PENTAIR

AURORA®

1030 SERIES
SUCTION DIFFUSERS
INSTRUCTION, INSTALLATION, MAINTENANCE AND REPAIR MANUAL

NOTE! To the installer: Please make sure you provide this manual to the owner of the equipment or to the responsible party who maintains the system.

Part # A-03-329 | © 2012 Pentair Ltd. | 11/19/12

INTRODUCTION:

Aurora Suction Diffusers are designed for bolting directly onto the suction flange of horizontal or vertical shaft centrifugal pumps.

CALIFORNIA PROPOSITION 65 WARNING:

⚠WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

OPERATING LIMITS:

Aurora Suction Diffusers are designed in three series:

Series Designation	Inlet Pipe Connection	Pump Connection
SD	150 psig ANSI Flange	125 psig Pump Flange
SDG	Grooved Pipe*	125 psig Pump Flange
SDH	300 psig ANSI Flange	250 psig Pump Flange

*Suitable for straight cut grooved Anvil or Victaulic fittings.

Each series is designed to be a *four-function* fitting. Each Suction Diffuser is a 90˚ elbow, a pipe strainer and a flow stabilizer. It may also be used as a reducing elbow, should the suction piping be larger than the pump inlet.

INSPECTION:

Aurora Suction Diffusers are thoroughly tested and inspected before shipment to assure they meet with your order requirements. All units must be carefully examined upon arrival for possible damage during transit. Any evidence of mishandling should be reported immediately to the carrier and noted on the freight bill.

INSTALLATION:

Install the Suction Diffuser with the directional arrow, indicated on the body, being aligned with the system flow direction. Aurora Suction Diffusers may be installed in any position, providing the diffuser vanes are facing the pump inlet flange.

Centrifugal pumps need a minimum of 5 pipe diameters of straight pipe before the pump suction. This length of straight pipe, after the last elbow, tee or fitting, helps to ensure that the flow is stable when entering the pump suction.

Crosspiece diffuser vanes are fitted into the Aurora Suction Diffuser outlet, where it bolts to the pump flange, to stabilize the flow and eliminate the need of long straight suction pipe.

Space must be allowed to remove the end cover and remove the strainer.

A blow-down valve may be installed on the Suction Diffuser drain connection. Should the Suction Diffuser be installed with the inlet port facing vertically down: The inlet piping configuration should include a blow-down valve at the lowest point on the down pipe to exhaust any debris that may fall from the Suction Diffuser strainer.

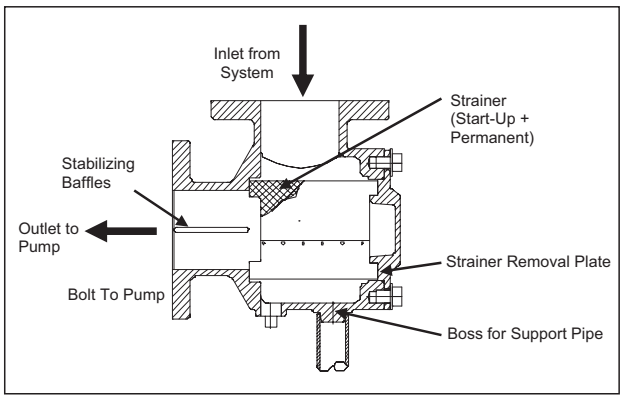

Figure 1. Aurora Suction Diffuser.

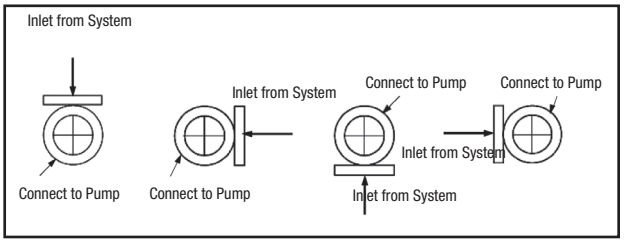

Figure 2. Aurora Suction Diffusers may be installed in any arrangement feasible by pump flange boltholes arrangement.

The Suction Diffuser must not be used to support the suction piping. Piping must be supported independently.

On base mounted pumps, the flexible piping connection may allow the Suction Diffuser to be supported by the pump suction flange. A boss is cast on every SD allowing a supporting pipe-stool to be located under the fitting, thereby removing the weight of the Suction Diffuser from the pump suction flange.

Suction Diffusers are supplied with an inlet tapped gauge connection. Monitoring the differential pressure across the fitting, from the suction diffuser inlet gauge to the pump inlet gauge, will alert the operator should the strainer need to be removed and cleaned.

OPERATION:

No special attention need be paid to the Suction Diffuser at start-up. The fitting is stationary and will strain the pumped fluid and stabilize the flow into the pump automatically.

Temporary strainer must be removed following system cleanup.

After all debris has been removed from the system, or a maximum of 24 running hours, stop the pump and close the pump isolation valves. Drain the Suction Diffuser by removing

the drain plug or opening the blow-down valve, if installed. Remove the Suction Diffuser cover and remove the strainer assembly from the valve body.

A temporary fine-mesh start-up strainer is tack-welded to the permanent stainless steel strainer. This temporary strainer should now be removed from the permanent strainer. The fine-mesh strainer is designed to remove small particulate from new piping systems and could easily clog with debris if left in place. This will be detrimental to the operation of the pump.

Replace the permanent strainer into the fitting body, once the temporary strainer is removed.

Inspect the cover O-ring and replace if necessary. Replace the cover into the body. Ensuring that the strainer is properly seated, tighten the cover bolts diagonally, evenly and firmly.

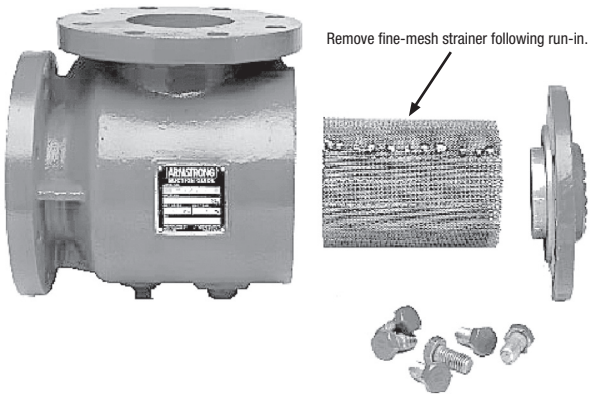

Figure 3. Remove fine-mesh strainer.

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