

Service Bulletin

Date: April 2003

Bulletin No: 27 001 03 (005)

BMW Motorcycles

Subject: Supplement to and revised information for recalls:

02V-190: F 650 CS Rear belt wheel cracks.

02V-191: F650 CS Front belt wheel not correctly secured.

Important Details: The information provided to you in the Service Bulletins listed below is superceded and is no longer valid:

27 001 02 (026) and
27 001 02 (026) Revised

In order to avoid confusion in the future, please destroy all copies of Service Bulletin numbers 27 001 02 (026) and 27 001 02 (026) Revised that are retained in your service library.

Dividing the information into Two Sections, we will individually address the revised actions required to complete the updates and repairs to the motorcycles affected by these recalls.

Section 1 will deal with the checking and replacement of the rear drive belt wheel, Recall 02V-191.

Section 2 will explain the procedure involved in checking and if necessary replacing the front drive belt wheel and gearbox main shaft as a result of the front belt wheel not being correctly secured, Recall 02V-190.

Section 1 starts on the following page, Section 2 on page 3.

Please take the opportunity to read the entire bulletin through in order that you may be familiar with all **Important Notes, Cautions, Warnings and VIN Ranges.**

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Section 1

Rear belt wheel cracks.

The latest technical findings on the rear belt wheel have made a re-issue of this technical campaign necessary.

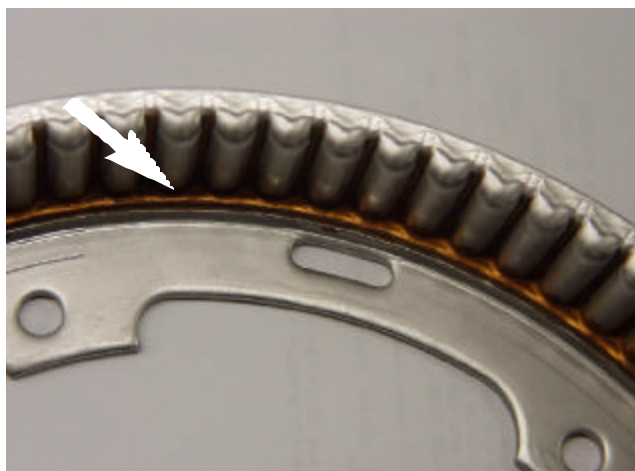
All of the motorcycles affected (as listed in the VIN Range Table below), **including those that have already been checked**, will have to be rechecked and addressed as necessary.

VIN Range Section 1:

Following the instructions and visual information provided below, check and, as necessary, replace the rear belt wheel on the following VINs. Checks and repairs are to be claimed under **Defect Code 00 00 27 06 00**:

ZH 15000 - ZH 15588

Photo #1: The new version of the rear belt wheel is soldered to provide additional reinforcement in the critical zone (see arrow). The soldering will appear "gold" or "copper" in color and is easily distinguishable from the original belt wheel that is "aluminum" in color throughout.

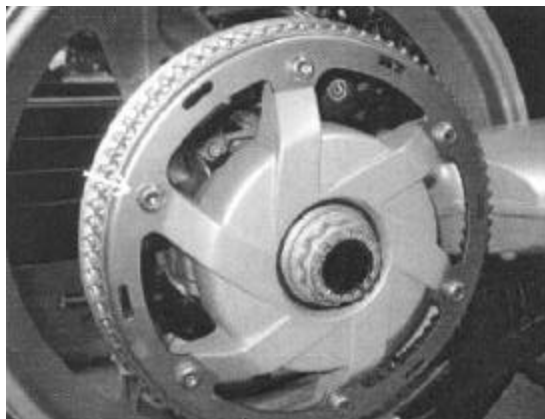


Only the new "soldered" belt wheel is to be used in completing this action.

Part Number: 27 72 7 659 997

Replacing the rear belt wheel:

- 1) Relieve the tension of the toothed belt and lift the belt off the belt wheel (refer to F 650CS Repair Manual, 00.57).
- 2) Remove 6 screws (see arrow in photo at right).
- 3) Remove the rear belt wheel.
- 4) Clean and degrease the tapered bores and the threads of the mounting screws.
- 5) Carefully place the new belt wheel in position on the damper, coat the screw threads with Loctite 243 and hand tighten the securing screws.
- 6) Tighten the securing screws to the specified torque maintaining a diagonally opposite tightening sequence throughout (Torque to 28 NM, curing time 12 hours).
- 7) Measure the vertical runout of the belt wheel (refer to F 650 CS Repair Manual, 33.15).
- 8) Install and adjust the rear drive belt (refer to F 650 CS Repair Manual 00.57 - 00.58).



Important Note: **Contrary to the information supplied in the F 650 CS Repair Manual, the use of chain spray is not permitted.**

Warranty Reimbursement: Enter a campaign claim using the following defect code and choosing either Work Package #1 or Work Package #2:

Defect Code: 00 00 27 06 00
Description: F 650 CS, Rear belt wheel cracks

Work Package #1:
Checking rear belt wheel for solder reinforcement.

Flat Rate Code: 00 60 602
Description: Check rear belt wheel for solder reinforcement.
FRU: 1 FRU

Work Package #2:
Checking rear belt wheel for solder reinforcement / replacing rear belt wheel.

Flat Rate Code: 00 60 602
Description: Check rear belt wheel for solder reinforcement.
FRU: 1 FRU

Flat Rate Code: 00 60 603
Description: Replace rear belt wheel (drive belt removed)
FRU: 3 FRUs

Part Number: 27 72 7 659 997
Description: Rear belt wheel
Qty: 1

Section 2

Front pinion of the drive belt is not correctly secured.

Important Note: All motorcycles within the VIN range noted below must be upgraded to this new status.

VIN Range: All F 650 CS motorcycles from and through the VIN range noted below must receive the checks and upgrades noted in Section 2, under **Defect Code 00 00 27 07 00**.

ZH 15000 - ZH 15838

2.1 Removal of the front belt wheel

Remove the front belt wheel in accordance with the instructions detailed in the F 650 CS Repair Manual.

Remove the securing screw of the activated charcoal filter and let the filter canister hang by one side by the hoses, or remove it and lay it aside.

Clean the splines and threads of the main shaft in order to remove all traces of Loctite.

If necessary, remove corrosion from the main shaft spline (use only a brass bristle brush).

2.2 Visual inspection

Check the splines of the main shaft for damage.

Replace the main shaft if the splines are damaged (broken, chipped, bent or damaged teeth). Refer to the F 650 CS Repair Manual for this procedure.

2.3 Wear check gearbox main shaft- It is extremely important that the technician always check that the dimensions of the gearbox main shaft splines are to specification before proceeding with the installation of a new front belt wheel. This note only applies to motorcycles with accumulated mileage, not to new motorcycles from the crate.

If the visual inspection was satisfactory and the main shaft was not replaced for visual damage, a main shaft wear check will be necessary. This check requires the use of **BMW Special Tool # 23 4 571**.

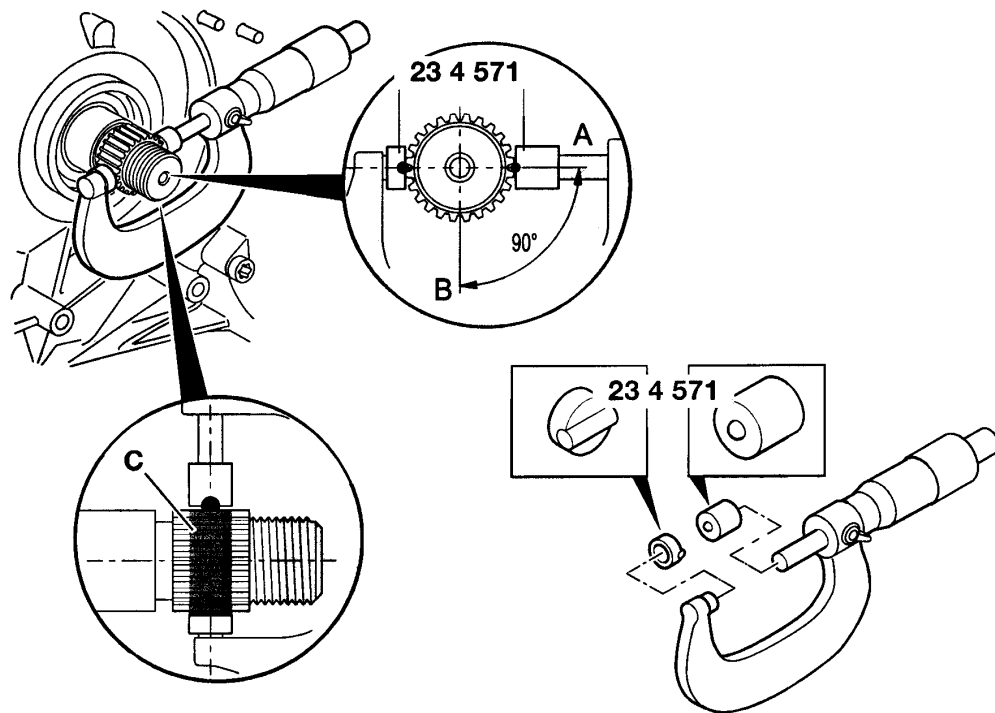
The adapters are designed for micrometer gauges with stud diameters from 6.35 mm to 6.6 mm.



Do not use cellulose-lacquer thinners to clean the adapters as there is a risk of damaging the measuring instruments.

Make sure that the micrometer gauges and the adapters are perfectly clean.

Illustration #1:



Calibrate the micrometer gauge for the end of scale reading

Fit the adapters to the micrometer gauge.

Clean the splines making sure that they are free of grease.

Please refer to **Illustration #1** above for reference points.

Using the micrometer gauge and **BMW Special Tool 23 4 571**, measure the splines on the main shaft midway along their length (measuring plane "C") in two (2) opposing tooth gaps (measuring plane "A").

Turn the main shaft through 90 degrees (Measuring plane "C") and repeat the measurement.

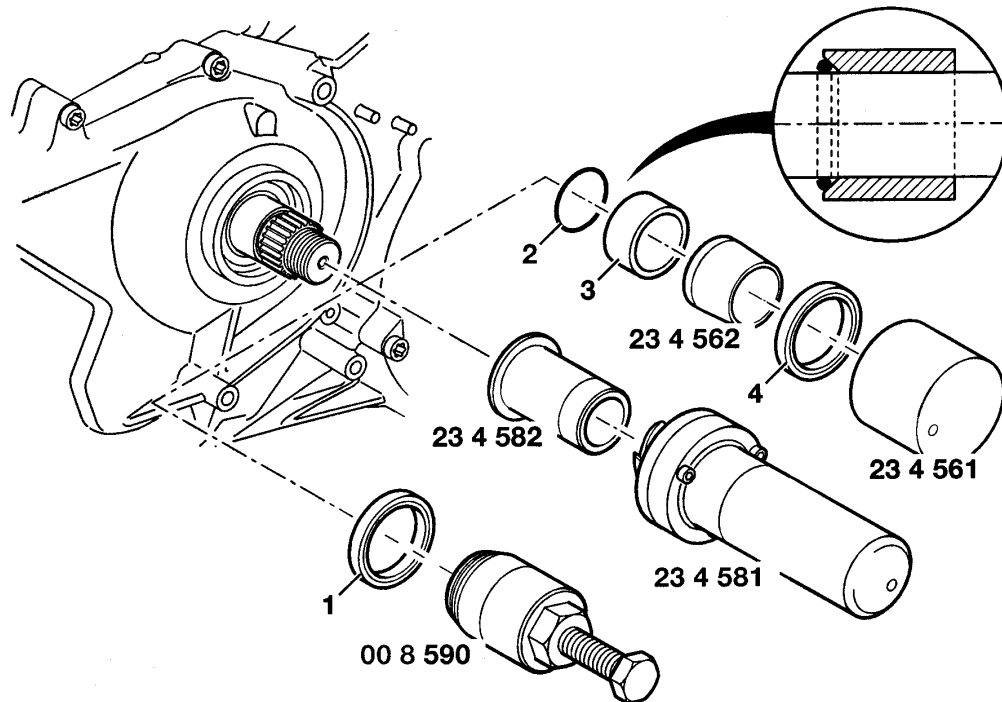
Refer to the picture on the following page.

The measure value should ≥ 28.40 mm.

If one measured value is less than the value specified above, the main shaft will have to be replaced (Refer to the F 650 CS Repair Manual for this procedure).

2.4 Installing a new spacer / sealing ring

Illustration #2:



Use puller tool **BMW Special Tool 00 8 590**, to remove shaft sealing ring (1).

Grease guide sleeve, **BMW Special Tool 23 4 582**, slip it onto the main shaft and push it home into the housing.



Use chamfering tool, BMW Special Tool 23 4 581, only in combination with guide sleeve, BMW Special Tool 23 4 582, otherwise chips of metal could make their way into the bearing / gearbox.

Using chamfering tool, **BMW Special Tool 23 4 581**, cut a clearly defined chamfer into the edge of the housing.

Remove the coarse metal particles.

Carefully pull the guide sleeve, **BMW Special Tool 23 4 582**, out of the housing in such a way that the rest of the metal particles are removed with the sleeve.

Coat the new O-Ring (2) with engine oil and push it all the way home on the main shaft.

Lightly grease the inside face of spacer (3) with **Kluber paste 46 MR 401***

Slide spacer (3) (beveled side should face the bearing) home on the main shaft.

Fit sliding sleeve, **BMW Special Tool 23 4 562**, on the shaft.

Pack the space between the sealing lip and the dust excluder lip of the new shaft sealing ring (4) with **Retinex LC II grease***.

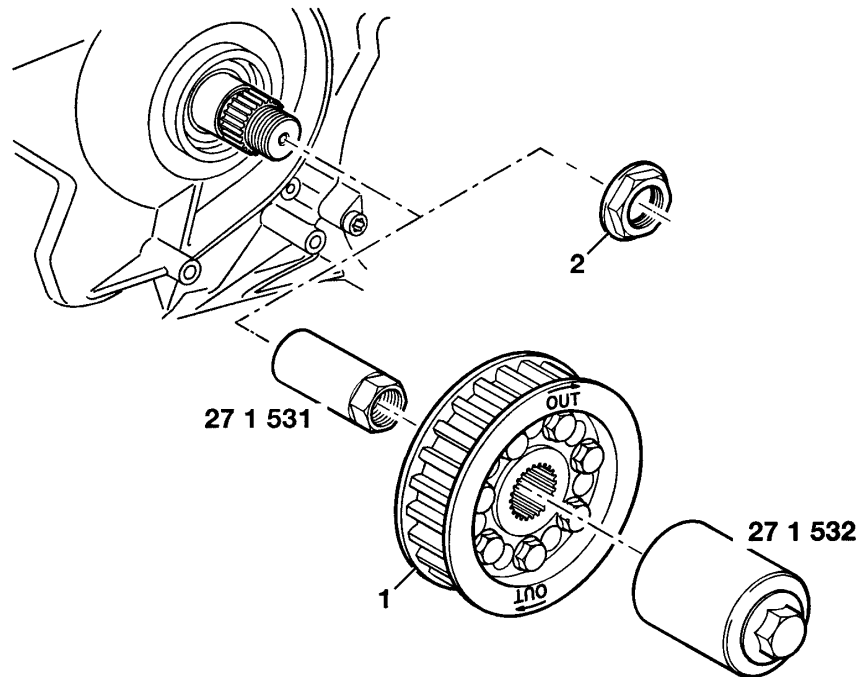
Use drift, **BMW Special Tool 23 4 561**, to drive in shaft sealing ring (4).

Take off the sliding sleeve.

Important Note: *Please refer to the "Additional Important Notes" section on page 8 of this bulletin for details on the availability of these lubricants.

2.5 Installing the new front drive belt wheel:

Illustration #3:



Please refer to Illustration #3 for details and clarification.

Using your hand and tighten hand tight only, screw threaded sleeve, **BMW Special Tool 27 1 531**, all the way onto the main shaft.

Lightly grease the splines of the new front drive belt wheel (1) with **Kluber paste 46 MR 401**

Slip belt wheel (1) (with "OUT" facing out) over the threaded sleeve, **BMW Special Tool 27 1 531**, turning it so that the splines mesh.

Using press on sleeve, **BMW Special Tool 27 1 532**, press the belt wheel (1) all the way onto the main shaft.

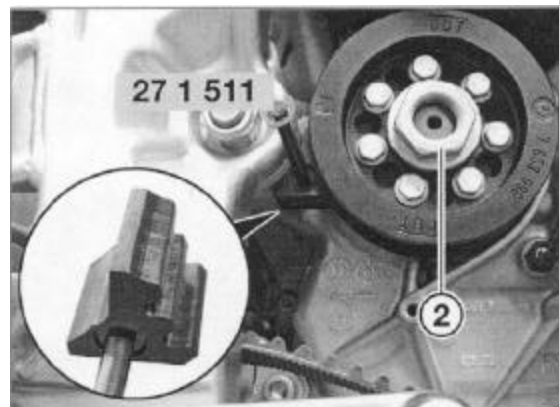
Remove the press on sleeve and the threaded sleeve.

Install counter holder, **BMW Special Tool 27 1 511**, to hold the belt wheel.

Do not ride the motorcycle until the securing nut has had ample time to cure.

Lightly oil the threads of the main shaft, install new securing nut (2) and tighten to the specified torque.

Tightening Torque: Belt wheel to main shaft (curing time 6 hours) - 220 Nm.



Warranty Processing: Enter a campaign claim using the following defect code and choosing either Work Package #1 or Work Package #2:

Defect code: 00 00 27 07 00
Description: F 650 CS Supplement, front drive belt wheel not correctly secured.

Work Package #1
Check dimensions of the gearbox mainshaft / replace the front belt wheel.

Flat Rate #: 00 60 091
Description: Check gearbox main shaft / replace front drive belt wheel.
FRU: 11 FRU.
Part Number: 27 72 7 679 997
Description: Repair kit.
Qty: 1

Work Package #2
Check gearbox mainshaft, replace gearbox mainshaft, replace front belt wheel.

Flat Rate #: 00 60 091
Description: Check gearbox main shaft / replace front drive belt wheel.
FRU: 11 FRU.
Flat Rate #: 00 60 601
Description: Replace gearbox main shaft (drive belt removed).
FRU: 105 FRU.
Part Number: 23 00 7 669 995
Description: Main shaft
Qty: 1
Part Number: 11 11 7 652 985
Description: Set of engine seals.
Qty: 1
Sublet: Engine Oil and Antifreeze
Sublet Code: 4
Sublet Amount: Actual amount up to \$25.00

Additional Important Notes: Rear Belt Wheel, part number 27 72 7 659 997: BMW parts inventory has been checked and only the latest, reinforced, rear belt wheels are in stock.

Adjusting Drive Belt Tension: Refer to F 650 CS Repair Manual pages, 00.57 and 00.58.

If the motorcycle in question is new or has accumulated 600 miles or less, use the instructions and reference mark (mark B) for adjusting a new drive belt.

If the motorcycle in question has accumulated more than 600 miles, use the instructions and reference mark (mark A) for adjusting a "used" drive belt.

New special tools as required to complete these recalls will/have been shipped to each retailer as part of the automatic parts/accessories/tools shipment program.

Additional Important Notes: Defect Codes 00 00 27 04 00 and 00 00 27 05 00 were cancelled on February 28, 2003. Warranty reimbursement, using these defect codes, will no longer be accepted after that date. The only defect code to be used with reference to Section 1 of the technical campaign is 00 00 27 06 00.

Defect code 0 00 27 03 00 was cancelled on February 28th, 2003. Warranty reimbursement, using this defect code, will no longer be accepted after that date. The only defect code to be used with reference to Section 2 of this technical campaign is 00 00 27 07 00.

Kluber paste 46 MR 401: Kluber paste 46 MR 401 may be obtained from a local distributor or directly from Kluber Lubrication at

www.kluberna.com.

Retinex LC II Grease: Retinex LC II grease is a Shell product, Shell part number 70428 and is available from a Shell product distributor. Locate the Shell product distributor nearest you by visiting the Shell website at

www.shell-lubricants.com/distributors.php

Under the National Traffic and Motor Vehicle Safety Act of 1966, as amended, if there has been a recall campaign, dealers must assure that all new vehicles and new items of replacement equipment are free of safety defects and comply with all applicable Federal Motor Vehicle Safety Standards at the time of delivery to the consumer. This means that dealers may not deliver new motor vehicles or new items of replacement equipment to consumers unless the safety defect or noncompliance has been remedied before delivery.