Retail Operator General Manager	Sales New Motorcycles	Sales Pre-Owned Motorcycles	Business Manager (F&I)	Service	Parts & Accessories	Administration

Date: December 2013 Bulletin # 33 001 13 (035)R4	Source: SI 32/2013 Name: Shawn McLean Title: Service & Technical Manager Phone: 201-307-4131	Revised March 2014

BMW Motorrad USA

Service Information Bulletin

Notice of recall 13V-549

Subject: **2007-2009 F 800 S / ST - Rear Wheel Bearing**

Model: F 800 S (K71, 0216/0226), F 800 ST (K71, 0234/0244)

Details: Given certain unfavorable combinations of tolerances, the final drive input shaft needle roller bearing can be subjected to corrosion between the inner bearing race and the bearing seat.
Aggravated wear of the tubular spacer can result in contact between the rotating judder damper and the eccentric or, more precisely, the sealing ring. Contact of this nature can result in a poor seal thus the possibility of the bearing suffering damage cannot be excluded.

As a result, the maintenance specifications were revised in May 2009.

Within the framework of quality monitoring, BMW Motorrad has ascertained that the maintenance specifications have not been complied with in all cases and that consequently, the occurrence of damage was not detected in good time. For this reason the maintenance specifications have again been optimized.
In order to ensure that all vehicles potentially affected by this problem can be checked as quickly as possible BMW Motorrad is conducting a recall campaign.

NHTSA Statement: PERFORM THE PROCEDURE OUTLINED IN THIS SERVICE INFORMATION BULLETIN ON ALL AFFECTED VEHICLES BEFORE CUSTOMER DELIVERY OR THE NEXT TIME THE VEHICLE IS IN THE SHOP FOR MAINTENANCE OR REPAIRS.

BMW Motorcycle dealers must ensure recalls are completed after having been notified by BMW of North America, LLC (BMW Motorrad USA) that a safety-related defect or noncompliance exists in any motor vehicle or item of replacement equipment in the dealer's possession at the time of notification. In BMW NA's case, this notification would typically be made by the issuance of a recall notification in the form of a Service Information Bulletin (SIB) or transmission of a Dealer Communication System (DCS) recall message.

Under the National Traffic and Motor Vehicle Safety Act of 1966, as amended, if a recall campaign is announced by BMW NA, dealers must ensure that all recalls on vehicles and new items of replacement equipment are completed BEFORE delivery to the consumer. This means that dealers may not legally deliver new vehicles or new items of replacement equipment to consumers with an open recall.

The Safety Act also prohibits dealers from selling or leasing the vehicle or item of replacement equipment, unless and until the open recall has been completed BEFORE delivery. This also pertains to motorcycles in the Certified Pre-Owned program, and to items of replacement equipment.

Finally, BMW motorcycle dealers should not sell or use parts that have been recalled by BMW Motorrad USA. Please follow the specific instructions provided by BMW Motorrad USA on the return or disposition of the parts.

Vehicles affected: In order to determine if a specific vehicle is affected by this recall campaign, it will be necessary to verify all vehicle VINs through a DCS Vehicle History Check. Based on the response of the system, either proceed with the repair or take no further action. Please note, affected VINs may not appear until 24-72 hours after the release of this bulletin.

Production Solution: An optimized input shaft that rules out the possibility of play between the bearing inner race and input shaft was introduced into series production as of February 25, 2009.

Aftersales Solution: The rear-wheel bearings have to be checked and, if necessary, the repair kit installed (see accompanying work items 00 60 275 and 00 60 276).

The revised maintenance item is valid for all F 800 S (K71 0216/0226) and F 800 ST (K71 0234/0244) models up to the series production of February 25, 2009.

Note:
The accompanying work items apply by analogy to both models affected.

Checking the rear-wheel bearing is now a three-step procedure. If aggravated wear of the rear-wheel bearing is found in any one of the test steps, the repair kit has to be installed.

If a repair is necessary, install the "final drive" repair kit that corresponds to the construction status of the F 800 GT (K71/11). Repair with individual parts is possible only for this construction status. Individual parts are not available for earlier construction statuses.

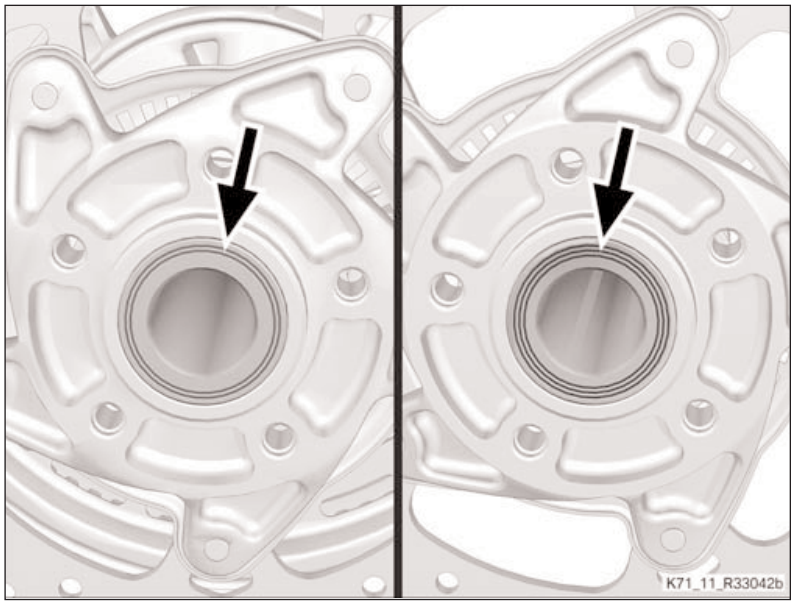


Illustration: Construction statuses of the final drive.

The repairable construction status is indicated by the 3 rings (right arrow) on the end face of the drive shaft, visible when the rear wheel is removed. Spare parts are no longer available for earlier construction statuses, (left arrow, 2 rings or zero rings-not shown).

This check has to be conducted regularly within the framework of maintenance for all vehicles up to introduction of the series solution.
The optimized "Checking bearing of final drive" maintenance item was published on the 09/2013 edition of the RSD (Repair and Service Data BMW Motorrad) DVD.

Warranty: The repair described in this bulletin is covered under warranty regardless of time or mileage. Reimbursement for this Recall Campaign is through normal claim entry utilizing the following information:

Warranty Processing Information:	**Defect code:**	00 00 33 40 00	Checking bearings of final drive.
	Labor codes:	00 60 275*	**Checking** bearings of final drive, 5 FRUs
		or	
		00 60 276*	**Checking and replacing** bearings of final drive, 12 FRUs
	Part number:	33 17 8 550 928	Repair kit, final drive
		07 11 9 932 099	Wave washer

*Main Work 00 60 275 / 276 - these main labor operations crediting 5 / 12 FRU respectively include all repair procedures to complete the task with allowance for necessary ancillary tasks (e.g., visual inspection, lubrication, cleaning parts etc.) and administrative tasks. Only one main labor operation can be claimed per repair visit. All other labor operations for any other line(s) must be claimed using plus code labor operations. Please refer to the Warranty Policy and Procedures Manual regarding add-ons, proper support, documentation, claims submission and archiving requirements as applicable.

Customer Reimbursement for Prior Repairs: In line with the TREAD Act, those customers that have previously paid for this repair are eligible for reimbursement. The customer must provide a copy of the paid invoice documenting the repair performed at an authorized BMW Motorrad dealership. These repairs may include repairs made with the previously available individual rear input axle parts as well as the currently available single assembly part. Dealers need to keep a copy of the repair documentation (paid invoice) in the respective vehicle file.

Once the previous repair documentation is provided, a warranty claim can be submitted in the amount of the repair on behalf of the customer. Reimbursement should then be made directly from the dealer to the customer with no mark up.

Warranty processing information for customer reimbursement:

Defect Code:	33 12 90 31 00	Checking Bearing of Rear Wheel Drive
Labor Code:	none	
Part number:	none	
Sublet Code 3	In the amount (rounded to the nearest whole dollar) of the previous customer paid repair.	

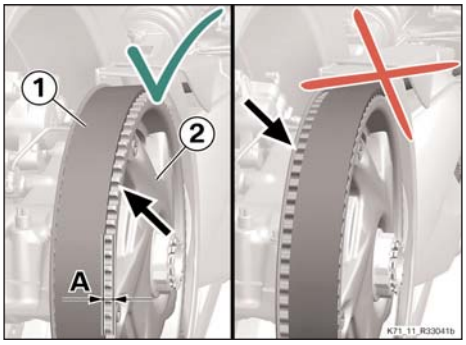
Important Note:
Even though a given vehicle may have had this repair completed previously, it is important to follow the repair instructions given in this Service Information Bulletin, which is an inspection and only if necessary a repair, followed by the normal warranty processing for this recall campaign given near the top of this page.

Contact: Service and Technical Manager

Work item: 00 60 275 Checking bearings of final drive

1 Preparatory work
Without center stand
Placing motorcycle on basic stand

2 Checking bearings of final drive
Check position of belt (1) on belt pulley (2) and distance (A).



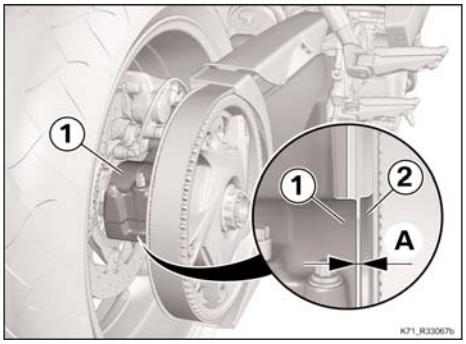
Note
The position of the belt must be on the inner side of belt pulley (picture with check mark).
A valid check is not possible after a repair or if the wheel is turned backwards.

Technical data	
Distance A, belt / belt pulley	min 0.5 mm

Result
Distance insufficient or belt is on the outer side of the pulley.

Measure
Install the repair kit for the final drive per work item 00 60 276 Replacing bearings of final drive (Installing repair kit) p. 7-11.

3 Check
Measure distance (A) between swinging arm (1) and judder-damper housing (2).



Technical data	
Clearance, swinging arm to judder damper housing	min 1 mm

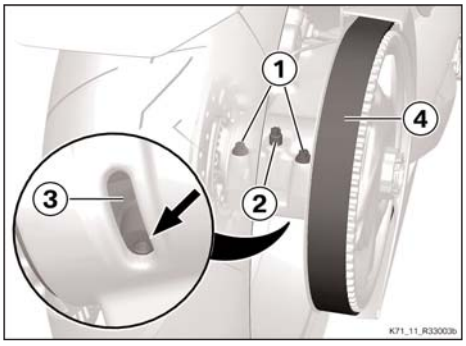
Result
Distance too small.

Measure
Install the repair kit for the final drive per work item 00 60 276 Replacing bearings of final drive (Installing repair kit) p. 7-11.

4 Relieve toothed-belt tension

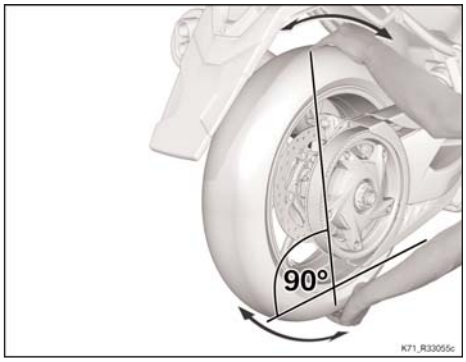
Note
Rear-wheel play is much more perceptible when the tension on the belt has been relieved.

Back off clamp screws (1) by a maximum of one full turn.
Slacken tensioning screw (2) a few turns, do not remove.
Position a suitable tool at the bore (arrow) and back off eccentric (3).
Tension of belt (4) is relieved.
Tighten clamping screws (1).



Tightening torques	
Eccentric clamp	
M8 x 55, Do not lubricate screws	30 Nm

Check
Using both hands, rock the rear wheel about the wheel axle over the imagined line through "**top** hand", "center of axle" and "**bottom** hand".



Note
Rocking the wheel about an imagined line through "**right** hand", center of axle", **left** hand" is of no use for checking bearing play, because the belt locates the pulley in the horizontal direction and bearing play is not perceptible.
Turn the wheel 90 ° and using both hands, again rock the rear wheel about the wheel axle over the imagined line through "**top** hand", "center of axle" and "**bottom** hand".
Perform measurement four times.

Result
No play is perceptible.

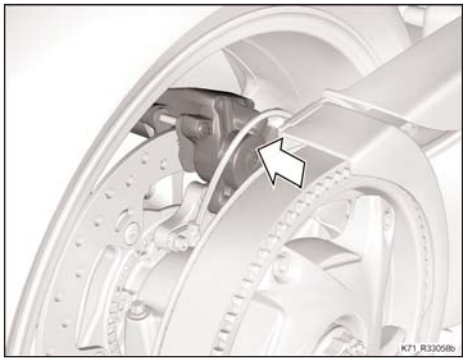
Measure
No further measures necessary.
Proceed to "**Adjust belt tension"** page 5.

Result
Play is perceptible.

Measure
Measure bearing play of rear wheel.

5 Measuring bearing play of rear wheel:

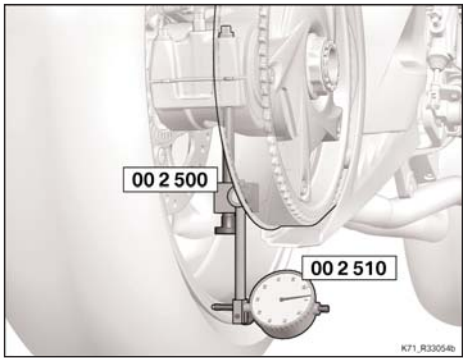
Note
The load must be taken off the rear wheel for the procedure described below. Do not use a rear-wheel stand.



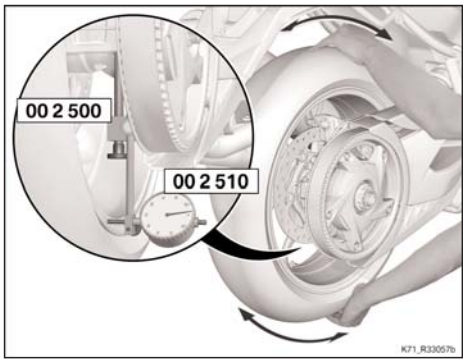
Requirement
Motorcycle standing firmly on center stand or auxiliary stand.
Press the brake caliper against the brake disc.
The brake pistons are pushed back

Secure M8 extension (00 2 503), knurled nut (00 2 501), clamping pieces (00 2 505) and (00 2 506) to the tapped bore.

Install dial gauge (00 2 510) in the clamping piece and align it such that the dial-gauge probe is slightly preloaded and touching the horn of the rim.



Check
Set the dial gauge to "0".



Using both hands, rock the rear wheel over its axle and check the readings on the dial gauge. The measuring point must be on the imagined line through "top hand", "center of axle" and "bottom hand"

The sum of the positive and negative dial-gauge readings is the rear-wheel bearing play.

Turn the wheel 90 ° and using both hands, again rock the rear wheel about the wheel axle over the imagined line through "top hand", "center of axle" and "bottom hand".

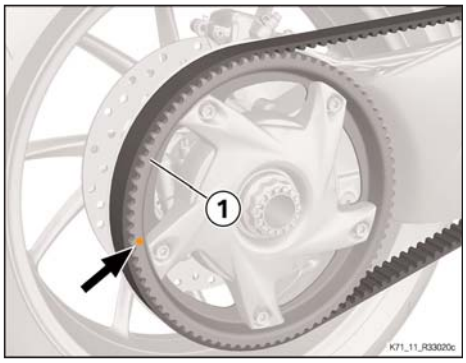
Perform measurement four times.

Technical data		
Rear-wheel bearing play	Measured at bead of wheel rim	max 0.8 mm

Result
Bearing play is excessive (greater than 0.8 mm).

Measure
Install the repair kit for the final drive per work item 00 60 276 Replacing bearings of final drive (Installing repair kit) p. 7-11.

6 Adjust belt tension
Turn belt pulley (1) until the colored mark (arrow) is at the rear.

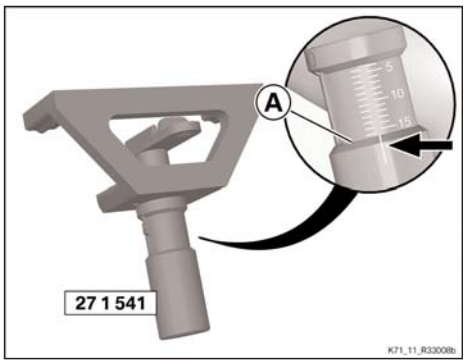


Check
Colored mark on belt pulley.

Result
No colored mark on belt pulley

Measure
Measuring vertical runout for belt pulley (for adjusting belt tension) (description in RSD, work item: 33 84 501).

Tension the belt
Attention
Component damage may result from excessive clamping forces acting on eccentric.
To avoid a reduction in necessary friction, do not lubricate the screws and the eccentric.

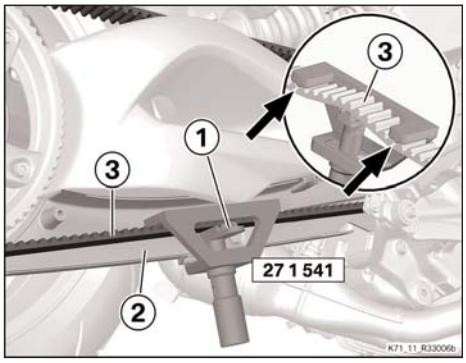


Requirement
Make sure that the toothed belt and the motorcycle are at room temperature.
Belt is looped over the pulleys and has been turned several times through the full length of its run by hand.
Make sure that the colored mark on the belt pulley is pointing toward the rear.
Pretension belt-tension tester (27 1 541) until the line (arrow) at the bottom reference edge (A) has reached the pretension value.

Technical data	
Pretension of belt-tension tester	10

Press down stop (1) and insert belt-tension tester (27 1 541) inside belt guard (2) and toothed belt (3).

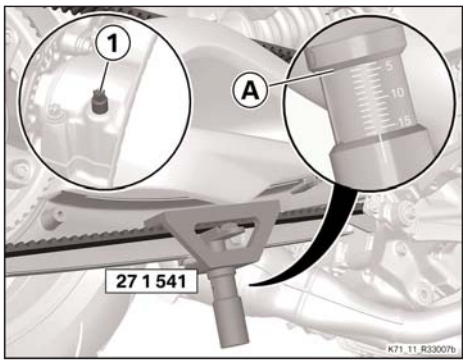
Make sure that the splines (arrows) engage toothed belt (3).



Tighten adjusting screw (1) until the belt setting at the top reference edge (A) is reached.

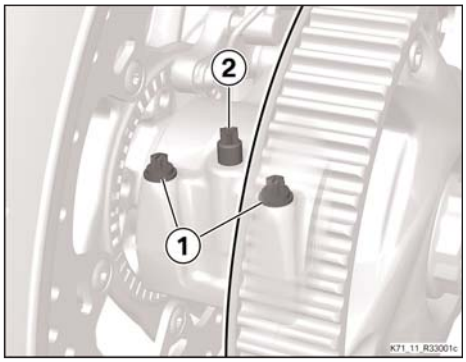
Note
The deflection shown by the instrument is very slight, so it important to work with meticulous care when making adjustments and taking readings.

Technical data		
Belt setting	Motorcycle at room temperature	4.5



Tighten clamping screws (1) and adjusting screw (2).

Technical data	
Eccentric clamp after adjustment of belt tension	
Do not lubricate screws	1st tightening torque, clamping screws, 10 Nm
	2nd tightening torque, clamping screws, 30 Nm
	Slacken the adjusting screw
	Tightening torque, clamping screws, 30 Nm
	Tightening torque, adjusting screw, 10 Nm



Remove the belt-tension tester.

7 Finishing work

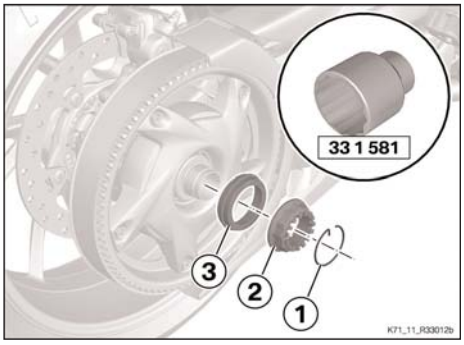
Without center stand
Removing motorcycle from basic stand
Final check of work performed

Note
The following pages contain Work item: 00 60 276 Replacing bearings of final drive (Installing repair kit).

Work item: 00 60 276 Replacing bearings of final drive (Installing repair kit)

1 Preparatory work
without center stand
Placing motorcycle on basic stand

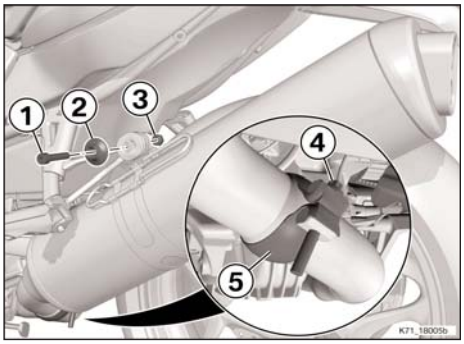
2 Slackening belt-pulley carrier
Remove circlip (1).
Apply the rear brake and remove nut (2) with socket wrench insert (33 1 581).
Remove spacing bushing (3).



3 Removing the silencer

Warning
Risk of burns from hot exhaust system.
Do not touch hot parts of the exhaust system.

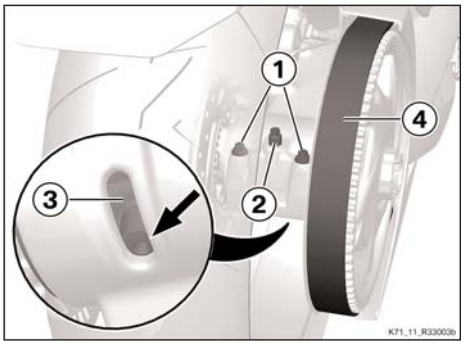
Slacken screw (4) on ball clamp (5).
Remove screw (1) together with washer (2) and nut (3).
Pull the silencer to the rear to remove.



4 Removing rear wheel
Remove wheel studs (1).
Remove the rear wheel.

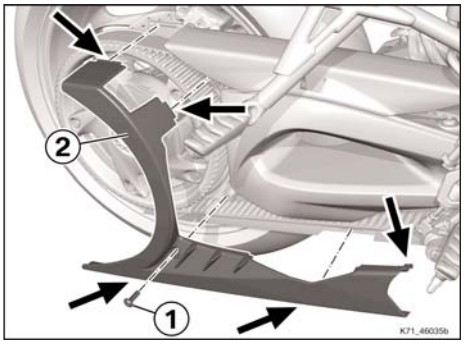
Attention
Components can be damaged by hard or sharp-edged objects.
Avoid scratching the components; use masking tape if necessary.

5 Relieve toothed-belt tension
Back off clamp screws (1) by a maximum of one full turn.
Slacken tensioning screw (2) a few turns, do not remove.
Position a suitable tool at the bore (arrow) and back off eccentric (3).
Tension of belt (4) is relieved.



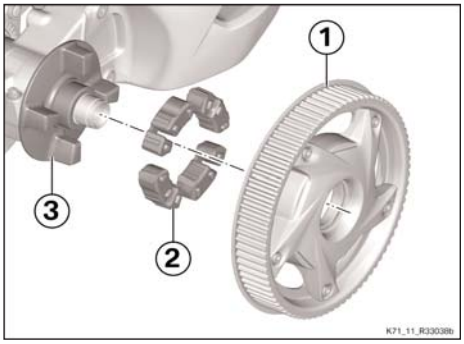
6 Removing bottom outboard belt guard

Remove screw (1).
Unclip belt guard (2) (arrows) and remove.



7 Removing belt-pulley carrier and driver

Remove belt-pulley carrier (1).
Remove judder-damper elements (2) and drivers (3).

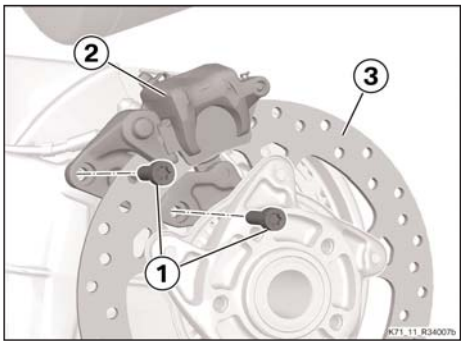


8 Release the brake caliper

Remove screws (1) and remove brake caliper (2) from brake disc (3). Secure brake caliper (2) to the vehicle.

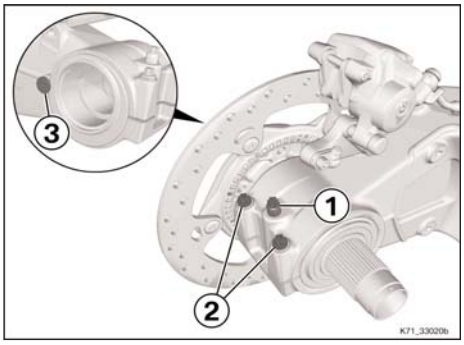
Attention

Once the brake calipers or brake pads have been removed, operating a brake lever could result in the pistons being pushed out. Do not operate the brakes.
Install the brake pads and brake caliper or insert the piston resetting device.



9 Removing input shaft with eccentric

Remove adjusting screw (1).
Slacken clamping screws (2).
Turn the eccentric with the drive shaft and brake disc until pin (3) is in line with the recess in the eccentric.
Pull the eccentric with the input shaft and brake disc to the left to remove.

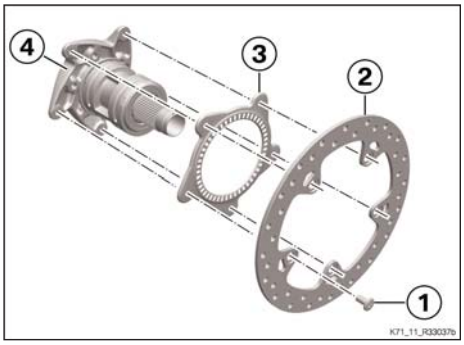


10 Removing brake disc and sensor ring from input shaft

Remove screws (1).
Remove brake disc (2) and sensor ring (3) from input shaft (4).

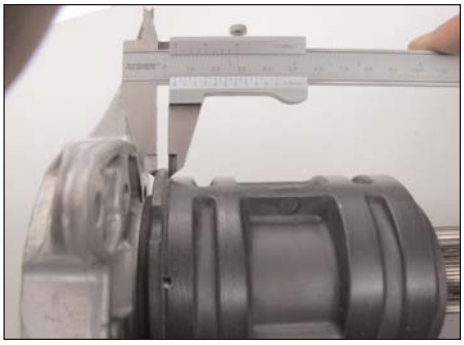
Note

Do not attempt to separate the input shaft and the wheel flange.



11 Inspecting new input shaft

Check
Measure the width of the collar on the eccentric.



Result
Measurement **GREATER** than 4.03 mm

Measure
Continue with step **12 Installing wave washer**

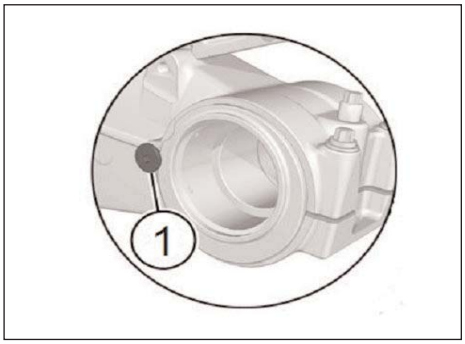
Result
Measurement 4.03 mm or less is achieved

Measure
Continue with step **13 Assembling input shaft**

Technical data	
Width of the collar	3.97...4.03 mm

12 Installing wave washer

Install wave washer between pin (1) and swing arm.

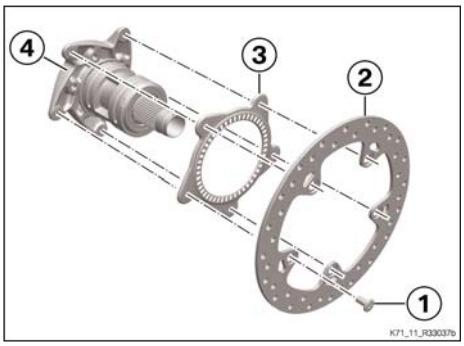


BMW Part Number	
Wave Washer	07 11 9 932 099

Tightening torques	
Collar screw, micro-encapsulated	
Apply medium Loctite to original screw	12 Nm

13 Assembling input shaft

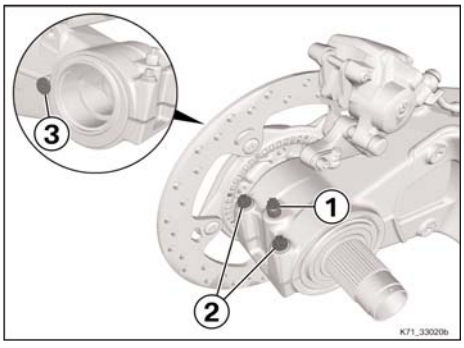
Set brake disc (2) with sensor ring (3) on new input shaft (4) and align the components.
Install screws (1).



Tightening torques		
Brake disc with sensor ring to input shaft		
M8 x 15.5, Replace screw Thread-locking compound (Micro-encapsulated, included in kit 33 17 8 550 928)	Tighten by stages in diagonally opposite sequence	30 Nm

14 Install the input shaft with eccentric

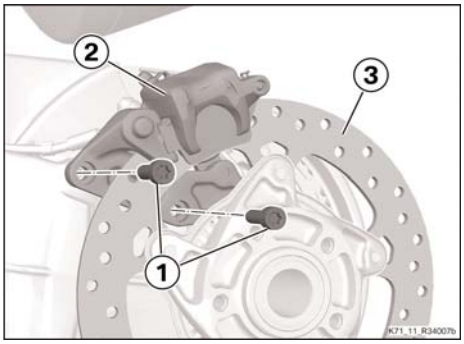
Clean and degrease the eccentric and the swinging arm.
Align the eccentric with the input shaft and brake disc so that pin (3) is in line with the recess in the eccentric.
Push the eccentric with input shaft and brake disc all the way into the swinging arm. Ease of movement between pin (3) bolt head and ABS sensor ring must be checked.
Tighten clamping screws (2) until hand tight.
Install adjusting screw (1), leaving it loose.



Attention
Component damage may result from excessive clamping forces acting on eccentric.
To avoid a reduction in necessary friction, do not lubricate the screws and the eccentric.

15 Securing brake caliper

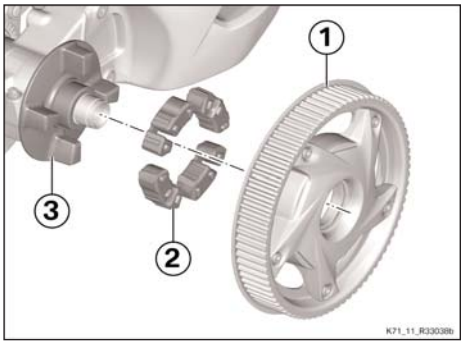
Disengage brake caliper (2) and ease it on to brake disc (3).
Install screws (1).



Tightening torques	
Brake caliper to swinging arm	
M8 x 25 - 10.9	22 Nm

16 Installing belt-pulley carrier and driver

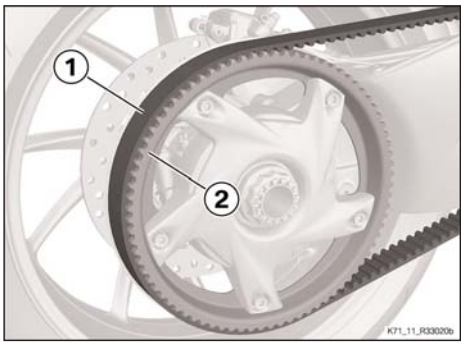
Lubricate the splines of the shaft and the splines in the driver (3).
Insert judder damper (2) and driver (3) into belt pulley carrier (1).
Push belt pulley carrier (3) on until seated.



Lubricant	
Optimoly TA	18 21 9 062 599

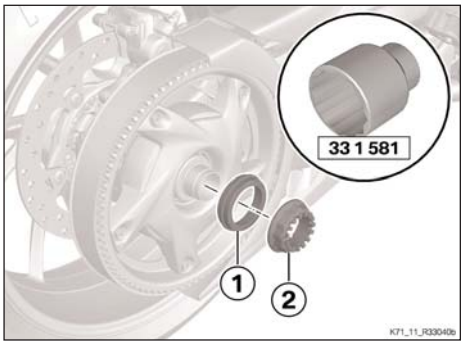
17 Fitting toothed belt to belt pulley

Engage toothed belt (1) on belt pulley (2), turning the belt pulley in the process.



18 Securing belt-pulley carrier

Clean the threads.
Install spacing bushing (1).
If necessary, apply thread-locking compound to nut (2).
Install nut (2) and tighten with socket wrench insert (33 1 581).



Thread-locking compound	
Loctite 243, Medium strength	Locally sourced

19 Checking clearance of wheel speed sensor

Check

Use a feeler gauge to check the gap between the wheel speed sensor and the sensor ring.

Result

Gap out of tolerance

Measure

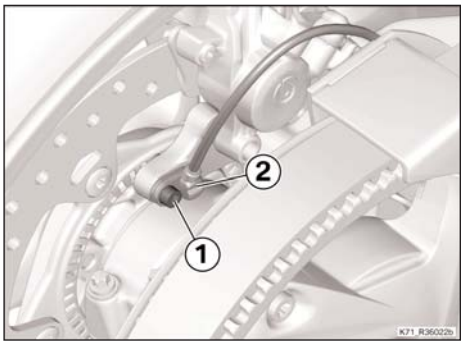
Check whether the eccentric is seated against the stop.

Technical data	
Gap between rear wheel speed sensor and sensor ring	0.2...1.4 mm

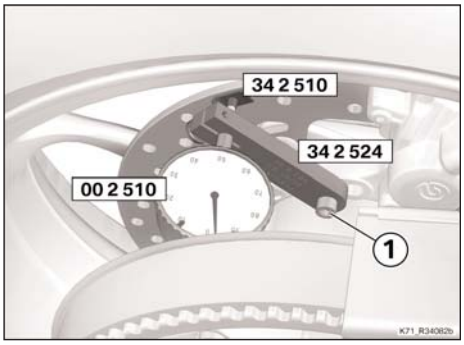
20 Measuring rear brake disc runout

Requirement

No burrs or scoring on brake disc, brake disc thickness above minimum.
No play in wheel bearing.



Remove screw (1).
Remove speed sensor (2).
Raise the rear wheel clear of the ground so that it can turn freely.



Install dial gauge (00 2 510) in dial gauge holder (34 2 524) and install measuring adapter (34 2 510).
Use screw (1) of the speed sensor to secure the dial gauge holder.
Align dial gauge in such a way that the measuring adapter is in contact with the brake disc close to the outer circumference and the dial gauge is slightly preloaded.

Check

Set the dial gauge to "0".
Slowly turn the wheel through at least one complete revolution and observe the dial gauge reading.
The sum of the positive and negative dial gauge readings is the total runout.

Technical data		
Brake disc lateral runout, rear	Wear limit at circumference	max 0.15 mm

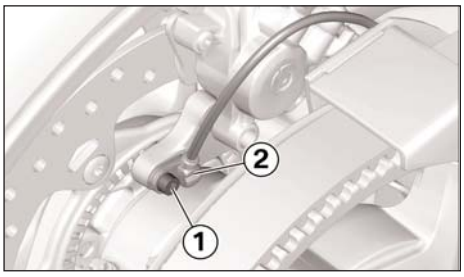
Result

Lateral runout excessive.

Measure

Check positioning of the brake disc/wheel flange.
Check the wheel flange for damage.
If necessary, check the brake disc.
See SIB 34 001 11 (009) Brake pulsation and brake vibration for further information.

Install speed sensor (2) with screw (1).



Tightening torques	
Wheel-speed sensor, rear	
M6 x 16	9 Nm

21 See pages 5 and 6 for belt tension adjustment and finishing work.