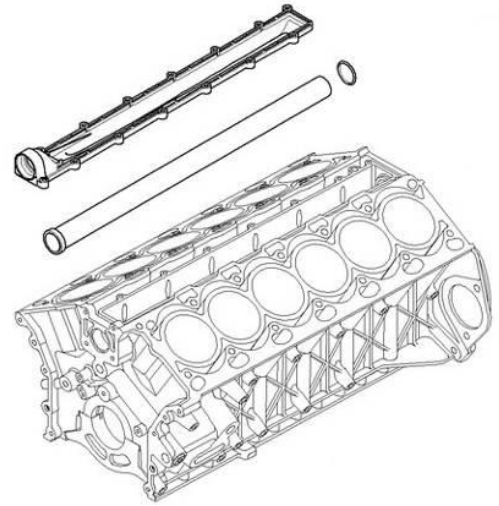


BMW V12 models fitted with the N73 engine often suffer from a failure of the front seal of the water transfer feed pipe, which is located under the intake valley pan.

The original bonded rubber seal fails primarily due to corrosion caused by an electro-chemical reaction between the dissimilar materials. Symptoms will initially be a coolant leak from the weep hole in the front timing cover, followed by loss of coolant, overheating, and possible engine failure.

The factory design is a long section of tube, which can only be installed from the front of the engine with the timing cover removed. This difficult repair that can take over 20 hours of shop time, and cost upwards of \$10,000.



ÜRO Parts 2 piece collapsible design



Factory 1 piece design

ÜRO Parts re-designed the coolant transfer pipe using two sections of tubing, so the assembly can collapse in the middle. This allows the repair to be completed without removing the timing cover, saving many hours of labor, and dramatically reducing cost.



Installation by a professional technician is recommended. Refer to the factory repair manual for vehicle-specific service procedures for this part. Tighten all hardware to factory torque specifications and observe all repair manual cautions and warnings. Use safety stands whenever beneath a vehicle and always wear protective eyewear.



### Item Description

#1 Front Inner Water Tube	(Qty 1)
#2 Rear Outer Water Tube	(Qty 1)
#4 Rear Packing Shims 0.020" (nylon)	(Qty 3)
#5 Inner Tube O-Ring Seals	(Qty 3)
#6 Rubber-safe Grease Packet	(Qty 1)
#7 Spirolox Locking Ring	(Qty 1)
#8 Front Tube Seal	(Qty 1)
#9 Rear Tube O-Ring Seal	(Qty 1)

### Supplied

### Recommended Additional BMW Factory Parts:

11 51 7 507 717	O-Ring, water pump	(Qty 1)
11 51 7 508 535	Gasket, water pump	(Qty 1)
11 51 1 439 976	Return Pipe, water	(Qty 1)
11 14 7 506 384	Gasket, intake valley pan	(Qty 1)
11 61 7 568 910	Gasket, intake manifold	(Qty 2)

Note: Given the tear down necessary to access the water pipe, other miscellaneous parts may be required. See BMW factory workshop manual for full details.

The following is a guideline for installation of the ÜRO Parts repair kit, and only shows the basic steps. A trained technician following the factory workshop manual and repair procedures is recommended to properly complete this repair.

Note: All instruction photos show a stripped engine block to make the steps clearer. Stripping the block is not required for the repair.



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### **STEP 1**

After draining the cooling system, remove the intake manifold and other related components to expose the intake valley pan.

### **STEP 2**

Remove the intake valley pan, exposing the factory one-piece coolant pipe.

**Important Note:** Space is extremely limited within engine block vee, and the machined edges are very sharp. Protective gloves should always be worn to avoid injury.



### **STEP 3**

The original pipe can now be drilled and cut into two sections using a small air saw or cut-off wheel. **\*Care must be taken to prevent metal shavings and cutting debris from entering the engine!\***

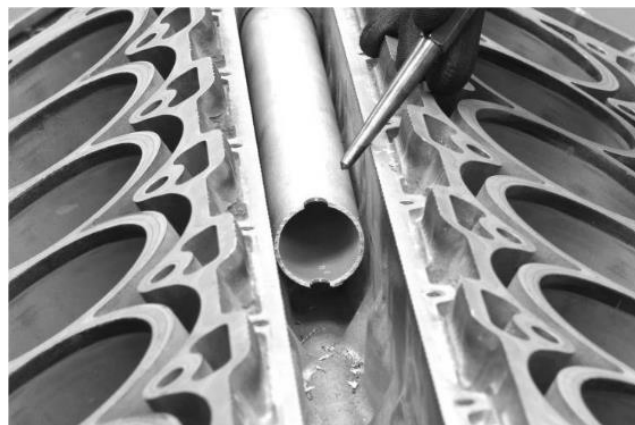
### **STEP 4**

Mark center of tube with a punch, then drill a 3/8" hole through the upper and lower walls of the tube, taking care not to drill into the engine block.



### **STEP 5**

Insert the blade of a small reciprocating saw into the hole, and cut the pipe into two sections. Again, care must be taken not to cut the surrounding engine block.



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### **STEP 6**

Remove the two pieces of original pipe. The front will require twisting and prying to break the bond at the front seal. Large pliers or Vise-Grip are best suited for this job.



### **STEP 7**

Remove the remaining front seal material with a small scraper and wire brush, taking care not to damage the seal pocket. Also carefully remove the original rear o-ring seal.



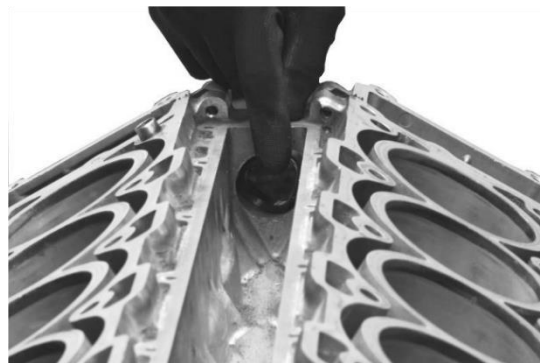
### **STEP 8**

Carefully clean the front seal pocket. Lubricate all surfaces of the front seal (item #8) with the grease (#6) provided in the kit.



### **STEP 9**

Fit the front seal into housing, ensuring the thick edge of the seal faces forward (to timing cover). The inside bevel at the thin rear edge of the seal will make pipe insertion easier.



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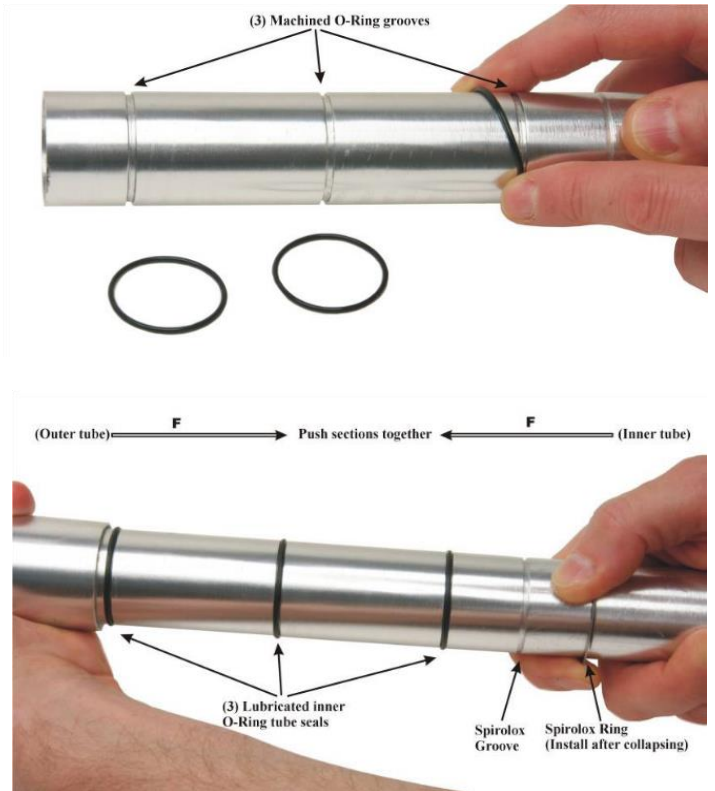
### STEP 10

Perform the same lubricating and fitting operation to the rear o-ring (#9). There is no orientation necessary for the rear seal.



### STEP 11

Carefully fit the three o-rings (#5) to the front tube section (#1), so that each o-ring is fully-seated in its machined groove. Lubricate the o-rings with provided grease, and lightly grease the **inside** of the outer tube (#2) so that the inner tube (with o-rings) can slide smoothly inside the outer tube.

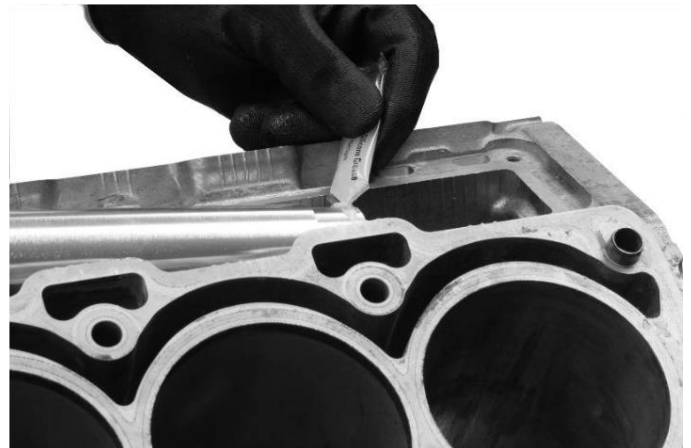


### STEP 12

Fit inner and outer tube sections together (taking care not to pinch or damage the o-rings), and collapse the tubes together. Carefully install the Spirolox (#7) lock ring around the smaller diameter front tube, but do not slide it into the lock ring groove.

### STEP 13

Lubricate the insertion end of the rear outer tube (#2) with the grease. Note the angle of the tube shoulder, and see how the angled shoulder can be rotated to match the angle of the inner back wall of the engine block.



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### **STEP 14**

On the collapsed pipe assembly, grease the front of the inner pipe (#1) where it will slide into the greased front seal. Holding the pipes at a slight downward angle, slide the front tube into the front seal (#8) opening and push pipe towards the timing cover.

The bevel on the ID of the front seal will allow tube to be inserted. If the seal is installed backwards, the tube can catch the edge of the seal and roll it out of the groove.

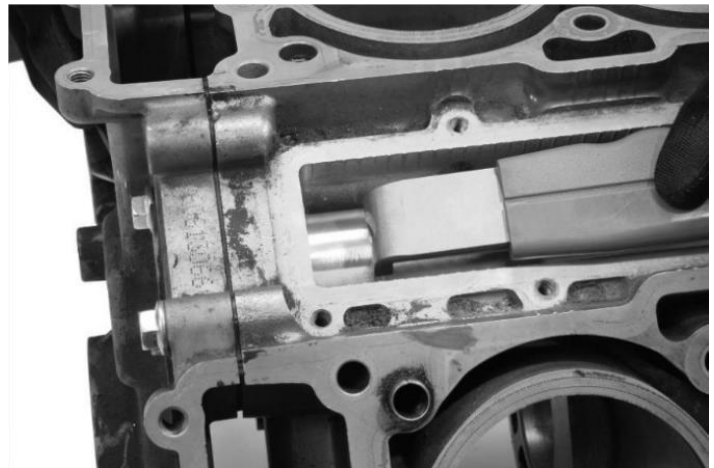


### **STEP 15**

After front tube is inserted, there will be room to lower the end of the rear tube. Lower rear tube to align with seal opening, and slide tubes apart until tube shoulder contacts the block wall. Spin rear tube to align the angle of the shoulder with the angle of the back wall of the block, and finish inserting tube.

### **STEP 16**

While holding the rear tube in place, use a suitable tool in the machined groove to push the front tube forward. Slide tube forward until it stops against the timing cover. Re-check rear tube to make sure the shoulder angle still matches wall angle, and the rear tube remains fully inserted.



### **STEP 17**

Full insertion of both tubes will expose the lock ring groove near the center of the pipe assembly (at the inner end of the outer tube). If there is a gap between the end of the outer tube and the groove (where the lock ring (#7) will be located), the provided shims (#4) can be used to take up space. Block casting variations determine whether shims will be used or not.

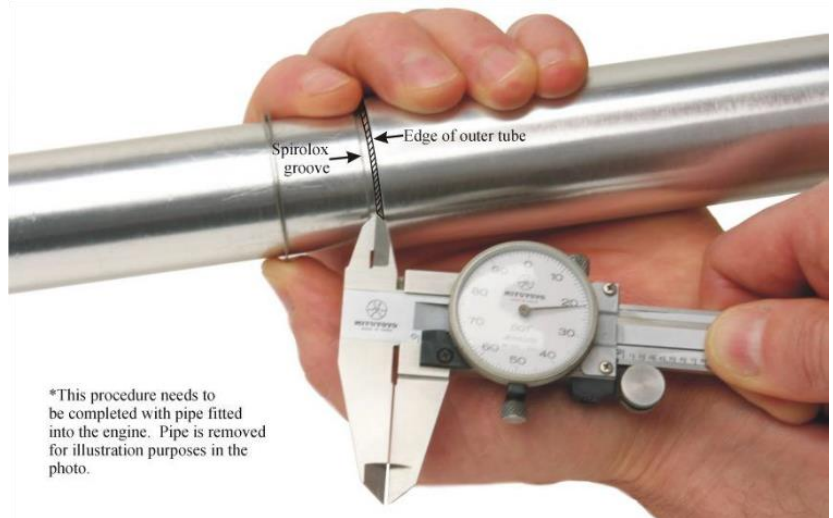


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**STEP 18**

Measure the distance (in thousandths of an inch) from the rear edge of the lock ring groove to the front end of the rear tube.

**STEP 19**

Slide rear tube section forward and out of the rear seal, and add the appropriate number of shims (equaling the previous measurement) to the end of the rear pipe (at the shoulder).

**STEP 20**

Re-seat the rear tube in the block, again ensuring the shoulder angle matches the block wall angle. The lock ring groove should now be exposed with no gap. Slide the lock ring into its groove, locking the tubes in place. Fit new intake pan gasket # 11 14 7 507 278 (not provided), and reassemble engine per the factory workshop manual.

**STEP 21**

Ensure collapsible pipe assembly was installed correctly by pressure testing cooling system after all the appropriate components are installed.



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