

**MAGNETIC GAUGING DEVICE
MGD 1000
INSTALLATION INSTRUCTIONS
THREADED VERSION**

1. Do not remove the individual gauge device components from their packaging until it is time to install each component. This will keep them clean and undamaged.
2. Insure that the opening through the pressure plate is at least 1 1/2" in diameter. This is required to allow the guide tube to fit through the pressure plate.

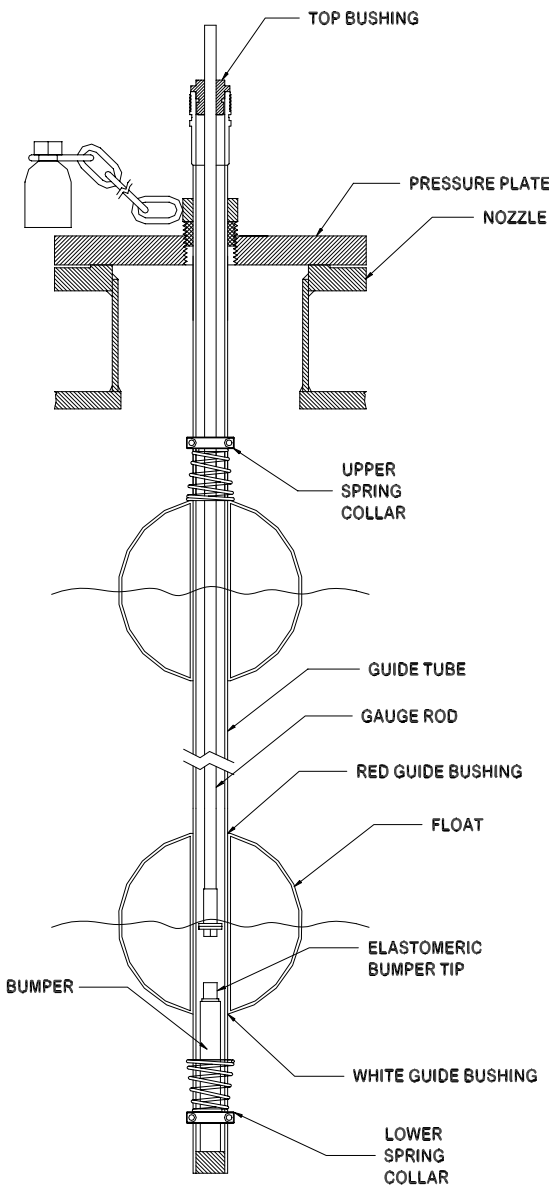


FIGURE 1

3. Slide the guide tube through the opening in the pressure plate. As the tube is fed from the top, the upper spring collar, the float and the lower spring collar must all be slid onto the guide tube. Thread the 2" NPT connection on the guide tube into the NPT in the pressure plate. Tighten as required using the square fitting above the threads. The guide tube can be back welded to the pressure plate, if desired. A 3/8" fillet weld using a stainless steel rod such as AWS E-309 or equal is recommended. The weld must not be undercut.
4. The upper spring collar must be installed with the spring facing down (see Figure 1). The float has teflon guide bushings which are the interface between the float and the guide tube. One bushing is red and the other bushing is white. The float must be installed on the guide tube with the red bushing pointing toward the pressure plate, and the white bushing pointing toward the bottom of the tank. The end of the float with the red bushing is also etched with the letters "TOP." Once the float is installed on the guide tube, it must be protected at all times from heat and weld splatter. Always slide the float on the guide tube away from the area being welded. The lower spring collar must be installed with the spring facing up (see Figure 1).
5. It is the installer's responsibility to insure that the float does not come in contact with the tank shell, pressure plate, or other structural members. A clearance of 1" is recommended between the float and any structural members. The top spring should be placed so that when compressed, the float is kept from contacting anything but the spring. The top spring must also allow the highest desired outage to be read. The bottom spring should be placed low enough to ensure that the lowest desired outage can be read. Tack weld the collars to the guide tube to keep them in place.

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6. A brace or support should be installed at the bottom of the guide tube as well as one near the top if possible. It is very important to properly brace and support the guide tube. When bracing the gauge device, be sure **NOT** to pull any other lines out of alignment.
7. Once welding is complete, inspect the guide tube carefully to insure that the surface is free from any weld splatter or gouges. Weld splatter must be removed and gouges must be smoothed out. Once the guide tube is clean, cycle the float up and down the full length of the tube to verify that the float does not contact any structural elements.
8. Install the bumper in the guide tube by dropping it in flat side down so that the elastomeric bumper tip is pointing up.
9. Remove the gauge rod from its packaging. Insure that there are no metal filings on the magnet. Insert the gauge rod, magnet end first, into the guide tube.
10. Fill the guide tube with glycol to prevent condensation from freezing in cold weather. Fill the guide tube to within 12" of the top.
11. Place the top bushing over the gauge rod and into the top opening of the guide tube. The gauge rod should extend approximately 1/2" above the top bushing.
12. Secure the cap to the top of the guide tube over the end of the gauge rod and top bushing before shipping the car.
13. Install the instruction placard on the underside of the protective housing cover so that the instructions are visible when the device is being operated. Mask the instruction placard whenever repainting the protective housing cover.
14. If the pressure plate assembly with all the piping, gauging device, and other fittings is placed on the ground, be sure that the gauging device is not on the underside of the assembly. The float cannot support the weight of the assembly and the magnets will attract filings.
15. When the pressure plate assembly is lowered into the tank car, take great care to make sure that the float does not contact anything as it is going into the tank. It should be guided very carefully because a normal vertical drop installation will most likely result in the float hitting the nozzle.