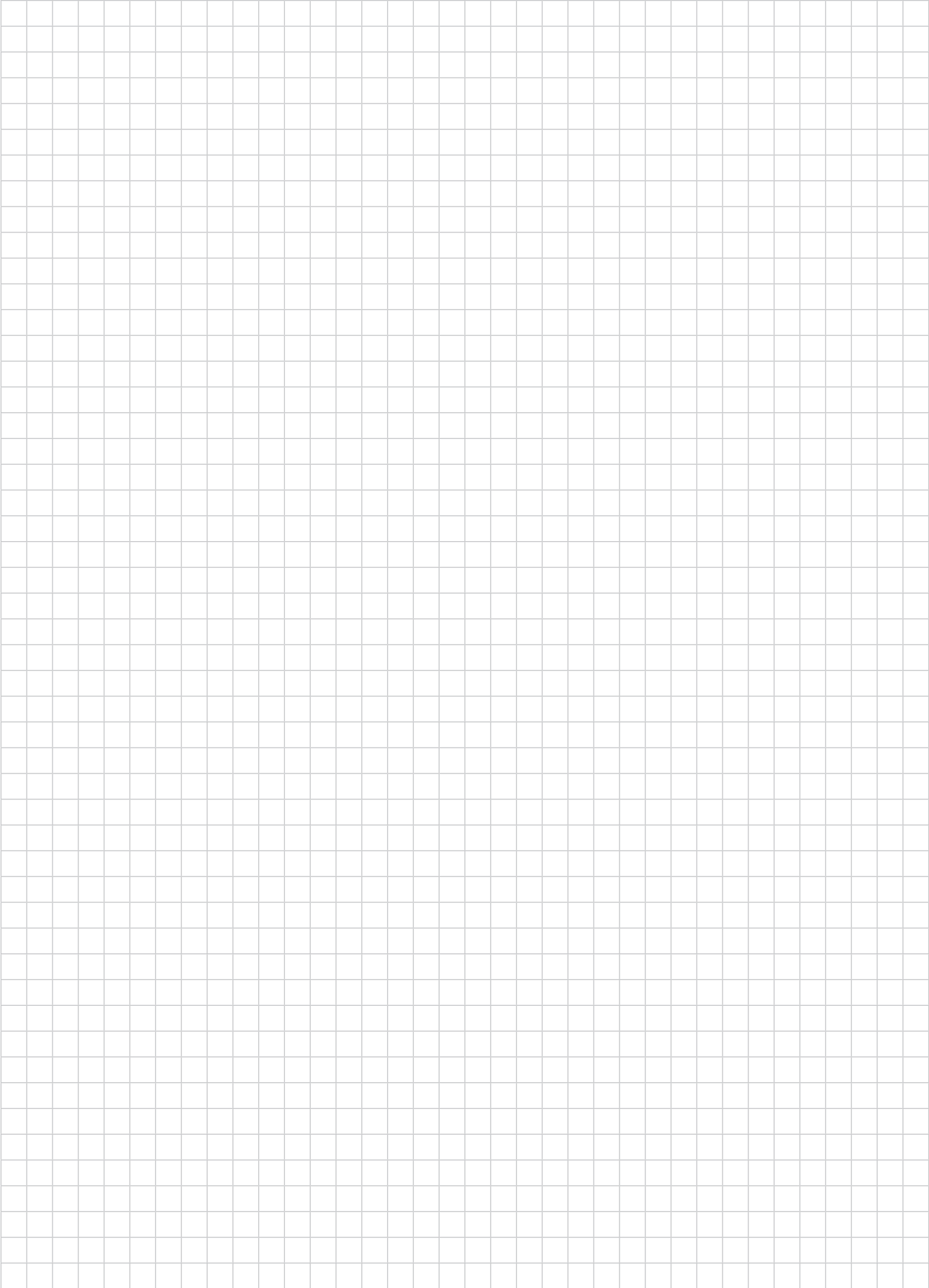


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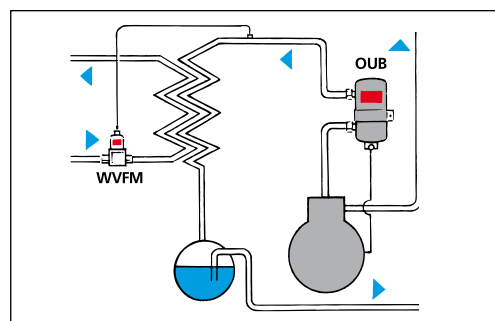
Notes



Application

WV pressure-operated water valves are used in refrigeration systems with water-cooled condensers to maintain constant condensing pressure under varying loads.

The water valves can be used for common refrigerants provided the operating range of the valves is not exceeded. The WVS can be used for R717 (ammonia)



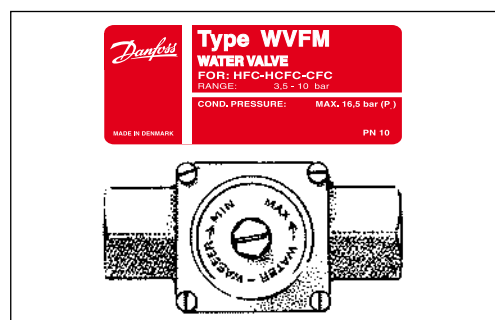
Ag0_0001

Identification

Danfoss water valve type WVFM consists of a valve body and bellows housing. The bellows housing carries a label giving valve type, operating range and max. permissible working pressure.

The label also indicates the max. permissible working pressure on the water side, given as PN 10 in accordance with IEC 534-4.

The direction in which the setting spindle must be turned for greater or lesser water quantity is given at the bottom of the valve.

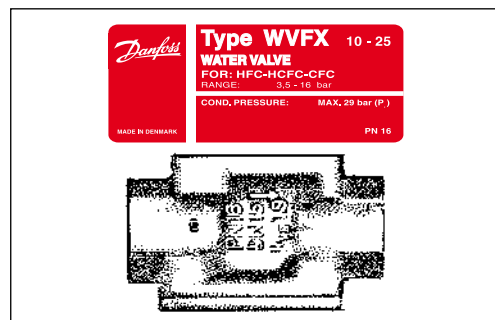


Ag0_0002

Water valve type WVFX consists of a valve body with setting unit on one side and a bellows housing on the other.

The bellows housing carries a label giving valve type, operating range and permissible working pressure.

All pressures given apply to the condenser side. Moulded in on one side of the valve body are PN 16 (nom. pressure) and, for example, DN 15 (nom. diameter), together with k_{vs} 1.9 (valve capacity in m^3/h at a pressure drop of 1 bar).

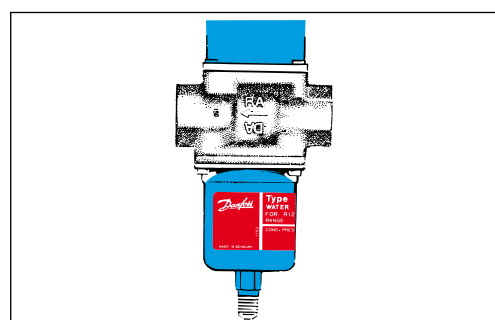


Ag0_0003

RA and DA are moulded in on the opposite side of the valve body.

RA means "reverse acting" and DA means "direct acting".

When WVFX is used as a condensing pressure valve the bellows housing must always be mounted nearest the DA marking.



Ag0_0004

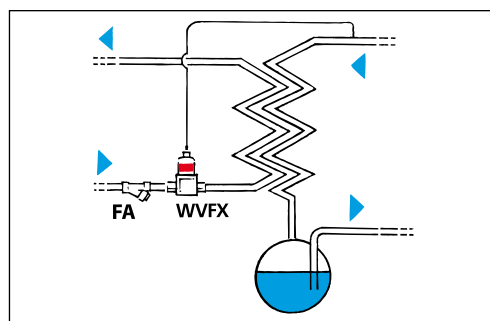
Installation

WVFM and WVFX are installed in the water line, normally ahead of the condenser, with flow in the direction of the arrow.

It is a good idea to always install an FV filter ahead of the water valve to exclude dirt from the moving parts of the valve.

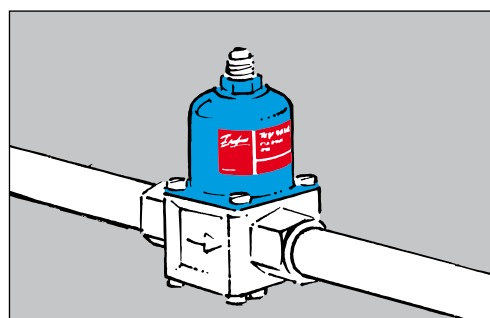
To prevent vibrations from being transmitted to the bellows housing the housing must be connected to the discharge line after the oil separator, via a capillary tube.

The capillary tube must be connected to the top side of the discharge line to prevent the back-flow of oil and perhaps dirt.



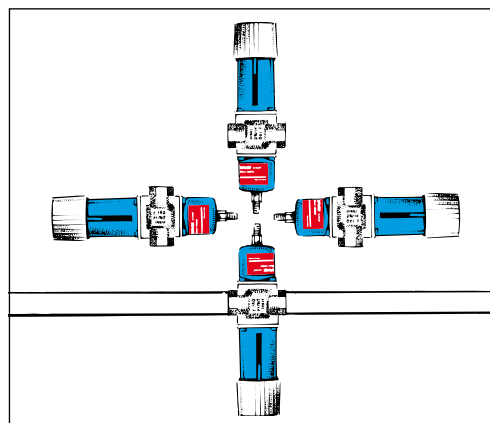
Ag0_0005

WVFM and WVFX 32-40 water valves are normally installed with bellows housing upwards.



Ag0_0006

WVFX 10-25 water valves can be installed in any position.



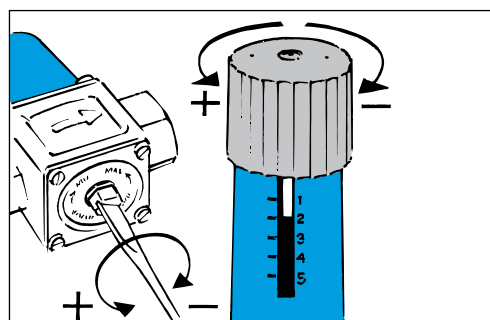
Ag0_0007

Setting

WVFM and WVFX water valves must be set to obtain the required condensing pressure. Turning the setting spindle clockwise gives lower pressure, turning it counterclockwise gives higher pressure.

The scale marks 1 - 5 can be used for coarse setting. Scale mark 1 corresponds to about 2 bar, and scale mark 5 corresponds to about 17 bar.

Note that the valve setting range is given for when the valve begins to open. The condensing pressure must increase by 3 bar to fully open the valve.

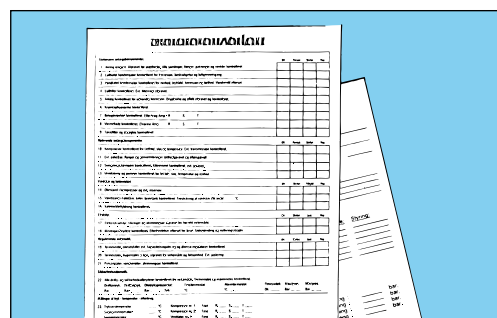


Ag0_0008

Maintenance

It is a good idea to include water valves in preventive maintenance because dirt (sludge) can collect around the moving parts of the valves.

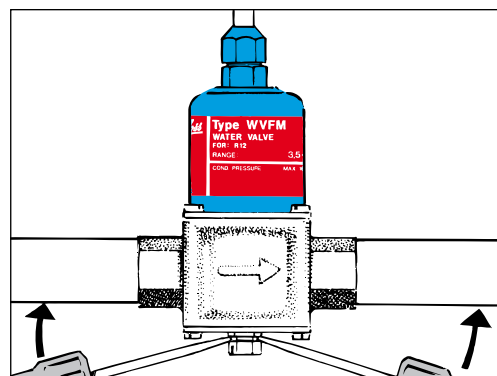
The maintenance routine can include flushing the water valves, partly to wash out impurities and partly to be able to “sense” whether the reaction of valves has become slower.



Ag0_0009

Flushing a WVFM water valve is easiest to perform if two screwdrivers are inserted under the setting screw.

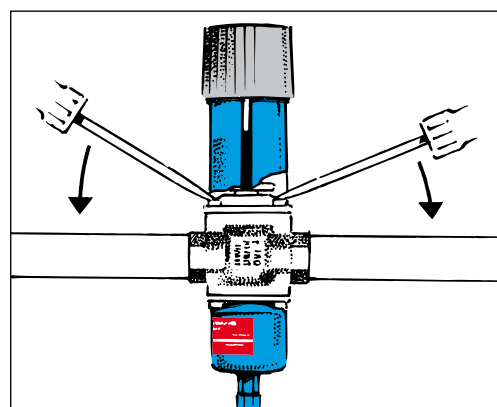
The screw can then be levered up to give greater water flow.



Ag0_0010

WVFX valves can be flushed similarly using two screwdrivers inserted in the slots on each side of the setting unit (spring housing) and under the spring cup.

Levering the screwdrivers down towards the piping gives greater water flow.

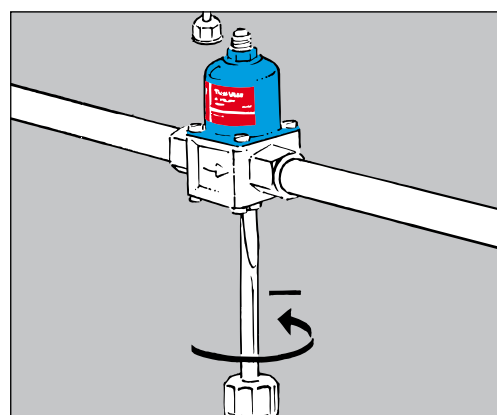


Ag0_0011

If operating irregularities appear in a water valve, or if leakage occurs across the valve seat, dismantle the valve and clean it.

Before dismantling a valve, the pressure must always be relieved from the bellows housing, i.e. it must be disconnected from the refrigeration system condenser.

Before dismantling, screw the setting spring fully clockwise towards the lowest pressure setting. The O-ring and remaining seals must always be replaced after dismantling.



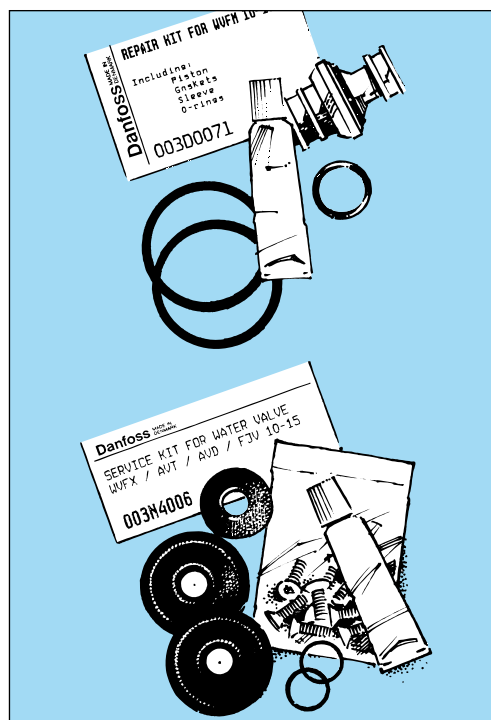
Ag0_0012

Spare parts

Spare parts for WVFM and WVFX water valves can be obtained from Danfoss:

- one bellows housing.
- one service kit (containing spare parts, gaskets and grease for the water side of the valve).
- A gasket set is also supplied as a spare part for type WVFM.

The code numbers of spare parts and gasket sets are given in the spare parts catalogue*.



Ag0_0013

*) Find spare part documentation on <http://www.danfoss.com>