

# 3-way control valves type M3F

## Cast iron, PN 16, DN 20 – 65 mm, Flanged ends

2.3.08-I

GB-1

### Characteristics

- Nominal pressure PN 16
- Regulating capability  $\frac{k_{vs}}{k_{vr}} > 25$
- Same  $k_{vs}$ -value as mixing and diverting valve
- Quadratic/linear characteristic
- Ideal for controlling process and central heating plants.

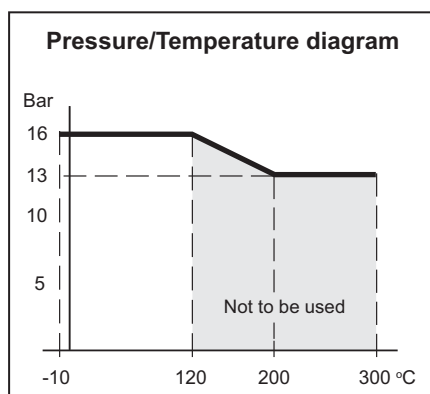
### Applications

Control valves type M3F are designed for lubricants, hot water and other liquids and can be installed in pipe systems as mixing or diverting valves.

The valves are used in conjunction with our temperature regulators for controlling industrial processes, district or central heating plants or marine installations.

### Dimensioning

For sizing of control valves and selection of actuators, please see "Quick Choice" leaflet No. 9.0.00.



### Design

The valve components - seats and cone - are made of gun metal, the stem - of stainless steel.

The valve body is made of cast iron EN-GJL-250 with flanges drilled according to EN 1092-2 PN 16.

The thread for the actuator connection is G1B ISO 228.

The valves have two balanced single seats and are designed for tight closure. The leakage rate is less than 0.5 % of the full flow (according to VDI/VDE 2174).

### Quality assurance

All valves are manufactured under an ISO 9001 certification and are pressure and leakage tested before shipment.

For marine applications the valves can be supplied with relevant test certificates from recognized classification societies.

### Function

Without an actuator being installed, connection A-AB is fully open and connection B-AB completely closed by means of a spring.

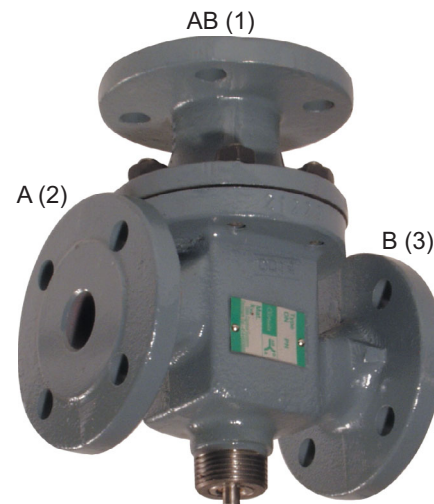
By increasing pressure on the spindle, the opening of the ports changes proportionally to the travel of the spindle, and when the spindle is pressed to the bottom, connection B-AB is fully open and connection A-AB completely closed.

The valve characteristics are as follows:

Port A-AB and AB-A: quadratic

Port B-AB and AB-B: almost linear

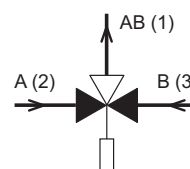
These characteristics ensure constant total flow under almost all pressure conditions and optimum circulation in the individual circuits.



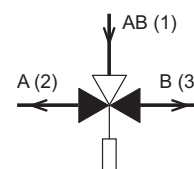
### Port Numbering

Valves type M3F are marked with the internationally recognized port designations: A, B, AB.

#### Mixing valve



#### Diverting valve



Port AB common port always open  
 Port A closes by activating the spindle  
 Port B opens by activating the spindle

### Technical data

Materials:

- Valve body Cast iron EN-GJL-250
- seats and cone Gun metal RG 5 DIN/EN 1982 CC491K
- spindle Stainless steel (W. No. 1.4305)
- bolts, nuts 24 CrMo 4/A4
- Nominal pressure PN 16
- Seating 2 balanced single seats
- Valve characteristic Quadratic/linear
- Regulating capability  $\frac{k_{vs}}{k_{vr}} > 25$
- Leakage  $\leq 0.5\%$  of  $k_{vs}$
- Temperature range See pressure/temperature diagram
- Mounting See page 2
- Flanges - drilled according to EN 1092-2 PN 16
- Counter flanges DIN 2633
- Colour Grey
- Subject to changes without notice.

Specification					
Type	Flange connection DN in mm	Opening mm	$k_{vs}$ -value* m <sup>3</sup> /h	Lifting height mm	Weight kg
20 M3F	20	20	6.3	7.5	6
25 M3F	25	25	10	9	7
32 M3F	32	32	16	10	10
40 M3F	40	40	25	11	14
50 M3F	50	50	38	11.5	18
65 M3F	65	65	63	14.5	26

\* Same  $k_{vs}$ -values for mixing and diverting valves

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### Definition of $k_{VS}$ -value

The  $k_{VS}$ -value is identical to the IEC flow coefficient  $k_V$  and defined as the water flow rate in  $m^3/h$  through the fully open valve by a constant differential pressure,  $\Delta p_V$ , of 1 bar.

### Mounting

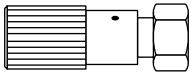
The valves can be installed with vertical as well as horizontal spindles.

### Strainer

It is recommended to use a strainer in front of the control valve if the liquid contains suspended particles.

### Accessories

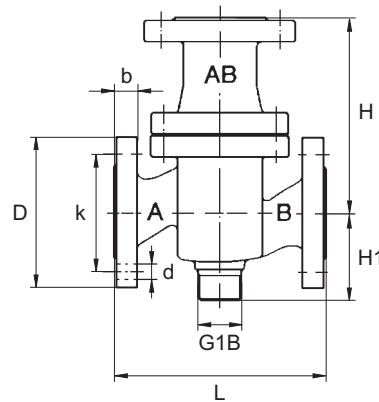
#### Manual adjusting device



The device has a built-in stuffing box. For sealing and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction.

Subject to changes without notice.

### Dimension sketch



### Dimensions

Type	L mm	H mm	H1 mm	D (dia.) mm	b mm	k (dia.) mm	d mm dia. (number)
20 M3F	150	115	63	105	16	75	14x(4)
25 M3F	160	130	70	115	16	85	14x(4)
32 M3F	180	150	75	140	18	100	18x(4)
40 M3F	200	160	85	150	18	110	18x(4)
50 M3F	230	190	95	165	20	125	18x(4)
65 M3F	290	220	110	185	20	145	18x(4)