



Instruction Sheet

302-042.1

Suction Diffuser Rear Strainer Pullout (RSP) with Integral Cast Straightening Vanes

SUPERSEDES: August 7, 2013

EFFECTIVE: December 5, 2013

Plant I.D. 001-4219

LOCATION & INSTALLATION:

1. Locate and install pump per pump manufacturer's instructions.
NOTE: When selecting pump location, ensure there is sufficient space available to remove the Suction Diffuser straightening vane assembly and strainer for routine maintenance. Clearance requirements are shown as dimension "C" in Table 1.
2. Mount suction diffuser directly to pump suction flange. Pump and suction diffuser flanges should be aligned before connections are made. Piping should **NEVER** be drawn into place by force. Inlet connection is labeled with the word "SYSTEM" on the flange and outlet flange is labeled "PUMP".
3. Both suction and discharge piping should be suspended or supported close to the pump so that no pipe weight rests on pump. To support the Suction Diffuser, cut a piece of 1 1/4" pipe without threads to the approximate length required from one of the bosses provided on the pump connection to the adjustable foot nut. See Figure 1: Piping Diagram.
4. Place pipe on nut and under the boss and turn the nut counter-clockwise until sufficient load is supplied to give maximum support.

MOUNTING:

1. Suction Diffusers can be mounted in a vertical or horizontal position. Bosses are cast into the Suction Diffuser body to accommodate pipe supports for each position.
2. If used in a horizontal position, the pump should be positioned at right angles to the piping.
3. A blow down valve may be installed on the drain connection of the Suction Diffuser.

TABLE 1: STRAIGHTENING VANE AND STRAINER CLEARANCE DIMENSION

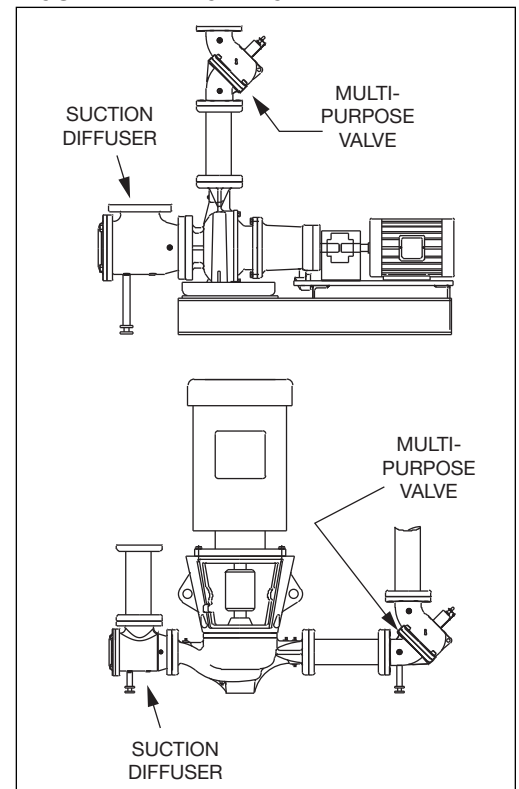
| Model Number | System | Pump | C | Model Number | System | Pump | C |
|--------------|---------------|---------------|-------------|--------------|------------|------------|-------------|
| SD020015-5 | 2 Flanged | 1 1/2 Flanged | 8.49 (216) | SD060060-5 | 6 Flanged | 6 Flanged | 19.02 (483) |
| SD020020-5 | 2 Flanged | 2 Flanged | 8.24 (209) | SD080060-5 | 8 Flanged | 6 Flanged | |
| SD025020-5 | 2 1/2 Flanged | 2 Flanged | | SD100060-5 | 10 Flanged | 6 Flanged | |
| SD030020-5 | 3 Flanged | 2 Flanged | 8.97 (228) | SD080080-5 | 8 Flanged | 8 Flanged | 23.79 (604) |
| SD025025-5 | 2 1/2 Flanged | 2 1/2 Flanged | | SD100080-5 | 10 Flanged | 8 Flanged | |
| SD030025-5 | 3 Flanged | 2 1/2 Flanged | | SD120080-5 | 12 Flanged | 8 Flanged | |
| SD040025-5 | 4 Flanged | 2 1/2 Flanged | 10.47 (266) | SD100100-5 | 10 Flanged | 10 Flanged | 29.40 (747) |
| SD030030-5 | 3 Flanged | 3 Flanged | | SD120100-5 | 12 Flanged | 10 Flanged | |
| SD040030-5 | 4 Flanged | 3 Flanged | | SD140100-5 | 14 Flanged | 10 Flanged | |
| SD050030-5 | 5 Flanged | 3 Flanged | 12.86 (327) | SD120120-5 | 12 Flanged | 12 Flanged | 33.72 (856) |
| SD040040-5 | 4 Flanged | 4 Flanged | | SD140120-5 | 14 Flanged | 12 Flanged | |
| SD050040-5 | 5 Flanged | 4 Flanged | | SD160120-5 | 16 Flanged | 12 Flanged | |
| SD060040-5 | 6 Flanged | 4 Flanged | 15.36 (390) | SD140140-5 | 14 Flanged | 14 Flanged | 34.00 (864) |
| SD050050-5 | 5 Flanged | 5 Flanged | | SD160140-5 | 16 Flanged | 14 Flanged | |
| SD060050-5 | 6 Flanged | 5 Flanged | | | | | |
| SD080050-5 | 8 Flanged | 5 Flanged | | | | | |

NOTE: Dimensions are in inches. Metric dimensions are in millimeters and are in parentheses ().



- NOTE:** Blow down is **MOST** effective when system connection of the Suction Diffuser is in the 12 o'clock position.
4. When insulating the Suction Diffuser, allowances need to be made for removal of the straightening vane assembly and cleaning of the strainer.

FIGURE 1: PIPING DIAGRAM



START-UP STRAINER REMOVAL:

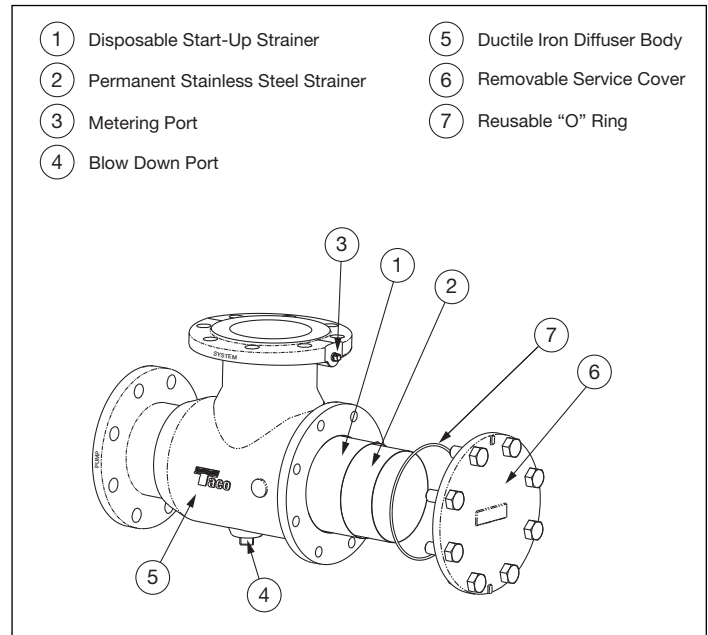
The fine mesh start up strainer should be removed after initial system fluid circulation and proper system cleaning.

1. Shut the pump off and close the service valves to isolate the Suction Diffuser and pump from the system. Allow enough time for the system fluid to cool below 100° F (38° C).
2. Once isolated remove drain plug on bottom of Suction Diffuser and allow system pressure to drop to zero (if installed this may be accomplished by opening the blow down valve).
3. Loosen the cover bolts on the rear of the Suction Diffuser and carefully break it loose from the Suction Diffuser body. Once all drainage has stopped completely remove the bolts and cover from the Suction Diffuser body.
4. Remove the strainers from the Suction Diffuser body.
5. Remove the fine mesh start up strainer (if still in place) and discard appropriately.
6. Inspect all components for any damage and replace any damaged components as necessary.
7. Inspect cover "O" ring and replace as necessary.
8. Reinstall the permanent strainer into Suction Diffuser body. Making sure that the permanent strainer is properly seated inside of Suction Diffuser body, reattach the cover and secure in place by tightening the bolts in criss-cross pattern.
9. Open isolation valves slowly while inspecting the "O" ring sealing area for leaks.
10. Return system to normal operating conditions.

CLEANING:

1. It is recommended that valved gauge connections be provided on diffuser inlet and pump suction connections to indicate when cleaning is needed.
2. Note pressure drop when strainer is clean. When the pressure drop increases 100%, remove the strainer and clean.

NOTE: Follow the same procedures in the START-UP STRAINER REMOVAL section when performing routine maintenance and cleaning of the permanent strainer.



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