M 918
03.11.08 MC
REV. 02

THREE-PORT BALL VALVE
PN 6 ; – 15...120 °C

XDG 3.. Eng.

- **Female threaded connections**
- **Body in nickel-plated brass and ball in hard-chromed brass**
- **Seals in Teflon and Viton**

CE

1. APPLICATION

XDG 3 valves are used for diverting water flow in heating and cooling systems.
They are operated by rotary actuators:
– CRB ..., CVC... and CVH ... with fluid temperature 5...120 °C,
– CVC .../T and CVH .../T with fluid temperature –15...120 °C.
Permitted fluids:
– hot water max. 120 °C,
– chilled water min. –15 °C,
– water with max. 50% glycol.

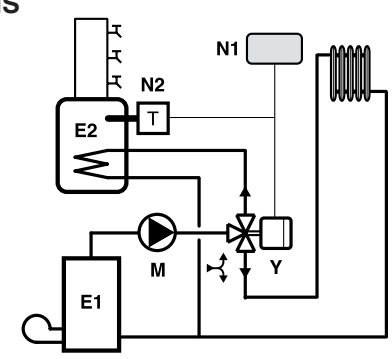
2. MODELS

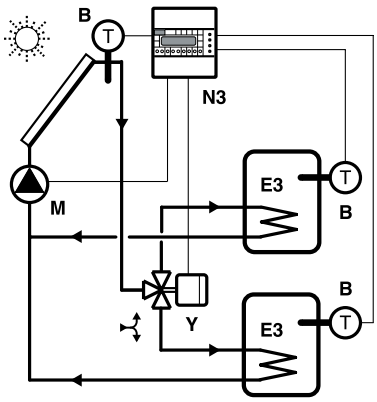
Code	DN inches	Kvs m^3/h	Actuator **CRB ...** Δp max.	Actuator **CVC ...** Δp max.	Actuator **CVH 11..** Δp max.	Actuator **CVH 05..-21..-63..** Δp max.
			kPa (bar)	kPa (bar)	kPa (bar)	kPa (bar)
XDG 310	3/8"	1.8	600 (6)	600 (6)	600 (6)	600 (6)
XDG 315	1/2"	3.9	600 (6)	600 (6)	600 (6)	600 (6)
XDG 320	3/4"	7.9	600 (6)	600 (6)	600 (6)	600 (6)
XDG 325	1"	13.0	600 (6)	600 (6)	600 (6)	600 (6)
XDG 332	1"1/4	20.7	600 (6)	600 (6)	600 (6)	600 (6)
XDG 340	1"1/2	38.7	–	–	600 (6)	600 (6)
XDG 350	2"	54	–	–	–	600 (6)

Kvs = flow coefficient : flow in m^3/h with valve open and pressure drop of 100 kPa.
Δp max. = maximum differential pressure permitted by actuator.
100 kPa = 10 mWG = 1 bar

3. TIPICAL APPLICATION DIAGRAMS

E1 – Boiler
E2 – Hot water reservoir
E3 – Solar hot water reservoir
B – Solar plant detectors
M – Plant pumps
Y – 3-port motorised valves
N1 – Ambient controller
N2 – Hot water reservoir thermostat
N3 – Solar plant controller





4. TECHNICAL DATA

Test pressure	1000 kPa (10 bar)
Working pressure	600 kPa (6 bar)
Maximum differential pressure	600 kPa (6 bar)
Leakage rate	nil
Fluid temperature	–15...120 °C

Materials :

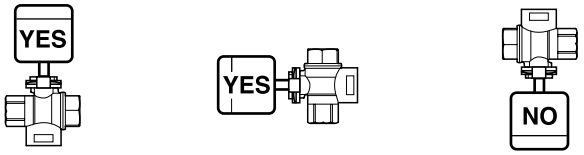
– valve body	nickel-plated OT58 brass
– ball	hard-chromed OT58 brass
– spindle	OT58 brass
– ball seal	PTFE (teflon)
– spindle seal	O-Ring in viton

5. CONSTRUCTION

The valve body is in OT58 nickel-plated brass with female threaded connections. The ball is in hard-chromed OT58 brass, held between the two seals in PTFE (teflon) which guarantee the total absence of let-by.
The ball-teflon system presents the big advantage of being self-cleaning and therefore of keeping the valve free from scale build-up.
The spindle is in OT58 brass and is rendered watertight by two viton O-Rings in viton.

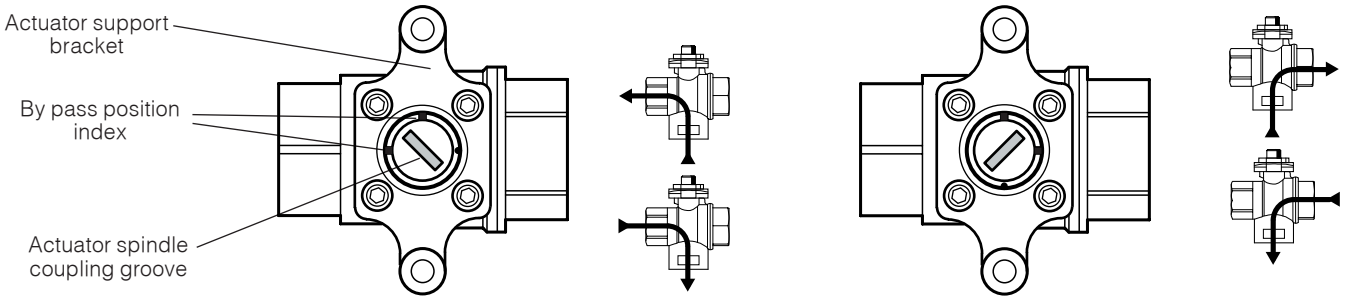
6. MOUNTING

Before mounting the valve make sure that there is'nt any extraneous matter in the pipework (remains of welding or threading). The pipework must not be subject to vibrations and must be perfectly aligned with the valve unions in order to avoid dangerous strains.
The valve can be mounted in any position except with the spindle facing downwards.
N.B.: Leave enough space on the spindle side for the mounting of actuator (see section 8).

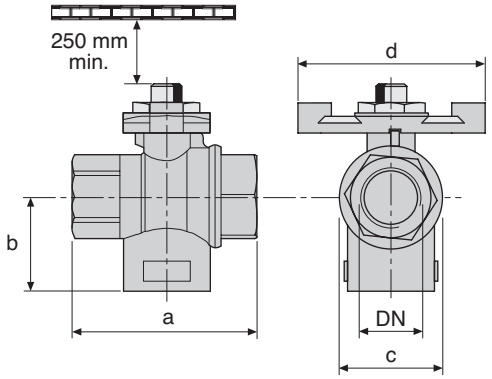


7. OPERATION

The valve operates with a 90° rotary movement.
The central port is always open and the flow is diverted to the lateral ports or from the lateral ports to the central one.
The position of the bypass flow is indicated by a groove in the head of the coupling spindle and by an indicator plate, firmly secured to the spindle, which permits to locate the position of the ball even when the actuator is mounted.

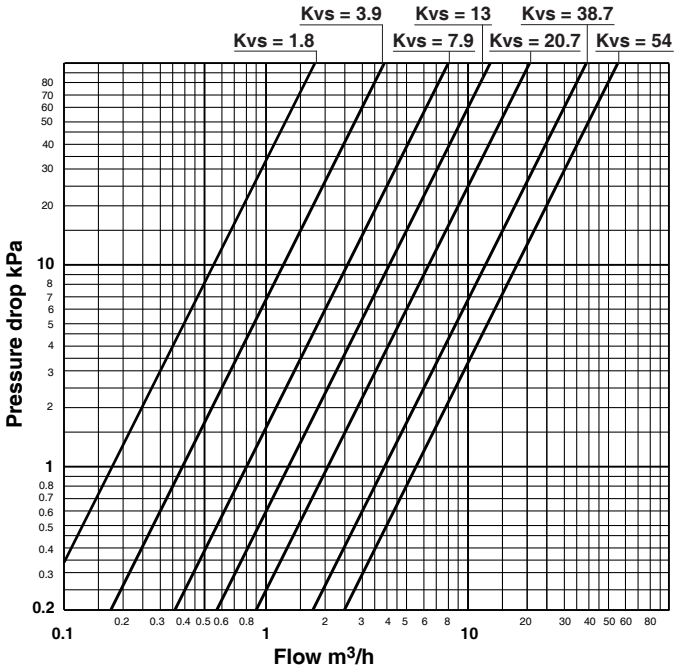


8. OVERALL DIMENSIONS



Model	DN inches	a mm	b mm	c mm	d mm
XDG 310	3/8"	52	26	28	74
XDG 315	1/2"	64	33.5	34.5	74
XDG 320	3/4"	74	39.5	43	74
XDG 325	1"	89	47	53	74
XDG 332	1"1/4	100	54.5	63	74
XDG 340	1"1/2	110	61.5	77	74
XDG 350	2"	130	73	93	74

9. PRESSURE DROP



Kvs = Flow in m^3/h with valve open and pressure drop of100 kPa.
100 kPa = 10 mWG = 1 bar

Amendment to data sheet

Date	**Revision No.**	Page	Section	Details of amendment
- -.05.94 LB	–	–	General	Layout data sheet
Various date	–	–	–	Unspecified; (02.10.01 MC; 07.05.04 MZ; 14.03.05 MZ; 11.09.06 MZ).
25.09.07 MC	**01**	All	General	Pages & illustrations; add model **XDG 310** (3/8") valve
03.11.08 MZ	02	2	Overall dimensions	Update "d" dimension

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