Danfoss POV 600 Compressor Overflow Valve Installation Guide

Contents

Danfoss POV 600 Compressor Overflow Valve

Specifications

- **Model:** Compressor overflow valve POV
- **Manufacturer:** Danfoss
- **Pressure** Range: Up to 40 barg (580 psig)
- **Refrigerants** Applicable: HCFC, HFC, R717 (Ammonia), R744 (CO2)

Product Usage Instructions

Installation

1. The POV valve is used in conjunction with the BSV back-pressure independent safety relief valve to protect compressors against excessive pressure.
2. Install the valve with the spring housing upwards to avoid thermal and dynamic stress.
3. Ensure the valve is protected from pressure transients like liquid hammer in the system.
4. The valve should be installed with the flow towards the valve cone as indicated by the arrow on the valve.

Welding

1. Remove the top before welding to prevent damage to O-rings and teflon gaskets.
2. Use materials and welding methods compatible with the valve housing material.
3. Clean internally to remove welding debris before reassembly.

4. Protect the valve from dirt and debris during welding.

Assembly

1. Remove welding debris and dirt from pipes and valve bodies before assembly.
2. Tighten the top with a torque wrench to the specified values.
3. Ensure grease on bolts is intact before reassembling.

Colours and Identification

- Precise identification of the valve is made via the ID label on the top and stamping on the valve body.
- Prevent external surface corrosion with a suitable protective coating after installation.

Installation

- **Note!** Valve-type POV is categorised as a compressor overflow accessory (not as a safety accessory).
- Hence, a safety valve (e.g. SFV) has to be installed to protect the system against excessive pressure.

$Refrigerants

- Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO_2).
- Flammable hydrocarbons are not recommended. The valve is only recommended for use in closed circuits. For further information, please contact Danfoss.

Temperature range

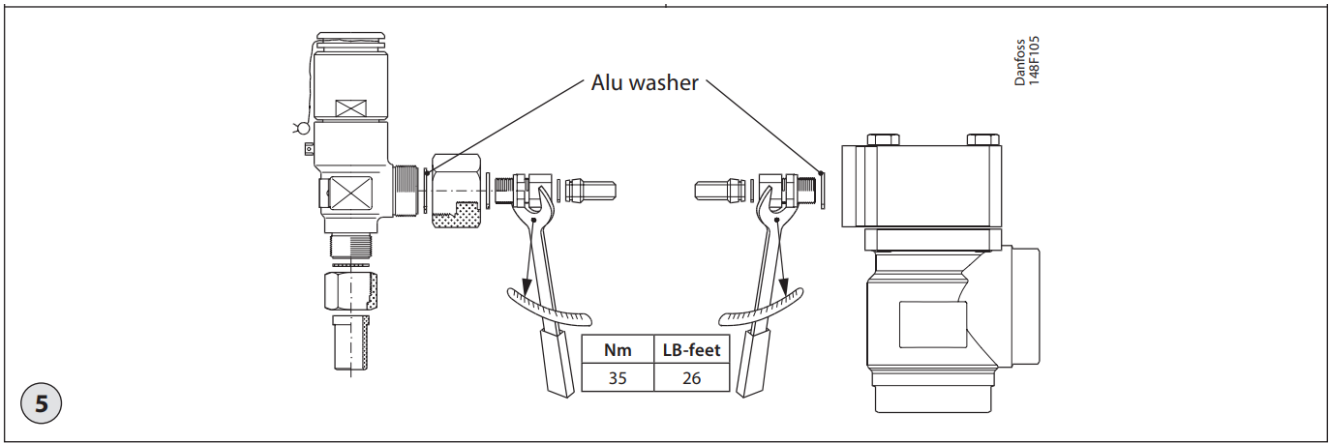
- POV: -50/+150 °C (-58/+302 °F)

Pressure range

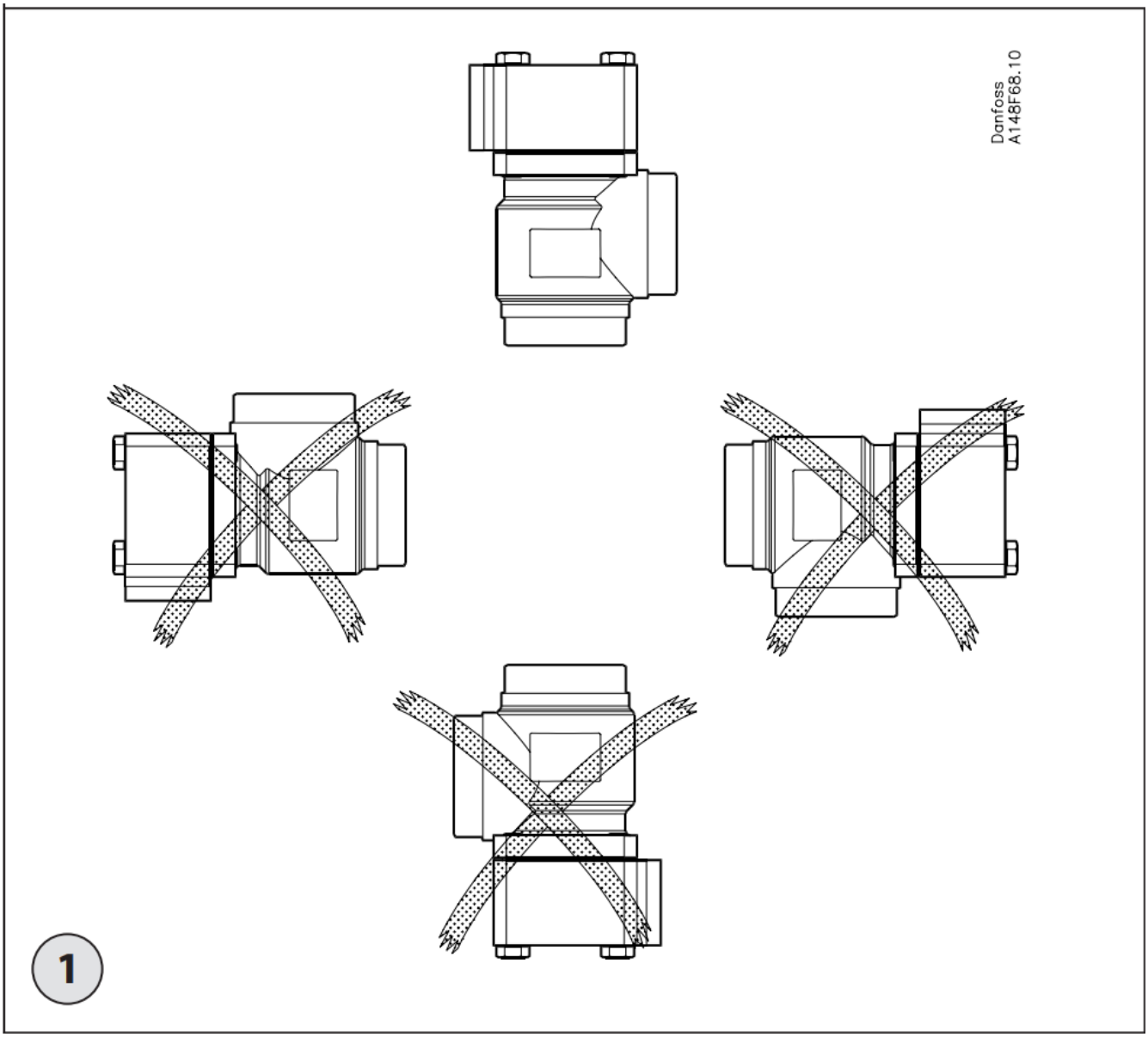
- The valves are designed for a maximum. working pressure of 40 barg (580 psig).

Installation

- The POV valve is used in conjunction with the BSV back-pressure independent safety relief valve and is specifically designed for protecting compressors against excessive pressure (fig. 5).



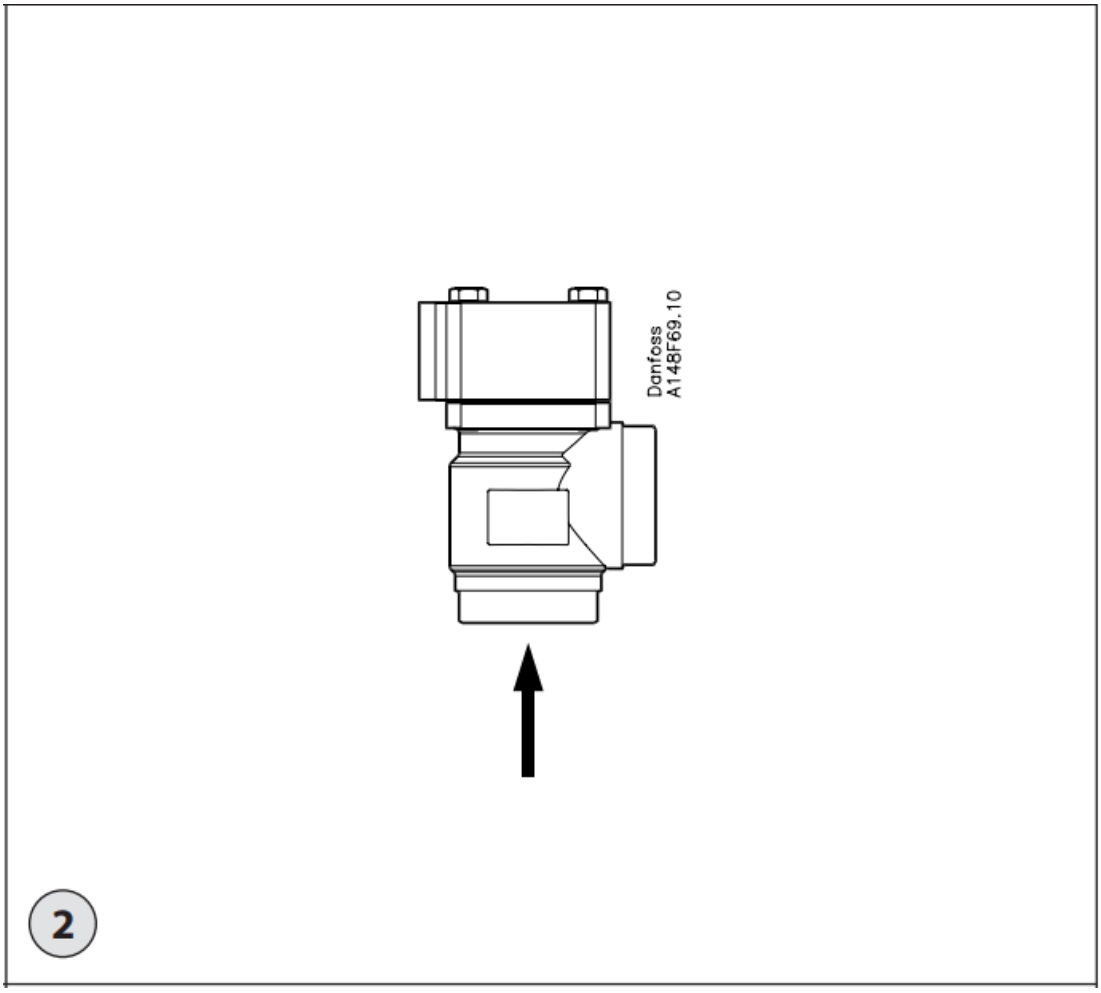
- See the technical leaflet for further installation instructions.
- The valve should be installed with the spring housing upwards (fig. 1).



- By mounting the valve, it is important to avoid the influence of thermal and dynamic stress (vibrations).
- 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.

Recommended flow direction

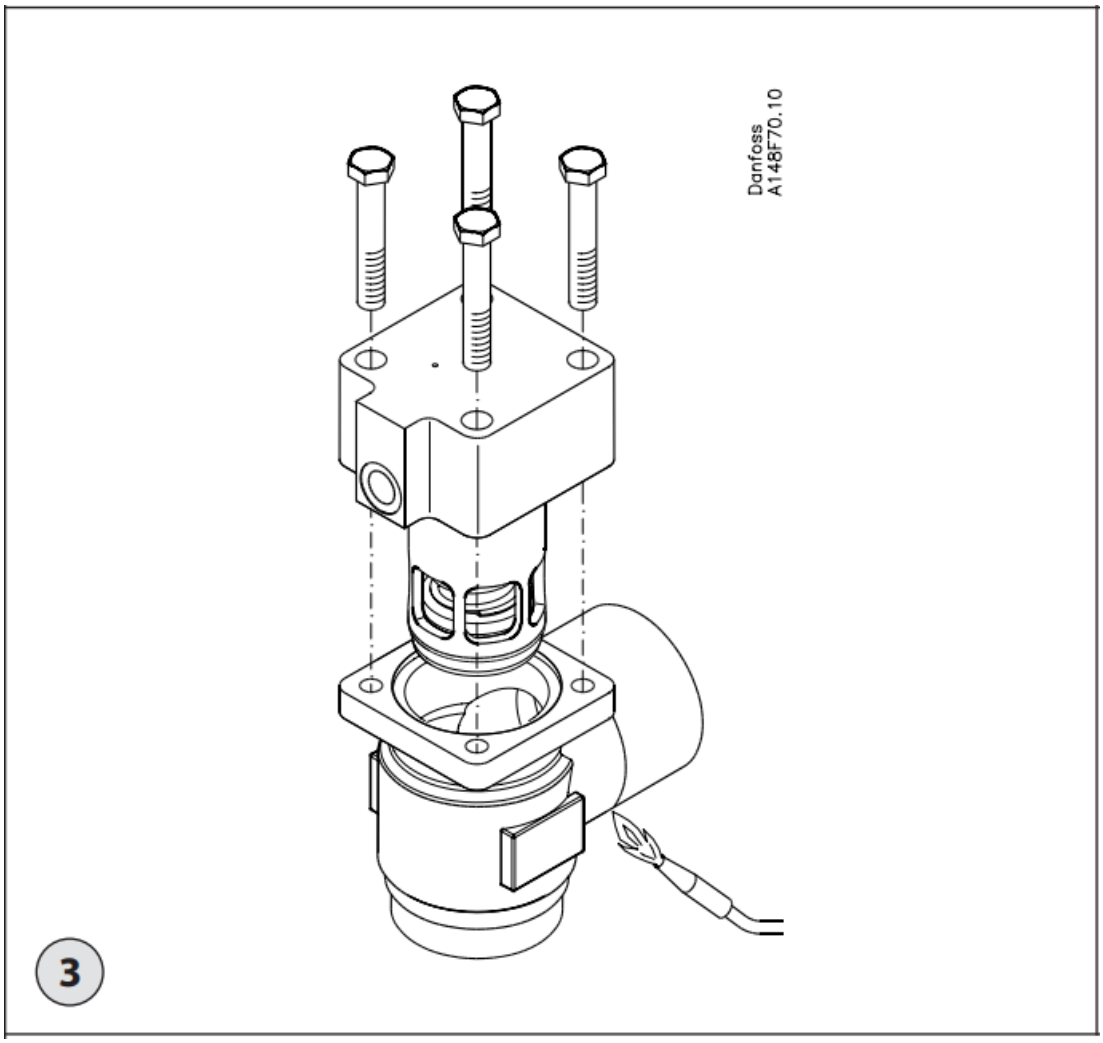
- The valve should be installed with the flow towards the valve cone as indicated by the arrow on the figure. 2.



- Flow in the opposite direction is not acceptable.

Welding

- The top should be removed before welding (fig. 3) to prevent damage to the O-rings between the valve body and top, as well as the teflon gasket in the valve seat.



- Do not use high-speed tools for dismantling and reassembling.
- Be sure that the grease on bolts is intact before reassembling.
- Only materials and welding methods compatible with the valve housing material must be applied.
- 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 threads of the housing and the top.

Removing the top can be omitted provided that:

- The temperature in the area between the valve body and top, as well as in the area between the seat and the teflon cone during welding, does not exceed +150 °C/+302 °F.
- This temperature depends on the welding method as well as on any cooling of the valve body during the welding itself (cooling can be ensured by, for example, wrapping a wet cloth around the valve body).
- Make sure that no dirt, welding debris, etc, gets into the valve during the welding procedure.
- Be careful not to damage the teflon cone ring.
- The valve housing must be free from stresses (external loads) after installation.

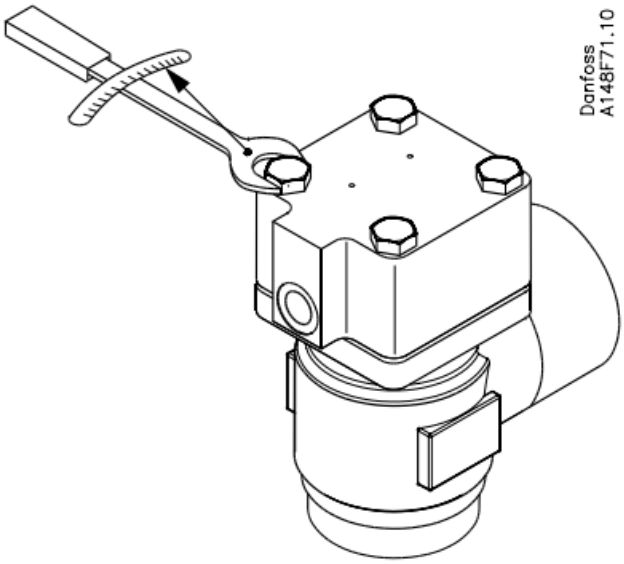
Assembly

- Remove welding debris and any dirt from pipes and the valve body before assembly.

Tightening

- Tighten the top with a torque wrench to the values indicated in the table **(fig. 4).**

	Nm	LB-feet
POV 600	44	32
POV 1050	75	53
POV 2150	44	32



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- Do not use high-speed tools for dismantling and reassembling. Be sure that the grease on bolts is intact before reassembling.

Colours and identification

- Precise identification of the valve is made via the ID label on the top, as well as by the stamping on the valve body.
- The external surface of the valve housing must be protected against corrosion with a suitable protective coating after installation and assembly.
- Protection of the ID label when painting the valve is recommended.
- In cases of doubt, please contact Danfoss.
- Danfoss accepts no responsibility for errors and omissions. Danfoss Industrial
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Customer Service

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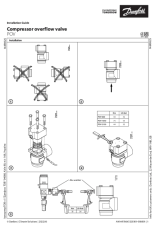
FAQ

- **Q: What refrigerants can be used with the POV valve?**
  - **A:** The valve is suitable for HCFC, HFC, R717 (Ammonia), and R744 (CO2). Flammable hydrocarbons are not recommended.
- **Q: What is the maximum working pressure for the valves?**
  - **A:** The valves are designed for a maximum working pressure of 40 barg (580 psig).

Documents / Resources

	Danfoss POV 600 Compressor Overflow Valve [pdf] Installation Guide POV 600, POV 1050, POV 2150, POV 600 Compressor Overflow Valve, POV 600, Compressor Overflow Valve, Overflow Valve

References

- User Manual