

Fig. KISD16 Iron Suction Diffuser Installation & Maintenance Instructions

PRODUCT LIFE CYCLE

The life of the suction diffuser is dependent on its application and freedom from misuse.

The properties of the fluid being transported such as pressure and temperature must be taken into account to avoid premature failure.

Other factors to be considered are the electrolytic interaction between dissimilar metal used in the system, dezincification and stress corrosion cracking occurring on chilled water service.

Before commissioning a system, it should be flushed to eliminate debris and chemically cleaned as appropriate to eliminate contamination, all of which will prolong the life of the strainer.

OPERATING PRESSURES AND TEMPERATURES

Maximum non shock pressure and temperature range: 16 bar from -10°C to 100°C

INSTALLATION STEPS:

1. Before choosing the installation location, be sure there is enough space to dismantle the filter net of diffuser. Please refer the “External Size C” listed in the dimensions Table of the product catalog for the exact space and length needed.
2. If using vibration damper for connection on the base of pump installation, please be sure the base is big enough to hold the support of diffuser.
3. The support is to be used between the diffuser and the base (it won't be supplied by us) for supporting the diffuser and for avoiding stretching the pump. There is a convex for fixing the support on the valve. When installing, the suitable pipe can be used to cover the convex. The length of the support can be different depending on the occasion. Please make the decision according to the actual installation condition. The foot of the support should be adjustable to adjust the length of the support.
4. When installing the valve, please be careful about the way of screw fastening, or it would be easy to damage the valve body, or to form a huge stress, or to shorten the life of the valve.



Note: Note: Unreasonable installation way.

When fastening the screw, it must be done using “intersecting” fastening way. Otherwise, there will be damage to the flange of the valve and cause the injury or other property loss / damage.

After cleaning the filter net, it should be put back right in the centre before closing the cover and fastening the screw; otherwise, it would damage the filter net and threaten the safety of other equipments in the system.

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5. The entrance of the valve is better located at the direction of twelve o'clock. If installing at the direction of three o'clock or nine o'clock, it would affect the efficiency of the valve.
6. After installing the valve, the suitable tools should be prepared for carrying out the necessary maintenance, such as dismantle the starting protective filter net, change the filter net, and clean the valve, etc.
7. We suggest installing the pressure gauge on the valve to monitor the pressure of the inlet of the pump. This is not a standard accessory and needs to be purchased separately.



Note: Potentially unreasonable construction.

It is a must to use an adjustable foot for the support to support the weight of the valve and the channel. Otherwise, it could cause personal injury or other property loss / damage.

OPERATION

The startup screen (20 Mech net) should be dismantled and removed from the regular mesh after the system has been operating normally for a period of time (See details below in coming section).

MAINTENANCE

1. Periodically inspect and clean the filter net of the valve to avoid causing the damage of the pump. If the filter net is damaged, it must be replaced by a new one.
2. When inspecting the valve, please carry out according to the following steps:
 - a. Close the pump, separate the valve and pump from the system.
 - b. Make sure the water temperature is under 38°C (100°F).



Warning: High Temperature or High Pressure. Please make sure the water temperature is under 38°C (100°F) and make sure to maintain the pressure is down to the zero. Otherwise, it may cause personal injury or other property loss.

- c. Open the Drain Valve located in the section of the diffuser and pump which have been separated from the system to make the pressure in this separated section lower to zero. If there is still water flowing out, please check the separated valve.

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- d. Unfasten the screw which is used to fix the cover of the diffuser, and dismantle it. Before taking this step, please make sure there is no water flowing out from the Drain Valve.
- e. Take out the filter net from the valve.
- f. If the starting protective filter net is still on the filter, dismantle it. Check if the filter net is OK. If necessary, please replace it with a new filter net.
- g. Check if O-Ring is OK. If necessary, please replace it with a new O-Ring.
- h. Install the cover of the diffuser. Use the intersecting fastening way to fasten and fix the screw.
- i. Slowly open the separated valve and check the connecting area of the valve to see if there is a phenomenon of leakage. If so, please re-check again.
- j. Restore the system back to the normal working status.



Note: when there is a phenomenon of corrosion or leakage, it is possible to cause damage to the pump resulting from the leakage, break or foreign materials entering the pump. Therefore, it is necessary to inspect the diffuser regularly. Otherwise, it may cause personal injury or other property loss. There are connectors to measure the system pressure at the inlet and outlet of the diffuser. When the pressure differential between inlet and outlet is over 0.3kgf/cm² .it is a must to clean the dirt and foreign materials inside the diffuser.

IT IS TIME TO REMOVE THE START-UP SCREEN.....

One of our products: the suction diffuser is equipped with the Start-up screen. If the differential pressure of our product is up to 0.3 bar or higher after the system starts running, the Start-up screen must be removed! If the Start-up screen has been removed, then check and clean the screen. In case the water is too dirty, only remove the Start-up screen after the system has been running for about 12 hours. Please follow the steps below.

1. Isolate the system. Close the gate valves before the suction diffuser and after the pump. Then drain all rest fluid in the system from the suction diffuser.



WARNING: Watch for the latent high temperature injury or high pressure injury. When maintaining the system, the hot water might leak out. So, please make sure to isolate the valve from the system or make sure there is no

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any pressure in the system. And the water temperature should be controlled under 38°C (100°F) to prevent danger, injury and property loss.

2. Unfasten the bolts on the cover of the suction diffuser.
3. Remove the cover. For the sizes of suction diffusers bigger than 12", the cover and the body are connected with a long bolt for easy maintaining.



CAUTION: The cover of big size suction diffuser is very heavy. It needs more manpower to do assembly. Also must be careful when dismantling to avoid human injury.

4. Get out the screen. Notice that the Start-up screen and the mesh screen are riveted together with aluminum rivets.
5. Cut out the rivets with the pincer and remove the Start-up screen from the mesh screen.



CAUTION: The Start-up screen is made by 20 meshes net and the material is stainless steel. Watch out your hand when dismantling.

6. Clean the foreign material and mud inside the suction diffuser.
7. Reinstall the screen (without Start-up screen).



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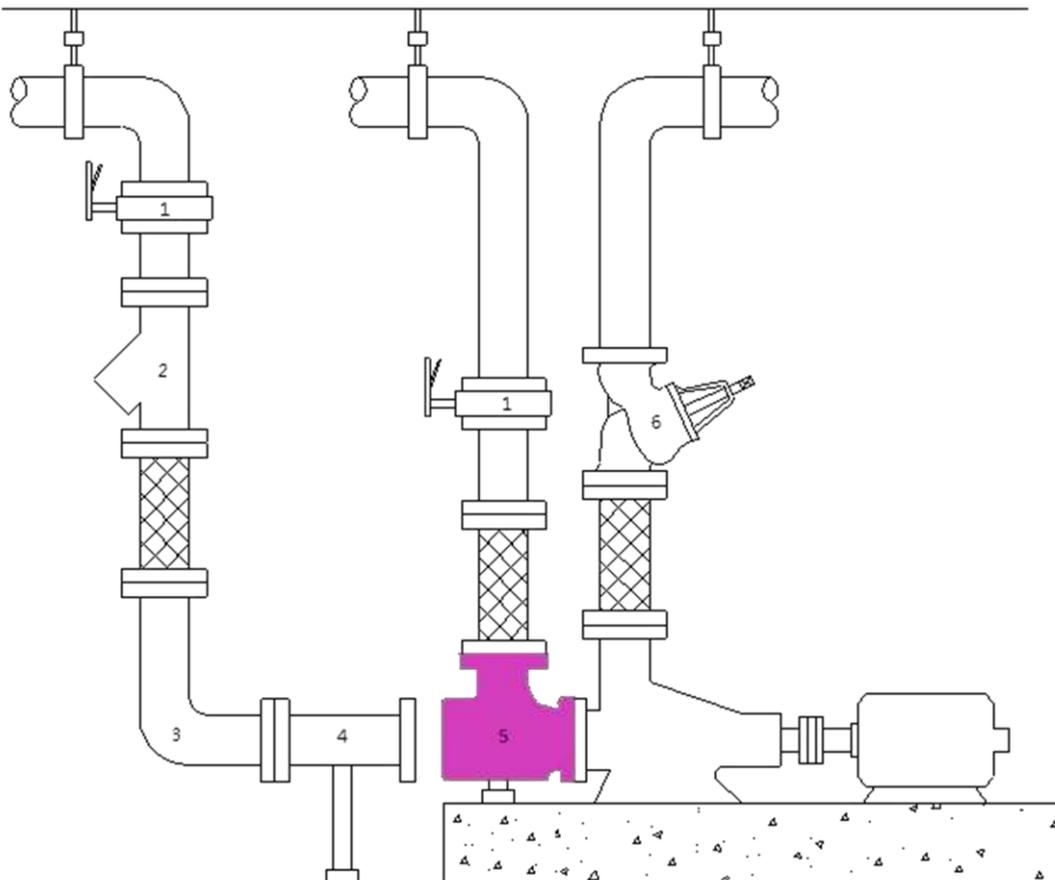
CAUTION: To avoid damaging the screen during assembly, suggest putting the screen on the cover first, then assemble the cover with the screen at the same time.

8. Fasten the bolts on the cover. For the big size suction diffusers, remember to fasten the long connecting bolt between the cover and the body of suction diffuser.



CAUTION: The bolts should be fasten by the cross way. Otherwise, the cover might not be fastened and it might cause the leakage.

9. Open the gate valves before the suction diffuser and after the pump, then restart the system. Check the suction diffuser's cover again to prevent leakage. If leakage occurs, check the cover's O-ring again or replace the O-ring.



General Installation Layout Drawing