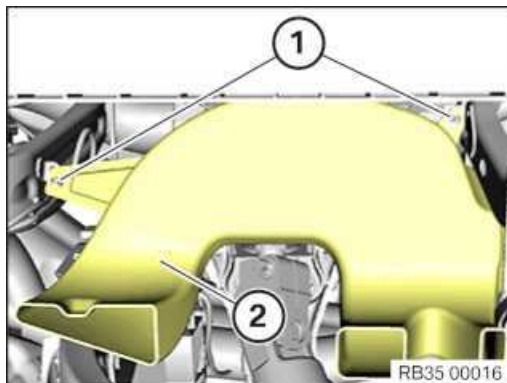
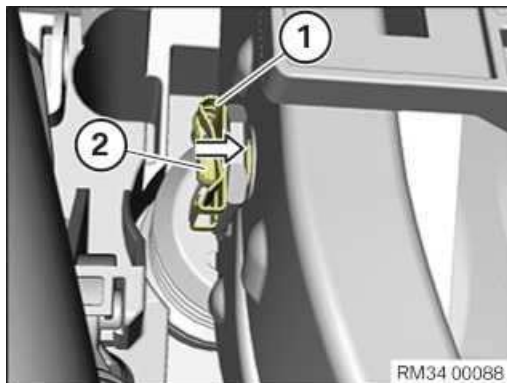


35 11 000 Completely removing and installing the bearing support for the pedal mechanism (automatic transmission)

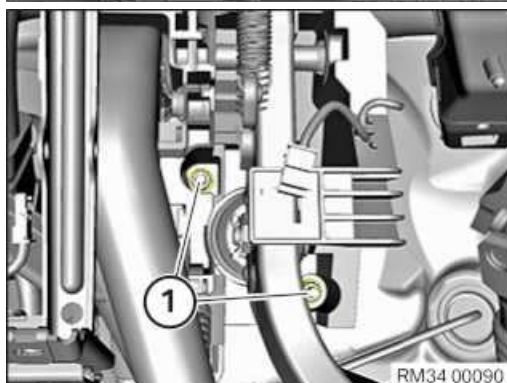
1 – Removing the bearing support (automatic transmission)



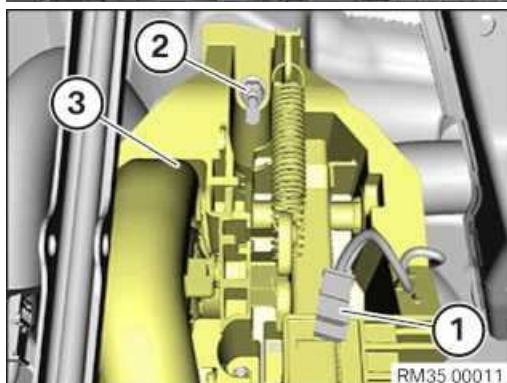
- Remove air duct (1).



- Pull off the retaining clip (1) on the brake pedal, detach the retaining bolt (2) and pull out.

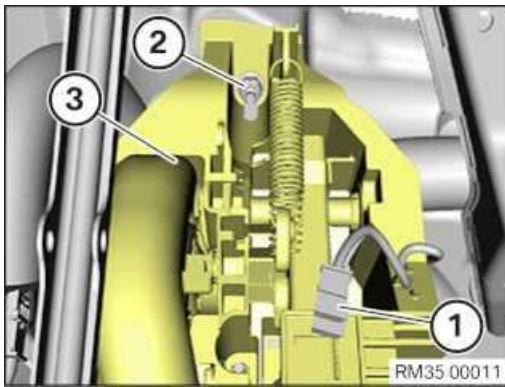


- Loosen nuts (1).



- Disconnect plug connection (1) on brake light switch.
- Release nut (2) and remove bearing support (3).

2 – Install the bearing support (automatic transmission)



- Install bearing support (3).
- Renew nuts (2).

Parts: Nuts

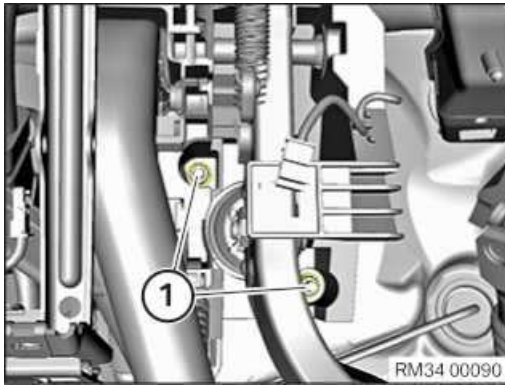
- Place and tighten nuts (2).

Pedal bracket on body

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------

- Connect the plug connection (1).

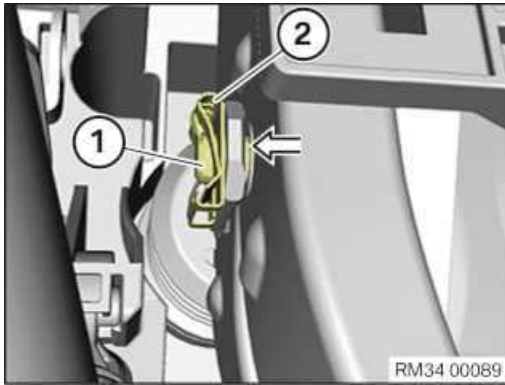


- Renew nuts (1).
- Install the nuts (1) and tighten.

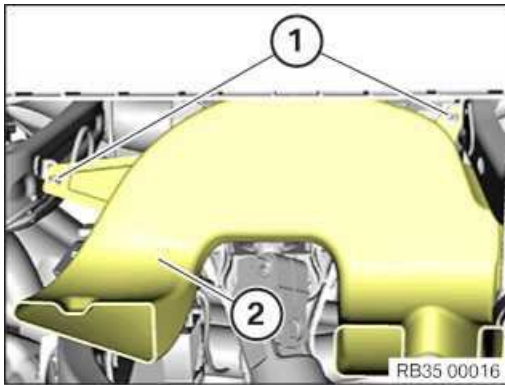
Brake booster to pedal assembly console

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------



- Install the retaining bolt (1) through the brake pedal.
Lightly grease the retaining bolts (1).
- Renew the retaining clip (2).
- Parts:** Retaining clip
- Mount the retaining clip (2) at the retaining bolt.



- Install air duct (1).



- Install non-return valve (1) in direction of arrow into brake booster.

Additional Information

Overview of Tightening Torques

Pedal bracket on body

Used in step 2

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------

Brake booster to pedal assembly console

Used in step 2

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------

35 11 000 Removing and installing bearing support for pedal mechanism completely (vehicles with manual gearbox)

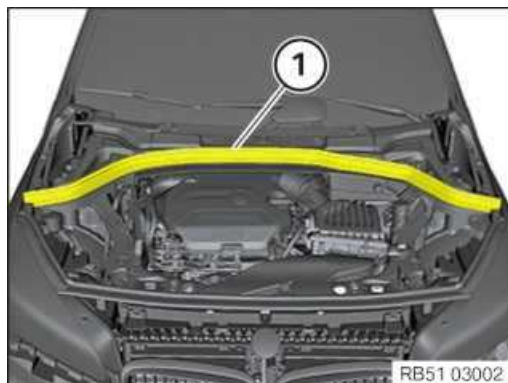
PRELIMINARY WORK

1 – Remove the seal for the rear bonnet



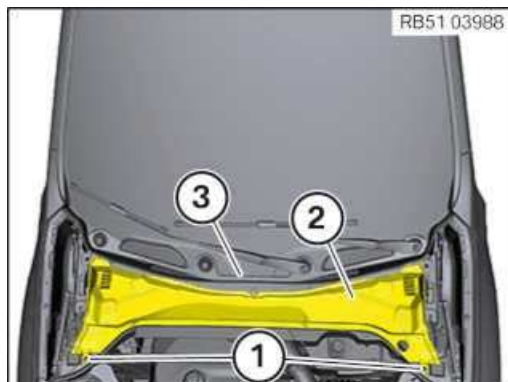
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



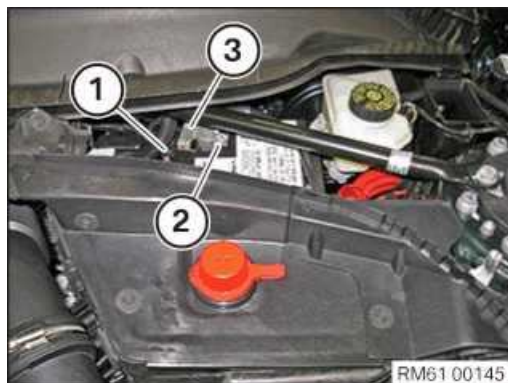
- Pull off rear bonnet seal (1) towards the top and remove.

2 – Removing front cowl panel cover



- Loosen the expanding rivet (1).
- Feed out and remove front cowl panel cover (2) from the rear cowl panel cover(3).

3 – Disconnecting the battery earth lead



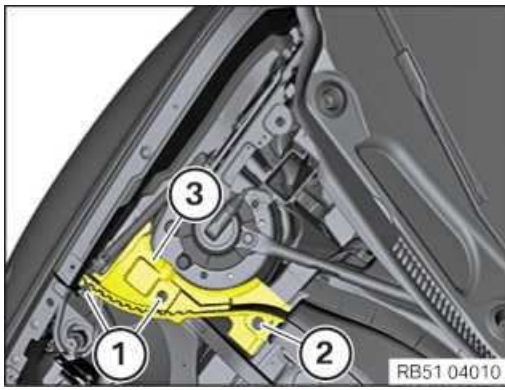
- Unlock plug connection (1) and disconnect.
- Unfasten nut (2).
- Remove the battery earth lead (3) and secure to one side.

4 – Remove suspension cross-brace



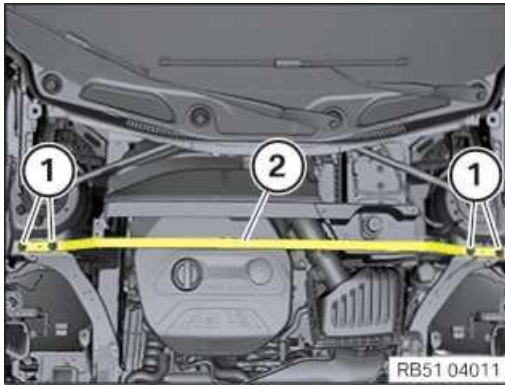
TECHNICAL INFORMATION

Driving without the strut brace/front end or tension strut is not permitted.



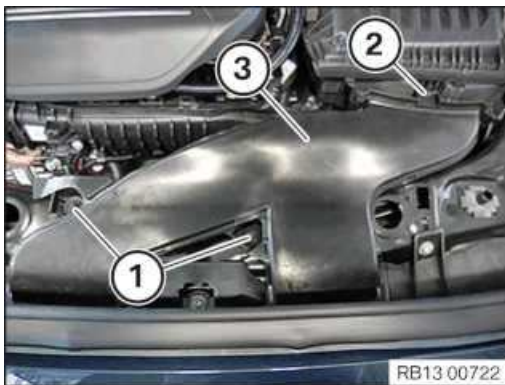
NOTICE

Description is for right component only. The procedure on the left side is identical.



- Loosen expanding rivet (1).
- Loosen screw (2).
- Remove the cover (3).
- Loosen screws (1).
- Remove strut brace (2).

5 – Remove the intake neck for intake silencer housing



- Loosen nuts (1).
- Loosen the lock (2).
- Guide the intake neck (3) out and remove it.

6 – Removing intake silencer housing



- Loosen the holder (1).
- Loosen screw (2).
- Unlock and loosen connector (3).
- Unfasten clamp (4).
- Pull out and remove the intake silencer housing (5) from the rubber mounts towards the top.

7 – Remove vehicle battery

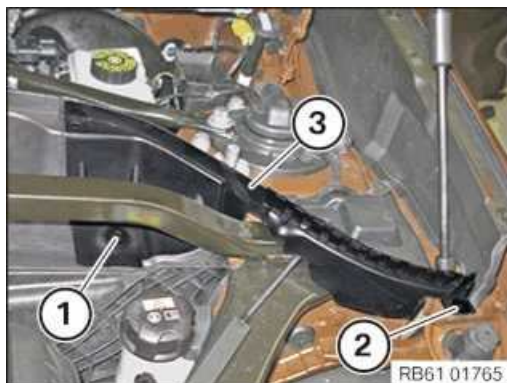


WARNING

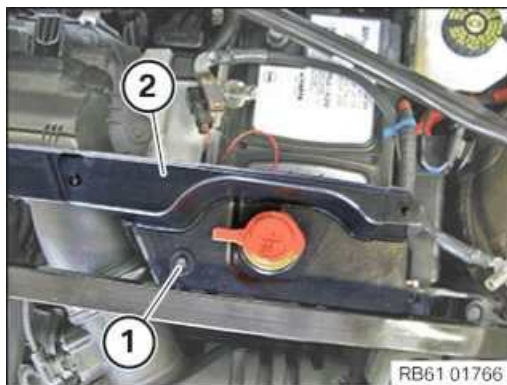
Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

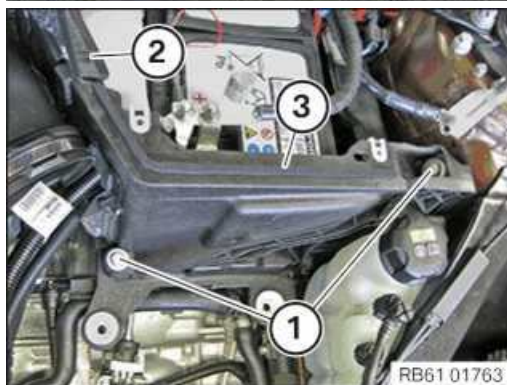
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.



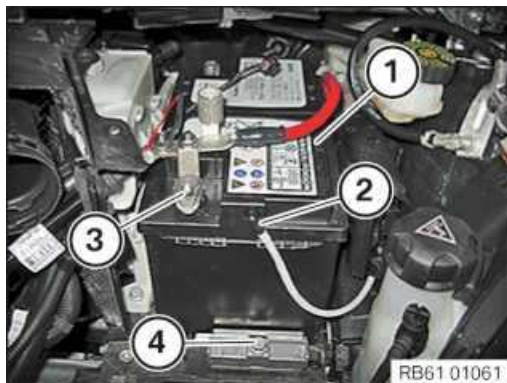
- Release the screw (1) and the expanding rivet (2).
- Remove the fixture for the gasket (3).



- Loosen screw (1).
- Remove the cover (2).



- Loosen screws (1).
- Unscrew the bolt (2) and guide the tension strut (3) out.



- Pull off the vent hose (2).
- Slacken the nut (3) on the positive battery terminal and remove the positive battery terminal.



WARNING

Unprotected battery terminals.

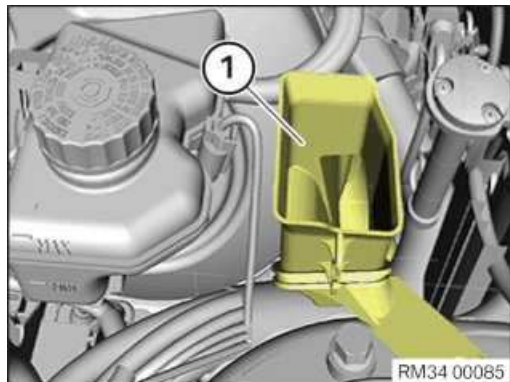
Risk of short circuits! Risk of fire!

- Cover the vehicle battery.
- Loosen the screw (4) and remove the holder.
- Remove vehicle battery (1).

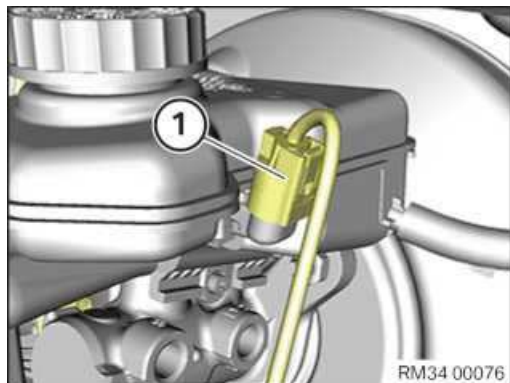
8 – Removing expansion tank (vehicles with manual gearbox)

Prerequisite

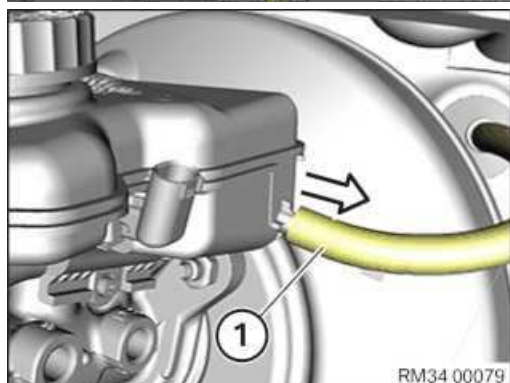
Brake fluid has been drawn off.



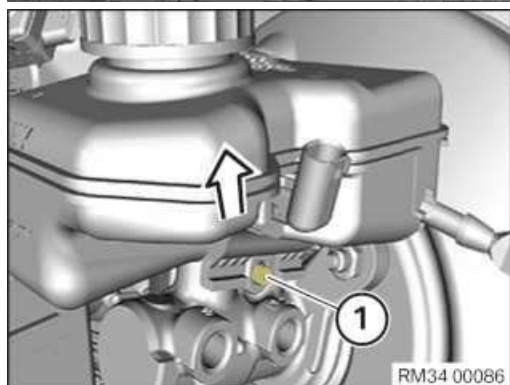
- Remove the water drain channel (1).



- Disconnect plug connection (1).

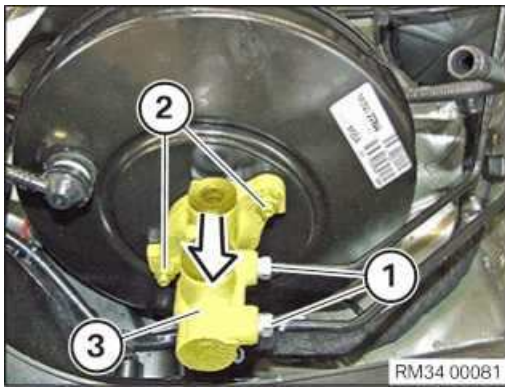


- Pull off feed line (1) for the clutch hydraulic system in the direction of arrow.



- Loosen screw (1).
- Remove expansion tank upwards.

9 – Remove the tandem brake master cylinder.



- (1) Unfasten brake lines.
- Loosen nuts (2) and remove tandem brake master cylinder (3).

10 – Remove left and right wiper arm

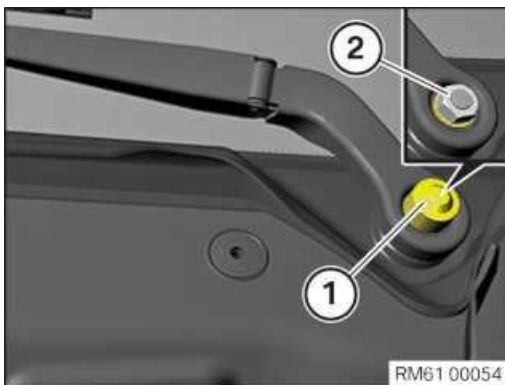


RISK OF DAMAGE

Damage to wiper console

While removing the wiper arms without using special tool, the wiper console can break.

- Removing the wiper arms must be carried out only using the prescribed special tool.
- Do not lift off wiper arm, else the wiper console may break on the predetermined breaking point for the pedestrian protection.



- Pull off the protective cap (1) and release the nut (2) below it.



- Pull off windscreen wiper arm (1) with special tool.

11 – Remove the gutter strip on the windscreen on the left and right



NOTICE

Description is for left component only. Procedure on the right side is identical.

- Remove the gutter strip on the windscreen

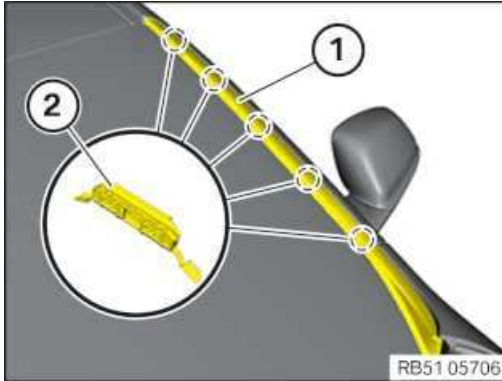


RISK OF DAMAGE

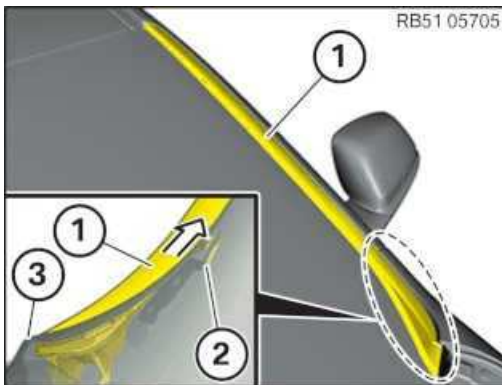
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Unclip the gutter strip (1) from the clamps (2) beginning at the roof to the top.



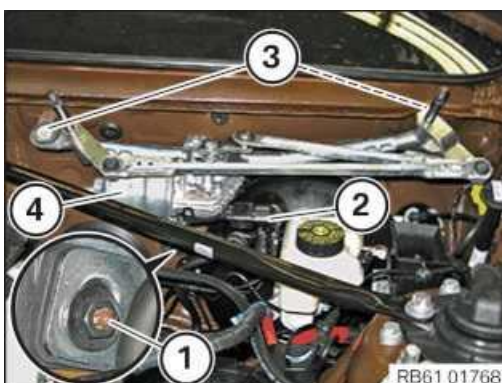
- Pull out the gutter strip (1) from the guide (2) in direction of arrow and carefully feed out at the side panel (3).

12 – Remove the rear cowl panel



- Pull off the cowl panel cover (1) towards the top, starting from the side and feed out.

13 – Removing the console for the windscreen wiper system complete with motor

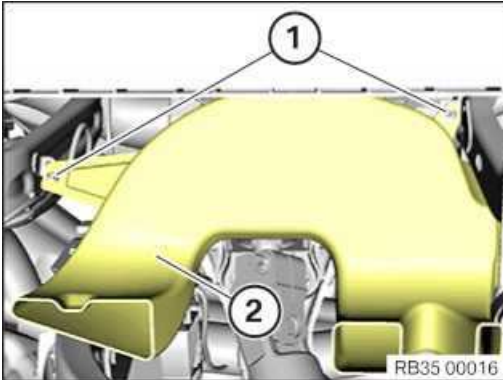


- Unfasten nut (1).
- Loosen screws (3).
- Unlock connector (2) and disconnect (see next figure).
- Remove the console for the windscreen wiper system (4).

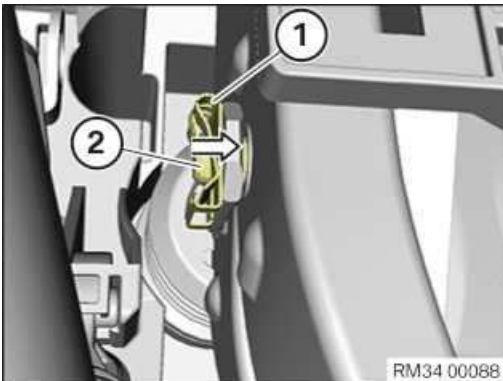


- Press lock on the connector underside and pull out the connector.

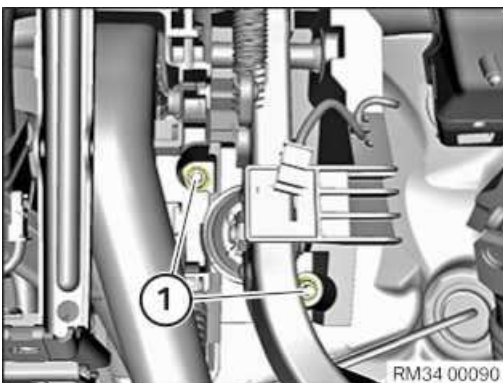
14 – Remove brake booster



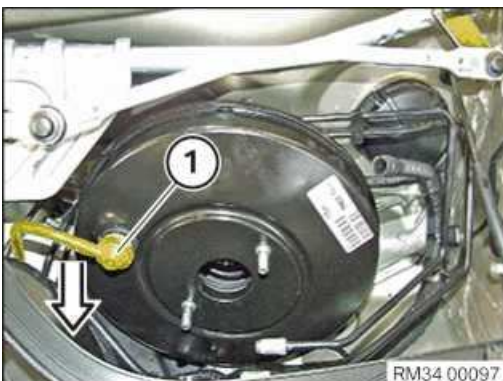
- Remove air duct (1).



- Pull off the retaining clip (1) on the brake pedal, detach the retaining bolt (2) and pull out.



- Loosen nuts (1).



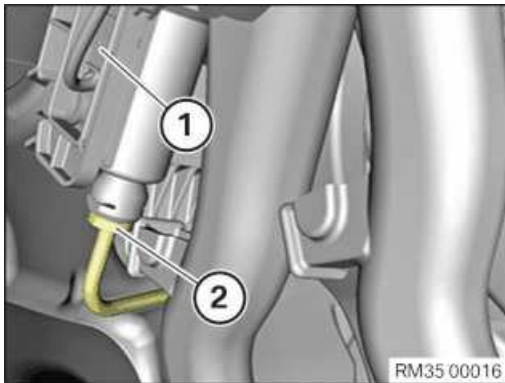
- Remove non-return valve (1) from brake booster in the direction of the arrow.



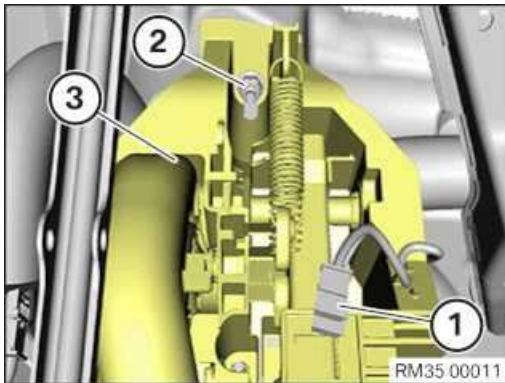
- Unscrew the brake booster (1) from the bulkhead.

MAIN WORK

15 – Removing the bearing support (manual gearbox)

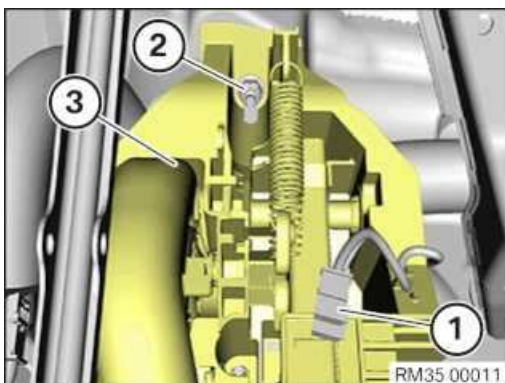


- Disconnect plug connection (1) on the clutch master cylinder.
 - Disconnect the cable connection (2).
- Catch brake fluid in a suitable container.



- Disconnect plug connection (1) on brake light switch.
- Release nut (2) and remove bearing support (3).

16 – Installing the bearing support (manual gearbox)



- Install bearing support (3).
- Renew nut (2).

Parts: Nut

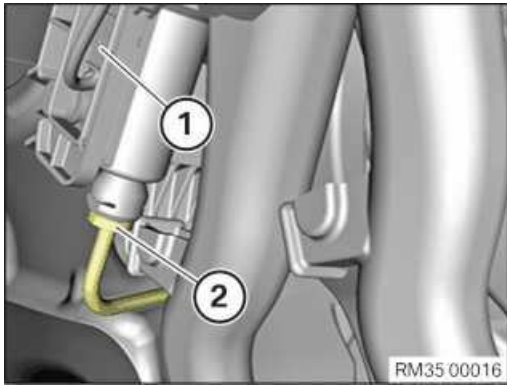
- Fit nut (2) and tighten.

Pedal bracket on body

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------

- Connect the plug connection (1).



- Connect the cable connection (2).
- Connect the plug connection (1) on the clutch master cylinder.

POSTPROCESSES

17 – Prepare for the installation of the brake booster

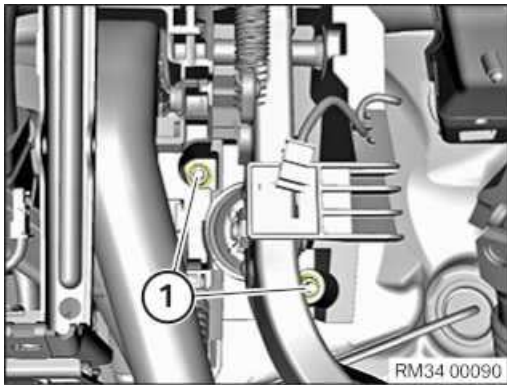


- Replace the gasket (1) on the brake booster.
- Parts:** Gasket
- Thoroughly clean the sealing surfaces on the brake booster and on the bulkhead.

18 – Install brake booster



- Screw in the brake booster (1) in the bulkhead.

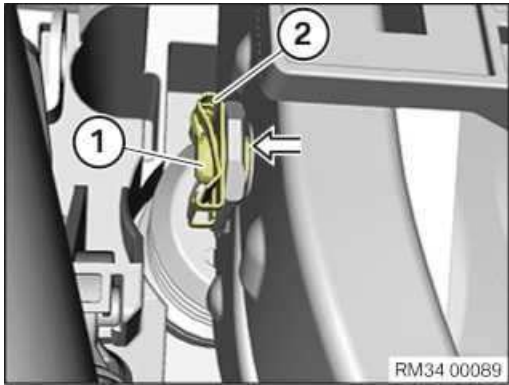


- Renew nuts (1).
- Parts:** Nuts
- Install the nuts (1) and tighten.

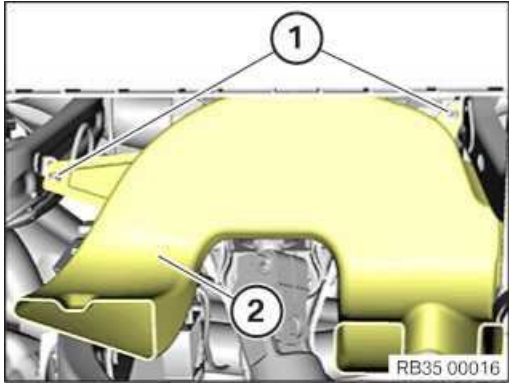
Brake booster to pedal assembly console

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------



- Install the retaining bolt (1) through the brake pedal.
Lightly grease the retaining bolts (1).
 - Renew the retaining clip (2).
- Parts:** Retaining clip
- Mount the retaining clip (2) at the retaining bolt.

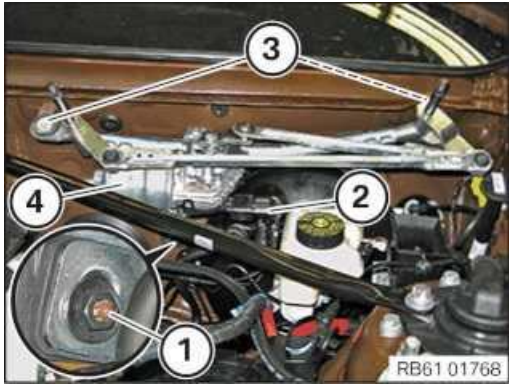


- Install air duct (1).



- Install non-return valve (1) in direction of arrow into brake booster.

19 – Installing console for windscreen wiper system complete with engine



- Feed in console for windscreen wiper system (4).
- Tighten down screws (3).

Wiper console to body

M6x30		Tightening torque	10 Nm
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- Tighten nut (1).

Wiper console to retaining bracket

M6		Tightening torque	10 Nm
----	--	-------------------	-------

- Connect connector (2).

20 – Install the rear cowl panel



- Insert the cowl panel cover (1) and press it into the latch mechanism on the windscreen starting at the side.

21 – Install the gutter strip on the windscreen on the left and right



NOTICE

Description is for left component only. Procedure on the right side is identical.

► Install the gutter strip on the windscreen



RISK OF DAMAGE

Scratches.

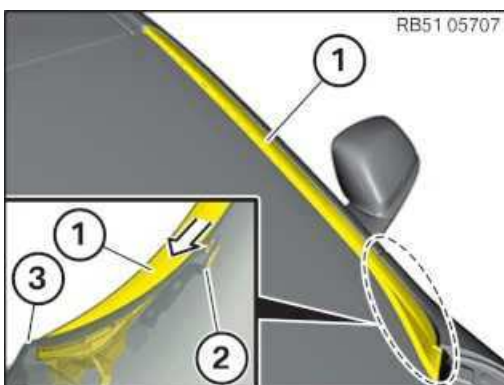
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

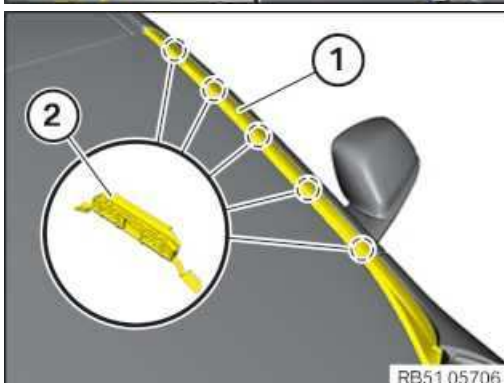


TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

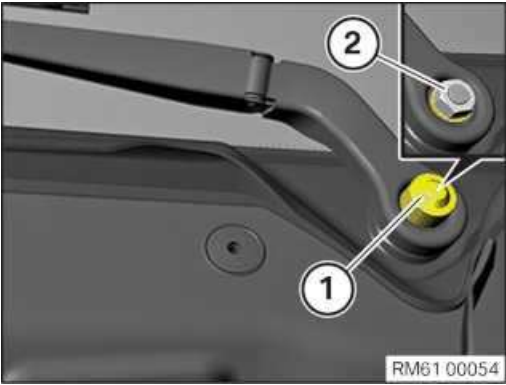


- Carefully feed in the gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the gutter strip (1) at the bottom starting at the clamps (2).

22 – Install left and right wiper arm



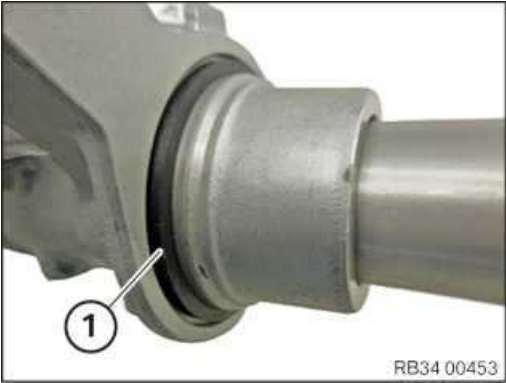
- Join wiper arm and tighten with nut (2).

Windscreen wiper arm

Combination hexagon nut		Tightening torque	35 Nm
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- Join the protective cap (1).

23 – Preparations for installing the tandem brake master cylinder



- Renew sealing ring (1).

Parts: Sealing ring

24 – Install tandem brake master cylinder.



- Introduce tandem brake master cylinder (1) in the brake booster.
- Renew nuts (2).

Parts: Nuts

- Place and tighten nuts (2).

Tandem brake master cylinder in the brake booster

Replace nuts.

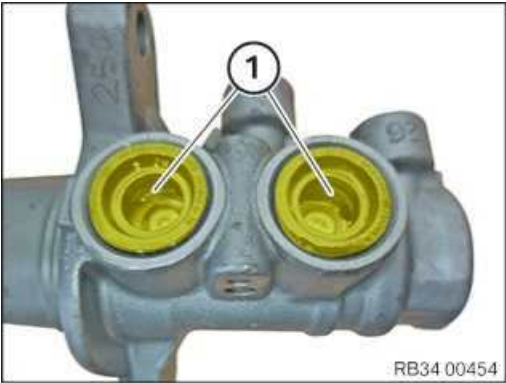
M8		23 Nm
----	--	-------

- (3)Fit brake lines () and tighten.

Brake pipe screw connection / Union screws

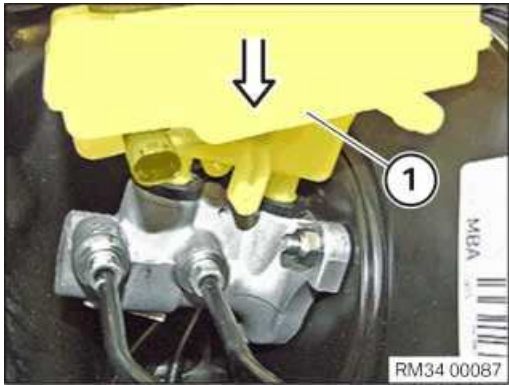
		17 Nm
--	--	-------

25 – Installing the expansion tank (vehicles with manual gearbox)



- Renew rubber plugs(1).

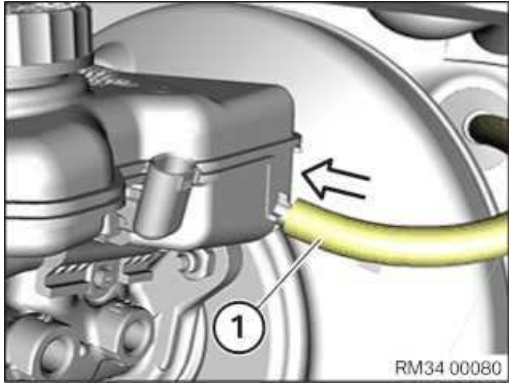
Parts: Rubber plug



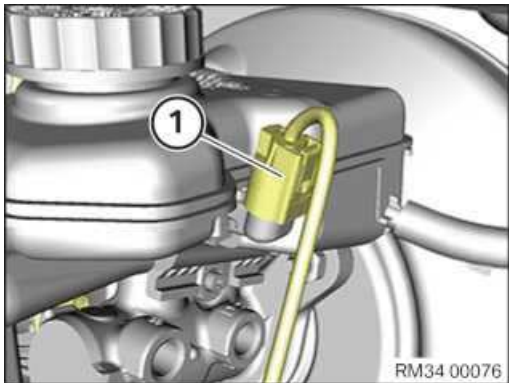
- Connect expansion tank (1) to the tandem brake master cylinder.
 - Renew the retaining screw.
- Parts:** Retaining screw
- Attach retaining screw and tighten.

Retaining screw, expansion tank to tandem brake master cylinder

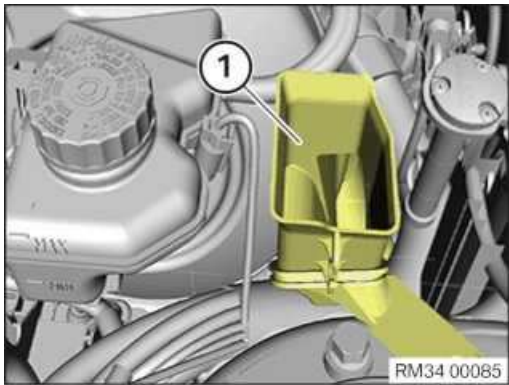
	Renew screw.	4 Nm
--	--------------	------



- Connect the feed line (1) for the clutch hydraulic system in the direction of arrow.

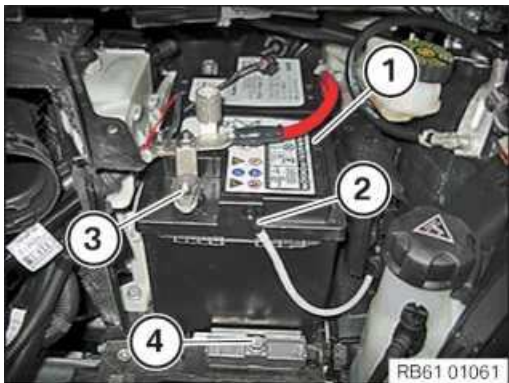


- Connect the plug connection (1).



- Install the water drain channel (1).

26 – Install vehicle battery



- Install vehicle battery (1).
- Position the bracket and tighten with the screw (4) .

Battery terminal rail to battery tray

M8		19 Nm
----	--	-------

- Position the vent hose (2) and clip it in.
- Position the positive battery terminal and tighten with the nut (3) .

Battery terminal with IBS positive battery terminal / negative battery terminal

NutM6		5 Nm
-------	--	------

► Check the vent holes of the battery



WARNING

Gas emission.

Danger of injury! Danger of explosion!

- Assign the vent holes correctly.
- Route the vent hose correctly.

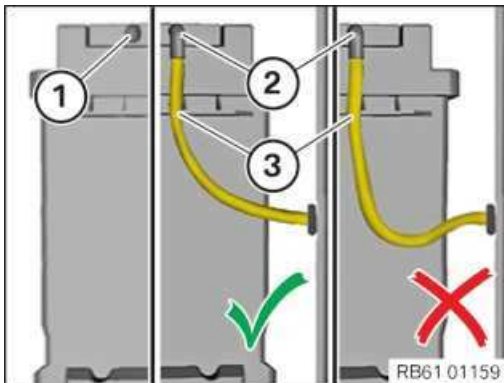


TECHNICAL INFORMATION

The battery has two vent holes, opposite:

One vent hole (1) must be closed correctly with a dummy plug.

The vent hose (3) must be correctly connected and routed at the other vent hole (2).



Check

- Check if the vent hole (1) is correctly closed with a dummy plug.

Result

» No dummy plug.

Measure

- Close the vent hole (1) correctly with a dummy plug.

Check

- Check if the vent hole (2) has a correctly connected vent hose (3).

Result

» The vent hose (3) is not correctly connected.

Measure

- At the vent hole (2), connect the vent hose (3) correctly.

Check

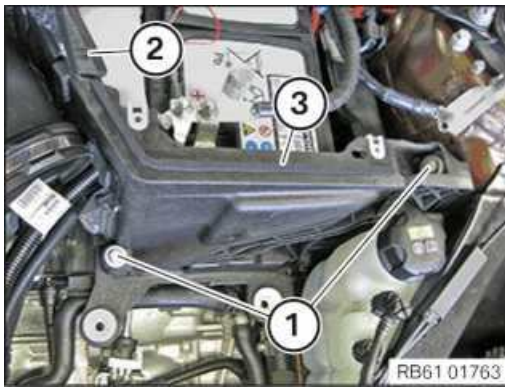
- Check if the vent hose (3) is routed to the outside with a downhill gradient (**no siphon formation!**).

Result

» The vent hose (3) is not correctly routed as shown in the image on the right.

Measure

- Route the vent hose (3) correctly as shown in the centre image.



- Insert tension strut (3) and tighten with screws (1).

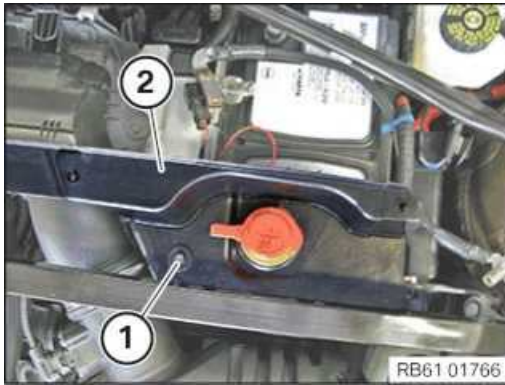
Trailing link

M8		Tightening torque	19 Nm
----	--	-------------------	-------

- Tighten down screw (2).

Battery cover

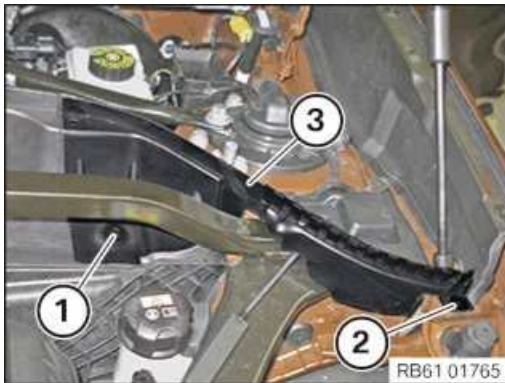
M8			2,8 Nm
----	--	--	--------



- Position the cover (2).
- Tighten down screw (1).

Battery cover

M8			2,8 Nm
----	--	--	--------

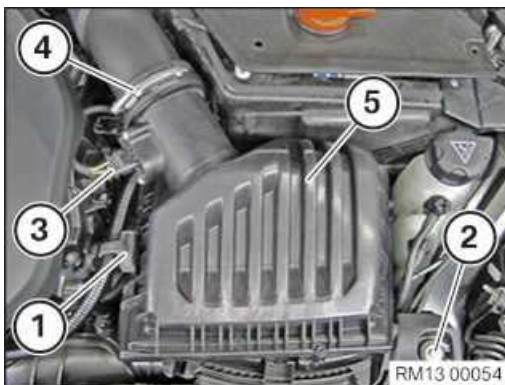


- Position the fixture for the gasket (3) and secure with the expanding rivet (2).
- Tighten down screw (1).

Battery cover

M8			2,8 Nm
----	--	--	--------

27 – Installing intake silencer housing



- Insert the intake silencer housing (5) into the rubber mounts and install it. Intake filter housing (5) must engage audibly.
- Tighten down screw (2).

Intake silencer housing to lock bridge

M6X30		Tightening torque	8 Nm
-------	--	-------------------	------

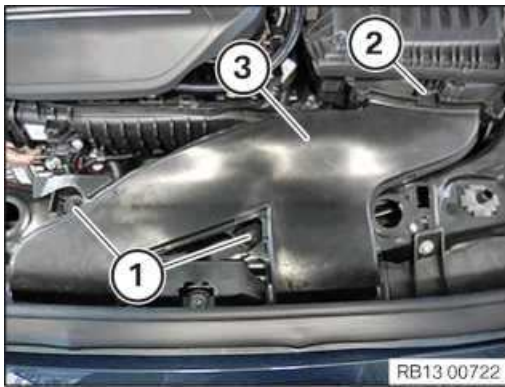
- Tighten clamp (4).

Clean air pipe to intake silencer housing

Clamp		Tightening torque	3 Nm
-------	--	-------------------	------

- Connect and lock the connector (3). The connector (3) must engage audibly.
- Insert and install the holder (1).

28 – Install the intake neck for the intake filter housing



- Insert and install the intake neck (3).
The lock (2) must audibly engage.
- Tighten nuts (1).

Intake neck to cross connection

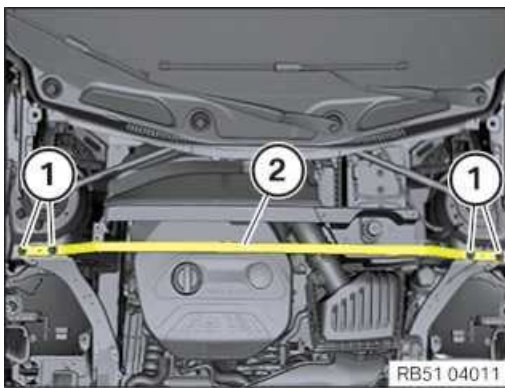
M6		Tightening torque	8 Nm
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29 – Install strut brace



TECHNICAL INFORMATION

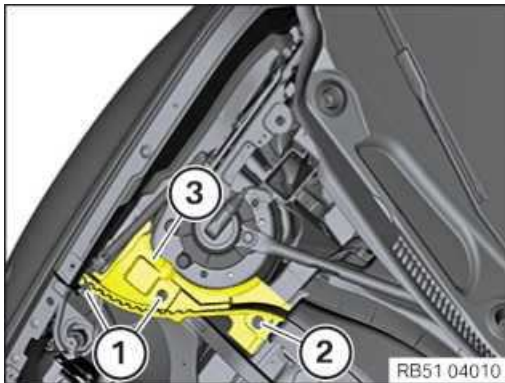
Driving without the strut brace/front end or tension strut is not permitted.



- Install the strut brace (2).
 - Renew screws (1).
- Parts:** Bolts
- Tighten the screws (1).

Cross-brace to spring strut dome

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °



NOTICE

Description is for right component only. The procedure on the left side is identical.

- Install the cover (3).
- Tighten down screw (2).

Cover on body

Hexagon screw		Tightening torque	3 Nm
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- Install the expanding rivet (1).

30 – Connecting the battery earth lead



TECHNICAL INFORMATION

For additional information see:

- 61 00 ... Safety information on handling the vehicle battery
- 61 00 / 12 00 ... Notes on disconnecting and connecting the vehicle battery
- 61 12 ... Notes on the intelligent battery sensor (IBS)



- Remove the protective cover of the positive battery terminal.
- Position the battery earth lead (2).
- Tighten nut (1).

Battery terminal with IBS positive battery terminal / negative battery terminal

NutM6		5 Nm
-------	--	------

- If required, connect the connector (3).

31 – Connect the bleeder unit for brake fluid (following repair)



- To guarantee correct bleeding of the brake system, it is essential to adhere to the following procedure!
- Fill new brake fluid in the expansion tank up to the lower edge of thread (1).
- Bleed the hose of the bleeder unit before connecting.



TECHNICAL INFORMATION

Use only BMW-approved brake fluids, see operating fluids.



RISK OF DAMAGE

Paint damage.

Mechanical or chemical action may lead to paint damage.

- Cover up working area with specified covering material only.

- Connect the bleeder unit (1) to the brake fluid expansion tank and switch it on.

Observe the operating instructions of the corresponding equipment manufacturer.

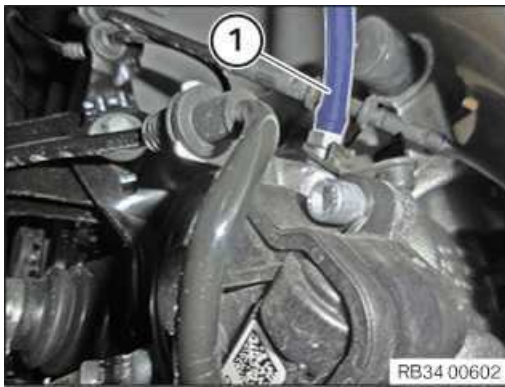
- **Do not exceed the filling pressure of 2 bar.**

32 – Rinsing and bleeding the rear axle brake circuit



NOTICE

Description is for right component only. The procedure on the left side is identical.



- **Start flushing at the rear right.**
- Connect the vent hose with the collecting vessel to the vent valve (1) on rear right brake caliper.
- Open the vent valve (1) and purge it until clear, bubble-free brake fluid emerges.
- Close vent valve.

Vent valve

		Tightening torque	10 Nm
--	--	-------------------	-------

- Carry out the same procedure on the rear left wheel brake.

33 – Flushing and bleeding the front axle brake circuit



NOTICE

Description is for right component only. The procedure on the left side is identical.



- **Start flushing at the front right.**
- Connect the vent hose with the collecting vessel to the vent valve (1) on front right interior brake calliper.
- Open the vent valve (1) and purge it until clear, bubble-free brake fluid emerges.
- Close vent valve (1).

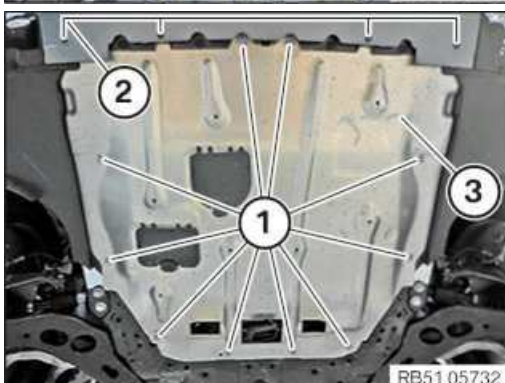
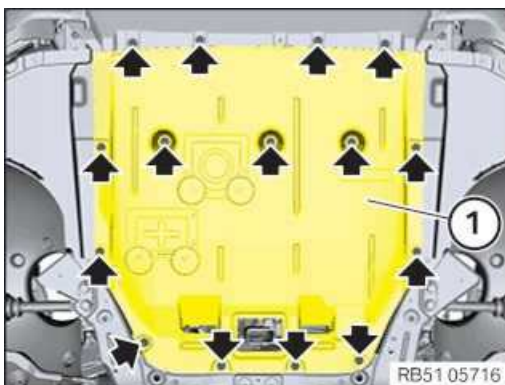
Vent valve

		Tightening torque	10 Nm
--	--	-------------------	-------

34 – Flushing and bleeding the clutch hydraulic system

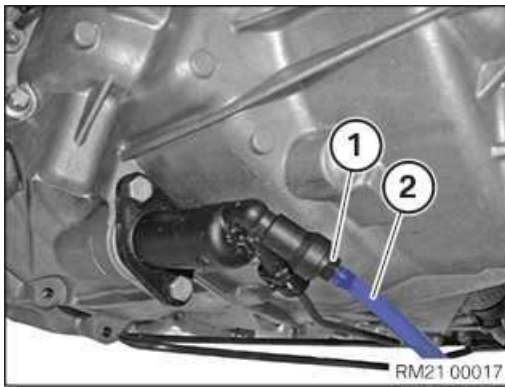
► Removing the front underbody protection

- Remove screws (arrows).
- Thread out and remove the front underbody protection (1) from the bumper panel.



• Equipment specification with metal underride protection:

- Loosen screws (1) and (2).
- Thread out and remove the underride protection (3).



- Remove the dust cap from the vent valve (1).
- Connect the vent hose (2) with the collecting vessel to the vent valve (1) on the clutch slave cylinder.
- Open the vent valve (1) and purge it until clear, bubble-free brake fluid emerges.
- Close vent valve (1).

Clutch slave cylinder vent valve

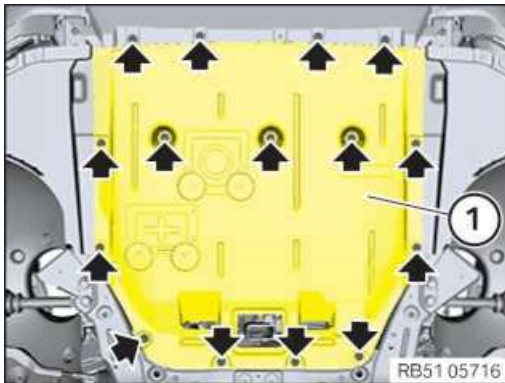
		Tightening torque	6 Nm
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► Installing the front underbody protection

- Guide the front underbody protection (1) in under the bumper panel and position it at the screw points.
- Tighten screws (arrows).

Underbody protection front

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

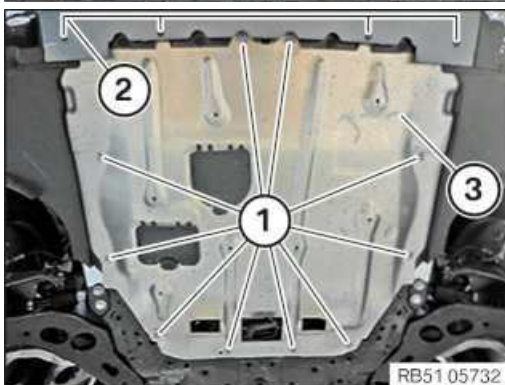


• Equipment specification with metal underride guard:

- Guide in and attach the underride guard (3).
- Tighten down screws (1) and (2).

Underbody protection front

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



35 – Finalize the bleeder unit for brake fluid (following repair)



RISK OF DAMAGE

Paint damage.

Mechanical or chemical action may lead to paint damage.

- Cover up working area with specified covering material only.

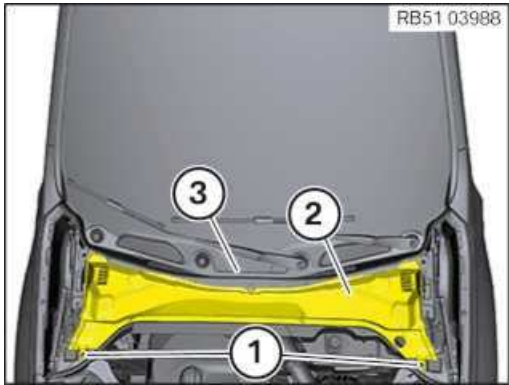


- Switch off bleeder unit (1) and remove from brake fluid expansion tank .
- Check the brake fluid level; if necessary , adjust to maximum mark.



- Check the seal (1) on the sealing cap, renew if necessary.
- Mount the sealing cap on the brake fluid expansion tank.

36 – Installing front cowl panel cover



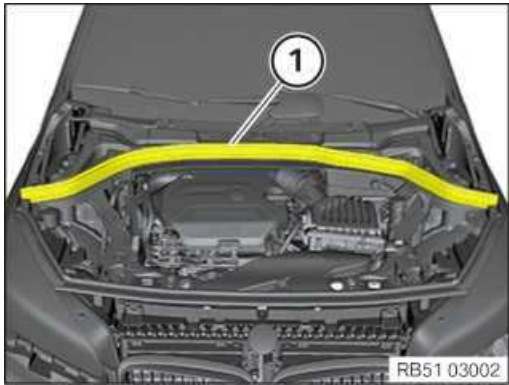
- Insert and install cowl panel cover at front (2) into cowl panel cover at rear (3).
- Check cowl panel cover at front is correctly seated (2).
- Secure expanding rivet (1).

37 – Install the seal for the bonnet



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Install bonnet seal at rear (1).
- Ensure that the rear bonnet seal (1) is fitted correctly.

Additional Information

Overview of Tightening Torques

Pedal bracket on body

Used in step 16

Replace nuts.

M8	Replace nuts.	24 Nm
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Brake booster to pedal assembly console

Used in step 18

Replace nuts.

M8	Replace nuts.	24 Nm
----	---------------	-------

Wiper console to bodyUsed in step [19](#)

M6x30		Tightening torque	10 Nm
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Wiper console to retaining bracketUsed in step [19](#)

M6		Tightening torque	10 Nm
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Windscreen wiper armUsed in step [22](#)

Combination hexagon nut		Tightening torque	35 Nm
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Tandem brake master cylinder in the brake boosterUsed in step [24](#)

Replace nuts.

M8			23 Nm
----	--	--	-------

Brake pipe screw connection / Union screwsUsed in step [24](#)

			17 Nm
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Retaining screw, expansion tank to tandem brake master cylinderUsed in step [25](#)

	Renew screw.		4 Nm
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Battery terminal rail to battery trayUsed in step [26](#)

M8			19 Nm
----	--	--	-------

Battery terminal with IBS positive battery terminal / negative battery terminalUsed in step [26](#) [30](#)

NutM6			5 Nm
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Trailing linkUsed in step [26](#)

M8		Tightening torque	19 Nm
----	--	-------------------	-------

Battery coverUsed in step [26](#)

M8			2,8 Nm
----	--	--	--------

Intake silencer housing to lock bridgeUsed in step [27](#)

M6X30		Tightening torque	8 Nm
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Clean air pipe to intake silencer housingUsed in step [27](#)

Clamp		Tightening torque	3 Nm
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Intake neck to cross connectionUsed in step [28](#)

M6		Tightening torque	8 Nm
----	--	-------------------	------

Cross-brace to spring strut domeUsed in step [29](#)

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °

Cover on bodyUsed in step [29](#)

Hexagon screw		Tightening torque	3 Nm
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Vent valveUsed in step [32](#) [33](#)

		Tightening torque	10 Nm
--	--	-------------------	-------

Clutch slave cylinder vent valve

Used in step [34](#)

		Tightening torque	6 Nm
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Underbody protection front

Used in step [34](#)

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

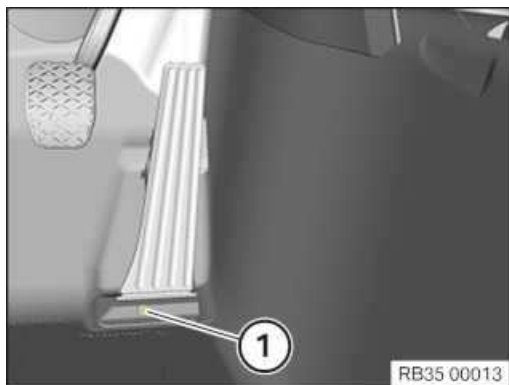
Overview of Special Tools

Links

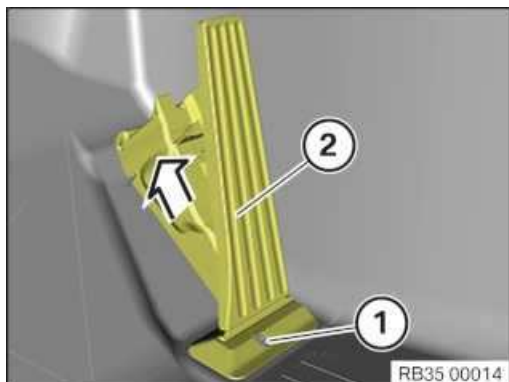
General repair instructions	Used in step
61 20 ... Notes on AGM battery	30
61 12 ... Notes on intelligent battery sensor (IBS)	30
61 00 ... Notes for disconnecting and connecting battery	30
61 00 ... Safety information for handling vehicle battery	

35 40 001 Removing and installing or replacing accelerator pedal module

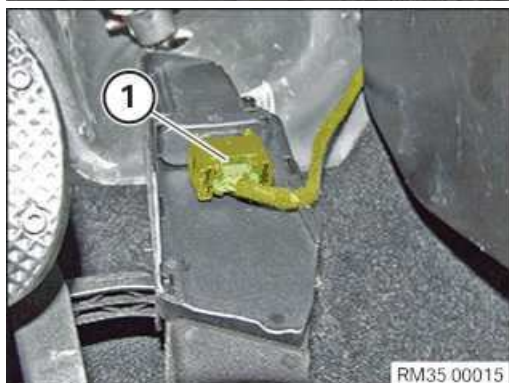
1 – Remove accelerator pedal module



- Lever out cover (1) towards the top.

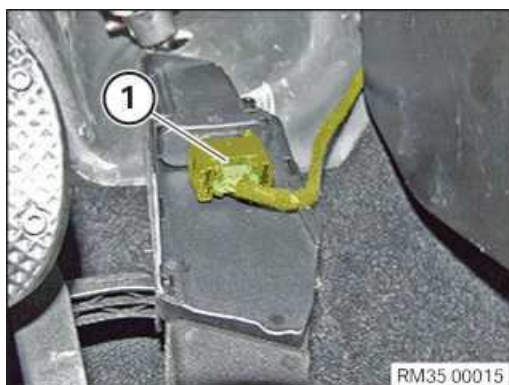


- Release the hexagon socket screw (1).
- Feed out accelerator pedal module (2) towards the top.

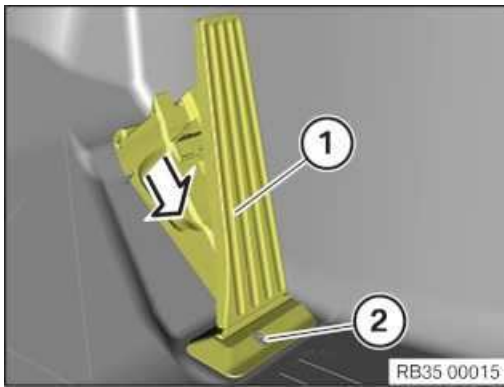


- Disconnect plug connection (1) and remove accelerator pedal module.

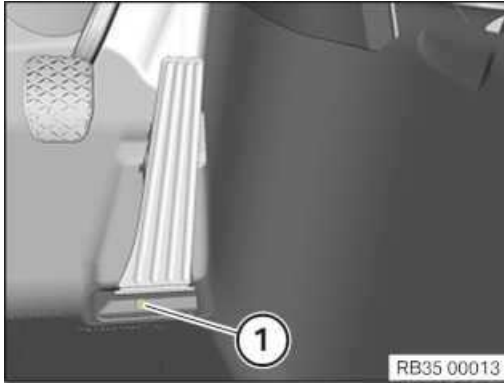
2 – Install accelerator pedal module



- Connect connectors (1) and lock.



- Feed in accelerator pedal module (2) from above.
 - Renew the hexagon socket screw (1).
- Parts:** Hexagon socket screw
- Fit the hexagon socket screw (1) and tighten.



- Clip in the cover (1).

Additional Information

Overview of Tightening Torques