

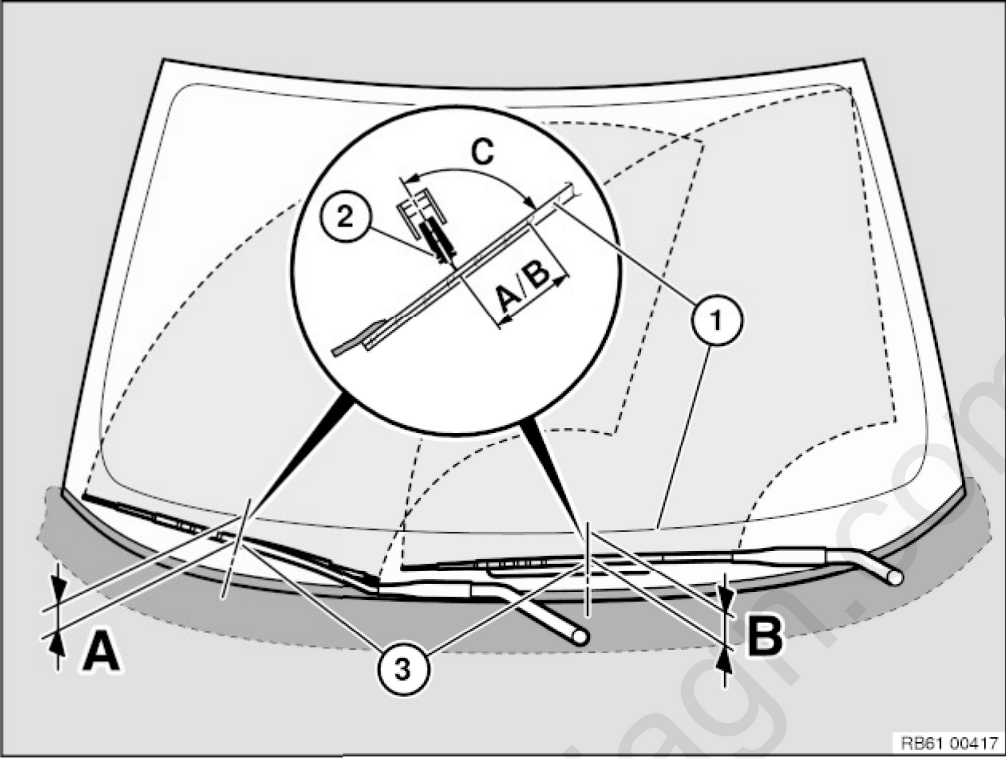
61 61 ... Checking contact angle of wiper on left or right (series P L7)



Special tools required:

- 61 6 100

A correctly adjusted contact angle of the wiper arms is important for the wiping quality. Consult the vehicle-specific repair instructions for adjustments



- A/B = Distance between black print edge (1) and wiper blade (2).
Note: Measurement is done at the height of the fixture (3) of the wiper blades.
- C= Contact angle between wiper blade centre plane and windscreen

When using special tool 61 6 100 , check the scale value according to the following table.

For right hand drive vehicles, change the preceding sign of the scale values.

- Left hand drive vehicle scale range 0 to -10
- Right hand drive vehicle scale range 0 to +10

Model	Contact angle (C) on windscreen wiper arm		Scale value on the special tool (left hand drive vehicle)		Setting dimension (A, B) on windscreen wiper arm	
	Front front passenger side	Driver's side	Front front passenger side	Driver's side	Front front passenger side	Driver's side
F20 / F21 / F22 / F23	85.0 ° ±2 °	85,6 ° ±2 °	-5 ±3	-5 ±3	36 mm ±3 mm	34 mm ±3 mm
F30 / F31 / F35 / F80	85,5 ° ±2 °	85,5 ° ±2 °	-5 ±3	-5 ±3	35 mm ±3 mm	45 mm ±3 mm

F32 / F36 / F33 / F82 / F83	85,8 ° ±2 °	85,6 ° ±2 °	-5 ±3	-5 ±3	49 mm ±3 mm	64 mm ±3 mm	
F34	84,0 ° ±2 °	84,0 ° ±2 °	-5 ±3	-5 ±3	40 mm ±3 mm	32 mm ±3 mm	

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Special tools required:

- 61 6 100
- 00 9 220



Note:

The wipe quality is improved by precise adjustment of the contact angle of the wiper arms.

The contact angle can be tested with special tool 61 6 100 .



Note:

Graphics show left hand drive vehicle.

Remove wiper blade.

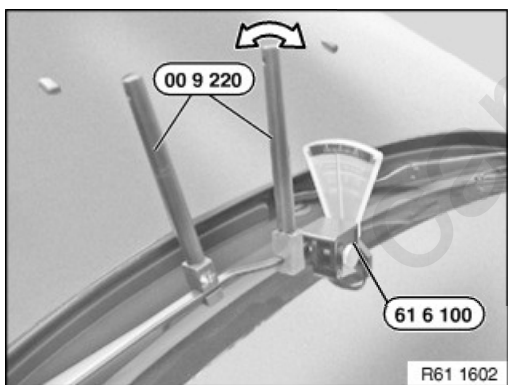
Insert wiper arm (1) into special tool 61 6 100 as shown.

Secure the wiper arm (1) with screw (2) and pressure plate (3) and place onto the windscreen.

Read the scale value and adjust the wiper arm, if necessary.

Note:

The wiper arm (1) must be placed correctly along the lower and side contact surface of special tool 61 6 100 .



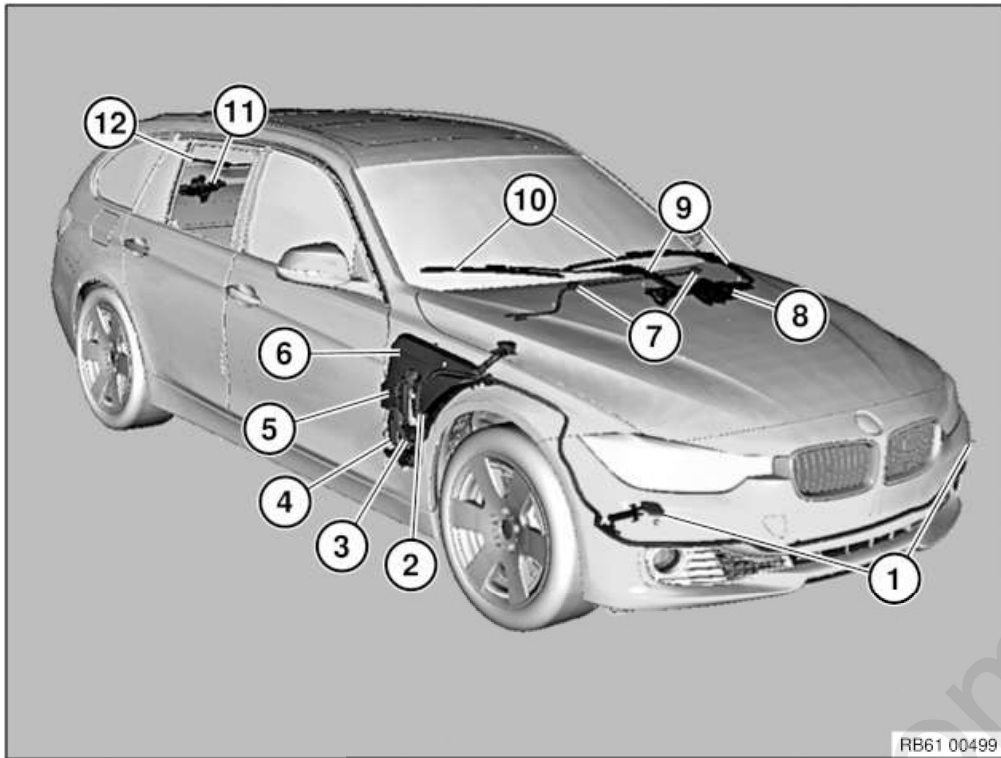
Note:

Tape off the wiper arm with yellow plastic adhesive tape to prevent damage.

Press special tools 00 9 220 into the corresponding direction until the correct contact angle is reached.



61 61 .. Overview of windscreen wiper and cleaning system



- | | |
|--|---|
| 1 High-pressure nozzle for headlight cleaning system | 7 Washer jet for window washer system |
| 2 Washer pump for headlight cleaning system | 8 Windscreen wiper console |
| 3 Rear washer pump (only F31) | 9 Windscreen wiper arms |
| 4 Windscreen washer pump | 10 Windscreen wiper blades |
| 5 Washer fluid level switch (integrated in washer fluid reservoir) | 11 Rear wiper motor (F31 only) |
| 6 Washer fluid reservoir | 12 Rear window wiper arm and rear window wiper blade (only F31) |



61 61 270 Removing and installing or replacing console for windscreen washer system complete with motor



Important!

Read and comply with notes on protection against electrostatic discharge (ESD protection).



Important!

Before installing the wiper arms, allow wiper motor to run into rest position.



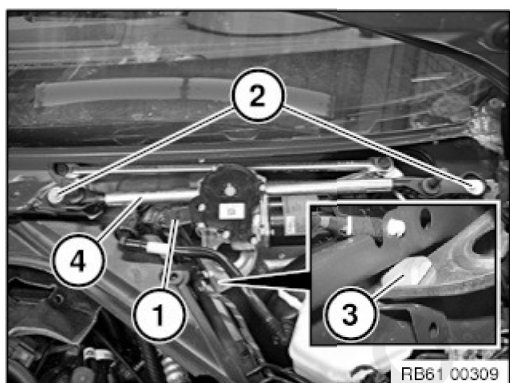
Warning!

Danger of injury from emergency operation, disconnect battery negative terminal!



Necessary preliminary tasks:

- Remove cowl panel cover



Unlock and disconnect plug connection (1).

Unfasten screws (2).

Tightening torque 61 61 1AZ.

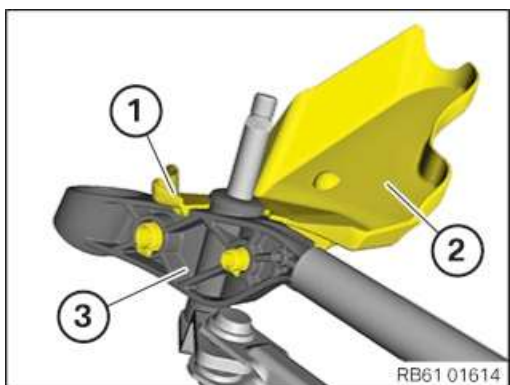
Pull console for windscreen wiper (4) out of guide (3) and remove.

Note:

On a right hand drive vehicle also release position at position (3).

Installation note:

Ensure guide (3) is correctly installed.



For replacement from 07/13:

Release latch mechanism (1) and pull out the water drain (2) from the wiper console.

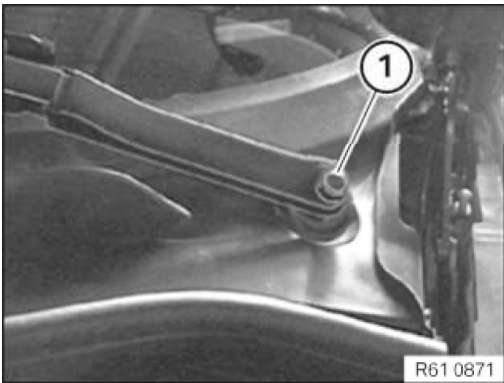


**Special tools required:**

- 61 6 060

**Important!**

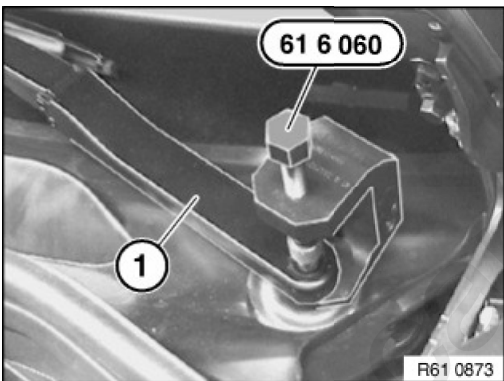
After installation check setting dimension and contact angle of the wiper arm.



Remove protective cap (1).

Release nut underneath.

Tightening torque 61 61 2AZ.

**Important!**

Risk of breakage!

Do not bend wiper arm when removing.

Detach windscreen wiper arm with special tool 61 6 060 .

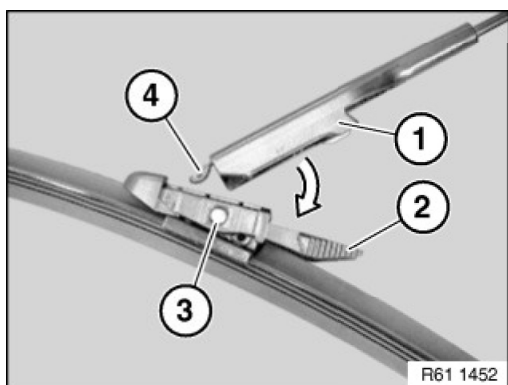


**Important!**

Make sure the wiper arm does not contact the windscreen without its wiper blade.

*Note:*

In the event of a **customer complaint** regarding the cleaning or wiping performance or noise build-up (juddering, squeaking noise) by the wiper blades, proceed as follows: **First check** whether the complaint is caused by dirt (preservation wax on new vehicles, resins or other environmental influences) on the windscreen; if necessary, **clean the windscreen thoroughly!** Replace the wiper blades only if cleaning the windscreen fails to remedy the situation.



Fold wiper arm (1) away from windscreen.

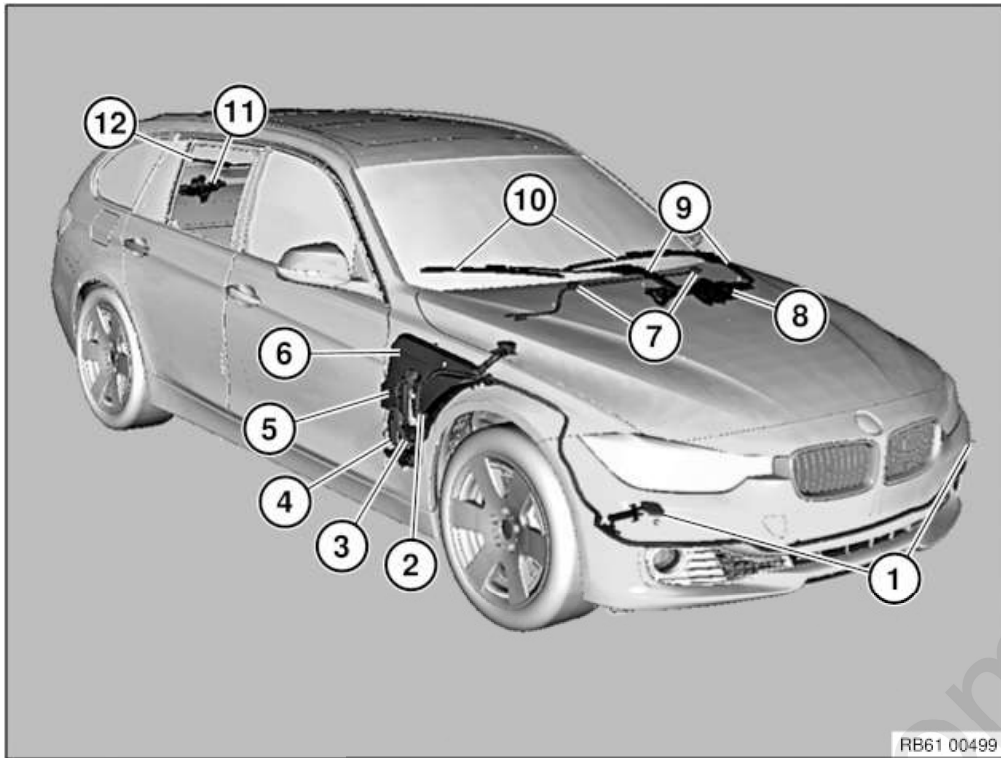
Press lock (2) and remove wiper blade (3) in direction of arrow.

Installation note:

Make sure guide (4) is correctly seated in wiper blade (3).



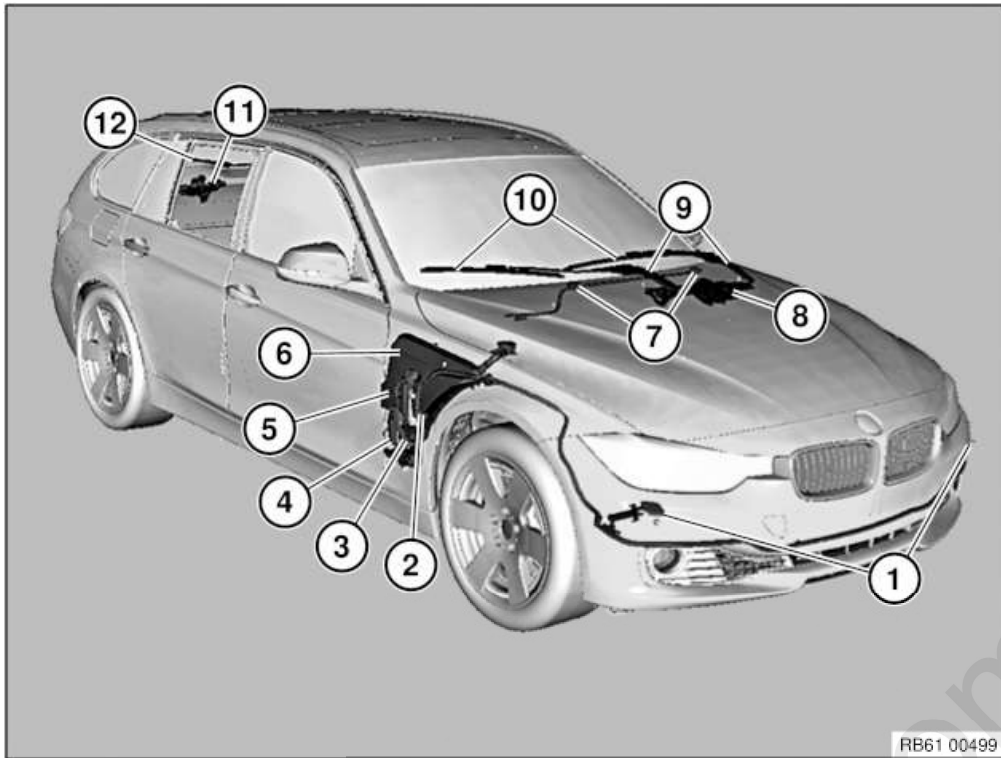
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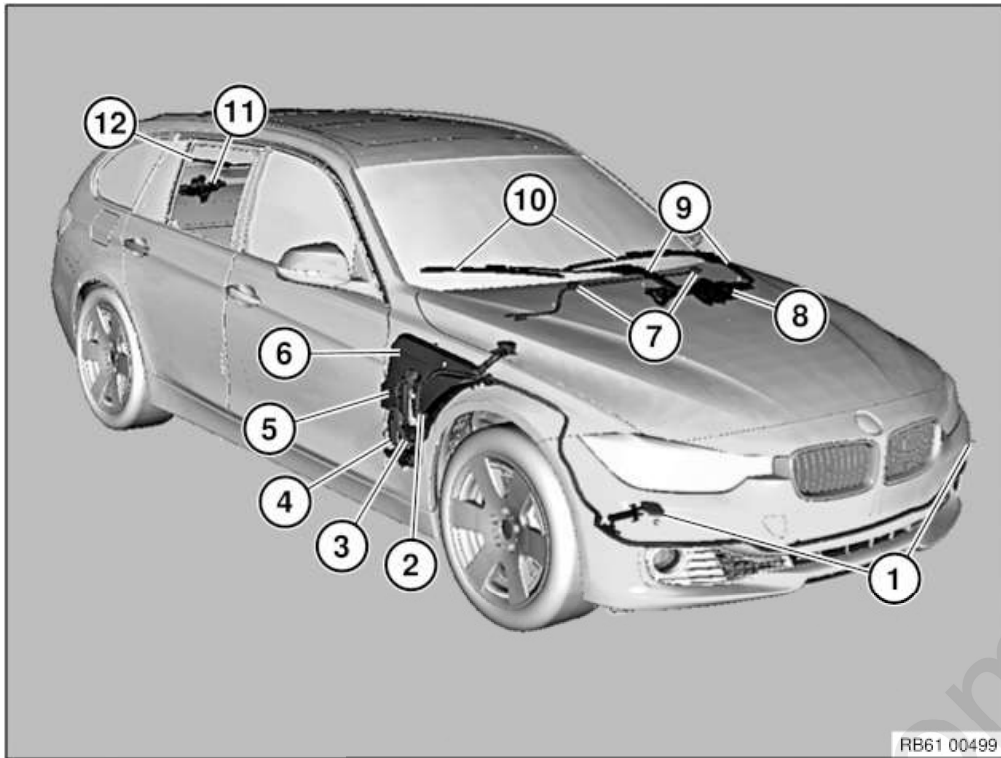
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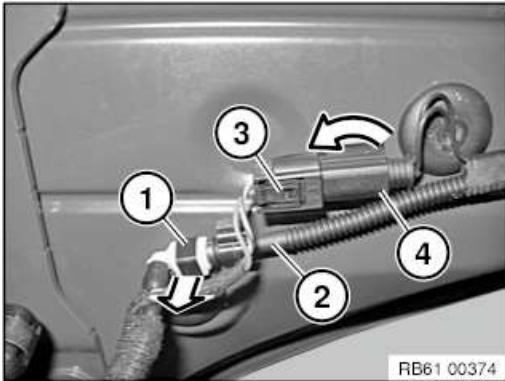
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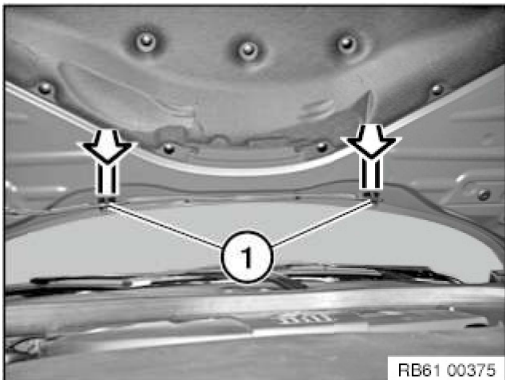
61 71 030 Removing and installing/renewing all washer jets of windscreen washer system



Unlock hose coupling (1) in direction of arrow and detach washer fluid line (2).

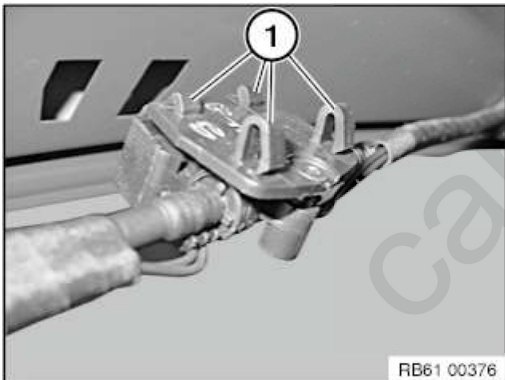
Unfasten plug connection (3) and disconnect.

Turn connector with holder (4) counterclockwise slightly and remove in downward direction.



Press all washer jets (1) in direction of arrow upwards and remove.

Open all brackets and remove washer fluid line.

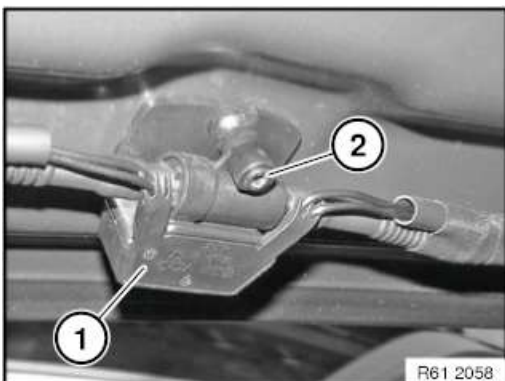


Installation note:

Retaining lugs (1) must not be missing or damaged.

Check washer jet setting.

Top up window washer system.



Note:

Washer jets are preset by the manufacturer, do not change this setting if possible.

Setting can be changed in a specific case for a customer complaint.

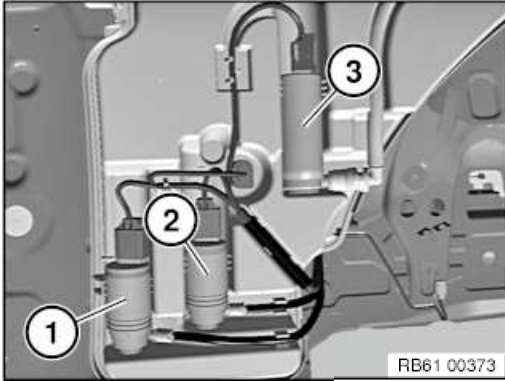
Changes in the setting must take into account the possible driving situations (high/low speed; with/without washing additive) and must be performed with care.

If necessary, adjust left/right washer jet (1) by using screw (2).

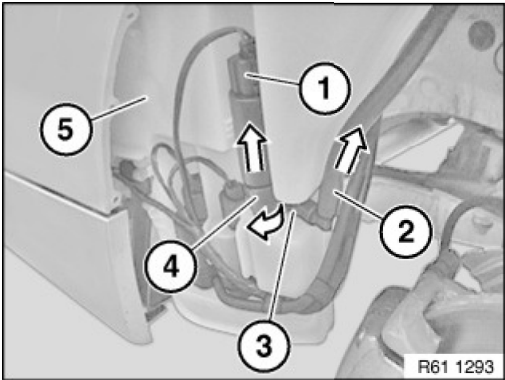


**Necessary preliminary tasks:**

- Detach washer fluid reservoir and pull forwards

Overview of washer pumps:

- (1) Windscreen washer pump of window washer system.
- (2) Windscreen washer pump of window washer system (F20, F21, F31 only).
- (3) Washer pump for headlight cleaning system.

*Note:*

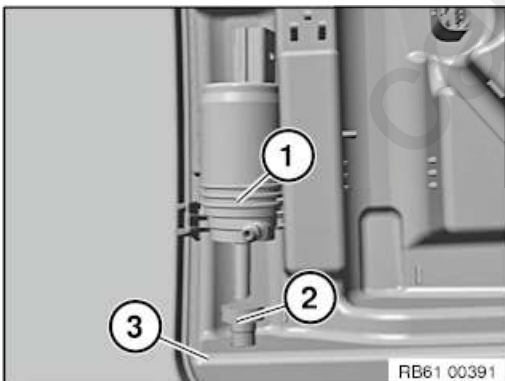
Graphic shows by way of example the washer pump for the headlight cleaning system!

Catch any escaping washer fluid if necessary.

Unfasten plug connection (1) and disconnect.

Unlock latch (3) and detach hose pipe (2) from washer pump (4).

Turn washer pump (4) if necessary and pull out of washer fluid reservoir (5).

*Note:*

Graphic shows an example of the strainer for windscreen washer pump.

Remove and replace strainer (2) of windscreen washer pump (1) or washer fluid reservoir (3).

*Installation note:*

- Coat sealing ring of washer pump with lubricant
- Lay hose pipe of washer pump without kinks
- Topping up washer fluid





Operation is described in:

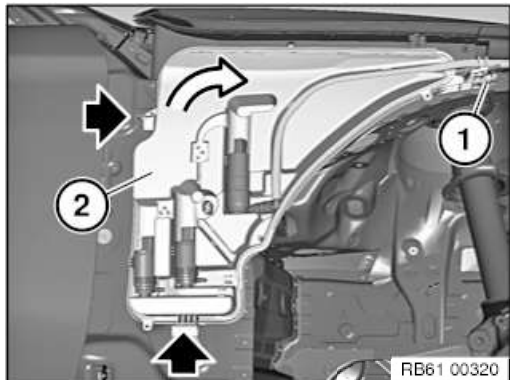
Remove windscreen washer pump.

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**Necessary preliminary tasks:**

- Remove front right wheel arch cover

*Note:*

Shown with side wall removed for purposes of clarity.

Release screw (1).

Tightening torque 61 66 1AZ.

Pull the washer fluid reservoir (2) out of the guides (arrow) in the direction of the arrow).

Unlock and disconnect all plug connections.

Unlock filler hose and pull it off the fitting on the washer fluid reservoir.

Note:

Catch any escaping washer fluid if necessary.

Replacement:

- Modify all windscreen washer pumps

*Installation note:*

- Replace strainers on washer pumps
- Coat sealing rings of washer pumps with lubricant.
- Lay hose pipes of washer pumps without kinks and clip into holders on washer fluid reservoir
- Top up the washer fluid reservoir

