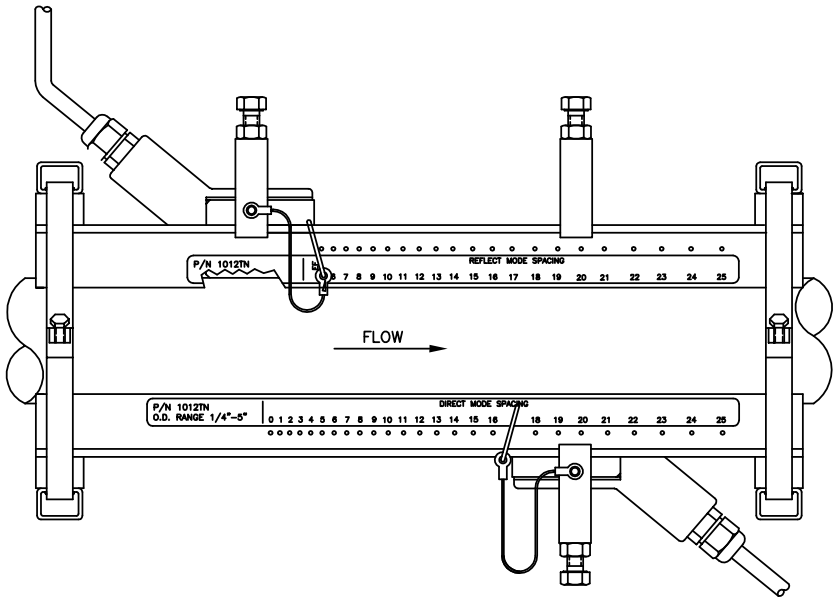
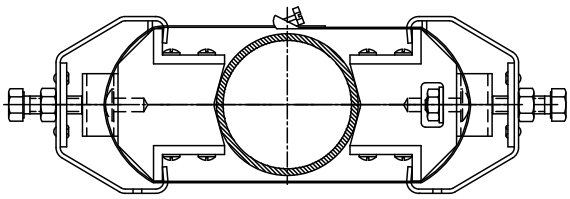
F-4000 Series Track Mount Hardware
Installation Instructions for Direct Mode Operation





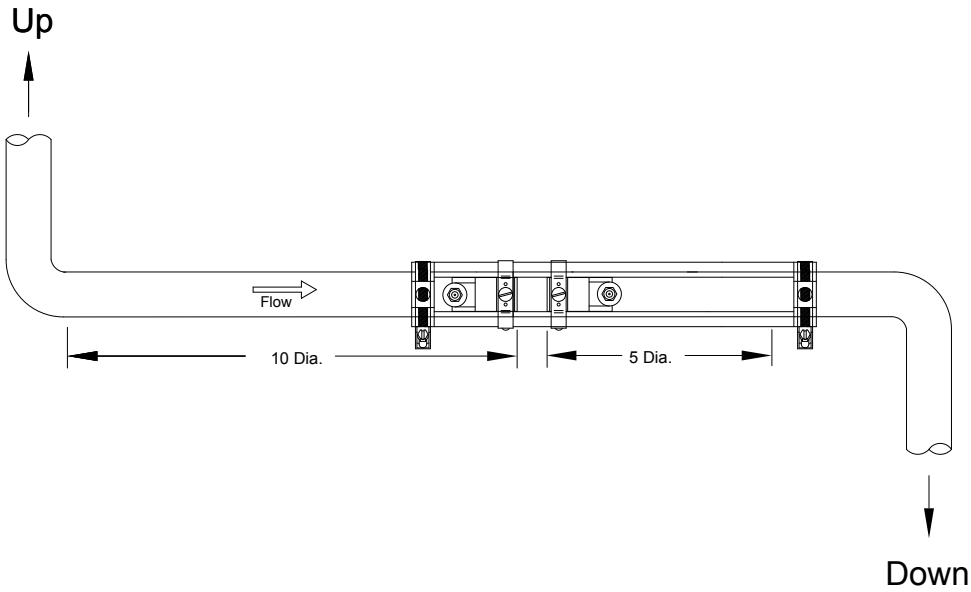
SIDE VIEW

Installation Site Selection

For best results, the transducers must be installed on a straight run of pipe, free of bends, tees, valves, transitions, insertion probes and obstructions of any kind. For most installations, ten straight unobstructed pipe diameters upstream and five diameters downstream of the transducers is the minimum recommended distance for proper operation. Additional considerations are outlined on the next page.

IMPORTANT NOTE

In some cases, longer straight runs may be necessary when the transducers are placed downstream from devices which cause unusual flow profile disruptions or swirl; for example, modulating valves or two elbows in close proximity and out of plane, etc.



1500 North Belcher Road, Clearwater, FL 33765 • Tel (727) 447-6140 • Fax (727) 442-5699
www.onicon.com • sales@onicon.com

Determining Diameters of Straight Pipe

For each application, locate the longest straight, unobstructed section of pipe (no bends, tees, valves, other insertion probes, size transitions). The longest straight pipe run in inches divided by nominal pipe size in inches equals "diameters of straight pipe." For closed loop applications, consider both the supply and return lines as possible locations.

Other Considerations When Determining Mounting Location

1. Do not, if possible, install the transducers downstream from a throttling valve, a mixing tank, the discharge of a positive displacement pump or any other equipment that could possibly aerate the liquid. The best location will be as free as possible from flow disturbances, vibration, sources of heat, noise, or radiated energy.

2. Do not mount transducers on the bottom of a horizontal pipe.

3. Avoid mounting transducers on the top of a horizontal pipe. The best placement on a horizontal pipe is one sensor at 9:00 and one sensor at 3:00 for direct mode.

4. Mounting on a vertical pipe is recommended only if flow is in the upward direction. When mounting on a vertical pipe flowing in a downward direction, make sure there is sufficient back pressure in the system to maintain a full pipe.

5. Do not mount the transducers on or across a surface aberration (pipe seam, etc.)

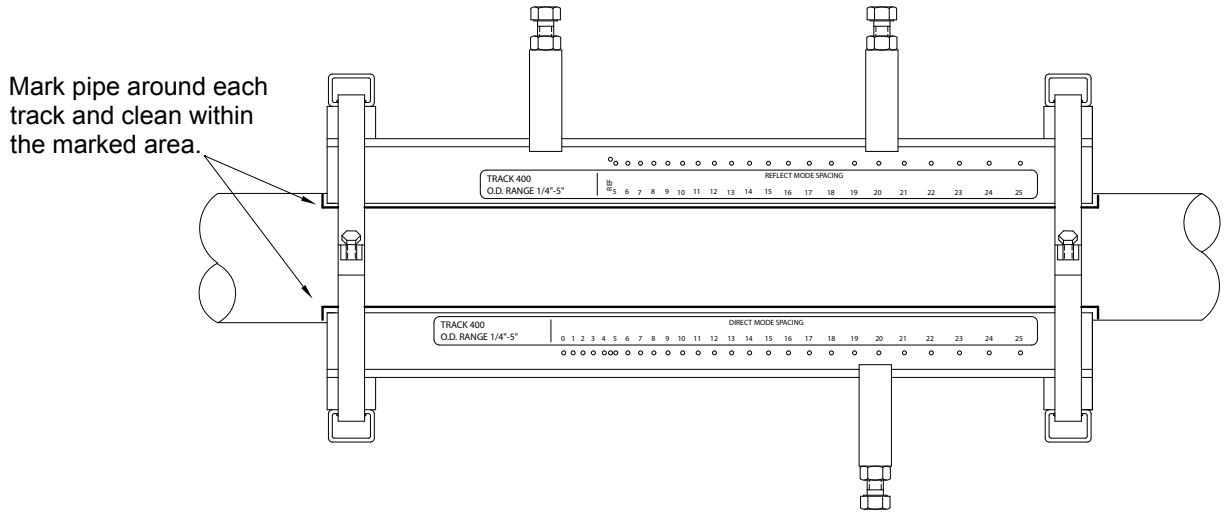
6. Avoid mounting the transducers on a section of pipe with any external scale. Remove all scale, rust, loose paint, etc. from the location prior to mounting the transducers.

7. Do not mount transducers from different ultrasonic flow meters on the same pipe.

8. Never mount transducers under water, unless you have specifically purchased submersible transducers and you install them in accordance with factory instructions.

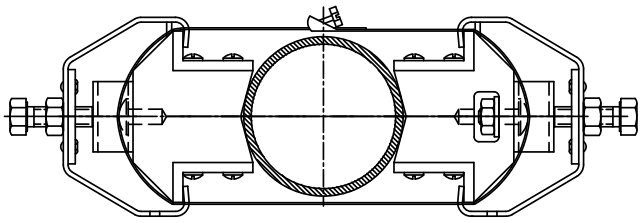
Preparing the Pipe

To prepare the pipe, temporarily position one track mount hardware assembly on each side of the pipe where you intend to permanently mount them as shown below. Space them 180° apart as shown below. Ensure that pipe surface is smooth without any raised areas (seams, etc.) With a pencil, marker or chalk, draw a rectangle around each track mount assembly. Remove the hardware from the pipe and clean and de-grease the area within the rectangles. Use the small sanding block provided with the installation hardware as necessary to remove any grit, corrosion, rust, loose paint or other contaminants. It is not necessary to remove paint that fully adheres to the pipe. Be sure to wipe the surface clean after sanding. The cleaned surface should extend at least ½" beyond the length and width of each assembly.



IMPORTANT NOTE

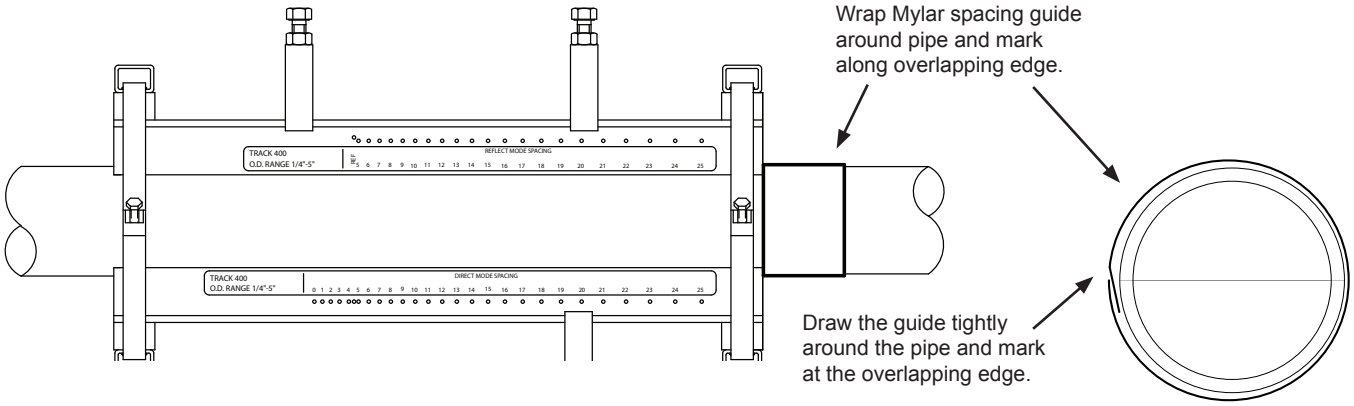
Direct mode mounting requires that transducers be installed on opposite sides of the pipe. For horizontal pipes, the transducers should be located at the 3 o'clock and 9 o'clock positions.



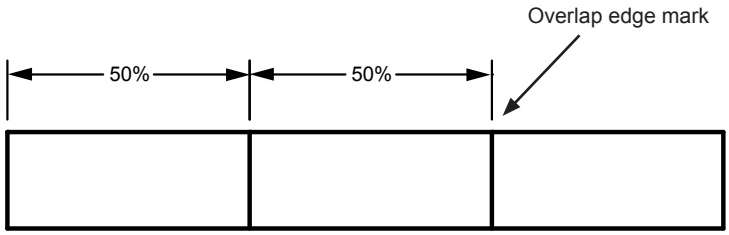
Re-install the two track mount hardware assemblies on the pipe and loosely secure them in place with the mounting straps provided. Align the assemblies such that they are positioned on top of the cleaned surfaces.

Positioning the Track Mount Assembly

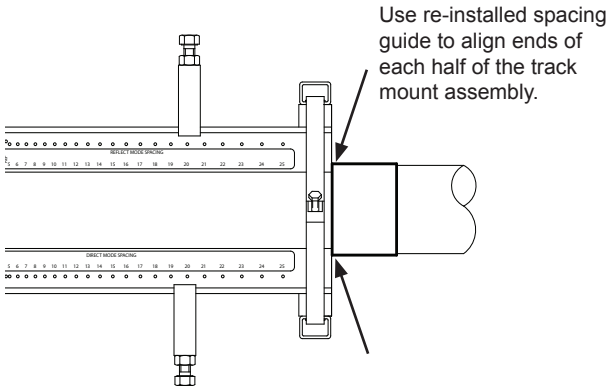
Wrap the Mylar spacing guide around the pipe placing it against the end of the track mount assemblies. Ensure that it is snug around the pipe and mark it along the overlapping edge.



Remove Mylar spacing guide and lay it out on a flat surface. Either measure the exact distance half-way between the overlap edge and the mark at the overlap, or fold the guide from the overlap edge to overlap mark and draw a line at the fold or halfway point.



Reinstall the mylar spacing guide and tape in place. Use the edge of the guide to align each assembly bracket as shown.



Rotate the track assemblies until the center of one track aligns with the center line on the spacer guide, and the center of the other track aligns at the point where the spacer guide ends meet. The tracks should now be 180° apart. Tighten both mounting straps to secure the assembly to the pipe. Do not over tighten.