Installation of SCIT Tool for 'Hydrostatic Weld Test'

Definition: Self Centring Isolation and Test Tool (SCIT Tool)

Selecting Proper Tool and Seals

- *Determine the proper Schedule of Pipe. The best way to do this is by physical measurement of the pipe wall thickness (WT) and refer to pipe tables to determine the actual schedule.*
- *Once the Schedule of pipe has been Determined you must refer to Vital Tool Size Chart and Seal Selection Chart to determine the series of tool required to install. (Appendix A)*
- *Now that you have determined the actual tool size that needs to be installed in the pipe you now must refer to the same chart to determine which seal to use.*
- *For example, if you are installing the tool into an 8" Schedule 80/XS pipe you will need *8A-XS Seal kit. If the pipe schedule is 40/STD, you will need 8A-STD Seal Kit. If you Pipe wall Schedule 100 you will need 8B-100 Seal kit.*

***8 = Pipe Size / A = Tool Series / XS = Pipe Schedule**

NOTE: If testing is required across a welded area that has two different diameters (schedules), you must use two different seal sizes in order to match the difference in the pipe diameters and still achieve suitable pressures and a successful test.

Guidelines:

The following will identify the basic guidelines required to accomplish a ***hydrostatic weld test using the SCIT Tool for test pressures less than 2250 PSI.***

- Request a gas test (each time) prior to working in the area of the piping assembly. Certain situations will require continuous monitoring of the area and may require for each technician to wear personal monitoring devices.
- SCIT Tool must be disassembled and ready to accept Seals.
- Install one seal on the spigot of the front plate and one seal on the spigot of the back plate.
- Reassemble tool with the seals installed, hand tight.
- "De-burr" piping edges using metal file or wire brush, where applicable.

- Insert SCIT Tool into the pipe, the tool will centre its self as you tighten.

- When performing a test, the tool should be installed so that the weld being tested is centred between the two Seals, if possible.

- The fill and vent fittings must be positioned at 12 and 6 o'clock (when possible) to allow test medium to properly fill the tool cavity and bleed off air.

- For single bolt tools, tightening is accomplished by ***Feel Only*** using a crescent wrench (or equivalent). The nut on a single bolt tool system must always be accessible; therefore, proper positioning of the tool is extremely critical.

- For multi-bolt tool systems, a torque wrench may be used to tighten the compression nuts to the **ASME PCC-1 Alternate Assembly Pattern #3**

- To introduce test medium into the cavity of the SCIT Tool, connect a hose from the pump to the lower fitting and fill until medium begins to seep out of the upper fitting, then attach all hoses.

- Install pressure gauges (quick disconnect) and ready for pressure application.

Pressurize system to specified values using a **Step Method** of pressurization.

A.	Initial Pressure	25% or 150 PSI	Hold 15 Seconds
B.	Second Pressure	50% or 300 PSI	Hold 30 Seconds
C.	Third Pressure	75% or 450 PSI	Hold 30 Seconds
D.	Final Pressure	100% or 600 PSI	Hold as required, do not exceed 10%

Example Only: Test Pressure to be 600 PSI Step method:

- During pressurization, visually inspect for leakage around the tool assembly.

- Visually inspect the weld area and the SCIT Tool for medium (water) leakage. If leakage occurs on the tool, then continue to tighten the bolts using the **Alternate Assembly Pattern #3** until leakage is no longer detected. Once there is no leakage and the desired test pressure is achieved hold the specified pressure for a minimum of ten (10) minutes, or as required by the Customer/Inspector.
- Release the pressure and recover all test medium following verification by the Customer/Inspector that their requirements have been satisfied.
- Disconnect gauge and pump hose assemblies.
- Loosen compression nut(s) until the SCIT Tool is movable within the test area assembly.
- Slowly remove SCIT Tool from test area. ***(Always use a partner when inserting or removing larger tools into or from piping)***

The following shall identify additional items that must be considered and accomplished to perform ***high-pressure tests in excess of 2250 PSI (anything over 2250 PSI may require that the weld root be ground).***

- Request from Customer exact schedule and ID of the pipe assembly, as the SCIT Tool will need to be schedule specific for the application.
- Select the appropriate SCIT Tool that allows **approximately** 1/16" clearance between the tool and pipe interior.
- Visually inspect and ensure that the pipe and welded fitting (flange) are aligned exactly. Any misalignment may affect the outcome of the test.
- Gauges and hoses to be used must have a rating equal to at least the desired test pressure. The Tools and associated fittings are rated for 5000 PSI.
- If necessary, request that the interior root of the weld be ground down smooth with the pipe inside diameter (ID). This is to allow the close tolerance tool to be installed.