



ChamFlex® Hose Kit # 2:

ChamFlex® UI-94 VO rated hose with return and supply assemblies. Assemblies are male pipe with x male pipe swivel adapter. Supply has a ball valve with pt. port. Return is circuit sentry automatic flow limiting with shut off valve and two pt. ports.

CR 1000 Series PT Port Brass Valve

Installation Instructions:

1. Ensure the pipeline is free of dirt or debris. Flush system if necessary. Foreign matter can damage valve or degrade performance.
2. Thoroughly clean pipe threads and apply thread dope to the male thread only. PTFE thread sealant is recommended for most applications. (Installer is responsible for selecting a sealant compatible with fluid).
3. Apply torque to the valve at wrenching flats nearest the end being assembled. Do not apply torque through the full length of the valve body as this may compromise the integrity of the body to end piece seal. Care should be taken not to over tighten as this can cause distortion of the valve body and affect valve performance. Pipe wrenches should not be used on the valve as they can crush the body distorting the NPT thread.
4. A tight leak free joint can be obtained on valves 2" and under by rotating the valve 2 to 3 turns relative to the pipe, larger valves should be turned 1 1/2 to 2 turns. (Basic Dimensions, American National Standards Taper Pipe Threads, NPT ANSI B1.20.1-1983.)
5. After installation operate the valve through several full open to close cycles. Check tightness of stem packing.
6. For valves with NPT side taps assembly is the same as end connections. Tighten the mating part 2 to 3 turns past hand tight while holding the valve securely. The valve should be secured at the wrenching flats only. Applying a radical load on the main part of the body can distort it.

Operation Instructions:

The valve is opened by turning counterclockwise one quarter turn and close by turning clockwise. Valve state is indicated by the lever. A closed valve's lever is at 90° to the valve axis. When the valve is open the lever lies along axis.

Circuit Sentry Automatic Flow Limiting Valve

Installation Instructions:

1. The valves must be installed on the return side of the coil with the union ended on the upstream side and other end on the downstream side.
2. Install the unit so that the flow arrow on the body housing points in the direction of flow.

Operation Instructions:

Operation of the Automatic Flow Limiting Valve is fully automatic and does not require any adjustment. It automatically maintains the selected flow over the designated differential pressure range.

Warning: Hose uninsulated surfaces can cause burns to the skin. Do not touch hot surfaces. Failure to follow these instructions could result in moderate personal injury.

Before the system start up, remove cartridge from the valve. Flush the hydronic system and then reassemble cartridge into the valve and make sure cap is tightened properly. Start the system and check for AFLV leak.

Service Instructions:

Should the Automatic Flow Limiting-Valve require cleaning or changing the orifice, follow the following instructions.

Warning: System fluid under pressure and/or at high temperature can be very hazardous. Before servicing, reduce system pressure to zero or isolate the pressure reducing from the system. Leave drain valve open. Allow system to cool below 100°F (38°C). Failure to follow these instructions could result in serious personal injury or death and property damage.

1. Loosen and remove the cap from the valve body.
2. Pull the cartridge assembly from the valve body for cleaning or replacing with the new flow cartridge. Check the cartridge by pushing the orifice washer into the cartridge housing for several times to make sure spring is functional.
3. To change orifice washer (for a different flow rate). Remove the clip ring from inside the cartridge housing with a screwdriver. Pull the orifice washer out and replace with the new orifice size as required.
4. Reinstall retaining clip (or replace clip ring, if damaged) in the cartridge-housing groove. Slide cartridge into the body. Reassemble the cap with the o-ring to body with appropriate torque.

Warning: Corrosion or leakage is indication that the Automatic Flow Limiting Valve must be replaced. Failure to follow these instructions could result in serious personal injury or death and property damage.

ChamFlex® Fire Retardant Hose Assemblies Installation Instructions

- A) All applications should be checked to ensure that the proper hose assembly lengths are being installed:
- Hose assemblies should not be installed in a “stretched” (taut) fashion. Some expansion and contraction of the hose assembly can occur due to temperature variation, system pressures, and system cycling (see Figure #1).
 - All hose assemblies should be routed properly to avoid contact with other surfaces that could possibly cause “chafing” (abrasion of the wire braided reinforcement).
 - The use of elbows and adapters should be considered to relieve hose “strain” (see Figure #2). **Do not use any plastic fittings or adapters.**
 - Hose assemblies should not be “bent” past the minimum bend radius requirements listed in the chart below. Hose assemblies showing evidence of “kinking” (being bent beyond the recommended bend radius) should not be installed (see Figure #3).

Hose Size	Working Pressure	Minimum Burst (@ 72° F)	Temperature Range	Minimum Bend Radius
1/2”	400 PSI	1600 PSI	-40° to 200° F	2.5”
3/4”	300 PSI	1200 PSI	-40° to 200° F	4”
1”	500 PSI	2000 PSI	-40° to 200° F	5.5”
1 1/4”	400 PSI	1600 PSI	-40° to 200° F	10”

- B) All hose assemblies should be installed in the following fashion so that no “twisting” occurs:
- Solid male pipe thread (NPT) ends should be installed first unless they are being connected to a “swivel” female (NPT). *The entire hose assembly must rotate during the tightening of this connection in order to avoid hose tube damage.*
 - The flared adapter on the “union” (female swivel) end should be removed with the male pipe (NPT) end of the adapter connected to the appropriate port first.

CAUTION: Thread sealant or thread tape should not be used on “flared” connections. Additional thread sealant or thread tape should not be applied to male pipe thread (NPT) ends where factory installed thread sealant is already present.

- The last step is to reconnect the flared swivel female coupling to the flared end of the adapter in a manner that ensures that the hose assembly is not twisted (see Figure #4).

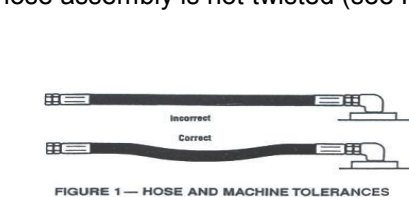


FIGURE 1 — HOSE AND MACHINE TOLERANCES



FIGURE 2 — ELBOWS AND ADAPTERS

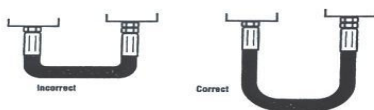


FIGURE 3 — MINIMUM BEND RADIUS



FIGURE 4 — TWIST ANGLE AND ORIENTATION

Visit www.chamberlinrubber.com to view safety guidelines for selecting hose.