

This document is for use with Sierra's BioTrak 645S, BioTrak 645, TM100, and TM500 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 0.781-inch (25/32") hole through the wall of the pipe (1 wall only).
 - Hole must be centered with respect to the fitting.
2. Assemble the hex nipple and branch fitting hand tight onto the probe of the flow meter.
3. Insert the probe into the hole in the pipe and use the flow meter 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 pipe with proper alignment.
 - It must be perpendicular to pipe in both planes (see Figure 1 on next page).

WARNING! Tack weld only, do not completely weld branch fitting until Step 6 is completed (ensure proper alignment).

5. Verify that the correct hole position has been achieved (see Figure 2 on next page).
 - If retractor ordered: Assemble the retractor and flow meter together by "hand tightening" to the branch fitting.
 - Slide the 0.75-inch sensor through the 0.781-inch hole.

WARNING! Do not force the 0.75-inch sensor through the 0.781-inch hole. Forcing it through the 0.781-inch hole can damage the probe and flow meter performance will be affected.

- If the 0.75-inch sensor does not fit through 0.781-inch hole easily, the fitting has not been welded correctly and must be re-welded.
6. Verify correct alignment of the branch fitting:
 - The branch fitting must position the probe window on the pipe's centerline.
 - Figure 1 shows an incorrect welding of the branch fitting, causing the 0.75-inch sensor to be "off center".
 - Once alignment has been verified:
 - Remove the flow meter (and retractor, if ordered) from the branch fitting and finish welding; OR
 - Remove the flow meter (and retractor, if ordered) and redo the branch fitting installation so that the hole is perpendicularly aligned to the pipe and repeat steps 1-4.
 7. Remove debris, flush inside of pipe.
 8. Insert the flow meter into the branch fitting. Re-assemble the flow meter (and retractor assembly, if ordered) to the branch fitting.
 - Use proper sealant.
 - Verify the probe is still aligned with the center of the pipe.
 9. Setting the depth of flow meter:
 - Do not tighten compression fitting until proper depth of flow meter is determined. See Manual (645S, 645i, TM100, and TM500: "Installation" section)
 10. Ensure that cable jam nuts on both ends of cable are tight.

Figure 1: Incorrect Alignment of Branch Fitting

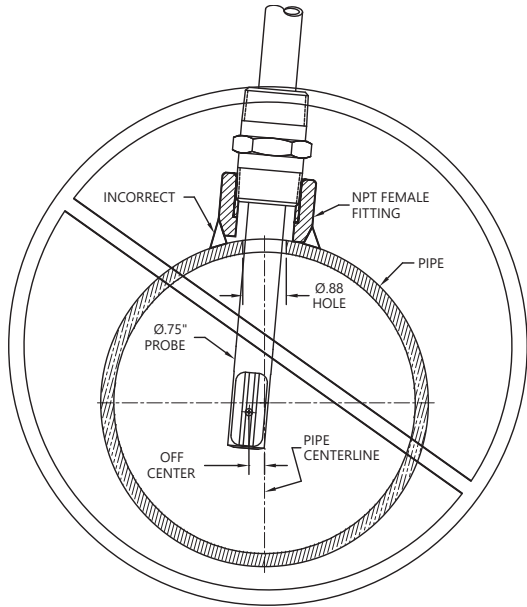


Figure 2b: Correct Alignment of Branch Fitting and Sensor Elements Centered in Pipe (without retractor)

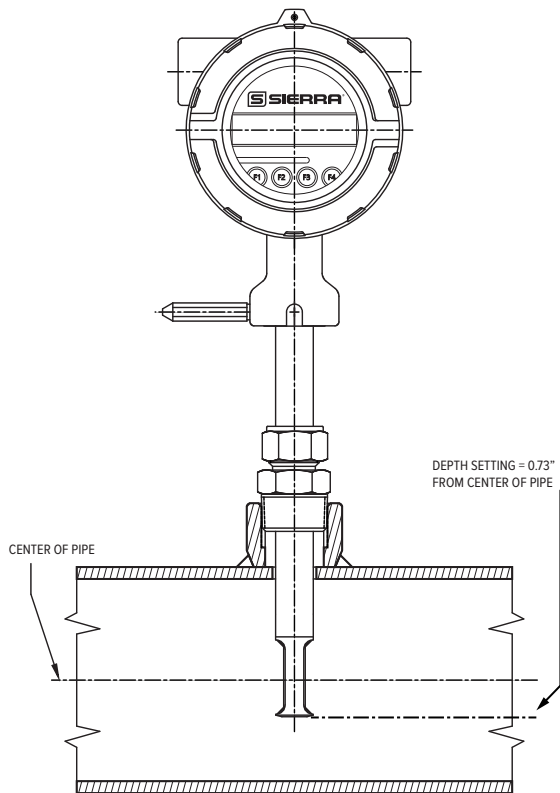
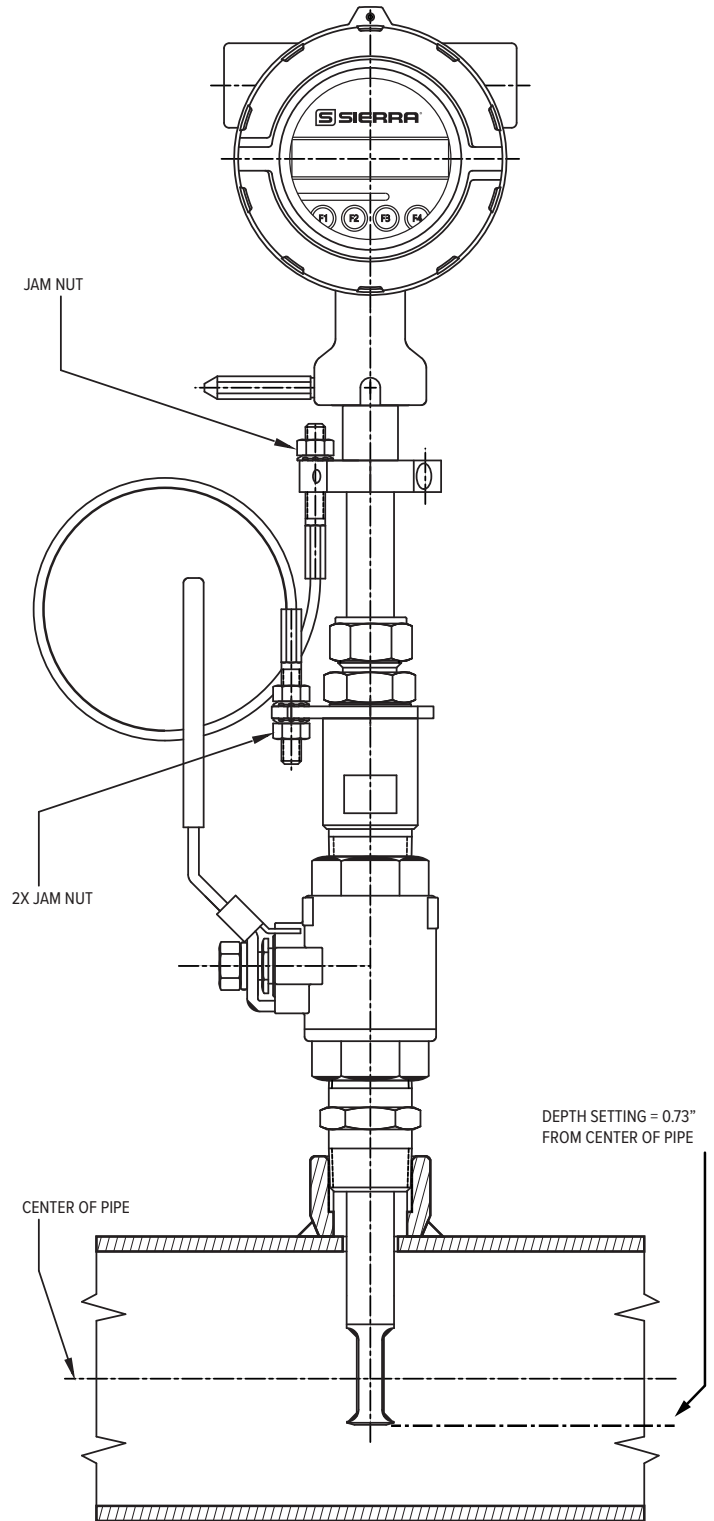


Figure 2a: Correct Alignment of Branch Fitting and Sensor Elements Centered in Pipe (with retractor)



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