Danfoss CHV-140B 15-100 Check Valve Installation Guide

Contents

Danfoss CHV-140B 15-100 Check Valve

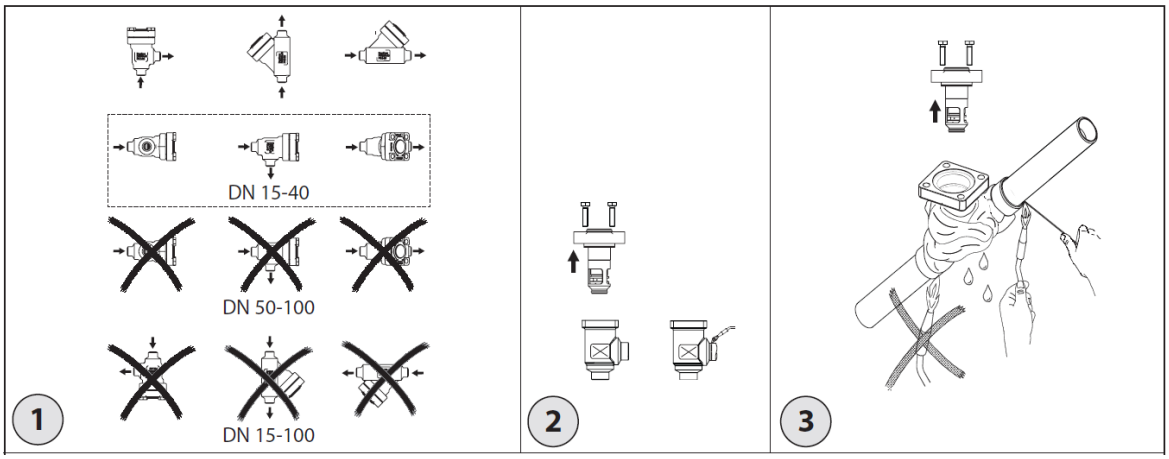
Installation Instructions

Refrigerants

Applicable to R744(CO2). The valve is only recommended for use in closed circuits. For further information please contact Danfoss.

- Temperature range -40/+150 °C (-40/+302 °F)
- Pressure range 140 bar (2030 psi)

The valve must be installed with the top part vertically upwards, DN 15-40 are acceptable for horizontal installation only if the vertical installation does not match the piping (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.



Flow direction

Direct the flow towards the cone as indicated by an arrow on the valve housing (fig. 1).

Welding

The complete top part should be removed before welding (fig. 2) to prevent damage to the O-ring in the insert and the gasket between the valve body and top part as well as the teflon in the valve cone. Be careful not to damage the teflon cone ring and make sure the complete top part is protected from dirt and water while removed. Only materials and welding methods, compatible with the valve housing material, must be applied to the valve housing. The valve housing must be free from stresses(external loads) after installation. The valve should be cleaned internally to remove welding debris on completion of welding and before the valve is reassembled.

Brazing
When brazing the housings with SD(DIN) and SA(ASME) connections (fig. 3), follow the steps as follows,

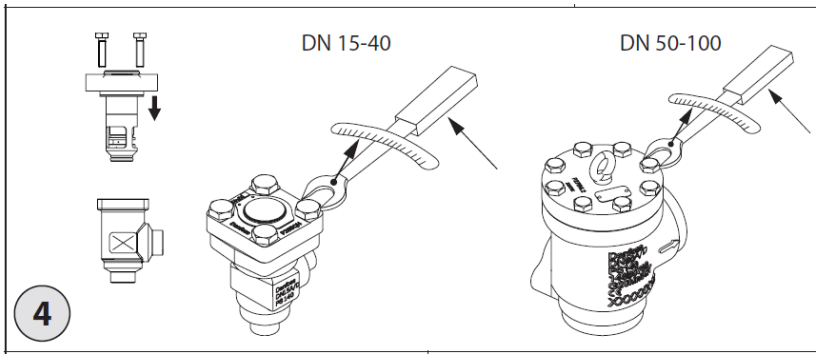
1. Remove the complete top part
2. Clean connections with cleaning agent
3. Wrap around wet cloth

Assembly

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

Tightening
Tighten the top part with a torque wrench, to the values indicated in the table (fig. 4). Please note that the table (fig. 4) containing maximum torque must be adhered to and never exceeded.

Important for CHV-140B 50 – 100 valves: For optimal flow the insert must be installed as indicated in (fig. 7). Otherwise kv value will be below indicated in the technical brochure.



Valve size	Bolt*	Nm	LB-feet
DN 15-20	M10x30	44 ± 5	32 ± 3.7
DN 25-40	M12x40	84 ± 5	62 ± 3.7
DN 50-65	M14x45	133 ± 5	98 ± 3.7
DN 80	M12x40	84 ± 5	62 ± 3.7
DN 100	M14x45	133 ± 5	98 ± 3.7

*Always use 42CrMo4+QT DIN 933, Grade8.8

Colours and identification
The CHV-140B valves are painted with a green primer(except housing with SA/SD connections) in the factory. Precise identification of the valve is made via the ID ring/name plate at the top of the top part as well as by the stamping on the valve body. The external surface of the valve must be protected against corrosion with a suitable protective coating after installation and assembly. Protection of the ID-ring/name plate when repainting the valve is recommended.

Maintenance

Dismantling the valve (fig. 5a/5b)
Do not remove the complete top part while the valve is still under pressure.

DN 15-40 (fig. 5a)

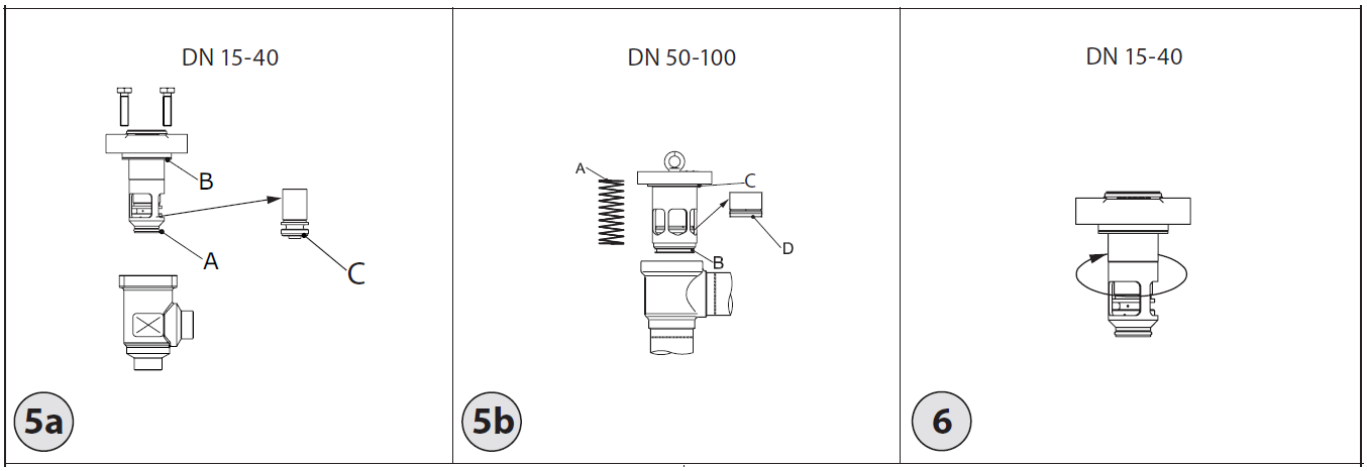
- Check that the O-ring (pos. A) and gasket (pos. B) have not been damaged.
- The EPDM O-ring (pos. A) can be replaced using Danfoss spare parts. This may be needed every second year,

when operating constantly close to the +150 °C temperature limit.

- If the teflon cone ring (pos.C) has been damaged, the whole cone assembly (included in the repair kit) must be replaced.

DN 50-100 (fig. 5b)

- Check that the spring (pos. A) is intact.
- Check that the O-ring (pos. B) and gasket (pos. C) have not been damaged.
- The EPDM O-ring (pos. B) can be replaced using Danfoss spare parts. This may be needed every second year, when operating constantly close to the +150 °C temperature limit.
- If the teflon cone ring (pos. D) has been damaged, the whole cone assembly (included in the repair kit) must be replaced.



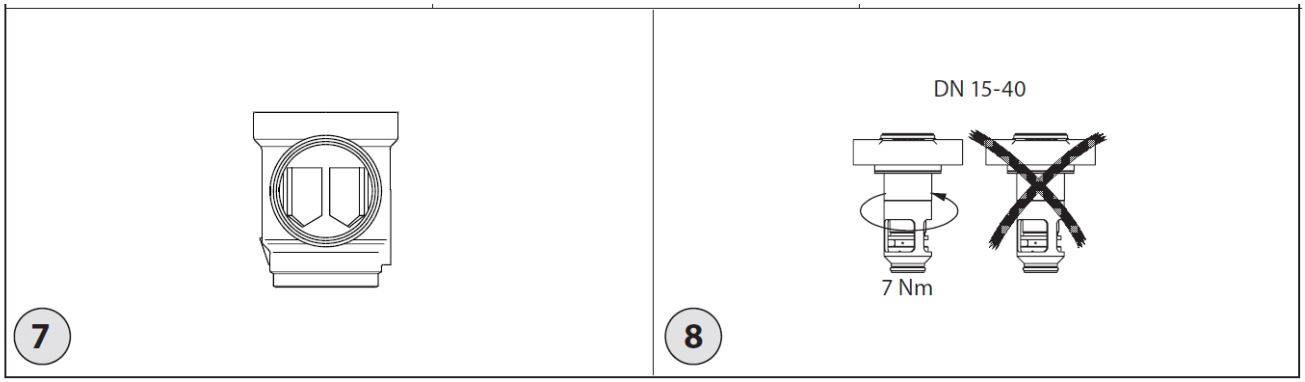
Replacement of the cone (g. 6)

DN 15-40
Unscrew the lower part of the insert and pull the cone assembly out. Ensure that the spring is not lost in the process. Remove dirt, if any. Mount new cone assembly and the spring. Screw in the lower part of the insert and tighten it (fig.8).

Assembly
Remove dirt, if any, from pipes and housing before assembly.

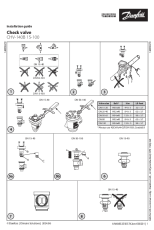
Note:
For CHV-140B sizes DN 15-40 it is important to ensure that the lower and upper part of the insert is tightly screwed together (fig. 8) and that this screw connection is kept tight during repositioning of the cone in the housing.

Tightening
Tighten the top part with a torque wrench,to the values indicated in the table (fig. 4). Use only original Danfoss parts for replacement. Materials of new parts are certified for the relevant refrigerant. In cases of doubt, please contact your local Danfoss sales office.



Danfoss A/S
Climate Solutions
danfoss.com
+45 7488 2222

Documents / Resources

	Danfoss CHV-140B 15-100 Check Valve [pdf] Installation Guide CHV-140B 15-100, 148R9679, CHV-140B 15-100 Check Valve, CHV-140B 15-100, Check Valve, Valve

References

- User Manual