



Three-port Self-acting Control Valve for Liquid Systems

Description

The TW valve is a 3-port self-acting control valve for liquid systems (including sea water) and can be used for mixing or diverting applications. It is used in conjunction with a Spirax Sarco SA control system to provide a self-acting temperature control unit.

Alternatively, it can be used as an electrically actuated temperature control valve by fitting an EL7200 Series electric actuator with a suitable temperature transmitter and controller.

Available types

Duan-a valvas	Screwed	3/4", 1" and 11/2"
Bronze valves	Flanged	DN50
Cast iron valves	Flanged	DN50, DN80 and DN100

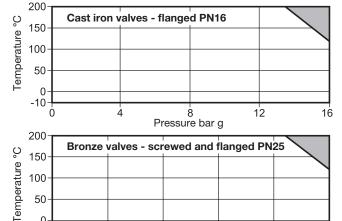
Sizes and pipe connections

Bronze valves
34", 1" and 1½" screwed BSP (BS 21 parallel) or NPT.
DN50 standard flange EN 1092 PN25 which also meets the face-to-face dimensions of PN16 and PN10.

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DN50, DN80 and DN100 standard flange EN 1092 PN16 which also meets the face-to-face dimensions of PN10.

Pressure/temperature limits



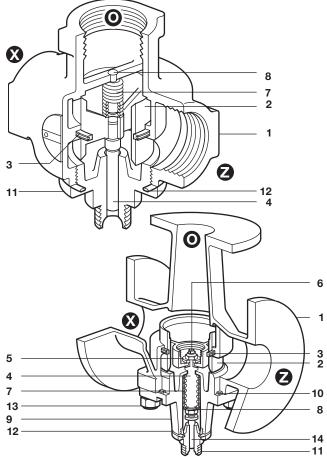
The product **must not** be used in this region.

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Pressure bar g

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		O .
Body design conditions	Cast iron	PN16
Body design conditions	Bronze	PN25
Maximum design pressure	Cast iron	16 bar g @ 120°C
	Bronze	25 bar g @ 120°C
Maximum design temperature	Cast iron	200°C @ 13.5 bar g
	Bronze	200°C @ 21.0 bar g
Minimum design temperature	Cast iron	-10°C
	Bronze	-90°C
Maximum operating	Cast iron	200°C @ 13.5 bar g
temperature	Bronze	200°C @ 21.0 bar g
Minimum on avating target and	Cast iron	-10°C
Minimum operating temperature	Bronze	-20°C
Note: For lower operating to	emperatures c	onsult Spirax Sarco
Maximum differential pressure	34", 1" and 11	⁄2" 3.4 bar
	DN50, DN80	and DN100 2.7 bar
Designed for a maximum cold	Cast iron	24 bar g
hydraulic test pressure of:	Bronze	37.5 bar g
Leakage rate 1%	of full K _V (see c	verleaf for K _V values)



Tender End y End y EN GJL 250 2 Piston Bronze CC491 K or CC491 KM 3 Piston sealing ring FEP/silicone rubber 'O' ring 4 Stem DN20 - DN40 Brass BS 2874 CZ 121 5 Spacer piece Bronze BS 2874 PB 102 6 Lock-nut Bronze BS 2874 PB 102 7 Return spring Stainless steel BS 2056 302 S26 8 Return DN20 - DN40 Brass BS 2874 CZ 121 8 spring cover DN50 - DN100 Bronze BS 2874 BP 102 9 Bonnet Bronze CC491 KM Cast iron EN GJL 250 10 Cover sealing ring Reinforced exfoliated graphite 11 Bonnet DN20 - DN25 DN25 DN40 - DN100 Brass CW 617N CV 61	Ma	aterials	6	9.0	
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Cast Iron	4	Dady		Bronze	CC491 KM
Stem DN20 - DN40 Brass BS 2874 CZ 121	1	воау		Cast iron	EN GJL 250
Stem	2	Piston		Bronze	CC491 K or CC491 KM
Stem	3	Piston s	ealing ring	FEP/silicor	ne rubber 'O' ring
DN50 - DN100 Bronze	4	Ctom	DN20 - DN40	Brass	BS 2874 CZ 121
6 Lock-nut Bronze BS 2874 PB 102 7 Return spring Stainless steel BS 2056 302 S26 Return DN20 - DN40 Brass BS 2874 CZ 121 8 spring cover DN50 - DN100 Bronze BS 2874 BP 102 9 Bonnet Bronze CC491 KM 10 Cover sealing ring Reinforced exfoliated graphite 11 Bonnet DN20 - DN25 DN40 - DN100 Brass DCW 617N 12 Bonnet gasket Nickel reinforced exfoliated graphite 13 Cover studs Steel BS 2693/1 Cover nuts Steel BS 1768/R	4	Sterri	DN50 - DN100	Bronze	
Return spring Stainless steel BS 2056 302 S26	5	Spacer p	oiece	Bronze	BS 2874 PB 102
Return DN20 - DN40 Brass BS 2874 CZ 121	6	Lock-nu	t	Bronze	BS 2874 PB 102
8 spring cover DN50 - DN100 Bronze BS 2874 BP 102 9 Bonnet Bronze CC491 KM 10 Cover sealing ring Reinforced exfoliated graphite 11 Bonnet DN20 - DN25 Brass CW 617N DN40 - DN100 Bronze CC491 KM 12 Bonnet gasket Nickel reinforced exfoliated graphite Steel BS 2693/1 Tover studs Steel BS 1768/R	7	Return s	pring	Stainless st	teel BS 2056 302 S26
cover DN50 - DN100 Bronze BS 2874 BP 102 9 Bonnet Bronze CC491 KM 10 Cover sealing ring Reinforced exfoliated graphite 11 Bonnet DN20 - DN25 DN40 Brass CW 617N 12 Bonnet gasket Nickel reinforced exfoliated graphite 13 Cover studs Steel Fig. "UNF x 1³/s" (35 mm) BS 2693/1 Cover nuts Steel BS 1768/R		Return	DN20 - DN40	Brass	BS 2874 CZ 121
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Cast iron EN GJL 250 10 Cover sealing ring Reinforced exfoliated graphite 11 Bonnet DN20 - DN25 DN40 - DN100 Brass Brass Brass Brass Brass Brance CC491 KM 12 Bonnet gasket Nickel reinforced exfoliated graphite Steel Tyle "UNF x 13/8" (35 mm) BS 2693/1 Cover nuts Steel BS 1768/R	0	Dannat		Bronze	CC491 KM
11 Bonnet DN20 - DN25 Brass CW 617N	9	Donnet		Cast iron	EN GJL 250
11 Bonnet DN40 - DN100 Bronze CC491 KM 12 Bonnet gasket Nickel reinforced exfoliated graphite 13 Cover studs Steel %e" UNF x 1³/8" (35 mm) BS 2693/1 Cover nuts Steel BS 1768/R	10	Cover se	ealing ring	Reinforced	exfoliated graphite
12 Bonnet gasket Nickel reinforced exfoliated graphite Steel 7/16" UNF x 13/8" (35 mm) BS 2693/1 Cover nuts Steel BS 1768/R	44	Donnot	DN20 - DN25	Brass	CW 617N
13 Cover studs Steel 7/16" UNF x 13/8" (35 mm) BS 2693/1 Cover nuts Steel BS 1768/R		Bonnet	DN40 - DN100	Bronze	CC491 KM
13 Cover studs 7/16" UNF x 13/8" (35 mm) BS 2693/1 Cover nuts Steel BS 1768/R	12	2 Bonnet gasket		Nickel reinf	orced exfoliated graphite
	13	13 Cover studs			1 ³ / ₈ " (35 mm) BS 2693/1
14 Back seal Bronze BS 2874 PB 102		Cover no	uts	Steel	BS 1768/R
	14	Back sea	al	Bronze	BS 2874 PB 102

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K_V values

Size	3/4"	1"	11/2"	DN50	DN80	DN100
K _V	4.64	8.96	20.29	41.20	97.85	118.45
For co	nversion:	Cv (UK	$= K_V \times 0.$	963 Cv	(US) = K	, x 1.156

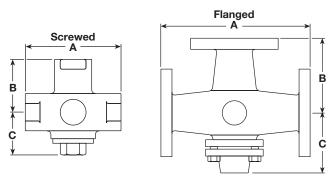
Stroke mm

Size	3/4"	1"	11/2"	DN50	DN80	DN100
Stroke	2.7	4.3	5.9	7.7	12.4	13.9

Sizing See TI-GCM-09.

Dimensions/weights (approximate) in mm and kg **Bronze screwed**

Size	Α	В	С	Weight
3/4"	97	54	58	1.2
1"	114	57	61	1.9
11/6"	151	70	76	3.8



Bron	76	flar	naed	PN2	5

Size	Α	В	С	Weight
DN50	201	144	133	15.0

Cast iron flanged PN16

Size	Α	В	С	Weight
DN50	219	153	133	13.7
DN80	250	176	135	25.0
DN100	351	151	140	32.0

Safety information, installation and maintenance For full details see the Installation and Maintenance Instructions (IM-P047-04) supplied with the product.

Installation note:

The valve should be fitted in a horizontal line with the actuator vertically below the line. Note that the ports are marked X, Z and O.

How to order

Example: 1 off Spirax Sarco DN50, TW 3-port self-acting control valve having a bronze body and flanged connections to PN25.

Spare partsThe spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

Available spares

Piston sealing ring set	3⁄4" to 11⁄2"	C, F, E
	DN50 to DN100	C, D, E
Piston set	3⁄4" to 11⁄2"	A, C, E, F
	DN50 to DN100	A, B, C, D, E, J, H
Set of cover studs and	P	

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of valve. **Example:** 1 - Piston set for a Spirax Sarco DN50 TW 3-port self-acting control valve.

