

92 – Wiper/Washer Systems

1 Windshield Wiper System

⇒ [“1.1 Overview - Windshield Wiper System”, page 108](#)

⇒ [“1.2 Windshield Wiper, Bringing into Service Position”, page 109](#)

⇒ [“1.3 Wiper Blade, Removing and Installing”, page 110](#)

⇒ [“1.4 Windshield Wiper Arms, Removing and Installing”, page 110](#)

⇒ [“1.5 Windshield Wiper Arms, Adjusting”, page 111](#)

⇒ [“1.6 Windshield Wiper Motor V, Removing and Installing”, page 112](#)

1.1 Overview - Windshield Wiper System

1 - Joint-Free Windshield Wiper

- ☐ Removing and installing. Refer to
⇒ [“1.3 Wiper Blade, Removing and Installing”, page 110](#).
- ☐ Park Position, Adjusting. Refer to
⇒ [“1.5 Windshield Wiper Arms, Adjusting”, page 111](#).

2 - Windshield Wiper Arm

- ☐ Removing and installing. Refer to
⇒ [“1.4 Windshield Wiper Arms, Removing and Installing”, page 110](#)

3 - Nut

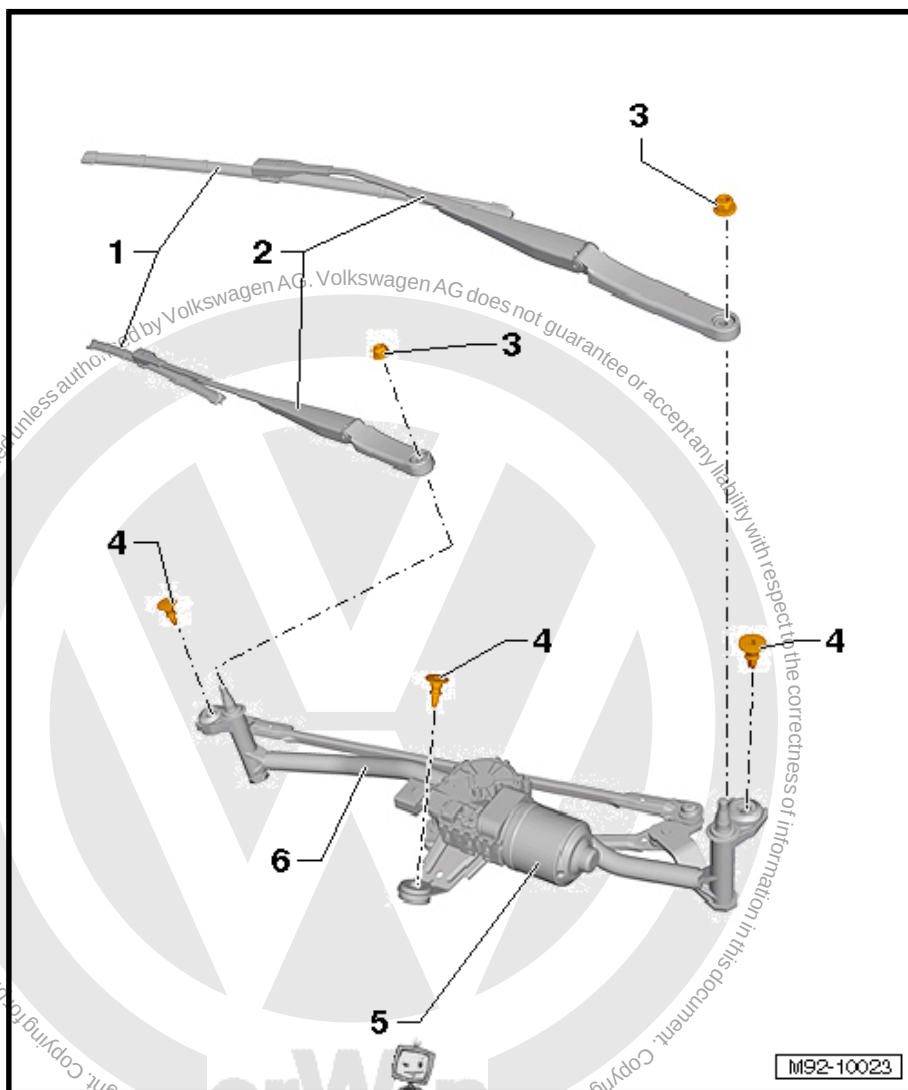
- ☐ 20 Nm
- ☐ Quantity: 2

4 - Bolt

- ☐ 5 Nm
- ☐ Quantity: 3

5 - Windshield Wiper Motor - V- with Wiper Motor Control Module - J400-

- ☐ Removing and installing. Refer to
⇒ [“1.6.2 Windshield Wiper Motor V, Removing and Installing”, page 113](#).
- ☐ Wiper Motor Control Module - J400-, coding/APP function, deactivating. Refer to
⇒ [“1.2.2 Wiper Motor Control Module J400, Deactivating APP Function”, page 109](#).





6 - Wiper Frame with Linkage

- ❑ Removing and installing. Refer to
⇒ [“1.6.1 Wiper Frame with Linkage and Windshield Wiper Motor V , Removing”, page 112](#) .

No Illustration

- ◆ Windshield Wiper Motor - V- bolts to the wiper frame with linkage: 8 Nm
- ◆ Windshield wiper motor crank to windshield wiper motor shaft: 18 Nm

1.2 Windshield Wiper, Bringing into Service Position

⇒ [“1.2.1 Windshield Wiper, Bringing into Service Position”, page 109](#)

⇒ [“1.2.2 Wiper Motor Control Module J400 , Deactivating APP Function”, page 109](#)

1.2.1 Windshield Wiper, Bringing into Service Position

The windshield wiper arms must be in the “service/winter position” in order to remove the wiper blades. The “service/winter position” is activated by operating the windshield wiper lever in the “one-touch wiping” position within 10 seconds after switching off the ignition. Refer to the Owner's Manual.

1.2.2 Wiper Motor Control Module - J400- , Deactivating APP Function

The windshield wiper system is equipped with the APP function (alternating park position).

The APP function causes the wiper, after every second time it is switched off, to move up one level after reaching the lowest position.

To install the motor crank on the Windshield Wiper Motor - V- , it is necessary to shut off the Windshield Wiper Motor - V- in the lower park position. This is attained by deactivating the APP function.

Note the following:

- ◆ An activation of APP function is not possible.
- ◆ APP function is automatically activated after 100 wiping cycles. This applies to Windshield Wiper Motors - V- in which the APP function was deactivated as well as new Windshield Wiper Motors - V- .

Procedure

- Connect the Vehicle Diagnostic Tester .
- Select the **Guided Fault Finding** mode.
- Use the **GO TO** button to select the “function/component selection” and the following menu options one after the other:
 - ◆ Body
 - ◆ Electrical Equipment
 - ◆ 01 - OBD-capable systems
 - ◆ 09 - vehicle electrical system control module



- ◆ Vehicle electrical system control module functions
- ◆ Coding the wiper motor control module/deactivating the APP function

1.3 Wiper Blade, Removing and Installing

Right and left wiper blades may not be interchanged during installation.

Joint-free wiper blades are very flexible. Grasp the wiper blades in the area for the wiper blade mount only and lift them away from the windshield.

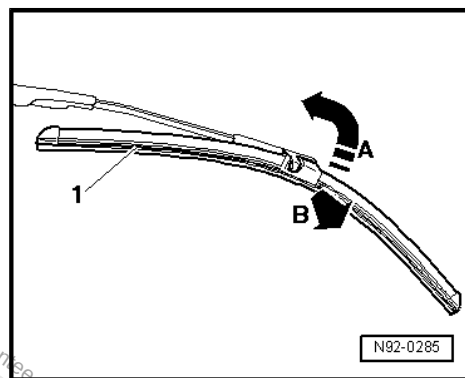
To remove wiper blades, wiper arms must be put into "service/winter position". The "service/winter position" is activated by operating windshield wiper lever in "one-touch wiping" setting within 10 seconds after switching off the ignition.

Removing

- Move the wiper arms into "service/winter position" by moving windshield wiper lever into "one-touch wiping" position within 10 seconds after switching off the ignition.
- Fold the wiper arm up.
- Tilt the wiper blade -1- on wiper arm all the way in direction of -arrow A-.
- Remove the wiper blade -1- from the wiper arm axle -arrow B-.

Installing

- Push the wiper blade onto the wiper arm axle.
- Turn the wiper blade all the way on the wiper arm axle.
- Carefully fold the wiper arm back onto the windshield.



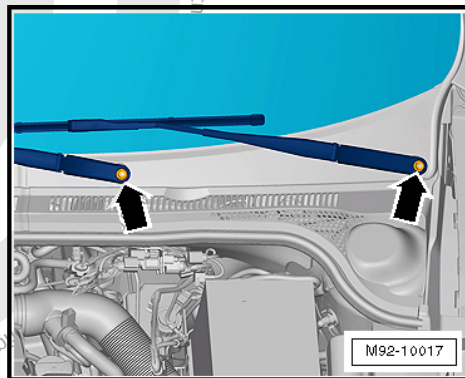
1.4 Windshield Wiper Arms, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Puller - Wiper Arm Kit - T10369-

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Pry out the caps -arrows- using a screwdriver.
- Remove the nuts -arrows-.





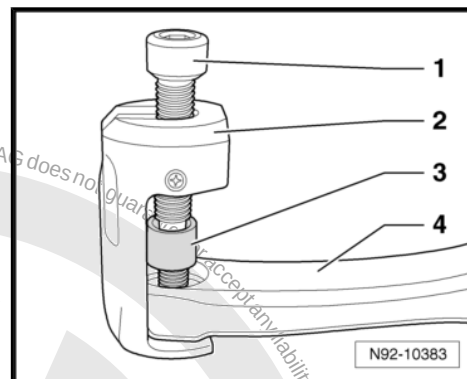
- Slide the arms of the Puller - Wiper Arm Kit - Puller 1 - T10369/1- -2- under the windshield wiper arm -4- as shown in the illustration.



Caution

The windshield wiper shaft can be damaged.

Always use the thrust piece -3- to loosen the windshield wiper arm.

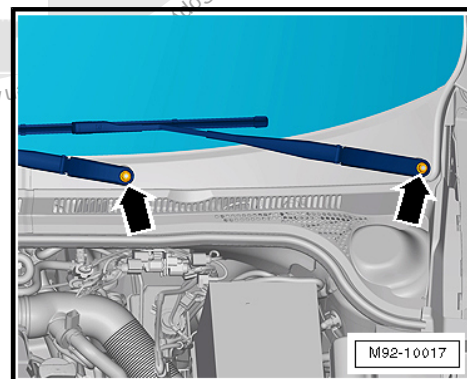


- Turn the pressure bolt -1- for the Puller - Wiper Arm Kit - Puller 1 - T10369/1- clockwise until the thrust piece -3- makes contact with the wiper arm shaft. Turn the pressure bolt -1- for the Puller - Wiper Arm Kit - Puller 1 - T10369/1- clockwise with a hex socket wrench until the windshield wiper arm -4- comes loose off the shaft.
- Remove the Puller - Wiper Arm Kit - Puller 1 - T10369/1- and the wiper arm.

Installing

Tighten the nuts on the wiper arms only after the wiper arms have been adjusted.

- Deactivate the APP function. Refer to ["1.2.2 Wiper Motor Control Module J400, Deactivating APP Function", page 109](#).
- Switch the windshield wipers on and off when the ignition is switched on so that the Windshield Wiper Motor - V- goes into its park position.
- Mount both windshield wiper arms in the approximate park positions on the wiper arm shafts and tighten the nuts -arrows- hand-tight.
- Adjust the windshield wiper arms. Refer to ["1.5 Windshield Wiper Arms, Adjusting", page 111](#).
- Install the cover and trim panel.



1.5 Windshield Wiper Arms, Adjusting

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-

Procedure

- Deactivate the APP function. Refer to ["1.2.2 Wiper Motor Control Module J400, Deactivating APP Function", page 109](#).
- Let the wiper return to its park position and then switch off the ignition.
- Adjust the windshield wiper arms at this time.

Driver Side

Distance -a- between tips of wiper lips and upper edge of plenum chamber cover must be 10 mm.

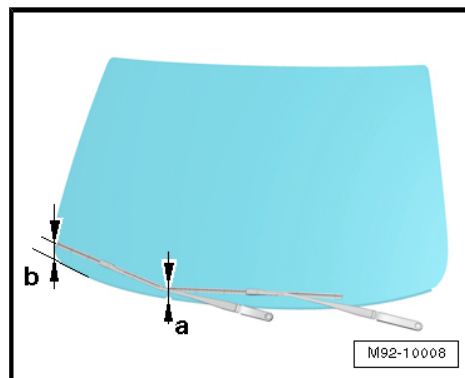


- If necessary, adjust the windshield wiper blade park position by repositioning the windshield wiper arm.
- Tighten the threaded connections to the tightening specification.

Front Passenger Side

Distance -b- between tips of wiper lips and upper edge of plenum chamber cover must be 10 mm.

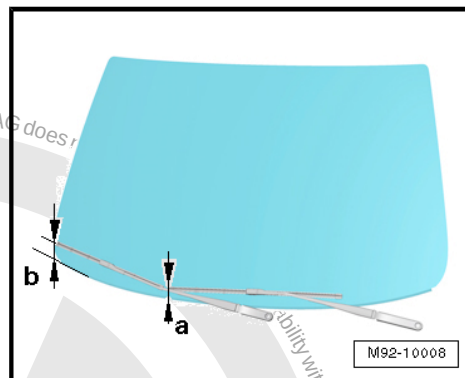
- If necessary, adjust the windshield wiper blade park position by repositioning the windshield wiper arm.



- Tighten the threaded connections to the tightening specification.

Tightening Specifications

- ♦ Refer to
⇒ ["1.1 Overview - Windshield Wiper System", page 108](#)



1.6 Windshield Wiper Motor - V- , Removing and Installing

⇒ ["1.6.1 Wiper Frame with Linkage and Windshield Wiper Motor V , Removing", page 112](#)

⇒ ["1.6.2 Windshield Wiper Motor V , Removing and Installing", page 113](#)

1.6.1 Wiper Frame with Linkage and Windshield Wiper Motor - V- , Removing

Procedure

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the windshield wiper arms. Refer to
⇒ ["1.4 Windshield Wiper Arms, Removing and Installing", page 110](#).
- Remove the plenum chamber cover. Refer to ➤ Body Exterior; Rep. Gr. 50 ; Plenum Chamber Cover; Plenum Chamber Cover, Removing and Installing .
- Release and disconnect the connector -1-.

- Remove the bolts -arrows- and remove the wiper frame -2- upward from the vehicle.

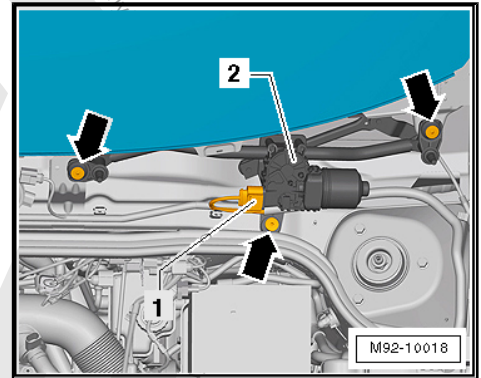
Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification.

Tightening Specifications

- ◆ Refer to
⇒ ["1.1 Overview - Windshield Wiper System", page 108](#)



1.6.2 Windshield Wiper Motor - V- , Removing and Installing

General Information

The Wiper Motor Control Module - J400- is integrated with the Windshield Wiper Motor - V- .

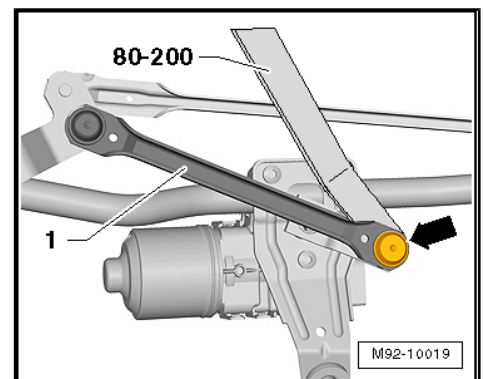
Malfunction Recognition and Malfunction Indicator

The Vehicle Electrical System Control Module - J519- is equipped with OBD.

For troubleshooting. Refer to Vehicle Diagnostic Tester in the "Guided Fault Finding" function.

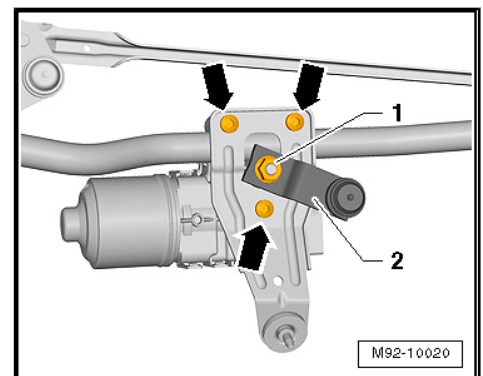
Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the wiper frame together with the linkage. Refer to ⇒ ["1.6.1 Wiper Frame with Linkage and Windshield Wiper Motor V , Removing", page 112](#) .
- Pry off the ball head -arrow- of linkage -1- from motor crank using Pry Lever - 80-200- .
- Remove the nut -1-.
- Remove the motor crank -2- from the windshield wiper motor shaft.



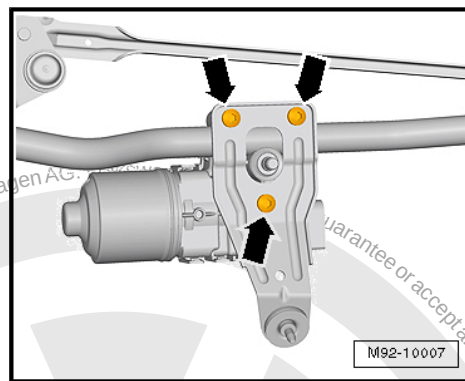
- Remove the mounting bolts -arrows- and remove the Windshield Wiper Motor - V- with the Wiper Motor Control Module - J400- from the wiper frame.

Installing

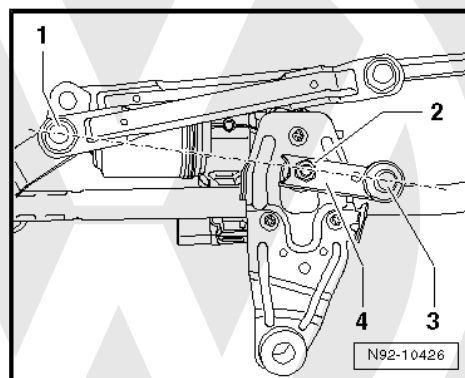




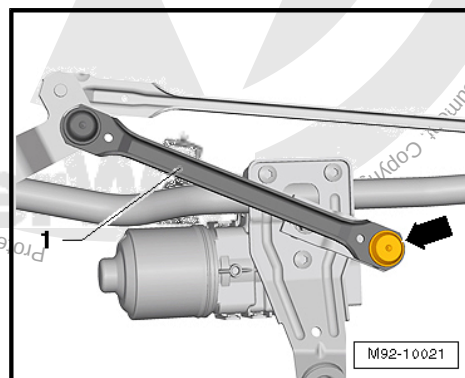
- Insert the Windshield Wiper Motor - V- with the Windshield Wiper Motor Control Module - J400- into the wiper frame and tighten the bolts -arrows-.



- Attach the motor crank -4- to the Windshield Wiper Motor - V- shaft -2- so that the three points shown in the illustration -1-, -2- and -3- line up.
- Tighten the motor crank and the Windshield Wiper Motor - V- shaft with the nut -2-.



- Push the ball head -arrow- from the linkage -1- onto the motor crank.



Tightening Specifications

- ♦ Refer to
⇒ ["1.1 Overview - Windshield Wiper System", page 108](#)

1.7 Rain/Light Recognition Sensor - G397- , Removing and Installing

The Rain/Light Recognition Sensor - G397- can be installed again if it is not damaged when removing it from the retaining plate on the windshield (for example when replacing the windshield). If the windshield is cracked in the area near the Rain/Light Recognition Sensor - G397- , then the Rain/Light Recognition Sensor - G397- cannot be used again.

Store the removed Rain/Light Recognition Sensor - G397- in a dust-free area and keep the silicone connecting pads from getting dirty.

If a Rain/Light Recognition Sensor - G397- is replaced with a Rain/Light Recognition Sensor - G397- with a different part number, the new Rain/Light Recognition Sensor - G397- must be coded. Refer to

⇒ ["2.2.10 Rain/Light Recognition Sensor G397 , Coding", page 325](#) .

The Rain/Light Recognition Sensor - G397- cannot be optionally installed. Refer to the Parts Catalog for the correct Rain/Light Recognition Sensor - G397- .

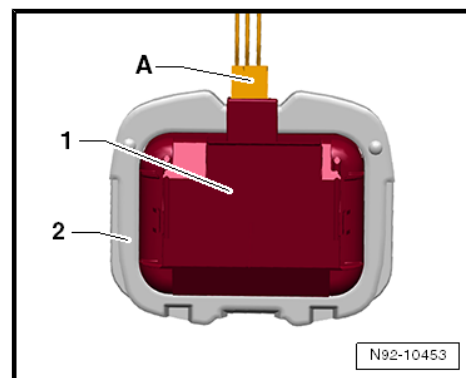


Rain/Light Recognition Sensor - G397- , Servicing, Manufacturer TRW. Refer to
 ⇒ **"1.7.1 Rain/Light Recognition Sensor G397 , Servicing, Manufacturer TRW", page 116 .**

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the interior rearview mirror. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Interior Rearview Mirror; Interior Rearview Mirror, Removing and Installing .
- Disconnect the connector -A- from the Rain/Light Recognition Sensor - G397- -1-.

Not every Rain/Light Recognition Sensor - G397- has the third opening. If this opening is not there, pry it out at another suitable location.



Pry the Rain/Light Recognition Sensor - G397- -1- out of the retaining plate -2- at the opening -3- using a suitable flat-head screwdriver.

While removing, the complete Rain/Light Recognition Sensor - G397- and not just the upper shell of the Rain/Light Recognition Sensor - G397- must be pried off.

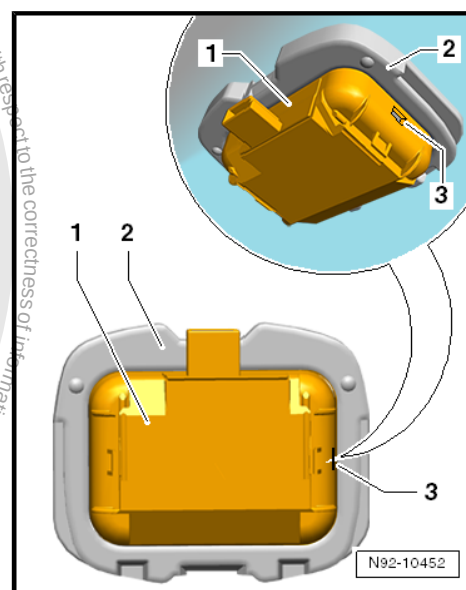
Installing

Install in reverse order of removal. Note the following:



Caution

- ◆ ***Always clean the windshield surface inside the Rain/Light Recognition Sensor - G397- holder before installing. Remove any traces of the connecting pad still remaining on the windshield.***
- ◆ ***Surface (connecting pads) of Rain/Light Recognition Sensor - G397- must not be contaminated or damaged when installing. Replace the Rain/Light Recognition Sensor - G397- if the connecting pad is damaged.***



Surface (connecting pads) of the Rain/Light Recognition Sensor - G397- must not be contaminated when installing.

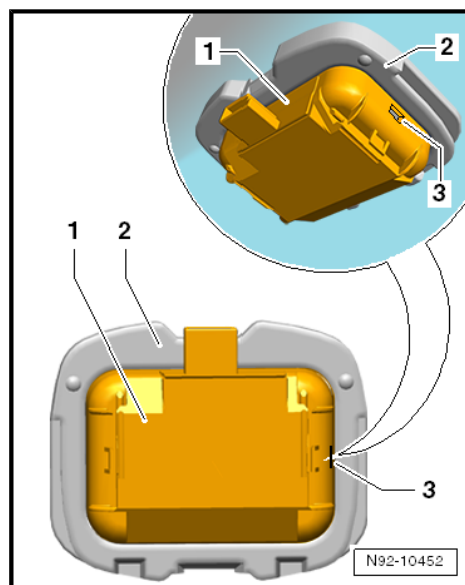
If the surface (connecting pads) of the Rain/Light Recognition Sensor - G397- is contaminated, it can be potentially cleaned by "applying" and then "pulling off" one or more adhesive strips.

- Clean the windshield around the base plate thoroughly with isopropyl alcohol. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Interior Rearview Mirror; Interior Rearview Mirror Baseplate, Servicing .
- Remove the cap from the new Rain/Light Recognition Sensor - G397- .

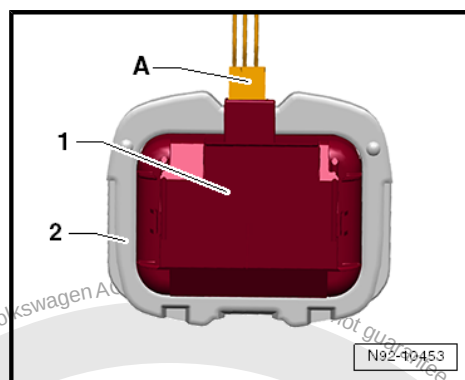


- Insert the Rain/Light Recognition Sensor - G397- -1- into the retaining plate on the windshield -2- and then press it in securely.

Approximately 10 minutes after installing, there must be no air bubbles between the windshield and connecting pads for the Rain/Light Recognition Sensor - G397- .



- Connect the connector -A- and install the wire cover to secure the Rain/Light Recognition Sensor - G397- -1-.
- Install the interior rearview mirror. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Interior Rearview Mirror; Interior Rearview Mirror, Removing and Installing .
- Code the Rain/Light Recognition Sensor - G397- using the Vehicle Diagnostic Tester. Refer to ⇒ [“2.2.10 Rain/Light Recognition Sensor G397 , Coding”, page 325](#) .



1.7.1 Rain/Light Recognition Sensor - G397- , Servicing, Manufacturer TRW

Only TRW can replace the housing and optical unit if the optical unit (coupling cushion) is damaged.

The housing and optical unit are always delivered with mounting clips. Remove these clips if they are not needed.

Procedure

- Remove the Rain/Light Recognition Sensor - G397- . Refer to ⇒ [“1.7 Rain/Light Recognition Sensor G397 , Removing and Installing”, page 114](#) .



Caution

The rain sensor electronics may be damaged.

Be careful not to insert the screwdriver all the way through the housing up to the rain sensor electronics.

Do not touch the rain sensor electronics.



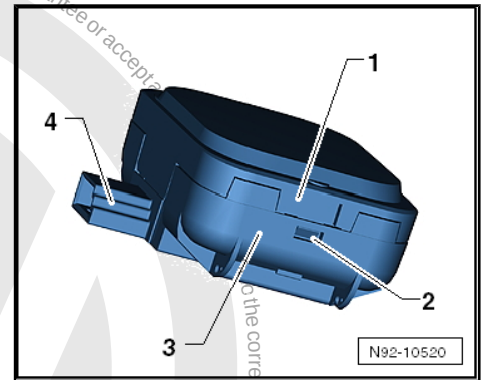
- Press the tab -2- on both sides and separate the upper section -1- with optical unit from the lower section -3-.
- Remove the rain sensor electronics at the connector -4- from the old lower section and install the new electronics the exact same way.



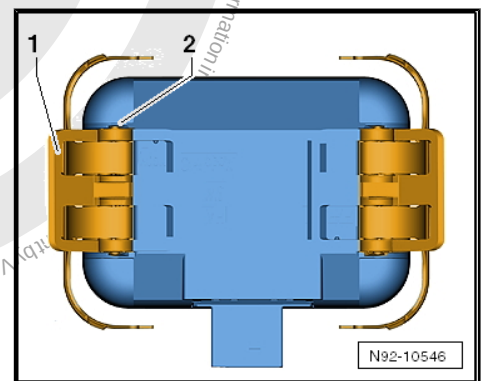
Caution

Do not touch the optical unit.

Remove the protective cover just before installing the Rain/Light Recognition Sensor - G397- .



- Assemble the new housing upper section with optical unit and protective cover with the housing lower section.
- Pry the clip and bracket -1- out of the rain sensor housing -2- with a screwdriver.
- Install the Rain/Light Recognition Sensor - G397- . Refer to [⇒ "1.7 Rain/Light Recognition Sensor G397 , Removing and Installing", page 114](#).
- Code the Rain/Light Recognition Sensor - G397- using the Vehicle Diagnostic Tester. Refer to [⇒ "2.2.10 Rain/Light Recognition Sensor G397 , Coding", page 325](#) .





2 Windshield Washer System

⇒ [“2.1 Overview - Windshield Washer System”, page 118](#)

⇒ [“2.2 Washer Fluid Reservoir, Removing and Installing”, page 119](#)

⇒ [“2.3 Windshield Washer Fluid Level Sensor G33 , Removing and Installing”, page 121](#)

⇒ [“2.4 Windshield Washer Pump V5 , Removing and Installing”, page 121](#)

⇒ [“2.5 Spray Nozzles, Removing and Installing”, page 122](#)

⇒ [“2.6 Spray Nozzles, Adjusting”, page 122](#)

2.1 Overview - Windshield Washer System

1 - Right Windshield Washer Spray Nozzle

- ❑ Removing and installing. Refer to
⇒ [“2.5 Spray Nozzles, Removing and Installing”, page 122](#) .
- ❑ Adjusting. Refer to
⇒ [“2.6 Spray Nozzles, Adjusting”, page 122](#) .

2 - Left Windshield Washer Spray Nozzle

- ❑ Removing and installing. Refer to
⇒ [“2.5 Spray Nozzles, Removing and Installing”, page 122](#) .
- ❑ Adjusting. Refer to
⇒ [“2.6 Spray Nozzles, Adjusting”, page 122](#) .

3 - Hose

- ❑ Hose repair. Refer to
⇒ [“4 Washer Fluid Hoses”, page 128](#) .

4 - Washer Fluid Reservoir Filler Neck

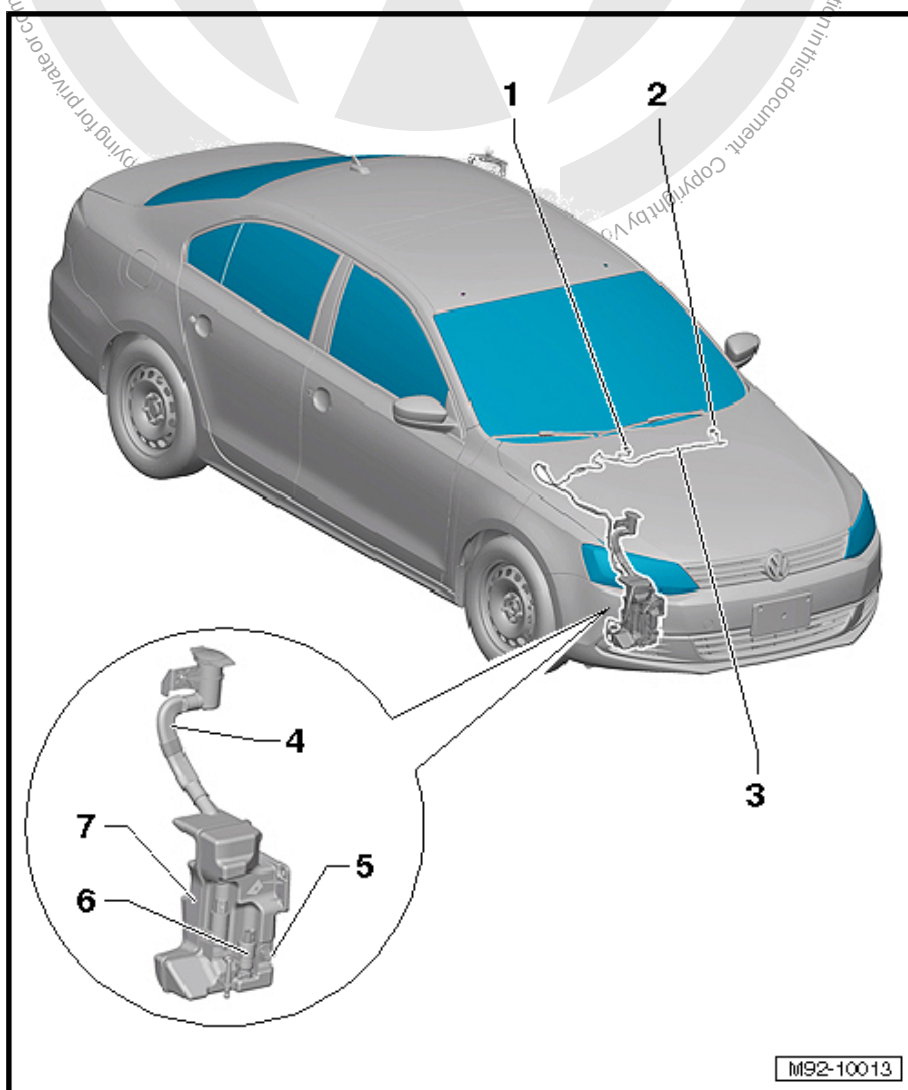
- ❑ Removing and installing. Refer to
⇒ [“2.2.1 Filler Neck, Removing and Installing”, page 119](#) .

5 - Windshield Washer Fluid Level Sensor - G33-

- ❑ Removing and installing. Refer to
⇒ [“2.3 Windshield Washer Fluid Level Sensor G33 , Removing and Installing”, page 121](#) .

6 - Windshield Washer Pump - V5-

- ❑ Removing and installing. Refer to
⇒ [“2.4 Windshield Washer Pump V5 , Removing and Installing”, page 121](#) .





7 - Washer Fluid Reservoir

- ❑ Removing and installing. Refer to ⇒ [“2.2 Washer Fluid Reservoir, Removing and Installing”, page 119](#).

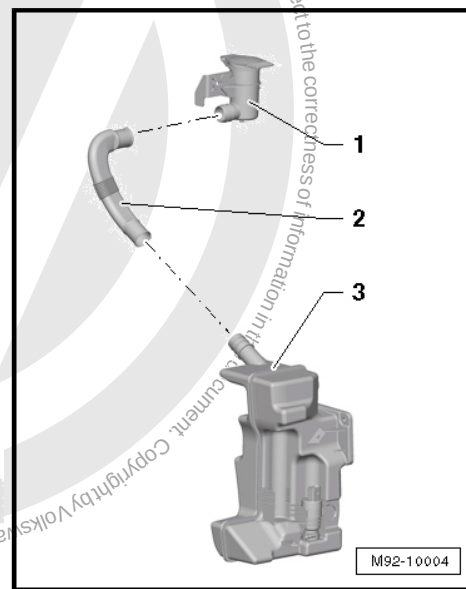
No Illustration

- ◆ Windshield washer fluid reservoir to body: 8 Nm

2.2 Washer Fluid Reservoir, Removing and Installing

The windshield washer fluid reservoir has three parts. The individual components are connected. In order to guarantee the correct position of the parts with respect to each other, make sure that the guides present on the individual components interlock in each other during assembly.

- 1 - Filler tube, removing and installing. Refer to ⇒ [“2.2.1 Filler Neck, Removing and Installing”, page 119](#).
- 2 - Filler Tube Connecting Pipe to Windshield Washer Fluid Reservoir The connecting pipe and the windshield washer fluid reservoir are removed together. Refer to ⇒ [“2.2.2 Washer Fluid Reservoir, Removing and Installing”, page 120](#).
- 3 - Washer Fluid Reservoir, Removing and installing. Refer to ⇒ [“2.2.2 Washer Fluid Reservoir, Removing and Installing”, page 120](#).



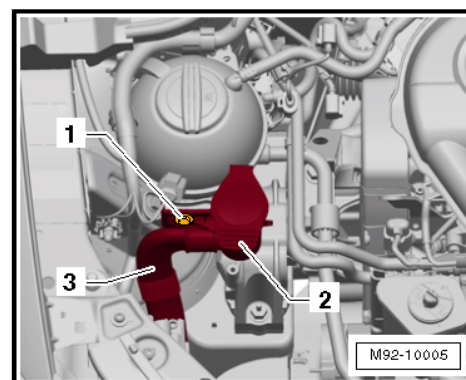
2.2.1 Filler Neck, Removing and Installing

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the connecting pipe -3- from the filler neck -2- for the washer fluid reservoir.
- Remove the bolt -1-.
- Unclip the hose bracket from the filler neck -2- and remove it from the vehicle.

Installing

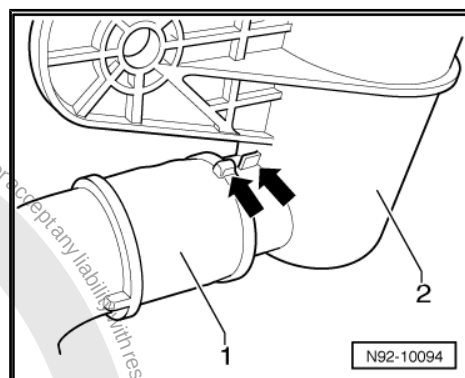
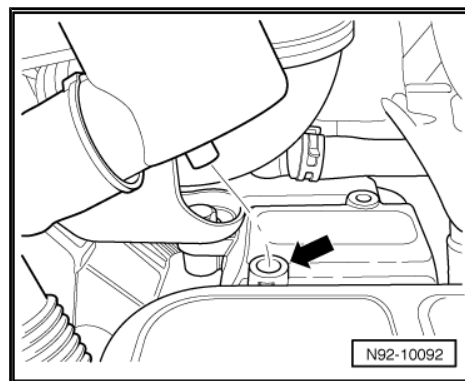
Install in reverse order of removal. Note the following:





The casting mark on the bottom side of the filler neck must be inserted into the hole -arrow-.

The connecting pipe -1- and filler neck -2- must be joined so that the guides -arrows- interlock in each other.



- Tighten the threaded connections to the tightening specification.

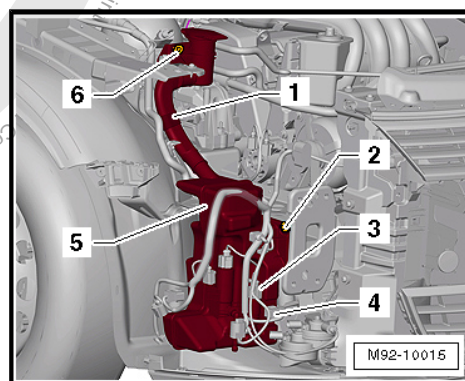
Tightening Specifications

- ◆ Refer to
⇒ ["2.1 Overview - Windshield Washer System", page 118](#)

2.2.2 Washer Fluid Reservoir, Removing and Installing

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63; Front Bumper Cover; Front Bumper Cover, Removing and Installing.
- Turn the clip to unlock the hose connection and then remove it from the Windshield Washer Pump - V5- -3-.
- Catch any draining washer fluid in a suitable container.
- Release and disconnect the connector from the Windshield Washer Pump - V5- -3-.
- Release and disconnect the Windshield Washer Fluid Level Sensor - G33- connector -4-.





- Remove the screws -2,5, and 6- then remove the washer fluid reservoir -1- from the vehicle.

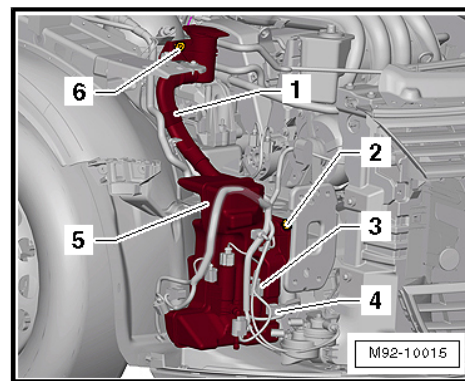
Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification.

Tightening Specifications

- ◆ Refer to
⇒ ["2.1 Overview - Windshield Washer System", page 118](#)



2.3 Windshield Washer Fluid Level Sensor - G33- , Removing and Installing

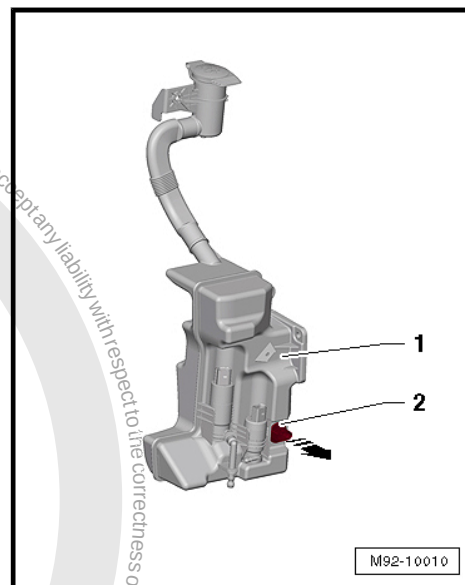
Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the right air grille from the front bumper. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Front Bumper Cover; Front Bumper Cover Attachments .
- Release and disconnect the Windshield Washer Fluid Level Sensor - G33- connector -2-.
- Pull the Windshield Washer Fluid Level Sensor - G33- -2- out of the rubber seal on the washer fluid reservoir -1-.
- Catch any draining washer fluid in a suitable container.

Installing

Install in reverse order of removal. Note the following:

- Bleed the headlamp washer system after finishing assembly work. Refer to ⇒ [page 125](#) .



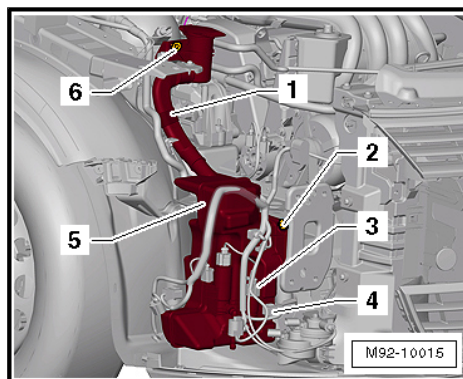
2.4 Windshield Washer Pump - V5- , Removing and Installing

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the right air grille from the front bumper. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Front Bumper Cover; Front Bumper Cover Attachments .



- Turn the clip to unlock the hose connection and then remove it from the Windshield Washer Pump - V5- -3-.
- Catch any draining washer fluid in a suitable container.

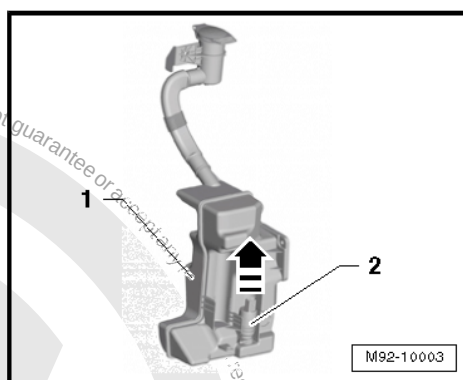


- Pull the Windshield Washer Pump - V5- -2- upward and out of the washer fluid reservoir -1- and release and disconnect the connector.

Installing

Install in reverse order of removal. Note the following:

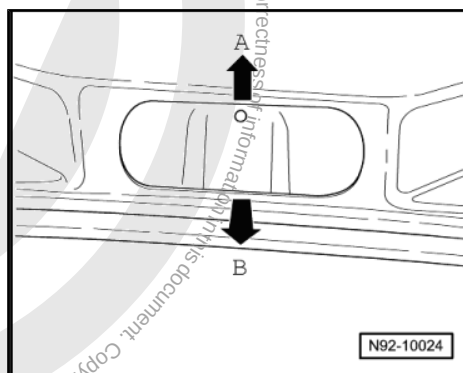
- Bleed the headlamp washer system after finishing assembly work. Refer to [⇒ page 125](#).



2.5 Spray Nozzles, Removing and Installing

Removing

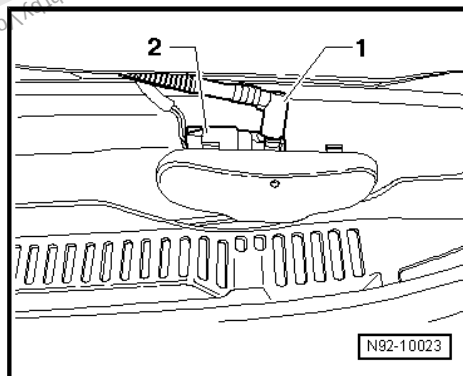
- Push the spray nozzle upward -arrow A- and remove it from the door -arrow B-.



- Pull the hose -1- off the spray nozzle and disconnect the connector -2-.

Installing

- Connect the connector -2- and attach the hose -1-.
- Slide spray nozzle into installation opening until it engages audibly.
- Adjust the spray nozzles. Refer to [⇒ "2.6 Spray Nozzles, Adjusting", page 122](#).



2.6 Spray Nozzles, Adjusting

If the spraying field is uneven due to dirt in the nozzle, remove the spray nozzles and flush the nozzle out in the opposite direction of the spray. It is then permitted to blow compressed air opposite



the spray direction. Do not clean the spray nozzles using any objects.





3 Headlamp Washer System

- ⇒ [“3.1 Overview - Headlamp Washer System”, page 124](#)
- ⇒ [“3.2 Headlamp Washer Pump V11 , Removing and Installing”, page 125](#)
- ⇒ [“3.3 Spray Nozzles, Removing and Installing”, page 125](#)
- ⇒ [“3.4 Spray Nozzles, Adjusting”, page 126](#)
- ⇒ [“3.5 Lift Cylinder, Removing and Installing”, page 126](#)

3.1 Overview - Headlamp Washer System

1 - Washer Fluid Reservoir Filler Neck

- ❑ Removing and installing. Refer to
⇒ [“2.2.1 Filler Neck, Removing and Installing”, page 119](#).

2 - Washer Fluid Reservoir

- ❑ Removing and installing. Refer to
⇒ [“2.2 Washer Fluid Reservoir, Removing and Installing”, page 119](#).

3 - Headlamp Washer Pump - V11-

- ❑ Removing and installing. Refer to
⇒ [“3.2 Headlamp Washer Pump V11 , Removing and Installing”, page 125](#).

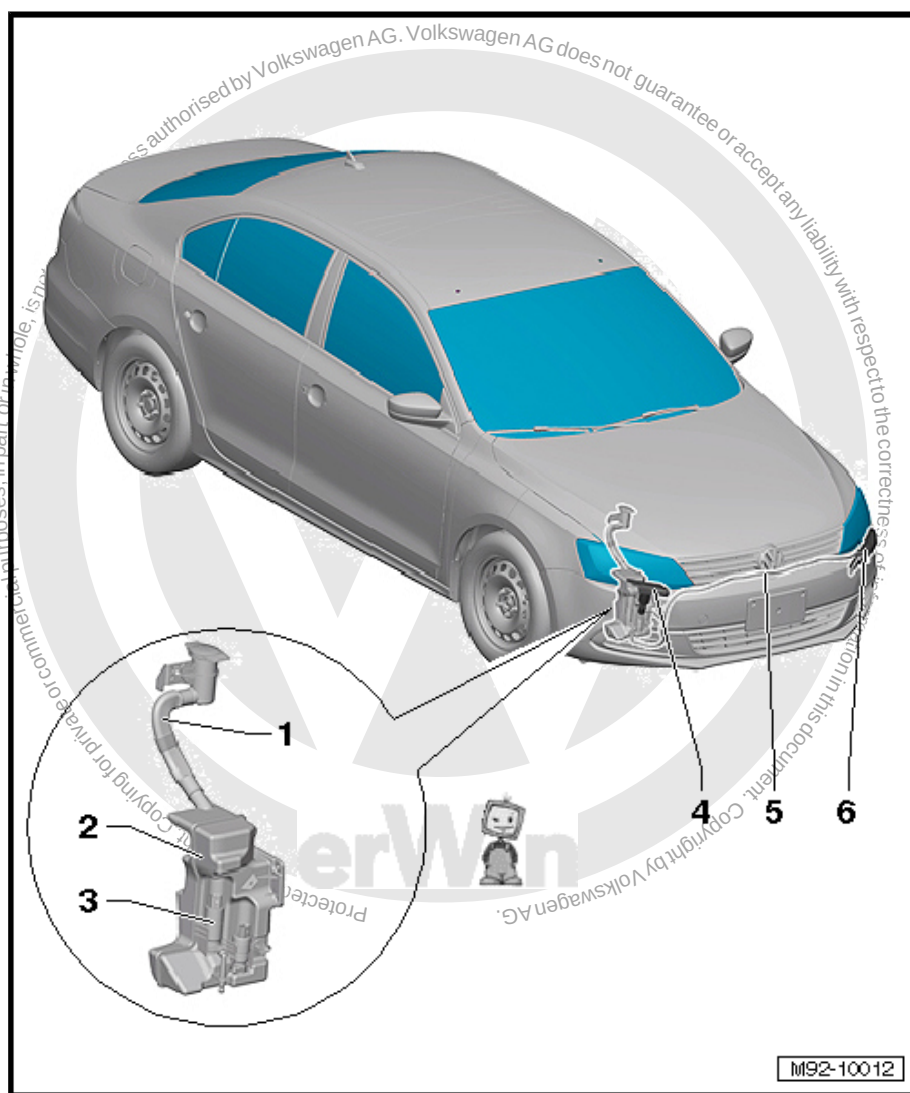
4 - Right Spray Nozzle Holder with Spray Nozzles

- ❑ Spray Nozzles, Removing and installing. Refer to
⇒ [“3.3 Spray Nozzles, Removing and Installing”, page 125](#).
- ❑ Spray Nozzles, Adjusting. Refer to
⇒ [“3.4 Spray Nozzles, Adjusting”, page 126](#).
- ❑ Lift cylinder for spray nozzles, removing and installing. Refer to
⇒ [“3.5 Lift Cylinder, Removing and Installing”, page 126](#).

5 - Hose

6 - Left Spray Nozzle Holder with Spray Nozzles

- ❑ Spray Nozzles, Removing and installing. Refer to
⇒ [“3.3 Spray Nozzles, Removing and Installing”, page 125](#).
- ❑ Spray Nozzles, Adjusting. Refer to ⇒ [“3.4 Spray Nozzles, Adjusting”, page 126](#).
- ❑ Lift cylinder for spray nozzles, removing and installing. Refer to
⇒ [“3.5 Lift Cylinder, Removing and Installing”, page 126](#).





No Illustration

- ◆ Lift cylinder for spray nozzles to the front bumper cover: 4.5 Nm

3.2 Headlamp Washer Pump - V11- , Removing and Installing

The Headlamp Washer Pump - V11- is attached to the washer fluid reservoir in the right wheel housing.

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Front Bumper Cover; Front Bumper Cover, Removing and Installing .
- Remove the Headlamp Washer Pump - V11- -2- upward out of the washer fluid reservoir -1-.
- Release and disconnect the connector.
- Pull the clip on the connection to remove the connecting pipe, and remove the connecting pipe from the Headlamp Washer Pump - V11- -2-.

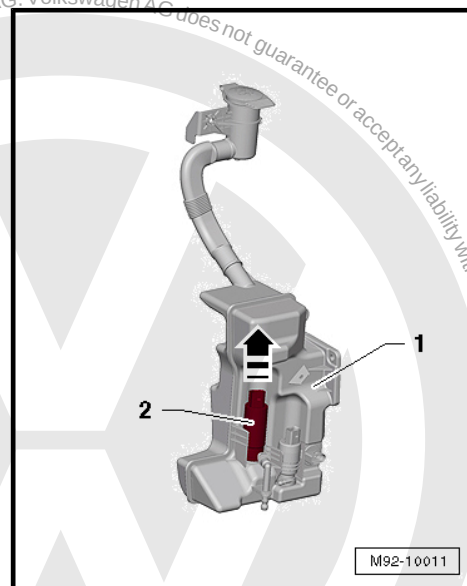
Installing

Install in reverse order of removal. Note the following:

- Bleed the headlamp washer system after finishing assembly work. Refer to ⇒ [page 125](#) .

Headlamp Washer System, Bleeding

- Fill the washer fluid reservoir.
- Start the engine.
- Switch the headlamps on.
- Operate the headlamp washer system several times (3 to 5 impulses for every 3-second period).
- Repeat the bleeding procedure until the lift cylinders and spray nozzles function correctly.



3.3 Spray Nozzles, Removing and Installing

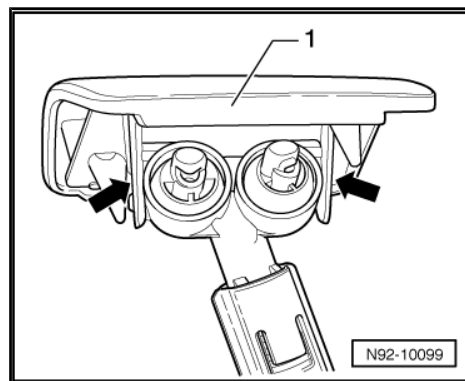
Removing and installing the left spray nozzle holder is shown in the following illustrations. Removing and installing the right spray nozzle holder is identical.

Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.



- Pull the spray nozzles and the cap -1- off the bumper cover until it stops.
- Remove the cap -1- from the mountings -arrows- on the spray nozzle holder.

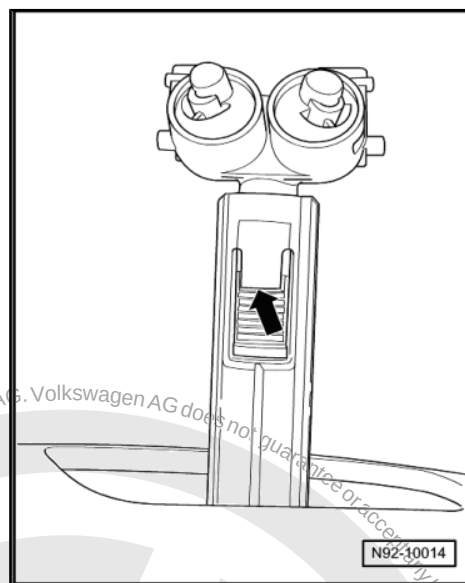


- Lift the retaining hook -arrow- slightly and remove the spray nozzle holder.

Installing

Use the catches on the spray nozzle holder to adjust how far the cap of the spray nozzle is pulled onto the bumper cover. The cap will not close if the spray nozzle bracket is not pushed back far enough. If the spray nozzle bracket moves with too much force, the cap and the bumper cover will get deformed.

- Push the spray nozzle holder into the lift cylinder until it locks in place.
- Place the cap on the spray nozzle bracket and let the lift cylinder draw inward.
- Check the cap for proper seating on the bumper cover.
- Bleed the headlamp washer system after finishing assembly work. Refer to ➔ [page 125](#) .



3.4 Spray Nozzles, Adjusting

If the spraying field is uneven due to dirt in the nozzle, remove the spray nozzles and flush the nozzle out in the opposite direction of the spray. It is then permitted to blow compressed air opposite the spray direction. Do not clean the spray nozzles using any objects.

3.5 Lift Cylinder, Removing and Installing

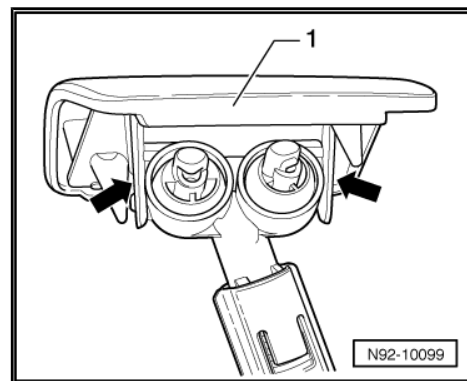
Removing and installing the left spray nozzle lift cylinder is shown in the following illustrations. Removing and installing the right spray nozzle is identical.

Removing

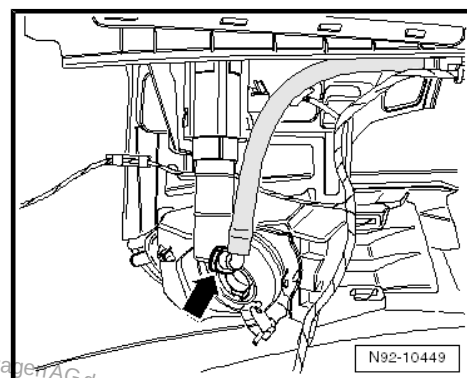
- Turn off the ignition and all electrical equipment and remove the ignition key.



- Pull the spray nozzles and the cap -1- off the bumper cover until it stops.
- Remove the cap -1- from the mountings -arrows- on the spray nozzle holder.
- Remove the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Front Bumper Cover; Front Bumper Cover, Removing and Installing .



- Press on the clip -arrow- and pull the hose connection off of the lift cylinder.

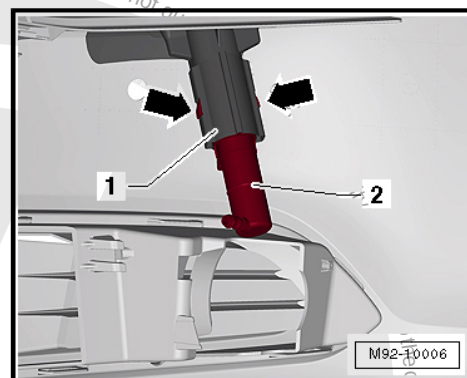


- Press both locking mechanisms in direction of -arrow- together at the same time and pull the lift cylinder -2- out and downward out from the bracket in the bumper cover -1-.

Installing

Install in reverse order of removal. Note the following:

- Bleed the headlamp washer system after finishing assembly work. Refer to ⇒ [page 125](#)





4 Washer Fluid Hoses

⇒ **"4.1 Washer Fluid Hoses, Servicing", page 128**

4.1 Washer Fluid Hoses, Servicing

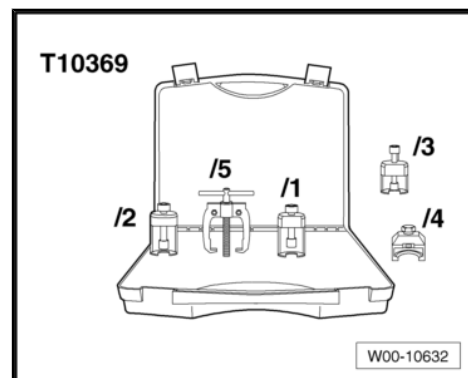
Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 92 ; Washer Fluid Hoses .



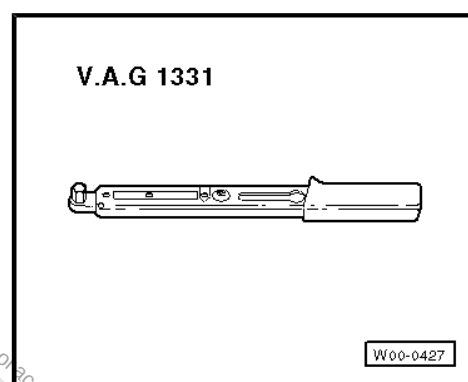
5 Special Tools

Special tools and workshop equipment required

- ◆ Puller - Wiper Arm Kit - T10369-



- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



- ◆ Pry Lever - 80-200-

