Danfoss HFI 070 High Pressure Float Valve HFI Instruction Manual

Contents

Danfoss HFI 070 High Pressure Float Valve HFI

Product Specifications

- **Refrigerants:** Applicable to all common non-flammable refrigerants, including R717 and noncorrosive gases/liquids dependent on sealing material compatibility.
- **Float Ball Design**: Designed for R717 with a density of 500 through to 700 kg/m3.
- **Pressure Range:** Max. working pressure of 25 bar g(363 psi g).
- **Installation** Position: Mount horizontally with the outlet connection position. A vertical downward.
- **Color:** Painted with red oxide primer in the factory.

Product Usage Instructions

Installation

Mount the float valve horizontally with the outlet connection position. A (fig. 1) vertically downwards. Ensure the flow direction is from the flanged inlet connection as indicated by the arrows (Fig. 1).

Welding

Before welding, remove the float assembly by dismounting the end cover and unscrewing the screw pos. C (fig. 1). Weld the outlet connection position. A (fig. 1) into the plant using compatible materials and welding methods. Clean the valve internally after welding.

Assembly

Remove welding debris and dirt from pipes and valve bodies before assembly. Replace float assembly in the outlet branch and tighten the screw pos. C (fig. 3). Ensure the float ball is positioned in the middle of the housing without any restriction.

Tightening

Use a torque wrench to tighten the screws pos. F (fig. 3) with a torque of 183 Nm (135 lb-ft).

Installation

Refrigerants

- Applicable to all common non-flammable refrigerants, including R717 and non-corrosive gases/liquids,

dependent on sealing material compatibility.

- As standard the float ball is designed for R717 with a density of 500 through to 700 kg/m3. For refrigerants, which have a density outside this range please contact Danfoss.
- Flammable hydrocarbons are not recommended. The valve is only recommended for use in closed circuits. For further information, please contact Danfoss.

Temperature range
HFI: –50/+150°C (–58/+302°F)

Pressure range
The float valves are designed for a maximum. working pressure of 25 bar g(363 psi g). Strength test without floatball.

Installation

- Mount the float valve horizontally with the outlet connection position. A (fig. 1) vertically downwards.
- The flow direction has to be from the flanged inlet connection as indicated with the arrows (Fig. 1).
- The valve is designed to withstand a high internal pressure. However, the piping system should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion. It must be ensured that the valve is protected from pressure transients like “liquid hammer” in the system.

Welding

- Remove the float assembly before welding as follows:
  - Dismount the end cover and remove the transport packing.
  - Unscrew the screw pos. C (fig. 1) and lift the float assembly from the outlet.
  - Weld the outlet connection position. A (Fig. 1) into the plant as shown in Fig. 2.
- Only materials and welding methods, compatible with the valve housing material, must be welded to the valve housing. The valve should be cleaned internally to remove welding debris on completion of welding and before the valve is reassembled.
- Avoid welding debris and dirt in the housing.
  NB! When demand is heavy at low temperature operation, we recommend to check the velocity in the outlet branch. If necessary the diameter of the pipe which is welded on to the outlet branch pos. A g. 1) can be increased.
- The valve housing must be free from stresses (external loads) after installation.

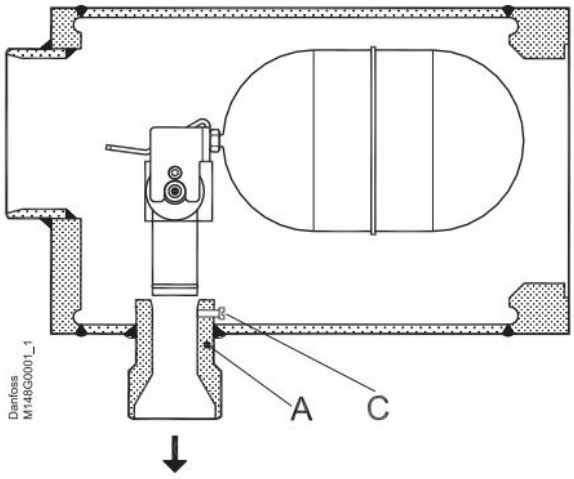


Fig. 1

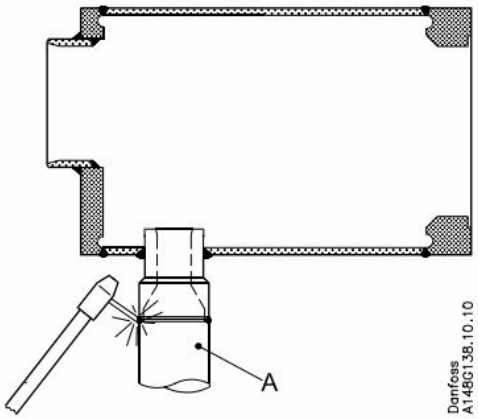


Fig. 2

Assembly

- Remove welding debris and any dirt from pipes and the valve body before assembly. Replace float assembly in the outlet branch and tighten the screw pos. C (Fig. 3). Check that the float assembly has gone all the way down the outlet connection and that the float ball is positioned in the middle of the housing, so it can move without any restriction.
- The end cover with purge valve and pipe is remounted in the housing.
  NB! The ventilating pipe pos. E (Fig. 3) has to be placed vertically upwards.
- In case an insert with a slide (version before 2007) replaced by a present version, an extra threaded hole needs to be made in the outlet connection A to fix the screw g.1)

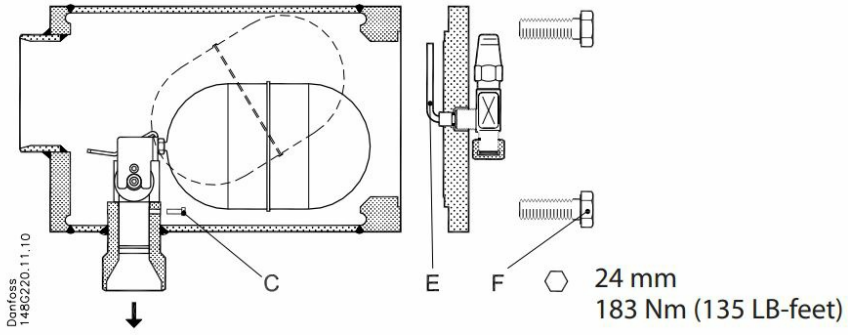


Fig. 3

Tightening
Use a torque wrench to tighten the screws pos. F (fig. 3). Tighten with torque of 183 Nm (135 lb-ft).

Colours and identification

- The HFI valves are painted with a red oxide primer in the factory. The external surface of the valve housing must be prevented against corrosion with a suitable protective coating after installation and assembly.
- Protection of the ID plate when repainting the valve is recommended.

Maintenance

- Purging of incondensable gases. Incondensable gases might accumulate in the upper part of the float valve. Purge these gases using the purge valve position. G (fig. 4).
- Replacement of complete float assembly (adjusted from factory), follow the steps below:
    1. NB! Before opening up the float valve, the system must be evacuated and the pressure equalized to atmospheric pressure by using the purge valve pos. G (fig. 4)
    2. Remove the end cover
    3. Remove float valve assembly by untightening the screw pos. C (fig. 5) and lifting the complete float valve assembly.
    4. Place the new float assembly in the outlet connection position. A and tighten the screw pos. C (Fig. 5)
    5. The end cover with purge valve and pipe is remounted on the housing.
       NB! Ventilating pipe pos. E (fig. 5) has to be placed vertically upwards.
    6. Use a torque wrench to tighten the screws pos. F (fig. 5). Tighten with torque of 183 Nm (135 lb-ft).
       NB! Check that the purge valve is closed before you pressurize the float valve.
- Use only original Danfoss parts for replacement. Materials of new parts are certified for the relevant refrigerant.
- In cases of doubt, please contact Danfoss. Danfoss accepts no responsibility for errors and omissions. Danfoss Industrial Refrigeration reserves the right to make changes to products and specifications without prior notice.

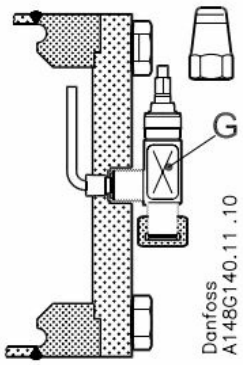


Fig. 4

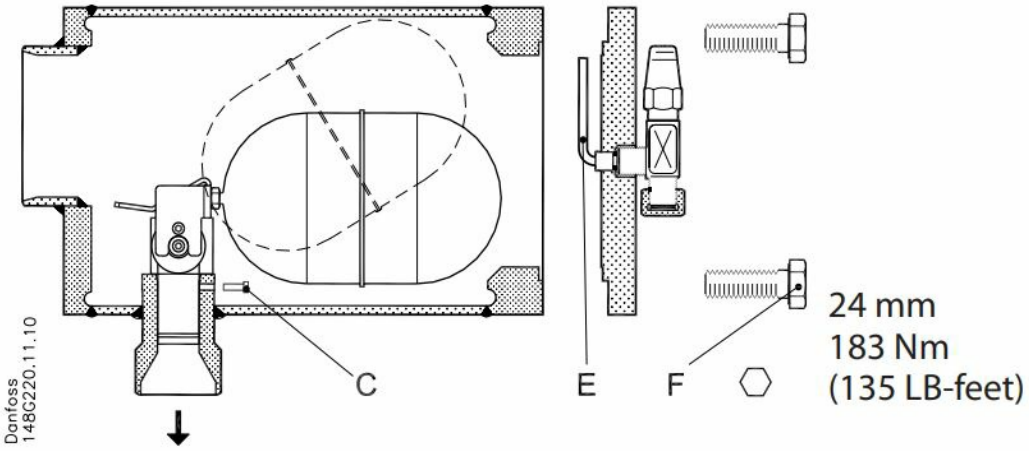


Fig. 5

Overview

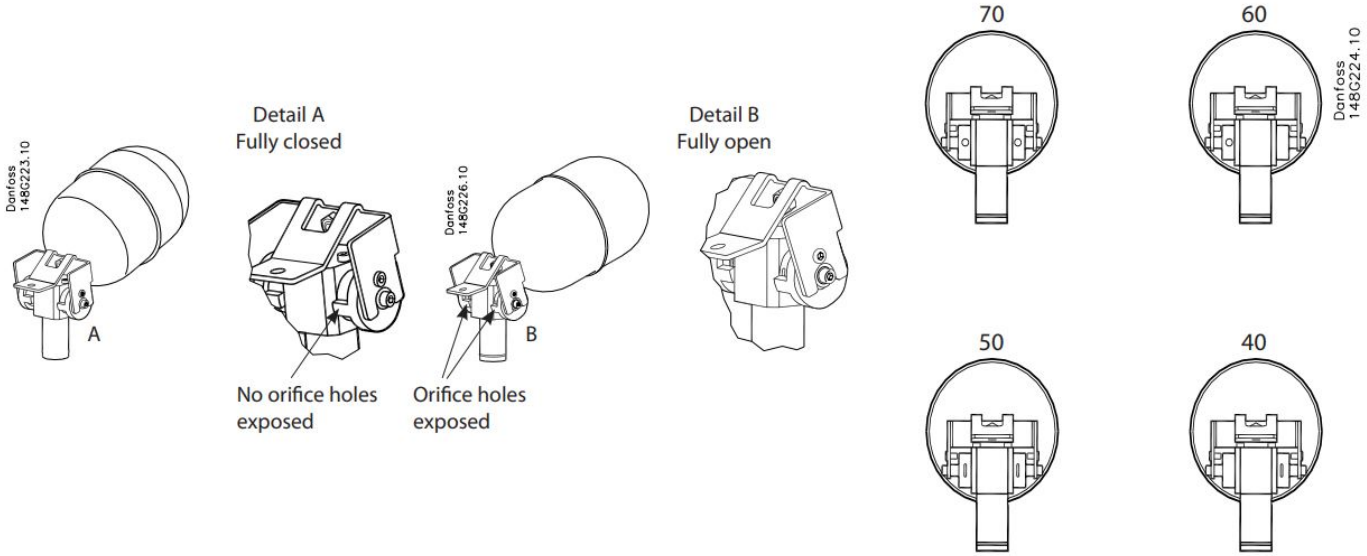
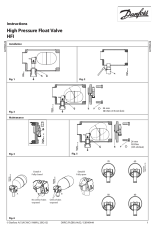


Fig. 6

FAQ

- **What refrigerants is the float valve compatible with?**
  The float valve is applicable to all common non-flammable refrigerants, including R717 and non-corrosive gases/liquids dependent on sealing material compatibility.
- **What is the maximum working pressure of the float valve?**
  The float valve is designed for a maximum working pressure of 25 bar g(363 psi g).
- **How should I position the float valve during installation?**
  Mount the float valve horizontally with the outlet connection position. A vertically downward direction, and ensure the flow direction is from the flanged inlet connection as indicated by the arrows.

Documents / Resources

	**Danfoss HFI 070 High Pressure Float Valve HFI** [pdf] Instruction Manual AN040686416738en-000401, HFI 040-070, HFI 070 High Pressure Float Valve HFI, High Pressure Float Valve HFI, Pressure Float Valve HFI, Float Valve HFI, Valve HFI

References

- **User Manual**