SUCTION DIFFUSERS
INSTALLATION AND MAINTENANCE

INSTALLATION

Two dimensions are used to designate the size of suction diffusers. The first is the inlet size; the second is the outlet size. Example: 3” x 2” suction diffuser has a three-inch inlet and a two-inch outlet flange. Place the suction diffuser so that the head of the flow arrow points to the suction flange (inlet) of the pump.

Full-face gaskets must be used on flat flanges. Pump and suction diffuser flanges should be aligned before final connections are made. Do not draw piping into place by force. Flange bolts should be only finger tight. Suction and discharge piping should be properly supported so that the weight of piping does not rest on pump. To support the suction diffuser cut a piece of pipe with the correct inside diameter to the approximate length from the boss to the adjustable foot (Take this measure with the foot adjusted to its shortest position. Place the pipe over the boss and on the foot. Adjust the nut upward until the weight of the suction diffuser is properly supported).

Tighten all flange bolts in sequence crossing to opposites. Slowly bring system to working pressure and check for leaks. If pressure gauges are installed be sure that threaded fittings are properly sealed. If leaks occur, check for piping and flange misalignment. If there is no misalignment, retighten flange bolting.

MAINTENANCE

WARNING

Before the removal or loosening of any cap, plug, cover, or other part on a suction diffuser, extreme caution should be exercised to ensure there is zero pounds pressure in the system. Only after the system has been depressurized, should the suction diffuser be drained for service.

SERVICE ON A PRESSURIZED SUCTION DIFFUSER CAN CAUSE SERIOUS INJURY AND/OR PROPERTY DAMAGE.

We recommended that pressure gauges be installed on the suction diffuser inlet and outlet or the suction diffuser inlet and suction side of the pump to indicate when cleaning is required. Record the pressure drop when the suction diffuser is clean. When the indicated pressure drop doubles, the suction diffuser should be cleaned. Shut down the pump and close the upstream and downstream isolation valves. Remove the NPT plug on the body of the suction diffuser and allow to drain. Loosen knobs (or nuts) and remove cover. Do not use sharp objects to pry cover from body or the o-ring seal may be damaged.

Remove and clean perforated screen. The temporary mesh sleeve should be removed and thrown away after the 30-day start-up period. Inspect the perforated screen for damage and replace if necessary. Before reassembling the suction diffuser, inspect the o-ring seal for cuts or other damage and replace if necessary. When reassembling, be sure that the o-ring is seated against the cover and that the screen is seated snugly in the recess of the cover. Reinstall cover and tighten cover knobs (or nuts) in sequence crossing to opposites.

Open upstream isolation valve slowly to bring the system back up to working pressure. If there are no leaks open the downstream isolation valve and restart the system. If leakage occurs the cover should be checked for proper seating. Retighten knobs (or nuts).

Note: For a “quick clean”, a blow down valve may be substituted for the NPT plug. Opening this valve with the system running will flush out most of the accumulated sediment from the suction diffuser. We do not recommend this procedure for the first service after start-up. This procedure should be used only if it is not possible to carry out scheduled maintenance.