

Installation Guide

Motor - and Servo operated valve

ICS-(H)A4A, ICS-(H)S4A, ICM-HMMV, ICM-HMMR sizes 25-65 (3/4-2 1/2) and ICLX-S9A sizes 32-65 (1 1/4-2 1/2)

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1

2

3

4

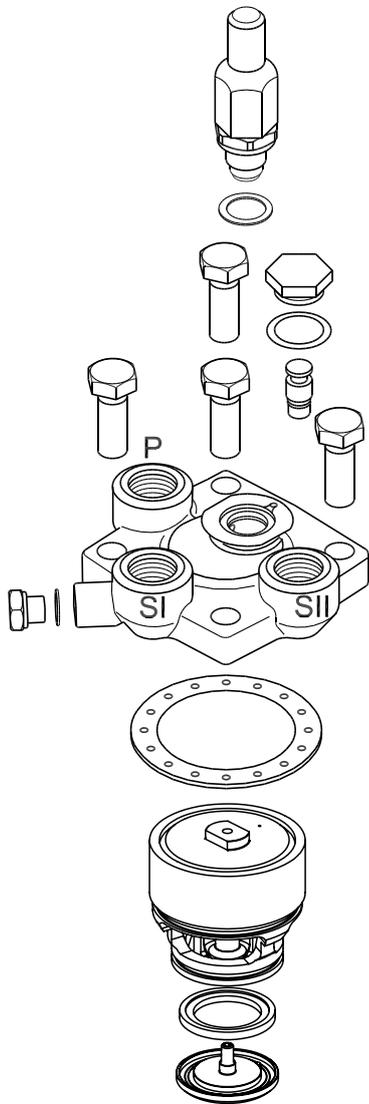
5a

5b

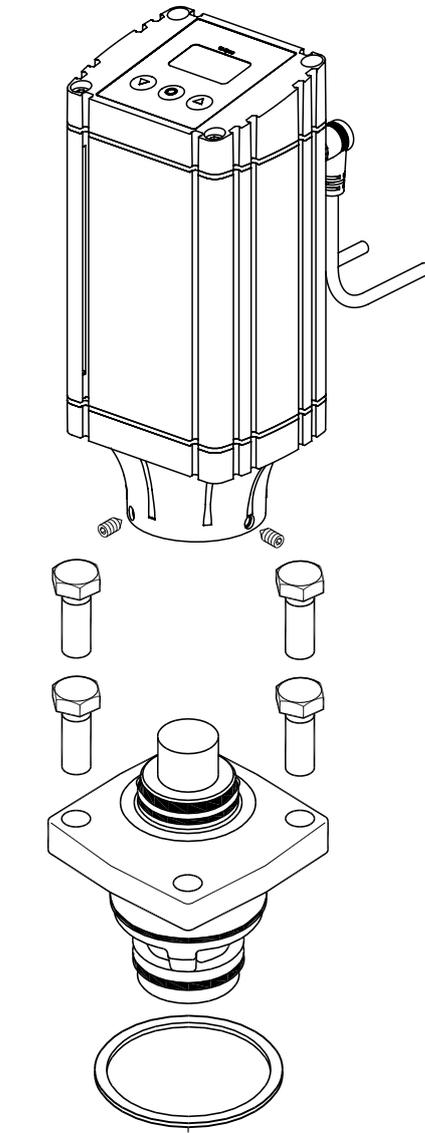
		ICM		ICS		ICLX			
		Nm	ft lb	Nm	ft lb	Nm	ft lb		
A	Bonnet	Valve body size							
		25		100	74	100	74		
		32		120	88	120	88	120	88
		40		120	88	120	88	120	88
		50		140	103	140	103	140	103
65		150	110	150	110	150	110		
B	External port	25							
		32							
		40		25	18	50	37		
		50							
C	Pilot	25							
		32							
		40		50	37	50	37		
		50							
		65							

6

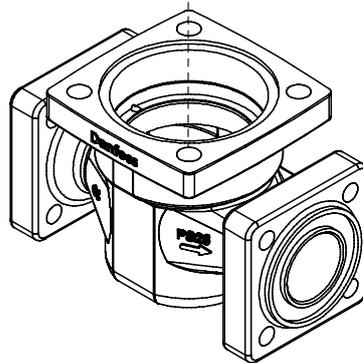
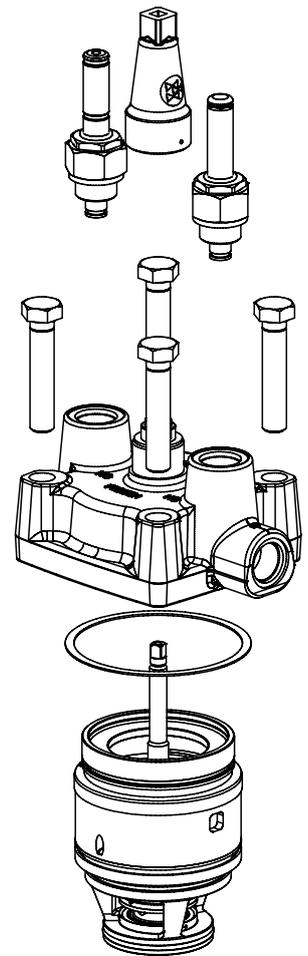
ICS



ICM



ICLX



ENGLISH

Installation

Refrigerants

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

Temperature range

-60/+120°C (-76/+248°F). Please note explicit limitations in function modules installation guides

Pressure range

The valves are designed for a max. working pressure of 28 bar g (406 psi g).

Important:

This pressure limitation is valid for all covered valves in this guide despite the function modules installation guides statement.

Applications

All covered valves can be used in suction, liquid, hotgas and liquid/vapor lines. The valves regulates the flow of the medium, modulating or on/off, depending on the actual configuration.

Regulating range

Please refer to the regulating range of the enclosed specific function module installation guide

Design (fig. 7)

For more details on ordered configuration please refer to the enclosed specific function module installation guide

Installation

The valve must be installed with the spindle in vertically upwards position (fig. 1). The valve must be installed with the arrow in the direction of the flow and the top cover upwards. The top cover can be rotated 4 X 90° in relation to the valve body (fig. 2). Specific requirements for the individual configurations must be followed. See enclosed specific function module installation guide.

Mounting of valve flanges

- Make sure that piping into which a valve/flange is installed is properly supported and aligned square and plumb to the joining sections.
- Ensure that the finalized valve assembly is free of any stresses from external loads.
- Make certain that the mating surfaces of gasketed joints are free of rust and are in good condition.
- Use only new gaskets manufactured by Danfoss.
- Make sure that the bolts are adequately tightened in an alternating pattern.
- Ensure that flanges / valves are properly pressure tested, leak tested, evacuated before charging with refrigerant in accordance with ANSI /IIAR 5, EN378-2 or ISO 5149-2.

The enclosed valves must not be mounted in systems where the outlet side of the valve is open to atmosphere. The outlet side of the valve must always be connected to the system or properly capped off, for example with a welded-on end plate.

Silver label

Inside the valve box you'll find a small silver label with pressure information. Please place this label on the top cover.

Tightening (fig. 6)

Tighten the top cover, pilot and/or external connection with a torque wrench, to the values indicated in the table fig 6.

Colours and identification

The valves are Zinc-Chromated from factory. If further corrosion protection is required, the valves can be painted. Precise identification of the valve is made via the ID plate on the top cover. Protection of the ID plate when painting the valve is recommended.

Maintenance

Service

The involved valves are easy to dismantle. Do not open the valve while the valve is still under pressure.

Pressure relief can be done by carefully opening the manual operating spindle (not ICM versions). Small grooves along the thread will release refrigerant into open air. This operation must only be done after providing the correct countermeasures under local legislation. Dismantling of the individual function modules must be done according to fig. 3 and the more detailed descriptions in the function module installation guides.

Assembly

Remove any dirt from the body before the valve is assembled. Check that all channels in the valve are not blocked by particles or similar. If possible, apply some refrigeration oil to ease the insertion and to protect the o-rings.

Tightening (fig. 6)

Tighten the top cover and externals with a torque wrench, to the values indicated in the table.

ICM: Manual opening/closing of the motorized ICM valve is shown in fig. 4

ICS/ICLX:

Always pay attention to the spindle during operation of the manual opener (see fig 5a)

1. Make sure that the C-clip (C) is positioned on the spindle (B) and is intact. A new C-clip is available in the inspection kit for the valve.
2. Pay attention to the C-clip reaching the top nut of the packing gland when turning the manual stem clockwise.

Never use excessive torque and stop turning when the C-clip gets in contact with the top nut.

Manual opening/closing of the mechanical valves ICS/ICLX is shown in fig 5b.

Returning to normal operating mode:
ICLX: Turn the spindle clockwise until the C-clip gets in contact with the top nut.
ICS: Turn the spindle counterclockwise to the top point and continue turning until a torque of 8 Nm (5.9 lb/ft) is reached.

Remount the cap and tighten it clockwise to 8 Nm (5.9 lb/ft) torque.

Use only original Danfoss parts, including O-rings and gaskets for replacement. Materials of new parts are certified for the relevant refrigerant. In cases of doubt, please contact Danfoss.

Drawings are only for illustration, not for dimensioning or construction.

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