

296 Series

3-way valve

Technical Data Sheet



Description

296 Series valves are 3-way devices for shutting off boilers and expansion vessels in closed-circuit systems. The threaded versions are made of bronze and the flanged versions are made of cast iron. All have bores that comply with INAIL (Italian Institute for Insurance against Accidents at Work) requirements.

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3-way valve for boiler and expansion vessel shut-off.

The bores inside the valve correspond to those of the piping with the same nominal diameter in accordance with INAIL requirements.



Type	Part No.	DN	PN	Weight (g)
296	2961	1"	10	2,300
296	296114	1.1/4"	10	2,700
296	296112	1.1/2"	10	3,500
296	2962	2"	10	4,200
296	296212	65 *	16	31,100
296	29680	80 *	16	37,500
296	296100	100 *	16	52,700
296	296125	125 *	16	-
296	296150	150 *	16	-
296	296200	200 *	16	-

* Flanged model

Technical features	
Valve body nominal pressure	16 bar
Maximum operating pressure	PN10 (10 bar) PN16 (16 bar)
Maximum operating temperature	100°C
Design characteristics	
Valve body DN 1"-2"	Bronze
Valve body DN 65-200	Cast iron

Application

For systems with two or more boilers, the solutions prescribed by the "R" regulations should be adopted, namely:

- a separate safety pipe for each boiler;
- a safety pipe shared by two or more boilers in the same system or same secondary circuit sized for the overall nominal capacity of the boilers in question.

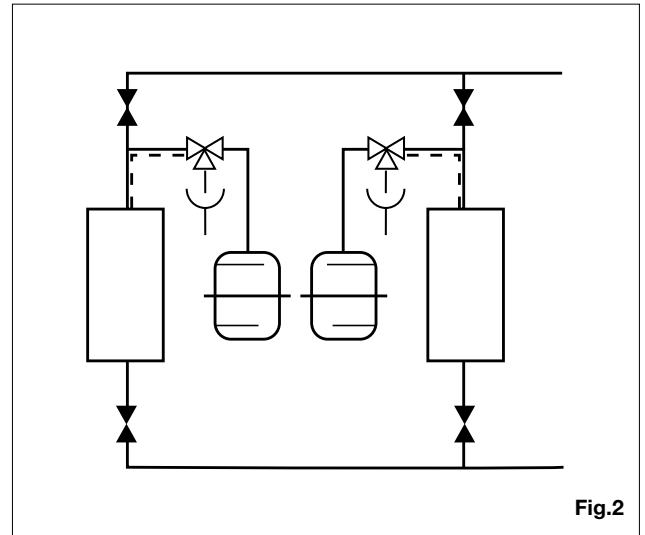
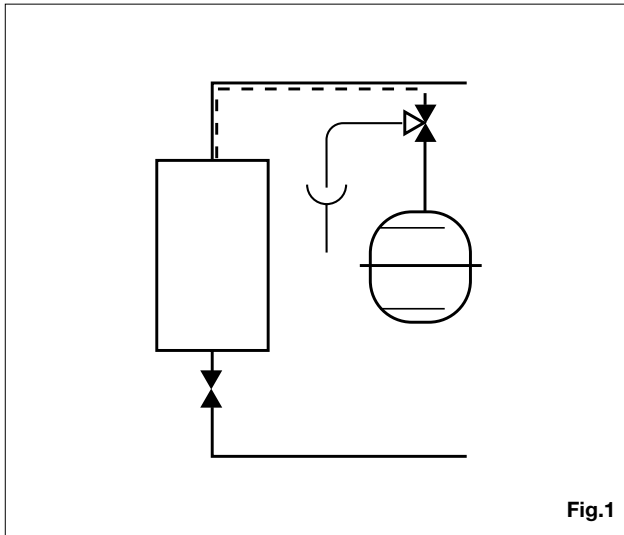
When the second solution is adopted, a three-way valve must be used for each boiler, designed to ensure that, in each position, the boiler communicates with the outdoor atmosphere through the safety pipe or through a vent pipe connected to the third way.

296 Series valves comply with "R" regulations because their bore corresponds to the bore of pipes with the same nominal diameter. In closed-circuit systems the three-way valve is the only permissible device when it is required to shut off the expansion vessel.

Sizing

Sizing depends on the boiler capacity and length of the safety circuit.

The run of piping from the shut-off valve to the expansion vessel must have a minimum internal diameter of 18 mm (**Fig.1**).
If two or more boilers are installed, an individual shut-off device must be installed for each boiler (**Fig.2**).



When sizing the safety pipe, it is necessary to consider the resistance of the three-way valve by increasing the virtual length by one hundred times the internal diameter of the pipe itself. The following values must therefore be added to the calculated safety pipe:

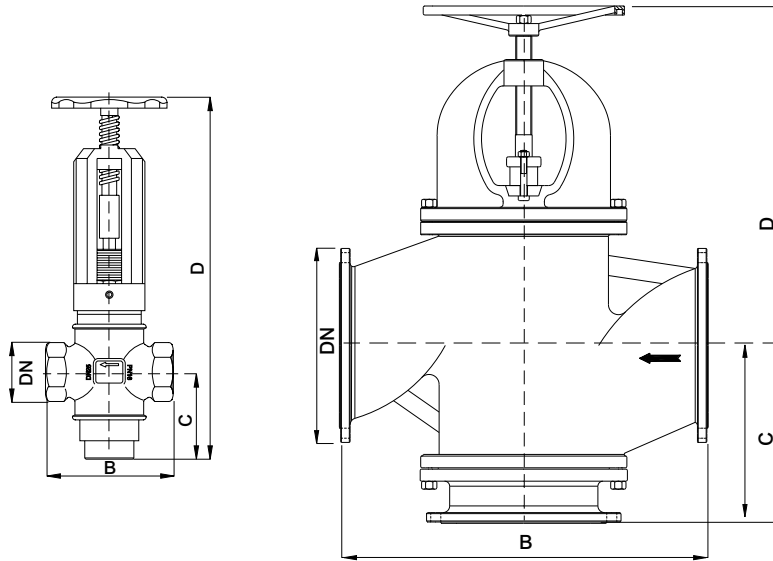
Ø1	2.5 m eq.
Ø1.1/4"	3.2 m eq.
Ø1.1/2"	4 m eq.
Ø1.1/4"	5 m eq.
Ø1	7 m eq.
Ø1.1/4"	9 m eq.

Installation

The constant flow port to be connected to the boiler is marked by the letter "C". The other two ways can be in communication either with the safety pipe (with closed vessel) or the outdoor atmosphere. As prescribed in point R.3.A.3.4 of the "R" regulations, the valve always ensures that, in each position, the boiler communicates with either the atmosphere or the safety pipe. When one of the ways is closed, therefore, the other two ways are completely free and there is absolutely no risk of an incorrect manoeuvre causing a reduction in the flow in one way, without a corresponding increase in the other way.

Overall dimensions (mm)

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DN	B	C	D
1" F	105	72	320
1.1/4" F	120	75	330
1.1/2" F	145	80	335
2" F	165	90	360
65	290	165	485
80	310	180	510
100	350	200	590
125	400	230	630
150	480	260	730
200	600	315	655

Specification text

296 Series

3-way valve **296 Series** WATTS brand for boiler and expansion vessel shut-off. The threaded versions from DN 1" to DN 2" have a bronze body and nominal pressure of PN10. The flanged versions from DN 64 to DN 200 have a cast iron body and nominal pressure of PN16. In accordance with INAIL technical specifications, the bores inside the valve correspond to those of the piping with the same nominal diameter.

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding.

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Watts Industries Italia S.r.l.

Via Brenno, 21 • 20853 Biassono (MB) • Italy
Tel. +39 039 4986.1 • Fax +39 039 4986.222
infowattsitalia@wattswater.com • www.watts.com