



Ferrari North America Technical Information

Date: January 2020
 Bulletin #: 2620
 Campaign #:
 Supersedes:
 Section: 3

**This Technical Information Cancels and Replaces
 the previous TIs 2326, 2330, 2344, 2393 and 2395.**

Model Type:



Model Year: All

Subject: Replacement of CCP on DCT gearbox

The procedure for replacing the CCP on the DCT gearbox of the aforementioned models is described as follows. The part numbers of the kits necessary for this procedure are indicated in the following table, organized by model. Note that these kits are only applicable for vehicles with valid warranty coverage.

Models	CCP Kit Part No.
458 Italia 458 Spider 458 Speciale 458 Speciale A	70002997
California	70003000
California T	70003854
FF	70003002
F12berlinetta	70003004
F12 TDF 488 GTB 488 Spider 488 Pista 488 Pista Spider GTC4 Lusso GTC4 Lusso T 812 Superfast Portofino F8 Tributo Monza SP1/SP2	70004638



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Protocol for Managing DCT Gearbox Repairs

- Prior to carrying out the procedure, the Dealer must fully complete the “DCT Gearbox Pre-Diagnosis Form” on pages 50 to 52 of this document and attach it to a new ROL.

Replaced parts must be kept for at least 60 days, so that they may be returned if requested or authorized for scrapping by SAT.

Tools and equipment necessary for replacement of CCP

- Swivel-head base **Part. No. 95972621 (AV 2621)**
- Gearbox overhaul support **Part. No. 95977314 (AM 107314)**
- Rear cover extractor **Part. No. 95978603 (AV 8603)**
- Gearbox presser tool **Part. No. 95978604 (AV 8604)**
- Lift bracket for central section of gearbox **Part. No. 95978605 (AV 8605)**
- Lift bracket for rear section of gearbox **Part No. 95978606 (AV 8606)**
- Gearbox housing alignment pin **Part. No. 95978607 (AV 8607)**
- Axle shaft oil seal installation punch **Part. No. 95978608 (AV 8608)**
- Transmission shaft oil seal extractor **Part. No. 95978609 (AV 8609)**
- Clutch side oil seal installation punch **Part. No. 95978610 (AV 8610)**
- Internal gearbox plug **Part. No. 95978611 (AV 8611)**
- External gearbox pressurizing plugs **Part. No. 95978612 (AV 8612)**
- Cap and punch for rear gearbox cover **Part. No. 95978613 (AV 8613)**
- Tool for tightening bevel gear set ring nut **Part. No. 95978619 (AV 8619)**
- Bevel gear set extractor **Part. No. 95978620 (AV 8620)**
- Adapter for rear gearbox cover extractor **Part No. 95978626 (AV 8626)**

- IMPORTANT -

If not already in your possession, these tools must be ordered by you directly from our Spare Parts Department in the quantities needed.



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Procedure

- IMPORTANT -

The utmost cleanliness must be maintained during all the following operations; always wear clean gloves, replacing them as needed, and use absorbent lint-free cloth and heptane to clean and degrease components.

- IMPORTANT -

In the replacement procedures described as follows, ALL gaskets removed must be discarded and REPLACED WITH NEW COMPONENTS during reassembly.

- IMPORTANT -

Check the expiration date of all products used in the following procedures before use. NEVER use EXPIRED products.

Preparations for procedures

The CCP is replaced with the gearbox on the work bench. It is therefore necessary to remove the DCT gearbox from the vehicle, preparing and fitting the support tool as described as follows.

Draining the hydraulic clutch system oil

- For the **Ferrari California, 458 Italia, 458 Spider, 458 Speciale, 458 Speciale A, 488 GTB, 488 Spider, 812 Superfast, FF, F12 Berlinetta, F12 TDF, GTC4 Lusso, GTC4 Lusso T and California T**, Drain the DCT F-3 ATF oil from the hydraulic clutch system (as described in the Workshop Manual).
- For the **488 Pista, 488 Pista Spider, F8 Tributo, Monza SP1, Monza SP2 and Portofino**, drain the hydraulic actuator system oil (as described in the relative paragraph in the Workshop Manual).

Draining gear oil

- For the **458 Italia, 458 Spider, 458 Speciale, 458 Speciale A, FF, F12 Berlinetta, F12 TDF, GTC4 Lusso, GTC4 Lusso T, 488 GTB, 488 Spider, 812 Superfast, California T and Ferrari California**, drain the Shell Transaxle 75W-90 GL5 gear oil (as described in the Workshop Manual).



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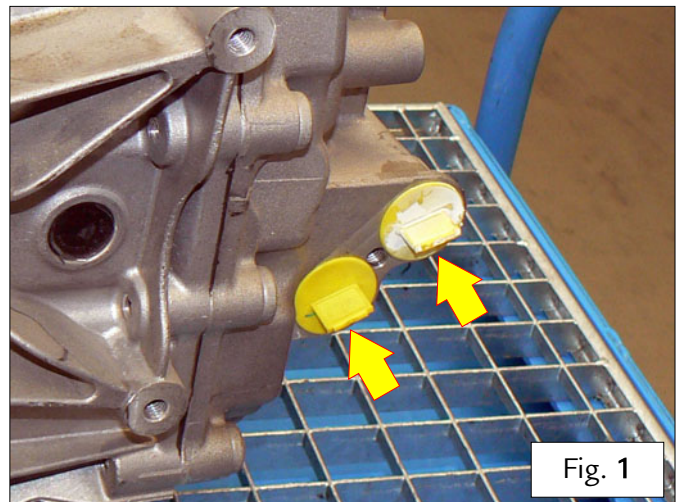
- For the **488 Pista, 488 Pista Spider, F8 Tributo, Monza SP1, Monza SP2 and Portofino**, drain the DCT gearbox gear lubrication system (as described in the Workshop Manual).

Removing the complete DCT gearbox

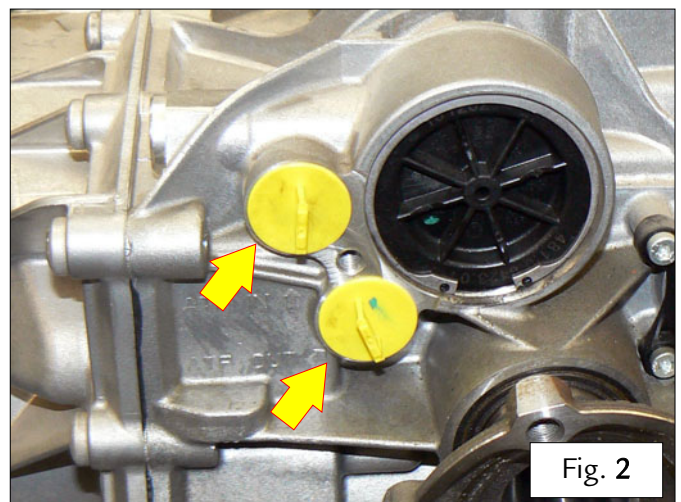
- For the **458 Italia, 458 Spider, 458 Speciale, 458 Speciale A, FF, F12 Berlinetta, F12 TDF, GTC4 Lusso, GTC4 Lusso T, 488 GTB, 488 Spider, 812 Superfast, California T, California, 488 Pista, 488 Pista Spider, F8 Tributo, Monza SP1, Monza SP2 and Portofino**, remove the complete DCT gearbox from the vehicle (as described in the Workshop Manual).

Preliminary procedure for installation

- Using a lint-free cloth and heptane, thoroughly clean the area surrounding the **GL oil inlet orifices** and fit seal plugs in the indicated positions – Fig. 1.



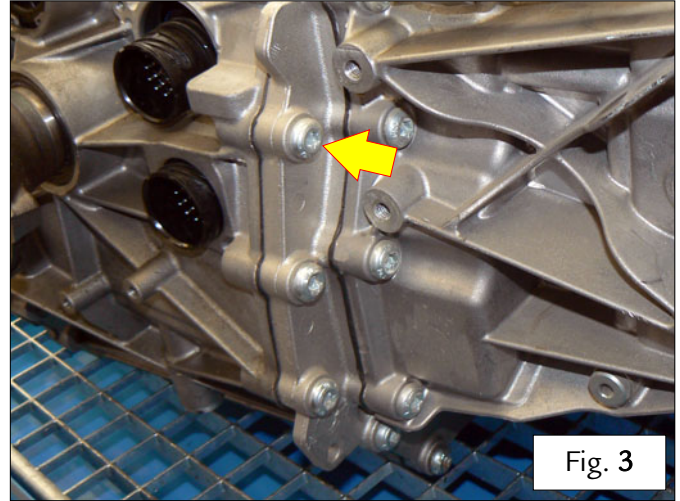
- Using a lint-free cloth and heptane, thoroughly clean the area surrounding the **ATF fluid inlet orifices** and fit seal plugs in the indicated positions – Fig. 2.



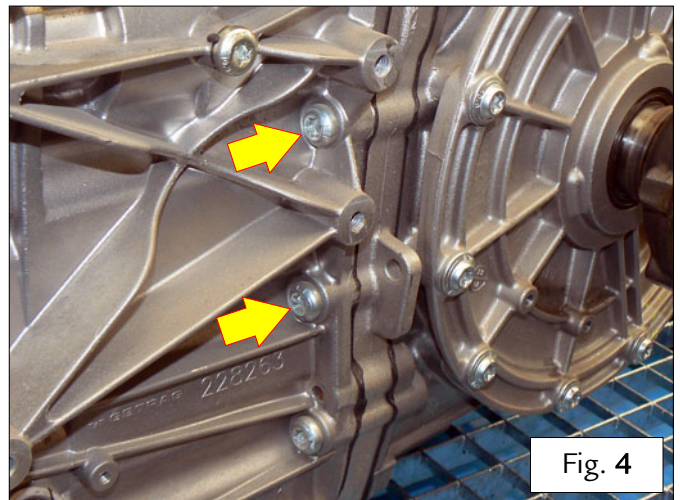


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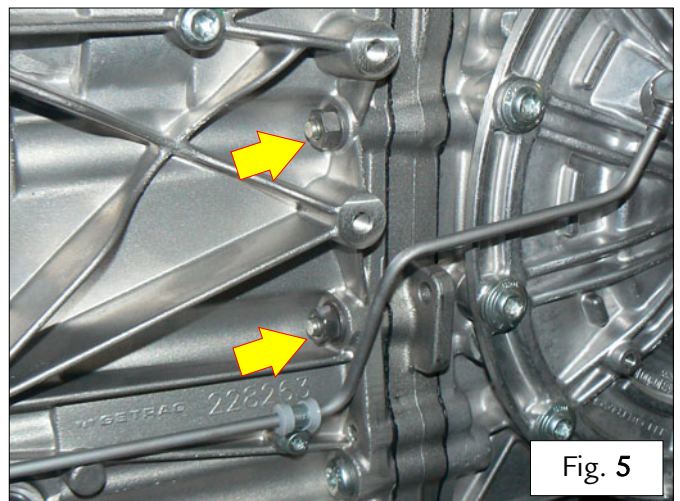
- On the left hand side of the DCT gearbox, undo and remove the indicated screw – Fig. 3.



- On the right hand side of the DCT gearbox, undo and remove the indicated screws – Fig. 4.



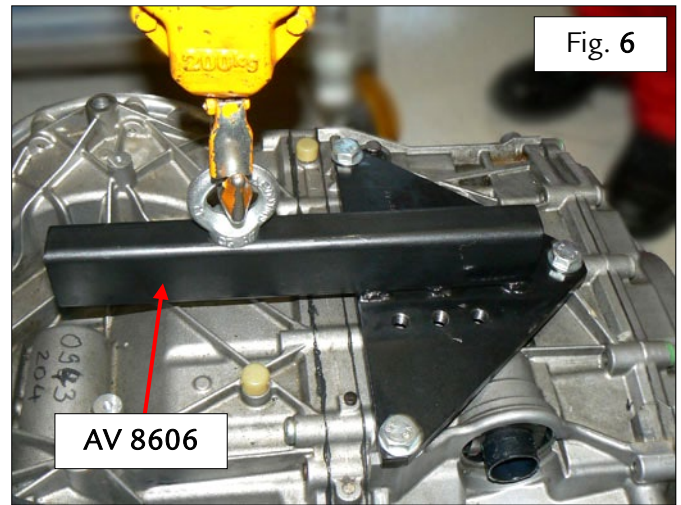
- On the right hand side of the DCT gearbox, undo and remove the indicated nuts – Fig. 5.



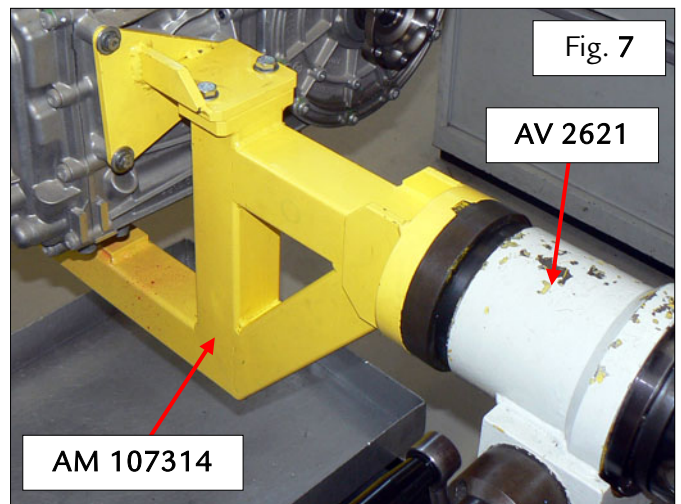


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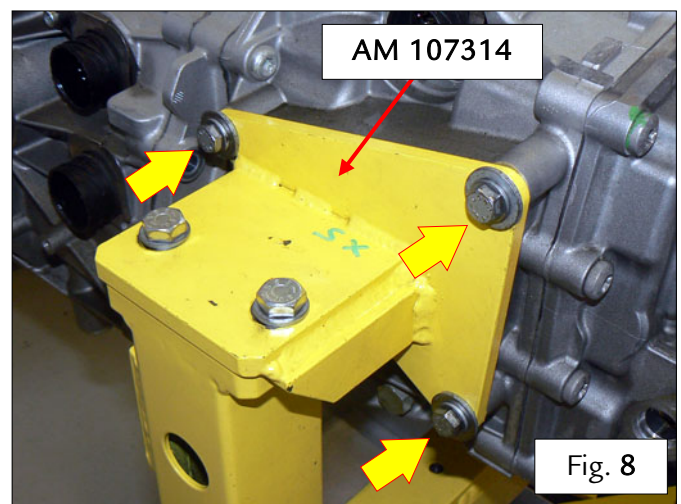
- Install the lift bracket **AV 8606** (95978606) on the gearbox – Fig. 6.
- Hitch a lift hook to the eye bolt on bracket **AV 8606**, then lift the DCT gearbox – Fig. 6.



- Assemble the gearbox overhaul support **AM 107314** (95977314) onto the swivel-head base **AV 2621** (95972621) – Fig. 7.



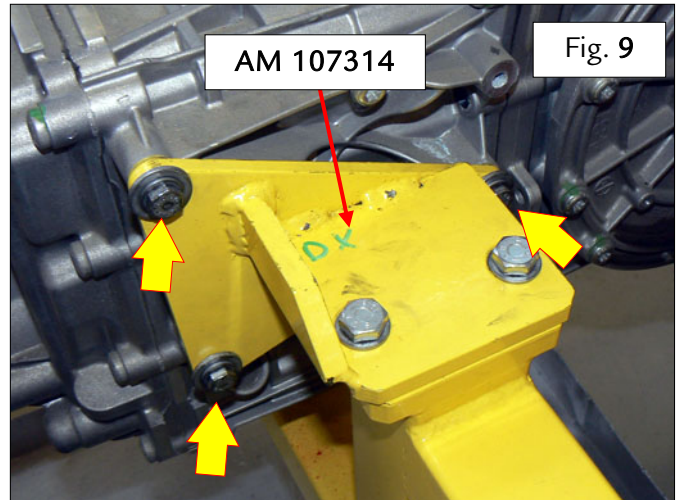
- Using the lift bracket **AV 8606** (95978606), bring the gearbox over the lift equipment prepared previously – Fig. 8.
- On the left hand side, fasten the gearbox to the support **AM 107314**, tightening the screws with the relative washers as indicated – Fig. 8.





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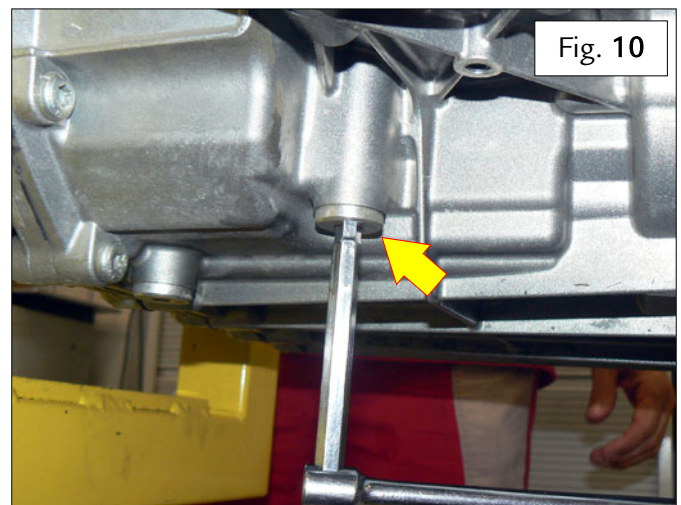
- On the right hand side, fasten the gearbox to the support **AM 107314**, tightening the screws with the relative washers as indicated – Fig. 9.



- Ensure that the gearbox is fastened securely to the relative support, then remove the lift bracket **AV 8606**.
- While the GL gear oil and the ATF clutch hydraulic fluid were already drained previously with the gearbox in the vehicle, there are still considerable quantities of oil and fluid remaining in the gearbox. This oil and fluid must be drained completely before starting any work on the gearbox.

GL GEAR OIL

- Place a container for collecting the oil under the front GL gear oil drain plug orifice – Fig. 10.
- Undo the indicated front GL gear oil drain plug – Fig. 10.



- Wait for the GL gear oil to drain completely into the container – Fig. 11.

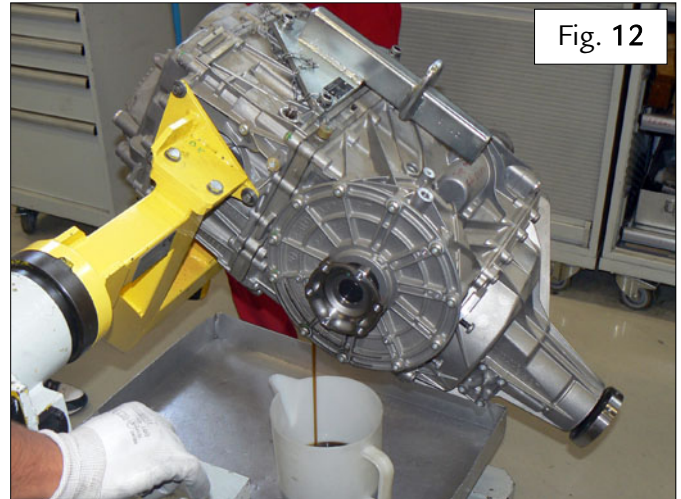


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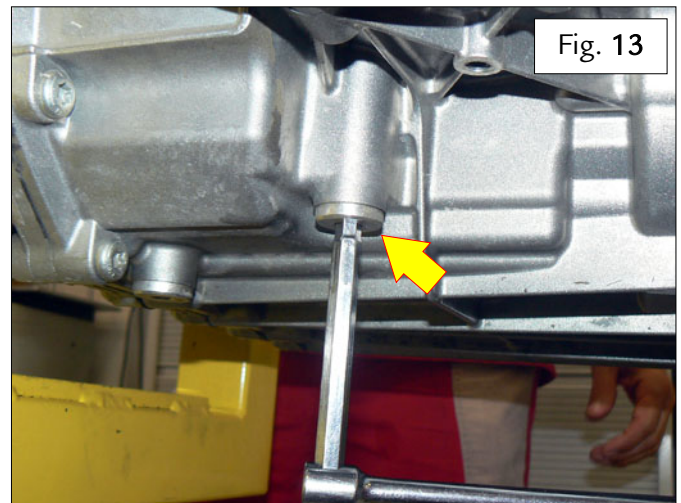


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- Rotate the gearbox clockwise to empty all the GL gear oil – Fig. 12.

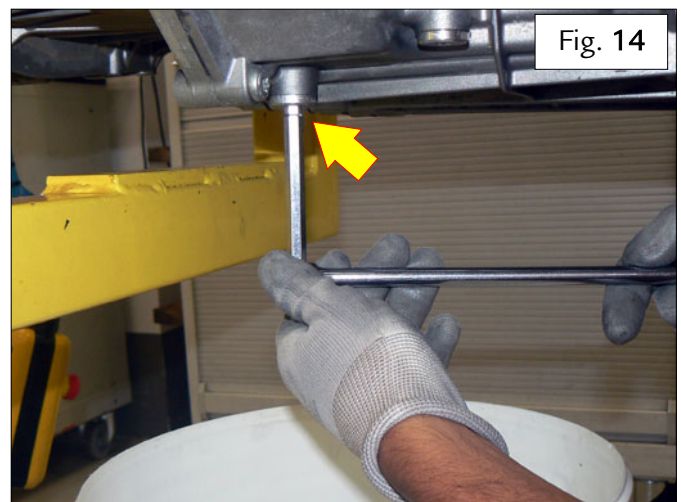


- Replace the indicated plug and tighten to a torque of 25 Nm class B – Fig. 13.



ATF CLUTCH HYDRAULIC SYSTEM FLUID

- Place a container for collecting the fluid under the ATF clutch fluid drain plug orifice – Fig. 14.
- Undo the indicated ATF clutch fluid drain plug – Fig. 14.

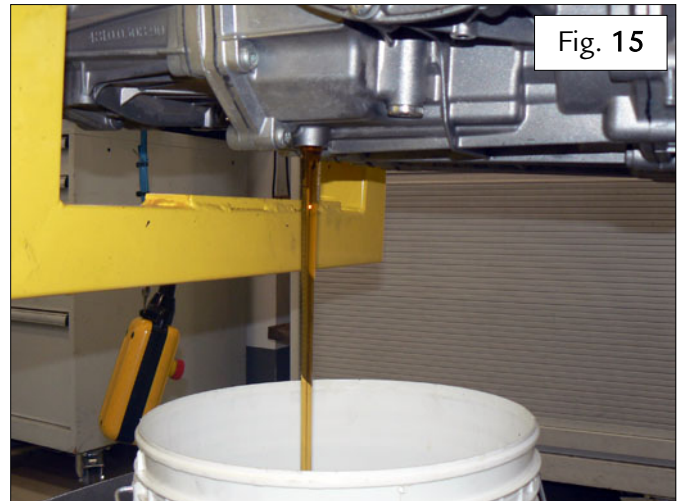


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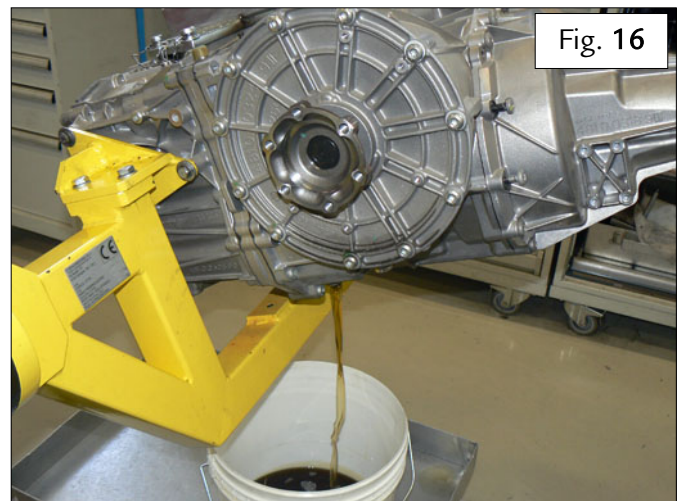


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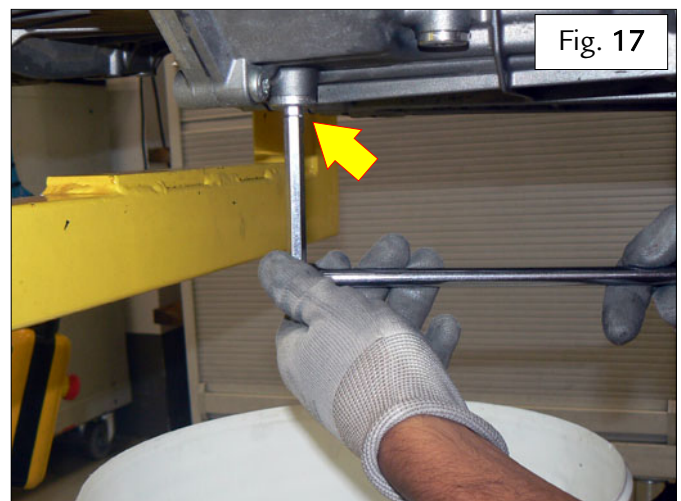
- Wait for the ATF clutch fluid to drain completely into the container – Fig. 15.



- Rotate the gearbox counter-clockwise to empty all the ATF clutch fluid – Fig. 16.



- Fit and tighten the indicated plug – Fig. 17.

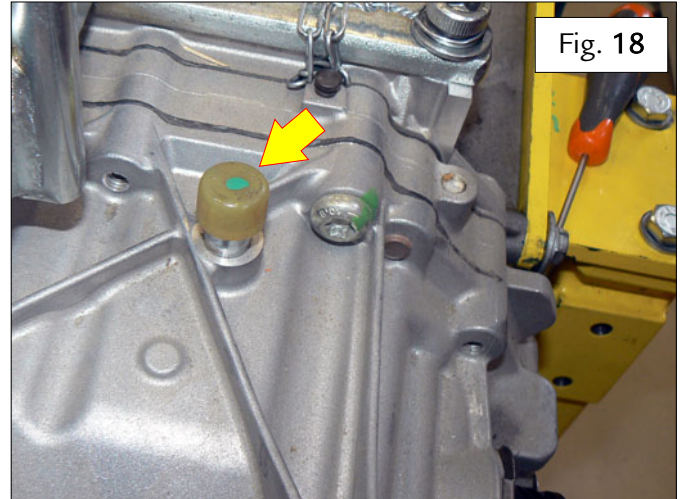


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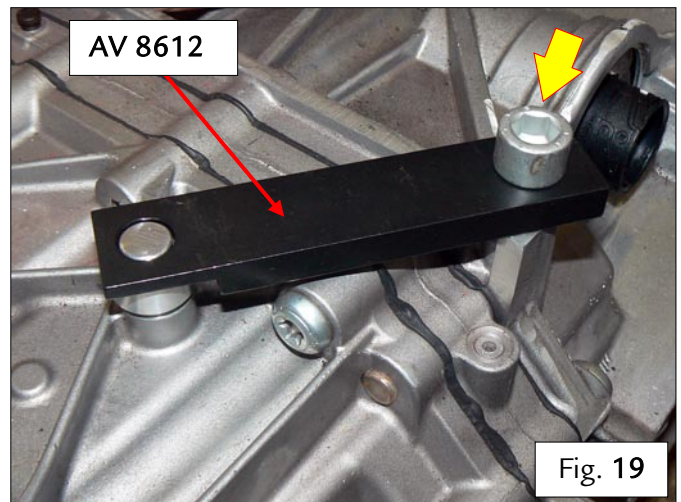


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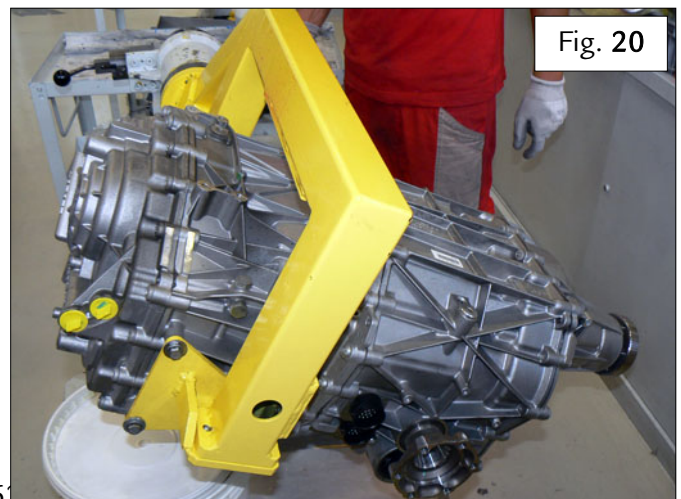
- In preparation for turning the DCT gearbox upside-down, remove the plug on the ATF hydraulic clutch system breather shown in Fig. 18.



- Temporarily fit the tool AV 8612 (95978612), consisting of a plug with relative O-ring and a bracket fastened with the relative screw indicated, in the ATF hydraulic clutch system breather to prevent the fluid from escaping – Fig. 19.



- Turn the DCT gearbox upside-down as shown in the figure by rotating counter-clockwise – Fig. 20.

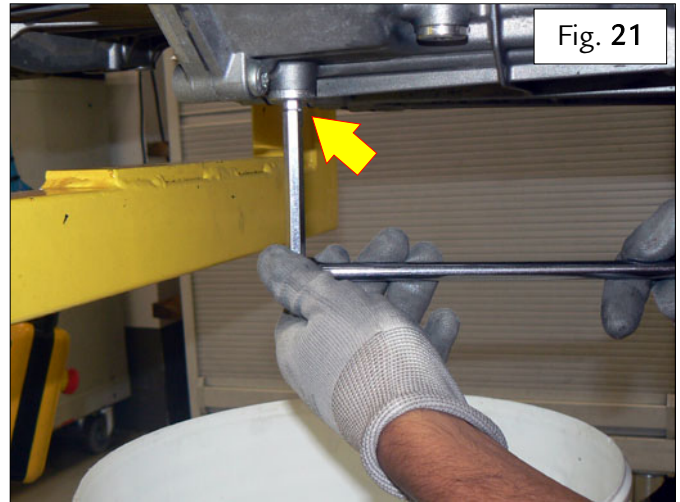


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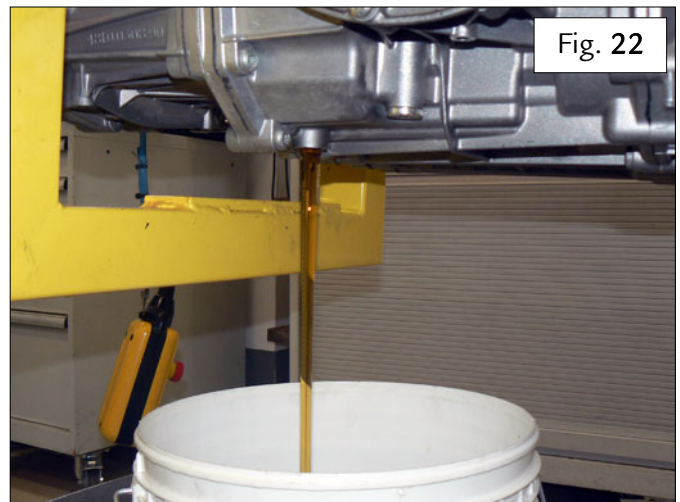


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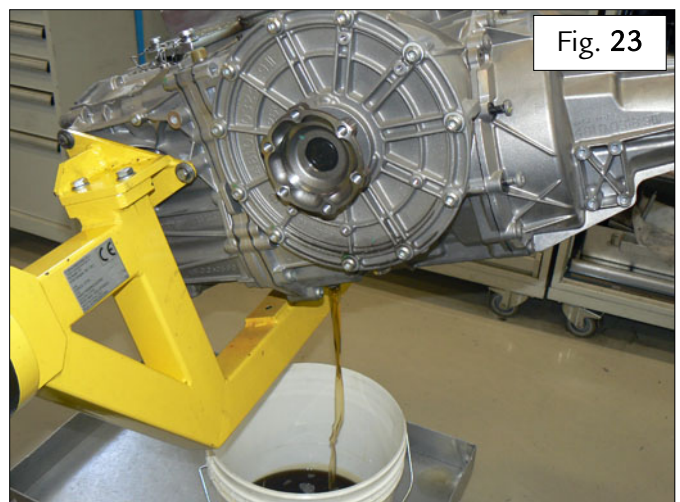
- Return the DCT gearbox to the upright position by turning clockwise – Fig. 21.
- Remove the tool AV 8612 (95978612) fitted previously.
- Undo the ATF clutch fluid drain plug indicated – Fig. 21.



- Wait for the ATF clutch fluid to drain completely into the container – Fig. 22.



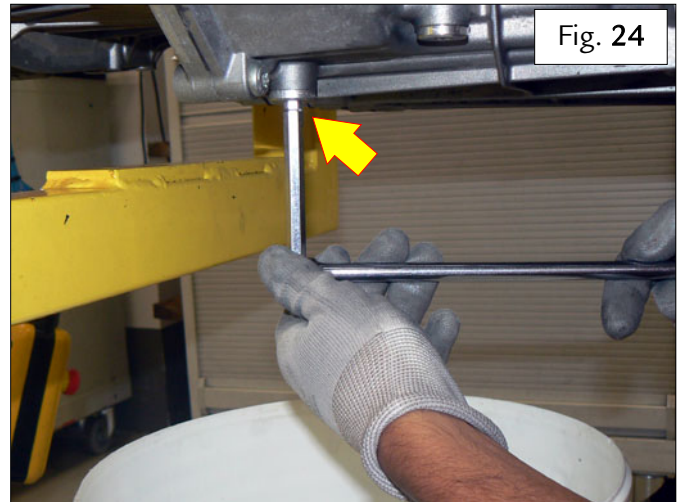
- Rotate the gearbox counter-clockwise to empty all the ATF clutch fluid completely – Fig. 23.



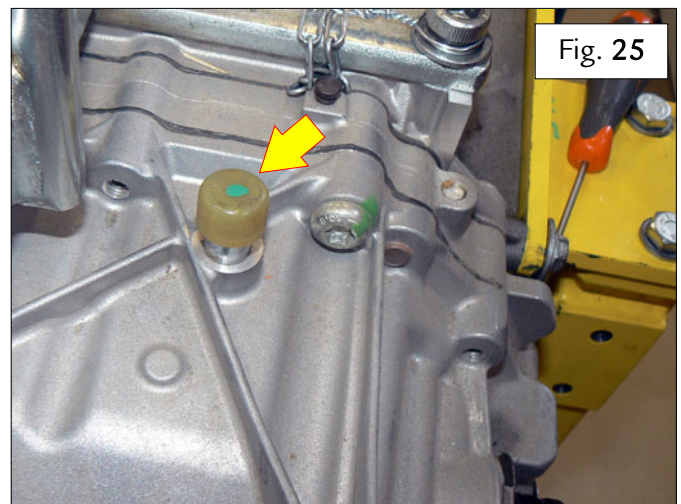


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- Replace the indicated cap and tighten to a torque of 25 Nm class B – Fig. 24.



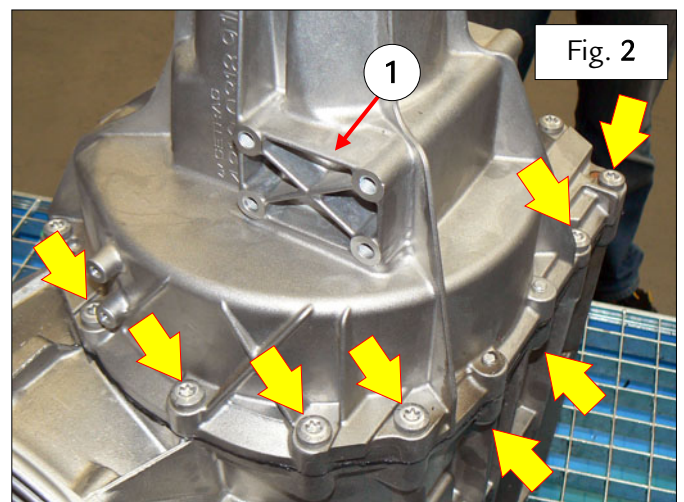
- Refit the original plug as indicated – Fig. 25.



CCP replacement

For front engine vehicles ONLY.

- Undo the indicated screws fastening the connector casing (1) – Fig. 1, 2.





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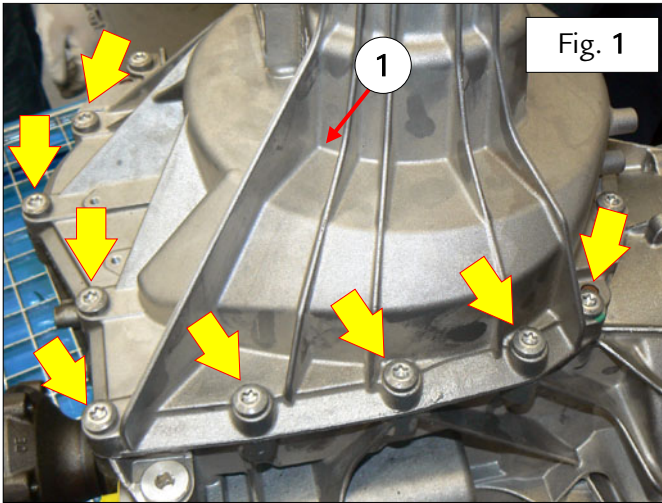


Fig. 1

For rear mid-engine vehicles only

➤ Undo the indicated screws fastening the

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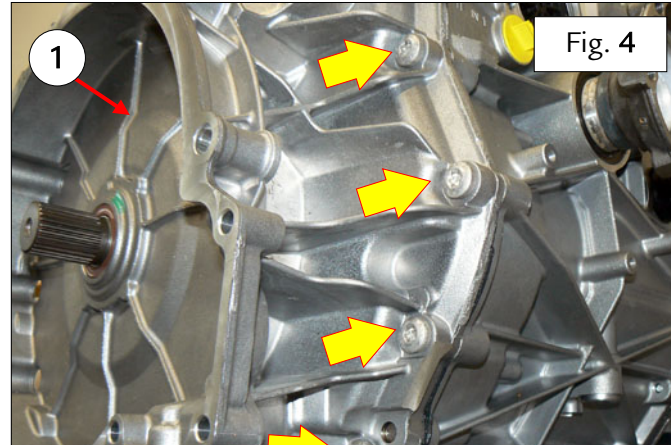


Fig. 4

using (1) – Fig. 3, 4, 5 and 6.

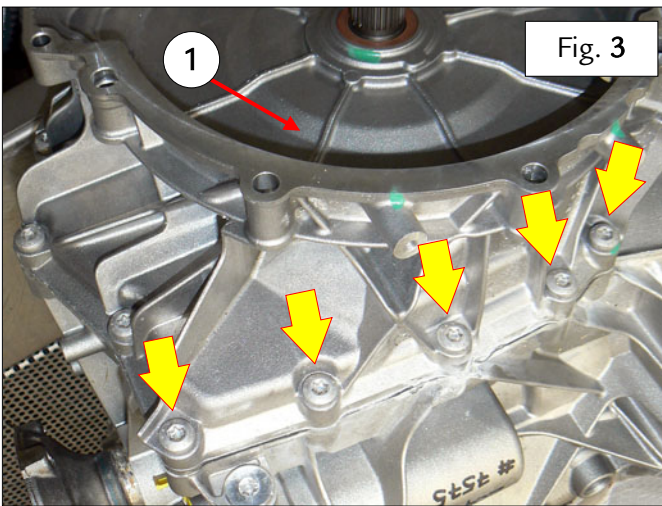


Fig. 3

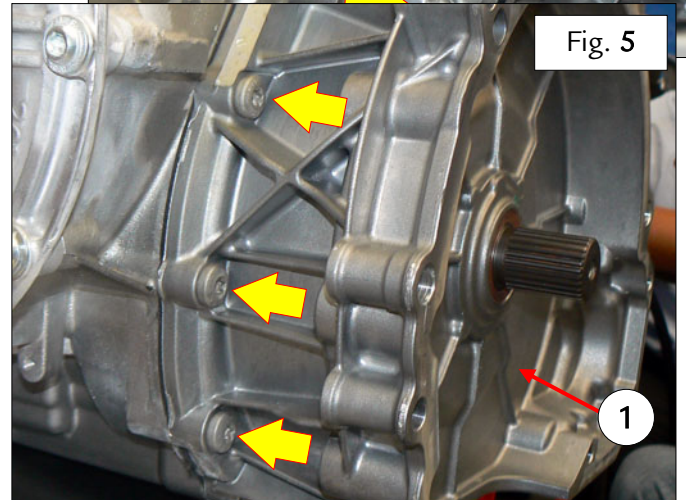


Fig. 5

➤ Using a crowbar placed in the indicated leverage recess on the gearbox, detach the connector housing (1) – Fig. 7.

Note: Insert a Teflon spatula between the lever and the differential housing to prevent damage.

Note: There may be some spillage of residual oil when detaching the connector housing; take all necessary precautions to limit and collect the spillage.

➤ Using a crowbar placed in the indicated leverage recess on the gearbox, detach the

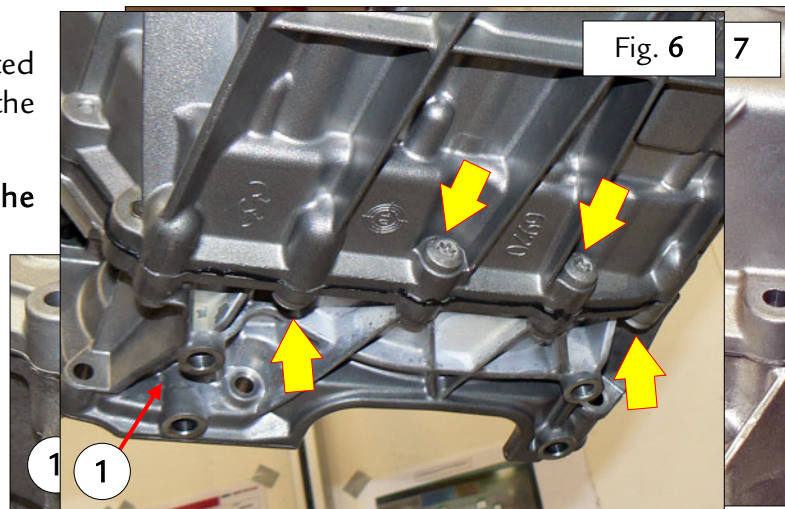
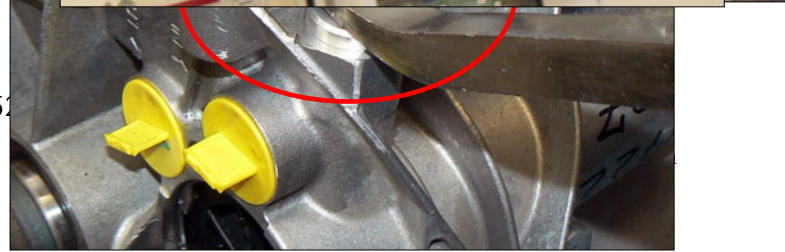


Fig. 6

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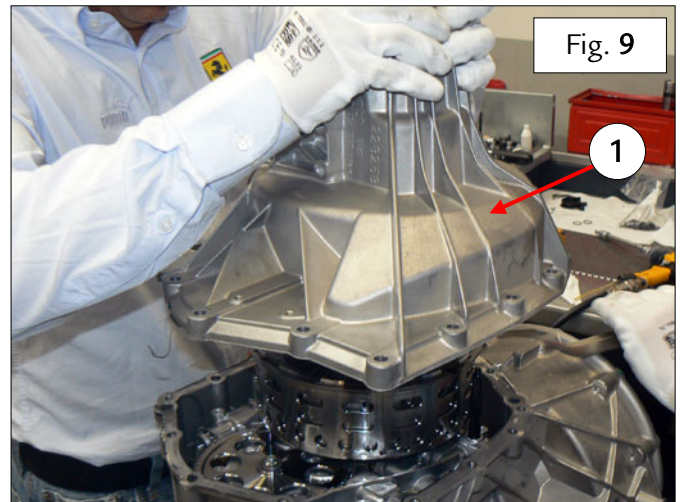
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connector housing (1) – Fig. 8.

Note: There may be some spillage of residual oil when detaching the connector housing; take all necessary precautions to limit and collect the spillage.

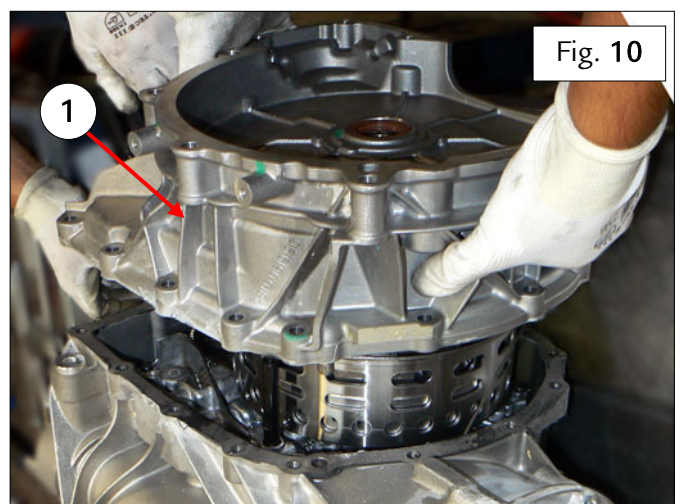
For front engine vehicles ONLY

- Separate the connector casing (1) from the differential housing and place it in a safe place – Fig. 9.



For rear mid-engine vehicles only

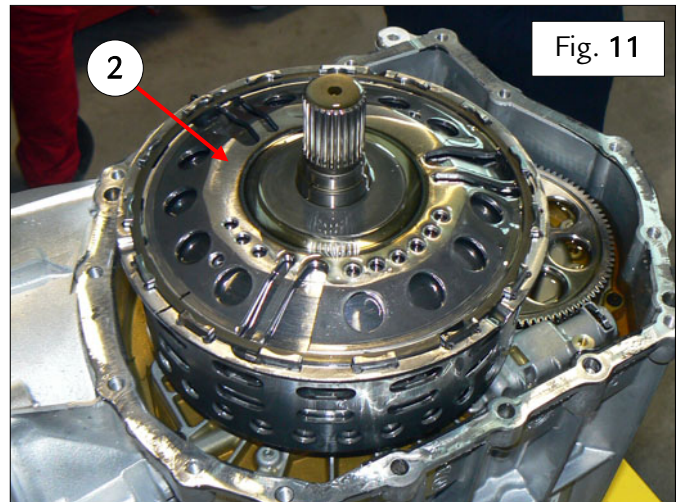
- Separate the connector casing (1) from the differential housing and place it in a safe place – Fig. 10.



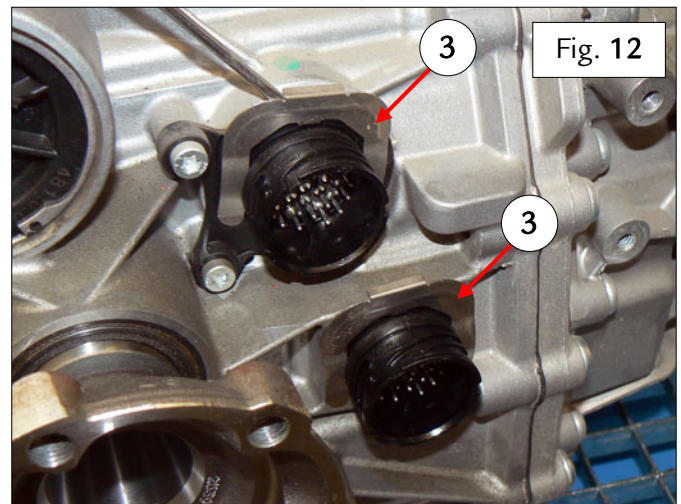


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- Remove the clutch basket (2) from the CCP vertically – Fig. 11.



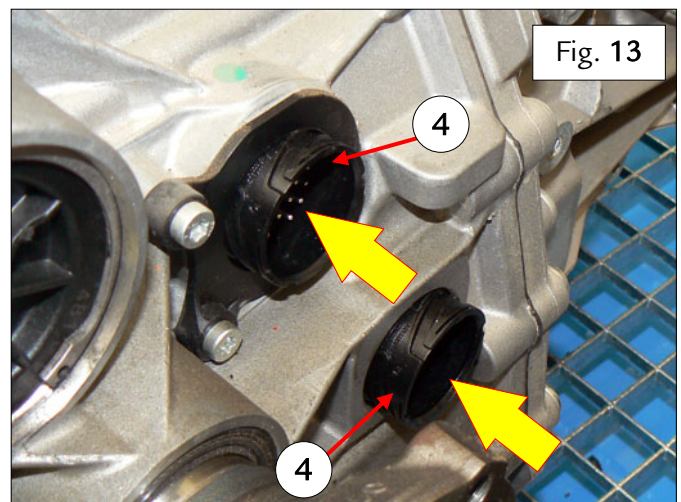
- Remove the retainer clips (3) from their seats – Fig. 12.



- Gently fit the connections (4) in the gearbox housing by hand – Fig. 13.

Note: Do not force the connectors (4) into the gearbox housing, as this may damage the sensors in the SAP and CCP, which are located immediately behind the connectors.

Note: The lower connection (4) is for the CCP. Only push this connection into the gearbox housing after separating the gearbox housing from the SAP





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plate.

- Undo the indicated screws fastening the adapter – Fig. 14.

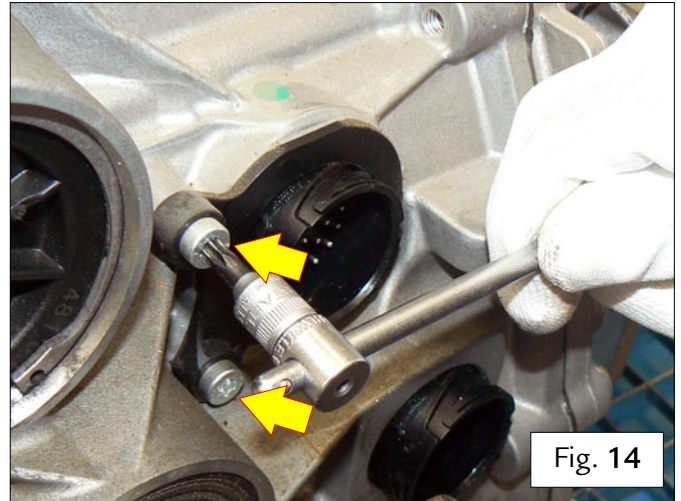


Fig. 14

- Remove the adapter – Fig. 15.

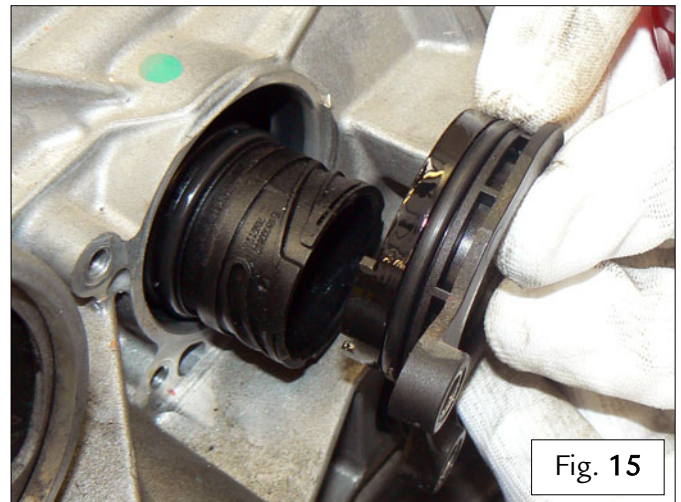


Fig. 15

- The next step consists in detaching the differential housing from the gear housing by undoing the 16 fasteners (3 have already been removed previously).
- **DO NOT undo the indicated screws for any reason** – Fig. 16.

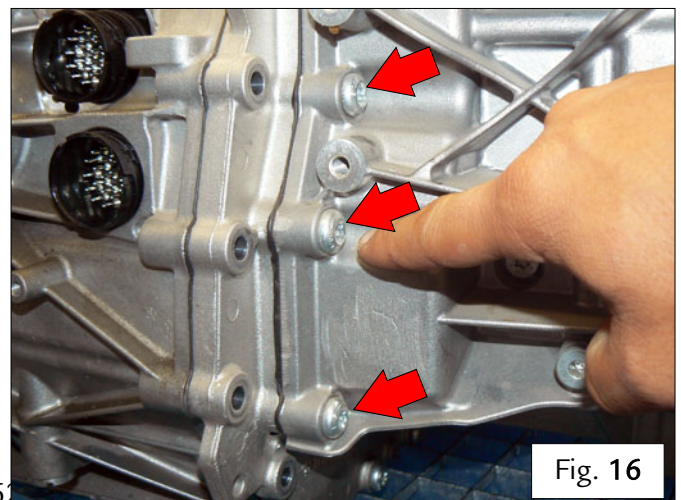


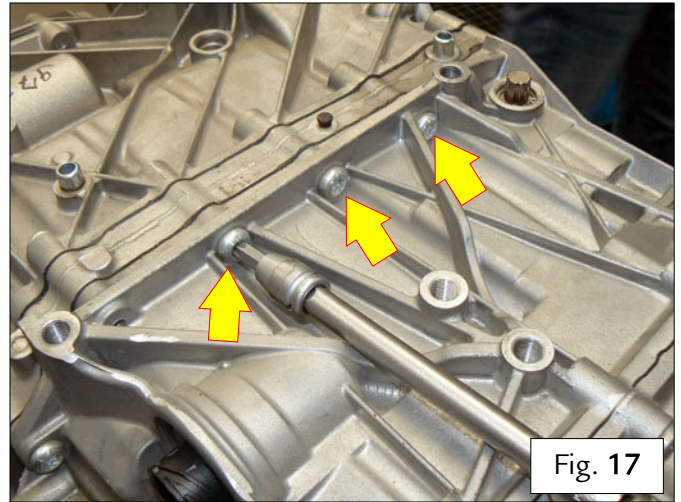
Fig. 16

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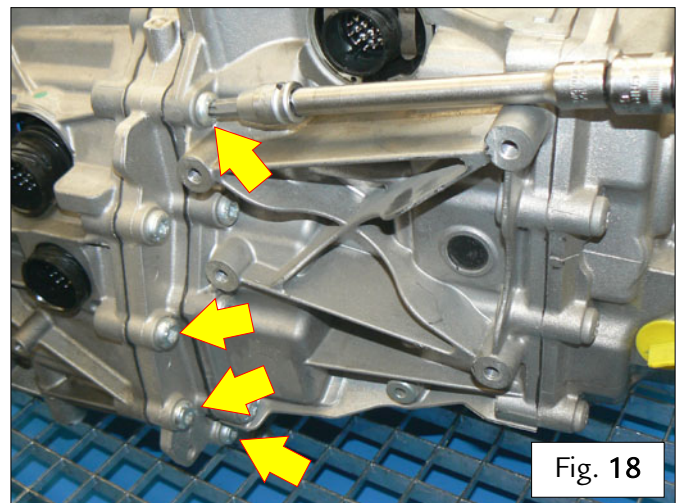


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- Undo the indicated screws fastening the gearbox to the interface plate – Fig. 17.



- Undo the indicated screws fastening the gearbox to the interface plate – Fig. 18.



- Undo the indicated screws fastening the gearbox to the interface plate – Fig. 19.

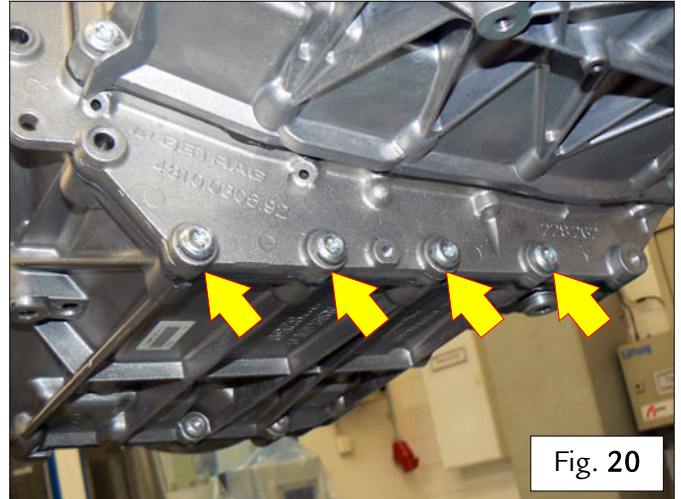


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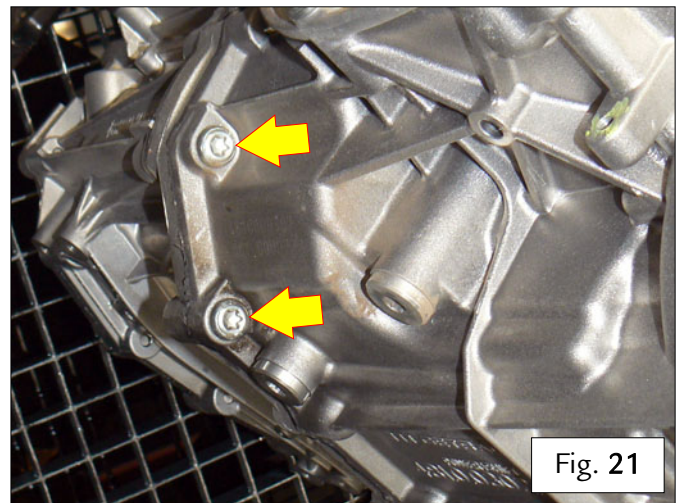


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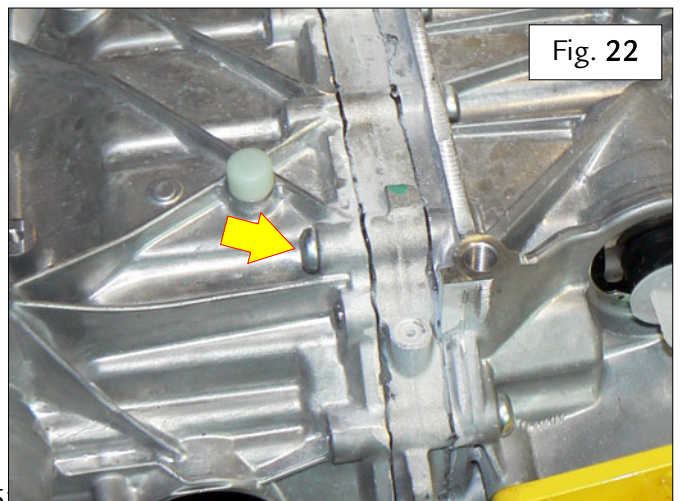
- Undo the indicated screws fastening the gearbox to the interface plate – Fig. 20.



- Undo the remaining screws indicated fastening the gearbox to the interface plate – Fig. 21.



- Undo the remaining screws indicated fastening the gearbox to the interface plate – Fig. 22.

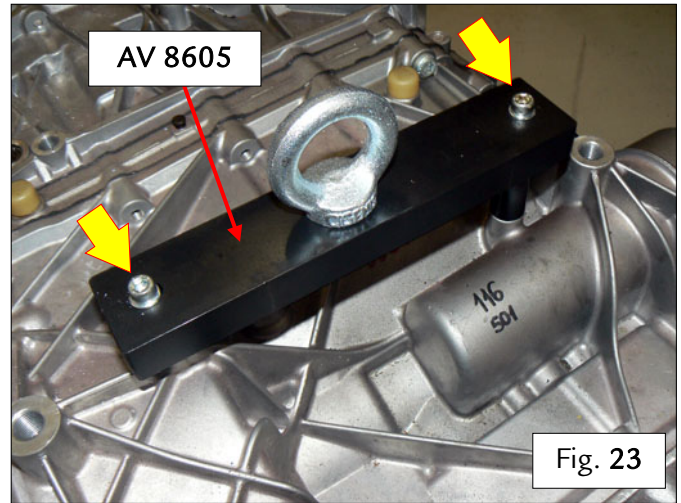


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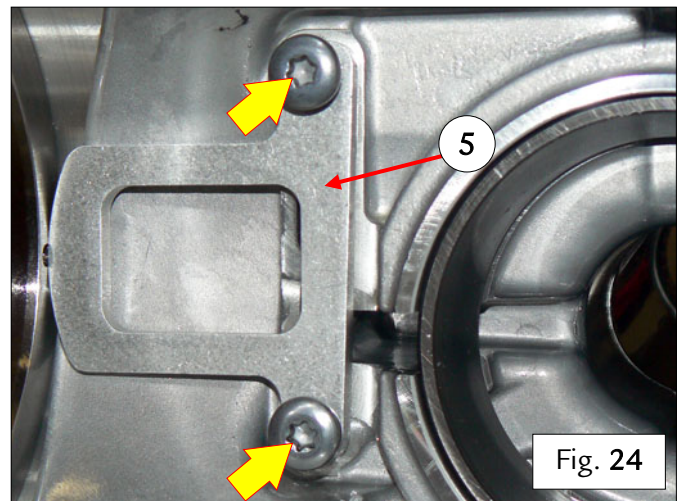
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- Fit the support bracket **95978605 (AV 8605)** in the relative seat on the differential housing, tightening the indicated screws – Fig. 23.
- Hitch a lift hook to the eye bolt on bracket **AV 8605**, and tighten the lift straps – Fig. 23.



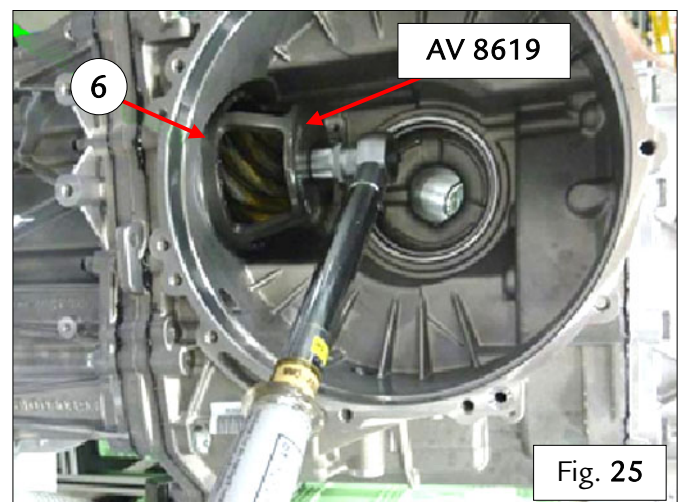
For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

- Remove the bracket (5), undoing the indicated screws – Fig. 24.



For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

- Using the tool **95978619 (AV 8619)**, undo the ring nut (6) fastening the plate to the differential housing – Fig. 25.



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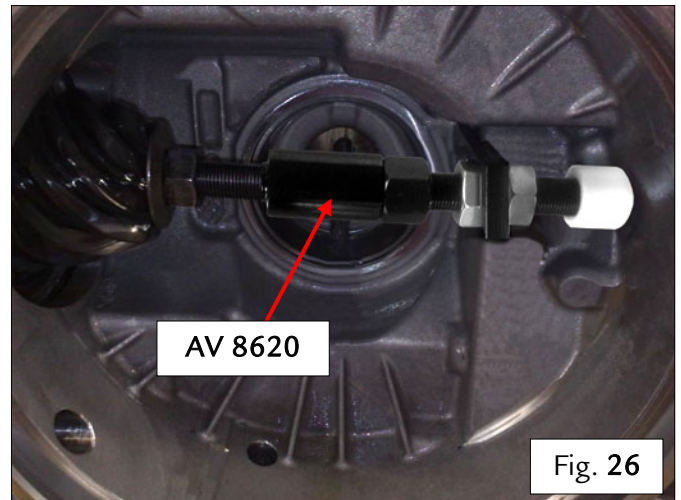


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For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

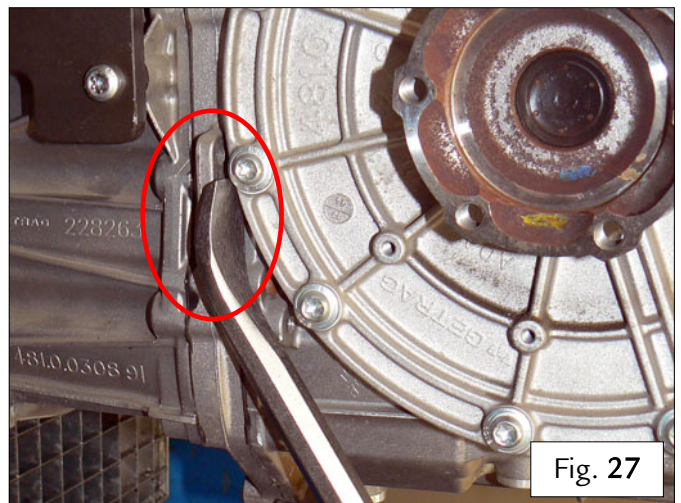
- Using the extractor tool 95978620 (AV 8620), separate the differential housing from the plate – Fig. 26.

Note: There may be some spillage of residual oil when detaching the differential housing; take all necessary precautions to limit and collect the spillage.

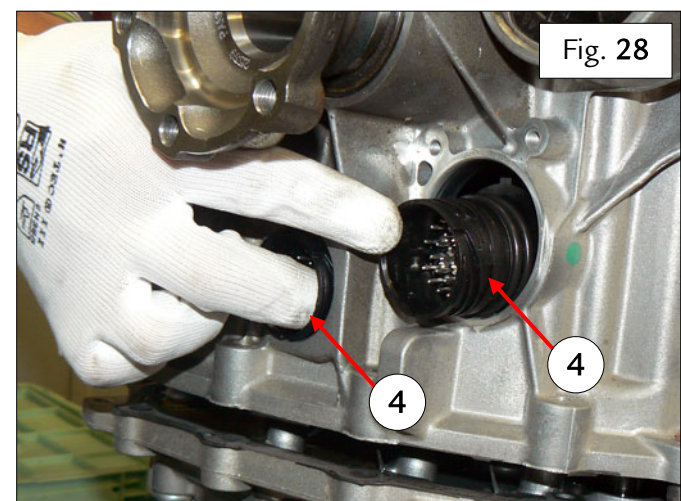


- Using a crowbar placed on the indicated leverage lug on the gearbox, detach the differential housing – Fig. 27.

Note: There may be some spillage of residual oil when detaching the differential housing; take all necessary precautions to limit and collect the spillage.



- Pull out the differential housing by a few centimeters and push the connections (4) inside through the hole – Fig. 28.

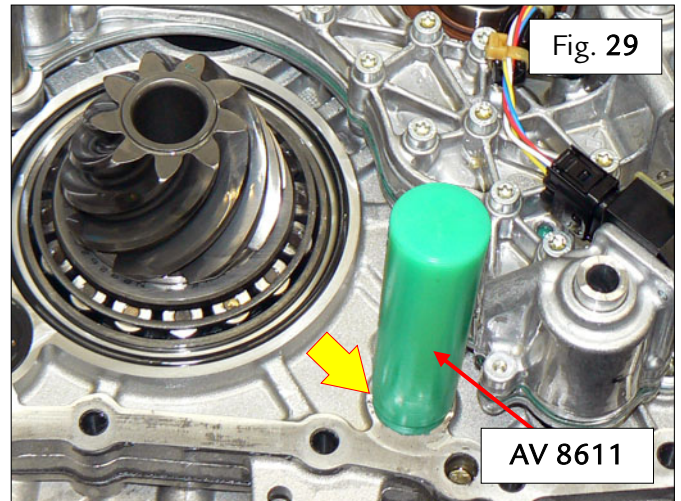


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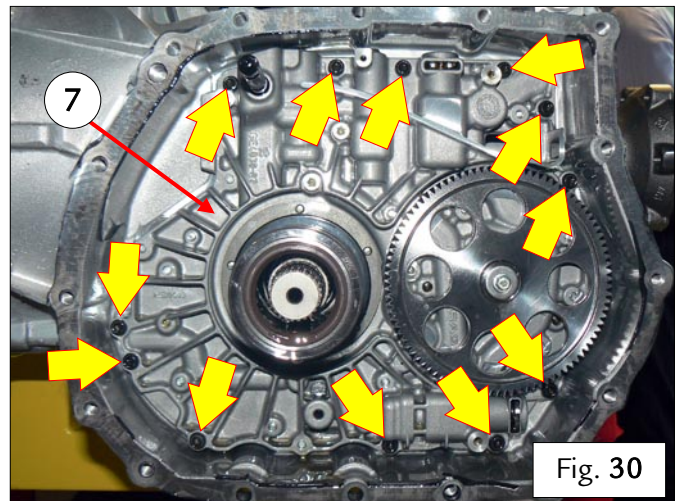


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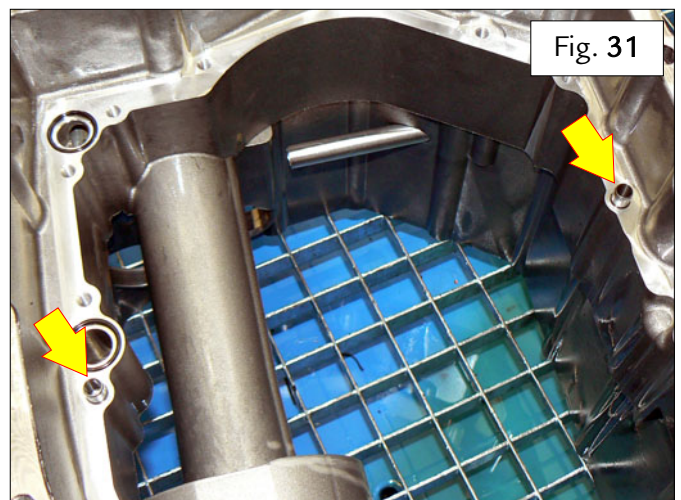
- Remove the differential housing completely and set it down vertically on a plastic surface to prevent damage to seal surfaces.
- Remove the indicated O-ring and close the orifice on the interface plate with the plug 95978611 (AV 8611) – Fig. 29.



- Inside the clutch housing, undo the indicated screws fastening the CCP (7) – Fig. 30.
- Lift the CCP (7) off the differential housing – Fig. 30.



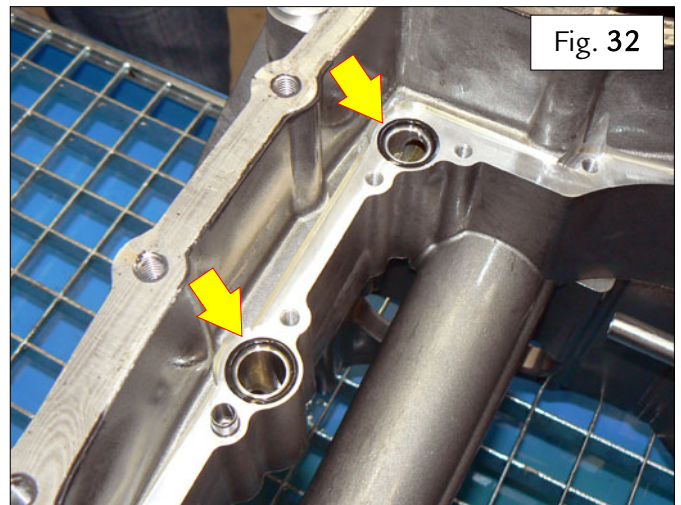
- Retrieve the indicated CCP alignment pins on the differential housing – Fig. 31.



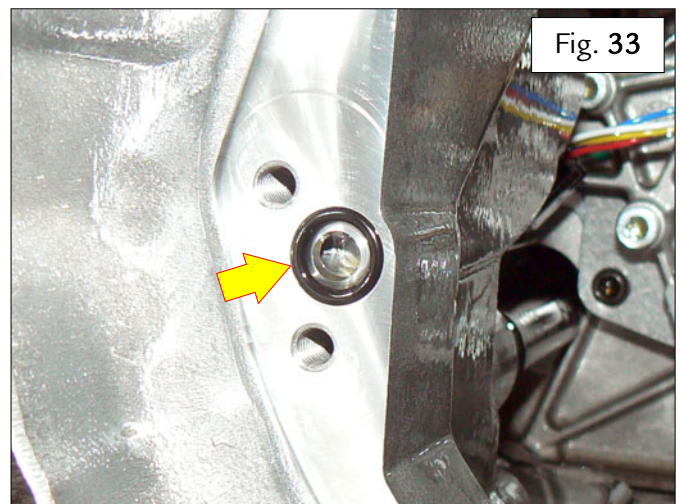


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- Remove the two O-rings from the differential housing and obstruct the holes with suitable plugs – Fig. 32.

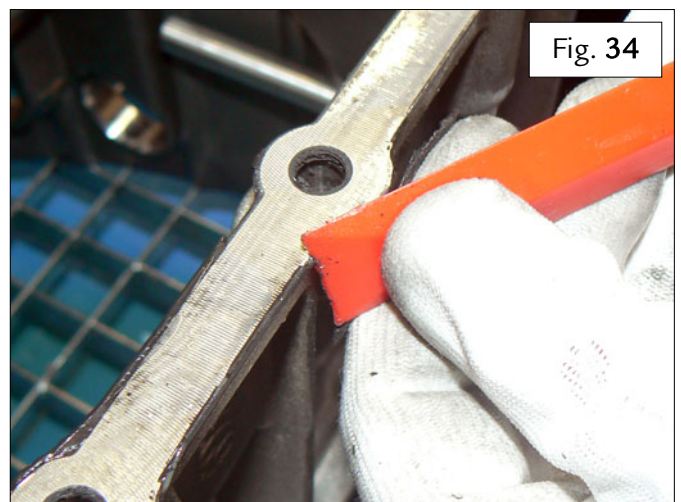


- Remove the O-ring from the differential housing and close the orifice with a suitable plug – Fig. 33.



- Using a Teflon spatula, remove all traces of sealant from the surfaces of the differential housing and the surfaces of the connector casing – Fig. 34.

Note: Be careful to not damage the surfaces of the two housings.

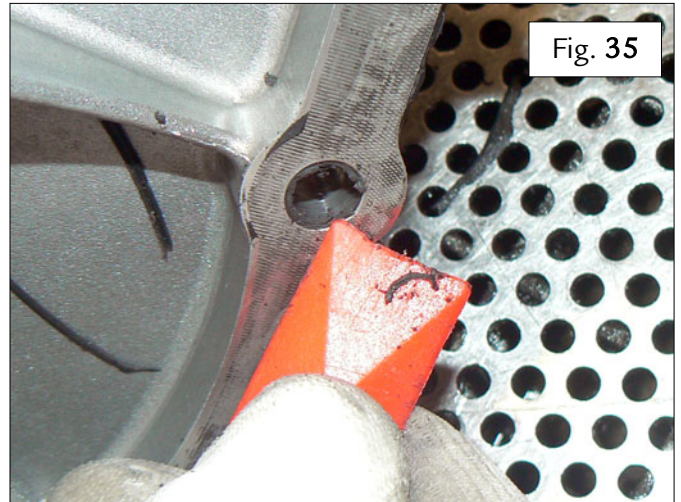




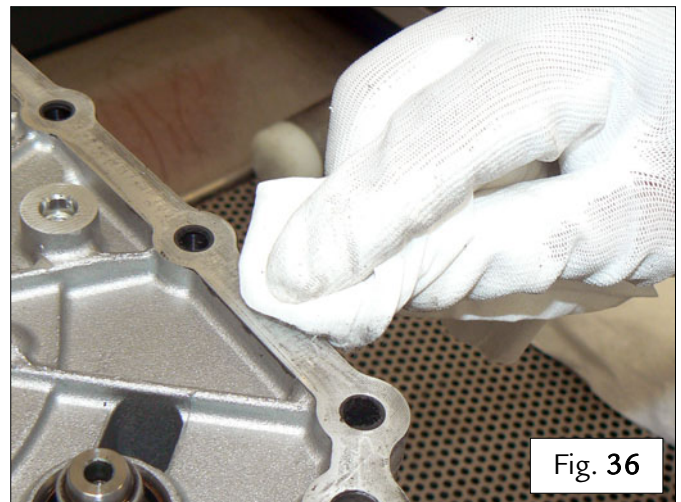
Ferrari North America

- Using a Teflon spatula, remove all traces of sealant from the surfaces of the differential housing and the surfaces of the connector casing – Fig. 35.

Note: Be careful to not damage the surfaces of the two housings.

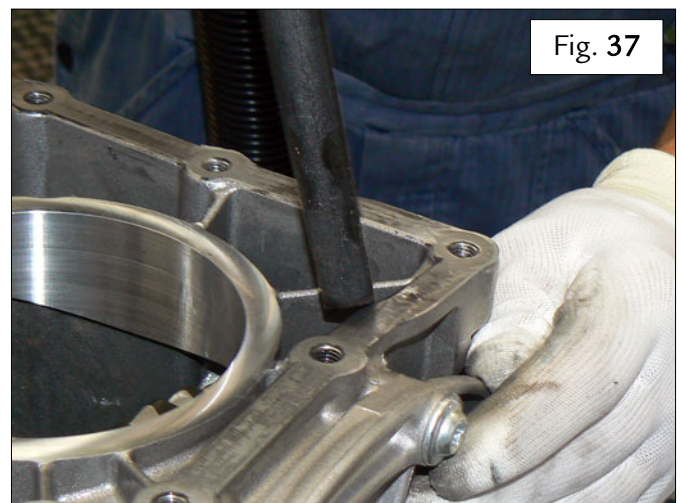


- Using a lint-free cloth and heptane, remove all traces of adhesive and/or dirt from the surfaces and holes of the differential housing and from the connector casing – Fig. 36.



- Aspirate all residue of adhesive and/or dirt from the surfaces of the differential housing and from the connector casing – Fig. 37.

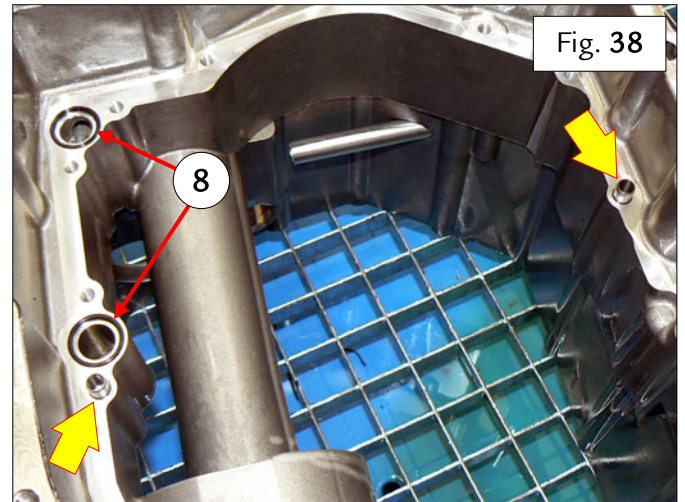
Note: DO NOT blow or use cloths to remove dirt and/or dust.



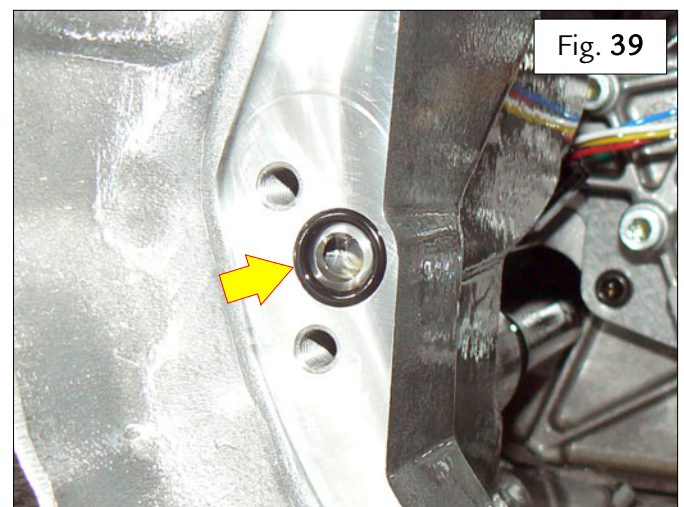


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- Remove the plugs fitted previously in the oil orifices – Fig. 38.
- Fit new O-rings (8) in the relative seats on the differential housing – Fig. 38.
- If not already fitted on the new CCP, install the new CCP alignment pins on differential housing in the indicated positions – Fig. 38.



- Fit a new O-ring in the relative seat on the differential housing – Fig. 39.

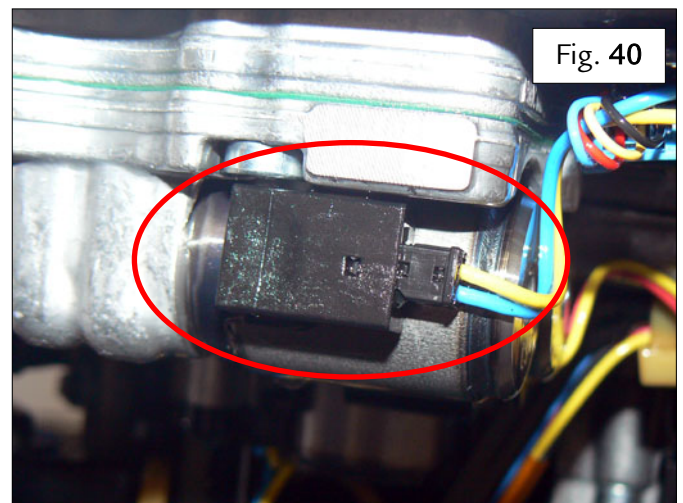


- IMPORTANT -

Do not separate the clutch basket from the relative CCP for any reason.

- Before fitting the CCP on the differential housing, check that the CCP connectors are securely connected to the respective sensors – Fig. 40

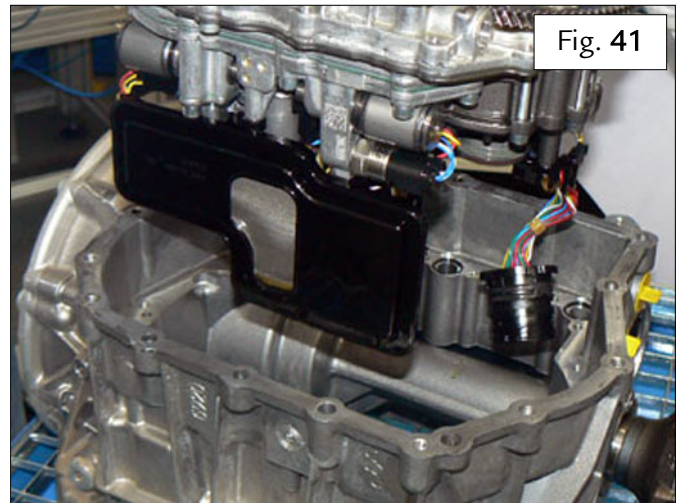
Note: The fastener tab clicks audibly when the connector is connected correctly.



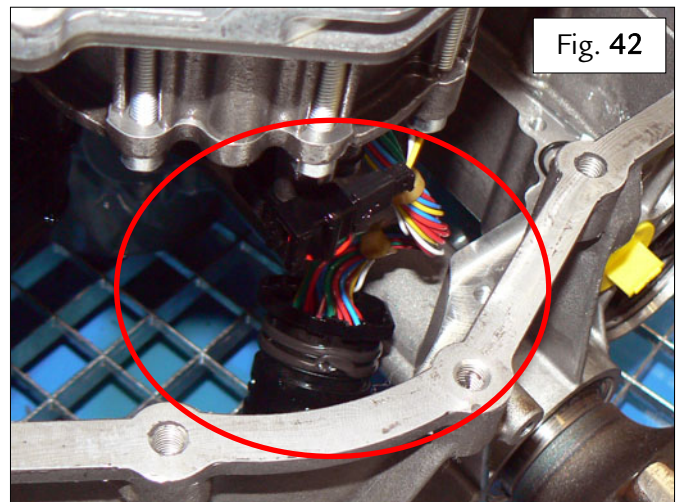


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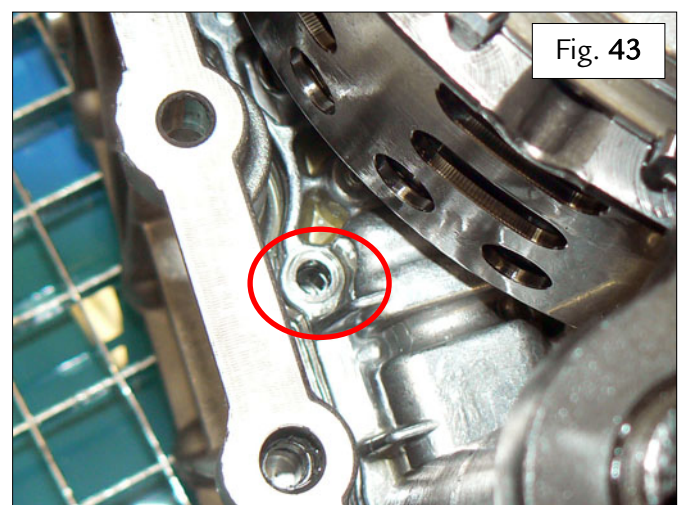
- Fit the new CCP in the relative seat on the differential housing – Fig. 41.



- Lower the CCP, using caution to not damage the relative connector – Fig. 42.
- Accompany the connector into the connector casing as shown in the photo aside – Fig. 42.



- Lower the CCP completely, ensuring that the highlighted pin is correctly aligned – Fig. 43.





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- Lower the CCP completely, ensuring that the highlighted pin is correctly aligned – Fig. 44.

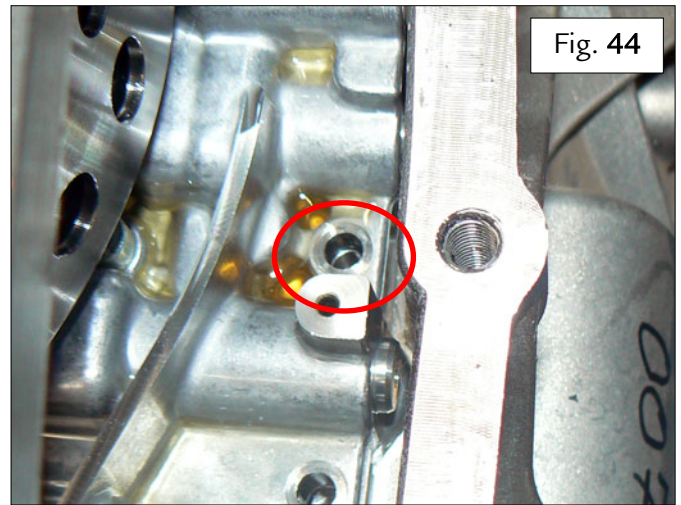


Fig. 44

- Select new fastener screws for the CCP and apply **Loctite 243** to the threads – Fig. 45.

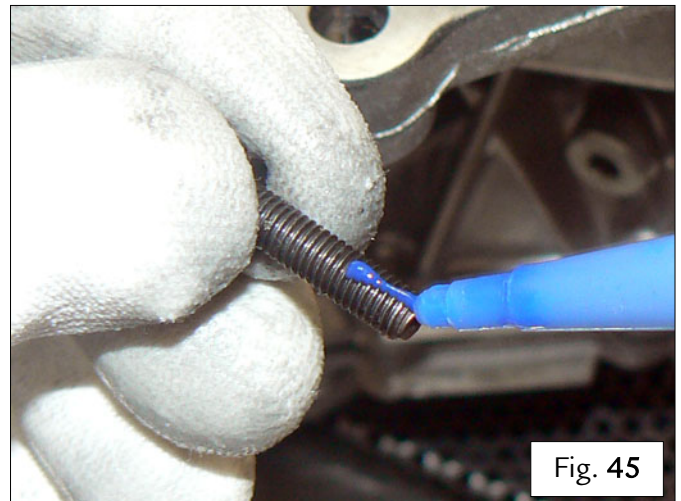


Fig. 45

- Hand-tighten the new screws indicated fastening the CCP (7) – Fig. 46.

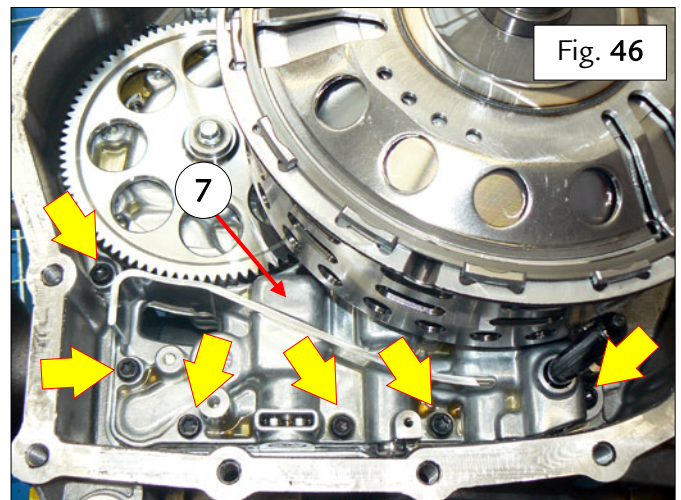
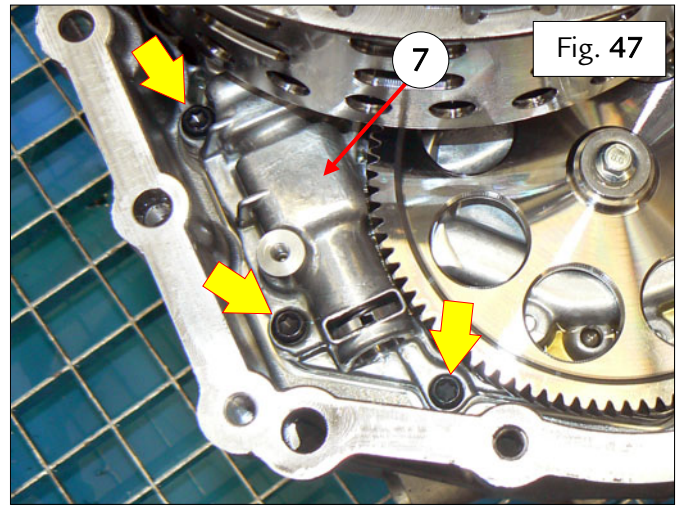


Fig. 46

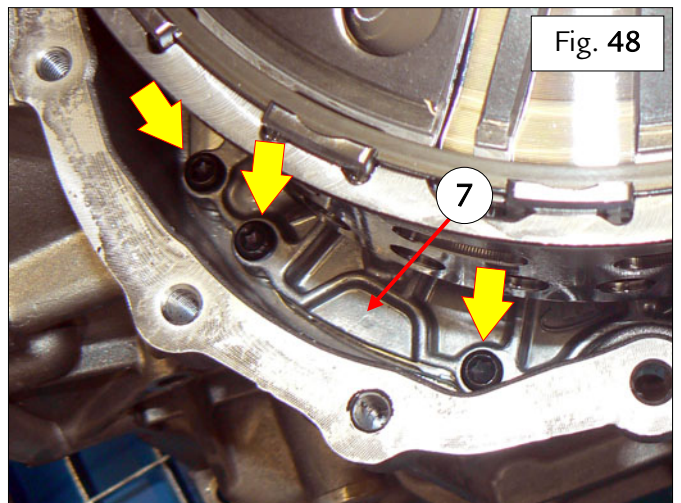


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- Hand-tighten the new screws indicated fastening the CCP (7) – Fig. 47.



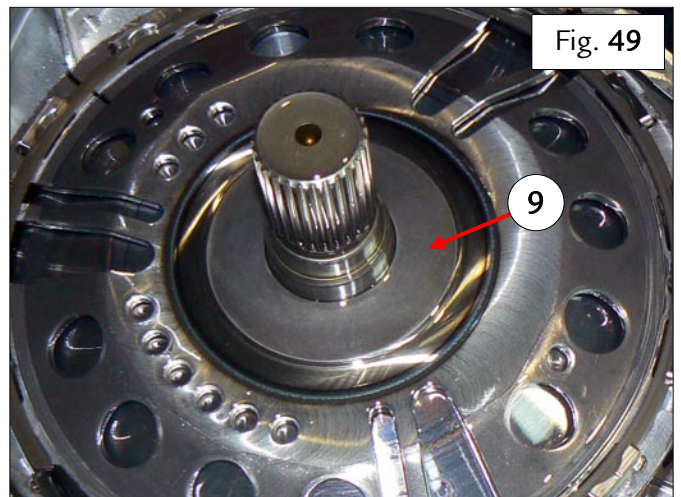
- Hand-tighten the new screws indicated fastening the CCP (7) – Fig. 48.



- Tighten the twelve screws fitted previously to a torque of 10 - 12 Nm in a cross pattern.

- Install the new clutch Belleville washer (9) on the clutch basket of the new CCP – Fig. 49.

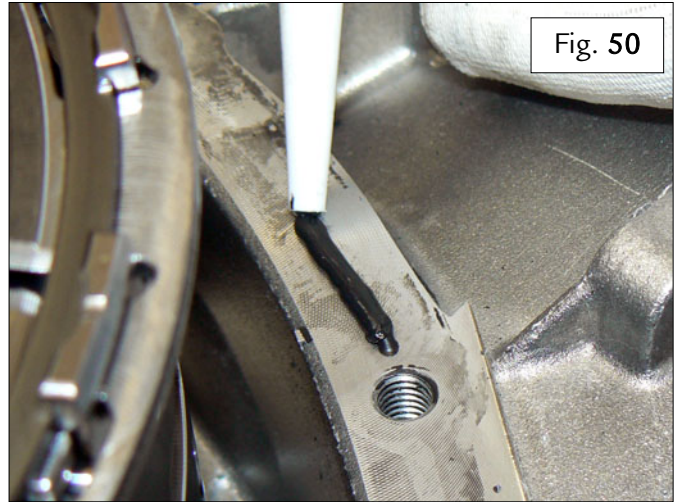
Note: fit the Belleville washer (9) with the convex side facing the engine.



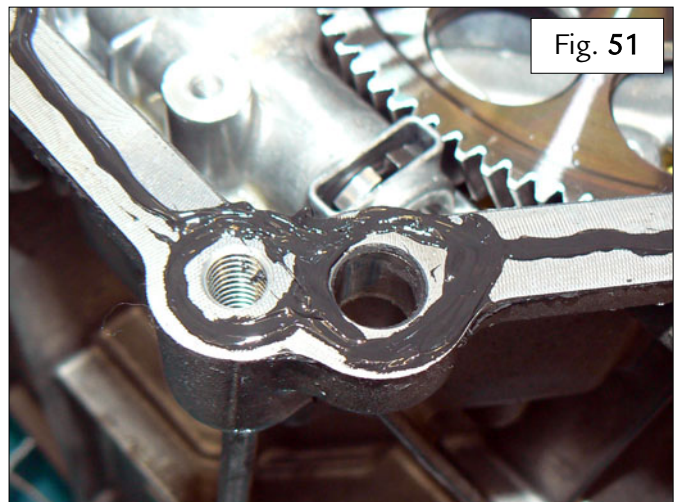


Ferrari North America

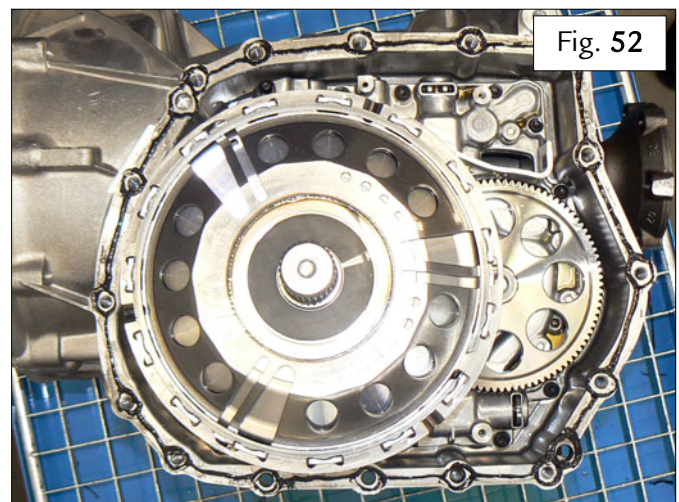
- Apply a continuous bead of **Loctite 5970** to the outer mating surface of the differential housing on the connector casing side – Fig. 50.



- Apply a continuous bead of **Loctite 5970** around the holes in the outer mating surface of the differential housing, on the connector casing side, as shown in the photo aside – Fig. 51.



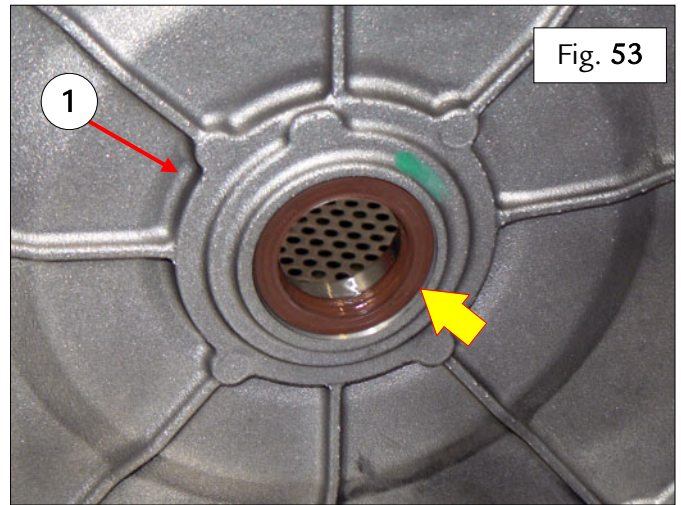
- The continuous bead of **Loctite 5970** must look like the example shown in the photo aside – Fig. 52.





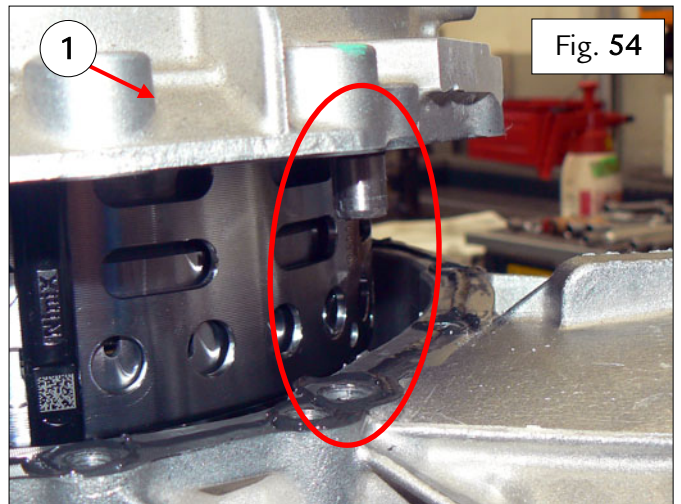
Ferrari North America

- Replace the indicated seal before refitting the connector casing (1) – Fig. 53.



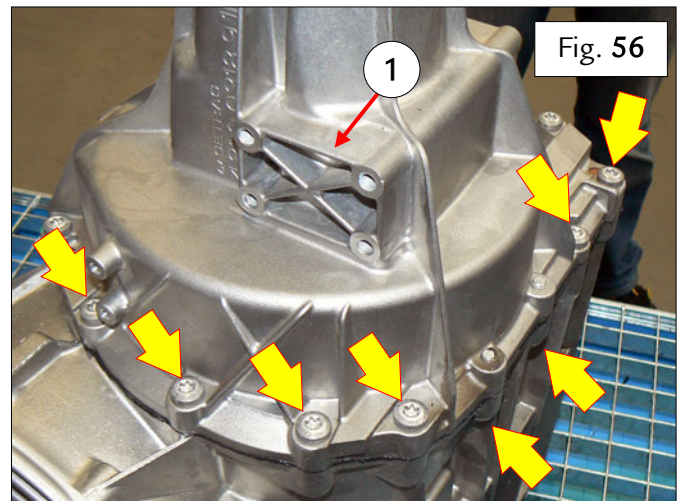
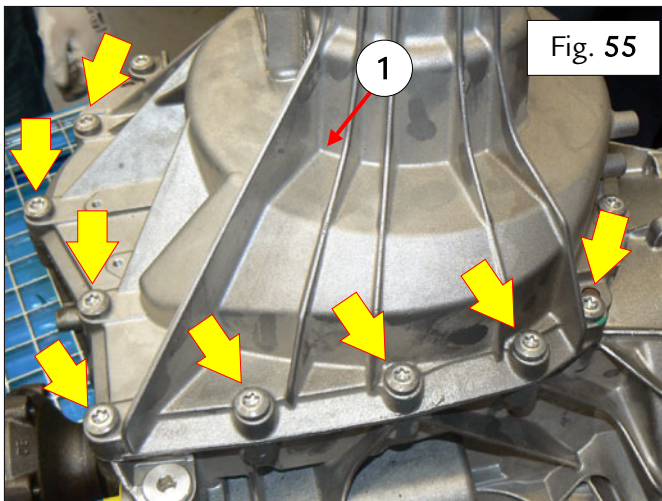
- Lift the connector casing (1) and manually fit it in the relative seat on the differential housing, aligning the indicated pins – Fig. 54.

Note: DO NOT use the rubber mallet to complete the installation of the housing.



For front engine vehicles ONLY

- Hand-tighten the indicated new screws fastening the connector casing (1) – Fig. 55, 56.

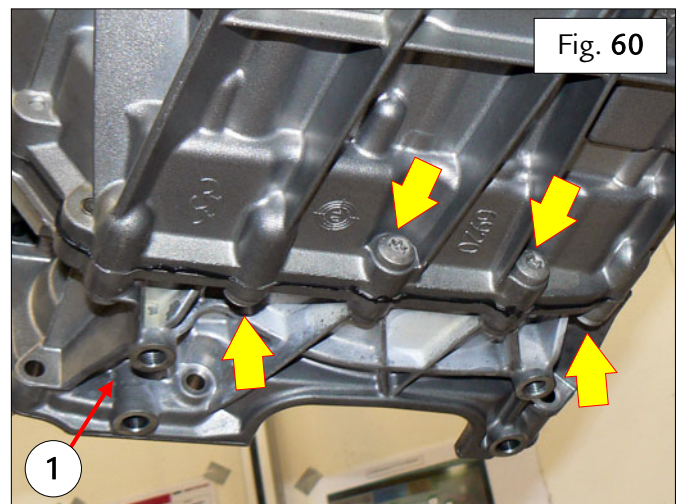
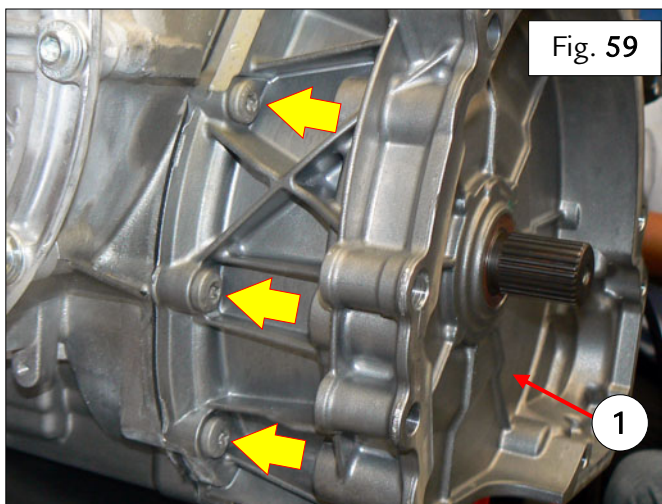
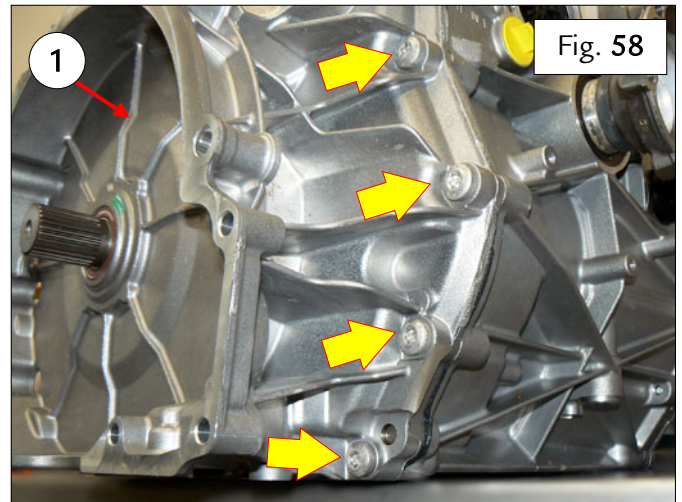
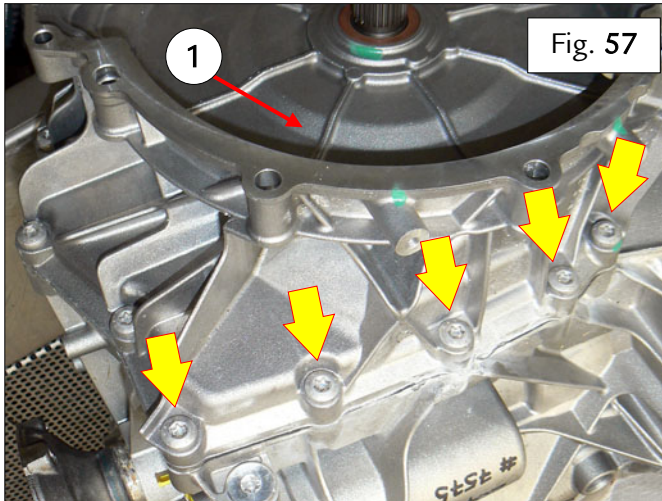




Ferrari North America

For rear mid-engine vehicles only

- Fit the connector casing (1) onto the differential housing, taking all the precautions necessary to prevent the clutch shaft from damaging the seal installed previously – Fig. 57.
- Hand-tighten the indicated new screws fastening the connector casing (1) – Fig. 57, 58, 59 and 60.

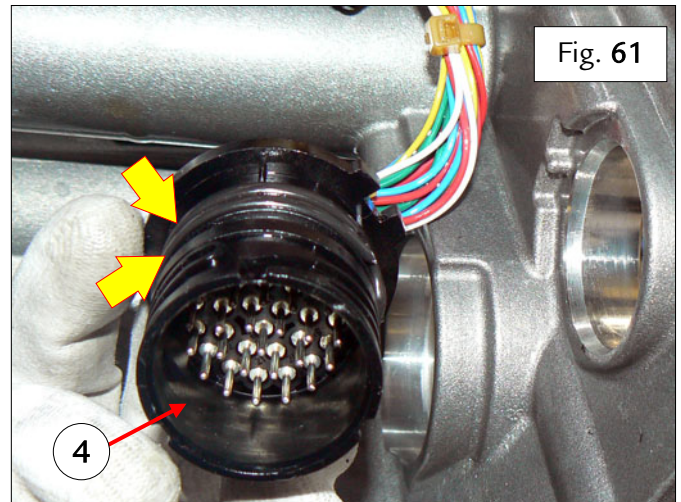


- Tighten the sixteen screws fitted previously to a torque of **10 Nm** in a cross pattern. Then tighten definitively by turning by an additional **90°** in a cross pattern.

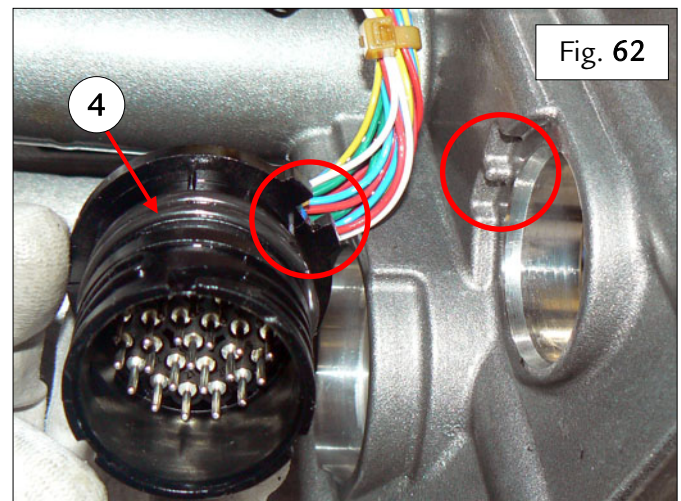


Ferrari North America

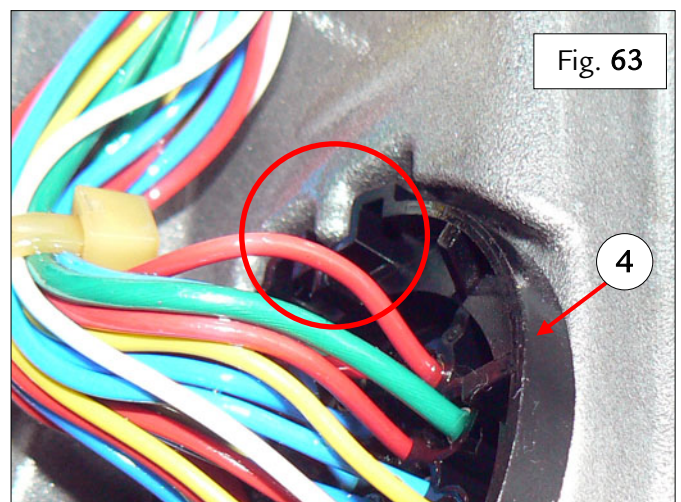
- Check the state of the O-rings indicated on the connector (4) – Fig. 61
- Lubricate the indicated O-rings – Fig. 61.



- Lift the differential housing.
- From underneath, insert the CCP connector (4) in the relative seat in the differential housing, aligning the references shown in the photo aside correctly – Fig. 62.



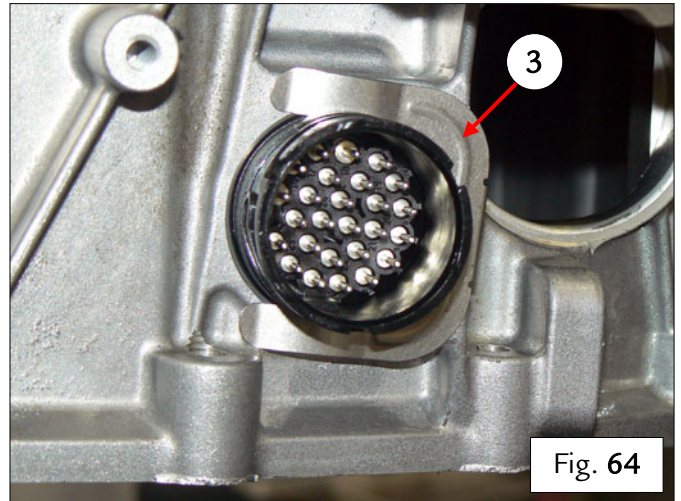
- The correct position of the connector (4) on the differential housing is shown in the photo aside – Fig. 63.



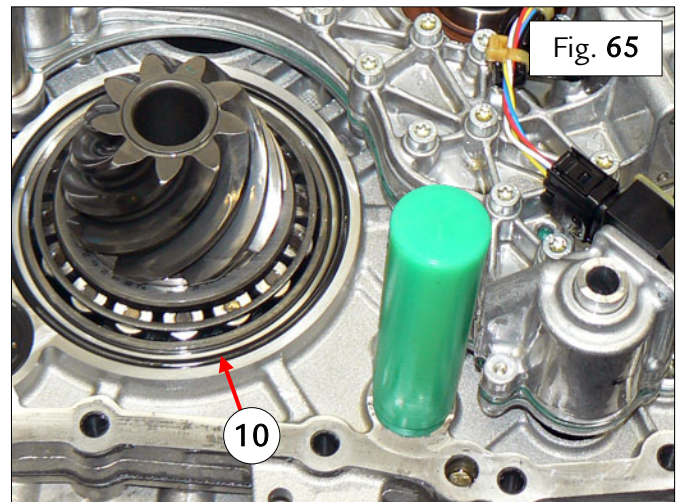


Ferrari North America

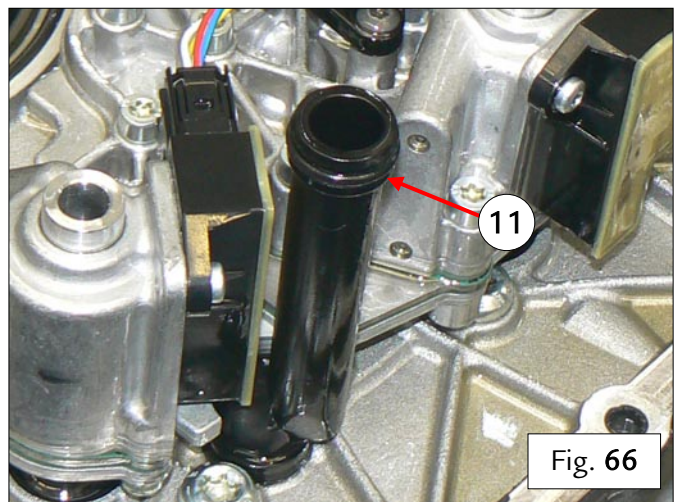
- Fit the new retainer clip (3) onto the connector to fasten – Fig. 64.



- Remove the O-ring from the (10) interface plate – Fig. 65.



- Replace the O-ring (11) on the oil return pipe – Fig. 66.

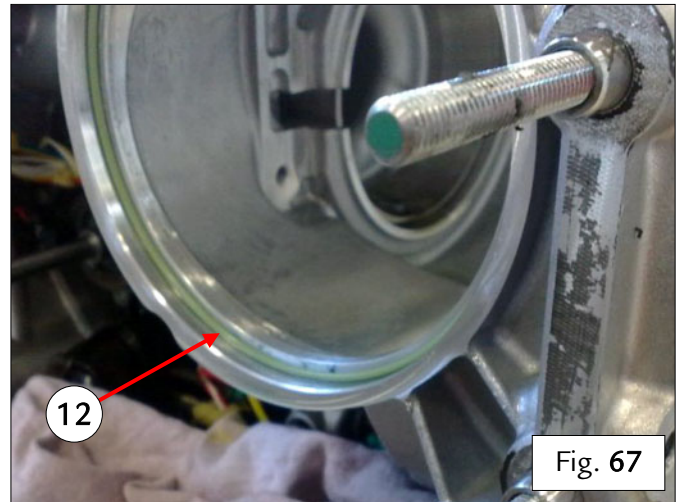




Ferrari North America

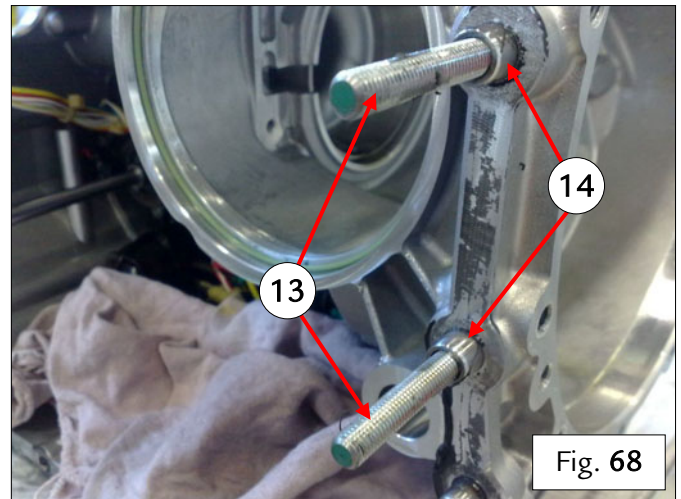
For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

- Remove the seal (12) from the differential housing on the side in contact with the interface plate – Fig. 67.



For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

- Remove the stud bolts (13) and the alignment dowels (14) from the differential housing, on the side in contact with the interface plate – Fig. 68.



- Using a Teflon spatula, remove all traces of sealant from the surfaces of the interface plate and the differential housing – Fig. 69.

Note: Be careful to not damage the surfaces of the two housings.

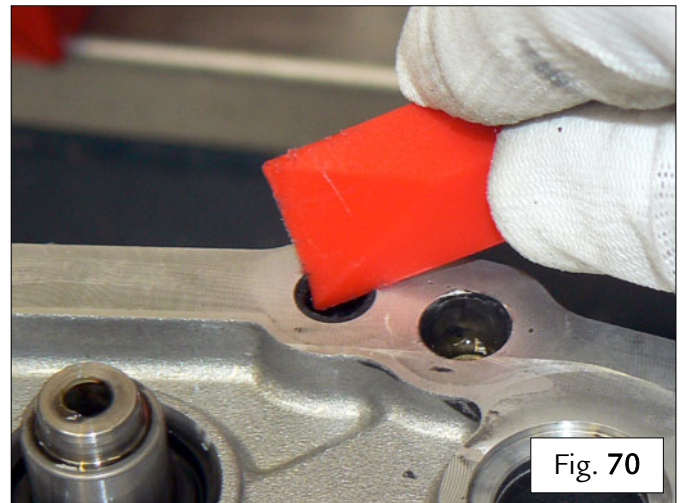




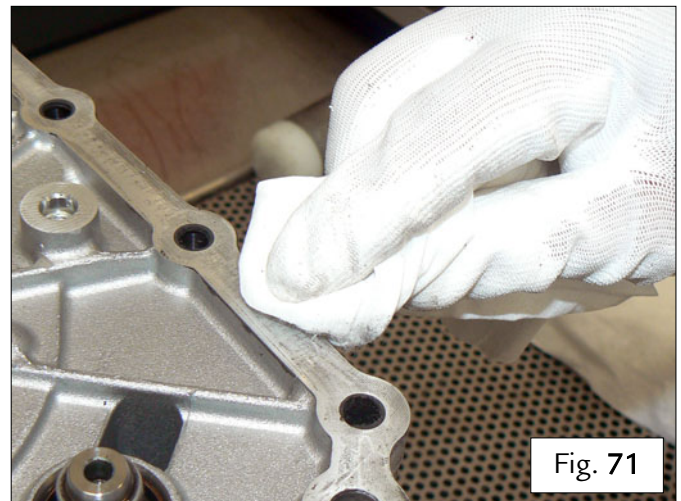
Ferrari North America

- Using a Teflon spatula, remove all traces of sealant from the surfaces of the interface plate and the differential housing – Fig. 70.

Note: Be careful to not damage the surfaces of the two housings.

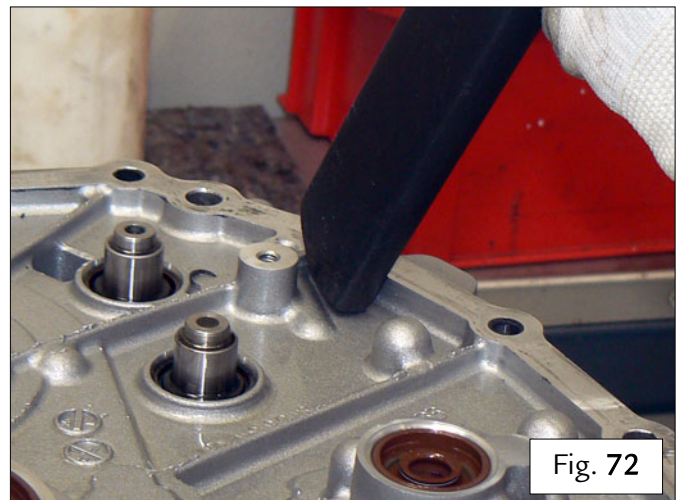


- Using a lint-free cloth and heptane, remove all traces of adhesive and/or dirt from the surfaces and holes of the interface plate and from the differential housing – Fig. 71.



- Aspirate all residue of adhesive and/or dirt from the surfaces of the interface plate and from the differential housing – Fig. 72.

Note: DO NOT blow or use cloths to remove dirt and/or dust.

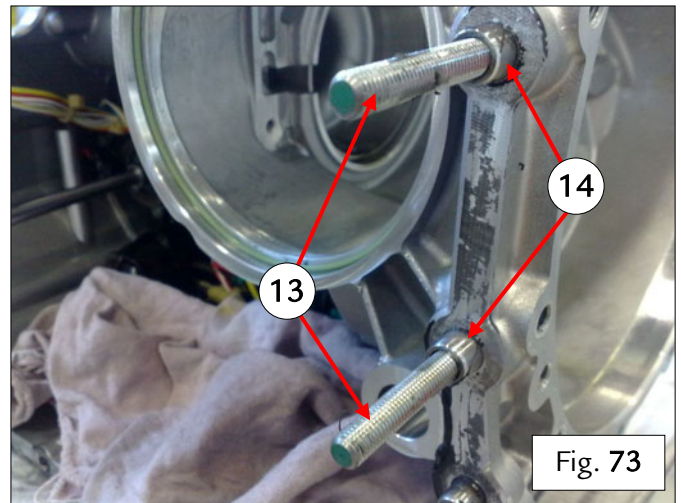




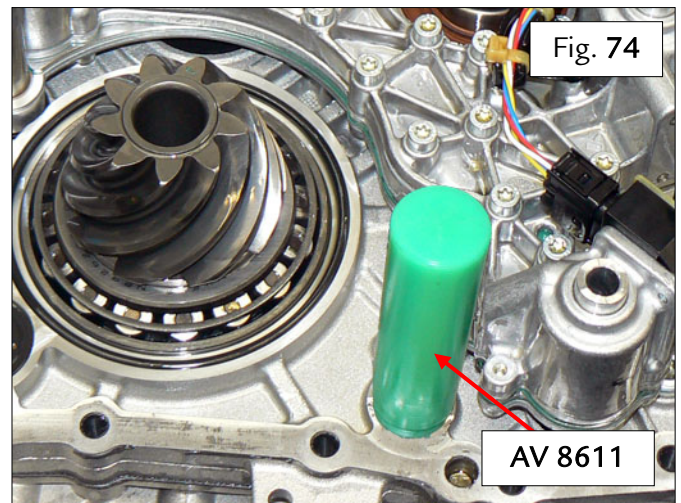
Ferrari North America

For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

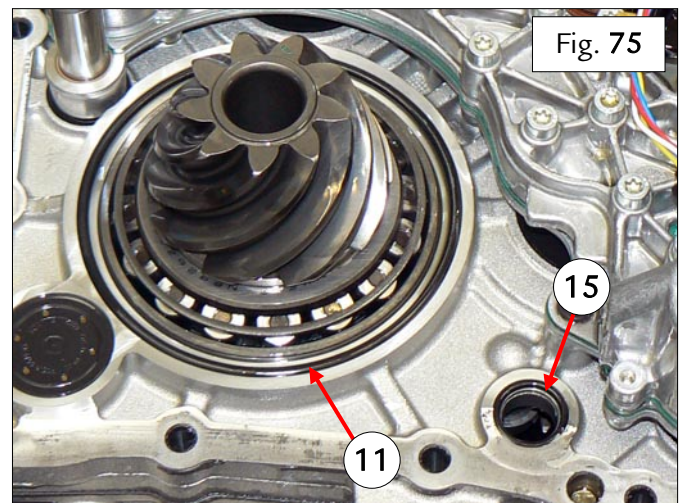
- Install the new alignment dowels (14) on the differential housing – Fig. 73.
- Install the new stud bolts (13) on the differential housing, tightening to a torque of $15 \text{ Nm} \pm 1 \text{ Nm}$ – Fig. 73.



- Remove the plug 95978611 (AV 8611) from the interface plate – Fig. 74.



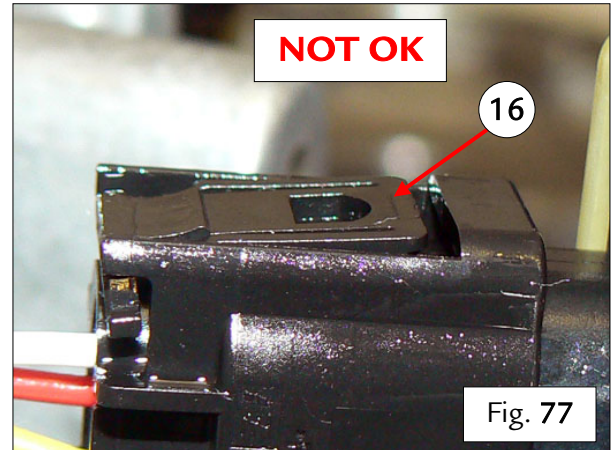
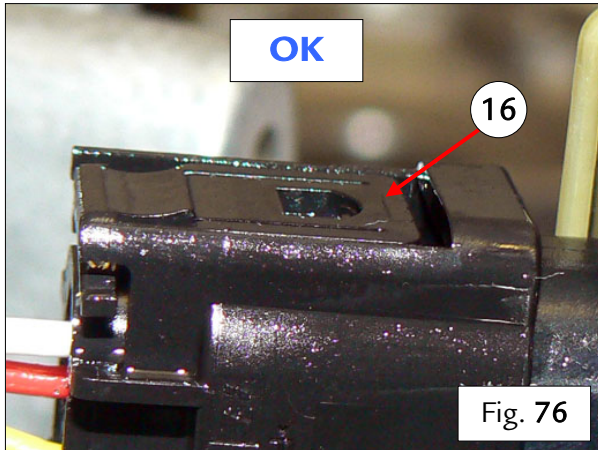
- Fit the new O-rings (11 and 15) in the relative seats on the interface plate – Fig. 75.



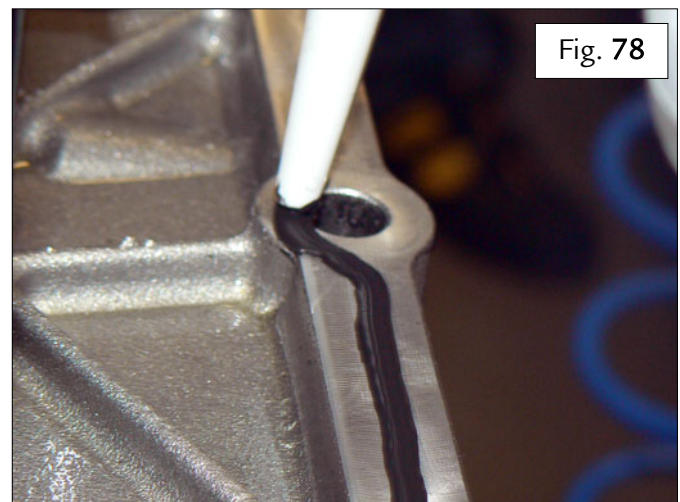


Ferrari North America

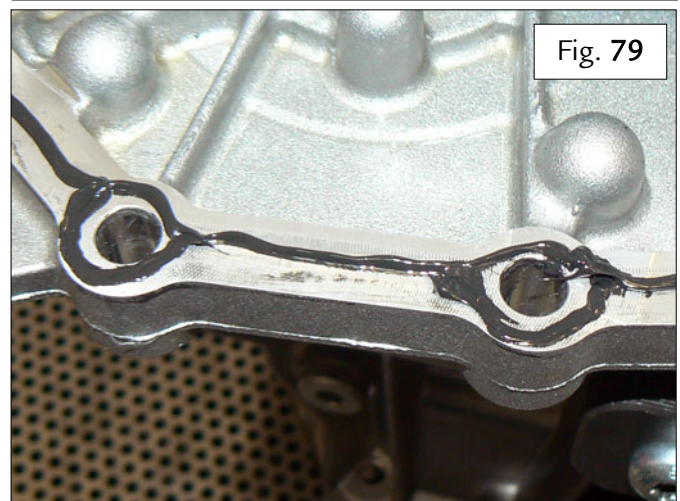
- **DO NOT TOUCH** the retainer clips (16) fastening the connections on the SAP. Check that the connectors are connected correctly on the SAP; there is very little difference in appearance between a connector that is connected correctly to the sensor and an incorrectly connected connector. As it is possible that the connector retainer clip (16) may have been touched inadvertently during the previous operations, check the connectors before installing the differential housing. A correct connection (Fig. 76) and an incorrect connection (Fig. 77) are shown in the two photos below.



- Apply a continuous bead of **Loctite 5970** to the outer mating surface of the interface plate – Fig. 78.



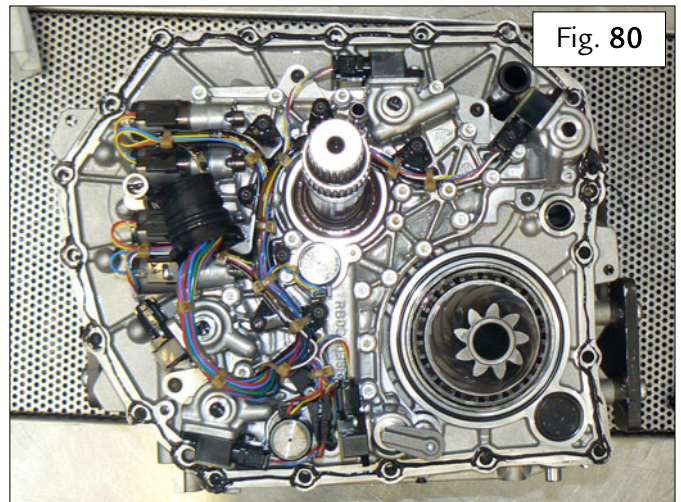
- Apply a continuous bead of **Loctite 5970** around the holes in the outer mating surface of the interface plate as shown in the photo aside – Fig. 79.





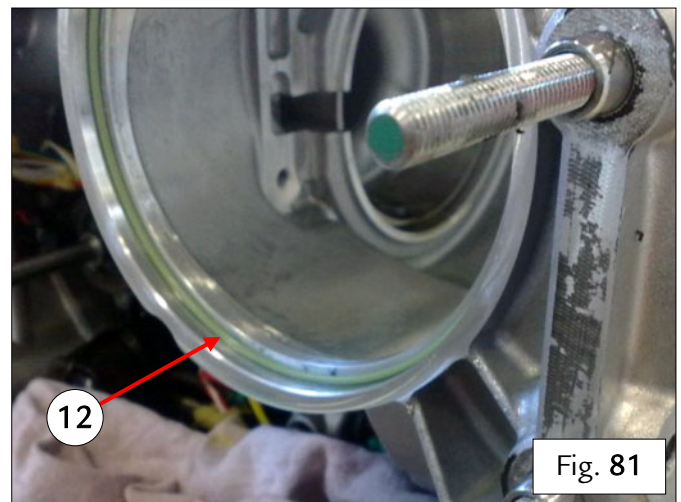
Ferrari North America

- The continuous bead of **Loctite 5970** must look like the example shown in the photo aside – Fig. 80.

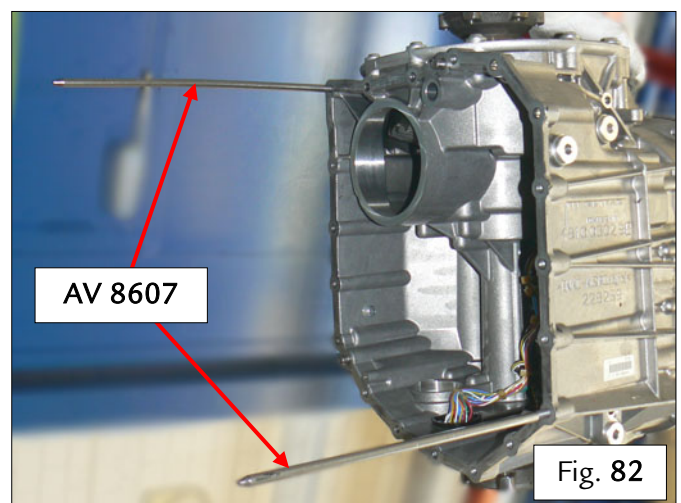


For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

- Lubricate then install the new seal (12) in the differential housing, on the side in contact with the interface plate – Fig. 81.



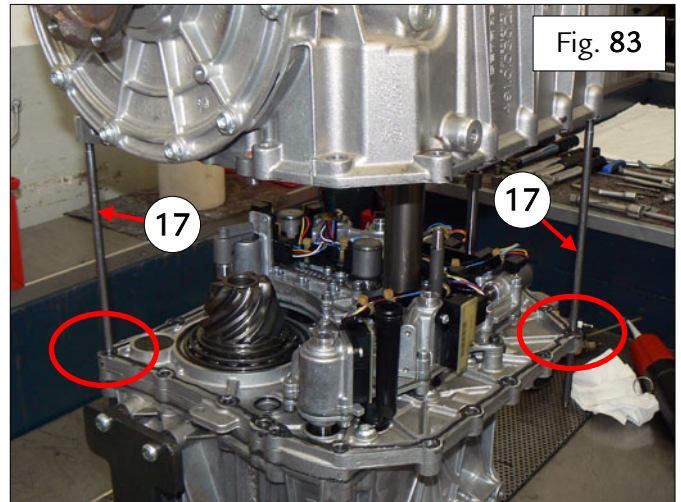
- Fit the two alignment pins **95978607 (8607)** in the positions on the differential housing indicated in the photo aside – Fig. 82.



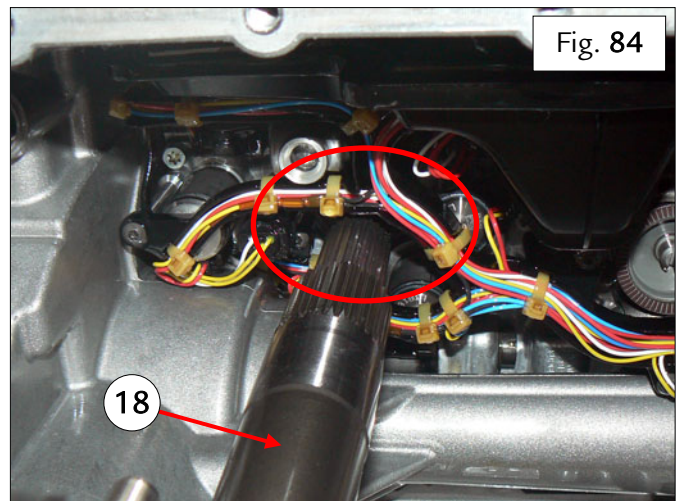


Ferrari North America

- Using the hoist, align the differential housing with the interface plate, aligning the pins (17) of tool AV 8607 in the positions indicated in the photo aside – Fig. 83.

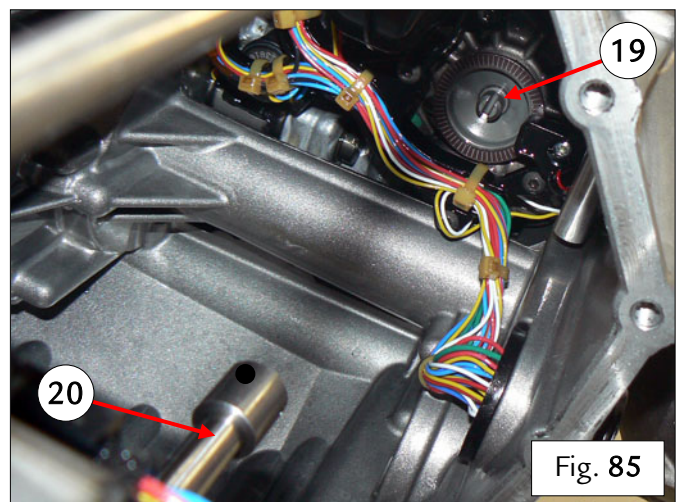


- Ensure that as the differential housing is lowered, the primary shaft (18) does not interfere with the wiring of the CCP in the area indicated in the photo aside – Fig. 84.



- Rotate the clutch to align the respective seats of the shaft (20) and the oil pump (19) – Fig. 85.

Note: the pin on the oil pump spindle (21) must be aligned in the respective seat on the pump (20). **DO NOT TRY TO FORCE THE PARTS TOGETHER IF RESISTANCE IS ENCOUNTERED.**





Ferrari North America

- From inside the differential housing, push the SAP connection (4) through the relative hole, fastening in the correct position – Fig. 86.

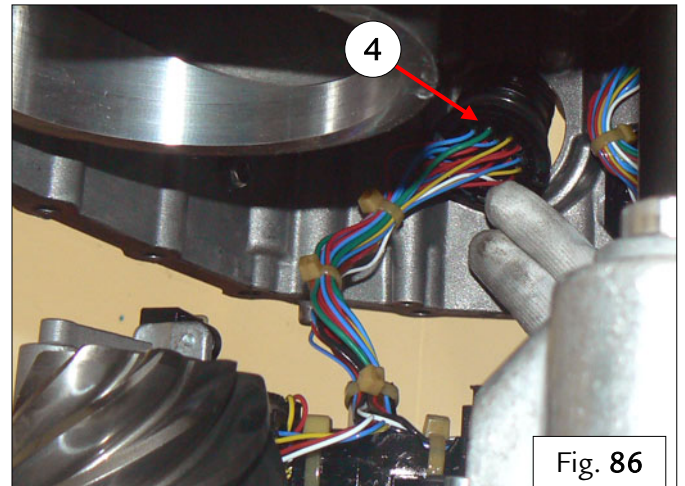


Fig. 86

- Continue to move the differential housing forward slowly, proceeding carefully; a few centimeters before the two components come into contact, if necessary, rotate the front flange (21) slightly to align the components definitively – Fig. 87.

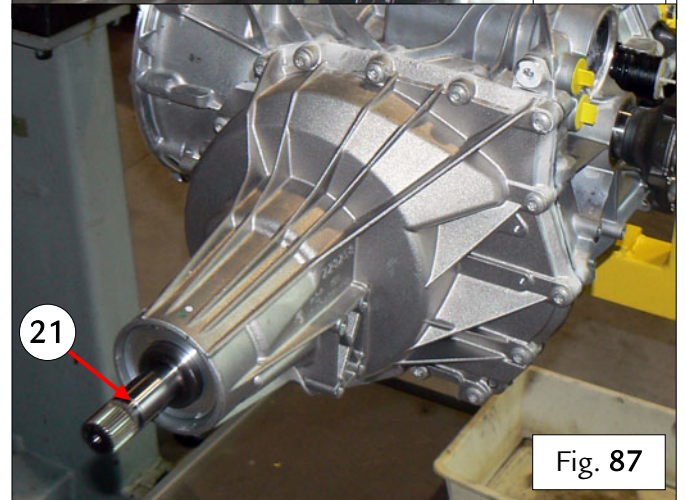


Fig. 87

- IMPORTANT -

DO NOT definitively tighten the screws fastening the two housings until the mating surfaces of the two housings are perfectly in contact. DO NOT attempt to force the two housings together with a rubber mallet.

- Hand-tighten the new screws indicated fastening the gearbox to the interface plate – Fig. 88.

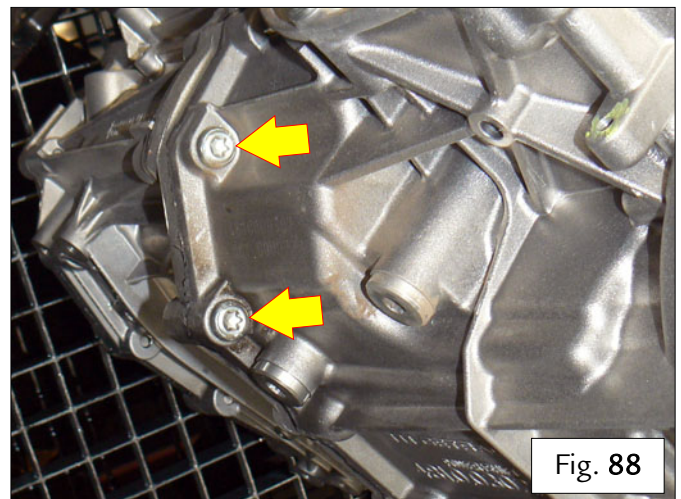
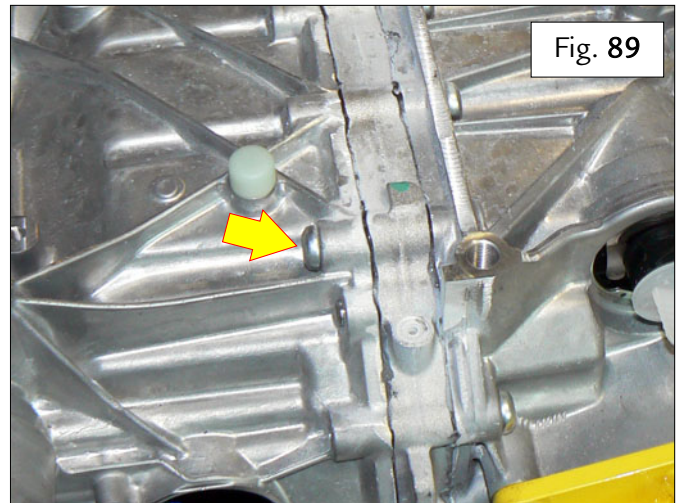


Fig. 88



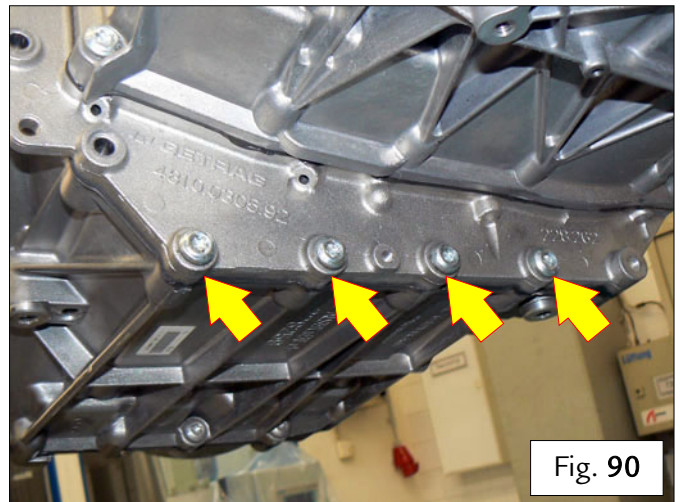
Ferrari North America

- Hand-tighten the new screw indicated fastening the gearbox to the interface plate – Fig. 89.

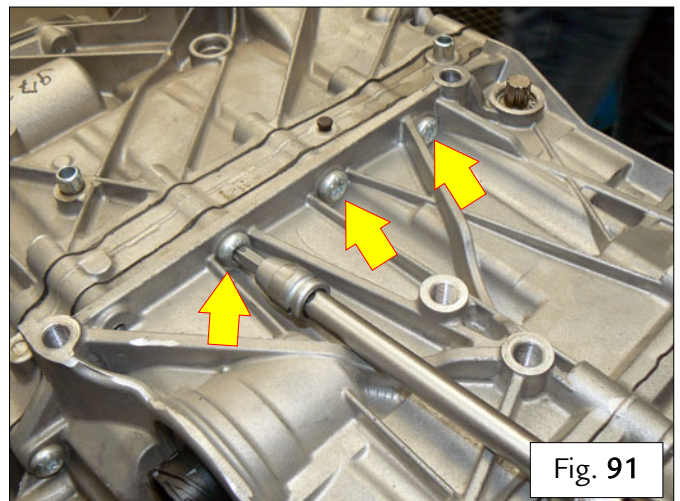


- Remove the alignment pins 95978607 (AV 8607) from the differential housing.

- Hand-tighten the new screws indicated fastening the gearbox to the interface plate – Fig. 90.



- Hand-tighten the new screws indicated fastening the gearbox to the interface plate – Fig. 91.





Ferrari North America

Hand-tighten the new screws indicated fastening the gearbox to the interface plate – Fig. 92.

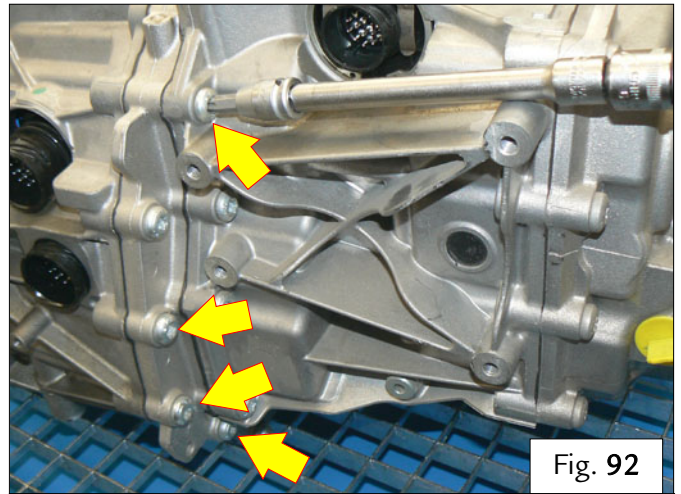


Fig. 92

- Hand-tighten the new screws indicated fastening the gearbox to the interface plate – Fig. 93.



Fig. 93

- Tighten the 19 screws fitted previously to a torque of 34 ± 1.2 Nm in a cross pattern.

For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

- Hand-tighten the new ring nut (6) in the relative seat – Fig. 94.
- Using the tool 95978619 (AV 8619) tighten the new ring nut (6) fastening the plate to the differential housing to a torque of 30 Nm – Fig. 94.

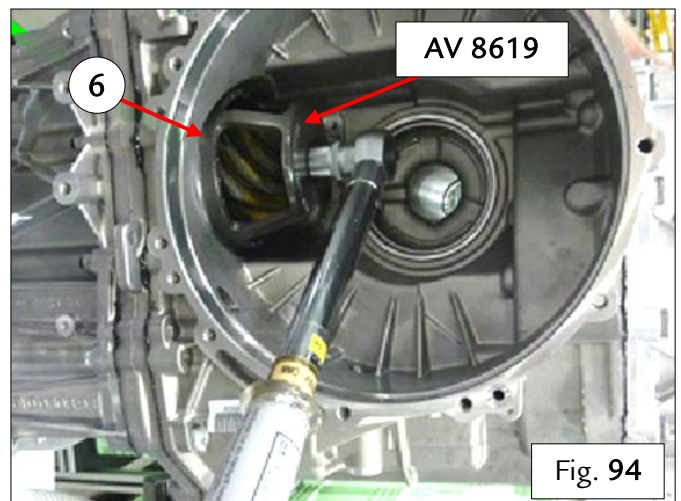


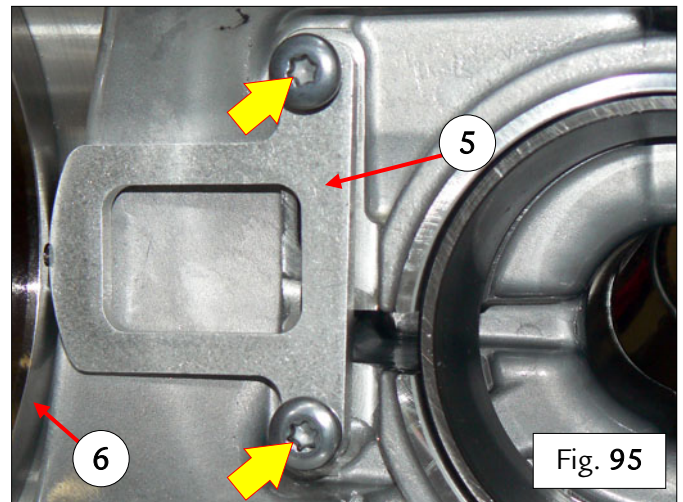
Fig. 94



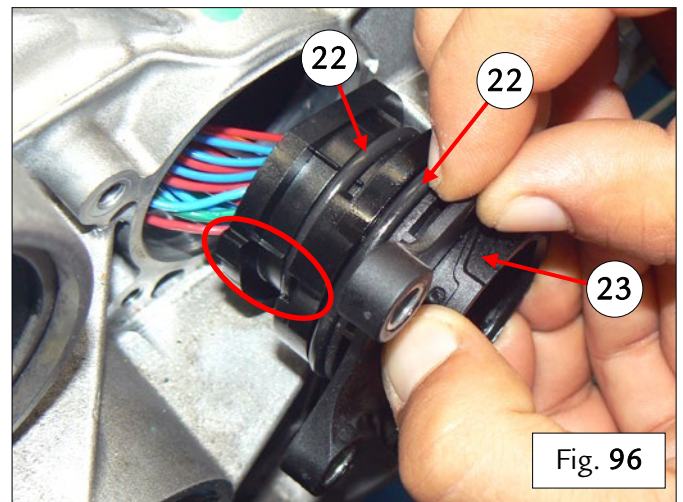
Ferrari North America

For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

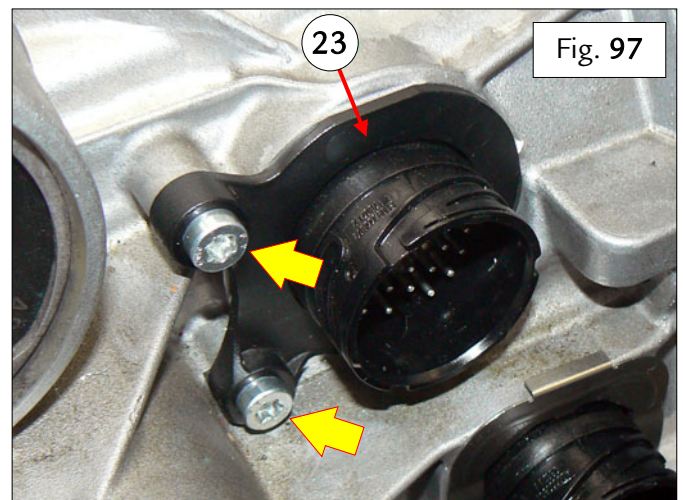
- Fit the new bracket (5) in the relative seat against the ring nut (6), then tighten the new screws indicated to a torque of 9 Nm Class B – Fig. 95.



- Visually inspect the seal surface of the adapter (23) in the differential housing – Fig. 96.
- Lubricate the two O-rings (22), then fit the adapter (23) onto the respective connector, aligning correctly as indicated in the photo aside – Fig. 96.



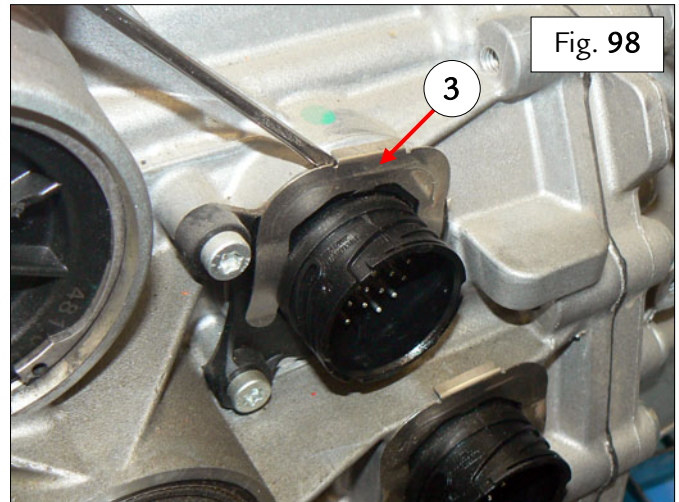
- Insert the adaptor (23) (assembled onto the connector) in the respective hole in the differential housing, then fasten by tightening the new screws as indicated to a torque of 10 to 11 Nm – Fig. 97



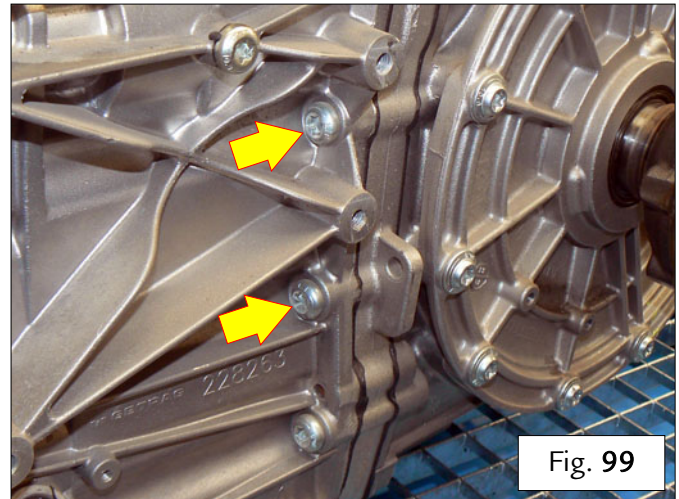


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- Fit the new retainer clip (3) onto the connector to fasten – Fig. 98.

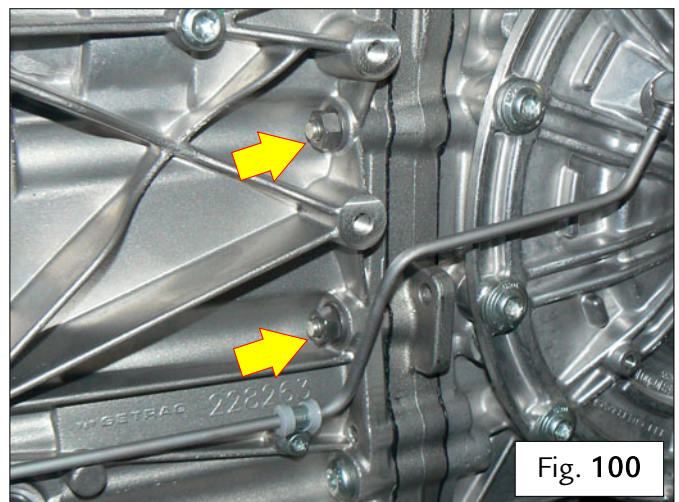


- Using the bracket AV 8606 and the lift hook, lift and remove the DCT gearbox from the support tool AM 107314.
- On the right hand side of the DCT gearbox, tighten the indicated screws to a torque of 34 ± 1.2 Nm – Fig. 99.



For Monza SP1, Monza SP2, F12 Berlinetta and 812 Superfast ONLY

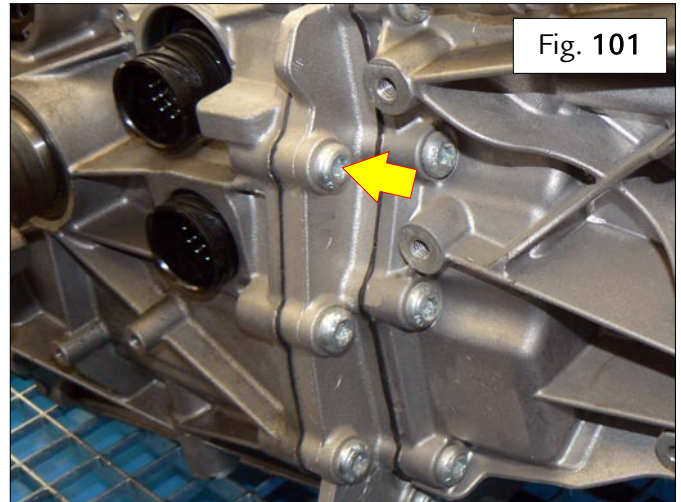
- On the right hand side of the DCT gearbox, tighten the indicated nuts to a torque of 34 ± 1.2 Nm – Fig. 100.





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- On the left hand side of the DCT gearbox, tighten the indicated screw to a torque of 34 ± 1.2 Nm – Fig. 101.



System pressurization procedure

The system pressurization test described as follows must be performed before starting the procedure.

- IMPORTANT -

The utmost cleanliness must be maintained during all the following operations; always wear clean gloves, replacing them as needed, and use absorbent lint-free cloth and heptane to clean and degrease components.

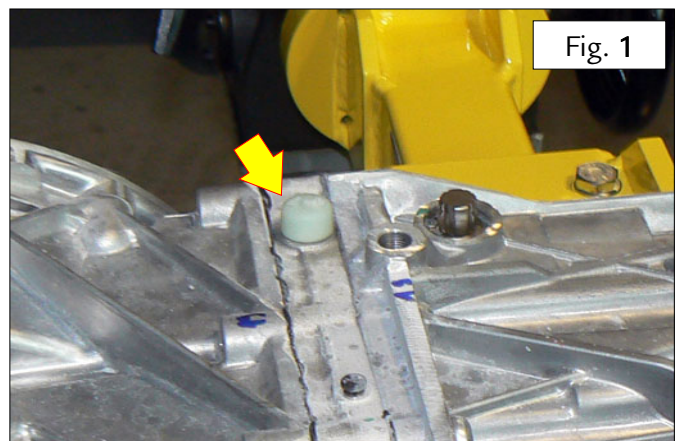
When performing any of the above procedures with the gearbox on the workbench, before reinstalling the gearbox in the vehicle and filling the gearbox with oil and fluid, the gearbox systems must be pressurized.

- IMPORTANT -

This procedure must only be performed with the gearbox completely empty (containing no oil or fluid).

GEAR OIL SYSTEM

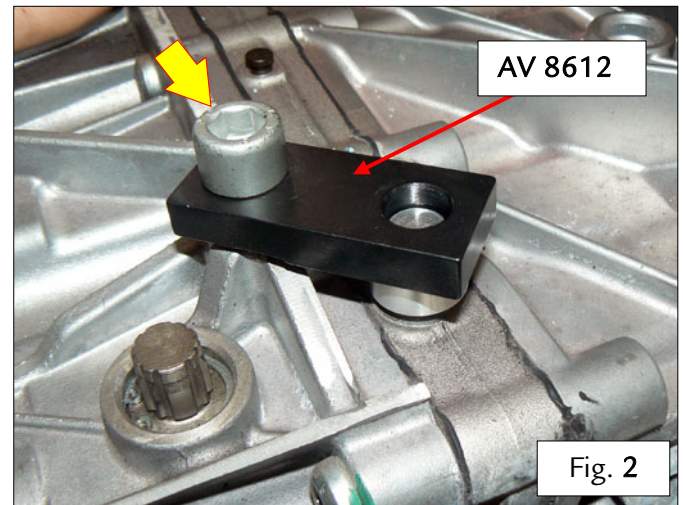
- Remove the gear oil breather plug indicated – Fig. 1.





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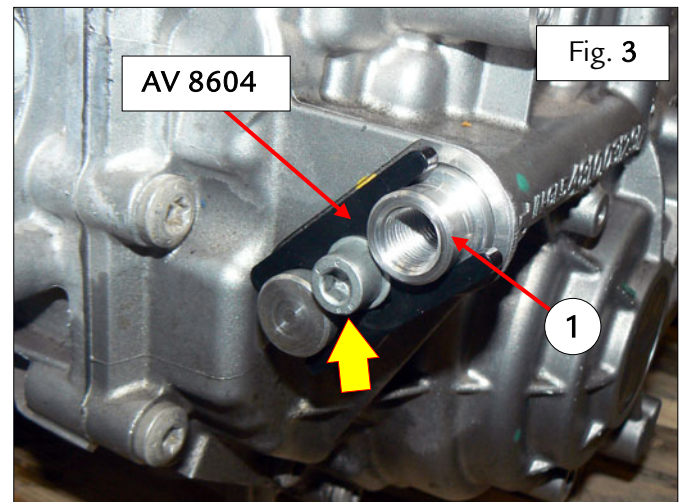
- Install the tool **AV 8612 (95978612)**, consisting of a plug with relative O-ring and a bracket fastened with the indicated screw, in the GL oil system breather – Fig. 2.



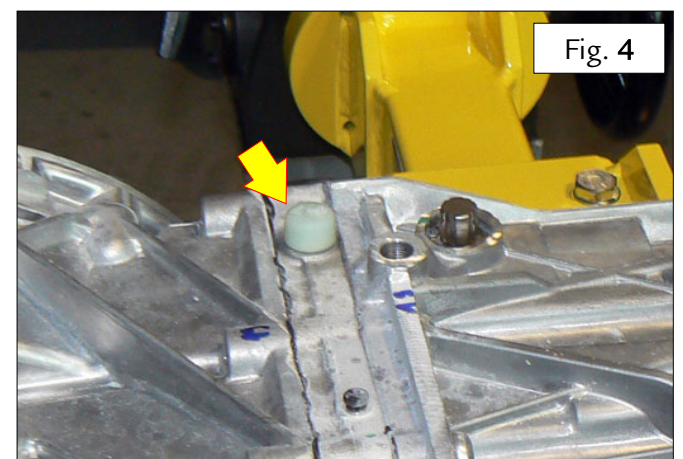
- Seal the indicated GL oil inlet and outlet orifices on the gearbox with the gearbox pressurizing tool **AV 8604 (95978604)**, then fasten by tightening the indicated screw – Fig. 3.

Note: The open plug (1) must be fitted in the orifice on the gearbox marked “IN”.

- Connect the pressurizing system to the plug (1) – Fig. 3.
- Pressurize the system to a maximum of **0.5 Bar**.
- Keeping the system pressurized, test the seal of the replaced parts around joints/seams/gaskets/seals using bubble testing liquid.
- After testing, remove all residue of bubble testing liquid from the gearbox with a clean, lint-free cloth.
- Once the procedure is complete, remove the gearbox pressurizing tools **AV 8604** and **AV 8612**.



- Refit the indicated breather plug – Fig. 4.

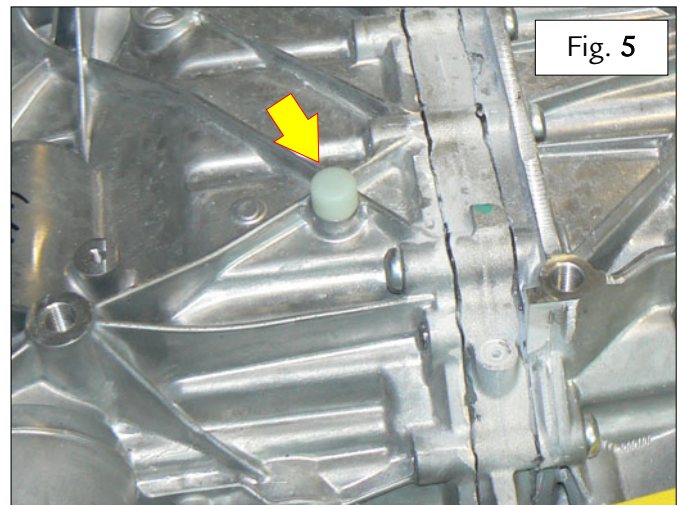




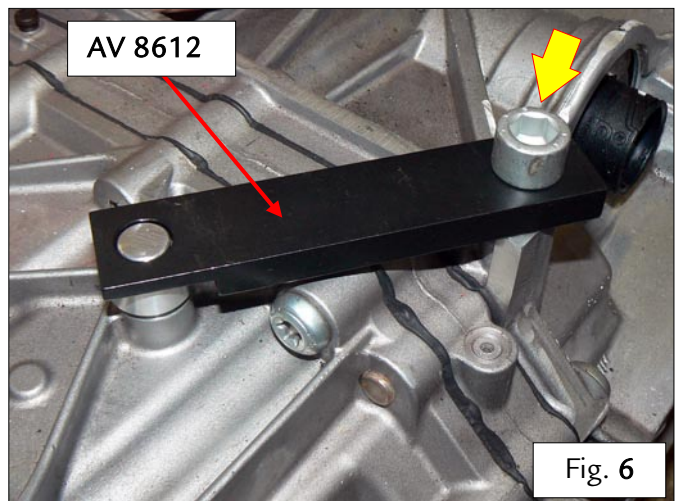
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ATF HYDRAULIC CLUTCH SYSTEM

- Remove the hydraulic clutch system oil breather plug indicated – Fig. 5.



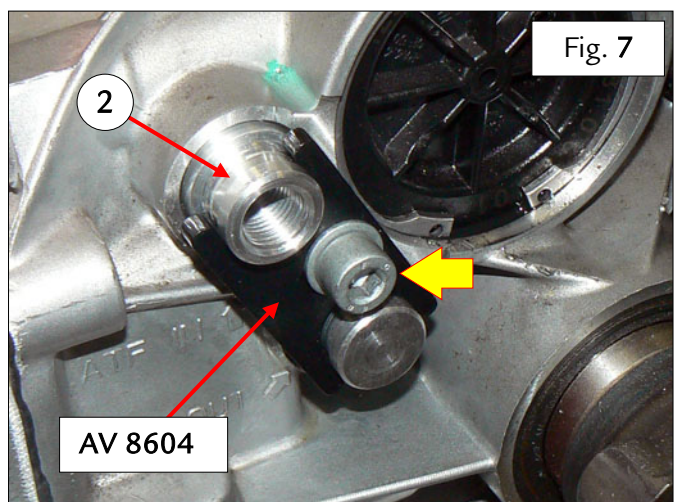
- Install the tool AV 8612 (95978612), consisting of a plug with relative O-ring and a bracket fastened with the indicated screw, in the ATF oil system breather – Fig. 6.



- Seal the indicated ATF oil inlet and outlet orifices on the gearbox with the gearbox pressurizing tool AV 8604 (95978604), then fasten by tightening the indicated screw – Fig. 7.

Note: the open plug (2) must be fitted in the orifice on the gearbox marked “IN”.

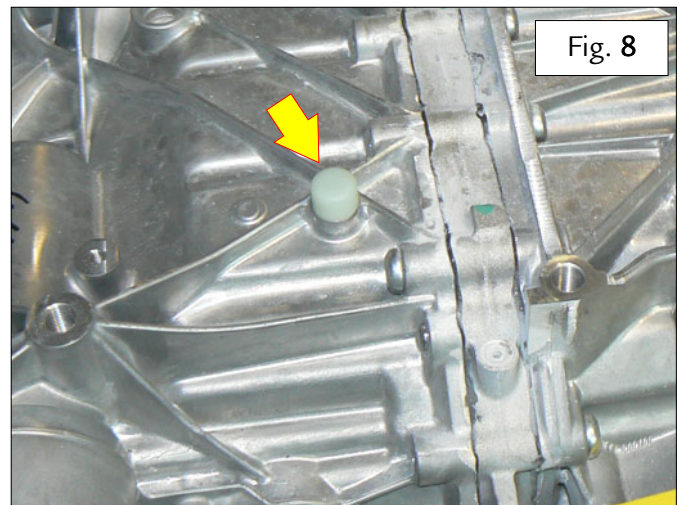
- Connect the pressurizing system to the plug (2) – Fig. 7.





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- Pressurize the system to a maximum of **0.5 Bar**.
- Keeping the system pressurized, test the seal of the replaced parts around joints/seams/gaskets/seals using bubble testing liquid.
- After testing, remove all residue of bubble testing liquid from the gearbox with a clean, lint-free cloth.
- Once the procedure is complete, remove the gearbox pressurizing tools **AV 8604** and **AV 8612**.
- Refit the indicated breather plug – Fig. 8.



- Using the bracket **AV 8606** and the lift hook, mount the DCT gearbox again on the support tool **AM 107314**, and perform the **procedure for pressurizing the repaired system** as described at the end of this document.
- Using the bracket **AV 8606** and the lift hook, lift and remove the DCT gearbox again from the support tool **AM 107314**.

Refitting the complete DCT gearbox

- For the 458 Italia, 458 Spider, 458 Speciale, 458 Speciale A, FF, F12 Berlinetta, F12 TDF, GTC4 Lusso, GTC4 Lusso T, 488 GTB, 488 Spider, 812 Superfast, California T, California, 488 Pista, 488 Pista Spider, F8 Tributo, Monza SP1, Monza SP2 and Portofino, refit the complete DCT gearbox in the vehicle (as described in the Workshop Manual).

- IMPORTANT -

When refilling the GL oil and ATF fluid and inspecting the relative levels, replace all the oil/fluid plugs and the relative seals removed during the procedures described herein.



Ferrari North America

Filling the hydraulic clutch system with oil

- For the **Ferrari California, 458 Italia, 458 Spider, 458 Speciale, 458 Speciale A, 488 GTB, 488 Spider, FF, F12 Berlinetta, F12 TDF, GTC4 Lusso, GTC4 Lusso T, California T and 812 Superfast**, fill the hydraulic clutch system with DCT F-3 ATF oil (as described in the Workshop Manual).
- For the **488 Pista, 488 Pista Spider, F8 Tributo, Monza SP1, Monza SP2 and Portofino**, fill the hydraulic actuator system with oil (as described in the Workshop Manual).

Filling with gear oil

- For the **California, 458 Italia, 458 Spider, 458 Speciale, 458 Speciale A, FF, F12 Berlinetta, F12 TDF, GTC4 Lusso, GTC4 Lusso T, 488 GTB, 488 Spider, 812 Superfast and California T**, fill the gear oil system with Shell Transaxle 75W-90 GL5 gear oil (as described in the Workshop Manual).
- For the **488 Pista, 488 Pista Spider, F8 Tributo, Monza SP1, Monza SP2 and Portofino**, fill the DCT gearbox gear lubrication system (as described in the Workshop Manual).

Self-acquisition procedure

After replacing the SAP and/or CCP, reinstalling the gearbox in the vehicle and filling all oil circuits correctly, the following self-acquisition procedure must be performed to allow the system to reacquire all operating parameters necessary.

1. Connect the DEIS diagnostic tester to the vehicle.
2. Start the engine and run until the gearbox gear oil reaches operating temperature;
3. Check the gearbox gear oil level and the clutch hydraulic system oil level (as described in the Workshop Manual).

- IMPORTANT -

If any fault warning indicators illuminate or any errors are generated during the aforementioned procedures, stop the procedure and diagnose the cause of the error.

4. Perform the cycle “**40 NCR Valve cleaning test**” with the DEIS tester.
5. Test drive the vehicle normally for **30 minutes**, checking if any fault warning indicators illuminate or any gearbox malfunctions are noted during the test drive.



Ferrari North America

6. Upon returning to the service center, check that:
- no fault warning indicators are lit;
 - there are no signs of gearbox malfunction such as a slipping clutch, excessively harsh gear engagement or noise from the gearbox;
 - there are no errors indicated on the DEIS diagnostic tester;
 - there are no leaks.

- IMPORTANT -

- If any error codes relative to internal components of the gearbox are generated, diagnose the cause of the fault.
- If error “P193F” is generated after replacing the CCP, perform the DEIS cycle “30 NCR Calibration”;
- If error “P193F” is generated after replacing the SAP, perform the DEIS cycle “50 Gearbox Position Self-acquisition”.

Note: All DEIS calibration cycles must be performed with the vehicle on a flat surface with the longitudinal accelerometer calibrated correctly (with DEIS cycle “20 NCR Accelerometer self-acquisition”), and waiting at least 30 seconds between steps.

Thank you for your co-operation.

DCT Gearbox Pre-Diagnosis Form



Model	Updated on
<i>458 ITALIA 458 SPIDER 458 SPECIALE SPECIALE A California</i> <i>F12 tdf F12 berlinetta FF 488 PISTA California T</i> <i>488 SPIDER 488 PISTA Portofino GTC4LUSSO</i> <i>F8 TRIBUTO MONZA SP1 MONZA SP2 612superfast</i>	<p>October 2019</p>

VEHICLE FILE

Date:	Chassis number:
Model:	Dealer:
Market:	Vehicle Km/mi:
Gearbox No.:	ROL No. (if available):
Warranty start date:	Warranty end date:
Prior procedures on DCT gearbox (date and type of procedure):	

DIAGNOSTIC FILE

Provide description of oil leakage found (attach photos), specifying number of leaks, in reference to the drawings from page 2 to 4 of Technical Information 2622:

List any DTC errors in NCR (in reference to the list from page 7 to 15 of Technical Information 2622):

In the event of NOISE from gearbox/differential, specify:

Conditions in which noise occurs:

Vehicle speed:

Gear selected: N 1st 2nd 3rd 4th 5th 6th 7th R

During gear shift? YES NO

If noise occurs during gear shifting, specify:

Upshifts <input type="checkbox"/>	Downshifts <input type="checkbox"/>
Automatic mode <input type="checkbox"/>	Manual mode <input type="checkbox"/>
	Performance mode <input type="checkbox"/>

DCT Gearbox Pre-Diagnosis Form



Model	Updated on
<i>458 ITALIA</i> <i>458 SPIDER</i> <i>458 SPECIALE SPECIALE</i> <i>458A</i> <i>California</i> <i>F12 tdf</i> <i>F12 berlinetta</i> <i>FF</i> <i>488 PISTA SPIDER</i> <i>California T</i> <i>488 SPIDER</i> <i>488 PISTA</i> <i>Portofino</i> <i>GTC4 LUSSO</i> <i>F8 TRIBUTO</i> <i>MONZA SPI</i> <i>MONZA SP2</i> <i>812 SUPERFAST</i>	October 2019

If noise occurs with gear engaged, specify when:	Under acceleration	When lifting off throttle	Constant throttle (cruise)
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise is heard when:	Driving straight	Turning right	Turning left
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Describe the type of noise heard:	Negotiating traffic circle	Negotiating tight bend	Negotiating wide bend
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Whistle	Rumble	Gear noise
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Differential bevel gear	Vibration	Clunking
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the levels of the clutch hydraulic oil system (ATF) and the gearbox gear oil system (GL)			
Oil level (ATF)	Too high	Too low	OK
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil level (GL)	Too high	Too low	OK
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is metal debris found on plug?			
JOB FILE			
Job performed:			
Kit Part Nos. ordered:			

DCT Gearbox Pre-Diagnosis Form



Model	Updated on
<p> <i>458 ITALIA</i> <i>458 SPIDER</i> <i>458 SPECIALE SPECIALE A</i> <i>458 California</i> <i>F12 tdf</i> <i>F12 berlinetta</i> <i>FF</i> <i>488 PISTA SPIDER</i> <i>California T</i> <i>488 SPIDER</i> <i>488 PISTA</i> <i>Portofino</i> <i>GTC4LUSSO</i> <i>F8 TRIBUTO</i> <i>MONZA SPI</i> <i>MONZA SP2</i> <i>812 superfast</i> </p>	<p>October 2019</p>

Job performed on:	
<p><u>CCP</u></p> <p>Identification No. of old CCP:</p> <p>Identification No. of new CCP:</p>	<p><u>SAP</u></p> <p>Identification No. of old SAP:</p> <p>Identification No. of new SAP:</p>
<p>Any faults noted during repair procedure:</p>	

Task performed by (Dealer):

Technical Manager:

First name _____ Last name _____
 (Print) (Print)

Company stamp

_____ Full signature