

# 3-way Control Valves type G3FM-TR (AB-Right) Nodular cast iron, DN 200 – 800 mm

2.6.02-R

GB-1

## Characteristics

- Nominal pressure
  - DN 200-300 mm: PN 16, max. 100°C (option 250°C)
  - DN 350-800 mm: PN 10, max. 100°C (option 250°C)
  - DN 200-800 mm: JIS 5K (option)
- Slide in Nodular cast iron

## Applications

Control valve type G3FM-TR is a three-way control valve with a slide for quarter turn operation designed for regulating of fresh water, lubricating oil and other liquid media.

The valves are designed for use in conjunction with industrial processes, district heating and marine installations with large water or lubricating oil volumes:

- Engine Jacket Cooling Water System
- Lubricating Oil Cooling
- Central Cooling Water System, etc.

The valves are designed for use in conjunction with valve motor type CAR with handle for manual operation or for use in conjunction with a pneumatic actuator.

## Dimensioning

For sizing of control valves the following equation can be used:

$$k_{vs} = \frac{G(m^3/h)}{\sqrt{\Delta p(\text{bar})}}$$

$$\Delta p(\text{bar}) = \left( \frac{G(m^3/h)}{k_{vs}} \right)^2$$

## Design

The valve body and the valve slide are made of nodular cast iron.

The valve flanges are drilled according to EN 1092-2 (JIS B 2210 option).

## 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

The slide is firmly connected with the motor spindle. When the slide is in the one outer position by turning the spindle, connection A-AB is fully open and connection B-AB is fully closed. In the other outer position connection A-AB is fully closed and connection B-AB is fully open. In the intermediate positions the opening degrees change proportionally. The valve has a small tolerance between body and slide. To minimize the leakage an O-ring is mounted in a groove on the slide.

## Technical data

Materials:

- Valve body, slide Nodular cast iron  
EN-GJS-400-15

- O-ring NBR 70A

Valve characteristic Almost linear

Leakage Max. 0.5%

Temperature range Max. 100°C

(option 250°C)

Mounting See page 2

Flanges EN 1092-2 PN 10/16

- option JIS B 2210 5K

Counter flanges (suggested for

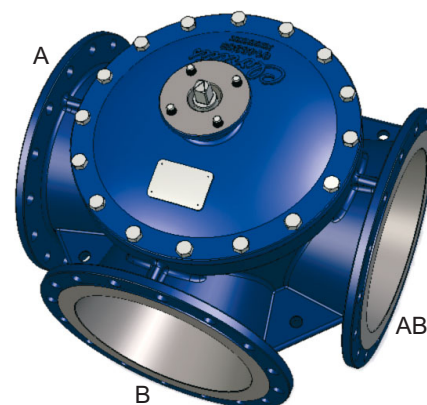
EN 1092-2) DIN 2632 – PN 10

DIN 2633 – PN 16

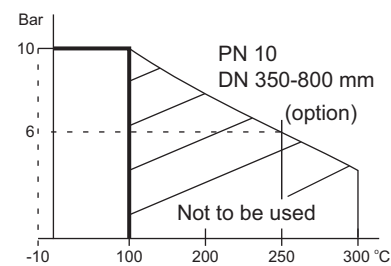
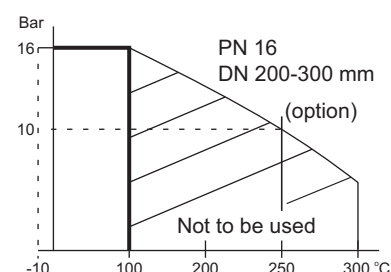
Max. pressure  $\Delta p_L$ , against which the valve can close:

- DN 200-300 16 bar

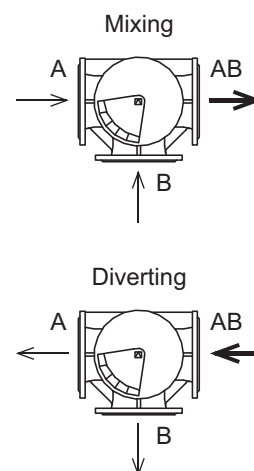
- DN 350-800 10 bar



## Pressure/Temperature diagram



## Port numbering



Subject to change without notice.

Specifications					
Type	Flange connection DN in mm	$k_{vs}$ -value <sup>1)</sup> Mixing valve m <sup>3</sup> /h	$k_{vs}$ -value <sup>1)</sup> Diverting valve m <sup>3</sup> /h	Torque Nm	Weight kg
200 G3FM-TR	200	800	1100	330	114
250 G3FM-TR	250	1500	2100	450	159
300 G3FM-TR	300	2000	2650	700	207
350 G3FM-TR	350	2530	3380	780	278
400 G3FM-TR	400	3050	3950	880	346
450 G3FM-TR	450	3680	4480	1250	433
500 G3FM-TR	500	4150	5250	1450	563
600 G3FM-TR	600	4800	6050	1750	816
700 G3FM-TR	700	5500	7000	2150	1150
800 G3FM-TR	800	6200	8000	2550	1400

<sup>1)</sup>  $k_{vs}$ -value for port A and B 50% open.

# 3-way Control Valves type G3FM-TR (AB-Right) Nodular cast iron, DN 200 – 800 mm

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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 valve connections are marked A, B and AB. The slide is operating between A and B.

Check slide position before installation in the pipe. The slide position is marked on the top of the shaft.

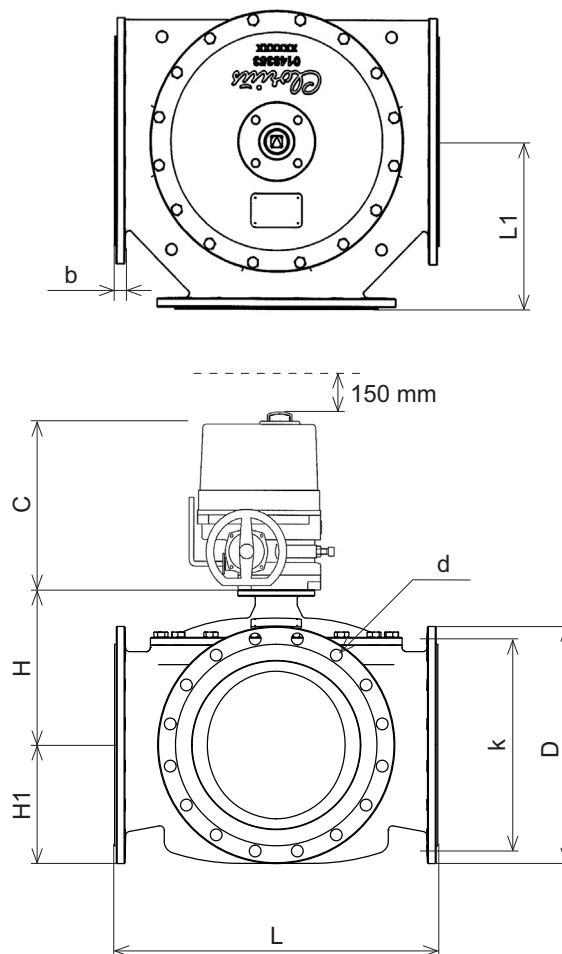
The valves can be installed with vertical as well as horizontal spindles. The valves must be mounted in a way that the valve actuator will be exposed to a minimum of moisture and unnecessary vibrations.

Valves can also be supplied in AB-Left configuration (data sheet 2.6.03).

## Strainer

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

## Dimension sketch



Dimensions							EN 1092-2			ANSI Class 150			JIS B 2210 5K			JIS B 2210 10K		
Type	L mm	L1 mm	H mm	H1 mm	b mm	C mm	D (dia.) mm	k (dia.) mm	d mm dia. (number)	D (dia.) mm	k (dia.) mm	d mm dia. (number)	D (dia.) mm	k (dia.) mm	d mm dia. (number)	D (dia.) mm	k (dia.) mm	d mm dia. (number)
200 G3FM-TR	530	270	236	175	21	361	340	295	23x(12)	343	299	23x(8)	320	280	23x(8)	320	290	23x(12)
250 G3FM-TR	592	300	273	205	23	361	400	355	28x(12)	407	362	26x(12)	385	345	23x(12)	400	355	25x(12)
300 G3FM-TR	649	330	305	230	25.5	361	455	410	28x(12)	483	432	26x(12)	430	390	23x(12)	445	400	25x(16)
350 G3FM-TR	717	360	337	255	25.5	361	505	460	23x(16)	534	477	29x(12)	480	435	25x(12)	490	445	25x(16)
400 G3FM-TR	770	385	375	285	26	361	565	515	28x(16)	597	540	29x(16)	540	495	25x(16)	560	510	27x(16)
450 G3FM-TR	820	410	391	310	26.5	556	615	565	28x(20)	635	578	32x(16)	605	555	25x(16)	620	565	27x(20)
500 G3FM-TR	900	455	425	340	27.5	556	670	620	28x(20)	699	635	32x(20)	655	605	25x(20)	675	620	27x(20)
600 G3FM-TR	1000	505	470	393	31.0	556	780	725	31x(20)	813	750	35x(20)	770	715	25x(20)	795	730	33x(24)
700 G3FM-TR	1106	553	519	462	34.0	556	895	840	31x(24)	-	-	-	875	820	27x(24)	905	840	33x(24)
800 G3FM-TR	1200	600	579	507	37	556	1015	950	34x(24)	-	-	-	995	930	33x(24)	1020	950	33x(28)

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