

Double union ball valve – DUAL BLOCK®

2-way ball valve with female ends for socket welding





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Technical specifications

Construction	2-way True Union ball valve with locked carrier, lockable union nuts and female ends for socket welding
Dimensions	20 ÷ 63 mm (DN 15 ÷ 50)
Pressure resistance	EN ISO 16135 20°C/10 bar
Temperature range	In connection with standard EN ISO 15874 "Plastics piping systems for hot and cold water installations – Polypropylene (PP)"
Connector type	 Fusion socket: In connection with pipes according to EN ISO 15874 "Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 2: Pipes" In connection with pipes according to EN ISO 15494 "Plastics piping systems for industrial applications"
Reference standards	Construction: EN ISO 16135 "Industrial valves - Ball valves of thermoplastics materials", EN ISO 15494 "Plastics piping systems for industrial applications"
	Test methods and requirements: ISO 9393 "Thermoplastics valves for industrial applica- tions – Pressure test methods and requirements"
	Welding: DVS 2208-01 "Welding thermoplastic materials – Heated element welding of pipes, piping parts and panels made of PP"
Valve material	PP-RCT (body, unions, end sockets); PP-H (ball and stem)
Seal material	EPDM, (O-Rings); PTFE (ball seats)
Control options	Hand operated, optionally with electric or pneumatic actuator

Double union ball valve – DUAL BLOCK®

		d	Item Code	В	B1	С	Cl	E	н	H1	Z	L	kg
		20	5152 65101	54	29	67	40	54	103	65	3	16	0,143
		25	5152 65102	65	35	85	49	65	114	70	4	18	0,238
		32	5152 65103	70	39	85	49	73	126	78	4	20	0,312
	40	5152 65104	83	46	108	64	86	142	88	5	22	0,480	
		50	5152 65105	89	52	108	64	98	164	93	11	25	0,638
	63	5152 65106	108	62	134	76	122	199	111	15	29	1,115	
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- Top quality industrial PP-RCT ball valve with double unions and fusion end sockets.
- Patented SEAT STOP[®] ball seat carrier system to microadjust ball seats and minimize axial force effects.
- Patented DUAL BLOCK[®] system allowing locking of the union nuts in a preset position, assuring seal integrity.
- Easy radial disassembly allowing quick replacement of O-rings and ball seats without any need for tools.
- Complying with EN ISO 16135, suitable for 20°C/10 bar.
- Option of disassembling downstream pipes with the valve in closed position.
- Floating full bore ball with high quality surface finish.
- Ball seat carriers can be adjusted using the handle insert.







- Ergonomic handle equipped with removable tool to adjust the ball seat carrier.
- 2 Handle lock 0°-90° ergonomically operable during service and padlockable.
- 3 Robust integrated bracket for valve anchoring, for easy and quick automation even after valve installation on the system via the Power Quick module (optional).
- 4 DUAL BLOCK[®] patented lock system that ensures union nut tightening hold even in severe conditions such as vibrations or heat dilation.
- 5 Machined high quality surface finish ball that guarantees a smooth operation and increased reliability.



Technical data

Pressure variation according to temperature

The values of the pressure-temperature-diagram are based on a service life of 25 years with safety factor at static pressure load and apply to water and harmless fluids to which the material is classified as chemically resistant.

For a complete overview on chemical resistance, please refer to the Wefatherm Specification Manual.

bar\°C -40 100 -20 0 20 40 60 80 120 140 16 14 12 10 8 6 4 2 0

Flow rate – pressure loss



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The C_v100 flow coefficient is the Q flow rate of litres per minute of water at a temperature of 20 °C that will generate Δp =1 bar pressure drop at a certain valve position. The C_v100 values shown in the table are calculated with the valve completely open.

Operating torque at maximum working pressure





Components – Exploded view

1 Handle insert (PVC) 2 Handle (HIPVC) 1 3 Spring (Stainless steel) 4 Handle safety block (PP-GR) Stem O-rings (EPDM) 5 2 Stem (PP-H) 6 Ball seat (PTFE) 7 3 Ball (PP-H) 8 15 Body (PP-RCT) 9 4 14 Ball seat O-Rings (EPDM) 10 6 (12) 11 Radial seal O-Ring (EPDM) 12 Socket seal O-Ring (EPDM) 0 5 **13** Ball seat carrier (PP-RCT) 14 End connector (PP-RCT) 15 Union nut (PP-RCT) 8 16 DUAL BLOCK® (POM) (7 (10) $(\mathbf{1})$ 16) (13) 12 14 9 15 (10 7

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Disassembly and assembly





Fig. 2

Disassembly

- 1) Isolate the valve from the line (release the pressure and empty the pipeline).
- 2) Unlock the union nuts by pressing the lever on the DUAL BLOCK[®] (16) along the axis and separate it from the union nut (Fig. 1-2). It is also possible to completely remove the block device from the body of the valve.
- 3) Fully unscrew the union nuts (15) and extract the body sideways.
- 4) Before dismounting, hold the valve in a vertical position and open it 45° to drain any liquid that might remain.
- 5) After closing the valve, remove the special insert (1) from the handle (2) and push the two projecting ends into the corresponding recesses on the ball seat carrier (13). Rotate the stop ring anti-clockwise to extract it (Fig. 3-4).
- 6) Pull the handle (2) upwards to remove it from the valve stem (6).
- 7) Press on the ball from the side opposite the "REGULAR ADJUST" label, being sure not to scratch it, until the ball seat carrier exits (13), then extract the ball (8).
- 8) Press the stem (6) inwards until it exits the body.
- Remove the O-Ring (5, 10, 11, 12) and PTFE ball seats (7) extracting them from their grooves, as illustrated in the exploded view.





Fig. 4

Assembly

Fig. 3

- 1) All the O-rings (5, 10, 11, 12) must be inserted in their grooves as shown in the exploded view.
- 2) Insert the stem (6) from inside the valve body (9).
- 3) Place the PTFE ball seats (7) in the housings in the body(9) and in the ball seat ball seat carrier (13).
- 4) Insert the ball (6) rotating it to the closed position.
- 5) Screw the carrier (13) into the body and tighten up in the clockwise direction using the handle (2) to limit stop.
- 6) Insert the valve between the end connectors (14) and tighten the union nuts (15) making sure that the socket seal O-rings (12) do not exit their seats.
- 7) The handle (2) should be placed on the valve stem (6).
 - During assembly operations, it is advisable to lubricate the rubber seals. Mineral oils are not recommended for this task as they react aggressively with EPDM rubber.





Installation





Fig. 5

Fig. 6



Installation

Before proceeding with installation. please follow these instructions carefully:

- Check that the pipes to be connected to the valve are aligned in order to avoid mechanical stress on the threaded joints.
- Check that the DUAL BLOCK[®] union nut locking device (16) is fitted to the valve body.
- To release the union nuts, axially press the release lever to separate the lock and then unscrew it in the counterclockwise direction.
- 4) Unscrew the union nuts (15) and insert them on the pipe segments.
- 5) Weld pipe ends with the end connectors (14) following the steps described in the Wefatherm Specification Manual.
- 6) Position the valve body between the end connectors and fully tighten the union nuts (15) manually by rotating clockwise without using wrenches or other tools that could damage the union nut surface.
- Lock the union nuts by returning the DUAL BLOCK[®] to its housing, pressing on it until the hinges lock on the union nuts.

Installation tip

To be sure the nut is correctly tightened, we advise you to operate as follows:

- check nut position on body in a fully tighten mode without EPDM O-Ring
- put the EPDM O-ring into the groove and tighten the nut reaching the same position.

In this way the EPDM O-Ring will be fully compressed into the groove.



Fig. 7

When the handle safety block (3, 4) is installed, lift the lever (4) and rotate the handle (Fig. 5-6).

A lock can also be installed on the handle to protect the system against tampering (Fig. 7).

Seal can be adjusted using the extractable insert on the handle (Fig. 3-4).

🚹 Benefit

The seals can be adjusted later with the valve installed on the pipe by simply tightening the union nuts. This "micro adjustment", only possible with Wefatherm valves thanks to the patented "Seat stop system", allows the seal to be recovered where PTFE ball seats are worn due to a high number of operations.

- If volatile liquid such as Hydrogen Peroxide (H₂O₂) or Sodium Hypochlorite (NaCIO) are used, for safety reasons we recommend you contact the service centre. These liquids, upon vaporising, could create hazardous over pressures in the area between the body and ball.
 - Always avoid sudden closing operations and protect the valve from accidental operations.
- The ball valve and jointing techniques may only be designed, engineered, installed and operated as described in the Wefatherm Specification Manual. Any other use is improper and therefore inadmissible.



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