

31 12 050 Removing and installing/replacing left or right tension strut



Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Remove front left or right wheel

► 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 **0 492 518 (36 1 300)**.

2 – Loosen the output shaft from the wheel bearing



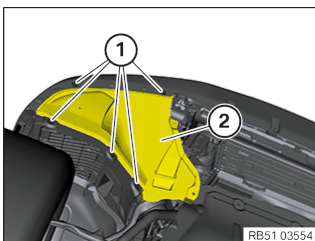
- Press brake pedal.
- Loosen the collar bolt (1).

The output shaft is released from the wheel bearing.

3 – Removing the front lower wheel arch cover



To provide a better overview: Schematic diagram with partially hidden components.



- Loosen screws (1).
- Guide the wheel arch cover (2) out.

MAIN WORK

4 – Remove trailing link



Component damage caused by striking tools.
Brute force can result in component damage.

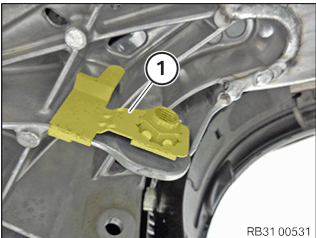
- Only use those tools intended for the work.



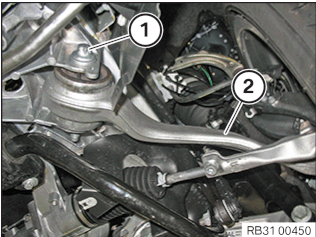
- Unfasten nut (1).
- Loosen the tension strut from the swivel bearing.



5 – Install the tension strut



- Replace clip nut (1).
- Parts:** Clip nut



- Position the tension strut (2) on the front axle support.
 - Renew the screw (1).
- Parts:** Screw
- Screw in the screw (1) a few turns.
- Note:** Do not yet tighten the screw (1).



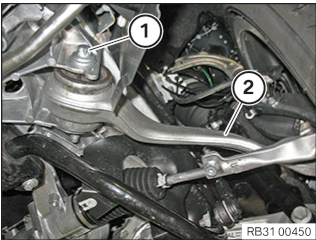
- Position tension strut on swivel bearing.
 - Renew nut (1).
- Parts:** Nut
- Tighten nut (1).
- Note:** Use the Torx socket for counter support.

Tension strut to swivel bearing

M16	Replace nut.	Jointing torque	100 Nm
		Angle of rotation	90 °



Tighten the screw connection in the normal position.
For additional information see: 31 00 overview of Technical Data



- Tighten the screw (1) in normal position.

Tension strut to front axle support

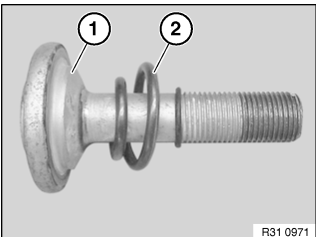
M14	Renew flat nuts and screw. Tighten in normal position.	Tightening torque	85 Nm
		Angle of rotation	180 °

POSTPROCESSES

6 – Securing the output shaft on the wheel bearing



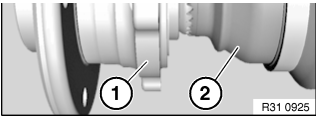
The installation note for front gearing must be observed at all times.



- Renew the collar bolt (1) and the compression spring (2).
- Parts:** Collar bolt and compression spring
- Note installation position of compression spring (2).
 - Keep the collar bolt (1) and the front gearing of the wheel bearing and the output shaft clean and free of grease.



- Hand-tighten the collar bolt (1) with the compression spring.



- Check whether front gearing is locked tooth in tooth (arrows) by reciprocally rotating the wheel bearing (1) and the output shaft (2).
- Verify positive locking.
- Press brake pedal.
- Tighten the collar bolt.

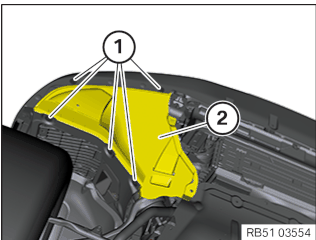
Output shaft to wheel bearing

M16	Replace collar bolt and spring.	Jointing torque	210 Nm
		Angle of rotation	90 °

7 – Installing the front bottom wheel arch cover



To provide a better overview: Schematic diagram with partially hidden components.



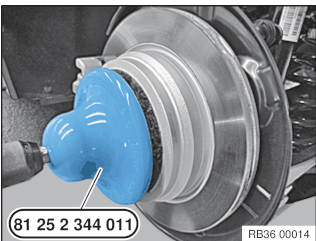
- Guide the wheel arch cover (2) in.
- Tighten the screws (1).

Wheel arch cover (screws)

Thermoplastic hexagon screw	Tightening torque	3 Nm
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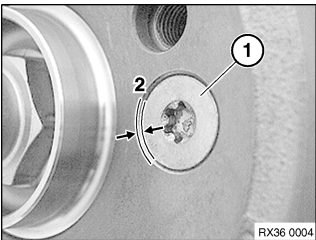
8 – Install front left or right wheel

► 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).



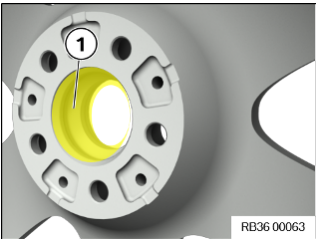
- Check that the mounting bolt (1) for the brake disc is securely seated.
The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

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

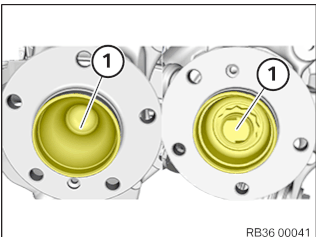
M8	Renew screw.	Tightening torque	16 Nm
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- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

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



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	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

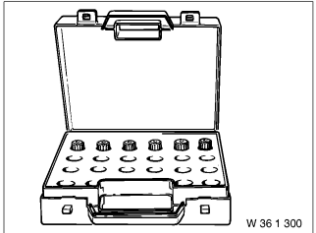
Additional Information

Overview of Tightening Torques

Tension strut to swivel bearing			Used in step 5
M16	Replace nut.	Jointing torque	100 Nm
		Angle of rotation	90 °
Tension strut to front axle support			Used in step 5
M14	Renew flat nuts and screw.	Tightening torque	85 Nm
	Tighten in normal position.	Angle of rotation	180 °
Output shaft to wheel bearing			Used in step 6
M16	Replace collar bolt and spring.	Jointing torque	210 Nm
		Angle of rotation	90 °
Wheel arch cover (screws)			Used in step 7
Thermoplastic hexagon screw		Tightening torque	3 Nm
Brake disc to front wheel hub			Used in step 8
M8	Renew screw.	Tightening torque	16 Nm
Brake disc to rear wheel hub			Used in step 8
M8	Renew screw.	Tightening torque	16 Nm
Wheel bolts			Used in step 8
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

0 492 518 (36 1 300) Adapter



Common		Used in step 1
Usage	(Wheel bolt adapter kit) For releasing and tightening wheel bolts. Individual parts are available via the EPC, see also comments texts for the individual adapters.	
Included in the tool or work		
Storage location	Individual	
Replaced by		
In connection with		
SI-Number	01 27 04 (167)	
Consisting of		



- 6 [0 495 222 \(36 1 324\)](#)
- 6 [0 495 223 \(36 1 325\)](#)
- 6 [0 495 224 \(36 1 326\)](#)
- 6 [0 495 225 \(36 1 327\)](#)
- 6 [0 495 226 \(36 1 328\)](#)
- 6 [0 495 227 \(36 1 329\)](#)
- 6 [0 495 228 \(36 1 331\)](#)
- 6 [0 495 229 \(36 1 332\)](#)
- 6 [0 495 230 \(36 1 333\)](#)
- 6 [0 495 231 \(36 1 335\)](#)
- 6 [0 495 232 \(36 1 336\)](#)
- 6 [0 495 233 \(36 1 339\)](#)
- 2 [0 492 519 \(36 1 301\)](#)
- 2 [0 492 520 \(36 1 302\)](#)
- 2 [0 492 521 \(36 1 303\)](#)
- 2 [0 492 522 \(36 1 304\)](#)
- 2 [0 492 523 \(36 1 306\)](#)
- 2 [0 492 524 \(36 1 307\)](#)
- 2 [0 492 525 \(36 1 308\)](#)
- 2 [0 492 526 \(36 1 309\)](#)
- 2 [0 492 527 \(36 1 311\)](#)
- 2 [0 492 528 \(36 1 312\)](#)

Wheel stud
(Code 31) With centring bore available separately, (see EPC) under 36 13 6 765 544

Wheel stud
(Code 32) With centring bore available separately, (see EPC) under 36 13 6 765 545

Wheel stud
(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546

Wheel stud
(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547

Wheel stud
(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340

Wheel stud
(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341

Wheel stud
(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342

Wheel stud
(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343

Wheel stud
(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344

Supplement
Not available separately. Can only be ordered as part of the complete special tools (SWZ) set 83 30 0 492 518 (SWZ number 36 1 300) or via the Electronic Parts Catalogue (supplementary set for wheel bolt adapter kit 36 1 300). Consists of: 36 1 323 Code 30 36 1 324 Code 31 36 1 325 Code 32 36 1 326 Code 33 36 1 327 Code 34 36 1 328 Code 35 36 1 329 Code 36 36 1 331 Code 37 36 1 332 Code 38 36 1 333 Code 40 36 1 336 Connection diagram label

Labels
(Label) Connection diagram not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue.

Case
s (Case) incl. connection diagram label. Not available individually.

Wheel stud
(Code 11) Can be ordered separately via EPC under part number 36 13 1 181 241.

Wheel stud
(Code 12) available separately (see EPC) under 36 13 1 181 242

Wheel stud
(Code 13) available separately (see EPC) under 36 13 1 181 243

Wheel stud
(Code 14) available separately, (see EPC) under 36 13 1 181 244

Wheel stud
(Code 16) available separately (see EPC) under 36 13 1 181 246

Wheel stud
(Code 17) available separately (see EPC) under 36 13 1 181 247

Wheel stud
(Code 18) available separately (see EPC) under 36 13 1 181 248

Wheel stud
(Code 19) available separately (see EPC) under 36 13 1 181 249

Wheel stud
(Code 20) available separately (see EPC) under 36 13 1 181 250

Wheel stud
(Code 31) 12/2004 available separately, (see EPC) under 36 13 6 765 544



2	0 492 530 (36 1 314)	0 495 224	(Code 33) 12/2004 Replaced by 36 1 326.(0 495 224) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 34) 12/2004 Replaced by 36 1 327.(0 495 225) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 35) 12/2004 Replaced by 36 1 328.(0 495 226) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 36) 12/2004 Replaced by 36 1 329.(0 495 227) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 37) 12/2004 Replaced by 36 1 331.(0 495 228) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 38) 12/2004 Replaced by 36 1 332.(0 495 229) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 39) Code 30, 12/2004 Replaced by 36 1 323.(0 495 221) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 40) 12/2004 Replaced by 36 1 333.(0 495 230) Not available individually. Can only be ordered as part of the complete special tool set 83 30 0 492 518 (special tool number 36 1 300) or via the Electronic Parts Catalogue. Wheel stud (Code 15) available separately (see EPC) under 36 13 1 181 245
2	0 492 531 (36 1 315)	0 495 225	
2	0 492 532 (36 1 316)	0 495 226	
2	0 492 533 (36 1 317)	0 495 227	
2	0 492 534 (36 1 318)	0 495 228	
2	0 492 535 (36 1 319)	0 495 229	
2	0 492 536 (36 1 321)	0 495 221	
2	0 492 537 (36 1 322)	0 495 230	
10	0 493 534 (36 1 305)		

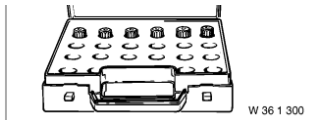
2 344 011 Tool



Common		Used in step	8
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)		

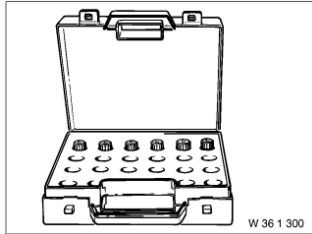
Replacement tools:
0 495 221 (36 1 323) Wheel stud

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			



W 36 1 300

0 495 224 (36 1 326) Wheel stud



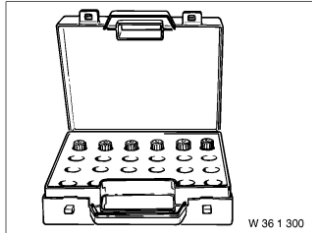
W 36 1 300

Common

Used in step [1](#)

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



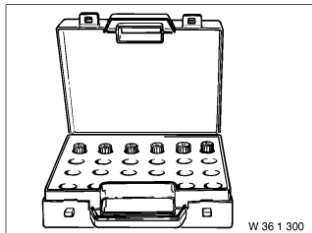
W 36 1 300

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



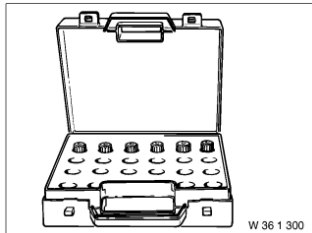
W 36 1 300

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



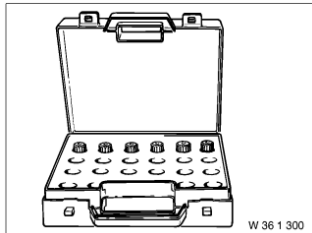
W 36 1 300

Common

Used in step [1](#)

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



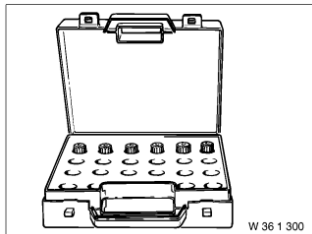
W 36 1 300

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



W 36 1 300

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

Common

Used in step [1](#)

Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
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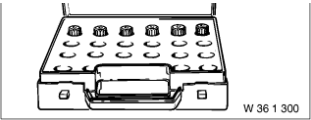
Magnificent Modern
Farmhouse Plan with
Sunroom and 2-Story...

\$1,530 ~~\$4,899~~



Luxury Tuscan Home Plan
with Sport Court and 5-
Car Garage at...

\$6,911.35 ~~\$8,134~~



in connection with
SI-Number

Links

Overview: Technical data	Used in step
3100 Overview of Technical Data	5

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