

## TECHNICAL MANUAL

## PP &amp; PVC BALL VALVES



- Easy to install
- Removable handle
- Excellent flow characteristics
- Minimal pressure drop
- Suitable for both interior and exterior applications

**QUALITY MANAGEMENT**

Elysee quality system, ISO 9001:2008, is approved by CCC and IQNet. To ensure that all requirements of standards and regulations are fulfilled, our fittings are tested regularly and approved worldwide by the main testing institutes and certification bodies.

**ABRASION RESISTANCE**

The ball valves are suitable for the transportation of abrasive slurries and will withstand normal conditions found in urban, mining, industrial, rural water and waste water systems.

**EFFECT ON WATER**

Elysee ball valves are fully conform to international hygiene and sanitary requirements specified by WRAS and standards such as BS6920 (UK).

**STANDARDS****PP ball valves**

EN 12201-3

ISO 14236

**PVC-U ball valves**

British Standards. Fittings (inch) EN 1452-3, BS 4346

Fittings (metric) DIN 8063, KIWA 54, UNI 7442/75

Threaded Fittings BS21, DIN 2999, ISO 7/1

Solvent Cement BS EN 6920, BS4346 Part 3, WRAS

Approved Valves EN 1452 Part 3 Din 2999 ISO 7/1

**CHEMICAL RESISTANCE**

The chemical resistance properties of PP & PVC-U are excellent. It is resistant to most solutions of acids, alkalis, salts and to solvents that can be mixed with water.

**OPERATING PRESSURE**

**PP ball valves** are suitable for working pressures up to 10 bars @ 20°C.

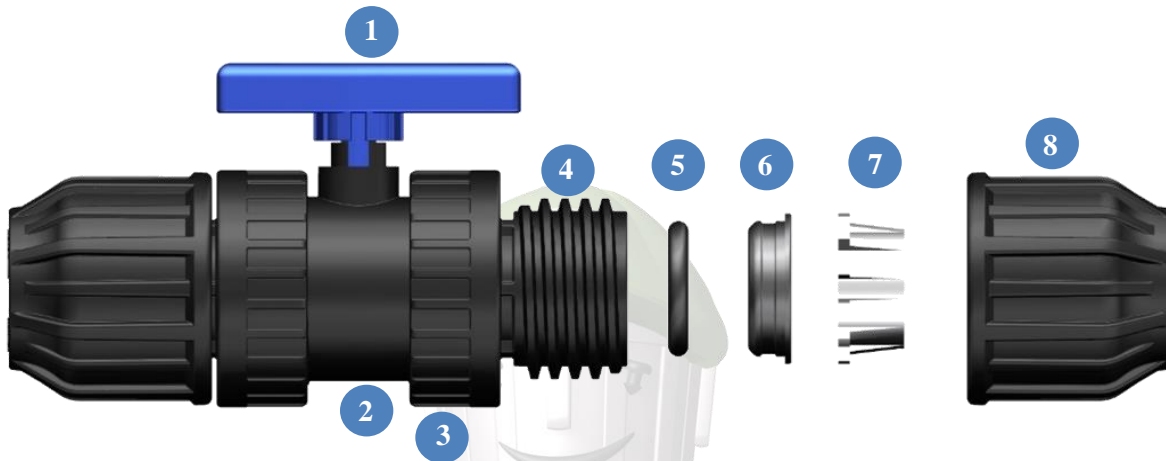
**PVC-U ball valves** are suitable for working pressures as follows:

| <i>Product</i>          | <i>Size</i> | <i>Pressure (bar)</i> |
|-------------------------|-------------|-----------------------|
| Fittings Solvent Cement | 1/2" - 4"   | 15                    |
| Fittings Threaded       | 1/2" - 4"   | 10                    |
| Valves                  | 1/2" - 2"   | 16                    |
| Valves                  | 2 1/2" - 3" | 10                    |

**WEATHERING**

Elysee ball valves offer excellent weathering properties which protects against degradation due to ultra- violet radiation. Therefore, their use is permissible on exposed systems without additional protection.

## PP BALL VALVES - MATERIALS AND COMPONENTS



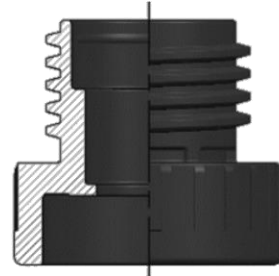
- (1) **LEVER** - Ergonomic design and removable. It is made by blue high performance polypropylene copolymer PP-B.
- (2) **BODY** - It is the main and most important component of the fitting system. It can be shaped in several dimensions and configurations to satisfy the requirements. It has a snagging arrangement internally to position the O-ring and insert, ensuring leak tightness when assembled with a pipe. A male trapezoidal thread is used externally to join the body with the nut. The body up to  $\varnothing 63$  mm is made with black high performance polypropylene copolymer PP-B and for  $\varnothing 75$  mm and  $\varnothing 90$  mm the body is made with PVC-U. It offers an excellent long-term pressure resistance and also high impact resistance compared to other plastic materials.
- (3) **NUT SCREW** –up to  $\varnothing 63$  mm is made with black high performance polypropylene copolymer PP-B. For  $\varnothing 75$  mm and  $\varnothing 90$  mm is made with grey PVC-U.
- (4) **ADAPTOR**- is made with black high performance polypropylene copolymer PP-B. Up to  $\varnothing 63$  mm the adaptor is one body with the nut screw. For  $\varnothing 75$  mm and  $\varnothing 90$  mm the adaptor is separated from the nut screw.
- (5) **O-RING** - Main purpose of this component is to ensure leak tightness between the fitting system and the inserted pipe. It is made by Nitrile rubber (NBR 70) with the ability to withstand high service temperature, excellent compression set, tear, and abrasion resistance.
- (6) **INSERT** - Main purpose of this component is to secure the O-ring and keep it in position during handling and operation. It is made by black high performance polypropylene copolymer PP-B.
- (7) **SPLIT RING** - Main purpose of this component is to ensure optimum grip between the fitting system and pipe. Internally, several sharp triangular teeth are applied and are in contact with pipe when inserted to the fitting system. Externally, conical ribs are applied to fit and tight progressively on cap's cone and pipe while pressure is applied in the system or pulling force is increased. They are made by high performance polyacetal material. It can be used to join all types of polyethylene pipes.
- (8) **NUT** - The main purpose of this component is the tightening of pipe with the fitting system. Internally, a female trapezoidal thread is applied to enable the connection with the fitting body. Externally, it has an ergonomic designed surface for easy handling during assembly with a pipe.

## AVAILABLE COMBINATIONS

PP DOUBLE UNION BALL VALVE COMPRESSION JOINT



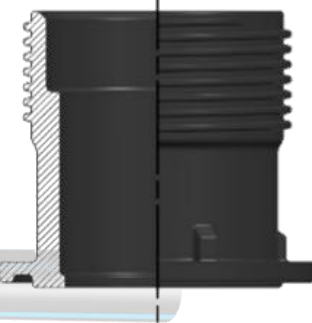
MALE ADAPTOR FOR 20 MM UP TO 63 MM (PP)



PP SINGLE UNION BALL VALVE FEMALE THREADED



MALE ADAPTOR FOR 75 MM & 90 MM (PP)

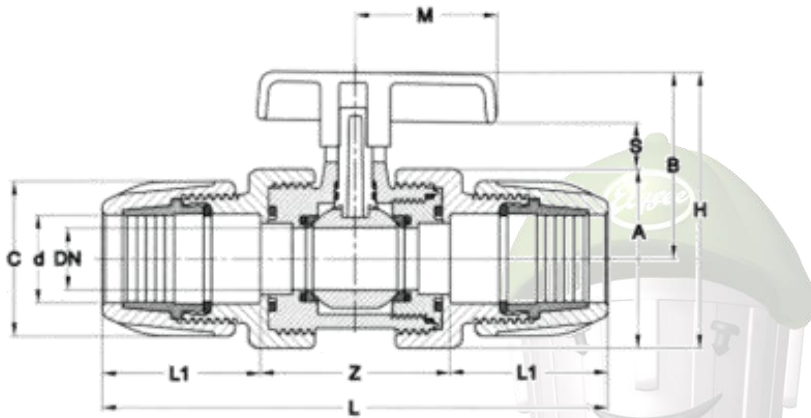


PP SINGLE UNION BALL VALVE MALE THREADED



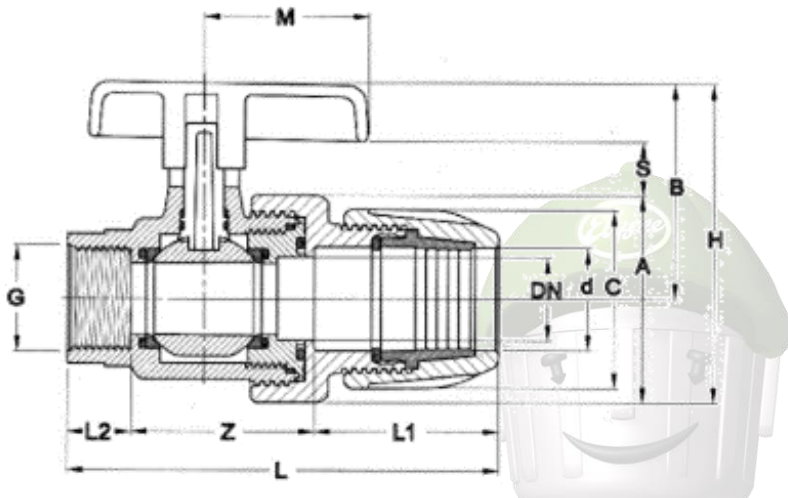
# NOMINAL DIMENSIONS

PP DOUBLE UNION BALL VALVE COMPRESSION JOINT



| CODE        | SIZE | WEIGHT (gr) | DN    | A      | B      | C      | H      | L      | M      | S     | Z      | L1     |
|-------------|------|-------------|-------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| 104C 00 020 | 20   | 130         | 22.30 | 47.00  | 45.00  | 40.00  | 69.00  | 132.00 | 35.00  | 10.00 | 50.00  | 41.00  |
| 104C 00 025 | 25   | 270         | 26.80 | 67.00  | 70.00  | 46.00  | 103.00 | 170.00 | 53.00  | 17.00 | 70.00  | 49.00  |
| 104C 00 032 | 32   | 330         | 33.60 | 67.00  | 70.00  | 58.00  | 103.00 | 190.00 | 53.00  | 17.00 | 70.00  | 60.00  |
| 104C 00 040 | 40   | 600         | 41.50 | 93.00  | 92.00  | 69.00  | 139.00 | 238.00 | 64.00  | 21.00 | 92.00  | 73.00  |
| 104C 00 050 | 50   | 820         | 51.50 | 93.00  | 92.00  | 84.00  | 139.00 | 267.00 | 64.00  | 21.00 | 92.00  | 87.50  |
| 104C 00 063 | 63   | 1440        | 64.50 | 113.00 | 105.00 | 111.00 | 162.00 | 331.00 | 73.00  | 23.00 | 111.00 | 110.00 |
| 104C 00 075 | 75   | 3290        | 78.00 | 151.00 | 122.00 | 121.00 | 197.00 | 462.00 | 100.00 | 25.00 | 170.00 | 146.00 |
| 104C 00 090 | 90   | 5000        | 92.00 | 185.00 | 148.00 | 146.00 | 240.00 | 500.00 | 123.00 | 30.00 | 206.00 | 150.00 |

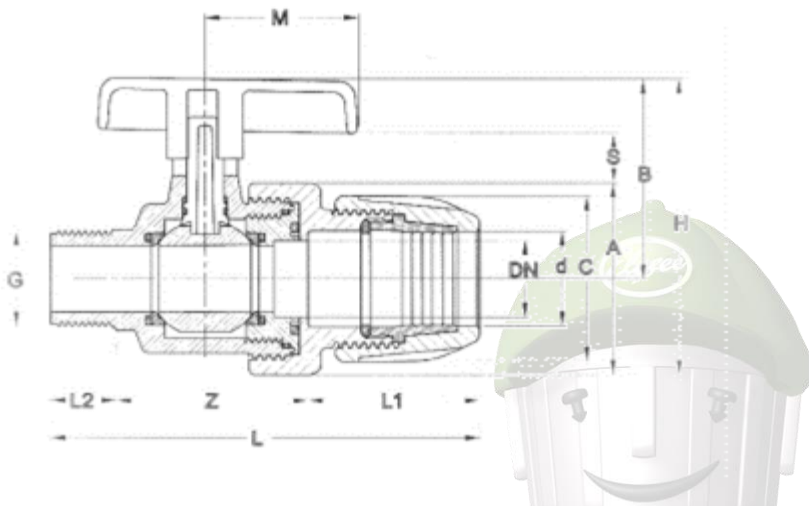
PP SINGLE UNION BALL VALVE FEMALE THREADED



| CODE        | SIZE      | WEIGHT (gr) | DN | A   | B   | C   | H   | L   | M  | S  | Z     | L1    | L2 |
|-------------|-----------|-------------|----|-----|-----|-----|-----|-----|----|----|-------|-------|----|
| 103F 020 01 | 20 X ½"   | 74          | 15 | 47  | 45  | 40  | 69  | 97  | 35 | 10 | 41    | 41    | 15 |
| 103F 020 02 | 20 X ¾"   | 74          | 15 | 47  | 45  | 40  | 69  | 97  | 35 | 10 | 41    | 41    | 16 |
| 103F 025 02 | 25 X ¾"   | 186         | 20 | 67  | 7   | 46  | 103 | 126 | 53 | 17 | 49    | 49    | 16 |
| 103F 032 03 | 32 X 1"   | 225         | 25 | 67  | 70  | 58  | 103 | 140 | 53 | 17 | 60    | 60    | 19 |
| 103F 040 04 | 40 X 1 ¼" | 466         | 32 | 93  | 92  | 69  | 139 | 175 | 64 | 21 | 73    | 73    | 21 |
| 103F 050 05 | 50 X 1 ½" | 549         | 40 | 93  | 92  | 84  | 139 | 193 | 64 | 21 | 83.50 | 87.50 | 22 |
| 103F 063 06 | 63 X 2"   | 941         | 50 | 113 | 105 | 111 | 162 | 225 | 73 | 23 | 94    | 105   | 26 |



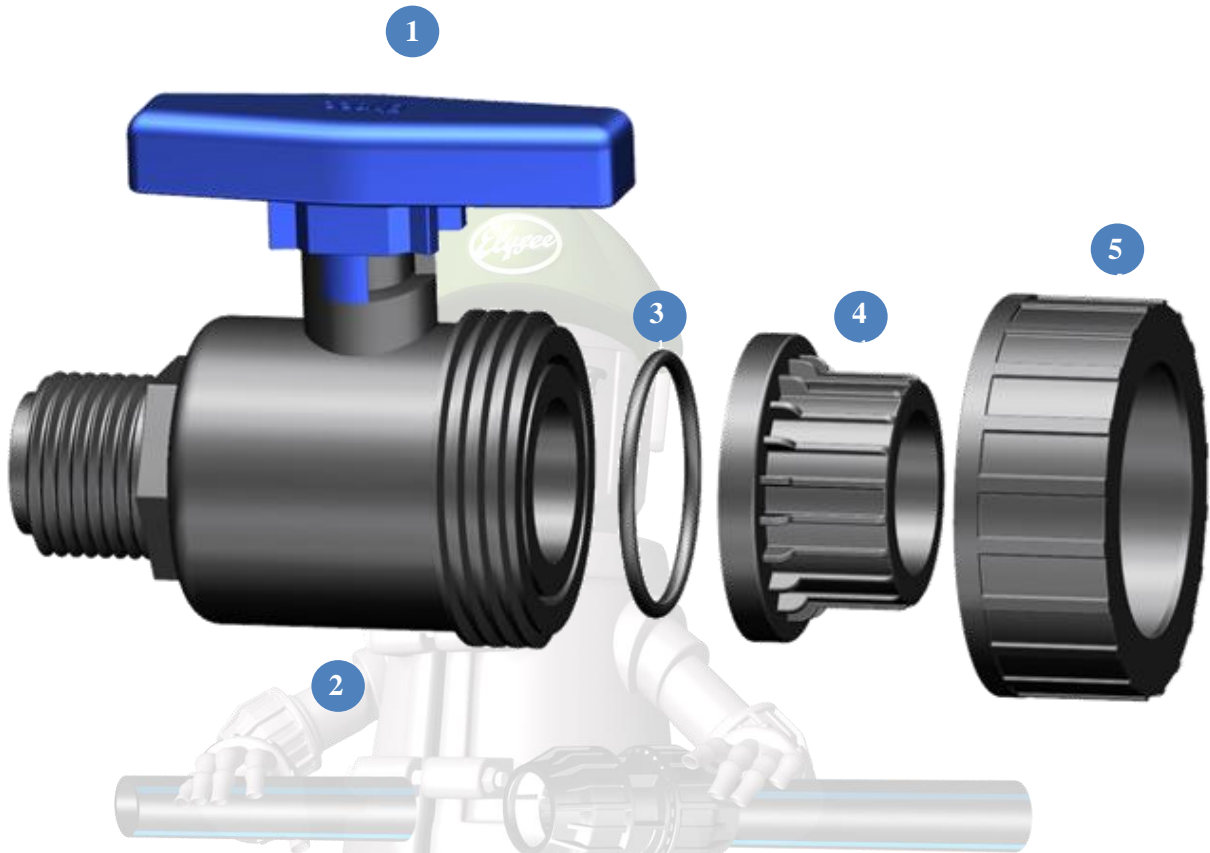
PP SINGLE UNION BALL VALVE MALE THREADED



| CODE        | SIZE      | WEIGHT (gr) | DN    | A      | B      | C      | H      | L      | M     | S     | Z      | L1     | L2    |
|-------------|-----------|-------------|-------|--------|--------|--------|--------|--------|-------|-------|--------|--------|-------|
| 103M 020 01 | 20 X ½"   | 75.00       | 15.00 | 47.00  | 45.00  | 40.00  | 69.00  | 103.00 | 35.00 | 10.00 | 47.00  | 41.00  | 15.00 |
| 103M 020 02 | 20 X ¾"   | 73.00       | 15.00 | 47.00  | 45.00  | 40.00  | 69.00  | 103.00 | 35.00 | 10.00 | 47.00  | 41.00  | 16.00 |
| 103M 025 02 | 25 X ¾"   | 191.00      | 20.00 | 67.00  | 7.00   | 46.00  | 103.00 | 135.00 | 53.00 | 17.00 | 70.00  | 49.00  | 16.00 |
| 103M 032 03 | 32 X 1"   | 220.00      | 25.00 | 67.00  | 70.00  | 58.00  | 103.00 | 147.00 | 53.00 | 17.00 | 68.00  | 60.00  | 19.00 |
| 103M 040 04 | 40 X 1 ¼" | 456.00      | 32.00 | 93.00  | 92.00  | 69.00  | 139.00 | 185.00 | 64.00 | 21.00 | 91.00  | 73.00  | 21.00 |
| 103M 050 05 | 50 X 1 ½" | 542.00      | 40.00 | 93.00  | 92.00  | 84.00  | 139.00 | 203.00 | 64.00 | 21.00 | 93.50  | 87.50  | 22.00 |
| 103M 063 06 | 63 X 2"   | 950.00      | 50.00 | 113.00 | 105.00 | 111.00 | 162.00 | 236.00 | 73.00 | 23.00 | 105.00 | 105.00 | 26.00 |



## PVC BALL VALVES - MATERIALS AND COMPONENTS



- (1) **LEVER** - Ergonomic design and removable. It is made by blue high performance polypropylene copolymer PP-B.
- (2) **BODY** - It is the main and most important component of the fitting system. It can be shaped in several dimensions and configurations to satisfy the requirements and arrangements. It has a snagging arrangement internally to position the O-ring, ensuring leak tightness. A male trapezoidal thread is used externally to join the body with the nut. The body is made with PVC. It offers an excellent long-term pressure resistance and also high impact resistance compared to other plastic materials.
- (3) **O-RING**- Main purpose of this component is to ensure leak tightness between the fitting system and the inserted pipe. It is made by E.P.D.M with the ability to withstand high service temperature, excellent compression set, tear, and abrasion resistance.
- (4) **ADAPTOR** – Is made with grey high performance PVC U.
- (5) **NUT SCREW** - Is made with grey high performance PVC U ensuring the adaptor seal on the O-ring.

# VARIOUS COMBINATIONS

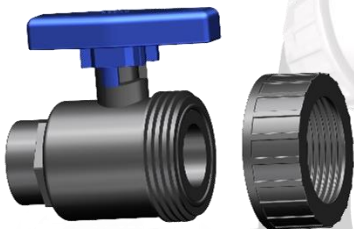
PVC DOUBLE UNION



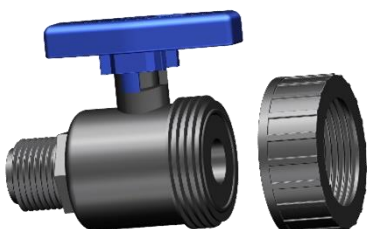
PVC SINGLE UNION BALL VALVES FEMALE GLUED



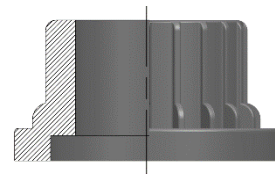
PVC SINGLE UNION BALL VALVES FEMALE THREADED



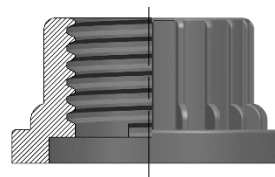
PVC SINGLE UNION BALL VALVES MALE THREADED



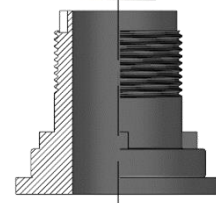
GLUED FEMALE (PVC-U)



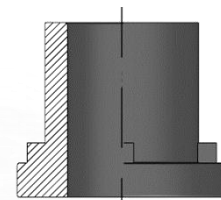
FEMALE THREADED (PVC-U)



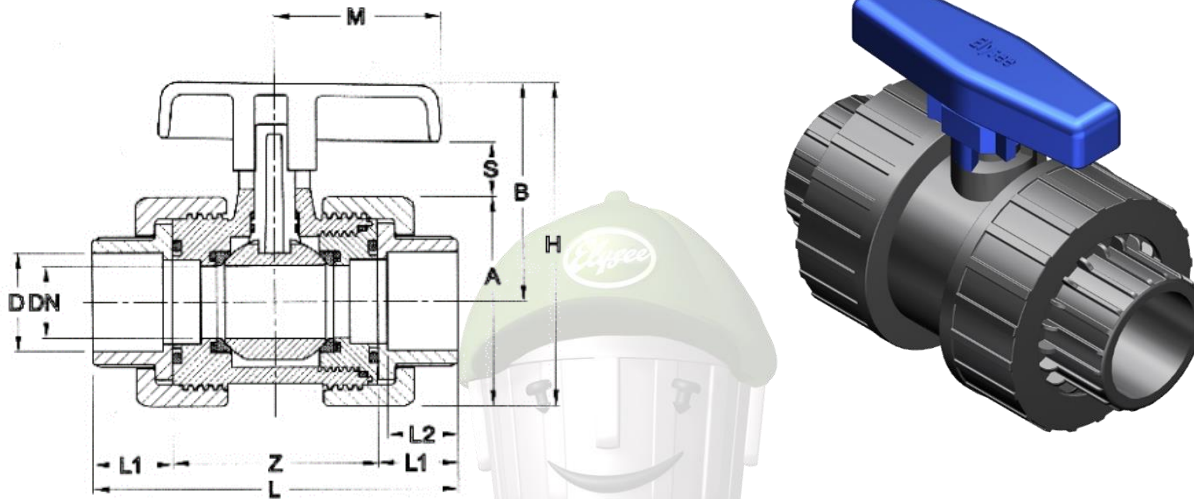
MALE THREADED (PVC-U)



MALE / FEMALE UNION ENDS (PVC-U)

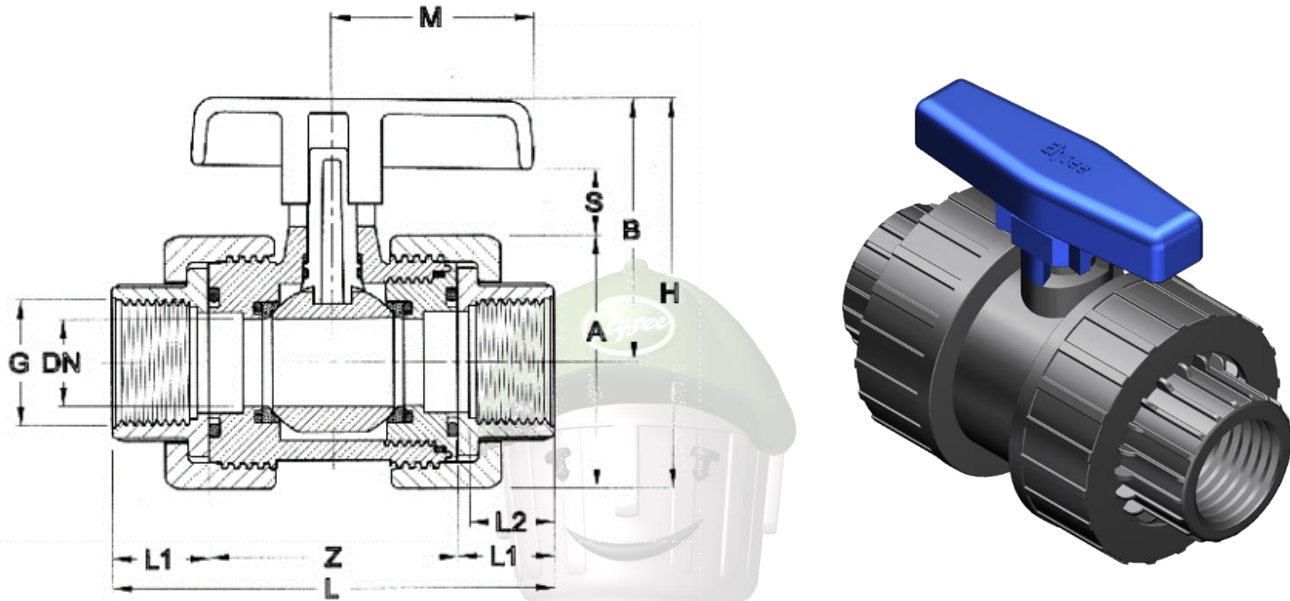


PVC DOUBLE UNION GLUED F/F



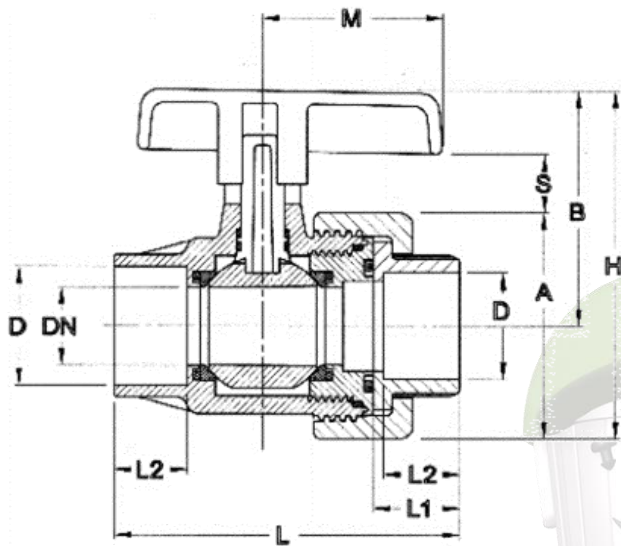
| CODE         | SIZE | WEIGHT (gr) | DN | A   | B   | H   | L   | M   | S  | Z   | L1   | L2 |
|--------------|------|-------------|----|-----|-----|-----|-----|-----|----|-----|------|----|
| 108F 020 020 | 20   | 127         | 15 | 48  | 46  | 70  | 84  | 35  | 10 | 44  | 20   | 17 |
| 108F 025 025 | 25   | 355         | 20 | 68  | 71  | 105 | 112 | 54  | 18 | 66  | 23   | 19 |
| 108F 032 032 | 32   | 360         | 25 | 68  | 71  | 105 | 126 | 54  | 18 | 66  | 30   | 23 |
| 108F 040 040 | 40   | 815         | 32 | 95  | 93  | 141 | 149 | 65  | 21 | 88  | 30.5 | 27 |
| 108F 050 050 | 50   | 826         | 40 | 95  | 93  | 141 | 157 | 65  | 21 | 88  | 34.5 | 31 |
| 108F 063 063 | 63   | 1382        | 50 | 115 | 107 | 164 | 190 | 74  | 23 | 102 | 44   | 38 |
| 108F 075 075 | 75   | 2500        | 65 | 151 | 122 | 197 | 214 | 100 | 25 | 116 | 49   | 44 |
| 108F 090 090 | 90   | 3800        | 80 | 185 | 148 | 240 | 259 | 123 | 30 | 140 | 59   | 51 |
| 108F 110 110 | 110  | 3820        | 80 | 185 | 148 | 240 | 275 | 123 | 30 | 140 | 67   | 61 |

P VC DOUBLE UNION THREADED F/F



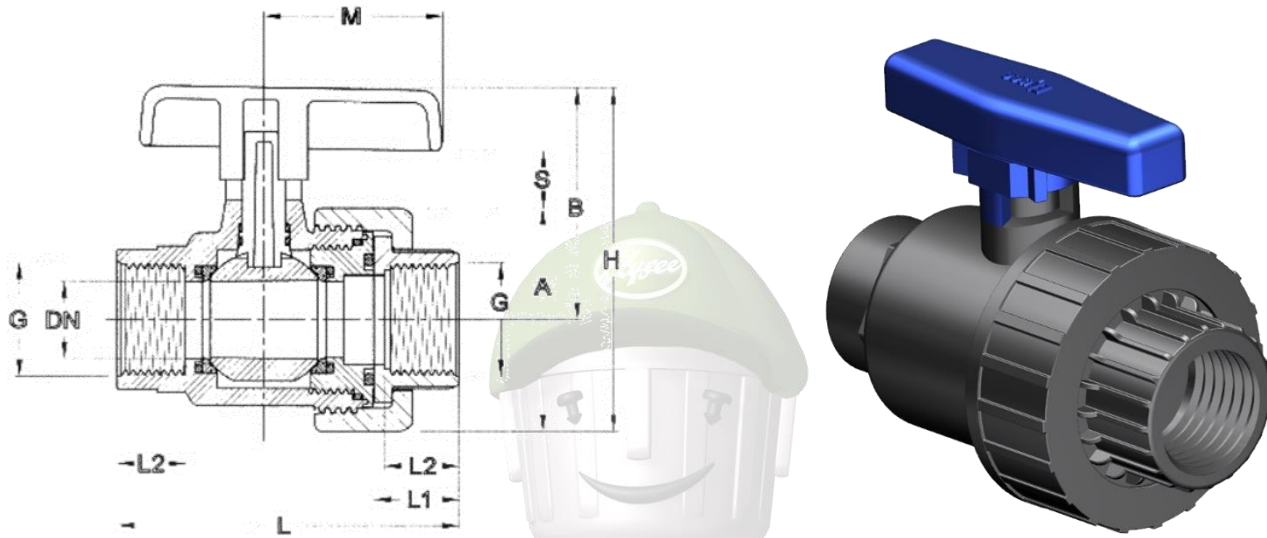
| CODE        | SIZE        | WEIGHT (gr) | DN | A   | B   | H   | L   | M   | S  | Z   | L1   | L2 |
|-------------|-------------|-------------|----|-----|-----|-----|-----|-----|----|-----|------|----|
| 109T 001 01 | ½" X ½"     | 127         | 15 | 48  | 46  | 70  | 84  | 35  | 10 | 44  | 20   | 17 |
| 109T 002 02 | ¾" X ¾"     | 355         | 20 | 68  | 71  | 105 | 112 | 54  | 18 | 66  | 23   | 19 |
| 109T 003 03 | 1" X 1"     | 360         | 25 | 68  | 71  | 105 | 126 | 54  | 18 | 66  | 30   | 23 |
| 109T 004 04 | 1 ¼" X 1 ¼" | 815         | 32 | 95  | 93  | 141 | 149 | 65  | 21 | 88  | 30.5 | 27 |
| 109T 005 05 | 1 ½" X 1 ½" | 826         | 40 | 95  | 93  | 141 | 157 | 65  | 21 | 88  | 34.5 | 31 |
| 109T 006 06 | 2" X 2"     | 1382        | 50 | 115 | 107 | 164 | 190 | 74  | 23 | 102 | 44   | 38 |
| 109T 007 07 | 2 ½" X 2 ½" | 2500        | 65 | 151 | 122 | 197 | 214 | 100 | 25 | 116 | 49   | 44 |
| 109T 008 08 | 3" X 3"     | 3800        | 80 | 185 | 148 | 240 | 259 | 123 | 30 | 140 | 59   | 51 |

PVC SINGLE UNION BALL VALVES F/F GLUED



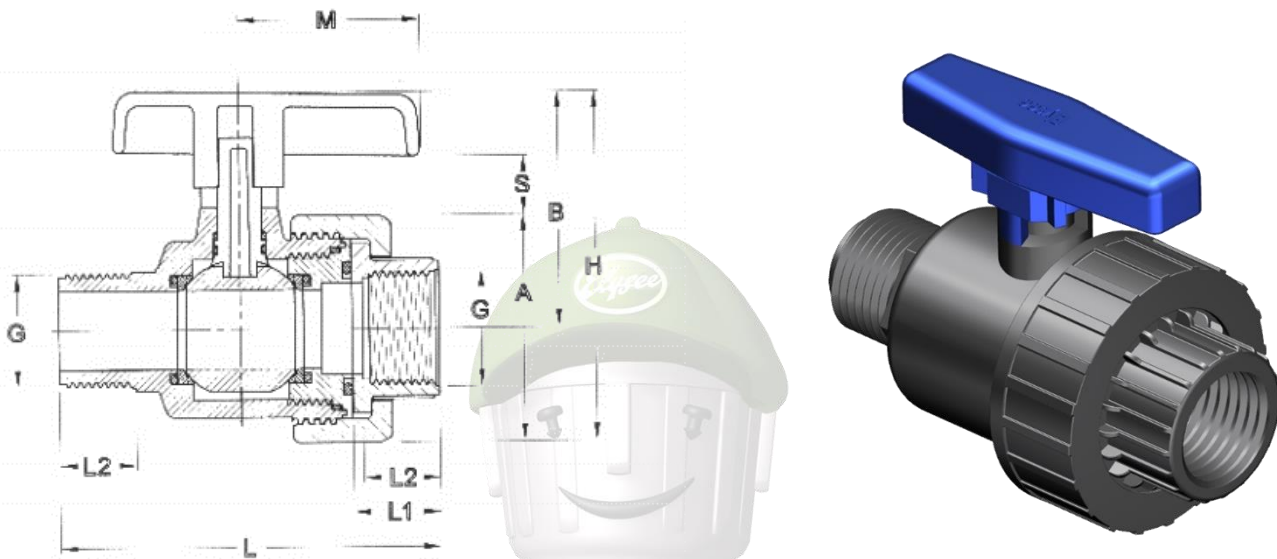
| CODE        | SIZE | WEIGHT (gr) | DN    | A      | B      | H      | L      | M      | S     | L1    | L2    |
|-------------|------|-------------|-------|--------|--------|--------|--------|--------|-------|-------|-------|
| 108G 00 020 | 20   | 91          | 15.00 | 48.00  | 46.00  | 70.00  | 75.00  | 35.00  | 10.00 | 20.00 | 17.00 |
| 108G 00 025 | 25   | 264         | 20.00 | 68.00  | 71.00  | 105.00 | 100.00 | 54.00  | 18.00 | 23.00 | 19.00 |
| 108G 00 032 | 32   | 273         | 25.00 | 68.00  | 71.00  | 105.00 | 111.00 | 54.00  | 18.00 | 30.00 | 23.00 |
| 108G 00 040 | 40   | 606         | 32.00 | 95.00  | 93.00  | 141.00 | 135.00 | 65.00  | 21.00 | 30.50 | 27.00 |
| 108G 00 050 | 50   | 635         | 40.00 | 95.00  | 93.00  | 141.00 | 143.00 | 65.00  | 21.00 | 34.50 | 31.00 |
| 108G 00 063 | 63   | 1028        | 50.00 | 115.00 | 107.00 | 164.00 | 172.00 | 74.00  | 23.00 | 44.00 | 38.00 |
| 108G 00 075 | 75   | 1920        | 65.00 | 151.00 | 122.00 | 197.00 | 204.00 | 100.00 | 25.00 | 49.00 | 44.00 |
| 108G 00 090 | 90   | 3000        | 80.00 | 185.00 | 148.00 | 240.00 | 239.00 | 123.00 | 30.00 | 59.00 | 51.00 |
| 108G 00 110 | 110  | 3140        | 80.00 | 185.00 | 148.00 | 240.00 | 255.00 | 123.00 | 30.00 | 67.00 | 61.00 |

PVC SINGLE UNION BALL VALVES F/F THREADED



| CODE        | SIZE        | WEIGHT (gr) | DN    | A      | B      | H      | L      | M      | S     | L1    | L2    |
|-------------|-------------|-------------|-------|--------|--------|--------|--------|--------|-------|-------|-------|
| 108T 001 01 | ½" X ½"     | 92          | 15.00 | 48.00  | 46.00  | 70.00  | 64.00  | 35.00  | 10.00 | 20.00 | 15.00 |
| 108T 002 02 | ¾" X ¾"     | 265         | 20.00 | 68.00  | 71.00  | 105.00 | 84.00  | 54.00  | 18.00 | 23.00 | 16.00 |
| 108T 003 03 | 1" X 1"     | 273         | 25.00 | 68.00  | 71.00  | 105.00 | 92.00  | 54.00  | 18.00 | 30.00 | 19.00 |
| 108T 004 04 | 1 ¼" X 1 ¼" | 620         | 32.00 | 95.00  | 93.00  | 141.00 | 116.00 | 65.00  | 21.00 | 30.50 | 21.00 |
| 108T 005 05 | 1 ½" X 1 ½" | 652         | 40.00 | 95.00  | 93.00  | 141.00 | 122.00 | 65.00  | 21.00 | 34.50 | 22.00 |
| 108T 006 06 | 2" X 2"     | 1060        | 50.00 | 115.00 | 107.00 | 164.00 | 143.00 | 74.00  | 23.00 | 44.00 | 26.00 |
| 108T 007 07 | 2 ½" X 2 ½" | 1970        | 65.00 | 151.00 | 122.00 | 197.00 | 202.00 | 100.00 | 25.00 | 49.00 | 36.00 |
| 108T 008 08 | 3" X 3"     | 2950        | 80.00 | 185.00 | 148.00 | 240.00 | 220.00 | 123.00 | 30.00 | 59.00 | 36.00 |

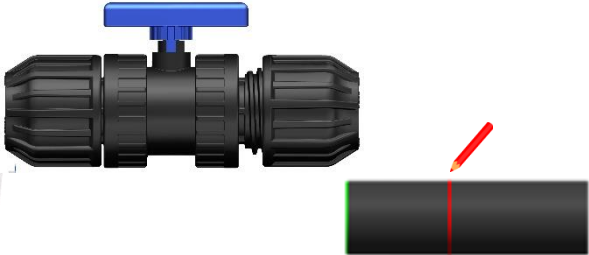
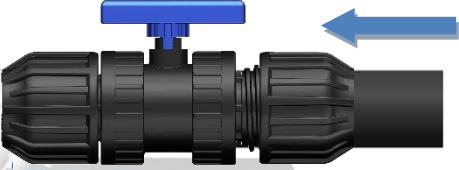

PVC SINGLE UNION BALL VALVES M/F THREADED



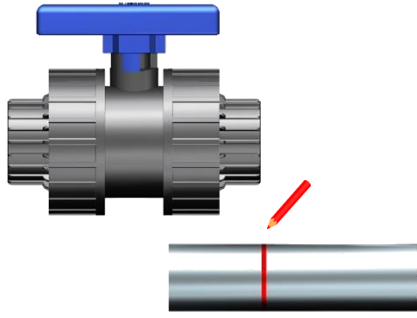
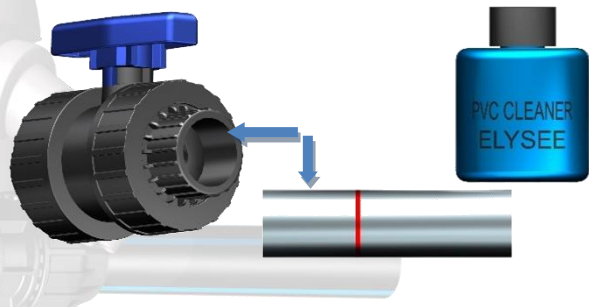
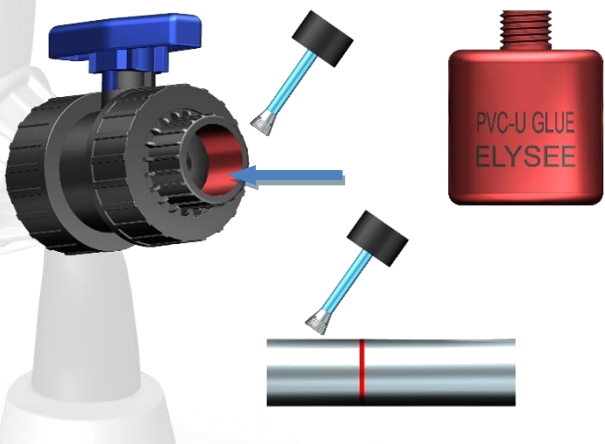
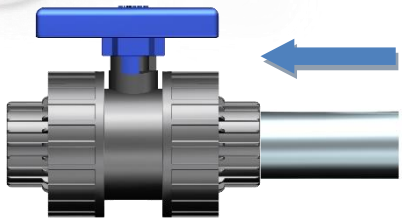
| CODE        | SIZE        | WEIGHT (gr) | A      | B      | H      | L      | M     | S     | L1    | L2    |
|-------------|-------------|-------------|--------|--------|--------|--------|-------|-------|-------|-------|
| 108M 001 01 | ½" X ½"     | 90          | 48     | 46     | 70     | 70     | 35    | 10    | 20    | 15    |
| 108M 002 02 | ¾" X ¾"     | 272         | 68.00  | 71.00  | 105.00 | 93.00  | 54.00 | 18.00 | 23.00 | 16.00 |
| 108M 003 03 | 1" X 1"     | 272         | 68.00  | 71.00  | 105.00 | 99.00  | 54.00 | 18.00 | 30.00 | 19.00 |
| 108M 004 04 | 1 ¼" X 1 ¼" | 614         | 95.00  | 93.00  | 141.00 | 126.00 | 65.00 | 21.00 | 30.50 | 21.00 |
| 108M 005 05 | 1 ½" X 1 ½" | 638         | 95.00  | 93.00  | 141.00 | 133.00 | 65.00 | 21.00 | 34.50 | 22.00 |
| 108M 006 06 | 2" X 2"     | 1065        | 115.00 | 107.00 | 164.00 | 154.00 | 74.00 | 23.00 | 44.00 | 26.00 |



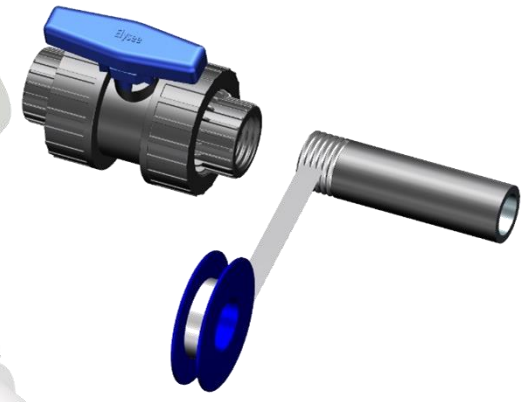
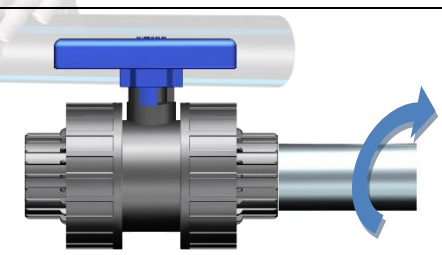
# ASSEMBLY PROCEDURE - PP BALL VALVE COMPRESSION JOINT

|        | INSTRUCTIONS  | PROCEDURES  |
|--------|---|---|
| STEP 1 | <p>Do not undo or remove the nut from the body.</p> <p>Cut the PE pipe square, remove burns &amp; chamfer the end of the pipe with a chamfering tool.</p> <p>Mark the insertion depth on the PE pipe.</p> <p>Lubricate the end pipes.</p> |     |
| STEP 2 | <p>Push the PE pipe into the fitting, through the nut, split ring and O-ring, as far as it will go until it meets the 1st resistance.</p>   |    |
| STEP 3 | <p>Turn the nut clockwise with hand until is feasible.</p> <p>Tight well with a wrench.</p> <p>The mark on the pipe is now just in front of the nut.</p>  |  |

# ASSEMBLY PROCEDURE - PVC CEMENT JOINTING VALVE

|        | INSTRUCTIONS  | PROCEDURES   |
|--------|---|--|
| STEP 1 | <p>Cut the PVC pipe square, remove burrs &amp; chamfer the end of the pipe with a chamfering tool.</p> <p>Mark the insertion depth on the PVC pipe.</p> |    |
| STEP 2 | <p>Clean the pipe and the ball valve with cleaner.</p>  |   |
| STEP 3 | <p>Put PVC glue to the marked area of the pipe and into the inside diameter of the ball valve.</p>  |  |
| STEP 4 | <p>Put the pipe into the ball valve until the marked line.</p> <p>Let the glue to dry.</p>  |  |

# ASSEMBLY PROCEDURE - PVC TAPPED VALVE

|        | INSTRUCTIONS  | PROCEDURES   |
|--------|---|--|
| STEP 1 | Put PTFE tape on the threads of the pipe                    |    |
| STEP 2 | Turn the pipe clockwise and tight well until it's feasible. |  |

## CERTIFICATES



**POTABLE  
WATER**



**DVGW  
(COMPRESSION JOINT)**

