

## **INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS**

### **GENERAL INFORMATION**

1. Clean the lines of all foreign material, (welding slag, pipe scale, dirt, thread chips etc.). Upstream installation of a strainer may be necessary in dirty systems.
2. Air should be eliminated from the system prior to startup to assure quiet operation, freedom from water hammer and correct flow.

### **INSTALLATION**

1. Threaded hose ends are made with inch series NPT threads in accordance with ANSI STD B1.20.1 and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9.
2. Apply thread sealant to male pipe threads.  
(CAUTION, if factory applied thread sealant is present, DO NOT ADD ADDITIONAL SEALANT, DO NOT TWIST JOINTS WITH SEALANT ALREADY PRESENT AS THIS MAY CREATE A LEAKTHROUGH THE SEALANT). Torque the connection to 75 foot pounds per inch of pipe size minimum. Example: (1 ½", 1.5 X 75 = 113 ft lb. Min.) (¼", .25 X 75 = 19 ft lb. Min.)
3. Sweat fitting valves have their end connections formed to ANSI STD B16.22 requirements and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9. The Temperature/Pressure rating of the Solder Joint is dependent upon the type of solder used. ANSI STD B16.22 Pressure Ratings should be reviewed prior to selecting a solder and sweating. UNIONS, UNION END PIECES ON VALVES AND THREADED SWEAT ADAPTERS ARE SHIPPED LOOSE AND SHOULD BE UNATTACHED DURING SWEATING. O'Rings in the Union End Pieces must be removed and stored on the valve handle or on a nearby PT fitting during the sweating operation. Ball Valves must be in the closed position during sweating. The outside of the tubing, and the inside of the fitting are to be mechanically cleaned and then lightly coated with solder flux. The tube is then inserted one diameter into the fitting, and the CENTRAL PORTION OF THE VALVE BODY WRAPPED WITH A WET RAG, WET SPONGE OR HEAT ABSORBING PUTTY. Heat is never to be applied to the Automatic Temperature Control Valve Body, without first removing all plastic parts and actuators. Valves without removable parts are to be set to the open position to prevent thermal damage. Heat may be applied, either to the tubing or to the end of the fitting so as to achieve solder flow. When the parts have achieved the necessary temperature; solder is to be added to the joint and the joint allowed to cool. The heat is to be applied for the shortest time possible, and never directly to the area where the solder is being applied. The internal parts of the Hays Piping Packages are capable of continuous use at 300 deg. F. but will be quickly damaged at higher temperatures. When soldering vertical assemblies care must be taken not to permit excess solder to drip into the valve. Heat discoloration from the sweating operation should not extend to the major

diameter of the valve body. If disassembled, the valve must be reassembled in the reverse order, with all of the parts returned to their original positions. Hays Valves, Strainers, and Unions are equipped with O'Ring Seals in the Union Connection. These seals provide reliable, easy to use connections, but care must be taken to not damage them during installation. Do not heat valve assembly with the O'Ring in place. When installing, be sure the O'Ring is fully seated in the channel and not twisted or misaligned. The seal is the last item installed prior to tightening the Union Nut to 80 Ft Lbs. for the 2514/2405, and 130 Ft Lbs for the 2524/2407 Hays products. (The Union Nut is shipped loose on sweat fitting 2500 and 2400 Series Products.) If chlorinated flux has been used, all parts are to be flushed thoroughly to avoid premature corrosion failure.

### **OPERATION**

1. For optimum operation, air entrainment in the system must be eliminated. The system must be clean and free of foreign materials.
2. Bypass Kits are fully compatible with Ethylene Glycol and Propylene Glycol with all concentrations.
3. Working pressure meets or exceeds Hays specification of 600 psig.
4. The Bypass Kits must only be used with fluids that are compatible with, Iron, Brass, Santoprene and EPDM materials. The temperature during operation must be limited to the range between -4°F – 230°F.

### **MAINTENANCE**

1. General maintenance is not required for Hays Bypass Kits, however if the system experiences large amounts of pipe scale due to poor water conditions, some maintenance may be required.
2. Provisions should be made to keep the system clean. Proper water treatment is also recommended.

### **LIMITED WARRANTY**

See Hays Fluid Controls terms & conditions