



This Service Information bulletin reactivates S.I. B11 02 03 dated **October 2004**.

PERFORM THE PROCEDURE OUTLINED IN THIS SERVICE INFORMATION ON ALL AFFECTED VEHICLES THE NEXT TIME THEY ARE IN THE SHOP FOR MAINTENANCE OR REPAIRS.

MODEL

E46; M3 coupe/convertible with S54B32 engine produced from 10/01/2001 up to 02/28/2002
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SITUATION

Due to contamination of the engine lubricating system during engine assembly in combination with unfavorable tolerances in the oil pump, the connecting rod bearings can be damaged which may lead to their overheat and possible engine failure on M3 coupe/convertible vehicles produced from October 2001 through February 2002.

A Service Action will be conducted on those vehicles to replace the engine oil pump, and as a precautionary measure, replacement of the connecting rod bearings. Additionally, the engine control module will be programmed with the latest software, which includes improved cold start characteristics. Customers will be mailed letters notifying them of the Service Action shortly (copy of letter, Q & A list are attached).

AFFECTED VEHICLES

This Service Action involves E46, M3 coupe/convertible vehicles with S54B32 engines which were produced from October 1st, 2001 up to February 28th, 2002.

In order to determine if a specific vehicle is affected by this Service Action, it will be necessary to utilize the "Service Menu" of the DCS (Dealer Communication System). Based on the response of the system, either proceed with the corrective action or take no further action.

The Chassis Number Ranges listed below are **only** for informational purposes and are not to be considered as the only deciding factor.

Model	Chassis Number Range
M3 convertible	EX21703 - EX21999 EX22000 - EX23492
M3 coupe	JR12921 - JR16052

CORRECTION

In the affected vehicles, replace the engine oil pump and connecting rod bearings. Reprogram DME control module.

Following completion of this Service Action, the following engine break-in instructions must be observed by customers; for the first 1,200 miles engine speed should not exceed 5,500 rpm, or road speed should not exceed 105 mph.

Engine Oil service is NOT required after the completion of engine break-in period.

PROCEDURE

A detailed Service Action repair instructions can be found on the CD ROM "SIP S54 Connecting Rod

Bearings Replacement", which is included in the Oil Pump Kit w/con. rod bearings (p/n 11 41 0 390 281) used for this particular repair. It takes approximately 15 minutes to review the content of the CD.

FAMILIARIZE YOURSELF WITH THE CONTENT OF INSTRUCTION CD PRIOR TO STARTING THE REPAIR. ALL STEPS MUST BE CARRIED OUT AS PRESENTED.

The connecting rod bearings and oil pump will be replaced without removing the engine from the vehicle. In order to remove the oil pan, the complete front axle carrier must be detached from the body, and then it must be lowered by approximately 100mm.

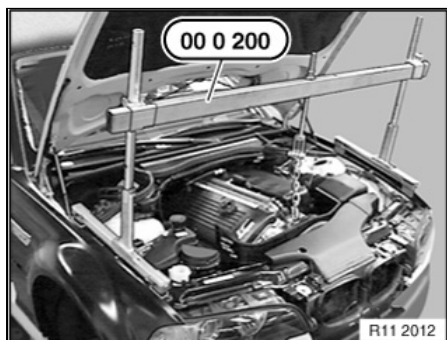
Since the front struts top mounts are not being disturbed in the process, there is no need to perform a wheel alignment check after the repair is completed.

All parts required to perform this Service Action are included in the Oil Pump Kit (p/n 11 41 0 390 281), including engine oil filter (p/n 11 42 7 833 769).

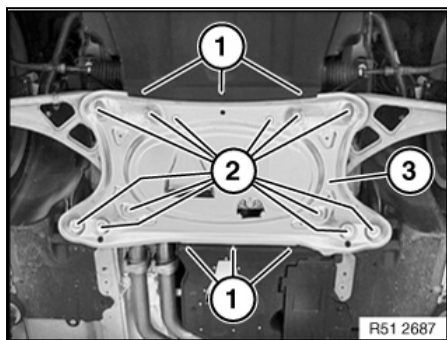
1. Remove front wheels.
2. Remove intake filter housing. For removal instruction refer to RA 13 71 000 found in BMW TIS.



3. Detach guide tube (1) for oil dipstick from the intake manifold



4. Install a special tool p/n 88 88 6 00 0 200 ("engine brace") in engine compartment, in order to support engine during the repair. For installation instructions refer to RA 11 13 000



5. Remove engine splashguard. Remove thrust (3) plate on front axle support. For removal instructions refer to RA 51 71 374.

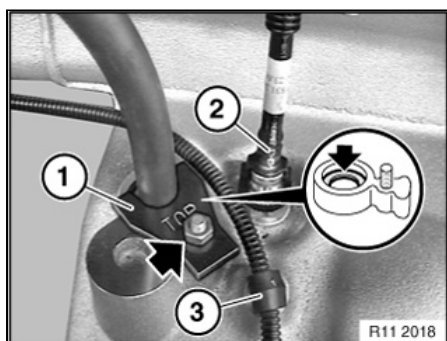
6. Drain engine oil.

IMPORTANT:

When reinstalling thrust plate, use a set of new M10x30x1.5 screws provided in the parts kit. Then, the reinforcement plate screws must be tightened in two stages:

- first, torque with 59 Nm

- then, angle torque to 90 using Torque Angle Measuring Tool p/n 90 88 6 009 120 (available through the Automatic Tools Shipment Program)

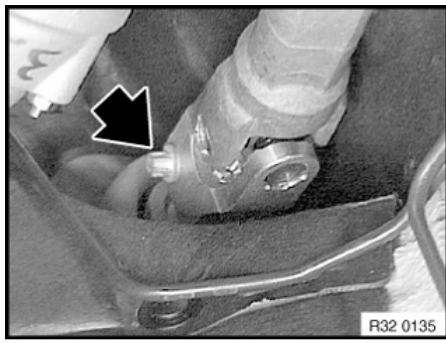


7. Remove dipstick holder (1) from the oil sump, and remove dipstick.

8. Detach oil condensate return hose (2).

IMPORTANT:

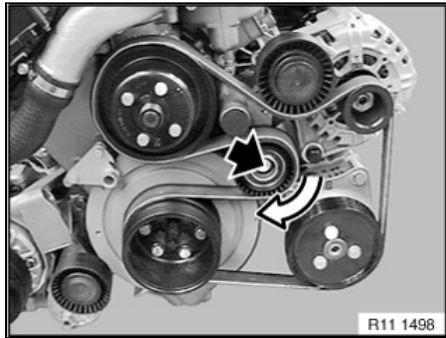
When reinstalling the oil dipstick, replace the O-ring (as indicated by black arrow) included in the parts kit.



9. Detach steering spindle from the steering rack by removing clamping screw.

IMPORTANT:

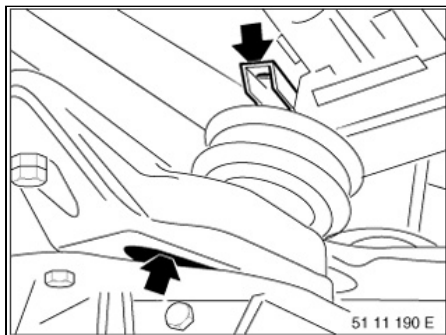
Use the new clamping screw M8 x 33 (provided in the parts kit) when reinstalling steering spindle. Tightening torque should be 22 Nm.



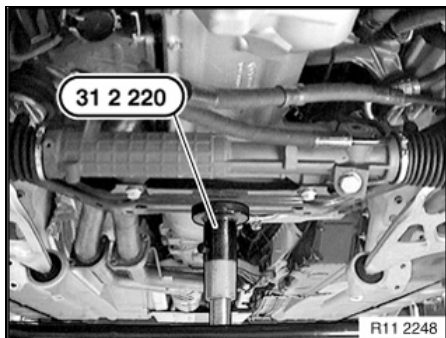
10. Detach oil lines from the power steering pump bracket.

11. Remove drive belt from the power steering pump belt pulley. In order to do this, remove the plastic cover from the belt tensioner pulley. Using a 6mm Allen key, compress tensioner by rotating it clockwise until p/s belt can be removed.

12. Remove power steering pump without disconnecting power steering lines. Secure steering pump to the body by using plastic wire ties.



13. Unfasten two nuts at the bottom of the engine mounts.



14. Release retaining brackets for front stabilizer bar.

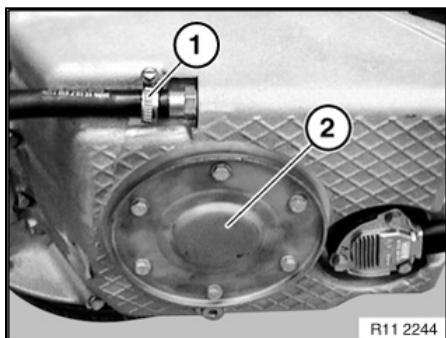
15. Detach brackets for left and right wishbone lower control arms.

16. Support front axle carrier with a suitable hydraulic support jack (e.g. Universal Hydraulic Stand p/n 88 88 6 00 2 030).

17. Release 4 bolts securing front axle carrier, and lower the whole axle by approximately 100mm.

IMPORTANT:

There is no need to detach the steering rack from the front axle during this procedure.



18. Detach return hose (1) from oil sump.

19. Remove cover (2) from oil sump.

20. Disconnect oil level sensor connector.

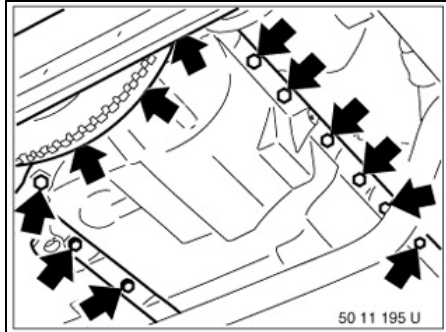
IMPORTANT:

Replace gasket for sump cover (2) when reinstalling oil sump (gasket is provided in the parts kit)

21. Unfasten oil sump screws and carefully remove oil pan.

IMPORTANT:

Three screws on the left side of oil pan (near the oil condensate return hose) are 5 mm longer than the rest of them.

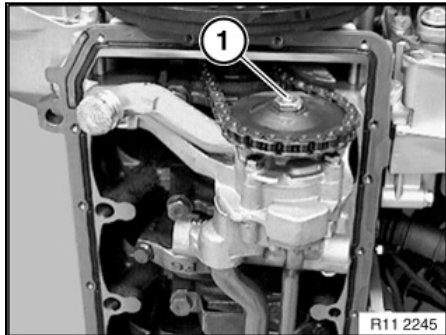


On SMG transmission equipped vehicles, if necessary, disconnect bracket for engine oil lines to ensure sufficient clearance for oil sump movement.

When reinstalling, use new oil pan gasket provided in the parts kit. Also, apply a small amount (bead approximately 3mm wide and 2mm high) of HYLOMAR Sealing Compound (p/n 81 22 9 400 339) in areas around timing cover/engine block/bell housing joints.

Detailed procedure can be found in the instructional CD.

Then, torque down oil pan screws (M6) to 10 Nm when reinstalling.



22. Using M17 mm socket remove oil pump sprocket nut (1).

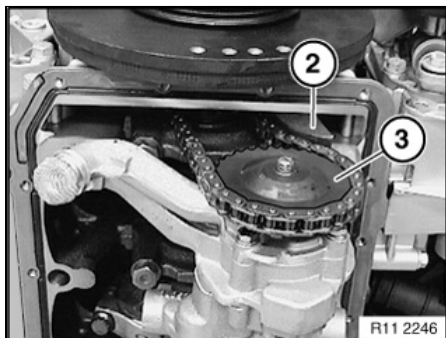
IMPORTANT:

Left-hand threads (turn clockwise to loosen-up).



23. **IMPORTANT:**

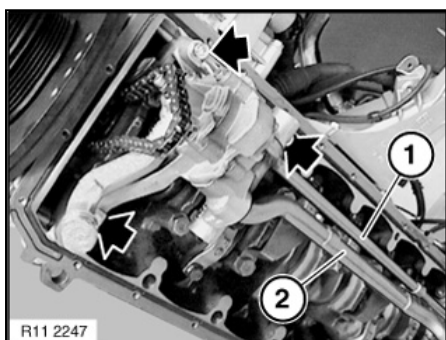
To reduce tension exerted by the oil pump chain when loosening-up the sprocket nut, remove all slack existing in the chain. It can be done by tightening chain around the sprocket (as shown on the illustration) with approx. 7" of soft wire (e.g., from a wire hanger). This will protect plastic tensioner from possible damage while loosening-up the sprocket nut.



24. Press back the chain tensioner (2). Detach sprocket wheel (3) from oil pump shaft.

IMPORTANT:

When reinstalling, align teeth of the sprocket wheel and oil pump shaft. Torque down sprocket nut to 25Nm.

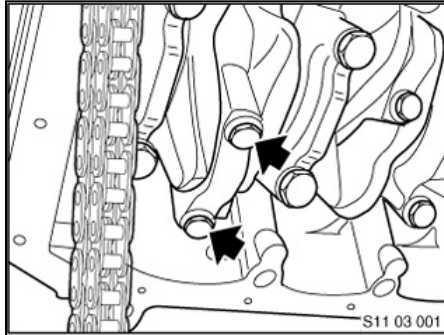
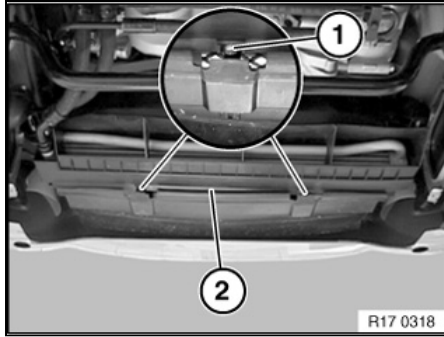


25. Remove oil pump return pipe (1) and suction pipe (2). Remove oil pump.

IMPORTANT:

When reinstalling, replace O-ring on the suction pipe 2 (O-ring is included in the parts kit).

26. Remove two fastening screws (2) for oil cooler. Detach oil cooler (2) from the bottom of radiator without disconnecting oil hoses. Secure oil cooler to the body by means of plastic wire ties.



Connecting rod bearings bolts can be accessed from the bottom, in the following sequence: cylinders 1 and 6, cylinders 3 and 4, finally cylinders 2 and 5, when rotating crankshaft in clockwise direction.

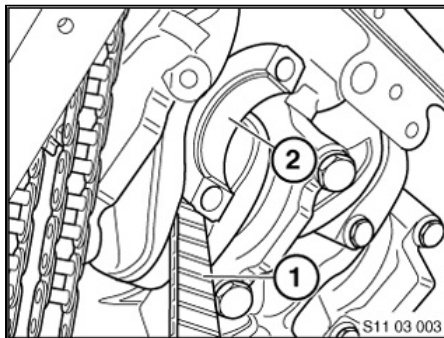
27. Using a special tool PN 90 88 6 115 100 at the crankshaft vibration damper pulley, turn crankshaft clockwise until number 1 cylinder connecting rod bolts are accessible.

28. Using M12 mm, 12-point socket remove connecting rod bolts.

IMPORTANT:

Since the connecting rod bolts will be reused with the new bearings, it is essential to mark them, and then reinstall them in the same order (e.g. BOLT FROM THE EXHAUST SIDE MUST BE REINSTALLED AGAIN ON THE EXHAUST SIDE, etc)

29. Cut off a strip (1) from a clean and fiber-free cardboard with approximate dimensions of 20mm x 150mm. Use such a cardboard strip to protect crankshaft bearing surface.



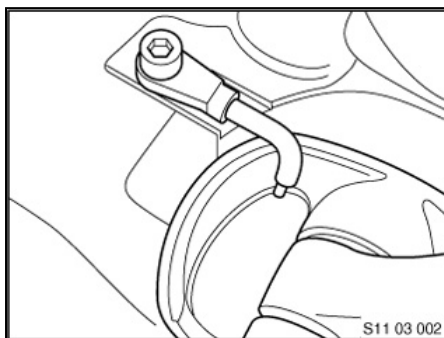
30. After removing connecting rod cap, gently push connecting rod upwards, and then after securing enough clearance from the crankshaft, slowly pull it down in order to remove the upper bearing shell (2).

IMPORTANT:

Do not use sharp tools to pry out the bearing shells out of the connecting rod or cap.

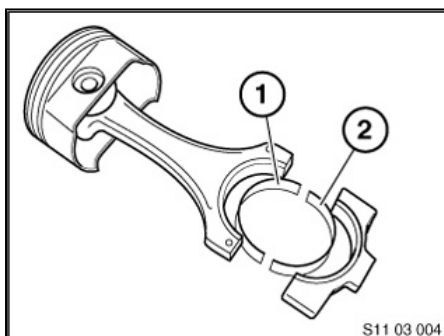
NOTE:

If the removed connecting rod bearings exhibit signs of excessive wear (e.g.: exposed shiny, copper bedding on the inner surface; missing, sheered-off locking tabs; or deep, shiny grooves on the outer surface indicating "spinning"), then contact the Technical Hotline-Drivetrain for further instructions.



IMPORTANT:

When pulling down pistons for connecting rod bearing shell disassembly, make sure not to damage oil spray nozzles, which are located at the bottom side of the block (between crank bearing supports).



One classification of connecting rod bearings will be used in this Service Action.

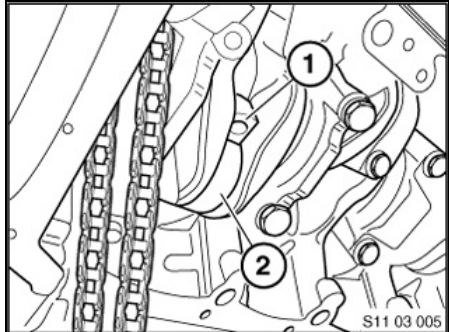
Connecting rod bearings are color-coded:

-BLUE (1) for the connecting rod side

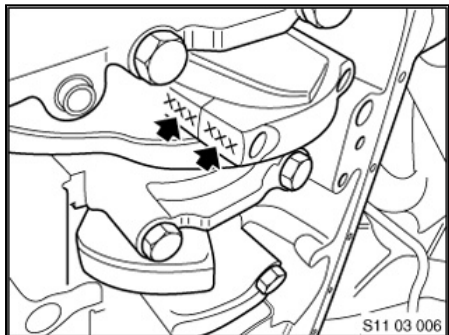
-RED (2) for the cap side.

IMPORTANT:

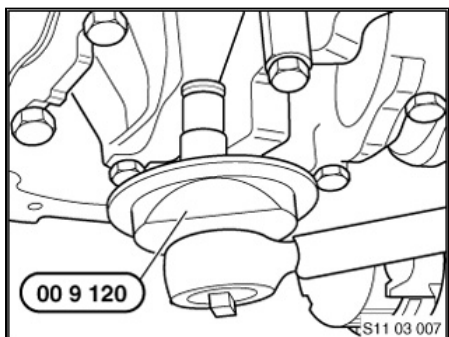
IN ORDER TO UNSURE ENGINE RELIABILITY, IT IS ESENTIAL TO INSTALL BEARING SHELLS IN THE ORDER SPECIFIED ABOVE.



31. Clean connecting rod bearing surface with fiber-free cloth, then install "blue" bearing shell and moisten it with clean 10W-60 engine oil.
32. Then, carefully push the connecting rod (1) upwards and over the crankshaft contrive (2), making sure that crankshaft surface is not scratched in the process.



33. Install "red" bearing shell in the corresponding connecting rod cap and moisten it with clean 10W-60 engine oil.
34. Install connecting rod cap in the proper position, with matching serial numbers stamped on cap and rod as shown on the illustration.



35. Install the original M11x1.25 connecting rod bolts in the same positions as when removed.
36. With help of second person, torque connecting rod bolts in the following sequence:
- settling torque: 5 Nm
- initial torque: 30 Nm
- angle torque to 70, in one single stroke. Use the Torque Angle Tool p/n 90 88 6 00 9 120 (available through the Automatic Parts Shipment Program)

- 37. Install new engine oil pump. Reinstall all previously removed components.

UPDATE! 38. Replace oil filter and refill engine with 6.5 liters of fresh 10W-60 oil (Castrol Formula RS, or Castrol TWS Motorsport BMW p/n 07 51 0 009 420).

NOTE:

With the removal of oil pan, some minor quantity of oil (which otherwise would stay inside pan during regular oil/filter service) is disposed during draining and cleaning of oil pan from inside. To compensate for this loss, the additional 1.0 liter of oil (to the total of 6.5 liters) was allocated for this Service Action repair.

IMPORTANT:

S54B32 engine oil refill capacity used during **scheduled oil service** (with oil filter replaced) is **5.5 liters (5.8 quarts)** of Castrol 10W-60 Synthetic Oil (PN 07 51 0 009 420). For the proper procedure of checking oil level follow procedure below, from SIB 11 03 03 (04/2003).

Engine Oil Level Checking Procedure:

1. Park the vehicle on a level surface.
2. With engine warmed to its normal operating temperature (one yellow LED illuminated on the tachometer), allow it to idle for at least 15 seconds, then switch off.
3. After approximately 1 minute, pull the dipstick out and wipe it off with a clean lint-free cloth, paper towel, or similar material.
4. Carefully push the dipstick into the guide tube and pull it out again.
5. The oil level should be between the two marks on the dipstick.

With 6.5 liter of fresh oil, and when correctly checked, the oil level should be between the two marks on the dipstick. It is not necessary, nor recommended to bring oil level to the "max" mark on the dipstick.

NOTE:

The oil volume between two marks on the dipstick corresponds to approximately 1.3 liters (1.4 quarts).

Do not fill beyond the upper mark on the dipstick. Excess oil will induce excessive oil consumption, and may damage the engine.

- 39. Reprogram DME control module using DISPlus/GT1 with CD 32.0 1ST update or higher.
- **To reprogram DME:**
 - Connect vehicle to the BMW approved battery charger.
 - Connect DISplus/GT1 loaded with CD 32.0 1ST update, or higher.
 - Select: **BMW Coding/Programming**
 - Select: **5 Programming**, then right arrow
 - Select: **3 DME Programming**, then right arrow
 - Select: **2 Exchange control unit**, then right arrow
 - Display appears **First determine and then program basic control unit**, then right arrow
 - Select **1 Determine basic control unit**, then right arrow. Automatic determination is going to be performed.
 - **DME, is the faulty control unit still installed in the car?**, select **YES**
 - Start automatic determination?, select **YES**
 - Display appears: **Compare chassis number displayed with number in the car. Chassis number Do numbers correspond?** Select **YES**
 - **Part number basic control unit/.....** are displayed, then scroll down
 - Display appears: **Followed part numbers (basic control unit) can likewise be used. A new program version is also programmed for these part numbers. Duration depends on control unit between 4 16 minutes**, then scroll down
 - At this point vehicle data is stored in the tester for the automatic identification. **Disregard screen prompt which refers to obtaining and installing a new basic control unit, and scroll to the left**
 - Select: **2 Program basic control module**, then right arrow
 - Follow instruction: **Chassis number, enter the last 7 characters of VIN. Is the number correct?** Select **YES**
 - **Disregard** the next instruction: **Install new basic control module**, just go forward by pressing right arrow
 - Display will appear: **There is new program version and new data version for this control unit. Depending on the control unit, programming may last between 4-16 minutes. First programming and then data are programmed. After programming, with diagnosis program, the fault memories have to be cleared. EWS alignment is automatically carried-out with reprogramming. The adaptation values must be cleared after programming**, then right arrow
 - The next screen displays: **The control module can be programmed X times**, then right arrow
 - Follow the command: **Please enter reading mileage.....Entry correct?**. Select: **YES**
 - **Start automatic programming?** Select: **YES**
 - When programming starts, the following message is displayed: **MSS43 Program programming active. Voltage terminal 30.....**
 - After programming part is finished , the following message is displayed: **MSS43 data programming active. Voltage terminal 30.....**
 - After successful programming, message is displayed: **Programming completed.**
 - Next, follow-up screen instructions for EWS alignment and for clearing of adaptation values.

40. Obtain one "Break-in procedures" label (SD92-246). Using a ball-point pen, write the appropriate mileage (current mileage + 1,200 miles) on the label, and apply to the upper left corner of the windshield.

Break-in procedures

To ensure proper running-in of the new components installed in your engine, a break-in period must be observed.

For the next 1,200 miles: do not exceed:

- 5,500 rpm engine speed
- 105 mph road speed

Obey your local and state maximum speed limits.

Please observe these conditions until your odometer displays the following mileage:

SD92-246

S11 03 U02

PARTS INFORMATION

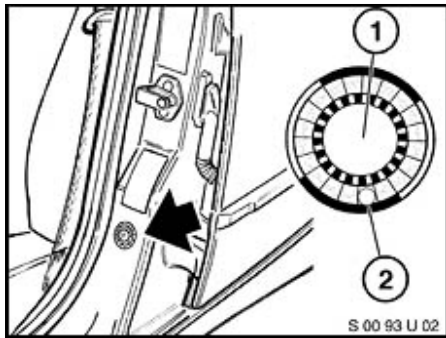
Part Number	Description	Quantity
11 41 0 390 281	M3 Oil Pump con. rod bearing kit	1
07 51 0 009 420	10W-60 Castrol motor oil (liter)	6

Orders for the S54 Oil Pump connecting rod bearing kit (P/N 11 41 0 390 281) will be VIN specific. Orders may be placed as a VOR or stock order. The VIN is to be placed in the "comment/text" field. It is recommended that VIN not be used as the P.O. number. This will prevent using the VIN again for subsequent VIN specific orders. Only orders with a VIN will be released. All other orders will be cancelled.

Item Number	Description	Per	Cost
SD92-246	M3 S54 Service Action Break-in Procedure Label	1= strip of 10	N/C

This item are available online at BMW TIS under Materials Ordering

LABEL INSTRUCTIONS



This Service Action has been assigned code number **356**. After the vehicle has been checked, and corrected if necessary, obtain a label (SD92-205) and:

- emboss your BMW dealer warranty number in the middle of the label (1);
- punch out code number **356** printed on the label and,
- affix the label to the **B** pillar as shown.

If the vehicle already has a label from a previous Service Action/Recall Campaign, affix the new label next to the old one. Do not affix one label on top of another one because a number from an underlying label could appear in the punched-out hole of the new label.

WARRANTY INFORMATION

Reimbursement for this Service Action will be via Campaign Entry

Defect Code **00 11 76 01 00**

Work Package #1: Replace oil pump, set of connecting rod bearings, and reprogram DME

Labor Operation: 00 54 076

Labor Allowance:	69 FRU	
Parts Allowance:	11 41 0 390 281 Oil Pump Kit w/con. Rod bearings	Qty (1)
Sublet Allowance	UPDATE! 6.5 liters of 10W-60 Castrol motor oil	UPDATE! \$65.06

As previously communicated to the owners of affected vehicles, the warranty for engine internal oil lubricated parts is extended to 6 years, 100,000 miles.

To maintain customer confidence on S54 equipped vehicles that were not produced within the production periods previously listed, they will also be provided with an extended warranty on all internal mechanical engine components lubricated by engine oil for a period of 6 years or 100,000 miles, whichever comes first. This will be valid for all model year 2001, 2002 and 2003 S54 equipped vehicles, including 2002 and 2002 model year m roadster/coupe vehicles with S54 engines. Refer to Question #24 in the attached Questions & Answers.

Please make sure the customers of these vehicles are aware of this warranty extension and coverage.

UPDATE! **IMPORTANT:**

BMW Roadside Assistance protection has not been extended, and is concurrent with the New Vehicle Limited Warranty coverage (48 months or 50,000 miles, whichever occurs first) as stated in the customer's Service and Warranty Information booklet.

RE-FUELING COSTS

BMW NA will provide reimbursement to have the gas tank topped off once as required, for each vehicle affected by this Service Action.

Defect Code: **85 99 00 66 NA** **Refuel M3 when performing
Service Action Code 356**

Sublet: Actual gas cost to top off fuel tank

Sublet code: 4

Please attach the gas purchase receipt to the repair order to document cost.

RENTAL VEHICLES

Please note, that the Warranty Policy and Procedure Manual in section 9 on page 8, spells out for those participating BMW centers the opportunity to self-authorize rental vehicle if needed by your customer for this type of repair.

ATTACHMENTS

View PDF attachment [B110203Letter1](#).

View PDF attachment [B110203Letter2](#).

View PDF attachment [B110203Letter3](#).

View PDF attachment [B110203Q&A](#).