

34 11 220 Removing both front discs and installing / replacing (17-inch high equipment and 18-inch brake)



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

Danger! Life-threatening injuries!

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



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 removed 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.



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 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 both front wheels

► Removing the wheel



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to remove the wheel (see workshop equipment).

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



- If several wheels are removed simultaneously: 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 a suitable adapter from the tool set .

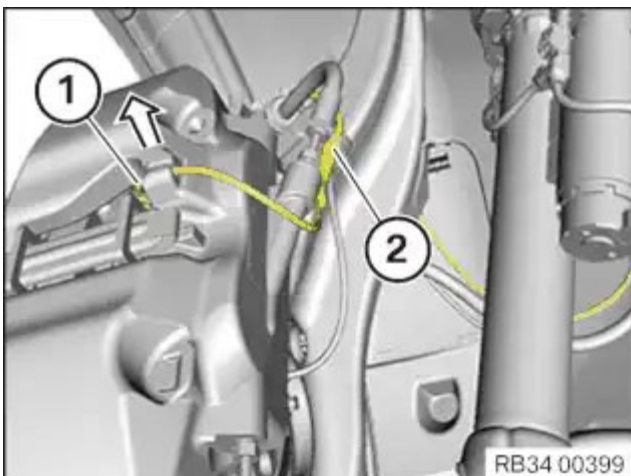
2 – Remove brake pad wear sensor to the front



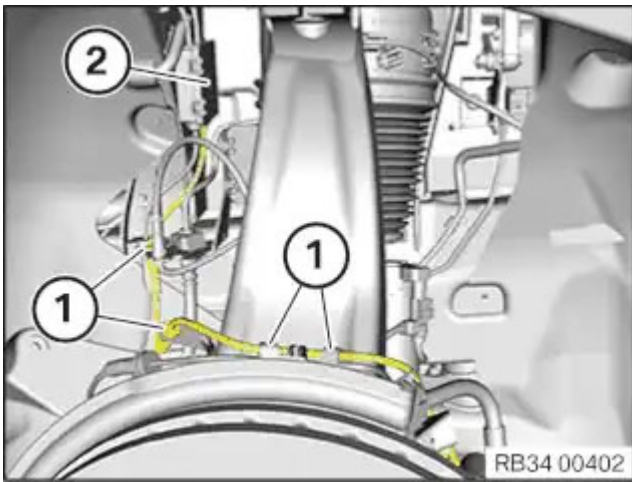
The brake pad wear sensor must be replaced once it has been removed because the brake pad wear sensor loses its retention capability in the brake pad.

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.

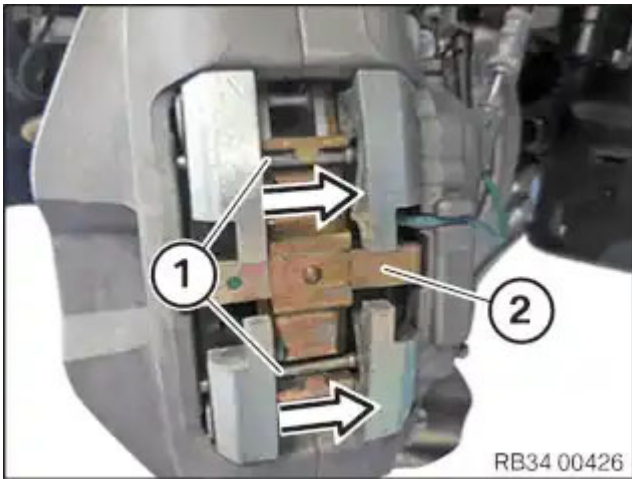


- Remove brake pad wear sensor (1) out of the brake pad in the direction of the arrow.
- Detach the cable of the brake pad wear sensor (1) from the bracket (2).

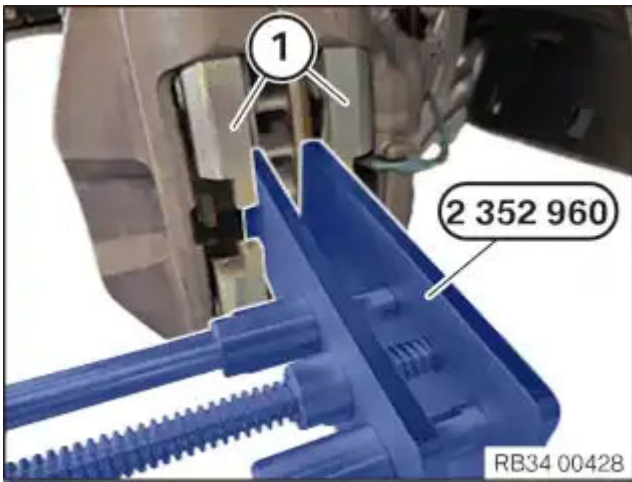


- Detach the brake pad wear sensor from the brackets (1).
- Open sealing cap (2) and disconnect the plug connection.

3 – Removing the front brake pads (brake high)



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



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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.

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Note the following for the removal of the brake pads:

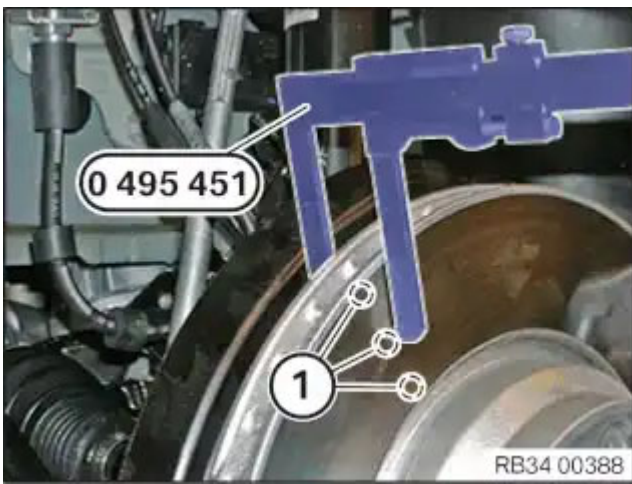
To prevent damage to the paintwork of the brake callipers:
Do not remove the brake pads from the brake piston with a hammer or screwdriver.

Use plastic wedges to remove the brake pads.

- Remove brake pad 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 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 disc thickness is greater than the minimum brake disc thickness.

Minimum brake disc thickness (nominal dimension 348x30)

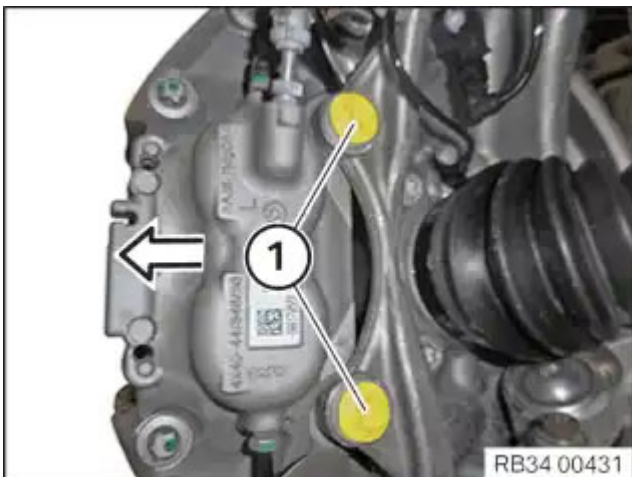
Minimum brake disc thickness (brake disc 348x30)	28,4 mm
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Minimum brake disc thickness (nominal dimension 348x36)

Minimum brake disc thickness (brake disc 348x36)	34,4 mm
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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).



Note the following for the removal of the brake disc:

Do not under any circumstances strike the friction ring with a hammer or similar tool. If necessary, carefully tap with a

- Remove brake disc (2).

6 – Install the front brake disc (brake high)



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

Fit new brake discs only together with new brake pads.



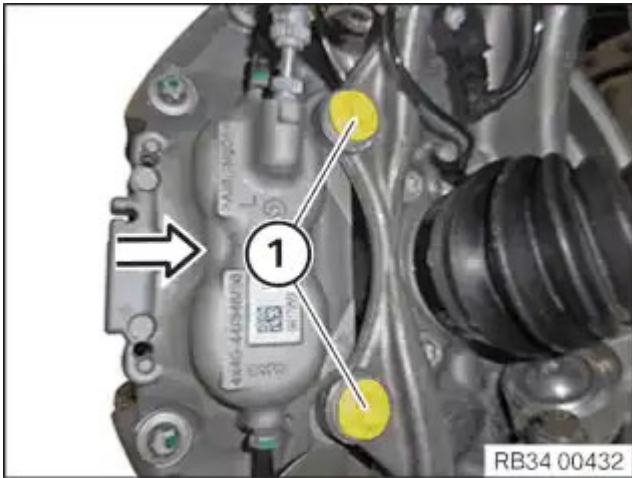
- If an arrow 1 is stamped on the brake disc, it must point in the direction of travel.

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



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

Parts: Bolts

Brake caliper / caliper carrier at front swivel bearing

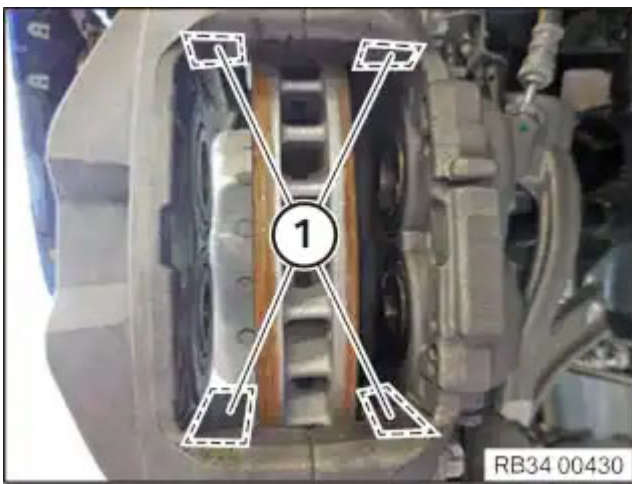
M12	Renew screw.	Tightening torque	110 Nm
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POSTPROCESSES

7 – Grease 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 close 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).

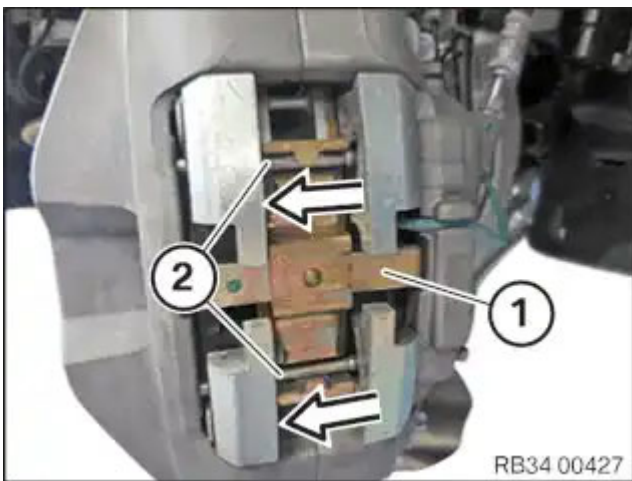
Expendable materials

Brake block paste	3 g,	83192158851
* TU = Trade Unit. TU numbers cannot be ordered!	Bag	
For invoicing purposes only.	100 g,	83192158852
	Tube	
	5 g,	83230140233
	TU*	

8 – Installing the front brake pads (High brake)

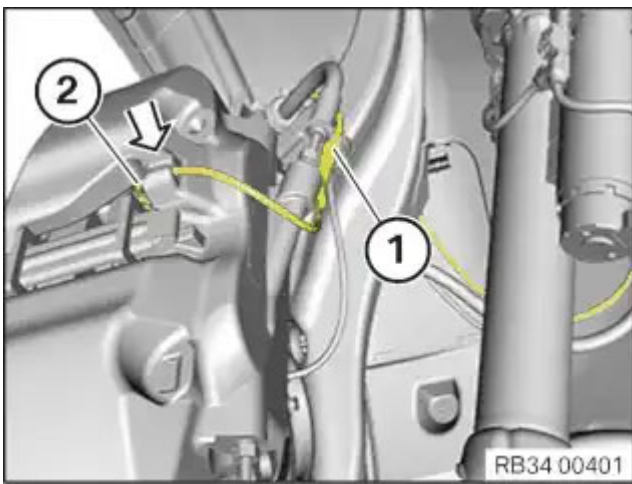


- Remove the protective film of the adhesive layer(1) at the brake pads.
- The adhesive layer (1) must not be touched.



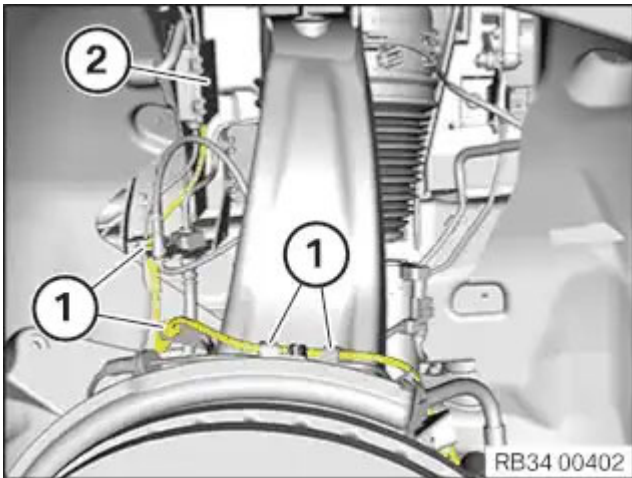
- Insert brake pads into the brake caliper.
- The adhesive layer must not touch the brake piston.
- Position the retaining clip (1).
 - Drive in locking pins (2) in the direction of the arrow.

9 – Installing the front brake pad wear sensor



- Attach the cable of the brake pad wear sensor (2) in the bracket (1).
- Install the brake pad wear sensor (2) in the brake pad in the direction of the arrow.

Ensure brake pad wear sensor fits correctly in brake pad.



- Attach cable of brake pad wear sensor in brackets (1).
- Connect the plug connection .
- Close sealing cap (2).

10 – Installing both front wheels

► Mounting the wheel



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).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.

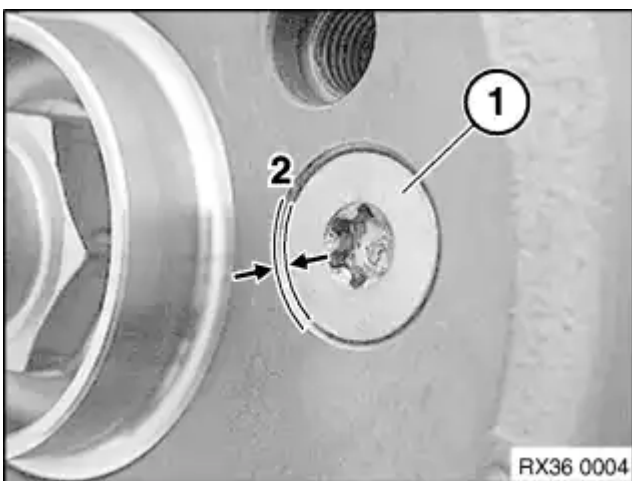




- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

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

- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



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

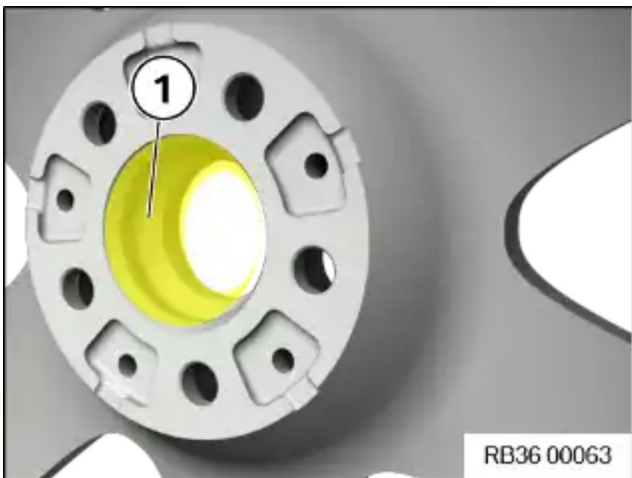
The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm
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Brake disc to rear wheel hub

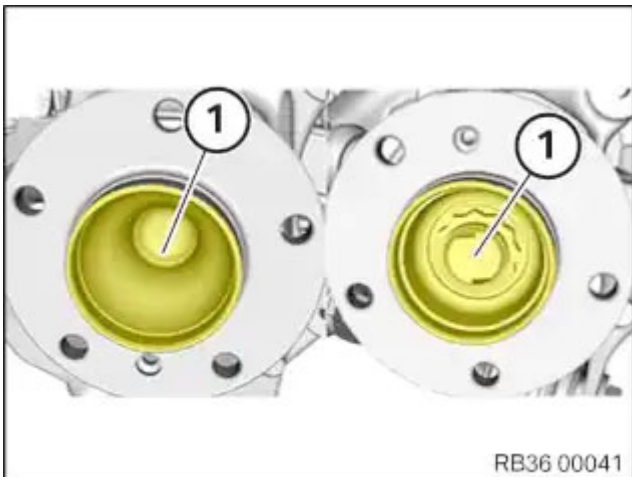
M8	Renew screw.	Tightening torque	16 Nm
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- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste	3 g,	83192158851
* TU = Trade Unit. TU numbers cannot be ordered!	Bag	
For invoicing purposes only.	100 g,	83192158852
	Tube	
	5 g,	83230140233
	TU*	



- Lightly grease the front and rear wheel hubs in this area (1) to protect from corrosion.

Expendable materials

Brake block paste	3 g,	83192158851
* TU = Trade Unit. TU numbers cannot be ordered!	Bag	
For invoicing purposes only.	100 g,	83192158852
	Tube	
	5 g,	83230140233
	TU*	



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to install the wheel (see workshop equipment).

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



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 corroded wheel bolts.

Parts: Wheel bolts

- Clean the wheel bolts.
- Check wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join 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 all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Check	140 Nm

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



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.
- Perform a functional check on the brake test stand to ensure compliance of the brake system with statutory guidelines.
- Attach mirror tag to inside mirror.

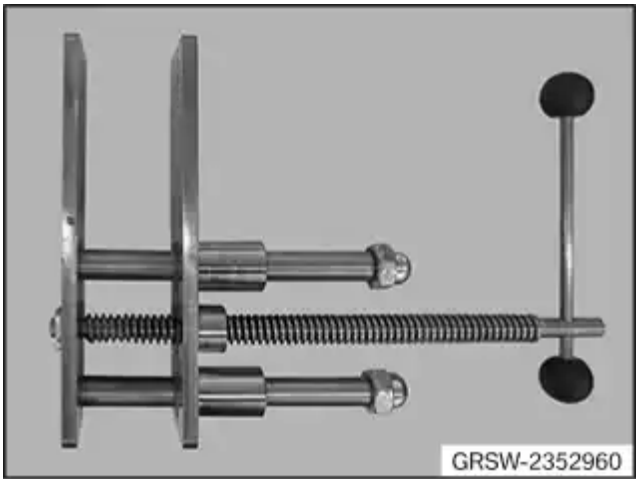
Additional Information

Overview of Tightening Torques

Brake disc to front wheel hub			Used in step	6	10
M8	Renew screw.	Tightening torque			16 Nm
Brake caliper / caliper carrier at front swivel bearing			Used in step	6	
M12	Renew screw.	Tightening torque			110 Nm
Brake disc to rear wheel hub			Used in step	10	
M8	Renew screw.	Tightening torque			16 Nm
Wheel bolts			Used in step	10	
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.				

Overview of Special Tools

2 352 960 Reset



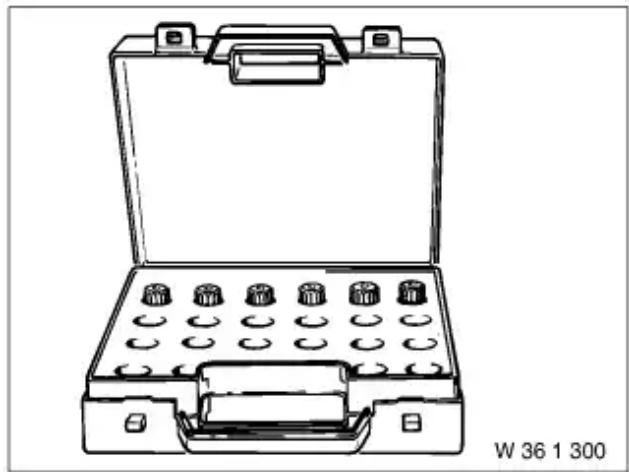
Common		Used in step	3
Usage	Set back to brake piston. Replacement for 34 1 050 (83300492455).		
Included in the tool or work			
Storage location	Individual		
Replaced by			
In connection with			
SI-Number			

2 344 011 Tool



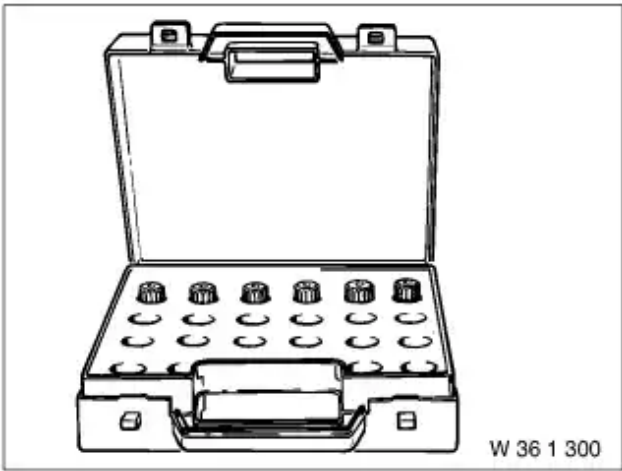
Common		Used in step	10
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.		
Included in the tool or work			
Storage location			
Replaced by			
In connection with			
SI-Number	08 08 12 (872)		

Replacement tools: 0 495 221 (36 1 323) Wheel stud



Common		Used in step	1
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

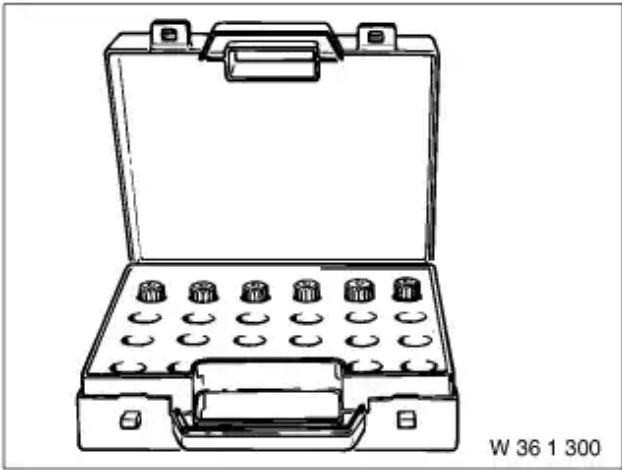
0 495 224 (36 1 326) Wheel stud



Common

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud

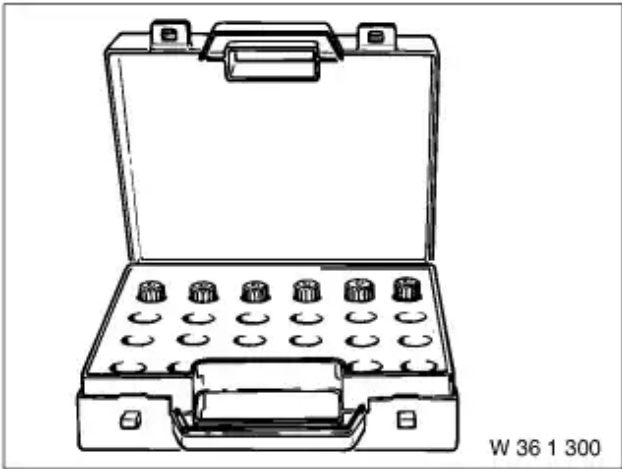


Common

Used in step [1](#)

Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



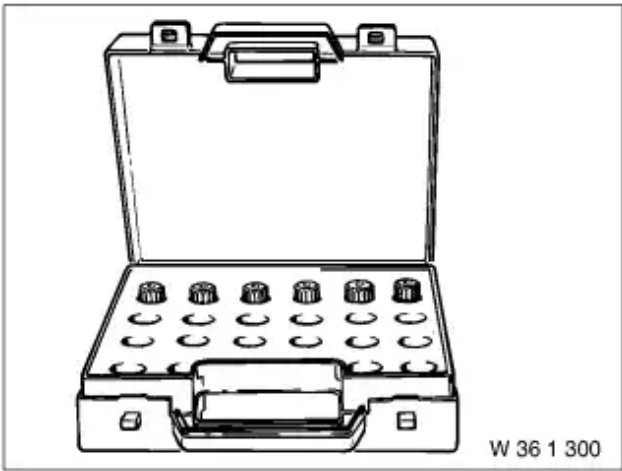
Common

Used in step [1](#)

Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud

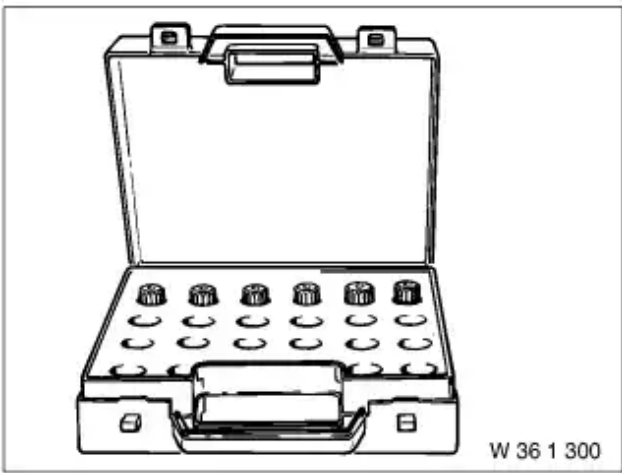
Used in step [1](#)



Common

Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud

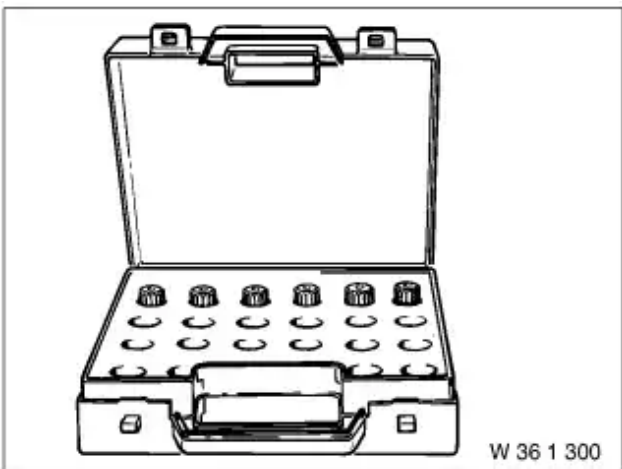


Common

Used in step [1](#)

Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



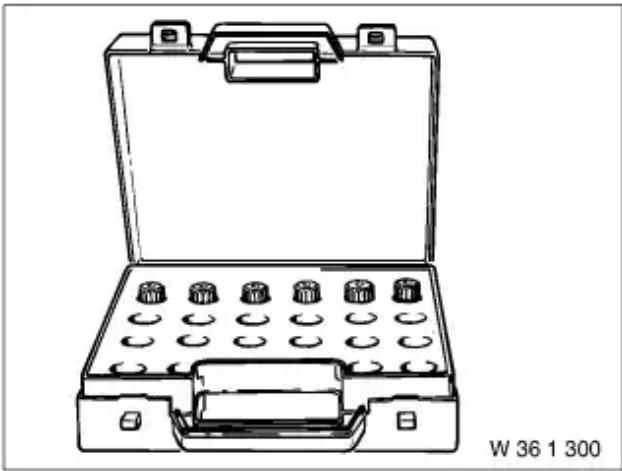
Common

Used in step [1](#)

Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud

Used in step [1](#)



Common

Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Overview Technical Data

Minimum brake disc thickness (nominal dimension 348x30)	Used in step 4
Minimum brake disc thickness (brake disc 348x30)	28,4 mm
Minimum brake disc thickness (nominal dimension 348x36)	Used in step 4
Minimum brake disc thickness (brake disc 348x36)	34,4 mm
Minimum brake disc thickness (nominal dimension 330x24)	Used in step 4
Minimum brake disc thickness (brake disc 330x24)	22,4 mm

Links

Repair instructions	Used in step
34 00 x01 Guideline for applying brake pad paste on brake pads and caliper carrier	

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