

MALONEY TECHNICAL PRODUCTS

SERIES III DETECTOR – SEAL REPLACEMENT INSTRUCTION SHEET

SAFETY WARNING

The Series III Detector may be installed on high pressure lines carrying a wide variety of materials. FOLLOW ALL PERTINENT SAFETY INSTRUCTIONS AND WORK INSTRUCTIONS FOR PERFORMING OPERATIONS ON PRESSURED LINES.

STEP BY STEP INSTRUCTIONS

- 1 Remove the Visual Indicator and /or Microswitch Assemblies by loosening the ¼"-20NC SHCS (Qty 2 each) which attach these items to the Accessory Plate (Item 2). Set these aside. Care should be taken to mark the assemblies so that they may be returned to the same position from which they were removed, particularly if the detector includes a Calibrated Microswitch for use on a prover system. Remove and set aside the 23/32" Ball Bearing from the Accessory Plate which actuates the Microswitch.
- 2 After confirming that pressure has been removed from the line, loosen the 3/8"-24NF x 4" long hex bolts (Qty 4, Item 12), and remove them.
- 3 It should now be possible to remove the Detector from the Base. If the Detector will not lift free, a slight twisting motion may be used to aid in removal. Prying should be avoided as it may leave dents or dings in the soft stainless steel of the Detector which may prevent the unit from seating completely when being re-installed.
- 4 If the Detector is to be removed from the installation area, we recommend the installation of a Blanking Cap (Maloney P/N +301-BLK/CAP) or replacement Detector. This reduces the chance of an accidental discharge or contamination.
- 5 If possible, the Detector should now be removed to a workbench or other flat surface for the balance of the procedure. It may be necessary at this point to clean the Detector to remove residue from the media carried in the pipeline as well as normal environmental accumulations of dirt and other particulates. Since the seals are going to be replaced it is not necessary to mask or limit their exposure to cleaning fluids. Care should be exercised to maintain the finish of the sealing surfaces free of scratches, gouges or mechanical damage which could impact seal performance.

MALONEY TECHNICAL PRODUCTS

SERIES III DETECTOR – SEAL REPLACEMENT INSTRUCTION SHEET

- 6 Invert the Detector so that the spring loaded plunger points upward. Using an Allen wrench, loosen and remove the #10-24NC x .5" long SHCS (Qty 1, Item 10) and the #10-24NC x 1.75" long SHCS) Qty 1, Item 11). Set both aside.
- 7 Remove the Cap (Qty 1, Item 1). The Retaining Ring (Qty 1, Item 7) and Shaft Seal (Qty 1, Item 8) should remain in place. Remove the Retaining Ring to expose the Shaft Seal. Remove the shaft seal. Clean any remaining residue from inside the Cap and examine the I.D. of the Retaining Ring for any sign of wear. If the retaining Ring shows evidence of excessive wear, it should be replaced. Place the Shaft Seal into the cavity in the Cap with the open end of the seal facing the blind end of the hole (away from you when installing it). Replace the Retaining Ring and set the Cap Assembly aside.
- 8 Remove the Flange (Qty 1, Item 3) from the Accessory Plate. The Shaft (Qty 1, Item 4), the Retaining Ring (Qty 1, Item 7), the Shaft End (Qty 1, Item 5) and the Shaft Spring (Qty 1, Item 6) will come off with it. Place the Shaft End on a soft block such as a piece of wood or aluminum and use a pin punch to remove the Spring Pin (Qty 1, Item 13) which holds the Shaft End to the Shaft. Care should be taken to retain the Assembly when the Shaft End is removed as the Shaft Spring is under a slight amount of compression. Set aside the Shaft end and the Shaft Spring.
- 9 Remove the Shaft from the Flange. The Retaining Ring (Qty 1, Item 7) and the Shaft Seal (Qty1, Item 8) should remain in place. Remove the Retaining Ring to expose the Shaft Seal. Clean any remaining residue from the inside of the Flange and examine the I.D. of the Retaining Ring for any sign of wear. If the Retaining Ring is excessively worn it should be replaced. Place the Shaft Seal into the cavity in the Flange with the open end of the seal facing down, away from the Accessory Plate. Replace the Retaining Ring and set the assembly aside.
- 10 Examine the Shaft for signs of wear or scoring. Surfaces which are pitted or scored will reduce seal life and contribute to leakage. The shaft may be polished slightly if required, however, do not attempt to machine or grind the shaft as this will most likely cause the tolerance limits to be exceeded. If excessive wear or damage is noted the Shaft should be replaced.

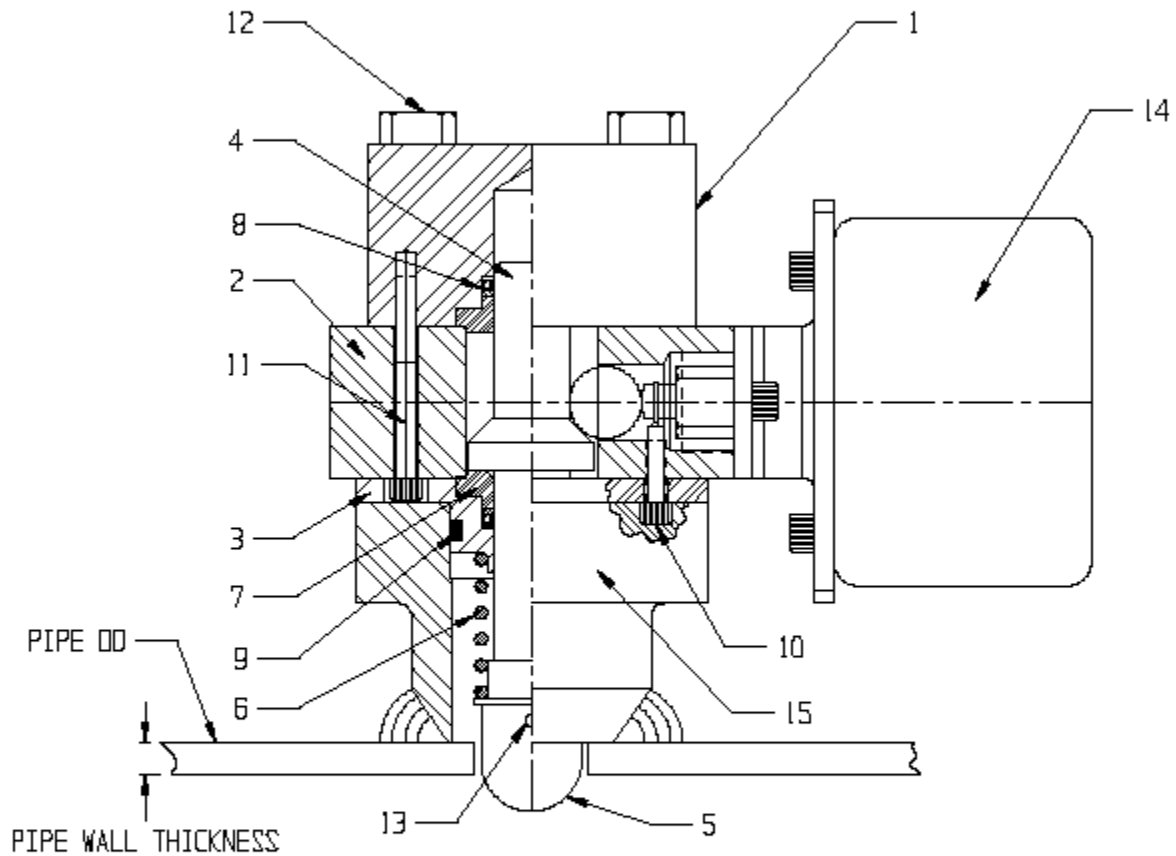
MALONEY TECHNICAL PRODUCTS

SERIES III DETECTOR – SEAL REPLACEMENT INSTRUCTION SHEET

- 11 Lubricate the Shaft Seals with a small amount of Lithium grease. Assemble the Shaft through the Flange with the flat shoulder against the Retaining Ring. Place the Shaft Spring over the Shaft. Place the Shaft End over the Shaft, taking care to line up the 0.125" holes in the Shaft End with the hole in the Shaft. Compress the Shaft Spring and drive the Spring Pin into place to secure the Assembly. Make sure that the Spring Pin is flush to the Shaft End and that the Shaft Assembly will move freely through the Flange and Retaining Ring.
- 12 Place the Flange Assembly on the Accessory Plate, taking care to align all the bolt holes. Secure the Flange to the Accessory Plate with the #10-24NC x 0.5" long SHCS previously removed. Again check to see that the Shaft moves freely.
- 13 Place the Cap Assembly over the Shaft and onto the Accessory Plate, taking care to align all the bolt holes. Secure the Cap to the Accessory Plate with the #10-24NC x 1.75" long SHCS previously removed. Note that the head of this fastener must seat through the hole in the Flange and be below the surface for the Detector to fit properly on its Base. Again check to see that the Shaft moves freely.
- 14 Remove the Viton® O-ring from the exterior groove of the flange. Clean the groove and replace with a new O-ring. This should also be lightly lubricated with Lithium grease as were the Shaft Seals.
- 15 Replace the Detector Assembly on its Base, being careful to return the unit to its original orientation. Secure the unit with the 4 bolts previously removed. At this time the Visual Indicator and / or the Microswitch Assemblies should be replaced, using the original hardware. Please be sure to replace the Ball Bearing in the 0.75" diameter hole prior to bolting on the Microswitch Assembly or it will not function. Your Detector Assembly should now be ready for use.

MALONEY TECHNICAL PRODUCTS

SERIES III DETECTOR – SEAL REPLACEMENT INSTRUCTION SHEET



SERIES III DETECTOR
CUTAWAY DETAIL