

NG7 - Trik Fitting Value Proposition and Application



Product Solution : NG7's Trik Fitting provides flexibility for semiconductor facilities' high purity and ultra high purity gas delivery systems, and their process cooling and critical process cooling water systems. When installed, Trik's flexibility reduces the material and labor costs of frequent facility upgrades and retooling. Furthermore, Trik's rotational flexibility allows for future installation of, and changes to, new equipment to be easily pre-installed in advance of full fabrication of newly built or renovated facilities.

The Trik product line accomplishes this through its proprietary/patent pending design, that allows for a full 360 degree rotation for piping and tubing lines, without use of any tools or system shutdown. This allows for entire high purity bulk gas and process water systems to be reconfigured, rerouted, and reused in minutes, without the need for skilled labor for cutting and welding. By reusing and re-aligning these costly prefabricated and pre-installed pipe and tube runs/laterals, rather than having them cut out and scrapped, our clients save money by eliminating loss of manufacturing time, labor costs, and costs of the products that are scrapped and the new products that would need to be reinstalled.

Furthermore, adding Trik fittings into any new system creates dynamic flexibility prior to design layouts or pipe/ tube runs having been determined. Trik's flexibility generates a head start on new installation and speeds up system design processes because it allows the easy re-orientation of any fitting, valve, gauge, or instrument, welded or not, creating the ability to manually align each by hand on site during install. This gives the user/client the ability to shift and adapt these subfab systems on the fly to evolve with the needs of the manufacturing environment in the fab above, as the project progresses. This can all occur without forcing a shutdown of the manufacturing environment these systems support.

Applications - Tool install & Subfab - Example Scenarios

1. Scenario envisioned is within the subfab, up in the catwalks/individual bays.

- The large diameter main laterals within the CFOS scope, 3", 2", 1" and 1/2", typically are 145' in length and include around 100 plus branch lines/valves, teeing off to the north and south directions as opposed to the main lateral running east/west. These branch/tees reduce in size, typically to 1/2", 3/4" lines that lead up through the waffle floor to below the tool, where it awaits connection to the tool, being temporarily suspended via a custom and unique interface plate. This interface plate is fixed to the tool's pedestal at the correct height and coordinates of the new tool's TPOC.
- When a tool is being replaced/upgraded/switched out, the branch line(s) that lead from the main CFOS laterals in the catwalks/bays become redundant until the new tool is installed, during which time this line sits idle. Furthermore, the end of run closest to the TPOC will require dismantle and re-design, and the new tool's TPOC will change location. Thus it requires some rework. This is very common in most if not all cases.
- Immense cost savings can be achieved by using Trik, which gives our clients the ability to continue using the idle line by simply disconnecting from the existing/dated TPOC and realigning to another location, even if for a temporary period. This realignment would require zero shutdown on the main lateral, no interference on any other operating branch running to tools, no special skills or skilled labor (union), and could be re-routed within minutes.
- Using Trik fittings on main laterals will further allow design work to move faster, as orientation of branch valves and/or tees, gauges, and instruments will no longer be an issue. The only thing required is spacing along the main run so that the angle/orientation can be adjusted to any angle. This eliminates the need for the technical labor of setting up jigs in order to weld at correct angles, the back and forth between engineer, designer, fabricator on dialing in angles/orientations, facing directions north vs south, east vs west etc.

2. Scenario - PCW environment

- These scenarios also apply to the PCW environment, main laterals/headers of 8", 6" with 2", 1-1/2" branch lines all living within the tightly congested catwalks/bays.
- Using Trik fittings enables sloped pipe systems in other areas, to be sloped on site at any angle, without cutting back elbows or rolling 45's or 90's. The client can build it flat/level and angle on site to any desired slope/ angle when installing, all with minimal design and fabrication error. Trik provides the freedom to adjust if and when the need arises and gives the ability to reach every angle, be it 1 degree or 359 degrees.