34 11 220 Removing and installing/replacing both front brake discs

Overview of Activities

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Additional information is available.

General information

⚠ WARNING

Vehicle may slip off the vehicle lift if the vehicle lift is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle lift.
- For additional information see: 00 ... Raise the vehicle using a vehicle lift.

i TECHNICAL INFORMATION

General information on changing the brake pads:

For vehicles older than 48 months it is recommended to replace the retaining spring or expanding spring.

The brake pad wear sensor must be replaced once it has been disassembled because the brake pad wear sensor loses its retention capability in the brake pad.

A CBS reset must be done after every brake pad exchange:

A CBS reset in the vehicle is possible in the event of a **partially ground down** brake pad wear sensor. The CBS display in the Central Information Display (CID) is active.

In the event of a brake pad wear sensor that is **not partially ground down** a CBS reset is only possible with the diagnosis system. No CBS display in the Central Information Display (CID).

If bonded brake pads are installed, the brake pads must be renewed after releasing the adhesive strip.

i TECHNICAL INFORMATION

To prevent damage to the surface coating: With floating callipers on the brake caliper mounting bracket or with fixed callipers in the brake caliper housing, do not mechanically clean the contact surfaces for the brake pads to the extent that it is possible

housing, do not mechanically clean the contact surfaces for the brake pads to the extent that it is possible.

Clean the contact surfaces with brake cleaner (BMW part number 83 19 2 154 780). Next, apply a thin coat of brake pad paste (BMW part number 83 19 2 158 851 for 3 g) or 83 19 2 158 852 fr 100 g).

Spread brake pad paste on the marked surfaces with a brush.

For additional information see: 34 00 ... brake pad paste

PRELIMINARY WORK

1–Removing the front left and right wheels

NOTICE

Perform the steps on the left and right side.

▸ **Removing the wheel**

Additional information is available.

TECHNICAL INFORMATION

A wheel lift is recommended for easier wheel removal and installation without exertion (see Retailer Equipment Catalogue).

- **In vehicles with carbon ceramic brake: The wheel lift must be used to remove the wheel.**

  This process is intended to prevent damage to the brake disc.

- If several wheels are removed at the same time: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.
- To release and tighten wheel bolts with a security code: Use the correct adapter from the set of special tools **0 492 518 (36 1 300)**.

◂

2–Remove brake pad wear sensor to the front

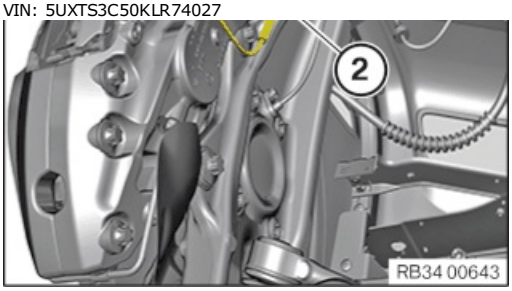
TECHNICAL INFORMATION

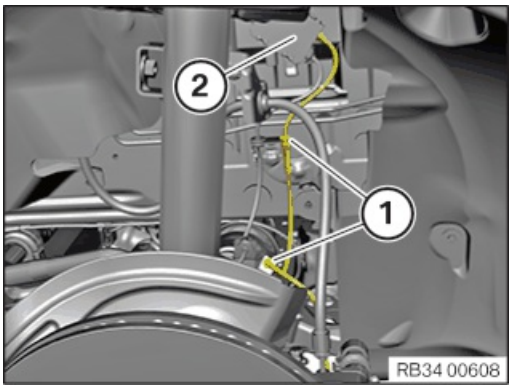
The brake pad wear sensor must be renewed immediately once it has been removed because the brake pad wear sensor loses its retention capacity in its brake pad.

If a brake pad wear sensor that has already been ground has to be replaced even though the minimum brake pad thickness has not yet been reached, you must observe the following:

The new sliding contact must be filed down with a file to the same length as the sanded sliding contact.

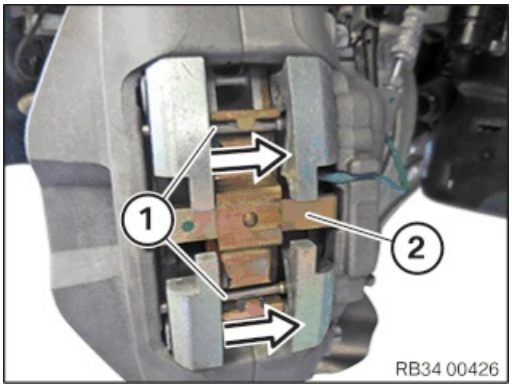
- Remove the brake pad wear sensor (1) out of the brake pad in the direction of the arrow.
- Detach the brake pad wear sensor cable (1) from the holder(2) .



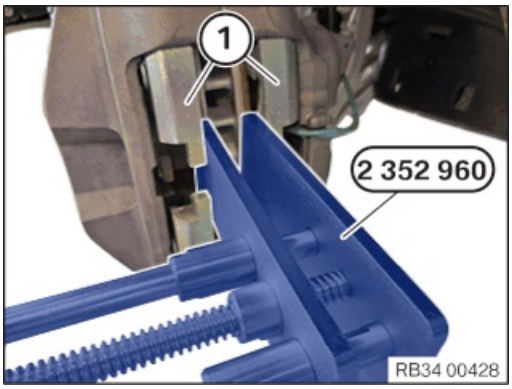


- Detach the brake pad wear sensor from the holders (1) .
- Open the sealing cap (2) and unlock and disconnect the plug connection.

3–Removing the front brake pads (brake high)



- Drive out locking pins (1) in direction of arrow.
- Take off the retaining clip (2).



i TECHNICAL INFORMATION

When pressing the brake piston back, note the brake fluid level in the expansion tank.

Overflowing brake fluid will damage the paintwork.

- Press back the brake piston against the weights (1) with special tool **2 352 960**.
- Press back the brake piston up to the limit position.

i TECHNICAL INFORMATION

Note the following for the removal of the brake pads:

To prevent damage to the paintwork of the brake callipers: Do not remove the brake pads from the brake piston with a hammer or screwdriver.

Use plastic wedges to remove the brake pads.

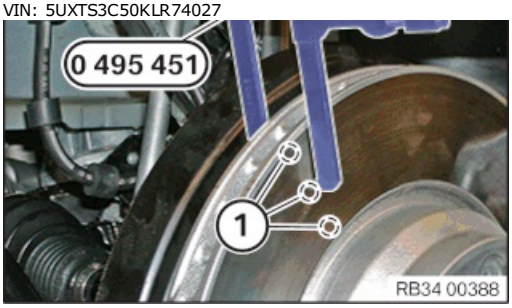
- Remove brake pads from the brake caliper.
- **Do not re-use brake pads.**

  Once the brake pads have been released from the brake piston, the brake pads must not be reused.

4–Measure minimum brake disc thickness (front brake)

- Check minimum brake disc thickness:

  Place the special tool **0 495 451 (34 1 280)** at three measuring points in area (1) and measure.



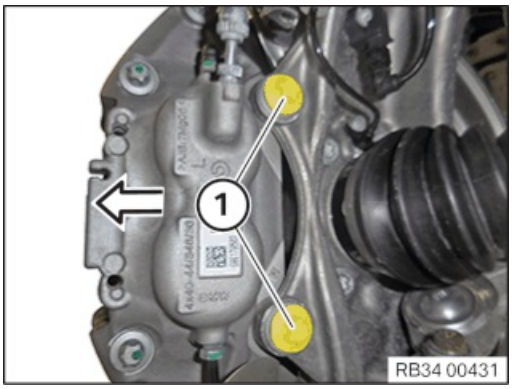
Compare measuring result and lowest value with setpoint value.

New brake pads must only be installed if the brake disk thickness is greater than the minimum brake disc thickness.

Minimum brake disc thickness is imprinted on the brake disc.

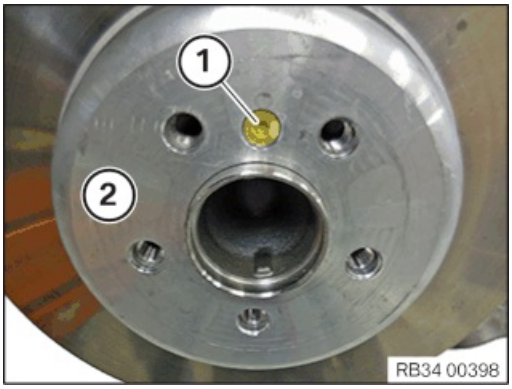
MAIN WORK

5–Remove the front brake disc (brake high)



- Unscrew the bolts (1) and remove brake caliper in the direction of the arrow.
- Tie up the brake caliper .

  The brake caliper must not hang on the brake hose.



- Loosen screw (1).

i TECHNICAL INFORMATION

Note the following for the removal of the brake disc:

Do not strike the friction ring with a tool under any circumstance (for example, hammer). If required, **carefully** tap with a rubber mallet against the brake disc chamber.

- Remove brake disc (2).

6–Install the front brake disc (brake high)

i TECHNICAL INFORMATION

Brake discs must only be replaced in pairs (per axle).

Fit new brake discs only together with new brake pads.

- If an arrow 1 is stamped on the brake disc, it must point in the direction of travel.

  In this case, the brake discs are different on the left and right.

- Clean contact surface of wheel hub thoroughly and remove any traces of rust if necessary.

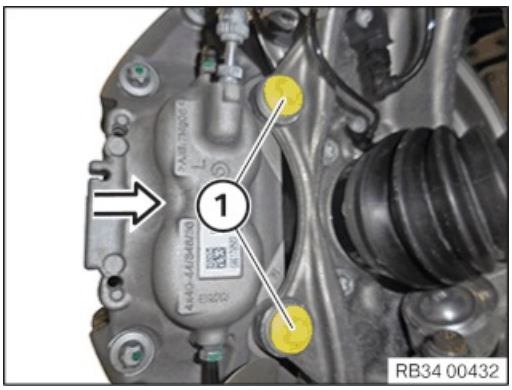
  Irregularities in the contact surface can cause distortion in the brake disc!
- Mount brake disc (2).

- Position and tighten the screw (1).
- Renew the screw (1).

  Parts: Screw

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Mount the brake caliper in the direction of the arrow.
- Insert screws (1) and tighten.
- Renew screws (1).

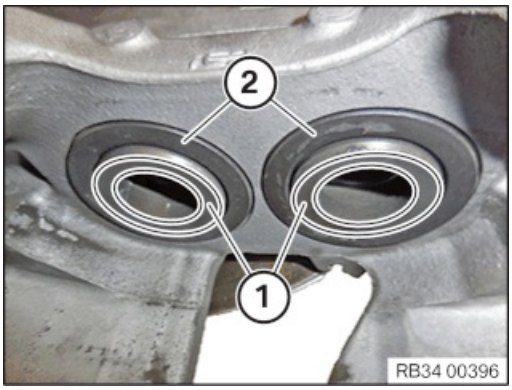
  Parts: Screws

Brake calliper/calliper carrier to front swivel bearing

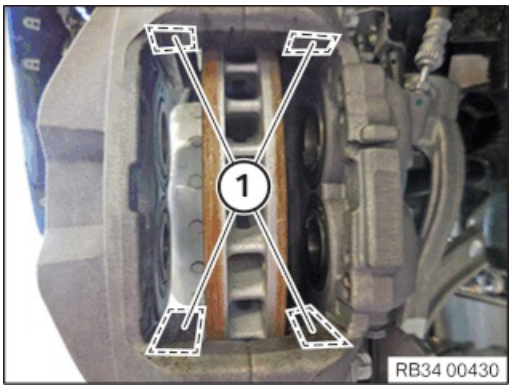
M12	Renew screw.	Tightening torque	130 Nm

POSTPROCESSES

7–Greasing brake pads, caliper carrier and brake caliper with brake pad paste (brake, high)



- Clean the contact surfaces (1) of the brake pistons (4 pieces) with brake cleaner.
- Completely remove the adhesive residue.
- Check the dust boots (2) for damage and renew if necessary.



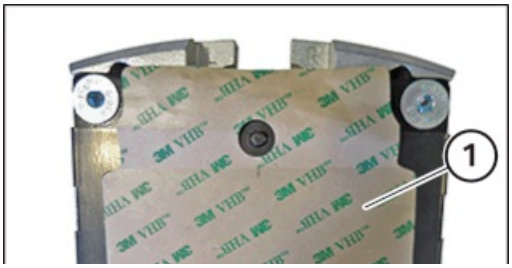
- Clean the contact surfaces (1) for the brake pads on the brake caliper with brake cleaner.

  If possible, do not clean the contact surfaces mechanically to prevent damage to the surface coating.
- Apply a thin coat of the brake pad paste to the contact surfaces (1).

Expendable materials

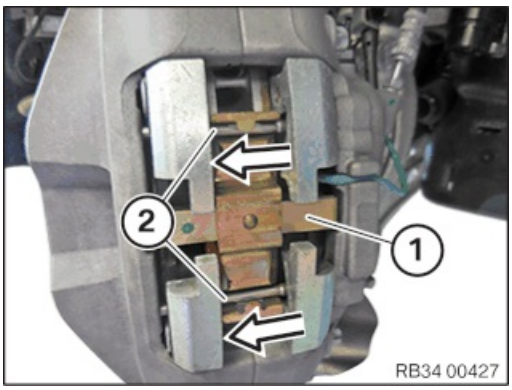
Brake pad paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83 19 2 158 851
	100 g, Tube	83 19 2 158 852
	5 g, TU*	83 23 0 140 233

8–Installing the front brake pads (High brake)



- Pull off the protective film of the adhesive layer (1) at the brake pads.

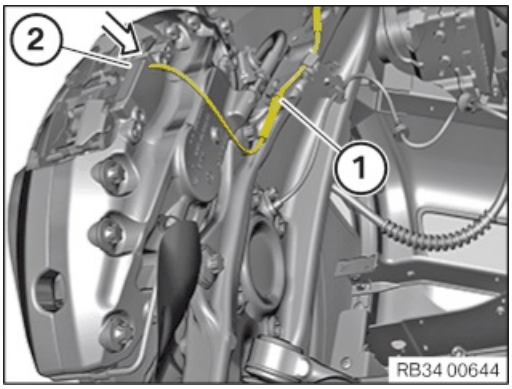
  The adhesive layer (1) must not be touched.



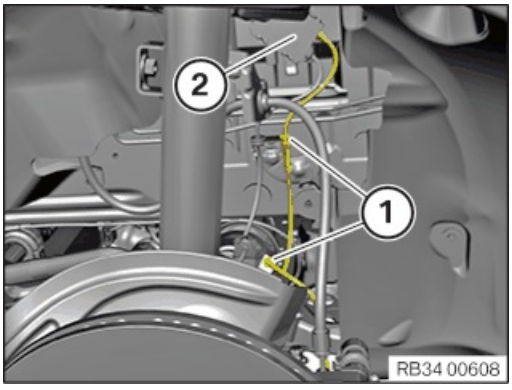
- Insert brake pads into the brake caliper.

  The adhesive layer must not touch the brake piston.
- Position the retaining clip (1).
- Drive in locking pins (2) in the direction of the arrow.

9–Installing the front brake pad wear sensor



- Hook the cable of the brake pad wear sensor (2) to the holder (1) .
- Install the brake pad wear sensor (2) in the brake pad in the direction of the arrow and ensure correct fit.



- Hook the cable of brake pad wear sensor to the holders (1) .
- Connect connectors and lock.
- Close sealing cap (2).

10–Mounting the front left and right wheels

NOTICE

Perform the steps on the left and right side.

▸ Mounting the wheel

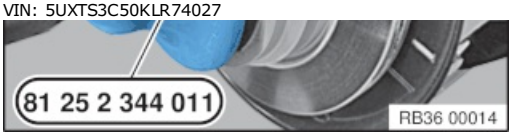
Additional information is available.

TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

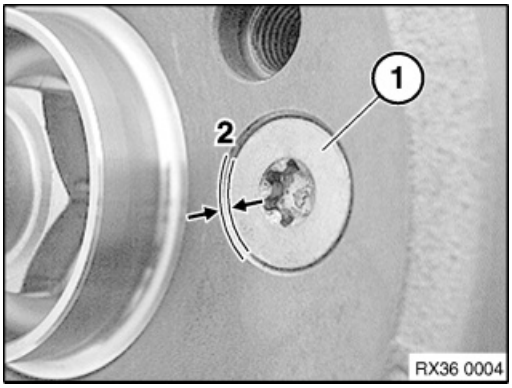
  Do not operate special tool **2 344 011** with an impact screwdriver.



- Degrease the contact surfaces with the universal cleaner (see BMW Group parts sales and distribution).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group parts sales and distribution).



- Check that the mounting bolt (1) for the brake disc is securely fitted.

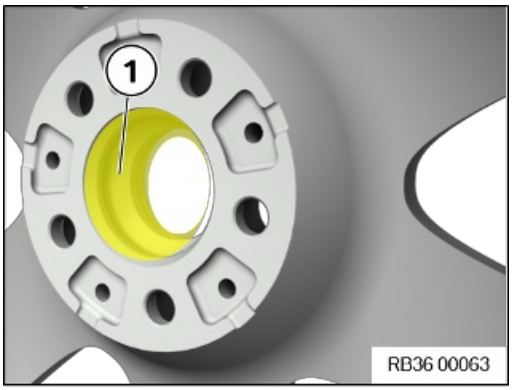
  The mounting bolt (1) for the brake disc may **not** protrude on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm



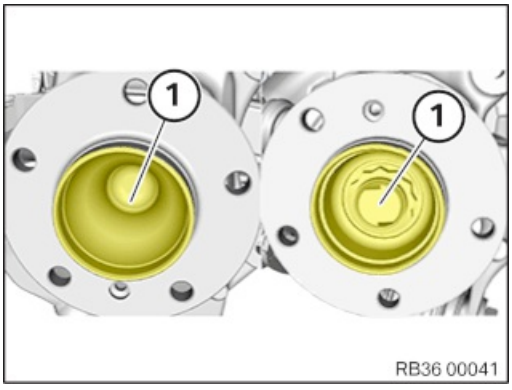
TECHNICAL INFORMATION

Wheel hubs and wheel centering on the models G80, G82 and G83 **must not** be greased.

- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake pad paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83 19 2 158 851
	100 g, Tube	83 19 2 158 852
	5 g, TU*	83 23 0 140 233



TECHNICAL INFORMATION

Wheel hubs and wheel centering on the models G80, G82 and G83 **must not** be greased.

- Apply a thin layer of grease to the front and rear wheel hubs in area (1) to protect against corrosion.

Expendable materials

Brake pad paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83 19 2 158 851
	100 g, Tube	83 19 2 158 852
	5 g, TU*	83 23 0 140 233

TECHNICAL INFORMATION

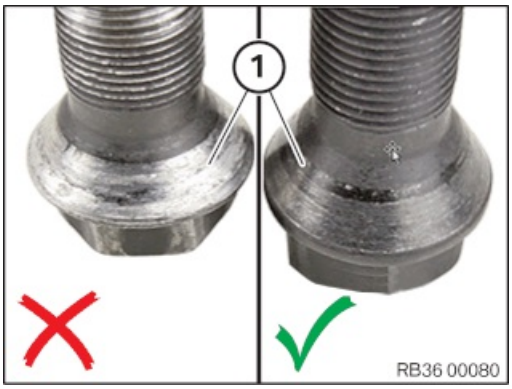
A wheel lift is recommended for easier wheel removal and installation without exertion (see Retailer Equipment Catalogue).

- **In vehicles with carbon ceramic brake: The wheel lift must be used to mount the wheel.**

  This process is intended to prevent damage to the brake disc.

Check

- **Check wheel bolts for wear.**



Result

» Places (> 30%) of the bearing surface (1) of the taper on the screw head show a silver wear.

Measure

- Renew wheel bolts.

TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew the corroded wheel bolts (arrows).

  Parts: Wheel bolts

- Clean the wheel bolts (arrows).
- Check the wheel bolts (arrows) and threads for damage, renew the wheel bolts (arrows), if necessary.
- Position and tighten the wheel bolts (arrows).

Wheel bolts

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

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11–Start-up or bed in of new brake pads and discs (brake, high)

TECHNICAL INFORMATION

When exchanging brake pads, reset the CBS display in accordance with factory specification (CBS reset).

Carry out test braking while driving at low speed because the effectiveness of the brakes may be reduced during the initial braking operations.

Exaggerated emergency and continuous braking operations for faster bedding-in are not permitted.

Advise the customer not to perform intentional emergency braking operations for the first 200 km after the brakes have been replaced.

- Fully depress brake pedal several times so that brake pads contact brake discs.
- Adjust the brake fluid level to the maximum mark.
- After the brake repair, compliance with the legal guidelines must be checked.

  Country-specific methods must be observed.

  A brake dynamometer is recommended for the functional check – see brake test on the test bench
- Attach mirror tag to interior mirror.