3-way Control Valves type G3F, Nodular cast iron PN 25, DN 20 – 65 mm, Flanged ends

Characteristics

- Nominal pressure PN 25
- Regulating capability $\frac{k_{vs}}{k_{vr}}$ > 25
- Same k_{vs}-value as mixing and diverting valve
- Quadratic / linear characteristic

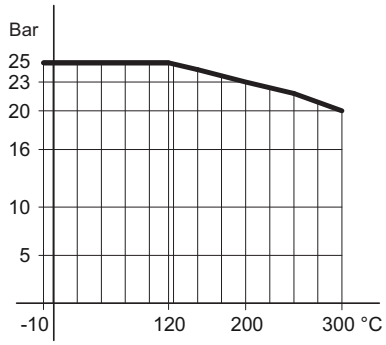
Applications

Control valves type G3F are designed for hot water and hot oil systems 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.

Pressure/Temperature diagram



Design

The valve components - spindle, seats and cone - are 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 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).

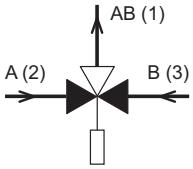
Quality assurance

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.

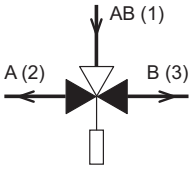
Port numbering

Valves type G3F are marked with the internationally recognized port designations: A, B, AB.

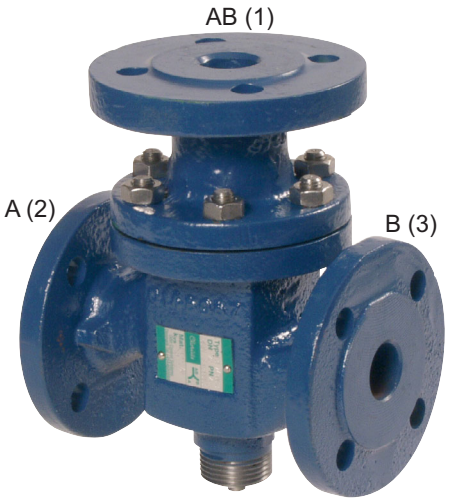
Mixing valve



Diverting valve



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



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.

Specification

Type	Flange connection DN in mm	Opening mm	k_{vs}-value* m^3/h	Lifting height mm	Weight kg
20 G3F	20	20	6.3	7.5	6
25 G3F	25	25	10	9	7
32 G3F	32	32	16	10	10
40 G3F	40	40	25	11	14
50 G3F	50	50	38	11.5	18
65 G3F	65	65	63	14.5	26

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

Technical Data

Materials:	
- Valve body	Nodular cast iron EN-GJS-400-15
- Components	Stainless steel
- Nuts, bolts	24 CrMo 5/A4
Nominal pressure	PN 25
Seating	2 balanced single seats
Valve characteristic	Quadratic / linear
Regulating capability	$\frac{k_{vs}}{k_{vr}}$ > 25
Leakage	≤ 0.5% of k_{vs}
Temperature range	See pressure/temperature diagram
Mounting	See page 2
Flanges - drilled according to	EN 1092-2 PN 25
Counter flanges	DIN 2634
Colour	Blue

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.

Mounting

Up to 170ºC the valve can be installed vertically as well as horizontally. For media temperature above 170ºC, a cooling unit of type KS has to be applied. It must then be installed with actuator/ thermostats downwards, and according to the following instructions:

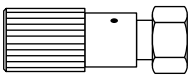
Valve temperature	Cooling unit	Suitable for
170ºC - 250ºC	KS-4	All actuators
250ºC - 300ºC	KS-5	Thermostats
250ºC - 300ºC	KS-6	El. actuators

Strainer

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

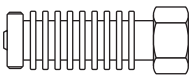
Accessories

Manual adjusting device



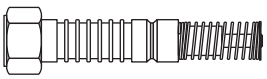
The device has a built-in stuffing box. For sealing and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction.

Cooling unit KS-4

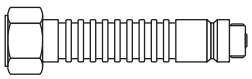


Cooling unit protecting the stuffing box of the electric actuator/thermostat. To be applied at valve temperatures between 170ºC and 250ºC.

Cooling unit KS-5

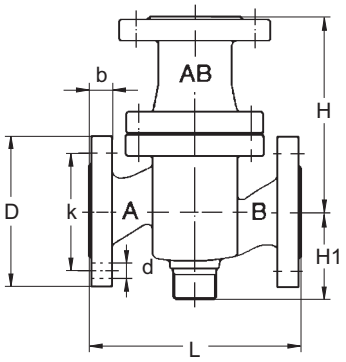


Cooling unit KS-6



Cooling units with built-in bellow glands, replacing stuffing box of thermostat (KS-5) or electric valve actuator (KS-6). Must be applied at valve temperatures above 250ºC.

Dimension sketch



Dimensions

Type	L mm	H mm	H1 mm	D (dia.) mm	b mm	k (dia.) mm	d mm dia. (number)
20 G3F	150	115	63	105	16	75	14x(4)
25 G3F	160	130	70	115	16	85	14x(4)
32 G3F	180	150	75	140	18	100	18x(4)
40 G3F	200	160	85	150	18	110	18x(4)
50 G3F	230	190	95	165	20	125	18x(4)
65 G3F	290	220	110	185	20	145	18x(8)

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