With our patented spool design and distinctive manufacturing method, CSI is the leading supplier of transfer panels—also called flow diversion panels, flowverters, or swing panels. Fluid flow is directed through the panel during production or cleaning with a physical break to the atmosphere, thus eliminating any unintentional mixing of fluids or sending them down the wrong line. For decades, the biopharm industry has relied on transfer panels to provide a secure, clean, and effective alternative to more costly or less efficient flow diversion methods.

**MATERIALS**

- 304L and 316L stainless steel
- AL-6XN® and Hastelloy® C-22® Super Alloys™

**APPLICATIONS**

- Pharmaceutical, Biotech, and Chemical industries
- Active Pharmaceutical Ingredients (API)
- Processes and products that require BPE compliance
- Finished products
- Bulk pharmaceuticals
- Chemical processes
- Liquid source gases
- CIP/SIP routing
- Buffer solutions
Transfer Panels
For High Purity Applications

1. Dome Cap
2. Port/Nozzle Identification
3. Jumper/U-Bend
4. Magnetic Jumper Stem
5. Jumper/U-Bend Drain Valve
6. Drip/Drain Pan
7. Base Plate
8. Panel Identification
9. Bleed Cap
10. Panel Supports
11. Collared Nozzle (Patented)
12. Proximity Switch
13. Proximity Switch Mounting Coupling
14. Manufacturing Tag
15. Panel Plate
**STANDARD FEATURES**

- **Collared nozzle** protects internal surface finish with a hygienic seal weld which also eliminates cracks, crevices, and the possibility of product entrapment (U.S. Patents 6,254,143 & 6,557,255)
- **Glass bead finish** is applied to gray space/utility area to remove weld discoloration and create a uniform satin finish for surface aesthetics

**OPTIONAL FEATURES**

- **Base plate** (1/2" thick for extra structural rigidity) anchors panel to the floor; attached to pipe legs with a continuous fillet weld; fully ground and polished to provide a hygienic finish
- **Bleed cap** provides an extra safety precaution by enabling the operator to bleed off line pressure or drain fluid from the nozzle before removing the port cap
  
  Multiple options and configurations available including concentric, eccentric, straight drain, and 90° drain
- **Dome cap** eliminates a flat surface, preventing fluid and soil buildup on pipe legs
- **Drip/drain pan** collects process fluids that may spill during panel operations — constructed from 12 gauge stainless steel and continuously fillet welded to the front side of the panel for extra rigidity with welds that are fully ground and polished to provide a hygienic finish
- **Jumper/U-Bend drain valve** drains process fluid, bleeds line pressure, or relieves vacuum from the panel piping after completing the transfer process; can also be used as a product sample point at the front side of the panel which eliminates the need to remove the jumper assembly
  
  Multiple options and configurations available
- **Magnetic jumper stem** seals the magnet inside the proximity stem with fully enclosed design to prevent the ferrous material within a magnet from contaminating a clean room environment
- **Jumper/U-bend** connects to panel nozzles and enables product to be transferred from one nozzle to another without cross-contamination
- **Manufacturing tag** identifies the transfer panel assembly, customer purchase order, shop job number, and date of manufacture
- **Panel plate** (1/4” thick) provides structural rigidity to uphold the required ferrule face flatness tolerances on all panel nozzles
- **Panel supports** to distribute the weight of the panel to the floor
  
  Pipe leg panel supports for free-standing panels, featuring polished pipe welded to both sides of the panel
  
  Square tube frame for wall-mounted panels, featuring stitch welds to minimize possible plate deflection caused by the welding process
- **Port/nozzle identification** labels the particular service associated with each panel nozzle via port tags including Lectroetch (as pictured on page 2), Phenolic, and pin stamp
- **Proximity switch** provides an electronic signal to the control system, indicating the ports connected by the jumper/u-bend
  
  Magnetic proximity switches eliminate unnecessary panel penetrations which would otherwise contribute to entrapment and/or sterility concerns
  
  CSI’s standard magnetic proximity switch features stainless steel cylindrical housing, UL and CE compliance, and a micro quick-connect for ease of maintenance
- **Proximity switch mounting couplings** are welded to the backside of the panel to conceal proximity switch threads and provide a more hygienic design
- **RFID proximity sensors** detect presence of nearby objects without physical contact, sending a signal which turns off the proximity switch
  
  They reduce the size of multi-port systems and simplify electricity complexity
DOCUMENTATION

• QA/QC documentation meets installation, operation, and performance qualifications for government regulations

• Turn Over Package includes binder with material test certificates, as-built drawings, weld logs, material inspection reports, and welder certifications along with digital copies on a USB flash drive

• Additional market-appropriate documents to support the validation of your process piping system are available upon request

• Weld coupons available upon request

• Video recordings of borescopic inspection available upon request

MEASUREMENT AND INSPECTION EQUIPMENT

All Transfer Panels endure a rigorous quality inspection process conducted by trained professionals using only calibrated instruments for optimal efficiency.

• To verify material type, Positive Material Identification (PMI) is conducted using handheld X-ray fluorescence equipment

• Welds are visually examined by a trained inspector for compliance with the relevant welding standard using a high-resolution remote videoscope for clear visualization and powerful images

• Surface finishes are inspected visually, and roughness measurements taken to verify Ra with a calibrated profilometer

• Drainability of a piping system is important for cleanability — therefore, slope of piping segments are verified with digital levels