



Installation & Maintenance Instructions for

PVC & CPVC Plastic Strainers

Use full faced, 1/8" thick gaskets of a material suitable for the intended application having a shore "A" durometer of approximately 60. Use of well lubricated bolts and flat washers is required. Bolts must be tightened in a 180° opposing pattern. Precautions and Warnings for All Installations

CAUTION: The system must be designed and installed so as not to pull the unit in any direction. Pipe must be cut and installed in such a manner as to avoid all stress loads associated with bending, pulling, or shifting. Unit must be supported.

CAUTION: BEFORE THE unit IS CYCLED, all dirt, sand, grit or other material must be flushed from the system. This is to prevent scarring of internal components; e.g., ball, cup, wedge, seats, etc.

LUBRICATION WARNING: Some Lubricants, including vegetable oils, are known to cause stress cracking in thermoplastic materials. Formulation changes by lubricant manufacturers may alter compatibility of previously acceptable materials and are beyond our control.

WARNING: Systems must not be operated or flushed out at flow velocities greater than 5 feet per second.

NOT FOR DISTRIBUTION OF COMPRESSED AIR OR GAS. All air must be bled from the system during initial fluid fill. Pressure testing of the system must not be made until all solvent cement joints have properly cured. Initial pressure testing must be made at approximately 10% of the system hydrostatic pressure rating to identify potential problems, prior to testing at higher pressures.

Read all applicable instructions and procedures thoroughly before starting. Suitability of the intended service application must be determined prior to installation. Plastic piping systems must be engineered, installed, operated and maintained in accordance with accepted standards and procedures for plastic piping systems. It is absolutely necessary that all design, installation, operation and maintenance personnel be trained in proper handling, installation requirements and precautions for installation and use of plastic piping systems before starting.



Basket Strainers should be installed in a level, horizontal position with adequate piping system support to prevent mechanical stress on the basket connections (see “Precautions and Warnings for All Installations” in this instruction).

Step 1: Preparation of Strainer Unit: Pressure Gauge and Pressure Release Valve, or optional plugs, are packaged inside strainer body. Remove Retaining Clamp by unthreading lock nut and lifting outward on clamp handle. Pull Bonnet evenly from Body. Install gauge and valve (or supplied plugs if gauge or valve is not used) in Bonnet according to threading instructions on the following pages. Note: Use of gauge and release valve is highly recommended for monitoring and safety during servicing.

Step 2: Prepare connecting pipe as required for solvent cement or flanged connections referring to appropriate procedures on the following pages.

Step 3: Solvent cement or flange each end of Basket Strainer body to connecting pipe according to solvent cementing or flanging procedures on the following pages. Be sure to install Basket Strainer in the direction of flow indicated by “arrow” on Strainer Body. DO NOT use Strainer Basket flanges to draw system components together. DO NOT allow solvent cements or primers to run into interior of strainer body or basket. Remove excess glue from solvent cement joints and allow to cure before proceeding.

Step 4: Tighten bottom O-ring sealed drain plug snug. Check that Bonnet is properly seated into basket body and retaining clamp is properly installed (Note: Clamp should fit tightly in closed position. If clamp is loose, it may be installed upside down. Installing the clamp upside down will not allow proper attachment).

WARNING: Check Retaining Clamp for proper attachment to housing. Clamp MUST be properly INSTALLED, closed and secured to CLAMP bolt with lock nut prior to operation. FAILURE TO DO SO MAY RESULT IN SERIOUS BODILY INJURY AND SYSTEM FAILURE. (A spare lock nut is supplied under clamp handle.

Step 5: Pressure Test System only after all solvent cement joints have fully cured. Flanged connections may require additional tightening after initial pressure testing.



Maintenance Service Instructions

The Strainer Basket is accessed for cleaning and servicing by removal of the Retaining Clamp. CAUTION: Before servicing, system must be shut down, de-pressurized and drained.

Step 1: Check pressure gauge to verify de-pressurization. The Pressure Release Valve may be opened to assist in venting. **WARNING: DO NOT OPEN UNIT UNDER PRESSURE!** Note: Drain plug may be removed from bottom of unit to flush and drain.

Step 2: Remove clamp handle lock nut and pull handle outward to release Retaining Clamp. Grasp both Bonnet Handles and pull Bonnet evenly from body. Remove Strainer Basket Screen unit. Inspect Basket and Bonnet O-ring for damage and debris. Clean all components and replace as necessary.

Step 3: Reassembly: Reinstall Strainer Basket into body. Install drain plug in bottom of unit. Tighten bottom O-ring sealed drain plug snug. Insert Bonnet and O-ring seal evenly into body. Check that Bonnet is properly seated into basket body. Install Retaining Clamp (Note: Clamp should fit tightly in closed position. If clamp is loose, it may be installed upside down. Installing the clamp upside down will not allow proper attachment.)

WARNING: Check Retaining Clamp for proper attachment to housing. Clamp MUST be properly INSTALLED, closed and secured to CLAMP bolt with lock nut prior to operation. FAILURE TO DO SO MAY RESULT IN SERIOUS BODILY INJURY AND SYSTEM FAILURE.

SOLVENT CEMENT WELDED JOINTS

For best results, installation must be made at temperatures between 40°F and 110°F. All joint components must be inspected for any breaking, chipping, gouging or other visible damage before proceeding. All pipe, fittings and valves must be removed from their packaging or containers and exposed to the installation environment for a minimum of one hour in order to thermally balance all components. All joining components must be clean and dry.

Step 1: Cut Pipe Square - Pipe ends must be cut square, using a wheel-type cutter or saw & miter box. A fine-toothed hand saw (16-18 teeth/inch) with little or no set is recommended. A power cut-off saw with carbide blade is recommended for high volume cutting.

Step 2: Deburr & Bevel Pipe - Regardless of cutting method used in Step 1, burrs are created which must be removed from both the pipe I.D. and O.D before joining. All pipe ends must be beveled 10° to 15°. Commercially available deburring & beveling tool is recommended, or a mill file may be used.

Step 3: Clean Joint Components - Wipe away all loose dirt and moisture from the pipe O.D. and fitting I.D. with a clean, dry cotton rag. DO NOT ATTEMPT TO JOIN WET SURFACES.

Step 4: Check Joint Interference Fit - An interference between pipe and socket is necessary for proper fusion of the joint. To check, lightly insert pipe into fitting socket. DO NOT FORCE. Interference between pipe and socket must occur between 1/2 of the socket depth (full interference fit) and the socket bottom (net fit). Do not use components which improperly mate.



Step 5: Apply Primer

Primer is necessary to penetrate and soften both pipe and socket surfaces in order for the solvent cement to properly bond. **THE MOST FREQUENT CAUSE OF JOINT FAILURES IS INADEQUATE SOLVENT PENETRATION AND SOFTENING OF BONDING SURFACES DURING THE WELDING OPERATION.**

1. Using a brush or applicator size no less than 1/2 the pipe diameter, apply a liberal coat of primer with a scrubbing motion to the socket until the surface is softened and semi- fluid. This may take 5 to 15 seconds depending on size and temperature (larger diameters and lower temperatures will increase required time).
2. Apply primer to pipe in the same manner, extending application area to slightly more than the insertion depth into the socket.
3. Apply a second coat to both the socket and the pipe.
4. Check penetration and softening by scraping the primed surfaces. A few thousandths of the semi-fluid surface must be easily removed. Repeat primer application if necessary.

Step 6: Apply Solvent Cement Solvent cement must be applied IMMEDIATELY to primed surfaces before the primer dries, in an alternating 3-coat application. Using a brush or applicator size no less than 1/2 the pipe diameter, apply a liberal coat of solvent cement to the primed pipe surface, then apply a light to medium coat to the primed socket. If a “net fit” was experienced during dry fit check (Step 4), apply an additional coat again to the pipe surface. BE SURE TO USE A VERY LIBERAL AMOUNT OF SOLVENT CEMENT ON PIPE.

Step 7: Join Components IMMEDIATELY following application of cement and before it starts to set, insert the pipe into the socket with a 1/4 - turn, twisting motion to evenly distribute cement within the joint. A full bead of cement must form around the circumference of the joint. Hold joint together for approximately 30 seconds to make sure the pipe does not move or back out of the socket.

Step 8: Remove Excess Cement Using a cloth, wipe clean all excess cement from the exterior juncture of the pipe and socket.

Step 9: Initial Set & Cure Time Initial Set & Cure Time must be followed in accordance with the solvent cement manufacturer’s instructions.



THREADED CONNECTIONS

Step 1: Apply Joint Sealant Threaded connections require application of a quality grade thread sealant to seal and lubricate joint assembly. Sealant must be applied to male pipe threads. **WARNING: THREADED CONNECTIONS — Use a quality grade thread sealant. WARNING: SOME PIPE JOINT COMPOUNDS OR PTFE PASTES MAY CONTAIN SUBSTANCES THAT COULD CAUSE STRESS CRACKING TO PLASTIC.** Spears® Manufacturing Company recommends the use of Spears® BLUE 75™ Thread Sealant which has been tested for compatibility with Spears® products. Please follow the sealant manufacturers' application/ installation instructions. Choice of an appropriate thread sealant other than those listed above is at the discretion of the installer. 1 to 2 turns beyond FINGER TIGHT is generally all that is required to make a sound plastic threaded connection. Unnecessary OVER TIGHTENING will cause DAMAGE TO BOTH PIPE AND FITTINGS.

Step 2: Assemble Joint by Hand Threaded pipe and valves or fittings must be initially assembled "finger tight" (just enough to fully engage thread clearance).

Step 3: Wrench Make-Up Threaded plastic pipe and fitting components must always be installed using commercially available strap wrenches. Do not use conventional pipe wrenches which can damage plastic piping materials