Quick Start Guide
IP2032-SUB2-QS, Rev AA
May 2012

Mobrey Submersion Shield for the MSP900SH and MSP900FH

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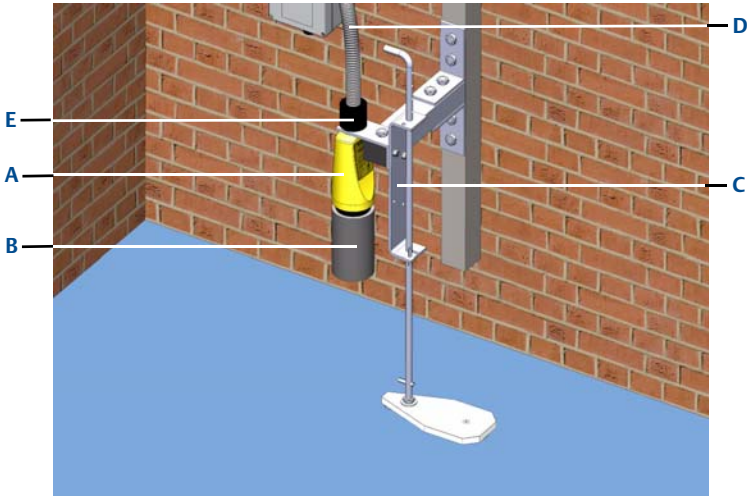
About this guide

This guide provides instructions for fitting a Mobrey Submersion Shield (part number MSP-SUB2) which is an optional accessory for the Mobrey MSP900SH Level and MSP900FH Flow transmitters.

It does not provide installation instructions for the transmitters (or their optional accessories). Refer to the MSP900SH or MSP900FH installation manuals for detailed instructions.

Product data sheets, reference manuals, and quick-start guides are available electronically on www.mobrey.com.

Figure 1. Example application with a submersion shield fitted



A. Mobrey MSP900SH Level or MSP900FH Flow Transmitter
B. Mobrey Submersion Shield (*part number MSP-SUB2*)
C. Mobrey Head Verification Device (*part number MSP-HVD*)
D. Conduit (*not supplied*)
E. Mobrey Conduit Adaptor Boss,
1-in. BSP female to M20 x 1.5 female (*part number 03100-1005-0001*) or
1-in. NPT female to $^{1}/_{2}$-in. NPT female (*part number 03100-1005-0002*)

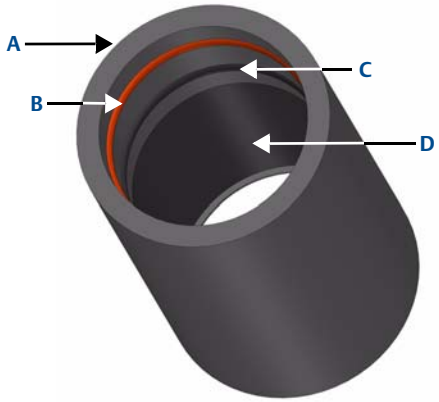
Mobrey MSP900SH/MSP900FH Submersion Shield

The Mobrey Submersion Shield (MSP-SUB2) is recommended for installations, e.g. wet wells, where a MSP900SH/MSP900FH transmitter may be at risk of being flooded.

It is easily fitted over the transducer cup, but requires the transmitter to be kept firmly vertical so that flood water causes an air pocket and keeps the transmitter face clear. The transmitter can then function normally when the flood water subsides.

Figure 1 on page 2 shows an example application with the submersion shield already fitted to a Mobrey MSP900SH/MSP900FH transmitter, which is then mounted on a Mobrey Head Verification Device.

Figure 2. Features of the Mobrey Submersion Shield



A. PVC Submersion Shield (Medium Grey)
B. Silicone O-ring (Red)
C. Fluoroelastomer (FKM) O-ring (Dark Grey)
D. Foam (PVC/NITRILE)

⚠ WARNING

Failure to follow these installation guidelines could result in death or serious injury

- Make sure only qualified personnel perform the installation
- Use the equipment only as specified in this manual. Failure to do so may impair the protection provided by the equipment

Electrical shock could cause death or serious injury

- Make sure the main power to the transmitter is off and the lines to any other external power source are disconnected or not powered whilst installing the submersion shield

Fitting the submersion shield

Step 1: Check the transmitter mounting

The transmitter mounting must ensure that the transmitter is firmly kept in place, and ideally at 90 degrees to the liquid surface. This is essential for an air pocket to be formed at the base of the shield as flood water rises and passes it.

Step 2: Lubricate both O-rings before fitting the shield

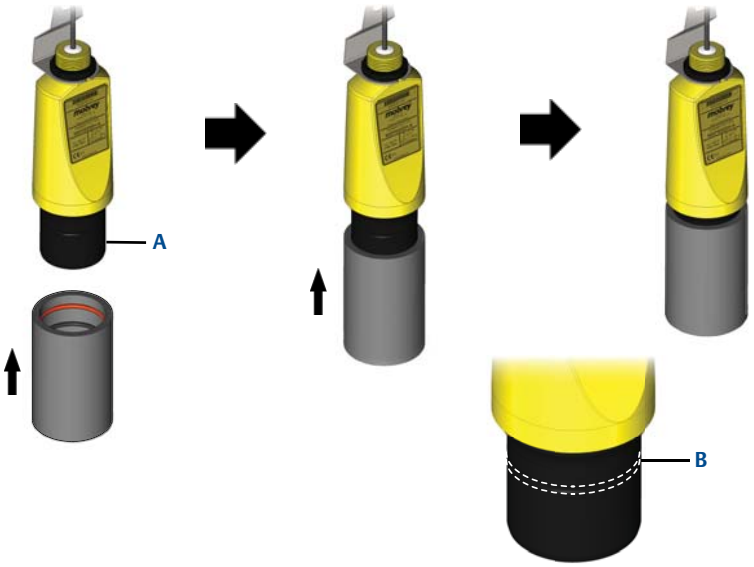
A suitable lubricant such as Dow Corning MS4 silicone grease may be used. If this is not available, a suitable water-based lubricant or liquid detergent may be used.

Step 3: Fit the submersion shield

Follow this procedure:

1. Align the shield opening with the transducer cup, ensuring that the red O-ring is *above* the grey O-ring (Figure 3, left image).
2. Hold the transmitter and firmly push the shield upwards onto the transducer cup, until the red O-ring is on the transducer cup (Figure 3, middle image).
3. Continue pushing the shield upwards firmly until the red O-ring engages with the recess on the transducer cup (Figure 3, right image).

Figure 3. Visual help for fitting the submersion shield



A. Transducer Cup
B. Recess on Transducer Cup

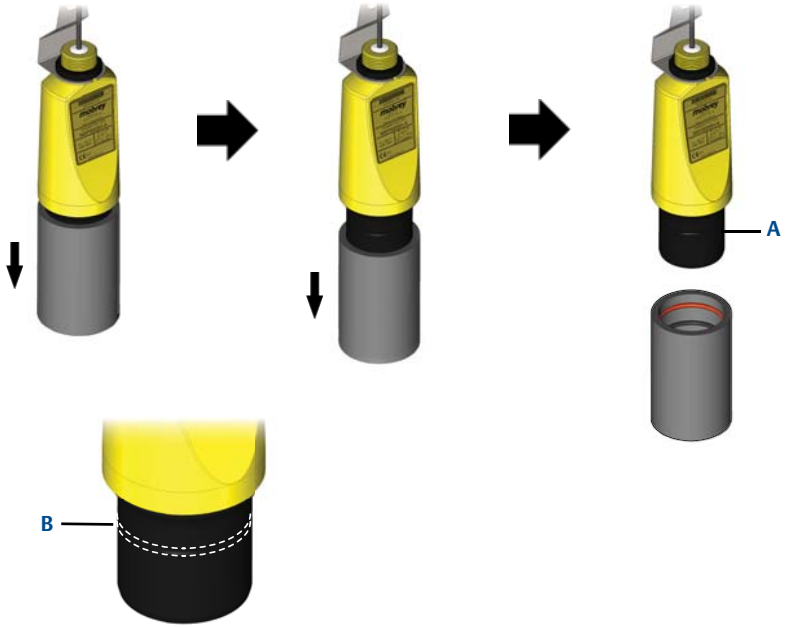
Removing the submersion shield

This is only necessary for occasional cleaning or inspection in the event of contamination from flood water.

Follow this procedure:

1. Holding the transmitter, pull the shield downwards firmly until the red O-ring is released from the recess on the transducer cup (Figure 4).
2. Continue to pull the shield downwards until it is free from the transducer cup.
3. Inspect the O-rings inside the shield for any signs of damage, and replace if necessary. Contact Mobrey for how to get replacements.

Figure 4. Visual help for removing the submersion shield



A. Transducer Cup
B. Recess on Transducer Cup

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