

# Technical catalogue



Manual valves, fittings, compression fittings, clamp saddles



Pressure piping fluids conveying





# Contents

## PVC-U MANUAL VALVES

General characteristics	6
Reference standards	8
Approvals and quality marks	9
Solvent welding instructions	10
Installation instructions for threaded joints	15
Installation instructions for flanged joints	16
Main properties	18
724- True union ball valve (Industry & water treatments)	20
420- True union ball valve (Swimming pools)	26
426- True union ball valve with PE union ends (Swimming pools)	32
334- True union ball valve with compression fittings (Swimming pools)	36
322- True union ball valve (Irrigation)	40
302- Single union ball valve (Irrigation)	46
303- Single union ball valve (Irrigation)	52
304- Single union ball valve (Irrigation)	56
305- Single union ball valve with compression fitting (Irrigation)	60
335- Single union ball valve with compression fittings (Irrigation)	64
930- Three-way ball valve	68
800- Butterfly valve	74
230- True union spring check valve	80
CROV- Clapet check valve	86
210- True union foot ball valve	90
220- True union air release ball valve	96

## RACCORDI IN PVC-U

General characteristics	102
Reference standards	104
Approvals and quality marks	105
Solvent welding instructions	106
Installation instructions for threaded joints	111
Installation instructions for flanged joints	112
Main properties	114
Metric series	118
Threaded Series	129
Transition Series DIN/BSP	137
Accessories and Spare Parts	145



BS Plain Series	148
Transition Series BS/BSP	152
Accessories and Spare Parts	155

## **COMPRESSION FITTINGS**

Reference standards	158
Approvals and quality marks	159
Compression Fittings	160
Components and Spare Parts	171
Installation	175

## **CLAMP SADDLES**

Reference standards	180
Approvals and quality marks	181
Clamp saddles in PP	182

<b>KEY ABBREVIATIONS</b>	191
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# Technical catalogue



Manual valves in PVC-U



# General characteristics

## PVC-U

**Developed in 1930 in Germany, PVC-U (rigid polyvinyl chloride - unplasticized) is obtained through the polymerization of a vinyl chloride monomer. The presence of chlorine in the PVC-U molecule results in a high performance resin, in terms of thermal stability and chemical and mechanical resistance, up to temperatures of 60° C.**

The different formulations obtained by adding suitable additives and stabilizers render the PVC-U the most versatile of all plastic materials, allowing it to be adapted to many applications involving fluids under pressure.

PVC-U represents one of the more economic solutions in the field of thermoplastic and metal materials for resolving problems in the transport of corrosive chemical fluids, and in the distribution and treatment of water in general.

The main reasons for this preference are the unique characteristics of the resin, which include:

- **Good chemical resistance:** PVC-U resins have excellent chemical resistance to most acids and alkalis, paraffin/aliphatic hydrocarbons and saline solutions. It is not recommended for the transport of polar organic compounds, including some types of chlorinated and aromatic solvents. PVC-U resins are also fully compatible with the transport of foodstuffs, demineralised water, potable water and unconditioned water, as provided for by current national and international standards.
- **Good thermal stability:** PVC-U resins have good thermal stability in the temperature range between 20°C and 50°C and are typically used in industrial and water supply applications, guaranteeing excellent mechanical strength, sufficient rigidity for the purpose, reduced thermal expansion coefficients and high factors of safety in service. PVC-U compounds are also resistant to combustion with a flash point of 399°C. The flame, in fact, only persists if the oxygen concentration is twice that of atmospheric or in the presence of a flame from an external source. Flash point: 399° C. Oxygen index: 45%. UL 94 class: V0.  
Thanks to the reduced coefficient of thermal conductivity ( $\lambda = 0,15 \text{ W/m } ^\circ\text{C}$  according to ASTM C177) the use of PVC-U resin for transporting hot fluids reduces heat loss and virtually eliminates condensation problems.
- **Good mechanical strength:** PVC-U resins are characterised by their low permeability to oxygen and reduced water absorption (0.1% at 23°C according to ASTM D 570). The thermal stability of the material leads to good impact resistance and the capacity to support service pressures of 4 - 6 - 10 - 16 bar at 20°C.
- **Resistance to ageing:** PVC-U resins have a high circumferential breaking strength (Minimum Required Strength MRS  $\geq 25.0 \text{ MPa}$  at 20°C) and allow long installation lifetimes without showing any signs of significant physical-mechanical deterioration.

<b>Density</b>	
Test method	ISO 1183 - ASTM D792
Unit of measurement	g/cm <sup>3</sup>
Value	1,38
<b>Modulus of elasticity</b>	
Test method	ISO 527
Unit of measurement	MPa = N/mm <sup>2</sup>
Value	3200
<b>IZOD notched impact strength at 23°C</b>	
Test method	ASTM D256
Unit of measurement	J/m
Value	50
<b>Ultimate elongation</b>	
Test method	ISO 527
Unit of measurement	%
Value	50
<b>Shore hardness</b>	
Test method	ISO 868
Unit of measurement	Shore D
Value	80
<b>Tensile strength</b>	
Test method	ISO 527
Unit of measurement	MPa = N/mm <sup>2</sup>
Value	50
<b>VICAT softening point (B/50)</b>	
Test method	ISO 306
Unit of measurement	°C
Value	76
<b>Heat distortion temperature HDT (0.46 N/mm<sup>2</sup>)</b>	
Test method	ASTM D648
Unit of measurement	°C
Value	86
<b>Thermal conductivity at 23°C</b>	
Test method	DIN 52612-1 - ASTM C177
Unit of measurement	W/(m °C)
Value	0,16
<b>Coefficient of linear thermal expansion</b>	
Test method	DIN 53752 - ASTM D696
Unit of measurement	m/(m °C)
Value	8 x 10 <sup>-5</sup>
<b>Limiting Oxygen Index</b>	
Test method	ISO 4859-1 - ASTM D2863
Unit of measurement	%
Value	45

# Reference standards

## PVC-U

**Production of the ASTORE valves is carried out according to the highest quality standards and in full compliance with the environmental restrictions set by the applicable laws in force and in accordance with ISO 14001.**

**All products are made in accordance with the quality guarantee system in compliance with ISO 9001.**

- **BS 4346-1**

Joints and fittings for use with solvent weld PVC pressure pipes

- **EN 10226-1/2**

Pipe threads where pressure tight joints are made on the threads.  
Part 2: Taper external threads and taper internal threads - Dimensions, tolerances and designation

- **EN ISO 1452**

PVC-U pipes and fittings for water supply systems

- **EN ISO 15493**

Plastic piping systems (Pipes, Fittings and Valves) in ABS, PVC-U, PVC-C for industrial applications

- **EN 12201-3**

Piping systems, plastic, for water distribution, drainage and pressure sewerage - Polyethylene (PE) - Part 3: Fittings

- **EN 12201-5**

Piping systems, plastic, for water distribution, drainage and pressure sewerage - Polyethylene (PE) - Part 4: Valves

- **ISO 7**

Fittings with pressure-tight threaded joints

- **ISO 228-1**

Fittings with threaded connections

- **ISO 727**

PVC-U pipes and fittings. Dimensions and tolerances - metric series

- **ISO 4427-3**

Piping systems, plastic, for water distribution, drainage and pressure sewerage - Polyethylene (PE) - Part 3: Fittings

- **ISO 17885**

Plastic Piping Systems - Mechanical Fittings for Pressure Piping Systems - Specifications



# Approvals and quality marks



- **ACS France (Attestation de conformité Sanitaire)**

Suitability of PVC-U and PVC-C for drinking water



- **WRAS (Water regulations advisory scheme - UK)**

Suitability of PVC-U for transporting potable water



- **OQC by NSF**

ASTORE products are OQC certified, Certificate of Controlled Origin by NSF.

NSF with the brand OQC (Origin and Quality controlled) also declare the suitability of the products for transporting potable water.

For the detailed list of certified products please refer to OQC on the [www.nsf.org](http://www.nsf.org) site

# Solvent welding

## Instructions

Solvent welding, or cement jointing, is the longitudinal joining system for connecting rigid PVC-U pipes and fittings.

The "cementing" is carried out using adhesives/cements obtained by dissolving PVC-U polymer in a solvent mixture. This solvent liquefies the walls of the pipe and/or fitting, allowing the constituent material to chemically combine and be subsequently welded. Chemical welding allows permanent joints to be achieved possessing chemical and mechanical strength characteristics identical to those of the pipes and fittings joined. The adhesives/solvent cements must be selected according to the type of thermoplastic resin to weld, in that the nature of the solvents vary, as does the weld material contained in them. It must be remembered, therefore, that all the solvent cements designed for joining thermoplastic pipes and fittings must be used to join pipes, fittings and valves of the same material.

Before starting any solvent welding operations, the efficiency and condition of the equipment used and the pieces to be assembled must be verified, in particular the uniformity, fluidity and expiry date of the solvent cement.

- 1) Cut the pipe perpendicular to its axis to obtain a clean square section, preferably using a wheeled pipe cutter designed specifically for thermoplastic pipes (fig. 1).
- 2) Chamfer the outer edges of the pipe in order to ensure that it enters the socket of the fitting at an angle of  $15^\circ$ . The chamfering operation must be carried out at all costs, otherwise the lack of chamfer can lead to the solvent being scraped off the surface of the fitting, thus compromising the effectiveness of the joint. The chamfering must be carried out using the appropriate chamfering tool (fig. 2).
- 3) Measure the depth of the socket of the fitting to the internal shoulder and mark the corresponding distance on the end of the pipe (fig. 3 and 4).
- 4) Using a clean paper towel or applicator soaked in Cleaner-Primer, remove any traces of dirt or grease from the outer surface of the pipe for the entire cementing length. Repeat the same operation on the internal surface of the socket of the fitting: leaving the surfaces softened (fig. 5).

Leave the surfaces to dry for a few minutes before applying the solvent cement. Remember that, in addition to cleaning the joint surfaces, the Cleaner-Primer also performs the important role of softening and preparing the surface to receive the solvent, an operation that enables a perfect joint to be obtained.

- 5) Apply the solvent cement in a uniform manner longitudinally over both parts to be assembled (outer surface of the pipe and internal coupling surface of the fitting) using an applicator or suitably sized coarse brush.

For more detailed information, refer to the "Brush-applicator characteristics and dimensions" table.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

It is advisable to use an applicator/brush of dimension not less than half the diameter of the pipe. The solvent cement must be applied along the entire length of the joining surface of both the pipe and the fitting:

- for the entire joint length of the pipe previously marked on the outer surface (fig. 6)
- for the entire depth of the socket as far as the internal shoulder (fig.7)

**6)** Fully insert the pipe into the fitting immediately and without any rotation. Only after this operation will it be possible to slightly rotate both ends (max. 1/4 of a turn between pipe and fitting). This rotation movement will render the layer of applied solvent cement more uniform (fig. 8)

**7)** The pipe must be inserted in the fitting as soon and as quick as possible (after no more than 20-25 seconds is recommended). Depending on the external diameter of the pipe and, as a result, possible handling difficulties, the insertion of the pipe into the fitting must be carried out:

- manually by one person for external diameters < 90 mm.
- manually by two people for external diameters from d 90 to d < 160 mm.
- using mechanical pipe-pullers for external diameters > 160 mm.

**8)** Immediately after fully inserting the pipe in the fitting, apply pressure to the joined parts for a few seconds. Then use crepe paper or a clean cloth to remove any excess solvent cement from the outer surfaces, and from internal surfaces where possible (fig. 9).

**9)** Solvent cement drying: the joined parts must be left to stand in order to allow the solvent cement to set naturally without generating any unnecessary stress. The setting time depends on the amount of stress that the joint will be placed under.

In particular, the following minimum setting times must be respected according to the ambient temperature:

- before handling the joint:
  - from 5 to 10 minutes for ambient T. > 10°C
  - from 15 to 20 minutes for ambient T. < 10°C
- for repair joints on pipes of any size or pressure not subject to hydraulic testing:
  - 1 hour for each atm of applied pressure
- for joints in pipes and fittings of any diameter subject to pressure testing up to PN 16:
  - minimum 24 hours

The solvent cement setting times indicated are valid at ambient temperature (approx. 25°C.). For particular climatic conditions (humidity, temperature, etc...), we recommend you contact our technical services department and/or the solvent cement manufacturer for more information (fig. 10 and 11).



Fig. 6



Fig. 7



Fig.8



Fig.9

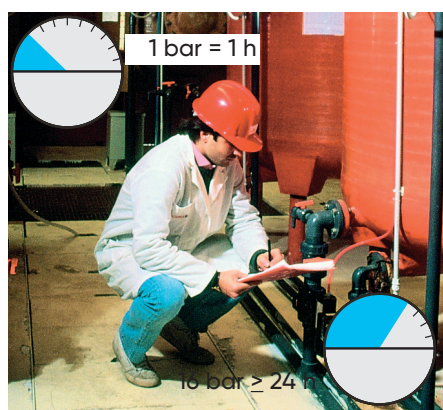


Fig.11

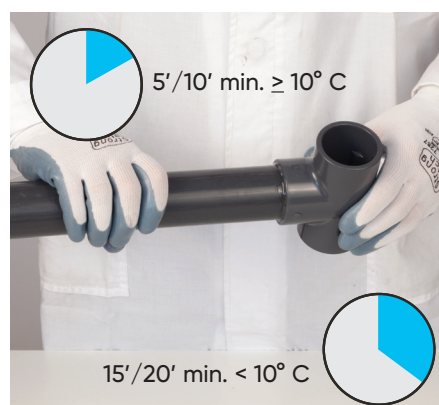
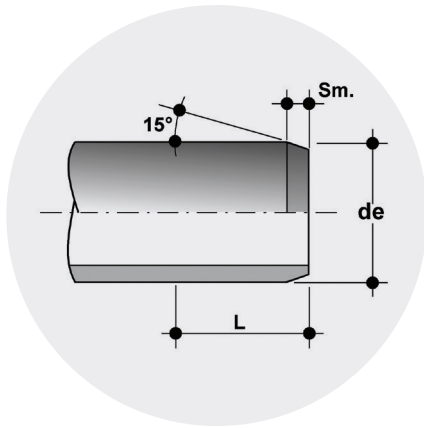


Fig.10



## Socket depth, cement and chamfer length

External diameter		Cementing length L (mm)		Chamfer Sm (mm)
Metric series de (mm)	BS series (inches)	Metric series	BS series	
16	3/8"	14	14.5	
20	1/2"	16	16.5	1.5
25	3/4"	18,5	19.5	3
32	1"	22	22.5	3
40	1" 1/4	26	27	3
50	1" 1/2	31	30	3
63	2"	37,5	36	5
75	2" 1/2	43,5	43.5	5
90	3"	51	50.5	5
110	4"	61	63	5
125	-	68,5	-	5
140	5"	76	76	5
160	6"	86	90	5
180	-	96	-	5÷6
200	-	106	-	5÷6
225	8"	118,5	115.5	5÷6
250	-	131	-	5÷6
280	10"	146	142.5	5÷6
315	12"	163,5	168	5÷6

## Characteristics and dimensions of brushes-applicators

External diameter		Type and dimensions of Brush or Applicator
de (mm)	(inch)	
16 - 25	3/8" - 3/4"	Round (8 - 10 mm)
32 - 63	1" - 2"	Round (20 - 25 mm)
75 - 160	2" 1/2 - 6"	Rectangular / round (45 - 50 mm)
>160	>6"	Rectangular / cylindrical (45 - 50 mm)
>160 - 315	>6" - 12"	Rectangular / cylindrical (60 - 65 mm)

## Warnings

- In the case where the external diameter of the pipe and the internal diameter of the fitting are at opposite extremes of their tolerance values, the dry pipe cannot be inserted in the dry socket of the fitting. Insertion will only be possible after having applied the Cleaner and Solvent Cement to both parts to be joined.
- The solvent cement is manufactured from the same PVC resin used for the production of the pipes, fittings and valves. Unless otherwise specified, the solvent cement used on the surfaces to join must also be usable with the following tolerances:
  - maximum interference 0.2 mm,
  - maximum clearance 0.6 mm.
- When using the Cleaner and Solvent Cement, the following precautions should be adopted:
  - use gloves and safety glasses to protect hands and eyes.
  - use the Cleaner and Solvent Cement in a working environment with sufficient ventilation to avoid the formation of pockets of air containing concentrations of evaporated solvent, which can irritate the respiratory tract and eyes,
  - due to the volatile nature of the solvents in the cleaner and cement, the containers must be closed immediately after use,
  - Solvents in the gaseous phase tend to form flammable mixtures. Therefore, remove any ignition sources such as welding operations, accumulation of electrostatic charges, etc. from the work area, and do not smoke. In all cases, it is advisable to adhere strictly to the solvent cement manufacturer's instructions written on the packaging,
  - In order to prevent a deterioration in the performance of the cleaner and solvent cement, the joining operations should be carried out within an ambient temperature range of between + 5 and + 40° C.
- The amount of solvent cement used on the joints depends on a number of factors (environmental conditions, pipe size, cement viscosity, operator experience, etc.) which are often difficult to quantify. In this respect, Table "Rigid PVC-U pipes and fittings. Theoretical solvent cement consumption" reports the approximate quantities of cement normally used for joining various diameter pipes and fittings.
- After having completed all the joints and prior to putting the lines into service, make sure that the insides of the pipes and fittings are completely free of any solvent traces/ vapours. This will prevent contamination of the fluids conveyed.
- Table "Most common defects" reports the most common types of defect found if the correct solvent welding procedure is not followed.

## Rigid PVC-U pipes and fittings theoretical solvent cement consumption

Pipe/Fitting diameter		Number of joints per kg of solvent cement
d (mm)	d (inches)	
16	3/8"	550
20	1/2"	500
25	3/4"	450
32	1"	400
40	1" 1/4	300
50	1" 1/2	200
63	2"	140
75	2" 1/2	90
90	3"	60
110	4"	40
125	-	30
140	5"	25
160	6"	15
180	-	12
200	-	10
225	8"	6
250	-	4
280	10"	2
315	12"	2

## Most common defects

Solvent cement too fluid (incorrect diluent addition)	
<b>Immediate effect</b>	Cementing failure
<b>Consequence</b>	Joint separation or leaks from between the pipe and fitting
Excess solvent cement	
<b>Immediate effect</b>	Internal and external runs beyond the joint zone
<b>Consequence</b>	Weakening of the outer surface of the joint area and formation of bubbles with micro-cracks/sources of fracture in the base material
Excessively dense solvent cement due to evaporated solvent	
<b>Immediate effect</b>	Cementing failure
<b>Consequence</b>	Joint separation or leaks from between the pipe and fitting. Possible surface cracks triggering cracks in the base material
Insufficient and/or incorrect distribution of solvent cement	
<b>Immediate effect</b>	Cementing failure or local weakness
<b>Consequence</b>	Joint separation or leaks from between the pipe and fitting
Incorrect pipe insertion (incomplete, excessive, misaligned)	
<b>Immediate effect</b>	Imperfect joint
<b>Consequence</b>	Transmission of mechanical stresses from the pipe to the fitting and/or leaks from the joint
Impurities and/or humidity on the surfaces of the parts to join	
<b>Immediate effect</b>	Imperfect joint
<b>Consequence</b>	Joint separation or leaks (fluid seepage) from between the pipe and fitting

# Installation instructions for threaded joints

To guarantee the hydraulic seal of the joint on fittings and valves with a threaded female end, we recommend you perform the following operations:

1. Start winding some PTFE sealing tape on the outside of the threaded male end, taking care not to obstruct the through-hole on the pipe, fitting or valve (fig. 1);
2. Complete the first winding layer by winding the tape clockwise until you reach the root of the thread. Remember to keep the tape taut throughout the entire process (fig. 2);
3. Press on the tips of the thread to make sure the tape adheres fully to the support clip;
4. Increase the thickness of the PTFE layer by continuing to apply the taut tape and winding it clockwise until you achieve the optimal level (fig. 3);
5. Connect the previously sealed male end to the female end and proceed manually by screwing the two elements;
6. Make sure the layer of PTFE is not removed during screwing, as this would compromise the hydraulic seal of the joint;
7. Complete screwing the two ends exploiting the entire length of the thread with the aid of a strap wrench or similar tool;
8. Avoid tightening the elements too much, as this could damage the threads or cause stress to the elements themselves.

## Recommendations

For correct installation, we recommend you only use sealing tape in non-sintered PTFE. Under all circumstances avoid using materials such as hemp, lint or paints usually implemented for the hydraulic seal on metal threads.

## Warnings

Avoid using threaded joints in the following cases:

- highly critical applications, such as for conveying chemically aggressive or toxic fluids,
- in the presence of medium or high pressures. In this case, we recommend the use of solvent welding joints, hot welding joints or flanged joints,
- systems subject to mechanical and/or thermal stresses such as water hammers, strong variations in temperature, bends, misalignments and cross tensions which could cause the threaded joint to break prematurely,
- coupling of elements with excessive distance from one another.

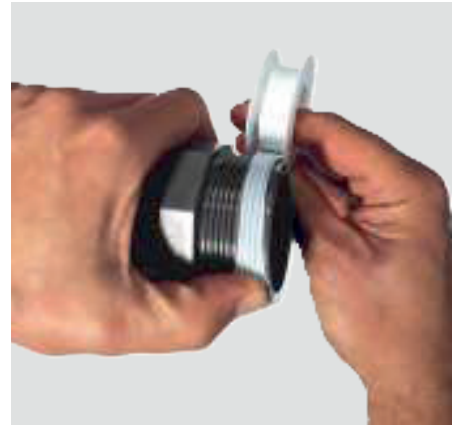


Fig. 1

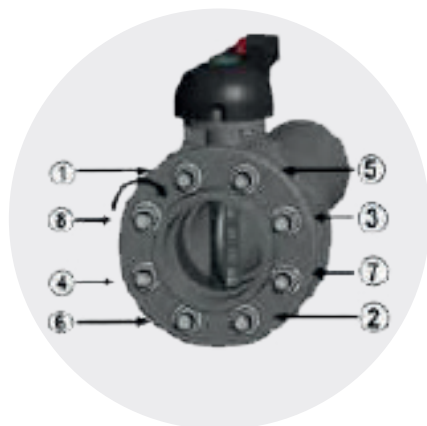


Fig. 2



Fig. 3

# Installation instructions for flanged Joints



To guarantee the correct installation of flanged elements, we recommend you perform the following operations:

1. insert the possible backing ring onto the pipe, before proceeding with the installation of the stub;
2. in the event of a fixed flange, check the drilling is correctly aligned with the counter flange;
3. check that the position of the counter flange takes into account the overall dimensions of the face to face distance of the components;
4. insert the flat gasket between the stubs (this step is not necessary for butterfly valves), making sure the sealing surfaces of the flanges to be welded have not been separated by an excessive distance, since this would cause it to compress;
5. proceed with solvent welding or welding of the fixed flanges or stub (in the case of backing rings) following the welding or solvent welding instructions provided by FIP;
6. insert all the bolts, washers and nuts;
7. once the cooling time is up, proceed with tightening the bolts in a "cross-wise" order (fig.1);
8. complete the bolt tightening process using a torque wrench until the tightening torque values shown in the table are reached.

## Tightening torque

Tightening torques for nuts and bolts to achieve the seal with flanges in PVC-U or PVC-C with gaskets in EPDM/FKM/NBR during the pressure test (1.5 x NP and water at 20°C),

DN	40	50	65	80	100	125	150	200	250	300	350	400
Nm	9	12	15	18	20	35	40	55	70	70	75	75

Please note that:

- the use of flanges in coated metal or fibreglass may allow the application of higher tightening torques, provided these do not exceed the elastoplastic limit of the material,
- the use of different elastomeric seal materials from those listed in the previous table may require slightly higher tightening torques,
- FIP always recommends the use of suitably sized washers for any bolt used in the coupling flange.












## Minimum length of bolts

For flanged butterfly valves	
DN	Lmin
40	M 16x150
50	M 16x150
65	M 16x170
80	M 16x180
100	M 16x180
125	M 16x210
150	M 20x240
200	M 20x260
250	M 20x310
300	M 20x340
350	M 20x360
400	M 24x420

For flanged joints on pipes using backing rings		
d	DN	L min
20	15	M 12x70
25	20	M 12x70
32	25	M 12x70
40	32	M 16x85
50	40	M 16x85
63	50	M 16x95
75	65	M 16x95
90	80	M 16x105
110	100	M 16x105
125	125	M 16x115
140	125	M 16x120
160	150	M 20x135
200	200	M 20x140
225	200	M 20x140
250	250	M 20x150
280	250	M 20x160
315	300	M 20x180
355	350	M 20x180
400	400	M 22x180

# Main properties

Properties of PVC-U		Benefits
Thermal resistance		<ul style="list-style-type: none"> <li>• Service range 0–60 °C (see pressure/temperature regression curves)</li> </ul>
Low surface roughness		<ul style="list-style-type: none"> <li>• High flow coefficients (extremely smooth internal walls)</li> <li>• Pressure drop constant over time</li> <li>• Low risk of stoppages due to scaling</li> <li>• Reduced transfer of material to the transported fluid</li> </ul>
Chemical resistance		<ul style="list-style-type: none"> <li>• Good chemical resistance for conveying acids and alkalis, paraffin/aliphatic hydrocarbons and saline solutions.</li> </ul>
Abrasion resistance		<ul style="list-style-type: none"> <li>• Extremely low operating costs due to its long service life</li> </ul>
Insulating		<ul style="list-style-type: none"> <li>• Non-conductive (immune to galvanic corrosion)</li> <li>• No condensation problems</li> <li>• Minimum heat loss</li> </ul>
Linear thermal expansion coefficients		<ul style="list-style-type: none"> <li>• Reduced need for supports and expansion joints, resulting in considerable advantages in terms of plant design</li> </ul>
Easy to join (solvent weld sockets)		<ul style="list-style-type: none"> <li>• Reduced installation costs thanks to the “solvent weld” joint effected using a suitable solvent cement</li> </ul>
Fire behaviour		<ul style="list-style-type: none"> <li>• Good resistance to combustion also due to the presence of self-extinguishing chlorine</li> </ul>
Good mechanical resistance		<ul style="list-style-type: none"> <li>• PVC-U satisfies the need to provide adequate mechanical strength and complies with the requirements of industrial plant design</li> </ul>



# 724

Astore 724 is a true union ball valve for industrial and water treatment applications, with fixed ball support and radial disassembly, which allow a simple and safe installation and a reliable service over time.

## TRUE UNION BALL VALVE FOR INDUSTRIAL AND WATER TREATMENT APPLICATIONS

- Versions available: ISO metric (1V724) and BS standard (3V724) plain solvent weld socket, BSP female threaded socket (1V725).
- Available to be produced in other international standards (ASTM, JIS, NPT) upon request.

Technical specifications	
Construction	True union grey PVC spheric ball valve, with fixed ball support and radial disassembly
Size range	DN 10 ÷ 100
Nominal pressure	DN 10÷50: PN16 with water at 20°C DN 65÷100: PN10 with water at 20°C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>Solvent welding:</b> ISO 727, EN ISO 1452-4 (model 1V724); BS 4346-1 (model 3V724) <b>Thread:</b> UNI ISO 228-1, ISO 7-1, UNI EN ISO 1452-4 (model 1V725)
Valve material	PVC-U
Seal material	EPDM, FKM (O-Ring); PTFE (ball seats)
Control options	Manual control

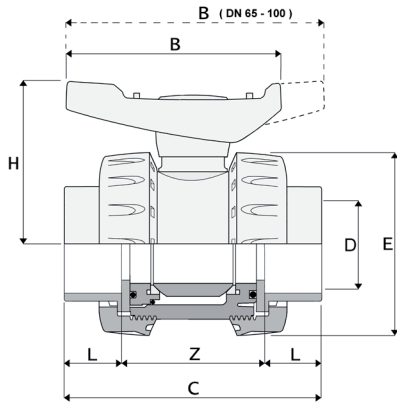


DN 10 ÷ 50



DN 65 ÷ 100

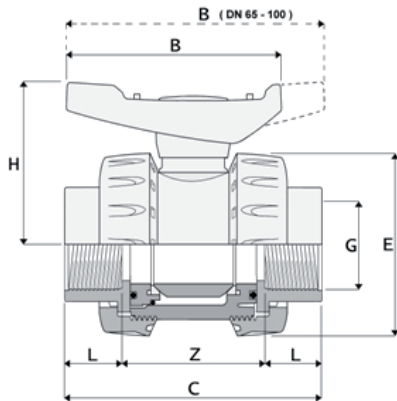
# DIMENSIONS



## 1V724

True union grey PVC spheric ball valve, ISO metric plain solvent weld socket, with fixed ball support and radial disassembly.  
EPDM or FKM seals.  
PTFE ball seats.

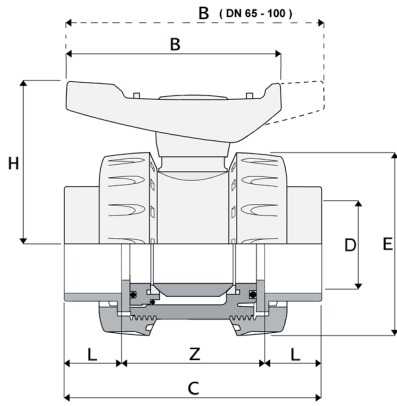
D	PN	DN	L	Z	C	E	H	B	g	EPDM code	FKM code
16	16	10	14	54	82	53	51	66	150	1V72401600	1V72401610
20	16	15	16	50	82	53	51	66	145	1V72402000	1V72402010
25	16	20	19	53	91	62	59	77	220	1V72402500	1V72402510
32	16	25	22	59	103	71	66	88	315	1V72403200	1V72403210
40	16	32	26	68	120	84	77	102	505	1V72404000	1V72404010
50	16	40	31	77	139	98	87	117	725	1V72405000	1V72405010
63	16	50	38	98	174	117	105	140	1245	1V72406300	1V72406310
75	10	65	44	142	230	168	138	225	3400	1V72407500	1V72407510
90	10	80	51	142	244	168	138	225	3500	1V72409000	1V72409010
110	10	100	61	162	284	210	171	280	5900	1V72411000	1V72411010



## 1V725

True union grey PVC spheric ball valve, BSP female threaded socket, with fixed ball support and radial disassembly.  
EPDM or FKM seals.  
PTFE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	EPDM code	FKM code
3/8"	16	10	13	56	82	53	51	66	150	1V72501600	1V72501610
1/2"	16	15	17	56	90	53	51	66	145	1V72502000	1V72502010
3/4"	16	20	19	55	93	62	59	77	225	1V72502500	1V72502510
1"	16	25	22	66	110	71	66	88	320	1V72503200	1V72503210
1 1/4"	16	32	24	79	127	84	77	102	515	1V72504000	1V72504010
1 1/2"	16	40	24	83	131	98	87	117	735	1V72505000	1V72505010
2"	16	50	29	103	161	117	105	140	1260	1V72506300	1V72506310
2 1/2"	10	65	33	164	230	168	138	225	3400	1V72507500	1V72507510
3"	10	80	36	172	244	168	138	225	3500	1V72509000	1V72509010
4"	10	100	42	200	284	210	171	280	5900	1V72511000	1V72511010



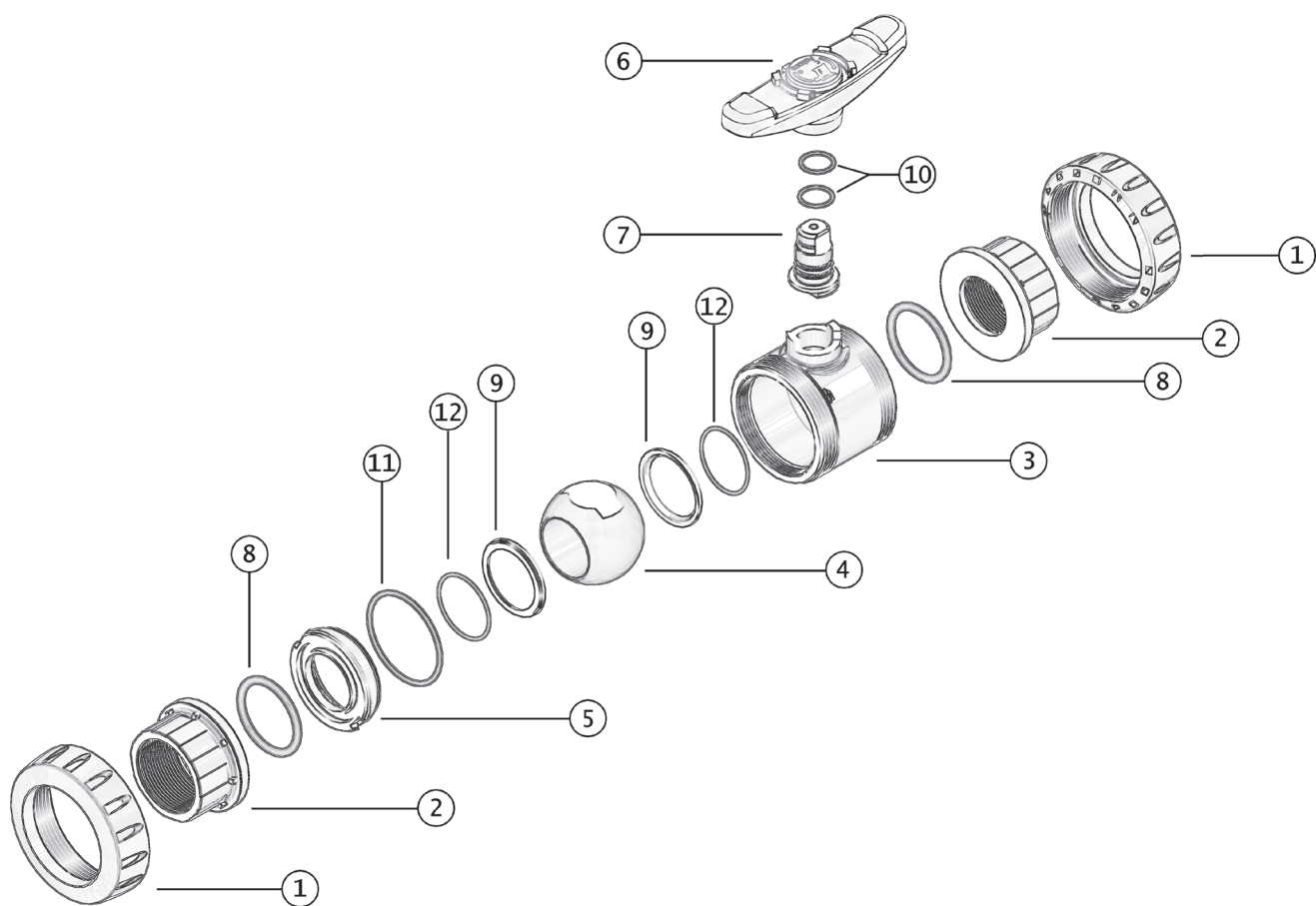
### 3V724

True union grey PVC spheric ball valve, BS Standard plain solvent weld socket, with fixed ball support and radial disassembly.  
 EPDM or FKM seals.  
 PTFE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	EPDM code	FKM code
3/8"	16	10	15	52	82	53	51	66	150	3V72401600	3V72401610
1/2"	16	15	17	48	82	53	51	66	145	3V72402000	3V72402010
3/4"	16	20	19	53	91	62	59	77	220	3V72402500	3V72402510
1"	16	25	22	59	103	71	66	88	315	3V72403200	3V72403210
1 1/4"	16	32	26	68	120	84	77	102	505	3V72404000	3V72404010
1 1/2"	16	40	31	77	139	98	87	117	725	3V72405000	3V72405010
2"	16	50	38	98	174	117	105	140	1245	3V72406300	3V72406310
2 1/2"	10	65	44	142	230	168	138	225	3400	1V72407500	1V72407510
3"	10	80	51	142	244	168	138	225	3500	3V72409000	3V72409010
4"	10	100	61	162	284	210	171	280	5900	3V72411000	3V72411010

# COMPONENTS

## EXPLODED VIEW



- |          |                       |          |                              |             |                                 |
|----------|-----------------------|----------|------------------------------|-------------|---------------------------------|
| <b>1</b> | Nut (PVC-U - 2)       | <b>5</b> | Support (PVC-U - 1)          | <b>9</b>    | Ball seat (PE - 2)              |
| <b>2</b> | Union end (PVC-U - 2) | <b>6</b> | Handle (PVC-U - 1)           | <b>10*</b>  | Stem O-ring (EPDM/FKM - 1)      |
| <b>3</b> | Body (PVC-U - 1)      | <b>7</b> | Stem (PVC-U - 1)             | <b>11</b>   | Radial O-ring (EPDM/FKM - 1)    |
| <b>4</b> | Ball (PVC-U - 1)      | <b>8</b> | Socket O-Ring (EPDM/FKM - 2) | <b>12**</b> | Ball seat O-ring (EPDM/FKM - 2) |

\*2 pcs for DN 65÷100

\*\*Only for DN 65÷100

Inside brackets are indicated the material and the quantity supplied for each component.





# 420

Astore 420 is a true union ball valve for swimming pools and water supply systems, with fixed ball support and radial disassembly, which allow a simple and safe installation and a reliable service over time.

## TRUE UNION BALL VALVE FOR SWIMMING POOLS AND WATER SUPPLY SYSTEMS

- Versions available: ISO metric (1V420) and BS standard (3V420) plain solvent weld socket, BSP female threaded socket (1V421).
- Available to be produced in other international standards (ASTM, JIS, NPT) upon request.

Technical specifications	
Construction	True union grey PVC spheric ball valve, with fixed ball support and radial disassembly
Size range	DN 10 ÷ 100
Nominal pressure	DN 10 ÷ 50: PN16 with water at 20°C DN 65 ÷ 100: PN10 with water at 20°C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>Solvent welding:</b> ISO 727, EN ISO 1452-4 (model 1V420); BS4346-1 (model 3V420) <b>Thread:</b> UNI ISO 228-1, ISO 7-1, UNI EN ISO 1452-4 (model 1V421)
Valve material	PVC-U grey
Seal material	EPDM (O-Ring); PE (ball seats)
Control options	Manual control

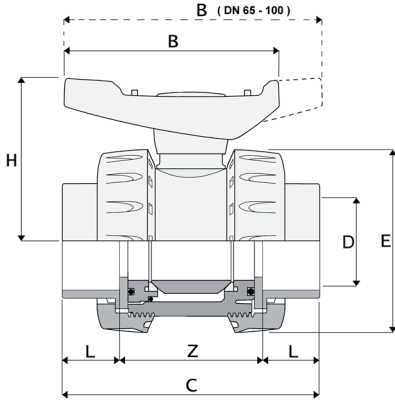


**DN 10 ÷ 50**



**DN 65 ÷ 100**

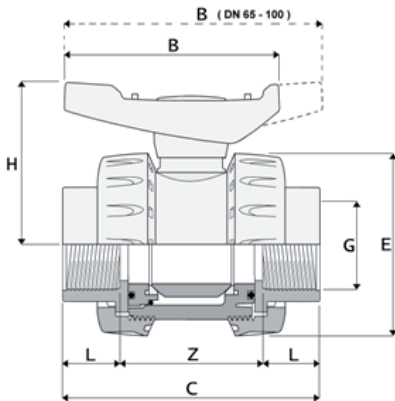
# DIMENSIONS



## 1V420

True union grey PVC spheric ball valve, ISO metric plain solvent weld socket, with fixed ball support and radial disassembly.  
EPDM seals.  
PE ball seats.

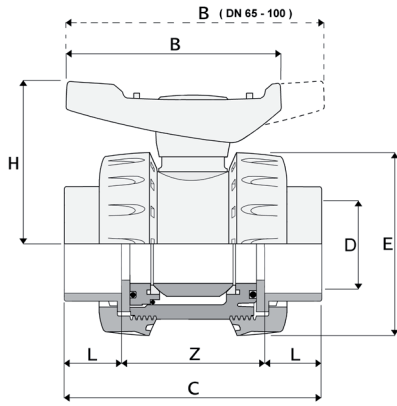
D	PN	DN	L	Z	C	E	H	B	g	Code
16	16	10	14	54	82	53	51	66	150	1V42001600
20	16	15	16	50	82	53	51	66	145	1V42002000
25	16	20	19	53	91	62	59	77	220	1V42002500
32	16	25	22	59	103	71	66	88	315	1V42003200
40	16	32	26	68	120	84	77	102	505	1V42004000
50	16	40	31	77	139	98	87	117	725	1V42005000
63	16	50	38	98	174	117	105	140	1245	1V42006300
75	10	65	44	142	230	168	138	225	3400	1V42007500
90	10	80	51	142	244	168	138	225	3500	1V42009000
110	10	100	61	162	284	210	171	280	5900	1V42011000



## 1V421

True union grey PVC spheric ball valve, BSP female threaded socket, with fixed ball support and radial disassembly.  
EPDM seals.  
PE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	Code
3/8"	16	10	13	56	82	53	51	66	150	1V42101600
1/2"	16	15	17	56	90	53	51	66	145	1V42102000
3/4"	16	20	19	55	93	62	59	77	225	1V42102500
1"	16	25	22	66	110	71	66	88	320	1V42103200
1 1/4"	16	32	24	79	127	84	77	102	515	1V42104000
1 1/2"	16	40	24	83	131	98	87	117	735	1V42105000
2"	16	50	29	103	161	117	105	140	1260	1V42106300
2 1/2"	10	65	33	164	230	168	138	225	3400	1V42107500
3"	10	80	36	172	244	168	138	225	3500	1V42109000
4"	10	100	42	200	284	210	171	280	5900	1V42111000



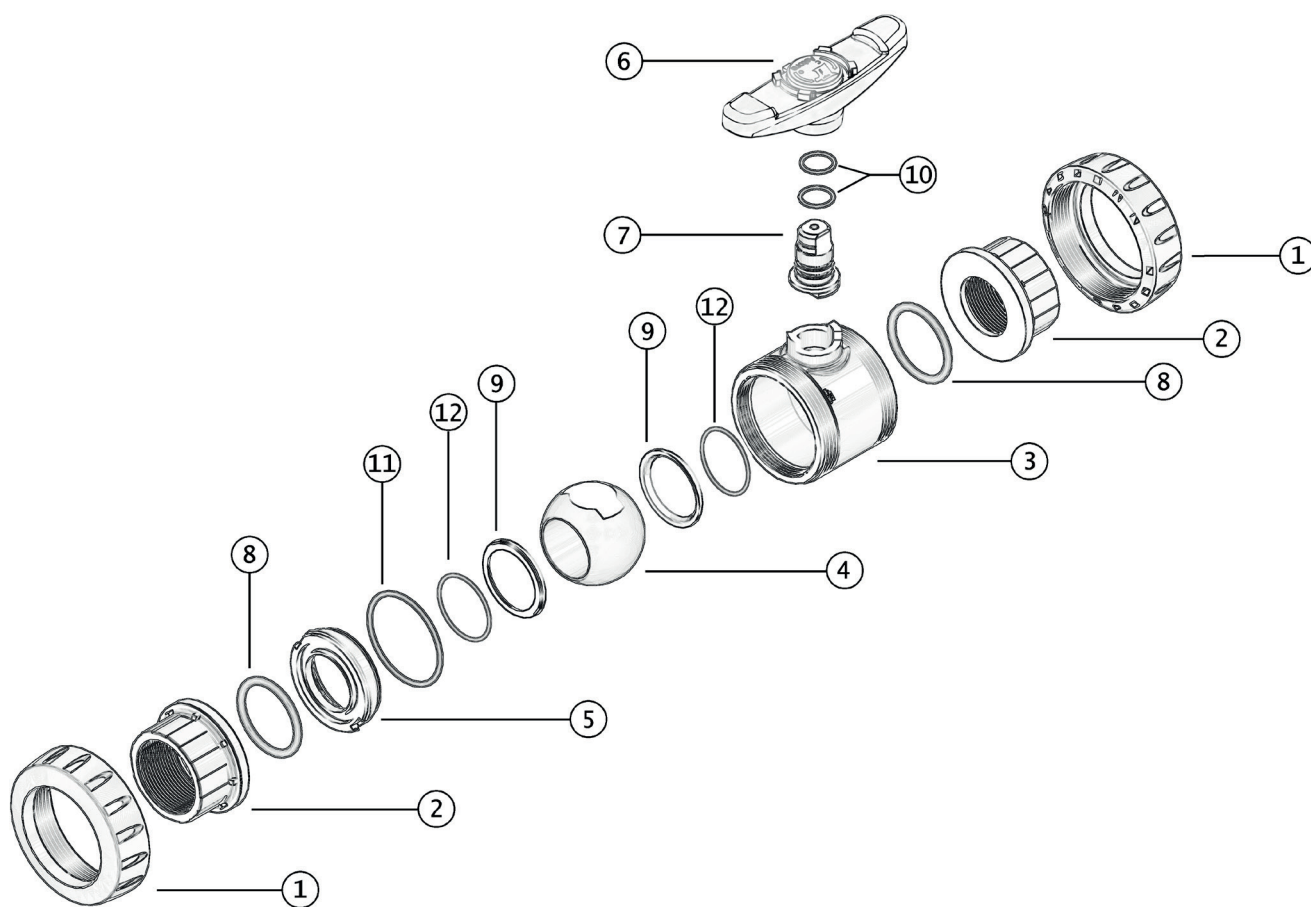
### 3V420

True union grey PVC spheric ball valve, BS Standard plain solvent weld socket, with fixed ball support and radial disassembly.  
EPDM seals.  
PE ball seats.

D	PN	DN	L	Z	C	E	H	B	g	Code
3/8"	16	10	15	52	82	53	51	66	150	3V42001600
1/2"	16	15	17	48	82	53	51	66	145	3V42002000
3/4"	16	20	19	53	91	62	59	77	220	3V42002500
1"	16	25	22	59	103	71	66	88	315	3V42003200
1 1/4"	16	32	26	68	120	84	77	102	505	3V42004000
1 1/2"	16	40	31	77	139	98	87	117	725	3V42005000
2"	16	50	38	98	174	117	105	140	1245	3V42006300
2 1/2"	10	65	44	142	230	168	138	225	3400	1V42007500
3"	10	80	51	142	244	168	138	225	3500	3V42009000
4"	10	100	61	162	284	210	171	280	5900	3V42011000

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 2)
- 2 Union end (PVC-U - 2)
- 3 Body (PVC-U - 1)
- 4 Ball (PVC-U - 1)

- 5 Support (PVC-U - 1)
- 6 Handle (PVC-U - 1)
- 7 Stem (PVC-U - 1)
- 8 Socket O-Ring (EPDM - 2)

- 9 Ball seat (PE - 2)
- 10\* Stem O-ring (EPDM - 1)
- 11 Radial O-ring (EPDM - 1)
- 12\*\* Ball seat O-ring (EPDM - 2)

\*2 pcs for DN 65÷100

\*\*Only for DN 65÷100

Inside brackets are indicated the material and the quantity supplied for each component.



# 426

Astore 426 is a true union ball valve with PE union ends for swimming pools and water supply systems, with fixed ball support and radial disassembly, that can be coupled to PE pipes by butt welding or electrofusion.

## TRUE UNION BALL VALVE WITH PE UNION ENDS FOR SWIMMING POOLS AND WATER SUPPLY SYSTEMS

- Equipped with PE 100 SDR 11 shanks for butt welding and electrofusion.

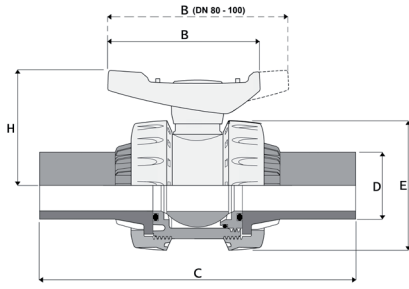
Technical specifications	
Construction	True union grey PVC spheric ball valve with PE union ends, with fixed ball support and radial disassembly.
Size range	DN 15 ÷ 100
Nominal pressure	DN 15÷50: PN16 with water at 20°C DN 65÷100: PN10 with water at 20°C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>PE union ends:</b> EN 12201-3 , EN 12201-4, ISO 4427-3
Valve material	PVC-U
Seal material	EPDM (O-ring); PE (ball seats)
Control options	Manual control





**DN 15 ÷ 100**

# DIMENSIONS



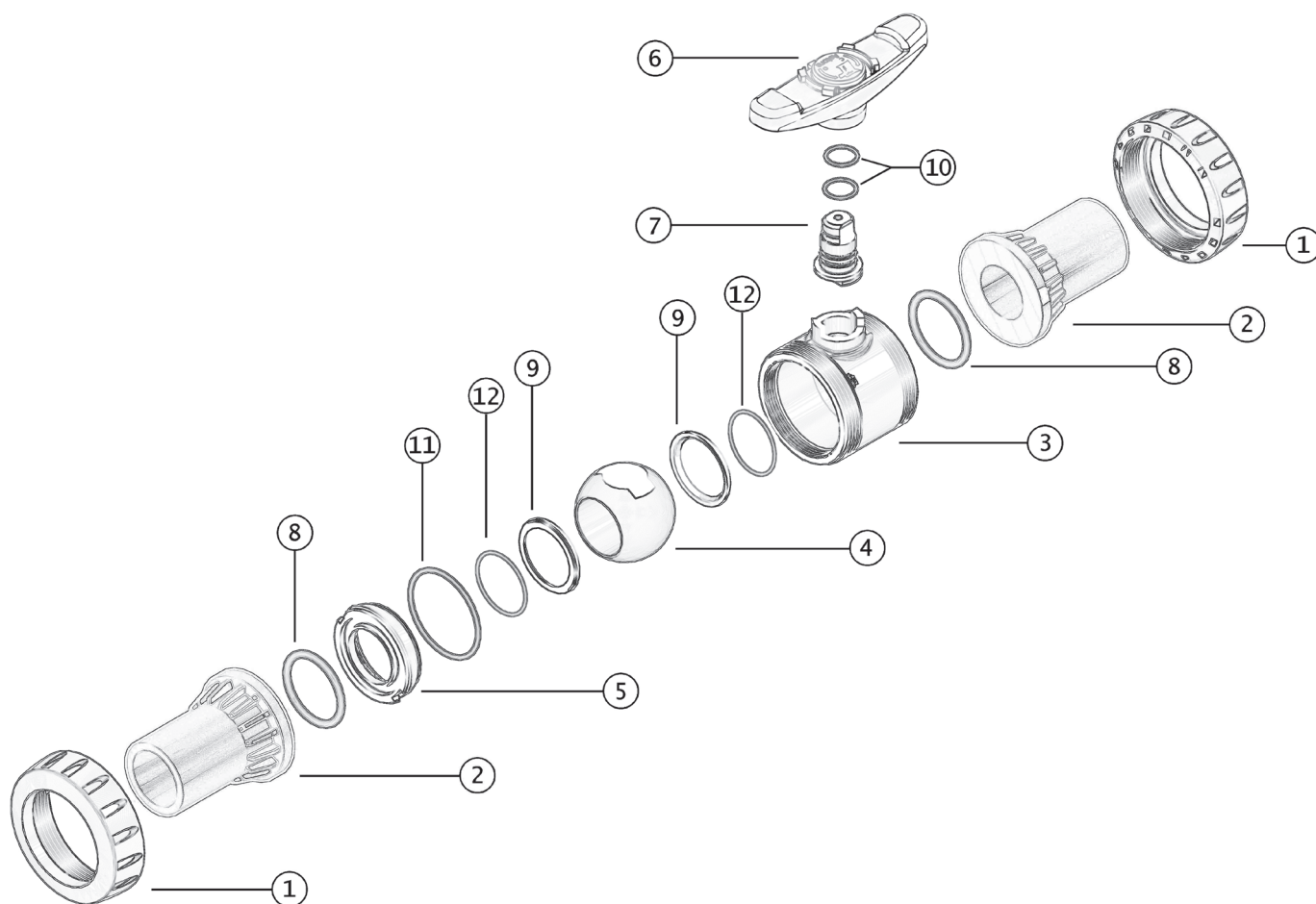
## 1V426

True union grey PVC spheric ball valve, provided with PE 100 SDR 11 union ends for butt welding and electrofusion, with fixed ball support and radial disassembly.  
EPDM seals.  
PE ball seats.

D	PN	DN	C	E	H	B	g	Code
20	16	15	154	53	51	66	155	1V42602000
25	16	20	186	62	59	77	230	1V42602500
32	16	25	199	71	66	88	330	1V42603200
40	16	32	217	84	77	102	530	1V42604000
50	16	40	236	98	87	117	780	1V42605000
63	16	50	268	117	105	140	1330	1V42606300
90	10	80	368	168	151	225	3750	1V42609000
110	10	100	404	210	178	280	6300	1V42611000

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 2)
- 2 Union end (PE 100 - 2)
- 3 Body (PVC-U - 1)
- 4 Ball (PVC-U - 1)

- 5 Support (PVC-U - 1)
- 6 Handle (PVC-U - 1)
- 7 Stem (PVC-U - 1)
- 8 Socket O-ring (EPDM - 2)

- 9 Ball seat (PE - 2)
- 10\* Stem O-ring (EPDM - 1)
- 11 Radial O-ring (EPDM - 1)
- 12\*\* Ball seat O-ring (EPDM - 2)

\*2 pcs for DN 80 ÷ DN 100

\*\* Only for DN 80 ÷ DN 100

Inside brackets are indicated the material and the quantity supplied for each component.

# 334

Astore 334 is a true union ball valve with compression fittings for swimming pools and water supply systems, with fixed ball support and radial disassembly.

## TRUE UNION BALL VALVE WITH COMPRESSION FITTINGS FOR SWIMMING POOLS AND WATER SUPPLY SYSTEMS

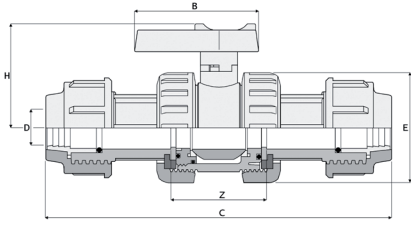
- Equipped with compression fittings for connection with PE pipes metric series on both sides.

Technical specifications	
<b>Construction</b>	True union grey PVC ball valve with compression fittings, with fixed ball support and radial disassembly
<b>Size range</b>	DN 15 ÷ 25
<b>Nominal pressure</b>	PN 16 with water at 20 °C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Compression fittings:</b> ISO 17885
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-ring) PE (ball seats)
<b>Control options</b>	Manual control



**DN 15 ÷ 25**

# DIMENSIONS



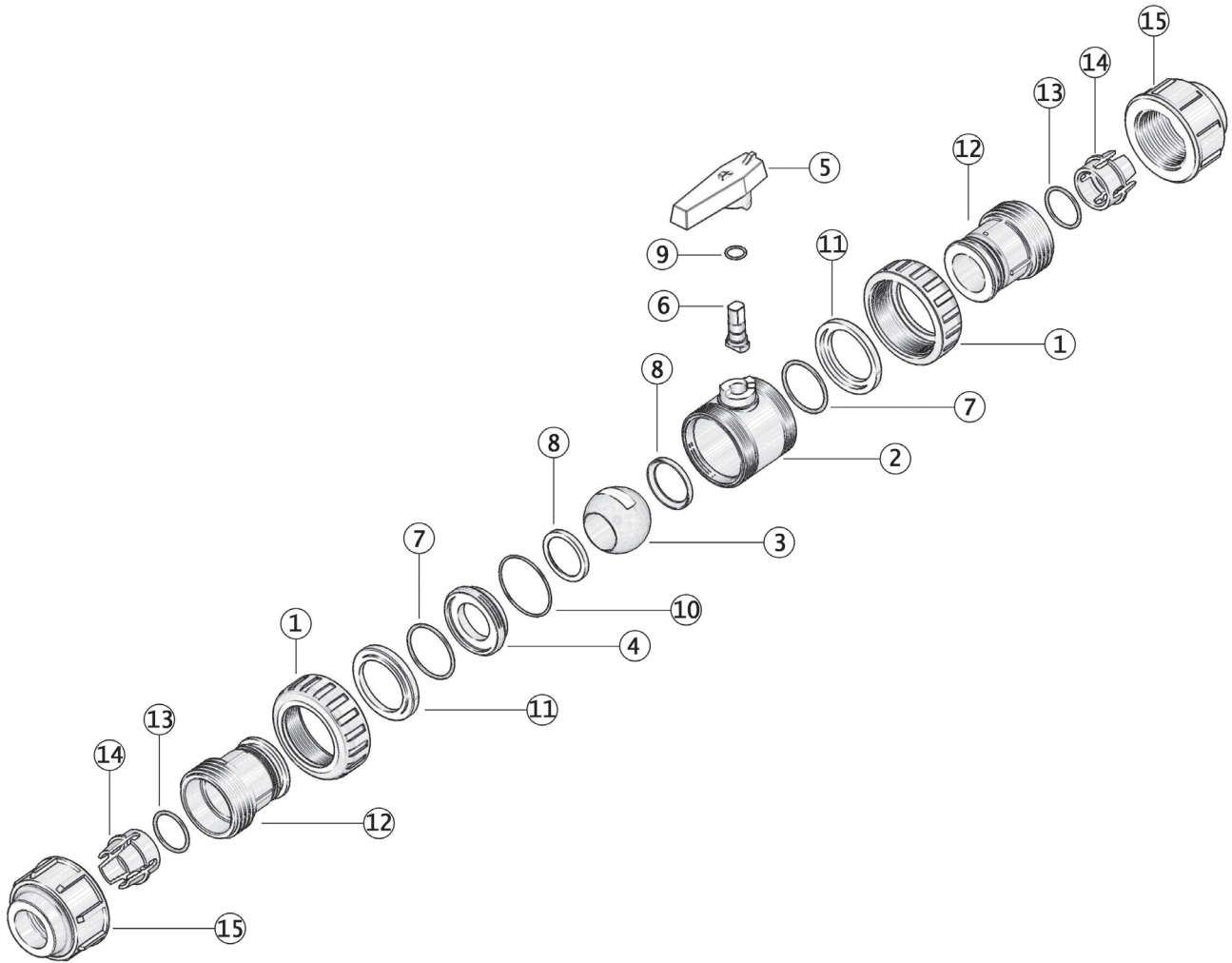
## 1V334

True union grey PVC ball valve, provided with compression fittings to connect PE ISO metric pipes to both sides, with fixed ball support and radial disassembly. EPDM seals. PE ball seats.

D	PN	DN	C	E	H	B	Z	g	Code
20	16	15	175	50	50	57	74	200	1V33420000W
25	16	20	195	59	55	66	85	300	1V33425000W
32	16	25	215	68	67	75	85	450	1V33432000W

# COMPONENTS

## EXPLODED VIEW



- |   |                     |    |                          |    |                                 |
|---|---------------------|----|--------------------------|----|---------------------------------|
| 1 | Nut (PVC-U - 2)     | 6  | Stem (PVC-U - 1)         | 11 | Split ring (PVC-U - 2)          |
| 2 | Body (PVC-U - 1)    | 7  | Socket O-ring (EPDM - 2) | 12 | Body compr. fitting (PVC-U - 2) |
| 3 | Body (PVC-U - 1)    | 8  | Ball seat (PE - 2)       | 13 | Compr. fitting O-ring (NBR - 2) |
| 4 | Support (PVC-U - 1) | 9  | Stem O-ring (EPDM - 1)   | 14 | Clinching ring (POM - 2)        |
| 5 | Handle (PVC-U - 1)  | 10 | Radial O-ring (EPDM - 1) | 15 | Compr. fitting nut (PP - 2)     |

Inside brackets are indicated the material and the quantity supplied for each component.

# 322

Astore 322 is a true union ball valve for irrigation and water supply systems, with free ball support and radial disassembly, which ensure a quick and easy installation and a convenient maintenance.

## TRUE UNION BALL VALVE FOR IRRIGATION AND WATER SUPPLY SYSTEMS

- Versions available: ISO metric (1V322) and BS standard (3V322) plain solvent weld socket, BSP female threaded socket (1V321).

Technical specifications	
<b>Construction</b>	True union grey PVC ball valve, with free ball support and radial disassembly
<b>Size range</b>	DN 10 ÷ 100
<b>Nominal pressure</b>	DN 10÷50: PN16 with water at 20°C DN 65÷80: PN10 with water at 20°C DN 100: PN6 with water at 20°C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Solvent welding:</b> ISO 727, EN ISO 1452-4 (model 1V322); BS4346-1 (model 3V322) <b>Thread:</b> UNI ISO 228-1, ISO 7-1, UNI EN ISO 1452-4 (model 1V321)
	PVC-U
<b>Seal material</b>	EPDM (O-ring) PE (ball seats)
<b>Control options</b>	Manual control



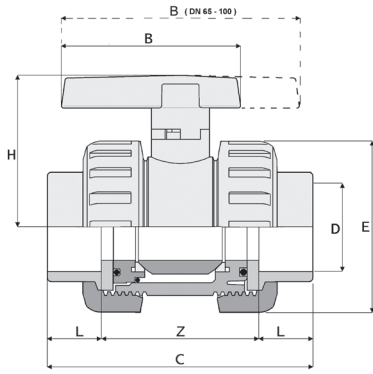


DN 10 ÷ 50



DN 65 ÷ 100

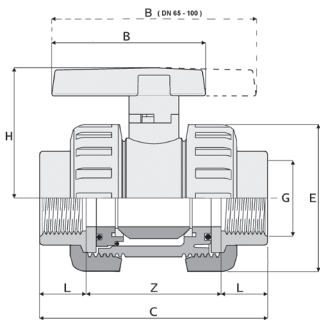
# DIMENSIONS



## 1V322

True union grey PVC ball valve, ISO metric plain solvent weld socket, with free ball support and radial disassembly.  
EPDM seals.  
PE ball seats.

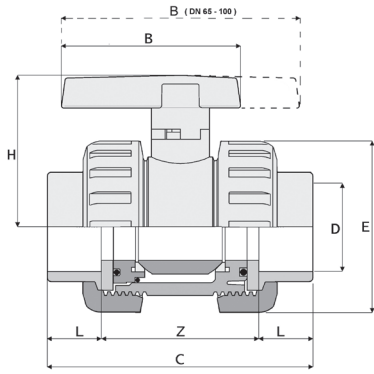
D	PN	DN	L	Z	C	E	H	B	g	Code
16	16	10	14	47	75	50	50	57	125	1V32216000H
20	16	15	16	48	80	50	50	57	130	1V32220000H
25	16	20	19	57	95	55	55	66	205	1V32225000H
32	16	25	22	64	108	63	63	75	300	1V32232000H
40	16	32	26	72	124	76	76	90	450	1V32240000H
50	16	40	31	84	146	88	88	103	710	1V32250000H
63	16	50	38	96	172	102	102	121	1150	1V32263000H
75	10	65	44	142	230	138	138	225	3400	1V32275000LW
90	10	80	51	142	244	138	138	225	3500	1V32290000LW
110	6	100	61	162	284	171	171	280	5900	1V32211000LW



## 1V321

True union grey PVC ball valve, BSP female threaded socket, with free ball support and radial disassembly.  
EPDM seals.  
PE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	Code
3/8"	16	10	13	49	75	50	50	57	130	1V32160000H
1/2"	16	15	17	46	80	50	50	57	135	1V32120000H
3/4"	16	20	19	57	95	59	55	66	215	1V32125000H
1"	16	25	22	64	108	68	63	75	310	1V32132000H
1 1/4"	16	32	24	76	124	80	76	90	460	1V32140000H
1 1/2"	16	40	24	98	146	96	88	103	730	1V32150000H
2"	16	50	29	114	172	116	102	121	1200	1V32163000H
2 1/2"	10	65	33	164	230	168	138	225	3400	1V32175000LW
3"	10	80	36	172	244	168	138	225	3550	1V32190000LW
4"	6	100	42	200	284	210	171	280	5900	1V32111000LW



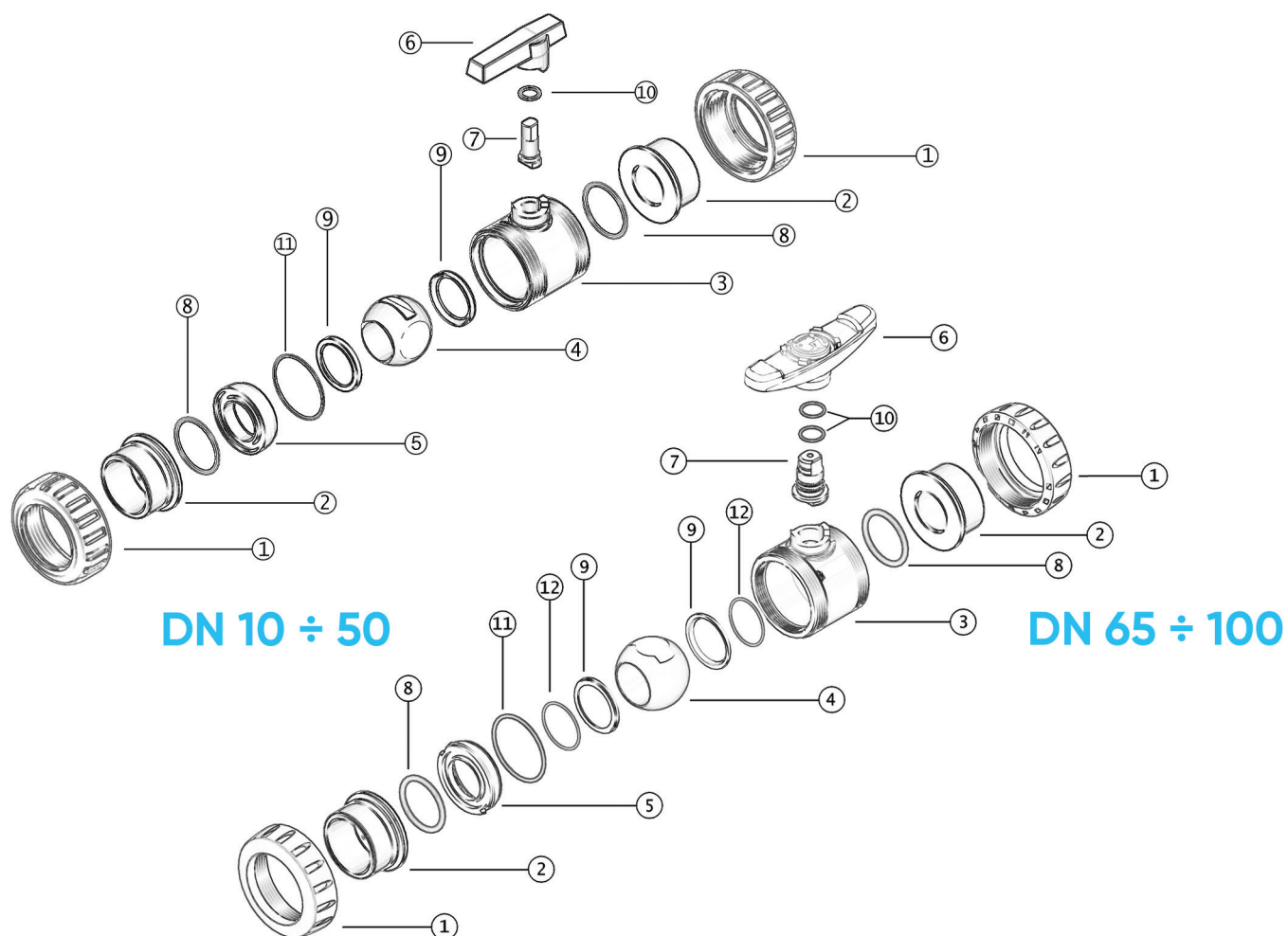
### 3V322

True union grey PVC ball valve, BS Standard plain solvent weld socket, with free ball support and radial disassembly.  
 EPDM seals.  
 PE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	Code
3/8"	16	10	15	45	75	50	50	57	125	3V32216000H
1/2"	16	15	17	46	80	50	50	57	130	3V32220000H
3/4"	16	20	19	57	95	59	55	66	205	3V32225000H
1"	16	25	22	64	108	68	63	75	300	3V32232000H
1 1/4"	16	32	26	72	124	80	76	90	450	3V32240000H
1 1/2"	16	40	31	84	146	96	88	103	710	3V32250000H
2"	16	50	38	96	172	116	102	121	1150	3V32263000H
2 1/2"	10	65	44	142	230	168	138	225	3400	1V32275000LW
3"	10	80	51	142	244	168	138	225	3500	3V32290000LW
4"	6	100	61	162	284	210	171	280	5900	3V32211000LW

# COMPONENTS

## EXPLODED VIEW



- 1** Nut (PVC-U - 2)
- 2** Union end (PVC-U - 2)
- 3** Body (PVC-U - 1)
- 4** Ball (PVC-U - 1)

- 5** Support (PVC-U - 1)
- 6** Handle (PVC-U - 1)
- 7** Stem (PVC-U - 1)
- 8** Socket O-ring (EPDM - 2)

- 9** Ball seat (PE - 2)
- 10\*** Stem O-ring (EPDM - 1)
- 11** Radial O-ring (EPDM - 1)
- 12\*\*** Ball seat O-ring (EPDM - 2)

\*2 pcs for DN 65÷100

\*\*Only for DN 65÷100

Inside brackets are indicated the material and the quantity supplied for each component.



# 302

Astore 302 is a single union ball valve for irrigation and water supply systems, with free ball support, which ensures a quick and easy installation and a convenient maintenance.

## SINGLE UNION BALL VALVE FOR IRRIGATION AND WATER SUPPLY SYSTEMS

- Versions available: ISO metric (1V302) and BS standard (3V302) plain solvent weld socket, BSP female threaded socket (1V301).

Technical specifications	
<b>Construction</b>	Single union grey PVC ball valve, with free ball support
<b>Size range</b>	DN 10 ÷ 100
<b>Nominal pressure</b>	DN 10÷50: PN16 with water at 20°C DN 65÷80: PN10 with water at 20°C DN 100: PN6 with water at 20°C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Solvent welding:</b> ISO 727, EN ISO 1452-4 (model 1V302); BS4346-1 (model 3V302) <b>Thread:</b> UNI ISO 228-1, ISO 7-1, UNI EN ISO 1452-4 (model 1V301)
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-ring) PE (ball seats)
<b>Control options</b>	Manual control

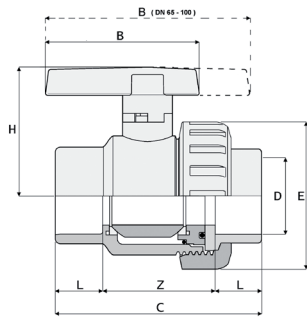


**DN 10 ÷ 50**



**DN 65 ÷ 100**

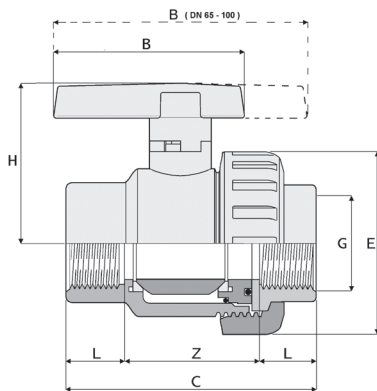
# DIMENSIONS



## 1V302

Single union grey PVC ball valve, ISO metric plain solvent weld socket, with free ball support.  
EPDM seals.  
PE ball seats.

D	PN	DN	L	Z	C	E	H	B	g	Code
16	16	10	15	41	71	50	50	57	97	1V30216000H
20	16	15	16	42	74	50	50	57	100	1V30220000H
25	16	20	19	48	86	59	55	66	155	1V30225000H
32	16	25	22	56	100	68	63	75	240	1V30232000H
40	16	32	26	62	114	80	76	90	350	1V30240000H
50	16	40	31	74	136	96	88	103	550	1V30250000H
63	16	50	38	86	162	116	102	121	930	1V30263000H
75	10	65	44	122	210	168	138	225	2600	1V30275000LW
90	10	80	51	124	226	168	138	225	2700	1V30290000LW
110	6	100	61	150	272	210	171	280	4700	1V30211000LW

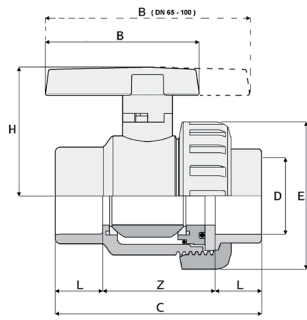


## 1V301

Single union grey PVC ball valve, BSP female threaded socket, with free ball support.  
EPDM seals.  
PE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	Code
3/8"	16	10	13	45	71	50	50	57	96	1V30116000H
1/2"	16	15	17	40	74	50	50	57	105	1V30120000H
3/4"	16	20	19	48	86	59	55	66	160	1V30125000H
1"	16	25	22	56	100	68	63	75	240	1V30132000H
1 1/4"	16	32	24	66	114	80	76	90	355	1V30140000H
1 1/2"	16	40	24	88	136	96	88	103	575	1V30150000H
2"	16	50	29	104	162	116	102	121	960	1V30163000H
2 1/2"	10	65	33	144	210	168	138	225	2700	1V30175000LW
3"	10	80	36	154	226	168	138	225	2800	1V30190000LW
4"	6	100	42	188	272	210	171	280	4700	1V30111000LW





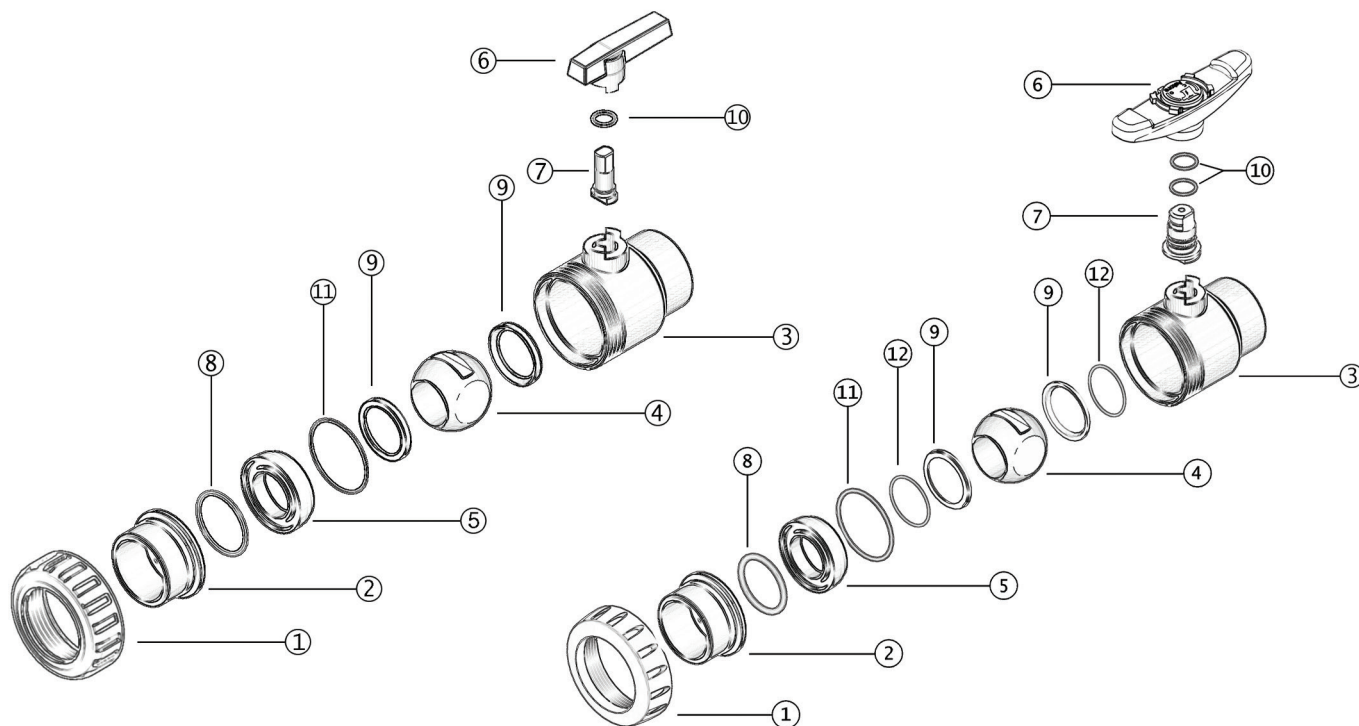
## 3V302

Single union grey PVC ball valve, BS Standard plain solvent weld socket, with free ball support.  
EPDM seals.  
PE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	Code
3/8"	16	10	15	41	71	50	50	57	96	3V30216000H
1/2"	16	15	17	40	74	50	50	57	100	3V30220000H
3/4"	16	20	19	48	86	59	55	66	155	3V30225000H
1"	16	25	22	56	100	68	63	75	240	3V30232000H
1 1/4"	16	32	26	62	114	80	76	90	350	3V30240000H
1 1/2"	16	40	31	74	136	96	88	103	550	3V30250000H
2"	16	50	38	86	162	116	102	121	930	3V30263000H
2 1/2"	10	65	44	122	210	168	138	225	2600	1V30275000LW
3"	10	80	51	124	226	168	138	225	2700	3V30290000LW
4"	6	100	61	150	272	210	171	280	4700	3V30211000LW

# COMPONENTS

## EXPLODED VIEW



**DN 10 ÷ 50**

**DN 65 ÷ 100**

- 1** Nut (PVC-U - 1)
- 2** Union end (PVC-U - 1)
- 3** Body (PVC-U - 1)
- 4** Ball (PVC-U - 1)

- 5** Support (PVC-U - 1)
- 6** Handle (PVC-U - 1)
- 7** Stem (PVC-U - 1)
- 8** Socket O-ring (EPDM - 1)

- 9** Ball seat (PE - 2)
- 10\*** Stem O-ring (EPDM - 1)
- 11** Radial O-ring (EPDM - 1)
- 12\*\*** Ball seat O-ring (EPDM - 2)

\*2 pcs for DN 65÷100

\*\*Only for DN 65÷100

Inside brackets are indicated the material and the quantity supplied for each component.



# 303

Astore 303 is a single union ball valve for irrigation and water supply systems, with free ball support, which ensures a quick and easy installation and a convenient maintenance.

## SINGLE UNION BALL VALVE FOR IRRIGATION AND WATER SUPPLY SYSTEMS

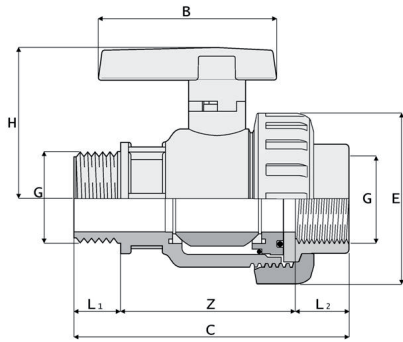
- Version available is BSP female threaded socket on nut side and BSP male threaded on valve body side.

Technical specifications	
Construction	Single union grey PVC ball valve, with free ball support
Size range	DN 10 ÷ 50
Nominal pressure	PN 16 with water at 20 °C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>Solvent welding:</b> ISO 727, EN ISO 1452-4 <b>Thread:</b> UNI ISO 228-1, ISO 7-1, UNI EN ISO 1452-4
Valve material	PVC-U
Seal material	EPDM (O-Ring); PE (ball seats)
Control options	Manual control



**DN 10 ÷ 50**

# DIMENSIONS



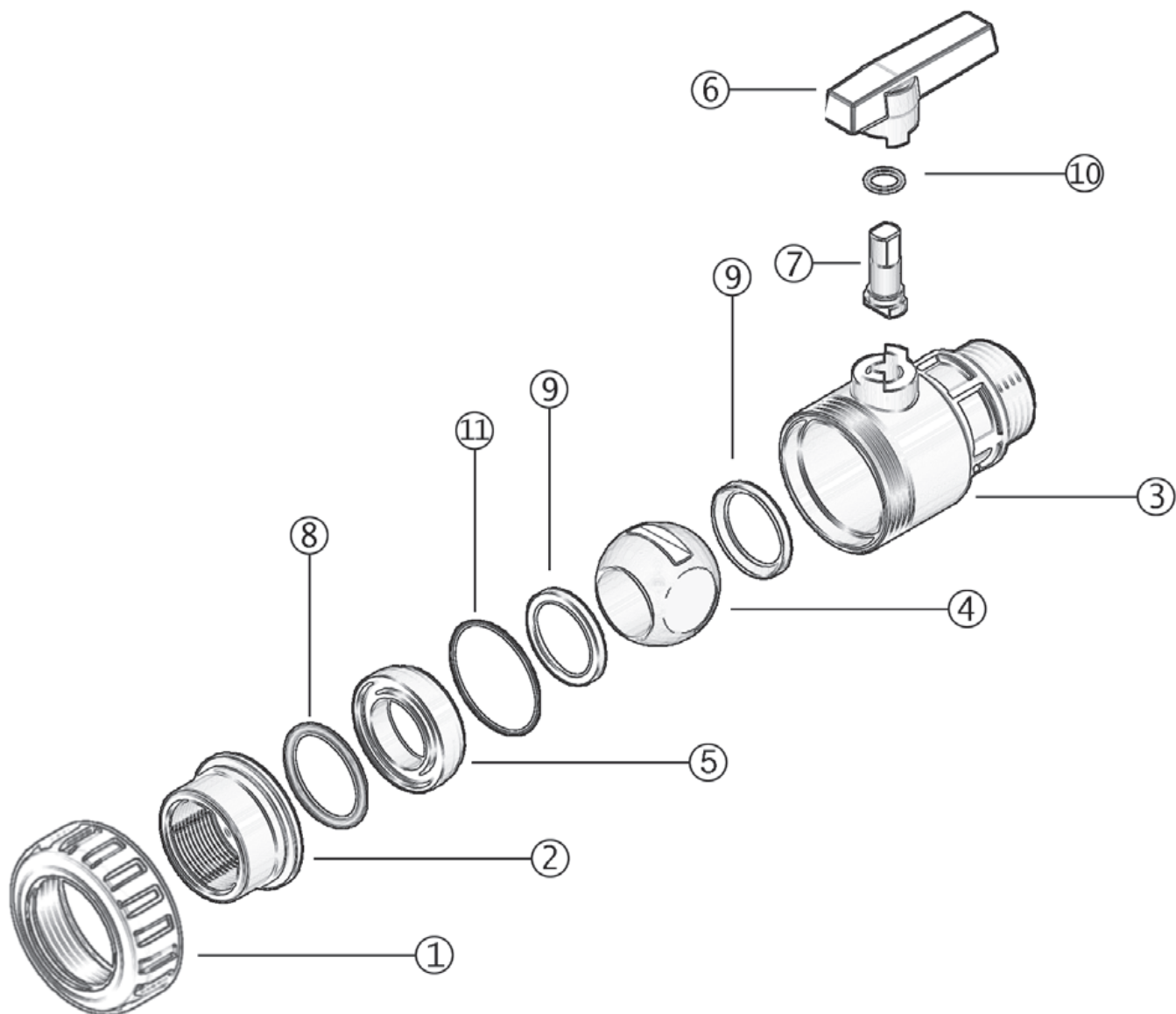
## 1V303

Single union grey PVC ball valve, BSP female threaded socket on nut side and BSP male threaded socket on valve body side, with free ball support.  
EPDM seals.  
PE ball seats.

G	PN	DN	L1	L2	Z	C	E	H	B	g	Code
3/8"	16	10	12	13	60	85	50	50	57	100	1V30316000H
1/2"	16	15	15	17	53	85	50	50	57	105	1V30320000H
3/4"	16	20	17	20	61	98	59	55	66	160	1V30325000H
1"	16	25	19	22	72	113	68	63	75	245	1V30332000H
1 1/4"	16	32	22	24	84	130	80	76	90	360	1V30340000H
1 1/2"	16	40	22	24	104	150	96	88	103	590	1V30350000H
2"	16	50	26	29	122	177	116	102	121	980	1V30363000H

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 1)
- 2 Union end (PVC-U - 1)
- 3 Body (PVC-U - 1)
- 4 Ball (PVC-U - 1)

- 5 Support (PVC-U - 1)
- 6 Handle (PVC-U - 1)
- 7 Stem (PVC-U - 1)
- 8 Socket O-ring (EPDM - 1)

- 9 Ball seat (PE - 2)
- 10 Stem O-ring (EPDM - 1)
- 11 Radial O-ring (EPDM - 1)

Inside brackets are indicated the material and the quantity supplied for each component.

# 304

Astore 304 is a single union ball valve for irrigation and water supply systems, with fixed ball support and radial disassembly, which ensures a quick and easy installation and a convenient maintenance.

## SINGLE UNION BALL VALVE FOR IRRIGATION AND WATER SUPPLY SYSTEMS

- Versions available: ISO metric (1V304) and BSP female threaded socket (1V309).

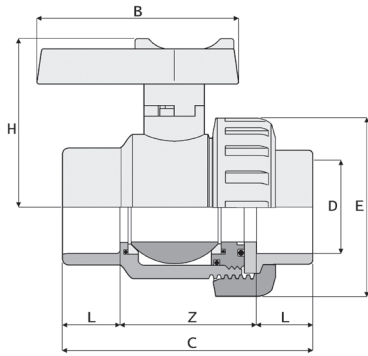
Technical specifications	
Construction	Single union grey PVC ball valve, with fixed ball support
Size range	DN 10 ÷ 50
Nominal pressure	PN 16 with water at 20 °C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>Solvent welding:</b> ISO 727, EN ISO 1452-4 (model 1V304)
Valve material	<b>Thread:</b> UNI ISO 228-1, ISO 7-1, UNI EN ISO 1452-4 (model 1V309) PVC-U
Seal material	EPDM (O-Ring); PE (ball seats)
Control options	Manual control





**DN 15 ÷ 50**

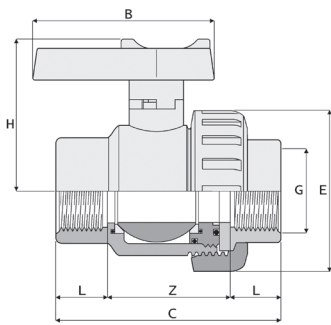
# DIMENSIONS



## 1V304

Single union grey PVC ball valve, ISO metric plain solvent weld socket, with fixed ball support.  
EPDM seals.  
PE ball seats.

D	PN	DN	L	Z	C	E	H	B	g	Code
20	16	15	16	42	74	50	53	57	100	1V30420000
25	16	20	19	48	86	59	58	66	155	1V30425000
32	16	25	22	56	100	68	68	75	240	1V30432000
40	16	32	26	62	114	80	80	90	350	1V30440000
50	16	40	31	74	136	96	93	103	550	1V30450000
63	16	50	38	86	162	116	108	121	930	1V30463000



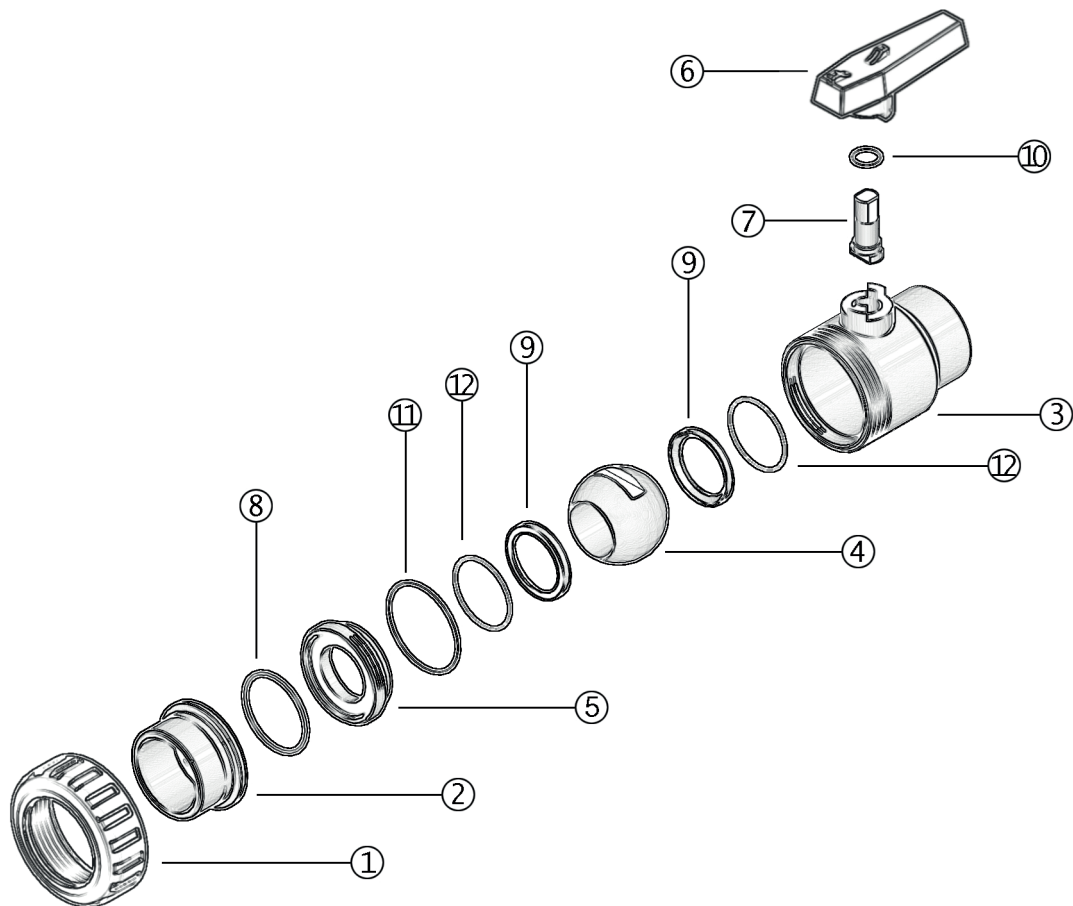
## 1V309

Single union grey PVC ball valve, BSP female threaded socket, with fixed ball support.  
EPDM seals.  
PE ball seats.

G	PN	DN	L	Z	C	E	H	B	g	Code
1/2"	16	15	17	40	74	50	53	57	105	1V30920000
3/4"	16	20	19	48	86	59	58	66	160	1V30925000
1"	16	25	22	56	100	68	68	75	240	1V30932000
1" 1/4	16	32	24	66	114	80	80	90	355	1V30940000
1" 1/2	16	40	24	88	136	96	93	103	575	1V30950000
2"	16	50	29	104	162	116	108	121	960	1V30963000

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 1)
- 2 Union end (PVC-U - 1)
- 3 Body (PVC-U - 1)
- 4 Ball (PVC-U - 1)

- 5 Support (PVC-U - 1)
- 6 Handle (PVC-U - 1)
- 7 Stem (PVC-U - 1)
- 8 Socket O-ring (EPDM - 1)

- 9 Ball seat (PE - 2)
- 10 Stem O-ring (EPDM - 1)
- 11 Radial O-ring (EPDM - 1)

The component material and quantity supplied are indicated in the parentheses.

# 305

Astore 305 is a single union ball valve with compression fitting for irrigation and water supply systems, with free ball support.

## SINGLE UNION BALL VALVE WITH COMPRESSION FITTINGS FOR IRRIGATION AND WATER SUPPLY SYSTEMS

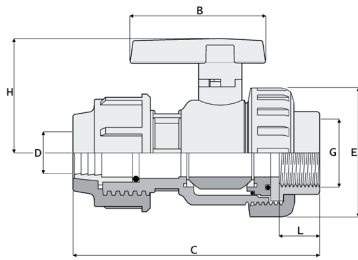
- Version available is BSP female threaded socket on nut side and compression fitting for connection with PE pipes on valve body side.

Technical specifications	
Construction	Single union grey PVC ball valve, with free ball support
Size range	DN 10 ÷ 50
Nominal pressure	PN 16 with water at 20 °C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>Thread:</b> UNI ISO 228-1, ISO 7-1 <b>Compression fittings:</b> ISO 17885
Valve material	PVC-U
Seal material	EPDM (O-Ring); PE (ball seats)
Control options	Manual control



DN 10 ÷ 50

# DIMENSIONS



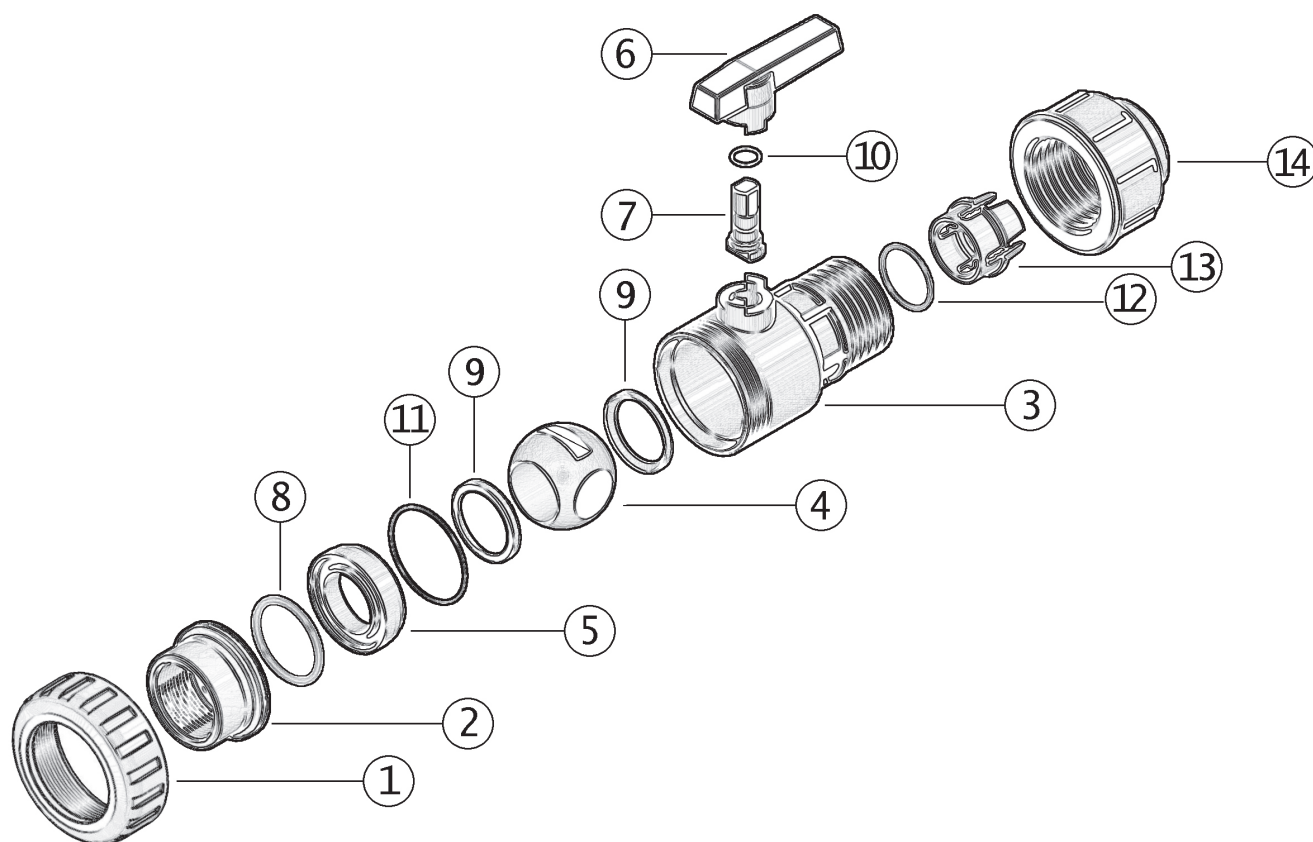
## 1V305

Single union grey PVC ball valve, BSP female threaded socket on nut side and compression fitting for connection with PE pipes on valve body side, with free ball support.  
EPDM seals.  
PE ball seats.

D x G	PN	DN	L	C	E	H	B	g	Code
16 x 3/8"	16	10	13	96	50	50	57	115	1V30516000L
20 x 1/2"	16	15	17	99	50	50	57	130	1V30520000L
25 x 3/4"	16	20	19	115	59	55	66	195	1V30525000L
32 x 1"	16	25	22	131	68	63	75	300	1V30532000L
40 x 1 1/4"	16	32	24	158	80	76	90	455	1V30540000L
50 x 1 1/2"	16	40	24	181	96	88	103	740	1V30550000L
63 x 2"	16	50	29	221	116	102	121	1200	1V30563000L

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 1)
- 2 Union end (PVC-U - 2)
- 3 Body (PVC-U - 1)
- 4 Ball (PVC-U - 1)
- 5 Support (PVC-U - 1)

- 6 Handle (PVC-U - 1)
- 7 Stem (PVC-U - 1)
- 8 Socket O-ring (EPDM - 1)
- 9 Ball seat (PE - 2)
- 10 Stem O-ring (EPDM - 1)

- 11 Radial O-ring (EPDM - 1)
- 12 Body O-ring (NBR - 1)
- 13 Clinching ring (POM - 1)
- 14 Nut (PP - 1)

Inside brackets are indicated the material and the quantity supplied for each component.

# 335

Astore 335 is a single union ball valve with compression fittings for irrigation and water supply systems, with fixed ball support.

## SINGLE UNION BALL VALVE WITH COMPRESSION FITTINGS FOR IRRIGATION AND WATER SUPPLY SYSTEMS

- Equipped with compression fittings for connection with PE pipes metric series on both sides.

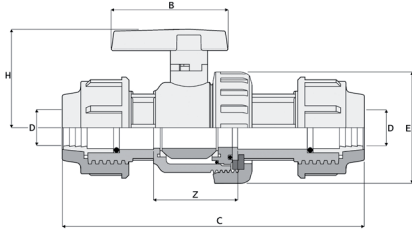
Technical specifications	
<b>Construction</b>	Single union grey PVC ball valve with compression fittings, with free ball support
<b>Size range</b>	DN 15 ÷ 25
<b>Nominal pressure</b>	PN 16 with water at 20 °C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Compression fittings:</b> ISO 17885.
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-ring) PE (ball seats)
<b>Control options</b>	Manual control





DN 15 ÷ 25

# DIMENSIONS



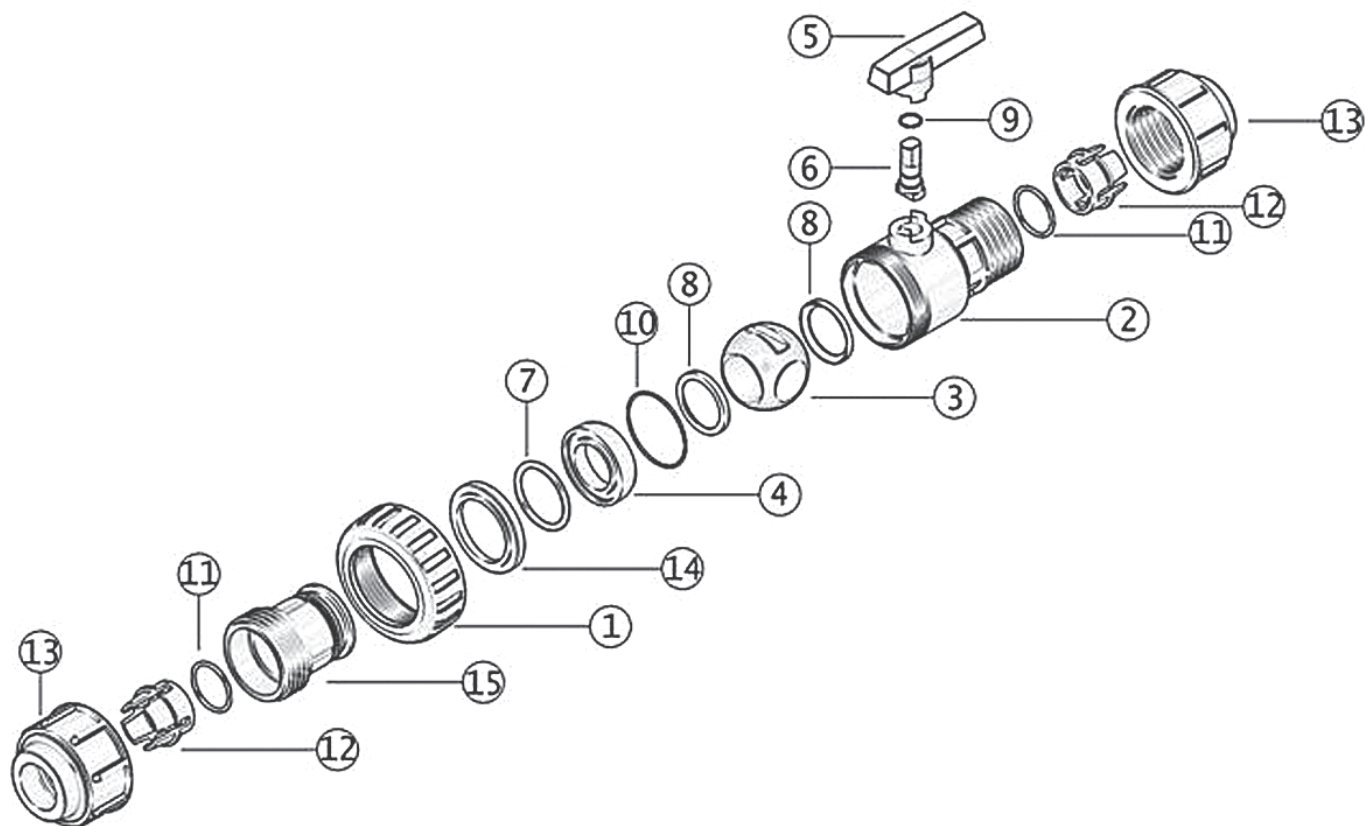
## 1V335

Single union grey PVC ball valve, provided with compression fittings to connect PE ISO metric pipes to both sides, with free ball support.  
EPDM seals.  
PE ball seats.

D	PN	DN	C	E	H	B	Z	g	Code
20	16	15	148	50	50	57	67	156	1V33520000W
25	16	20	165	59	55	66	77	235	1V33525000W
32	16	25	188	68	63	75	83	365	1V33532000W

# COMPONENTS

## EXPLODED VIEW



- |                              |                                   |   |
|------------------------------|-----------------------------------|---|
| <b>1</b> Nut (PVC-U - 1)     | <b>6</b> Stem (PVC-U - 1)         | <b>11</b> Compr. fitting O-ring (NBR - 2) |
| <b>2</b> Body (PVC-U - 1)    | <b>7</b> Socket O-ring(EPDM - 1)  | <b>12</b> Clinching ring (POM - 2)        |
| <b>3</b> Body (PVC-U - 1)    | <b>8</b> Ball seat (PE - 2)       | <b>13</b> Compr. fitting nut (PP - 2)     |
| <b>4</b> Support (PVC-U - 1) | <b>9</b> Stem O-ring (EPDM - 1)   | <b>14</b> Split ring (PVC-U - 1)          |
| <b>5</b> Handle (PVC-U - 1)  | <b>10</b> Radial O-ring(EPDM - 1) | <b>15</b> Body compr. fitting (PVC-U - 1) |

Inside brackets are indicated the material and the quantity supplied for each component.

# 930

Astore 930 is a three-way ball valve for mixing or diverting fluids, with free ball support and radial disassembly.

## THREE-WAY BALL VALVE FOR MIXING OR DIVERTING FLUIDS

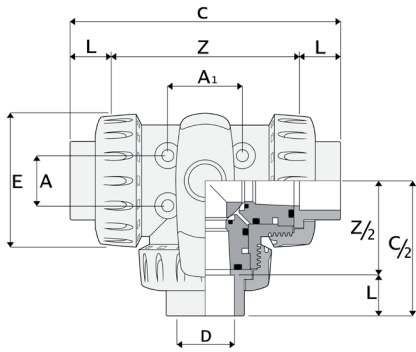
- Versions available: ISO metric (1V930) and BS standard (3V930) plain solvent weld socket, BSP female threaded socket (1V931).
- Radial disassembly of the valve on all three connections, T- bore ball.
- Available to be produced in other international standards (ASTM, JIS, NPT) upon request.

Technical specifications	
<b>Construction</b>	Three-way grey PVC ball valve, with free ball support
<b>Size range</b>	DN 15 ÷ 50
<b>Nominal pressure</b>	PN 10 with water at 20 °C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Solvent welding:</b> ISO metric (model 1V930), BS standard (model 3V930) <b>Thread:</b> BSP standard female (model 1V931)
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-ring) PTFE (ball seats)
<b>Control options</b>	Manual control



DN 15 ÷ 50

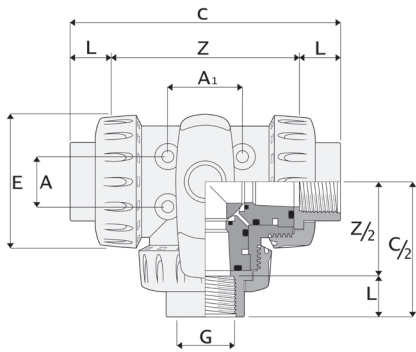
# DIMENSIONS



## 1V930

Three-way grey PVC ball valve, ISO metric plain solvent weld socket, with free ball support and radial disassembly.  
T bore ball.  
EPDM seals.  
PTFE ball seats.

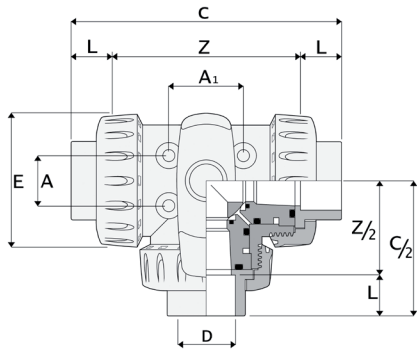
D	PN	DN	H	B	E	L	Z	C	H1	A1	A	g	Code
20	10	15	52	66	53	16	76	108	27,5	24	24	245	1V93002000
25	10	20	61	77	62	19	90	128	32,5	31	25	385	1V93002500
32	10	25	68	88	71	22	100	144	36,5	40	27	560	1V93003200
40	10	32	76	102	84	26	121	173	43	41	32	875	1V93004000
50	10	40	91	117	98	31	135	197	51,5	53	28	1290	1V93005000
63	10	50	107	140	117	38	167	243	59,5	58	35	2085	1V93006300



## 1V931

Three-way grey PVC ball valve, BSP female threaded socket, with free ball support and radial disassembly.  
T bore ball.  
EPDM seals.  
PTFE ball seats.

D	PN	DN	H	B	E	L	Z	C	H1	A1	A	g	Code
1/2"	10	15	52	66	53	15	86	116	27,5	24	24	245	1V93102000
3/4"	10	20	61	77	62	16	98	130	32,5	31	25	385	1V93102500
1"	10	25	68	88	71	19	113	151	36,5	40	27	560	1V93103200
1 1/4"	10	32	76	102	84	22	136	180	43	41	32	875	1V93104000
1 1/2"	10	40	91	117	98	22	145	189	51,5	53	28	1290	1V93105000
2"	10	50	107	140	117	26	178	230	59,5	58	35	2085	1V93106300



### 3V930

Three-way grey PVC ball valve, BS Standard plain solvent weld socket, with free ball support and radial disassembly.

T bore ball.

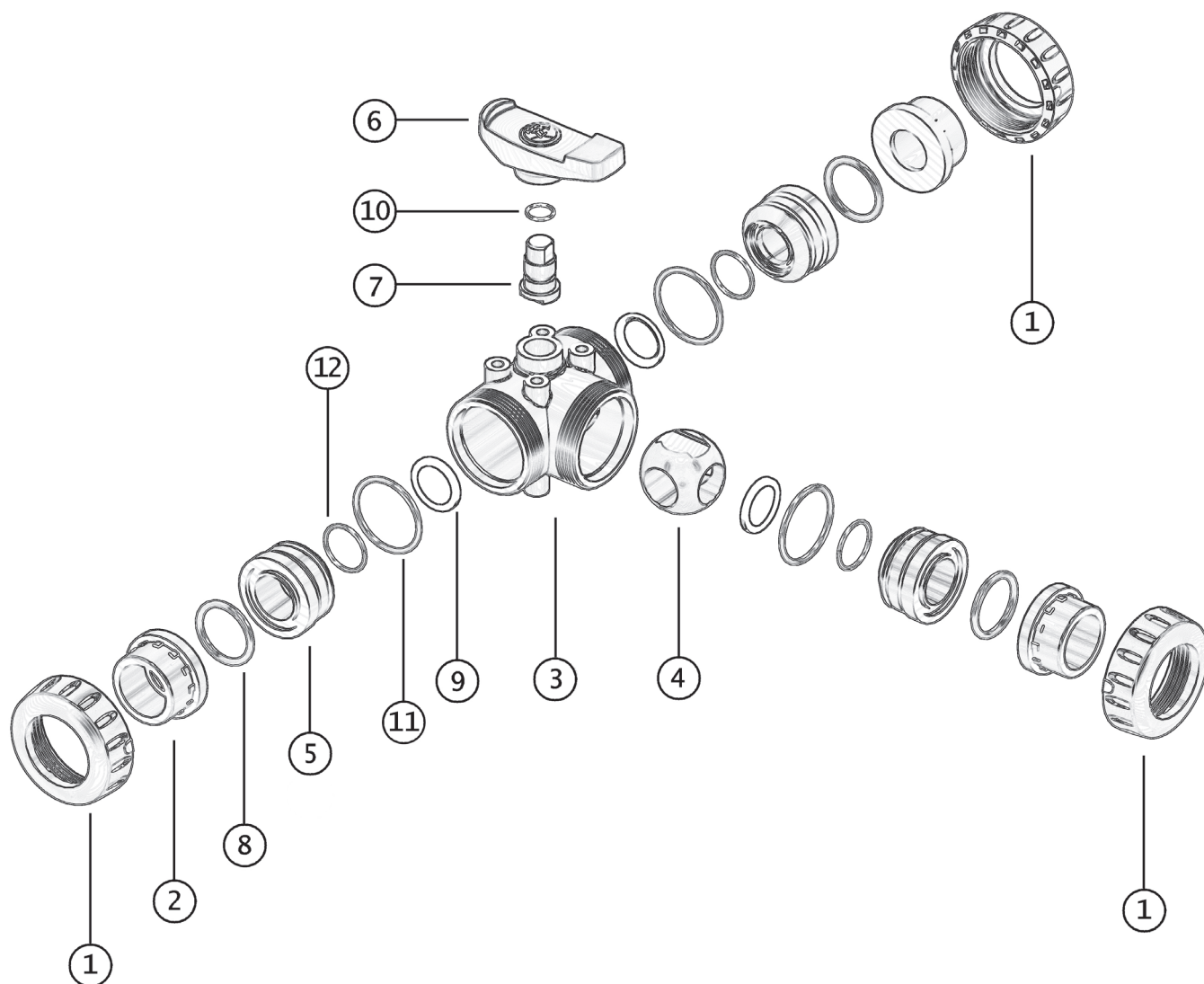
EPDM seals.

PTFE ball seats.

D	PN	DN	H	B	E	L	Z	C	H1	A1	A	g	Code
1/2"	10	15	52	66	53	16	74	108	27,5	24	24	245	3V93002000
3/4"	10	20	61	77	62	19	90	128	32,5	31	25	385	3V93002500
1"	10	25	68	88	71	22	100	144	36,5	40	27	560	3V93003200
1 1/4"	10	32	76	102	84	26	121	173	43	41	32	875	3V93004000
1 1/2"	10	40	91	117	98	30	137	197	51,5	53	28	1290	3V93005000
2"	10	50	107	140	117	36	171	243	59,5	58	35	2085	3V93006300

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 3)
- 2 Union end (PVC-U - 3)
- 3 Body (PVC-U - 1)
- 4 Ball (PVC-U - 1)

- 5 Support for ball seat (PVC-U - 3)
- 6 handle (PVC-U - 1)
- 7 Stem (PVC-U - 1)
- 8 Socket O-ring (EPDM - 3)

- 9 Ball stem (PTFE - 3)
- 10 Stem O-ring (EPDM - 1)
- 11 Radial O-ring (EPDM - 3)
- 12 O-ring for ball seat (EPDM - 3)

Inside brackets are indicated the material and the quantity supplied for each component.





# 800

Astore 800 is a butterfly valve for water supply systems.

## BUTTERFLY VALVE FOR WATER SUPPLY SYSTEMS

- Customization system consisting of transparent protective cap and label plate.

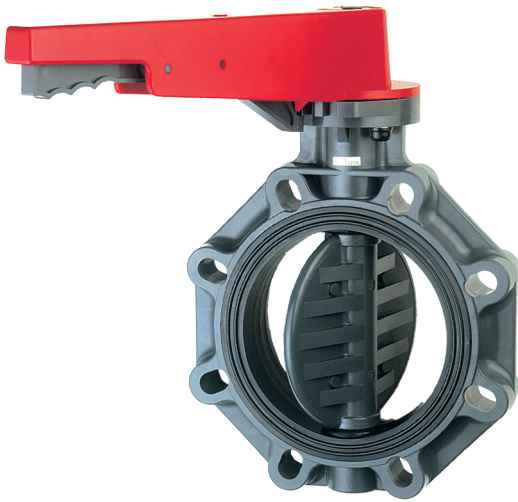
Technical specifications	
<b>Construction</b>	Grey PVC butterfly valve
<b>Size range</b>	DN 40÷300
<b>Nominal pressure</b>	DN 40÷50: PN16 with water at 20°C DN 65÷200: PN10 with water at 20°C DN 250: PN6 with water at 20°C DN 300: PN4 with water at 20°C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Flanging system:</b> EN ISO 1452, EN ISO 15493, DIN 2501, ISO 7005-1, EN 1092-1, ANSI B16.5 Cl.150
<b>Valve and disc material</b>	PVC-U
<b>Shaft material</b>	Zinc plated steel
<b>Liner material</b>	EPDM
<b>Control options</b>	Manual control (handle: DN 40÷200; gear box: DN 250÷300)



DN 40 ÷ 65



DN 80 ÷ 150

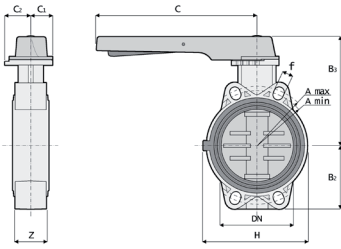


DN 200



DN 250 ÷ 300

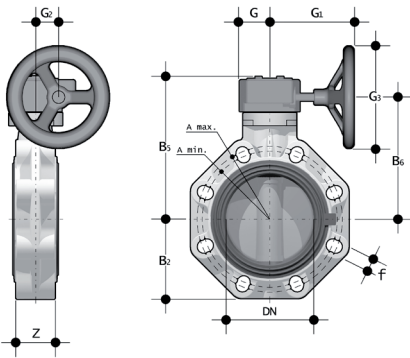
# DIMENSIONS



## 1V800

Grey PVC butterfly valve.  
Handle manual control.  
EPDM liner.  
Zinc plated steel stem.

D	PN	DN	B2	B3	C	C1	C2	H	Z	A min	A max	F	g	n°holes	Torque in N/m	Code
50	16	40	60	136	175	45	42	132	33	93	109	19	827	4	8	1V80050000W
63	16	50	70	143	175	45	42	147	43	108	124	19	1012	4	10	1V80063000W
75	10	65	80	168	175	45	45	165	46	128	144	19	1420	4	12	1V80075000W
90	10	80	90	182	250	45	45	130	49	145	159	19	1640	4	25	1V80090000W
110	10	100	105	196	250	45	45	150	56	165	190	19	1990	4	45	1V80011000W
140	10	125	121	215	335	45	45	185	64	204	215	23	3030	4	60	1V80015000W
160	10	150	132	229	335	45	45	210	70	230	242	23	3730	4	90	1V80017000W
225	10	200	161	309	425	65	82	325	71	280	298	23	8240	8	140	1V80023000



## 1V800

Grey PVC butterfly valve.  
Gear box manual control.  
EPDM liner.  
Zinc plated steel stem.

D	PN	DN	B2	B5	B6	G	G1	G2	G3	Z	A min	A max	F	g	n°holes	Torque in N/m	Code
280*	6	250	210	317	281	88	236	76	250	114	335	362	25	18600	12	140	1V80028000
315*	4	300	245	374	338	88	236	76	250	114	390	432	29	25600	12	200	1V80033000

# ACCESSORIES

## 24 V AC/DC ELECTRICAL ACTUATION KIT

24 V AC/DC electrical actuation kit for V800 butterfly valves

d	Code
50÷75	KIT800CE075V24
90-110	KIT800CE110V24
140-160	KIT800CE160V24
225	KIT800CE225V24
280-315	KIT800CE315V24

## 90-240 V AC ELECTRICAL ACTUATION KIT

90-240 V AC electrical actuation kit for V800 butterfly valves

d	Code
50÷75	KIT800CE075V220
90-110	KIT800CE110V220
140-160	KIT800CE160V220
225	KIT800CE225V220
280-315	KIT800CE315V220

## DA PNEUMATICAL ACTUATION KIT

Double action pneumatical actuation kit for V800 butterfly valves

d	Code
50÷75	KIT800CPDA075
90	KIT800CPDA090
110	KIT800CPDA110
140	KIT800CPDA140
160	KIT800CPDA160
225	KIT800CPDA225
280-315	KIT800CPDA315

## SA PNEUMATICAL ACTUATION KIT

Single action pneumatical actuation kit for V800 butterfly valves

d	Code
50	KIT800CPSA050
63-75	KIT800CPSA075
90	KIT800CPSA090
110	KIT800CPSA110
140	KIT800CPSA140
160	KIT800CPSA160
225	KIT800CPSA225
280	KIT800CPSA280
315	KIT800CPSA315

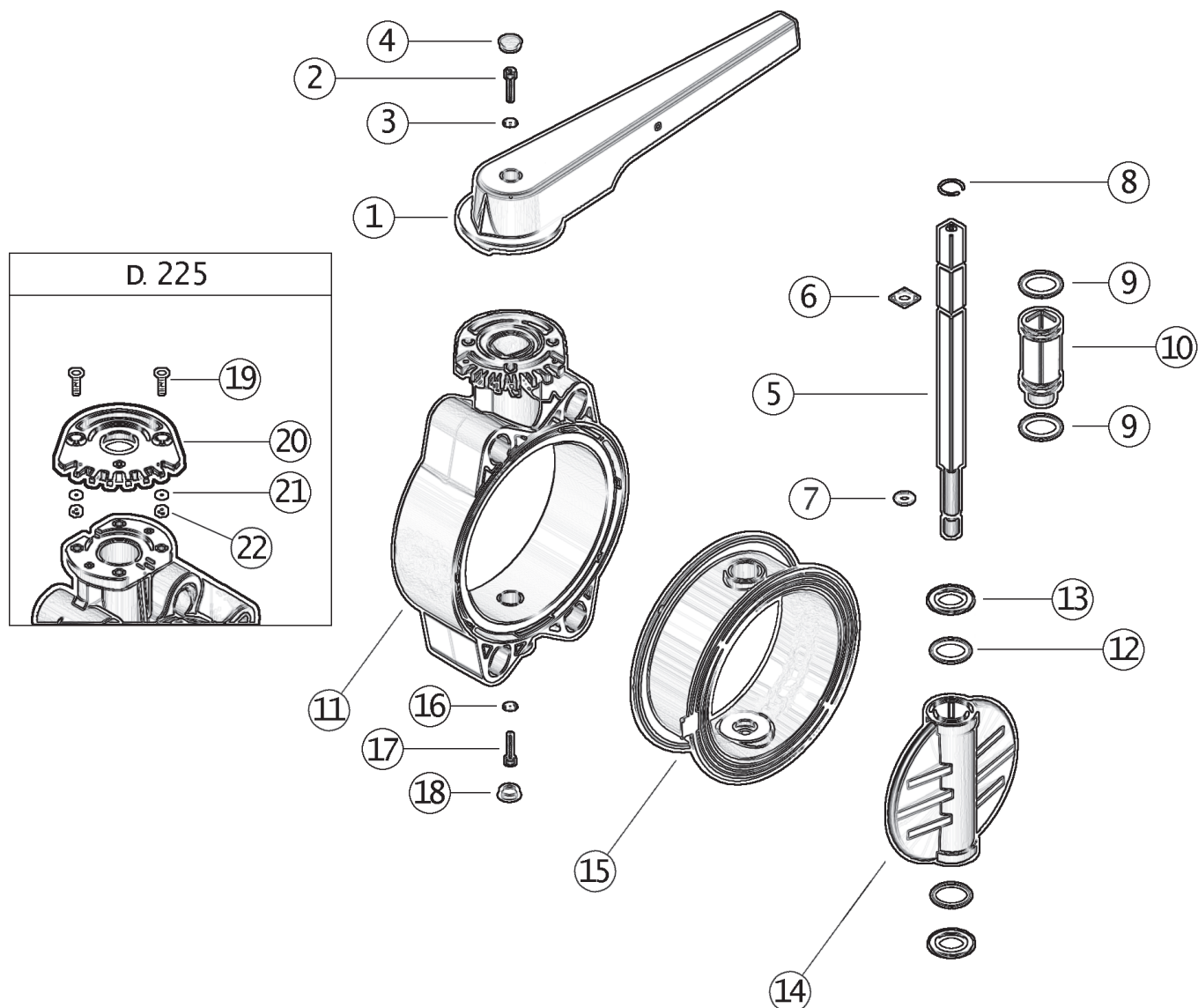
## GEAR BOX KIT

Gear box kit for V800 butterfly valve including: gear box, bolts and, if necessary, the square adaptor

d	DN	Code
75÷110	65-100	GEAR01V800
140-160	125-150	GEAR02V800
225	200	GEAR03V800
280-315	250-300	GEAR04V800

# COMPONENTS

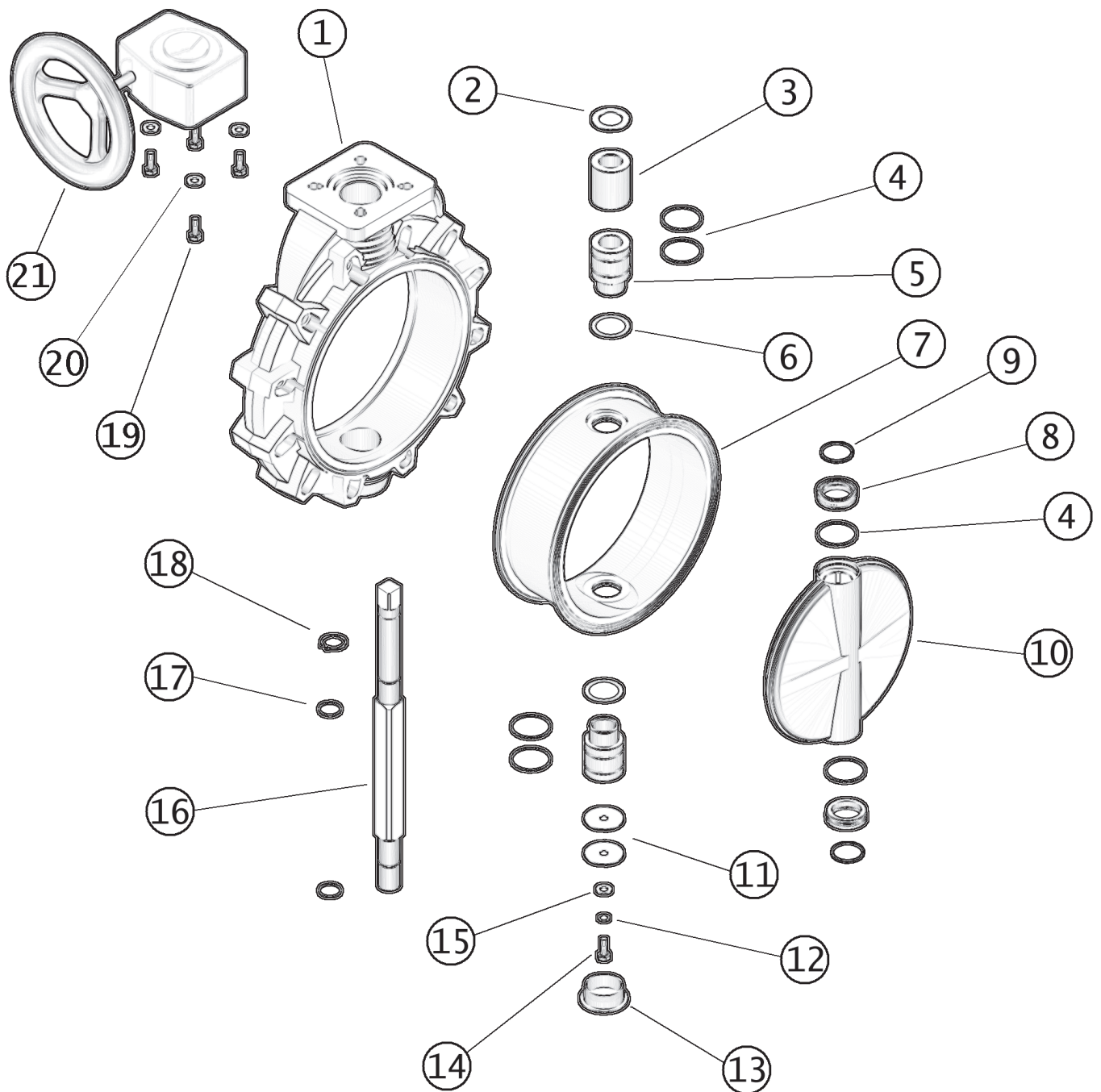
## EXPLODED VIEW DN 40÷200



- |  |   |  |
|--|---|--|
| <b>1</b> Handle (PVC-U - 1)                | <b>9</b> Bush O-ring (EPDM - 2)         | <b>17</b> Screw (Stainless steel - 1)  |
| <b>2</b> Screw (Stainless steel - 1)       | <b>10</b> Bush (Nylon - 1)              | <b>18</b> Protection cap (PE - 1)      |
| <b>3</b> Washer (Stainless steel - 1)      | <b>11</b> Body (PVC-U - 1)              | <b>19</b> Screw (Stainless steel - 2)  |
| <b>4</b> Protection cap (PE - 1)           | <b>12</b> Disc O-ring (EPDM - 2)        | <b>20</b> Pad (PVC-U - 1)              |
| <b>5</b> Shaft (Zinc plated steel - 1)     | <b>13</b> Anti-friction ring (PTFE - 2) | <b>21</b> Washer (Stainless steel - 2) |
| <b>6</b> Shaft gasket (EPDM - 1)           | <b>14</b> Disc (PVC-U - 1)              | <b>22</b> Nut (Stainless steel - 2)    |
| <b>7</b> Shaft O-ring (EPDM - 1)           | <b>15</b> Gasket (EPDM - 1)             |  |
| <b>8</b> Seeger ring (Stainless steel - 1) | <b>16</b> Washer (Stainless steel - 1)  |  |

Inside brackets are indicated the material and the quantity supplied for each component.

## EXPLODED VIEW DN 250÷300



- |          |                              |           |                               |           |                                   |
|----------|------------------------------|-----------|-------------------------------|-----------|-----------------------------------|
| <b>1</b> | Body (PVC-U - 1)             | <b>8</b>  | Anti-friction ring (PTFE - 2) | <b>15</b> | Washer (Stainless steel - 1)      |
| <b>2</b> | Washer (Stainless steel - 1) | <b>9</b>  | Disc O-ring (EPDM - 2)        | <b>16</b> | Shaft (Zinc plated steel - 1)     |
| <b>3</b> | Bush (PP - 1)                | <b>10</b> | Disc (PVC-U - 1)              | <b>17</b> | O-ring shaft (EPDM - 2)           |
| <b>4</b> | Bush/O-ring (EPDM - 4)       | <b>11</b> | Washer (Stainless steel - 2)  | <b>18</b> | Seeger ring (Stainless steel - 1) |
| <b>5</b> | Bush for O-ring (PP - 2)     | <b>12</b> | Washer (Stainless steel - 1)  | <b>19</b> | Screw (Stainless steel - 4)       |
| <b>6</b> | Washer (Stainless steel - 2) | <b>13</b> | Protection cap (PE - 1)       | <b>20</b> | Washer (Stainless steel - 4)      |
| <b>7</b> | Primary liner (EPDM - 1)     | <b>14</b> | Screw (Stainless steel - 1)   | <b>21</b> | Gear box (1)                      |

Inside brackets are indicated the material and the quantity supplied for each component.

# 230

Astore 230 is a true union spring check valve, radially disassemblable and installable in horizontal or in vertical position, which allows the flow only in one direction.

## TRUE UNION SPRING CHECK VALVE

- Versions available: ISO metric (1V230) and BS standard (3V230) plain solvent weld socket, BSP female threaded socket (1V231).
- Customization system consisting of transparent protective cap and label tag (DN 65-100).
- Stainless Steel AISI 316 spring.
- Available to be produced in other international standards (ASTM, JIS, NPT) upon request.

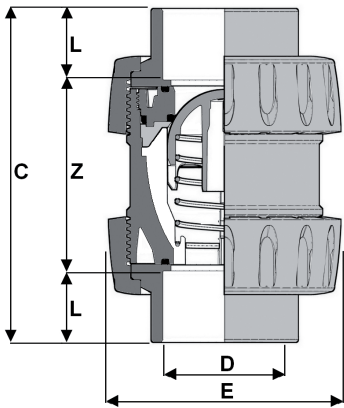
Technical specifications	
<b>Construction</b>	True union grey PVC spring check valve, radially disassemblable
<b>Size range</b>	DN 10 ÷ 100
<b>Nominal pressure</b>	DN 10÷50: PN16 with water at 20°C DN 65÷100: PN10 with water at 20°C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Minimum sealing pressure</b>	0,08 bar
<b>Coupling standards</b>	<b>Solvent welding:</b> ISO metric (model 1V230) and BS standard (model 3V230) <b>Thread:</b> Standard BSP (Model 1V231)
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-ring)
<b>Control options</b>	Manual control





DN 10 ÷ 100

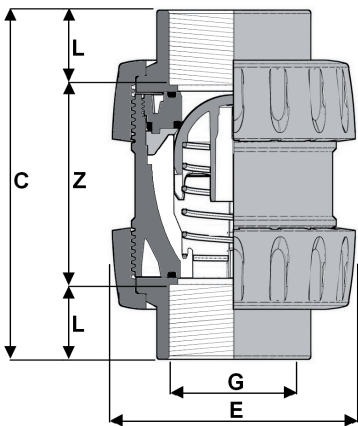
# DIMENSIONS



## 1V230

True union grey PVC spring check valve, ISO metric plain solvent weld socket.  
Stainless Steel AISI 316 spring.  
EPDM seals.

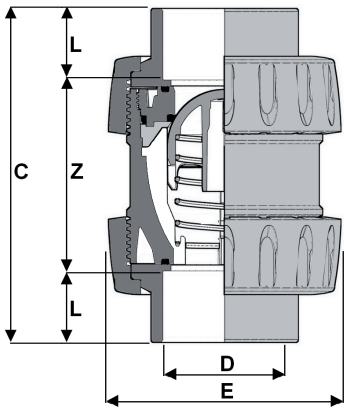
D	PN	DN	L	Z	C	E	g	Code
16	16	10	14	54	82	53	100	1V23001600
20	16	15	16	50	82	53	105	1V23002000
25	16	20	19	53	91	62	150	1V23002500
32	16	25	22	59	103	71	250	1V23003200
40	16	32	26	68	120	84	370	1V23004000
50	16	40	31	77	139	98	590	1V23005000
63	16	50	38	98	174	117	990	1V23006300
75	10	65	44	123	211	157	2480	SSEIV075E
90	10	80	51	146	248	174	3090	SSEIV090E
110	10	100	61	161	283	212	5370	SSEIV110E



## 1V231

True union grey PVC spring check valve, BSP female threaded socket.  
Stainless Steel AISI 316 spring.  
EPDM seals.

G	PN	DN	L	Z	C	E	g	Code
3/8"	16	10	13	56	82	53	100	1V23101600
1/2"	16	15	17	56	90	53	105	1V23102000
3/4"	16	20	19	55	93	62	150	1V23102500
1"	16	25	22	66	110	71	250	1V23103200
1 1/4"	16	32	24	79	127	84	370	1V23104000
1 1/2"	16	40	24	83	131	98	590	1V23105000
2"	16	50	29	103	161	117	990	1V23106300
2 1/2"	10	65	30,2	150,6	211	157	2480	SSEFV212E
3"	10	80	33,3	181,4	248	174	3090	SSEFV300E
4"	10	100	39,3	204,4	283	212	5370	SSEFV400E



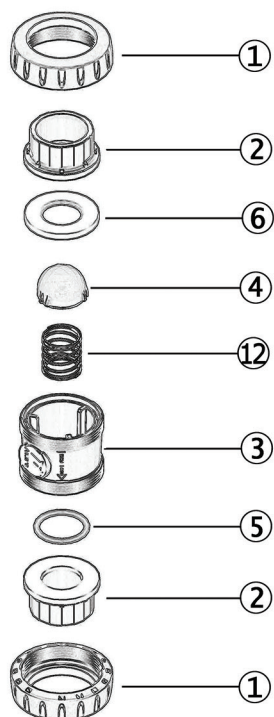
### 3V230

True union grey PVC spring check valve, BS Standard plain solvent weld socket.  
Stainless Steel AISI 316 spring.  
EPDM seals.

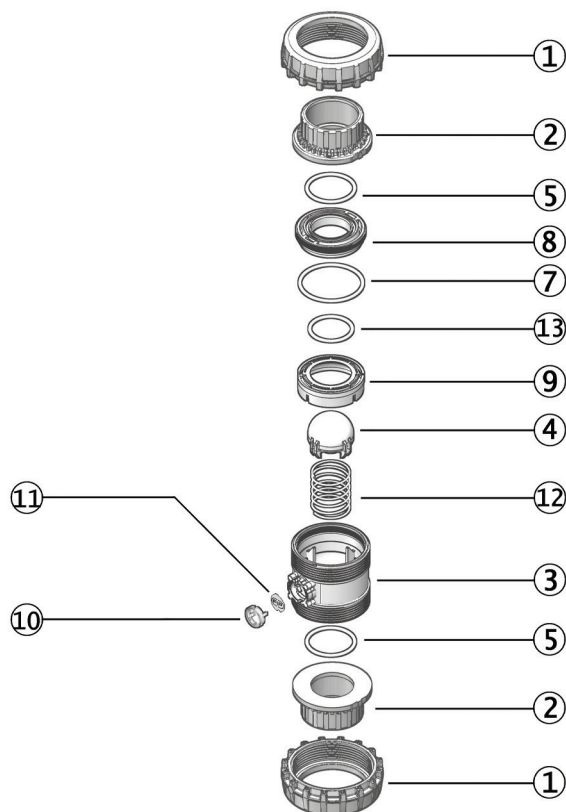
D	PN	DN	L	Z	C	E	g	Code
3/8"	16	10	15	52	82	53	100	3V23001600
1/2"	16	15	17	48	82	53	105	3V23002000
3/4"	16	20	19	53	91	62	150	3V23002500
1"	16	25	22	59	103	71	250	3V23003200
1 1/4"	16	32	26	68	120	84	370	3V23004000
1 1/2"	16	40	31	77	139	98	590	3V23005000
2"	16	50	38	98	174	117	990	3V23006300
2 1/2"	10	65	44	123	211	157	2480	SSEIV075E
3"	10	80	51	146	248	174	3090	SSELV300E
4"	10	100	63	157	283	212	5370	SSELV400E

# COMPONENTS

## EXPLODED VIEW



**DN 10 ÷ 50**



**DN 65 ÷ 100**

- |                                   |  |   |
|-----------------------------------|--|---|
| <b>1</b> Nut (PVC-U - 2)          | <b>6</b> Piston gasket (EPDM - 1)              | <b>11</b> Tag holder (PVC-U - 1)                |
| <b>2</b> Union end (PVC-U - 2)    | <b>7</b> Radial seal O-ring (EPDM - 1)         | <b>12</b> Spring (Stainless Steel AISI 316 - 1) |
| <b>3</b> Body (PVC-U - 1)         | <b>8</b> Support (PVC-U - 1)                   | <b>13</b> Piston O-ring (EPDM - 1)              |
| <b>4</b> Piston (PVC-U - 1)       | <b>9</b> Packing presser ring (PVC-U - 1)      |   |
| <b>5</b> Socket O-ring (EPDM - 1) | <b>10</b> Transparent service plug (PVC-U - 1) |   |

Inside brackets are indicated the material and the quantity supplied for each component.



# CROV

Astore CROV is a clapet check valve, designed to be installed between collars and flanges, which allows the flow only in one direction.

## CLAPET CHECK VALVE

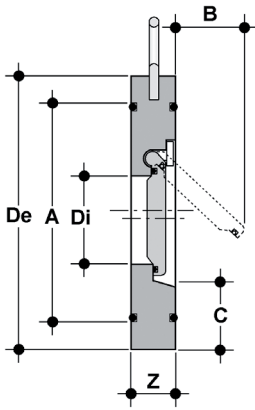
- Connection with pipes with maximum pressure rating PN 10

Technical specifications	
Construction	Grey PVC clapet check valve
Size range	DN 40 ÷ 300
Nominal pressure	PN5 bar with water at 20 °C
Temperature range	0 °C ÷ 60 °C
Coupling standards	<b>Flanging system:</b> DIN 2501 PN 10, EN ISO 1452, EN ISO 15493
Reference standards	<b>Construction criteria:</b> EN ISO 16137 EN ISO 1452, EN ISO 15493 <b>Test methods and requirements:</b> ISO 9393 <b>Installation criteria:</b> DVS 2204, DVS 2221, UNI 11242
Body and disc material	PVC-U
Seal material	EPDM



**DN 40 ÷ 300**

# DIMENSIONS



**CROV**  
PVC-U/EPDM clapet check valve

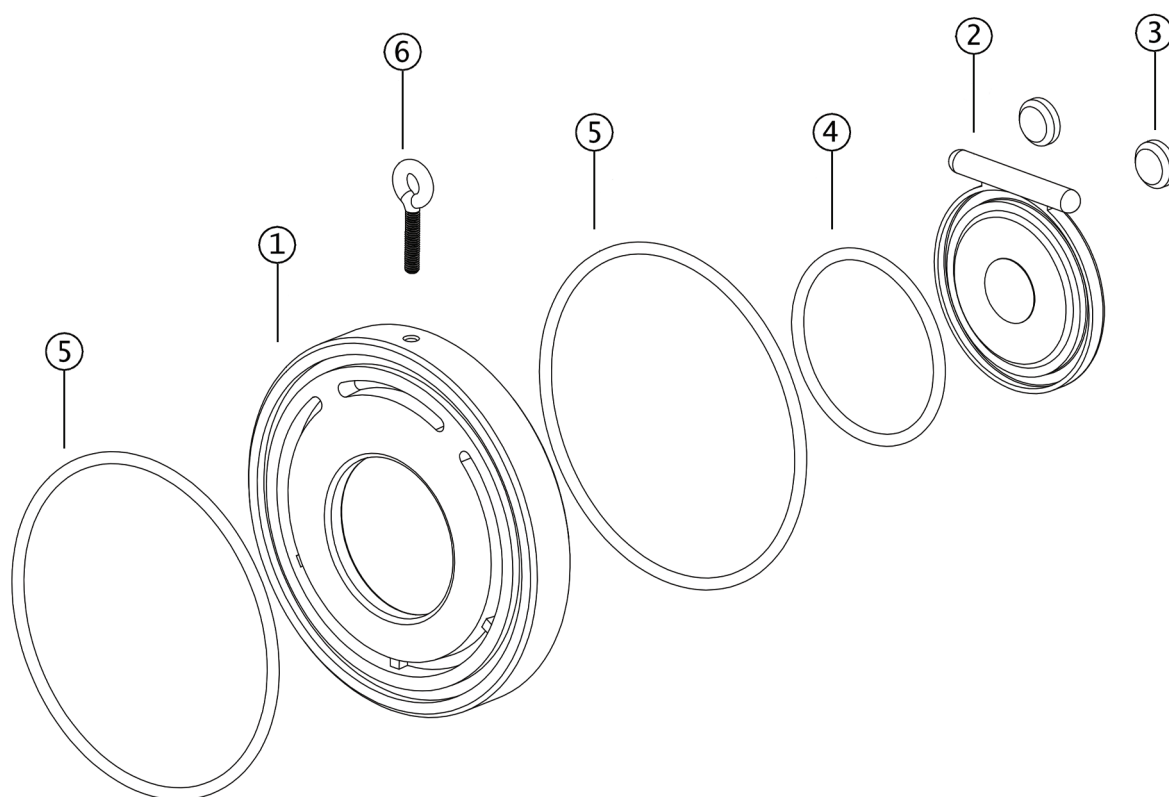
D	PN	DN	De	Z	Di	A	B	C	g	A(hor) Bar	A(vert) Bar	B Bar	Code
50	5	40	95	16	22	72	25	28	160	0,001	0,002	0,3	CROV050E
63	5	50	109	18	32	86	37	29	260	0,001	0,003	0,3	CROV063E
75	5	65	129	20	40	105	50	31	330	0,001	0,003	0,3	CROV075E
90	5	80	144	20	54	119	61	32	400	0,001	0,003	0,2	CROV090E
110	5	100	164	23	70	146	77	31	560	0,001	0,003	0,2	CROV110E
140	5	125	195	23	92	173	94	35	760	0,001	0,003	0,2	CROV140E
160	5	150	220	26	105	197	100	40	1120	0,001	0,005	0,2	CROV160E
225	5	200	275	34	154	225	152	38	2130	0,001	0,005	0,2	CROV225E
280	5	250	330	40	192	312	180	41	3540	0,001	0,008	0,2	CROV280E
315	5	300	380	45	227	363	215	41	5350	0,001	0,008	0,2	CROV315E

A - Minimum pressure for valve opening  
B - Minimum ppressure for valve sealing



# COMPONENTS

## EXPLODED VIEW



**1** Body (PVC-U - 1)

**2** Disc (PVC-U - 1)

**3** Disc holder (PVC-U - 2)

**4** O-ring disc (EPDM - 1)

**5** O-ring body (EPDM - 2)

**6** Eyelet (Zinc plated carbon steel- 1)

Inside brackets are indicated the material and the quantity supplied for each component.

# 210

Astore 210 is a true union foot ball valve, radially disassemblable and installable in vertical position, which allows the flow only in one direction.

## TRUE UNION FOOT BALL VALVE

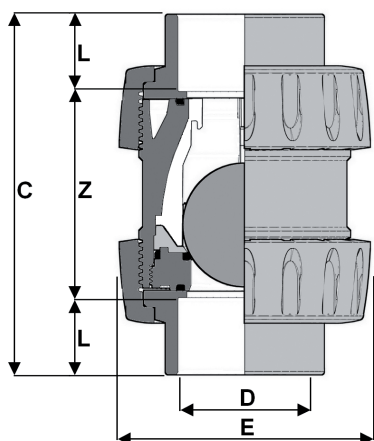
- Versions available: ISO metric (1V210) and BS standard (3V210) plain solvent weld socket, BSP female threaded socket (1V211).
- Customization system consisting of transparent protective cap and label tag (DN 65-100).
- Visual indication on the body for correct installation.
- Available to be produced in other international standards (ASTM, JIS, NPT) upon request.

Technical specifications	
<b>Construction</b>	True union foot spheric ball valve, radially disassemblable
<b>Size range</b>	DN 10 ÷ 100
<b>Nominal pressure</b>	DN 10÷50: PN16 with water at 20 °C DN 65÷100: PN10 with water at 20 °C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Solvent welding:</b> ISO metric (model 1V210) and BS standard (model 3V210) <b>Thread:</b> BSP standard female (model 1V211).
<b>Minimum sealing pressure</b>	0,2 bar
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-Ring and ball seats)
<b>Control options</b>	Manual control



DN 10 ÷ 100

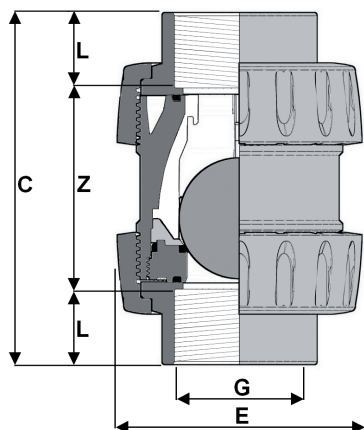
# DIMENSIONS



## 1V210

True union grey PVC foot spheric ball valve, ISO metric plain solvent weld socket. EPDM seals.

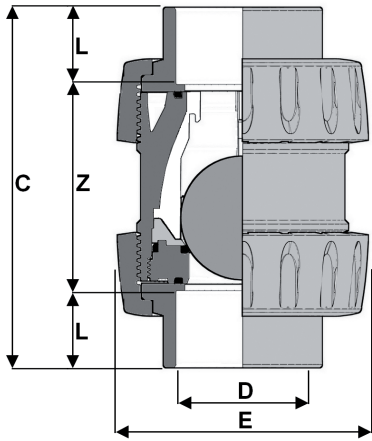
D	PN	DN	L	Z	C	E	g	Code
16	16	10	14	54	82	53	100	1V21001600
20	16	15	16	50	82	53	105	1V21002000
25	16	20	19	53	91	62	150	1V21002500
32	16	25	22	59	103	71	250	1V21003200
40	16	32	26	68	120	84	370	1V21004000
50	16	40	31	77	139	98	590	1V21005000
63	16	50	38	98	174	117	990	1V21006300
75	10	65	44	123	211	157	2605	SXEIV075E
90	10	80	51	146	248	174	3300	SXEIV090E
110	10	100	61	161	283	212	5770	SXEIV110E



## 1V211

True union grey PVC foot spheric ball valve, BSP female threaded socket. EPDM seals.

G	PN	DN	L	Z	C	E	g	Code
3/8"	16	10	13	56	82	53	100	1V21101600
1/2"	16	15	17	56	90	53	105	1V21102000
3/4"	16	20	19	55	93	62	150	1V21102500
1"	16	25	22	66	110	71	250	1V21103200
1 1/4"	16	32	24	79	127	84	370	1V21104000
1 1/2"	16	40	24	83	131	98	590	1V21105000
2"	16	50	29	103	161	117	990	1V21106300
2 1/2"	10	65	30,2	150,6	211	157	2605	SXEFV212E
3"	10	80	33,3	181,4	248	174	3300	SXEFV300E
4"	10	100	39,3	204,4	283	212	5770	SXEFV400E



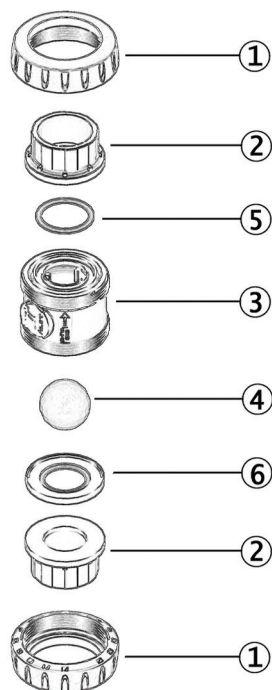
### 3V210

True union grey PVC foot spheric ball valve, BS Standard plain solvent weld socket. EPDM seals.

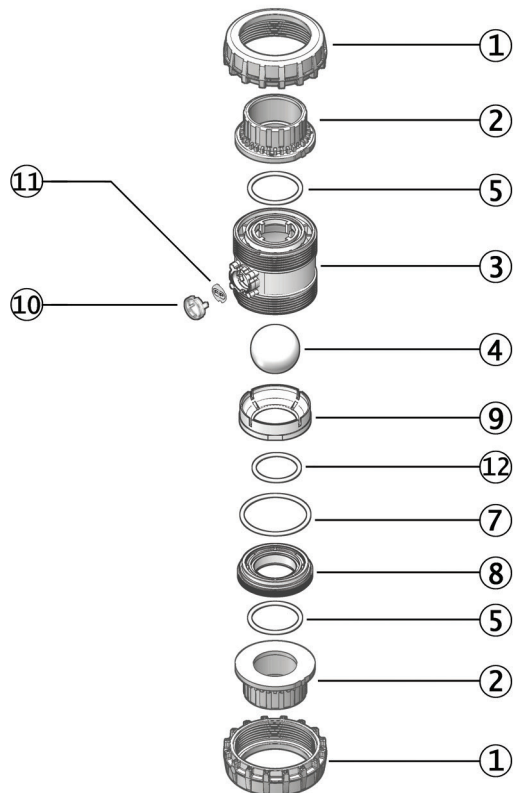
D	PN	DN	L	Z	C	E	g	Code
3/8"	16	10	15	52	82	53	100	3V21001600
1/2"	16	15	17	48	82	53	105	3V21002000
3/4"	16	20	19	53	91	62	150	3V21002500
1"	16	25	22	59	103	71	250	3V21003200
1 1/4"	16	32	26	68	120	84	370	3V21004000
1 1/2"	16	40	31	77	139	98	590	3V21005000
2"	16	50	38	98	174	117	990	3V21006300
2 1/2"	10	65	44	123	211	157	2605	SXEIV075E
3"	10	80	51	146	248	174	3300	SXELV300E
4"	10	100	61	157	283	212	5770	SXELV400E

# COMPONENTS

## EXPLODED VIEW



**DN 10 ÷ 50**



**DN 65 ÷ 100**

- 1** Nut (PVC-U - 2)
- 2** Union end (PVC-U - 2)
- 3** Body (PVC-U - 1)
- 4** Ball (PVC-U - 1)
- 5** Socket O-ring (EPDM - 2)

- 6** Ball seat (EPDM - 1)
- 7** Radial O-ring (EPDM - 1)
- 8** Support (PVC-U - 1)
- 9** Packing presser ring (PVC-U - 1)
- 10** Transparent service plug (PVC-U - 1)

- 11** Tag holder (PVC-U - 1)
- 12** Ball O-ring (EPDM - 1)

Inside brackets are indicated the material and the quantity supplied for each component.



# 220

Astore 220 is a true union air release ball valve, radially disassemblable and installable in vertical position, which allows the ejection of air from the system.

## TRUE UNION AIR RELEASE BALL VALVE

- Versions available: ISO metric (1V220) and BS standard (3V220) plain solvent weld socket, BSP female threaded socket (1V221).
- Visual indication on the body for correct installation.
- Available to be produced in other international standards (ASTM, JIS, NPT) upon request.

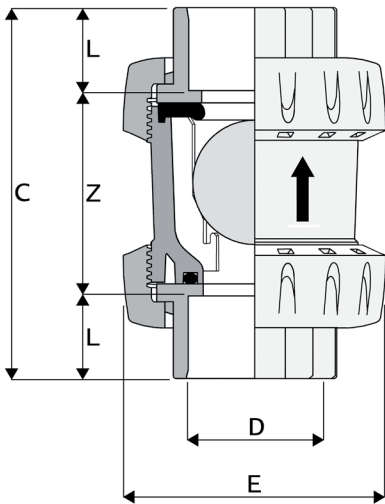
Technical specifications	
<b>Construction</b>	True union grey PVC air release spheric ball valve, radially disassemblable
<b>Size range</b>	DN 10 ÷ 50
<b>Nominal pressure</b>	PN 16 with water at 20 °C
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Coupling standards</b>	<b>Solvent welding:</b> ISO metric (model 1V220), BS standard (model 3V220) <b>Thread:</b> BSP (model 1V221)
<b>Valve material</b>	PVC-U
<b>Seal material</b>	EPDM (O-Ring and ball seats)
<b>Control options</b>	Manual control





**DN 10 ÷ 50**

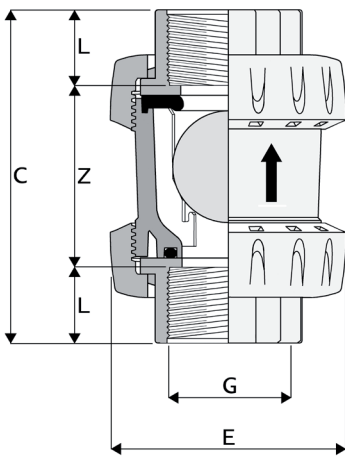
# DIMENSIONS



## 1V220

True union grey PVC air release spheric ball valve, ISO metric plain solvent weld socket. EPDM seals.

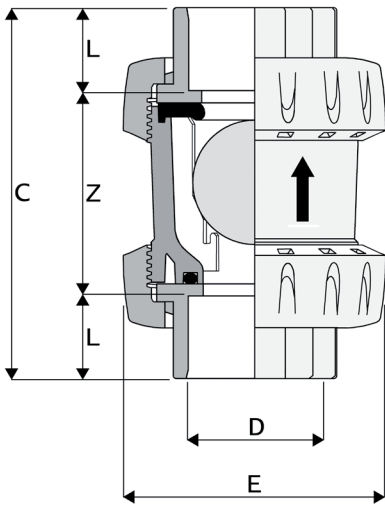
D	PN	DN	L	Z	C	E	g	Code
16	16	10	14	54	82	53	95	1V22001600
20	16	15	16	50	82	53	100	1V22002000
25	16	20	19	53	91	62	140	1V22002500
32	16	25	22	59	103	71	230	1V22003200
40	16	32	26	68	120	84	350	1V22004000
50	16	40	31	77	139	98	560	1V22005000
63	16	50	38	98	174	117	950	1V22006300



## 1V221

True union grey PVC air release spheric ball valve, BSP female threaded socket. EPDM seals.

G	PN	DN	L	Z	C	E	g	Code
3/8"	16	10	13	56	82	53	95	1V22101600
1/2"	16	15	17	56	90	53	100	1V22102000
3/4"	16	20	19	55	93	62	140	1V22102500
1"	16	25	22	66	110	71	230	1V22103200
1 1/4"	16	32	24	79	127	84	350	1V22104000
1 1/2"	16	40	24	83	131	98	560	1V22105000
2"	16	50	29	103	161	117	950	1V22106300



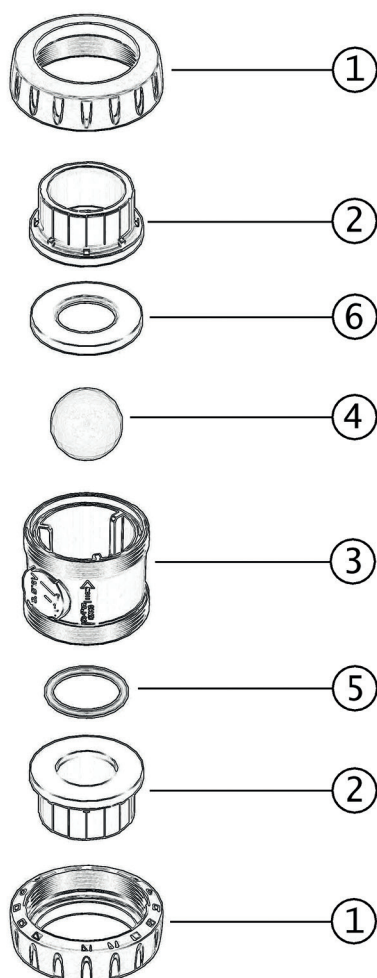
### 3V220

True union grey PVC air release spheric ball valve, BS Standard plain solvent weld socket. EPDM seals.

D	PN	DN	L	Z	C	E	g	Code
3/8"	16	10	15	52	82	53	95	3V22001600
1/2"	16	15	17	48	82	53	100	3V22002000
3/4"	16	20	19	53	91	62	140	3V22002500
1"	16	25	22	59	103	71	230	3V22003200
1 1/4"	16	32	26	68	120	84	350	3V22004000
1 1/2"	16	40	31	77	139	98	560	3V22005000
2"	16	50	38	98	174	117	950	3V22006300

# COMPONENTS

## EXPLODED VIEW



- 1 Nut (PVC-U - 2)
- 2 Union end (PVC-U - 2)

- 3 Body (PVC-U - 1)
- 4 Ball (PP - 1)

- 5 Socket O-ring (EPDM - 1)
- 6 Ball seat (EPDM - 1)

Inside brackets are indicated the material and the quantity supplied for each component.

# Technical catalogue



Pressure fittings in PVC-U



# General characteristics

## PVC-U

**Developed in 1930 in Germany, PVC-U (rigid polyvinyl chloride - unplasticized) is obtained through the polymerization of a vinyl chloride monomer. The presence of chlorine in the PVC-U molecule results in a high performance resin, in terms of thermal stability and chemical and mechanical resistance, up to temperatures of 60° C.**

The different formulations obtained by adding suitable additives and stabilizers render the PVC-U the most versatile of all plastic materials, allowing it to be adapted to many applications involving fluids under pressure.

PVC-U represents one of the more economic solutions in the field of thermoplastic and metal materials for resolving problems in the transport of corrosive chemical fluids, and in the distribution and treatment of water in general.

The main reasons for this preference are the unique characteristics of the resin, which include:

- **Good chemical resistance:** PVC-U resins have excellent chemical resistance to most acids and alkalis, paraffin/aliphatic hydrocarbons and saline solutions. It is not recommended for the transport of polar organic compounds, including some types of chlorinated and aromatic solvents. PVC-U resins are also fully compatible with the transport of foodstuffs, demineralised water, potable water and unconditioned water, as provided for by current national and international standards.
- **Good thermal stability:** PVC-U resins have good thermal stability in the temperature range between 20°C and 50°C and are typically used in industrial and water supply applications, guaranteeing excellent mechanical strength, sufficient rigidity for the purpose, reduced thermal expansion coefficients and high factors of safety in service. PVC-U compounds are also resistant to combustion with a flash point of 399°C. The flame, in fact, only persists if the oxygen concentration is twice that of atmospheric or in the presence of a flame from an external source. Flash point: 399° C. Oxygen index: 45%. UL 94 class: V0.  
Thanks to the reduced coefficient of thermal conductivity ( $\lambda = 0,15 \text{ W/m } ^\circ\text{C}$  according to ASTM C177) the use of PVC-U resin for transporting hot fluids reduces heat loss and virtually eliminates condensation problems.
- **Good mechanical strength:** PVC-U resins are characterised by their low permeability to oxygen and reduced water absorption (0.1% at 23°C according to ASTM D 570). The thermal stability of the material leads to good impact resistance and the capacity to support service pressures of 4 - 6 - 10 - 16 bar at 20°C.
- **Resistance to ageing:** PVC-U resins have a high circumferential breaking strength (Minimum Required Strength MRS  $\geq 25.0 \text{ MPa}$  at 20°C) and allow long installation lifetimes without showing any signs of significant physical-mechanical deterioration.

<b>Density</b>	
Test method	ISO 1183 - ASTM D792
Unit of measurement	g/cm <sup>3</sup>
Value	1,38
<b>Modulus of elasticity</b>	
Test method	ISO 527
Unit of measurement	MPa = N/mm <sup>2</sup>
Value	3200
<b>Charpy impact strength at 23°C</b>	
Test method	ASTM D256
Unit of measurement	KJ/m <sup>2</sup>
Value	5-8
<b>Ultimate elongation</b>	
Test method	ISO 527
Unit of measurement	%
Value	50
<b>Shore hardness</b>	
Test method	ISO 868
Unit of measurement	Shore D
Value	80
<b>Tensile strength</b>	
Test method	ISO 527
Unit of measurement	MPa = N/mm <sup>2</sup>
Value	50
<b>VICAT softening point (B/50)</b>	
Test method	ISO 306
Unit of measurement	°C
Value	76
<b>Heat distortion temperature HDT (0.46 N/mm<sup>2</sup>)</b>	
Test method	ASTM D648
Unit of measurement	°C
Value	86
<b>Thermal conductivity at 23°C</b>	
Test method	DIN 52612-1 - ASTM C177
Unit of measurement	W/(m °C)
Value	0,16
<b>Coefficient of linear thermal expansion</b>	
Test method	DIN 53752 - ASTM D696
Unit of measurement	m/(m °C)
Value	8 x 10 <sup>-5</sup>
<b>Limiting Oxygen Index</b>	
Test method	ISO 4859-1 - ASTM D2863
Unit of measurement	%
Value	43

# Reference standards

## PVC-U

Production of the PVC-U lines is carried out according to the highest quality standards and in full compliance with the environmental restrictions set by the applicable laws in force and in accordance with **ISO 14001**.

All products are made in accordance with the quality guarantee system in compliance with **ISO 9001**.

- **BS 10**  
Specification for flanges and bolts for pipes, valves and fittings
- **BS 3505**  
Specification for PVC-U pressure pipes for cold water supplies
- **BS 4346-1**  
Joints and fittings for use with solvent weld PVC-U pressure pipes
- **DIN 2501**  
Flanges, dimensions
- **DIN 8061**  
PVC-U pipes: General quality requirements and testing
- **DIN 8062**  
PVC-U pipes - dimensions
- **DVS 2204 - DVS 2221**  
Adhesive bonding of thermoplastic PVC-U pipes and fittings
- **EN 10226-1**  
Pipe threads where pressure tight joints are made on the threads.
- **EN 1092-1**  
Flanges and their joints - Circular flanges for pipes, valves and accessories - Part 1: PN designated steel flanges
- **EN ISO 1452-3**  
PVC-U pipes and fittings for water supply systems
- **EN 14728**  
Imperfections in thermoplastic welds -classification
- **EN ISO 15493**  
Plastic piping systems (Pipes, Fittings and Valves) in ABS, PVC-U, PVC-C for industrial applications
- **ISO 7-1**  
Fittings with pressure-tight threaded joints
- **ISO 161-1**  
Dimensions of PVC-U pipes and fittings, metric series
- **ISO 228-1**  
Fittings with threaded joints
- **ISO 727**  
PVC-U pipes and fittings Dimensions and tolerances, metric series
- **ISO 7005-1**  
Metal flanges; part 1: steel flanges
- **ISO 9624**  
Thermoplastic piping systems for fluids under pressure -flange adapters and loose backing flanges- Mating dimensions
- **UNI 11242**  
Solvent welding of PVC-U and PVC-C pipes, fittings and valves



# Approvals and quality marks



- **ACS France (Attestation de conformité Sanitaire)**  
Suitability of PVC-U for drinking water



- **WRAS (Water regulations advisory scheme - UK)**  
Suitability of PVC-U for transporting potable water



- **IIP N. 122 Istituto Italiano dei Plastici (Italian Plastics Institute)**  
PVC-U fittings and pipes to standard UNI EN ISO 1452-3



- **OQC by NSF**  
ASTORE products are OQC certified, Certificate of Controlled Origin by NSF. NSF with the brand OQC (Origin and Quality controlled) also declares the suitability of the products for transporting potable water. For the detailed list of certified products please refer to OQC on the [www.nsf.org](http://www.nsf.org) site

# Solvent welding Instructions

Solvent welding, or cement jointing, is the longitudinal joining system for connecting rigid PVC-U pipes and fittings.

The "cementing" is carried out using adhesives/cements obtained by dissolving PVC-U polymer in a solvent mixture. This solvent liquefies the walls of the pipe and/or fitting, allowing the constituent material to chemically combine and be subsequently welded. Chemical welding allows permanent joints be achieved possessing chemical and mechanical strength characteristics identical to those of the pipes and fittings joined. The adhesives/solvent cements must be selected according to the type of thermoplastic resin to weld, in that the nature of the solvents vary, as does the weld material contained in them. It must be remembered, therefore, that all the solvent cements designed for joining thermoplastic pipes and fittings must be used to join pipes, fittings and valves of the same material.

Before starting any solvent welding operations, the efficiency and condition of the equipment used and the pieces to be assembled must be verified, in particular the uniformity, fluidity and expiry date of the solvent cement.

- 1) Cut the pipe perpendicular to its axis to obtain a clean square section, preferably using a wheeled pipe cutter designed specifically for thermoplastic pipes (fig. 1).
- 2) Chamfer the outer edges of the pipe in order to ensure that it enters the socket of the fitting at an angle of 15°. The chamfering operation must be carried out at all costs, otherwise the lack of chamfer can lead to the solvent being scraped off the surface of the fitting, thus compromising the effectiveness of the joint. The chamfering must be carried out using the appropriate chamfering tool (fig. 2).
- 3) Measure the depth of the socket of the fitting to the internal shoulder and mark the corresponding distance on the end of the pipe (fig. 3 and 4).

For more details, refer to the "Socket depth, cement and chamfer length" table.

- 4) Using a clean paper towel or applicator soaked in Cleaner-Primer, remove any traces of dirt or grease from the outer surface of the pipe for the entire cementing length. Repeat the same operation on the internal surface of the socket of the fitting: leaving the surfaces softened (fig. 5).

Leave the surfaces to dry for a few minutes before applying the solvent cement. Remember that, in addition to cleaning the joint surfaces, the Cleaner-Primer also performs the important role of softening and preparing the surface to receive the solvent, an operation that enables a perfect joint to be obtained.

- 5) Apply the solvent cement in a uniform manner longitudinally over both parts to be assembled (outer surface of the pipe and internal coupling surface of the fitting) using an applicator or suitably sized coarse brush.

For more detailed information, refer to the "Brush-applicator characteristics and dimensions" table.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

It is advisable to use an applicator/brush of dimension not less than half the diameter of the pipe. The solvent cement must be applied along the entire length of the joining surface of both the pipe and the fitting:

- for the entire joint length of the pipe previously marked on the outer surface (fig. 6)
- for the entire depth of the socket as far as the internal shoulder (fig.7)

**6)** Fully insert the pipe into the fitting immediately and without any rotation. Only after this operation will it be possible to slightly rotate both ends (max. 1/4 of a turn between pipe and fitting). This rotation movement will render the layer of applied solvent cement more uniform (fig. 8)

**7)** The pipe must be inserted in the fitting as soon and as quick as possible (after no more than 20-25 seconds is recommended). Depending on the external diameter of the pipe and, as a result, possible handling difficulties, the insertion of the pipe into the fitting must be carried out:

- manually by one person for external diameters < 90 mm.
- manually by two people for external diameters from d 90 to d < 160 mm.
- using mechanical pipe-pullers for external diameters > 160 mm.

**8)** Immediately after fully inserting the pipe in the fitting, apply pressure to the joined parts for a few seconds. Then use crepe paper or a clean cloth to remove any excess solvent cement from the outer surfaces, and from internal surfaces where possible (fig. 9).

**9)** Solvent cement drying: the joined parts must be left to stand in order to allow the solvent cement to set naturally without generating any unnecessary stress. The setting time depends on the amount of stress that the joint will be placed under.

In particular, the following minimum setting times must be respected according to the ambient temperature:

- before handling the joint:
  - from 5 to 10 minutes for ambient T. > 10°C
  - from 15 to 20 minutes for ambient T. < 10°C
- for repair joints on pipes of any size or pressure not subject to hydraulic testing:
  - 1 hour for each atm of applied pressure
- for joints in pipes and fittings of any diameter subject to pressure testing up to PN 16:
  - minimum 24 hours

The solvent cement setting times indicated are valid at ambient temperature (approx. 25°C.). For particular climatic conditions (humidity, temperature, etc...), we recommend you contact our technical services department and/or the solvent cement manufacturer for more information (fig. 10 and 11).



Fig. 6



Fig. 7



Fig.8



Fig.9

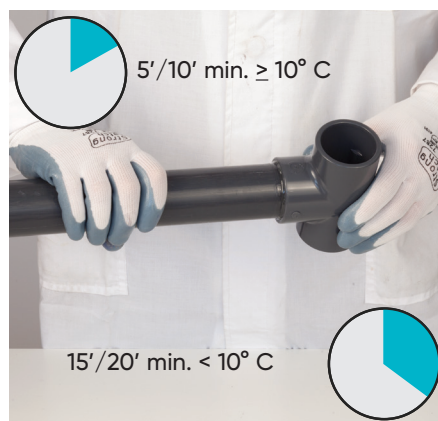


Fig.10

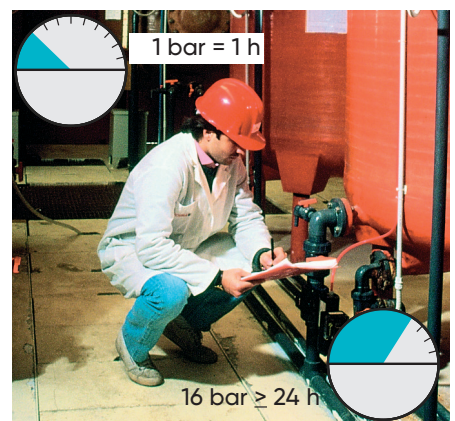
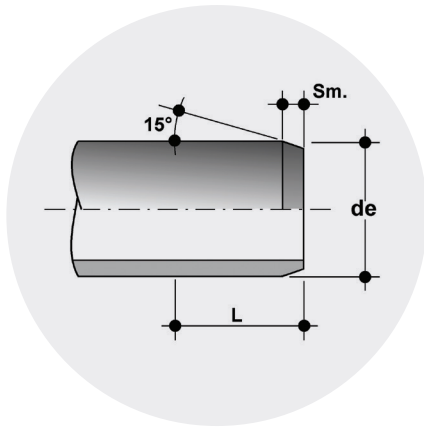


Fig.11



## Socket depth, cement and chamfer length

External diameter		Cementing length L (mm)		Chamfer Sm (mm)
Metric series de (mm)	BS series (inches)	Metric series	BS series	
16	3/8"	14	14.5	
20	1/2"	16	16.5	1.5
25	3/4"	18,5	19.5	3
32	1"	22	22.5	3
40	1" 1/4	26	27	3
50	1" 1/2	31	30	3
63	2"	37,5	36	5
75	2" 1/2	43,5	43.5	5
90	3"	51	50.5	5
110	4"	61	63	5
125	-	68,5	-	5
140	5"	76	76	5
160	6"	86	90	5
180	-	96	-	5÷6
200	-	106	-	5÷6
225	8"	118,5	115.5	5÷6
250	-	131	-	5÷6
280	10"	146	142.5	5÷6
315	12"	163,5	168	5÷6

## Characteristics and dimensions of brushes-applicators

External diameter		Type and dimensions of Brush or Applicator
de (mm)	de (inch)	
16 - 25	3/8" - 3/4"	Round (8 ÷ 10 mm)
32 - 63	1" - 2"	Round (20 ÷ 25 mm)
75 - 160	2" 1/2 - 6"	Rectangular / round (45 ÷ 50 mm)
>160	>6"	Rectangular / cylindrical (45 ÷ 50 mm)
>160 - 315	>6" - 12"	Rectangular / cylindrical (60 ÷ 65 mm)

## Warnings

- In the case where the external diameter of the pipe and the internal diameter of the fitting are at opposite extremes of their tolerance values, the dry pipe cannot be inserted in the dry socket of the fitting. Insertion will only be possible after having applied the Cleaner and Solvent Cement to both parts to be joined.
- The solvent cement is manufactured from the same PVC resin used for the production of the pipes, fittings and valves. Unless otherwise specified, the solvent cement used on the surfaces to join must also be usable with the following tolerances:
  - maximum interference 0.2 mm,
  - maximum clearance 0.6 mm.
- When using the Cleaner and Solvent Cement, the following precautions should be adopted:
  - use gloves and safety glasses to protect hands and eyes.
  - use the Cleaner and Solvent Cement in a working environment with sufficient ventilation to avoid the formation of pockets of air containing concentrations of evaporated solvent, which can irritate the respiratory tract and eyes,
  - due to the volatile nature of the solvents in the cleaner and cement, the containers must be closed immediately after use,
  - Solvents in the gaseous phase tend to form flammable mixtures. Therefore, remove any ignition sources such as welding operations, accumulation of electrostatic charges, etc. from the work area, and do not smoke. In all cases, it is advisable to adhere strictly to the solvent cement manufacturer's instructions written on the packaging,
  - In order to prevent a deterioration in the performance of the cleaner and solvent cement, the joining operations should be carried out within an ambient temperature range of between + 5 and + 40° C.
- The amount of solvent cement used on the joints depends on a number of factors (environmental conditions, pipe size, cement viscosity, operator experience, etc.) which are often difficult to quantify. In this respect, Table "Rigid PVC-U pipes and fittings. Theoretical solvent cement consumption" reports the approximate quantities of cement normally used for joining various diameter pipes and fittings.
- After having completed all the joints and prior to putting the lines into service, make sure that the insides of the pipes and fittings are completely free of any solvent traces/ vapours. This will prevent contamination of the fluids conveyed.
- Table "Most common defects" reports the most common types of defect found if the correct solvent welding procedure is not followed.

## Rigid PVC-U pipes and fittings theoretical solvent cement consumption

Pipe/Fitting diameter		Number of joints per kg of solvent cement
d (mm)	d (inches)	
16	3/8"	550
20	1/2"	500
25	3/4"	450
32	1"	400
40	1" 1/4	300
50	1" 1/2	200
63	2"	140
75	2" 1/2	90
90	3"	60
110	4"	40
125	-	30
140	5"	25
160	6"	15
180	-	12
200	-	10
225	8"	6
250	-	4
280	10"	2
315	12"	2

## Most common defects

<b>Solvent cement too fluid (incorrect diluent addition)</b>	
<b>Immediate effect</b>	Cementing failure
<b>Consequence</b>	Joint separation or leaks from between the pipe and fitting
<b>Excess solvent cement</b>	
<b>Immediate effect</b>	Internal and external runs beyond the joint zone
<b>Consequence</b>	Weakening of the outer surface of the joint area and formation of bubbles with micro-cracks/sources of fracture in the base material
<b>Excessively dense solvent cement due to evaporated solvent</b>	
<b>Immediate effect</b>	Cementing failure
<b>Consequence</b>	Joint separation or leaks from between the pipe and fitting. Possible surface cracks triggering cracks in the base material
<b>Insufficient and/or incorrect distribution of solvent cement</b>	
<b>Immediate effect</b>	Cementing failure or local weakness
<b>Consequence</b>	Joint separation or leaks from between the pipe and fitting
<b>Incorrect pipe insertion (incomplete, excessive, misaligned)</b>	
<b>Immediate effect</b>	Imperfect joint
<b>Consequence</b>	Transmission of mechanical stresses from the pipe to the fitting and/or leaks from the joint
<b>Impurities and/or humidity on the surfaces of the parts to join</b>	
<b>Immediate effect</b>	Imperfect joint
<b>Consequence</b>	Joint separation or leaks (fluid seepage) from between the pipe and fitting

# Installation instructions for threaded joints

To guarantee the hydraulic seal of the joint on fittings and valves with a threaded female end, we recommend you perform the following operations:

1. Start winding some PTFE sealing tape on the outside of the threaded male end, taking care not to obstruct the through-hole on the pipe, fitting or valve (fig. 1);
2. Complete the first winding layer by winding the tape clockwise until you reach the root of the thread. Remember to keep the tape taut throughout the entire process (fig. 2);
3. Press on the tips of the thread to make sure the tape adheres fully to the support clip;
4. Increase the thickness of the PTFE layer by continuing to apply the taut tape and winding it clockwise until you achieve the optimal level (fig. 3);
5. Connect the previously sealed male end to the female end and proceed manually by screwing the two elements;
6. Make sure the layer of PTFE is not removed during screwing, as this would compromise the hydraulic seal of the joint;
7. Complete screwing the two ends exploiting the entire length of the thread with the aid of a strap wrench or similar tool;
8. Avoid tightening the elements too much, as this could damage the threads or cause stress to the elements themselves.

## Recommendations

For correct installation, we recommend you only use sealing tape in non-sintered PTFE. Under all circumstances avoid using materials such as hemp, lint or paints usually implemented for the hydraulic seal on metal threads.

## Warnings

Avoid using threaded joints in the following cases:

- highly critical applications, such as for conveying chemically aggressive or toxic fluids,
- in the presence of medium or high pressures. In this case, we recommend the use of solvent welding joints, hot welding joints or flanged joints,
- systems subject to mechanical and/or thermal stresses such as water hammers, strong variations in temperature, bends, misalignments and cross tensions which could cause the threaded joint to break prematurely,
- coupling of elements with excessive distance from one another.



Fig. 1

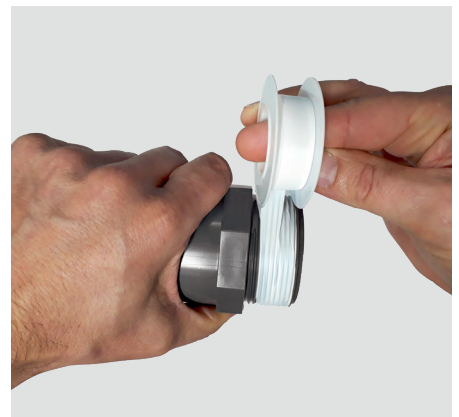
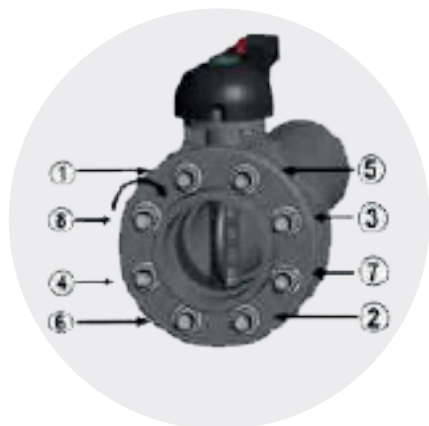


Fig. 2



Fig. 3

# Installation instructions for flanged Joints



To guarantee the correct installation of flanged elements, we recommend you perform the following operations:

1. insert the possible backing ring onto the pipe, before proceeding with the installation of the stub;
2. in the event of a fixed flange, check the drilling is correctly aligned with the counter flange;
3. check that the position of the counter flange takes into account the overall dimensions of the face to face distance of the components;
4. insert the flat gasket between the stubs (this step is not necessary for butterfly valves), making sure the sealing surfaces of the flanges to be welded have not been separated by an excessive distance, since this would cause it to compress;
5. proceed with solvent welding or welding of the fixed flanges or stub (in the case of backing rings) following the welding or solvent welding instructions provided by FIP;
6. insert all the bolts, washers and nuts;
7. once the cooling time is up, proceed with tightening the bolts in a "cross-wise" order (fig.1);
8. complete the bolt tightening process using a torque wrench until the tightening torque values shown in the table are reached.

## Tightening torque

Tightening torques for nuts and bolts to achieve the seal with flanges in PVC-U or PVC-C with gaskets in EPDM/FKM/NBR during the pressure test (1.5 x NP and water at 20°C),

DN	40	50	65	80	100	125	150	200	250	300	350	400
Nm	9	12	15	18	20	35	40	55	70	70	75	75

Please note that:

- the use of flanges in coated metal or fibreglass may allow the application of higher tightening torques, provided these do not exceed the elastoplastic limit of the material,
- the use of different elastomeric seal materials from those listed in the previous table may require slightly higher tightening torques,
- FIP always recommends the use of suitably sized washers for any bolt used in the coupling flange.












## Minimum length of bolts

For flanged butterfly valves	
DN	Lmin
40	M 16x150
50	M 16x150
65	M 16x170
80	M 16x180
100	M 16x180
125	M 16x210
150	M 20x240
200	M 20x260
250	M 20x310
300	M 20x340
350	M 20x360
400	M 24x420

For flanged joints on pipes using backing rings		
d	DN	L min
20	15	M 12x70
25	20	M 12x70
32	25	M 12x70
40	32	M 16x85
50	40	M 16x85
63	50	M 16x95
75	65	M 16x95
90	80	M 16x105
110	100	M 16x105
125	125	M 16x115
140	125	M 16x120
160	150	M 20x135
200	200	M 20x140
225	200	M 20x140
250	250	M 20x150
280	250	M 20x160
315	300	M 20x180
355	350	M 20x180
400	400	M 22x180

# Main properties

Properties of PVC-U		Benefits
Thermal resistance		<ul style="list-style-type: none"> <li>• Service range 0–60 °C (see pressure/temperature regression curves)</li> </ul>
Low surface roughness		<ul style="list-style-type: none"> <li>• High flow coefficients (extremely smooth internal walls)</li> <li>• Pressure drop constant over time</li> <li>• Low risk of stoppages due to scaling</li> <li>• Reduced transfer of material to the transported fluid</li> </ul>
Chemical resistance		<ul style="list-style-type: none"> <li>• Good chemical resistance for conveying acids and alkalis, paraffin/aliphatic hydrocarbons and saline solutions.</li> </ul>
Abrasion resistance		<ul style="list-style-type: none"> <li>• Extremely low operating costs due to its long service life</li> </ul>
Insulating		<ul style="list-style-type: none"> <li>• Non-conductive (immune to galvanic corrosion)</li> <li>• No condensation problems</li> <li>• Minimum heat loss</li> </ul>
Linear thermal expansion coefficients		<ul style="list-style-type: none"> <li>• Reduced need for supports and expansion joints, resulting in considerable advantages in terms of plant design</li> </ul>
Easy to join (solvent weld sockets)		<ul style="list-style-type: none"> <li>• Reduced installation costs thanks to the “solvent weld” joint effected using a suitable solvent cement</li> </ul>
Fire behaviour		<ul style="list-style-type: none"> <li>• Good resistance to combustion also due to the presence of self-extinguishing chlorine</li> </ul>
Good mechanical resistance		<ul style="list-style-type: none"> <li>• PVC-U satisfies the need to provide adequate mechanical strength and complies with the requirements of industrial plant design</li> </ul>



# PVC PRESSURE FITTINGS

PVC (polyvinyl chloride) fittings for use in pressurised Irrigation Systems, water adduction, chemical installations and for water treatment in general.

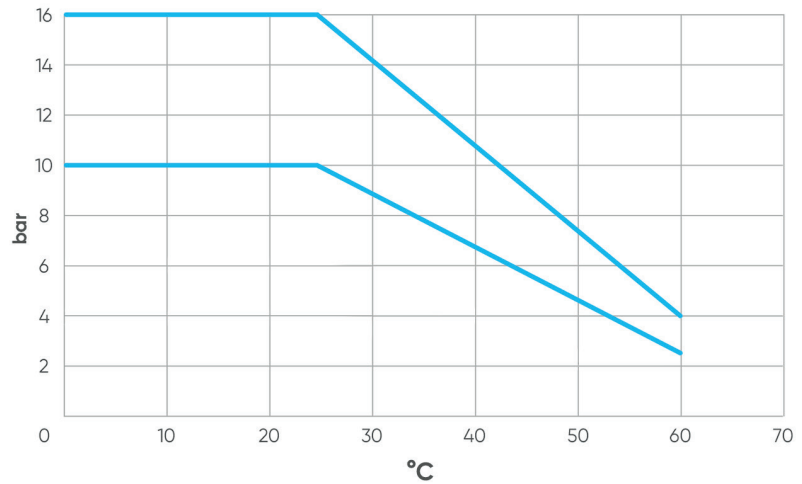
## PVC PRESSURE FITTINGS

Technical specifications	
<b>Size range</b>	<b>Metric series:</b> d 12 ÷ d 315 mm <b>Threaded series:</b> R 3/8" ÷ R 4" <b>Transition series:</b> d 16 x 3/8" ÷ d 110 x 4" <b>Imperial BS Series:</b> d 1/2" ÷ d 6" - BS Solvent welding range - BS Transition series for solvent welding/Threaded BSP
<b>Nominal pressure</b>	<b>Metric series:</b> PN 16 with water at 20 °C up to d 160 mm, PN 10 from d 180 to d 315 <b>Threaded series:</b> PN 16 with water at 20 °C <b>Imperial BS Series:</b> Class E with water at 20°C up to d 4", Class D up to 6" <b>BS/BSP transition fittings:</b> Class E up to 2", Class D from 2"1/2 to 4"
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Reference standards</b>	<b>Metric series:</b> ISO 727, EN ISO 1452-3, EN ISO 15493, BS 4346-1, UNI EN 10226-1 <b>Threaded and transition series:</b> ISO 7-1, ISO 228-1
<b>Fitting material</b>	PVC-U
<b>Seal material</b>	Gaskets in EPDM, on request FKM Reinforcing rings (TM3, GM3, MM3, RM3) in stainless steel AISI 430

# TECHNICAL DATA

## PRESSURE VARIATION ACCORDING TO TEMPERATURE

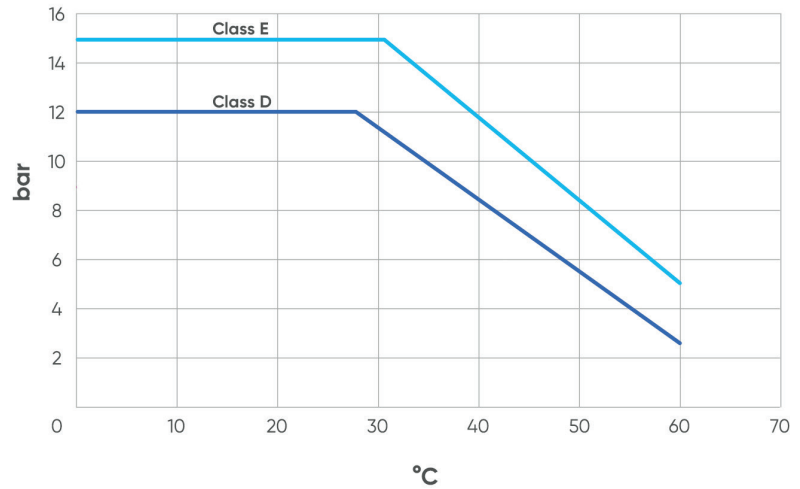
For water and non-hazardous fluids for which the material is classified as CHEMICALLY RESISTANT (life expectancy 25 years). In other cases, a reduction of the nominal pressure PN is required.



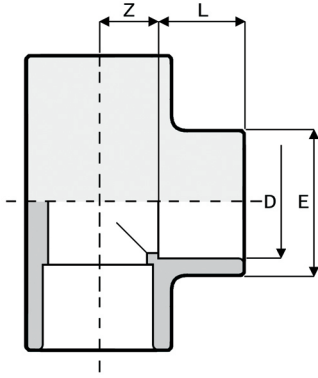
## PRESSURE VARIATION ACCORDING TO TEMPERATURE

For water and non-hazardous fluids with regard to which the material is classified as CHEMICALLY RESISTANT. In other cases, a reduction of the nominal pressure PN is required (25 years with safety factor).

Class E (15 bar)  
Class D (12 bar)



# METRIC SERIES



## T11

90° Tee with solvent weld sockets

D	PN	L	Z	E	g	Code
16	16	14	9	23	13	1RT116000
20	16	16	11	27	22	1RT1120000
25	16	19	14	33	42	1RT1125000
32	16	22	18	40	66	1RT1132000
40	16	26	22	49	99	1RT1140000
50	16	31	26	61	162	1RT1150000
63	16	38	33	75	286	1RT1163000
75	16	44	39	80	506	1RT1175000
90	16	51	47	106	795	1RT1190000
110	16	61	61	128	1400	1RT111000
125	16	69	66	146	2020	1RT113000
140	16	76	72	163	2740	1RT115000
160	16	86	82	186	4042	1RT117000
200	10	106	102	230	6960	1RT1121000
225	10	119	115	258	9600	1RT1123000
250	10	131	128	286	13250	1RT1126000
280	10	146	144	319	17840	1RT1128000
315	10	164	162	360	25300	1RT1133000

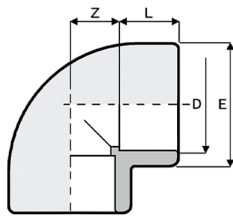


Fig. A

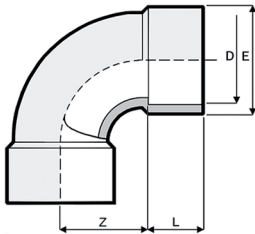
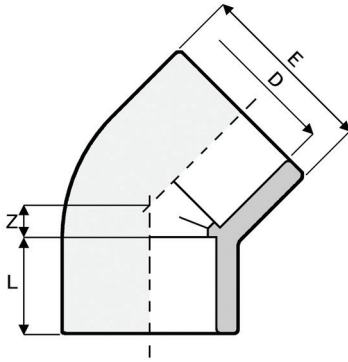


Fig. B

## GO1

90° elbow with solvent weld sockets

D	PN	L	Z	E	g	Fig.	Code
16	16	14	9	23	14	A	1RGO116000
20	16	16	12	26	15	A	1RGO120000NL
25	16	19	14	34	35	A	1RGO125000
32	16	22	17	39	38	A	1RGO132000
40	16	26	21	51	95	A	1RGO140000
50	16	31	26	59	114	A	1RGO150000
63	16	38	33	75	197	A	1RGO163000
75	16	44	39	89	402	A	1RGO175000
90	16	51	47	106	600	A	1RGO190000
110	16	61	57	129	1020	A	1RGO111000
125	16	69	66	146	1385	A	1RGO113000
140	16	76	72	163	2125	A	1RGO115000
160	16	86	82	186	2920	A	1RGO117000
200	10	106	102	230	5400	A	1RGO121000
225	10	119	115	258	7550	A	1RGO123000
250	10	131	188	287	12480	B	1RGO126000
280	10	147	210	325	17000	B	1RGO128000
315	10	164	236	359	23370	B	1RGO133000

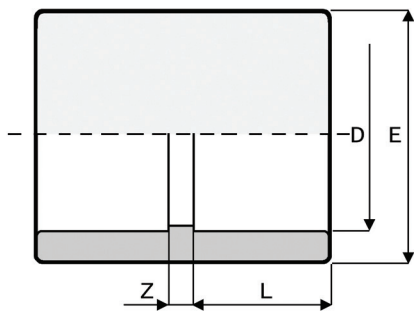


## GY1

45° elbow with solvent weld sockets

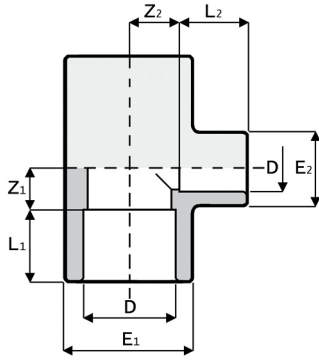
D	PN	L	Z	E	g	Code
20	16	16	5	28	20	1RGY120000
25	16	19	6	34	25	1RGY125000
32	16	22	8	42	45	1RGY132000
40	16	26	10	51	75	1RGY140000
50	16	31	12	61	117	1RGY150000
63	16	38	14	75	230	1RGY163000
75	16	44	17	90	320	1RGY175000NL
90	16	51	21	107	550	1RGY190000NL
110	16	61	24	129	835	1RGY111000
125	16	69	27	145	1085	1RGY113000
140	16	76	31	163	1620	1RGY115000
160	16	86	35	186	2265	1RGY117000
200	10	108	48	230	4500	1RGY121000
225	10	121	55	260	6400	1RGY123000NL
250	10	131	58	286	7700	1RGY126000
280	10	146	62	320	10460	1RGY128000
315	10	164	66	359	15500	1RGY133000





**MA1**  
Solvent weld double socket

D	PN	L	Z	E	g	Code
16	16	14	3	21	7	1RMA16000NL
20	16	16	3	28	15	1RMA120000
25	16	19	3	34	20	1RMA125000
32	16	22	3	42	30	1RMA132000
40	16	26	3	51	60	1RMA140000
50	16	31	3	58	64	1RMA150000
63	16	38	3	75	140	1RMA163000
75	16	44	3	90	250	1RMA175000NL
90	16	51	4	108	415	1RMA190000NL
110	16	61	8	131	715	1RMA11000NL
125	16	69	7	148	960	1RMA113000NL
140	16	76	8	164	1240	1RMA115000NL
160	16	86	8	182	1380	1RMA117000
200	10	106	11	232	3050	1RMA121000NL
225	10	119	11	260	4600	1RMA123000NL
250	10	131	10	286	5760	1RMA126000
280	10	146	10	320	7630	1RMA128000
315	10	164	12	355	9780	1RMA133000



## TR1

90° reducing tee with reduced branch and solvent weld sockets

D x D	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	E <sub>1</sub>	E <sub>2</sub>	g	Code
20 x 16	16	16	14	11	11	28	23	30	1RTR120A00
25 x 16	16	19	14	14	14	34	23	45	1RTR125A00
25 x 20	16	19	16	14	14	34	28	45	1RTR125B00
32 x 16	16	22	14	17	17	42	23	65	1RTR132A00
32 x 20	16	22	16	17	17	41	28	60	1RTR132B00NL
32 x 25	16	22	19	17	17	42	34	65	1RTR132C00
40 x 16	16	26	14	21	21	51	23	105	1RTR140A00
40 x 20	16	26	16	21	21	51	28	110	1RTR140B00
40 x 25	16	26	19	21	21	51	34	110	1RTR140C00
40 x 32	16	26	22	21	21	51	42	110	1RTR140D00
50 x 20	16	31	16	26	26	61	29	180	1RTR150B00
50 x 25	16	31	19	26	26	61	35	182	1RTR150C00
50 x 32	16	31	22	26	26	61	42	183	1RTR150D00
50 x 40	16	31	26	26	26	61	51	184	1RTR150E00
63 x 20	16	38	16	33	33	75	28	275	1RTR163B00
63 x 25	16	38	19	33	33	75	36	304	1RTR163C00
63 x 32	16	38	22	33	33	75	43	306	1RTR163D00
63 x 40	16	38	26	33	33	75	52	313	1RTR163E00
63 x 50	16	38	31	33	33	75	62	325	1RTR163F00
75 x 32	16	44	22	40	40	91	41	530	1RTR175D00NL
75 x 40	16	44	26	40	40	91	50	540	1RTR175E00NL
75 x 50	16	44	31	40	40	91	61	550	1RTR175F00NL
75 x 63	16	44	38	40	40	91	76	580	1RTR175G00NL
90 x 40	16	51	26	48	48	109	50	870	1RTR190E00NL
90 x 50	16	51	31	48	48	109	61	880	1RTR190F00NL
90 x 63	16	51	38	48	48	109	76	900	1RTR190G00NL
90 x 75	16	51	44	48	48	109	91	940	1RTR190H00NL
110 x 50	16	61	31	61	61	133	61	1580	1RTR111F00NL
110 x 63	16	61	38	61	61	133	76	1590	1RTR111G00NL
110 x 75	16	61	44	61	61	133	91	1610	1RTR111H00NL
110 x 90	16	61	51	61	61	133	109	1640	1RTR111I00NL
160 x 110	16	86	61	82	57	187	131	3744	1RTR117L00

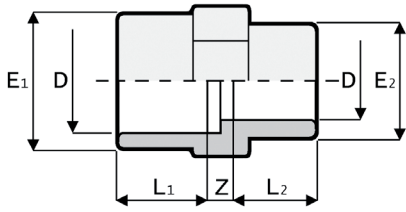


Fig. A

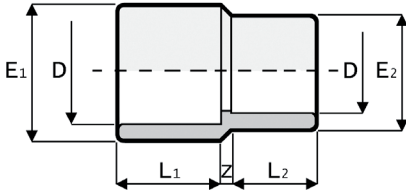


Fig. B

## MR1

Reducer with solvent weld double socket

D x D	PN	L <sub>1</sub>	L <sub>2</sub>	Z	E <sub>1</sub>	E <sub>2</sub>	Fig.	g	Code
20 x 16	16	16	14	6	28	23	B	10	1RMR120A00
25 x 20	16	19	16	6	34	28	B	13	1RMR125B00
32 x 25	16	22	19	6	42	34	B	37	1RMR132C00
40 x 32	16	26	22	6	51	42	B	55	1RMR140D00
50 x 40	16	31	26	6	61	51	B	80	1RMR150E00
63 x 50	16	38	31	6	75	61	B	130	1RMR163F00
75 x 63	16	44	38	4	89	75	A	210	1RMR175G00
90 x 75	16	51	44	5	106	89	A	370	1RMR190H00
110 x 90	16	61	51	6	129	106	A	528	1RMR111I00
125 x 110	16	69	61	24	145	129	B	809	1RMR113L00
140 x 110	16	76	81	25	160	129	B	1166	1RMR115L00

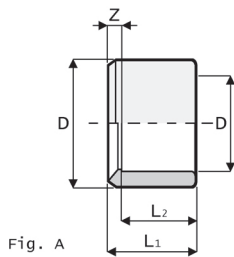


Fig. A

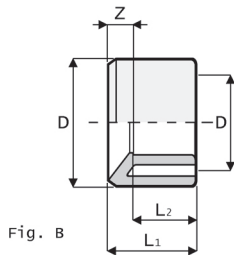


Fig. B

## RC1

Reducing bush with solvent weld spigot and solvent weld socket

D x D	PN	L <sub>1</sub>	L <sub>2</sub>	Z	Fig.	g	Code
25 x 16	16	19	14	5	B	10	1RRC125A00
25 x 20	16	19	16	3	A	5	1RRC125B00NL
32 x 16	16	22	14	8	B	15	1RRC132A00
32 x 20	16	22	16	6	B	18	1RRC132B00
32 x 25	16	22	19	3	A	10	1RRC132C00NL

D x D	PN	L <sub>1</sub>	L <sub>2</sub>	Z	Fig.	g	Code
40 x 20	16	26	15	9	B	25	1RRC140B00NL
40 x 25	16	26	19	7	B	24	1RRC140C00NL
40 x 32	16	26	22	4	A	15	1RRC140D00
50 x 20	16	31	16	15	B	50	1RRC150B00
50 x 25	16	31	19	12	B	45	1RRC150C00
50 x 32	16	31	22	8	B	35	1RRC150D00NL
50 x 40	16	31	26	5	A	32	1RRC150E00NL
63 x 32	16	38	22	16	B	73	1RRC163D00NL
63 x 40	16	38	25	11	B	75	1RRC163E00NL
63 x 50	16	38	31	7	A	65	1RRC163F00
75 x 40	16	44	26	18	B	120	1RRC175E00
75 x 50	16	44	31	13	B	120	1RRC175F00NL
75 x 63	16	44	38	6	A	85	1RRC175G00NL
90 x 50	16	51	31	20	B	220	1RRC190F00
90 x 63	16	51	38	13	B	205	1RRC190G00
90 x 75	16	51	44	7	A	150	1RRC190H00
110 x 63	16	61	38	23	B	375	1RRC111G00
110 x 75	16	61	44	17	B	380	1RRC111H00
110 x 90	16	61	51	9	A	280	1RRC111I00
125 x 75	16	69	44	25	B	440	1RRC113H00
125 x 90	16	69	51	18	B	455	1RRC113I00
125 x 110	16	69	61	8	A	300	1RRC113L00
140 x 90	16	76	51	25	B	730	1RRC115I00NL
140 x 110	16	76	59	17	A	645	1RRC115L00NL
140 x 125	16	76	66	9	A	350	1RRC115M00NL
160 x 90	16	86	51	35	B	1040	1RRC117I00NL
160 x 110	16	86	60	24	B	945	1RRC117L00NL
160 x 125	16	86	69	17	B	1840	1RRC117M00
160 x 140	16	86	76	10	A	565	1RRC117N00NL
200 x 160	10	106	86	20	B	1310	1RRC121O00
225 x 160	10	119	86	33	B	1840	1RRC123O00
225 x 200	10	119	106	13	A	1380	1RRC123P00NL
250 x 160	10	119	106	13	A	1196	1RRC126O00
280 x 225	10	147	119	27	B	4300	1RRC128Q00
315 x 200	10	165	106	58	B	8650	1RRC133P00
315 x 225	10	165	119	45	B	8100	1RRC133Q00
315 x 250	10	165	131	33	B	5080	1RRC133R00

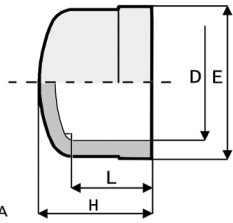


Fig. A

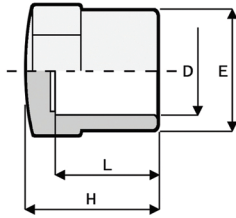
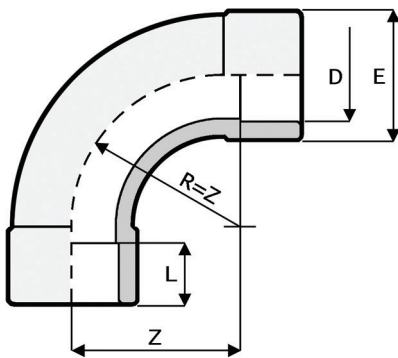


Fig. B

## CA1

End cap with solvent weld socket

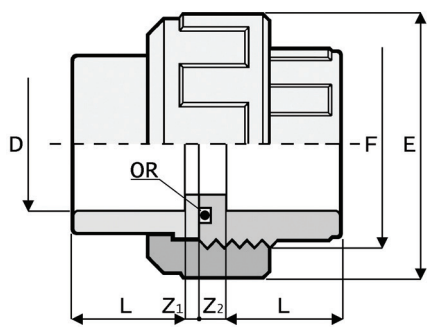
D	PN	L	H	E	Fig.	g	Code
16	16	15	17	21	A	4	1RCA116000NL
20	16	16	23	28	A	9	1RCA120000NL
25	16	19	27	34	A	15	1RCA125000NL
32	16	22	31	41	A	25	1RCA132000NL
40	16	26	36	51	A	40	1RCA140000NL
50	16	31	43	62	A	60	1RCA150000NL
63	16	38	51	77	A	110	1RCA163000NL
75	16	44	59	91	A	190	1RCA175000NL
90	16	51	69	110	A	330	1RCA190000NL
110	16	61	85	133	A	575	1RCA111000NL
125	16	69	99	147	A	900	1RCA113000NL
140	16	76	108	164	A	1100	1RCA115000NL
160	16	86	123	182	B	1080	1RCA117000



## CU1

90° long radius bend (R=2d) with solvent weld sockets

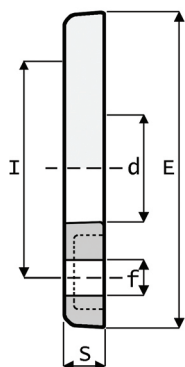
D	PN	L	Z	E	g	Code
20	16	16	40	27	35	1RCU120000
25	16	19	50	33	56	1RCU125000
32	16	22	65	41	96	1RCU132000
40	16	26	80	50	170	1RCU140000
50	16	31	100	61	310	1RCU150000
63	16	38	126	77	510	1RCU163000
75	16	44	150	94	995	1RCU175000
90	16	51	180	113	1765	1RCU190000
110	16	61	220	137	2805	1RCU111000



### BO1

Union with solvent weld socket and O-Ring in EPDM (FKM on request)

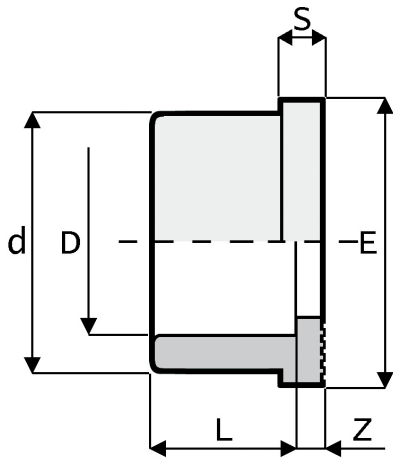
D	PN	L	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
16	16	11	3	10	3/4"	31	3062	30	1RBO116000
20	16	16	3	10	1"	42	4081	42	1RBO120000
25	16	19	3	10	1 1/4"	52	4112	70	1RBO125000
32	16	22	3	10	1 1/2"	59	4131	97	1RBO132000
40	16	26	3	12	2"	72	6162	156	1RBO140000
50	16	31	3	14	2 1/4"	79	6187	216	1RBO150000
63	16	38	3	18	2 3/4"	96	6237	368	1RBO163000
75	16	44	3	18	3 1/2"	120	6300	590	1RBO175000L
90	16	51	5	18	4"	135	6362	770	1RBO190000L
110	16	61	5	18	5"	163	6300	1300	1RBO11000L



### FL1

Loose flange

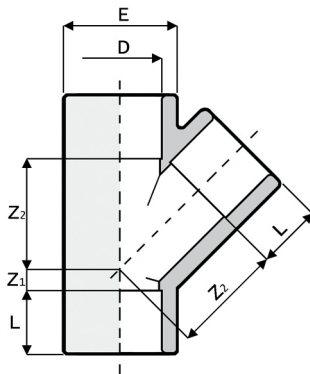
D	PN	DN	d	E	S	I	f	n° drill	g	Bolts	Code
20	16	15	28	96	11	65	14	4	70	M12 x 70	1RFL120000
25	16	20	34	107	12	75	14	4	85	M12 x 70	1RFL125000
32	16	25	42	117	14	85	14	4	120	M12 x 70	1RFL132000
40	16	32	51	143	15	100	18	4	190	M16 x 85	1RFL140000
50	16	40	62	153	16	110	18	4	225	M16 x 85	1RFL150000
63	16	50	78	168	18	125	18	4	280	M16 x 85	1RFL163000NL
75	16	65	92	188	19	145	18	4	390	M16 x 95	1RFL175000
90	16	80	110	203	20	160	18	8	460	M16 x 100	1RFL190000
110	16	100	132	222	22	180	18	8	515	M16 x 100	1RFL111000
125	16	125	149	250	26	210	18	8	950	M16 x 100	1RFL112500
140	16	125	166	251	26	210	18	8	813	M16 x 110	1RFL115000NL
160	16	150	189	290	29	240	22	8	915	M20 x 120	1RFL117000NL
200	10	200	235	340	30	295	22	8	1210	M20 x 120	1RFL121000NL
225	10	200	252	340	30	295	22	8	1090	M20 x 140	1RFL123000NL
250	10	250	278	396	34	350	22	12	1790	M40 x 140	1RFL126000NL
280	10	250	309	396	35	350	22	12	1880	M20 x 160	1RFL128000
315	10	300	349	465	40	400	22	12	3050	M20 x 180	1RFL133000



### QR1

Serrated face stub PN 10/16 with solvent weld socket

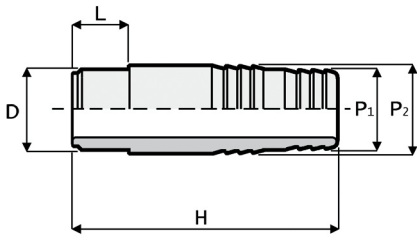
D	PN	L	Z	d	S	E	g	Code
20	16	16	3	27	6	34	10	1RQR120000
25	16	19	3	33	7	41	16	1RQR125000
32	16	22	3	41	7	50	26	1RQR132000
40	16	26	3	50	8	61	42	1RQR140000
50	16	31	4	61	8	73	63	1RQR150000
63	16	38	4	76	9	90	112	1RQR163000
75	16	44	3	90	10	106	169	1RQR175000
90	16	51	5	108	11	125	273	1RQR190000
110	16	61	5	131	12	150	439	1RQR111000
125	16	69	5	147	13	168	750	1RQR113000NL
140	16	76	5	165	14	188	790	1RQR115000NL
160	16	86	4	188	16	212	1112	1RQR117000
200	10	106	5	230	18	254	1840	1RQR121000NL
225	10	119	5	245	25	273	1750	1RQR123000NL
250	10	131	8	270	20	306	2140	1RQR126000NL
280	10	147	14	307	32	327	3650	1RQR128000
315	10	165	13	346	32	375	4791	1RQR133000



### TY1

45° Tee with solvent weld sockets

D	PN	L	Z <sub>1</sub>	Z <sub>2</sub>	E	g	Code
20	16	16	7	30	27	39	1RTY120000
25	16	19	7	35	33	62	1RTY125000
32	16	22	9	44	41	110	1RTY132000
40	16	26	11	55	50	190	1RTY140000
50	16	31	12	68	63	326	1RTY150000
63	16	38	15	85	78	584	1RTY163000



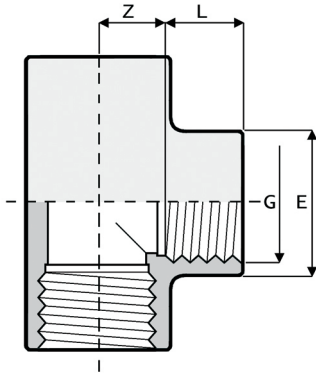
## PO1

Hose adaptor with solvent weld spigot

DxP1xP2	PN	L	H	g	Code
16 x 18 x 16	16	14	60	12	1RPO116000
20 x 22 x 20	16	16	67	17	1RPO120000
25 x 27 x 25	16	19	81	26	1RPO125000
32 x 32 x 30	16	22	97	40	1RPO132000
40 x 42 x 40	16	26	104	78	1RPO140000
50 x 52 x 50	16	31	111	113	1RPO150000
63 x 64 x 60	16	38	123	170	1RPO163000



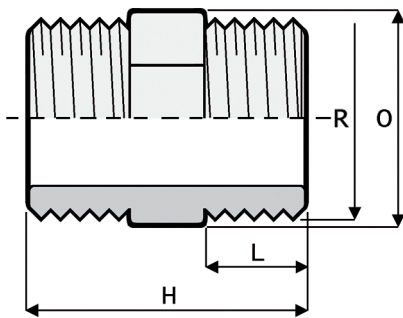
# THREADED SERIES



## T12

90° Tee with BSP threaded female ends

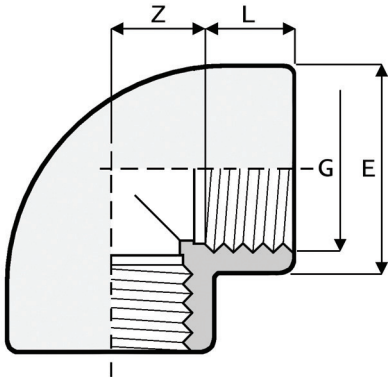
G	PN	L	Z	E	g	Code
3/8"	16	11	12	23	37	1RTI216000
1/2"	16	15	13	28	30	1RTI220000
3/4"	16	16	17	35	55	1RTI225000
1"	16	19	20	43	80	1RTI232000
1 1/4"	16	21	27	50	117	1RTI240000NL
1 1/2"	16	21	37	61	260	1RTI250000NL
2"	16	26	46	76	465	1RTI263000NL
2 1/2"	16	30	55	91	640	1RTI275000NL
3"	16	33	66	109	1135	1RTI290000NL



## N12

Barrel nipple with BSP threaded male ends

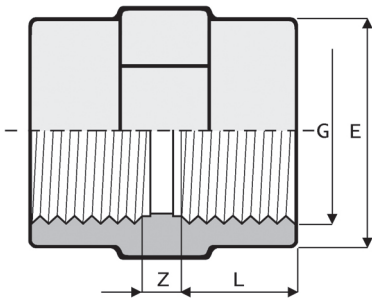
R	PN	L	H	O	g	Code
3/8"	16	11	33	22	5	1RNI216000
1/2"	16	15	42	24	10	1RNI220000
3/4"	16	16	44	30	20	1RNI225000
1"	16	19	50	36	30	1RNI232000
1 1/4"	16	21	58	46	45	1RNI240000
1 1/2"	16	21	58	50	63	1RNI250000
2"	16	26	66	65	105	1RNI263000
2 1/2"	16	30	78	80	175	1RNI275000
3"	16	33	85	95	245	1RNI290000
4"	16	39	96	120	348	1RNI211000



## GO2

90° elbow with BSP threaded female ends

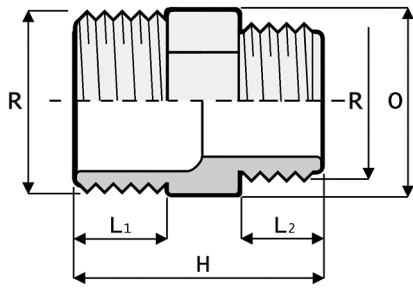
G	PN	L	Z	E	g	Code
3/8"	16	11	12	23	27	1RGO216000
1/2"	16	15	13	28	25	1RGO220000
3/4"	16	16	17	35	40	1RGO225000
1"	16	19	20	43	65	1RGO232000
1 1/4"	16	21	26	51	100	1RGO240000
1 1/2"	16	21	36	61	190	1RGO250000
2"	16	26	45	76	340	1RGO263000
2 1/2"	16	30	53	89	455	1RGO275000
3"	16	33	65	106	545	1RGO290000
4"	16	39	79	129	1030	1RGO211000



## MA2

Double socket with BSP threaded female ends

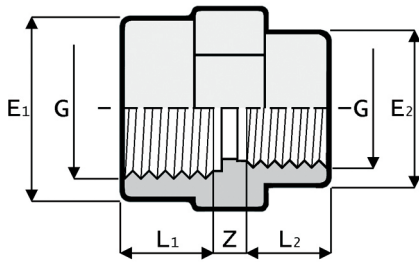
G	PN	L	Z	E	g	Code
3/8"	16	11	8	23	10	1RMA216000
1/2"	16	15	7	28	17	1RMA220000
3/4"	16	16	8	35	26	1RMA225000
1"	16	19	9	43	42	1RMA232000
1 1/4"	16	21	11	51	53	1RMA240000
1 1/2"	16	21	17	61	108	1RMA250000
2"	16	26	19	76	190	1RMA263000
2 1/2"	16	30	9	89	215	1RMA275000
3"	16	33	10	106	305	1RMA290000



## NR2

Reducing barrel nipple with BSP threaded male ends

R x R	PN	L <sub>1</sub>	L <sub>2</sub>	H	O	g	Code
3/4" x 1/2"	16	16	15	43	30	15	1RNR225B00
1" x 3/4"	16	19	16	47	36	25	1RNR232C00
1 1/4 x 1"	16	21	19	56	46	40	1RNR240D00
1 1/2 x 1 1/4	16	21	21	58	50	60	1RNR250E00
2" x 1 1/2	16	26	21	62	65	90	1RNR263F00
2 1/2 x 2"	16	30	26	72	80	155	1RNR275G00
3" x 2 1/2	16	33	30	82	95	240	1RNR290H00
4" x 3"	16	39	33	90	120	357	1RNR21100



## MR2

Reducing socket with BSP threaded female ends

G x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z	E <sub>1</sub>	E <sub>2</sub>	g	Code
1/2" x 3/8"	16	15	11	6	28	23	7	1RMR220A00
3/4" x 1/2"	16	16	15	7	34	28	25	1RMR225B00
1" x 3/4"	16	19	16	7	42	34	40	1RMR232C00
1 1/4 x 1"	16	21	19	8	51	42	34	1RMR240D00
1 1/2 x 1 1/4	16	21	21	8	58	51	79	1RMR250E00
2" x 1 1/2	16	26	21	8	72	58	130	1RMR263F00
2 1/2 x 2"	16	30	25	8	89	72	178	1RMR275G00
3" x 2 1/2	16	33	30	9	103	89	226	1RMR290H00
4" x 3"	16	39	33	10	130	103	515	1RMR21100

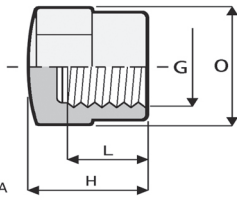


Fig. A

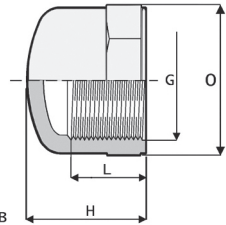


Fig. B

## CA2

End cap with BSP threaded female end

G	PN	L	H	E	Fig.	g	Code
1/2"	16	15	25	28	A	10	1RCA220000
3/4"	16	16	27	34	A	15	1RCA225000
1"	16	19	31	42	A	27	1RCA232000
1"1/4	16	21	35	51	A	40	1RCA240000
1"1/2	16	21	36	58	A	53	1RCA250000
2"	16	26	42	71	A	85	1RCA263000
3"	16	33	55	109	B	310	1RCA290000NL

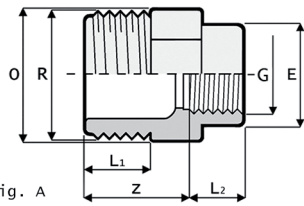


Fig. A

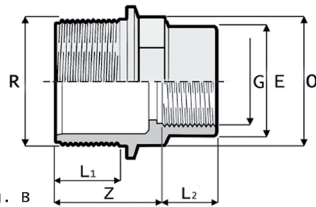
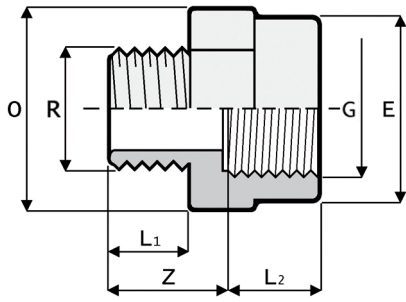


Fig. B

## R12

Reducer with BSP threaded male end and BSP threaded female end

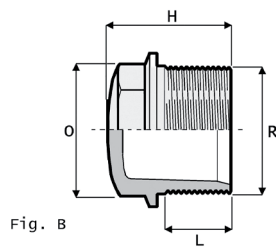
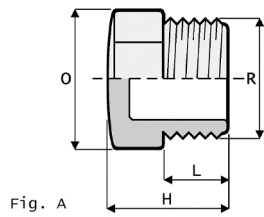
R x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z	E	O	g	Fig.	Code
1/2" x 3/8"	16	15	11	24	23	24	21	A	1RRI220A00
3/4" x 3/8"	16	16	11	20	34	28	15	B	1RRI225A00NL
3/4" x 1/2"	16	16	15	23	34	28	15	B	1RRI225B00NL
1" x 3/8"	16	19	11	22	40	35	20	B	1RRI232A00NL
1" x 1/2"	16	19	15	25	40	35	24	B	1RRI232B00NL
1" x 3/4"	16	19	16	27	40	35	26	B	1RRI232C00NL
1 1/4" x 1/2"	16	21	15	27	52	44	37	B	1RRI240B00NL
1 1/4" x 3/4"	16	21	16	28	52	44	37	B	1RRI240C00NL
1 1/4" x 1"	16	21	19	31	52	44	40	B	1RRI240D00NL
1 1/2" x 3/4"	16	21	16	29	58	51	47	B	1RRI250C00NL
1 1/2" x 1"	16	21	19	34	58	51	52	B	1RRI250D00NL
1 1/2" x 1 1/4"	16	21	21	34	51	55	79	A	1RRI250E00
2" x 1"	16	26	19	37	70	64	80	B	1RRI263D00NL
2" x 1 1/4"	16	26	21	39	70	64	85	B	1RRI263E00NL
2" x 1 1/2"	16	26	21	37	58	65	105	A	1RRI263F00
2 1/2" x 1 1/2"	16	30	21	43	58	80	145	A	1RRI275F00
2 1/2" x 2"	16	30	26	43	72	80	160	A	1RRI275G00
3" x 2"	16	33	26	47	72	95	215	A	1RRI290G00
3" x 2 1/2"	16	33	30	47	89	95	230	A	1RRI290H00
4" x 3"	16	39	33	53	103	120	200	A	1RRI211I00



## MG2

Reducer: BSP threaded male reduced end, BSP threaded female end

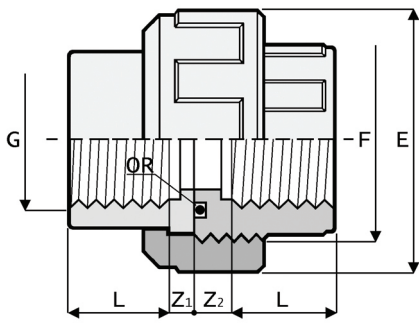
R x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z	O	E	g	Code
3/8" x 1/2"	16	11	15	22	30	28	27	1RMG216B00
1/2" x 3/4"	16	15	16	24	36	34	15	1RMG220C00
3/4" x 1"	16	16	19	26	46	42	40	1RMG225D00
1" x 1 1/4"	16	19	21	30	55	51	72	1RMG232E00
1 1/4" x 1 1/2"	16	21	21	33	60	58	83	1RMG240F00
1 1/2" x 2"	16	21	26	34	75	72	125	1RMG250G00
2" x 2 1/2"	16	26	30	38	90	89	202	1RMG263H00
2 1/2" x 3"	16	30	33	44	105	103	240	1RMG275I00
3" x 4"	16	33	39	48	130	130	333	1RMG290L00



## TA2

Plug with BSP male thread

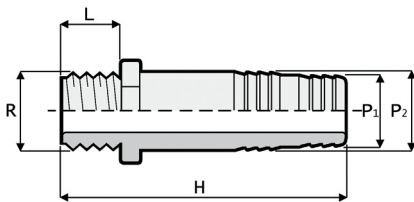
R	PN	L	H	O	g	Fig.	Code
3/8"	16	11	22	22	4	B	1RTA216000NL
1/2"	16	15	26	28	8	B	1RTA220000NL
3/4"	16	16	30	34	11	B	1RTA225000NL
1"	16	19	34	40	21	B	1RTA232000NL
1 1/4"	16	21	38	52	30	B	1RTA240000NL
1 1/2"	16	21	40	58	46	B	1RTA250000NL
2"	16	26	43	65	80	A	1RTA263000
2 1/2"	16	30	51	80	160	A	1RTA275000
3"	16	33	55	95	235	A	1RTA290000
4"	16	39	61	120	360	A	1RTA211000



## BO2

Union with BSP threaded female ends, with O-Ring in EPDM (FKM on request)

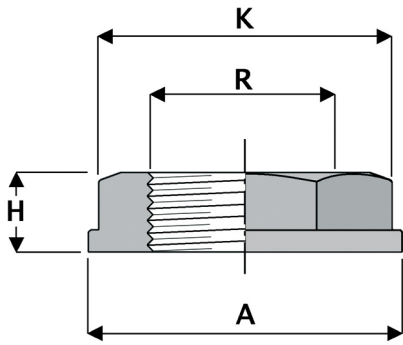
G	PN	L	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
3/8"	16	11	6	14	3/4"	34	3062	32	1RBO216000
1/2"	16	15	4	11	1"	42	4081	44	1RBO220000
3/4"	16	16	6	13	1 1/4"	52	4112	72	1RBO225000
1"	16	19	6	13	1 1/2"	59	4131	100	1RBO232000
1 1/4"	16	21	8	17	2"	72	6162	161	1RBO240000
1 1/2"	16	21	13	24	2 1/4"	79	6187	264	1RBO250000
2"	16	26	15	30	2 3/4"	96	6237	454	1RBO263000
2 1/2"	16	30	18	33	3 1/2"	120	6300	620	1RBO275000L
3"	16	33	26	37	4"	135	6362	810	1RBO290000L
4"	16	39	28	41	5"	163	6450	1350	1RBO211000L



## PO2

Hose adaptor with BSP threaded male end

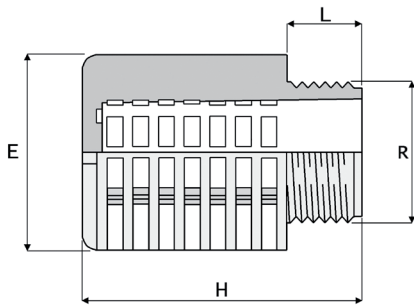
RxP <sub>1</sub> xP <sub>2</sub>	PN	L	H	g	Code
3/8" x 16 x 18	16	11	58	14	1RPO216000
1/2" x 20 x 22	16	15	66	19	1RPO220000
3/4" x 25 x 27	16	16	81	30	1RPO225000
1" x 30 x 32	16	19	97	45	1RPO232000
1 1/4" x 40 x 42	16	21	104	85	1RPO240000
1 1/2" x 50 x 52	16	21	111	120	1RPO250000
2" x 60 x 64	16	26	123	180	1RPO263000



### NU2

Union nut with BSP thread for unions

R	PN	A	K	H	g	Code
1/2"	16	38	28	13	11	1RNU220000
3/4"	16	44	33	13	14	1RNU225000
1"	16	58	46	16	31	1RNU232000
1 1/4"	16	62	50	18	32	1RNU240000
1 1/2"	16	76	60	19	52	1RNU250000
2"	16	92	79	20	84	1RNU263000



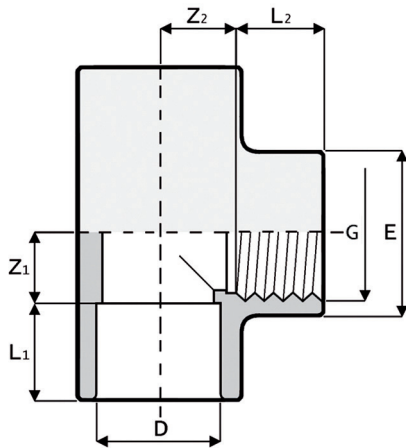
### FLT

Male threaded not return filter

R	PN	L	H	E	g	Code
3/4"	16	12	55	37	28	20FLT18M2G025
1"	16	16	69	47	55	20FLT18M2G032
1 1/4"	16	16	83	59	100	20FLT18M2G040
1 1/2"	16	16	91	66	125	20FLT18M2G050
2"	16	15	109	81	220	20FLT18M2G063



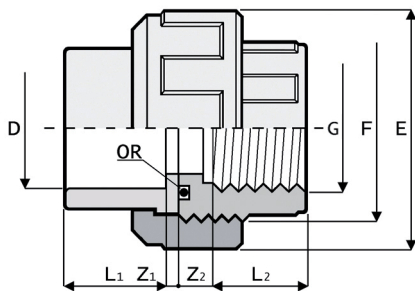
# TRANSITION SERIES DIN/BSP



## TI3

90° Tee with solvent weld socket and BSP threaded female end

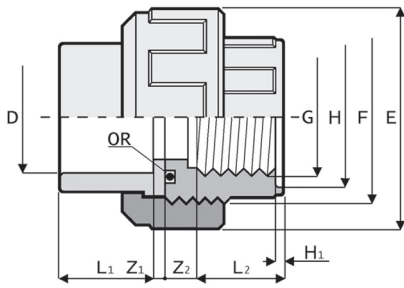
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	E	g	Code
16 x 3/8"	16	14	11	9	12	23	40	1RTI316A00
20 x 1/2"	16	16	15	12	13	28	32	1RTI320B00
25 x 3/4"	16	19	16	15	17	35	52	1RTI325C00
32 x 1"	16	22	19	18	21	43	71	1RTI332D00
40 x 1 1/4"	16	26	21	22	27	50	110	1RTI340E00NL
50 x 1 1/2"	16	31	15	27	28	61	160	1RTI350F00NL
63 x 2"	16	38	26	34	46	76	405	1RTI363G00NL



## BO3

Union with solvent weld socket and BSP threaded female end, with O-Ring in EPDM (FKM on request)

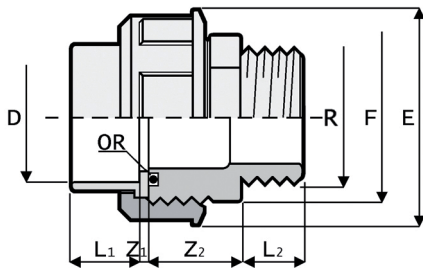
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
16 x 3/8"	16	14	11	3	14	3/4"	34	3062	31	1RBO316A00
20 x 1/2"	16	16	15	3	11	1"	42	4081	42	1RBO320B00
25 x 3/4"	16	19	16	3	13	1 1/4"	52	4112	70	1RBO325C00
32 x 1"	16	22	19	3	13	1 1/2"	59	4131	96	1RBO332D00
40 x 1 1/4"	16	26	21	3	17	2"	72	6162	155	1RBO340E00
50 x 1 1/2"	16	31	21	3	24	2 1/4"	79	6187	237	1RBO350F00
63 x 2"	16	38	26	3	30	2 3/4"	96	6237	405	1RBO363G00
75 x 2 1/2"	10	45	30	3	33	3 1/2"	120	6300	620	1RBO375H00L
90 x 3"	10	53	33	5	37	4"	135	6362	810	1RBO390I00L
110 x 4"	10	61	39	5	41	5"	163	6450	1350	1RBO311L00L



## BO3SG

Union with O-ring ISO/female threaded version

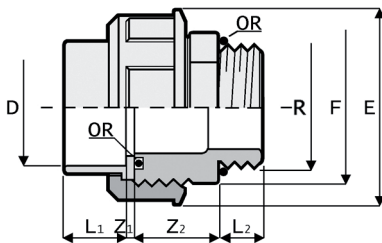
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	F	H	H <sub>1</sub>	E	O-R	g	Code
50 x 1 1/2	16	31	21	3	24	2 1/4	57	4	79	6187	237	1RBO350F00AT
63 x 2"	16	38	25	3	30	2 3/4	70	4	96	6237	405	1RBO363G00AT
75 x 2 1/2	16	45	30	3	33	3 1/2	86	4	119	6312	620	1RBO375H00LSG
90 x 3"	16	53	33	5	37	4"	98	4	135	6362	810	1RBO390I00LSG



## BM3

Union with fixed BSP threaded male end and O-Ring in EPDM (FKM on request)

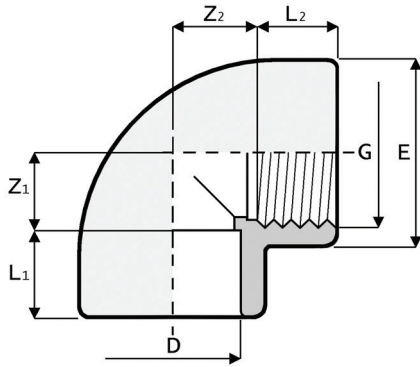
D x R	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
50 x 1 1/2	16	31	28	3	41	2 1/4	79	6187	270	1RBM350F00
50 x 2"	16	31	28	3	41	2 1/4	79	6187	258	1RBM350G00
63 x 2"	16	38	28	3	43	2 3/4	96	6237	406	1RBM363G00



## BM3C

Male union with short male thread and external O-ring

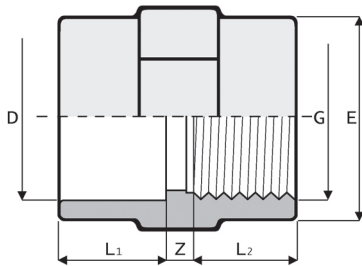
D x R	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
50 x 1 1/2	16	31	18	3	41	2 1/4	79	6187	260	1RBM350F00C
63 x 2"	16	38	22	3	43	2 3/4	96	6237	400	1RBM363G00C



### GO3

90° elbow with solvent weld socket and BSP threaded female end

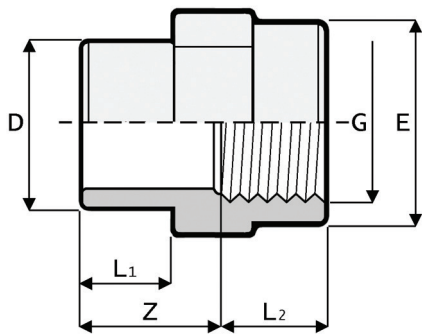
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	E	g	Code
16 x 3/8"	16	14	11	9	12	23	25	1RGO316A00
20 x 1/2"	16	16	15	11	12	28	25	1RGO320B00
25 x 3/4"	16	19	16	14	17	35	40	1RGO325C00
32 x 1"	16	22	19	18	21	43	72	1RGO332D00
40 x 1 1/4"	16	26	21	21	26	51	95	1RGO340E00
50 x 1 1/2"	16	31	21	26	36	61	165	1RGO350F00
63 x 2"	16	38	26	33	46	76	320	1RGO363G00
75 x 2 1/2"	16	44	30	39	53	89	417	1RGO375H00
90 x 3"	16	51	33	47	65	106	690	1RGO390I00
110 x 4"	16	61	39	57	79	129	1035	1RGO311L00



### MA3

Double socket with solvent weld socket and BSP threaded female end

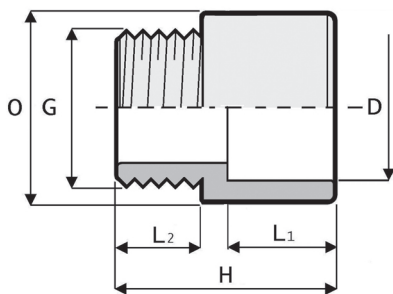
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z	E	g	Code
16 x 3/8"	16	14	11	6	24	12	1RMA316A00
20 x 1/2"	16	16	15	4	29	20	1RMA320B00
25 x 3/4"	16	19	16	5	35	30	1RMA325C00
32 x 1"	16	22	19	6	43	48	1RMA332D00
40 x 1 1/4"	16	26	21	5	50	56	1RMA340E00
50 x 1 1/2"	16	31	21	8	61	102	1RMA350F00
63 x 2"	16	38	26	8	76	181	1RMA363G00



### AF3

Double adaptor with solvent weld socket, solvent weld spigot and BSP threaded female end

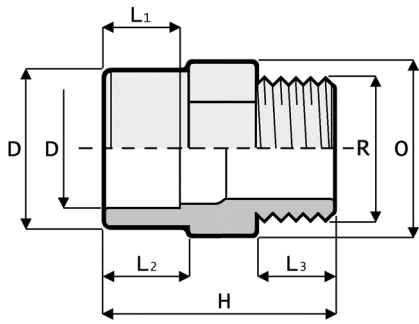
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	E	Z	g	Code
16 x 3/8"	16	14	15	23	18	9	1RAF316A00
20 x 1/2"	16	16	19	28	21	17	1RAF320B00
20 x 3/4"	16	16	19	34	23	23	1RAF320C00
25 x 1/2"	16	19	17	28	27	19	1RAF325B00
25 x 3/4"	16	19	19	34	27	25	1RAF325C00
25 x 1"	16	19	22	42	26	40	1RAF325D00
32 x 3/4"	16	22	19	34	29	29	1RAF332C00
32 x 1"	16	22	22	42	26	32	1RAF332D00
40 x 1"	16	26	22	42	34	45	1RAF340D00
40 x 1 1/4	16	26	24	51	34	60	1RAF340E00
50 x 1 1/4	16	31	27	51	36	76	1RAF350E00
50 x 1 1/2	16	31	24	61	39	92	1RAF350F00
50 x 2"	16	31	28	72	39	120	1RAF350G00
63 x 1 1/2	16	38	24	61	47	123	1RAF363F00
63 x 2"	16	38	28	72	47	131	1RAF363G00
75 x 2"	16	44	28	72	54	175	1RAF375G00
75 x 2 1/2	16	44	33	89	56	220	1RAF375H00
75 x 3"	16	44	38	103	55	295	1RAF375I00
90 x 2 1/2	16	51	33	89	63	240	1RAF390H00
90 x 3"	16	51	39	103	61	314	1RAF390I00
110 x 3"	16	61	37	103	72	490	1RAF311I00
110 x 4"	16	61	43	129	73	485	1RAF311L00



### AL3

ISO/female threaded adaptor

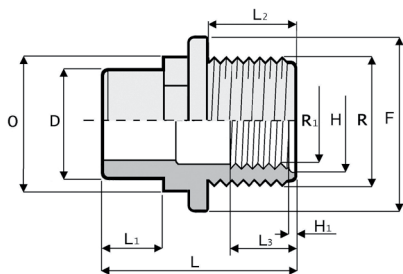
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	H	O	g	Code
50 x 1 1/2	16	32	30	67	62	90	1RAL350F00
63 x 2"	16	39	35	80	76	142	1RAL363G00
75 x 2 1/2	16	44	40	108	95	300	1RAL375H00



### AM3

Double adaptor with solvent weld socket, solvent weld spigot and BSP threaded male end

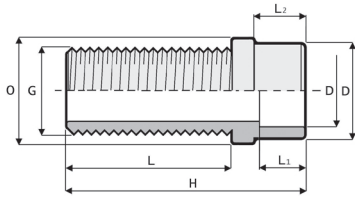
D x D x R	PN	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	H	O	g	Code
16 x 20 x 3/8"	16	14	16	11	40	24	10	1RAM316A00
16 x 20 x 1/2"	16	14	16	15	43	24	15	1RAM316B00
20 x 25 x 1/2"	16	16	19	15	46	30	15	1RAM320B00
20 x 25 x 3/4"	16	16	19	16	47	30	20	1RAM320C00
25 x 32 x 1/2"	16	19	22	15	49	36	25	1RAM325B00
25 x 32 x 3/4"	16	19	22	16	50	36	25	1RAM325C00
25 x 32 x 1"	16	19	22	19	53	36	45	1RAM325D00
32 x 40 x 3/4"	16	22	26	16	54	46	40	1RAM332C00
32 x 40 x 1"	16	22	26	19	57	46	40	1RAM332D00
32 x 40 x 1 1/4"	16	22	26	21	60	46	55	1RAM332E00
40 x 50 x 1"	16	26	31	19	64	55	70	1RAM340D00
40 x 50 x 1 1/4"	16	26	31	21	67	55	70	1RAM340E00
40 x 50 x 1 1/2"	16	26	31	21	67	55	70	1RAM340F00
50 x 63 x 1 1/4"	16	31	38	21	74	65	70	1RAM350E00
50 x 63 x 1 1/2"	16	31	38	21	74	65	115	1RAM350F00
50 x 63 x 2"	16	31	38	26	78	65	125	1RAM350G00
63 x 75 x 1 1/2"	16	38	44	21	80	80	198	1RAM363F00
63 x 75 x 2"	16	38	44	26	84	80	160	1RAM363G00
63 x 75 x 2 1/2"	16	38	44	30	91	80	195	1RAM363H00
75 x 90 x 2"	16	44	51	26	93	95	275	1RAM375G00
75 x 90 x 2 1/2"	16	44	51	30	98	95	280	1RAM375H00
75 x 90 x 3"	16	44	51	34	100	95	300	1RAM375I00
90 x 110 x 2 1/2"	16	51	61	30	108	110	370	1RAM390H00
90 x 110 x 3"	16	51	61	34	113	110	390	1RAM390I00
90 x 110 x 4"	16	51	61	39	128	128	420	1RAM390L00
110 x 125 x 3"	16	61	69	34	120	128	450	1RAM311I00
110 x 125 x 4"	16	61	69	39	126	128	500	1RAM311L00



### AM3SG

ISO/Threaded male adaptor

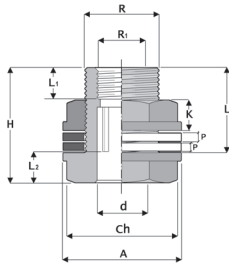
D x R <sub>1</sub> x R <sub>2</sub>	PN	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L	H	H <sub>1</sub>	F	O	g	Code
50 x 1 1/2 x 2"	16	32	40	34	96	53	2	82	55	145	1RAM350GF0SG



### AP3

Wall entry with female thread

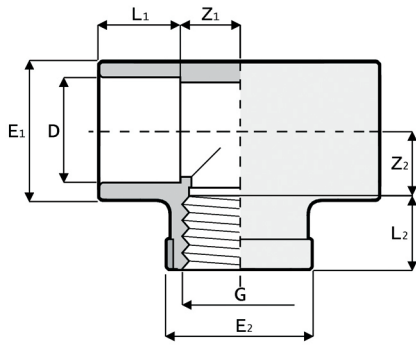
$D_1 \times D \times G$	PN	L	$L_1$	$L_2$	H	O	g	Code
40 x 50 x 1"1/2	16	106	27	31	148	55	150	1RAP340F00
50 x 63 x 2"	16	100	32	38	148	68	220	1RAP350G00



### AS3

Tank connector with solvent weld spigot, threaded joint with tightening nut and flat gasket in EPDM

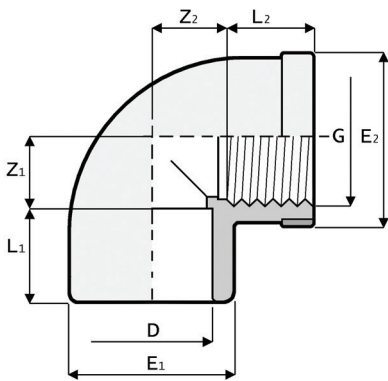
$R \times d \times R_1$	PN	A	Ch	L	$L_1$	$L_2$	H	P	K	g	Code
3/4" x 16 x 1/2"	16	44	33	47	15	14	61	3	14	53	1RAS316B00
1" x 20 x 3/4"	16	58	46	49	16	16	65	3	16	108	1RAS320C00
1"1/4 x 25 x 1"	16	62	50	52	19	19	70	3	18	142	1RAS325D00
1"1/2 x 32 x 1"	16	76	60	54	19	22	73	3	19	192	1RAS332D00
2" x 40 x 1"1/2	16	92	79	60	21	26	81	3	21	337	1RAS340F00



### TM3

90° Tee with reinforced end: solvent weld socket and BSP threaded female branch with stainless steel reinforcing ring

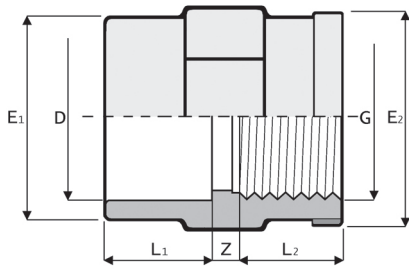
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	E <sub>1</sub>	E <sub>2</sub>	g	Code
16 x 3/8"	16	14	11	9	12	42	35	35	1RTM316A00
20 x 1/2"	16	16	15	11	12	51	45	45	1RTM320B00
25 x 3/4"	16	19	16	14	17	61	55	55	1RTM325C00
32 x 1"	16	22	19	17	20	42	45	75	1RTM332D00
40 x 1 1/4"	16	26	21	22	27	50	51	125	1RTM340E00NL
50 x 1 1/2"	16	31	21	27	37	61	62	210	1RTM350F00NL
63 x 2"	16	38	26	34	46	76	77	415	1RTM363G00NL



### GM3

90° elbow with reinforced solvent weld socket and BSP threaded female end with stainless steel reinforcing ring

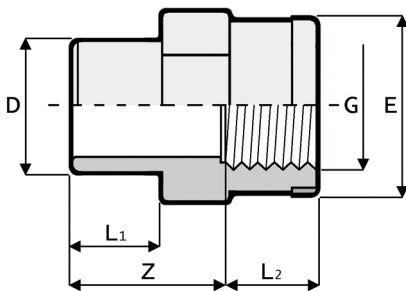
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	E <sub>1</sub>	E <sub>2</sub>	g	Code
16 x 3/8"	16	14	11	9	12	23	25	25	1RGM316A00
20 x 1/2"	16	16	15	11	12	28	30	25	1RGM320B00
25 x 3/4"	16	19	16	14	17	35	36	48	1RGM325C00
32 x 1"	16	22	19	18	21	43	44	85	1RGM332D00
40 x 1 1/4"	16	26	21	21	26	51	55	95	1RGM340E00
50 x 1 1/2"	16	31	21	26	36	61	65	165	1RGM350F00
63 x 2"	16	38	26	33	45	75	78	280	1RGM363G00



### MM3

Double socket with solvent weld socket and BSP threaded female end with stainless steel reinforcing ring

D x G	PN	L <sub>1</sub>	L <sub>2</sub>	E <sub>1</sub>	E <sub>2</sub>	Z	g	Code
16 x 3/8"	16	14	11	24	25	6	14	1RMM316A00
20 x 1/2"	16	16	15	29	30	4	23	1RMM320B00
25 x 3/4"	16	19	16	35	36	5	34	1RMM325C00
32 x 1"	16	22	19	43	44	6	53	1RMM332D00
40 x 1 1/4"	16	26	21	50	51	5	62	1RMM340E00
50 x 1 1/2"	16	31	21	61	62	8	110	1RMM350F00
63 x 2"	16	38	26	76	77	8	190	1RMM363G00



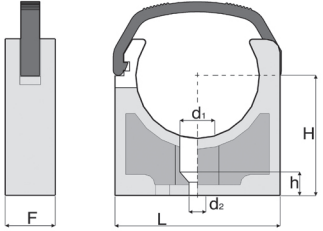
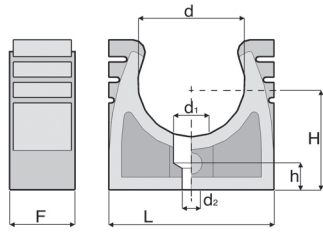
### RM3

Double adaptor with solvent weld socket, solvent weld spigot and BSP threaded female end with stainless steel reinforcing ring

D x G	PN	L <sub>1</sub>	L <sub>2</sub>	E	Z	g	Code
20 x 1/2"	16	16	15	30	26	20	1RRM320B00
25 x 1/2"	16	16	19	30	29	20	1RRM325B00
25 x 3/4"	16	19	16	35	29	30	1RRM325C00
32 x 3/4"	16	19	22	35	32	30	1RRM332C00
32 x 1"	16	22	19	45	33	40	1RRM332D00
40 x 1"	16	22	21	45	37	50	1RRM340D00
40 x 1 1/4"	16	26	21	55	37	53	1RRM340E00
50 x 1 1/2"	16	31	21	65	42	100	1RRM350F00
50 x 2"	16	31	26	78	42	125	1RRM350G00
63 x 2"	16	38	26	78	50	140	1RRM363G00



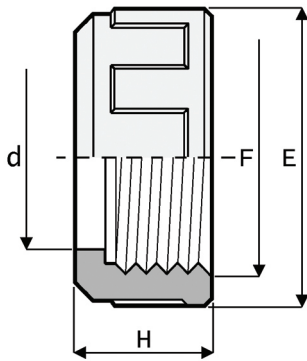
# ACCESSORIES AND SPARE PARTS



## ST1

Pipe clip for ISO-DIN pipes (available also in PE)

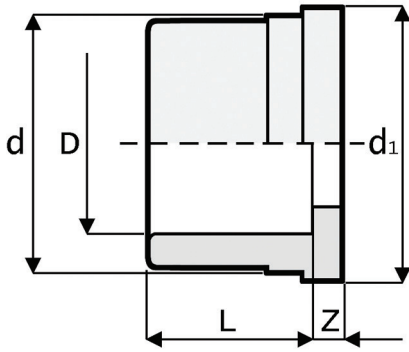
D	PN	H	L	d <sub>2</sub>	d <sub>1</sub>	h	f	Fig.	g	Code
16	16	23	28	5	10	7	16	A	5	1RST116000
20	16	25	33	5	10	7	16	A	7	1RST120000
25	16	27	38	5	10	7	16	A	8	1RST125000
32	16	31	48	5	10	7	16	A	13	1RST132000
40	16	41	54	5	10	7	20	B	23	1RST140000
50	16	46	64	7	14	9	23	B	29	1RST150000
63	16	56	80	7	14	9	25	B	39	1RST163000
75	16	63	94	9	17	10	27	B	55	1RST175000
90	16	72	115	9	17	13	30	B	85	1RST190000
110	16	84	139	9	17	14	30	B	100	1RST111000



## BG1

Union nut with BSP thread for union types for B01, B02 and B03

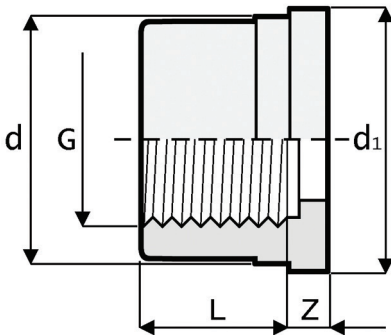
D	d	H	F	E	g	Code
16	22	23	3/4"	34	10	1RBG116000
20	28	23	1"	42	20	1RBG120000
25	36	25	1 1/4"	52	30	1RBG125000
32	42	27	1 1/2"	59	40	1RBG132000
40	53	30	2"	72	59	1RBG140000
50	59	34	2 1/4"	79	75	1RBG150000
63	74	38	2 3/4"	96	108	1RBG163000
75	93	45	3 1/2"	120	198	1RBG175000L
90	106	52	4"	135	278	1RBG190000L
110	130	59	5"	163	448	1RBG111000L



### BL1

Union end for solvent welding, metric series for union types B01 and B03

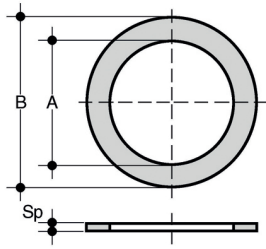
D	L	Z	d	d <sub>1</sub>	g	Code
16	14	3	22	24	5	1RBL16000NL
20	16	3	28	30	8	1RBL120000NL
25	19	3	36	39	15	1RBL125000NL
32	22	3	42	45	24	1RBL132000NL
40	26	3	53	57	37	1RBL140000NL
50	31	3	59	63	42	1RBL150000NL
63	38	3	74	78	77	1RBL163000NL



### BL2

Union end with BSP female thread for union type for B02

G	L	Z	d	d <sub>1</sub>	g	Code
3/8"	11	6	22	24	11	1RBL216000
1/2"	15	4	28	30	11	1RBL220000
3/4"	16	6	36	39	15	1RBL225000
1"	19	6	42	45	24	1RBL232000
1 1/4"	21	8	53	57	58	1RBL240000
1 1/2"	21	12	59	63	70	1RBL250000
2"	26	15	74	78	105	1RBL263000
2 1/2"	30	18	91	97	165	1RBL275000
3"	33	26	105	110	170	1RBL290000
4"	39	28	129	136	331	1RBL211000

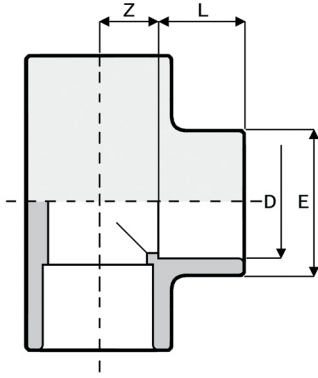


## ASGP

Flat gasket for AS3

D	Code
16	GP0195E
20	GP2299E
25	GP0200E
32	GP0201E
40	GP0202E

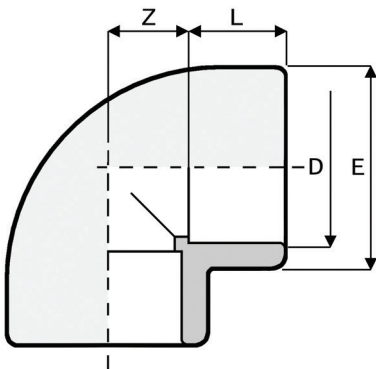
# BS PLAIN SERIES



## T14

Tee 90° equal, socket for solvent welding BS series

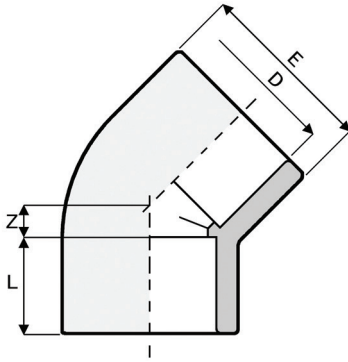
D	PN	L	Z	E	g	Code
1/2"	16	17	11	27	26	1RTI420000NL
3/4"	16	20	14	33	30	1RTI425000NL
1"	16	23	17	41	55	1RTI432000NL
1 1/4"	16	26	22	50	90	1RTI440000NL
1 1/2"	16	31	27	61	257	1RTI450000NL
2"	16	38	34	76	495	1RTI463000NL
3"	16	51	48	108	970	1RTI490000NL
4"	16	63	59	133	1480	1RTI41000
6"	16	86	82	186	3855	1RTI417000



## GO4

Elbow 90°, socket for solvent welding BS series

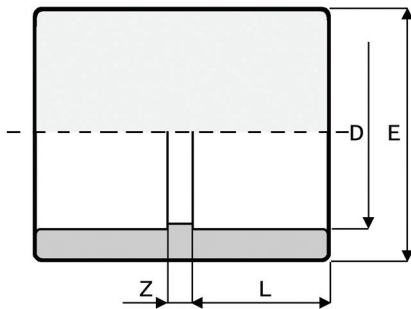
D	PN	L	Z	E	g	Code
1/2"	16	17	11	27	15	1RGO420000NL
3/4"	16	20	14	33	30	1RGO425000NL
1"	16	23	17	41	45	1RGO432000NL
1 1/4"	16	27	22	54	110	1RGO440000NL
1 1/2"	16	31	27	61	160	1RGO450000NL
2"	16	38	34	76	340	1RGO463000NL
3"	16	51	47	106	600	1RGO490000
4"	16	63	58	131	972	1RGO41000NL
6"	16	86	82	186	2920	1RGO417000



### GY4

Elbow 45°, socket for solvent welding BS series

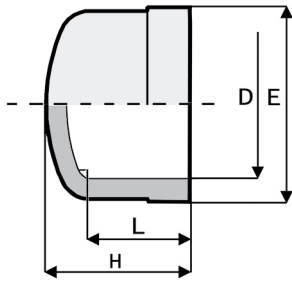
D	PN	L	Z	E	g	Code
1/2"	16	17	5	27	13	1RGY420000NL
3/4"	16	20	6	33	20	1RGY425000NL
1"	16	23	7	41	45	1RGY432000NL
1 1/4"	16	26	11	50	85	1RGY440000NL
1 1/2"	16	31	12	61	155	1RGY450000NL
2"	16	38	14	75	230	1RGY463000
3"	16	51	22	108	565	1RGY490000NL
4"	16	61	26	131	740	1RGY411000NL
6"	16	86	35	186	2265	1RGY417000



### MA4

Double socket for solvent welding BS series

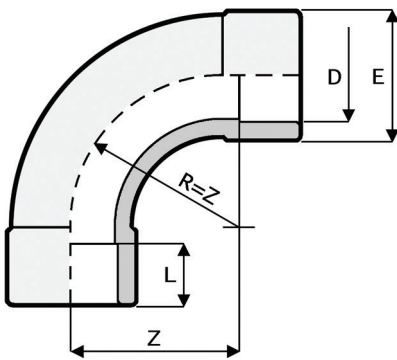
D	PN	L	Z	E	g	Code
1/2"	16	17	2	27	13	1RMA420000NL
3/4"	16	20	2	33	15	1RMA425000NL
1"	16	23	2	41	36	1RMA432000NL
1 1/4"	16	26	3	50	58	1RMA440000NL
1 1/2"	16	31	3	61	118	1RMA450000NL
2"	16	38	3	75	140	1RMA463000
3"	16	51	20	106	355	1RMA490000
4"	16	63	5	131	680	1RMA411000NL
6"	16	86	8	182	1380	1RMA417000



### CA4

End cap, socket for solvent welding BS series

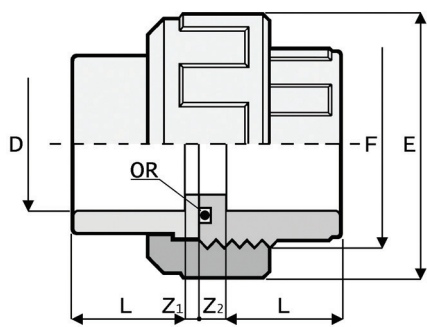
D	PN	L	H	E	g	Code
1/2"	16	16	24	28	49	1RCA420000
3/4"	16	20	27	33	15	1RCA425000NL
1"	16	23	31	41	36	1RCA432000NL
1 1/4"	16	26	36	50	58	1RCA440000NL
1 1/2"	16	31	43	61	118	1RCA450000NL
2"	16	38	52	76	206	1RCA463000NL
2 1/2"	16	44	59	91	190	1RCA475000NL
3"	16	51	69	108	420	1RCA490000NL
4"	16	63	82	131	680	1RCA411000NL
6"	16	86	123	182	1080	1RCA417000



### CU4

Bend 90° Long Radius (R=2d), socket for solvent welding BS series

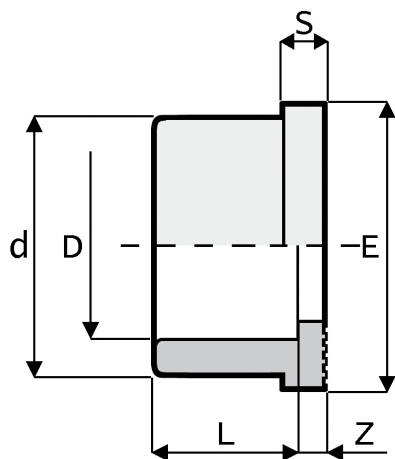
D	PN	L	Z	E	g	Code
1/2"	16	16	40	28	45	1RCU420000
3/4"	16	19	50	36	75	1RCU425000
1"	16	22	64	41	120	1RCU432000
1 1/4"	16	26	80	51	205	1RCU440000
1 1/2"	16	31	100	65	310	1RCU450000
2"	16	38	126	77	510	1RCU463000
3"	16	51	180	113	1765	1RCU490000
4"	16	61	220	137	2805	1RCU411000



### BO4

Socket union, socket for solvent welding, with EPDM gasket BS series

D	PN	L	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
1/2"	16	16	3	10	1"	42	4081	42	1RBO420000
3/4"	16	19	3	10	1 1/4"	52	4112	70	1RBO425000
1"	16	22	3	10	1 1/2"	59	4131	97	1RBO432000
1 1/4"	16	26	3	12	2"	72	6162	156	1RBO440000
1 1/2"	16	31	3	14	2 1/4"	79	6187	216	1RBO450000
2"	16	38	3	18	2 3/4"	96	6237	368	1RBO463000
3"	16	51	5	18	4"	135	6362	770	1RBO490000L
4"	16	61	5	18	5"	163	6450	1300	1RBO411000L

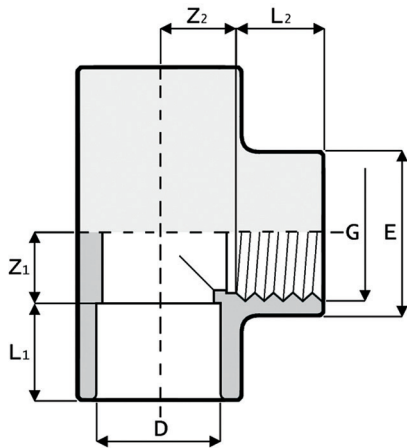


### QR4

Serrated stub according to DIN 8063 PN10/16 for flat gasket, socket BS for solvent welding

D	PN	L	Z	d	S	E	g	Code
1"	16	22	3	41	7	50	26	1RQR432000
1 1/2"	16	31	4	61	8	73	63	1RQR450000
2"	16	38	4	76	9	90	112	1RQR463000
3"	16	51	5	108	11	125	273	1RQR490000
4"	16	61	5	131	12	150	439	1RQR411000
6"	16	86	5	188	16	216	1250	1RQR417000NL

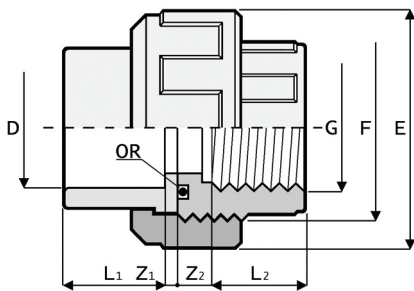
# TRANSITION SERIES BS/BSP



## TI6

Tee 90° BS plain/BSP threaded

D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	E	g	Code
1/2" x 1/2"	16	16	15	12	13	28	32	1RTI620000
3/4" x 3/4"	16	19	16	15	17	35	52	1RTI625000

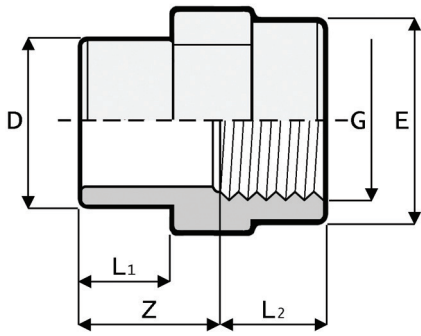


## BO6

Socket union, socket BS solvent welding/BSP Threaded, with EPDM oring

D x G	PN	L <sub>1</sub>	L <sub>2</sub>	Z <sub>1</sub>	Z <sub>2</sub>	F	E	O-R	g	Code
1"x1"	16	22	19	3	13	1 1/2"	59	4131	96	1RBO632000
1 1/2"x1 1/2"	16	31	21	3	24	2 1/4"	79	6187	237	1RBO650000
2"x2"	16	38	26	3	30	2 3/4"	96	6237	405	1RBO663000
75 x 2 1/2"	16	45	30	3	33	3 1/2"	120	6300	620	1RBO375H00L
3"x3"	16	53	33	5	37	4"	135	6362	810	1RBO690000L

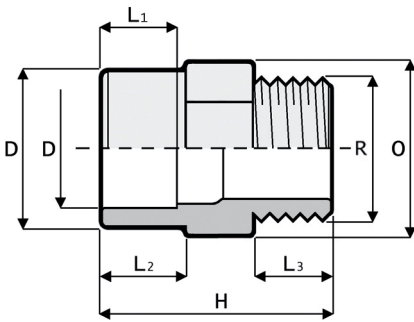




### AF6

Female adaptor BS male plain/BSP threaded

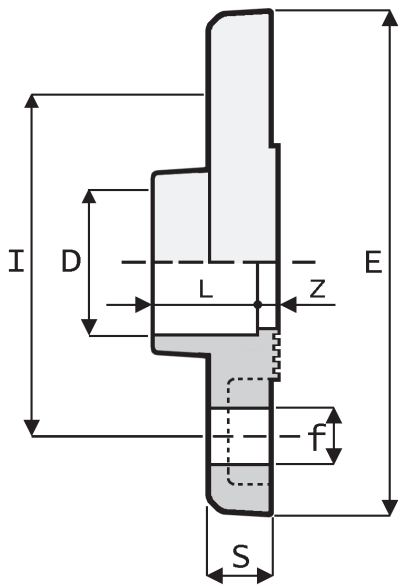
D x G	PN	L <sub>1</sub>	L <sub>2</sub>	E	Z	g	Code
1/2" x 1/2"	16	16	19	28	21	17	1RAF620B00
3/4" x 3/4"	16	19	19	34	27	25	1RAF625C00
1" x 1"	16	22	22	42	26	32	1RAF632D00
1"1/4 x 1"1/4	16	26	24	51	34	60	1RAF640E00
1"1/2 x 1"1/2	16	31	24	61	39	92	1RAF650F00
2" x 2"	16	38	28	72	47	131	1RAF663G00



### AM6

Female/male adaptor with solvent weld socket d and BSP threaded male end

D x R	PN	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	H	O	g	Code
1 1/4" x 1 1/4"	16	27	22	20	57	55	65	1RAM640E00NL
2" x 2"	16	36	33	26	73	80	160	1RAM663G00NL
2 1/2" x 2 1/2"	16	44	51	30	99	95	285	1RAM375H00
3" x 3"	16	51	61	33	113	115	490	1RAM690I00

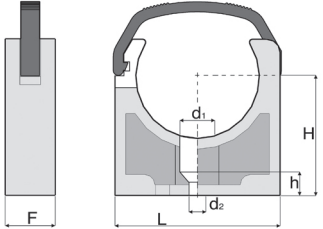
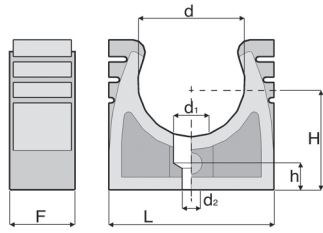


### FF5

Fixed flange hole according to ISO DIN 8063/BS plain socket

D	PN	DN	L	Z	E	I	f	S	n°drill	g	Bolts	Code
2"	16	50	38	5	165	125	18	18	4	395	M16x80	1RFF563000
3"	16	80	51	7	200	160	18	20	8	780	M16x90	1RFF590000
4"	16	100	61	8	220	180	18	22	8	1070	M16x100	1RFF511000

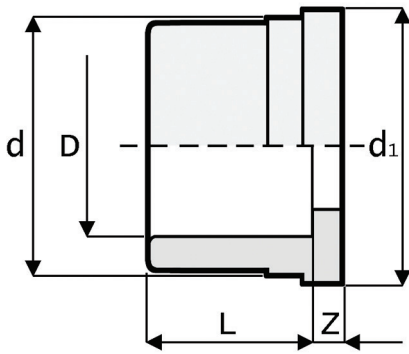
# ACCESSORIES AND SPARE PARTS



## ST4

Pipe clip for BS pipes (available also in PE)

D	PN	H	L	d <sub>2</sub>	d <sub>1</sub>	h	f	Fig.	g	Code
1/2"	16	25	33	5	10	7	16	A	7	1RST420000
3/4"	16	27	38	5	10	7	16	A	8	1RST425000
1"	16	31	48	5	10	7	16	A	13	1RST432000
1 1/4"	16	41	54	5	10	7	20	B	23	1RST440000
1 1/2"	16	46	64	7	14	9	23	B	29	1RST450000
2"	16	56	80	7	14	9	25	B	39	1RST463000
2 1/2"	16	63	94	9	17	10	27	B	55	1RST475000
3"	16	72	115	9	17	13	30	B	85	1RST490000
4"	16	84	139	9	17	14	30	B	100	1RST411000



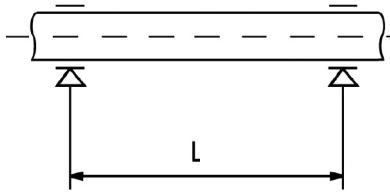
## BL4

Union end for solvent welding BS series

D	L	Z	d	d <sub>1</sub>	g	Code
1/2"	16	3	28	30	8	1RBL420000NL
3/4"	19	3	36	39	13	1RBL425000NL
1"	22	3	42	45	19	1RBL432000NL
1 1/4"	26	3	53	57	32	1RBL440000NL
1 1/2"	31	3	59	63	46	1RBL450000NL
2"	38	3	74	78	75	1RBL463000
3"	51	5	105	110	190	1RBL490000
4"	61	5	129	136	335	1RBL411000

# INSTALLATION

## POSITIONING PIPE CLIPS



The installation of thermoplastic pipe systems requires the use of support clips to prevent flexing and the resulting mechanical stresses.

The distance between the clips depends on the pipe material, SDR, surface temperature and the density of the conveyed fluid.

Before installing the clips, check the distances reported in the table below, as provided for by guidelines DVS 2210-1 for water pipes.

### Supporting PVC-U pipes conveying liquids of density $1 \text{ g/cm}^3$ (water and other fluids of equal intensity).

For pipes of SDR 13.6 / S 6.3 / PN 16:

d mm	< 20° C	30° C	40° C	50° C	60° C
16	950	900	850	750	600
20	1100	1050	1000	900	700

For pipes of SDR 21 / S 10 / PN 10:

d mm	< 20° C	30° C	40° C	50° C	60° C
25	1200	1150	1050	950	750
32	1350	1300	1250	1100	900
40	1450	1400	1350	1250	1000
50	1600	1550	1500	1400	1150
63	1800	1750	1700	1550	1300
75	2000	1900	1850	1700	1450
90	2200	2100	2000	1850	1550
110	2400	2300	2250	2050	1750
125	2550	2450	2400	2200	1850
140	2700	2600	2500	2300	1950
160	2900	2800	2700	2500	2100
180	3100	2950	2850	2650	2200

For different SDR values, multiply the data in the table by the following factors:

1.08 for SDR 13.6 / S6.3 / PN16 size range d25 - d400

1.15 for SDR 11 / S5 / PN20 entire size range

### Supporting PVC-U pipes conveying liquids of density other than $1 \text{ g/cm}^3$

If the liquid being conveyed has a density other than  $1 \text{ g/cm}^3$ , the distance L in the table must be multiplied by the factors in the table below.

Fluid density in $\text{g/cm}^3$	Support factor
1,25	0,96
1,50	0,92
< 0,01	1.42 for SDR 21 / S10 / PN10 1.30 for SDR 13.6 / S6.3 / PN16 1.20 for SDR 11 / S5 / PN20

# Technical catalogue



## Compression fittings



# Reference standards

**Production of the ASTORE compression fittings is carried out according to the highest quality standards and in full compliance with the environmental restrictions set by the applicable laws in force and in accordance with ISO 14001. All products are made in accordance with the quality guarantee system in compliance with ISO 9001.**

- **UNI 9561**  
Pipe and fittings in thermoplastic material, compression fitting mechanical jointing for PE pipe pressure
- **ISO 17885**  
Plastic piping systems – Mechanical fittings for pressure piping systems specifications
- **ISO 7**  
Fittings with pressure-tight threaded joints
- **UNI EN 12201**  
Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene
- **EN 10226-1/2**  
Pipe threads where pressure tight joints are made on the threads.  
Part 2: Taper external threads and taper internal threads – Dimensions, tolerances and designation
- **ISO 4427**  
PE pipe system for water supply

# Approvals and quality marks



- **DVGW**

ASTORE compression fittings are certified as suitable for coming into contact with water intended for human consumption according to the Deutscher Verein des Gas und Wasserfaches. for further info on the certificated range, please contact Marketing dept.

# COMPRESSION FITTINGS

Astore PP compression fittings are joints for PE pipes dedicated to water adduction systems.

They can be used both in irrigation field and drinking water systems.

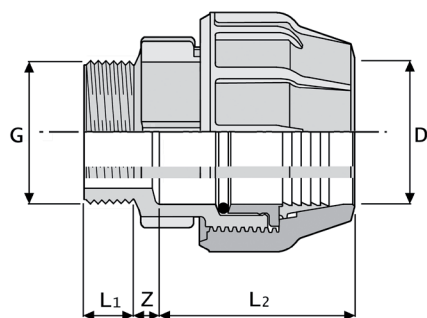
## COMPRESSION FITTINGS

- The joints provided with threads have a metal reinforcement on the external part of the thread, leaving from R 1 1/4".

Technical specifications	
<b>Size range</b>	d 16 ÷ d 110 (mm)
<b>Nominal pressure</b>	PN16 with water at 20 °C from d 16 (mm) to d 63 (mm), PN10 with water at 20 °C from d 75 (mm) to d 110 (mm)
<b>Temperature range</b>	0 °C ÷ 60 °C
<b>Reference standards</b>	Astore compression fitting is manufactured in compliance with the requirements of standards UNI 9561, ISO 17885. The joints can be installed on PE pipes which are in compliance with standards ISO 4427, UNI EN 12201. The threaded versions are manufactured in compliance with standard ISO 7-1.
<b>Fitting material</b>	Body and nut in polypropylene black co-polymer, clinching ring in white POM resin.
<b>Seal material</b>	O-ring in NBR. Reinforcement ring in AISI 430.



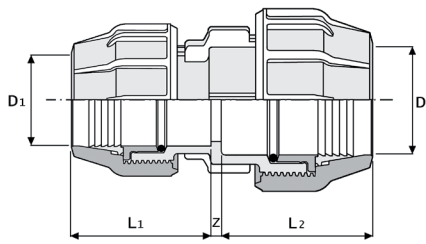
# COMPRESSION FITTINGS



**511**  
Male adaptor

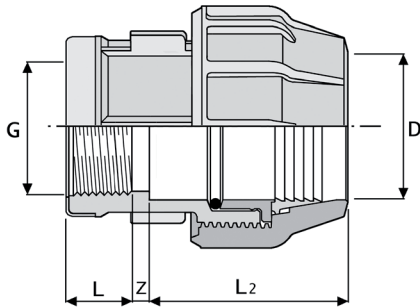
D x G	PN	L1	L2	Z	g	Code
16 x 3/8"	16	18	45	16	23	GG51116A00
16 x 1/2"	16	18	45	20	23	GG51116B00
16 x 3/4"	16	20	45	20	25	GG51116C00
20 x 1/2"	16	18	50	18	36	GG51120B00
20 x 3/4"	16	20	50	19	38	GG51120C00
25 x 1/2"	16	18	57	19	53	GG51125B00
25 x 3/4"	16	20	57	20	54	GG51125C00
25 x 1"	16	20	57	26	56	GG51125D00
32 x 3/4"	16	20	64	23	81	GG51132C00
32 x 1"	16	20	64	26	83	GG51132D00
32 x 1 1/4"	16	24	64	26	89	GG51132E00
40 x 1"	16	20	76	26	137	GG51140D00
40 x 1 1/4"	16	24	76	29	140	GG51140E00
40 x 1 1/2"	16	24	76	29	143	GG51140F00
50 x 1 1/4"	16	24	88	29	214	GG51150E00
50 x 1 1/2"	16	24	88	29	214	GG51150F00
50 x 2"	16	29	88	34	222	GG51150G00
63 x 1 1/2"	16	24	103	29	341	GG51163F00
63 x 2"	16	29	103	34	347	GG51163G00
63 x 2 1/2"	16	32	103	39	361	GG51163H00
75 x 2"	10	29	118	34	520	GR51175G00
75 x 2 1/2"	10	32	118	40	516	GR51175H00
75 x 3"	10	38	118	43	534	GR51175I00
90 x 2"	10	29	136	34	740	GR51190G00
90 x 2 1/2"	10	32	136	40	750	GR51190H00
90 x 3"	10	38	136	43	750	GR51190I00
90 x 4"	10	44	136	49	793	GR51190L00
110 x 2"	10	27	150	34	1040	GG51111G00
110 x 3"	10	38	151	43	1138	GR51111I00
110 x 4"	10	44	151	49	1156	GR51111L00

d20-25-32 DVGW approved, certification n. DW-8616BQ0078



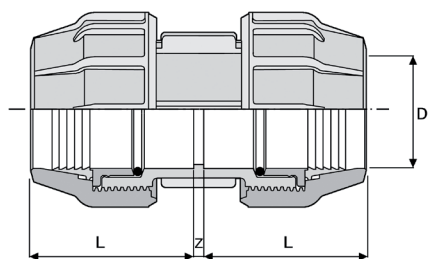
**512**  
Reducer coupling

D x D1	PN	L1	L2	Z	g	Code
20 x 16	16	40,5	50	4	54	GG51220A00
25 x 20	16	50	57	4	81	GG51225B00
32 x 20	16	50	57,5	4	109	GG51232B00
32 x 25	16	53	58	4	123	GG51232C00
40 x 25	16	57	76	4	183	GG51240C00
40 x 32	16	64	76	4	190	GG51240D00
50 x 25	16	57	88	4	262	GG51250C00
50 x 32	16	64	88	4	281	GG51250D00
50 x 40	16	76	88	4	319	GG51250E00
63 x 32	16	64	103	4	403	GG51263D00
63 x 40	16	76	103	4	450	GG51263E00
63 x 50	16	88	103	4	492	GG51263F00
75 x 50	10	88	118	4	664	GR51275F00
75 x 63	10	103	118	4	757	GR51275G00
90 x 63	10	103	136	4	980	GR51290G00
90 x 75	10	118	136	4	1123	GR51290H00
110 x 75	10	118	151	4	1502	GG51211H00
110 x 90	10	136	151	4	1682	GR51211I00



**601**  
Female adaptor

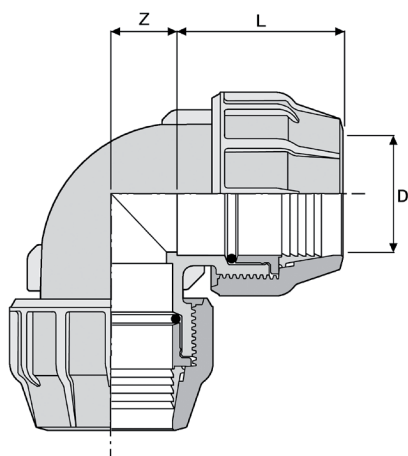
D x G	PN	L	L2	Z	g	Code
16 x 3/8"	16	19	45	4	26	GG60116A00
16 x 1/2"	16	19	45	4	30	GG60116B00
20 x 1/2"	16	19	50	5	41	GG60120B00
20 x 3/4"	16	21	50	6	47	GG60120C00
25 x 1/2"	16	19	57	3	54	GG60125B00
25 x 3/4"	16	21	57	6	61	GG60125C00
25 x 1"	16	21	57	8	68	GG60125D00
32 x 1/2"	16	19	64	4	85	GG60132B00
32 x 3/4"	16	21	64	4	88	GG60132C00
32 x 1"	16	21	64	7	95	GG60132D00
32 x 1 1/4"	16	25	64	8	100	GG60132E00
40 x 1"	16	21	76	4	148	GG60140D00
40 x 1 1/4"	16	25	76	4	155	GG60140E00
40 x 1 1/2"	16	25	76	6	172	GG60140F00
50 x 1 1/4"	16	25	88	4	231	GG60150E00
50 x 1 1/2"	16	25	88	6	234	GG60150F00
50 x 2"	16	30	88	6	254	GG60150G00
63 x 1 1/2"	16	25	103	9	360	GG60163F00
63 x 2"	16	30	103	3	374	GG60163G00
75 x 2"	10	30	118	7	537	GR60175G00
75 x 2 1/2"	10	33	118	4	635	GR60175H00
75 x 3"	10	39	118	6	580	GR60175I00
90 x 2"	10	30	136	3	700	GR60190G00
90 x 2 1/2"	10	33	136	10	730	GR60190H00
90 x 3"	10	39	136	10	932	GR60190I00
110 x 3"	10	39	151	10	1316	GG60111I00
110 x 4"	10	45	151	10	1390	GR60111L00



**510**  
Coupling

D x D	PN	L	Z	g	Code
16 x 16	16	45	4	42	GG51016000
20 x 20	16	50	4	66	GG51020000
25 x 25	16	57	4	96	GG51025000
32 x 32	16	64	4	144	GG51032000
40 x 40	16	76	4	242	GG51040000
50 x 50	16	88	4	374	GG51050000
63 x 63	16	103	9	599	GG51063000
75 x 75	10	118	4	905	GR51075000
90 x 90	10	136	5	1290	GR51090000
110 x 110	10	151	4	1970	GR51011000

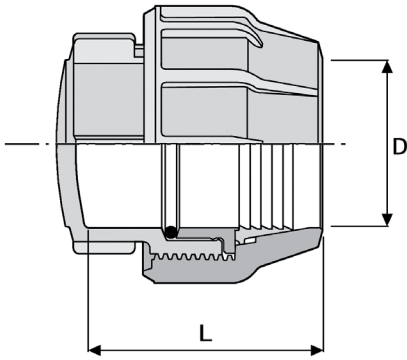
d20-25-32 DVGW approved, certification n. DW-8616BQ0078



**513**  
Elbow

D x D	PN	L	Z	g	Code
16 x 16	16	45	11	45	GG51316000
20 x 20	16	50	13	70	GG51320000
25 x 25	16	57	15	105	GG51325000
32 x 32	16	64	19	161	GG51332000
40 x 40	16	76	23	269	GG51340000
50 x 50	16	88	28	415	GG51350000
63 x 63	16	103	35	656	GG51363000
75 x 75	10	118	41	994	GR51375000
90 x 90	10	136	49	1450	GR51390000
110 x 110	10	151	60	2193	GR51311000

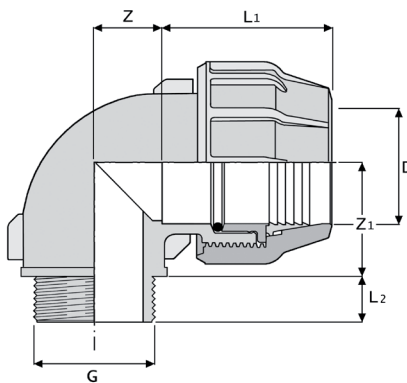
d20-25-32 DVGW approved, certification n. DW-8616BQ0078



**521**  
Plug

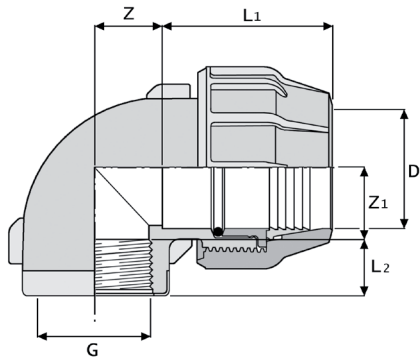
D	PN	L	g	Code
16	16	45	29	GG52116000
20	16	50	40	GG52120000
25	16	57	55	GG52125000
32	16	64	86	GG52132000
40	16	76	152	GG52140000
50	16	88	230	GG52150000
63	16	103	348	GG52163000
75	10	118	452	GR52175000
90	10	136	750	GR52190000
110	10	151	1031	GR52111000

d20-25-32 DVGW approved, certification n. DW-8616BQ0078



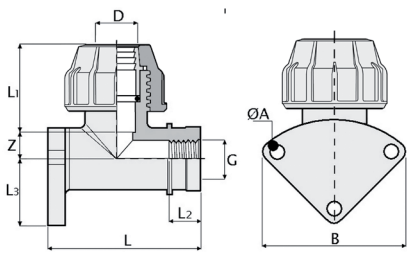
**519**  
Elbow male threaded

D x G	PN	L1	L2	Z	Z1	g	Code
16 x 1/2"	16	45	18	11	40	29	GG51916B00
20 x 1/2"	16	50	18	13	46	50	GG51920B00
20 x 3/4"	16	50	20	13	46	50	GG51920C00
25 x 1/2"	16	57	20	15	52	75	GG51925B00
25 x 3/4"	16	57	20	15	52	75	GG51925C00
25 x 1"	16	57	20	15	52	75	GG51925D00
32 x 1"	16	64	20	19	61	120	GG51932D00
32 x 1 1/4"	16	64	24	19	61	120	GG51932E00
40 x 1 1/4"	16	76	24	23	69	198	GG51940E00
40 x 1 1/2"	16	76	24	23	69	198	GG51940F00
50 x 1 1/2"	16	88	24	28	82	305	GG51950F00
50 x 2"	16	88	29	28	82	305	GG51950G00
63 x 2"	16	103	29	35	96	480	GG51963G00
63 x 2 1/2"	16	103	32	35	96	480	GG51963H00
75 x 2 1/2"	10	118	32	41	111	709	GR51975H00
75 x 3"	10	118	38	41	111	709	GR51975I00
90 x 3"	10	136	38	49	128	1031	GR51990I00
110 x 4"	10	153	44	58	143	1549	GR51911L00



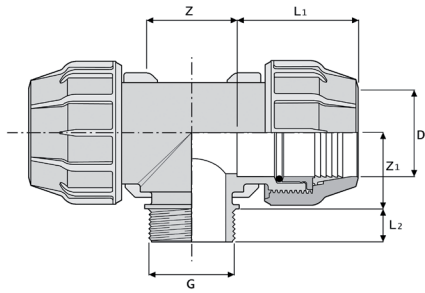
**518**  
Elbow female threaded

D x G	PN	L1	L2	Z	Z1	g	Code
16 x 3/8"	16	45	19	11	25	32	GG51816A00
16 x 1/2"	16	45	19	11	28	32	GG51816B00
20 x 1/2"	16	50	19	13	28	51	GG51820B00
20 x 3/4"	16	57	20	13	28	51	GG51820C00
25 x 1/2"	16	57	19	13	28	75	GG51825B00
25 x 3/4"	16	57	21	15	31	77	GG51825C00
25 x 1"	16	57	21	15	31	77	GG51825D00
32 x 1/2"	16	64	19	19	40	122	GG51832B00
32 x 3/4"	16	64	21	19	40	122	GG51832C00
32 x 1"	16	64	21	19	40	122	GG51832D00
32 x 1 1/4"	16	64	25	19	40	122	GG51832E00
40 x 1 1/4"	16	76	25	23	44	198	GG51840E00
40 x 1 1/2"	16	76	25	23	51	198	GG51840F00
50 x 1 1/2"	16	88	25	28	55	316	GG51850F00
50 x 2"	16	88	30	28	55	316	GG51850G00
63 x 2"	16	103	30	35	63	582	GG51863G00
63 x 2 1/2"	16	103	33	35	78	499	GG51863H00
75 x 2 1/2"	10	118	33	41	73	810	GR51875H00
75 x 3"	10	118	39	41	73	810	GR51875I00
90 x 3"	10	136	39	49	87	1213	GR51890I00
110 x 4"	10	151	45	60	103	1767	GR51811L00



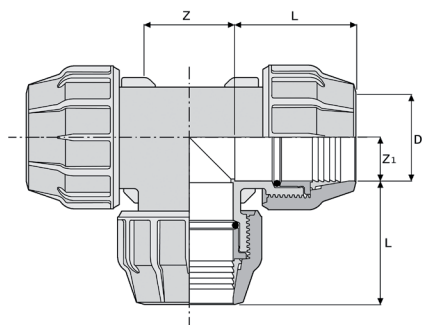
**524**  
Wallbrackets

D x G	PN	L	L1	L2	Z	A	B	g	Code
25 x 3/4"	16	83,5	57	21	14	6	62	76	GG52425C00



**516**  
Tee male threaded

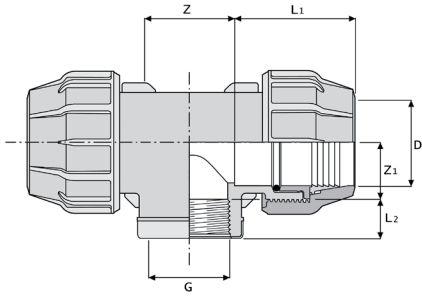
D x G x D	PN	L1	L2	Z	Z1	g	Code
16 x 1/2" x 16	16	45	18	22	40	52	GG51616B00
20 x 1/2" x 20	16	50	18	26	46	82	GG51620B00
20 x 3/4" x 20	16	50	20	26	46	82	GG51620C00
25 x 3/4" x 25	16	57	20	30	52	122	GG51625C00
25 x 1" x 25	16	57	20	30	52	122	GG51625D00
32 x 1" x 32	16	64	20	38	31	190	GG51632D00
32 x 1 1/4" x 32	16	64	24	38	31	190	GG51632E00
40 x 1 1/4" x 40	16	76	24	46	39	322	GG51640E00
40 x 1 1/2" x 40	16	76	24	46	39	322	GG51640F00
50 x 1 1/2" x 50	16	88	24	56	82	490	GG51650F00
50 x 2" x 50	16	88	29	56	82	490	GG51650G00
63 x 2" x 63	16	103	29	70	96	775	GG51663G00
63 x 2 1/2" x 63	16	103	32	70	96	775	GG51663H00
75 x 2 1/2" x 75	10	118	32	82	111	790	GR51675H00
90 x 3" x 90	10	125	38	97	122	1800	GR51690I00
110 x 4" x 110	10	144	44	119	143	2523	GR51611L00



**514**  
Tee

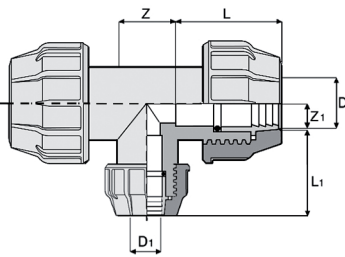
D x D1 x D	PN	L	Z	Z1	g	Code
16 x 16 x 16	16	45	22	11	66	GG51416000
20 x 20 x 20	16	50	26	13	101	GG51420000
20 x 25 x 20	16	53	26	13	115	GG51420C00
25 x 25 x 25	16	57	30	15	151	GG51425000
25 x 32 x 25	16	54	30	15	190	GG51425D00
32 x 32 x 32	16	64	38	19	236	GG51432000
40 x 40 x 40	16	76	46	23	390	GG51440000
50 x 50 x 50	16	88	56	28	598	GG51450000
63 x 63 x 63	16	103	70	35	944	GG51463000
75 x 75 x 75	10	118	82	41	1427	GR51475000
90 x 90 x 90	10	136	98	49	2113	GR51490000
110 x 110 x 110	10	151	120	60	3191	GR51411000

d20-25-32 DVGW approved, certification n. DW-8616BQ0078



**515**  
Tee female threaded

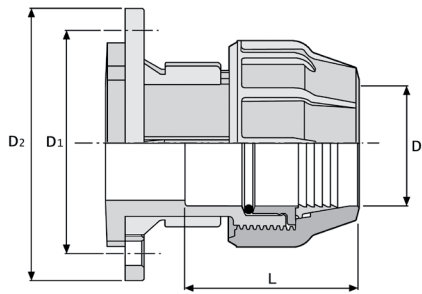
D x G x D	PN	L1	L2	Z	Z1	g	Code
16 x 3/8" x 16	16	45	19	22	25	55	GG51516A00
16 x 1/2" x 16	16	45	19	22	19	48	GG51516B00
20 x 1/2" x 20	16	50	19	26	27	85	GG51520B00
20 x 3/4" x 20	16	50	19	26	27	85	GG51520C00
25 x 1/2" x 25	16	57	19	30	31	127	GG51525B00
25 x 3/4" x 25	16	57	21	30	31	127	GG51525C00
25 x 1" x 25	16	57	21	30	35	127	GG51525D00
32 x 1/2" x 32	16	64	19	38	40	195	GG51532B00
32 x 3/4" x 32	16	64	21	38	40	195	GG51532C00
32 x 1" x 32	16	64	21	38	40	195	GG51532D00
32 x 1 1/4" x 32	16	64	25	38	40	195	GG51532E00
40 x 1" x 40	16	76	21	46	44	322	GG51540D00
40 x 1 1/4" x 40	16	76	25	46	44	322	GG51540E00
40 x 1 1/2" x 40	16	76	25	46	50	322	GG51540F00
50 x 1 1/2" x 50	16	88	25	56	55	510	GG51550F00
50 x 2" x 50	16	88	25	56	55	510	GG51550G00
63 x 2" x 63	16	103	30	70	64	801	GG51563G00
63 x 2 1/2" x 63	16	103	33	70	64	801	GG51563H00
75 x 2 1/2" x 75	10	118	33	82	75	1270	GR51575H00
90 x 3" x 90	10	136	36	98	87	1882	GR51590I00
110 x 4" x 110	10	151	40	120	103	2780	GR51511L00



**523**  
Reduced Tee

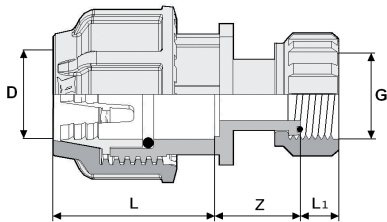
D x D1 x D	PN	L	L1	Z	Z1	g	Code
20 x 16 x 20	16	47	44	25	13	93	GG52320A00
25 x 20 x 25	16	51,5	47	30	14	132	GG52325B00
32 x 25 x 32	16	57,5	51	32	19	207	GG52332C00
40 x 32 x 40	16	83	75	40	17	340	GG52340D00
50 x 40 x 50	16	100	90	44	23	580	GG52350E00
63 x 50 x 63	16	95	85	66	33	950	GG52363F00





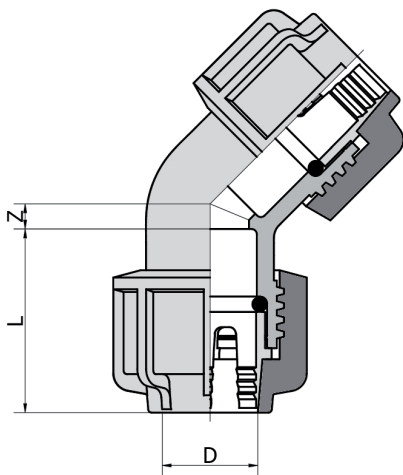
**520**  
Flange adaptor

D x DN	PN	L	D1	D2	n°Drill	g	Code
50 x 1 1/2	16	86	110	150	4	1033	GG52050F00
63 x 2"	16	98	125	163	4	1217	GG52063G00
75 x 2 1/2	10	118	145	185	4	1843	GR52075H00
75 x 3"	10	118	160	200	8	2516	GR52075I00
90 x 3"	10	136	160	200	8	2207	GR52090I00
90 x 4"	10	136	180	220	8	3190	GR52090L00
110 x 4"	10	151	180	220	8	2635	GR52011L00



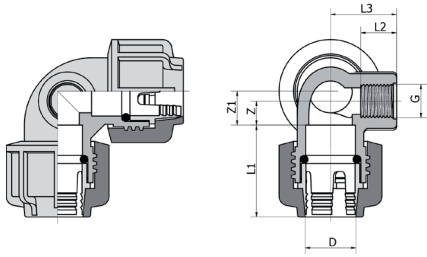
**525**  
Adaptor with nut

D x G	PN	L	L1	Z	g	Code
25 x 1"	16	55	13,2	30	70	GG52525D00
32 x 1"	16	57	13,2	33	105	GG52532D00



**526**  
Elbow 45°

D x D	PN	L	Z	g	Code
20 x 20	16	47	6,5	66	GG52620000
25 x 25	16	52	7	96	GG52625000
32 x 32	16	56	8,5	159	GG52632000
40 x 40	16	70	11	268	GG52640000

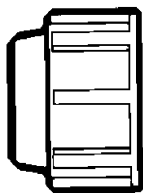


## 527

Elbow female threaded with orthogonal derivation

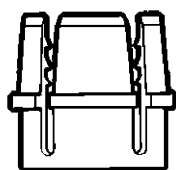
D x G x D	PN	L1	L2	L3	Z	Z1	g	Code
25 x 1/2" x 25	16	49	19	35	13	18	104	GG52725B00
32 x 3/4" x 32	16	58	19	36	16	20,5	108	GG52732C00

# COMPONENTS AND SPARE PARTS



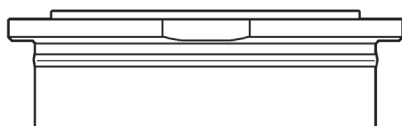
**GHP**  
Nut

D	Code
16	10GHI2000N016
20	10GHI2000N020
25	10GHI2000N025
32	10GHI2000N032
40	10GHI2000N040
50	10GHI2000N050
63	10GHI2000N063
75	10GHI2100N075
90	10GHI2100N090
110	10GHI2100N110



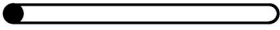
**AGR**  
Clinching ring

D	Code
16	10AGR6000B016
20	10AGR6000B020
25	10AGR6000B025
32	10AGR6000B032
40	10AGR6000B040
50	10AGR6000B050
63	10AGR6000B063
75	10AGR6100B075
90	10AGR6100B090
110	10AGR6100B110



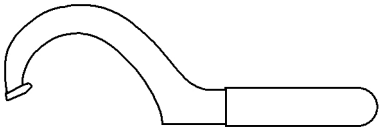
**BUS**  
Bushing ring

D	Code
75	10BUS2100N075
90	10BUS2100N090
110	10BUS2100N110



**GRD**  
O-ring gasket

D	Code
16	4OR1557I
20	4OR1558I
25	4OR1559I
32	4OR1560I
40	4OR1561I
52	4OR1562I
63	4OR1563I
75 (GG)	4OR1564I
75 (GR)	4OR1567I
90	4OR1565I
110 (GG)	4OR1566I
110 (GR)	4OR1568I

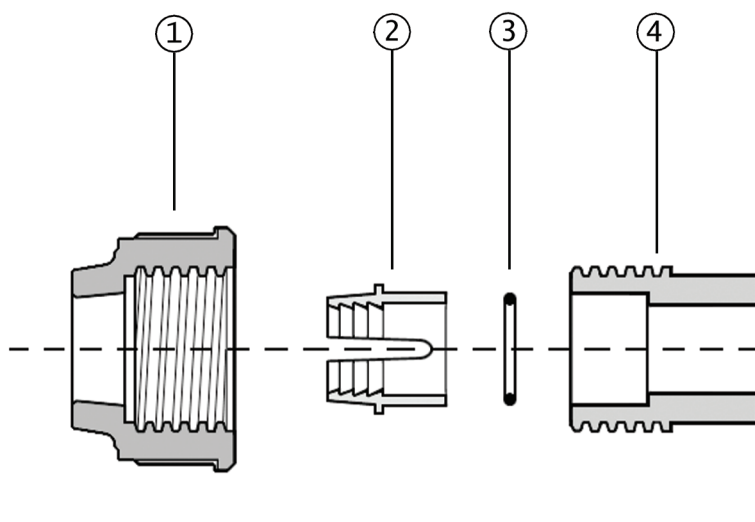


**Tightening key**

D	g	Code
40÷63	400	MAGNUMGRI040063
75÷110	1000	MAGNUMGRI075110

# COMPONENTS

## EXPLODED VIEW DN 10÷50

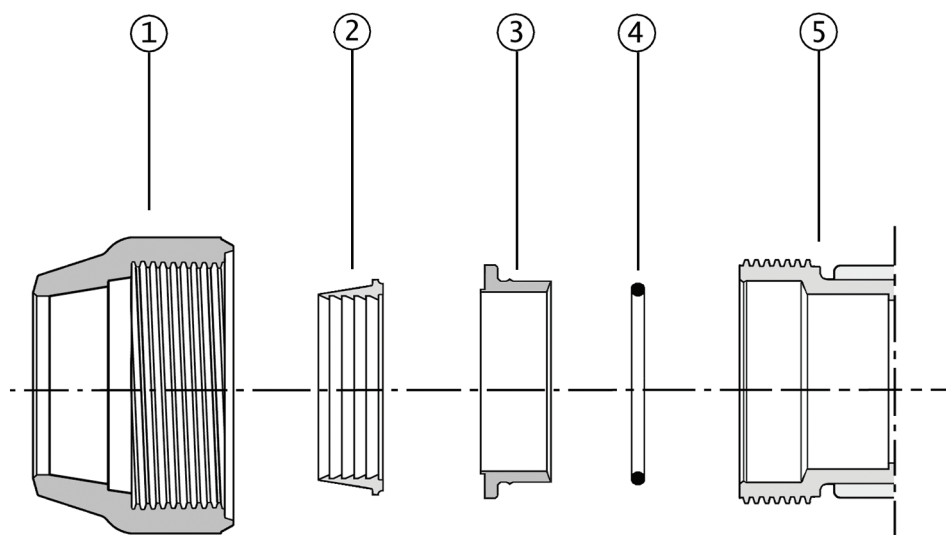


**DN 10 ÷ 50**

- 1** Nut
- 2** Clinching ring

- 3** O-ring
- 4** Body

## EXPLODED VIEW DN 65÷100



**DN 65 ÷ 100**

- 1 Nut
- 2 Clinching ring

- 3 Thrust bushing
- 4 O-ring

- 5 Body

# INSTALLATION

## INSTALLATION D 16÷40

1. Cut the pipe at 90 ° to its axis using a pipe cutter (figure 1).
2. Any burrs and chips resulting from the cutting must be removed. A small chamfering at the end of the pipe will make the assembly easier.
3. Loosen the joint ring nut to the last thread engaged (the fitting doesn't need to be dismantled).
4. Insert the pipe joint ring into the fitting to the beat and tightly screw the ring nut (figure 2 and 3).

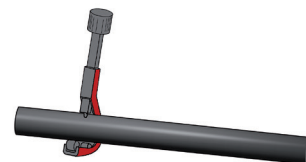
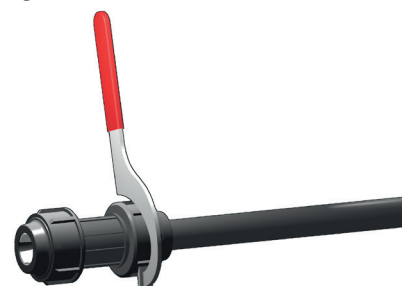


Fig.2



Fig.3



## INSTALLATION D 50÷63

1. Cut the pipe at 90 ° to its axis using a pipe cutter (figure 1).
2. Any burrs and chips resulting from the cutting must be removed.
3. Insert on the pipe these items in the following order: the ring nut, the clinching ring and put the o'ring onto the pipe inlet. Before carrying out this operation, lubricate the pipe and the seal to ease the insertion (figure 1).
4. Insert the fitting body until the seal beats in the body (figure 2).
5. Tightly screw the ring nut with the proper spanner (figure 3).

Fig.1

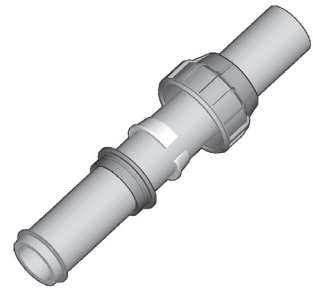


Fig.2

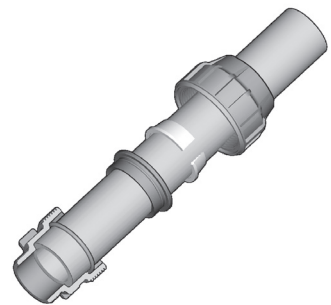
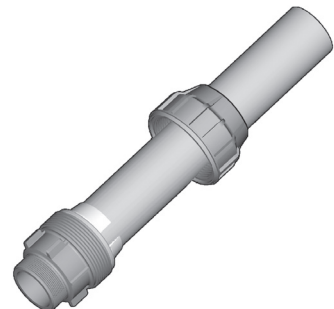


Fig.3





## INSTALLATION D 75÷110

1. Cut the pipe at 90 ° to its axis using a pipe cutter.
2. Any burrs and chips resulting from the cutting must be removed (figure 1).
3. Insert on the pipe these items in the following order: the ring nut, the presser bush, the o-ring and the fitting body. Before carrying out this operation, lubricate both the pipe and the seal to ease the insertion (figure 2).
4. Tightly screw the ring nut to allow the introduction of the seal until it beats in the body. Unscrew the ring nut, open the clinching ring and insert it into the pipe (figure 3).
5. Tightly screw the ring nut with the proper spanner.

Fig.1

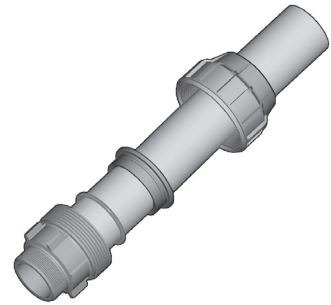


Fig.2

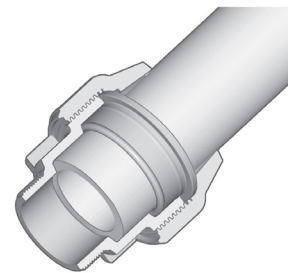
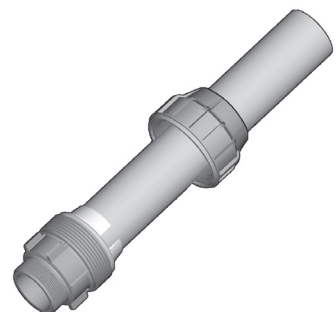


Fig.3





# Technical catalogue



Clamp saddles in PP-H



# Reference standards

**Production of the ASTORE clamp saddles is carried out according to the highest quality standards and in full compliance with the environmental restrictions set by the applicable laws in force and in accordance with ISO 14001. All products are made in accordance with the quality guarantee system in compliance with ISO 9001.**

- **ISO 727**  
PVC-U pipes and fittings. Dimensions and tolerances – metric series
- **EN ISO 1452**  
PVC-U pipes and fittings for water supply systems
- **ISO 228-1**  
Fittings with threaded connections
- **ISO 7**  
Fittings with pressure-tight threaded joints
- **EN 10226-1/2**  
Pipe threads where pressure tight joints are made on the threads.  
Part 2: Taper external threads and taper internal threads – Dimensions, tolerances and designation
- **ISO 4427**  
PE pipe system for water supply
- **UNI EN 12201**  
Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene
- **ISO 13460**  
Agricultural irrigation equipment – Plastics saddles for polyethylene pressure pipes

# Approvals and quality marks



- **OQC by NSF**

ASTORE products are OQC certified, Certificate of Controlled Origin by NSF.

NSF with the brand OQC (Origin and Quality controlled) also declare the suitability of the products for transporting potable water.

For the detailed list of certified products please refer to OQC on the [www.nsf.org](http://www.nsf.org) site

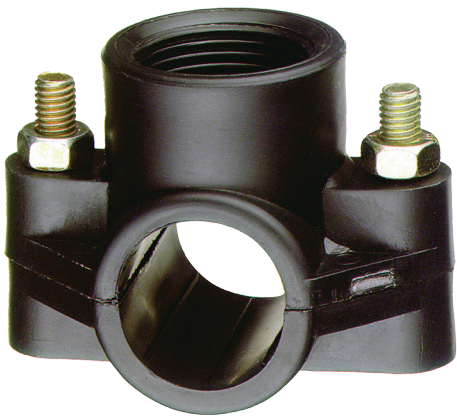
# CLAMP SADDLES PP

Astore clamp saddles are the ideal solution for branching from existing pipelines for water and irrigation.

## CLAMP SADDLES IN PP

- Astore clamp saddles are supplied in three types: 503, 505 and 508.

Technical specifications	
<b>Size range</b>	<p><b>503 single branch:</b> Coupling with pipes from D 20 up to D 110 mm, threaded branches from 1/2" to 3". Provided with 2 or 4 bolts according to the diameters.</p> <p><b>505 single branch:</b> Coupling with pipes from D 20 up to D 315 mm, threaded branches from 1/2" to 4". Provided with 2, 4 or 6 bolts according to the diameters and metal reinforcing ring on the threaded branches.</p> <p><b>508 double branch:</b> Coupling with pipes from D 20 up to D 315 mm, threaded branches from 1/2" to 4". Provided with 2, 4 or 6 bolts according to the diameters and metal reinforcing ring on the threaded branches.</p>
<b>Pressione nominale</b>	<p><b>503:</b> pressure rating at 20° C: 6 bar according to ISO 13460.</p> <p><b>505-508:</b> see enclosed table.</p>
<b>Reference standards</b>	<p>Threads following DIN 2999 - BS 21 - ISO 7-1 up to D 160 mm, ISO 228 from D 180 to D 315 mm.</p> <p>Coupling to pipes complying:</p> <ul style="list-style-type: none"> <li>-PE metric sized according to, ISO 4427 and EN 12201.</li> <li>-PVC metric sized according to EN ISO 1452.</li> <li>-PP metric sized according to EN ISO 15494.</li> </ul>
<b>Materials</b>	<p>Saddle body in PP black co-polymer, nuts and bolts in zinc chromed steel, o-ring gasket in NBR, reinforcing ring in AISI 430.</p> <p>In case of very aggressive atmospheres (like very close to the sea) the installator has to choose the adequate metallic nuts and bolts.</p>



503



505



508

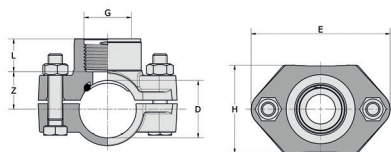
## 505-508 WORKING PRESSURE

at 20° according to ISO 13460

d x R	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
20	10 bar								
25	10 bar	10 bar							
32	10 bar	10 bar	10 bar						
40	10 bar	10 bar	10 bar						
50	10 bar	10 bar	10 bar						
63	10 bar	10 bar	10 bar	10 bar	10 bar				
75	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar			
90	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar			
110	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar		6 bar	
125		10 bar	10 bar	10 bar	10 bar	10 bar			
140			10 bar	10 bar	10 bar	10 bar	6 bar	6 bar	
160		10 bar	10 bar	10 bar	10 bar	10 bar		6 bar	
180				6 bar	6 bar	6 bar		6 bar	6 bar
200				6 bar	6 bar	6 bar		6 bar	6 bar
225				4 bar	4 bar	4 bar		4 bar	4 bar
250				4 bar	4 bar	4 bar		4 bar	4 bar
280				4 bar	4 bar	4 bar		4 bar	4 bar
315				4 bar	4 bar	4 bar		4 bar	4 bar



# CLAMP SADDLES IN PP



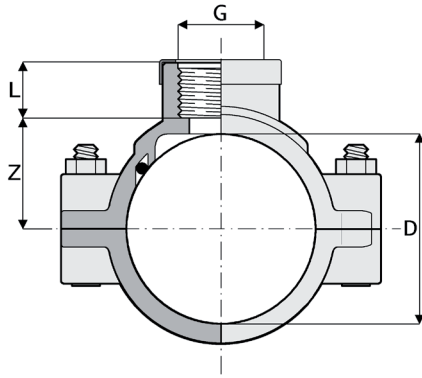
## 503

Clamp saddle for irrigation

Gasket: NBR O-ring

Bolts: Zinc chromed steel. 2 or 4 pcs. according to the diameter

D x G	PN	L	Z	E	H	g	n°Bolts	Bolts	Code
20 x 1/2"	6	17	16	62	37,5	51	2	M6 x 35	1S50320B00F
25 x 1/2"	6	18,5	18,5	69	43	62	2	M6 x 35	1S50325B00F
25 x 3/4"	6	18,5	18,5	69	43	66	2	M6 x 35	1S50325C00F
32 x 1/2"	6	17	22	78	49	96	2	M8 x 45	1S50332B00F
32 x 3/4"	6	18,3	21	78	49	98	2	M8 x 45	1S50332C00F
32 x 1"	6	18,5	22,5	91	60	131	2	M8 x 45	1S50332D00F
40 x 1/2"	6	17	28	84	55	115	2	M8 x 45	1S50340B00F
40 x 3/4"	6	18,3	28,5	84	55	120	2	M8 x 45	1S50340C00F
40 x 1"	6	22	27	84	55	125	2	M8 x 45	1S50340D00F
50 x 1/2"	6	17	34,5	87	57	117	2	M8 x 45	1S50350B00F
50 x 3/4"	6	18,3	34,5	87	57	120	2	M8 x 45	1S50350C00F
50 x 1"	6	22	34,5	87	57	125	2	M8 x 45	1S50350D00F
63 x 1/2"	6	17	40	100	71	235	4	M8 x 50	1S50363B00F
63 x 3/4"	6	20	40	100	71	240	4	M8 x 50	1S50363C00F
63 x 1"	6	22	40	100	71	242	4	M8 x 50	1S50363D00F
63 x 1 1/4"	6	24	40	100	71	250	4	M8 x 50	1S50363E00F
63 x 1 1/2"	6	24	40	100	71	255	4	M8 x 50	1S50363F00F
75 x 1/2"	6	17	44,5	120	91	310	4	M8 x 50	1S50375B00F
75 x 3/4"	6	20	44,5	120	91	315	4	M8 x 50	1S50375C00F
75 x 1"	6	22	44,5	120	91	322	4	M8 x 50	1S50375D00F
75 x 1 1/4"	6	24	44,5	120	91	350	4	M8 x 50	1S50375E00F
75 x 1 1/2"	6	24	44,5	120	91	330	4	M8 x 50	1S50375F00F
75 x 2"	6	26	44,5	120	91	330	4	M8 x 50	1S50375G00F
90 x 1/2"	6	17	52	137	91	355	4	M8 x 60	1S50390B00F
90 x 3/4"	6	20	52	137	91	357	4	M8 x 60	1S50390C00F
90 x 1"	6	22	52	137	91	360	4	M8 x 60	1S50390D00F
90 x 1 1/4"	6	24	52	137	91	360	4	M8 x 60	1S50390E00F
90 x 1 1/2"	6	24	52	137	91	368	4	M8 x 60	1S50390F00F
90 x 2"	6	26	52	137	91	374	4	M8 x 60	1S50390G00F
110 x 1/2"	6	17	65	155	98,5	400	4	M8 x 60	1S50311B00F
110 x 3/4"	6	20	65	155	98,5	403	4	M8 x 60	1S50311C00F
110 x 1"	6	22	65	155	98,5	410	4	M8 x 60	1S50311D00F
110 x 1 1/4"	6	24	65	155	98,5	420	4	M8 x 60	1S50311E00F
110 x 1 1/2"	6	24	65	155	98,5	426	4	M8 x 60	1S50311F00F
110 x 2"	6	24	65	155	98,5	435	4	M8 x 60	1S50311G00F
110 x 3"	6	33	65	159	118,5	507	4	M8 x 60	1S50311I00F



## 505

Clamp saddle with reinforcing metal ring

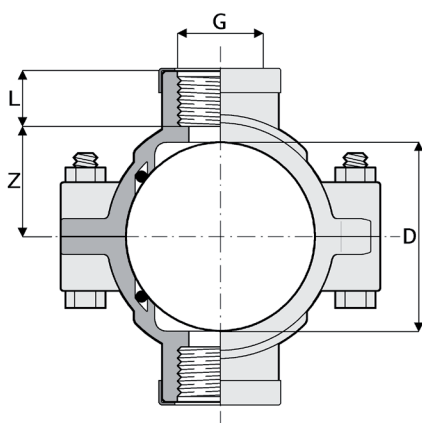
Metal ring: AISI 430

Gasket: NBR O-ring

Bolts: Zinc chromed steel. 2, 4 or 6 pcs. according to the diameter

D x G	PN	L	Z	E	H	g	n°Bolts	Bolts	Code
20 x 1/2"	10	17	16	62	37,5	56	2	M6 x 35	1S50520B00F
25 x 1/2"	10	18,5	18,5	69	43	67	2	M6 x 35	1S50525B00F
25 x 3/4"	10	18,5	18,5	69	43	71	2	M6 x 35	1S50525C00F
32 x 1/2"	10	17	22	78	49	99	2	M8 x 45	1S50532B00F
32 x 3/4"	10	18,3	21	78	49	103	2	M8 x 45	1S50532C00F
32 x 1"	10	18,5	22,5	91	60	138	2	M8 x 45	1S50532D00F
40 x 1/2"	10	17	28	84	55	119	2	M8 x 45	1S50540B00F
40 x 3/4"	10	18,3	28,5	84	55	125	2	M8 x 45	1S50540C00F
40 x 1"	10	22	27	84	55	132	2	M8 x 45	1S50540D00F
50 x 1/2"	10	17	34,5	87	57	119	2	M8 x 45	1S50550B00F
50 x 3/4"	10	18,3	34,5	87	57	123	2	M8 x 45	1S50550C00F
50 x 1"	10	22	34,5	87	57	132	2	M8 x 45	1S50550D00F
63 x 1/2"	10	17	40	100	71	237	4	M8 x 50	1S50563B00F
63 x 3/4"	10	20	40	100	71	244	4	M8 x 50	1S50563C00F
63 x 1"	10	22	40	100	71	249	4	M8 x 50	1S50563D00F
63 x 1 1/4"	10	24	40	100	71	260	4	M8 x 50	1S50563E00F
63 x 1 1/2"	10	24	40	100	71	267	4	M8 x 50	1S50563F00F
75 x 1/2"	10	17	44,5	120	91	312	4	M8 x 50	1S50575B00F
75 x 3/4"	10	20	44,5	120	91	319	4	M8 x 50	1S50575C00F
75 x 1"	10	22	44,5	120	91	329	4	M8 x 50	1S50575D00F
75 x 1 1/4"	10	24	44,5	120	91	360	4	M8 x 50	1S50575E00F
75 x 1 1/2"	10	24	44,5	120	91	342	4	M8 x 50	1S50575F00F
75 x 2"	10	26	44,5	120	91	346	4	M8 x 50	1S50575G00F
90 x 1/2"	10	17	52	137	91	358	4	M8 x 60	1S50590B00F
90 x 3/4"	10	20	52	137	91	360	4	M8 x 60	1S50590C00F
90 x 1"	10	22	52	137	91	367	4	M8 x 60	1S50590D00F
90 x 1 1/4"	10	24	52	137	91	370	4	M8 x 60	1S50590E00F
90 x 1 1/2"	10	24	52	137	91	380	4	M8 x 60	1S50590F00F
90 x 2"	10	26	52	137	91	390	4	M8 x 60	1S50590G00F
110 x 1/2"	10	17	65	155	98,5	403	4	M8 x 60	1S50511B00F
110 x 3/4"	10	20	65	155	98,5	407	4	M8 x 60	1S50511C00F
110 x 1"	10	22	65	155	98,5	417	4	M8 x 60	1S50511D00F
110 x 1 1/4"	10	24	65	155	98,5	430	4	M8 x 60	1S50511E00F
110 x 1 1/2"	10	24	65	155	98,5	438	4	M8 x 60	1S50511F00F
110 x 2"	10	24	65	155	98,5	451	4	M8 x 60	1S50511G00F
110 x 3"	10	33	65	155	98,5	537	4	M8 x 60	1S50511I00F
125 x 3/4"	10	20	73,5	168	101	540	4	M8 x 60	1S50513C00F
125 x 1"	10	22	73,5	168	101	543	4	M8 x 60	1S50513D00F
125 x 1 1/4"	10	24	73,5	168	101	545	4	M8 x 60	1S50513E00F
125 x 1 1/2"	10	24	73,5	168	101	548	4	M8 x 60	1S50513F00F
125 x 2"	10	24	73,5	168	101	552	4	M8 x 60	1S50513G00F
140 x 1"	10	22	80	189	134	921	6	M8 x 60	1S50515D00F
140 x 1 1/4"	10	24	80	189	134	923	6	M8 x 60	1S50515E00F
140 x 1 1/2"	10	24	80	189	134	926	6	M8 x 60	1S50515F00F
140 x 2"	10	24	80	189	134	930	6	M8 x 60	1S50515G00F
140 x 2 1/2"	10	24	80	189	134	937	6	M8 x 60	1S50515H00F
140 x 3"	10	33	80	189	134	944	6	M8 x 60	1S50515I00F
160 x 3/4"	10	22	88	213	137	987	6	M8 x 60	1S50517C00F

D x G	PN	L	Z	E	H	g	n°Bolts	Bolts	Code
160 x 1"	10	22	88	213	137	991	6	M8 x 60	1S50517D00F
160 x 1"1/4	10	24	88	213	137	994	6	M8 x 60	1S50517E00F
160 x 1"1/2	10	24	88	213	137	996	6	M8 x 60	1S50517F00F
160 x 2"	10	28,5	88	213	137	1000	6	M8 x 60	1S50517G00F
160 x 3"	10	36	88	213	137	1014	6	M8 x 60	1S50517I00F
180 x 1"1/4	6	24	115	265	171	2289	6	M10 x 80	1S50518E00
180 x 1"1/2	6	24	115	265	171	2292	6	M10 x 80	1S50518F00
180 x 2"	6	24	115	265	171	2296	6	M10 x 80	1S50518G00
180 x 3"	6	33	115	265	171	2310	6	M10 x 80	1S50518I00
180 x 4"	6	42	115	265	171	2314	6	M10 x 80	1S50518L00
200 x 1"1/4	6	24	115	265	171	2019	6	M10 x 80	1S50521E00
200 x 1"1/2	6	24	115	265	171	2022	6	M10 x 80	1S50521F00
200 x 2"	6	24	115	265	171	2026	6	M10 x 80	1S50521G00
200 x 3"	6	33	115	265	171	2040	6	M10 x 80	1S50521I00
200 x 4"	6	42	115	265	171	2044	6	M10 x 80	1S50521L00
225 x 1"1/4	4	24	127,5	280	173	2165	6	M10 x 80	1S50523E00
225 x 1"1/2	4	24	127,5	280	173	2145	6	M10 x 80	1S50523F00
225 x 2"	4	24	127,5	280	173	2155	6	M10 x 80	1S50523G00
225 x 3"	4	33	127,5	280	173	2180	6	M10 x 80	1S50523I00
225 x 4"	4	42	127,5	280	173	2210	6	M10 x 80	1S50523L00
250 x 1"1/4	4	24	142	313	181	2545	6	M10 x 80	1S50526E00
250 x 1"1/2	4	24	142	313	181	2548	6	M10 x 80	1S50526F00
250 x 2"	4	22,4	142	313	181	2552	6	M10 x 80	1S50526G00
250 x 3"	4	33	142	313	181	2566	6	M10 x 80	1S50526I00
250 x 4"	4	42	142	313	181	2570	6	M10 x 80	1S50526L00
280 x 1"1/4	4	24	171	385	190	4069	6	M10 x 80	1S50528E00
280 x 1"1/2	4	24	171	385	190	4072	6	M10 x 80	1S50528F00
280 x 2"	4	24	171	385	190	4076	6	M10 x 80	1S50528G00
280 x 3"	4	33	171	385	190	4090	6	M10 x 80	1S50528I00
280 x 4"	4	42	171	385	190	4094	6	M10 x 80	1S50528L00
315 x 1"1/4	4	24	171	385	190	3168	6	M10 x 80	1S50533E00
315 x 1"1/2	4	24	171	385	190	3171	6	M10 x 80	1S50533F00
315 x 2"	4	24	171	385	190	3175	6	M10 x 80	1S50533G00
315 x 3"	4	33	171	385	190	3189	6	M10 x 80	1S50533I00
315 x 4"	4	42	171	385	190	3193	6	M10 x 80	1S50533L00



## 508

Clamp saddle double branch with reinforcing metal ring

Metal ring: AISI 430

Gaskets: NBR O-ring

Bolts: Zinc chromed steel. 2, 4 or 6 PCS. according to the diameter

D x G x G	PN	L	Z	E	H	g	n°Bolts	Bolts	Code
63 x 1/2" x 1/2"	10	17	40	100	71	250	4	M8 x 50	1S50863B00
63 x 3/4" x 3/4"	10	20	40	100	71	252	4	M8 x 50	1S50863C00
63 x 1" x 1"	10	22	40	100	71	272	4	M8 x 50	1S50863D00
63 x 1"1/4 x 1"1/4	10	24	40	100	71	292	4	M8 x 50	1S50863E00
63 x 1"1/2 x 1"1/2	10	24	40	100	71	308	4	M8 x 50	1S50863F00
75 x 1/2" x 1/2"	10	17	44,5	170	91	320	4	M8 x 60	1S50875B00
75 x 3/4" x 3/4"	10	20	44,5	170	91	324	4	M8 x 60	1S50875C00

D x G x G	PN	L	Z	E	H	g	n°Bolts	Bolts	Code
75 x 1" x 1"	10	22	44,5	170	91	340	4	M8 x 60	1S50875D00
75 x 1"1/4 x 1"1/4	10	24	44,5	170	91	356	4	M8 x 60	1S50875E00
75 x 1"1/2 x 1"1/2	10	24	44,5	170	91	364	4	M8 x 60	1S50875F00
75 x 2" x 2"	10	26	44,5	170	91	392	4	M8 x 60	1S50875G00
90 x 1/2" x 1/2"	10	17	52	137	91	362	4	M8 x 60	1S50890B00
90 x 3/4" x 3/4"	10	20	52	137	91	366	4	M8 x 60	1S50890C00
90 x 1" x 1"	10	22	52	137	91	374	4	M8 x 60	1S50890D00
90 x 1"1/4 x 1"1/4"	10	24	52	137	91	392	4	M8 x 60	1S50890E00
90 x 1"1/2 x 1"1/2	10	24	52	137	91	398	4	M8 x 60	1S50890F00
90 x 2" x 2"	10	24	52	137	91	414	4	M8 x 60	1S50890G00
110 x 1/2" x 1/2"	10	33	65	155	98,5	408	4	M8 x 60	1S50811B00
110 x 3/4" x 3/4"	10	20	65	155	98,5	414	4	M8 x 60	1S50811C00
110 x 1" x 1"	10	22	65	155	98,5	422	4	M8 x 60	1S50811D00
110 x 1"1/4 x 1"1/4"	10	24	65	155	98,5	450	4	M8 x 60	1S50811E00
110 x 1"1/2 x 1"1/2	10	24	65	155	98,5	466	4	M8 x 60	1S50811F00
110 x 2" x 2"	10	24	65	155	98,5	494	4	M8 x 60	1S50811G00
110 x 3" x 3"	10	33	65	159	118,5	730	4	M8 x 60	1S50811I00
125 x 3/4" x 3/4"	10	20	73,5	168	101	540	4	M8 x 60	1S50813C00
125 x 1" x 1"	10	22	73,5	168	101	553	4	M8 x 60	1S50813D00
125 x 1"1/4 x 1"1/4	10	24	73,5	168	101	575	4	M8 x 60	1S50813E00
125 x 1"1/2 x 1"1/2	10	24	73,5	168	101	589	4	M8 x 60	1S50813F00
125 x 2" x 2"	10	24	73,5	168	101	615	4	M8 x 60	1S50813G00
140 x 1" x 1"	10	22	80	189	134	968	6	M8 x 75	1S50815D00
140 x 1"1/4 x 1"1/4	10	24	80	189	134	985	6	M8 x 75	1S50815E00
140 x 1"1/2 x 1"1/2	10	24	80	189	134	995	6	M8 x 75	1S50815F00
140 x 2" x 2"	10	24	80	189	134	1015	6	M8 x 75	1S50815G00
140 x 2"1/2 x 2"1/2	10	24	80	189	134	1070	6	M8 x 75	1S50815H00
140 x 3" x 3"	10	33	80	189	134	1200	6	M8 x 75	1S50815I00
160 x 3/4" x 3/4"	10	22	88	213	137	1045	6	M8 x 75	1S50817C00
160 x 1" x 1"	10	22	88	213	137	1045	6	M8 x 75	1S50817D00
160 x 1"1/4 x 1"1/4	10	24	88	213	137	1080	6	M8 x 75	1S50817E00
160 x 1"1/2 x 1"1/2	10	24	88	213	137	1098	6	M8 x 75	1S50817F00
160 x 2" x 2"	10	28,5	88	213	135	1135	6	M8 x 75	1S50817G00
160 x 3" x 3"	10	36	88	213	135	1120	6	M8 x 75	1S50817I00
180 x 1"1/4 x 1"1/4	6	24	115	265	171	2356	6	M10 x 80	1S50818E00
180 x 1"1/2 x 1"1/2	6	24	115	265	171	2380	6	M10 x 80	1S50818F00
180 x 2" x 2"	6	24	115	265	171	2460	6	M10 x 80	1S50818G00
180 x 3" x 3"	6	33	115	265	171	2660	6	M10 x 80	1S50818I00
180 x 4" x 4"	6	42	115	265	171	2840	6	M10 x 80	1S50818L00
200 x 1"1/4 x 1"1/4	6	24	115	265	171	1910	6	M10 x 80	1S50821E00
200 x 1"1/2 x 1"1/2	6	24	115	265	171	1935	6	M10 x 80	1S50821F00
200 x 2" x 2"	6	24	115	265	171	1980	6	M10 x 80	1S50821G00
200 x 3" x 3"	6	33	115	265	171	2200	6	M10 x 80	1S50821I00
200 x 4" x 4"	6	42	115	265	171	2380	6	M10 x 80	1S50821L00
225 x 1"1/4 x 1"1/4	4	24	127,5	280	173	2110	6	M10 x 80	1S50823E00
225 x 1"1/2 x 1"1/2	4	24	127,5	280	173	2130	6	M10 x 80	1S50823F00
225 x 2" x 2"	4	24	127,5	280	173	2195	6	M10 x 80	1S50823G00
225 x 3" x 3"	4	33	127,5	280	173	2420	6	M10 x 80	1S50823I00
225 x 4" x 4"	4	42	127,5	280	173	2600	6	M10 x 80	1S50823L00
250 x 1"1/4 x 1"1/4	4	24	142	313	181	2580	6	M10 x 80	1S50826E00
250 x 1"1/2 x 1"1/2	4	24	142	313	181	2600	6	M10 x 80	1S50826F00
250 x 2" x 2"	4	24	142	313	181	2650	6	M10 x 80	1S50826G00
250 x 3" x 3"	4	33	142	313	181	2860	6	M10 x 80	1S50826I00
250 x 4" x 4"	4	42	142	313	181	3040	6	M10 x 80	1S50826L00
280 x 1"1/4 x 1"1/4	4	24	171	385	190	4050	6	M10 x 80	1S50828E00
280 x 1"1/2 x 1"1/2	4	24	171	385	190	4070	6	M10 x 80	1S50828F00
280 x 2" x 2"	4	22,4	171	385	190	4120	6	M10 x 80	1S50828G00
280 x 3" x 3"	4	33	171	385	190	4320	6	M10 x 80	1S50828I00
280 x 4" x 4"	4	42	171	385	190	4500	6	M10 x 80	1S50828L00

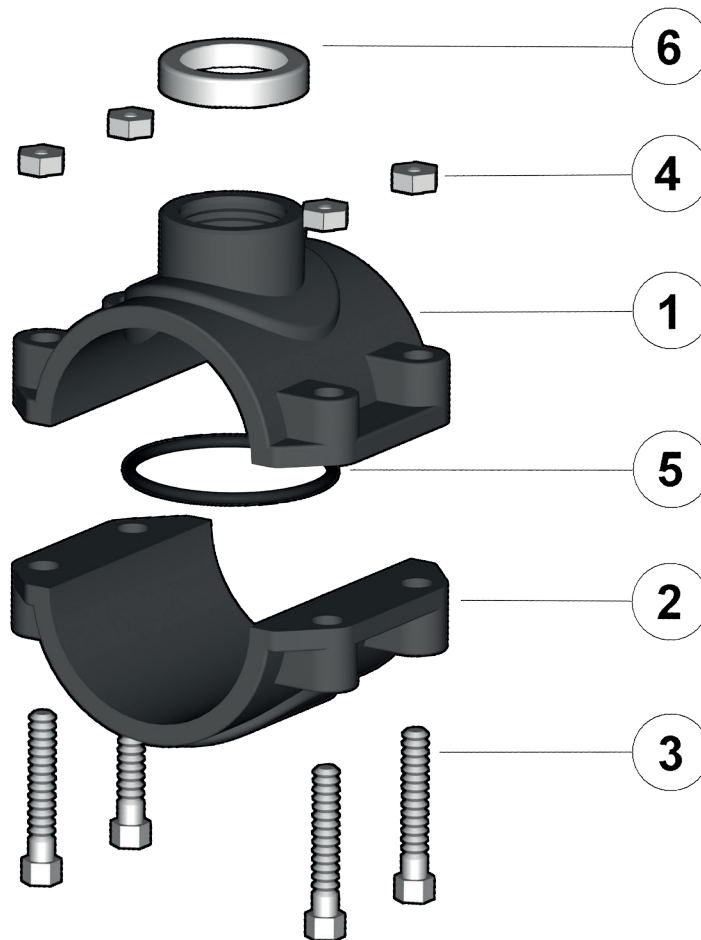
D x G x G	PN	L	Z	E	H	g	n°Bolts	Bolts	Code
315 x 1"1/4 x 1"1/4	4	24	171	385	190	3105	6	M10 x 80	1S50833E00
315 x 1"1/2 x 1"1/2	4	24	171	385	190	3120	6	M10 x 80	1S50833F00
315 x 2" x 2"	4	24	171	385	190	3170	6	M10 x 80	1S50833G00
315 x 3" x 3"	4	33	171	385	190	3400	6	M10 x 80	1S50833I00
315 x 4" x 4"	4	42	171	385	190	3600	6	M10 x 80	1S50833L00

## GASKET O-RING IN NBR

D	Code
20	3OR0117I
25	3OR0119I
32	3OR4081I
32 x 1"	3OR4093I
40	3OR0134I
50	3OR4137I
63	3OR0153I
75	3OR6237I
90	3OR6237I
110	3OR6225I
110 x 3"	3OR6337I
125	3OR6225I
140	3OR6337I
160	3OR6350I
180	OR8450N
200	OR8450N
225	OR8450N
250	OR8450N
280	OR8450N
315	OR8450N

# COMPONENTS

## EXPLODED VIEW 505



- 1** Upper part (PP - 1)
- 2** Bottom part (PP - 1)

- 3** Bolts (Zinc plated steel - 4)
- 4** Nuts (Zinc plated steel - 4)

- 5** O-Ring (NBR - 1)
- 6** Reinforcing ring (Stainless steel -1)

Inside brackets are indicated the material and the quantity supplied for each component.

# Key Abbreviations

<b>ABS</b>	Acrylonitrile butadiene styrene
<b>b</b>	Bolts
<b>c</b>	O-ring code
<b>d</b>	Nominal external diameter of the pipe in mm
<b>DA</b>	Double acting
<b>DN</b>	Nominal internal diameter of the pipe in mm
<b>EPDM</b>	Ethylene-Propylene-Diene-Monomer
<b>FKM (FPM)</b>	Fluoroelastomer
<b>g</b>	Weight in grams
<b>HIPVC</b>	PVC high impact
<b>K</b>	Lid key
<b>Kg</b>	Weight in kilograms
<b>L</b>	Length in meters
<b>MRS</b>	minimum guaranteed breaking strength of the material at 20°C - water - for 50 years of service
<b>n</b>	Number of flange holes
<b>NBR</b>	Nitrile butadiene rubber
<b>OP</b>	Working pressure
<b>P</b>	Hose adaptor
<b>PA</b>	Polyamide
<b>PA-GR</b>	Fibreglass reinforced polyamide
<b>PBT</b>	Polybutylene terephthalate
<b>PE</b>	Polyethylene
<b>PN</b>	Nominal pressure in bar (max.operating pressure at 20°C water)
<b>POM</b>	Polyoxymethylene
<b>PP-GR</b>	Fibreglass reinforced polypropylene
<b>PP-H</b>	Polypropylene homopolymer

<b>PPS</b>	Polifenilensulfide
<b>PPSU</b>	Polifenilsulfone
<b>PTFE</b>	Politetrafluoroetilene
<b>PVC-C</b>	Chlorinated polyvinyl chloride
<b>PVC-U</b>	Unplasticized polyvinylchloride
<b>PVDF</b>	Polyvinylidene difluoride
<b>R</b>	Nominal thread size in inches
<b>s</b>	Pipe thickness in mm
<b>S</b>	Thickness series = $(SDR - 1)/2$
<b>SA</b>	Single acting
<b>SDR</b>	Standard dimension ratio = $d/s$
<b>Sp</b>	Flange thickness on flanged valves
<b>U</b>	Number of holes for flanged version







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