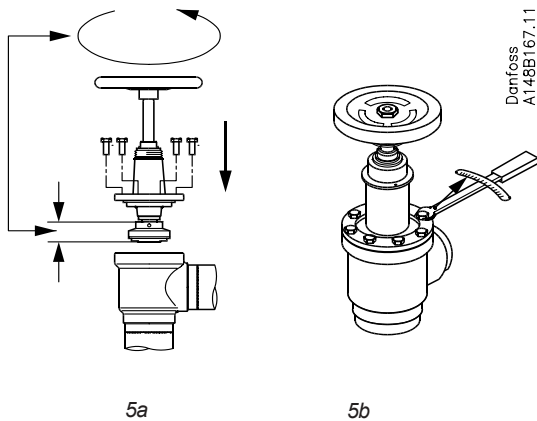
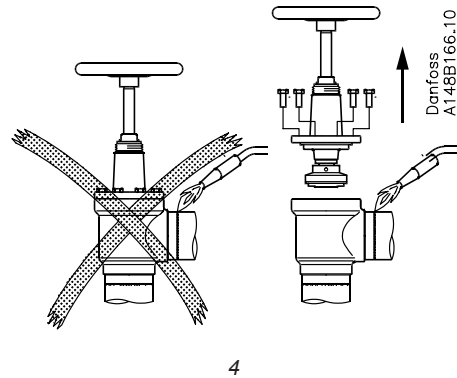
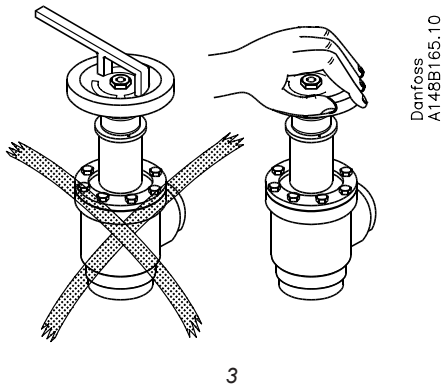
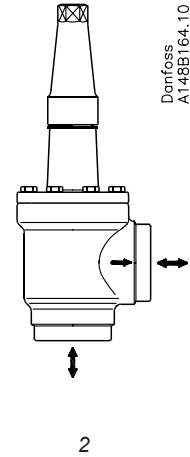
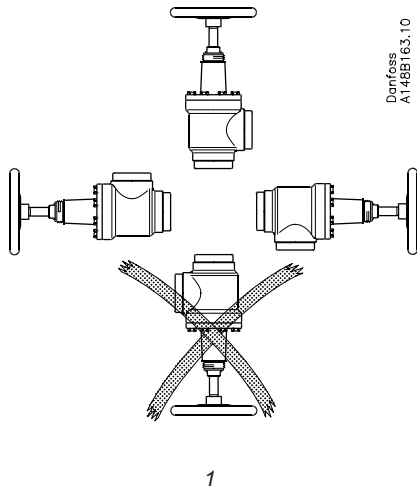
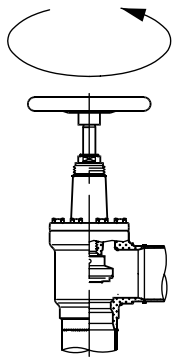


Installation

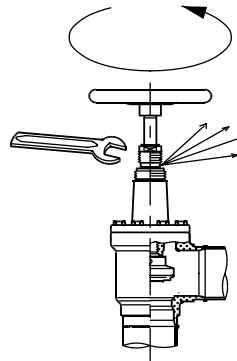


	Nm	LB-feet
DN 15 - 20	22	16
DN 25 - 50	44	32
DN 65	74	53
DN 80	44	32
DN 100	74	53
DN 125 - 150	183	135
DN 200	370	272



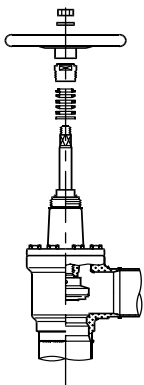
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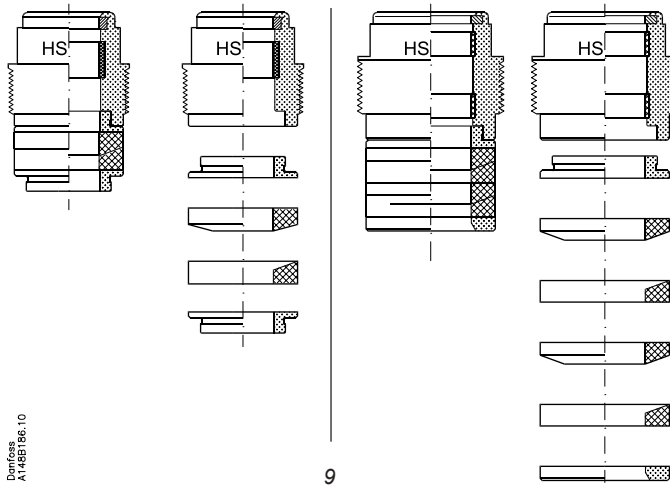


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8

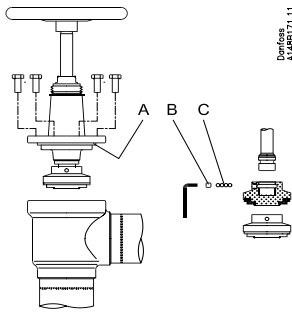
DN 15 - 40

DN 50 - 200



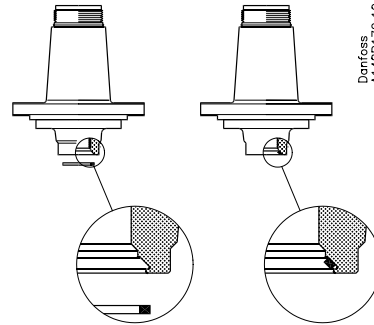
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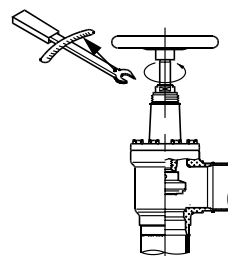
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	Nm	LB-feet
DN 15 - 20	40	30
DN 25 - 40	60	45
DN 50 - 65	60	45
DN 80 - 100	80	60
DN 125 - 150	80	60
DN 200	120	90



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Introduction

The SVA-X1 valve is designed for use in industrial refrigeration systems. The following installation and service instructions should be carefully read and fully understood before using the product or servicing it. Only trained and qualified personnel should be responsible for installation, operation, and service.

Installation

Refrigerants

Applicable to all common non-flammable refrigerants, including R717 and non-corrosive gases/liquids dependent on sealing material compatibility. Flammable hydrocarbons are not recommended. The valve is only recommended for use in closed circuits. For further information please contact Danfoss.

Temperature range

-60/+150°C (-76/+302°F)

Pressure range

The valves are designed for a maximum working pressure of 40 bar g (580 psi g) throughout the temperature range.

Installation

The valve must be installed with the spindle upwards or in a horizontal position (fig. 1).

Although the valve is designed to resist high internal pressure, piping should be installed in such a way as to avoid liquid confinement and the resulting risk of hydraulic pressure.

Stop valves must not be installed in systems where the valve outlet is open to the atmosphere. The valve outlet must always be connected to the system unless it is securely blanked off, e.g. with a welded-on end plate.

Recommended direction of flow

In order to achieve optimum k_v and C_v values, the direction of flow should be towards the valve cone, as shown by the arrow on the valve body (fig. 2). Flow in the opposite direction is also acceptable.

Operation

Avoid overloading the spindle by the inappropriate use of tools (fig. 3).

Welding

Before welding in (fig. 4), the top section with the valve insert must be removed in order to ensure that the Teflon gasket in the valve seat and the sealing material in the spindle seal and between the valve body and the top section are not damaged by heat during welding. After welding, the inside of the valve should be cleaned before refitting the top section.

Dismantling can be omitted if the temperature in the area between the valve body and the top section does not exceed +150°C / +302°F during welding. This temperature depends on the

welding method and on any cooling of the valve body during welding (cooling can for example be achieved by wrapping a damp cloth around the valve body). In order to protect the spindle and valve cone, the valve should be fully open during welding in, and dirt, weld spatter or other matter must be prevented from entering the valve during welding.

Assembly

Weld spatter and dirt must be removed from the piping and the valve body before the valve is assembled.

During assembly, check:

- that the seal between valve body and top section (pos. A) is undamaged.
- that the valve spindle is unscratched and has not been damaged by impact.
- that the Teflon gasket on the valve cone is undamaged.

Ensure also that the valve cone is screwed back to the top section before refitting the top section in the body (fig. 5a).

Tightening

Tighten the top section using a torque wrench in accordance with the table (fig. 5b).

Colour and identification

SVA-X1 valves are supplied from the factory painted with a primer. The valve can be identified precisely by the ID ring uppermost on the top section and by markings embossed on the valve body. It is recommended that the ID ring should be protected during painting in order that the information it contains remains legible.

Maintenance

Dismantling the valve

The top section must not be removed while the valve is subject to pressure.

Replacing the spindle seal

During service and maintenance the complete spindle seal can be replaced. Seals can be supplied as spare parts. Normally, the valve should not be subject to pressure when the seal is removed. However, the seal can be removed while there is pressure in the valve if the following precautions are taken:

Reverse sealing (fig. 6)

The valve is reverse-sealed by turning the spindle anticlockwise until the valve is completely open.

Pressure equalisation (fig. 7)

Under certain conditions, pressure can build up behind the spindle seal. This pressure can be equalised by slowly unscrewing the seal. During this operation, it is recommended that a handwheel or other adjusting tool be fitted to the end of the spindle in order to maintain the torque for reverse sealing.

Removing the spindle seal (fig. 8)

The handwheel and other spindle seal components can now be removed.

Note! Teflon gaskets should not be re-used after removing the spindle seal.

Fitting a replacement spindle seal

Great care should be taken when fitting a new spindle seal and damage to Teflon gaskets must be avoided.

During fitting, the individual components in the spindle seal should be placed in order and positioned as shown (fig. 9).

Replacing the cone (fig. 10)

Remove the screw (pos. B) from the cone with a hexagon key.

SVA-X1 15-40 (1/2-1 1/2")	2 mm a/flats
SVA-X1 50-65 (2-2 1/2")	2.5 mm a/flats
SVA-X1 80-100 (3-4")	4 mm a/flats
SVA-X1 125-150 (5-6")	5 mm a/flats
SVA-X1 200 (8")	6 mm a/flats

Hexagonal keys are enclosed in the gasket sets "Complete Cone" and "Complete Repair Kit" from Danfoss Industrial Refrigeration.

The balls (pos. C) can then be taken out and the cone subsequently removed.

SVA-X1 15-20 (1/2-3/4")	10 pcs.
SVA-X1 25-65 (1 1/2-2 1/2")	14 pcs.
SVA-X1 80-200 (3-8")	13 pcs.

A new cone can now be mounted on the spindle and the balls replaced. Refit the screw and tighten it. If the cone and spindle are detached several times, it may be necessary to use a strong adhesive (e.g. Loctite no. 648) to ensure screw fixing.

Replacing the reverse sealing, DN 80-200 (3-8") (fig. 11)

The reverse sealing of the valve is in the form of a special Teflon ring DN 80-200 (3-8"). This Teflon ring should be replaced if it becomes damaged. Screw the spindle out of the top section. Carefully remove the original Teflon ring and fit a replacement on the sloping contact surface just inside the opening in the top section.

Avoid folding or damaging the Teflon ring during fitting. In addition, be careful not to damage the contact surface for the ring in the top section.

Assembly (fig. 12)

Any dirt must be removed before assembling the valve.

During assembly, check:

- that the seal between the valve body and top section (pos. A) is undamaged.
- that the valve spindle is unscratched and has not been damaged by impact.
- that the Teflon gasket on the valve cone is undamaged.

Ensure also that the valve cone is screwed back to the top section before refitting the top section in the body (fig. 5a).

Tightening

Tighten the top section using a torque wrench in accordance with the table (fig. 5b).

The spindle seal should be tightened in accordance with the table (fig. 12).

In case of doubt, contact Danfoss.

Danfoss accepts no responsibility for errors and omissions in printed matter. Danfoss Industrial Refrigeration reserves the right to modify products and specifications without prior notice.