

# Suction Diffuser

SERIES 731-D AND **AGS** W731-D



## IMPORTANT INSTALLATION INFORMATION

**⚠ WARNING**

- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear hardhat, safety glasses, and foot protection.

Failure to follow these instructions could result in serious personal injury, property damage, and/or product damage.

**⚠ CAUTION**

- To ensure maximum gasket life, make sure the suction diffuser is installed with a gasket grade that is suitable for the intended service.

Failure to follow this instruction could cause joint leakage, resulting in property damage.

The following procedures must be referenced to ensure proper installation of Victaulic Series 731-D/W731-D Suction Diffusers.

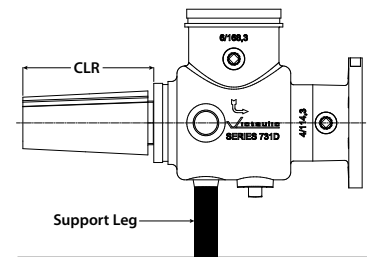
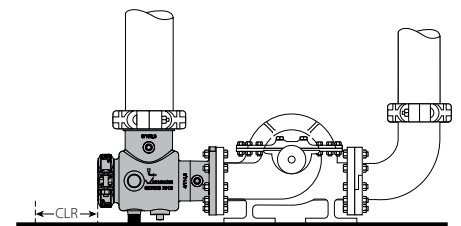
**NOTE:** Maximum service life is dependent upon proper gasket selection and installation. Refer to Victaulic publication 05.01, "Gasket Selection Guide," for details.

## ASSEMBLY CLEARANCE

- Select a location for the Series 731-D/W731-D Suction Diffuser that accommodates the recommended access clearances for removing the basket. The recommended access clearances are listed in the following table (noted as the "CLR" dimension). **NOTE:** These dimensions take into account an extra 2 inches/51 mm of clearance.
- The recommended support leg pipe diameters are listed in the following table and are based on Schedule 40 pipe.

Support Leg Requirements and Minimum Clearance Requirements for Removal of Suction Diffuser Baskets

Size – Grooved/System Side			Dimensions - inches/mm	
ANSI inches/ millimeters	DIN/GB/AS millimeters	JIS millimeters	Clearance Requirements "CLR"	Support Leg Pipe Diameter Requirements inches/mm
-	76.1 mm	76.1 mm	8.00 203	1 ¼ 42.4
3 88.9	80	80A	8.00 203	1 ¼ 42.4
4 114.3	100	100A	9.50 241	1 ¼ 42.4
5 141.3	125	125A	10.00 254	2 60.3
6 168.3	150	150A	11.50 292	2 60.3
-	139.7 mm	139.7 mm	10.50 267	2 60.3
8 219.1	200	200A	14.00 356	2 60.3
10 273.0	250	250A	18.00 457	2 60.3
12 323.9	300	300A	20.00 508	2 60.3
14 355.6	350	350A	22.00 559	2 60.3
16 406.4	400	400A	25.00 635	2 60.3
18 457	450	450A	28.00 711	3 88.9
20 508	500	500A	30.00 762	3 88.9
24 610	600	600A	34.00 864	3 88.9



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### IDENTIFICATION LABEL



Each Series 731-D/W731-D Suction Diffuser contains a label that identifies the flange pattern dimensions to which the product conforms. Verify that the suction diffuser conforms to the appropriate flange pattern dimensions before installation.

### INSTALLING THE SUPPORT LEG

#### **CAUTION**

- The suction diffuser and pump must be supported properly.
- Failure to follow this instruction could cause damage to the suction diffuser and pump, resulting in property damage.



1. To prevent strain on the pump, a support leg and foot are required (not supplied by Victaulic). Bosses are provided on the suction diffuser body to allow for mounting in any of three positions.
2. The length of the leg will be determined by the conditions of each installation. The support leg can be made of Schedule 40 pipe (refer to the table on page 1 for the proper diameter).
3. Use an adjustable support foot for final height adjustment. There is a potential for damage if the suction diffuser and pump are not supported properly.

### MAKING THE FLANGE CONNECTION



1. Join the flanged section of the suction diffuser with the mating flange by aligning the bolt holes. Insert a standard flange bolt through each hole in the suction diffuser flange/mating flange. Thread standard flange nuts finger-tight onto all bolts.
2. Tighten all nuts evenly in a crisscrossing pattern, as with a regular flange assembly, until the flange faces come into firm contact or the standard, flange-joint torque requirement is achieved. **NOTE:** Victaulic does not supply the flange gasket or the standard flange bolts/nuts.

### INSTALLATION OF THE SUPPLY-SIDE COUPLING

#### NOTICE

- Always refer to the instructions, supplied with the coupling, for detailed installation requirements.

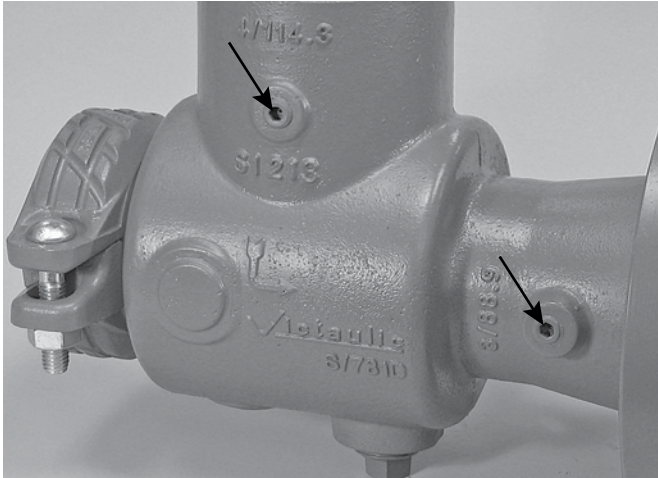


1. Refer to the I-100 Field Installation Handbook for complete instructions on how to install the grooved pipe coupling on the supply side of the suction diffuser. **NOTE:** For Series W731-D AGS Suction Diffusers, the mating pipe for the supply-side connection must be grooved with Victaulic AGS roll sets (RW for steel).

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### INSTALLATION OF PRESSURE GAUGES

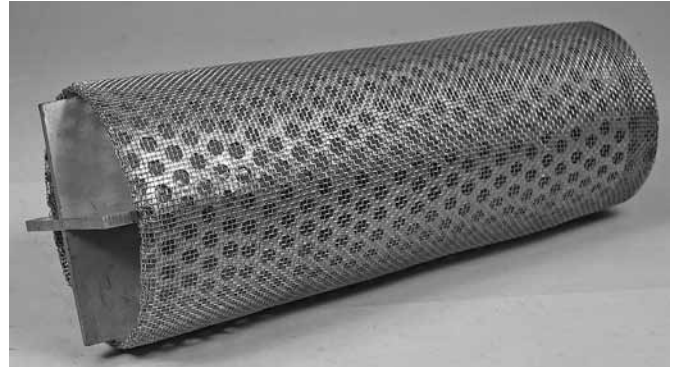


1. Remove the two pipe plugs from the appropriate side of the suction diffuser body.
2. Apply thread tape to the threads of the pressure gauges. Install a pressure gauge into the locations where the pipe plugs were removed. Make sure the face of each gauge is positioned so that maintenance personnel can take differential pressure readings without difficulty (pressure gauges help in determining differential pressure from inlet to outlet [across the basket]). Refer to the "Cleanout/Servicing" section for additional information.

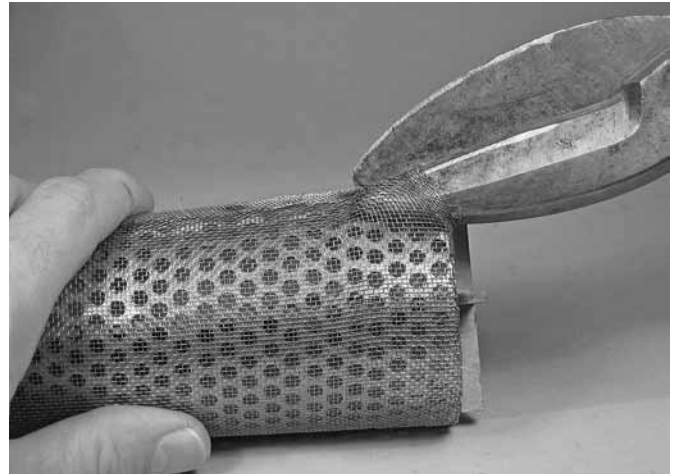
### DURING INITIAL SYSTEM STARTUP

1. During initial system startup, observe all gauges and check joints for leaks. If any leaks are present, depressurize and drain the system and resolve any problems. Restart the system and make sure all leaks have been resolved.

### AFTER INITIAL SYSTEM STARTUP



1. Each Victaulic Series 731-D/W731-D Suction Diffuser contains a fine, mesh sleeve that is attached to the permanent diffuser basket.



2. After initial system startup, follow all steps in the "Cleanout/Servicing" section to remove the diffuser basket. Cut off the fine, mesh sleeve that is attached to the diffuser basket. Discard the sleeve. **NOTE:** Use extra caution to prevent hands from being cut or punctured by sharp points that may be present when removing the sleeve.

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### CLEANOUT/SERVICING

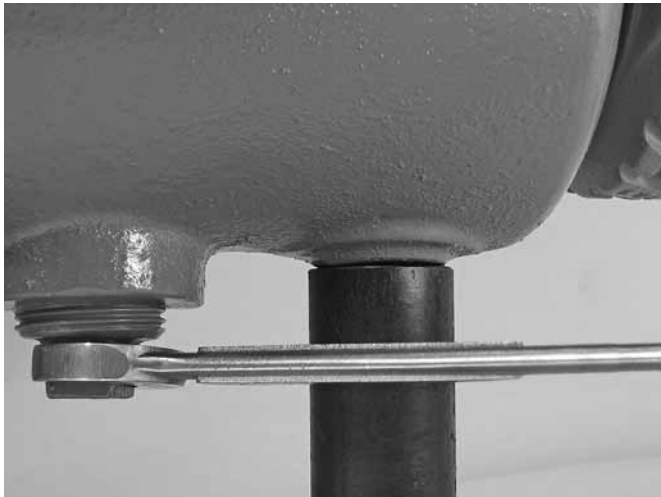
#### **⚠ WARNING**



- End cap or drain tap may be under pressure.
- Depressurize and drain the piping system before attempting to remove the end cap or drain tap.
- Make sure the system temperature is below 100°F/38°C before attempting to remove the end cap or drain tap.
- Due to the size and weight of larger-size end caps, proper support/lifting devices are required for safe removal and re-assembly.

Failure to follow these instructions could result in serious personal injury and property damage.

WHEN THE PRESSURE DIFFERENTIAL FROM INLET TO OUTLET (ACROSS THE BASKET) REACHES 10 PSI/69 KPA, THE BASKET MUST BE REMOVED AND CLEANED OUT, AS OUTLINED IN THE FOLLOWING INSTRUCTIONS.



1. Make sure the system is depressurized. Allow the system temperature to fall below 100°F/38°C. Remove the drain tap, as shown above, to drain the suction diffuser.

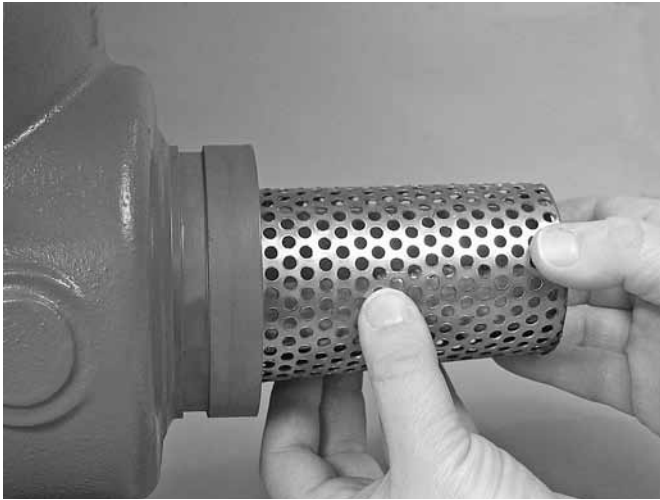


2. Remove the coupling, end cap, and gasket. Check the gasket for damage. If the gasket shows any signs of wear or damage, replace it with a new, Victaulic-supplied gasket that is suitable for the intended service.

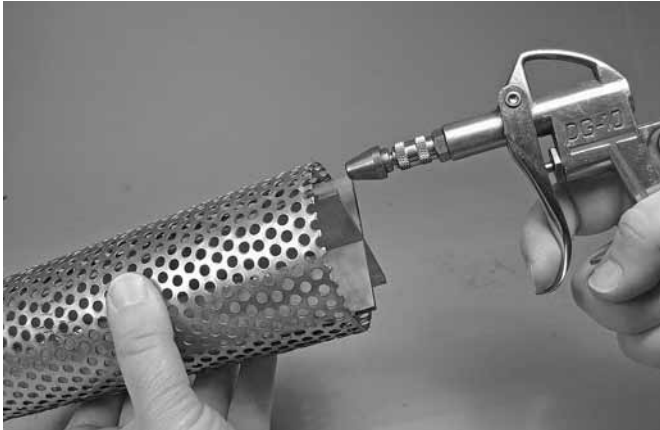


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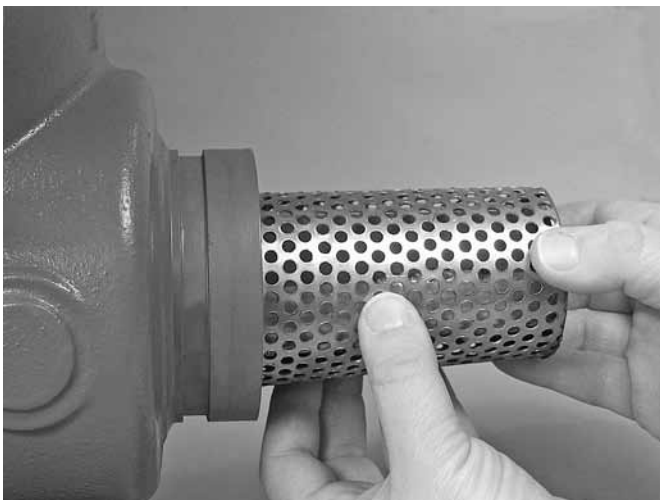
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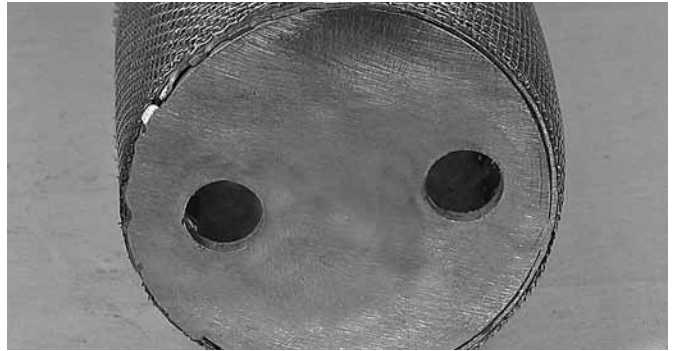
3. Remove the basket from the suction diffuser body.



4. Remove all debris from the basket and from inside the suction diffuser body.



5. Re-install the basket. Make sure the basket seats properly within the suction diffuser body.



**NOTE:** The end of the basket contains two holes that mate with two bosses on the inside portion of the end cap. In addition, spacers are included on each boss. If these spacers are removed or replaced for any reason, the same amount of spacers must be re-installed. If the spacers show any signs of wear or damage, replace them with new, Victaulic-supplied spacers.

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6. Apply a thin coat of Victaulic Lubricant or silicone lubricant to the gasket lips and exterior. Install the gasket onto the end of the suction diffuser body. Make sure the gasket lip does not overhang the end of the suction diffuser body.
- 6a. Re-install the end cap. Make sure the bosses on the inside portion of the end cap engage with the holes in the basket.
- 6b. Center the gasket between the groove in the suction diffuser body and the end cap.
- 6c. Install the coupling housings over the gasket. Make sure the coupling housings' keys engage the groove in the suction diffuser body and the end cap.
- 6d. Install the bolts, and thread the nuts onto the bolts until finger-tight. **NOTE:** Make sure the oval neck of the bolts seat properly in the bolt holes.

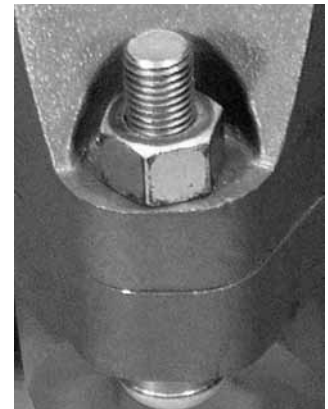
**⚠ WARNING**

- For Victaulic rigid couplings (flat and angle-bolt-pad), the nuts must be tightened evenly by alternating sides until metal-to-metal contact occurs at the bolt pads.
- For Series 731-D Suction Diffusers that contain Victaulic rigid, angle-bolt-pad couplings, equal offsets must be present at the bolt pads.

Failure to follow these instructions could cause joint failure, resulting in serious personal injury and property damage.

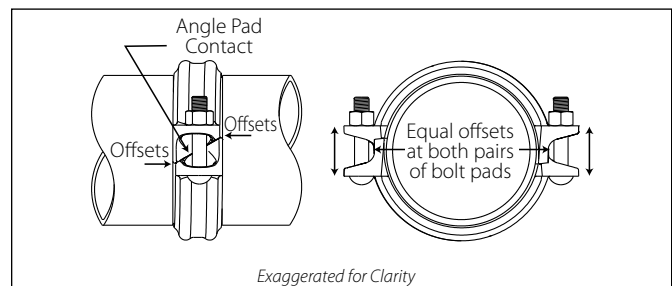


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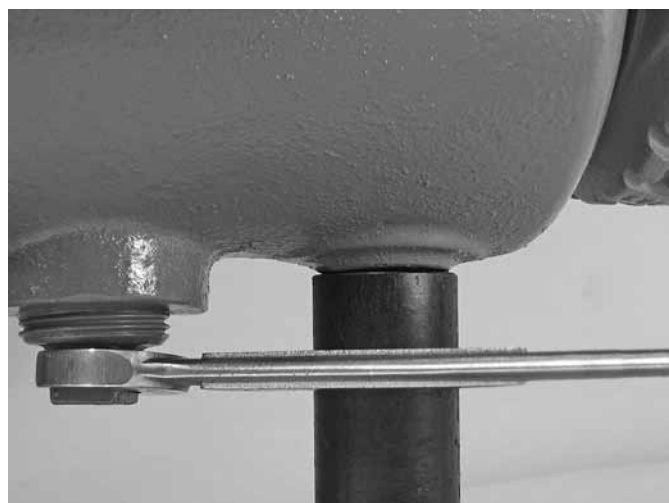


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7. Tighten the nuts evenly by alternating sides until metal-to-metal contact occurs at the bolt pads. Make sure the housings' keys engage the grooves completely in the suction diffuser body and the end cap. **NOTE:** It is important to tighten all nuts evenly to prevent gasket pinching. Always refer to the I-100 Field Installation Handbook for complete instructions on how to install grooved pipe couplings.



- 7a. For Series 731-D Suction Diffusers that contain Victaulic rigid, angle-bolt-pad couplings, make sure the offsets are equal at the bolt pads. This is necessary to ensure a properly-assembled, rigid joint (refer to drawing above).



8. Re-install the drain tap.
9. Place the system back into service.

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For complete contact information, visit [www.victaulic.com](http://www.victaulic.com)

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