## FLOW TUBE CONFIGURATIONS

**Step 1.** Factory Authorized Flow Tube Configurations vary widely depending on the Riptide™ in use, or the Authorized Stacking Configuration that has been assembled. In all cases, Flow Tubes must be used together to allow for the even distribution of water. Please refer to the factory provided spreadhseets on page 12 for Authorized Flow Tube Configurations. Only factory Authorized Flow Tube Configurations are permitted. All relevant instructions under Assembly, Field Ops, Service, Authorized Stacking Configurations, Authorized Flow Tube Configurations and Authorized Reduced Orifice Insert Configurations apply.

## REDUCED ORIFICE INSERT CONFIGURATIONS

**Step 1.** When appropriate based on site conditions and source characteristics, Riptide™ Reduced Orifice Inserts may be used to capture lower flow rates. Evaluate the condition of the equipment. Look for damage and gasket integrity. Fix or replace any component found to be deficient, prior to use. All relevant instructions under Assembly, Field Ops, Service, Authorized Stacking Configurations, Authorized Flow Tube Configurations and Authorized Reduced Orifice Insert Configurations applies.

**Step 2.** Factory Authorized Reduced Orifice Insert Configurations include 1.125" and 1.750" iterations in Single, Double, Triple and Quad Action Riptides™, as well as 3.250" in the LDH 4" Riptide™. Please refer to the factory provided spreadhseets on pages 13-17 for Authorized Reduced Orifice Insert Configurations. All relevant instructions under Assembly, Field Ops, Service, Authorized Stacking Configurations, Authorized Flow Tube Configurations and Authorized Reduced Orifice Insert Configurations apply.

**Step 3.** Insert the desired Reduced Orifice Insert into the desired Flow Tube so that the machined keyway notch on the discharge side shrouds the Pitot. Do not attempt to use the 1.125" or 1.750" Reduced Orifice Inserts in the LDH 4" Riptide™.

**Step 4.** Connect/thread the female end of a 2.50" diameter fire hose, or 4" for LDH, to the source being tested.

**Step 5.** Follow all remaining steps under General Use, 3 through 11.

## TYPHOON REMOTE MANIFOLD

**Step 1.** Evaluate the condition of the equipment. Look for broken ball valves, sheared threads, kinked or cut tubing, damaged Quick Connect Fittings, etc. Fix, replace or calibrate any component found to be deficient, prior to use. All relevant instructions under Assembly, Field Ops, Service, Authorized Stacking Configurations, Authorized Flow Tube Configurations and Authorized Reduced Orifice Insert Configurations apply.

**Step 2.** Beginning at a location adjacent to the Diffusers, unravel the Jacketed Tube Assembly towards the desired destination where readings will be observed. Ensure that there are no twists, kinks or loops.

**Step 3.** After unraveling, return to the Diffuser(s) and securely attach the female Quick Connects on the ends of each tube to the male Quick Connect Plugs on each Street 90*, affixed to each Flow Tube that will be used during testing. Up to eight Flow Tubes in a single stack (two Quad Action Riptides™) can be monitored with the Typhoon Remote Manifold™. Do not use one Typhoon™ to monitor different Diffuser stacks.

**Step 4.** Return to the desired destination where readings will be observed and securely attach the female Quick Connects on the ends of each tube to the male Quick Connect Plugs on each ball valve across the top of the Manifold. Then securely attach the liquid filled, calibrated, 1% accuracy Riptide™ gauge to the side of the Manifold with the Quick Connect Plug.

**Step 5.** Close all ball valves on the Manifold to protect the gauge from initially acute pressures.

**Step 6.** Follow Steps 1-3, and 5-7 under General Use.

**Step 7.** After water has been introduced and the source has been opened to a satisfactory point, slowly open the bleeder ball valve located on the side of the Manifold opposite from the gauge to purge trapped air until a steady stream of water presents. Then slowly close this ball valve.

**Step 8.** Independently capture Pitot readings from each Flow Tube by opening one ball valve at a time on the Typhoon Remote Manifold™. Observe and document the reading on the gauge while a given ball valve is fully open. Then close said ball valve and open another until all ball valves in service have been independently opened and closed with readings documented. Please note that any dissimilarity in elevation between the Manifold and the Flow Tube actively being monitored will affect readings due to head loss/gain at 0.433 PSI per foot. It is recommended that the Manifold be held at the same level as the Flow Tube being monitored to provide accurate readings.

**Step 9.** After flow rates have been achieved, very slowly begin to close the source being tested. It is vital that the source is closed in a predictable, controlled manner without haste or aggressive turns to avoid potential source damage.

**Step 10.** Detach and coil the Jacketed Tube Assembly. Dry off and store all components in a safe, secure place for future use.

**Step 11.** Return the work area to the state it was found in upon arrival. Do not leave tools or equipment behind.

# SERVICE

## *REPLACING THE PITOT*

**Step 1.** Using an 11/16" box wrench, remove the old Pitot from the Flow Tube on The Riptide™ Diffuser by turning it counter-clockwise. Discard the old Pitot after use.

**Step 2.** Apply teflon tape to the exterior threads of the new Pitot prior to installation.

**Step 3.** Thread the new Pitot into the 3/8" threaded hole on the Flow Tube by turning clockwise until hand tight.

**Step 4.** Insert the Pitot Alignment Tool into the end of the Flow Tube referenced above, on the Coupling side. Use the 2.500" tool for all 2.500" Flow Tubes and the 4" tool for the LDH 4". Take note of the Target Hole at the bottom of the Pitot Alignment Tool.

**Step 5.** Using an 11/16" box wrench, turn the new Pitot clockwise until the entry port of the Pitot is centered within the Target Hole as viewable at the bottom of the Pitot Alignment Tool.

**Step 6.** Remove the Pitot Alignment Tool from the Flow Tube.

**Step 7.** Set The Riptide™ on the Leveling Table so the the Flow Tube is pointing straight up, and the handle on the back of the Diffusing Box is sitting within the center cutout of the Leveling Table. Facing The Riptide™ place a magnetic digital angle finder at the 3 o'clock or 9 o'clock orientation on the Flow Tube and observe the angle on the display. Continue to adjust teh legs on the Leveling Table until the angle finder shows 90°.