**MASERATI NORTH AMERICA, INC.**
**TECHNICAL SERVICE DEPARTMENT**

**TECHNICAL INFORMATION**

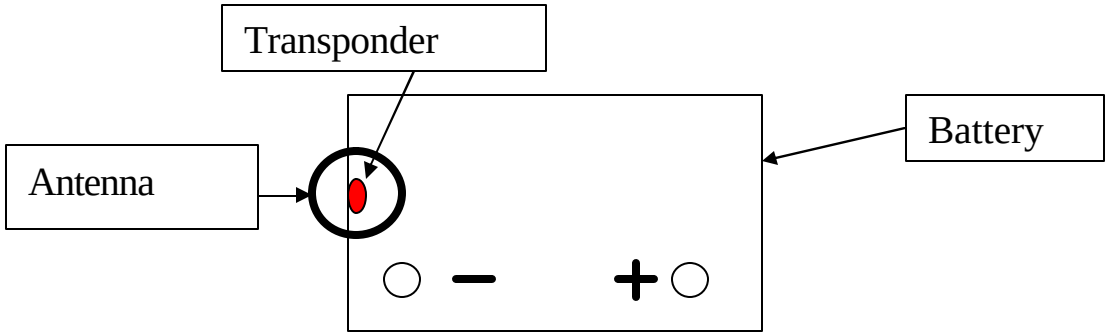
| Section | Section serial n° | Bulletin n° | Date | Pages |
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**SUBJECT: Battery Diagnosis Tool**

Maserati Spyder and Coupé produced from assembly number 11353 (VIN num. 10103) onwards, feature batteries which contain a transponder for the purpose of providing the following data:

Date of production
Current (%)
Static voltage (V)
State of the battery (current condition)
Vehicle VIN

With the "MASERATI BATTERY TESTER" (p/n 900026750), you can diagnose the efficiency of the battery and record the above listed data from the transponder. Included with the tester is the operating instruction manual. The managing software has to be downloaded from MODIS (after sales / technical service / download SD2 software / tools) and it is called "INST9984_10700.exe".



Please, observe the correct position the antenna above the transponder when reading or writing data.

➔ Make sure that the pegs that are located on the bottom of the tool (circled in red below) are properly set into the recesses on the battery housing.





Whenever a battery diagnosis is being performed, be sure the battery is not connected to any loads.

You are required to make a reading and record the results whenever:

A new car arrives at the dealership
Before delivering a new car to the customer (after P.D.I.)
Any time the car enters a workshop with an electrical complaint

Keep a record of the acquired files and make them available in the event of future problems or complaints concerning the battery or charging system.

**Note:** Listed are some recommendations that will help conserve the battery's power until the time of delivery to the customer:

➔ Disconnect the battery whenever the car is not moved for an extended period of time. (lower windows first)
➔ Connect an external power supply if, with the engine off, you need to operate functions that require electrical power, e.g., radio, soft top, air conditioning, seats, lights, etc.

# Rough Cold Start Software Download

# All Maserati MY 2003-2004 Spyder & Coupe Versions/Models

**MY 2003**
**STARTING ASSEMBLY NO. 10265**
**STARTING CHASSIS NO. 9058**

**MY 2004**
**ENDING ASSEMBLY NO. 14592**
**ENDING CHASSIS NO. 13336**

**MY 2004 PRODUCTION AS OF 4/15/04 HAS THE NEW SOFTWARE STARTING WITH ASSY NO. 14594 & VIN 13444**

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## TECHNICAL INFORMATION BULLETIN

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**Subject: New Software Download for All MY 2003-2004 Spyder & Coupe models - Service Campaign No. 116**

A new software version has been developed to address a rough cold start complaint that the Spyder and Coupe may experience with the original factory installed Bosch Motronic ECU software. All MY 2003-2004 Spyder & Coupe Models are affected up to **assembly number 14592 (chassis number 13336).**

The Motronic Electronic Control Unit (ECU) **part number 180251** is used on all MY 2003 - 2004 Maserati Coupe and Spider, F1 and GT versions. The software in each model is different. Close attention must be made to the particular model being worked on so the correct software is installed.

**Note**: A CD will be sent automatically with the appropriate software, also the software programs are on MODIS listed under “After Sales”, “SD2 software download” in the Spyder and Coupe section, “ECU Software”.




**The updated software to be downloaded is:**

**For Model Year 2003**

**From assembly number 10265 (vin: 9058) up to assembly number 12171(vin: 10724)**

Spyder Cambiocorsa (F1) gearbox version – INST5212 (20005.001)
Spyder Manual gearbox version – INST5209 (198863.001)

Coupe Cambiocorsa (F1) gearbox version – INST5213 (200004.001)
Coupe Manual gearbox version – INST5208 (198861.001)

**For Model Year 2004**

**From assembly number 12176(vin: 10836) up to assembly number 14594(vin: 13444)**

Spyder Cambiocorsa (F1) gearbox version – INST5210 (202920.001)
Spyder Manual gearbox version – INST5207 (202921.001)

Coupe Cambiocorsa (F1) gearbox version – INST5211 (202918.001)
Coupe Manual gearbox version – INST5206 (202919.001)

***Note: This update is only for vehicles starting with assembly number 10265 up to assembly number 14592. After assembly 14592 the newer software is already factory installed.***

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**The procedure is as follows:**

- Download the files from the CD supplied into the P.C. by selecting, **"Maintenance"**, then **"Update"**, then **"Load File"**.
- Update the SD2 by deleting all files currently loaded.
- With the SD2 in **"Link to PC"** mode, select the correct file to download according to the vehicle being worked on.
- Jump the Immobilizer relay with an appropriate jumper wire obtained locally. (Fig.1)
- Connect the SD2 in Stand Alone mode to the OBD socket, connector E.
- Select "MENU, ECU Programming and follow the listed instructions.
- If a warning message "Security Message # 1" or "Security Message # 2" appears, exit the download and restart the remote loading procedure again.
- When the download procedure is completed, verify the correct software is loaded by selecting the "Information" environment and refer to the software listed above.
- Road test and recheck for errors in the ECU.

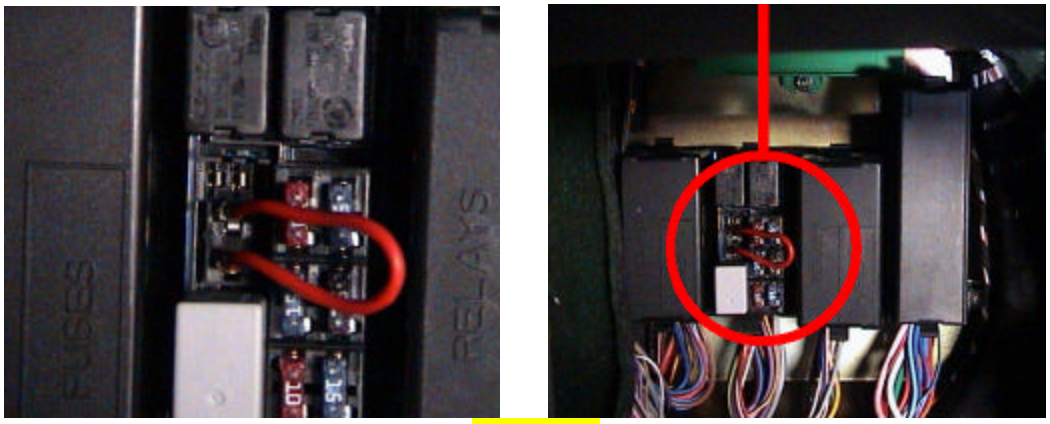


**Figure 1**

**Warranty Submission procedures for ECU:**

- Cost Code.....**23**
- Campaign Number .....**116**
- Malfunction Code ..... **063**
- Problem Code..... **810001**
- Operation Code ..... **8100017**
- Time .....**0.5 hour**

***After the download is completed, it is extremely important that every upgraded ECU is marked with a special sticker as shown below in Fig. 2.***



**Fig. 2**



**Fig. 3**

***You will receive enough stickers to complete 10 vehicles, if additional stickers are required, please contact the Warranty Department at 201-816-2659.***
***In addition to the ECU stickers that must be installed, you will also receive a sticker which must be placed on the engine compartment cover as shown in Fig.3.***
***Please fill in the sticker with the Dealer code and date of the repair.***

**Description of Emission Related Component: On-Board Diagnostic system**

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**Description of Repairs:** The OBD II system does not set any DTC codes while experiencing the Rough Cold Start problem. Please notice that this software upgrade improves it by introducing new parameters during cold starting.

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 9058 | 10265 | 9136 | 10337 |
| 9082 | 10269 | 9129 | 10338 |
| 9069 | 10272 | 9134 | 10339 |
| 9085 | 10274 | 9131 | 10340 |
| 9055 | 10276 | 9184 | 10341 |
| 9056 | 10277 | 9135 | 10342 |
| 9081 | 10278 | 9145 | 10345 |
| 9075 | 10279 | 9142 | 10346 |
| 9072 | 10280 | 9181 | 10347 |
| 9074 | 10281 | 9132 | 10350 |
| 9086 | 10282 | 9182 | 10351 |
| 9079 | 10289 | 9051 | 10353 |
| 9084 | 10292 | 9140 | 10354 |
| 9049 | 10293 | 9143 | 10356 |
| 9050 | 10294 | 9137 | 10357 |
| 9052 | 10295 | 9141 | 10359 |
| 9073 | 10296 | 9130 | 10361 |
| 9087 | 10298 | 9147 | 10375 |
| 9059 | 10300 | 9185 | 10377 |
| 9088 | 10301 | 9155 | 10403 |
| 9077 | 10302 | 9183 | 10404 |
| 9071 | 10303 | 9186 | 10405 |
| 9057 | 10306 | 9139 | 10406 |
| 9083 | 10308 | 9078 | 10409 |
| 9076 | 10309 | 9144 | 10410 |
| 9054 | 10310 | 9148 | 10411 |
| 9063 | 10311 | 9149 | 10412 |
| 9062 | 10313 | 9152 | 10413 |
| 9053 | 10316 | 9151 | 10414 |
| 9080 | 10319 | 9146 | 10415 |
| 9180 | 10320 | 9187 | 10416 |
| 9064 | 10321 | 9188 | 10417 |
| 9066 | 10322 | 9153 | 10418 |
| 9070 | 10323 | 9154 | 10419 |
| 9068 | 10326 | 9150 | 10420 |
| 9060 | 10327 | 9156 | 10422 |
| 9067 | 10328 | 9133 | 10424 |
| 9128 | 10330 | 9204 | 10425 |
| 9061 | 10332 | 9207 | 10432 |
| 9138 | 10333 | 9205 | 10433 |
| 9065 | 10335 | 9235 | 10439 |
| 9179 | 10336 | 9234 | 10440 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 9209 | 10445 | 9321 | 10608 |
| 9210 | 10446 | 9323 | 10609 |
| 9212 | 10452 | 9318 | 10611 |
| 9213 | 10453 | 9343 | 10612 |
| 9314 | 10454 | 9326 | 10616 |
| 9315 | 10455 | 9397 | 10619 |
| 9208 | 10457 | 9325 | 10622 |
| 9214 | 10465 | 9398 | 10623 |
| 9211 | 10470 | 9412 | 10626 |
| 9283 | 10475 | 9401 | 10630 |
| 9304 | 10479 | 9403 | 10634 |
| 9282 | 10483 | 9402 | 10635 |
| 9280 | 10484 | 9589 | 10658 |
| 9279 | 10487 | 9324 | 10659 |
| 9206 | 10489 | 9405 | 10666 |
| 9215 | 10490 | 9409 | 10668 |
| 9284 | 10491 | 9406 | 10669 |
| 9281 | 10492 | 9408 | 10675 |
| 9288 | 10499 | 9407 | 10676 |
| 9285 | 10500 | 9411 | 10677 |
| 9289 | 10502 | 9571 | 10680 |
| 9290 | 10503 | 9494 | 10684 |
| 9338 | 10510 | 9468 | 10685 |
| 9291 | 10514 | 9469 | 10686 |
| 9236 | 10515 | 9399 | 10687 |
| 9339 | 10517 | 9404 | 10690 |
| 9337 | 10520 | 9477 | 10691 |
| 9344 | 10521 | 9330 | 10694 |
| 9346 | 10524 | 9410 | 10698 |
| 9327 | 10534 | 9478 | 10703 |
| 9287 | 10535 | 9445 | 10704 |
| 9345 | 10536 | 9491 | 10705 |
| 9341 | 10541 | 9492 | 10711 |
| 9340 | 10542 | 9400 | 10715 |
| 9317 | 10544 | 9479 | 10724 |
| 9328 | 10547 | 9493 | 10727 |
| 9316 | 10549 | 9632 | 10735 |
| 9319 | 10552 | 9590 | 10737 |
| 9342 | 10556 | 9573 | 10750 |
| 9286 | 10558 | 9470 | 10752 |
| 9329 | 10562 | 9480 | 10756 |
| 9439 | 10601 | 9471 | 10758 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
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| 9320 | 10606 | 9572 | 10772 |
| 9481 | 10773 | 9796 | 11013 |
| 9475 | 10786 | 9797 | 11020 |
| 9473 | 10792 | 9809 | 11025 |
| 9574 | 10801 | 9810 | 11032 |
| 9575 | 10803 | 9720 | 11043 |
| 9476 | 10805 | 9798 | 11044 |
| 9576 | 10809 | 9804 | 11046 |
| 9474 | 10812 | 9740 | 11048 |
| 9577 | 10817 | 9698 | 11067 |
| 9660 | 10821 | 9811 | 11072 |
| 9472 | 10833 | 9807 | 11074 |
| 9579 | 10842 | 9816 | 11078 |
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| 9664 | 10868 | 9805 | 11081 |
| 9582 | 10869 | 9752 | 11082 |
| 9586 | 10881 | 9826 | 11085 |
| 9764 | 10882 | 9831 | 11104 |
| 9580 | 10884 | 9818 | 11106 |
| 9581 | 10894 | 9806 | 11118 |
| 9665 | 10899 | 9832 | 11121 |
| 9769 | 10912 | 9923 | 11123 |
| 9775 | 10921 | 9925 | 11125 |
| 9678 | 10923 | 9817 | 11132 |
| 9663 | 10924 | 9830 | 11135 |
| 9773 | 10926 | 9924 | 11138 |
| 9689 | 10940 | 9926 | 11139 |
| 9778 | 10942 | 9937 | 11153 |
| 9774 | 10960 | 9932 | 11157 |
| 9779 | 10963 | 9931 | 11159 |
| 9699 | 10965 | 9943 | 11164 |
| 9786 | 10966 | 9922 | 11166 |
| 9691 | 10967 | 9936 | 11172 |
| 9785 | 10969 | 9930 | 11177 |
| 9690 | 10973 | 9812 | 11179 |
| 9783 | 10975 | 9972 | 11184 |
| 9719 | 10980 | 9792 | 11185 |
| 9784 | 10981 | 9971 | 11186 |
| 9794 | 10983 | 9939 | 11187 |
| 9790 | 10988 | 9964 | 11188 |
| 9578 | 10989 | 9940 | 11196 |

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| Chassis No. | Assembly No. | Chassis No. | Assembl No. |
|---|---|---|---|
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| 9587 | 10994 | 9945 | 11202 |
| 9793 | 11006 | 9974 | 11209 |
| 9662 | 11008 | 9975 | 11213 |
| 9944 | 11222 | 10038 | 11379 |
| 10002 | 11229 | 10081 | 11385 |
| 9982 | 11230 | 10098 | 11391 |
| 9999 | 11241 | 10205 | 11394 |
| 9946 | 11247 | 10201 | 11398 |
| 10003 | 11250 | 10155 | 11399 |
| 10059 | 11258 | 10154 | 11401 |
| 10069 | 11261 | 10142 | 11403 |
| 10014 | 11262 | 10149 | 11404 |
| 10067 | 11265 | 10206 | 11407 |
| 9983 | 11268 | 10107 | 11409 |
| 9996 | 11269 | 10202 | 11411 |
| 10052 | 11272 | 10102 | 11419 |
| 10000 | 11276 | 10165 | 11421 |
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| 10015 | 11289 | 10216 | 11440 |
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| 10068 | 11319 | 10258 | 11457 |
| 10092 | 11322 | 10252 | 11461 |
| 10093 | 11324 | 10260 | 11463 |
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| 10116 | 11330 | 10250 | 11470 |
| 10122 | 11333 | 10253 | 11472 |
| 10143 | 11336 | 10255 | 11476 |
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| 9833 | 11341 | 10254 | 11485 |
| 10244 | 11347 | 10266 | 11489 |
| 10103 | 11353 | 10091 | 11497 |
| 10049 | 11354 | 10144 | 11498 |
| 10099 | 11356 | 10190 | 11506 |
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| 10055 | 11362 | 10305 | 11537 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
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| 10071 | 11374 | 10376 | 11660 |
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| 10299 | 11666 | 10562 | 11842 |
| 10437 | 11678 | 10564 | 11844 |
| 10400 | 11680 | 10561 | 11847 |
| 10426 | 11681 | 10659 | 11851 |
| 10447 | 11700 | 10667 | 11852 |
| 10442 | 11702 | 10574 | 11858 |
| 10454 | 11707 | 10666 | 11861 |
| 10521 | 11711 | 10566 | 11862 |
| 10449 | 11717 | 10581 | 11864 |
| 10453 | 11719 | 10582 | 11866 |
| 10443 | 11721 | 10671 | 11875 |
| 10448 | 11723 | 10669 | 11876 |
| 10445 | 11725 | 10658 | 11877 |
| 10460 | 11732 | 10668 | 11878 |
| 10458 | 11734 | 10608 | 11882 |
| 10465 | 11736 | 10585 | 11883 |
| 10466 | 11742 | 10670 | 11887 |
| 10467 | 11747 | 10552 | 11896 |
| 10532 | 11749 | 10717 | 11897 |
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| 10455 | 11778 | 10688 | 11927 |
| 10551 | 11786 | 10735 | 11928 |
| 10617 | 11790 | 10691 | 11932 |
| 10540 | 11791 | 10736 | 11933 |
| 10027 | 11793 | 10689 | 11942 |
| 10251 | 11797 | 10759 | 11945 |
| 10541 | 11801 | 10737 | 11952 |
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| 10631 | 11807 | 10553 | 11972 |
| 10630 | 11808 | 10570 | 11973 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
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| 10461 | 11813 | 10545 | 11984 |
| 10533 | 11821 | 10693 | 11988 |
| 10542 | 11827 | 10569 | 11990 |
| 10535 | 11828 | 10575 | 11991 |
| 10468 | 11831 | 10679 | 11992 |
| 10547 | 11833 | 10694 | 12010 |
| 10738 | 12032 | 10980 | 12240 |
| 10802 | 12035 | 11015 | 12241 |
| 10858 | 12054 | 11055 | 12242 |
| 10743 | 12059 | 11064 | 12244 |
| 10865 | 12079 | 11063 | 12246 |
| 10852 | 12082 | 11065 | 12247 |
| 10864 | 12089 | 11013 | 12249 |
| 10687 | 12101 | 11068 | 12252 |
| 10874 | 12111 | 11066 | 12253 |
| 10811 | 12118 | 11022 | 12255 |
| 10857 | 12152 | 11067 | 12258 |
| 10724 | 12171 | 10989 | 12260 |
| 10836 | 12176 | 11018 | 12261 |
| 10835 | 12179 | 11020 | 12263 |
| 10993 | 12180 | 11070 | 12264 |
| 10997 | 12183 | 11021 | 12265 |
| 10995 | 12185 | 11128 | 12266 |
| 10959 | 12186 | 11058 | 12268 |
| 10994 | 12187 | 11002 | 12269 |
| 10965 | 12190 | 11053 | 12271 |
| 11003 | 12191 | 11031 | 12272 |
| 10968 | 12194 | 11073 | 12273 |
| 11010 | 12198 | 11071 | 12274 |
| 10966 | 12204 | 11016 | 12276 |
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| 10972 | 12211 | 11125 | 12283 |
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| 10958 | 12215 | 11072 | 12288 |
| 11006 | 12217 | 11054 | 12290 |
| 10973 | 12220 | 11069 | 12292 |
| 11014 | 12222 | 11041 | 12295 |
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| 11017 | 12224 | 11090 | 12297 |
| 11019 | 12225 | 11076 | 12298 |
| 10967 | 12226 | 11040 | 12299 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 10996 | 12227 | 11089 | 12301 |
| 10988 | 12228 | 11077 | 12302 |
| 11051 | 12229 | 11059 | 12303 |
| 10971 | 12232 | 11095 | 12304 |
| 10990 | 12234 | 11061 | 12305 |
| 11005 | 12235 | 11078 | 12306 |
| 11012 | 12236 | 11079 | 12308 |
| 11052 | 12239 | 11080 | 12309 |
| 11081 | 12311 | 11158 | 12376 |
| 11060 | 12313 | 11195 | 12377 |
| 11096 | 12314 | 11188 | 12380 |
| 11082 | 12315 | 11108 | 12384 |
| 11097 | 12316 | 11159 | 12389 |
| 11084 | 12317 | 11119 | 12391 |
| 11087 | 12319 | 11197 | 12394 |
| 11098 | 12320 | 11176 | 12398 |
| 11102 | 12322 | 11196 | 12399 |
| 11103 | 12326 | 11172 | 12400 |
| 11123 | 12327 | 10982 | 12405 |
| 11104 | 12328 | 11163 | 12406 |
| 11109 | 12329 | 11165 | 12407 |
| 11117 | 12331 | 11164 | 12409 |
| 11092 | 12332 | 11168 | 12410 |
| 11118 | 12333 | 11166 | 12411 |
| 11083 | 12336 | 11177 | 12413 |
| 11086 | 12338 | 11254 | 12415 |
| 11129 | 12340 | 11167 | 12416 |
| 11085 | 12342 | 11178 | 12418 |
| 11132 | 12343 | 11179 | 12421 |
| 11105 | 12344 | 11182 | 12422 |
| 11138 | 12345 | 11263 | 12423 |
| 11139 | 12346 | 11262 | 12428 |
| 11093 | 12347 | 11214 | 12429 |
| 11091 | 12348 | 11185 | 12431 |
| 11133 | 12349 | 11200 | 12432 |
| 11135 | 12351 | 11199 | 12434 |
| 11106 | 12352 | 11256 | 12436 |
| 11137 | 12353 | 11220 | 12439 |
| 11140 | 12356 | 11203 | 12440 |
| 11141 | 12357 | 11215 | 12443 |
| 11134 | 12359 | 11184 | 12444 |
| 11142 | 12361 | 11221 | 12445 |
| 11149 | 12362 | 11228 | 12447 |
| 11136 | 12364 | 11229 | 12448 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 11148 | 12366 | 11230 | 12449 |
| 11144 | 12367 | 11231 | 12450 |
| 11160 | 12368 | 11267 | 12451 |
| 11143 | 12369 | 11261 | 12454 |
| 11154 | 12370 | 11237 | 12456 |
| 11161 | 12372 | 11331 | 12457 |
| 11189 | 12373 | 11232 | 12461 |
| 11198 | 12375 | 11269 | 12462 |
| 11233 | 12463 | 11344 | 12540 |
| 11186 | 12465 | 11350 | 12541 |
| 11227 | 12468 | 11335 | 12542 |
| 11270 | 12469 | 11353 | 12543 |
| 11236 | 12470 | 11352 | 12544 |
| 11251 | 12471 | 11361 | 12545 |
| 11328 | 12472 | 11322 | 12546 |
| 11238 | 12473 | 11326 | 12547 |
| 11271 | 12474 | 11293 | 12549 |
| 11242 | 12476 | 11345 | 12550 |
| 11239 | 12477 | 11327 | 12554 |
| 11279 | 12478 | 11340 | 12555 |
| 11265 | 12481 | 11371 | 12558 |
| 11245 | 12482 | 11372 | 12560 |
| 11243 | 12483 | 11379 | 12561 |
| 11280 | 12484 | 11343 | 12562 |
| 11287 | 12486 | 11273 | 12563 |
| 11294 | 12487 | 11373 | 12568 |
| 11303 | 12488 | 11392 | 12569 |
| 11288 | 12490 | 11310 | 12570 |
| 11323 | 12491 | 11334 | 12572 |
| 11244 | 12492 | 11382 | 12574 |
| 11250 | 12493 | 11381 | 12575 |
| 11319 | 12494 | 11360 | 12576 |
| 11252 | 12497 | 11362 | 12577 |
| 11295 | 12498 | 11364 | 12578 |
| 11304 | 12501 | 11369 | 12580 |
| 11272 | 12504 | 11385 | 12590 |
| 11320 | 12506 | 11386 | 12591 |
| 11321 | 12508 | 11341 | 12592 |
| 11332 | 12510 | 11384 | 12593 |
| 11311 | 12512 | 11363 | 12598 |
| 11305 | 12514 | 11388 | 12601 |
| 11286 | 12515 | 11370 | 12602 |
| 11333 | 12517 | 11374 | 12603 |
| 11337 | 12519 | 11383 | 12605 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
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| 11336 | 12521 | 11407 | 12609 |
| 11292 | 12525 | 11412 | 12610 |
| 11313 | 12528 | 11410 | 12614 |
| 11296 | 12532 | 10998 | 12615 |
| 11266 | 12537 | 11394 | 12616 |
| 11351 | 12538 | 11449 | 12617 |
| 11339 | 12539 | 11452 | 12619 |
| 11405 | 12621 | 11592 | 12774 |
| 11445 | 12624 | 11591 | 12776 |
| 11396 | 12647 | 11317 | 12778 |
| 11447 | 12649 | 11519 | 12779 |
| 11393 | 12652 | 11583 | 12780 |
| 11422 | 12653 | 11480 | 12784 |
| 11522 | 12663 | 11511 | 12786 |
| 11411 | 12665 | 11544 | 12789 |
| 11454 | 12671 | 11593 | 12791 |
| 11533 | 12677 | 11545 | 12798 |
| 11397 | 12679 | 11514 | 12800 |
| 11530 | 12681 | 11556 | 12803 |
| 11387 | 12682 | 11549 | 12804 |
| 11398 | 12683 | 11686 | 12810 |
| 11529 | 12687 | 11510 | 12816 |
| 11535 | 12700 | 11601 | 12818 |
| 11448 | 12703 | 11617 | 12820 |
| 11537 | 12705 | 11605 | 12822 |
| 11473 | 12706 | 11342 | 12824 |
| 11471 | 12714 | 11640 | 12830 |
| 11543 | 12715 | 11690 | 12837 |
| 11460 | 12718 | 11547 | 12839 |
| 11486 | 12721 | 11631 | 12842 |
| 11461 | 12723 | 11685 | 12843 |
| 11542 | 12725 | 11538 | 12844 |
| 11459 | 12726 | 11656 | 12845 |
| 11508 | 12727 | 11643 | 12847 |
| 11479 | 12730 | 11606 | 12850 |
| 11458 | 12733 | 11603 | 12851 |
| 11472 | 12734 | 11648 | 12852 |
| 11509 | 12735 | 11611 | 12856 |
| 11534 | 12739 | 11551 | 12858 |
| 11520 | 12740 | 11453 | 12861 |
| 11546 | 12742 | 11644 | 12865 |
| 11518 | 12748 | 11697 | 12866 |
| 11474 | 12749 | 11701 | 12869 |
| 11484 | 12750 | 11552 | 12870 |

**Maserati North America, Inc.**
Technical Department




| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 11487 | 12753 | 11658 | 12871 |
| 11495 | 12754 | 11702 | 12875 |
| 11515 | 12762 | 11585 | 12880 |
| 11548 | 12767 | 11642 | 12882 |
| 11507 | 12769 | 11660 | 12886 |
| 11574 | 12770 | 11496 | 12887 |
| 11575 | 12771 | 11650 | 12891 |
| 11703 | 12892 | 11811 | 13002 |
| 11485 | 12893 | 11659 | 13004 |
| 11667 | 12894 | 11693 | 13005 |
| 11618 | 12897 | 11700 | 13006 |
| 11619 | 12899 | 11834 | 13015 |
| 11512 | 12905 | 11784 | 13016 |
| 11736 | 12907 | 11763 | 13021 |
| 11681 | 12908 | 11677 | 13023 |
| 11671 | 12914 | 11818 | 13027 |
| 11676 | 12915 | 11792 | 13028 |
| 11649 | 12918 | 11721 | 13032 |
| 11669 | 12923 | 11722 | 13034 |
| 11446 | 12925 | 11862 | 13035 |
| 11694 | 12926 | 11793 | 13036 |
| 11612 | 12927 | 11791 | 13038 |
| 11692 | 12928 | 11668 | 13040 |
| 11741 | 12934 | 11790 | 13044 |
| 11740 | 12936 | 11825 | 13052 |
| 11748 | 12937 | 11833 | 13053 |
| 11550 | 12938 | 11863 | 13055 |
| 11729 | 12942 | 11865 | 13058 |
| 11670 | 12943 | 11827 | 13066 |
| 11730 | 12946 | 11380 | 13067 |
| 11787 | 12947 | 11738 | 13068 |
| 11584 | 12949 | 11888 | 13071 |
| 11594 | 12950 | 11887 | 13077 |
| 11786 | 12951 | 11886 | 13080 |
| 11769 | 12961 | 11836 | 13081 |
| 11764 | 12963 | 11872 | 13083 |
| 11754 | 12964 | 11896 | 13084 |
| 11785 | 12966 | 11868 | 13087 |
| 11602 | 12967 | 11843 | 13090 |
| 11623 | 12968 | 11869 | 13092 |
| 11744 | 12973 | 11897 | 13099 |
| 11753 | 12975 | 11845 | 13102 |
| 11651 | 12978 | 11871 | 13103 |
| 11641 | 12979 | 11844 | 13104 |
| 11657 | 12980 | 11873 | 13105 |

**Maserati North America, Inc.**
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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 11768 | 12981 | 11835 | 13111 |
| 11770 | 12984 | 11898 | 13113 |
| 11819 | 12993 | 11849 | 13115 |
| 11743 | 12997 | 11909 | 13118 |
| 11747 | 12998 | 11876 | 13119 |
| 11752 | 13001 | 11908 | 13122 |
| 11889 | 13126 | 12229 | 13309 |
| 11826 | 13128 | 12119 | 13314 |
| 11914 | 13132 | 12116 | 13316 |
| 11715 | 13136 | 12001 | 13322 |
| 11856 | 13141 | 12121 | 13323 |
| 11928 | 13142 | 12258 | 13333 |
| 11820 | 13145 | 12250 | 13341 |
| 11779 | 13155 | 11789 | 13349 |
| 11850 | 13157 | 12124 | 13350 |
| 11910 | 13159 | 11995 | 13355 |
| 11875 | 13170 | 12238 | 13357 |
| 11929 | 13183 | 12029 | 13359 |
| 11783 | 13188 | 12039 | 13373 |
| 11963 | 13190 | 12062 | 13374 |
| 11973 | 13200 | 12057 | 13376 |
| 11978 | 13202 | 11994 | 13382 |
| 11960 | 13203 | 12038 | 13383 |
| 11959 | 13205 | 12149 | 13403 |
| 11964 | 13208 | 12046 | 13404 |
| 11604 | 13210 | 12031 | 13408 |
| 11974 | 13212 | 11761 | 13416 |
| 11976 | 13217 | 12169 | 13417 |
| 11972 | 13218 | 12161 | 13425 |
| 11962 | 13220 | 12179 | 13427 |
| 11980 | 13222 | 12180 | 13428 |
| 11944 | 13225 | 12229 | 13309 |
| 11947 | 13229 | 12119 | 13314 |
| 11971 | 13231 | 12116 | 13316 |
| 11762 | 13233 | 12001 | 13322 |
| 11961 | 13234 | 12121 | 13323 |
| 11737 | 13236 | 12258 | 13333 |
| 11946 | 13239 | 12250 | 13341 |
| 11945 | 13243 | 11789 | 13349 |
| 12047 | 13244 | 12124 | 13350 |
| 12117 | 13248 | 11995 | 13355 |
| 11981 | 13250 | 12238 | 13357 |
| 11979 | 13255 | 12029 | 13359 |
| 11982 | 13257 | 12039 | 13373 |
| 11975 | 13259 | 12062 | 13374 |
| 11983 | 13267 | 12057 | 13376 |

**Maserati North America, Inc.**
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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 11992 | 13270 | 11994 | 13382 |
| 11760 | 13285 | 12038 | 13383 |
| 11817 | 13286 | 12149 | 13403 |
| 11993 | 13298 | 12046 | 13404 |
| 12031 | 13408 | 12162 | 13590 |
| 11761 | 13416 | 12386 | 13594 |
| 12169 | 13417 | 12411 | 13599 |
| 12161 | 13425 | 12394 | 13607 |
| 12179 | 13427 | 12381 | 13608 |
| 12180 | 13428 | 12478 | 13610 |
| 12148 | 13434 | 12393 | 13615 |
| 12181 | 13436 | 12370 | 13616 |
| 12191 | 13445 | 12477 | 13617 |
| 12030 | 13447 | 12372 | 13621 |
| 12058 | 13448 | 12389 | 13627 |
| 12186 | 13450 | 12489 | 13629 |
| 12187 | 13451 | 12388 | 13632 |
| 12154 | 13452 | 12483 | 13634 |
| 12160 | 13455 | 12484 | 13635 |
| 12221 | 13458 | 12496 | 13636 |
| 12168 | 13461 | 12498 | 13639 |
| 12220 | 13464 | 12416 | 13642 |
| 12223 | 13465 | 12257 | 13650 |
| 12239 | 13467 | 12357 | 13653 |
| 12225 | 13469 | 12500 | 13654 |
| 12222 | 13478 | 12408 | 13660 |
| 12240 | 13480 | 12490 | 13661 |
| 12249 | 13483 | 12382 | 13663 |
| 12347 | 13485 | 12506 | 13668 |
| 12224 | 13501 | 12552 | 13672 |
| 12227 | 13502 | 12501 | 13675 |
| 12077 | 13509 | 12497 | 13676 |
| 12348 | 13512 | 12392 | 13682 |
| 12349 | 13513 | 12422 | 13686 |
| 12355 | 13526 | 12482 | 13688 |
| 12354 | 13527 | 12425 | 13694 |
| 12356 | 13530 | 12419 | 13697 |
| 12364 | 13538 | 12551 | 13702 |
| 12228 | 13546 | 12581 | 13705 |
| 12369 | 13552 | 12577 | 13721 |
| 12406 | 13565 | 12433 | 13722 |
| 12380 | 13569 | 12513 | 13723 |
| 12371 | 13574 | 12589 | 13725 |
| 12363 | 13576 | 12516 | 13726 |
| 12404 | 13579 | 12547 | 13731 |

**Maserati North America, Inc.**
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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 12387 | 13586 | 12569 | 13732 |
| 12476 | 13588 | 12583 | 13738 |
| 12410 | 13589 | 12509 | 13746 |
| 12582 | 13749 | 12772 | 13924 |
| 12520 | 13761 | 12762 | 13931 |
| 12615 | 13766 | 12773 | 13935 |
| 12631 | 13768 | 12784 | 13940 |
| 12606 | 13770 | 12810 | 13943 |
| 12621 | 13780 | 12678 | 13951 |
| 12429 | 13781 | 12781 | 13952 |
| 12614 | 13782 | 12811 | 13956 |
| 12622 | 13788 | 12674 | 13962 |
| 12632 | 13794 | 12766 | 13965 |
| 12426 | 13798 | 12813 | 13967 |
| 12521 | 13808 | 12783 | 13973 |
| 12515 | 13813 | 12778 | 13978 |
| 12646 | 13816 | 12673 | 13980 |
| 12525 | 13819 | 12669 | 13987 |
| 12613 | 13820 | 12780 | 13994 |
| 12597 | 13826 | 12790 | 14001 |
| 12637 | 13829 | 12818 | 14003 |
| 12592 | 13830 | 12815 | 14007 |
| 12502 | 13833 | 12794 | 14015 |
| 12653 | 13836 | 12792 | 14019 |
| 12654 | 13837 | 12944 | 14021 |
| 12645 | 13839 | 12945 | 14028 |
| 12599 | 13843 | 12957 | 14035 |
| 12595 | 13847 | 12795 | 14038 |
| 12633 | 13850 | 12791 | 14040 |
| 12590 | 13852 | 12899 | 14041 |
| 12594 | 13855 | 12801 | 14043 |
| 12600 | 13858 | 12937 | 14044 |
| 12666 | 13861 | 12786 | 14049 |
| 12656 | 13862 | 12936 | 14050 |
| 12663 | 13868 | 12935 | 14060 |
| 12598 | 13870 | 12970 | 14065 |
| 12523 | 13871 | 12938 | 14069 |
| 12636 | 13878 | 12796 | 14078 |
| 12662 | 13881 | 12984 | 14081 |
| 12759 | 13885 | 12905 | 14084 |
| 12668 | 13889 | 12951 | 14086 |
| 12644 | 13891 | 12676 | 14089 |
| 12667 | 13894 | 12912 | 14092 |
| 12526 | 13902 | 12777 | 14098 |
| 12755 | 13906 | 12802 | 14100 |

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| Chassis No. | Assembly No. | Chassis No. | Assembly No. |
|---|---|---|---|
| 12671 | 13920 | 12950 | 14101 |
| 12677 | 13923 | 12902 | 14103 |
| 12956 | 14111 | 13043 | 14287 |
| 12985 | 14114 | 13066 | 14290 |
| 12965 | 14115 | 13064 | 14293 |
| 12910 | 14118 | 13156 | 14295 |
| 12991 | 14122 | 13232 | 14307 |
| 12963 | 14123 | 13059 | 14315 |
| 12964 | 14125 | 13063 | 14317 |
| 12907 | 14132 | 13257 | 14326 |
| 12980 | 14134 | 13162 | 14332 |
| 13015 | 14136 | 13234 | 14336 |
| 13017 | 14137 | 13168 | 14348 |
| 12981 | 14140 | 13236 | 14351 |
| 12911 | 14142 | 13260 | 14352 |
| 13016 | 14155 | 12896 | 14366 |
| 12990 | 14156 | 13169 | 14370 |
| 12996 | 14163 | 13240 | 14371 |
| 12782 | 14168 | 13264 | 14379 |
| 13030 | 14170 | 13268 | 14389 |
| 13031 | 14171 | 13259 | 14393 |
| 13025 | 14172 | 13241 | 14396 |
| 12785 | 14179 | 13263 | 14403 |
| 12992 | 14181 | 12943 | 14418 |
| 13032 | 14182 | 13354 | 14421 |
| 13037 | 14193 | 13352 | 14426 |
| 13048 | 14196 | 13266 | 14430 |
| 12901 | 14205 | 13163 | 14442 |
| 13024 | 14208 | 13151 | 14449 |
| 12997 | 14218 | 13322 | 14454 |
| 13049 | 14220 | 13325 | 14459 |
| 13001 | 14222 | 13357 | 14463 |
| 13055 | 14223 | 13360 | 14474 |
| 13056 | 14232 | 13262 | 14478 |
| 13060 | 14243 | 13351 | 14486 |
| 13042 | 14246 | 12914 | 14500 |
| 12979 | 14249 | 13267 | 14504 |
| 13000 | 14251 | 13362 | 14528 |
| 13062 | 14260 | 13153 | 14534 |
| 12998 | 14261 | 13442 | 14549 |
| 13004 | 14264 | 13345 | 14575 |
| 12949 | 14266 | 13359 | 14584 |
| 13011 | 14269 | 13336 | 14592 |
| 13010 | 14273 | | |
| 13067 | 14275 | | |
| 13009 | 14277 | | |

**Maserati North America, Inc.**
Technical Department

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

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**MODEL: Quattroporte**

**SUBJECT: Reverse Gear Lever – Campaign 126**

For your Information, the Quattroporte starting with assembly number 15140 (VIN: 14216) up to and including assembly number 17559 (VIN: 16353) are involved in a Service Campaign to install a new reverse gear lever. After assembly number 17559 (VIN: 16353) the newer part is already installed from the factory.
The newer lever is being installed to eliminate noises, (i.e., rattles or squeaks) and cracks that may develop, due to the plastic used in the construction of the "T" handle. Always check with Modis to ensure the vehicle being worked on is included in the campaign.

The parts required are:

| Description | P/N | Qty. |
|---|---|---|
| Reverse Lever – 214421 | | 1 |

**Warranty Information:**

Component Code……3 01 001
Labor Operation……3 01 001 0 (0.3 h)
Problem Code……006
Cost Code……23
Campaign Number……..126

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

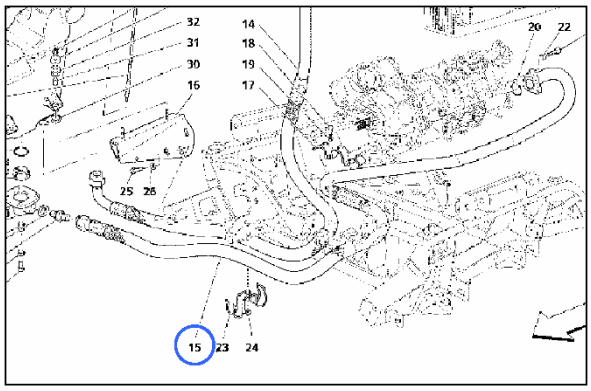
| Section | Section serial n° | Bulletin n° | Date | Pages |
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**MODEL: Quattroporte**

**SUBJECT: Oil pipe between pump and reservoir – Campaign 138**

For your Information, the Quattroporte starting with vin number 14719 up to and including vin number 17090 are involved in a Service Campaign. This campaign is to inspect and if necessary, replace a connector union located on the oil pipe between the oil pump and the oil reservoir (No. 15 below) that may show signs of minor seepage.

Attached to this bulletin is a list of the vehicles involved.
Always check with Modis to ensure the car being worked on requires this campaign.




**Inspection Procedure:**

1. Remove the protective shields under the front bumper and the engine compartment.

2. Read the part number on the collar of the pipe as shown below.




3. If the collar has part number **196233** stamped, the part **does not require replacement.** **Mark the collar with red paint to show the campaign has been completed.** Reassemble the panels and submit the inspect only procedure on the warranty claim.
   If the collar has part number **211411** stamped, the part **must be replaced**.

**Replacement Procedure:**

1. Drain the oil from the reservoir into a clean container so the oil can be reused.
2. Remove the pipe from the reservoir side and drain the residual oil.
3. Remove the pipe from the pump side.
4. Install the new pipe (part number 211411) and seal (part number 109649) Torque on the reservoir side union is 78 Nm. Torque on the pump side bolts is 10 Nm. **Mark the collar with red paint to show the campaign has been completed.**
5. Reinstall all the previously removed components.
6. Refill the oil using the saved oil and top off if necessary.
7. Return all parts as per the warranty return system and indicate the campaign number on the box of return parts.

**Warranty Information:**

Component Code……..1 60 009
Labor Operation…….1 6 0 009 9 (1.1 h, replacement)
1 60 009 8 (0.5 h, visual inspection only)
Problem Code……063
Cost Code……..23
Campaign Number……138

Vin Number

| | |
|---|---|
| 14719 | 16296 |
| 14854 | 16342 |
| 15018 | 16343 |
| 15736 | 16344 |
| 15785 | 16345 |
| 15794 | 16346 |
| 15795 | 16347 |
| 15803 | 16348 |
| 15804 | 16349 |
| 15809 | 16350 |
| 15811 | 16351 |
| 15993 | 16352 |
| 15994 | 16353 |
| 15995 | 16354 |
| 15996 | 16355 |
| 15998 | 16356 |
| 15999 | 16543 |
| 16000 | 16544 |
| 16001 | 16545 |
| 16002 | 16546 |
| 16003 | 16547 |
| 16004 | 16548 |
| 16005 | 16549 |
| 16006 | 16550 |
| 16007 | 16806 |
| 16008 | 16807 |
| 16009 | 16808 |
| 16010 | 16809 |
| 16011 | 16810 |
| 16012 | 16811 |
| 16024 | 16812 |
| 16122 | 16813 |
| 16149 | 16814 |
| 16150 | 16815 |
| 16151 | 16816 |
| 16152 | 16817 |
| 16160 | 16818 |
| 16282 | 16819 |
| 16283 | 16950 |
| 16284 | 16951 |
| 16285 | 16952 |
| 16286 | 16953 |
| 16287 | 16954 |
| 16288 | 16956 |
| 16289 | 16957 |
| 16290 | 16958 |
| 16291 | 16959 |
| 16292 | 16962 |
| 16293 | 16964 |
| 16294 | 16965 |
| 16295 | 17090 |

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

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**MODEL: Quattroporte**

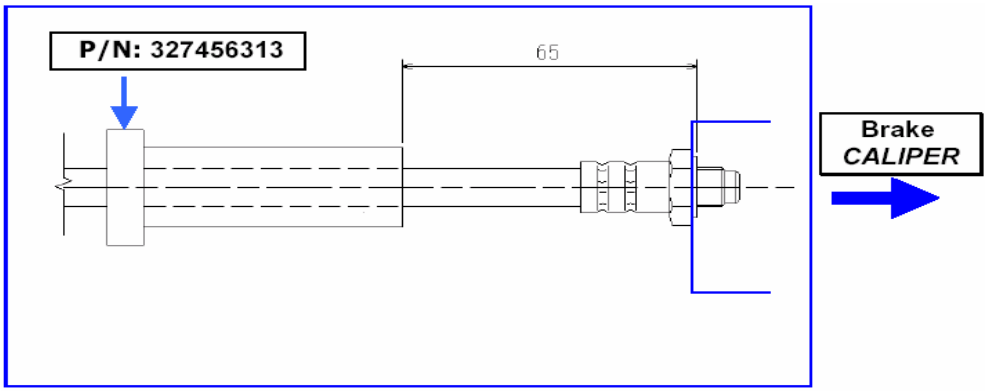
**SUBJECT: Rear Caliper Brake Hose – Campaign 139**

For your Information, the Quattroporte starting with assembly number 15140 (VIN: 14216) up to and including assembly number 18210 (VIN: 17271) are involved in a Service Campaign to install a snap ring on each of the rear brake caliper hoses. The snap ring (p/n: 327456313) will help keep a rubber insulator in the correct position to help prevent rattles and noises that may appear to be coming from the rear trunk area.

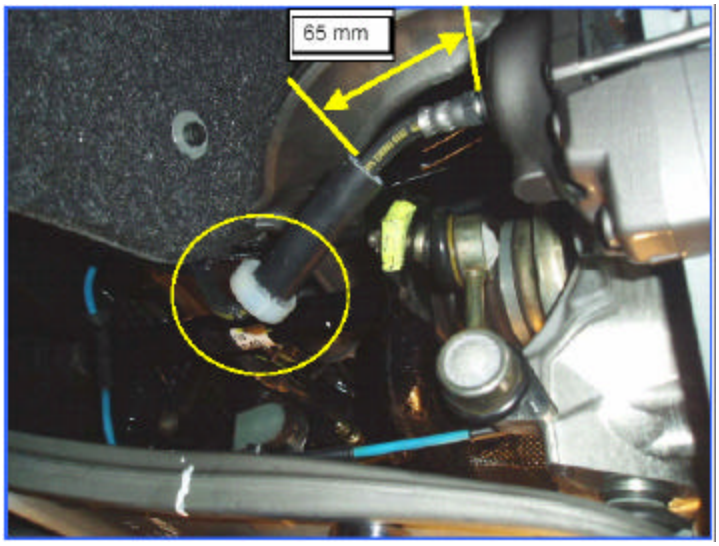
Always check Modis to ensure the vehicle being worked on is included in the campaign.

**Procedure:**

- Remove the rear wheels to access the brake calipers.
- Measure the gap between the rubber sleeve and the union that faces the caliper. (As shown below). The gap must be 65mm.



- If necessary, slide the rubber sleeve to get the correct gap.
- Install the snap ring, part number: 327456313, as shown below.




- Repeat this procedure on the other side of the vehicle.

**Warranty Information:**

- Component Code……4 11 009
- Labor Operation……4 11 009 9 (0.4h)
- Problem Code……063
- Cost Code……..23
- Campaign Number……...139

| VIN | | | | |
|---|---|---|---|---|
| 14216 | 14714 | 15207 | 15742 | 16343 |
| 14217 | 14716 | 15208 | 15786 | 16344 |
| 14218 | 14719 | 15209 | 15787 | 16348 |
| 14219 | 14720 | 15211 | 15788 | 16350 |
| 14220 | 14721 | 15212 | 15789 | 16351 |
| 14221 | 14722 | 15213 | 15790 | 16543 |
| 14222 | 14725 | 15215 | 15791 | 16544 |
| 14223 | 14830 | 15216 | 15792 | 16545 |
| 14224 | 14832 | 15217 | 15793 | 16547 |
| 14225 | 14833 | 15218 | 15794 | 16548 |
| 14226 | 14834 | 15223 | 15795 | 16549 |
| 14351 | 14835 | 15224 | 15796 | 16550 |
| 14397 | 14836 | 15225 | 15801 | 16807 |
| 14398 | 14837 | 15226 | 15802 | 16808 |
| 14399 | 14839 | 15227 | 15803 | 16809 |
| 14401 | 14842 | 15229 | 15807 | 16810 |
| 14476 | 14854 | 15230 | 15808 | 16812 |
| 14477 | 14858 | 15232 | 15809 | 16814 |
| 14478 | 15011 | 15233 | 15811 | 16815 |
| 14479 | 15012 | 15371 | 15812 | 16816 |
| 14480 | 15014 | 15373 | 15839 | 16817 |
| 14481 | 15016 | 15375 | 15993 | 16818 |
| 14482 | 15019 | 15376 | 15994 | 16819 |
| 14631 | 15020 | 15377 | 15995 | 16950 |
| 14633 | 15021 | 15379 | 15996 | 16952 |
| 14635 | 15022 | 15380 | 15997 | 16953 |
| 14636 | 15024 | 15381 | 15998 | 16954 |
| 14637 | 15026 | 15382 | 15999 | 16956 |
| 14638 | 15027 | 15383 | 16001 | 16957 |
| 14639 | 15128 | 15385 | 16002 | 16958 |
| 14641 | 15129 | 15387 | 16003 | 16959 |
| 14642 | 15130 | 15391 | 16004 | 16962 |
| 14643 | 15131 | 15397 | 16008 | 16963 |
| 14645 | 15134 | 15706 | 16010 | 16964 |
| 14693 | 15136 | 15713 | 16011 | 16965 |
| 14694 | 15137 | 15716 | 16122 | 17090 |
| 14696 | 15138 | 15717 | 16149 | 17091 |
| 14697 | 15140 | 15718 | 16150 | 17100 |
| 14699 | 15141 | 15720 | 16151 | 17271 |
| 14701 | 15142 | 15724 | 16152 | |
| 14702 | 15143 | 15726 | 16282 | |
| 14703 | 15145 | 15727 | 16284 | |
| 14704 | 15146 | 15729 | 16286 | |
| 14705 | 15147 | 15730 | 16287 | |
| 14706 | 15149 | 15731 | 16288 | |
| 14707 | 15150 | 15732 | 16289 | |
| 14708 | 15152 | 15735 | 16290 | |
| 14709 | 15153 | 15736 | 16291 | |
| 14711 | 15154 | 15737 | 16292 | |
| 14712 | 15204 | 15739 | 16296 | |
| 14713 | 15205 | 15741 | 16342 | |

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

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**MODEL: Quattroporte**

**SUBJECT: Roll Over Valves**

For your Information, the Quattroporte starting with assembly number 19454 (VIN: 18352) has a newer style roll over valve installed in the fuel tank. This newer style valve is installed to help prevent rattle type noises that may be emitted from the rear of the car on rough road surfaces.
Anytime the valve has to be replaced, use part number 217194 which replaces the older valve part number 192099.

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**MODEL: Quattroporte**

**SUBJECT: Engine Electronic Management – Campaign 140**

Maserati Quattroportes built up to and including VIN **18629,** are involved in a Service Campaign involving the engine electronic management. The purpose of this campaign is to help improve the comfort performance when the operation of MSR is required. **Please perform this campaign together with campaign 142.**

Update procedure is as follows:

1. Read this document carefully and completely to determine the repair to be performed
2. Check via MODIS that the vehicle is included in the campaign
3. Protect areas that could be exposed to damages during repair
4. Select **Aftersales**
5. Select **Technical Service**
6. Select **SD2 Software Download**
7. Select **M139 Quattroporte**
8. Select **ECU Software**
9. Download file **INST5235_10000**.exe (engine sw **198428.002**) from **MODIS** and extract the file to a suitable location
10. Open SD3Net on your PC and update your SD3 tester by selecting **Updates** >> **Tester SD3 Software Update.** Select the folder where the above mentioned file was downloaded. Select **SELECT ALL**, and then **TRANSFER** to load program on the SD3.
11. With the key turned to OFF, remove the cover from the fuse and relay box (CVM) located in the engine compartment RHS and jump the immobilizer relay as shown below



12. Connect the SD3 tester to the car. **Connect a battery charger to the battery!!!**
13. Turn the key to ON and switch off all electrical devices in the car.
14. Select the following: **SERIAL DIAGNOSIS** >> **Diagnostic cycle on individual ECU** >> **MASERATI** >> **M139**
15. Select **TELECARICAMENTO MOTORE 198428.002**. The SD3 tester will enter the *SD2 emulator* mode: select **ISO1 LINE** when requested, then follow the instructions displayed on the screen. **Note: You do not need to change the SD3 cable. Use the standard cable SD3-CBL06 for this procedure, disregard the message: "Connect proper cable bundle SD3-CBL07"**
16. When requested, select **ECU PROGRAMMING**: the software downloading will begin and run automatically for about 90 minutes.
17. At the end of the flash programming, you will be requested to turn the key OFF then ON again (if the request to turn the key ON is delayed, press "ESC")
18. After the confirmation message that the correct downloading has been displayed, press "ESC"
19. Select EXIT as it appears in the menu
20. Turn the key OFF, remove the jumper, and re-connect the immobilizer relay

21. Select diagnosis **NCM Nodo Controllo Motore Bosch Motronic** and enter **ECU IDENTIFICATION ENVIRONMENT**. Make sure that the field labeled "MASERATI HW N:" in the ECU is **198428.002**
22. Look for errors possibly stored in the ECU and erase them
23. Disconnect the SD3 and start the engine; check if any warning light is on then switch off the engine
24. Fit back all parts previously detached, road test the car briefly

Fill in relevant Warranty Claims as follows:

- **component code 1 90 009**
- **labor operation 1 90 009 9 (0.9 h)**
- **problem code 001**
- **cost code 23**
- **campaign number 140**

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

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**MODEL: GranSport**

**SUBJECT: Configuration of the BECKER Infotainment system BE7801**

Below you will find the process to correctly configure the BECKER Infotainment system.

Note: The following operations should be performed with the key OFF and the Becker Radio ON; Please reference the documentation in the BECKER manual.

- **Setting the Region for the Radio**
  1. In radio mode, push buttons 1 and 6 simultaneously
  2. The screen will display the list of regions
  3. Select North America by using the tuner knob. Push OK button when done.
  4. "Really change the region?" Select YES
  5. Wait for the radio to turn OFF. After the LED light has blinked, turn ON again and check that the setting is North America

- **Setting the correct Language**
  1. Push and hold the "TP" button until the settings menu appears
  2. Push the Right Arrow Key twice
  3. Push the "LAG" button
  4. Select the language and push OK
  5. The system does not turn OFF and the language is immediately set

- **Setting the telephone function* (if equipped)**
  1. Enter the SIM card
  2. From mode *telephone* push on TEL button
  3. Select telephone settings pushing on OK
  4. Select the GSM frequency band pushing on OK
  5. Select the correct frequency and push on YES

- **Setting the satellite navigator function* (if equipped)**
  1. Enter the navigator CD
  2. From mode *navigator* push on button NAV
  3. Select the language of concern and, where applicable, the gender of the voice (i.e., male or female); then push OK
  4. Wait for the data uploading to be complete

- **Setting the Time* (if equipped)**
  1. Make sure that the satellite coverage is sufficient
  2. From the same menu where you selected the language, select TIME SETTING
  3. Set time correctly then select OK. Time can be set by steps of 30 minutes each; minutes will be automatically and exactly adjusted by the system itself

- **Setting the unit of measure**
  1. From the same menu where you choose the language, you can select the unit of measure
  2. Select item UNIT OF MEASURE and select metric (km) or imperial (mi)

- **Setting the system with the navigation CD**. NOTE: It is necessary the setting of the satellite navigator according to the country where the vehicle is going to be used. This operation will require a few minutes:
  1. Make sure the battery voltage is constant. It is recommended that a battery charger is connected.
  2. Turn the system ON and enter the navigation CD
  3. The screen will display a message to confirm the update
  4. Select YES the press on OK
  5. The system will turn OFF (do not operate on the system at all, wait for a few minutes)
  6. The radio will turn ON automatically and the progress bar will be displayed on the screen.
  7. When the downloading is complete, the system turns OFF automatically.
  8. Wait for the front LED to blink, then turn the system ON
  9. The operation is now complete.




**Information regarding software updates**

Each time that a navigation CD of a later version is used, the newer software level of the CD is automatically downloaded and this will overwrite the older version. This may occur when delivering the vehicle to the customer and anytime an updated version of the map is distributed.
It is recommended to load the navigation CD before the car is delivered to the customer. If the automatic uploading begins and is interrupted in any way before completion, the system may exhibit an abnormal operation and could cause a delay in delivering the car.

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

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**SUBJECT: 2004 Spyder and Coupe Fuel Delivery Rails – Campaign 141**

For your information if the Check Engine light is illuminated due to detection of engine missfire faults in cylinders 3, 4, 6, and 8 in the ECU, new fuel rails which contain a dampener to help eliminate pulsations are now being used.

This campaign only affects cars with engine numbers below the following;

- Coupe engine number 93324 (VIN number 18809)
- Spyder engine number 93330 (VIN number 18792)

Engine numbers after those listed above already have the newer rails installed from the factory.

The part numbers for the fuel rails that contain a dampener are;

- Right side fuel rail: 212697 (replaces 197846)
- Left side fuel rail 212696 (replaces 197845)

Warranty Submission information: Campaign Number…141

**R/S rail p/n 212697**
Component Code…..140017
Labor Operation…….1400150 (0.4h)
Problem Code…….061
Cost Code……23

**L/S rail p/n 212696**
Component Code…..140018
Labor Operation…….1400160 (0.4h)
Problem Code…….061
Cost Code……..23

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**MODEL: Quattroporte**

**SUBJECT: Transmission Control Unit Software – Campaign 142**

Maserati Quattroporte produced **up to and including VIN 20625** are involved in a service campaign whose subject is the managing software of the transmission. This requires a software update for the transmission control unit and is designed to improve the functionality of the TCU when subjected to conditions of low supply voltage.

**NOTE: The SD3NET system and the SD3 tester must be updated to diagnostic software version 8.4M or later. SD3 tester must be updated to SD3 Base Software 2.28.**

**NOTE: Verify that the software in the Engine Control Unit is 198428.002. If it is not, then Campaign 140 must be performed. (Refer to bulletin 200506)**

Operating procedure:

A. Downloading the Flash Reprogramming software
B. Downloading the TCU software
C. Loading the TCU software into the vehicle

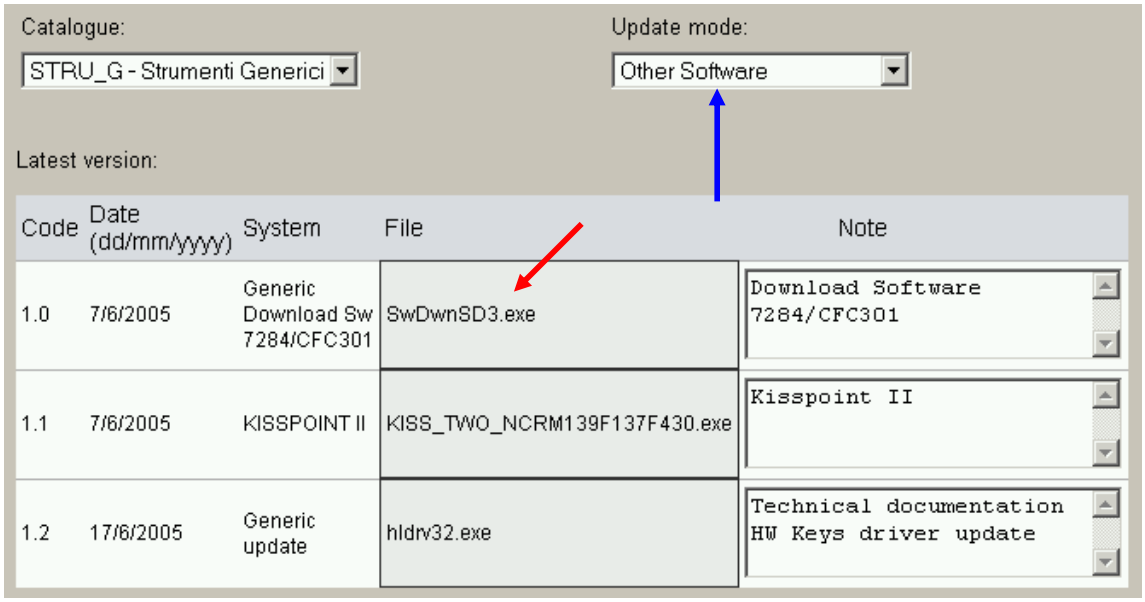
**A. Flash Reprogramming Software**

Flash Reprogramming Software can be downloaded using the following procedure:

- **Downloading Flash Reprogramming software from MODIS:**

1. Sign-on to MODIS and select Maserati
2. Select **After-sale**
3. Select **Technical Service**

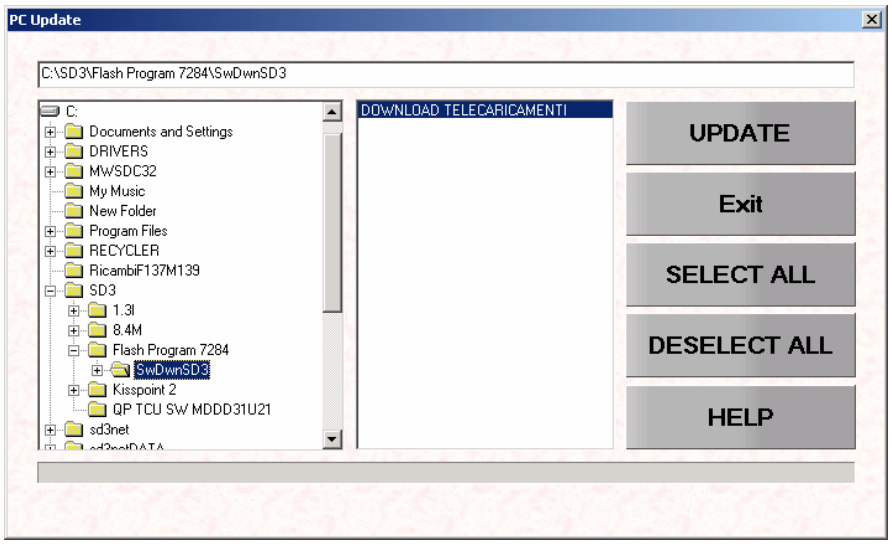
4. Select **SD2 Software Download**
5. Select **STRU_G-Strumenti Generici** from the box that appears
6. Select **Other Software**
7. Click once on the file that appears below:



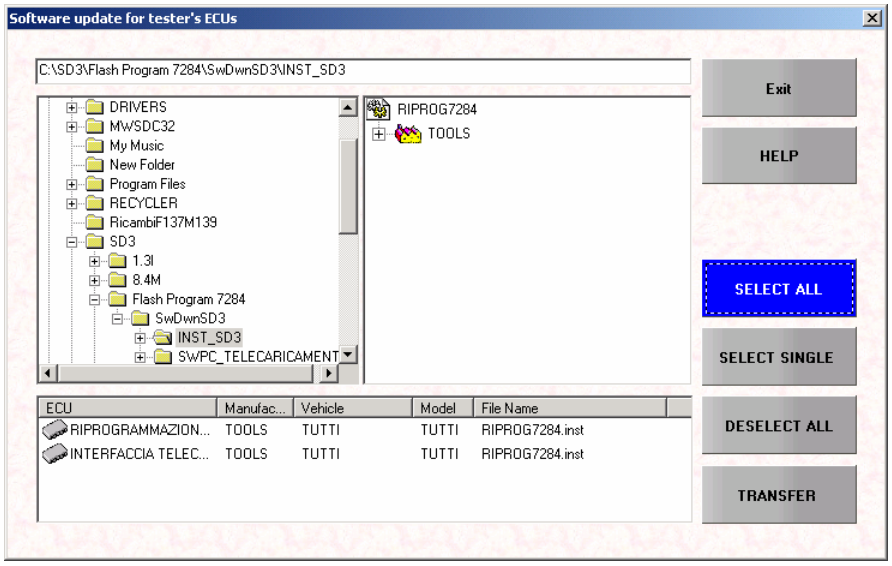

8. Once the download window opens: click, save and select a suitable location
9. Once the download is complete, double click either file and extract the file to a suitable location on your PC

- **Loading Flash Reprogramming software on PC and SD3:**

10. Open SD3net on your PC and select **updates** on the top left hand corner
11. Select **personal computer software update**
12. On the left hand side of the update screen locate the file you previously extracted labeled **SwDwnSD3**
13. Once the program **DOWNLOAD TELECARICAMENTI** is shown on the right click **select all**
14. Click **update** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will end briefly.**
15. Select **EXIT**




16. While SD3NET is open on your PC, select **updates** on the top left hand corner
17. Select **tester SD3 software update**
18. On the left hand side of the update screen locate the file you previously extracted labeled **INST_SD3** in the **SwDwnSD3** folder
19. Once the program **DOWNLOAD TELECARICAMENTI** is shown on the right click **select all**
20. Click **TRANSFER** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will end briefly.**
21. Select **EXIT**



This is a general purpose tool that is used for flash programming software in the ECUs of the M139. Software from this download is loaded on both the **PC** and the **SD3**. The following lines will be added on the menu of the SD3 tester:

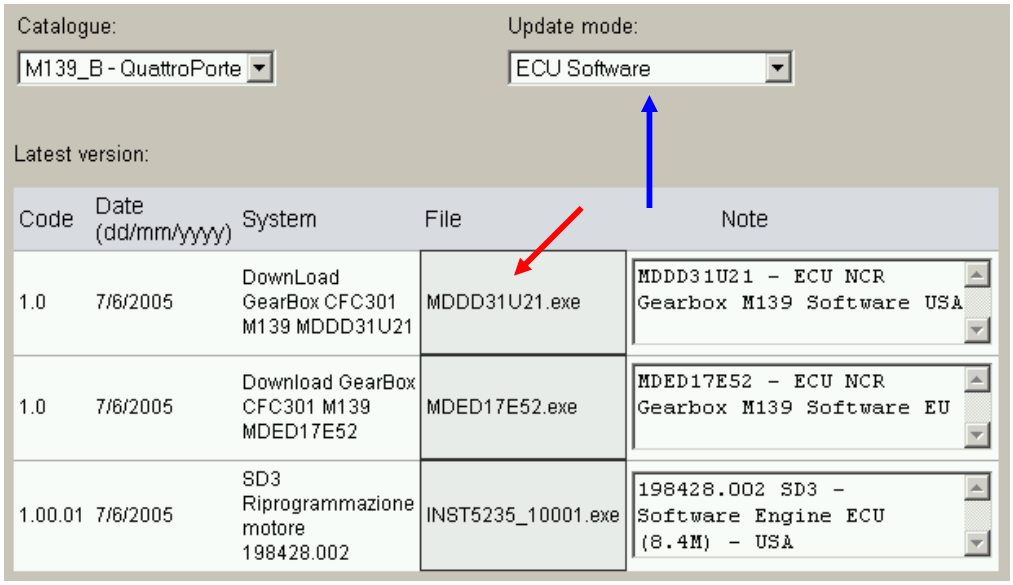
**1. TOOLS / TUTTI / RIPROGRAMMAZIONE 7284:** generic environment for the flash programming of all ECUs. The environment for NIM and NCL is currently available
**2. TOOLS / TUTTI / INTERFACCIA TELECARICAMENTO NCR CFC301**: flash programming menu for the only gearbox ECU NCR CFC301 (SOFAST3)

## B. Downloading the Transmission Control Unit Software

Transmission Control Unit Software can be downloaded using the following procedure:

- **Downloading Transmission Control Unit Software from MODIS:**

1. Sign-on to MODIS and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 Software Download**
5. Select **M139_B - QuattroPorte** from the box that appears
6. Select **ECU Software**
7. Click once on the file that appears below (MDDD31U21.exe):

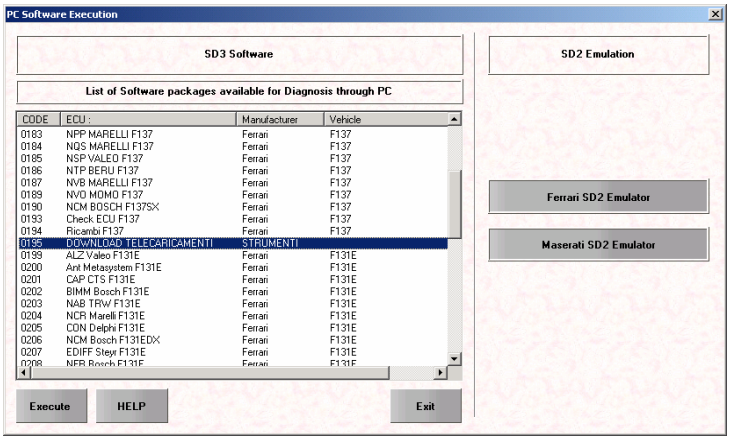



8. Once the download window opens: click ,save, and select a suitable location

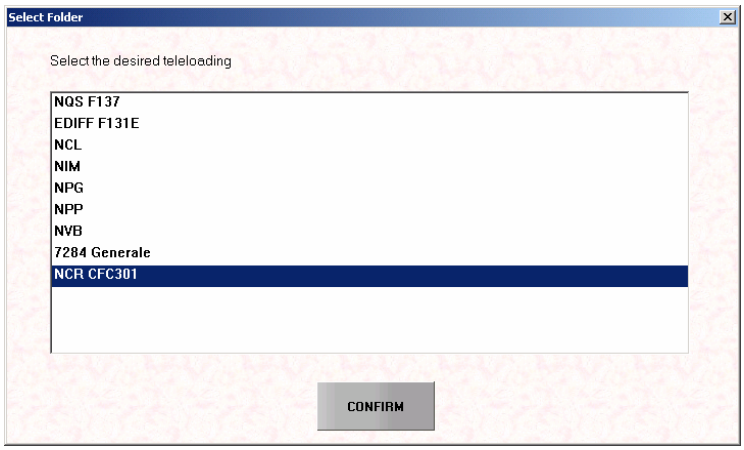
9. Once the download is complete, double click either file and extract the file to a suitable location on your PC

### ➢ Loading TCU software on SD3:

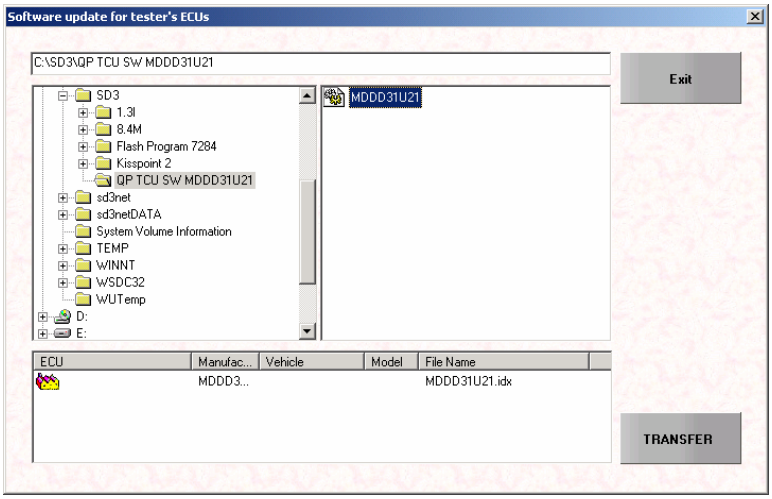
1. Set up the SD3 in **LINK TO PC** mode.
2. Open SD3net on your PC and select **PC diagnosis** on the top left hand corner
3. Select **personal computer diagnostics software running**
4. On the left hand side of the update screen locate the file you previously extracted labeled **DOWNLOAD TELECARICAMENTI** and select **Execute** (see below)




5. Once the programs are shown in the new window, select **NCR CFC301** and click **CONFIRM** (see below)



6. In the new window, select the folder where the previous file **MDDD31U21** was stored and double click the file on the right side of the screen. When the icon and text appear in the bottom window, click **TRANSFER.**




7. When complete, click **CONTINUE**. Then select **EXIT**.

## C. Loading the TCU software into the vehicle

1. Connect SD3 to vehicle
2. Shut off all electrical consumers and connect a battery charger to the battery. Turn key ON.
3. On SD3 go to: **Serial Diagnosis** >> **Diagnostic cycle on individual ECU** >> **MASERATI** >> **M139**
4. Select **NCR CAMBIO ROBOTIZZATO MAGNETTI MARELLI SOFAST3**
5. Make a printout of all the parameters, then exit to the main menu
6. On SD3 go to: **Serial Diagnosis** >> **Diagnostic cycle on individual ECU** >> **TOOLS >> TUTTI**
7. Go to: **INTERFACCIA TELECARICAMENTO NCR CFC301** >> **REPROGRAMMING**
8. Highlight **CFC301** with the arrow keys, then press **Enter**
9. Highlight **MDDD31U21.IDX** with the arrow keys, then press **TAB** until **CONTINUE** at the bottom of the screen is highlighted, then press **Enter**
10. Highlight **MDDD31U21** with the arrow keys, then press **TAB** until **CONTINUE** at the bottom of the screen is highlighted, then press **Enter**
11. As the SD3 prompts you, turn key ON
12. The programming session takes approx. 30 minutes.
13. After download is complete the following message will appear: **PROCEDURE SUCCESSFULLY ENDED. TURN KEY OFF, THEN ON.** Turn key OFF for 5 seconds and then turn ON before selecting **Enter.**

14. Press **ESC** until you reach the main menu
15. Turn key OFF
16. Disconnect the TCU by first removing the small connector, then the large connector
17. Wait 30 seconds.
18. Reconnect the TCU by installing the large connector first, then the small connector
19. Turn key ON. Connect SD3 and follow the path **Serial Diagnosis** >> **Diagnostic cycle on individual ECU** >> **MASERATI** >> **M139** >> **NCR CAMBIO ROBOTIZZATO MAGNETTI MARELLI SOFAST3**
20. Select **ECU IDENTIFICATION** and verify that the software loaded on the TCU is **MDDD31U21**

**NOTE:** If at any time, the programming process is interrupted, it can be repeated. There is a possibility that the tester does not recognize the hardware version and displays the following message: **VERSION NOT COMPATIBLE WITH TELELOADING! WOULD YOU LIKE TO GO ON ANYWAY?**
If this happens, continue with the downloading process.

Fill in relevant Warranty Claims as follows:

- **Component code** **3 90 001**
- **Labor operation** **3 90 001 8 (0.8h)**
- **Problem code** **063**
- **Cost code** **23**
- **Campagin number** **142**

# MASERATI NORTH AMERICA, INC.
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**SUBJECT: R / S Fuel pump Quattroporte**

For your information, if a temporary interruption of the signal from the r / s fuel level sending unit occurs, the check engine light will be illuminated.
To help prevent this erroneous illumination of the Check Engine light, a new r / s fuel level sending unit is now being used.

Starting with assembly number 19763 (VIN number 18193) the newer style fuel level sending unit has been installed by the factory. On any Quattroporte before assembly number 19763 (VIN number 18193) if the Check Engine light is illuminated due to the fuel level sending unit, the unit must be replaced.

The newer part, p/n 187572 is the same part number as the original, but the improvements necessary have been included since January production.

When replacement of the r / s fuel level sending is completed, use the information below for the Warranty submission.

Component Code……..143001
Labor Operation……1430010 (3.5h)
Problem Code……001
Cost Code……..16

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**MODEL: Quattroporte**

**SUBJECT: Instrument Cluster - "NACK UNKNOWN" display**

For your information, if the instrument cluster displays "Service Due Now" and then the message "NACK UNKOWN" appears on the SD3 when attempting to reset the service with the SD3, it could be an internal instrument cluster malfunction. This may happen when the date in the NIT was not set before the odometer reaches 120 miles. If that is the case, the wrong initial maintenance interval date will be set to 01-01-2000.

A new software level was installed in the Instrument cluster beginning with VIN number 19864 to help prevent the "NACK UNKNOWN" from appearing.

Check these following conditions and perform the prescribed actions:

- If the "NACK UNKNOWN" appears in vehicles which have a VIN number **lower than 19864**, replace the instrument cluster under warranty.

- If the "NACK UNKNOWN" appears in vehicles with a VIN number of **19864 or higher**, submit a Blue On Line report with the ECU identification info and service maintenance interval information.

Warranty Information:

- Component code 8 50 001
- Labor operation 8 50 001 0 (1.7h)
- Cost code 16

**NOTE:** It is recommended to check and if necessary set the date and time on all new vehicles delivered (e.g. on PDI).

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**MODEL: Quattroporte**

**SUBJECT: Air Conditioning Software Update – Campaign 144**

For your information, new software for the Air Conditioning ECU (NCL Nodo Climatizzore) is now available on MODIS. All Quattroporte up to and including VIN num. 20785 (Assembly num. 21975) must be updated with this software.

Prerequisites for this procedure:

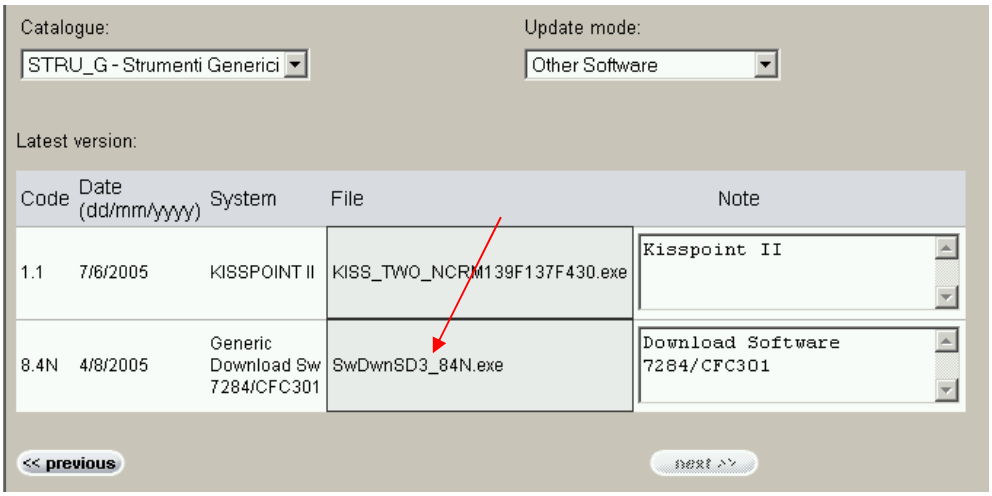
A. **The PC and SD3 must be loaded with 8.4N or later**
B. **Reprogramming software 7284 must be loaded on the SD3**
C. **Air Conditioning ECU software must be loaded on the SD3**

### A. Loading 8.4N on the PC and SD3

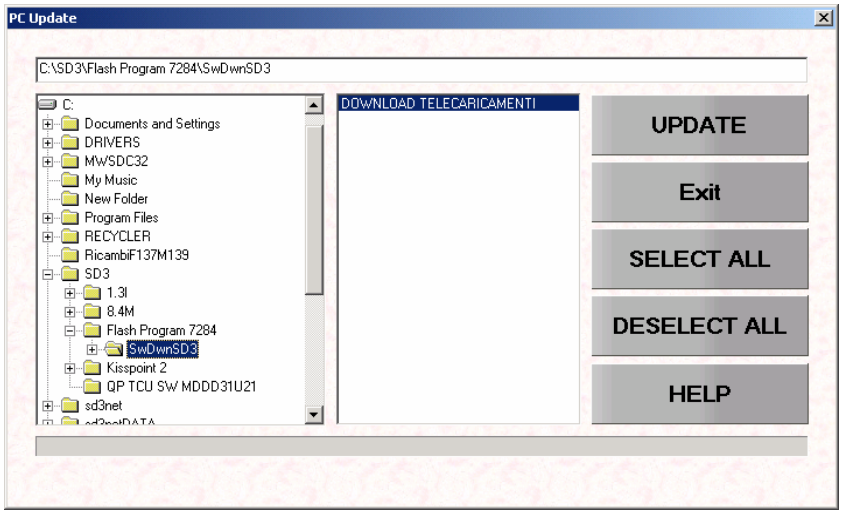
You must access MODIS to download 8.4N. Please follow the outlined instructions in Bulletin MNA-20 / N for more information on how to load into PC and SD3.

### B. Loading Reprogramming Software 7284

1. Sign on to MODIS and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 Software Download**
5. Select **STRU_G – Strumenti Generici**
6. Select **Other Software**
7. Click on **SwDwnSD3_84N.exe** and save to a suitable location (see below)

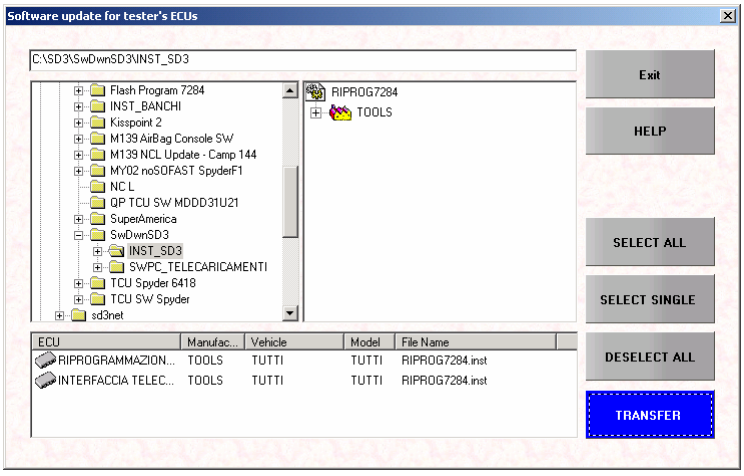



1. Open SD3net on your PC and select **Updates** on the top left hand corner
2. Select **Personal Computer Software Update**
3. On the left hand side of the update screen locate the file you previously extracted labeled **SwDwnSD3**
4. Once the program **DOWNLOAD TELECARICAMENTI** are shown on the right click **SELECT ALL**
5. Click **UPDATE NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**
6. Select **EXIT**




7. While SD3NET is still open on your PC, select **Update** on the top left hand corner.

8. Select **Tester SD3 Software Update**.
9. On the left hand side of the update screen locate the file you previously extracted labeled **INST_SD3** in the **SwDwnSD3** folder.
10. Once the program **DOWNLOAD TELECARICAMENTI** is shown on the right click **SELCT ALL** (reference screen shot below).
11. Click **TRANSFER**. **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, wait. The system is still updating and will end briefly.**
12. Select **EXIT.**

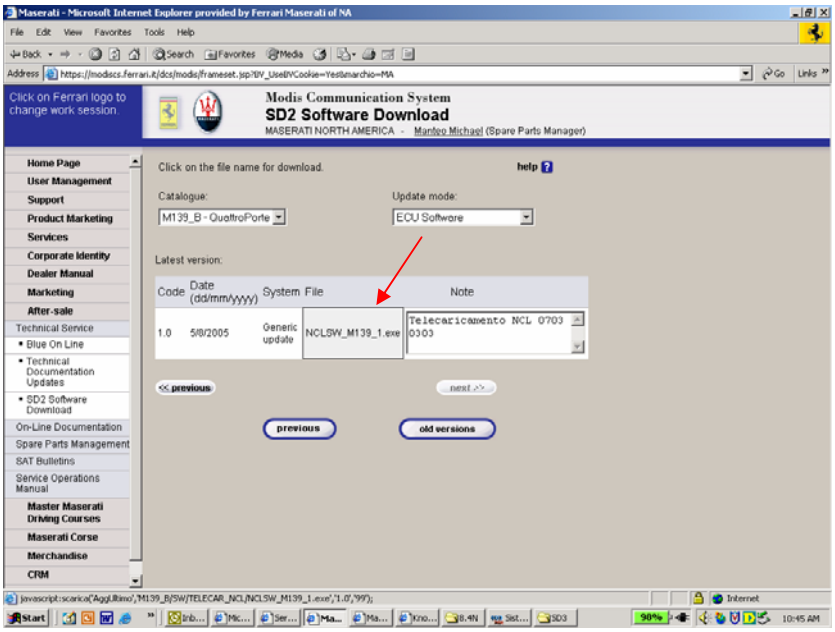



## C. Loading Air Conditioning ECU software

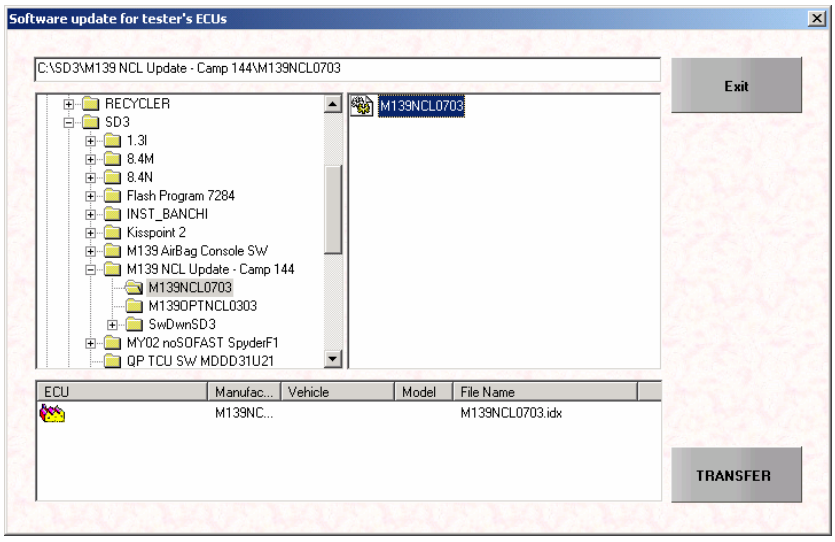
The Air Conditioning ECU software can be found in the SD2 download menu under:

1. After-sale
2. Technical Service
3. SD2 Software Download
4. M139_B – QuattroPorte
5. ECU Software
6. **NCLSW_M139_1.exe** (see caption below)

,




7. Click on the file **NCLSW_M139_1.exe** and save it in an appropriate location on the PC.
8. Unzip the file – **M139NCL Telecaricamento** should then appear.
9. Double-click **M139NCL Telecaricamento** to extract the file.
10. When prompted, extract files to same directory.
11. There should be two (2) directories now present: **M139NCL0703** and **M139OPTNCL0303.**
12. Set up the PC and SD3 to Link to PC mode.
13. Start SD3NET.
14. Select **PC Diagnosis.**
15. Select **Personal Computer Diagnostic Software Running.**
16. Select DOWNLOAD **TELECARICAMENTO**, then click **Execute.**
17. Select **NCL**, and click **Confirm.**
18. Go to the directory where the files in Step 11 were saved (see figure on the next page).




19. Select the folder **M139NCL0703**, the corresponding file should appear in the right window.
20. Double click the file until the file is prepared for transfer in the bottom window.
21. Click TRANSFER to load the file into the SD3.
22. Repeat Steps 19 – 21 with the folder **M139NCLOPT0303.**
23. Although it is possible to transfer both files at the same time, it is better to transfer one by one.
24. The SD3 is now ready for the software update.

**NOTE:**

**The 2 different softwares correspond to whether the vehicle has Front and Rear A/C control, or Front Only A/C control. They should be loaded accordingly.**

**M139NCL0703 – Front Only A/C Control**
**M139OPTNCL0303 – Front and Rear A/C Control**

**Performing the Air Conditioning Software Update on Vehicle**

1. Turn OFF all electrical consumers, key to position 2
2. Connect an external power supply (battery charger).
3. Connect the SD3 to the vehicle, and turn on the SD3.
4. Select SERIAL DIAGNOSIS.
5. Select DIAGNOSTIC CYCLE ON INDIVIDUAL ECU.
6. Select TOOLS.
7. Select TUTTI.

8. Select RIPROGRAMMAZIONE 7284.
9. Select REPROGRAMMING.
10. Use arrow to select NCL.
11. Select using the appropriate folder depending on equipment
    a. M139NCL0703 – Front Only A/C Control
    b. M139OPTNCL0303 – Front and Rear A/C Control
12. Select TAB, then ENTER.
13. Select using the appropriate file depending on equipment
    a. M139NCL0703.BIN – Front Only A/C Control
    b. M139OPTNCL0303.BIN – Front and Rear A/C Control
14. Select TAB, then ENTER.
15. At the confirmation screen “ECU SELECTED: NCL M139”, select ENTER.
16. The process takes approximately 25 minutes.
17. Follow the last set of instructions.
18. After the SD3 prompts you to turn the key OFF, press ESC until the Main Menu appears.

**NOTE:** If at any time, the programming process is interrupted, it can be repeated. There is a possibility that the tester does not recognize the hardware version and displays the following message: **VERSION NOT COMPATIBLE WITH TELELOADING! WOULD YOU LIKE TO GO ON ANYWAY?**
If this happens, continue with the downloading process.

Fill in relevant Warranty Claims as follows:

- Component code 8 49 008
- Labor operation 8 49 008 8 (0.8h)
- Problem code 899
- Cost code 23
- Campaign number 144

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**This Bulletin Cancels and Replaces Bulletin number 200517 which was sent on 10-31-2005**

**MODEL: Quattroporte**

**SUBJECT: Driver Seat Harness – Campaign 145**

Maserati Quattroportes in the attached list are involved in a Service Campaign. The driver's seat (with "comfort package" option) has the wiring layout in such a way that there is potential for physical damage to the wiring harness which can result in malfunction of the electrical controls of the seat. The purpose of this campaign is to ensure that the harness is secured, avoiding any possible interference with the other components of the seat.

Retailed repair procedure:

1. Read this document carefully to determine the repair to be performed.
2. Reference to the Technical Documentation in order to properly perform the repair procedure.
3. Check via MODIS that the vehicle is included in the campaign.
4. Protect all areas that could be exposed to damage during repair.
5. Remove the driver's seat from the vehicle.
6. Connect the connector under the seat to the connector in the vehicle via the **extension harness tool** (**part number 220381**, Figure 1). This will allow the seat rail movement while the seat is out of the vehicle.
7. Lift the seat in the fully upright position, front and rear, then lay down the seat on one side and identify the area of interference (Figure 2)




**Figure 1**

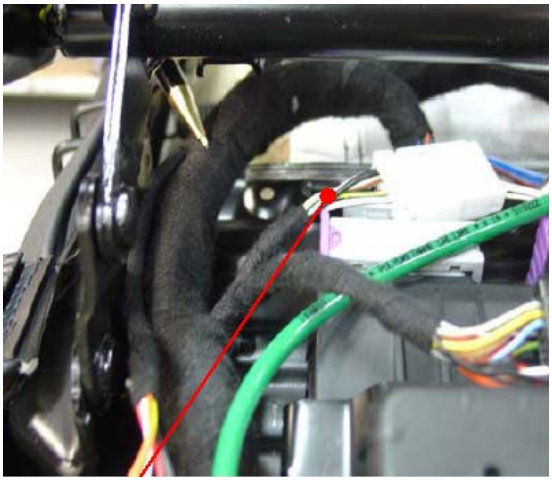


**Figure 2**

8. Insert a plastic tie wrap into the indicated holes (shown in Figure 3) and secure the seat wiring harness to the frame of the seat. Cut away the extra length of the tie wrap end (Figures 3 and 4)

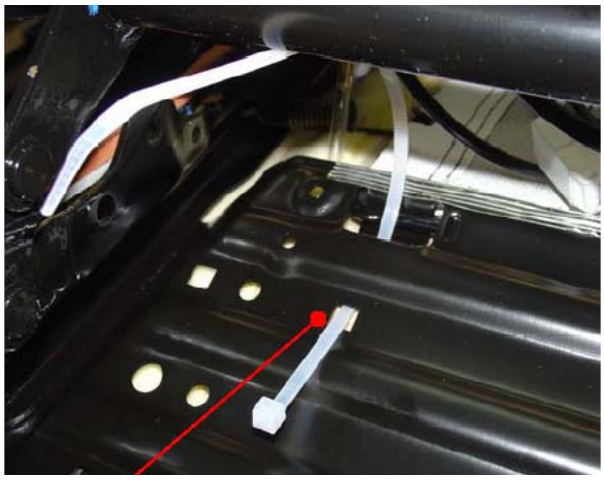


**Figure 3**

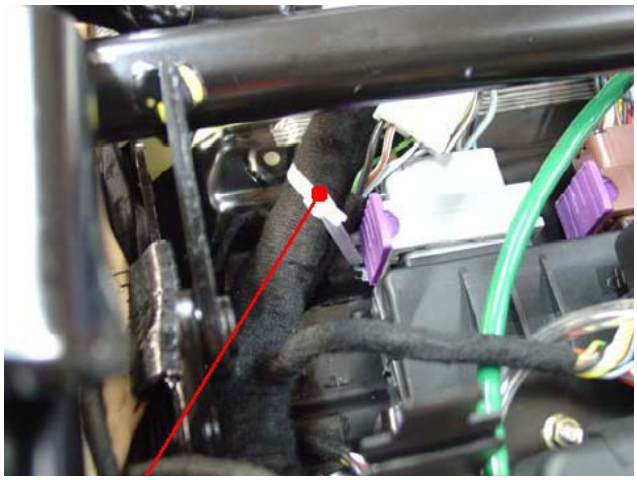


**Figure 4**

9. Lower the seat to the fully down position and make sure that the seat wiring harness does not exhibit any interference.
10. Affix a red dot in the location shown in Figure 5 to confirm that the repair has been performed.
11. Remove the **extension harness tool** (part number 220381) and re-install the seat.

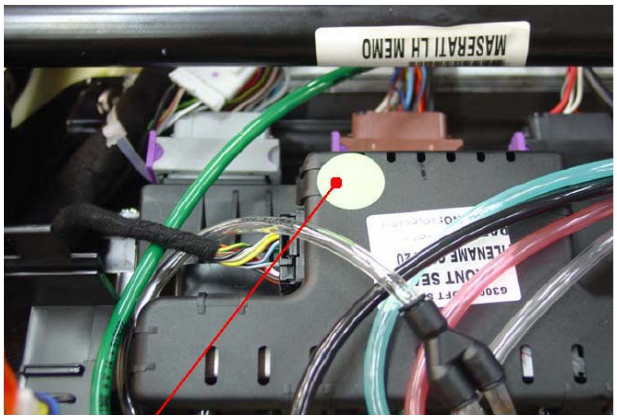



**Figure 5**

Necessary material:

| **Description** | **P/N** | **Qty.** |
|---|---|---|
| Extension Harness Tool | 220381 | |
| Tie Wrap | Obtained locally | 1 |

Warranty Information:

- Component code 9 41 09
- Labor operation 9 41 009 9 (0.9h)
- Problem code 063
- Cost code 23
- Campaign number 145




| VIN | Assembly |
|---|---|
| 15368 | 16654 |
| 16339 | 17514 |
| 16640 | 17619 |
| 15330 | 16514 |
| 16762 | 17780 |
| 16250 | 17445 |
| 16251 | 17491 |
| 16649 | 17607 |
| 16764 | 17956 |
| 16780 | 17853 |
| 15335 | 16549 |
| 15353 | 16708 |
| 15551 | 16622 |
| 16638 | 17767 |
| 16333 | 17676 |
| 15346 | 16583 |
| 15361 | 16656 |
| 15684 | 16785 |
| 16767 | 17912 |
| 16768 | 17830 |
| 16773 | 17974 |
| 15327 | 17239 |
| 15816 | 17175 |
| 15196 | 16536 |
| 15341 | 16585 |
| 15347 | 16776 |
| 15349 | 16599 |
| 15692 | 17014 |
| 15762 | 17007 |
| 15778 | 17001 |
| 15965 | 16931 |
| 16112 | 17197 |
| 16272 | 17653 |
| 16313 | 17459 |
| 16636 | 17583 |
| 15359 | 16673 |
| 14629 | 16813 |
| 15698 | 16907 |
| 15704 | 17033 |
| 15782 | 17078 |
| 15783 | 17128 |
| 16146 | 17261 |
| 16147 | 17350 |
| 16278 | 17568 |
| 16279 | 17490 |
| 16281 | 17778 |

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|---|---|
| 15690 | 16842 |
| 16527 | 17538 |
| 16530 | 17530 |
| 15574 | 16688 |
| 16271 | 17699 |
| 16318 | 17460 |
| 16319 | 17480 |
| 15819 | 17181 |
| 16553 | 17880 |
| 14719 | 17387 |
| 14854 | 17512 |
| 15018 | 17192 |
| 15139 | 16727 |
| 15210 | 16711 |
| 15216 | 16524 |
| 15225 | 16502 |
| 15231 | 16488 |
| 15232 | 16627 |
| 15233 | 16559 |
| 15370 | 16490 |
| 15374 | 16522 |
| 15379 | 16692 |
| 15380 | 16528 |
| 15382 | 16566 |
| 15385 | 16540 |
| 15386 | 16570 |
| 15387 | 16601 |
| 15391 | 16644 |
| 15397 | 16676 |
| 15707 | 16765 |
| 15713 | 16757 |
| 15714 | 16763 |
| 15715 | 16867 |
| 15724 | 16851 |
| 15725 | 16849 |
| 15727 | 16890 |
| 15728 | 16789 |
| 15729 | 16859 |
| 15730 | 16856 |
| 15731 | 16925 |
| 15732 | 16941 |
| 15733 | 16863 |
| 15734 | 16903 |
| 15738 | 16998 |
| 15739 | 16900 |
| 15741 | 16667 |
| 15742 | 16686 |

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|---|---|
| 15785 | 17124 |
| 15786 | 16944 |
| 15787 | 16929 |
| 15789 | 16996 |
| 15790 | 17099 |
| 15791 | 17026 |
| 15792 | 16979 |
| 15794 | 17399 |
| 15796 | 17101 |
| 15802 | 16951 |
| 15803 | 17142 |
| 15804 | 17316 |
| 15806 | 17006 |
| 15811 | 17155 |
| 15839 | 16971 |
| 15994 | 17211 |
| 15996 | 17227 |
| 16000 | 17219 |
| 16001 | 17119 |
| 16002 | 17163 |
| 16005 | 17617 |
| 16007 | 17415 |
| 16008 | 17395 |
| 16009 | 17186 |
| 16011 | 17126 |
| 16012 | 17303 |
| 16024 | 17201 |
| 16149 | 17117 |
| 16151 | 17203 |
| 16152 | 17283 |
| 16160 | 17443 |
| 16285 | 17207 |
| 16288 | 17237 |
| 16289 | 17662 |
| 16293 | 17419 |
| 16296 | 17376 |
| 16297 | 17483 |
| 16342 | 17505 |
| 16344 | 17532 |
| 16345 | 17647 |
| 16347 | 17517 |
| 16348 | 17547 |
| 16349 | 17502 |
| 16352 | 17604 |
| 16353 | 17559 |
| 16355 | 17553 |
| 16356 | 17753 |




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|---|---|
| 16544 | 17668 |
| 16547 | 17666 |
| 16550 | 17645 |
| 16806 | 17751 |
| 16809 | 17806 |
| 16812 | 17836 |
| 16816 | 17794 |
| 15581 | 16741 |
| 16668 | 18049 |
| 16089 | 17060 |
| 16120 | 17827 |
| 16256 | 17451 |
| 16771 | 17790 |
| 16246 | 17441 |
| 15201 | 16492 |
| 15202 | 16494 |
| 15203 | 16498 |
| 15674 | 16783 |
| 15695 | 16911 |
| 15768 | 17071 |
| 16087 | 17153 |
| 16138 | 17273 |
| 16645 | 17609 |
| 15743 | 17081 |
| 16822 | 18047 |
| 16823 | 17901 |
| 16824 | 18058 |
| 15578 | 16725 |
| 16124 | 17313 |
| 16141 | 17567 |
| 15235 | 16509 |
| 15754 | 16821 |
| 15759 | 16945 |
| 16019 | 16976 |

| | |
|---|---|
| 16021 | 17087 |
| 16309 | 17402 |
| 16372 | 17804 |
| 16373 | 17693 |
| 16560 | 17718 |
| 14348 | 16882 |
| 14998 | 16888 |
| 15350 | 16694 |
| 15362 | 16650 |
| 15543 | 17115 |
| 15546 | 16612 |
| 15548 | 16669 |
| 15554 | 16743 |
| 15560 | 16632 |
| 15565 | 16749 |
| 15569 | 16747 |
| 15573 | 16684 |
| 15958 | 16678 |
| 15964 | 17891 |
| 15968 | 16964 |
| 15969 | 16923 |
| 15971 | 17135 |
| 15981 | 17105 |
| 15982 | 17161 |
| 15983 | 17091 |
| 16114 | 17549 |
| 16115 | 17431 |
| 16118 | 17340 |
| 16125 | 17279 |
| 16131 | 17299 |
| 16267 | 17378 |
| 16320 | 17536 |
| 16321 | 17450 |
| 16531 | 17602 |

| | |
|---|---|
| 16536 | 17595 |
| 16539 | 17773 |
| 16623 | 17671 |
| 16646 | 17570 |
| 16653 | 17651 |
| 16660 | 17739 |
| 16664 | 17757 |
| 16790 | 17943 |
| 16791 | 17984 |
| 16925 | 18065 |
| 15334 | 16519 |
| 15577 | 16663 |
| 15680 | 16865 |
| 15682 | 16773 |
| 15696 | 16896 |
| 15780 | 16919 |
| 16630 | 17722 |
| 16139 | 17425 |
| 16140 | 17465 |
| 16323 | 17695 |
| 15587 | 16770 |
| 15673 | 16745 |
| 15351 | 16589 |
| 15038 | 17095 |
| 15039 | 17131 |
| 16378 | 17692 |
| 16777 | 17872 |
| 16316 | 17584 |
| 16268 | 17591 |
| 16269 | 17461 |
| 16315 | 17384 |
| 16329 | 17544 |
| 16337 | 17625 |

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
|---|---|---|---|---|
| 6 | 19 | 200518 | 1 December 2005 | 2 |

**MODEL: Quattroporte**

**SUBJECT: Wheel Alignment**

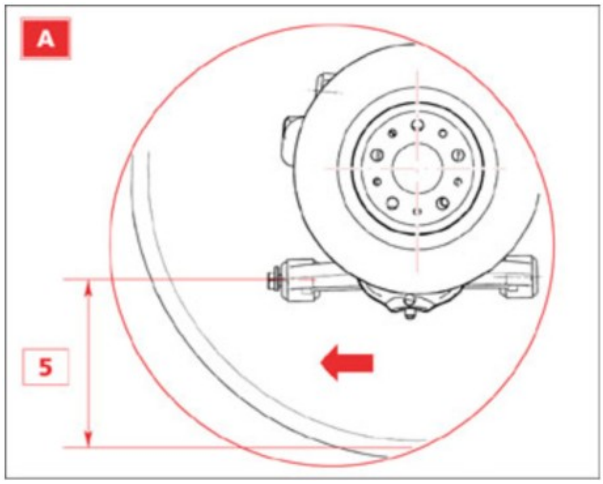
The following table shows the data for the wheel alignment that are specific to all MY2006 Quattroporte (Assembly number **21926 and later**).

| | FRONT | REAR |
|---|---|---|
| Toe in | -2.0 ± 0.4 mm | -4.0 ± 0.4 mm |

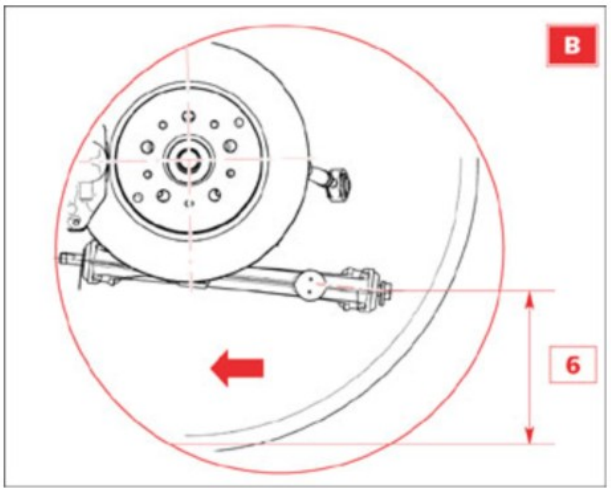
Make these measurements after verifying the ride height of the reference points (see below) on the suspension under the following conditions of static load:

- Fuel Tank Full
- All Fluids Full
- 75kg on Driver seat, 75kg on Front passenger seat

A. Front Control Points: 173 ± 5 mm



B. Rear Control Points: 159 ± 5 mm



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| 8 | 45 | 200522 | 10 January 2006 | 5 |

**MODEL: Quattroporte**

**SUBJECT: New SD3 Software - 8.4O**

The latest software release for diagnostic system SD3 (both Tester and PC), **8.4O**, is now available on MODIS. Perform the following procedures:

A. It is recommended to delete all previous diagnosis software versions installed on the tester before loading 8.4O.

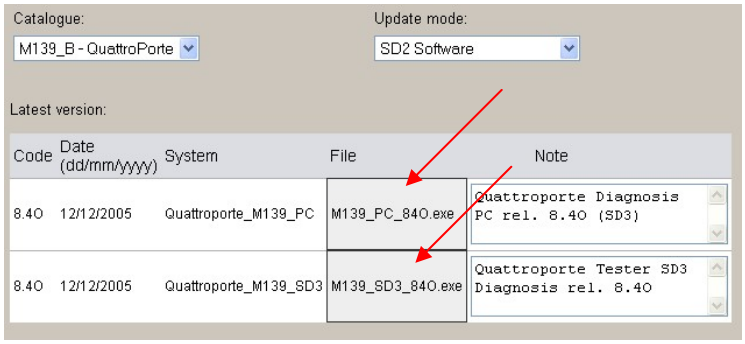
   To Erase Current Diagnosis Software on SD3:
   1. Go to the Main Menu of the SD3
   2. Select “TOOLS”
   3. Select “Delete Data”
   4. Select “ERASE ALL DIAGNOSIS SW”
   5. Confirm erase procedure when prompted
   6. Select “CLEARING OF ALL TRIAD (7284) OF REPROGRAMMING”
   7. Confirm erase procedure when prompted

   NOTE: After this procedure, there will be no diagnostic software on the tester. Therefore, in addition to 8.4O, you must load all porting software previously on the tester before data deletion (Coupe, Spyder, GranSport).

B. Download the SD3 Tester and PC software from MODIS using the path:
   a. Log into MODIS
   b. Select **After-Sale**
   c. Select **Technical Service**
   d. Select **SD2 Software Download**
   e. Select **M139_B – QuattroPorte**
   f. Select **SD2 Software**
   g. Select **M139_PC_84O.exe**, and then select **M139_SD3_84O.exe**, and save in an appropriate location on your PC (See Figure 1).

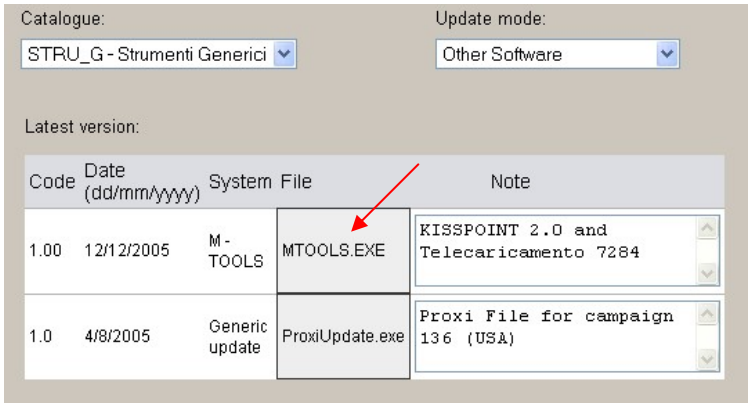
h. Once both files are downloaded, double-click each file in order to extract it and make it suitable for installation
i. Follow the procedure outlined in the bulletin: **MNA – 20 – N – New SD3 Software** in order to correctly install the software in the PC and SD3. It is recommended to install the PC software before installing the SD3 software.

**Figure 1**



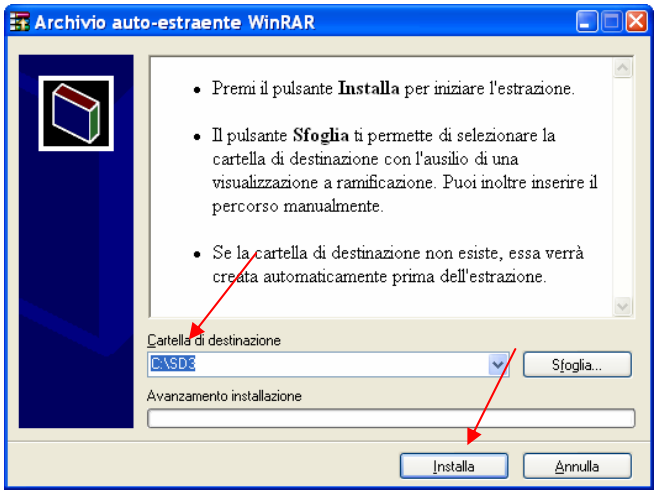

C. Download the latest *Kisspoint 2* and *Telecaricamento 7284* software from MODIS onto the PC by using the path:
   a. Log into MODIS
   b. Select **After-Sale**
   c. Select **Technical Service**
   d. Select **SD2 Software Download**
   e. Select **STRU_G – Strumenti Generici**
   f. Select **Other Software**
   g. Select **MTOOLS.exe**, and save in an appropriate location on your PC (See Figure 2)

**Figure 2**



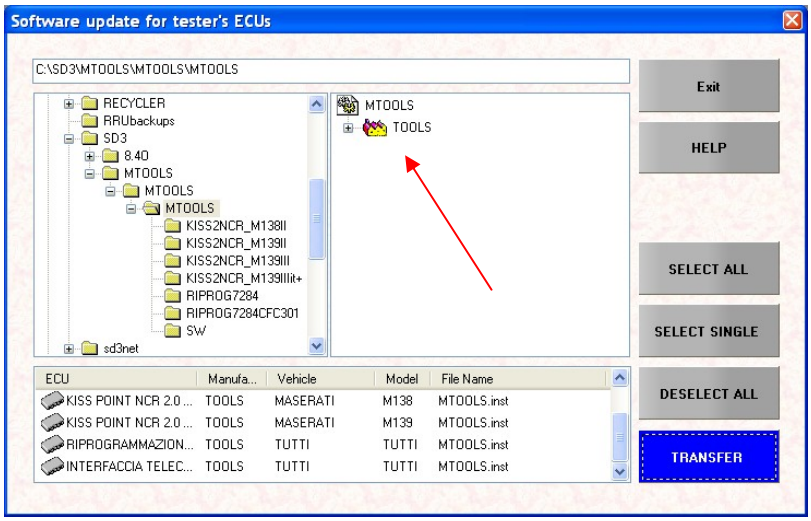
h. Once the file is downloaded, double-click the file in order to extract it and make it suitable for installation. Select “RUN” when prompted.
i. When the WinRAR program prompt appears, select “Installa” and indicate the directory where you want the files extracted by selecting “Sfolglia”(Figure 3). **NOTE**: The downloaded file will extract into several folders. Make sure that you know exactly where these extracted folders are located on your PC.

**Figure 3**



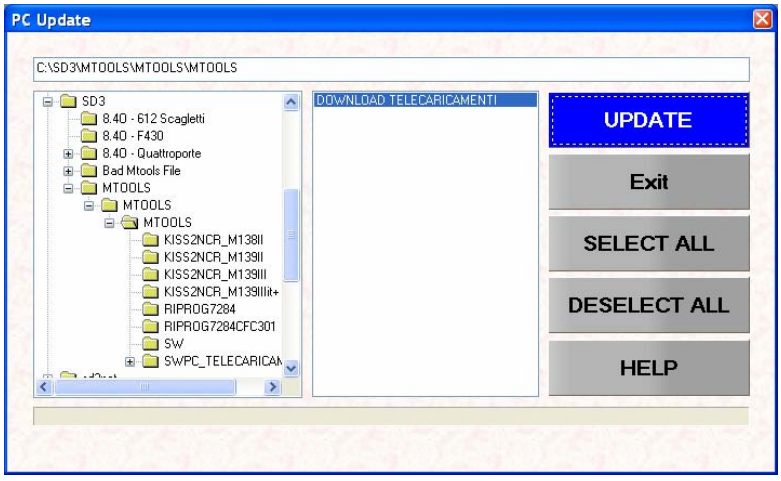

D. Load the latest *Kisspoint 2* and *Telecaricamento 7284* into the SD3 tester by the following procedure:
   a. Connect the PC to the SD3 tester in Link-to-PC mode
   b. Start the SD3NET program
   c. Select **Updates** in the top menu bar
   d. Select **Tester SD3 Software Update**
   e. Select the directory in which you originally saved and extracted the file in Step B. An icon should appear in the right window (Figure 4).
   f. Select **SELECT ALL**
   g. Select **TRANSFER**
   h. After the downloading process takes place, select **CONTINUE** when the screen displays **OPERATION COMPLETE**
   i. The software is loaded; exit from SD3NET

**Figure 4**




E. Load the latest *Telecaricamento 7284* into the PC by the following procedure:
   a. Start the SD3NET program
   b. Select **Updates** in the top menu bar
   c. Select **Personal Computer Software Update**
   d. Select the directory in which you originally saved and extracted the file in Step B. The text “DOWNLOAD TELECARICAMENTI” should appear in the right window (See Figure 5).
   e. Select **SELECT ALL**
   f. Select **UPDATE**
   g. The download is complete when “Operations completed” is displayed.
   h. The software is loaded; exit from SD3NET

**Figure 5**



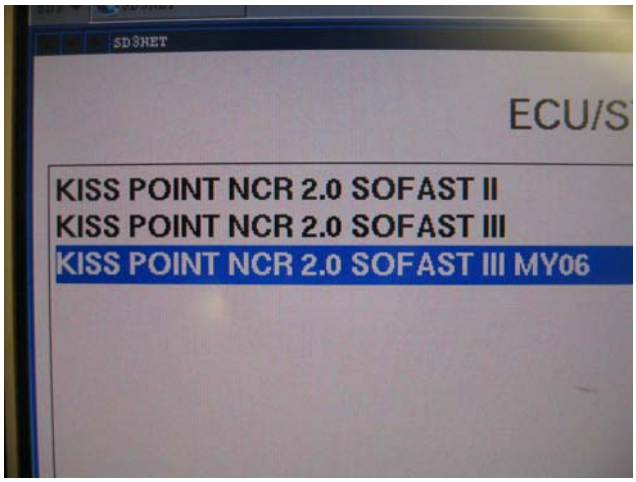
F. Important Notes

When performing the Kiss Point 2 procedure, follow the procedure outlined in bulletin **TECH TIPS – Vol 1 Issue 2**. However, you must use the following path to get to the correct software:

a. SERIAL DIAGNOSIS
b. DIAGNOSTICS CYCLE ON INDIVIDUAL ECU
c. TOOLS
d. MASERATI
e. M139

Use **KISS POINT NCR 2.0 SOFAST III** for MY05 Quattroporte
Use **KISS POINT NCR 2.0 SOFAST III MY06** for MY06 Quattroporte
(See Figure 6).

**Figure 6**




After selecting this software, the SD3 will start the same Kiss Point Procedure outlined in **TECH TIPS – Vol 1 Issue 2.**

**NOTE:** This version of SD3 software adds the following diagnostic software:

- **NCR CAMBIO ROBATIZZATO MAGNETI MARELLI SOFAST3+**
- **NCM CONTROLLO MOTORE BOSCH MOTRONIC MY06**

These are to be used with MY2006 Quattroporte ONLY!

**NOTE:** This version of SD3 software also adds:

- **NFR NODO FRENANTE BOSCH ESP 8**

This software is not used at this time.

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| 8 | 46 | 200523 | 10 January 2005 | 3 |

**MODEL: Quattroporte**

**SUBJECT: Instrument Cluster Setup**

Maserati Quattroporte with **Assembly # 23742 and later** are required to have the "Vehicle Start Date" entered manually in the instrument cluster using the SD3. **This procedure must be included in the PDI process.** The date entered will be the date of delivery to customer and beginning of the warranty period of the vehicle.

Instrument clusters supplied as spare parts have already been programmed with the software necessary to carry out this process.

**NOTE:** The instrument cluster must be already loaded with Software Level **2.38**. To verify this, connect the SD3 to the vehicle and follow the path: Serial Diagnosis > Diagnostic cycle on individual ECU > MASERATI > M139 > NQS QUADRO STRUMENTI MAGNETTI MARELLI > ECU IDENDIFICATION ENVIRONMENT. Check the field "SW LEVEL"; it should read **0238**.

**NOTE:** The SD3 must be loaded with Software Level **8.4O**. To verify this, turn the SD3 on and select the VERSIONS menu. The current version of the software is located in the right side column for all M139 (Quattroporte) control units.

The procedure to set the instrument cluster is as follows:

1. Connect the SD3 to the vehicle
2. Follow the path:
    a. Serial Diagnosis
    b. Diagnostic cycle on individual ECU
    c. MASERATI
    d. M139
    e. NQS QUADRO STRUMENTI  MAGNETTI MARELLI
    f. ACTIVE DIAGNOSIS ENVIRONMENT

3. Select VEHICLE START DATE SETTING
4. The screen will display **CURRENT DATE - 00/00/2000** (See Fig. 1). Press ENTER to confirm “SETTING”.
5. Use the TAB button to toggle to the three different fields to enter the date in the format DD/MM/YYYY (D=day, M=month, Y=year), and use the number keys on the SD3. Example: For December 6, 2005, you must enter **06 12 2005** (See Fig. 2). Notice that month and date are reversed.

**Figure 1**

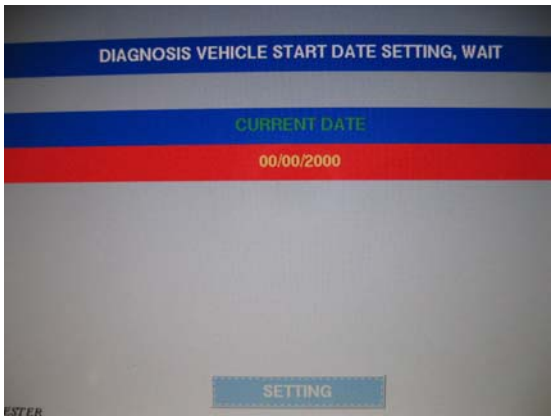
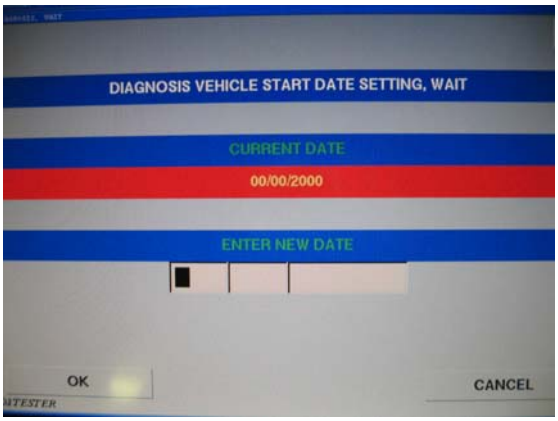



**Figure 2**




6. After the date is set and verified, select **OK** to save the date.
7. After **OK** is selected with the date entered, the SD3 will display a screen asking if the date is correct (See Fig. 3). Select **CONFIRM** to permanently write the date into the cluster. If the date entered is wrong, select **CANCEL** to enter another date.

**VERY IMPORTANT!**: Once the date is entered by selecting **CONFIRM**, it is permanently set and can never be modified.

**Figure 3**

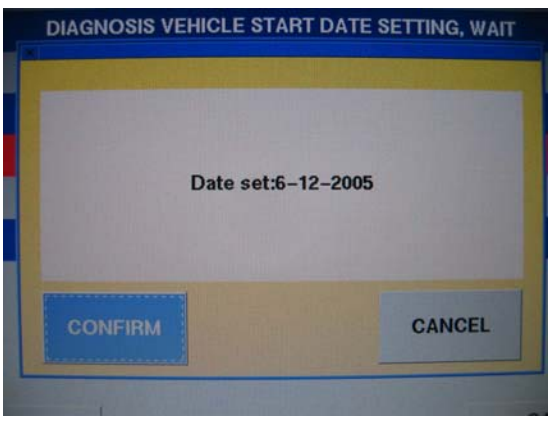



**Figure 4**



8. Once **CONFIRM** is selected, the writing process takes a few seconds and requires the key to be turned OFF and ON, which should be done when prompted by the SD3.
9. Once the date is written to the cluster, the SD3 will display a confirmation message (see Fig. 4).
10. Select **OK** at the confirmation message in Step 9 to return to the programming menu. The date that was entered is now set in the cluster (see Fig. 5).
11. The date in the instrument cluster is now programmed correctly.

**NOTE**: If an attempt is made to program the date again, a message will appear indicating that it is not possible (see Fig. 6).

**Figure 5**

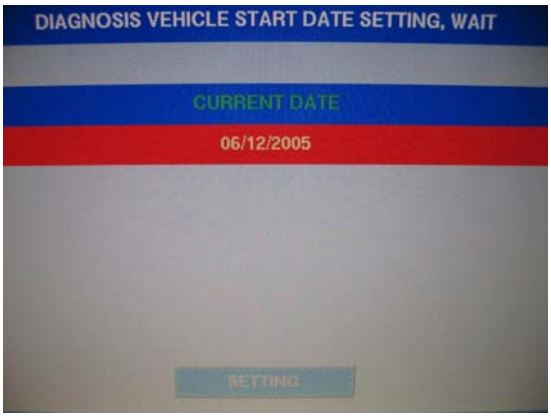
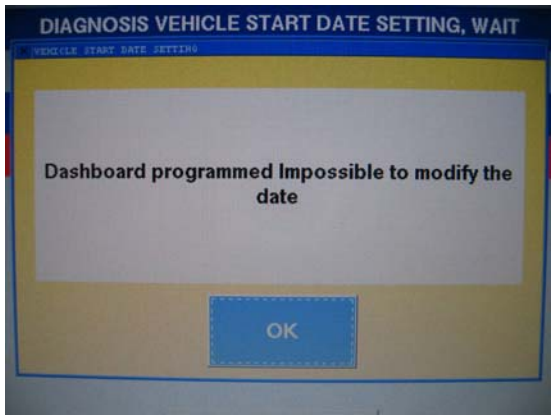



**Figure 6**




12. Check that the current TIME and DATE on the Instrument Cluster is correct. If not, set the current TIME and DATE in the NIT.

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| 8 | 48 | 200601 | 11 January 2006 | 2 |

**MODEL: Quattroporte**

**SUBJECT: Clutch Sensor Harness**

In any event where the clutch housing must be removed (e.g., clutch replacement, throw out bearing replacement), the part of the harness extension traveling from the rear trunk wiring harness to the clutch sensor connector must be modified. The purpose of the modification is to help reduce the potential of the formation of condensed water on the cable near the connector.

**NOTE:** This operation is only to be performed on Quattroporte **up to and including Assembly # 17584**

Please perform the following procedure when the clutch housing is replaced:

NOTE: Make sure that key is OFF and vehicle is cold when performing this procedure

1. Locate the clutch sensor connector on the extension (the connector housing is denoted as **K038** in the technical documentation) of the rear trunk wiring loom (See Figure 1, red highlight).
2. Bend this extension in order to form a “U”-shape. The gap between the connector housing of K038 and the bottom of the newly formed “U” must measure 80mm (see Figure 2).
3. Use electrical tape to adhere both parts of the newly formed “U” so that the tape is positioned 20mm from the bend (see Figure 2).
4. When performing this modification, make sure not to stress the harness at any point.

Warranty Information:
Operation Code 8 60 003 1 (0.1h)

**Figure 1**

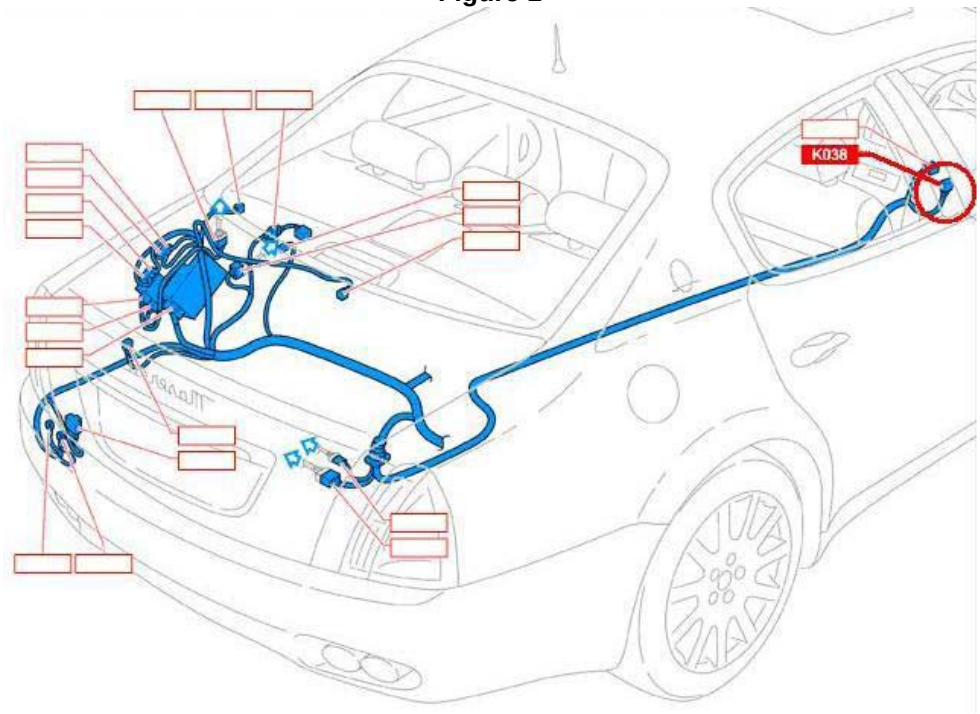
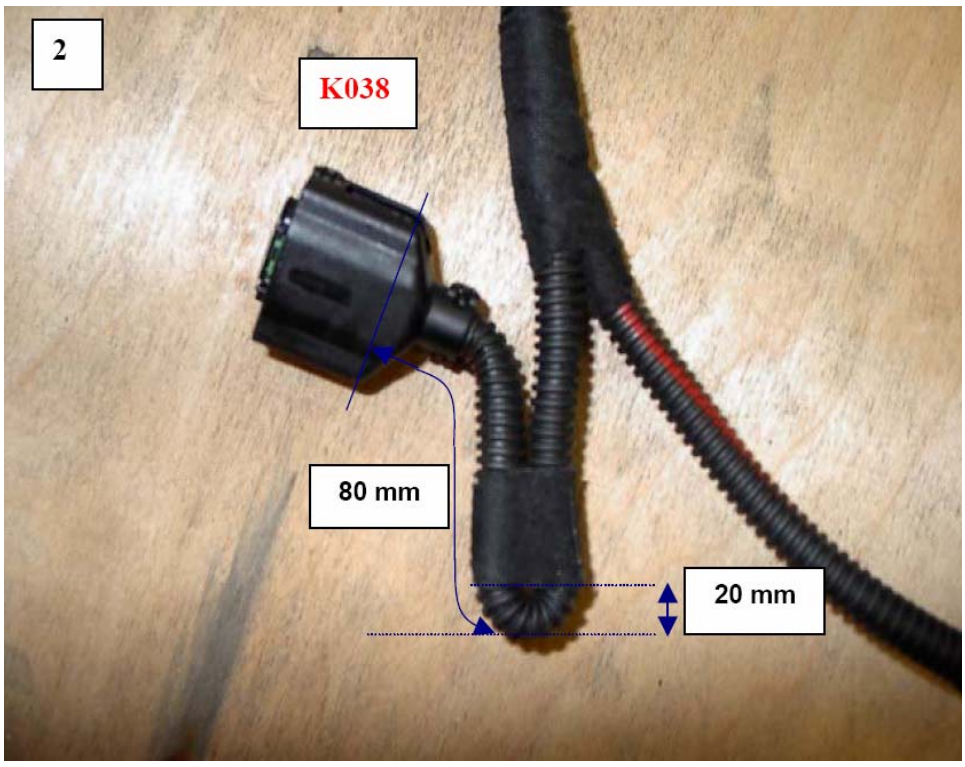



**Figure 2**



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|---|---|---|---|---|
| 4 | 24 | 200602 | 13 January 2006 | 3 |

**MODEL: Quattroporte**

**SUBJECT: Parking Brake – Campaign 147**

Maserati Quattroporte **from Assembly # 13757 up to and including Assembly # 20642** are involved in a service campaign regarding the parking brake. The purpose of the campaign is to help improve the functionality of the parking brake in the event that the vehicle has not been driven for a long period of time (more than 1 month of inactivity), where it is possible that the parking brake might not release.

The repair should be performed on customer vehicles first, then on vehicles in stock. There are 2 parts to this procedure:

A. Adjustment of the parking brake
B. Driving procedure after adjustment

**A. Adjustment of the parking brake**

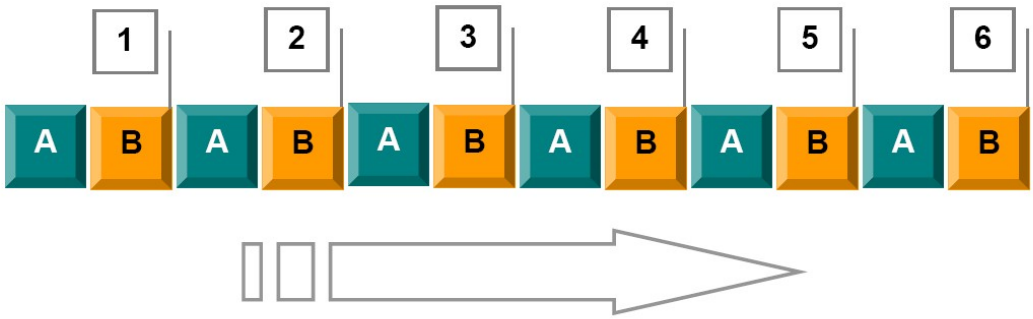
1. Read this document carefully to determine the repair
2. Reference the Maserati Technical Documentation in order to properly perform the procedure
3. Check on MODIS that the vehicle is included in the campaign, and verify that the procedure has not be performed already
4. Protect all areas that might be exposed to damage during repair
5. Adjust the parking brake setting (prepare vehicle on lift, and refer to the service manual)
    a. With the parking brake disengaged, the rear wheels should move freely
    b. With the parking brake engaged 1 “click”, there must be noticeable friction when the rear wheels are rotated
    c. With the parking brake engaged 2 “clicks”, the rear wheels must be impossible to move by hand
6. Once parking brake setting is complete, the vehicle must be driven on a level road surface

**B. Driving procedure to be performed after parking brake setting:**

1. Select MANUAL mode on the transmission
2. Get vehicle into 2nd gear and maintain speed at 20mph by using the cruise control
3. Under the condition outlined in step 2, pull up the parking brake level up to 3 “clicks” and drive for 0.2 miles ( approx. 40 seconds)
4. Release the parking brake lever and allow the brakes to cool down for 20 seconds while continuing to drive the vehicle.
5. Repeat Step 3 and 4, for 6 times.

**NOTE:** It takes about 40 seconds to drive the complete distance under the conditions outlined in Step 3. Therefore, it is not necessary to reference the trip odometer to drive the exact 0.2 miles. A count to 40 seconds while driving is sufficient.

**NOTE:** It is not required that the road is straight; however, it is important that the road is NOT sloped. This might cause clutch slippage and reduce the effect of the procedure.




A — MANUAL mode, 2nd Gear, 20 mph, Cruise Control ON, Parking Brake engaged for 0.2 miles (duration 40 seconds)

B — Cooling Down phase for 20 seconds

Warranty Information:

- Component code 4 30 005
- Labor operation 4 30 005 9 (driving procedure: 0.9 h)
  4 30 016 1 (adjustment: 0.3 h)
- Problem code 063
- Cost code 23
- Campaign number 147

**Figure 1**

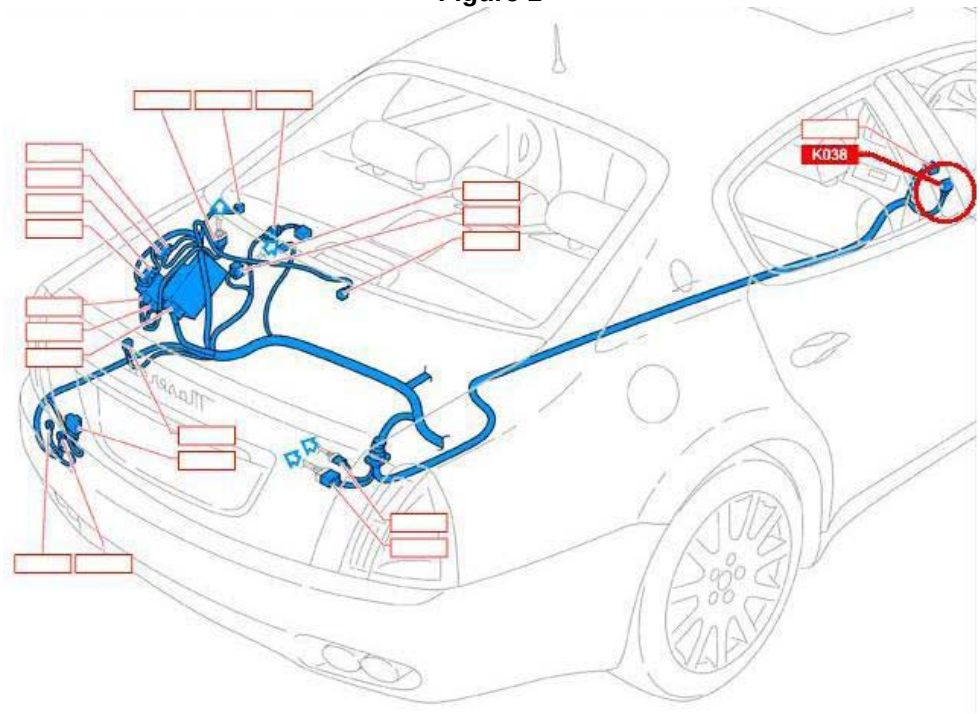
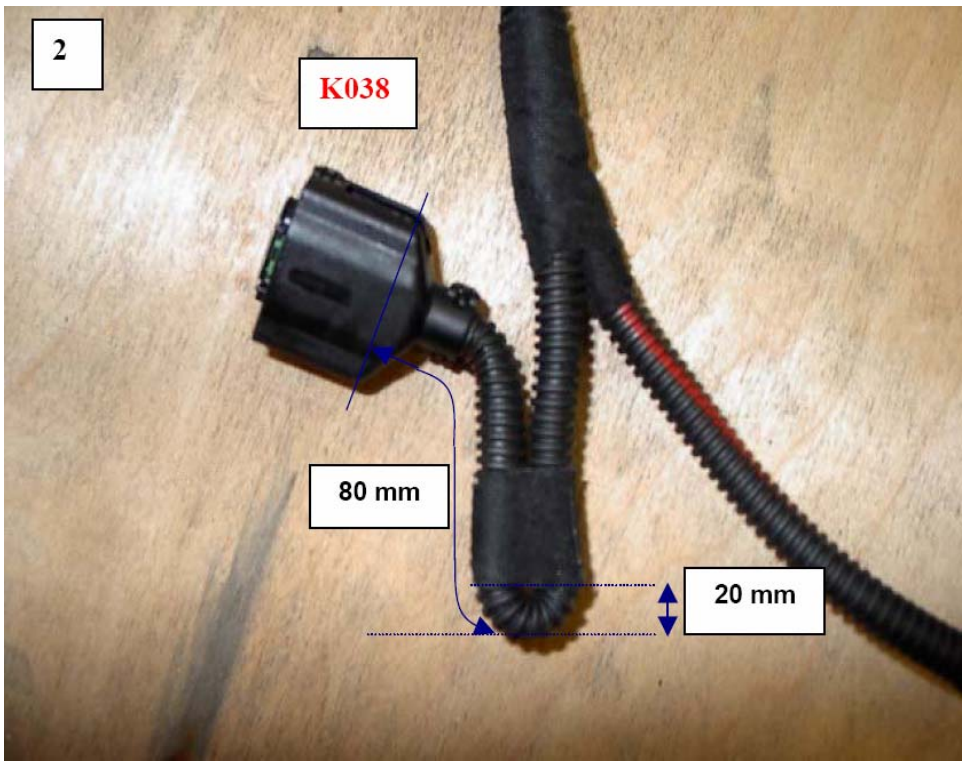



**Figure 2**



MASERATI

RECALL CAMPAIGN INSTRUCTIONS

# RECALL CAMPAIGN

## REF. NO. 136
## PASSENGER AIR BAG INDICATOR LIGHT

## QUATTROPORTE
## 2005 MODEL YEAR

## SEPTEMBER 2005

READ , INITIAL AND PASS ON »

| Service Manager | Parts Manager | Service Writer | Technician | | | | | Warranty Clerk |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**Maserati North America, Inc.**

February _, 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»
Serial Number: «VIN» «ASSY»

Dear Maserati Dealer:

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati Quattroporte vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

First letter delivered in February 2005

The Canadian vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A150014410 to ZAMCE39A350016160.

In addition to this notice, Maserati will provide, at no charge to the customer, a replacement console which does not contain the non-functioning button and LED light. When the new console is available, the customer will receive an additional notice informing them that they should take their vehicle to the nearest Maserati dealer to have the console replaced free of charge. Dealers will also be notified separately as soon as Maserati North America, Inc. receives the new console from the factory. The recall booklet for the dealers will be made available soon after the second notice is sent to the dealers.

Best Regards,
Enzo Francesconi
Vice President of Technical Services

**Maserati North America, Inc.**

September _, 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Dealer:

This notice is a follow up to the first notice we sent to you in the month of February. In the first notice we notified you that Maserati S.p.A., the manufacturer of Maserati automobiles, had decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

The Canadian vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A150014410 to ZAMCE39A250017865.

Maserati will provide, at no charge to the customer, a replacement console which does not contain the non-functioning button with the wording "Passenger Air Bag Off". Currently, the new console is available at our MNA parts department. Therefore, we notified the customer to take his or her vehicle to an authorized Maserati dealer to have the console replaced as soon as possible.

The operation will be performed free of charge to the vehicle owner, and will require approximately 1.0 hour to complete.

Best Regards,

Victor Soriano
National Aftersales Operations Manager
Maserati North America, Inc.

**Maserati North America, Inc.**

February _, 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Customer:

This notice is sent to you in accordance with the requirements of the "Canada Motor Vehicle Safety Act".

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

First letter delivered in February 2005

Maserati is sending you this notice to inform you that the non-functioning button with the words "Passenger Air Bag Off" will ***not*** turn off the passenger air bag, and the LED light is not an indication that the passenger-side air bag has been deactivated. Because the passenger-side air bag cannot be turned off by any means, ***you should never place infants and small children in the front passenger seat of the 2005 Maserati Quattroporte***.

The Canadian vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A150014410 to ZAMCE39A350016160.

In addition to this notice, Maserati will provide, at no charge to you, a replacement console which does not contain the non-functioning button and LED light. When the

new console is available, you will receive an additional notice informing you that you should take your vehicle to your dealer to have the console replaced free of charge.

The corrective action for the replacement of the console will be performed free of charge to you. Details about the repair and the length of time that it will take will be sent to you in the additional notice.

If the affected vehicle is not repaired free of charge to you and within a reasonable time, you may submit a written complaint to the Head of Recalls, Road Safety and Motor Vehicle Regulation, Transport Canada, 2780 Sheffield Road, Ottawa, Ontario KIB 3V9. You may also telephone Transport Canada at (613) 993-9851.

Canadian regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

If you no longer own this vehicle or your address has changed, please complete the enclosed prepaid yellow card and return it to Maserati North America, Inc.

We urge you to comply with this notice promptly and we apologize for any inconvenience this may cause you.

First letter delivered in February 2005

Best Regards,

Enzo Francesconi
Vice President of Technical Services

**Maserati North America, Inc.**

September _ , 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Customer:

This second notice is sent to you in accordance with the requirements of the "Canada Motor Vehicle Safety Act".

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

Maserati will provide, at no charge to you, a replacement console which does not contain the non-functioning button and LED light. Currently, the new console is available at our dealers. Therefore, you should take your vehicle to an authorized Maserati dealer to have the console replaced as soon as possible.

The operation will be performed free of charge to the vehicle owner, and will require approximately 1 hours to complete.

Maserati also stated in the first notice that the non-functioning button with the words "Passenger Air Bag Off" will ***not*** turn off the passenger air bag, and the LED light is not an indication that the passenger-side air bag has been deactivated. Because the passenger-side air bag cannot be turned off by any means, ***you should never place infants and small children in the front passenger seat of the 2005 Maserati Quattroporte***.

The Canadian vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A150014410 to ZAMCE39A250017865.

If the affected vehicle is not repaired free of charge to you and within a reasonable time, you may submit a written complaint to the Head of Recalls, Road Safety and Motor Vehicle Regulation, Transport Canada, 2780 Sheffield Road, Ottawa, Ontario KIB 3V9. You may also telephone Transport Canada at (613) 993-9851.

Canadian regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

If you no longer own this vehicle or your address has changed, please complete the enclosed prepaid yellow card and return it to Maserati North America, Inc.

We urge you to comply with this notice promptly and we apologize for any inconvenience this may cause you.

Best Regards,

Victor Soriano
National Aftersales Operations Manager
Maserati North America, Inc.

# RECALL CAMPAIGN NO. 136
# Maserati Quattroporte
# "Passenger Air Bag Indicator Light"
# RECALL CAMPAIGN OVERVIEW

**INTRODUCTION:** Maserati Quattroporte

**SUBJECT:** Recall Campaign No. 136

**VEHICLES**: See the attached list of affected vehicles

All 2005 model year Maserati Quattroporte produced within the assembly numbers **15774 (VIN: 14410)** and **18966 (VIN: 17865)** are affected by this **recall campaign no. 136** whose subject is the passenger air bag indicator light.

**CONDITION:** The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

**REMEDY:** Maserati will provide, at no charge to the customer, a replacement console which does not contain the words "Passenger Air Bag Off" etched into it. In addition, the software will be updated to disable the passenger air bag indicator light.

# RECALL CAMPAIGN NO. 136
# Maserati Quattroporte
# "Passenger Air Bag Indicator Light"
# RECALL CAMPAIGN OVERVIEW

**PARTS**: The parts required for this repair are identified by the following part numbers:

| **Name** | **Part Number** |
|---|---|
| Console **with** TPMS | 980139224 |
| Console **without** TPMS | 980139225 |

**LABOR**: **Replacement of Console**

Fill in relevant warranty claims as follows:

- **Component Code:** 810014
- **Operation Code:** 8100149 (1 h, console replace and software update)
- **Operation Code:** 8100148 (0.5 h, console replace only if required)
- **Defect Code:** 063
- **Campaign Code:** 24
- **Campaign Number:** 136

**Note:**

**Return** ***the removed console to our warranty department following the normal warranty parts return procedure.***

**REIMBURSEMENT**: Upon receipt of a warranty claim via MODIS CS.

# RECALL CAMPAIGN NO. 136
# Maserati Quattroporte
# "Passenger Air Bag Indicator Light"
# Software Download &Technical Instructions

All Canadian Maserati Quattroporte with **VIN 14410** (assembly number 15774) up to and including **VIN 17865** (assembly number 18966) are involved in a **recall campaign** to remove the passenger air bag indicator light console that is located in the overhead control panel. The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed.

**The new consoles do not have the words "Passenger Air Bag Off" etched into it.**

**NOTE:**

- Carefully read this bulletin to determine the repairs that need to be performed.
- Reference the technical documentation in order to properly perform the repair procedure.
- Check via MODIS CS that the vehicle is included in the campaign, and has not previously undergone corrective action.
- Protect areas that could be exposed to damages during repair.

The following repair procedure is composed of:

A. NIM software download
B. NIM software update
C. Proxi File update
D. Console replacement

**A. Software Download**

1. Make sure that the SD3NET system and the SD3 tester are updated to software version 8.4N or later. If not, please reference bulletin MNA – 20 / N.
2. Follow the path in MODIS
    a. After-sale
    b. Technical Service
    c. SD2 Software Download
    d. M139_B – Quattroporte
    e. ECU Software

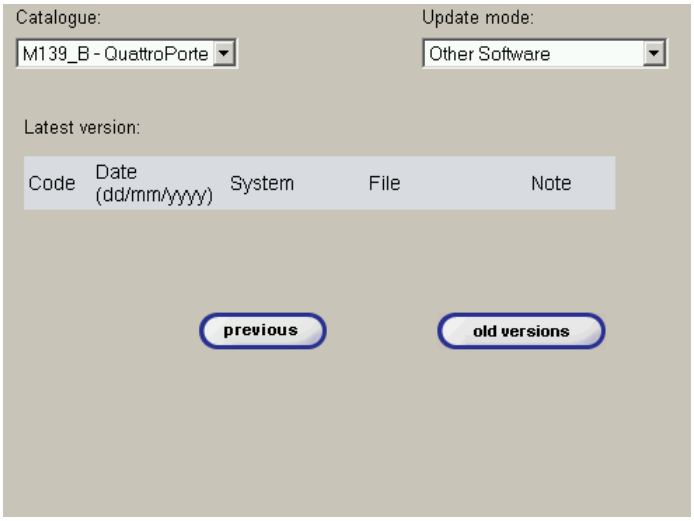



**Figure 1**

3. Download the file **NIMSW_M139_1.exe**
4. Unzip this file, and it will extract automatically into the folder labelled **NIMSW_M139_1**. This folder should contain a total of four (4) files.
5. Download the file **Proxiupdate.exe.** Save this in an appropriate location. Unzip it into the file **Proxilocal.mdb** – this will be used later.
6. Start SD3NET on the PC
7. Select **PC Diagnosis**
8. Select **Personal Computer Diagnostics Software Running**
9. In the software list, select **DOWNLOAD TELECARICAMENTI**, then click **Execute**
10. In the new window, select **NIM**, then click **CONFIRM**

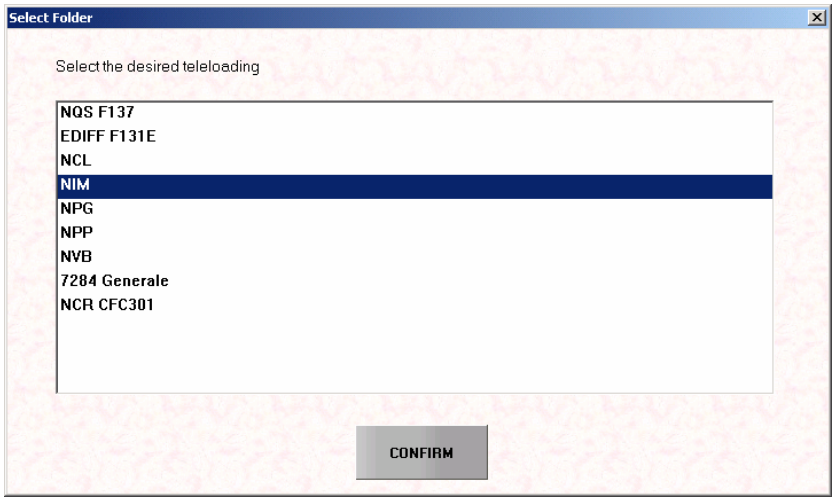



**Figure 3**

11. The next screen asks you to select the specific software. Go to the folder that contains the software that was previously downloaded (**NM04_18_M139AQ**). When the folder is selected, it should automatically appear in the right window.
12. Double click **NM04_18_M139AQ** in order to have file appear in the bottom window, then click **TRANSFER**. (See Figure 4)

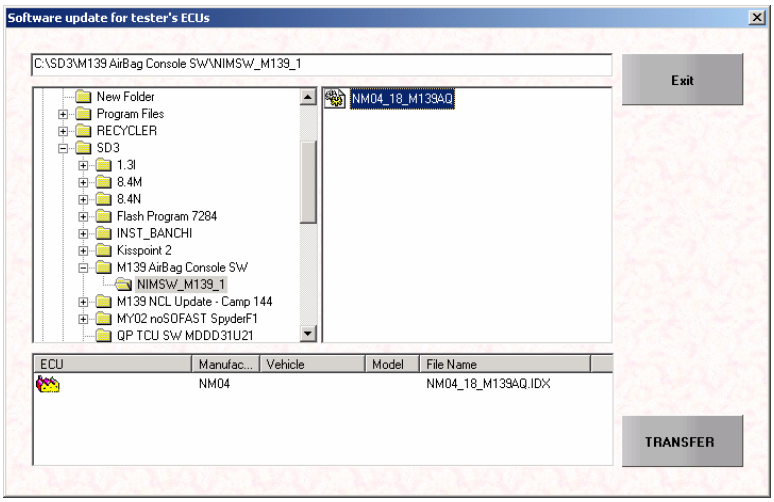
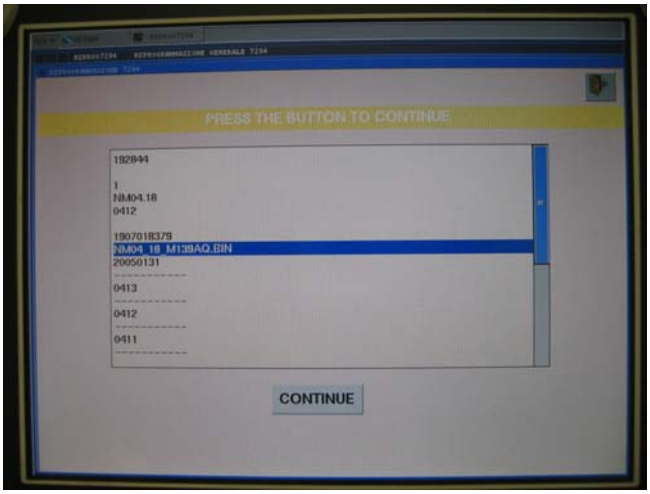



**Figure 4**

13. The process should take several minutes. When the "Operation Complete" message appears, select CONTINUE.
14. Select EXIT - Download is complete.

## B. Software Update

1. Connect SD3 to vehicle in stand alone mode.
2. Follow the path on the tester:
    a. SERIAL DIAGNOSIS
    b. DIAGNOSTIC CYCLE ON INDIVIDUAL ECU
    c. TOOLS
    d. TUTTI
    e. RIPROGRAMMIZIONE 7284
    f. REPROGRAMMING
3. Select **NIM/** using the arrow keys, then press ENTER on the SD3
4. Select **NM04_18_M139AQ.IDX** using arrow keys, then press "TAB" until **CONTINUE** is highlighted, and then press "ENTER"
5. When the window appears with the message **ECU SELECTED OLDNIM**, press "ENTER"
6. Use arrow keys to highlight **NM04_18_M139AQ.BIN**, and then press "TAB" until **CONTINUE** is highlighted, and then press "ENTER"




7. Turn key to ON (if not done already)
8. The SD3 then starts to download with **DOWNLOADING SOFTWARE…** message on the screen accompanied by a progress bar.

**NOTE:** During the downloading process, the instrument cluster screen may display the messages “Air bag system failure” and “Electrical system failure”. This is perfectly normal and the messages will disappear when the download procedure is complete. There is no malfunction.

9. The download process takes approximately 3 minutes to complete, and concludes with the message “REPROGRAMMING SUCCESSFULLY COMPLETED”. Press “ENTER”.
10. Turn Key OFF
11. Press ESC until you reach the main menu.
12. The software download for the NIM is now complete.

**NOTE:** If at any time, the programming process is interrupted, it can be repeated. There is a possibility that the tester does not recognize the hardware version and displays the following message: **VERSION NOT COMPATIBLE WITH TELELOADING! WOULD YOU LIKE TO GO ON ANYWAY?** If this happens, continue with the downloading process.

## C. Proxi File Update

1. Vehicles with **assembly** numbers between **15774** and **18966** must have the Proxi file re-loaded.
2. Proceed with performing a PROXI alignment
3. Select **Proxi (F2)**
4. When prompted to enter a Proxi file, select **Proxilocal.mdb** downloaded and unzipped in Section A, Step 5.
5. Be sure to enter the correct VIN, then carry out the proxi alignment

**D. Console Replacement**

1. Remove console assembly as per the procedure shown on the workshop manual (Reference the section labelled “ALARM SYTEM KIT REPLACEMENT”)

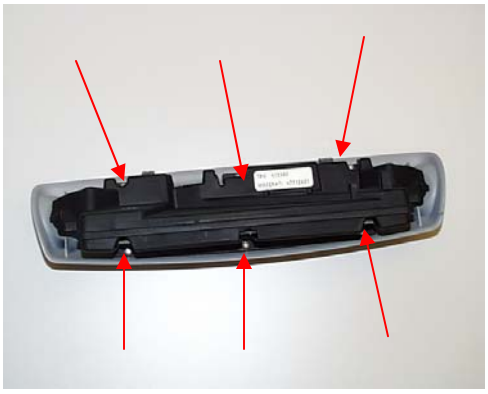


**Figure 5**

2. Remove the interior color-matching bezel from the black electronics housing. NOTE: Pay attention to the color of screws as they are of different lengths. There are a total of six (6) screws fastening the main electronic housing (Figure 5). There are three (3) screws fastening the front pictogram faceplate to the bezel (Figure 6).

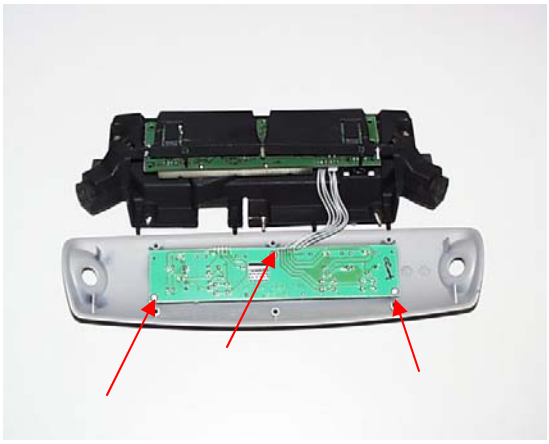


**Figure 6**

3. Remove the electronic components from the bezel, and install the replacement electronic components (Figure 7).

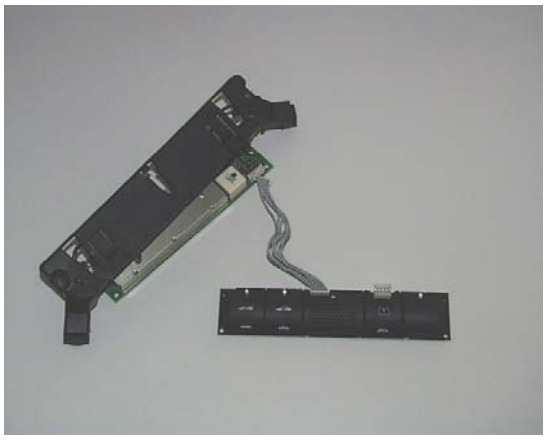


**Figure 7**

4. Re-install the console assembly

| VIN | Assy No. |
|---|---|
| 14410 | **15774** |
| 14645 | **15782** |
| 14722 | **16014** |
| 14723 | **15968** |
| 14724 | **16008** |
| 14725 | **16051** |
| 15027 | **16038** |
| 15152 | **16202** |
| 15153 | **16157** |
| 15154 | **16122** |
| 15741 | **16667** |
| 15742 | **16686** |
| 15838 | **16928** |
| 15839 | **16971** |
| 16160 | **17443** |
| 17291 | **18453** |
| 17292 | **18355** |
| 17420 | **18392** |
| 17421 | **18516** |
| 17422 | **18493** |
| 17423 | **18446** |
| 17424 | **18618** |
| 17425 | **18547** |
| 17426 | **18985** |
| 17427 | **18588** |
| 17542 | **18687** |
| 17865 | **18966** |

Maserati North America, Inc.

# Parts Bulletin

No. 08 Date: September 23, 2005

**Subject: Recall Campaign No. 136 Passenger Air Bag Indicator Light**

Please be aware that in accordance with Recall Campaign No. 136, Parts Operations will begin shipping the necessary parts on September 26, 2005. Each dealer will receive a shipment of parts equal to approximately 50% of the total allocation of vehicles reported as units in operation in your area. The following parts will be shipped:

| Part Number | Description |
|---|---|
| 980139224 | Updated Console for vehicles equipped with the Tire Pressure Monitoring System (TPMS) |
| 980139225 | Updated Console for vehicles not equipped with TPMS |

Additional quantities are available to order via MODIS CS as required.

For more information, please refer to the Recall Campaign No. 136 instructions in the booklet or contact Dealer Services.

MASERATI

RECALL CAMPAIGN INSTRUCTIONS

# RECALL CAMPAIGN

## REF. NO. 128
## OUTER DOOR HANDLES

## QUATTROPORTE
## 2005 MODEL YEAR

## OCTOBER 2004

READ , INITIAL AND PASS ON »

| Service Manager | Parts Manager | Service Writer | Technician | | | | | Warranty Clerk |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

# Maserati North America, Inc.

October, 2004

Dear Maserati Dealer:

This notice is sent to you in accordance with the requirements of the Motor Vehicle Safety Act.

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati Canadian Quattroporte vehicles.

The defect involves the internal wiring harness of the affected door handles, which may accidentally short circuit, opening the electrical switch of the door, and in certain situations the door might open without any action from the vehicle occupant. However, this cannot occur if the vehicle is traveling at a speed in excess of 6 miles per hour (10 kilometer per hour), due to the intervention of the central locking system.

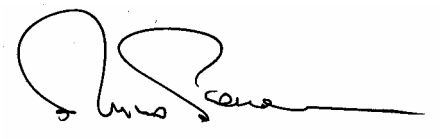
The vehicles possibly affected are as follows:

Model year 2005 Canadian Quattroporte with Vehicle Identification Numbers from ZAMCE39A150014410 to ZAMCE39A750015027, which have a Vehicle Assembly Number from 15774 to 16038.

The remedy consists of replacing the four outer door handles on the vehicle.

Thank you for your cooperation and support on this matter.

Sincerely,



Enzo Francesconi

Vice President of Technical Services

# RECALL CAMPAIGN NO. 128
# Maserati Quattroporte
# "Outer Door Handles"
# RECALL CAMPAIGN OVERVIEW

**INTRODUCTION:** Maserati Quattroporte

**SUBJECT:** Recall Campaign No. 128

**VEHICLES**: See the attached list of affected vehicles

All 2005 model year Maserati Quattroporte produced within the assembly numbers **15774 (VIN: 14410)** and **16038 (VIN: 15027)** are affected by this **recall campaign no. 128** whose subject is the outer door handles.

**CONDITION:** As a result of a manufacturing defect, the internal wiring harness of the affected door handles may accidentally short circuit, opening the electrical switch of the door, and in certain situations the door might open without any action from the vehicle occupant. However, this cannot occur if the vehicle is traveling at a speed in excess of 6 miles per hour (10 kilometer per hour), due to the intervention of the central locking system.

**REMEDY:** The remedy consists of replacing all four affected outer door handles with the new outer door handles that have the new routing of the wiring harness.

# RECALL CAMPAIGN NO. 128
# Maserati Quattroporte
# "Outer Door Handles"
# RECALL CAMPAIGN OVERVIEW

**PARTS**: The parts required for this repair are identified by the following part numbers:

| **Right Hand Side (RHS)** | | |
|---|---|---|
| **Part Number** | **Qty** | **Description** |
| 68808800 | 2 | New RHS Outer Door Handle |
| 067277600 | 1 | RHS Front Water Shield |
| 067277800 | 1 | RHS Rear Water Shield |

| **Left Hand Side (LHS)** | | |
|---|---|---|
| **Part Number** | **Qty** | **Description** |
| 68808900 | 2 | New LHS Outer Door Handle |
| 067277700 | 1 | LHS Front Water Shield |
| 067277900 | 1 | LHS Rear Water Shield |

**LABOR**: **Replacement of Outer Door Handles**

Fill in relevant warranty claims as follows:

- **Component Code:** 931011
- **Operation Code:** 9310119 (4 hours)
- **Defect Code:** 063
- **Campaign Code:** 24
- **Campaign Number:** 128

**Note:**

**Return *the removed outer door handles to our warranty department following the normal warranty parts return procedure.***

**REIMBURSEMENT**: Upon receipt of a warranty claim via MODIS CS.

**RECALL CAMPAIGN NO. 128**
**Maserati Quattroporte**
**"Outer Door Handles"**
**Technical Instructions**

## Repair Procedures / Technical Instructions:

Carefully read this document to determine the repair to be performed on all four doors. Do not forget to check via MODIS CS that the vehicle is flagged for the recall campaign no. 128. Follow the instructions and protect the door areas that could be exposed to damages during the repair.

- ***Remove the door panel trim.***



- ***Remove the door pull trim***



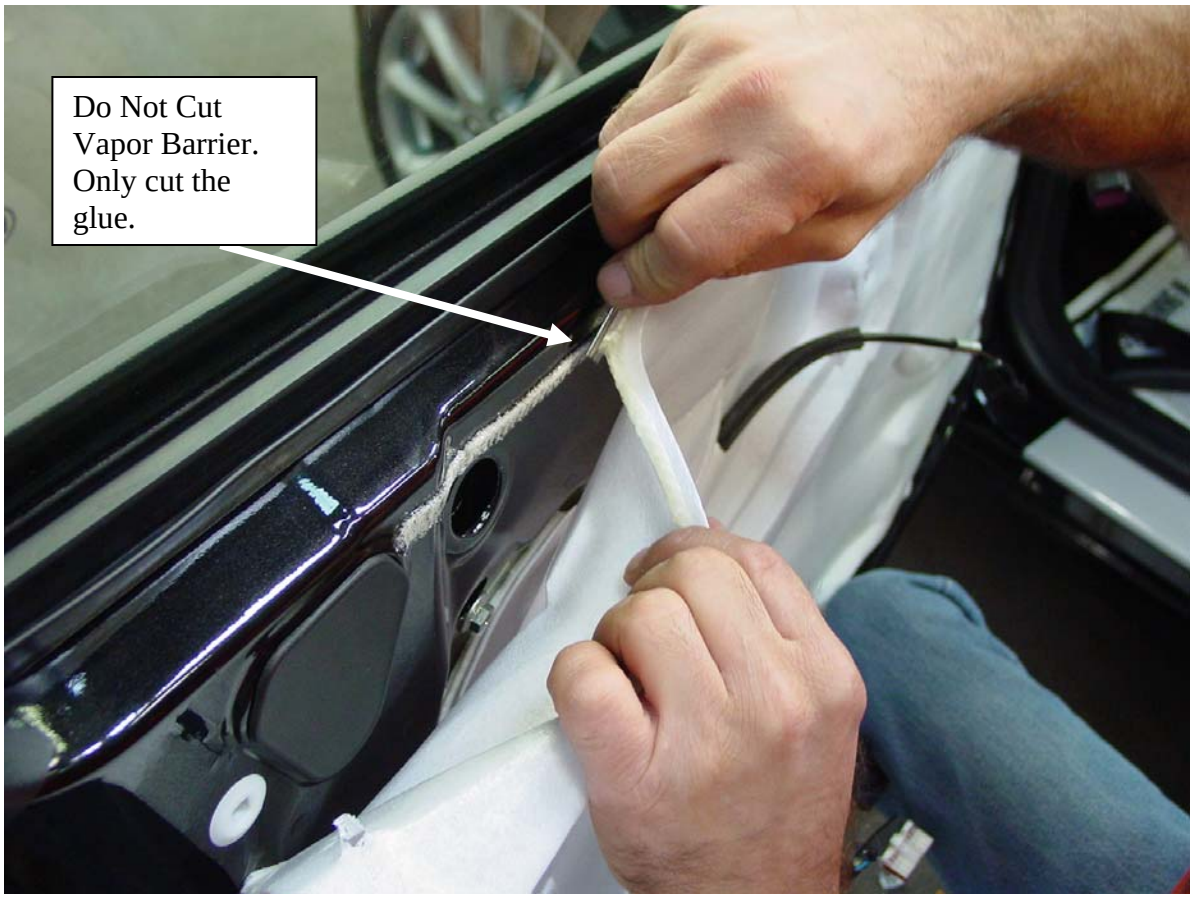
- ***Remove the door panel***



- ***After removing the door panel, detach/peel 1/3 of the internal water protection (water shield) in the position of the handles in such a way that the glue remains on both sides. (see attached photos)***

***<u>Notice:</u> Since you will be reusing the water shield, do not touch the stripe of glue as it may reduce its adhesive ability. Replace the water shield with a new one only if it is necessary.***

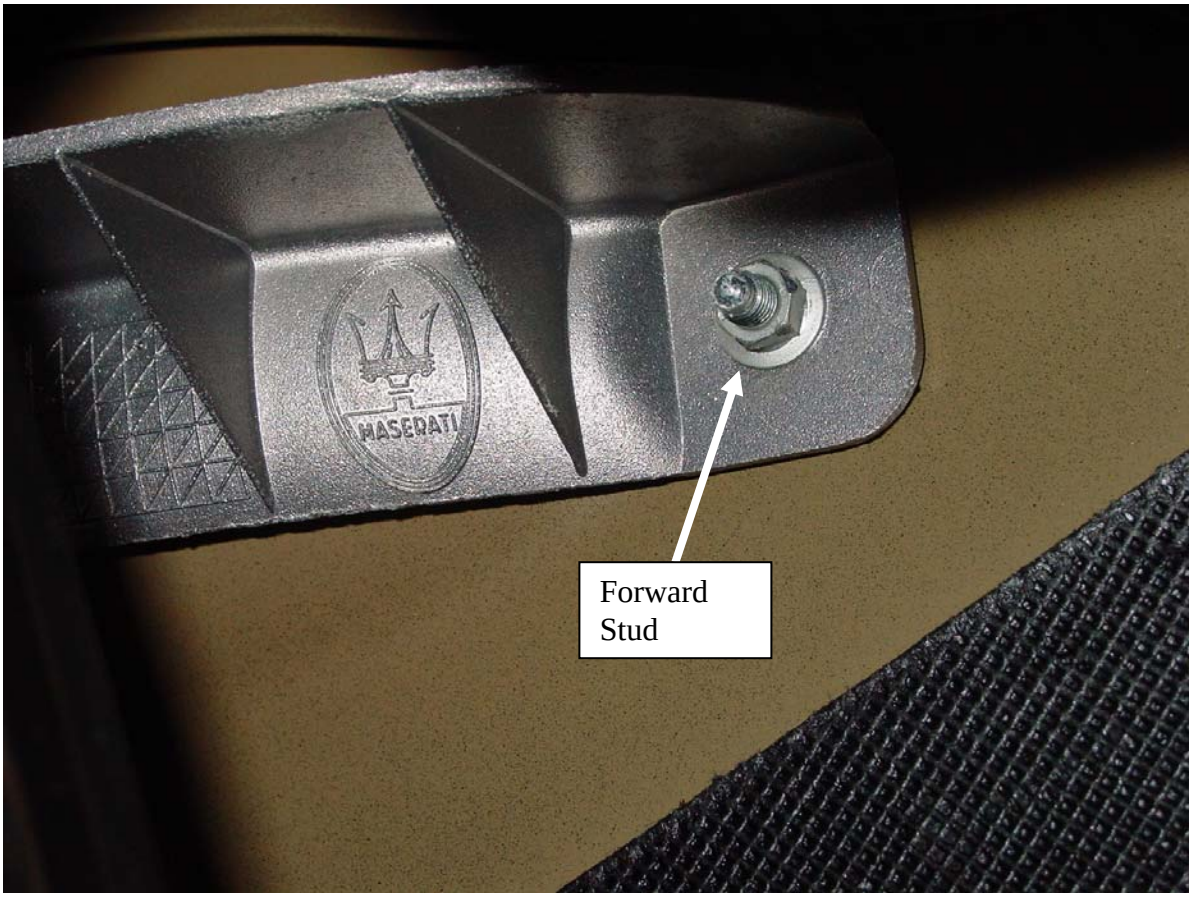



Do Not Cut
Vapor Barrier.
Only cut the
glue.


FRONT


REAR

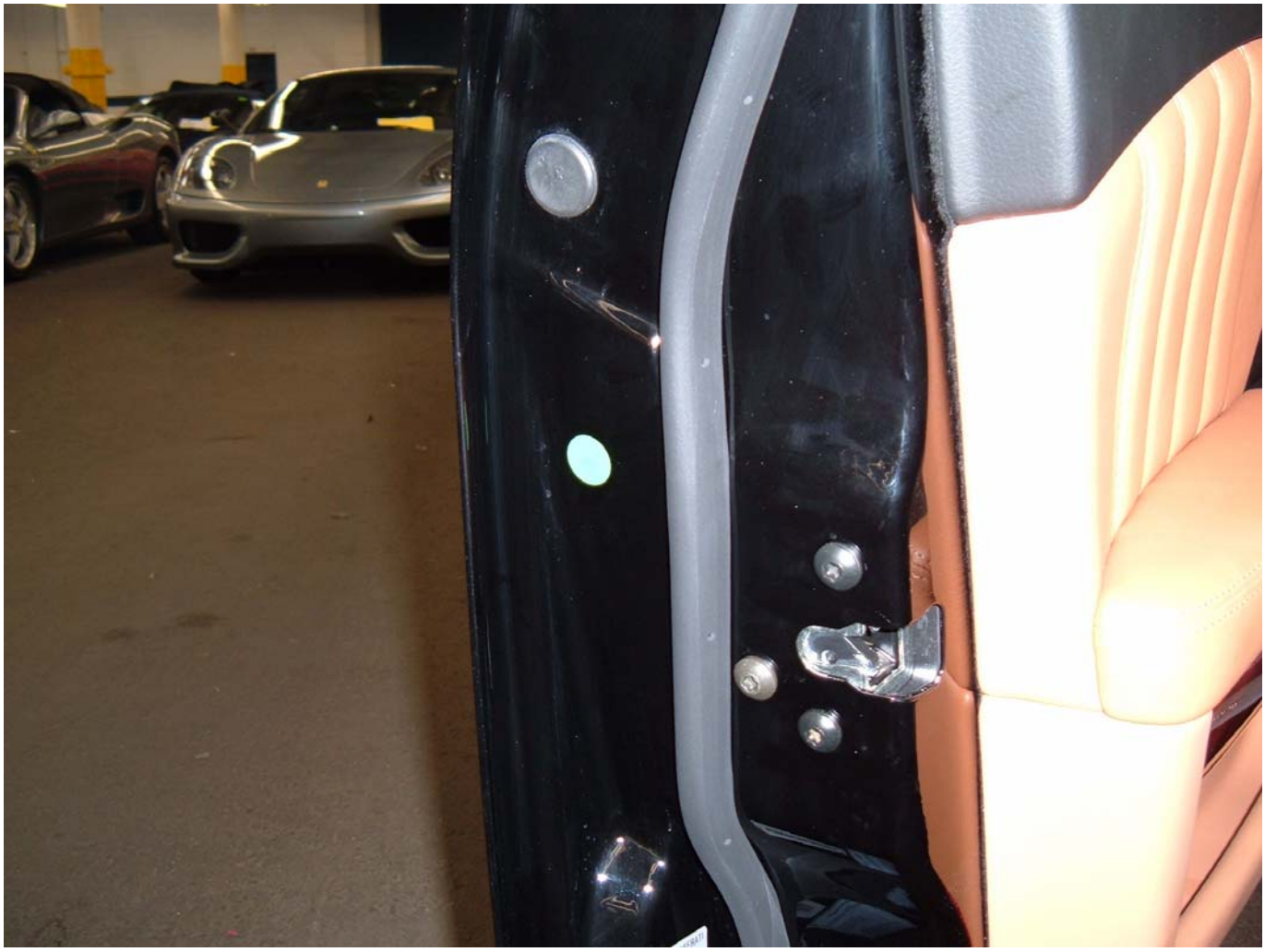
- ***Remove the outer door handles from each door.***



- ***Hold button of the handle in to allow better access to the back stud***



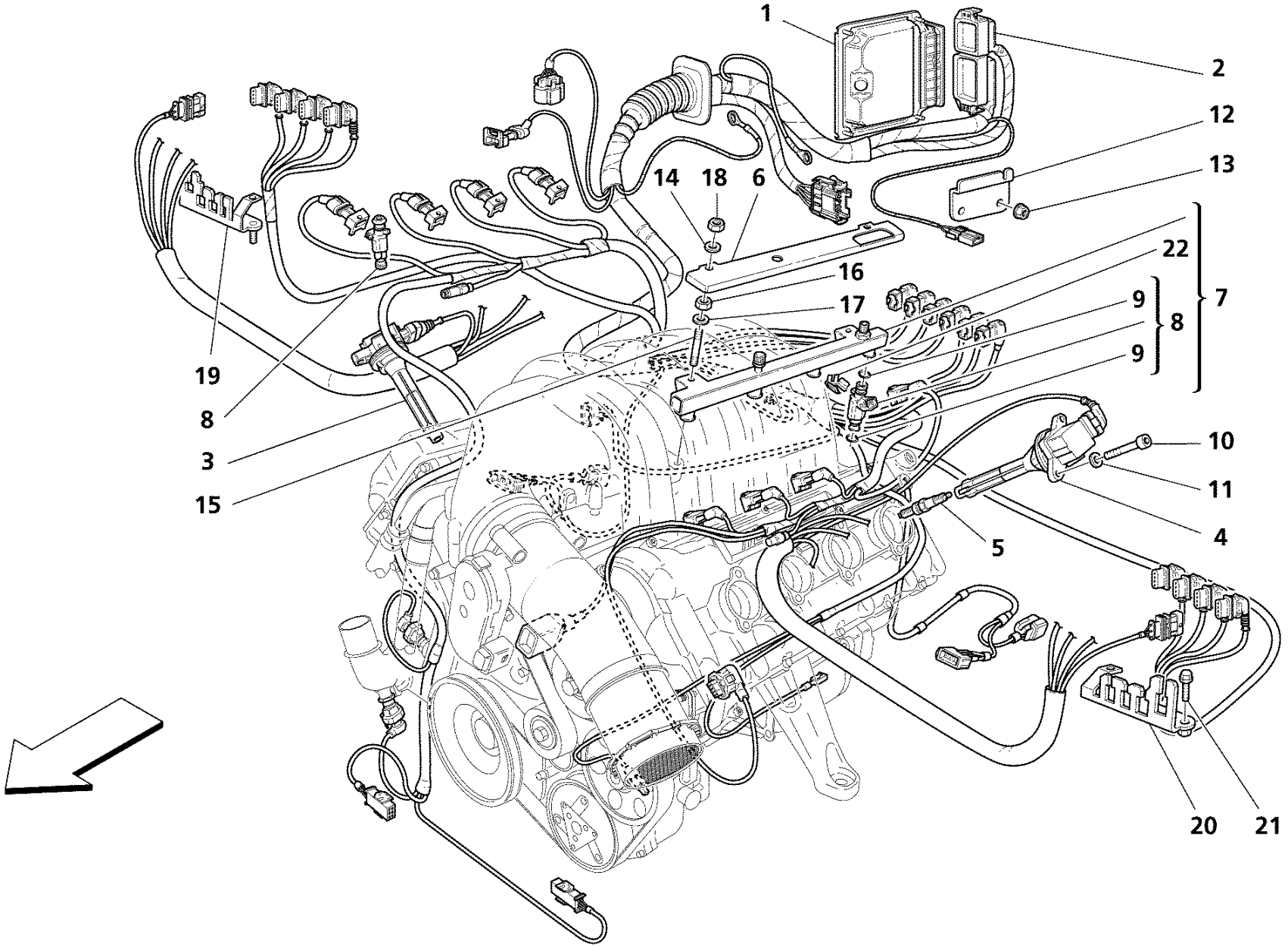
- ***Install the new outer door handles supplied by our Part Department to each door on the vehicle.***
- ***Tighten the outer door handles by applying a torque at the fixing point of the handles of 3 Ft-Lbs. ( 4.1 Nm).***
- ***Attach the peeled section of the water shield by pressing firmly around the edge to assure proper adhesion. Replace water shield if necessary.***
- ***Reinstall the door panel, door pull trim, door panel trim and clean the area with a clean cloth.***
- ***Place one green color-coding label on the inner side of the driver's door. The label will be provided by MNA and will help identify the completed vehicles.***



- ***Send the removed outer door handles to our warranty department following the normal warranty parts return procedure.***

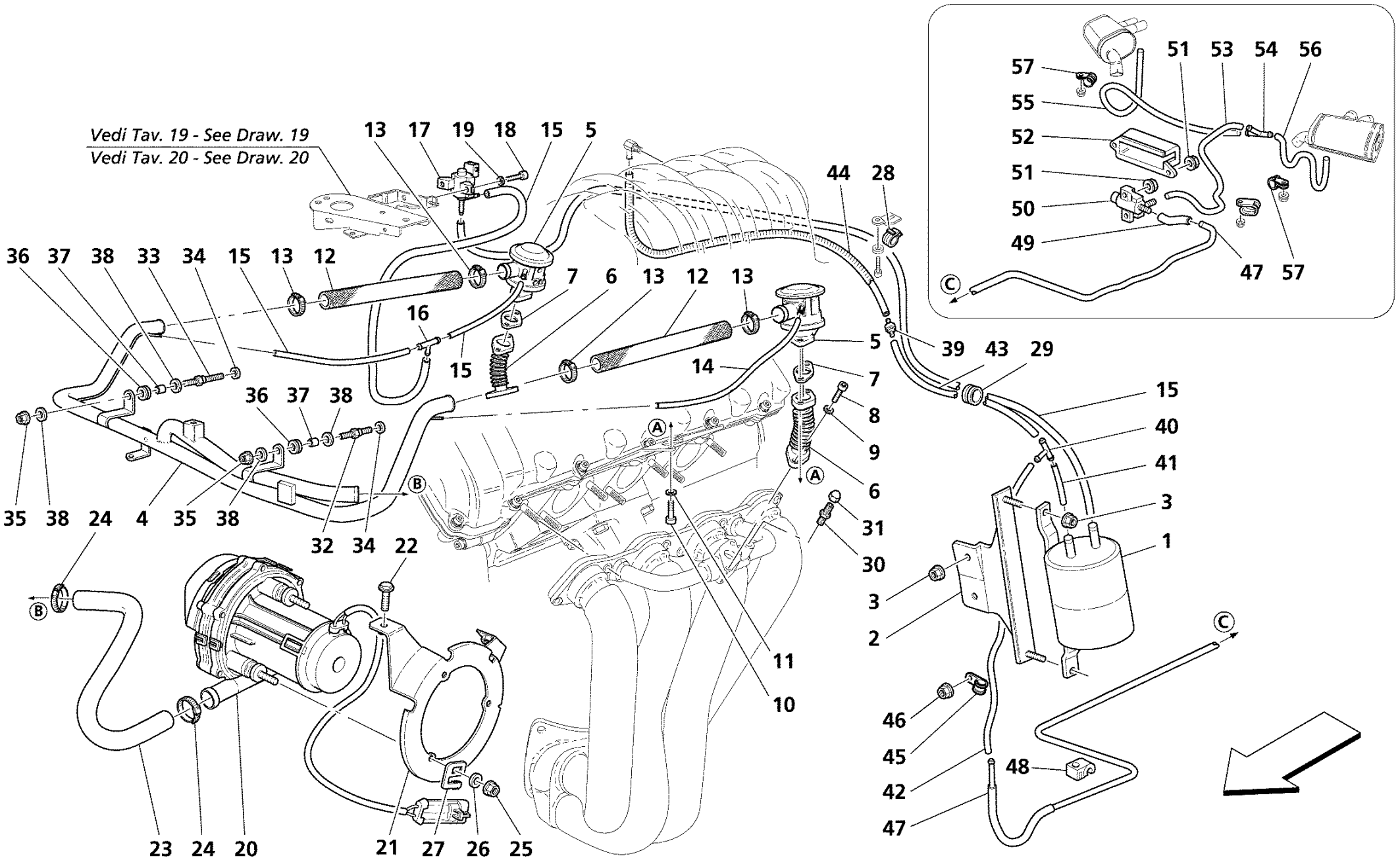
- ***Submit the warranty claim via MODIS CS.***

| VIN | Assembly No. |
|---|---|
| 14410 | 15774 |
| 14645 | 15782 |
| 14723 | 15968 |
| 14724 | 16008 |
| 14725 | 16051 |
| 15027 | 16038 |


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M138_G: GRANSPORT - 7 - INJECTION DEVICE - IGNITION

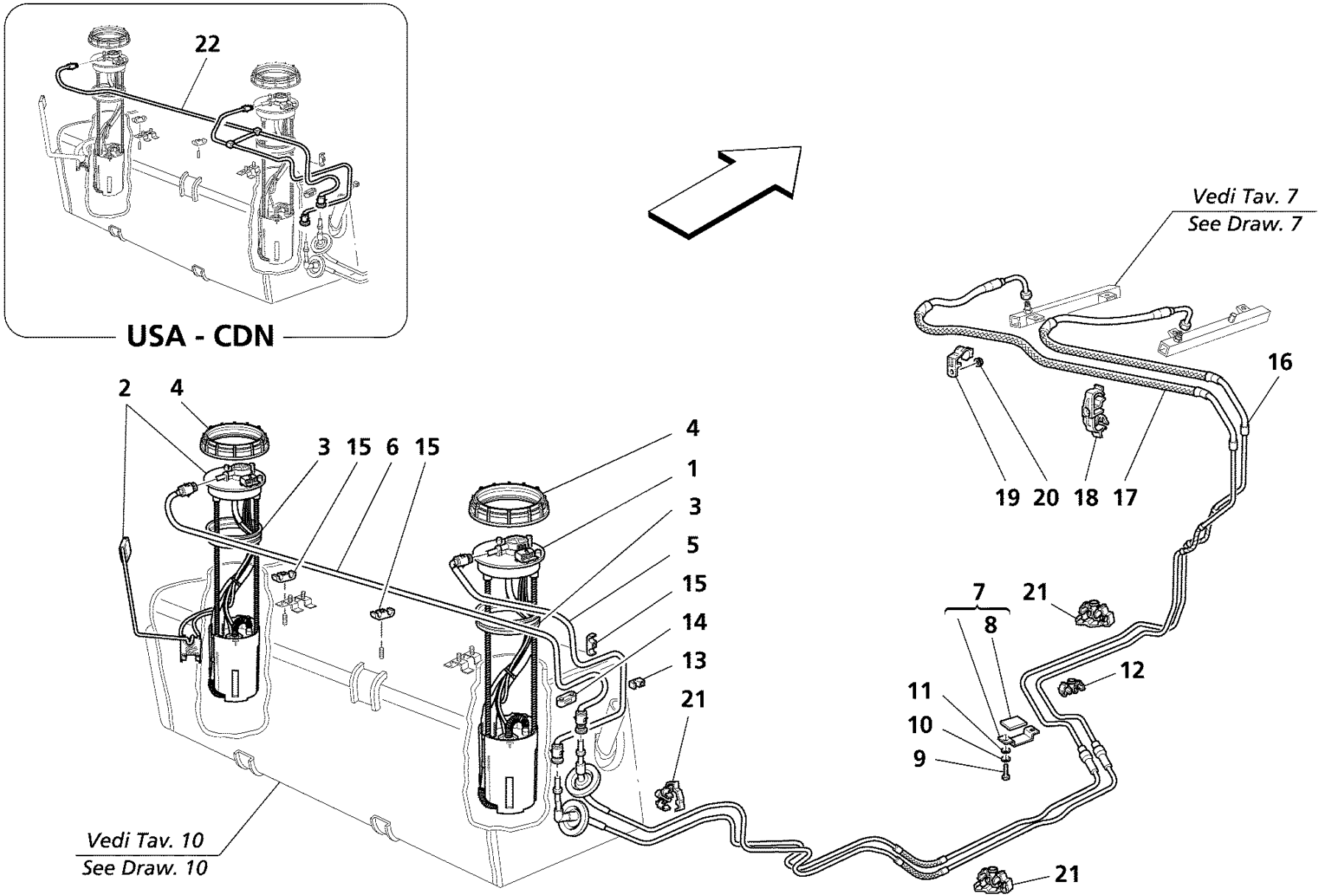
| | | | |
|---|---|---|---|
| 1 | 980138139 | 1 | CONTROL UNIT IGNITION<br>-Programmable- |
| 2 | 209651 | 1 | INJECTION DEVICE CABLES<br>-Not for USA, CDN and GD- |
| 2 | 209653 | 1 | INJECTION DEVICE CABLES<br>-Valid for USA and CDN- |
| 2 | 209652 | 1 | INJECTION DEVICE CABLES<br>-Valid for GD- |
| 3 | 188504 | 4 | FRONT IGNITION COIL<br>-Complete of cable- |
| 4 | 186914 | 4 | REAR IGNITION COIL<br>-Complete of cable- |
| 5 | 168325 | 8 | SPARK PLUG |
| 6 | 189124 | 1 | L.H. FLAUTES FUEL COVER |
| 6 | 189123 | 1 | R.H. FLAUTES FUEL COVER |
| 7 | 197846 | 1 | COMPLETE R.H. INJECTORS PIPE |
| 7 | 197845 | 1 | COMPLETE L.H. INJECTORS PIPE |
| 8 | 197808 | 8 | ELECTRO-INJECTOR |
| 9 | 133902 | 16 | O.R. GASKET |
| 10 | 201599 | 16 | SCREW |
| 11 | 11197774 | 16 | WASHER |
| 12 | 66313100 | 1 | MOTRONIC BRACKET |
| 13 | 14084211 | 2 | NUT |
| 14 | 11193874 | 4 | WASHER |
| 15 | 13516924 | 4 | STUD |
| 16 | 16102314 | 4 | NUT |
| 17 | 12604474 | 4 | WASHER |
| 18 | 14042321 | 4 | CAP NUT |
| 19 | 190009 | 1 | R.H. BRACKET FOR COIL CABLES |
| 20 | 190010 | 1 | L.H. BRACKET FOR COIL CABLES |
| 21 | 18750121 | 2 | SCREW |
| 22 | 144730 | 8 | INJECTORS RETAINING CLIP |


Vedi Tav. 19 - See Draw. 19
Vedi Tav. 20 - See Draw. 20
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M138_G: GRANSPORT - 8 - SECONDARY AIR SYSTEM

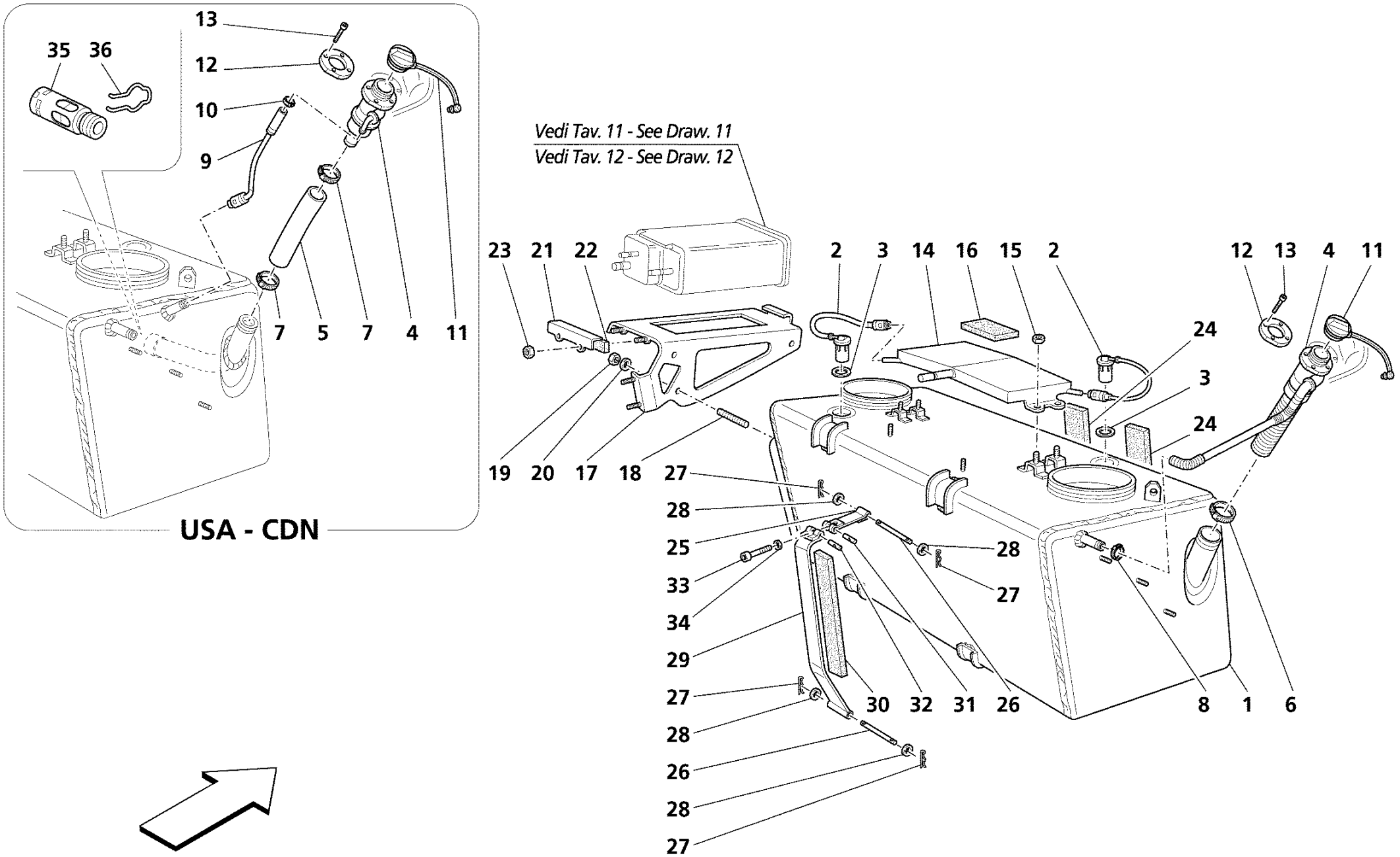
| | | | |
|---|---|---|---|
| 1 | 210189 | 1 | VACUUM TANK |
| 2 | 208281 | 1 | BRACKET |
| 3 | 14040614 | 4 | NUT |
| 4 | 195066 | 1 | AIR DELIVERY TUBE TO VALVES |
| | | | -Not for GD- |
| 4 | 195065 | 1 | AIR DELIVERY TUBE TO VALVES |
| | | | -Valid for GD- |
| 5 | 171175 | 2 | SECONDARY AIR VALVE |
| 6 | 186274 | 2 | SECONDARY AIR VALVE PIPE |
| 7 | 186781 | 4 | GASKET |
| 8 | 14305724 | 4 | SCREW |
| 9 | 127494 | 4 | WASHER |
| 10 | 14433124 | 4 | SCREW |
| 11 | 127494 | 4 | WASHER |
| 12 | 155116 | 2 | SLEEVE |
| 13 | 178054 | 4 | CLAMP |
| 14 | 147125 | 1 | L.H. RUBBER HOSE |
| 15 | 318720329 | - | RUBBER HOSE |
| | | | -Supplied in meters- |
| | | | -(Minimum quantity 1m. or multiples)- |
| 16 | 146972 | 1 | 3-WAY UNION |
| 17 | 184363 | 1 | SOLENOID VALVE |
| 18 | 14304224 | 2 | SCREW |
| 19 | 12601174 | 2 | WASHER |
| 20 | 181197 | 1 | SECONDARY AIR PUMP |
| 21 | 184837 | 1 | BRACKET |
| 22 | 16296924 | 2 | SCREW |
| 23 | 190992 | 1 | STUD |
| 24 | 178054 | 2 | CLAMP |
| 25 | 102948 | 3 | NUT |
| 26 | 12601274 | 3 | WASHER |
| 27 | 162606 | 1 | CLIP |
| 28 | 159740 | 1 | CLIP |
| 29 | 388100423 | 1 | RUBBER |
| 30 | 152630 | 2 | THREADED UNION |
| 31 | 150595 | 2 | CAP NUT |
| 32 | 194436 | 1 | STUD |
| 33 | 194437 | 1 | STUD |
| 34 | 11197774 | 2 | WASHER |
| 35 | 159601 | 2 | NUT |
| 36 | 315520375 | 2 | SUPPORT |
| 37 | 397850624 | 2 | SPACER |
| 38 | 14498801 | 4 | WASHER |
| 39 | 62507200 | 1 | NONRETURN VALVE |
| 40 | 146972 | 1 | 3-WAY UNION |
| 41 | 121831 | 1 | RUBBER HOSE |

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| 42 | 211475 | 1 | RUBBER HOSE |
| 43 | 115148 | 1 | RUBBER HOSE |
| 44 | 124347 | 1 | RUBBER HOSE |
| 45 | 10418401 | 1 | BRACKET WITH SHEATH |
| 46 | 14059214 | 1 | NUT |
| 47 | 208359 | 1 | RIGID PIPE |
| 48 | 169477 | 8 | CLIP |
| 49 | 163092 | 1 | RUBBER HOSE |
| 50 | 184363 | 1 | SOLENOID VALVE |
| 51 | 14040514 | 4 | NUT |
| 52 | 211068 | 1 | SHIELD |
| 53 | 163094 | 1 | RUBBER HOSE |
| 54 | 146972 | 1 | 3-WAY UNION |
| 55 | 208461 | 1 | R.H. RUBBER HOSE |
| 56 | 208460 | 1 | L.H. RUBBER HOSE |
| 57 | 10441390 | 2 | BRACKET WITH SHEATH |


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USA - CDN
Vedi Tav. 7
See Draw. 7
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Vedi Tav. 10
See Draw. 10

M138_G: GRANSPORT - 9 - FUEL PUMP AND PIPES

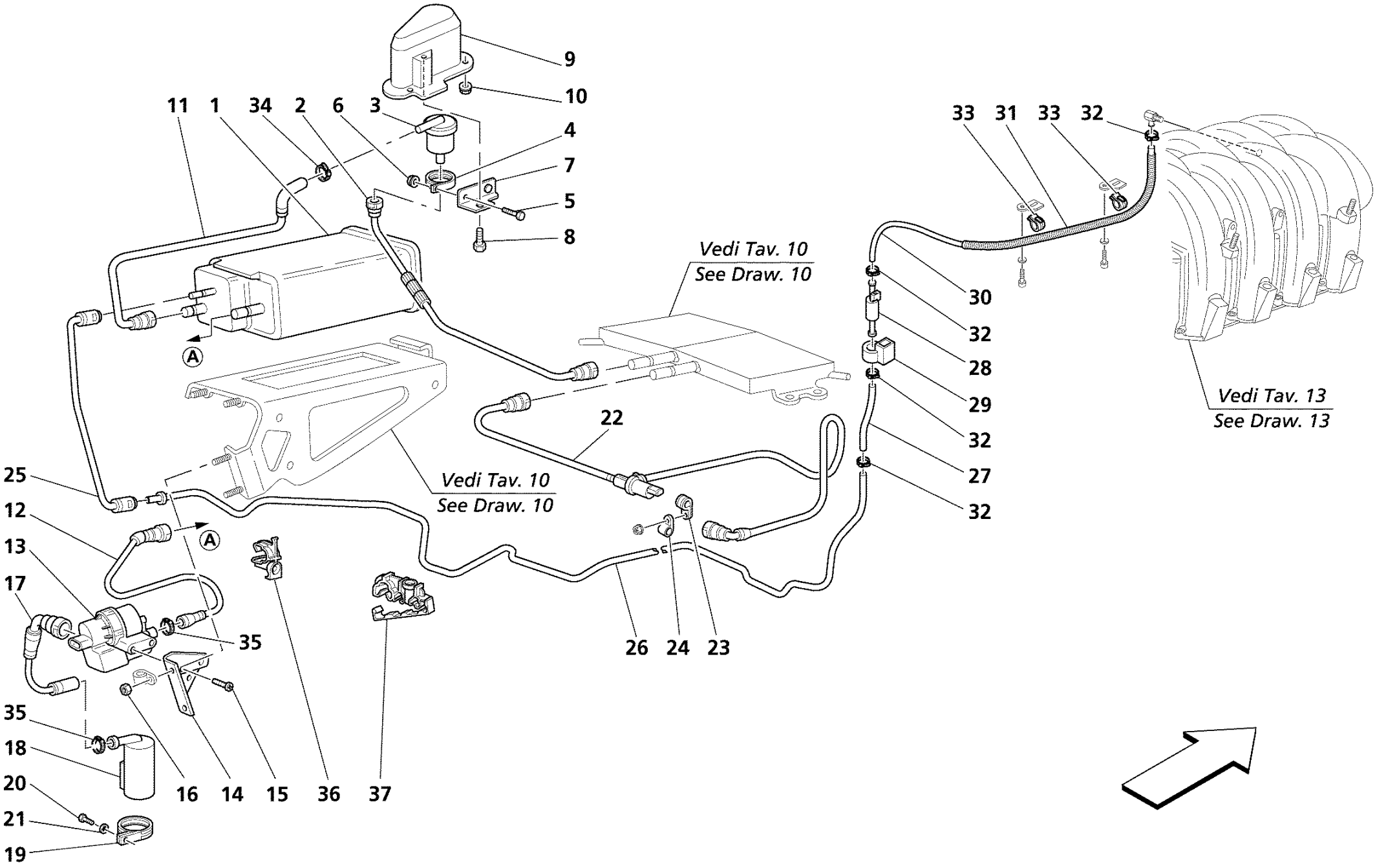
| | | | |
|---|---|---|---|
| 1 | 181205 | 1 | R.H. COMPLETE FUEL PUMP |
| 2 | 181204 | 1 | L.H. COMPLETE FUEL PUMP |
| 3 | 181681 | 2 | GASKET |
| 4 | 181682 | 2 | RING NUT |
| 5 | 197655 | 1 | R.H. FUEL DELIVERY TUBE<br>-Not for USA and CDN- |
| 6 | 197656 | 1 | L.H. FUEL DELIVERY TUBE<br>-Not for USA and CDN- |
| 7 | 187464 | 1 | PIPES PROTECTION BRACKET |
| 8 | 387400402 | 1 | GASKET |
| 9 | 10977824 | 2 | SCREW |
| 10 | 11181574 | 2 | WASHER |
| 11 | 14447025 | 2 | WASHER |
| 12 | 379200408 | - | CLIP<br>-(Quantity defined during<br>at assembly)- |
| 13 | 389200406 | 1 | CLIP |
| 14 | 191047 | 1 | CLIP |
| 15 | 379200408 | 3 | CLIP |
| 16 | 194747 | 1 | R.H. FUEL DELIVERY PIPE TO FLEXIBLE |
| 17 | 194748 | 1 | L.H. FUEL DELIVERY PIPE TO FLEXIBLE |
| 18 | 195052 | 2 | CLIP |
| 19 | 159521 | 1 | CLIP |
| 20 | 14059111 | 1 | NUT |
| 21 | 190410 | - | CLIP<br>-(Quantity defined during<br>at assembly)- |
| 22 | 193544 | 1 | COMPLETE FUEL DELIVERY TUBE<br>-Valid for USA and CDN- |


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Vedi Tav. 12 - See Draw. 12
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M138_G: GRANSPORT - 10 - FUEL TANKS AND UNION

| | | | |
|---|---|---|---|
| 1 | 181194 | 1 | FUEL TANK |
| | | | -Not for USA and CDN- |
| 1 | 193835 | 1 | FUEL TANK |
| | | | -Valid for USA and CDN- |
| 2 | 181206 | 2 | COMPLETE FLOAT VALVE |
| 3 | 195049 | 2 | GASKET FOR VALVE |
| 4 | 183430 | 1 | FUEL UNION |
| | | | -Not for USA and CDN- |
| 4 | 183431 | 1 | FUEL UNION |
| | | | -Valid for USA and CDN- |
| 5 | 182637 | 1 | UNION-TANK CONNECTING PIPE |
| | | | -Valid for USA and CDN- |
| 6 | 13000790 | 1 | SCREW COLLAR |
| | | | -Not for USA and CDN- |
| 7 | 13000590 | 2 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |
| 8 | 13000390 | 1 | SCREW COLLAR |
| | | | -Not for USA and CDN- |
| 9 | 182586 | 1 | VAPOR RECYCLING PIPE |
| | | | -Valid for USA and CDN- |
| 10 | 13432070 | 1 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |
| 11 | 183432 | 1 | FUEL TANK PLUG |
| 12 | 389200348 | 1 | GASKET |
| 13 | 13289277 | 4 | SCREW |
| 14 | 181209 | 1 | DISAREATOR |
| | | | -Not for USA and CDN- |
| 14 | 183011 | 1 | DISAREATOR |
| | | | -Valid for USA and CDN- |
| 15 | 12574211 | 4 | NUT |
| 16 | 127403 | 1 | RUBBER THICKNESS |
| 17 | 186510 | 1 | VAPOR FILTER SUPPORTING BRACKET |
| 18 | 11500024 | 3 | STUD |
| 19 | 12574211 | 3 | NUT |
| 20 | 10523424 | 3 | WASHER |
| 21 | 186512 | 1 | BRACKET FOR VAPOR FILTER FIXING |
| 22 | 184766 | 1 | RUBBER THICKNESS |
| 23 | 12574211 | 2 | NUT |
| 24 | 379200397 | 4 | ADHESIVE GASKET |
| 25 | 184208 | 2 | FUEL TANK FASTENER |
| 26 | 389200520 | 4 | PIN |
| 27 | 58841309 | 8 | SAFETY CLIP |
| 28 | 12648206 | 8 | WASHER |
| 29 | 184209 | 2 | FUEL TANK FASTENER |

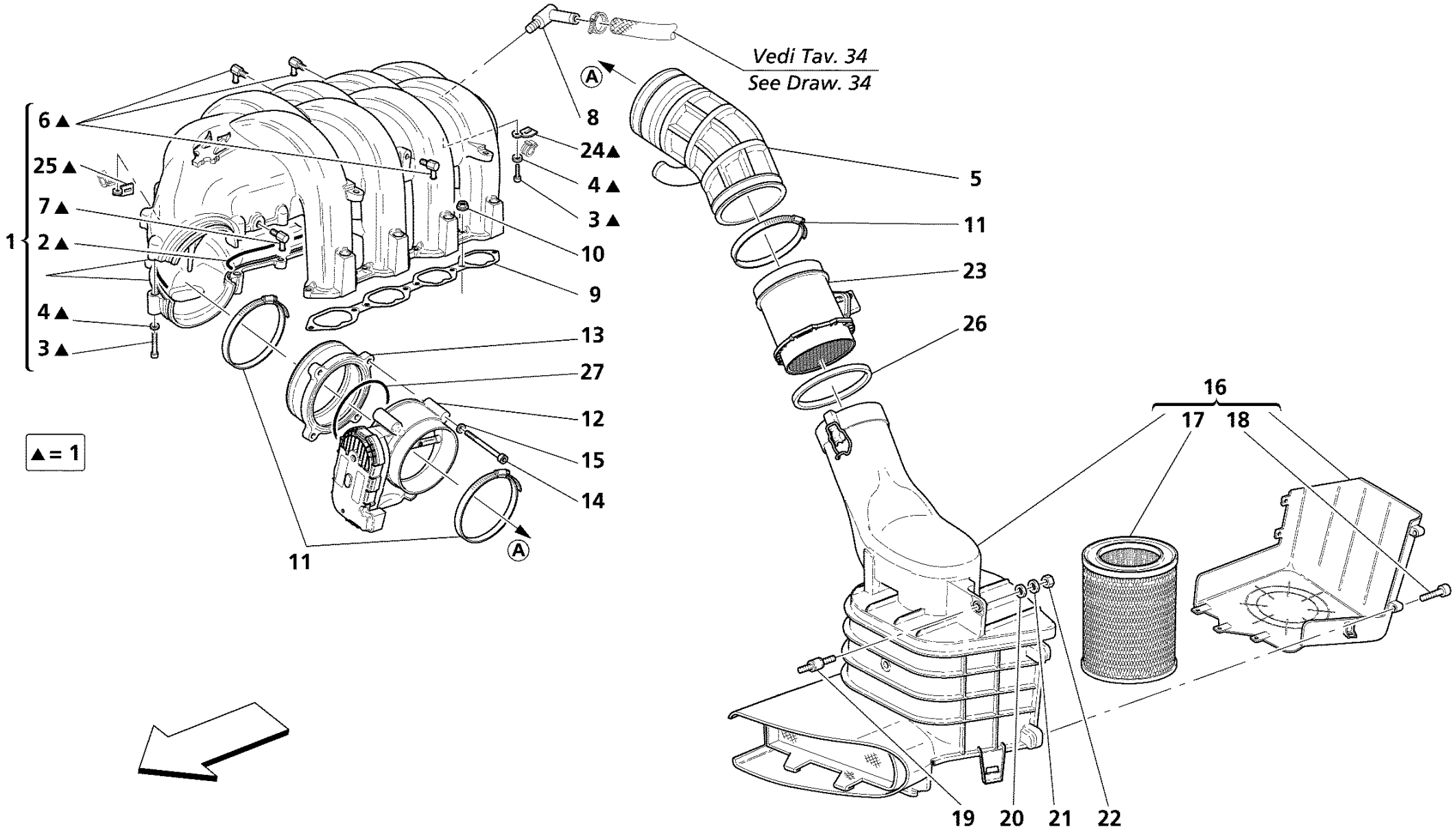
| | | | |
|---|---|---|---|
| 30 | 379200397 | 2 | ADHESIVE GASKET |
| 31 | 670000413 | 2 | ROD |
| 32 | 670000412 | 2 | ROD |
| 33 | 14306921 | 2 | SCREW |
| 34 | 10519624 | 2 | WASHER |
| 35 | 181929 | 1 | FUEL INTERCEPTION VALVE<br>-Valid for USA and CDN- |
| 36 | 181930 | 1 | CLIP<br>-Valid for USA and CDN- |


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Vedi Tav. 10
See Draw. 10
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Vedi Tav. 13
See Draw. 13
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Vedi Tav. 10
See Draw. 10
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M138_G: GRANSPORT - 12 - ANTIEVAPORATION DEVICE -Valid for USA and CDN-

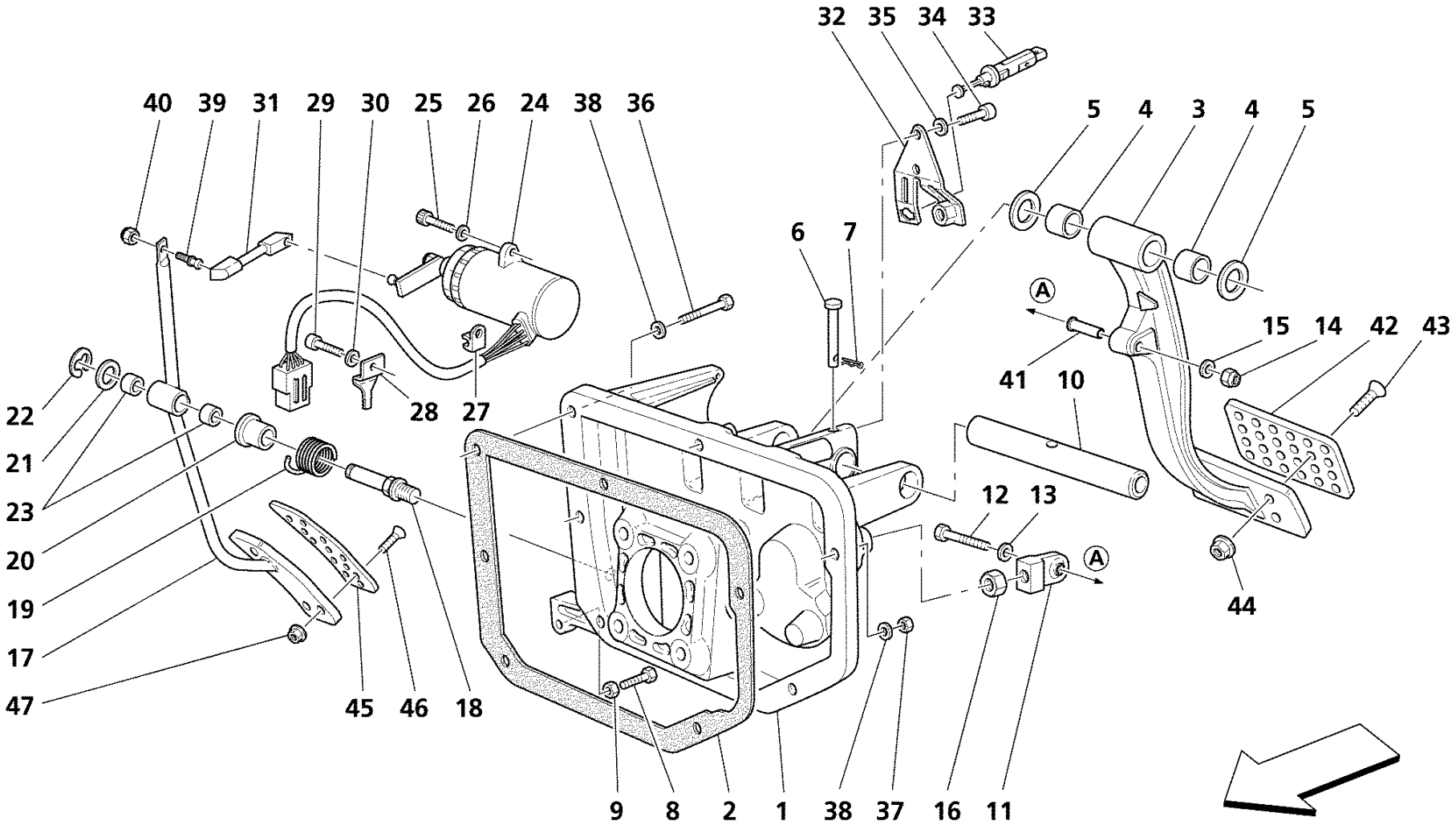
| | | | |
|---|---|---|---|
| 1 | 185135 | 1 | FUEL VAPOR FILTER |
| 2 | 181705 | 1 | PIPE FROM DISAREATOR TO ROLL-OVER |
| 3 | 180573 | 1 | ROLL-OVER VALVE |
| 4 | 66133600 | 1 | BRACKET WITH SHEATH |
| 5 | 10902424 | 1 | SCREW |
| 6 | 14084211 | 1 | NUT |
| 7 | 66132900 | 1 | ROLL-OVER VALVE FIXING BRACKET |
| 8 | 10979414 | 1 | SCREW |
| 9 | 66294500 | 1 | ROLL-OVER VALVE COVER |
| 10 | 14084211 | 3 | NUT |
| 11 | 181707 | 1 | PIPE FROM ROLL-OVER TO CANISTER |
| 12 | 181714 | 1 | PIPE FROM CANISTER TO PUMP |
| 13 | 185405 | 1 | DIAGNOSIS PUMP |
| 14 | 182381 | 1 | DIAGNOSIS PUMP FIXING BRACKET |
| 15 | 15958701 | 3 | SCREW |
| 16 | 12574211 | 2 | NUT |
| 17 | 186901 | 1 | PIPE FROM PUMP TO FILTER |
| 18 | 183221 | 1 | FILTER FOR OBD PUMP |
| 19 | 66244600 | 1 | BRACKET WITH SHEATH |
| 20 | 10977624 | 1 | SCREW |
| 21 | 12638104 | 1 | WASHER |
| 22 | 182585 | 1 | PIERBURG VALVE COMPLETE TUBE |
| 23 | 10442290 | 1 | BRACKET WITH SHEATH |
| 24 | 10440790 | 1 | BRACKET WITH SHEATH |
| 25 | 181712 | 1 | PIPE FROM CANISTER TO UNDERFLOOR |
| 26 | 190519 | 1 | COMPLETE UNDERFLOOR TUBE |
| 27 | 181703 | 1 | WASHING VALVE INLET TUBE |
| 28 | 180861 | 1 | WASHING VALVE |
| 29 | 174623 | 1 | BUFFER FOR SUPPORT |
| 30 | 181704 | 1 | WASHING VALVE OUTLET PIPE |
| 31 | 318720333 | - | PIPE<br>-Supplied in meters-<br>-(Minimum quantity 1m. or multiples)- |
| 32 | 13432070 | 4 | SCREW COLLAR |
| 33 | 178430 | 2 | CLIP |
| 34 | 13433370 | 1 | COLLAR FOR SLEEVE |
| 35 | 13000390 | 2 | SCREW COLLAR |
| 36 | 187840 | - | CLIP<br>-(Quantity defined during at assembly)- |
| 37 | 190409 | - | CLIP |

-(Quantity defined during
at assembly)-


Vedi Tav. 34
See Draw. 34
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M138_G: GRANSPORT - 13 - AIR INTAKE MANIFOLD

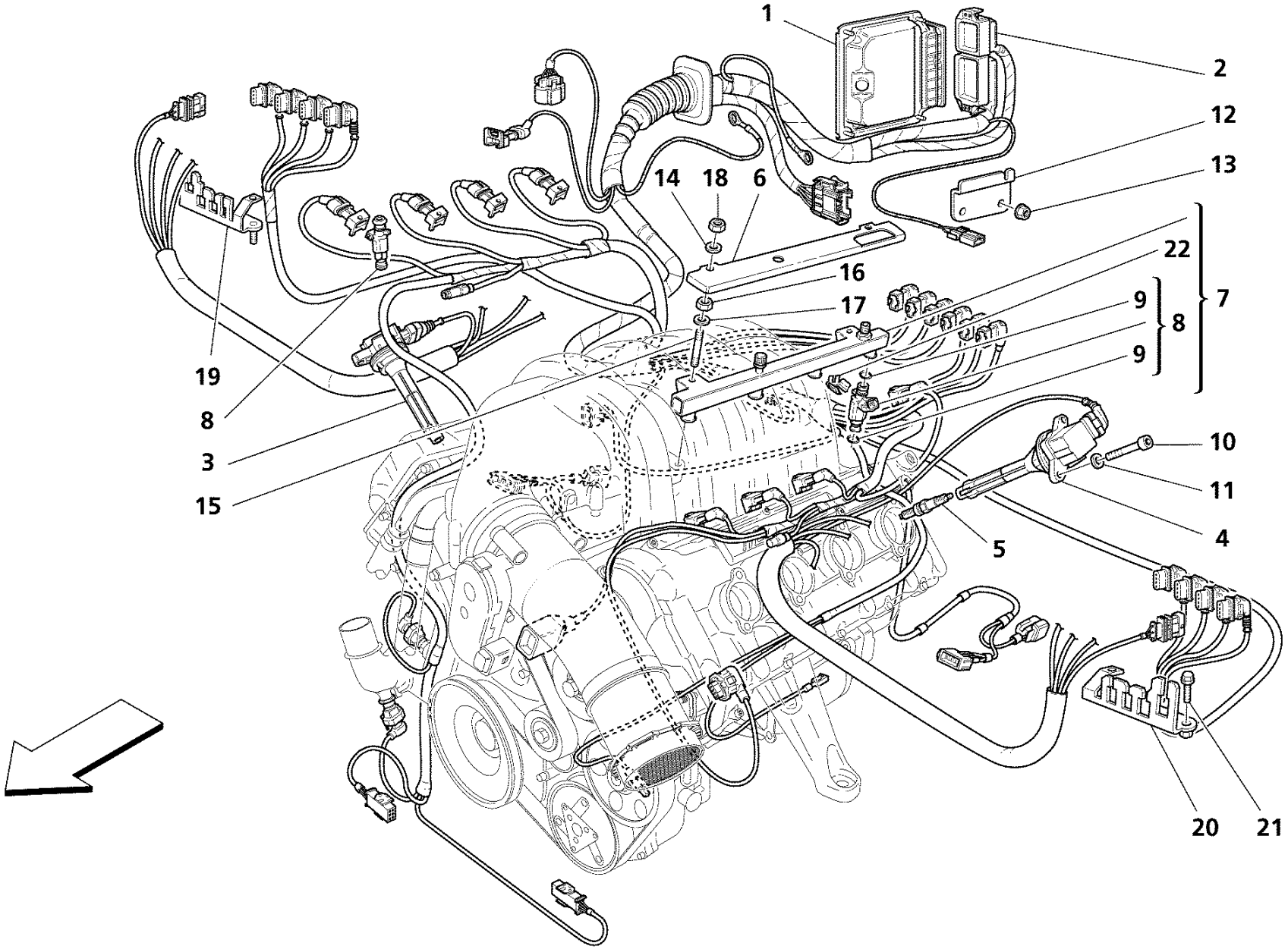
| | | | |
|---|---|---|---|
| 1 | 199039 | 1 | COMPLETE SUCTION MANIFOLD |
| 2 | 180830 | 1 | GASKET |
| 3 | 14441424 | 1 | SCREW<br>-M6X20- |
| 3 | 14432224 | 7 | SCREW<br>-M6X22- |
| 3 | 14305524 | 5 | SCREW<br>-M6X30- |
| 3 | 14305824 | 2 | SCREW<br>-M6X40- |
| 4 | 11197774 | 14 | WASHER |
| 5 | 180047 | 1 | SLEEVE |
| 6 | 128016 | 3 | THREADED UNION |
| 7 | 174818 | 1 | THREADED UNION |
| 8 | 124342 | 1 | THREADED UNION |
| 9 | 185824 | 2 | GASKET<br>-Supplied also in the cylinder heads gasket revision kit (cod. 980020001)- |
| 10 | 159601 | 16 | NUT |
| 11 | 190151 | 3 | CLAMP |
| 12 | 179912 | 1 | THROTTLE HOLDER |
| 13 | 195206 | 1 | SPACER |
| 14 | 14305924 | 4 | SCREW |
| 15 | 11197774 | 4 | WASHER |
| 16 | 196832 | 1 | COMPLETE FILTER BOX |
| 17 | 186183 | 1 | AIR FILTER |
| 18 | 184829 | 5 | SCREW |
| 19 | 184824 | 3 | PAD |
| 20 | 12643724 | 3 | WASHER |
| 21 | 12544274 | 3 | WASHER |
| 22 | 15896224 | 3 | NUT |
| 23 | 180045 | 1 | AIR FLOW METER |
| 24 | 190509 | 3 | PIPES SUPPORTING BRACKET |
| 25 | 191009 | 1 | PIPES SUPPORTING BRACKET |
| 26 | 193113 | 1 | GASKET |
| 27 | 150302 | 1 | O.R. GASKET |


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M138_G: GRANSPORT - 23 - PEDALS AND ELECTRONIC ACCELERATOR CONTROL -Not for GD-

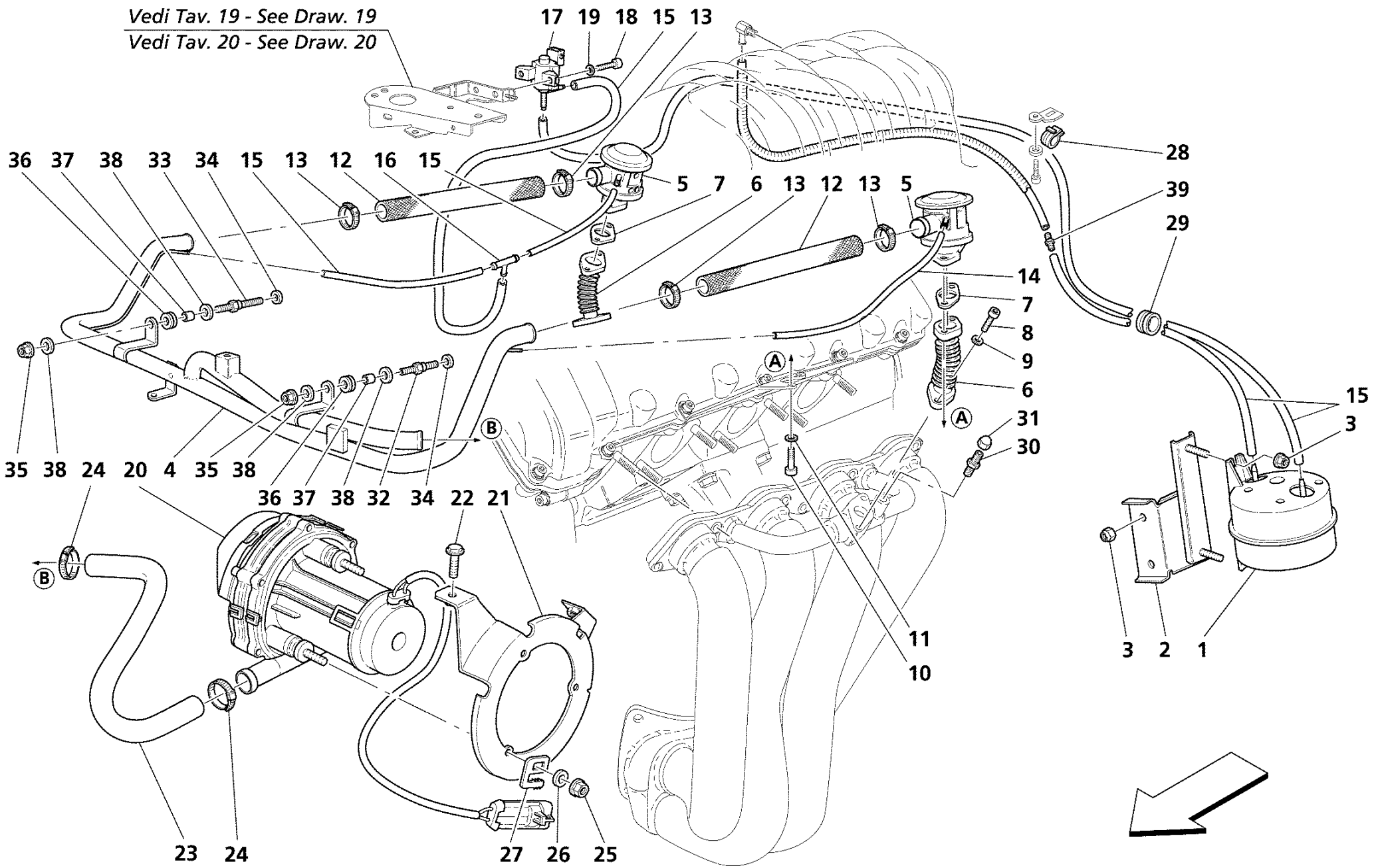
| | | | |
|---|---|---|---|
| 1 | 185180 | 1 | PEDAL SUPPORT |
| 2 | 378400348 | 1 | SUPPORT GASKET |
| 3 | 201988 | 1 | BRAKE PEDAL |
| 4 | 318420320 | 2 | BUSHING |
| 5 | 368402321 | 2 | SPACER WASHER |
| 6 | 186665 | 1 | PEDALS FIXING PIN |
| 7 | 58841309 | 1 | SAFETY CLIP |
| 8 | 10902224 | 1 | SCREW FOR END OF STROKE |
| 9 | 15896221 | 1 | NUT |
| 10 | 388400329 | 1 | PEDALS SUPPORT PIN |
| 11 | 184749 | 1 | SERVOBRAKE PIN |
| 12 | 16044421 | 1 | SCREW |
| 13 | 12654421 | 1 | WASHER |
| 14 | 147985 | 1 | NUT |
| 15 | 14499401 | 1 | WASHER |
| 16 | 16102324 | 1 | NUT |
| 17 | 201977 | 1 | ACCELERATOR PEDAL |
| 18 | 186666 | 1 | ACCELERATOR PEDAL PIN |
| 19 | 388400364 | 1 | RETUTN SPRING FOR PEDAL |
| 20 | 388400407 | 1 | BUSHING |
| 21 | 388400346 | 1 | WASHER |
| 22 | 11088076 | 1 | FLEXIBLE RING |
| 23 | 318420334 | 2 | BUSHING |
| 24 | 183656 | 1 | ACCELERATOR PEDAL POTENTIOMETER |
| 25 | 14433121 | 2 | SCREW |
| 26 | 12601274 | 2 | WASHER |
| 27 | 383000318 | 1 | RETAINING CLIP |
| 28 | 383000315 | 1 | PLATE |
| 29 | 14305121 | 1 | SCREW |
| 30 | 12601274 | 1 | WASHER |
| 31 | 82476740 | 1 | ACCELERATOR PEDALTIE ROD |
| 32 | 194452 | 1 | SWITCH SUPPORT BRACKET |
| 33 | 183433 | 1 | BRAKE PEDAL SWITCH |
| 34 | 14305121 | 2 | SCREW |
| 35 | 127494 | 2 | WASHER |
| 36 | 16044124 | 4 | SCREW |
| 37 | 16104421 | 3 | NUT |
| 38 | 14496521 | 7 | WASHER |
| 39 | 318420305 | 1 | BALL PIN |
| 40 | 14075611 | 1 | NUT |
| 41 | 189472 | 1 | BUSHING |
| 42 | 201103 | 1 | BRAKE PEDAL PLATE |
| 43 | 14441324 | 4 | SCREW |
| 44 | 14058411 | 4 | NUT |
| 45 | 205025 | 1 | ACCELERATOR PEDAL PLATE |

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|---|---|---|---|
| 46 | 14440734 | 3 | SCREW |
| 47 | 14058311 | 3 | NUT |


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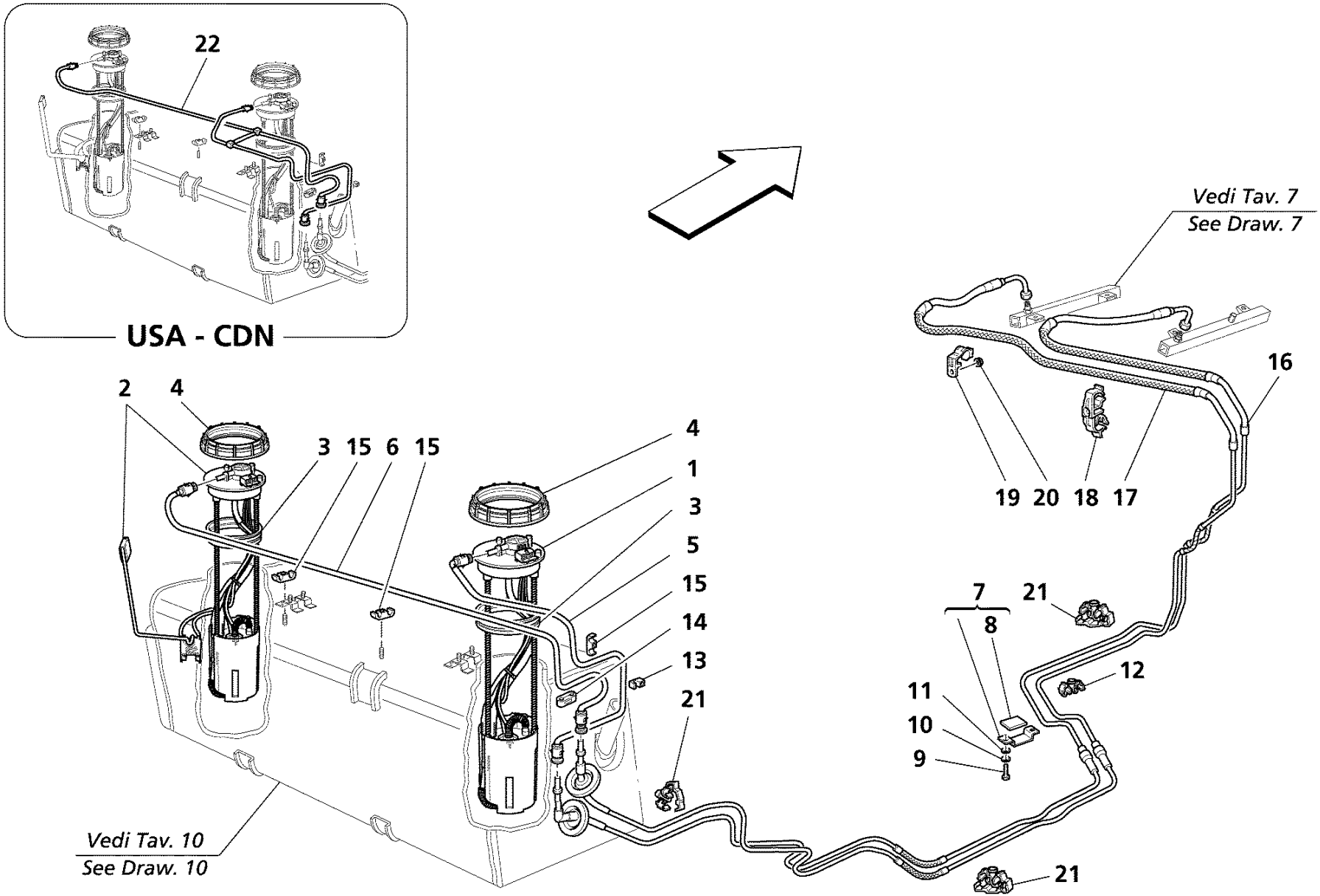
M138_C: Coupè M.Y.2005 - 7 - INJECTION DEVICE - IGNITION

| | | | |
|---|---|---|---|
| 1 | 980138139 | 1 | CONTROL UNIT IGNITION<br>-Programmable- |
| 2 | 200103 | 1 | INJECTION DEVICE CABLES<br>-Not for F1-<br>-Not for USA, CDN and GD- |
| 2 | 206640 | 1 | INJECTION DEVICE CABLES<br>-Not for F1-<br>-Valid for USA and CDN- |
| 2 | 200104 | 1 | INJECTION DEVICE CABLES<br>-Not for F1-<br>-Valid for GD- |
| 2 | 209651 | 1 | INJECTION DEVICE CABLES<br>-Valid for F1-<br>-Not for USA, CDN and GD- |
| 2 | 209653 | 1 | INJECTION DEVICE CABLES<br>-Valid for F1-<br>-Valid for USA and CDN- |
| 2 | 209652 | 1 | INJECTION DEVICE CABLES<br>-Valid for F1-<br>-Valid for GD- |
| 3 | 188504 | 4 | FRONT IGNITION COIL<br>-Complete of cable- |
| 4 | 186914 | 4 | REAR IGNITION COIL<br>-Complete of cable- |
| 5 | 168325 | 8 | SPARK PLUG |
| 6 | 189124 | 1 | L.H. FLAUTES FUEL COVER |
| 6 | 189123 | 1 | R.H. FLAUTES FUEL COVER |
| 7 | 197846 | 1 | COMPLETE R.H. INJECTORS PIPE |
| 7 | 197845 | 1 | COMPLETE L.H. INJECTORS PIPE |
| 8 | 197808 | 8 | ELECTRO-INJECTOR |
| 9 | 133902 | 16 | O.R. GASKET |
| 10 | 201599 | 16 | SCREW |
| 11 | 11197774 | 16 | WASHER |
| 12 | 66313100 | 1 | MOTRONIC BRACKET |
| 13 | 14084211 | 2 | NUT |
| 14 | 11193874 | 4 | WASHER |
| 15 | 13516924 | 4 | STUD |
| 16 | 16102314 | 4 | NUT |
| 17 | 12604474 | 4 | WASHER |
| 18 | 14042321 | 4 | CAP NUT |
| 19 | 190009 | 1 | R.H. BRACKET FOR COIL CABLES |
| 20 | 190010 | 1 | L.H. BRACKET FOR COIL CABLES |
| 21 | 18750121 | 2 | SCREW |
| 22 | 144730 | 8 | INJECTORS RETAINING CLIP |


Vedi Tav. 19 - See Draw. 19
Vedi Tav. 20 - See Draw. 20
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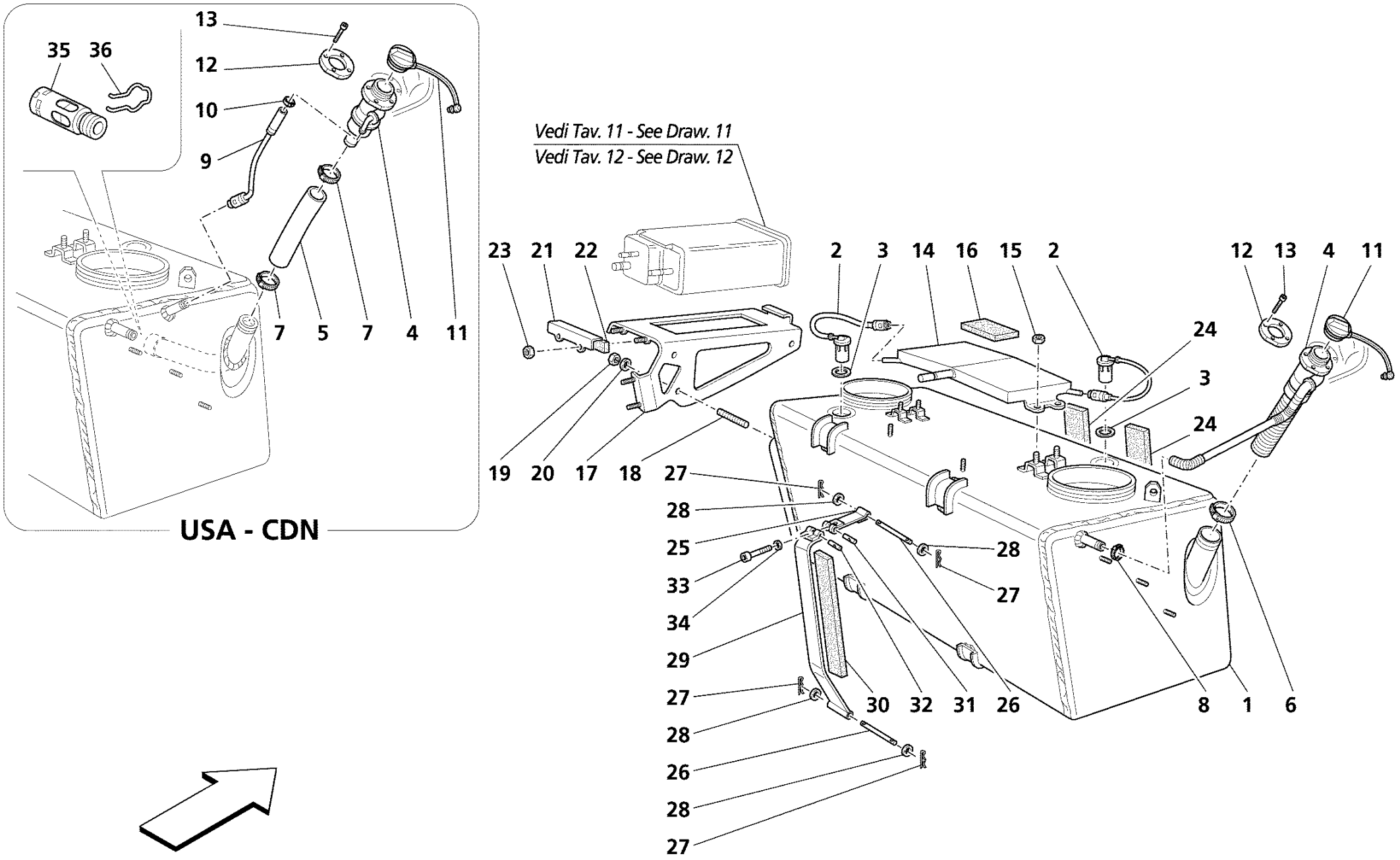
M138_C: Coupè M.Y.2005 - 8 - SECONDARY AIR SYSTEM

| | | | |
|---|---|---|---|
| 1 | 330328400 | 1 | VACUUM TANK |
| 2 | 66425700 | 1 | BRACKET |
| 3 | 14059211 | 4 | NUT |
| 4 | 195066 | 1 | AIR DELIVERY TUBE TO VALVES |
| | | | -Not for GD- |
| 4 | 195065 | 1 | AIR DELIVERY TUBE TO VALVES |
| | | | -Valid for GD- |
| 5 | 171175 | 2 | SECONDARY AIR VALVE |
| 6 | 186274 | 2 | SECONDARY AIR VALVE PIPE |
| 7 | 186781 | 4 | GASKET |
| 8 | 14305724 | 4 | SCREW |
| 9 | 127494 | 4 | WASHER |
| 10 | 14433124 | 4 | SCREW |
| 11 | 127494 | 4 | WASHER |
| 12 | 155116 | 2 | SLEEVE |
| 13 | 178054 | 4 | CLAMP |
| 14 | 147125 | 1 | L.H. RUBBER HOSE |
| 15 | 318720329 | - | RUBBER HOSE |
| | | | -Supplied in meters- |
| | | | -(Minimum quantity 1m. or multiples)- |
| 16 | 146972 | 1 | 3-WAY UNION |
| 17 | 184363 | 1 | SOLENOID VALVE |
| 18 | 14304224 | 2 | SCREW |
| 19 | 12601174 | 2 | WASHER |
| 20 | 181197 | 1 | SECONDARY AIR PUMP |
| 21 | 184837 | 1 | BRACKET |
| 22 | 16296924 | 2 | SCREW |
| 23 | 190992 | 1 | STUD |
| 24 | 178054 | 2 | CLAMP |
| 25 | 102948 | 3 | NUT |
| 26 | 12601274 | 3 | WASHER |
| 27 | 162606 | 1 | CLIP |
| 28 | 159740 | 1 | CLIP |
| 29 | 388100423 | 1 | RUBBER |
| 30 | 152630 | 2 | THREADED UNION |
| 31 | 150595 | 2 | CAP NUT |
| 32 | 194436 | 1 | STUD |
| 33 | 194437 | 1 | STUD |
| 34 | 11197774 | 2 | WASHER |
| 35 | 159601 | 2 | NUT |
| 36 | 315520375 | 2 | SUPPORT |
| 37 | 397850624 | 2 | SPACER |
| 38 | 14498801 | 4 | WASHER |
| 39 | 313620303 | 1 | UNION |


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USA - CDN
Vedi Tav. 7
See Draw. 7
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Vedi Tav. 10
See Draw. 10

M138_C: Coupè M.Y.2005 - 9 - FUEL PUMP AND PIPES

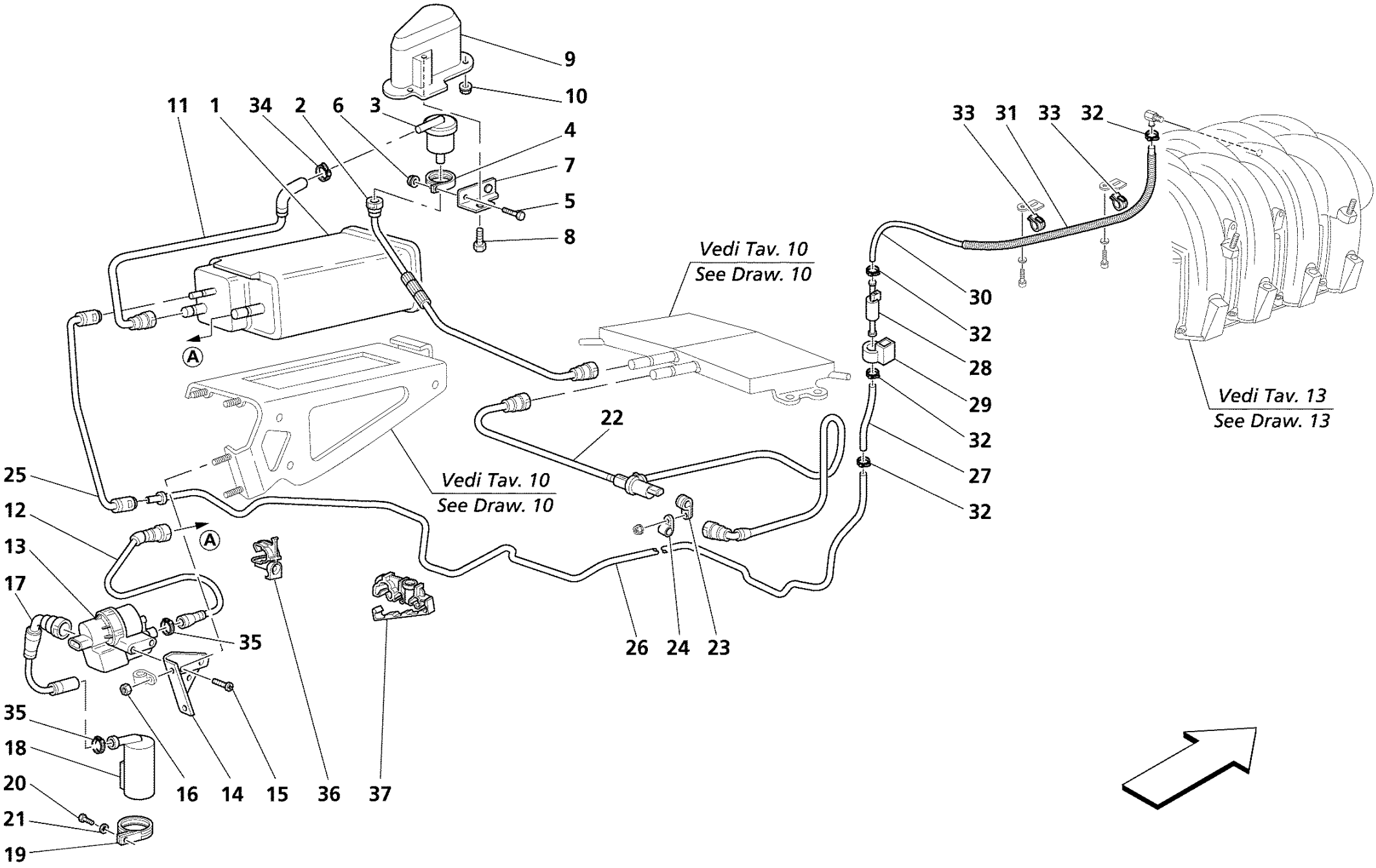
| | | | |
|---|---|---|---|
| 1 | 181205 | 1 | R.H. COMPLETE FUEL PUMP |
| 2 | 181204 | 1 | L.H. COMPLETE FUEL PUMP |
| 3 | 181681 | 2 | GASKET |
| 4 | 181682 | 2 | RING NUT |
| 5 | 197655 | 1 | R.H. FUEL DELIVERY TUBE<br>-Not for USA and CDN- |
| 6 | 197656 | 1 | L.H. FUEL DELIVERY TUBE<br>-Not for USA and CDN- |
| 7 | 187464 | 1 | PIPES PROTECTION BRACKET |
| 8 | 387400402 | 1 | GASKET |
| 9 | 10977824 | 2 | SCREW |
| 10 | 11181574 | 2 | WASHER |
| 11 | 14447025 | 2 | WASHER |
| 12 | 379200408 | - | CLIP<br>-(Quantity defined during<br>at assembly)- |
| 13 | 389200406 | 1 | CLIP |
| 14 | 191047 | 1 | CLIP |
| 15 | 379200408 | 3 | CLIP |
| 16 | 194747 | 1 | R.H. FUEL DELIVERY PIPE TO FLEXIBLE |
| 17 | 194748 | 1 | L.H. FUEL DELIVERY PIPE TO FLEXIBLE |
| 18 | 195052 | 2 | CLIP |
| 19 | 159521 | 1 | CLIP |
| 20 | 14059111 | 1 | NUT |
| 21 | 190410 | - | CLIP<br>-(Quantity defined during<br>at assembly)- |
| 22 | 193544 | 1 | COMPLETE FUEL DELIVERY TUBE<br>-Valid for USA and CDN- |


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USA - CDN
Vedi Tav. 11 - See Draw. 11
Vedi Tav. 12 - See Draw. 12
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M138_C: Coupè M.Y.2005 - 10 - FUEL TANKS AND UNION

| | | | |
|---|---|---|---|
| 1 | 181194 | 1 | FUEL TANK |
| | | | -Not for USA and CDN- |
| 1 | 193835 | 1 | FUEL TANK |
| | | | -Valid for USA and CDN- |
| 2 | 181206 | 2 | COMPLETE FLOAT VALVE |
| 3 | 195049 | 2 | GASKET FOR VALVE |
| 4 | 183430 | 1 | FUEL UNION |
| | | | -Not for USA and CDN- |
| 4 | 183431 | 1 | FUEL UNION |
| | | | -Valid for USA and CDN- |
| 5 | 182637 | 1 | UNION-TANK CONNECTING PIPE |
| | | | -Valid for USA and CDN- |
| 6 | 13000790 | 1 | SCREW COLLAR |
| | | | -Not for USA and CDN- |
| 7 | 13000590 | 2 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |
| 8 | 13000390 | 1 | SCREW COLLAR |
| | | | -Not for USA and CDN- |
| 9 | 182586 | 1 | VAPOR RECYCLING PIPE |
| | | | -Valid for USA and CDN- |
| 10 | 13432070 | 1 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |
| 11 | 183432 | 1 | FUEL TANK PLUG |
| 12 | 389200348 | 1 | GASKET |
| 13 | 13289277 | 4 | SCREW |
| 14 | 181209 | 1 | DISAREATOR |
| | | | -Not for USA and CDN- |
| 14 | 183011 | 1 | DISAREATOR |
| | | | -Valid for USA and CDN- |
| 15 | 12574211 | 4 | NUT |
| 16 | 127403 | 1 | RUBBER THICKNESS |
| 17 | 186510 | 1 | VAPOR FILTER SUPPORTING BRACKET |
| 18 | 11500024 | 3 | STUD |
| 19 | 12574211 | 3 | NUT |
| 20 | 10523424 | 3 | WASHER |
| 21 | 186512 | 1 | BRACKET FOR VAPOR FILTER FIXING |
| 22 | 184766 | 1 | RUBBER THICKNESS |
| 23 | 12574211 | 2 | NUT |
| 24 | 379200397 | 4 | ADHESIVE GASKET |
| 25 | 184208 | 2 | FUEL TANK FASTENER |
| 26 | 389200520 | 4 | PIN |
| 27 | 58841309 | 8 | SAFETY CLIP |
| 28 | 12648206 | 8 | WASHER |
| 29 | 184209 | 2 | FUEL TANK FASTENER |

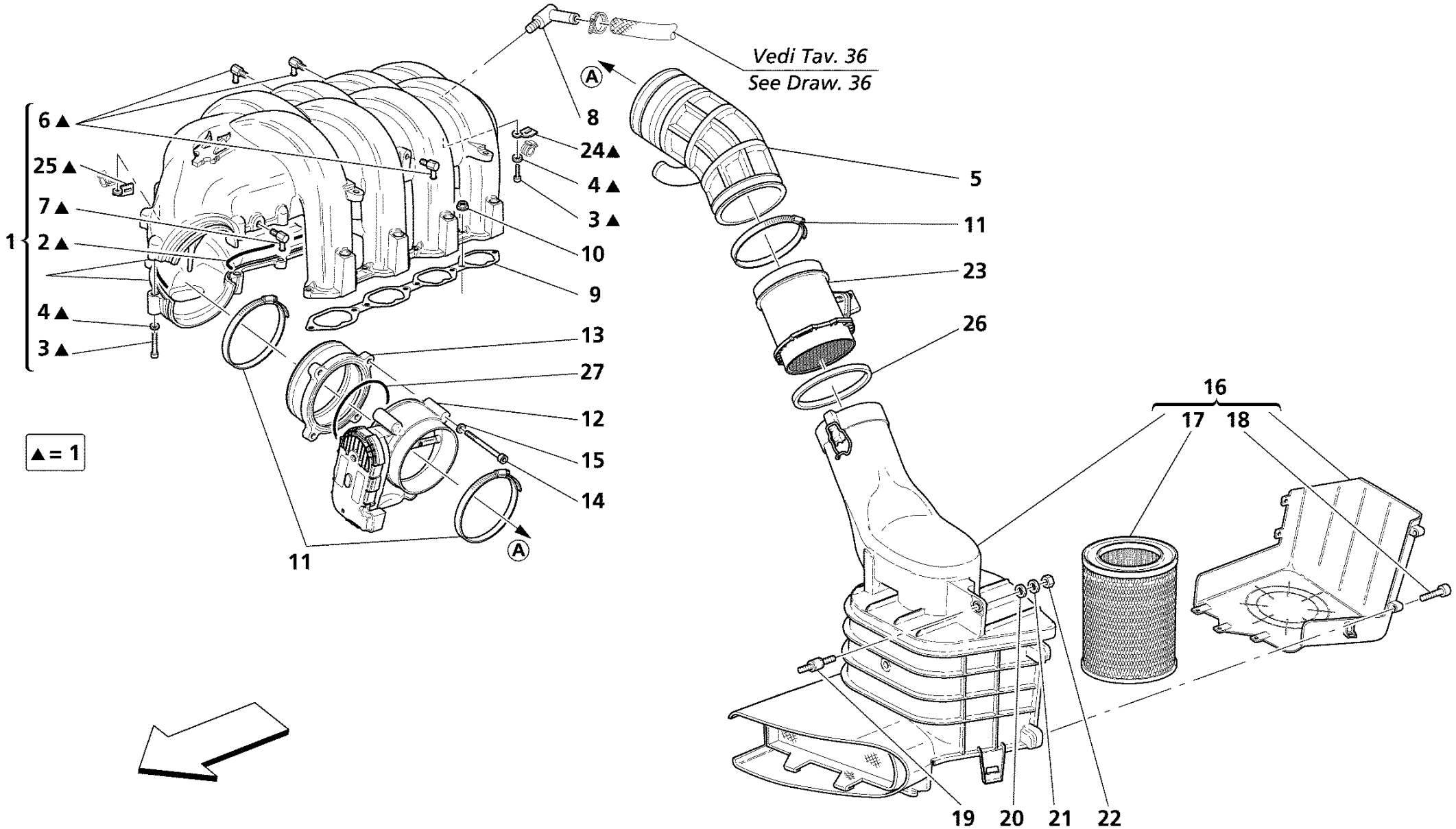
| | | | |
|---|---|---|---|
| 30 | 379200397 | 2 | ADHESIVE GASKET |
| 31 | 670000413 | 2 | ROD |
| 32 | 670000412 | 2 | ROD |
| 33 | 14306921 | 2 | SCREW |
| 34 | 10519624 | 2 | WASHER |
| 35 | 181929 | 1 | FUEL INTERCEPTION VALVE<br>-Valid for USA and CDN- |
| 36 | 181930 | 1 | CLIP<br>-Valid for USA and CDN- |


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Vedi Tav. 10
See Draw. 10
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Vedi Tav. 13
See Draw. 13
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Vedi Tav. 10
See Draw. 10
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M138_C: Coupè M.Y.2005 - 12 - ANTIEVAPORATION DEVICE -Valid for USA and CDN-

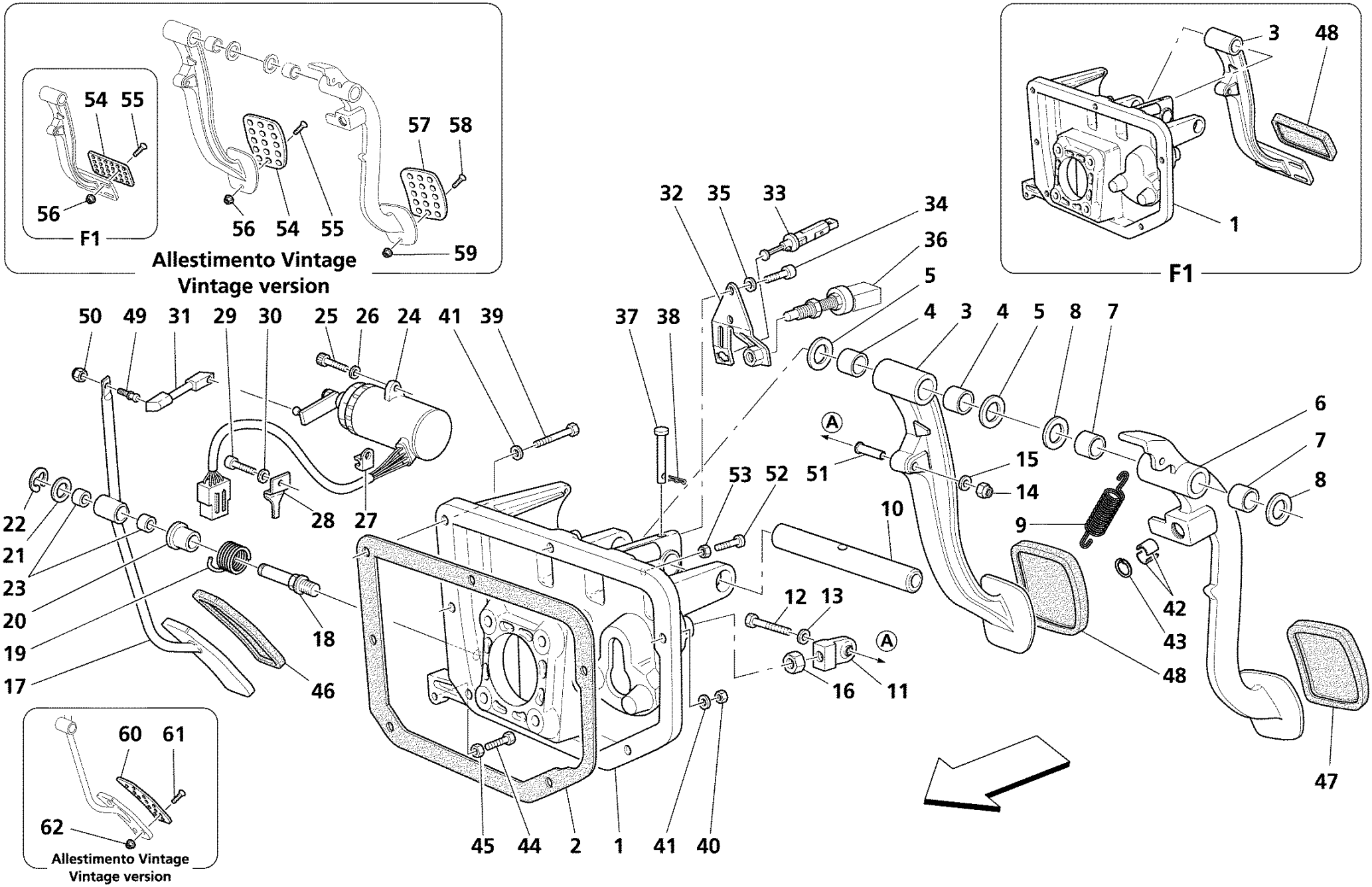
| | | | |
|---|---|---|---|
| 1 | 185135 | 1 | FUEL VAPOR FILTER |
| 2 | 181705 | 1 | PIPE FROM DISAREATOR TO ROLL-OVER |
| 3 | 180573 | 1 | ROLL-OVER VALVE |
| 4 | 66133600 | 1 | BRACKET WITH SHEATH |
| 5 | 10902424 | 1 | SCREW |
| 6 | 14084211 | 1 | NUT |
| 7 | 66132900 | 1 | ROLL-OVER VALVE FIXING BRACKET |
| 8 | 10979414 | 1 | SCREW |
| 9 | 66294500 | 1 | ROLL-OVER VALVE COVER |
| 10 | 14084211 | 3 | NUT |
| 11 | 181707 | 1 | PIPE FROM ROLL-OVER TO CANISTER |
| 12 | 181714 | 1 | PIPE FROM CANISTER TO PUMP |
| 13 | 185405 | 1 | DIAGNOSIS PUMP |
| 14 | 182381 | 1 | DIAGNOSIS PUMP FIXING BRACKET |
| 15 | 15958701 | 3 | SCREW |
| 16 | 12574211 | 2 | NUT |
| 17 | 186901 | 1 | PIPE FROM PUMP TO FILTER |
| 18 | 183221 | 1 | FILTER FOR OBD PUMP |
| 19 | 66244600 | 1 | BRACKET WITH SHEATH |
| 20 | 10977624 | 1 | SCREW |
| 21 | 12638104 | 1 | WASHER |
| 22 | 182585 | 1 | PIERBURG VALVE COMPLETE TUBE |
| 23 | 10442290 | 1 | BRACKET WITH SHEATH |
| 24 | 10440790 | 1 | BRACKET WITH SHEATH |
| 25 | 181712 | 1 | PIPE FROM CANISTER TO UNDERFLOOR |
| 26 | 190519 | 1 | COMPLETE UNDERFLOOR TUBE |
| 27 | 181703 | 1 | WASHING VALVE INLET TUBE |
| 28 | 180861 | 1 | WASHING VALVE |
| 29 | 174623 | 1 | BUFFER FOR SUPPORT |
| 30 | 181704 | 1 | WASHING VALVE OUTLET PIPE |
| 31 | 318720333 | - | PIPE<br>-Supplied in meters-<br>-(Minimum quantity 1m. or multiples)- |
| 32 | 13432070 | 4 | SCREW COLLAR |
| 33 | 178430 | 2 | CLIP |
| 34 | 13433370 | 1 | COLLAR FOR SLEEVE |
| 35 | 13000390 | 2 | SCREW COLLAR |
| 36 | 187840 | - | CLIP<br>-(Quantity defined during at assembly)- |
| 37 | 190409 | - | CLIP |

-(Quantity defined during
at assembly)-


Vedi Tav. 36
See Draw. 36
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M138_C: Coupè M.Y.2005 - 13 - AIR INTAKE MANIFOLD

| | | | |
|---|---|---|---|
| 1 | 199039 | 1 | COMPLETE SUCTION MANIFOLD |
| 2 | 180830 | 1 | GASKET |
| 3 | 14441424 | 1 | SCREW<br>-M6X20- |
| 3 | 14432224 | 7 | SCREW<br>-M6X22- |
| 3 | 14305524 | 5 | SCREW<br>-M6X30- |
| 3 | 14305824 | 2 | SCREW<br>-M6X40- |
| 4 | 11197774 | 14 | WASHER |
| 5 | 180047 | 1 | SLEEVE |
| 6 | 128016 | 3 | THREADED UNION |
| 7 | 174818 | 1 | THREADED UNION |
| 8 | 124342 | 1 | THREADED UNION |
| 9 | 185824 | 2 | GASKET<br>-Supplied also in the cylinder heads gasket revision kit (cod. 980020001)- |
| 10 | 159601 | 16 | NUT |
| 11 | 190151 | 3 | CLAMP |
| 12 | 179912 | 1 | THROTTLE HOLDER |
| 13 | 195206 | 1 | SPACER |
| 14 | 14305924 | 4 | SCREW |
| 15 | 11197774 | 4 | WASHER |
| 16 | 196832 | 1 | COMPLETE FILTER BOX |
| 17 | 186183 | 1 | AIR FILTER |
| 18 | 184829 | 5 | SCREW |
| 19 | 184824 | 3 | PAD |
| 20 | 12643724 | 3 | WASHER |
| 21 | 12544274 | 3 | WASHER |
| 22 | 15896224 | 3 | NUT |
| 23 | 180045 | 1 | AIR FLOW METER |
| 24 | 190509 | 3 | PIPES SUPPORTING BRACKET |
| 25 | 191009 | 1 | PIPES SUPPORTING BRACKET |
| 26 | 193113 | 1 | GASKET |
| 27 | 150302 | 1 | O.R. GASKET |

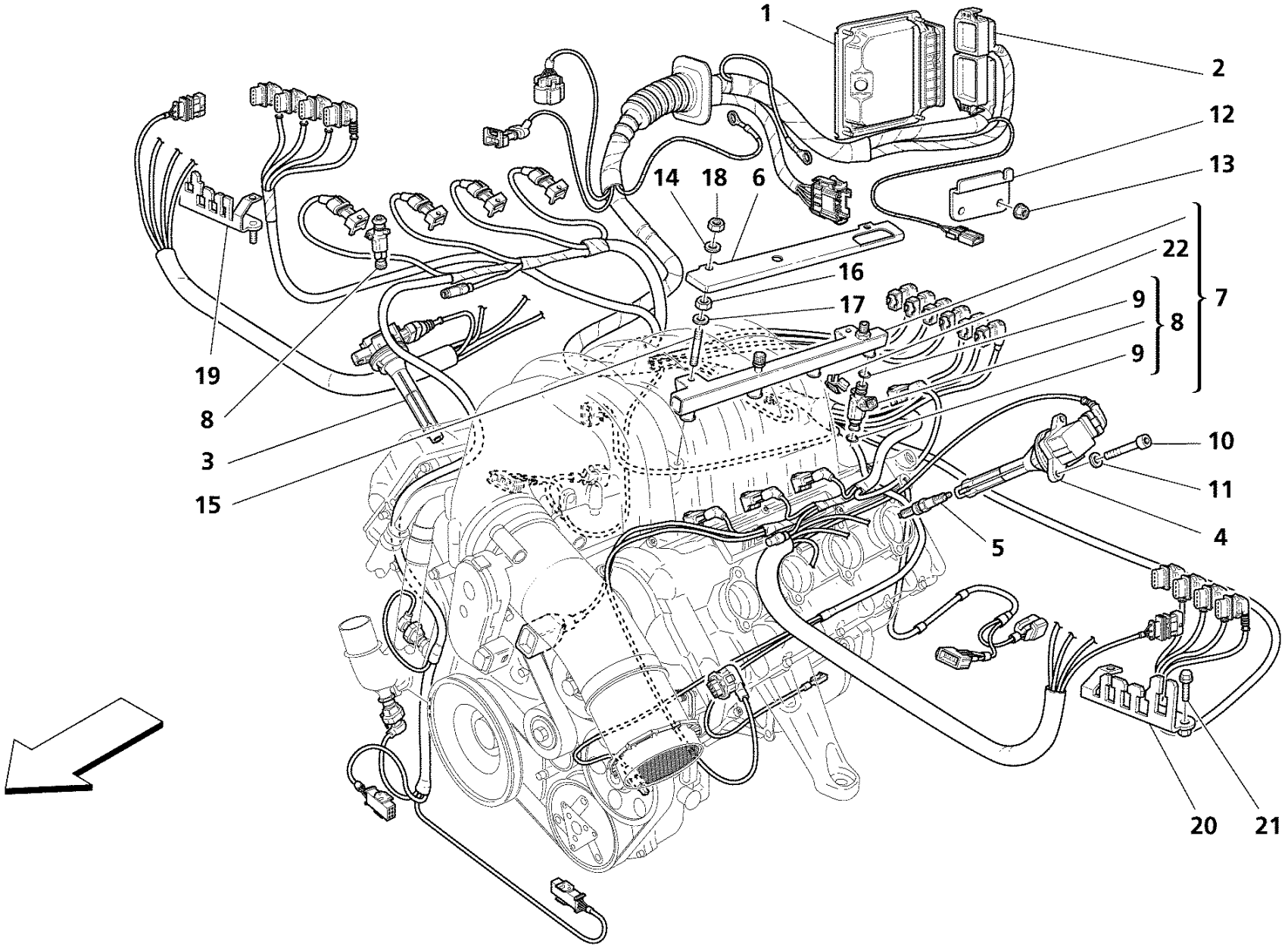

F1
Allestimento Vintage
Vintage version
F1
Allestimento Vintage
Vintage version

M138_C: Coupè M.Y.2005 - 24 - PEDALS AND ELECTRONIC ACCELERATOR CONTROL -Not for GD-

| | | | |
|---|---|---|---|
| 1 | 183743 | 1 | PEDAL SUPPORT<br>-Not for F1- |
| 1 | 185180 | 1 | PEDAL SUPPORT<br>-Valid for F1- |
| 2 | 378400348 | 1 | SUPPORT GASKET |
| 3 | 186859 | 1 | BRAKE PEDAL<br>-Not for F1-<br>-Standard- |
| 3 | 201972 | 1 | BRAKE PEDAL<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 3 | 186861 | 1 | BRAKE PEDAL<br>-Valid for F1-<br>-Standard- |
| 3 | 201988 | 1 | BRAKE PEDAL<br>-Valid for F1-<br>-Optional-<br>-Vintage version- |
| 4 | 318420320 | 2 | BUSHING |
| 5 | 368402321 | 2 | SPACER WASHER |
| 6 | 186862 | 1 | CLUTCH PEDAL<br>-Not for F1-<br>-Standard- |
| 6 | 201986 | 1 | CLUTCH PEDAL<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 7 | 318420320 | 2 | BUSHING<br>-Not for F1- |
| 8 | 368402321 | 2 | SPACER WASHER<br>-Not for F1- |
| 9 | 101305 | 1 | RETUTN SPRING FOR PEDAL<br>-Not for F1- |
| 10 | 388400329 | 1 | PEDALS SUPPORT PIN |
| 11 | 184749 | 1 | SERVOBRAKE PIN |
| 12 | 16044421 | 1 | SCREW |
| 13 | 12654421 | 1 | WASHER |
| 14 | 147985 | 1 | NUT |
| 15 | 14499401 | 1 | WASHER |
| 16 | 16102324 | 1 | NUT |
| 17 | 192592 | 1 | ACCELERATOR PEDAL<br>-Standard- |
| 17 | 201977 | 1 | ACCELERATOR PEDAL<br>-Optional-<br>-Vintage version- |

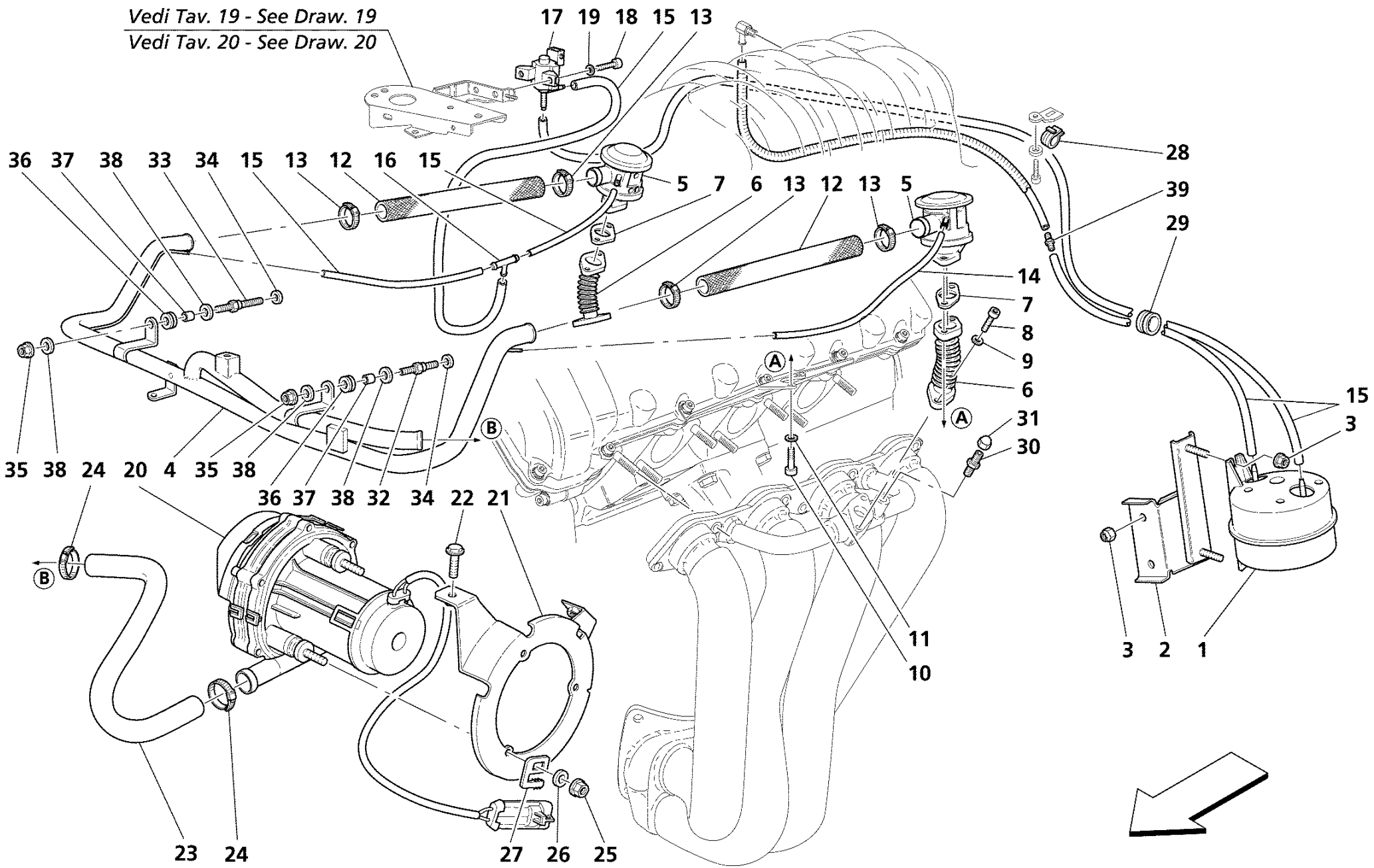
| | | | |
|---|---|---|---|
| 18 | 186666 | 1 | ACCELERATOR PEDAL PIN |
| 19 | 388400364 | 1 | RETUTN SPRING FOR PEDAL |
| 20 | 388400407 | 1 | BUSHING |
| 21 | 388400346 | 1 | WASHER |
| 22 | 11088076 | 1 | FLEXIBLE RING |
| 23 | 318420334 | 2 | BUSHING |
| 24 | 183656 | 1 | ACCELERATOR PEDAL POTENTIOMETER |
| 25 | 14432221 | 2 | SCREW -Not for F1- |
| 25 | 14433121 | 2 | SCREW -Valid for F1- |
| 26 | 12601274 | 2 | WASHER |
| 27 | 383000318 | 1 | RETAINING CLIP |
| 28 | 383000315 | 1 | PLATE |
| 29 | 14305121 | 1 | SCREW |
| 30 | 12601274 | 1 | WASHER |
| 31 | 82476740 | 1 | ACCELERATOR PEDALTIE ROD |
| 32 | 194452 | 1 | SWITCH SUPPORT BRACKET |
| 33 | 183433 | 1 | BRAKE PEDAL SWITCH |
| 34 | 14305121 | 2 | SCREW |
| 35 | 127494 | 2 | WASHER |
| 36 | 133555 | 1 | CLUTCH PEDAL SWITCH -Not for F1- |
| 37 | 186665 | 1 | PEDALS FIXING PIN |
| 38 | 58841309 | 1 | SAFETY CLIP |
| 39 | 16044124 | 4 | SCREW |
| 40 | 16104421 | 3 | NUT |
| 41 | 14496521 | 7 | WASHER |
| 42 | 186664 | 2 | BUSHING FOR PIN FIXING -Not for F1- |
| 43 | 11057876 | 1 | SEEGER RING -Not for F1- |
| 44 | 10902624 | 1 | SCREW FOR END OF STROKE -Not for F1- |
| 44 | 10902224 | 1 | SCREW FOR END OF STROKE -Valid for F1- |
| 45 | 15896221 | 1 | NUT |
| 46 | 318420301 | 1 | ACCELERATOR PEDAL COVER |
| 47 | 191496 | 1 | CLUTCH PEDAL COVER -Not for F1- |
| 48 | 191496 | 1 | BRAKE PEDAL COVER -Not for F1- |
| 48 | 318432300 | 1 | BRAKE PEDAL COVER -Valid for F1- |
| 49 | 318420305 | 1 | BALL PIN |
| 50 | 14075611 | 1 | NUT |
| 51 | 189472 | 1 | BUSHING |

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| 52 | 187014 | 1 | CLUTCH PEDAL ADJUSTEMENT PIN<br>-Not for F1- |
| 53 | 16102314 | 1 | NUT<br>-Not for F1- |
| 54 | 201020 | 1 | BRAKE PEDAL PLATE<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 54 | 201103 | 1 | BRAKE PEDAL PLATE<br>-Valid for F1-<br>-Optional-<br>-Vintage version- |
| 55 | 14441324 | 2 | SCREW<br>-(Quantity 4 for F1)-<br>-Optional-<br>-Vintage version- |
| 56 | 14058411 | 2 | NUT<br>-(Quantity 4 for F1)-<br>-Optional-<br>-Vintage version- |
| 57 | 201020 | 1 | CLUTCH PEDAL PLATE<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 58 | 14441324 | 2 | SCREW<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 59 | 14058411 | 2 | NUT<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 60 | 205025 | 1 | ACCELERATOR PEDAL PLATE<br>-Optional-<br>-Vintage version- |
| 61 | 14440734 | 3 | SCREW<br>-Optional-<br>-Vintage version- |
| 62 | 14058311 | 3 | NUT<br>-Optional-<br>-Vintage version- |


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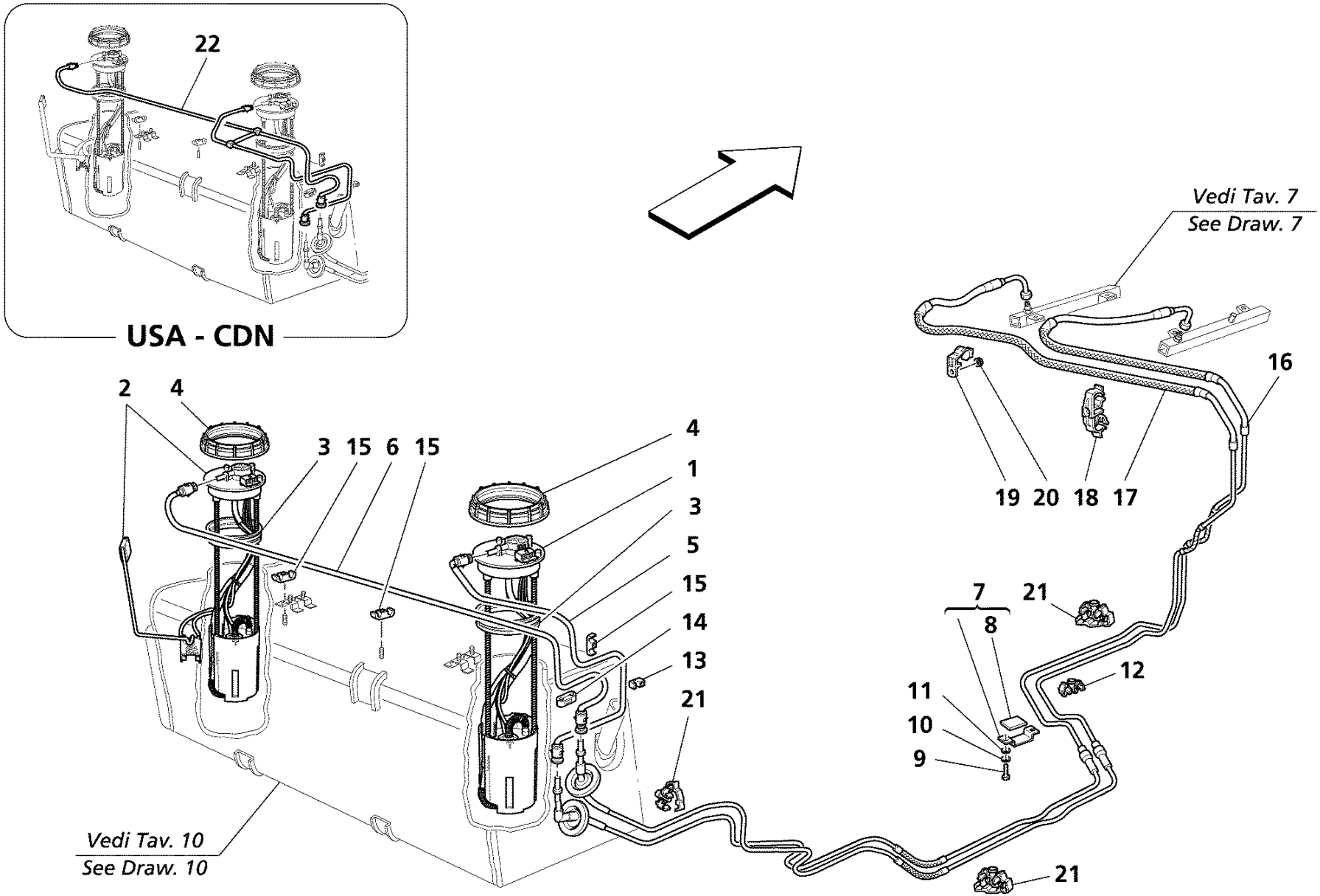
M138_C: Coupè M.Y.2005 - 7 - INJECTION DEVICE - IGNITION

| | | | |
|---|---|---|---|
| 1 | 980138139 | 1 | CONTROL UNIT IGNITION<br>-Programmable- |
| 2 | 200103 | 1 | INJECTION DEVICE CABLES<br>-Not for F1-<br>-Not for USA, CDN and GD- |
| 2 | 206640 | 1 | INJECTION DEVICE CABLES<br>-Not for F1-<br>-Valid for USA and CDN- |
| 2 | 200104 | 1 | INJECTION DEVICE CABLES<br>-Not for F1-<br>-Valid for GD- |
| 2 | 209651 | 1 | INJECTION DEVICE CABLES<br>-Valid for F1-<br>-Not for USA, CDN and GD- |
| 2 | 209653 | 1 | INJECTION DEVICE CABLES<br>-Valid for F1-<br>-Valid for USA and CDN- |
| 2 | 209652 | 1 | INJECTION DEVICE CABLES<br>-Valid for F1-<br>-Valid for GD- |
| 3 | 188504 | 4 | FRONT IGNITION COIL<br>-Complete of cable- |
| 4 | 186914 | 4 | REAR IGNITION COIL<br>-Complete of cable- |
| 5 | 168325 | 8 | SPARK PLUG |
| 6 | 189124 | 1 | L.H. FLAUTES FUEL COVER |
| 6 | 189123 | 1 | R.H. FLAUTES FUEL COVER |
| 7 | 197846 | 1 | COMPLETE R.H. INJECTORS PIPE |
| 7 | 197845 | 1 | COMPLETE L.H. INJECTORS PIPE |
| 8 | 197808 | 8 | ELECTRO-INJECTOR |
| 9 | 133902 | 16 | O.R. GASKET |
| 10 | 201599 | 16 | SCREW |
| 11 | 11197774 | 16 | WASHER |
| 12 | 66313100 | 1 | MOTRONIC BRACKET |
| 13 | 14084211 | 2 | NUT |
| 14 | 11193874 | 4 | WASHER |
| 15 | 13516924 | 4 | STUD |
| 16 | 16102314 | 4 | NUT |
| 17 | 12604474 | 4 | WASHER |
| 18 | 14042321 | 4 | CAP NUT |
| 19 | 190009 | 1 | R.H. BRACKET FOR COIL CABLES |
| 20 | 190010 | 1 | L.H. BRACKET FOR COIL CABLES |
| 21 | 18750121 | 2 | SCREW |
| 22 | 144730 | 8 | INJECTORS RETAINING CLIP |


Vedi Tav. 19 - See Draw. 19
Vedi Tav. 20 - See Draw. 20
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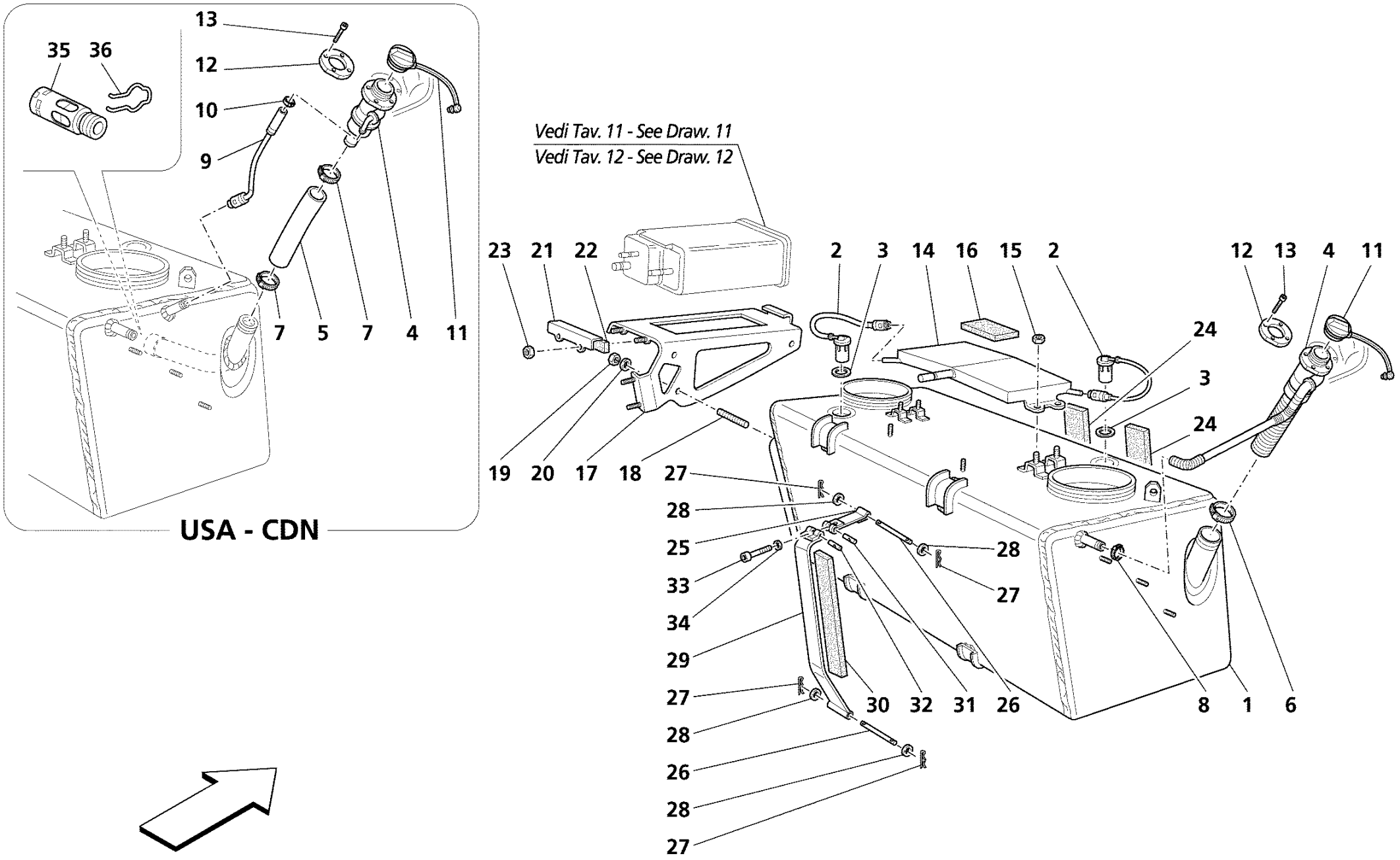
M138_C: Coupè M.Y.2005 - 8 - SECONDARY AIR SYSTEM

| | | | |
|---|---|---|---|
| 1 | 330328400 | 1 | VACUUM TANK |
| 2 | 66425700 | 1 | BRACKET |
| 3 | 14059211 | 4 | NUT |
| 4 | 195066 | 1 | AIR DELIVERY TUBE TO VALVES |
| | | | -Not for GD- |
| 4 | 195065 | 1 | AIR DELIVERY TUBE TO VALVES |
| | | | -Valid for GD- |
| 5 | 171175 | 2 | SECONDARY AIR VALVE |
| 6 | 186274 | 2 | SECONDARY AIR VALVE PIPE |
| 7 | 186781 | 4 | GASKET |
| 8 | 14305724 | 4 | SCREW |
| 9 | 127494 | 4 | WASHER |
| 10 | 14433124 | 4 | SCREW |
| 11 | 127494 | 4 | WASHER |
| 12 | 155116 | 2 | SLEEVE |
| 13 | 178054 | 4 | CLAMP |
| 14 | 147125 | 1 | L.H. RUBBER HOSE |
| 15 | 318720329 | - | RUBBER HOSE |
| | | | -Supplied in meters- |
| | | | -(Minimum quantity 1m. or multiples)- |
| 16 | 146972 | 1 | 3-WAY UNION |
| 17 | 184363 | 1 | SOLENOID VALVE |
| 18 | 14304224 | 2 | SCREW |
| 19 | 12601174 | 2 | WASHER |
| 20 | 181197 | 1 | SECONDARY AIR PUMP |
| 21 | 184837 | 1 | BRACKET |
| 22 | 16296924 | 2 | SCREW |
| 23 | 190992 | 1 | STUD |
| 24 | 178054 | 2 | CLAMP |
| 25 | 102948 | 3 | NUT |
| 26 | 12601274 | 3 | WASHER |
| 27 | 162606 | 1 | CLIP |
| 28 | 159740 | 1 | CLIP |
| 29 | 388100423 | 1 | RUBBER |
| 30 | 152630 | 2 | THREADED UNION |
| 31 | 150595 | 2 | CAP NUT |
| 32 | 194436 | 1 | STUD |
| 33 | 194437 | 1 | STUD |
| 34 | 11197774 | 2 | WASHER |
| 35 | 159601 | 2 | NUT |
| 36 | 315520375 | 2 | SUPPORT |
| 37 | 397850624 | 2 | SPACER |
| 38 | 14498801 | 4 | WASHER |
| 39 | 313620303 | 1 | UNION |


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USA - CDN
Vedi Tav. 7
See Draw. 7
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Vedi Tav. 10
See Draw. 10

M138_C: Coupè M.Y.2005 - 9 - FUEL PUMP AND PIPES

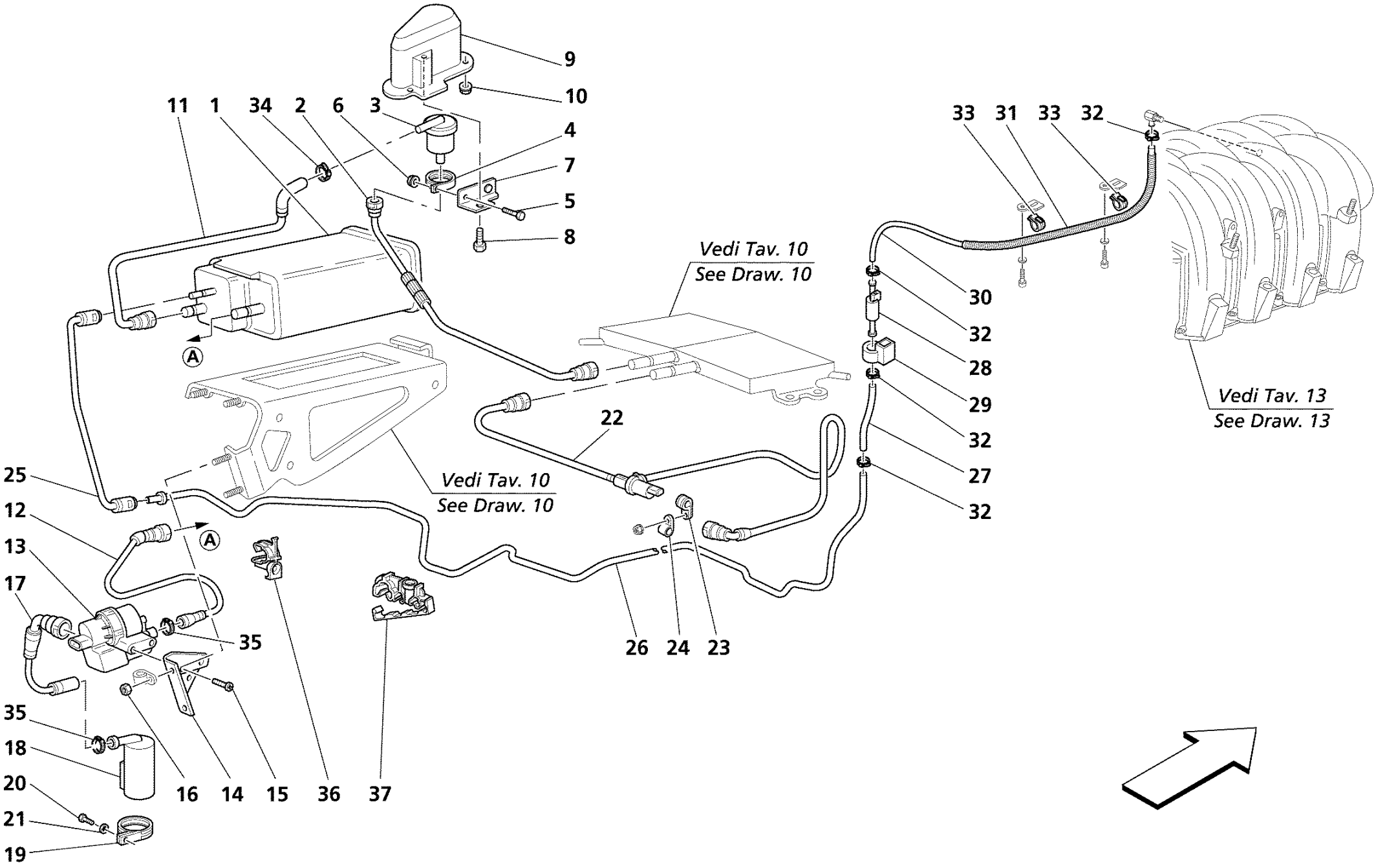
| | | | |
|---|---|---|---|
| 1 | 181205 | 1 | R.H. COMPLETE FUEL PUMP |
| 2 | 181204 | 1 | L.H. COMPLETE FUEL PUMP |
| 3 | 181681 | 2 | GASKET |
| 4 | 181682 | 2 | RING NUT |
| 5 | 197655 | 1 | R.H. FUEL DELIVERY TUBE<br>-Not for USA and CDN- |
| 6 | 197656 | 1 | L.H. FUEL DELIVERY TUBE<br>-Not for USA and CDN- |
| 7 | 187464 | 1 | PIPES PROTECTION BRACKET |
| 8 | 387400402 | 1 | GASKET |
| 9 | 10977824 | 2 | SCREW |
| 10 | 11181574 | 2 | WASHER |
| 11 | 14447025 | 2 | WASHER |
| 12 | 379200408 | - | CLIP<br>-(Quantity defined during<br>at assembly)- |
| 13 | 389200406 | 1 | CLIP |
| 14 | 191047 | 1 | CLIP |
| 15 | 379200408 | 3 | CLIP |
| 16 | 194747 | 1 | R.H. FUEL DELIVERY PIPE TO FLEXIBLE |
| 17 | 194748 | 1 | L.H. FUEL DELIVERY PIPE TO FLEXIBLE |
| 18 | 195052 | 2 | CLIP |
| 19 | 159521 | 1 | CLIP |
| 20 | 14059111 | 1 | NUT |
| 21 | 190410 | - | CLIP<br>-(Quantity defined during<br>at assembly)- |
| 22 | 193544 | 1 | COMPLETE FUEL DELIVERY TUBE<br>-Valid for USA and CDN- |


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USA - CDN
Vedi Tav. 11 - See Draw. 11
Vedi Tav. 12 - See Draw. 12
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M138_C: Coupè M.Y.2005 - 10 - FUEL TANKS AND UNION

| | | | |
|---|---|---|---|
| 1 | 181194 | 1 | FUEL TANK |
| | | | -Not for USA and CDN- |
| 1 | 193835 | 1 | FUEL TANK |
| | | | -Valid for USA and CDN- |
| 2 | 181206 | 2 | COMPLETE FLOAT VALVE |
| 3 | 195049 | 2 | GASKET FOR VALVE |
| 4 | 183430 | 1 | FUEL UNION |
| | | | -Not for USA and CDN- |
| 4 | 183431 | 1 | FUEL UNION |
| | | | -Valid for USA and CDN- |
| 5 | 182637 | 1 | UNION-TANK CONNECTING PIPE |
| | | | -Valid for USA and CDN- |
| 6 | 13000790 | 1 | SCREW COLLAR |
| | | | -Not for USA and CDN- |
| 7 | 13000590 | 2 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |
| 8 | 13000390 | 1 | SCREW COLLAR |
| | | | -Not for USA and CDN- |
| 9 | 182586 | 1 | VAPOR RECYCLING PIPE |
| | | | -Valid for USA and CDN- |
| 10 | 13432070 | 1 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |
| 11 | 183432 | 1 | FUEL TANK PLUG |
| 12 | 389200348 | 1 | GASKET |
| 13 | 13289277 | 4 | SCREW |
| 14 | 181209 | 1 | DISAREATOR |
| | | | -Not for USA and CDN- |
| 14 | 183011 | 1 | DISAREATOR |
| | | | -Valid for USA and CDN- |
| 15 | 12574211 | 4 | NUT |
| 16 | 127403 | 1 | RUBBER THICKNESS |
| 17 | 186510 | 1 | VAPOR FILTER SUPPORTING BRACKET |
| 18 | 11500024 | 3 | STUD |
| 19 | 12574211 | 3 | NUT |
| 20 | 10523424 | 3 | WASHER |
| 21 | 186512 | 1 | BRACKET FOR VAPOR FILTER FIXING |
| 22 | 184766 | 1 | RUBBER THICKNESS |
| 23 | 12574211 | 2 | NUT |
| 24 | 379200397 | 4 | ADHESIVE GASKET |
| 25 | 184208 | 2 | FUEL TANK FASTENER |
| 26 | 389200520 | 4 | PIN |
| 27 | 58841309 | 8 | SAFETY CLIP |
| 28 | 12648206 | 8 | WASHER |
| 29 | 184209 | 2 | FUEL TANK FASTENER |

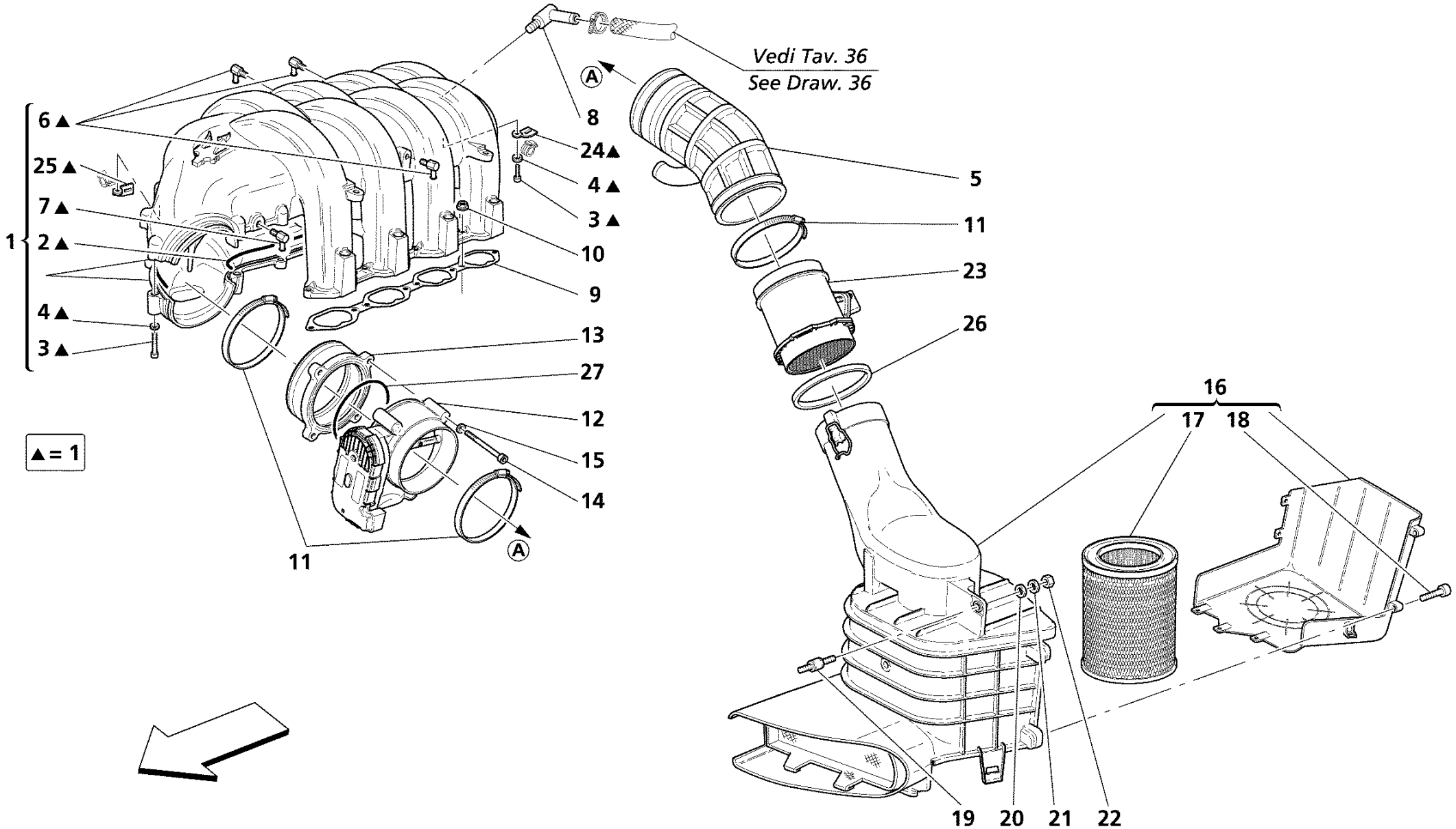
| | | | |
|---|---|---|---|
| 30 | 379200397 | 2 | ADHESIVE GASKET |
| 31 | 670000413 | 2 | ROD |
| 32 | 670000412 | 2 | ROD |
| 33 | 14306921 | 2 | SCREW |
| 34 | 10519624 | 2 | WASHER |
| 35 | 181929 | 1 | FUEL INTERCEPTION VALVE<br>-Valid for USA and CDN- |
| 36 | 181930 | 1 | CLIP<br>-Valid for USA and CDN- |


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Vedi Tav. 10
See Draw. 10
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Vedi Tav. 13
See Draw. 13
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Vedi Tav. 10
See Draw. 10
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M138_C: Coupè M.Y.2005 - 12 - ANTIEVAPORATION DEVICE -Valid for USA and CDN-

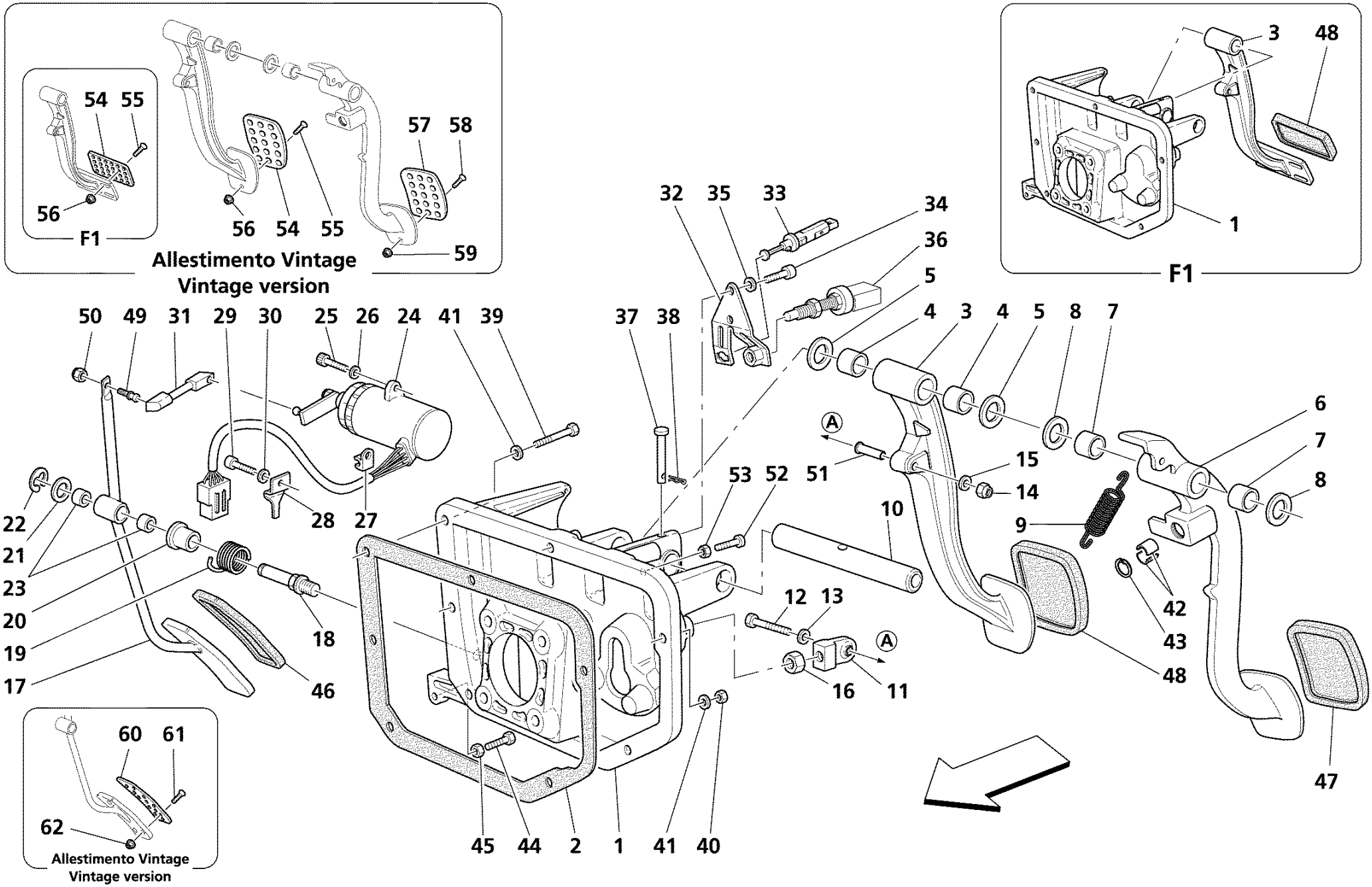
| | | | |
|---|---|---|---|
| 1 | 185135 | 1 | FUEL VAPOR FILTER |
| 2 | 181705 | 1 | PIPE FROM DISAREATOR TO ROLL-OVER |
| 3 | 180573 | 1 | ROLL-OVER VALVE |
| 4 | 66133600 | 1 | BRACKET WITH SHEATH |
| 5 | 10902424 | 1 | SCREW |
| 6 | 14084211 | 1 | NUT |
| 7 | 66132900 | 1 | ROLL-OVER VALVE FIXING BRACKET |
| 8 | 10979414 | 1 | SCREW |
| 9 | 66294500 | 1 | ROLL-OVER VALVE COVER |
| 10 | 14084211 | 3 | NUT |
| 11 | 181707 | 1 | PIPE FROM ROLL-OVER TO CANISTER |
| 12 | 181714 | 1 | PIPE FROM CANISTER TO PUMP |
| 13 | 185405 | 1 | DIAGNOSIS PUMP |
| 14 | 182381 | 1 | DIAGNOSIS PUMP FIXING BRACKET |
| 15 | 15958701 | 3 | SCREW |
| 16 | 12574211 | 2 | NUT |
| 17 | 186901 | 1 | PIPE FROM PUMP TO FILTER |
| 18 | 183221 | 1 | FILTER FOR OBD PUMP |
| 19 | 66244600 | 1 | BRACKET WITH SHEATH |
| 20 | 10977624 | 1 | SCREW |
| 21 | 12638104 | 1 | WASHER |
| 22 | 182585 | 1 | PIERBURG VALVE COMPLETE TUBE |
| 23 | 10442290 | 1 | BRACKET WITH SHEATH |
| 24 | 10440790 | 1 | BRACKET WITH SHEATH |
| 25 | 181712 | 1 | PIPE FROM CANISTER TO UNDERFLOOR |
| 26 | 190519 | 1 | COMPLETE UNDERFLOOR TUBE |
| 27 | 181703 | 1 | WASHING VALVE INLET TUBE |
| 28 | 180861 | 1 | WASHING VALVE |
| 29 | 174623 | 1 | BUFFER FOR SUPPORT |
| 30 | 181704 | 1 | WASHING VALVE OUTLET PIPE |
| 31 | 318720333 | - | PIPE<br>-Supplied in meters-<br>-(Minimum quantity 1m. or multiples)- |
| 32 | 13432070 | 4 | SCREW COLLAR |
| 33 | 178430 | 2 | CLIP |
| 34 | 13433370 | 1 | COLLAR FOR SLEEVE |
| 35 | 13000390 | 2 | SCREW COLLAR |
| 36 | 187840 | - | CLIP<br>-(Quantity defined during at assembly)- |
| 37 | 190409 | - | CLIP |

-(Quantity defined during
at assembly)-


Vedi Tav. 36
See Draw. 36
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M138_C: Coupè M.Y.2005 - 13 - AIR INTAKE MANIFOLD

| | | | |
|---|---|---|---|
| 1 | 199039 | 1 | COMPLETE SUCTION MANIFOLD |
| 2 | 180830 | 1 | GASKET |
| 3 | 14441424 | 1 | SCREW<br>-M6X20- |
| 3 | 14432224 | 7 | SCREW<br>-M6X22- |
| 3 | 14305524 | 5 | SCREW<br>-M6X30- |
| 3 | 14305824 | 2 | SCREW<br>-M6X40- |
| 4 | 11197774 | 14 | WASHER |
| 5 | 180047 | 1 | SLEEVE |
| 6 | 128016 | 3 | THREADED UNION |
| 7 | 174818 | 1 | THREADED UNION |
| 8 | 124342 | 1 | THREADED UNION |
| 9 | 185824 | 2 | GASKET<br>-Supplied also in the cylinder heads gasket revision kit (cod. 980020001)- |
| 10 | 159601 | 16 | NUT |
| 11 | 190151 | 3 | CLAMP |
| 12 | 179912 | 1 | THROTTLE HOLDER |
| 13 | 195206 | 1 | SPACER |
| 14 | 14305924 | 4 | SCREW |
| 15 | 11197774 | 4 | WASHER |
| 16 | 196832 | 1 | COMPLETE FILTER BOX |
| 17 | 186183 | 1 | AIR FILTER |
| 18 | 184829 | 5 | SCREW |
| 19 | 184824 | 3 | PAD |
| 20 | 12643724 | 3 | WASHER |
| 21 | 12544274 | 3 | WASHER |
| 22 | 15896224 | 3 | NUT |
| 23 | 180045 | 1 | AIR FLOW METER |
| 24 | 190509 | 3 | PIPES SUPPORTING BRACKET |
| 25 | 191009 | 1 | PIPES SUPPORTING BRACKET |
| 26 | 193113 | 1 | GASKET |
| 27 | 150302 | 1 | O.R. GASKET |


F1
Allestimento Vintage
Vintage version
F1
Allestimento Vintage
Vintage version

M138_C: Coupè M.Y.2005 - 24 - PEDALS AND ELECTRONIC ACCELERATOR CONTROL -Not for GD-

| | | | |
|---|---|---|---|
| 1 | 183743 | 1 | PEDAL SUPPORT<br>-Not for F1- |
| 1 | 185180 | 1 | PEDAL SUPPORT<br>-Valid for F1- |
| 2 | 378400348 | 1 | SUPPORT GASKET |
| 3 | 186859 | 1 | BRAKE PEDAL<br>-Not for F1-<br>-Standard- |
| 3 | 201972 | 1 | BRAKE PEDAL<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 3 | 186861 | 1 | BRAKE PEDAL<br>-Valid for F1-<br>-Standard- |
| 3 | 201988 | 1 | BRAKE PEDAL<br>-Valid for F1-<br>-Optional-<br>-Vintage version- |
| 4 | 318420320 | 2 | BUSHING |
| 5 | 368402321 | 2 | SPACER WASHER |
| 6 | 186862 | 1 | CLUTCH PEDAL<br>-Not for F1-<br>-Standard- |
| 6 | 201986 | 1 | CLUTCH PEDAL<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 7 | 318420320 | 2 | BUSHING<br>-Not for F1- |
| 8 | 368402321 | 2 | SPACER WASHER<br>-Not for F1- |
| 9 | 101305 | 1 | RETUTN SPRING FOR PEDAL<br>-Not for F1- |
| 10 | 388400329 | 1 | PEDALS SUPPORT PIN |
| 11 | 184749 | 1 | SERVOBRAKE PIN |
| 12 | 16044421 | 1 | SCREW |
| 13 | 12654421 | 1 | WASHER |
| 14 | 147985 | 1 | NUT |
| 15 | 14499401 | 1 | WASHER |
| 16 | 16102324 | 1 | NUT |
| 17 | 192592 | 1 | ACCELERATOR PEDAL<br>-Standard- |
| 17 | 201977 | 1 | ACCELERATOR PEDAL<br>-Optional-<br>-Vintage version- |

| | | | |
|---|---|---|---|
| 18 | 186666 | 1 | ACCELERATOR PEDAL PIN |
| 19 | 388400364 | 1 | RETUTN SPRING FOR PEDAL |
| 20 | 388400407 | 1 | BUSHING |
| 21 | 388400346 | 1 | WASHER |
| 22 | 11088076 | 1 | FLEXIBLE RING |
| 23 | 318420334 | 2 | BUSHING |
| 24 | 183656 | 1 | ACCELERATOR PEDAL POTENTIOMETER |
| 25 | 14432221 | 2 | SCREW -Not for F1- |
| 25 | 14433121 | 2 | SCREW -Valid for F1- |
| 26 | 12601274 | 2 | WASHER |
| 27 | 383000318 | 1 | RETAINING CLIP |
| 28 | 383000315 | 1 | PLATE |
| 29 | 14305121 | 1 | SCREW |
| 30 | 12601274 | 1 | WASHER |
| 31 | 82476740 | 1 | ACCELERATOR PEDALTIE ROD |
| 32 | 194452 | 1 | SWITCH SUPPORT BRACKET |
| 33 | 183433 | 1 | BRAKE PEDAL SWITCH |
| 34 | 14305121 | 2 | SCREW |
| 35 | 127494 | 2 | WASHER |
| 36 | 133555 | 1 | CLUTCH PEDAL SWITCH -Not for F1- |
| 37 | 186665 | 1 | PEDALS FIXING PIN |
| 38 | 58841309 | 1 | SAFETY CLIP |
| 39 | 16044124 | 4 | SCREW |
| 40 | 16104421 | 3 | NUT |
| 41 | 14496521 | 7 | WASHER |
| 42 | 186664 | 2 | BUSHING FOR PIN FIXING -Not for F1- |
| 43 | 11057876 | 1 | SEEGER RING -Not for F1- |
| 44 | 10902624 | 1 | SCREW FOR END OF STROKE -Not for F1- |
| 44 | 10902224 | 1 | SCREW FOR END OF STROKE -Valid for F1- |
| 45 | 15896221 | 1 | NUT |
| 46 | 318420301 | 1 | ACCELERATOR PEDAL COVER |
| 47 | 191496 | 1 | CLUTCH PEDAL COVER -Not for F1- |
| 48 | 191496 | 1 | BRAKE PEDAL COVER -Not for F1- |
| 48 | 318432300 | 1 | BRAKE PEDAL COVER -Valid for F1- |
| 49 | 318420305 | 1 | BALL PIN |
| 50 | 14075611 | 1 | NUT |
| 51 | 189472 | 1 | BUSHING |

| | | | |
|---|---|---|---|
| 52 | 187014 | 1 | CLUTCH PEDAL ADJUSTEMENT PIN<br>-Not for F1- |
| 53 | 16102314 | 1 | NUT<br>-Not for F1- |
| 54 | 201020 | 1 | BRAKE PEDAL PLATE<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 54 | 201103 | 1 | BRAKE PEDAL PLATE<br>-Valid for F1-<br>-Optional-<br>-Vintage version- |
| 55 | 14441324 | 2 | SCREW<br>-(Quantity 4 for F1)-<br>-Optional-<br>-Vintage version- |
| 56 | 14058411 | 2 | NUT<br>-(Quantity 4 for F1)-<br>-Optional-<br>-Vintage version- |
| 57 | 201020 | 1 | CLUTCH PEDAL PLATE<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 58 | 14441324 | 2 | SCREW<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 59 | 14058411 | 2 | NUT<br>-Not for F1-<br>-Optional-<br>-Vintage version- |
| 60 | 205025 | 1 | ACCELERATOR PEDAL PLATE<br>-Optional-<br>-Vintage version- |
| 61 | 14440734 | 3 | SCREW<br>-Optional-<br>-Vintage version- |
| 62 | 14058311 | 3 | NUT<br>-Optional-<br>-Vintage version- |

# 1 ENGINE

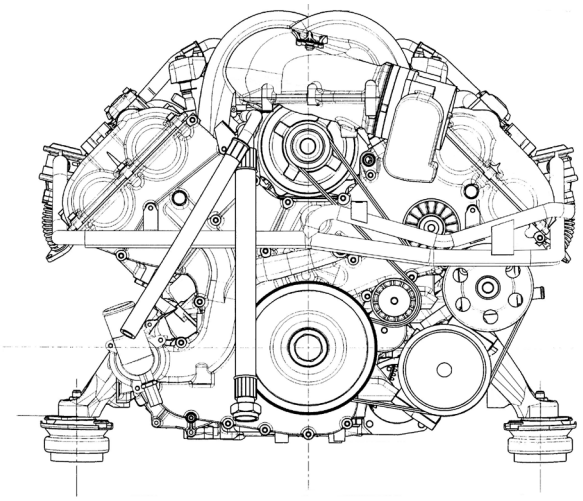
## 1.1 TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Cylinders | 8-90°V |
| Bore | 92 mm |
| Stroke | 79,8 mm |
| Piston displacement | 530,479 cm3 |
| Total displacement | 4243,83 cm3 |
| Compression ratio | 11,107 ± 0,2 : 1 |
| Max power. | 287 kw |
| Corresponding rpm | 7000 min-1 |
| Max torque | 448 Nm |
| Corresponding rpm | 4500 min-1 |

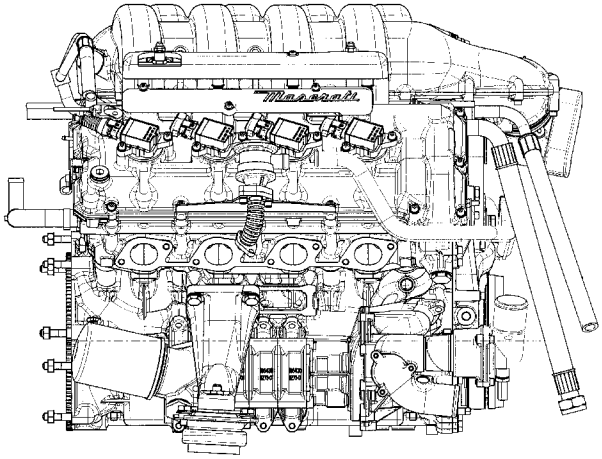
### 1.1.1 General information

Cylinder heads in hardened aluminium/silicium alloy with high volumetric and thermodynamic efficiency combustion chamber.
Crankcase in hardened aluminium/silicium alloy with fitted steel cylinder liners.
Single-cast crankshaft in hardened steel, individually balanced, resting on five journals with bearings.
The engine is equipped with an integrated ignition/injection system (**Bosch ME7.3.2**).
The timing system uses four overhead camshafts (two per bank) and four valves per cylinder, driven by hydraulic self-adjusting buckets.
The intake camshafts are equipped with a continuous high-pressure timing variator which has a specific pump and is controlled by the injection ECU, via a solenoid valve. This system enables varying the timing of the intake valves, as required by the engine's running conditions.
The timing system is controlled by two chains whose tension is determined by hydraulic tensioners.
Engine lubrication is the dry-sump type with a delivery and scavenge pump aligned with the cooling pump and integrated in a single unit , controlled by the crankshaft via a chain.
Engine cooling is obtained by means of an anti-freeze coolant.

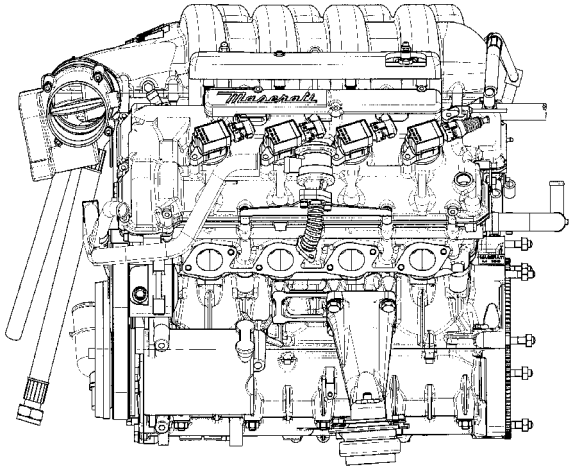
**FRONT**



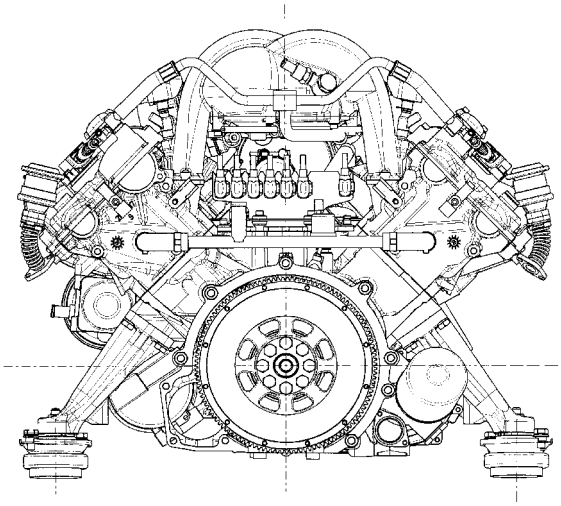
**SIDE 1**



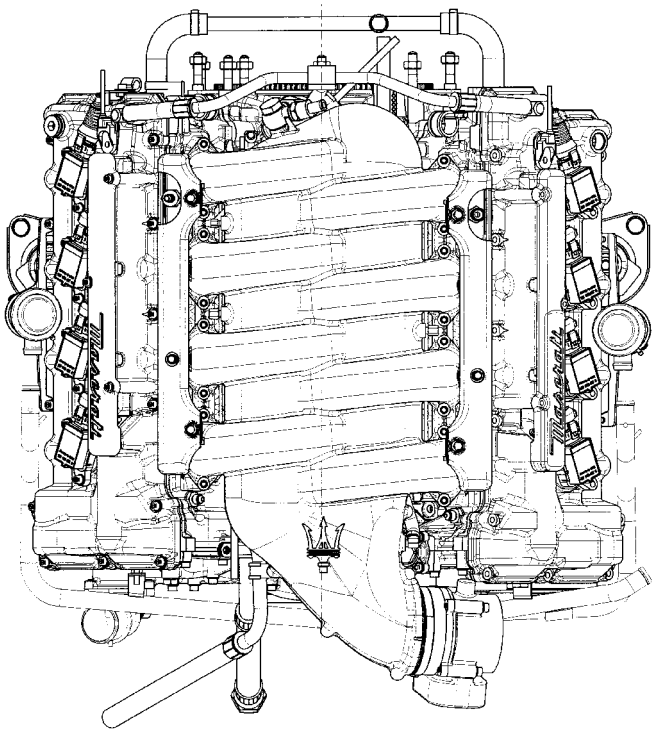
**SIDE 2**



**REAR**



**TOP**



# 1.2 INJECTION/IGNITION SYSTEM

## 1.2.1 Specifications

| Injection | |
|---|---|
| Type: | Bosch ME7.3.2 |
| Electronic Control Unit | Bosch A 261 203 939 |

| Ignition | |
|---|---|
| Static ignition | |
| Ignition sequence: | 1-8-6-2-7-3-4-5 |
| Ignition coil: | Bosch A 221 630 021 |
| Spark plugs: | NGK PMR8A |

## 1.2.2 General information

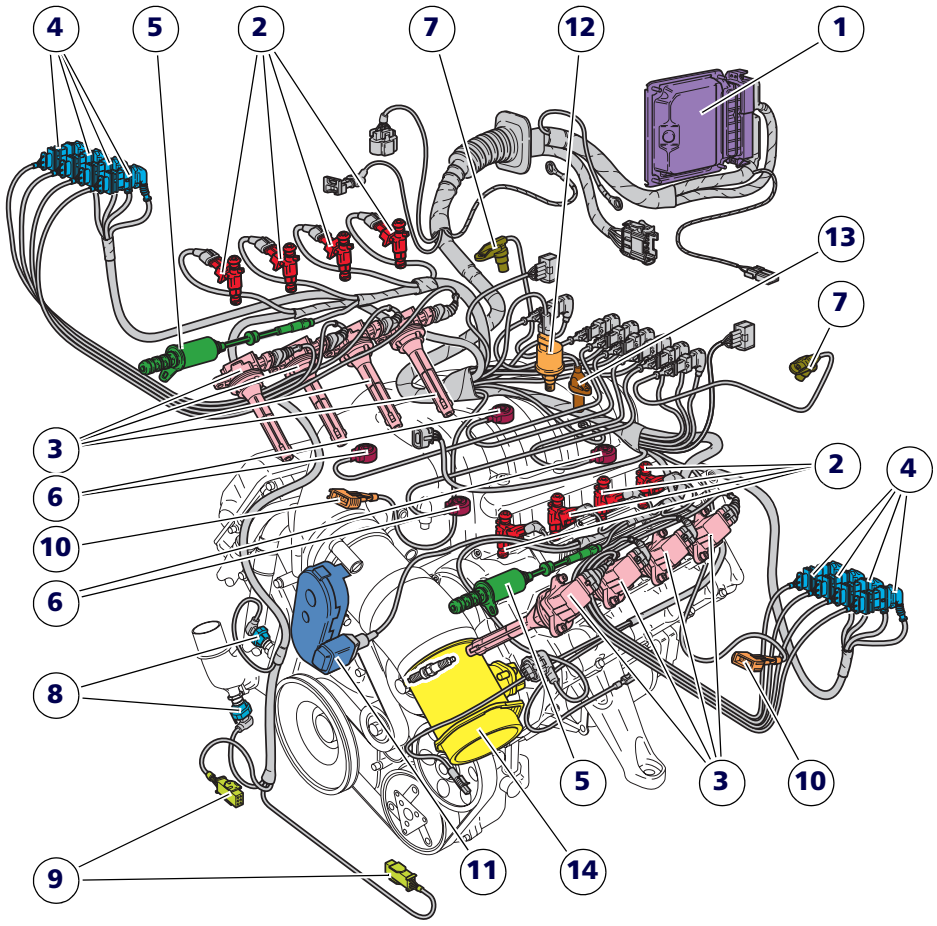
The ignition and injection system installed in the car is controlled by a single microprocessor Control Unit (ECU).
This optimises both the engine performance and handling of the vehicle, as well as reducing fuel consumption by optimising engine running with partial loads.

The system includes the following components:
- ELECTRIC/ELECTRONIC system
- AIR INTAKE system
- FUEL SUPPLY system
- EMISSION CONTROL system
- EXHAUST TEMPERATURE CONTROL system.

The system uses the following signals coming from external sensors:
- engine rpm and position (with respect to the T.D.C.);
- intake air volume and temperature;
- throttle position and opening speed;
- accelerator pedal position;
- coolant temperature;
- catalytic converter internal temperature;
- mixture ratio;
- knocking detection;
- car speed;
- ignition key to ON;
- battery voltage;
- brake system operation;
- clutch operation;
- turbocompressor activation;
- A/C system activation;
- engine supply cut-out;
- parameters coming from other systems over the CAN line (ABS, ASR, Electronically controlled gearbox, etc.).

## 1.2.3 System description

The two engine banks use individual ignition coils controlled by the microprocessor ECU. The latter receives signals regarding the vehicle's running conditions from the engine sensors and directly operates the actuators which control the engine itself.
The ECUs communicate with the other on-board systems over the CAN (Controller Area Network) line to optimise engine management.
The system is thus composed mainly of the ECU and a set of sensors and actuators.




**1)** Control unit (ECU)
**2)** Electro-injectors
**3)** Ignition coils
**4)** Coil connectors to engine wiring
**5)** Timing variators
**6)** Knocking sensors
**7)** Timing sensors
**8)** Water temperature sensors
**9)** Front Lambda sensor connectors
**10)** Rear Lambda sensor connectors
**11)** Throttle body
**12)** Oil pressure sensor
**13)** RPM sensor
**14)** Air flow meter

These components, together with the ECU, provide the MOTRONIC ME7.3.2 system with the following specifications:

- **EGAS** (**E**lectronic **G**AS **P**edal).

An engine control system in which every situation is interpreted as a torque demand. The main element in torque demand is represented by the accelerator pedal.

- **OBD II** (**O**n **B**oard **D**etection and **D**iagnostic system)

A system which detects operational malfunctions inside the engine control system, in order to ensure compliance with emissions control standards.

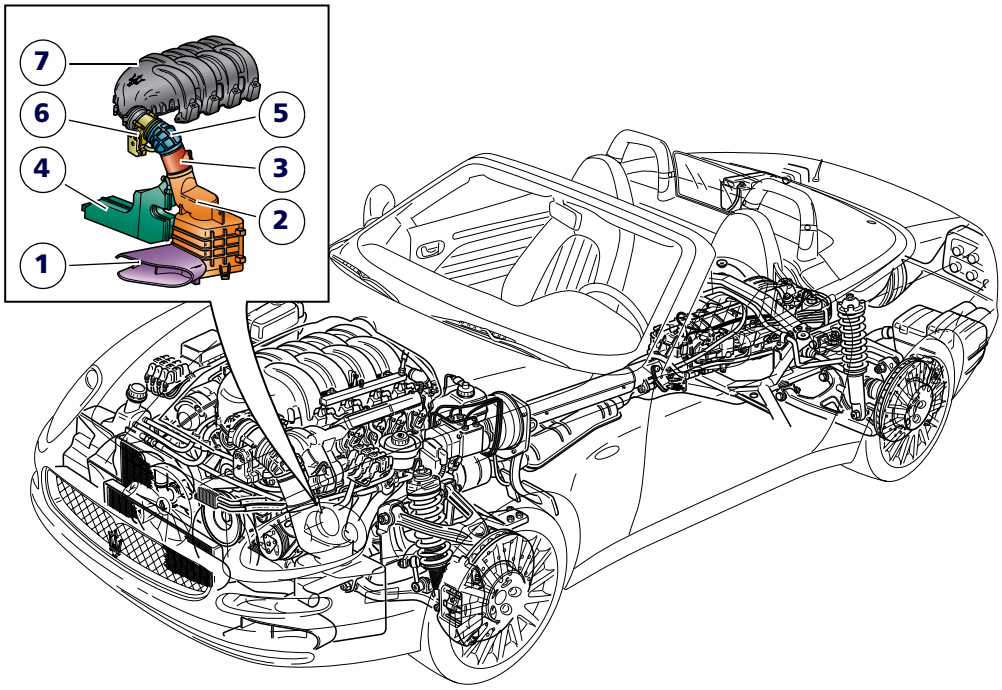
- **RLFS** (**R**eturn **L**ess **F**uel **S**ystem)

Fuel supply system preventing fuel return to the tank.

# 1.3 FUEL SYSTEM

## 1.3.1 Air intake system

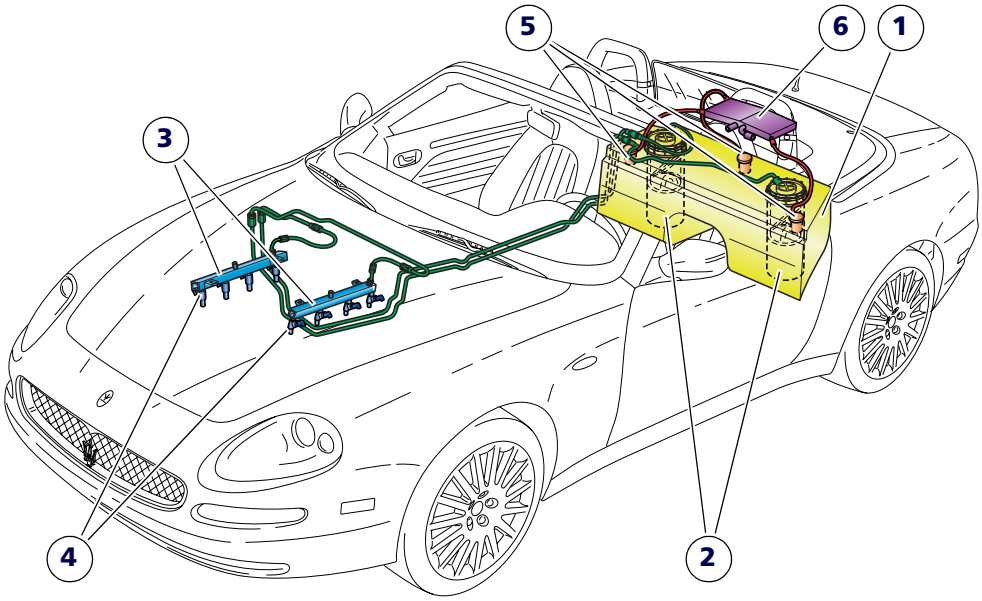
Outside air enters the air inlet (**1**), beneath the front bumpers, and is directed to the filter cartridges (**2**).
The filtered air flow reaches the air-flow meter(**3**), which informs the ECU on the quantity of air taken in. The air is then delivered to the plenum chamber (**7**).
Connected to the air flow meter by a pipe (**5**) is the motor-driven throttle body (**6**) whose opening is electrically controlled by the ECU.
The so metered air flow enters the plenum chamber (**7**) where it is divided and conveyed to the intake manifold to be mixed then with the fuel.




**1)** Air inlet
**2)** Air filter
**3)** Air flow meter
**4)** Conveyor-Resonator
**5)** Air Flow Meter /Throttle body duct
**6)** Throttle body
**7)** Plenum chamber

## 1.3.2 Fuel supply system

Each egine bank is supplied by its own fuel system from the common fuel tank (**1**).
Each system is composed of an electric pump (**2**) fitted inside the fuel tank.
From the pump, the fuel is conveyed to the delivery pipe/injector rail(**3**) which delivers the fuel to the injectors (**4**) on each bank.
The system is of the "returnless" type, that is without fuel return to the tank. This is ensured by the three float valves (**5**) which prevent fuel from spilling under particular set-up conditions of the vehicle.
The tank has a decanter in the upper section (**6**) which collects and condenses the fuel vapours.
Besides these valves, the system includes an inertia switch which cuts off power to the fuel pumps when the vehicle is subject to violent decelerations (collisions).
The tank also has a controller which tansmits the signal to the fuel level indicator on the dashboard.

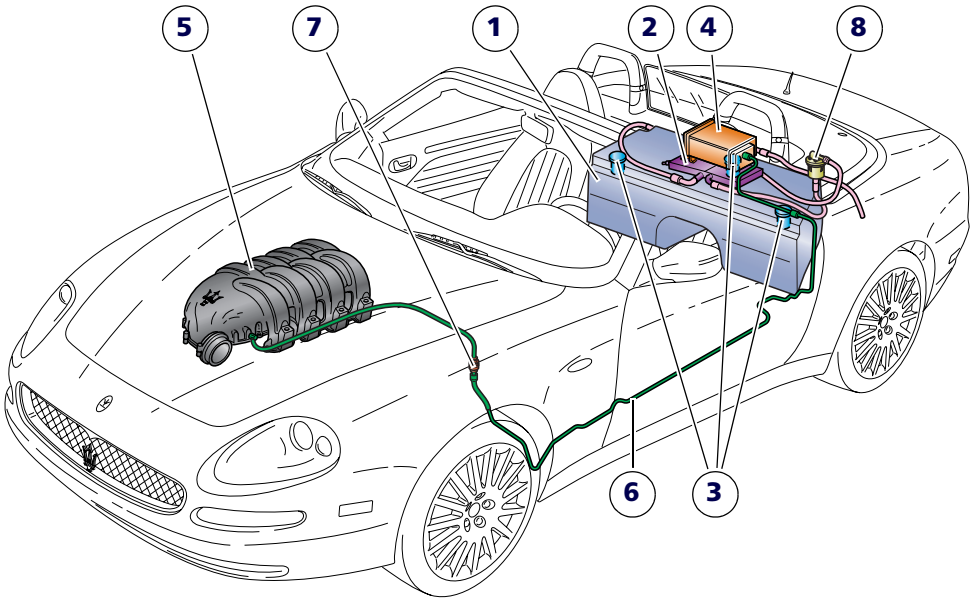



**1)** Fuel tank
**2)** Electric pumps
**3)** Delivery pipes/injector rail
**4)** Injectors
**5)** Float valves
**6)** Decanter

# 1.4 ANTI-POLLUTION SYSTEMS

## 1.4.1 Fuel vapour emission system

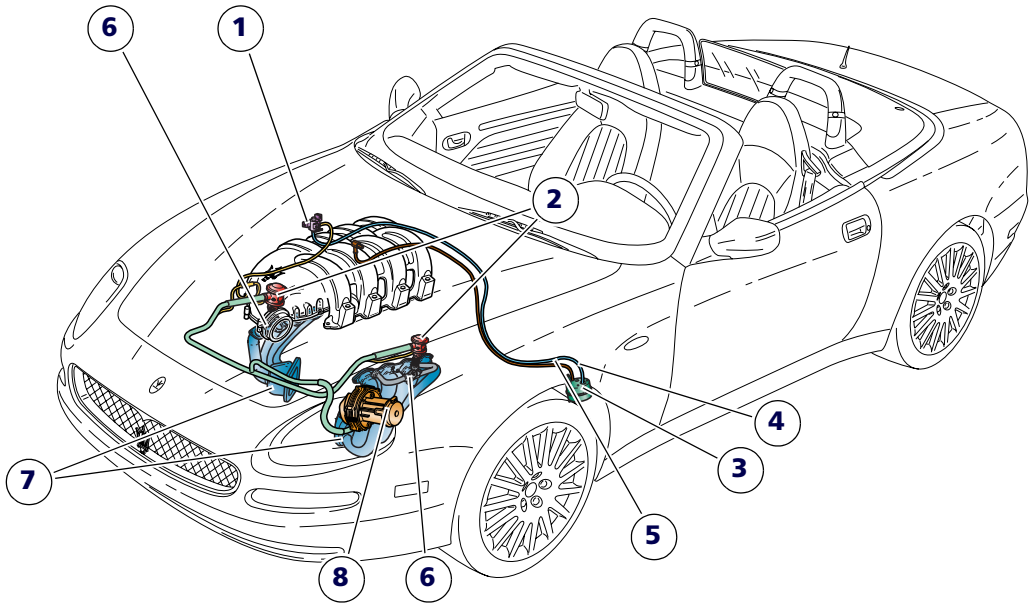
The evaporation monitoring system is designed to prevent fuel vapours from leaking out of the fuel circuit.
The vapours coming from the tank (**1**) are conveyed to a decanter (**2**) where one part condenses and falls back into the tank, while another part reaches the three float valves (**3**) which prevent fuel spilling in case of vehicle rolling.
The roll-over shut off valves deliver the vapour to the active charcoal filter (**4**) which absorbs and retains them, when the engine is at rest.
The active charcoal filter output unions are connected to the plenum chamber(**5**) via a pipe (**6**) controlled by a solenoid valve (**7**).
The ambient air intake on the filter is operated by a roll-over shut off valve (**8**). The active charcoal filter takes in not only the air but also the fuel vapours which are then delivered to the plenum chamber.




**1)** Tank
**2)** Decanter
**3)** Float valves
**4)** Active charcoal filter
**5)** Plenum chamber
**6)** Piping
**7)** Solenoid valve
**8)** Roll-over shut off valves

## 1.4.2 Secondary air system

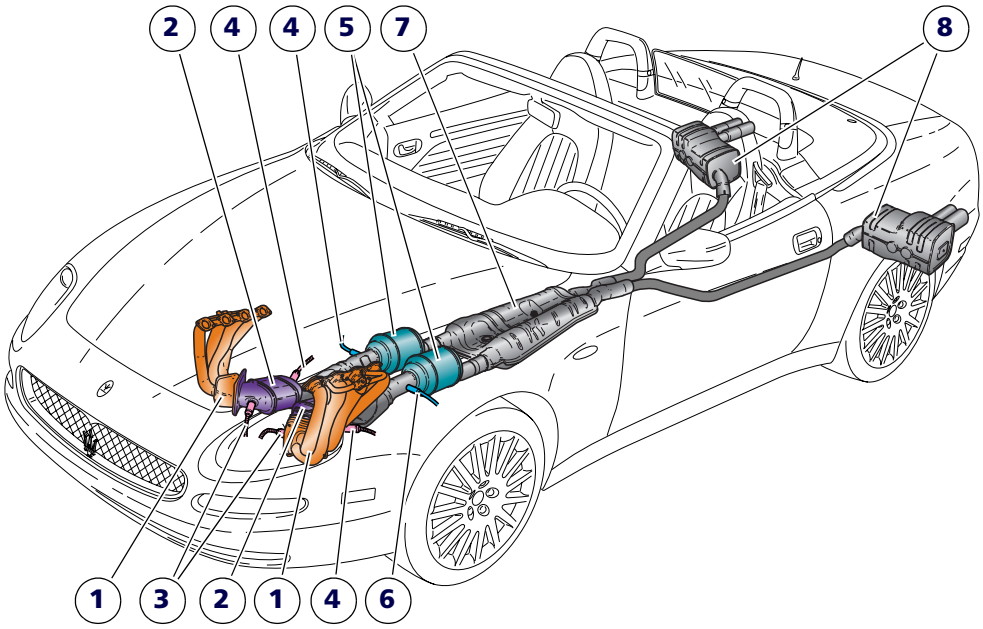
This system delivers additional air to the exhaust manifolds in order to reduce the HC and CO emissions during the catalytic converter heating stage.
The solenoid valve (**1**) is controlled by the ECU to open/close the two pneumatic valves (**2**) which actuate the injection of secondary air into the exhaust manifolds.
The vacuum tank (**3**), located beneath the LH wheelhouse, is connected to the solenoid valve via the pipe (**4**), and to the plenum chamber via the duct (**5**).
The solenoid valve, which controls additional air delivery, is connected to the pneumatic valves by means of a three-way union.
The pneumatic valves send the air to the exhaust manifolds via the pipes (**6**) using the secondary air pump (**7**), which is controlled by the ECU to take air from a filter in order to reduce the hydrocarbon content of the exhaust gases.
The pump and the secondary air solenoid valve are activated, after engine ignition, when the coolant temperature is in the range **-10° C** to **- 40° C**.
The function is active for around **80 seconds**, de-activates for around **60 seconds** and then re-activates for a further **10 seconds**.
In the latter period the secondary air valve seal is monitored.
The Lambda sensors are inhibited during this entire cycle .




**1)** Solenoid valve
**2)** Pneumatic valves
**3)** Vacuum tank
**4)** Tank/valve pipe
**5)** Tank/plenum chamber duct
**6)** Exhaust manifold pipes
**7)** Exhaust manifolds
**8)** Secondary air pump

## 1.4.3 Emission control system

The exhaust gases leaving each head are delivered by a manifold (**1**) into the respective catalytic converter (pre-catalytic converter) (**2**).
The pre-catalytic converter reduces the emissions of HC, CO and NOx into the atmosphere.
Each pre-catalytic converter is fitted (upstream and downstream) with two lambda sensors (**3** and **4**) which monitor the oxygen content of the exhaust gas. The lambda sensor output signal is sent to the ECU which controls the air/fuel mixture strength to maintain the stoichiometric ratio as close as possible to the theoretical value.
Downstream of the pre-catalytic converters are two further catalytic converters (**5**) (one per branch), equipped with thermocouples (**6**) which send the temperature signal to the ECU.
In case of incorrect operation of the engine and consequent exhaust system overheating, the ECU sends a signal to the multi-function display which lights up the SLOW DOWN icon.
The exhaust gases are delivered from the catalytic converters to the pre-silencers (**7**) and are then conveyed into the atmosphere through the silencers (**8**).




**1)** Manifolds
**2)** Pre-catalytic converters
**3)** Upstream Lambda sensors
**4)** Downtream Lambda sensors
**5)** Catalytic converters
**6)** Thermocouples
**7)** Pre-silencers
**8)** Silencers



# Scantool

Scantool

Scantool 

# SCANTOOL

# MASERATI

MANUALE OPERATORE

# Indice Generale

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## *PRECAUZIONI E MISURE DI SICUREZZA*

Prima del collegamento e della messa in funzione del tester di diagnosi (Scantool Maserati) è assolutamente necessario studiare a fondo le istruzioni per l'uso e soprattutto le avvertenze di sicurezza. È così possibile escludere fin dall'inizio incertezze sull'impiego del Tester e i rischi legati ad esse per la propria sicurezza e per evitare danni all'apparecchio.

*Le procedure di manutenzione ed eventuali riparazioni devono essere eseguite esclusivamente da personale qualificato.*

### Precauzioni contro le lesioni

**Utilizzare un cavo di alimentazione adeguato.** Per evitare pericolo d'incendio, utilizzare solamente il cavo di alimentazione specificato per lo strumento o quelli forniti in dotazione.

**Evitare sovraccarichi elettrici.** Per evitare lesioni o pericolo d'incendio, non applicare ad alcun ingresso una tensione maggiore a quella specificata per lo strumento.

**Non usare lo strumento privo delle sue coperture.** Per evitare scosse elettriche o pericolo d'incendio, non usare lo strumento con coperture o pannelli rimossi.

**Non usare lo strumento se bagnato o umido.** Per evitare scosse elettriche, non usare lo strumento quando é bagnato o in un ambiente umido.

**Non usare lo strumento in un ambiente esplosivo.** Per evitare lesioni fisiche o pericolo d'incendio, non usare lo strumento in un ambiente esplosivo.

## Precauzioni contro i danni allo strumento

**Usare una tensione di alimentazione adeguata.** Non usare lo strumento alimentandolo ad una tensione superiore a quella specificata. Alimentarlo solamente con il cavo per la batteria o con l'apposito alimentatore fornito con il prodotto.

**Non usare lo strumento se si sospetta un malfunzionamento.** Se si sospetta che lo strumento sia danneggiato, farlo ispezionare da personale di servizio qualificato.



# 1. Informazioni Generali

### 1.0 Informazioni Generali

Lo Scantool Maserati é un dispositivo elettronico che permette di gestire la diagnosi delle centraline elettroniche (ECU) installate a bordo dei moderni autoveicoli con implementato il protocollo OBD (On Board Diagnostic).
Lo Scantool Maserati é un palmare munito di un display LCD monocromatico e di una tastiera a membrana con cinque tasti; é inoltre dotato di una linea seriale standard RS232C, una linea seriale standard ISO9141, una linea seriale standard CAN per l'interfacciamento con le ECU in diagnosi.
Si interfaccia ad un Personal Computer (PC) tramite la linea seriale standard RS232C, con un relativo software di gestione per l'aggiornamento dei software di diagnosi delle ECU.

### 1.1 Tensione d'alimentazione

Lo Scantool Maserati necessita di una tensione di alimentazione compresa tra 6 Vcc e 16 Vcc, che deve essere fornita dalla batteria del veicolo sotto test o tramite apposito alimentatore fornito con il prodotto.

### 1.2 Istruzioni di installazione dello Scantool Maserati

Il Tester non necessita di alcuna installazione; deve solamente essere configurato con i software di diagnosi che si intendono utilizzare. I software scaricati verranno memorizzati nel Tester su memoria non volatile fino ad una nuova configurazione. Il Tester viene fornito con un cablaggio per la diagnosi e connessione alla sorgente di alimentazione. Un cablaggio specifico per la connessione verso il PC per la riprogrammazione è disponibile insieme all'alimentatore a tensione di rete in un KIT. Potranno essere necessari specifici cavi di collegamento verso l'impianto da diagnosticare, da utilizzare con l'adeguato software di diagnosi.

## 1.3 Descrizione Generale

Nella parte inferiore del Tester sono presenti due connettori:

- il connettore jack serve per alimentare il Tester durante la riprogrammazione tramite PC (alimentazione fornita con apposito alimentatore da rete);
- il connettore a vaschetta 15 poli serve per il collegamento con il PC (con alimentazione tramite jack) o per il collegamento con le centraline da diagnosticare; in quest'ultimo caso l'alimentazione viene fornita non tramite jack ma tramite lo stesso cablaggio utilizzato per la diagnosi.

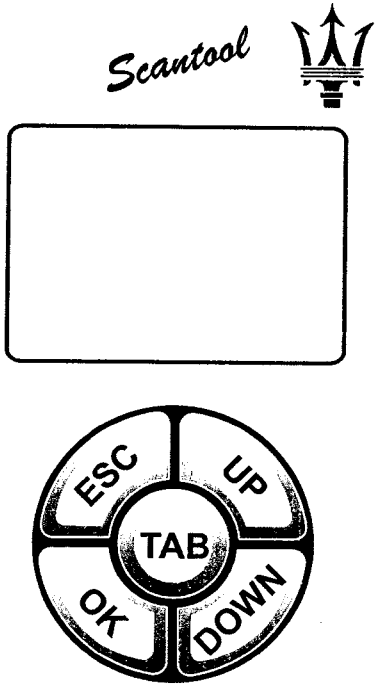



fig. 1.4.1



Nelle figura 1.4.1 é riportata una visione schematica della parte frontale dello Scantool Maserati (contenente il display e la tastiera).
Sui tasti UP, DOWN e TAB é stata implementata la ripetizione della funzione nel caso in cui i singoli tasti si tengano premuti di continuo.

## 1.4 Verifica funzionale

Per una rapida verifica del funzionamento fornire l'alimentazione: entro qualche secondo appare sul display un logo di presentazione o direttamente un menù. Premere poi un tasto e muoversi tra i menù.

# 2. Funzionamento Tester

## 2.1 MENÙ PRINCIPALE

Lo Scantool Maserati ha memorizzato permanentemente un software che si occupa della configurazione del sistema e del dialogo col software su PC per l'aggiornamento dei software di diagnosi (Software Base). All'accensione del Tester va in esecuzione il Software Base, il quale verifica il precaricamento di un software di diagnosi. Se un software di diagnosi è già stato precaricato viene messo in esecuzione in modo trasparente all'utente. Se l'utente vuole mandare in esecuzione un altro software di diagnosi deve accendere il Tester tenendo premuti contemporaneamente i tasti OK e ESC. In tal caso appare la schermata di figura 2.1.1 con il Menù Principale del Software Base.
Di norma, in tutti i menù dei vari software, per selezionare una opzione tra quelle visibili e passare alla schermata successiva occorre premere il tasto OK e per muoversi tra le opzioni disponibili vengono utilizzati i tasti UP e DOWN. All'interno dei menù il tasto ESC riporta la visualizzazione sul menù precedente (se esiste).
Per quanto riguarda i tasti UP, DOWN (e TAB) é utile ricordare che per esse é stata implementata la modalità di scorrimento continuo; tenendo quindi premuto uno di questi tasti si scorre l'elenco delle eventuali opzioni ricominciando dall'inizio se arrivo a fine riga o colonna; questa opzione non é stata implementata per gli altri tasti per evitare di entrare erroneamente in menù non desiderati.
Inoltre, in tutte le schermate, nella riga in basso viene riportato il nome dell'ambiente in cui ci si trova (il nome è preceduto da un trattino) con a destra il numero totale delle voci e il numero della voce selezionata; una riga continua separa l'indicazione dell'ambiente dall'elenco delle voci.
Il menù principale si presenta come in fig. 2.1.1



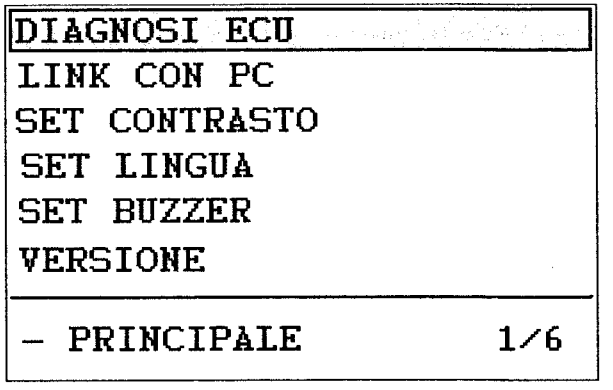



fig. 2.1.1

Per scegliere una delle opzioni occorre evidenziarla con l'aiuto dei tasti UP e DOWN e premere OK.
In questa schermata il tasto ESC non é utilizzato, dato che non esistono schermate a un livello superiore, quindi gli unici tasti significativi sono quelli sopra descritti per selezione e conferma.

## 2.2 MENÙ LINK CON PC

Selezionando "LINK CON PC" si entra nella modalità di gestione dei dati che necessita del programma di diagnosi su PC (fig. 2.2.1). Per tornare al menù principale é necessario premere il tasto ESC. Quando si entra nel menù di "Link con PC" il Software Base elimina un eventuale software di diagnosi pronto per essere eseguito (un suono prolungato segnala l'operazione); quindi, dopo aver selezionato "Link con PC", per mandare in esecuzione un qualsiasi software di diagnosi sarà necessario entrare nel menù "Diagnosi ECU" (vedi sotto).

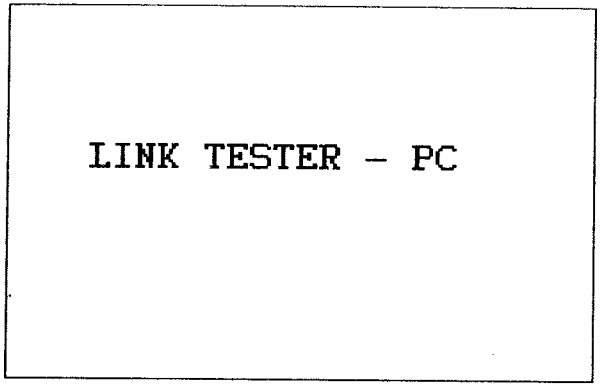



fig. 2.2.1



## 2.3 MENÙ SET CONTRASTO

Una volta evidenziata l'opzione "SET CONTRASTO", premendo OK si entra nel menù che consente di modificare il Contrasto del display.
La schermata si presenta come in fig. 2.3.1.

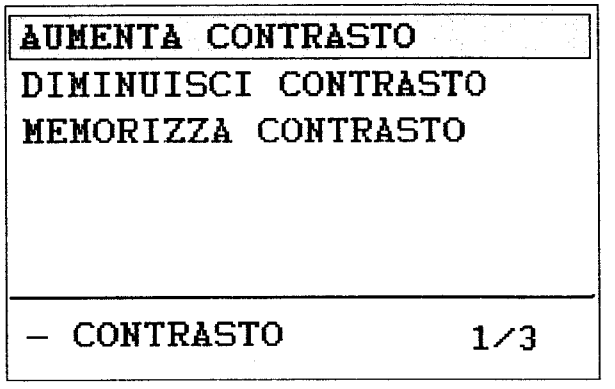



fig. 2.3.1

Il Contrasto si cambia selezionando la voce "Aumenta Contrasto" e premendo OK o la voce "Diminuisci Contrasto" e premendo OK. Dopo aver modificato il valore di contrasto si vede subito l'effetto e si può scegliere se rendere attiva la modifica (selezionando "Memorizza Contrasto" e premendo OK) oppure si può decidere di uscire senza salvare premendo il tasto ESC, ripristinando così il valore utilizzato prima di entrare nel menù di modifica. I valori che verranno memorizzati rimarranno tali anche alla riaccensione del Tester.

## 2.4 MENÙ SET LINGUA

Una volta evidenziata l'opzione "SET LINGUA", premendo OK si entra nel menù che consente di modificare la lingua delle scritte delle varie schermate.
La schermata si presenta come in fig. 2.4.1.

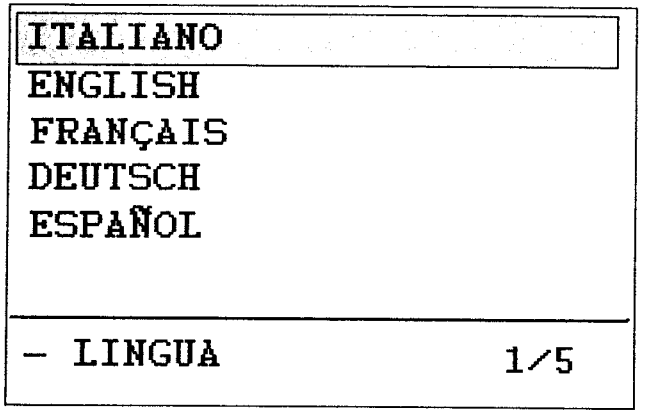



fig. 2.4.1

La lingua delle scritte si cambia selezionando la voce corrispondente e premendo OK. Il settaggio effettuato viene memorizzato e rimane tale anche alle successive riaccensioni del Tester.



## 2.5 MENÙ SET BUZZER

Una volta evidenziata l'opzione "SET BUZZER", premendo OK si entra nel menù che consente di attivare o non attivare il suono del buzzer alla pressione dei tasti.
La schermata si presenta come in fig. 2.5.1.

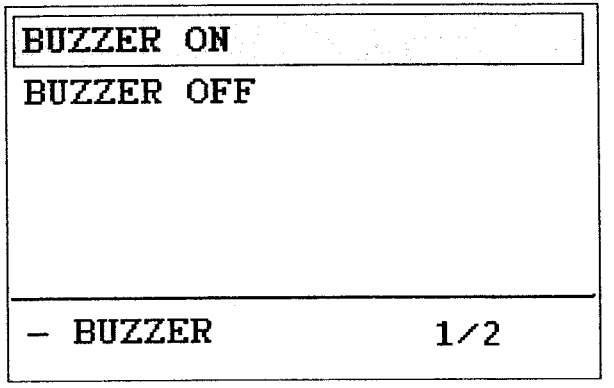



fig. 2.5.1

Per attivare/disattivare il suono del buzzer alla pressione dei tasti si deve selezionare la voce corrispondente (con i tasti UP e DOWN) e premendo OK. Il settaggio effettuato viene memorizzato e rimane tale anche alle successive riaccensioni del Tester.

## 2.6 MENÙ DIAGNOSI ECU

Una volta evidenziata l'opzione "DIAGNOSI ECU", premendo OK si entra nel menù che consente di caricare in memoria per l'esecuzione uno dei software di diagnosi precaricati tramite PC. Dipendentemente da quanti e quali software sono stati precaricati, la schermata potrebbe presentarsi come in fig. 2.6.1.

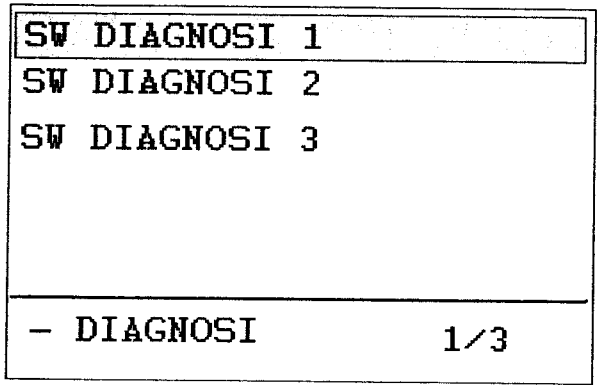



fig. 2.6.1

Per caricare in memoria ed eseguire un software si deve selezionare la voce corrispondente (con i tasti UP e DOWN) e premere OK. Appare la schermata di fig. 2.6.2 e viene poi messo in esecuzione il software selezionato.






fig. 2.6.2

Alle successive riaccensioni del Tester effettuate senza tenere premuti contemporaneamente i tasti OK e ESC e/o senza un nuovo caricamento in memoria, viene direttamente messo in esecuzione il software selezionato.

## 2.7 DESCRIZIONE SOFTWARE SCANTOOL

In questo capitolo viene descritto il funzionamento del software Scantool implementato.
Alla partenza, il software di diagnosi visualizza sul display un logo di presentazione; alla pressione di un qualsiasi tasto si ha la visualizzazione di una schermata con l'indicazione del nome e della versione del software di diagnosi. Questa schermata rimane attiva per qualche secondo, a meno che l'utente non intervenga con la pressione di un tasto. Si ha quindi la visualizzazione del Menù Principale con i nomi dei vari ambienti di diagnosi. In basso si ha il nome del Menù (Principale) e, in basso a destra, il numero della voce evidenziata e il numero totale delle voci del Menù. La voce evidenziata è visualizzata in Reverse. Per selezionare una voce è necessario premere i tasti Up/Down posizionandosi su quella prescelta. In linea di massima saranno sempre presenti i Menù Parametri, Contorno Errori, Errori, Cancellazione Errori ed Info Ecu. Da ciascun ambiente, premendo il tasto OK, si accede ad una schermata che presenta la lista delle ECU che sono state inizializzate dal software di diagnosi: ogni centralina risulta caratterizzata dall'indirizzo di risveglio (ex. ECU1 $11, con 11 indirizzo esadecimale della Ecu in esame). Con i tasti Up/Down si scorrono le ECU, con OK si entra nell'ambiente specifico di quella centralina.

L'ambiente Parametri consente la visualizzazione dei parametri di funzionamento dinamico della centralina selezionata. Tale ambiente implementa il servizio numero 1 del protocollo Scantool. All'interno del menù ci sono i singoli parametri che la ECU selezionata supporta divisi in pagine con l'indicazione dell'unità di misura e il valore assunto dinamicamente dalla grandezza indicata (a destra dello schermo). In basso sullo schermo c'è l'indicazione del nome dell'ambiente, del numero di pagina selezionata e del numero totale di pagine. Con i tasti Up/Down si selezionano le varie pagine, con Esc si torna al Menù principale. Se si perde il Link con la centralina appare una schermata con la scritta "LA CENTRALINA NON RISPONDE CONTROLLARE I COLLEGAMENTI"; il Tester riprova di continuo ad instaurare il link con le centraline e, se vi riesce,



visualizza la schermata di Parametri precedentemente selezionata; in caso di perdita del link, con Esc si torna al menu' principale.

L'ambiente Contorno Errori contiene, qualora siano stati memorizzati dalla centralina selezionata, un errore presente o memorizzato al momento della diagnosi ed il relativo contorno errore ovvero il set di parametri che la ECU ha memorizzato quando si e' verificato l'errore stesso. Tale ambiente realizza il servizio 2 del protocollo Scantool. L'errore che ha provocato la memorizzazione dei dati e' sempre indicato nella prima riga della prima pagina di questo ambiente mentre di seguito, divisi per pagine, sono riportati i parametri di contorno. Nel caso in cui non vi siano dati memorizzati compare la videata "NESSUN ERRORE HA PROVOCATO IL FREEZE FRAME DATA". Premendo un tasto si torna al Menu' principale. In basso sullo schermo c'è l'indicazione del nome dell'ambiente, del numero di pagina selezionata e del numero totale di pagine. Con i tasti Up/Down si selezionano le varie pagine, con Esc si torna al Menù principale.

L'ambiente Errori richiede e visualizza gli Errori di funzionamento rilevati alla centralina selezionata. Sulla sinistra e' riportato il p-code dell'errore (ovvero il codice univoco OBD standardizzato per quel DTC) e sulla destra l'indirizzo della centralina selezionata. Tutti i possibili errori sono divisi in pagine. Tale ambiente implementa il servizio 3 del protocollo Scantool. Con i tasti Up/Down si selezionano le varie pagine, con Esc si torna al Menù principale. Con il tasto TAB si evidenzia uno degli errori della pagina (visualizzato in Reverse). Se si perde il Link con la centralina appare una schermata con la scritta "LA CENTRALINA NON RISPONDE CONTROLLARE I COLLEGAMENTI"; il Tester riprova di continuo ad instaurare il link con la centralina e, se vi riesce, visualizza la schermata di Errori precedentemente selezionata; in caso di perdita del link, con Esc si torna alla schermata del Menù principale.

L' ambiente di cancellazione errori (servizio 4 del protocollo Scantool) permette la cancellazione degli errori di tutte le centraline attive in quel momento in diagnosi OBD e non solo della centralina che l'utente ha selezionato all'interno di questo servizio. La cancellazione errori e' possibile solo a motore spento. Al termine

viene indicata la riuscita o meno dell' operazione. Basta premere un tasto per tornare al menu' principale.

L' ambiente di Info Ecu implementa il servizio 9 del protocollo Scantool. Vengono visualizzati parametri informativi circa la centralina selezionata. Sono riportate 3 informazioni per pagina con alternati nome parametro e valore assunto. Con i tasti Up/Down si selezionano le varie pagine, con Esc si torna al Menù principale. Con il tasto TAB si evidenzia una delle informazioni della pagina (visualizzato in Reverse). Se si perde il Link con la centralina appare una schermata con la scritta "LA CENTRALINA NON RISPONDE CONTROLLARE I COLLEGAMENTI"; il Tester riprova di continuo ad instaurare il link con la centralina e, se vi riesce, visualizza la schermata informazioni precedentemente selezionata; in caso di perdita del link, con Esc si torna alla schermata del Menù principale. Nel caso in cui la centralina selezionata non supporti il servizio selezionato viene visualizzata la scritta "LA CENTRALINA NON RISPONDE. SERVIZIO INFO ECU NON SUPPORTATO". Con la pressione di un tasto si torna al menu' principale.



Scantool

# SCANTOOL

# MASERATI

## USER MANUAL

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# *PRECAUTIONS AND SAFETY MEASURES*

Before connecting and operating the Diagnosis Tester (Scantool Maserati) read the User Manual carefully, especially the safety instructions. This will remove all uncertainty regarding the use of the Tester and its associated risks both for the operator safety and for eventual damages to the Tester itself.

*Maintenance and repair procedures should be done only by a qualified service technician.*

## Precautions against personal injury

**Use an appropriate power cable.** To avoid fire risk, only use the type of power cable specified for the device or supplied with it.

**Avoid electrical overload.** To avoid injury and fire risk, do not supply a higher voltage to any input than that specified for the device.

**Do not operate the device with its housing removed.** To avoid electrical shock and fire risk, do not operate the device with its housing or panels removed.

**Do not operate the device if wet or damp.** To avoid electrical shock, do not use the device if it is wet or in a humid location.

**Do not operate the device in a location subject to explosion hazard.** To avoid personal injury and fire risk, do not operate the device in a location subject to explosion hazard.

## Precautions against damage to the device

**Use adequate supply voltage.** Do not operate the device with a supply voltage greater than that specified. Only use the battery cable or power supply provided.

**Do not operate the device when it has a suspected fault.** If there is reason to believe that the device is damaged, have it inspected by a qualified service technician.



# 1. Introduction

### 1.0 Introduction

The Scantool Maserati is an electronic device for running diagnosis programs on the electronic control units (ECU) on board modern vehicles supporting OBD protocol (On Board Diagnostic).
The Scantool Maserati is a palmtop device equipped with a monochrome LCD display and a five-key membrane keypad; it is also equipped with an RS232C serial line, an ISO9141 standard serial line, and a CAN serial line for interfacing with the ECU.
It connects to a PC via the RS232C standard line and features a management software for updating the ECU diagnosis software.

### 1.1 Supply voltage

The Scantool Maserati runs off 6 to 12 V DC, either from the tested vehicle battery or from the provided mains power adapter.

### 1.2 Installing the Scantool Maserati

The Tester does not require any installation; it only needs to be configured with the diagnosis software to be used. The downloaded software is stored in the Tester's non-volatile memory until a new configuration is downloaded. The Scantool Maserati is supplied with diagnostics and power cables. The special PC connection cable for downloading diagnosis programs and the mains power adapter are both available as a kit. Some systems may require special cables along with the specific diagnosis program.

### 1.3 General description

Two sockets are located on the base of the Tester:

- The jack socket is required for power supply to the Tester while downloading diagnostics from a PC (mains power adapter);
- The 15-pin socket is for the PC link (with mains power adapter in the jack socket) or connection to the ECU; in this case the power supply is not via the jack socket but directly through the diagnostics cable.

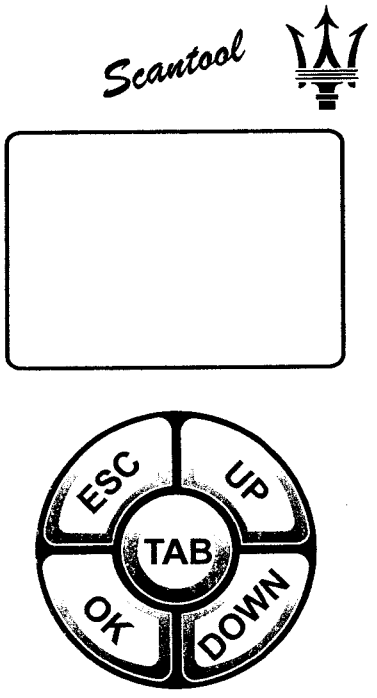



fig. 1.4.1

Figure 1.4.1 shows the front panel of the Scantool Maserati (display and keypad).
Holding down the UP, DOWN and TAB keys automatically repeats the respective command.



## 1.4 Operational check

To check the Tester is operating, supply power: within a few seconds a logo or a menu appears on the display. You can now use the menus with the keypad.

# 2. Tester operation

## 2.1 MAIN MENU

The Scantool Maserati permanently contains a software which manages the system configuration and the PC link for updating diagnosis programs (Basic Software). When it is switched on, the Tester runs the Basic Software, which checks whether a diagnosis program is loaded. If a diagnosis program is loaded, it is run in a user transparent mode. If the user wants to run a different diagnosis program, he must switch on the Tester while holding down both OK and ESC. In this case the screen in figure 2.1.1 is displayed with the Main Menu of the Basic Software.
As a standard rule, the OK key confirms the selected option among those displayed and thus access the next screen, while the UP and DOWN keys scroll through the options available. Pressing the ESC key displays the previous (higher level) menu (if there is one).
Note that UP, DOWN (and TAB) keys feature continuous scrolling; therefore, holding the key down scrolls through the list of options and starts again from the beginning when the end of the row or column is reached; this feature is not available on other keys in order to avoid inadvertently jumping from one menu to the next.
Furthermore, in all screens, the line at the bottom displays the name of the current environment (the name has a hyphen before it) with at the right the total number of options and the number of the selected option; the name of the environment is separated from the list of options by an unbroken line.
The main menu is as shown in figure 2.1.1



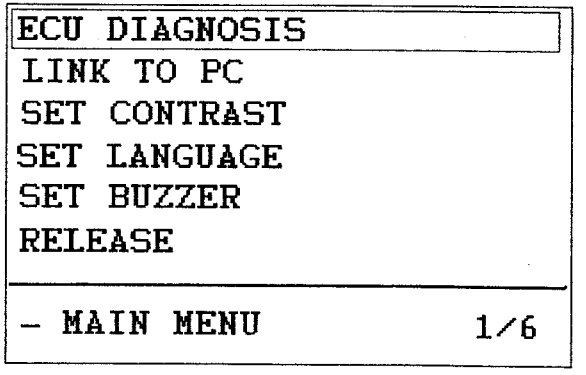



fig. 2.1.1

To select an option, highlight it with the UP and DOWN keys and press OK.
In this screen ESC is not available, in as much as there is no higher level menu, and thus the only operational keys are those indicated above for scrolling and confirming.

## 2.2 LINK TO PC MENU

Select "LINK TO PC" to enter the data management mode which needs the PC diagnosis program (fig. 2.2.1). To return to the main menu, press ESC. When entering the PC Link menu, the Basic Software deletes any previously downloaded diagnosis program (this is confirmed by a long beep); after having selected "Link To PC", to run any diagnosis program the user must first use the "ECU Diagnosis" menu (see below).

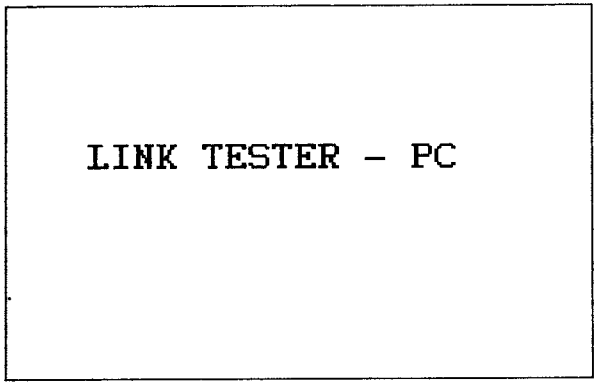



fig. 2.2.1



## 2.3 SET CONTRAST MENU

Highlight the "SET CONTRAST" option and press OK to enter the display contrast management menu.
The screen is as shown in fig. 2.3.1.

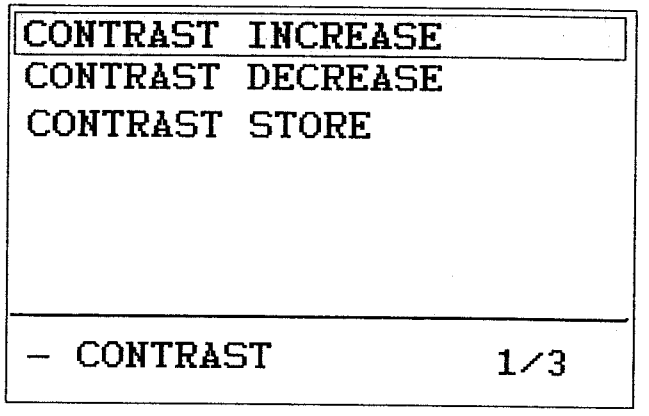



fig. 2.3.1

Set the contrast level by selecting "Contrast Increase" or "Contrast Decrease" and pressing OK. The change takes effect immediately and you can confirm the setting by selecting "Contrast Store" and pressing OK; to exit without saving and return to the previous setting, just press ESC. Stored settings will be retained even when the Tester is switched off and on again.

## 2.4 SET LANGUAGE MENU

Select "SET LANGUAGE" and press OK to enter the menu which sets the language in which the screens are displayed.
The screen is as shown in fig. 2.4.1.

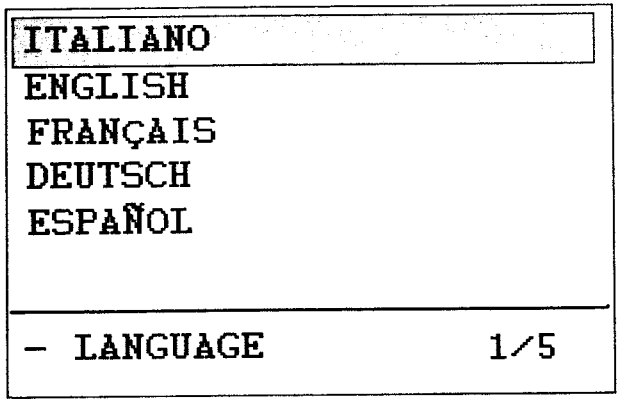



fig. 2.4.1

To set the display language, select the desired language and press OK. The setting is stored and retained even when the Tester is switched off and on again.



## 2.5 SET BUZZER MENU

Select the "SET BUZZER" option and press OK to enter the menu which sets the buzzer options (beep/no beep when the keys are pressed).
The screen is as shown in fig. 2.5.1.

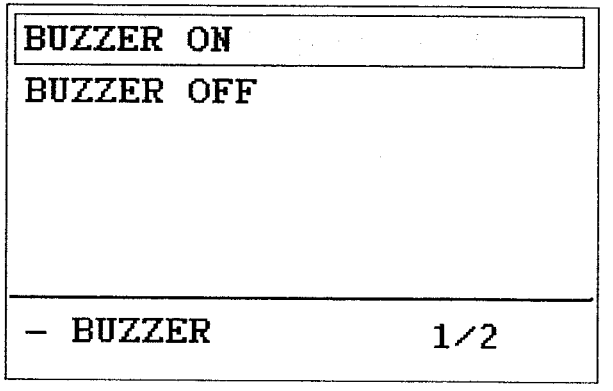



fig. 2.5.1

To activate/deactivate beeping when the keys are pressed, select the option you desire (with UP and DOWN keys) and press OK. The setting is stored and retained even when the Tester is switched off and on again.

## 2.6 ECU DIAGNOSIS MENU

Select "ECU DIAGNOSIS" and press OK to enter the menu which enables the user to load into memory one of the diagnosis programs previously downloaded through the PC, for execution.
Depending on how many and which programs have been downloaded, the screen is as shown in fig. 2.6.1.

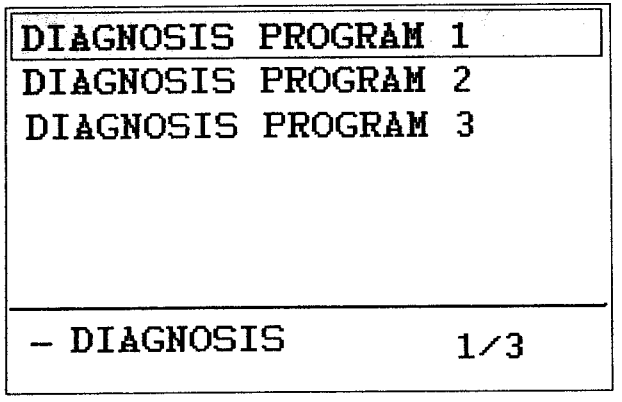



fig. 2.6.1

To load a program into memory and run it, select it (UP and DOWN keys) and press OK. The screen shown in fig. 2.6.2 appears and the selected software is run.



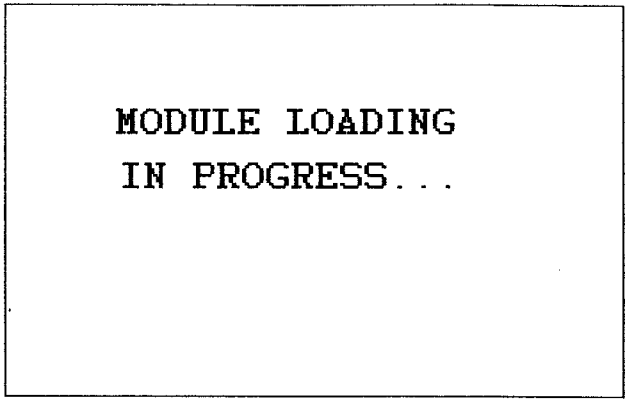



fig. 2.6.2

The next time the Tester is switched on without holding down both OK and ESC at the same time, and/or without downloading a new program from the PC, the selected program is run automatically.

## 2.7 DESCRIPTION SCANTOOL SOFTWARE

This chapter describes the operation of the scantool software implemented on the Tester.
When it starts running, the diagnosis program displays a logo; press any key to display a screen which gives the name and version of the program. This screen is displayed for a few seconds, unless the user presses a key. The Main Menu is then displayed, which gives the names of the various diagnosis menus. At the bottom of the display is the name of the menu (Main) and to the right the number of the highlighted option and the total number of options for the current menu. The highlighted option is reversed out. To select an option use the UP and DOWN keys to scroll through them. In general the Parameters, Freeze Frame Data, Errors, Errors Erasing and Ecu Information menus will be available.
From each menu, pressing OK key, a screen presenting the list of all the ECUs initialized by the diagnosis software appears: each ECU is marked by its address (e.g. ECU1 $11, with 11 hexadecimal address of that particular ECU). Use the UP and DOWN keys to scroll through the ECUs, press OK to enter in the specific menu of the chosen ECU.

The Parameters Environment displays the dynamic operating parameters of the selected electronic control unit. This environment implements the service nr. 1 of scantool protocol. The menu displays the individual parameters that the chosen ECU supports divided into pages with the unit of measure and the dynamic value for the indicated measure (on the right of the screen). The environment name, number of the selected page and the total number of pages available is displayed at the bottom of the screen. Use Up and DOWN to select a page and ESC to return to the Main Menu. If the connection to the ECU fails, the message "THE ECU DOES NOT RESPOND, CHECK THE CONNECTIONS" appears; the Tester will attempt repeatedly to reset the connection and if it succeeds, will display the previously selected Parameters page; if the connection fails permanently, press ESC to return to the main menu.

In Freeze Frame Data environment an error (present or memorized at the moment of the diagnosis) and its own environment parameters



are reported and this only if the ECU has memorized one. Environment parameters are data that the ECU has memorized when the error itself was detected. This environment realizes service nr. 2 of scantool protocol. The DTC that caused data storage is always shown as the first of the first page while all the parameters follow it. If no data are stored in ECU's memory "NO ERROR CAUSED THE FREEZE FRAME DATA" appears on the screen. Pressing a key you come back at main menu'. The environment name, number of the selected page and the total number of pages available is displayed at the bottom of the screen. Use Up and DOWN to select a page and ESC to return to the Main Menu.

The Errors environment downloads and displays the operating errors stored on the ECU. On the left of the screen is shown the p-code (that is the univocal OBD code standardized for that DTC) and on the right the address of the ecu selected. All the possible errors are divided into pages. This environment implements the service nr. 3 of scantool protocol. Use UP and DOWN to select pages and ESC to return to the main menu. Pressing the TAB key displays the selected error (displayed reversed out). If the connection to the ECU fails, the message "THE ECU DOES NOT RESPOND, CHECK THE CONNECTIONS" appears; the Tester will attempt repeatedly to reset the connection and if it succeeds, will display the previously selected error page; if the connection fails permanently, press ESC to return to the main menu.

Errors erasing environment (service 4 of scantool protocol) allows errors deleting from all active ECU's memories and not only of that one selected by the user. Errors erasing is possible only if engine is off. At the end a statement displays if the action has come to a successful conclusion or not. Pressing any key the main menu' appears again.

Ecu information environment implements service 9 of scantool protocol. Parameters concerning ecu information are shown in this service. Each page contains up to 3 parameters alternating names and values. Use UP and DOWN to select pages and ESC to return to the main menu. Pressing the TAB key displays the selected information (displayed reversed out). If the connection to the ECU fails, the message "THE ECU DOES NOT RESPOND, CHECK THE

CONNECTIONS" appears; the Tester will attempt repeatedly to reset the connection and if it succeeds, will display the previously selected Information page. If the selected electronic control unit does not support this service "INFO ECU SERVICE NOT SUPPORTED" appears. Pressing a key the software comes back to main menu'.

# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
|---|---|---|---|---|
| | | MNA-14 | August 2004 | 1 |

**MODEL: Quattroporte**

**SUBJECT: Service Procedures**

With the introduction of the Quattroporte, the procedures listed in this bulletin must be followed to ensure the best possible service experience for the customers. Following these procedures will make it possible to monitor and provide immediate assistance to the servicing dealer and technician.

**Procedure:**

1. Anytime an R.O. is written, a copy must be immediately faxed to the "Technical Support Dept." at 201-816-3397, and a "Blue on Line" report submitted.

2. If assistance with diagnosis or repairs is required, select the "Technical Support Request" option in the "Blue on Line "report. **All support requests must include the relevant fault codes and parameter printouts attached electronically to the "Blue on Line Report".**

3. Photos of any aesthetic related anomalies (i.e. leaks of **any** kind, defects relating to paint, interior items, glass, etc.) must also be attached to the "Blue on Line" reports electronically.

4. When repairs are completed, the "Blue on Line" report must be closed within 1 hour with all the above mentioned information (i.e parameters, fault codes, diagnostic tests of any kind with results) attached to the report, **electronically.**

5. If a loaner vehicle is requested, it is recommended that a Maserati product be supplied.

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
|---|---|---|---|---|
| | | MNA - 15 | October 2004 | 1 |

**SUBJECT: Closing Down Campaigns**

For your Information, below is a list of Maserati Campaigns that are closed or will be closing along with the respective closing dates.

| Campaign Num. | Description | Closing Date |
|---|---|---|
| 76 | Front Stabilizer Bar | Closed |
| 78 | Tow Hook | Closed |
| 79 | Torsional Dampener | Closed |
| 80 | Rear Sub-frame Bolts | Closed |
| 85 | Clutch Piping | Closed |
| 92 | Crankcase Breather Pipe | 12/31/04 |
| 93 | A/C Control Unit | 12/31/04 |
| 97 | Manual Gearbox Control | 12/31/04 |
| 99 | Radio Reception Kit | Closed |

# MASERATI NORTH AMERICA, INC.
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## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
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| | | MNA - 15 | September 2004 | 1 |

**SUBJECT: Reverse Shift Lever - CambioCorsa**

For your information, if the reverse shift lever "T" handle comes loose, it can be tightened so that replacement of the complete shifter assembly, part number; 67734326 / 67734327 is no longer necessary.

To tighten the securing screw for the "T" handle, remove the lever assembly and remove the bottom cover screws. After removing the bottom cover, it is now possible to access the lever to tighten the securing screw.

Warranty Information;

Component Code …..……...340031
Labor Code to R+R complete assembly……...3400310 (0.2 h)
New Labor Code to tighten the "T" handle.....3400319 (0.3 h)
Total Claim time……..….0.5 h

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
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| | | MNA - 16 | October 2004 | 2 |

**SUBJECT: Quattroporte Transmission Diagnosis Software**

For your information, please note that the North America market uses specific software on SD3 to communicate with the Nodo Cambio Robotizzato (Duoselect transmission). In the event that any software other than what is listed below is used, some parameters and acquisitions could be incomplete and/or incorrect.

The correct software for diagnosis and clutch setup is indicated on the SD3 as **CFC301** and/or **Sofast 3**. The marking **CFC301** can also can be found on the NCR Control unit located in the trunk above the battery. In order to access the below listed software be sure to have version 8.4H or above installed on your PC and in your SD3tester.

Figure 1 shows the correct diagnosis software that should always be used to diagnose transmission faults in the Quattroporte:

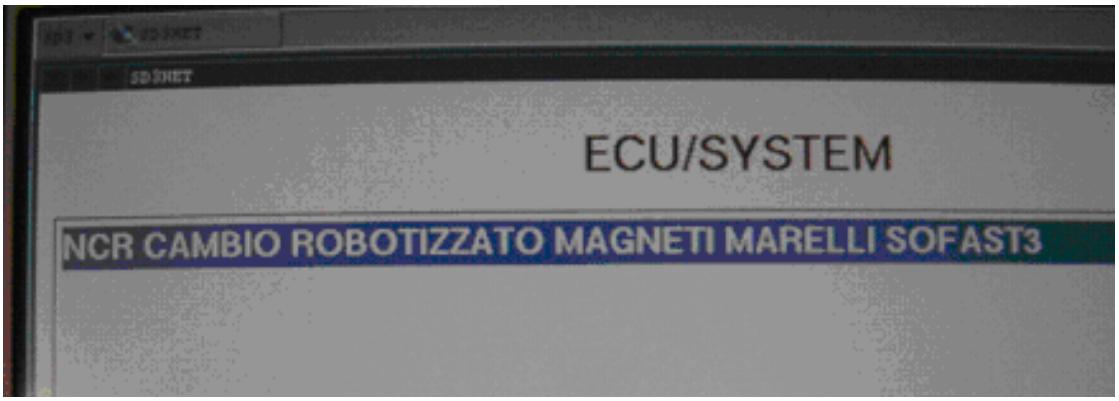



**Figure 1**

For clutch setup please be sure to follow the following steps:

1. Load your Quattroporte technical documentation CD **(be sure to have all 7 updates installed from Modis)**
2. Click on **Service Manual**
3. Click on **Gearbox Components**
4. Click on **Electronically Controlled Gearbox Controls**
5. Click on **Kiss point (PIS) adjustment procedure**
6. Follow all instructions carefully

Please note that upon booting up SD3 you must enter the diagnosis software **Kisspoint NCR CFC301** as shown in figure 2:

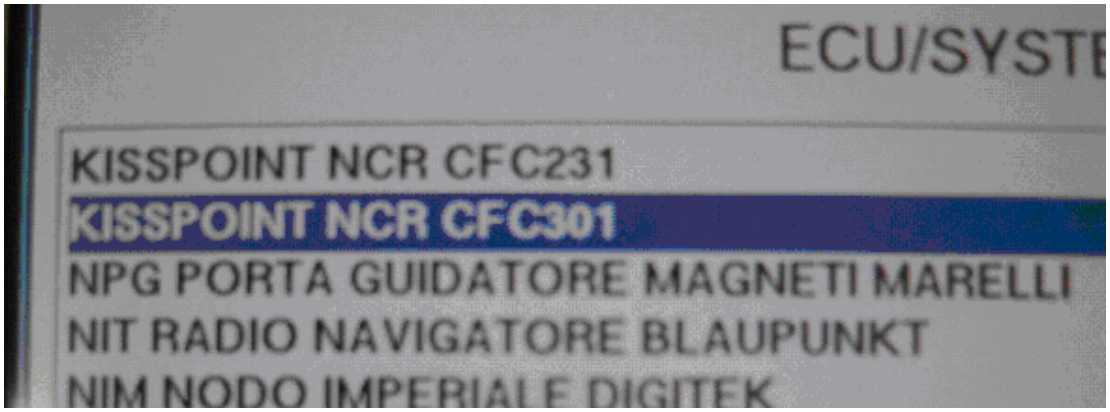



**Figure 2**

Please note that cable **95979568** is needed to complete the procedure and will be automatically sent to your dealer.

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
|---|---|---|---|---|
| | | MNA - 17 | March 2005 | 2 |

**MODEL: ALL**

**SUBJECT: Warranty Parts Return Form**

For your Information, attached is the form that will be used to explain why parts are being returned to a dealer. This form will accompany any parts returned to you that are not accepted in the warranty system.

Date:
Attention: **Service Manager**
Re: Warranty Returns

The Enclosed part has been received at the Warranty Parts return Center of Maserati North America Inc. Englewood Cliffs. Unfortunately, we are not in a position to process this part because of the following:

| | | |
|---|---|---|
| **01** | ☐ | **Over 20 days old** |
| **02** | ☐ | **Part Tampered with** |
| **03** | ☐ | **Part not Defective** |
| **04** | ☐ | **No NIT form attach** |
| **05** | ☐ | **Part damage in Transit/ Improper packing** |
| **06** | ☐ | **Unit not assembled** |
| **07** | ☐ | **Not A Manufacturing Defect** |
| **08** | ☐ | **Incorrect Part Supplied** |
| **09** | ☐ | **Not A genuine Ferrari / Maserati Part** |
| **10** | ☐ | **Production date is Incompatible to Vehicle** |
| **11** | ☐ | **Maintenance or Wear Item** |
| **12** | ☐ | **Incorrect Procedure** |
| **13** | ☐ | **No MODIS "BOL" or "ROL" on line report.** |
| **14** | ☐ | **No diagnostic SD2/ SD3 Print out** |
| **15** | ☐ | **Other** |

_____

_____

_____

Depending on circumstances you may have the opportunity of appealing once the claim has been fully processed. If it comes to an appeal, please follow the instructions in the Warranty Policy and Procedures manual.

Very truly yours,

**Maserati**
**North America, Inc.**

Dealer code_____ Vin # _____ Claim #_____ Warranty Repair date_____

Mileage_____ Part # _____ Disc._____Qty_____ Packing No_____

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
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| | | MNA - 20 | July 2005 | 11 |

**SUBJECT: New software available for SD3**

We would like to inform you that the following **new diagnostic software releases for SD3** are now available on **Modis.**

**A. SD3 Tester Operating System 2.28**
**B. Diagnostic Software Release 8.4 M for M139**
**C. KISSPOINT II and Flash Programming software for ECUs**

**NOTE: It is necessary to have SD3 Tester Operating System Version 2.28 before loading 8.4M!**

**NOTE: It is necessary to delete all previous diagnosis software versions installed on the tester before loading 8.4M! Failure to do so will result in faulty operation.**

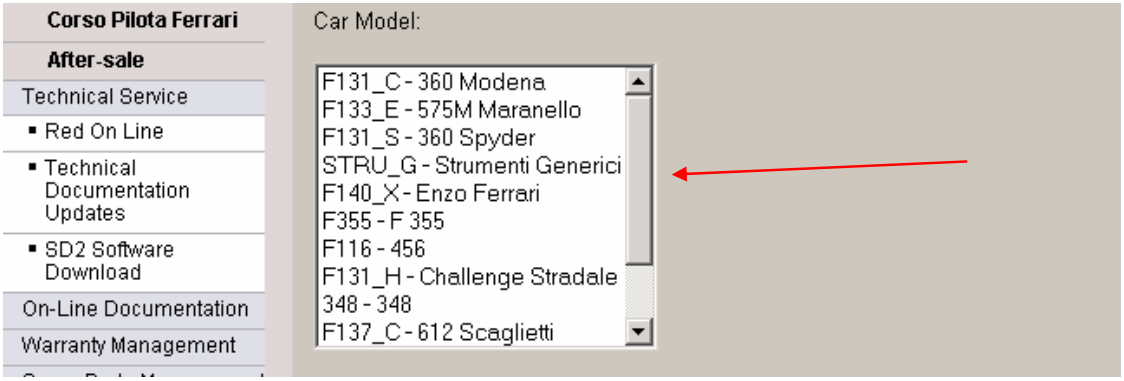
To Erase Current Diagnosis Software on SD3:

1. Go to the Main Menu of the SD3
2. Select “TOOLS”
3. Select “Delete Data”
4. Select “ERASE ALL DIAGNOSIS SOFTWARE”
5. Confirm erase procedure when prompted

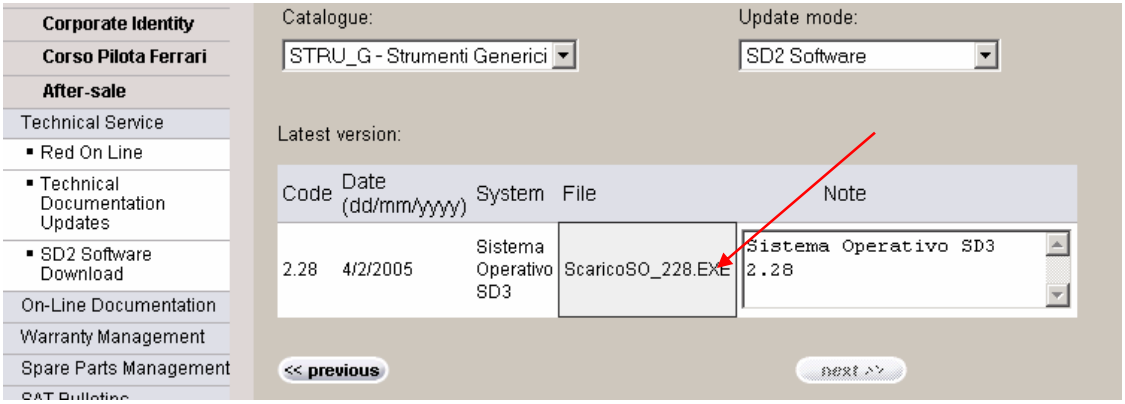
After this procedure, there will be no diagnostic software on the tester. Therefore, in addition to 8.4M, you must load all porting software previously on the tester before data deletion (Coupe, Spyder, GranSport).

**A. SD3 Tester Operating System 2.28**
Tester Operating Software 2.28 for the SD3 tester can be downloaded and installed through the following procedure:

1. Sign on to MODIS and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 Software Download**
5. Select **STRU_G-Strumenti Generici** as shown below

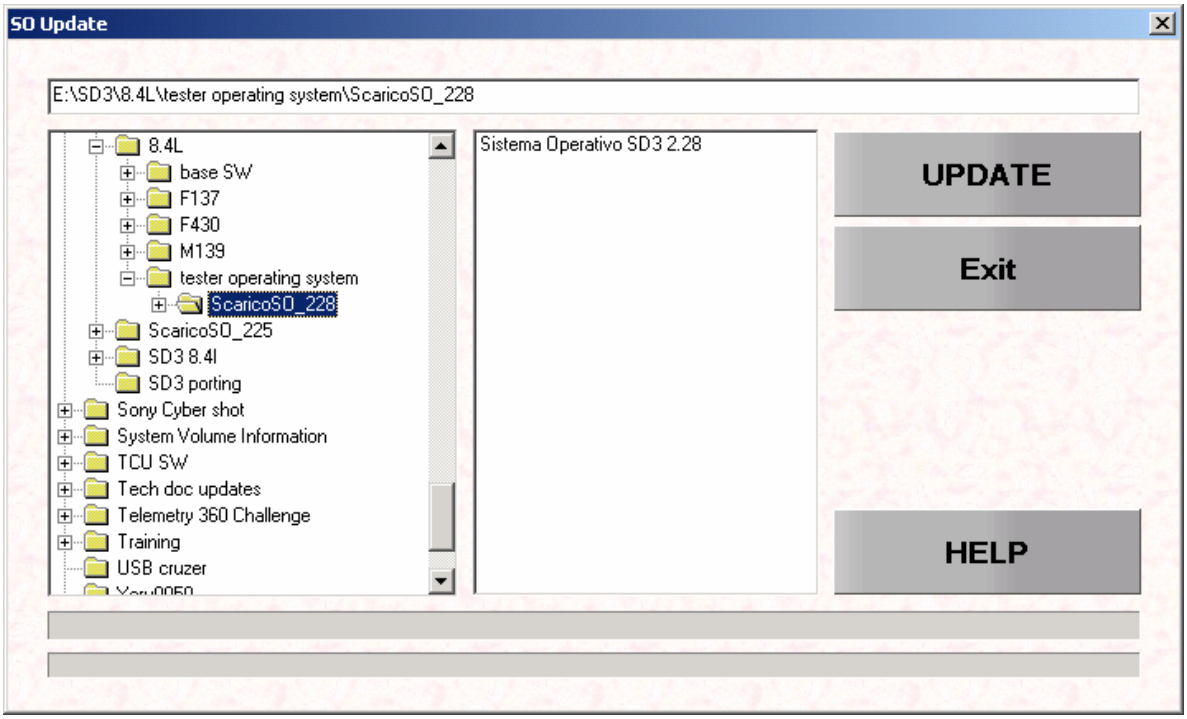



6. Select **SD2 Software**
7. Click the **next** button
8. Click on the file labeled **ScaricoSO_228.EXE** as shown below

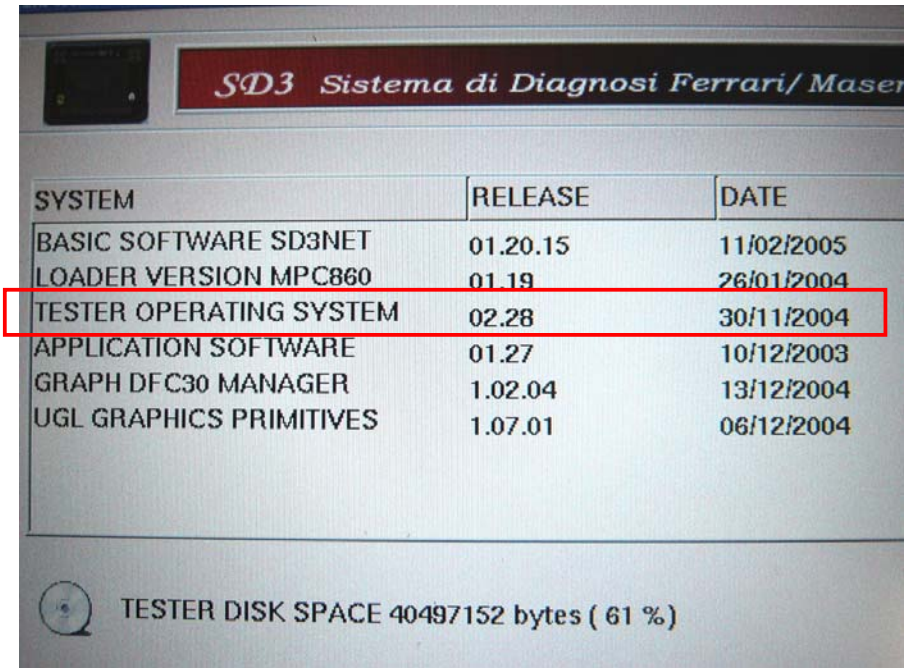



9. Click Save and select a suitable location on your PC to save the file
10. Once the download is complete click open on the window or locate the file and double-click **ScaricoSO_228.EXE**
11. Type or select a location to extract the file to and click Extract
12. Power up your **SD3 tester** and select the 2 option from the top **Dialogue Activation with the PC**
13. Using your PC now, double-click on the **SD3-Net** icon on your desktop

14. Click on **Maintenance** at the top
15. Select **Tester Operating System**
16. Next locate the file you extracted on your PC
17. Sistema Operativo SD3 2.28 should now be seen on the right column as shown below:



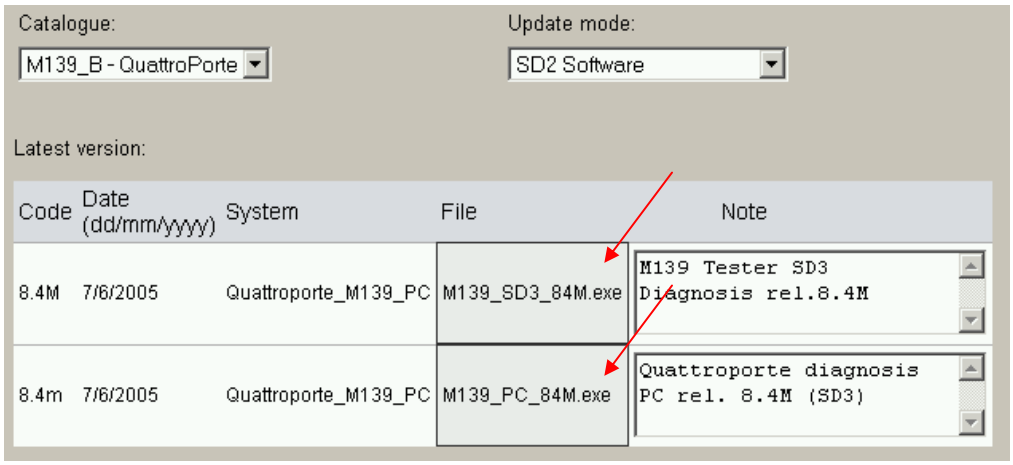

18. Click update and the PC is now sending the file to the tester
19. When complete turn the tester OFF then back ON
20. When the tester is booted up select the last option on the main menu **Information**
21. Check that the tester operating system is 2.28 as shown below:



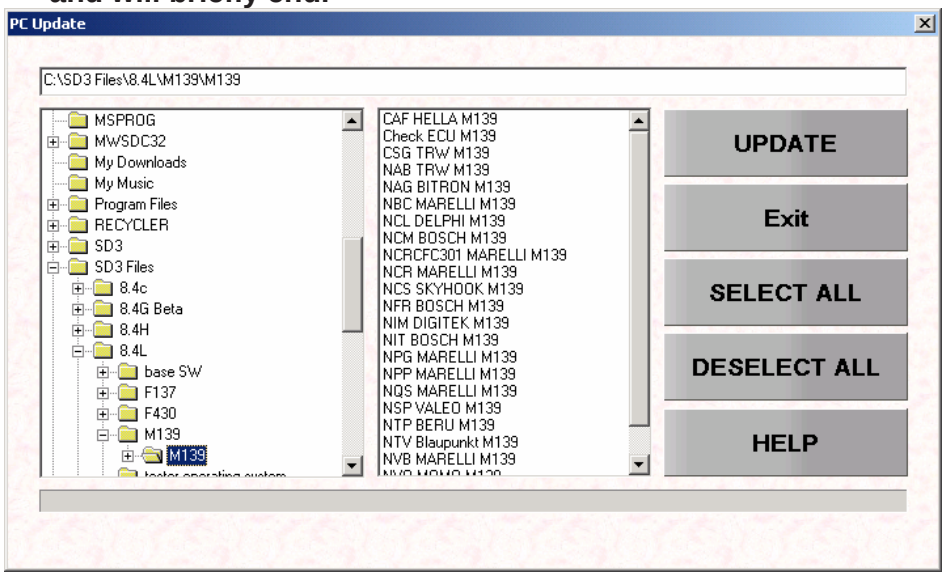

Now that the Operating System Software2.28 is installed, it is possible to install 8.4M Diagnostic Software.

**B. Diagnostic Software Release 8.4 M for M139**
Release 8.4M for the M139 can be downloaded through the following procedure:

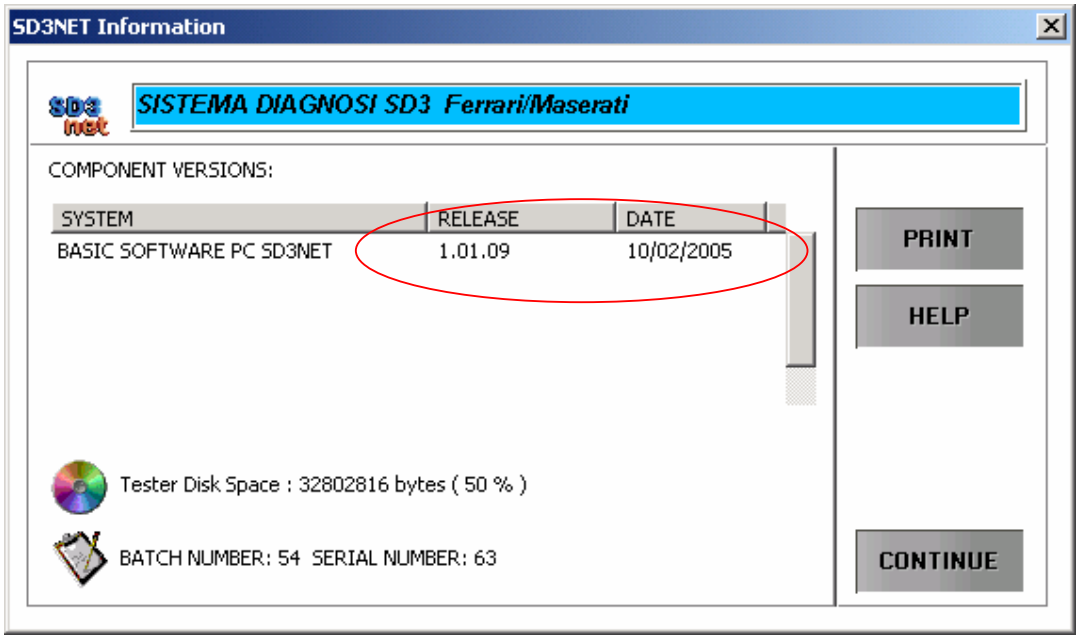
1. Sign-on to Modis and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 software download**
5. Select **M139_B QuttroPorte** from the box that appears
6. Select **SD2 Software**
7. Click once on both files that appear as shown below:




8. Once the download window open click save and select a suitable location
9. Once the download is complete double click either file and extract the file to a suitable location on your PC
10. Repeat with the other file
11. Open SD3net on your PC and select **updates** on the top left hand corner
12. Select **personal computer software update**
13. On the left hand side of the update screen locate the file you previously extracted labeled **M139**
14. Once all the ECU's are shown on the right click **select all**
15. Click **update** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**



16. Once complete SD3Net will show **“SD3Net will be closed to complete the update”**
17. Once shut down restart SD3Net
18. Click the **?** button on the left side of the screen (it is OK not be connected to the SD3 tester)
19. Your **BASIC Software PC SD3NET** should now read a **release 1.01.09** and a **date of 10/02/2005** as shown below:



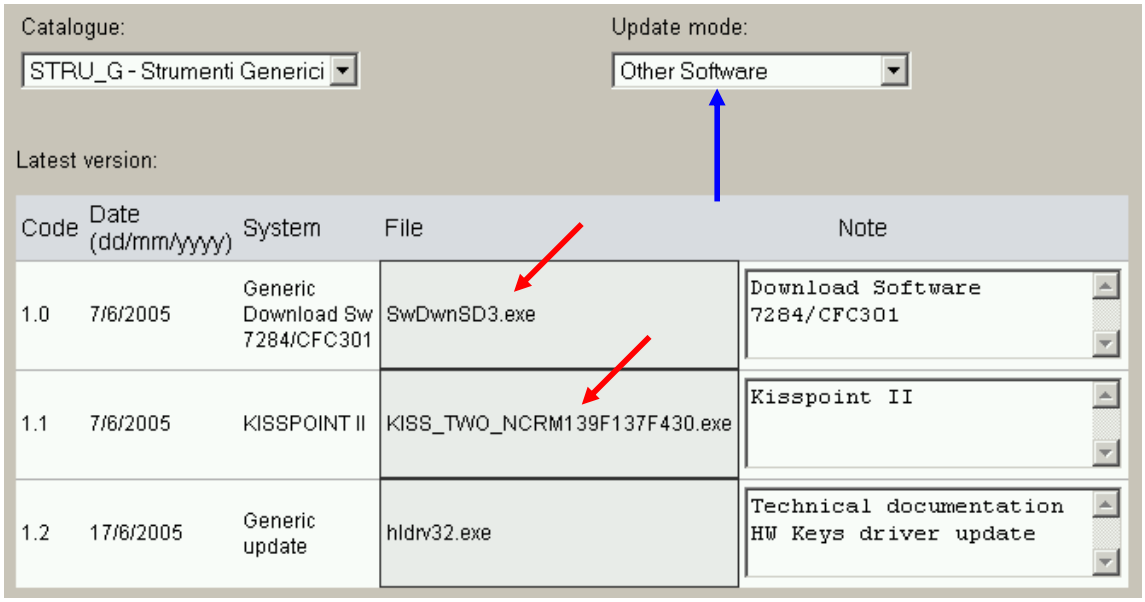

20. Restart SD3Net on your PC
21. Connect your tester to the PC by using the **Link to PC** function
22. On you r PC click **updates** at the top left of the screen and select **tester SD3 Software update**
23. Find the file you previously extracted **M139_SD3_84M** and click **select ALL** then **Transfer**

**C. KISSPOINT II and Flash Reprogramming Software for ECUs**

KISSPOINT II and Flash Reprogramming Software for M138 and M139 can be downloaded through the following procedure:

1. Sign-on to MODIS and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 Software Download**

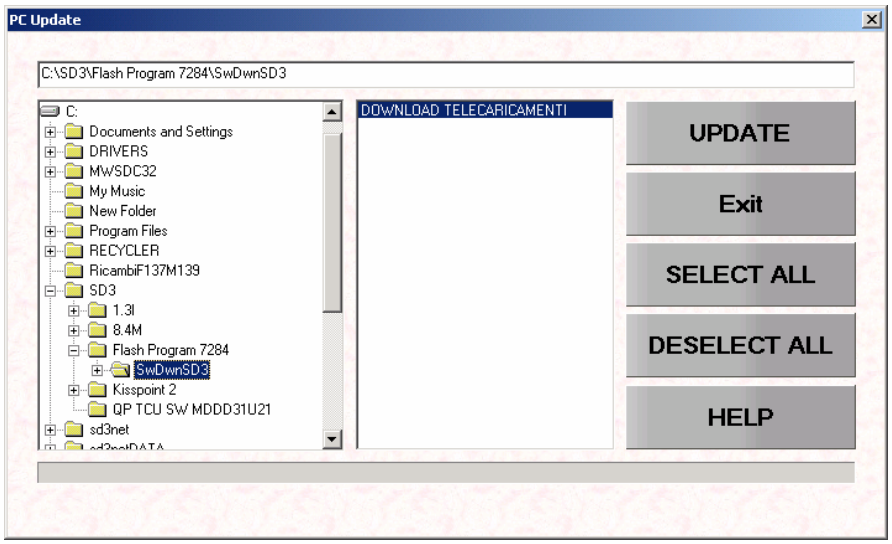
5. Select **STRU_G-Strumenti Generici** from the box that appears
6. Select **Other Software**
7. Click once on both files that appear as shown below:



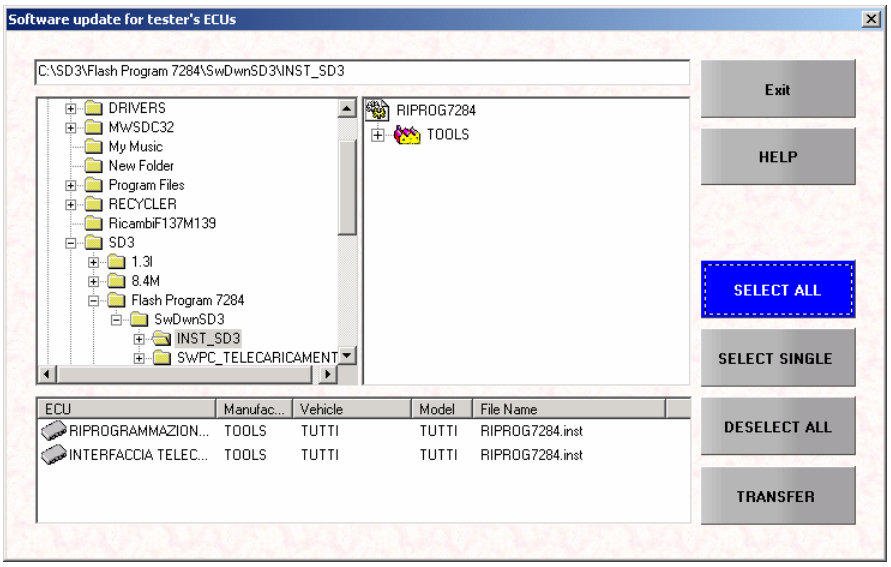

8. Once the download window open click save and select a suitable location
9. Once the download is complete double click either file and extract the file to a suitable location on your PC
10. Repeat with the other file

- **Loading Flash Reprogramming software on PC and SD3:**

11. Open SD3net on your PC and select **updates** on the top left hand corner
12. Select **personal computer software update**
13. On the left hand side of the update screen locate the file you previously extracted labeled **SwDwnSD3**
14. Once the program **DOWNLOAD TELECARICAMENTI** are shown on the right click **select all**
15. Click **update** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**
16. Select **EXIT**




17. While SD3NET is open on your PC, select **updates** on the top left hand corner
18. Select **tester SD3 software update**
19. On the left hand side of the update screen locate the file you previously extracted labeled **INST_SD3** in the **SwDwnSD3** folder
20. Once the program **DOWNLOAD TELECARICAMENTI** is shown on the right click **select all**
21. Click **TRANSFER** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**
22. Select **EXIT**

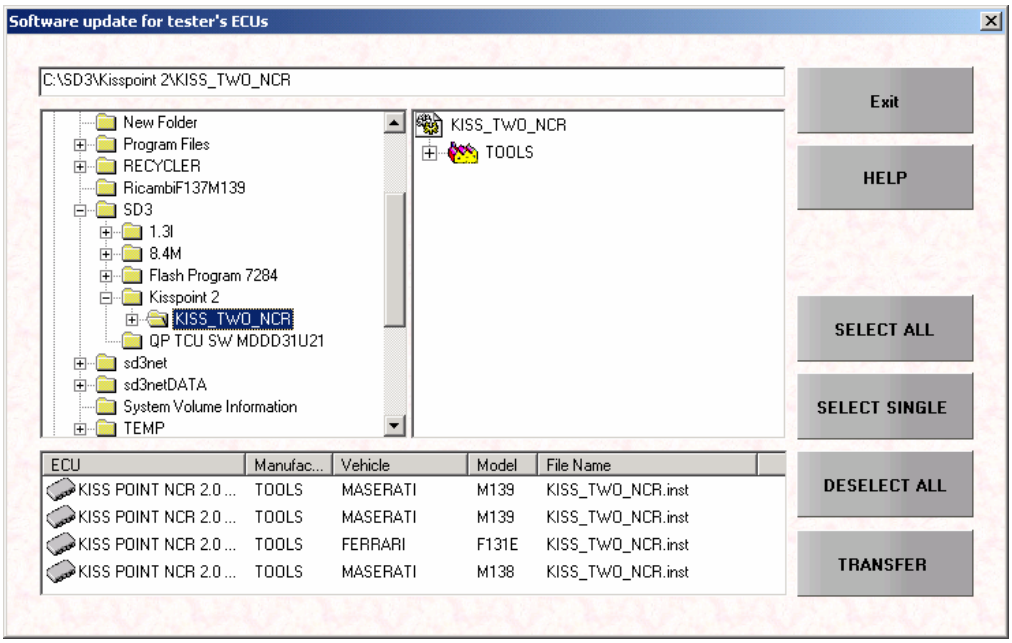



This is a general purpose tool for the flash programming of software of the on-board ECUs of the M139. Suitable files for different purposes will be issued on MODIS anytime necessary and the specific Technical information will be provided accordingly. Software from this download is loaded on both the **PC** and the **SD3**. The following lines will be added on the menu of the SD3 tester:

**1. TOOLS / TUTTI / RIPROGRAMMAZIONE 7284:** generic environment for the flash programming of all ECUs. The environment for NIM and NCL is currently available
**2. TOOLS / TUTTI / INTERFACCIA TELECARICAMENTO NCR CFC301**: flash programming menu for the only gearbox ECU NCR CFC301 (SOFAST3)

- **Loading KISSPOINT II software on SD3:**

1. While SD3NET is open on your PC, select **updates** on the top left hand corner
2. Select **tester SD3 software update**
3. On the left hand side of the update screen locate the file you previously extracted labeled **KISS_TWO_NCR**
4. Once all the ECU's are shown on the right click **select all**
5. Click **TRANSFER** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**




The KISSPOINT II software is ONLY loaded on the **SD3**. This process and the interface to the end user have been modified. On the SD3 diagnostic tester, the KISSPOINT II procedure can be found in the Serial Diagnosis menu under "Diagnostics Cycle on Individual ECU". The following are the specific programs used, with location on SD3 and description:

1. **TOOLS / MASERATI / M139 / KISSPOINT NCR 2.0 SOFAST II**: **DO NOT USE!:** This is software for the M139 EU specifications (European Only)

2**. TOOLS / MASERAT/ M139 / KISSPOINT NCR 2.0 SOFAST III**: For all model M139 US specifications using software "SOFAST 3" (They can be identified trough the hardware version of the gearbox ECU CFC301)

3. **TOOLS / MASERATI / M138 / KISSPOINT NCR 2.0 SOFAST II**: Spyder and Coupè MY05, GranSport, Spyder 90th Anniversary; software "SOFAST 2" (They can be identified trough the hardware version of the gearbox ECU CFC231)

- **Flash programming in Porting mode for M138 and M139:** the current flash programming mode is placed in the environment **MASERATI / M139SWUPDATE for M139** and **MASERATI / M138SWUPDATE for M138**. The flash programming porting for M138 has a high memory occupation therefore it must be downloaded alone and only when actually necessary.

**Listed below are changes to the above mentioned software for SD3Net**

**OPERATING SYSTEM;**
- The new version 2.28 for the SD3 operating system is now included.

**SD3 NET BASE SOFTWARE;**

- The correct Serial number/Batch number which is displayed in the identification environment corresponds exactly to the data plate on the back of the SD3 tester.

- The green/grey LED is now active during communication via USB

- The buttons 8 and 9 (page up/page down) have been added to the errors/parameters/diagnosis

- The color of the active diagnosis result windows has been modified:
› Green – result **OK**,
› Red – result **KO**,
› Light blue – diagnostics cycle ended by the user

- The vehicle serial number is now requested each time the SD3 tester is connected to a vehicle.

**IMPORTANT:**
**For the “dual brand” workshops, it is essential that the same software release is installed on the SD3 tester for the individual vehicles (for example, it would create problems if you installed release 8.4 L for 612 Scaglietti vehicles and release 8.4 M for Maserati Quattroporte vehicles on the SD3 tester).**

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

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**This Bulletin cancels and replaces Bulletin number MNA-20, dated June 2005.**

**SUBJECT: New software available for SD3**

We would like to inform you that the following **new diagnostic software releases for SD3** are now available on **Modis**:

**A. SD3 Tester Operating System 2.28**
**B. Diagnostic Software Release 8.4 N for M139**
**C. KISSPOINT II and Flash Programming software for ECUs**

**NOTE: It is necessary to have SD3 Tester Operating System Version 2.28 before loading 8.4N!**

**NOTE: If version 8.4L or earlier is loaded on the tester SD3, it is necessary to delete all previous diagnosis software versions installed on the tester before loading 8.4N! Failure to do so will result in faulty operation.**

To Erase Current Diagnosis Software on SD3:

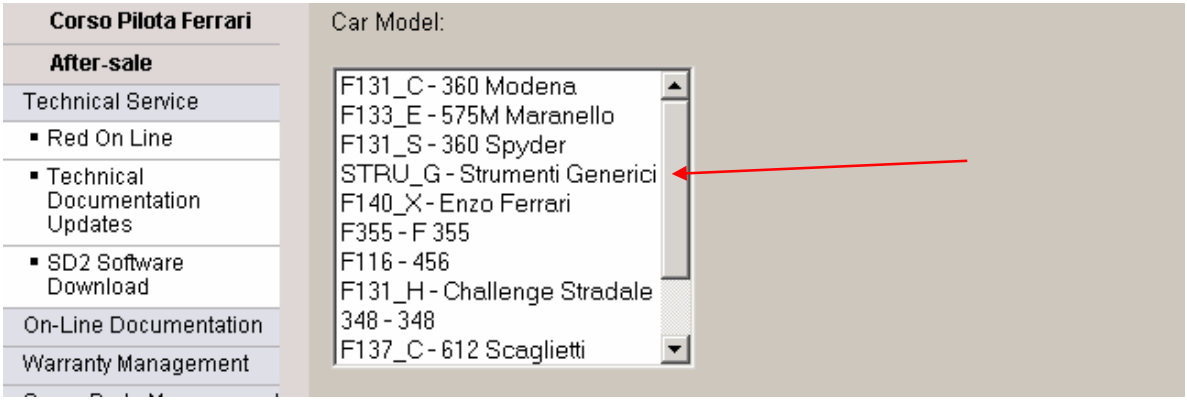
1. Go to the Main Menu of the SD3
2. Select “TOOLS”
3. Select “Delete Data”
4. Select “ERASE ALL DIAGNOSIS SOFTWARE”
5. Confirm erase procedure when prompted

After this procedure, there will be no diagnostic software on the tester. Therefore, in addition to 8.4N, you must load all porting software previously on the tester before data deletion (Coupe, Spyder, GranSport).

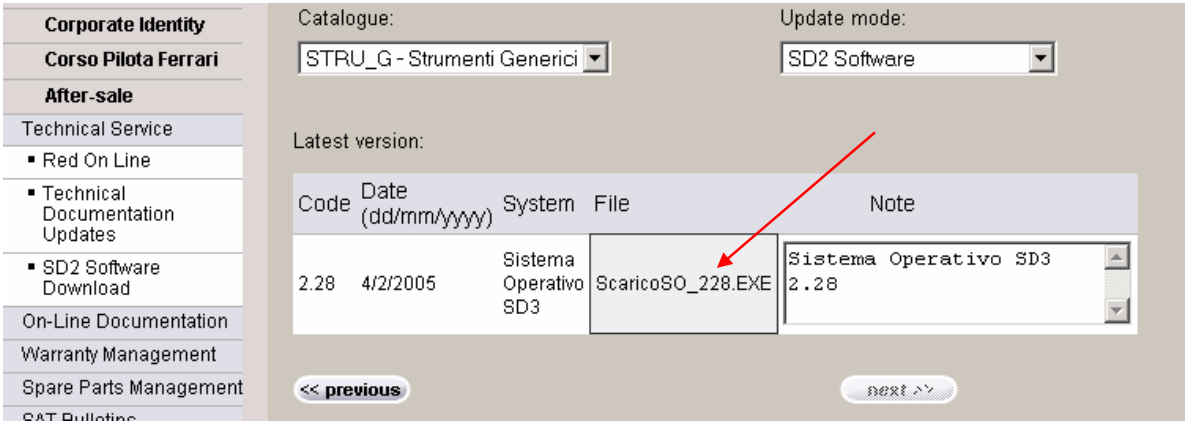
**A. SD3 Tester Operating System 2.28**
Tester Operating Software 2.28 for the SD3 tester can be downloaded and installed through the following procedure:

1. Sign on to MODIS and select Maserati

2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 Software Download**
5. Select **STRU_G-Strumenti Generici** as shown below

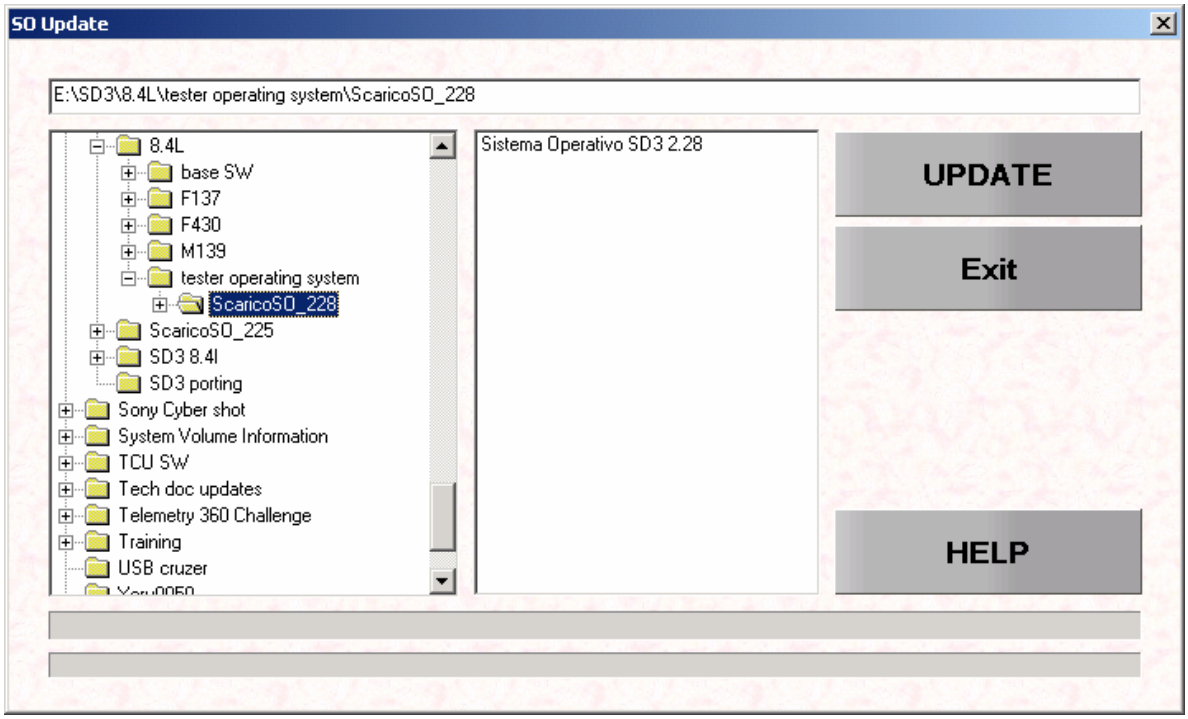



6. Select **SD2 Software**
7. Click the **next** button
8. Click on the file labeled **ScaricoSO_228.EXE** as shown below

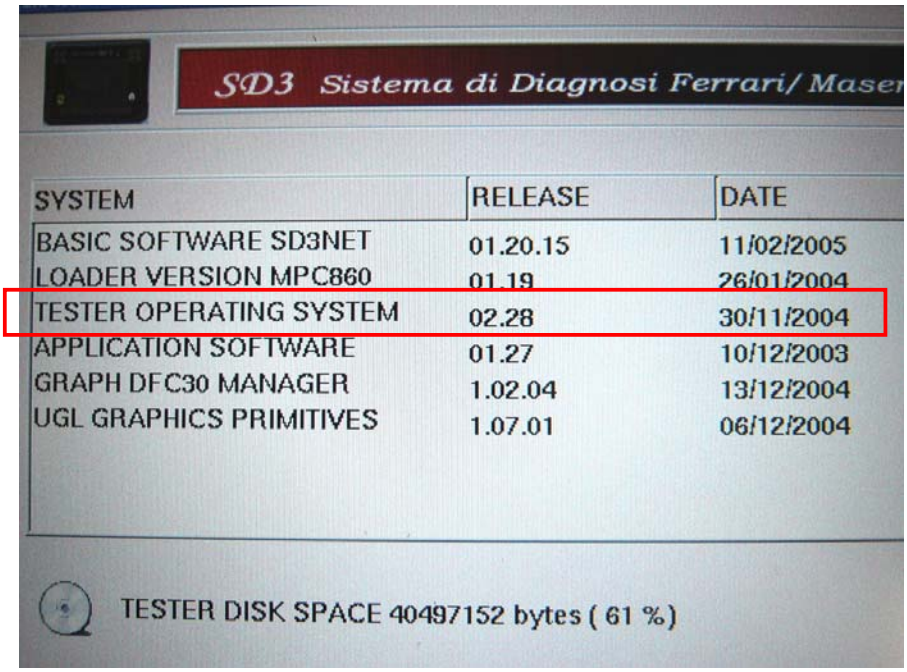



9. Click Save and select a suitable location on your PC to save the file
10. Once the download is complete click open on the window or locate the file and double-click **ScaricoSO_228.EXE**
11. Type or select a location to extract the file to and click Extract
12. Power up your **SD3 tester** and select the 2 option from the top **Dialogue Activation with the PC**
13. Using your PC now, double-click on the **SD3-Net** icon on your desktop
14. Click on **Maintenance** at the top
15. Select **Tester Operating System**

16. Next locate the file you extracted on your PC
17. Sistema Operativo SD3 2.28 should now be seen on the right column as shown below:



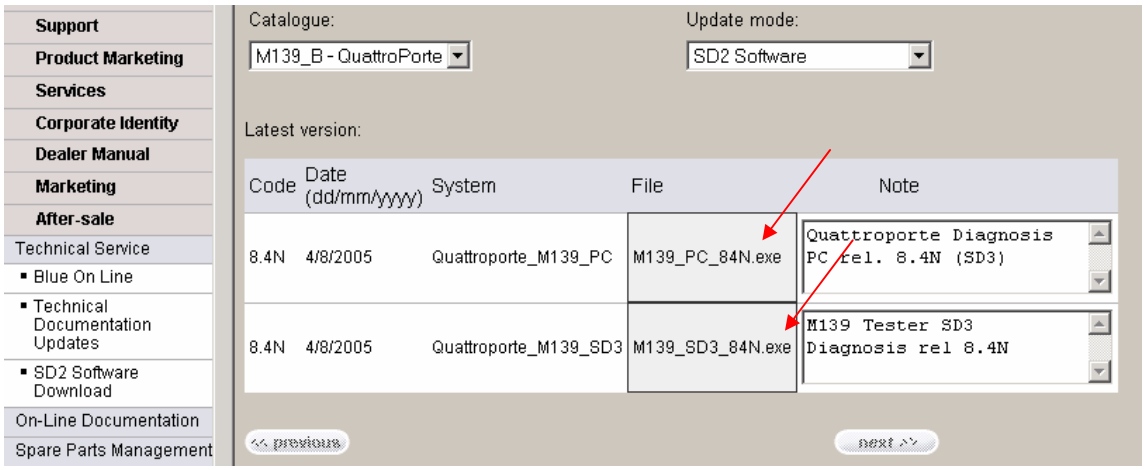

18. Click update and the PC is now sending the file to the tester
19. When complete turn the tester OFF then back ON
20. When the tester is booted up select the last option on the main menu **Information**
21. Check that the tester operating system is 2.28 as shown below:



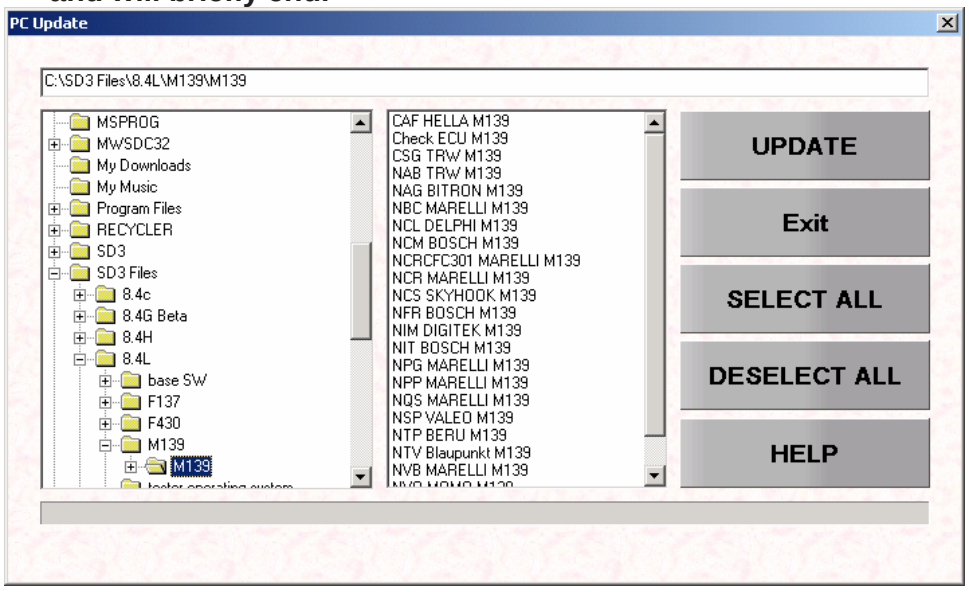

Now that the Operating System Software2.28 is installed, it is possible to install 8.4N Diagnostic Software.

**B. Diagnostic Software Release 8.4 N for M139**
Release 8.4N for the M139 can be downloaded through the following procedure:

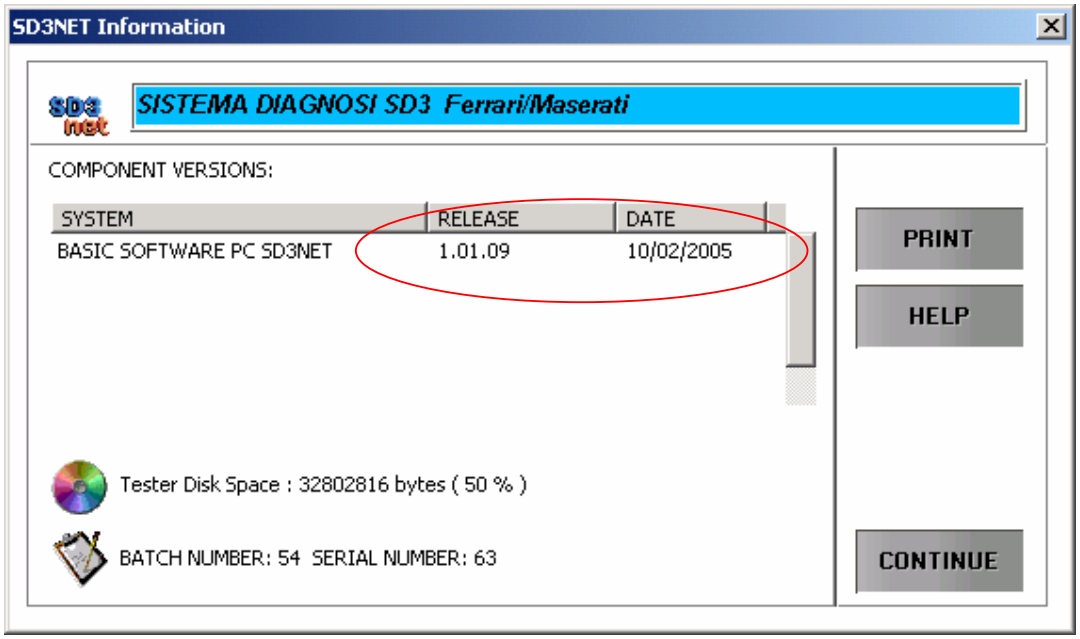
1. Sign-on to Modis and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 software download**
5. Select **M139_B QuttroPorte** from the box that appears
6. Select **SD2 Software**
7. Click once on both files that appear as shown below:




8. Once the download window open click save and select a suitable location
9. Once the download is complete double click either file and extract the file to a suitable location on your PC
10. Repeat with the other file
11. Open SD3net on your PC and select **updates** on the top left hand corner
12. Select **personal computer software update**
13. On the left hand side of the update screen locate the file you previously extracted labeled **M139**
14. Once all the ECU's are shown on the right click **select all**
15. Click **update** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**



16. Once complete SD3Net will show **“SD3Net will be closed to complete the update”**
17. Once shut down restart SD3Net
18. Click the **?** button on the left side of the screen (it is OK not be connected to the SD3 tester)
19. Your **BASIC Software PC SD3NET** should now read a **release 1.01.09** and a **date of 10/02/2005** as shown below:



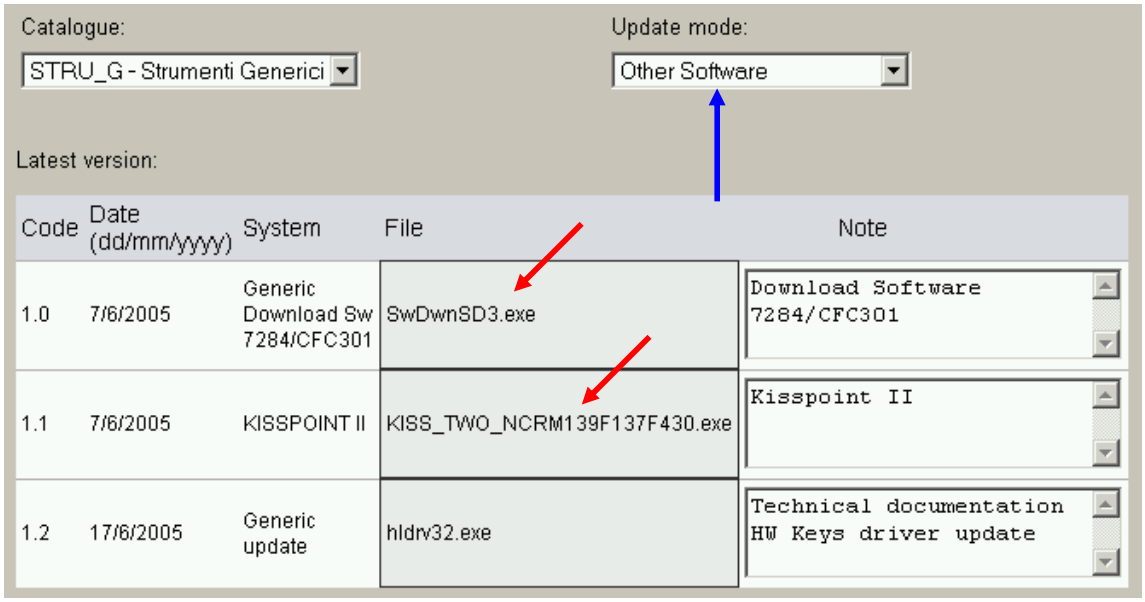

20. Restart SD3Net on your PC
21. Connect your tester to the PC by using the **Link to PC** function
22. On you r PC click **updates** at the top left of the screen and select **tester SD3 Software update**
23. Find the file you previously extracted **M139_SD3_84N** and click **select ALL** then **Transfer**

**C. KISSPOINT II and Flash Reprogramming Software for ECUs**

KISSPOINT II and Flash Reprogramming Software for M138 and M139 can be downloaded through the following procedure:

1. Sign-on to MODIS and select Maserati
2. Select **After-sale**
3. Select **Technical Service**
4. Select **SD2 Software Download**
5. Select **STRU_G-Strumenti Generici** from the box that appears

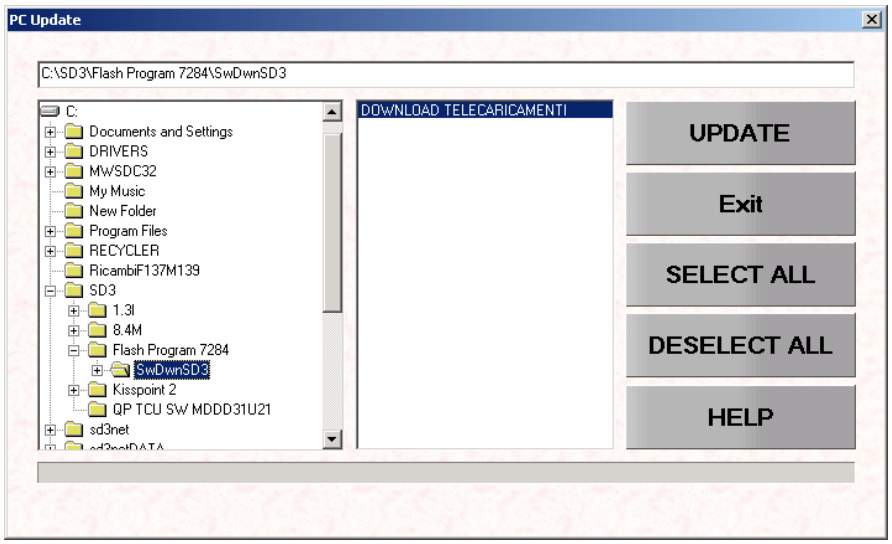
6. Select **Other Software**
7. Click once on both files that appear as shown below:



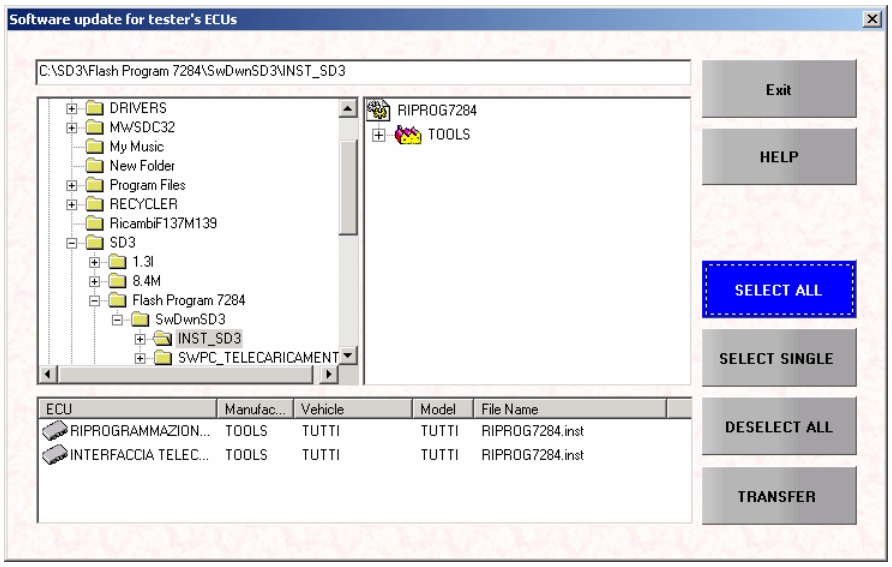

8. Once the download window open click save and select a suitable location
9. Once the download is complete double click either file and extract the file to a suitable location on your PC
10. Repeat with the other file

- **Loading Flash Reprogramming software on PC and SD3:**

11. Open SD3net on your PC and select **updates** on the top left hand corner
12. Select **personal computer software update**
13. On the left hand side of the update screen locate the file you previously extracted labeled **SwDwnSD3**
14. Once the program **DOWNLOAD TELECARICAMENTI** are shown on the right click **select all**
15. Click **update** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**
16. Select **EXIT**




17. While SD3NET is open on your PC, select **updates** on the top left hand corner
18. Select **tester SD3 software update**
19. On the left hand side of the update screen locate the file you previously extracted labeled **INST_SD3** in the **SwDwnSD3** folder
20. Once the program **DOWNLOAD TELECARICAMENTI** is shown on the right click **select all**
21. Click **TRANSFER** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**
22. Select **EXIT**

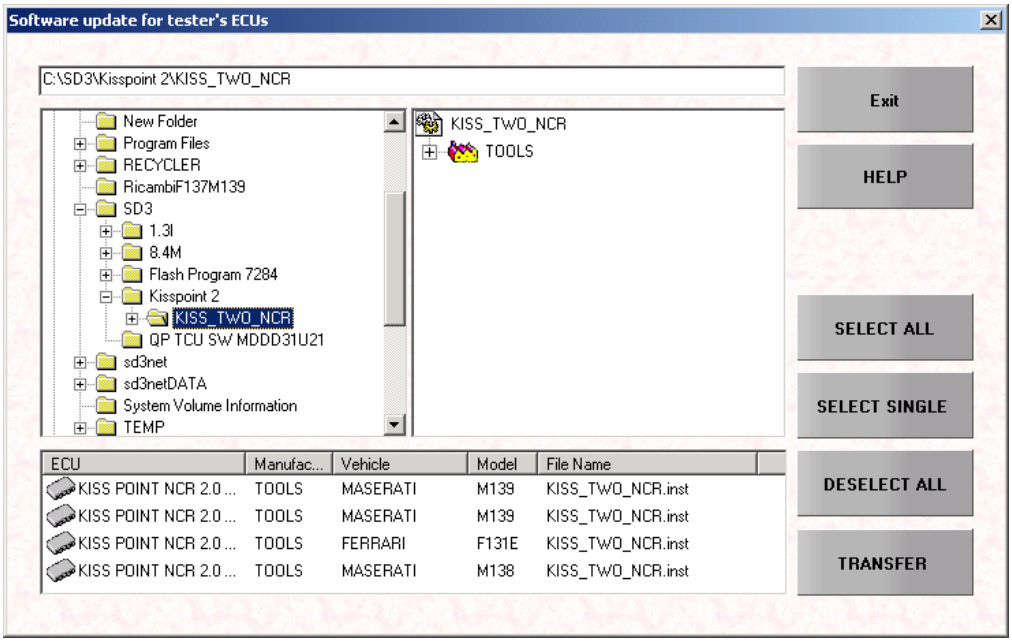


This is a general purpose tool for the flash programming of software of the on-board ECUs of the M139. Suitable files for different purposes will be issued on MODIS anytime necessary and the specific Technical information will be provided accordingly. Software from this download is loaded on both the **PC** and the **SD3**. The following lines will be added on the menu of the SD3 tester:

**1. TOOLS / TUTTI / RIPROGRAMMAZIONE 7284:** generic environment for the flash programming of all ECUs. The environment for NIM and NCL is currently available
**2. TOOLS / TUTTI / INTERFACCIA TELECARICAMENTO NCR CFC301**: flash programming menu for the only gearbox ECU NCR CFC301 (SOFAST3)

- **Loading KISSPOINT II software on SD3:**

1. While SD3NET is open on your PC, select **updates** on the top left hand corner
2. Select **tester SD3 software update**
3. On the left hand side of the update screen locate the file you previously extracted labeled **KISS_TWO_NCR**
4. Once all the ECU's are shown on the right click **select all**
5. Click **TRANSFER** **NOTE: If the screen seems to freeze or the progress bar (in green) does not move, do not do anything. The system is still updating and will briefly end.**



The KISSPOINT II software is ONLY loaded on the **SD3**. This process and the interface to the end user have been modified. On the SD3 diagnostic tester, the KISSPOINT II procedure can be found in the Serial Diagnosis menu under "Diagnostics Cycle on Individual ECU". The following are the specific programs used, with location on SD3 and description:

1. **TOOLS / MASERATI / M139 / KISSPOINT NCR 2.0 SOFAST II**: **DO NOT USE!:** This is software for the M139 EU specifications (European Only)

2**. TOOLS / MASERAT/ M139 / KISSPOINT NCR 2.0 SOFAST III**: For all model M139 US specifications using software "SOFAST 3" (They can be identified trough the hardware version of the gearbox ECU CFC301)

3. **TOOLS / MASERATI / M138 / KISSPOINT NCR 2.0 SOFAST II**: Spyder and Coupè MY05, GranSport, Spyder 90th Anniversary; software "SOFAST 2" (They can be identified trough the hardware version of the gearbox ECU CFC231)

- **Flash programming in Porting mode for M138 and M139:** the current flash programming mode is placed in the environment **MASERATI / M139SWUPDATE for M139** and **MASERATI / M138SWUPDATE for M138**. The flash programming porting for M138 has a high memory occupation therefore it must be downloaded alone and only when actually necessary.

**Listed below are changes to the above mentioned software for SD3Net**

**OPERATING SYSTEM;**
- The new version 2.28 for the SD3 operating system is now included.

**SD3 NET BASE SOFTWARE;**

- The correct Serial number/Batch number which is displayed in the identification environment corresponds exactly to the data plate on the back of the SD3 tester.

- The green/grey LED is now active during communication via USB

- The buttons 8 and 9 (page up/page down) have been added to the errors/parameters/diagnosis

- The color of the active diagnosis result windows has been modified:
› Green – result **OK**,
› Red – result **KO**,




› Light blue – diagnostics cycle ended by the user

- The vehicle serial number is now requested each time the SD3 tester is connected to a vehicle.

**IMPORTANT:**
**For the “dual brand” workshops, it is essential that the same software release is installed on the SD3 tester for the individual vehicles (for example, it would create problems if you installed release 8.4 L for 612 Scaglietti vehicles and release 8.4 N for Maserati Quattroporte vehicles on the SD3 tester).**

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

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**SUBJECT: Aftersales Dealer Extranet**

Please be informed that the dealer extranet now includes important information for the after sales departments. The dealer extranet web address is **http://www.dealers.maseratiusa.com**.

In order to access this information you must first complete the attached form and fax it to 201-816-3397. Please print legibly. Once the form is processed, you will receive a user name and password using the email address you provided on the form.

Concerning after-sales, the extranet now offers the following:

- Technical Bulletins
- Recall Campaigns
- Technical Tips
- Warranty Bulletins




# After-sales Dealer Extranet Sign-up

Dealer Name:_____ Dealer #:_____

First Name:_____ Mid Init. _____

Last Name:_____

Title:_____

Ferrari Dealer (yes/no):_____

Maserati Dealer (yes/no):_____

Email:_____

Office Phone#:_____ Ext.:_____

Mobile#:_____

Fax#:_____

## Completed forms must be faxed to 201-816-3397.

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

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| | | MNA - 22 | August 2005 | 1 |

**SUBJECT: M139 Quattroporte Key Programming**

For your information the below mentioned procedures should be carried out when ever you are programming new keys for the M139 Quattroporte.

**Important: Before you begin the procedure, be sure to have all keys on hand. Any key left out will no longer function. Second, be sure to have the electronic key code card from the vehicles pouch.**

1. Connect SD3 in link to PC to the car
2. Select **PC diagnosis** in SD3Net on your PC
3. Select **Personal Computer Diagnostics Software Running**
4. Select **Ricambi M139**
5. Select **Key reprogramming** and follow the on-screen prompts

**IMPORTANT!**

**Once complete with the steps on SD3 remove the key from the ignition and close all the doors (trunk and hood included). Wait 15 min for the vehicle's CAN bus to go to sleep as indicated by the CD-changer lights and the NQS lights going out. Once asleep the remote part of the keys (alarm system) will now function and the reprogramming will be complete.**

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

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| | | MNA - 23 | August 2005 | 1 |

**SUBJECT: Microsoft Internet Explorer 6.0**

For your information, starting September 1st, to be able to access ModisCs, the Internet Explorer version required is 6.0.

To see the version currently on your system, while using Internet Explorer, click on "**Help"**, then click on "**About Internet Explorer"**. If the version you are currently using is not 6.0 or higher, you must go to Microsoft.com and follow the instructions for loading version 6.0 on your system.

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

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| | | **MNA-24** | **August 2005** | **1** |

**SUBJECT: Engine and Transmission Control Unit Reprogramming (All Models)**

Please be aware that effective immediately, replacement Electronic Control Units (ECU) will no longer need to be programmed by Maserati North America prior to the ECU being shipped, as the SD2 and SD3 software required for programming the following ECUs is now available via ModisCS.

Transmission Control unit information is listed below for your reference:

| Part Number | Model Application | Type***** |
|---|---|---|
| 196833 | Coupe/Spyder, MY02 to Mid MY03 (Non-MSP****** equipped vehicles) | CFC201 |
| 980001181 | Coupe/Spyder/GS, Mid MY03 to MY05 (MSP equipped vehicles) | CFC231 |
| 980001182 | Quattroporte, MY04 to MY05 | CFC301 |

***** Number located at the bottom left corner of the label affixed to Transmission ECU (see **Figure 1**).
****** Maserati Stability Program

The new units will come **blank** and **must be programmed for each individual car**. ModisCS now has programming software listed for **SD2 and SD3** for engine and transmission control units for all Maserati models.

All software can be found under the following path:

1. After-sale
2. Technical Service
3. SD2 Software Download
4. (Select car model)
5. ECU Software




**Figure 1 M139 Transmission ECU (NCR)**

Please also refer to Maserati parts bulletin #7.

For any questions regarding this bulletin please email technicalsupport@ferrariusa.com.

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

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| | | MNA - 29 | 7 November 2005 | 2 |

**SUBJECT: Passenger Air Bag Light – Campaign 136 – Supplemental Info**

**MODEL: Quattroporte**

The purpose of this document is to clarify the location of the two (2) required files for Campaign 136 on the Maserati Quattroporte. Please reference the specified steps outlined in **A. Software Download** in the section labeled "Software Downloads & Technical Instructions"

A. The location of **ProxiUpdate.exe** (Figure 1) is found on MODIS using the path:
    a. After-sale
    b. Technical Service
    c. SD2 Software Download
    d. STRU_G – Strumenti Generici
    e. Other Software

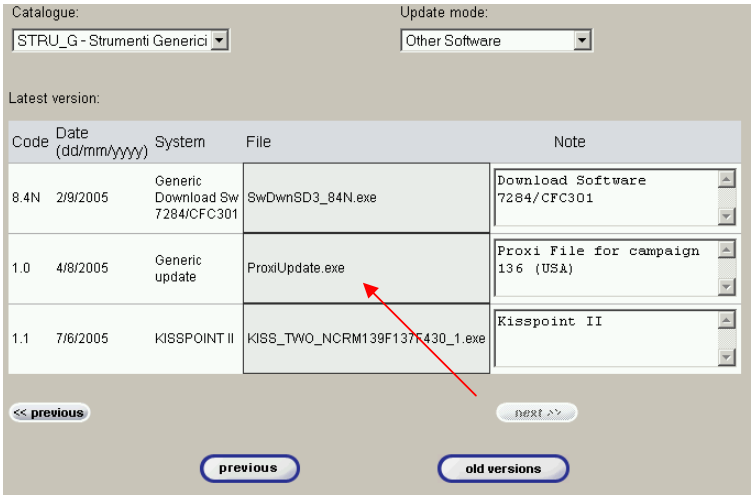



**Figure 1**

B. The location of **NIMSW_M139_1.exe** (Figure 2) is found on MODIS using the path:
    a. After-sale
    b. Technical Service
    c. SD2 Software Download
    d. M139_B - QuattroPorte
    e. ECU Software

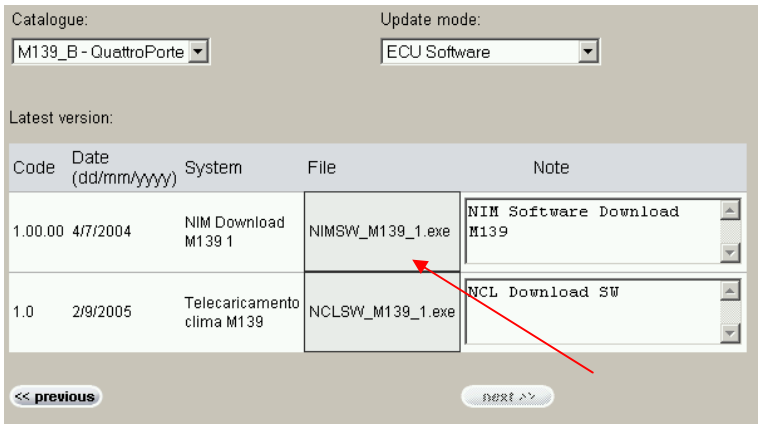



**Figure 2**

# MASERATI NORTH AMERICA, INC.
# TECHNICAL SERVICE DEPARTMENT

## TECHNICAL INFORMATION

| Section | Section serial n° | Bulletin n° | Date | Pages |
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| | | MNA - 30 | 7 November 2005 | 2 |

**MODEL: Quattroporte**

**SUBJECT: Instrument Cluster Information**

The following is important information related to the instrument clusters on the Quattroporte with **Software Version 0236** during PDI and service interval reset. This is to indicate if there is a fault with the instrument cluster.

**NOTE**: In order to check the software version of the instrument cluster, connect the SD3 to the vehicle in standalone mode and follow the path:

1. Serial Diagnosis
2. Diagnostic cycle on individual ECU
3. M139
4. NQS QUADRO STRUMENTI  MAGNETTI MARELLI
5. ECU IDENTIFICATION ENVIRONMENT

To verify the software version, check the value **SW VER.** It must be **0236**.

1. During PDI, the instrument cluster does <u>not</u> require any programming, setup, or intervention with the SD3.
   - The only action that <u>must</u> be performed is to set the TIME and DATE on the NIT if necessary.
   - Make sure that the time and date on the display on the cluster do not show dashes (e.g. --:-- or --/--/----). This is an indication that they must be set.

   **NOTE**: If the TIME and DATE are not set (--:-- and --/--/---- for the time and date, respectively, displayed in the cluster) at the instant the mileage reaches 120 miles, the cluster will store the initial date as 01-01-2000. If this happens, the cluster must then be replaced.

2. The NIT will display the current mileage and date UNTIL the next service. Use the following key strokes on the NIT to obtain this info: TRIP >> SERVICE INFO. You will see 2 possible screens:




**Before 120 mi**




**After 120 mi**

- If the vehicle has less than 120 miles, the mileage is displayed, but day information is not available
- Once the vehicle reaches 120 miles, the day countdown will start at 356 days, or 1 year.
- If the Service Information Reset in the SD3 is performed on the cluster before 120 miles, the SD3 will display “NACK UNKNOWN”. This is normal operation because the SD3 prevents a reset as service is not due.

3. There are 2 basic problems that may occur with the service interval in the instrument cluster.
   - If the “Service Due Now” indicator is displayed on the instrument cluster and the NIT during the first 120 miles, the instrument cluster must be replaced
   - If the “Service Due Now” indicator is displayed on the instrument cluster and the NIT before the first service interval (6000), the instrument cluster must be replaced

   **NOTE**: When the SD3 is used to reset the service interval in these above mentioned intervals, it is highly probable that the SD3 will display “NACK UNKNOWN” – this is NOT normal operation and the cluster must be replaced.

4. When a new cluster is installed, the cluster display might show the message “System not programmed”. In this case, the following actions must be done:
   - Set the TIME and DATE on the NIT
   - Perform a Proxi Align (**Ricambi M139** on SD3NET in Link-to-PC mode)
   - Perform a Cycle Test on the Cluster

# MASERATI NORTH AMERICA, INC.
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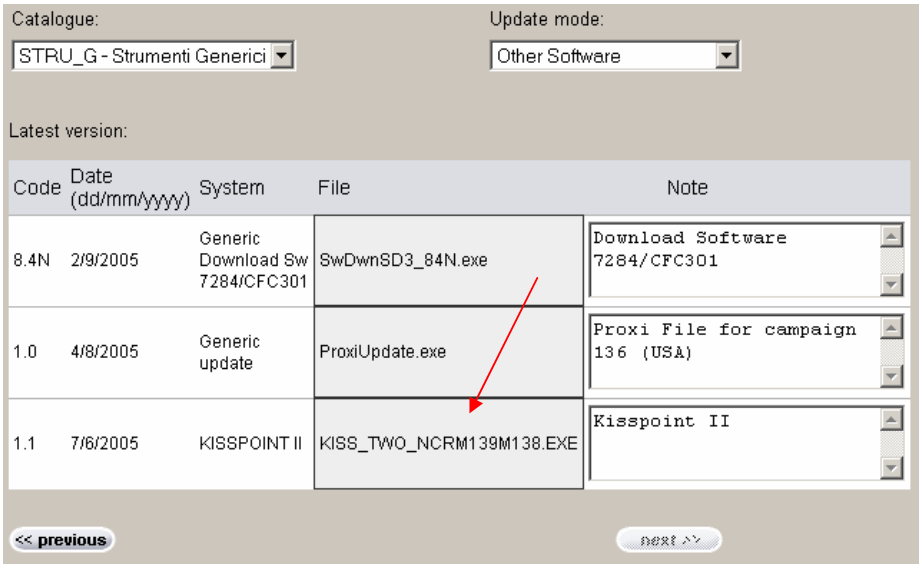
**MODEL: Quattroporte**

**SUBJECT: Kiss Point Procedure for MY06 Quattroporte**

There is now available on MODIS new Kiss Point software specifically for Model Year 2006 Quattroporte. This software must be used on all MY06 Quattroportes.

1. Download the Kiss Point software from MODIS using the path:
   a. After-sales
   b. Technical Service
   c. SD2 Software Download
   d. STRU_G – Strumenti Generici
   e. Other Software
   f. Select the file: **KISS_TWO_NCRM139M138.exe**

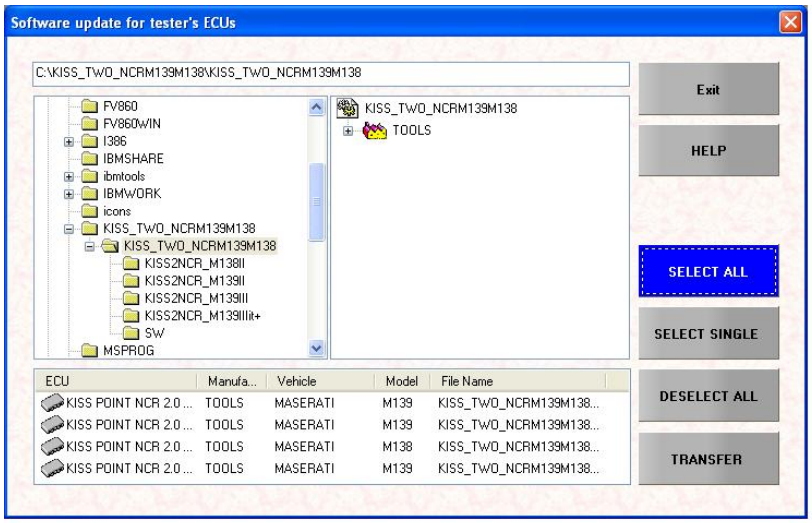
**Figure 1**



g. When prompted save the file in an appropriate location on the PC (preferably in a directory branching directly from the C: drive)

**IMPORTANT: The file must be extracted by double-clicking the downloaded icon. It will extract into several folders. Make sure that you know exactly where these extracted folders are located.**

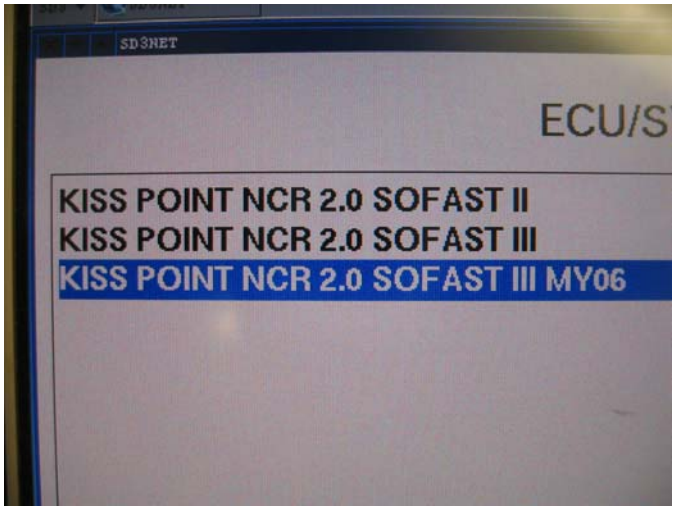
**Figure 2**




2. Load the Kiss Point 2 software into the tester by the following procedure:
   a. Connect the PC to the SD3 tester in Link-to-PC mode
   b. Start the SD3NET program
   c. Select **Updates** in the top menu bar
   d. Select **Tester SD3 Software Update**
   e. Select the directory in which you originally saved and extracted the file in Step 1. An icon should appear in the right window (Fig. 2).
   f. Select **SELECT ALL**
   g. Select **TRANSFER**
   h. After the downloading process takes place, select **CONTINUE** when the screen displays **OPERATION COMPLETE**

3. When performing the Kiss Point, follow the procedure outlined in bulletin **TECH TIPS – Vol 1 Issue 2**. However, you must use the following path to get to the correct software:
    a. SERIAL DIAGNOSIS
    b. DIAGNOSTICS CYCLE ON INDIVIDUAL ECU
    c. MASERATI
    d. TOOLS
    e. M139

Select **KISS POINT NCR 2.0 SOFAST III MY06**




After selecting this software, the SD3 will start the same Kiss Point Procedure outlined in **TECH TIPS – Vol 1 Issue 2.**

# MASERATI NORTH AMERICA, INC.
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**SUBJECT: Maserati Engine and Transmission Software on Modis**

For your information, to help clarify the current software for a particular model we have created a list for your reference. The list shows all production software for all models years and model types since 2002.
Please note that this list is subject to change. It is recommended that you check on Modis to stay current with any updates relating to software and Technical Documentation updates that may be posted.

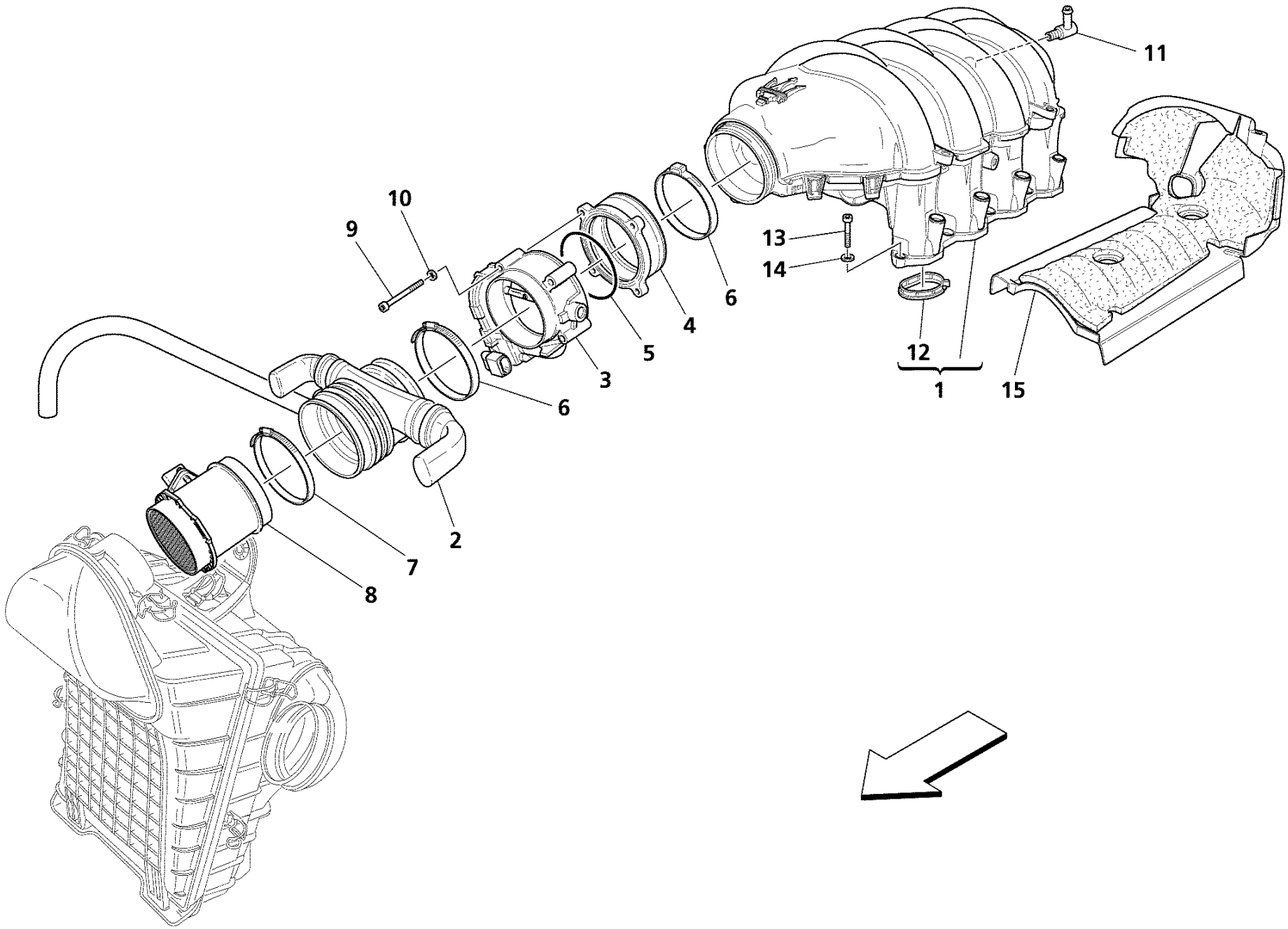
The software can be found by logging on to Modis and selecting:

1. Maserati
2. After-sale
3. Technical Service
4. SD2 Software Download
5. Select the appropriate vehicle
6. Select ECU software



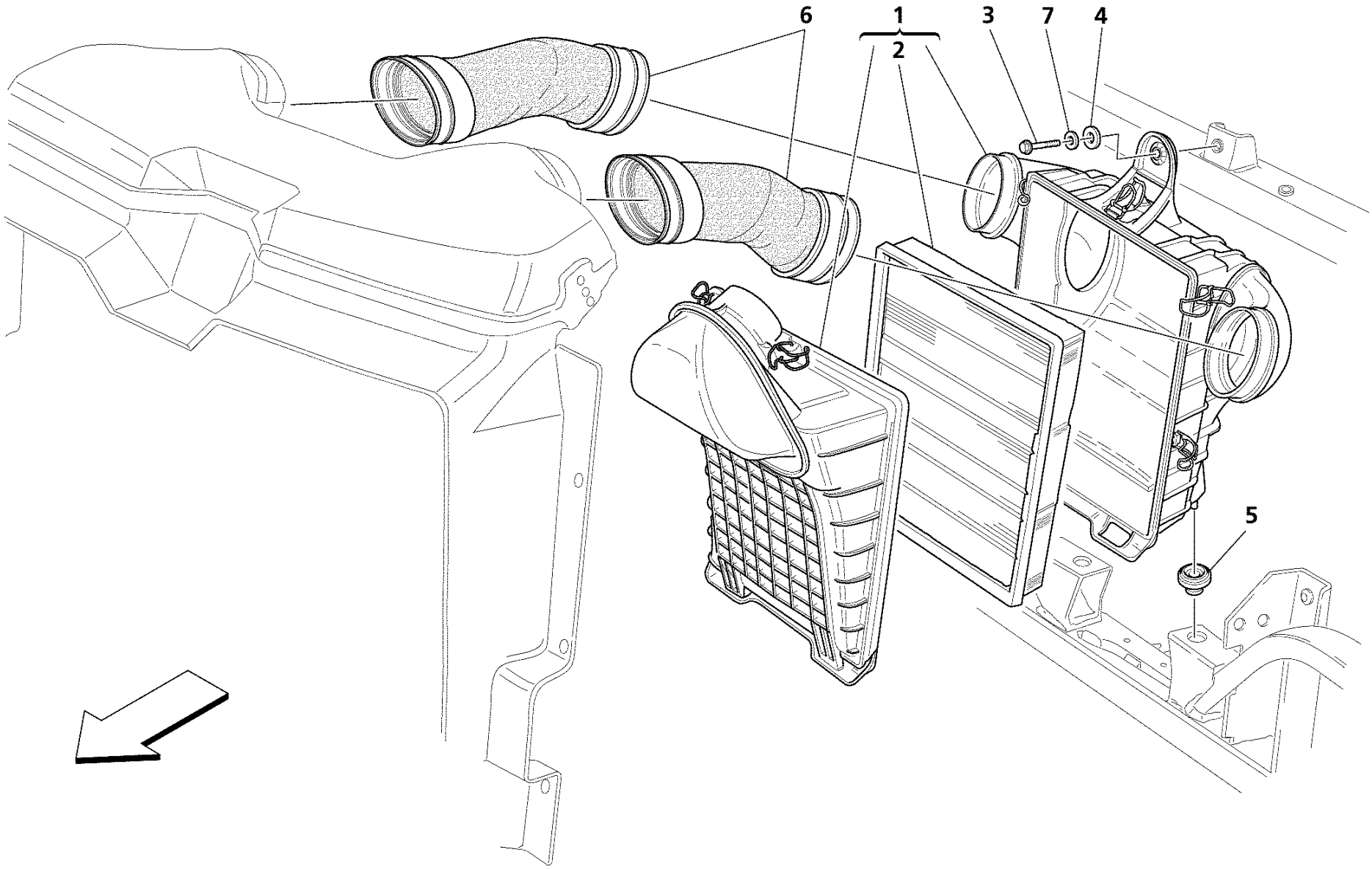

| Model year | Model | ME7.11 Engine Software | Cambio Software |
|---|---|---|---|
| MY02 **Non-sofast** | Coupe GT | 193591.002 | |
| | Coupe F1 | 193592.002 | MAC1BF45 |
| | Spyder GT | 192657.003 | |
| | Spyder F1 | 192658.003 | MAC1BE45 |
| MY02 **Sofast** | Coupe GT | 193591.002 | |
| | Coupe F1 | 200007.000 | Boot Sofast + MAC45F08 |
| | Spyder GT | 192657.003 | |
| | Spyder F1 | 200008.000 | Boot Sofast + MAC45E49 |
| MY03 **Sofast** | Coupe GT | 198861.001 | |
| | Coupe F1 | 200004.001 | MAC45F08 |
| | Spyder GT | 198863.001 | |
| | Spyder F1 | 200005.001 | MAC45F08 |
| MY04 | Coupe GT | 202919.001 | |
| | Coupe F1 | 202918.001 | MAB56F36 |
| | Spyder GT | 202921.001 | |
| | Spyder F1 | 202920.001 | MAB56F36 |
| MY05 | Coupe GT | 210517.001 | |
| | Coupe F1 | 210515.001 | MCC44F13 |
| | Spyder GT | 210518.001 | |
| | Spyder F1 | 210516.001 | MCC44F13 |
| | Coupe Gransport | 210520.001 | MCC44H12 |
| | Spyder Gransport | 214771.000 | MCC44H12 |
| | Quattroporte | 198428.002 | MDD31U21 |
| MY06 | Coupe GT | 219620.000 | |
| | Coupe F1 | 216619.001 | MCC47F22 |
| | | | |
| | | | |
| | Coupe Gransport | 219629.001 | MCC49H21 |
| | Spyder Gransport | 219629.001 | MCC49H21 |
| | Quattroporte | 219314.002 | MDED31A60 |

M139_B: Quattroporte Release 1.0 - 1.40 - AIR INTAKE MANIFOLD AND THROTTLE HOLDER



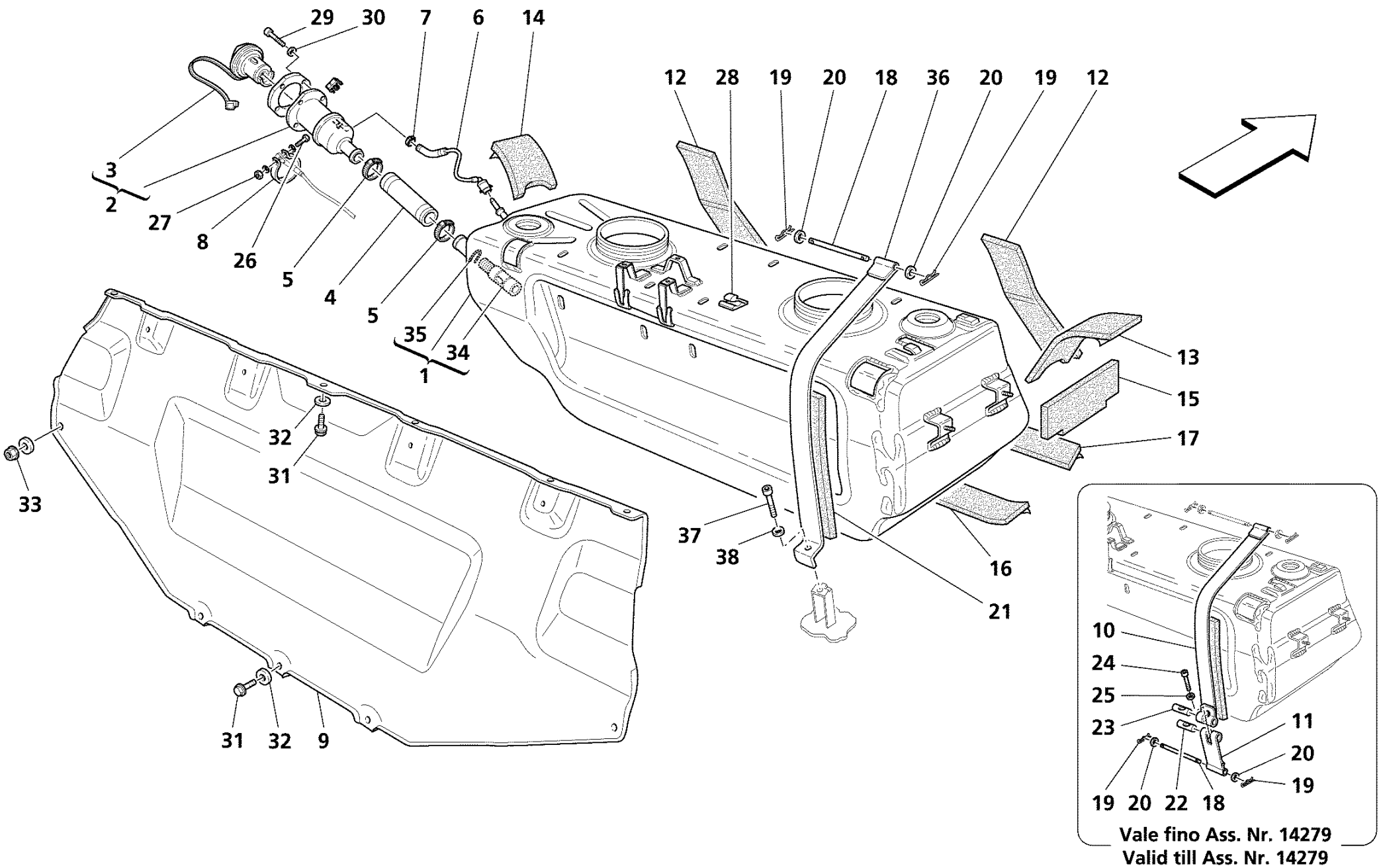
M139_B: Quattroporte Release 1.0 - 1.40 - AIR INTAKE MANIFOLD AND THROTTLE HOLDER

| | | | |
|---|---|---|---|
| 1 | 190008 | 1 | SUCTION MANIFOLD |
| 2 | 205886 | 1 | SLEEVE<br>-Not for USA and CDN- |
| 2 | 205887 | 1 | SLEEVE<br>-Valid for USA and CDN- |
| 3 | 179912 | 1 | THROTTLE HOLDER |
| 4 | 195206 | 1 | SPACER |
| 5 | 150302 | 1 | O.R. GASKET |
| 6 | 190151 | 2 | CLAMP |
| 7 | 204436 | 1 | CLAMP |
| 8 | 180045 | 1 | AIR FLOW METER |
| 9 | 14305924 | 4 | SCREW |
| 10 | 11197774 | 4 | WASHER |
| 11 | 124342 | 1 | THREADED UNION |
| 12 | 203134 | 8 | GASKET<br>-Supplied also in the cylinder heads gasket revision kit (cod. 980020003)- |
| 13 | 14305424 | 16 | SCREW |
| 14 | 11193274 | 16 | WASHER |
| 15 | 203712 | 1 | SILENCER |


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M139_B: Quattroporte Release 1.0 - 1.41 - AIR FILTER, INTAKE AND CONVEYOR

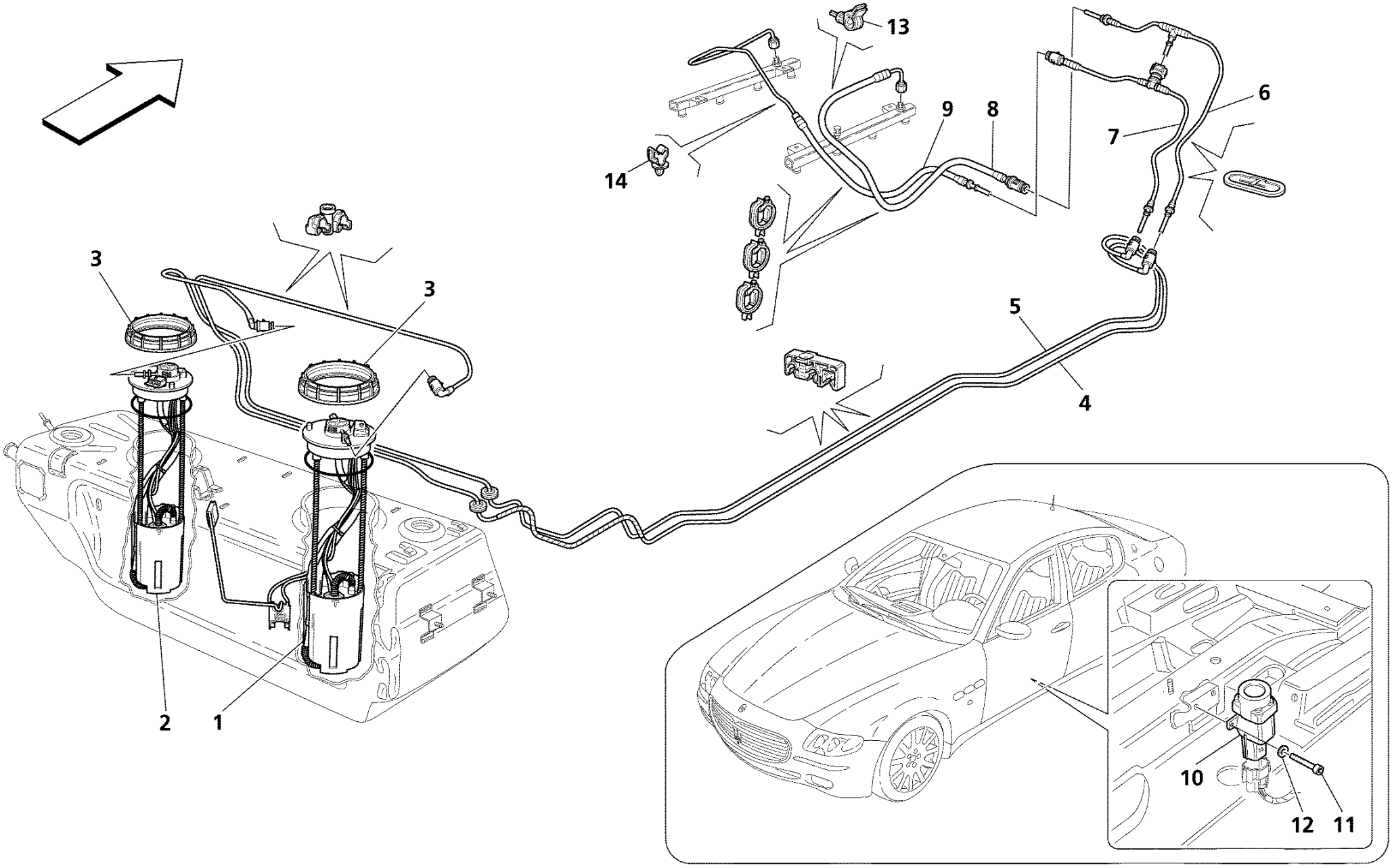
| | | | |
|---|---|---|---|
| 1 | 194852 | 1 | COMPLETE AIR FILTER BOX |
| 2 | 197784 | 1 | FILTERING ELEMENT |
| 3 | 10903024 | 1 | SCREW |
| 4 | 12643724 | 1 | WASHER |
| 5 | 199213 | 2 | RESILIENT BUSHING |
| 6 | 197781 | 2 | AIR INTAKE PIPE |
| 7 | 12601274 | 1 | WASHER |


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Vale fino Ass. Nr. 14279
Valid till Ass. Nr. 14279

M139_B: Quattroporte Release 1.0 - 1.42 - FUEL TANKS

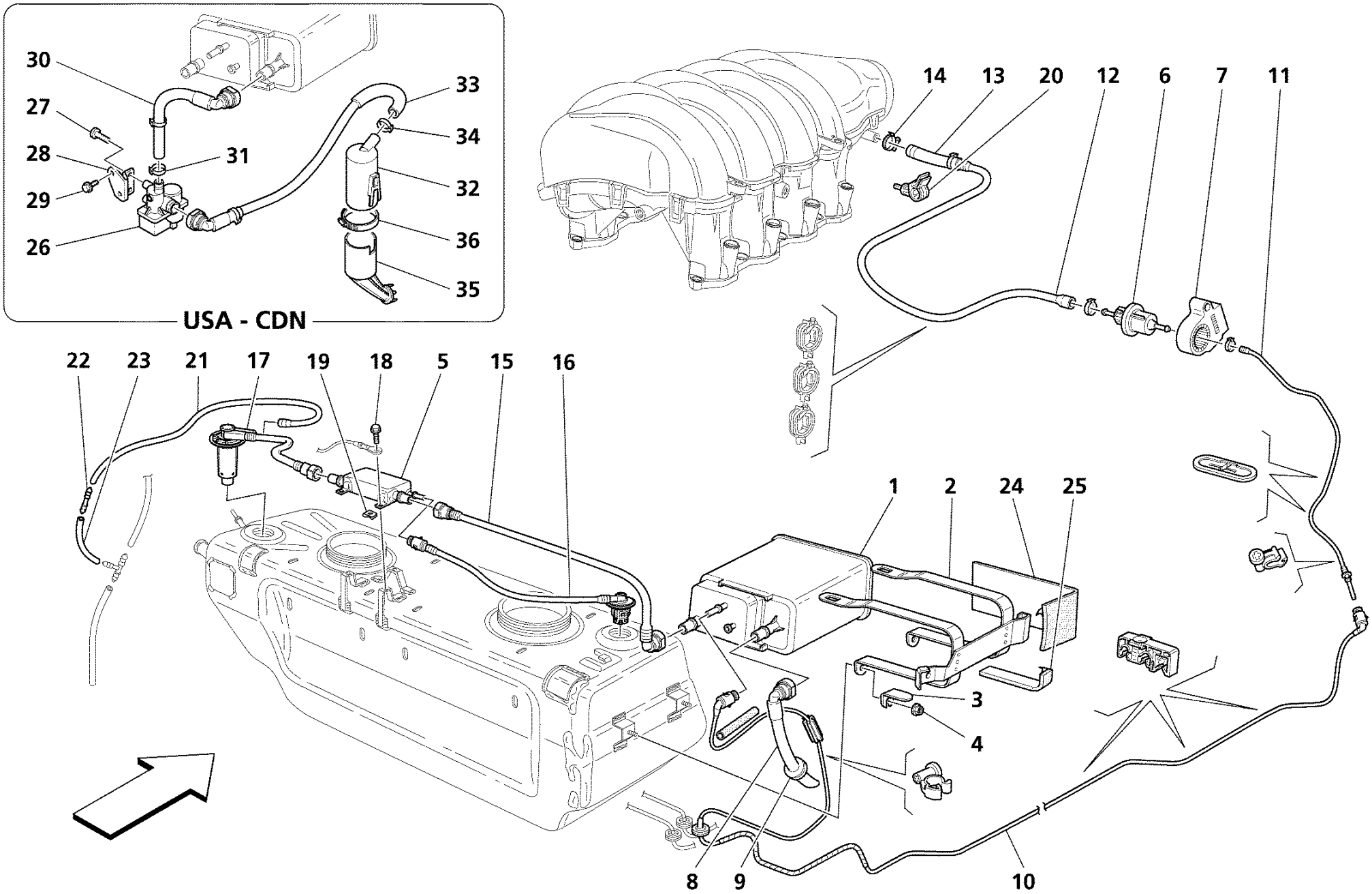
| | | | |
|---|---|---|---|
| 1 | 197121 | 1 | FUEL TANK<br>-Not for USA and CDN- |
| 1 | 199999 | 1 | FUEL TANK<br>-Valid for USA and CDN- |
| 2 | 192332 | 1 | COMPLETE FUEL UNION |
| 3 | 201026 | 1 | TANK PLUG |
| 4 | 197828 | 1 | UNION-TANK CONNECTING PIPE<br>-Not for USA and CDN- |
| 4 | 182637 | 1 | UNION-TANK CONNECTING PIPE<br>-Valid for USA and CDN- |
| 5 | 13000590 | 2 | SCREW COLLAR |
| 6 | 193573 | 1 | VAPORS RECYCLING PIPE |
| 7 | 13432070 | 1 | COLLAR |
| 8 | 203446 | 1 | COLLAR FOR GROUND CABLE |
| 9 | 67564100 | 1 | TANK PANEL |
| 10 | 187558 | 2 | FUEL TANK FASTENER<br>-Valid till car Ass. Nr. 14279- |
| 11 | 184208 | 2 | FUEL TANK FASTENER<br>-Valid till car Ass. Nr. 14279- |
| 12 | 192990 | 2 | RUBBER THICKNESS |
| 13 | 192993 | 1 | R.H. RUBBER THICKNESS |
| 14 | 192994 | 1 | L.H. RUBBER THICKNESS |
| 15 | 192329 | 1 | RUBBER THICKNESS |
| 16 | 192991 | 1 | LOWER RUBBER THICKNESS |
| 17 | 192992 | 1 | LOWER RUBBER THICKNESS |
| 18 | 389200520 | 4 | PIN<br>-Quantity 2 for cars till Ass. Nr. 14279- |
| 19 | 58841309 | 8 | SAFETY CLIP<br>-Quantity 4 for cars till Ass. Nr. 14279- |
| 20 | 12648206 | 8 | WASHER<br>-Quantity 4 for cars till Ass. Nr. 14279- |
| 21 | 379200397 | 2 | ADHESIVE GASKET |
| 22 | 670000413 | 2 | ROD<br>-Valid till car Ass. Nr. 14279- |
| 23 | 670000412 | 2 | ROD<br>-Valid till car Ass. Nr. 14279- |
| 24 | 203349 | 2 | SCREW<br>-Valid till car Ass. Nr. 14279- |
| 25 | 10519624 | 2 | WASHER<br>-Valid till car Ass. Nr. 14279- |
| 26 | 10389321 | 1 | SCREW |
| 27 | 14059121 | 1 | NUT |
| 28 | 198671 | 5 | CLIP |
| 29 | 13289277 | 4 | SCREW |

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|---|---|---|---|
| 30 | 10519201 | 4 | WASHER |
| 31 | 11625724 | 8 | SCREW |
| 32 | 12643724 | 8 | WASHER |
| 33 | 14040611 | 2 | NUT |
| 34 | 181929 | 1 | INTERCEPTION VALVE |
| 35 | 181930 | 1 | CLIP |
| 36 | 205365 | 2 | FUEL TANK FASTENER<br>-Valid from car Ass. Nr. 14280- |
| 37 | 205402 | 2 | SCREW<br>-Valid from car Ass. Nr. 14280- |
| 38 | 13550224 | 2 | WASHER<br>-Valid from car Ass. Nr. 14280- |


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M139_B: Quattroporte Release 1.0 - 1.43 - FUEL PUMPS AND PIPING

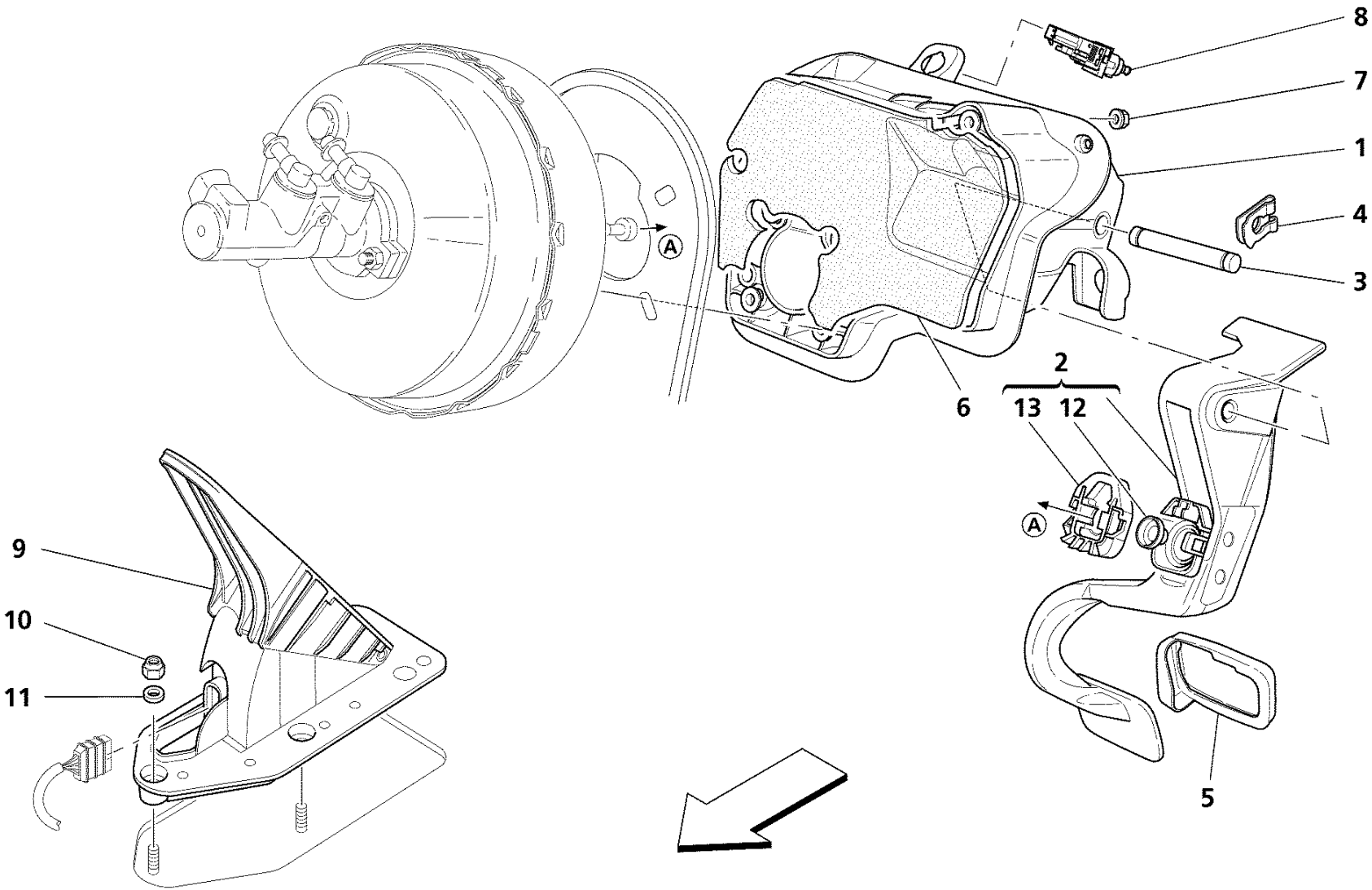
| | | | |
|---|---|---|---|
| 1 | 187572 | 1 | R.H. FUEL PUMP |
| 2 | 187571 | 1 | L.H. FUEL PUMP |
| 3 | 181682 | 2 | RING NUT |
| 4 | 194862 | 1 | R.H. FUEL PIPE FROM PUMP |
| 5 | 197884 | 1 | L.H. FUEL PIPE FROM PUMP |
| 6 | 194864 | 1 | R.H. FUEL PIPE FROM CONNECTION TO ENGINE |
| 7 | 194863 | 1 | L.H. FUEL PIPE FROM CONNECTION TO ENGINE |
| 8 | 199552 | 1 | R.H. FUEL DELIVERY TUBE -Not for GD- |
| 8 | 209820 | 1 | R.H. FUEL DELIVERY TUBE -Valid for GD- |
| 9 | 199553 | 1 | L.H. FUEL DELIVERY TUBE -Not for GD- |
| 9 | 209821 | 1 | L.H. FUEL DELIVERY TUBE -Valid for GD- |
| 10 | 163675 | 1 | INERTIAL SWITCH |
| 11 | 13026121 | 2 | SCREW |
| 12 | 11199274 | 2 | WASHER |
| 13 | 206536 | 1 | CLIP |
| 14 | 198271 | 2 | CLIP -(Quantity 1 for cars GD)- |


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M139_B: Quattroporte Release 1.0 - 1.44 - FUEL VAPORS RECYCLE SYSTEM

| | | | |
|---|---|---|---|
| 1 | 185135 | 1 | FUEL VAPOR FILTER |
| 2 | 200002 | 1 | FUEL VAPOR FILTER SUPPORT BRACKET |
| 3 | 192330 | 2 | ANGLE PIECE BRACKET |
| 4 | 14059211 | 2 | NUT |
| 5 | 192101 | 1 | DISAREATOR |
| 6 | 180861 | 1 | WASHER VALVE |
| 7 | 174623 | 1 | BUFFER FOR SUPPORT |
| 8 | 196675 | 1 | VAPOR PIPE FROM CANISTER TO WHEELHOUSE<br>-Not for USA and CDN- |
| 9 | 10396880 | 1 | CABLE GROMMET<br>-Not for USA and CDN- |
| 10 | 199847 | 1 | VAPOR PIPE FROM CANISTER TO WHEEL COMPARTMENT |
| 11 | 199849 | 1 | VAPOR PIPE |
| 12 | 204969 | 1 | VAPOR PIPE<br>-Not for GD- |
| 12 | 209822 | 1 | VAPOR PIPE<br>-Valid for GD- |
| 13 | 204968 | 1 | SLEEVE |
| 14 | 13433570 | 1 | SCREW COLLAR |
| 15 | 192210 | 1 | PIPE FROM SEPARATOR TO CANISTER |
| 16 | 192100 | 1 | EXHAUST VALVE WITH PIPE |
| 17 | 192099 | 1 | MULTIFUNCTION VALVE WITH PIPE |
| 18 | 16296924 | 3 | SCREW |
| 19 | 14369274 | 3 | BRACKET |
| 20 | 198264 | 2 | CLIP |
| 21 | 199880 | 1 | PIPE |
| 22 | 204955 | 1 | TWO-WAY UNION |
| 23 | 68085100 | 1 | PIPE |
| 24 | 177751 | 1 | RUBBER THICKNESS |
| 25 | 180789 | 1 | RUBBER THICKNESS |
| 26 | 202968 | 1 | OBD PUMP<br>-Valid for USA and CDN- |
| 27 | 15958701 | 3 | SCREW<br>-Valid for USA and CDN- |
| 28 | 204611 | 1 | BRACKET<br>-Valid for USA and CDN- |
| 29 | 11730624 | 2 | SCREW<br>-Valid for USA and CDN- |
| 30 | 205334 | 1 | PIPE FROM CANISTER TO OBD PUMP<br>-Valid for USA and CDN- |
| 31 | 13432670 | 1 | COLLAR<br>-Valid for USA and CDN- |
| 32 | 183221 | 1 | OBD PUMP FILTER |

| | | | |
|---|---|---|---|
| | | | -Valid for USA and CDN- |
| 33 | 205335 | 1 | PIPE FROM OBD PUMP TO FILTER |
| | | | -Valid for USA and CDN- |
| 34 | 13432670 | 1 | COLLAR |
| | | | -Valid for USA and CDN- |
| 35 | 205330 | 1 | AIR INTAKE PIPE |
| | | | -Valid for USA and CDN- |
| 36 | 13000890 | 1 | SCREW COLLAR |
| | | | -Valid for USA and CDN- |


8
7
1
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5

M139_B: Quattroporte Release 1.0 - 5.20 - COMPLETE PEDAL SUPPORT

| | | | |
|---|---|---|---|
| 1 | 189858 | 1 | PEDAL SUPPORT<br>-Not for GD- |
| 1 | 204192 | 1 | PEDAL SUPPORT<br>-Valid for GD- |
| 2 | 980139006 | 1 | COMPLETE BRAKE PEDAL<br>-Not for GD- |
| 2 | 980139007 | 1 | COMPLETE BRAKE PEDAL<br>-Valid for GD- |
| 3 | 189870 | 1 | PIN |
| 4 | 11064471 | 2 | RETAINER |
| 5 | 197659 | 1 | BRAKE PEDAL COVER |
| 6 | 193886 | 1 | PEDAL SILENCER |
| 7 | 12578211 | 2 | NUT |
| 8 | 187869 | 1 | PUSH-BUTTON SWITCH |
| 9 | 196819 | 1 | ACCELERATOR PEDAL |
| 10 | 102741 | 3 | NUT |
| 11 | 12601274 | 3 | WASHER |
| 12 | 189864 | 1 | CUP |
| 13 | 189863 | 1 | SMALL BLOCK |

MASERATI

RECALL CAMPAIGN INSTRUCTIONS

# RECALL CAMPAIGN

## REF. NO. 106
## STEERING ASSEMBLY BOLTS

## SPYDER / COUPE

## MARCH 2004

READ, INITIAL AND PASS ON »

| Service Manager | Parts Manager | Service Writer | Technician | | | | | Warranty Clerk |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

March, 2004

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Customer:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2002 through 2004 model year Maserati vehicles.

The defect involves two of the four securing bolts in the steering assembly that may not have had a locking compound applied to the threads prior to installation. As a result of the omission of the locking compound, the bolts may become loose when the cars are driven aggressively. Such circumstances could lead to a reduction in vehicle control and possibly, a crash without prior warning. The vehicles possibly affected are as follows:

Model year 2002 through 2004 Spyder and Coupe with Vehicle Identification Numbers from ZAMBC38A320005335 to ZAMBC38A340011963, which have a Vehicle Assembly Number from 6605 to 13190.

The remedy consists of replacing the two affected bolts with new bolts that are coated with a locking compound.

Since your car is among those that may be affected by the above condition, we ask you to immediately contact any Authorized Maserati Dealer in order to arrange an inspection of your automobile and to have the corrective action performed.

The corrective action for the above listed repair will be performed free of charge to you and will require up to approximately 1 hour to complete. Please plan, however, to leave your vehicle with the dealership to allow the dealer some flexibility for scheduling your repairs.

By the time you receive this letter, the Authorized Maserati Dealers will have been supplied with the parts and the instructions to perform the repair. If the Dealer fails or is unable to make the necessary repairs free of charge within a reasonable time, or if you have any problem obtaining the needed repair, you should inform the national headquarters of Maserati North America, Inc. at:

Maserati North America, Inc.
250 Sylvan Avenue
Englewood Cliffs, NJ 07632
(201) 816-2651 (National Technical Office)

If the affected vehicle is not repaired free of charge to you and within a reasonable time, you may submit a written complaint to the Administrator, National Highway Traffic Safety Administration, (NHTSA), 400 Seventh Street, SW, Washington, DC 20590. You may also telephone the toll free Auto Safety Hotline at 888-327-4236.

You may be eligible to receive reimbursement for the cost you incurred if you already have obtained a remedy for a problem associated with the defect described in this letter. However, you still must have this corrective action performed, regardless of any previous repairs that may have been performed. Information about the reimbursement program for pre-notification repairs is provided in the enclosure to this letter.
Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

If you no longer own this vehicle or your address has changed, please complete the enclosed prepaid yellow card and return it to Maserati North America, Inc.

We urge you to comply with this notice promptly and we apologize for any inconvenience this may cause you.

Best Regards,

Enzo Francesconi
Vice President of Technical Services

## ENCLOSURE

Pre-Notification Reimbursement Program

You may be eligible for reimbursement if you previously incurred out-of-pocket costs for repairs or replacements of the steering rack bolts covered by this recall campaign number 106.

1. This reimbursement program applies to the vehicles listed below and in the attached letter:

- Model year 2002 through 2004 Spyder and Coupe with Vehicle Identification Numbers from ZAMBC38A320005335 to ZAMBC38A340011963, which have a Vehicle Assembly Number from 6605 to 13190.

2. This reimbursement program applies to repairs or replacements of the steering rack bolts.

3. This reimbursement program applies to repairs or replacements of all or part of the steering rack bolts of a vehicle listed above if such repair or replacement was made at any time up to ten days following the mailing of the attached notification letter.

4. This reimbursement program does not apply to repairs or replacements that were made within the period during which the original warranty would have provided for a free repair of the problem addressed by this recall, unless (i) a franchised dealer or authorized representative of Maserati denied warranty coverage or (ii) the repair made under the warranty did not remedy the problem. Reimbursement also will not be provided if the pre-notification remedy was not of the same type as the recall remedy provided herein, did not address the defect that led to this recall, or was not reasonably necessary to correct the defect.

5. To obtain reimbursement for pre-notification remedies, you will need to provide a receipt, which may be an original or copy, identifying the equipment replaced; and, if the pre-notification remedy was obtained at a time when the vehicle was covered under the original warranty program, documentation indicating that the manufacturer's dealer or authorized facility either refused to remedy the problem addressed by the recall under the warranty or that the warranty repair did not correct the problem addressed by the recall. In addition, you will need to submit a written and signed claim for reimbursement that contains the information required in paragraph 6, below.

6. The claim for reimbursement should include the following information. (a) the name and address of the claimant; (b) identification of their vehicle's make, model, model year, and vehicle identification number; (c) identification of the Maserati Campaign number (Campaign No. 106) or identification of the recall by reference to NHTSA's recall number; and (d) identification of the owner or purchaser of the vehicle at the time that the pre-notification remedy was obtained.

7. If you have any questions about the reimbursement program or need help in making a claim for reimbursement, please write or call Maserati North America, Inc., at the following address and telephone number:

Maserati North America, Inc.
250 Sylvan Avenue
Englewood Cliffs, NJ 07632
(201) 816-2651 (National Technical Office)

March, 2004

Dear Maserati Dealer:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect, which relates to motor vehicle safety exists in certain 2002 through 2004 model year Maserati vehicles.

The defect involves two of the four securing bolts in the steering assembly that may not have had a locking compound applied to the threads prior to installation. As a result of the omission of the locking compound, the bolts may become loose when the cars are driven aggressively. Such circumstances could lead to a reduction in vehicle control and possibly a crash. The vehicles possibly affected are as follows:

Model years 2002 through 2004 Spyder and Coupe with Vehicle Identification Numbers from ZAMBC38A320005335 to ZAMBC38A340011963 which have a Vehicle Assembly Number from 6605 to 13190.

The remedy consists of replacing the two affected bolts with new bolts that are coated with a locking compound.

This operation will be performed free of charge to the vehicle owner, and will require up to approximately 1 hour to complete.

We have accordingly sent notices to all owners of the affected vehicles advising them of this problem and requesting that they contact any Authorized Maserati Dealer for the repairs, as per the attached notification letter.

Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

A supply of these parts will be shipped automatically to you based on the number of vehicles in your servicing area. Any additional quantities must be ordered, as needed, from our Parts Department.

Upon transmittal of the repair under the normal warranty system, we will of course reimburse you for the parts and the labor necessary to carry out this campaign.

Obviously, if you have any of the affected vehicles in your stock, you must not sell them until you have performed the necessary repairs. If you have already sold any vehicles with the chassis numbers specified in the enclosed instructions and have not yet sent in the new owner information to MNA, please do so at once so we may notify these owners.

Thank you for your cooperation.

Best Regards,

Enzo Francesconi
Vice President of Technical Services

**RECALL CAMPAIGN NO. 106**
**Maserati Spyder and Coupe**
**"Steering Rack Bolts"**
**RECALL CAMPAIGN OVERVIEW**

**INTRODUCTION:** Maserati Spyder and Maserati Coupe

**SUBJECT:** Recall Campaign No. 106

**VEHICLES**: See the attached list of affected vehicles

Model years 2002 through 2004 Spyder and Coupe with Vehicle Identification Numbers from 5335 to 11963 which have a Vehicle Assembly Number from 6605 to 13190.

**CONDITION:** The defect involves two of the four securing bolts in the steering assembly that may not have had a locking compound applied to the threads prior to installation. As a result of the omission of the locking compound, the bolts may become loose when the cars are driven aggressively. If this condition was to exist while the customer was driving, it could pose a potential safety risk to the driver as well as other vehicles and potentially result in damage to the vehicle or property and possibly crash.

**REMEDY:** The remedy consists of replacing the two affected bolts with new bolts that have a locking compound applied.

**RECALL CAMPAIGN NO. 106**
**Maserati Spyder and Coupe**
**"Steering Rack Bolts"**
**RECALL CAMPAIGN OVERVIEW**
**PAGE 2**

**PARTS**: The parts required for this repair are identified by the following part numbers:

| Part Number | Quantity | Description |
|---|---|---|
| 202965 | 2 | Bolts |
| 11190574 | 2 | Tapered Washer |
| 12641021 | 2 | Flat Washer |

**LABOR**: **Replacement of the two Steering Rack Bolts**

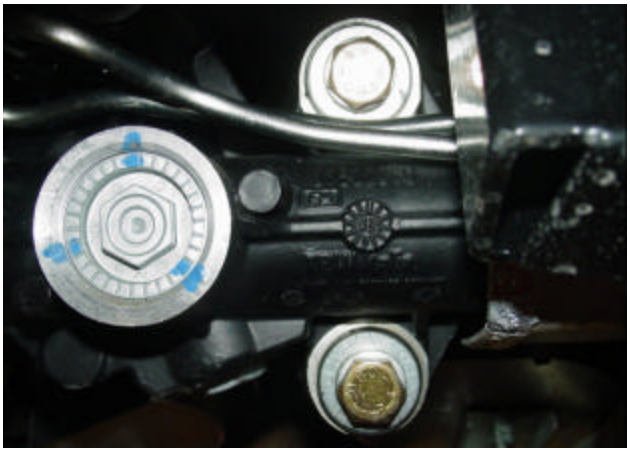
Cost Code .....24
Problem Code.....63
Component Code .....5 10 032
Labor Operation.……5.10.032.8 (0.8 h)
Campaign Number .....106

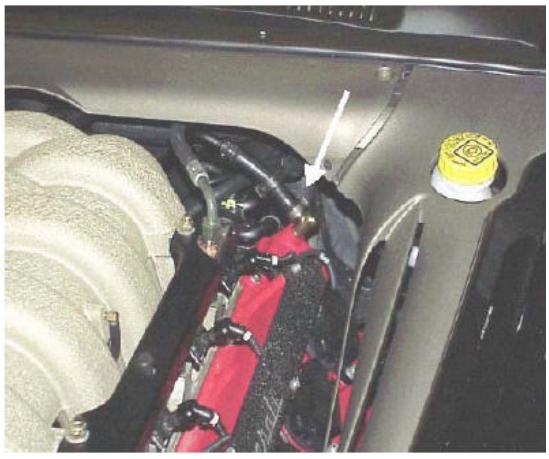
**REIMBURSEMENT**: Upon receipt of a warranty claim via ModisCS

**RECALL CAMPAIGN NO. 106**
**Maserati Coupe and Spyder**
**"Steering Assembly Bolts"**
**Technical Instructions**

**NOTE:** Before starting this procedure, you MUST read these instructions carefully and completely.

1. Using MODIS, check to be certain that the vehicle has not had the procedure performed previously.
2. Raise the car on a lift.
3. Remove one of the two bolts on the steering rack where the steering column attaches. (Picture 1)
4. Check the bolt hole threads with a 10 x 1.25 tap.
5. Clean the bolt hole to ensure there is no debris remaining after using the tap.
6. Install the new bolt and torque to 25 Nm.
7. Remove the second bolt and repeat steps 4, 5 and 6.
8. Perform a final torque of 40 Nm on both bolts.
9. Apply red touch-up paint (obtained locally) to the breather outlet pipe on the L/S cam cover. (Picture 2) This will be used to identify that the recall has been completed.


Picture 1


Picture 2

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 5335 | 6605 | 5803 | 7056 | 5874 | 7130 |
| 5336 | 6623 | 5804 | 7074 | 5875 | 7145 |
| 5337 | 6771 | 5805 | 7057 | 5876 | 7107 |
| 5338 | 6637 | 5806 | 7121 | 5877 | 7131 |
| 5339 | 6661 | 5807 | 7077 | 5878 | 7113 |
| 5340 | 6698 | 5808 | 7059 | 5879 | 7196 |
| 5379 | 6646 | 5809 | 7060 | 5880 | 7117 |
| 5380 | 6659 | 5810 | 7053 | 5881 | 7105 |
| 5381 | 6667 | 5811 | 7076 | 5882 | 7135 |
| 5382 | 6693 | 5812 | 7062 | 5883 | 7118 |
| 5395 | 6744 | 5813 | 7061 | 5884 | 7251 |
| 5397 | 6754 | 5814 | 7199 | 5885 | 7126 |
| 5465 | 6692 | 5815 | 7064 | 5886 | 7543 |
| 5466 | 6791 | 5816 | 7067 | 5887 | 7127 |
| 5467 | 6702 | 5817 | 7092 | 5888 | 7132 |
| 5468 | 6734 | 5818 | 7100 | 5889 | 7148 |
| 5469 | 6729 | 5819 | 7068 | 5890 | 7179 |
| 5470 | 6723 | 5820 | 7079 | 5891 | 7153 |
| 5471 | 6740 | 5821 | 7085 | 5892 | 7154 |
| 5472 | 6819 | 5822 | 7086 | 5893 | 7143 |
| 5473 | 6783 | 5823 | 7087 | 5894 | 7313 |
| 5474 | 6758 | 5824 | 7088 | 5895 | 7142 |
| 5536 | 6802 | 5825 | 7089 | 5896 | 7149 |
| 5537 | 6900 | 5826 | 7099 | 5897 | 7174 |
| 5538 | 6809 | 5827 | 7108 | 5898 | 7167 |
| 5584 | 6910 | 5828 | 7095 | 5899 | 7161 |
| 5585 | 6854 | 5829 | 7110 | 5900 | 7156 |
| 5586 | 6892 | 5830 | 7106 | 5901 | 7146 |
| 5587 | 6881 | 5831 | 7097 | 5902 | 7151 |
| 5638 | 6916 | 5832 | 7103 | 5903 | 7209 |
| 5639 | 6927 | 5833 | 7111 | 5904 | 7169 |
| 5640 | 6944 | 5834 | 7112 | 5905 | 7152 |
| 5641 | 6951 | 5835 | 7129 | 5906 | 7175 |
| 5642 | 7028 | 5836 | 7065 | 5907 | 7155 |
| 5653 | 6913 | 5837 | 7066 | 5908 | 7190 |
| 5654 | 6936 | 5838 | 7078 | 5909 | 7163 |
| 5789 | 7031 | 5839 | 7082 | 5910 | 7162 |
| 5790 | 7034 | 5840 | 7083 | 5911 | 7187 |
| 5791 | 7040 | 5841 | 7084 | 5912 | 7262 |
| 5792 | 7041 | 5842 | 7090 | 5913 | 7124 |
| 5793 | 7052 | 5843 | 7093 | 5914 | 7122 |
| 5794 | 7047 | 5844 | 7098 | 5915 | 7144 |
| 5795 | 7036 | 5845 | 7096 | 5916 | 7140 |
| 5796 | 7045 | 5846 | 7119 | 5919 | 7102 |
| 5797 | 7072 | 5847 | 7101 | 5920 | 7138 |
| 5801 | 7070 | 5866 | 7271 | 5921 | 7133 |
| 5802 | 7055 | 5873 | 7116 | 5922 | 7123 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 5923 | 7104 | 6014 | 7278 | 6167 | 7370 |
| 5924 | 7120 | 6015 | 7235 | 6168 | 7386 |
| 5925 | 7114 | 6016 | 7157 | 6169 | 7364 |
| 5926 | 7128 | 6017 | 7323 | 6170 | 7367 |
| 5927 | 7115 | 6018 | 7252 | 6171 | 7372 |
| 5928 | 7141 | 6019 | 7247 | 6172 | 7374 |
| 5929 | 7125 | 6020 | 7178 | 6173 | 7406 |
| 5930 | 7139 | 6021 | 7200 | 6174 | 7520 |
| 5931 | 7137 | 6022 | 7201 | 6175 | 7458 |
| 5932 | 7165 | 6023 | 7267 | 6176 | 7390 |
| 5933 | 7134 | 6024 | 7227 | 6177 | 7450 |
| 5934 | 7136 | 6025 | 7239 | 6178 | 7434 |
| 5935 | 7147 | 6026 | 7211 | 6179 | 7392 |
| 5936 | 7150 | 6027 | 7225 | 6180 | 7408 |
| 5937 | 7173 | 6028 | 7254 | 6181 | 7533 |
| 5982 | 7272 | 6029 | 7160 | 6182 | 7452 |
| 5983 | 7172 | 6049 | 7241 | 6183 | 7462 |
| 5984 | 7158 | 6050 | 7244 | 6184 | 7305 |
| 5985 | 7219 | 6051 | 7255 | 6185 | 7383 |
| 5986 | 7214 | 6052 | 7322 | 6186 | 7398 |
| 5987 | 7180 | 6053 | 7257 | 6187 | 7418 |
| 5988 | 7177 | 6054 | 7285 | 6188 | 7463 |
| 5989 | 7182 | 6055 | 7258 | 6189 | 7336 |
| 5990 | 7192 | 6056 | 7291 | 6190 | 7348 |
| 5991 | 7185 | 6057 | 7281 | 6191 | 7358 |
| 5992 | 7183 | 6058 | 7319 | 6192 | 7361 |
| 5993 | 7208 | 6059 | 7315 | 6193 | 7402 |
| 5994 | 7345 | 6060 | 7310 | 6194 | 7375 |
| 5995 | 7204 | 6061 | 7289 | 6195 | 7388 |
| 5996 | 7221 | 6062 | 7275 | 6196 | 7377 |
| 5997 | 7194 | 6063 | 7287 | 6197 | 7426 |
| 5998 | 7317 | 6064 | 7273 | 6198 | 7380 |
| 5999 | 7220 | 6065 | 7300 | 6199 | 7424 |
| 6000 | 7205 | 6066 | 7338 | 6200 | 7404 |
| 6001 | 7233 | 6067 | 7296 | 6201 | 7444 |
| 6002 | 7270 | 6068 | 7284 | 6202 | 7530 |
| 6003 | 7264 | 6069 | 7249 | 6203 | 7465 |
| 6004 | 7198 | 6070 | 7334 | 6204 | 7466 |
| 6005 | 7260 | 6109 | 7547 | 6205 | 7476 |
| 6006 | 7213 | 6110 | 7529 | 6206 | 7469 |
| 6007 | 7223 | 6134 | 7534 | 6207 | 7468 |
| 6008 | 7216 | 6135 | 7554 | 6208 | 7499 |
| 6009 | 7215 | 6136 | 7569 | 6209 | 7545 |
| 6010 | 7206 | 6163 | 7343 | 6210 | 7482 |
| 6011 | 7230 | 6164 | 7298 | 6211 | 7480 |
| 6012 | 7268 | 6165 | 7350 | 6212 | 7510 |
| 6013 | 7265 | 6166 | 7354 | 6213 | 7622 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 6214 | 7488 | 6311 | 7593 | 6419 | 7584 |
| 6215 | 7568 | 6312 | 7623 | 6420 | 7597 |
| 6216 | 7519 | 6313 | 7605 | 6421 | 7594 |
| 6217 | 7551 | 6314 | 7544 | 6422 | 7609 |
| 6218 | 7564 | 6315 | 7571 | 6423 | 7615 |
| 6219 | 7531 | 6316 | 7587 | 6424 | 7606 |
| 6220 | 7541 | 6317 | 7585 | 6425 | 7654 |
| 6221 | 7524 | 6318 | 7601 | 6426 | 7604 |
| 6222 | 7560 | 6319 | 7639 | 6427 | 7602 |
| 6223 | 7537 | 6339 | 7619 | 6428 | 7613 |
| 6224 | 7570 | 6340 | 7674 | 6429 | 7923 |
| 6225 | 7580 | 6341 | 7642 | 6430 | 7636 |
| 6226 | 7574 | 6342 | 7664 | 6431 | 7614 |
| 6227 | 7586 | 6343 | 7645 | 6432 | 7633 |
| 6228 | 7555 | 6344 | 7662 | 6433 | 7657 |
| 6229 | 7527 | 6345 | 7670 | 6434 | 7632 |
| 6230 | 7558 | 6346 | 7656 | 6435 | 7735 |
| 6231 | 7612 | 6347 | 7681 | 6436 | 7682 |
| 6232 | 7548 | 6348 | 7705 | 6437 | 7618 |
| 6233 | 7549 | 6349 | 7707 | 6438 | 7626 |
| 6234 | 7596 | 6350 | 7772 | 6439 | 7625 |
| 6235 | 7556 | 6351 | 7714 | 6440 | 7624 |
| 6236 | 7600 | 6352 | 7750 | 6441 | 7629 |
| 6237 | 7649 | 6353 | 7722 | 6442 | 7675 |
| 6238 | 7572 | 6354 | 7754 | 6443 | 7638 |
| 6239 | 7590 | 6355 | 7728 | 6444 | 7630 |
| 6240 | 7592 | 6356 | 7637 | 6445 | 7620 |
| 6241 | 7646 | 6357 | 7644 | 6446 | 7643 |
| 6242 | 7582 | 6376 | 7603 | 6447 | 7651 |
| 6243 | 7517 | 6377 | 7627 | 6448 | 7701 |
| 6294 | 7552 | 6378 | 7621 | 6449 | 7665 |
| 6295 | 7577 | 6379 | 7648 | 6450 | 7652 |
| 6296 | 7538 | 6380 | 7655 | 6451 | 7695 |
| 6297 | 7559 | 6381 | 7631 | 6452 | 7698 |
| 6298 | 7557 | 6382 | 7720 | 6453 | 7669 |
| 6299 | 7561 | 6383 | 7729 | 6454 | 7715 |
| 6300 | 7666 | 6404 | 7706 | 6455 | 7679 |
| 6301 | 7563 | 6405 | 7660 | 6456 | 7726 |
| 6302 | 7581 | 6406 | 7686 | 6457 | 7677 |
| 6303 | 7565 | 6407 | 7740 | 6458 | 7709 |
| 6304 | 7607 | 6408 | 7743 | 6459 | 7684 |
| 6305 | 7595 | 6409 | 8007 | 6460 | 7708 |
| 6306 | 7591 | 6414 | 7576 | 6461 | 7737 |
| 6307 | 7583 | 6415 | 7578 | 6462 | 7767 |
| 6308 | 7617 | 6416 | 7588 | 6463 | 7723 |
| 6309 | 7599 | 6417 | 7598 | 6464 | 7700 |
| 6310 | 7610 | 6418 | 7611 | 6465 | 7736 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 6474 | 7724 | 6538 | 7748 | 6754 | 8017 |
| 6475 | 7717 | 6539 | 7785 | 6755 | 8001 |
| 6476 | 7745 | 6540 | 7791 | 6756 | 7948 |
| 6477 | 7719 | 6541 | 7811 | 6777 | 8033 |
| 6478 | 7731 | 6542 | 7804 | 6778 | 8072 |
| 6479 | 7747 | 6543 | 7813 | 6779 | 8048 |
| 6480 | 7733 | 6544 | 7846 | 6780 | 8077 |
| 6481 | 7749 | 6545 | 7894 | 6781 | 8078 |
| 6482 | 7755 | 6546 | 7922 | 6782 | 8133 |
| 6483 | 7777 | 6547 | 7897 | 6783 | 8160 |
| 6484 | 7760 | 6590 | 7873 | 6784 | 8122 |
| 6485 | 7780 | 6591 | 7859 | 6785 | 8152 |
| 6486 | 7771 | 6592 | 7913 | 6786 | 8140 |
| 6487 | 7763 | 6593 | 7889 | 6787 | 8129 |
| 6488 | 7756 | 6594 | 7904 | 6788 | 8156 |
| 6489 | 7789 | 6595 | 7910 | 6789 | 8125 |
| 6490 | 7790 | 6596 | 7971 | 6790 | 8174 |
| 6491 | 7792 | 6597 | 7905 | 6791 | 8015 |
| 6492 | 7801 | 6598 | 8014 | 6792 | 8081 |
| 6493 | 7817 | 6599 | 7909 | 6793 | 8005 |
| 6494 | 7847 | 6600 | 8059 | 6808 | 7960 |
| 6495 | 7853 | 6601 | 7849 | 6809 | 8100 |
| 6496 | 7837 | 6642 | 7972 | 6867 | 8148 |
| 6497 | 7828 | 6643 | 7961 | 6868 | 8106 |
| 6498 | 7857 | 6644 | 7993 | 6869 | 8115 |
| 6499 | 7880 | 6645 | 8053 | 6870 | 8143 |
| 6500 | 7840 | 6646 | 8002 | 6871 | 8057 |
| 6501 | 7876 | 6647 | 7940 | 6872 | 8032 |
| 6519 | 7727 | 6648 | 7975 | 6873 | 8159 |
| 6520 | 7765 | 6661 | 7927 | 6874 | 8054 |
| 6521 | 7721 | 6669 | 7941 | 6875 | 8175 |
| 6522 | 7753 | 6691 | 7984 | 6876 | 8176 |
| 6523 | 7764 | 6692 | 8016 | 6877 | 8153 |
| 6524 | 7761 | 6694 | 8023 | 6913 | 8131 |
| 6525 | 7796 | 6695 | 8011 | 6914 | 8291 |
| 6526 | 7821 | 6696 | 8003 | 6915 | 8304 |
| 6527 | 7839 | 6697 | 8035 | 6916 | 8306 |
| 6528 | 7833 | 6698 | 8041 | 6917 | 8332 |
| 6529 | 7752 | 6699 | 8020 | 6918 | 8162 |
| 6530 | 7770 | 6700 | 7999 | 6919 | 8223 |
| 6531 | 7779 | 6701 | 8029 | 6920 | 8286 |
| 6532 | 7776 | 6702 | 8024 | 6924 | 8321 |
| 6533 | 7787 | 6703 | 8178 | 7025 | 8336 |
| 6534 | 7788 | 6704 | 8044 | 7027 | 8319 |
| 6535 | 7782 | 6727 | 7991 | 7028 | 8348 |
| 6536 | 7799 | 6728 | 8058 | 7029 | 8366 |
| 6537 | 7827 | 6753 | 8009 | 7030 | 8356 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 7031 | 8345 | 7330 | 8537 | 7461 | 8726 |
| 7032 | 8370 | 7332 | 8552 | 7462 | 8717 |
| 7033 | 8385 | 7333 | 8595 | 7463 | 8731 |
| 7034 | 8382 | 7334 | 8596 | 7464 | 8765 |
| 7035 | 8367 | 7335 | 8599 | 7465 | 8758 |
| 7036 | 8388 | 7336 | 8623 | 7466 | 8835 |
| 7037 | 8394 | 7337 | 8603 | 7467 | 8685 |
| 7038 | 8404 | 7338 | 8607 | 7468 | 8713 |
| 7039 | 8398 | 7339 | 8668 | 7469 | 8798 |
| 7040 | 8413 | 7341 | 8670 | 7536 | 8734 |
| 7058 | 8372 | 7342 | 8672 | 7537 | 8740 |
| 7059 | 8396 | 7343 | 8695 | 7538 | 8730 |
| 7060 | 8401 | 7344 | 8707 | 7539 | 8727 |
| 7061 | 8403 | 7345 | 8532 | 7540 | 8759 |
| 7106 | 8341 | 7346 | 8574 | 7541 | 8760 |
| 7107 | 8281 | 7357 | 8864 | 7542 | 8769 |
| 7114 | 8290 | 7358 | 8715 | 7543 | 8770 |
| 7115 | 8284 | 7418 | 8698 | 7544 | 8786 |
| 7147 | 8389 | 7419 | 8683 | 7545 | 8799 |
| 7148 | 8414 | 7420 | 8687 | 7546 | 8796 |
| 7149 | 8540 | 7423 | 8693 | 7547 | 8793 |
| 7150 | 8460 | 7424 | 8702 | 7548 | 8889 |
| 7151 | 8453 | 7425 | 8703 | 7549 | 8894 |
| 7152 | 8480 | 7426 | 8712 | 7550 | 8891 |
| 7153 | 8494 | 7427 | 8721 | 7575 | 8860 |
| 7154 | 8514 | 7428 | 8904 | 7576 | 8872 |
| 7155 | 8516 | 7429 | 8729 | 7577 | 8873 |
| 7156 | 8496 | 7430 | 8744 | 7623 | 8876 |
| 7157 | 8531 | 7431 | 8742 | 7624 | 8925 |
| 7158 | 8352 | 7432 | 8739 | 7625 | 8870 |
| 7159 | 8353 | 7433 | 8748 | 7626 | 8911 |
| 7160 | 8371 | 7434 | 8752 | 7627 | 8907 |
| 7161 | 8438 | 7435 | 8756 | 7628 | 8948 |
| 7162 | 8427 | 7436 | 8815 | 7629 | 8949 |
| 7163 | 8439 | 7437 | 8791 | 7630 | 8944 |
| 7164 | 8535 | 7438 | 8757 | 7631 | 8954 |
| 7165 | 8546 | 7439 | 8811 | 7651 | 8854 |
| 7166 | 8542 | 7440 | 8820 | 7652 | 8923 |
| 7167 | 8626 | 7441 | 8831 | 7653 | 8890 |
| 7168 | 8575 | 7442 | 8827 | 7654 | 8968 |
| 7188 | 8393 | 7443 | 8862 | 7655 | 8838 |
| 7189 | 8464 | 7444 | 8865 | 7656 | 8840 |
| 7190 | 8343 | 7445 | 8823 | 7657 | 8856 |
| 7191 | 8452 | 7446 | 8869 | 7658 | 8905 |
| 7192 | 8724 | 7447 | 8690 | 7659 | 8935 |
| 7206 | 8524 | 7448 | 8741 | 7660 | 8937 |
| 7215 | 8523 | 7449 | 8773 | 7661 | 8939 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 7662 | 8897 | 7780 | 9191 | 7909 | 9167 |
| 7663 | 8883 | 7781 | 9174 | 7910 | 9158 |
| 7664 | 8875 | 7782 | 9180 | 7911 | 9143 |
| 7665 | 8878 | 7783 | 9212 | 7912 | 9195 |
| 7666 | 8887 | 7784 | 9204 | 7913 | 9146 |
| 7667 | 8947 | 7785 | 9219 | 7914 | 9194 |
| 7668 | 8973 | 7786 | 9223 | 7915 | 9145 |
| 7669 | 8959 | 7787 | 9237 | 7916 | 9192 |
| 7670 | 8956 | 7788 | 9287 | 7917 | 9154 |
| 7671 | 8969 | 7789 | 9307 | 7918 | 9178 |
| 7672 | 8961 | 7790 | 9244 | 7919 | 9177 |
| 7673 | 8960 | 7791 | 9234 | 7920 | 9185 |
| 7674 | 8970 | 7792 | 9236 | 7921 | 9131 |
| 7675 | 8984 | 7793 | 9293 | 7937 | 9159 |
| 7676 | 8989 | 7794 | 9254 | 7942 | 9322 |
| 7677 | 8993 | 7795 | 9133 | 7943 | 9300 |
| 7678 | 8996 | 7796 | 9095 | 7944 | 9260 |
| 7679 | 8881 | 7797 | 9129 | 7945 | 9328 |
| 7680 | 8900 | 7816 | 8992 | 7946 | 9285 |
| 7681 | 8893 | 7817 | 9128 | 7947 | 9262 |
| 7682 | 8914 | 7818 | 9208 | 7948 | 9290 |
| 7683 | 8922 | 7819 | 9164 | 7949 | 9338 |
| 7684 | 9032 | 7820 | 9227 | 7950 | 9314 |
| 7685 | 9031 | 7821 | 9264 | 7951 | 9305 |
| 7729 | 8966 | 7822 | 9249 | 7952 | 9312 |
| 7730 | 8964 | 7823 | 9029 | 7953 | 9323 |
| 7731 | 8963 | 7824 | 9038 | 7954 | 9332 |
| 7732 | 8967 | 7825 | 9110 | 7955 | 9346 |
| 7733 | 9001 | 7826 | 9136 | 7956 | 9372 |
| 7734 | 8991 | 7856 | 8999 | 7957 | 9356 |
| 7735 | 8994 | 7857 | 9009 | 7958 | 9366 |
| 7736 | 9007 | 7858 | 9019 | 7959 | 9378 |
| 7747 | 8957 | 7859 | 9073 | 7960 | 9394 |
| 7748 | 9006 | 7860 | 9087 | 7961 | 9376 |
| 7767 | 9034 | 7861 | 9097 | 7962 | 9515 |
| 7768 | 9037 | 7862 | 9076 | 7963 | 9257 |
| 7769 | 9113 | 7863 | 9091 | 7964 | 9459 |
| 7770 | 9153 | 7883 | 9010 | 7974 | 9277 |
| 7771 | 9099 | 7899 | 9065 | 7975 | 9284 |
| 7772 | 9105 | 7900 | 9096 | 7976 | 9280 |
| 7773 | 9119 | 7901 | 9093 | 7977 | 9370 |
| 7774 | 9116 | 7902 | 9083 | 7978 | 9357 |
| 7775 | 9186 | 7903 | 9082 | 7979 | 9331 |
| 7776 | 9170 | 7904 | 9114 | 7999 | 9161 |
| 7777 | 9222 | 7905 | 9152 | 8000 | 9171 |
| 7778 | 9189 | 7906 | 9137 | 8001 | 9173 |
| 7779 | 9207 | 7907 | 9123 | 8002 | 9197 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 8003 | 9210 | 8116 | 9335 | 8238 | 9560 |
| 8004 | 9209 | 8117 | 9386 | 8239 | 9561 |
| 8005 | 9242 | 8118 | 9348 | 8240 | 9532 |
| 8006 | 9247 | 8119 | 9397 | 8241 | 9533 |
| 8007 | 9220 | 8120 | 9383 | 8242 | 9540 |
| 8008 | 9267 | 8121 | 9462 | 8243 | 9535 |
| 8009 | 9235 | 8122 | 9407 | 8244 | 9445 |
| 8010 | 9268 | 8123 | 9463 | 8254 | 9421 |
| 8011 | 9259 | 8124 | 9435 | 8255 | 9541 |
| 8012 | 9276 | 8125 | 9457 | 8256 | 9448 |
| 8013 | 9245 | 8126 | 9443 | 8257 | 9493 |
| 8014 | 9271 | 8127 | 9438 | 8258 | 9529 |
| 8015 | 9315 | 8128 | 9423 | 8259 | 9527 |
| 8016 | 9239 | 8129 | 9377 | 8304 | 9522 |
| 8017 | 9218 | 8130 | 9380 | 8305 | 9537 |
| 8029 | 9200 | 8131 | 9381 | 8306 | 9602 |
| 8030 | 9150 | 8132 | 9412 | 8307 | 9545 |
| 8031 | 9198 | 8133 | 9482 | 8308 | 9538 |
| 8032 | 9263 | 8134 | 9390 | 8309 | 9567 |
| 8033 | 9213 | 8135 | 9403 | 8310 | 9547 |
| 8034 | 9281 | 8136 | 9466 | 8311 | 9552 |
| 8056 | 9253 | 8148 | 9326 | 8312 | 9605 |
| 8057 | 9278 | 8149 | 9345 | 8313 | 9554 |
| 8058 | 9258 | 8150 | 9427 | 8314 | 9558 |
| 8059 | 9303 | 8151 | 9392 | 8315 | 9598 |
| 8060 | 9324 | 8152 | 9428 | 8316 | 9556 |
| 8061 | 9313 | 8166 | 9454 | 8317 | 9580 |
| 8062 | 9275 | 8167 | 9439 | 8318 | 9568 |
| 8063 | 9359 | 8168 | 9416 | 8319 | 9563 |
| 8064 | 9334 | 8169 | 9474 | 8320 | 9571 |
| 8065 | 9329 | 8173 | 9504 | 8321 | 9591 |
| 8066 | 9363 | 8174 | 9481 | 8322 | 9575 |
| 8067 | 9369 | 8175 | 9491 | 8323 | 9583 |
| 8068 | 9351 | 8176 | 9512 | 8324 | 9611 |
| 8069 | 9311 | 8187 | 9485 | 8325 | 9576 |
| 8070 | 9333 | 8226 | 9422 | 8326 | 9596 |
| 8071 | 9330 | 8227 | 9426 | 8327 | 9584 |
| 8072 | 9317 | 8228 | 9436 | 8328 | 9572 |
| 8073 | 9371 | 8229 | 9441 | 8329 | 9578 |
| 8074 | 9353 | 8230 | 9464 | 8330 | 9577 |
| 8085 | 9252 | 8231 | 9425 | 8331 | 9585 |
| 8086 | 9304 | 8232 | 9465 | 8332 | 9586 |
| 8087 | 9279 | 8233 | 9480 | 8333 | 9579 |
| 8088 | 9368 | 8234 | 9513 | 8334 | 9587 |
| 8089 | 9336 | 8235 | 9514 | 8335 | 9616 |
| 8114 | 9385 | 8236 | 9530 | 8336 | 9595 |
| 8115 | 9374 | 8237 | 9539 | 8337 | 9609 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 8338 | 9604 | 8419 | 9714 | 8501 | 9751 |
| 8339 | 9603 | 8420 | 9677 | 8502 | 9711 |
| 8340 | 9618 | 8421 | 9686 | 8503 | 9715 |
| 8341 | 9628 | 8422 | 9685 | 8504 | 9716 |
| 8342 | 9620 | 8423 | 9713 | 8505 | 9837 |
| 8343 | 9621 | 8424 | 9712 | 8506 | 9719 |
| 8353 | 9523 | 8425 | 9697 | 8507 | 9757 |
| 8354 | 9549 | 8426 | 9701 | 8508 | 9829 |
| 8355 | 9543 | 8427 | 9724 | 8509 | 9807 |
| 8356 | 9570 | 8428 | 9704 | 8566 | 9869 |
| 8357 | 9599 | 8429 | 9703 | 8567 | 9769 |
| 8358 | 9590 | 8430 | 9705 | 8568 | 9824 |
| 8384 | 9623 | 8431 | 9706 | 8569 | 9768 |
| 8385 | 9613 | 8432 | 9734 | 8570 | 9794 |
| 8386 | 9606 | 8442 | 9622 | 8571 | 9796 |
| 8387 | 9633 | 8443 | 9654 | 8572 | 9809 |
| 8388 | 9632 | 8444 | 9639 | 8573 | 9797 |
| 8389 | 9607 | 8445 | 9672 | 8574 | 9793 |
| 8390 | 9627 | 8446 | 9668 | 8575 | 9798 |
| 8391 | 9629 | 8447 | 9684 | 8576 | 9808 |
| 8392 | 9624 | 8448 | 9678 | 8577 | 9819 |
| 8393 | 9660 | 8462 | 9750 | 8578 | 9844 |
| 8394 | 9646 | 8463 | 9972 | 8579 | 9800 |
| 8395 | 9641 | 8464 | 9709 | 8580 | 9820 |
| 8396 | 9647 | 8465 | 9720 | 8581 | 9801 |
| 8397 | 9733 | 8466 | 9735 | 8582 | 9811 |
| 8398 | 9661 | 8467 | 9721 | 8583 | 9835 |
| 8399 | 9655 | 8468 | 9763 | 8584 | 9834 |
| 8400 | 9665 | 8469 | 9790 | 8585 | 9850 |
| 8401 | 9630 | 8470 | 9752 | 8586 | 9823 |
| 8402 | 9631 | 8471 | 9723 | 8604 | 9887 |
| 8403 | 9693 | 8472 | 9728 | 8605 | 9792 |
| 8404 | 9635 | 8473 | 9744 | 8606 | 9795 |
| 8405 | 9634 | 8474 | 9747 | 8612 | 10008 |
| 8406 | 9637 | 8475 | 9760 | 8613 | 9976 |
| 8407 | 9662 | 8476 | 9748 | 8651 | 9836 |
| 8408 | 9650 | 8477 | 9738 | 8652 | 9878 |
| 8409 | 9648 | 8478 | 9743 | 8653 | 9898 |
| 8410 | 9791 | 8479 | 9726 | 8654 | 9927 |
| 8411 | 9657 | 8480 | 9753 | 8655 | 9900 |
| 8412 | 9666 | 8481 | 9761 | 8656 | 9931 |
| 8413 | 9649 | 8482 | 9874 | 8657 | 9924 |
| 8414 | 9676 | 8483 | 9767 | 8658 | 9906 |
| 8415 | 9658 | 8484 | 9805 | 8659 | 9928 |
| 8416 | 9659 | 8485 | 9758 | 8660 | 9935 |
| 8417 | 9682 | 8486 | 9772 | 8661 | 9932 |
| 8418 | 9681 | 8487 | 9806 | 8689 | 9868 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 8690 | 9882 | 9069 | 10272 | 9179 | 10336 |
| 8691 | 10200 | 9070 | 10323 | 9180 | 10320 |
| 8692 | 9904 | 9071 | 10303 | 9181 | 10347 |
| 8693 | 9915 | 9072 | 10280 | 9182 | 10351 |
| 8694 | 9929 | 9073 | 10296 | 9183 | 10404 |
| 8695 | 10086 | 9074 | 10281 | 9184 | 10341 |
| 8696 | 9941 | 9075 | 10279 | 9185 | 10377 |
| 8697 | 9943 | 9076 | 10309 | 9186 | 10405 |
| 8698 | 9937 | 9077 | 10302 | 9187 | 10416 |
| 8736 | 9957 | 9078 | 10409 | 9188 | 10417 |
| 8737 | 9958 | 9079 | 10289 | 9204 | 10425 |
| 8738 | 9953 | 9080 | 10319 | 9205 | 10433 |
| 8739 | 9967 | 9081 | 10278 | 9206 | 10489 |
| 8740 | 9975 | 9082 | 10269 | 9207 | 10432 |
| 8741 | 9993 | 9083 | 10308 | 9208 | 10457 |
| 8774 | 9994 | 9084 | 10292 | 9209 | 10445 |
| 8775 | 10007 | 9085 | 10274 | 9210 | 10446 |
| 8776 | 9999 | 9086 | 10282 | 9211 | 10470 |
| 8777 | 9998 | 9087 | 10298 | 9212 | 10452 |
| 8778 | 9996 | 9088 | 10301 | 9213 | 10453 |
| 8779 | 9997 | 9128 | 10330 | 9214 | 10465 |
| 8780 | 10038 | 9129 | 10338 | 9215 | 10490 |
| 8781 | 10014 | 9130 | 10361 | 9234 | 10440 |
| 8782 | 10039 | 9131 | 10340 | 9235 | 10439 |
| 8783 | 10084 | 9132 | 10350 | 9236 | 10515 |
| 8784 | 10239 | 9133 | 10424 | 9279 | 10487 |
| 8785 | 10098 | 9134 | 10339 | 9280 | 10484 |
| 9049 | 10293 | 9135 | 10342 | 9281 | 10492 |
| 9050 | 10294 | 9136 | 10337 | 9282 | 10483 |
| 9051 | 10353 | 9137 | 10357 | 9283 | 10475 |
| 9052 | 10295 | 9138 | 10333 | 9284 | 10491 |
| 9053 | 10316 | 9139 | 10406 | 9285 | 10500 |
| 9054 | 10310 | 9140 | 10354 | 9286 | 10558 |
| 9055 | 10276 | 9141 | 10359 | 9287 | 10535 |
| 9056 | 10277 | 9142 | 10346 | 9289 | 10502 |
| 9057 | 10306 | 9143 | 10356 | 9290 | 10503 |
| 9058 | 10265 | 9144 | 10410 | 9291 | 10514 |
| 9059 | 10300 | 9145 | 10345 | 9304 | 10479 |
| 9060 | 10327 | 9146 | 10415 | 9314 | 10454 |
| 9061 | 10332 | 9147 | 10375 | 9315 | 10455 |
| 9062 | 10313 | 9148 | 10411 | 9316 | 10549 |
| 9063 | 10311 | 9149 | 10412 | 9317 | 10544 |
| 9064 | 10321 | 9150 | 10420 | 9318 | 10611 |
| 9065 | 10335 | 9151 | 10414 | 9319 | 10552 |
| 9066 | 10322 | 9152 | 10413 | 9320 | 10606 |
| 9067 | 10328 | 9153 | 10418 | 9321 | 10608 |
| 9068 | 10326 | 9154 | 10419 | 9322 | 10605 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 9323 | 10609 | 9482 | 0 | 9785 | 0 |
| 9324 | 10659 | 9491 | 10705 | 9786 | 10966 |
| 9325 | 10622 | 9492 | 10711 | 9790 | 10988 |
| 9326 | 10616 | 9493 | 10727 | 9791 | 10991 |
| 9327 | 10534 | 9494 | 10684 | 9792 | 11185 |
| 9328 | 10547 | 9571 | 10680 | 9793 | 11006 |
| 9329 | 10562 | 9572 | 10772 | 9794 | 10983 |
| 9330 | 10694 | 9573 | 10750 | 9796 | 11013 |
| 9337 | 10520 | 9574 | 10801 | 9797 | 11020 |
| 9338 | 10510 | 9575 | 10803 | 9798 | 11044 |
| 9339 | 10517 | 9576 | 10809 | 9804 | 11046 |
| 9340 | 10542 | 9577 | 10817 | 9805 | 11081 |
| 9341 | 10541 | 9578 | 10989 | 9806 | 11118 |
| 9342 | 10556 | 9579 | 10842 | 9807 | 11074 |
| 9343 | 10612 | 9580 | 10884 | 9809 | 11025 |
| 9344 | 10521 | 9581 | 10894 | 9810 | 11032 |
| 9345 | 10536 | 9586 | 10881 | 9811 | 11072 |
| 9346 | 10524 | 9587 | 0 | 9812 | 11179 |
| 9397 | 10619 | 9589 | 10658 | 9816 | 11078 |
| 9398 | 10623 | 9590 | 10737 | 9817 | 11132 |
| 9399 | 10687 | 9632 | 10735 | 9818 | 11106 |
| 9400 | 10715 | 9660 | 10821 | 9826 | 11085 |
| 9401 | 10630 | 9662 | 11008 | 9830 | 11135 |
| 9402 | 10635 | 9663 | 10924 | 9831 | 11104 |
| 9403 | 10633 | 9664 | 10868 | 9832 | 11121 |
| 9404 | 10690 | 9665 | 10899 | 9833 | 11341 |
| 9405 | 10666 | 9666 | 10860 | 9922 | 11166 |
| 9406 | 10669 | 9678 | 10923 | 9923 | 11123 |
| 9407 | 10676 | 9689 | 10940 | 9924 | 11138 |
| 9408 | 10675 | 9690 | 10973 | 9925 | 11125 |
| 9409 | 10668 | 9691 | 10967 | 9926 | 11139 |
| 9412 | 10626 | 9698 | 11067 | 9930 | 11177 |
| 9439 | 10601 | 9699 | 10965 | 9931 | 11159 |
| 9445 | 10704 | 9719 | 0 | 9932 | 11157 |
| 9468 | 10685 | 9720 | 11043 | 9936 | 11172 |
| 9469 | 10686 | 9740 | 11048 | 9937 | 11153 |
| 9470 | 10752 | 9751 | 11080 | 9938 | 11199 |
| 9471 | 0 | 9752 | 11082 | 9939 | 11187 |
| 9472 | 10833 | 9764 | 10882 | 9940 | 11196 |
| 9473 | 0 | 9769 | 10912 | 9943 | 11164 |
| 9474 | 10812 | 9773 | 0 | 9944 | 11222 |
| 9476 | 10805 | 9774 | 0 | 9945 | 11202 |
| 9477 | 10691 | 9775 | 10921 | 9946 | 11247 |
| 9478 | 10703 | 9778 | 10942 | 9964 | 11188 |
| 9479 | 10724 | 9779 | 0 | 9971 | 11186 |
| 9480 | 10756 | 9783 | 10975 | 9972 | 11184 |
| 9481 | 0 | 9784 | 10981 | 9974 | 11209 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 9975 | 11213 | 10144 | 11498 | 10447 | 11700 |
| 9982 | 11230 | 10149 | 11404 | 10448 | 11723 |
| 9983 | 11268 | 10154 | 11401 | 10449 | 11717 |
| 9999 | 11241 | 10155 | 11399 | 10453 | 11719 |
| 10000 | 11276 | 10165 | 11421 | 10454 | 11707 |
| 10001 | 11278 | 10190 | 11506 | 10455 | 11778 |
| 10002 | 11229 | 10201 | 11398 | 10460 | 11732 |
| 10003 | 11250 | 10202 | 11411 | 10461 | 11813 |
| 10013 | 11315 | 10205 | 11394 | 10465 | 11736 |
| 10014 | 11262 | 10206 | 11407 | 10466 | 11742 |
| 10015 | 11289 | 10207 | 11427 | 10467 | 11747 |
| 10016 | 11339 | 10208 | 11425 | 10468 | 11831 |
| 10023 | 11423 | 10209 | 11429 | 10521 | 11711 |
| 10027 | 11793 | 10213 | 11442 | 10522 | 11754 |
| 10028 | 11295 | 10214 | 11453 | 10532 | 11749 |
| 10029 | 11369 | 10215 | 11447 | 10533 | 11821 |
| 10038 | 11379 | 10216 | 11440 | 10534 | 11770 |
| 10039 | 11455 | 10244 | 11347 | 10535 | 11828 |
| 10046 | 11287 | 10249 | 11449 | 10539 | 11762 |
| 10049 | 11354 | 10250 | 11470 | 10540 | 11791 |
| 10055 | 11362 | 10251 | 11797 | 10541 | 11801 |
| 10067 | 11265 | 10252 | 11461 | 10542 | 11827 |
| 10068 | 11319 | 10253 | 11472 | 10545 | 11984 |
| 10069 | 11261 | 10254 | 11485 | 10546 | 11978 |
| 10070 | 11317 | 10255 | 11476 | 10547 | 11833 |
| 10071 | 11374 | 10258 | 11457 | 10551 | 11786 |
| 10076 | 11281 | 10259 | 11465 | 10552 | 11896 |
| 10081 | 11385 | 10260 | 11463 | 10553 | 11972 |
| 10082 | 11280 | 10261 | 11645 | 10560 | 11809 |
| 10091 | 11497 | 10262 | 11478 | 10561 | 11847 |
| 10092 | 11322 | 10266 | 11489 | 10562 | 11842 |
| 10093 | 11324 | 10267 | 11803 | 10564 | 11844 |
| 10097 | 11371 | 10289 | 11554 | 10565 | 11837 |
| 10098 | 11391 | 10299 | 11666 | 10566 | 11862 |
| 10099 | 11356 | 10305 | 11537 | 10569 | 11990 |
| 10101 | 11329 | 10315 | 11527 | 10570 | 11973 |
| 10102 | 11419 | 10324 | 11543 | 10574 | 11858 |
| 10103 | 11353 | 10369 | 11641 | 10575 | 11991 |
| 10106 | 11368 | 10376 | 11660 | 10581 | 11864 |
| 10107 | 11409 | 10400 | 11680 | 10582 | 11866 |
| 10115 | 11302 | 10426 | 11681 | 10585 | 11883 |
| 10116 | 11330 | 10430 | 11664 | 10586 | 11905 |
| 10122 | 11333 | 10437 | 11678 | 10602 | 11774 |
| 10131 | 11307 | 10442 | 11702 | 10608 | 11882 |
| 10132 | 11360 | 10443 | 11721 | 10617 | 11790 |
| 10142 | 11403 | 10444 | 11757 | 10618 | 11805 |
| 10143 | 11336 | 10445 | 11725 | 10626 | 11802 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 10630 | 11808 | 10968 | 12194 | 11060 | 12313 |
| 10631 | 11807 | 10971 | 12232 | 11061 | 12305 |
| 10647 | 11904 | 10972 | 12211 | 11063 | 12246 |
| 10658 | 11877 | 10973 | 12220 | 11064 | 12244 |
| 10659 | 11851 | 10980 | 12240 | 11065 | 12247 |
| 10666 | 11861 | 10981 | 12223 | 11066 | 12253 |
| 10667 | 11852 | 10982 | 12405 | 11067 | 12258 |
| 10668 | 11878 | 10988 | 12228 | 11068 | 12252 |
| 10669 | 11876 | 10989 | 12260 | 11069 | 12292 |
| 10670 | 11887 | 10990 | 12234 | 11070 | 12264 |
| 10671 | 11875 | 10993 | 12180 | 11071 | 12274 |
| 10674 | 11907 | 10994 | 12187 | 11072 | 12288 |
| 10675 | 11926 | 10995 | 12185 | 11073 | 12273 |
| 10679 | 11992 | 10996 | 12227 | 11074 | 12281 |
| 10680 | 11968 | 10997 | 12183 | 11075 | 12296 |
| 10685 | 11963 | 10998 | 12615 | 11076 | 12298 |
| 10687 | 12101 | 10999 | 12205 | 11077 | 12302 |
| 10688 | 11927 | 11002 | 12269 | 11078 | 12306 |
| 10689 | 11942 | 11003 | 12191 | 11079 | 12308 |
| 10691 | 11932 | 11005 | 12235 | 11080 | 12309 |
| 10692 | 11960 | 11006 | 12217 | 11081 | 12311 |
| 10693 | 11988 | 11009 | 12208 | 11082 | 12315 |
| 10694 | 12010 | 11010 | 12198 | 11083 | 12336 |
| 10717 | 11897 | 11011 | 12213 | 11084 | 12317 |
| 10718 | 11924 | 11012 | 12236 | 11085 | 12342 |
| 10724 | 12171 | 11013 | 12249 | 11086 | 12338 |
| 10735 | 11928 | 11014 | 12222 | 11087 | 12319 |
| 10736 | 11933 | 11015 | 12241 | 11089 | 12301 |
| 10737 | 11952 | 11016 | 12276 | 11090 | 12297 |
| 10738 | 12032 | 11017 | 12224 | 11091 | 12348 |
| 10743 | 12059 | 11018 | 12261 | 11092 | 12332 |
| 10759 | 11945 | 11019 | 12225 | 11093 | 12347 |
| 10802 | 12035 | 11020 | 12263 | 11095 | 12304 |
| 10811 | 12118 | 11021 | 12265 | 11096 | 12314 |
| 10835 | 12179 | 11022 | 12255 | 11097 | 12316 |
| 10836 | 12176 | 11031 | 12272 | 11098 | 12320 |
| 10852 | 12082 | 11039 | 12280 | 11102 | 12322 |
| 10857 | 12152 | 11040 | 12299 | 11103 | 12326 |
| 10858 | 12054 | 11041 | 12295 | 11104 | 12328 |
| 10864 | 12089 | 11051 | 12229 | 11105 | 12344 |
| 10865 | 12079 | 11052 | 12239 | 11106 | 12352 |
| 10874 | 12111 | 11053 | 12271 | 11108 | 12384 |
| 10958 | 12215 | 11054 | 12290 | 11109 | 12329 |
| 10959 | 12186 | 11055 | 12242 | 11117 | 12331 |
| 10965 | 12190 | 11057 | 12285 | 11118 | 12333 |
| 10966 | 12204 | 11058 | 12268 | 11119 | 12391 |
| 10967 | 12226 | 11059 | 12303 | 11123 | 12327 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 11125 | 12283 | 11215 | 12443 | 11310 | 12570 |
| 11128 | 12266 | 11220 | 12439 | 11311 | 12512 |
| 11129 | 12340 | 11221 | 12445 | 11312 | 12520 |
| 11132 | 12343 | 11227 | 12468 | 11313 | 12528 |
| 11133 | 12349 | 11228 | 12447 | 11317 | 12778 |
| 11134 | 12359 | 11229 | 12448 | 11319 | 12494 |
| 11135 | 12351 | 11230 | 12449 | 11320 | 12506 |
| 11136 | 12364 | 11231 | 12450 | 11321 | 12508 |
| 11137 | 12353 | 11232 | 12461 | 11322 | 12546 |
| 11138 | 12345 | 11233 | 12463 | 11323 | 12491 |
| 11139 | 12346 | 11236 | 12470 | 11326 | 12547 |
| 11140 | 12356 | 11237 | 12456 | 11327 | 12554 |
| 11141 | 12357 | 11238 | 12473 | 11328 | 12472 |
| 11142 | 12361 | 11239 | 12477 | 11331 | 12457 |
| 11143 | 12369 | 11242 | 12476 | 11332 | 12510 |
| 11144 | 12367 | 11243 | 12483 | 11333 | 12517 |
| 11148 | 12366 | 11244 | 12492 | 11334 | 12572 |
| 11149 | 12362 | 11245 | 12482 | 11335 | 12542 |
| 11154 | 12370 | 11250 | 12493 | 11336 | 12521 |
| 11159 | 12389 | 11251 | 12471 | 11337 | 12519 |
| 11160 | 12368 | 11252 | 12497 | 11339 | 12539 |
| 11161 | 12372 | 11254 | 12415 | 11340 | 12555 |
| 11163 | 12406 | 11256 | 12436 | 11341 | 12592 |
| 11164 | 12409 | 11261 | 12454 | 11342 | 12824 |
| 11165 | 12407 | 11262 | 12428 | 11343 | 12562 |
| 11166 | 12411 | 11263 | 12423 | 11344 | 12540 |
| 11167 | 12416 | 11265 | 12481 | 11345 | 12550 |
| 11168 | 12410 | 11266 | 12537 | 11350 | 12541 |
| 11172 | 12400 | 11267 | 12451 | 11351 | 12538 |
| 11176 | 12398 | 11269 | 12462 | 11352 | 12544 |
| 11177 | 12413 | 11270 | 12469 | 11353 | 12543 |
| 11178 | 12418 | 11271 | 12474 | 11360 | 12576 |
| 11179 | 12421 | 11272 | 12504 | 11361 | 12545 |
| 11182 | 12422 | 11273 | 12563 | 11362 | 12577 |
| 11184 | 12444 | 11279 | 12478 | 11363 | 12598 |
| 11185 | 12431 | 11280 | 12484 | 11364 | 12578 |
| 11186 | 12465 | 11286 | 12515 | 11369 | 12580 |
| 11188 | 12380 | 11287 | 12486 | 11370 | 12602 |
| 11189 | 12373 | 11288 | 12490 | 11371 | 12558 |
| 11195 | 12377 | 11292 | 12525 | 11372 | 12560 |
| 11196 | 12399 | 11293 | 12549 | 11373 | 12568 |
| 11197 | 12394 | 11294 | 12487 | 11374 | 12603 |
| 11198 | 12375 | 11295 | 12498 | 11379 | 12561 |
| 11199 | 12434 | 11296 | 12532 | 11380 | 13067 |
| 11200 | 12432 | 11303 | 12488 | 11381 | 12575 |
| 11203 | 12440 | 11304 | 12501 | 11382 | 12574 |
| 11214 | 12429 | 11305 | 12514 | 11383 | 12605 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 11384 | 12593 | 11514 | 12800 | 11642 | 12882 |
| 11385 | 12590 | 11515 | 12762 | 11643 | 12847 |
| 11386 | 12591 | 11518 | 12748 | 11644 | 12865 |
| 11387 | 12682 | 11519 | 12779 | 11648 | 12852 |
| 11388 | 12601 | 11520 | 12740 | 11649 | 12918 |
| 11392 | 12569 | 11522 | 12663 | 11650 | 12891 |
| 11393 | 12652 | 11529 | 12687 | 11651 | 12978 |
| 11394 | 12616 | 11530 | 12681 | 11656 | 12845 |
| 11396 | 12647 | 11533 | 12677 | 11657 | 12980 |
| 11397 | 12679 | 11535 | 12700 | 11658 | 12871 |
| 11398 | 12683 | 11537 | 12705 | 11659 | 13004 |
| 11405 | 12621 | 11538 | 12844 | 11660 | 12886 |
| 11406 | 12607 | 11542 | 12725 | 11667 | 12894 |
| 11407 | 12609 | 11543 | 12715 | 11668 | 13040 |
| 11410 | 12614 | 11544 | 12789 | 11669 | 12923 |
| 11411 | 12665 | 11545 | 12798 | 11670 | 12943 |
| 11412 | 12610 | 11546 | 12742 | 11671 | 12914 |
| 11422 | 12653 | 11547 | 12839 | 11676 | 12915 |
| 11445 | 12624 | 11548 | 12767 | 11677 | 13023 |
| 11446 | 12925 | 11549 | 12804 | 11681 | 12908 |
| 11447 | 12649 | 11550 | 12938 | 11685 | 12843 |
| 11448 | 12703 | 11551 | 12858 | 11686 | 12810 |
| 11449 | 12617 | 11552 | 12870 | 11690 | 12837 |
| 11452 | 12619 | 11556 | 12803 | 11692 | 12928 |
| 11453 | 12861 | 11574 | 12770 | 11693 | 13005 |
| 11454 | 12671 | 11575 | 12771 | 11694 | 12926 |
| 11458 | 12733 | 11583 | 12780 | 11697 | 12866 |
| 11459 | 12726 | 11584 | 12949 | 11700 | 13006 |
| 11460 | 12718 | 11585 | 12880 | 11701 | 12869 |
| 11461 | 12723 | 11591 | 12776 | 11702 | 12875 |
| 11471 | 12714 | 11592 | 12774 | 11703 | 12892 |
| 11472 | 12734 | 11593 | 12791 | 11715 | 13136 |
| 11473 | 12706 | 11594 | 12950 | 11721 | 13032 |
| 11479 | 12730 | 11601 | 12818 | 11722 | 13034 |
| 11480 | 12784 | 11602 | 12967 | 11729 | 12942 |
| 11484 | 12750 | 11603 | 12851 | 11730 | 12946 |
| 11485 | 12893 | 11605 | 12822 | 11736 | 12907 |
| 11486 | 12721 | 11606 | 12850 | 11738 | 13068 |
| 11487 | 12753 | 11611 | 12856 | 11740 | 12936 |
| 11495 | 12754 | 11612 | 12927 | 11743 | 12997 |
| 11496 | 12887 | 11617 | 12820 | 11744 | 12973 |
| 11507 | 12769 | 11618 | 12897 | 11747 | 12998 |
| 11508 | 12727 | 11619 | 12899 | 11748 | 12937 |
| 11509 | 12735 | 11623 | 12968 | 11752 | 13001 |
| 11510 | 12816 | 11631 | 12842 | 11753 | 12975 |
| 11511 | 12786 | 11640 | 12830 | 11754 | 12964 |
| 11512 | 12905 | 11641 | 12979 | 11763 | 13021 |

# Recall 106 - Steering Bolts

| VIN Number | Assembly Number | VIN Number | Assembly Number | VIN Number | Assembly Number |
|---|---|---|---|---|---|
| 11764 | 12963 | 11827 | 13066 | 11875 | 13170 |
| 11768 | 12981 | 11833 | 13053 | 11876 | 13119 |
| 11779 | 13155 | 11834 | 13015 | 11886 | 13080 |
| 11783 | 13188 | 11835 | 13111 | 11887 | 13077 |
| 11784 | 13016 | 11836 | 13081 | 11888 | 13071 |
| 11785 | 12966 | 11843 | 13090 | 11889 | 13126 |
| 11786 | 12951 | 11844 | 13104 | 11896 | 13084 |
| 11787 | 12947 | 11845 | 13102 | 11897 | 13099 |
| 11791 | 13038 | 11849 | 13115 | 11898 | 13113 |
| 11792 | 13028 | 11850 | 13157 | 11908 | 13122 |
| 11793 | 13036 | 11862 | 13035 | 11909 | 13118 |
| 11811 | 13002 | 11863 | 13055 | 11910 | 13159 |
| 11818 | 13027 | 11865 | 13058 | 11914 | 13132 |
| 11819 | 12993 | 11868 | 13087 | 11928 | 13142 |
| 11820 | 13145 | 11869 | 13092 | 11929 | 13183 |
| 11825 | 13052 | 11871 | 13103 | 11963 | 13190 |
| 11826 | 13128 | 11872 | 13083 | | |

MASERATI

RECALL CAMPAIGN INSTRUCTIONS

# RECALL CAMPAIGN

## REF. NO. 128
## OUTER DOOR HANDLES

## QUATTROPORTE
## 2005 MODEL YEAR

## OCTOBER 2004

READ , INITIAL AND PASS ON »

| Service Manager | Parts Manager | Service Writer | Technician | | | | | Warranty Clerk |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

# Maserati North America, Inc.

October, 2004

Dear Maserati Dealer:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati Quattroporte vehicles.

The defect involves the internal wiring harness of the affected door handles, which may accidentally short circuit, opening the electrical switch of the door, and in certain situations the door might open without any action from the vehicle occupant. However, this cannot occur if the vehicle is traveling at a speed in excess of 6 miles per hour (10 kilometer per hour), due to the intervention of the central locking system.

The vehicles possibly affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A550014216 to ZAMCE39A750015013, which have a Vehicle Assembly Number from 15140 to 16044.

The remedy consists of replacing the four outer door handles on the vehicle. The operation will be performed free of charge to the vehicle owner, and will require approximately 4 hours to complete.

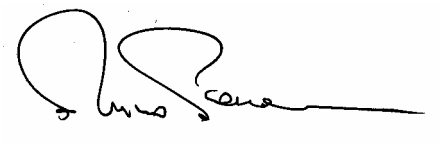
We have accordingly sent notices to all owners of the affected vehicles advising them of this problem and requesting that they contact any Authorized Maserati Dealer for the repairs, as per the attached notification letter. Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within 10 working days.

Please notice that a supply of these parts will be shipped automatically to you based on the number of vehicles in your servicing area. Any additional quantities must be ordered, as needed, from our Parts Department. Upon transmittal of the repair under the normal warranty system, we will of course reimburse you for the parts and the labor necessary to carry out this campaign.

Obviously, if you have any of the affected vehicles in your stock, you must not sell them until you have performed the necessary repairs. If you have already sold any vehicles with the chassis numbers specified in the enclosed instructions and have not yet sent in the new owner information to MNA, please do so at once so we may notify these owners.

Thank you for your cooperation and support on this matter.

Best Regards,



Enzo Francesconi
Vice President of Technical Services

# Maserati North America, Inc.

October, 2004

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Customer:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati Quattroporte vehicles.

The defect involves the internal wiring harness of the affected outer door handles, which may accidentally short circuit, opening the electrical switch of the door, and in certain situations the door might open without any action from the vehicle occupant. However, this cannot occur if the vehicle is traveling at a speed in excess of 6 miles per hour, due to the intervention of the central locking system.

The vehicles possibly affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A550014216 to ZAMCE39A750015013, which have a Vehicle Assembly Number from 15140 to 16044.

The remedy consists of replacing the four door handles on the vehicle.

We may have contacted you by telephone concerning this matter. If we did not reach you, or if you have not yet scheduled an appointment with your Authorized Maserati dealer to have this matter addressed, we ask you to immediately contact any Authorized Maserati Dealer in order to arrange an inspection of your automobile and to have the corrective action performed.

The corrective action for the above listed repair will be performed free of charge to you and will require up to approximately four hours to complete. Please plan, however, to leave your vehicle with the dealership to allow the dealer some flexibility for scheduling your repairs.

By the time you receive this letter, the Authorized Maserati Dealers will have been supplied with the parts and the instructions to perform the repair. If the Dealer fails or is unable to make the necessary repairs free of charge within a reasonable time, or if you have any problem obtaining the needed repair, you should inform the national headquarters of Maserati North America, Inc. at:

Maserati North America, Inc.
250 Sylvan Avenue
Englewood Cliffs, NJ 07632
(201) 816-2651 or (201) 816-2659 (National Technical Office)

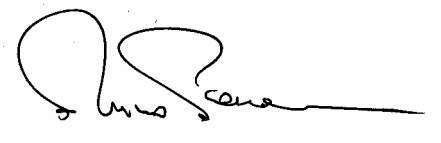
If the affected vehicle is not repaired free of charge to you and within a reasonable time, you may submit a written complaint to the Administrator, National Highway Traffic Safety Administration, (NHTSA), 400 Seventh Street, SW, Washington, DC 20590. You may also telephone the toll free Auto Safety Hotline at 888-327-4236.

You may be eligible to receive reimbursement for the cost you incurred if you already have obtained a remedy for a problem associated with the defect described in this letter. However, you still must have this corrective action performed, regardless of any previous repairs that may have been performed. Information about the reimbursement program for pre-notification repairs is provided in the enclosure to this letter.
Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

If you no longer own this vehicle or your address has changed, please complete the enclosed prepaid yellow card and return it to Maserati North America, Inc.

We urge you to comply with this notice promptly and we apologize for any inconvenience this may cause you.

Best Regards,



Enzo Francesconi
Vice President of Technical Services

## ENCLOSURE

Pre-Notification Reimbursement Program

You may be eligible for reimbursement if you previously incurred out-of-pocket costs for repairs or replacements of the outer door handles covered by this recall campaign number 128.

1. This reimbursement program applies to the vehicles listed below and in the attached letter:

- Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A550014216 to ZAMCE39A750015013, which have a Vehicle Assembly Number from 15140 to 16044.

2. This reimbursement program applies to repairs or replacements of the outer door handles covered by this recall campaign number 128.

3. This reimbursement program applies to repairs or replacements of the door handles of a vehicle listed above if such repair or replacement was made at any time up to ten days following the mailing of the attached notification letter.

4. This reimbursement program does not apply to repairs or replacements that were made within the period during which the original warranty would have provided for a free repair of the problem addressed by this recall, unless (i) a franchised dealer or authorized representative of Maserati denied warranty coverage or (ii) the repair made under the warranty did not remedy the problem. Reimbursement also will not be provided if the pre-notification remedy was not of the same type as the recall remedy provided herein, did not address the defect that led to this recall, or was not reasonably necessary to correct the defect.

5. To obtain reimbursement for pre-notification remedies, you will need to provide a receipt, which may be an original or copy, identifying the equipment replaced; and, if the pre-notification remedy was obtained at a time when the vehicle was covered under the original warranty program, documentation indicating that the manufacturer's dealer or authorized facility either refused to remedy the problem addressed by the recall under the warranty or that the warranty repair did not correct the problem addressed by the recall. In addition, you will need to submit a written and signed claim for reimbursement that contains the information required in paragraph 6, below.

6. The claim for reimbursement should include the following information. (a) the name and address of the claimant; (b) identification of their vehicle's make, model, model year, and vehicle identification number; (c) identification of the Maserati Campaign number (Campaign No. 128) or identification of the recall by reference to NHTSA's recall number; and (d) identification of the owner or purchaser of the vehicle at the time that the pre-notification remedy was obtained.

7. If you have any questions about the reimbursement program or need help in making a claim for reimbursement, please write or call Maserati North America, Inc., at the following address and telephone number:

Maserati North America, Inc.
250 Sylvan Avenue
Englewood Cliffs, NJ 07632
(201) 816-2651 (National Technical Office)

# RECALL CAMPAIGN NO. 128
# Maserati Quattroporte
# "Outer Door Handles"
# RECALL CAMPAIGN OVERVIEW

**INTRODUCTION:** Maserati Quattroporte

**SUBJECT:** Recall Campaign No. 128

**VEHICLES**: See the attached list of affected vehicles

All 2005 model year Maserati Quattroporte produced within the assembly numbers **15140 (VIN: 14216)** and **16044 (VIN: 15013)** are affected by this **recall campaign no. 128** whose subject is the outer door handles.

**CONDITION:** As a result of a manufacturing defect, the internal wiring harness of the affected door handles may accidentally short circuit, opening the electrical switch of the door, and in certain situations the door might open without any action from the vehicle occupant. However, this cannot occur if the vehicle is traveling at a speed in excess of 6 miles per hour (10 kilometer per hour), due to the intervention of the central locking system.

**REMEDY:** The remedy consists of replacing all four affected outer door handles with the new outer door handles that have the new routing of the wiring harness.

# RECALL CAMPAIGN NO. 128
# Maserati Quattroporte
# "Outer Door Handles"
# RECALL CAMPAIGN OVERVIEW

**PARTS**: The parts required for this repair are identified by the following part numbers:

| **Right Hand Side (RHS)** | | |
|---|---|---|
| **Part Number** | **Qty** | **Description** |
| 68808800 | 2 | New RHS Outer Door Handle |
| 067277600 | 1 | RHS Front Water Shield |
| 067277800 | 1 | RHS Rear Water Shield |

| **Left Hand Side (LHS)** | | |
|---|---|---|
| **Part Number** | **Qty** | **Description** |
| 68808900 | 2 | New LHS Outer Door Handle |
| 067277700 | 1 | LHS Front Water Shield |
| 067277900 | 1 | LHS Rear Water Shield |

**LABOR**: **Replacement of Outer Door Handles**

Fill in relevant warranty claims as follows:

- **Component Code:** 931011
- **Operation Code:** 9310119 (4 hours)
- **Defect Code:** 063
- **Campaign Code:** 24
- **Campaign Number:** 128

**Note:**

**Return *the removed outer door handles to our warranty department following the normal warranty parts return procedure.***

**REIMBURSEMENT**: Upon receipt of a warranty claim via MODIS CS.

**RECALL CAMPAIGN NO. 128**
**Maserati Quattroporte**
**"Outer Door Handles"**
**Technical Instructions**

## Repair Procedures / Technical Instructions:

Carefully read this document to determine the repair to be performed on all four doors. Do not forget to check via MODIS CS that the vehicle is flagged for the recall campaign no. 128. Follow the instructions and protect the door areas that could be exposed to damages during the repair.

- ***Remove the door panel trim.***



- ***Remove the door pull trim***



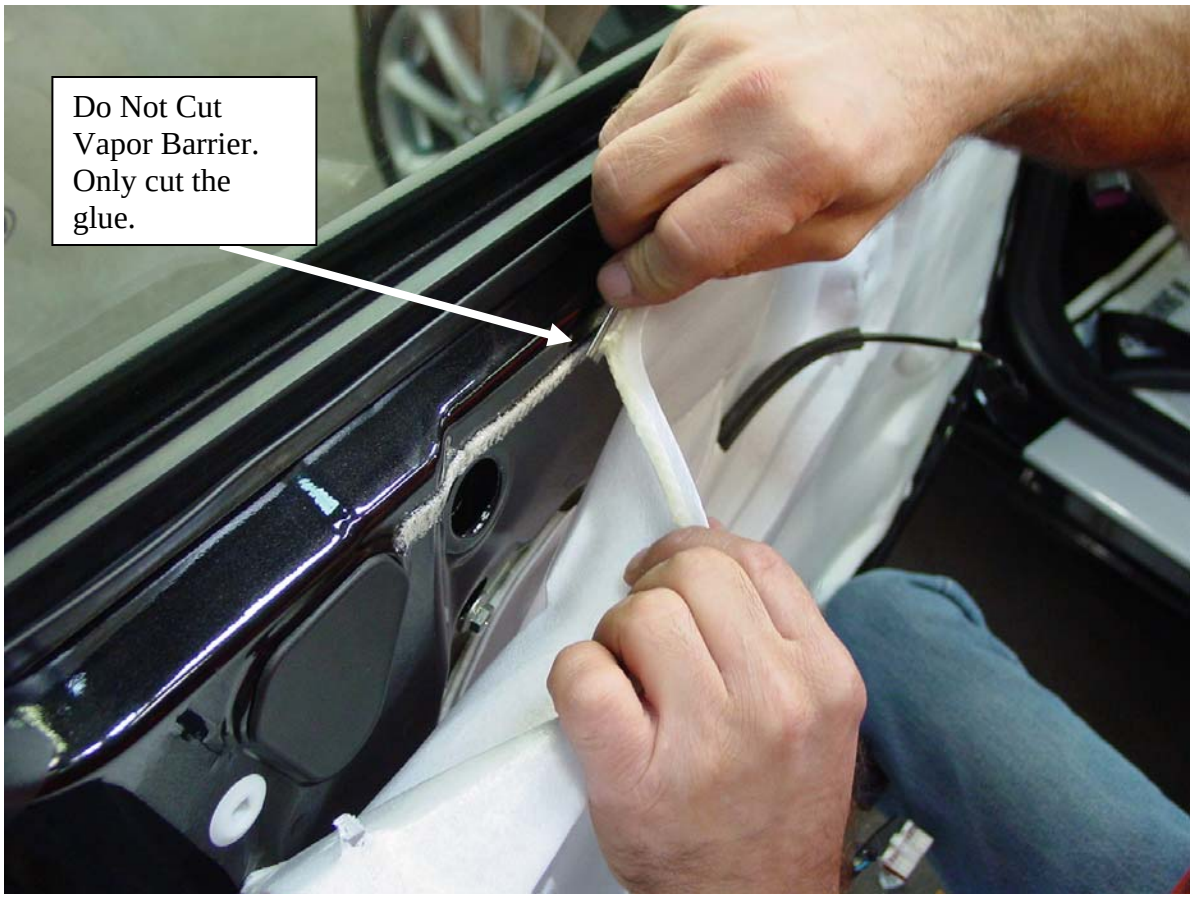
- ***Remove the door panel***



- ***After removing the door panel, detach/peel 1/3 of the internal water protection (water shield) in the position of the handles in such a way that the glue remains on both sides. (see attached photos)***

***<u>Notice:</u> Since you will be reusing the water shield, do not touch the stripe of glue as it may reduce its adhesive ability. Replace the water shield with a new one only if it is necessary.***

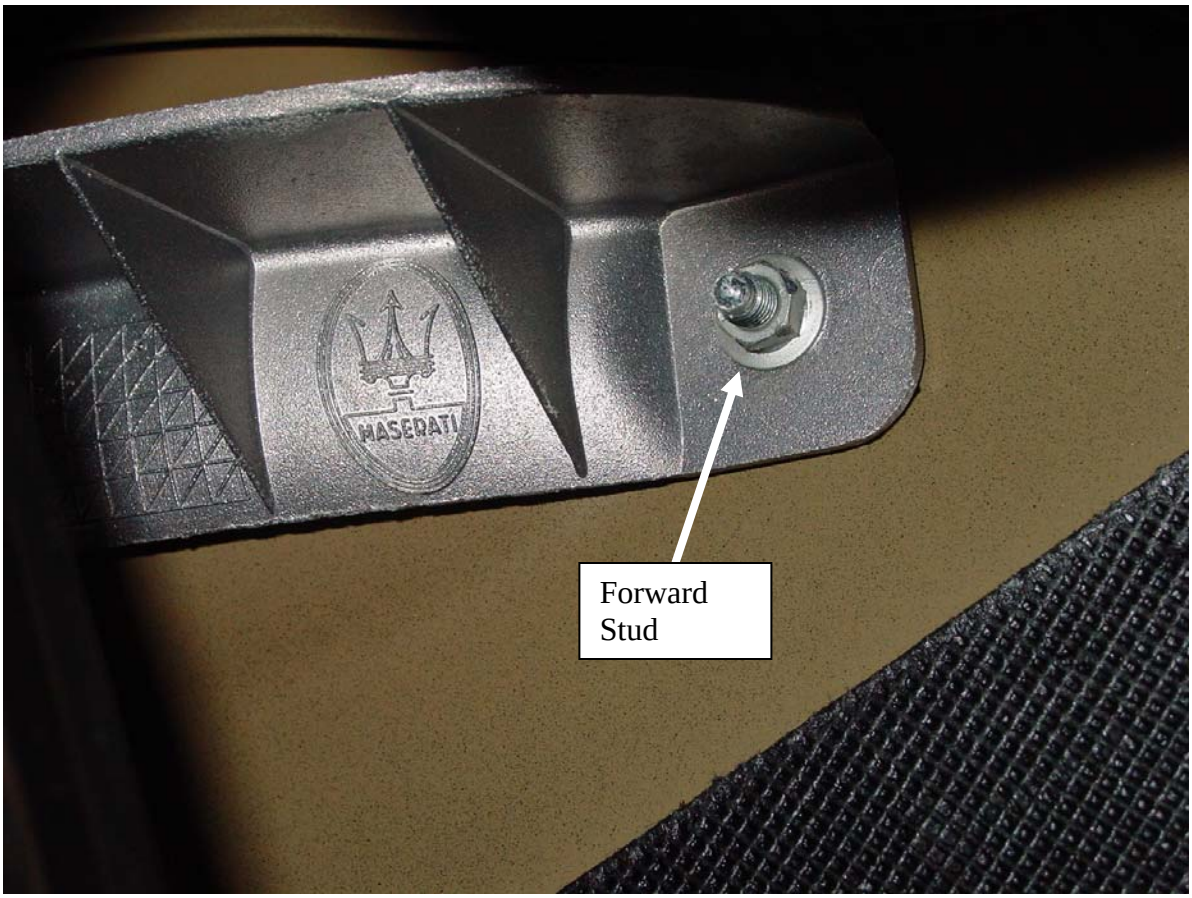



Do Not Cut
Vapor Barrier.
Only cut the
glue.


FRONT


REAR

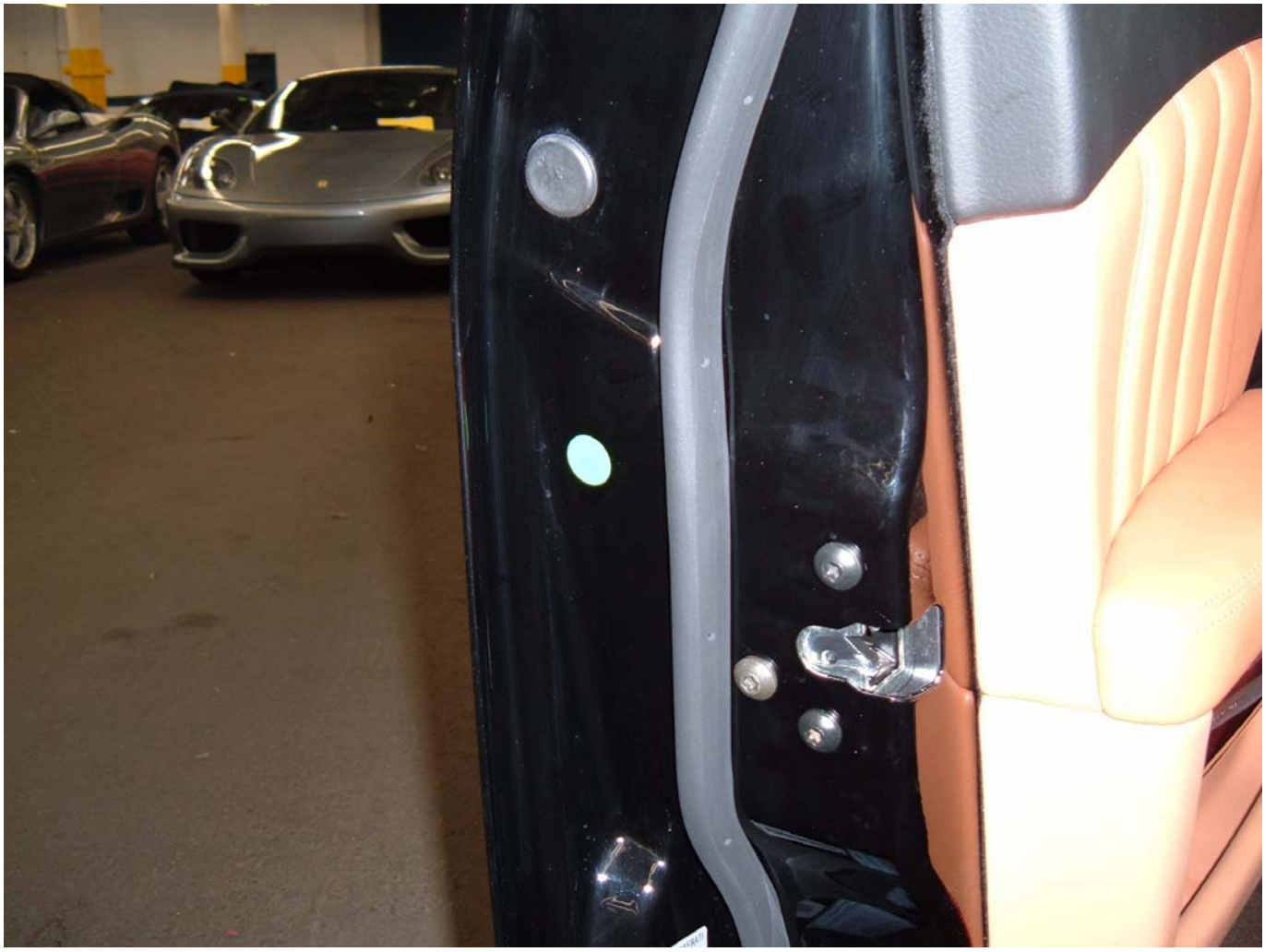
- ***Remove the outer door handles from each door.***



- ***Hold button of the handle in to allow better access to the back stud***



- ***Install the new outer door handles supplied by our Part Department to each door on the vehicle.***
- ***Tighten the outer door handles by applying a torque at the fixing point of the handles of 3 Ft-Lbs. (4.1 Nm).***
- ***Attach the peeled section of the water shield by pressing firmly around the edge to assure proper adhesion. Replace water shield if necessary.***
- ***Reinstall the door panel, door pull trim, door panel trim and clean the area with a clean cloth.***
- ***Place one green color-coding label on the inner side of the driver's door. The label will be provided by MNA and will help identify the completed vehicles.***



- ***Send the removed outer door handles to our warranty department following the normal warranty parts return procedure.***

- ***Submit the warranty claim via MODIS CS.***

| VIN | Assembly No. | VIN | Assembly No. |
|---|---|---|---|
| 14216 | 15140 | 14715 | 15874 |
| 14224 | 15365 | 14717 | 15890 |
| 14225 | 15553 | 14718 | 15891 |
| 14226 | 15509 | 14720 | 15887 |
| 14351 | 15514 | 14830 | 15936 |
| 14398 | 15596 | 14831 | 15896 |
| 14399 | 15643 | 14832 | 15919 |
| 14400 | 15567 | 14833 | 15930 |
| 14476 | 15625 | 14834 | 15958 |
| 14478 | 15645 | 14836 | 15948 |
| 14480 | 15662 | 14837 | 15947 |
| 14482 | 15686 | 14838 | 15915 |
| 14631 | 15709 | 14842 | 15895 |
| 14632 | 15658 | 14858 | 16114 |
| 14633 | 15743 | 15013 | 16044 |
| 14634 | 15809 | | |
| 14635 | 15788 | | |
| 14636 | 15807 | | |
| 14637 | 15794 | | |
| 14638 | 15833 | | |
| 14639 | 15713 | | |
| 14640 | 15732 | | |
| 14642 | 15739 | | |
| 14643 | 15785 | | |
| 14644 | 15821 | | |
| 14694 | 15842 | | |
| 14695 | 16003 | | |
| 14696 | 15812 | | |
| 14697 | 15796 | | |
| 14699 | 15850 | | |
| 14700 | 15932 | | |
| 14701 | 15848 | | |
| 14702 | 15860 | | |
| 14703 | 15906 | | |
| 14704 | 15814 | | |
| 14705 | 15911 | | |
| 14707 | 15861 | | |
| 14708 | 15878 | | |
| 14711 | 15870 | | |
| 14713 | 15884 | | |
| 14714 | 15867 | | |

MASERATI

RECALL CAMPAIGN INSTRUCTIONS

# RECALL CAMPAIGN

## REF. NO. 136
## PASSENGER AIR BAG INDICATOR LIGHT

## QUATTROPORTE
## 2005 MODEL YEAR

## SEPTEMBER 2005

READ , INITIAL AND PASS ON »

| Service Manager | Parts Manager | Service Writer | Technician | | | | | Warranty Clerk |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**Maserati North America, Inc.**

February _, 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»
Serial Number: «VIN» «ASSY»

Dear Maserati Dealer:

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati Quattroporte vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

First letter delivered in February 2005

The Maserati Quattroporte vehicles affected are as follows:

Model year 2005 Quattroportes with Vehicle Identification Numbers from: ZAMCD39B000011709 to ZAMCE39A950017846.

In addition to this notice, Maserati will provide, at no charge to the customer, a replacement console which does not contain the non-functioning button and LED light. When the new console is available, the customer will receive an additional notice informing them that they should take their vehicle to the nearest Maserati dealer to have the console replaced free of charge. Dealers will also be notified separately as soon as Maserati North America, Inc. receives the new console from the factory. The recall booklet for the dealers will be made available soon after the second notice is sent to the dealers.

Best Regards,

Enzo Francesconi
Vice President of Technical Services

**Maserati North America, Inc.**

September _, 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Dealer:

This notice is a follow up to the first notice we sent to you in the month of February. In the first notice we notified you that Maserati S.p.A., the manufacturer of Maserati automobiles, had decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

The vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A550014216 to ZAMCE39A250018112.

Maserati will provide, at no charge to the customer, a replacement console which does not contain the non-functioning button with the wording "Passenger Air Bag Off". Currently, the new console is available at our MNA parts department. Therefore, we notified the customer to take his or her vehicle to an authorized Maserati dealer to have the console replaced as soon as possible.

The operation will be performed free of charge to the vehicle owner, and will require approximately 1.0 hour to complete.

Best Regards,

Victor Soriano
National Aftersales Operations Manager
Maserati North America, Inc.

**Maserati North America, Inc.**

February _, 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Customer:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag. Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

First letter delivered in February 2005

Maserati is sending you this notice to inform you that the non-functioning button with the words "Passenger Air Bag Off" will ***not*** turn off the passenger air bag, and the LED light is not an indication that the passenger-side air bag has been deactivated. Because the passenger-side air bag cannot be turned off by any means, ***you should never place infants and small children in the front passenger seat of the 2005 Maserati Quattroporte***.

The vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A550014216 to ZAMCE39AX50017385.

In addition to this notice, Maserati will provide, at no charge to you, a replacement console which does not contain the non-functioning button and LED light. When the new console is available, you will receive an additional notice informing you that you should take your vehicle to your dealer to have the console replaced free of charge.

The corrective action for the replacement of the console will be performed free of charge to you. Details about the repair and the length of time that it will take will be sent to you in the additional notice.

If you have any questions, please call Maserati North America at 201-816-2600. If you believe that Maserati has failed to remedy the defect described in this letter free of charge to you and within a reasonable time, you may submit a written complaint to the Administrator, National Highway Traffic Safety Administration, (NHTSA), 400 Seventh Street, SW, Washington, DC 20590. You may also telephone the toll free Auto Safety Hotline at 888-327-4236.

Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

If you no longer own this vehicle or your address has changed, please complete the enclosed prepaid yellow card and return it to Maserati North America, Inc.

We urge you to comply with this notice promptly and we apologize for any inconvenience this may cause you.

Best Regards,

Enzo Francesconi
Vice President of Technical Services

First letter delivered in February 2005

**Maserati North America, Inc.**

September _ , 2005

«FIRST» «LAST»
«ADD1»
«ADD2»
«CITY», «ST» «ZIP»

Serial Number: «VIN» «ASSY»

Dear Maserati Customer:

This second notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

In the first notice we notified you that Maserati S.p.A., the manufacturer of Maserati automobiles, has decided that a defect which relates to motor vehicle safety exists in certain 2005 model year Maserati vehicles.

The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

Maserati will provide, at no charge to you, a replacement console which does not contain the non-functioning button and LED light. Currently, the new console is available at our dealers. Therefore, you should take your vehicle to an authorized Maserati dealer to have the console replaced as soon as possible.

The operation will be performed free of charge to the vehicle owner, and will require approximately 1 hour to complete.

Maserati also stated in the first notice that the non-functioning button with the words "Passenger Air Bag Off" will ***not*** turn off the passenger air bag, and the LED light is not an indication that the passenger-side air bag has been deactivated. Because the passenger-side air bag cannot be turned off by any means, ***you should never place***

***infants and small children in the front passenger seat of the 2005 Maserati Quattroporte***.

The vehicles affected are as follows:

Model year 2005 Quattroporte with Vehicle Identification Numbers from ZAMCE39A550014216 to ZAMCE39A250018112.

If you have any questions, please call Maserati North America at 201-816-2600. If you believe that Maserati has failed to remedy the defect described in this letter free of charge to you and within a reasonable time, you may submit a written complaint to the Administrator, National Highway Traffic Safety Administration, (NHTSA), 400 Seventh Street, SW, Washington, DC 20590. You may also telephone the toll free Auto Safety Hotline at 888-327-4236.

Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten working days.

If you no longer own this vehicle or your address has changed, please complete the enclosed prepaid yellow card and return it to Maserati North America, Inc.

We urge you to comply with this notice promptly and we apologize for any inconvenience this may cause you.

Best Regards,

Victor Soriano
National Aftersales Operations Manager
Maserati North America, Inc.

# RECALL CAMPAIGN NO. 136
# Maserati Quattroporte
# "Passenger Air Bag Indicator Light"
# RECALL CAMPAIGN OVERVIEW

**INTRODUCTION:** Maserati Quattroporte

**SUBJECT:** Recall Campaign No. 136

**VEHICLES**: See the attached list of affected vehicles

All 2005 model year Maserati Quattroporte produced within the assembly numbers **15140 (VIN: 14216)** and **19216 (VIN: 18112)** are affected by this **recall campaign no. 136** whose subject is the passenger air bag indicator light.

**CONDITION:** The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed. Maserati is concerned, however, that drivers and customers may be misled by this non-functioning button and LED light into thinking that the passenger-side air bag has been, or can be, deactivated. As a result, infants and small children might be placed in the front passenger seat. ***The placement of infants and small children in the front passenger seat could result in serious injury or death in the event of a crash in which the passenger-side air bag deploys.***

**REMEDY:** Maserati will provide, at no charge to the customer, a replacement console which does not contain the words "Passenger Air Bag Off" etched into it. In addition, the software will be updated to disable the passenger air bag indicator light.

# RECALL CAMPAIGN NO. 136
# Maserati Quattroporte
# "Passenger Air Bag Indicator Light"
# RECALL CAMPAIGN OVERVIEW

**PARTS**: The parts required for this repair are identified by the following part numbers:

| **Name** | **Part Number** |
|---|---|
| Console **with** TPMS | 980139224 |
| Console **without** TPMS | 980139225 |

**LABOR**: **Replacement of Console**

Fill in relevant warranty claims as follows:

- **Component Code:** 810014
- **Operation Code:** 8100149 (1 h, console replace and software update)
- **Operation Code:** 8100148 (0.5 h, console replace only if required)
- **Defect Code:** 063
- **Campaign Code:** 24
- **Campaign Number:** 136

**Note:**

**Return** ***the removed console to our warranty department following the normal warranty parts return procedure.***

**REIMBURSEMENT**: Upon receipt of a warranty claim via MODIS CS.

# RECALL CAMPAIGN NO. 136
# Maserati Quattroporte
# "Passenger Air Bag Indicator Light"
# Software Download &Technical Instructions

All Maserati Quattroporte with **VIN 14216** (assembly number 15140) up to and including **VIN 18112** (assembly number 19216) are involved in a **recall campaign** to remove the passenger air bag indicator light console that is located in the overhead control panel. The defect consists of the presence of a non-functioning button with the words "Passenger Air Bag Off" etched into it and located, along with an LED light, on a console adjacent to the sun roof. **This non-functioning button does *not* deactivate the passenger-side air bag**. **Nor is the LED light an indication that the passenger-side air bag has been deactivated.** The button is non-functional and cannot be depressed when pushed.

**The new consoles do not have the words "Passenger Air Bag Off" etched into it.**

**NOTE:**

- Carefully read this bulletin to determine the repairs that need to be performed.
- Reference the technical documentation in order to properly perform the repair procedure.
- Check via MODIS CS that the vehicle is included in the campaign, and has not previously undergone corrective action.
- Protect areas that could be exposed to damages during repair.

The following repair procedure is composed of:

A. NIM software download
B. NIM software update
C. Proxi File update
D. Console replacement

**A. Software Download**

1. Make sure that the SD3NET system and the SD3 tester are updated to software version 8.4N or later. If not, please reference bulletin MNA – 20 / N.
2. Follow the path in MODIS
    a. After-sale
    b. Technical Service
    c. SD2 Software Download
    d. M139_B – Quattroporte
    e. ECU Software

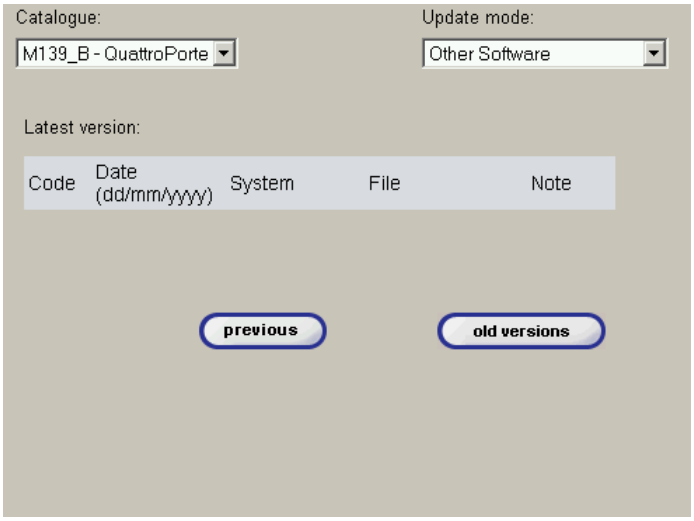



**Figure 1**

3. Download the file **NIMSW_M139_1.exe**
4. Unzip this file, and it will extract automatically into the folder labelled **NIMSW_M139_1**. This folder should contain a total of four (4) files.
5. Download the file **Proxiupdate.exe.** Save this in an appropriate location. Unzip it into the file **Proxilocal.mdb** – this will be used later.
6. Start SD3NET on the PC
7. Select **PC Diagnosis**
8. Select **Personal Computer Diagnostics Software Running**
9. In the software list, select **DOWNLOAD TELECARICAMENTI**, then click **Execute**
10. In the new window, select **NIM**, then click **CONFIRM**

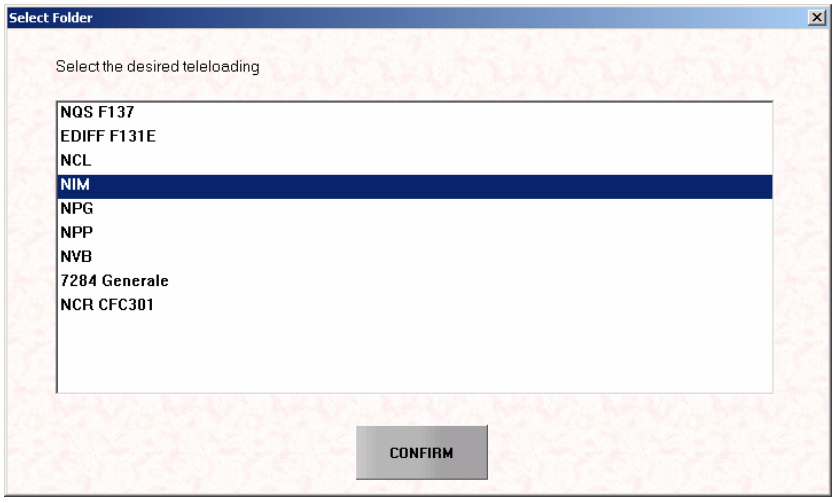



**Figure 3**

11. The next screen asks you to select the specific software. Go to the folder that contains the software that was previously downloaded (**NM04_18_M139AQ**). When the folder is selected, it should automatically appear in the right window.
12. Double click **NM04_18_M139AQ** in order to have file appear in the bottom window, then click **TRANSFER**. (See Figure 4)

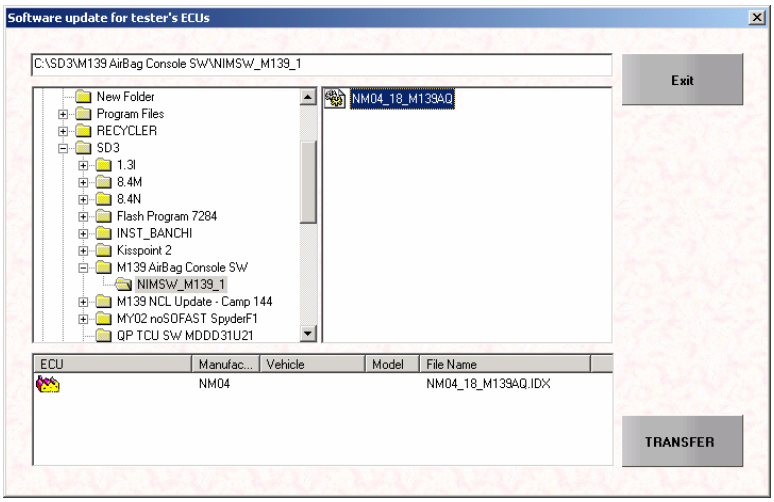
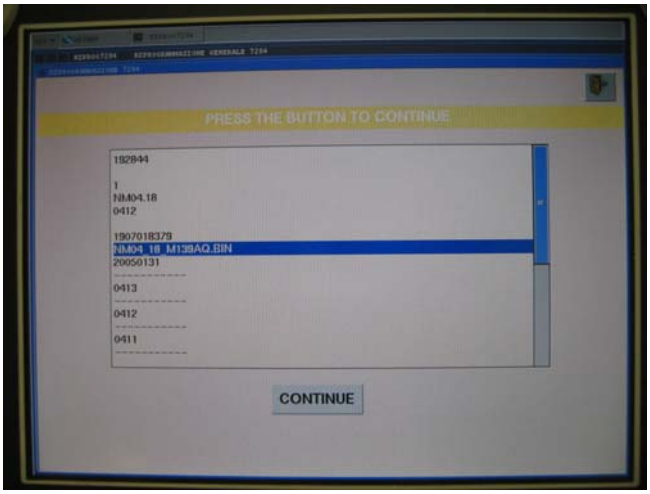



**Figure 4**

13. The process should take several minutes. When the "Operation Complete" message appears, select CONTINUE.
14. Select EXIT - Download is complete.

## B. Software Update

1. Connect SD3 to vehicle in stand alone mode.
2. Follow the path on the tester:
    a. SERIAL DIAGNOSIS
    b. DIAGNOSTIC CYCLE ON INDIVIDUAL ECU
    c. TOOLS
    d. TUTTI
    e. RIPROGRAMMIZIONE 7284
    f. REPROGRAMMING
3. Select **NIM/** using the arrow keys, then press ENTER on the SD3
4. Select **NM04_18_M139AQ.IDX** using arrow keys, then press "TAB" until **CONTINUE** is highlighted, and then press "ENTER"
5. When the window appears with the message **ECU SELECTED OLDNIM**, press "ENTER"
6. Use arrow keys to highlight **NM04_18_M139AQ.BIN**, and then press "TAB" until **CONTINUE** is highlighted, and then press "ENTER"




7. Turn key to ON (if not done already)
8. The SD3 then starts to download with **DOWNLOADING SOFTWARE…** message on the screen accompanied by a progress bar.

**NOTE:** During the downloading process, the instrument cluster screen may display the messages “Air bag system failure” and “Electrical system failure”. This is perfectly normal and the messages will disappear when the download procedure is complete. There is no malfunction.

9. The download process takes approximately 3 minutes to complete, and concludes with the message “REPROGRAMMING SUCCESSFULLY COMPLETED”. Press “ENTER”.
10. Turn Key OFF
11. Press ESC until you reach the main menu.
12. The software download for the NIM is now complete.

**NOTE:** If at any time, the programming process is interrupted, it can be repeated. There is a possibility that the tester does not recognize the hardware version and displays the following message: **VERSION NOT COMPATIBLE WITH TELELOADING! WOULD YOU LIKE TO GO ON ANYWAY?** If this happens, continue with the downloading process.

## C. Proxi File Update

1. Vehicles with **assembly** numbers between **15140** and **19126** must have the Proxi file re-loaded.
2. Proceed with performing a PROXI alignment
3. Select **Proxi (F2)**
4. When prompted to enter a Proxi file, select **Proxilocal.mdb** downloaded and unzipped in Section A, Step 5.
5. Be sure to enter the correct VIN, then carry out the proxi alignment

**D. Console Replacement**

1. Remove console assembly as per the procedure shown on the workshop manual (Reference the section labelled “ALARM SYTEM KIT REPLACEMENT”)

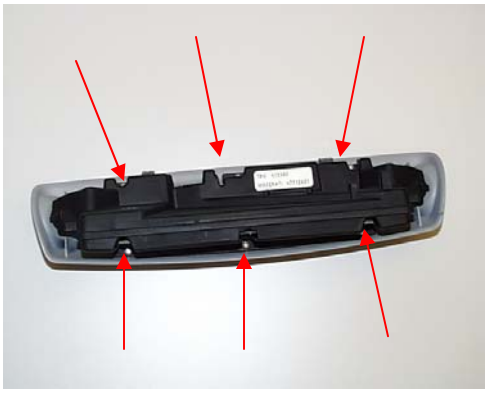


**Figure 5**

2. Remove the interior color-matching bezel from the black electronics housing. NOTE: Pay attention to the color of screws as they are of different lengths. There are a total of six (6) screws fastening the main electronic housing (Figure 5). There are three (3) screws fastening the front pictogram faceplate to the bezel (Figure 6).

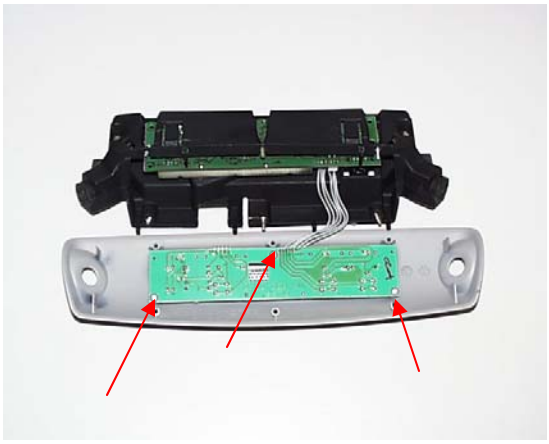


**Figure 6**

3. Remove the electronic components from the bezel, and install the replacement electronic components (Figure 7).

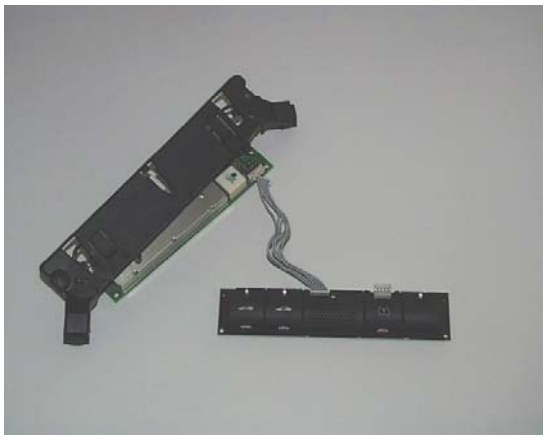


**Figure 7**

4. Re-install the console assembly

| VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14216 | **15140** | 14709 | **16068** | 15138 | **16362** | 15382 | **16566** | 15804 | **17316** | 16347 | **17517** |
| 14217 | **15257** | 14710 | **15866** | 15139 | **16727** | 15383 | **16547** | 15806 | **17006** | 16348 | **17547** |
| 14218 | **15277** | 14711 | **15870** | 15140 | **16532** | 15385 | **16540** | 15807 | **17041** | 16349 | **17502** |
| 14219 | **15296** | 14712 | **15768** | 15141 | **16425** | 15386 | **16570** | 15808 | **17074** | 16350 | **17556** |
| 14220 | **15321** | 14713 | **15884** | 15142 | **16376** | 15387 | **16601** | 15809 | **17231** | 16351 | **17765** |
| 14221 | **15409** | 14714 | **15867** | 15143 | **16464** | 15388 | **16545** | 15810 | **17109** | 16352 | **17604** |
| 14222 | **15448** | 14715 | **15874** | 15144 | **19152** | 15389 | **16574** | 15811 | **17155** | 16353 | **17559** |
| 14223 | **15468** | 14717 | **15890** | 15145 | **16421** | 15391 | **16644** | 15812 | **17067** | 16354 | **17623** |
| 14224 | **15365** | 14718 | **15891** | 15146 | **16403** | 15392 | **16593** | 15993 | **17247** | 16355 | **17553** |
| 14225 | **15553** | 14719 | **17387** | 15147 | **16384** | 15393 | **16797** | 15994 | **17211** | 16356 | **17753** |
| 14226 | **15509** | 14720 | **15887** | 15148 | **16433** | 15397 | **16676** | 15995 | **17169** | 16543 | **17869** |
| 14351 | **15514** | 14721 | **16561** | 15149 | **16461** | 15706 | **16861** | 15996 | **17227** | 16544 | **17668** |
| 14397 | **15632** | 14830 | **15936** | 15150 | **16380** | 15707 | **16765** | 15997 | **17107** | 16545 | **17683** |
| 14398 | **15596** | 14831 | **15896** | 15151 | **16396** | 15708 | **16768** | 15998 | **17191** | 16546 | **17677** |
| 14399 | **15643** | 14832 | **15919** | 15204 | **16411** | 15712 | **16691** | 15999 | **17217** | 16547 | **17666** |
| 14400 | **15567** | 14833 | **15930** | 15205 | **16382** | 15713 | **16757** | 16000 | **17219** | 16548 | **17723** |
| 14401 | **15678** | 14834 | **15958** | 15206 | **16447** | 15714 | **16763** | 16001 | **17119** | 16549 | **17488** |
| 14476 | **15625** | 14835 | **16012** | 15207 | **16402** | 15715 | **16867** | 16002 | **17163** | 16550 | **17645** |
| 14477 | **15680** | 14836 | **15948** | 15208 | **16405** | 15716 | **16815** | 16003 | **17120** | 16806 | **17751** |
| 14478 | **15645** | 14837 | **15947** | 15209 | **16423** | 15717 | **16786** | 16004 | **17277** | 16807 | **17720** |
| 14479 | **15667** | 14838 | **15915** | 15210 | **16711** | 15718 | **16817** | 16005 | **17617** | 16808 | **17992** |
| 14480 | **15662** | 14839 | **16134** | 15211 | **16459** | 15719 | **16845** | 16006 | **17233** | 16809 | **17806** |
| 14481 | **15639** | 14842 | **15895** | 15212 | **16466** | 15720 | **17012** | 16007 | **17415** | 16810 | **17990** |
| 14482 | **15686** | 14854 | **17512** | 15213 | **16364** | 15724 | **16851** | 16008 | **17395** | 16811 | **17919** |
| 14631 | **15709** | 14858 | **16114** | 15214 | **16441** | 15725 | **16849** | 16009 | **17186** | 16812 | **17836** |
| 14632 | **15658** | 15010 | **16333** | 15215 | **16431** | 15726 | **16825** | 16010 | **17209** | 16813 | **17903** |
| 14633 | **15743** | 15011 | **16136** | 15217 | **16415** | 15727 | **16890** | 16011 | **17126** | 16814 | **18003** |
| 14634 | **15809** | 15012 | **16110** | 15218 | **16445** | 15728 | **16789** | 16012 | **17303** | 16815 | **17862** |
| 14635 | **15788** | 15013 | **16044** | 15219 | **16429** | 15729 | **16859** | 16024 | **17201** | 16816 | **17794** |
| 14636 | **15807** | 15014 | **16063** | 15220 | **16390** | 15730 | **16856** | 16122 | **17397** | 16817 | **18020** |
| 14637 | **15794** | 15015 | **16120** | 15221 | **16409** | 15732 | **16941** | 16149 | **17117** | 16818 | **17932** |
| 14638 | **15833** | 15017 | **16080** | 15222 | **16443** | 15733 | **16863** | 16150 | **17205** | 16819 | **17920** |
| 14639 | **15713** | 15018 | **17192** | 15223 | **16470** | 15734 | **16903** | 16151 | **17203** | 16950 | **17886** |
| 14640 | **15732** | 15019 | **16204** | 15224 | **16449** | 15735 | **16834** | 16152 | **17283** | 16951 | **17900** |
| 14641 | **15792** | 15020 | **16066** | 15225 | **16502** | 15736 | **17311** | 16282 | **17356** | 16952 | **17999** |
| 14642 | **15739** | 15021 | **16093** | 15226 | **16468** | 15737 | **16805** | 16283 | **18113** | 16953 | **17898** |
| 14643 | **15785** | 15022 | **16086** | 15227 | **16462** | 15738 | **16998** | 16284 | **17145** | 16954 | **18084** |

| VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14644 | **15821** | 15023 | **16116** | 15228 | **16472** | 15739 | **16900** | 16285 | **17207** | 16955 | **18234** |
| 14693 | **16039** | 15024 | **16083** | 15229 | **16457** | 15740 | **18212** | 16286 | **17323** | 16956 | **18073** |
| 14694 | **15842** | 15025 | **16090** | 15230 | **16483** | 15785 | **17124** | 16287 | **17241** | 16957 | **18056** |
| 14695 | **16003** | 15026 | **16142** | 15231 | **16488** | 15786 | **16944** | 16288 | **17237** | 16958 | **18032** |
| 14696 | **15812** | 15125 | **16161** | 15232 | **16627** | 15787 | **16929** | 16289 | **17662** | 16959 | **18079** |
| 14697 | **15796** | 15126 | **16162** | 15233 | **16559** | 15788 | **16972** | 16290 | **17325** | 16960 | **18279** |
| 14698 | **16108** | 15127 | **16144** | 15370 | **16490** | 15789 | **16996** | 16291 | **17523** | 16961 | **18285** |
| 14699 | **15850** | 15128 | **16184** | 15371 | **16504** | 15790 | **17099** | 16292 | **17435** | 16962 | **18156** |
| 14700 | **15932** | 15129 | **16335** | 15372 | **16479** | 15791 | **17026** | 16293 | **17419** | 16963 | **18191** |
| 14701 | **15848** | 15130 | **16243** | 15373 | **16534** | 15792 | **16979** | 16294 | **18093** | 16964 | **18154** |
| 14702 | **15860** | 15131 | **16348** | 15374 | **16522** | 15793 | **17018** | 16295 | **18102** | 16965 | **18170** |
| 14703 | **15906** | 15132 | **16321** | 15375 | **16521** | 15794 | **17399** | 16296 | **17376** | 17089 | **18328** |
| 14704 | **15814** | 15133 | **16310** | 15376 | **16526** | 15795 | **17257** | 16342 | **17505** | 17090 | **18147** |
| 14705 | **15911** | 15134 | **16297** | 15377 | **16555** | 15796 | **17101** | 16343 | **17439** | 17091 | **18195** |
| 14706 | **15838** | 15135 | **16358** | 15379 | **16692** | 15801 | **17056** | 16344 | **17532** | 17092 | **18593** |
| 14707 | **15861** | 15136 | **16385** | 15380 | **16528** | 15802 | **16951** | 16345 | **17647** | 17093 | **18419** |
| 14708 | **15878** | 15137 | **16304** | 15381 | **16567** | 15803 | **17142** | 16346 | **17504** | 17094 | **18347** |
| 17095 | **18596** | 17369 | **18624** | 17503 | **18765** | 17657 | **19062** | 17841 | **19082** | 17924 | **19094** |
| 17098 | **18345** | 17370 | **18621** | 17504 | **18666** | 17658 | **18900** | 17842 | **19024** | 17925 | **19141** |
| 17100 | **18189** | 17371 | **18541** | 17505 | **18656** | 17659 | **18807** | 17843 | **18979** | 17926 | **19267** |
| 17101 | **18483** | 17372 | **18636** | 17506 | **18660** | 17660 | **18792** | 17844 | **18923** | 17927 | **19212** |
| 17102 | **18324** | 17373 | **18556** | 17507 | **18674** | 17661 | **18865** | 17845 | **19019** | 17928 | **19424** |
| 17103 | **18291** | 17374 | **18572** | 17508 | **18759** | 17662 | **19050** | 17846 | **18941** | 17929 | **19231** |
| 17104 | **18497** | 17375 | **18539** | 17509 | **18764** | 17663 | **18844** | 17847 | **19026** | 17930 | **19265** |
| 17270 | **18252** | 17376 | **18561** | 17510 | **18787** | 17664 | **18799** | 17848 | **19156** | 17931 | **19093** |
| 17271 | **18210** | 17377 | **19154** | 17511 | **18671** | 17665 | **18829** | 17849 | **18978** | 17932 | **19159** |
| 17272 | **18277** | 17378 | **18705** | 17512 | **18773** | 17666 | **18858** | 17850 | **19140** | 17933 | **19123** |
| 17273 | **18286** | 17379 | **18543** | 17513 | **18784** | 17667 | **18780** | 17851 | **19032** | 17934 | **19119** |
| 17274 | **18256** | 17381 | **18642** | 17514 | **18700** | 17668 | **18761** | 17852 | **19077** | 17935 | **19184** |
| 17275 | **18254** | 17382 | **18601** | 17515 | **18603** | 17669 | **20007** | 17853 | **19068** | 17936 | **19208** |
| 17276 | **18310** | 17383 | **18544** | 17516 | **18767** | 17670 | **18917** | 17854 | **19070** | 17937 | **19165** |
| 17277 | **18309** | 17384 | **18771** | 17517 | **18827** | 17671 | **18828** | 17855 | **19076** | 17938 | **19270** |
| 17278 | **18373** | 17385 | **18562** | 17518 | **18661** | 17672 | **18801** | 17856 | **19074** | 17939 | **19202** |
| 17279 | **18369** | 17386 | **18628** | 17519 | **18796** | 17673 | **18889** | 17857 | **19096** | 17940 | **19187** |
| 17280 | **18546** | 17387 | **18574** | 17520 | **18935** | 17674 | **18885** | 17858 | **19099** | 17941 | **19237** |
| 17281 | **18336** | 17388 | **18578** | 17521 | **18565** | 17675 | **18890** | 17859 | **19023** | 17942 | **19130** |
| 17282 | **18569** | 17389 | **18580** | 17522 | **18750** | 17676 | **18808** | 17860 | **19021** | 17943 | **19134** |

| VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. | VIN | Assy No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17283 | **18491** | 17390 | **18577** | 17523 | **18733** | 17677 | **18918** | 17861 | **19028** | 17944 | **19136** |
| 17284 | **18404** | 17391 | **18615** | 17524 | **18696** | 17678 | **18802** | 17862 | **19261** | 17945 | **19167** |
| 17285 | **18337** | 17392 | **18739** | 17525 | **18665** | 17679 | **18876** | 17863 | **19020** | 17946 | **19158** |
| 17286 | **18390** | 17393 | **18797** | 17526 | **18763** | 17680 | **18839** | 17864 | **19030** | 18096 | **19128** |
| 17287 | **18312** | 17394 | **18575** | 17527 | **18735** | 17681 | **18933** | 17894 | **19146** | 18098 | **19172** |
| 17288 | **18417** | 17395 | **18649** | 17528 | **18820** | 17682 | **18902** | 17895 | **19151** | 18099 | **19211** |
| 17289 | **18334** | 17396 | **18613** | 17529 | **18675** | 17683 | **18842** | 17896 | **19029** | 18100 | **19131** |
| 17290 | **18385** | 17397 | **18909** | 17530 | **18684** | 17684 | **18869** | 17897 | **19058** | 18101 | **19166** |
| 17343 | **18467** | 17398 | **18617** | 17531 | **19116** | 17685 | **18853** | 17898 | **19112** | 18102 | **19238** |
| 17344 | **18398** | 17399 | **18706** | 17532 | **18689** | 17686 | **18984** | 17899 | **19107** | 18103 | **19189** |
| 17345 | **18455** | 17400 | **18758** | 17533 | **18769** | 17687 | **18930** | 17900 | **18998** | 18104 | **19264** |
| 17346 | **18406** | 17401 | **18630** | 17534 | **18702** | 17688 | **18911** | 17901 | **19114** | 18105 | **19185** |
| 17347 | **18634** | 17402 | **18557** | 17535 | **18704** | 17689 | **18974** | 17902 | **19161** | 18106 | **19218** |
| 17348 | **18626** | 17403 | **18567** | 17536 | **18791** | 17690 | **18955** | 17903 | **19079** | 18107 | **19248** |
| 17349 | **18485** | 17404 | **18631** | 17537 | **18727** | 17691 | **19063** | 17904 | **19232** | 18108 | **19214** |
| 17350 | **18537** | 17405 | **18723** | 17538 | **18749** | 17692 | **18862** | 17905 | **19056** | 18109 | **19221** |
| 17351 | **18432** | 17406 | **18559** | 17539 | **18932** | 17693 | **18946** | 17906 | **18999** | 18110 | **19190** |
| 17352 | **18487** | 17407 | **18657** | 17540 | **18686** | 17694 | **19002** | 17907 | **19080** | 18111 | **19191** |
| 17353 | **18512** | 17408 | **18591** | 17541 | **18712** | 17695 | **18805** | 17908 | **19055** | 18112 | **19216** |
| 17354 | **18683** | 17409 | **18724** | 17642 | **18709** | 17696 | **18970** | 17909 | **19109** | | |
| 17355 | **18581** | 17410 | **18564** | 17643 | **18752** | 17697 | **18812** | 17910 | **19230** | | |
| 17356 | **18514** | 17411 | **18719** | 17644 | **18715** | 17698 | **18883** | 17911 | **19139** | | |
| 17357 | **18529** | 17412 | **18730** | 17645 | **18708** | 17699 | **18854** | 17912 | **19103** | | |
| 17358 | **18533** | 17413 | **18721** | 17646 | **18926** | 17700 | **18951** | 17913 | **19053** | | |
| 17359 | **18620** | 17414 | **18781** | 17647 | **19149** | 17701 | **18887** | 17914 | **19092** | | |
| 17360 | **18531** | 17415 | **18741** | 17648 | **18754** | 17829 | **18945** | 17915 | **19113** | | |
| 17361 | **18570** | 17416 | **18699** | 17649 | **18814** | 17830 | **19004** | 17916 | **19101** | | |
| 17362 | **18606** | 17417 | **18645** | 17650 | **18810** | 17831 | **18864** | 17917 | **19133** | | |
| 17363 | **18623** | 17418 | **18695** | 17651 | **18969** | 17832 | **18903** | 17918 | **19110** | | |
| 17364 | **18641** | 17419 | **18742** | 17652 | **18714** | 17833 | **19008** | 17919 | **19086** | | |
| 17365 | **18522** | 17499 | **18738** | 17653 | **18841** | 17834 | **18956** | 17920 | **19085** | | |
| 17366 | **18551** | 17500 | **18782** | 17654 | **18823** | 17838 | **18963** | 17921 | **19089** | | |
| 17367 | **18690** | 17501 | **18852** | 17655 | **18878** | 17839 | **18948** | 17922 | **19106** | | |
| 17368 | **18554** | 17502 | **18598** | 17656 | **18804** | 17840 | **19017** | 17923 | **19125** | | |

Maserati North America, Inc.

# Parts Bulletin

No. 08 Date: September 23, 2005

**Subject: Recall Campaign No. 136 Passenger Air Bag Indicator Light**

Please be aware that in accordance with Recall Campaign No. 136, Parts Operations will begin shipping the necessary parts on September 26, 2005. Each dealer will receive a shipment of parts equal to approximately 50% of the total allocation of vehicles reported as units in operation in your area. The following parts will be shipped:

| Part Number | Description |
|---|---|
| 980139224 | Updated Console for vehicles equipped with the Tire Pressure Monitoring System (TPMS) |
| 980139225 | Updated Console for vehicles not equipped with TPMS |

Additional quantities are available to order via MODIS CS as required.

For more information, please refer to the Recall Campaign No. 136 instructions in the booklet or contact Dealer Services.

## REMOVING-REFITTING THE ENGINE

- Remove the front lid.

*Removing-refitting the front compartment lid*

- Remove the spare wheel housing.

*Removing /refitting the spare wheel housing*

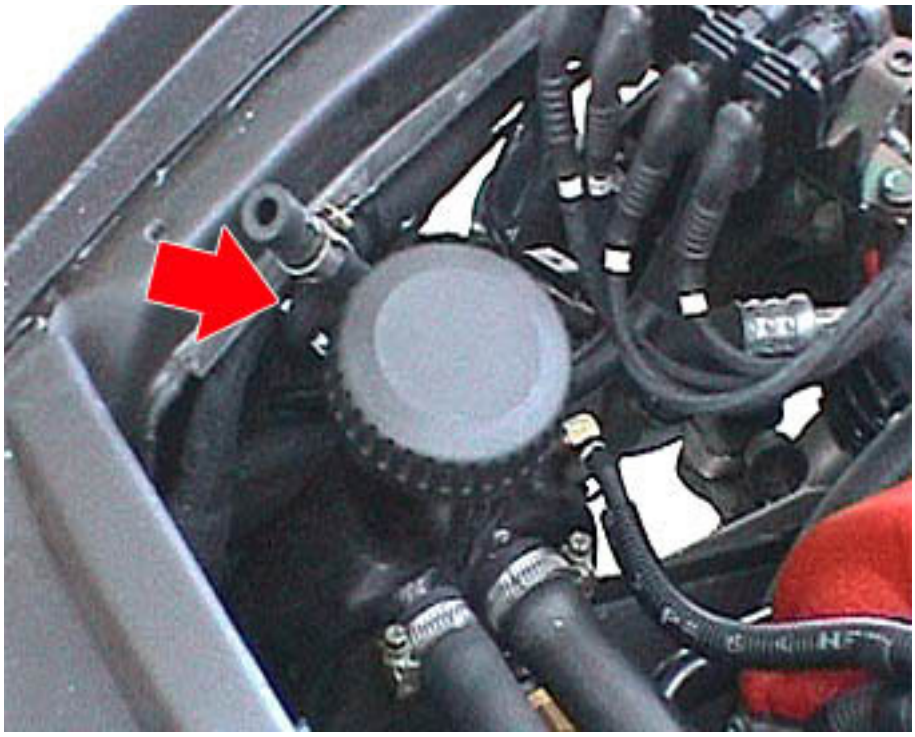
- Working from inside the engine compartment, loosen the cap for the hydraulic steering reservoir.




- Loosen the water nourice cap.



- Loosen the oil reservoir cap.



- Drain the A/C fluid circuit.



- Detach the air filter duct clips and remove it



- Unscrew the oil draining pipe clip next to the air flow meter.



- Unscrew the plenum chamber/throttle connector clip.



- Detach the air flow meter connector.



- Release the throttle cabling



- Remove the throttle / air flow meter assembly.



**N.B.**
**Suitably plug the plenum chamber "intake".**




- Working from the underbody, unscrew the four screws and disassemble the front frame (**Figure 1**).

**N.B.**
**Using a felt-tip pen, mark the relative positions of the two parts of the front frame (Figure 2).**






- Remove the central exhaust line.

*Removing/refitting the central exhaust line*

- Drain the cooling system fluid by unscrewing the radiator plug.



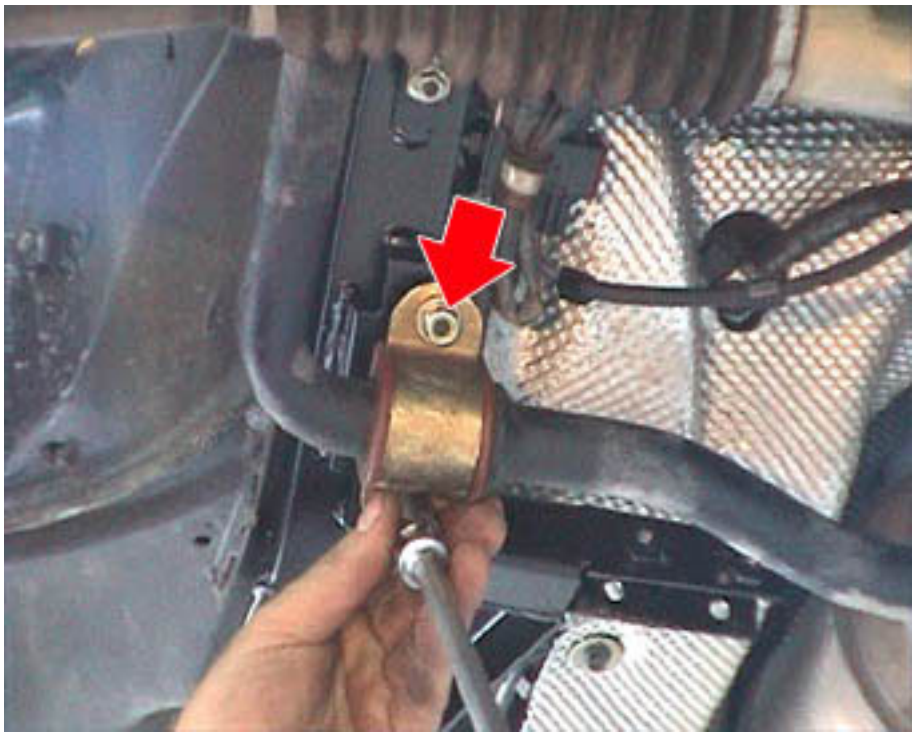
- Drain the lubrication system oil by unscrewing the duct to the tank.



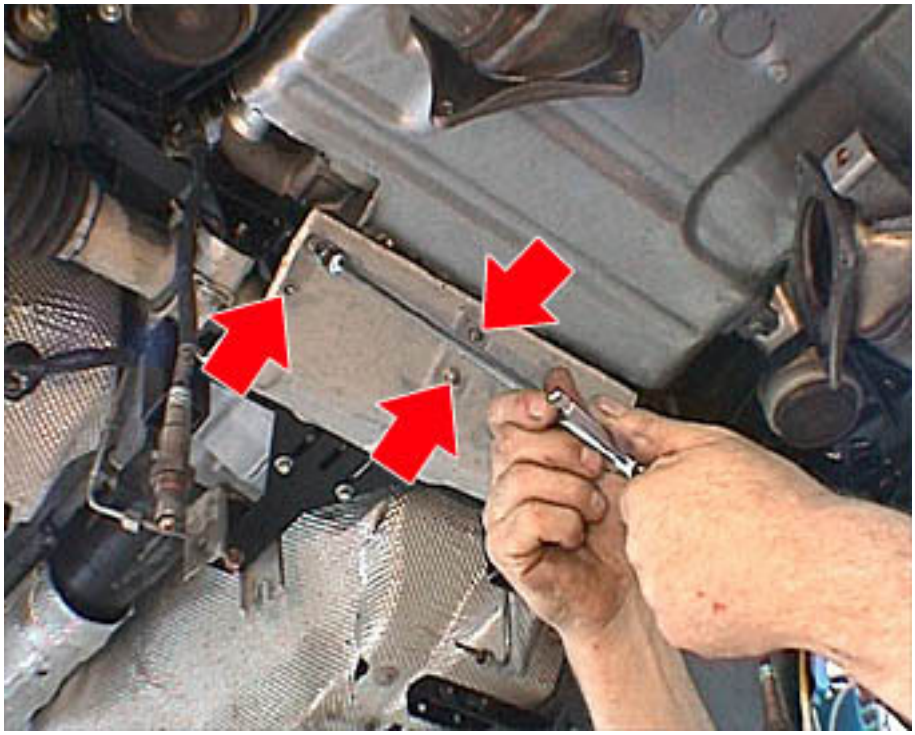
- Disconnect the torsion bar from its connecting rods.



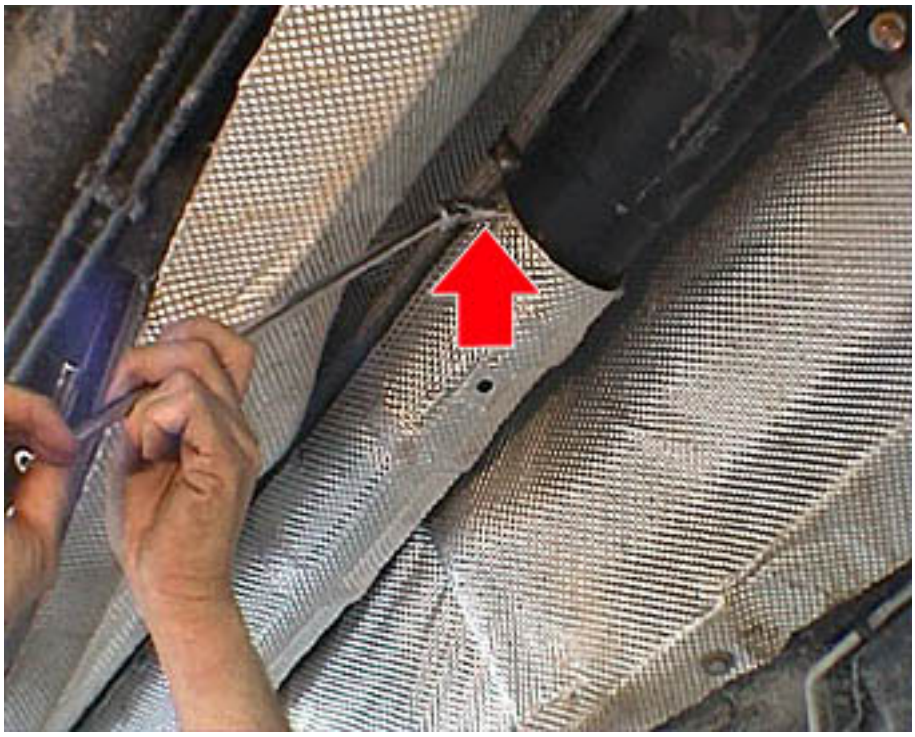
- Disconnect the torsion bar from the body by unscrewing the two screws on each jumper.



- Unscrew the six steering box protection screws.



- Unscrew its eight fastening screws and remove the transmission shaft heat shield.



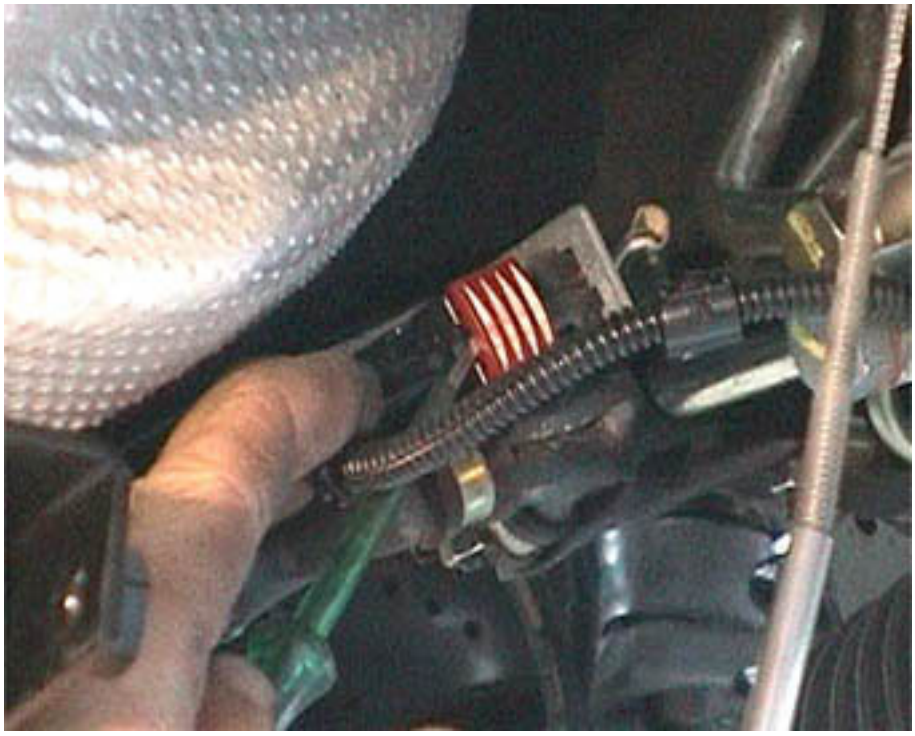
- Remove the heat shield for the spare wheel housing by unscrewing its six screws.



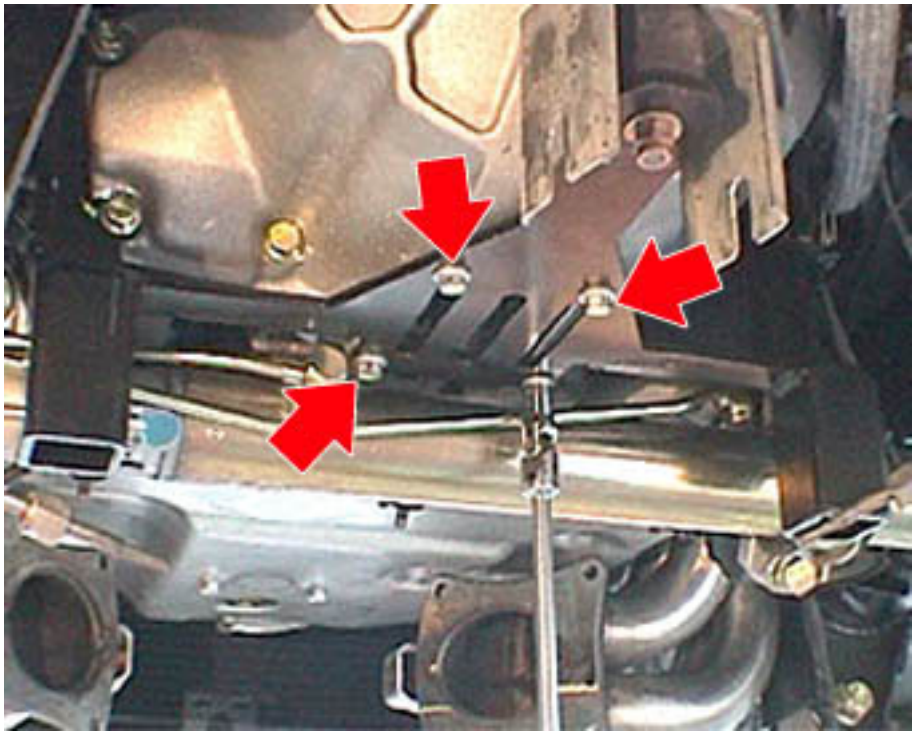
- Release the clutch hydraulic hose from its seven metal clips.



- Detach the rear Lambda sensor connectors.



- Unscrew the four locknuts securing the catalytic converter support to the clutch housing and remove the support.



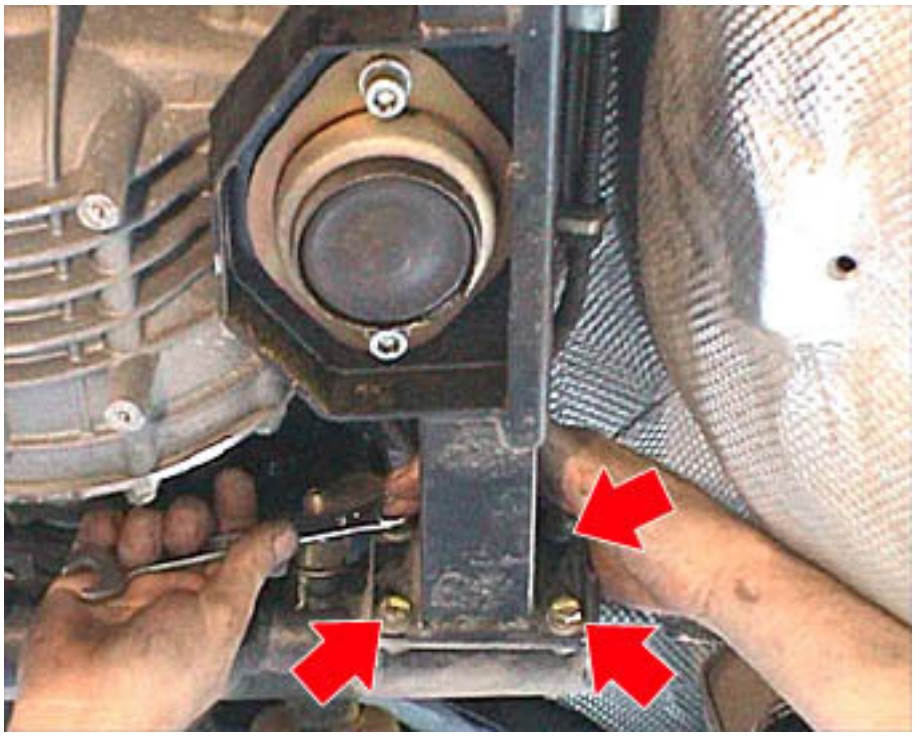
- Remove the handbrake cable.

*Removing-refitting the handbrake and tie-rods*

- Remove the gearbox oil recycling unit guard.



- Working from both sides, loosen the four screws securing the rear frame.



- Detach the clutch hydraulic duct Victaulic coupling.



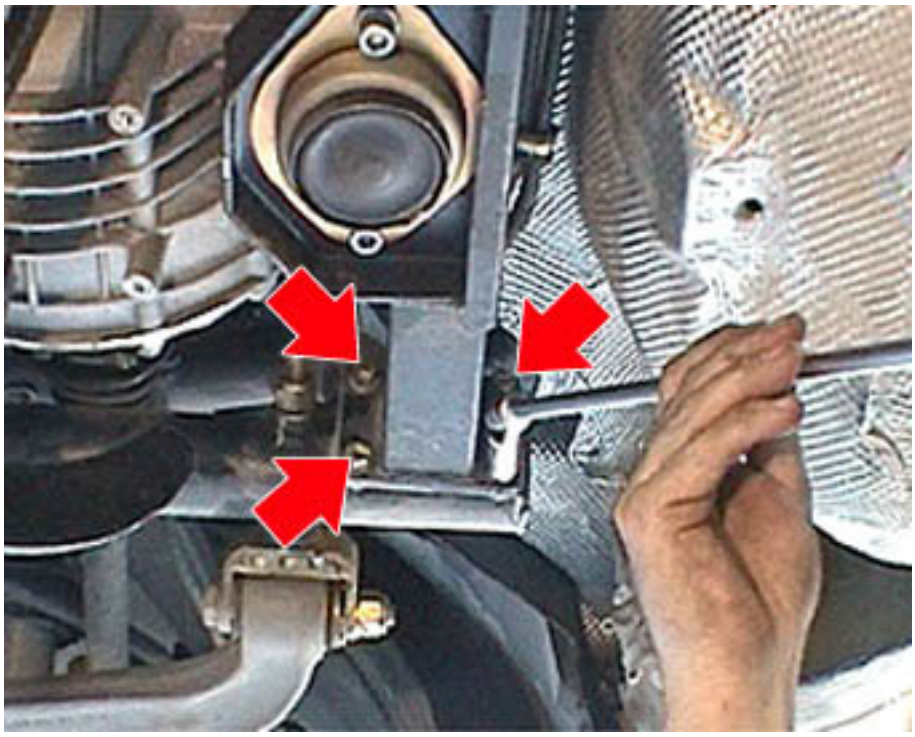
- Extract the clutch hydraulic duct.



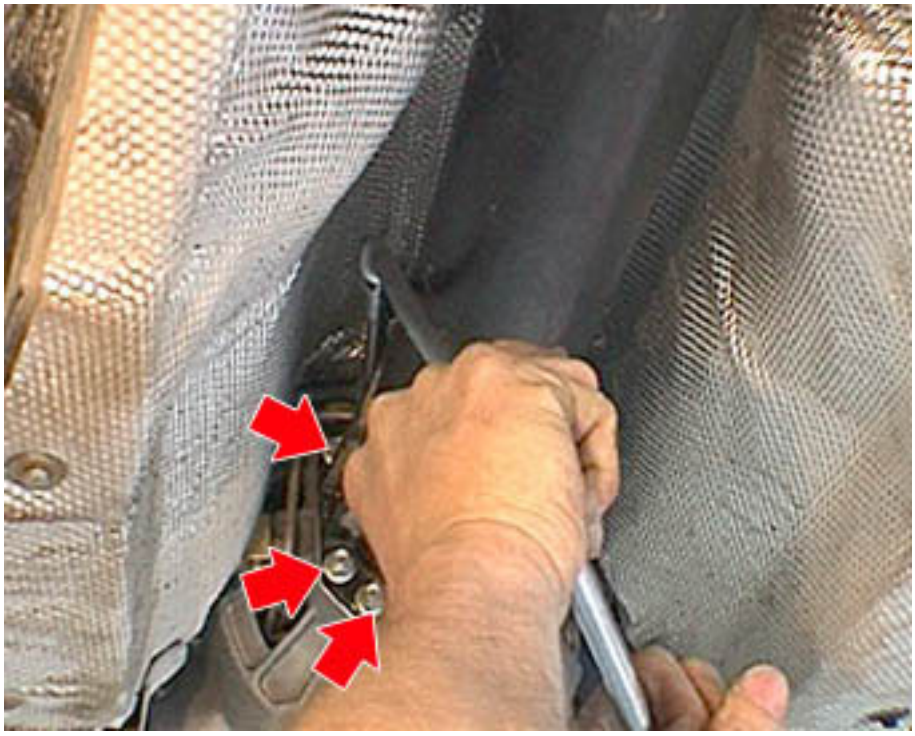
- Position a hydraulic lift underneath the gearbox housing.



- Unscrew the rear frame fastening screws.



- Unscrew the eight nuts connecting the transmission shaft to the clutch housing.

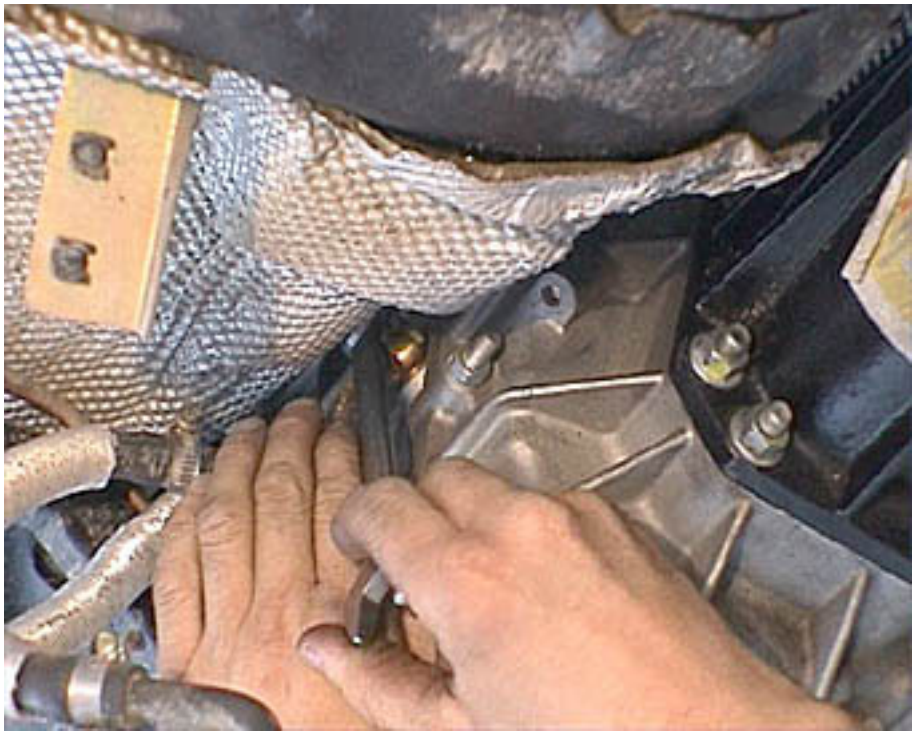


- Release the gearbox oil radiator clips.

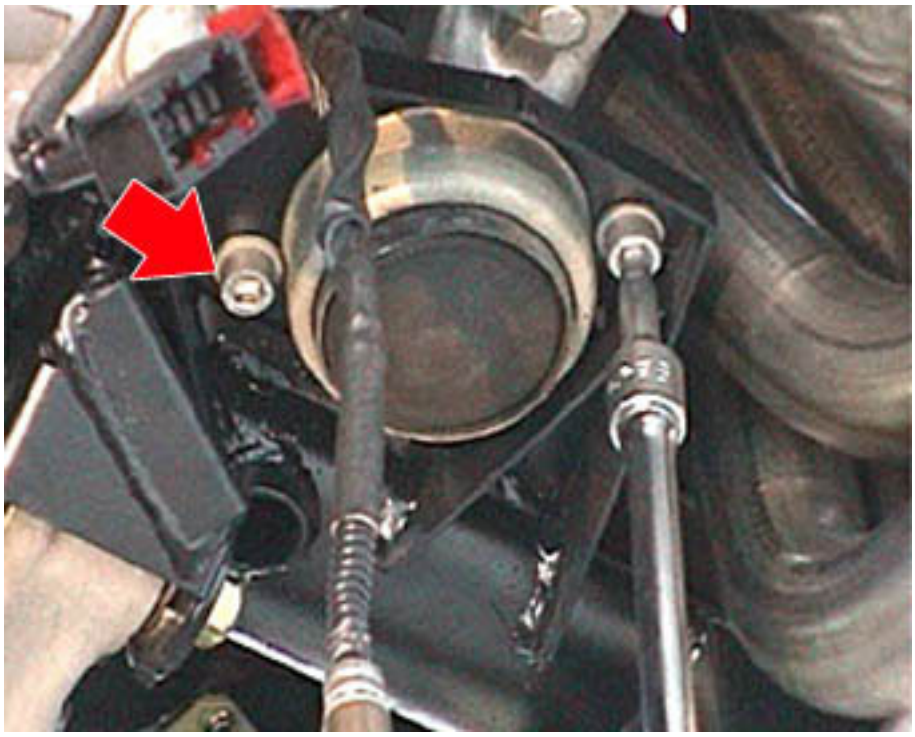


- Loosen the two oil union screws on the gearbox housing.

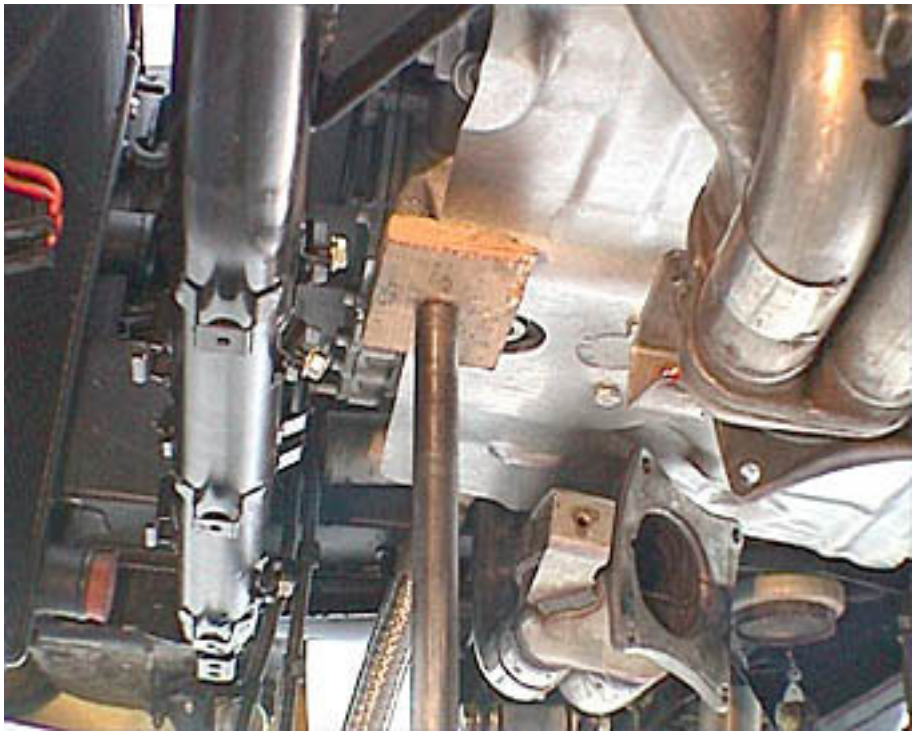
**N.B.**
**This enables rotating the gearbox unit when it is being moved back.**



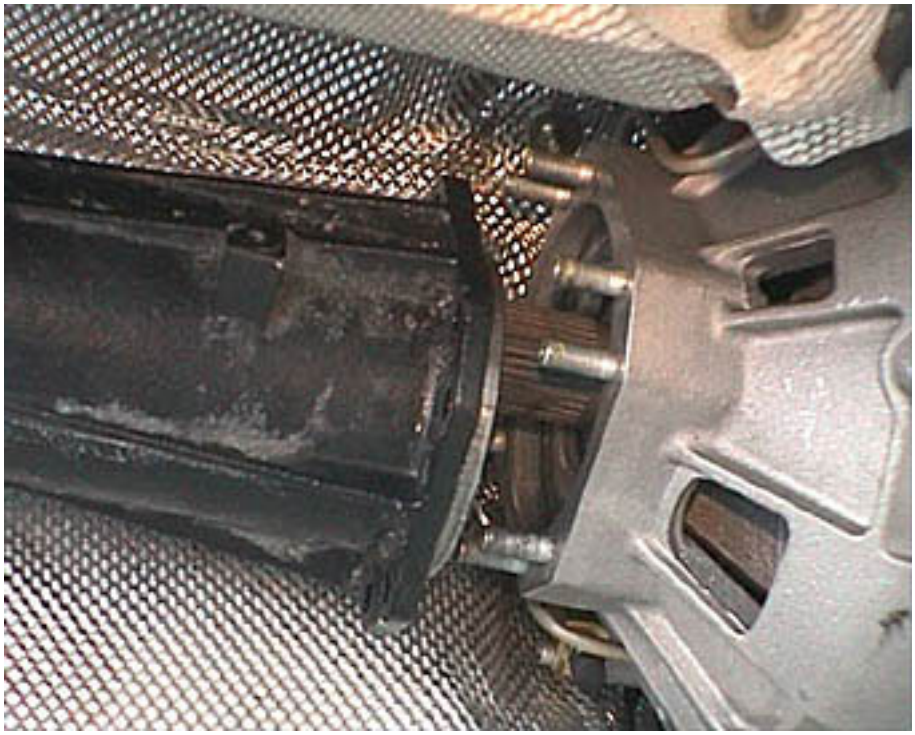
- Unscrew the screws of both engine rubber bushings.



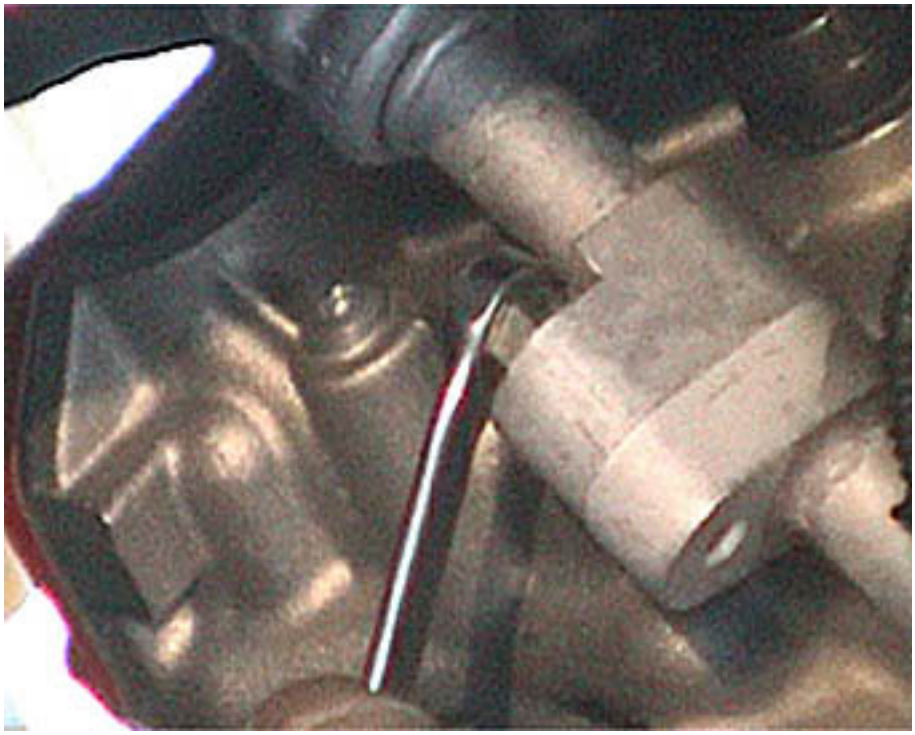
- Position a hydraulic lift underneath the engine shield.



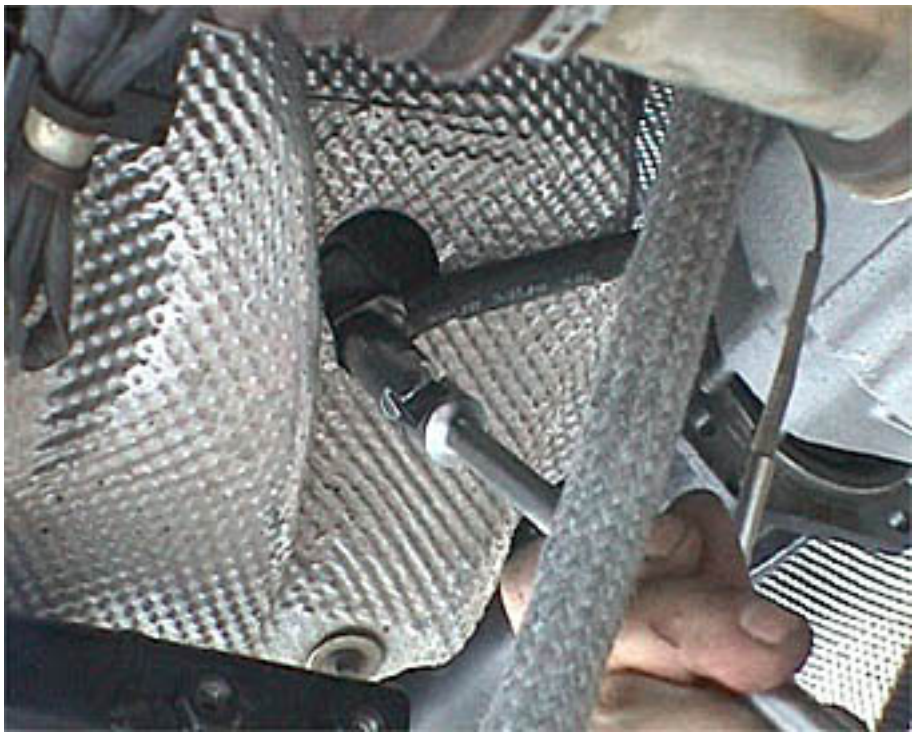
- Move the gearbox/transmission shaft assembly back by about **10cm**, so that the clutch housing stud bolts completely disengage from the transmission shaft.



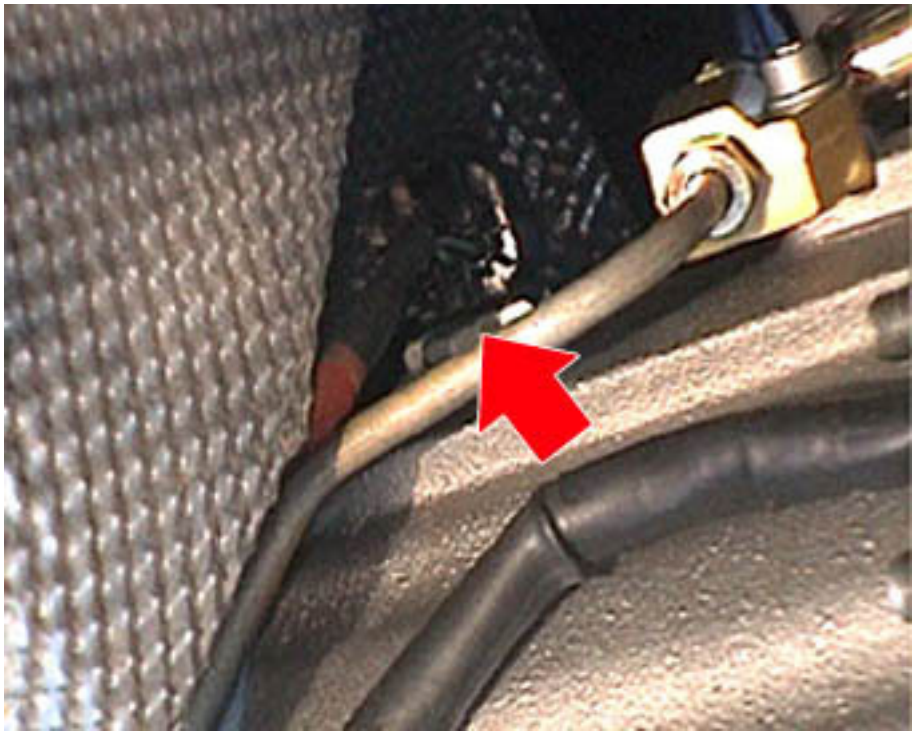
- Unscrew the A/C duct.



- Detach the engine earth cable from the chassis.



- Disconnect the clutch sensor from the gearbox unit.



- Position the tool **900026210** between the engine damper and the front chassis and remove the hydraulic lift.




- Working from inside the engine compartment, detach the water nourice hoses; The nourice hoses must also be freed from the clips securing them to the engine compartment.



- Unscrew the two screws securing the water nourice to the chassis.



- Detach the nourice connector pins.



- Detach the vacuum tube from the secondary air valve.



- Remove the water nourice from the car.



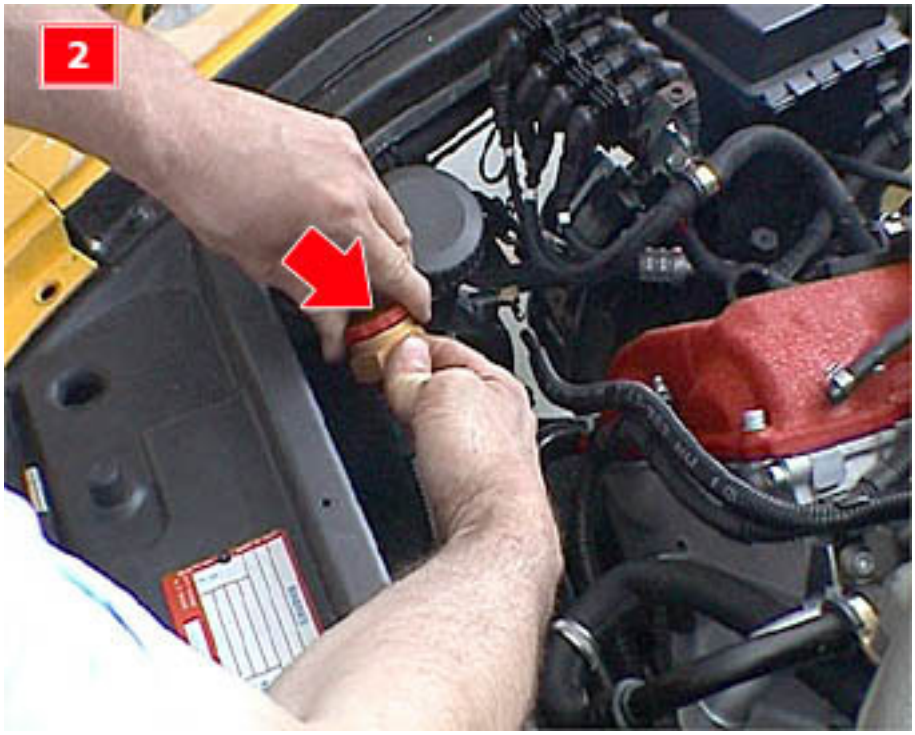
- Free the oil reservoir from the oil decanter hose and from the oil vapour collector hose.



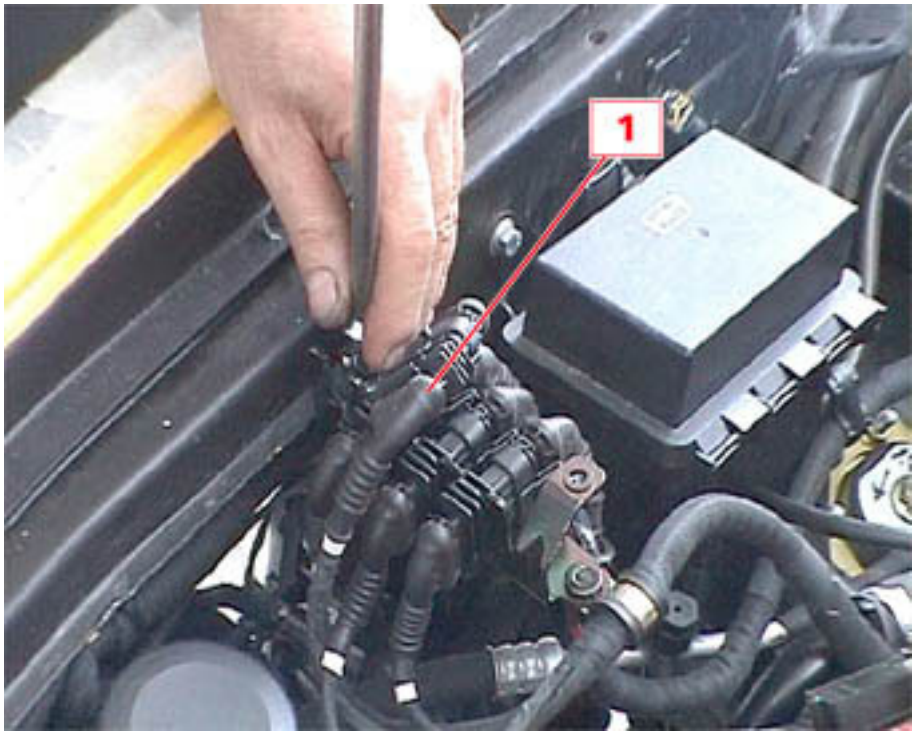
- Free the oil reservoir from the oil return hose. (**Figure 1**).

**N.B.**
**Fit a plug to the oil return hose (Figure 2).**

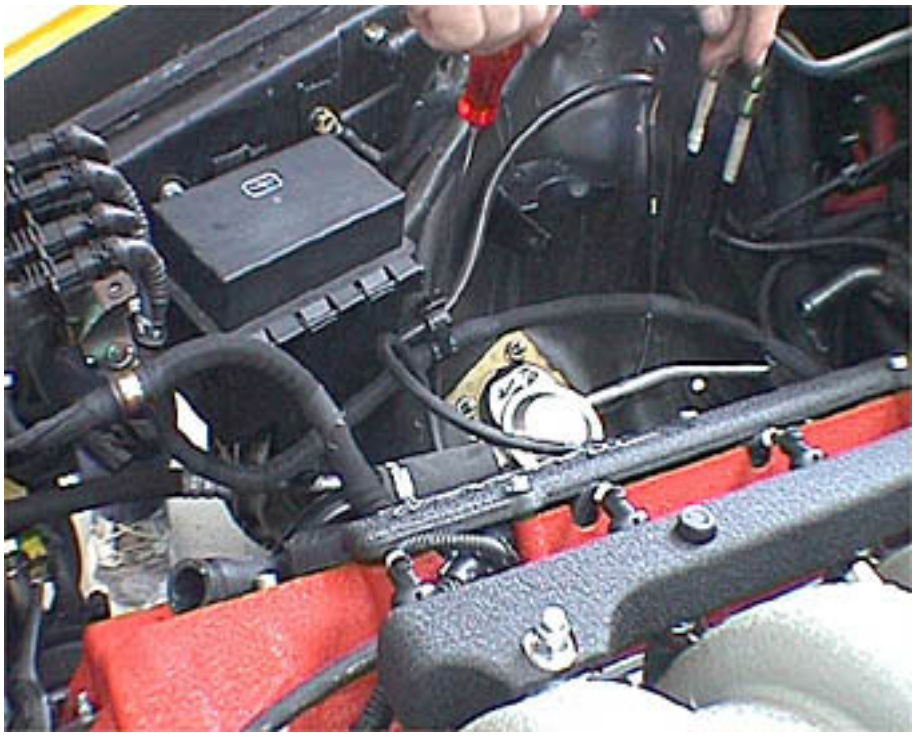





- Detach the coil connector plates on the RH and LH sides of the engine compartment, To access the external plate screw, the connector must be temporarily removed **(1)**.



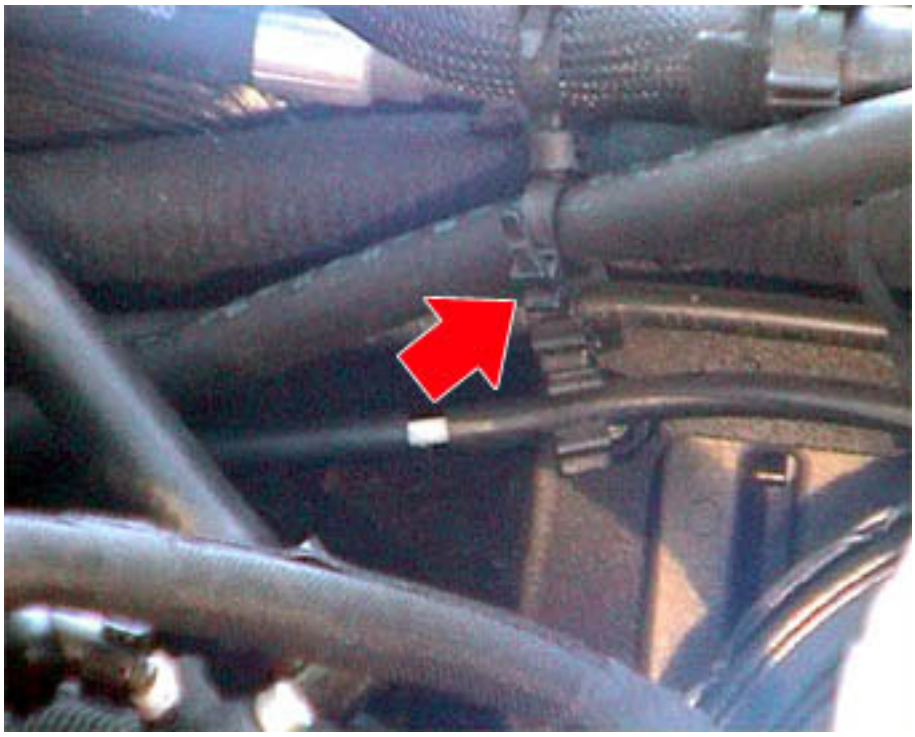
- Extract the connector unit from the clip.



- Disconnect the brake servo hose from the plenum chamber.



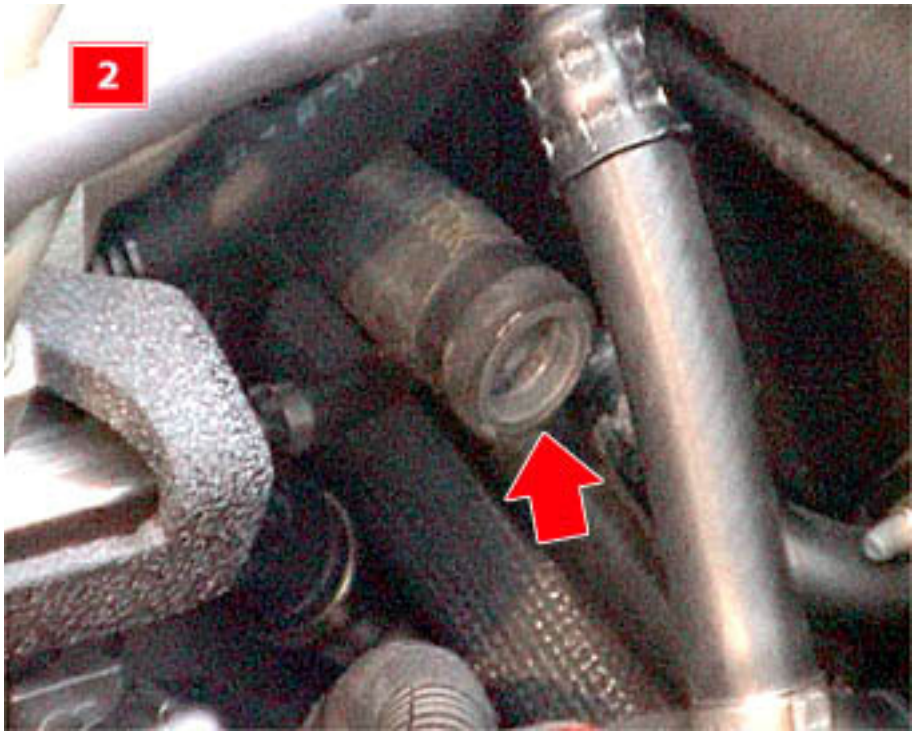
- Free the secondary air system vacuum tank hose from its clips.



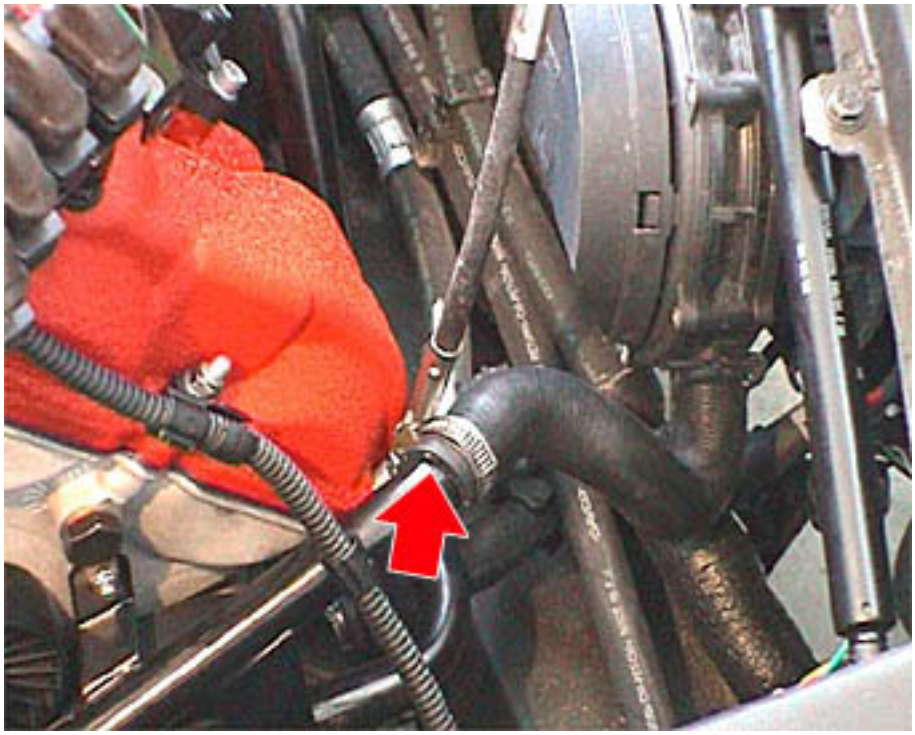
- Disconnect the heating system hose by slackening its clip. (**Figure 1**).

**N.B.**
**Fit a plug to the heating system delivery sleeve. (Figure 2).**

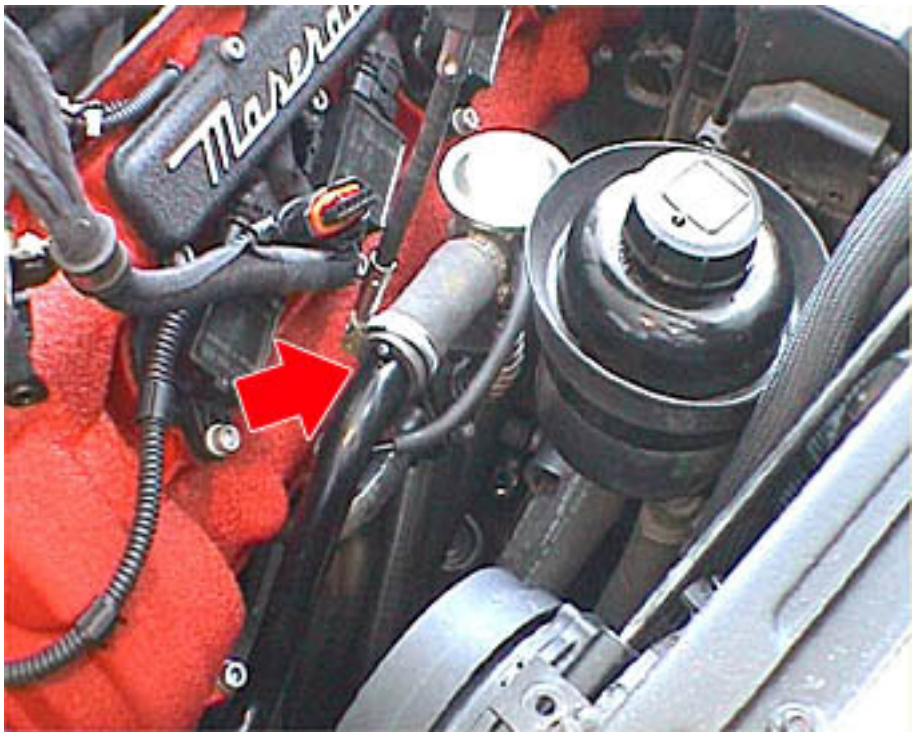




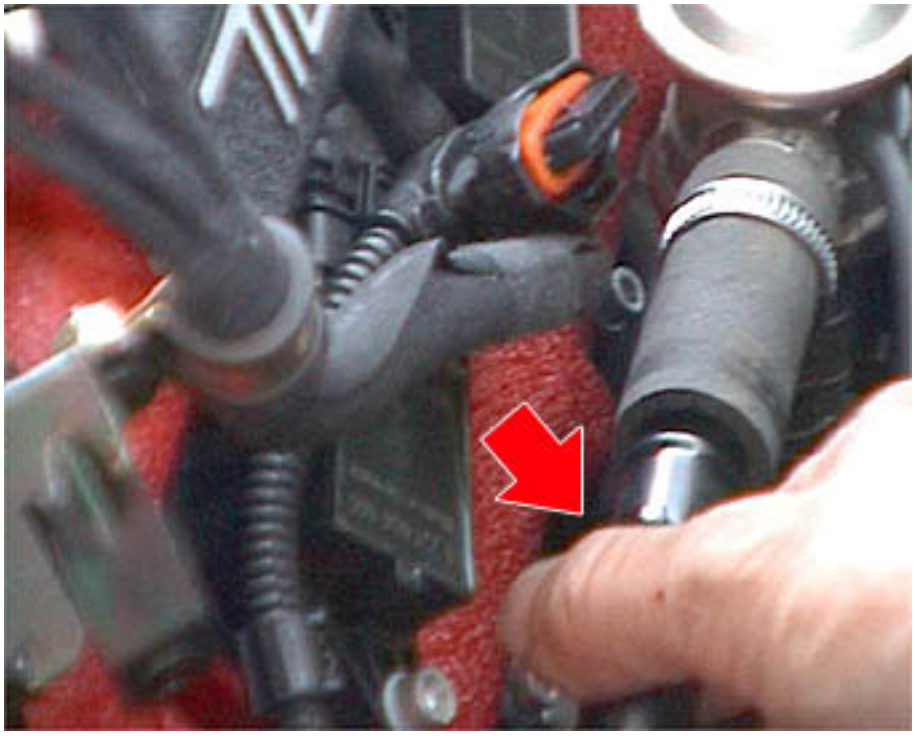

- Unscrew the air pump sleeve clip.



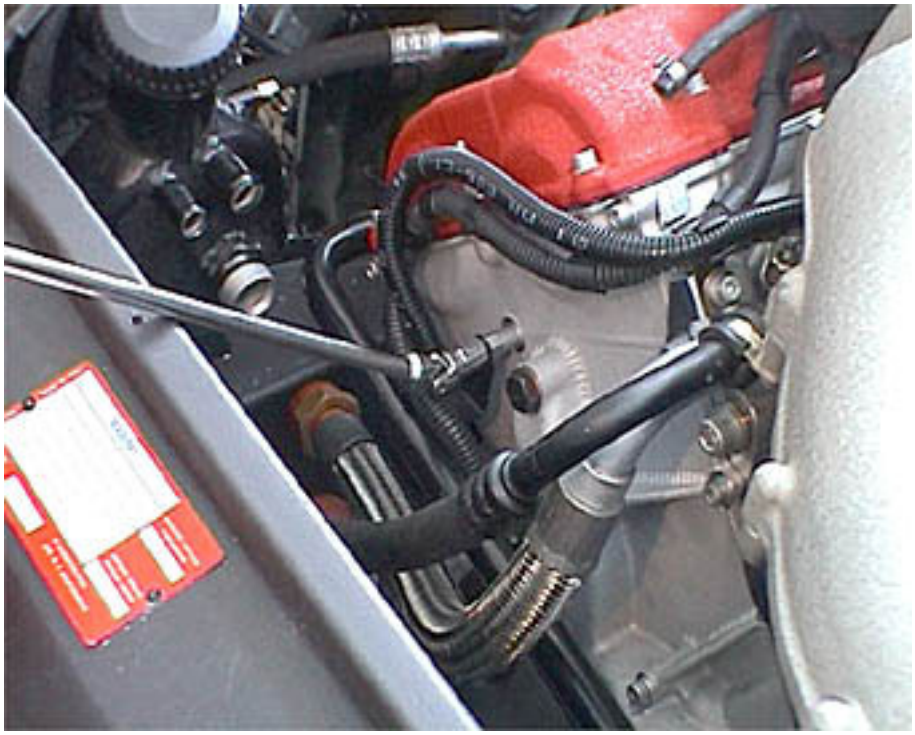
- Unscrew the secondary air valve sleeve clip



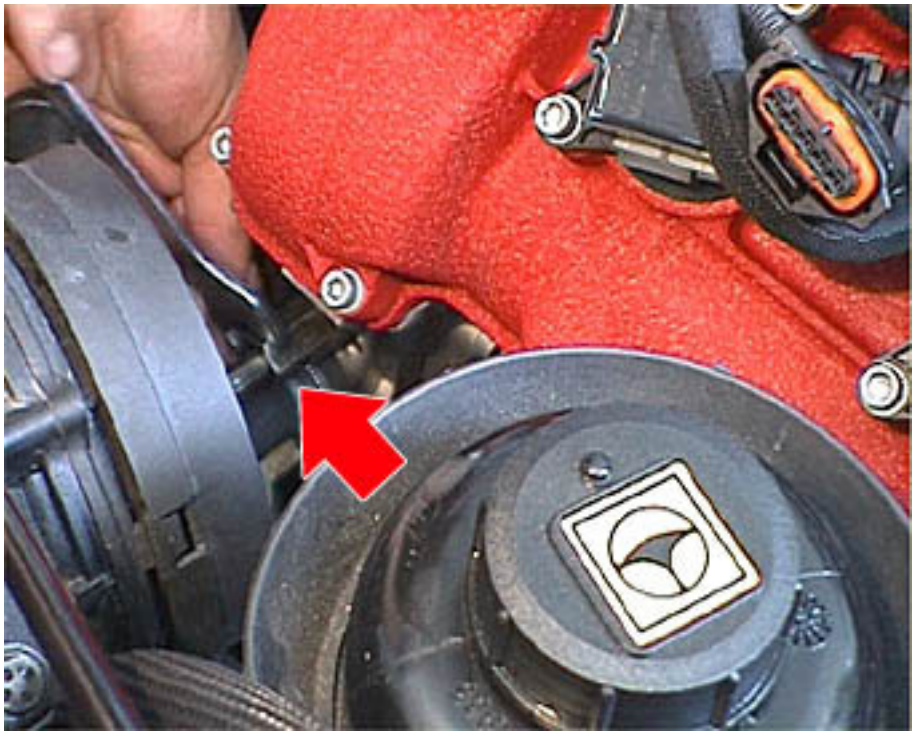
- Extract the pneumatic valve check pipe from the secondary air valve



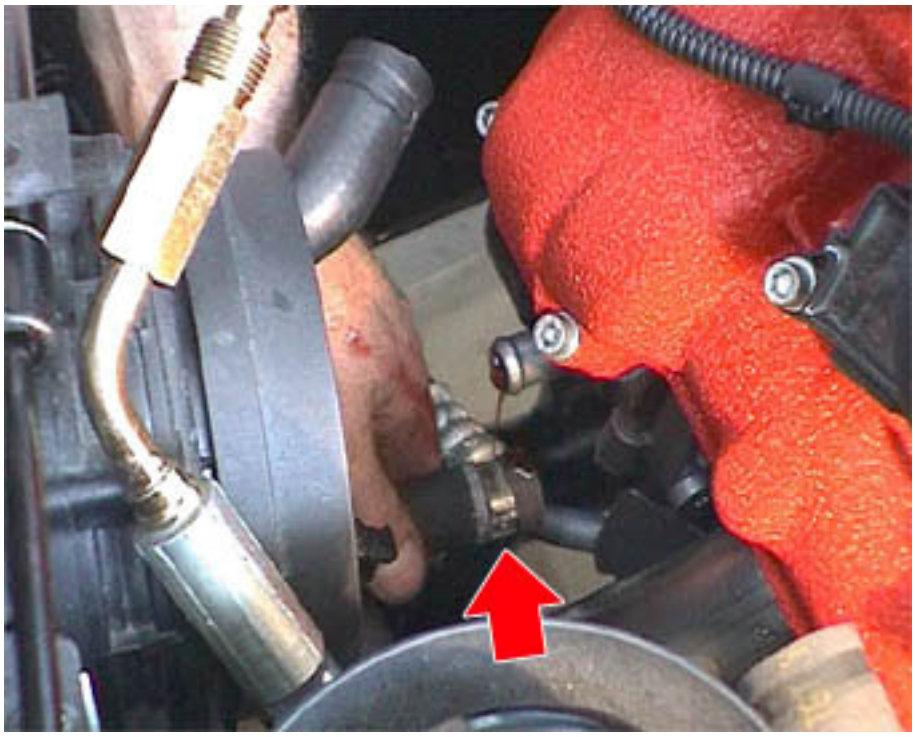
- Unscrew the screws securing the rigid pipe connected to the secondary air system pneumatic valves and extract the pipe itself.



- Unscrew the hydraulic steering system steering box/pump duct.



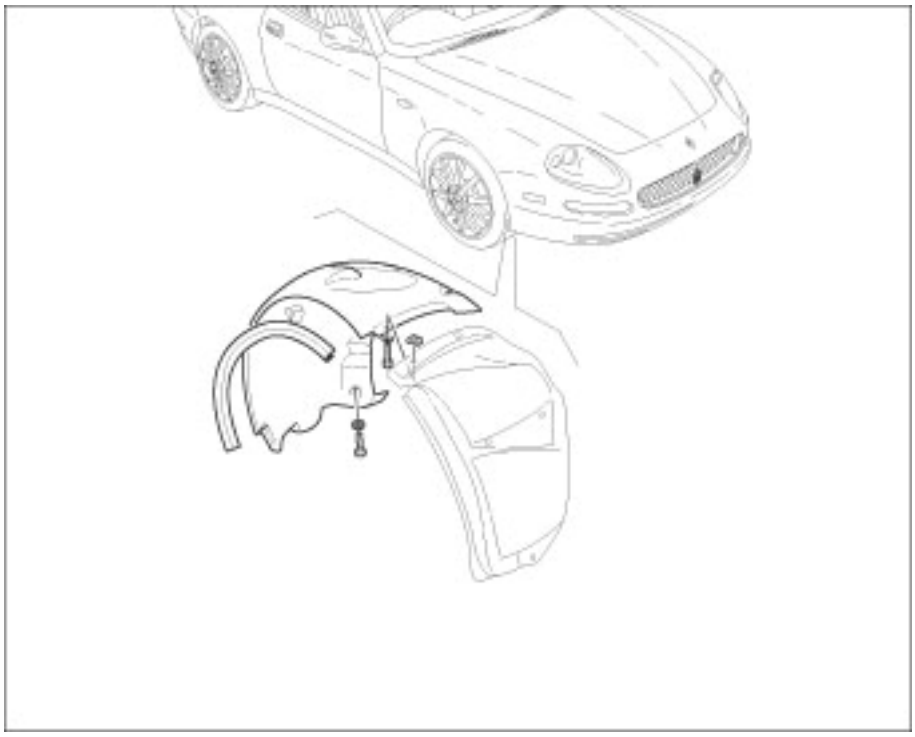
- Unscrew the hydraulic steering system tank/pump duct.



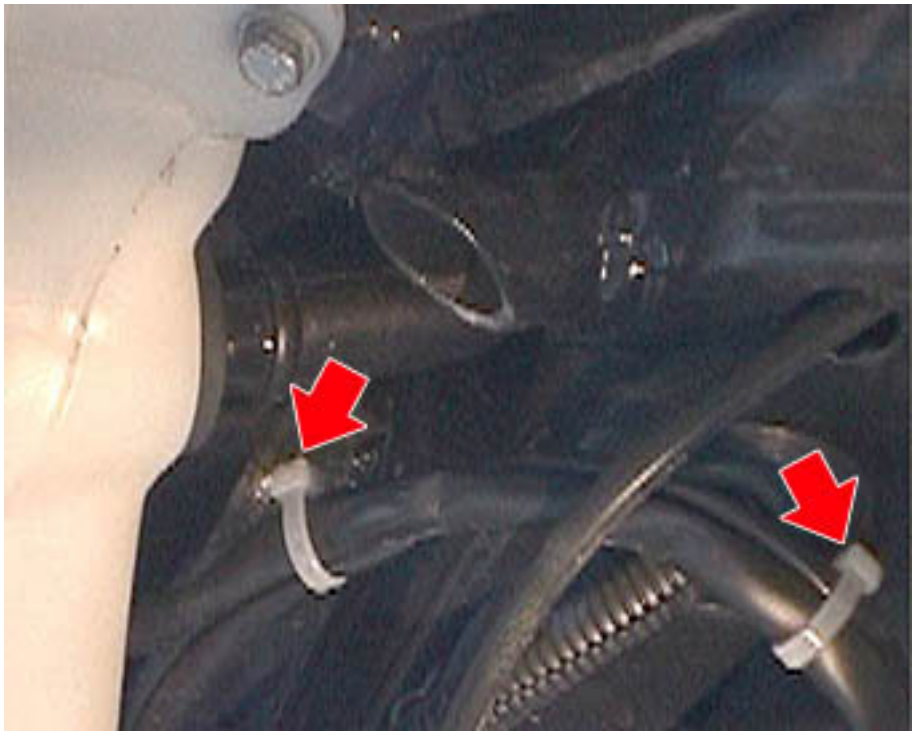
- Unscrew the screw securing the window fluid reservoir support clip to the car body.



- Remove the rear gravel guard from the front RH wheelhouse.



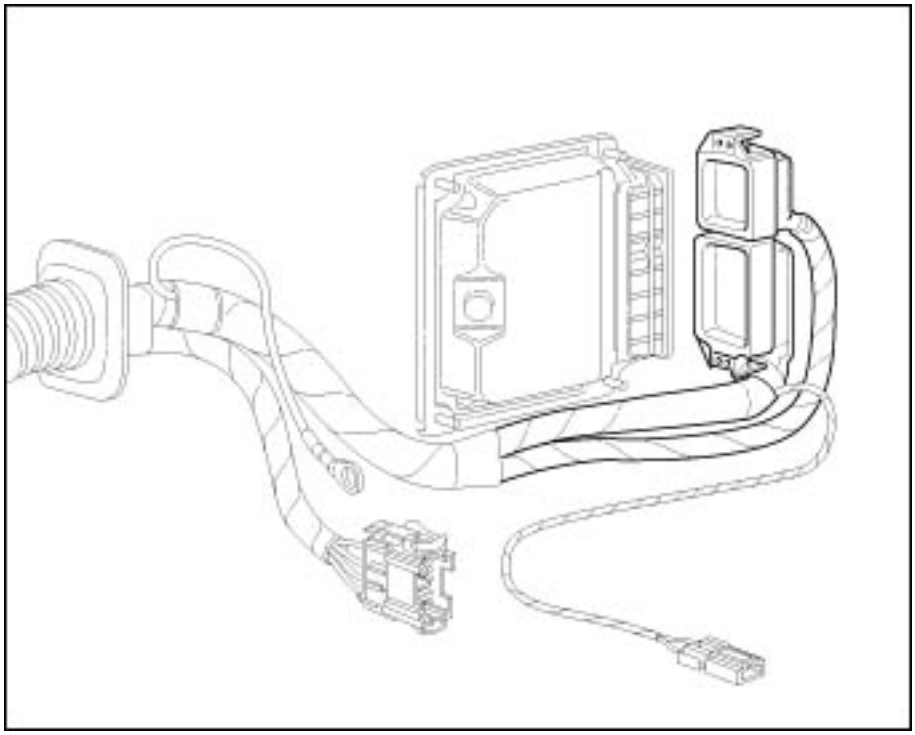
- Remove the two window fluid reservoir cable clips.



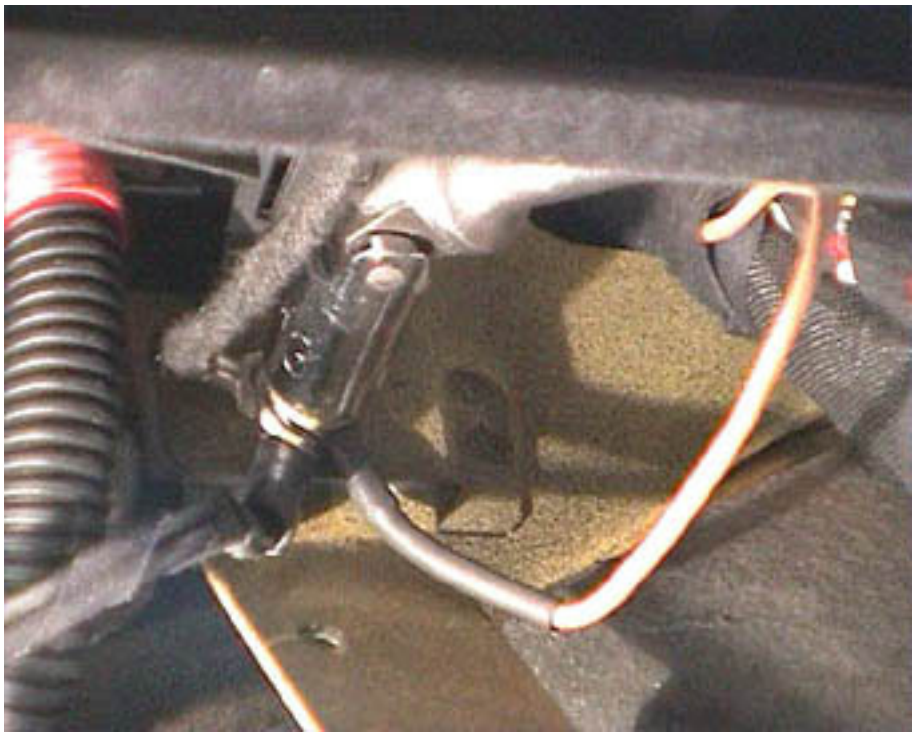
- Remove the carpet from the passenger foot area.



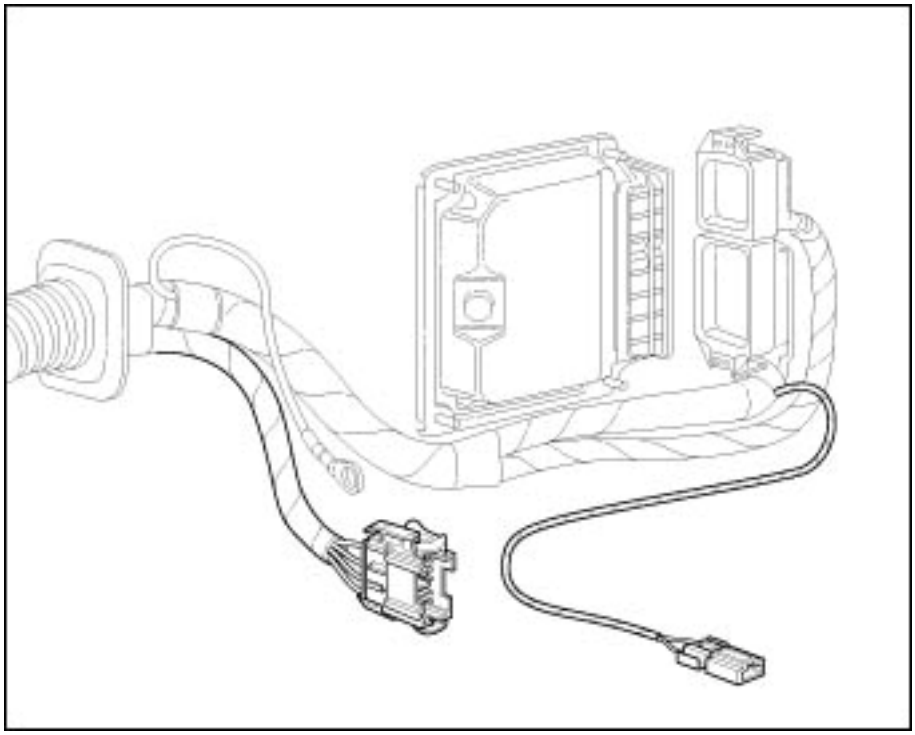
- Detach the two connectors from the ECU.



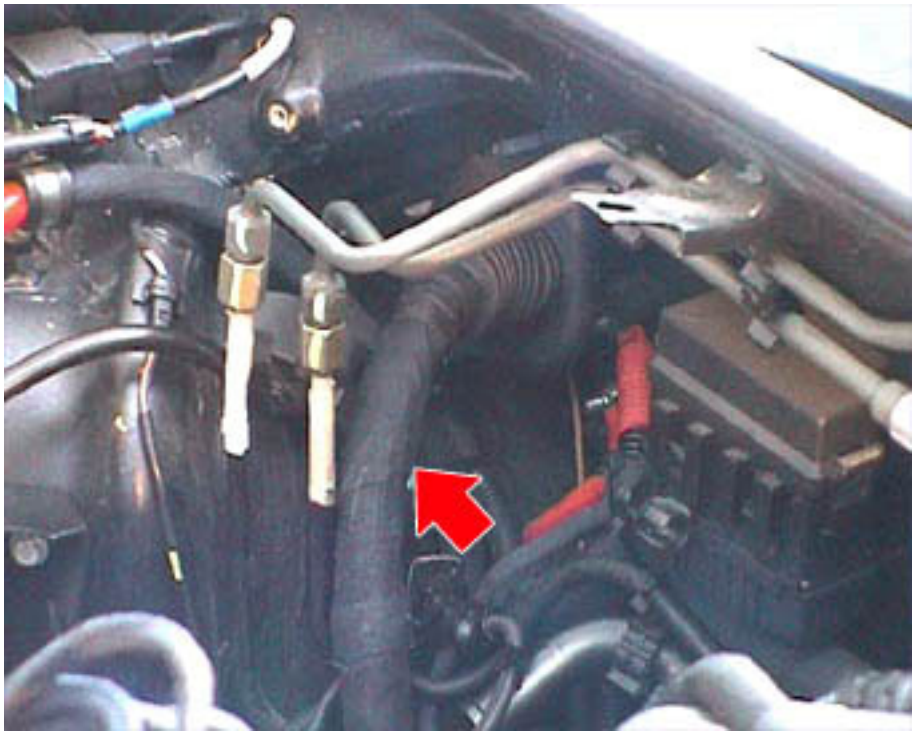
- Disconnect the earth cable.



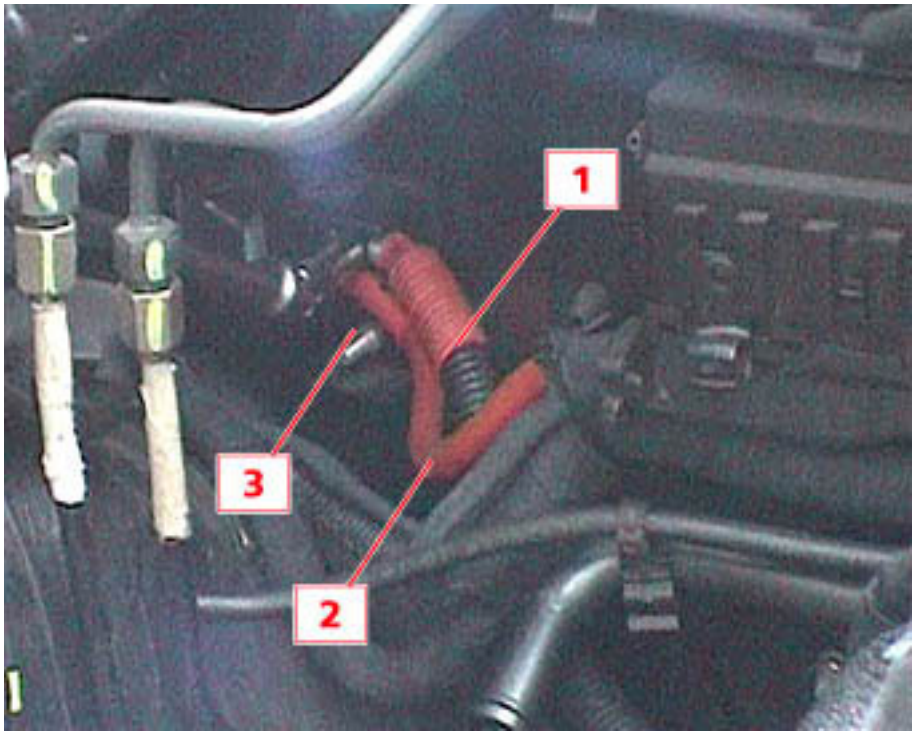
- Detach the two dashboard connectors.



- From inside the engine compartment, extract the wiring.



- Unscrew the engine service wiring screw **(1)**, the power fuse box cable screws **(2)** and the earth cable **(3)**.



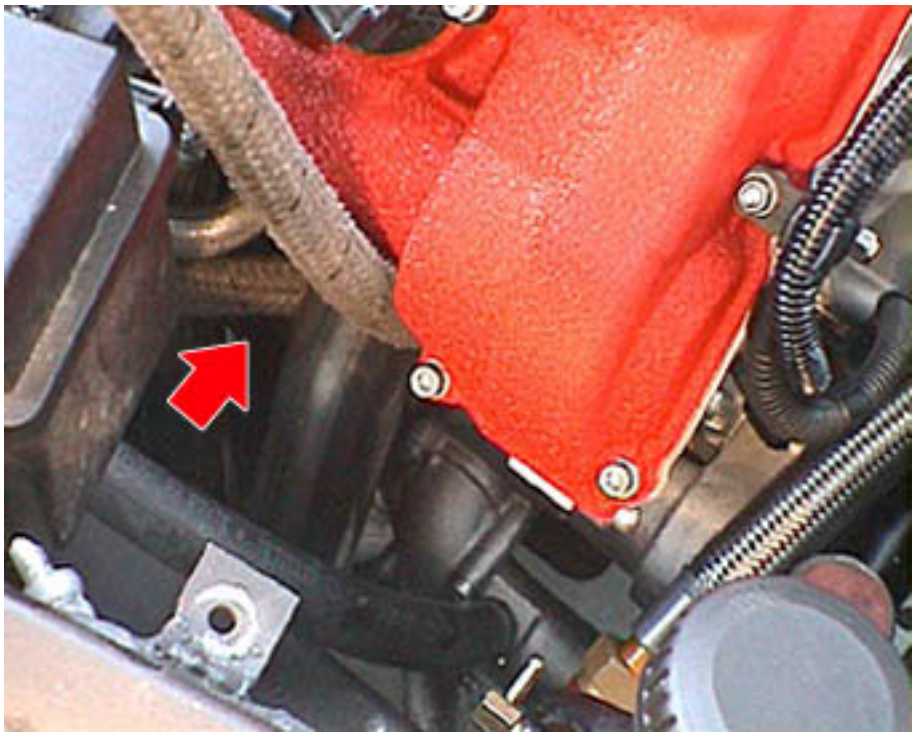
**N.B.:**
**For the right-hand drive version, the cable is positioned on the left-hand side of the engine compartment.**



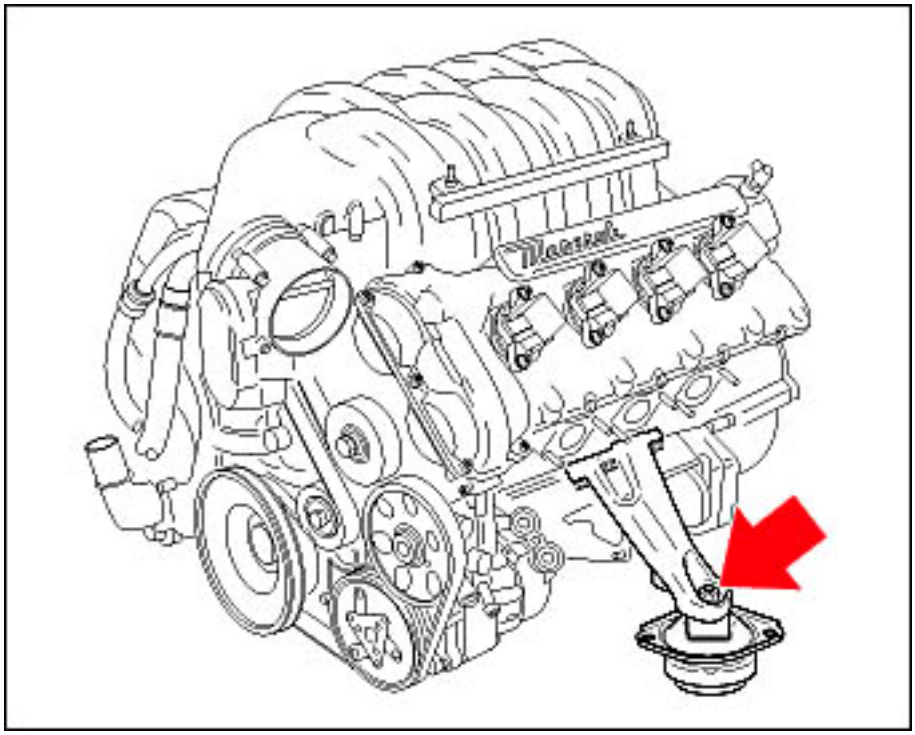
- Unscrew the union connecting the fuel pipes to the injector rails (one per bank).



- Fit the engine in a harness so that the belts pass around the exhaust manifolds.



- Unscrew the rubber bushings on the engine mounting brackets.



- Extract the engine from the car using a hydraulic lift.

**N.B.**
**Guide the engine so as to prevent parts hitting and damaging the bodywork and rest it on the stand 900026230.**



**When fitting, follow the procedures described above in reverse order.**

- Tighten the four screws securing the engine bushing to the engine underframe to a torque of **50Nm**.
- Reconnect the handbrake cable.

*Removing-refitting the handbrake and tie-rods*

- Fit the central exhaust line.

*Removing/refitting the central exhaust line*

- Mount the spare wheel housing.

*Removing /refitting the spare wheel housing*

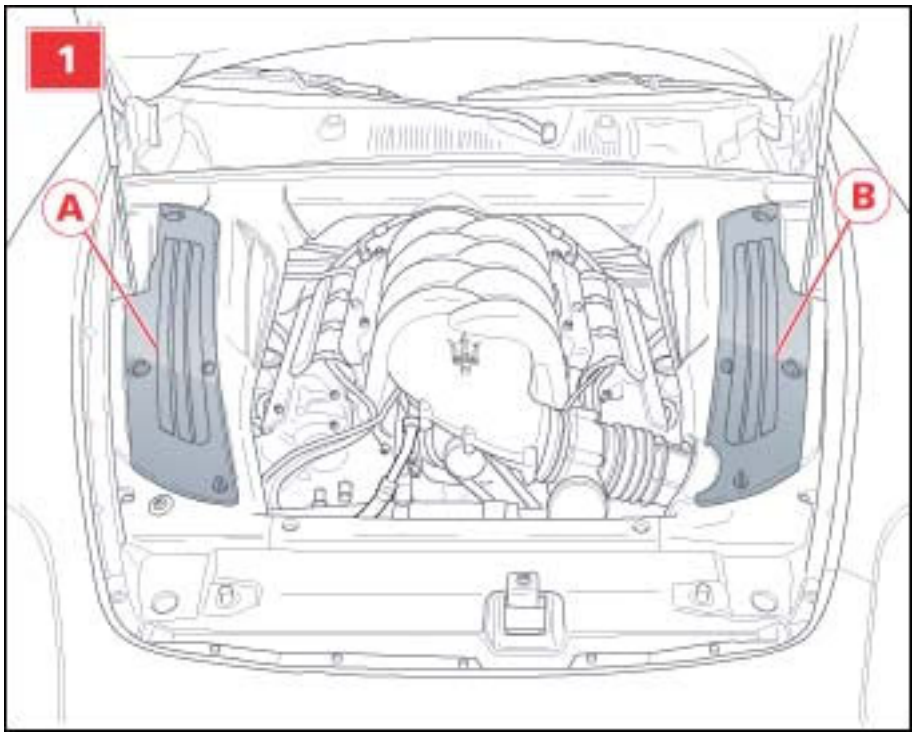
- Mount the front lid

*Removing/refitting the engine compartment lid*

## FILLING THE CIRCUITS AND CHECKING THE LEVELS

### Engine compartment panels

- In order to check and top up the levels of the brakes/clutch hydraulic control fluid and the power steering fluid, remove the left-hand panel **B** from the engine compartment. To remove the engine compartment panels, rotate the fixing pins. To refit the panels, position them correctly then screw in the fixing pins **(Figure 1)**.
  **(MY2003)** In order to check and top up the fluid level of the brake/clutch hydraulic control, you must unscrew the cap **(Figure 2).**

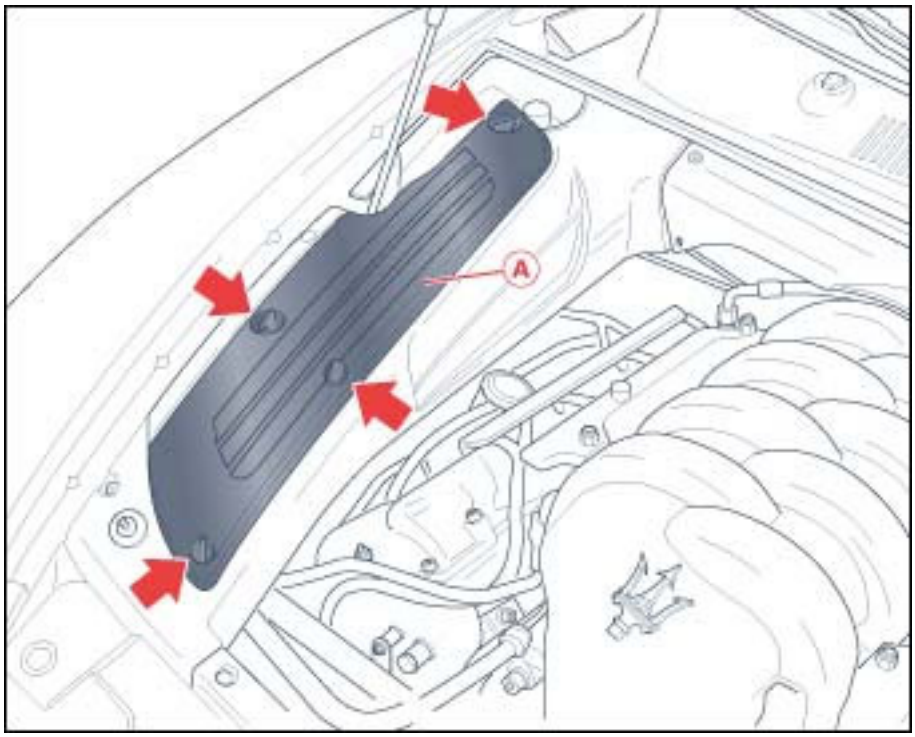




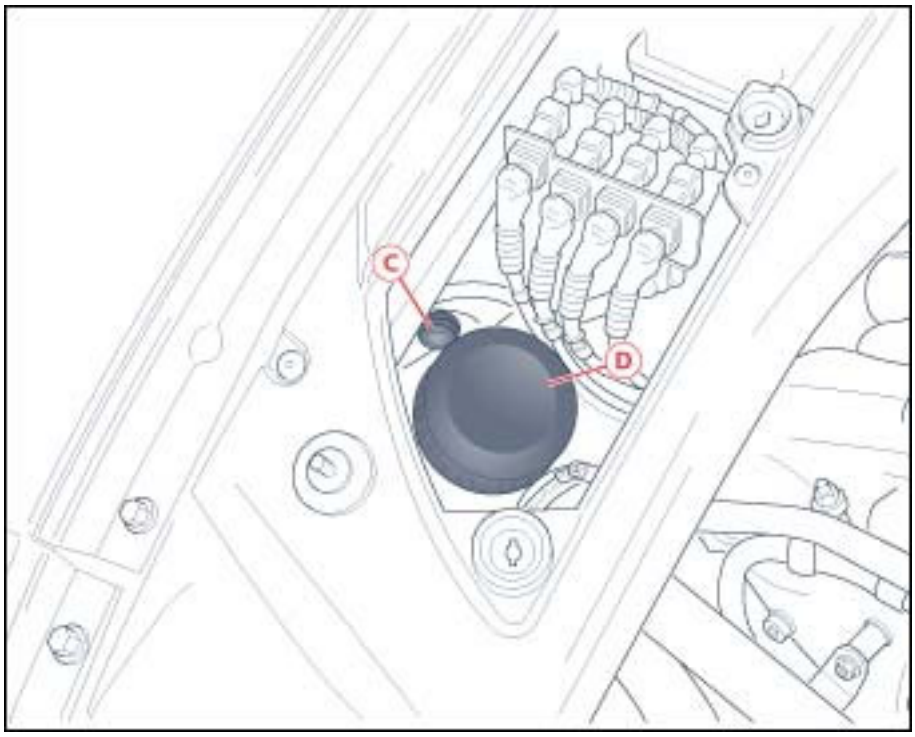

## Engine lubrication circuit

- To check and top up the engine oil and cooling fluid levels, remove the right-hand panel **A** from the engine compartment.

**CAUTION**
**With the engine warm, be very careful when working inside the engine compartment: risk of burns!**
**Remember that, with the engine warm, the electric fan could start to move: risk of injuries!**



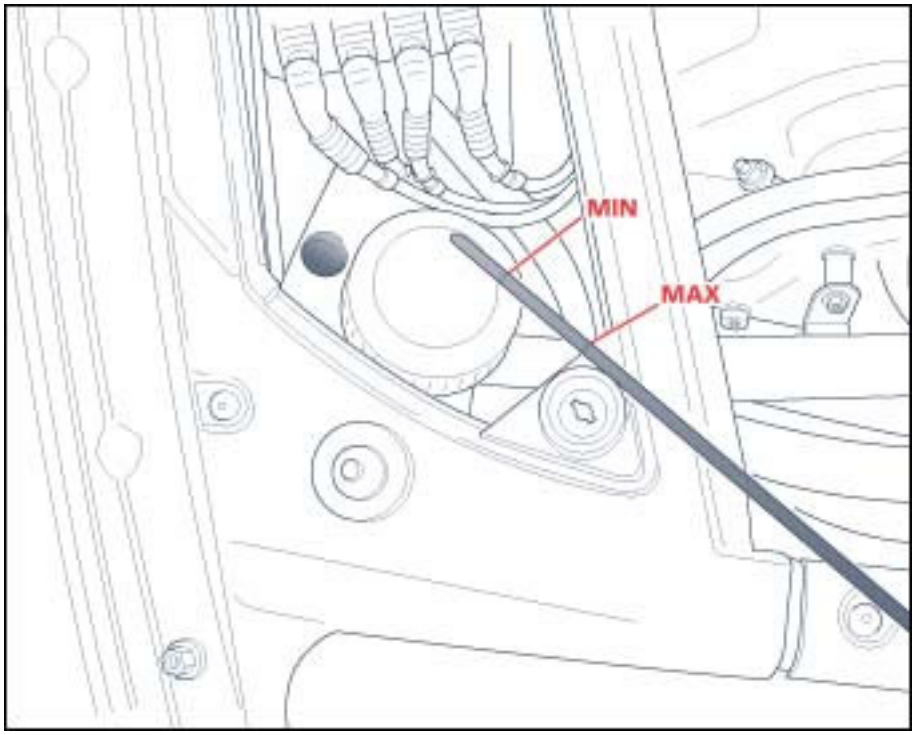
- The level check must be carried out with the car on the flat and the engine warm and idling. The oil level must be between the **MIN** and **MAX** reference points on the dipstick **C**
  The gap between **MIN** and **MAX** corresponds to about 1 litre of oil.




**IMPORTANT**
**Do not top up with oil having characteristics other than those of the oil already used in the engine.**

**CAUTION**
**The engine oil used and the oil filter replaced contain substances that are dangerous for the environment. For replacing the oil and the filters you are advised to contact the Maserati Service Network, where all the necessary equipment is available to dispose of the used oil and filters in compliance with the regulations in force and in an environment-friendly manner.**

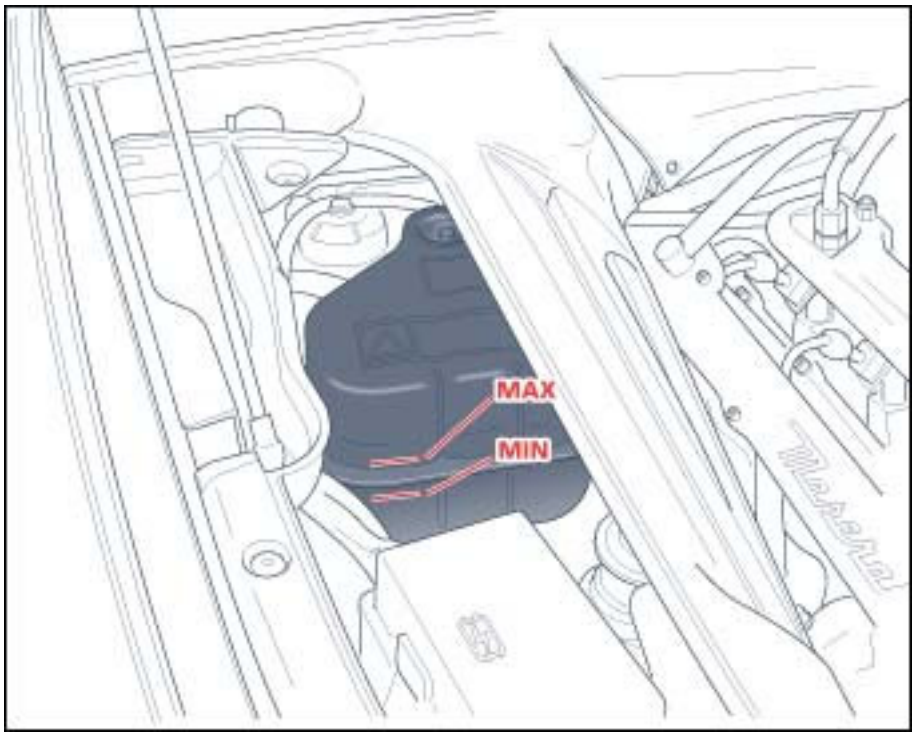
- If the level is close to or just under the **MIN** reference point, add oil through the filler neck which is closed by plug **D** until the **MAX** reference point is reached. The oil level should never exceed the **MAX** reference point.



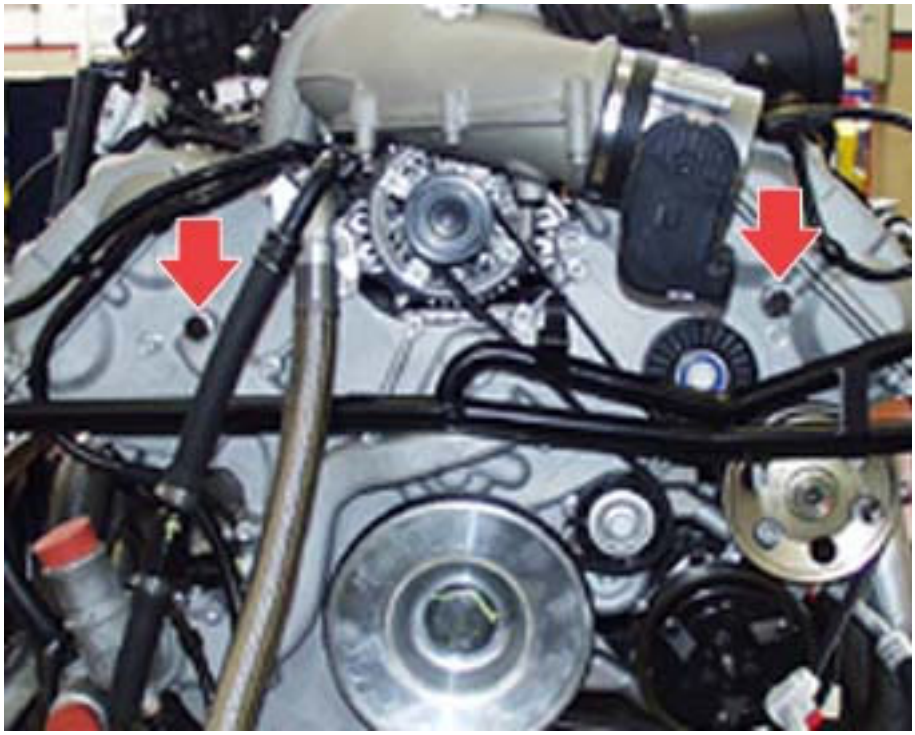
## Engine coolant circuit

**CAUTION**
**When the engine is very hot, do not remove the cap from the pan: risk of burns!**

- The fluid level must be checked with the engine cold and must be between the **MIN** and **MAX** reference points which can be seen on the pan. If the level is low, slowly pour the prescribed fluid through the filler neck on the pan until the level is close to the **MAX** reference point.



- The operation of filling the engine's water circuit is carried out by partially unscrewing the two caps which let water out from the heads. These are located in the front section of the engine to allow air contained in the top part of the engine to escape during the filling stage.

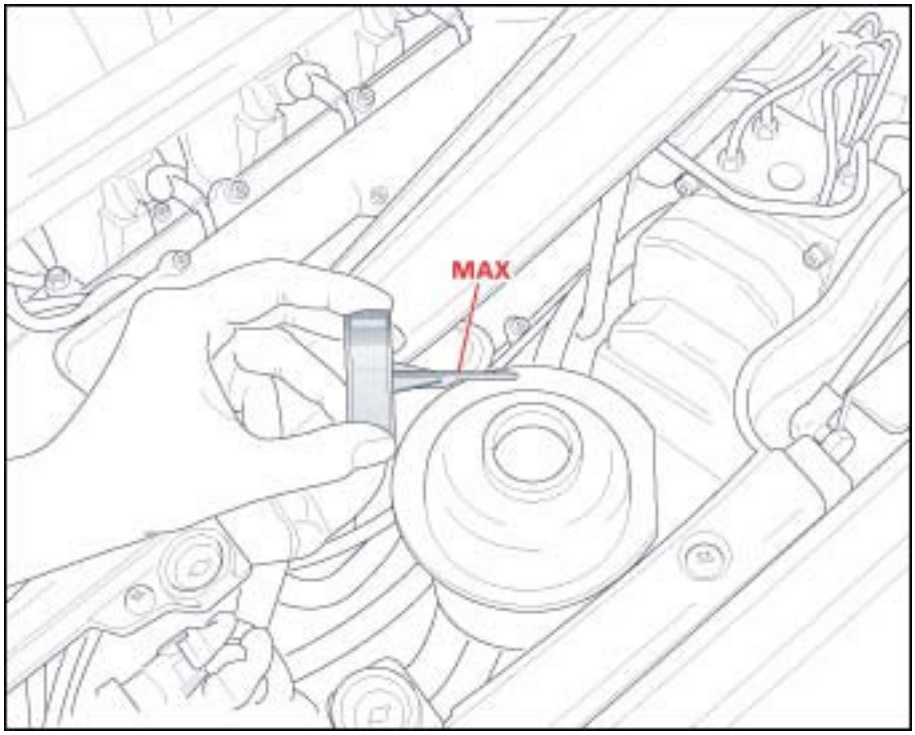


A further degassing is carried out via these two caps after the thermostat has been opened (or rather when the fan starts up), to release any air which may be present in the external engine circuit.

## Hydraulic steering fluid circuit

**IMPORTANT**
**Make sure that the power steering fluid does not come in touch with the engine hot parts as it is flammable.**

- To get to the pan, remove the left-hand panel from the engine compartment following the instructions in the "Engine compartment panels" paragraph. With the car on a level ground and the engine cold, check that the fluid level corresponds with the **MAX** reference point on the tank cap dipstick. To carry out the check, unscrew the cap, clean the dipstick, tighten the cap back , remove it again and check the level.




The system is self-draining. The draining is carried out by turning the steering wheel as far as possible to the left and to the right several times with the engine running and the vehicle stationary. This procedure must be carried out every time the delivery and return pipes which run to the steering box are disconnected

- Recheck the oil level after draining.
- With the engine running also check for any leakages of oil from the hydraulic steering system.

## Connection of equipment for operations concerning the air conditioning system refrigerant fluid

There are two fittings on the system pipes, one for high and one for low pressure, which are used for operations involving the refrigerant, such as:

- refrigerant absorption;
- emptying and drying the system;
- seeking any leaks in the circuit;
- admitting vacuum pump oil;
- charging the system with refrigerant (R134a);

| Version | Quantity |
|---|---|
| USA | 1100 gr |
| EUROPA | 750 gr |

- checking operation of the system.

The above operations may be carried out with different types of equipment with different operating procedures;
for more detailed information, use the technical use and maintenance manual relating to the machinery used.
The high (**Figure 1**) and low (**Figure 2**) pressure fittings are shown respectively on the car without and with the connections to the charging equipment.






## RADIATORS

### Removing/fitting the radiators

- Remove the front bumper and headlamp assemblies.

*Removing/fitting the front bumper*

- Drain out the system by unscrewing the plug.



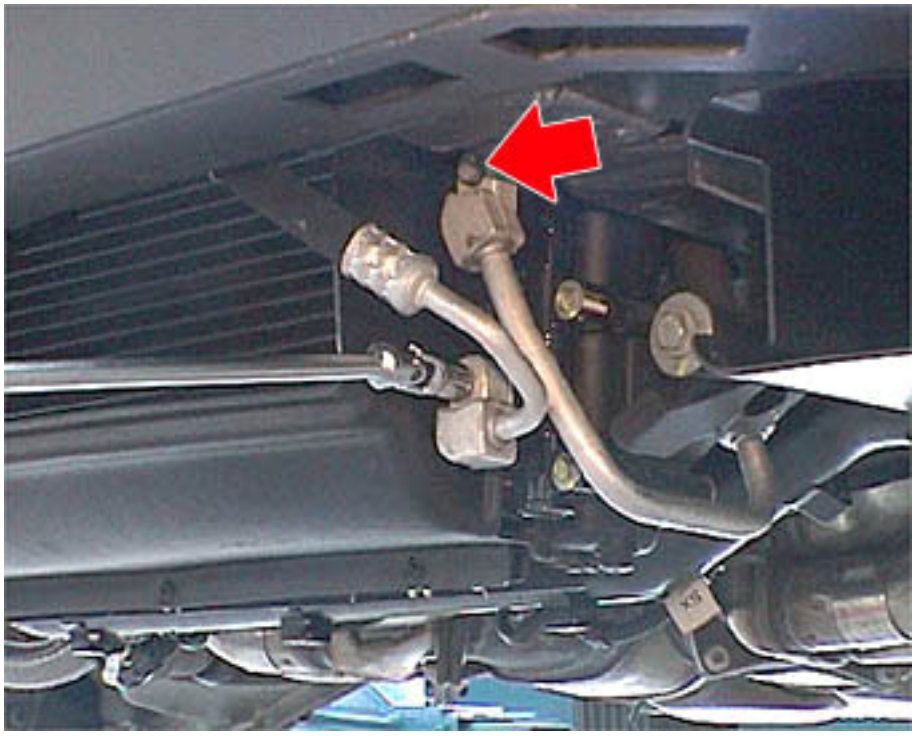
- Detach the two sleeves.



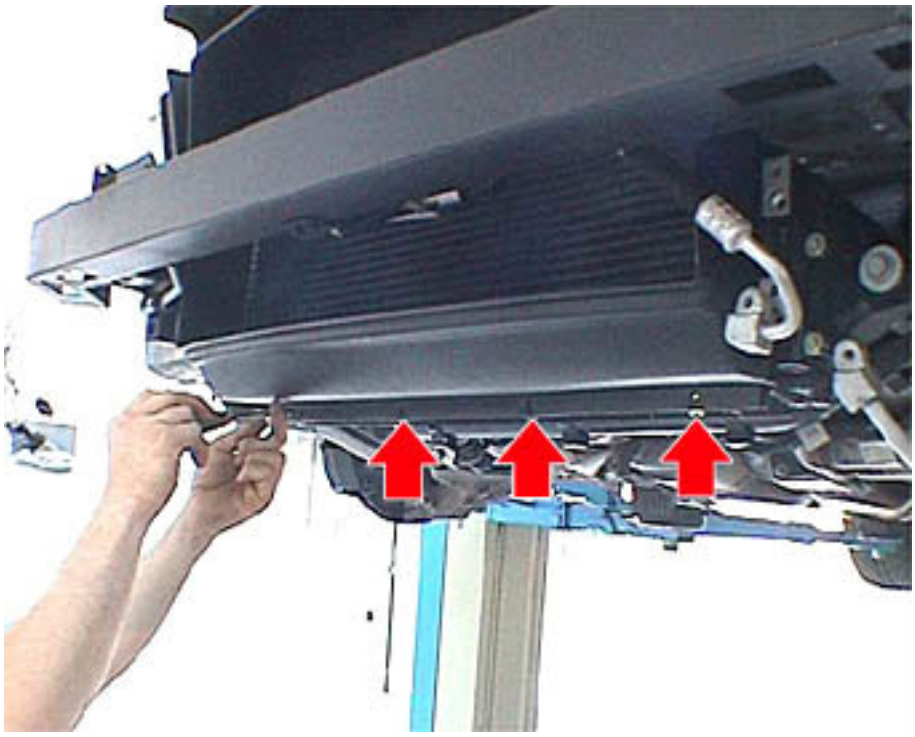
- Drain the air conditioning system using the special tool connected to the system valve.



- Disconnect the air conditioning system hoses.



- Unscrew the four lower screws on the cooling system fan duct.



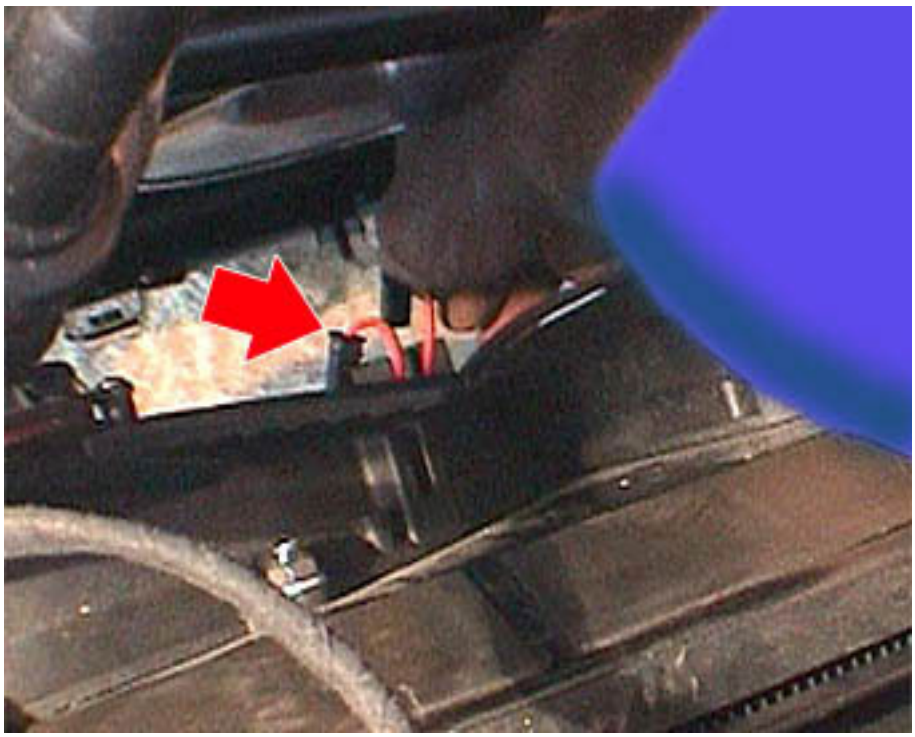
- Unscrew the lower radiator screws.



- Drain the oil from the reservoir by undoing the relative screw.



- Detach the two cooling system fan connectors and the fan speed sensor.



- Remove the two clips on each cable bundle.



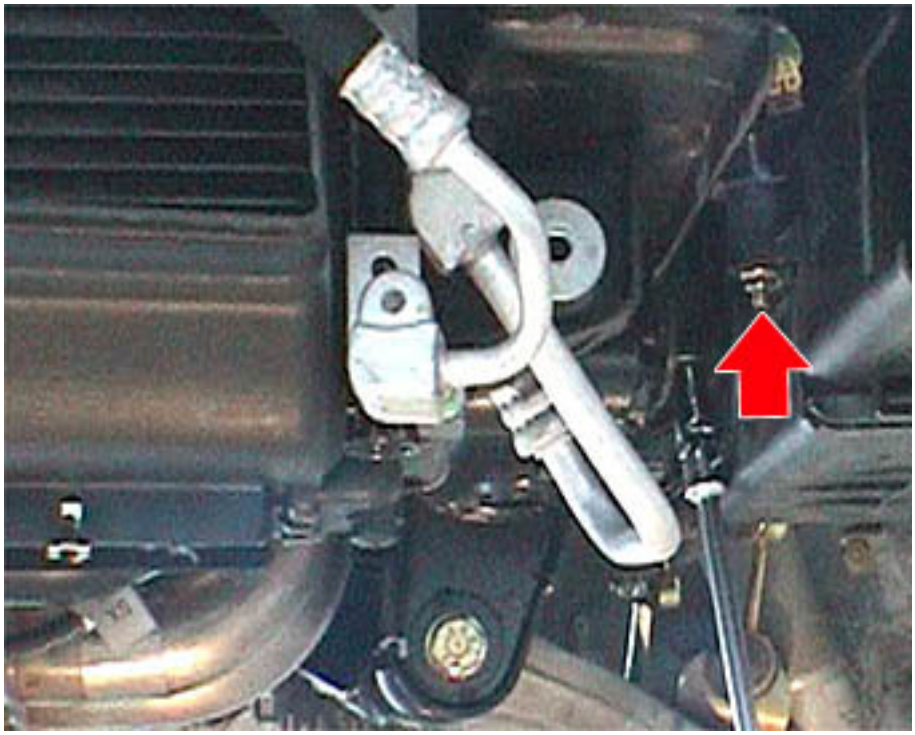
- Unscrew the upper screws on the fan duct.



- Release the clip and detach the radiator water return sleeve.



- Unscrew the air filter fastening screws.



- Detach the air filter duct clips and remove it



- Unscrew the oil draining pipe clip next to the air flow meter.



- Unscrew the plenum chamber/throttle connector clip.



- Detach the air flow meter connector.



- Release the throttle cabling



- Remove the throttle / air flow meter assembly.



**N.B.**
**Suitably plug the plenum chamber "intake".**



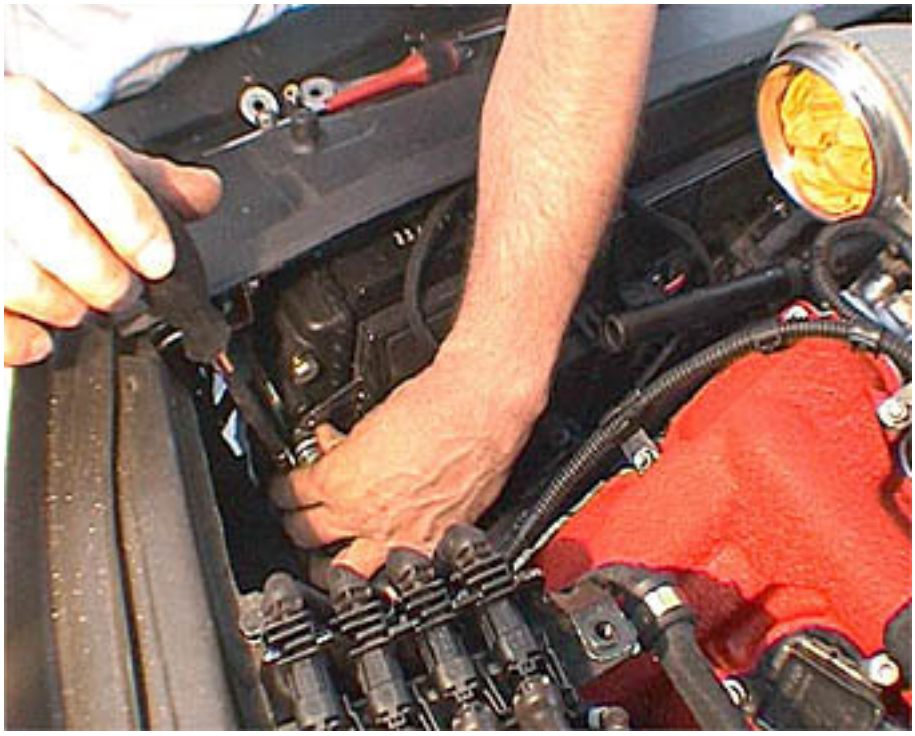

- Unscrew the upper radiator screws.



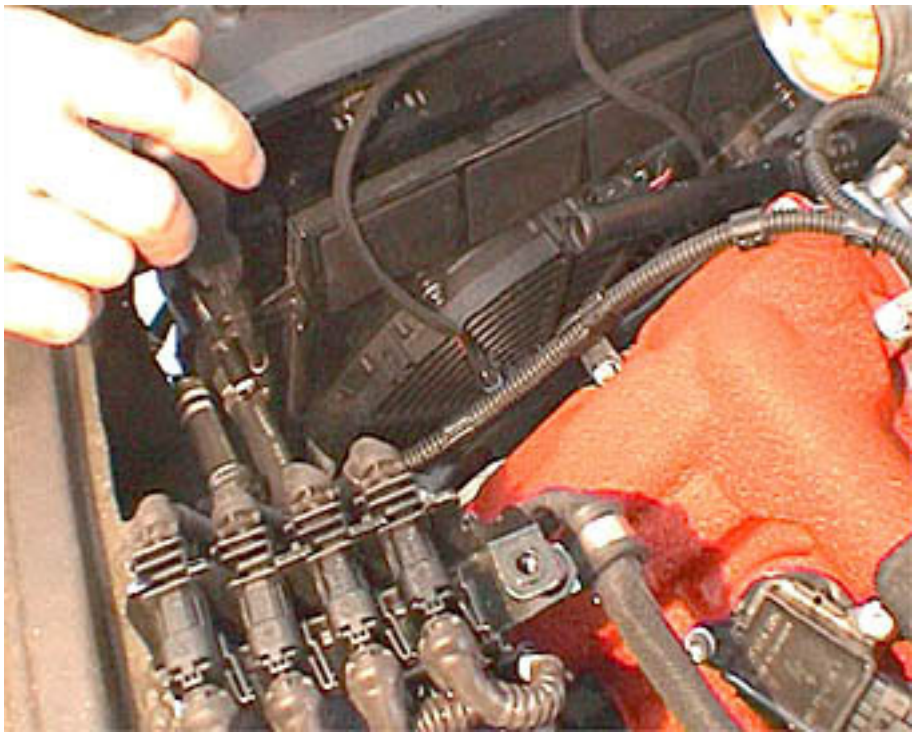
- Unscrew the upper radiator duct screws and remove it.



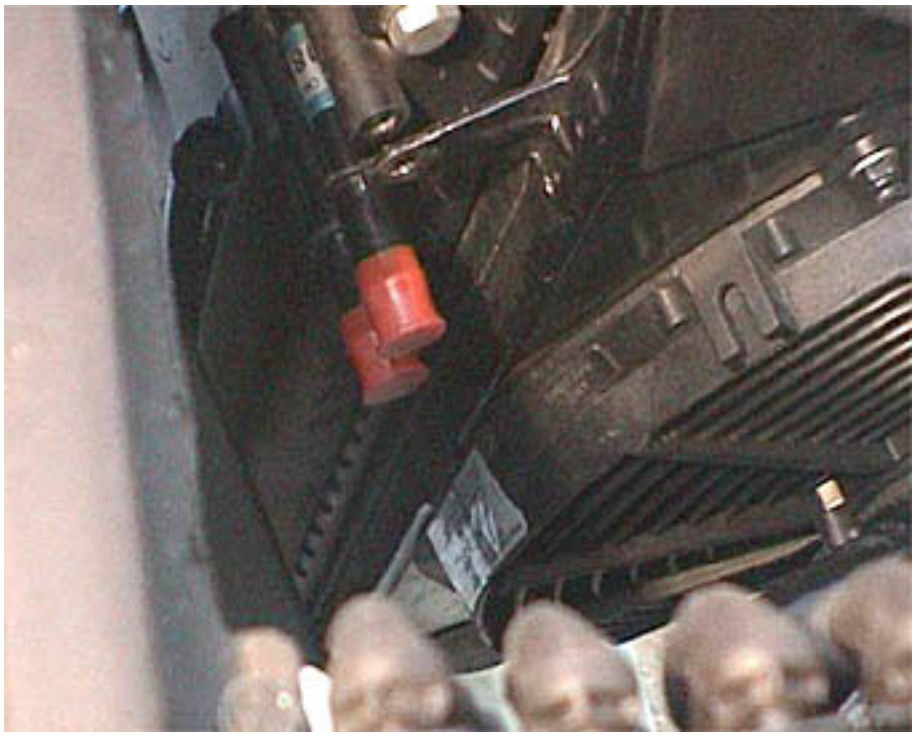
- Unscrew its clips and disconnect the return hose for the hydraulic steering cooling circuit .



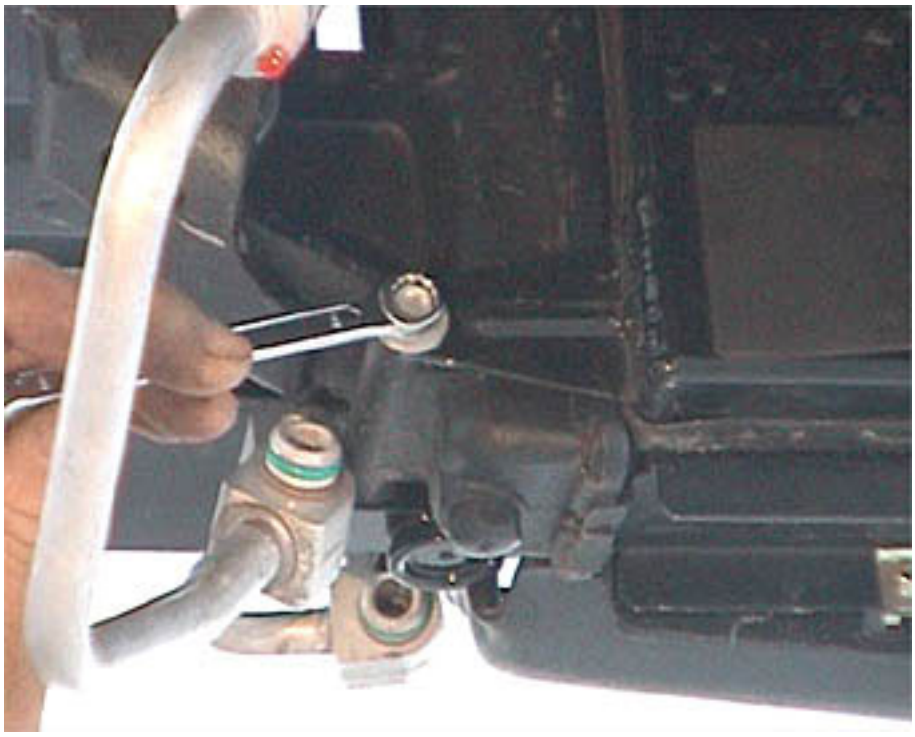
- Unscrew its clip and disconnect the delivery hose for the hydraulic steering cooling circuit.



**N.B.**
**Fit the plugs to the radiator ducts.**



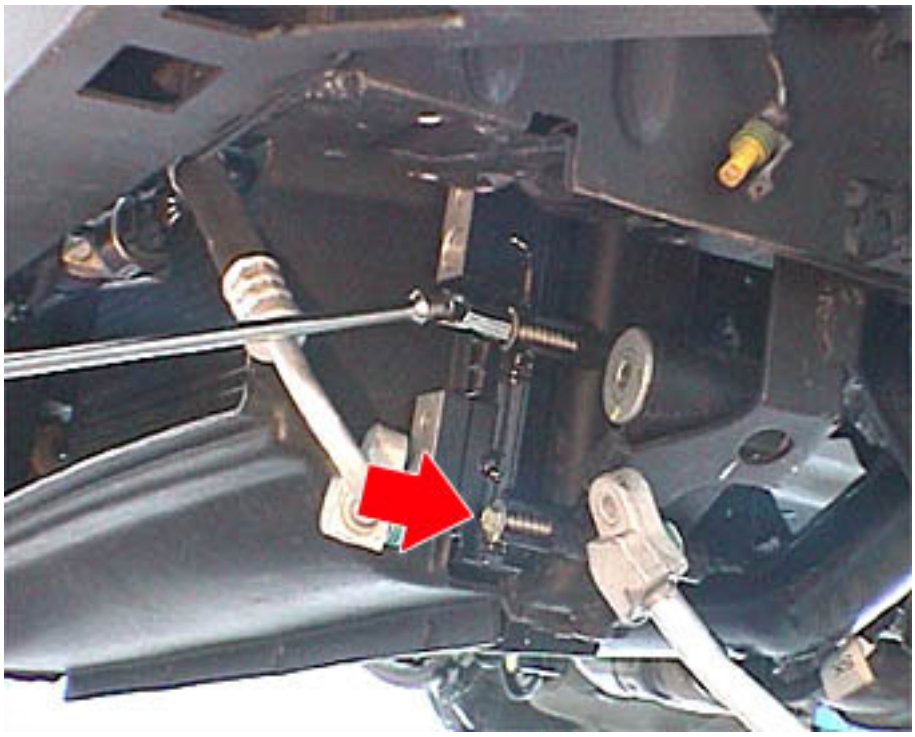
- Unscrew the lower fan unit screws.



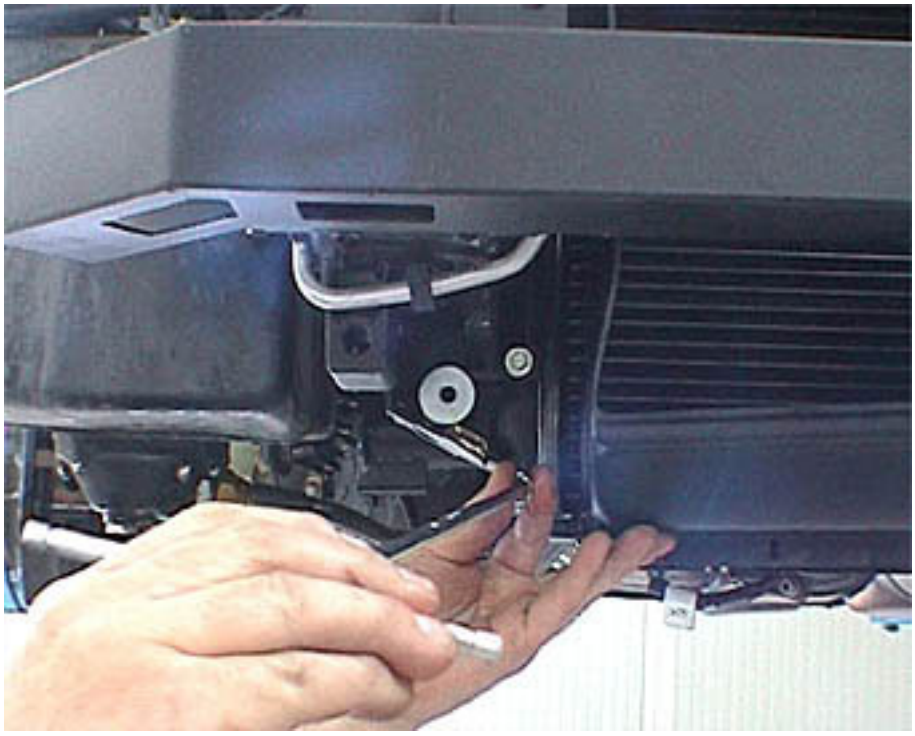
- Remove the fan unit.



- Unscrew the screws securing the condenser from the water radiator.



- Unscrew the screw securing the duct to the radiator.



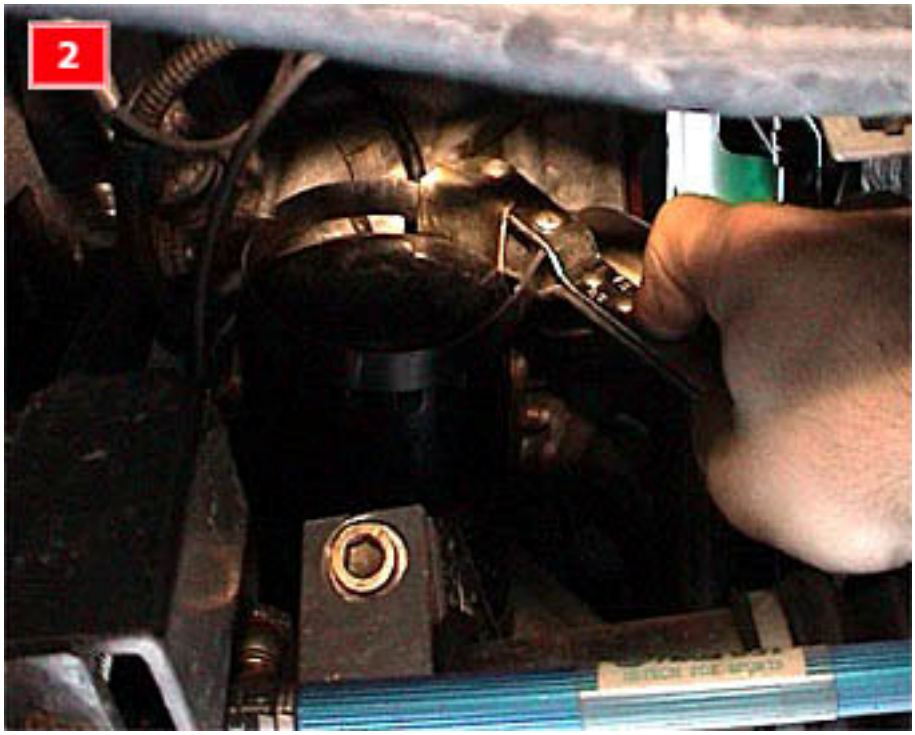
- Remove the radiator.

**When refitting, proceed in reverse order**

## OIL FILTER

Working from the underfloor, remove the oil filter using a suitable standard tool **(Figure 1 and 2).**



## AIR FILTER

- Remove the front left-hand wheel.

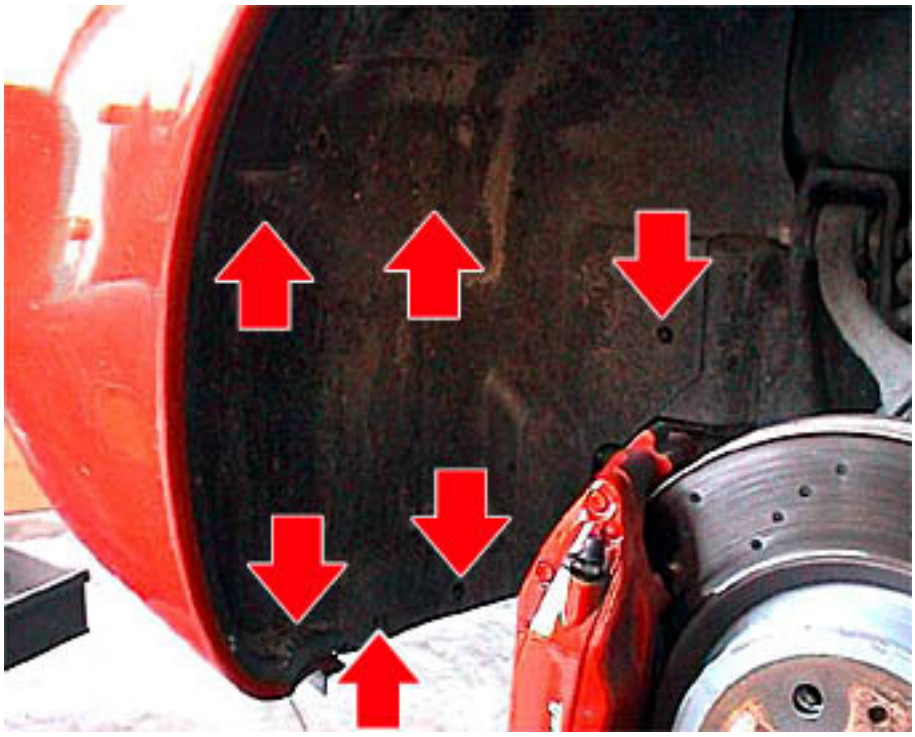
*Replacing the wheels*

- Working in the underfloor, undo, starting from the left-hand side of the base, the seven perimetric screws **(Figure 1)** and the central screw **(Figure 2)**.

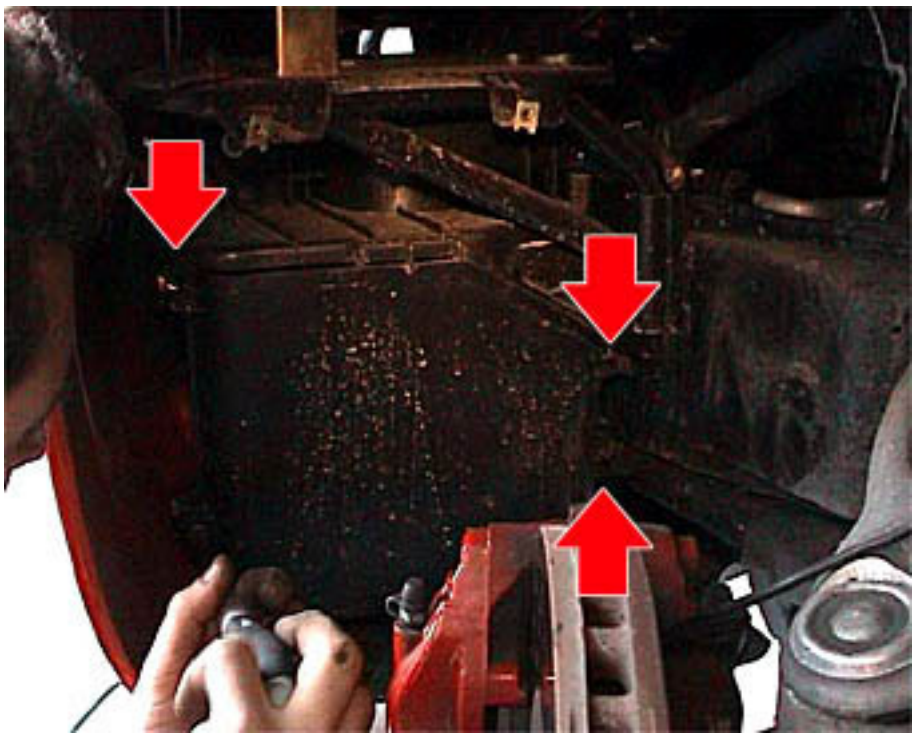





- Remove the front left-hand wheelhouse, undoing the six fastening screws.



- Undo the four screws on the air filter housing cover.



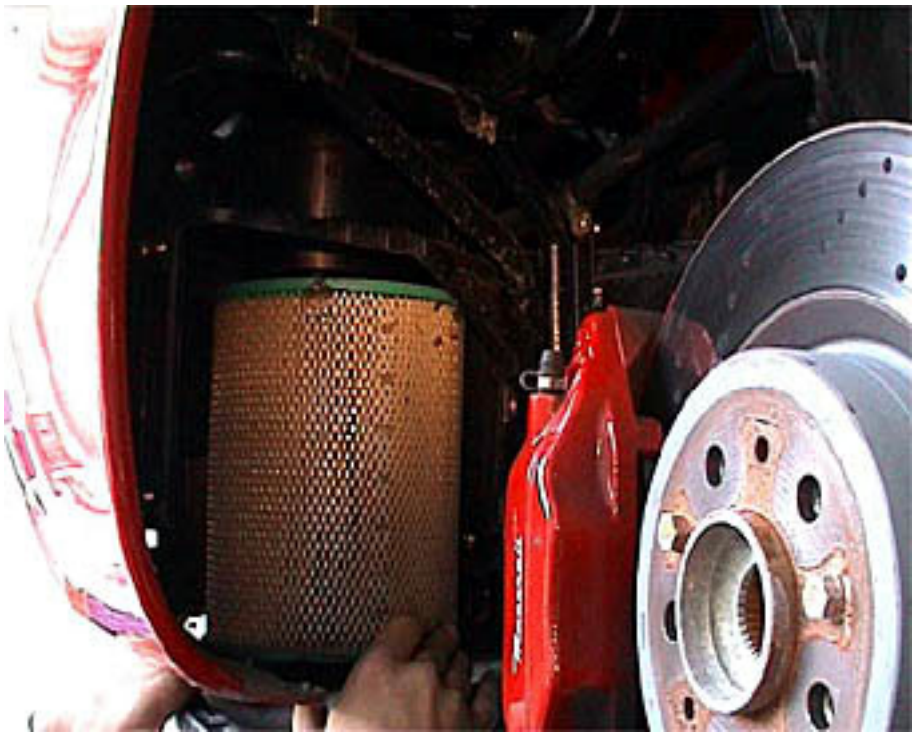
- Working between the base and the front bumper, release the right-hand side of the air filter housing cover.



- Remove the air filter housing cover, releasing its left-hand side.



- Slide the air filter out of the relative housing.

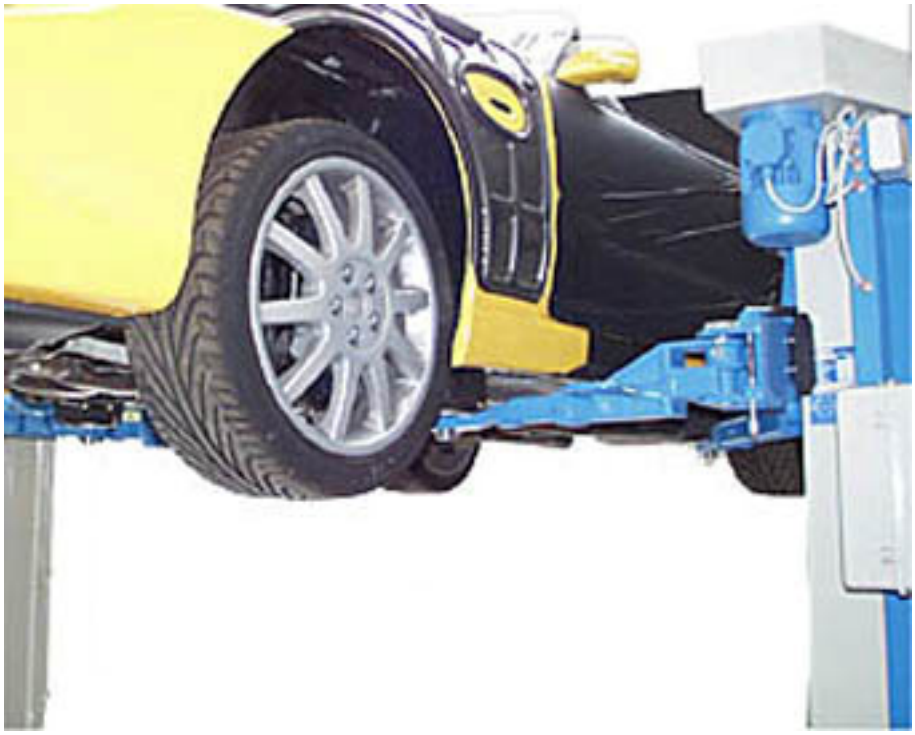


**When refitting proceed in reverse order.**

## CENTRAL EXHAUST LINE

### Removing/refitting the central exhaust line

- Lift the car



- Working from the underbody, unscrew the four screws and disassemble the front frame (**Figure 1**).

**N.B.**
**Using a felt-tip pen, mark the relative positions of the two parts of the front frame (Figure 2).**



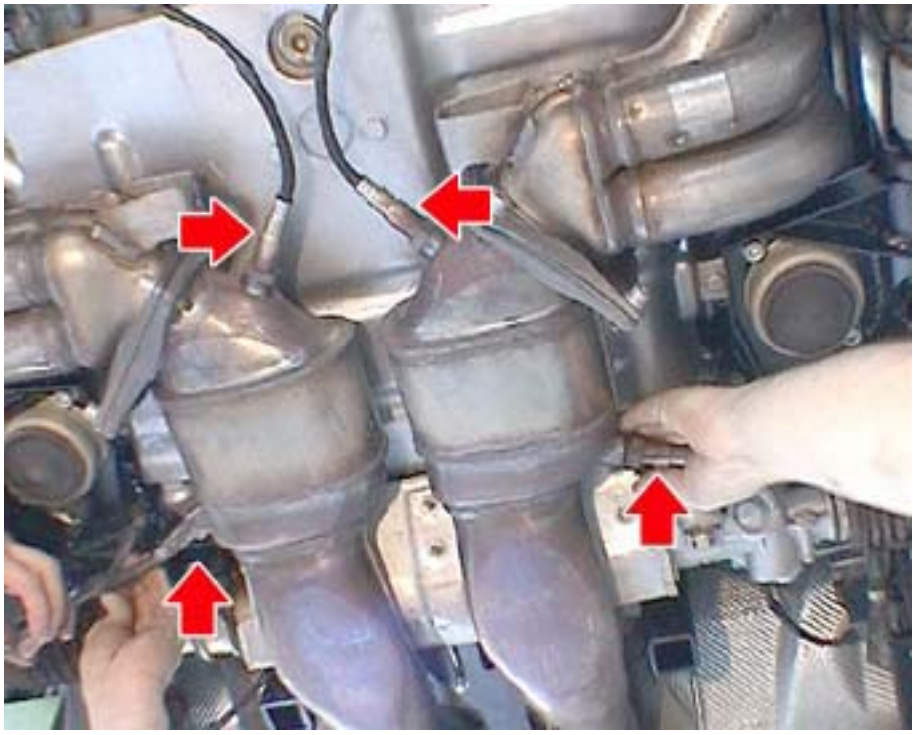



- Detach the rear Lambda sensor cables from the clamps and from the restraint on the support.

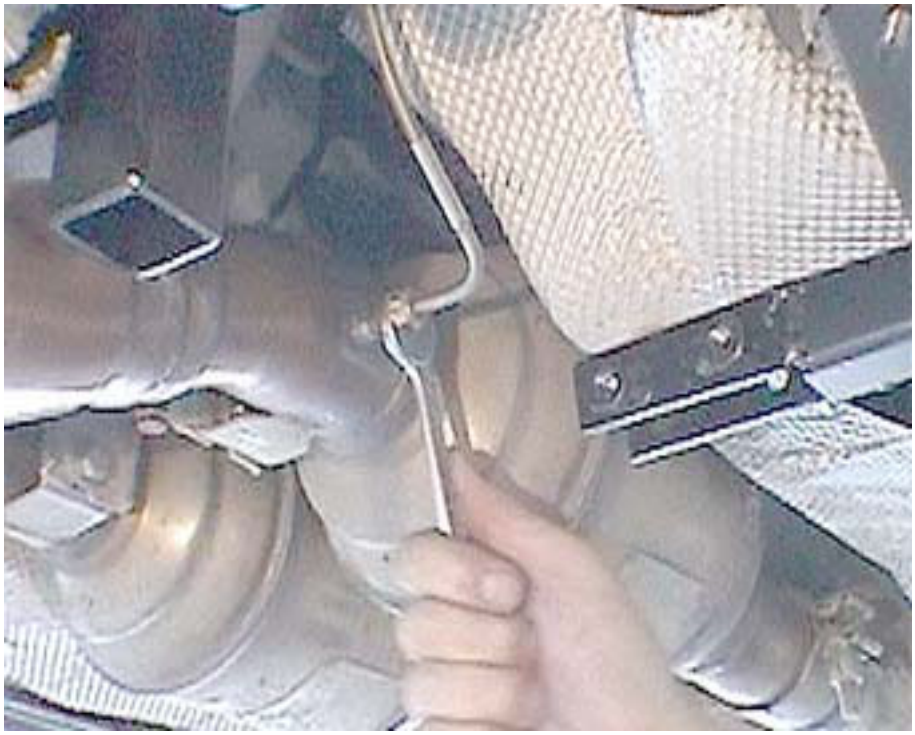


- Detach the front Lambda sensor cables from the front chassis cross member
- Unscrew the four Lambda sensors from the catalytic converters.
  Mark the right-hand or left-hand sensor and the corresponding catalytic converter in order to avoid reversing their positions during the re-assembly stage.

**N.B.**
**When unscrewing the Lambda sensors, make sure the cables do not get damaged by twisting.**



- Unscrew the thermocouples.



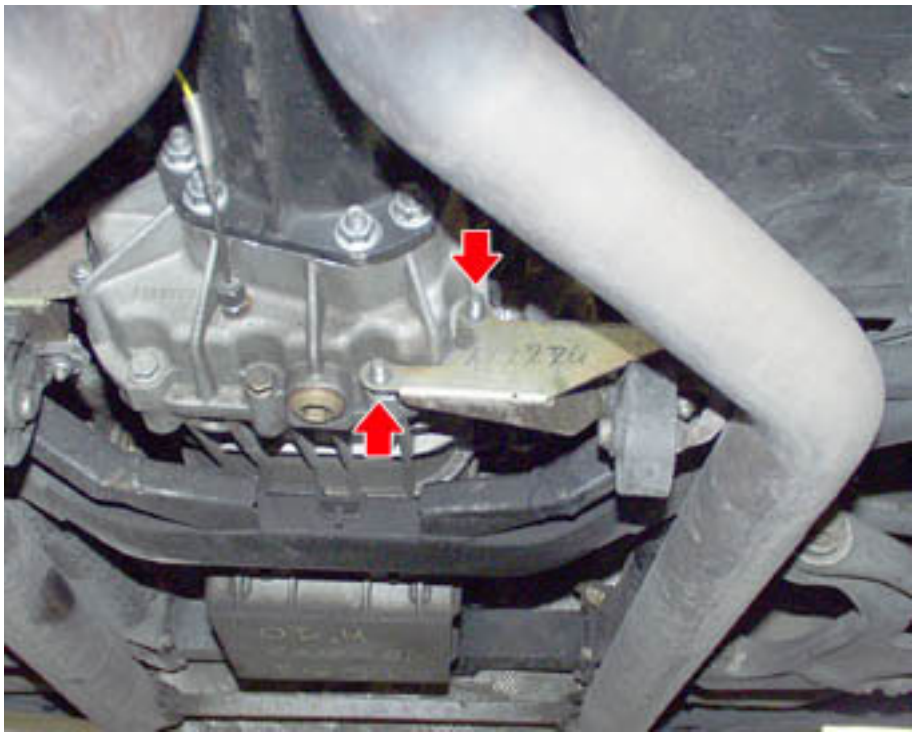
- Unscrew the four screws connecting the exhaust manifolds to the pre-catalytic converters.



- Unscrew the clamp Unscrew the clamp connecting the central exhaust line and the terminals.



- Unscrew the screws securing the central exhaust anti-vibration supports from the gearbox housing.



- Position a hydraulic lift under the central silencer
- Disconnect the  terminals from the central exhaust line.



- Unscrew the screws securing the catalytic converters.



- Remove the exhaust line.



**Refit the lid in reverse order.**

## TAILPIPES

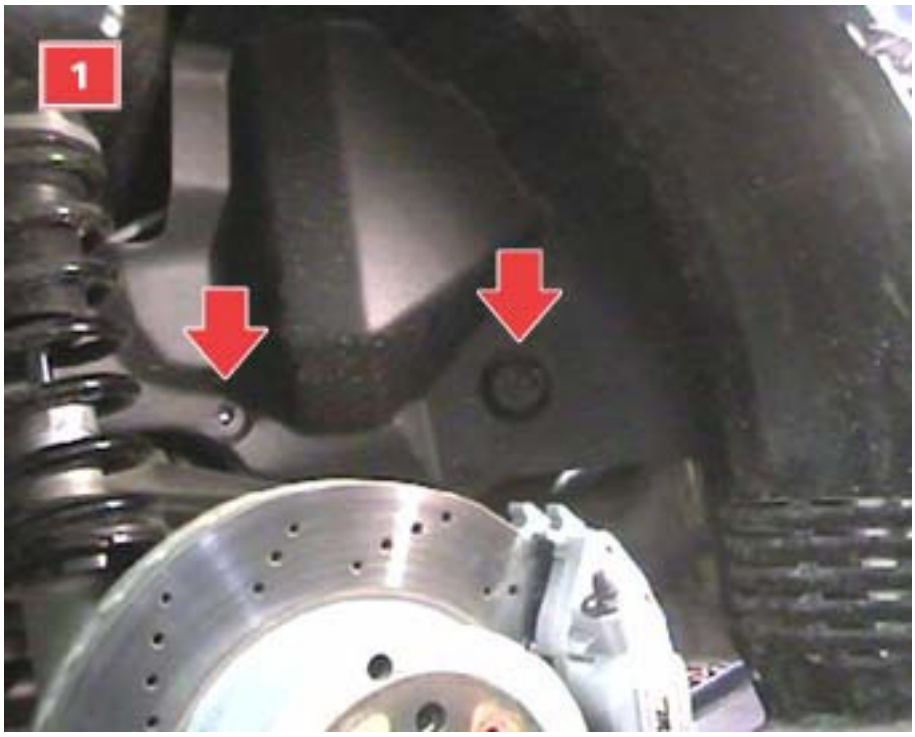
### Removing the tailpipe

- Place the car on the hoist.
- Remove the rear wheels.
- Working in the wheel compartment, remove the cable of the headlight adjusting device from the wheel arch liner.

**N.B.**
**The headlight adjusting device is only present on the left-hand side.**



- Remove the rear wheelhouse, undoing the five fastening screws (**Figures 1, 2, 3 and 4**).







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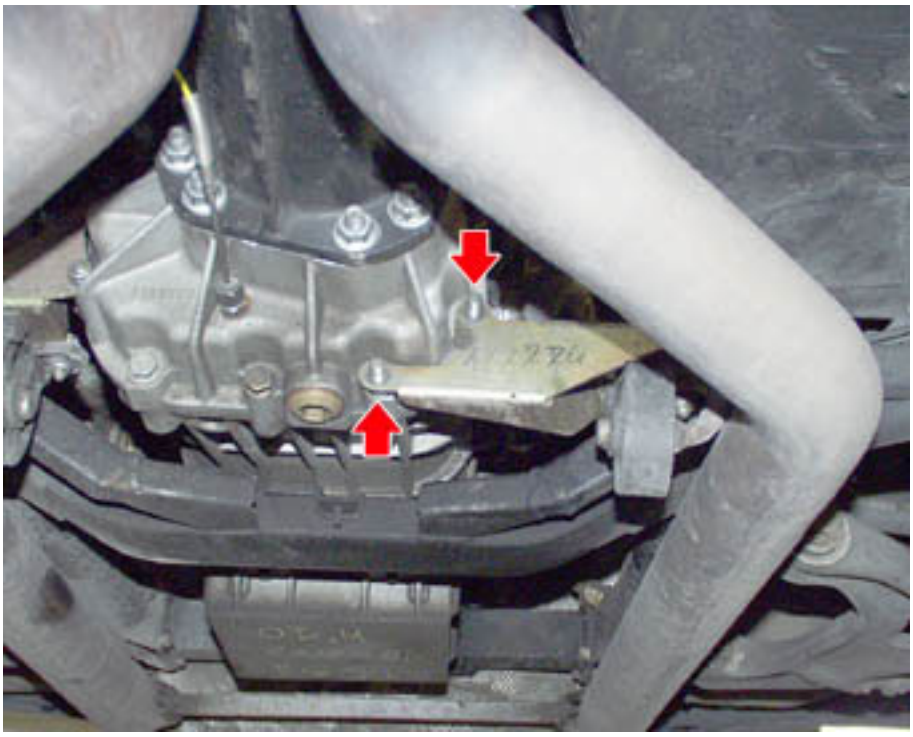
- Working in the underbody, loosen the fastening clamp between the exhaust extensions and the tailpipe.



- Loosen the connecting clamp between the exhaust extension and the central silencer.



- Unscrew the two vibration damper fastening nuts from the gearbox housing.



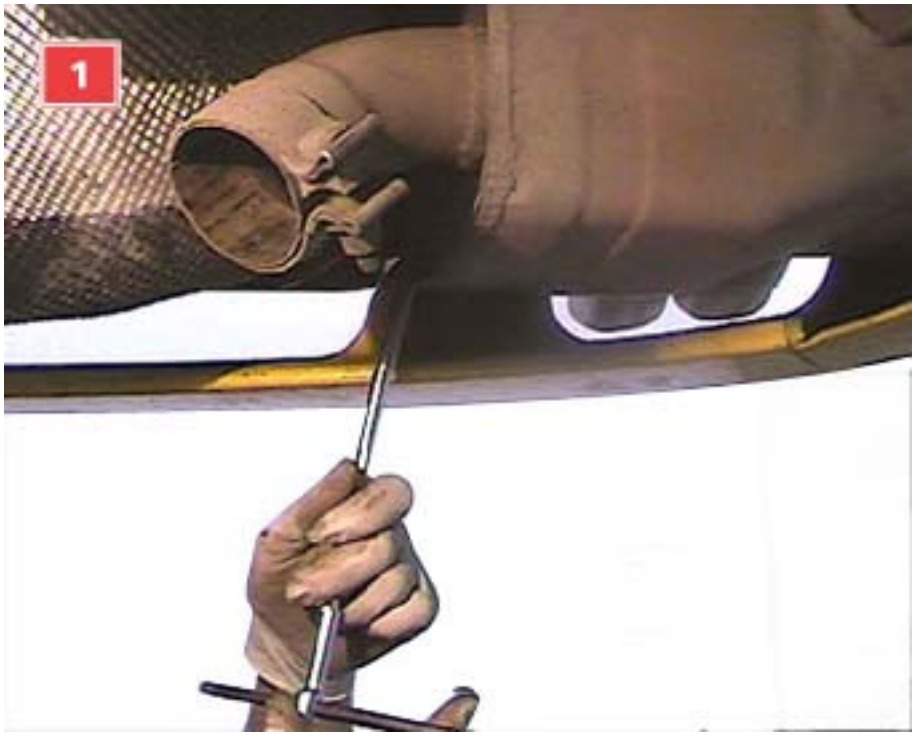
- Remove the cross member which fastens the exhaust pipe, undoing the two fastening screws on each extension.



- Remove the exhaust extensions from the tailpipe and from the connection with the central silencer.



- Working between the heat-shield and the tailpipe, undo the two screws fastening the vibration damper to the car body (**Figures 1 and 2**).






- Working in the wheel compartment, undo the two screws fastening the vibration damper to the car body (**Figures 1 and 2**).






## Re-attaching the tailpipe

**N.B.**
**Grease the tailpipe and the exhaust extension pipe to make them easier to fit.**

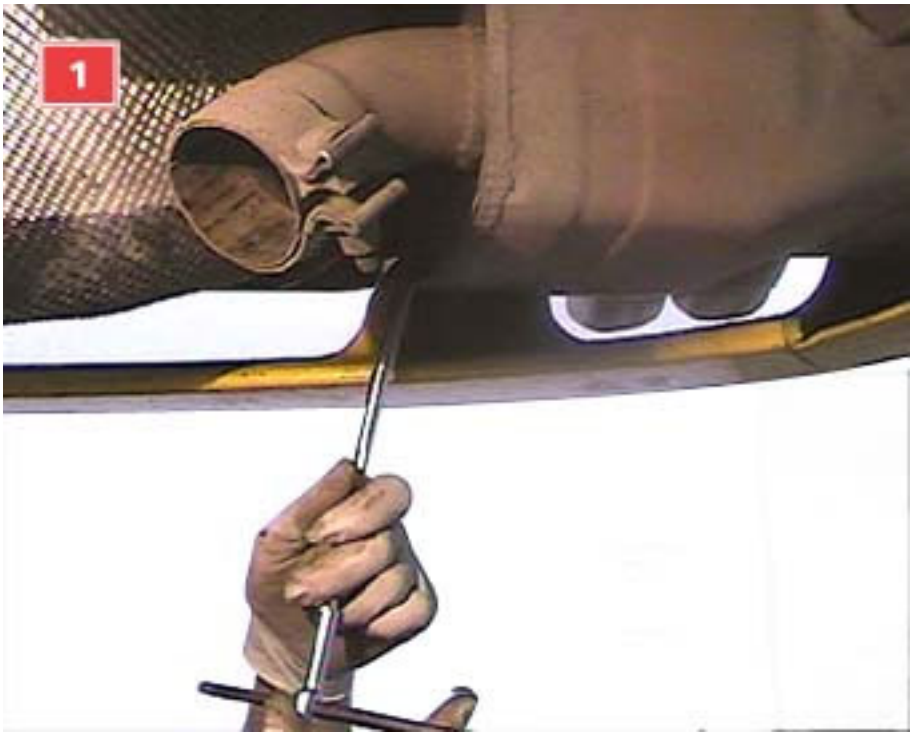


- Working in the wheel compartment, fix the vibration damper to the car body and tighten the two fastening screws (**Figures 1 and 2**).






- Secure the other vibration damper by tightening the two fastening screws to the car body (**Figures 1 and 2**).






- Connect the exhaust extension ahead of the central silencer and after the tailpipe.



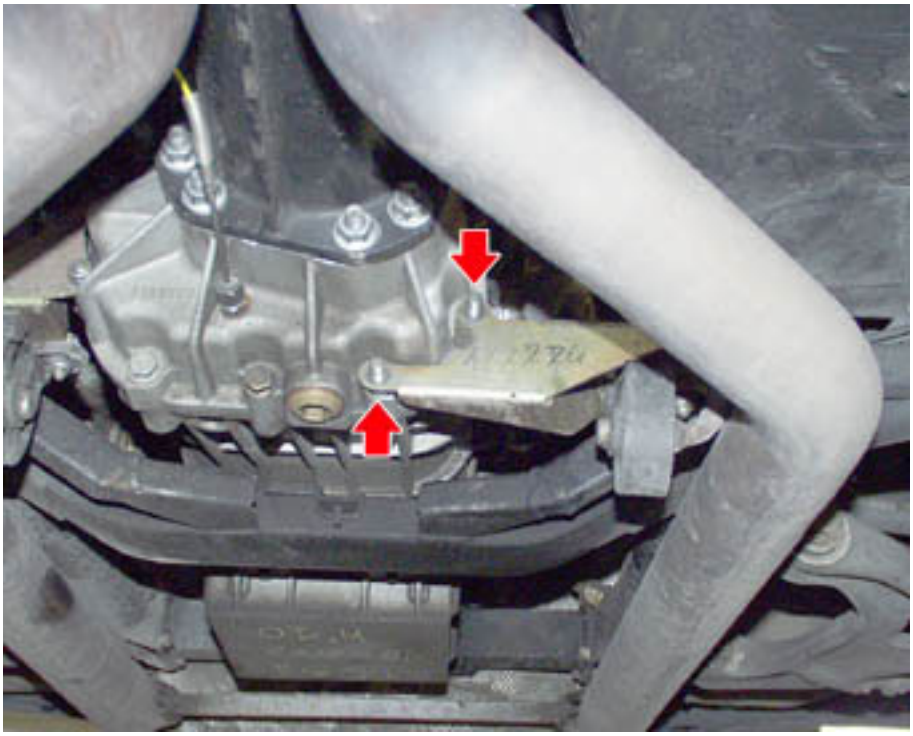
- Place a soft cloth over the exhaust tailpipes to avoid damaging the bumper while centring the tailpipe.



- Refit the cross-member between the exhaust pipes, tightening the two fastening screws on each of the extensions.



- Using the specific tool, centre the tailpipes with respect to the bumper's seatings.
- Working in the underbody, refit the vibration damper onto the gearbox housing and tighten the two fastening nuts.



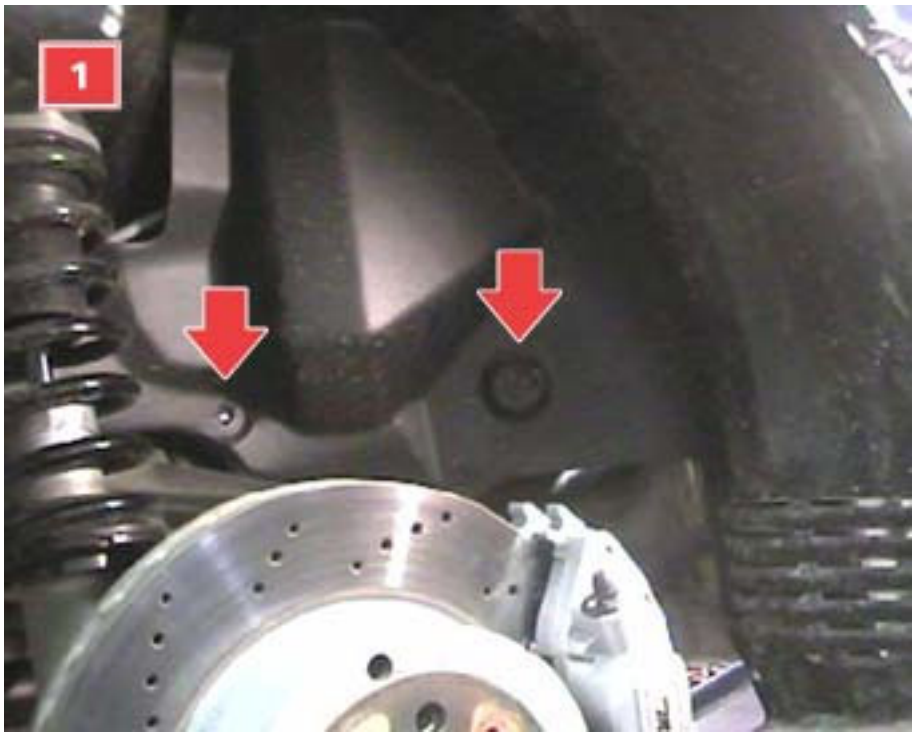
- Tighten the clamp which fastens the exhaust extension to the tailpipe.



- Tighten the clamp which fastens the exhaust extension to the central silencer.



- Refit the rear wheelhouse, tightening the five fastening screws (**Figures 1, 2, 3 and 4**).







3


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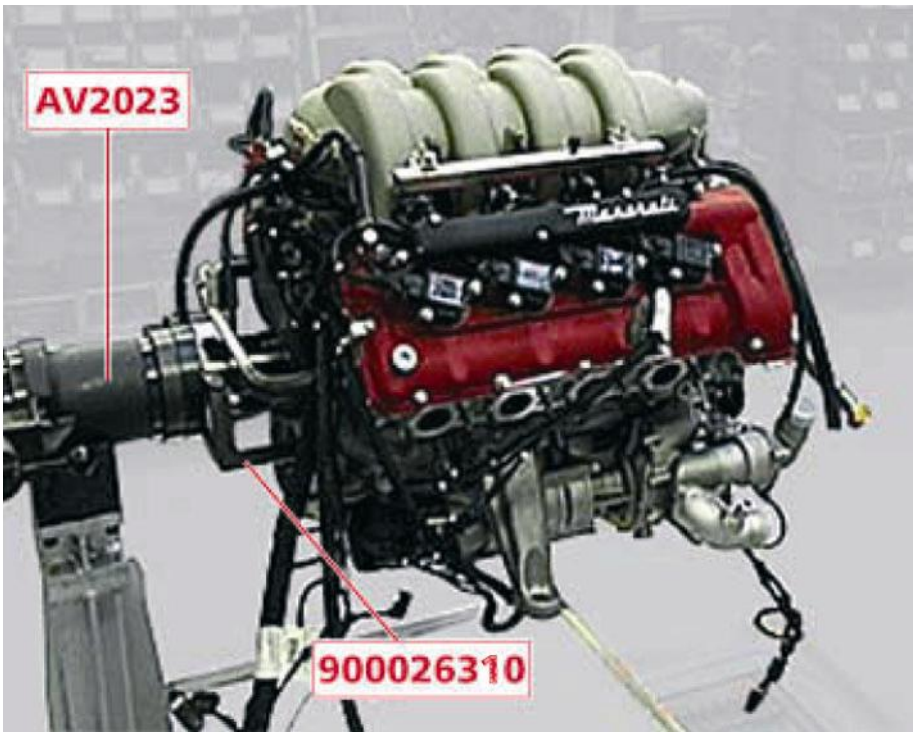
- Fix the cable of the headlight adjusting device to the wheel arch liner.

**N.B.**
**The headlight adjusting device is only present on the left-hand side of the car**



## ENGINE REMOVING

- Position the engine, without the clutch, onto the support stand **AV2023** , fixing it with the support tool **900026310**.




- Detach the injector connections.



- Remove the corrugated tubes from the wire guides.



- Take the vacuum intakes off the intake manifolds



- Detach the oil draining pipes from the heads and remove the connecting pipes.



- Disconnect the wiring from the motor driven throttle.



- Unfasten the bolts on the intake manifold.



- Remove the intake manifold by lifting it upwards.



- Remove the gaskets on the intake ducts.



- Fit the tools **AV3332**, securing them with two nuts to avoid allowing foreign bodies to enter the cylinders.



- Remove the wiring covers.




- Detach the ignition coil connectors, check that all wires are identified in order to position them correctly during the reassembly stage.



- After having detached the solenoid valve connection in the timing variator, move the coil wiring and the injector wiring.



- Remove the retaining clamps, detach the connection on the water temperature sensors and move the wiring on the clutch side.



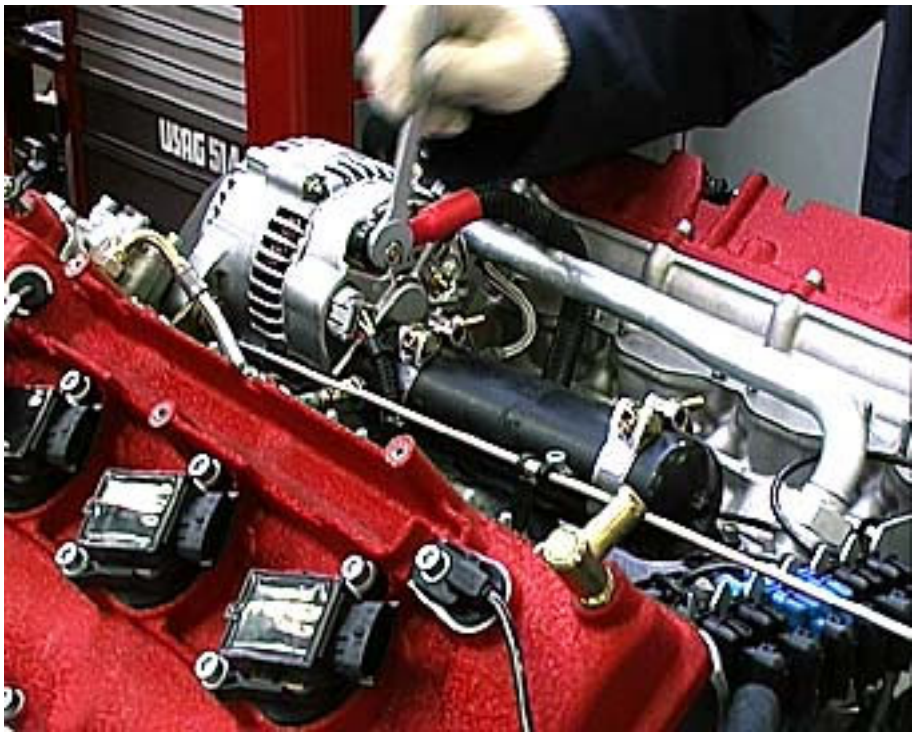
- Remove the battery-generator wire.



- Disconnect the wiring on the air conditioning system compressor.



- Detach the connections on the alternator and remove the wiring.



- Detach the connections on the detonation sensors, the timing sensors and the revolution sensor on the supporting bracket.

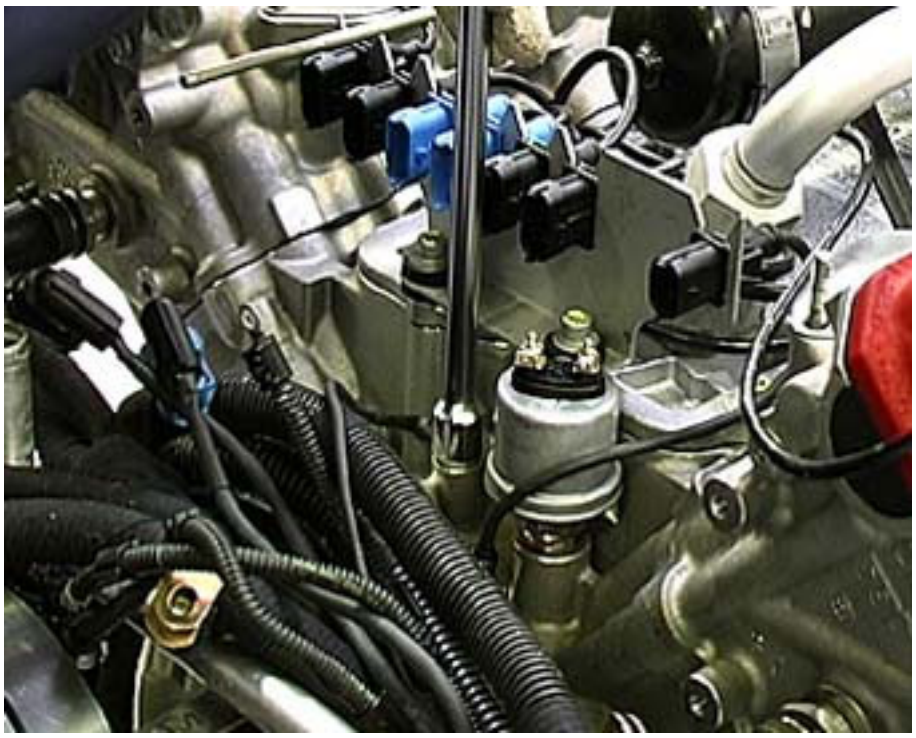


**CAUTION**
**Check that the sensors on each wire correspond, consulting the electric system manual if necessary.**

- Unscrew the injection wiring's seven retaining clamps.



- Remove the engine wiring's earth connection.



- Take away the engine wiring.



- Remove the engine mounting bracket, using the tool **900027160**.



- Remove the starter motor.



- Loosen the poliV belt by turning the tensioner and, holding the tensioner back, slide the belt off the pulleys and remove it.



- Undo the screws fastening the air conditioning system compressor and then remove it.



- Remove the **6 mm** screw from the hydraulic steering pump using the holes on the pulley.



- Unfasten the two **8 mm** screws and remove the pump.



- Open the clamps on the heads' water outputs and remove the entire connecting pipe.



- Take the bearing out of the clutch shaft support using the extracting tool **95972714**.




- Fit the tool **900026560** for locking the crankshaft.



- Remove the torsion damper Once the fastening screw has been removed, the damper can be taken out by hand.



- Remove the tool **900026560** for locking the crankshaft.



- Remove the belt tensioner, undoing the 8mm fastening screw.



- Remove the fixing bracket for the pipe which runs from the exchanger to the oil tank.



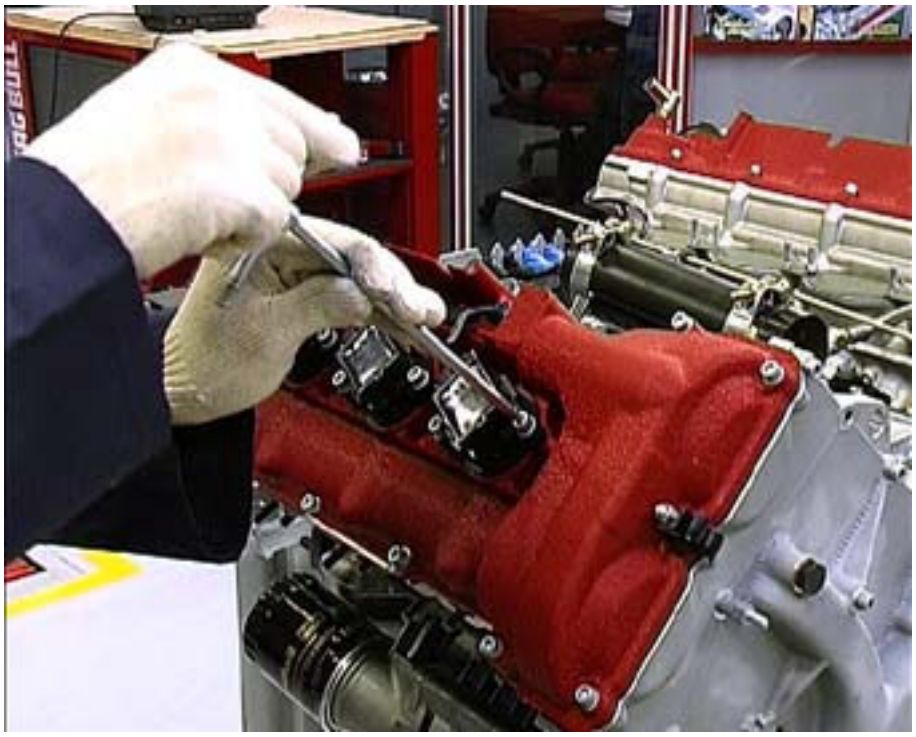
- Remove the pipe running from the exchanger to the oil tank, unscrewing the **36 mm** nut.



- Undo the two screws fastening  the alternator and remove it by moving it upwards.



- Remove the ignition coils by unfastening the two retaining screws.



- Extract the retaining seeger ring from the timing variator's wire guide.



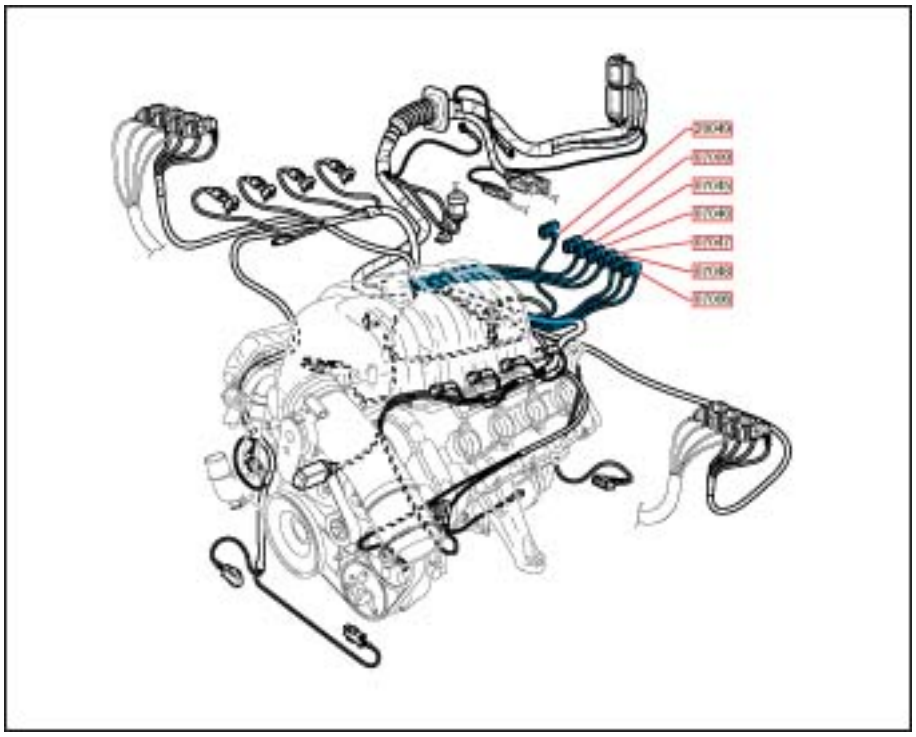
- Place the connectors for the timing (rh and lh), revolution (rh) and detonation (four) sensors into their housings on the support bracket.

**CAUTION**
**Check that the sensors on each wire correspond, consulting the electric system manual if necessary.**

**N.B.**
**If necessary, remove the timing sensors (Figure 2).**





- To remove the tappet covers, the stud bolt supporting the wiring and the fourteen perimetral socket head screws must be unfastened.



- Lift the cover, taking care to slide out the solenoid valve wire on the timing variator.



- Remove the two fastening screws from the left-hand bank belt tensioner.



- Remove the screws from the cover.



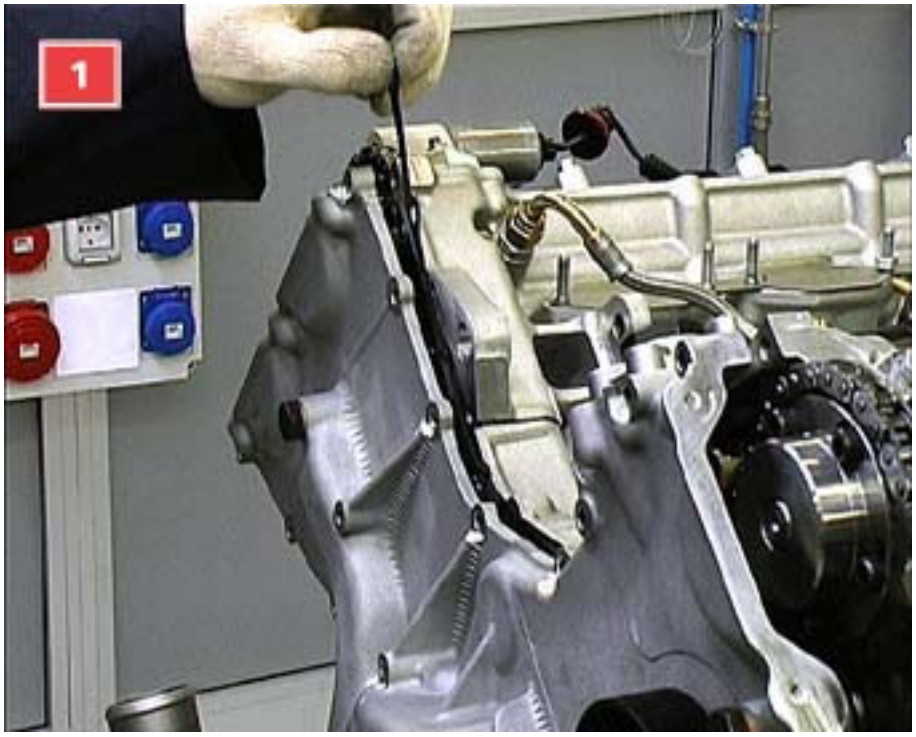
- Using a screwdriver, separate the front cover from the engine.

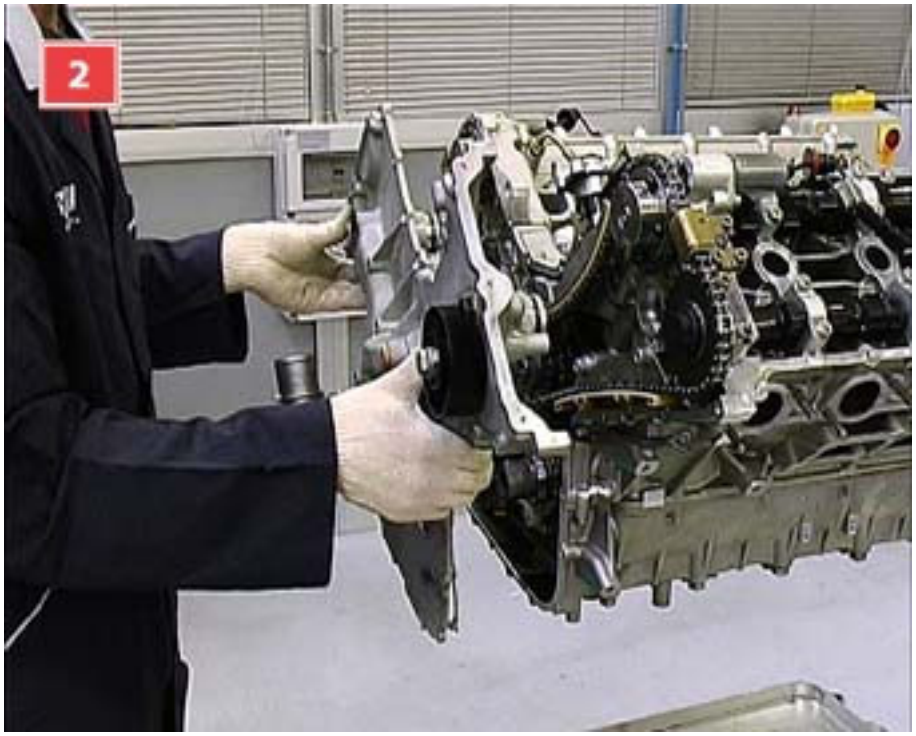
**N.B.**
**Keep the gasket located between the upper edge of the housing and the left-hand belt tensioner.**



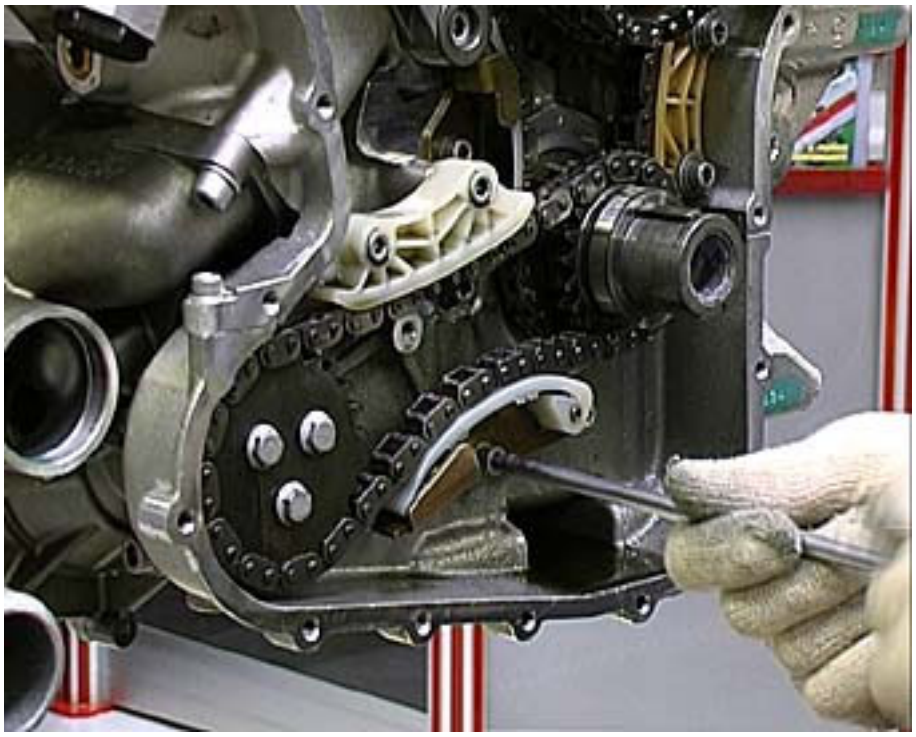
- Keep the upper gasket and remove the cover (**Figure 1**).

**N.B.**
**The lower gasket remains attached to the cover: remember to keep it for future assembly (Figure 2).**

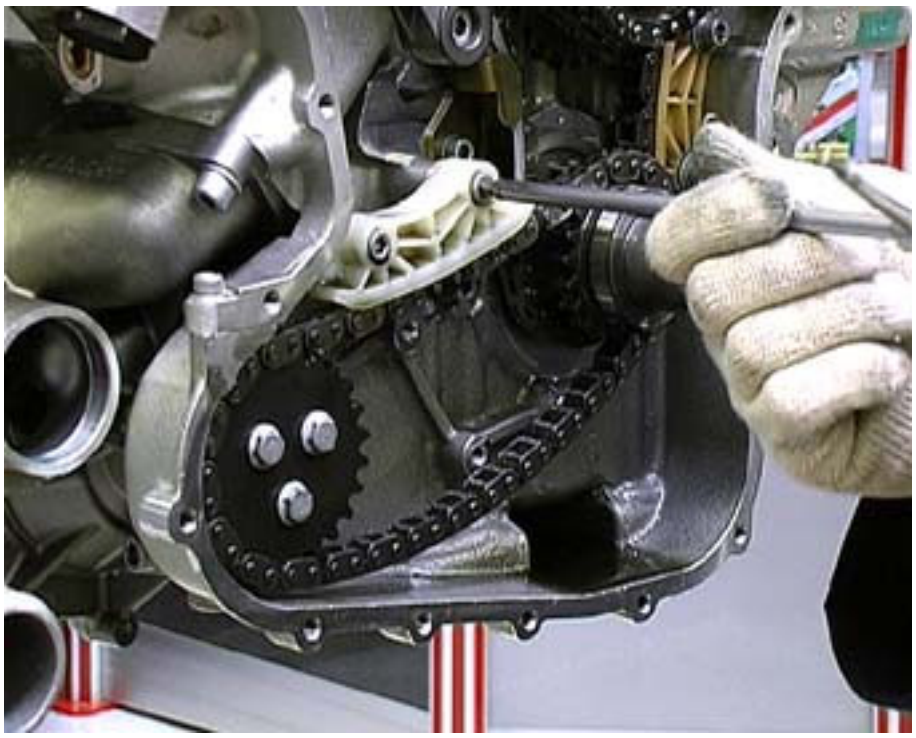


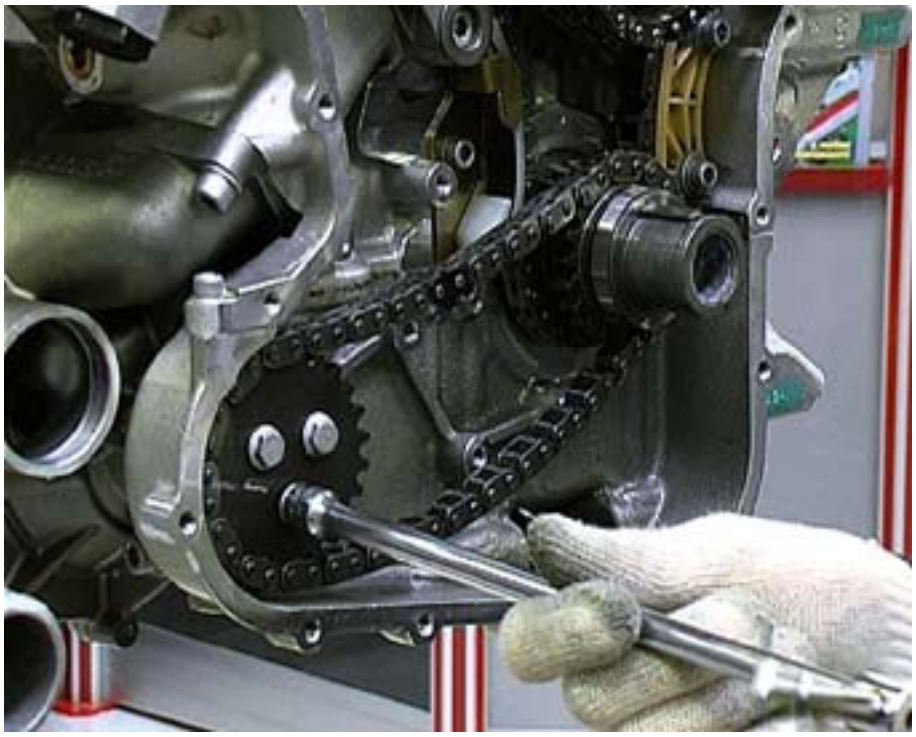
- Remove the mechanical tensioner from the oil-water pump chain.



- Remove the fixed shoe.



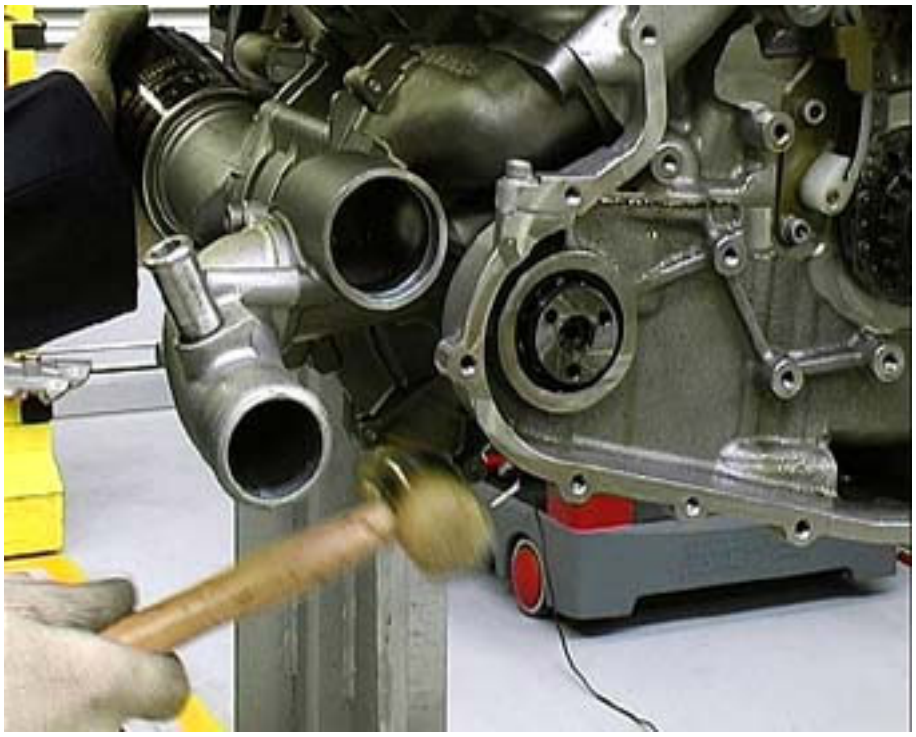
- Undo the screws on the pump's toothed control wheel and remove it along with the chain.



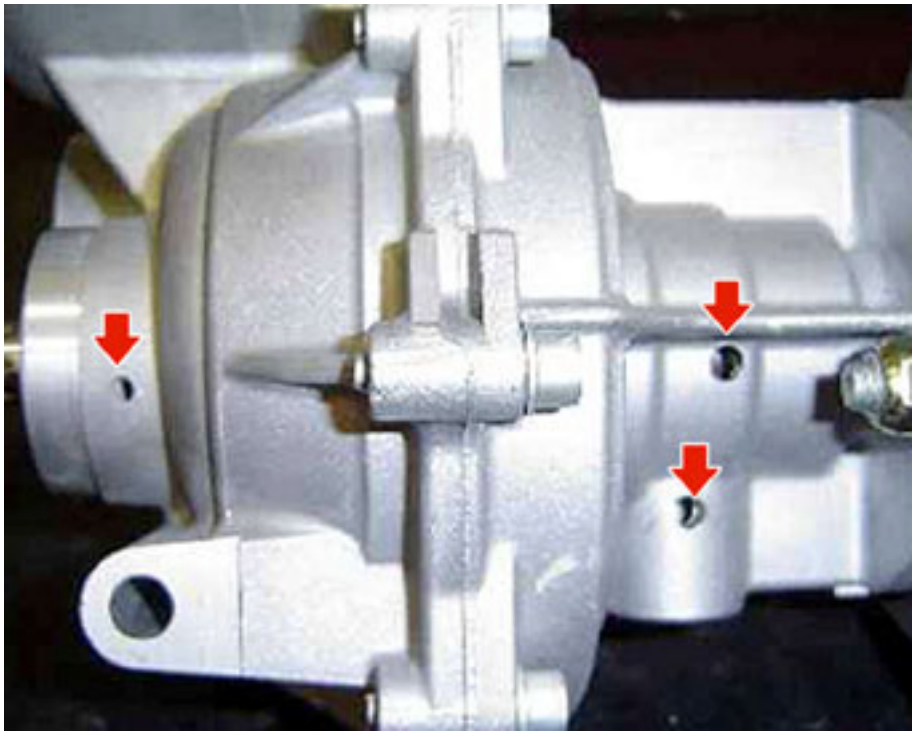
- Undo the screws which fix the oil-water pump to the crankcase.



- Move the oil-water pump backwards by hitting it lightly with a rubber hammer, and then remove it.



- After removing the pump, check through the three inspection holes that there are no leakages or spills.

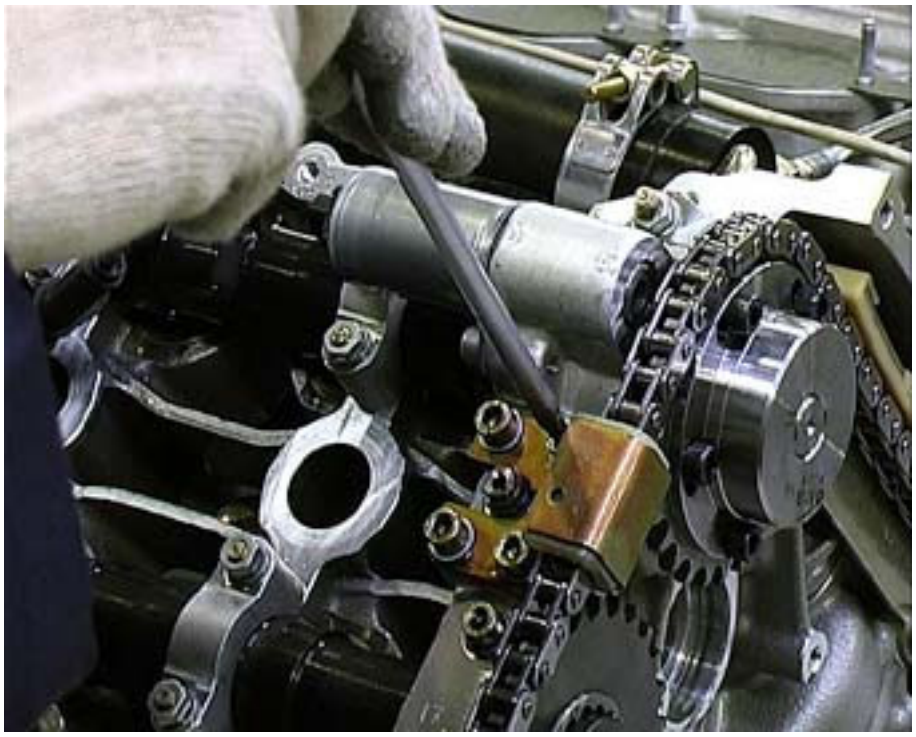


- Remove the tensioners from the timing chains (**Figure 1 and 2**).






- Remove the upper fixed shoes.



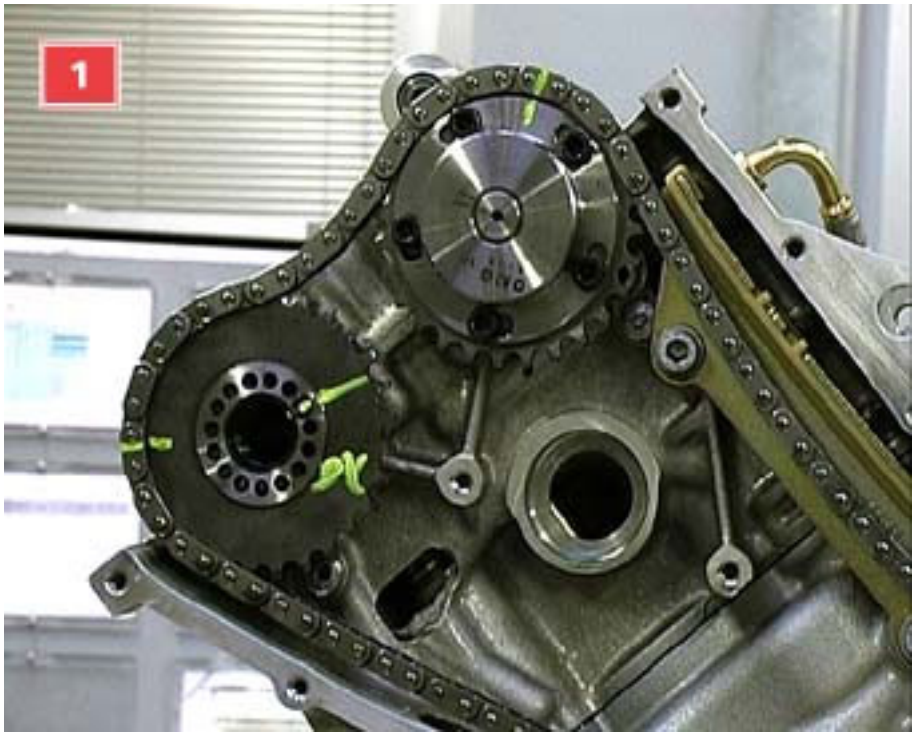
- Remove the timing system's movable shoes.

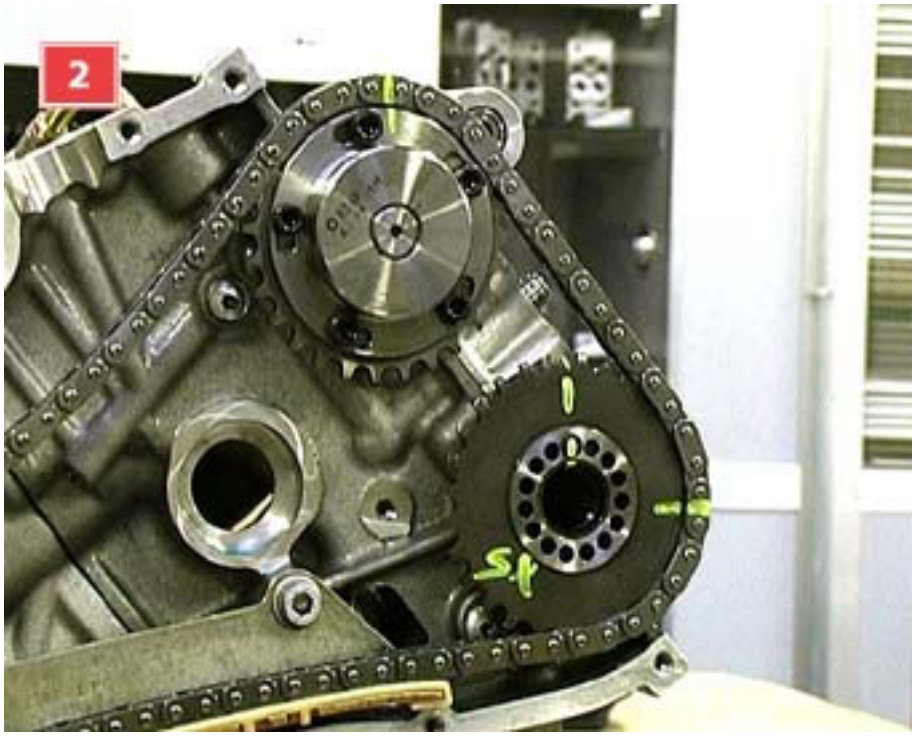


- Remove the exhaust camshaft screw, countering the rotation with a wrench inserted into the special hexagon machined on the shaft.



**N.B.**
**If it is necessary to keep the same timing, mark the toothed wheels and the chains(Figure 1 and 2) at the correct point.**



- Proceed with removing the chains, sliding the toothed wheels off the exhaust camshafts (**Figure 1**).

**N.B.**
**Keep the centring dowel (Figure 2).**






- Remove the timing chain's fixed shoes.



- Remove the tranmission axle's mechanical tensioner and the fixed shoe.



- Take the seeger ring and the relative shim off the transmission axle.



- Slide out the toothed wheels, paying attention to the roller cages on the transmission axle.



- Remove the transmission axle, paying attention to the grommet.



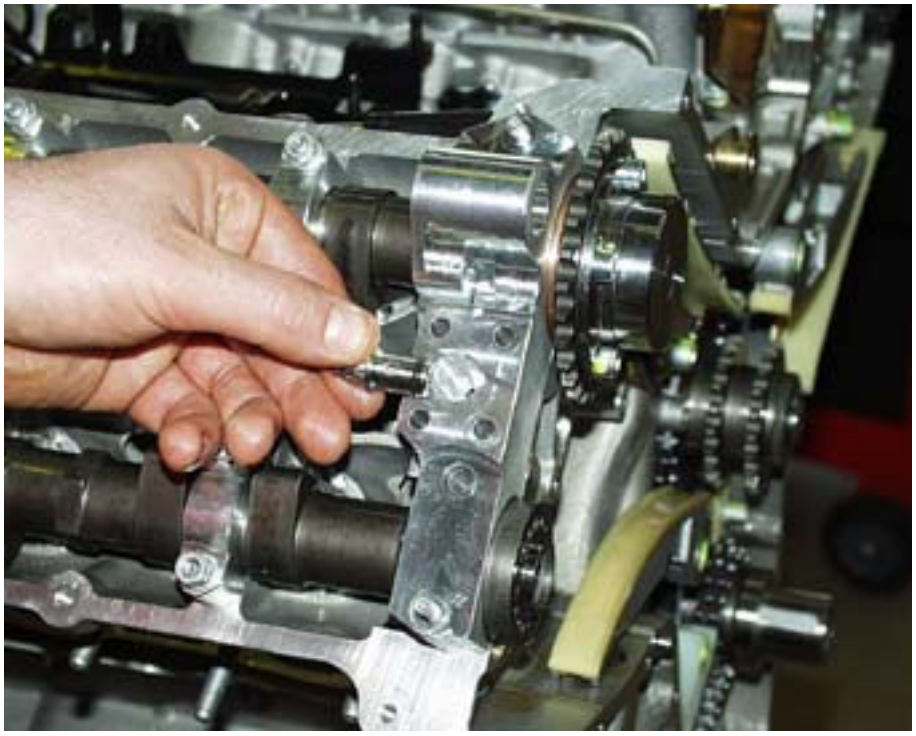
- Remove the union pipes leading from the oil accumulator to the heads.



- Unfasten the retaining nuts on the camshaft caps.



- Remove the oil filter.



- Remove the screws which fasten the timing variator oil pump onto the left-hand bank intake camshaft.
- Remove the caps checking that the reference number is stamped on them.



- Remove the exhaust camshaft and then the intake camshaft.

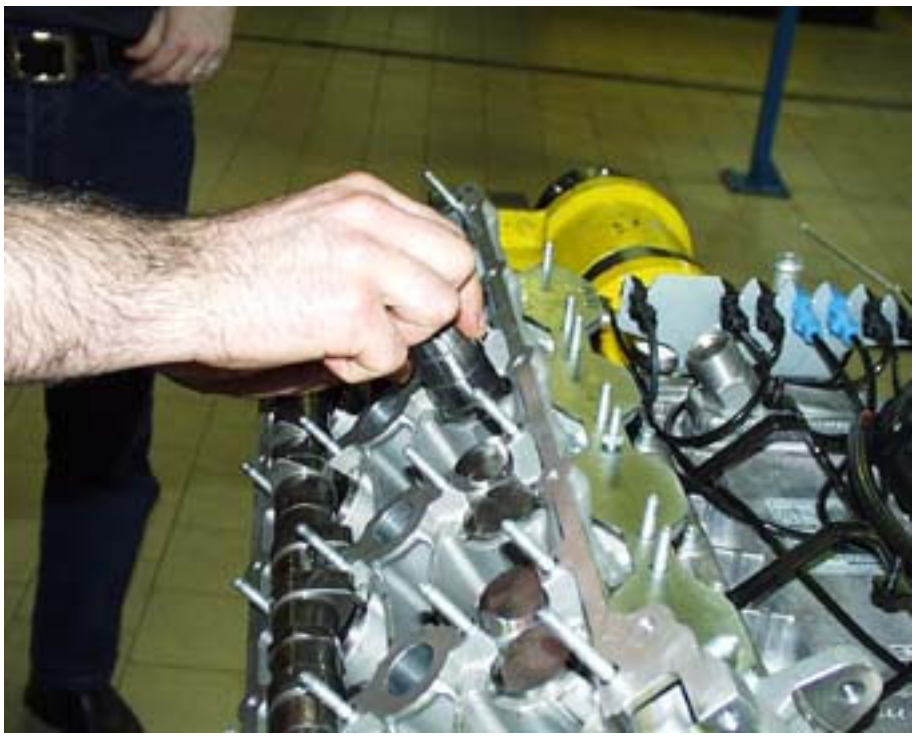
**N.B.**
**In this last stage, be sure to recover the timing variator tabs.**



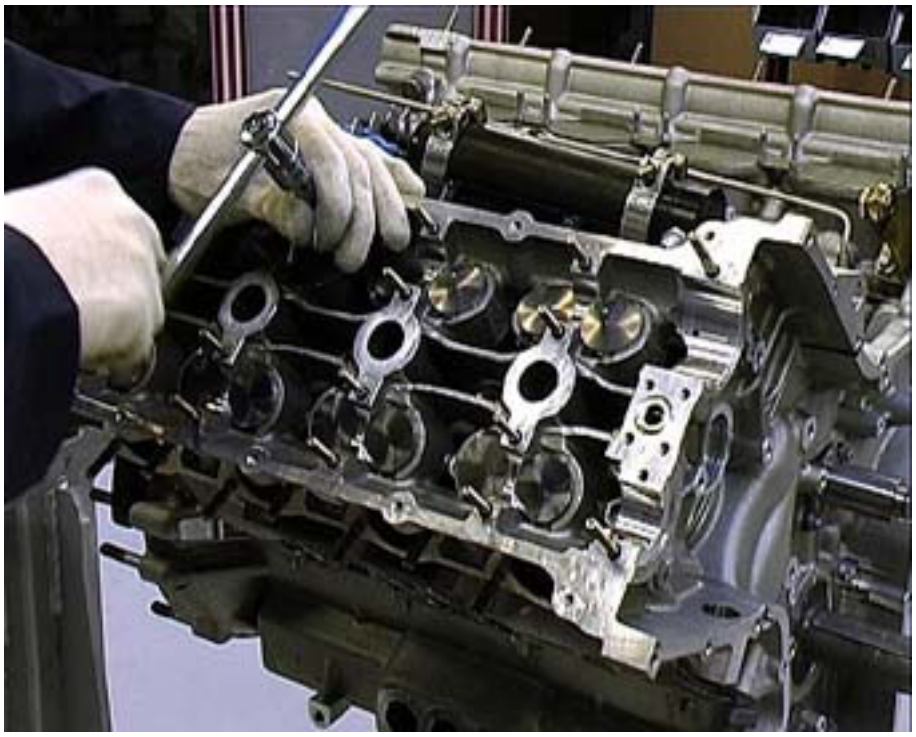
- If necessary, remove the continuous timing variator using tool **900027020**, provided for this purpose.




- Using a magnet, take the valve buckets out of their seats, checking their reference numbers.



- Unscrew the ten head fastening nuts.



- Remove the heads using a rubber hammer if necessary.



- Remove the head gaskets.



- Unscrew the RPM sensor.



- Proceed with the removal of the sub-crankcase by unfastening the perimetral screws.



- Unfasten the nuts on the sub-crankcase stud bolts.



- Move the sub-crankcase away by hitting it lightly with a hammer and then remove it completely.



- Remove the crankshaft oil seal.



- Fit the tool **AM105786** onto the crankshaft and rotate the shaft in order to gain access the connecting rod bolts easily.

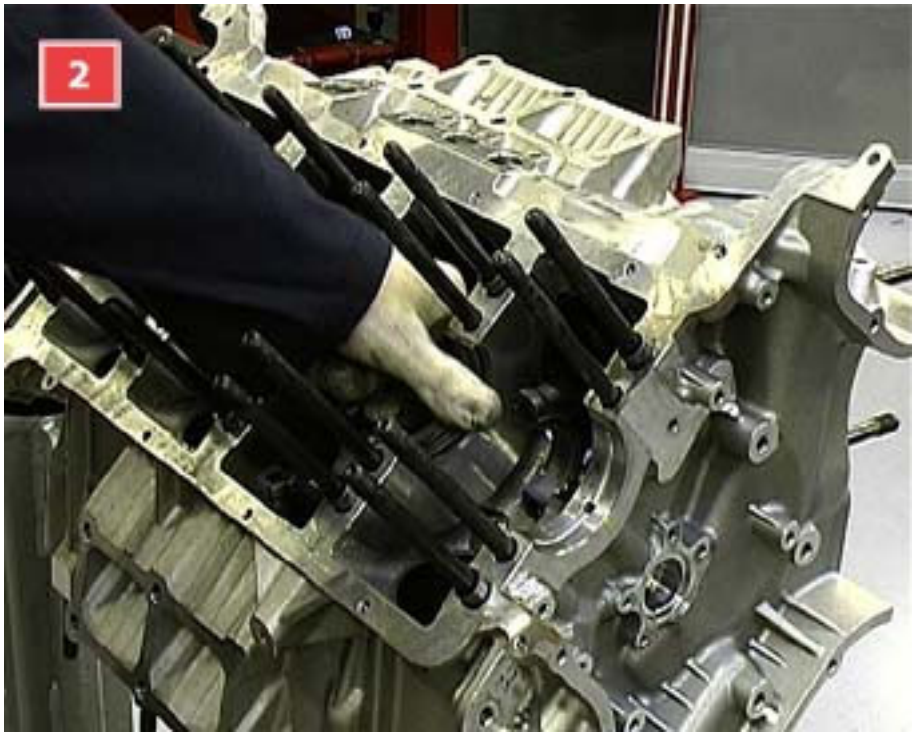



- Loosen the connecting rod caps and move them away by hitting them lightly with a hammer. Remove the bolts by hand and take off the caps.



- Remove the crankshaft and the bearings (**Figure 1**) taking care not to drop the crankshaft's central support shimmings (**Figure 2**).



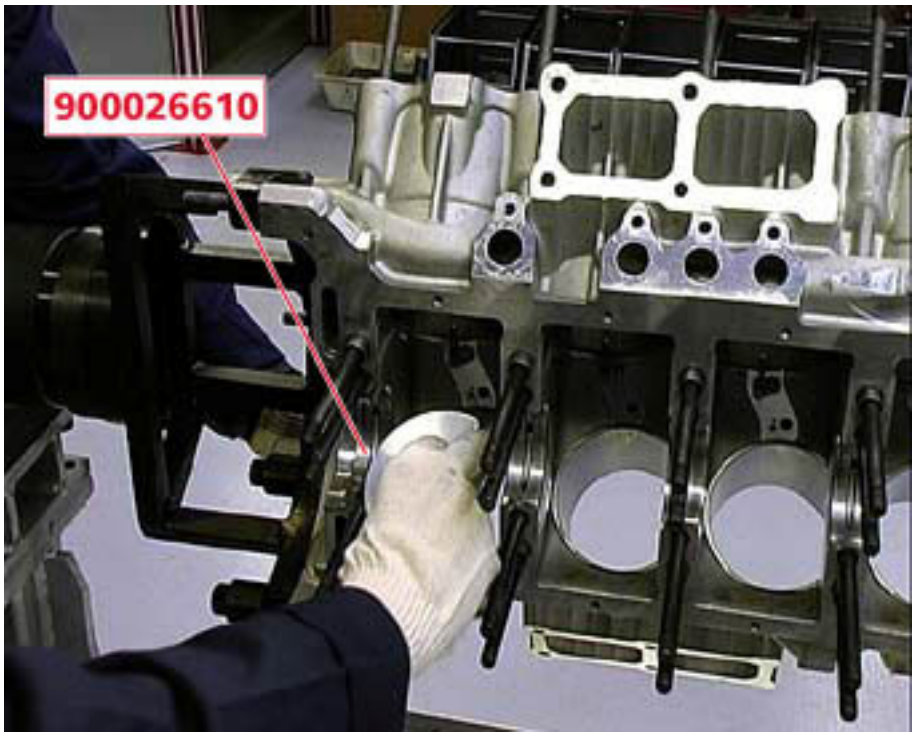
- Remove the pistons.



- Remove the oil nozzles underneath the pistons.



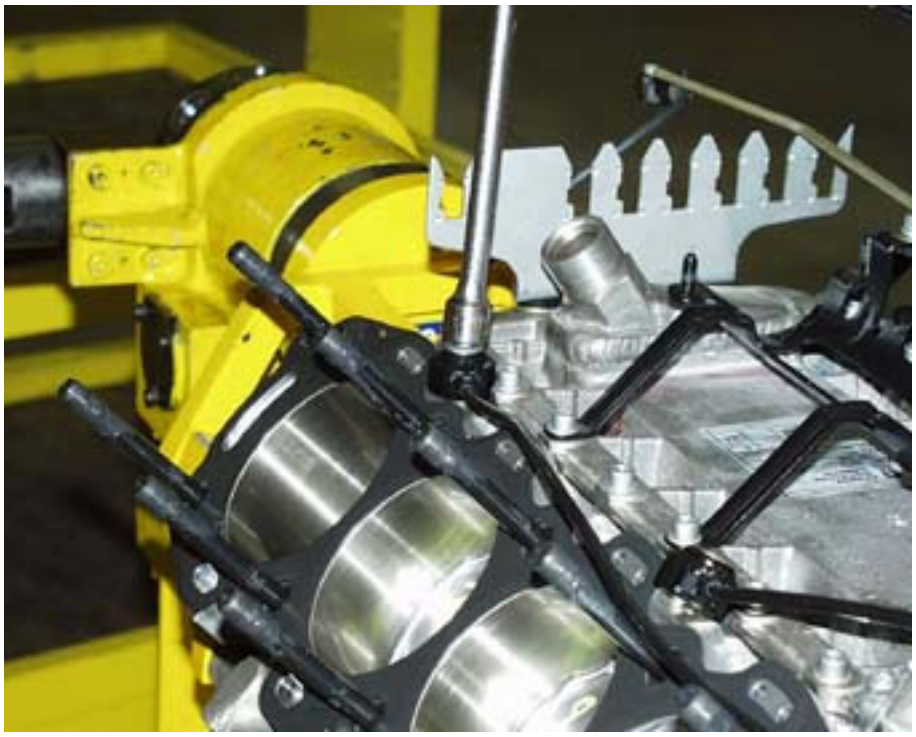
- Remove the cylinder liners using the tool **900026610**.




- Remove the oil pressure sensor, the revolution sensor.



- Unscrew the four anti-detonation sensors.



- Remove the oil accumulator for the variators.



- Remove the heat exchanger.



## FITTING AND TIMING THE ENGINE

In order to install the cylinder liners, the crankcase must be heated up in an oven. The crankcase must be completely bare.
The chokes for the pressurised oil delivered to the heads
have different diameters and are fitted on both cylinder banks. Each choke is fitted on a check valve. Upon each
overhaul, it is essential to check that this valve is clean and that it works properly. The crankcase is removed using an extracting tool, while for reassembly it is interference fitted.

Using tool **AV3605** (not illustrated) loosely fit the choking dowels.

**N.B.**
**During the reassembly stage, check that the oil choking dowels on the heads are installed correctly: the dowel with a 5.5mm internal diameter is found on the left-hand bank (Fig. 1), while that with a 3mm internal diameter is found on the right-hand bank (Fig. 2).**




2

- After checking the dimensions of the cylinder liners and the respective seats in the upper crankcase, check that the cylinder liner resting surfaces are perfectly clean, then measure the liner protrusion with respect to the crankcase as follows:
- Fit the cylinder liner to be installed turned upside down on the crankcase.
- Using the specific tool equipped with dial gauge with DTI plunger **CS0102916**measure the protrusion of the cylinder liner from the crankcase, checking that it falls within the **0.001÷0.05 mm** value range.
- If necessary, try the various liners in the various seats so as to obtain the correct coupling.
- It is important that the protrusion is uniform for all the cylinder liners on each bank.
- After coupling the various cylinder liners to the respective seats, number them in order to prevent a coupling error during assembly.



- Heat the bare crankcase in an oven for about 60 minutes to a temperature of 40-50°C, and cool down the cylinder liners to a temperature of -15 to -20°C putting them in a freezer or liquid nitrogen.
- When the specified temperatures for the crankcase and the cylinder liners have been reached, fix the crankcase on the support tool and proceed with installation as follows.
- Position the O-rings on the cylinder liners and lubricate them with engine oil.



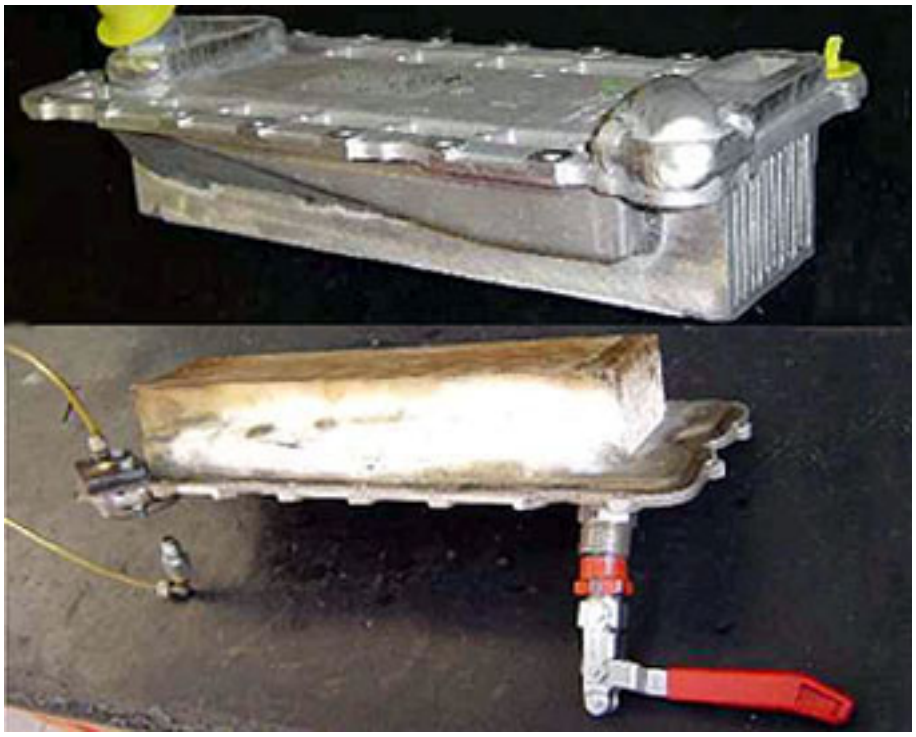
- Insert the cylinder liners in the crankcase, carefully respecting the coupling order established when checking the protrusion, and take care that the two adjoining faces of the upper edge, between the various cylinder liners, do not interfere with each other.
- To fully bed in the cylinder liner, evenly tap on its perimeter with a rubber hammer.
- The cylinder liners must be fitted within two minutes from taking the crankcase out of the oven.
- Check once again that the total cylinder liner protrusion for each cylinder bank is between **0.01 and 0.05** mm.



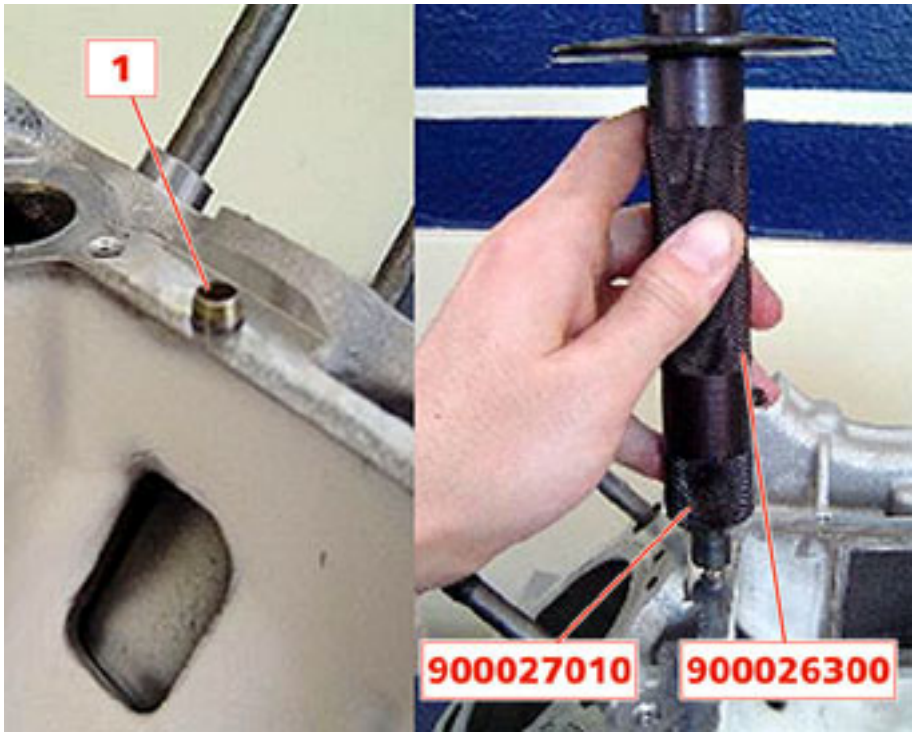
- If the cylinder liners are not replaced, but the same ones are reinstalled in their seats, always check the protrusion of the coupling edge with respect to the crankcase, in order to make sure that there are no faults.
- Make sure that there is no interference between the adjoining faces of the upper edge.



- When installing the water/oil heat exchanger, it is advisable to visually inspect the conditions of the radiator core. Thoroughly clean the part to assure maximum heat dissipation in operating conditions.
- To check that there is no leakage or spillage, before installing the heat exchanger, perform a pressure test by immersing it in a container of water, plugging one of the two inlets and blasting in air from the other inlet.



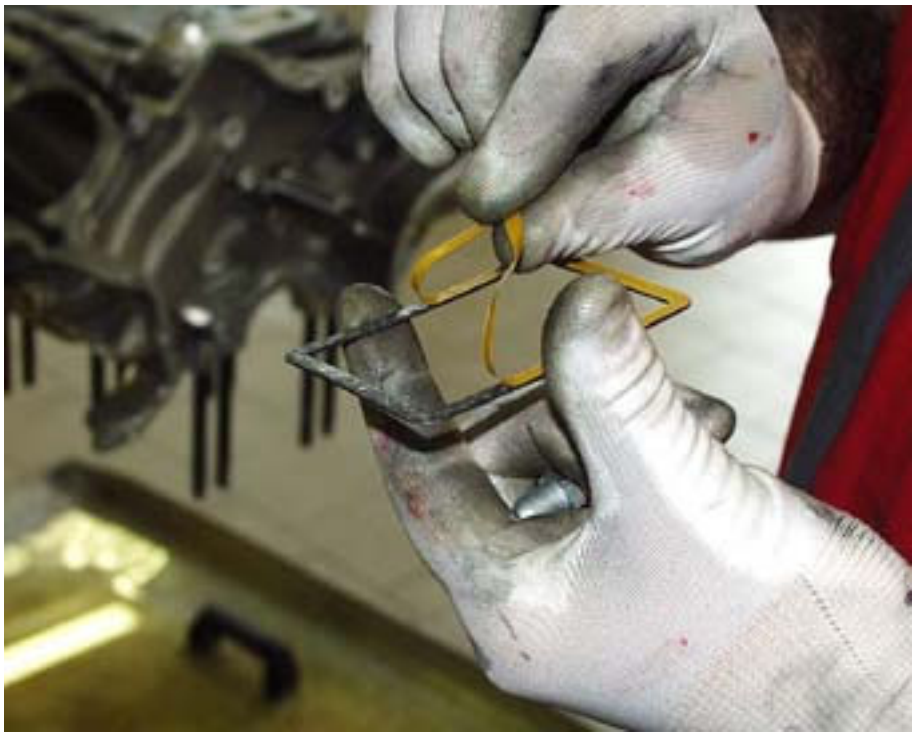
- If the centring dowels **(1)** for the Ø 6 heat exchanger on the crankcase are damaged or have been removed, you must use tool **900026300** together with tool **900027010**.




- Position the heat exchanger.



- Always replace the adhesive gasket of the heat exchanger.



- Properly fit the gasket on the heat exchanger.



- Install the sealing gasket **(1)** between the heat exchanger and the crankcase and position the heat exchanger.



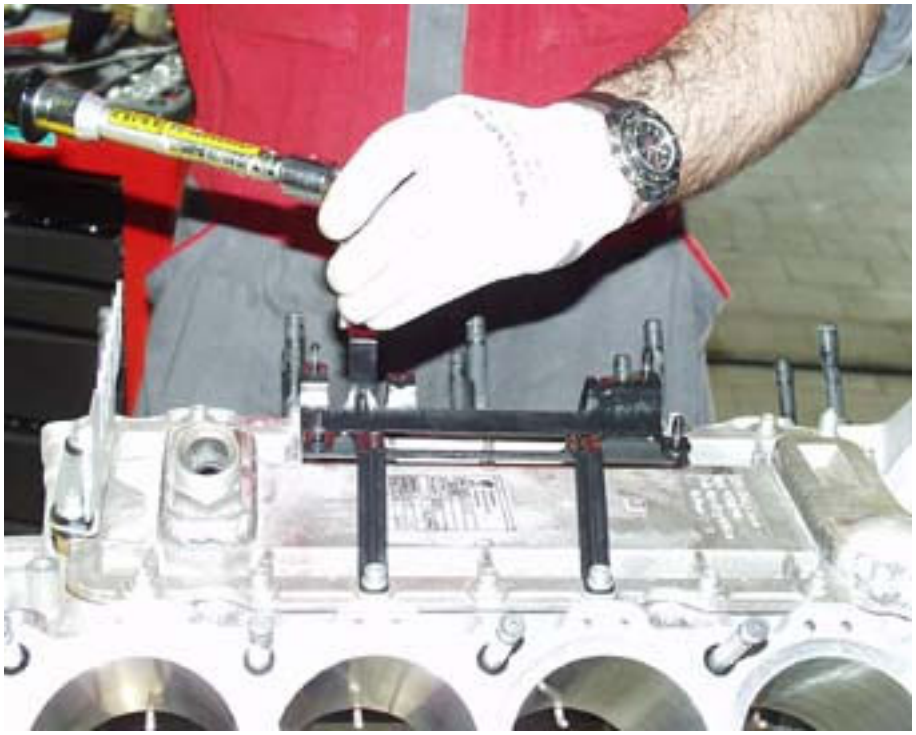

- Fit the accumulator mount.



- Fit the air bleeding union for the water cooling circuit and tighten it to a torque of **15Nm**.



- Fit the accumulator mount and tighten it with the exchanger to a torque of **10 Nm**.



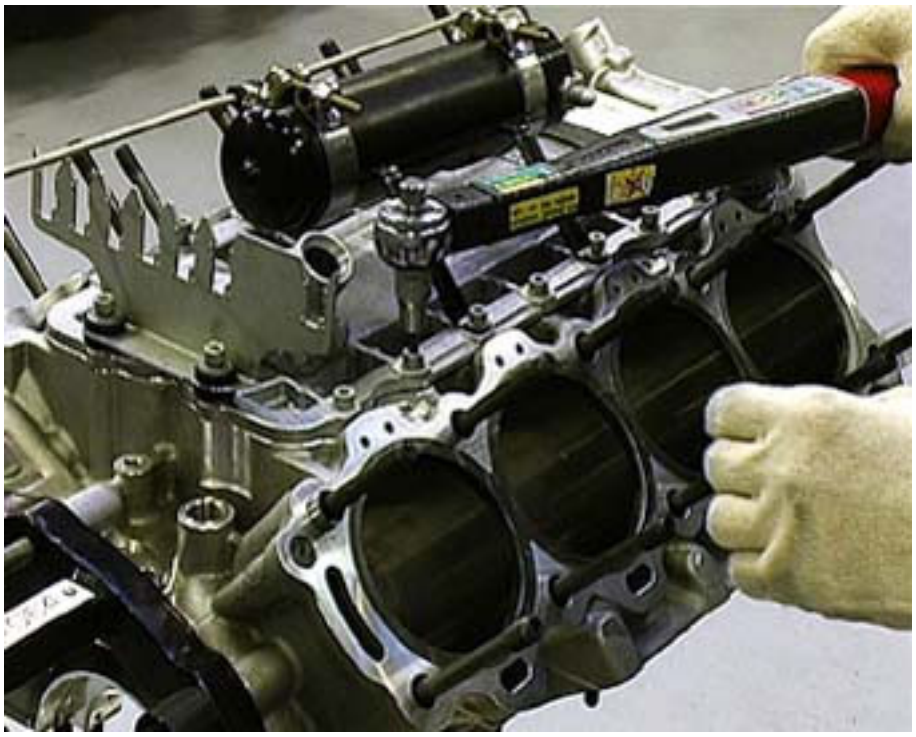
- Fit the four anti-detonation sensors and tighten them to a torque of **20 Nm**.



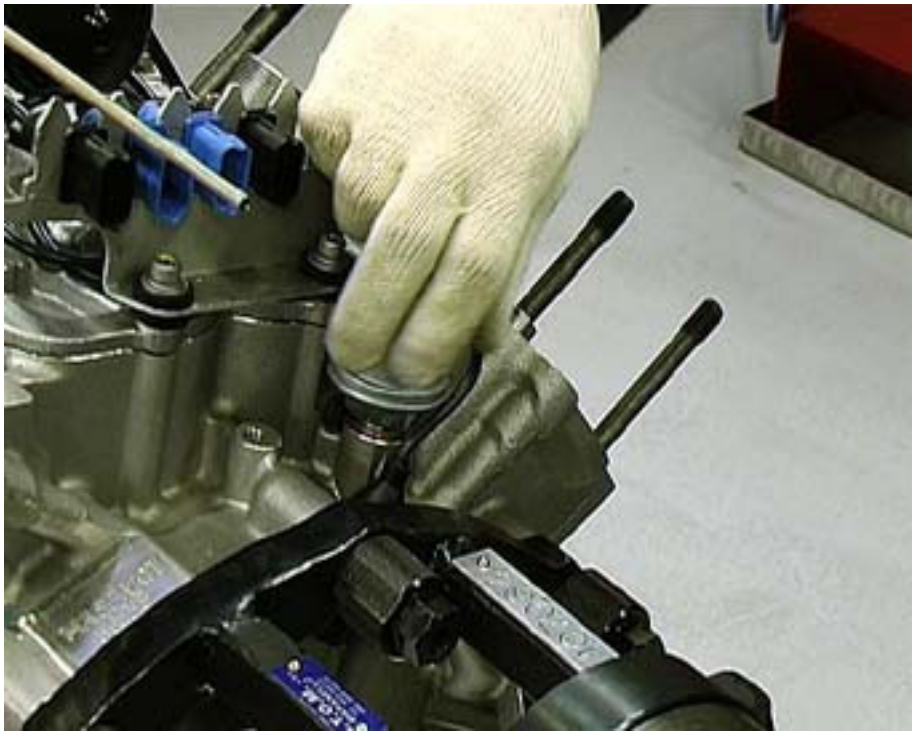
- Fit the rpm sensor and tighten it to a torque of **8 Nm**.



- Fit the oil accumulator for the variators.



- Fit the oil pressure sensor taking care not to damage the rpm sensor cable and tighten it to a torque of **40 Nm**.



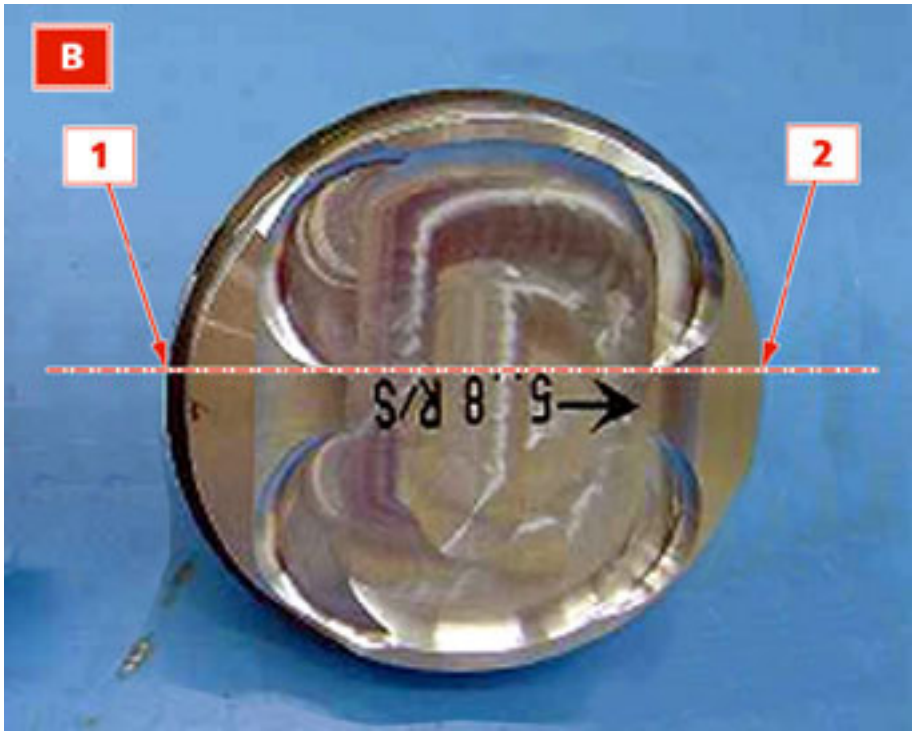
- After having applied a thin layer of Loctite 242 on the oil nozzles, install and tighten them to a torque of **3 Nm**.



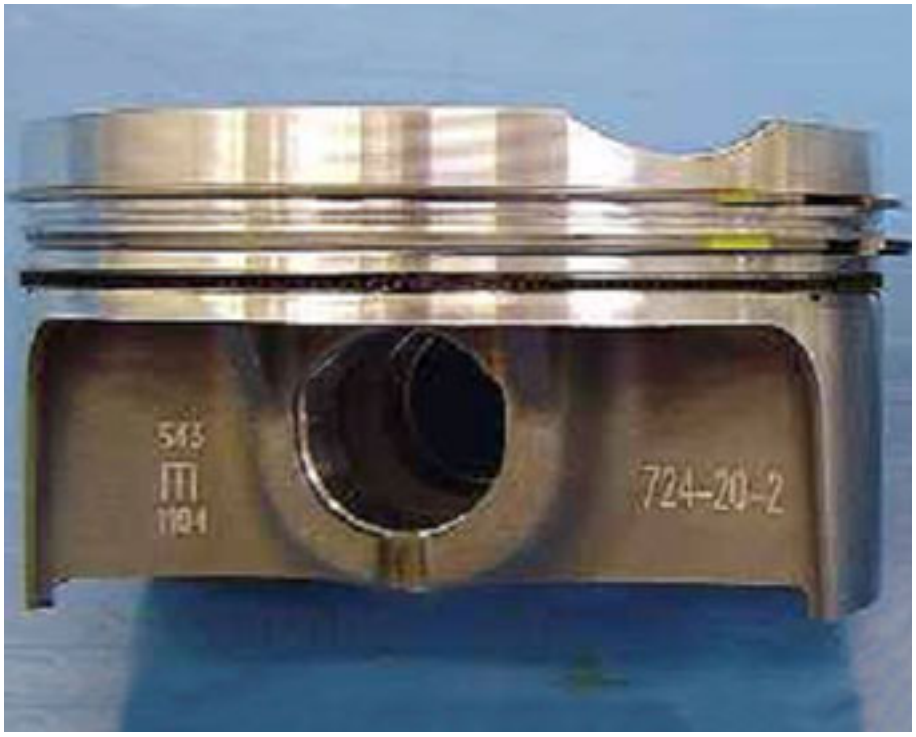
- Position the piston sealing segments in the direction shown in Figure **(A)** with the openings of the first **(1)** and the second **(2)** sealing segment at **180°** between them, as shown in Figure **(B).**



- **(1)** = Upper sealing segment opening
- **(2)** = Central sealing segment opening




There is no specific fitting direction for the oil scraper ring, nonetheless, take care at the joint of the internal clip: do not position it near the opening of the upper and lower rings.



- Mount the connecting rod on the piston, taking care that the mark on the lower part of the connecting rod is positioned on the piston exhaust side.

**IMPORTANT**
**After every removal, replace the pin stop rings. The connecting rod caps match the respective connecting rods. An identification number is printed on both the connecting rod and the connecting rod cap.**



- Lubricate the piston skirt and the cylinder liner with engine oil.



- Fit the half-bearings into their seats on the connecting rod and the cap.



| UNIT OF MEASURE mm | | CRANKPIN<br>CONNECTING ROD SEAT | CRANKPIN<br>CONNECTING ROD SEAT |
|---|---|---|---|
| SEAT YIELD= 0.008 | | 47.129 – 47.135<br>CLASS X | 47.136 – 47.142<br>CLASS Y |
| CRANKSHAFT<br>CRANKPIN | 43.630 – 43.637<br>CLASS X | YELLOW 1.727 – 1.732<br>YELLOW 1.727 – 1.732 | GREEN 1.732 – 1.737<br>GREEN 1.732 – 1.737 |
| CRANKSHAFT<br>CRANKPIN | 43.621 – 43.629<br>CLASS X | GREEN 1.732 – 1.737<br>GREEN 1.732 – 1.737 | BROWN 1.737 – 1.742<br>BROWN 1.737 – 1.742 |
| THE CLEARANCES ARE CALCULATED AT A REFERENCE TEMPERATURE OF 20°C | | | |

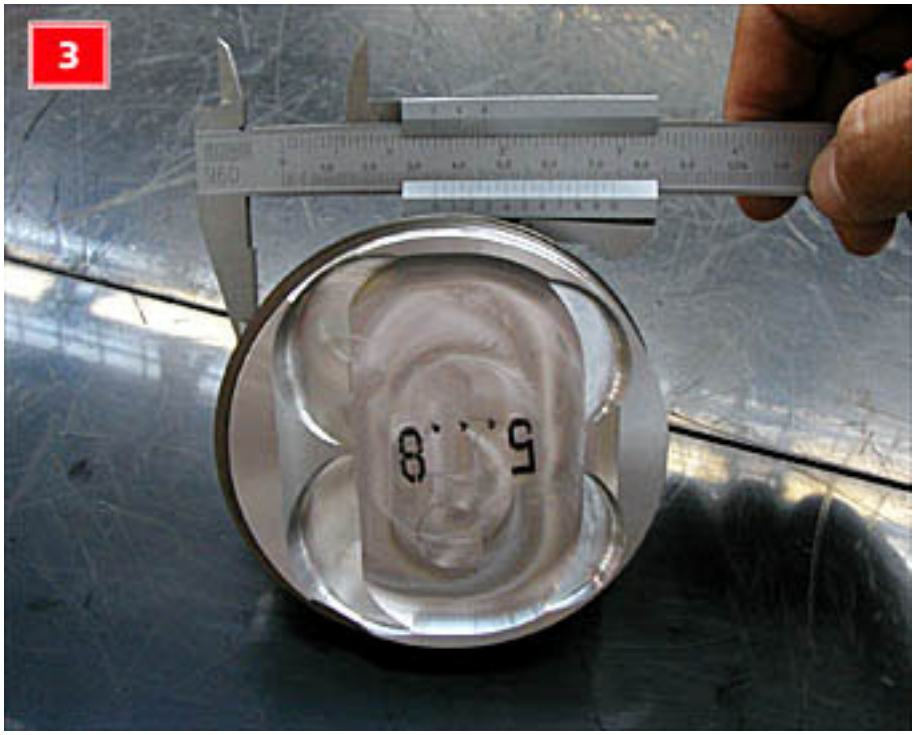
- Insert the piston into the dummy cylinder liner, so that the lower part of the skirt comes out slightly **(Figure 1)**.
- Loosely fit the piston on the cylinder liner, taking care to observe the correct direction, then push it firmly in.

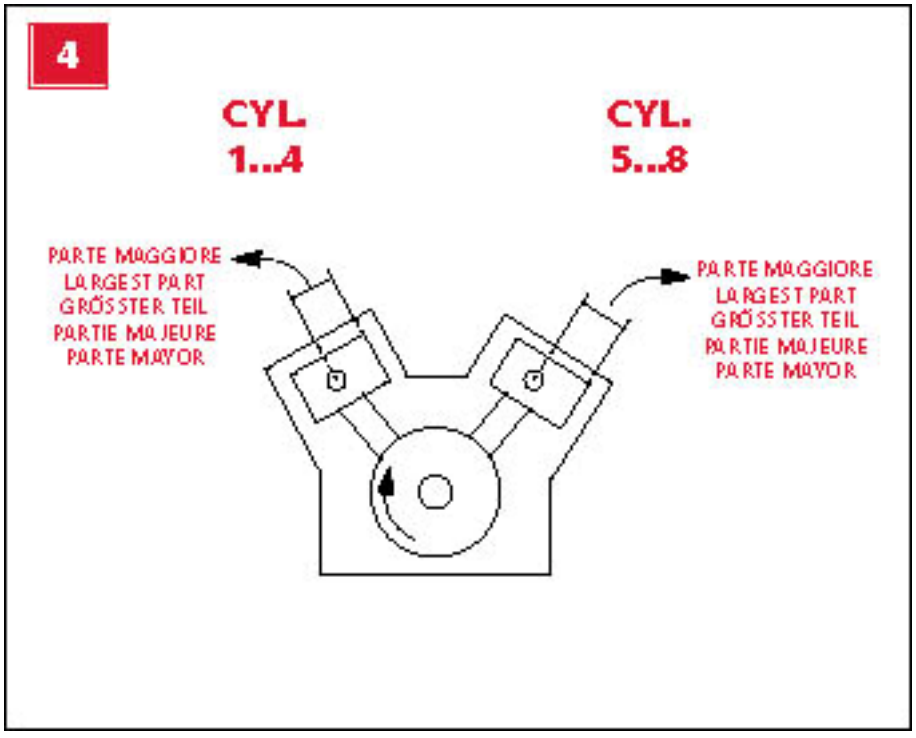
**IMPORTANT**

**When fitting the piston, take care that the piston offset is set as in Figures 2, 3 and 4.**







3


4
CYL.
1...4
CYL.
5...8
PARTE MAGGIORE
LARGEST PART
GRÖSSTER TEIL
PARTIE MAJEURE
PARTE MAYOR
PARTE MAGGIORE
LARGEST PART
GRÖSSTER TEIL
PARTIE MAJEURE
PARTE MAYOR

- Position all the pistons at the top dead centre before proceeding with the installation of the crankshaft, so as to avoid interference.



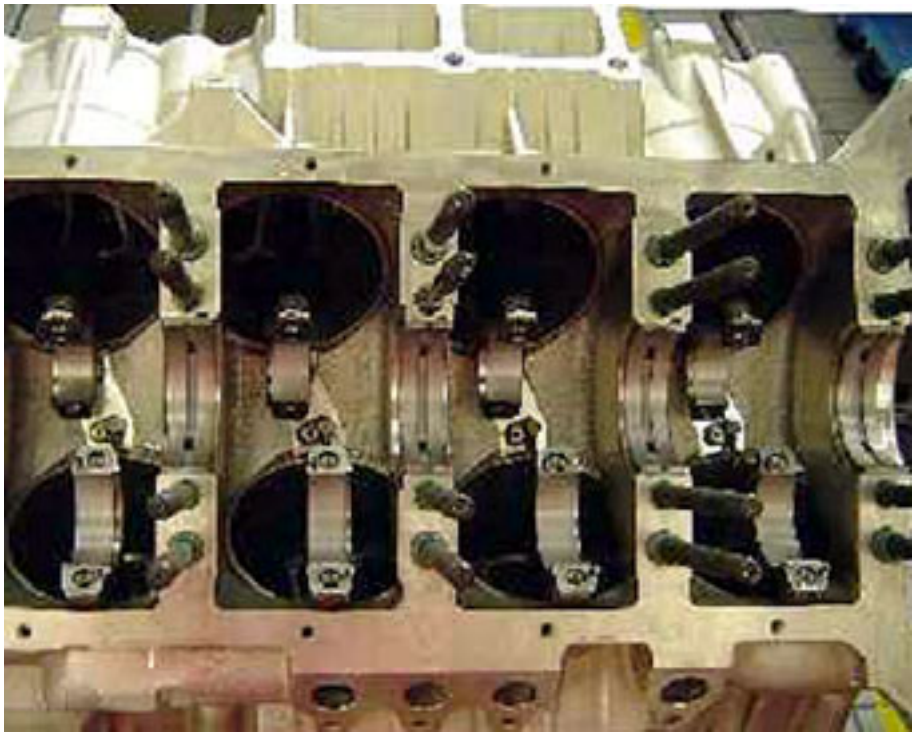
- Fit the bearings on the crankcase lubricating them with oil.



- Choose the main bearings according to the instructions on the table.

| UNIT OF MEASURE mm | | MAIN BEARING JOURNALS<br>CRANKCASE SEAT | MAIN BEARING JOURNALS<br>CRANKCASE SEAT |
|---|---|---|---|
| SEAT YIELD= 0.035 | | 66.675 – 66.681<br>CLASS A | 66.682 – 66.688<br>CLASS B |
| CRANKSHAFT MAIN BEARING JOURNALS | 58.994 – 59.000<br>CLASS A | BLUE 3.843 – 3.848<br>BLUE 3.843 – 3.848 | GREEN 3.848 – 3.853<br>GREEN 3.848 – 3.853 |
| CRANKSHAFT MAIN BEARING JOURNALS | 43.621 – 43.629<br>CLASS X | YELLOW 3.848 – 3.853<br>YELLOW 3.848 – 3.853 | GREEN 3.853 – 3.858<br>GREEN 3.853 – 3.858 |
| THE CLEARANCES ARE CALCULATED AT A REFERENCE TEMPERATURE OF 20°C | | | |

- Abundantly lubricate the half-bearings.



- Fit the crankshaft on its mounts.



- After having thoroughly lubricated the components, fit the connecting rod caps.

**N.B.**

- Be sure that the two marks on the connecting rod and the connecting rod big end are on the same side during the assembly procedure.



- Apply Molykote 1000 grease on the connecting rod tightening screws.



- After having closed them by hand first, tighten all the screws to a torque of **15 Nm**, then use a 60° tightening angle so as to obtain a torque of **55±10 Nm**.

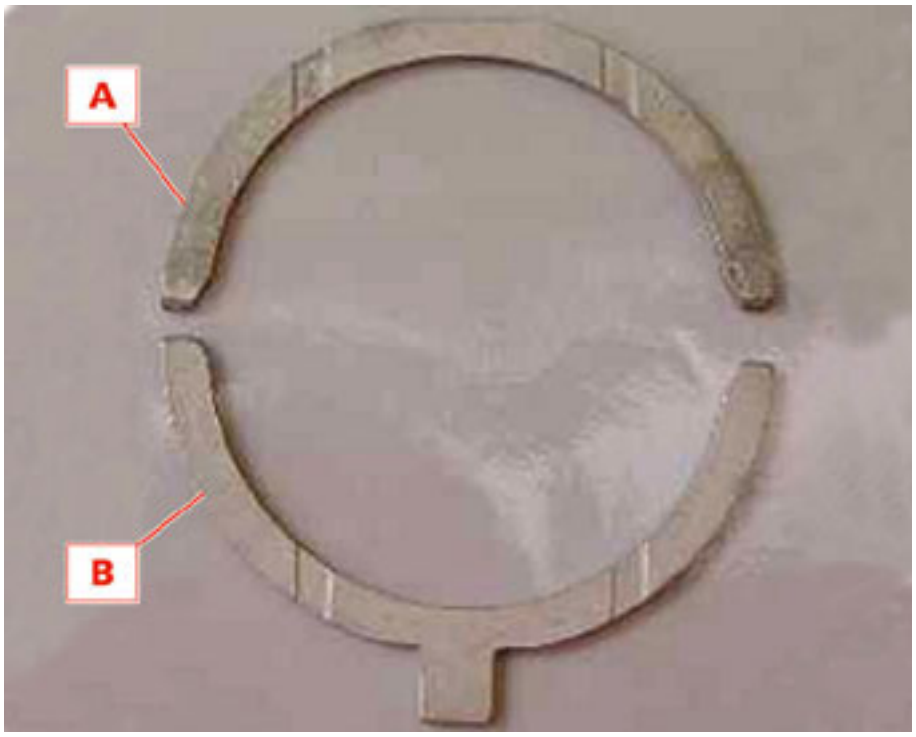


**N.B.**
**If the required torque is not attained after having applied the tightening angle, the entire procedure must be repeated.**

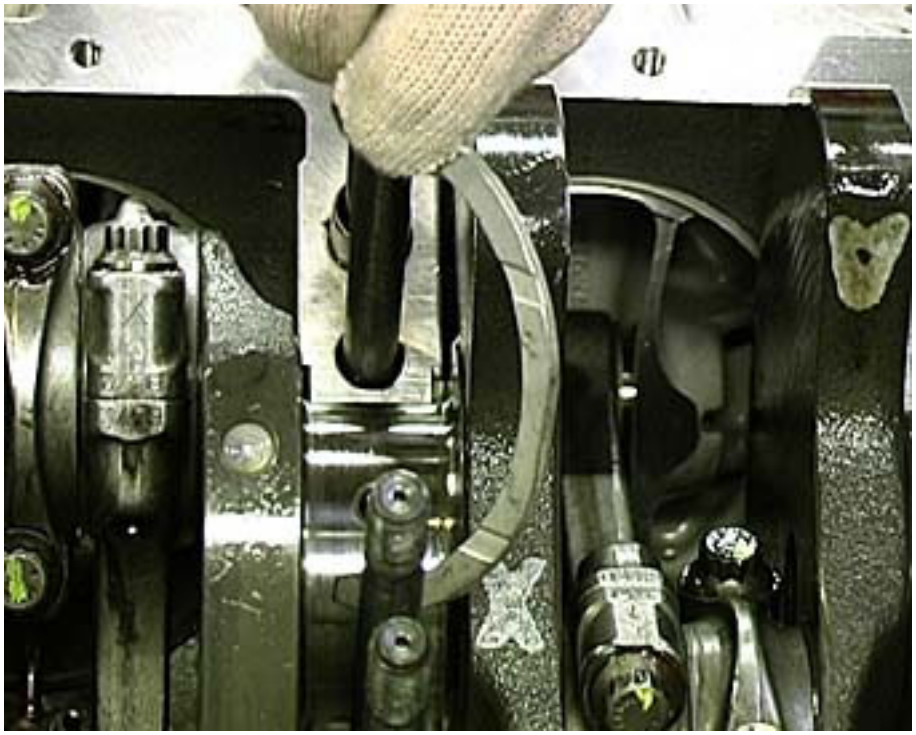
**IMPORTANT**
**Every time the connecting rod screws are tightened, use a new set of screws.**

- Fit the shims for the lower central crankshaft mount, being careful with the installation direction: the side with the two lubrication grooves must face the crankshaft shoulder. These shim rings help defining the axial play of the crankshaft. Different shims are available (standard, 1st allowance, 2nd allowance) depending on the type of coupling to be achieved.

- **A** – Upper crankcase shim
- **B** – Lower crankcase shim



- Insert the upper central mounting shims, following the correct installation direction by turning the rounded part facing outwards.



- Use the special tool (thickness 20-30) to check that the axial play of the connecting rods falls within the values **0.20-0.25 mm**.



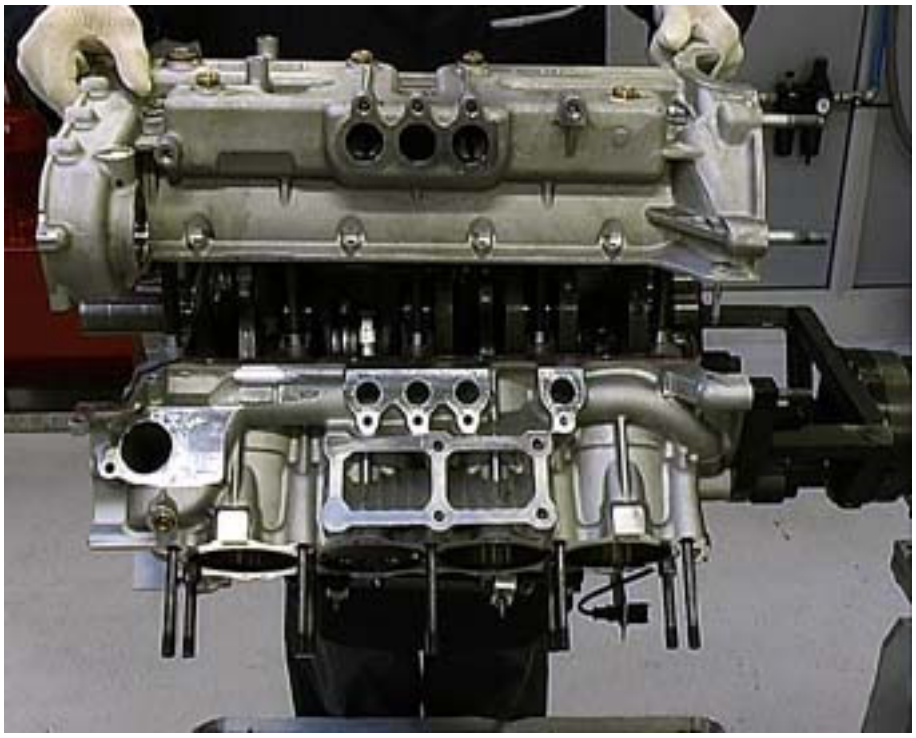
- Put the silicon sealing compound Loctite 518 along the perimeter of the engine crankcase.



- Prepare the lower part of the engine crankcase by fitting the bearings and the lower central mounting shims, respecting the fitting direction, i.e. with the rounded part facing outwards.



- Fit the lower part of the crankcase on the engine crankcase.



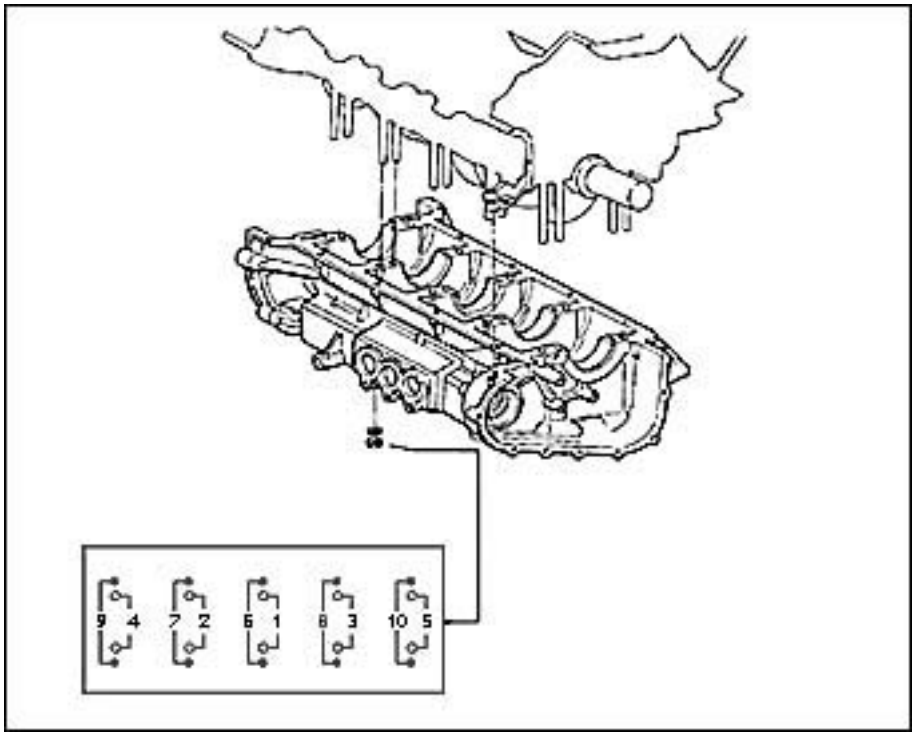
- Lubricate the tie-rods and the relative washers with Molycote 1000 grease, then loosely fit the nuts onto the stud bolts, checking that the stamped part is facing outwards.



- Tighten the nuts to a pre-load of **30Nm** for the inner nuts and **25 Nm** for the outer ones. Finally, tighten the internal ones to a torque of **60 Nm** and the external ones to a torque of **55 Nm**. During the procedure check that the shaft turns freely.



- Observe the tightening sequence.



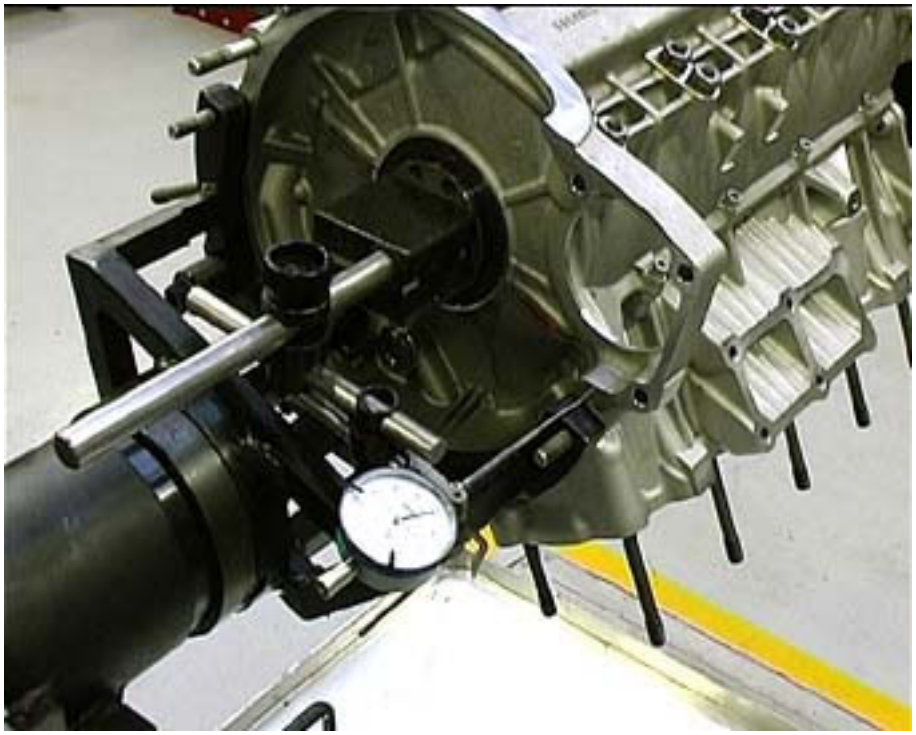

- Fit the 6mm screws onto the crankcase perimeter and the small hexagonal fastening nuts for the 2 stud bolts on the clutch side, tightening them to the a torque of **10 Nm.**



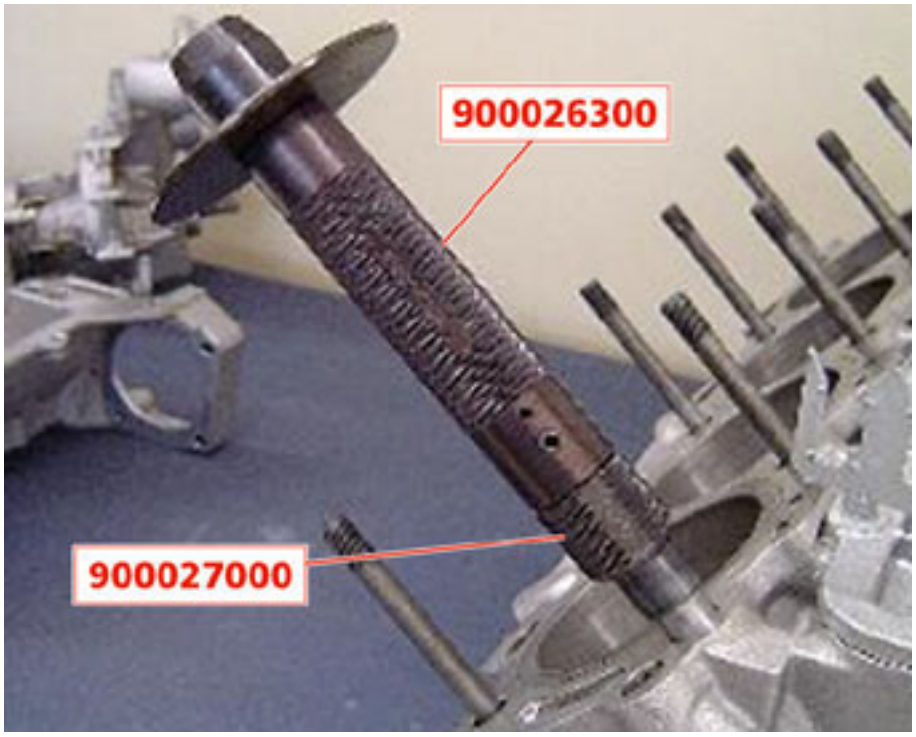
- Insert the oil seal for the crankshaft into its seat on the clutch side, using the specific tool.



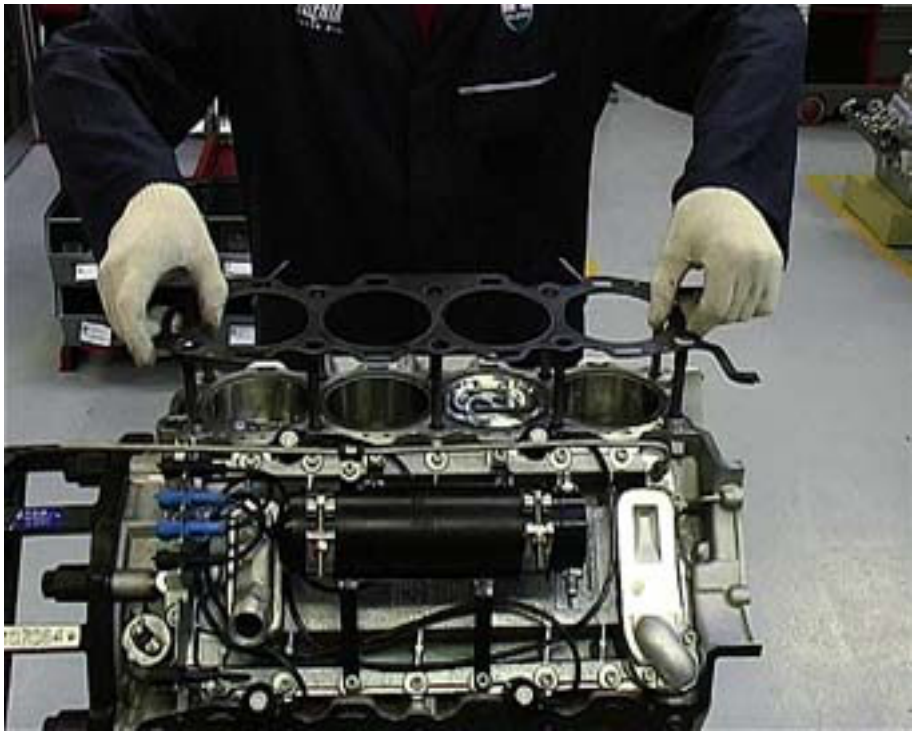
- Fit tool **AM105786** for crankshaft rotation and check the shaft end float using a dial gauge.
  The value must fall between **0.08**and **0.18 mm**
  After completing the check, it is recommended to position piston number 1 at the top dead centre.



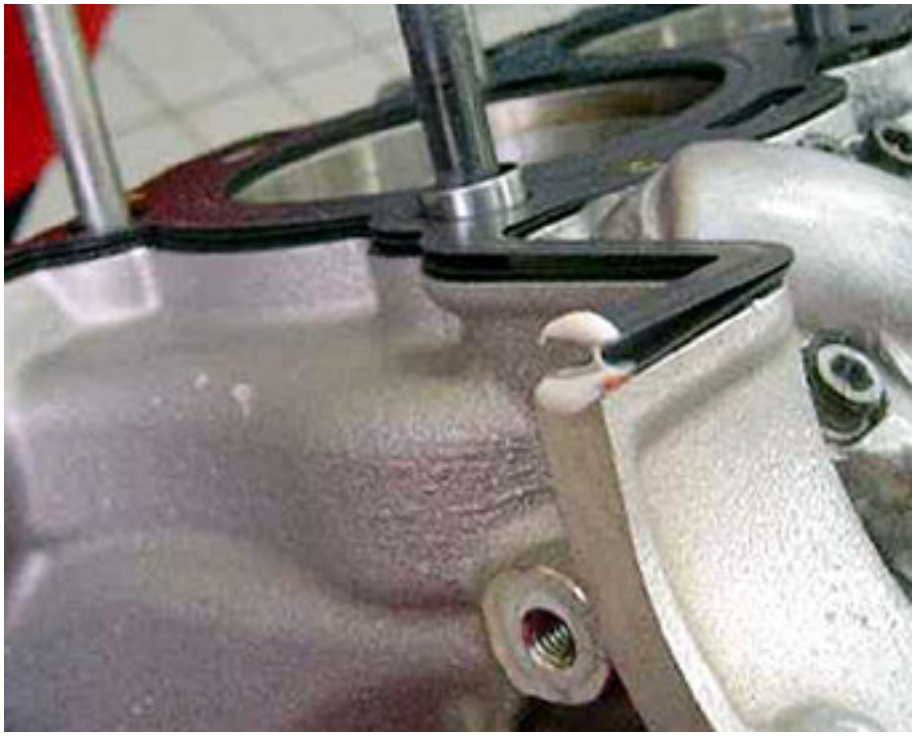
- If the head centring bushings have been damaged or removed, you must refit them using punch **900026300** equipped with tool **900027000.**



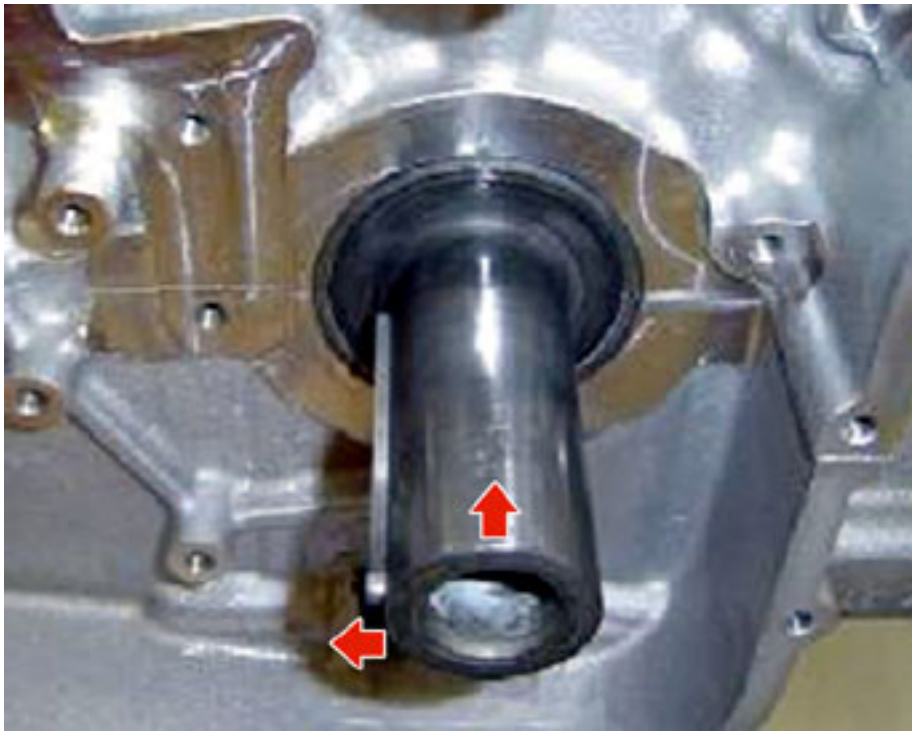

- Position the head gaskets, making sure that they are intact.



- It is advisable to apply a small amount of silicone **CAF4** on the ends of the head gaskets, on the timing side.



**N.B.**
**Before fitting the engine head, turn the crankshaft in such a way that all the pistons are positioned below the TDC. To do this, you must rotate the crankshaft until the tab on the crankshaft (timing side) is positioned as shown in the figure.**



- Grease the threading of the crankcase stud bolts and the resting surfaces of the head fastening nuts.



- Grease the stud bolts with **MOLYCOTE 1000**.



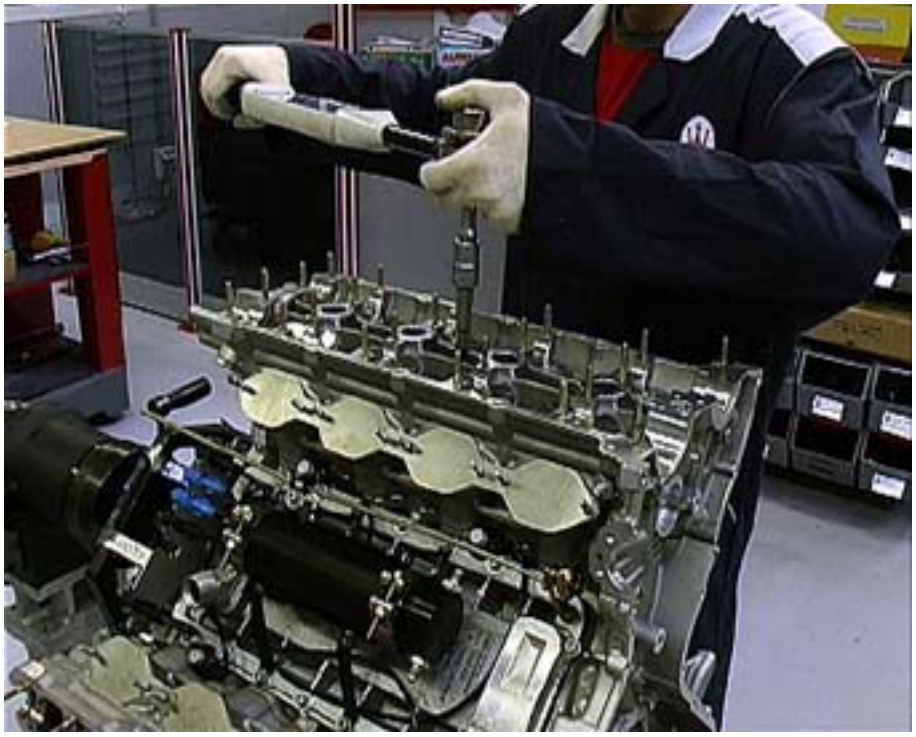
- Position the heads.



- Loosely fit the nuts with the relative washers, suitably greased with MOLYCOTE 1000.



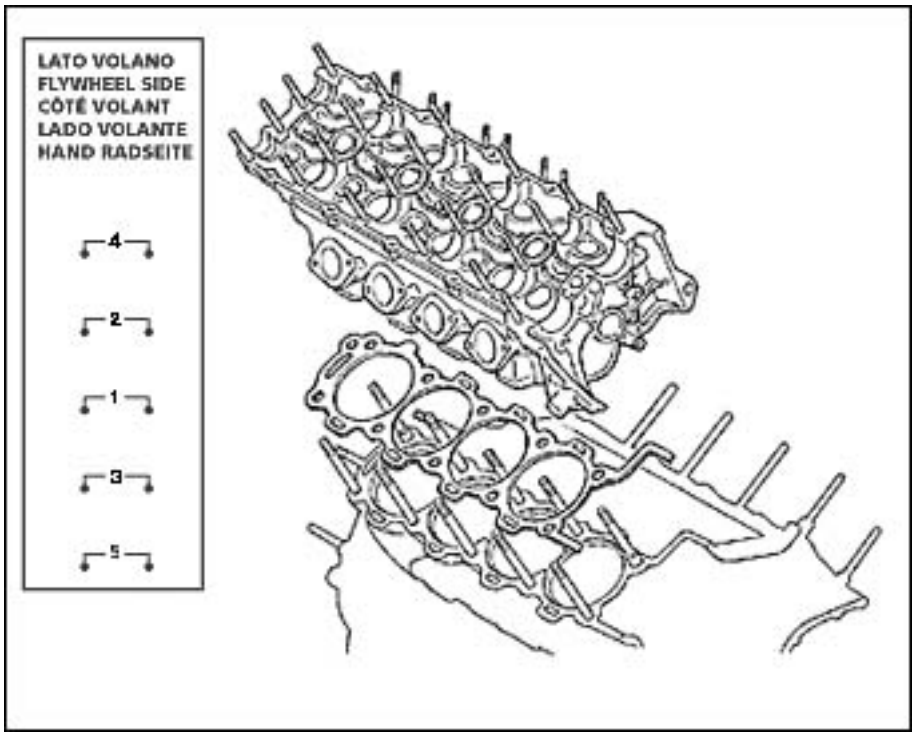
- Apply a pre-load equal to **60Nm**.



- Turn a further **90°** so as to obtain a torque of **80±10 Nm**; if the desired torque is not obtained, the operation must be repeated.



- Observe the tightening sequence.




- Position the valve buckets.



- Lubricate the camshaft mounts on the head.
- Make sure that the grommets are duly fit on the seat of the oil pump timing variators.



- Position the intake camshaft on the head, fitting the timing variator tab and positioning the oil pump timing variators in their seats.



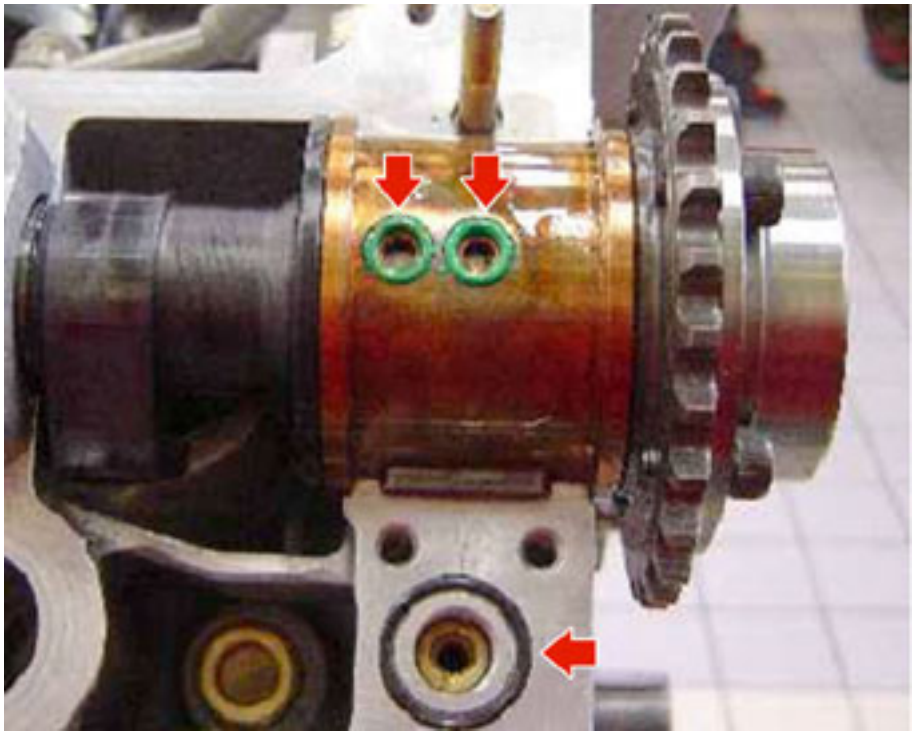
- Position the exhaust camshaft and proceed with fitting the camshaft caps tightening them to a torque of **9 Nm** (the two nuts and the Allen screw of the first cap must be tightened to a torque of **10 Nm**).



- Position the protection filter (if it was removed) for the variator pressure control valve using tool **900026990**. Carry out this operation on both engine heads.




- Position the two 7Øx1.78 O-rings for the timing variator bushing. Perform this operation on both engine heads



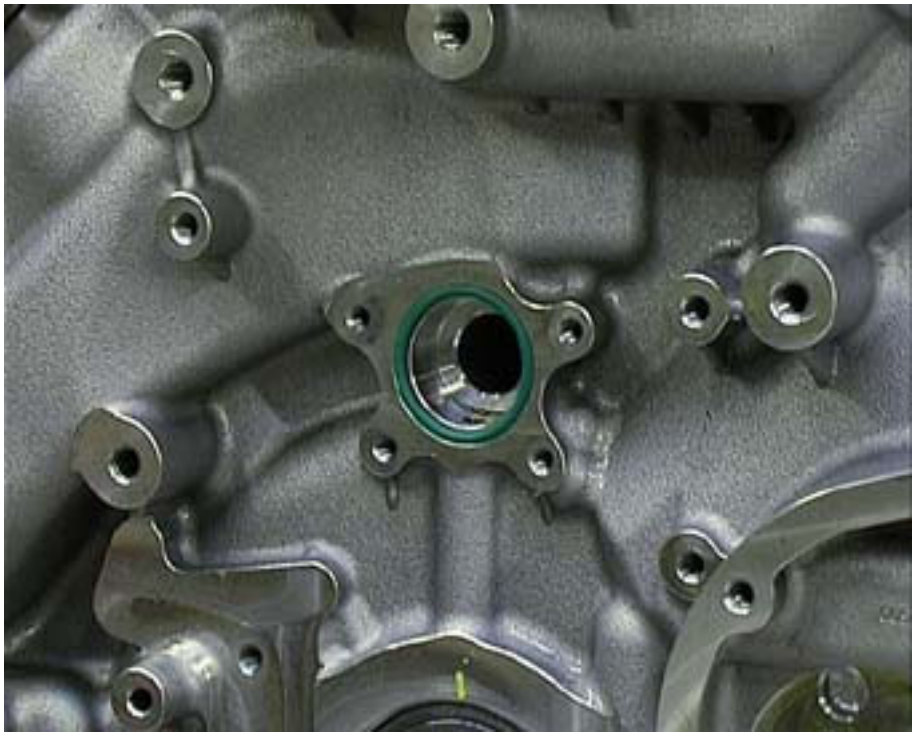
- Fasten the oil pump timing variators tightening the four Allen screws on the left-hand head and on the relative cap.



- Fit the timing variator solenoid valve, lubricate the mount and tighten the retaining screw to a torque of **10 Nm**.



- Fit the grommet for the timing control transmission mount into its seat.



- Fit the timing control transmission mount, tightening the fastening screws with Loctite 242 to a torque of **6 Nm**.



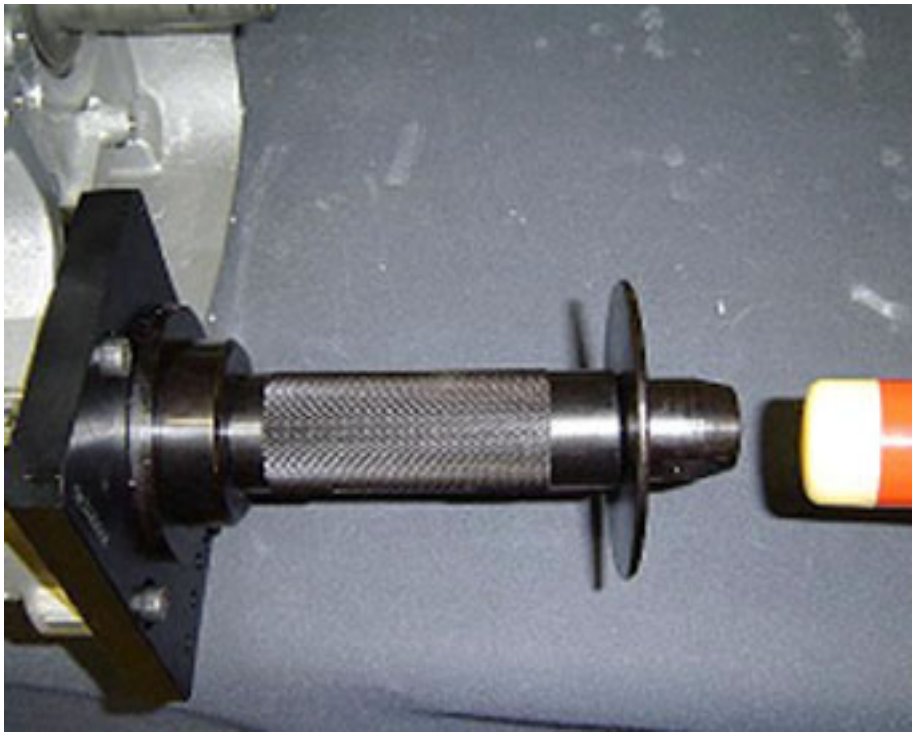
- If the pump assembly shaft bearing has been removed, refit it following the procedure described.
- Position the bearing centring template **900027040**.




- Place the Ø 25-47x12 ball bearing on the fitting punch.



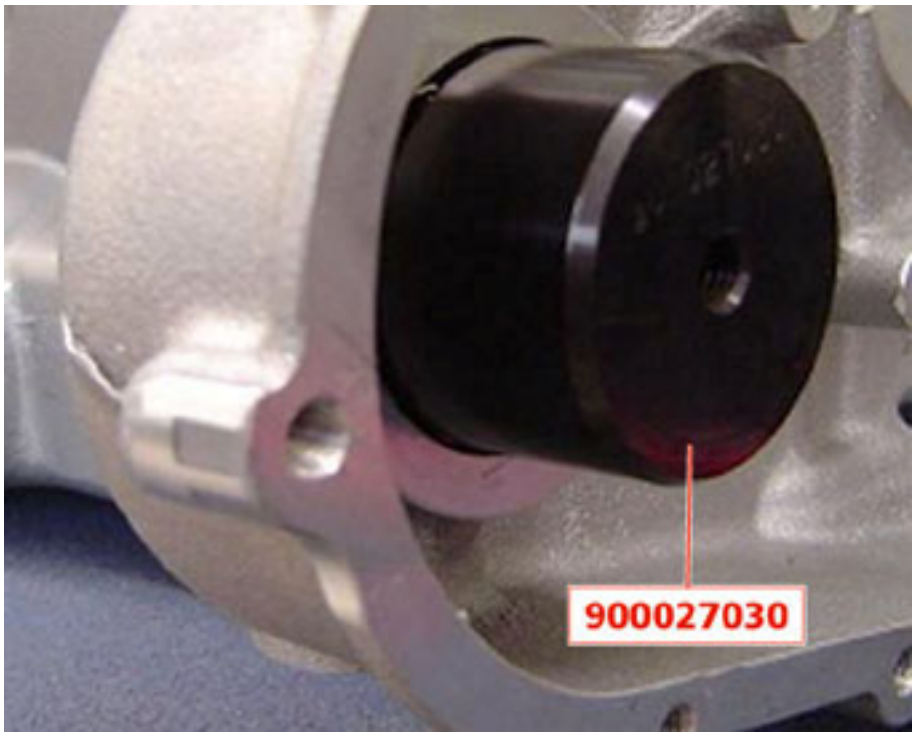
- Insert the punch into the template and bed in the bearing by tapping it with a plastic hammer.
- Subsequently check that the bearing has been fitted correctly.



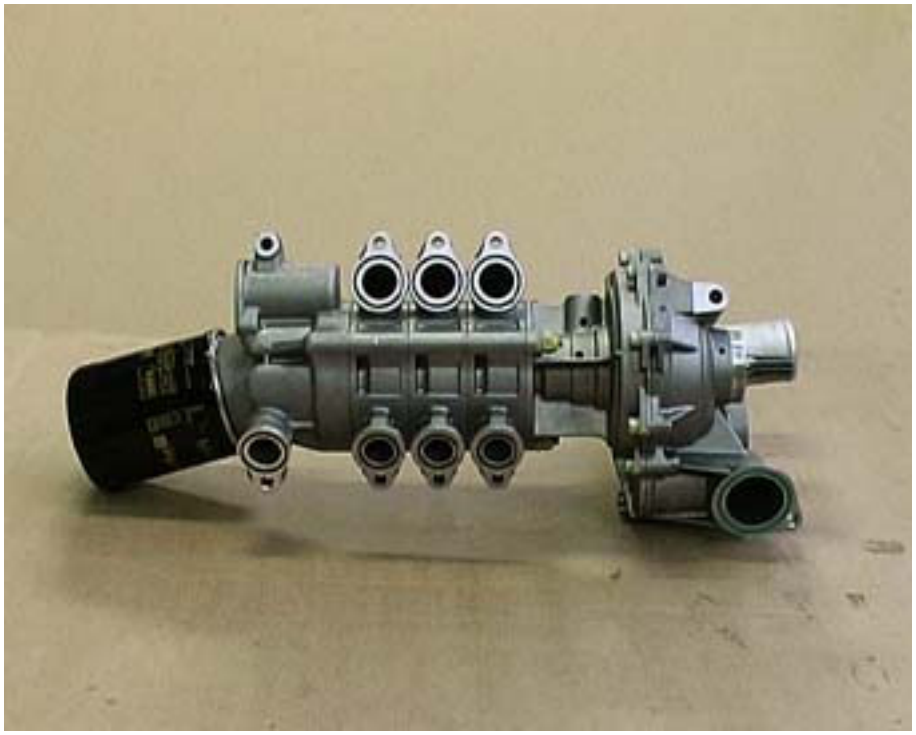
- Fit the water/oil pump drive shaft in its seat.



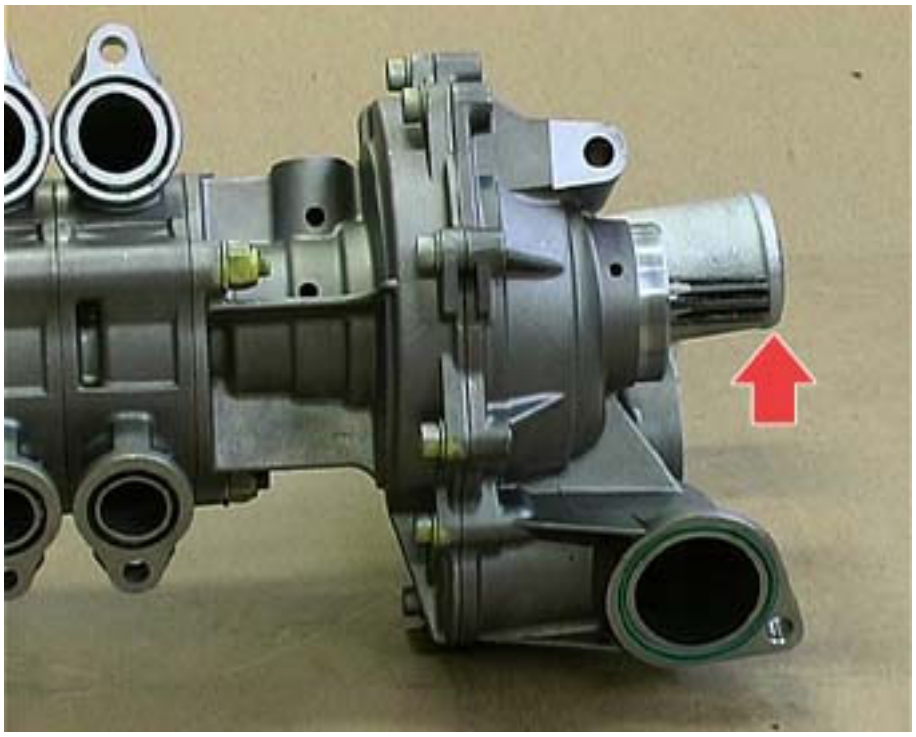
- Using tool **900027030**, fit the pump drive shaft into place.



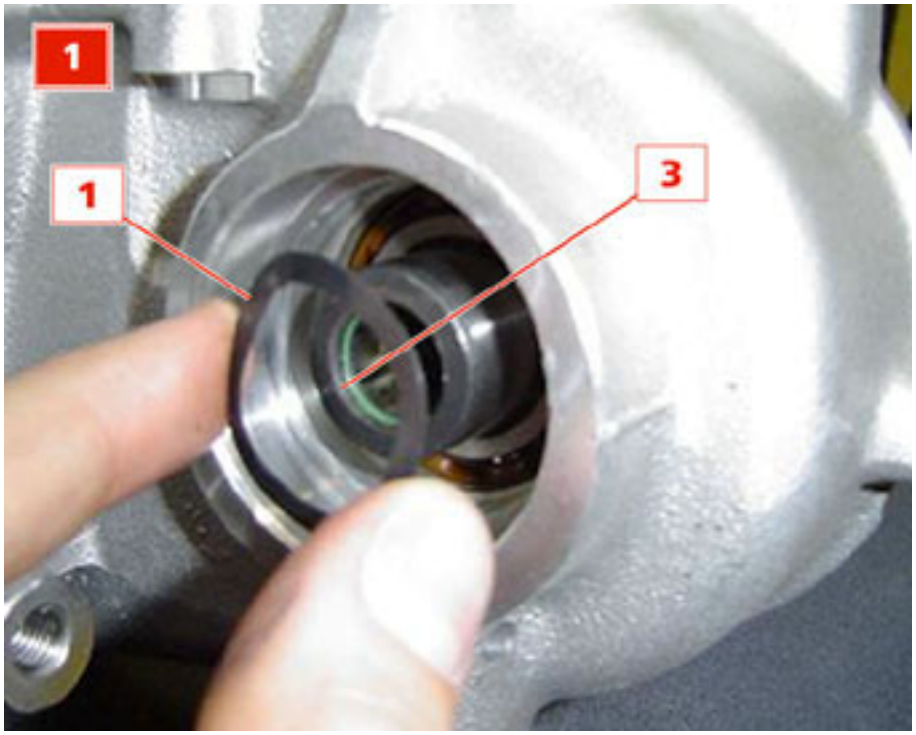

- Check the condition of the oil-water pump verifying that there is no leakage from the draining holes.

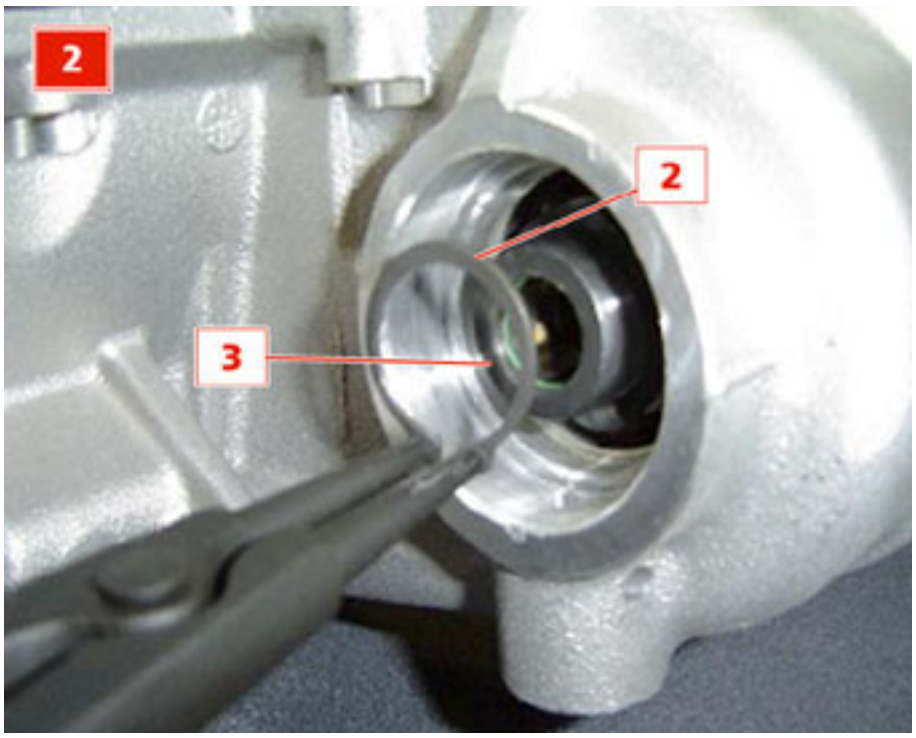


- Check the wear condition of the groove on the oil/water pump shaft.



- Fit the balancing ring **(1)** and relevant Seeger ring **(2)** on the drive shaft (pump side).
- Fit the O-ring **(3)** (**Figures 1 and 2**) in the drive shaft seat.



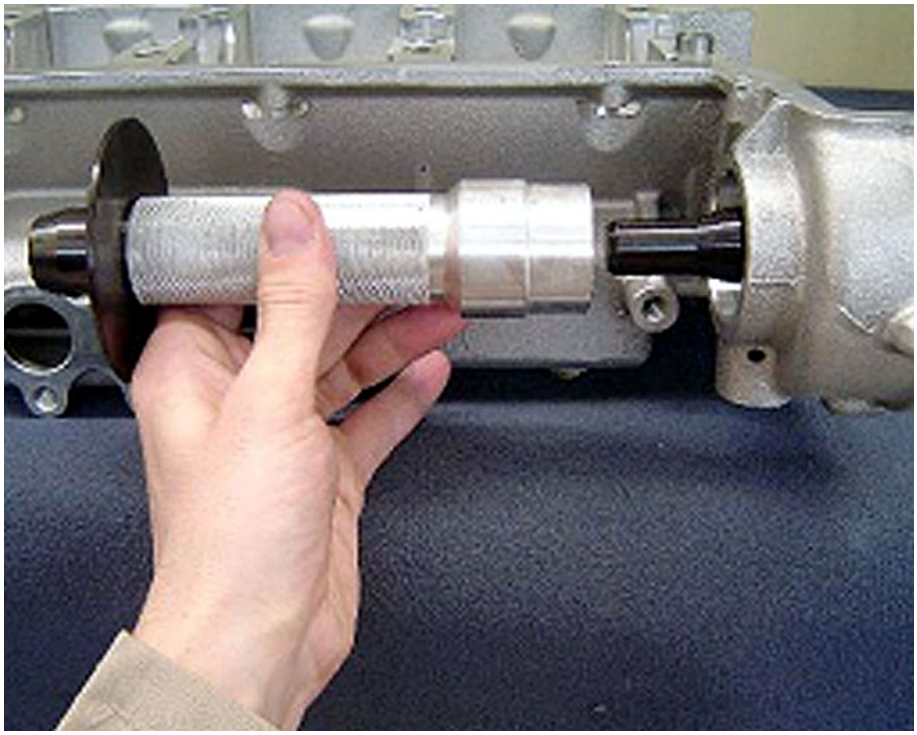
- Arrange tool **900027050** on the pump drive shaft to fit the oil seal.




- Fit the oil seal.



- Use the special punch to fit the grommet in its seat. Subsequently fit the balancing ring and the see ger ring which retains the bearing on the timing side.



- Subsequently fit the balancing ring and the see ger ring which retains the bearing on the timing side.

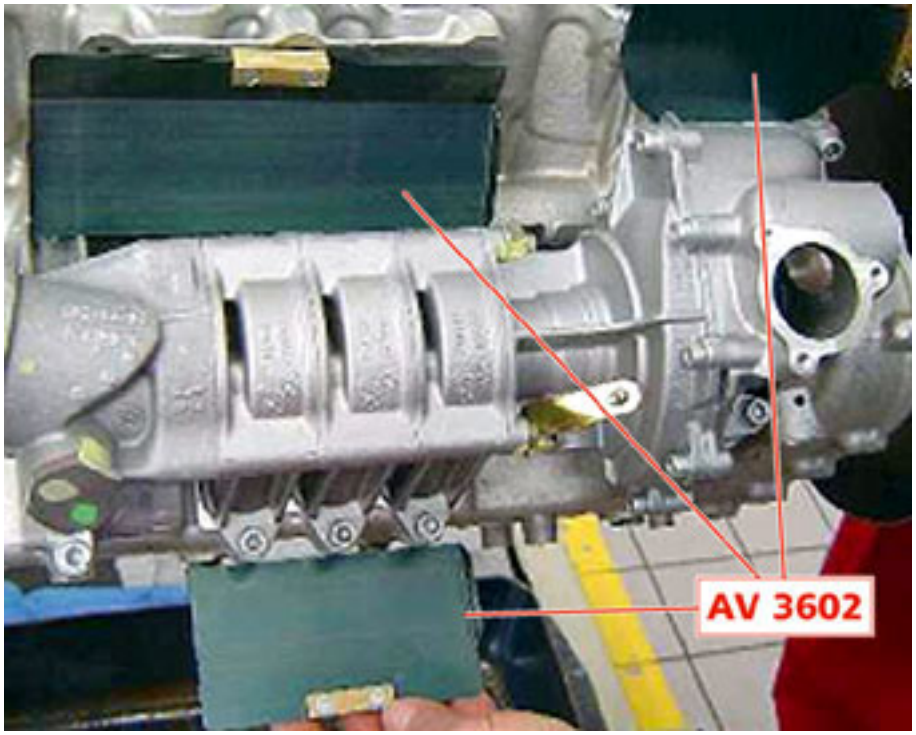


- Lubricate the driving joint seat with Molykote 1000 grease.



**N.B.**
**Always replace the pump OR.**

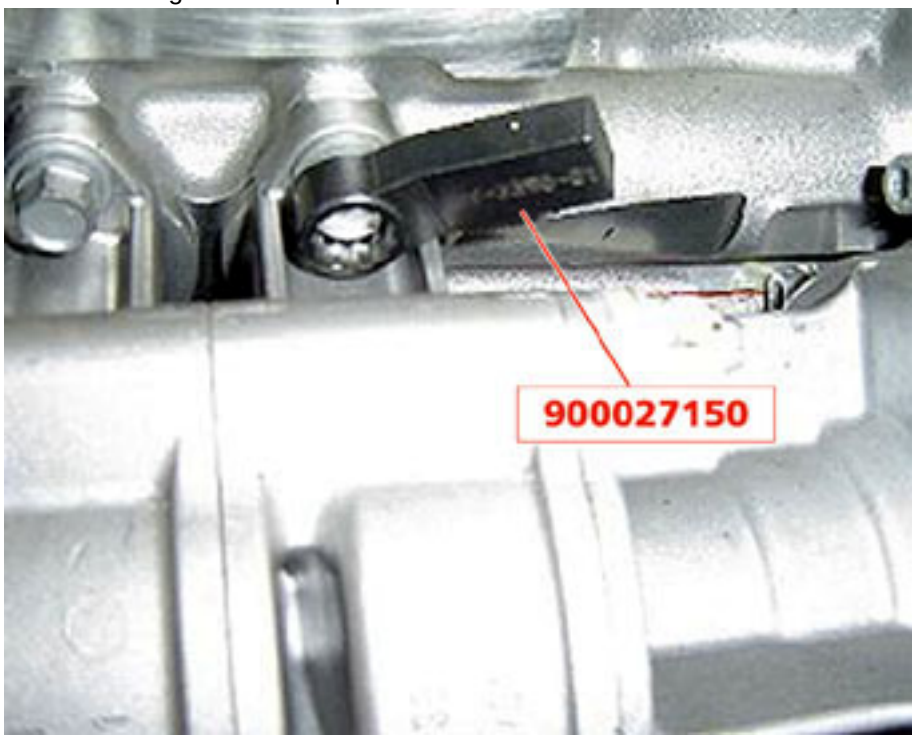
- Lubricate the pump drive shaft with Molycote 1000 grease.
- Arrange the three O-Ring protection plates of tool **AV3602**.
- Fit the oil-water pump into its seat by inserting the shaft into the joint.
- Check that there are no signs of peeling of the O-rings in the area where the pumps join the crankcase. Fit the four M8 small headed screws to secure the assembly to the crankcase, the two M8 screws to secure the pumps to the lower part of the crankcase, and the three M8 screws to secure the pump to the crankcase, and at the same time remove the three plates **AV3602**.



- Tighten the pump fastening screws to a torque of **25 Nm**.



- To fit the screws housed in the upper part of the pump assembly, use tool **900027150.**
- Use a torque wrench to tighten to a torque of **25 Nm**.

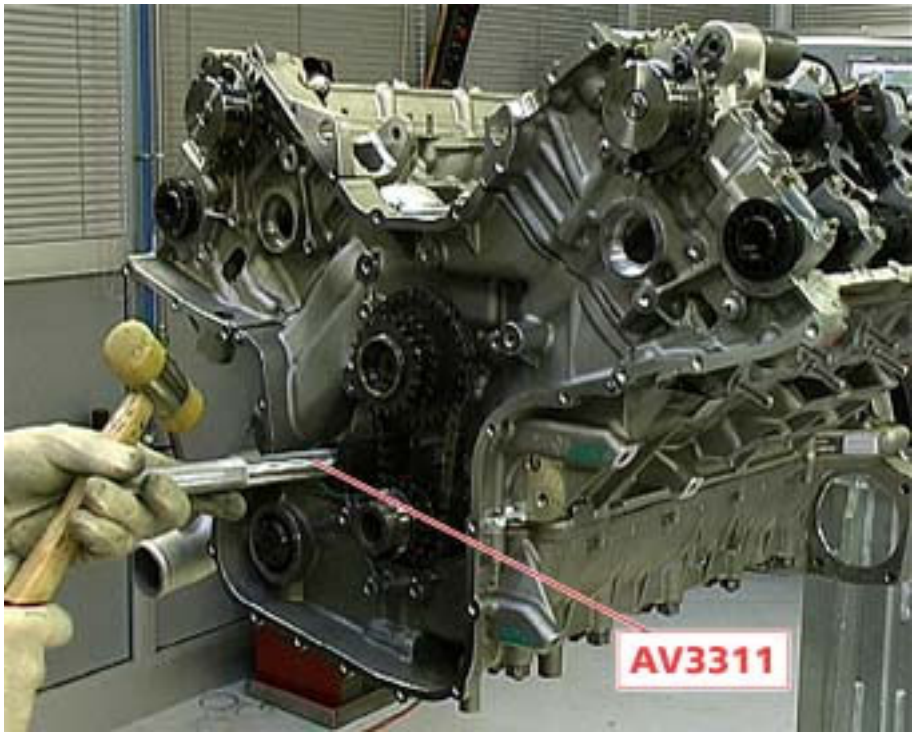


**IMPORTANT:**
**The tightening torques for the chain runners are 10 Nm for the 6mm screws and 25 Nm for the 8mm screws.**

- Install the mechanical tensioner for the transmission axle.



- Fit the transmission chain - toothed wheel unit onto the shaft using tool **AV3311**.




- Install the fixed runner and fit the shoulder, the balancing ring, the elastic pin and the Seeger ring.



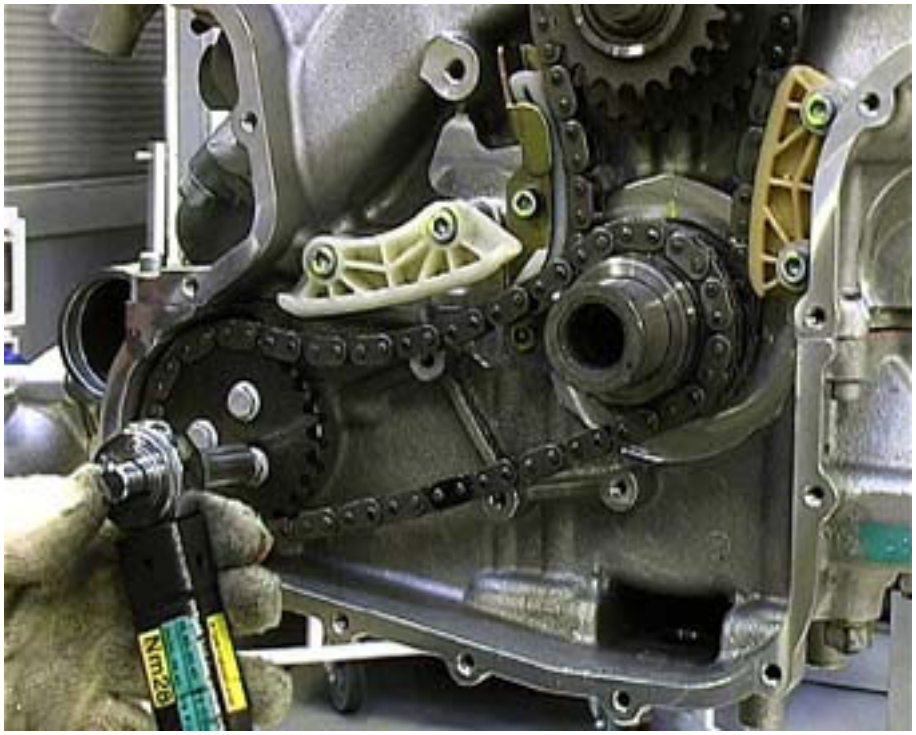
- Install the fixed runner for oil-water pump control.



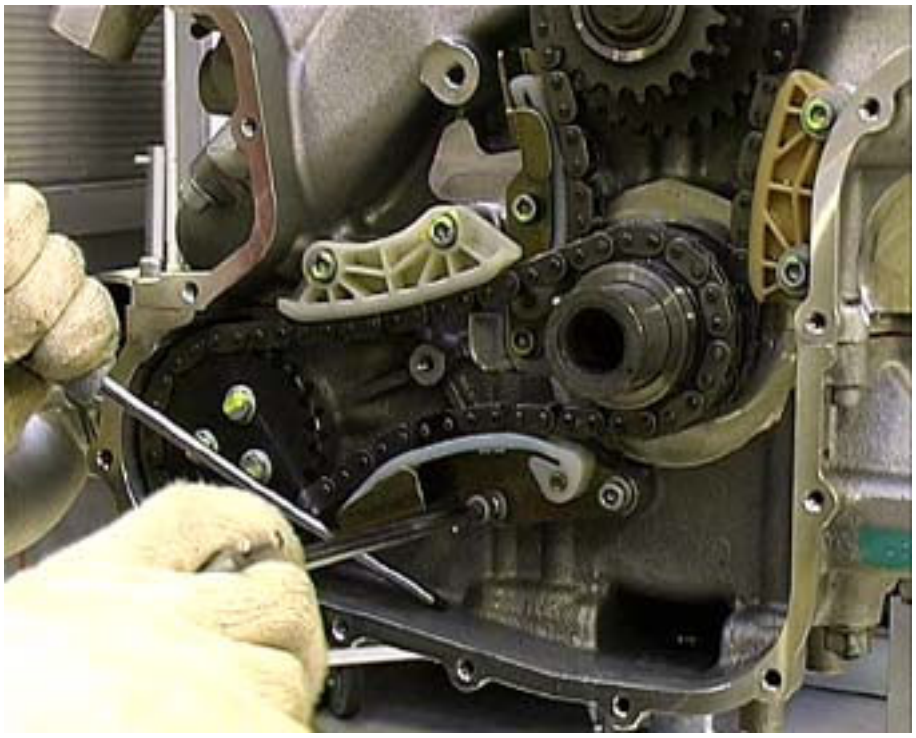
- Position the auxiliary pump chain on the toothed wheel for oil-water pump control and engage it with the crankshaft toothed wheel.



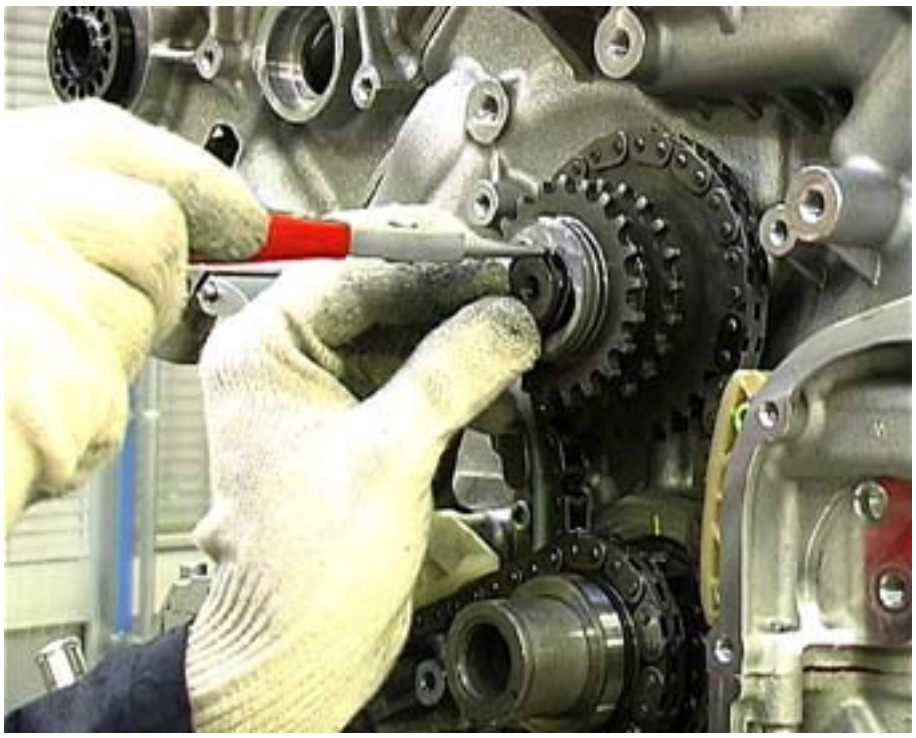
- Fasten the toothed wheel for oil-water pump control onto the oil-water pump driving joint, and tighten the fastening screws to a torque of **23 Nm**.




- Install the pump axle mechanical tensioner, tightening the fastening screws to the prescribed torque.

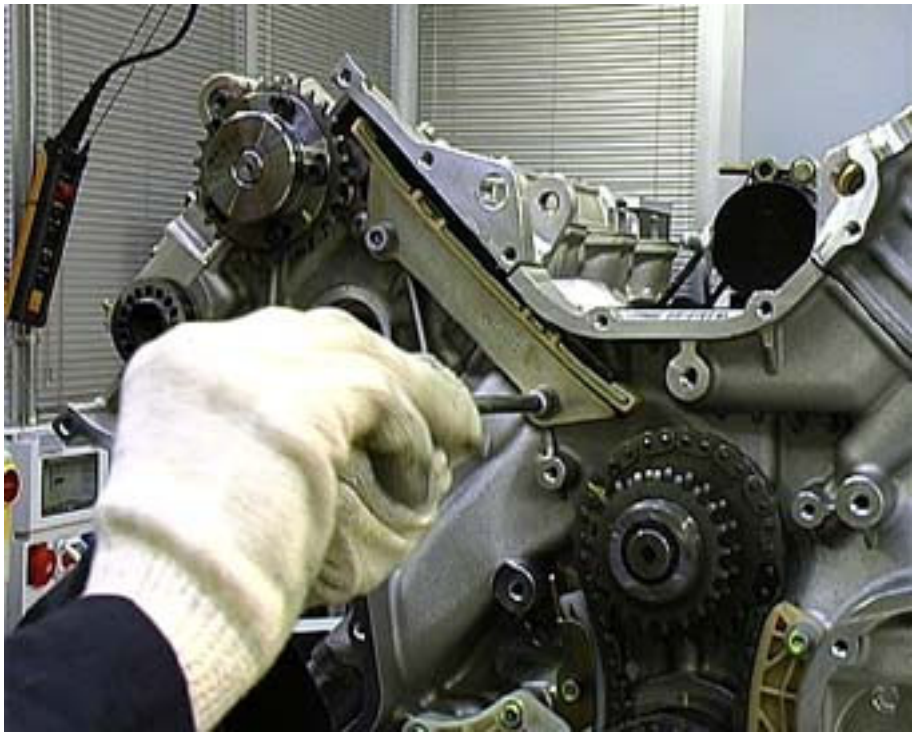


- Fit the elastic pin onto the transmission axle, insert the triple gearing shoulder support and the balancing ring.
- Fix the assembly with the see ger ring provided.

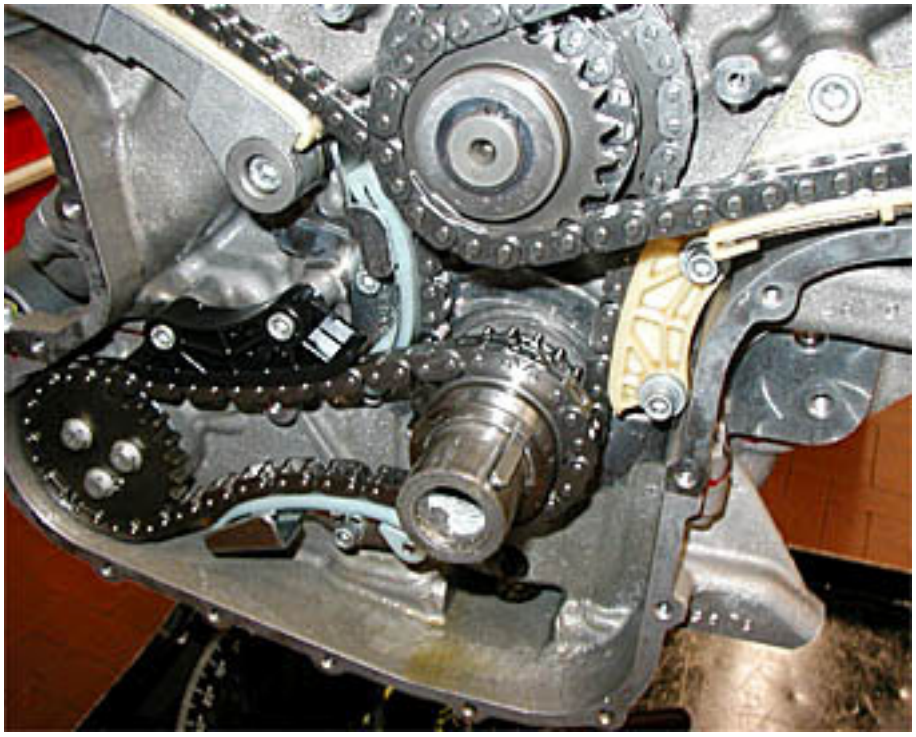


- Fit the fixed runners and the timing chain tensioners tightening them to the specified torque of **25 Nm**.

**N.B.**
**To facilitate subsequent fitting of the camshaft drive chain, it is advisable to keep the two retaining screws of the RH fixed chain tensioner runner loose.**



- Position the crankshaft so that the small wrench is at 45°, in order to prevent damaging the valves.

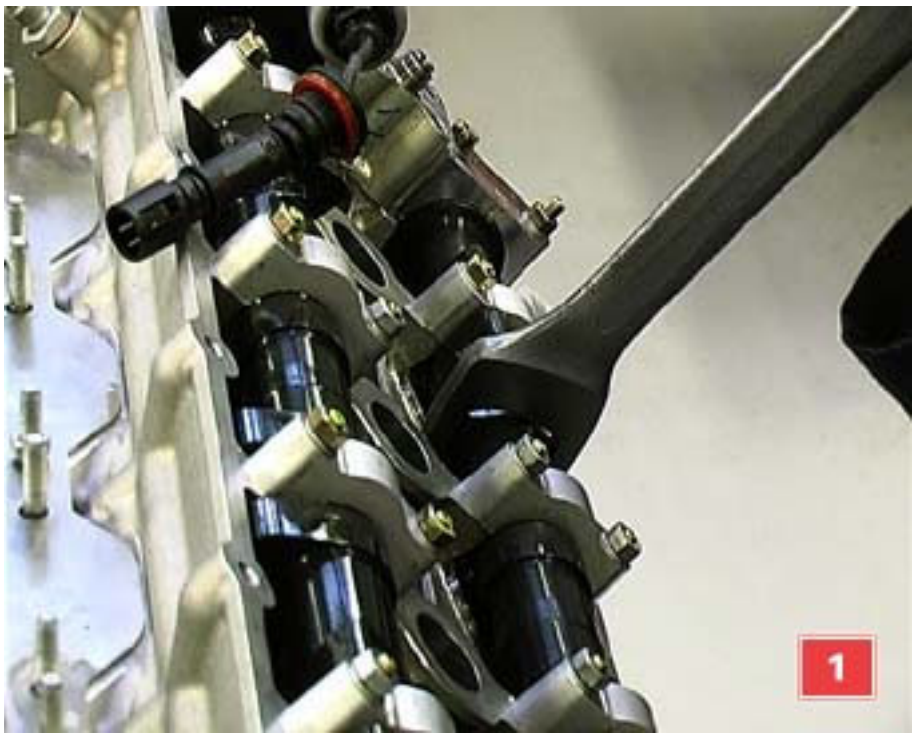


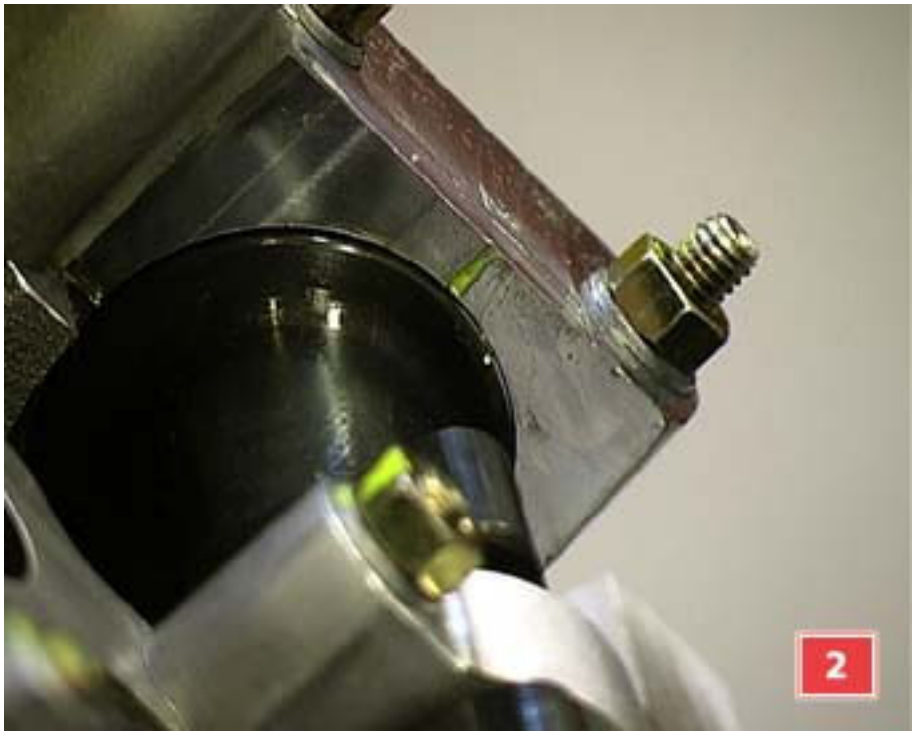
- Turn the camshafts of the two cylinder banks in such a way that the references at the ends of the shafts match the marks on the respective fixing caps. Lock the camshaft rotation.
- Having previously positioned all the pistons below the TDC, there is no risk of interference between the valves and the pistons during operation of the timing camshafts.
-

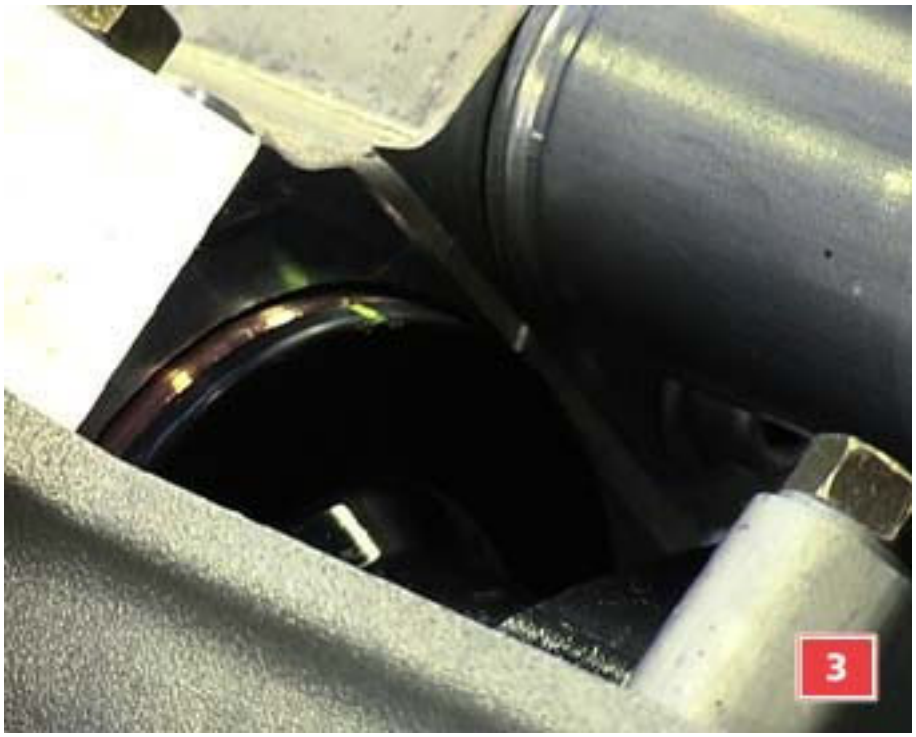
**N.B.**
**Depending on the version, the camshafts may be differently machined so as to allow rotation during timing. The part number identifying the spare part is the same, but there may be a hexagon on the camshaft for positioning a fixed wrench, or an opening machined to host a wrench, or a hole to position a cylindrical punch.**

**IMPORTANT**
**At this point in the assembly procedure, the engine timing must be checked or restored.**

- Move the camshafts to align the reference marks on the heads with those on the shafts themselves (**Figures 1, 2** and **3**).



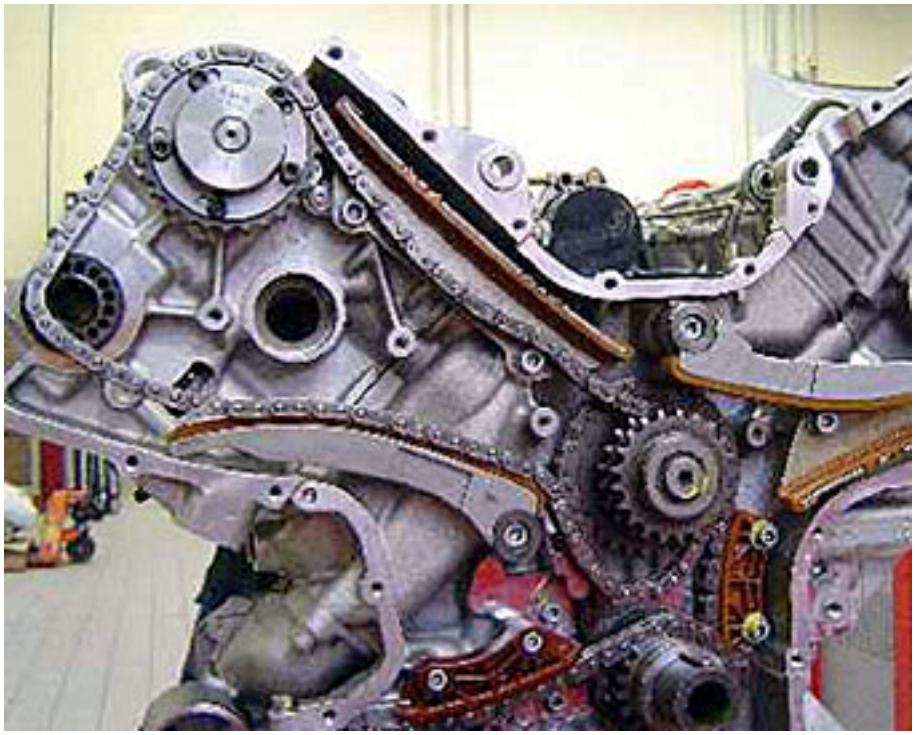

2


3

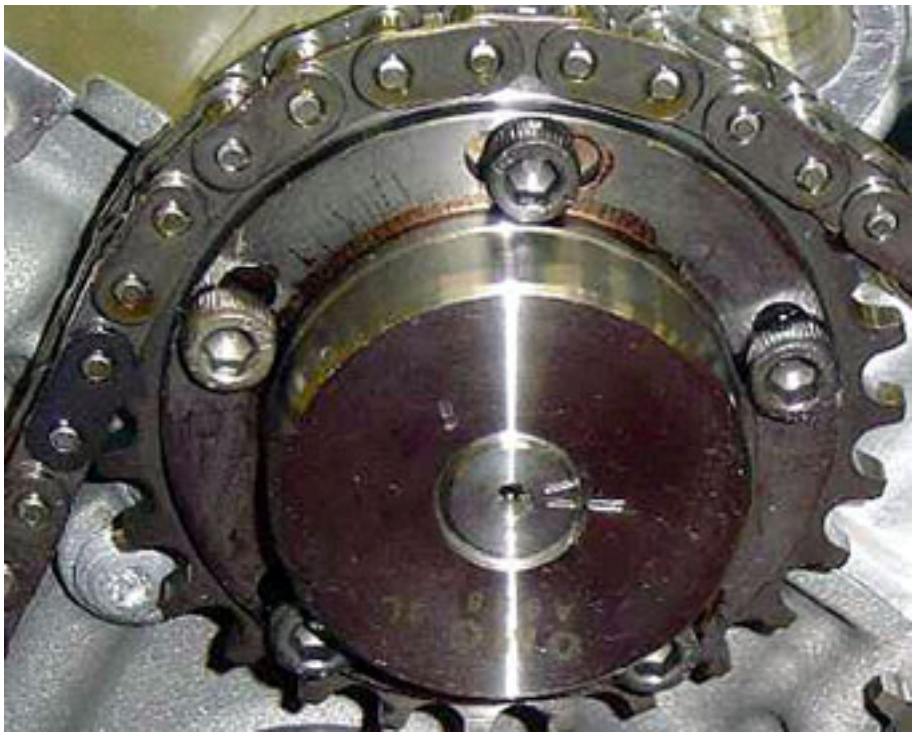
- Fit the centesimal dial gauge with its holder**CS104488**, screwing it into the spark plug hole of the first cylinder.
- Position the goniometer and turn the crankshaft until reaching the **TDC**




- Position the camshaft drive chain on the right-hand cylinder bank. Position the chain on the innermost gear of the crankshaft.



- When fitting the chain, loosen the screws on the timing variator of the right-hand and left-hand cylinder bank.
- Position the adjustment slots in the centre of the available adjustment range, so that play can be recovered during timing adjustment. Tighten at least two retaining screws on the variator.
- After positioning the timing chain on the engine, tighten the two retaining screws of the right-hand fixed chain tensioning runner to a torque of **25 Nm** using a torque wrench.



- Fit the gearwheel for the exhaust camshaft. Position the centring dowel into the first free hole available, after coupling the gearwheel onto the camshaft.



- Check that the pointer of the dial gauge fitted on the holder **CS104488** always indicates the TDC position.



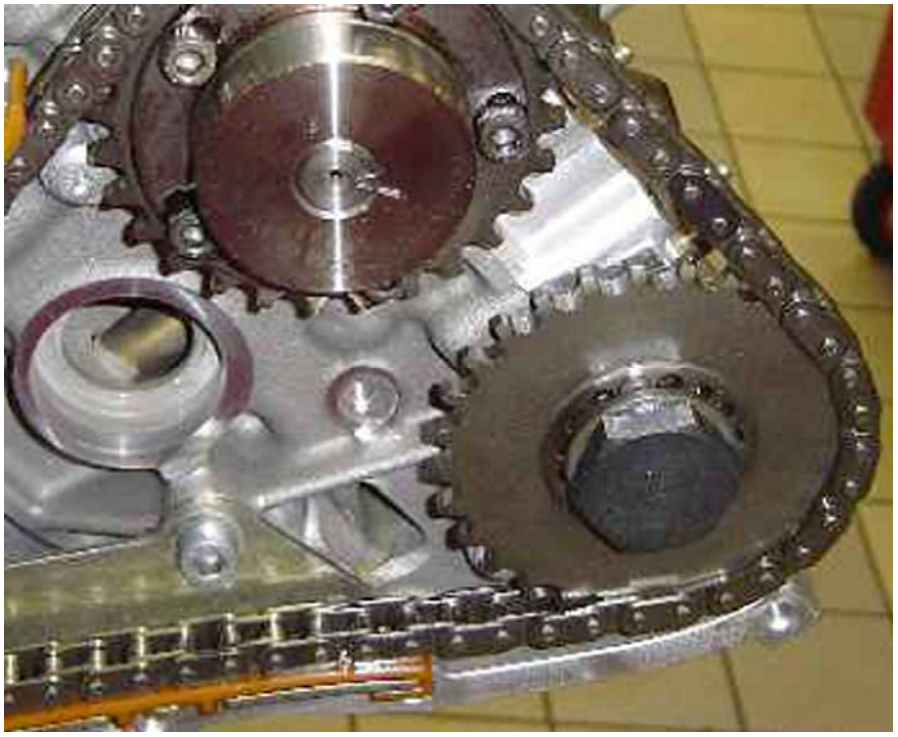
- Fit the hydraulic chain tensioner and use a torque wrench to tighten to a torque of **70 Nm**.



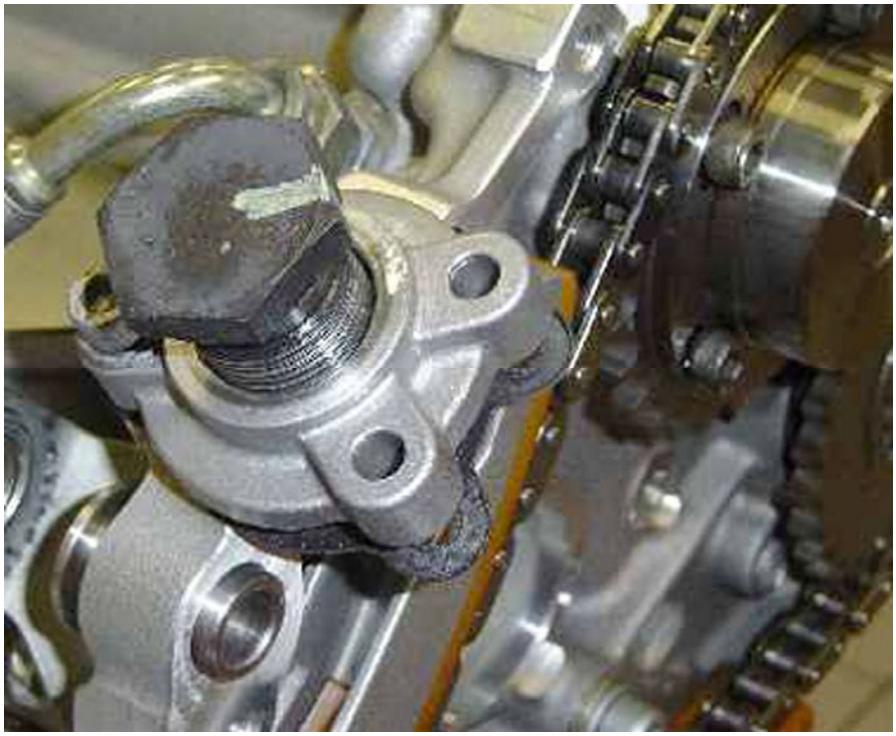
- Repeat the operation for the left-hand cylinder bank.
- When the assembly procedures have been completed, check the TDC position with the dial gauge.



- Screw down by hand, without tightening, the two retaining screws for the exhaust camshaft gearwheels.



- Position the hydraulic chain tensioner together with the gasket on the left-hand cylinder bank using two screws with washers.
- Use a torque wrench to tighten the two screws to a torque of 10 Nm.
- Use a torque wrench to tighten the tensioner screw to a torque of 40 Nm



- Release the camshafts.
- Turn the engine anticlockwise and check that there is no interference.



## ADJUSTING THE INTAKE SHAFT TIMING

- Turn the engine anticlockwise and position the first piston at the TDC. Make sure that the dial gauge is on zero.
- Place a support for the magnetic base of the dial gauge holder on the right-hand engine head.
- position a magnetic base with a long-rod centesimal dial gauge.
- Turn the engine clockwise positioning the intake cam immediately before the opening ramp. In this condition, the hydraulic tappet is still in the rest position.
- Position the dial gauge plunger above the tappet of an intake valve. The dial gauge rod must be as perpendicular as possible to the tappet surface.



- Reset the dial gauge that measures the movement of the intake tappet.
- Go back to the TDC position and check the dial gauge previously reset. In this position (TDC), the intake valves of the first cylinder have already started their travel. Therefore, carefully check the position on the dial gauge positioned on the tappet.
- Turn the crankshaft **15°** beyond the TDC. This corresponds to a piston stroke of 1.75 **mm** beyond the TDC.
- Check that the tappet downstroke (begun before the TDC) and hence the intake valve upstroke is **0.59±0.08** mm.
- Should the values measured in these conditions be out of tolerance, hold the crankshaft still, loosen the screws on the timing variator and turn the intake camshaft until obtaining the desired intake valve upstroke. For this reason, as described earlier, it is advisable to get ready for the timing procedure by positioning the variator adjustment slots in the centre of the angular adjustment.
- Check the timing again.
- Use a torque wrench to tighten the previously loosened screws that secure the variator to a torque of **15 Nm**, after applying Loctite 242.




Intake data summary.

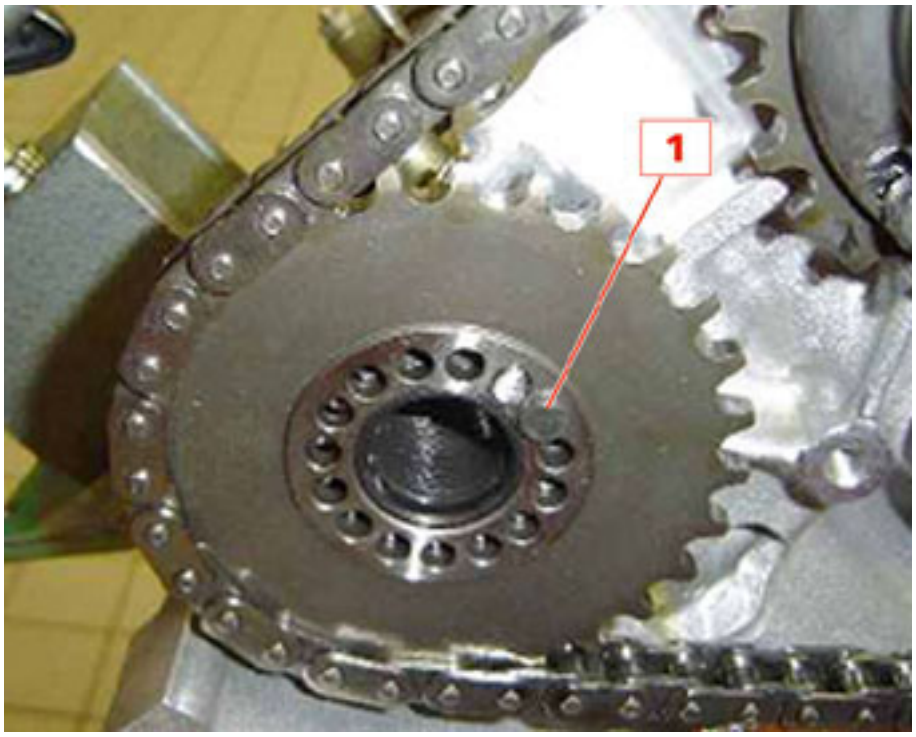
Beginning before TDC **15°± 1**
End after TDC **66°± 1**

## ADJUSTING THE EXHAUST SHAFT TIMING

- Turn the engine clockwise and position the first piston at the TDC with the camshafts balanced (exhaust closed and intake open). Make sure that the dial gauge is on zero.
- Position the dial gauge plunger on the tappet of an exhaust valve. The dial gauge rod must be as perpendicular as possible to the tappet surface.
- Reset the dial gauge that measures the movement of the exhaust tappet.
- Turn the crankshaft clockwise until an exhaust valve is closed.
- Check that the closing stroke of the exhaust valve is **1.09±0.08 mm**



- Should the values measured in these conditions be out of tolerance, hold the crankshaft still, move the centring dowel anticlockwise or clockwise (depending on whether you wish to delay or advance the shaft) until obtaining the desired timing value.
- Fit the retaining dowel **(1)** in the hole immediately after or before the centring dowel, whatever is easier.



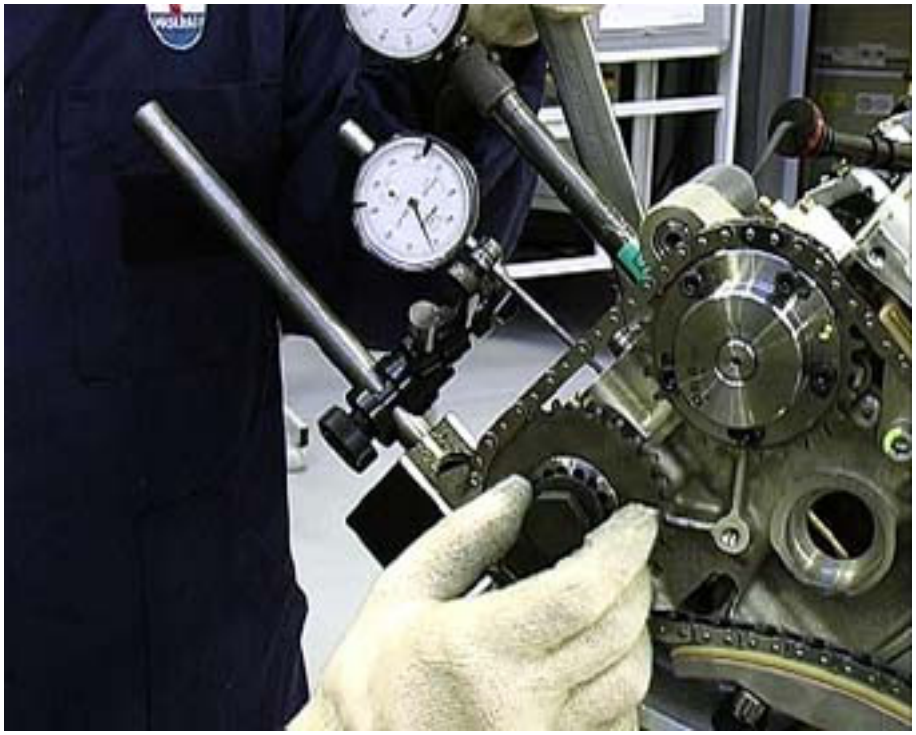

**Exhaust data summary**.

| | |
|---|---|
| Beginning before BDC | **41°± 1** |
| End | **0°± 1** |

- To complete the operation, fix the exhaust camshaft gearwheel.

**N.B.**
**Use engine oil to lubricate the thread and underhead of the retaining screw on the exhaust camshaft and the toothed ring gear.**

- Tighten the retaining nut with sealing washer to a torque of **200 Nm**.
- During the procedure, lock the camshaft by working on the handling hexagon in such a way as not to load the timing belt.
-
- Perform the same procedure for the left-hand cylinder bank, positioning the dial gauge holder in the seat of the spark plug of cylinder number 8.



**N.B.**
**After adjusting the timing, it is advisable to perform an OIL PRESSURE TEST, introducing pressurised engine oil through the oil filter union at a pressure of 5-6 bar. In this way, you can check the lubrication of the camshaft seats, hydraulic chain tensioners, tappets and central transmission pin.**

- Fit the upper runner and tighten the retaining screws to a torque of **10 Nm**



- With the aid of short stud bolts, position the gaskets on the crankcase.



- Lubricate the seats of the cooling circuit grommets.



- Fit tool **900026590** onto the crankshaft, in such a way that the oil seal will not be damaged when the cover is installed.



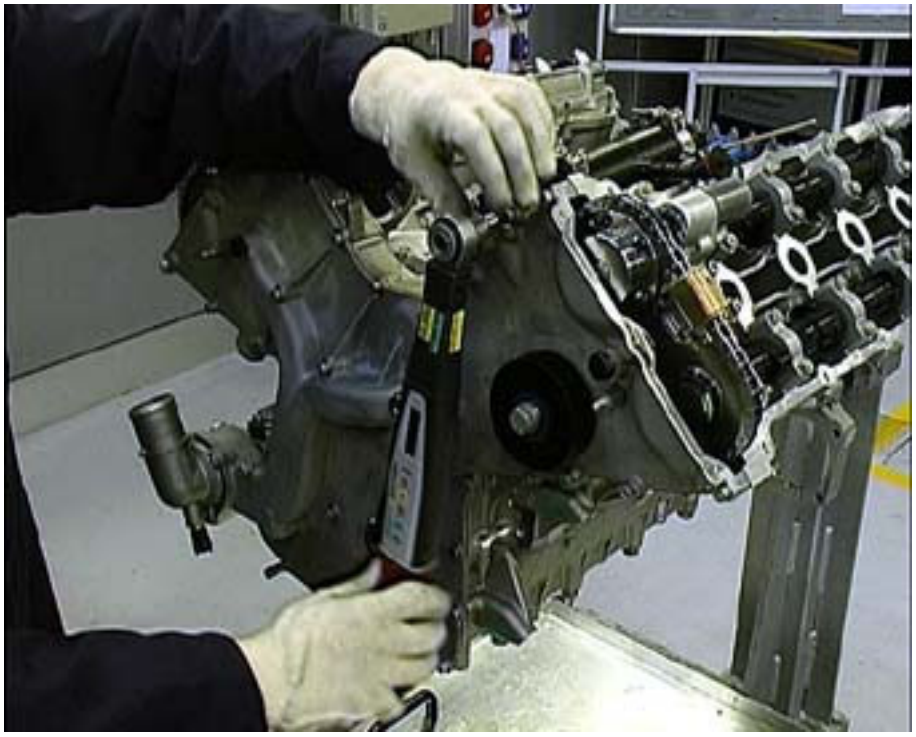
- Install the front crankcase cover.



- Replace the stud bolts together with the fastening screws.



- Tighten the front cover screws to a torque of **10 Nm.**



- Fit the belt tensioner paying particular attention to the position of the reference pin, and tighten to a torque of **25Nm.**



- Fit tool **900026560** to lock the crankshaft rotation.

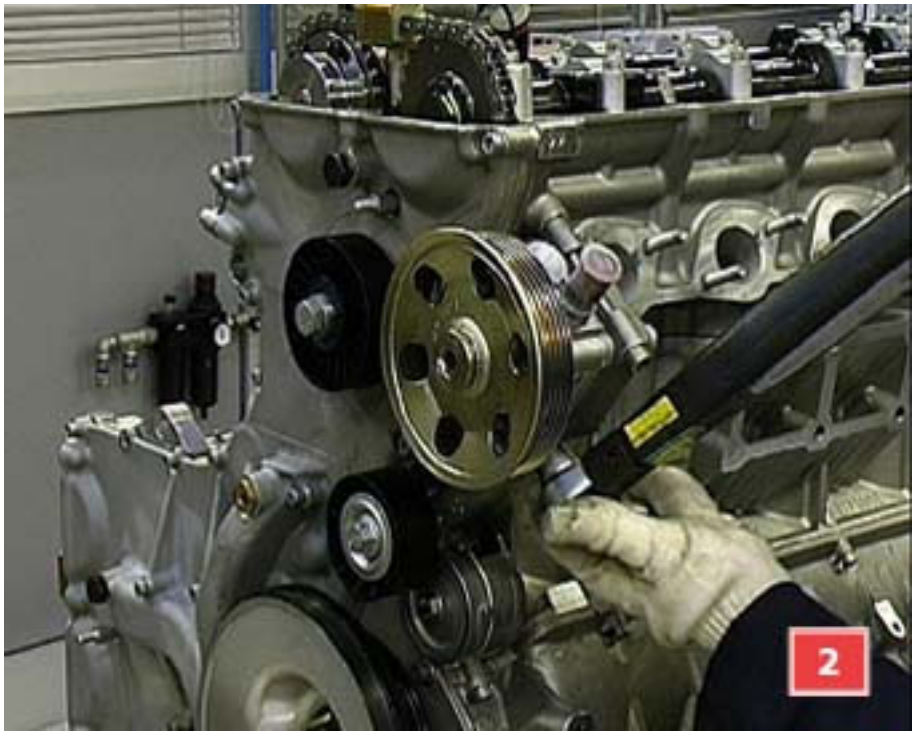



- Position the torsion damper on the shaft and tighten the fastening screw with Loctite 242 to a torque of **450 Nm.**



- Fit the hydraulic steering pump, tightening the front screw to a torque of **10 Nm** (**Figure 1**) and the rear screw to a torque of **25 Nm** (**Figure 2**).



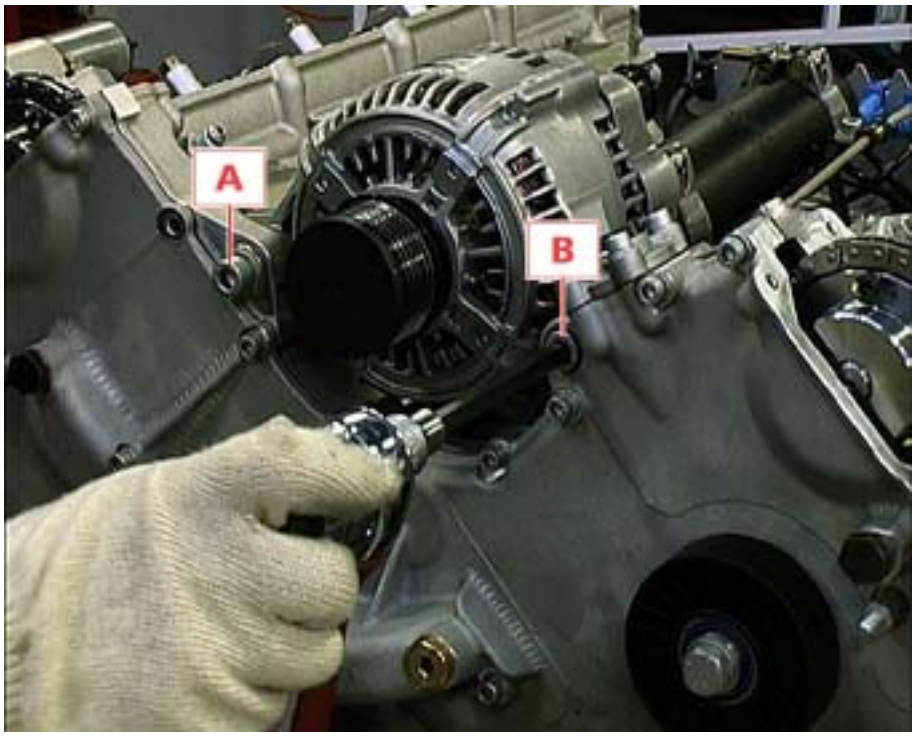
- Secure the air-conditioning system compressor by tightening the screws to a torque of **25 Nm.**



- Insert the bushings to fasten the alternator onto the crankcase.



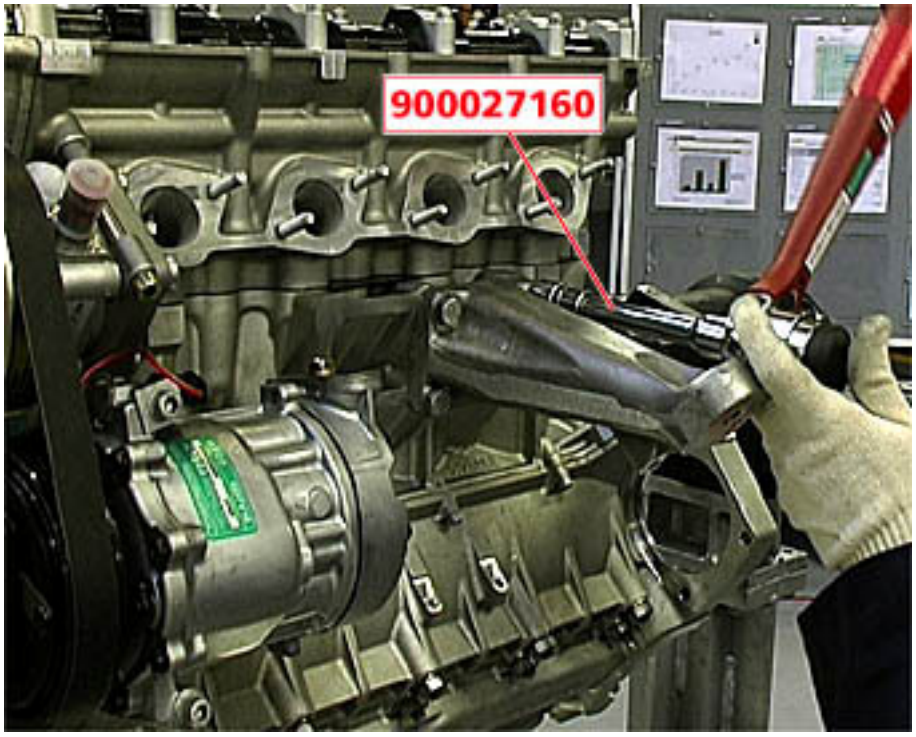
- Fit the alternator by tightening screw A to a torque of **49Nm** and screw **B** to a torque of **59 Nm.**




- Turn the movable tensioner and fit the multifunctional belt.



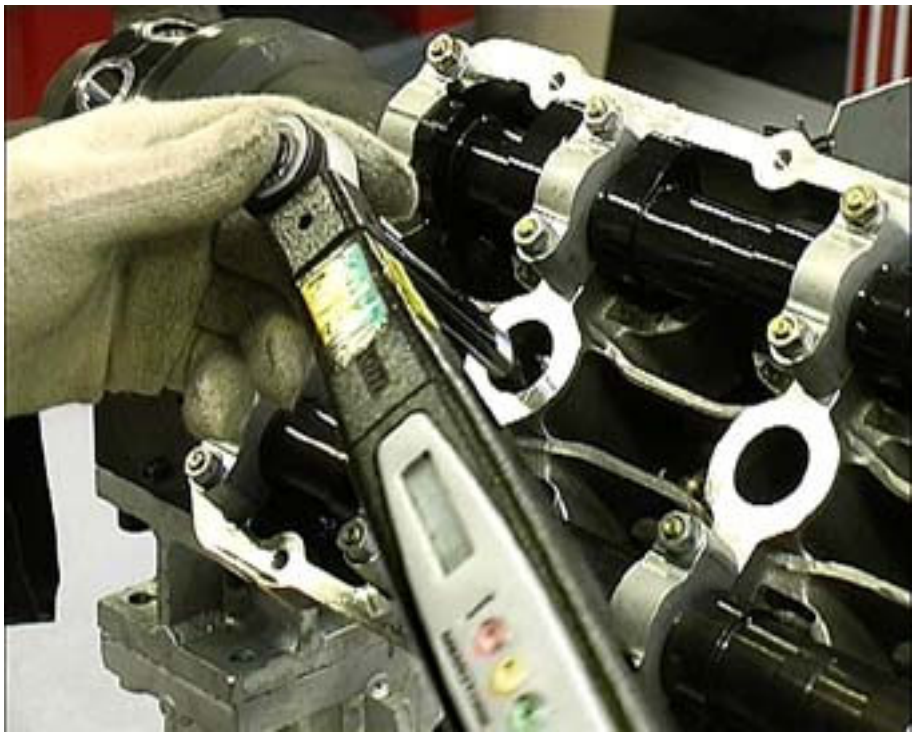
- Fit the engine mounting brackets using tool **900027160**, and tighten the fastening screws to a torque of **53 Nm.**




- Install the starter motor, tightening the fastening screws to a torque of **14 Nm**.



- Fit the spark plugs after having lubricated the threading with Champion 2612 grease.



- Fit the tappets' cover remembering to arrange the head gaskets and the spark plug tube gaskets beforehand. Insert the timing variator connector through the specific hole.



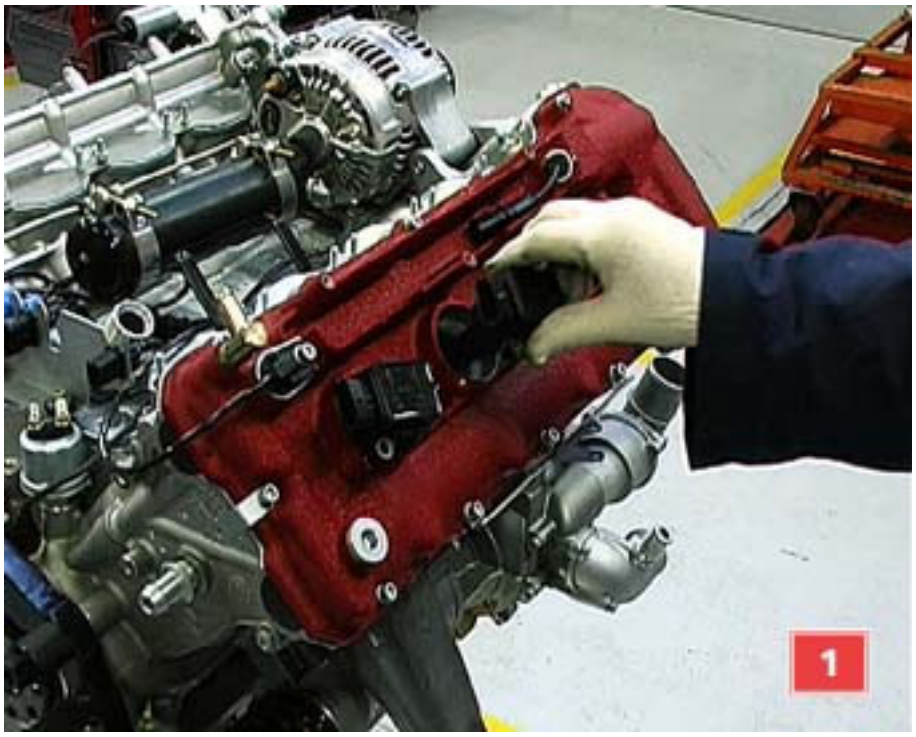
- Working from the middle outwards, tighten the closing screws to a torque of **10 Nm.**

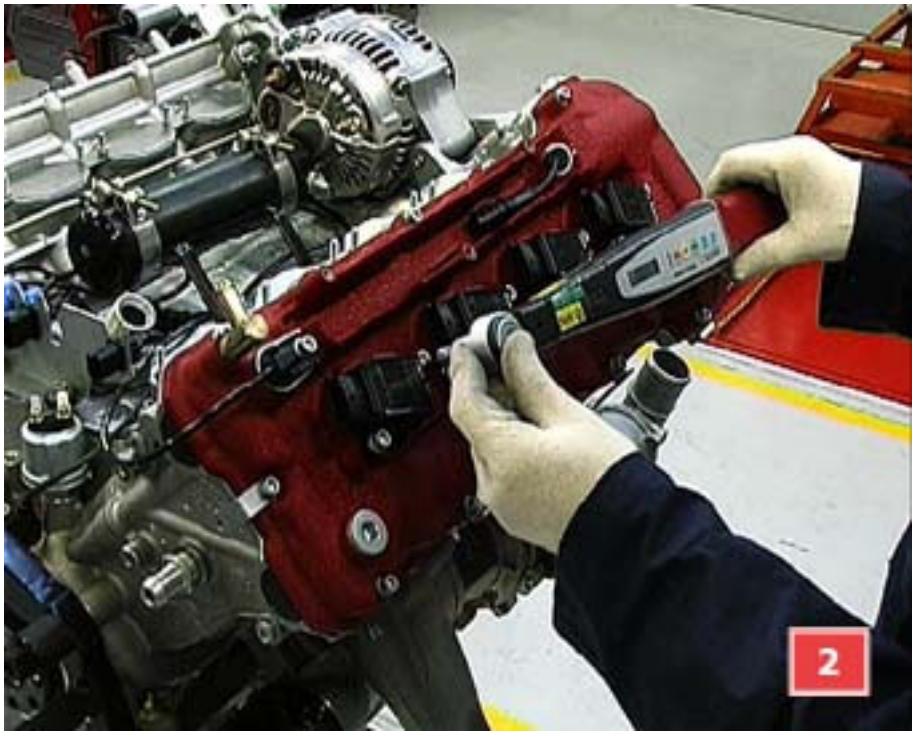


- Fit the Seeger ring for the cable guide of the  timing variator valve using tool **AV3333**.



- Fit the ignition coils (**Figure 1**) and tighten the retaining screws to a torque of **10 Nm** (**Figure 2** ).

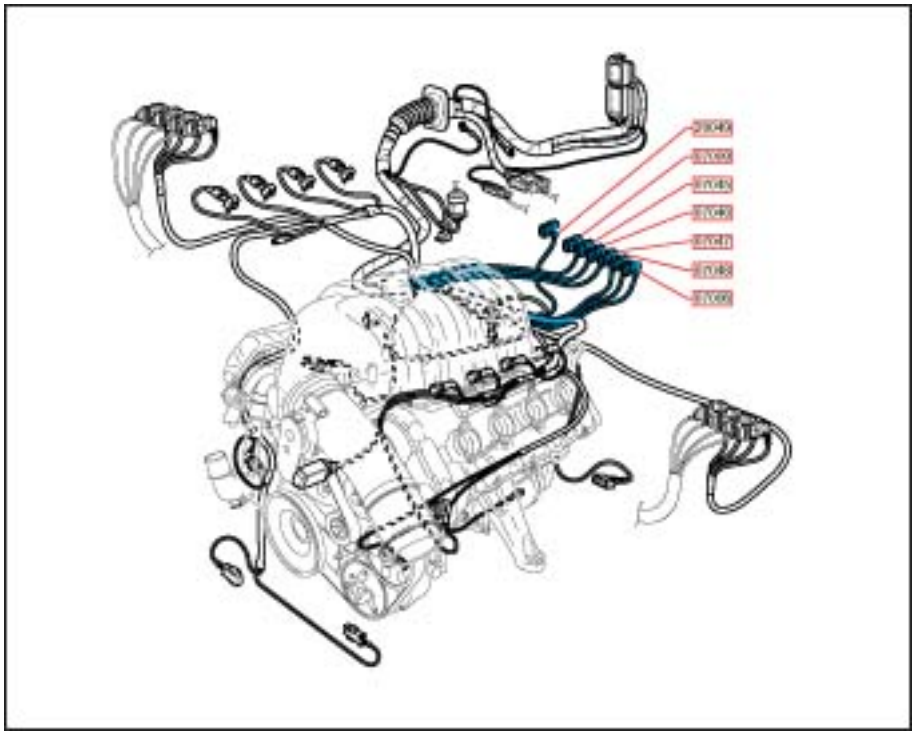


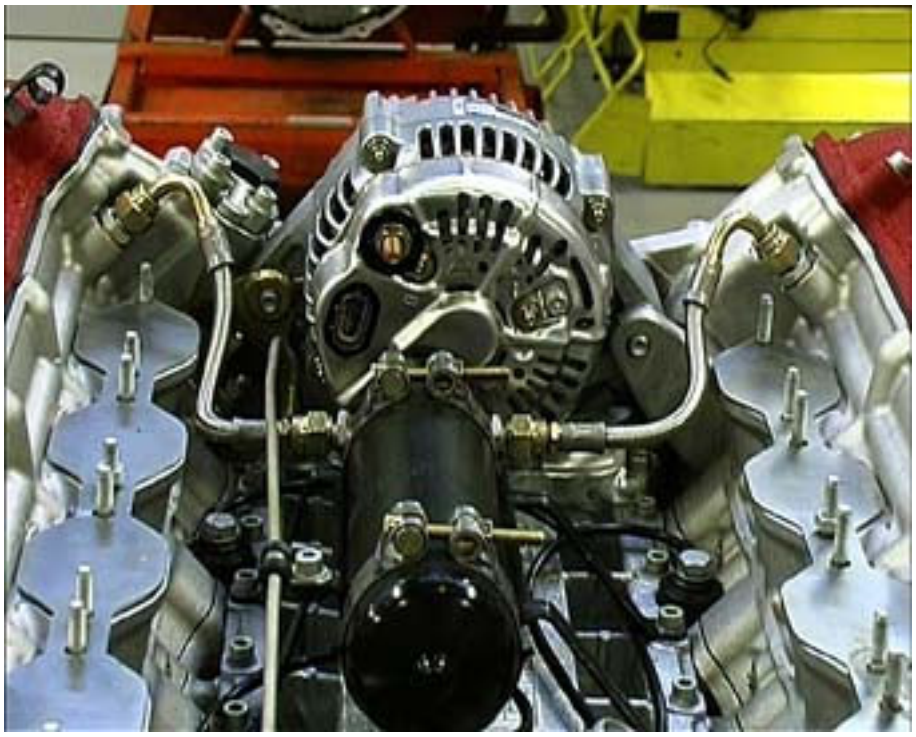
- Working from their housings on the support bracket, take out the connectors of the timing sensors (RH and LH), the rpm sensor (RH) and the detonation sensors (four).

**CAUTION**
**Check that the sensors on each wire match, consulting the electric system manual if necessary.**





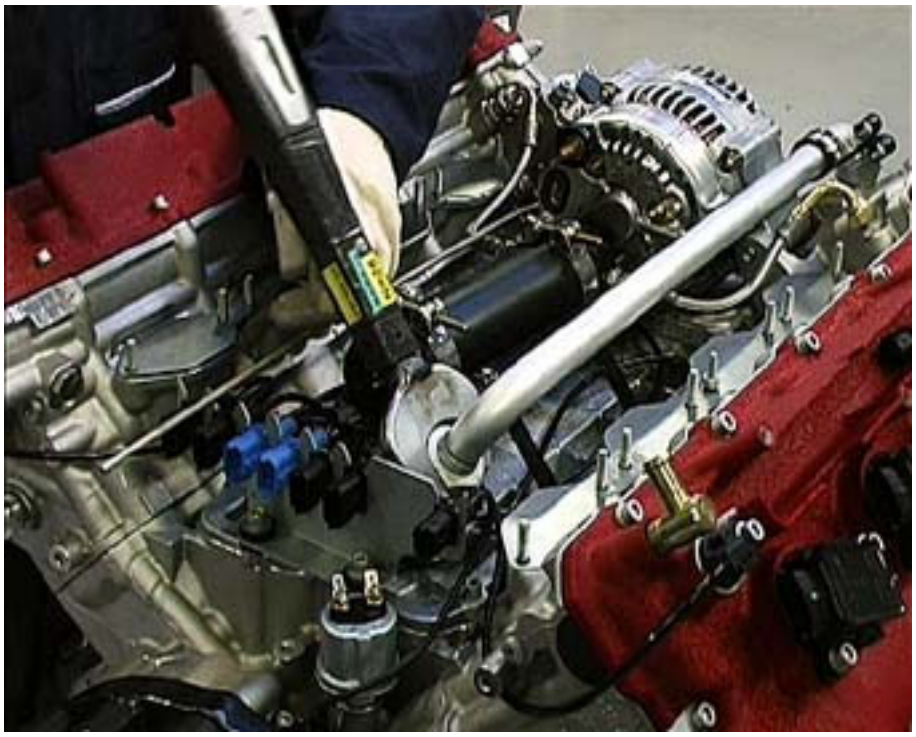
- Install the tubes which run from the accumulators to the timing variator solenoid valves.



- Fit the tube which runs from the exchanger to the tank. Fit the fastening nut onto the exchanger and secure the retaining bracket.



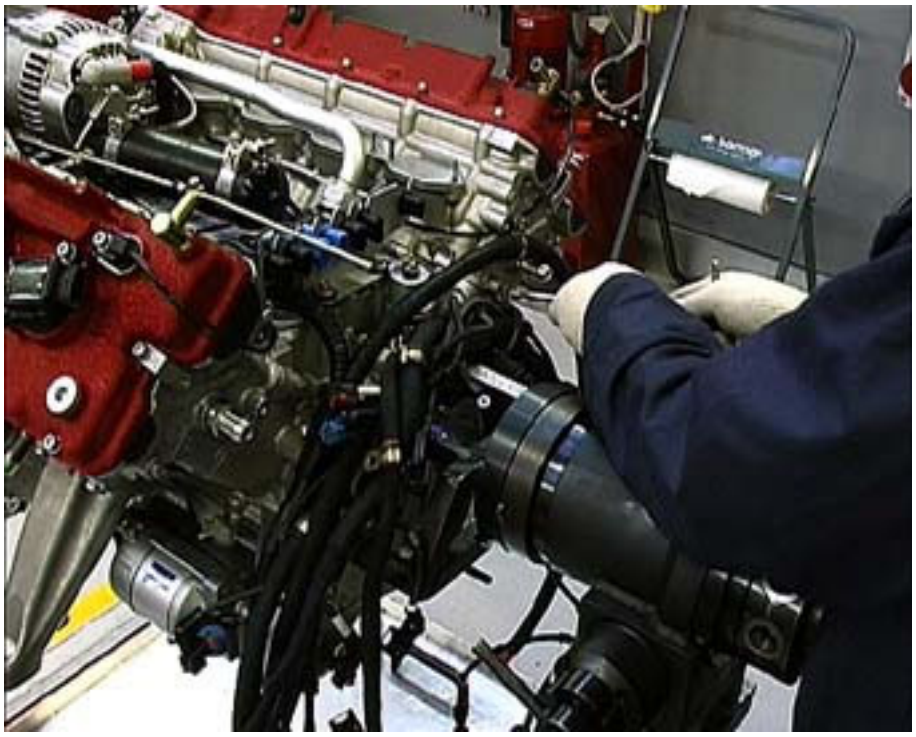
- Complete the procedure by tightening the nut on the exchanger to a torque of **75 Nm.**



- Secure the service wire onto the alternator and tighten it to a torque of **10 Nm.**



- Using a clamp, secure the injection cable onto the right-hand head.



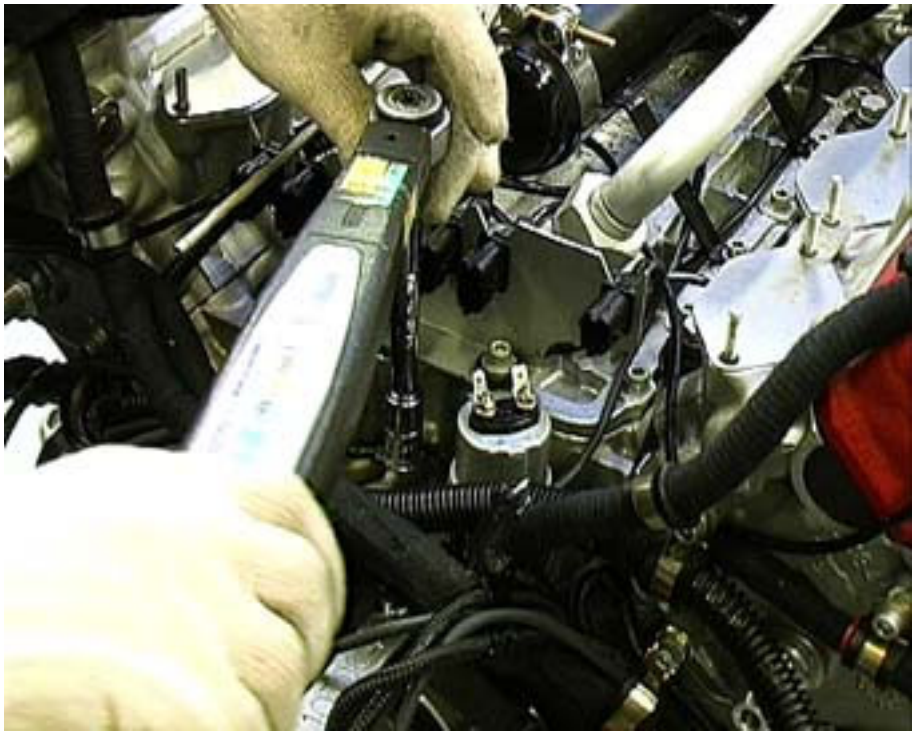
- Using a clamp, secure the wiring leading to the head coils and the wiring leading to the injectors and the fuse box.



- Fit the connector onto the alternator.



- Secure the earth terminal onto the crankcase, tightening the fastening screw to a torque of **25 Nm**.



- Attach the connectors to the wiring support bracket.



- Connect the oil pressure sensor.



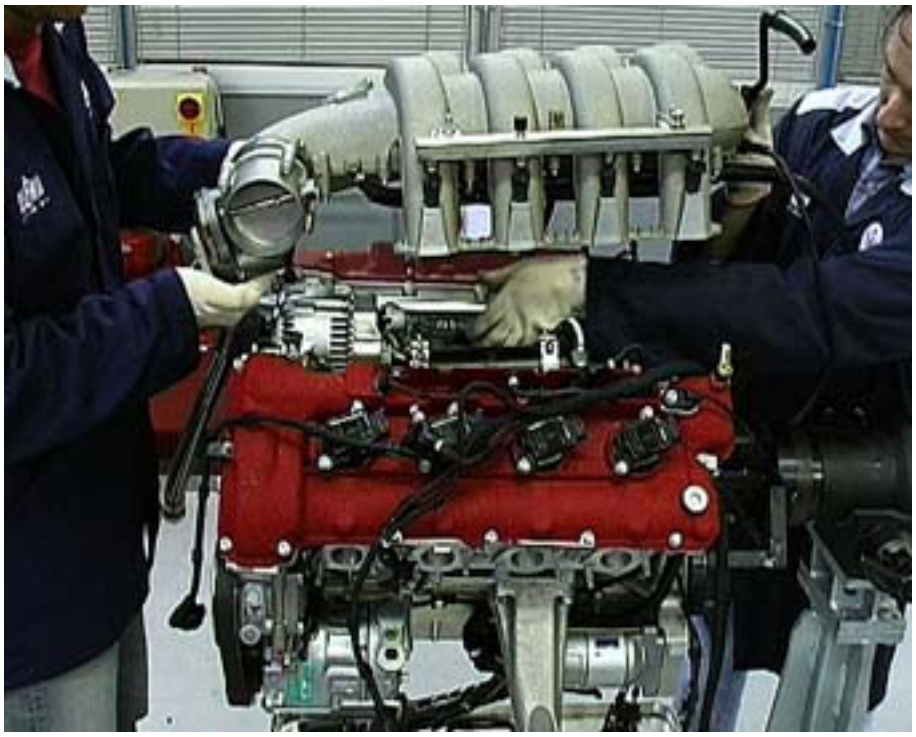
- Secure the wire which leads to the A/C compressor and to the starter motor.



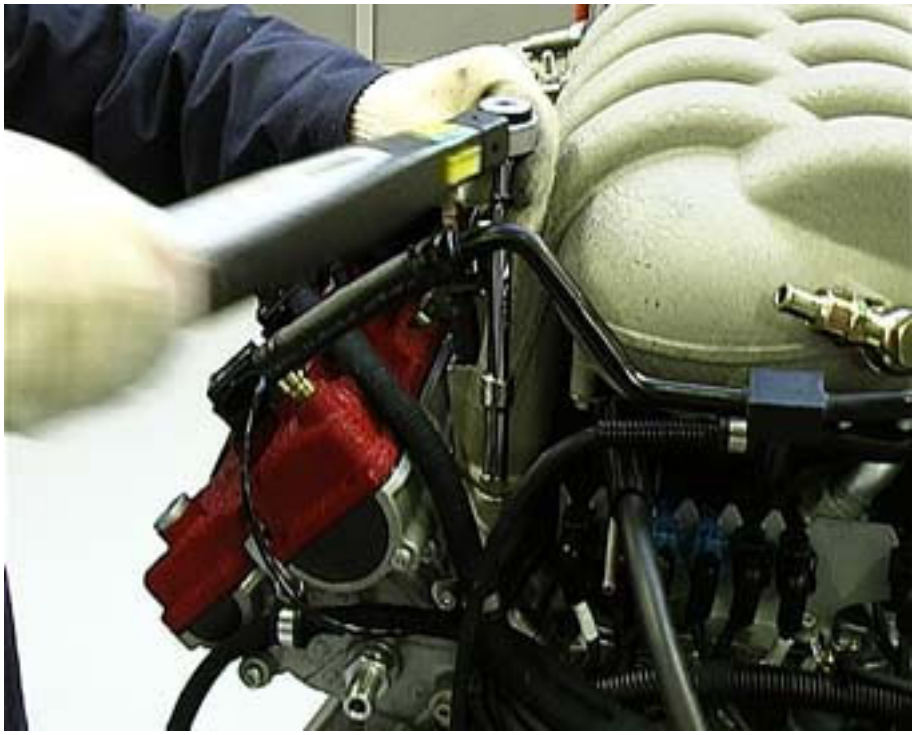
- Remove the tools **AV3332** protecting the intake ducts and position the gasket on the manifolds.



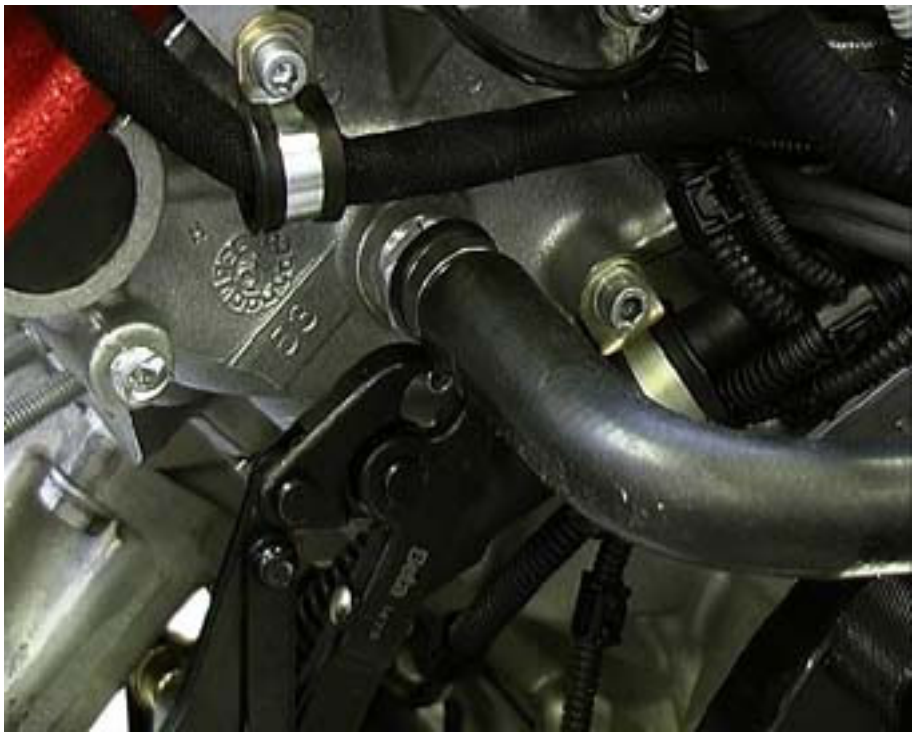
- Position the intake manifold, centring it on the duct's stud bolts.



- Tighten the bolts to a torque of **10 Nm.**



- Using clamps, fix the oil vapour breather lines and head water outlet lines.



- Attach the connector onto the timing variator solenoid valve. Then attach the injector wiring and the motor driven throttle connector.



- Connect the ignition coil wiring harness.



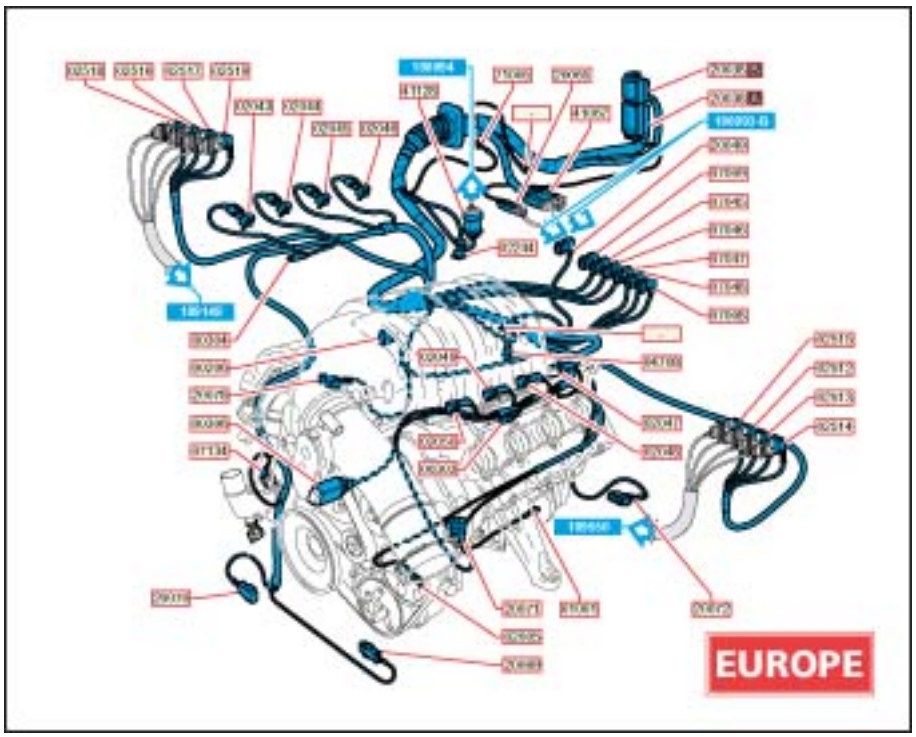
- Fit the wiring covers, securing the screws with Loctite 242 to a torque of **8 Nm**.

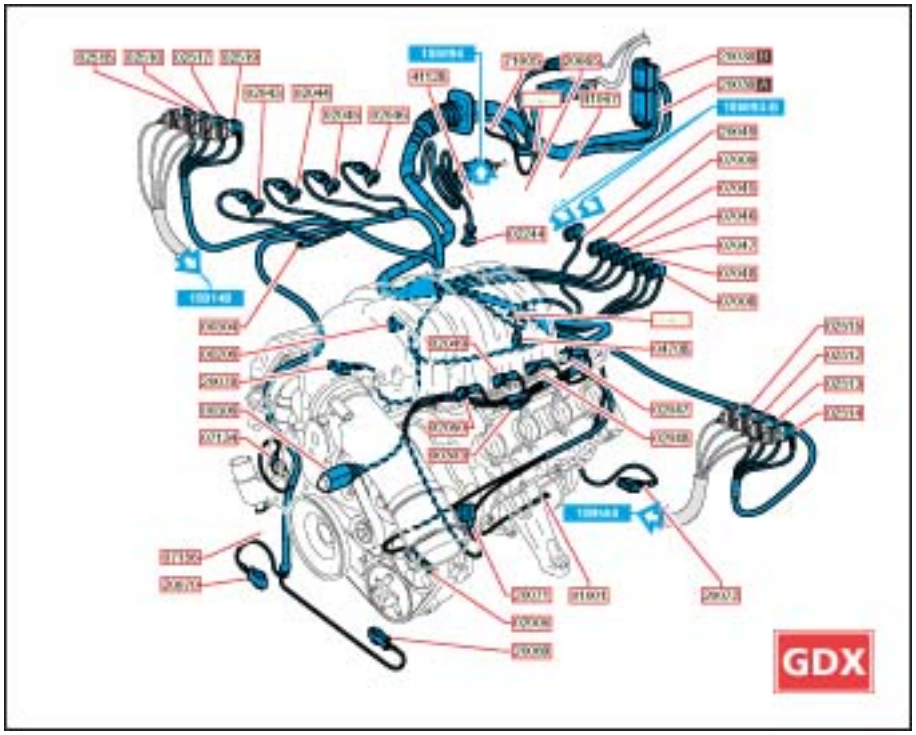


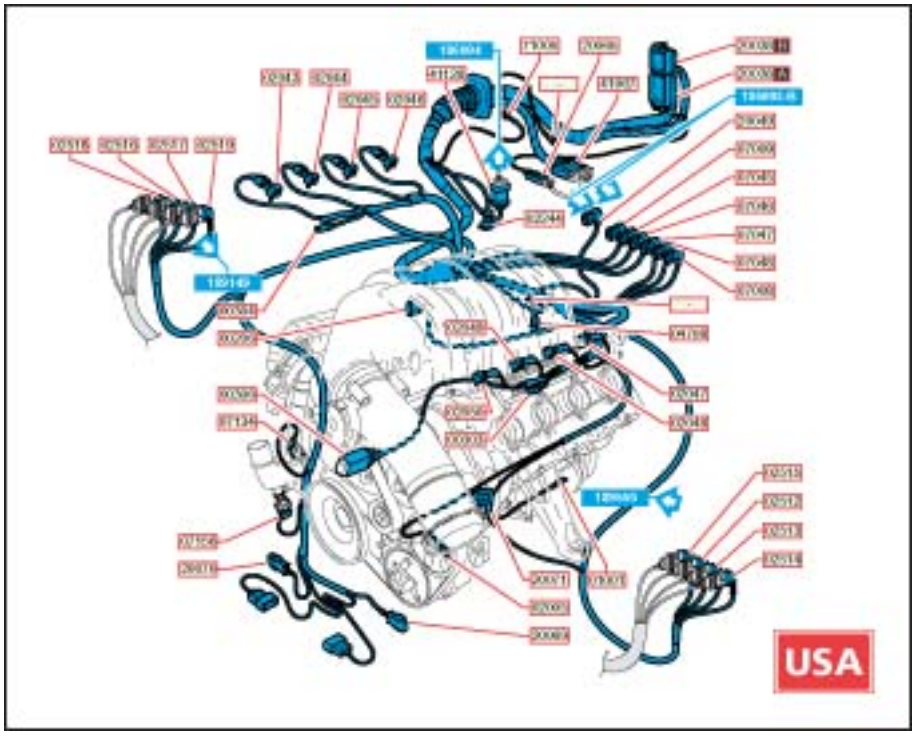
- Using tool **900026550**, insert the clutch shaft support bearing.




**IMPORTANT**
**Once the engine assembly procedure is complete, check that the wiring is correctly positioned, consulting the electric system manual if necessary.**




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## DIMENSIONAL CHECKS

### Checking the camshaft dimensions

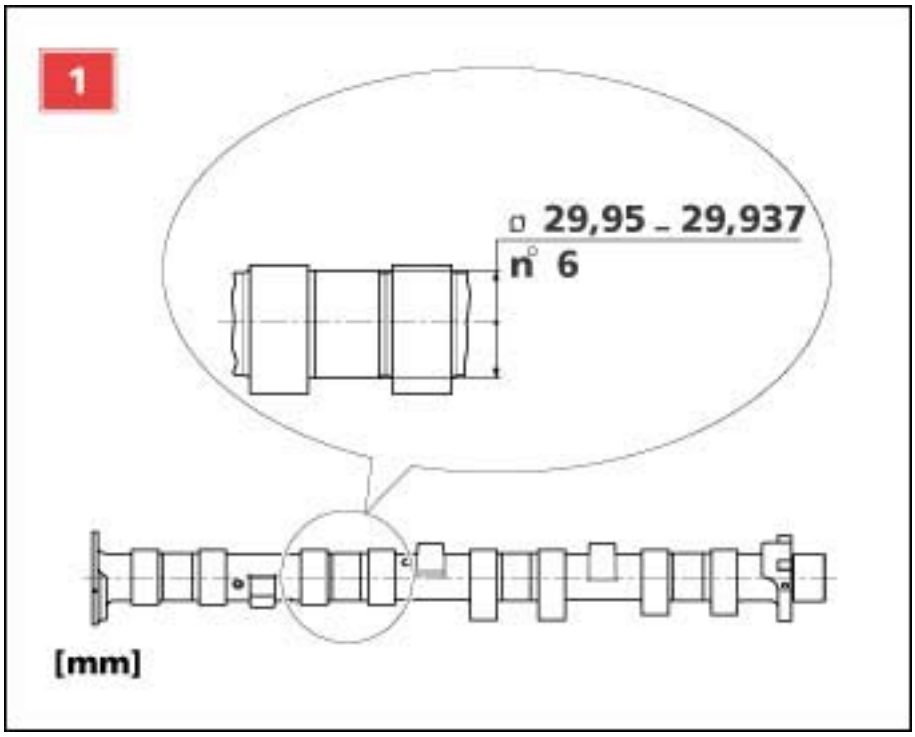
- Check that the main bearing journals and the cams do not show scoring or excessive wear.

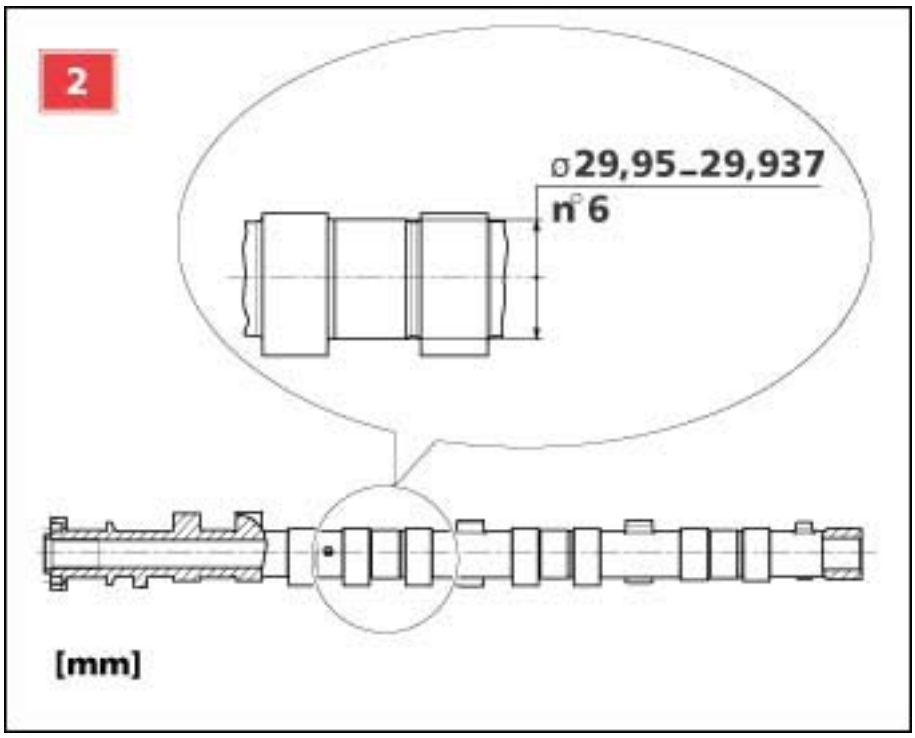


- Measure the main bearing journals with the micrometer.



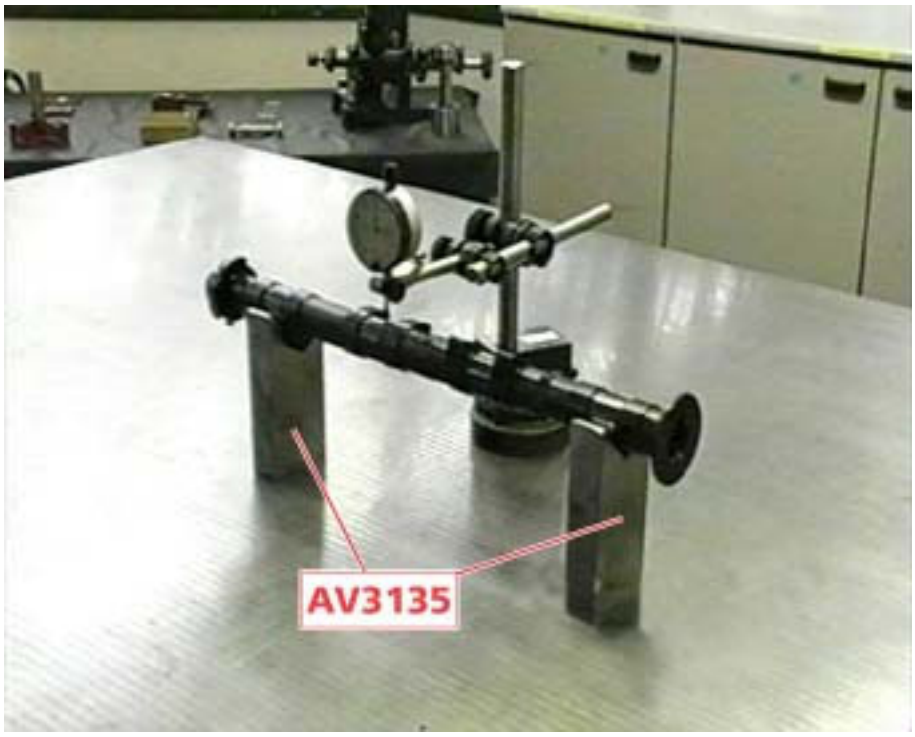
- The dimensions measured must fall within the indicated values (**Figure 1** e **2**)..



**N.B.**
**To check the coaxial factor of the main bearing journals, a checking plane is required.**

- Place the camshaft on the indicated tool. **AV3135**.
- Reset the dial gauge on the main bearing journal to be examined and rotate the shaft checking the dial gauge indication.
- The coaxial factor error detected must be lower than the prescribed value.




- Repeat the operation for the marked journals.



## Piston dimensional check

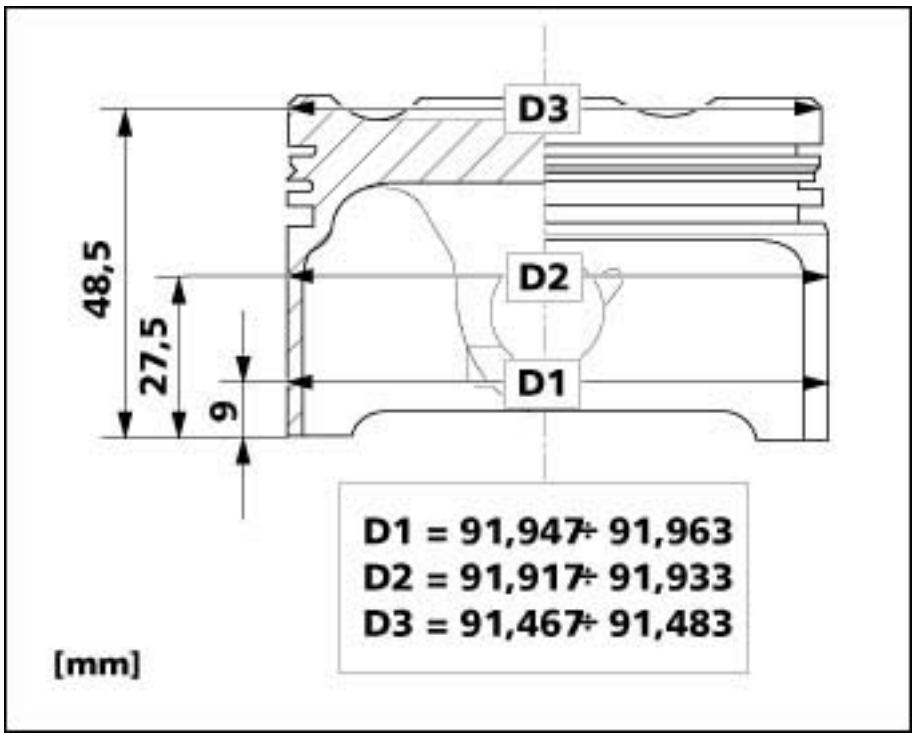
- Carry out a careful visual check of the skirt checking that there is no scoring or excessive wear.



- Measure the piston diameter taking three measurements at the reference heights.



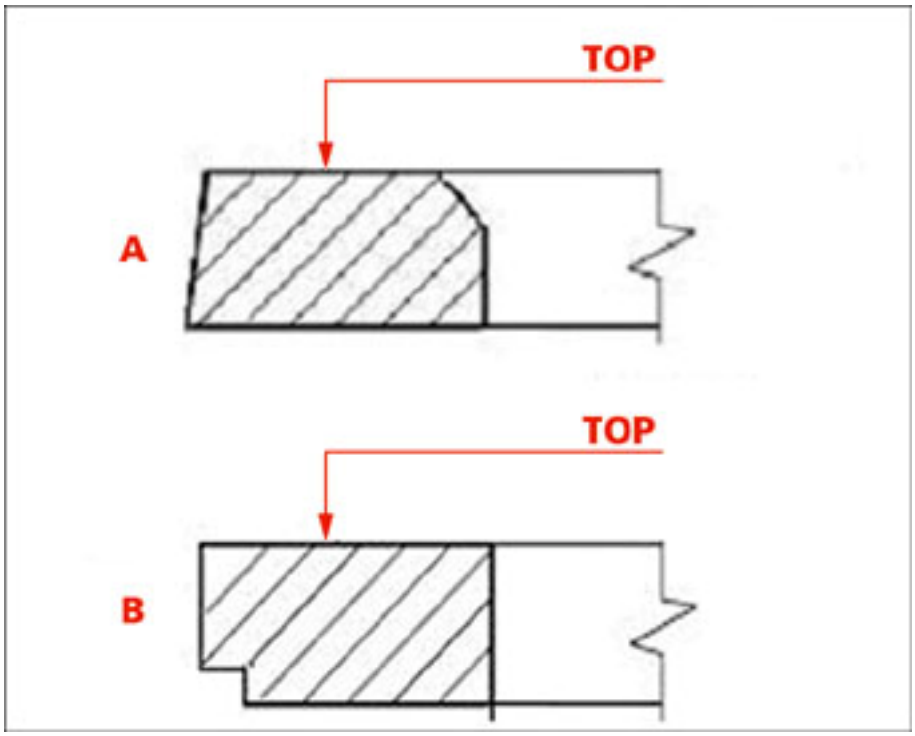
- The dimensions detected must fall within the indicated values.
- In addition, check the pin seat diameter, which must be **20+0.011+0.005 mm,** and the pin outer diameter, which must be **20 – 0.005 mm.**



**IMPORTANT**
**The pin hole is NOT symmetrical with the piston axis.**
**The reason for this offset is the need to limit the lateral forces that are perpendicular to the cylinder liner. The offset follows the rotation direction of the crankshaft and, for this reason, the RH bank pistons are different from those on the LH cylinder bank.**

- After removing the grommets from the piston, carefully inspect them. In the event of scoring, cracks or signs of abnormal wear, they must be replaced.

**IMPORTANT**
**There is no specific fitting direction for the oil scraper ring, nonetheless, take care at the joint of the internal clip: do not position it on the upper and lower ring opening.**



## Connecting rods dimensional check

**N.B.**
**All checks of the connecting rods must be carried out with used screws.**

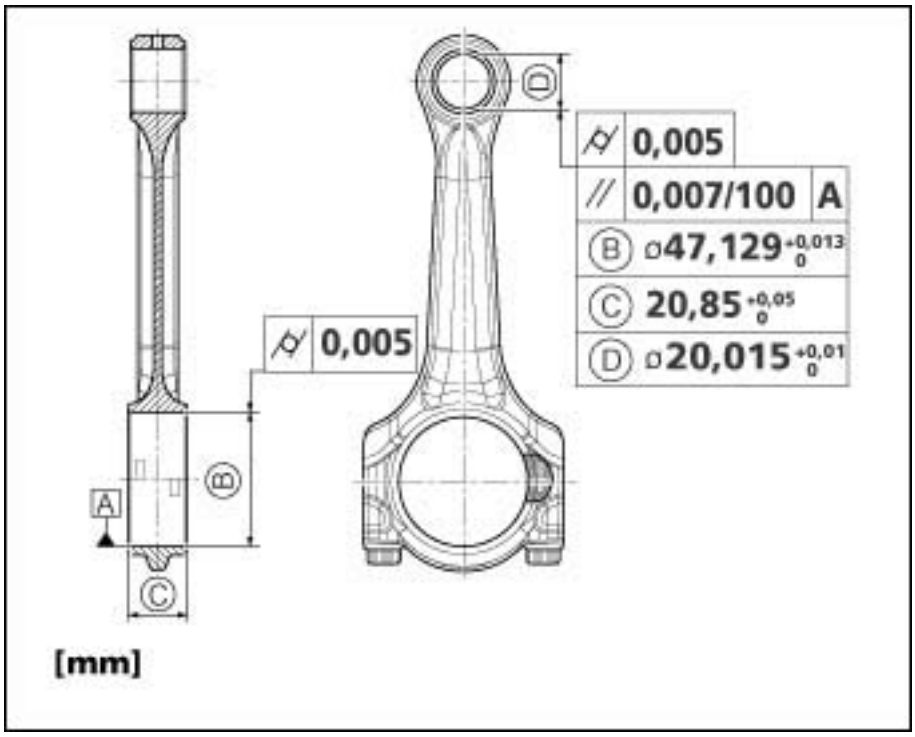
- To measure the diameter of the connecting rod big end, reset the bore-meter on tool **ALZ F04702**.




- Using a torque wrench, tighten the fastenings on the connecting rod big end to torque.
- Check the diameter of the connecting rod big end taking two measurements at a distance of 90°.



- The dimensions detected must fall within the indicated values.




- To measure the diameter of the connecting rod small end, reset the bore meter on the indicated tool (diameter 20 mm).



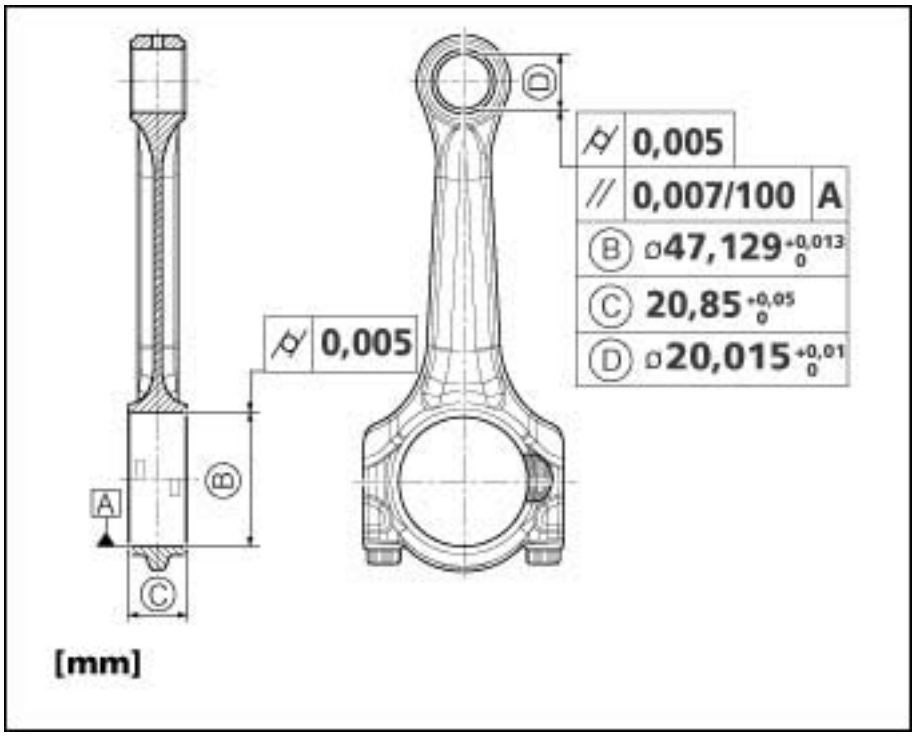
- Check the diameter of the connecting rod small end taking two measurements at a distance of 90°.



- Proceed with a second inspection of the connecting rod small end using the "go-no-go" gauge **TLDF02060**



- The dimensions detected must fall within the indicated values.



**N.B.**
To balance the connecting rod a checking plane is required.

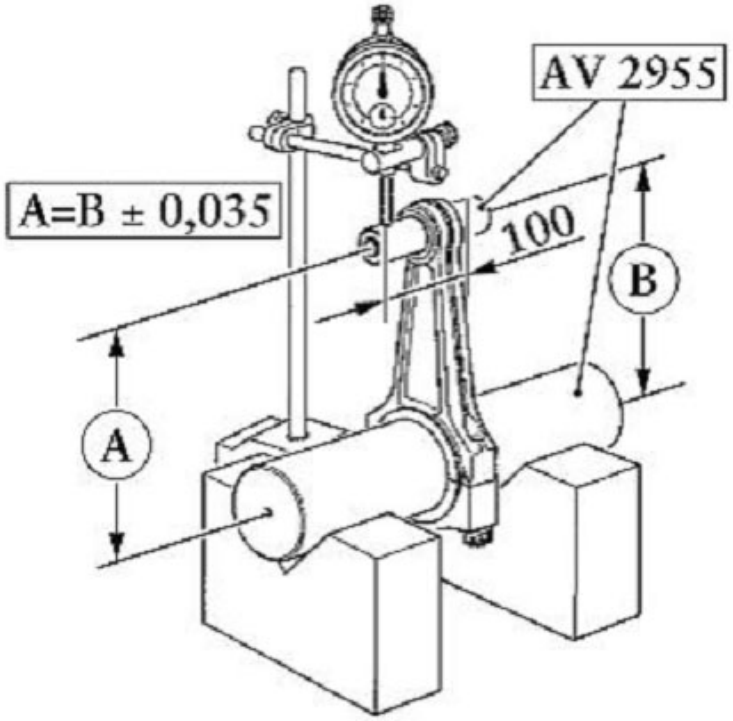
- The parallelism of the connecting rod axes is checked by means of tool **AV2955.**
  Insert the pins supplied into the connecting rod small end and the connecting rod big end, then check for any parallelism error with the dial gauge.




- Rotate the connecting rod by 90° and repeat the procedure.



- The values measured must correspond to those indicated in the drawing.



## Cylinder liner dimensional check

**N.B.**
**To carry out the dimensional check of the cylinder liners a bore-meter and the relative reference ring are required.**

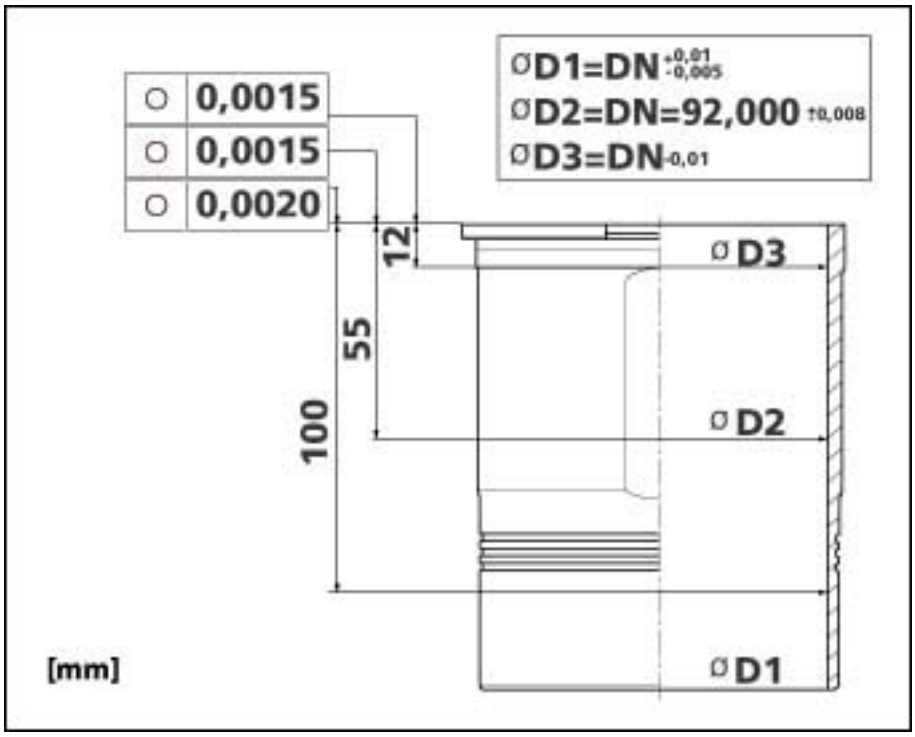
- Reset the bore-meter on the prescribed tool.



- Measure the diameter of the cylinder liner taking three measurements at the reference heights, then rotate the liber by 90° and repeat the procedure.



- The dimensions measured must fall within the indicated values.



## Drive shaft dimensional check

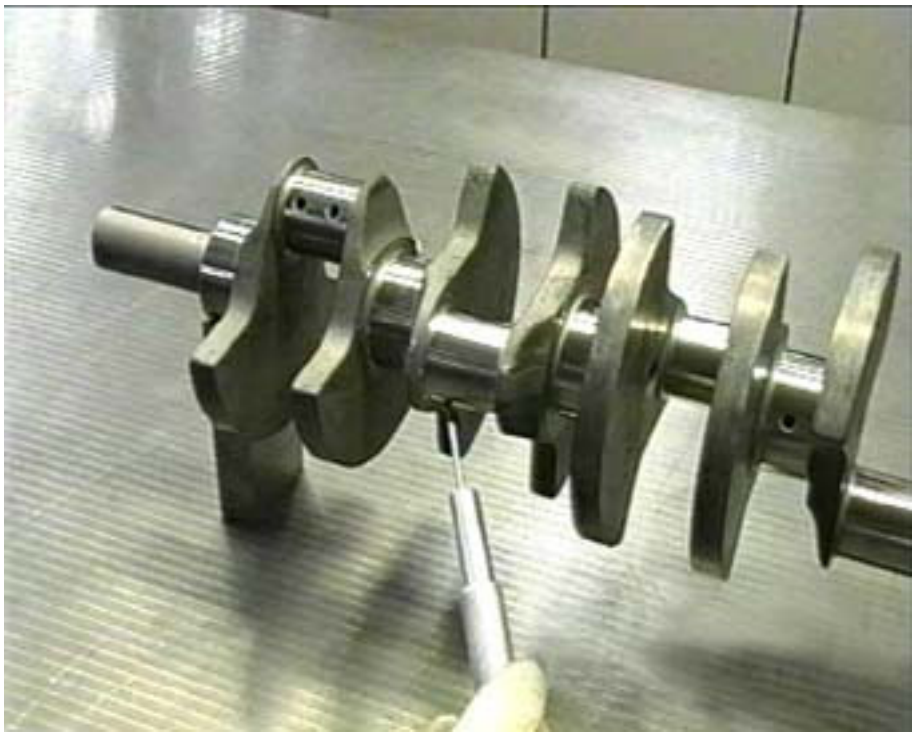
- Check that the main bearing journals do not show scoring or excessive wear.



- Check the condition of the rear plug on the clutch side.



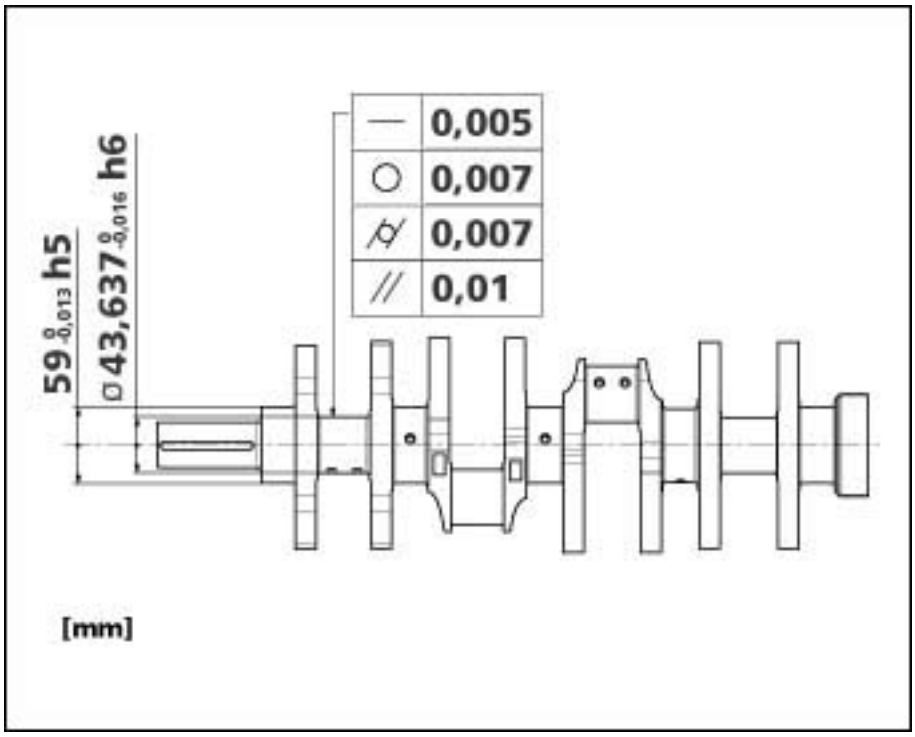
- Using a tube-brush, check that the oil passages are not clogged.



- Measure the main bearing journals using a micrometer.



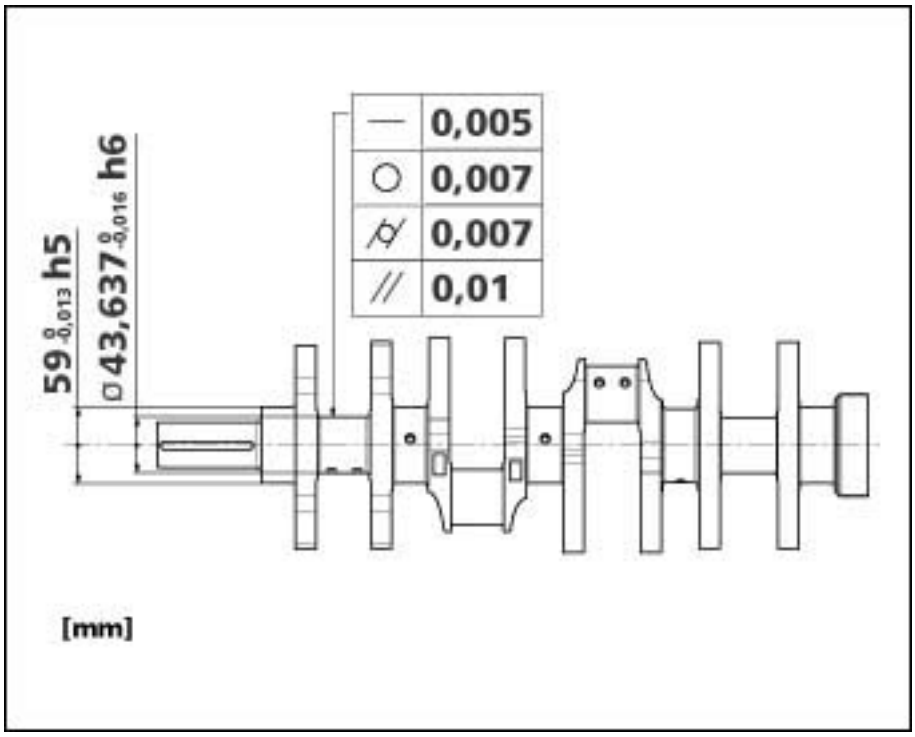
- The dimensions detected must fall within the indicated values.




- Measure the crankpins with the micrometer.



- The dimensions detected must fall within the indicated values.



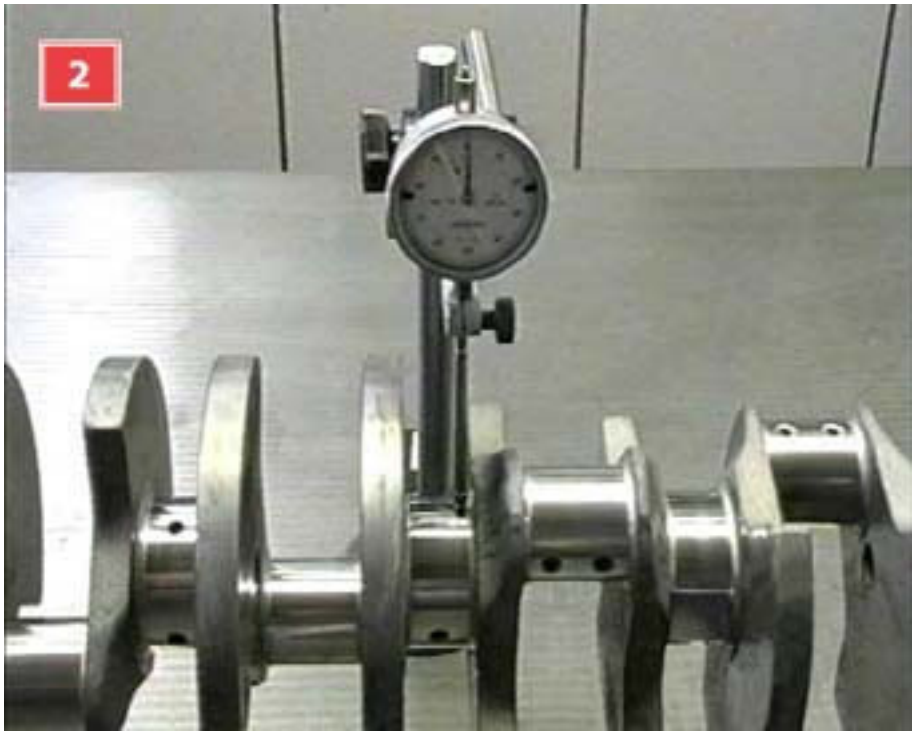

**N.B.**
**To check the coaxial factor of the main bearing journals a checking plane is required.**

- Arrange the crankshaft on the specified tool **AV3135**.

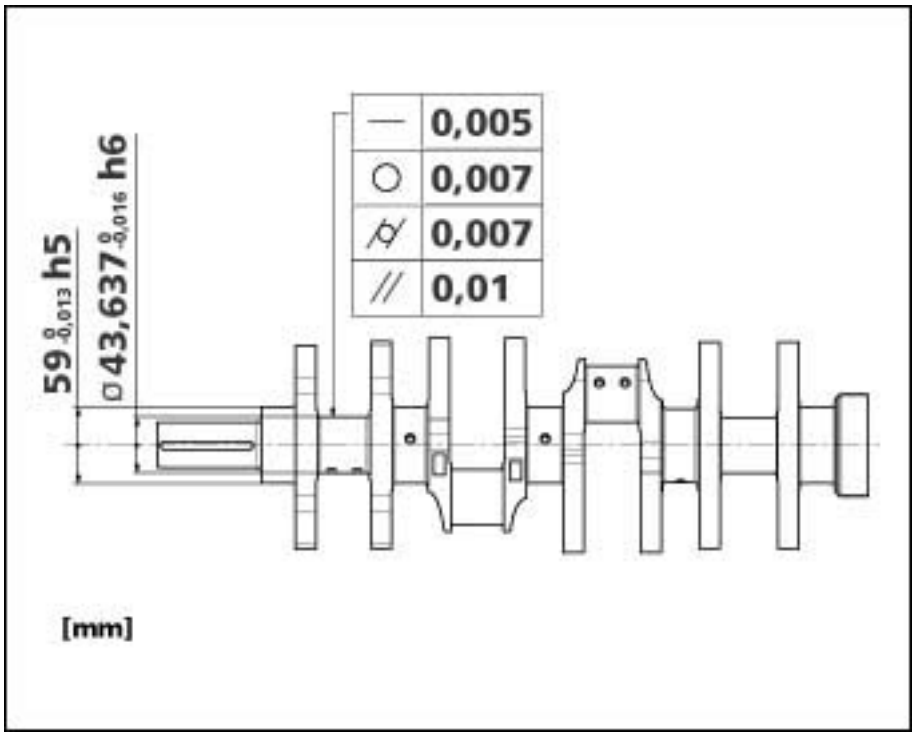


- Reset the dial gauge on the main bearing journal to be checked and rotate the shaft checking the dial gauge indication (**Figura 1** e **2**).

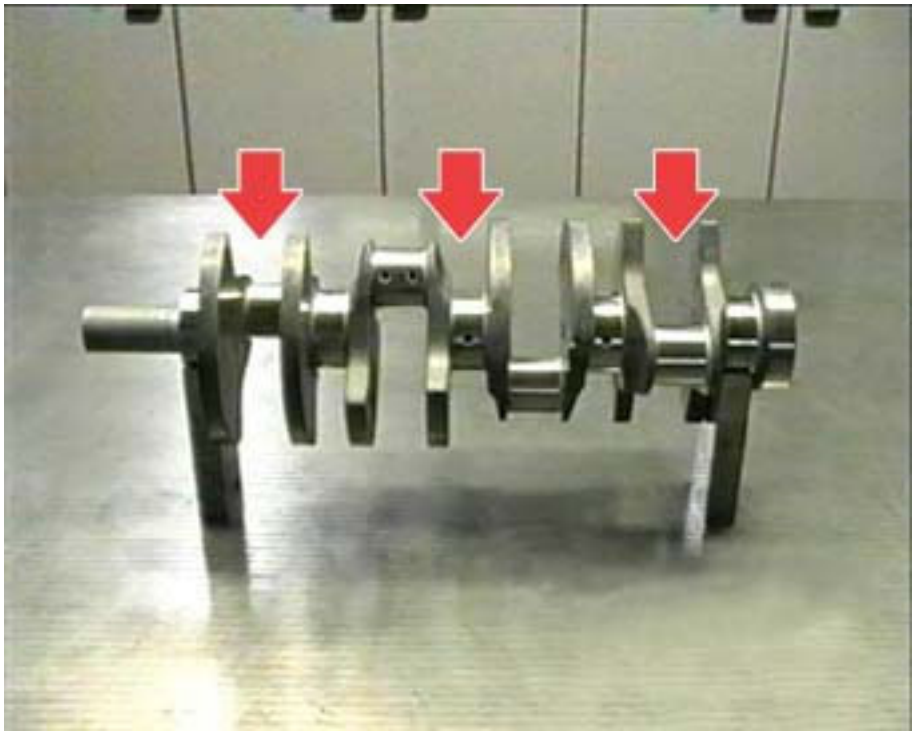


- The coaxial factor error detected must be lower than the indicated value.




- Repeat the operation for the marked main bearing journals.

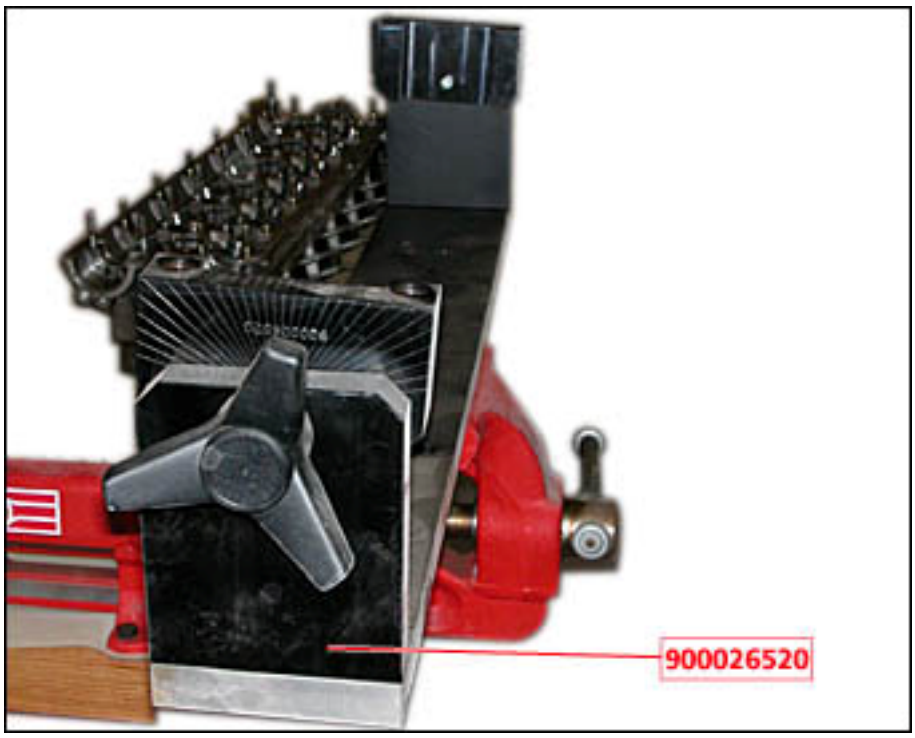


## Main cylinder head data

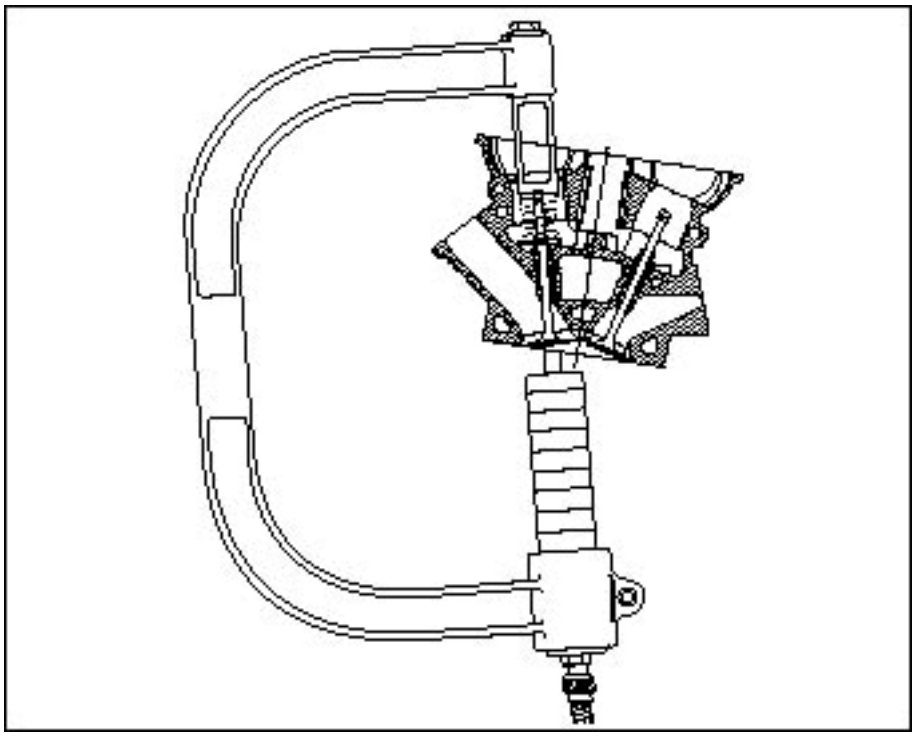
| | |
|---|---|
| **Interference between the valve guide and the housing on the head** | 0.032 ÷ 0.068 mm |
| | |
| **Interference between the valve seat and the housing on the head** | |
| • Intake. | 0,080 ÷ 0,140 mm |
| • Draining | 0,080 ÷ 0,140 mm |
| | |
| **Coupling between the valve rod and the relative guide** | |
| • Fitting clearance (intake ) | 0,030 ÷ 0,060 mm |
| • Fitting clearance (draining) | 0,035 ÷ 0,065 mm |
| • Wear limit | 0.100 mm T.B.D. |
| | |
| **Max. shift between valve stem and contact surface with bucket** | |
| • Intake and draining | 0.025 mm |
| | |
| **Clearance between bucket and relative seat** | |
| • Fitting clearance | 0,025 ÷ 0,057 mm |
| • Wear limit | 0,100 mm |

## Checking the cylinder heads

**N.B.**
**To ensure the best working conditions, position the cylinder heads on the tool 900026520**

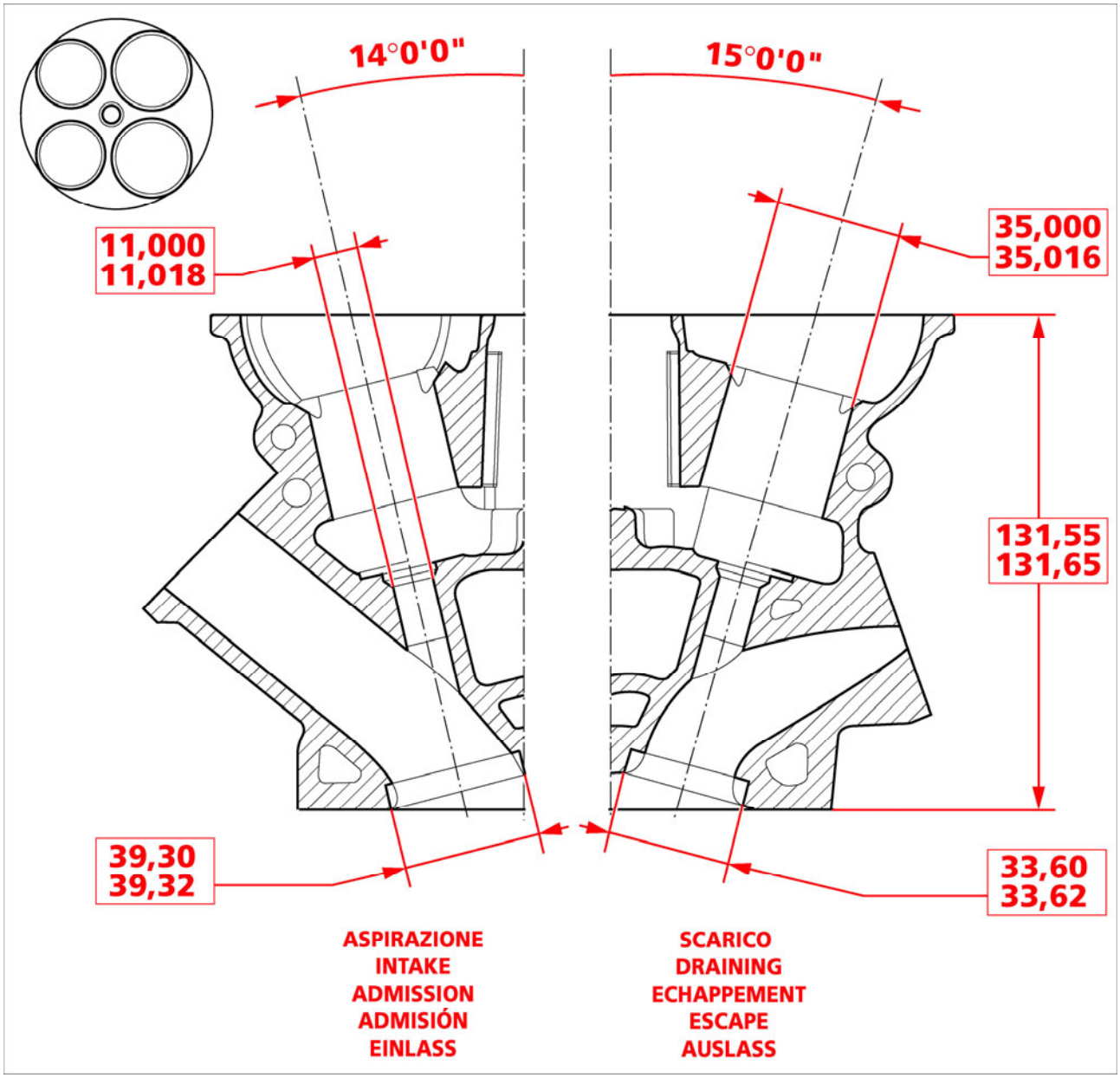


- Remove the valves, using specific standard pneumatic equipment.



- Clean the heads carefully, removing all traces of scaling from the combustion chambers and the oil and water lines. For this purpose, it is advisable to inject pressurised petroleum into the oil lines and a standard descaling liquid into the water lines. Perform these operations with the aid of tool **900026970** (not shown).
- Check the state of the spark plugs' seats.
- Using the bore-meter, check the valve control bucket seats for wear and the camshafts seats.
- On a straightening surface, check if the head and crankcase coupling surfaces are perfectly flat.

- If the head surface needs to be corrected, always comply with the value given in the figure.



## Checking the valve seats and guides

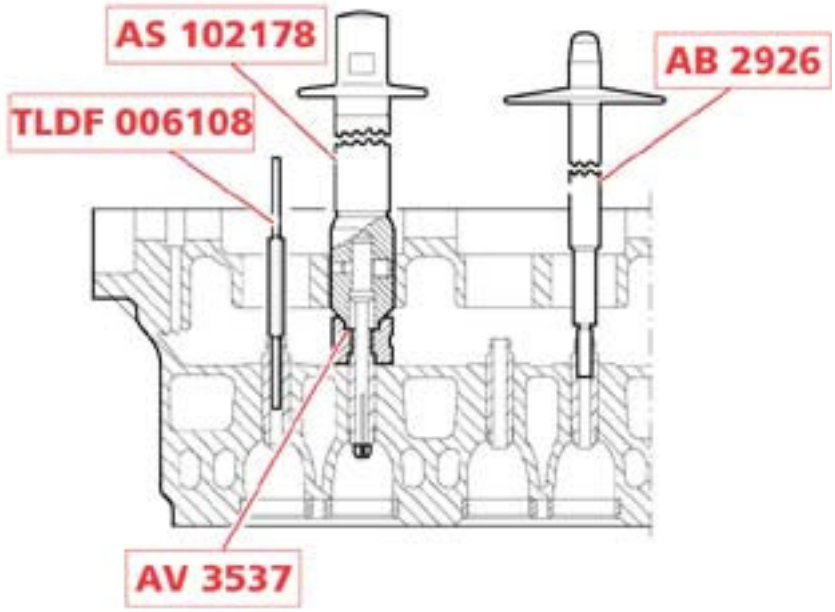
- Following the checks, if replacement of the valve seats is required, they must be removed by milling in order to prevent damage to the housing on the head.
- Check the dimensions of the grooves and the seats to ensure that the prescribed interference is created after assembly.
- To insert the new seats, heat the head in a kiln until it reaches a temperature of **190 °C**, for **six minutes**, then cool down the seats in liquid nitrogen, for about **five minutes**.

**NOTES**
**The above described operation must be exclusively carried out by a specialized laboratory.**

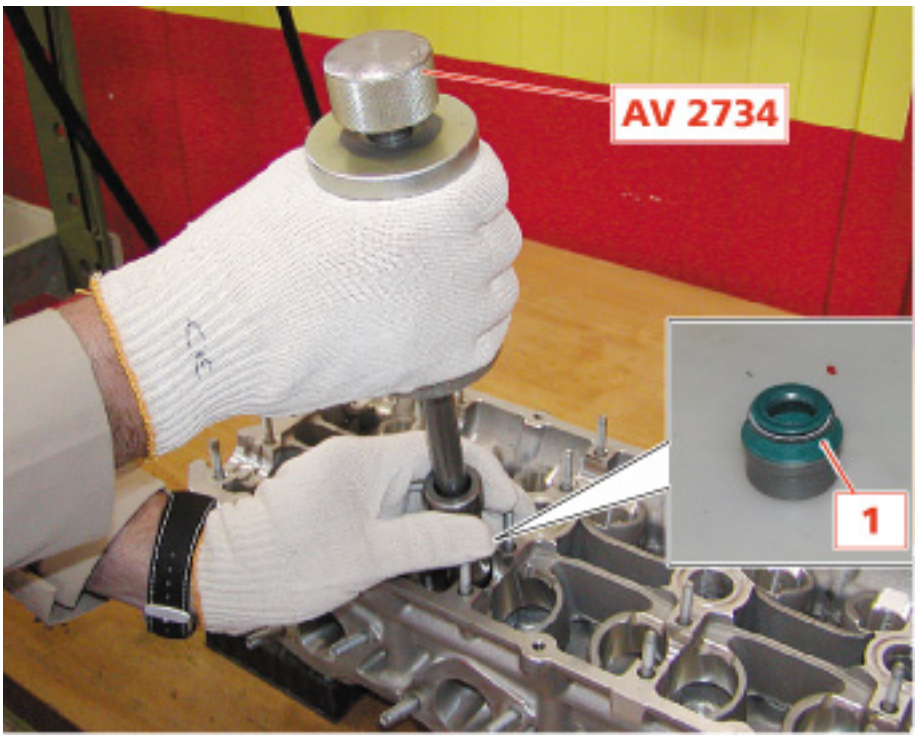
- Insert the seats onto the head using the special punch. Carefully check that the kickback does not cause the previously installed seats to fall out; if necessary, check that all installed seats are correctly fitted.
- Using gauge **TLDF 006108**, check the valve guides for wear.



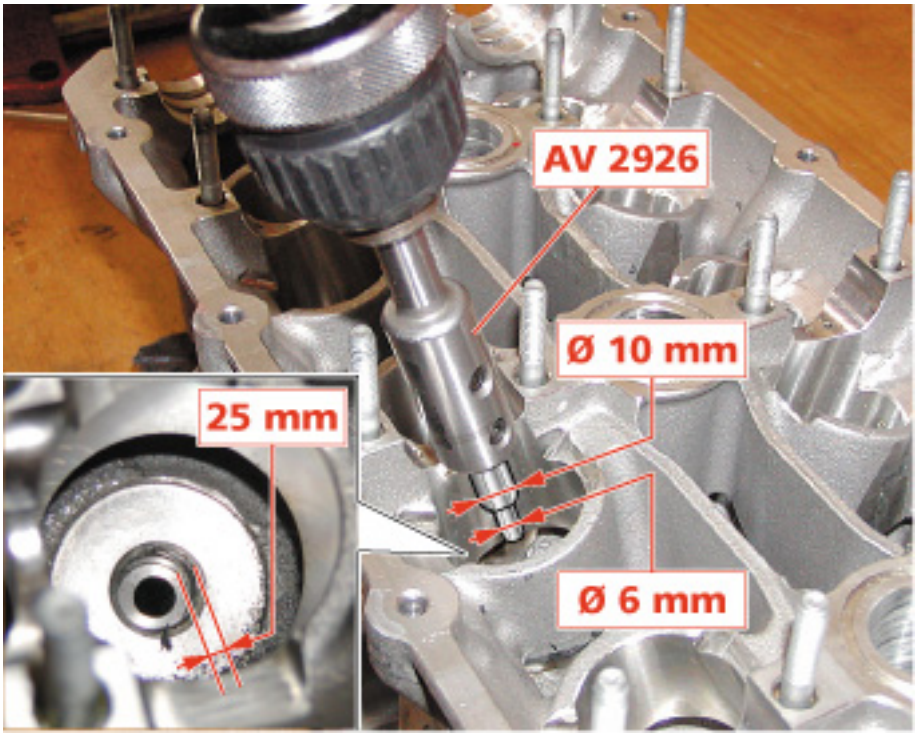
- If the gauge inside the guide features an excessive backlash, replace with new guides in order to obtain the prescribed assembly engagement.
- The guides can be removed following the below procedure




- Using tool **AV 2734** extract the seal rings **(1)** from the valve guides



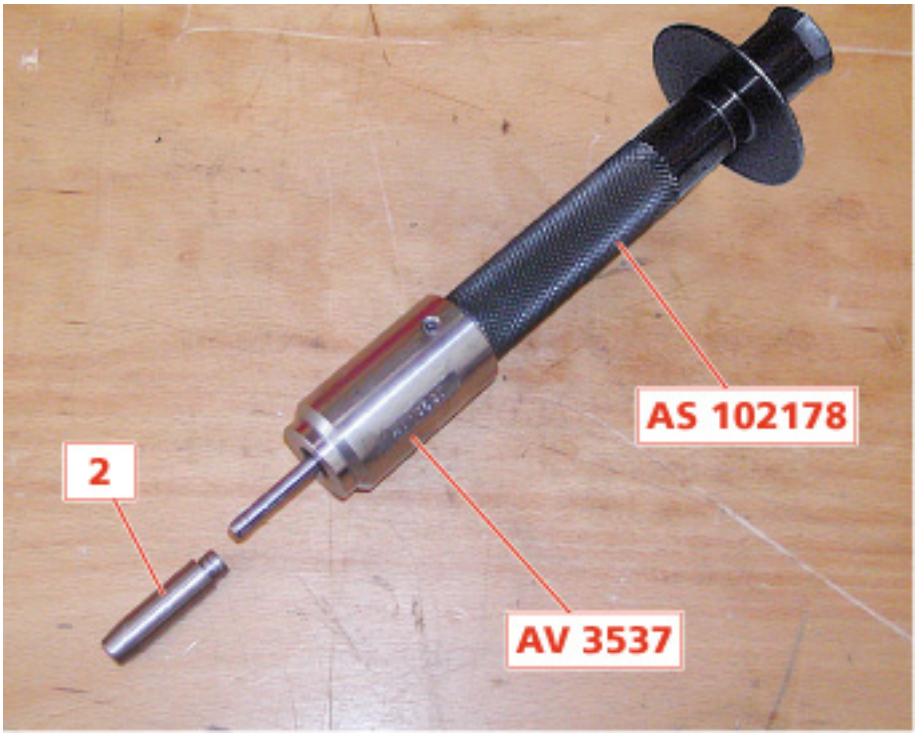
- Using a **Ø 10 mm** miller, with a **Ø 6 mm** tapered shank, supplied with tool **AV 2926**, mill the guide on the seal ring side for about **25 mm** from its end, lubricating the miller to prevent it from breaking and keeping it aligned with the valve guide.



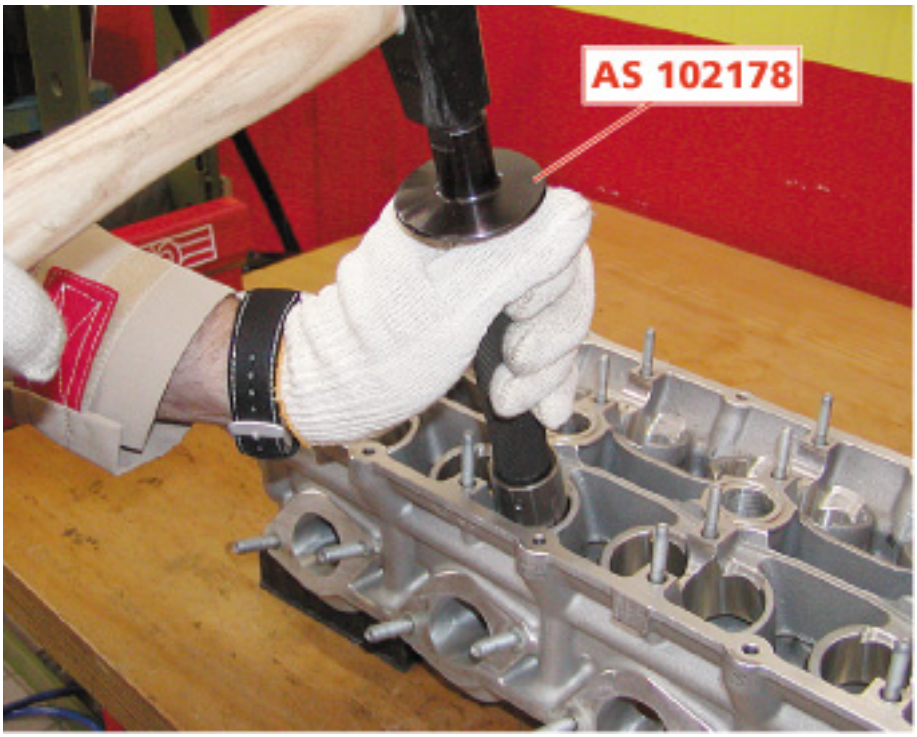

- Heat the head in a kiln at about **100 °C**, for ca. **thirty minutes**, to ease removal, then position it on two rubber shims.
- Extract the guide using the punch supplied with tool **AV 2926.**



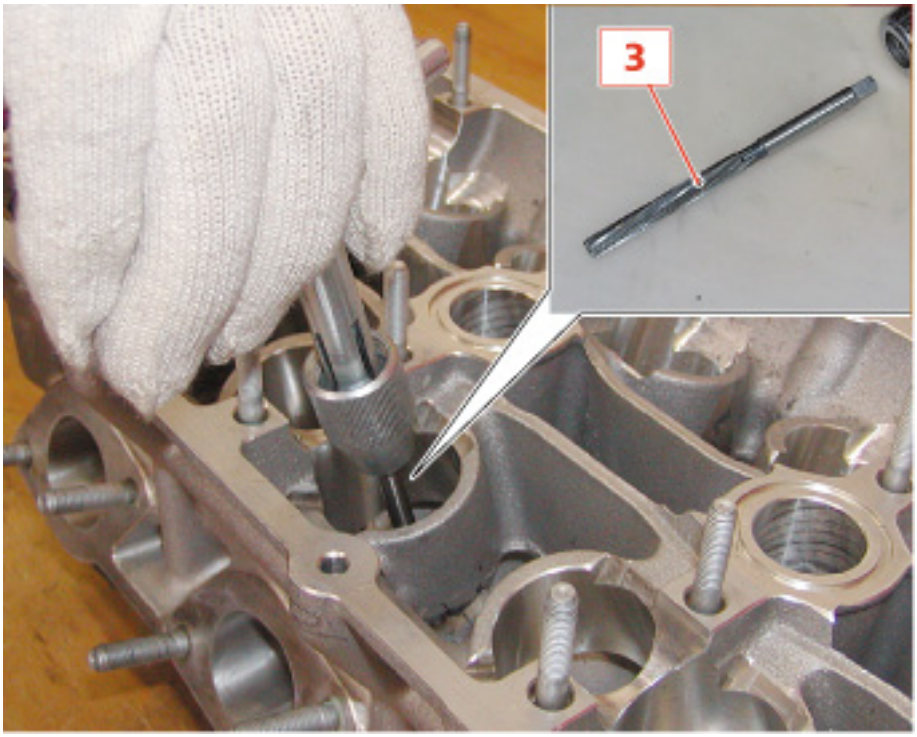
- To insert the new guides, it is necessary to heat the head at about **100 °C** for ca. **1 hour** and then cool down the guides in liquid nitrogen.
- To install the new guide **(2)** use tool **AS 102178** with shim **AV 3537**.




- Lubricate the guide with "SEGO" grease and push it into its seat, until the shim **AV 3537** comes flush with the head.



- After this procedure, **dry bore** the guides using a reamer **(3)** diameter **6 H7 mm**, fitted in the speacial hand-operated spindle. Before carrying out the operation, check that the reamer cutting edges are sharp.




- Using gauge **TLDF 006108,** directed towards side "P", check that the guide is properly bored.



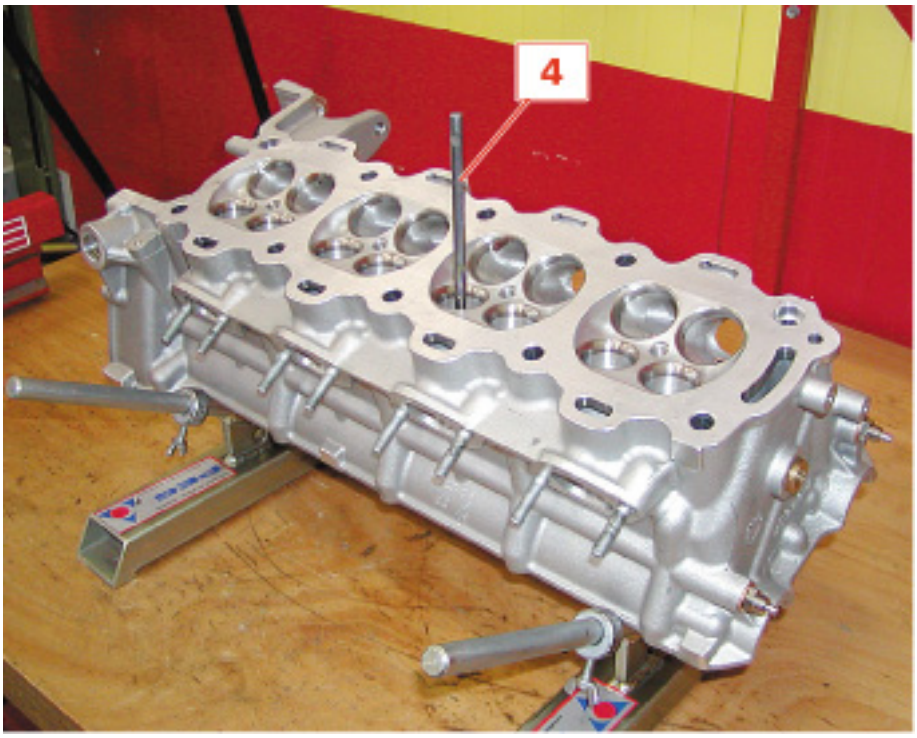
If, once the checks have been carried out, the valve seats need to be replaced, remove them by milling in order to prevent damaging their seat on the head.

- Check the dimensions of the recesses and seats.
- After fitting, it is absolutely essential to have the indicated interference.
- To fit the new seats, heat the head in the oven to a temperature of **190°C** for six minutes, and cool down the seats in liquid nitrogen for approx. **five minutes**.

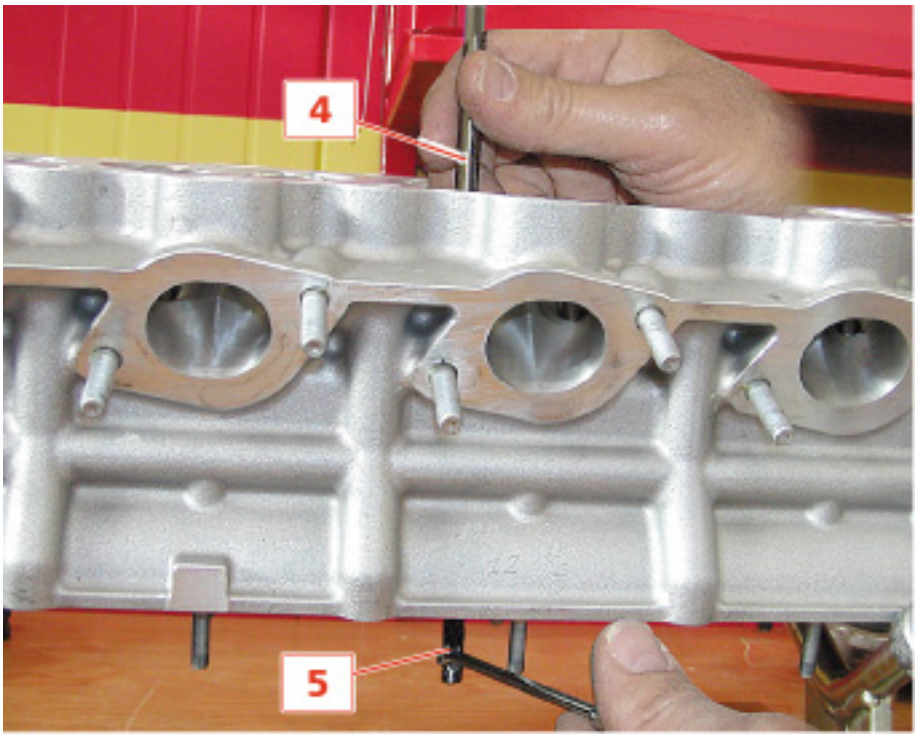
**N.B.**
**The above described operation must be carried out by a specialized laboratory only**

After having replaced the valve guides, it is necessary to grind the valve seats, thereby obtaining the prescribed union angle in order to perfectly match the seat-valve support surfaces. For this operation, use the recommended grinder for valve seats equipped with the relative

- To work on both sides of the head, position it on the special supports, working from the lid side.
- Insert the centering stem into the guide **(4)**, diameter **6 mm**, working from the side equipped with tightening screw.



- Lock the centering stem in the guide **(4)**, by means of the tightening screw **(5)**.

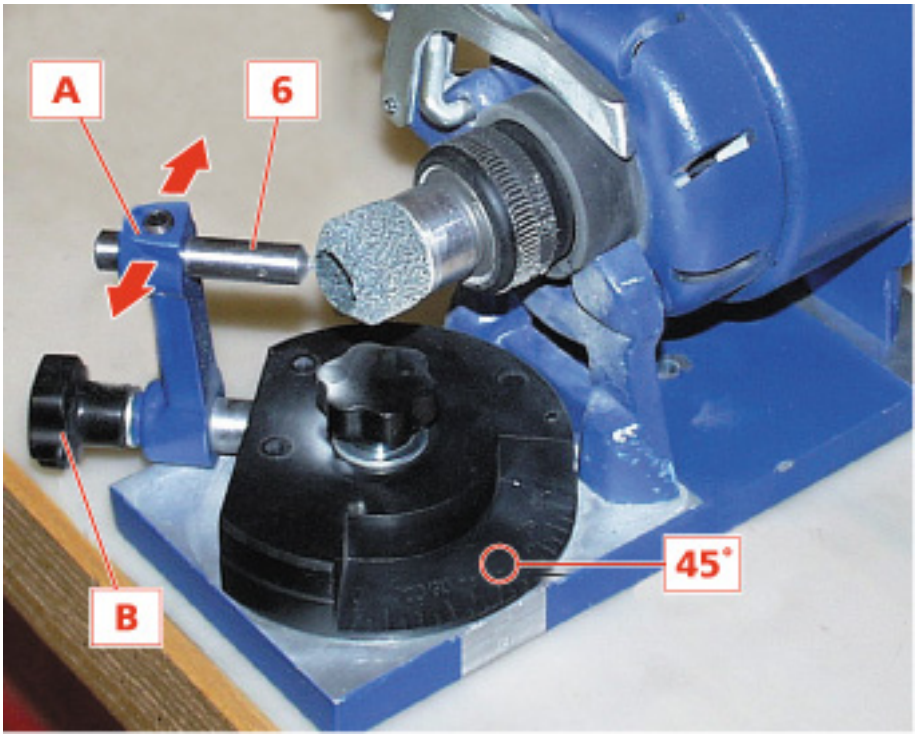


- The grinder must be fitted with the specific wheel for the valve seat to be machined:
  - for the intake valves use a **37 mm** diameter wheel;;
  - for the exhaust valves use a **33 mm** diameter wheel.

**NOTES**
**The wheel outer diameter must be slightly larger than that of the valve.**

- Set the diamond point inclination **(6)** to **45°**, with respect to the fixed index on the base.
- Sharpen the wheel swinging the small connecting rod (**A**) which holds the diamond point and, at the same time, operate the control knob (**B**).

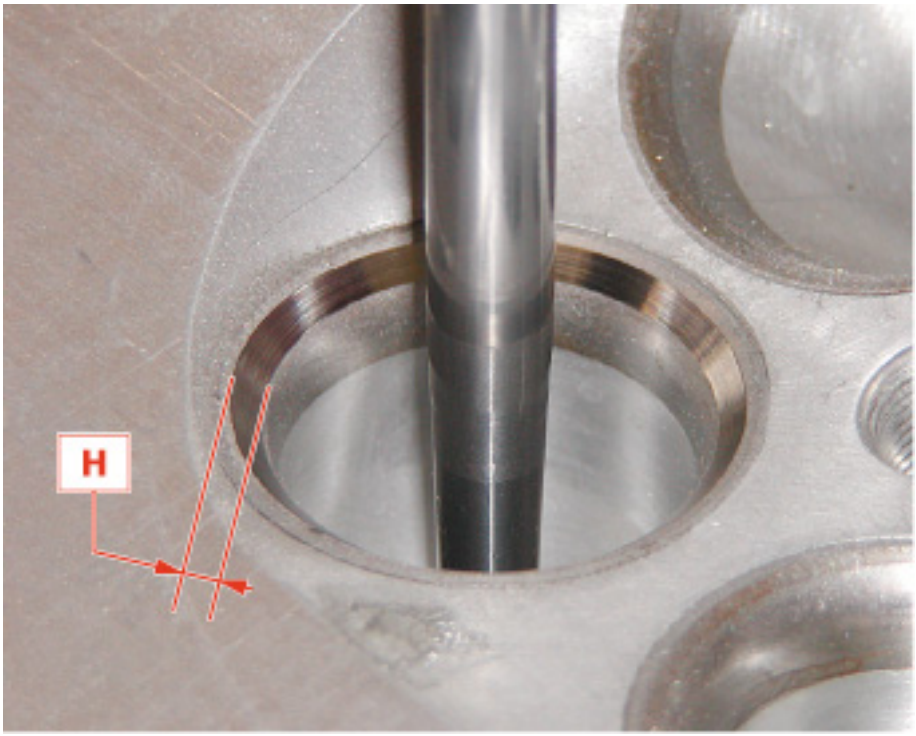
**IMPORTANT**
**To prevent the abrasive product from infiltrating into the camshaft central hole, plug the latter and clean with compressed air**



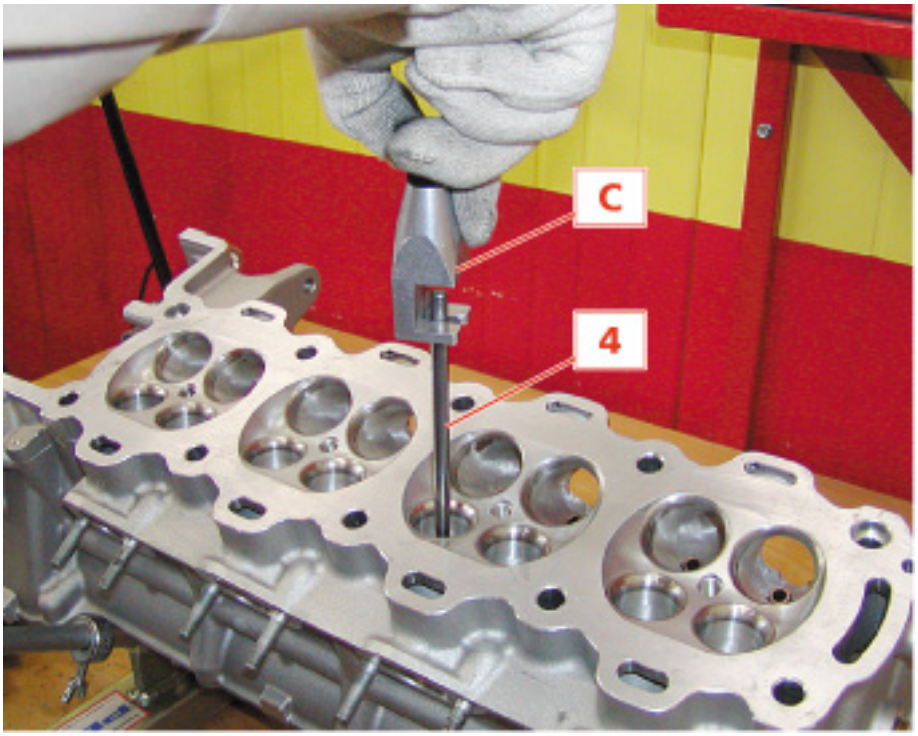
- Grease the centering stem and fit the grinder
- Move the wheel so that it skims the valve seat, and lock the screw which positions the knob **(7)** used to adjust the cutting depth..




- Start-up the grinder and machine the valve seat, gradually increasing the cutting depth using the knob **(7)**.
- Grind the whole surface **(H)** of the valve seat, letting the machine work freely for a few seconds. Check the working depth and the alignment (centering) of the machining with respect to the seat, adjusting the grinder position if necessary..



- Once the machining procedure is completed, lift the wheel operating the knob then remove it from the centering stem.
- Release the centering stem, working on the lower tightening screw.
- Using tool **(C)** supplied with the grinder, extract the centering stem **(4)** from the valve guide.




**IMPORTANT**
**After having ground the seats as described above, it is not necessary to lap the valves before re-assembly.**

There are two methods for checking the seat machining:
- application of a "Prussian Blue" layer;
- check of the hydraulic seal with "Vacutest".

*Check through the application of a "Prussian Blue" layer*

- Using a paintbrush, apply a thin and uniform layer of "Prussian Blue" on the whole resting surface of the valve.
- Insert the valve into its guide, making it "strike" on its seat.
- Then rotate it manually and, after having removed it, check that the "Prussian Blue" layer is evenly distributed on the whole seat. If this is not the case, grind the seat once again.

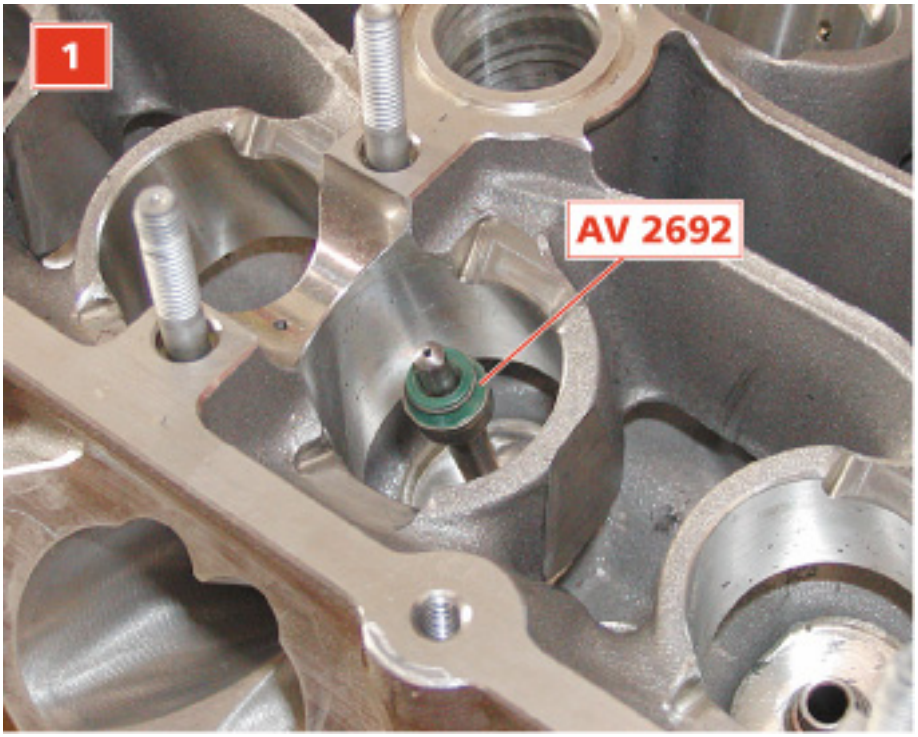


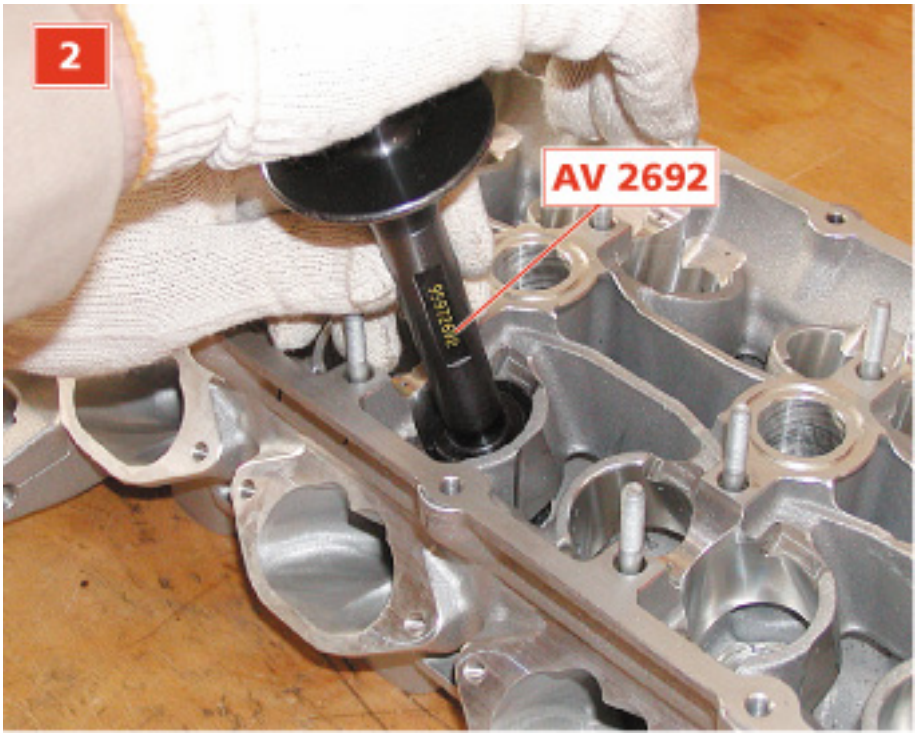
*Check of the hydraulic seal with "Vacutest""*

- Fit all the valves for a duct (intake or exhaust) and, in order to avoid that the cotter grooves - on the valve stem - damage the inside sealing surface of the grommet, fit the protection cap **AV 2944** and lubricate the coupling with engine oil

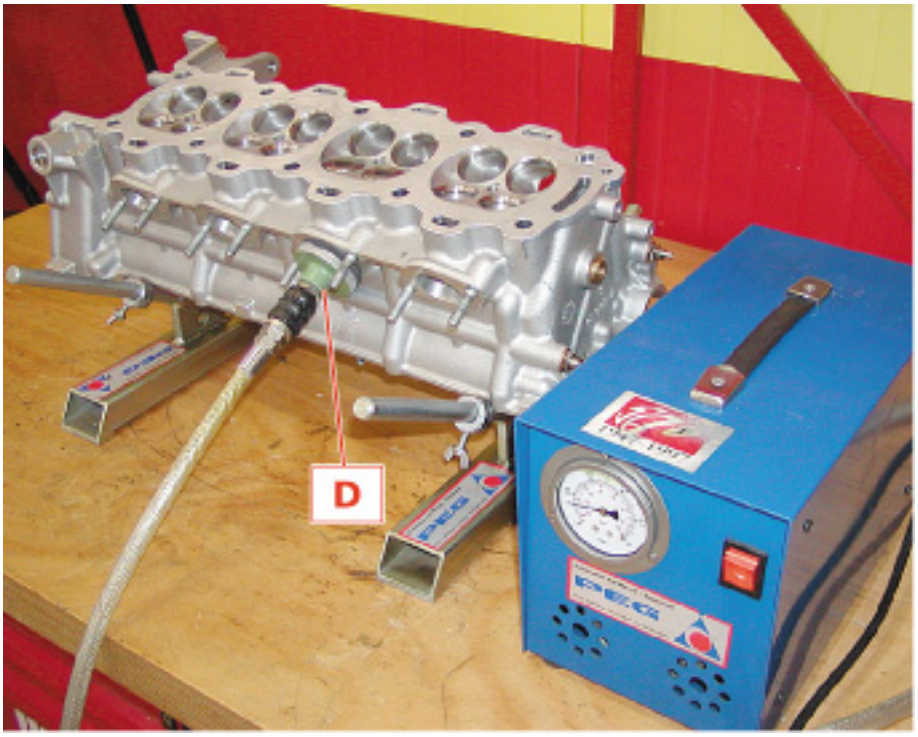


- Fit the sealing rings on the valve guides to be tested using the fitting tool **900026980** (Maserati part no.) or **AV 2692** (Ferrari part no.).



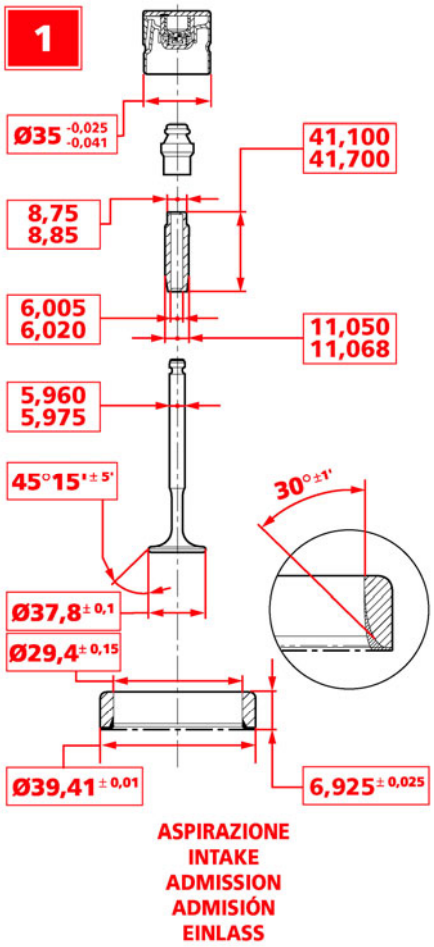



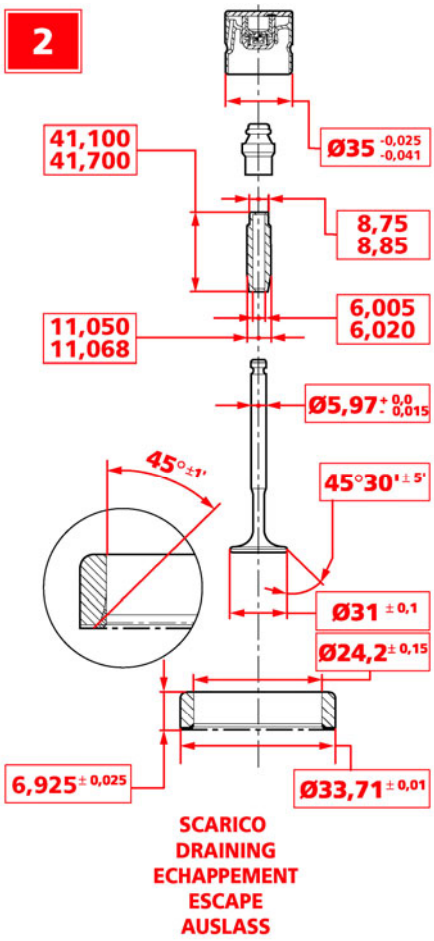
- Fit the rectangular punch **(D)**, supplied with the equipment, to plug the intake duct. Fit a round-shaped punch to plug the exhaust duct
- Activate the "Vacutest" and check on the pressure gauge that vacuum ranges between **0,94** and **0,86 bar**. If the value proves to be lower, check once again applying a "Prussian Blue" layer, in order to verify which is the seat to be ground once again.



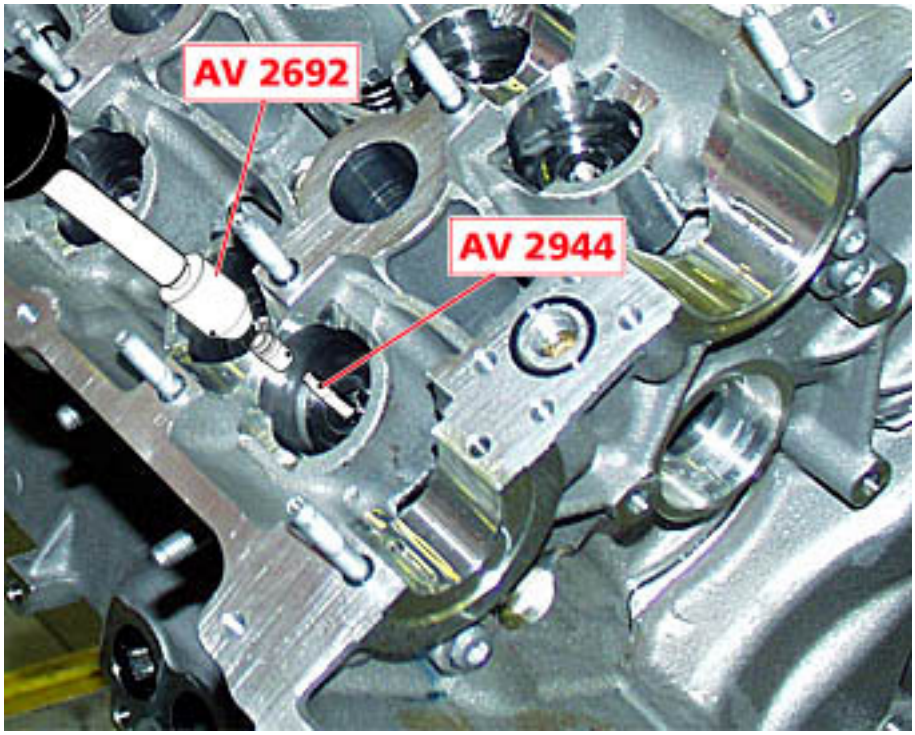
## Fitting the valves and checking the springs

- During servicing, after a careful examination, check the state of the valves (Figure **1** and **2)** and, if necessary, replace them.

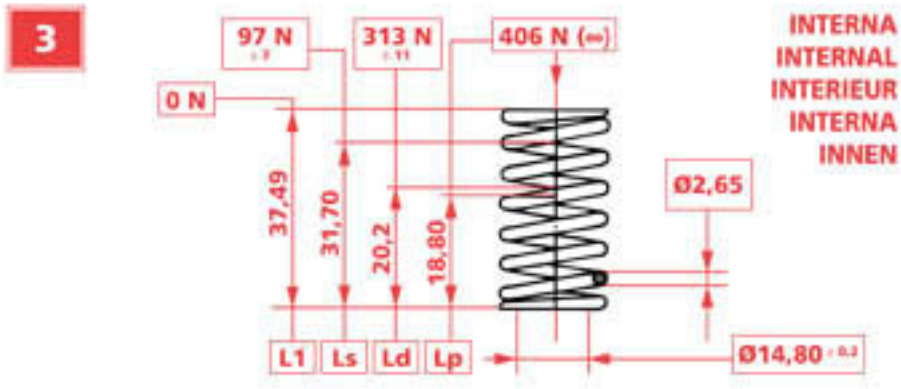


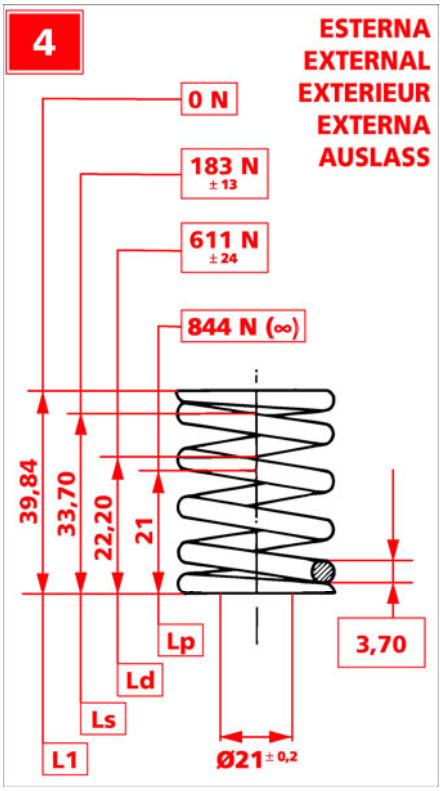



- Whenever necessary or, in any case, when fitting new valves, replace the grommets**,** using the punch **AV 2692** to insert them.
- To prevent the cotter grooving on the valve stem damaging the inner surface of the grommet, fit the protective cap **AV 2944** and lubricate the coupling with engine oil.



- The figures **3** and **4** show the nominal lengths (**L**) the spring must have depending on the charge (**N**) applied.



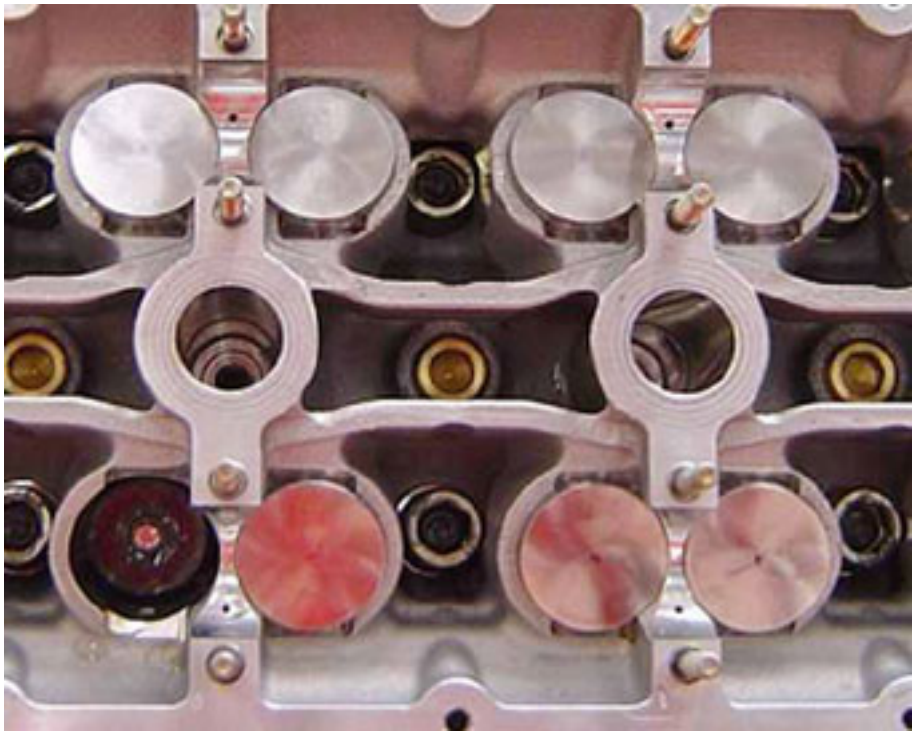




- Replace the deformed springs with new ones with a static charge of **30 ÷ 50 N**
- Examine the upper and lower washers visually to make sure they are intact.
- Refit the components, using the compression tool employed to remove them.

- The outer and inner valve springs must be fitted in a specific direction. A mark indicates the correct fitting direction: the marked end of both springs must be positioned in contact with the engine head.



- Fit the hydraulic tappets, abundantly lubricating the housings on the head and checking them for wear. The tappets on the head do not need to be positioned following a specific sequence, however, it is recommended to refit the hydraulic tappets following the same order in which they were removed.



## ELECTRO-INJECTORS

### Electro-injector detaching-reattaching

- Open the engine compartment lid.
- Working from the engine compartment, unscrew the fuel line-electro-injector pipe union.

**N.B.**
**To remedy any possible fuel leakage during operation, it is advisable to position a cloth beneath the connection between the fuel line and the electro-injector pipe.**



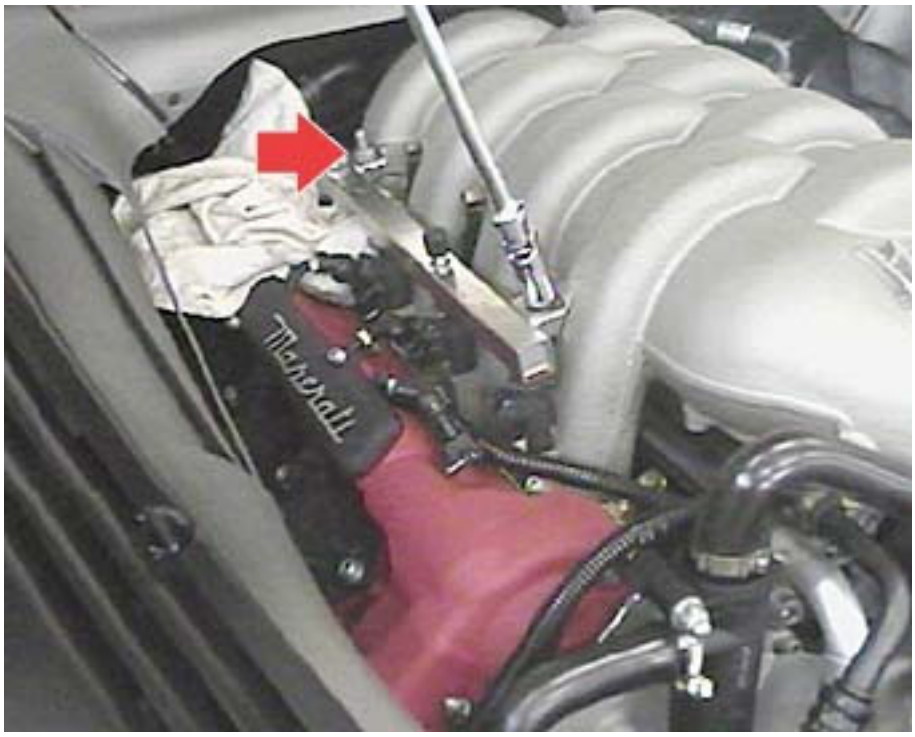
- Unscrew the two retaining nuts on the electro-injector pipe cover and remove it.



- Disconnect the electro-injector connectors.



- Unscrew the retaining nuts on the electro-injector pipe. Extract the electro-injector pipe.



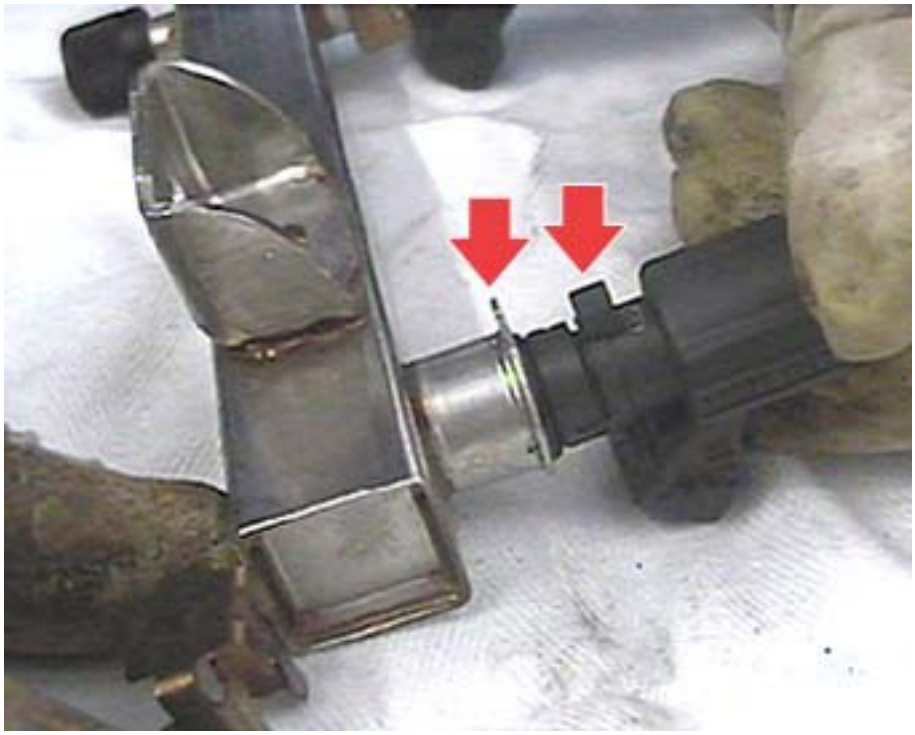
- Extract the locking retainer from the electro-injectors and remove the electro-injectors.



**When fitting, follow the procedures described above in reverse order.**

**N.B.**

1. **Prior to insertion of the electro-injectors in the seat, it is advisable to grease the grommet to facilitate insertion.**
2. **Align the reference tabs for correct fitting.**



## BATTERY

### Battery disconnection-connection

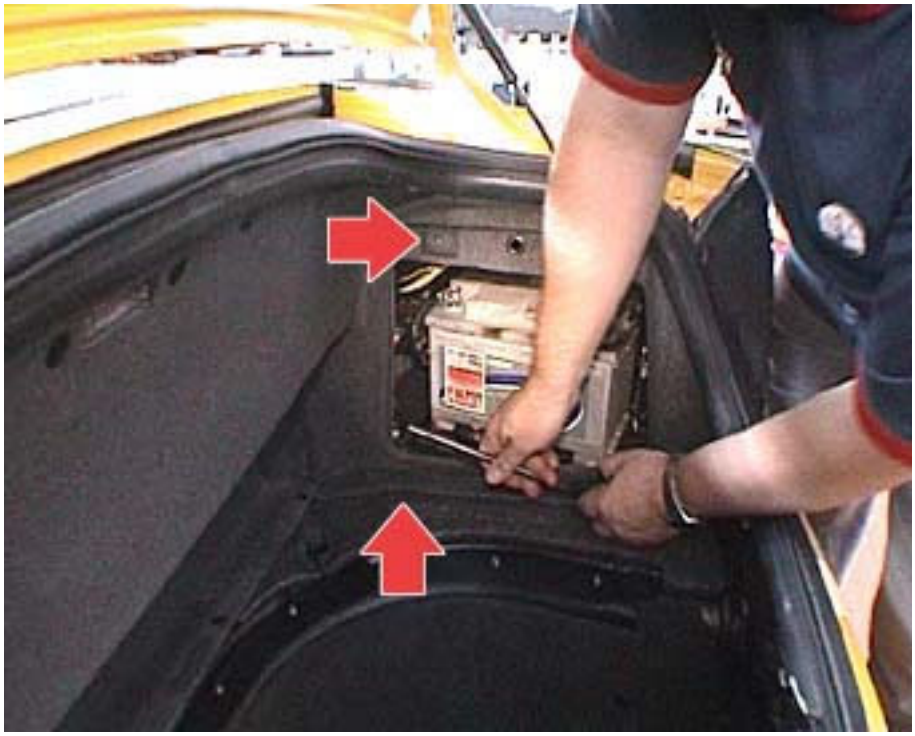
- Open the luggage compartment, unscrew the seven screws and remove the luggage compartment hinge cover.



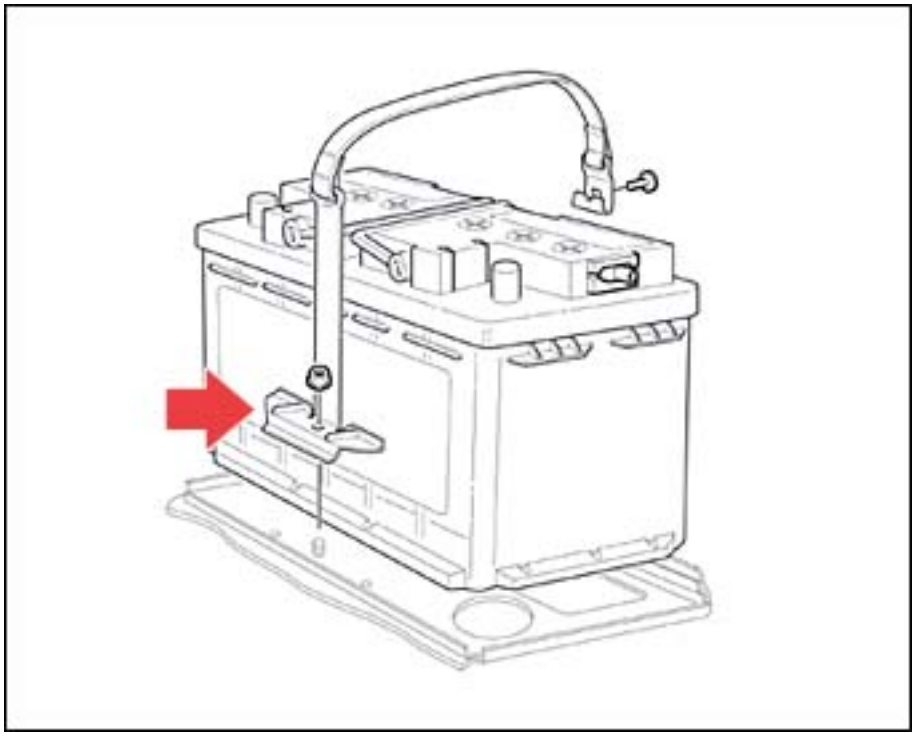
- Remove the spare wheel support.



- With the tool, detach the push fittings on the side panel of the luggage compartment and then remove the panel.



- Unscrew the retaining nut on the battery retaining bracket.



- Disconnect the battery by unscrewing the two retaining nuts.




- Disconnect the breathing pipe and remove the battery.




**When fitting, follow the procedures described above in reverse order.**

## STARTER MOTOR

### Detaching the starter motor.

- Remove the central exhaust line.

*Disconnecting-Reconnecting the central exhaust line*

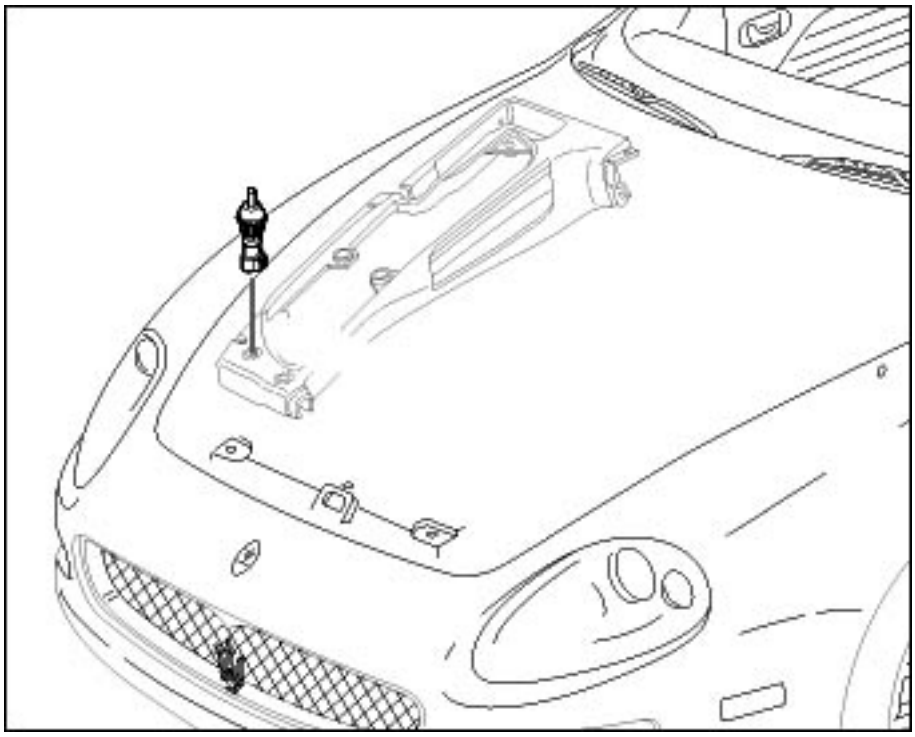
- Disconnect the battery cables

*Disconnecting-Reconnecting the battery*

- Place the car on the hoist.
- Remove the front wheels.
- Working from the engine compartment, remove the side rear and front covering panels, by unscrewing the twelve fastening screws.



- Detach the lid-open indicator connector.



- Detach the tube leading to the secondary air valve.



- Remove the clamp on the valve connection pipe.



- Undo the two lower fastening screws on the secondary air valve.

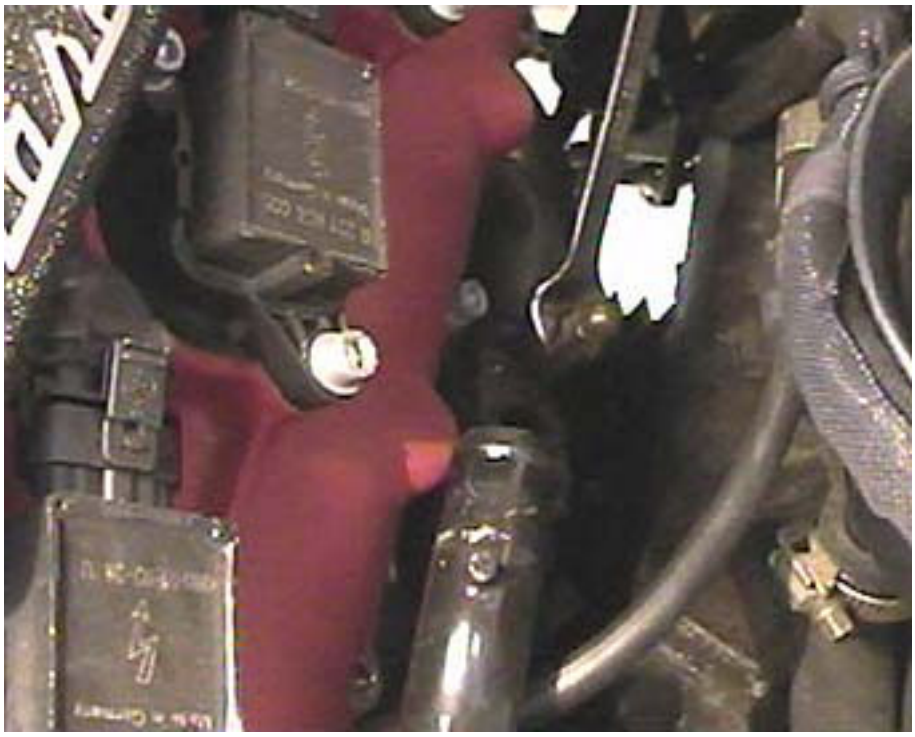


- Undo the two screws fastening the secondary air valve support (**Figure 1**) and slide off the rubber sleeve (**Figure 2**) to remove the valve






- Remove the diagnosis union found on the secondary air distributor pipe for the exhaust.



- Undo the screw fastening the connector bracket found alongside the air flow meter.



- Remove the wiring from the two retaining clamps.



- Loosen the clamp to remove the secondary air delivery pipe.



- Loosen the clamp to remove the pipe found under the air flow meter.



- Detach the connector on the air flow meter.



- Loosen the clamp (**Figure 1**) and release the retaining spring (**Figure 2**) to remove the air flow meter.






- Remove the air flow meter-oil decanter connection pipe from the retaining clamp.



- Unscrew the two nuts fastening the stiff pipe to the engine.



- Turn the stiff pipe towards the rear side of the vehicle to facilitate the loosening and removal of the nuts fastening the exhaust manifolds.

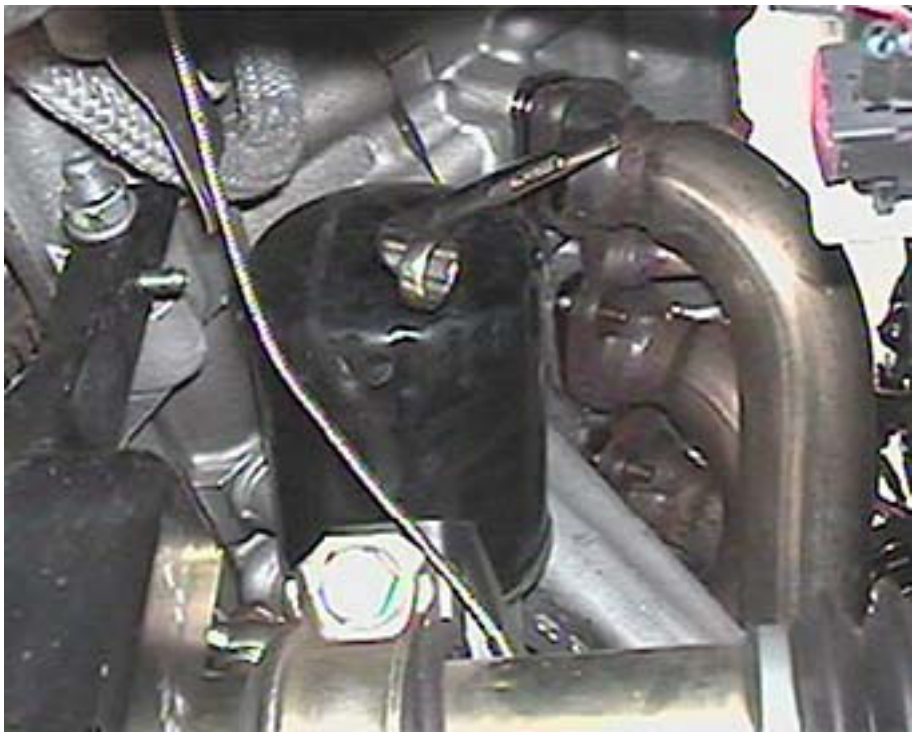


- Working on both sides of the engine, unscrew seven of the eight nuts fastening the manifolds.

**N.B.**
**The last nut fastening the manifolds is positioned towards the passenger compartment and it is concealed by the manifold itself. It is easier to unscrew it by lifting the vehicle and working from the underfloor.**



- Raise the vehicle and unscrew the last nut fastening the exhaust manifolds.



- Unscrew the engine mounting bracket retaining nut from both sides.



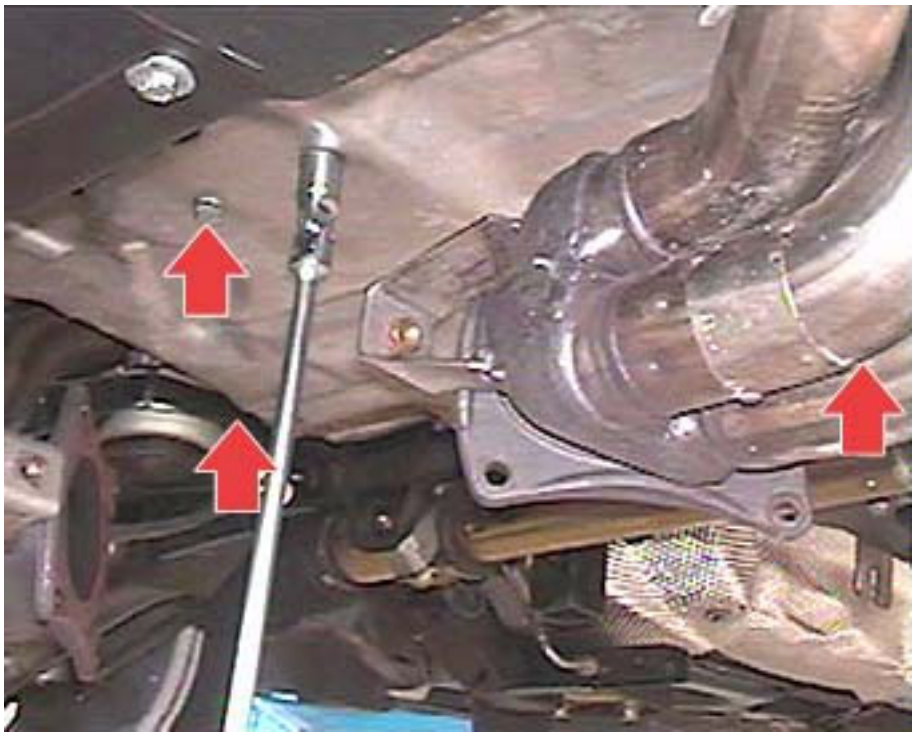
- Unscrew the blow-by pipe union (**Figure 1**).

**N.B.**
**Screw on a cap to avoid oil leakages (Figure 2).**






- Undo the four engine shield fastening screws.



- Position a hydraulic lift between the housing and the engine.

**N.B.**
**Fit a rubber shim between the hydraulic lift and the engine/housing.**



- Lift the engine just enough to slide out the exhaust manifold from the compressor unit side.



- Working from the manifold side, slide the shield off.
  Lower the engine.



- Unscrew the nut for the positive wire to disconnect the starter motor.

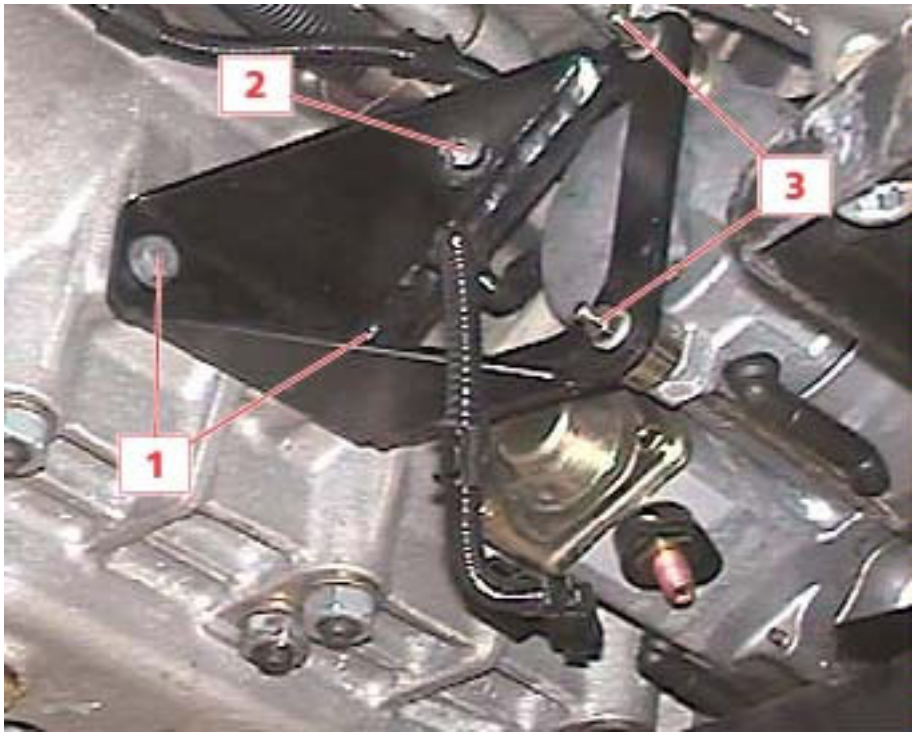


- Detach the jack.

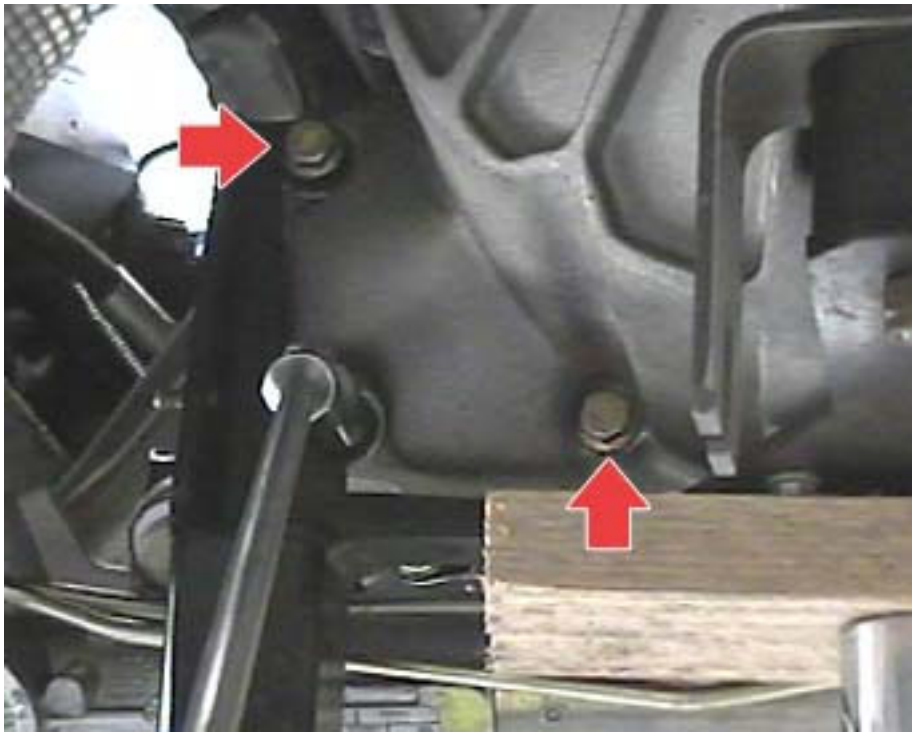


- Undo the two screws fastening the engine (**1**) and unscrew the nut fastening the wire (**2**).

**N.B.**
**If replacement of the starter motor is necessary, unscrew the two nuts (3) to remove the bracket from the motor.**



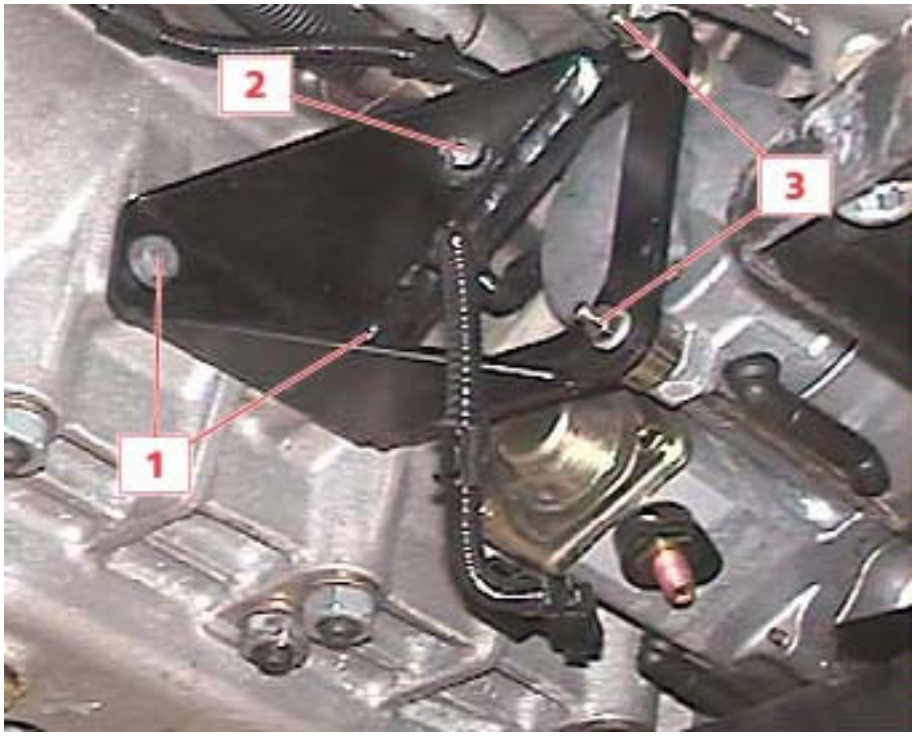

- Unscrew the three fastening screws on the clutch housing.



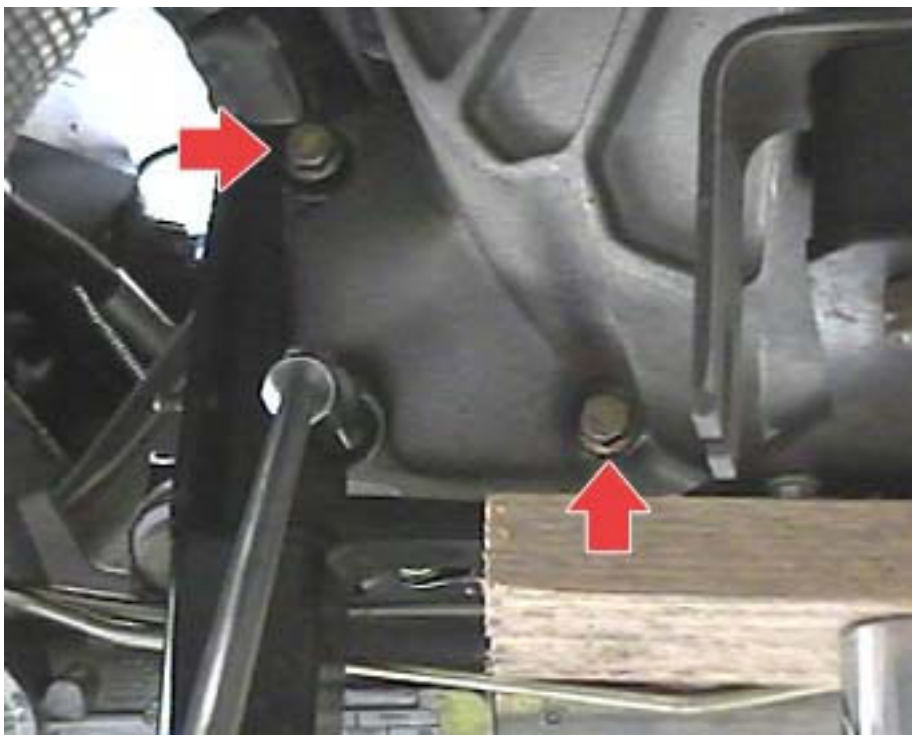
## Reattaching the starter motor

- Position the starter motor on the engine and tighten the two screws fastening it to the engine (**1**) and the wire retaining nut (**2**).

**N.B.**
**If replacement of the starter motor is necessary, before fastening the new one on the engine, position the bracket and tighten the two nuts (3).**




- Tighten the three screws fastening the motor to the clutch housing, to the torque of **17 Nm**.



- Connect the pin.



- Connect the starter motor, tightening the nut on the positive cable.



- Lift the engine to a height sufficient to insert the shield and secure it with the four screws.



- Insert the new gaskets on the stud bolts for the exhaust manifolds.

**N.B.**
**The gaskets have a raised side that should face the exhaust pipes when refitting them.**



- Insert the exhaust manifold from the compressor unit side.

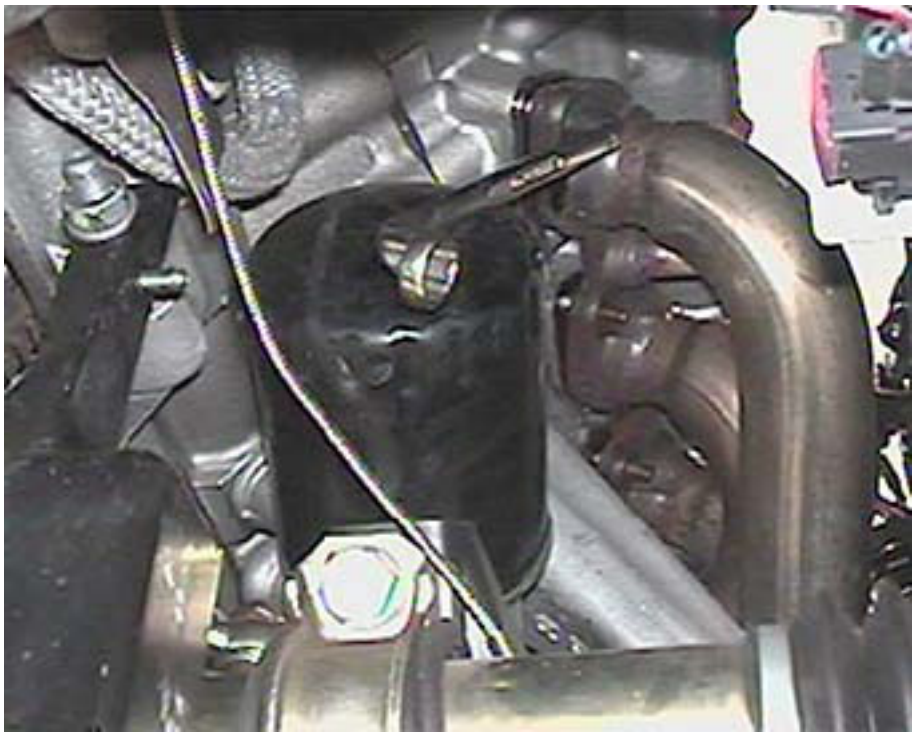


- Position a lever between the engine rubber bushing support and the engine mounting bracket and shift the engine sideways.
  Insert the manifold.

**N.B.**
**This procedure requires the help of another person to insert the manifold.**



- Insert the manifolds in the housing and tighten the last nut, passenger compartment side.



- Lower the engine, remove the hydraulic lift and tighten the nuts securing the engine.



- Tighten the blow-by union.

**N.B.**

**Before fitting the union, remove the cap on the engine.**



- Lower the vehicle to work inside the engine compartment.
- Tighten the seven nuts fastening the manifolds, on each side.



- Lock the stiff pipe to the engine.



- Fasten the air flow meter-oil decanter connection pipe with the clamp.



- Refit the air flow meter by tightening the clamp (**Figure 1**) and lock the retaining spring (**Figure 2**).






- Attach the connector on the air flow meter.



- Refit the pipe found underneath the air flow meter and tighten the clamp.



- Refit the secondary air delivery pipe and tighten the clamp.



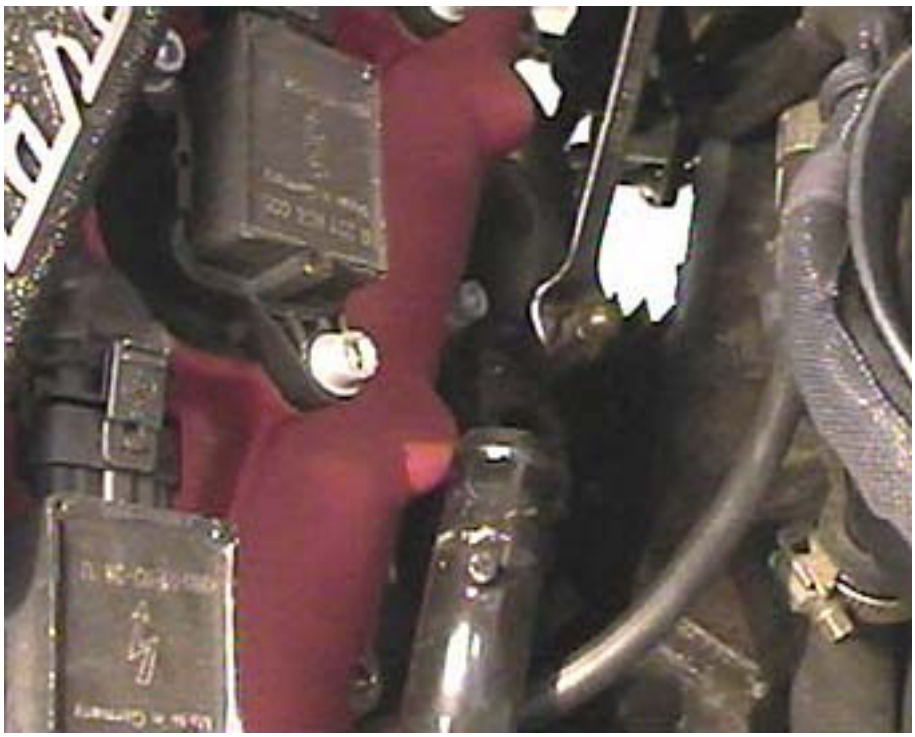
- Refit the wiring on the two retaining clamps.



- Fasten the connector support bracket found alongside the air flow meter and tighten the screw.



- Tighten the diagnosis union on the secondary air distributor pipe for the exhaust.



- Refit and tighten the two lower screws fastening the secondary air valve on the manifolds.

**N.B.**
**Insert the new gaskets between the secondary air valve and the distributor pipe for the exhaust.**



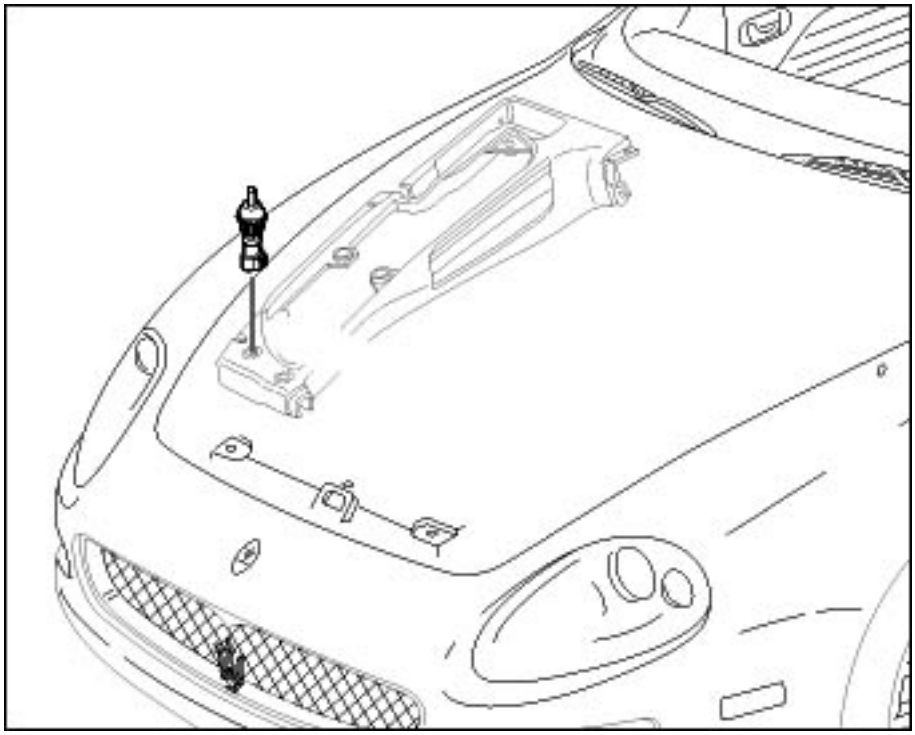
- Screw on the two screws fastening the support to the engine and secure the rubber sleeve with the clamp.



- Connect the small pipe to the secondary air valve.



- Attach the lid-open indicator connector.



- Refit the side, rear and front coverings and screw the twelve fastening screws.



- Reattach the central exhaust line.

*Detaching-reattaching the central exhaust line.*

- Connect the battery wires.

*Battery disconnection-reconnection.*

## FUEL TANK

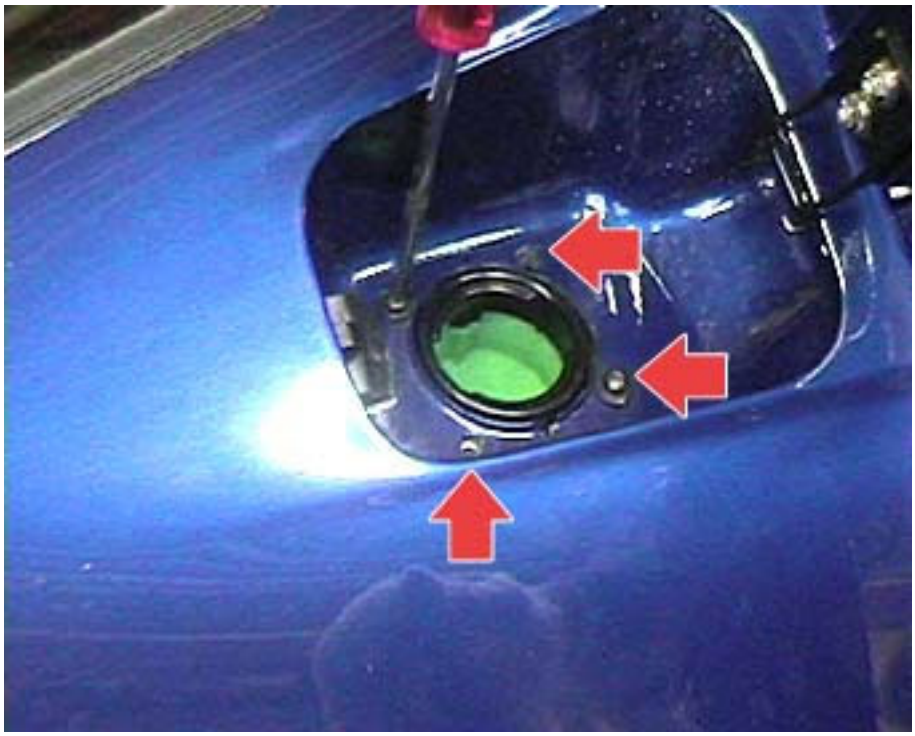
### Detaching the fuel tank

**CAUTION**

1. **The fuel contained in the fuel tank and in the entire engine fuel supply system is highly flammable and under certain conditions, it can also catch fire.**
2. **Do not smoke, produce sparks or use naked flames near the work site or in the immediate vicinity.**

**N.B.**
**It is advisable to drain the fuel out of the tank using the specific equipment.**

- Working on the fuel filler neck, undo the four fastening screws.



- Working in the luggage compartment, remove the plugs fastening the internal trim panels.



- Disconnect and remove the connection pin for the tank wiring .



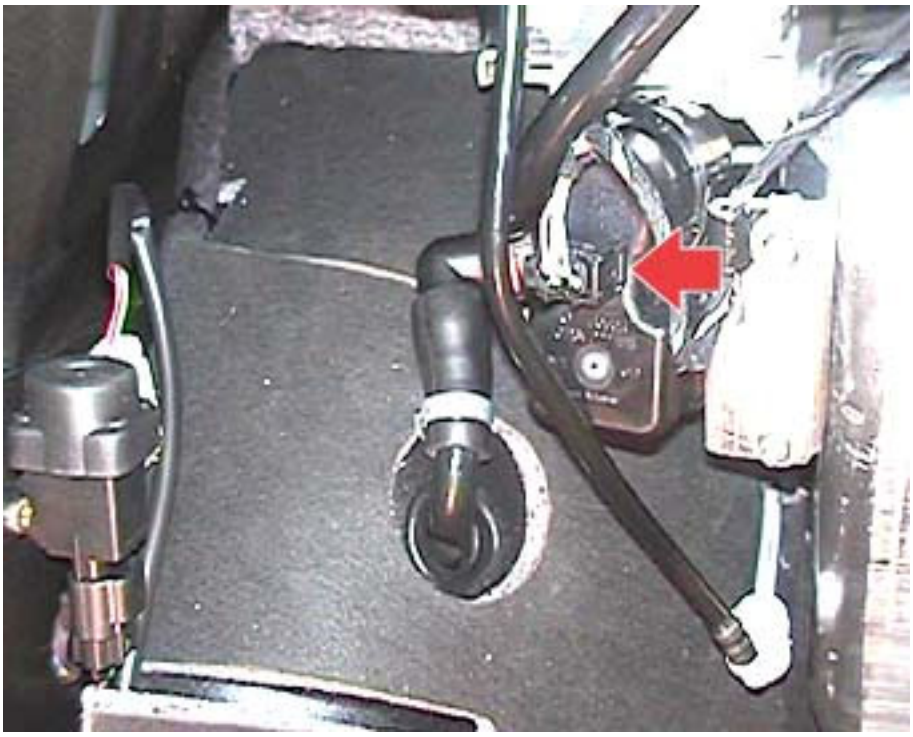
- Disconnect the fuel delivery pipes.



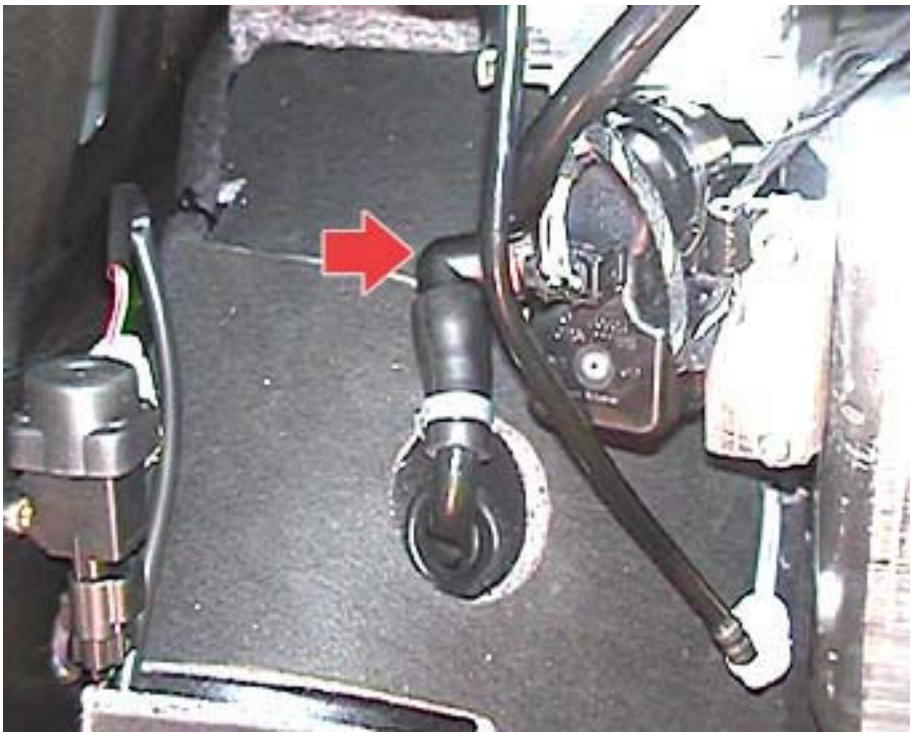
- Disconnect the active carbon filter connection pipes.



- **(USA Version)** Disconnect the diagnosis pump connector.



- **(USA Version)** Disconnect the diagnosis pump-filter connection pipe.



- Unscrew the two active carbon filter retaining nuts and remove the filter.



- Unscrew the two tank fastening bolts.



- Remove the tank from the vehicle.

**N.B.**

**Two persons are required for tank removal.**



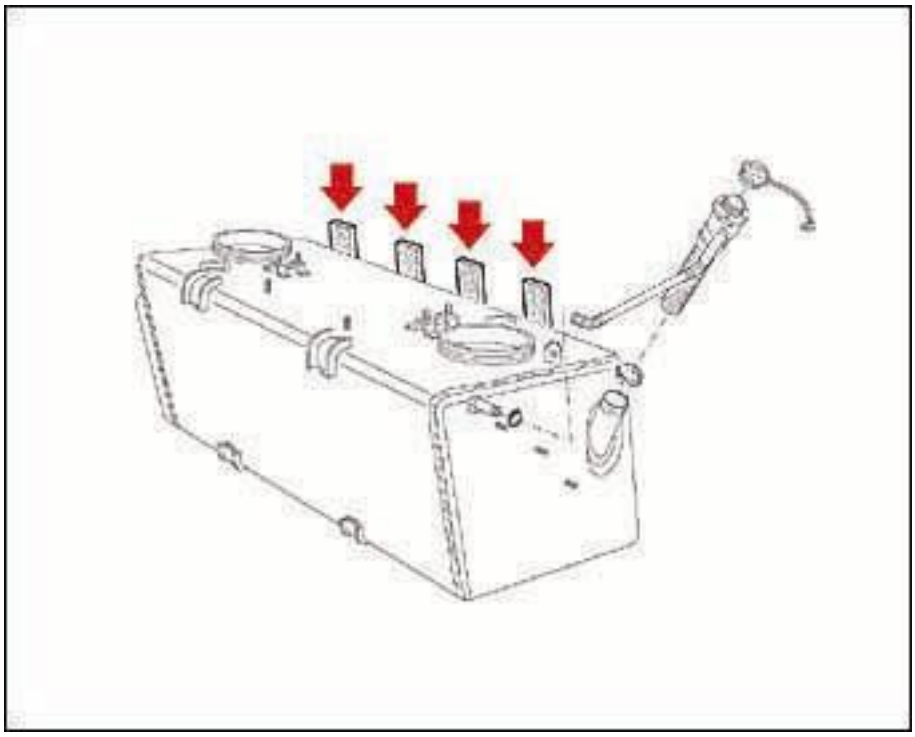
## Reattaching the tank

- Position the earth wire under a filler neck reference tab.

**N.B.**
**The earth wire must be positioned under the fastening tab for the filler neck screw, in order to connect it to the body.**



- Glue the sponge strips on the tank, keeping the same arrangement as on the tank being replaced.

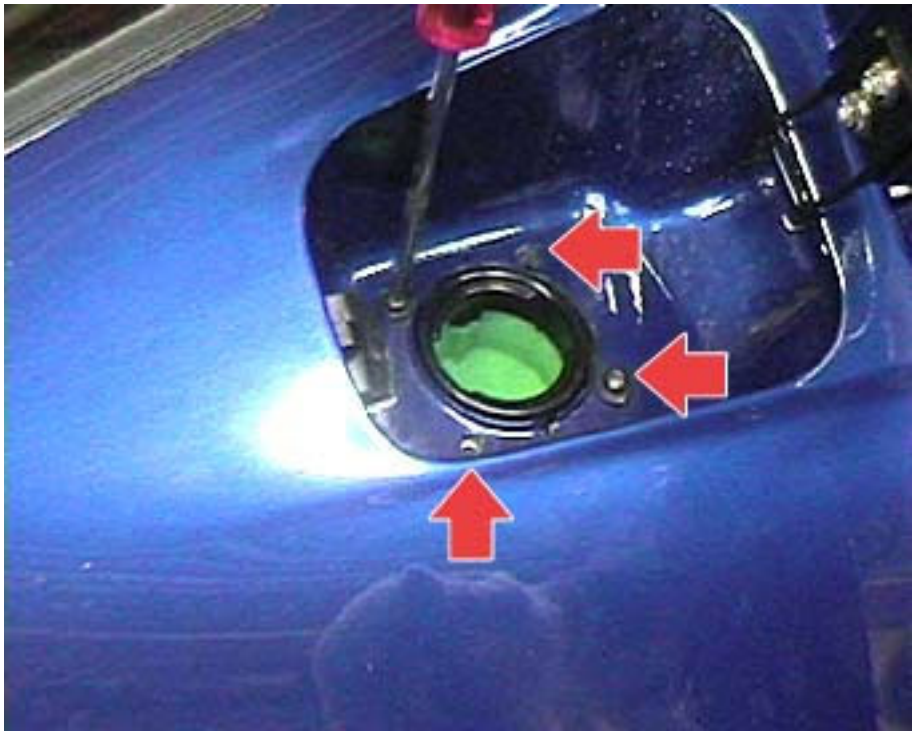


- Put the tank in the luggage compartment, inserting it from the filler neck side.

**N.B.**
**Two persons are required for tank removal.**



- Position the filler neck in its seat on the car body and loosely fit the four fastening screws. Working in the luggage compartment, position the fuel tank correctly.



- Grease the external surfaces of the active carbon filter to facilitate insertion in its housing.



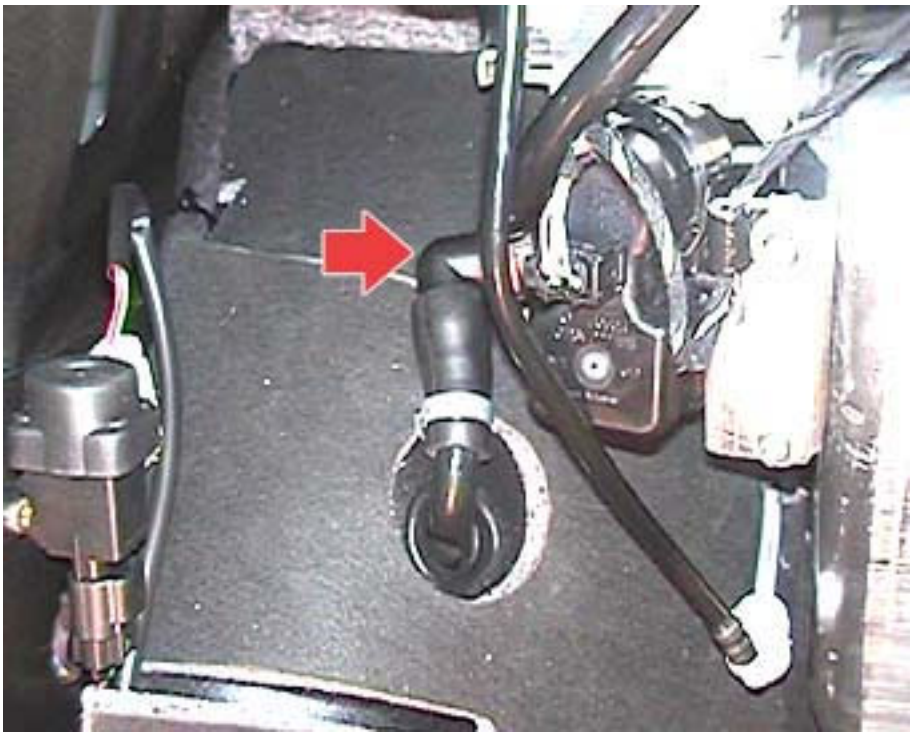
- Fit the active carbon filter in the luggage compartment. Position the support and tighten the two retaining nuts.



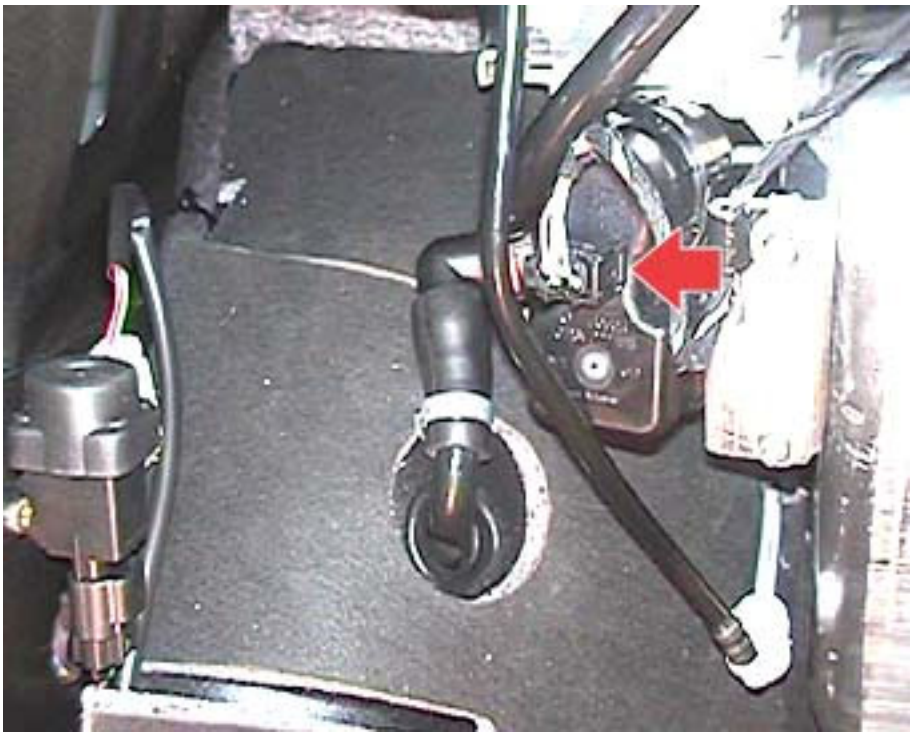
- Tighten the two fastening bolts on the fuel tank.



- **(USA Version)** Attach the diagnosis pump-filter connection pipe.



- **(USA Version)** Attach the diagnosis pump connector.



- Connect the fuel delivery pipes.



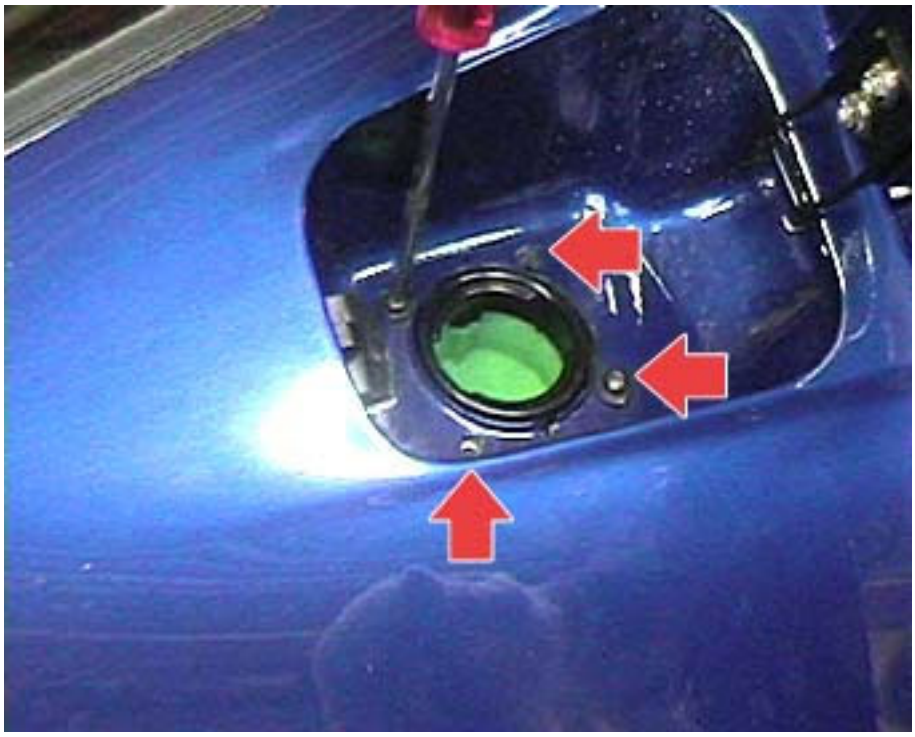
- Attach the connection pipes for the active carbon filter.



- Connect the tank wiring pin and fit it in the support.



- Tighten the four fastening screws on the filler neck.



- Refit the internal trim panel in the luggage compartment and secure it with the plugs.



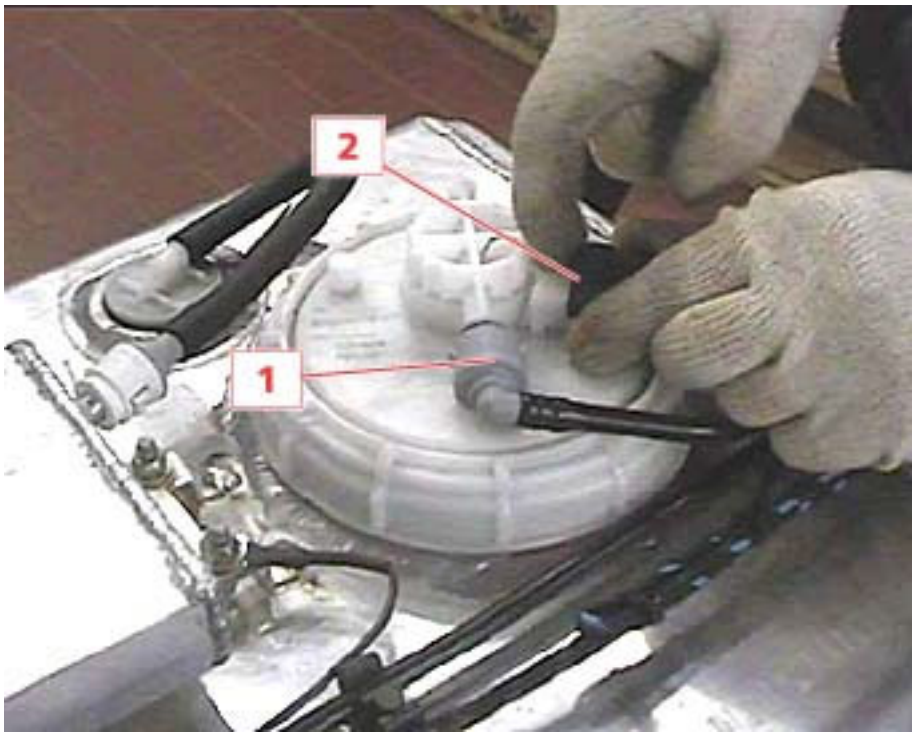
## MOTOR-DRIVEN PUMP PAN ASSEMBLY

### Detaching the motor-driven pump pan assembly

- Remove the tank from the vehicle.

*Detaching the fuel tank*

- Disconnect the fuel pipe **(1)** from the motor-driven pump.
- Detach the connector **(2)** working on the break pin first and then on the connector itself.



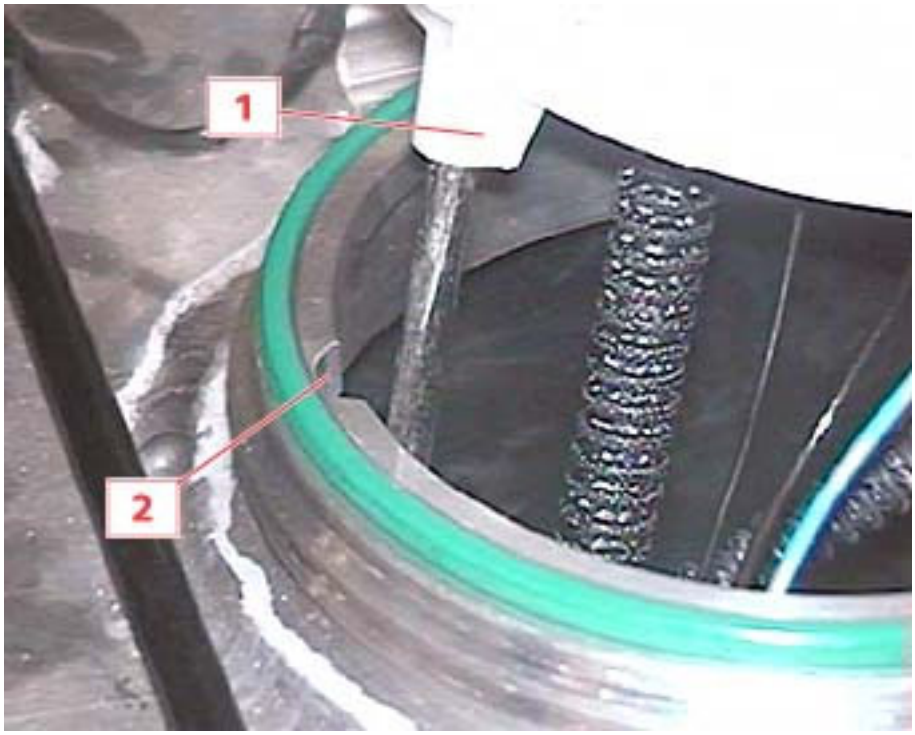
- Unscrew the ring nut using the tool **900026390** and extract the motor-driven pump unit from the fuel tank.



## Reattaching the motor-driven pump pan assembly

**N.B.**
**The fuel pump complete with the floater must be positioned on the left-hand fuel tank seat.**

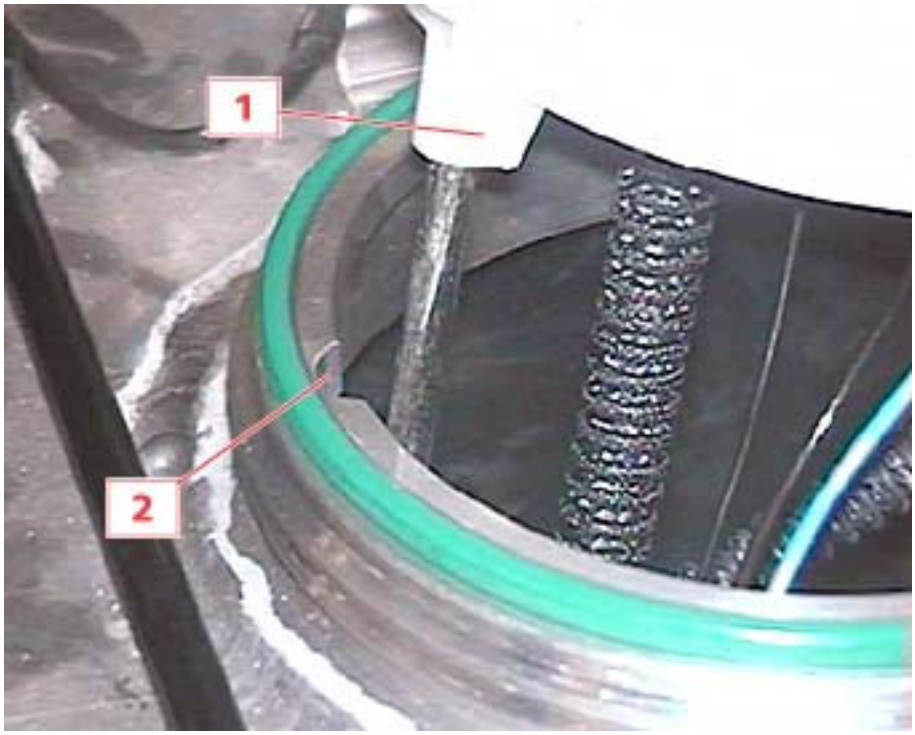
- Insert the pump in the tank, aligning the motor-driven pump reference tab **(1)** with the seat **(2)** on the tank.



- Press the fuel pump down and tighten the ring nut.
  Using the pin wrench **900026390** tighten to the torque of **15 Nm**.




- Connect the fuel pipe **(1)** on the motor-driven pump.
  Attach the connector **(2)** locking it on the respective pin.




- Refit the fuel tank on the vehicle.

*Reattaching the fuel tank*

## ANTI-EVAPORATION SYSTEM

### Component removal

- Working from inside the luggage compartment, remove the caps which fasten its lining.



- Working on the left-hand side of the fuel tank, disconnect the three tubes leading to the active carbon filter using their victaulic couplings.



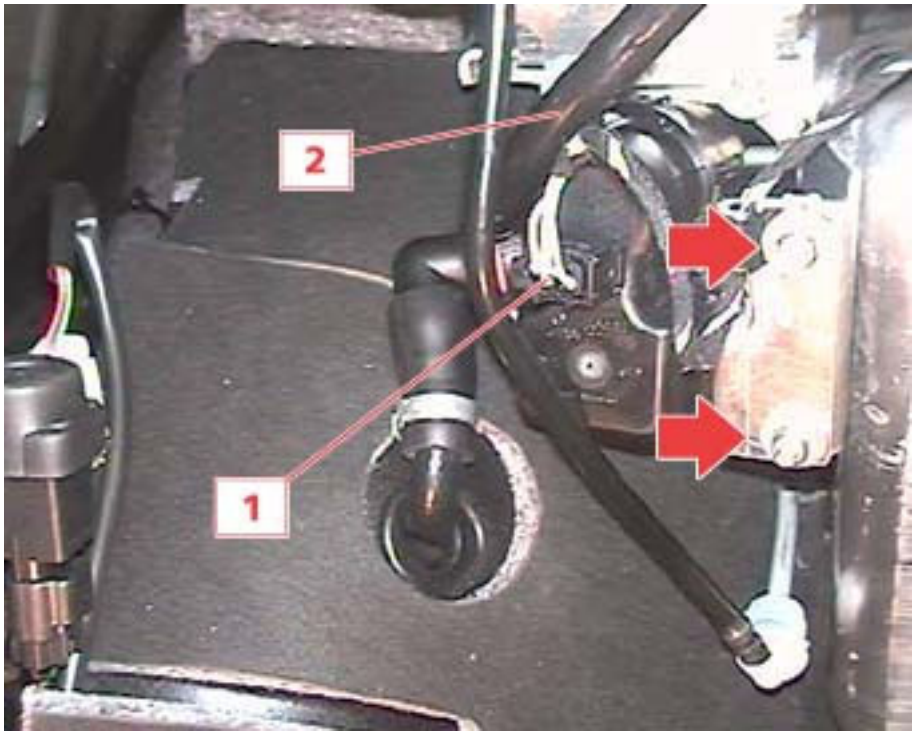
- Remove the active carbon filter by unscrewing its two fastening nuts.



- Detach the tube which connects the diagnosis pump filter using the victaulic coupling positioned next to the diagnosis pump (**USA Version**).

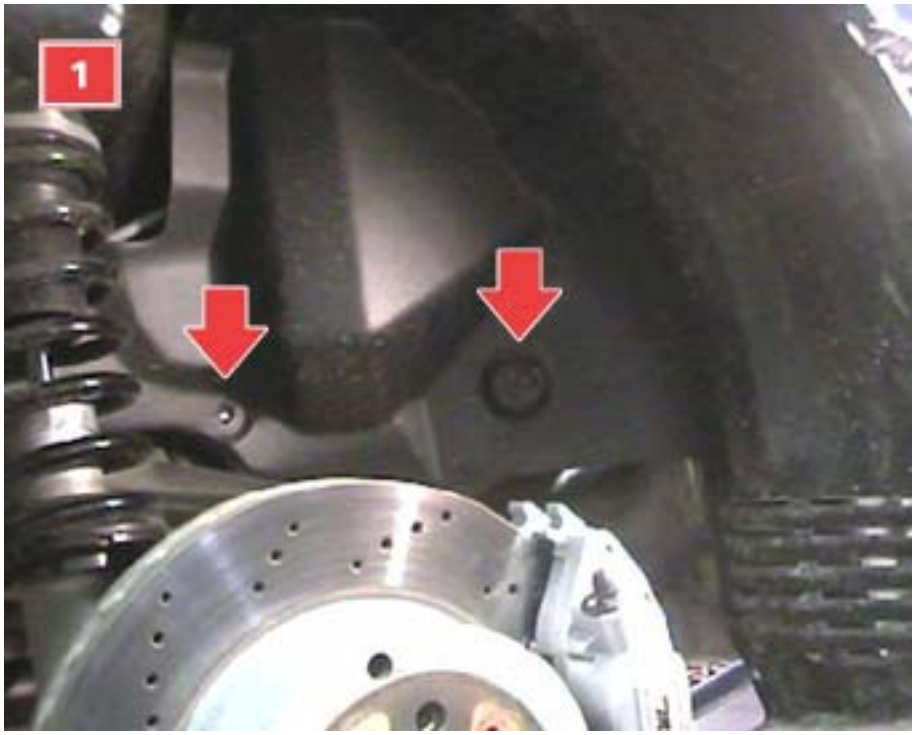


- Remove the diagnosis pump, unscrewing the two nuts which fasten the supporting plate.
- Detach the connector (**1**). Slide out the rubber pipe (**2**) (**USA Version**).



**N.B.**
**The diagnosis pump filter is positioned underneath the rear left-hand wheelhouse (USA Version).**

- Remove the rear left-hand wheel.
- Remove the rear wheelhouse by undoing the five fastening screws (**Figure 1**, **2, 4** and **4**).







3


4

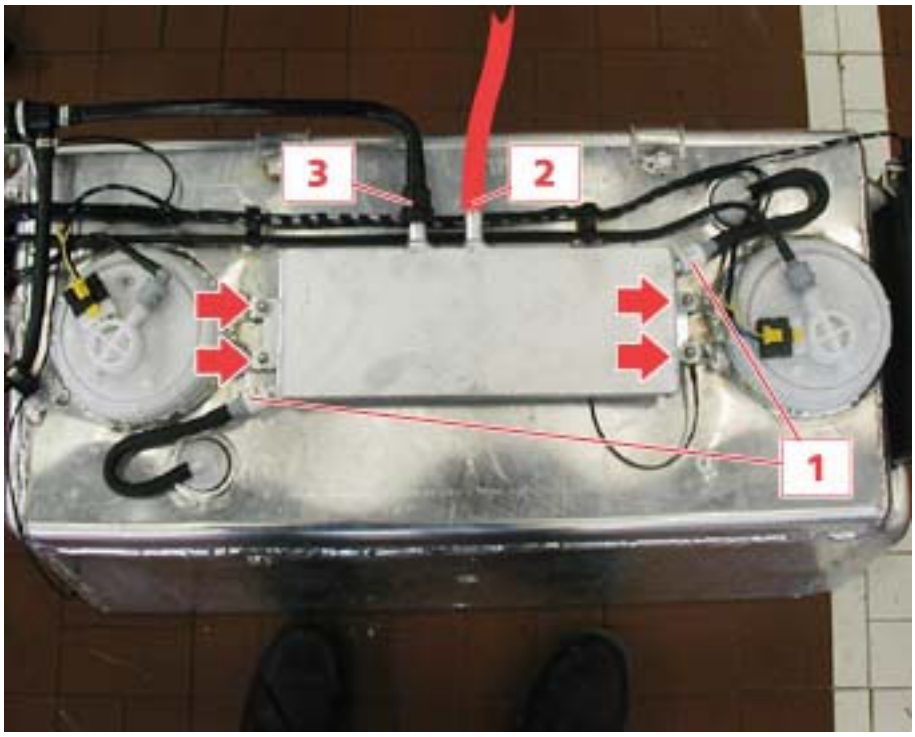
- Loosen the clamp which fixes the diagnosis pump filter to the car body (**USA Version**).



- Remove the diagnosis pump filter by loosening the clamp which fixes it to the diagnosis pump connecting tube (**USA Version**).

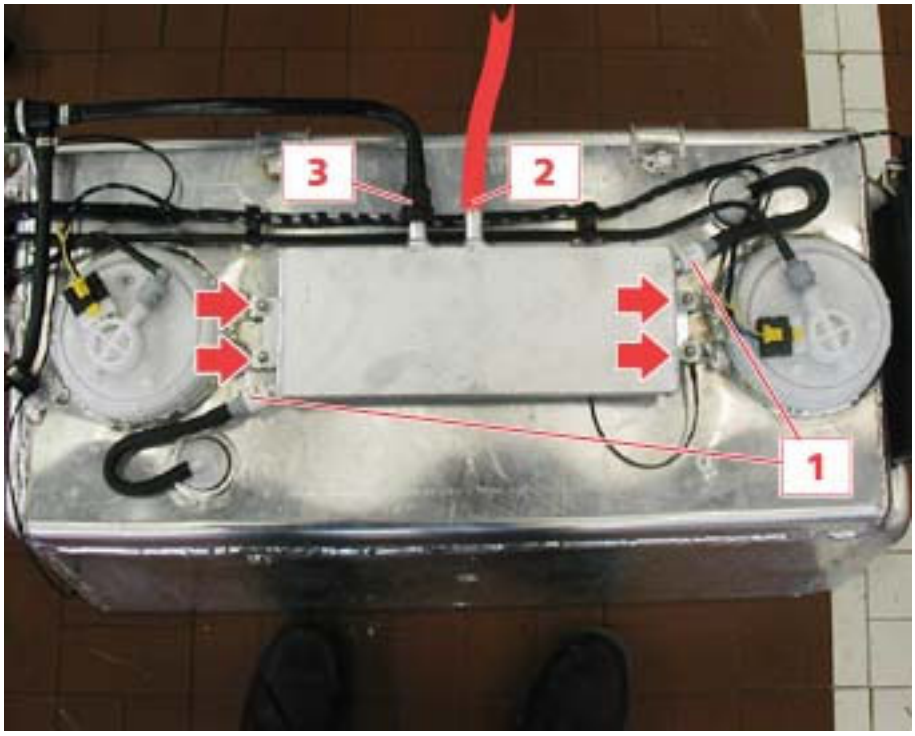


- Remove the liquid decanter located above the fuel tank, detaching the two victaulic couplings (**1**) from the float valves and the connecting pipe from the roll-over valve (**2**).
- Detach the connecting pipe from the Pierburg valve (**3**) (**USA version**).
- Undo the four fastening screws.



## Component fitting

- On the liquid decanter, connect the two victaulic couplings (**1**) to the float valves and the connecting pipe to the roll-over valve (**2**).
- Attach the connecting pipe to the Pierburg valve (**3**) (**USA version**).
- Tighten the four fastening screws on the fuel tank.



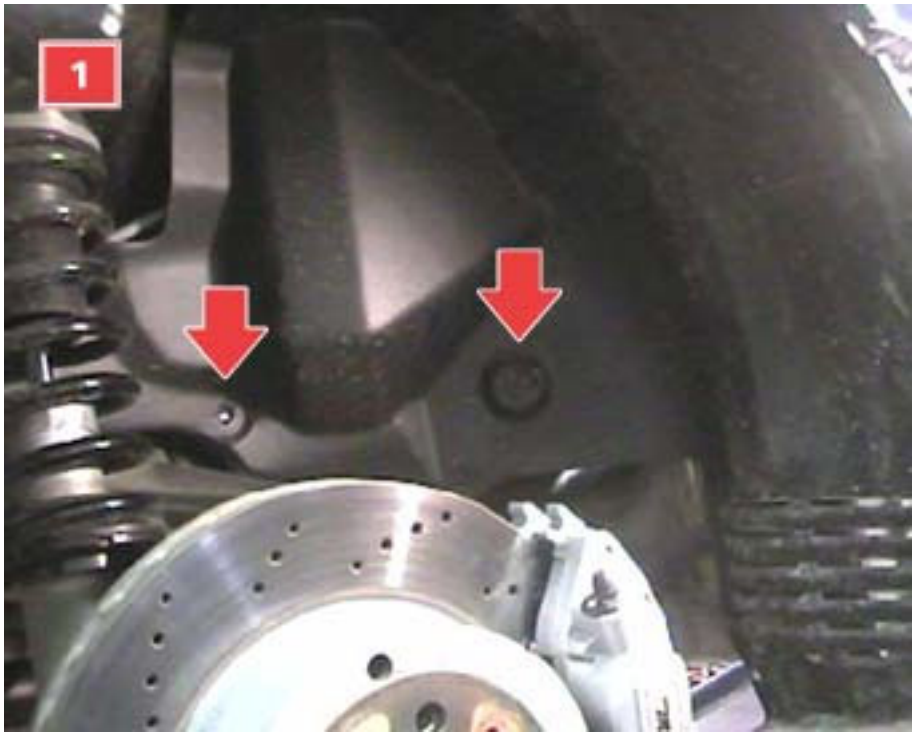
- Place the diagnosis pump filter onto the diagnosis pump connection tube and loosely fit the clamp (**USA Version**).



- Secure the diagnosis pump filter to the car body by tightening the fastening screw.
  Screw on the clamp which fastens the connecting tube to the diagnosis pump (**USA Version**).



- Refit the wheelhouse, fastening the five screws which secure it to the car body (**Figure 1**, **2**, **3 and 4**). Refit the wheel.



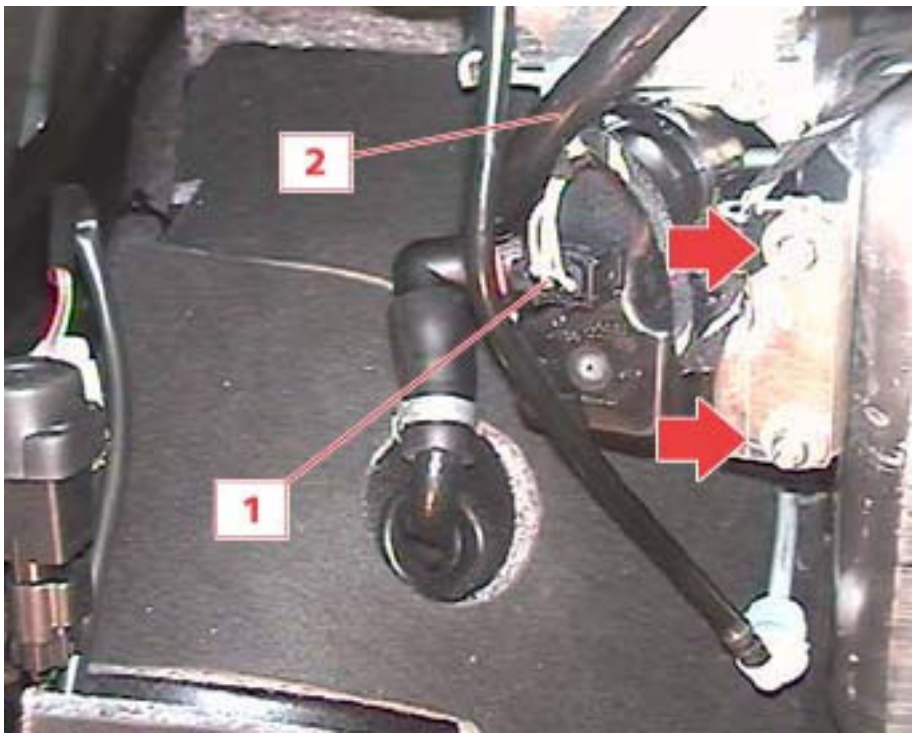




3


4

- Fit the rubber tube into its seating (**2**).
  Refit the diagnosis pump onto the support plate by tightening the two fastening nuts.
- Attach the connector (**1**) (**USA Version**).




- Insert the tube which connects the diagnosis pump filter, positioned next to the pump (**USA Version**).



**N.B.**
**For easier fitting of the active carbon filter fitting into its housing, grease its outer surface.**



- Secure the active carbon filter by tightening the two fastening nuts.



- Connect the three tubes to the active carbon filter using the victaulic couplings.



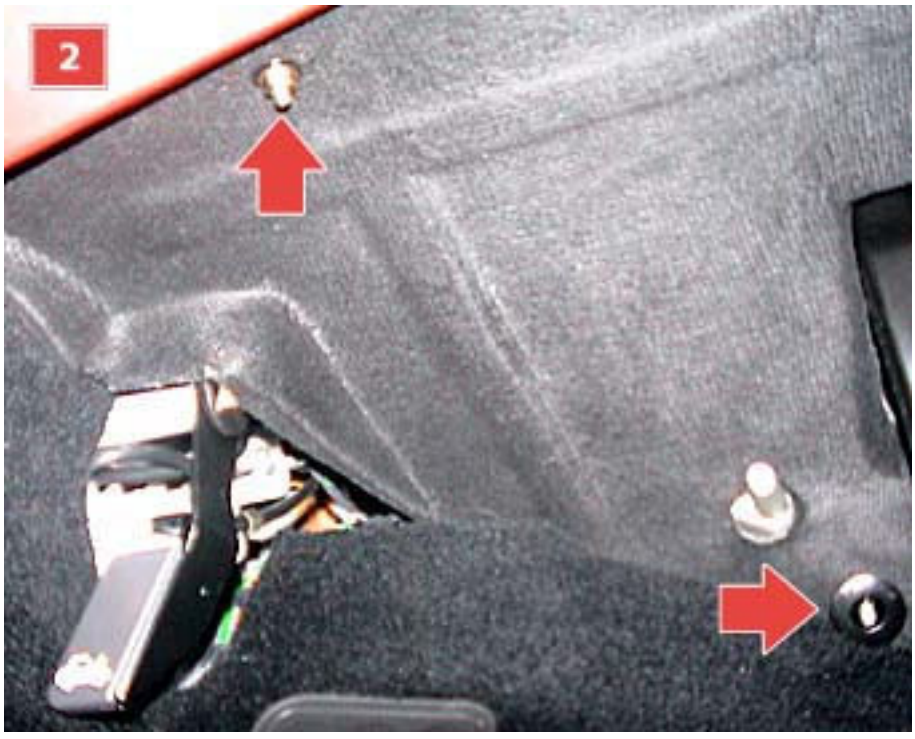
- Working from inside the luggage compartment, refit the lining.



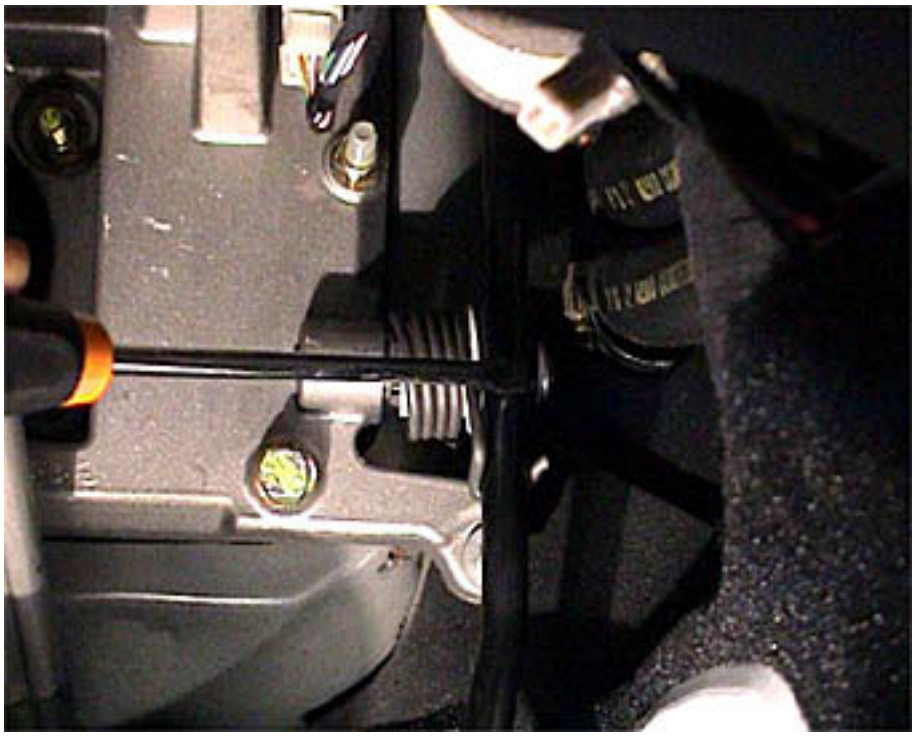
## ACCELERATOR PEDAL REPLACEMENT

- **(MY2003-Cambiocorsa gearbox version)** Remove the lower soundproof panel, driver's side, by unscrewing the two nuts and removing the two fastening caps **(Figure 1 and 2)**.

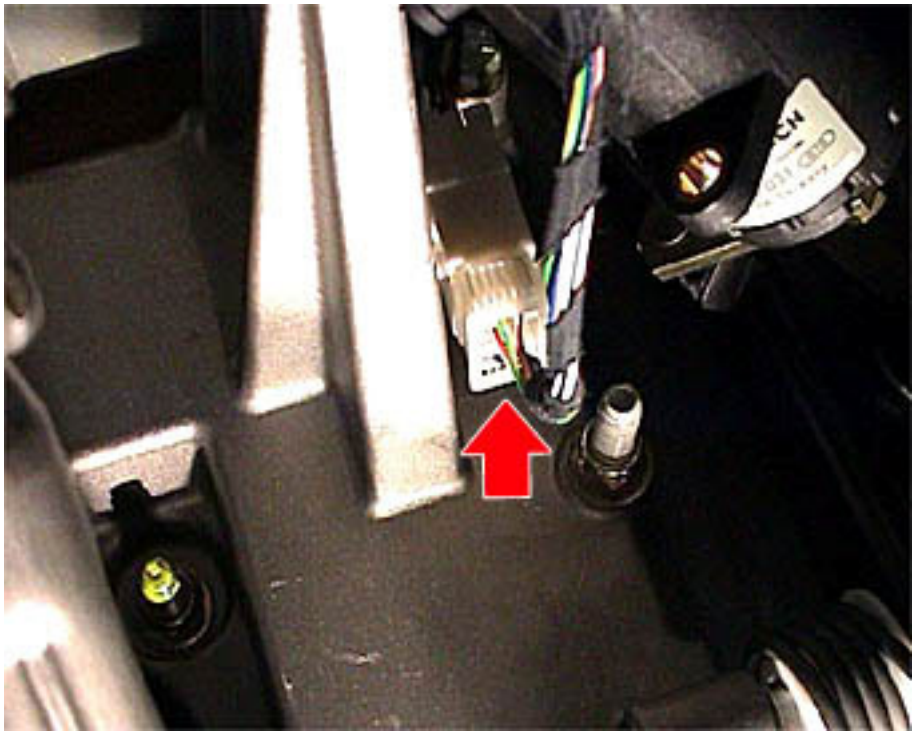


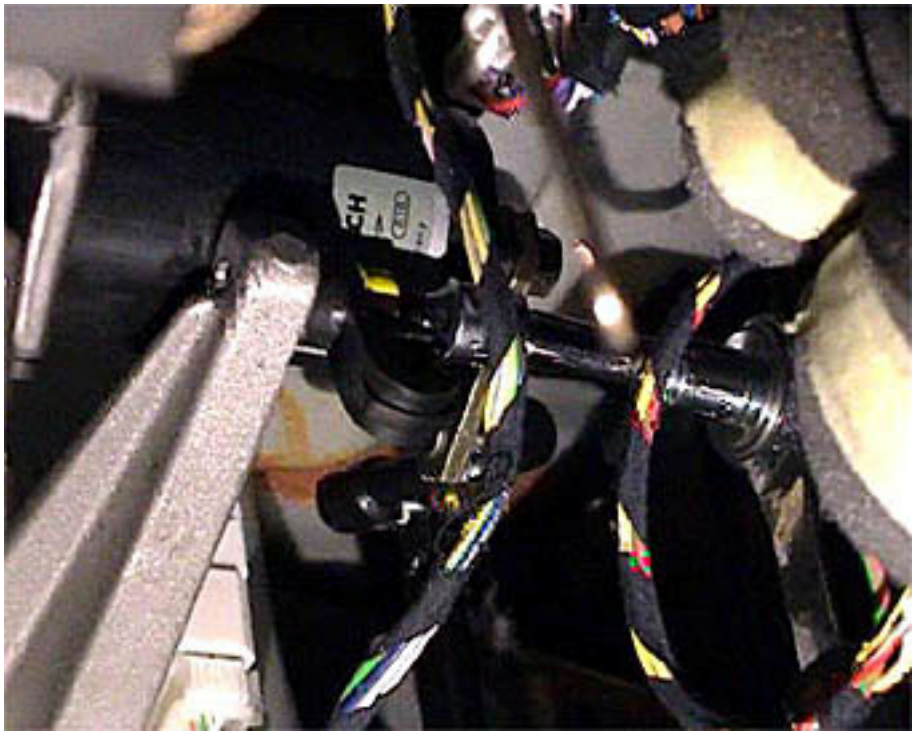
- Use a screwdriver to remove the Seeger ring of the pedal pin.



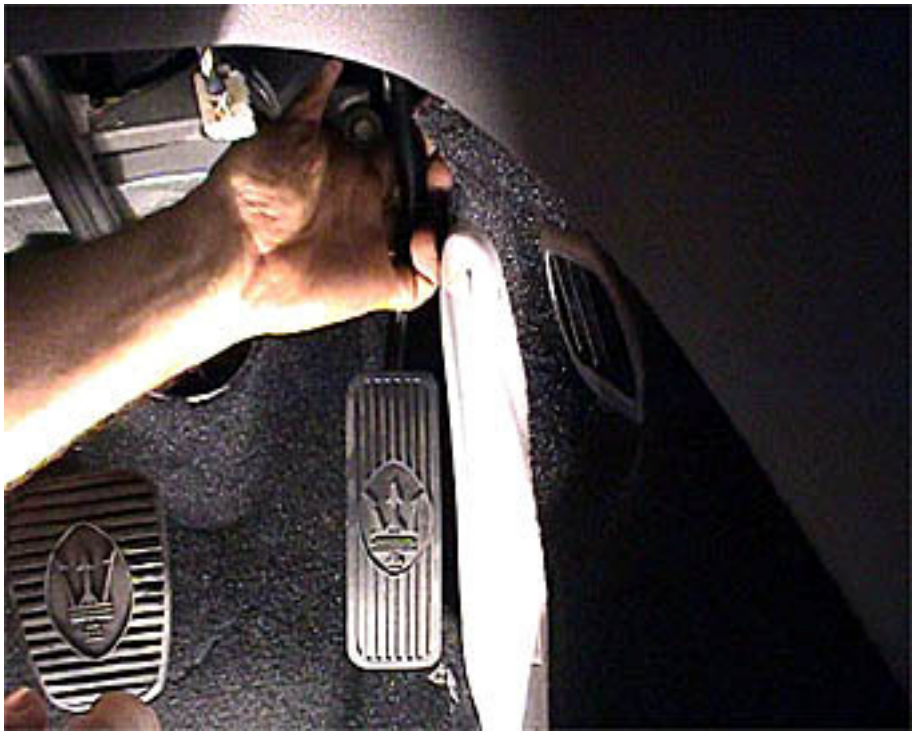
- Detach the connector on the accelerator potentiometer.



- Unscrew the two fastening screws for the potentiometer.



- Remove the accelerator pedal by pressing it towards the inside of the vehicle.



- Unscrew the fastening nut on the potentiometer lever and separate the two components.



**For refitting, follow the above procedures in reverse order.**

## TIGHTENING TORQUES

| Part | Nominal torque | Products |
|---|---|---|
| Screw fastening cylinder head to the crankcase | Preload of 60 Nm<br>90° = 80±10Nm | MOLYKOTE BR2 |
| Screw fastening damper to the crankshaft | 450 Nm | LOCTITE 242 |
| Nut "E" for stud bolt Screw fastening the sub-crankcase to the crankcase | | |
| Connecting rod tightening screw | | MOLYKOTE 1000 |
| Nut "E" Screw fastening the camshaft caps | 9 Nm | |
| Screw fastening flywheel to crankshaft | 91 Nm | |
| Solenoid valves' Screw fastening screw | 10 Nm | |
| Screw fastening pump control gearing | 23 Nm | |
| Camshaft control gearing | 200 Nm | Degrease the coupling surfaces. Lubricate the screw thread and underhead with engine oil |
| Oil filter cartridge | 25 Nm | engine oil on gasket |
| Screw fastening piston cooling system multiple union (oil nozzles) | 3 Nm | LOCTITE 242 |
| Screw fastening RH head alternator | 49 Nm | |
| Screw fastening LH head alternator | 59 Nm | |
| Timing chain tensioner for camshaft axle control | 40 Nm | |
| Screw fastening belt-tensioner pulley | 50 Nm | |
| Screw fastening coils on head cover | 10 Nm | |
| Screw fastening pumps to the sump | 25 Nm | |
| Screw fastening pump body to crankcase | 25 Nm | |
| Screw fastening exchanger to crankcase | 10 Nm | |
| Screw fastening variator oil pump | 3 Nm | |

| Part | Nominal torque | Products |
|---|---|---|
| Screw fastening exhaust manifolds | 25 Nm | |
| Screw fastening front cover to sub-crankcase-crankcase-heads | 10 Nm | |
| Oil pressure sensor | 40 Nm | |
| Pipe from accumulator to cylinder heads | 25 Nm | |
| Union on heads and accumulator, for oil pipes running from accumulator and heads | 30 Nm | |
| Filler neck union for pipe on the hydraulic steering pump | 40 Nm | |
| Exhaust system thermocouples | 10 Nm | |
| Lambda sensors | 50 Nm | |
| Water temperature sensor | 16 Nm | |
| Screw fastening injector rails to intake manifold | 25 Nm | |
| Screw fastening detonation sensor | 20 Nm | |
| Spark plug | 10 Nm | Spark plug lubricant |
| "Torca" clamp for exhaust system | 54 Nm | with spinner max 400 rpm |
| Screw fastening r.p.m. sensor | 8 Nm | |
| Timing variators | 200 Nm | |
| Outlet union for water vapour from the exchanger | 15 Nm | |
| Screw fastening hydraulic steering pump | 25 Nm | |
| Screw fastening A.C. compressor | 25 Nm | |
| Screw fastening auxiliary belt tensioners | 25 Nm | |
| Screw fastening timing control transmission mount | 6 Nm | LOCTITE 242 |
| Screw fastening bushing for LH head tensioner | 10 Nm | |
| Screw fastening gearing on timing variator | 15 Nm | LOCTITE 242 |

| Part | Nominal torque | Products |
|---|---|---|
| Screw fastening pipe running from the compressor to the condenser | 50 Nm | |
| Screw fastening timing sensor and revolution sensor | 8 Nm | |
| Screw fastening cylinder head cover | 10 Nm | |
| Screw fastening fixed runner onto transmission | 10 Nm | |
| Screw fastening fixed runner for timing system control | 25 Nm | |
| Screw fastening pump control fixed runner | 10 Nm | |
| Screw fastening moving runner for transmission | 10 Nm | |
| Screw fastening timing system movable runner | 25 Nm | |
| Screw fastening pump movable runner | 10 Nm | |
| Screw fastening intake manifold to head | 10 Nm | |
| Screw fastening upper fixed runner | 10 Nm | |
| Screw fastening oil delivery pipe to pump | 10 Nm | |
| Threaded union on pipe from exchanger to oil tank | 75 Nm | |
| Screw fastening wiring cover | 8 Nm | |
| Screw fastening engine electric earth | 25 Nm | |

## TOOLKIT

### Specific tooling

| Description | Code | |
|---|---|---|
| RH/LH cylinder head retaining tool | AM-107080 | 900026520 |
| Tool for fitting exhaust valve cotters on cylinder heads | AM-107079 | 900026970 |
| Tool for fitting seal ring on valve | AV-3374 | 900026980 |
| Special wrench for fitting variator oil filters | AV-3390 | 900026990 |
| Punch for fitting cylinder head centering dowel | AV-3328 | 900027000 |
| Punch for fitting centering dowel | AV-3329 | 900027010 |
| Tool for fitting diameter-6 centering dowel | AV-3330 | 900027260 |
| Tool for fitting diameter-13 centering dowel | AV-3331 | 900027270 |
| Special wrench for fitting timing variator on F136 camshaft | AV-3305 | 900027020 |
| Dummy liner | AV3335 | 900027060 |
| Punch for fitting pump unit control shaft on sub-crankcase | AV-3324 | 900027030 |
| Punch for fitting pump unit bearing on sub-crankcase | AV-3322 | 900027040 |
| Punch for fitting pump unit seal ring on sub-crankcase | AV-3325 | 900027050 |
| Punch for fitting seal ring on front crankcase cover | AV-3336 | 900026590 |
| Special wrench for tightening pump body screws to torque | AV-3350 | 900027150 |
| Special wrench for tightening engine mounting bracket screws to torque | AV-3351 | 900027160 |
| Crankshaft rotation-stop tool for dumper | AV-3294 | 900026560 |
| Cylinder liner extracting tool | SP1413 | 900026610 |
| Punch for fitting crankshaft bearing, clutch side | AV-3147 | 900026550 |
| Punch for riveting cap | AV-2083 | 900026540 |

| Description | Code | |
|---|---|---|
| Tool for unlocking clutch 1x 4x dumper | | 900026220 |
| Radiator guard sheet | | 900026200 |
| Spacer for resting engine on radiator | | 900026210 |
| Stand for resting engine and manifolds | | 900026230 |
| Adjusting tool for lh fuel delivery line | | 900026280 |
| Adjusting tool for rh fuel delivery line | | 900026290 |
| Engine support for stand | | 900026310 |
| Spacer for earth wire connection onto engine stud bolts | | 900026940 |
| Wrench for fuel tank pump ringnut | | 900026390 |
| Punch grip | | 900026300 |
| Punch gauge **Ø 6 mm** | TLDF 006108 | 95976108 |
| Valve guide punch | AS-102178 | |
| Punch bushing (valve guide fitting) | AV-3537 | |
| Extracting tool for seal ring on valve guide | AV-2734 | 95972734 |
| Extracting tool for valve guide | AV-2926 | 95972926 |
| Punch for fitting grommets onto valve guides | AV 2692 | |

## REMOVING-REFITTING THE ELECTRONICALLY-CONTROLLED GEARBOX

- Position the car on a hoist
- Open the engine and luggage compartments
- Disconnect the battery from the switch in the luggage compartment
- Remove the rear wheels

*Replacing the wheels*

- Remove the spare wheel housing

*Removing /refitting the spare wheel housing*

- Remove the heat shield



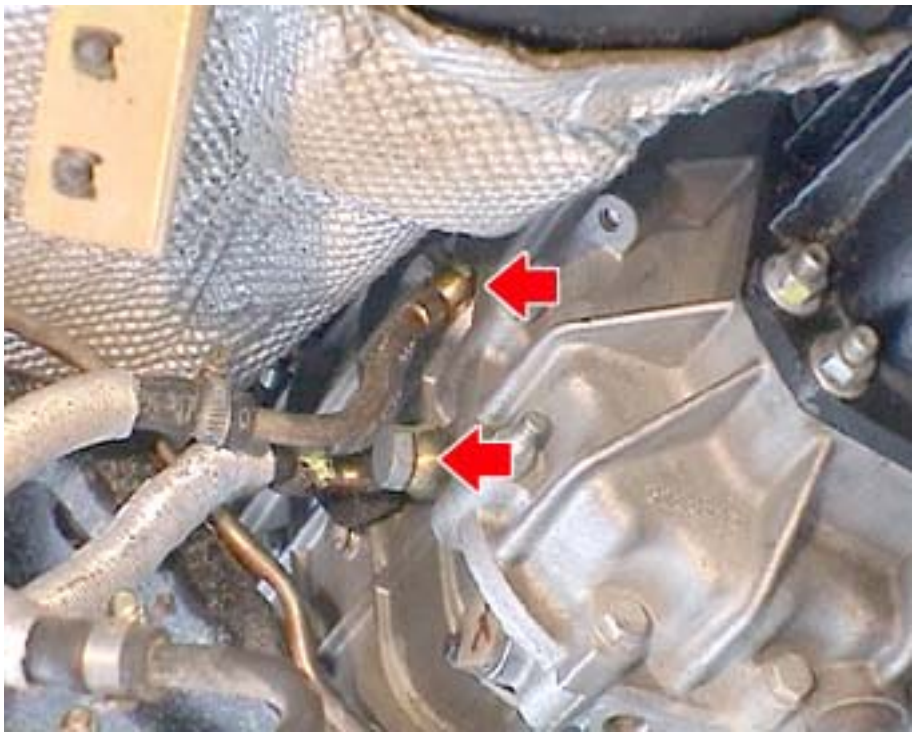
- Remove the central exhaust line

*Removing/refitting the central exhaust line*

- Remove the handbrake cables and tie-rods

*Removing/refitting the handbrake cables and tie-rods*

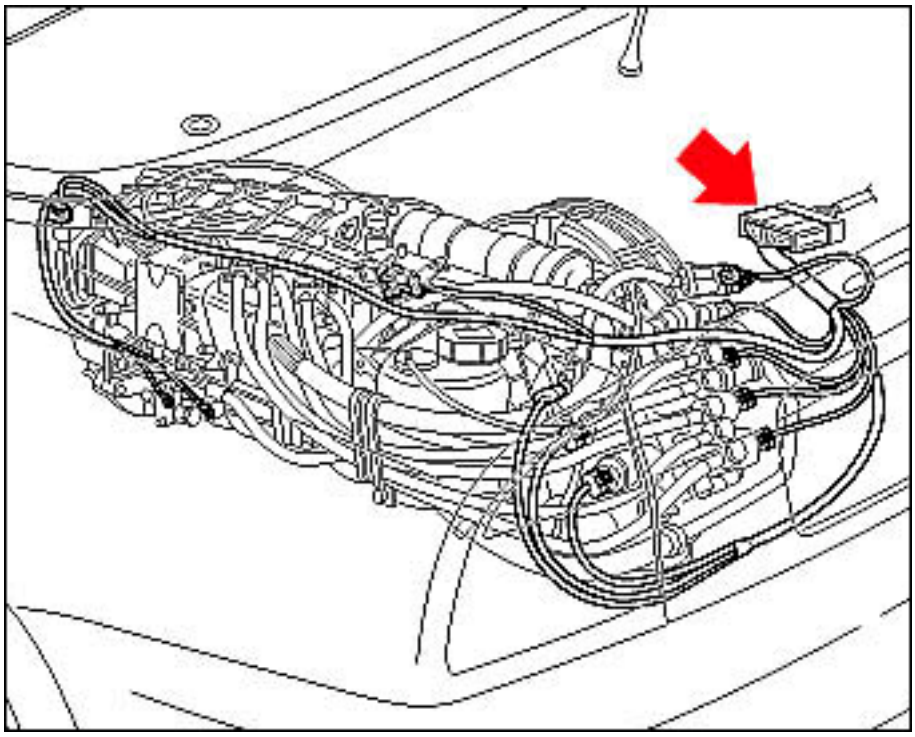
- Detach the cooling system oil delivery and return unions from the gearbox, by unscrewing the two screws



- Unscrew the six RH and LH axle shaft differential output flange screws



- Disconnect the main wiring



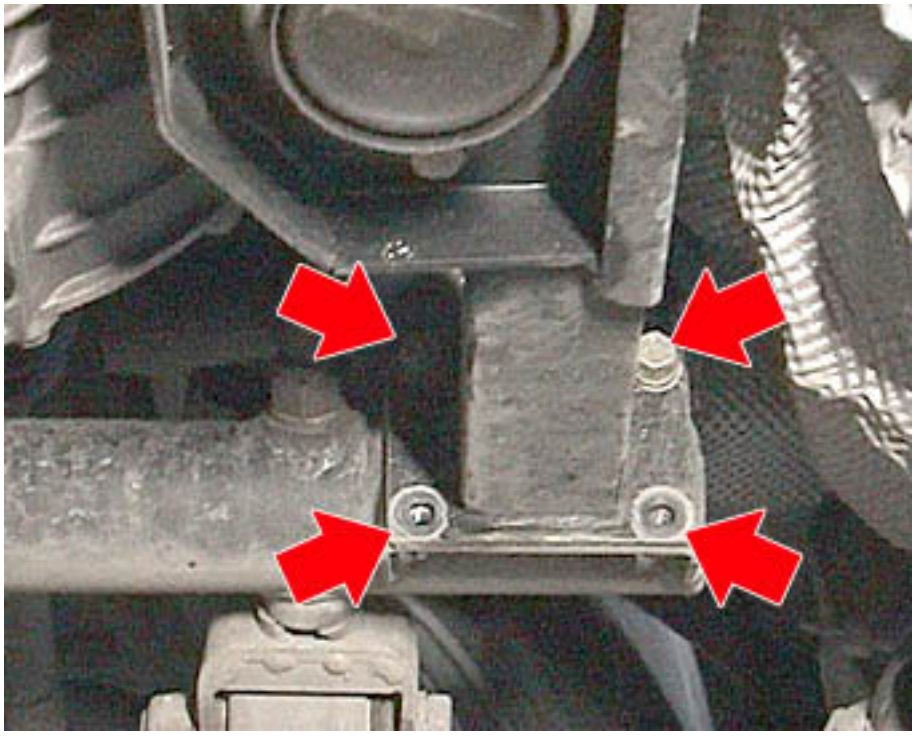
- Disconnect the quick disconnect



- Unscrew the seven transmission shaft gearbox nuts



- Remove the rear frame by unscrewing the four screws on each side



- Holding it on both sides, push the gear unit towards the rear of the car until it completely detaches from the transmission shaft



- Rock the gear unit lightly to extract it from the base of the car

**When refitting, proceed in reverse order.**

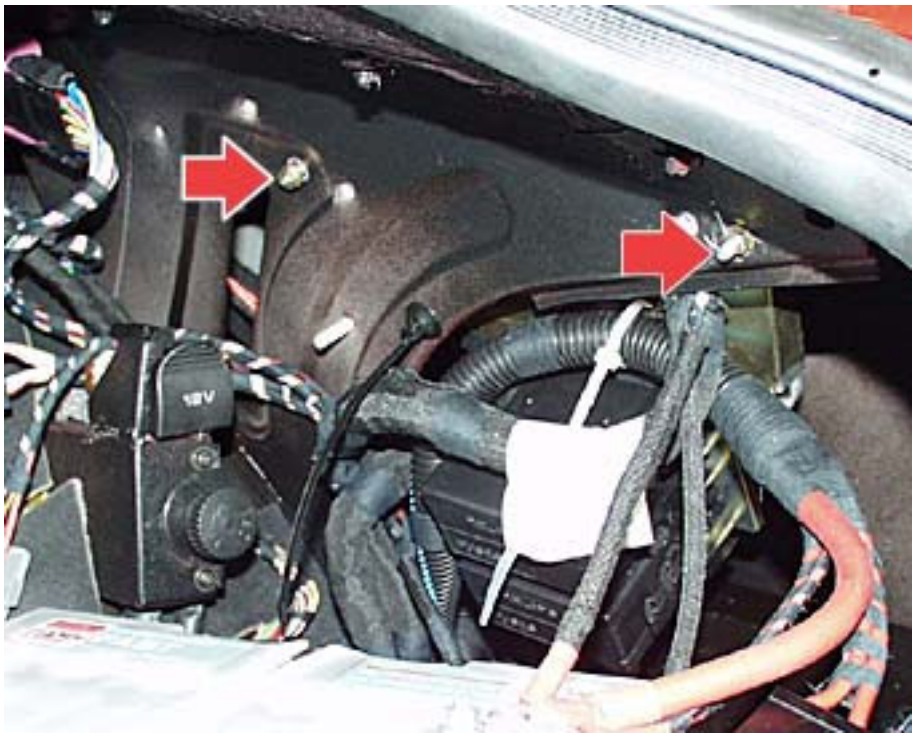
## REPLACING THE ELECTRONICALLY-CONTROLLED GEARBOX CONTROL UNIT (TCU)

### detaching-reattaching of the electronically-controlled gearbox control unit (TCU)

- Remove the battery

*Battery disconnection-reconnection*

- Unscrew the two screws fastening the control unit to the bracket.



- While holding the control unit, disconnect the connectors.



- Unscrew the two retaining nuts to remove the pin and free the earth wire.

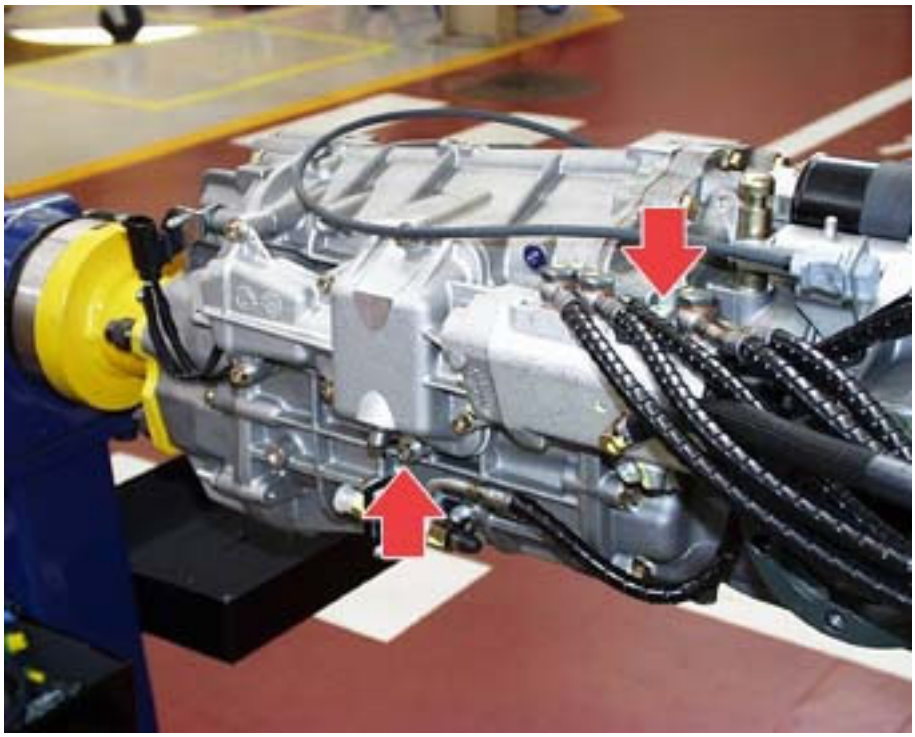


**When fitting, follow the procedures described above in reverse order.**

## POWER UNIT REPLACEMENT

### Removal

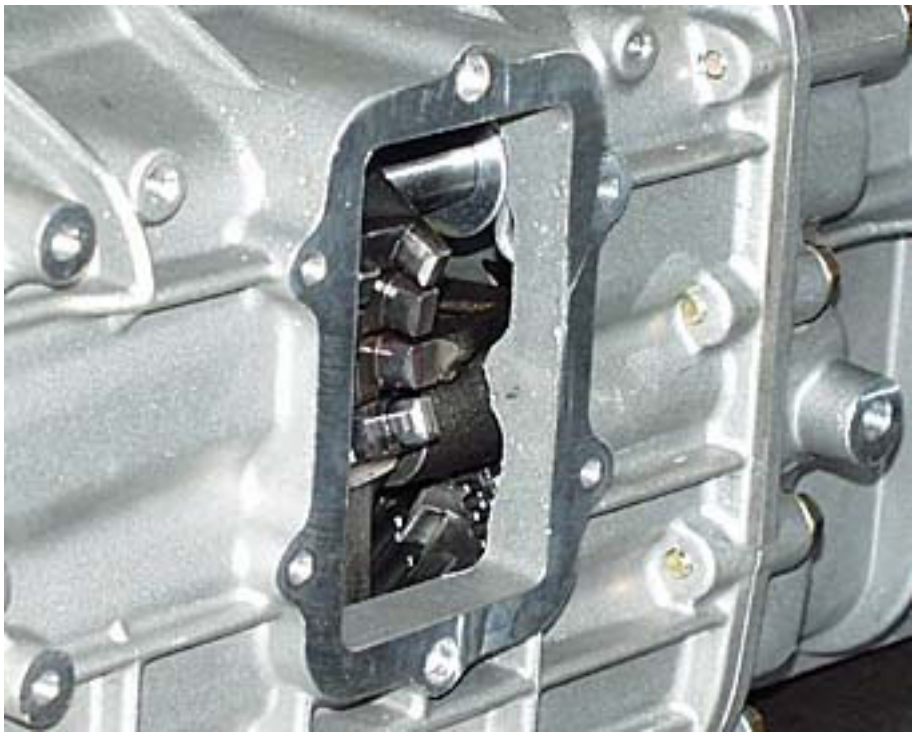
- Remove the lower and upper brackets, undoing their fastening screws.



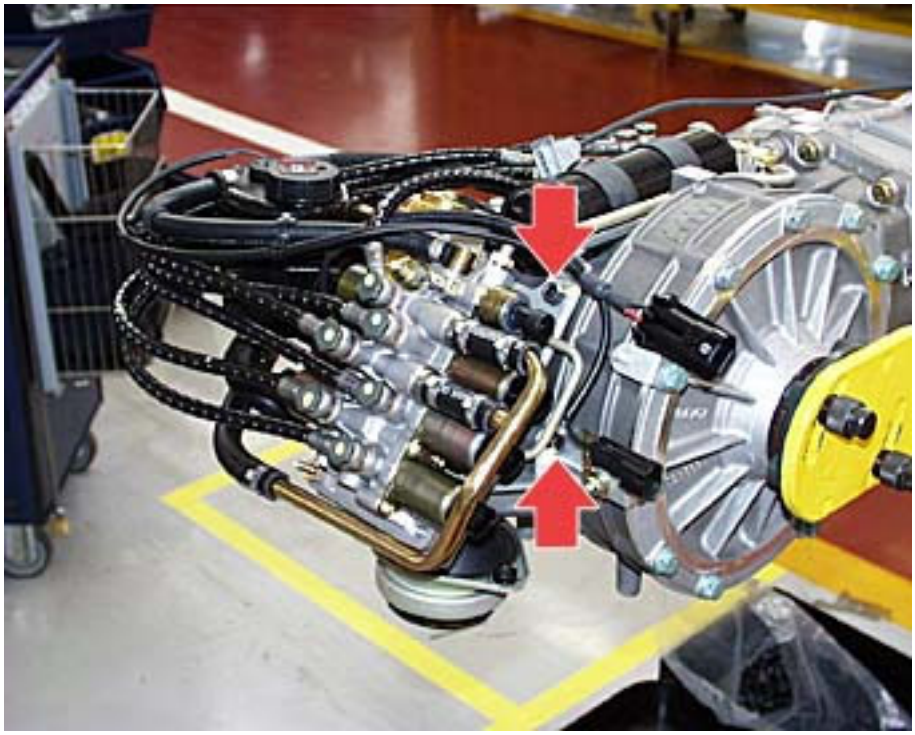
- Remove the side cover, by undoing the 6 fastening screws.



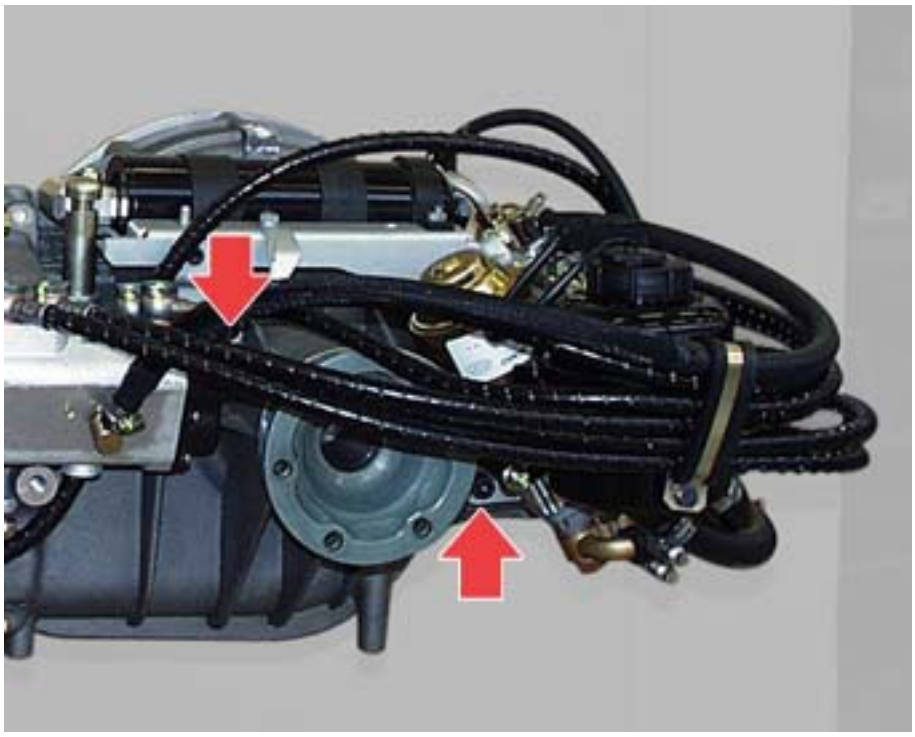
- Carefully clean the contact surfaces between the gearbox housing and the cover.



- Undo the two rear fastening screws.



- Undo the two side fastening screws.

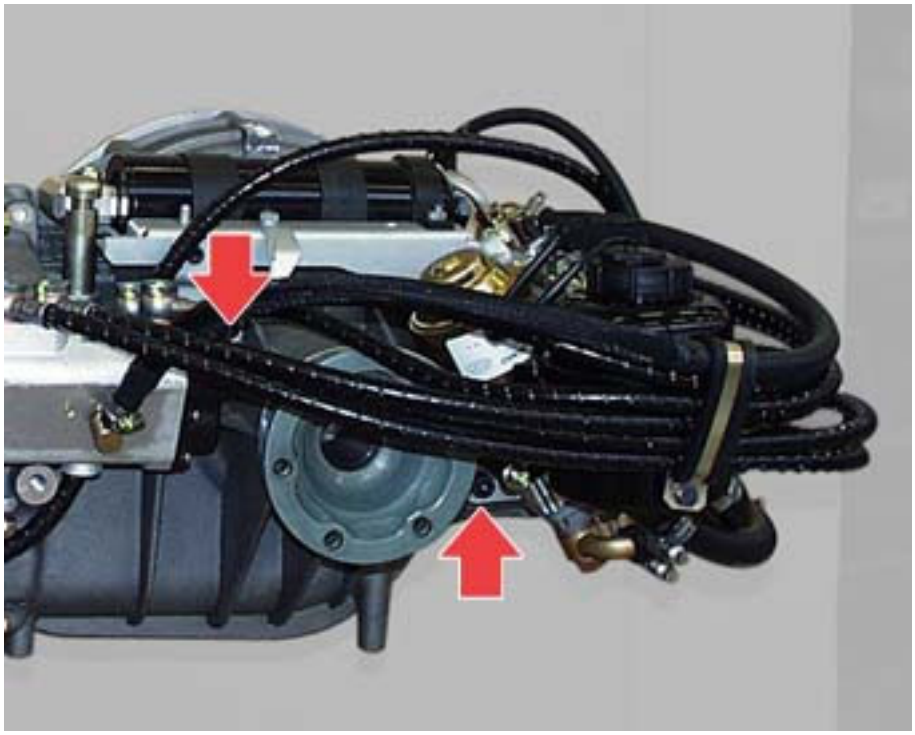


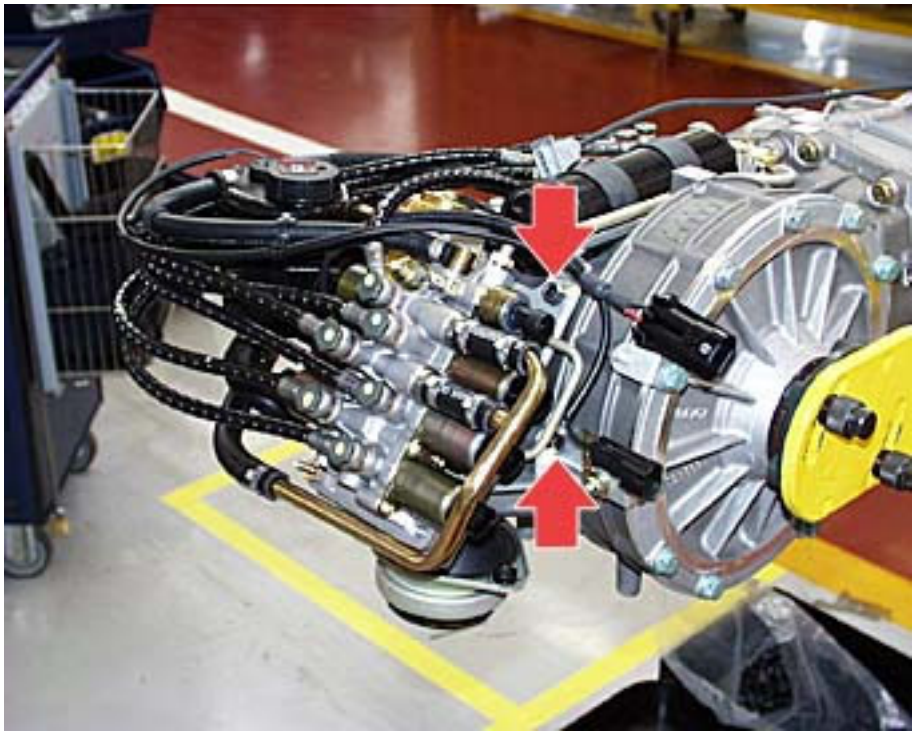
## Fitting

- Position the power unit near the gearbox.

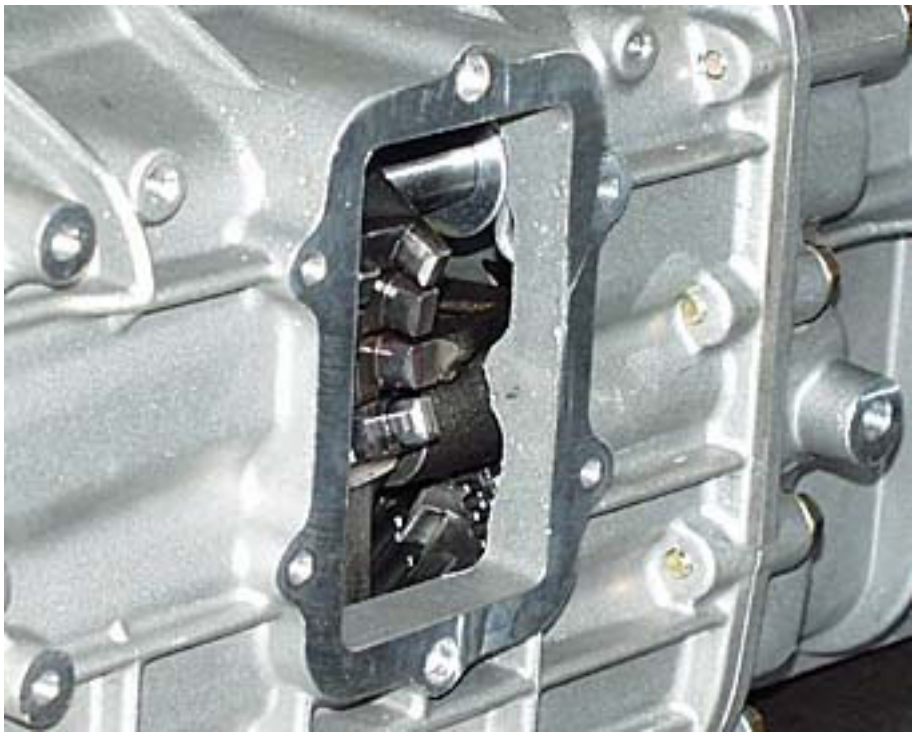


- Tighten the four rear fastening screws (**1,2,3,4**) to a torque of **24 Nm**.
- Use LOCTITE 243 on the central screw (**4**).





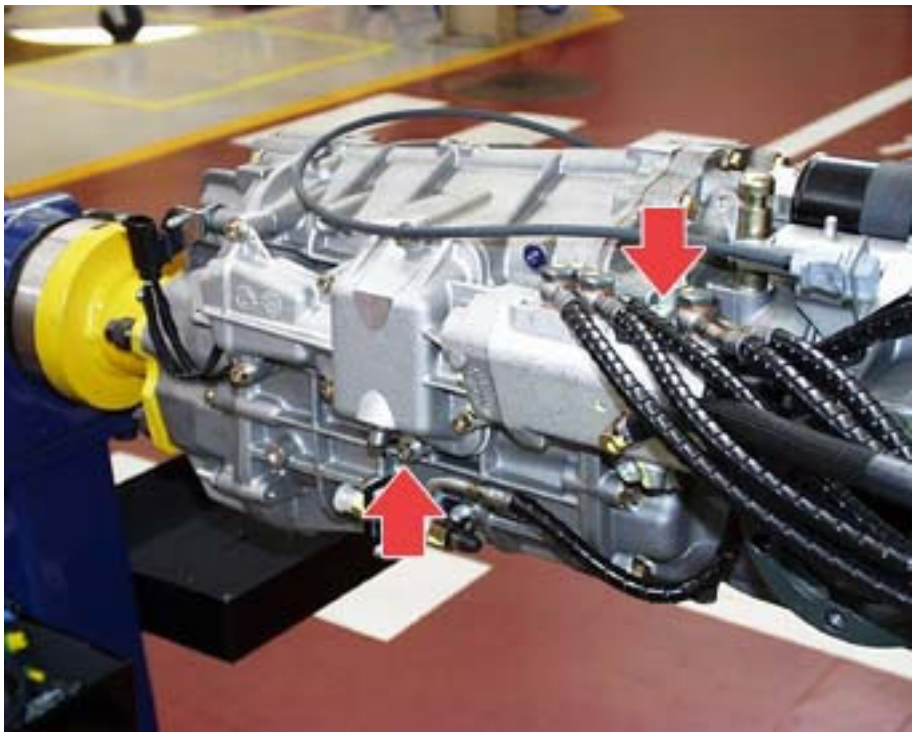
- Apply CAF 4 sealant between the gearbox housing and the actuators' side cover.



- Fit the side cover and tighten the screws to **7,4 Nm**.



- Fit the lower bracket and the upper bracket.

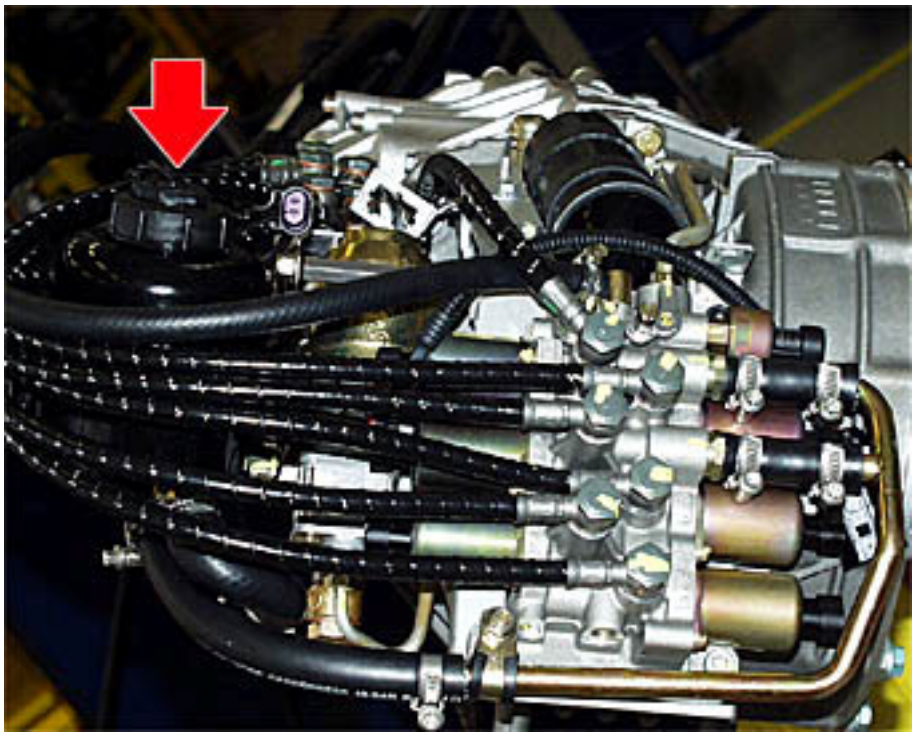


- Check the oil level.

## ESTABLISHING THE ELECTRONICALLY-CONTROLLED GEARBOX OIL TANK LEVEL

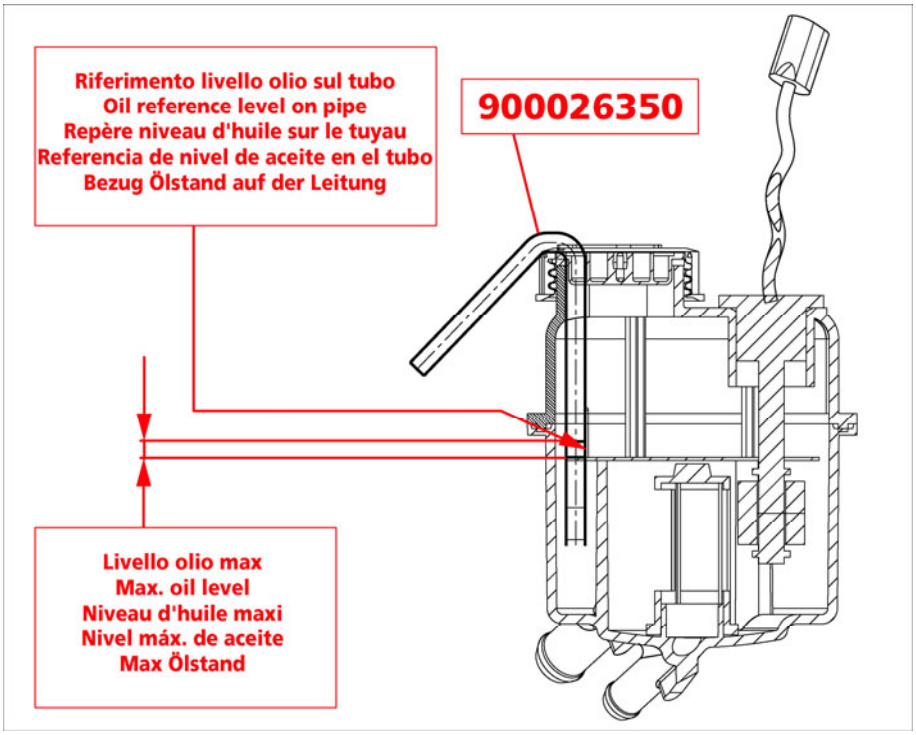
**N.B.**
**The following procedure shows how to establish the electronically-controlled gearbox's oil tank level in the vehicle.**

- Top up the oil in the electronically-controlled gearbox tank.



- Set the key in the "key on" position on the panel.
- Make sure the motor-driven pump has charged the electronically-controlled gearbox system.

- Drain the oil from the tank using the specific tool **900026350**.



## PIS ADJUSTMENT PROCEDURE

**N.B**
**This operation must only be carried out on versions fitted with the SOFAST 2 gearbox**

Before proceeding with PIS (or KISS POINT) the clutch has to be **bedded in.**

- In order to allow minimal bedding-in of the clutch when driving the first kilometres, follow the instructions below:
  - avoid Sport drive
  - gear shifts at max 4000 rpm and max 50% accelerator pedal
  - avoid violent pick-ups
  - avoid prolonged pickups as far as possible (traffic jams, manoeuvres)
  - change gears several times while moving

- Keep the vehicle running in idle for 5 minutes in order to calibrate the solenoid valves when **hot**. With the vehicle running, engage 1-2-1 in sequence, hold the vehicle in idle with the 1st gear engaged and the brake pedal pushed for 1 minute. Repeat the sequence three times to allow correct assessment of the clutch solenoid valve leakage.

- Proceed with adjusting the PIS or KISS POINT.

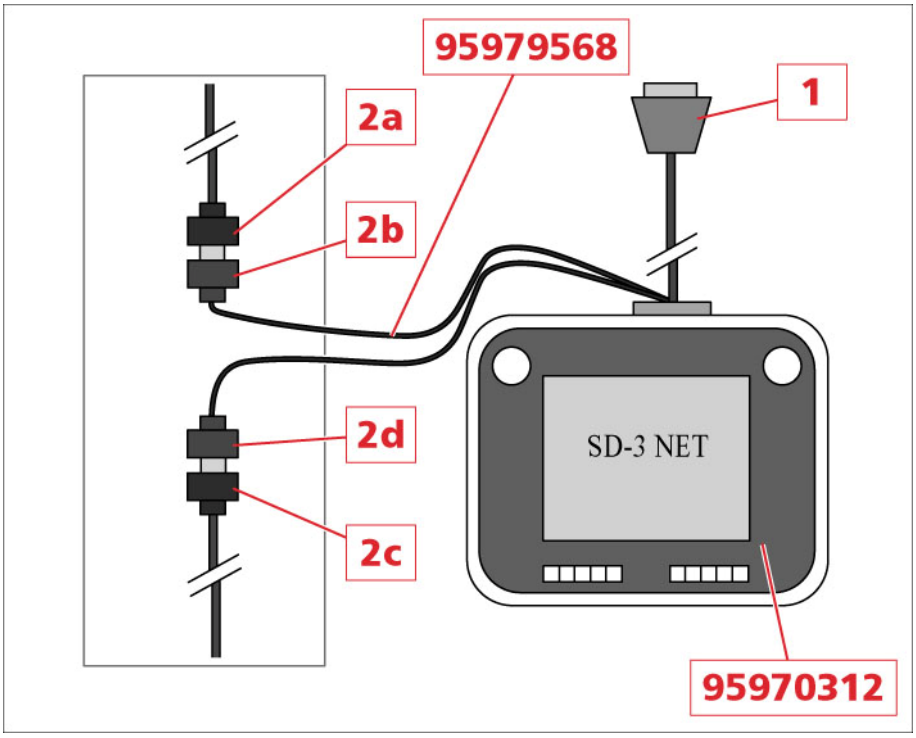
- Turn off the engine, checking that the ignition switch is in OFF position
- Unscrew the retaining nut of the lower guard of the instrument panel.



- Partially pull down the lower guard of the instrument panel and access the 4-way connector of the C-CAN line, then disconnect it.



- Connect SD3 (**95970312**) to the EOBD diagnostic connector **(1).**
- Connect the C-CAN connector **(2a)** to the SD3 cable bundle (**95979568**))**(2b).**
- Connect the C-CAN connector **(2c)** to the SD3 cable bundle (**95979568**)**(2d).**



**CAUTION**

**Before adjusting the gear shift / selection actuator system, the following checks must be carried out:**

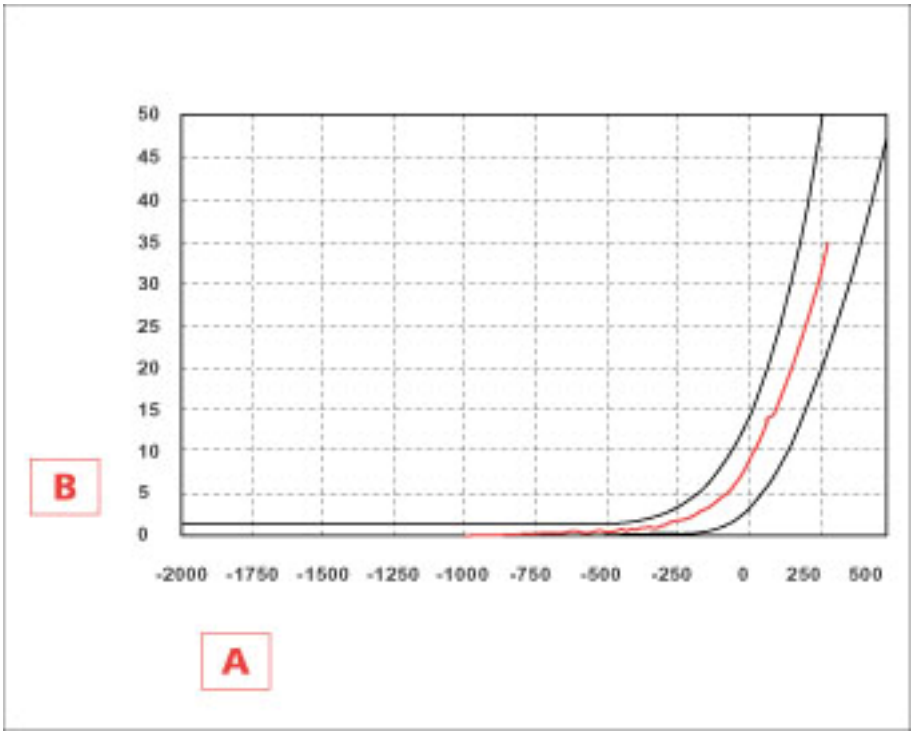
**- If the vehicle has been stationary for over 8 hours, it must be driven for 15 minutes in "Free Drive" conditions with repeated gear shifts.**

**- If the vehicle has been stationary for over 30 minutes after the bedding stage, perform the pick-up manoeuvre 10 times, bringing the engine speed up to 1500 rpm.**

**- If the car has been stationary for less under 30 minutes after the bedding stage, perform the pick-up manoeuvre 5 times, bringing the engine speed up to 1500 rpm.**

- Switch on the SD3 and select the "**NCR KISS-POINT**" software option from the diagnostic programmes.
- Select the "**KISS POINT ENVIRONMENT**" function from the list of M138 software
- The user is guided through the subsequent stages by the diagnostic system chosen.
- Enter the vehicle serial number.
- Use the TAB button to select "**CONTINUE**" then press "**ENTER**" to confirm the data entered.
- The system will display a warning message for the user, advising him/her of the vehicle conditions required to run the calibration procedure correctly.
- If the vehicle meets the conditions which permit the procedure to continue, press "ENTER".
- Shift the gear to neutral, turn the ignition switch to the OFF position, wait approximately 15 seconds, then start the engine and select "ENTER" on the SD3.
- Select "**START PROCEDURE** "
- The following screen pages instruct the user to keep the accelerator pedal pressed throughout the entire data acquisition period.
- The system will carry out 10 clutch opening and closing cycles automatically, with the gearbox in the neutral position, during which the SD3 will acquire the data needed to calculate the touch point (PIS) correctly.
- Wait for the data acquisition procedure end message to appear on the display and a tone to be emitted by the instrument panel node.

- The SD3 will display the "TRANSMITTABILITY" graph, i.e. the torque value depending on the clutch position (in red) and the two reference curves (in black) indicating the tolerance range within which the transmittability curve must be positioned.




**A** = CSC bearing movement (Thousandths)
**B** = Torque (Nm)

- The system will automatically check that the transmittability curve read lies within the two tolerance curves.
- Two results are possible, depending on the outcome of this processing:
  - the data is correct and therefore the system will proceed with the next data acquisition stages.
  - the data is incorrect and therefore the procedure will be cancelled and an error message will be displayed with instructions on how to solve the problem.

- At the end of each data acquisition and processing sequence, the following parameters will be displayed:

- Number of pickups
- PIS value (bit,mm)
- POINT DISPERSION value (bits)

- If completed correctly, the procedure will be performed a further two times.
- On completion of the three stages, the average touch point (PIS) value will be calculated and stored in the gearbox ECU.
- The message "**TOUCH POINT (PIS) WRITTEN CORRECTLY**" will appear on the SD3 display.

## CLUTCH REMOVAL

### Removing the transmission shaft

- Remove the spare wheel housing.

*Removing /refitting the spare wheel housing*

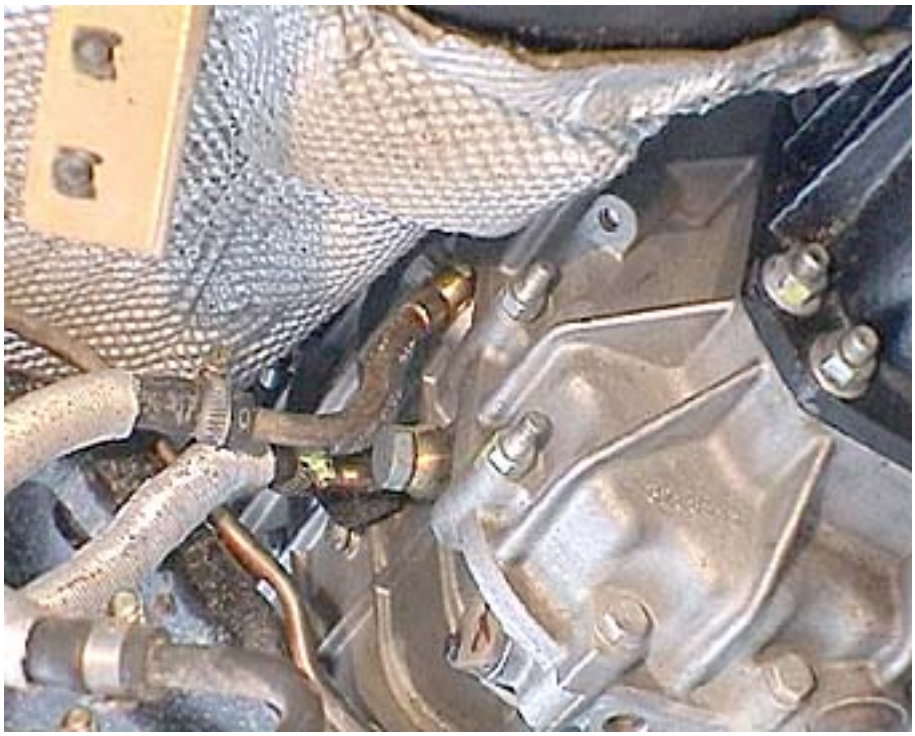
- Remove the central exhaust line.

*Removing/refitting the central exhaust line*

- Remove the handbrake cable.

*Removing-refitting the handbrake and tie-rods*

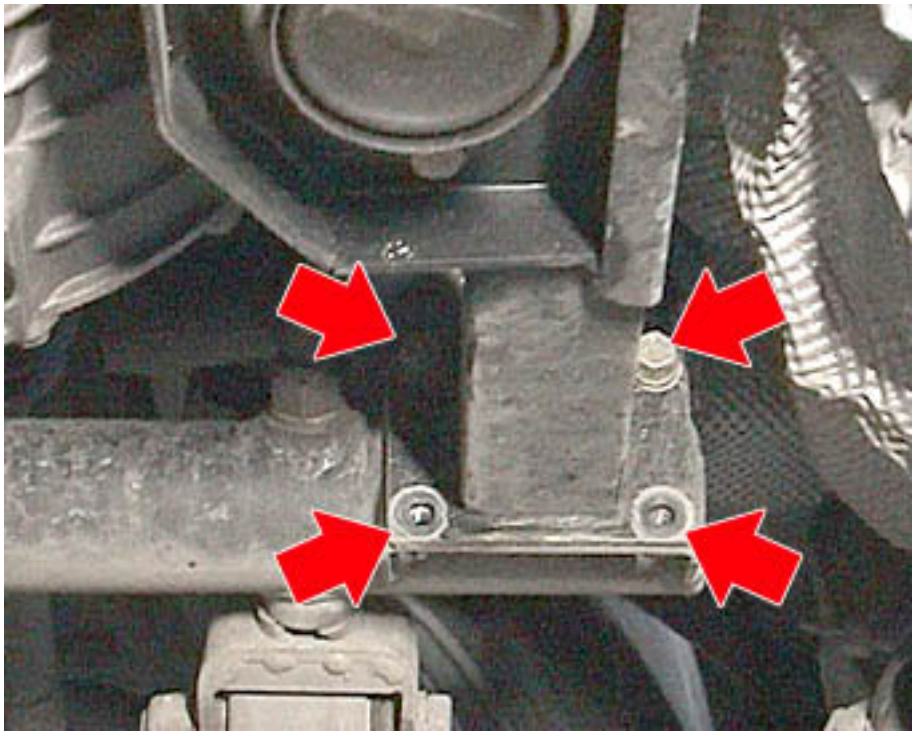
- Detach the cooling system oil delivery and return hoses from the gearbox by unscrewing their two screws.



- Position the hydraulic lift underneath the gearbox and lift the unit slightly.

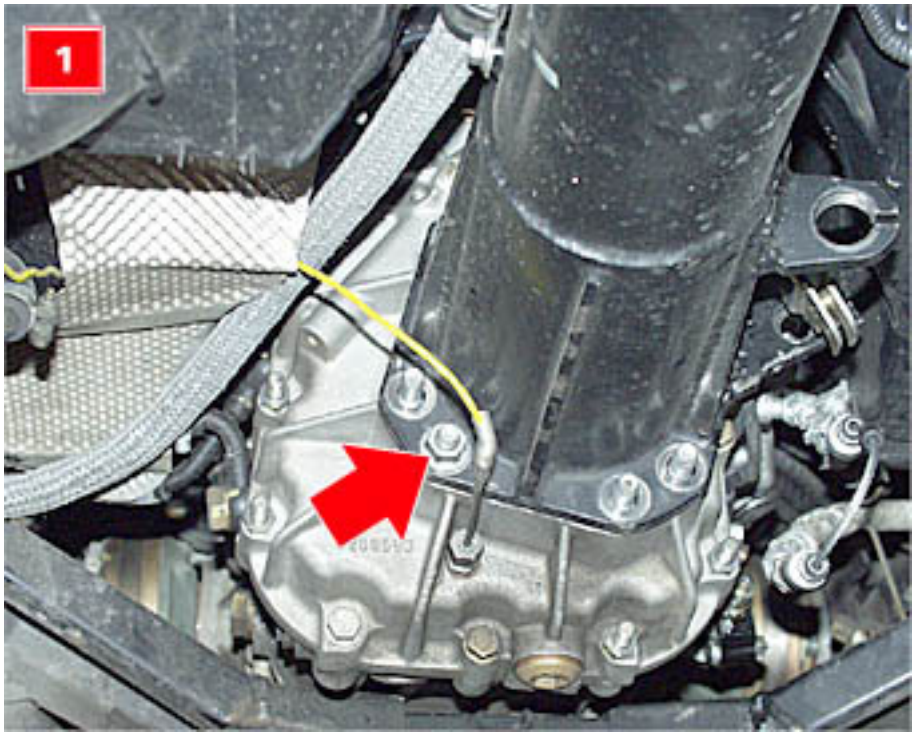


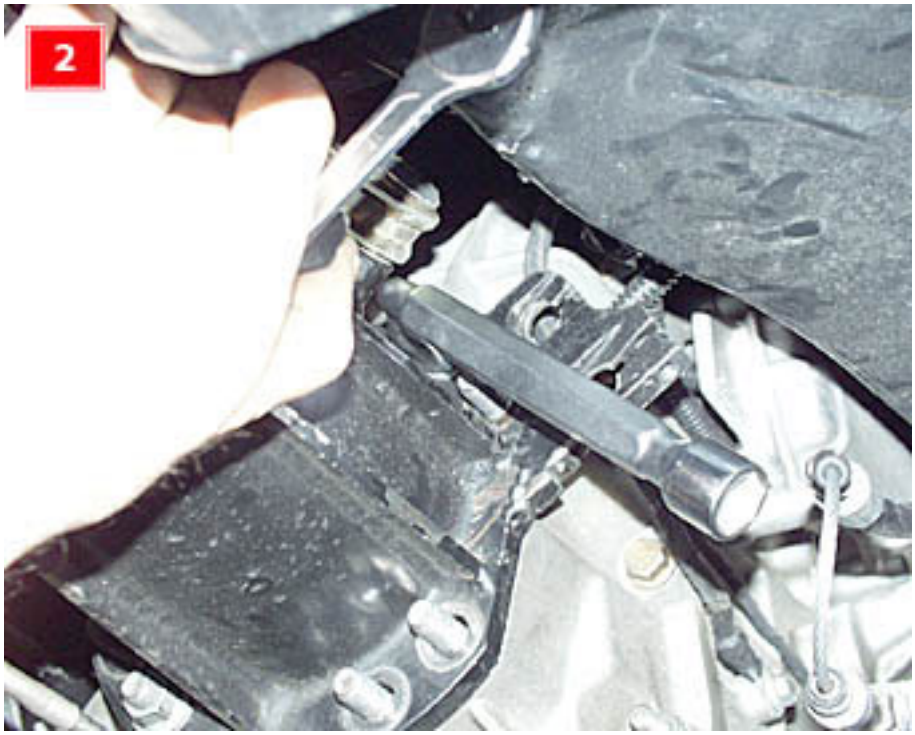
- Remove the rear cross member by unscrewing the four fastening screws positioned on each side.



- Remove the hydraulic lift and unscrew the seven nuts securing the transmission shaft to the gearbox unit, leaving one nut screwed on to ensure the transmission shaft does not come off unexpectedly (**Figure 1**).

**N.B.**
**Use a pipe wrench to remove the upper transmission shaft screw (Figure 2).**



- Remove the front modular cross member by unscrewing the two screws on each side.



- On both sides, unscrew the two screws securing the front rollbar jumpers.



- Lower the front rollbar.

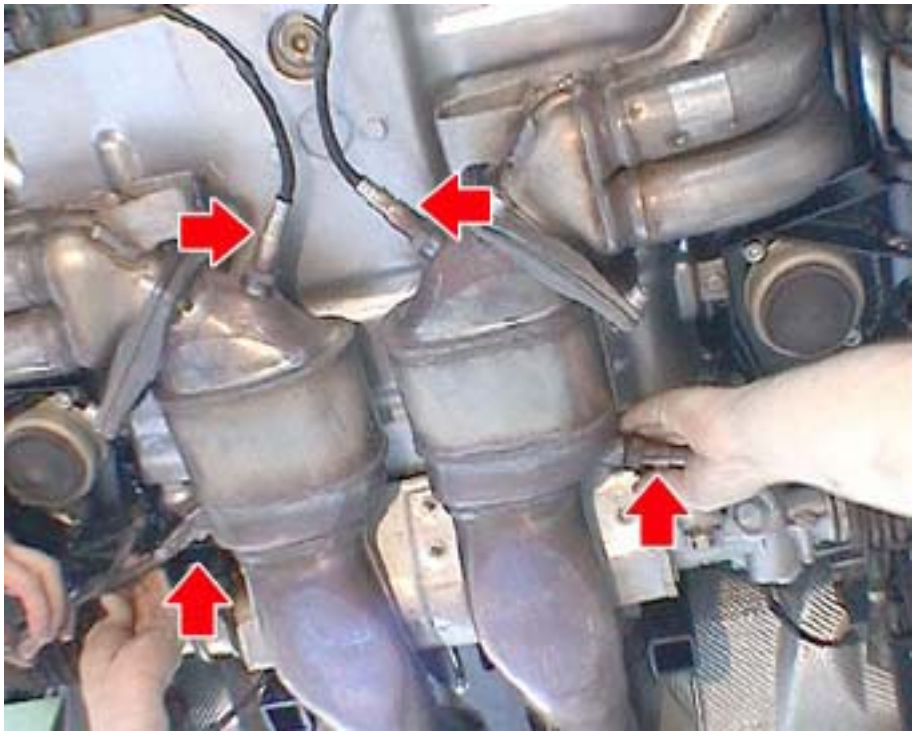


- Remove the clip and unscrew the rear Lambda sensor cable bracket screw.

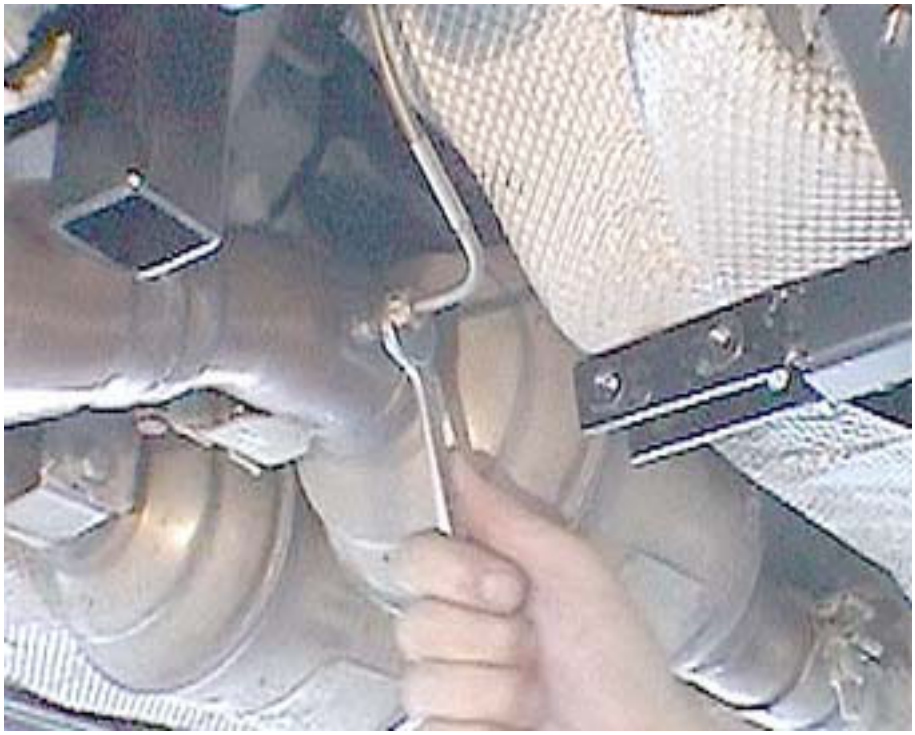


- Unscrew the four Lambda sensors from the catalytic converters.
  Mark the RH and LH sensors and the respective catalytic converters to avoid inverting their positions during re-assembly.

**N.B.**
**When unscrewing the Lamda sensors, make sure the cables do not get damaged by twisting.**



- Unscrew the two thermocouples from the catalytic converters.



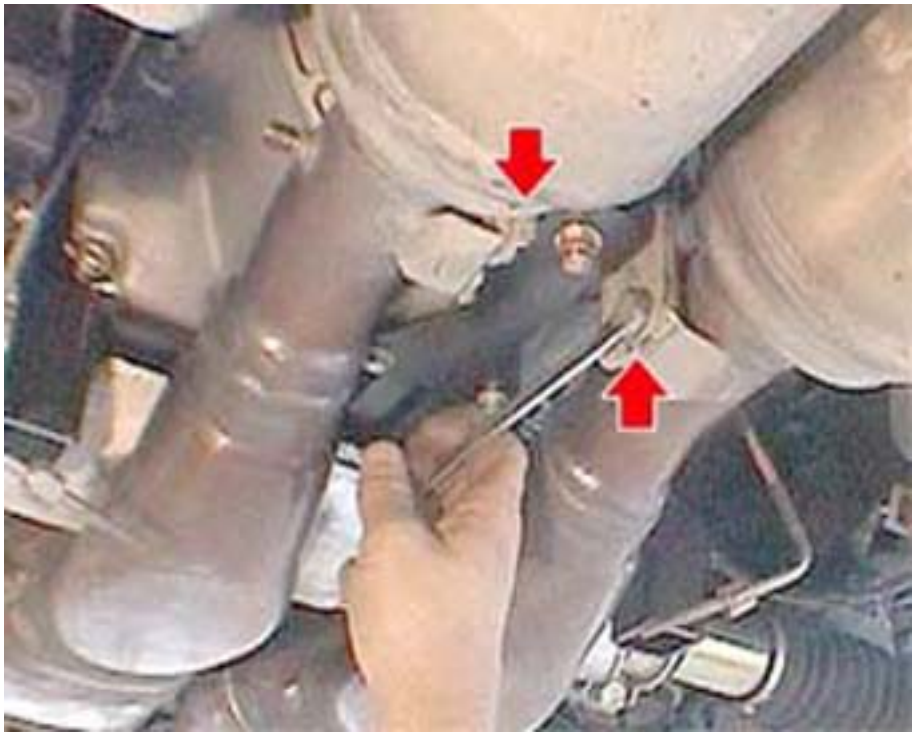
- Unscrew the four screws securing the pre-catalytic converter flange to the exhaust manifolds.



- Detach the pre-catalytic converter from the exhaust manifolds  and extract the seal.



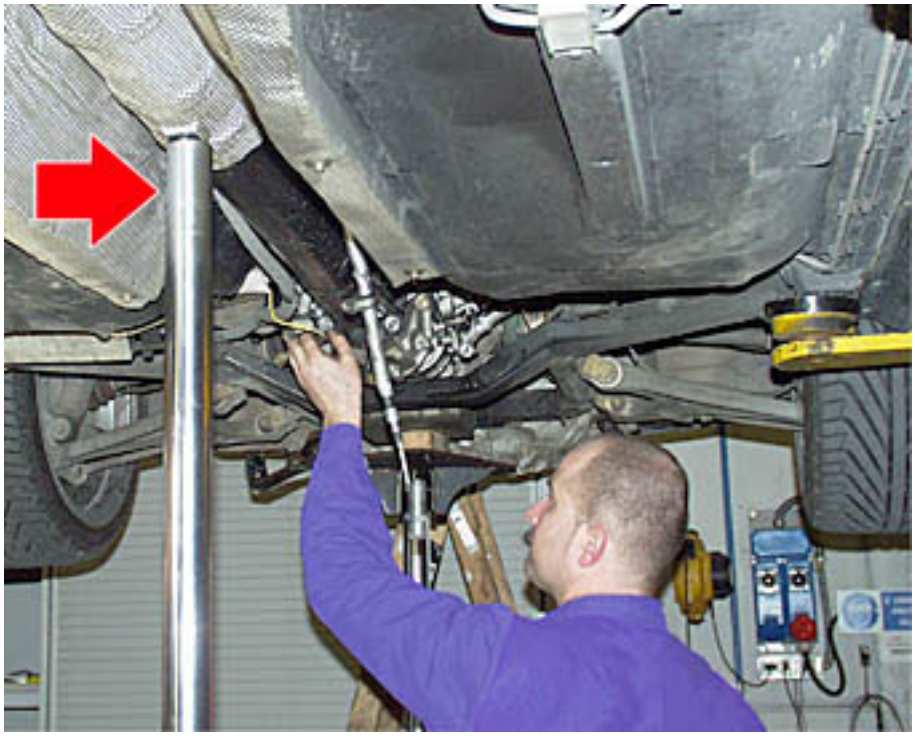
- Unscrew the two screws securing the catalytic converter support to the clutch housing and remove the pre-catalytic converters as well as the catalytic converters from the car.



- Unscrew the six screws securing the steering box heat shield and remove it from the



- Position a second hydraulic lift underneath the car so as to align the transmission shaft to the gearbox unit.



- Unscrew the eighth screw securing the transmission shaft to the gearbox unit

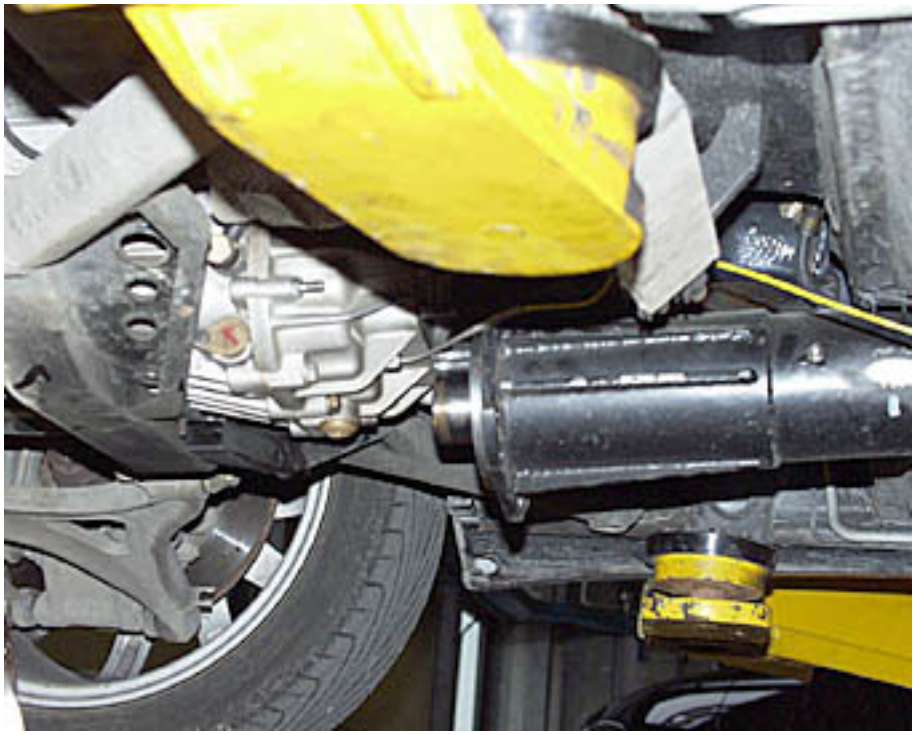


- From both sides, push the gearbox to the rear of the car until it completely disengages from the transmission shaft.

**N.B.**
**The unit must be moved about 10 - 15cm to disengage the transmission shaft.**



- Lower the second hydraulic lift and tilt the transmission shaft sufficiently to allow its removal from the gearbox unit.



- Unscrew seven of the nuts securing the transmission shaft to the clutch housing, leaving one nut screwed on so as to avoid the shaft coming off unexpectedly.



- Position the front hydraulic lift underneath the engine guard and raise it to fit snugly against one of the securing screws.

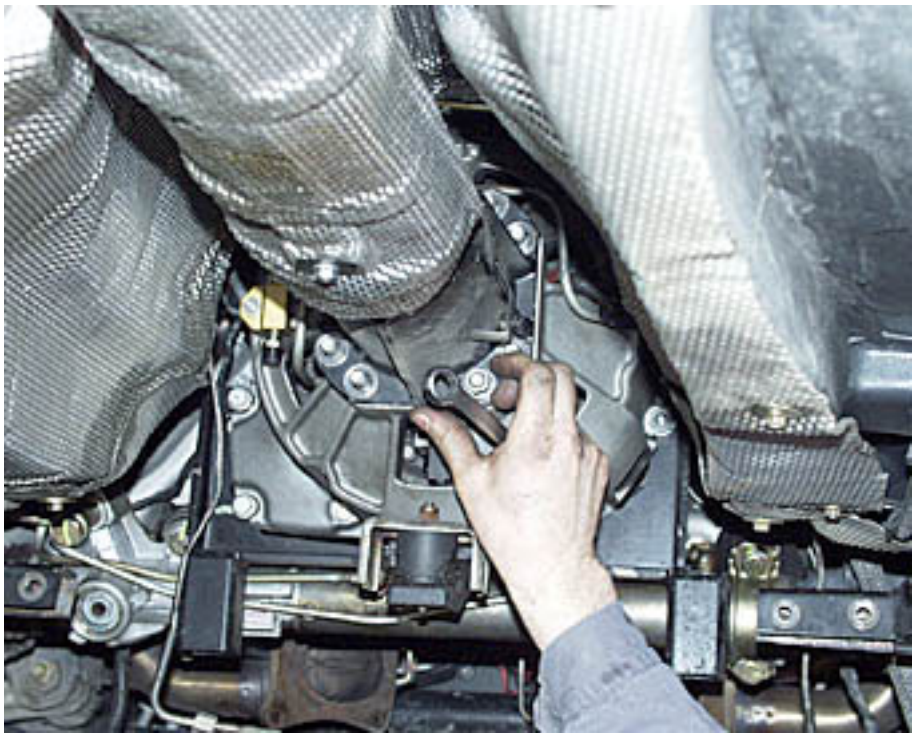


- Use the hoist to rock the transmission shaft until it tilts to the correct position for removal.



- Unscrew the eighth screw securing the transmission shaft to the clutch housing.

**CAUTION**
**When the transmission shaft is fully disengaged, take care not to allow it to fall out unexpectedly by tilting it too far.**



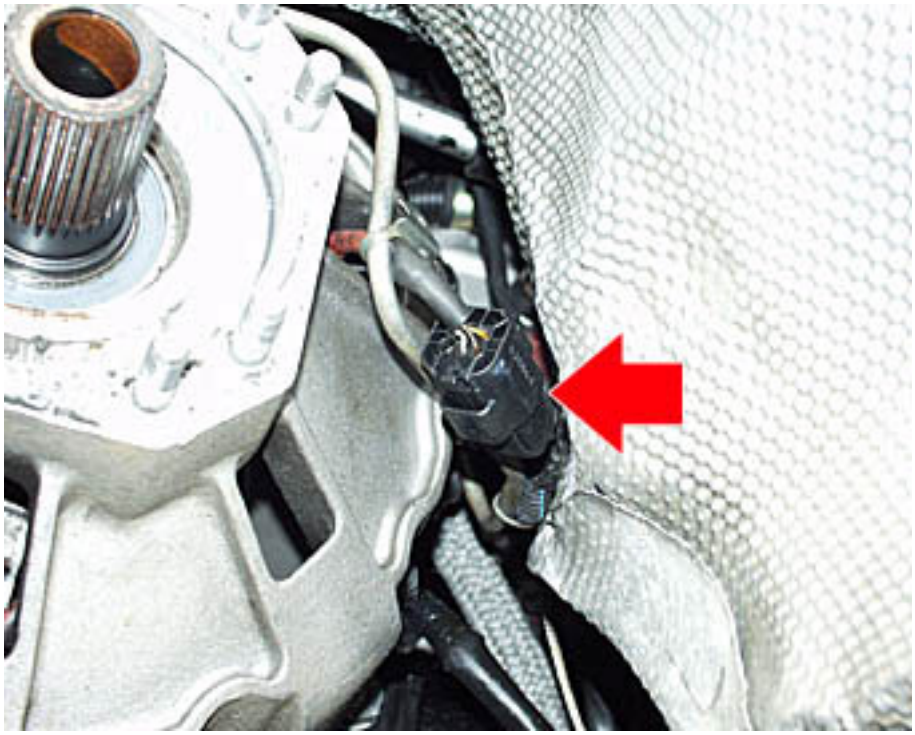
- Remove the transmission shaft from the car (two operators are required for this procedure).

**IMPORTANT**
**Do not tilt the shaft so far as to damage its machined profile, while still allowing easy extraction.**



## Clutch removal

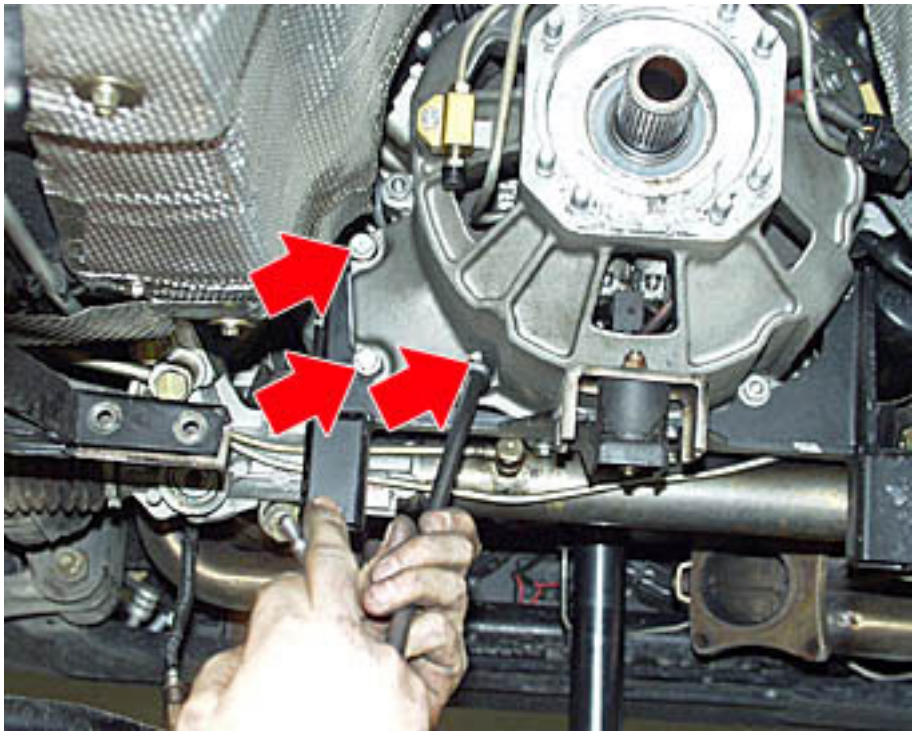
- Disconnect the thrust bearing connector from the clutch housing



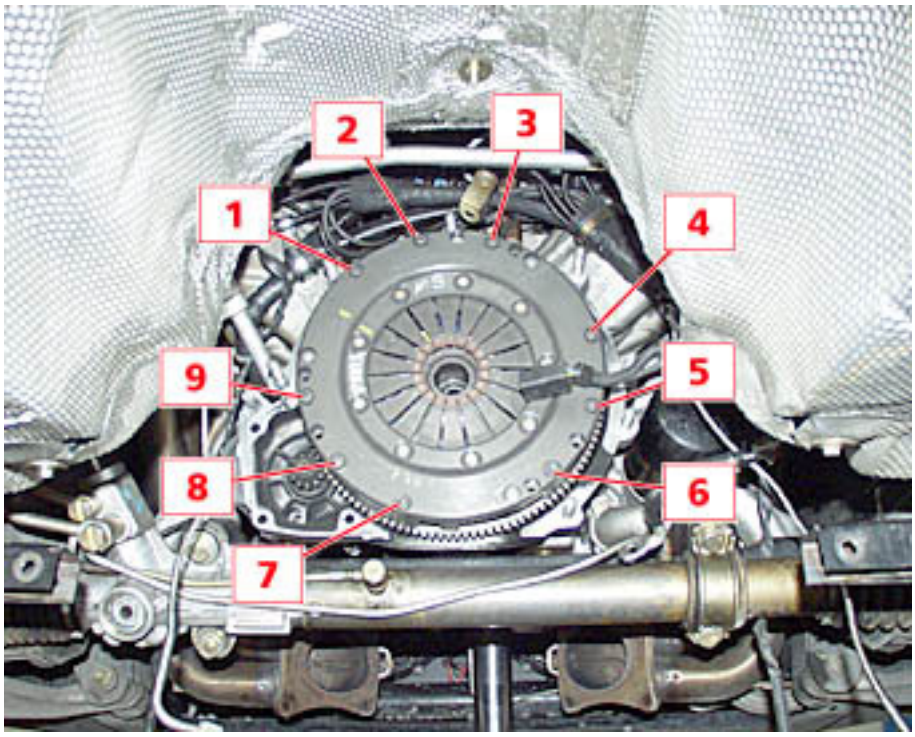
- Remove the seven screws securing the clutch housing to the engine.



- Remove the three screws fastening the starter motor and take out the clutch housing.



- Unscrew the six retaining screws **(1**,**3**,**4**,**6**,**7**,**9)** on the clutch pack.




- Position the centring shaft **900026250** on the clutch pack.
  Mark the positions of the screws **(2,5,8)** , and their spacers, as they act as counterweights
  Unscrew the three remaining screws **(2**,**5**,**8)** (**preceding figure** )
  Mark the relative position of the clutch pack and engine.



- Remove the clutch pack including the car starting wheel.

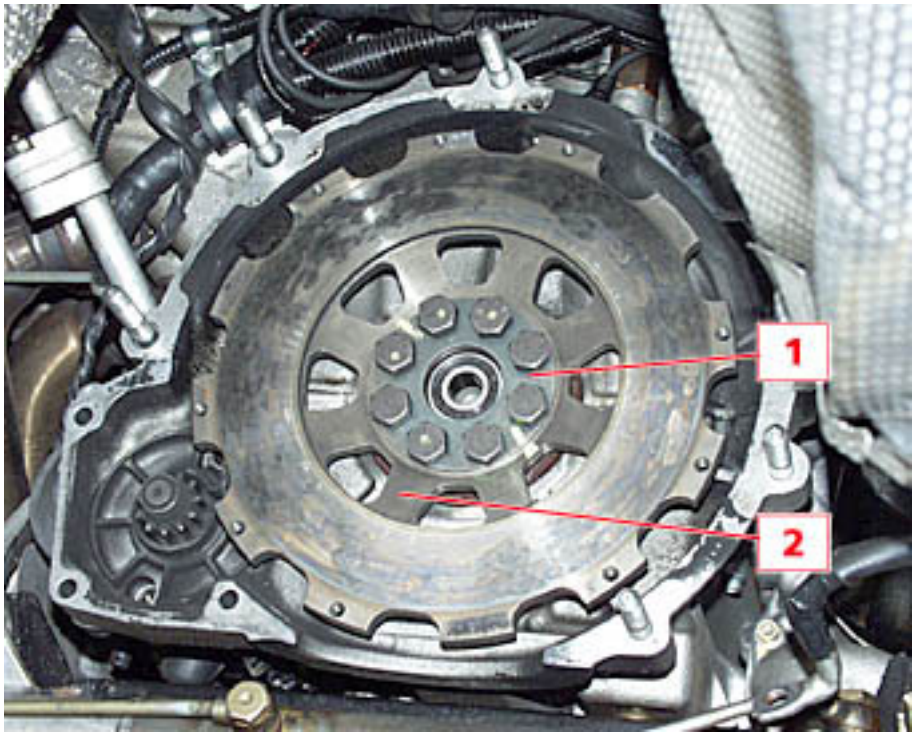


- Mark the relative position between the clutch, flywheel crown and crankcase.



- Unscrew the eight flywheel screws and remove it from the car.

**N.B.**
**Mark the positions of the screws on the flange and the relative position between the plate (1) and the flywheel(2),**

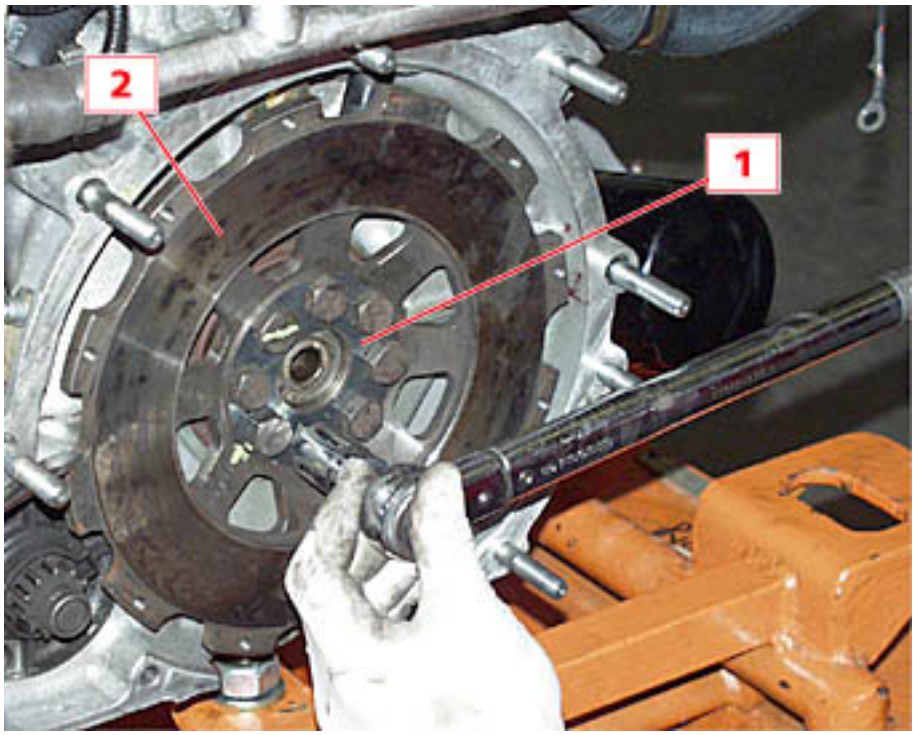


## RE-ATTACHING THE CLUTCH

### Clutch refitting

- Position the plate **(1)** and the flywheel **(2)** on the engine, immobilise the flywheel rotation using the special tool, and screw down the screws to a torque of **91Nm**.

**N.B.**
**If re-fitting a flywheel which has previously been removed from the car, position it using the markings made during removal.**



- Fit the clutch set with the centring shaft **900026250** and, using the clutch unit removal stage sequence, loosely fit the three central screws and then the six lateral screws.

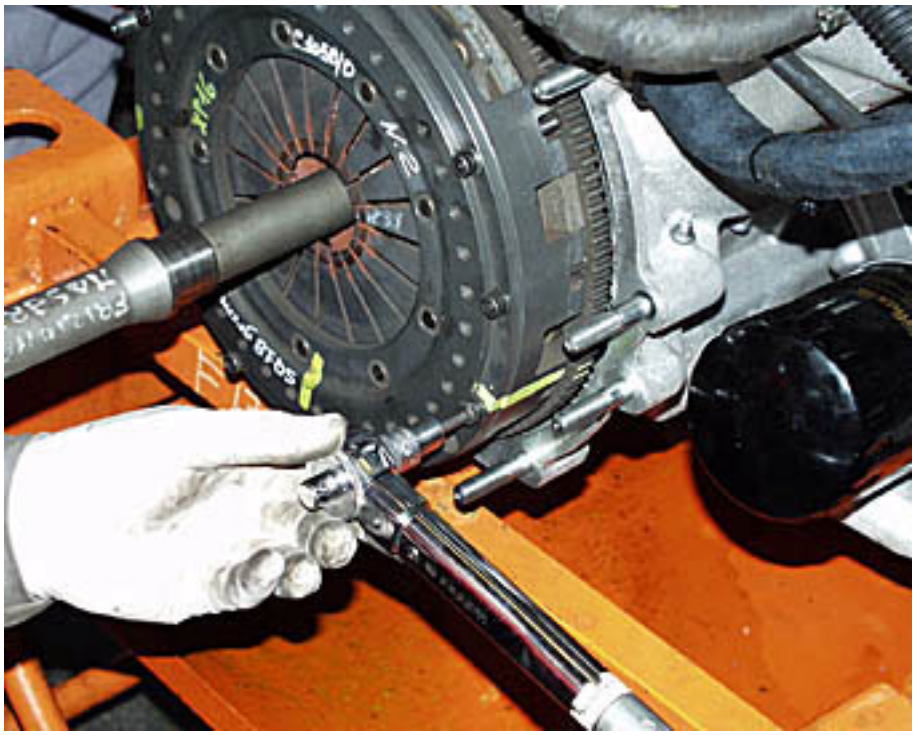
**IMPORTANT**
**If re-fitting a clutch unit which has been previously removed from the car, follow the markings made during removal.**

**N.B.**
**The clutch disk is supplied by the manufacturer with the maximum unbalance point marked.**

**IMPORTANT**
**If fitting a new clutch disk, its maximum unbalance point must be oriented at 180° with respect to the maximum unbalance point of the flywheel.**



- Tighten the nine screws securing the clutch to a torque of **18Nm**, in a crosswise sequence.



- Apply waterproof grease onto the grooved profile of the thrust bearing and the two clutch housing grubscrews.



- Position the clutch housing on the engine using a rubber mallet.



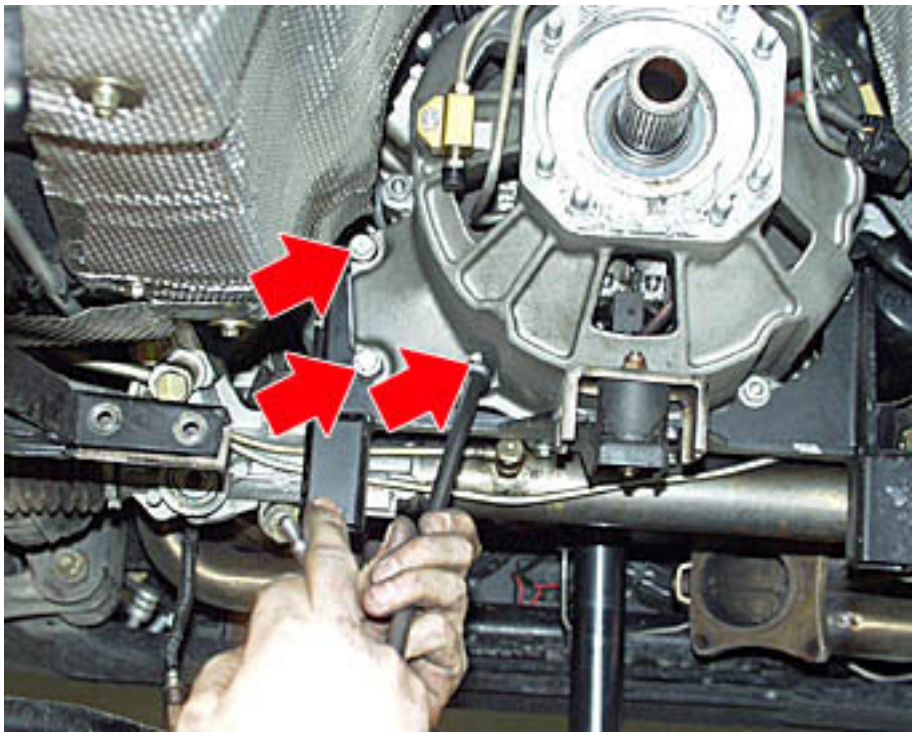
- Fit the  clip retaining the thrust bearing cabling to the upper stud bolt.



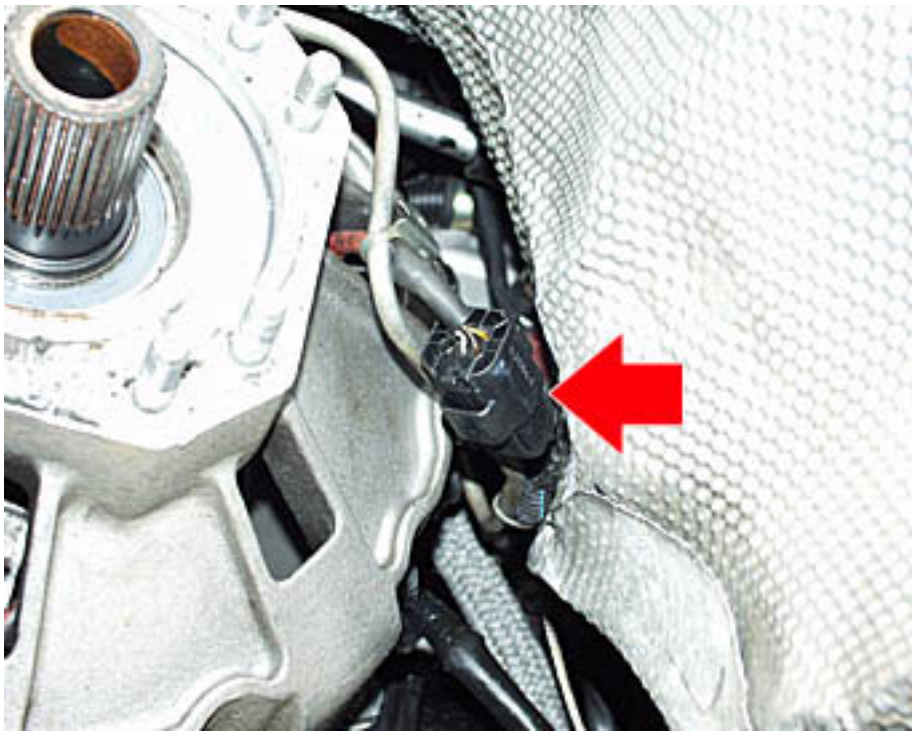
- Tighten the seven screws securing the clutch housing to the engine to a torque of **26Nm**.



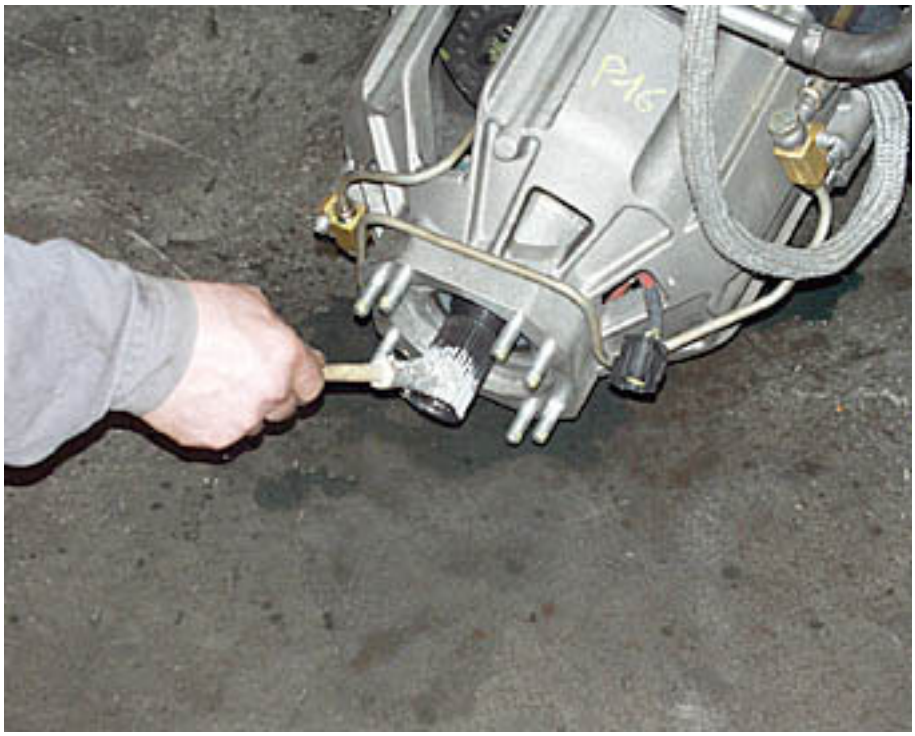
- Tighten the three starting motor screws to a torque of **26Nm**.



- Attach the thrust bearing / clutch housing connector



- Apply waterproof grease to the grooved profile of the transmission shaft and clutch housing.



## Refitting the transmission shaft

- Key the transmission shaft to the clutch housing (two operators are required for this procedure).

**IMPORTANT**
**Do not tilt the shaft so far as to damage its machined profile, while still allowing easy extraction.**



- Use a hoist to align the transmission shaft with the clutch housing, so as to fit the eight transmission shaft fastening nuts.

**CAUTION**
**When fitting, take care with the angle of the shaft to prevent the latter from coming out unexpectedly.**



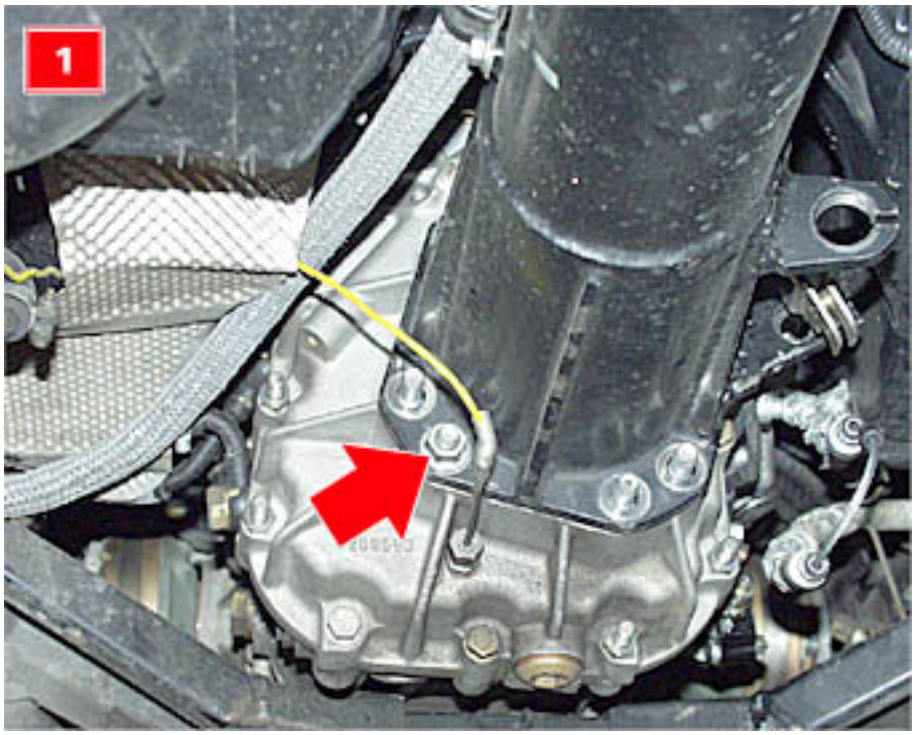
- Using the hoist, align the transmission shaft with the gearbox.



- Key the transmission shaft to the gearbox and push the gearbox forwards to fit snugly against the shaft.

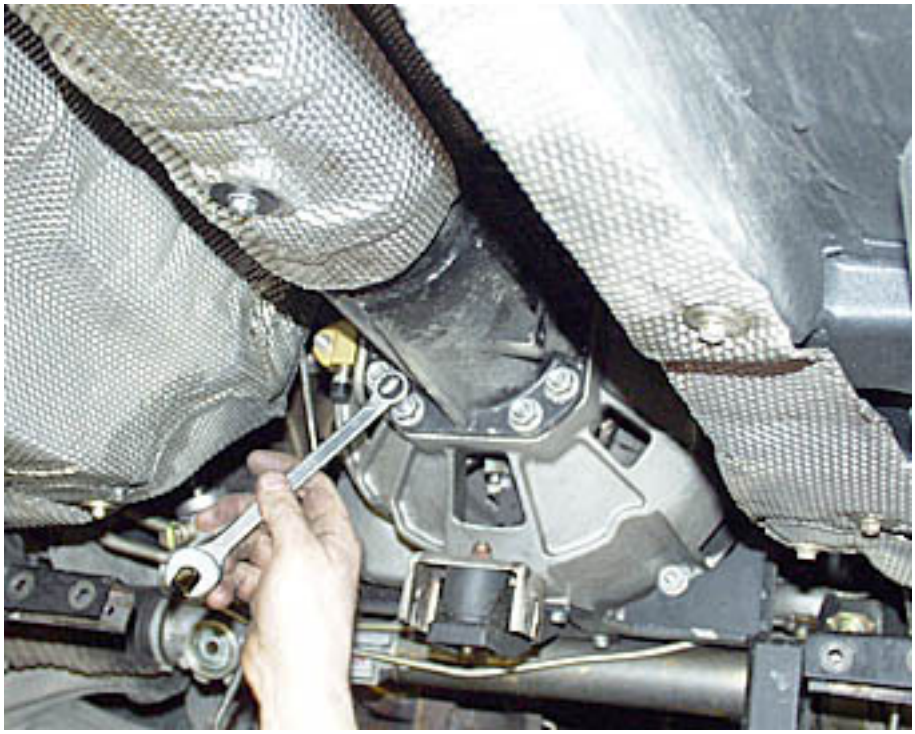


- Tighten the eight nuts securing the transmission shaft to the gearbox to a torque of **70Nm**




- Tighten the eight nuts securing the transmission shaft to the clutch housing to a torque of **70Nm**.

**CAUTION**
**When fitting, take care with the angle of the shaft to prevent the latter from coming out unexpectedly.**



- Fit the heat shield to the steering box and tighten its six screws.



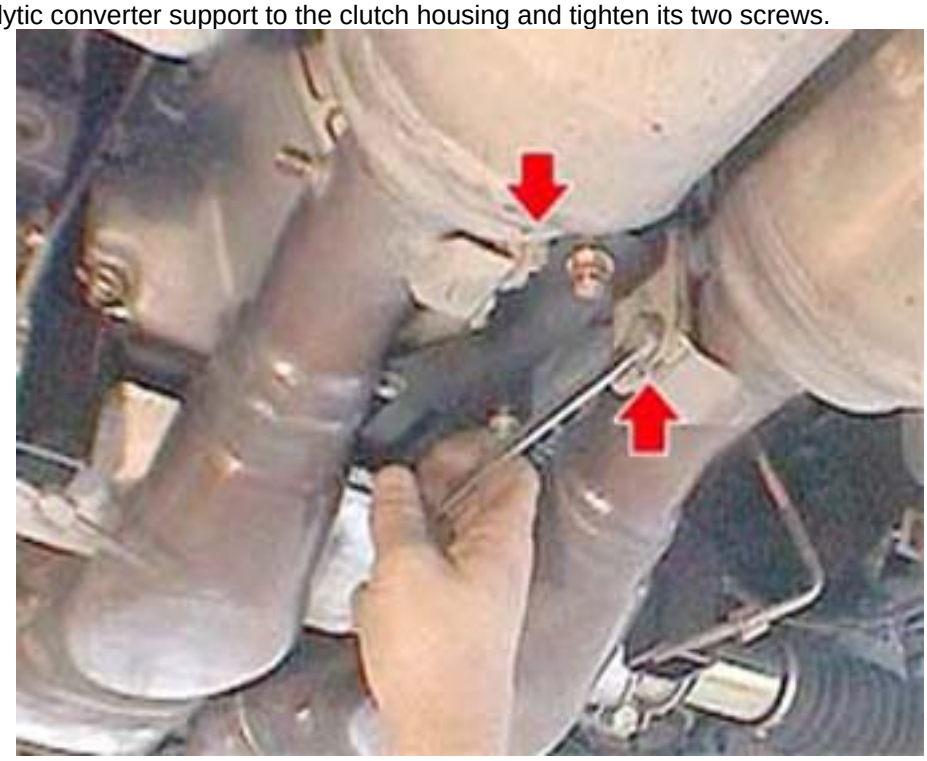
- Fit the pre-catalytic converters, and insert the relative seal between the catalytic converter and the exhaust manifold.



- Tighten the four screws securing the precatalytic converter to the exhaust manifold.

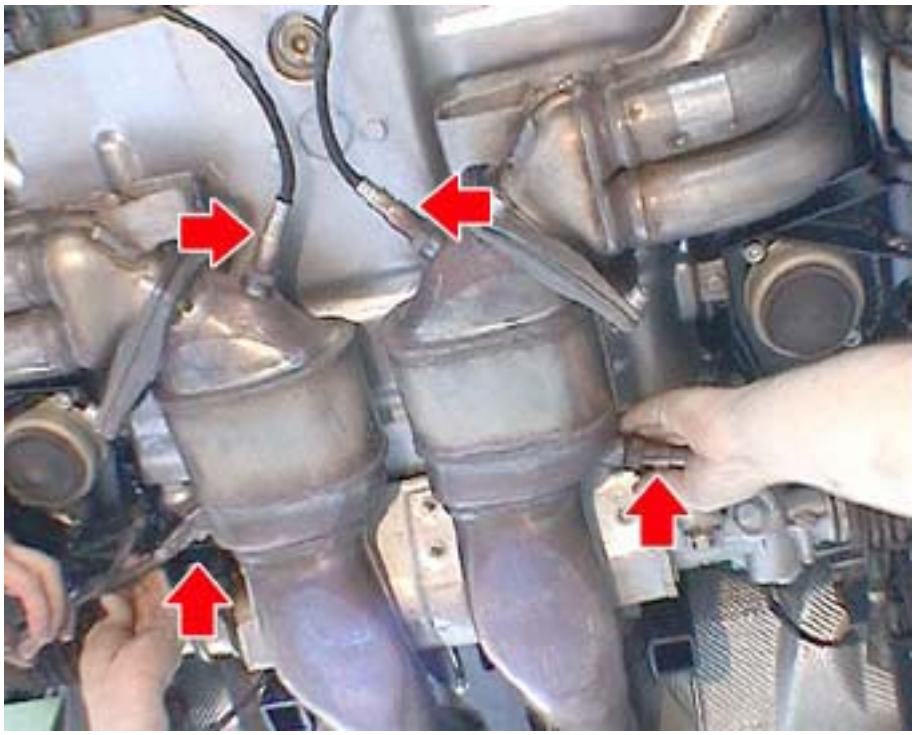


- Fit the catalytic converter support to the clutch housing and tighten its two screws.



- Screw the four Lambda sensors and the two thermocouples into their seats.

**N.B.**
**Follow the markings on the Lambda sensors made during removal.**



- Screw the two thermocouples into their seats.



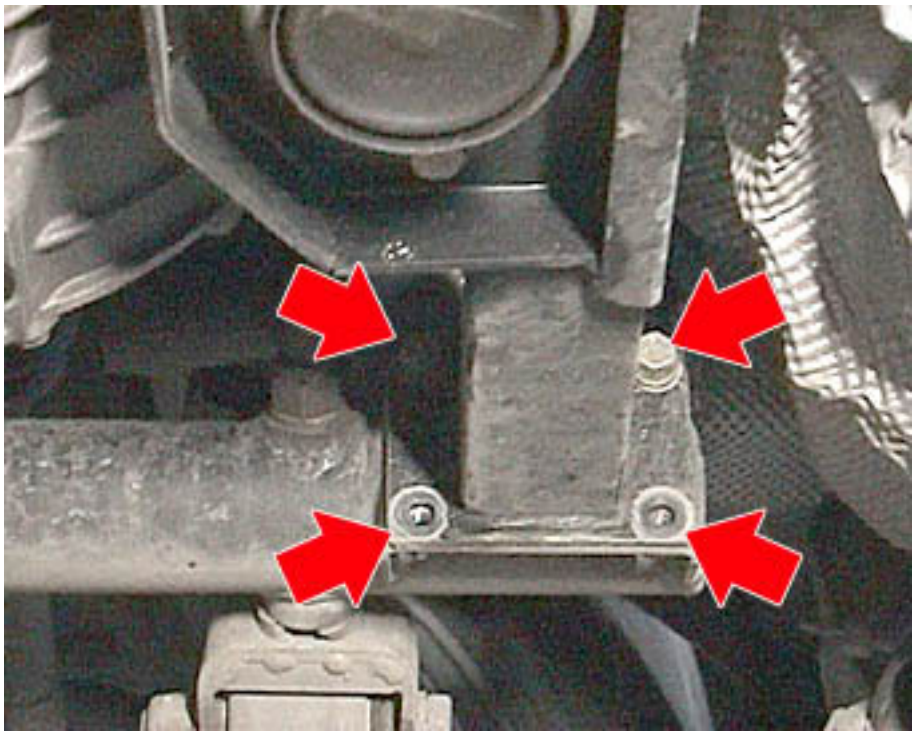
- Tighten the four nuts securing the rollbar to a torque of **24Nm**.



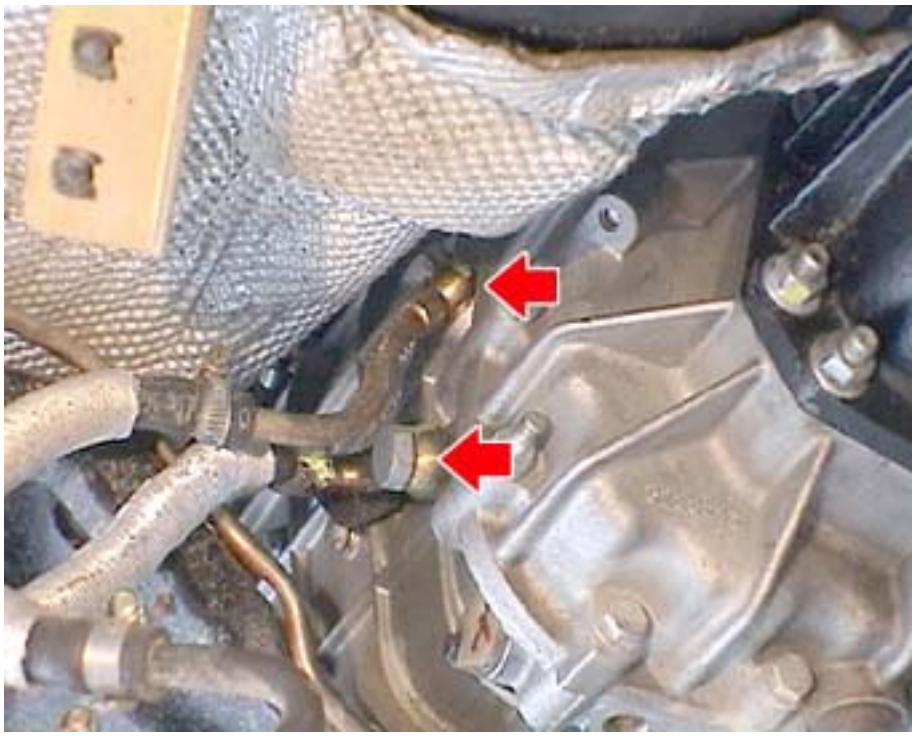
- Tighten the four rollbar screws to a torque of **24Nm**.



- Mount the rear cross member by tightening the eight fastening screws to a torque of **24Nm**.



- Mount the adjuster and fit the handbrake cable to the pulley lever.



- Reconnect the handbrake cable.

*Removing-refitting the handbrake and tie-rods*

- Fit the central exhaust line.

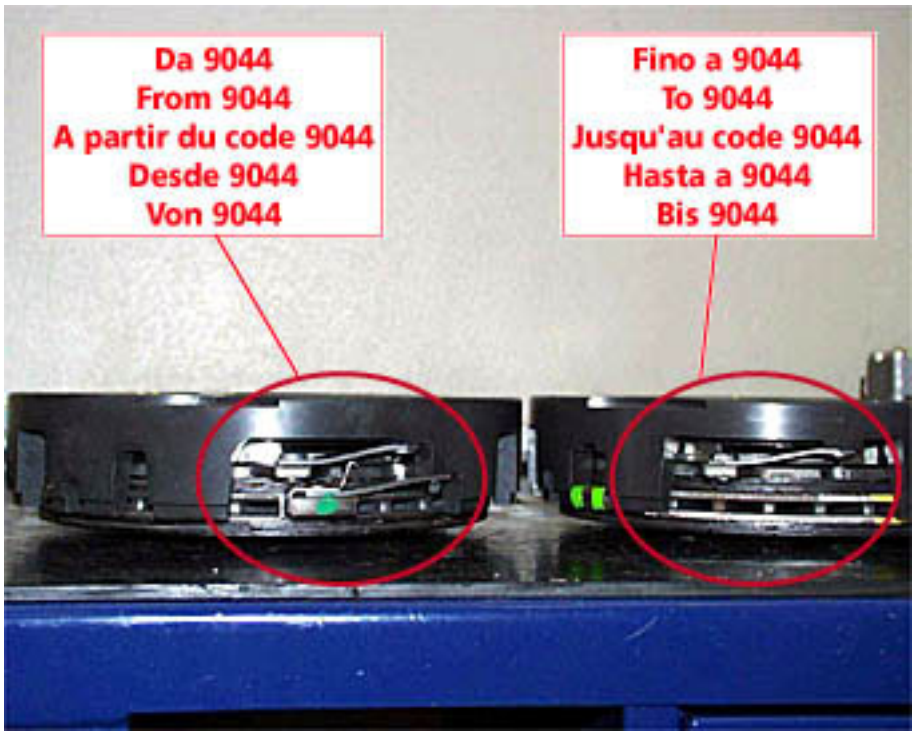
*Removing/refitting the central exhaust line*

- Mount the spare wheel housing.

*Removing /refitting the spare wheel housing*

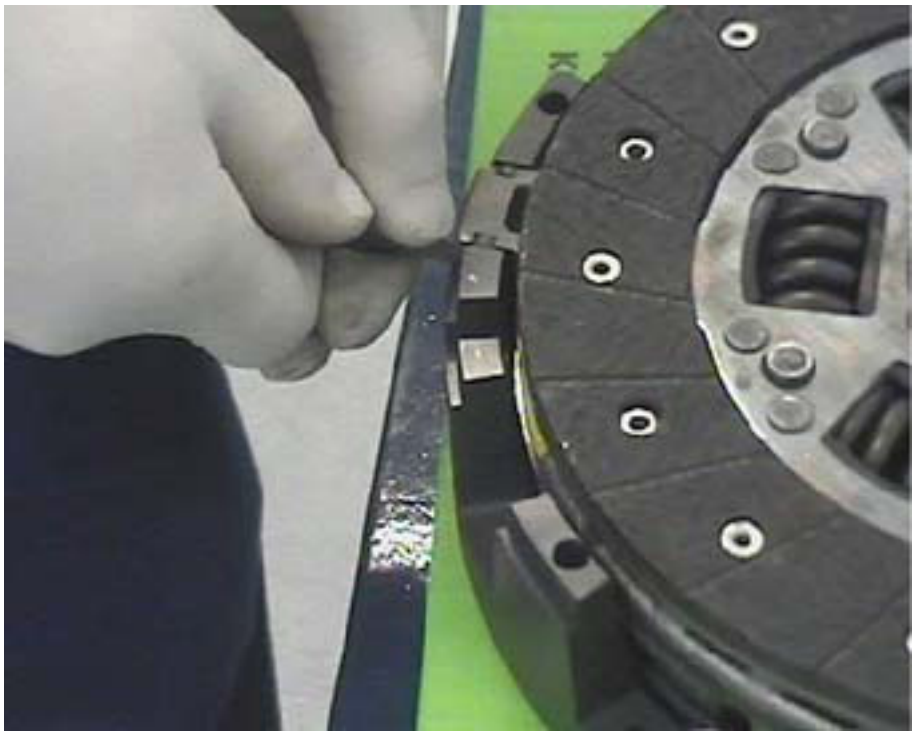
## CLUTCH BALANCING

**IMPORTANT**
**Since component 9044, a new clutch has been introduced and the visible differences between the two components are illustrated in the figure.**



## Clutch balancing procedure "for components up to component 9044"

- Before fitting the new clutch set, use a thickness gauge to check the tolerance between the clutch and the pan, which should be **0.20-0.30 mm.**
  Using a felt-tip pen, mark the centring between the clutch and the pan.

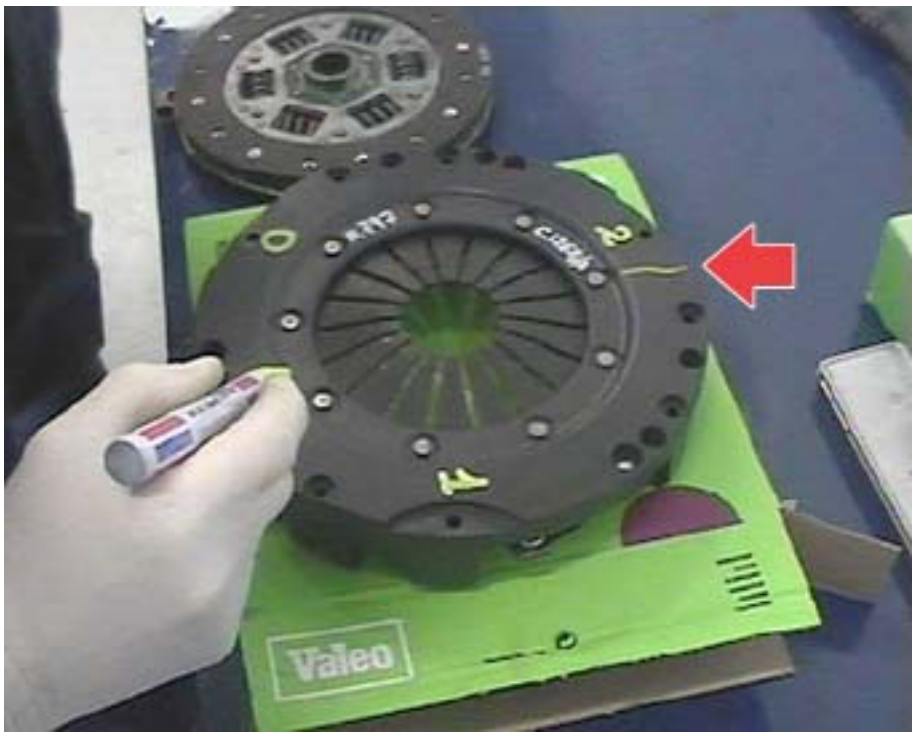


- Remove the clutch from the vehicle.

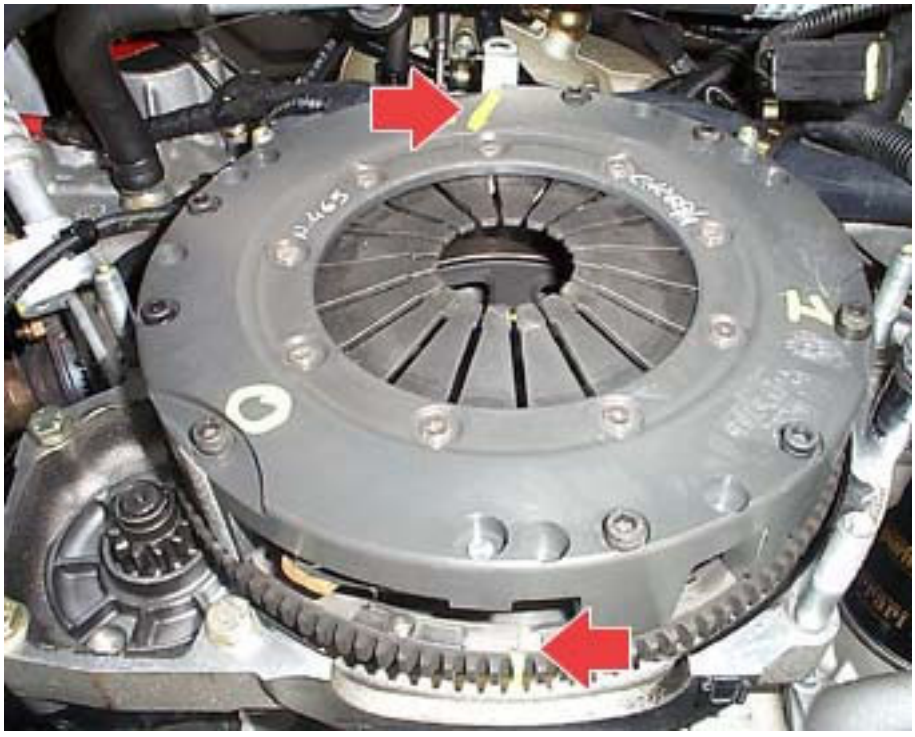
*Detaching-reattaching the clutch*

**N.B.**
**Remove the clutch housing.**
**Disassemble the clutch set**

- Mark the point of maximum unbalance on the unit outer casing (see arrow).
- Mark the reference points “**0**”-“**1**”-“**2**” starting from the point furthest from the maximum unbalance and working anti-clockwise.




- Install the new pan onto the flywheel, without the clutch, and screw down the nine screws, tightening them to a torque of **18 Nm**.
- Position the clutch set's maximum unbalance point at **180°** with respect to the maximum unbalance point of the flywheel (see arrow).



- At point “**0**” in the side section of the pan, attach a reflective strip of approximately **15 x 40 mm**.



- Affix the accelerometer mount **900026950** to the lower right-hand part of the crankcase with glue.



- Using a screwdriver, rotate the flywheel so as to position point "**0**" as shown in the figure.



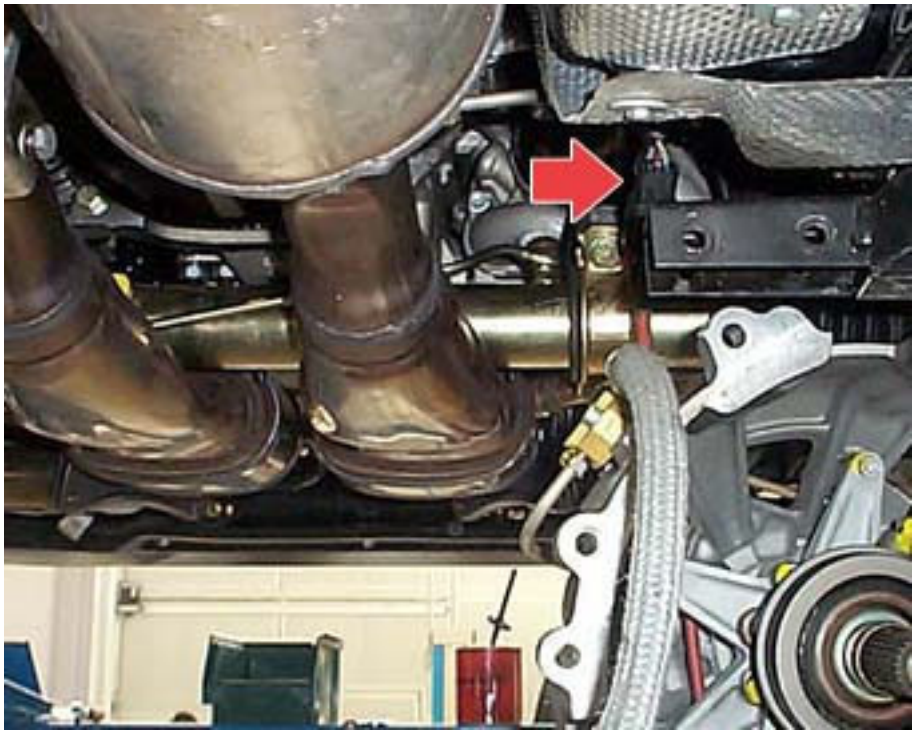
- Insert the accelerometer **900026950** in the relative mount.



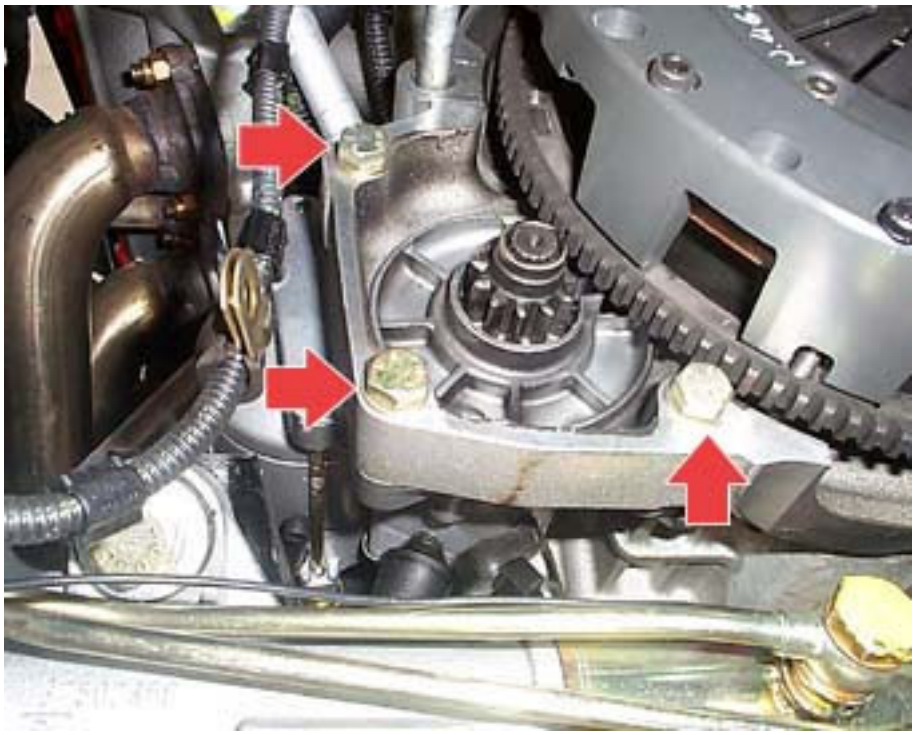
- Pulling the pressure plate backwards, place a spacer **900026930** in the housing between it and the retainer.




- Attach the connector for the clutch position sensor.



- Secure the starter motor by tightening three screws which have to be shorter than those fastening the housing unit.



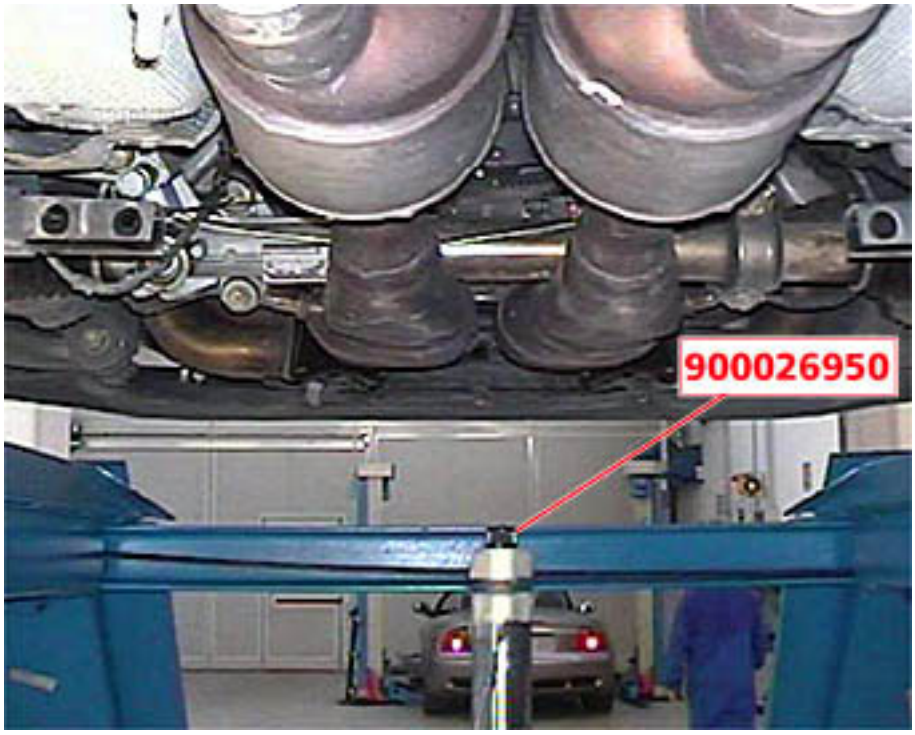
- Connect the earth wire to the crankcase stud bolt.



- Refit the exhaust pipe, the four lambda sensors and the two thermocouples.



- Using the arm of a hoist, position the photoelectric cell **900026950** for measuring the engine revolutions vertically, at a distance of **350 mm** from the reflector, as shown in the figure.



- Attach the connector holding bundle to the "SD2 DIAGNOSIS SYSTEM".




- Connect the accelerometer's electric wire to the instrument "EQUALIZER DSE1/DSE2", using the socket marked "Front accelerometer".



- Connect the electric cable of the photoelectric cell which measures the speed to the instrument "EQUALIZER DSE1/DSE2", using the socket marked "transmission shaft speed sensor".



- Connect the cable marked **"RS232"** to the instrument "EQUALIZER DSE1/DSE2".
- Connect the cable marked **"CAN"** to the supplementary terminal of cable **"RS232"**.



- Prepare the adjustment weights.



- At this point, follow all the steps in the specific SD2 programme.

**IMPORTANT:**
**These procedures must be carried out after balancing the flywheel, following the fitting of <u>new</u> clutch discs**

## Clutch disc type

| Version | Code |
|---|---|
| GT | 196021 |
| Cambiocorsa gearbox | 196335 |

- Connect the SD2 tester and select the "M138 Marelli Gearbox" option. In the "Parameters" environment, read the value for "AUTO-SET CLOSED CLUTCH POSITION". Digit this value in the “DIAGNOSIS” environment, “CLUTCH CONFIGURATION” option, and store it in the ECU memory. You have thus correctly configured the parameter “CLOSED CLUTCH POSITION WHEN NEW”.
- Check that the PIS (Touch point) is set at **5.6.**
- Keep the vehicle idling in neutral gear for five minutes, in order to set the solenoid valves when **cool**, taking care **not to perform sharp pick-up manoeuvres during the first movements**.

- To allow the clutch to set-in, follow the below instructions at least during the first Kilometres:
  - do not drive the car in sport mode
  - shift gears at 4000 rpm max and press the pedal only half way down (50%)
  - avoid sharp pick-up manoeuvres
  - avoid, as much as possible, prolonged pick-ups (in queues, during manoeuvres)
  - shift gears several times while driving

- Keep the vehicle idling in neutral gear for five minutes, in order to set the solenoid valves when **warm**. With the engine running, engage the $1^{st}$-$2^{nd}$-$1^{st}$ gears in sequence, then keep the vehicle idling with the first gear engaged and the brake pedal pressed for 1 minute. Repeat the sequence three times in order to perform a correct evaluation of the clutch solenoid valve leakage.

- **Modify the PIS only after having carried out the procedures specified in the first 5 points**, following the below indications:
  - if, during UP-shifting, you feel that the rpm tend to “**runaway**” during the torque discharge phase, decrease the set value by 0.2 mm max.
  - if, during UP-shifting in AUTO mode, with average loads and average rpm, you feel a too strong “**sinking**” sensation, increase the set value by 0.2 mm.
- In any case, the PIS values must range between **5.4** and **6.2**

- Check the pick-up pressing the pedal down / mid-way, in normal and sport mode, at 1300-1500-1700-2000 Rpm, and make sure that the clutch closes progressively (two steps max.) **performing three consecutive pick-up manoeuvres maximum** and then leaving the clutch cool down.

## Clutch balancing procedure "for components up to component 9044"

- Remove the clutch from the vehicle.

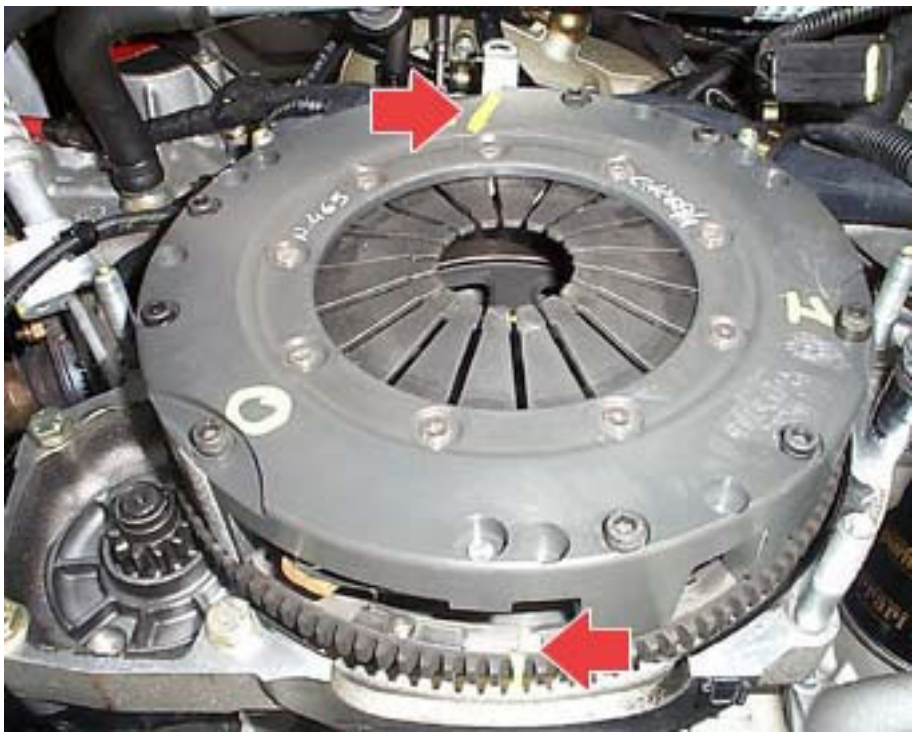
*Detaching-reattaching the clutch*

**N.B.**
**Remove the clutch housing.**
**Disassemble the clutch set**

- Mark the point of maximum unbalance on the unit outer casing (see arrow).
- Mark the reference points "**0**"-"**1**"-"**2**" starting from the point furthest from the maximum unbalance and working anti-clockwise.



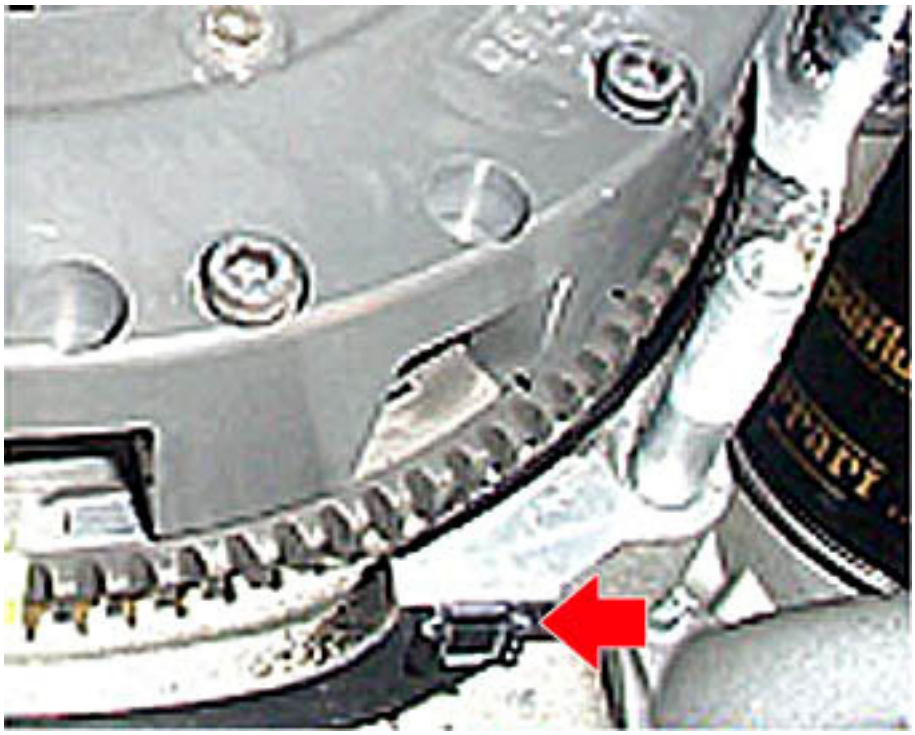
- Fit  the complete clutch block  on the flywheel, tightening the nine screws to a torque of **18 Nm**.
- Position the clutch set's maximum unbalance point at **180°** with respect to the maximum unbalance point of the flywheel (see arrow).



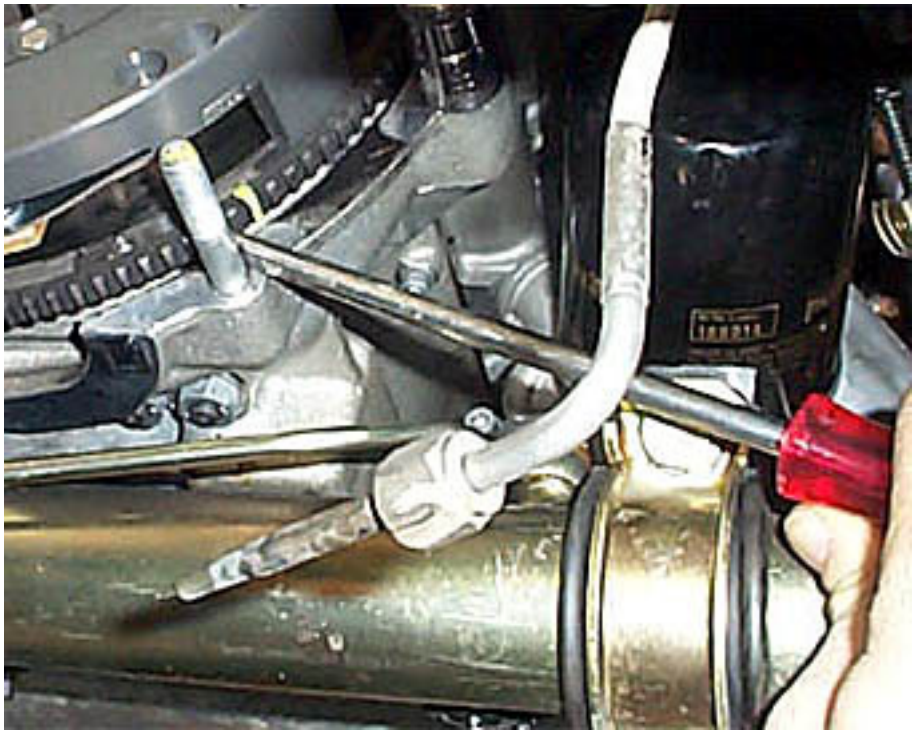
- At point "**0**" in the side section of the pan, attach a reflective strip of approximately **15 x 40 mm**.



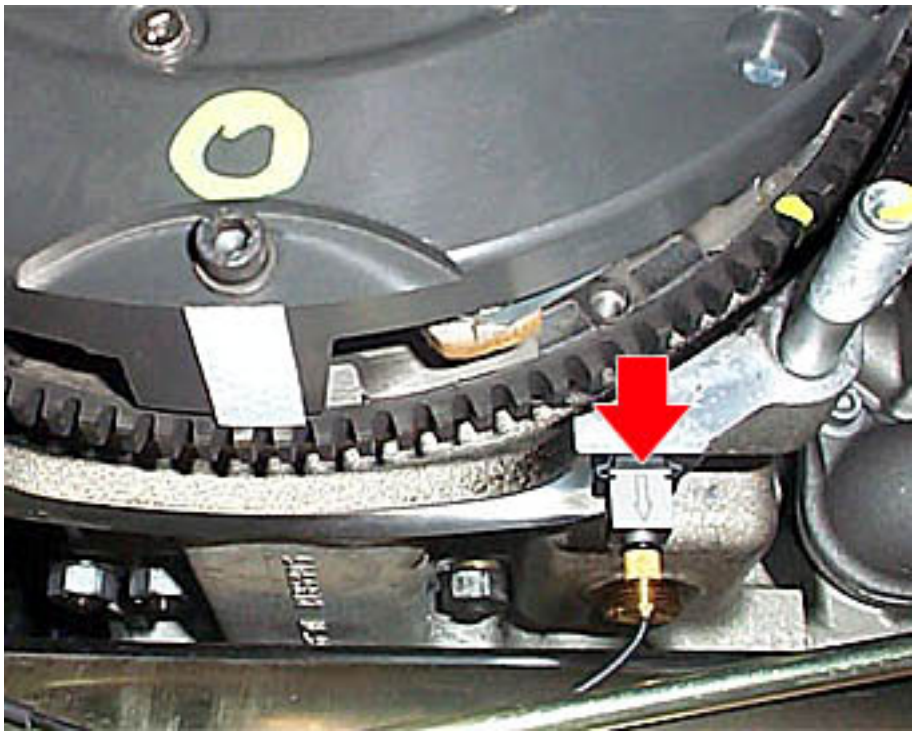
- Affix the accelerometer mount **900026950** to the lower right-hand part of the crankcase with glue.



- Using a screwdriver, rotate the flywheel so as to position point "**0**" as shown in the figure.



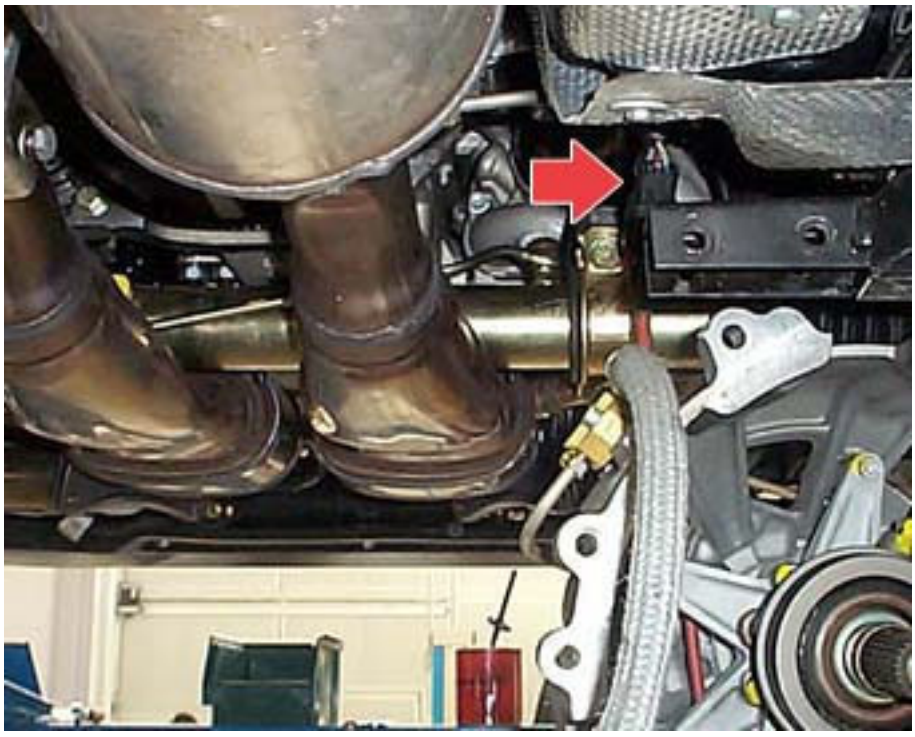
- Insert the accelerometer **900026950** in the relative mount.



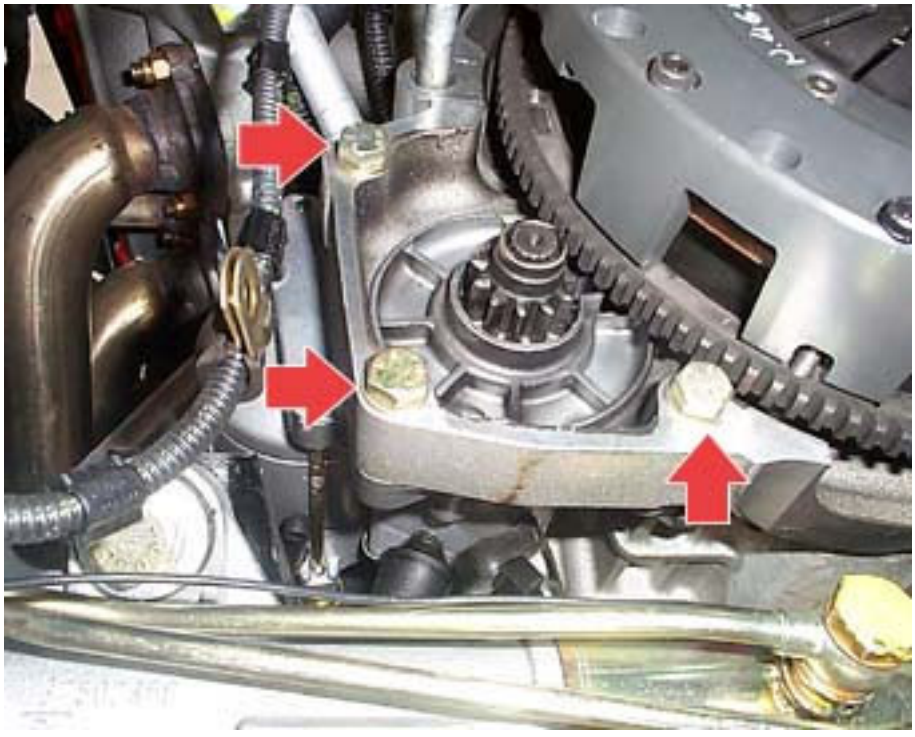
- Pulling the pressure plate backwards, place a spacer **900026930** in the housing between it and the retainer.



- Attach the connector for the clutch position sensor.



- Secure the starter motor by tightening three screws which have to be shorter than those fastening the housing unit.



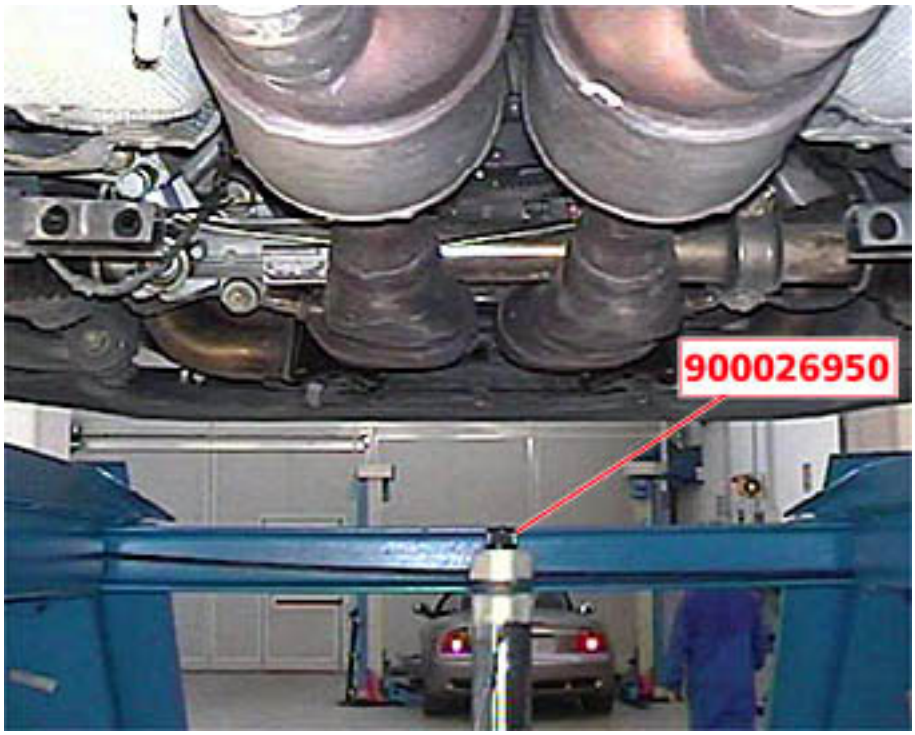
- Connect the earth wire to the crankcase stud bolt.



- Refit the exhaust pipe, the four lambda sensors and the two thermocouples.



- Using the arm of a hoist, position the photoelectric cell **900026950** for measuring the engine revolutions vertically, at a distance of **350 mm** from the reflector, as shown in the figure.




- Attach the connector holding bundle to the "SD2 DIAGNOSIS SYSTEM".



- Connect the accelerometer's electric wire to the instrument "EQUALIZER DSE1/DSE2", using the socket marked "Front accelerometer".



- Connect the electric cable of the photoelectric cell which measures the speed to the instrument "EQUALIZER DSE1/DSE2", using the socket marked "transmission shaft speed sensor".



- Connect the cable marked **"RS232"** to the instrument "EQUALIZER DSE1/DSE2".
- Connect the cable marked **"CAN"** to the supplementary terminal of cable **"RS232"**.



- Prepare the adjustment weights.



- At this point, follow all the steps in the specific SD2 programme.

**IMPORTANT:**
**These procedures must be carried out after balancing the flywheel, following the fitting of <u>new</u> clutch discs**

## Clutch disc type and software

| Outfitting | Code | Software |
|---|---|---|
| USA spyder | 197095 | MAC10E43 |
| USA coupè | 197094 | MAC10F43 |
| Rest of the world | 196833 | MAC10D34 |

- Connect the SD2 tester and select the "M138 Marelli Gearbox" option. In the "Parameters" environment, read the value for "AUTO-SET CLOSED CLUTCH POSITION". Digit this value in the “DIAGNOSIS” environment, “CLUTCH CONFIGURATION” option, and store it in the ECU memory. You have thus correctly configured the parameter “CLOSED CLUTCH POSITION WHEN NEW”.
- The value should be 20 ± 2 mm. If the reading falls within13 + 1/2 (13 + 1mm _ 13 - 2 mm), you will need to modify the clutch sensor magnet fitting.

Adjusting the clutch sensor magnet

- Keep the vehicle idling in neutral gear for five minutes, in order to set the solenoid valves when **cool**, taking care **not to perform sharp pick-up manoeuvres during the first movements**.

- To allow the clutch to set-in, follow the below instructions at least during the first Kilometres:
  - do not drive the car in sport mode
  - shift gears at 4000 rpm max and press the pedal only half way down (50%)
  - avoid sharp pick-up manoeuvres
  - avoid, as much as possible, prolonged pick-ups (in queues, during manoeuvres)
  - shift gears several times while driving

- Keep the vehicle idling in neutral gear for five minutes, in order to set the solenoid valves when **warm**. With the engine running, engage the $1^{st}$-$2^{nd}$-$1^{st}$ gears in sequence, then keep the vehicle idling with the first gear engaged and the brake pedal pressed for 1 minute. Repeat the sequence three times in order to perform a correct evaluation of the clutch solenoid valve leakage.

- **Modify the PIS only after having carried out the procedures specified in the first 5 points**, following the below indications:
  - if, during UP-shifting, you feel that the rpm tend to “**runaway**” during the torque discharge phase, decrease the set value by 0.2 mm max.
  - if, during UP-shifting in AUTO mode, with average loads and average rpm, you feel a too strong “**sinking**” sensation, increase the set value by 0.2 mm.
- However, the PIS values must always fall between **4.8** and **5.4**

- Check the pick-up pressing the pedal down / mid-way, in normal and sport mode, at 1300-1500-1700-2000 Rpm, and make sure that the clutch closes progressively (two steps max.) **performing three consecutive pick-up manoeuvres maximum** and then leaving the clutch cool down.

## BLEEDING THE CLUTCH

After replacing the system components, bleed the air from the circuit.

**IMPORTANT**

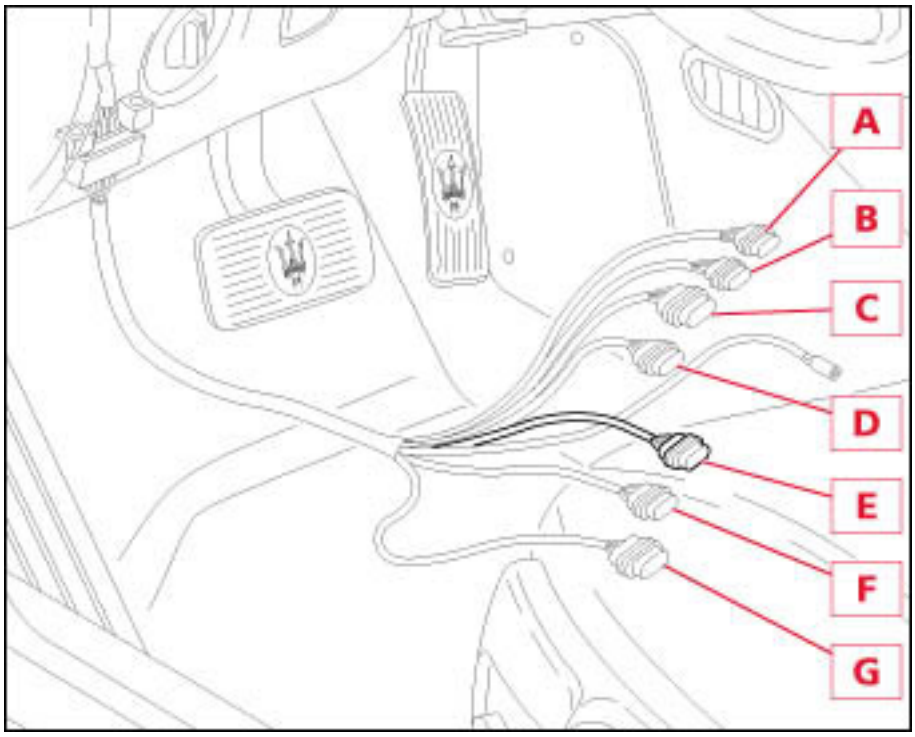
1. **During the bleeding phase, keep checking the oil level in the tank: Must never fall below the "MIN" level**
2. **Never re-use the oil which has leaked from the system**

This operation requires the use of the special SD2 tester.
Slacken off the bleed union (1) on the LH side of the clutch housing and connect a small pipe to drain the oil which leaks during bleeding into a container



To bleed the clutch using the SD2 tester you must:

- connect the diagnostic socket using the data acquisition cable;
- attach connector E, on the data acquisition cable, to the SD2 tester;
- turn the ignition key to ON;
- launch the bleed program.




Once the bleed program is running the two operators, stationed at the tester and the circuit bleed valve respectively, can complete the procedure:

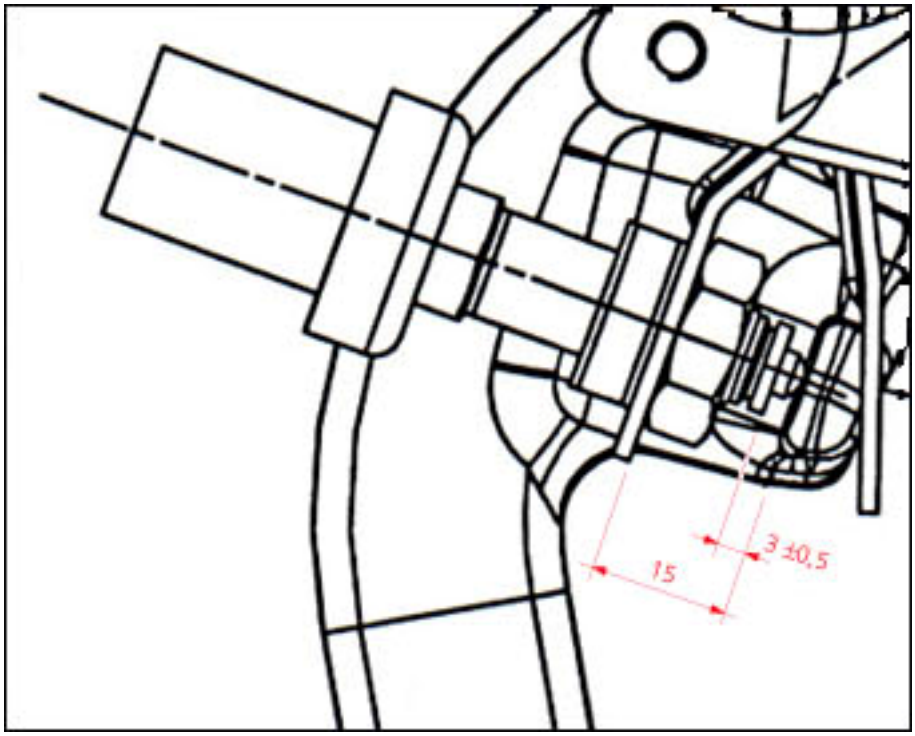
- the circuit pump runs in pulse mode; it is therefore essential that the bleed valve be opened when the pump starts running to stop the circuit being overpressurised
- open and close the valve until the flow of oil becomes uniform. The procedure is now complete.

**IMPORTANT**

1. **Before bleeding a hydraulic circuit, top up the tank with specific oil to avoid emptying out and thereby damaging the circuit itself.**
2. **At the end of the procedure, check the fluid level again.**

## ADJUSTING THE CLUTCH PEDAL POSITION

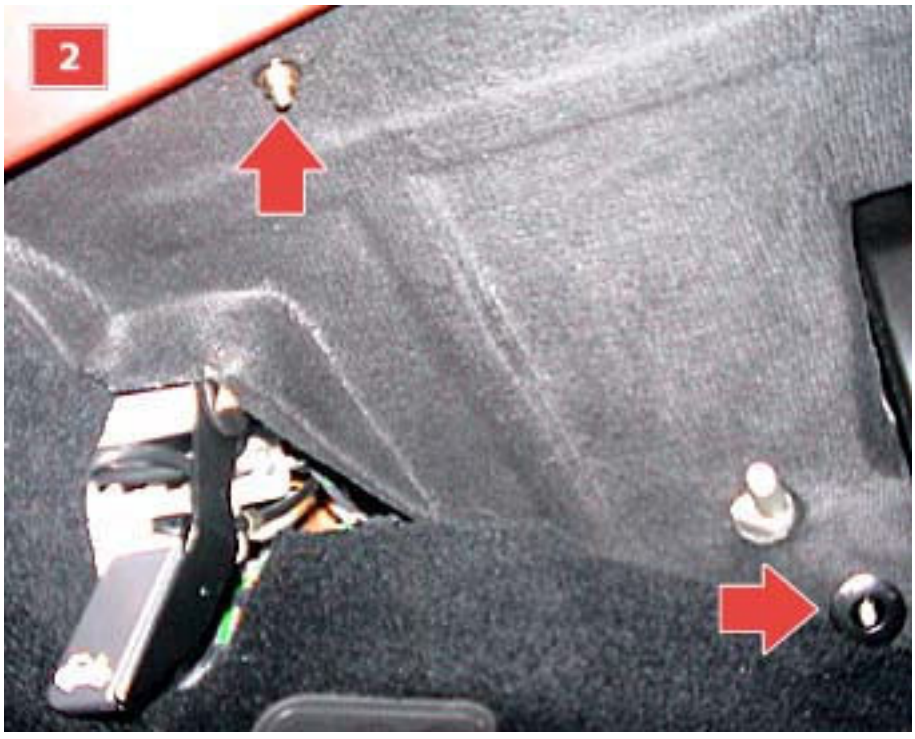
- Check the distance of the switch from the clutch pedal: this must be 3 mm.
  If this is not so, loosen the check nut, screw or unscrew the sensor until reaching the above mentioned value, then tighten the check nut.



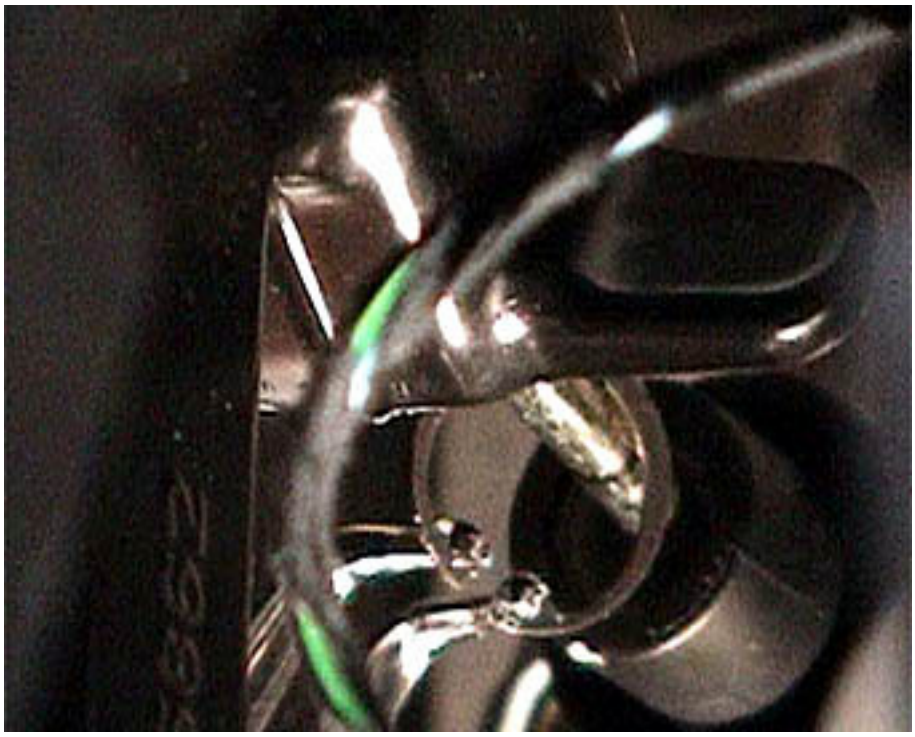
## CLUTCH PEDAL REPLACEMENT

- **(MY2003-Cambiocorsa gearbox version)** Remove the lower soundproof panel, driver's side, by unscrewing the two nuts and removing the two fastening caps **(Figure 1 and 2)**.



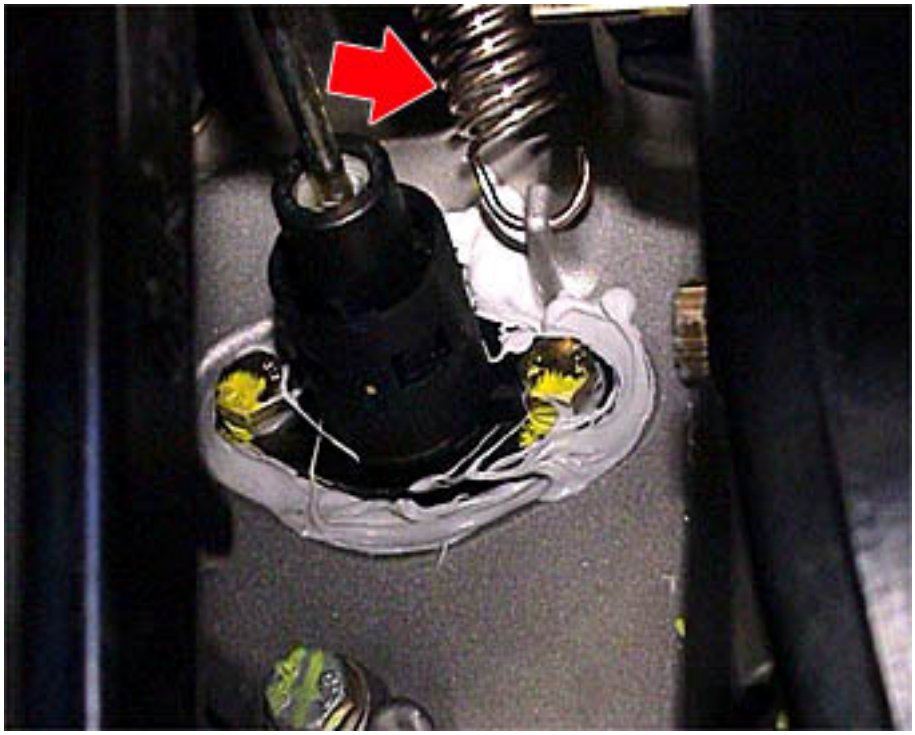
- Remove the seeger ring fastening the clutch pump stem from the pedal.



- Slide the clutch pedal from the pin, taking care to keep the two drive half-bushings.



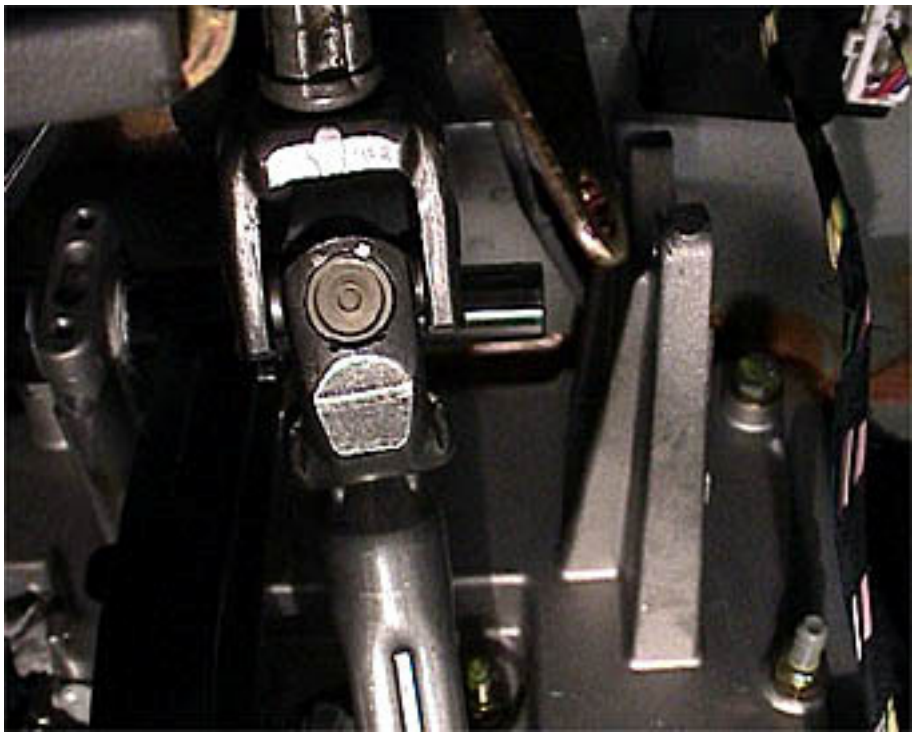
- Remove the clutch pedal spring.



- Remove the stop from the pedal board pin and extract it.



- Slide the pin towards the inside of the vehicle and remove the clutch pedal.



- Take care to keep the spacers.



**For refitting, follow the above procedures in reverse order.**

## CLUTCH PUMP

- Remove the left-hand internal shield for the engine compartment



- Remove the fastening screws for the engine compartment left-hand shield.



- Use a screwdriver to disconnect the gas spring pin from the body.



- Extract the left-hand shield.



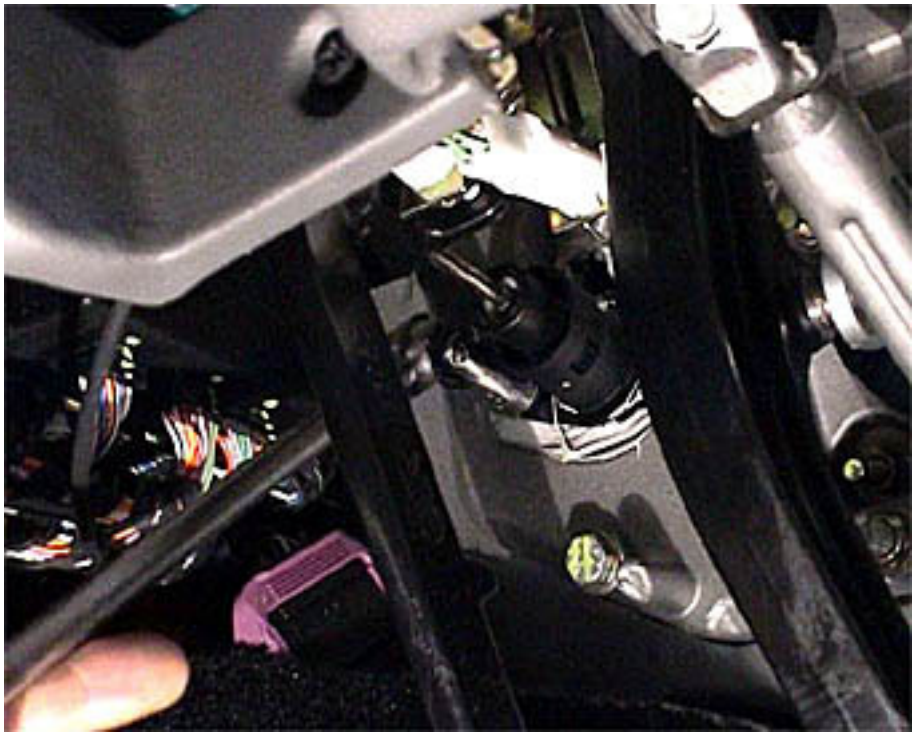
- Reattach the gas strut stem to the pin.



- Unscrew the clutch oil tank cap. Use a syringe to top up the oil level to half-full.



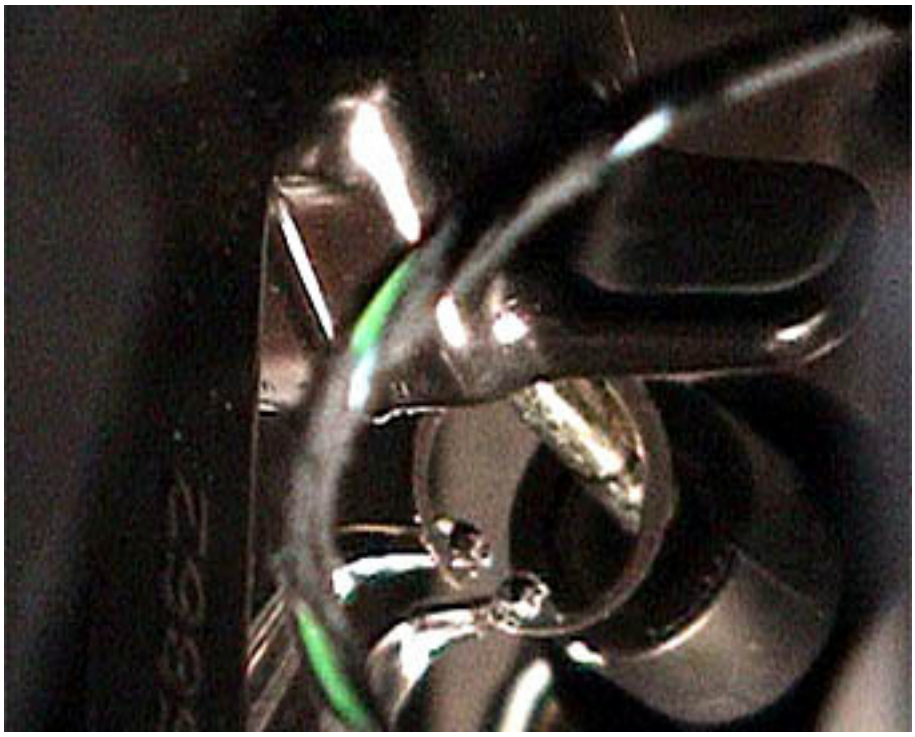
- Working from the engine compartment, undo the two screws fastening the clutch cylinder and remove the clutch pedal switch using a screwdriver.



- Detach the pump from the sealant and pull the clutch pedal towards the rear of the vehicle.



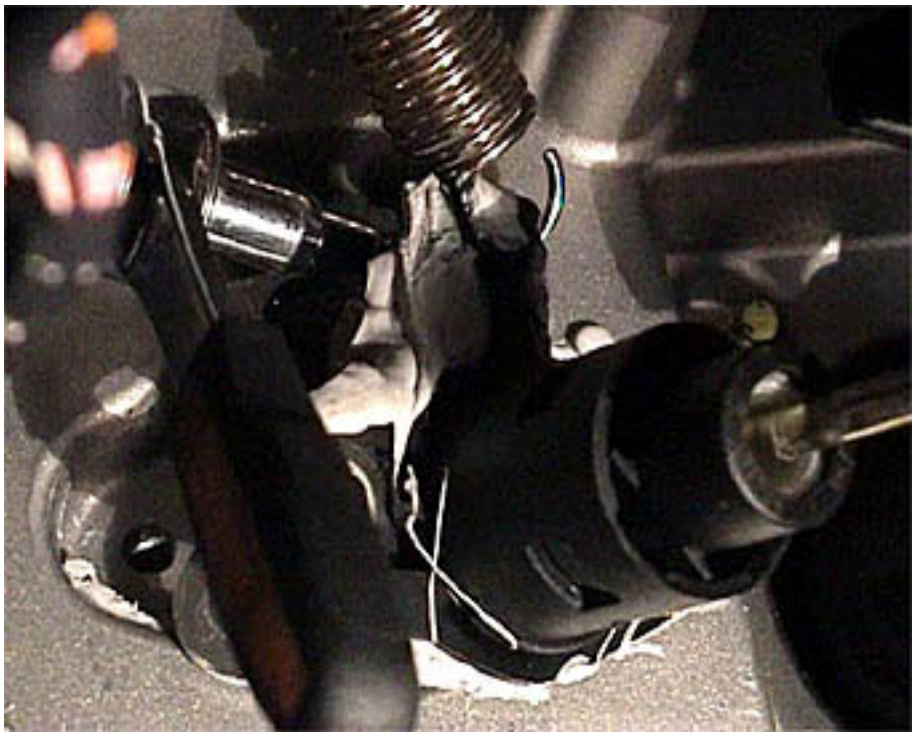
- Use pliers to remove the seeger ring fastening the clutch pump stem to the pedal.



- Separate the clutch pedal from the adjusting screw, taking care to keep the two drive half-bushings.



Unscrew the clutch pipe-pump fastening strip.

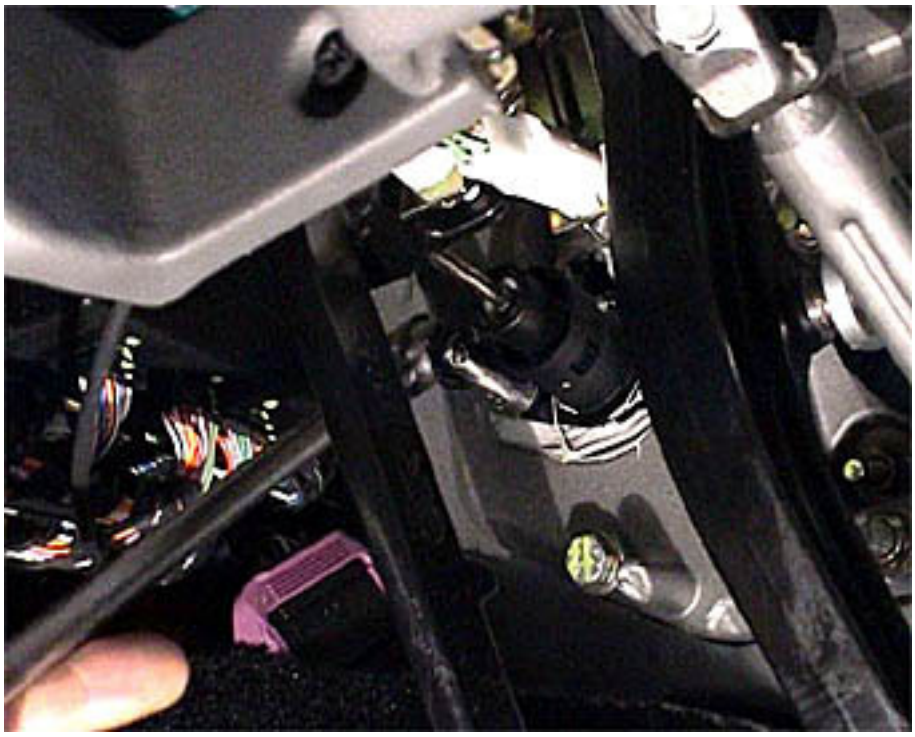


- Use a screwdriver to remove the clutch pump union stop and extract the pump.



**For refitting, follow the above procedures in reverse order**

- Working from the passenger compartment, tighten the two clutch pump fastening screws to a torque of **20 Nm** and apply sealant **MULTI PURPOSE SILICONE SEALANT.**



**N.B.**
**On completion of the remounting operation, top up the brake fluid in the tank.**

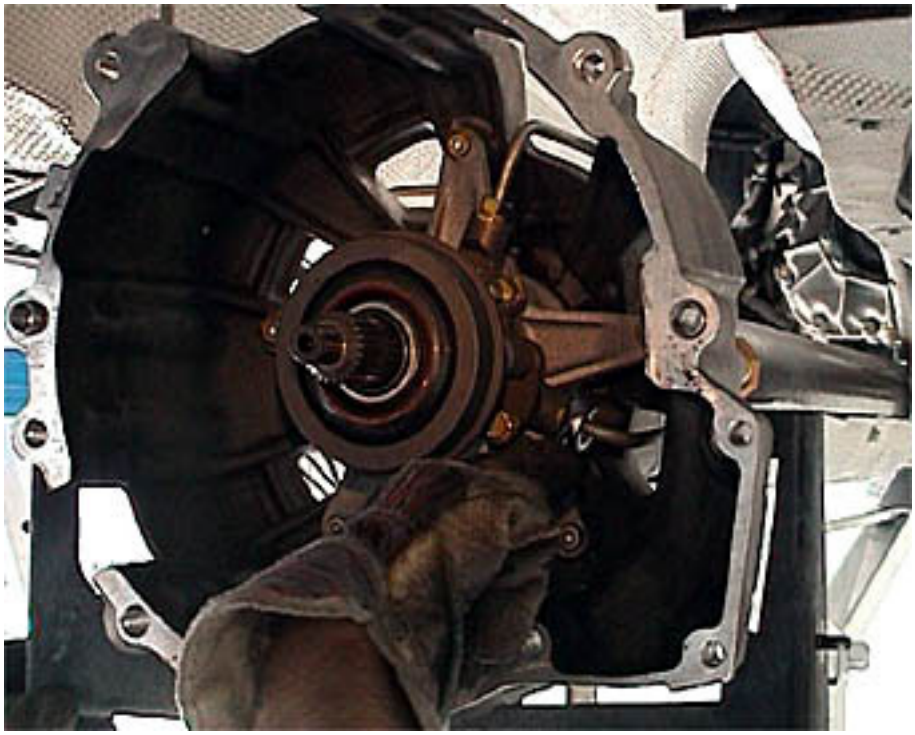
## CLUTCH THRUST BEARING

### Clutch thrust bearing removal

- Remove the clutch housing

*Clutch removal*

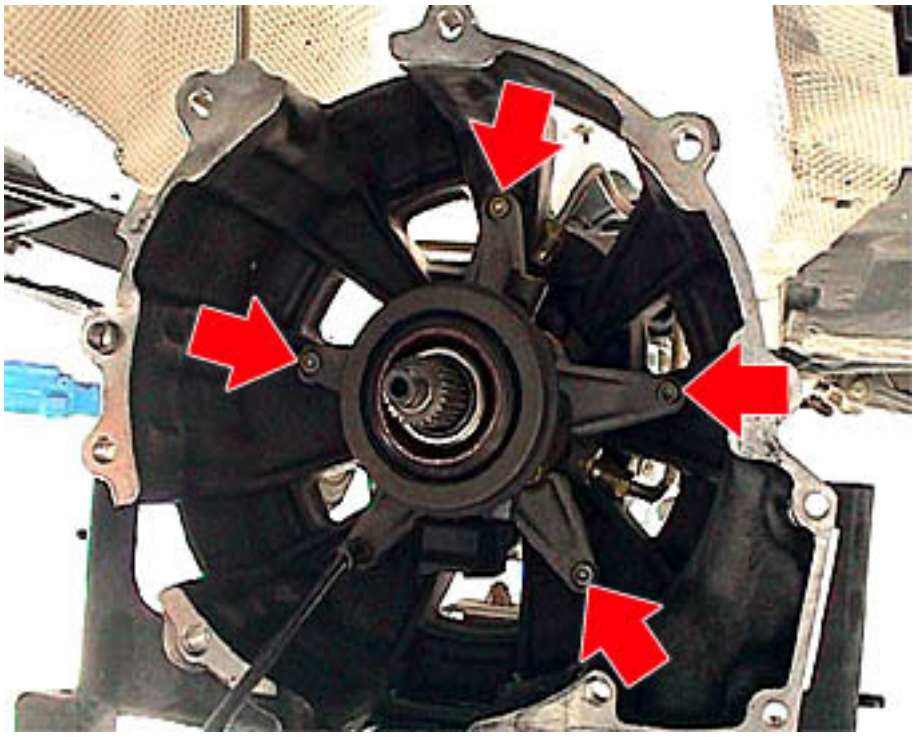
- Unscrew the lower union on the thrust bearing block.



- Unscrew the upper union on the thrust bearing block.



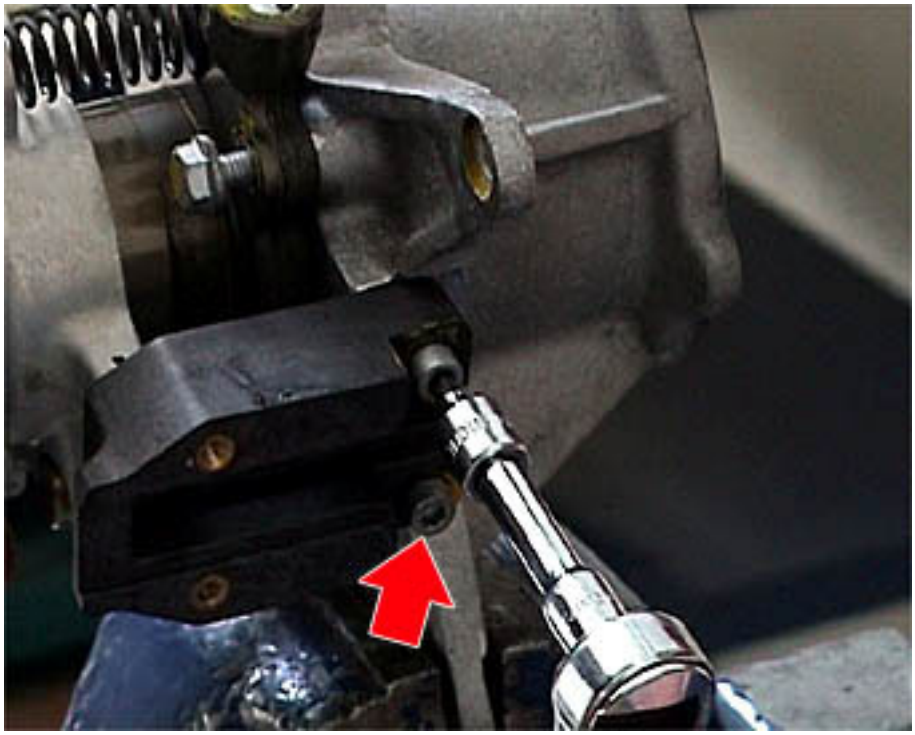
- Remove the five fastening screws from the thrust bearing unit



- Extract the thrust bearing unit from the clutch housing



- Undo the two fastening screws to remove the lower element



- With the thrust bearing unit on bench, unscrew the four fastening screws.



- Unscrew the two fastening pins.



- Detach the steering column from the thrust bearing; keep the two springs and pins.



## Refitting the clutch thrust bearing

- Insert the thrust bearing into the steering column.



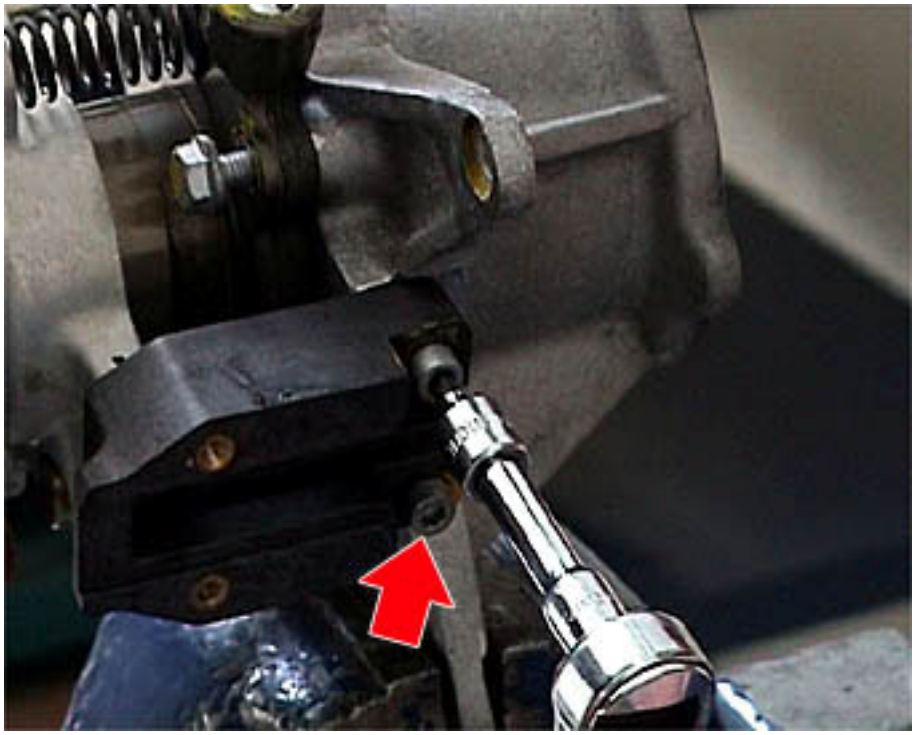
- Tighten the two fastening pins to a torque of **7,5 Nm**.



- Tighten the two fastening screws to a torque of **7,5 Nm**.



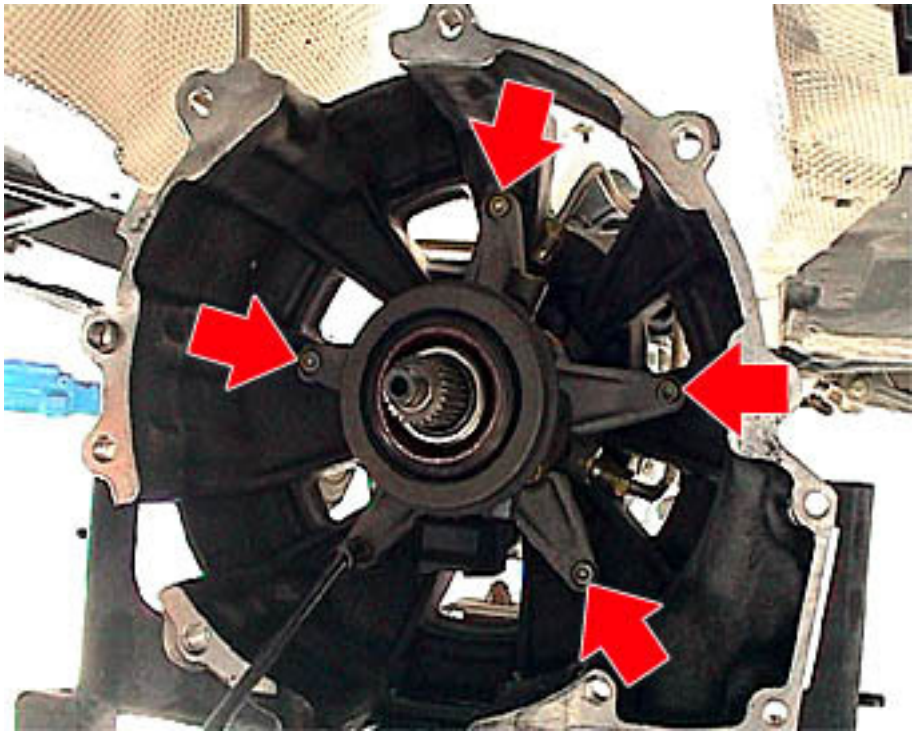
- Refit the lower element and tighten the two fastening screws to a torque of **1,2 Nm**.



- Insert the thrust bearing unit into the clutch housing



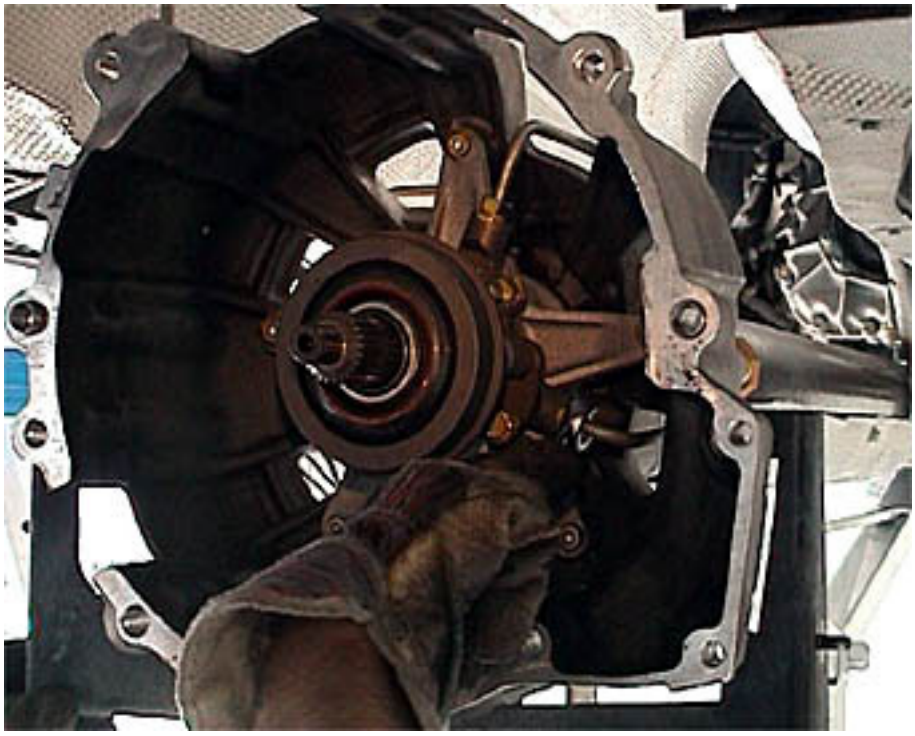
- Tighten the five fastening screws on the thrust bearing unit to a torque of **7,5 Nm**.



- Tighten the upper union on the thrust bearing block to a torque of **18 Nm**.



- Tighten the lower union on the thrust bearing block to a torque of **18 Nm**.



- Mount the clutch housing.

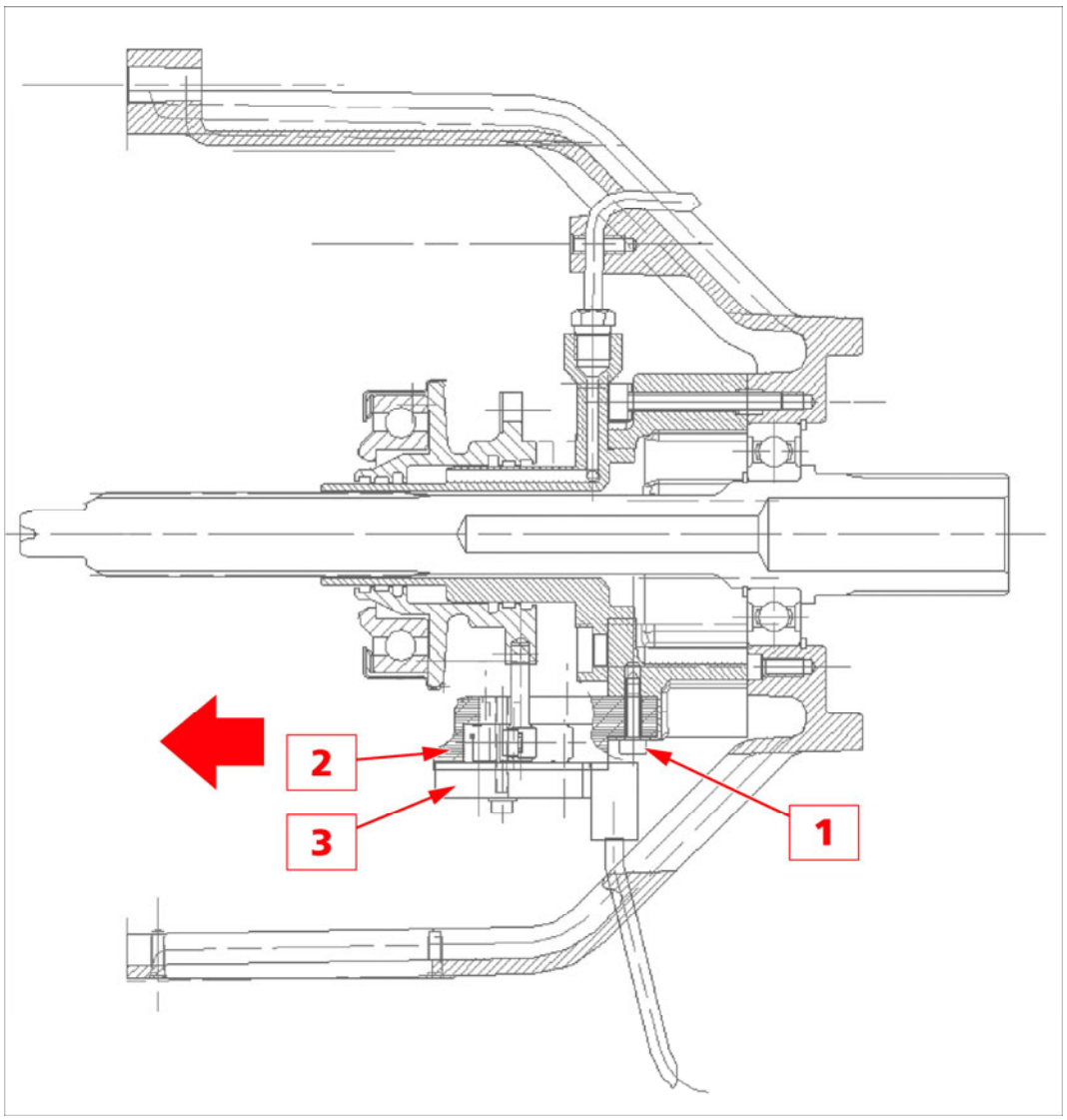
*Refitting the clutch*

## ADJUSTING THE CLUTCH SENSOR MAGNET

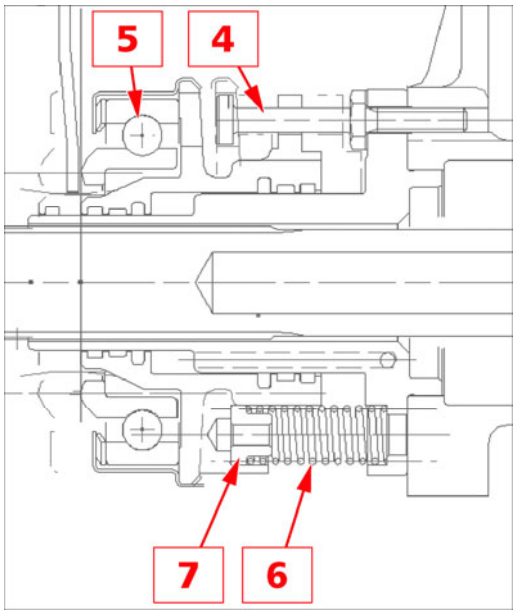
- Remove the clutch housing

*Clutch removal*

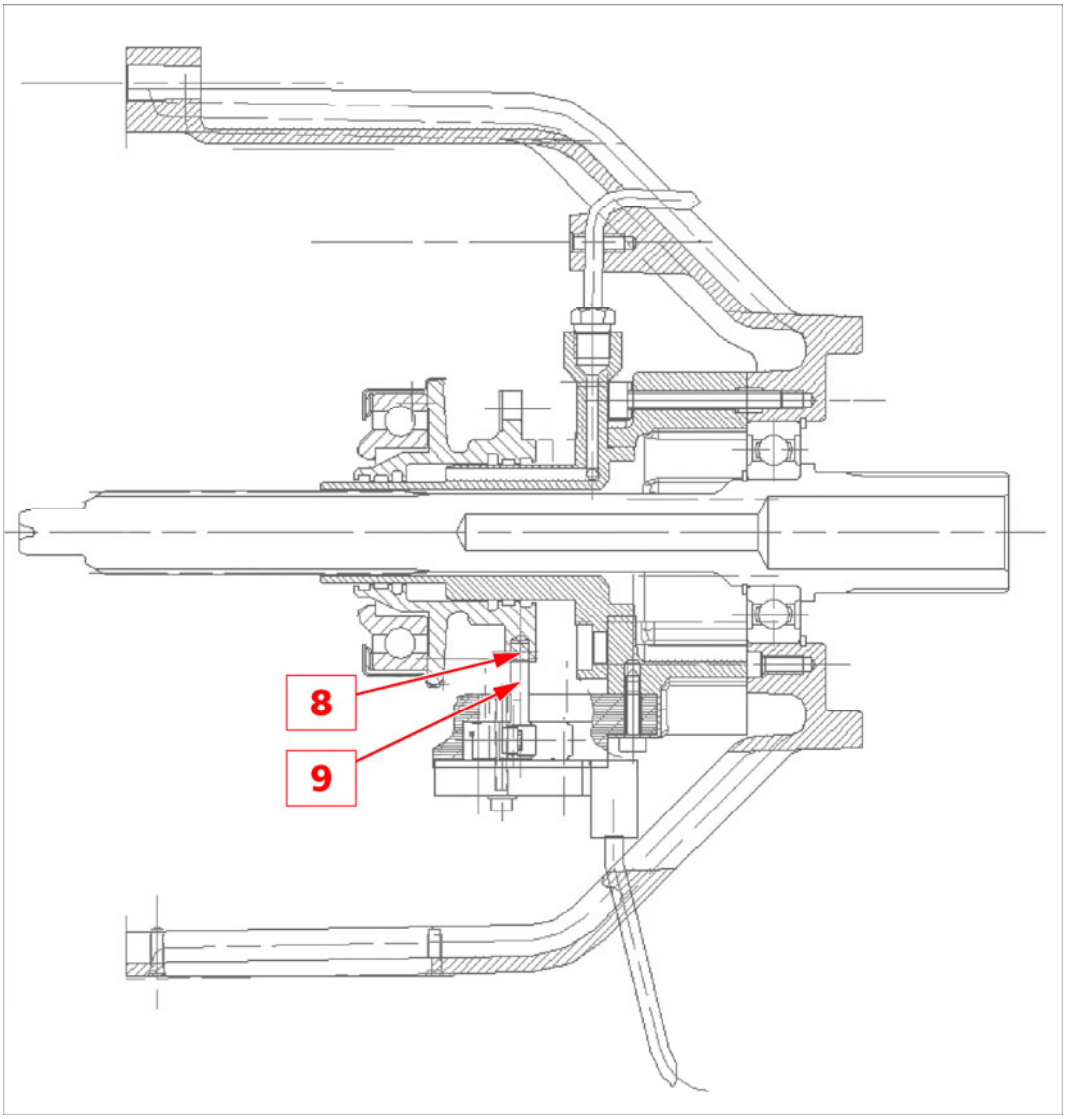
- Undo screws **(1)**.
  Slide the mount **(2)** out in the direction indicated without removing the sensor **(3).**



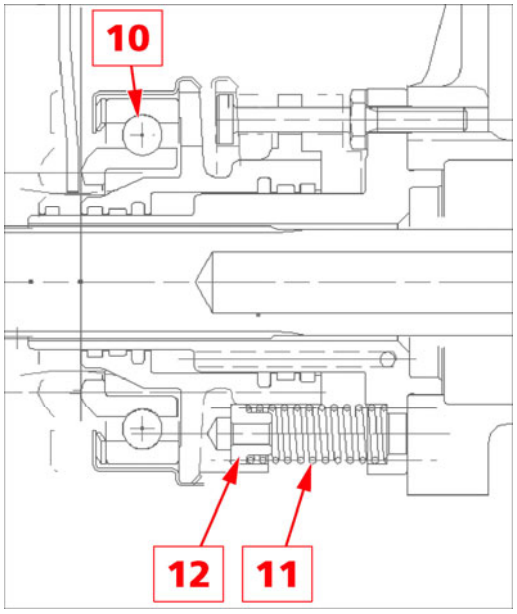
- Undo the stud bolts **(4)**.
- Extract the thrust bearing **(5)** taking care not to damage the inner grommets.
- Remove the springs **(6)** and the spacers **(7)**.



- Remove the pin **(8)** from the thrust bearing
- Rotate the magnet mount **(9)** by 180°.
- Re-insert the pin **(8)**.

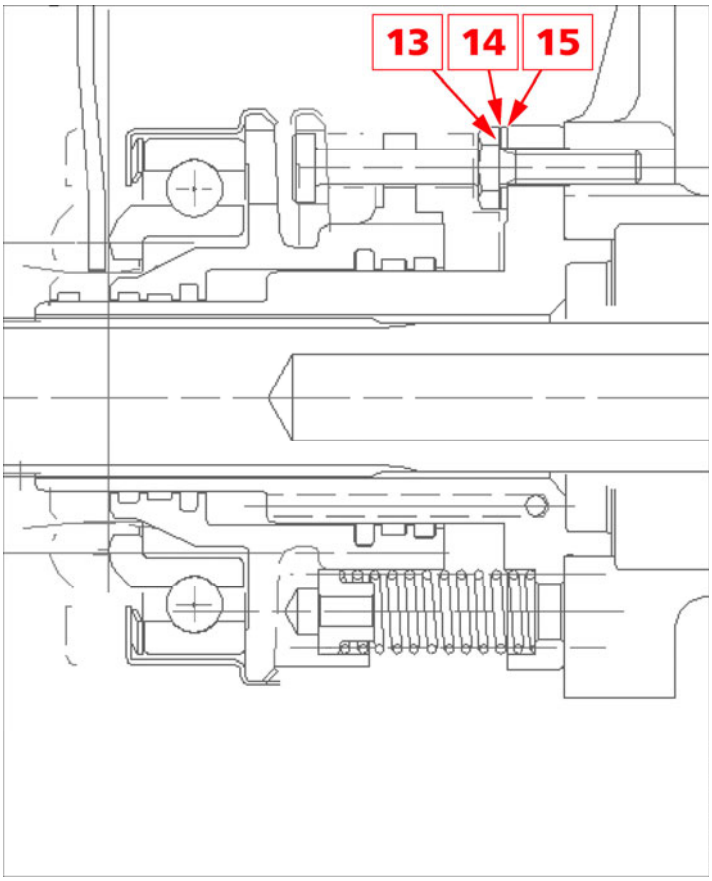


- Dampen the thrust bearing seals **(10) with oil from the gearbox actuator unit.**
- Carefully slip the thrust bearing over the sliding  flange inserting the springs **(11)** and the spacers **(12).**



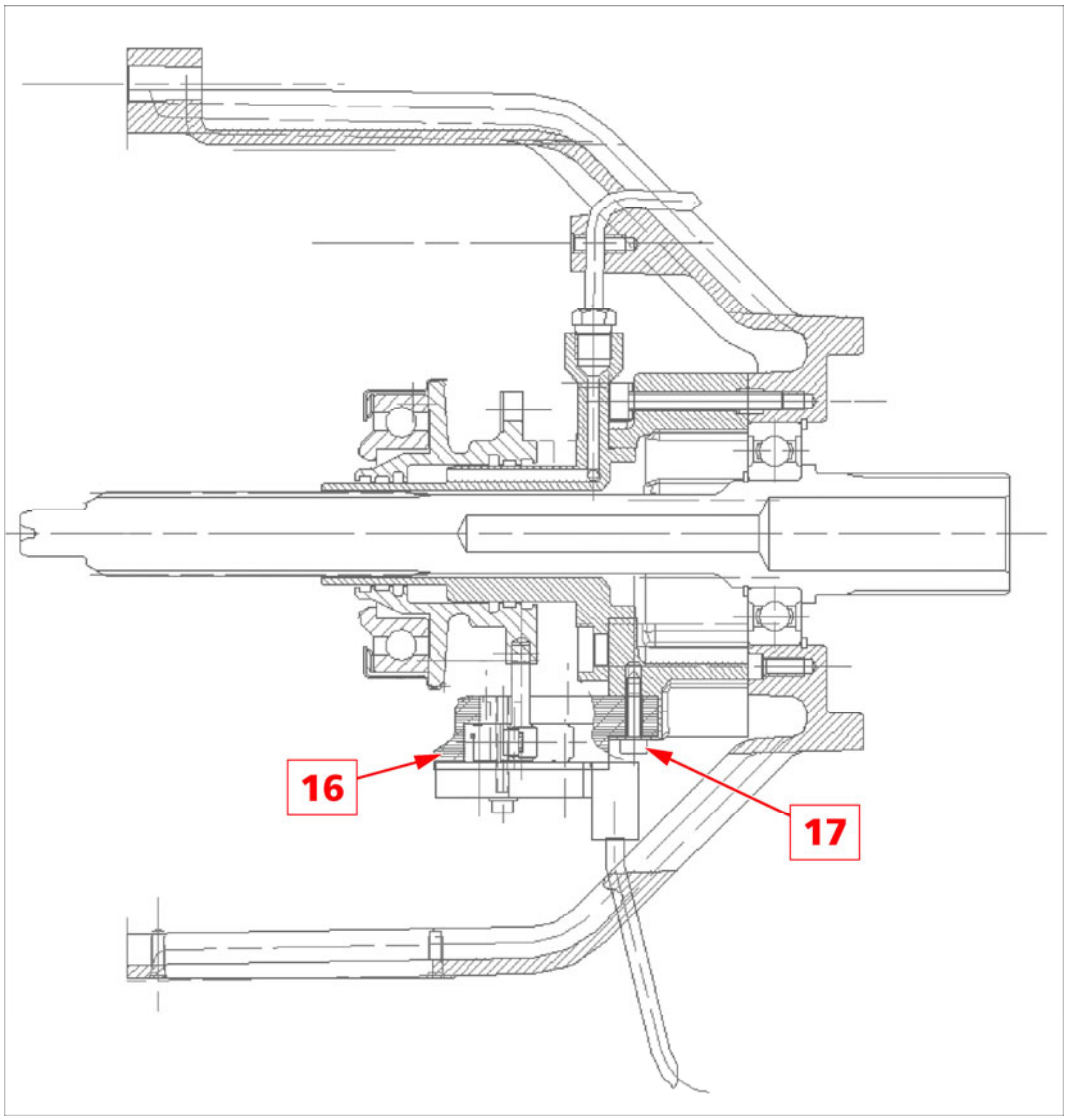

- Tighten the stud bolts **(13)** to **7.4 Nm**, fitting the washers **(14)** and the washers **(15)**.

**N.B.**
**For all the fastenings use Loctite medium thread brake.**



- Fit the mount **(16)**.
- Tighten the screws **(17)** to **1.2 Nm**.

**N.B.**
**For all the fastenings use Loctite medium thread brake.**




- Mount the clutch housing.

*Refitting the clutch*

## HALF SHAFTS

### Removal

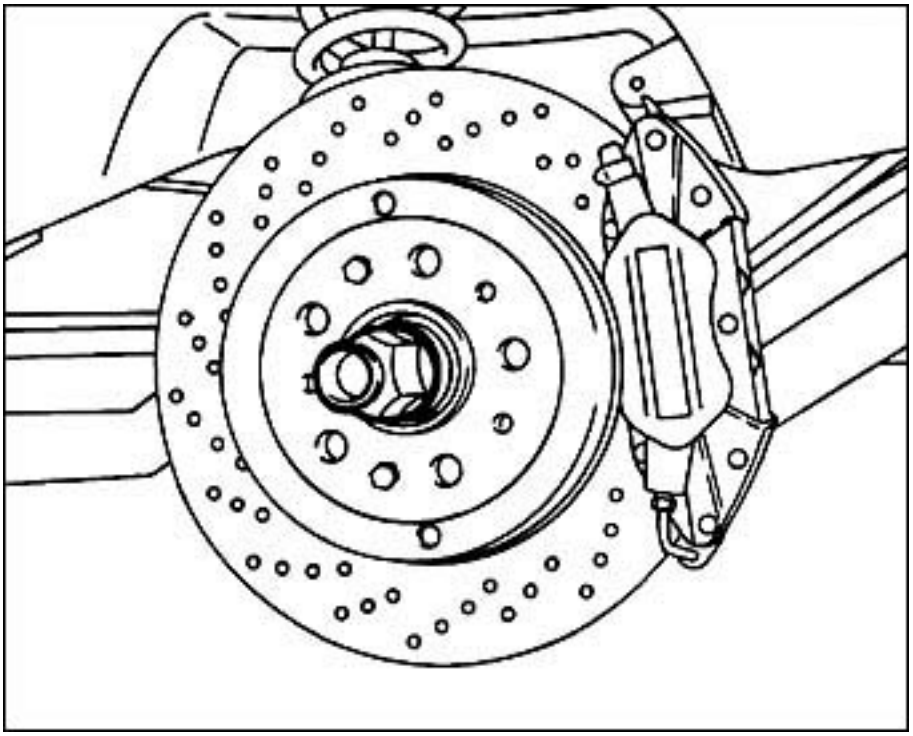
- Slacken the six screws fastening the right and left half shafts to the differential output flanges.



- Working from both sides, remove the caulking from the nut fastening the wheel hub to the half shaft.



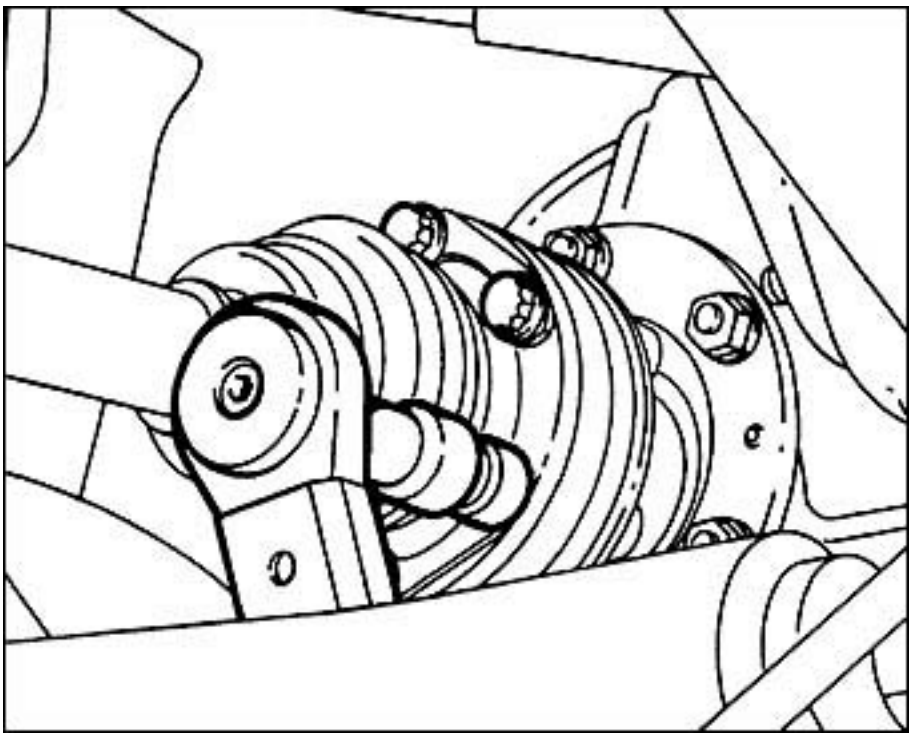
- Slacken the nut fastening the wheel hub to the half shaft**.**

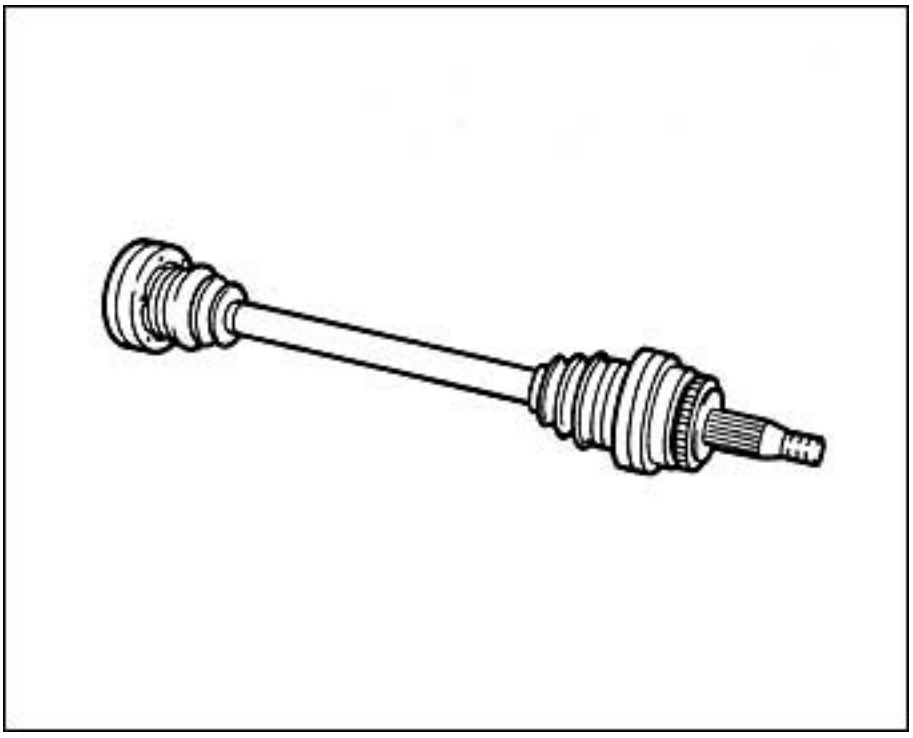


- Disconnect the anti-roll bar control rod loosening the fastening nuts.



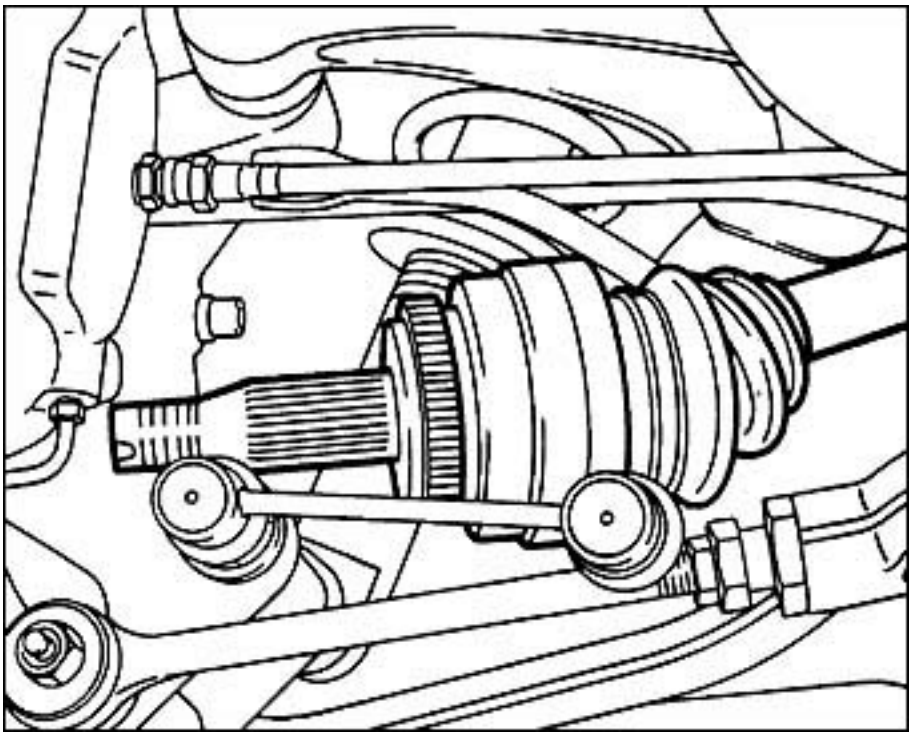
- Remove the half shaft part from the wheel hub connection **(Figure 1)** and, with the utmost care, withdraw the half shaft from the vehicle **(Figure 2)**.





## Installation

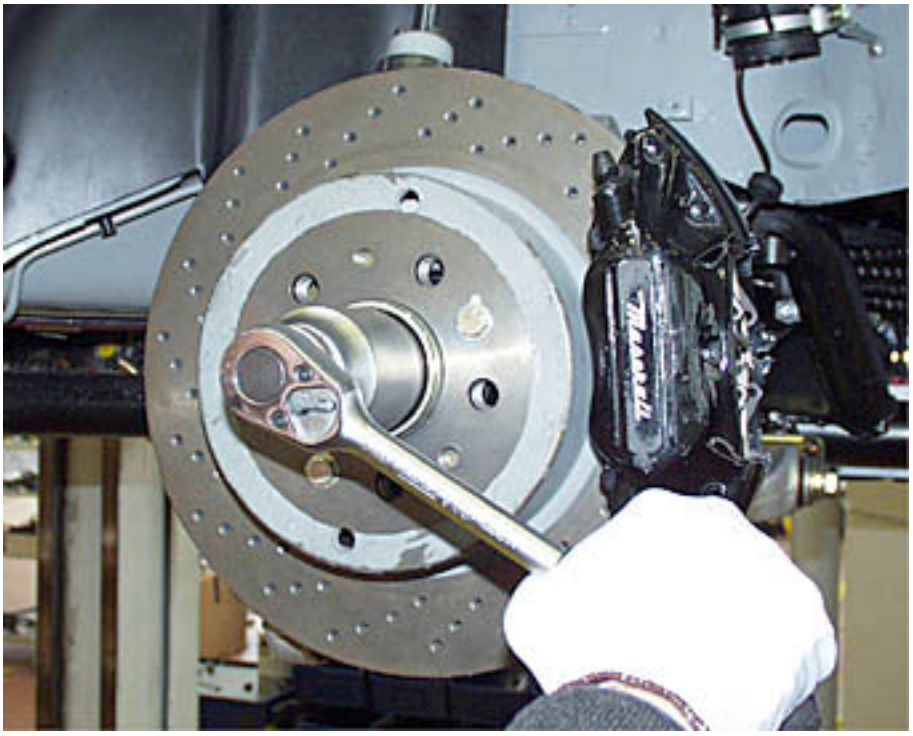
- Working on both sides, insert a new half shaft in the car, then connect its connection part to the wheel hub.



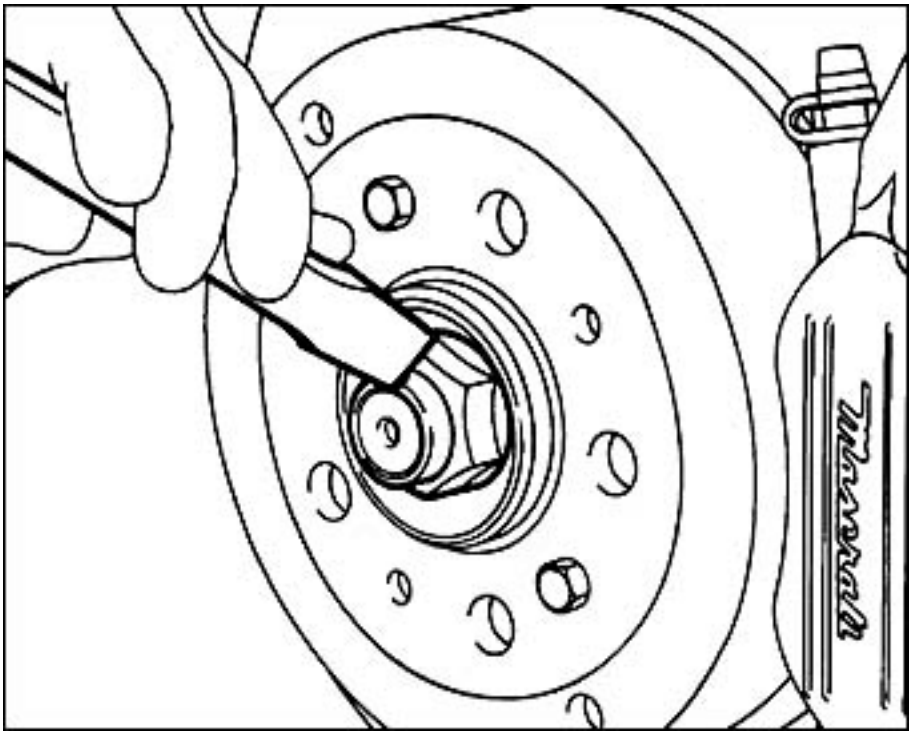
- Connect the anti-roll bar control rod, tightening the fastening nut.



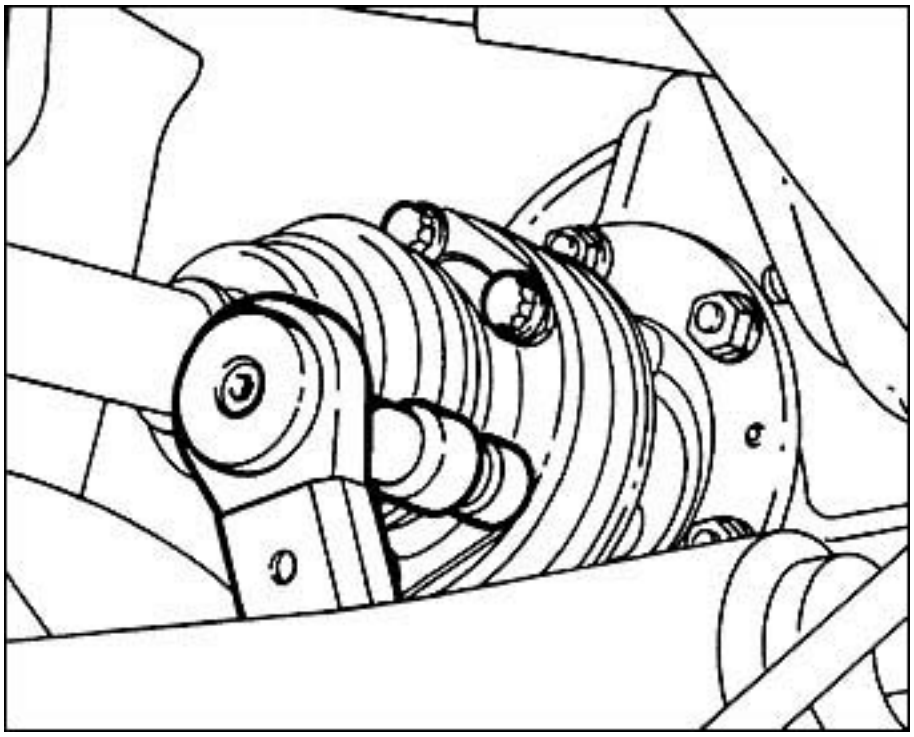
- Tighten the nut fastening the half shaft to the wheel hub to **275 Nm** (with lubricated thread) or **320 Nm** (when dry)**.**



- Caulk the fastening nut.



- Connect the left and right half shafts to the differential output flanges, tightening the six screws to **80 Nm**.



## CROWN WHEEL – DIFFERENTIAL AND TAPERED ROLLER BEARINGS

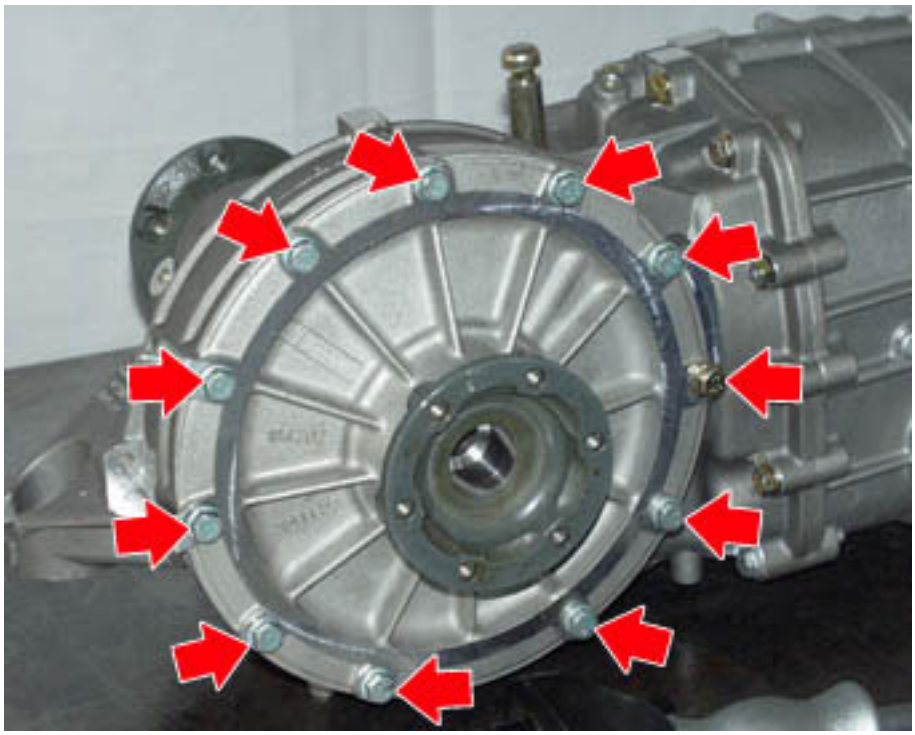
**IMPORTANT**
**The differential crown wheel is supplied as a spare part together with the pinion (bevel gear pair) these components must always be replaced as a pair.**

### Differential removal

- Remove the complete gearbox from the vehicle.

*Removing-refitting the electronically-controlled gearbox*

- Remove the eleven screws on the gearbox housing cover.



- Slide the gearbox housing cover and the flange shaft off of the gearbox, using the extracting tool **95972714** with pins **900026400.**




- Remove the fastening screw for the bearing holder case from the differential compartment.



- Remove the differential from the gearbox housing using tool **95973266.**




- To remove the inner roller race for the LH side bearing, use the **USAG 454N/3** extracting tool with spacer washer **900026800**, as shown in the figure, and insert the tool arms into the the grooves on the differential housing.

**IMPORTANT**

**The tapered roller bearings on the differential must always be replaced as a pair. Do not exchange the components for the two bearings. Do not refit any bearings that have been removed.**



- To remove the relative outer race on the LH tapered roller bearing, take out the LH flange shaft and work on the differential housing.

*Removal of the right-hand differential housing cover and flange shafts*
*Disassembly of the differential housing components*

- Lock the diferential using tool **95976628**, clamped in a vice, and undo all the screws fastening the crown wheel.
  Take out the differential housing's cover and remove the crown wheel.

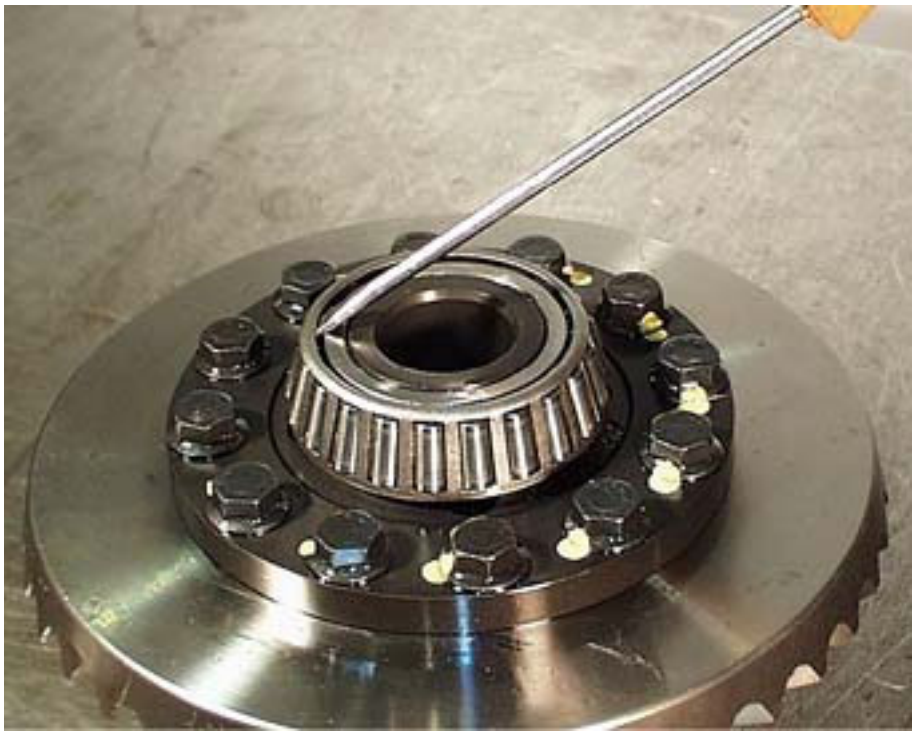
**IMPORTANT**
**The crown fastening screws must be replaced after every disassembly procedure.**



- To remove the tapered roller bearing inner race, on the RH side, force the roller cage from the inner race.

**IMPORTANT**

**The tapered roller bearings on the differential must always be replaced as a pair. Do not exchange the components for the two bearings. Do not refit any bearings that have been removed.**



- Apply the separator's **USAG 472A/3** jaws under the inner race's rim and remove it from the differential housing using extractor **USAG 472N/3** .




- To remove the corresponding outer track on the RH tapered roller bearing, work on the differential housing side cover.

*Removal of the right-hand differential housing cover and flange shafts*

## Differential reassembly

- After having cleaned the coupling zone on the differential housing, fit the new crown wheel and the differential housing cover.
  Apply **LOCTITE 270** on the threading of the new screws and loosely fit them on the differential housing.
  Tighten the screws to a preload of **60 Nm** working crosswise and using the torque wrench **USAG 815 F** (progr. 10) with angle adjustment control, tighten to the yield point.




**IMPORTANT**
**After replacing the crown wheel, check the backlash with the pinion teeth and the differential's roller bearing preload.**
*Checking the crown wheel and pinion backlash*
*Measuring the preload for the differential taper roller bearings*

- Fit the inner roller races onto the differential using the base and the punch **95973278** in a vice.




- To install the RH tapered roller bearing outer race, work on the differential housing side cover.

*Reassembly of the right-hand differential housing cover and flange shafts*

- To install the LH tapered roller bearing outer race, insert the LH flange shaft and work on the differential housing.

*Reassembly of the differential housing components*

*Reassembly of the right-hand differential housing cover and flange shafts*

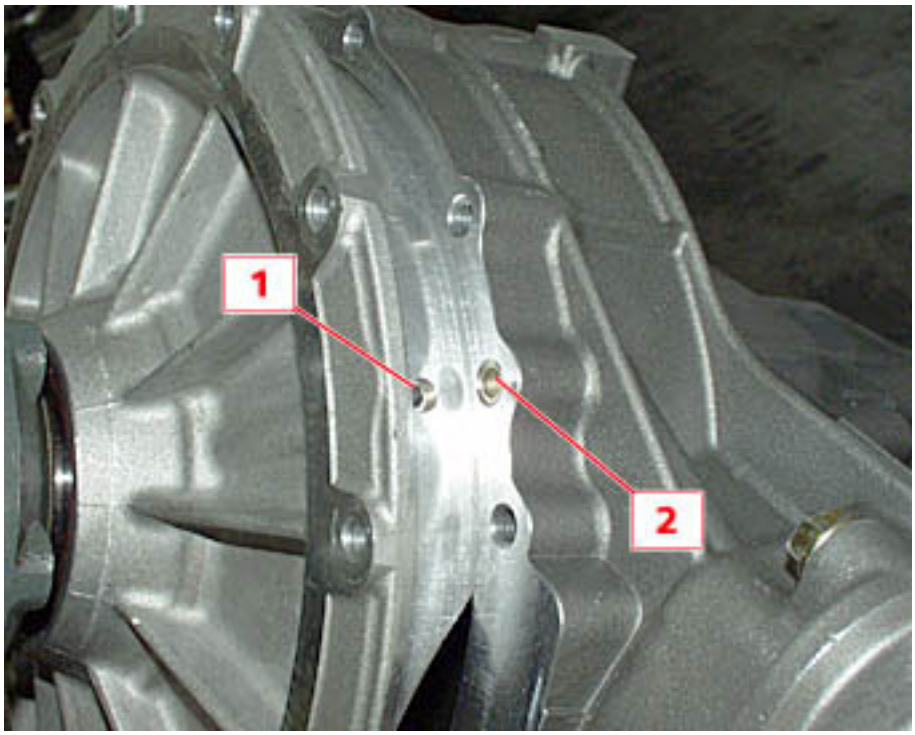
- Insert the differential-crown wheel set into the differential housing, using the tool **95973266.**




- Tighten the thirteenth fastening screw for the bearing holder case to a torque of **30 Nm.**



- Clean and degrease the contact surfaces on the cover and differential housing and outline the holes uniformly and evenly with LOCTITE 510.
  Fit the differential housing cover matching the lubrication opening **(1)** found on the cover with the differential housing retaining washer **(2)**.




- Position the two cable-guide brackets **(3**) and tighten the eleven fastening screws on the differential housing cover to a torque of **30 Nm**, proceeding crosswise.

**N.B.**
**The front fastening screw differs in the length of the thread stem. check the figure for proper fitting.**

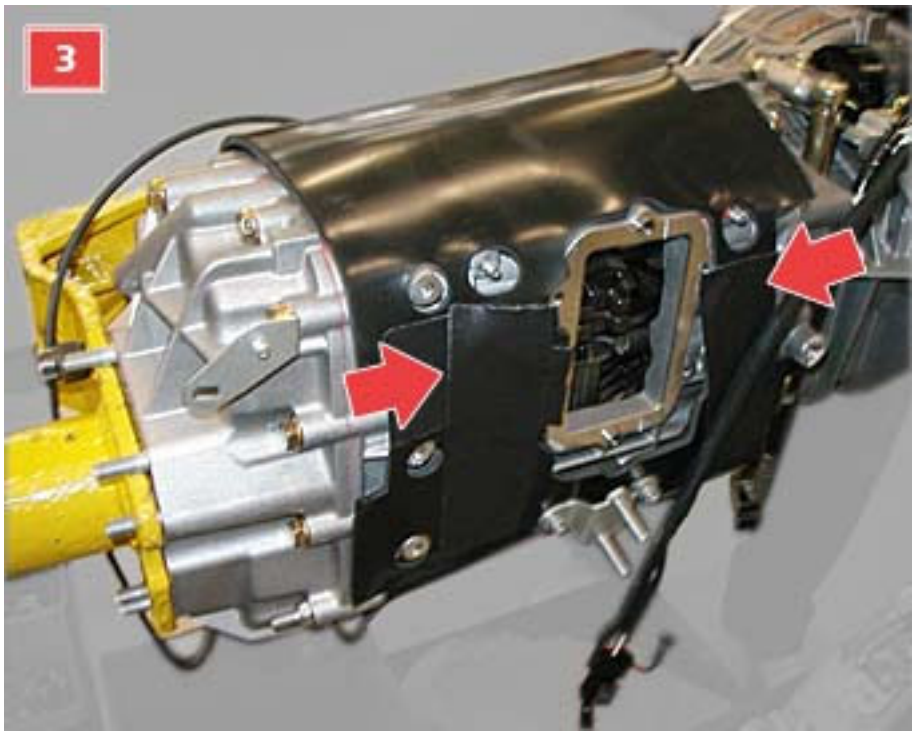


## GEARBOX REMOVAL

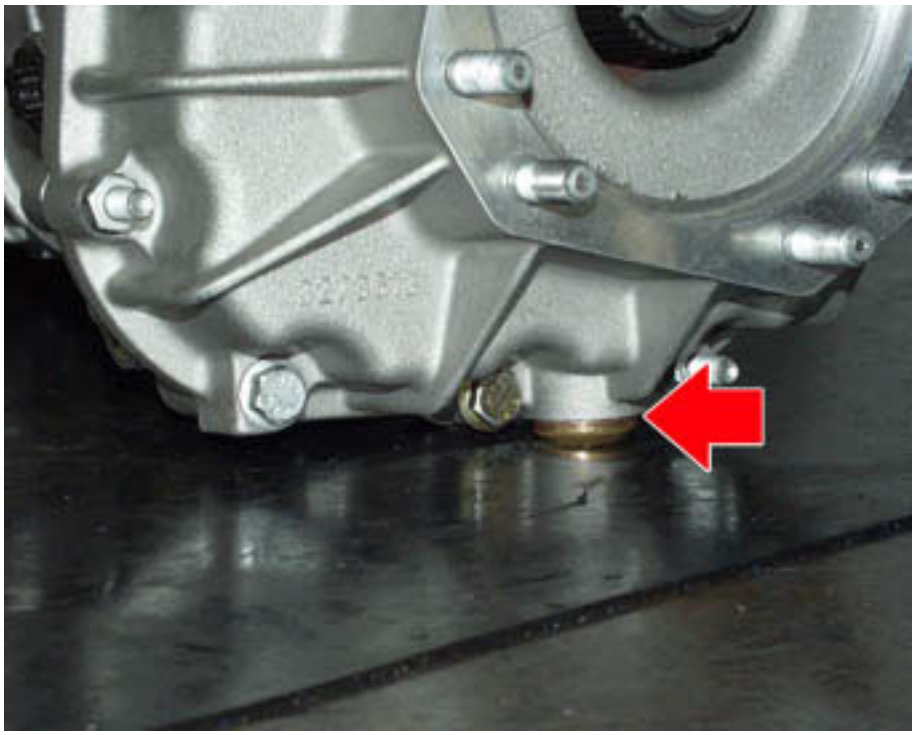
**IMPORTANT**
**In order to read the gearbox identification number (Figure 1), which is found under the plastic cover for the gearbox housing (Figure 2), you must remove the adhesive tape (Figure 3), after having disassembled the mechanical gearbox control with its driving rod ("cambiocorsa" gearbox version) or the actuator.**






- Drain the oil in the gearbox from the cap found on the front cover.

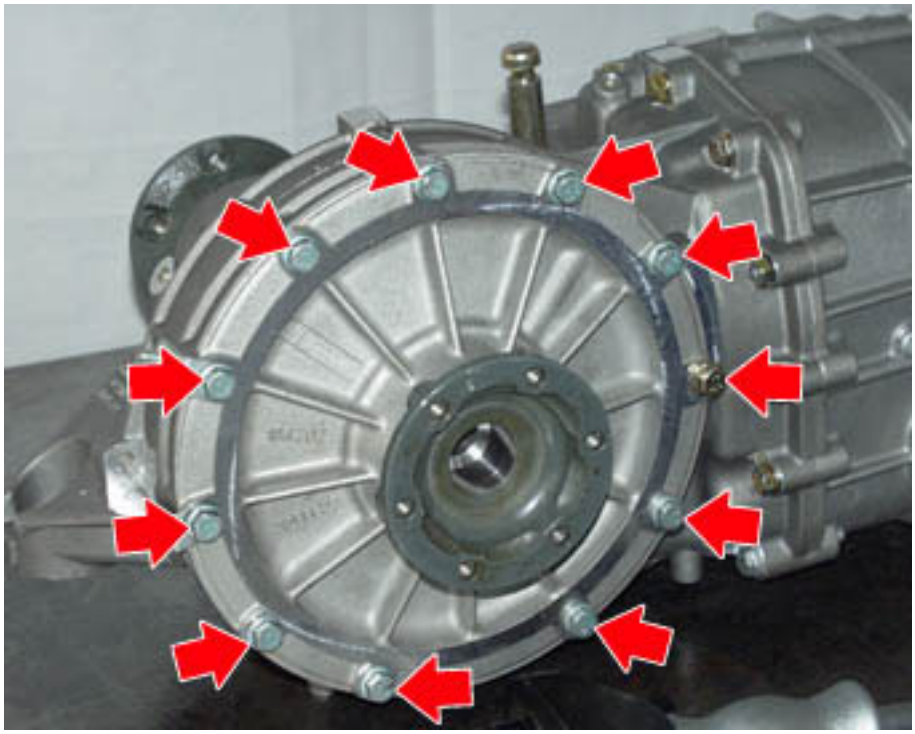


- Remove the gearbox from the car.

*Gearbox detaching-reattaching*

## Removal of the right-hand differential housing cover and flange shafts

- Remove the eleven screws on the gearbox housing cover.



- Slide the gearbox housing cover and the flange shaft off of the gearbox, using the extracting tool **95972714** with pins **900026400**.



- Remove the O-ring from the gearbox housing cover.



- Remove the Seeger ring from the flange shaft.



- Rivet the flange shaft with a rubber hammer and extract it from the differential housing cover.



- Remove the grommet from the gearbox housing cover using a flat screwdriver.



- Remove the ball bearing, the adjustment ring and the external tapered roller bearing seat from the flange shaft using the punch **(b)** on the tool **900026410**, the support tool **95976628** and the press.

**IMPORTANT**
**The ball bearing removed with this procedure must always be replaced.**




- Remove the fastening screw for the bearing holder case from the differential compartment.



- Remove the differential from the gearbox housing using the tool **95973266**.




- Remove the Seeger ring from the differential compartment.



- Slide off the flange shaft, left-hand side, from the gearbox using the extracting tool **95972714** with pins **900026400**.



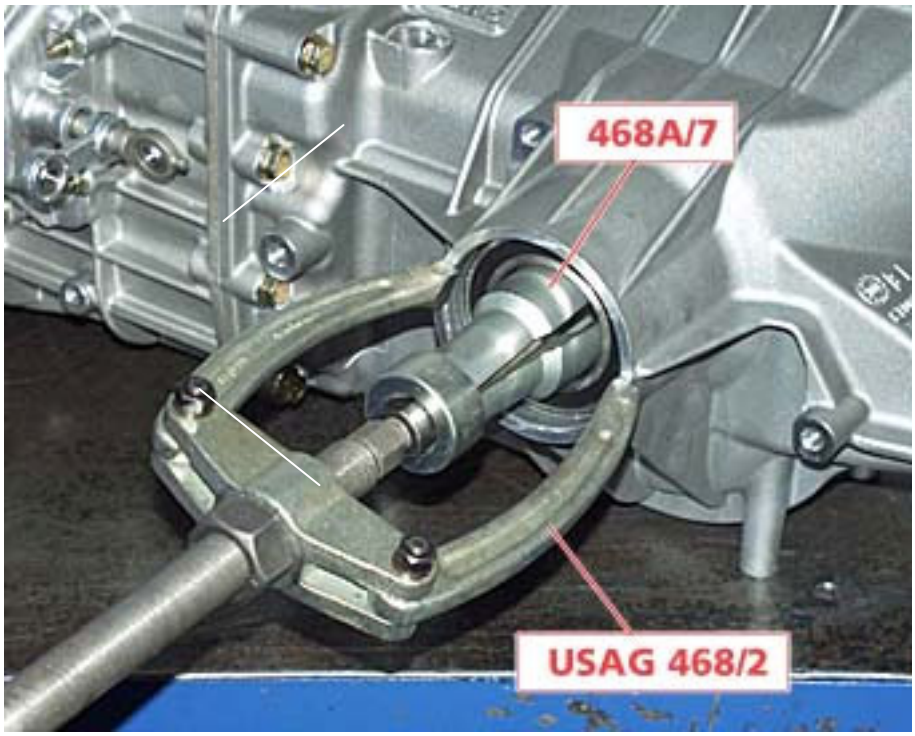

- Remove the grommet from the gearbox housing, using a flat screwdriver.



- Remove the Seeger ring from the gearbox housing using two flat screwdrivers simultaneously.



- Remove the left-hand flange shaft support bearing with a **USAG 468/2** standard bearing extractor and accessory **468A/7**.

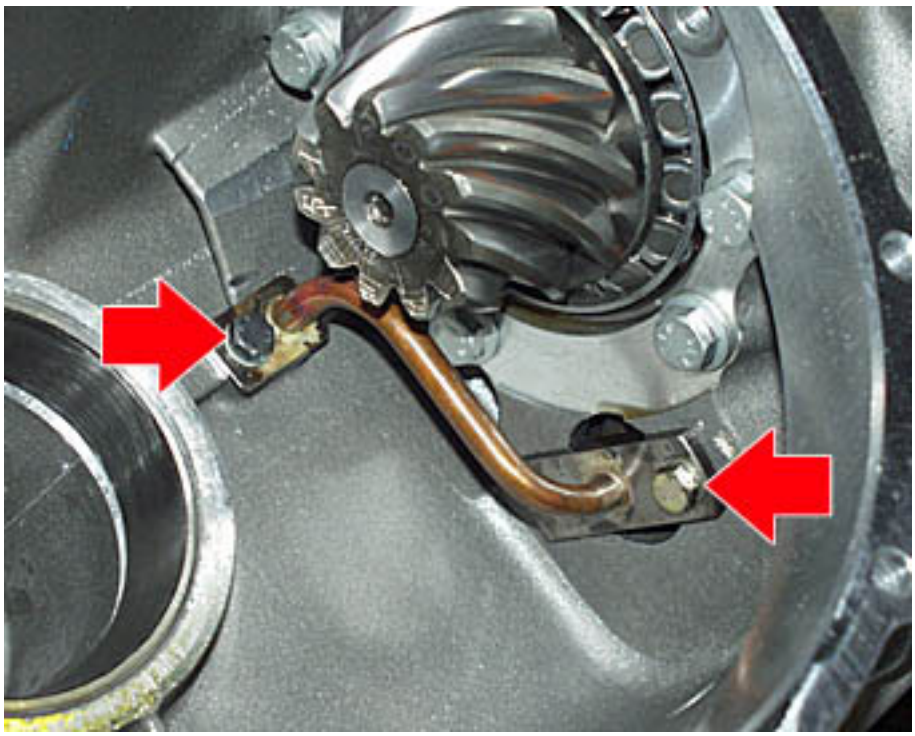


## Removal of shaft-rods unit with forks

**N.B.**
**Before working on the internal parts of the gearbox, it is advisable to check the housing for any cracks or deformation, or the presence of lubricant leakage from couplings or from the closure flanges.**

**IMPORTANT**
**If replacement of the gearbox housing is necessary, the thickness of the crown wheel and pinion spacers should be calculated on the basis of the new dimensions.**

- Unscrew the two fastening screws for the lubrication nozzle from the differential compartment.



- Remove the lubrication nozzle from the differential compartment and then the O-ring.



- Lock the vertical hooking bracket**900026790** on the front gearbox housing cover with two screw nuts.



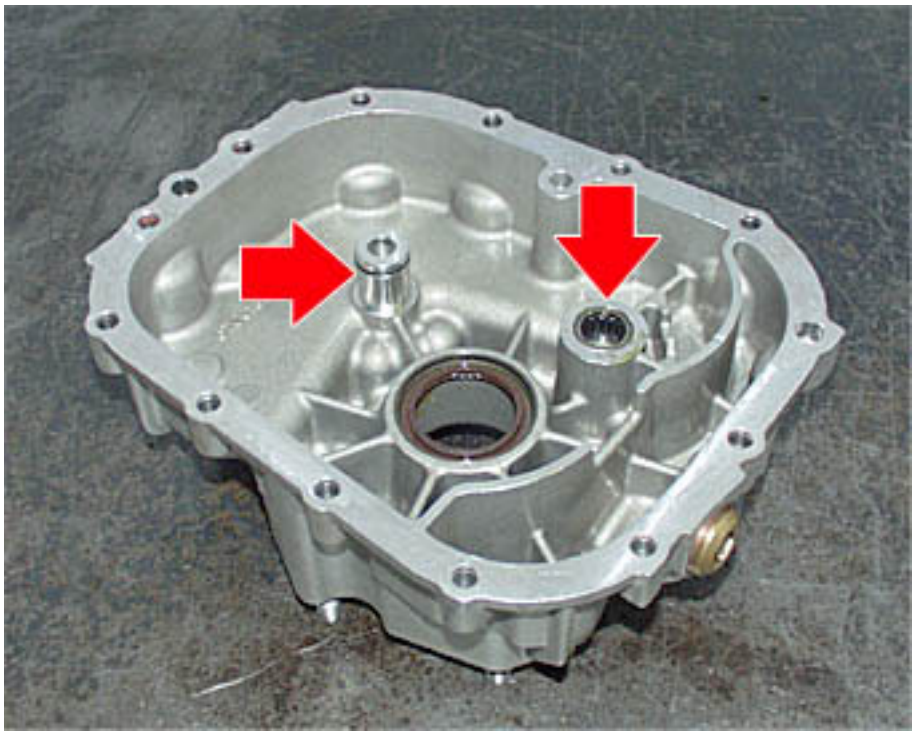
- Sling the gearbox housing and lock it on the vertical mount for the trolley **900026840** using the special screw nut.




- Remove the vertical hooking bracket **900026790**. Unscrew the thirteen perimeter fastening screws on the front cover and take the latter off of the gearbox housing.



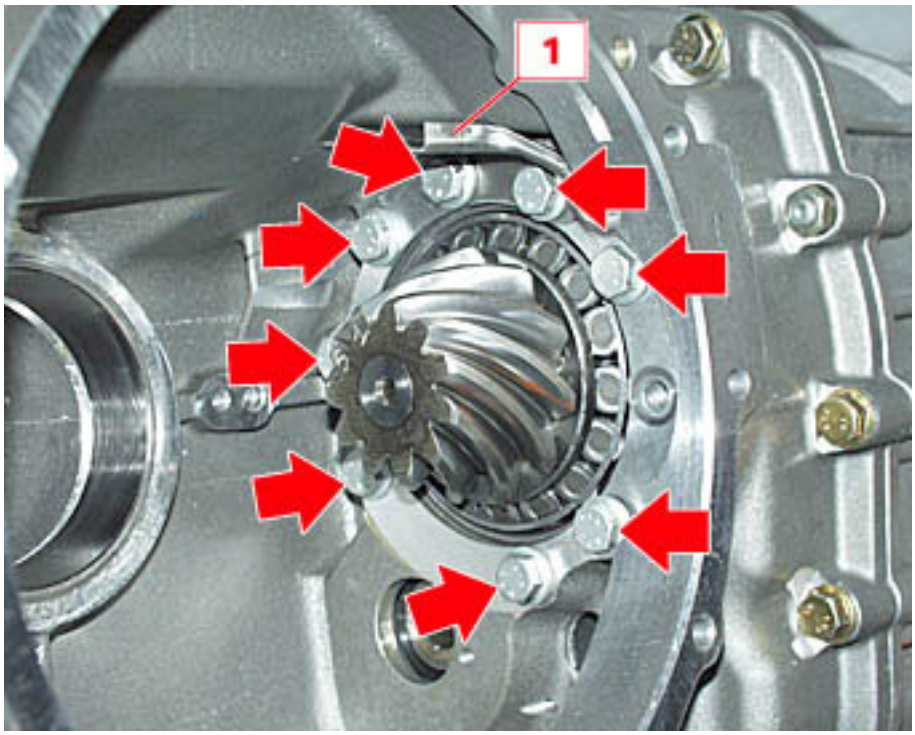
- Slide the O-ring off the centering pin and use the **USAG 468S11** bushing extractor or a flat screwdriver to remove the ball bushing.



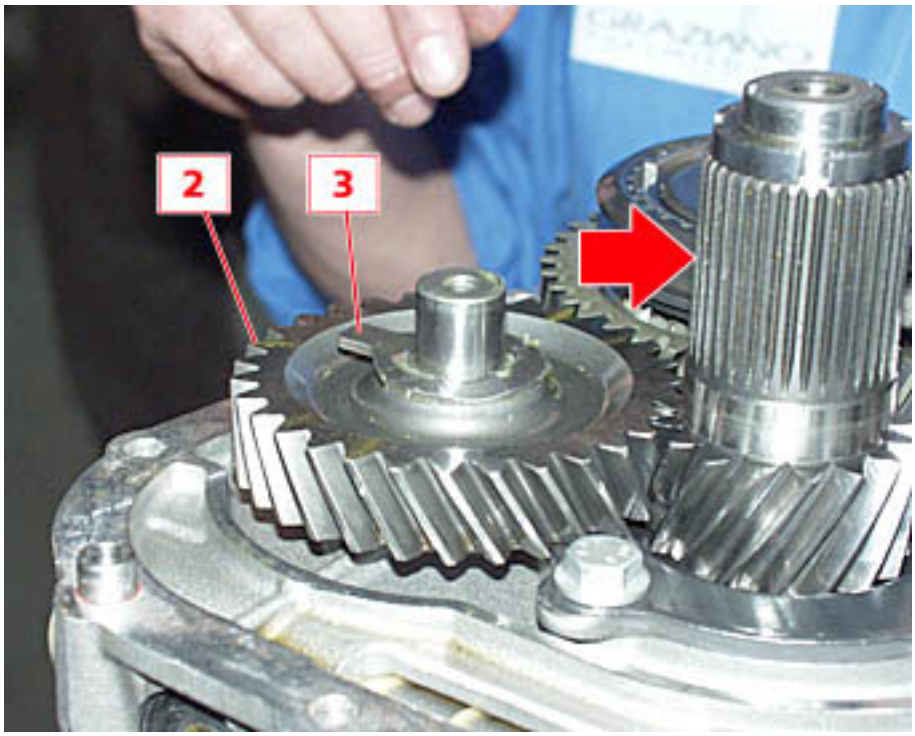
- Remove the grommet from the front cover using the tool **900026870** and a rubber hammer.



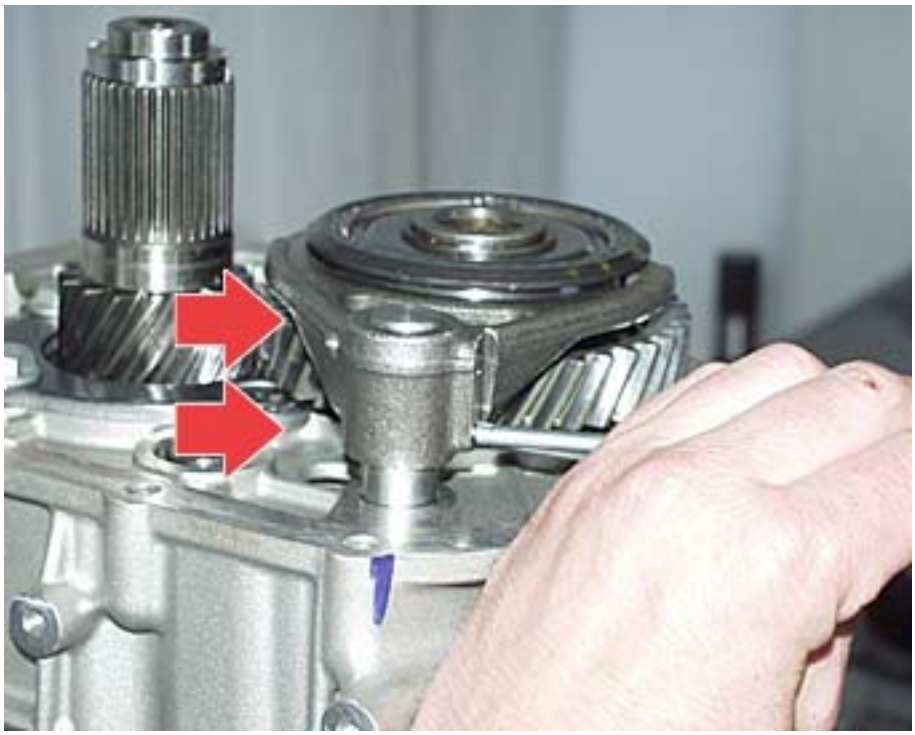
- Working from the differential compartment, unscrew the eight fastening screws for the bearing holder case and remove the sheet protecting the oil passage lines **(1)**.



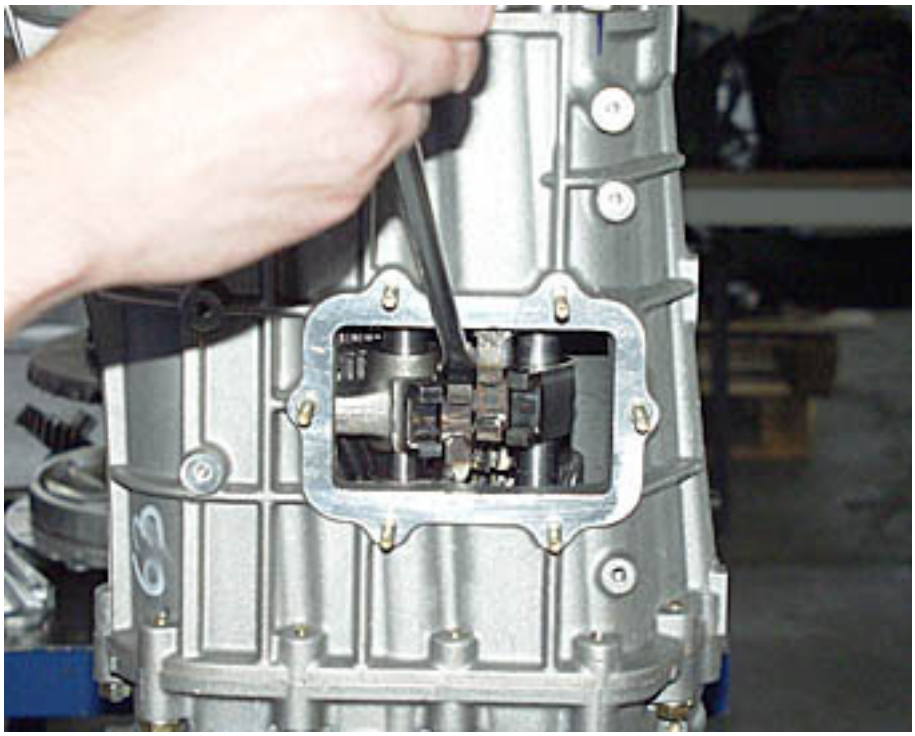

- Slide off the reverse gear idle gearing **(2)** with its respective shouldering rings **(3)**. There are two shouldering rings, one for each side of the idle gearing.



- Rivet the two elastic pins off of the rod using a suitable pin-driver.



- Engage two gears to block the main shaft.



- Shift to neutral. Rivet the main shaft ring nut - front side - and use the tool **900026770** to unscrew it off of the main shaft.

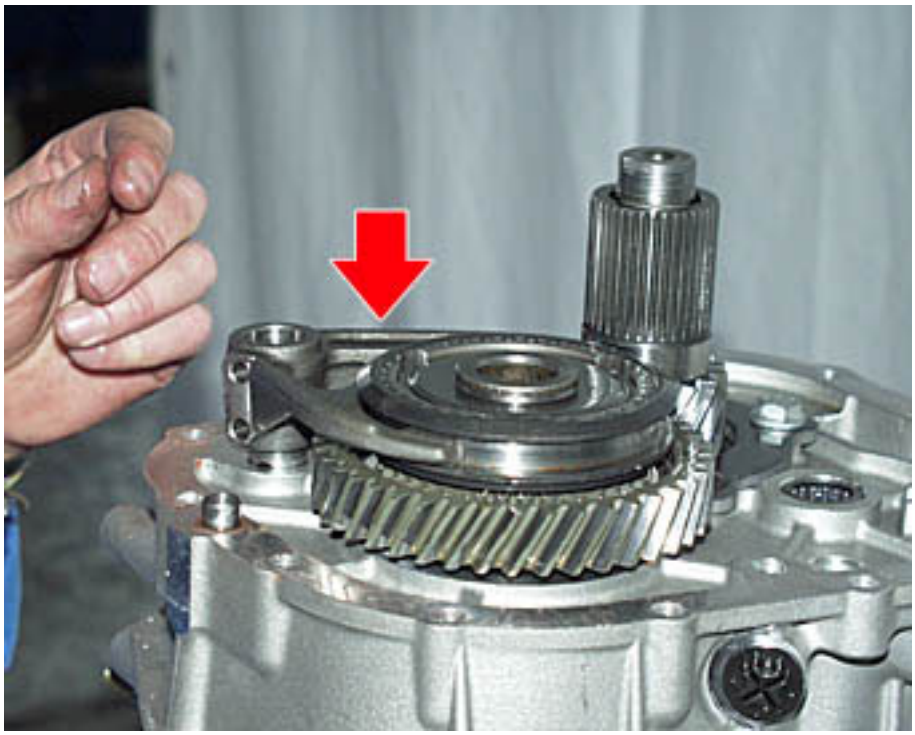
**IMPORTANT**
**All ring nuts that are removed must be replaced.**




- Slide the Seeger ring off the lay shaft.



- Remove the reverse gear fork by sliding it off the control rod.



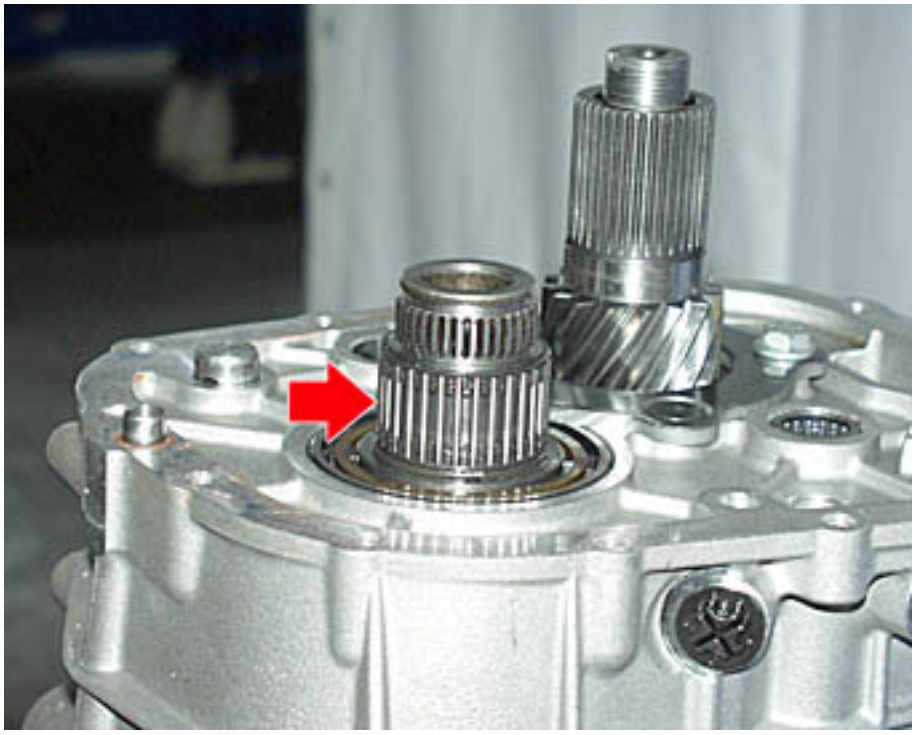
- Insert the centering bushing **900026780** on the **Reverse** gear synchronizer.



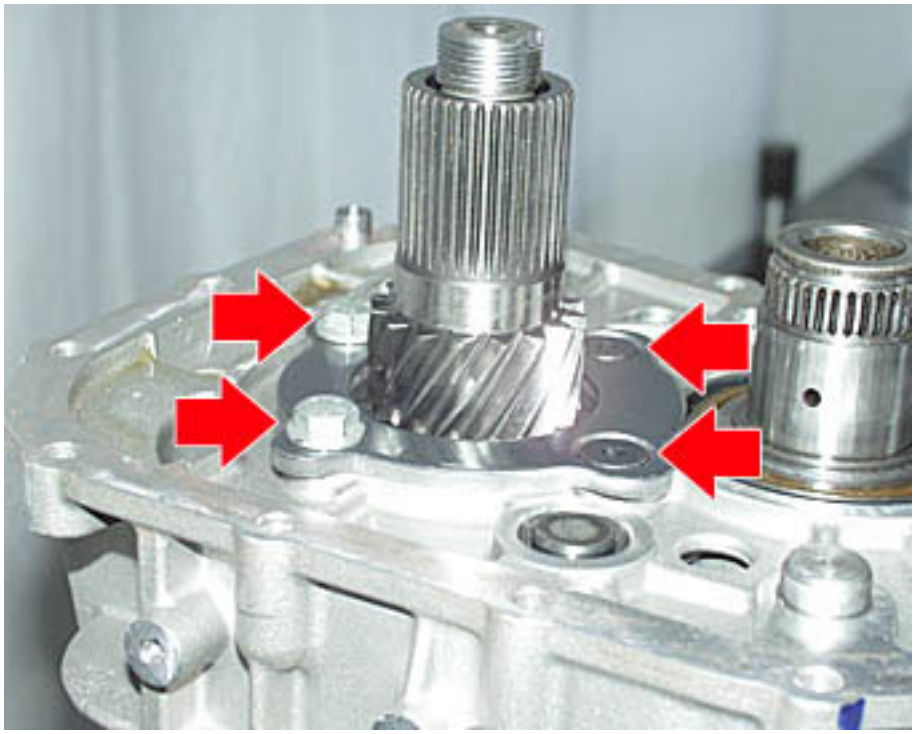
- Position the ends of the **USAG 454N/2** extractor arms under the **Reverse** driven gearing and extract the latter and the **Reverse** gear synchronizer together with the lay shaft.



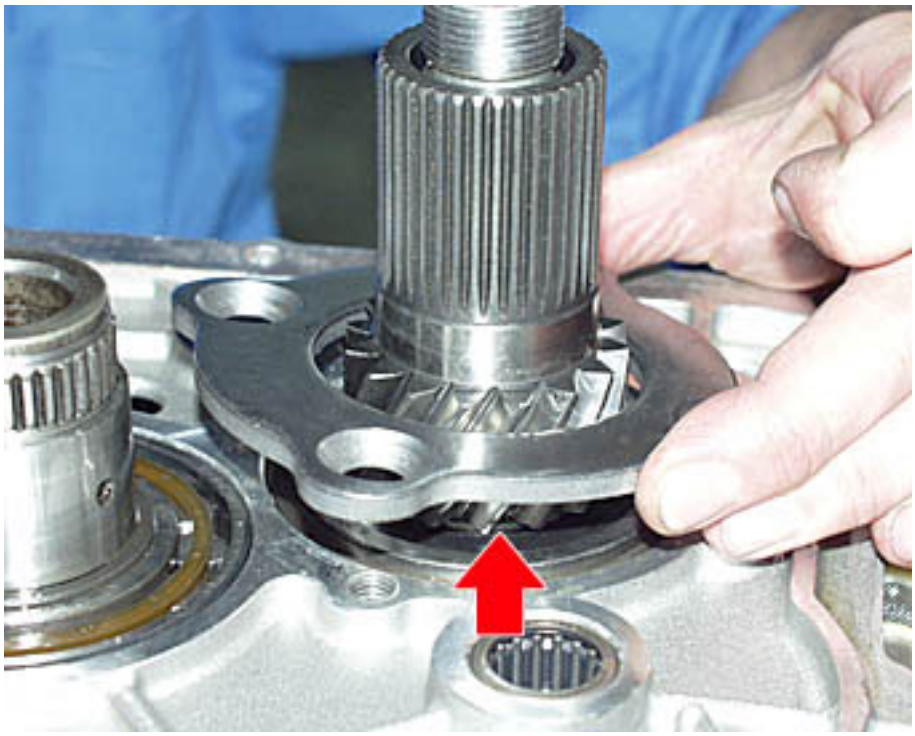

- Slide the **Reverse** gearing roller cage off the lay shaft.



- Unscrew the four fastening screws on the bearing retaining plate.



- Slide the bearing retaining plate off the lay shaft.



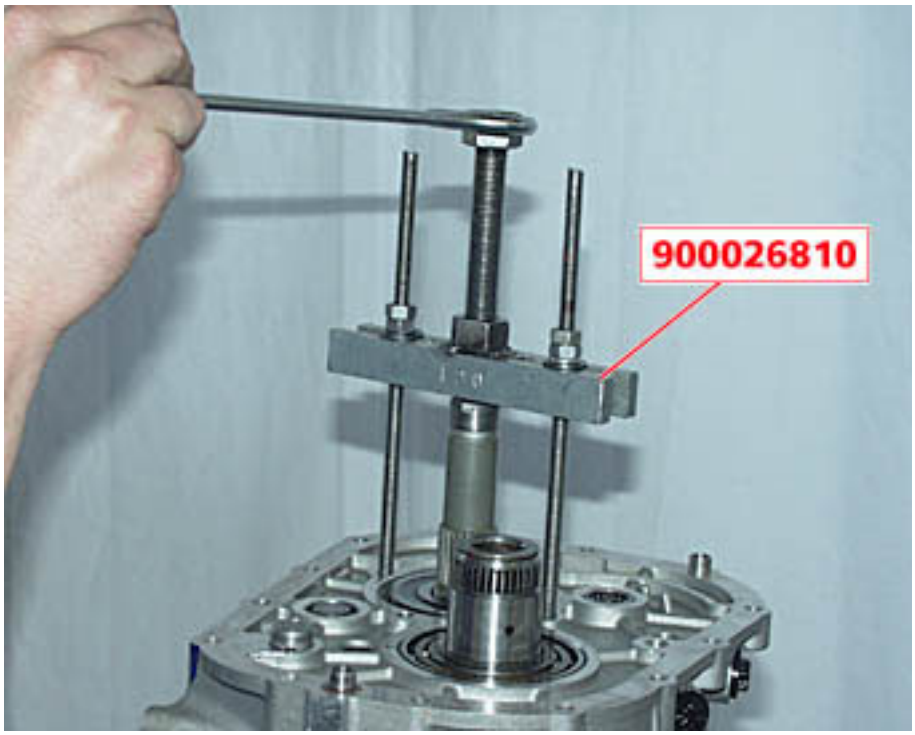
- Slide the driving **Reverse** gearing and respective O-ring off the lay shaft.



- Unscrew the thirteen screws securing the gearbox housing to the differential housing.



- Insert a centering bushing of suitable dimensions on the main shaft, screw the extractor **900026810** tie-rods into the two holes for the screws removed previously and remove the gearbox housing.



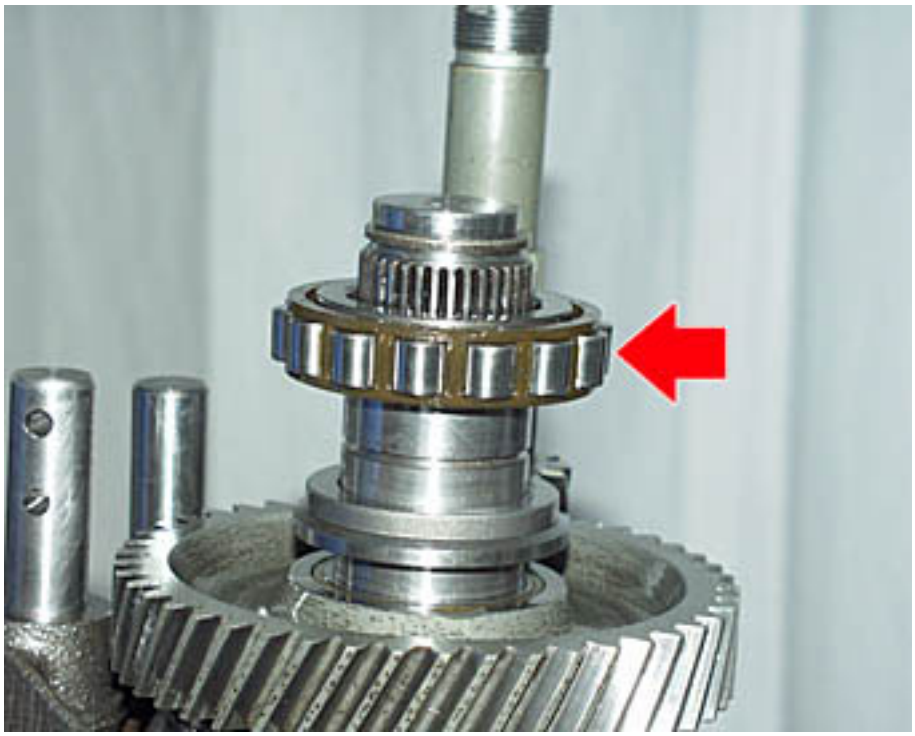

- Slide the Seeger ring off the lay shaft.



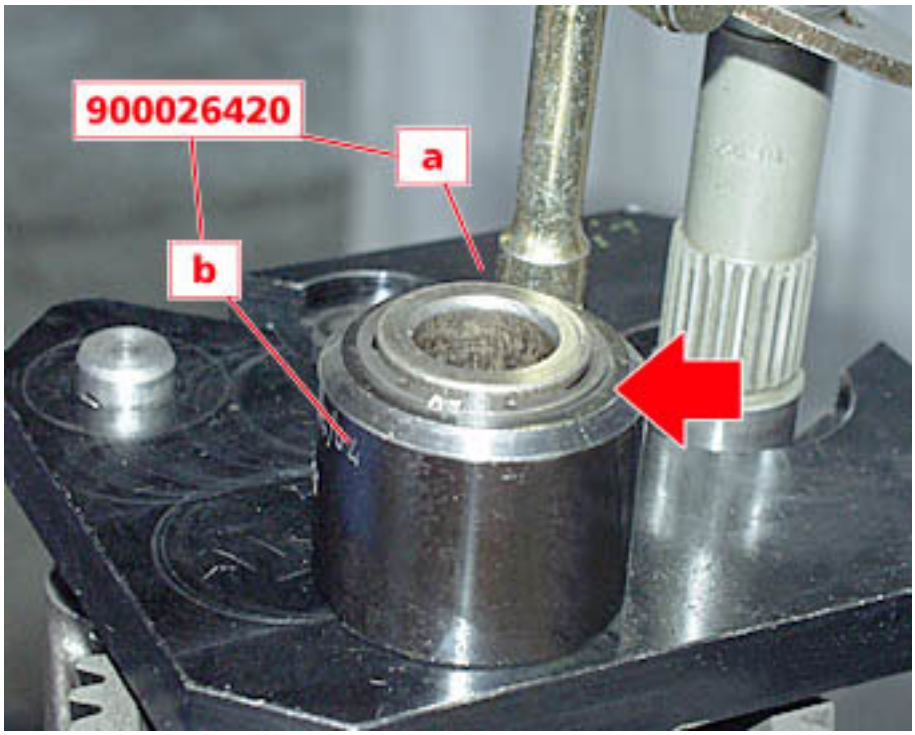
- Fit the centering bushing **900026780** onto the lay shaft. Position the **USAG 454N/2** extractor arms under the **1st** speed gearing and lift it just enough to release the components placed on the lay shaft between the track with the bearing rollers and the **1st** speed gearing.



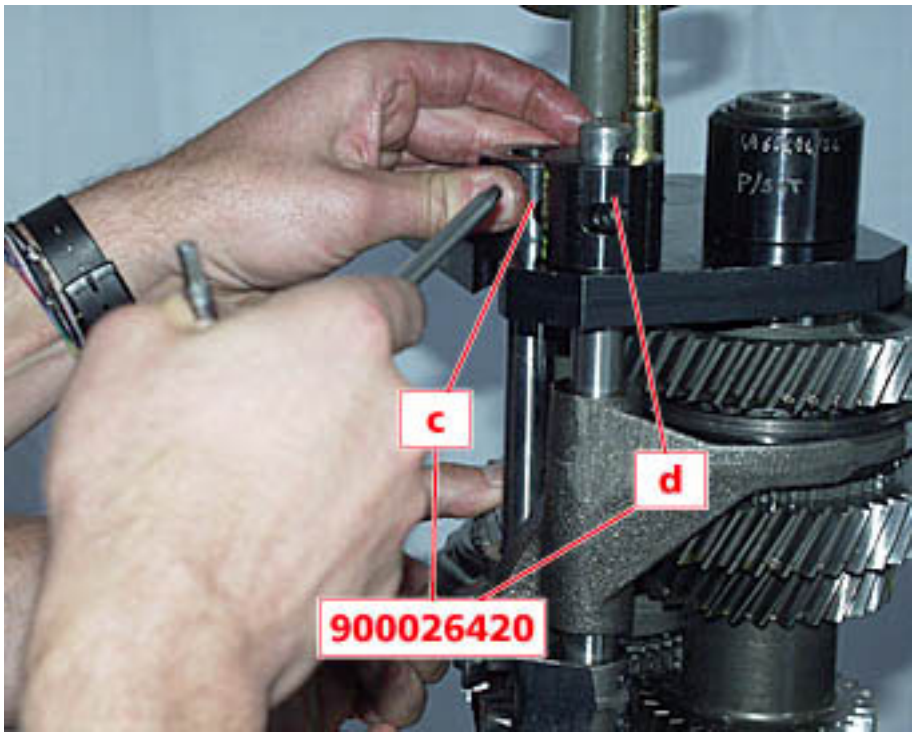

- Leave the complete **1st** speed gearing assembled on the shaft and remove the track with the bearing rollers, the spacer and the shouldering fifth wheel.



- Position the tool **900026420** plate **(a)** on the shafts. Insert the tool **900026420** bush **(b)** on the lay shaft and lock it with the Seeger ring.




- Insert the specific bushings **(c** and **d)** for tool **900026420** on the fork support rods and lock them with their respective socket head screws.



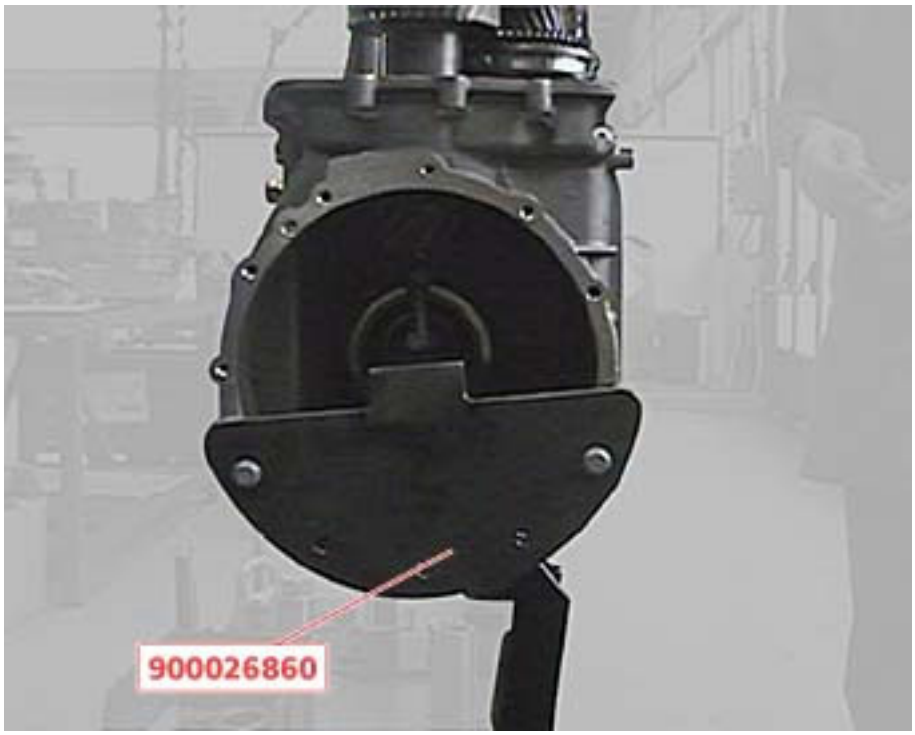
- Position the spacer **(f)** on the main shaft and lock the ring nut **(e)** using the specific wrench **(g)** on tool **900026420.**




- Screw a hook on the tool **900026420** and hook it onto a hoist.



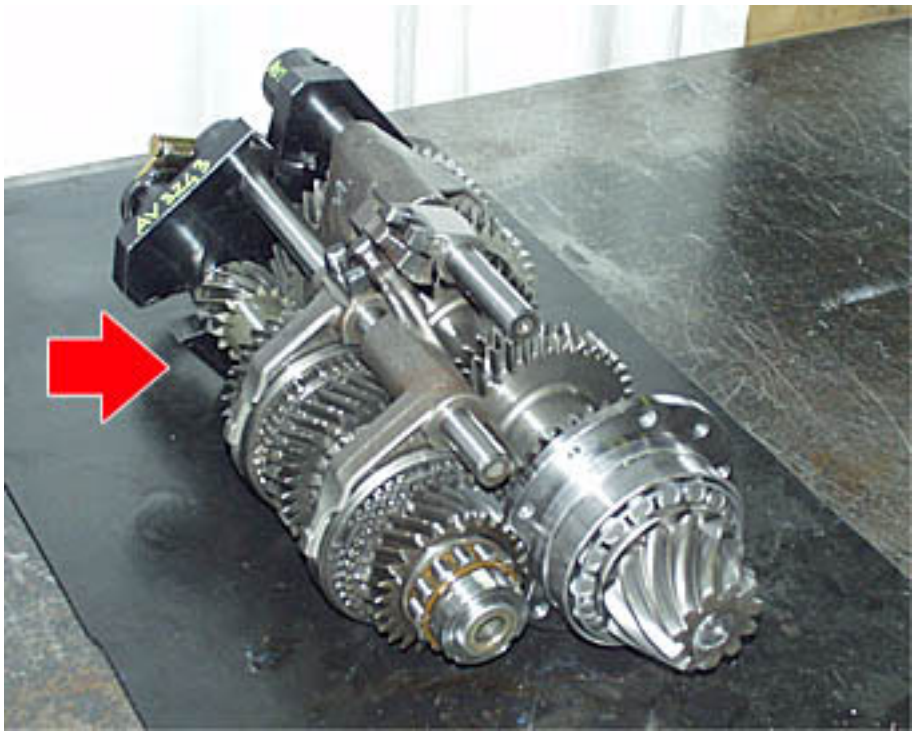
- Position the tool **900026860** under the pinion to release the support bearing coupling and to facilitate removal.




- Lift the complete assembly of shafts up from the differential housing.



- Remove the complete tool **900026420** from the shaft-rod unit with forks, following the assembly procedures in reverse order.

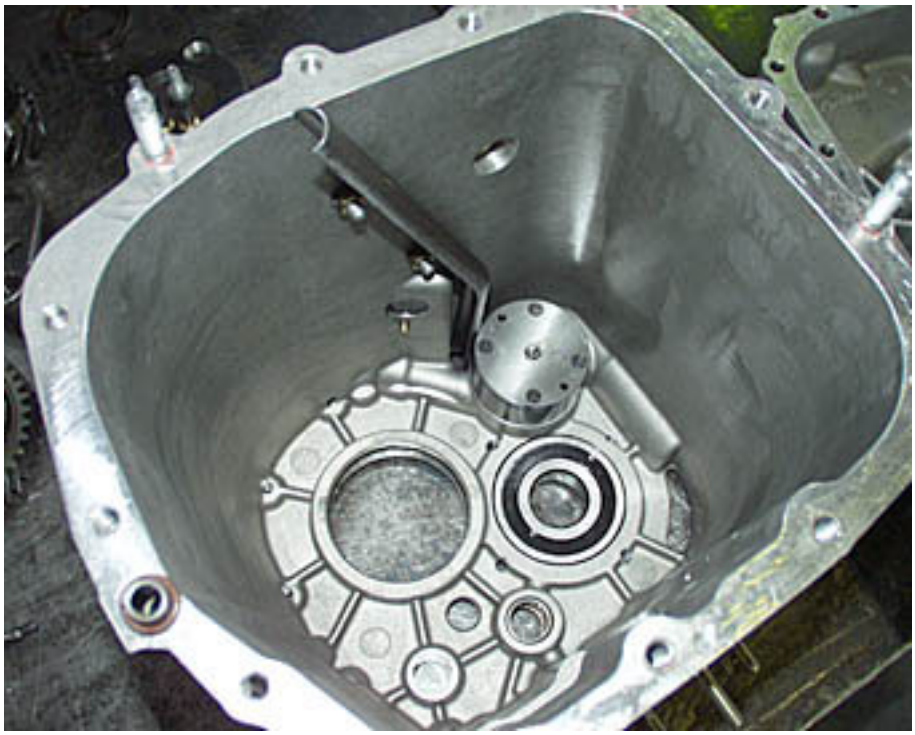


- Detach the **5th - 6th** speed fork from the lay shaft and the **1st - 2nd** and **3rd - 4th** gear forks from the main shaft.



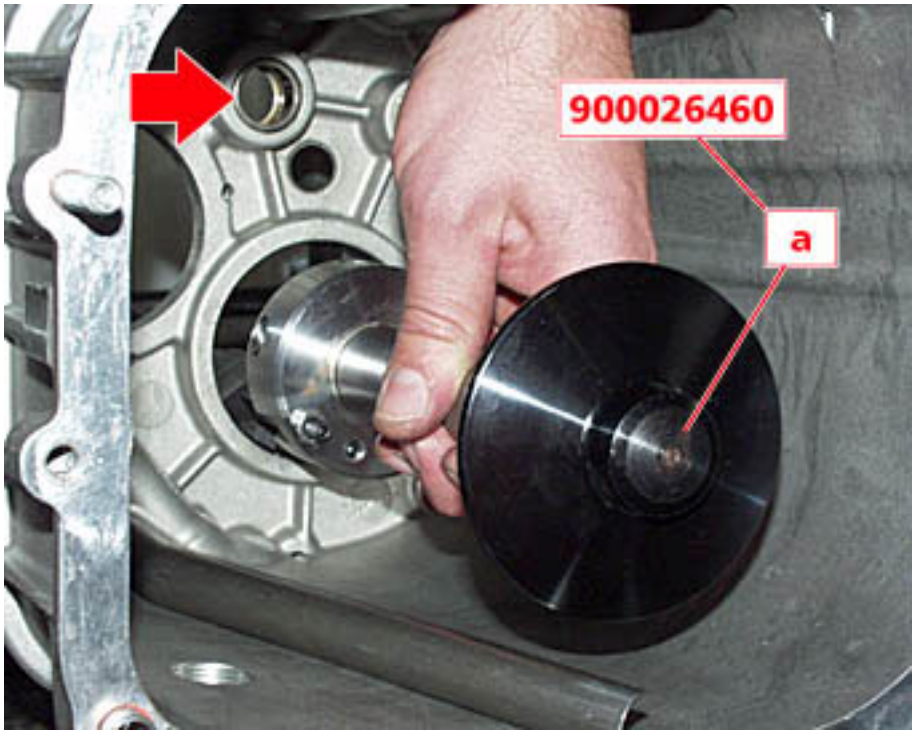
## Disassembly of the gearbox housing components

- Remove the gearbox housing together with the oil pump, main shaft ball bearing, the external seat for the tapered roller bearing, the ball bushing for the control rod and the lubrication channel.



- Working from inside the gearbox housing, extract the external track for the roller bearing using the punch/extractor **(a)** on the tool **900026460** and then remove the ball bushing using the **USAG 468S11** bushing extractor

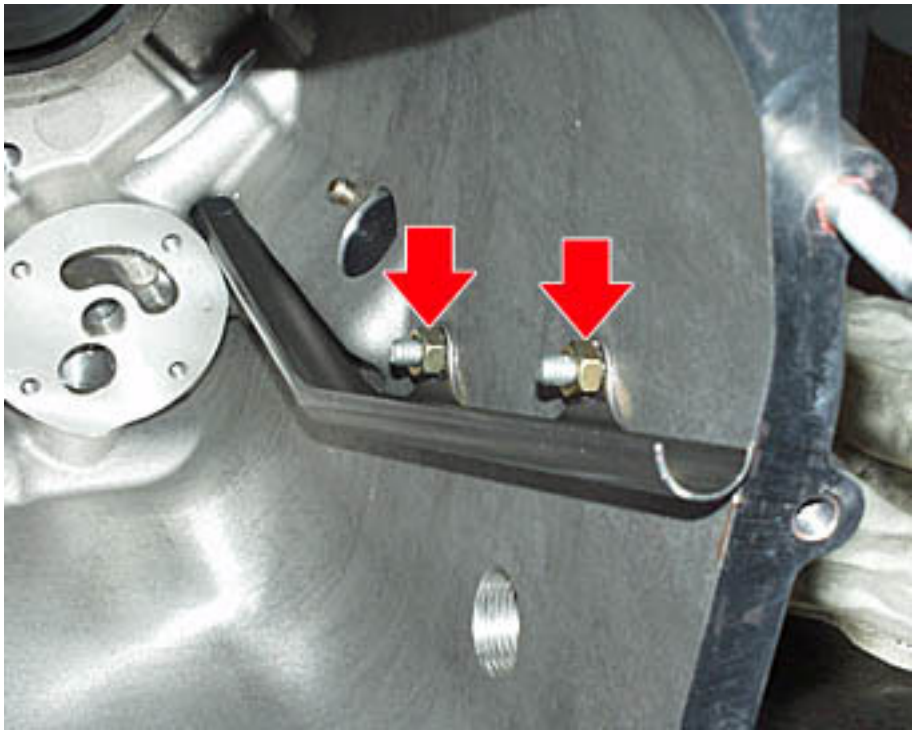
**IMPORTANT**
**Do not refit any ball bushings that have been removed.**



- Working from inside the gearbox housing, extract the ball bearing using the punch **900026470**. The bearing is equipped with a stop ring used to obtain a correct positioning.




- Remove the two fastening screw nuts from the channel and remove the latter.

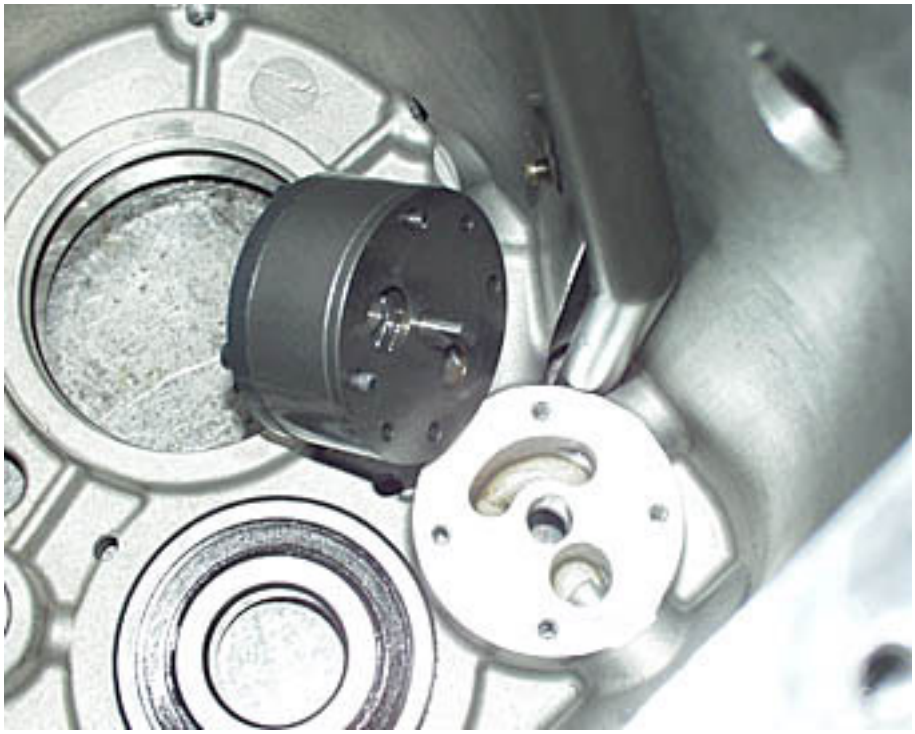


- Remove the ball bushing in the gearbox housing - front cover side - using the **USAG 468S11** bushing extractor or a flat screwdriver.

**IMPORTANT**
**Do not refit any ball bushings that have been removed.**



- Unscrew the four fastening screws with the rubber washer and remove the gearbox oil pump.



## Main shaft disassembly

- Lock the base **(a)** of the tool **900026440** in a vice and insert the main shaft from the front cover side.




- Remove the ring nut and the check nut - differential housing side - from the main shaft using a specific wrench **900026880**.

**IMPORTANT**
**All ring nuts that are removed must be replaced.**



- Insert a centering bushing of suitable dimensions on the main shaft and, using a **USAG 452N/2** extractor with arms, lift the **3rd - 4th** speed synchronizer sliding coupling up by a few millimeters.




- Push the **4th** speed gearing downwards and remove the roller bearing, positioning the **USAG 452N/2** extractor arms under the internal ring of the bearing.



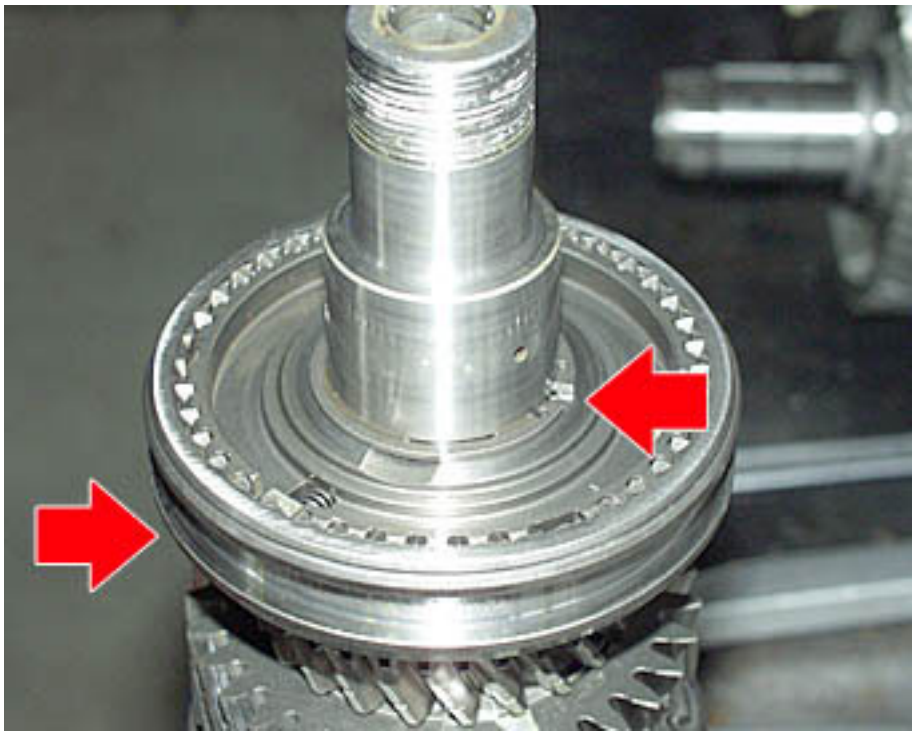
- Slide the support washer and the **4th** speed gearing off the main shaft.



- Slide the roller cage for the **4th** speed gearing off the main shaft.



- Remove the Seeger ring and slide off the sliding coupling, the balls, the dowels and the **3rd - 4th** speed synchronizer springs.



- Position the spacer **900026490** on the main shaft and position the tool **95973272**.



- Fasten the **95973272** extractor arms in the dowel seats of the **3rd - 4th** speed synchronizer hub and extract it.



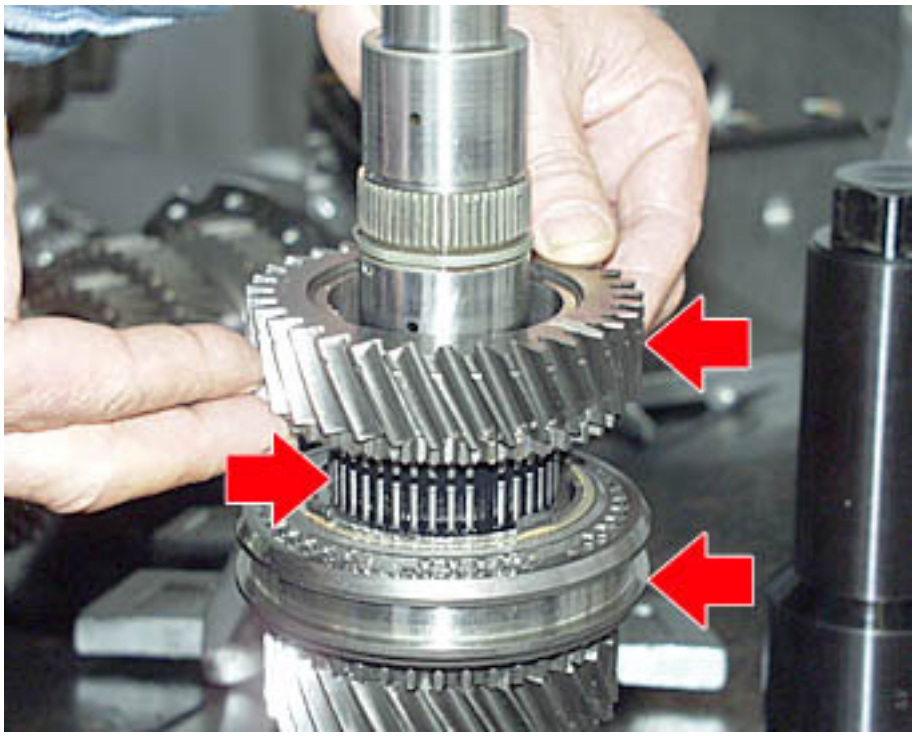

- Slide the **3rd - 4th** speed synchronizer rings, the **3rd** speed gearing and the roller cage off the main shaft.



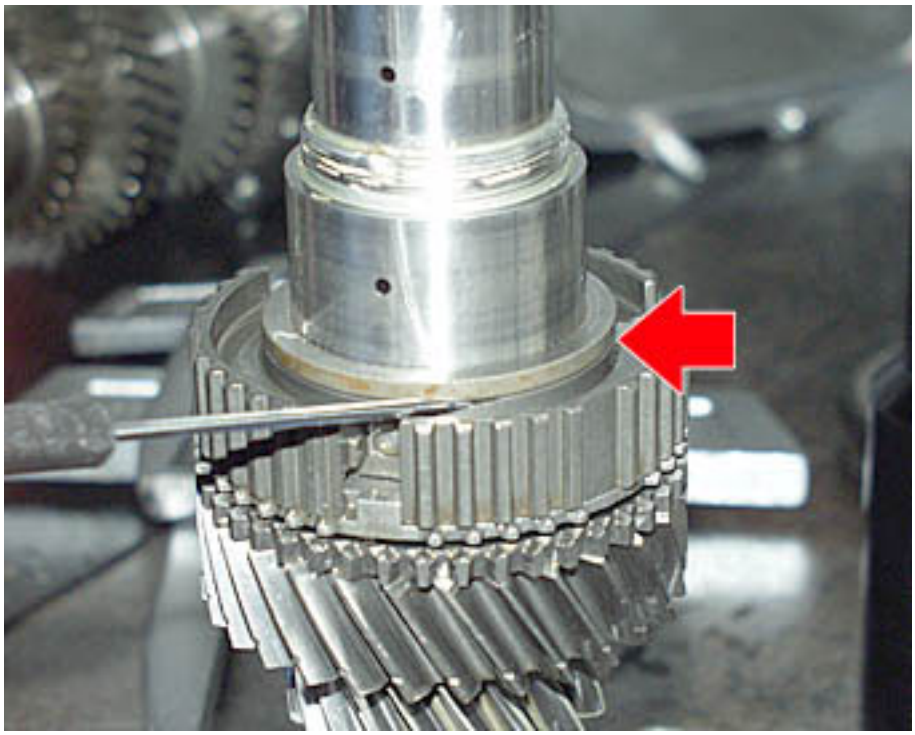
- Rivet the chamferings in the shouldering ring nut and unscrew it off the main shaft using the **95973246** wrench.



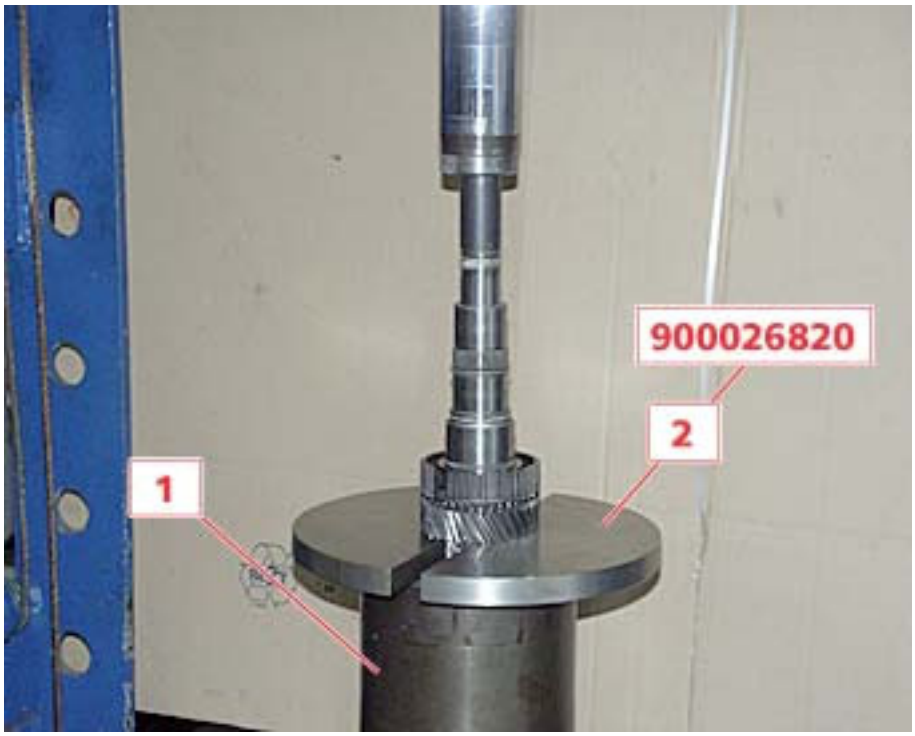

- Slide the **6th** speed gearing, the roller cage, the sliding coupling, the balls, the dowels and the **5th - 6th** speed synchronizer springs off the main shaft.



- Working from the recess found in the **5th - 6th** speed synchronizer hub, use a flat screwdriver to slide off the spacer and remove the underlying Seeger ring.



- Insert the main shaft on a support cylinder **(1)**, resting the **5th** speed gearing on the support flange **900026820**. Press the shaft to release and extract the **5th - 6th** speed and **5th** speed gearing synchronizer hub and rings.



## Lay shaft disassembly

**N.B.**
**The double 5th - 6th and 3rd - 4th speed gearings are interference-fit on the lay shaft. The two tapered roller bearings are positioned between the pinion and gearings with a retainer ring nut and a spacer which determines the pre-loading of the bearings. The removal of these components from the shaft is a delicate procedure which should only be performed if the crown wheel and pinion or the above-mentioned parts are being replaced.**

- Fit the lay shaft, pinion side, in the base **(a)** of the tool **900026450**.



- Insert the centering bushing **900026780** on the lay shaft and using the **USAG 454N/2** extractor with arms, slide off the spacer, the shouldering fifth wheel and the **1st** speed gearing.



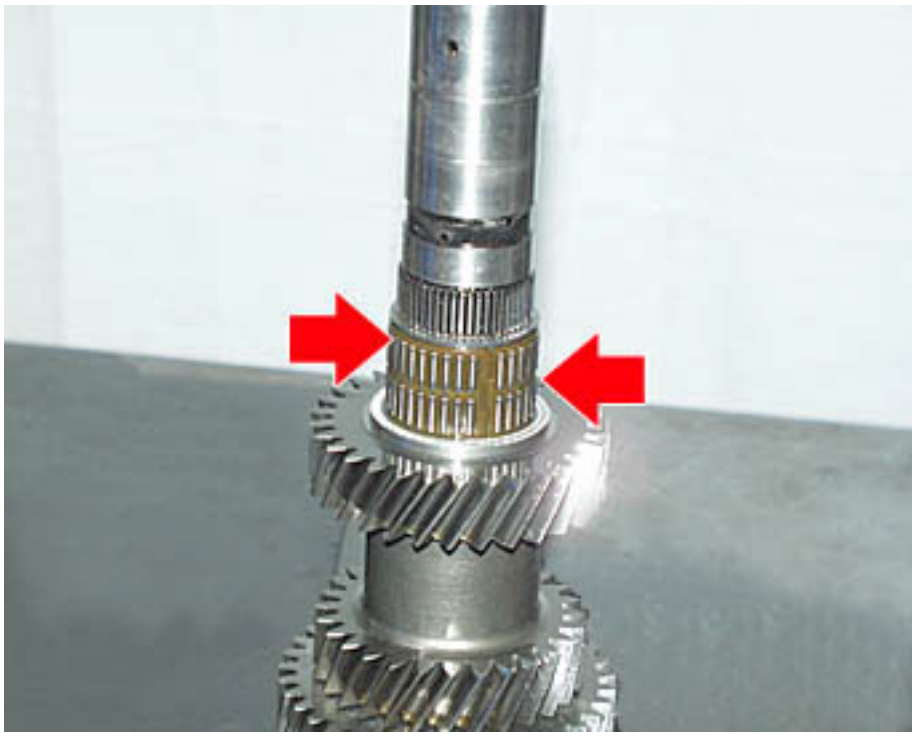

- Remove the roller cage for the **1st** speed gearing from the lay shaft.



- Use the **USAG 454N/3** extractor with its arm ends resting on the **2nd** speed gearing, after having inserted the centering bushing **900026780**. Slide the internal bushing, the complete **1st - 2nd** speed synchronizer and the **2nd** speed gearing off the lay shaft.




- Remove the Seeger ring, the roller cage for the **2nd** speed gearing from the lay shaft.



- Install the lay shaft on a support cylinder **(1)**, resting the **5th** speed gearing on the support flange **900026820**. Press the shaft to release and extract the shouldering fifth wheel and the double **5th - 6th** speed gearing.




- With the support flange resting on the **3rd** speed gearing, press the shaft to release and extract the double **3rd - 4th** speed gearing.



- Block the tool **95973257** support plate in a vice and insert the lay shaft, matching the raised flange sections with the ring nut notches. To keep the shaft in this position, use the supplied screw and lock it on the bearing holder case.




- Apply the tool **95973247** on the end of the lay shaft to release the ring nut retaining the bearings. Undo the screw supplied with the toolkit **95973257** and remove the ring nut from the lay shaft.

**IMPORTANT**
**All ring nuts that are removed must be replaced.**



- Suitably support the bearing holder case with a support cylinder and, using the press, slide the case, the front tapered roller bearing and the external track for the rear tapered roller bearing off the lay shaft.



- Using the **FACOM U.53J2** bearing extractor, press the lay shaft and slide off the internal track for the front tapered roller bearing and the middle spacer.
  Take out the second taper roller bearing using tool **900026800** and arm extracting tool USAG 454N/3.



- Remove the external track for the front tapered roller bearing from the bearing holder case, while adequately holding the case with a support cylinder **900026450**; press with bushing **900026450**.

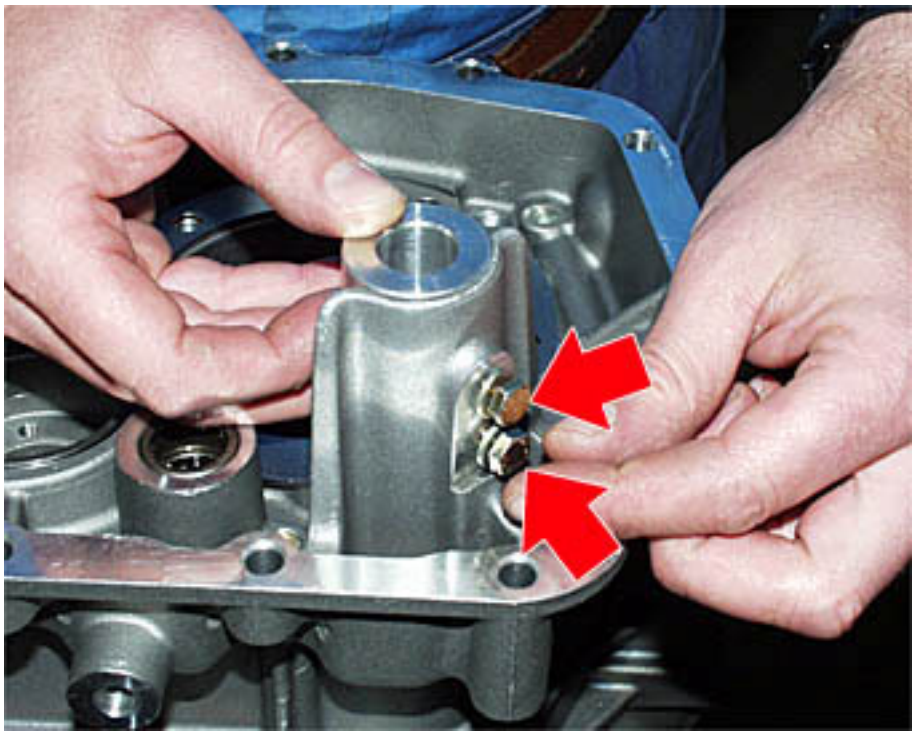



## Disassembly of the differential housing components

- Remember to keep the spacer for the bearing holder case from the differential housing.



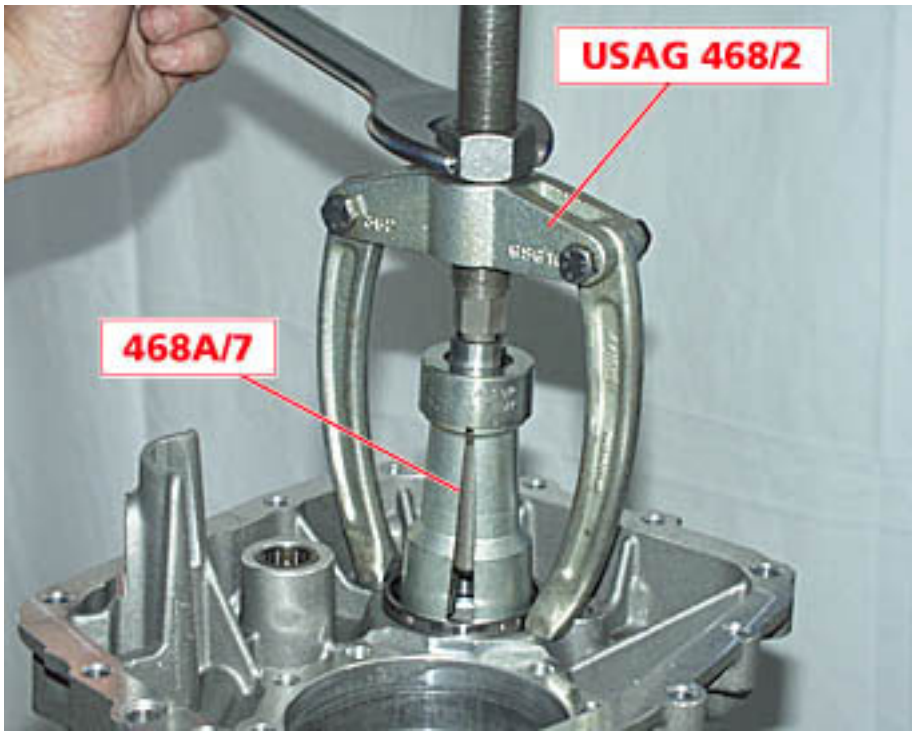
- Undo the two fastening screws on the **1st - 2nd** and **Reverse** gear speed control rod bushing and remove the latter from the differential housing .



- Unscrew the socket head screw and remove the rubber washer and the retaining bushing from the differential housing.

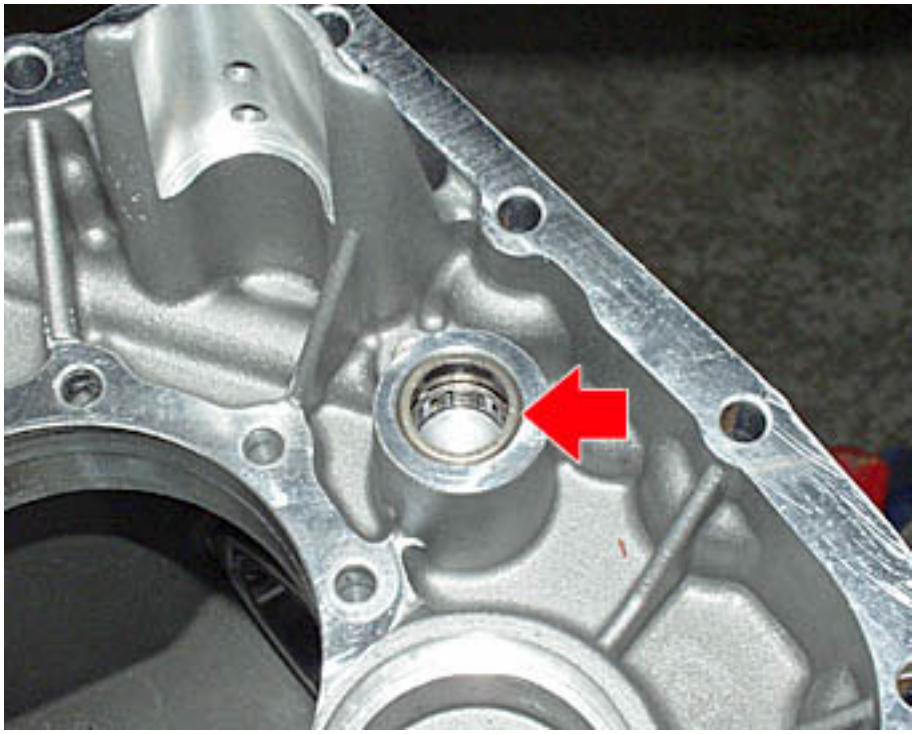


- Extract the external track for the tapered roller bearing with **USAg 468/2** extractor and accessory **468A/7** from the differential housing.




- Remove the ball bushing from the differential housing using the **USAG 468S11** bushing extractor or a flat screwdriver.

**IMPORTANT**
**Do not refit any ball bushings that have been removed.**



- Remove the adjustment ring and the external track for the tapered roller bearing from the differential compartment, using the expanding hub **(a)** on tool **9000264600**.



## REFITTING THE DIFFERENTIAL -GEARBOX -

**N.B.**

1. **In order to perform a visual inspection of the components, all metal parts should be washed thoroughly with a solvent, possibly a biodegradable one, and then blown with compressed air.**
   **Be especially careful with the internal lubrication lines on the gearbox shafts, the housings and the cover, as they must be perfectly clean.**
2. **Ensure that the housings and cover are free of cracks and that the bearing housings are intact, showing no scoring or grooves. If such defects are found, replace immediately.**
3. **Ensure that the surfaces and the profile of the gearing teeth show no traces of wear or spalling. The contact zone should extend over the entire length of the tooth and and it must be smooth and uniform. Replace all gearings showing these defects.**
4. **Prior to reassembly of the double gearings, the coupling surfaces must be visually inspected: there should not be any scoring or deformation.**
5. **Ensure that the gearings have maintained the prescribed minimum interference with the lay shaft. If not, replace the components immediately.**
6. **Check the sides of the sliding couplings and the contact surfaces on the gear-shifting forks for wear. It is extremely important that the contact surfaces on the fork and the coupling remain perpendicular with respect to the support rods.**
7. **Ensure that the shimming surfaces on the idle gearings, the spacers and the shouldering rings are free of burrs or ripples. In such cases, replace them.**
8. **Ensure that the claw clutches on the couplings and the idle gearings are free of burrs, spalling or excessive wear that could impair the clutch.**
9. **Ensure that the threadings and grooves on the shafts, synchronizer hubs and the Reverse driving gear are intact.**
10. **In addition to the closing plugs for the machined holes on the gearbox housing and differential, tapered-thread plugs are also fitted to close the lubrication lines. In case of removal, apply LOCTITE 510 on the threading.**
11. **The oil breather is driven into the gearbox housing until flush. Ensure that it is not blocked by any foreign matter.**

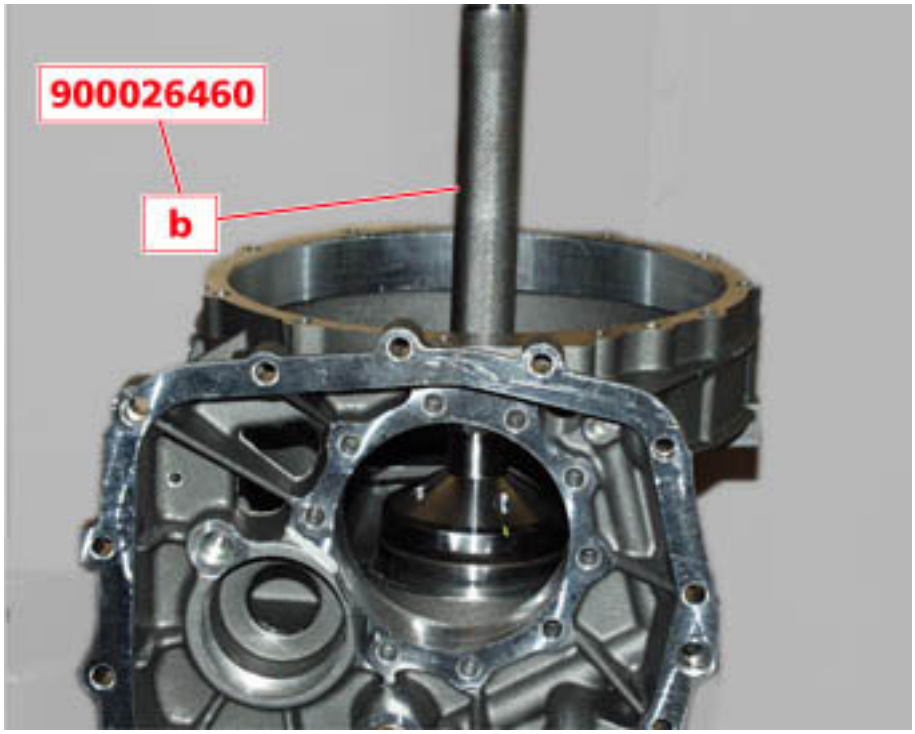
**IMPORTANT**
**Proper positioning and end float of the gearings on the main and lay shafts is determined by the shouldering rings. The thickness of the latter must be checked each time a component in the set is replaced. It is possible to keep the same shoulderings only in the case that the new component presents a deviation equal to or lower than *0.02 mm* with respect to the thickness of the replaced component.**

## Differential housing reassembly

- Insert the differential with the beveled edge facing the differential housing seat and position the external track of the tapered roller bearing.



- Bring the external track of the tapered roller bearing flush with the differential housing using the tool **900026460** punch **(b)** and press.



- Bring the external track of the tapered roller bearing in the differential housing flush using the punch **95973259**.



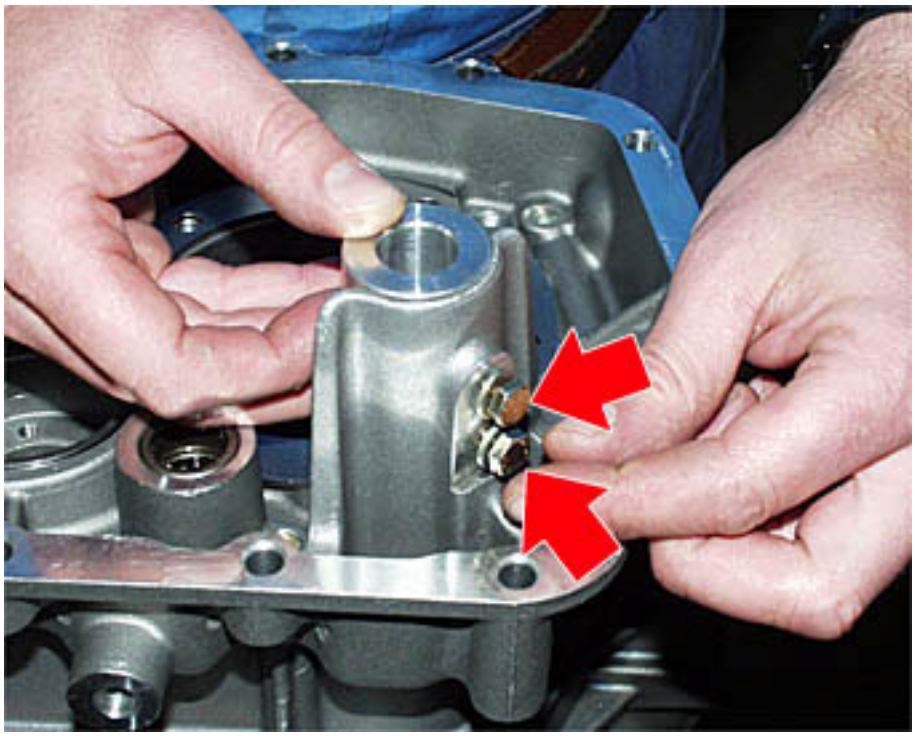

- Lock the external track for the roller bearing with the retaining bushing, washer and the fastening screw by applying **LOCTITE 242** and tightening it to a  torque of **1.4 Nm**.



- Insert the new ball bushing on the differential housing using the punch **95973267**.




- Lock the control rod bushing on the differential housing with two washers and fastening screws.



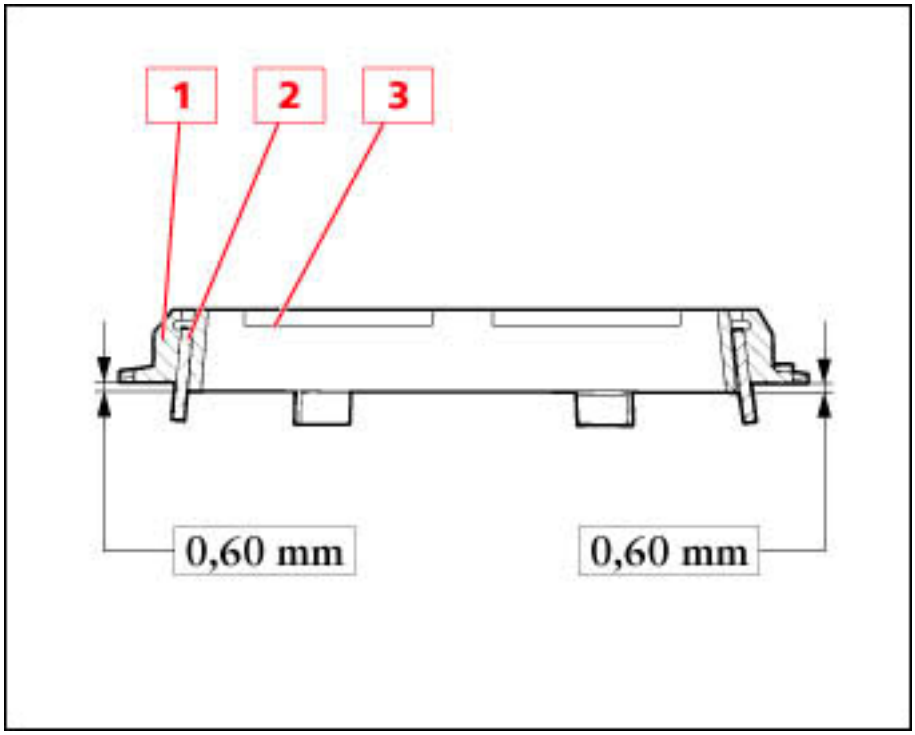
## Main shaft reassembly

**IMPORTANT**
**Clean and degrease the main shaft surface and the interior gearing surfaces.**

## Checking the 3rd - 4th and 5th - 6th speed synchronizer for wear.

- Form a set by centering the middle synchronizer ring with gasket **(1)** in the external ring **(2)** and inserting the internal ring **(3)** in the middle ring - the couplings must be parallel and uniform.
  Rest the set thus formed with the divergent part of the internal ring on a suitable checking plane. Then while maintaining light pressure on the external ring, measure the distance at diametrically opposite points.
  If it is less than the prescribed distance, replace the synchronizer.

**IMPORTANT**
**Visually inspect the male cone which should not show lapping, excessive ripples or overheated zones.**

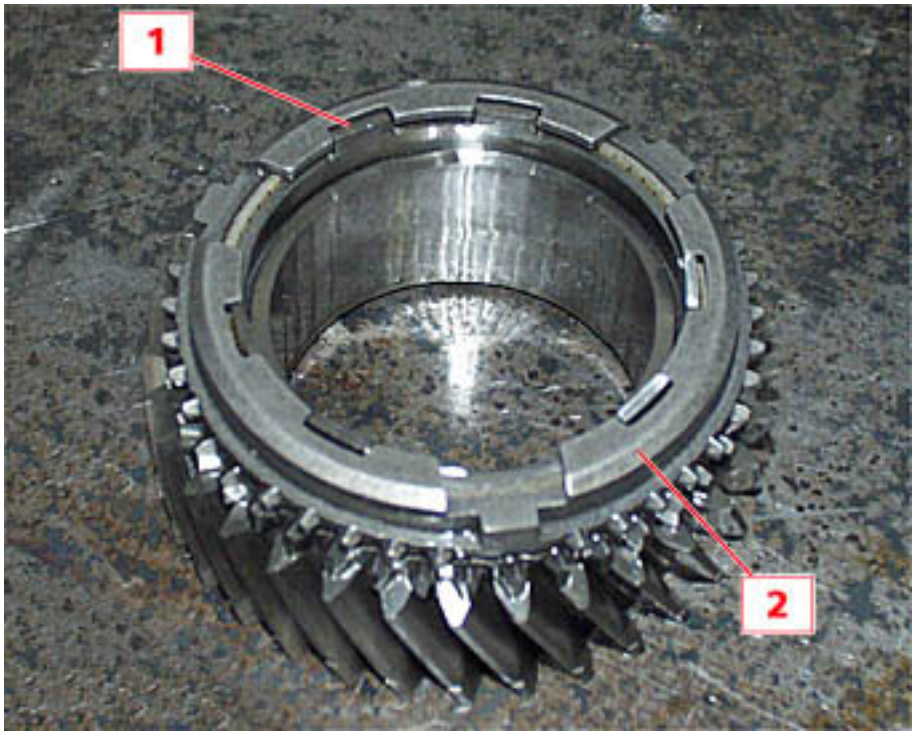



3
2
1

## 5th - 6th speed synchronizer reassembly

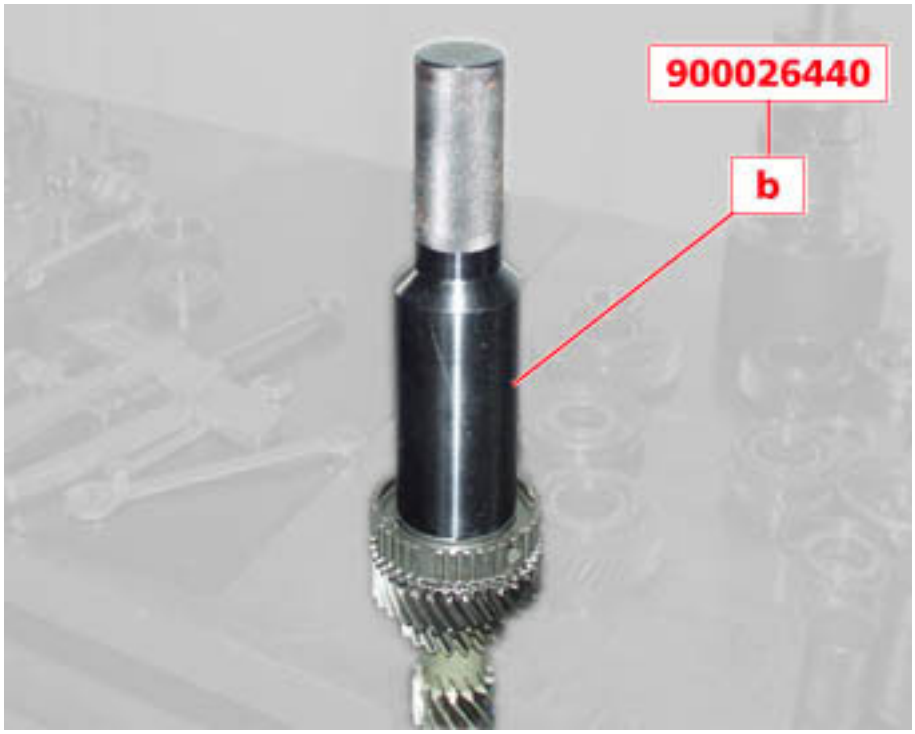
**N.B.**
**Prior to reassembly, lubricate all synchronizer components with gearbox oil and particularly the rings with gaskets.**

- Fit the **5th - 6th** speed synchronizer rings on the coupling element for the **5th** speed gearing, being careful as to the positioning of the driving teeth on the internal ring **(1)** with respect to the external ring **(2)**.



- Insert the main shaft, differential housing side, on the base **(a)** of the tool **900026440**.
  Using the punch **(b)** on the tool **900026440** , bring the set formed and the **5th - 6th** speed synchronizer hub flush with the main shaft.

**N.B.**
**The 5th - 6th speed synchronizer hub can be fitted in both directions without distinction.**



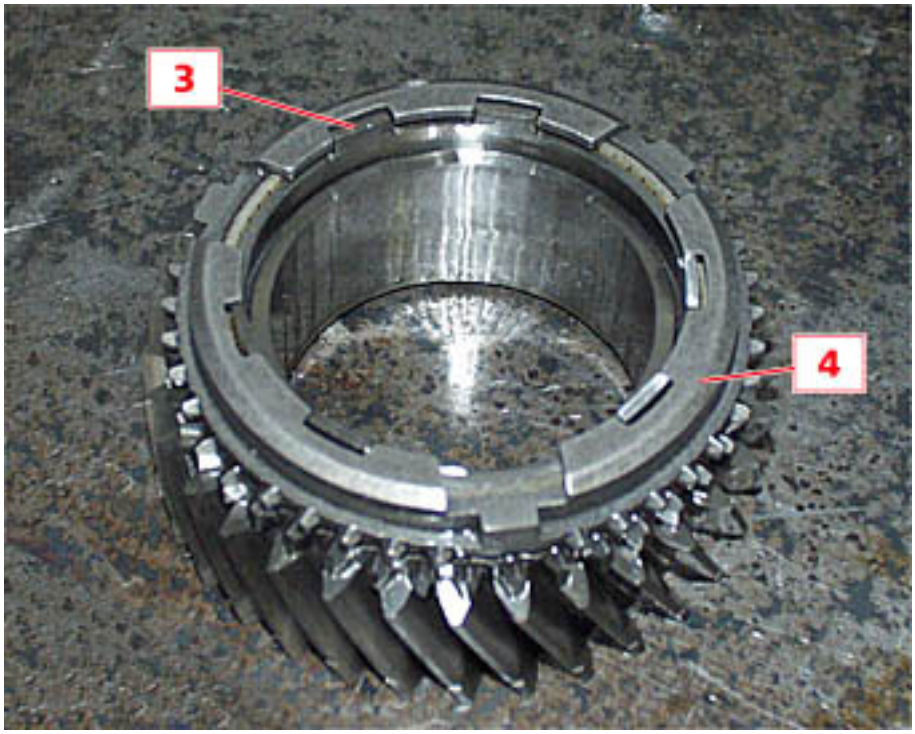

- Insert the sliding coupling on the **5th - 6th** speed synchronizer hub and fit the Seeger ring on the main shaft.



- Insert the **6th** speed gearing spacer with the grooved side resting on the **5th - 6th** speed synchronizer hub retaining Seeger ring, using the tubular punch **(b)** on the tool **900026440.**
  Push the sliding coupling towards the **5th** speed gearing. Put the springs inside the dowels and using a screwdriver, push them into the seats, inserting the balls as well.



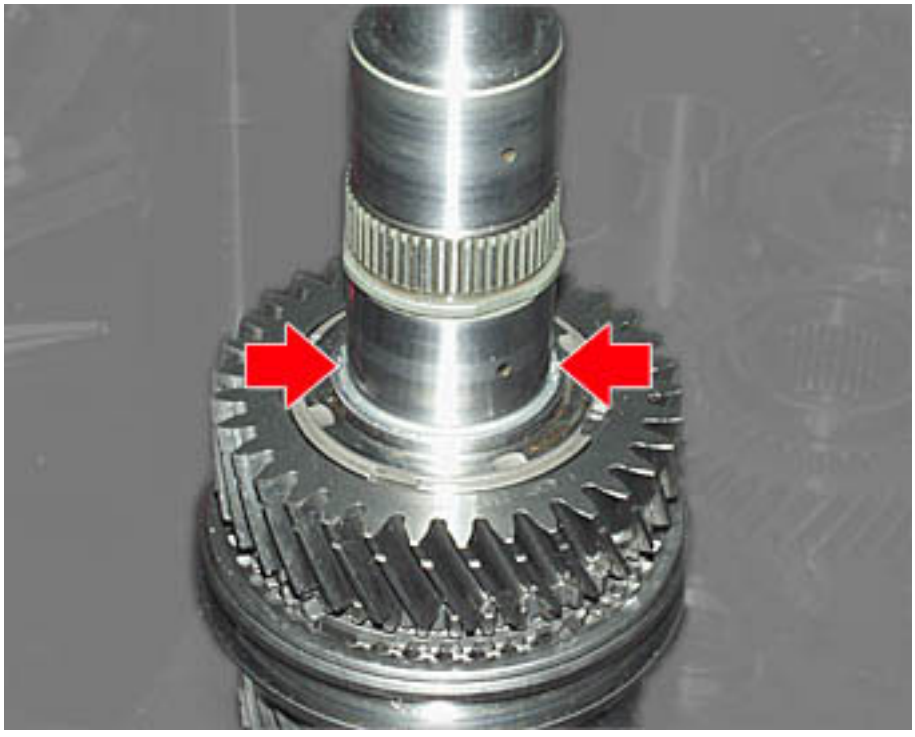

- Fit the **5th - 6th** speed synchronizer rings on the coupling element for the **6th** speed gearing, being careful as to the positioning of the driving teeth on the internal ring **(3)** with respect to the external ring **(4)**.
  Insert the set formed onto the main shaft after having first inserted the roller cage.



- Apply LOCTITE 242 on the shouldering ring nut threading and using the wrench **95973246**, tighten to the torque of **70 Nm**.



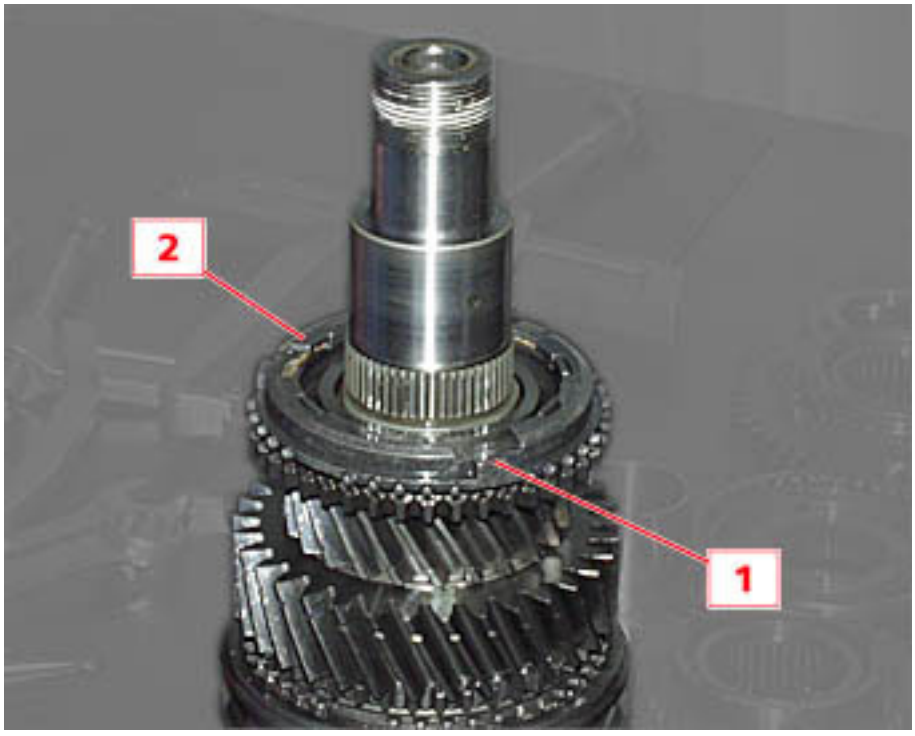

- Bend the shouldering ring nut on the two points (see arrows), corresponding to the main shaft notches.



## 3rd - 4th speed synchronizer reassembly

**N.B.**
**Prior to reassembly, lubricate all synchronizer components with gearbox oil and particularly the rings with gaskets.**

- Fit the **3rd - 4th** speed synchronizer rings on the **3rd** speed gearing coupling element, carefully checking the positioning of the driving teeth **(1)** on the internal ring with respect to the external ring **(2)**. Then fit the set formed on the main shaft after having first inserted the roller cage.



- Lock the set formed and the **3rd - 4th** speed synchronizer hub onto the tool **95976121** with a screw and a washer of suitable dimensions.
  Insert the sliding coupling onto the synchronizer hub.

**N.B.**
**The 3rd - 4th speed synchronizer hub can be fitted in both directions without distinction.**



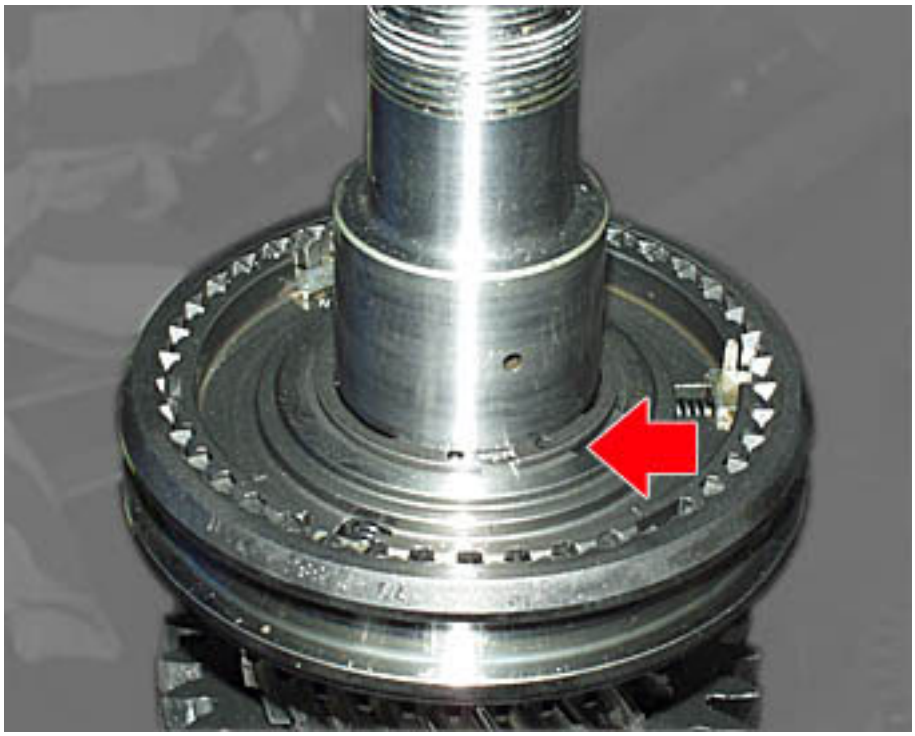

- Using a screwdriver, put the spring inside the dowel and push it into the seat, inserting the ball as well.



- Insert the set formed onto the main shaft using the tubular punch **(c)** on tool **900026440** and a hammer.




- Fit the Seeger ring on the main shaft.



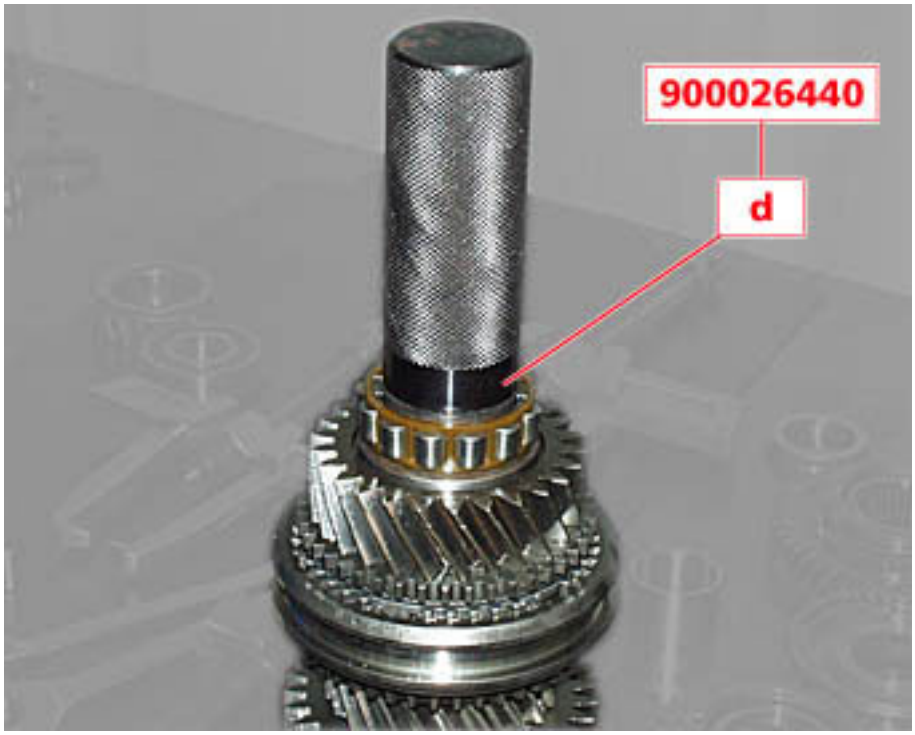
- Fit the **3rd - 4th** speed synchronizer rings onto the **4th** speed gearing coupling element, carefully checking the positioning of the driving teeth on the internal ring with respect to the external ring. Then put the set formed on the main shaft after having first inserted the roller cage.



- Insert the support washer on the main shaft with the slotted side facing the gearing.



- Bring the internal track for the roller bearing flush with the support washer, using the punch **(d)** on the tool **900026440** and a hammer.



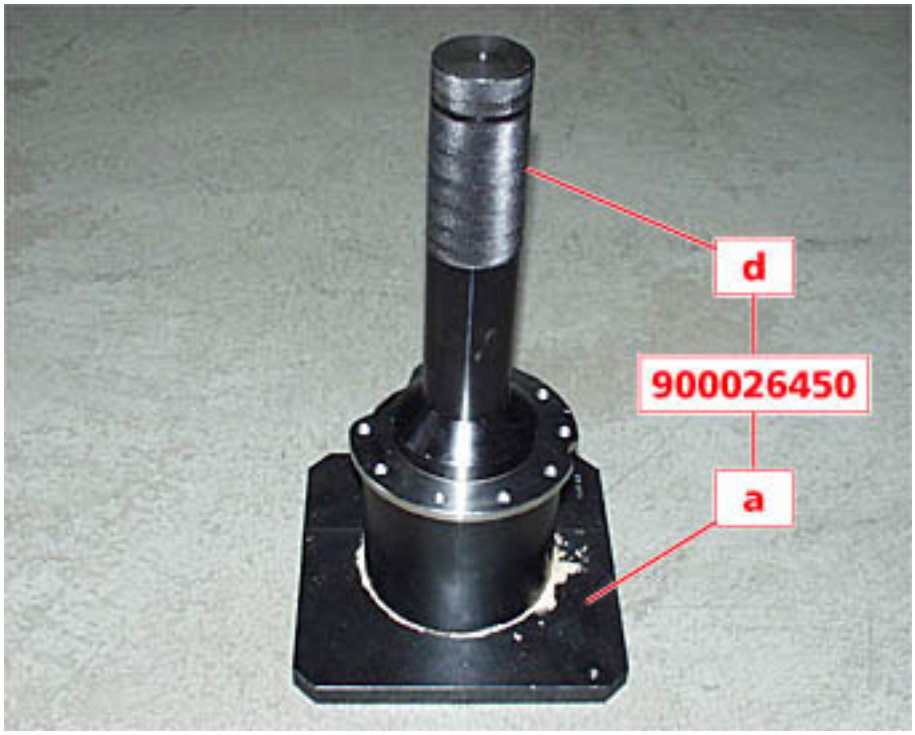

- Apply LOCTITE 242 on the ring nut and check nut threading and use the wrench **900026880** to tighten the two ring nuts in sequence to a torque of **100 Nm**.



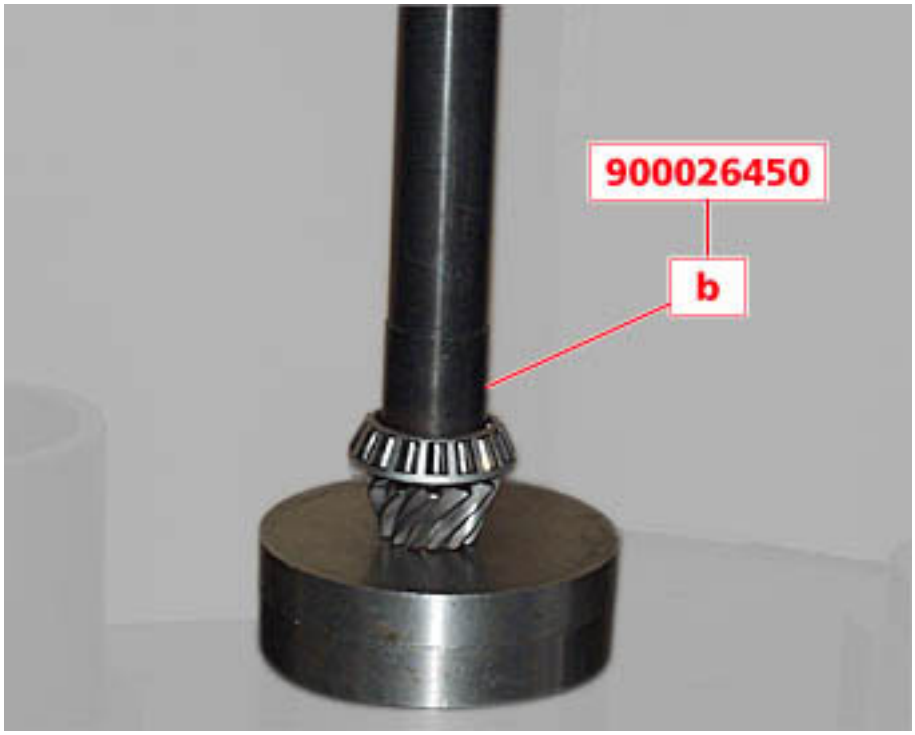
## Lay shaft reassembly

**IMPORTANT**
**All ring nuts that are removed must be replaced.**
**Clean and degrease the main shaft surface and the interior gearing surfaces.**

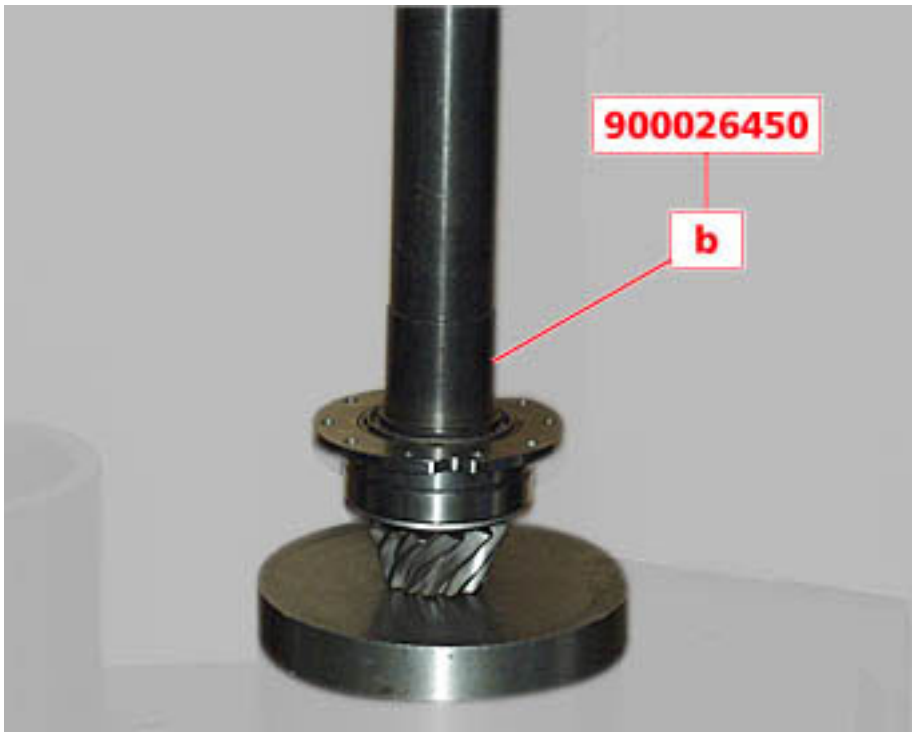
- Using the press, drive in the external track of the front tapered roller bearing flush with the bearing holder case using the base **(a)** and the punch **(d)** on the tool **900026450**.



- With the press, drive in the internal track for the rear tapered roller bearing using the tubular punch **(b)** on the tool **900026450**.




- Position the outer track for the rear tapered roller bearing, the spacer, the internal track for the front tapered roller bearing and the bearing holder case. Then using the press and the tubular punch **(b)** on the tool **900026450**, bring it flush.



- Loosely fit the ring nut, pinion side, onto the lay shaft.



- Block the tool **95973257** support plate in a vice and insert the lay shaft, matching the raised flange sections with the ring nut notches. To keep the shaft in this position, use the supplied screw and lock it on the bearing holder case.



- Fit the tool **95973247** on the end of the lay shaft and tighten the bearing retainer ring nut to the torque of **300 Nm** with the **FACOM R.250A** torque wrench. Undo the screw supplied with the toolkit **95973257** and remove the lay shaft from the latter.




- Put the two double gearings and the shouldering ring in an oven for at least **2 hours** at a temperature of **140°C**.
  Position the pinion under the press and use the tubular punch **(b)** on the tool **900026450** to drive in the first double gearing.
  Leave it under load (**10000 Kg**) for at least **15 minutes** and allow the shaft to cool.



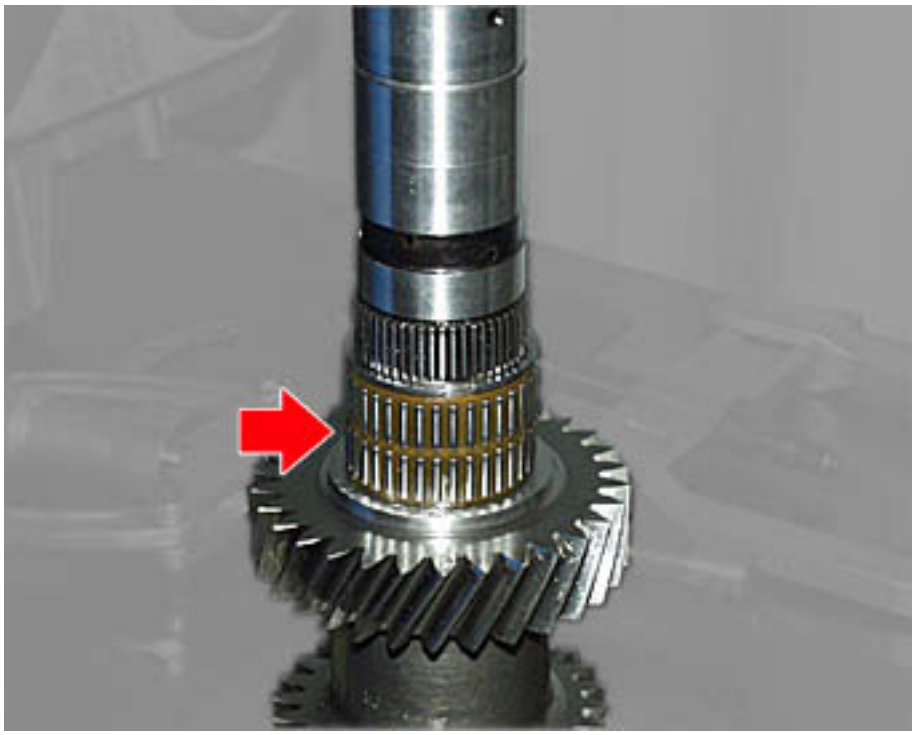
- Remove the second double gearing from the oven and follow the same procedure described above to drive it onto the lay shaft, using the tubular punch **(c)** on the tool **900026450.**




- Remove the shouldering ring from the oven, set it on the side with the notches facing the double gearing and following the same procedure described above, drive it onto the lay shaft, using the tubular punch **(c)** on the tool **900026450.**



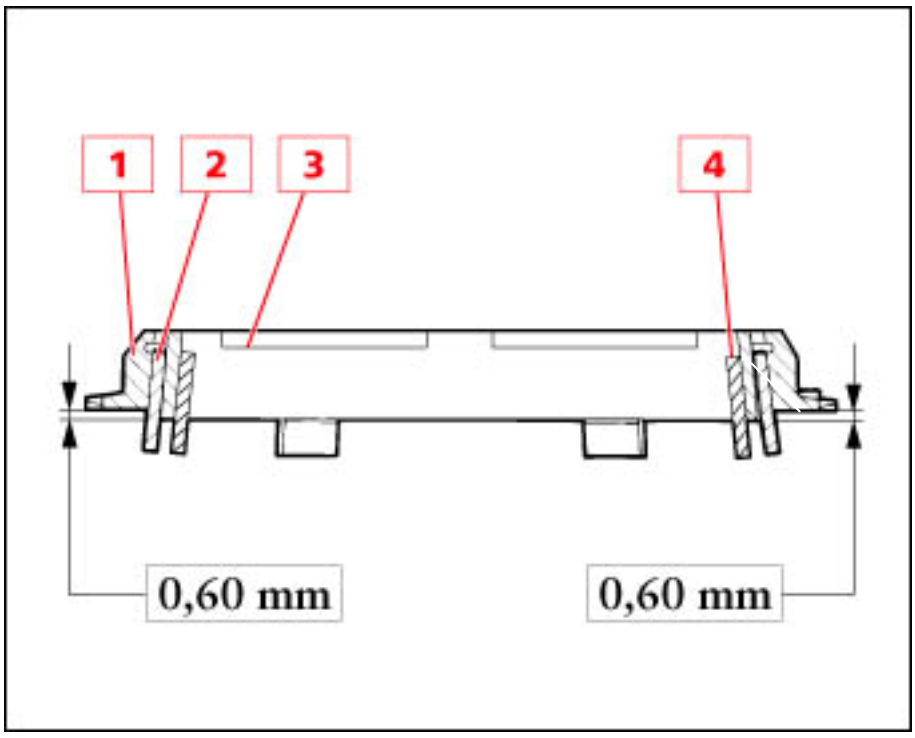
- Insert the roller cage for the **2nd** speed gearing on the lay shaft and lock it into place with the Seeger ring.

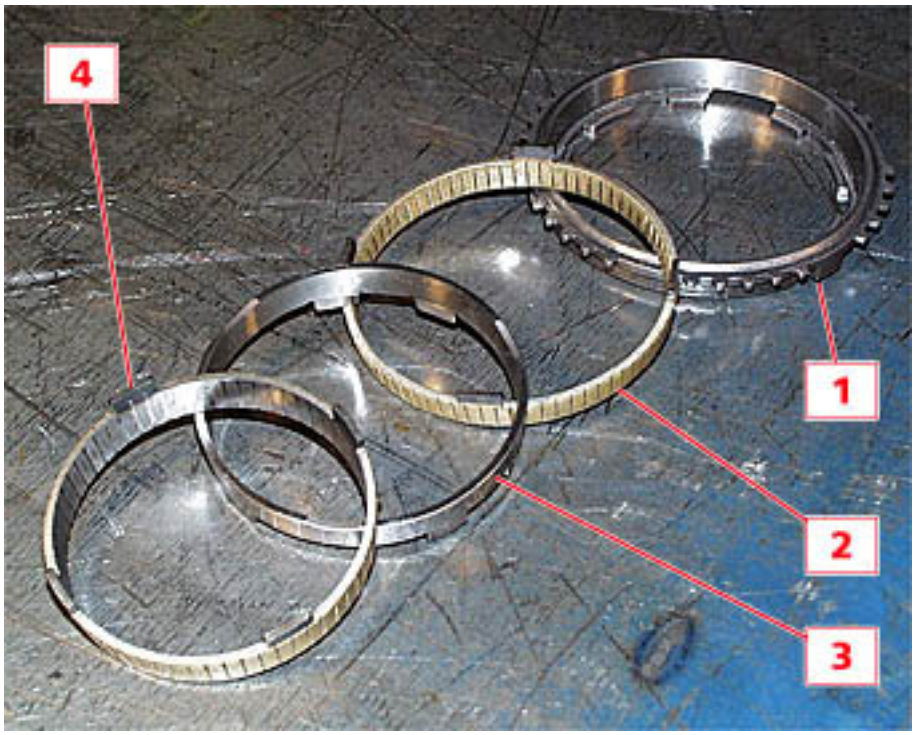


## Checking the 1st - 2nd speed synchronizer for wear

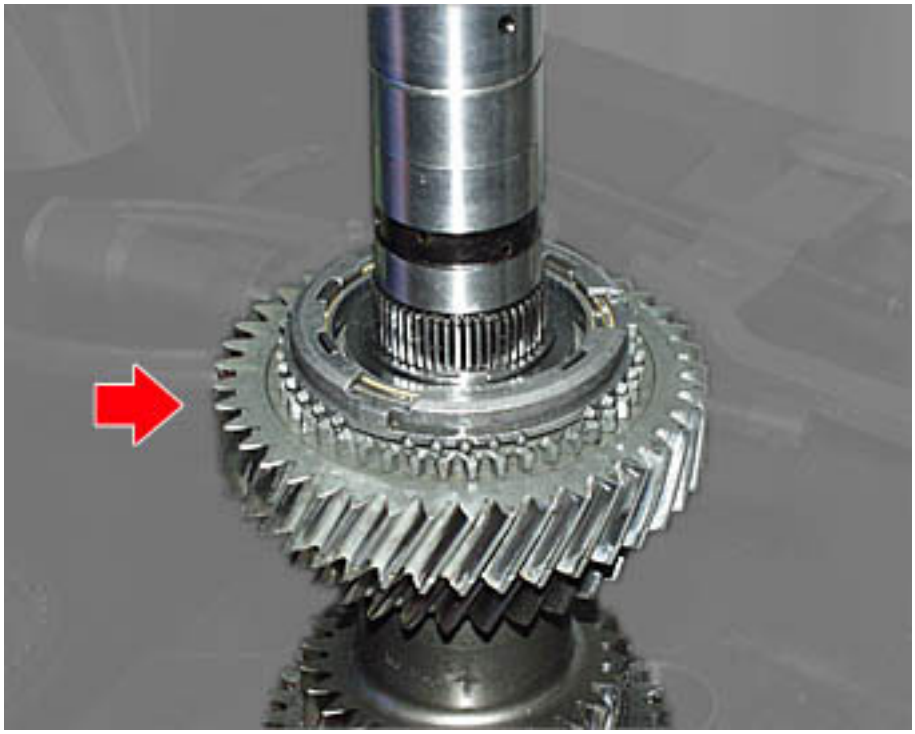
- Form a set by centering the first middle synchronizer ring with gasket **(1)** in the external ring **(2)**, inserting the internal ring **(3)** in the middle ring and adding the second ring with gasket **(4)** to the set, ensuring that the couplings are parallel and uniform.
  Rest the set thus formed with the divergent part of the internal ring on a suitable checking plane. Then while maintaining light pressure on the external ring, measure the distance at diametrically opposite points.

**IMPORTANT**
**Visually inspect the male cone which should not show lapping, excessive ripples or overheated zones.**






- Position the **1st - 2nd** speed synchronizer rings on the **2nd** speed gearing coupling element and fit the set formed on the lay shaft.



- Insert the complete **1st - 2nd** speed synchronizer on the lay shaft and bring it flush with the punch **95973262**.

**N.B.**
**After inserting the synchronizer, ensure that the 2nd speed gearing moves freely.**




- Insert the **1st** speed gearing bushing on the lay shaft with the punch **95973263**.



- Insert the roller cage for the **1st** speed gearing on the lay shaft.



- Position the **1st - 2nd** speed synchronizer rings on the **1st** speed gearing coupling element and fit the set formed on the lay shaft.



- Fit the shouldering fifth wheel on the lay shaft using punch **95973263**.



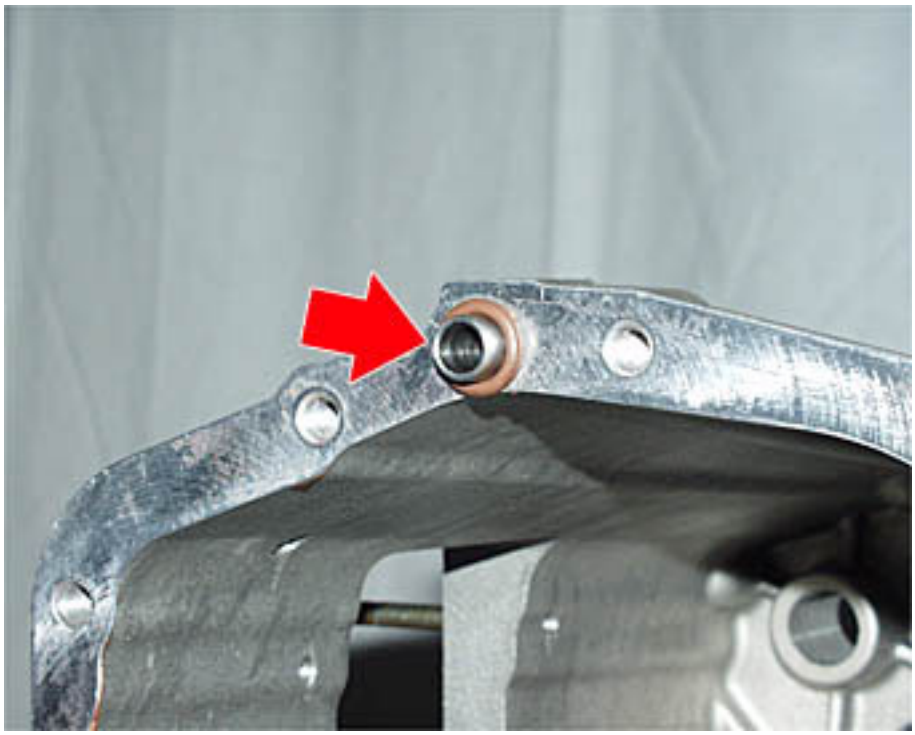

- Insert the **5-mm** spacer on the lay shaft.



## Reassembly of gearbox housing components

**IMPORTANT**
**In the event of retaining washer replacement, use 95973268 (∅ 14 mm), 900026830 (∅ 8mm) punches to fit them.**

- Fit the two centering dowels and the new O-rings on the gearbox housing.



- Insert the external track for the roller bearing on the gearbox housing, front cover side, using the tool **900026480**.



- Insert the roller box on the gearbox housing, front cover side, using the punch **(d)** on the tool **900026480**.



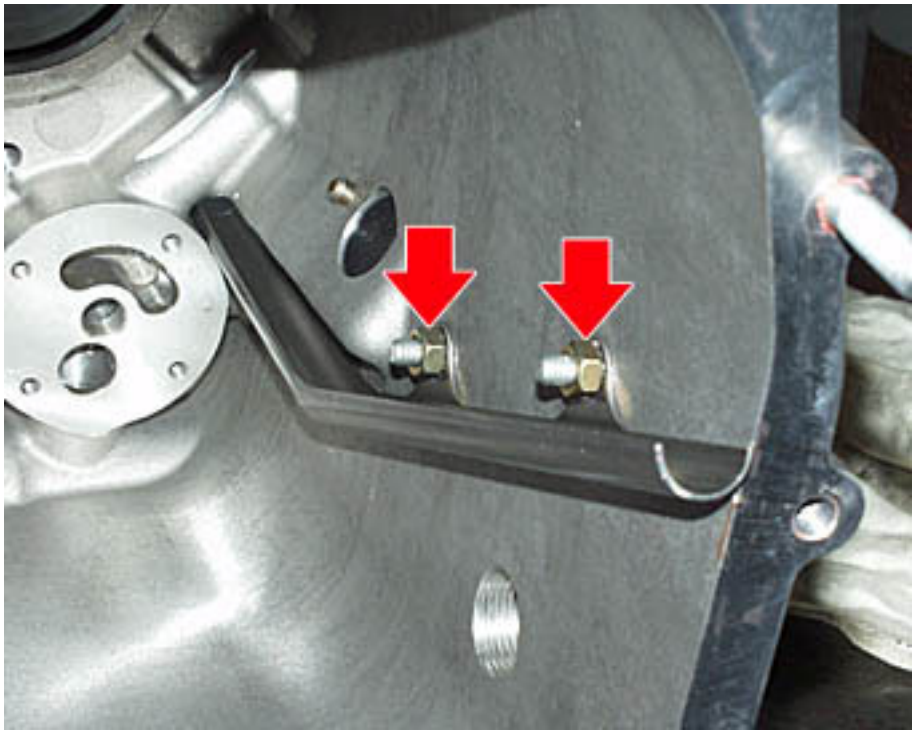

- Using the punch **(c)** on the tool **900026480**, insert the ball bushing on the gearbox housing, front cover side.



- Insert the ball bushing in the gearing compartment of the gearbox housing, using the punch **95973267**.




- Lock the raceway in the gearing compartment with two bolts and their respective washers and apply LOCTITE 270.

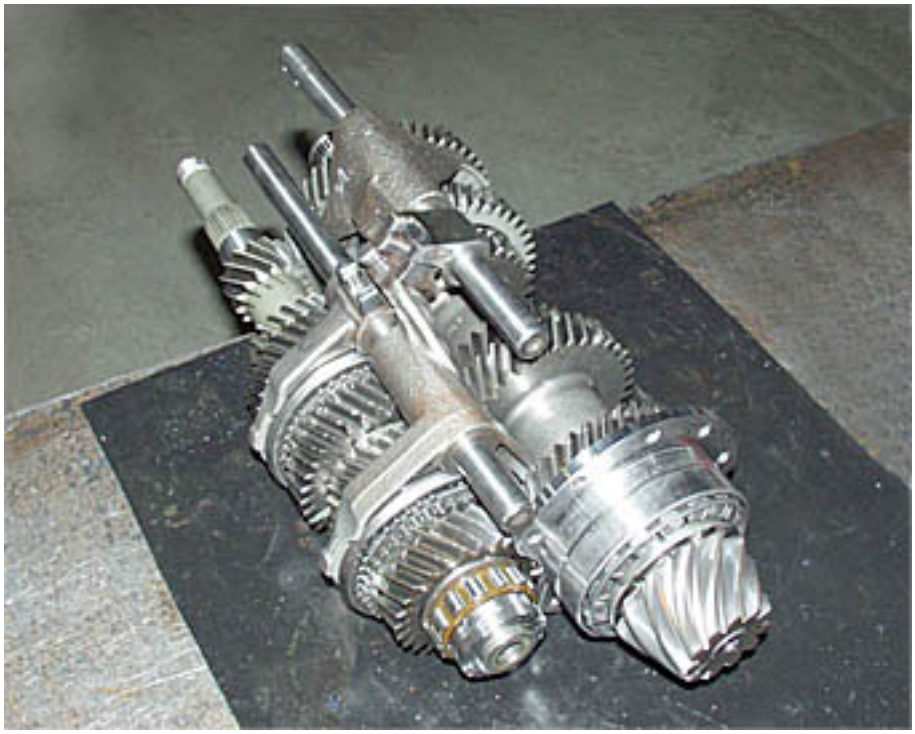


- Fasten the positive-displacement pump driven by the auxiliary gearing for reverse gear,on the gearbox housing, using four fastening screws and rubber washers.



## Reassembly of shaft-rod unit with forks

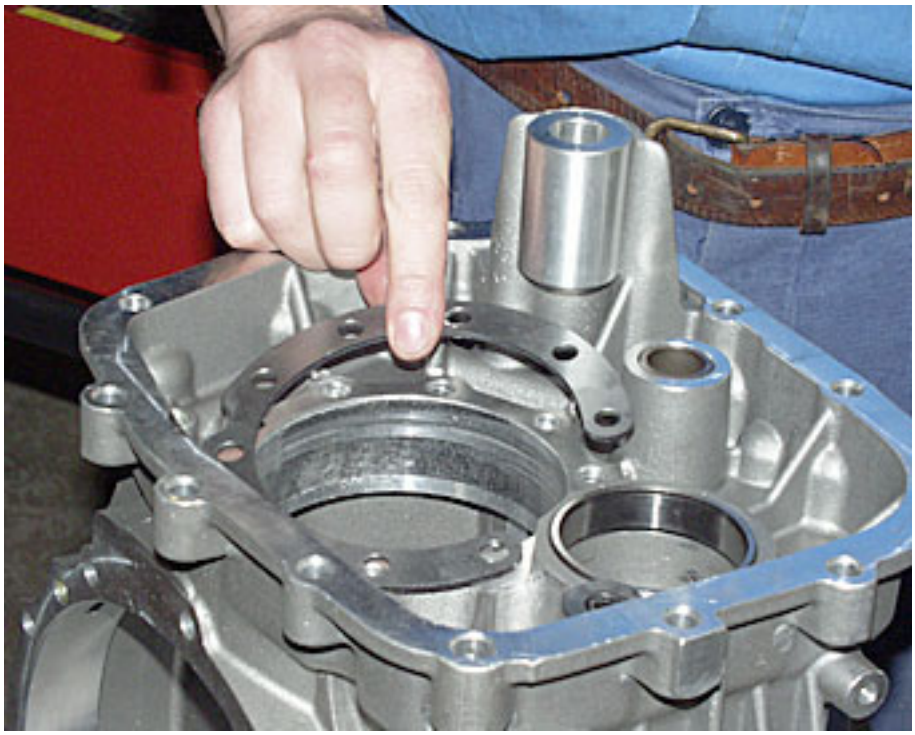
- Assemble the shafts and forks with the respective control rods.



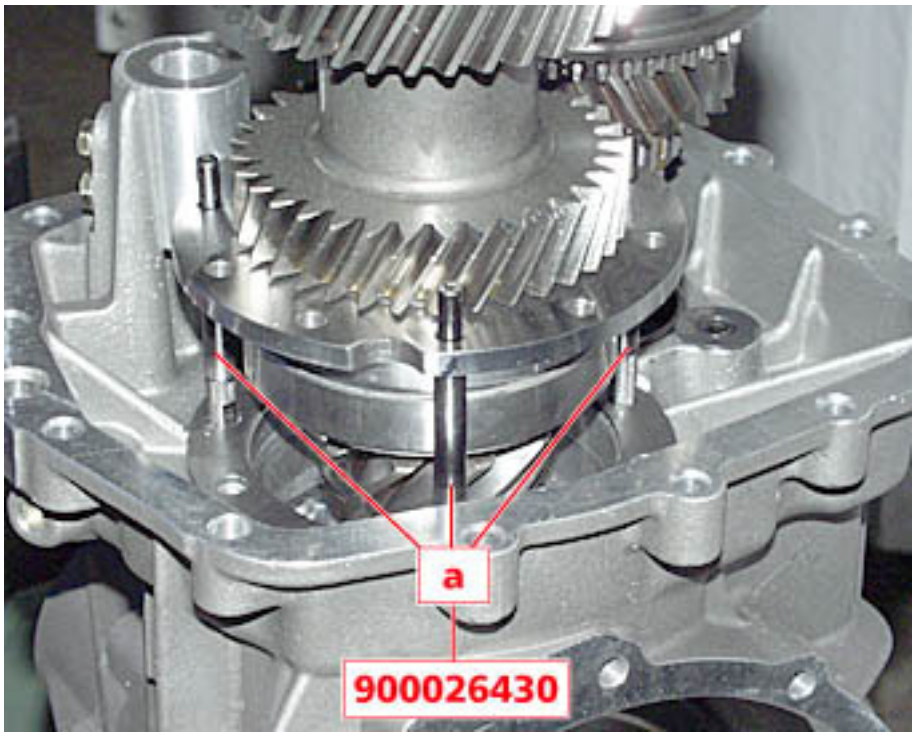
- Fit all of the tool components **900026420** on the shaft-rod unit with forks and lock into place.



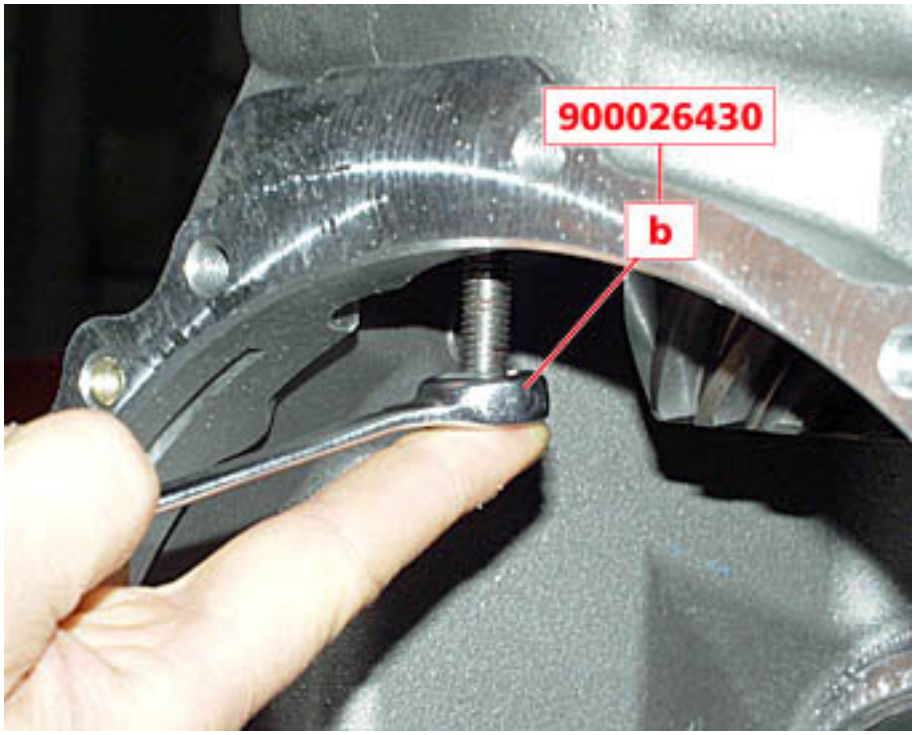
- Position the spacer on the refaced surface of the differential housing.



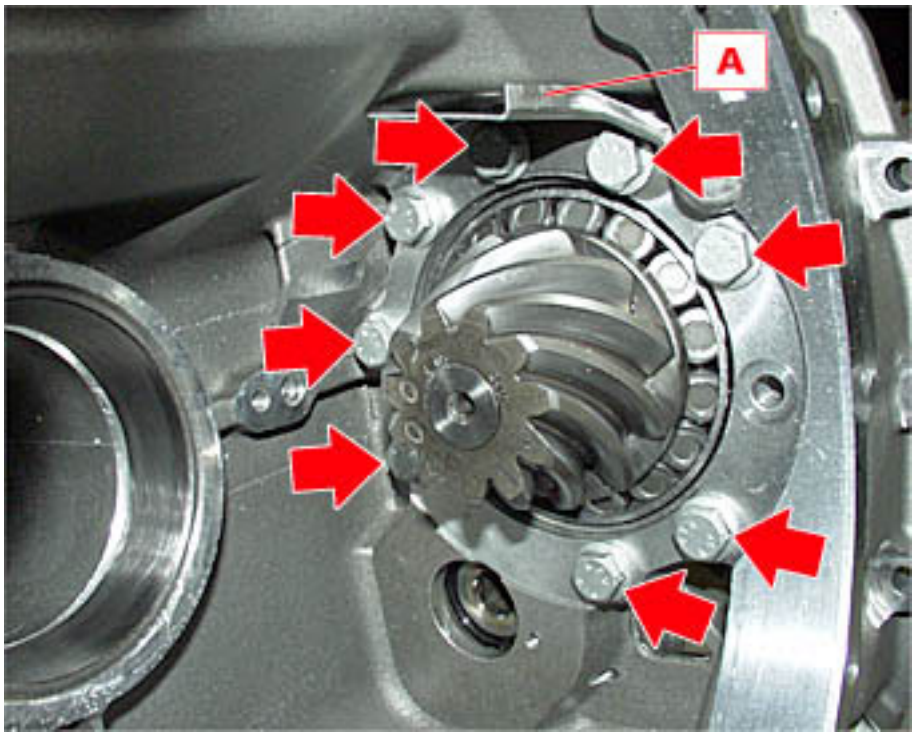
- Fit the three centering screws **(a)** for the tool **900026430** on the bearing holder case in diametrically opposite positions and while lifting the unit slowly with a hoist, insert it into the housing gradually in order to prevent bumping or interference.



- Working from the differential compartment, bring the unit flush using the screw nut **(b)** supplied with the tool **900026430** and a socket wrench.




- Unscrew the tool **900026430** removing it from the bearing holder case. Position the sheet **(A)**, apply LOCTITE 270 on the eight fastening screws and tighten to the torque of **30 Nm** proceeding crosswise.



- Put the roller bearing on the lay shaft using the tubular punch **95973262**.




- Insert the Seeger ring on the lay shaft.



## Gearbox housing reassembly

- Clean and degrease the contact surfaces on the gearbox and differential housing and outline the holes uniformly and evenly with LOCTITE 510.
  Lock the thirteen fastening screws on the housings, tightening them to the torque of **30 Nm**.

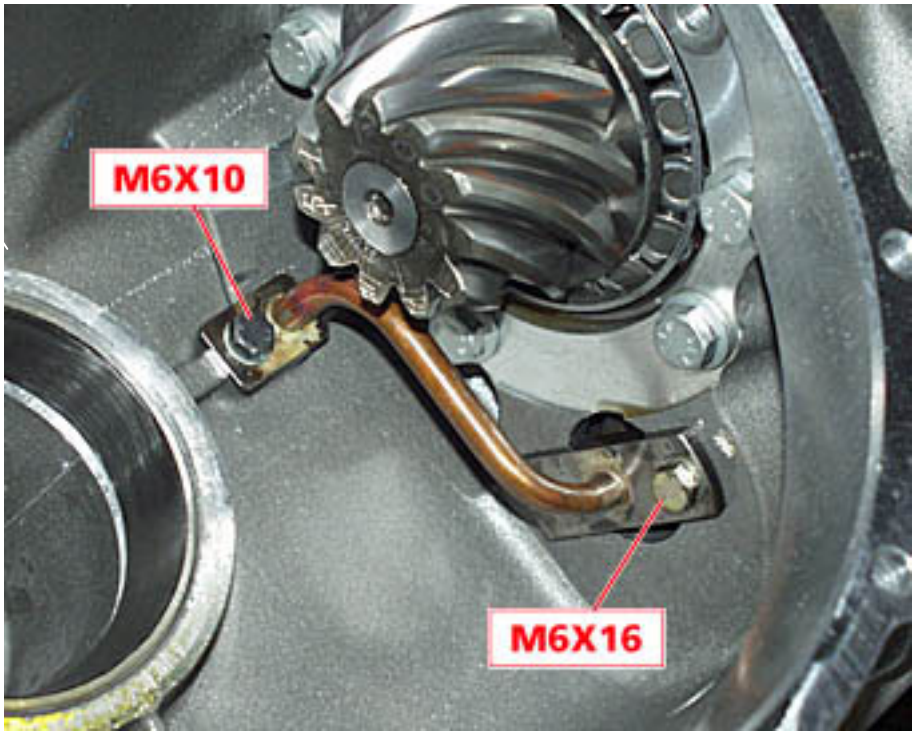


- Working from the differential compartment, check the condition of the O-ring and fit it on the lubrication nozzle.



- Apply LOCTITE 270 on the threading of the two fastening screws for the lubrication nozzle and position the two respective washers. Tighten to the torque of **10 Nm**.

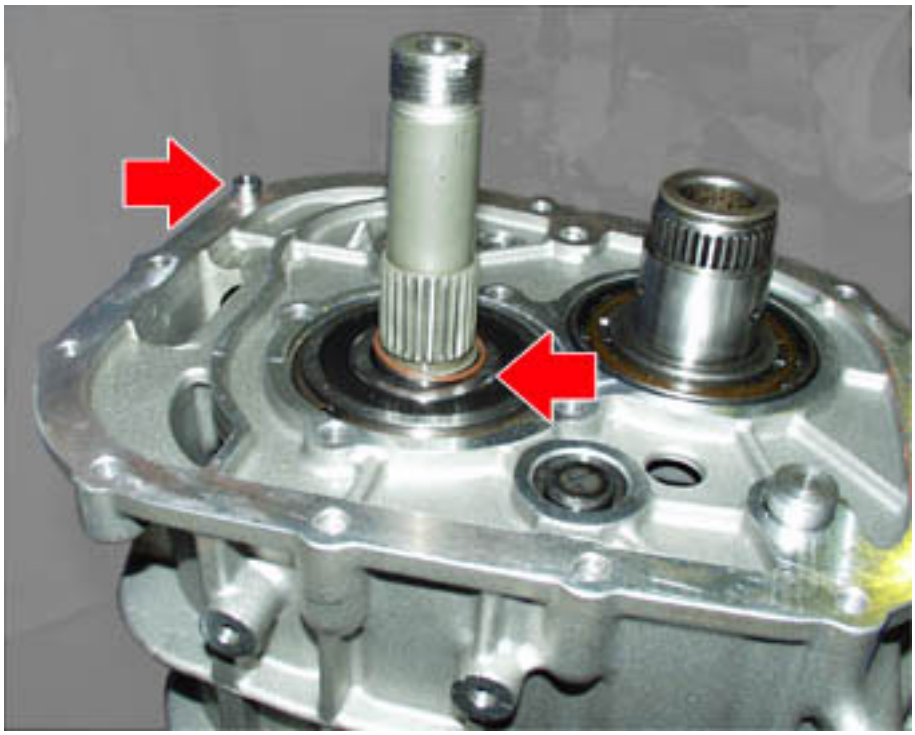
**N.B.**
**The two fastening screws have different thread stem lengths; check the figure for proper fitting.**



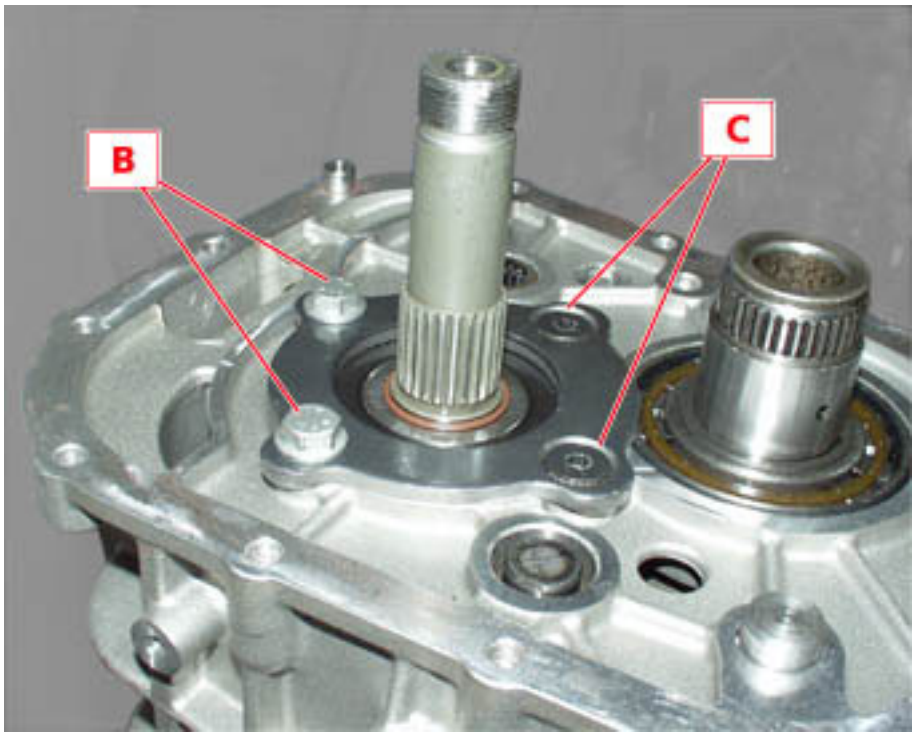

- Put the ball bearing on the main shaft and bring it flush with the gearbox housing using the punch **900026470**.



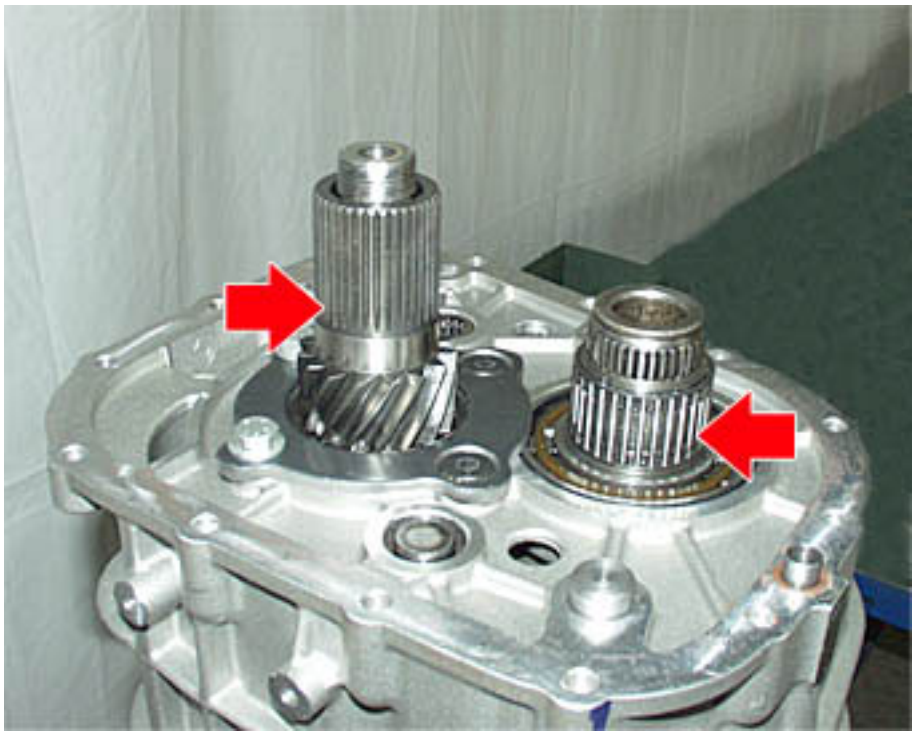
- Position the O-ring on the main shaft and fit the two centering dowels with the respective new O-rings.



- Lock the bearing retaining plate on the gearbox housing with the two hexagonal-head fastening screws, **(B)**, tightening them to the torque of **30 Nm** and the two socket head screws **(C)** and the retaining plate for the toothed washers, to the torque of **26 Nm,** after applying LOCTITE 270 sealer.



- Insert the **Reverse** driving gear on the main shaft and the roller cage on the lay shaft.

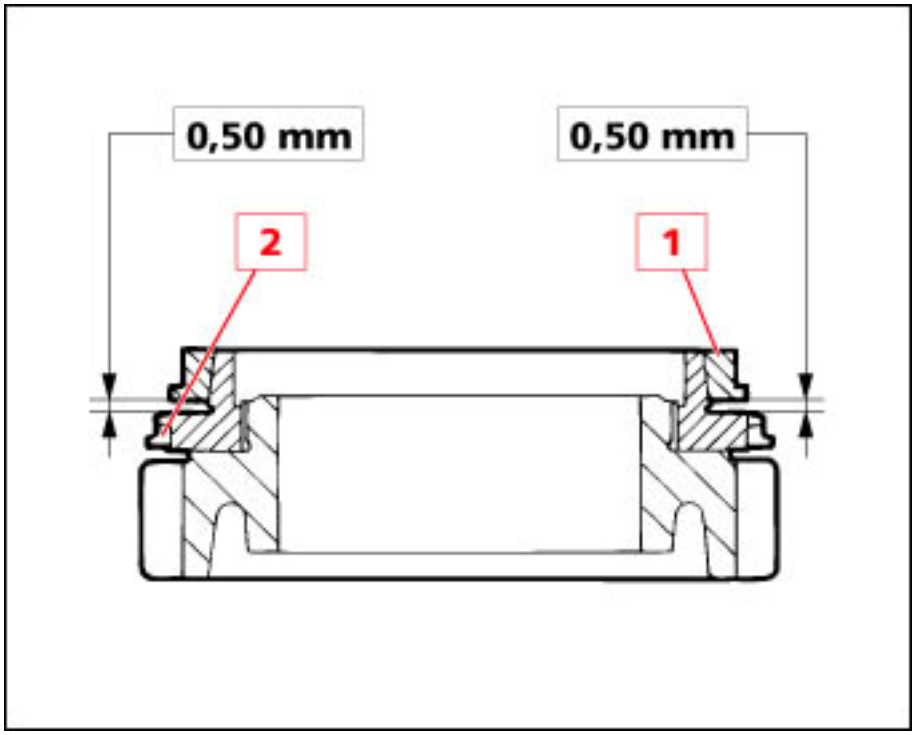


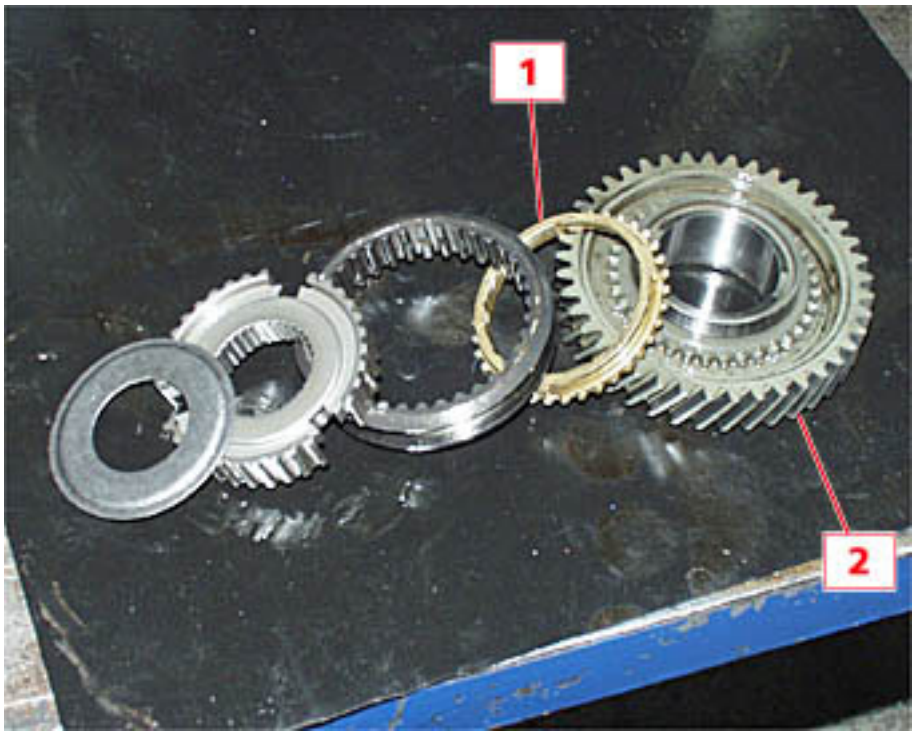
## Checking the Reverse gear synchronizer for wear

- Center the synchronizer ring **(1)** on the respective clutch cone. The two cones must be in a position to mate uniformly and in a parallel manner by means of the relative axial rotation.
  Check the distance between the coupling element **(2)** and the synchronizer ring at several points that are diametrically opposite each other.
  If it is less than the prescribed distance, replace the synchronizer.

**IMPORTANT**
**Visually inspect the male cone which should not show lapping, excessive ripples or overheated zones.**

**IMPORTANT**
**From gearbox no. 2406 on, a new 63 mm diameter RM synchronizer has been fitted (previously 63 mm). Apart from the single components, this change affects the synchronizer, the RM gearing and the roller retaining washer. New parts cannot be used to replace pre-modification parts. When replacing even one component only, the complete new RM synchorizer must be fitted as well as the new RM gearing.**




1
2

## Reverse gear synchronizer reassembly

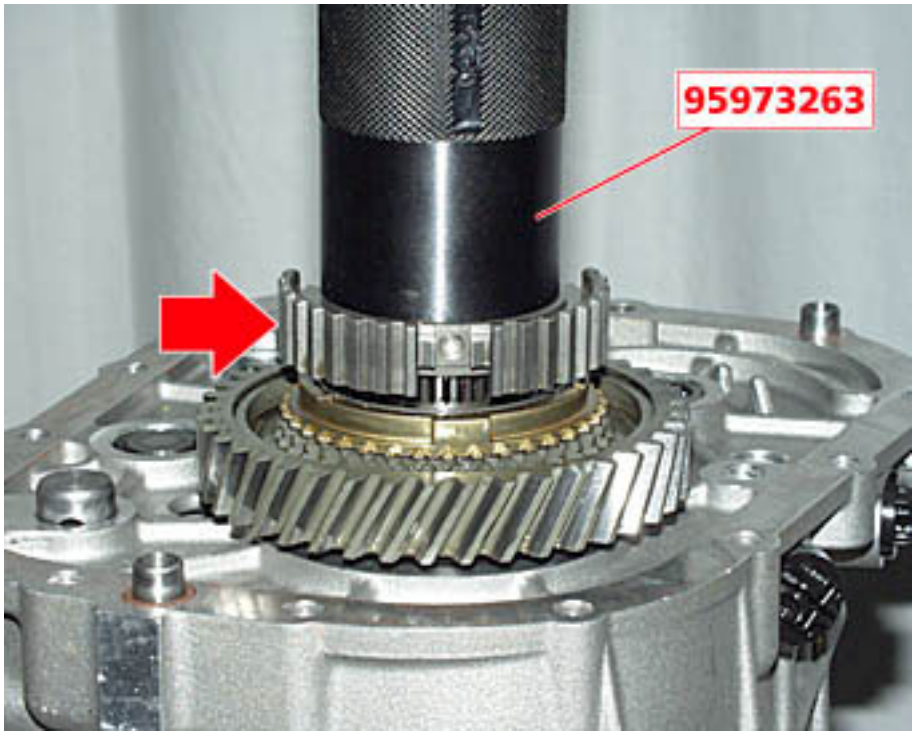
**IMPORTANT**
**From gearbox no. 2406 on, a new 63 mm diameter RM synchronizer has been fitted (previously 63 mm). Apart from the single components, this change affects the synchronizer, the RM gearing and the roller retaining washer. New parts cannot be used to replace pre-modification parts. When replacing even one component only, the complete new RM synchorizer must be fitted as well as the new RM gearing.**

- Insert the **Reverse** driven gear on the lay shaft and position the **Reverse** synchronizer rings on the gear coupling element.



- Insert the synchronizer hub for the **Reverse** gear synchronizer using punch **95973263**, carefully checking to ensure that the lubrication slots on the element are facing the gear.

**N.B.**
**Match the synchronizer hub recess with the coupling of the synchronizer rings.**




- Position the three springs on the **Reverse** gear synchronizer hub.



- Fit the sliding coupling on the **Reverse** gear synchronizer hub, with the **Reverse** gear fork fitted.

**N.B.**
**Ensure that the notch on the sliding coupling is facing the recess in the synchronizer hub.**



- Fit the rollers on the **Reverse** gear synchronizer using a flat screwdriver and pushing the sliding coupling towards the **Reverse** driven gearing.



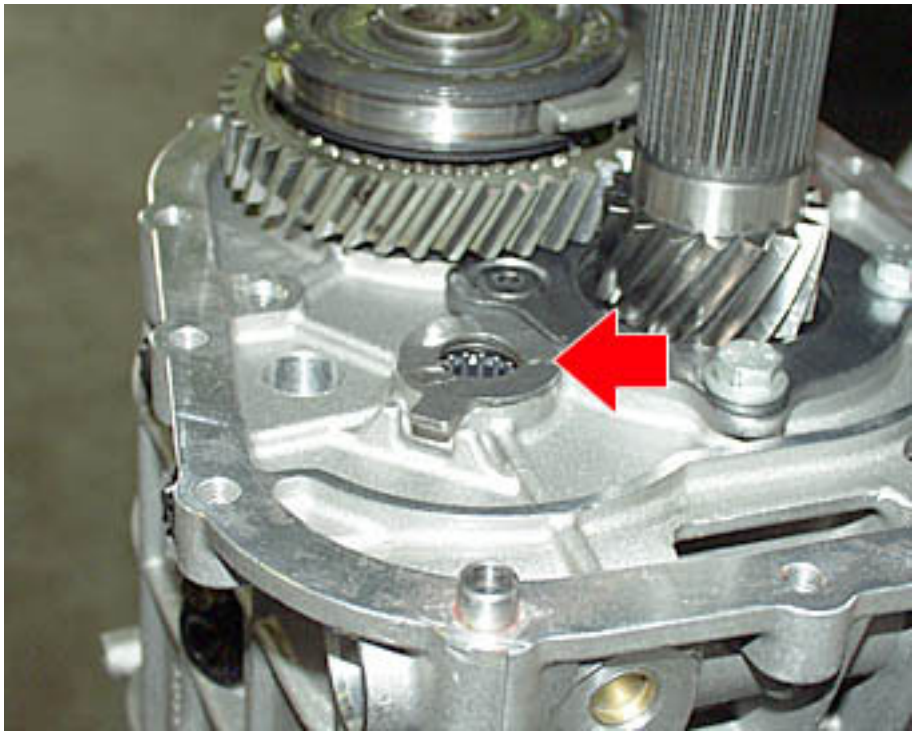
- Insert the Seeger ring on the lay shaft.



- Put the elastic pins on the **Reverse** gear fork using a pin-driver, as well as the tool **900026430** to help center them.



- Fit the shouldering ring on the roller box with the protruding part inserted between the gearbox housing retainers.



- Fit the **Reverse** gear idle gearing on its respective seat.



- Engage the two gears and fasten the ring nut on the main shaft. Apply LOCTITE 242 and using the tool **900026770**, tighten to a torque of **100 Nm**.




- Bend the main shaft ring nut, front cover side.



## Front cover reassembly

Bring the roller box **(a)** flush with tool **95973267**. Insert the grommet on the front cover with the punch **900026760** and slide the new O-ring onto the pin.

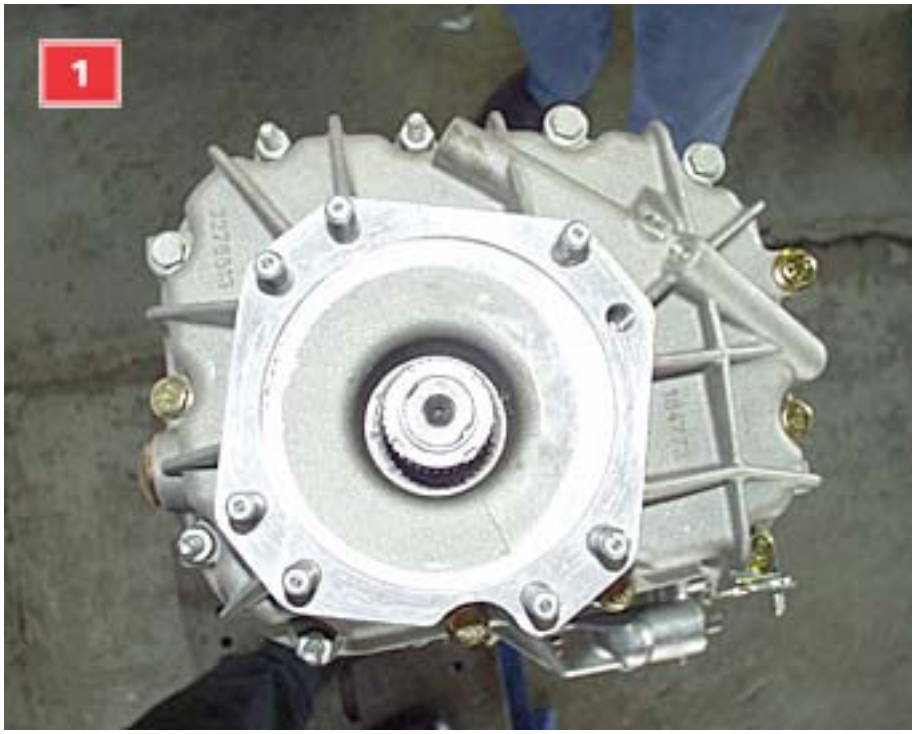


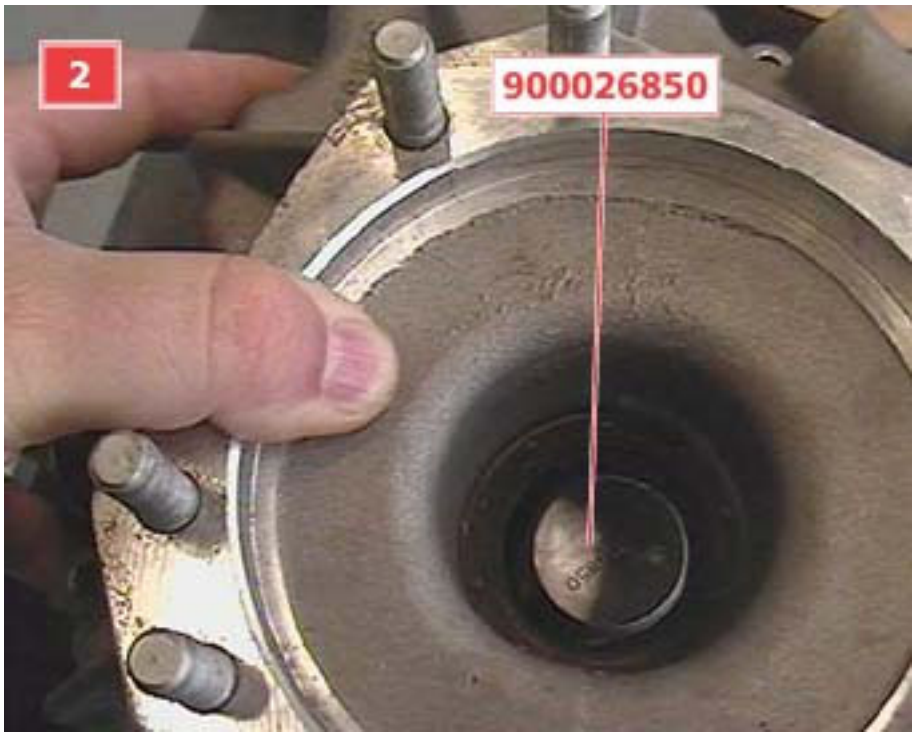

- Grease the surface on which the shouldering ring rests, on the front cover, to keep it positioned between the retainers during cover reassembly.



- Clean and degrease the contact surfaces on the gearbox housing and the front cover. Outline the holes uniformly and evenly with LOCTITE 510.
  Lock the thirteen stud bolts and fastening screws on the front cover, tightening them to a torque of **30 Nm**, proceeding crosswise (**Figure 1**).

**N.B.**
**Insert the scraper ring 900026850 guard on the shaft (Figure 2).**



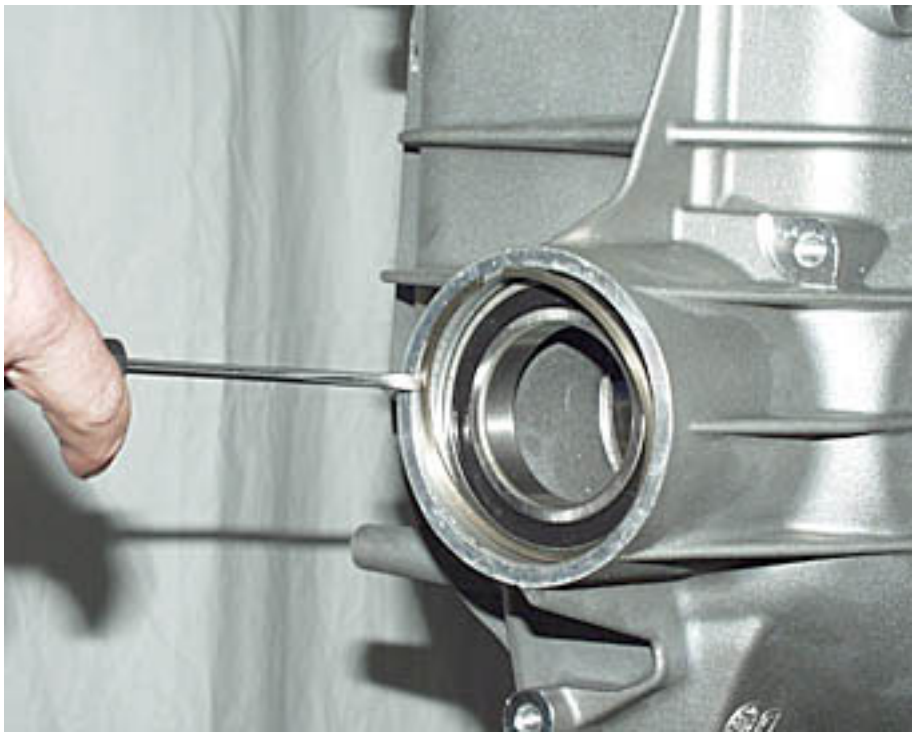



## Reassembly of the differential housing cover and flange shafts

- Bring the ball bearing flush with the differential housing seat using the punch **900026890** and a hammer.




- Fit the Seeger ring on the differential housing.



- Clean the seat for the new grommet thoroughly and grease it adequately.
  Place the grommet with the closed side facing outward and using the base and the punch on the tool **900026410**, bring it flush with the differential housing.

**IMPORTANT**
**Lubrication of the grommet is indispensable to ensure its proper functioning.**




- Fit the left-hand flange shaft on the differential housing using the punch **(a)** on the tool **95973276**.



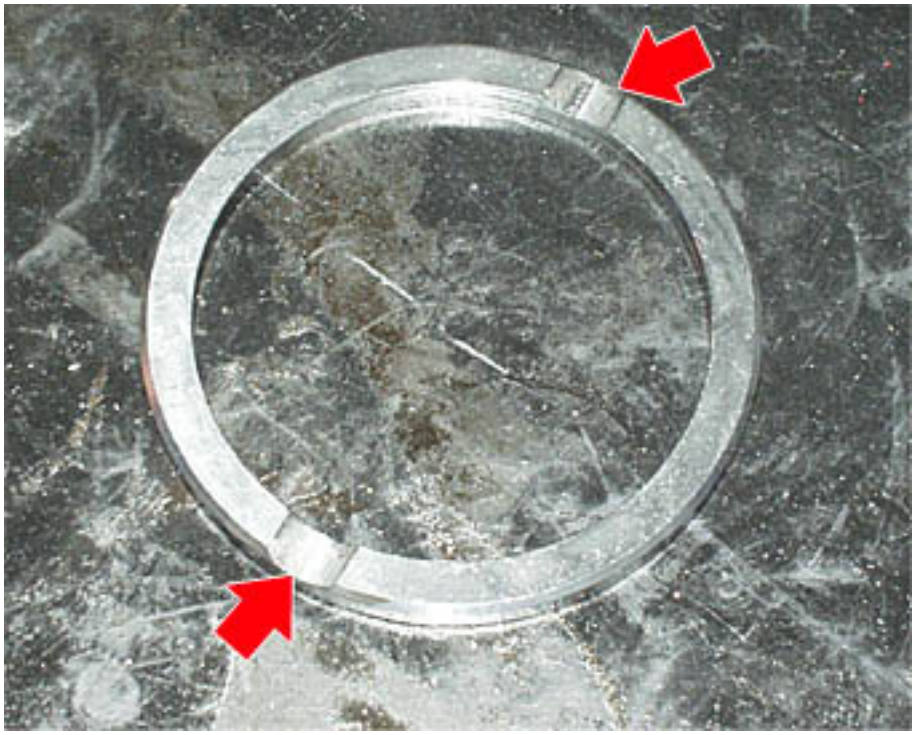
- Working from the differential compartment, fit the Seeger ring on the differential housing.



- Insert the new ball bearing and center the differential housing cover on the base **(a)** of the tool **95973275**.



- Position the spacer on the cover ball bearing, differential housing side, with the side equipped with slots for the passage of the lubricating oil opposite the bearing.



- Bring the external track for the tapered roller bearing flush with the differential housing cover using the **95973275** toolkit and the press.



- Clean the seat for the new grommet thoroughly and grease it adequately.
  Place the grommet with the closed side facing outwards and, using the base and the punch on the tool **900026410**, bring it flush with the differential housing cover.

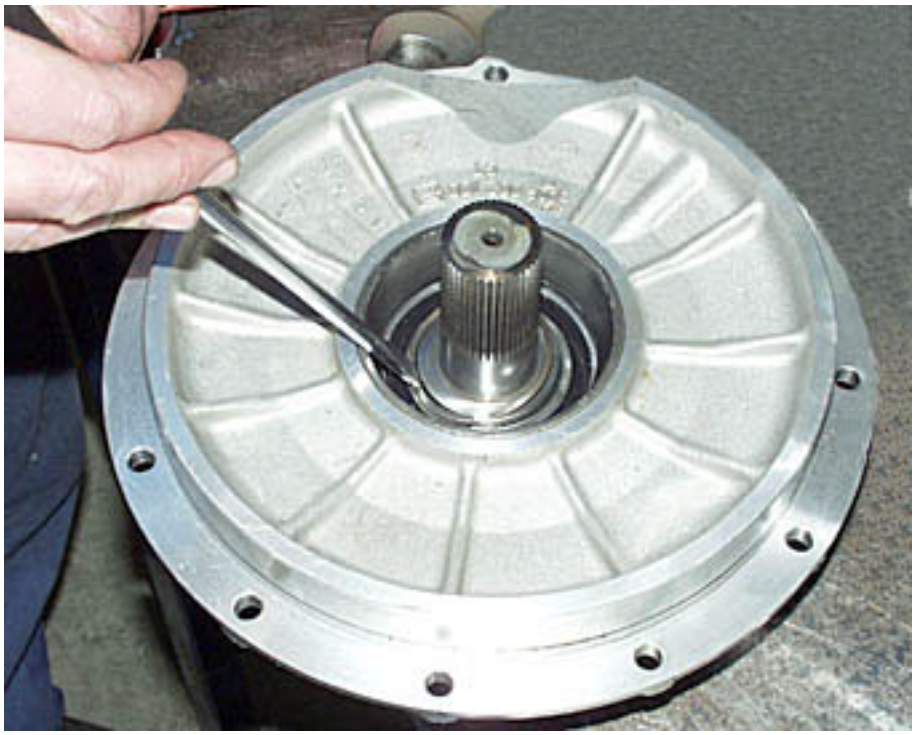
**IMPORTANT**
**Lubrication of the grommet is indispensable to ensure its proper functioning.**



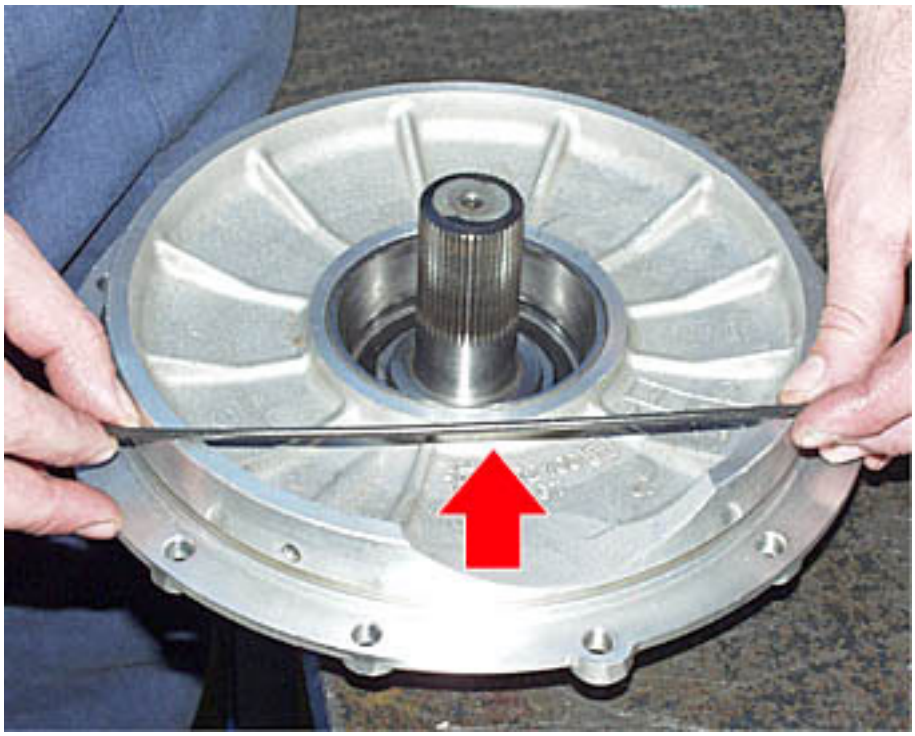

- Lubricate the right-hand flange shaft pin with gearbox oil.
  Bring the right-hand flange shaft flush with the differential housing cover using the base and punch on the tool **95973276** under the press.



- Fit the Seeger ring on the differential housing cover.



- Check the condition of the O-ring and fit it on the differential housing cover.



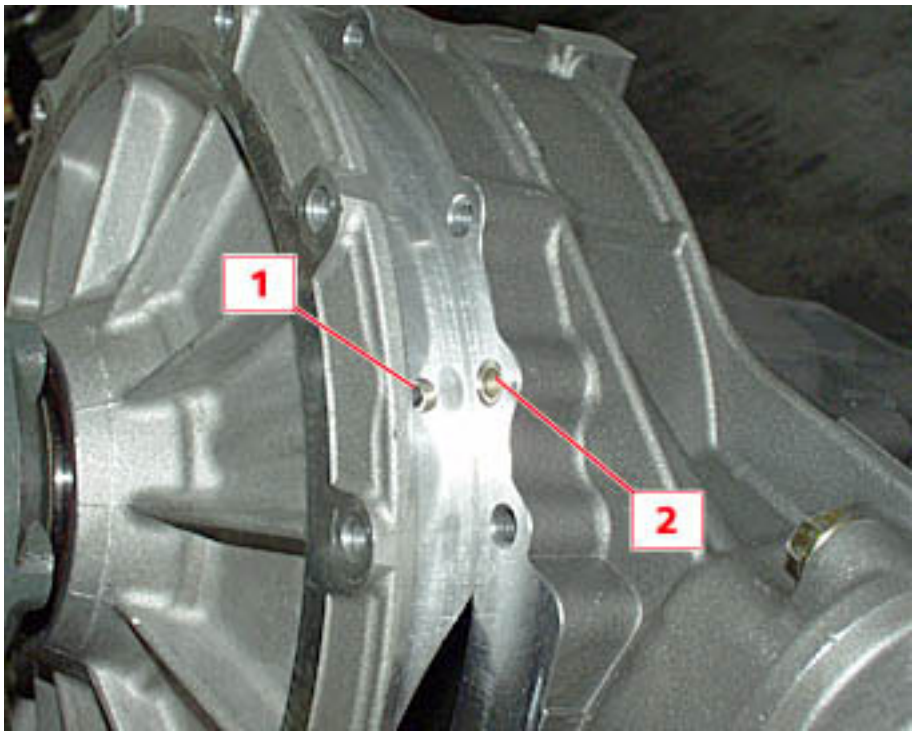
- Insert the differential- crown wheel set inside the differential housing, using the tool **AV3266**.




- Tighten the thirteenth fastening screw for the bearing holder case to the torque of **30 Nm**.



- Clean and degrease the contact surfaces on the cover and differential housing and outline the holes uniformly and evenly with LOCTITE 510.
  Fit the differential housing cover matching the lubrication opening **(1)** found on the cover with the differential housing retaining washer **(2)**.




- Position the two cable-guide brackets **(3)** and tighten the eleven fastening screws on the differential housing cover to the torque of **30 Nm**, proceeding crosswise.

**N.B.**
**The front fastening screw differs in the length of the thread stem. check the figure for proper fitting.**



## Seal test

To check for leaks, a seal test can be performed on the gearbox housing when it is completely assembled.

**IMPORTANT**
**If leaks are present, the external grommets must be replaced and/or the front cover, gearbox housing and differential housing couplings must be checked.**

- Plug all openings leading outside of the gearbox housing and remove the breather valve.



- Fit the union **95973283** in the breather valve seat and, using a standard inflation equipment provided with a precision pressure gauge, let in air up to the pressure of **0.3 bar**. A drop in pressure of **20 Pascal** in **15 seconds** is acceptable.

**N.B.**
**Use a leak detector spray on the gearbox to check for the presence of any leaks.**

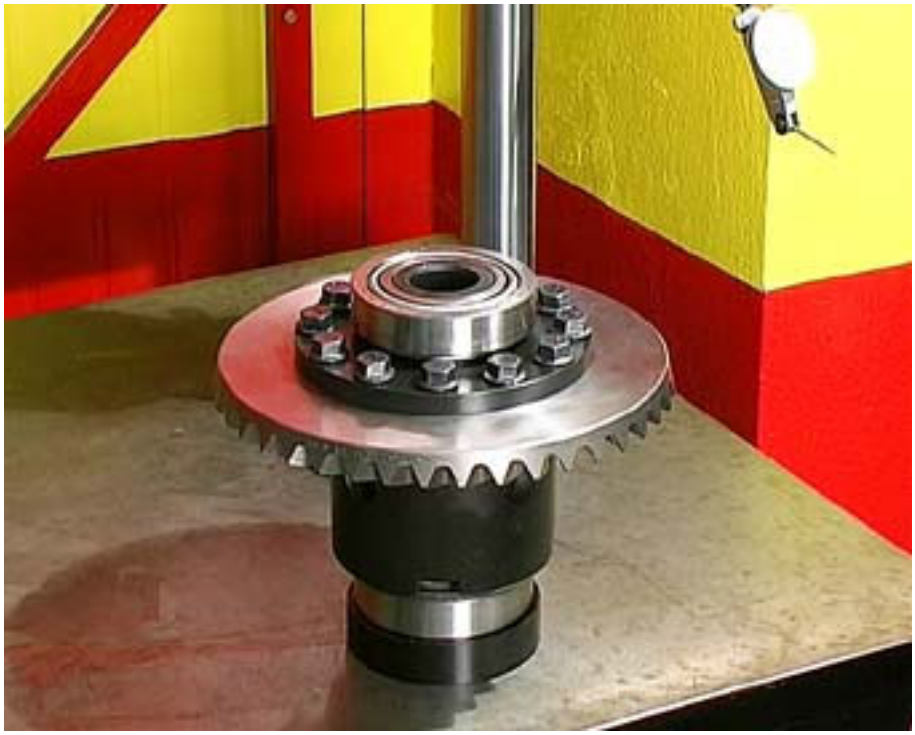


## ADJUSTMENTS AND CHECKS

**IMPORTANT**
**For fitting and removing the gearbox components required for the adjustment and check procedures, follow the operations indicated in the chapters "Gearbox removal" and "Gearbox reassembly".**
*Gearbox removal*
*Gearbox reassembly*

### Measuring the pre-load for the differential taper roller bearings

- Place the differential on a checking plane.

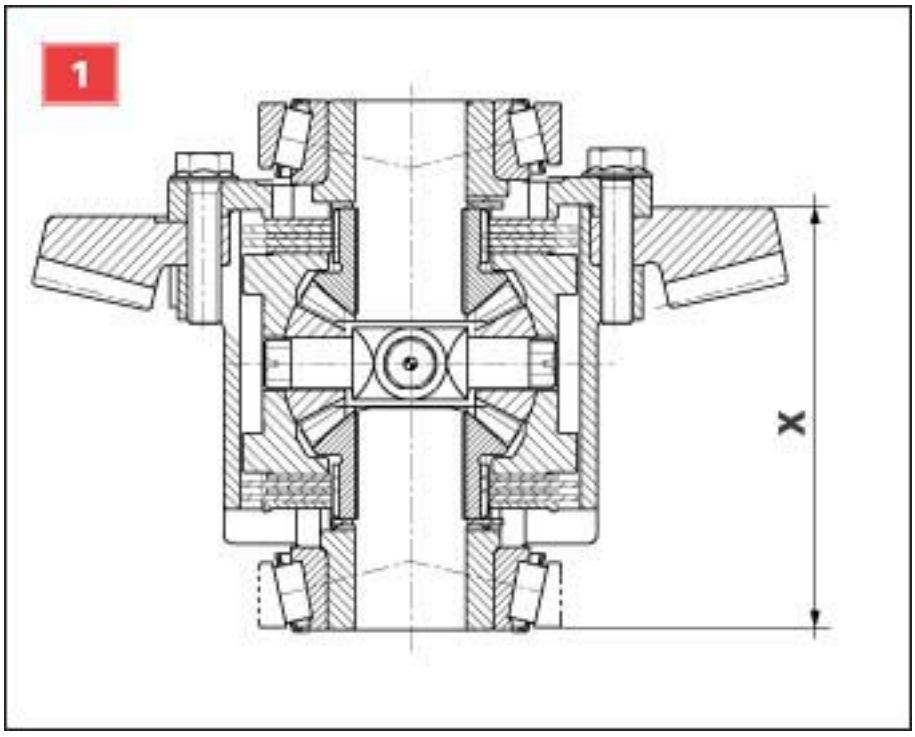


- Check the flatness of the outer track for the upper taper roller bearing (**Figure 1 and 2**).






- Measure the distance W between the side surfaces of the bearings' outer rings (**Figure 1**,**2 and 3**).

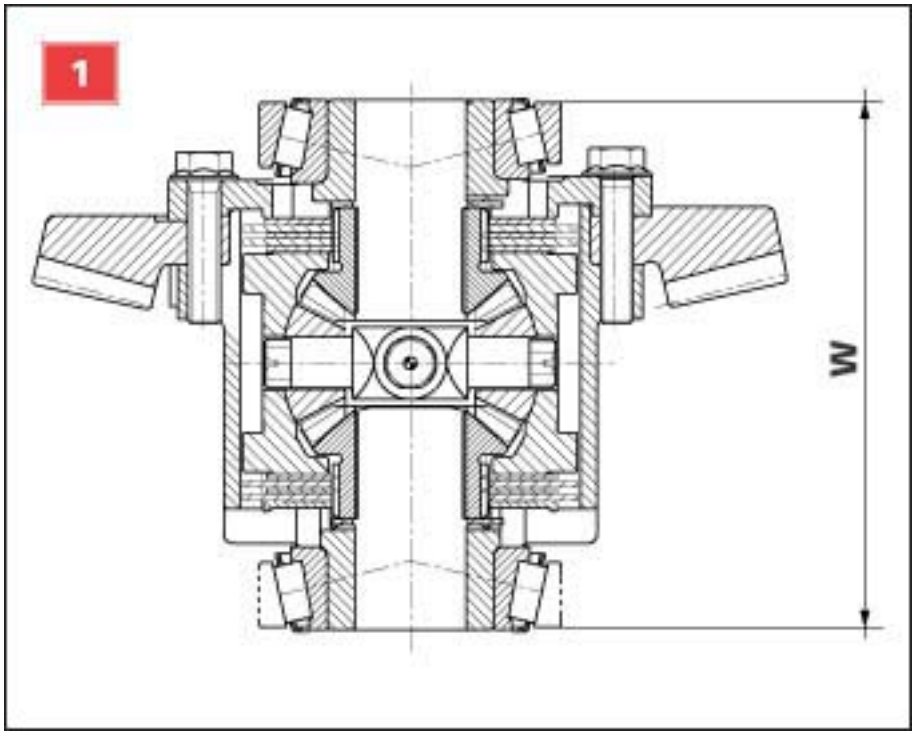






3

- Measure the distance **X** between the crown rear surface and the side surface of the lower bearing's outer ring (**Figure 1 and 2**).





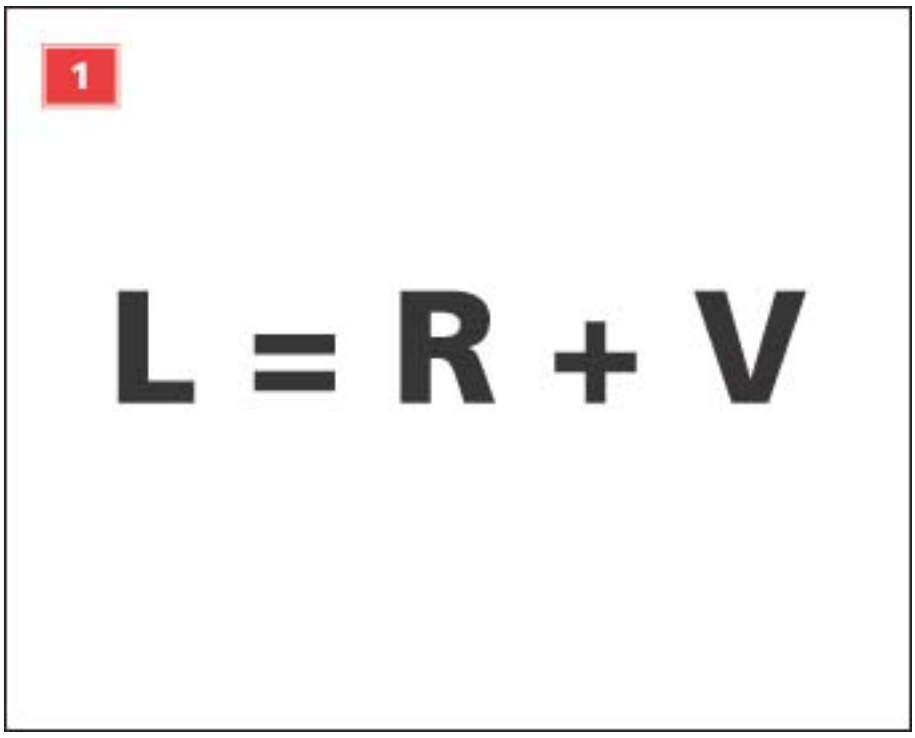

- The deviation **t** from the theoretical distance of **45,10 mm** is marked on the differential crown wheel.

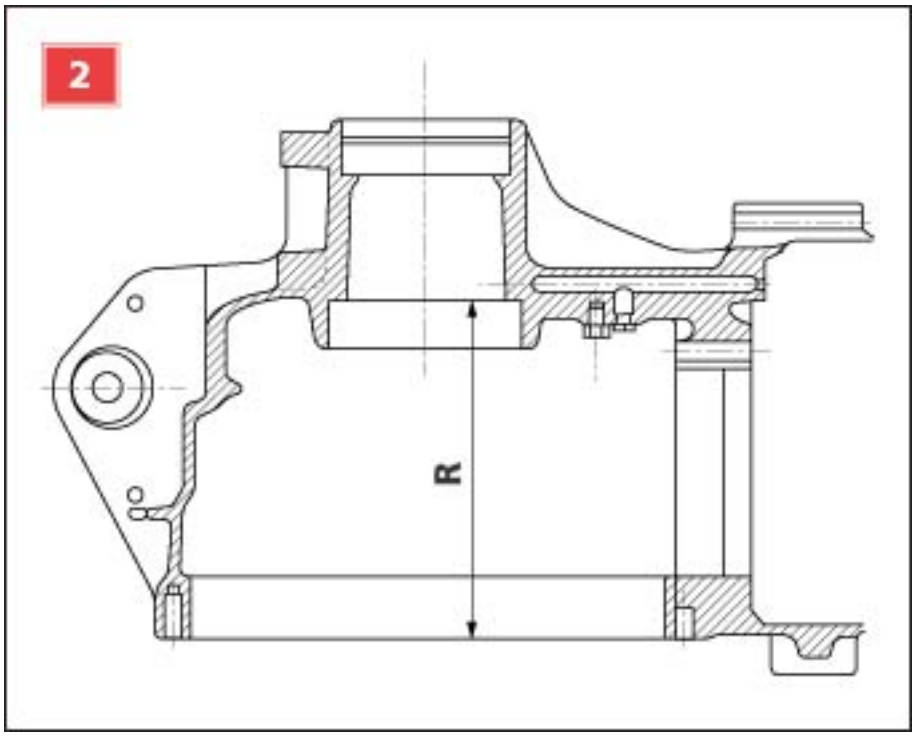


- Thus the actual distance **G** between the crown rear surface and pinion axis is:

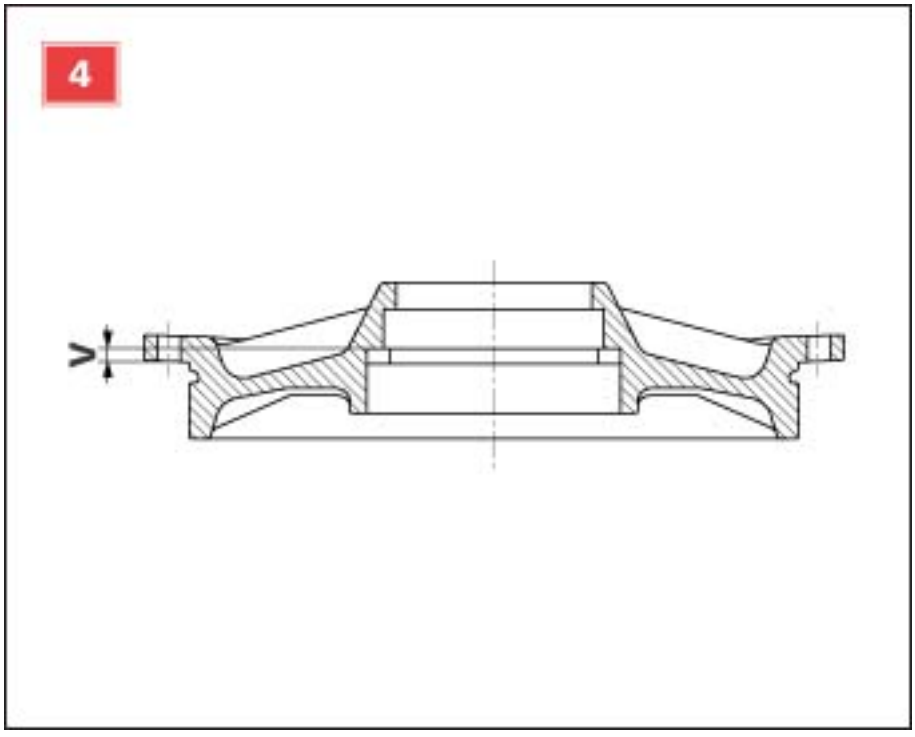
$$G = 45{,}10\text{mm} + t$$

- To determine the total dimension **L** of the differential set with bearings and spacers calculate: (**Figure 1**):
- Where **R** and **V** are printed on the differential housing (**Figure 2 and 3**) and the differential cover (**Figure 4 and 5**) respectively.




3
R
S
Z
U


4


5
184787

- The spacer thickness **S3**, on the differential housing side, is calculated as follows (**Figure 1**):

**N.B.**

**S is punched on the differential housing (Figure 2).**

1

$$S3 = R - S - X + G$$

2



- To calculate the spacer **S4**, on the differential cover side, a bearing preload of **0,07 mm** must be taken into account.
  Calculate the thickness as follows:




**N.B.**
**The thickness of the spacers supplied as spare parts may not correspond to the values obtained through the calculations described: in this case, the spacers must be adjusted to the right size using a surface grinder.**

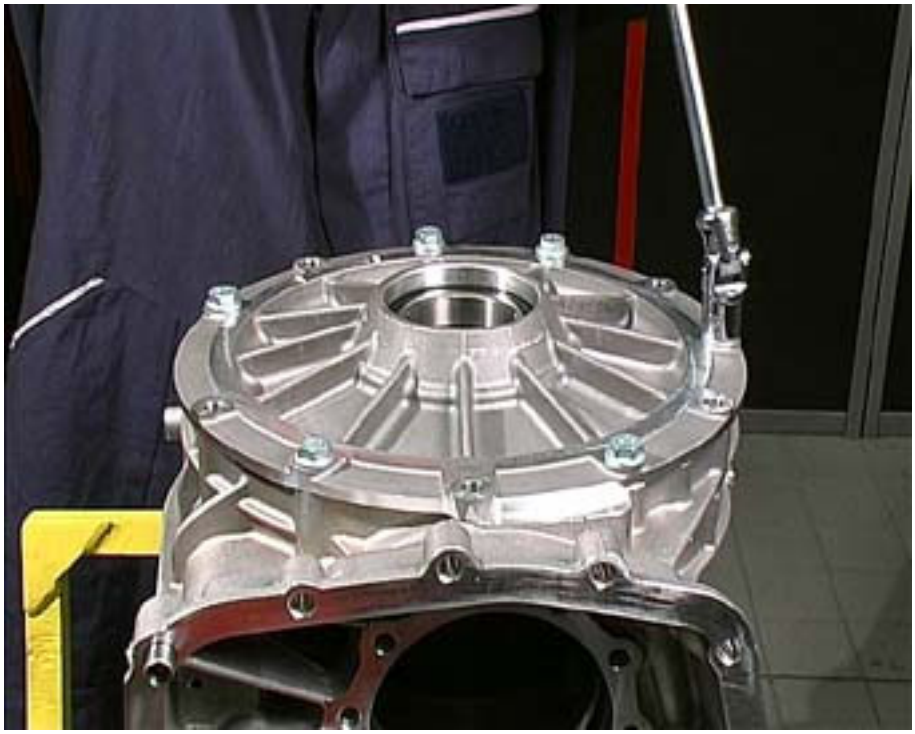
## Checking the differential housing rolling torque

**N.B.**
**To check the rolling torque of the differential housing, it is essential that the lay shaft is not installed.**

- Place the differential in its housing using tool **95973266**.




- Fit the differential cover tightening the fastening screws to the torque **30 Nm**.



- Fit the prescribed tool **95973266** (**Figure 1**).into the seat for the right hand flange shaft and fit the specific torque wrench onto the tool hexagon (**Figure 2**).
- Rotate the differential checking that the torque is as prescribed (**Figure 3**).



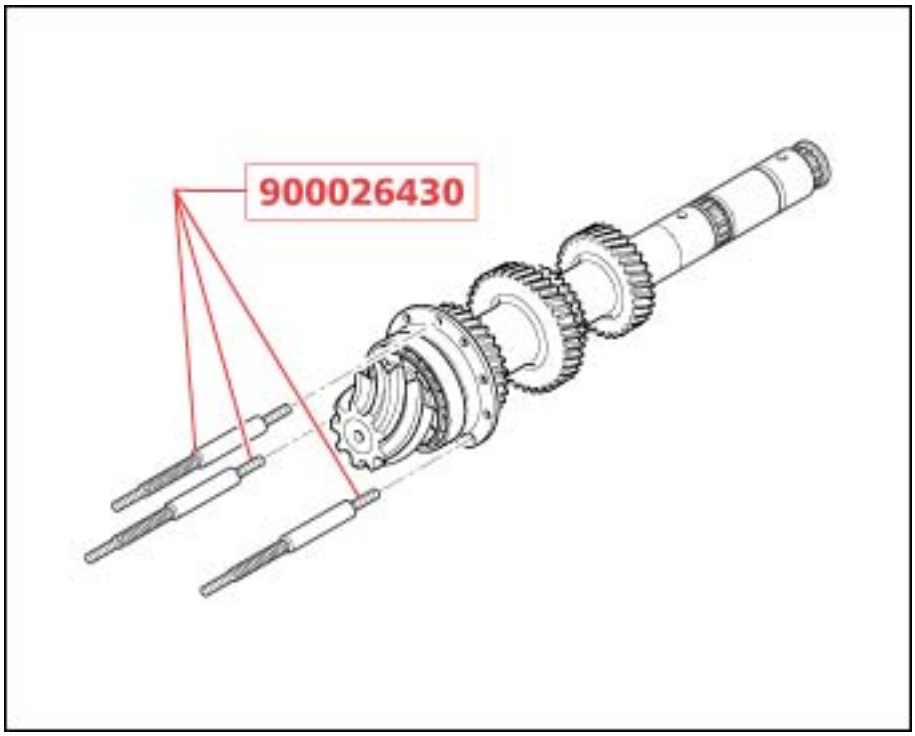






**Checking the crown wheel and pinion backlash**

- Fit the prescribed tools **900026430** onto the bearing case.

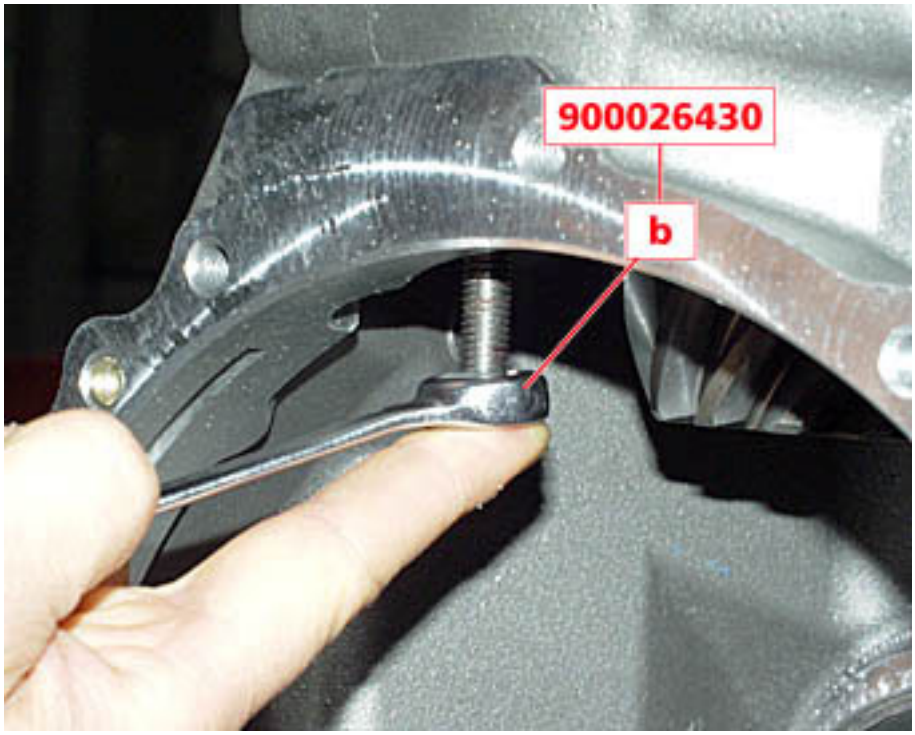


- Position the bearing case spacer (**Figure 1**) and fit the lay shaft onto the differential housing (**Figura 2**).






- Working from the differential compartment, bring the unit flush using the nut (**b**) supplied with tool **900026430** and a socket wrench.




- Remove the centering tools and fix the case in its seat using the specific screws to the torque of **30 Nm**.

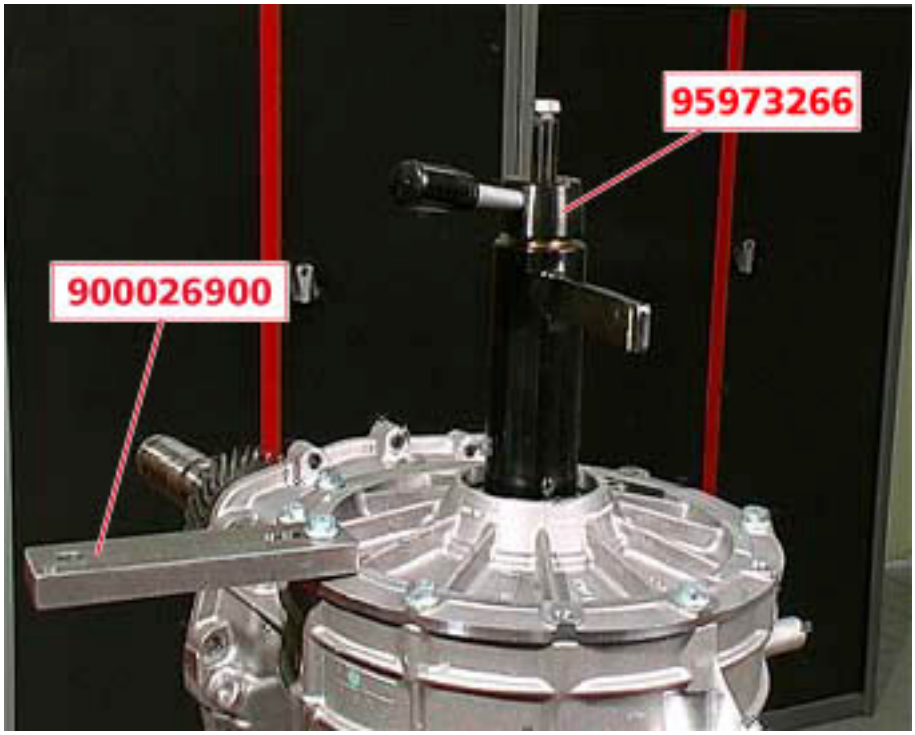


- Place the differential in its seating using tool **95973266** (**Figure 1**) and tighten the differential cover's fastening screws to a torque of **30 Nm** (**Figure 2**).






- Fit the prescribed tool **95973266** into the seat for the right-hand flange shaft.
  Lock the fastening tool for the dial gauge **900026900**.




- Reset the dial gauge plunger in position with the mark on the tool, which corresponds to the crown outer diameter.



- Rotate the tool (**Figure 1**).and check that the backlash falls within the prescribed values. (**Figure 2**).

**N.B.**
**If the backlash measured is not correct, adjust the spacer thickness keeping the preload conditions for the differential bearings stable.**






## Checking the crown wheel and pinion impression

- Apply red lead paint to the teeth of the crown wheel.
- Insert the differential into its housing using tool **95973266**.




- Fit the differential cover tightening the fastening screws to the torque of **30 Nm**.



- Fit the prescribed tool **95973266** into the seat for the right-hand flange shaft.
- Have the differential perform some revolutions in a clockwise and anticlockwise direction.




- Remove the differential cover and extract the differential with the prescribed tool **95973266**.



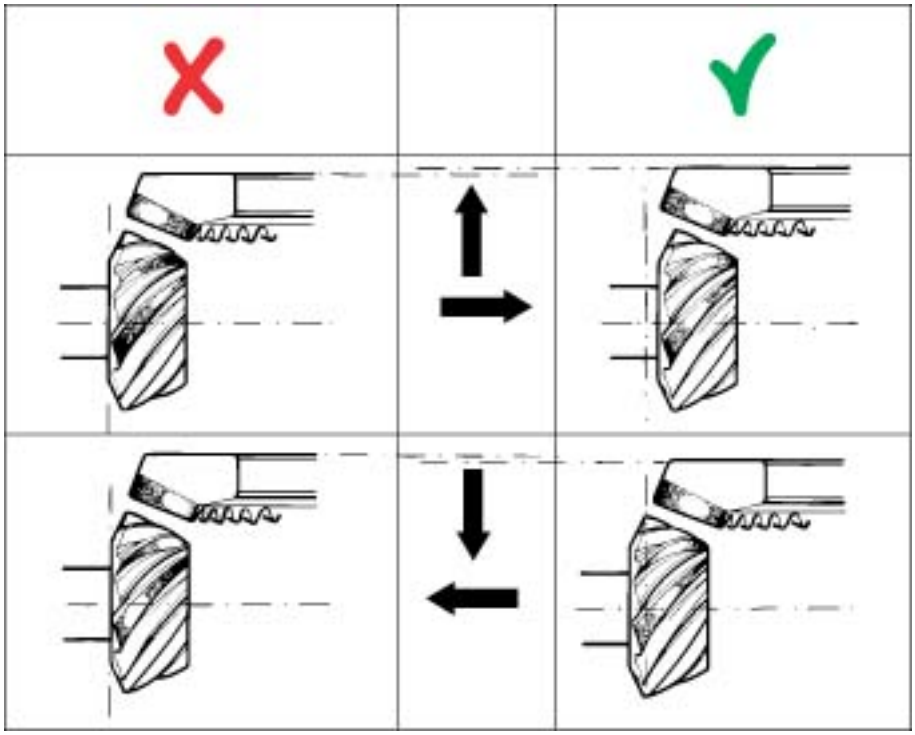
- Check that the impression on the crown teeth is three quarters the width of each tooth side, both on the pulling (**Figure 1**) and on the releasing side (**Figure 2**).

**N.B.**
**The distance between the inner edge of the crown wheel tooth and the beginning of the impression must range from 5 to 8 mm.**



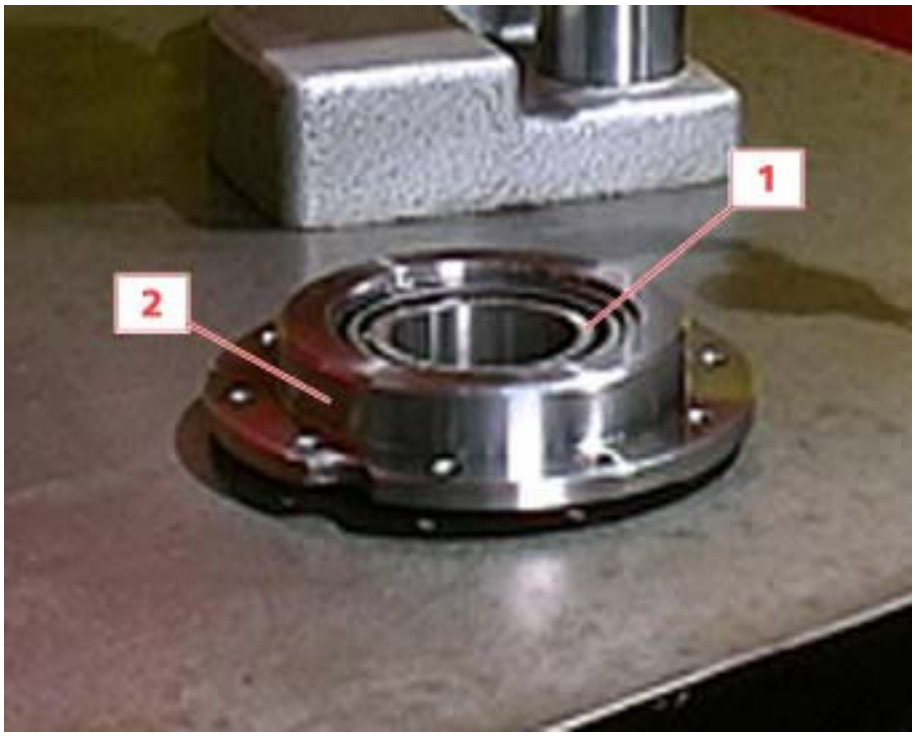



- If the preceding conditions are not met, the spacers' thickness must be modified according to the logics displayed , keeping the prescribed  backlash and bearing preload conditions.



## Measuring the pre-load for the pinion taper roller bearings

- Place inner roller track on the checking plane (**1**) and set the case equipped with outer track on it (**2**).



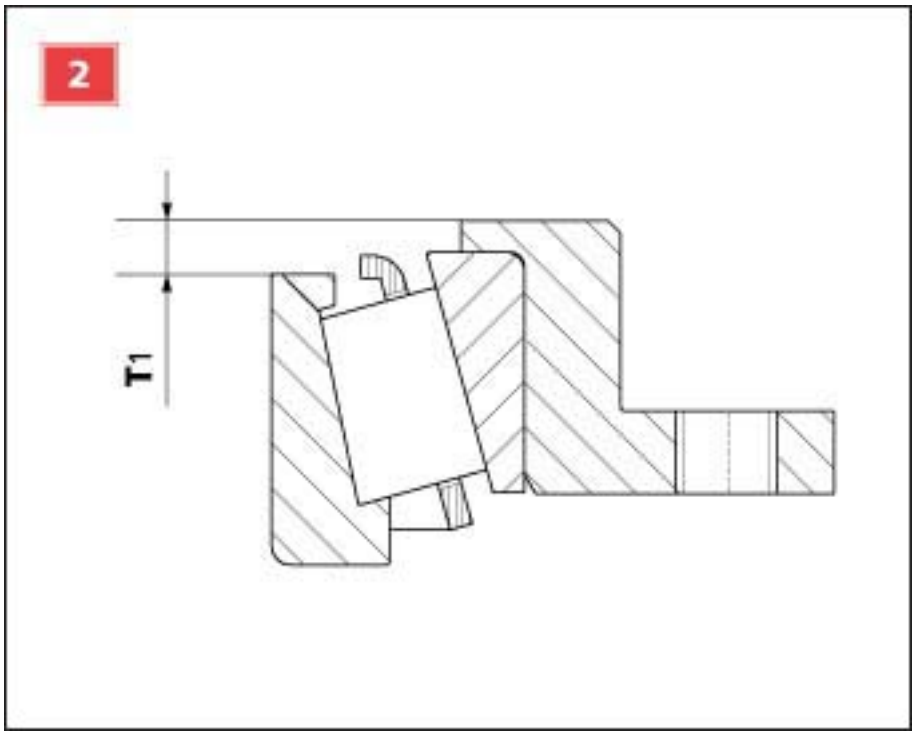
- Check that the case lies evenly on the resting surface (**Figure 1 and 2**).
- In this position, reset the dial gauge.






- Measure the distance **T1** between the bearing holder case surface and the inner ring (**Figura 1** e **2**).



- Verify that the values taken are correct by checking the flatness of the bearing inner ring.



- Place the lay shaft equipped with taper roller bearing on the checking plane.



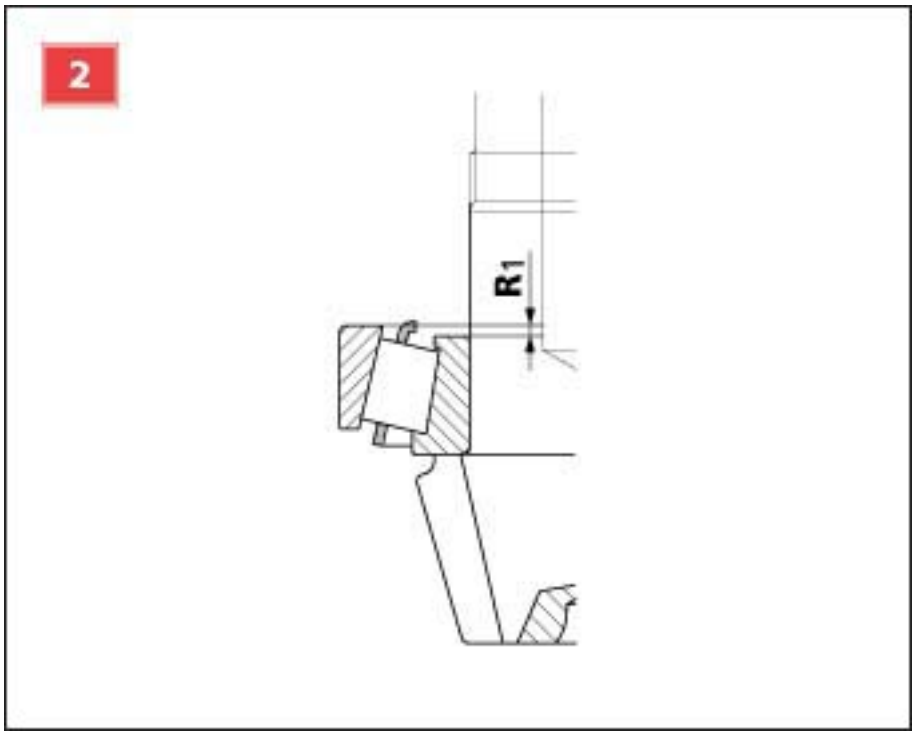
- Check the flatness of the outer ring (**Figure 1 and 2**).



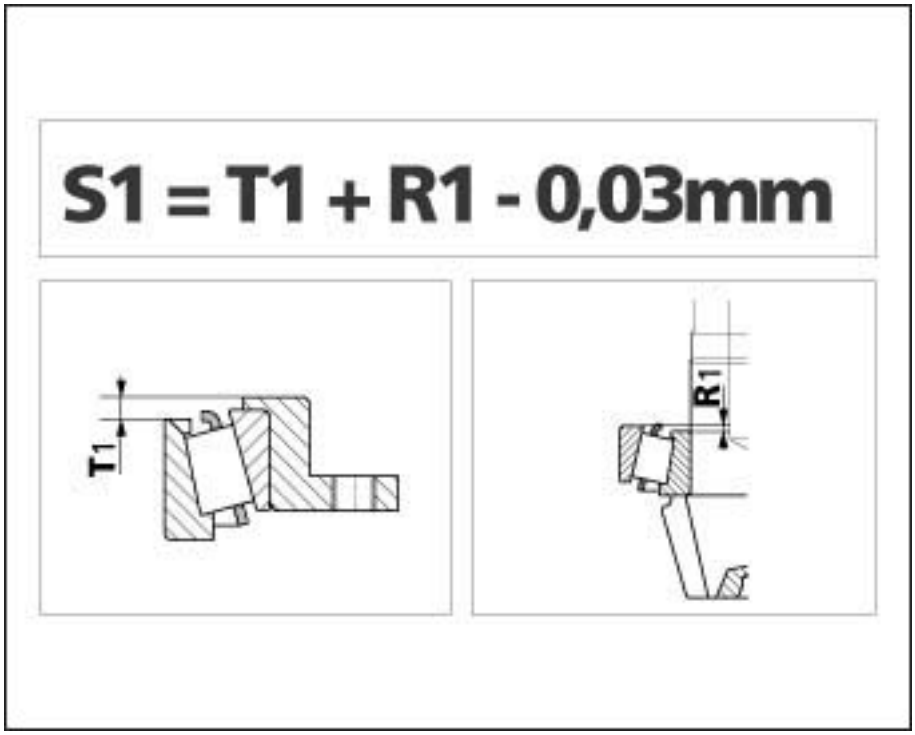



- Measure the distance **R1** between the surfaces of the outer and inner bearing rings (**Figure 1 and 2**).



- Considering a bearing preload of **0.03 mm**, the thickness **S1** of the spacer to be positioned between the taper roller bearings is:



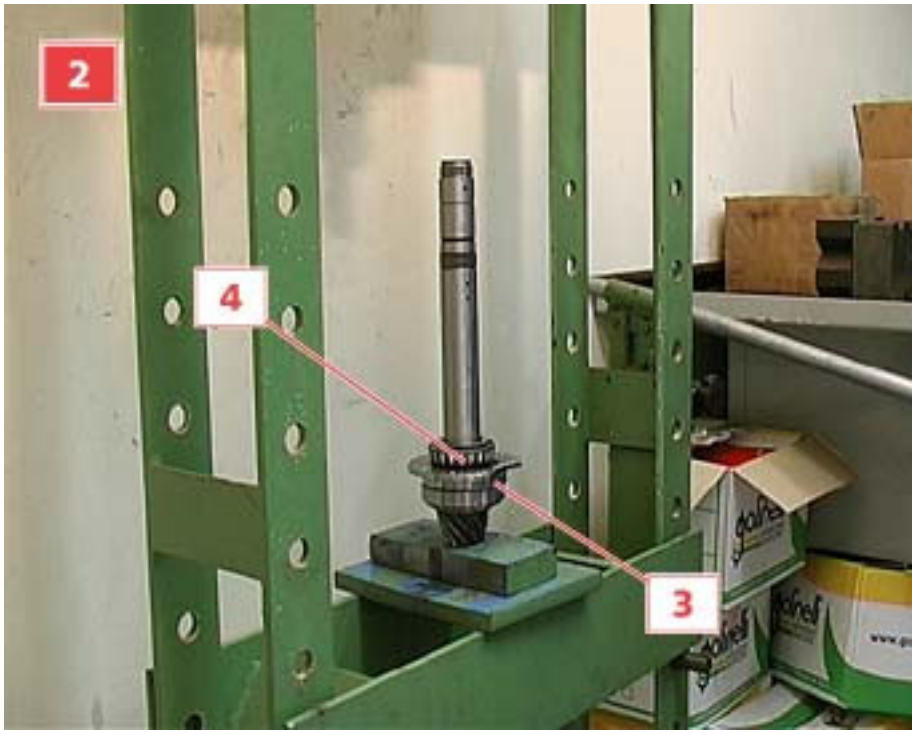

## Fitting the bearings and checking the pinion rolling torque

- Fit the inner ring of the front taper roller bearing using the press equipped with the prescribed tubular punch **900026450**.



- Onto the lay shaft place the outer ring of the front taper roller bearing (**1**), the taper roller bearing spacer (**2**) (**Figure 1**), the bearing holder case (**3**) and the rear taper roller bearing (**4**) (**Figure 2**).



- Bring the components flush with the press equipped with the prescribed tubular punch **900026450**.




- Fit a new ring nut onto the lay shaft.



- Fix the retaining plate of the prescribed tool **95973257** in a vice and mount the lay shaft aligning the flange ridges with the notches in the ring nut.




- To keep the shaft in this position, fix the bearing holder case with the screw supplied.



- Apply the prescribed tool **95973247** onto the end of the lay shaft and tighten the ring nut to the torque of **300 Nm**.

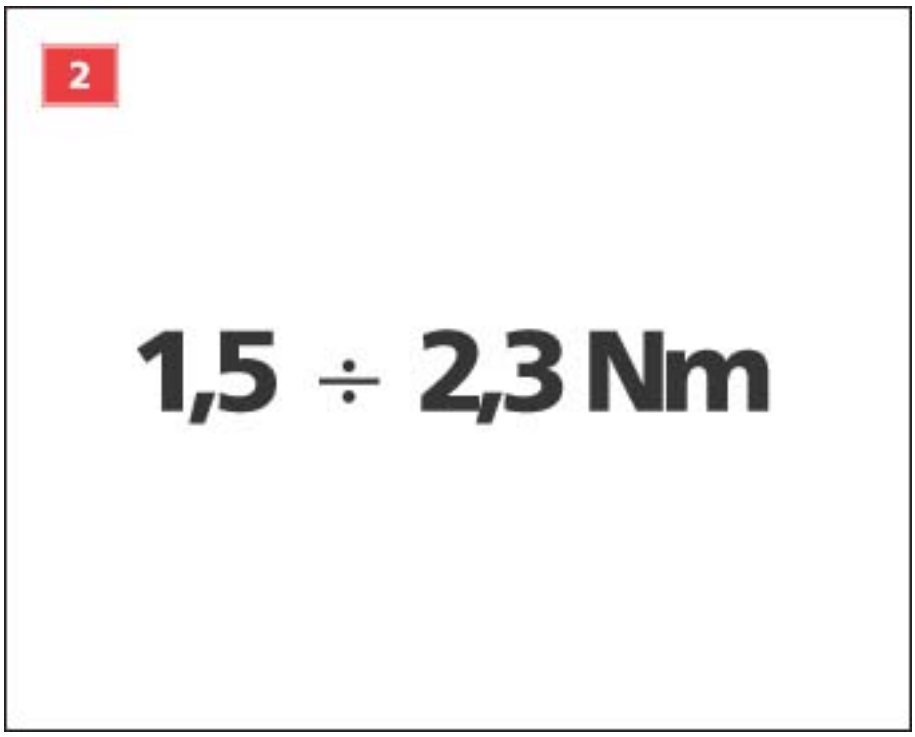



- Remove the lay shaft from the tool. Lock the bearing case in a vice suitably protecting the contact surfaces.



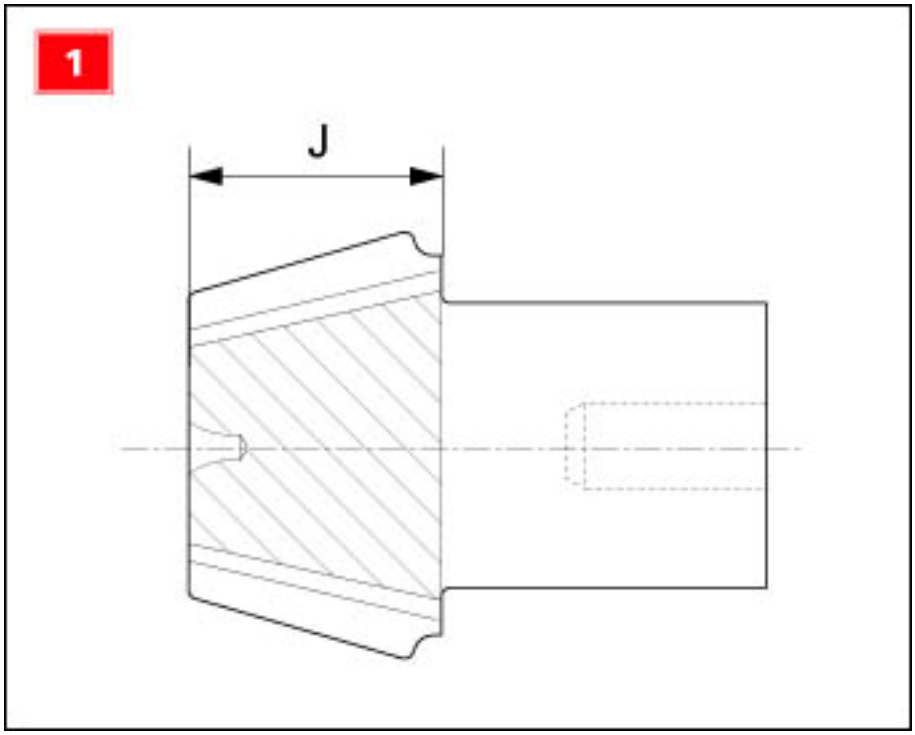
- After having engaged tool **95973247** (**Figure 1**), rotate the shaft using the prescribed torque wrench **FACOM R.250°A**, and check that the rolling torque falls between the prescribed values (**Figure 2**).



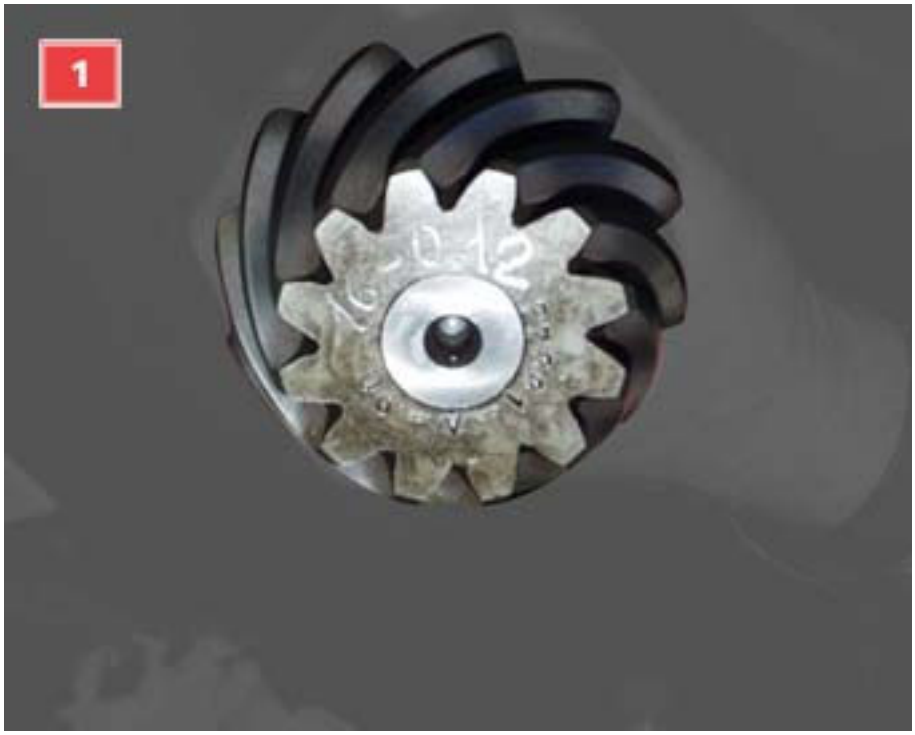
## Pinion positioning

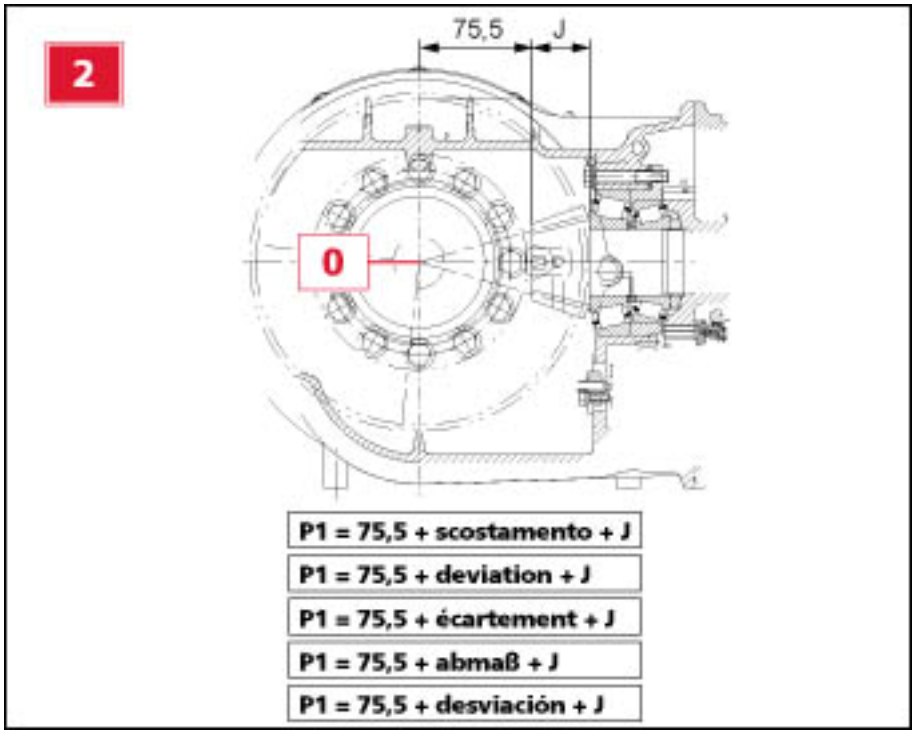
- Reset the dial gauge on a checking plane.
  Measure the distance **J** (**Figure 1**) between the ground plane on the pinion head and the resting surface of the front taper roller bearings' internal race (**Figure 2**).



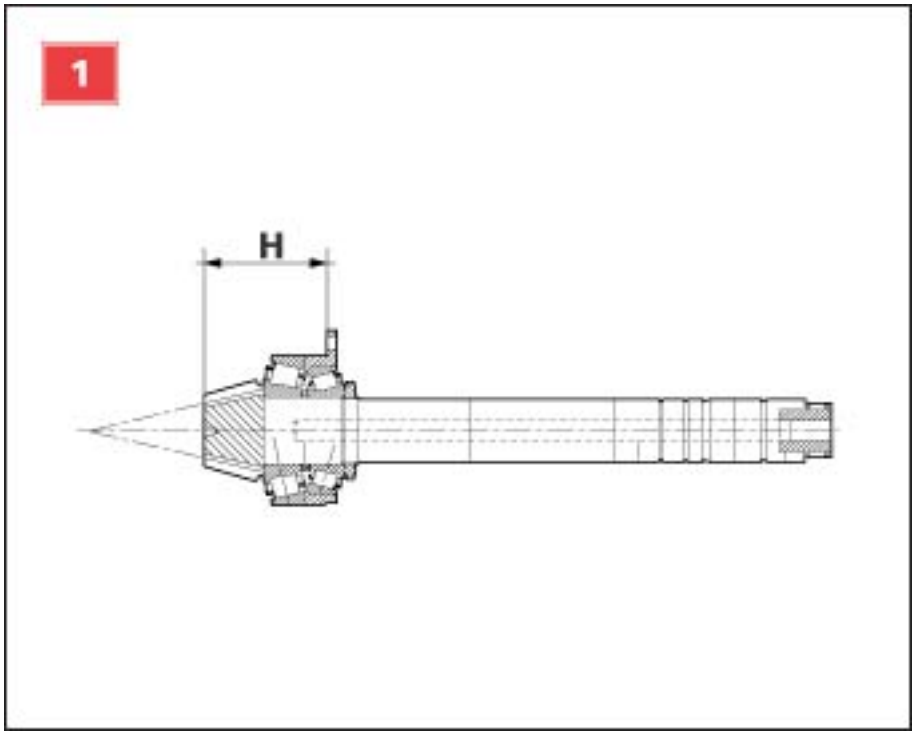



- Considering the deviation marked on the pinion head (**Figure 1**), calculate the distance **P1** between the taper roller bearing surface plane and the differential axle (**Figure 2**).



- Place the lay shaft on an x block and measure the distance **H** (**Figure 1**) between the pinion head surface (**Figure 2**) and the resting surface of the bearing case (**Figure 3**) on the differential housing.





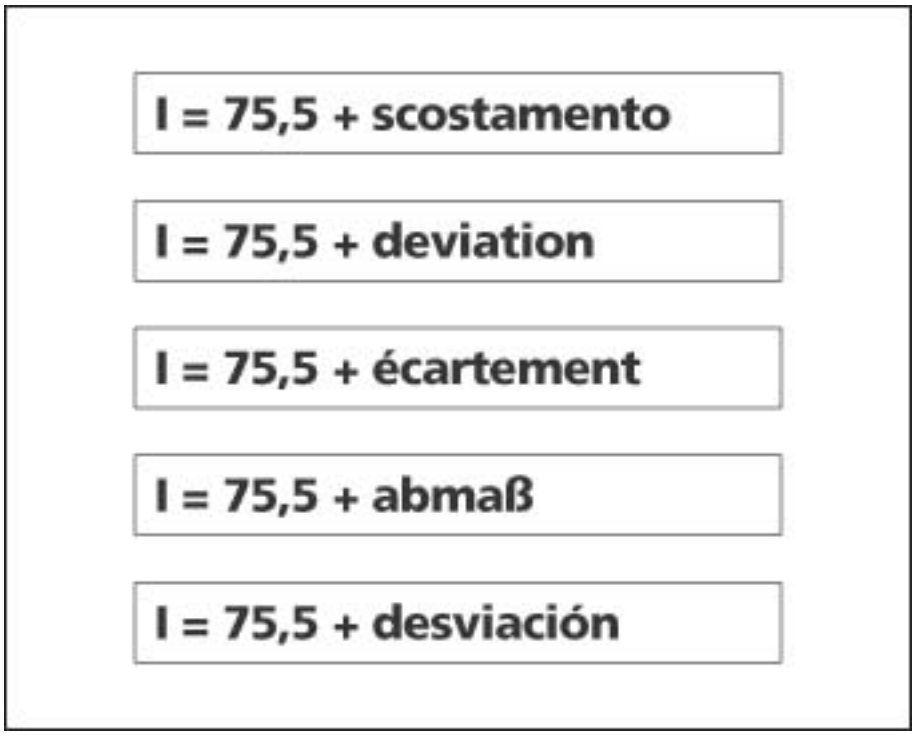




- The deviation from the theoretical distance of **75,50 mm** must be marked on the pinion head.

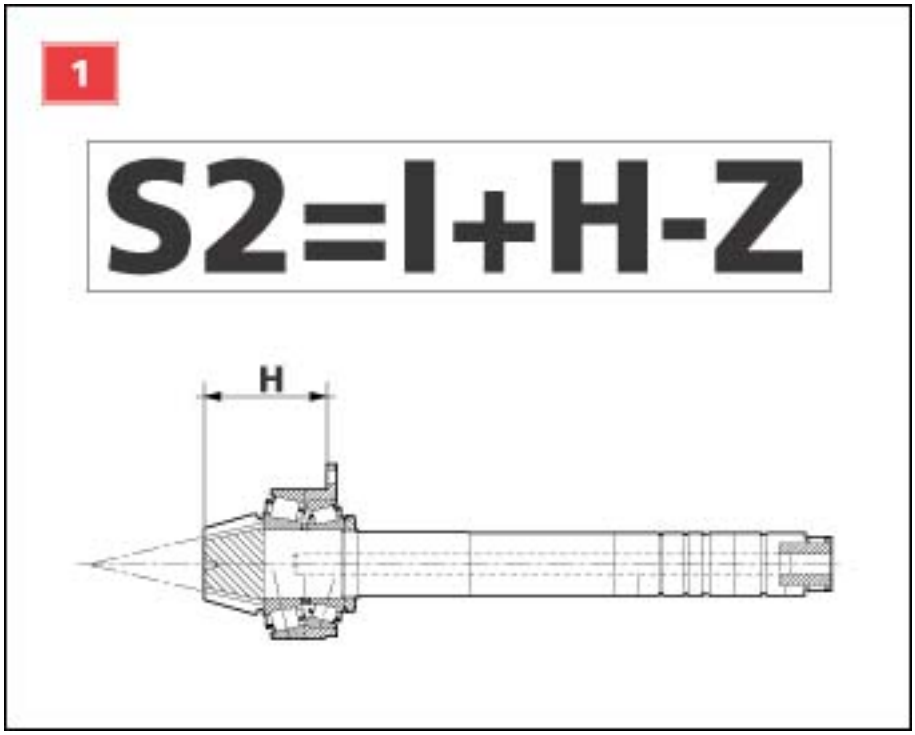


- Thus the actual distance between the pinion head and differential axis is:



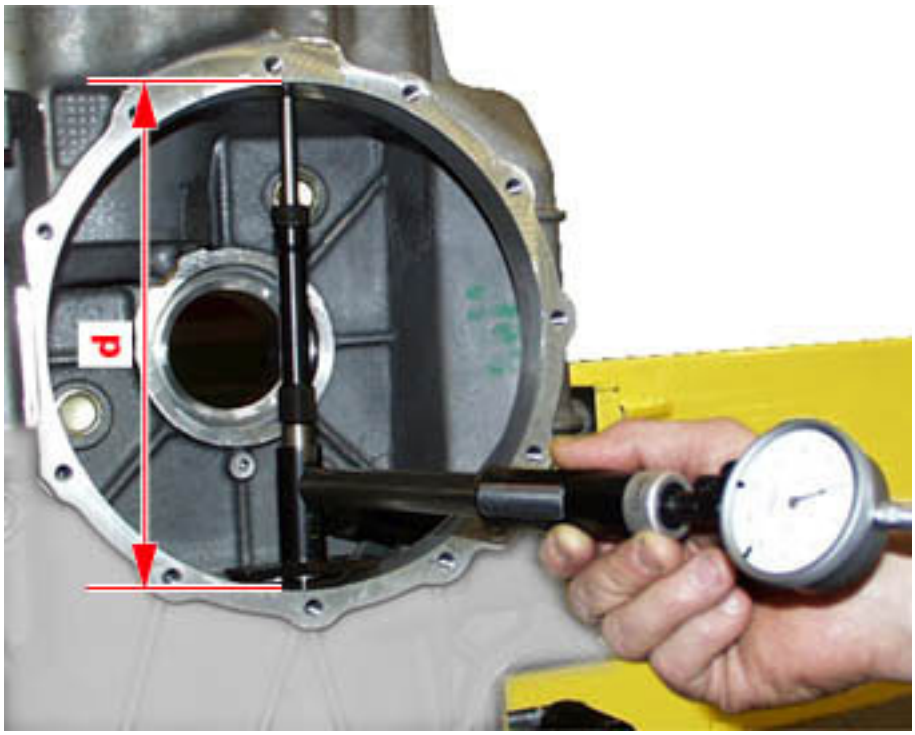
- To measure the thickness of the spacer **S2** to be inserted between the bearing case and the differential housing calculate the following: (**Figure 1**):

**N.B.**
**Z is printed on the differential housing (Figure 2).**

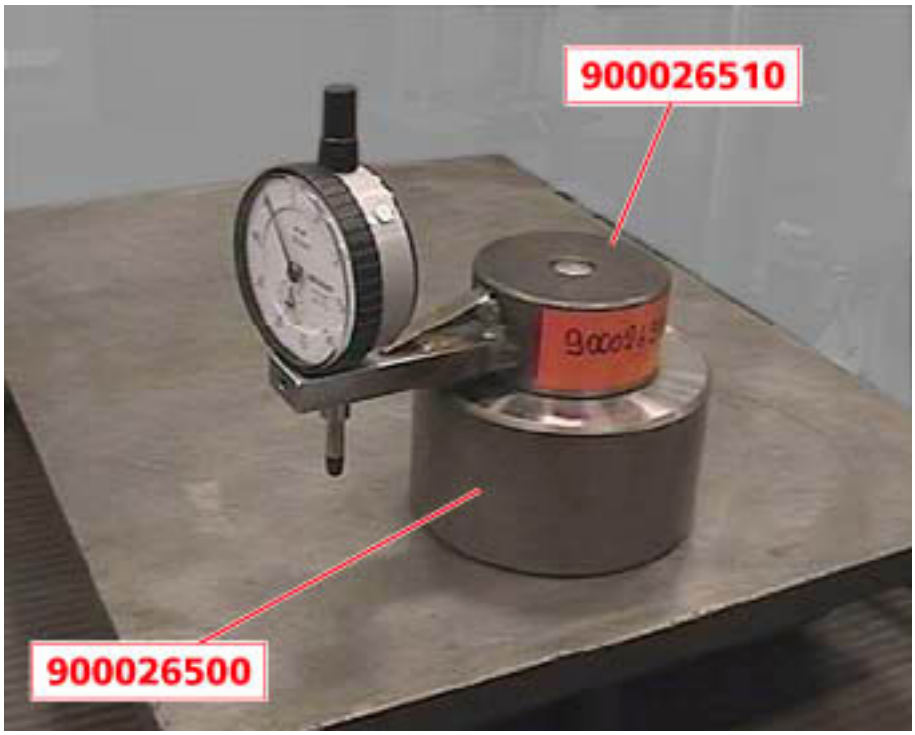




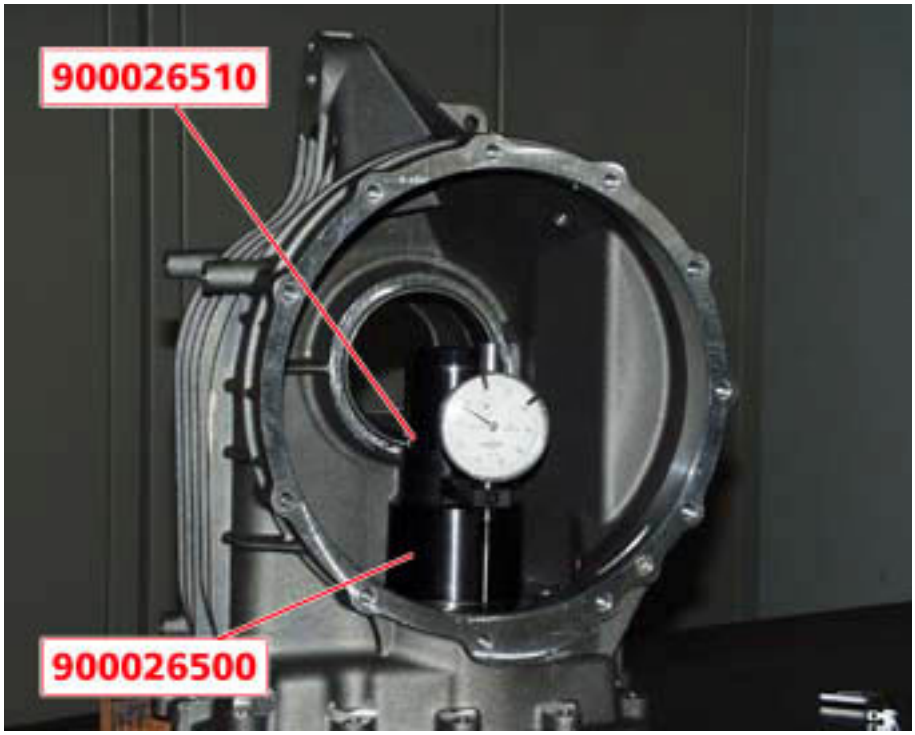

- Using a bore-meter measure the diameter **d** of the side cover's seat on the differential housing.




- Fit the lay shaft onto the differential housing, including the spacer for preloading the pinion's taper roller bearings.
- Reset the dial gauge **900026510** to **2mm** on a checking plane, positioning it on the bushing **900026500.**



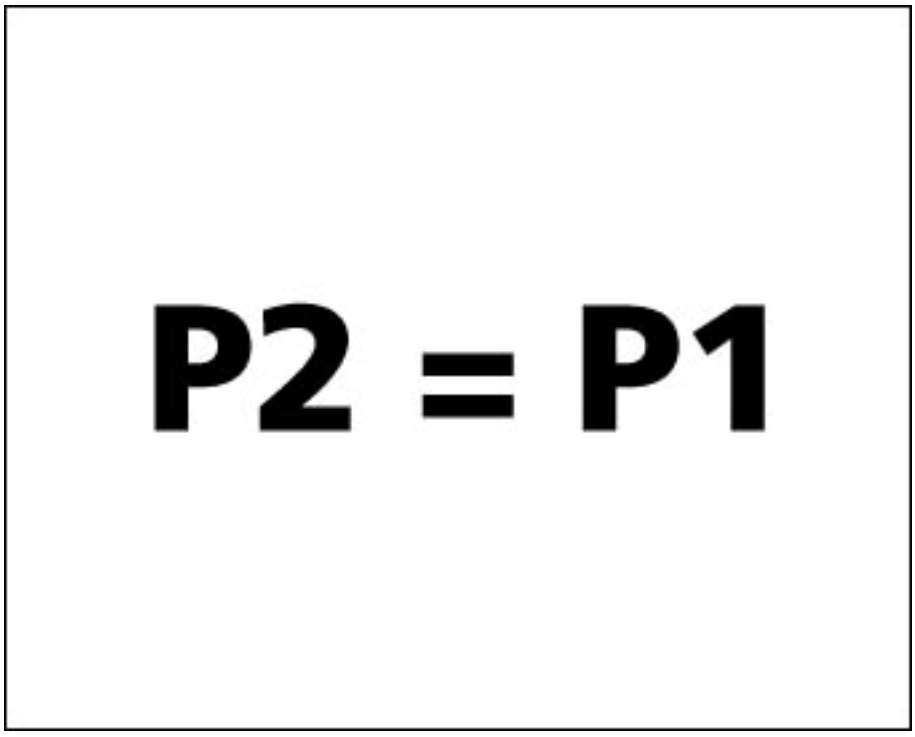
- Rest the bushing **900026500** including the dial gauge **900026510** onto the pinion head and read the deviation **M**.




- In order to determine the actual positioning of the taper roller bearing in relation to the differential axle, carry out the following procedure:

$$P2 = d/2 + M$$

- In order to obtain the correct positioning of the pinion in relation to the differential axle, this must be:




**IMPORTANT**
**If this does not prove correct, increase or reduce the thickness of the spacer in order to obtain this condition.**

## Measuring the seeger ring thickness for positioning the I$^{st}$ and II$^{nd}$ gear synchroniser

- Fit the seeger ring (**Figure 1**) orientating the bevelled side towards the roller cage (**Figure 2**).





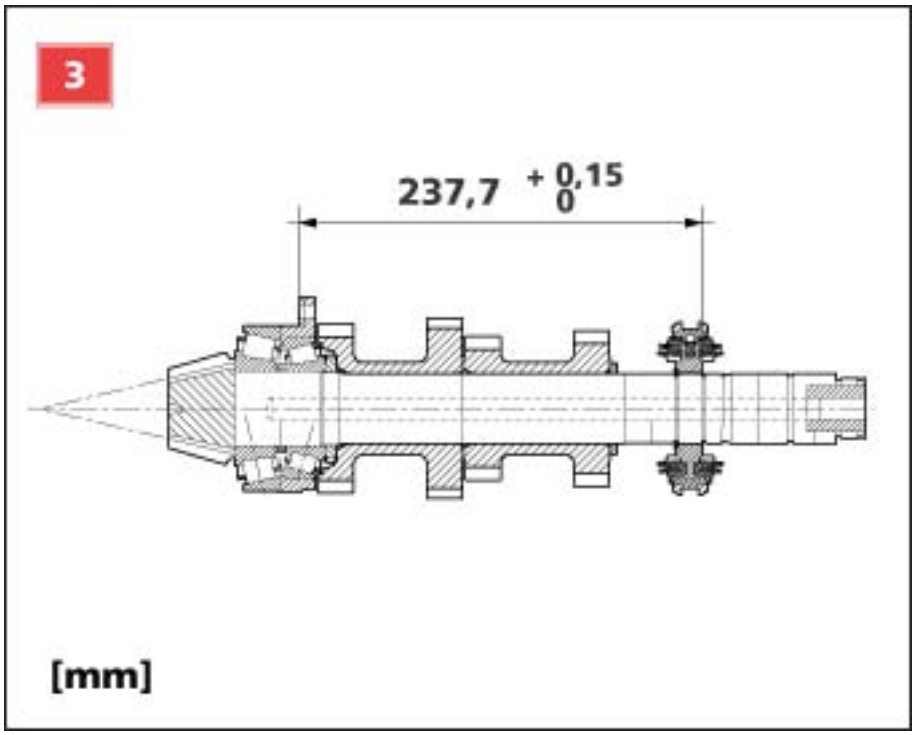

- Fit the first and second speed synchronizer hub using the punch for the prescribed tool **95973262**.



- Insert the pinion positioning spacer under the bearing case and rest it on the checking plane base.
- Measure the distance between the spacer surface (**Figure 1**) and the synchronizer hub (**Figure 2**), the value must be (**Figure 3**):





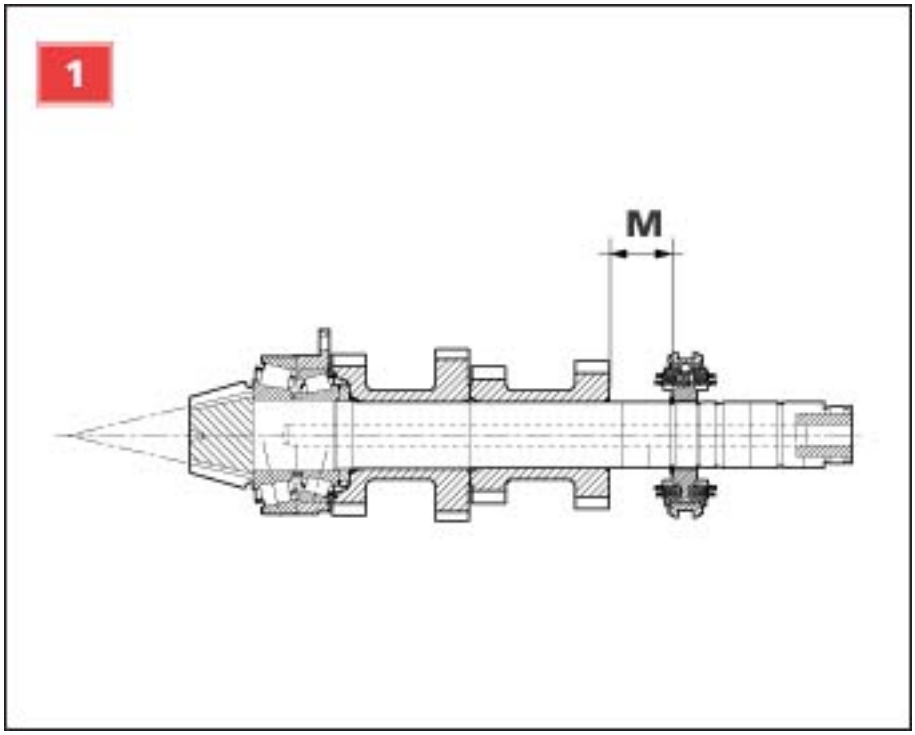



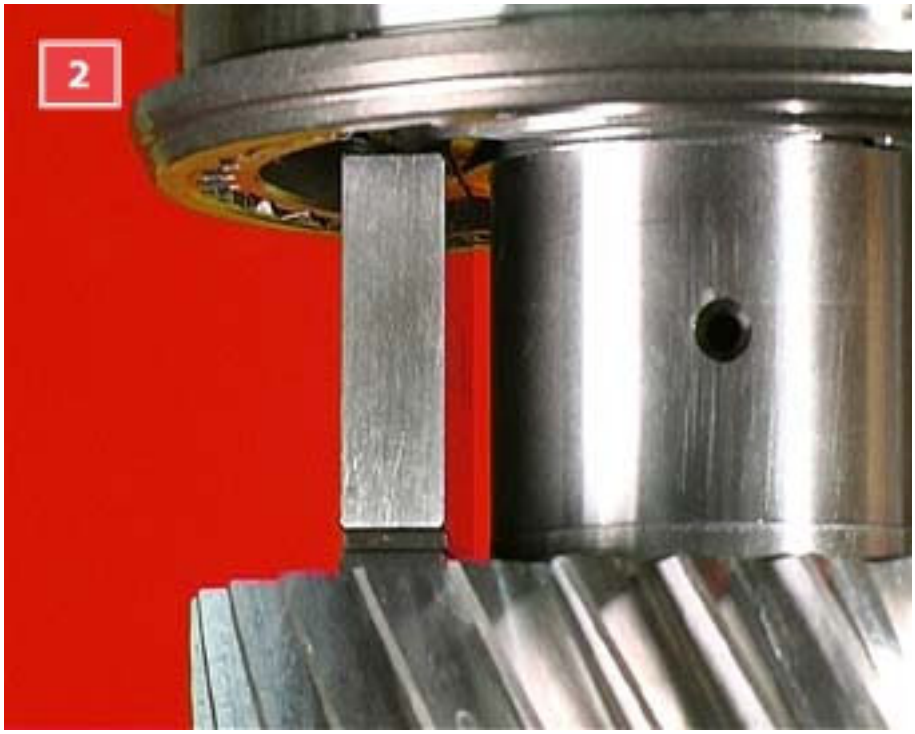

**N.B.**
**If the measured value does not correspond to the prescribed one, adjust the seeger ring thickness until it reaches the reference measurement.**

## Measuring the spacer thickness for II$^{nd}$ gear end float

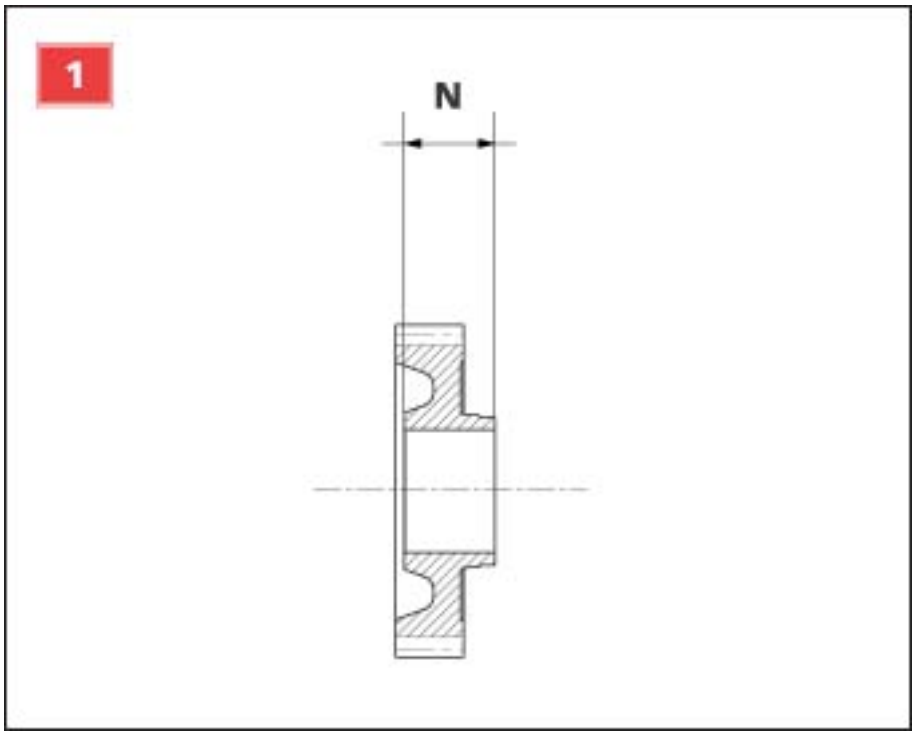
- With the synchronizer and seeger ring fitted, measure the distance **M** between the synchronizer hub and the fifth speed gear using gauged blocks (**Figure 1**).

**N.B.**
**The blocks must rest on the surface of the synchronizer hub ledge and not on the protrusion of the seeger ring as this would distort the measurement.**



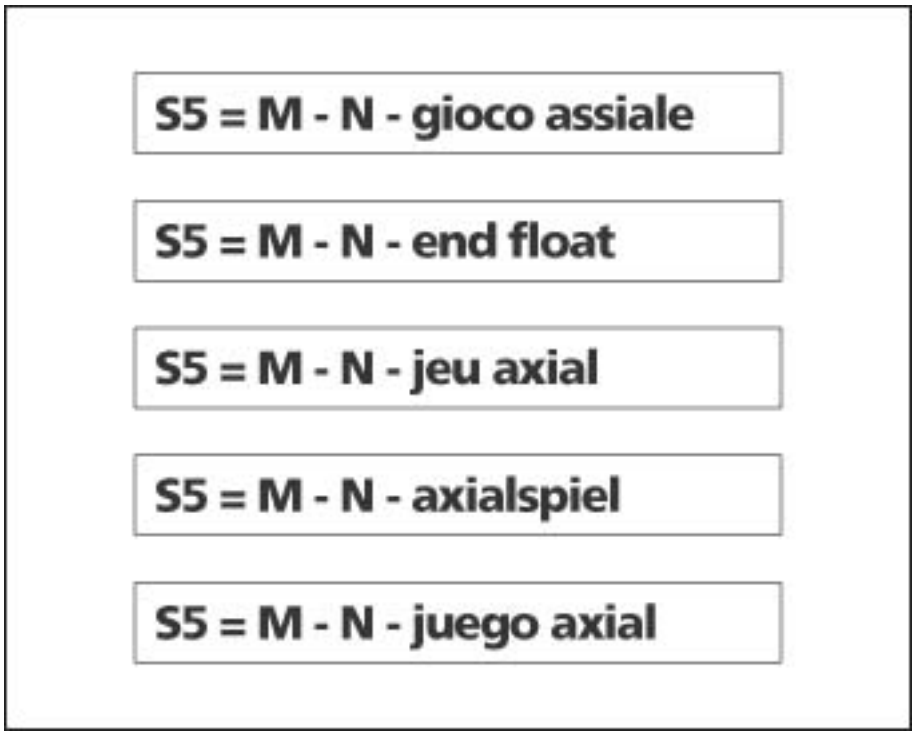



- Using a micrometer, measure the thickness **N** of the second speed gear hub (**Figure 1 and 2**).






- To obtain the thickness of the shouldering ring calculate the following:




- Remove the synchronizer and the seeger ring and heat the lay shaft in a kiln.

**N.B.**

**Put the shouldering ring in the oven at a temperature of 140°G for at least 20 minutes.**

- Fit the shoulder onto the shaft with the side with notches turned towards the double gear.

**N.B.**

**Apply a load (10,000 kg) for at least 2 minutes and let the shaft cool down.**

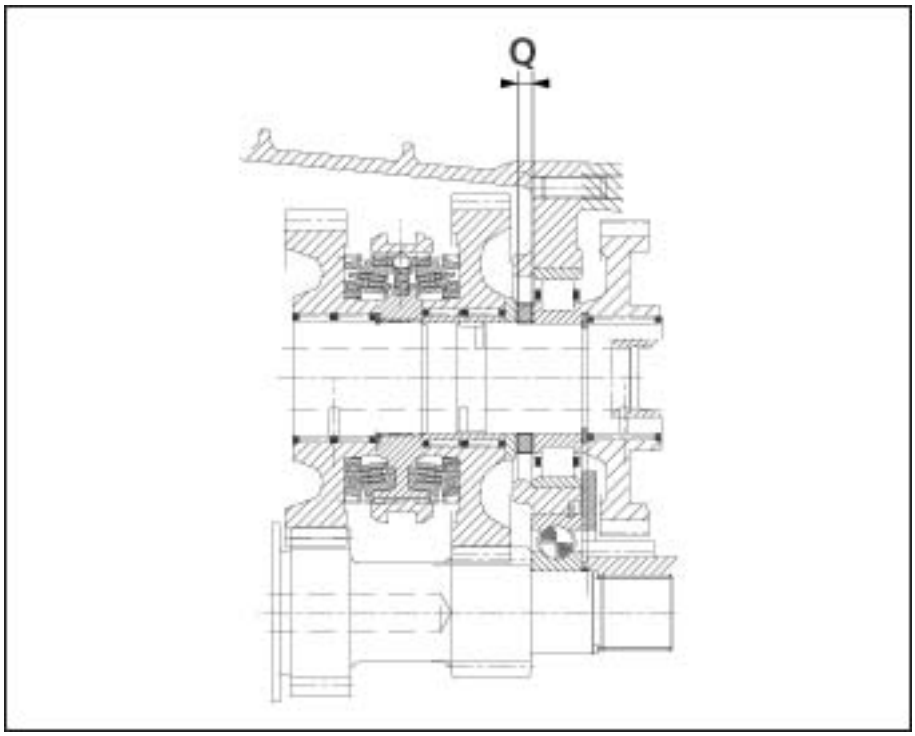


- Bring the entire unit flush with the punch of the prescribed tool **AV3262**.

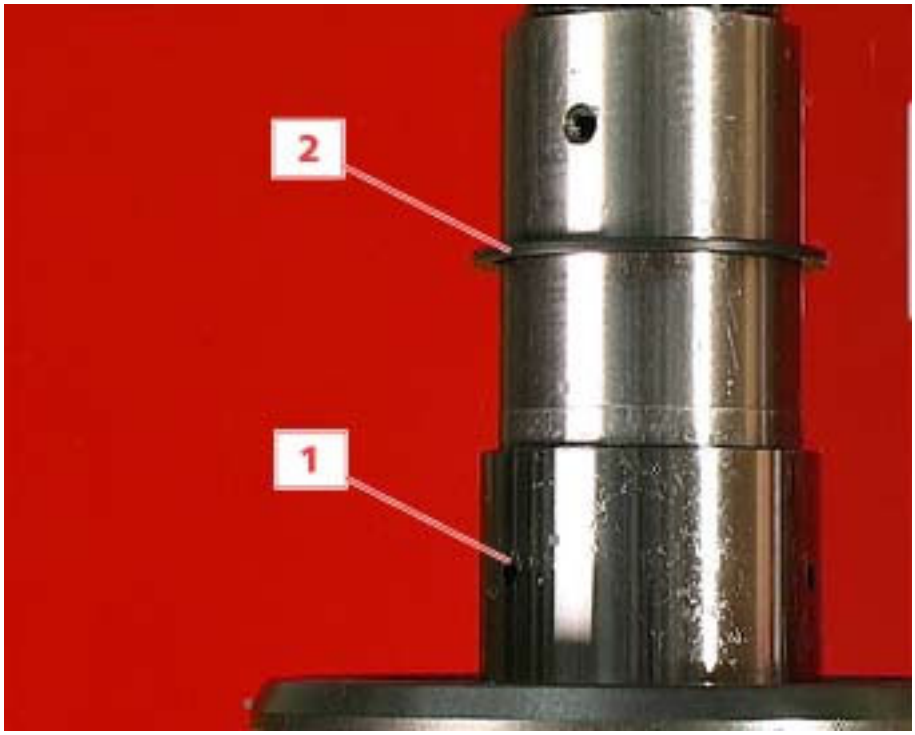



### Measuring the spacer for gear set locking

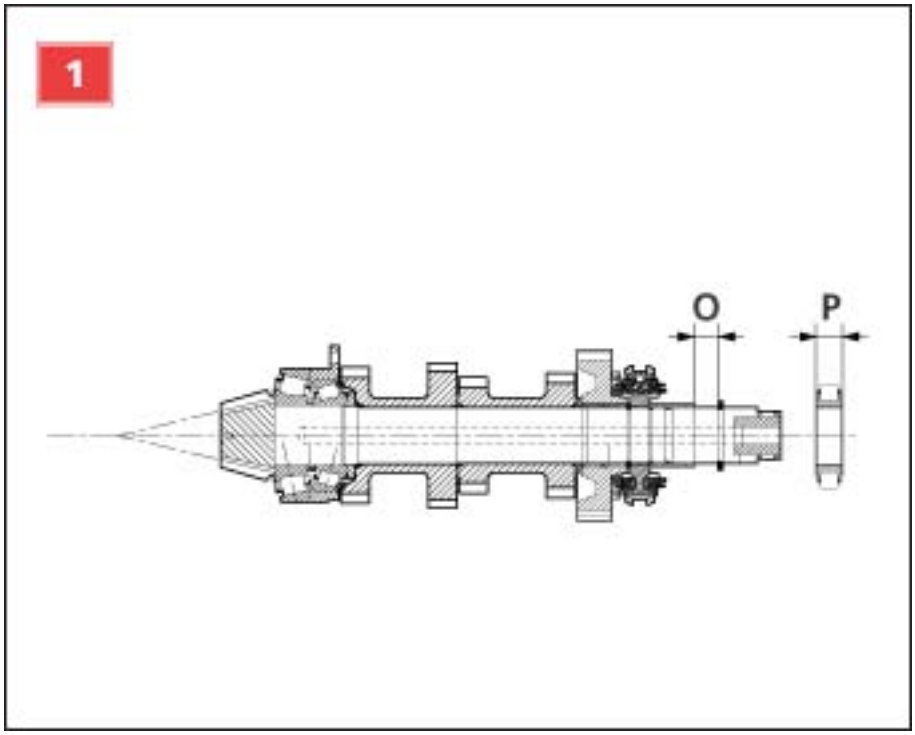
- Using the micrometer, measure the thickness **Q** of the spacer.



- Fit the bushing (**1**) so that it rests on the first and second speed synchronizer hub and install the seeger ring in the specific seat (**2**).



- Using the gauged blocks measure the distance **O** between the bushing edge and the seeger ring (**Figure 1 and 2**).
- To obtain the thickness of the shouldering fifth wheel, the thickness of the roller bearing inner track and the prescribed value for the roller bearing **P** (**Figure 1**) and float must be deducted from the distance measured (**Figure 3**).






3

S6 = O - P - Q - gioco assiale

S6 = O - P - Q - end float

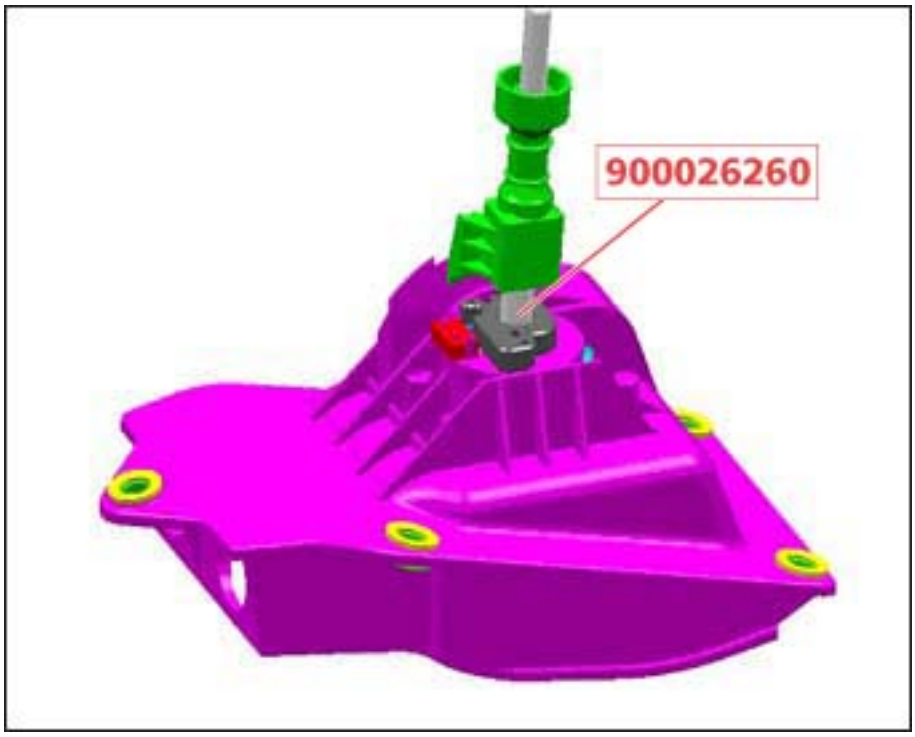
S6 = O - P - Q - jeu axial

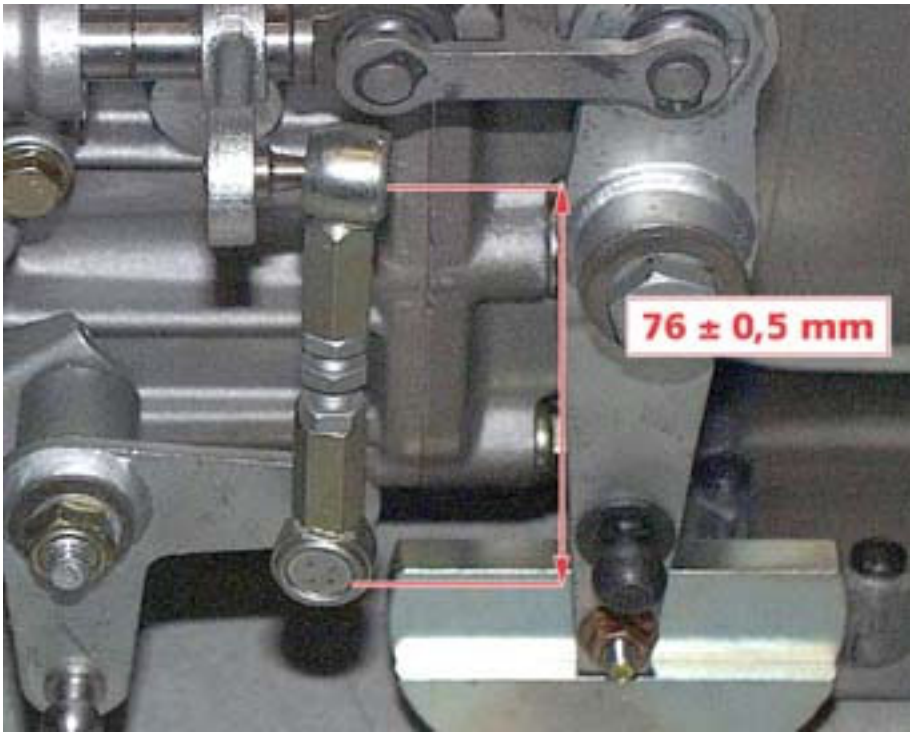
S6 = O - P - Q - axialspiel

S6 = O - P - Q - juego axial

## GEARBOX CONTROL ADJUSTMENT

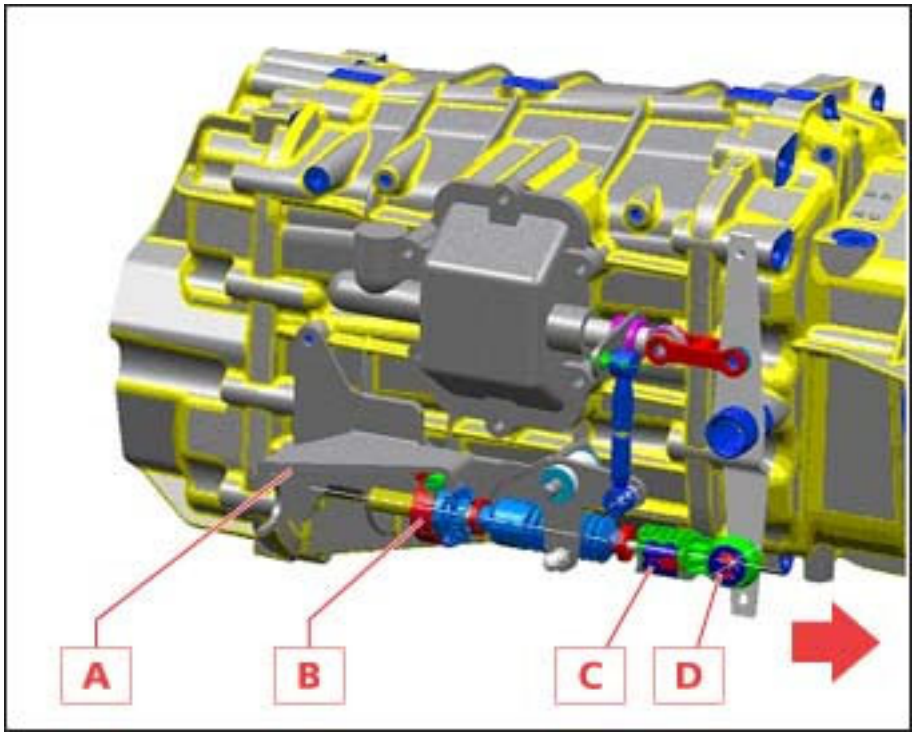
- Present instruction is applicable on cars that feature the gearbox controls p/n 198245 (Spyder GT) and p/n 198242 (Coupé GT) (from assembly number **10256**) onwards




- Hold firmly the gearshift lever in neutral by mean of tool p/n 900026260.
- Check that the axis-to-axis dimension between the ball joints of lever corresponds to 76 ± 0,5 mm.
- 

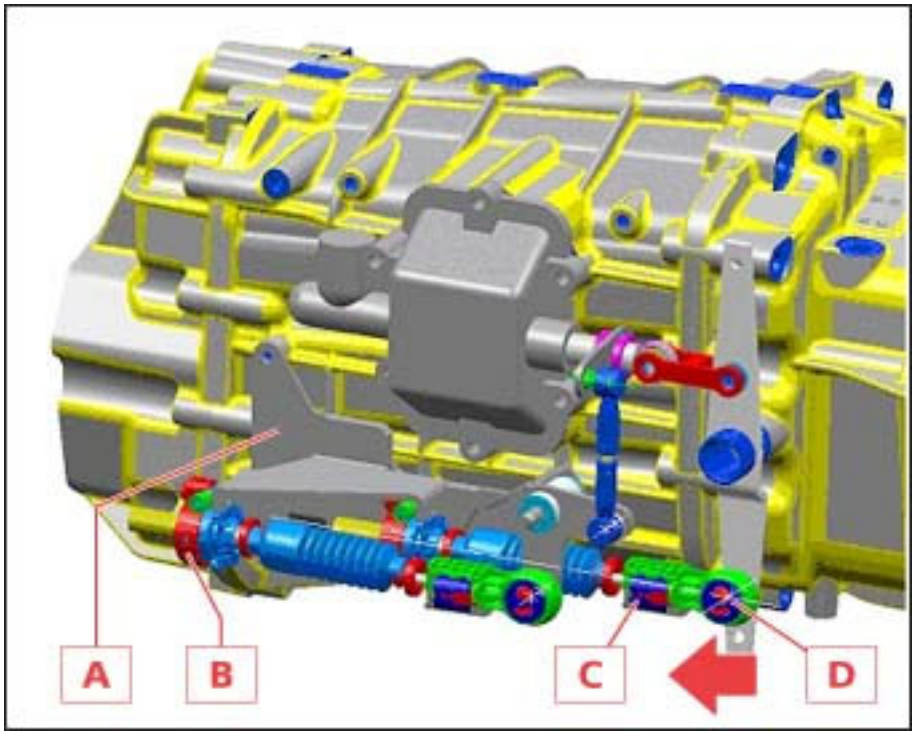
## Adjusting the gearshift wire

- Disconnect the cable from bracket **(A)** and from the ball joint of rocker **(B).**
- Connect the head of the cable to the bracket.
- Open the linking block **(C)** and connect the plastic **(D)** end to the ball joint of the rocker.
- Let the internal spring compensate the freeplay of the cable then close the linking block.

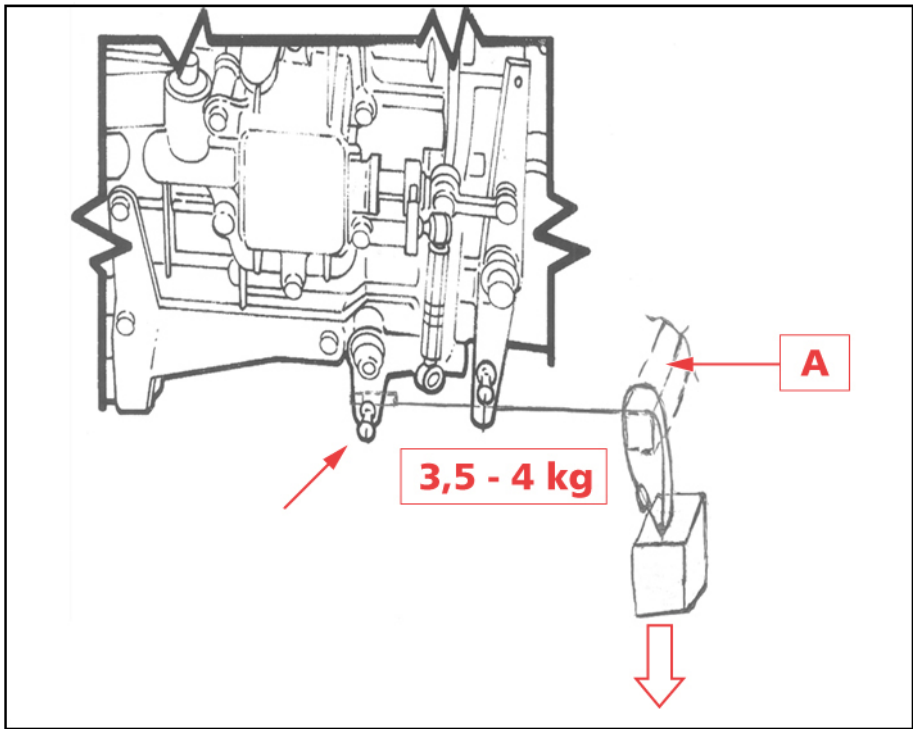


## Adjusting the gears selection

- Disconnect the cable from bracket **(A)** and from the ball joint of rocker **(B).**
- Connect the head of the cable to the bracket.
- Open the linking block and connect **(C)** the plastic end **(D)** to the ball joint of the rocker.




- Hang a weight heavy 3.5 – 4.0 kg about to the ball joint of the rocker and let it droop from the spacer bar **(A)** of the exhaust, with a wire so that the freeplay of the system will be compensated. Then close the linking block.



## TIGHTENING TORQUES

| Description | Torque | Product |
|---|---|---|
| Main shaft ring nut and check-nut | 100 Nm | LOCTITE 242 |
| Front main shaft ring nut | 100 Nm | |
| Main shaft shouldering ring nut | 70 Nm | LOCTITE 242 |
| Ring nut fastening lay shaft tapered roller bearings | 300 Nm | |
| Bearing holder case fastening screws | 30 Nm | LOCTITE 270 |
| Front cover nuts | 30 Nm | |
| Front cover stud bolts | 30 Nm | |
| Lubrication nozzle fastening screws | 10 Nm | LOCTITE 510 |
| Bearing retaining plate hexagonal-head screws | 30 Nm | LOCTITE 270 |
| Bearing retaining plate socket-head screws | 26 Nm | LOCTITE 270 |
| Pump driving pin | 27 Nm | |
| Oil pump fastening screws | 8 Nm | |
| Gearbox/differential housing fastening nuts | 30 Nm | |
| Differential housing side cover fastening screws | 30 Nm | |
| Bushing fastening screw | 8 Nm | LOCTITE 242 |
| Screw fastening nuts for cover with control rod | 8 Nm | LOCTITE 270 |
| Oil pump fastening screws | 8 Nm | |
| Differential crown wheel fastening screws | 70 Nm | LOCTITE 270 |
| Rocker lever fastening screw | 49 Nm | |
| Gearbox rocker lever fastening nut | 24 Nm | |
| Nut for fastening counterweight on gearshift lever | 7.4 Nm | |
| Nut fastening bushing to gearbox | 130 Nm | |
| Screw fastening rubber bushing to rear underframe | 50 Nm | |

| Description | Torque | Product |
|---|---|---|
| Screw fastening wiring retaining bracket to gearbox | 7,4 Nm | |
| Nut for fastening exhaust extension support brackets to gearbox | 24 Nm | |
| Union for oil coil lines to gearbox | 18 Nm | |
| Nut fastening housing to tunnel | 17 Nm | |
| Rear screw fastening housing to tunnel | 17 Nm | |
| Screw fastening electronically-controlled kit to gearbox m8x18 | 24 Nm | |
| Screw fastening electronically-controlled kit to gearbox m8x30 | 32 Nm | |
| Screw fastening upper bracket to actuator | 24 Nm | |
| Screw fastening lower bracket to actuator | 24 Nm | |
| Screw fastening lower actuator bracket to differential housing | 49 Nm | |
| Nut fastening upper actuator bracket to gearbox housing | 24 Nm | |
| Screw fastening electronically-controlled actuator cover to gearbox | 7,4 Nm | |
| Flanged screw fastening starter motor | 24 Nm | |
| Nuts fastening outlet supporting brackets to gearbox | 25 Nm | |
| Flywheel fastening screws | 83 Nm | |
| Clutch assembly retaining screws | 18 Nm | |
| Clutch housing locknuts | 26 Nm | |
| Starting motor locknuts | 26 Nm | |
| Transmission s heft/clutch housing locknuts | 70 Nm | |
| Fastening nuts for transmission shaft-gearbox unit | 70 Nm | |
| Rollbar fastening nuts | 24 Nm | |
| Fastening screws for front modular cross member | 24 Nm | |
| Rear cross member fastening nuts | 24 Nm | |

## TOOLKIT

### Specific equipment

| Description | Pieces | Code | |
|---|---|---|---|
| Clutch flywheel locking tool | 1 | 900026240 | |
| Clutch centring shaft | 1 | 900026250 | |
| Tool for checking electronically-controlled gearbox oil level | 1 | 900026350 | |
| Clutch thrust bearing spacer | 1 | 900026930 | |
| Manual accelerator for clutch balancing | 1 | 900026950 | |
| Extracting tool | 1 | 95972714 | AV2714 |
| Extracting tool pins | 2 | 900026400 | |
| Toolkit for fitting grommet | 2 | 900026410 | |
| Toolkit for fitting gearbox shafts-assemblies | 5 | 900026420 | |
| Wrench for fastening main shaft ring nut and check-nut | 1 | 95973245 | AV3245 |
| Wrench for fastening main shaft shouldering ring | 1 | 95973246 | AV3246 |
| Wrench for lay shaft bearing retaining ring nut | 1 | 95973247 | AV3247 |
| Shaft-rod assembly centring screws with forks | 1 | 900026430 | |
| Toolkit for removing/fitting main shaft | 4 | 900026440 | |
| Toolkit for fitting twin gearings and bearings on lay shaft | 4 | 900026450 | |
| Torque tool for tightening lay shaft ring nut | 1 | 95973257 | AV3257 |
| Tool for fitting roller bearing outer ring | 1 | 95973259 | AV3259 |
| Tool for removing/fitting gearbox housing bearing | 2 | 900026460 | |
| Tool for fitting $1^{st}$ - $2^{nd}$ speed synchroniser hub and spacer | 1 | 92973262 | AV3262 |
| Tool for fitting various parts on lay shaft | 1 | 95973263 | AV3263 |
| Tool for fitting ball bearing onto main shaft | 1 | 900026470 | |
| Tool for mechanical gearbox control adjustment | 1 | 900026260 | |

| Description | Pieces | Code | |
|---|---|---|---|
| Toolkit for fitting bearing and bushing on middle plate | 4 | 900026480 | |
| Pinion clearance checking tool | 1 | 95973266 | AV3266 |
| Tool for fitting ball bushing | 1 | 95973267 | AV3267 |
| Punch for fitting plug (∅ 14mm) | 1 | 95973268 | AV3268 |
| Tool for positioning gearshift control lever on rod | 1 | 95973271 | AV3271 |
| Synchroniser extracting tool | 1 | 95973272 | AV3272 |
| Extracting tool for 3rd - 4th speed synchroniser on main shaft | 1 | 900026490 | |
| Bushing with bearing seat | 1 | 95973274 | AV3274 |
| Tool for fitting ball bearing outer ring on differential cover | 2 | 95973275 | AV3275 |
| Tool for fitting bearing on differential axle-shaft with flange, right-hand side | 2 | 95973276 | AV3276 |
| Tool for fitting differential tapered bearings | 2 | 95923278 | AV3278 |
| Union for gearbox pressing | 1 | 95973283 | AV3283 |
| Tool for checking container between bevel gear pair pinion and bearing seat | 1 | 90026500 | |
| Toolkit for fitting synchroniser components | 3 | 95976121 | AM106121 |
| Tool for locking differential | 1 | 95976628 | AM106628 |
| Tool for checking distance between pinion and bearing seat | 1 | 900026510 | |
| Tool for fitting front cover oil seal | 1 | 900026760 | |
| Tool for tightening main shaft front ring nut | 1 | 900026770 | |
| Tool for extracting reverse gearing | 1 | 900026780 | |
| Bracket for gearbox vertical hooking | 1 | 900026790 | |
| Tool for removing thrust bearing | 1 | 900026800 | |
| Extracting tool for gearbox housing | 1 | 900026810 | |

| Description | Pieces | Code | |
|---|---|---|---|
| Crescent-shaped tool for removal of gearbox gears | 1 | 900026820 | |
| Punch for fitting plug (∅ 8mm) | 1 | 900026830 | |
| Gearbox vertical support for trestle | 1 | 900026840 | |
| Front cover oil scraper guard | 1 | 900026850 | |
| Tool for removing synchroniser gearing on main shaft | 1 | 900026860 | |
| Tool for removing front cover oil seal | 1 | 900026870 | |
| Tool for tightening rear ring nuts on main shaft | 1 | 900026880 | |
| Tool for fitting left-hand side differential housing bearing | 1 | 900026890 | |
| Tool for fastening dial gauge in order to check pinion-crown wheel clearance | 1 | 900026900 | |

## Standard toolkit

| Article | Description | Manufacturer |
|---|---|---|
| USAG 454N/2 | Extracting tool with arms | USAG |
| USAG 454N/3 | Extracting tool with arms | |
| USAG 468 S11 | Bushing extracting tool | |
| USAG 472A/3 | Bearing extracting tool | |
| USAG 468/2 | Bearing extracting tool | |
| 468A/7 | Accessory part for bearing extracting tool USAG 468/2 | |
| USAG 815 F | Controlled tightening electric torque wrench:<br>End of scale: 250 Nm | |
| Item 154 | Press<br>Capacity: 10,000 Kg | CORADE S.p.A.<br>via Pietro Toselli, 81<br>50144 (FI)<br>Tel. 055 32271 |
| ZO-PW 470 | Calibrated blocks | ATS FAAR<br>Via Camporicchio, 1<br>20060 Vignate (MI)<br>Tel. 02 95360013<br>r.a. |
| 460 Series | Electronic dial gauge kit | |
| Item 5184TC500 | Working length: 500 mm<br>Reading: 1-50 mm<br>Precision: 0.05 mm | |
| F250 | Forced ventilation oven | |

## MECHANICAL GEARBOX LEVER HOUSING

### Detaching the gearbox lever housing

- Remove the mechanical gearbox lever boot.

*Mechanical gearbox lever covering*

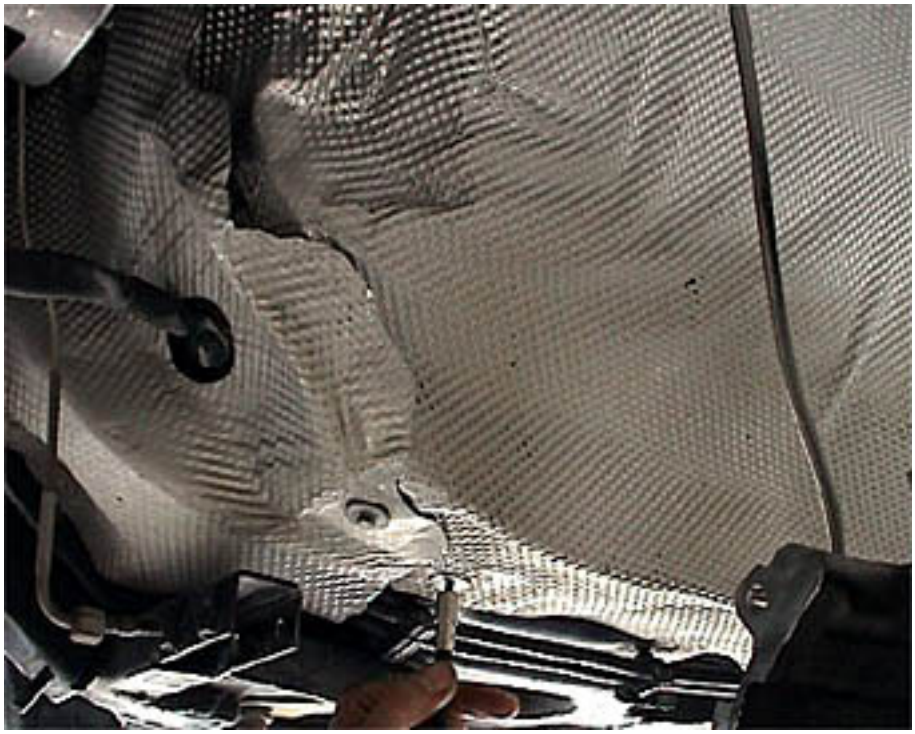
- Disconnect the reverse gear connector.



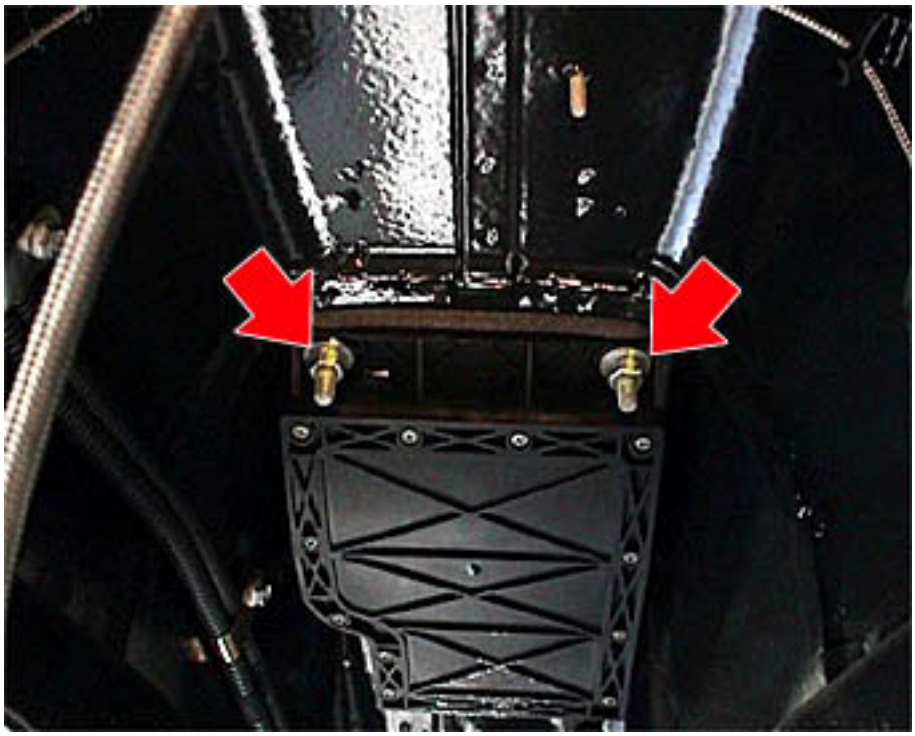
- Remove the transmission shaft.

*Clutch removal*

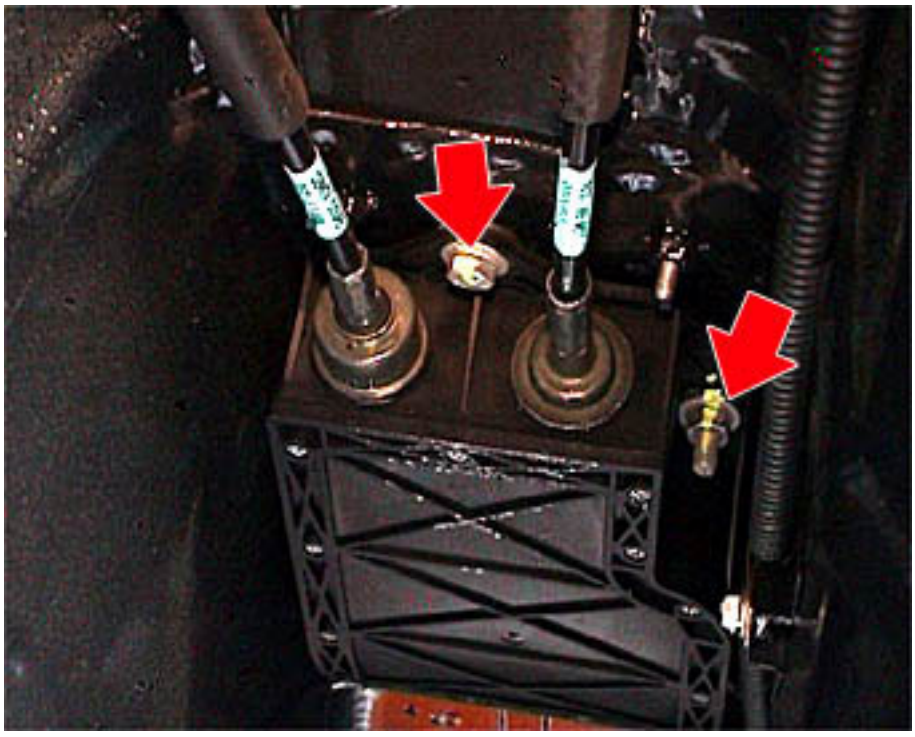
Remove the heat shield by undoing the fastening screws.



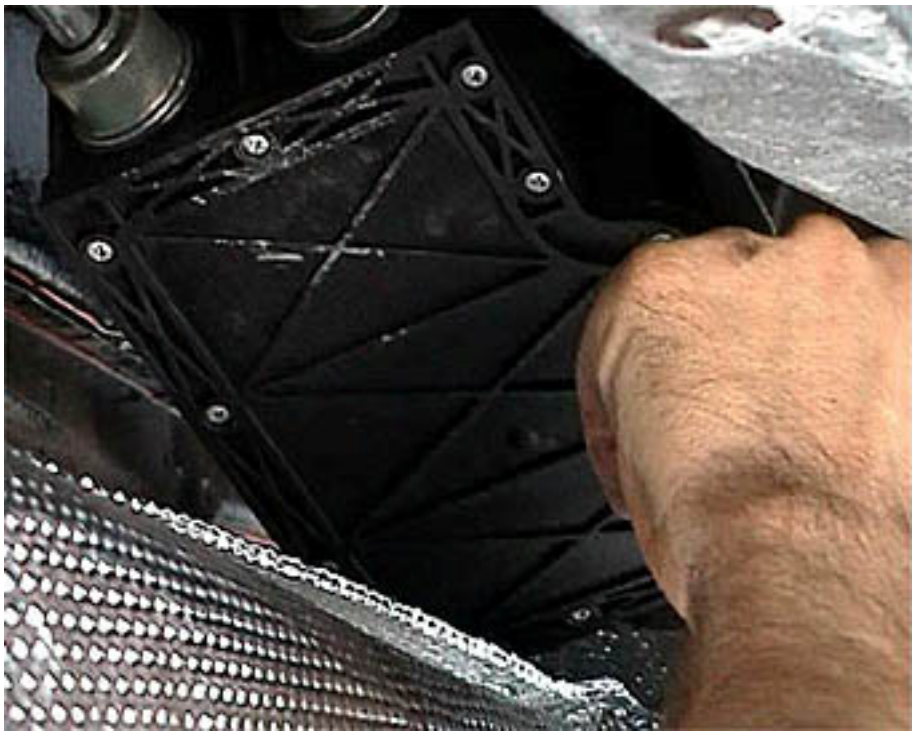
- Undo the two front screws fastening the gearbox lever housing.



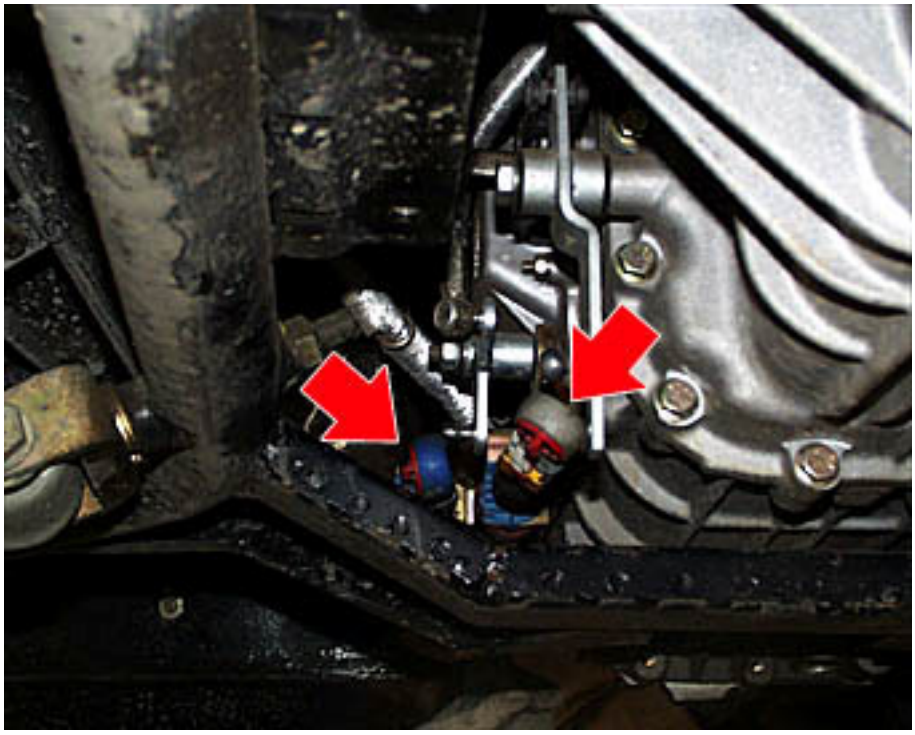
- Undo the rear fastening screw of the gearbox lever housing.



- Remove the gearbox lever housing from the seating.

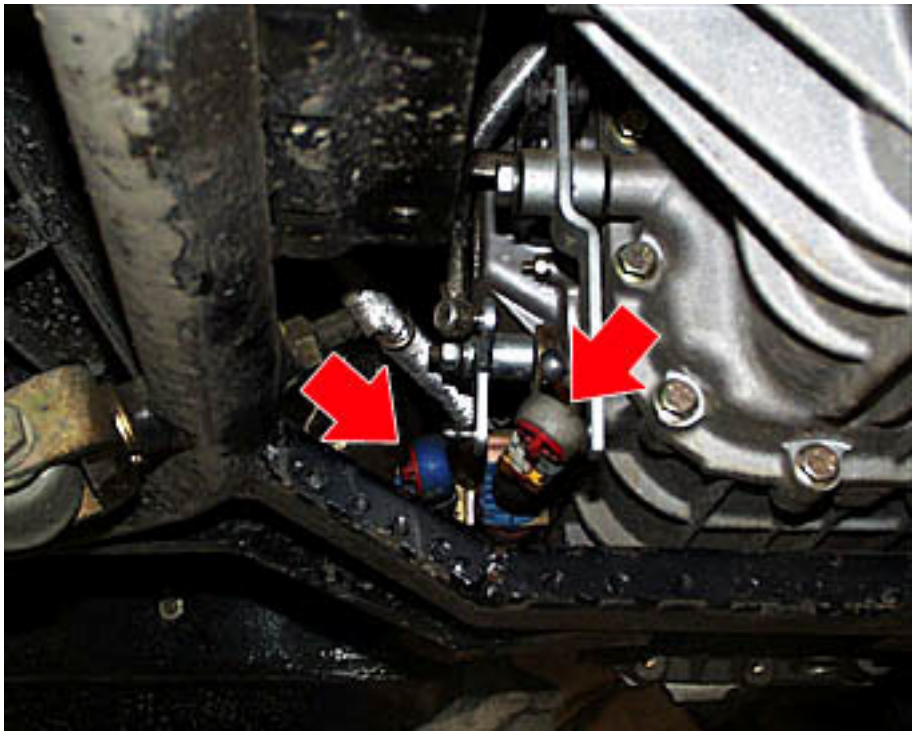


- Use a screwdriver to slide out the two gearbox control wires.

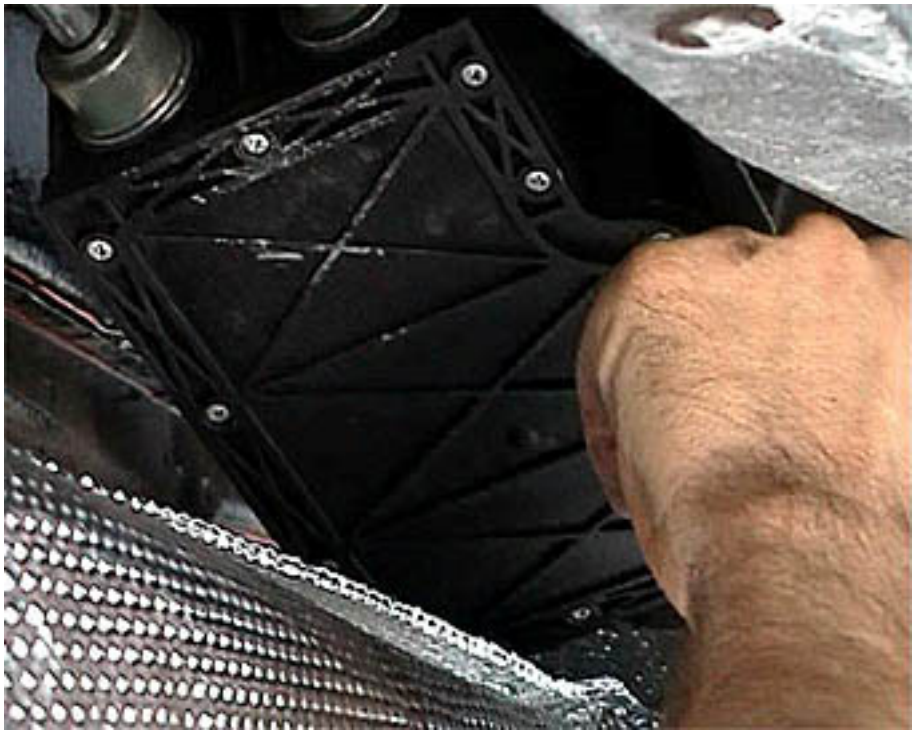


**Reattaching the gearbox lever housing.**

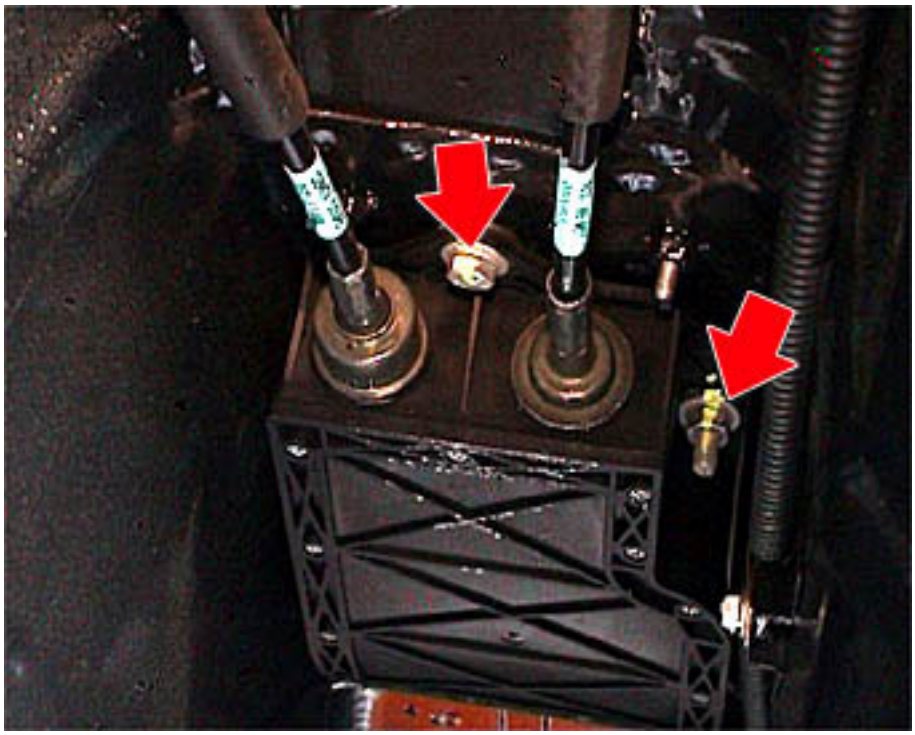
- Connect the two gearbox control wires.



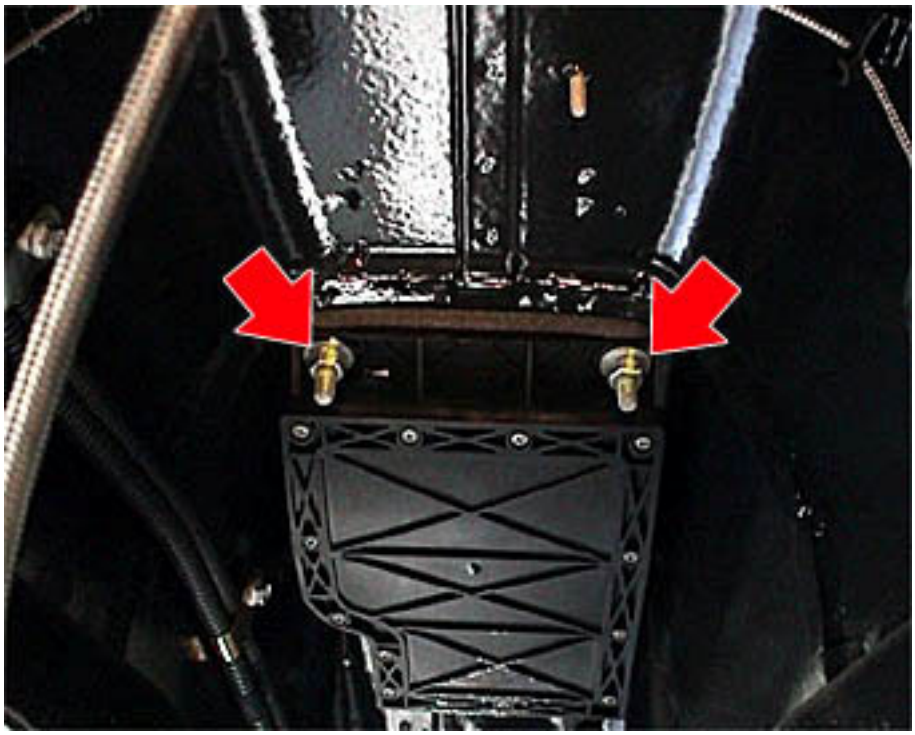
- Relocate the gearbox lever housing.



- Tighten the rear screw and nut to a torque of **17 Nm**.



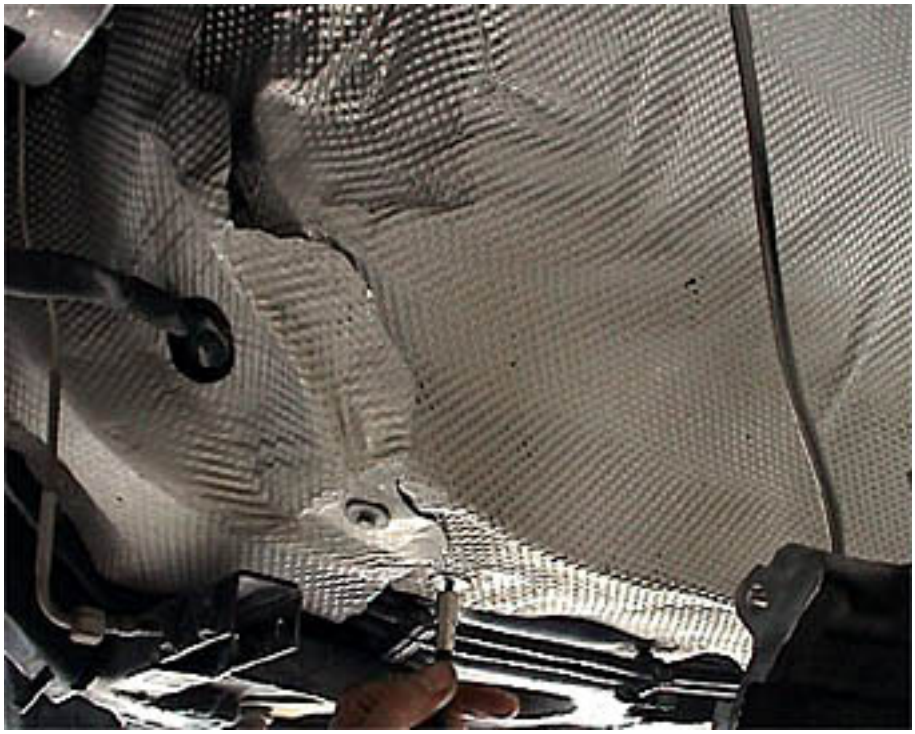
- Tighten the two front nuts to a torque of **17 Nm**.



- Adjust the gearbox control wires.

*Gearbox control adjustment*

- Remount the heat shield below the transmission shaft, tightening the fastening screws.



- Fit the transmission shaft.

*Reattaching the clutch*

- Working in the engine compartment, connect the reverse gear connector.



- Mount the manual gearbox lever boot.

*Mechanical gearbox lever covering*

## MAIN EARTH LOCATION - M138 COUPÈ

- **Figure no. 1**: Battery master switch earth.
- **Figure no. 2**: F1 wiring and longitudinal earth.
- **Figure no. 3**: Stranded earth wire for air bag ECU.
- **Figure no. 4**: Longitudinal wiring and Boge earth.
- **Figure no. 5**: A.B.S. wiring earth
- **Figure no. 6**: Engine compartment  wiring earth.
- **Figure no. 7**: Earth from engine to chassis.
- **Figure no. 8**: Earth for  dashboard wiring and A.C. system cable bundle.
- **Figure no. 9**: Earth for dashboard wiring  - injection- A.C. system.
- **Figure no. 10**: Earth for LHD dashboard wiring
- **Figure no. 11**: Earth for RHD dashboard wiring.
- **Figure no. 12**: Ignition coil earth.
- **Figure no. 13**: F1 gearbox earth.
- **Figure no. 14**: Earth for F1 ECU wiring.
- **Figure no. 15** : Earth for IT Node bracket.

**Figure no. 1**

- BATTERY MASTER SWITCH EARTH (**15 Nm**).
- Position : Luggage compartment, RH side.




**Figure no. 2**

- F1 WIRING EARTH (**15 Nm**).
- Position : Luggage compartment, RH side.



**Figure no. 3**

- STRANDED EARTH WIRE FOR AIR BAG ECU (**15 Nm**).
- Position: Passenger compartment central tunnel.
- N.B.: The black cable is available only in the RHD version (dashboard cable earth).




**Figure no. 4**

- LONGITUDINAL WIRING EARTH (**15 Nm**).
- Position : Luggage compartment, LH side.



**Figure no. 5**

- A.B.S. WIRING EARTH (**15 Nm**).
- Position: Luggage compartment, LH side.




**Figure no. 6**

- ENGINE COMPARTMENT WIRING EARTH (**15 Nm**).
- Position: Engine compartment, RH side.



**Figure no. 7**

- ENGINE EARTH.
- 1- Position : Clutch housing RH side (**60 Nm**).
- 2- Position : RH side underbody (**15 Nm**).




**Figure no. 8**

- DASHBOARD WIRING EARTH, A.C. UNIT CABLE BUNDLE AND POWER WINDOW KEYBOARD (**15 Nm**).
- Position: Passenger compartment, tunnel RH side.



**Figure no. 9**

- EARTH FOR DASHBOARD WIRING, A.C. SYSTEM AND INJECTION (**15 Nm**).
- Position: Passenger compartment, RH side on fire protection shield.




**Figure no. 10**

- LHD DASHBOARD WIRING  EARTHS (**15 Nm**).
- Position: LH side passenger compartment, under dashboard.



**Figure no. 11**

- RHD DASHBOARD WIRING EARTHS (**15 Nm**).
- Position: RH side passenger compartment, under dashboard.




**Figure no. 12**

- IGNITION COIL EARTHS (**25 Nm**).
- Position: Engine compartment rear side, near the oil pressure sensor.



**Figure no. 13**

- EARTHS ON GEARBOX (**10 Nm**).
- Position: Gearbox LH side.

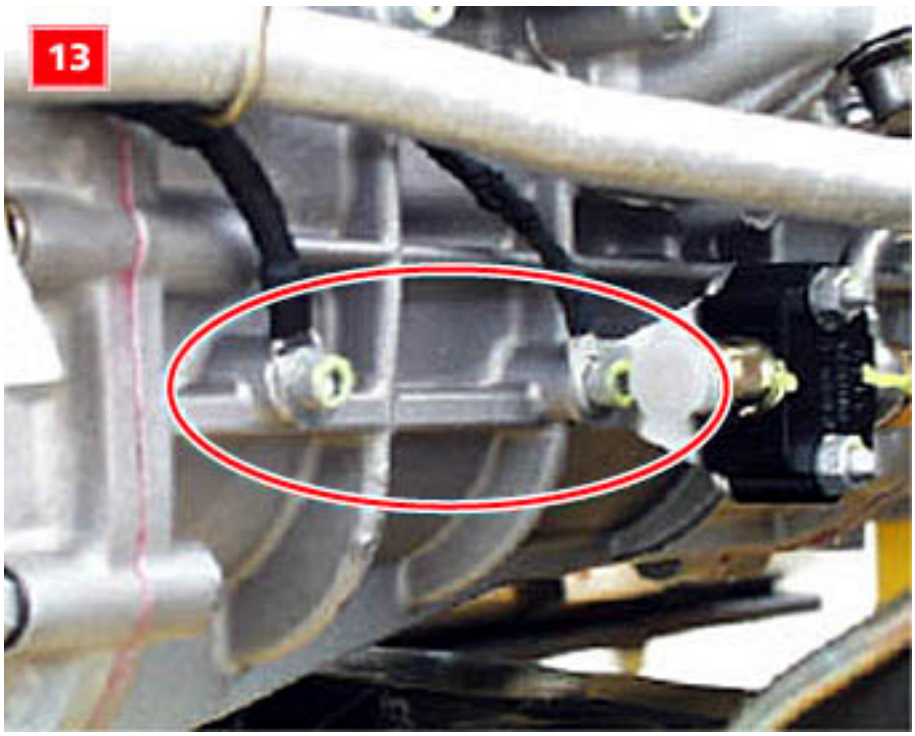



**Figure no. 14**

- EARTH FOR F1 GEARBOX ECU WIRING.
- Position: RH side luggage compartment.

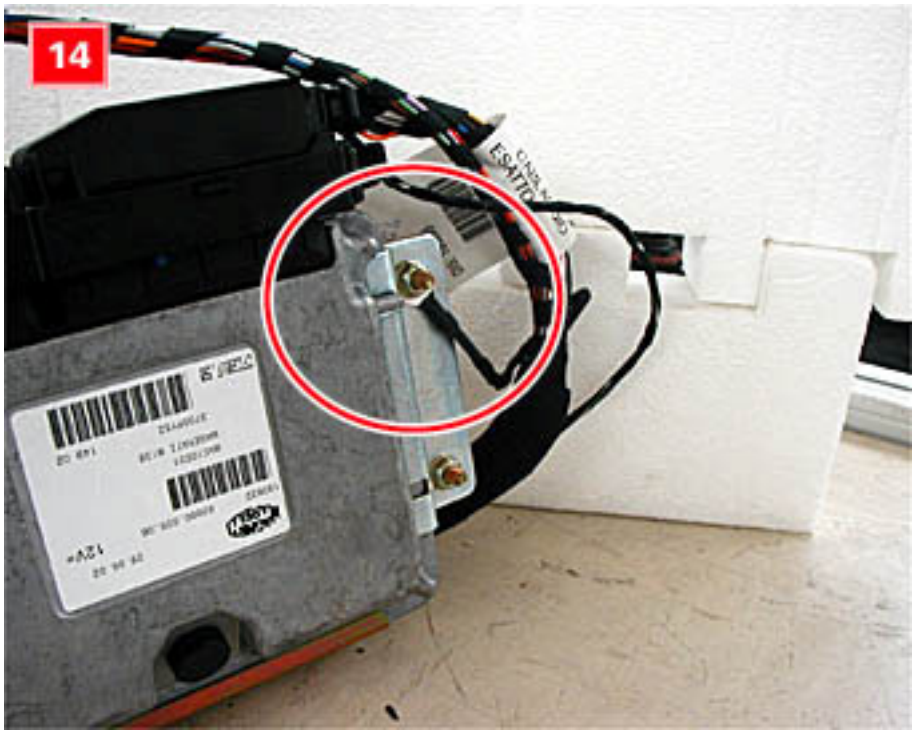
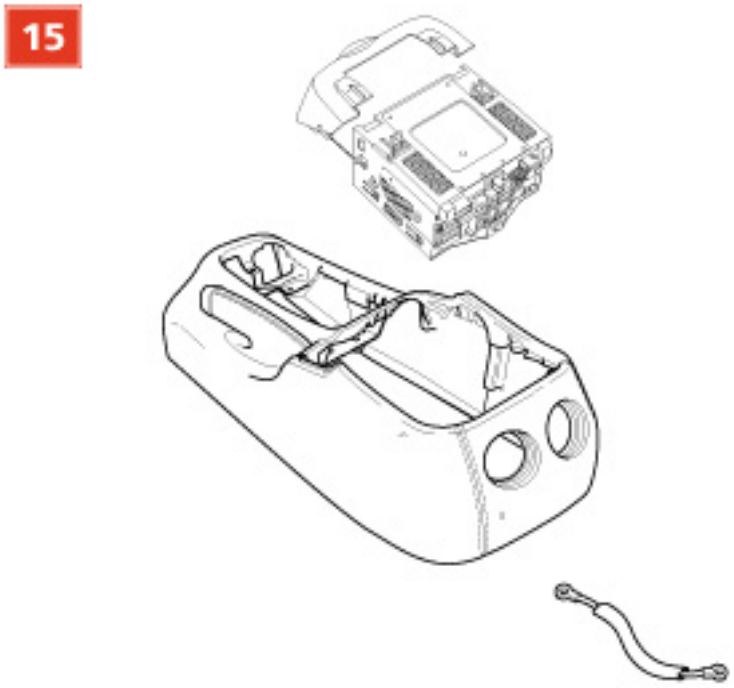


**Figure n° 15**

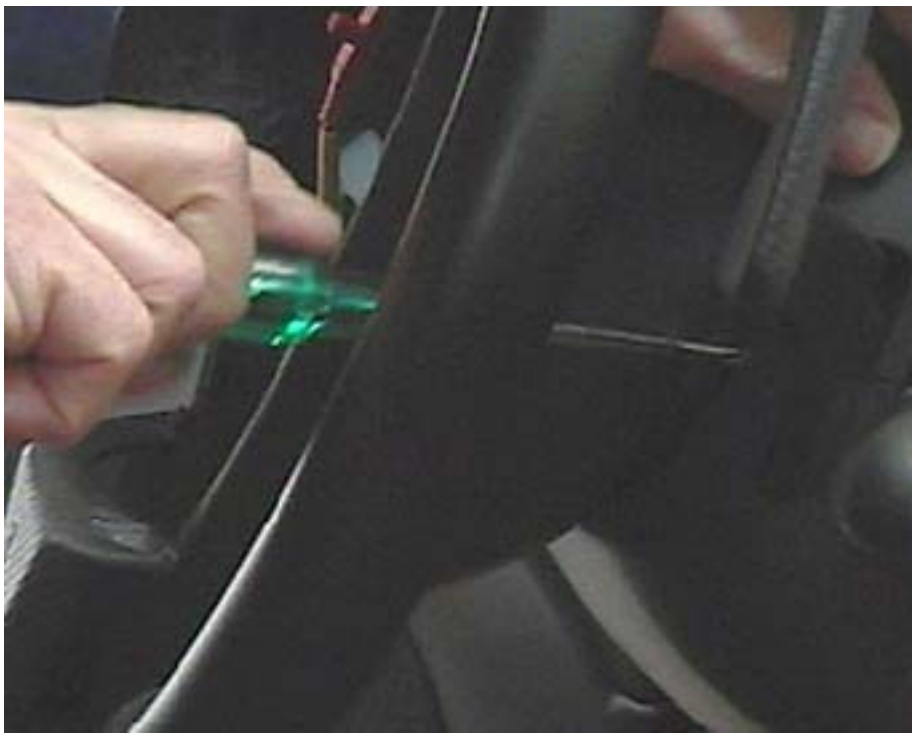
- Earth for IT Node bracket.
- Position: Central tunnel, LH side



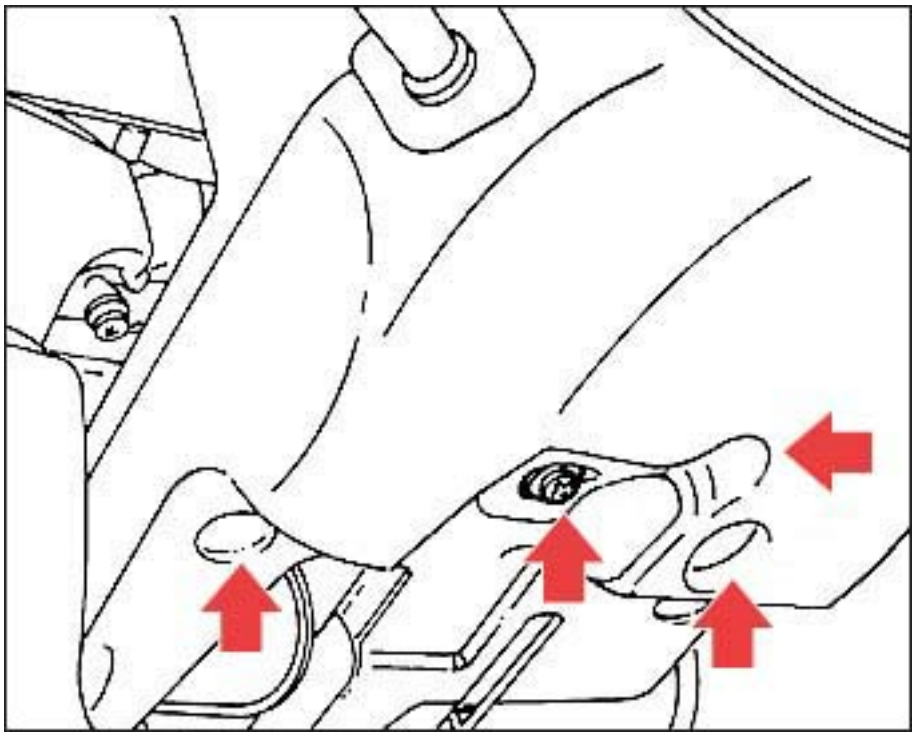
## ALARM SYSTEM KIT REPLACEMENT

### Immobilizer and  alarm system aerial ECU

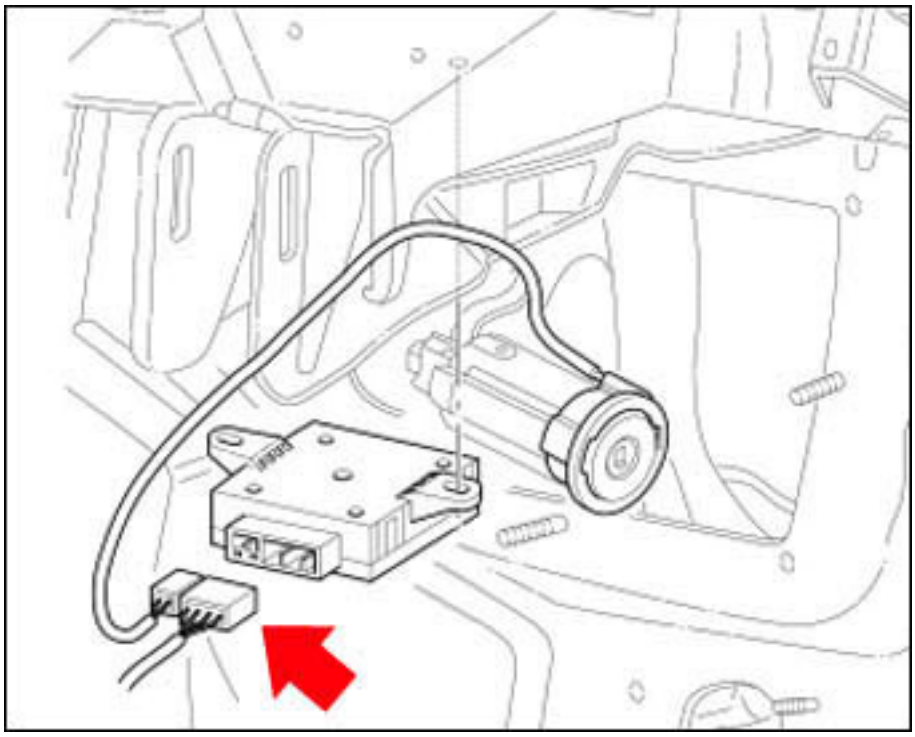
- Undo the two fastening screws - located behind the steering wheel - for the half bearings on the steering column stalk.



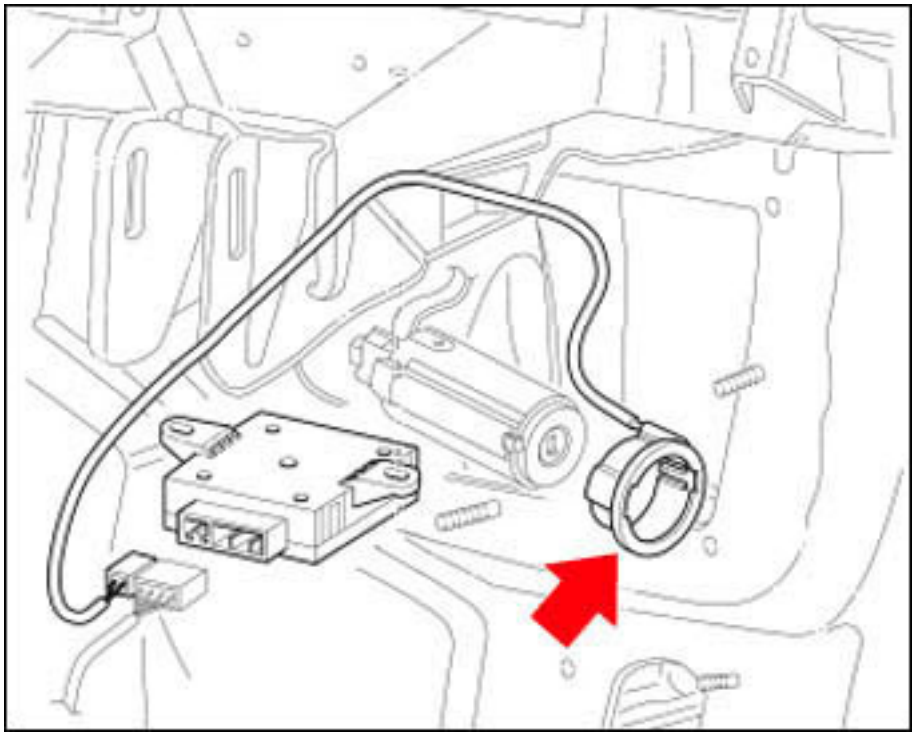
- Undo the five screws and remove the steering column cover.



- Detach the two alarm system aerial connectors.

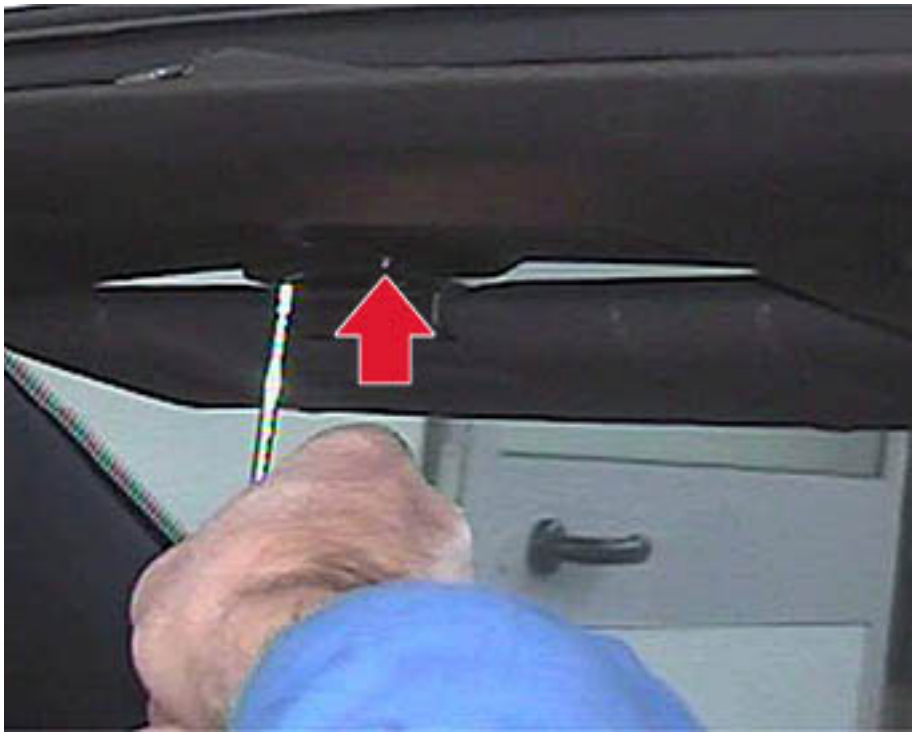


- Slide the aerial out of the ignition key block.



## Hyperfrequency sensors

- Unscrew the four fastening screws to remove the sun visors on both sides.
- Unscrew the five screws fastening the lower trim panel.



- Remove the front light.

*Front ceiling light*

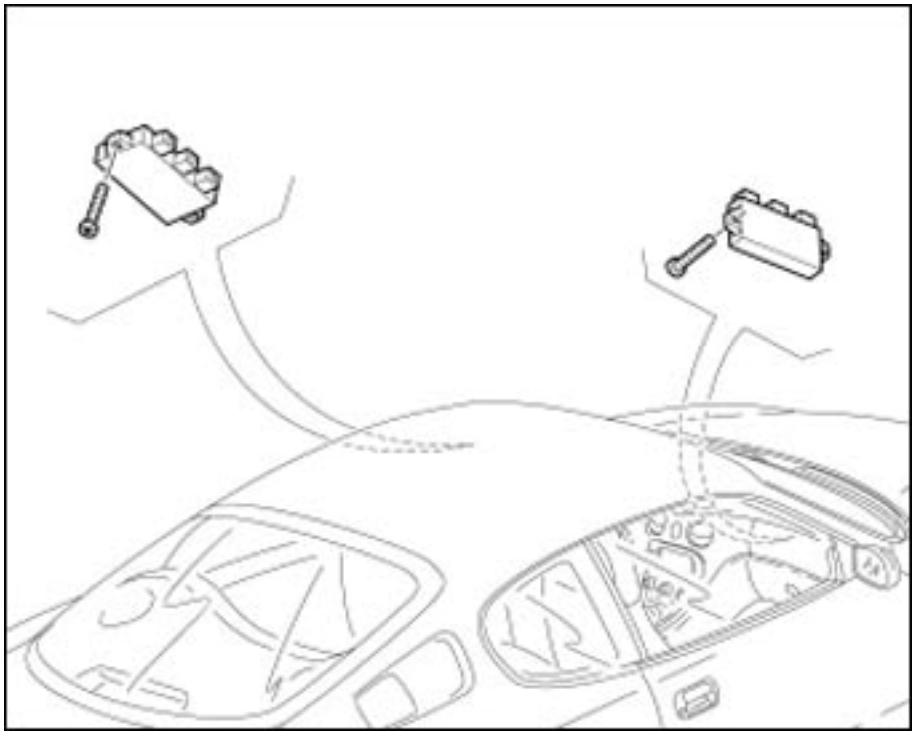
- Remove the lower trim panel.



- Working on the side column, remove the trim panel on both sides of the vehicle, undoing the two fastening screws.



- Disconnect the hyperfrequency sensors and remove them by undoing the two fastening screws for each sensor.

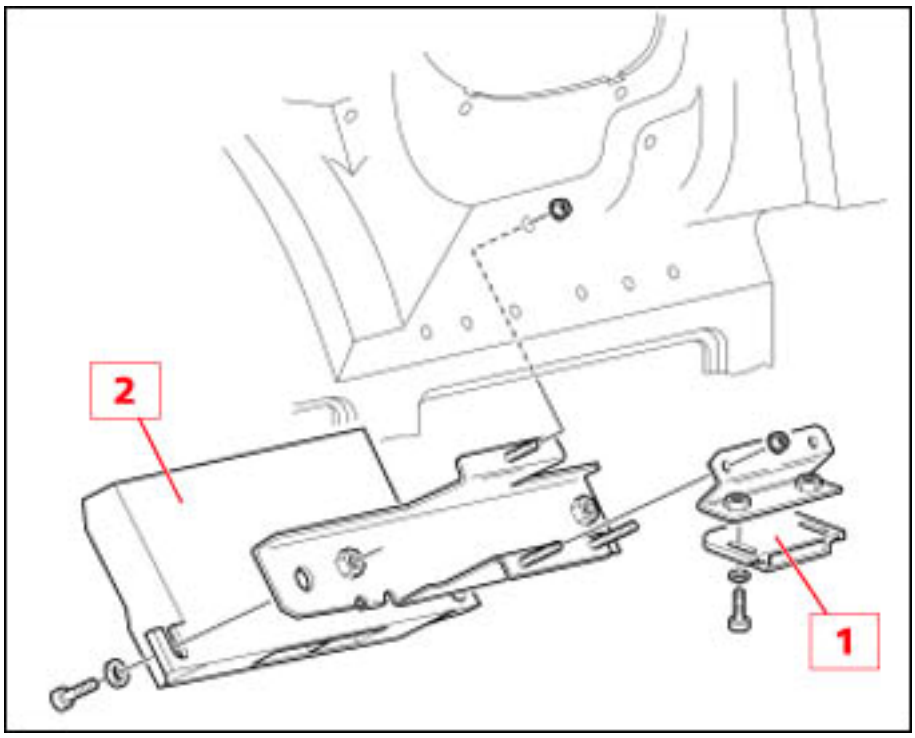


## Alarm system ECU and anti-lift sensor

- Remove the rear lower, left-hand side.

*Interior upholstery*

- Detach the connector for the anti-lift sensor **(1)** and remove it by undoing the two fastening screws.
- Detach the two connectors of the alarm system **(2)** and remove it by unscrewing the two fastening screws.



## Alarm system siren

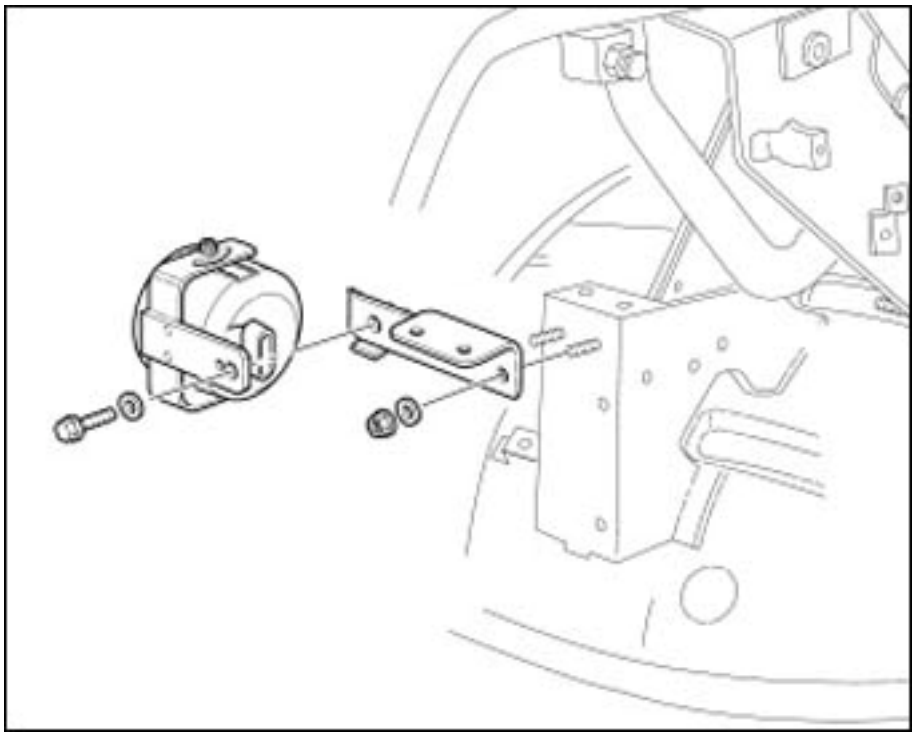
- Working in the luggage compartment, remove the spare wheel support shelf.



- Detach the fastening buttons on the left-hand side panel of the luggage compartment and remove the panel.



- Detach the connector on the alarm siren and remove it by unscrewing the fastening screw.



**For refitting, follow the above procedures in reverse order.**

## CHECK FOR CORRECT ALARM TRIGGER OPERATION

Observe the following procedure for controlling correct operation of the alarm trigger:

1. Check that the vehicle windows are open.
2. Activate the alarm system by remote control.
3. Wait for **10s** for the system to stabilize.
4. Put a hand into the cockpit and move it in a horizontal direction along the longitudinal axis of the cockpit and parallel to the ground; be sure to cover the whole area of the open front window, The correct indication of an intrusion is signalled by a double flash of the direction indicators.
5. Wait for **10s** and repeat the procedure outlined in point 4 on the other side of the vehicle.
6. To check for excessive sensitivity, make a sample test by passing a metallic strip (about 50 cm x 50 cm) around the glassed surface of the vehicle, including the top if the vehicle is a sports car. Pass the metal strip at a distance corresponding to that at which another vehicle or a pedestrian might pass, or imagine a tilting garage door closing around the vehicle. The alarm must not emit any signal in these cases.

These operations must be done within **25s** from activation of the alarm system to prevent triggering of the siren.
At each flash of the headlights, indicating a triggering of the alarm, the **25s** timer is reset and a fresh testing period commences.
The alarm system is completely active after **25s** from the last direction indicator flash. The active state is signalled by a different flashing of the LED on the instrument panel.

## IDENTIFICATION OF ALARM MEMORIES FOR THE METASYSTEM M826 ALARM SYSTEM

If alarms have gone off during operation, when the alarm system is deactivated by remote control, the LED on the instrument panel indicates the alarms as follows:

| | |
|---|---|
| One LED blip | Passenger compartment protection alarm |
| Two LED blips | Anti-lift sensor alarm |
| Three LED blips | Door alarm |
| Four LED blips | Front lid/rear lid alarm |
| Five LED blips | Ignition key alarm |

When more than one alarm goes off, a sequence is activated, with pauses between single alarms of **3s**.
The alarm memory is reset by turning the key to ON or when it is activated by remote control.

## PROGRAMMING A NEW KEY

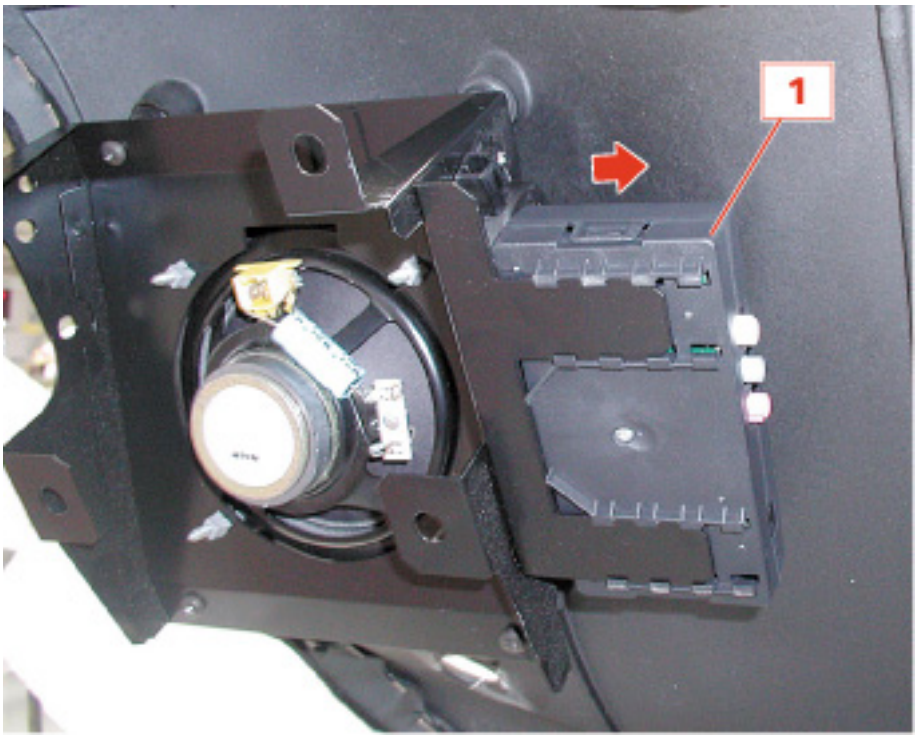
To program a new key, the following are needed: the electronic code (grey card), the old keys and obviously the new keys.

- Connect the SD2 tester in "link to PC" mode, immobilizer ECU, "spare parts" section.
- Follow the steps as advised and in particular:
  1. enter the electronic code;
  2. run a key-on/key-off cycle with the original keys;
  3. the new keys are programmed symply leaving them inserted in the switch, without carrying out a key-on cycle.
  4. to end the procedure, reply "no"  when a further key is requested.

## DETACHING – REFITTING D-BOX

## (MY2004)

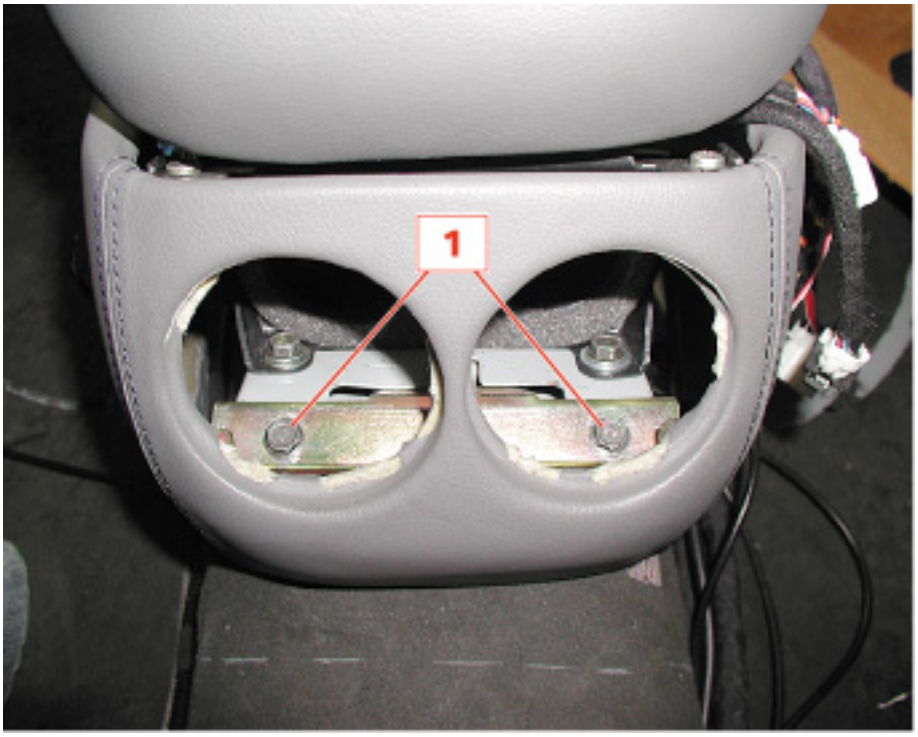
- Remove the rear seats.
- Remove the luggage compartment lining.
- Remove the back shelf.
- Remove the D-BOX**(1)** from its seat, pulling it out in the direction indicated by the arrow.



## DETACHING – REFITTING ARMREST UNIT

## (MY2004)

- Remove the rear air vents, housed in the armrest unit.
- Undo the rear fastening screws **(1)** on the armrest unit.



- Move the front seats as far back as possible.
- Release the passenger compartment floor mat tab **(1)**, so that the lateral fastening screw on the armrest unit is practicable.
- Undo the lateral fastening screw **(2)** on the pocket change tray unit



- Perform the same operation on the side opposite the armrest unit too.
- Undo the retaining buttons to release the handbrake lever boot **(1).**

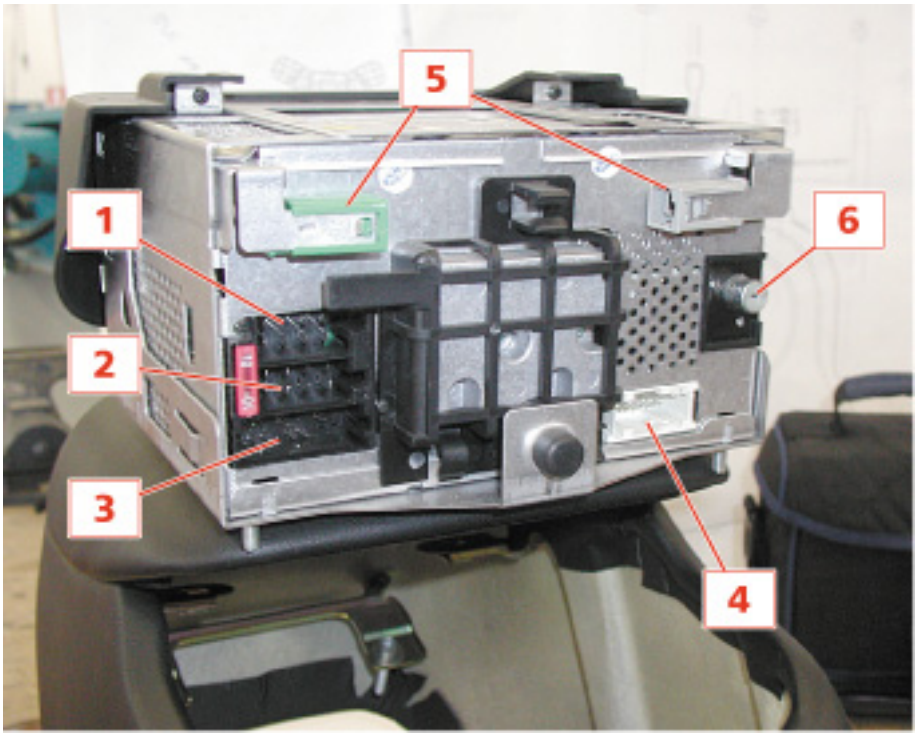



- Remove the armrest unit from the seat following the direction indicated by the arrow.

**N.B.**: **Take care when carrying out the operation not to damage the dashboard trim panel or any of the other nearby parts**.



- Detach the electric connections **(1), (2), (3), (4)** and the aerial connections **(5)** and **(6)** on the NIT.




- Detach the electric connections on the electric mirror control unit, and also those on the top opening/closing control and the cigar lighter/power socket.
- Remove the armrest unit from its seat..

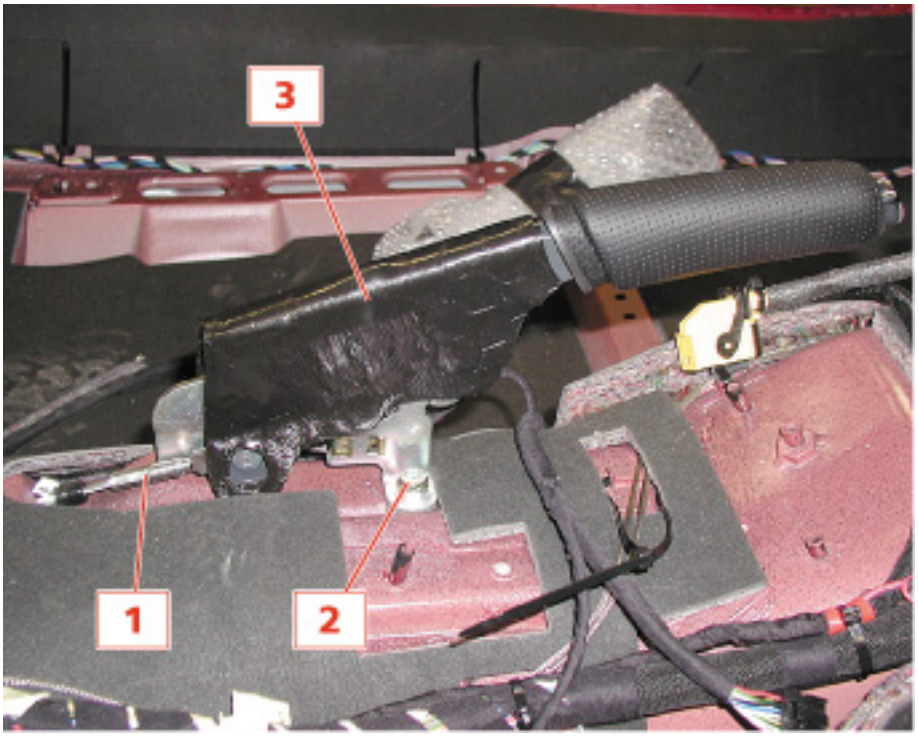
## DETACHING – REFITTING HANDBRAKE LEVER MY 04

## (MY 2004)

- Remove the armrest unit.
- Working on the driver's side, detach the 'handbrake on' switch electric connection **(1)** and unscrew the fastening nut **(2).**



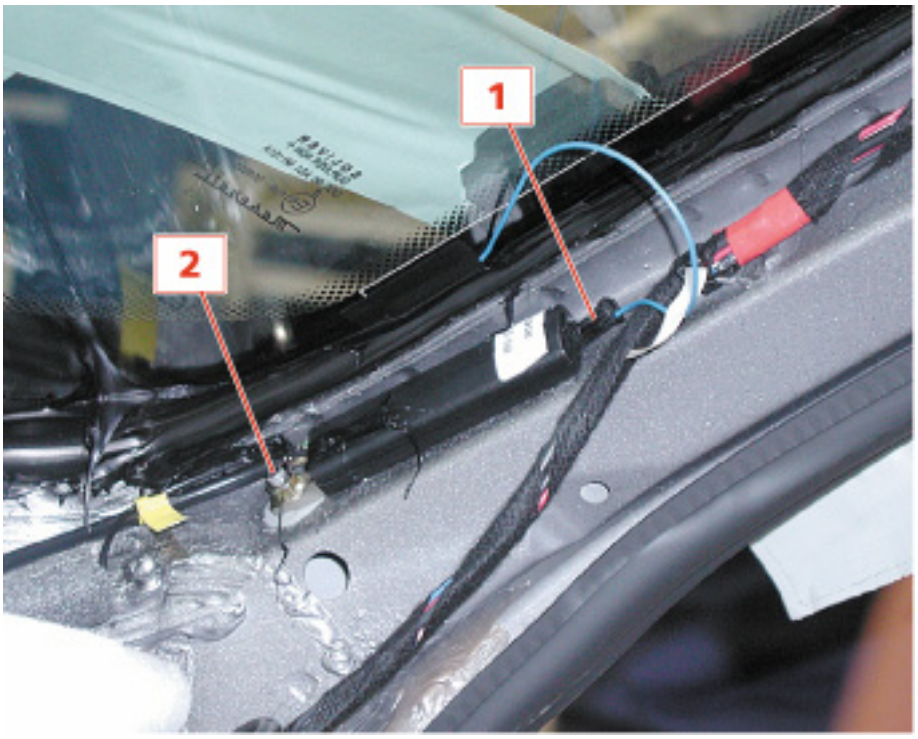
- Free the cable from the handbrake lever **(1).**
- Working on the passenger side, unscrew the fastening nut **(2)** and remove the handbrake lever **(3).**



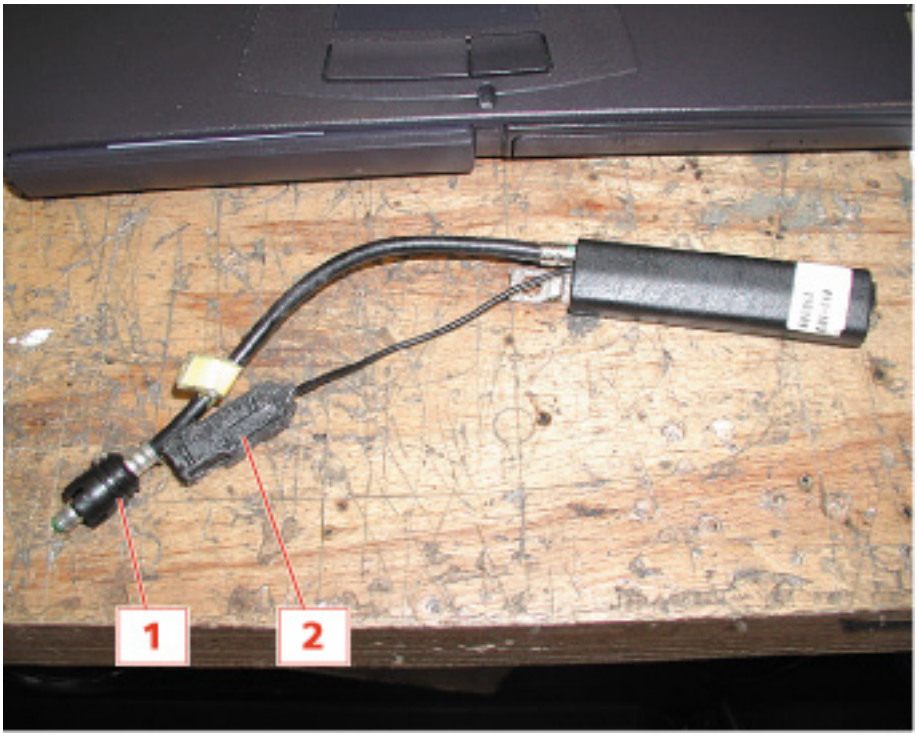
## DETACHING – REFITTING FRONT AERIAL AMPLIFIER MY 04

### (MY 2004) Detaching

- Remove the right-hand front door pillar trim panel.
- Detach the electric amplifier connection with the aerial on the windscreen **(1)**.
- Unscrew the amplifier fastening nut **(2)**.



- Detach the electric amplifier connection with the D-BOX **(1)**.
- Detach the aerial amplifier electricity supply connection **(2)**.




- Remove the aerial amplifier from its seat.

## Refitting

- Fit the aerial amplifier by following the procedure outlined before in reverse order.
- Before proceeding to refit the front right-hand trim panel, check the aerial amplifier is working correctly, proceeding as follows:
- Tune the radio in the AM mode.
- If the radio receives the signal, then the amplifier is working correctly.

## DETACHING – REFITTING REAR AERIAL AMPLIFIER

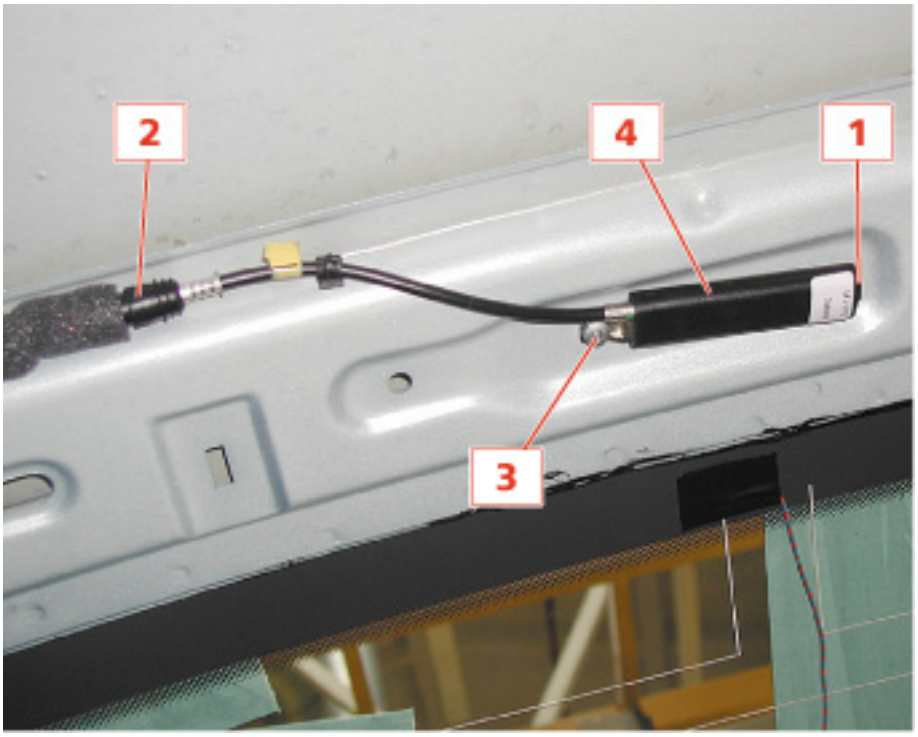
## (MY2004)

### Detaching

- Remove the roof lining

**N.B.: The roof lining must be removed to prevent it becoming misshapen when the amplifier is removed.**

- Detach the electric amplifier connection to the aerial on the heated rear window **(1).**
- Detach the electric amplifier connection to the D-BOX **(2).**
- Undo the screw fastening the aerial amplifier **(3).**
- Remove the aerial amplifier **(4)** from its seat.



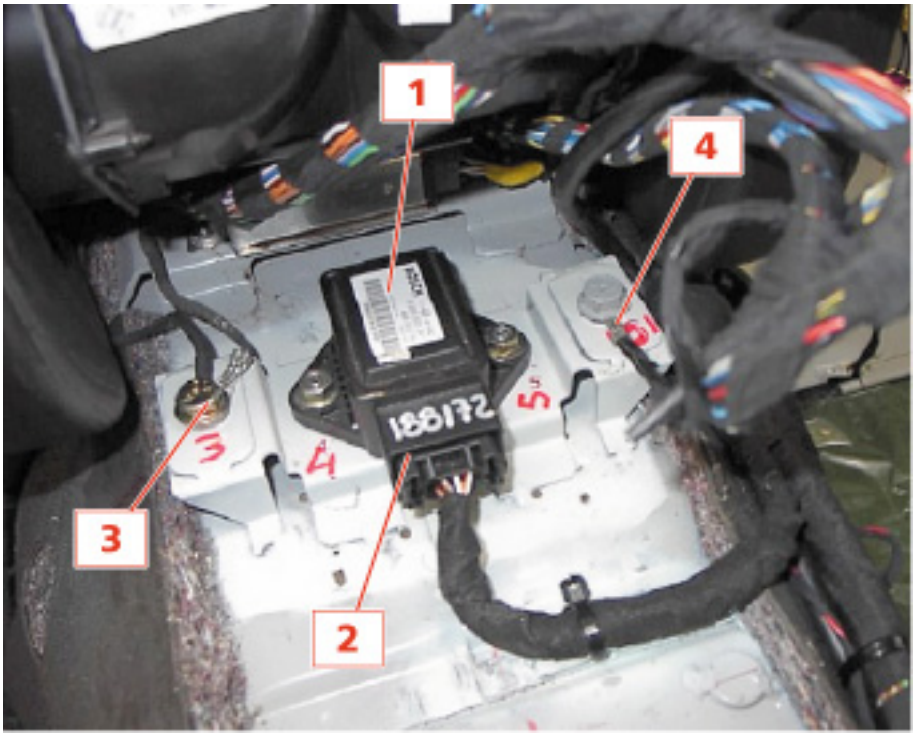

### Refitting

- Fit the aerial amplifier by following the procedure outlined before in reverse order.
- Before proceeding to refit the roof lining, make sure the aerial amplifier works correctly, proceeding as follows:
- Detach the front amplifier.
- Check the radio tunes in normally to the stations selected.
- If the radio is working in the standard fashion, then the aerial amplifier is working correctly.

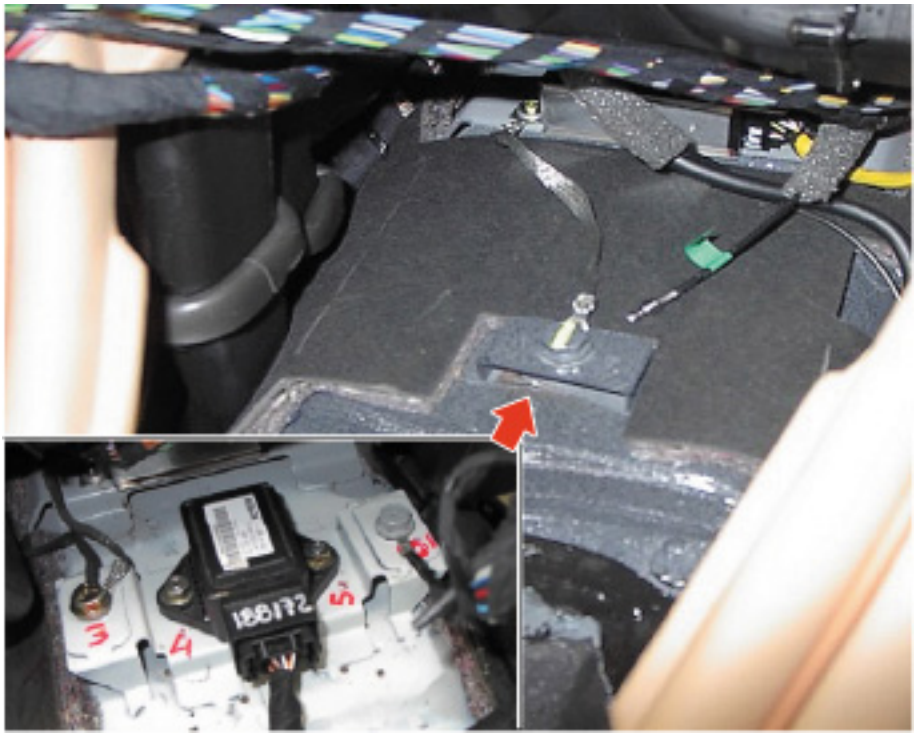
## YAW SENSOR

## (M.Y. 2003)

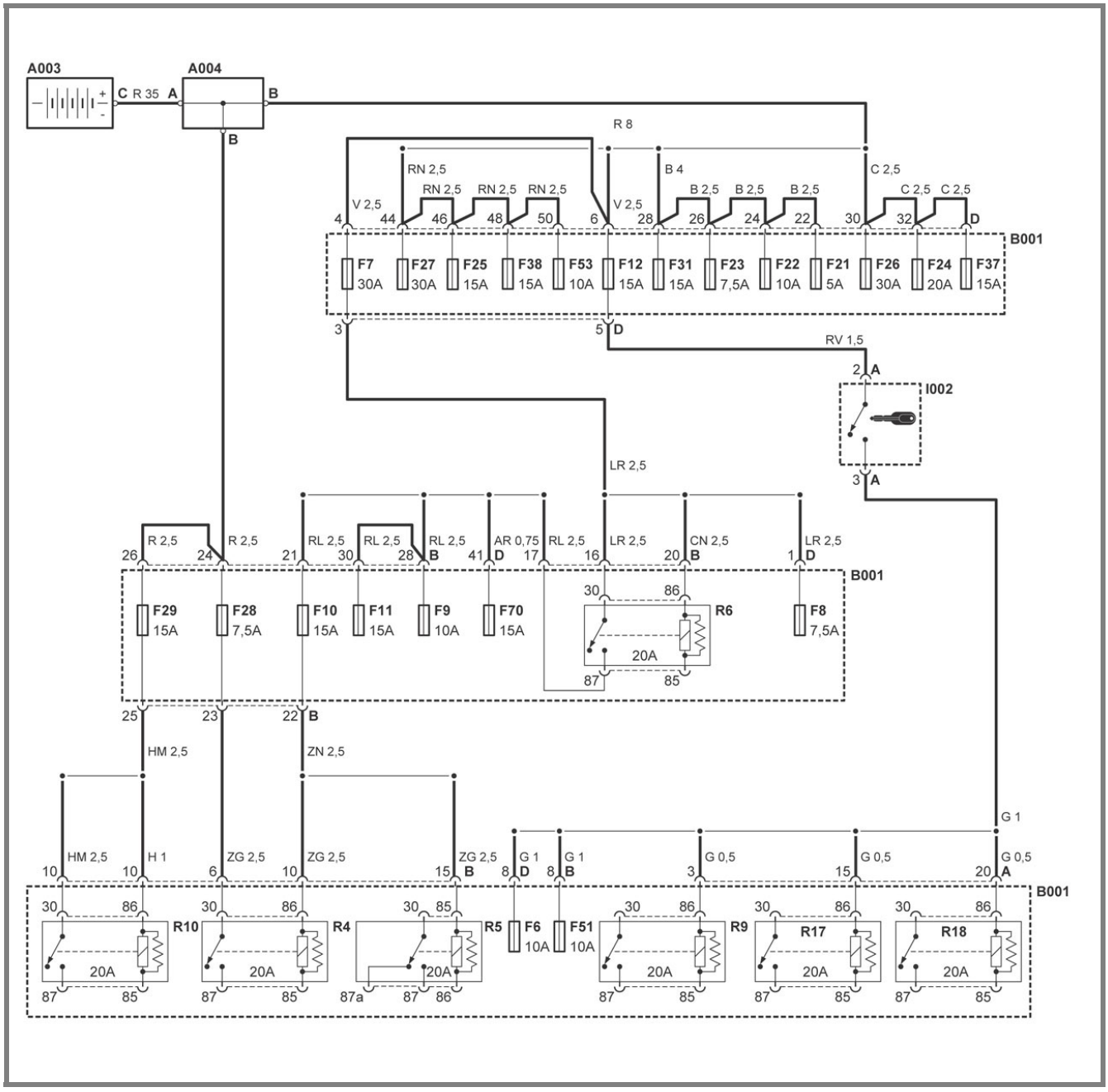
The Sensor **(1)** is part of the ABS/ASR/MSP braking system, which is linked to the ABS 5.7 ECU.
The dashboard wiring has been integrated with a connector **(2)** which is attached to the yaw sensor**,** and with a single earth for the airbag system, that is fixed together with the stranded earth wire **(3)**.Also the longitudinal cable earth must be connected into the earth bracket **(4).**

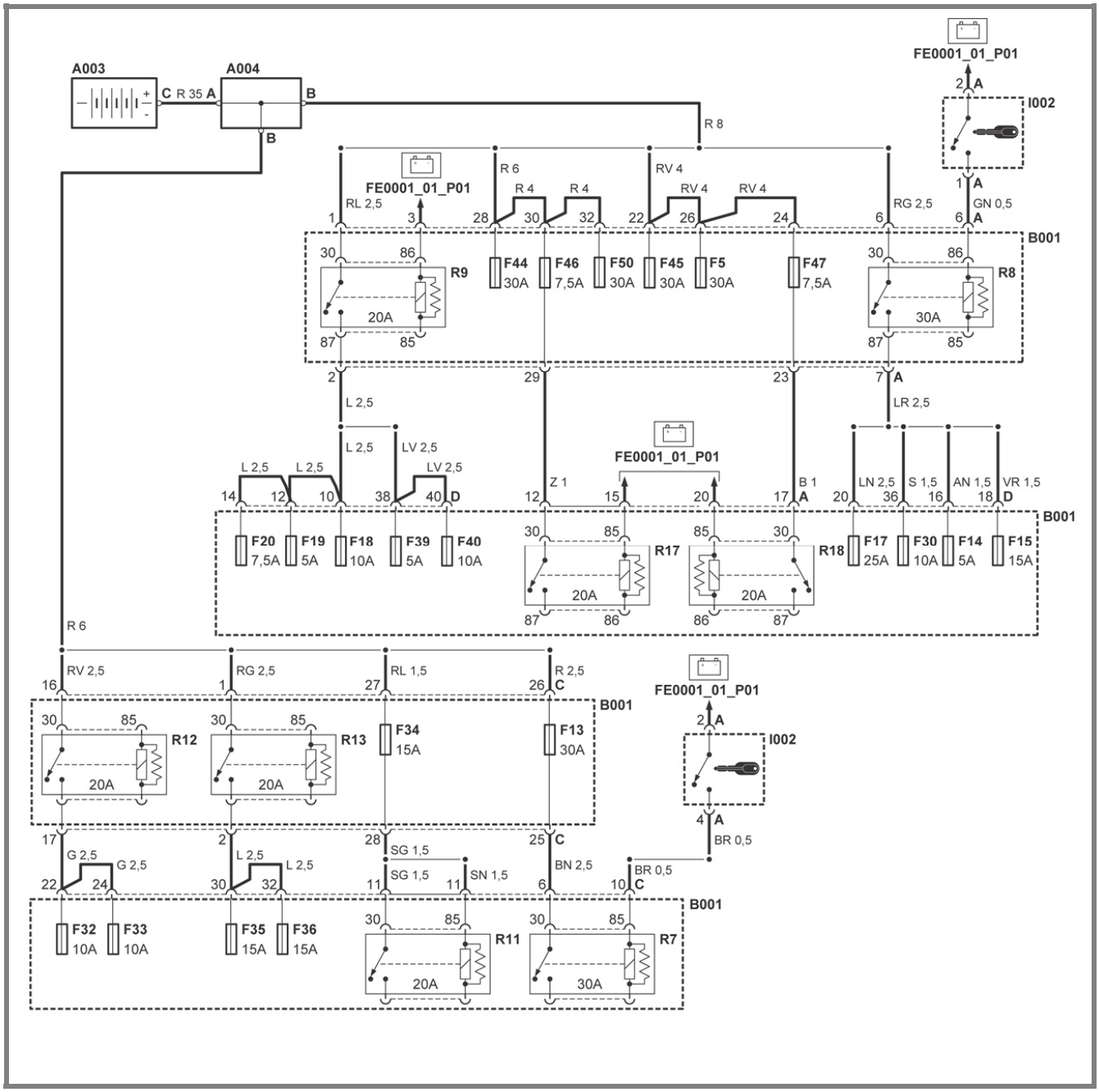


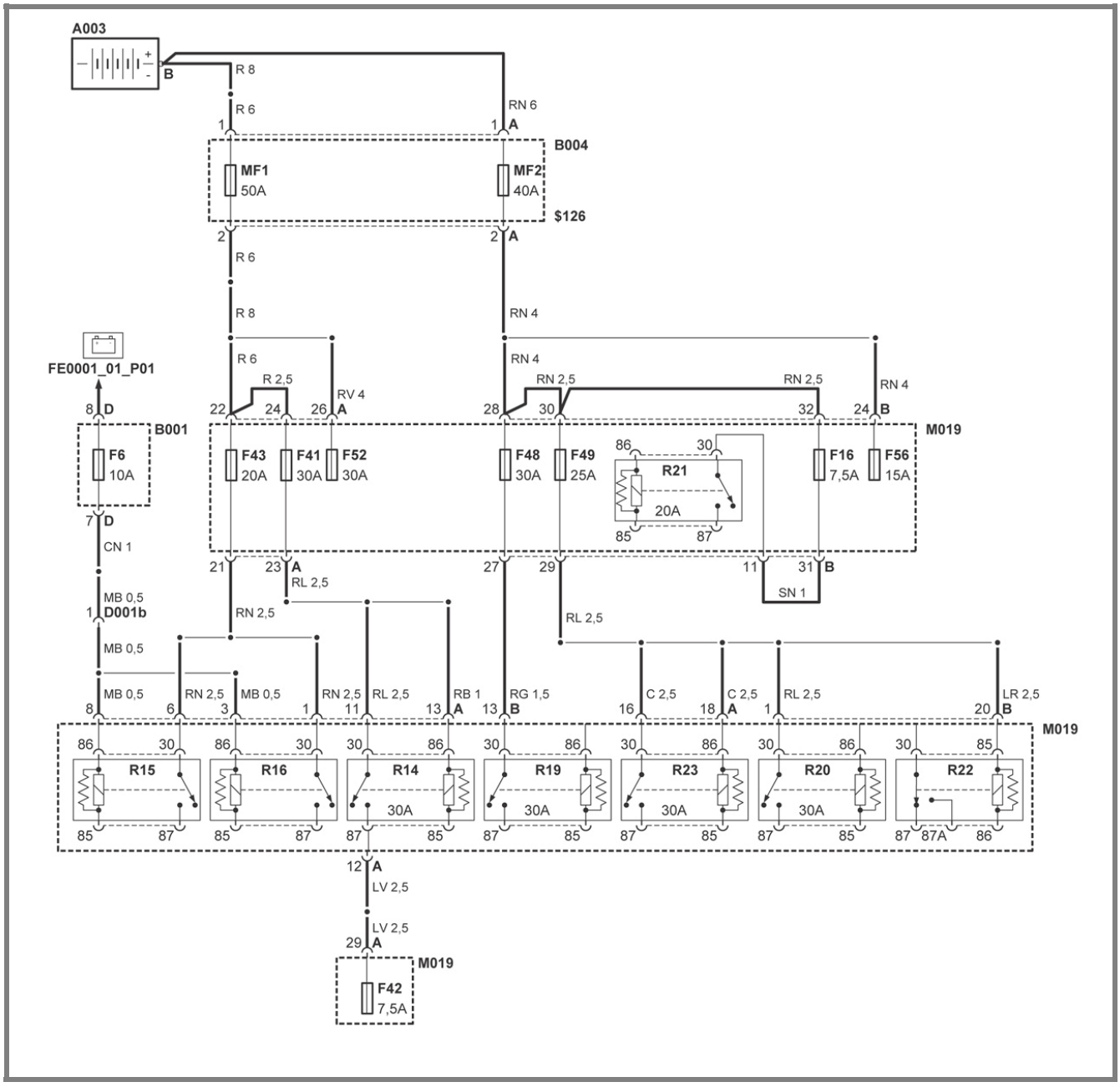
The modification on the tunnel acoustic insulation lies in the removal of a piece of soundproofing material, in the point shown in the figure. This allows the earth bracket to be inserted and the yaw sensor to be secured on the tunnel, in front of the airbag ECU.



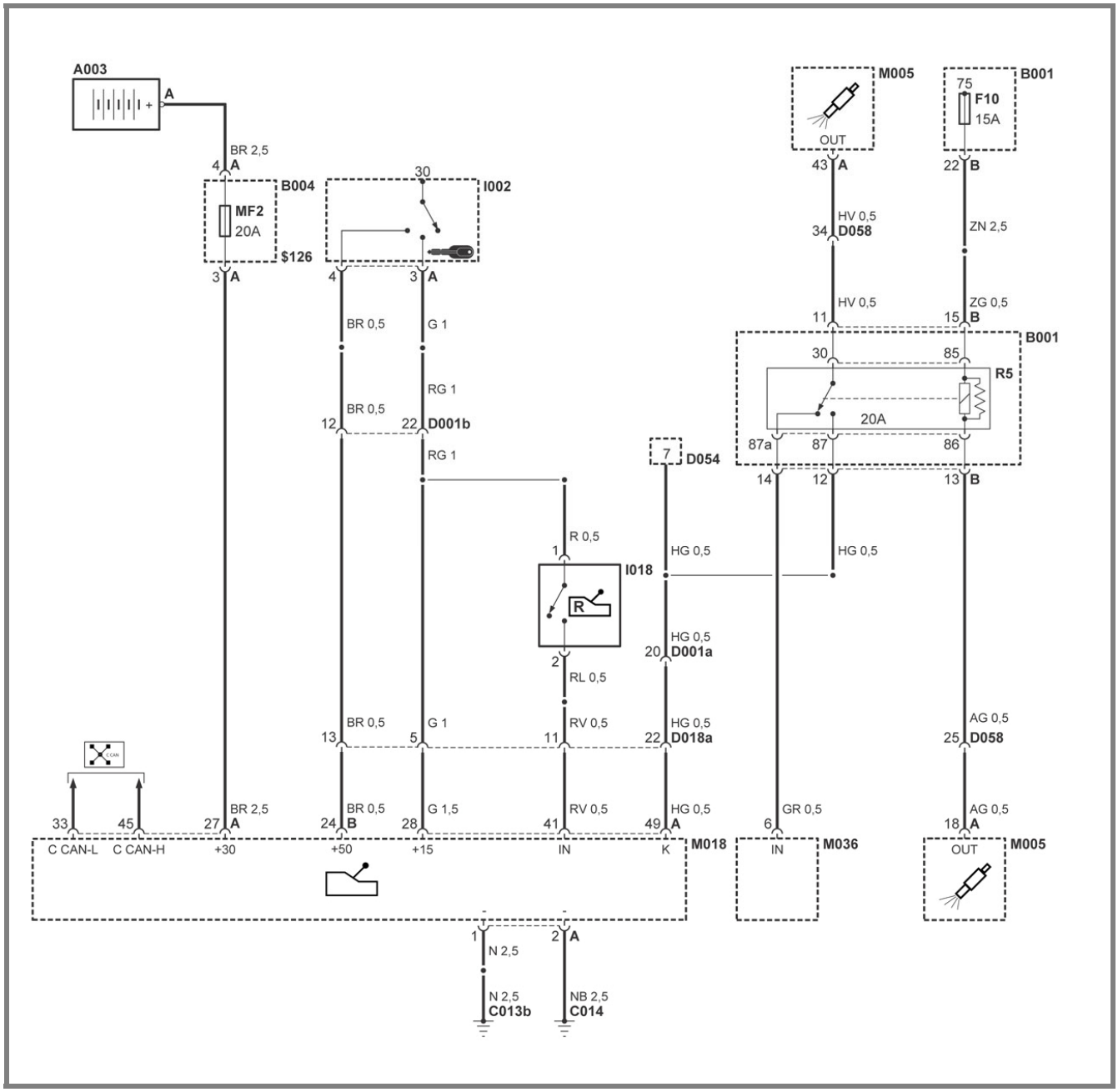
## FUEL SUPPLY DISTRIBUTION

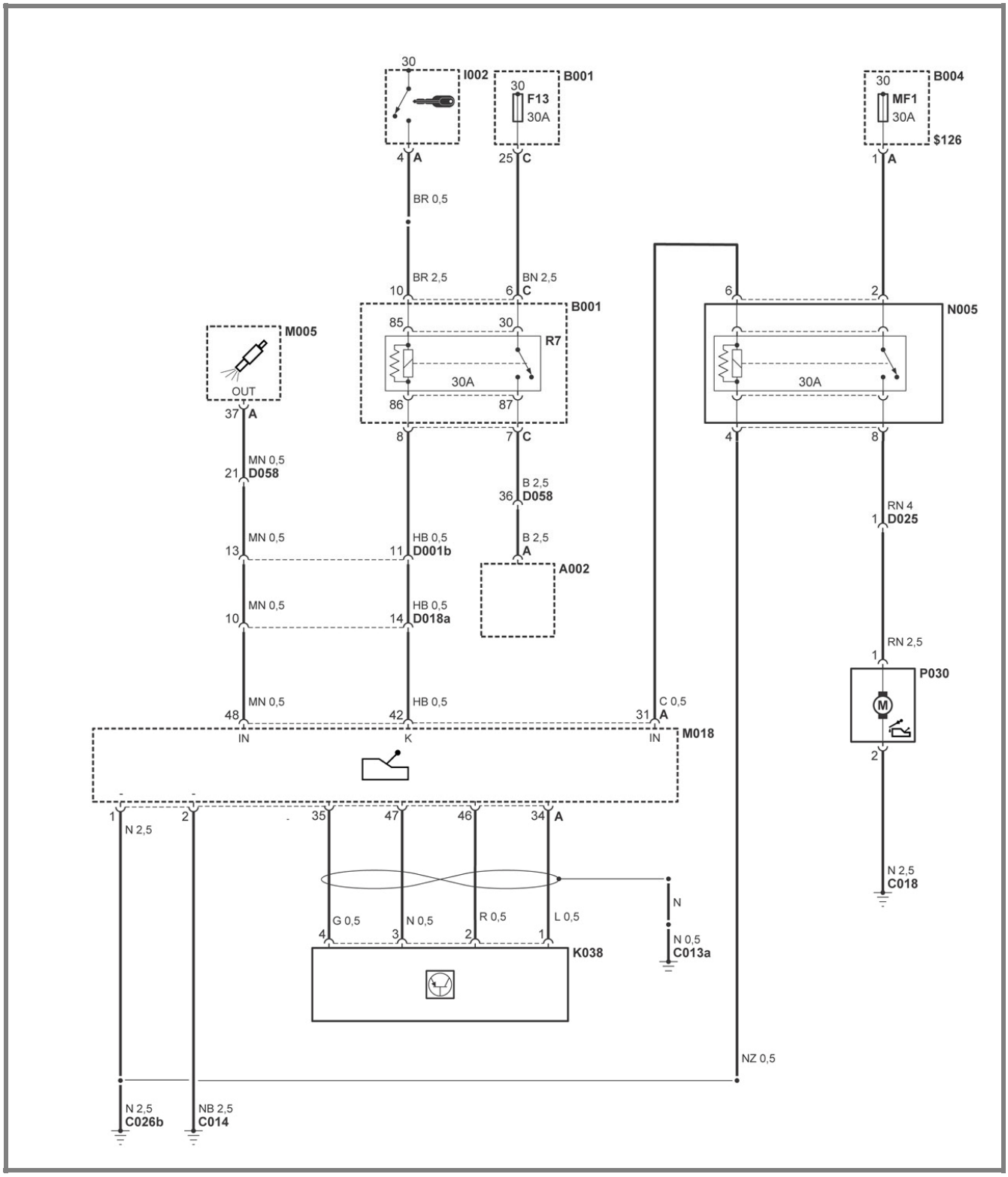


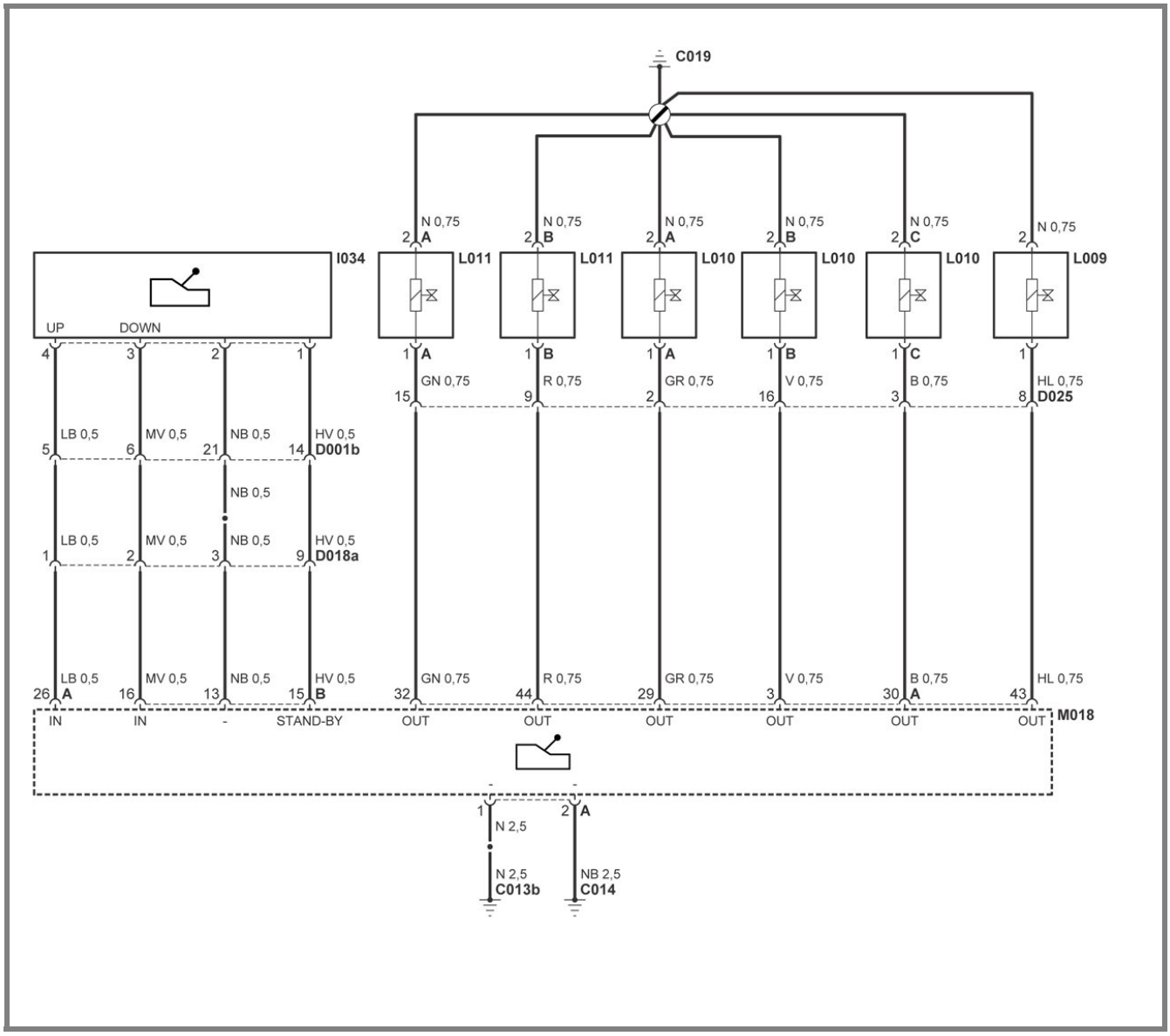

A003
A004
C R 35 A
B
B
R 8
FE0001_01_P01
2 A
I002
1 A
GN 0,5
6 A
RG 2,5
R 6
R 4
R 4
RV 4
RV 4
RV 4
FE0001_01_P01
RL 2,5
1
3
28
30
32
22
26
24
6
B001
30
86
R9
20A
87
85
F44
30A
F46
7,5A
F50
30A
F45
30A
F5
30A
F47
7,5A
30
86
R8
30A
87
85
2
29
23
7 A
L 2,5
LR 2,5
L 2,5
LV 2,5
FE0001_01_P01
L 2,5
L 2,5
LV 2,5
Z 1
B 1
LN 2,5
S 1,5
AN 1,5
VR 1,5
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12
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20
17 A
20
36
16
18 D
B001
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F19
5A
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20A
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F30
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F15
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85
R13
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F13
30A
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I002
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G 2,5
G 2,5
L 2,5
L 2,5
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SN 1,5
BN 2,5
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30
85
R7
30A

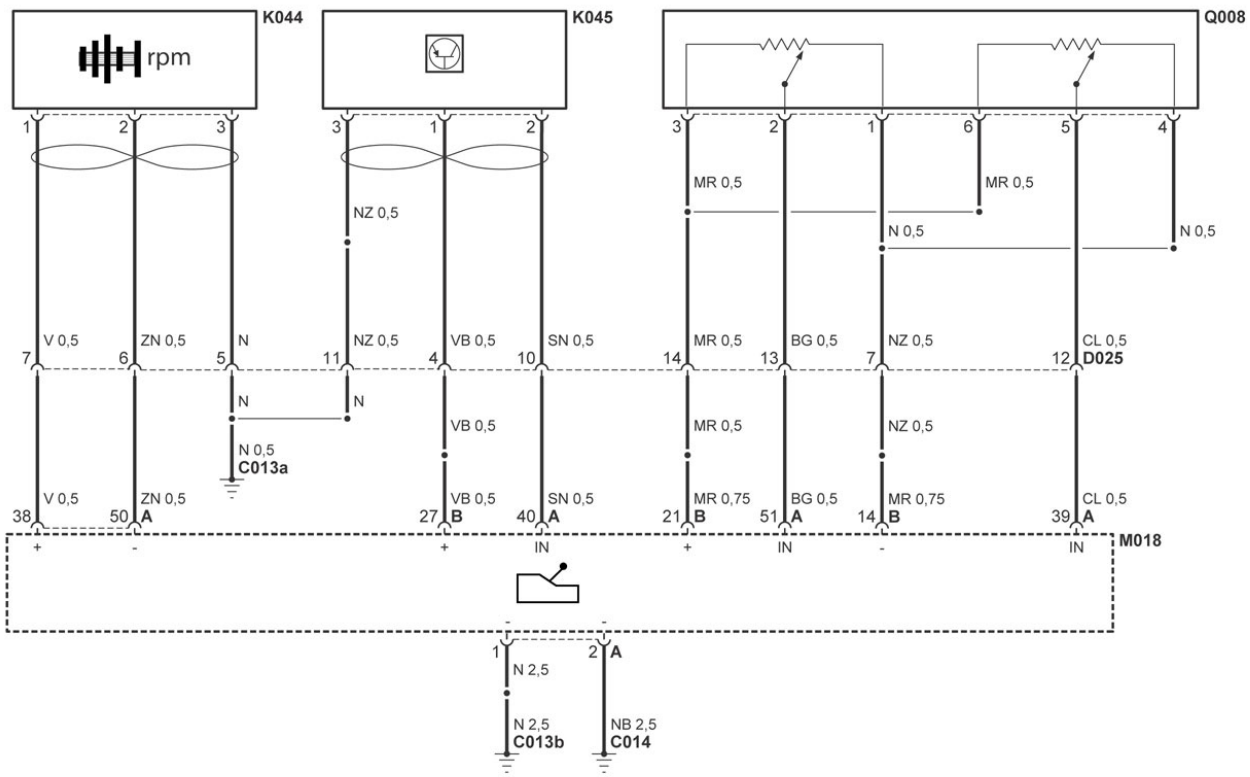

A003
B
R 8
R 6
RN 6
1
1 A
B004
MF1
50A
MF2
40A
$126
2
2 A
R 6
R 8
RN 4
FE0001_01_P01
R 6
R 2,5
RV 4
RN 4
RN 2,5
RN 2,5
RN 4
8 D
22
24
26 A
28
30
32
24 B
B001
M019
F6
10A
F43
20A
F41
30A
F52
30A
F48
30A
F49
25A
86
30
R21
20A
85
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F56
15A
7 D
CN 1
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23 A
RL 2,5
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29
11
31 B
SN 1
MB 0,5
1 D001b
RN 2,5
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MB 0,5
MB 0,5
RN 2,5
MB 0,5
RN 2,5
RL 2,5
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C 2,5
RL 2,5
LR 2,5
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3
1
11
13 A
13 B
16
18 A
1
20 B
M019
R15
R16
R14
30A
R19
30A
R23
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87
87A
86
12 A
LV 2,5
LV 2,5
29 A
M019
F42
7,5A

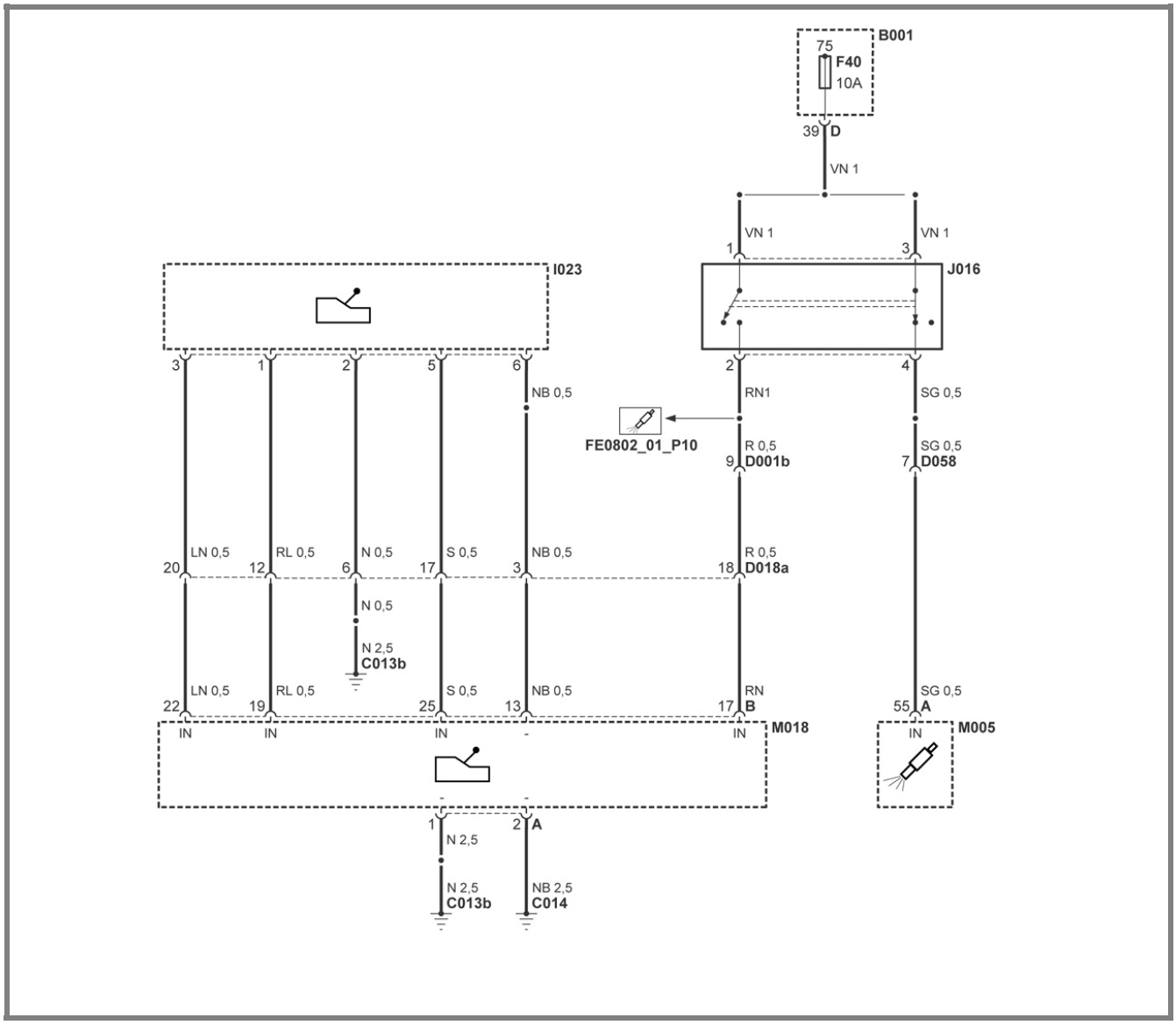
## CAMBIOCORSA ROBOTIZED GEARBOX

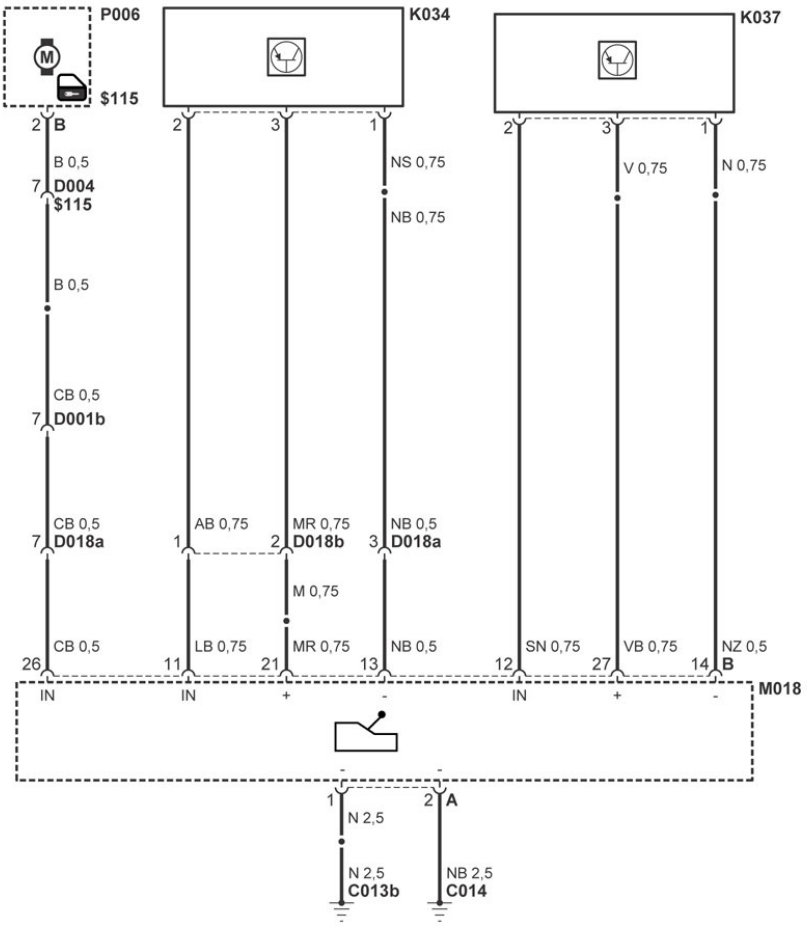



30
I002
B001
30
F13
30A
B004
MF1
30A
$126
4 A
25 C
1 A
BR 0,5
BR 2,5
BN 2,5
10
6 C
B001
85
30
R7
30A
86
87
6
2
N005
30A
4
8
M005
OUT
37 A
8
7 C
MN 0,5
21 D058
B 2,5
36 D058
RN 4
1 D025
MN 0,5
13
HB 0,5
11 D001b
B 2,5
A
A002
MN 0,5
10
HB 0,5
14 D018a
RN 2,5
1
P030
M
2
MN 0,5
48
HB 0,5
42
C 0,5
31 A
IN
K
IN
M018
1
2
N 2,5
35
47
46
34 A
N
G 0,5
N 0,5
R 0,5
L 0,5
4
3
2
1
K038
N 0,5
C013a
N 2,5
C018
NZ 0,5
N 2,5
C026b
NB 2,5
C014

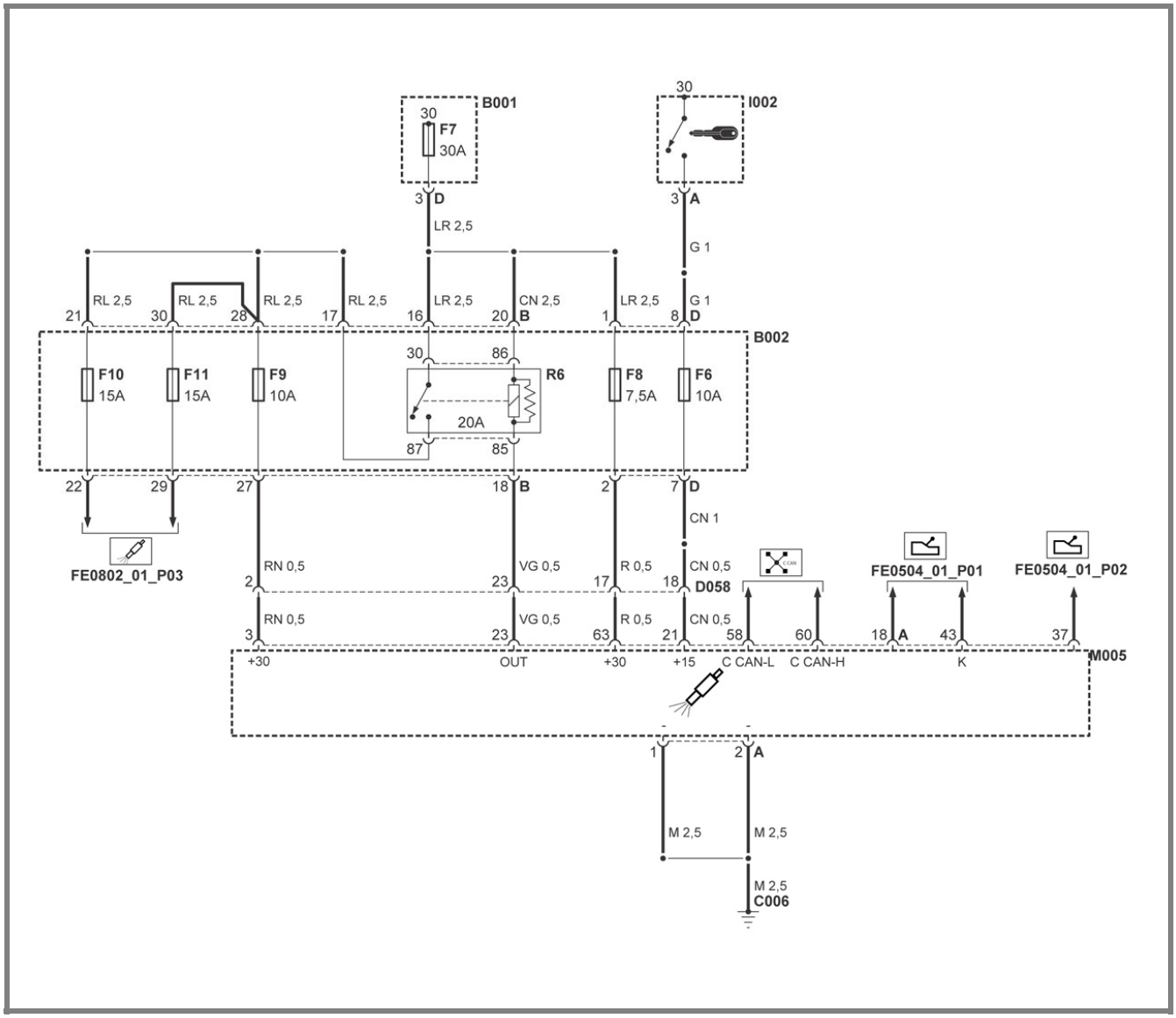

C019
N 0,75
2 A
L011
2 B
L011
2 A
L010
2 B
L010
2 C
L010
2
L009
I034
UP
DOWN
4
3
2
1
1 A
1 B
1 A
1 B
1 C
1
15 GN 0,75
9 R 0,75
2 GR 0,75
16 V 0,75
3 B 0,75
8 HL 0,75
D025
LB 0,5
MV 0,5
NB 0,5
HV 0,5
5
6
21
14
D001b
NB 0,5
LB 0,5
MV 0,5
NB 0,5
HV 0,5
1
2
3
9
D018a
LB 0,5
MV 0,5
NB 0,5
HV 0,5
26 A
16
13
15 B
32 GN 0,75
44 R 0,75
29 GR 0,75
3 V 0,75
30 A B 0,75
43 HL 0,75
IN
IN
-
STAND-BY
OUT
OUT
OUT
OUT
OUT
OUT
M018
-
-
1
2 A
N 2,5
N 2,5
C013b
NB 2,5
C014

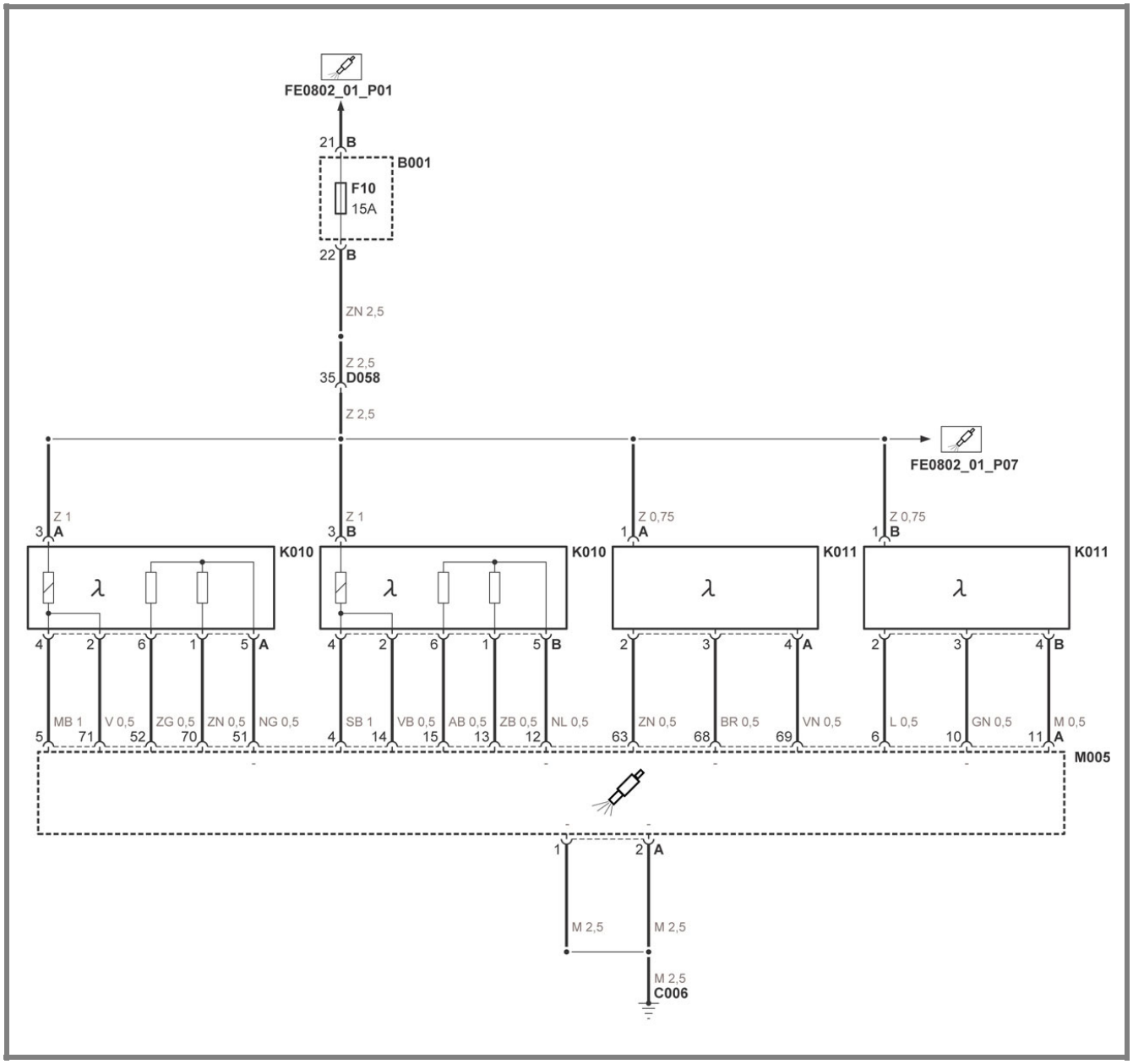

K044
rpm
K045
Q008
1 2 3
3 1 2
3 2 1 6 5 4
MR 0,5
MR 0,5
N 0,5
N 0,5
NZ 0,5
V 0,5
ZN 0,5
N
NZ 0,5
VB 0,5
SN 0,5
MR 0,5
BG 0,5
NZ 0,5
CL 0,5
D025
7 6 5 11 4 10 14 13 7 12
N
N
VB 0,5
MR 0,5
NZ 0,5
N 0,5
C013a
V 0,5
ZN 0,5
VB 0,5
SN 0,5
MR 0,75
BG 0,5
MR 0,75
CL 0,5
38 50 A 27 B 40 A 21 B 51 A 14 B 39 A
+ - + IN + IN - IN
M018
1 2 A
N 2,5
N 2,5
C013b
NB 2,5
C014

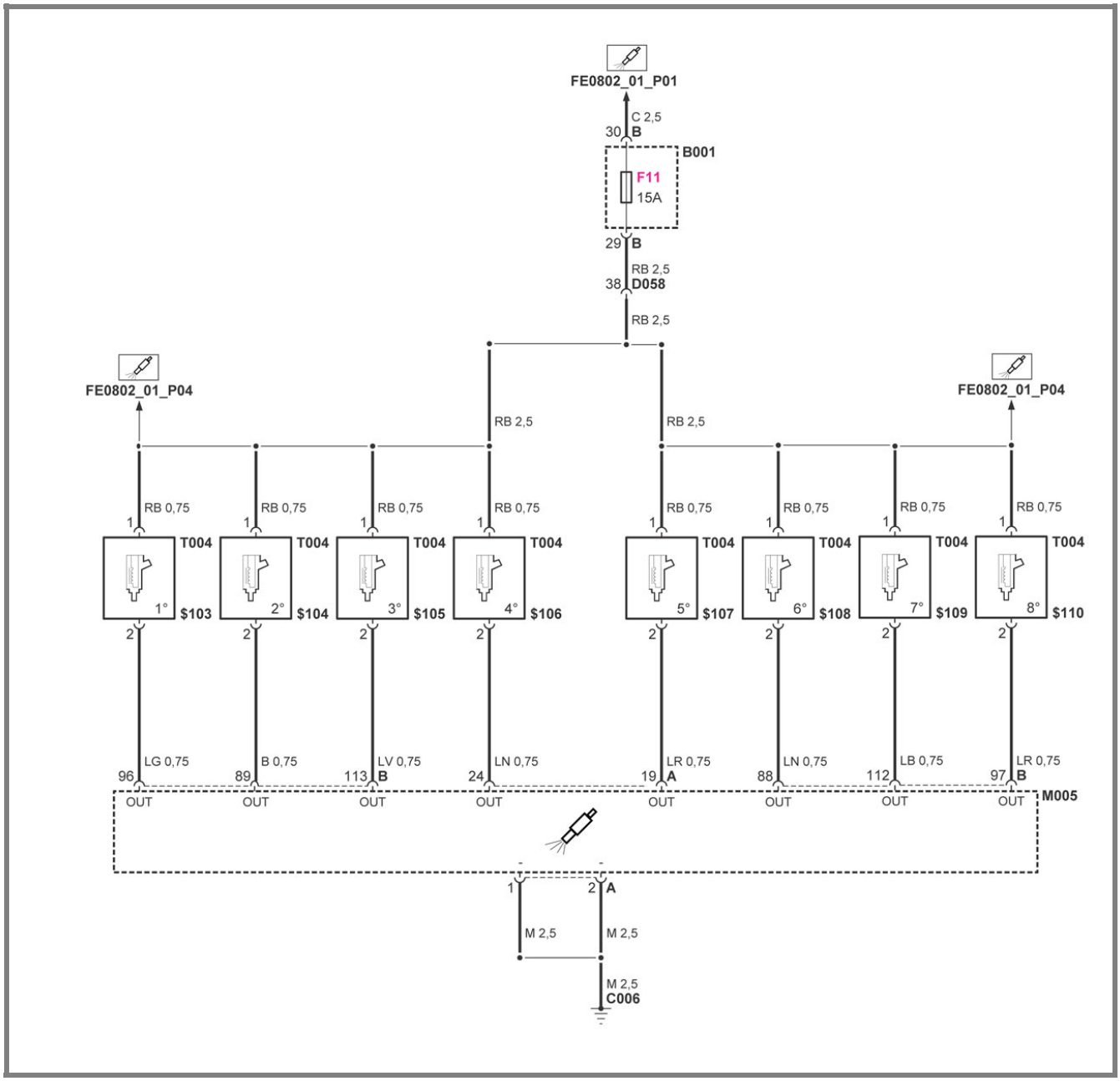

B001
75
F40
10A
39 D
VN 1
VN 1
VN 1
1
3
J016
I023
3
1
2
5
6
NB 0,5
2
4
RN1
SG 0,5
FE0802_01_P10
R 0,5
9 D001b
SG 0,5
7 D058
LN 0,5
20
RL 0,5
12
N 0,5
6
S 0,5
17
NB 0,5
3
R 0,5
18 D018a
N 0,5
N 2,5
C013b
LN 0,5
22
RL 0,5
19
S 0,5
25
NB 0,5
13
RN
17 B
SG 0,5
55 A
IN
IN
IN
-
IN
IN
M018
M005
1
2 A
N 2,5
N 2,5
C013b
NB 2,5
C014

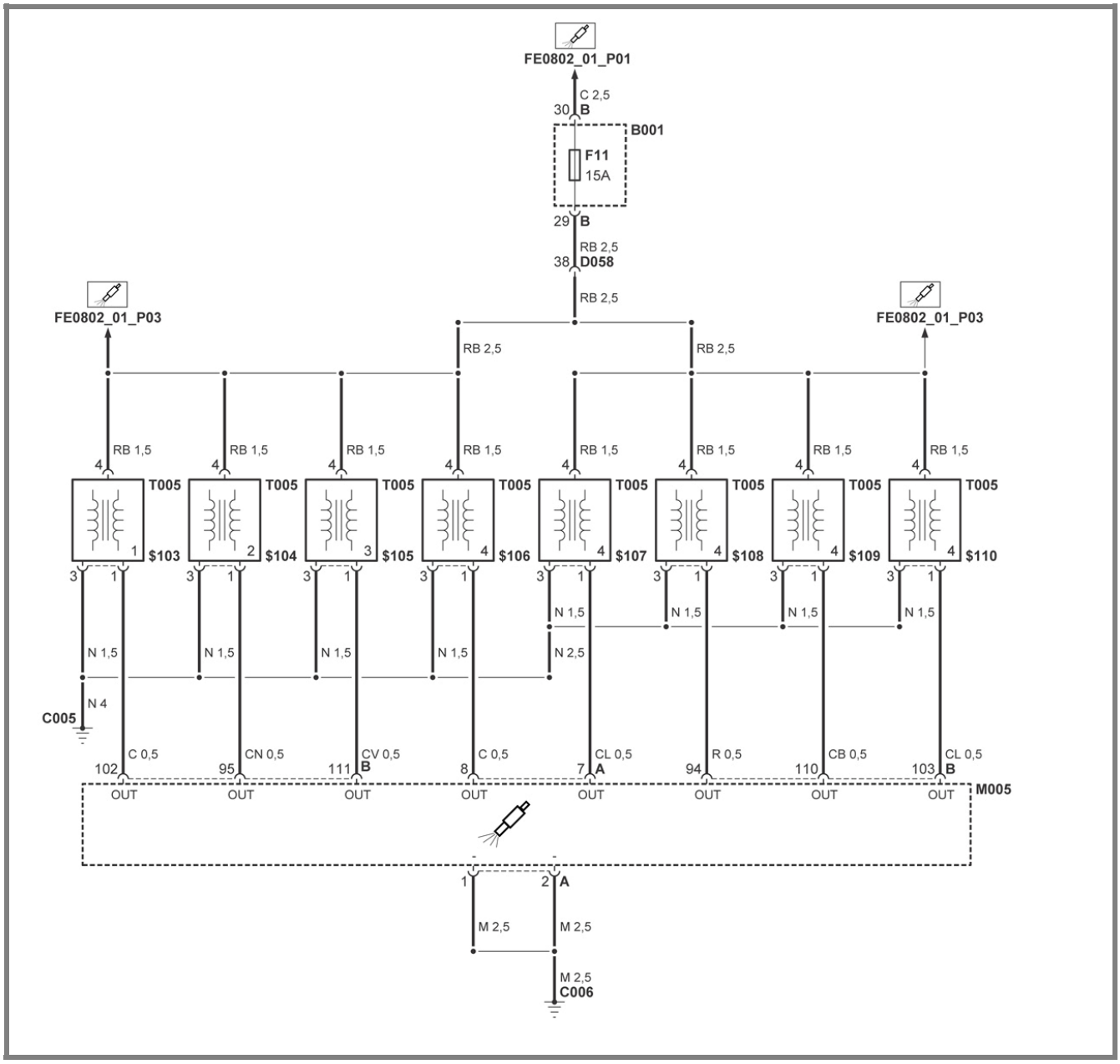

P006
$115
K034
K037
2 B
B 0,5
7 D004
$115
B 0,5
CB 0,5
7 D001b
CB 0,5
7 D018a
CB 0,5
26
IN
2
3
1
NS 0,75
NB 0,75
AB 0,75
1
MR 0,75
2 D018b
M 0,75
NB 0,5
3 D018a
LB 0,75
11
MR 0,75
21
NB 0,5
13
IN
+
-
2
3
1
V 0,75
N 0,75
SN 0,75
12
VB 0,75
27
NZ 0,5
14 B
IN
+
-
M018
1
2 A
N 2,5
N 2,5
C013b
NB 2,5
C014

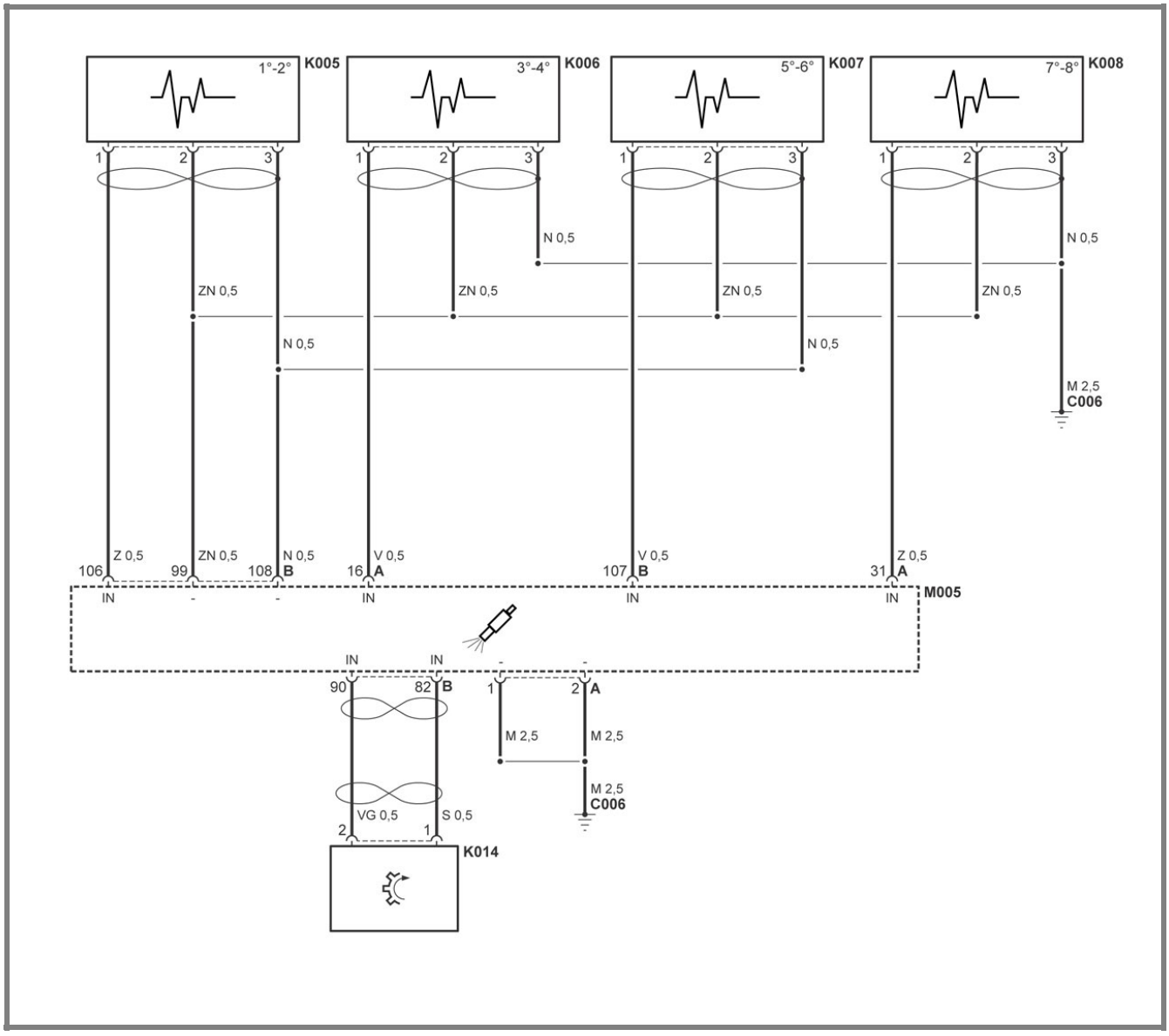
## ENGINES FUEL ELECTRONIC MANAGEMENT

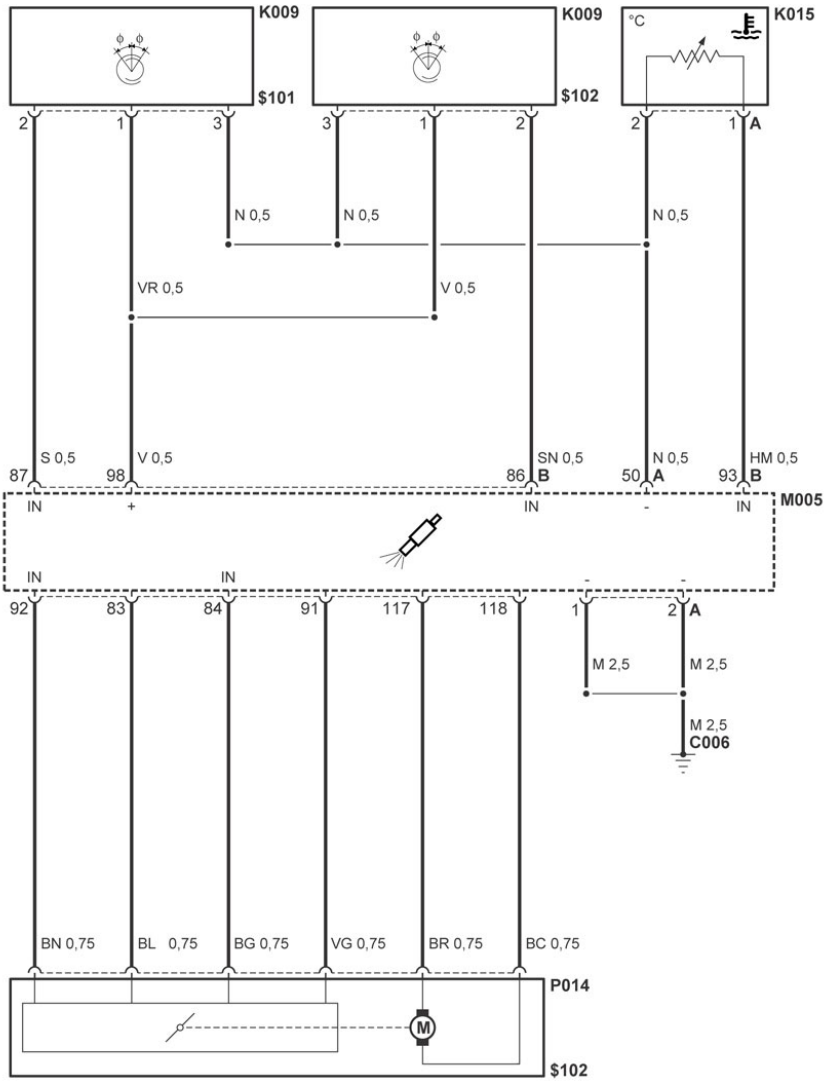


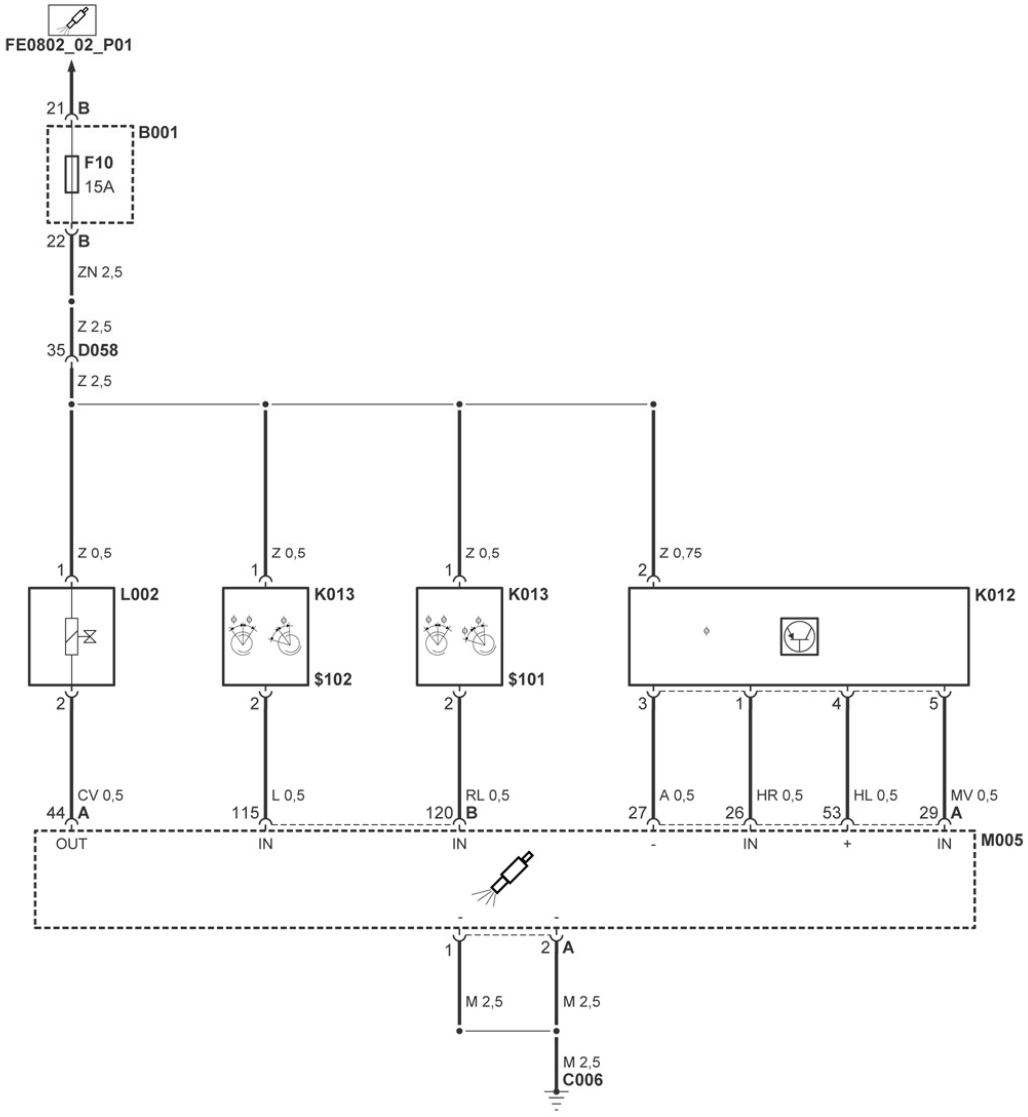

FE0802_01_P01
21 B
B001
F10
15A
22 B
ZN 2,5
Z 2,5
35 D058
Z 2,5
FE0802_01_P07
Z 1
3 A
K010
Z 1
3 B
K010
Z 0,75
1 A
K011
Z 0,75
1 B
K011
λ
4 2 6 1 5 A
4 2 6 1 5 B
2 3 4 A
2 3 4 B
MB 1 71
V 0,5 52
ZG 0,5 70
ZN 0,5 51
NG 0,5
SB 1 14
VB 0,5 15
AB 0,5 13
ZB 0,5 12
NL 0,5
ZN 0,5 63
BR 0,5 68
VN 0,5 69
L 0,5 6
GN 0,5 10
M 0,5 11 A
5
M005
1 2 A
M 2,5
M 2,5
M 2,5
C006

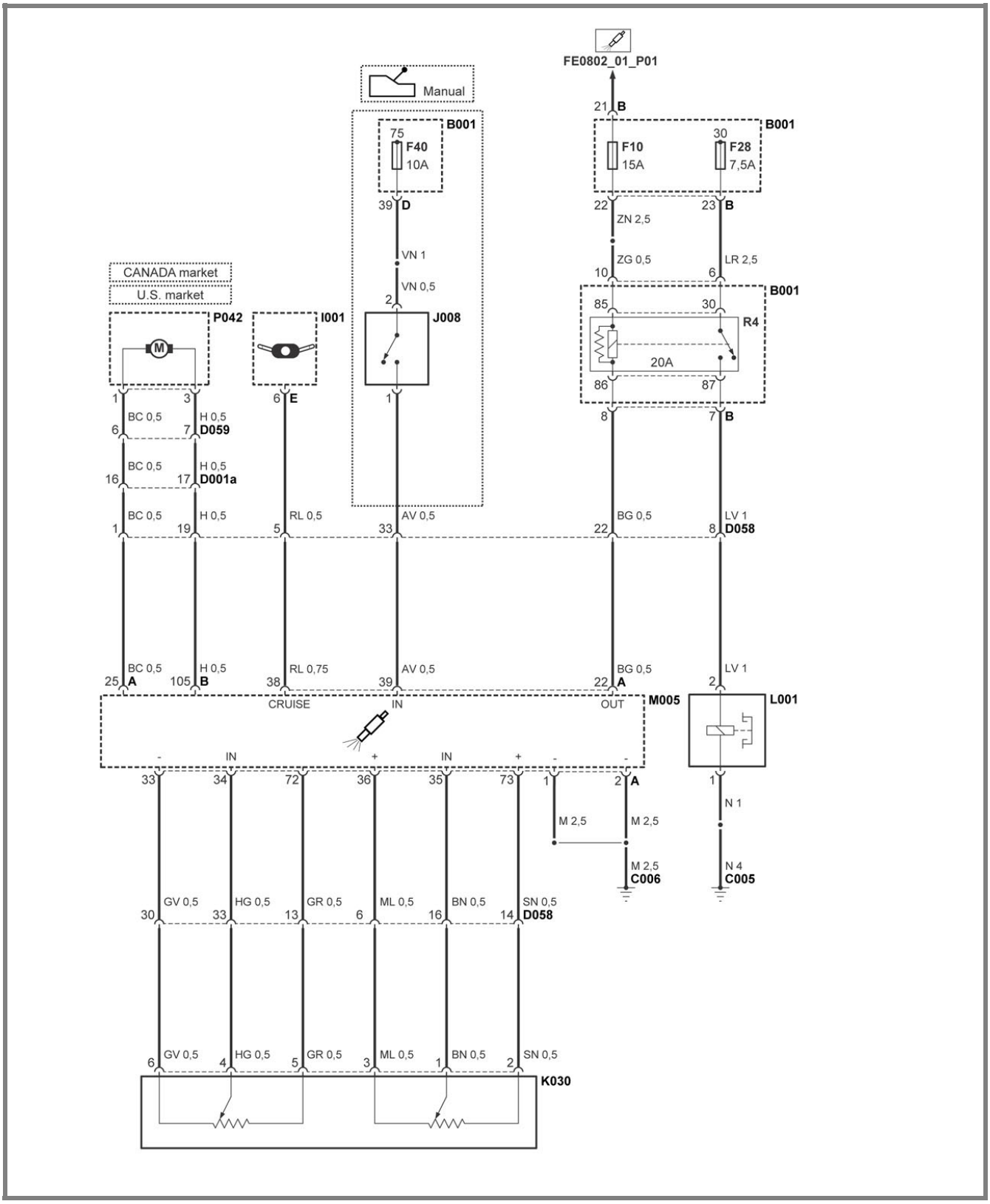

FE0802_01_P01
C 2,5
30 B
B001
F11
15A
29 B
RB 2,5
38 D058
RB 2,5
FE0802_01_P04
FE0802_01_P04
RB 2,5
RB 2,5
RB 0,75
RB 0,75
RB 0,75
RB 0,75
RB 0,75
RB 0,75
RB 0,75
RB 0,75
1
T004
1°
$103
2°
$104
3°
$105
4°
$106
5°
$107
6°
$108
7°
$109
8°
$110
2
LG 0,75
B 0,75
LV 0,75
LN 0,75
LR 0,75
LN 0,75
LB 0,75
LR 0,75
96
89
113 B
24
19 A
88
112
97 B
OUT
M005
1
2 A
M 2,5
M 2,5
M 2,5
C006

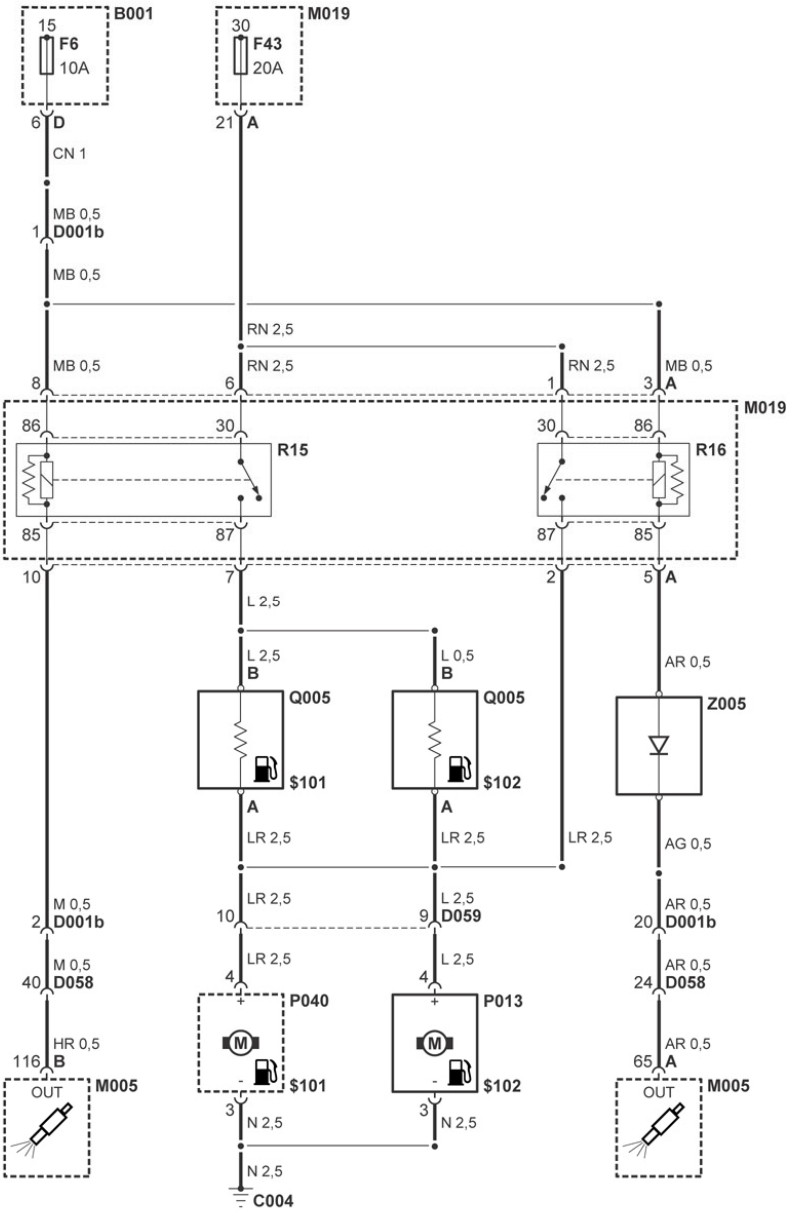

FE0802_01_P01
C 2,5
30 B
B001
F11
15A
29 B
RB 2,5
38 D058
RB 2,5
FE0802_01_P03
FE0802_01_P03
RB 2,5
RB 2,5
RB 1,5
RB 1,5
RB 1,5
RB 1,5
RB 1,5
RB 1,5
RB 1,5
RB 1,5
4
T005
1
S103
2
S104
3
S105
4
S106
4
S107
4
S108
4
S109
4
S110
3
1
N 1,5
N 2,5
N 4
C005
C 0,5
CN 0,5
CV 0,5
C 0,5
CL 0,5
R 0,5
CB 0,5
CL 0,5
102
95
111 B
8
7 A
94
110
103 B
OUT
M005
1
2 A
M 2,5
M 2,5
M 2,5
C006

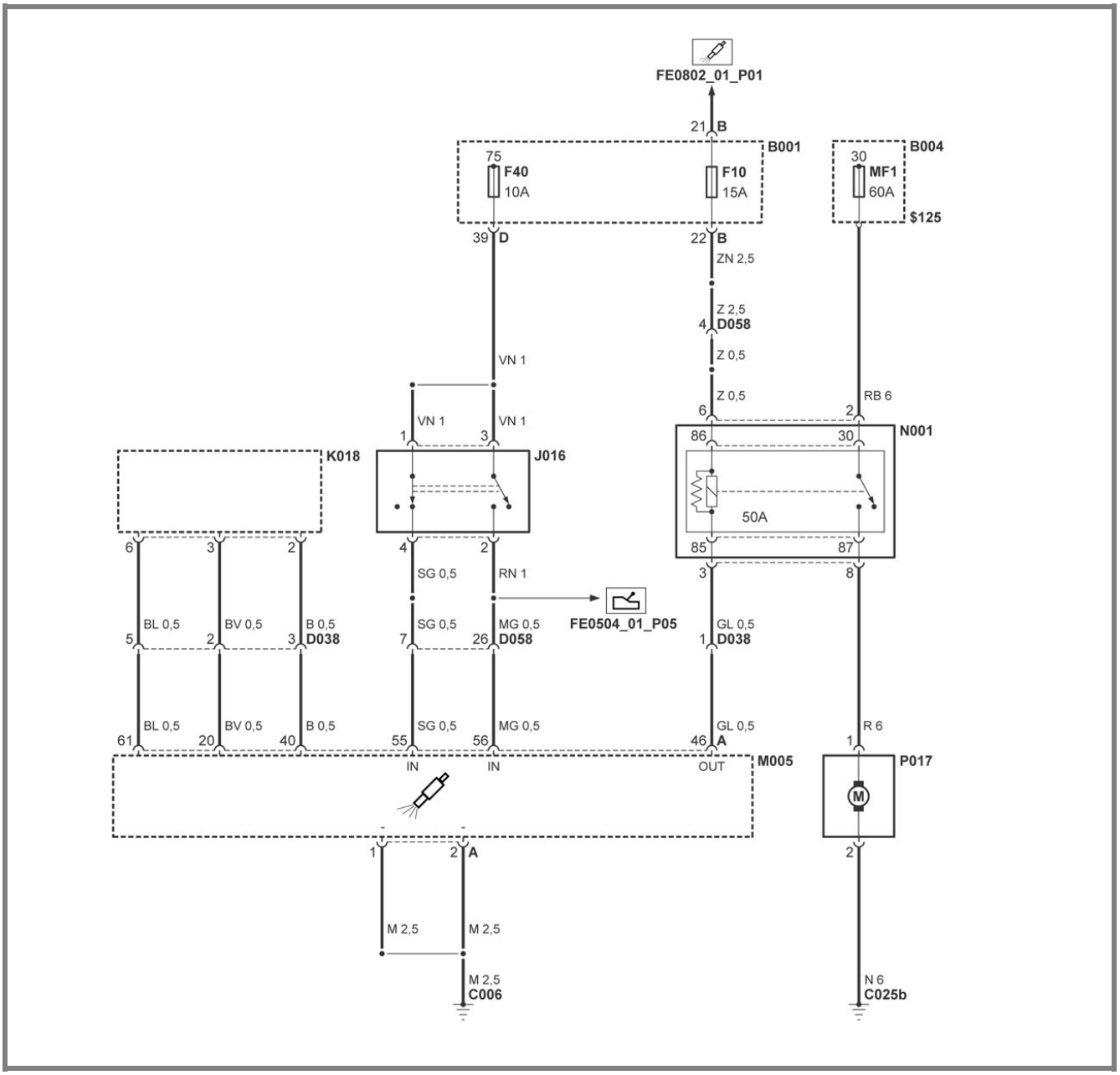

1°-2°
K005
3°-4°
K006
5°-6°
K007
7°-8°
K008
1
2
3
N 0,5
ZN 0,5
M 2,5
C006
Z 0,5
V 0,5
106
99
108
B
16
A
107
31
IN
M005
90
82
VG 0,5
S 0,5
K014

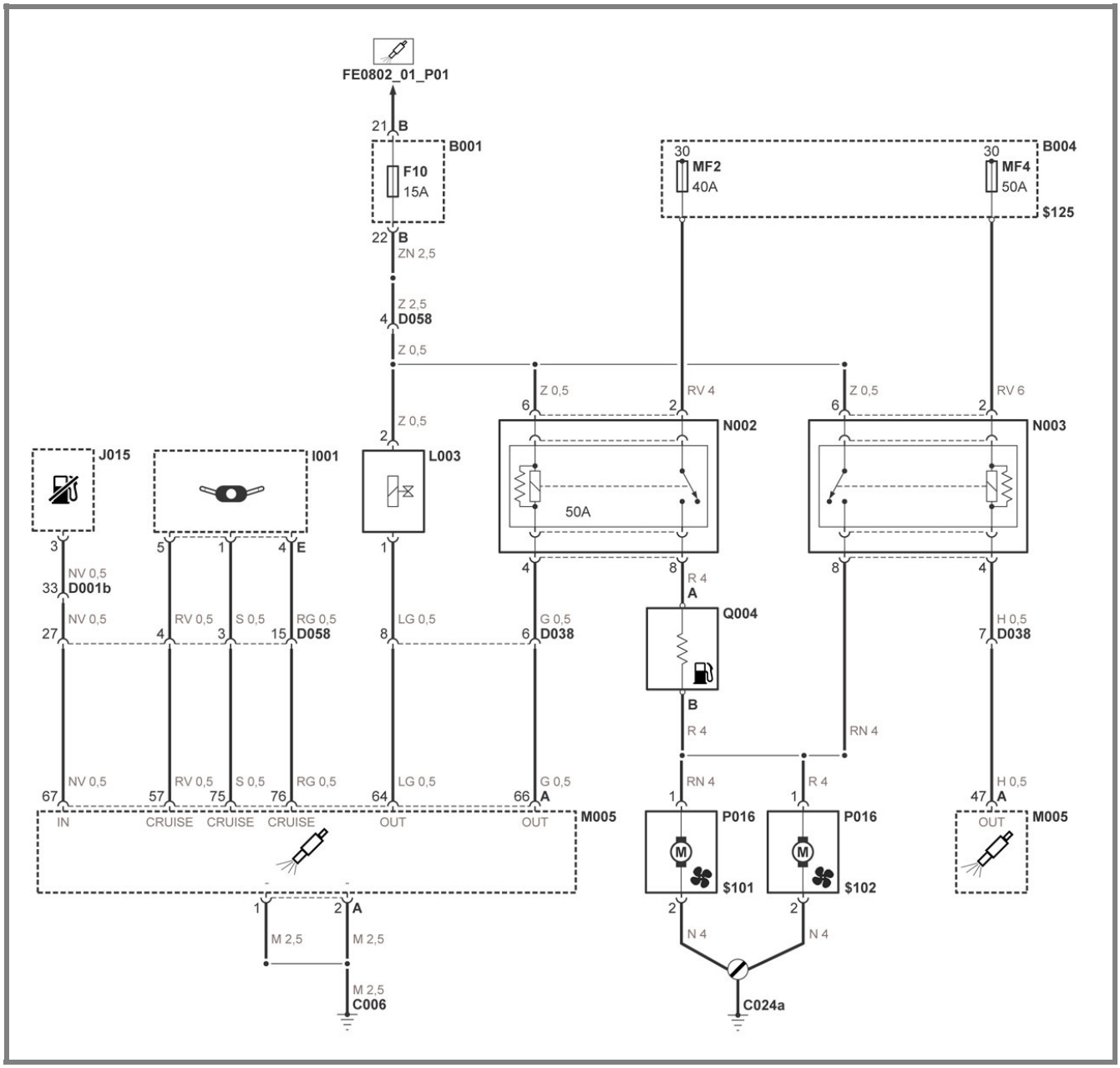

K009
$101
K009
$102
°C
K015
2 1 3
3 1 2
2 1 A
N 0,5
N 0,5
N 0,5
VR 0,5
V 0,5
S 0,5
V 0,5
SN 0,5
N 0,5
HM 0,5
87 98 86 B 50 A 93 B
IN + IN - IN
M005
IN IN - -
92 83 84 91 117 118 1 2 A
M 2,5
M 2,5
M 2,5
C006
BN 0,75
BL 0,75
BG 0,75
VG 0,75
BR 0,75
BC 0,75
P014
M
$102


FE0802_02_P01
21 B
B001
F10
15A
22 B
ZN 2,5
Z 2,5
35 D058
Z 2,5
1 Z 0,5
L002
2
CV 0,5
44 A
OUT
1 Z 0,5
K013
$102
2
L 0,5
115
IN
1 Z 0,5
K013
$101
2
RL 0,5
120 B
IN
2 Z 0,75
K012
3
A 0,5
27
-
1
HR 0,5
26
IN
4
HL 0,5
53
+
5
MV 0,5
29 A
IN
M005
1
2 A
M 2,5
M 2,5
M 2,5
C006


FE0802_01_P01
Manual
B001
75
F40
10A
39 D
VN 1
VN 0,5
2
J008
1
21 B
B001
F10
15A
30
F28
7,5A
22
23 B
ZN 2,5
ZG 0,5
LR 2,5
10
6
B001
85
30
R4
20A
86
87
8
7 B
CANADA market
U.S. market
P042
I001
1
3
BC 0,5
H 0,5
6
7 D059
BC 0,5
H 0,5
16
17 D001a
BC 0,5
H 0,5
1
19
6 E
RL 0,5
5
AV 0,5
33
BG 0,5
22
LV 1
8 D058
BC 0,5
H 0,5
25 A
105 B
RL 0,75
38
AV 0,5
39
BG 0,5
22 A
LV 1
2
CRUISE
IN
OUT
M005
L001
- IN + IN + - -
33
34
72
36
35
73
1
2 A
M 2,5
M 2,5
M 2,5
C006
1
N 1
N 4
C005
GV 0,5
HG 0,5
GR 0,5
ML 0,5
BN 0,5
SN 0,5
30
33
13
6
16
14 D058
6
4
5
3
1
2
K030


B001
15
F6
10A
M019
30
F43
20A
6 D
21 A
CN 1
MB 0,5
1 D001b
MB 0,5
RN 2,5
MB 0,5
8
RN 2,5
6
RN 2,5
1
MB 0,5
3 A
M019
86
30
R15
85
87
30
86
R16
87
85
10
7
2
5 A
L 2,5
L 2,5
B
Q005
$101
A
L 0,5
B
Q005
$102
A
AR 0,5
Z005
LR 2,5
LR 2,5
LR 2,5
AG 0,5
M 0,5
2 D001b
LR 2,5
10
L 2,5
9 D059
AR 0,5
20 D001b
M 0,5
40 D058
LR 2,5
4
L 2,5
4
AR 0,5
24 D058
P040
P013
HR 0,5
116 B
AR 0,5
65 A
OUT
M005
$101
$102
OUT
M005
3
N 2,5
3
N 2,5
N 2,5
C004


FE0802_01_P01
21 B
B001
75
F40
10A
F10
15A
39 D
22 B
ZN 2,5
Z 2,5
4 D058
Z 0,5
VN 1
Z 0,5
6
VN 1
VN 1
1
3
K018
J016
6
3
2
4
2
SG 0,5
RN 1
FE0504_01_P05
BL 0,5
BV 0,5
B 0,5
5
2
3
D038
7
SG 0,5
MG 0,5
26
D058
GL 0,5
1
D038
61
BL 0,5
20
BV 0,5
40
B 0,5
55
SG 0,5
56
MG 0,5
46
A
IN
IN
OUT
M005
1
2
A
M 2,5
M 2,5
M 2,5
C006
B004
30
MF1
60A
$125
RB 6
2
N001
86
30
50A
85
87
3
8
R 6
1
P017
M
2
N 6
C025b


FE0802_01_P01
21 B
B001
F10
15A
22 B
ZN 2,5
4 D058
Z 2,5
Z 0,5
2 Z 0,5
L003
1
B004
30 MF2 40A
30 MF4 50A
$125
6 Z 0,5
2 RV 4
N002
50A
4
8 R 4
A
Q004
B
R 4
RN 4
6 Z 0,5
2 RV 6
N003
8
4
H 0,5
7 D038
J015
I001
3
5 1 4 E
NV 0,5
33 D001b
NV 0,5
27
RV 0,5
S 0,5
RG 0,5
4 3 15 D058
LG 0,5
8
G 0,5
6 D038
67 NV 0,5
57 RV 0,5
75 S 0,5
76 RG 0,5
64 LG 0,5
66 G 0,5
A
47 H 0,5
A
IN
CRUISE
CRUISE
CRUISE
OUT
OUT
OUT
M005
M005
1 RN 4
P016
$101
1 R 4
P016
$102
2
2
N 4
N 4
C024a
1 2 A
M 2,5
M 2,5
M 2,5
C006

## ELECTRICAL COMPONENTS - DESCRIPTION

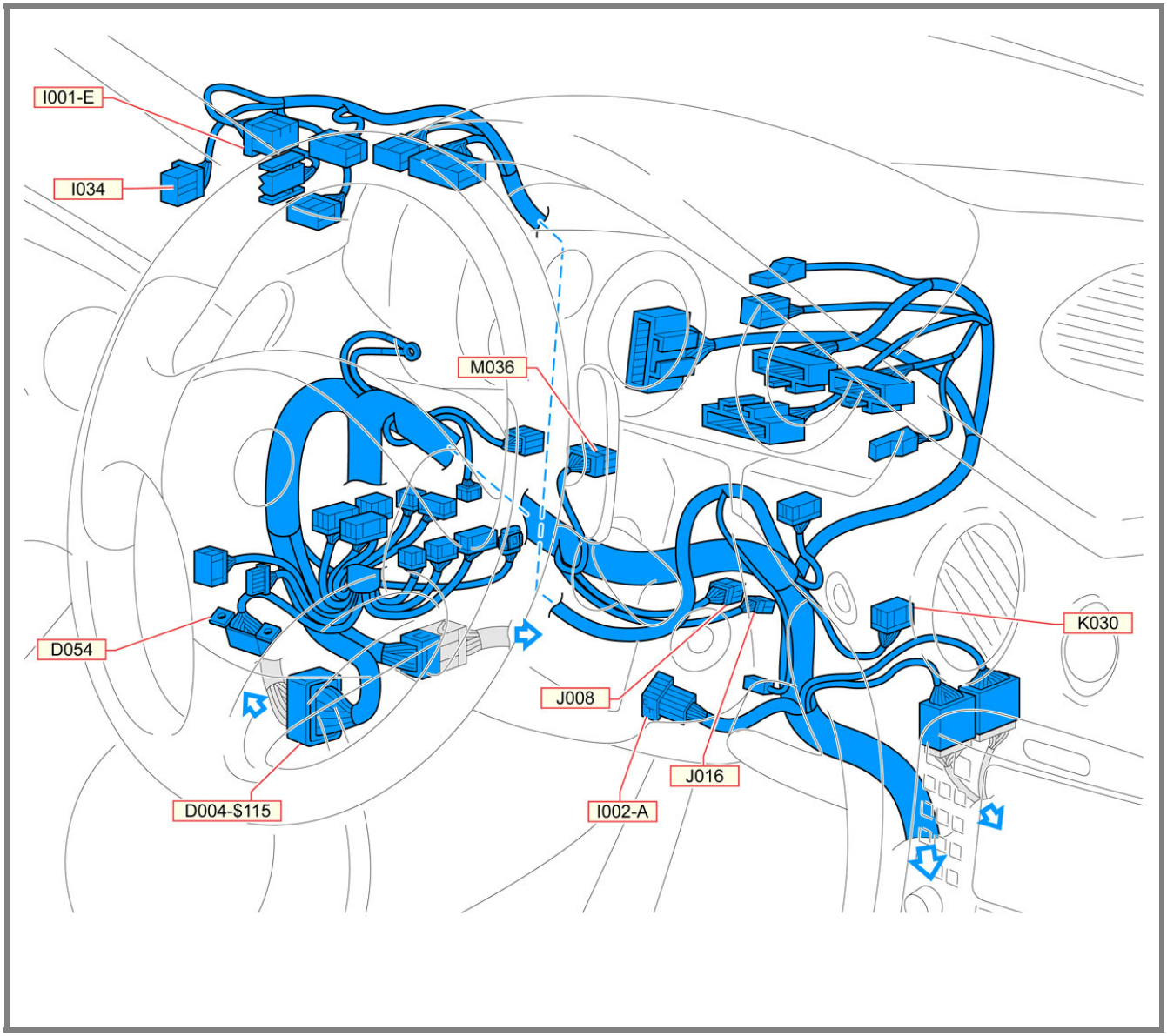
| | |
|---|---|
| A002 | 12V starter motor |
| A003 | Battery positive |
| A004 | Branch terminal board |
| B001 | Dashboard branching ecu (CPL) |
| B004 | Fuses ecu (MAXI FUSE) |
| C004 | Fuel tank earth |
| C005 | Coils earth |
| C006 | Injection system earth |
| C013 | Luggage compartment wiring earth |
| C014 | Robotized gearbox node earth |
| C018 | Gearbox oil motor pump's earth |
| C019 | Gearbox solenoid valves' earth |
| C025 | Engine compartment wiring earth |
| D001 | Dashboard/passenger compartment wiring connections |
| D004 | Front door wiring connection |
| D018 | Passenger compartment/luggage compartment wiring connection |
| D025 | Luggage compartment wiring/F1 robotized gearbox cable bundle connection |
| D038 | Injection/ engine compartment wiring connection |
| D054 | OBD connection |
| D058 | Dashboard /Injection wiring connection |
| D059 | Passenger compartment/fuel tank cable bundle connection |
| I001 | Steering column switch |
| I002 | Ignition switch |
| I018 | Reverse gear engagement control set |
| I023 | Electronically controlled gearbox lever |
| I034 | Gearshift control cluster on steering wheel |
| J008 | Clutch pedal switch |
| J015 | Inertia switch |
| J016 | Stop indicator switch |

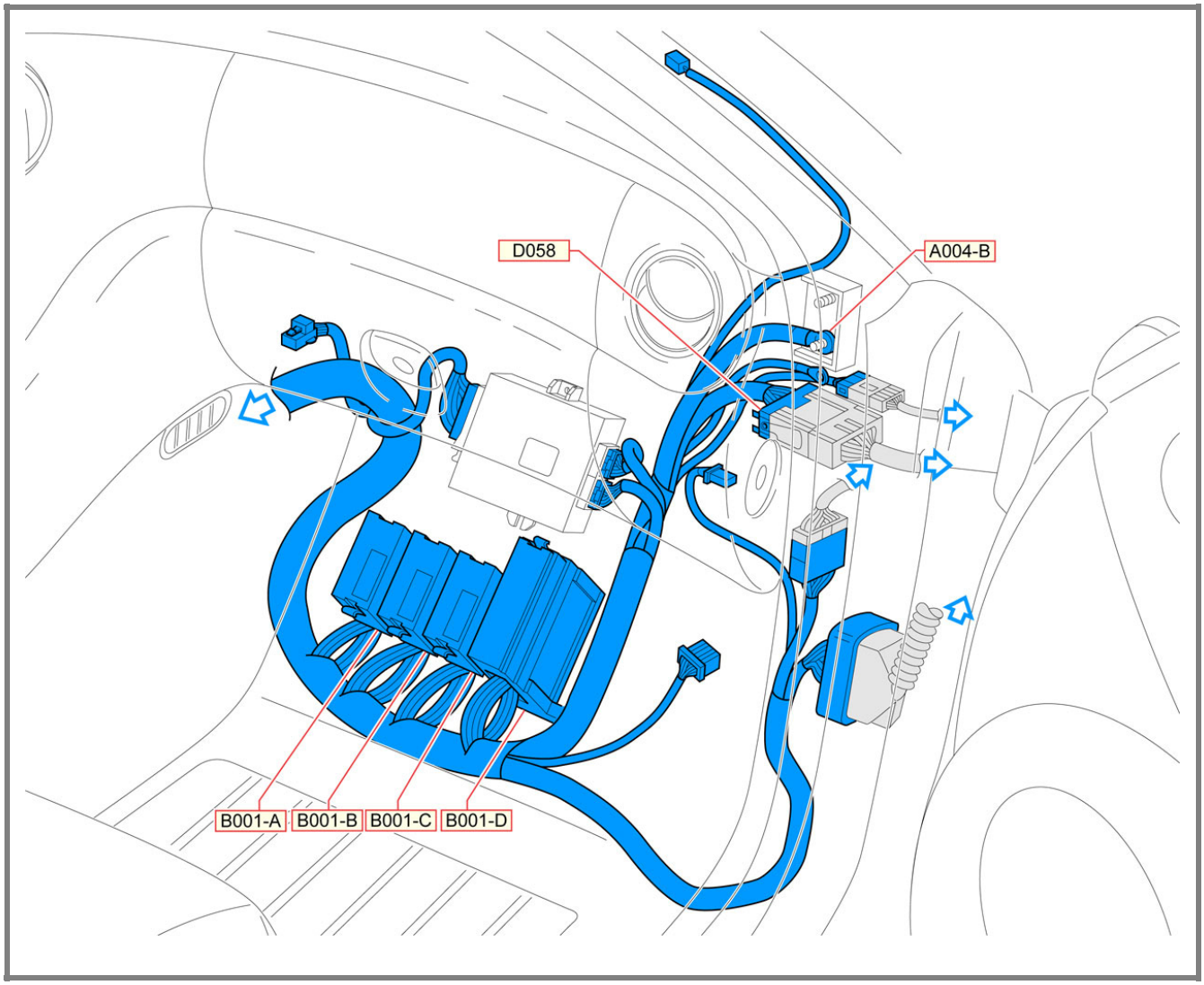
| | |
|---|---|
| K005 | Detonation sensor (cylinders 1-2) |
| K006 | Detonation sensor (cylinders 3-4) |
| K007 | Detonation sensor (cylinders 5-6) |
| K008 | Detonation sensor (cylinders 7-8) |
| K009 | Stage sensor |
| K010 | Front lambda sensor |
| K011 | Rear lambda sensor |
| K012 | Air flow meter |
| K013 | Stage variator |
| K014 | Engine rpm sensor |
| K015 | Engine water temperature sensor |
| K018 | Pressure gauge |
| K030 | Accelerator pedal sensor |
| K034 | F1 robotized gearbox acceleration sensor |
| K037 | Pressure sensor on clutch |
| K038 | Clutch sensor |
| K044 | Gearbox sensor |
| K045 | Pressure transducer |
| L001 | Air conditioner compressor electromagnet |
| L002 | Secondary air solenoid valve |
| L003 | Anti-evaporation system safety solenoid valve |
| L009 | Clutch solenoid valve |
| L010 | Gear selection solenoid valve, robotized gearbox |
| L011 | Gear engagement solenoid valve, robotized gearbox |
| M005 | Engine control node (NCM) |
| M018 | Robotized gearbox node (NCR) |
| M019 | Luggage compartment ecu (CVB) |
| M036 | Immobilizer ECU |
| N001 | Exhaust air pump relay |
| N002 | First speed fan relay |
| N003 | Second speed fan relay |

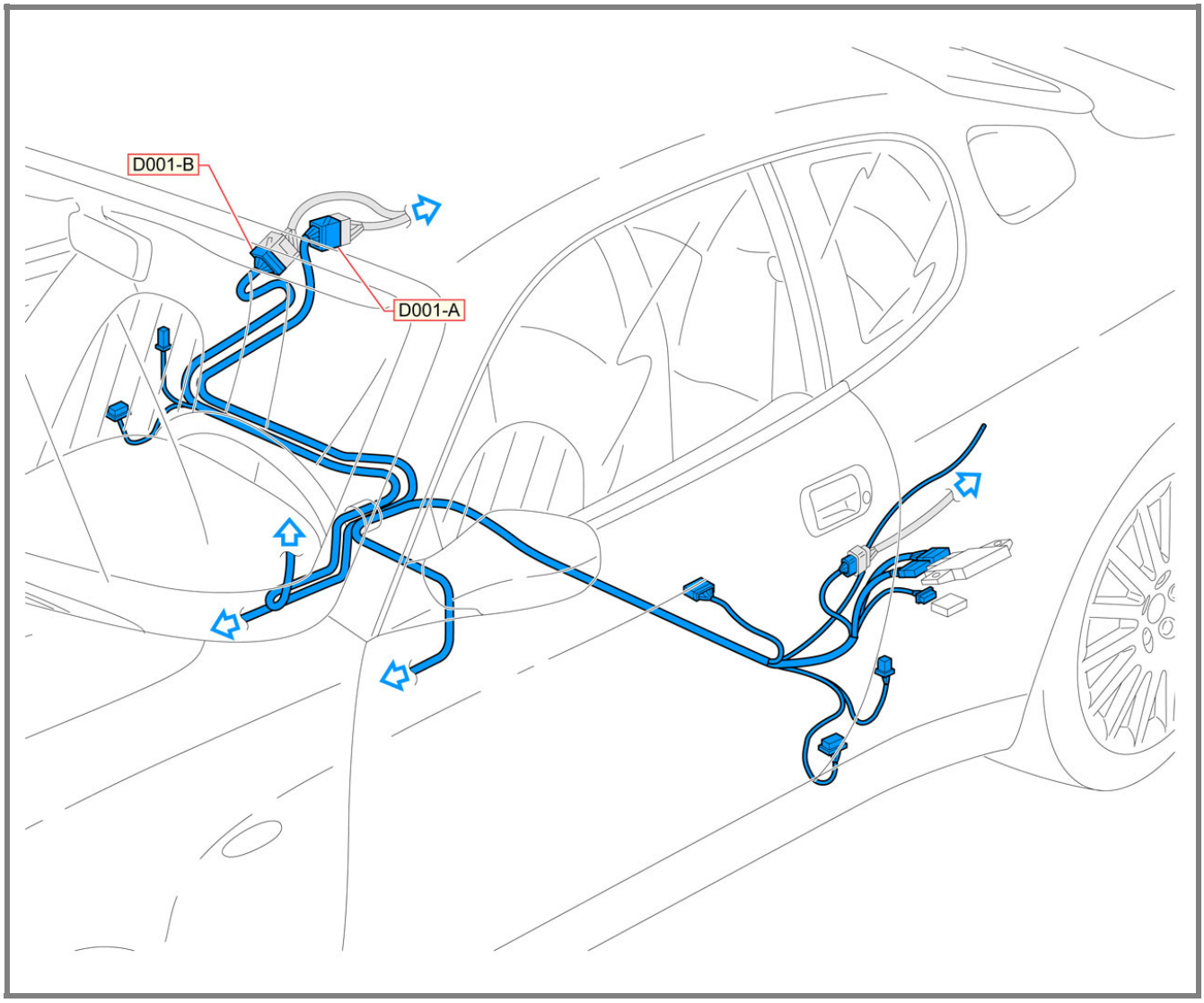
| | |
|---|---|
| N005 | F1 robotized gearbox pump relay |
| P006 | Front door lock motor |
| P013 | Fuel motor pump |
| P014 | Motor driven throttle |
| P016 | Engine cooling electric fan |
| P017 | Exhaust air pump |
| P030 | Gearbox oil motor pump |
| P040 | Fuel motor pump with integrated level sensor |
| P042 | Diagnosis electric pump anti-evaporation system |
| Q004 | Engine cooling electric fan's resistor |
| Q005 | Fuel pump resistor |
| Q008 | Gear selection/engagement potentiometer |
| T004 | Electro-injector |
| T005 | Coil |
| Z005 | Fuel supply system protection diode |

| | |
|---|---|
| $101 | left-hand side |
| $102 | right-hand side |
| $103 | cylinder 1 |
| $104 | cylinder 2 |
| $105 | cylinder 3 |
| $106 | cylinder 4 |
| $107 | cylinder 5 |
| $108 | cylinder 6 |
| $109 | cylinder 7 |
| $110 | cylinder 8 |
| $115 | driver's side |
| $125 | front |
| $126 | rear |

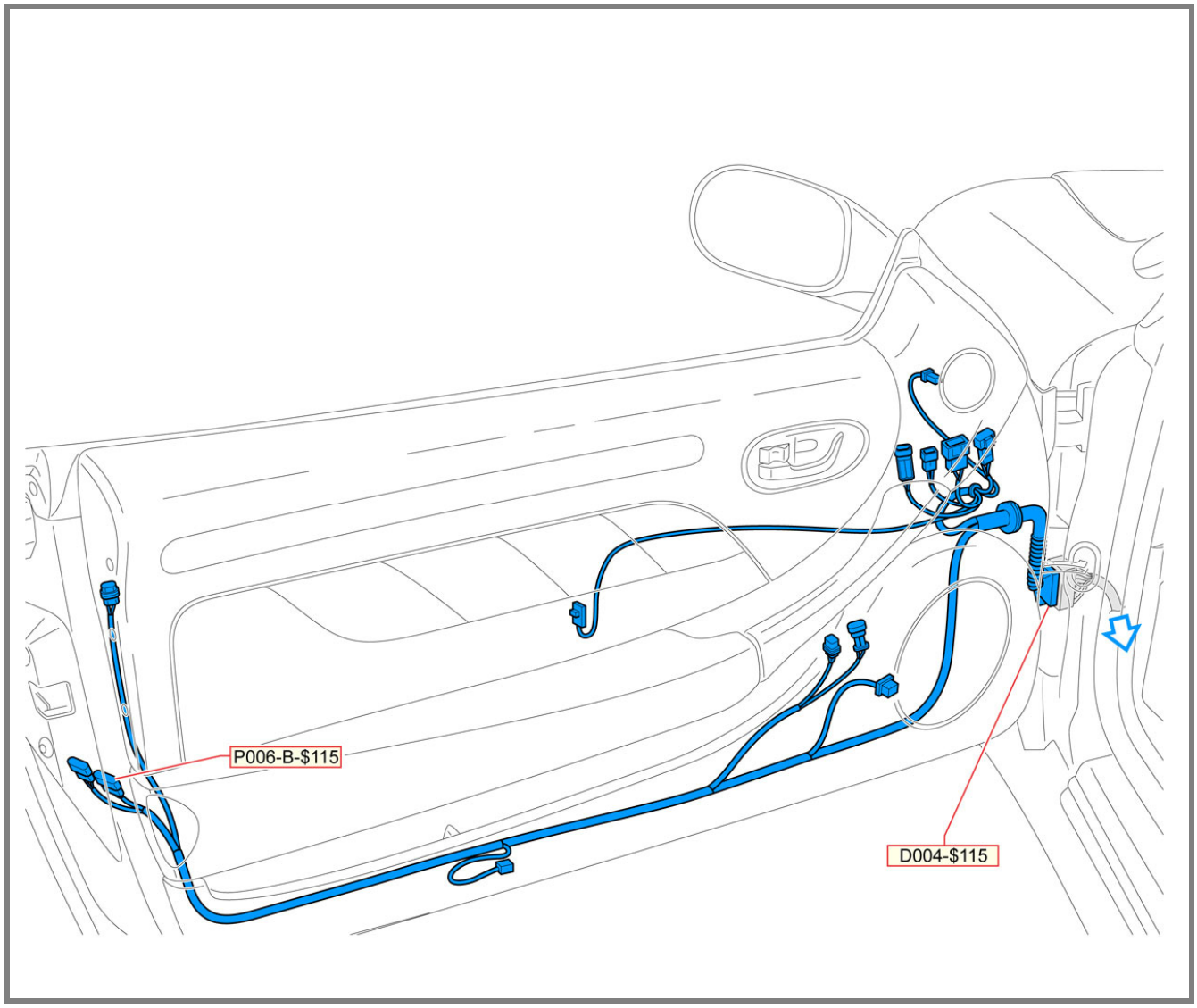
## DASHBOARD WIRING



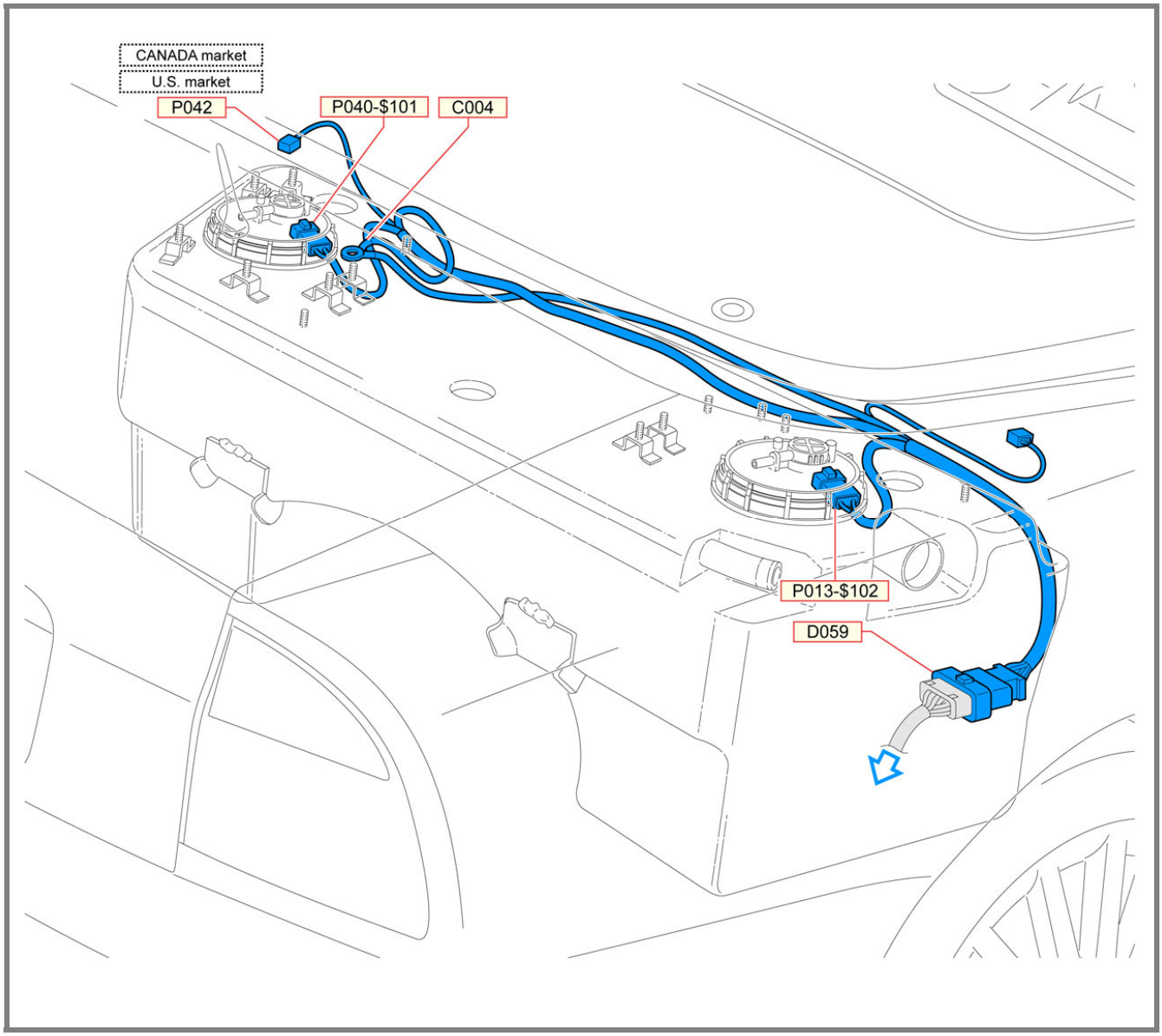

D058
A004-B
B001-A
B001-B
B001-C
B001-D


D001-B
D001-A

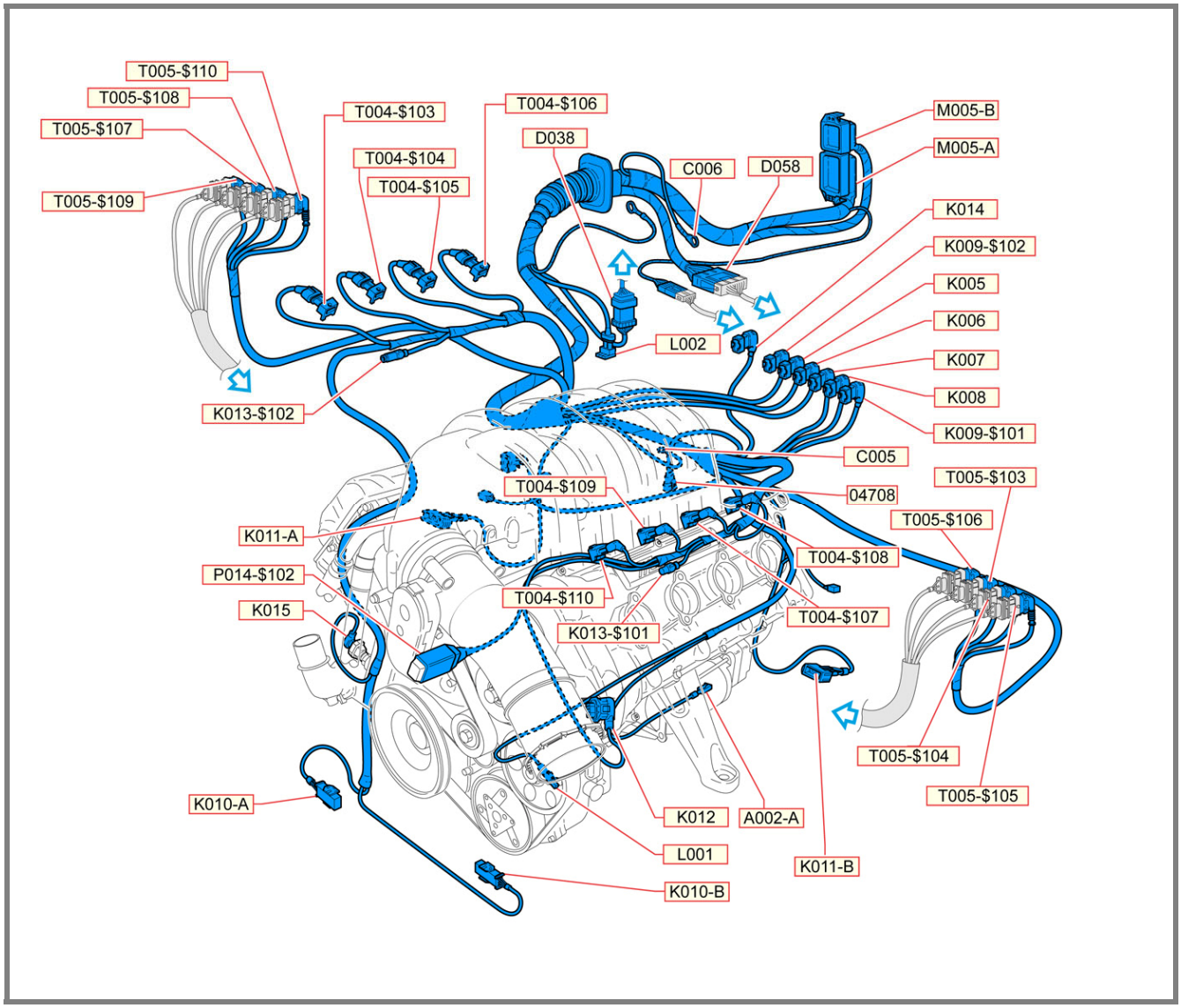
## FRONT DOOR WIRING DRIVER SIDE



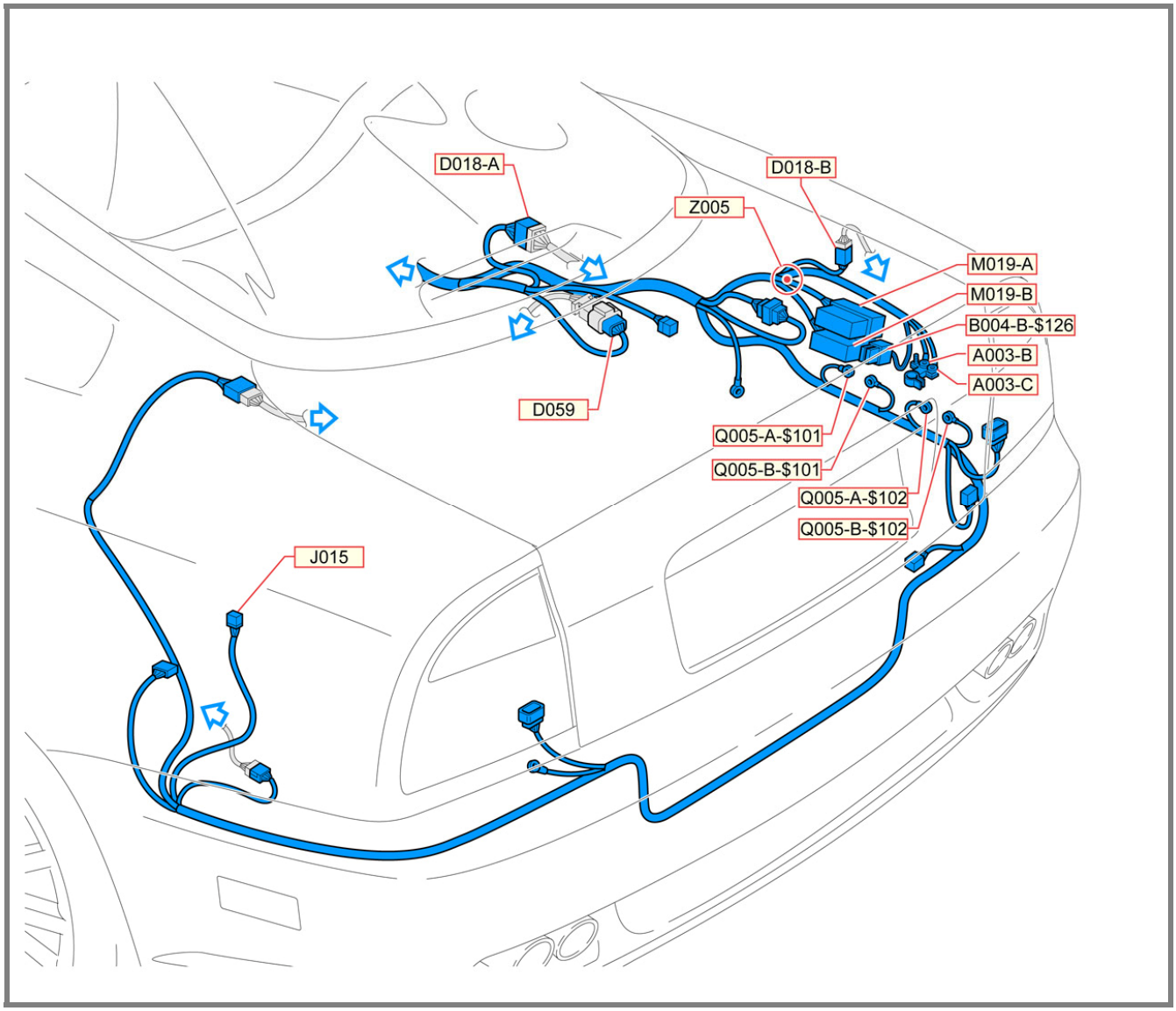
## FUEL TANK CABLE BUNDLE

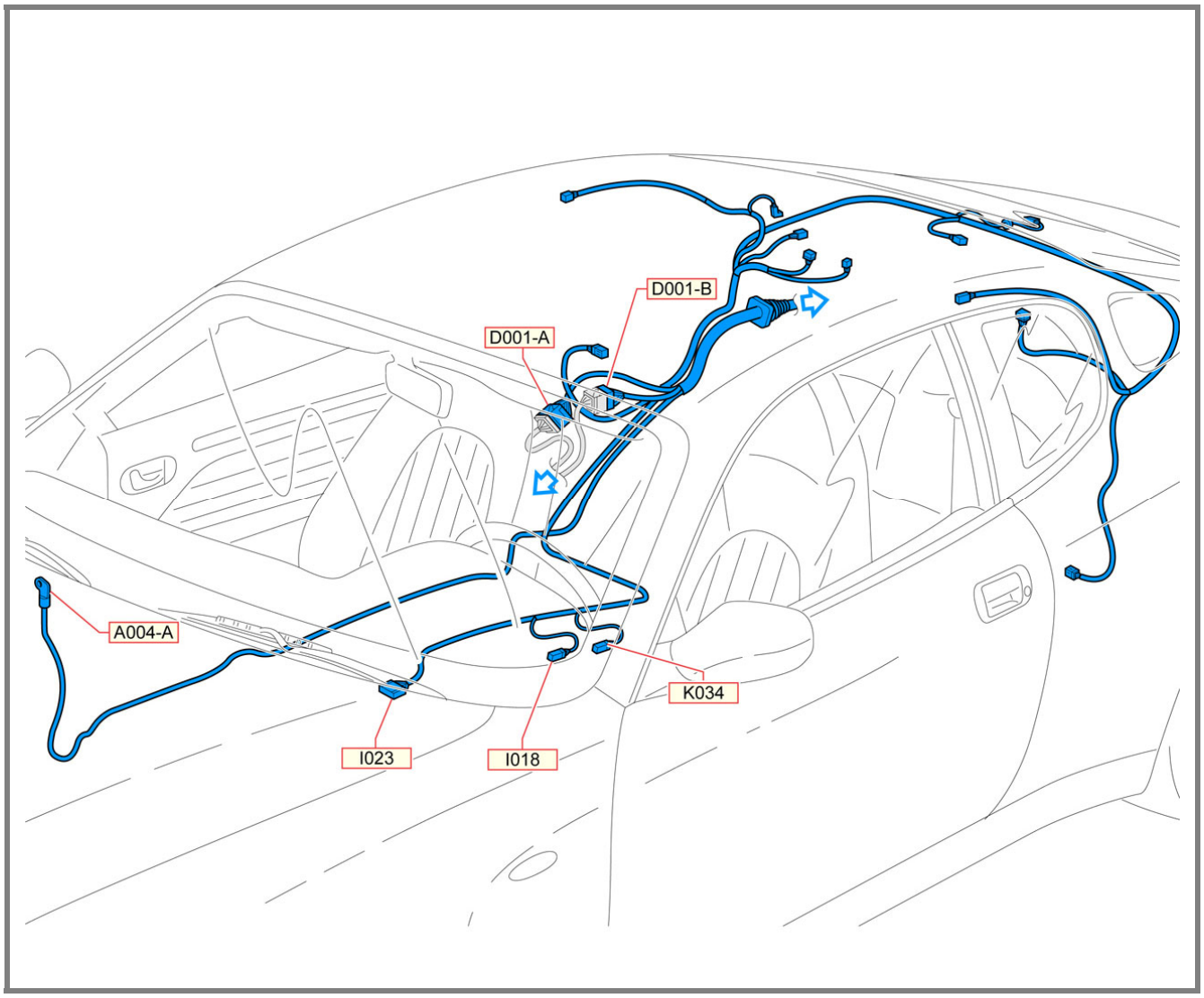


## INJECTION WIRING

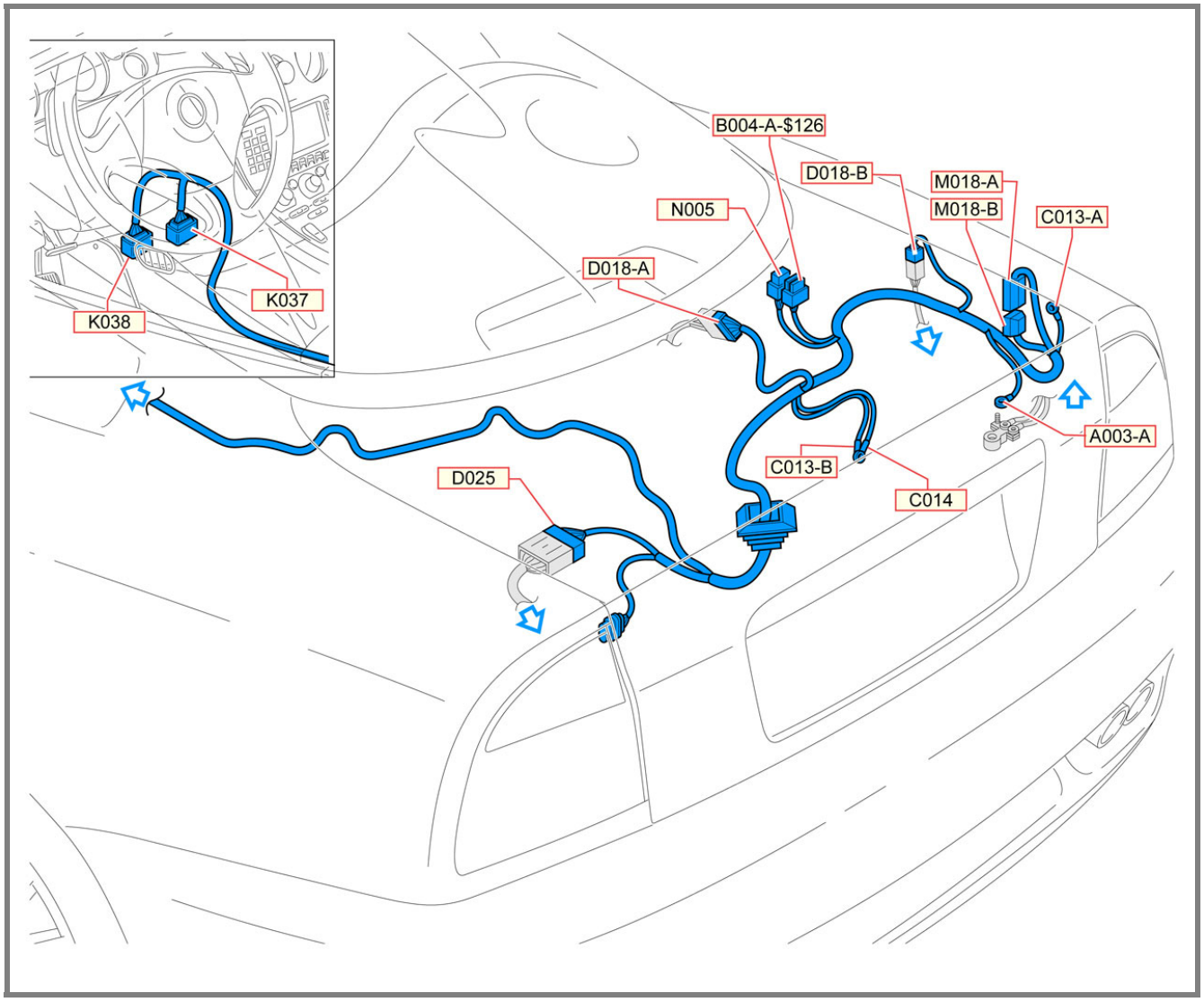


## PASSENGER COMPARTMENT WIRING

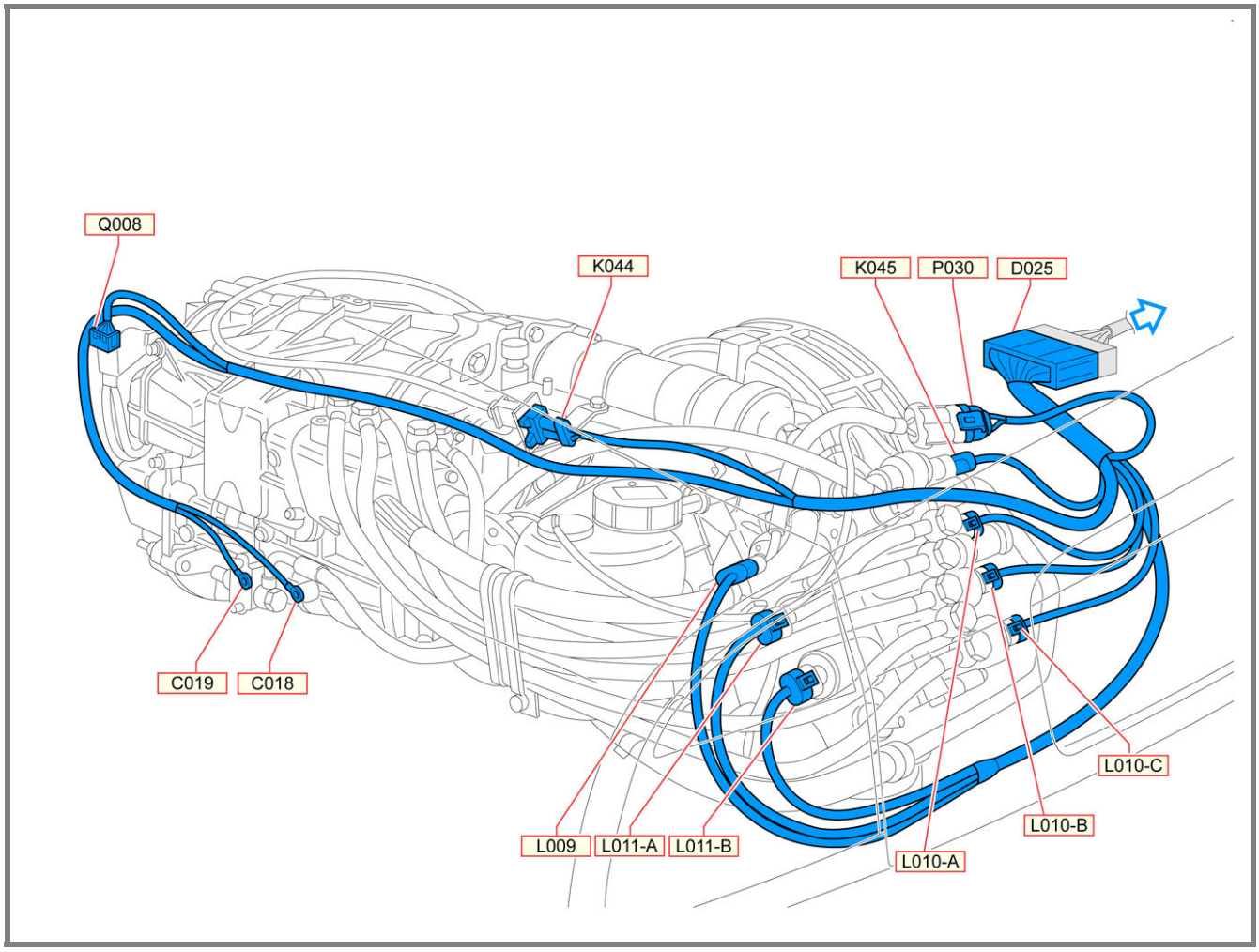



D001-B
D001-A
A004-A
K034
I023
I018

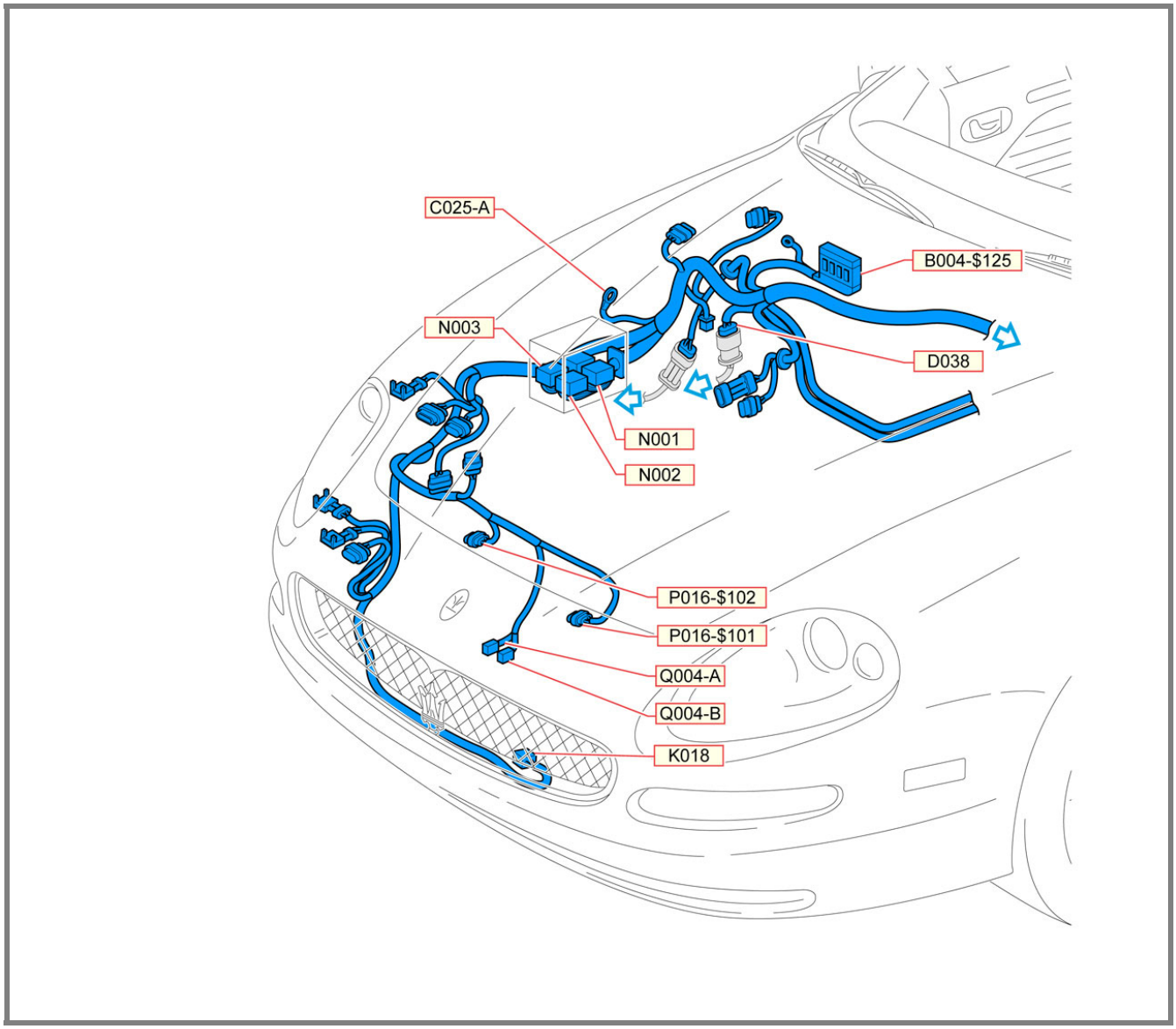
## LUGGAGE COMPARTMENT WIRING

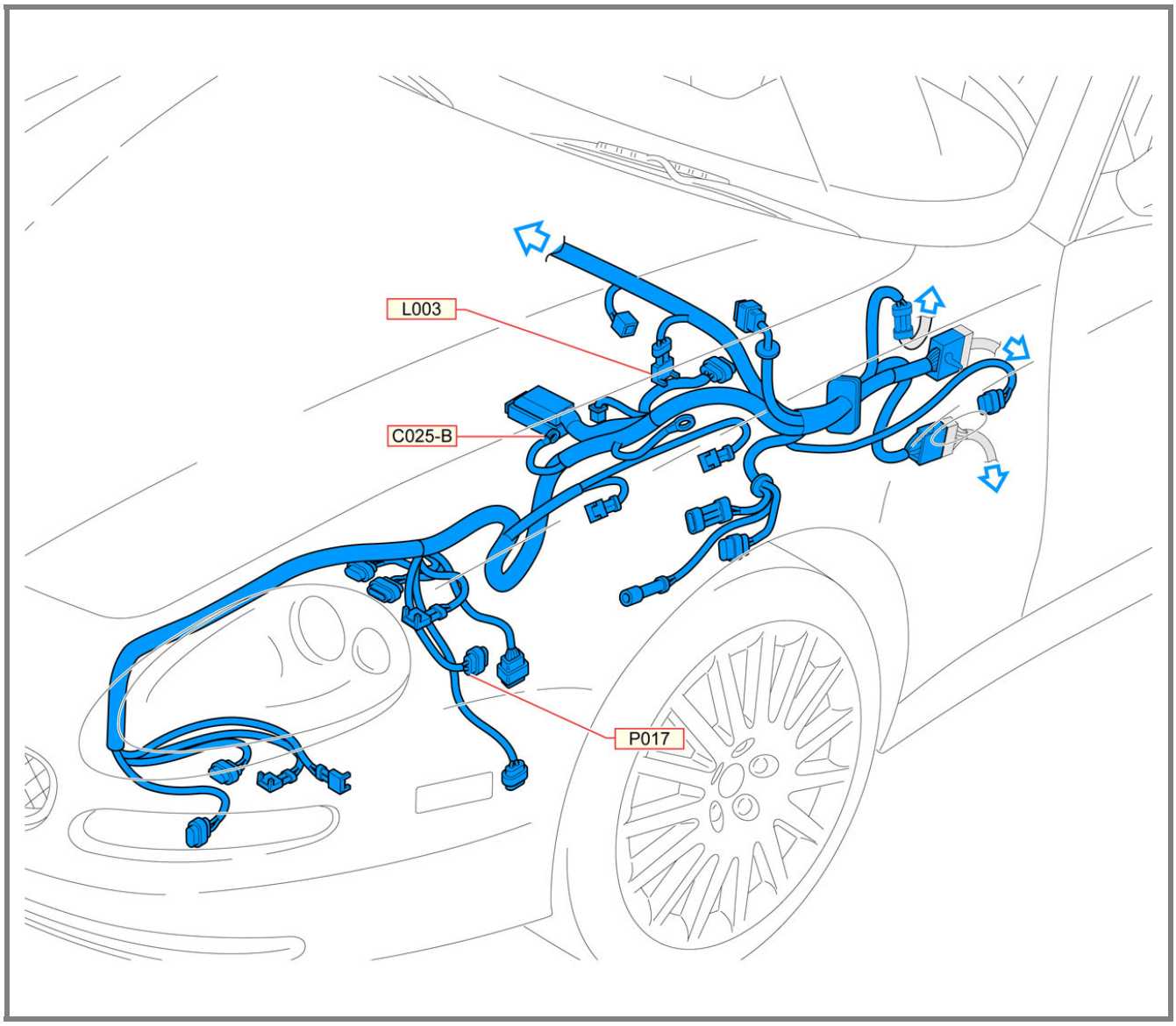


## ROBOTIZED GEARBOX WIRING

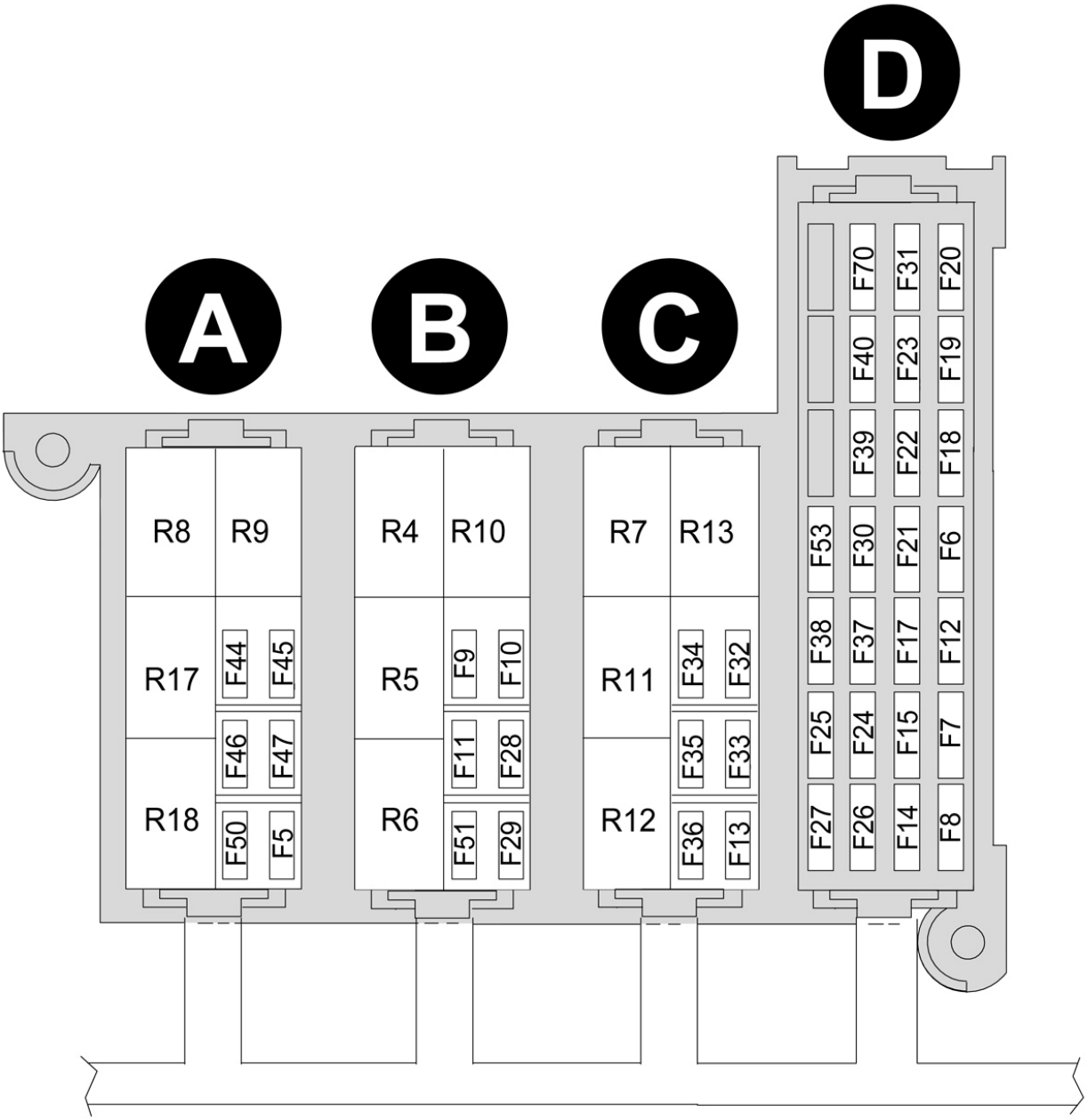


## ENGINE COMPARTMENT WIRING




L003
C025-B
P017

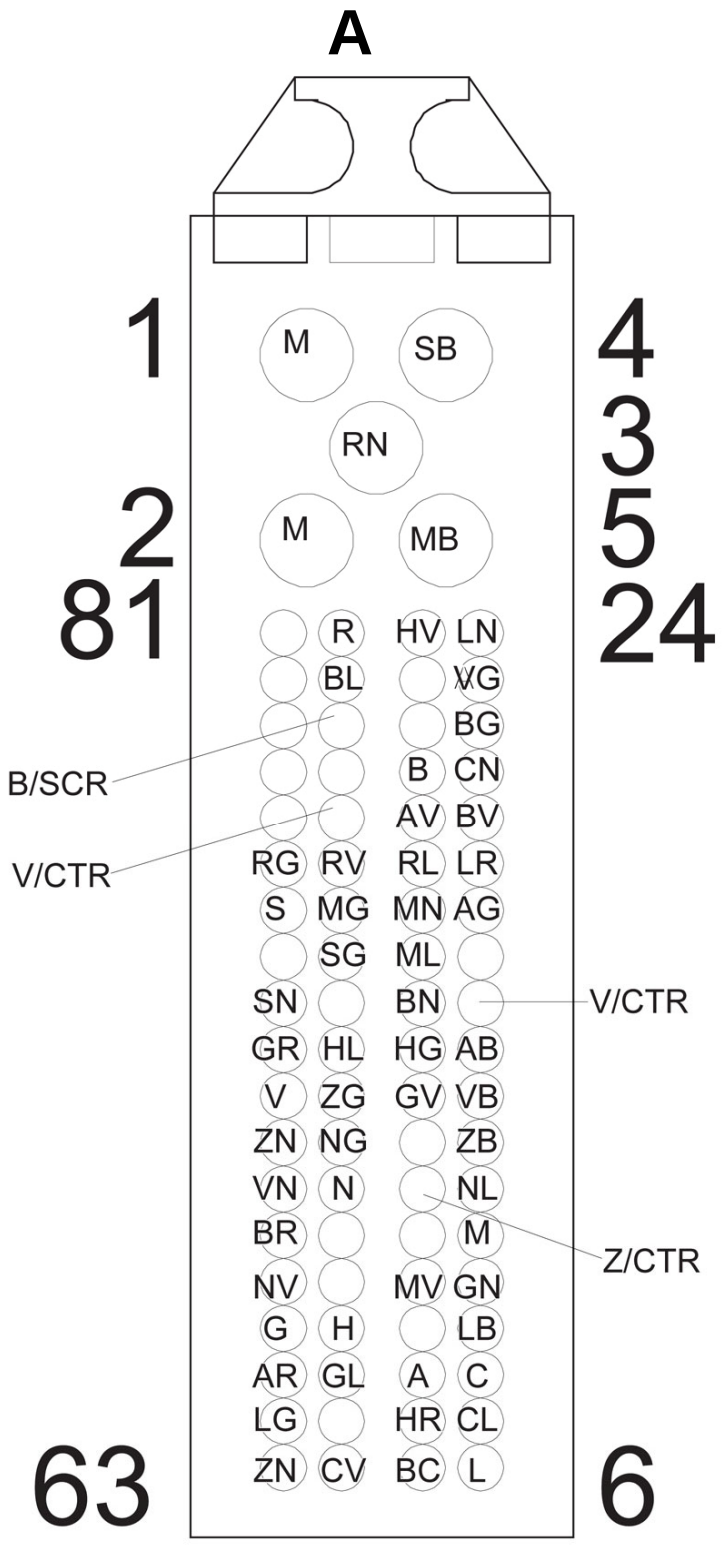
## DASHBOARD BRANCHING ECU (CPL-B001)



| | | |
|---|---|---|
| **A** | | |
| F5 | 30A | Headlight washer timer |
| F44 | 30A | +30 Driver's seat |
| F45 | 30A | +30 Passenger's seat |
| F46 | 7,5A | Passenger's seat heating |
| F47 | 7,5A | Driver's seat heating |
| F50 | 7,5A | Air conditioning and ventilation unit |
| R8 | 30A | Connected devices cut out during ignition |
| R9 | 30A | Connected devices not cut out during ignition |
| R17 | 20A | Passenger's seat heating |
| R18 | 20A | Driver's seat heating |
| **B** | | |
| F9 | 10A | +87 main relay |
| F10 | 15A | +87 Lambda sensor main relay , air flow meter |
| F11 | 15A | +87 main relay for injectors, coils |
| F28 | 7,5A | A.C. Compressor |
| F29 | 15A | Horns |
| F51 | 10A | +15 ABS |
| R4 | 20A | A.C. Compressor |
| R5 | 20A | Immobilizer |
| R6 | 20A | Main injection |
| R10 | 20A | A.C. Compressor, horns |
| **C** | | |
| F13 | 30A | Starter motor |
| F32 | 10A | RH High beam light |
| F33 | 10A | LH High beam light, warning light |
| F34 | 15A | Fog lights |
| F35 | 15A | Left-hand low beam |
| F36 | 15A | Right-hand low beam, headlight washers inhibitor switch, manual headlight angle adjuster |
| R7 | 30A | Starter motor |
| R11 | 20A | Fog lights |
| R12 | 20A | High beam lights |
| R13 | 20A | Low beam lights |

| D | | |
|---|---|---|
| F6 | 10A | Headlight washer timer |
| F7 | 30A | Main injection |
| F8 | 7,5A | +30 injection |
| F12 | 15A | +30 ignition switch |
| F14 | 5A | Air conditioning and ventilation system, navigator cable bundle, (+15 connected devices cut out during ignition) |
| F15 | 15A | Cigarette lighter, radio, engine indic., rear view mirrors, ceiling light, glove compartment lamp (+15 cut out during ignition) |
| F17 | 25A | Windshield wiper, windshield wiper washing pumps, wiper(+15 cut out during ignition) |
| F18 | 10A | Airbag (+15 connected devices not cut out during ignition) |
| F19 | 5A | +15 NCS (+15 connected devices not cut out during ignition) |
| F20 | 7,5A | Immobilizer, CAN line interface, navigator cable bundle instrument(+15 not cut out during ignition) |
| F21 | 5A | Alarm system, preset for satellite alarm |
| F22 | 10A | Ceiling lights, ceiling light timer, (electronic) seats , luggage compartment and fuel flap opening controls |
| F23 | 7,5A | ECU for CAN line interface, OBD, Maserati CODE system, multifuncion display |
| F24 | 20A | Door locking system |
| F25 | 15A | Radio, navigator |
| F26 | 30A | Driver side power windows |
| F27 | 30A | Passenger side power window |
| F30 | 10A | +15 light switch, Cruise Control, headlight aiming ECU (+15 cut out during ignition) |
| F31 | 15A | Turn signal light blinking |
| F37 | 15A | +30 IGE ECU |
| F38 | 15A | +30 IGE ECU |
| F39 | 5A | IGE ECU, ceiling light timer, light switch (+15 connected devices not cut out during ignition) |
| F40 | 10A | Stop, clutch |
| F53 | 10A | Navigator, clock, tunnel display |
| F70 | 15A | Exhaust bypass solenoid valve |

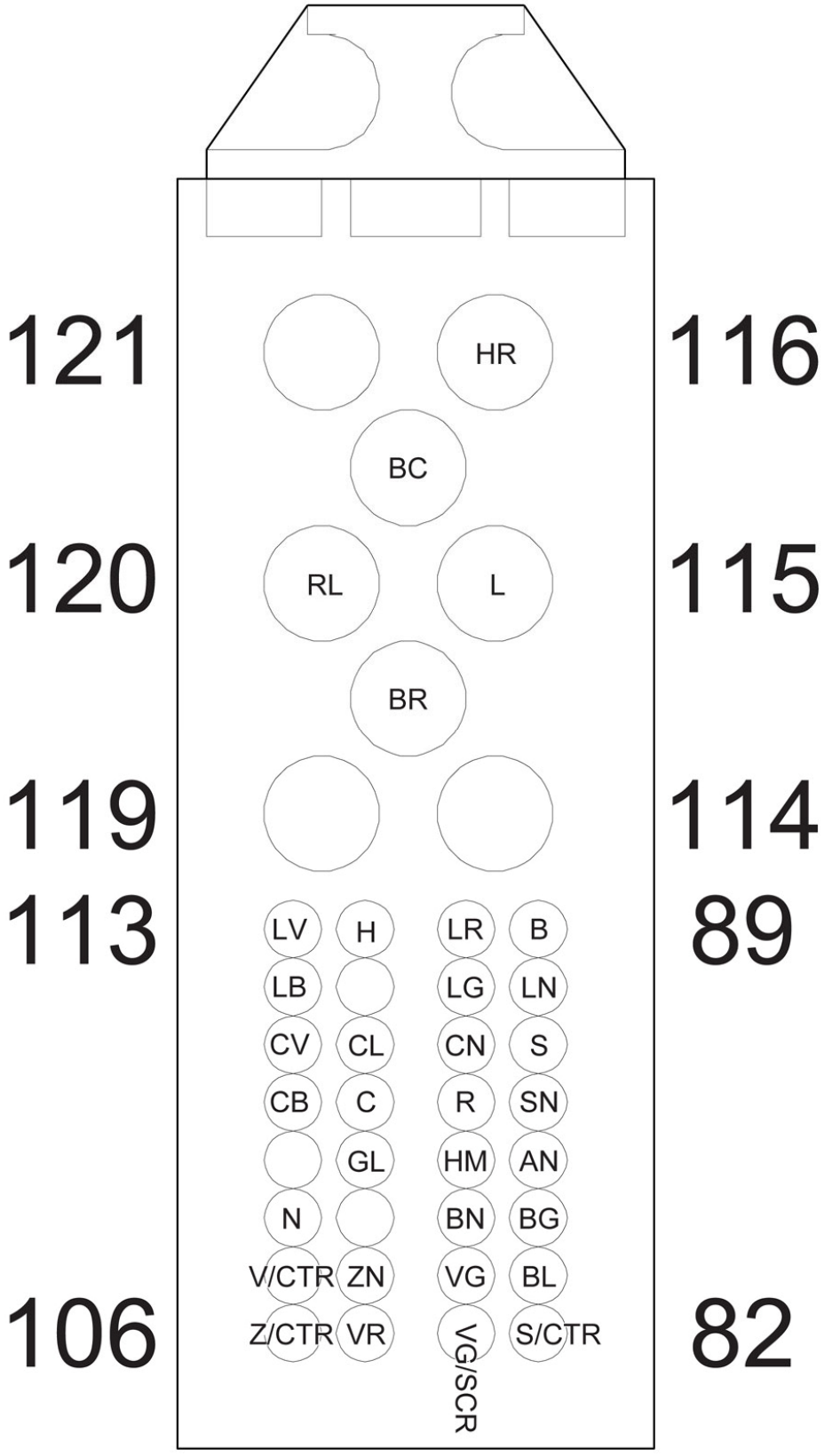
## ENGINE CONTROL NODE (NCM- M005)



| | |
|---|---|
| 1 | Earth |
| 2 | Earth |
| 3 | Power supply from main relay |
| 4 | Front lambda sensor 2 heater |
| 5 | Front lambda sensor 1 heater |
| 6 | Rear lambda sensor 2 heater |
| 7 | Cylinder 5 coil control 4 |
| 8 | Cylinder 4 coil control 4 |
| 9 | - |
| 10 | Rear lambda sensor 2 reference earth |
| 11 | Rear lambda sensor 2 signal |
| 12 | Front lambda sensor 2 reference earth |
| 13 | Front lambda sensor 2 signal |
| 14 | Front lambda sensor 2 equalizing current |
| 15 | Front lambda sensor 2 pumping current |
| 16 | Cylinders 3 and 4 detonation sensor |
| 17 | - |
| 18 | Immobilizer relay |
| 19 | Cylinder 5 injector control |
| 20 | Cooling fan 1 control input |
| 21 | ECU power supply +15 (key) |
| 22 | A / C compressor control |
| 23 | Power supply from main relay |
| 24 | Cylinder 4 injector control |
| 25 | Seal control pump |
| 26 | Intake air temperature signal |
| 27 | Air flow meter reference earth |
| 28 | - |
| 29 | Air flow meter signal |
| 30 | - |
| 31 | Cylinders 7 and 8 detonation sensor |
| 32 | - |
| 33 | Reference earth for accelerator pedal 2 potentiometer |
| 34 | Signal for accelerator pedal potentiometer 2 |
| 35 | Signal for accelerator pedal potentiometer 1 |
| 36 | Reference earth for accelerator pedal 1 potentiometer |
| 37 | Engine speed rate signal for rev. counter |
| 38 | Cruise control: acceleration adjustment |
| 39 | Closed clutch signal |
| 40 | A / C system activation signal |
| 41 | - |
| 42 | - |
| 43 | K diagnosis line |
| 44 | Secondary air valve control |
| 45 | - |
| 46 | Secondary air pump control |
| 47 | High speed fan control |
| 48 | - |
| 49 | - |
| 50 | Sensor reference earth |
| 51 | Front lambda sensor 1 reference earth |
| 52 | Front lambda sensor 1 pumping current |

| | |
|---|---|
| 53 | Air flow meter power supply |
| 54 | - |
| 55 | Brake pedal switch signal |
| 56 | Stop switch signal |
| 57 | Cruise control: deceleration adjustment |
| 58 | CAN line (-) |
| 59 | - |
| 60 | CAN line (+) |
| 61 | Cooling fan 2 control input |
| 62 | Power supply +30 |
| 63 | Rear lambda sensor 1 heater |
| 64 | Canister purge valve |
| 65 | Fuel pump relay (reduced power) |
| 66 | Low speed fan control |
| 67 | Inertia switch signal |
| 68 | Rear lambda sensor 1 reference earth |
| 69 | Rear lambda sensor 1 signal |
| 70 | Front lambda sensor 1 signal |
| 71 | Front lambda sensor 1 equalizing current |
| 72 | Stabilized voltage for accelerator pedal potentiometer 2 |
| 73 | Stabilized voltage for accelerator pedal potentiometer 1 |
| 74 | - |
| 75 | Cruise control restoring |
| 76 | Cruise control ON / OFF |
| 77 | - |
| 78 | - |
| 79 | - |
| 80 | - |
| 81 | - |

# B


121
116
HR
BC
120
115
RL
L
BR
119
114
113
89
LV
H
LR
B
LB
LG
LN
CV
CL
CN
S
CB
C
R
SN
GL
HM
AN
N
BN
BG
V/CTR
ZN
VG
BL
106
82
Z/CTR
VR
VG/SCR
S/CTR

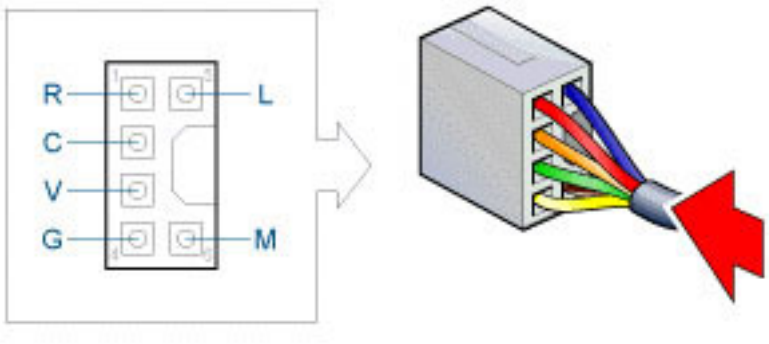
| | |
|---|---|
| 82 | Toothed wheel signal (A) |
| 83 | Stabilized voltage for motor driven throttle potentiometers 1 and 2 |
| 84 | Signal for motor driven throttle 2 potentiometer |
| 85 | - |
| 86 | Bank timing sensor signal |
| 87 | Bank timing sensor signal |
| 88 | Cylinder 6 injector control |
| 89 | Cylinder 2 injector control |
| 90 | Toothed wheel signal (B) |
| 91 | Reference earth for throttle 1 and 2 potentiometers |
| 92 | Signal for motor driven throttle 1 potentiometer |
| 93 | Engine temperature signal |
| 94 | Cylinder 6 coil control 1 |
| 95 | Cylinder 2 coil control 1 |
| 96 | Cylinder 1 injector control |
| 97 | Cylinder 8 injector control |
| 98 | Power supply 5V for sensors 1 and 2 |
| 99 | Detonation sensors reference earth |
| 100 | - |
| 101 | - |
| 102 | Cylinder 1 coil control 1 |
| 103 | Cylinder 8 coil control 1 |
| 104 | - |
| 105 | Seal check valve |
| 106 | Cylinders 1 and 2 detonation sensor signal |
| 107 | Cylinders 5 and 6 detonation sensor signal |
| 108 | Detonation sensors shield |
| 109 | - |
| 110 | Cylinder 7 coil control 1 |
| 111 | Cylinder 3 coil control 1 |
| 112 | Cylinder 7 injector control |
| 113 | Cylinder 3 injector control |
| 114 | - |
| 115 | Bank 1 timing variator control |
| 116 | Fuel pump control 2 |
| 117 | Motor driven throttle control (-) |
| 118 | Motor driven throttle control (-) |
| 119 | - |
| 120 | Bank 2 timing variator control |
| 121 | - |

## Keys

### CABLE COLOURS

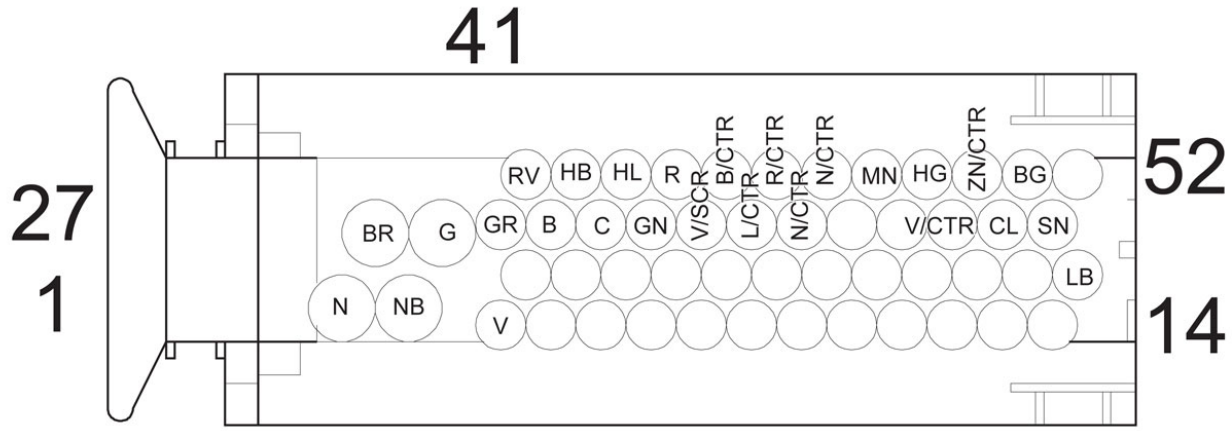
| | | |
|---|---|---|
| | A | light blue |
| | B | white |
| | C | orange |
| | G | yellow |
| | H | grey |
| | L | blue |
| | M | brown |
| | N | black |
| | O | nut-brown |
| | R | red |
| | S | pink |
| | V | green |
| | Z | violet |

### CONNECTOR VIEW - CABLE CONNECTION



## ROBOTIZED GEARBOX NODE (NCR-M018)

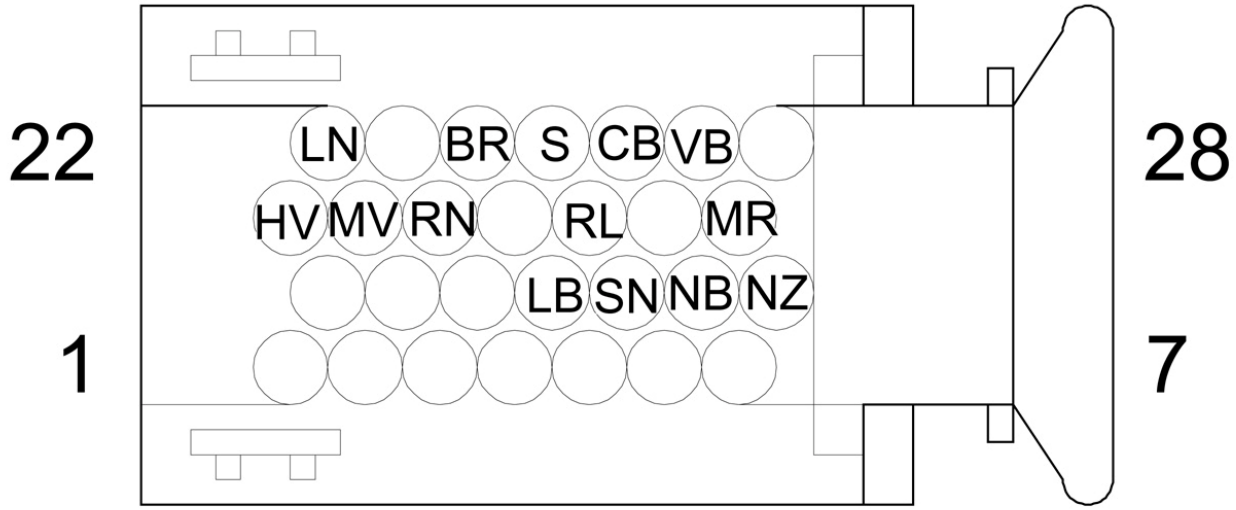
# A




| | |
|---|---|
| 1 | Ground |
| 2 | Ground |
| 3 | Output: Gear selection solenoid valve, robotized gearbox |
| 4 | - |
| 5 | - |
| 6 | - |
| 7 | - |
| 8 | - |
| 9 | - |
| 10 | - |
| 11 | - |
| 12 | - |
| 13 | - |
| 14 | - |
| 15 | - |
| 16 | - |
| 17 | - |
| 18 | - |
| 19 | - |
| 20 | - |
| 21 | - |
| 22 | - |
| 23 | - |
| 24 | - |
| 25 | - |
| 26 | Gearshift control cluster on steering wheel (up) |
| 27 | +30 |
| 28 | +15 |

| | |
|---|---|
| 29 | Output: Gear selection solenoid valve, robotized gearbox |
| 30 | Output: Gear selection solenoid valve, robotized gearbox |
| 31 | Input: F1 robotized gearbox pump relay |
| 32 | Output: Gear engagement solenoid valve, robotized gearbox |
| 33 | C CAN-L |
| 34 | Clutch sensor |
| 35 | Clutch sensor |
| 36 | - |
| 37 | - |
| 38 | +Gearbox sensor |
| 39 | Gear selection/engagement potentiometer |
| 40 | Input: Pressure transducer |
| 41 | Input: Reverse gear engagement switch |
| 42 | Starter motor activation |
| 43 | Output: Clutch solenoid valve |
| 44 | Output: Gear engagement solenoid valve, robotized gearbox |
| 45 | C CAN-H |
| 46 | Clutch sensor |
| 47 | Clutch sensor |
| 48 | Engine control node (NCM) |
| 49 | K diagnosis line |
| 50 | +Gearbox sensor |
| 51 | Gear selection/engagement potentiometer |
| 52 | - |

# B



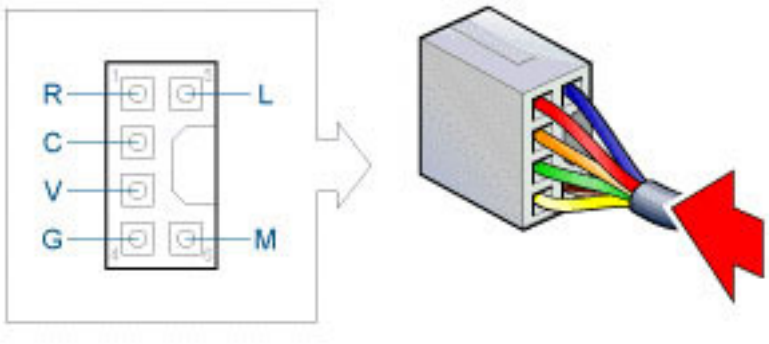

| | |
|---|---|
| 1 | - |
| 2 | - |
| 3 | - |
| 4 | - |
| 5 | - |
| 6 | - |
| 7 | - |
| 8 | - |
| 9 | - |
| 10 | - |
| 11 | Cambiocorsa  robotized gearbox acceleration sensor |
| 12 | Input: Pressure sensor on clutch |
| 13 | Ground |
| 14 | Ground |
| 15 | Gearshift control cluster on steering wheel (stand-by) |
| 16 | Gearshift control cluster on steering wheel (down) |
| 17 | Input: Stop indicator switch (N.A.) |
| 18 | - |
| 19 | Input: ASR |
| 20 | - |
| 21 | +Cambiocorsa robotized gearbox acceleration sensor;<br>+Gear selection/engagement potentiometer |
| 22 | Input: Reverse gear engagement control set |
| 23 | - |
| 24 | +50 |
| 25 | Input: "Auto" |
| 26 | Input: Front door lock motor (driver's side) |
| 27 | +Pressure transducer;<br>+Pressure sensor on clutch |
| 28 | - |

## Keys

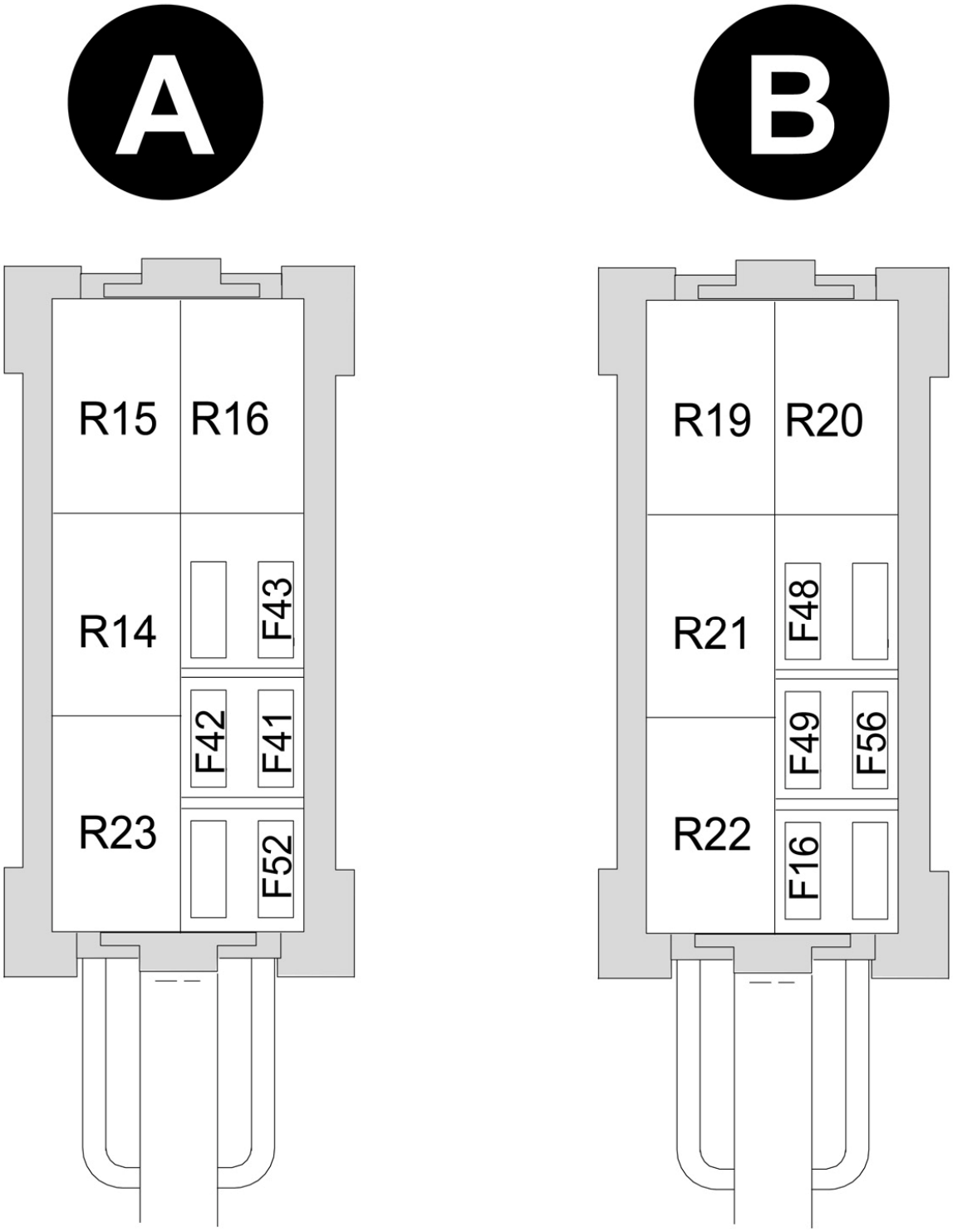
### CABLE COLOURS

| | | |
|---|---|---|
| | A | light blue |
| | B | white |
| | C | orange |
| | G | yellow |
| | H | grey |
| | L | blue |
| | M | brown |
| | N | black |
| | O | nut-brown |
| | R | red |
| | S | pink |
| | V | green |
| | Z | violet |

### CONNECTOR VIEW - CABLE CONNECTION



## LUGGAGE COMPARTMENT ECU (CVB– M019)



| A | | |
|---|---|---|
| F41 | 30A | Heated rear window |
| F42 | 7,5A | External defogging units |
| F43 | 20A | Fuel pumps |
| F52 | 30A | Radio amplifier |
| R14 | 30A | Heated rear window |
| R15 | - | Fuel pump 1 speed |
| R16 | - | Fuel pump 2 speed |
| R23 | 30A | Luggage compartment lid opening alarm |
| **B** | | |
| F16 | 7,5A | Reverse gear |
| F48 | 30A | Fuel tank flap |
| F49 | 25A | Luggage compartment lid |
| F56 | 15A | Power socket |
| R19 | 30A | Fuel tank flap |
| R20 | 30A | Luggage compartment lid |
| R21 | 20 | Reverse gear |
| R22 | - | Luggage compartment lid and fuel tank flap relay cut out |