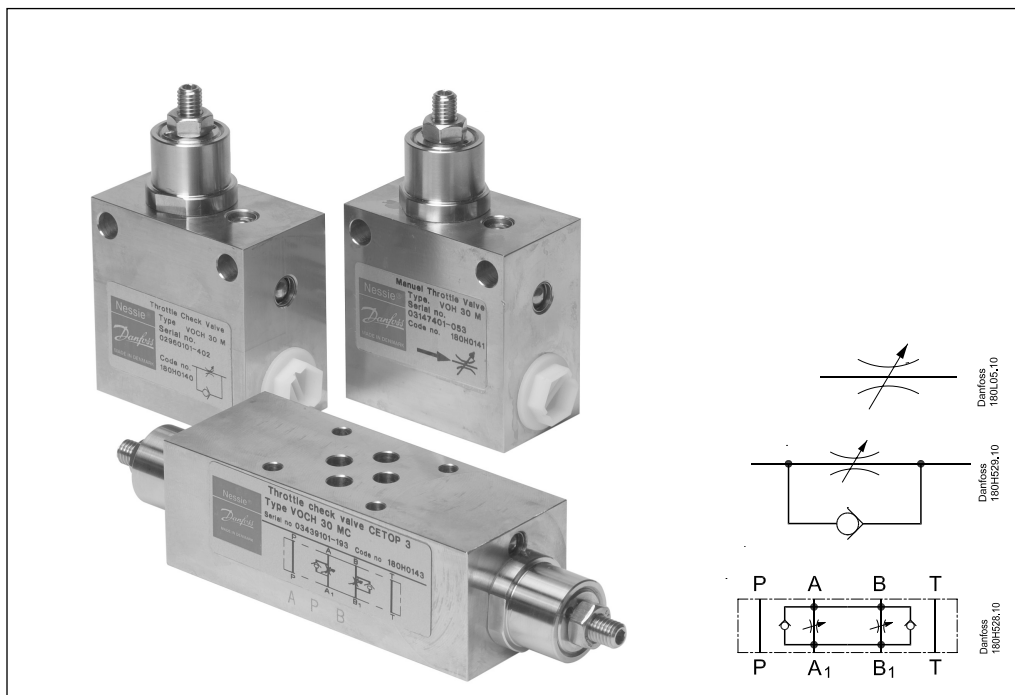


Nessie® Throttle Valves



Manually Variable Throttle Valve

- VOH 30M (inline mounted)

VOH 30M regulates the flow in both directions.

Manually Variable Throttle Check Valve

- VOCH 30M (inline mounted)
- VOCH 30MC (cetop 3 block mounted)

VOCH 30M and VOCH 30MC regulate the flow in one direction and allow for free passage in the opposite direction via an integrated check valve.

Application

The valves regulate flow and thus e.g. the speed of an actuator (motor or cylinder). The valves are designed for ordinary tap water without additives of any kind, but are

also suitable for applications operating on air, neutral gases and oil compatible with the NBR O-ring material used.

Function

The valves are designed to operate according to the needle controlled valve principle. VOCH 30MC is a double throttle check valve working as an intermediate block to a cetop 3

standard, consisting of a block, VOCH 30MC and Nessie® directional valve, type VDH 30EC4/3.

Advantages

- Accurate flow regulation
- Flow rates easy to set
- Corrosion resistant surfaces, mainly stainless steel
- Adjustment position secured with lock nut

Variants

The valve housing comes as standard in stainless steel AISI 304 (W.nr. 1.4301). On request the valve housing for VOCH 30MC

is available in stainless steel AISI 316L (W.nr. 1.4401). Please contact the Danfoss sales organization for water hydraulics.

Data Sheet

Nessie® Throttle Valves

Filtration

The water supplied to the valve must be filtered: 50 µm absolute filter is recommended.

For further information on filters, please contact Danfoss sales organization for water hydraulics.

Temperature

Storage temperature:

- -40°C to +70°C – provided that the valve is drained of fluid and stored “plugged”

Operation on water containing antifreeze:

- Fluid temperature and ambient temperature: -30°C ¹⁾ to +50°C

Operation on (clean) water:

- Fluid temperature and ambient temperature: +2°C to +80°C

1) please see paragraph on antifreeze protection

Antifreeze Protection

If a system requires antifreeze protection, Danfoss recommends Dowcall N or Chillsafe mono propylene glycol from the Dow Chemical Company and Arco Chemical Company, respectively. Both antifreezes are biologically degradable and must be used together with demineralized water.

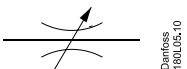
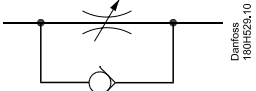
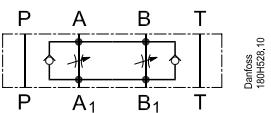
Mixing ratio must be:

- min. 30% antifreeze and 70% demineralized water providing frost protection to -13°C and preventing biofilm in the system.
- max. 50% antifreeze and 50% demineralized water due to increased viscosity, providing frost protection to -30°C.

Technical Data

	VOH 30M	VOCH 30M	VOCH 30MC
Max pressure cont.	140 bar	140 bar	140 bar
Max pressure drop across the valve	140 bar	140 bar	140 bar
Max. flow	30 l/min	30 l/min	30 l/min
Pressure loss at 30 l/min.	15 bar	15 bar	23 bar
Pressure loss at 15 l/min.	4 bar	4 bar	8 bar
Min. adjustable flow at 140 bar	3 l/min	3 l/min	3 l/min.
Max. leakage for closed valve at 140 bar	50 ml/min.	50 ml/min.	50 ml/min.
Pressure loss across check valve at 30 l/min	–	4.5 bar	5 bar
Service life at pressure drop 140 bar	8000 hours	8000 hours	8000 hours
Adjustment screw (from min. to max. flow)	7 1/2 turns	7 1/2 turns	7 1/2 turns
Port connection	G 3/8"	G 3/8"	Cetop 3
Steel type	AISI 304	AISI 304	AISI 304
O-ring material	NBR	NBR	NBR
Weight	1.30 Kg	1.30 Kg	1.90 Kg

Code Numbers

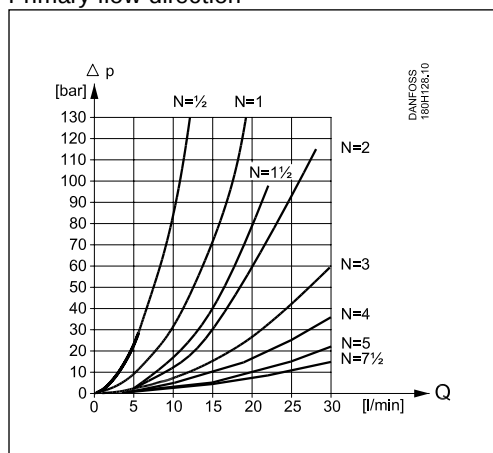
Valves	Function symbol	Code number
VOH 30M	 Danfoss 180H0141	180H0141
VOCH 30M	 Danfoss 180H0140	180H0140
VOCH 30MC	 Danfoss 180H0143	180H0143

Flowrate curves
(for water)

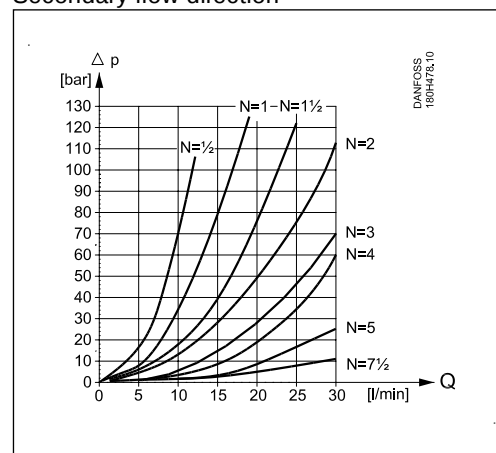
VOH 30M

Pressure losses at various opening degrees

Primary flow direction

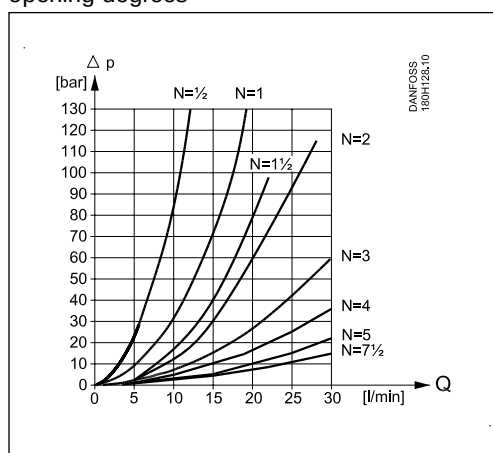


Secondary flow direction

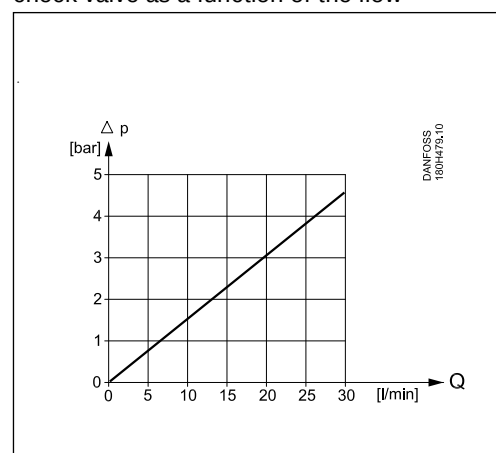


VOCH 30M

Pressure losses at various opening degrees

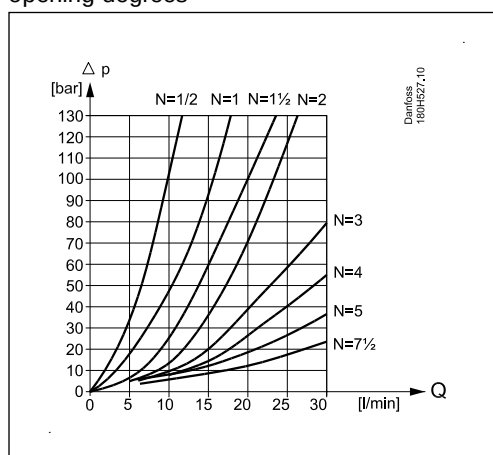


Pressure drop across the check valve as a function of the flow

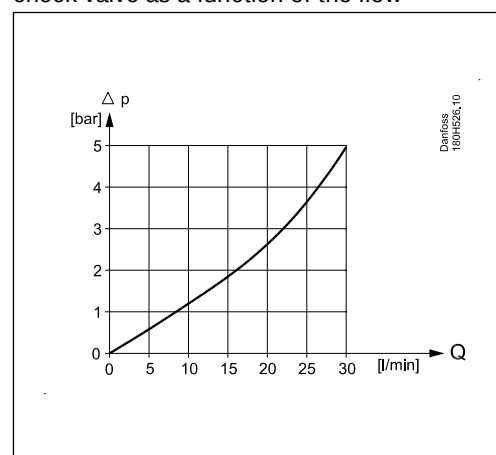


VOCH 30MC

Pressure losses at various opening degrees



Pressure drop across the check valve as a function of the flow



N is the number of rotations of the adjusting screw.
At N = 0 the valve is fully closed (lower position).

fixed either directly in the pipe connections or with bolts in the fixation holes on the valve.

ber to smear/spray the threads on the screws with Molykote® D pasta from Dow Corning, or Klüber UH1 84-201 from Klüber lubrication, before mounting the valve.

Technical drawing of a Danfoss 180M523.10 valve. The drawing includes a side view showing a cylindrical body with two end fittings, a top view showing a square flange with four mounting holes, and a cross-section view showing the internal valve mechanism. Dimensions include a total length of 195 mm, a mounting hole diameter of 17 mm, and a flange thickness of 41 mm. The valve is labeled "Cetop 3 / NG6 ISO 4401" and "Danfoss 180M523.10".

Produced by Danfoss G1 advertising agency 03.08 Bi.DS