3-way control valves type G3F
Nodular cast iron, PN 16, DN 80 – 150 mm

Characteristics

- Nominal pressure PN 16 (16 bar/max. 120°C)
- Characteristic - almost linear
- Regulating capability $\frac{k_{vs}}{k_{vr}}$ > 25
- For regulating of process- and central heating plants

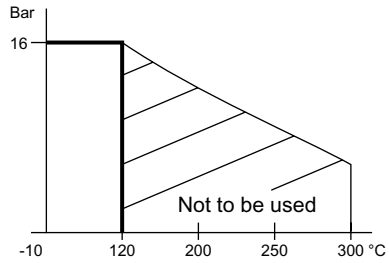
Applications

Control valves type G3F are designed for regulating of water, lubricating oil and other liquid media and can be mounted in the pipe system as either mixing or diverting valves. However when mounting as a diverting valve the pressure drop is increased, compared with mounting as a mixing valve. See “Important note” on page 2.
The valves are used in conjunction with our temperature regulators for controlling industrial processes, district and central heating plants and marine installations.

Dimensioning

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

Pressure/Temperature diagram
According to DIN 2401



Design

The valve components - seats and cone - are made of gun metal, the spindle is made of stainless steel.
The valve body is made of nodular cast iron EN-GJS-400-15 with flanges drilled according to EN 1092-2. The connection thread for the actuator 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).

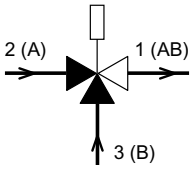
Quality assurance

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.

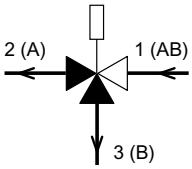
Port numbering

The ports of valves type G3F are marked with the figures 1, 2 and 3.
The letters in parentheses refer to the corresponding internationally adapted designations.

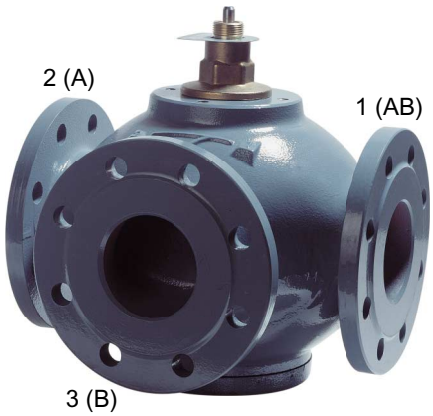
Mixing valve



Diverting valve



Port 1(AB)	common port always open
Port 2(A)	closes at load on spindle
Port 3(B)	opens at load on spindle



Function

Without an actuator being installed, connection 2-1 is fully open and connection 3-1 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 3-1 is fully open and connection 2-1 completely closed.

Technical data

Materials:

- Valve body:	
80 – 150 G3F	Nodular cast iron EN-GJS-400-15
- Seats and cone	Gun metal RG 5 CuSn5Zn5Pb5-C
- Spindle	stainless steel (W.no. 1.4436)
Nominal pressure	PN 16
Seating	Two balanced single seats
Valve characteristic	Almost linear
Temperature range	Max. 120°C
Mounting	See page 2
Flanges drilled according to	EN 1092-2 PN 16
Counter flanges	DIN 2633
Colour	Blue

Specification

Type	Flange connection DN in mm	Opening mm	Mixing valve k_{vs}-value m^3/h	Diverting valve k_{vs}-value m^3/h	Lifting height mm	Weight kg
80 G3F	80	80	80	69	11	35
100 G3F	100	100	125	108	13	44
125 G3F	125	125	215	185	18	72
150 G3F	150	150	310	267	20	111

Subject to changes without notice.

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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, Δp_V, of 1 bar.

Important note

In case the valves are applied as diverting valves, the pressure drop will increase by 35% and the k_{VS}-value will decrease by 14% as against mixing valves.

Mounting

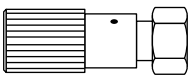
The valves can be installed with vertical as well as horizontal spindles. The valves must be mounted in a way that the valve motor will be exposed to a minimum of moisture and unnecessary vibrations.
Free height above / below the valve must be minimum 645 mm for mounting and operation of the MT 90 Marine motor. See drawing.

Strainer

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

Accessories

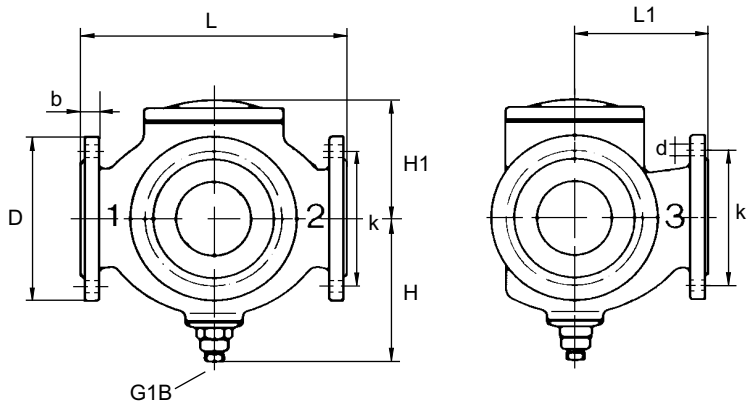
Manual adjusting device



The device has a built-in stuffing box. For tightening and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction (max. 150°C).

Subject to changes without notice.

Dimensions



Type	L mm	L1 mm	H mm	H1 mm	D (dia.) mm	b mm	k (dia.) mm	d mm dia. (number)
80 G3F	310	155	180	127	200	19	160	19x(8)
100 G3F	350	175	195	141	220	19	180	19x(8)
125 G3F	400	240	245	171	250	19	210	19x(8)
150 G3F	480	270	280	189	285	24	240	23x(8)

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