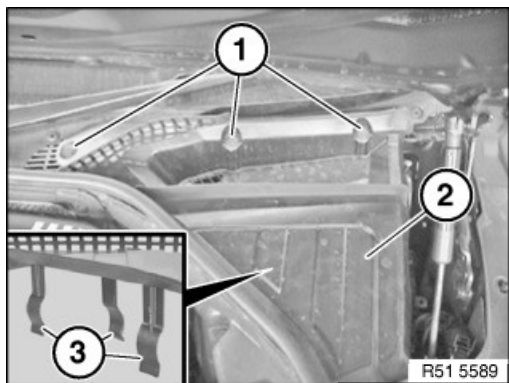


**Necessary preliminary work:**

- Remove underbody protection



Release expanding rivets (1).

Remove cover (2) for cowl panel.

Installation note:

Replace damaged expanding rivets.

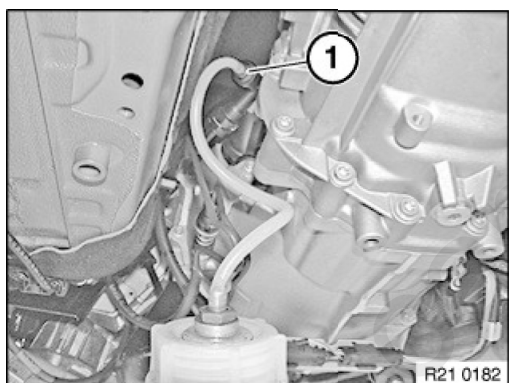
Holders (3) must snap into place in suspension cross-brace when cover (2) is installed.



Connect bleeder unit to brake fluid expansion tank. **Important!**

Check relevant equipment manufacturer's operating instructions for each device.

Charging pressure should not exceed 2 bar.



Connect vent hose to vent valve (1).

Open vent valve (1) and flush until clear brake fluid emerges without air bubbles.

Close vent valve.

Switch off bleeder unit or remove from brake fluid expansion tank.

Correct brake fluid level in expansion tank.



**Special tools required:**

- 11 9 260
- 21 2 141
- 21 2 142
- 21 2 170
- 21 2 180
- 21 2 200
- 21 2 230
- 21 2 250

**Important!**

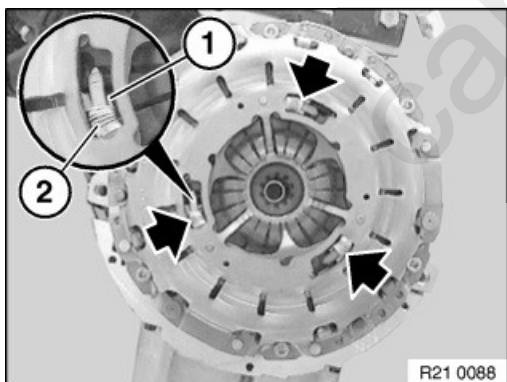
Do not clean the Self-adjusting clutch and the flywheel with a pressure washer or washing machine, otherwise the function of adjusting unit and damping springs is no longer guaranteed.

Clean friction surface only.

Check self-adjusting clutch for wear and damage and replace as necessary.

**Necessary preliminary tasks:**

- Remove transmission.

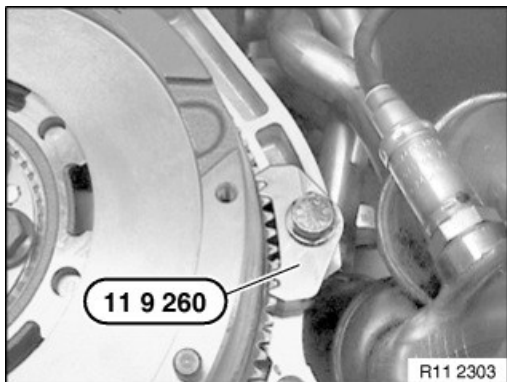
**Identification SAC clutch $\varnothing$ 240 mm (self-adjusting clutch):**

- 3 openings each with a pressure piece (1) of adjustment ring and a pressure spring (2)

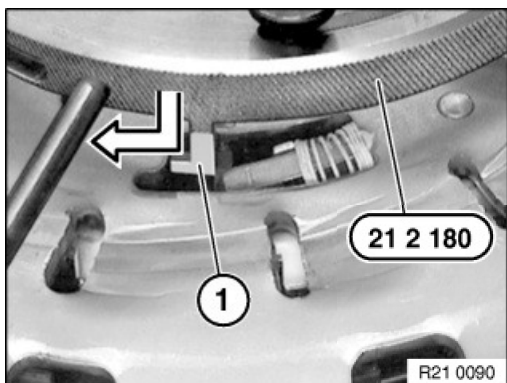
Note:

Figure shows new position of the thrust pieces.

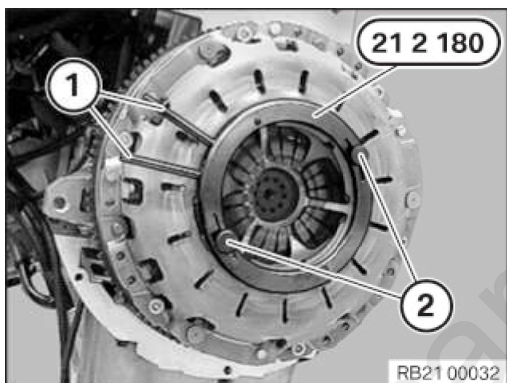




Lock flywheel with special tool 11 9 260 .



Insert special tool 21 2 180 in self-adjusting clutch. *Note:*
Locking hooks (1) of special tool 21 2 180 must engage in recesses of self-adjusting clutch.

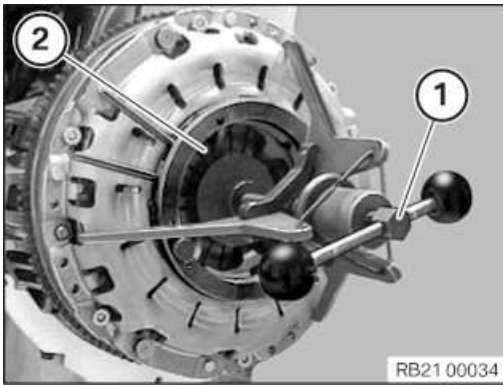


Press special tool 21 2 180 together at handles (1) up to limit position and grip firmly.
At same time tighten down knurled screws (2).
Adjusting ring of self-adjusting clutch is now secured.

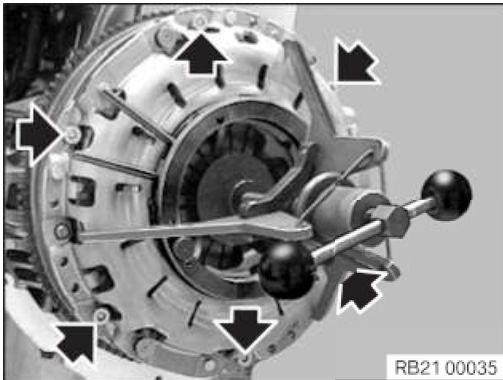


Fit special tool 21 2 170 and tighten down at knurled screw (1).





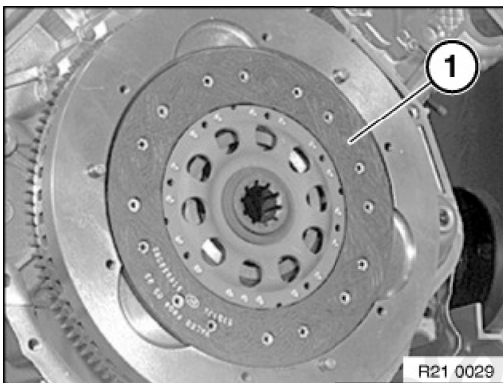
Screw in spindle (1) until diaphragm spring (2) is tensioned up to stop.



Remove bolts and remove self-adjusting clutch from flywheel. *Installation note:*

Screws must be replaced.

Joining torque and angle of rotation must be observed without fail.



Remove clutch disc (1) from flywheel.

Clean flywheel, check for wear and damage.

Replace damaged flywheel.

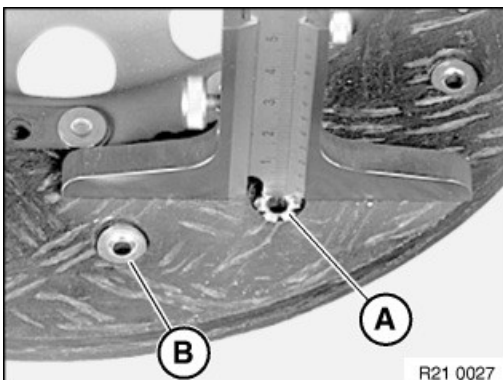
Check grooved ball bearing in crankshaft for ease of movement and tightness and if necessary replace grooved ball bearing.



Important!

Always replace clutch discs fouled e.g. by oil, cleaning agent.

Check the clutch disc for damage and frictional corrosion in the hub profile and replace if necessary.



Check clutch disc for wear:

Measure lining protrusion at lining rivets at closing head (A) in each case.

Note:

Rivet connection

- a) Closing head
- b) Swage head

Replace clutch disc if lining protrusion at closing head (A) is less than 1 mm.

Push clutch disc onto the cleaned transmission input shaft and check for easy movability.





Important!

Do not clean the Self-adjusting clutch and the flywheel with a pressure washer or washing machine, otherwise the function of adjusting unit and damping springs is no longer guaranteed.

Clean friction surface only.

Check self-adjusting clutch for wear and damage and replace as necessary.



Reinstall the previously removed self-adjusting clutch and clutch disc:



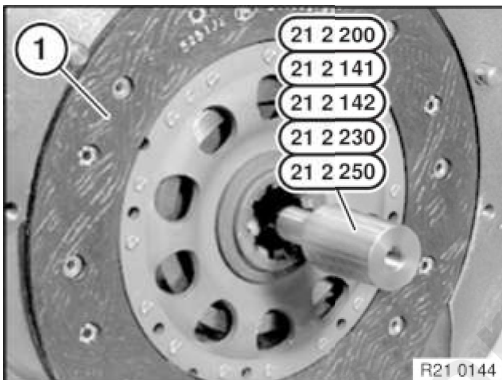
Important!

Handle clutch disk carefully, do not touch surfaces of friction pads.

Clean friction surfaces of the flywheel and the pressure plate with BMW-approved brake cleaner.

Install clutch disc in correct position.

Note designation for "engine side" / "transmission side".



Centre clutch disc (1) with special tool.

Special tool Transmission

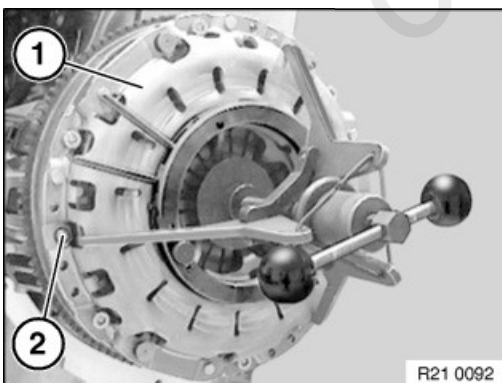
21 2 141 S6S 420G; S6S 560G; S5D 390Z

21 2 142 S5D 200G; S5D 250G; S5D 260Z; S5D 310Z

21 2 200 GS6-37BZ; GS6-17BG

21 2 230 GS6-53DZ, GS6-45 BZ/DZ

21 2 250 GS6-17BG



Mount self-adjusting clutch (1) on flywheel together with special tools.

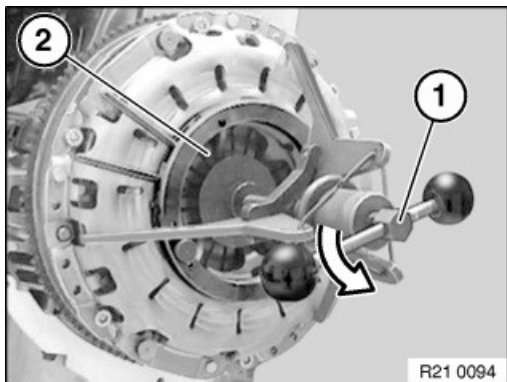
Pay attention to dowel pins (2).

Self-adjusting clutch (1) must be secured by way of dowel pins (2).

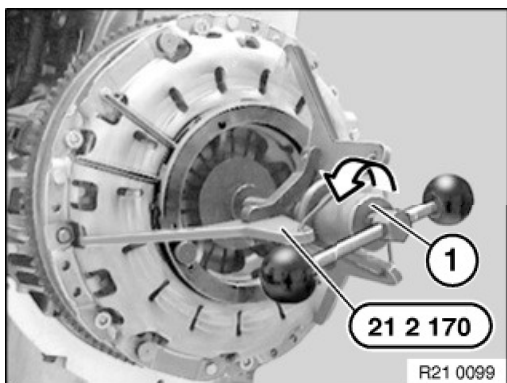
Install and tighten down screws.

Tightening torque: 21 21 1AZ.

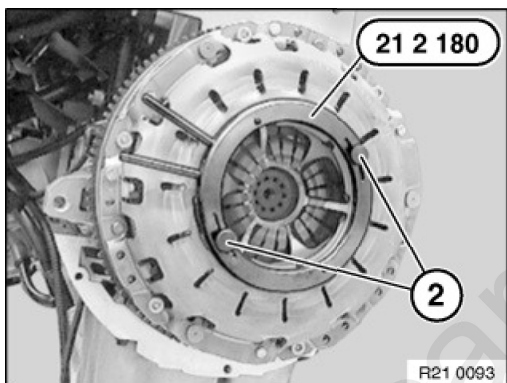




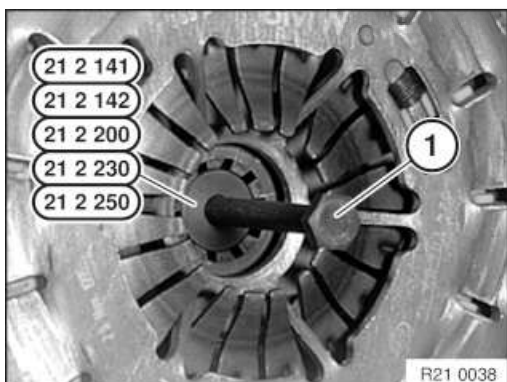
Release spindle (1) until load is fully removed from diaphragm spring (2).



Release knurled screw (1) and remove special tool 21 2 170 from self-adjusting clutch.



Release knurled screws (2) and remove special tool 21 2 180 from self-adjusting clutch.



Withdraw special tool from clutch disc with aid of accompanying screw (1).



Install removed self-adjusting clutch with new clutch disc: *Installation*

note:

Screws must be replaced.





Important!

Before installing a self-adjusting clutch which has been in service with a new clutch disc: always reset adjusting ring in new position.



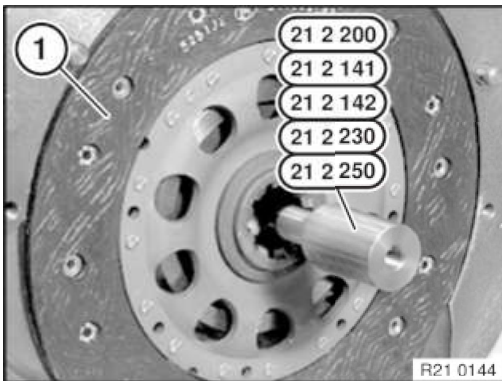
Important!

Handle clutch disk carefully, do not touch surfaces of friction pads.

Clean friction surfaces of the flywheel and the pressure plate with BMW-approved brake cleaner.

Install clutch disc in correct position.

Note designation for "engine side" / "transmission side".



Centre clutch disc (1) with special tool.

Special tool Transmission

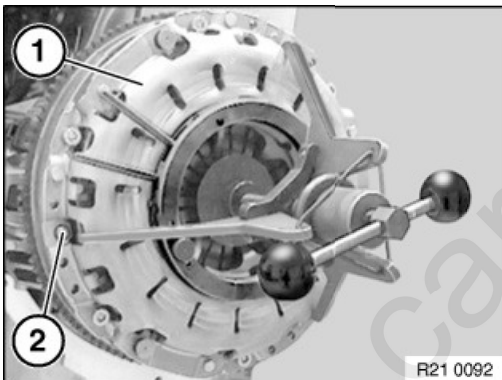
21 2 141 S6S 420G; S6S 560G; S5D 390Z

21 2 142 S5D 200G; S5D 250G; S5D 260Z; S5D 310Z

21 2 200 GS6-37BZ; GS6-17BG

21 2 230 GS6-53DZ, GS6-45 BZ/DZ

21 2 250 GS6-17BG



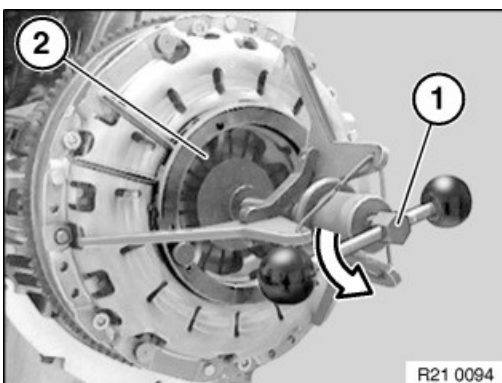
Mount self-adjusting clutch (1) on flywheel together with special tools.

Pay attention to dowel pins (2).

Self-adjusting clutch (1) must be secured by way of dowel pins (2).

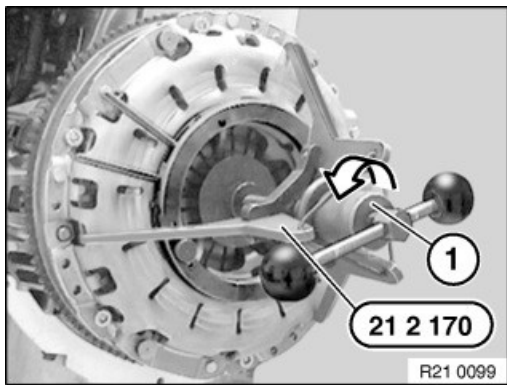
Insert and tighten mounting bolts for self-adjusting clutch.

Tightening torque: 21 21 1AZ.

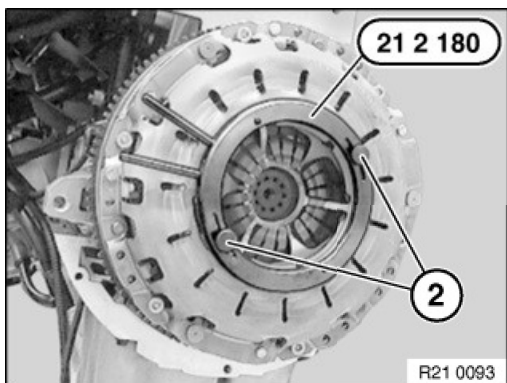


Release spindle (1) until load is fully removed from diaphragm spring (2).

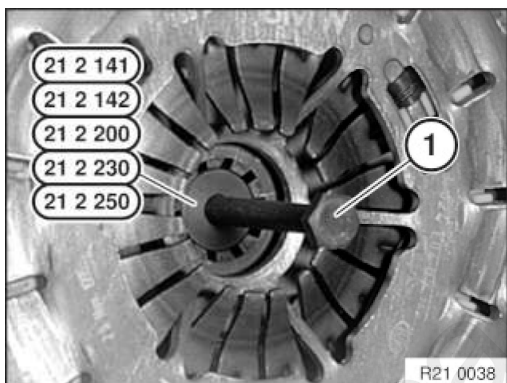




Release knurled screw (1) and remove special tool 21 2 170 from self-adjusting clutch.



Release knurled screws (2) and remove special tool 21 2 180 from self-adjusting clutch.



Withdraw special tool from clutch disc with aid of accompanying screw (1).



Install new self-adjusting clutch:



Important!

Handle clutch disk carefully, do not touch surfaces of friction pads.

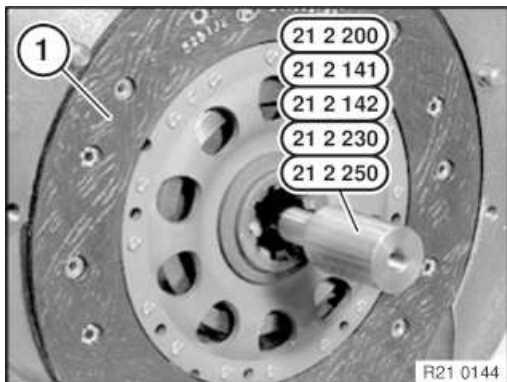
Clean friction surfaces of the flywheel and the pressure plate with BMW-approved brake cleaner.

Install clutch disc (1) in correct position.

Note designation for "engine side"/"transmission side".

The clutch operator contained in the new replacement clutch set **absolutely** must be installed.

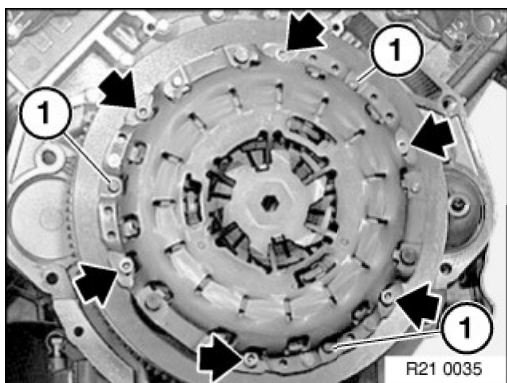




Centre clutch disc (1) with special tool.

Special tool Transmission

21 2 141	S6S 420G; S6S 560G; S5D 390Z
21 2 142	S5D 200G; S5D 250G; S5D 260Z; S5D 310Z
21 2 200	GS6-37BZ; GS6-17BG
21 2 230	GS6-53DZ, GS6-45 BZ/DZ
21 2 250	GS6-17BG



Slide self-adjusting clutch onto dowel pin (1) located in flywheel and screw on.

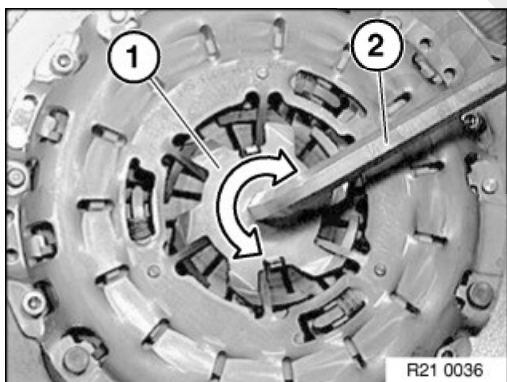
Tightening torque: 21 21 1AZ.

Important! Clutch must be secured by way of dowel pins (1).



Important!

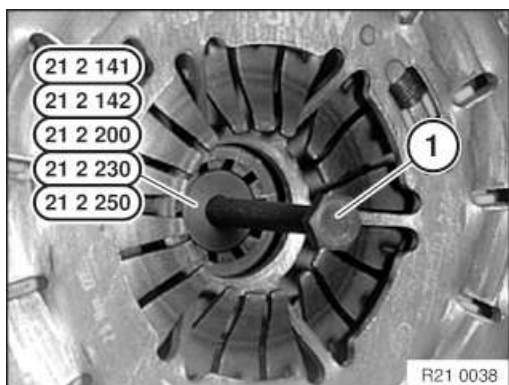
Stop (1) may only be removed with self-adjusting clutch screw-mounted.



Carefully unscrew stop (1) clockwise or anticlockwise using a size 14 (2) hexagon socket wrench. **Note:**

A slight snapping of the plate spring while unscrewing is possible.





Withdraw special tool from clutch disc with aid of accompanying screw (1).

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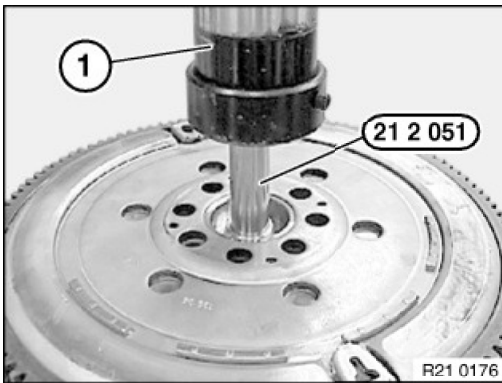


**Special tools required:**

- 21 2 051
- 21 2 052



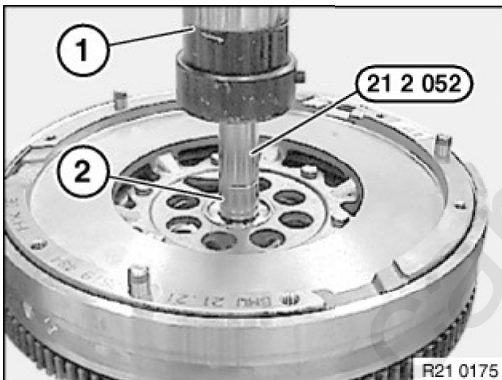
Note:
Flywheel removed!



Using hydraulic press (1) and special tool 21 2 051, press roller bearing out of dual-mass flywheel downwards on engine side. **Important!**

Risk of damage:

Roller bearing must not be driven out.



Push roller bearing (2) onto special tool 21 2 052.

Using hydraulic press (1), press roller bearing into dual-mass flywheel to limit position on clutch side.

Important!

Risk of damage:

Observe press-in instruction:

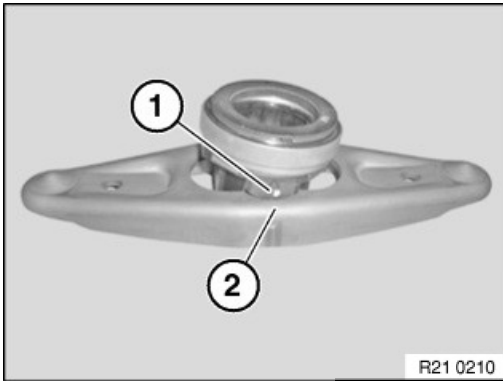
- Roller bearing must not be driven in.
- Roller bearing mounting force/travel monitored:
Min. 2000 N 1 mm before end of pressing in.
Max. 15,000 N during entire press-in procedure.



Note: (gearbox removed)



Do not disassemble the release module. Otherwise there is a risk of the release module being **incorrectly** reassembled.



Note:

Release bearing (1) and release lever (2) have been combined to form a single release module.

Do **not** grease sliding surfaces.

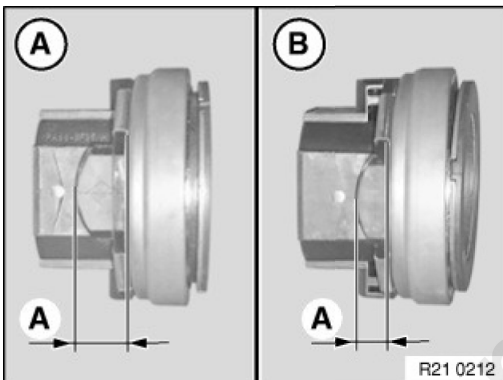
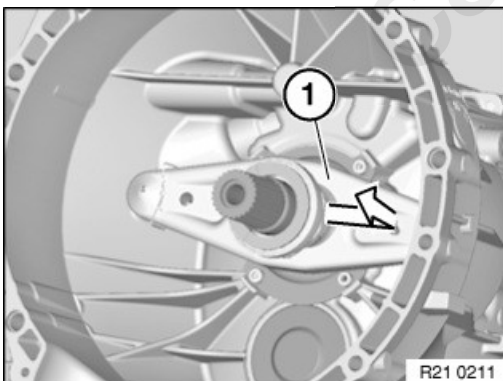


image A: Cam (1) of release bearing (**A=12 mm**) is on sliding surface of release lever.

Type: N43, N45, N46

image B: Cam (1) of release bearing (**A=7 mm**) is on sliding surface of release lever.

Version for all other engines



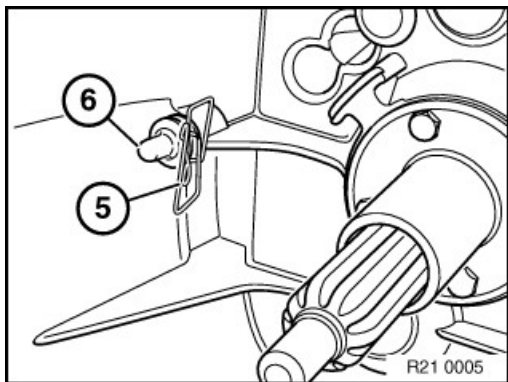
Remove release module (1) from spring wire clip.

Remove release module.

Note:

Similar to graphic.





Installation note:

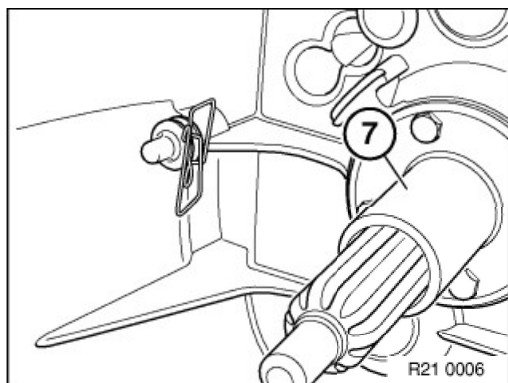
Check spring wire clip (5) and ball pin (6) for damage and replace if necessary.

Apply a thin coating of grease to ball pin (6).

Grease, refer to BMW Service Operating Fluids.

Note:

Similar to graphic.



Clean guide sleeve (7). *Installation note:*

Do **not** grease guide sleeve.

Important!

If guide sleeve is greased, the release lever can stick on the guide sleeve.

Note:

Similar to graphic.

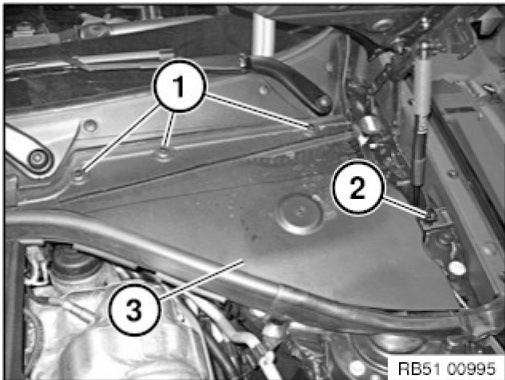


**Note:**

After completing repair work, bleed clutch hydraulic system.

**Necessary preliminary tasks:**

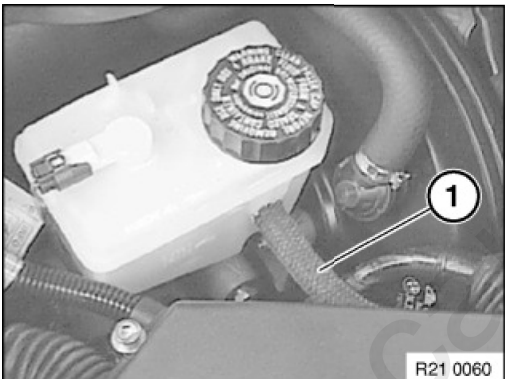
- Remove trim panel for pedal mechanism.



Turn locks (1) 90° counterclockwise.

Unlock latch mechanism (2).

Remove cover (3).



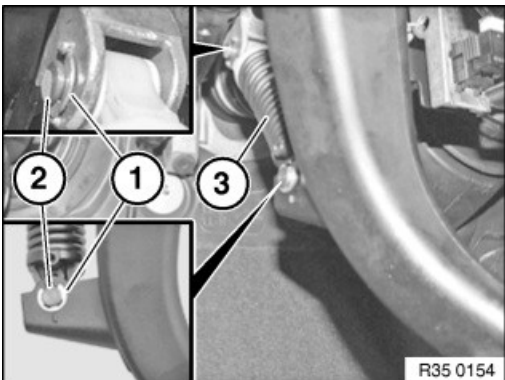
Draw off brake fluid up to supply hose of clutch hydraulic system (1).

- For this purpose, use only a vacuum pipe that is exclusively used for removing brake fluid.

Detach supply hose (1) from expansion tank.

Note:

Graphic similar.



Remove retainer (1).

Installation note:

Check retainer (1), replace if necessary.

Both shanks of retainer (1) must rest in groove of bolts (2) and engage audibly.

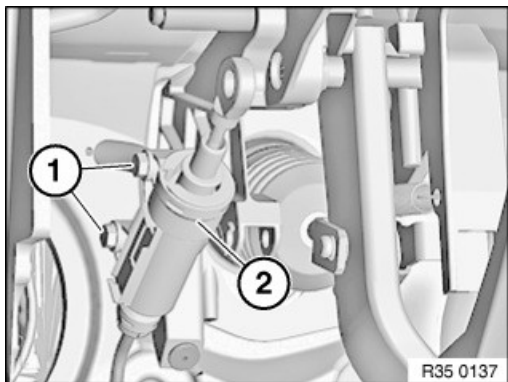
Slide out bolt (2).

Installation note:

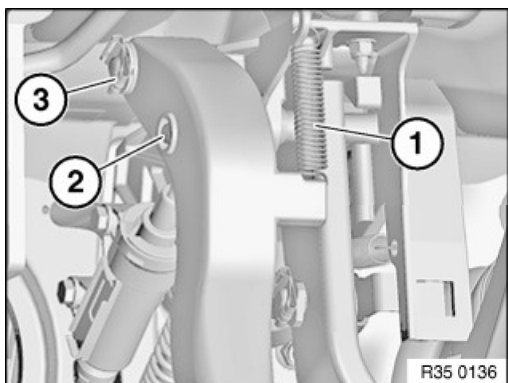
Lightly grease bolt (2).

Remove over-centre helper spring.

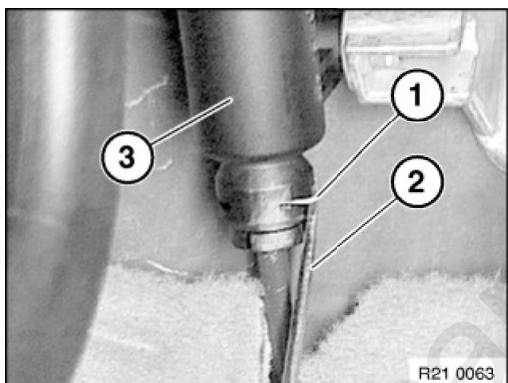




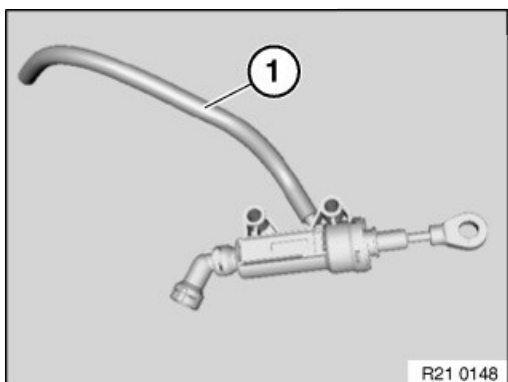
Release screws (1) on clutch master cylinder (2).
Tightening torque 21 52 2AZ.



Disconnect return spring (1).
Detach retaining clip (3) and pull clutch pedal with clutch master cylinder off bearing support.
Press bolt ends (2) together and remove pin.
Installation note:
Replace retaining clip and bolt.
The retaining clip must be seated with both shanks in the pin groove.

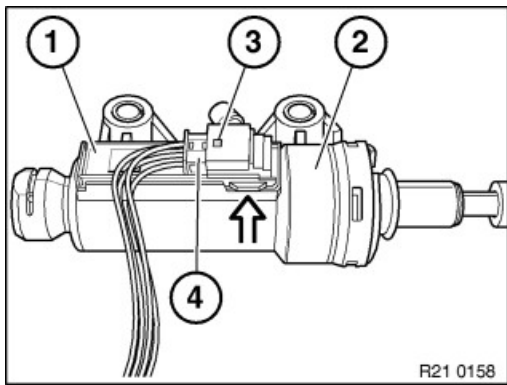


Detach clamp (1) with a screwdriver (2).
Important!
Protect the carpet with suitable agents from contamination with brake fluid.
Detach hydraulic line from clutch master cylinder (3).



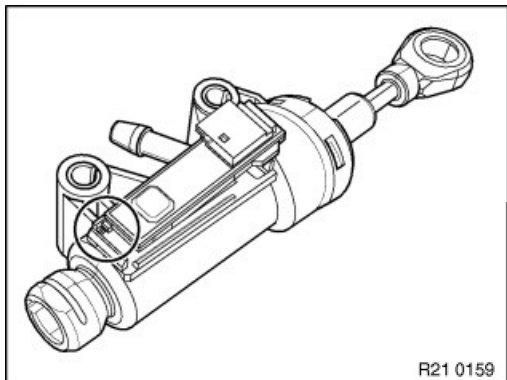
Detach supply hose (1) from clutch master cylinder.
Important!
Do not pull supply hose completely into interior.





Lever clutch switch (1) out of clutch master cylinder (2) with a screwdriver.

Release plug connection (3) and disconnect connector (4) from clutch switch (1).



Installation note:

The clutch switch is protected from incorrect installation.

The clutch switch must snap audibly into place.

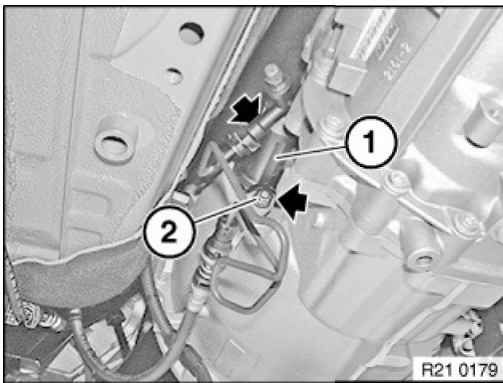
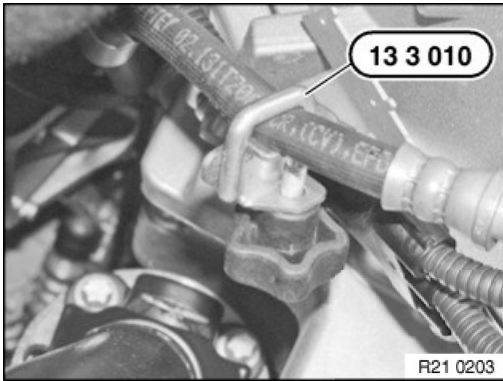


**Special tools required:**

- 13 3 010

Note: After completing work bleed clutch hydraulic system.

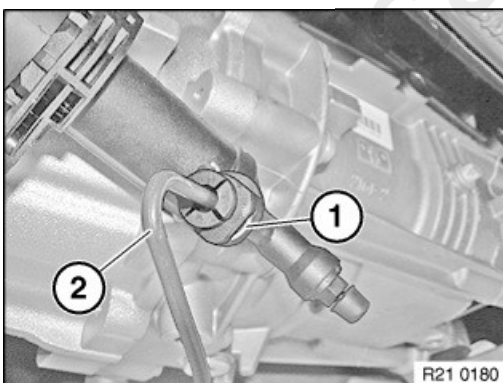
Seal hydraulic line to clutch slave cylinder with special tool 13 3 010 .



Release nuts or screws and remove clutch slave cylinder (1) with holder (2). **Installation note:**

Replace self-locking nuts.

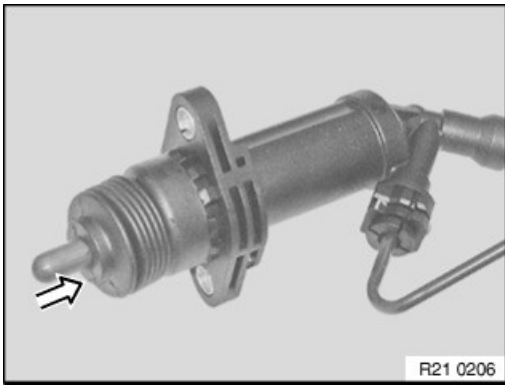
Tightening torque 21 52 1AZ.



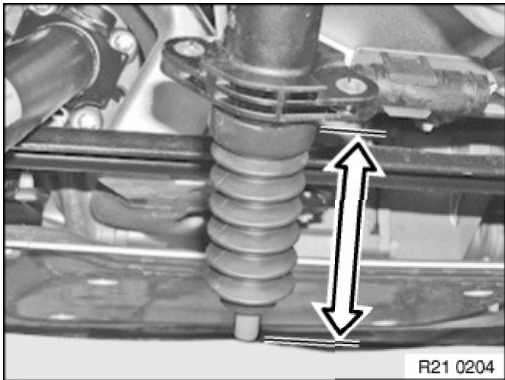
Unlock spring clamp (1).

Disconnect hydraulic line (2).

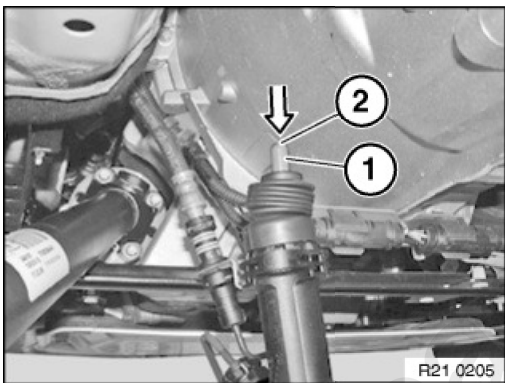




Press cylinder together by hand.
Connect hydraulic line with cylinder pressed.



Remove special tool 13 3 010 .
Hold cylinder piston vertically downwards.
Press piston 5 times into cylinder.



Press in piston until it engages.
Install clutch slave cylinder.
Bleed clutch hydraulic system.

Installation note:

Clean thrust member (1) and contact surface on release lever.
Lightly grease thrust member (1) on contact surface (2).
Grease, refer to BMW Service Operating Fluids.

