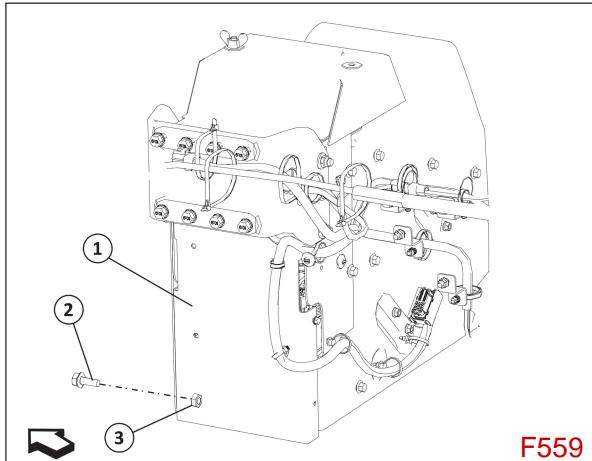


5.11 SCR SYSTEM (Applicable for BSIV Vehicles Only)

5.11.1 Adblue Dosing Pump -Albonair

5.11.1.1 Removal

- 1 a) Remove the dosing pump protection bracket given at the rear of the tank where pump is mounted.
- 2 b) Disconnect the air line from dosing pump.

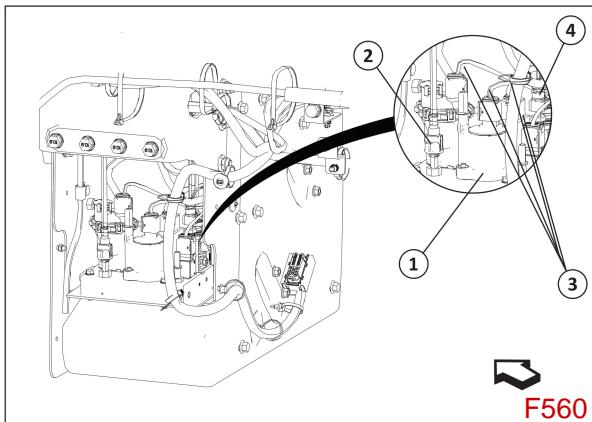


1. Dosing pump protection bracket 2. Bolt 3. Nut



Caution :

Switch off the ignition. Wait at least two minutes before the hoses are allowed for purging after treatment

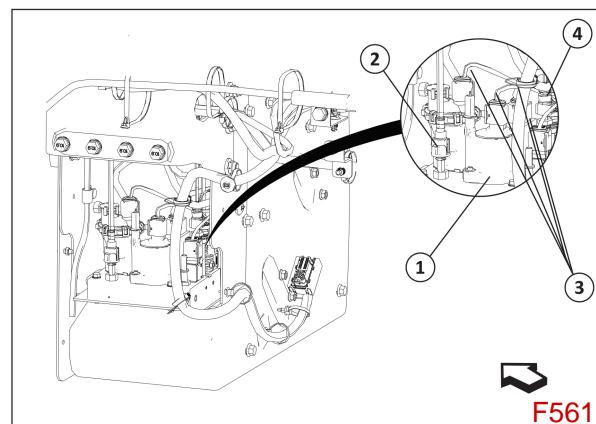


- 3 c) Disconnect the suction line from dosing pump by using roufoss tool 6 mm.
- 4 d) Disconnect the pressure line connection from dosing pump by using roufoss tool 8 mm.

- 5 e) Disconnect the wiring harness connectors by pulling the connector horizontally.
- 6 f) Remove the dosing pump mounting bolts and take out the unit.

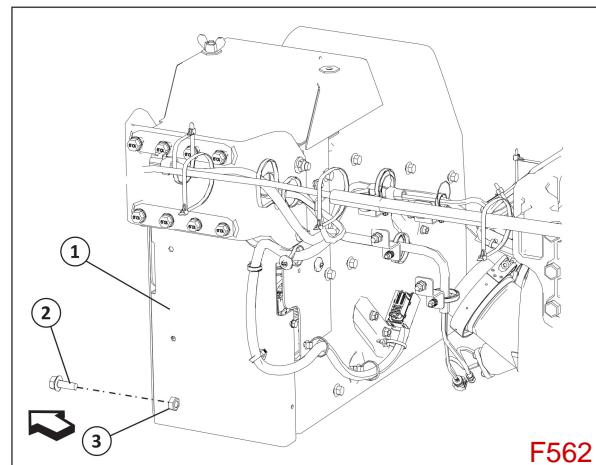
5.11.1.2 Re-fitment

- 1 a) Install the dosing pump unit on urea pump mounting bracket and the tighten the mounting bolts..
- 2 b) Connect the wiring harness connectors by pressing the connector horizontally.
- 3 c) Connect the suction air line connection on dosing pump by using roufoss tool 8 mm..
- 4 d) Connect the pressure air line on dosing pump by using roufoss tool 6 mm.



1. AdBlue dosing pump 2. Suction line
3. Wiring harness connectors 4. Pressure line

- 5 e) Connect the air line on dosing pump.
- 6 f) Install the dosing pump protection bracket from rear of the tank where pump is mounted.

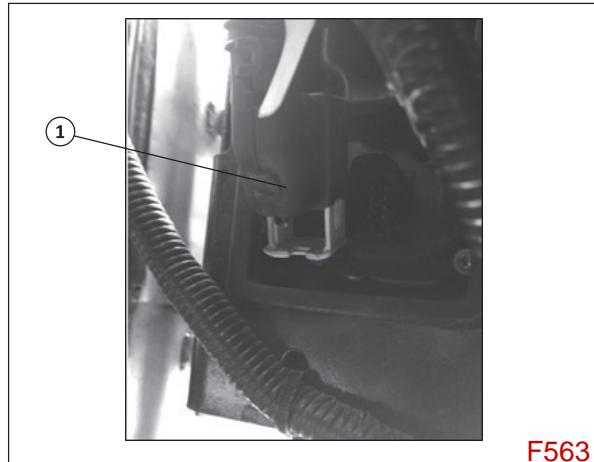


1. Dosing pump protection bracket 2. Bolt 3. Nut

5.11.2 Adblue Dosing Pump - BOSCH

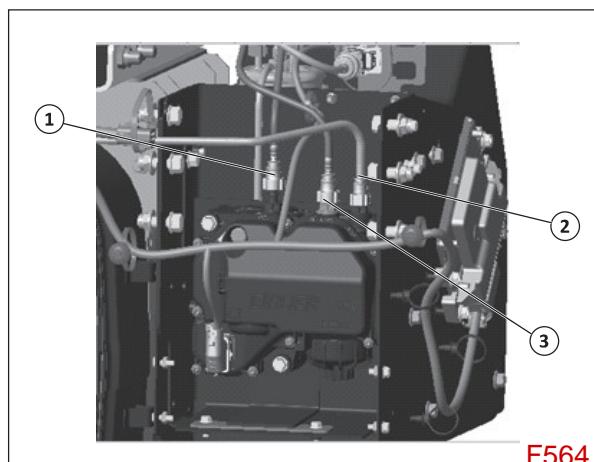
5.11.2.1 Removal

- 1 a) Remove the dosing pump protection bracket given at the rear of the tank where pump is mounted.
- 2 b) Disconnect the air line from dosing pump.
- 3 c) Disconnect the connector.



1. Connector

- 4 b) Disconnect the urea inlet, outlet and back flow lines (3).
- 5 c) Loosen and remove the lower and upper mounting bolts.

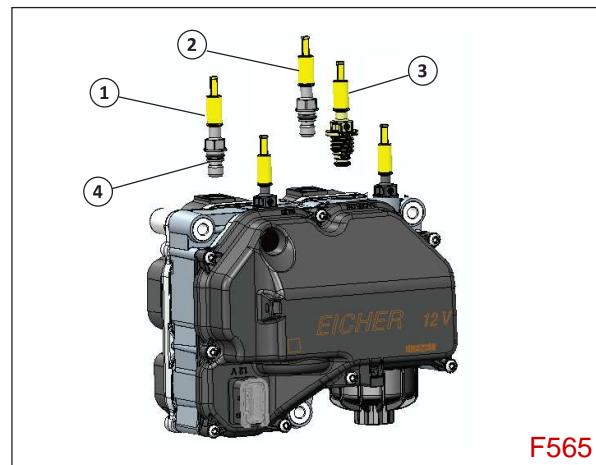


1. Urea inlet 3. Return line
2. Urea outlet 4. Bolt

- 6 d) Take out the supply module from vehicle

5.11.2.2 Disassembly Of Inlet, Outlet And Return Line Connectors

- a) Loosen and remove the AdBlue inlet, outlet and return line connectors along with o-ring by using the 17mm wrench.



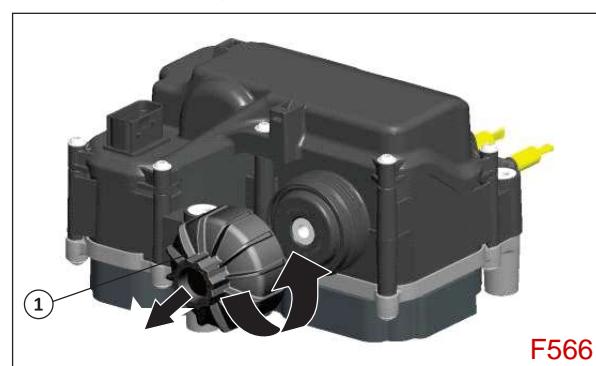
1. Outlet connector 2. Return line connector 3. Inlet connector
4. O-ring

NOTE :

Cover the connectors to prevent entry of dust and dirt.

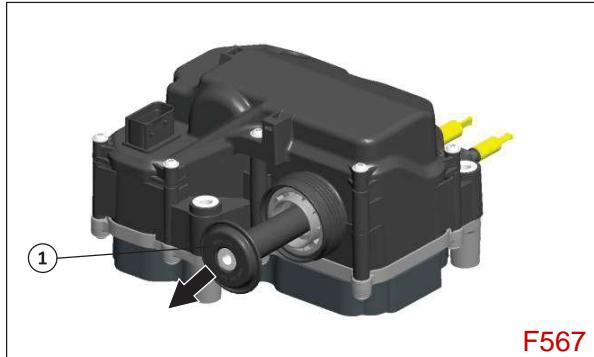
5.11.2.3 Disassembly of Dosing Pump Filter

- a) Remove the supply module as given in removal of supply module.
- b) Remove the filter cover with help of 27mm open and ring spanner wrench by rotating anticlockwise direction.



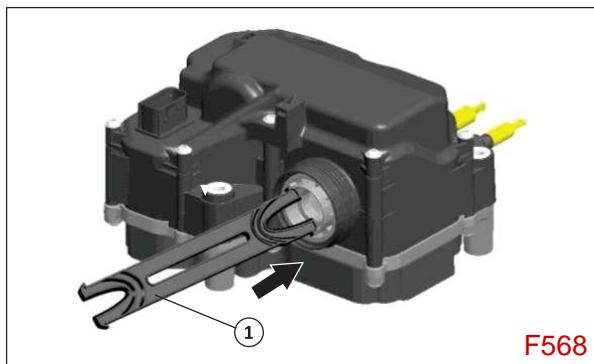
1. Filter cover

- 3** c) Remove the equalizing element by pulling out.



1. Equalizing element.

- 4** e) Insert black side edge of filter removal tool completely until a "click" is felt, or heard, indicating that the tool is completely inserted.

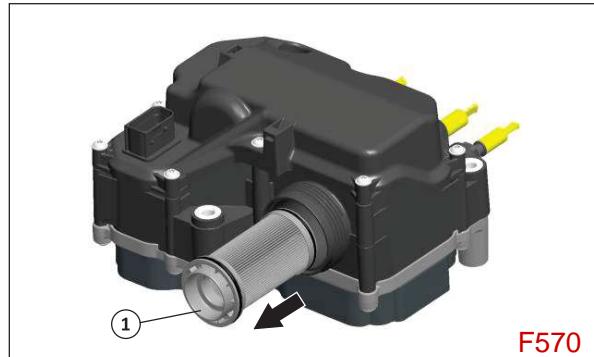


1. Filter removal tool



1. Filter

- 5** f) Pull out the filter along with O-ring with hand.



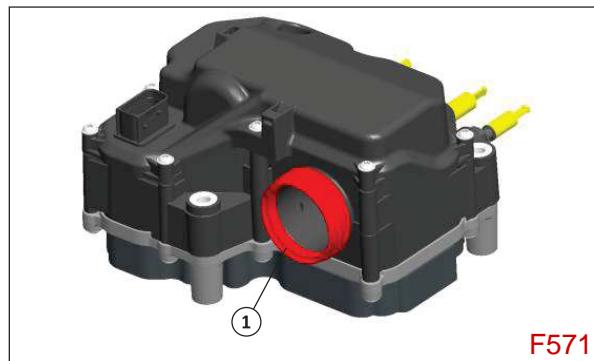
F570

NOTE : 2

Insert a tool on slot to help if necessary.

5.11.2.4 Assembly of Dosing Pump Filter

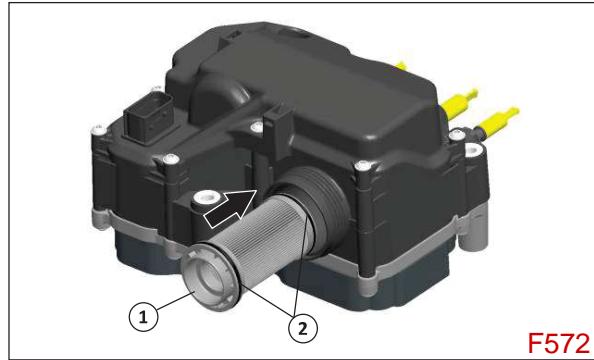
- 1** a) Clean surface of filter fitment area with water only.



F571

1. Filter fitment Surface

- 2** b) Lubricate the O-rings with recommended oil and insert the new filter assembly.



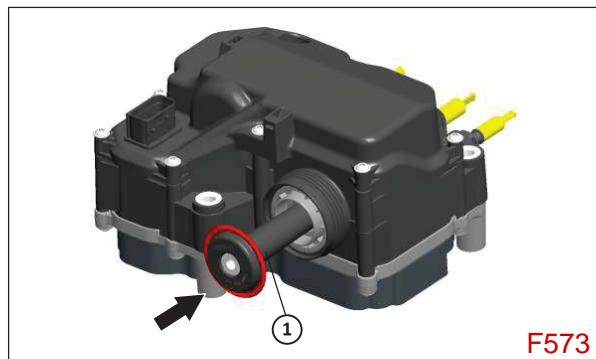
1. Filter 2. O-ring

NOTE : 3

Use recommended lubricant Mobil Veloce No. 6.

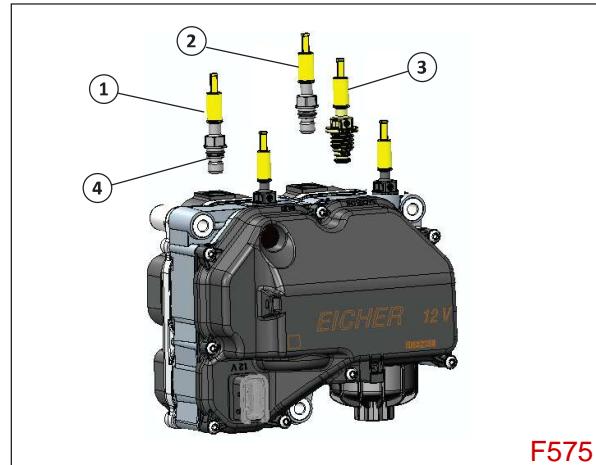
3

c) Insert the equalizing element.



1. Equalizing element

F573

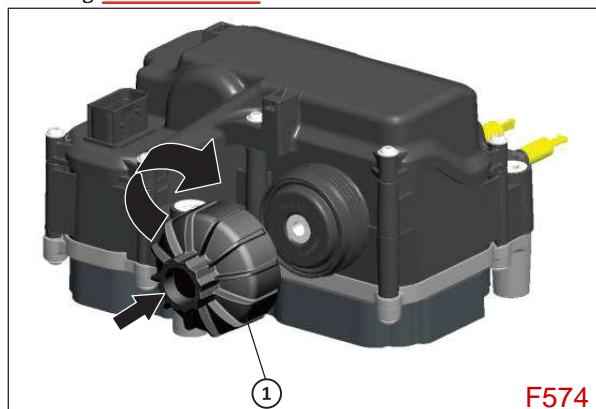


F575

1. Outlet connector 2. Back flow connector 3. Inlet connector
4. O-ring

4

d) Mount the filter cover and tighten by rotating in clockwise direction with specific torque of $20\text{Nm}+5$ by using 27mm wrench.

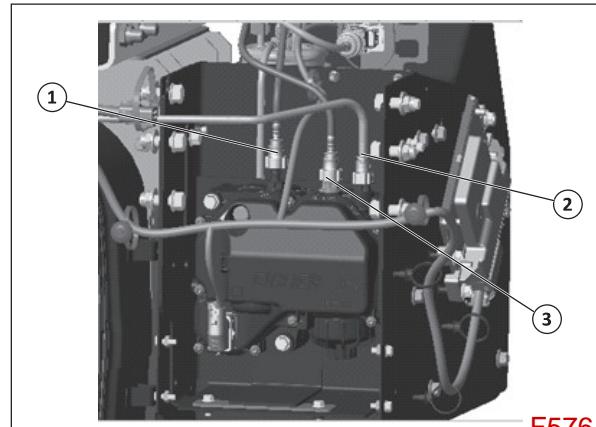


1. Filter cover

F574

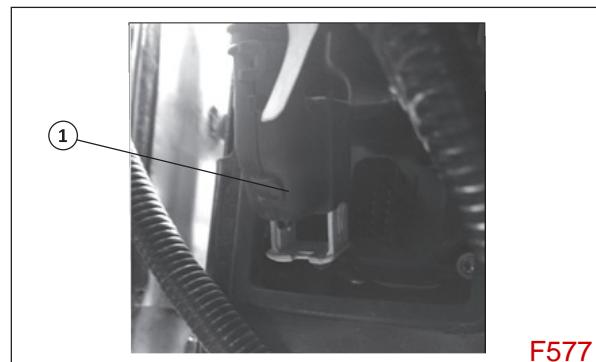


NOTE : 4
Filter cover change only in combination with a change of the equalizing element & filter.



F576

1. Urea inlet 3. Return line
2. Urea outlet 4. Bolt

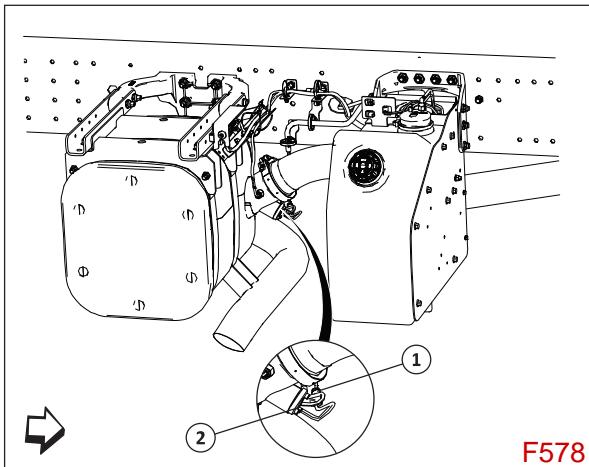


F577

1. Connector

5.11.3 Nozzle - Albonair**5.11.3.1 Removal**

- 1 a) Disconnect the air line connection.
b) Disconnect the AdBlue line connection.



1. Air line connection 2. Nozzle assembly

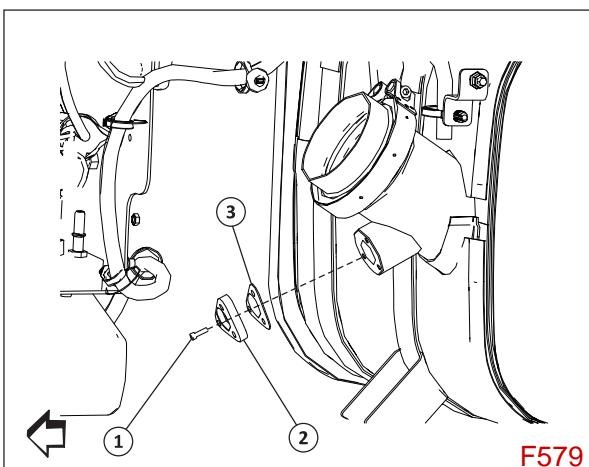
**WARNING :**

Exhaust pipe and component are hot & may cause personal injury.

**NOTE :**

Use new gasket whenever nozzle is opened.

- 3 c) Remove the AdBlue nozzle mounting bolts by using allen key and remove the plate along with gasket.



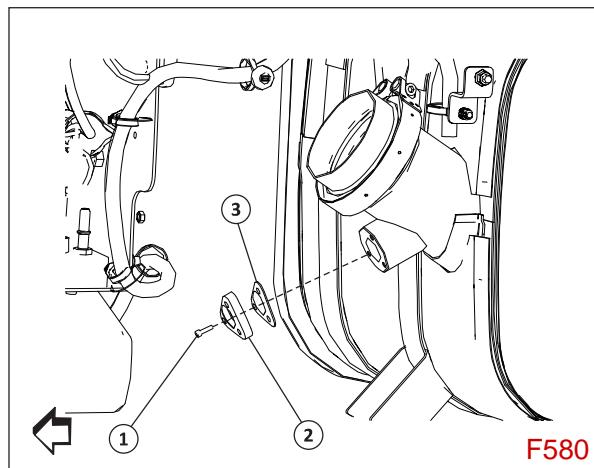
1. AdBlue nozzle bolt 2. Plate 3. Nozzle gasket

**NOTE :**

Use new gasket while refitment.

5.11.3.2 Re-fitment

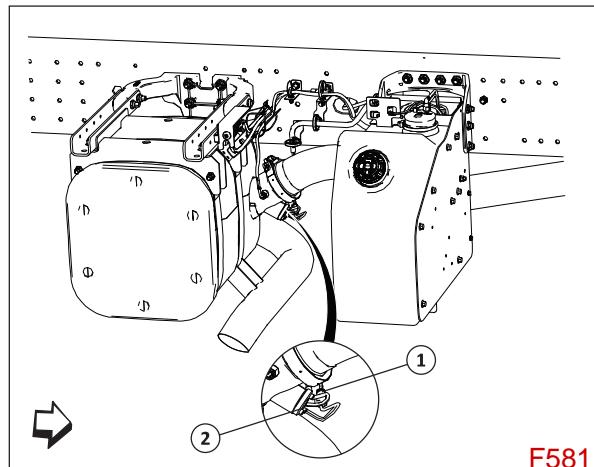
- a) Install the AdBlue nozzle mounting bolts by using allen key and fit the nozzle along with new gasket.



1. AdBlue nozzle bolt 2. Plate 3. Nozzle gasket

- 2 b) Connect the AdBlue line connection.

- 3 c) Connect the air line connection.

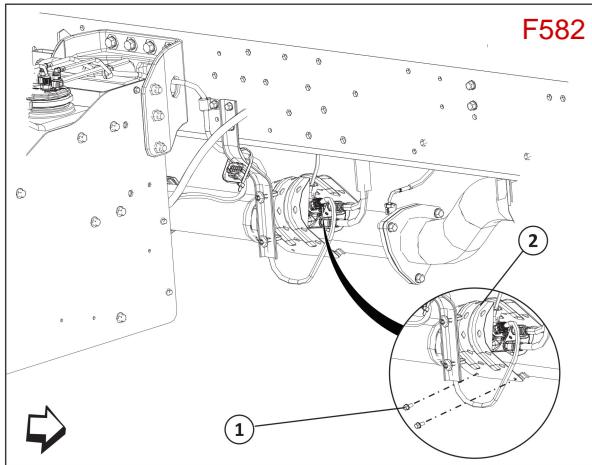


1. Air line connection 2. Nozzle assembly

5.8.2 Nozzle - BOSCH

5.8.2.1 Removal

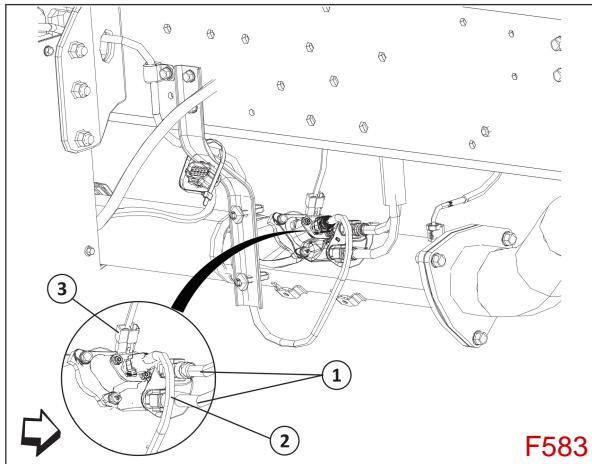
- 1 a) Remove the nozzle cover by removing the four mounting bolts.



1. Bolt 2. Nozzle cover

- 2 b) Disconnect the cooling water and AdBlue inlet line connections.

- 3 c) Disconnect the electric valve connector.

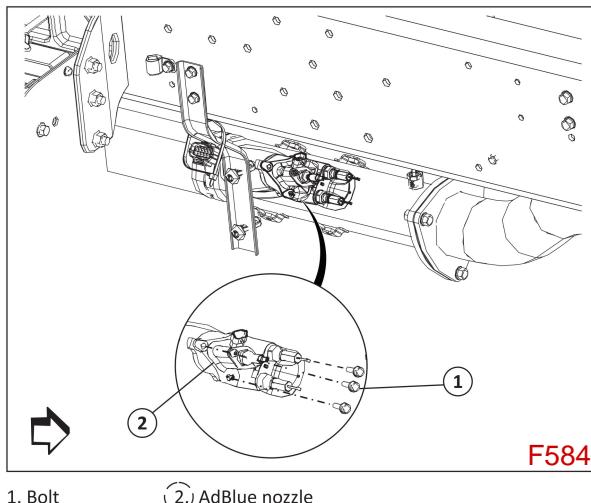


1. Cooling water connections 3. Electrical valve connector
2. Inlet AdBlue

⚠ WARNING : 2

Always remove the Exhaust pipe and component are in cold condition else may cause personal injury if removed in hot condition.

- 4 d) Remove the AdBlue nozzle mounting bolts by using allen key and remove the nozzle along with gasket.



1. Bolt 2. AdBlue nozzle

⚠ Caution : 2

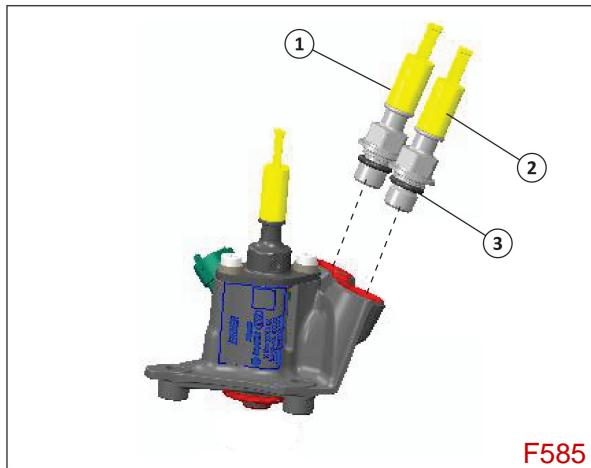
Keep AdBlue nozzle at safe place to avoid the entering dust particles.

NOTE : 8

Use new gasket only at the time of re-fitment.

5.8.2.2 Disassembly of AdBlue Nozzle Connector

- a) Loosen and remove the nozzle coolant connectors along with o-ring by rotating in anti-clockwise direction with the help of 15mm wrench.



1. Coolant inlet connector 2. Coolant outlet connector 3. O-ring

NOTE : 9

Cover the connectors to prevent entry of dust and dirt.

5.8.2.3 Assembly of AdBlue Nozzle Connector

- 1 a) Clean the sealing surfaces of connectors.

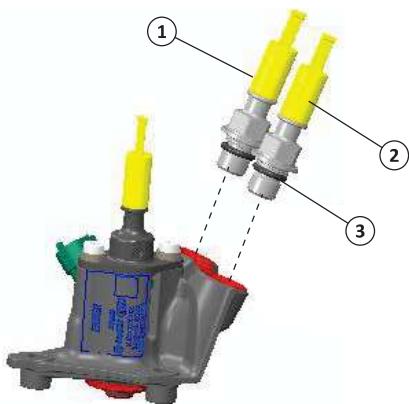
NOTE : 10

Use normal water to clean the connectors if required.

- 2 b) Lubricate the o-ring of connector with recommended oil only.
 3 c) Install and tighten the nozzle coolant connectors with specific torque of 5.5 ± 0.5 Nm by rotating in clockwise direction with the help of 15mm wrench.

NOTE : 11

Use Mobil velocite oil no. 61 lubricant for lubricating.



F586

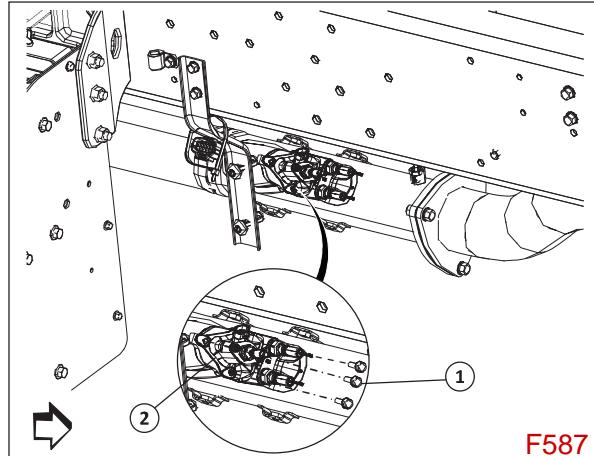
1. Coolant inlet connector 2. Coolant outlet connector 3. O-ring

NOTE : 12

Cover the connectors to prevent entry of dust and dirt.

5.8.2.4 Re-fitment

- 1 a) Install the AdBlue nozzle mounting bolts by using allen key and fit the nozzle along with new gasket.



1. Bolt

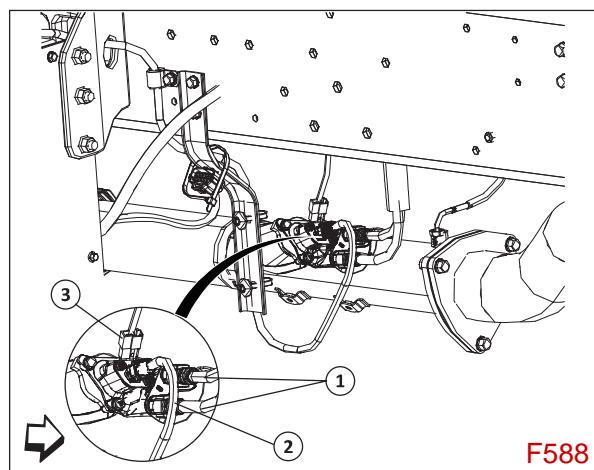
1. AdBlue nozzle

F587

NOTE : 13

Use new gasket only at the time of re-fitment.

- 2 b) Connect the cooling water and AdBlue inlet line connection.
 3 c) Connect the electric valve connector.



1. Cooling water connections

2. Inlet AdBlue

3. Electrical valve connector

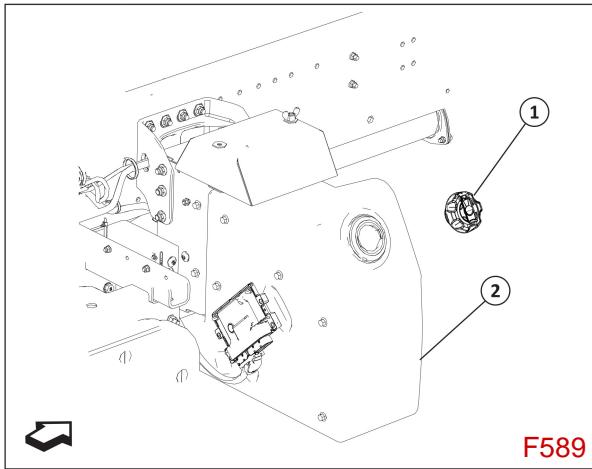
F588

- 4 d) Install the nozzle cover and tighten the mounting bolts.

5.11.4 Adblue Tank

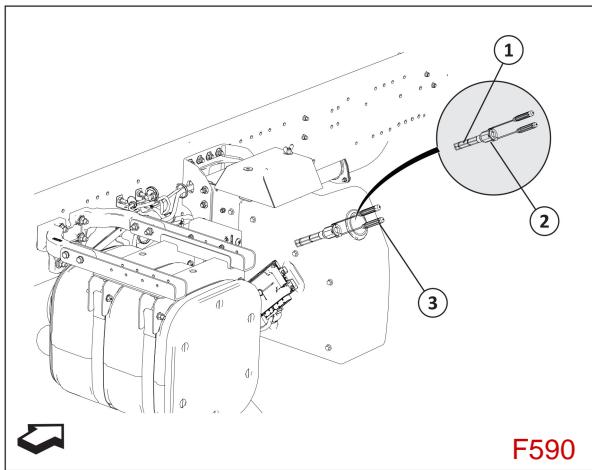
5.11.4.1 Removal

- a) Loosen and remove AdBlue tank filler lock cap by rotating counterclockwise direction.



1. Filler Cap 2. AdBlue tank

- 2 b) Remove the AdBlue tank filter by pressing filter neck with the help of screw driver.



1. Filter 2. Filter neck 3. Screw driver

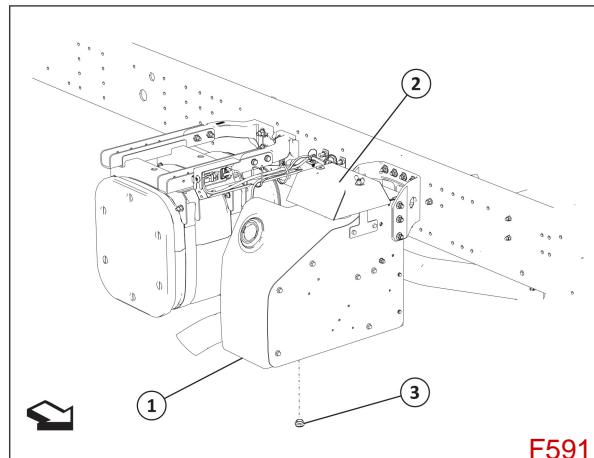
! Caution : 3

Use plastic or stainless steel equipment or container for handling AdBlue.

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2), Stainless steel 1.4401.

Unsuitable materials for containers: paper, iron, tin (tinplate), Copper, aluminum, glass, brass, zinc coated, zinc.

- 3 c) Remove the dust cover of AdBlue tank.
4 d) Drain the AdBlue from the bottom drain plug provided in tank.

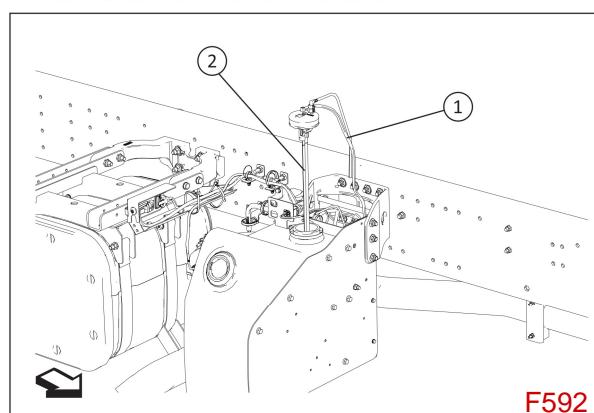


1. AdBlue tank 2. Dust cover 3. Drain plug

! WARNING : 3

Adblue can cause personal injury.
Use the appropriate protective equipment.
Adblue that is spilled on hot parts can vaporise quickly.
Turn away your face.
If Adblue comes into contact with skin or eyes, rinse thoroughly with water.
If Adblue is inhaled, breathe in fresh air.
When work is finished, clean the equipment and tools that have come into contact with AdBlue.

- 5 e) Disconnect the AdBlue level sensor wiring harness connector from AdBlue level sensor.



1. AdBlue wiring harness 2. AdBlue level sensor

! Caution : 4

Handle the level sensor with safety.

- 6** f) Disconnect the AdBlue lines from AdBlue level sensor and from nozzle.

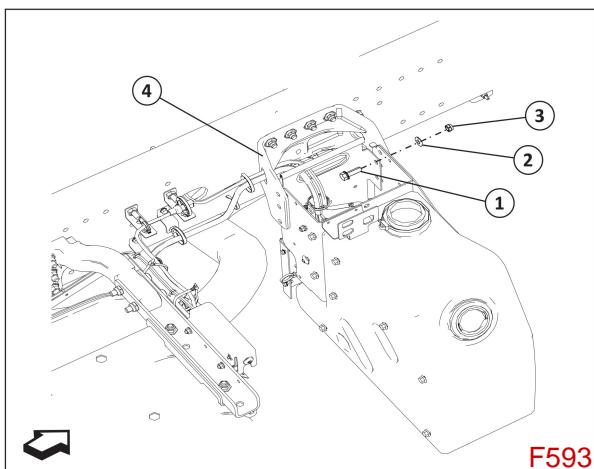
! Caution : 5

Don't keep AdBlue line open , where dust particles can enter.

NOTE : 14

Use normal water to clean the AdBlue lines if required.

- 7** g) Remove the tank side mounting bolts provided on tank holding bracket & take out the tank.



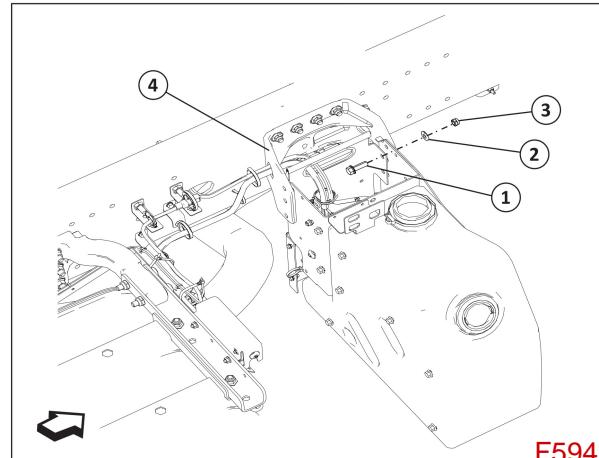
1. Bolt 2. Washer 3. Nut 4. Bracket

! Caution : 6

Ensure there is no dust particles inside the tank, Clean with normal water if required.

5.11.4.2 Refitment

- 1** a) Install the adBlue tank by tightening the side mounting bolts provided on tank holding bracket & fit the tank.



1. Bolt 2. Washer 3. Nut 4. Bracket

! Caution : 7

Ensure there is no dust particles inside the tank, Clean with normal water if required.

- 2b** b) Connect the AdBlue lines with AdBlue level sensor and nozzle.

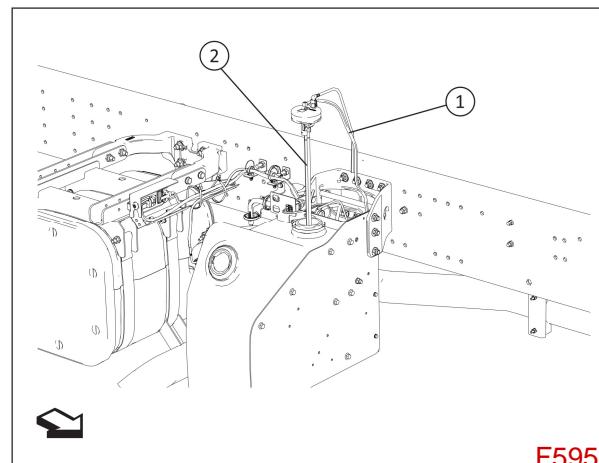
! Caution : 8

Don't keep AdBlue line open , where dust particles can enter.

NOTE : 15

Use normal water to clean the AdBlue lines if required.

- 3c** c) Connect the AdBlue level sensor wiring harness connector with AdBlue level sensor.

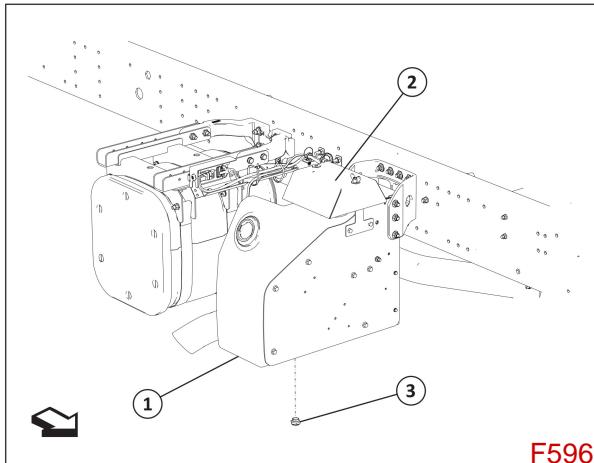


1. AdBlue wiring harness 2. AdBlue level sensor

! Caution : 

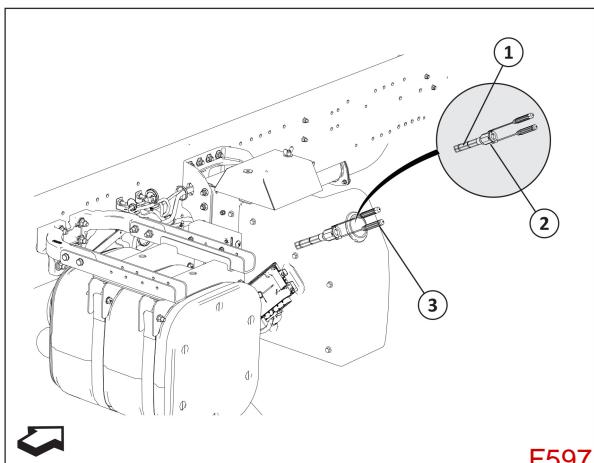
Handle the level sensor with safety.

- 4 d) Tighten the bottom drain plug provided in tank and fill the AdBlue in tank.
 5 e) Install the dust cover of AdBlue tank.



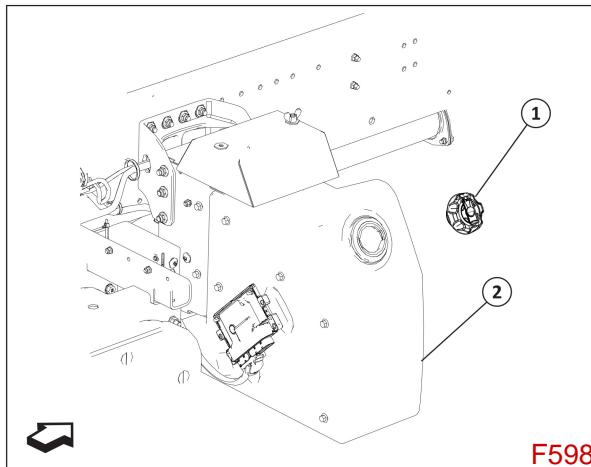
1. Adblue tank 2. Dust cover 3. Drain plug

- 6 f) Install the filter by pressing filter neck with the help of screw driver in to AdBlue tank.



1. Filter 2. Filter neck 3. Screw driver

- 7 g) Install and tighten the AdBlue tank filler lock cap by rotating clockwise direction.



1. Filler Cap 2. AdBlue tank

5.11.3.3 Measurement of Adblue concentration

- 1 a) Place the sample onto the prism surface



F599

- 2 b) Press the start key



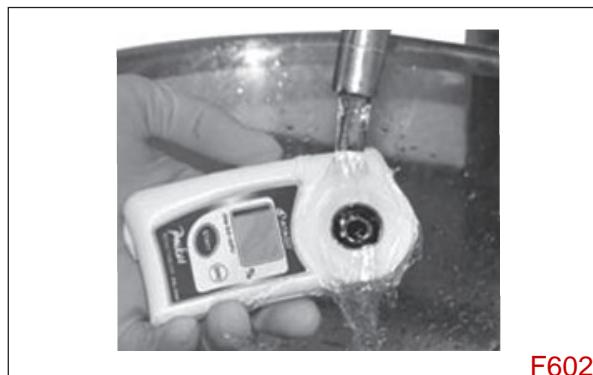
F600

- 3** c) The measured value will be displayed in 3 seconds



F601

- 4** d) Quick and easy cleanup.



F602



NOTE : 16

Clean with water after every test

5.11.5 Catalytic Convertor

5.11.5.1 Removal

- 1** a) Use jack or place the transmission removal trolley under the catalytic converter to provide the support before removal.



WARNING :

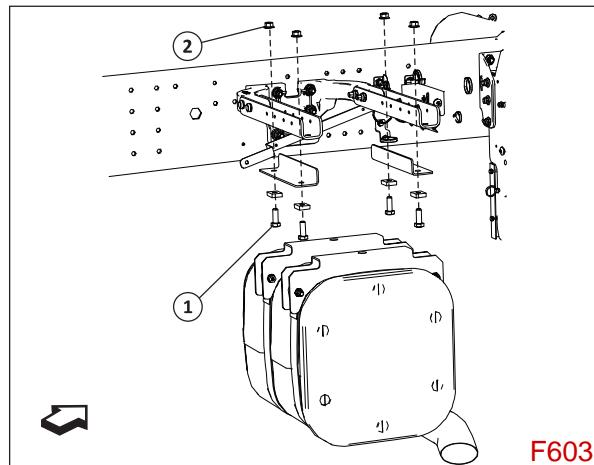
4

SCR catalytic convertor is heavy than normal exhaust. 2 or more persons are required for holding the catalytic converter while removal. Otherwise it can cause personal injury.

Exhaust pipe and component are hot & may cause personal injury.

- 2** b) Remove the catalytic converter mounting bolts.

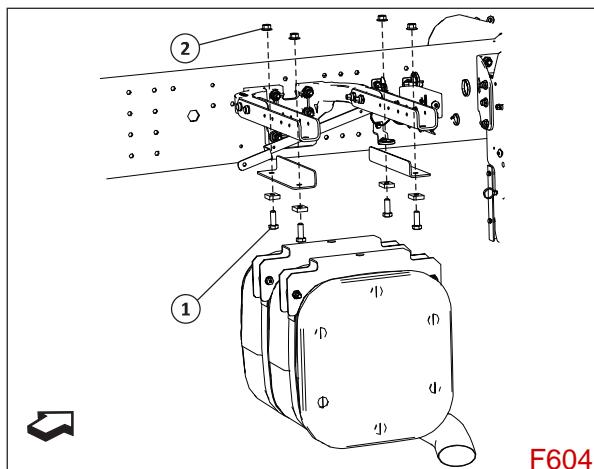
- 3** c) Hold the catalytic convertor assembly and remove from the vehicle.



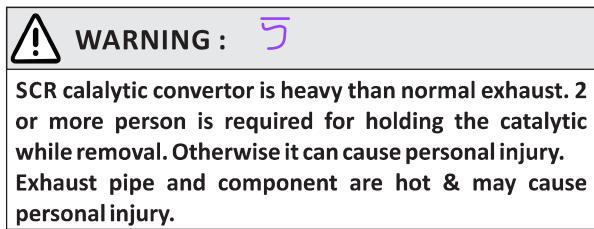
1. Bolt 2. Nut

5.11.5.2 Re-fitment

- 1** a) Install the catalytic converter and tighten the mounting bolts with muffler bracket.
- 2** b) Use jack or place the transmission removal trolley under the catalytic convertor to provide before fitment..



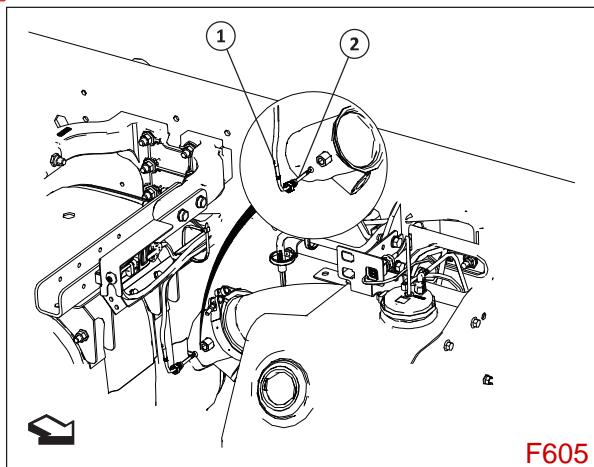
1. Bolt 2. Nut



5.11.6 Temperature Sensor

5.11.6.1 Removal

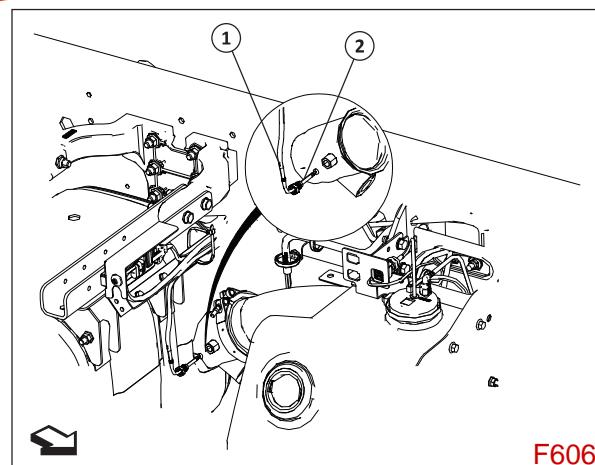
- 1 a) Remove the wiring harness of temperature sensor.
- 2 b) Loosen the sensor and take it out.



1. Temperature sensor wiring harness 2. Temperature sensor

5.11.6.2 Re-fitment

- 1 a) Install the temperature sensor on exhaust out let pipe.
- 2 b) Connect the wiring harness of temperature sensor.

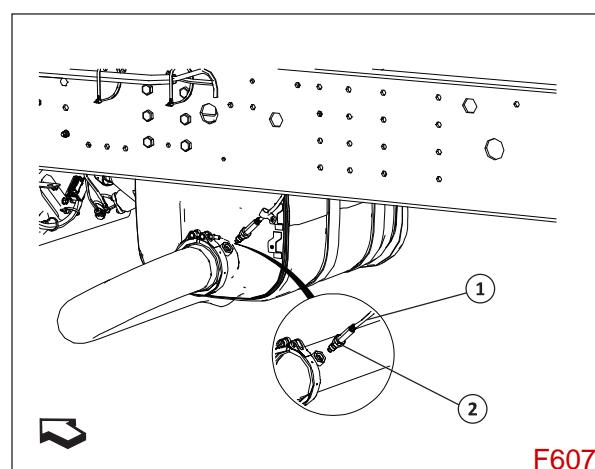


1. Temperature sensor wiring harness 2. Temperature sensor

5.11.7 Nox Sensor

5.11.7.1 Removal

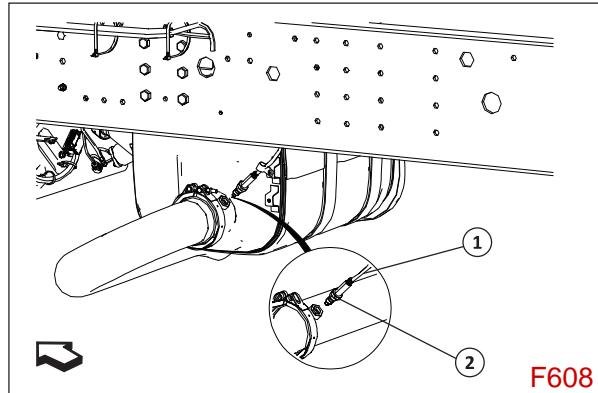
- 1 a) Remove the wiring harness of NOx sensor.
- 2 b) Loosen the sensor and take it out.



1. NOx wiring harness 2. Nox sensor

5.11.7.2 Re-fitment

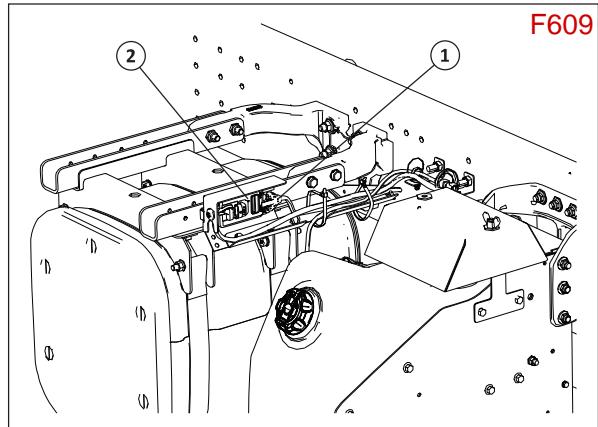
- 1** a) Install the NOx sensor on exhaust outlet pipe.
2 b) Connect the wiring harness of NOx sensor.



1. NOx wiring harness 2. Nox sensor

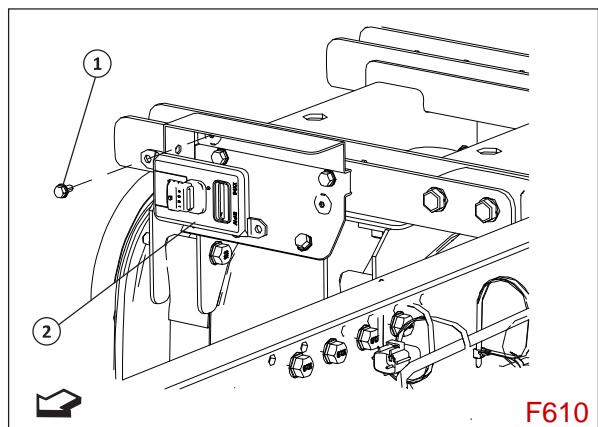
5.11.8 Nox Sensor ECU**5.11.8.1 Removal**

- 1** a) Disconnect and remove the wiring harness connectors from of NOx sensor ECU.



1. NOx sensor connector 2. Nox sensor ECU

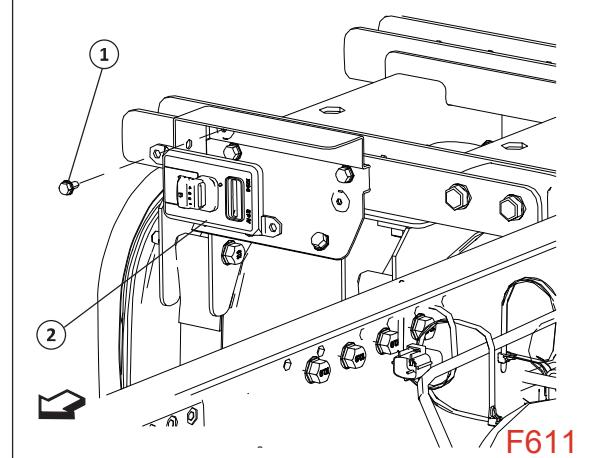
- 2** b) Loosen and remove the mounting bolts of Nox sensor ECU and take it out.



1. Bolt 2. Nox sensor ECU

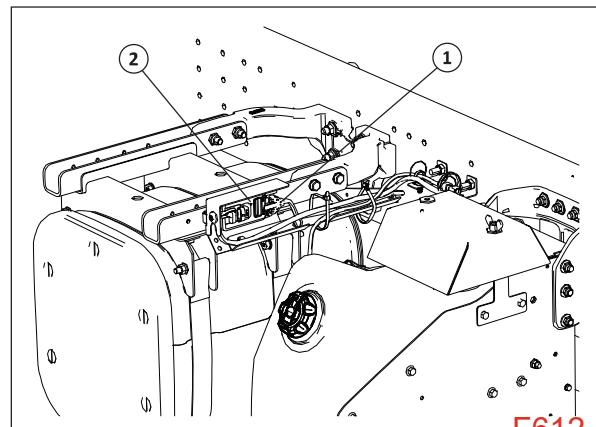
5.11.8.2 Re-fitment

- 1** a) Install the NOx sensor ECU on muffler bracket and tighten with mounting bolts.



1. Bolt 2. Nox sensor ECU

- 2** b) Connect the wiring harness connectors on NOx sensor ECU.

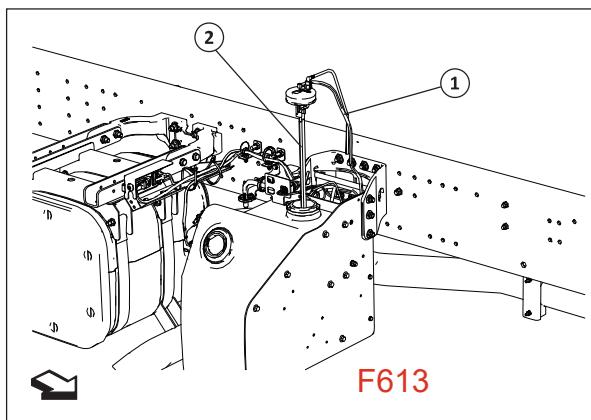


1. NOx sensor connector 2. Nox sensor ECU

5.11.9 AdBlue Level Sensor - Albonair

5.11.9.1 Removal

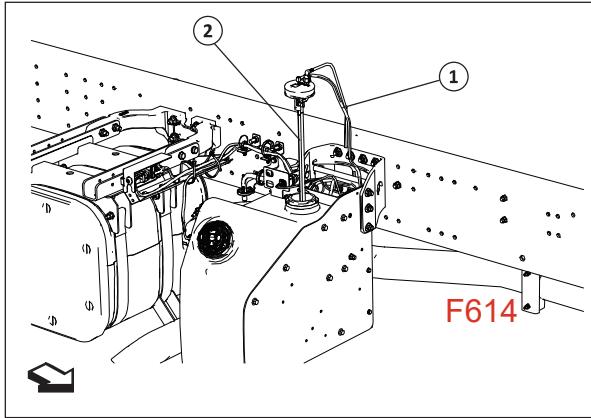
- 1 a) Follow the AdBlue tank assy. removal process (applicable for Pro 6000 Trucks) or lift the tipper body (applicable for Pro 6000 Tippers). then remove the sensor from tank.
- 2 b) Remove the band clip provided on rubber cap on AdBlue level sensor, remove the sensor by taking upward from the tank.



1. AdBlue wiring harness 2. AdBlue level sensor

5.11.9.2 Re-fitment

- 1 a) Install the band clip on rubber cap on Adblue level sensor, install the sensor by taking downward into the tank.
- 2 b) Follow the Adblue tank assy refitment process (applicable for Pro 6000 Trucks) and lift the tipper body (applicable for Pro 6000 Tippers) then install the sensor into the tank.

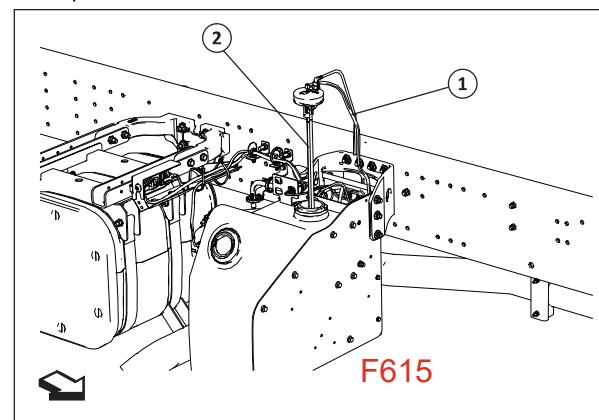


1. Adblue wiring harness 2. Adblue level sensor

5.11.10 AdBlue Level Sensor - BOSCH

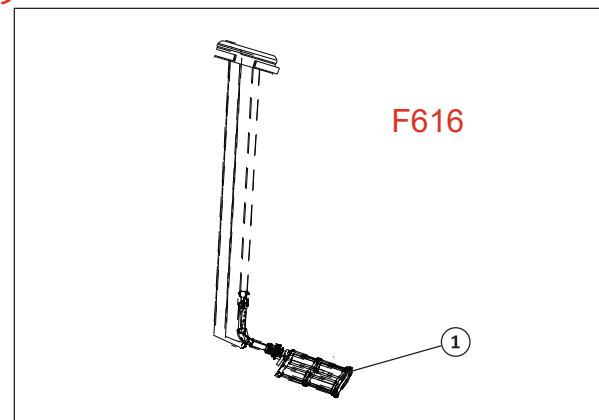
5.11.10.2 Removal

- 1 a) Follow the AdBlue tank assy. removal process (applicable for Pro 6000 Trucks) or lift the tipper body (applicable for Pro 6000 Tippers). then remove the sensor from tank.
- 2 b) Remove the band clip provided on rubber cap on AdBlue level sensor, remove the sensor by taking upward from the tank.



1. AdBlue wiring harness 2. AdBlue level sensor

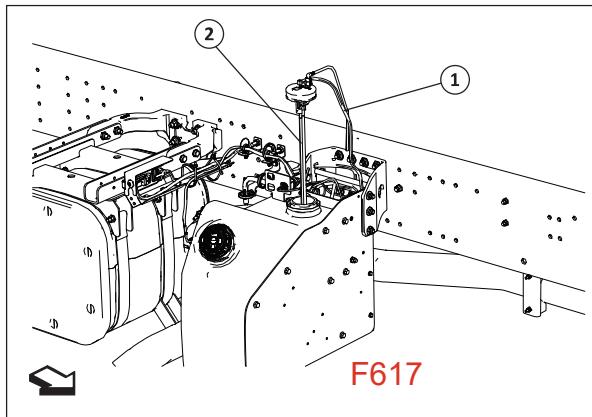
- 3 b) Remove the AdBlue level sensor pick up filter.



1. Pick up filter

5.11.9.2 Re-fitment

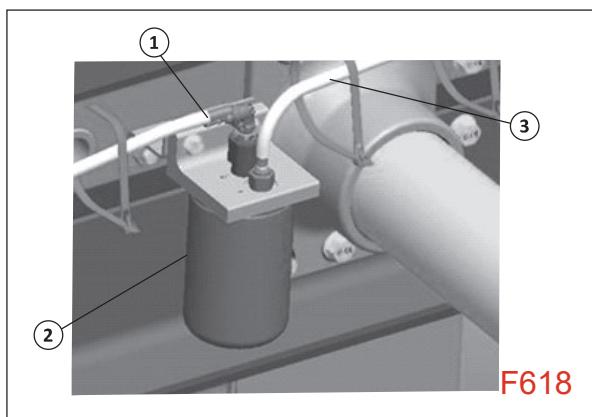
- 1 a) Install the band clip on rubber cap on Adblue level sensor, install the sensor by taking downward into the tank.
- 2 b) Follow the Adblue tank assy refitment process (applicable for Pro 6000 Trucks) and lift the tipper body (applicable for Pro 6000 Tippers) then install the sensor into the tank.



1. Adblue wiring harness 2. Adblue level sensor

5.11.11 Air Oil Separator**5.11.11.1 Removal**

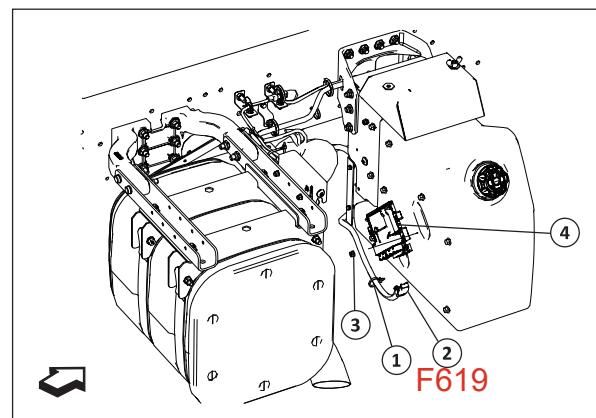
- 1 a) Disconnect the air inlet pipe from air oil separator filter
- 2 b) Disconnect the air outlet pipe from air oil separator filter.
- 3 c) Rotate air oil separator (spin on) assembly anti clockwise direction by using wrench (standard tool) then take out.



1. Air filter 2. Air in pipe 3. Air outlet pipe

5.11.11.2 Re-fitment

- 1 a) Install the air oil separator assembly by hand tight from base level.
- 2 b) Install and connect the air outlet pipe onto air oil separator filter.
- 3 c) Install and connect the air outlet pipe onto air oil separator filter.

5.11.12 ACM (After treatment Control Module)**5.11.12.1 Removal**

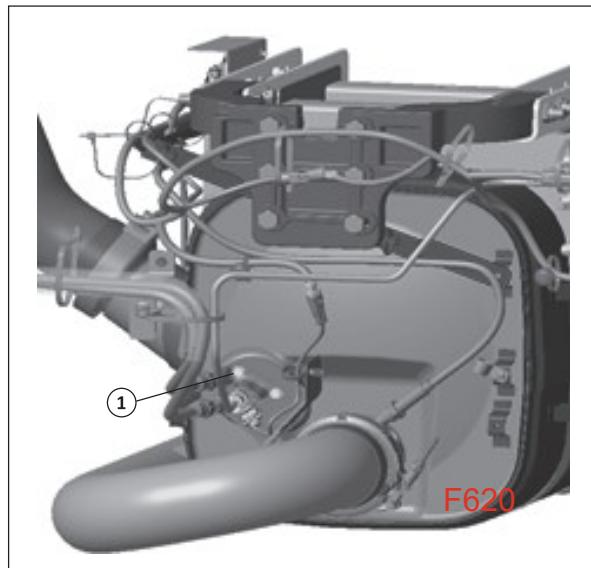
1. Tie clip
2. ACM harness
3. Nut
4. ACM
- 1 a) Remove the tie clip and disconnect the ACM harness.
- 2 b) Loosen the ACM mounting nut mounted on AdBlue tank and remove the ACM

5.11.12.2 Re-fitment

- 1 a) Install the ACM on AdBlue tank and tighten with mounting nut
- 2 b) Connect the ACM harness on ACM and tie with tie clip.

5.12 Back pressure measuring Procedure (Muffler Clogging - Inspection Process)

- 1 a) Remove the Nozzle mounting 03 bolts from muffler and disconnect the Dozing Module (Nozzle) from muffler.
- 2 b) Take out the steel gasket from dozing module.



1. Mounting bolt



NOTE : 17

Don't Damage the gasket it will be reused for installing dozing module.

- 3 c) Install the back pressure measuring tool ST000206i in the place of nozzle by using 03 mounting bolts of Nozzle.



F622



F623

- 4 d) Start the engine.
- 5 e) Press the accelerate pedal and keep the engine rpm at 1800 to 2000 rpm.
- 6 f) Pressure in the gauge will be increase



F624

- 7 g) If it is exceed more than 100 kpa, muffler is clogged
then kindly contact the technical team for further
action.

