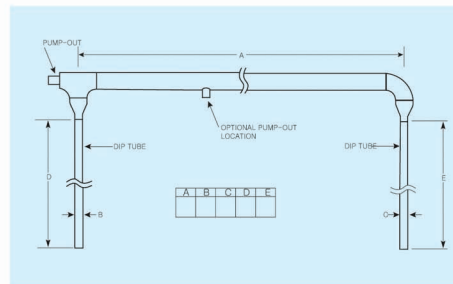
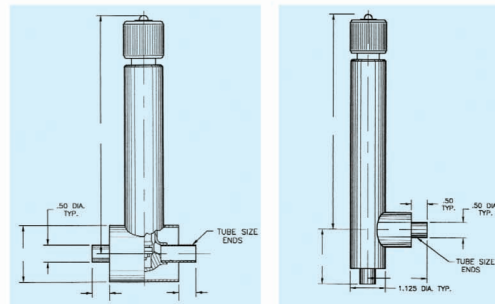


CFRT Series

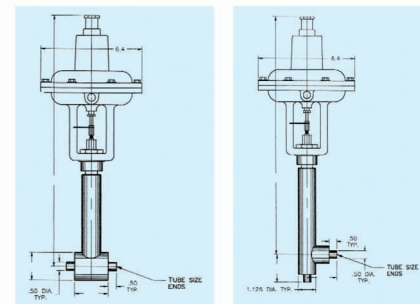


An old time liquid helium transfer staple, this line is completely rigid from tip to tip. The vacuum and super insulation make it an extremely efficient means of transfer. The most common configuration is the "U" Tube for transfers from a storage dewar to an experiment. The horizontal section has two legs that turn 90 degrees downward, upward, or straight for the withdrawal and filling process. Built to order, all dimensions can be supplied to fit requirements exactly. Options such as threaded tips, un-insulated extension tubes, VJ Shut Off Valves, and bayonet connections can be added for convenience.

Optional CFHT Accessories



VJ Shut Off Valves

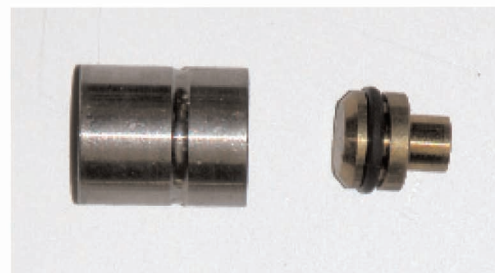


Actuated Valves

VJ Shut Off Valves are offered in laboratory style or industrial grade. Valves supply a means to interrupt or terminate the flow of liquid cryogenics and maintain a minimal heat leak. **Actuated Valves** allow for remote and unattended filling of cryostats when incorporated with a controller.

Bayonet Couplings are available as a set or individually as male and female. This option allows for easy disassembly of transfer equipment without removal of a section from an experiment or storage dewar. Bayonets transform single construction transfer lines into multiple parts for ease of use and flexibility in tight locations.

Approximate Steady State Heat Leak		
Description	LN2 (BTU/hr)	LHe (BTU/hr)
1/4" x 3"	7.38	8.12
1/4" x 6"	3.45	3.79
1/4" x 9"	2.30	2.53
1/2" x 3"	7.38	8.12
1/2" x 6"	3.45	3.79
1/2" x 9"	2.30	2.53
1/2" x 15"	1.20	1.52
3/4" x 9"	3.60	3.96



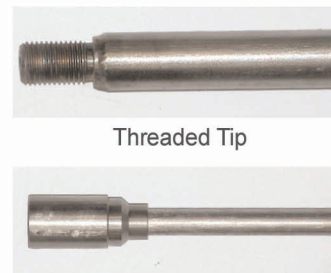
Standard Pump Out



Pump Out Operator



Bellows Valve



Extension Tube

Pump Out Operator gives end user the ability to re-evacuate on site with our standard pump out configuration. **Bellows Valve Evacuation Port** allows the end user to re-evacuate a line without the use of an operator. Valves are supplied with 1/8" or 1/4" NPT ends for adaptation. **Threaded Tips & Extension Tubes** allow for added length on transfer line fill and withdrawal legs. This adds flexibility in use of storage dewars & experiments. This option helps alleviate the problem of low ceiling heights and different dewar depths.

CFUL Series



END FITTINGS



Female Flare



Pipe Thread



Tube



Compression Fitting

EXTERIOR COVER OPTIONS



Armor



Braided

This is the simplest non-jacketed transfer line. Constructed of all stainless steel with a braided outer cover for protection, it can also withstand medium pressure applications. This product is most commonly used with LN₂, LOX and LARG when dispensing from portable liquid storage cylinders. Available in any length with different combinations of end fittings, it can be ordered to meet a customer's exact requirement. Because the line is un-insulated, frost and condensation will appear along the outer cover when a transfer is being done. CFUL can be purchased with standard braided outer or a S.S. armored casing for added protection. Inner diameters are available ranging from 1/4" i.d. to 2" i.d. The most common lengths are 4' and 6' but lines can be supplied to meet any requirement.

The most common end terminations are: female flares, pipe thread, tube or compression fitting.

CFFL Series

This assembly is for applications that require an upgrade from an un-insulated transfer line.

The line has a neoprene foam insulation encasing the outer flex. End caps on each end keep the foam in place along with a mesh cover for added protection. For small, intermittent transfers, this line will deliver a frost-free and slightly improved efficient delivery of liquid. Liquid nitrogen is the most common cryogen used with this configuration. Because the line has ambient end connections, frost will appear at the inlets and outlets. Long transfers will freeze the foam to the point where it is no longer flexible. It becomes brittle and can crack. This line is designed for lower pressures up to 90PSI depending on the inner diameter. Inner diameters available are 1/4", 3/8" and 1/2". All lines are built to order and can be made to a specified length.



CFFL Exterior Cover