Instructions for Welding NPT Female Branch Outlet to Pipe

This document is for use with Sierra's BioTrakTM 645S, BioTrakTM 645i, TM100TM, and TM500TM insertion models.

The purpose of this procedure is to ensure that the customer welds the branch fitting to the pipe correctly. This process directly affects the flow meter installation, ensures that the meter performs properly, and also ensures that damage to the probe does not occur.

WARNING! Do not begin until the proper location of the branch fitting is determined. See the Instruction Manual (645S, 645i, TM100, and TM500) “Installation: Insertion Type” section for requirements or consult Sierra Instruments for technical assistance (831-373-0200).

IMPORTANT NOTE: If welding of the branch fitting onto the pipe is performed incorrectly, errors in flow meter reading may occur.

Directions:

1. Drill a hole through one wall of the pipe. The hole must be 0.781" (25/32") for the 3/4" diameter probe or 0.531" (17/32") for the 1/2" diameter probe option.
2. Assemble the compression fitting and branch fitting hand tight onto the probe of the TM100.
3. Insert the probe into the hole in the pipe and use the TM100 probe and compression fitting to align the branch fitting with the hole and the probe perpendicular to the pipe.
4. Tack-weld the branch fitting carefully onto the pipe.
   - Before welding the fitting completely, verify the probe is aligned to the center of the pipe and the hole is centered in the branch fitting (see Figure 2.4).
5. To verify that the correct position has been achieved, carefully slide the probe in and out of the branch fitting and hole.

WARNING! Do not force the probe through the hole. Forcing it through the hole can damage the probe.

   - If the sensor does fit through easily through the hole (see No. 1 above for hole size according to probe diameter), then the fitting has not been welded correctly and must be re-welded.
6. Verify that the temporary weld of the branch fitting positions the probe window on the pipe's centerline.
   - Figure 1 shows an incorrect welding of the branch fitting, causing the probe sensor to be "off center".
7. Once the branch fitting is aligned properly, remove the probe sensor from the branch fitting and finish welding. Then verify the probe is still aligned with the center of the pipe.
8. Set the depth of the flow meter (see "Fig. 2b: Cross Section of Insertion Sensor Depth in Pipe" on page 2).
9. Do not tighten compression fitting until proper depth of flow meter is determined.

Figure 1: Incorrect Alignment of Branch Fitting

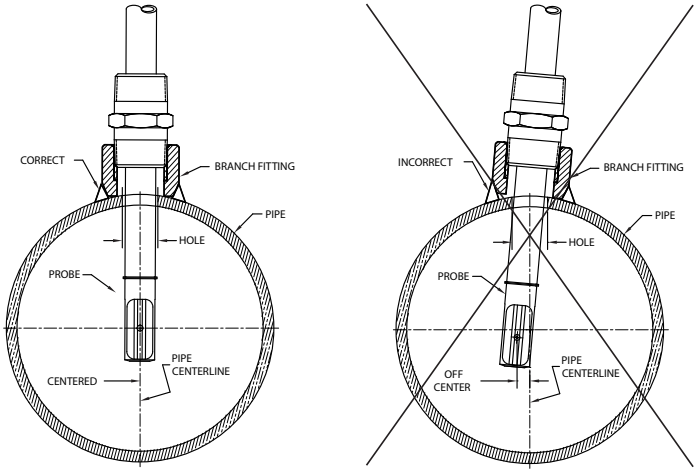


Figure 2a: Correct Alignment of Branch Fitting and Sensor Elements Centered in Pipe (with retractor)

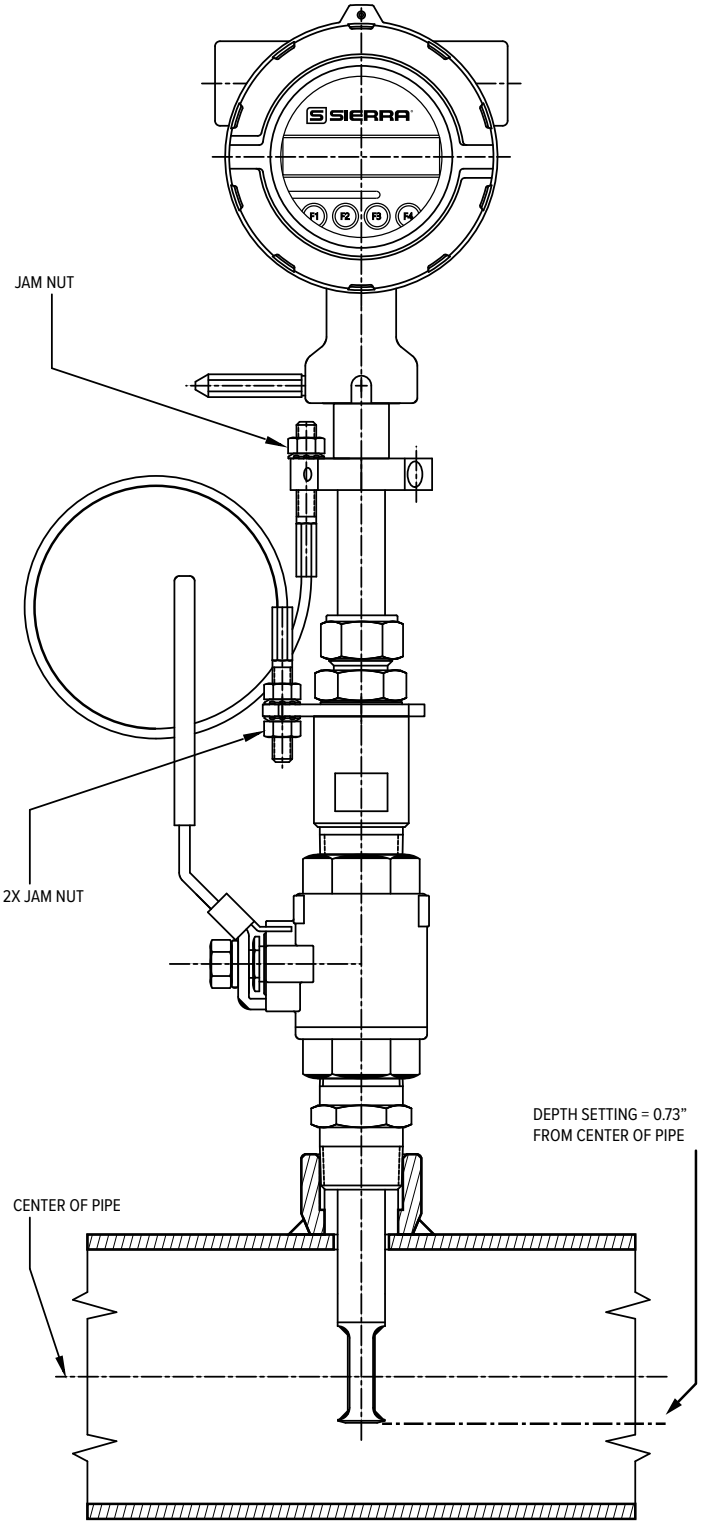
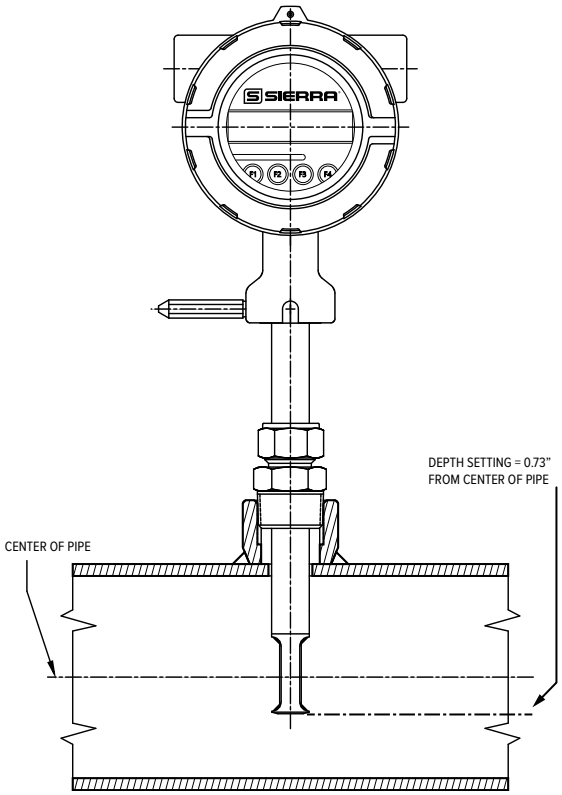


Figure 2b: Correct Alignment of Branch Fitting and Sensor Elements Centered in Pipe (without retractor)



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