

Product Range  
– effective 1.1.2006

Export

ABS

The robust plastic  
piping system

Pipe, fittings,  
valves and  
accessories



**+GF+**

**GEORG FISCHER**  
PIPING SYSTEMS



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# General Information on ABS Pipe Systems

## Physical Properties, Chemical Resistance, Installation

### Material

#### General

Acrylonitrile butadiene styrene (ABS) is a styrene and acrylonitrile copolymer grafted to polybutadiene to produce a homogeneous material with high impact strength and ductility, good chemical resistance, good resistance to environmental stress cracking and excellent resistance to crack propagation. Other advantageous features are its suitability for use at low temperatures ( $-40^{\circ}\text{C}$ ), it is easily recyclable and is non-toxic, it can be regarded as biologically inert.

#### Physical properties

Long-term behaviour under internal pressure is good. Impact strength at  $20^{\circ}\text{C}$  is excellent. Failure would normally be in a ductile manner.

ABS will suffer some loss of properties when exposed to heat or UV light. If the pipe system is to be exposed to direct sunlight for prolonged periods, it is recommended that the surface be painted.

#### Chemical resistance

ABS is generally resistant to most diluted

### Material Characteristics of ABS (Standard Values)

Characteristics	Value	Units	Test Standard
Density	1.03	$\text{g}/\text{cm}^3$	ISO 1183
Yield stress at $23^{\circ}\text{C}$	38	$\text{N}/\text{mm}^2$	EN ISO 527-1
Bending-E-modulus at $23^{\circ}\text{C}$	1800	$\text{N}/\text{mm}^2$	EN ISO 527-1
Notched bar impact strength at $23^{\circ}\text{C}$	47	$\text{kJ}/\text{m}^2$	DIN EN ISO 179/1eA
Notched bar impact strength at $-40^{\circ}\text{C}$	28	$\text{kJ}/\text{m}^2$	DIN EN ISO 179/1eA
Indentation hardness (358N/30s)	80	MPa	DIN EN ISO 2039-1
Dimensional stability HDT A 1.82 MPa	74	$^{\circ}\text{C}$	ISO 75-2
Vicat-heat distortion temperature B/50N	94	$^{\circ}\text{C}$	ISO 306
Thermal expansion coefficient	$1 \times 10^{-4}$	$\text{m}/\text{mK}$	DIN 53752
Heat conductivity at $23^{\circ}\text{C}$	0.17	$\text{W}/\text{mK}$	DIN 52612-1
Water absorption at $23^{\circ}\text{C}$	0.43	%	DIN EN ISO 62
Colour	7001	-	RAL
Oxygen index	19	%	ISO 4589-1

#### ABS piping systems advantages

- economical material costs
- quick and easy to joint requiring practically no investment and minimal training
- smooth inner bore reduces pressure losses to a minimum and can reduce the size of piping required in comparison with other less efficient systems (e.g. metal generally)
- its light weight reduces transport costs and enables easy, quick handling on site
- a low thermal conductivity, approx. 2000 times lower than copper, optimizes your piping system reducing to a minimum energy loss and reducing or often eliminating the need for insulation
- no corrosion
- reduced maintenance costs

inorganic acids, bases and salts, and to most animal oils and fats. It is not resistant to organic solvents such as esters, ketones, chlorinated and aromatic hydrocarbons, or to alcohol, petrol, acetic acid and vegetable oils. A guide to the chemical resistance of ABS, and O-ring and diaphragm materials can be found in ISO/TR 10358 and in the +GF+ Chemical Resistance Chart for Plastics.

Where there is uncertainty about the probable behaviour of ABS when in contact with a specific chemical substance, we recommend prior consultation with our Technical Advisory Service.

### **Thermal properties**

Its excellent thermal properties allow it to be used at temperatures ranging from  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ , incorporating a safety factor throughout of 2.1.

ABS has an excellent thermal conductivity value,  $0.2\text{ W/m}^{\circ}\text{C}$ , which increases its efficiency as a piping system enormously in comparison with metal or copper.

### **Combustion Behaviour**

As temperature rises, ABS itself ignites only at temperatures exceeding  $450^{\circ}\text{C}$ .

ABS burns when exposed to an open flame. When the flame is removed, the material continues to burn.

The oxygen index amounts to 19% (under 21% plastic is considered to be flammable).

According to UL-94, ABS has an HB (Horizontal Burning) flammability coefficient and falls into building material class B2 (conventional inflammable, non-dripping) according to DIN 4102-1.

Fundamentally, toxic substances are released by all burning processes. Carbon monoxide is generally the most important. When ABS burns, primarily carbon dioxide, carbon monoxide and water are formed. Tests have shown that the relative toxicity of the products of combustion are similar or even lower than those of natural products such as wood, wool and cotton. ABS combustion gases are not corrosive. That the burning nevertheless forms soot, smoke develops during combustion. Suitable fire-fighting agents are water, foam and carbon dioxide.

### **ABS in sub-zero temperatures**

Although ABS pipe systems are suitable for use in temperatures as low as  $-40^{\circ}\text{C}$ , it is necessary, as with any other pipeline materials, to take whatever precautions may be required to prevent the line fluid from freezing and consequent damage to the pipe system.

### **Electrical properties**

ABS is electrically non-conducting. The volume resistivity is  $3.5 \times 10^{16}\ \Omega\text{cm}$  (ASTM S257). This has to be taken into consideration for certain applications where there is a danger of ignition or explosion.

### **Physiological properties**

ABS is non-toxic. The polymer conforms to the requirements of "Plastics in Food Applications – A Code of Practice for Safety in Use" produced by the British

Plastics Federation with the cooperation of the British Industrial Biological Research Association. It is also approved for use with foodstuffs by many other national authorities.

## **Jointing of Pipe and Fittings**

ABS pipe, fittings and valves are solvent cement socket jointed. Solvent cementing requires no specialized tooling, is quick, easy and reliable and the most commonly used method of jointing plastics. The cement creates a chemical bond between pipe and fitting. Jointing at temperatures as low as  $0^{\circ}\text{C}$  is possible. It is essential that only solvent cement especially developed for jointing ABS pressure systems is used.

Detailed instructions on ABS solvent cement jointing are given on pages 10 to 13.

### **Threaded joints**

Where possible, threaded joints should be avoided, as ABS, like most plastic materials, is notch sensitive.

For sealing ABS threads we recommend only PTFE tape (e.g. Teflon). Hand tight plus  $\frac{1}{2}$  turn is usually sufficient to seal, do not overtighten. Transition from ABS to metal should be done using an appropriate adaptor fitting. Adaptor Unions or Flanges are ideal when possible.

# Temperature and Pressure

The permissible working temperature range for an ABS pipe system is from  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .

The pressure ratings for ABS pipe, fittings and valves are as follows:

## Metric

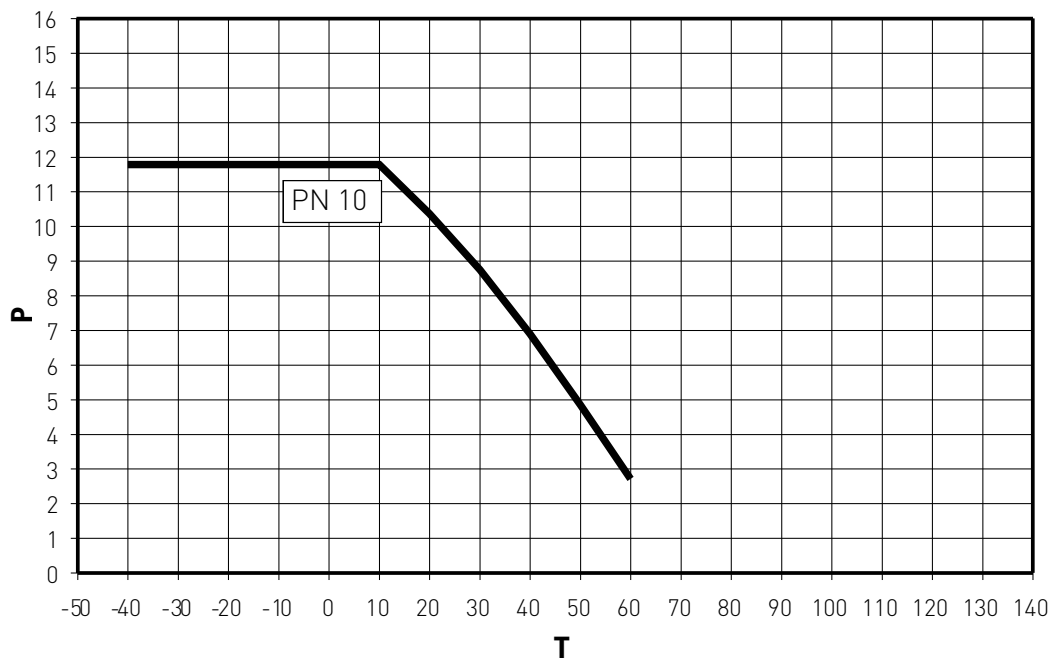
Pipe		10 bar	(PN 10 or 145 lbf/in <sup>2</sup> )
Fittings	16–225 mm	10 bar	(PN 10 or 145 lbf/in <sup>2</sup> )
Valves		10 bar	(PN 10 or 145 lbf/in <sup>2</sup> )

Pressure ratings for thermoplastic pipework are always quoted at  $20^{\circ}\text{C}$ . It can be used at higher temperatures, but it is a fundamental principle in thermoplastic pipework that if the temperature is increased then the pressure rating must be reduced. Reduction factors can apply when using media other than water. Please consult our technical advisory service.

The table below shows, for an ABS pipe system, the maximum permissible pressures at various temperatures up to the maximum of  $60^{\circ}\text{C}$ . The table is based on an ambient temperature of  $20^{\circ}\text{C}$  with water as the medium.

A design factor of 2.0 is incorporated into all calculations with a life span of 25 years.

For metric pipes and fittings (25 years operation with a design factor = 2.0)



P Permissible pressure in bar  
T Temperature in °C

According to the 10° line in the hydrostatic strength curve for ABS a permissible pressure of 12 bar in the temperature range of  $-40^{\circ}\text{C}$  to  $+10^{\circ}\text{C}$  for the PN 10 system can be applied.

# Installation

## General

Thermoplastics are subject to greater thermal expansion than metals, this change in length should be taken into account to avoid unnecessary stresses.

There are two standard methods to accommodate length changes

- a. flexible sections
- b. compensators

For more comprehensive design recommendations and general informations than that given here please consult the George Fischer Planning Fundamentals for Industrial Piping Systems.

## Approvals

+GF+'s ABS Piping System has the following approvals:

- DWI (Drinking Water Institute, GB)
  - Mairie de Paris (Drinking Water, France)
  - LR (Lloyds Register)
  - DNV (Det Norske Veritas)
  - ABS (American Bureau of Shipping)
  - KTW (Cold Drinking Water, Germany)
- is applied for and expected early 2001.

## Calculation of length changes

Length changes which occur in ABS pipelines can be calculated in the usual manner, taking into consideration the coefficient of linear expansion  $\delta$  for ABS as given in the following formula:

$$\Delta L = L \cdot \Delta T \cdot \delta$$

(mm)    (m)    (°C)    (mm/m °C)

$\Delta L$  = difference in length in millimetres.

L = original length in metres of pipe or pipe section where length change is to be calculated.

$\Delta T$  = difference between installation temperature and max. or min. working temperature in °C.

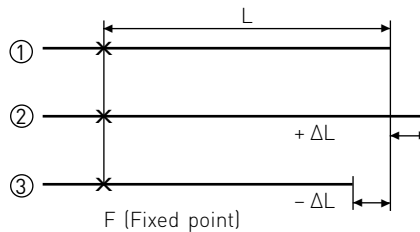
$\delta$  = coefficient of linear expansion of the pipe material in millimetres per metre per °C.

$$\Delta \text{ABS} = 0.1 \text{ mm/m } ^\circ\text{C}$$

**Important:** If the working temperature is higher than the installation temperature the pipe expands.

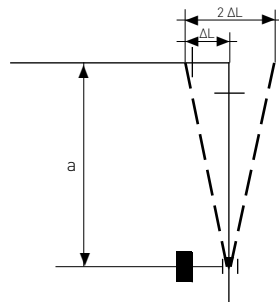
If, on the other hand, the working temperature is lower, the pipe contracts.

**For this reason:** both max. and min. working temperatures must be taken into account.



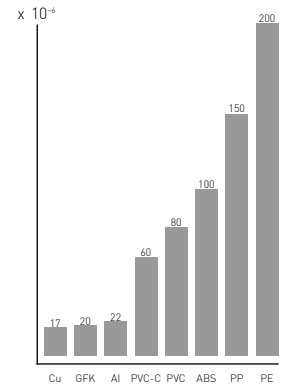
- ① Installation temperature
- ② Working temperature: > installation temperature
- ③ Working temperature: < installation temperature

## Calculation of flexible section length Values needed to calculate a are



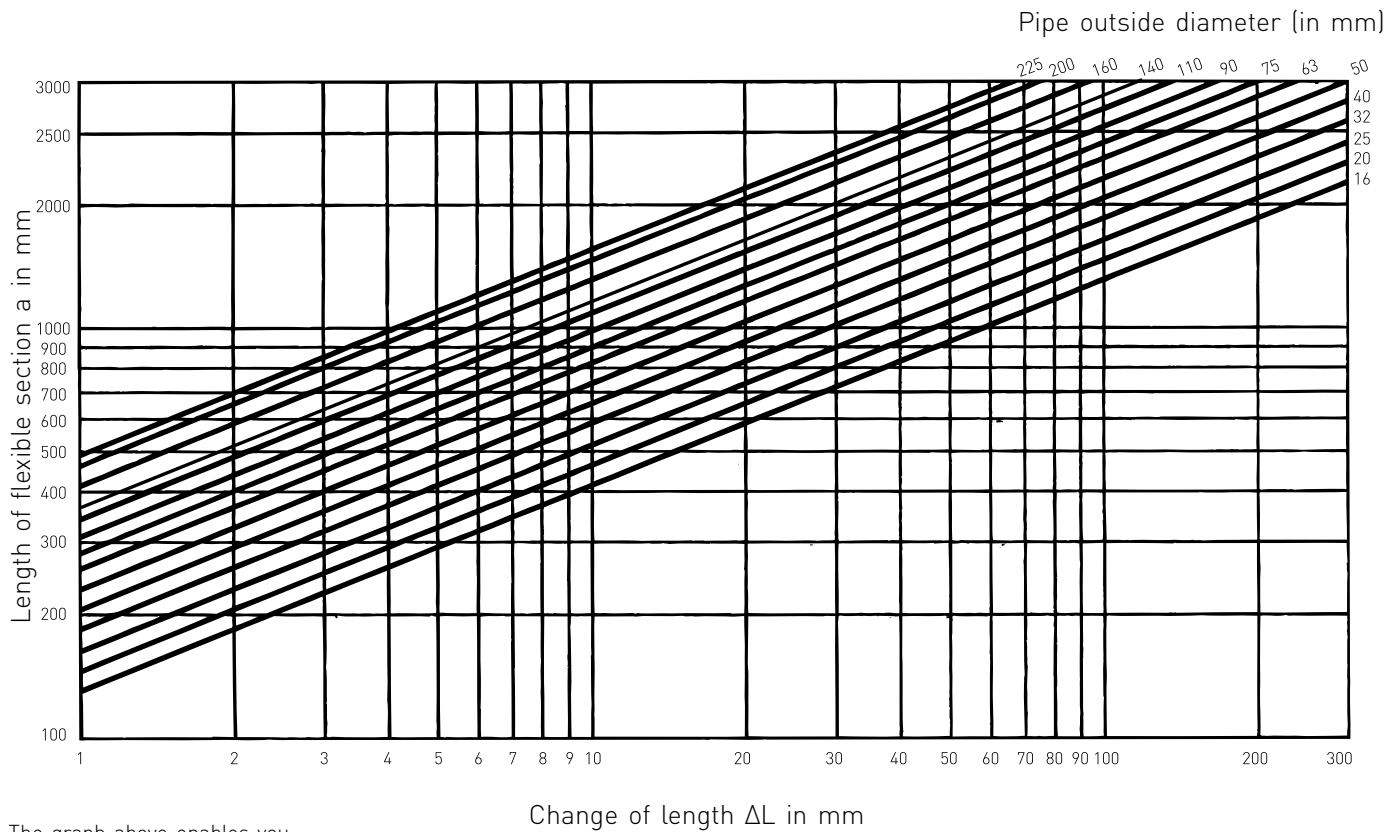
+/-  $\Delta L$  (contraction or expansion value) and the pipe outside diameter d. The formula used is:

$$a = 32.7 \cdot \sqrt{d \cdot \Delta L}$$



Coefficient of linear expansion  $\delta$  of various materials





The graph above enables you to quickly find the appropriate a length, given  $\Delta L$  and d.

## Distance Between Pipe Brackets

ABS pipelines need to be supported at specific intervals, depending upon the average pipe wall temperature, the density of the flow medium and the diameter and wall thickness of the pipe. The inner diameter of the bracket must

exceed the outside diameter of the pipe to allow the pipe to contract or expand. The pipe bracket spacing given in the following table is calculated on the basis of a permissible deflection of the pipe of max. 2.5 mm between two brackets.

### Pipe bracket spacing for ABS pipelines conveying fluids with density $\leq 1 \text{ g/cm}^3$ and gases

Pipe size d	Inch	20°C	30°C	40°C	50°C	60°C	Correction factors for other pipe classes
16	3/8	0.70	0.65	0.60	0.55	0.45	The bracket spacings shown in the table are for Class C and PN 10 pipe and are given in metres. For other pipe classes the figures must be multiplied by the following factors:
20	1/2	0.80	0.70	0.65	0.60	0.50	
25	3/4	0.85	0.80	0.75	0.65	0.60	
32	1	1.00	0.90	0.85	0.75	0.65	
40	1 1/4	1.10	1.00	0.95	0.85	0.75	
50	1 1/2	1.15	1.10	1.00	0.90	0.80	
63	2	1.30	1.20	1.10	1.00	0.85	
75	2 1/2	1.50	1.35	1.20	1.10	0.95	
90	3	1.60	1.45	1.35	1.20	1.05	
110	4	1.80	1.65	1.55	1.35	1.20	
140	5	2.05	1.80	1.70	1.40	1.25	Class B0.90 Class D1.05
160	6	2.20	1.85	1.75	1.45	1.30	Class E 1.09
200	7	2.30	2.05	1.85	1.55	1.35	
225	8	2.40	2.20	1.90	1.60	1.45	

Bracket spacing in metres for Class C and PN 10 pipe

In the case of a vertical pipe run the pipe bracket spacing given in the table may be increased by 30%, i.e. multiply the values given by 1.3.

## Pipe bracket spacing in the case of fluids with density $>1 \text{ g/cm}^3$

When fluids with a density exceeding  $1 \text{ g/cm}^3$  are to be conveyed, the pipe bracket spacing given in the preceding table must be multiplied by the factors given in the second column of the following table, resulting in shorter distances between the supports.

Density of medium in $\text{g/cm}^3$	Factors for pipe bracket spacing in the case of densities $>1 \text{ g/cm}^3$
1.25	0.9
1.5	0.83
1.75	0.77
2.0	0.70

## Pressure Losses

Pressure loss in straight ABS pipe can be calculated using a surface roughness of  $K = 0.007 \text{ mm}$ .

Further details regarding pressure loss in fittings and valves as well as flow calculations can be found in the George Fischer Planning Fundamentals for Industrial Piping Systems.

# Instructions for Solvent Cement Jointing of ABS

## General

Solvent cement jointing calls for adequate technical knowledge, which can be acquired in the appropriate training courses. Your Georg Fischer representative will gladly provide you with information about training possibilities.

The dimensions of George Fischer pipes, fittings and valves conform generally to the various national standards as well as to ISO 727 concerning dimensions of sockets. Our fittings and valves can be used with any ABS pipes whose outside diameter tolerance conforms to ISO 11922-1.

According to ISO 727 the following minimal cement lengths are valid:

Pipe outside diameter - Socket inside diameter d (mm)	Minimal cement length  L (mm)
12	12.0
16	14.0
20	16.0
25	18.5
32	22.0
40	26.0
50	31.0
63	37.5
75	43.5
90	51.0
110	61.0
125	68.5
140	76.0
160	86.0
200	106.0
225	118.5

## Tools and equipment

Pipe cutter	d 10-63	790 109 001
Type KRA	d 50-110	790 109 002
	d 110-160	790 109 003
Plastic pipe cutter	230 V/50 Hz	790 201 001
Type KRT 250	120 V/60 Hz	790 201 002
	110 V/50 Hz	790 201 003
Chamfering tool	d 16-75	799 495 145
	d 32-200	799 495 146
Cleaner	799 298 010 (1 litre tin)	
Tangit ABS Solvent Cement	799 298 022 (0.65 kg tin)	
Brush sizes	Pipe outside diameter in mm	Code-No.
	6- 10	Round brush ø 4 mm 799 299 001
	12- 32	Round brush ø 8 mm 799 299 002
	40- 63	Flat brush 25 x 3 mm 799 299 003
	75-225	Flat brush 50 x 5 mm 799 299 004
Tin lid	799 298 028	
White absorbent paper	commercially available	
Solvent resistant protecting gloves	commercially available	



Cutting the pipe to length



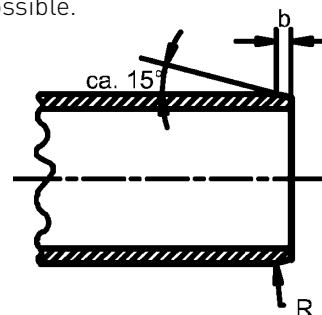
Chamfering the pipe



Solvent cementing equipment

## Preparations

The pipe must be cut off at right angles. Remove the inside edges and chamfer the outside ones as illustrated in the sketch. Only then is an optimal solvent cemented joint possible.



Pipe outside diameter mm	b mm
6–16 mm	1–2 mm
20–50 mm	2–3 mm
0 63 mm	3–6 mm

**Important:** Well-chamfered pipe ends prevent the layer of cement from being removed as the pipe is inserted into the fitting.

Wipe the outside of the pipe and the inside of the socket with a clean cloth to remove obvious dirt. Marking the jointing length on the pipe end makes it possible to check afterwards whether the pipe has been inserted to the full extent of the socket.



Marking the jointing length

**Note:** If the outside diameter of the pipe and the inside diameter of the socket are at opposite extremes of their tolerances, then the pipe cannot be inserted dry into the fitting socket. This will only become possible once the cement has been applied.

The Tangit ABS Cement is supplied ready for use. Stir thoroughly before using! Cement of the correct consistency will run evenly from a wooden spatula held at a slant. Cement which no longer runs smoothly is unusable. The cement must not be thinned. Cement and cleaner should be stored in a cool, dry place (5–25 °C)!



Checking the cement

### Cementing

For surfaces are clean and free from grease, cleaning with absorbent paper and Tangit cleaner is not necessary for ABS. For surfaces not in perfect condition clean the outside of the pipe end and the inside of the socket **thoroughly** with ABS Cleaner and absorbent paper.

Use a fresh piece of paper for each component. Remove any condensation which may have formed on the parts.



Cleaning the pipe and socket

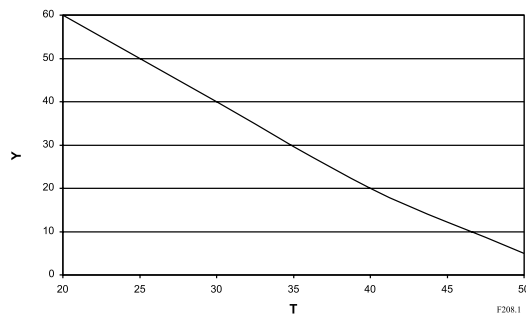
**Important:** Pipe end and fitting socket must be dry and free from grease and dirt and must not be touched after cleaning.

ABS pipes should be cemented at temperatures between –5 °C and +40 °C. Take the following protective measures if the temperatures deviate from the above:

At temperatures near freezing point condensation or ice water which may have formed must be removed, e. g. with warm air. Cement and cleaner should be stored at room temperature. Completed joints must be left at 20–30 °C for approximately 10 minutes to condition.

Avoid overheating when cementing at higher temperatures by protecting the jointing area from direct sunlight.

The quick curing time of the cement necessitates that the joint is made within 1 minute after application of the cement has started. The opening time of the ABS cement varies with the ambient temperature and/or the thickness (1 mm) of the cement applied:



T Temperature [°C]  
Y Open time [sec]

Begin by applying a normal layer of cement to the fitting socket and then a thicker one to the pipe end with firm brush pressure. **Work in well.** The brush strokes should always be in an axial direction.

To ensure that both jointing surfaces are completely covered with a smooth, even layer of cement, the brush should be generously loaded with cement.

The joints can be made single handed for pipes with diameters up to d 63 mm.



Applying the cement

For d 75 mm and larger pipes, two people are needed to apply the cement to the pipe end and fitting socket simultaneously in order to avoid exceeding the maximum opening time of the cement of 1 minute.

After the cement has been applied insert the pipe to the full depth of the socket immediately without twisting and bring them into the correct alignment. Ensure that the outlet of the fitting is in the correct position. Hold them briefly in this position to allow the cement to set. Wait at least 10 minutes before the next joint, extend the waiting time at temperatures under 10 °C to 15 minutes.

Remove any surplus cement immediately, using absorbent paper.

A bead of excess solvent cement around the complete external circumference of the joint and a slightly smaller bead again around the complete internal circumference show that the joint has been performed correctly.

After use clean the brush of excess cement with dry absorbent paper and then clean thoroughly using TANGIT cleaner. Brushes must be dry before being re-used (shake out).

Replace the lid of the cement tin after use to prevent the solvent evaporating. Using the conical lid allows to leave the brush in the cement tin during breaks.



Replace the lid of the cement tin during work breaks

Both solvent cement and cleaner dissolve ABS. Pipes and fittings must not therefore be laid on or allowed to come into contact with spilled cement or paper containing cement residues.



The pipe trench is not a rubbish tip

It is recommended to scavenge the pipeline after finishing, and leave it filled with water if it is not directly used. Do not use compressed air for scavenge.

### Drying period and pressure testing

The length of drying period before the joint may be subjected to testing or operating pressure depends on the ambient temperature and the tolerances.

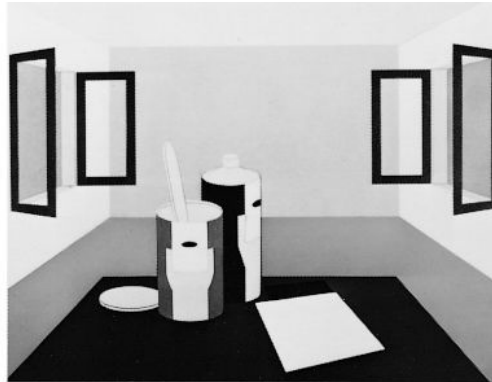
A longer waiting time should be applied when temperatures exceed ambient. Generally the waiting time after the last joint until the pressure test at a testing pressure of 15 bar (PN 10) must be at least 15 hours. If the pipe is only subjected to the operating pressure, e. g. after adaptation or repair works, the following rule of thumb for the drying period applies:

**1 hour waiting time per bar operating pressure at temperatures of up to 25 °C.**

For waiting times at higher temperatures please consult your local George Fischer Representative.

### Safety precautions

Tangit Cement and Tangit Cleaner contain highly volatile solvents. This makes good ventilation or adequate fume extraction essential in closed spaces. Since the solvent fumes are heavier than air, extraction must occur at floor level, or at least below the working level. Place paper which has been used for cleaning or for the removal of surplus cement into closed containers to minimize the amount of solvent fumes in the air.



Adequate ventilation of the workplace

Cement and cleaner are inflammable. Extinguish open fires before commencing work. Switch off unprotected electrical apparatus, electric heaters, etc. Do not smoke! Discontinue any welding operations. Furthermore, observe all instructions issued by the solvent cement manufacturer (e.g. label of the tin and any supplementary documentation).



No naked flames when cementing  
No smoking

Protect pipes and fittings from spilled solvent cement, cleaner and absorbent paper which has been used to wipe off cement. Do not dispose of surplus solvent cement or cleaner in drainage systems.

The use of protective gloves is recommended to avoid contact of the skin with solvent cement and cleaner. If the cement or the cleaner get in contact with eyes, rinse immediately with water. Consult a doctor! Immediately change clothes that have solvent cement on them.

Always obey the safety regulations issued by the authorities responsible.

Do not close off cement pipelines during the drying process. This is particularly important at temperatures below + 5°C, when there is otherwise a danger of damaging the material.

# ABS Pressure Pipe Systems

## Standards

George Fischer metric fittings in ABS are generally in accordance with DIN 8063 and the pipe with DIN 16890/16891. George Fischer's inch range of fittings is generally in accordance with BS 5392 and the pipe with BS 5391.

## Sizes (Metric vs Inch)

For those unfamiliar with the difference between metric and inch sizes the following note may be helpful. In imperial systems, the sizes of pipe, fittings and other components such as valves are identified by reference to the nominal size of the bore of the pipe expressed in inches and fractions of an inch.

In metric systems, however, sizes are identified by references to the outside diameter of the pipe expressed in millimetres.

The table below shows the metric sizes which are regarded for practical purposes as being generally equivalent to imperial sizes up to 8 inches. It should, however, be understood that metric sizes are not simply inch sizes which have been converted into millimetres and called metric; their actual dimensions are slightly different and they are, with the exception of 2½" (75 mm) and 5" (140 mm) not interchangeable.

IMPERIAL SIZES Nominal Bore inches	METRIC SIZES	
	Pipe outside diameter (mm)	Nominal bore (mm)
¼	12	8
⅜	16	10
½	20	15
¾	25	20
1	32	25
1¼	40	32
1½	50	40
2	63	50
2½	75	65
3	90	80
4	110	100
5	140	125
6	160	150
8	225	200

# ABS BS Inch Product Range

(for further details please contact your local George Fischer Supplier)

## Pipe

Class E	(15 bar, 217 lb/in <sup>2</sup> at 20°C)	3/8"-4"
Class D	(12 bar, 173 lb/in <sup>2</sup> at 20°C)	6"
Class C	(9 bar, 130 lb/in <sup>2</sup> at 20°C)	1"-8"
Class T	(12 bar, 173 lb/in <sup>2</sup> at 20°C)	1/2"-2"

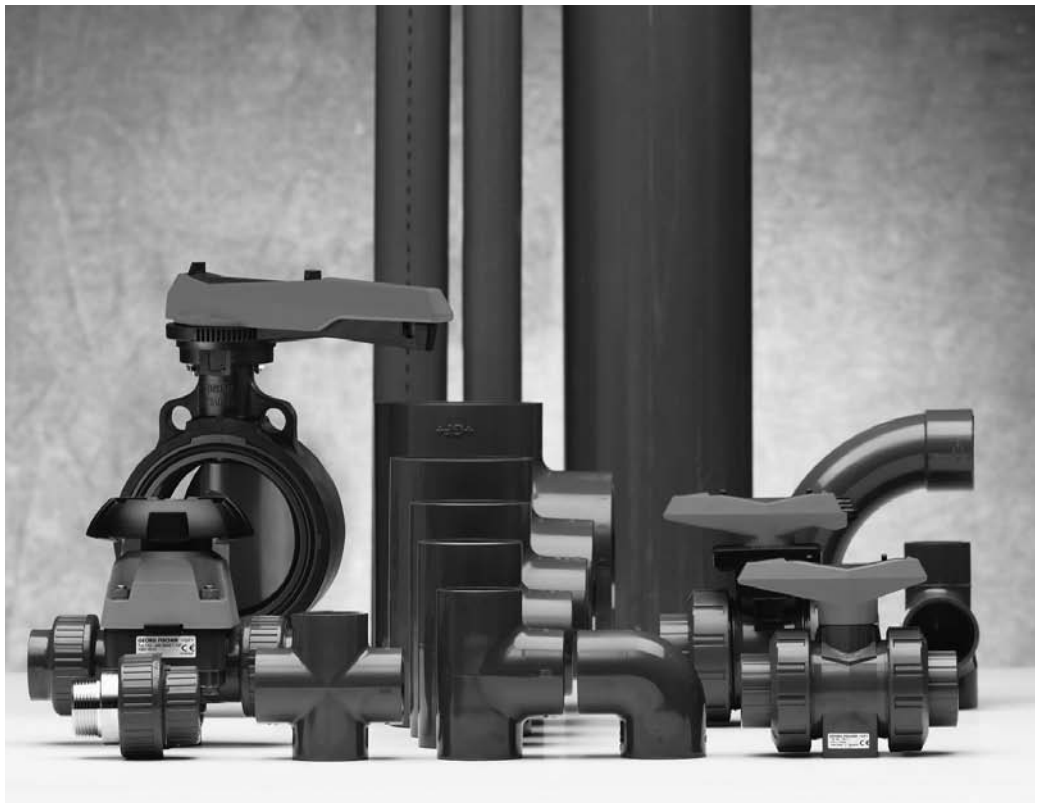
## Fittings

Long Bends	Class E	1/2"-4"
Short Pattern Bend	Class C	8"
Elbows 90°	Class E	3/8"-4"
	Class C	6"
Tee 90°	Class E	3/8"-4"
	Class D	6"
	Class C	8"
Tee 90° Reduced	Class E	3/4"-1/2"-2"-1"
Tee 45°	Class E	1/2"-2 1/2"
Elbow 45°	Class E	3/8"-4"
	Class D	6"
	Class C	8"
Socket	Class E	3/8"-4"
	Class D	6"
	Class C	8"
Cap	Class E	3/8"-4"
Flange Adaptors (Serrated, O-ring groove, flat)	Class E	1/2"-4"
	Class D	6"
	Class C	8"
Full Faced Flanges (BS 10, BS 4504/ISO, ASA, undrilled)	Class E	1/2"-4"
	Class D	6"
Union (EPDM and FPM)	Class E	3/8"-2"
Short Reducing Bushes	Class E	3/8"-4"
	Class D	6"-8"
Long Reducing Bushes	Class E	3"-4"
	Class D	6"
Adaptor Sockets (Female Thread x Socket)		3/8"-2"
Adaptor (Nipple x Female Thread)		1/2"-2"
Adaptor Bush (Socket x Male Thread)		3/8"-2"
Adaptor Unions (Brass, PVC, Malleable Iron)		3/8"-2"
Accessories (Lose Flanges, Sets, Pipe Brackets etc.)		various



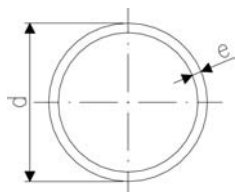
## Hand-operated and actuated valves

Ball Valve, Type 346, Class D (EPDM and FPM, Thread Socket Versions)	3/8"-2"
Ball Valve, Type 370, Class D (EPDM and FPM)	2 1/2"-4"
Diaphragm Valve, Type 315, Class D (EPDM and PTFE)	1/2"-2"
Ball Check Valve, Type 360, Class D	3/8"-2"
Electrically Actuated Ball Valves, Type 114 and Type 106	3/8"-2"
Pneumatically Actuated Ball Valves, Type 227	3/8"-2"
Pneumatically Actuated Diaphragm Valves, Type 021 and Type 018	1/2"-2"



# Metric Pipe

## Pipe 5 metre lengths, ABS metric

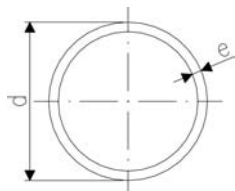


### Model:

- Material: ABS
- Colour: RAL 7001, gravel grey
- Length: Lengths of 5 m
- PN6 (6 bar) / PN10 (10 bar) / PN16 (16 bar) at 20°C

d [mm]	PN	Code	kg/m	e [mm]	
16	16	<b>169 017 080</b>	0.095	1,8	
20	16	<b>169 017 081</b>	0.152	2,3	
25	16	<b>169 017 082</b>	0.193	2,3	
32	10	<b>169 017 083</b>	0.212	1,9	
40	10	<b>169 017 084</b>	0.334	2,4	
50	10	<b>169 017 085</b>	0.523	3,0	
63	10	<b>169 017 086</b>	0.834	3,8	
75	10	<b>169 017 087</b>	1.176	4,5	
90	10	<b>169 017 088</b>	1.693	5,4	
110	10	<b>169 017 089</b>	2.529	6,6	
140	10	<b>169 017 091</b>	4.489	9,2	
160	10	<b>169 017 092</b>	5.856	10,5	
200	10	<b>169 017 093</b>	9.133	13,1	
225	10	<b>169 017 094</b>	11.605	14,8	
250	6	<b>169 017 095</b>	14.800	9,6	
280	6	<b>169 017 096</b>	16.800	10,7	
315	6	<b>169 017 097</b>	20.500	12,1	

## Pipes 1m length, ABS metric



### Model:

- Material: ABS
- Colour: RAL 7001, gravel grey
- Length: 1m
- PN 10 (10 bar) / PN 16 (16 bar) at 20°C

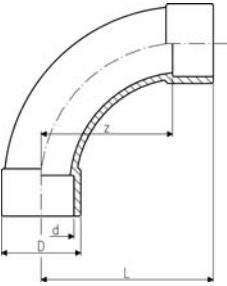
d [mm]	PN	Code	kg/m	e [mm]	Length [m]	
16	16	<b>700 262 080</b>	0.095	1.8	1.00	
20	16	<b>700 262 081</b>	0.152	2.3	1.00	
25	16	<b>700 262 082</b>	0.193	2.3	1.00	
32	10	<b>700 262 083</b>	0.212	1.9	1.00	
40	10	<b>700 262 084</b>	0.334	2.4	1.00	
50	10	<b>700 262 085</b>	0.523	3.0	1.00	
63	10	<b>700 262 086</b>	0.834	3.8	1.00	
75	10	<b>700 262 087</b>	1.176	4.6	1.00	
90	10	<b>700 262 088</b>	1.693	5.4	1.00	
110	10	<b>700 262 089</b>	2.529	6.6	1.00	
140	10	<b>700 262 091</b>	4.489	9.2	1.00	
160	10	<b>700 262 092</b>	5.856	10.5	1.00	
200	10	<b>700 262 093</b>	9.133	13.1	1.00	
225	10	<b>700 262 094</b>	11.605	14.8	1.00	

# Adhesive Jointed Fittings

29 00 01

## Bend 90°, ABS metric

- Radius = 2 d



d [mm]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]
20	16	<b>729 000 106</b>	-	0.027	40	27	58
25	16	<b>729 000 107</b>	10	0.038	50	35	69
32	10	<b>729 000 108</b>	-	0.051	64	38	86
40	10	<b>729 000 109</b>	-	0.158	80	54	109
50	10	<b>729 000 110</b>	-	0.206	100	61	131
63	10	<b>729 000 111</b>	-	0.387	126	76	164
75	10	<b>729 000 112</b>	-	0.585	150	90	194
90	10	<b>729 000 113</b>	-	0.750	180	113	231
110	10	<b>729 000 114</b>	-	2.030	220	137	281
140	10	<b>729 000 116</b>	-	4.100	280	168	356
160	10	<b>729 000 117</b>	-	5.600	320	191	406

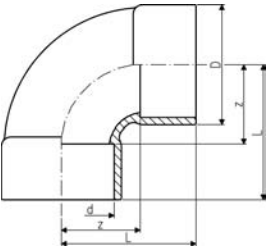
29 01 01

## Bend 90° short pattern, ABS metric

- Radius = 0,75 d
- >d225 - maximum operating temperature: +40°C



$r = 0,75 d$

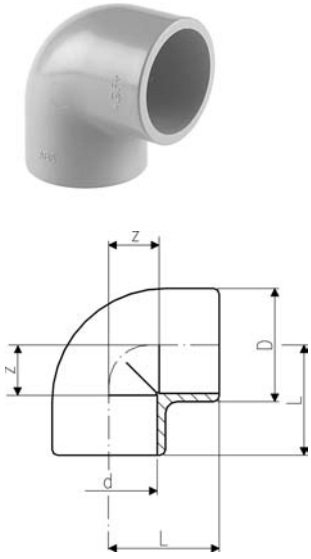


d [mm]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]
225	10	<b>729 010 120</b>	-	5.650	168	256	287
280	6	<b>729 010 122</b>	-	16.000	210	318	357
315	6	<b>729 010 123</b>	-	21.000	237	356	401

29 10 01

**Elbow 90°, ABS metric**

- >d225 - maximum operating temperature: +40°C



d	d	PN	Code	SP	kg	z	D	L	
[mm]	[inch]					[mm]	[mm]	[mm]	
16		16	<b>729 100 105</b>	10	0.007	9	21	23	
20		16	<b>729 100 106</b>	10	0.010	11	26	27	
25		16	<b>729 100 107</b>	10	0.017	14	31	33	
32		10	<b>729 100 108</b>	10	0.032	17	40	39	
40		10	<b>729 100 109</b>	10	0.051	21	49	47	
50		10	<b>729 100 110</b>	5	0.103	26	61	57	
63		10	<b>729 100 111</b>	-	0.196	33	76	72	
75	2 ½	10	<b>729 100 112</b>	-	0.308	40	90	84	
90		10	<b>729 100 113</b>	-	0.429	46	110	97	
110		10	<b>729 100 114</b>	-	1.125	61	136	122	
140	5	10	<b>729 100 116</b>	-	1.470	70	162	146	
160		10	<b>729 100 117</b>	-	2.150	80	185	166	
200		10	<b>729 100 119</b>	-	3.372	101	225	207	
250		6	<b>729 100 121</b>	-	8.200	131	282	263	

29 15 01

**Elbow 45°, ABS metric**

- >d225 - maximum operating temperature: +40°C

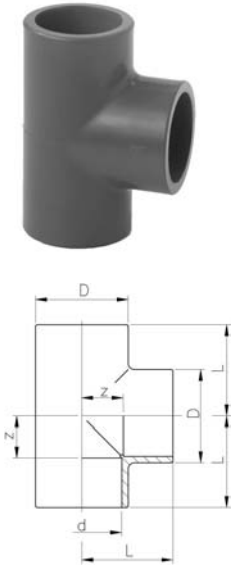


d	d	PN	Code	SP	kg	z	D	L	
[mm]	[inch]					[mm]	[mm]	[mm]	
20		16	<b>729 150 106</b>	10	0.019	5	25	21	
25		16	<b>729 150 107</b>	10	0.029	6	31	25	
32		16	<b>729 150 108</b>	10	0.046	8	40	30	
40		10	<b>729 150 109</b>	10	0.082	10	49	36	
50		10	<b>729 150 110</b>	5	0.121	12	61	43	
63		10	<b>729 150 111</b>	-	0.144	14	76	52	
75	2 ½	10	<b>729 150 112</b>	-	0.228	17	89	61	
90		10	<b>729 150 113</b>	-	0.362	20	107	71	
110		10	<b>729 150 114</b>	-	0.775	28	131	89	
140	5	10	<b>729 150 116</b>	-	1.190	32	162	108	
160		10	<b>729 150 117</b>	-	1.680	36	185	122	
200		10	<b>729 150 119</b>	-	2.506	43	225	149	
225		10	<b>729 150 120</b>	-	3.100	49	250	168	
250		6	<b>729 150 121</b>	-	7.200	60	282	192	
280		6	<b>729 150 122</b>	-	10.500	66	318	213	
315		6	<b>729 150 123</b>	-	14.600	74	356	239	

29 20 01

### Tee 90°, ABS metric

- >d225 - maximum operating temperature: +40°C

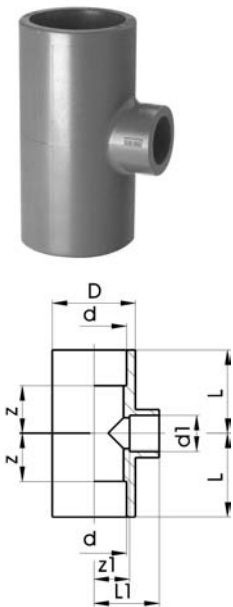


d [mm]	d [inch]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]
16		16	<b>729 200 105</b>	10	0.010	9	21	23
20		16	<b>729 200 106</b>	10	0.014	11	25	27
25		16	<b>729 200 107</b>	10	0.024	14	31	33
32		10	<b>729 200 108</b>	10	0.042	17	40	39
40		10	<b>729 200 109</b>	10	0.074	21	49	47
50		10	<b>729 200 110</b>	5	0.131	26	61	57
63		10	<b>729 200 111</b>	-	0.250	34	76	72
75	2 ½	10	<b>729 200 112</b>	-	0.421	40	90	84
90		10	<b>729 200 113</b>	-	0.687	47	107	98
110		10	<b>729 200 114</b>	-	1.020	55	133	116
140	4	10	<b>729 200 116</b>	-	2.500	71	169	147
160		10	<b>729 200 117</b>	-	3.700	81	193	167
200		10	<b>729 200 119</b>	-	4.430	101	225	207
225		10	<b>729 200 120</b>	-	6.850	114	256	233
250		6	<b>729 200 121</b>	-	12.400	132	282	263
280		6	<b>729 200 122</b>	-	17.300	152	318	298
315		6	<b>729 200 123</b>	-	24.100	168	356	332

29 20 01

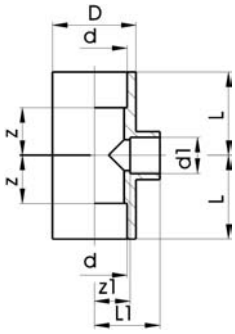
### Tees 90°, reducing, ABS metric

\* Dimension 110-90-110 is a Tee 90° equal delivered with the required reducing bush



d [mm]	d1 [mm]	PN	Code	SP	kg
25	20	16	<b>729 200 134</b>	10	0.029
32	25	10	<b>729 200 138</b>	10	0.048
40	25	10	<b>729 200 151</b>	-	0.081
40	32	10	<b>729 200 147</b>	10	0.085
50	25	10	<b>729 200 010</b>	5	0.135
50	32	10	<b>729 200 164</b>	5	0.200
63	25	10	<b>729 200 011</b>	-	0.245
63	32	10	<b>729 200 178</b>	-	0.249
63	50	10	<b>729 200 170</b>	-	0.265
75	40	10	<b>729 200 182</b>	-	0.500
75	63	10	<b>729 200 184</b>	-	0.518
90	32	10	<b>729 200 143</b>	-	1.000
90	63	10	<b>729 200 146</b>	-	0.900
110	32	10	<b>729 200 144</b>	-	2.000
110	50	10	<b>729 200 136</b>	-	1.900
*110	90	10	<b>729 200 137</b>	-	1.899
140	50	10	<b>729 200 148</b>	-	1.899
140	75	10	<b>729 200 149</b>	-	2.500
160	90	10	<b>729 200 158</b>	-	2.800
200	110	10	<b>729 200 153</b>	-	4.900
225	110	10	<b>729 200 156</b>	-	7.500
225	160	10	<b>729 200 157</b>	-	7.900

d [mm]	d1 [mm]	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]
25	20	14	14	33	33	30
32	25	17	17	41	39	36
40	25	23	23	50	49	42
40	32	23	23	50	49	45
50	25	28	28	62	59	47
50	32	28	28	62	59	50
63	25	34	34	77	73	53
63	32	35	34	77	73	56
63	50	35	34	77	73	65



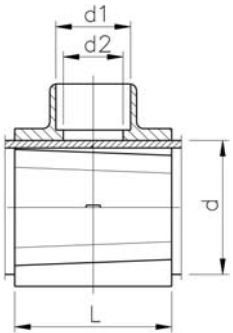
d [mm]	d1 [mm]	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]
75	40	40	41	92	84	66
75	63	40	47	92	84	84
90	32	46	55	110	97	93
90	63	46	55	110	97	93
110	32	56	67	133	117	89
110	50	56	67	133	117	98
*110	90	61	65	138	122	136
140	50	72	82	172	148	113
140	75	72	78	172	148	122
160	90	81	91	192	167	142
200	110	106	131	232	213	192
225	110	119	143	257	239	204
225	160	119	119	257	239	205



## Branch Saddles ABS

### Model:

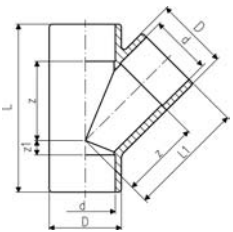
- For ABS-pipes
- Top saddle (ABS) for solvent cementing
- Bottom part and wedges made from PVC-U
- Outlet with solvent cement socket metric
- PN 10



d [mm]	Code	SP	kg	d1 [mm]	d2 [mm]	Tapping-Ø [mm]	L [mm]
90	<b>169 110 056</b>	1	0.786	50	40	39	105
110	<b>169 110 066</b>	-	0.864	50	40	39	105
160	<b>169 110 097</b>	1	1.185	63	49	48	120
225	<b>169 110 117</b>	-	1.483	63	49	48	120

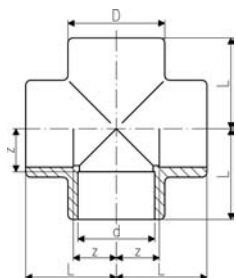
29 25 01

## Tee 45°, ABS metric



d [mm]	PN	Code	SP	kg	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]
20	10	<b>729 250 106</b>	10	0.027	30	6	28	68	46
25	10	<b>729 250 107</b>	10	0.043	36	9	33	83	55
32	10	<b>729 250 108</b>	10	0.073	45	10	41	99	67
40	10	<b>729 250 109</b>	-	0.119	56	10	50	118	82
50	10	<b>729 250 110</b>	-	0.202	66	12	60	140	97
63	10	<b>729 250 111</b>	-	0.325	85	14	74	175	123
75	6	<b>729 250 112</b>	-	0.637	101	18	91	207	145
90	6	<b>729 250 113</b>	-	0.940	122	20	107	245	173
110	6	<b>729 250 114</b>	-	1.870	149	27	134	298	210
140	6	<b>729 250 116</b>	-	4.315	190	34	168	376	266

29 30 01

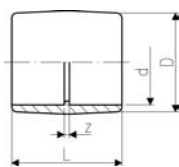
**Crosses, ABS metric**

d [mm]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]
32	10	<b>729 300 108</b>	-	0.070	17	43	39
63	10	<b>729 300 111</b>	-	0.361	34	79	72

29 91 01

**Socket, ABS metric**

- >d225 - maximum operating temperature: +40°C

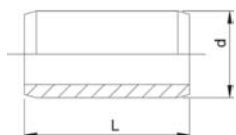


d [mm]	d [inch]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]
16		16	<b>729 910 105</b>	10	0.005	3	22	31
20		16	<b>729 910 106</b>	10	0.007	3	26	35
25		16	<b>729 910 107</b>	10	0.011	3	32	41
32		10	<b>729 910 108</b>	10	0.020	3	40	47
40		10	<b>729 910 109</b>	10	0.034	3	49	55
50		10	<b>729 910 110</b>	10	0.060	3	61	65
63		10	<b>729 910 111</b>	5	0.107	3	76	79
75	2 ½	10	<b>729 910 112</b>	-	0.140	4	87	92
90		10	<b>729 910 113</b>	-	0.242	5	104	107
110		10	<b>729 910 114</b>	-	0.570	5	131	132
140	5	10	<b>729 910 116</b>	-	0.760	7	162	159
160		10	<b>729 910 117</b>	-	1.176	8	183	180
200		10	<b>729 910 119</b>	-	1.480	9	221	221
225		10	<b>729 910 120</b>	-	2.500	10	253	248
250		6	<b>729 910 121</b>	-	5.400	16	284	272
280		6	<b>729 910 122</b>	-	6.600	16	321	302
315		6	<b>729 910 123</b>	-	8.100	16	356	338

29 90 09

**Barrel Nipple, ABS metric****Model:**

- For quick connections between fittings
- For the shortest possible distance between fittings
- Overall length L = 2 x socket length



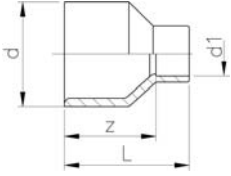
d [mm]	PN	Code	SP	kg	L [mm]
16	16	<b>729 900 905</b>	-	0.003	28
20	16	<b>729 900 906</b>	-	0.004	32
25	16	<b>729 900 907</b>	-	0.007	38
32	10	<b>729 900 908</b>	-	0.009	44
40	10	<b>729 900 909</b>	-	0.017	52
50	10	<b>729 900 910</b>	-	0.032	62
63	10	<b>729 900 911</b>	-	0.063	76
75	10	<b>729 900 912</b>	-	0.102	88
90	10	<b>729 900 913</b>	-	0.173	102
110	10	<b>729 900 914</b>	-	0.309	122

29 91 03

## Reducing Bushes Long, ABS metric

**Model:**

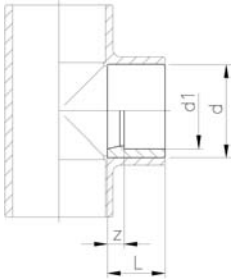
- With spigot and solvent cement socket



d [mm]	d1 [mm]	PN	Code	SP	kg	z [mm]	L [mm]
32	20	10	<b>729 910 342</b>	-	0.016	30	46
40	25	10	<b>729 910 347</b>	10	0.026	36	55
50	25	10	<b>729 910 354</b>	10	0.041	44	63
63	32	10	<b>729 910 360</b>	5	0.077	54	76
75	40	10	<b>729 910 366</b>	5	0.115	62	88
90	63	10	<b>729 910 371</b>	-	0.218	74	112

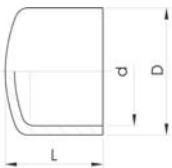


29 90 03

**Reducing Bush, ABS metric**

d [mm]	d1 [mm]	PN	Code	SP	kg	z [mm]	L [mm]
20	16	16	<b>729 900 334</b>	10	0.003	2	16
25	20	16	<b>729 900 337</b>	10	0.005	3	19
32	20	10	<b>729 900 342</b>	10	0.012	6	22
32	25	10	<b>729 900 341</b>	10	0.009	4	22
40	20	10	<b>729 900 348</b>	10	0.016	10	26
40	25	10	<b>729 900 347</b>	10	0.016	7	26
40	32	10	<b>729 900 346</b>	10	0.012	4	26
50	20	10	<b>729 900 355</b>	10	0.024	15	31
50	25	10	<b>729 900 354</b>	10	0.025	12	31
50	32	10	<b>729 900 353</b>	-	0.035	9	31
50	40	10	<b>729 900 352</b>	10	0.038	5	31
63	32	10	<b>729 900 360</b>	10	0.060	16	38
63	40	10	<b>729 900 359</b>	10	0.067	12	38
63	50	10	<b>729 900 358</b>	10	0.044	7	36
75	50	10	<b>729 900 365</b>	10	0.105	13	44
75	63	10	<b>729 900 364</b>	10	0.076	7	44
90	50	10	<b>729 900 372</b>	-	0.136	20	51
90	63	10	<b>729 900 371</b>	-	0.130	14	51
90	75	10	<b>729 900 370</b>	-	0.133	7	51
110	63	10	<b>729 900 378</b>	-	0.238	24	61
110	90	10	<b>729 900 376</b>	-	0.196	10	61
140	110	10	<b>729 900 385</b>	-	0.454	15	76
160	110	10	<b>729 900 390</b>	-	0.666	25	86
160	140	10	<b>729 900 388</b>	-	0.416	10	86
200	160	10	<b>729 900 392</b>	-	0.818	20	106
225	160	10	<b>729 900 396</b>	-	1.640	33	119
225	200	10	<b>729 900 181</b>	-	1.440	13	119
250	225	6	<b>729 900 303</b>	-	1.700	12	131
280	250	6	<b>729 900 306</b>	-	2.500	15	146
315	280	6	<b>729 900 312</b>	-	3.350	17	164

29 96 01

**Cap, ABS metric**

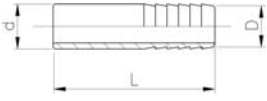
d [mm]	PN	Code	SP	kg	D [mm]	L [mm]
16	16	<b>729 960 105</b>	10	0.006	26	24
20	16	<b>729 960 106</b>	10	0.008	30	25
25	16	<b>729 960 107</b>	10	0.013	37	30
32	10	<b>729 960 108</b>	10	0.020	44	34
40	10	<b>729 960 109</b>	10	0.034	55	41
50	10	<b>729 960 110</b>	10	0.034	64	44
63	10	<b>729 960 111</b>	5	0.086	80	54
75	10	<b>729 960 112</b>	5	0.115	87	65
90	10	<b>729 960 113</b>	-	0.215	112	77
110	10	<b>729 960 114</b>	-	0.480	145	101
140	10	<b>729 960 116</b>	-	0.880	163	114
160	10	<b>729 960 117</b>	-	1.130	188	130

29 96 04

## Hose Connectors, ABS metric

**Model:**

- With solvent cement spigot metric and parallel hose connection



d [mm]	PN	Code	SP	kg	D [mm]	L [mm]	
16	10	<b>729 960 405</b>	10	0.007	16	57	
20	10	<b>729 960 406</b>	10	0.011	20	73	
25	10	<b>729 960 407</b>	10	0.016	25	79	
32	10	<b>729 960 408</b>	10	0.026	30	89	

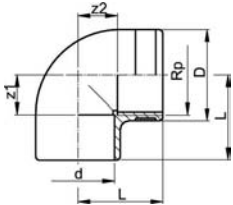
# Adaptor Fittings

29 10 02

## Elbow 90°, ABS metric

### Model:

- With solvent cement socket metric and parallel female thread (Rp)
- Reinforcing ring stainless (A2)
- Connection to plastic or metal
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



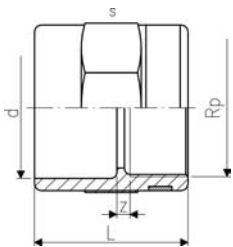
d [mm]	Rp [inch]	PN	Code	SP	kg	z1 [mm]	z2 [mm]	D [mm]	L [mm]
20	1/2	10	<b>729 100 206</b>	10	0.018	11	14	30	27
25	3/4	10	<b>729 100 207</b>	10	0.028	14	17	35	33
32	1	10	<b>729 100 208</b>	10	0.047	17	22	45	39
40	1 1/4	10	<b>729 100 209</b>	10	0.088	23	27	55	50
50	1 1/2	10	<b>729 100 210</b>	5	0.128	27	36	62	58
63	2	10	<b>729 100 211</b>	5	0.233	33	46	75	73

29 91 02

## Socket, ABS metric

### Model:

- With solvent cement socket metric and parallel female thread Rp
- With BSP parallel female thread (Rp) reinforced (A2)
- Reinforcing ring stainless (A2)
- Connection to plastic or metal
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



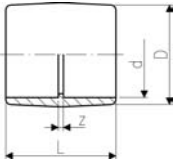
d [mm]	Rp [inch]	PN	Code	SP	kg	z [mm]	L [mm]	s [mm]
20	1/2	10	<b>729 910 206</b>	10	0.020	4	35	32
25	3/4	10	<b>729 910 207</b>	10	0.030	3	40	36
32	1	10	<b>729 910 208</b>	10	0.040	3	45	46
40	1 1/4	10	<b>729 910 209</b>	10	0.069	5	51	55
50	1 1/2	10	<b>729 910 210</b>	10	0.100	7	59	65
63	2	10	<b>729 910 211</b>	5	0.162	7	69	80

29 91 31

## Adaptor Socket, ABS metric - Inch BS (ASTM)

**Model:**

- with BS Inch and metric solvent cement sockets



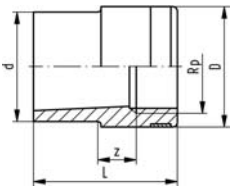
d [mm]	Inch	PN	Code	SP	kg	z [mm]	L [mm]	D [mm]
16	3/8	10	<b>729 913 105</b>	-	0.007	5	35	23
20	1/2	10	<b>729 913 106</b>	-	0.010	5	38	27
25	3/4	10	<b>729 913 107</b>	-	0.016	5	45	33
32	1	10	<b>729 913 108</b>	-	0.025	5	51	41
40	1 1/4	10	<b>729 913 109</b>	-	0.045	5	60	51
50	1 1/2	10	<b>729 913 110</b>	-	0.070	4	65	59
63	2	10	<b>729 913 111</b>	-	0.130	5	79	75
75	2 1/2	10	<b>729 913 112</b>	-		8	93	95
90	3	10	<b>729 913 113</b>	-	0.365	6	108	104
110	4	10	<b>729 913 115</b>	-	0.630	7	135	134

29 91 04

## Reducing Bushes metric-Rp, ABS metric-Rp

**Model:**

- With solvent cement spigot metric and parallel female thread Rp
- Reinforcing ring stainless (A2)
- Connection to plastic or metal
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



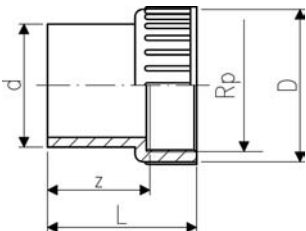
d [mm]	Rp [inch]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]	s [mm]
20	3/8	10	<b>729 910 434</b>	10	0.012	24	25	35	15
25	1/2	10	<b>729 910 437</b>	10	0.018	27	30	41	21
32	3/4	10	<b>729 910 441</b>	10	0.027	32	35	48	33
40	1	10	<b>729 910 446</b>	10	0.048	38	45	56	60
50	1 1/4	10	<b>729 910 452</b>	10	0.073	46	55	66	99
63	1 1/2	10	<b>729 910 458</b>	5	0.106	57	62	77	150

29 90 04

## Adaptor, ABS metric - Rp

**Model:**

- With solvent cement spigot metric and parallel female thread Rp
- Connection to plastic thread only
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



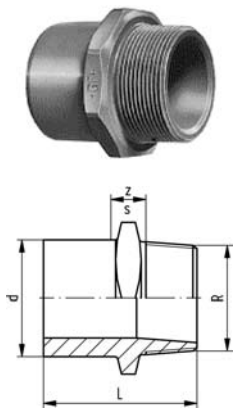
d [mm]	Rp [inch]	PN	Code	SP	kg	z [mm]	L [mm]	D [mm]
20	1/2	10	<b>729 900 406</b>	10	0.009	21	37	28
25	3/4	10	<b>729 900 407</b>	10	0.014	23	41	33
32	1	10	<b>729 900 408</b>	-	0.026	27	48	42
40	1 1/4	10	<b>729 900 409</b>	10	0.046	33	56	52
50	1 1/2	10	<b>729 900 410</b>	10	0.073	38	61	62
63	2	10	<b>729 900 411</b>	5	0.127	47	74	77

29 91 05

## Adaptor Spigot-Nipple, ABS metric - R

**Model:**

- With solvent cement spigot metric and taper male thread R
- Connection to plastic thread only
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



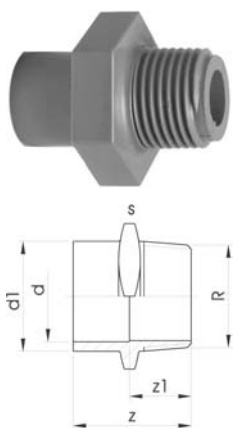
d [mm]	R [inch]	PN	Code	SP	kg	z [mm]	s [mm]
16	3/8	10	<b>729 910 505</b>	10	0.009	35	27

29 91 05

## Adaptor Socket-Nippel, ABS metric - R

**Model:**

- With solvent cement spigot/socket metric and taper male thread R
- Connection for plastic threads
- Do not use thread sealing pastes that are harmful to ABS



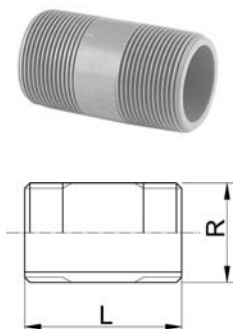
d [mm]	d1 [mm]	R [inch]	PN	Code	SP	kg	z [mm]	z1 [mm]	s [mm]
16	20	1/2	10	<b>729 910 556</b>	10	0.012	42	28	32
20	25	3/4	10	<b>729 910 557</b>	10	0.020	47	31	36
25	32	1	10	<b>729 910 558</b>	10	0.031	54	35	46
32	40	1 1/4	10	<b>729 910 559</b>	10	0.050	60	38	55
40	50	1 1/2	10	<b>729 910 560</b>	10	0.070	66	40	65
50	63	2	10	<b>729 910 561</b>	5	0.123	78	47	80

29 91 15

## Barrel Nipple, ABS - R

**Model:**

- BSP taper male threads (R)
- Connection to plastic thread only
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



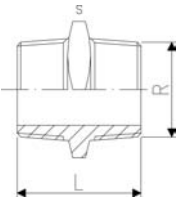
R [inch]	PN	Code	SP	kg	L [mm]
3/8	10	<b>729 911 505</b>	-	0.014	43
1/2	10	<b>729 911 506</b>	-	0.014	50
3/4	10	<b>729 911 507</b>	-	0.021	56
1	10	<b>729 911 508</b>	-	0.035	63
1 1/4	10	<b>729 911 509</b>	-	0.053	75
1 1/2	10	<b>729 911 510</b>	-	0.031	88
2	10	<b>729 911 511</b>	-	0.135	88
3	10	<b>729 911 513</b>	-	0.196	128
4	10	<b>729 911 515</b>	-	0.357	153

29 91 19

## Hexagon Nipple, ABS - R

**Model:**

- With taper male thread R
- Connection to plastic thread only
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



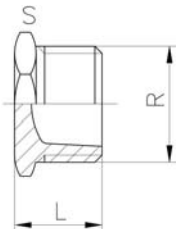
R [inch]	PN	Code	SP	kg	L [mm]	s [mm]	
½	10	<b>729 911 906</b>	10	0.009	45	22	
¾	10	<b>729 911 907</b>	10	0.014	49	27	
1	10	<b>729 911 908</b>	10	0.026	57	36	

29 96 19

## Plug, ABS - R

**Model:**

- With taper male thread R
- Connection to plastic thread only
- Do not use thread sealing pastes that are harmful to ABS



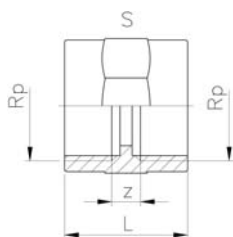
R [inch]	PN	Code	SP	kg	s [mm]	L [mm]	
½	10	<b>729 961 906</b>	10	0.008	27	25	

29 91 06

## Threaded socket, ABS metric - Rp

**Model:**

- With parallel female thread Rp
- Connection to plastic thread only
- Do not use thread sealing pastes that are harmful to ABS
- Install with low mechanical stress and avoid large cyclic temperature changes



Rp [inch]	PN	Code	SP	kg	z [mm]	L [mm]	s [mm]	
½	10	<b>729 910 606</b>	10	0.019	9	35	32	
¾	10	<b>729 910 607</b>	10	0.022	9	39	36	
1	10	<b>729 910 608</b>	10	0.041	11	45	46	

# Unions

29 51 01

## Unions, ABS metric

### Model:

- Union end: Solvent cement socket metric
- Union bush: Solvent cement socket metric
- Gasket: O-ring EPDM No. 48 41 00



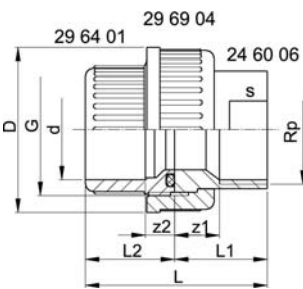
d [mm]	PN	Code	SP	kg	z1 [mm]	z2 [mm]	D [mm]	L1 [mm]	L2 [mm]	G/Tr	
16	10	<b>729 510 105</b>	10	0.025	5	10	35	19	24		3/4
20	10	<b>729 510 106</b>	10	0.035	4	10	43	21	26		1
25	10	<b>729 510 107</b>	10	0.050	5	10	53	24	29		1 1/4
32	10	<b>729 510 108</b>	10	0.070	5	10	60	27	32		1 1/2
40	10	<b>729 510 109</b>	10	0.130	5	12	74	32	38		2
50	10	<b>729 510 110</b>	5	0.170	3	14	83	33	40		2 1/4
63	10	<b>729 510 111</b>	-	0.340	3	18	103	40	46		2 3/4
75	10	<b>729 510 112</b>	-	0.461	3	18	135	47	62		Tr 108x5
90	10	<b>729 510 113</b>	-	0.694	5	18	158	56	69		Tr 128x5
110	10	<b>729 510 114</b>	-	1.069	5	11	158	66	72		Tr 154x5

29 54 02

## Adaptor Unions, ABS / Stainless Steel metric - Rp

### Model:

- Union End: stainless steel WN 1.4404 (316L), parallel female thread Rp
- Union Bush: solvent cement socket ABS metric
- Union Nut: ABS
- Gasket: O-ring EPDM No. 48 41 00



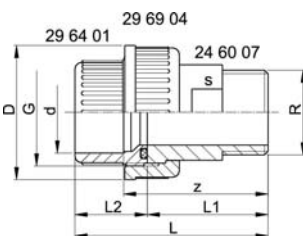
d [mm]	Rp [inch]	PN	EPDM Code	kg	z1 [mm]	z2 [mm]	D [mm]	L [mm]	L1 [mm]	L2 [mm]	G [inch]	s [mm]	
16	3/8	10	<b>729 540 205</b>	0.053	9	10	35	43	19	24	3/4	19	
20	1/2	10	<b>729 540 206</b>	0.096	11	10	43	50	24	26	1	24	
25	3/4	10	<b>729 540 207</b>	0.154	11	10	51	55	26	29	1 1/4	29	
32	1	10	<b>729 540 208</b>	0.212	12	10	58	61	29	32	1 1/2	36	
40	1 1/4	10	<b>729 540 209</b>	0.356	14	12	74	71	33	38	2	45	
50	1 1/2	10	<b>729 540 210</b>	0.455	15	14	83	79	34	45	2 1/4	54	
63	2	10	<b>729 540 211</b>	0.721	15	18	100	95	39	56	2 3/4	63	

29 54 07

## Adaptor Unions, ABS/Stainless Steel metric - R

### Model:

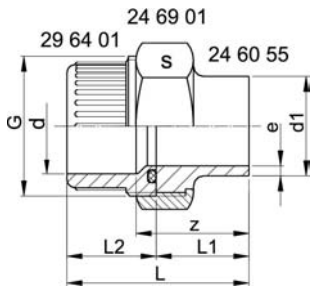
- Union End: stainless steel WN 1.4404 (316L), taper male thread R
- Union Bush: solvent cement socket ABS metric
- Union Nut: ABS
- Gasket: O-ring EPDM No. 48 41 00



d [mm]	R [inch]	PN	EPDM Code	kg	z [mm]	D [mm]	L [mm]	L1 [mm]	L2 [mm]	G [inch]	s [mm]	
16	3/8	10	<b>729 540 705</b>	0.073	40	35	54	30	24	3/4	19	
20	1/2	10	<b>729 540 706</b>	0.126	44	43	60	34	26	1	24	
25	3/4	10	<b>729 540 707</b>	0.174	46	51	65	36	29	1 1/4	32	
32	1	10	<b>729 540 708</b>	0.262	50	58	72	40	32	1 1/2	37	
40	1 1/4	10	<b>729 540 709</b>	0.476	58	74	84	46	38	2	48	
50	1 1/2	10	<b>729 540 710</b>	0.535	62	83	93	48	45	2 1/4	54	
63	2	10	<b>729 540 711</b>	0.931	73	100	111	55	56	2 3/4	69	

29 54 55

## Adaptor Unions, ABS/Stainless Steel metric - Welding End

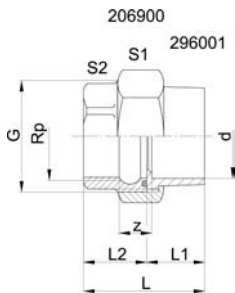


### Model:

- Union End: stainless steel WN 1.4404 (316L) with welding end
- Union Bush: solvent cement socket ABS metric
- Union Nut: stainless steel WN 1.4404 (316L)
- Gasket: O-ring EPDM No. 48 41 00

d [mm]	d1 [mm]	PN	EPDM Code	kg	z [mm]	L [mm]	L1 [mm]	L2 [mm]	e [mm]	G [inch]	s [mm]
16	17	10	<b>729 545 505</b>	0.101	28	42	18	24	1.6	3/4	32
20	21	10	<b>729 545 506</b>	0.176	32	48	22	26	2.0	1	41
25	27	10	<b>729 545 507</b>	0.204	33	52	23	29	2.0	1 1/4	46
32	34	10	<b>729 545 508</b>	0.313	36	58	26	32	2.0	1 1/2	55
40	42	10	<b>729 545 509</b>	0.493	38	64	26	38	2.0	2	68
50	48	10	<b>729 545 510</b>	0.566	42	73	28	45	2.0	2 1/4	74
63	60	10	<b>729 545 511</b>	0.902	50	88	32	56	2.6	2 3/4	88

## Adapter Union Brass/ABS metric - Rp

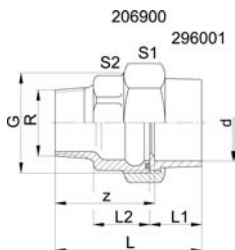


### Model:

- O-Ring special for Temperature < 0°C
- Union End: ABS, solvent cement socket metric
- Union Bush: Brass BSP parallel female thread (Rp)
- Union Nut: brass
- Gasket: O-Ring No. 48 41 00 EPDM

d [mm]	Rp [inch]	PN	Code	kg	z [mm]	G [inch]	L1 [mm]	L2 [mm]	S1 [mm]	S2 [mm]
16	3/8	10	<b>729 550 255</b>	0.086	10	3/4	19	17	30	27
20	1/2	10	<b>729 550 256</b>	0.134	11	1	21	20	38	27
25	3/4	10	<b>729 550 257</b>	0.221	12	1 1/4	24	23	47	32
32	1	10	<b>729 550 258</b>	0.263	13	1 1/2	27	26	52	38
40	1 1/4	10	<b>729 550 259</b>	0.437	13	2	32	28	66	47
50	1 1/2	10	<b>729 550 260</b>	0.508	14	2 1/4	33	29	72	53
63	2	10	<b>729 550 261</b>	0.774	15	2 3/4	40	34	87	65

## Adapter Union Brass/ABS metric - R



### Model:

- with O-ring
- Union End: ABS, solvent cement socket metric
- Union Bush: Brass, BSP, taper male thread R
- Union Nut: brass
- Gasket: O-Ring No. 48 41 00

d [mm]	R [inch]	PN	Code	kg	z [mm]	G [inch]	L1 [mm]	L2 [mm]	S1 [mm]	S2 [mm]
16	3/8	10	<b>729 550 755</b>	0.109	32	3/4	19	29	30	27
20	1/2	10	<b>729 550 756</b>	0.152	36	1	21	32	38	27
25	3/4	10	<b>729 550 757</b>	0.261	53	1 1/4	24	50	47	27
32	1	10	<b>729 550 758</b>	0.330	57	1 1/2	27	54	52	34
40	1 1/4	10	<b>729 550 759</b>	0.437	58	2	32	54	66	43
50	1 1/2	10	<b>729 550 760</b>	0.675	65	2 1/4	33	62	72	50
63	2	10	<b>729 550 761</b>	1.040	73	2 3/4	40	69	87	61

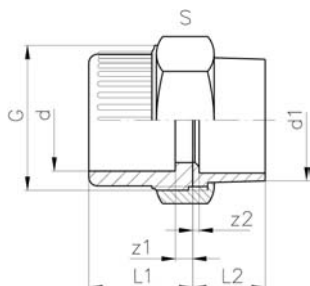


20 51 01

## Adaptor Union, Copper for soldering, ABS

**Model:**

- Union End: Copper
- Union Bush: solvent cement socket ABS metric
- Union Nut: brass
- Gasket: O-ring EPDM No. 48 41 00



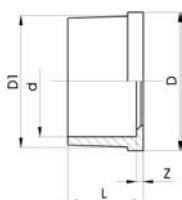
d [mm]	d1 [mm]	PN	Code	kg	L1 [mm]	L2 [mm]	z1 [mm]	z2 [mm]	G [inch]	s [mm]
16	18	10	<b>720 510 105</b>	0.079	25	17	11	4	3/4	32
20	22	10	<b>720 510 106</b>	0.140	26	19	9	3	1	40
25	28	10	<b>720 510 107</b>	0.269	29	28	9	6	1 1/4	50
32	35	10	<b>720 510 108</b>	0.198	32	27	10	5	1 1/2	52
40	42	10	<b>720 510 109</b>	0.350	38	35	12	6	2	66
50	54	10	<b>720 510 110</b>	0.438	40	46	14	3	2 1/4	72

29 60 01

## Union End, ABS metric

**Model:**

- Solvent cement socket metric
- For adaptor unions 29 53 02, 29 53 07, 29 55 02, 29 55 07
- For union 29 51 01



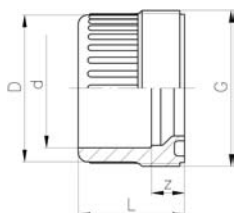
d [mm]	PN	Code	SP	kg	z [mm]	L [mm]	D [mm]	D1 [mm]
16	10	<b>729 600 105</b>	-	0.004	5	19	24	22.00
20	10	<b>729 600 106</b>	-	0.007	4	21	30	28.00
25	10	<b>729 600 107</b>	-	0.012	5	24	39	36.00
32	10	<b>729 600 108</b>	-	0.016	5	27	44	41.00
40	10	<b>729 600 109</b>	-	0.042	3	31	57	53.00
50	10	<b>729 600 110</b>	-	0.045	3	34	63	59.00
63	10	<b>729 600 111</b>	-	0.084	3	41	78	74.00
75	10	<b>729 600 162</b>	-	0.109	3	47	101	91.00
90	10	<b>729 600 163</b>	-	0.178	5	56	121	108.00
110	10	<b>729 600 164</b>	-	0.295	5	66	146	131.00

29 64 01

## Union Bush, ABS metric

**Model:**

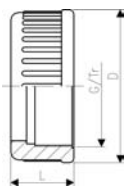
- Solvent cement socket metric
- For adaptor unions 29 53 02, 29 53 07, 29 55 02, 29 55 07
- For union 29 51 01
- Jointing Face: with O-Ring groove
- Jointing face: with O-ring groove



d [mm]	PN	Code	SP	kg	z [mm]	D [mm]	L [mm]	G/Tr
16	10	<b>729 640 105</b>	-	0.008	10	24	24	3/4
20	10	<b>729 640 106</b>	-	0.011	10	28	26	1
25	10	<b>729 640 107</b>	-	0.016	10	33	29	1 1/4
32	10	<b>729 640 108</b>	-	0.023	10	41	32	1 1/2
40	10	<b>729 640 109</b>	-	0.039	12	50	38	2
50	10	<b>729 640 110</b>	-	0.040	14	62	40	2 1/4
63	10	<b>729 640 111</b>	-	0.100	18	77	56	2 3/4
75	10	<b>729 640 112</b>	-	0.160	18	93	62	Tr108x5
90	10	<b>729 640 113</b>	-	0.238	18	110	69	Tr128x5
110	10	<b>729 640 114</b>	-	0.330	11	133	72	Tr154x6

**Union Nut, ABS****Model:**

- For union 23 51 01
- For adaptor unions 29 54 02, 29 54 07



d [mm]	PN	Code	SP	kg	D [mm]	L [mm]	G/Tr
16	10	<b>729 690 405</b>	-	0.009	35	21	3/4
20	10	<b>729 690 406</b>	-	0.014	43	23	1
25	10	<b>729 690 407</b>	-	0.018	53	25	1 1/4
32	10	<b>729 690 408</b>	-	0.024	60	27	1 1/2
40	10	<b>729 690 409</b>	-	0.049	74	30	2
50	10	<b>729 690 410</b>	-	0.070	83	34	2 1/4
63	10	<b>729 690 411</b>	-	0.101	103	38	2 3/4
75	10	<b>729 690 012</b>	-	0.188	135	40	Tr108x5
90	10	<b>729 690 013</b>	-	0.267	158	43	Tr128x5
110	10	<b>729 690 014</b>	-	0.423	188	48	Tr154x6

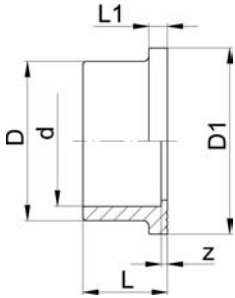
# Flange Adaptors and Flanges

29 79 01

## Flange Adaptor, ABS metric

### Model:

- Jointing faces serrated
  - Counter part: Same flange adaptor or 29 79 11
  - Gasket: Order separately: Flat gasket 48 40 01 EPDM or 49 40 01 FPM
  - Flat gasket 48 40 01 EPDM or 49 40 01 FPM
  - Backing flange: Order separately
- >d225 - maximum operating temperature: +40°C



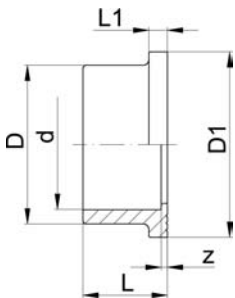
d [mm]	PN	Code	SP	kg	z [mm]	D [mm]	D1 [mm]	L [mm]	L1 [mm]
20	10	<b>729 790 106</b>	10	0.008	3	27	34	21	6
25	10	<b>729 790 107</b>	10	0.012	3	33	41	24	7
32	10	<b>729 790 108</b>	-	0.019	3	41	50	27	7
40	10	<b>729 790 109</b>	10	0.058	3	50	61	30	8
50	10	<b>729 790 110</b>	10	0.058	3	61	73	34	8
63	10	<b>729 790 111</b>	10	0.074	3	76	90	41	9
75	10	<b>729 790 112</b>	-	0.118	3	91	106	47	10
90	10	<b>729 790 113</b>	-	0.187	5	108	125	56	11
110	10	<b>729 790 114</b>	-	0.300	5	131	150	66	12
140	10	<b>729 790 116</b>	-	0.567	5	165	188	81	14
160	10	<b>729 790 117</b>	-	0.800	5	188	213	91	16
200	10	<b>729 790 119</b>	-	1.120	6	224	250	112	24
225	10	<b>729 790 120</b>	-	1.300	6	248	274	125	25
250	6	<b>729 790 121</b>	-	1.940	9	274	303	140	23
280	6	<b>729 790 122</b>	-	2.161	5	307	329	151	23
315	6	<b>729 790 123</b>	-	3.321	8	346	379	172	27

29 79 11

## Flange Adaptors BS, Solvent Socket, ABS inch

### Model:

- Jointing faces serrated
- Counterpart: Same flange adaptor or 29 79 01
- Gasket: Order separately: Flat gasket 48 40 01 EPDM or 49 40 01 FPM
- Backing flange: Order separately



d [inch]	PN	Code	SP	kg	z [mm]	D [mm]	D1 [mm]	L [mm]	L1 [mm]
½	10	<b>729 791 106</b>	-	0.007	3	27	34.00	21	6
¾	10	<b>729 791 107</b>	-	0.011	3	33	41.00	24	7
1	10	<b>729 791 108</b>	-	0.017	3	41	50.00	27	7
1 ¼	10	<b>729 791 109</b>	-	0.027	3	50	61.00	32	8
1 ½	10	<b>729 791 110</b>	-	0.048	3	61	73.00	33	8
2	10	<b>729 791 111</b>	-	0.078	3	77	91.00	40	9
3	10	<b>729 791 113</b>	-	0.187	5	108	125.00	56	11
4	10	<b>729 791 115</b>	-	0.309	5	136	155.00	69	12
6	10	<b>729 791 117</b>	-	0.963	5	198	217.00	96	16

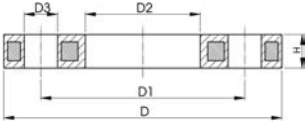
27 70 02

## Backing Flanges, PP/Steel for Socket Systems metric

Model:

- PP-GF (30% glass-fibre reinforced) with steel ring
- Connecting dimensions: ISO 7005, EN 1092, DIN 2501; bolt circle PN 10

\* Connecting dimension: ISO 2536



d [mm]	DN [mm]	PN	Code	D [mm]	D1 [mm]	D2 [mm]	D3 [mm]	H [mm]	AL	SC
20	15	16	<b>727 700 206</b>	95	65	28	14	12	4	M12
25	20	16	<b>727 700 207</b>	105	75	34	14	12	4	M12
32	25	16	<b>727 700 208</b>	115	85	42	14	16	4	M12
40	32	16	<b>727 700 209</b>	140	100	51	18	16	4	M16
50	40	16	<b>727 700 210</b>	150	110	62	18	18	4	M16
63	50	16	<b>727 700 211</b>	165	125	78	18	18	4	M16
75	65	16	<b>727 700 212</b>	185	145	92	18	18	4	M16
90	80	16	<b>727 700 213</b>	200	160	110	18	20	8	M16
110	100	16	<b>727 700 214</b>	220	180	133	18	20	8	M16
125	100	16	<b>727 700 215</b>	250	210	150	18	24	8	M16
140	125	16	<b>727 700 216</b>	250	210	167	18	24	8	M16
160	150	16	<b>727 700 217</b>	285	240	190	22	24	8	M20
200	200	16	<b>727 700 219</b>	340	295	226	22	27	8	M20
225	200	16	<b>727 700 220</b>	340	295	250	22	27	8	M20
*250	250	16	<b>727 700 221</b>	395	325	277	22	30	8	M20
280	250	16	<b>727 700 222</b>	395	350	310	22	30	12	M20
315	300	16	<b>727 700 223</b>	445	400	348	22	34	12	M20

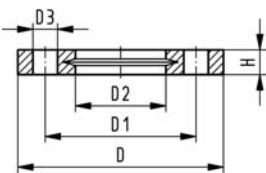
27 70 04  
27 70 05

## Backing Flanges, PP-V for Socket Systems metric

Model:

- Modern full-plastic flange PP-GF (30 % glass-fibre reinforced)
- With V-groove which applies force evenly on collar
- With integrated bolt retainers as an assembly aid
- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10

1) Suitable for socket- and butt fusion systems (no pictograph on flange)



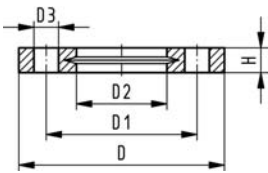
d [mm]	DN [mm]	PN	Code	D [mm]	D1 [mm]	D2 [mm]	D3 [mm]	H [mm]	AL	SC
20	15	16	<b>727 700 406</b>	95	65.00	28.00	14.0	16	4	M12
25	20	16	<b>727 700 407</b>	105	75.00	34.00	14.0	17	4	M12
32	25	16	<b>727 700 408</b>	115	85.00	42.00	14.0	18	4	M12
40	32	16	<b>727 700 409</b>	140	100.00	51.00	18.0	20	4	M16
50	40	16	<b>727 700 410</b>	150	110.00	62.00	18.0	22	4	M16
63	50	16	<b>727 700 411</b>	165	125.00	78.00	18.0	24	4	M16
75	65	16	<b>727 700 412</b>	185	145.00	92.00	18.0	26	4	M16
90	80	16	<b>727 700 413</b>	200	160.00	110.00	18.0	27	8	M16
110	100	16	<b>727 700 414</b>	220	180.00	133.00	18.0	28	8	M16
140	125	16	<b>727 700 416</b>	250	210.00	167.00	18.0	30	8	M16
160	150	16	<b>727 700 417</b>	285	241.00	190.00	22.0	32	8	M20
200	200	16	<b>727 700 419</b>	340	296.50	226.00	22.0	34	8	M20
225	200	16	<b>727 700 420</b>	340	295.00	250.00	22.0	34	8	M20
250	250	16	<b>727 700 421</b>	395	350.00	277.00	22.0	38	12	M20
280	250	16	<b>727 700 422</b>	395	350.00	310.00	22.0	38	12	M20
315	300	16	<b>727 700 423</b>	445	400.00	348.00	22.0	42	12	M20

27 70 14  
27 70 15

## Backing Flanges, PP-V for Socket Systems Inch/ANSI

### Model:

- Modern full-plastic flange PP-GF (30 % glass-fibre reinforced)
- With V-groove which applies force evenly on collar
- With integrated bolt-fixing as an assembly aid
- Connection dimensions according to ANSI B 16.5, ASTM D 4024; bolt circle class 150

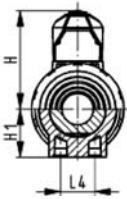
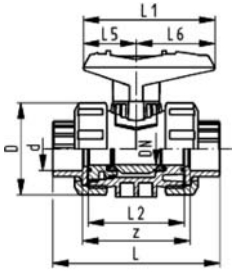


<sup>1)</sup> Suitable for socket- and butt fusion systems (no pictograph on flange)

Inch	d [mm]	DN [mm]	PN	Code	kg	D [mm]	D1 [mm]	D2 [mm]	D3 [mm]	H [mm]	AL	SC
1/2		15	16	<b>727 701 406</b>	0.080	95	60.00	28.00	16.0	16	4	M12
3/4		20	16	<b>727 701 407</b>	0.100	105	70.00	34.00	16.0	17	4	M12
1		25	16	<b>727 701 408</b>	0.140	115	79.00	42.00	16.0	18	4	M12
1 1/4		32	16	<b>727 701 409</b>	0.220	140	89.00	51.00	16.0	20	4	M16
1 1/2		40	16	<b>727 701 410</b>	0.210	150	98.00	62.00	16.0	22	4	M16
2		50	16	<b>727 701 411</b>	0.380	165	121.00	78.00	19.0	24	4	M16
2 1/2		65	16	<b>727 701 412</b>	0.480	185	140.00	92.00	19.0	26	4	M16
3		80	16	<b>727 701 413</b>	0.520	200	152.00	110.00	19.0	27	4	M16
4	110	100	16	<b>727 701 414</b>	0.680	229	190.00	133.00	19.0	28	8	M16
	160	150	16	<b>727 700 417</b>	1.200	285	241.00	190.00	22.0	32	8	M20
10		250	16	<b>727 701 422</b>	1.700	406	362.00	310.00	26.0	38	12	M20
12		300	16	<b>727 701 423</b>	2.400	483	432.00	348.00	26.0	42	12	M20

# Ball valves

## Ball valve type 546 ABS With solvent cement sockets metric



### Model:

- For easy installation and removal
- z-dimension, valve end and valve nut are **not compatible** with type 346
- Ball seals PTFE
- Without mounting inserts

### Option:

- Individual configuration of the valve (see form)
- Multifunctional module with integrated limit switches
- Pneumatic or electric actuators from +GF+

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	71	<b>169 546 001</b>	0.112
20	15	10	185	<b>169 546 002</b>	0.114
25	20	10	350	<b>169 546 003</b>	0.178
32	25	10	700	<b>169 546 004</b>	0.258
40	32	10	1000	<b>169 546 005</b>	0.457
50	40	10	1600	<b>169 546 006</b>	0.642
63	50	10	3100	<b>169 546 007</b>	1.175

d [mm]	D [mm]	H [mm]	H1 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	z [mm]
16	50	57	27	92	77	56	25	32	45	64
20	50	57	27	95	77	56	25	32	45	64
25	58	67	30	110	97	65	25	39	58	72
32	68	73	36	123	97	71	25	39	58	79
40	84	90	44	146	128	85	45	54	74	94
50	97	97	51	157	128	89	45	54	74	95
63	124	116	64	183	152	101	45	66	87	107



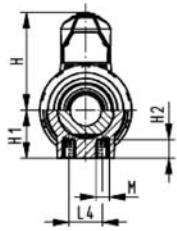
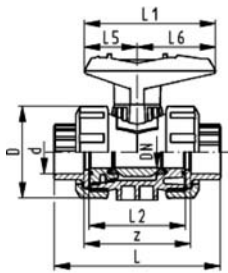
## Ball valve type 546 ABS With mounting inserts With solvent cement sockets metric

### Model:

- For easy installation and removal
- z-dimension, valve end and valve nut are **not compatible** with type 346
- Ball seals PTFE
- Integrated stainless steel mounting inserts

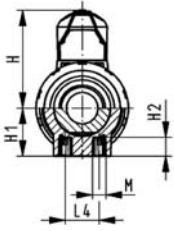
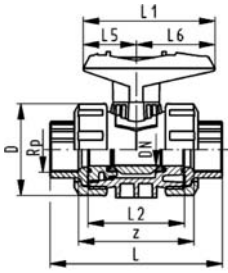
### Option:

- Individual configuration of the valve (see form)
- Multifunctional module with integrated limit switches
- Pneumatic or electric actuators from +GF+



d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	71	<b>169 546 061</b>	0.112
20	15	10	185	<b>169 546 062</b>	0.114
25	20	10	350	<b>169 546 063</b>	0.178
32	25	10	700	<b>169 546 064</b>	0.258
40	32	10	1000	<b>169 546 065</b>	0.457
50	40	10	1600	<b>169 546 066</b>	0.642
63	50	10	3100	<b>169 546 067</b>	1.175

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	M	z [mm]
16	50	57	27	12	92	77	56	25	32	45	M6	64
20	50	57	27	12	95	77	56	25	32	45	M6	64
25	58	67	30	12	110	97	65	25	39	58	M6	72
32	68	73	36	12	123	97	71	25	39	58	M6	79
40	84	90	44	15	146	128	85	45	54	74	M8	94
50	97	97	51	15	157	128	89	45	54	74	M8	95
63	124	116	64	15	183	152	101	45	66	87	M8	107



## Ball valve type 546 ABS With mounting inserts With threaded sockets Rp

### Model:

- For easy installation and removal
- z-dimension, valve end and valve nut are **not compatible** with type 346
- Ball seals PTFE
- Integrated stainless steel mounting inserts

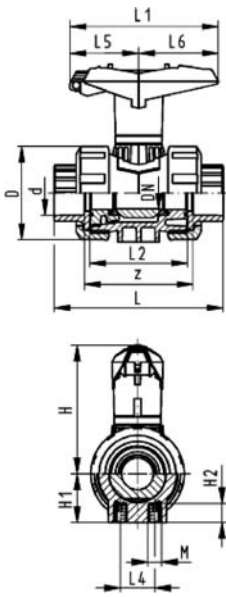
### Option:

- Individual configuration of the valve (see form)
- Multifunctional module with integrated limit switches
- Pneumatic or electric actuators from +GF+

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	71	<b>169 546 021</b>	0.112
1/2	15	10	185	<b>169 546 022</b>	0.114
3/4	20	10	350	<b>169 546 023</b>	0.178
1	25	10	700	<b>169 546 024</b>	0.258
1 1/4	32	10	1000	<b>169 546 025</b>	0.457
1 1/2	40	10	1600	<b>169 546 026</b>	0.642
2	50	10	3100	<b>169 546 027</b>	1.175

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	M	z [mm]
3/8	50	57	27	12	95	77	56	25	32	45	M6	69
1/2	50	57	27	12	100	77	56	25	32	45	M6	67
3/4	58	67	30	12	114	97	65	25	39	58	M6	78
1	68	73	36	12	127	97	71	25	39	58	M6	85
1 1/4	84	90	44	15	146	128	85	45	54	74	M8	100
1 1/2	97	97	51	15	152	128	89	45	54	74	M8	106
2	124	116	64	15	177	152	101	45	66	87	M8	121





## Ball valve type 546 ABS With lockable handle With solvent cement sockets metric

### Model:

- For easy installation and removal
- z-dimension, valve end and valve nut are **not compatible** with type 346
- Ball seals PTFE
- Integrated stainless steel mounting inserts
- Lockable hand lever with ratchet settings

### Option:

- Individual configuration of the valve (see form)
- Multifunctional module with integrated limit switches
- Pneumatic or electric actuators from +GF+

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg								
16	10	10	71	<b>169 546 081</b>	0.121								
20	15	10	185	<b>169 546 082</b>	0.123								
25	20	10	350	<b>169 546 083</b>	0.193								
32	25	10	700	<b>169 546 084</b>	0.273								
40	32	10	1000	<b>169 546 085</b>	0.480								
50	40	10	1600	<b>169 546 086</b>	0.665								
63	50	10	3100	<b>169 546 087</b>	1.205								
d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	M	z [mm]	
16	50	79	27	12	92	87	56	25	42	45	M6	64	
20	50	79	27	12	95	87	56	25	42	45	M6	64	
25	58	88	30	12	110	108	65	25	50	58	M6	72	
32	68	94	36	12	123	108	71	25	50	58	M6	79	
40	84	113	44	15	146	140	85	45	66	75	M8	94	
50	97	119	51	15	157	140	89	45	66	75	M8	95	
63	124	141	64	15	183	165	101	45	78	87	M8	107	



## Ball valve type 370 ABS

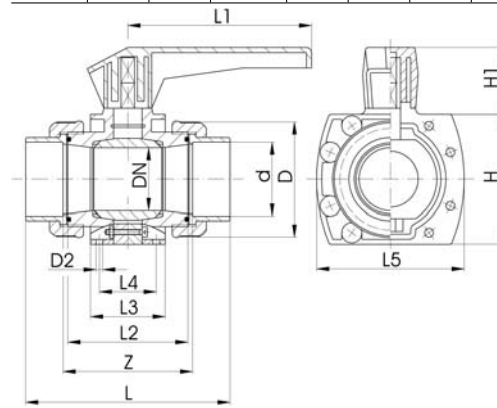
### Unions with solvent cement sockets metric

#### Model:

- For easy installation and removal
- Pneumatic or electric actuator available separately
- Minimum temperature: - 40°C

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
75	65	2 ½	10	5000	<b>169 370 008</b>	2.385
90	80		10	7000	<b>169 370 009</b>	3.510
110	100		10	11000	<b>169 370 010</b>	6.738

d [mm]	z [mm]	D [mm]	D2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	H [mm]	H1 [mm]
75	145	135	10.00	233	205	139	90	72	160	148	74
90	165	158	10.00	267	205	155	104	88	188	176	74
110	196	188	12.00	318	250	186	128	104	225	223	78

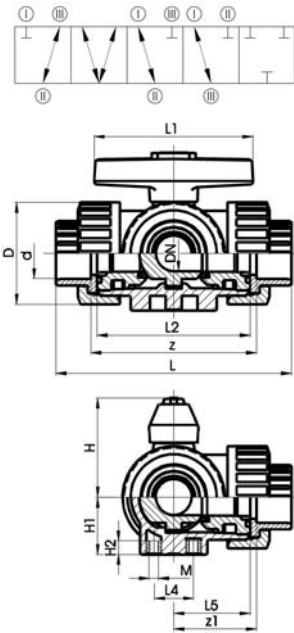




### 3-Way ball valve type 343 ABS Horizontal/ L-port With solvent cement sockets metric

**Model:**

- L-port ball
- For easy installation and removal
- Ball seals PTFE
- Pneumatic or electric actuator available separately
- Angle of operation 45°, without turn limiter
- Minimum temperature: - 40°C



d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	50	<b>169 343 001</b>	0.213
20	15	10	75	<b>169 343 002</b>	0.156
25	20	10	150	<b>169 343 003</b>	0.285
32	25	10	280	<b>169 343 004</b>	0.388
40	32	10	480	<b>169 343 005</b>	0.639
50	40	10	620	<b>169 343 006</b>	1.036
63	50	10	1230	<b>169 343 007</b>	1.987

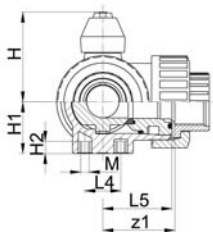
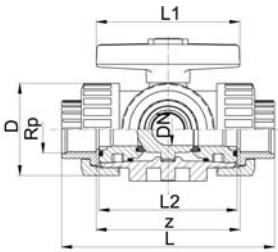
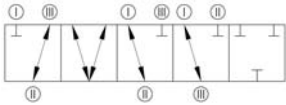
d [mm]	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	H [mm]	H1 [mm]	H2 [mm]	M
16	80	40	45	108	78	72	25	36	50	27	8	6
20	80	40	45	111	78	72	25	36	50	27	8	6
25	94	47	52	131	92	86	25	43	60	33	8	6
32	104	52	65	148	100	96	25	48	68	36	8	6
40	126	63	78	176	110	116	45	58	79	44	9	8
50	144	72	92	206	120	137	45	69	90	49	9	8
63	186	93	116	262	146	179	45	90	109	61	9	8



### 3-Way ball valve type 343 ABS Horizontal/ L-port With threaded sockets Rp

**Model:**

- L-port ball
- For easy installation and removal
- Ball seals PTFE
- Pneumatic or electric actuator available separately
- Angle of operation 45°, without turn limiter
- Minimum temperature: - 40°C



Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	50	<b>169 343 041</b>	0.156
1/2	15	10	75	<b>169 343 042</b>	0.156
3/4	20	10	150	<b>169 343 043</b>	0.285
1	25	10	280	<b>169 343 044</b>	0.388
1 1/4	32	10	480	<b>169 343 045</b>	0.639
1 1/2	40	10	620	<b>169 343 046</b>	1.036
2	50	10	1230	<b>169 343 047</b>	1.987

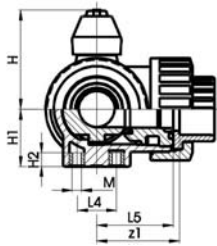
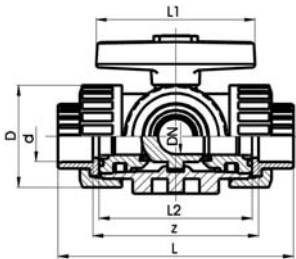
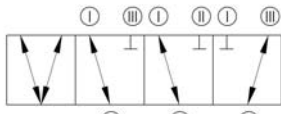
Rp [inch]	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	H [mm]	H1 [mm]	H2 [mm]	M
3/8	80	40	45	108	78	72	25	36	50	27	8	6
1/2	80	40	45	111	78	72	25	36	50	27	8	6
3/4	94	47	52	131	92	86	25	43	60	33	8	6
1	104	52	65	148	100	96	25	48	68	36	8	6
1 1/4	126	63	78	176	110	116	45	58	79	44	9	8
1 1/2	144	72	92	206	120	137	45	69	90	49	9	8
2	186	93	116	262	146	179	45	90	109	61	9	8



### 3-Way ball valve type 343 ABS Horizontal/ T-port With solvent cement sockets metric

**Model:**

- T-port ball
- For easy installation and removal
- Ball seals PTFE
- Pneumatic or electric actuator available separately
- Angle of operation 90°, without turn limiter
- Minimum temperature: - 40°C



d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	140	<b>169 343 201</b>	0.156
20	15	10	200	<b>169 343 202</b>	0.156
25	20	10	470	<b>169 343 203</b>	0.285
32	25	10	793	<b>169 343 204</b>	0.388
40	32	10	1290	<b>169 343 205</b>	0.639
50	40	10	1910	<b>169 343 206</b>	1.036
63	50	10	3100	<b>169 343 207</b>	1.987

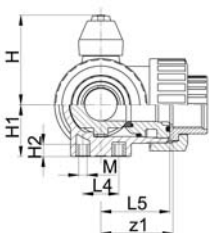
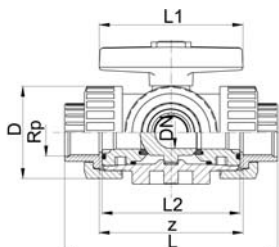
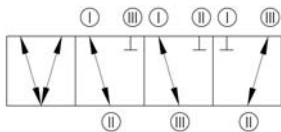
d [mm]	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	H [mm]	H1 [mm]	H2 [mm]	M
16	80	40	45	108	78	72	25	36	50	27	8	6
20	80	40	45	111	78	72	25	36	50	27	8	6
25	94	47	52	131	92	86	25	43	60	33	8	6
32	104	52	65	148	100	96	25	48	68	36	8	6
40	126	63	78	176	110	116	45	58	79	44	9	8
50	144	72	92	206	120	137	45	69	90	49	9	8
63	186	93	116	262	146	179	45	90	109	61	9	8



## 3-Way ball valve type 343 ABS Horizontal/ T-port With threaded sockets Rp

### Model:

- T-port ball
- For easy installation and removal
- Ball seals PTFE
- Pneumatic or electric actuator available separately
- Angle of operation 90°, without turn limiter
- Minimum temperature: - 40°C



Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	140	<b>169 343 241</b>	0.156
1/2	15	10	200	<b>169 343 242</b>	0.156
3/4	20	10	470	<b>169 343 243</b>	0.285
1	25	10	793	<b>169 343 244</b>	0.388
1 1/4	32	10	1290	<b>169 343 245</b>	0.639
1 1/2	40	10	1910	<b>169 343 246</b>	1.036
2	50	10	3100	<b>169 343 247</b>	1.987

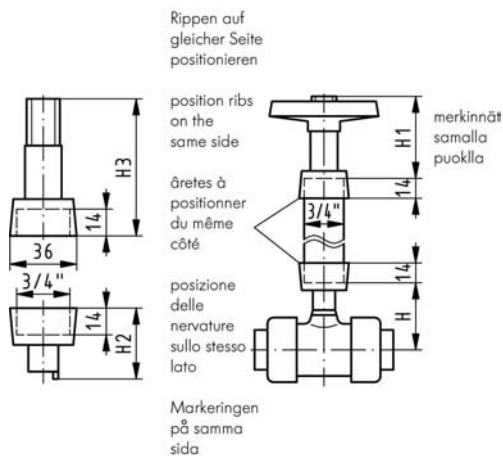
Rp [inch]	z [mm]	z1 [mm]	D [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	H [mm]	H1 [mm]	H2 [mm]	M
3/8	80	40	43	108	78	72	25	36	50	27	8	6
1/2	80	40	43	111	78	72	25	36	50	27	8	6
3/4	94	47	52	131	92	86	25	43	60	33	8	6
1	104	52	65	148	100	96	25	48	68	36	8	6
1 1/4	126	63	78	176	110	116	45	58	79	44	9	8
1 1/2	144	72	92	206	120	137	45	69	90	49	9	8
2	186	93	116	262	146	179	45	90	109	61	9	8



## Handle extension type 615 PVC-U

- For Ball Valves Type 323, 343 and 346

d [mm]	DN [mm]	Inch	Code	kg	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]
16-20	10-15	3/8-1/2	<b>161 483 561</b>	0.160	102	102	37	59
25	20	3/4	<b>161 483 562</b>	0.170	114	114	40	62
32	25	1	<b>161 483 563</b>	0.280	127	127	42	65
40	32	1 1/4	<b>161 483 564</b>	0.400	137	137	43	67
50	40	1 1/2	<b>161 483 565</b>	0.055	152	152	46	69
63	50	2	<b>161 483 566</b>	0.056	175	175	51	71





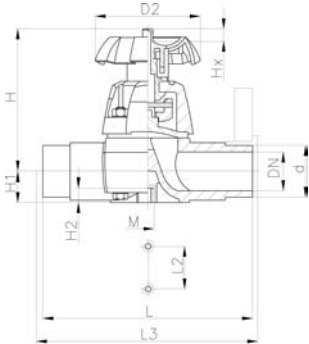
## Pipe PVC-U

- For Handle Extension Type 615

d [inch]	Code	kg	l [mm]	l [mm]	
3/4	<b>161 483 570</b>	0.075	200	200	
3/4	<b>161 483 571</b>	0.200	1000	1000	

# Diaphragm valves

## Diaphragm valve type 315 ABS With solvent cement spigots metric



### Model:

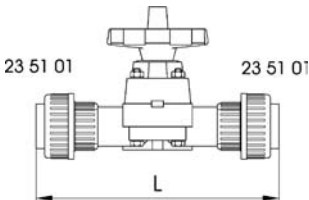
- Overall length EN 558-1
- Other types available on request
- Minimum temperature: - 30°C

### Option:

- Handwheel with built-in locking mechanism (standard version is nonlockable)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	PTFE with EPDM Code	kg
20	15	10	72	<b>169 315 417</b>	<b>169 315 432</b>	0.290
25	20	10	137	<b>169 315 418</b>	<b>169 315 433</b>	0.440
32	25	10	207	<b>169 315 419</b>	<b>169 315 434</b>	0.710
40	32	10	354	<b>169 315 420</b>	<b>169 315 435</b>	1.000
50	40	10	517	<b>169 315 421</b>	<b>169 315 436</b>	1.300
63	50	10	713	<b>169 315 422</b>	<b>169 315 437</b>	2.300

d [mm]	D2 [mm]	L [mm]	L2 [mm]	L3 [mm]	H [mm]	H1 [mm]	H2 [mm]	M	Lift = Hx [mm]
20	80.00	124	25	130	90	14	12	M6	8
25	80.00	144	25	150	102	18	12	M6	11
32	94.00	154	25	160	119	21	12	M6	13
40	117.00	174	45	180	126	26	15	M8	16
50	117.00	194	45	200	139	33	15	M8	21
63	152.00	224	45	230	172	39	15	M8	28



## Diaphragm valve type 314 ABS With solvent cement socket metric

### Model:

- Type 315 with two adhesive jointed unions
- Overall length not standard
- For easy installation and removal
- Minimum temperature: - 30°C

### Option:

- Handwheel with built-in locking mechanism (standard version is nonlockable)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	D2 [mm]	L [mm]	Lift = Hx [mm]
20	15	10	72	<b>169 314 017</b>	0.360	80.00	182	8
25	20	10	137	<b>169 314 018</b>	0.540	80.00	208	11
32	25	10	207	<b>169 314 019</b>	0.850	94.00	224	13
40	32	10	354	<b>169 314 020</b>	1.260	117.00	256	16
50	40	10	517	<b>169 314 021</b>	1.640	117.00	290	21
63	50	10	713	<b>169 314 022</b>	2.980	152.00	342	28





## Diaphragm valve type 317 ABS With PP-V flanges metric

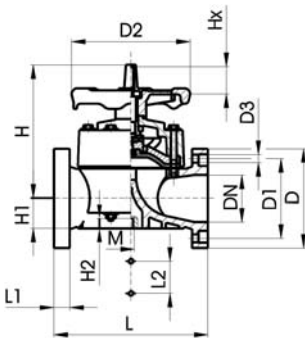
### Model:

- Overall length EN 558-1
- Flanged for easy installation and removal
- Jointing face flat
- Other types available on request
- With ABS fixed flanges DN 80-100
- Ergonomic easy to remove handwheel
- Minimum temperature: - 30°C

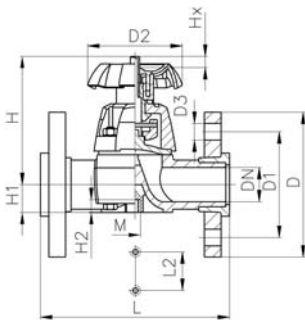
### Option:

- Handwheel lockable DN15-65 (basic version not lockable)

### \* with ABS fixed flanges



DN 80-100



DN 15-65

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
75	65	2 ½	10	992	<b>169 317 423</b>	5.000
*90	80	3	10	1700	<b>169 317 024</b>	8.350
*110	100	4	10	2700	<b>169 317 025</b>	11.600

d [mm]	D [mm]	D1 [mm]	D2 [mm]	D3 [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	M	AL	Lift = Hx [mm]
75	185	145.00	152.00	18.0	290		70	201	46	15	M8	4	30
*90	200	160.00	270.00	18.0	310	35	120	265	57	23	M12	8	40
*110	225	180.00	270.00	18.0	350	35	120	304	69	23	M12	8	50

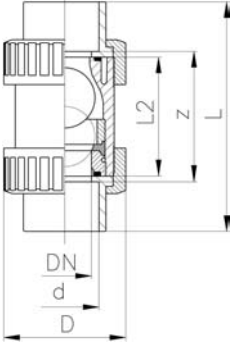


## Handwheel with built-in locking mechanism For diaphragm valve type 314 / 315 / 317 / 319

d [mm]	DN [mm]	d-d [inch]	Code	kg
32	25	1 -	<b>167 481 944</b>	0.043
40 - 50	32 - 40	1 ¼ - 1 ½	<b>167 481 945</b>	0.071
63 - 75	50 - 65	2 - 2 ½	<b>167 481 946</b>	0.217

# Ball check (non-return) valve

## Ball check (non-return) valve type 360 ABS With solvent cement sockets metric



### Model:

- For easy installation and removal
- Ball is sealing at a minimum water column of 1 m
- Vibration free even at high flow velocity
- Other types available on request
- Minimum temperature: - 40°C
- Installation position vertical, flow direction from down upward

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	z [mm]	D [mm]	L [mm]	L2 [mm]
16	10	3/8	10	170	<b>169 360 401</b>	0.105	71	45	99	63
20	15	1/2	10	150	<b>169 360 402</b>	0.105	70	45	102	63
25	20	3/4	10	330	<b>169 360 403</b>	0.175	82	56	120	75
32	25	1	10	390	<b>169 360 404</b>	0.271	87	67	131	79
40	32	1 1/4	10	710	<b>169 360 405</b>	0.445	98	82	150	89
50	40	1 1/2	10	900	<b>169 360 406</b>	0.715	101	92	163	95
63	50	2	10	1390	<b>169 360 407</b>	1.271	121	120	197	115

# Butterfly valves

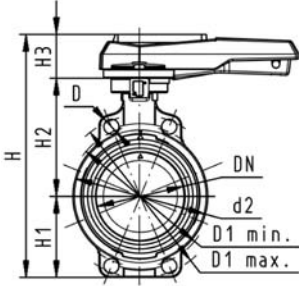
## Butterfly valve type 567 ABS Hand lever with ratchet settings



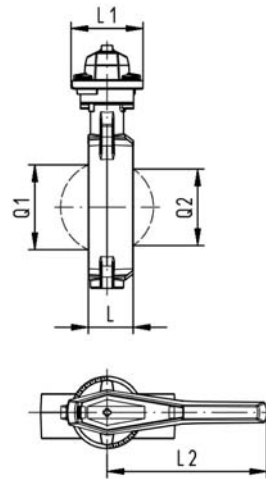
### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>169 567 002</b>	1.221 1.805
*75	65	2 ½	10	2200	<b>169 567 003</b>	
90	80	3	10	3000	<b>169 567 004</b>	
110	100	4	10	6500	<b>169 567 005</b>	
*140	125	5	10	11500	<b>169 567 006</b>	
160	150	6	10	16600	<b>169 567 007</b>	3.128
225	200	8	10	39600	<b>169 567 008</b>	4.936



d [mm]	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	L2 [mm]	Q1 [mm]	Q2 [mm]
*63	19	120.0	125.0	104	264	77	134	54	45	106	205	35.74	
*75	19	139.7	145.0	115	277	83	140	54	46	106	205	50.93	30.62
90	19	150.0	160.0	131	289	89	146	54	49	106	205	64.01	46.24
110	19	175.0	190.5	161	325	104	167	55	56	106	255	84.46	69.96
*140	23	210.0	215.9	187	352	117	181	55	64	106	255	110.71	94.50
160	24	241.3	241.3	215	373	130	189	55	72	106	255	136.08	121.54
225	23	290.0	295.0	267	435	158	210	67	73	140	408	175.62	166.23



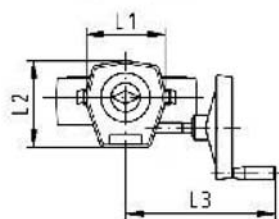
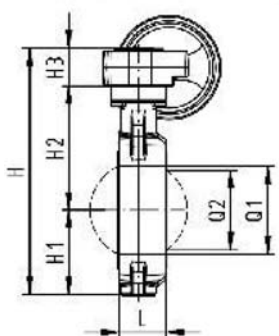
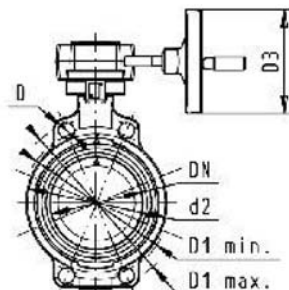
## Butterfly valve type 567 ABS Reduction gear with handwheel



### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>169 567 022</b>	
*75	65	2 ½	10	2200	<b>169 567 023</b>	
90	80	3	10	3000	<b>169 567 024</b>	3.259
110	100	4	10	6500	<b>169 567 025</b>	3.795
*140	125	5	10	11500	<b>169 567 026</b>	
160	150	6	10	16600	<b>169 567 027</b>	5.118
225	200	8	10	39600	<b>169 567 028</b>	6.389

d [mm]	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	D3 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]
*63	19	120.0	125.0	104	160.0	278	77	134	68	45	120	132	236
*75	19	139.7	145.0	115	160.0	291	83	140	68	46	120	132	236
90	19	150.0	160.0	131	160.0	303	89	146	68	49	120	132	236
110	19	175.0	190.5	160	160.0	339	104	167	68	56	120	132	236
*140	23	210.0	215.9	187	160.0	365	117	181	68	64	120	132	236
160	24	241.3	241.3	215	160.0	387	130	189	68	72	120	132	236
225	23	290.0	295.0	267	160.0	436	158	210	68	73	120	132	236

d [mm]	Q1 [mm]	Q2 [mm]
*63	35.74	
*75	50.93	30.62
90	64.01	46.24
110	84.46	69.96
*140	110.71	94.50
160	136.08	121.54
225	175.62	166.23



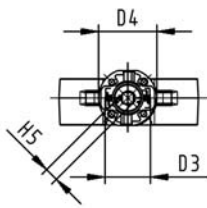
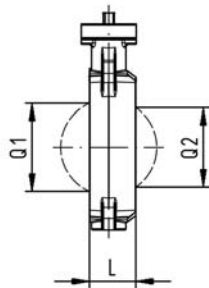
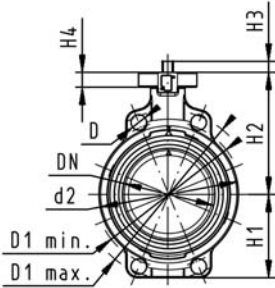
## Butterfly valve type 567 ABS Bare shaft



### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Interface F07 according to DIN/ISO 5211

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>169 567 802</b>	0.763
*75	65	2 ½	10	2200	<b>169 567 803</b>	0.859
90	80	3	10	3000	<b>169 567 804</b>	0.999
110	100	4	10	6500	<b>169 567 805</b>	1.535
*140	125	5	10	11500	<b>169 567 806</b>	2.018
160	150	6	10	16600	<b>169 567 807</b>	2.858
225	200	8	10	39600	<b>169 567 808</b>	4.129

d [mm]	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	D3 [mm]	D4 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]
*63	19	120.0	125.0	104	85.0	90.0	222	77	134	26	23	11	45
*75	19	139.7	145.0	115	85.0	90.0	235	83	140	26	23	11	46
90	19	150.0	160.0	131	85.0	90.0	247	89	146	26	23	11	49
110	19	175.0	190.5	161	85.0	90.0	287	104	167	15	23	14	56
*140	23	210.0	215.9	187	85.0	90.0	313	117	181	15	23	14	64
160	24	241.3	241.3	215	85.0	90.0	335	130	189	15	23	17	72
225	23	290.0	295.0	267	85.0	90.0	387	158	210	18	23	17	73

d [mm]	Q1 [mm]	Q2 [mm]
*63	35.74	
*75	50.93	30.62
90	64.01	46.24
110	84.46	69.96
*140	110.71	94.50
160	136.08	121.54
225	175.62	166.23

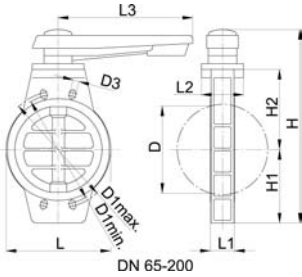


## Butterfly valve type 367 ABS Lever handle with ratchet settings

### Model:

- Jointing face flat
- Overall length ISO 7508
- Overall length EN 558-1
- Connecting dimension: ISO 7005 PN10, EN 1092 PN 10, DIN 2501 PN10
- Minimum temperature: - 30°C

Phase out product will be replaced with type 567



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
90	80	3	10	3000	<b>169 367 606</b>	1.650	
110	100	4	10	6500	<b>169 367 607</b>	2.200	
160	150	6	6	16600	<b>169 367 609</b>	3.320	

d [mm]	D [mm]	D1 min. [mm]	D1 max. [mm]	D3 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	H [mm]	H1 [mm]	H2 [mm]	
90	66	160.0	160.0	18.0	132	49	77	230	290	92	120	
110	85	180.0	180.0	18.0	160	56	92	230	328	108	138	
160	135	240.0	240.0	22.0	216	70	116	355	415	140	170	

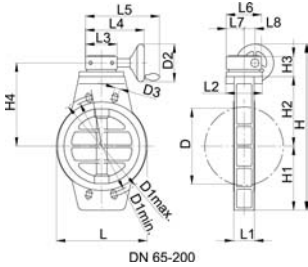


## Butterfly valve type 367 ABS Reduction gear with handwheel

### Model:

- Jointing face flat
- Overall length ISO 7508
- Overall length EN 558-1
- Connecting dimension: ISO 7005 PN10, EN 1092 PN 10, DIN 2501 PN10
- Minimum temperature: - 30°C

Phase out product will be replaced with type 567



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
90	80	3	10	3000	<b>169 367 646</b>	3.960	
110	100	4	10	6500	<b>169 367 647</b>	4.480	
160	150	6	6	16600	<b>169 367 649</b>	5.510	

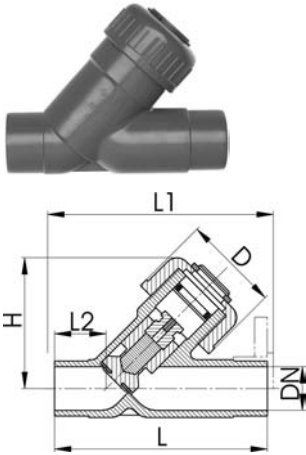
d [mm]	D [mm]	D1 min. [mm]	D1 max. [mm]	D2 [mm]	D3 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]
90	66	160.0	160.0	160.00	18.0	132	49	77	120	221	296	132	55	46
110	85	180.0	180.0	160.00	18.0	160	56	92	120	221	296	132	55	46
160	135	240.0	240.0	160.00	22.0	216	70	116	120	221	296	132	55	46

d [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]
90	307	80	10	68	147
110	329	92	120	68	157
160	363	108	138	68	175

# Angle seat check valves and Strainers

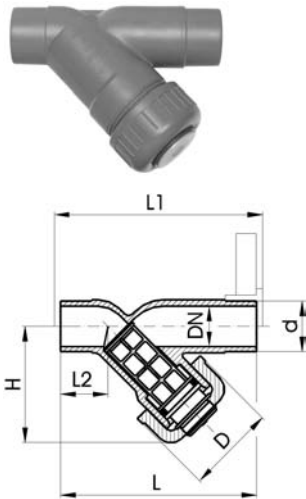
## Angle seat check valve type 303 ABS With solvent cement spigots metric



### Model:

- For horizontal or vertical installation
- Specific gravity of piston approx. 2 kg/dm<sup>3</sup>
- Overall length EN 558-1
- Leakproof from: EPDM 2m, FPM 3m water column

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	D [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]
20	15	10	95	<b>169 303 006</b>	0.090	43	124	130	28	65
25	20	10	180	<b>169 303 007</b>	0.137	47	144	150	37	75
32	25	10	327	<b>169 303 008</b>	0.228	56	154	160	37	90
40	32	10	484	<b>169 303 009</b>	0.348	64	174	180	44	102
50	40	10	725	<b>169 303 010</b>	0.624	82	194	200	48	123
63	50	10	1130	<b>169 303 011</b>	1.108	95	224	230	60	144



## Line strainer type 305 ABS With solvent cement spigots metric

### Model:

- Protects valves, pumps, etc. from becoming soiled
- Easy dismantling for cleaning the screens
- Cylindrical screen must be ordered separately
- Overall length EN 558-1
- Screen in stainless steel operable temperature range up -10°C to +60°C
- Screen in PVC-U operable temperature range up 0°C to +60°C

d [mm]	DN [mm]	Inch	PN	EPDM Code	kg	D [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]
20	15	½	10	<b>169 305 302</b>	0.080	48	124	130	28	65
25	20	¾	10	<b>169 305 303</b>	0.120	54	144	150	37	76
32	25	1	10	<b>169 305 304</b>	0.180	62	154	160	37	90
40	32	1 ¼	10	<b>169 305 305</b>	0.280	71	174	180	44	104
50	40	1 ½	10	<b>169 305 306</b>	0.470	88	194	200	48	124
63	50	2	10	<b>169 305 307</b>	0.780	103	224	230	60	148

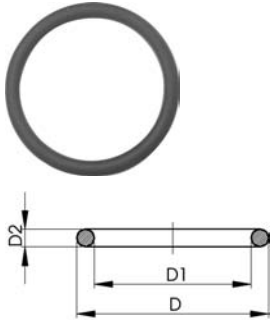
# Seals

EPDM 48 41 00  
FPM 49 41 00

## O-Ring Gaskets

Model:

- For unions
- Hardness approx. 65° Shore
- EPDM minimum temperature -40°C
- FPM minimum temperature -15°C



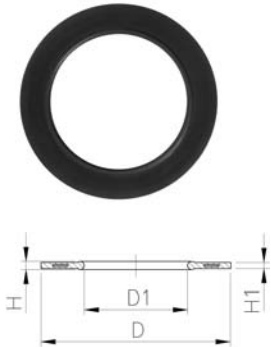
d [mm]	DN [mm]	EPDM Code	FPM Code	SP	kg	D [mm]	D1 [mm]	D2 [mm]
10-12	8	748 410 004	749 410 004	-	0.002	18	12.40	2.60
16	10	748 410 005	749 410 005	-	0.002	21	15.50	2.60
20	15	748 410 006	749 410 006	-	0.002	27	20.20	3.50
25	20	748 410 007	749 410 007	100	0.002	35	28.20	3.50
32	25	748 410 008	749 410 008	100	0.002	40	32.90	3.50
40	32	748 410 009	749 410 009	-	0.006	51	40.60	5.30
50	40	748 410 010	749 410 010	-	0.007	58	47.00	5.30
63	50	748 410 011	749 410 011	100	0.010	70	59.70	5.30
75	65	748 410 014	749 410 014	100	0.012	93	81.90	5.30
90	80	748 410 015	749 410 015	100	0.015	112	101.00	5.30
110	100	748 410 016	749 410 016	50	0.031	134	120.00	7.00

EPDM 48 44 01  
FPM 49 44 01

## Flange Gaskets metric

Model:

- G-ST-P/K Profil
- Hardness: 70° Shore **EPDM**, 75° Shore **FPM**
- Suitable for ISO/DIN or ANSI socket fusion flange adaptor
- For flange adaptors only in combination with butterfly valves

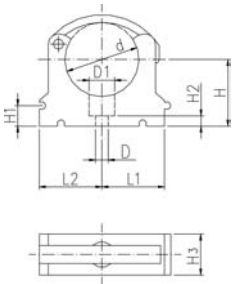


d [mm]	EPDM Code	FPM Code	kg	D [mm]	D1 [mm]	H [mm]	H1 [mm]
16	748 440 100	749 440 100	0.007	46	16	4	3
20	748 440 101	749 440 101	0.008	51	20	4	3
25	748 440 102	749 440 102	0.011	61	25	4	3
32	748 440 103	749 440 103	0.014	71	32	4	3
40	748 440 104	749 440 104	0.020	82	40	4	3
50	748 440 105	749 440 105	0.021	92	50	4	3
63	748 440 106	749 440 106	0.040	107	63	5	4
75	748 440 107	749 440 107	0.054	127	75	5	4
90	748 440 108	749 440 108	0.060	142	90	5	4
110	748 440 109	749 440 109	0.083	162	110	6	5
125	748 440 110	749 440 110	0.154	192	125	6	5
140	748 440 111	749 440 111	0.115	192	140	6	5
160	748 440 112	749 440 112	0.149	218	160	8	6
200	748 440 114	749 440 114	0.257	273	200	8	6
225	748 440 115	749 440 115	0.177	273	225	8	6
280	748 440 117	749 440 117	0.220	328	280	8	6
315	748 440 118	749 440 118	0.326	378	315	8	6



# Pipe Clips metric

## KLIP-IT Pipe Clips Type 061, PP metric

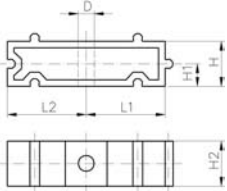


### Model:

- For mm pipes
- Material: Clip and safety clip PP black, UV resistant
- **Minimum order quantity: standard packagings SP**

d [mm]	d [inch]	Code	SP	D [mm]	D1 [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	SC
*10		<b>167 061 003</b>	10	5	8	11	14	20	10	6	12	M4
*12		<b>167 061 004</b>	10	5	8	11	14	21	10	6	12	M5
75	2 ½	<b>167 061 012</b>	10	9	17	52	52	58	10	10	25	M8
90	3	<b>167 061 013</b>	10	9	17	65	65	65	10	10	28	M8
110	4	<b>167 061 014</b>	10	9	17	79	79	75	10	10	28	M8
125		<b>167 061 015</b>	10	9	17	88	88	90	10	10	32	M8
140	5	<b>167 061 016</b>	10	9	17	98	98	110	10	10	32	M8
160		<b>167 061 017</b>	10	9	17	109	109	108	10	10	32	M8

## KLIP-IT Spacer Type 061, PP



### Model:

- For pipe clips Type 061/061H, PP black, UV resistant
- **Minimum order quantity: standard packaging SP**

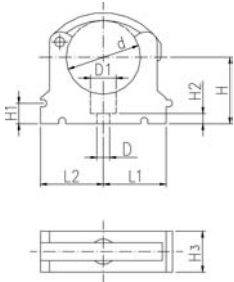
d [mm]	Inch	Code	SP	kg	D [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	SC
10-12	1/8-1/4	<b>167 061 153</b>	10	0.003	5	11	14	20	10	12	M4
16	3/8	<b>167 061 155</b>	10	0.006	6	14	17	20	10	16	M5
20	1/2	<b>167 061 156</b>	10	0.006	6	17	19	20	10	16	M5
25	3/4	<b>167 061 157</b>	10	0.007	6	19	22	20	10	16	M5
32	1	<b>167 061 158</b>	10	0.008	6	24	27	20	10	16	M5
40	1 1/4	<b>167 061 159</b>	10	0.016	7	34	34	20	10	22	M6
50	1 1/2	<b>167 061 160</b>	10	0.017	7	37	37	20	10	22	M6
63	2	<b>167 061 161</b>	10	0.024	9	45	45	20	10	25	M8
75	2 1/2	<b>167 061 162</b>	10	0.027	9	52	52	20	10	25	M8
90	3	<b>167 061 163</b>	10	0.040	9	65	65	20	10	28	M8
110	4	<b>167 061 164</b>	10	0.048	9	79	79	20	10	28	M8
125	4 1/2	<b>167 061 165</b>	10	0.059	9	88	88	20	10	32	M8
140	5	<b>167 061 166</b>	10	0.065	9	98	98	20	10	32	M8
160	6	<b>167 061 167</b>	10	0.074	9	109	109	20	10	32	M8

## KLIP-IT Pipe Clips Type 061, PE metric



### Model:

- For mm pipes
- Material: Clip PE and safety clip PP black
- **Minimum order quantity: standard packaging SP**

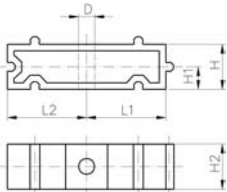


d [mm]	Code	SP	kg	D [mm]	D1 [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	SC
*10	<b>173 061 003</b>	10	0.003	5	8	11	14	20	10	6	12	M4
*12	<b>173 061 004</b>	10	0.006	5	8	11	14	21	10	6	12	M5
*16	<b>173 061 005</b>	10	0.007	6	11	14	17	23	10	6	16	M5
*20	<b>173 061 006</b>	10	0.008	6	11	17	19	25	10	6	16	M5
*25	<b>173 061 007</b>	10	0.009	6	11	19	22	28	10	6	16	M5
*32	<b>173 061 008</b>	10	0.012	6	11	24	27	31	10	6	16	M5
40	<b>173 061 009</b>	10	0.022	7	14	34	34	35	10	7	22	M6
50	<b>173 061 010</b>	10	0.030	7	14	37	37	40	10	7	22	M6
63	<b>173 061 011</b>	10	0.044	9	17	45	45	52	10	10	25	M8
75	<b>173 061 012</b>	10	0.062	9	17	52	52	58	10	10	25	M8
90	<b>173 061 013</b>	10	0.090	9	17	65	65	65	10	10	28	M8
110	<b>173 061 014</b>	10	0.114	9	17	79	79	75	10	10	28	M8
125	<b>173 061 015</b>	10	0.174	9	17	88	88	90	10	10	32	M8
140	<b>173 061 016</b>	10	0.217	9	17	98	98	110	10	10	32	M8
160	<b>173 061 017</b>	10	0.237	9	17	109	109	108	10	10	32	M8

## KLIP-IT Spacer Type 061, PE

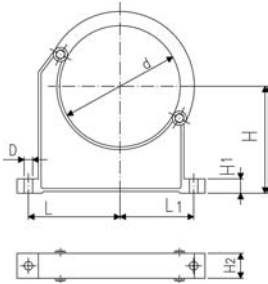
### Model:

- For pipe clips Type 061, PE black, UV resistant
- **Minimum order quantity: standard packaging SP**



d [mm]	Inch	Code	SP	kg	D [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	SC
	1/8-1/4	<b>173 061 153</b>	10	0.003	5	11	14	20	10	12	M4
16	3/8	<b>173 061 155</b>	10	0.005	6	14	17	20	10	16	M5
20	1/2	<b>173 061 156</b>	10	0.006	6	17	19	20	10	16	M5
25	3/4	<b>173 061 157</b>	10	0.007	6	19	22	20	10	16	M5
32	1	<b>173 061 158</b>	10	0.008	6	24	27	20	10	16	M5
40	1 1/4	<b>173 061 159</b>	10	0.016	7	34	34	20	10	22	M6
50	1 1/2	<b>173 061 160</b>	10	0.017	7	37	37	20	10	22	M6
63	2	<b>173 061 161</b>	10	0.025	9	45	45	20	10	25	M8
75	2 1/2	<b>173 061 162</b>	10	0.027	9	52	52	20	10	25	M8
90	3	<b>173 061 163</b>	10	0.040	9	65	65	20	10	28	M8
110	4	<b>173 061 164</b>	10	0.048	9	79	79	20	10	28	M8
125	4 1/2	<b>173 061 165</b>	10	0.059	9	88	88	20	10	32	M8
140	5	<b>173 061 166</b>	10	0.065	9	98	98	20	10	32	M8
160	6	<b>173 061 167</b>	10	0.074	9	109	109	20	10	32	M8

## Pipe Clips Type 060, PP metric

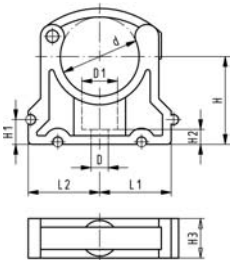


### Model:

- For mm pipes d90-400
- Material: Clip and safety clip PP black, UV resistant
- Accidental opening of the safety clip is not possible
- **Minimum order quantity: standard packaging SP or gross packaging GP**
- Clip and safety clip are not assembled in the packaging.
- Pipes with flanges can be installed directly

d	d	Code	SP	kg	D	L	L1	H	H1	H2	SC	
[mm]	[inch]				[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
90		<b>167 060 038</b>	10	0.163	9	89	71	105	15	33	M 8	
110		<b>167 060 039</b>	10	0.179	9	94	80	115	15	33	M 8	
125		<b>167 060 040</b>	10	0.300	11	116	91	130	20	35	M10	
140		<b>167 060 041</b>	10	0.309	11	121	98	130	20	35	M10	
160		<b>167 060 042</b>	10	0.348	11	131	107	148	20	35	M10	
180		<b>167 060 043</b>	-	0.378	11	143	115	163	20	35	M10	
200		<b>167 060 019</b>	-	0.582	13	152	120	175	25	39	M12	
225		<b>167 060 020</b>	-	0.612	13	165	132	175	25	39	M12	
250		<b>167 060 021</b>	-	0.698	13	183	143	200	25	39	M12	
280		<b>167 060 022</b>	-	0.722	13	198	156	200	25	39	M12	
315		<b>167 060 023</b>	-	0.842	13	219	172	225	25	39	M12	
355		<b>167 060 024</b>	-	1.250	17	275	209	258	30	50	M16	
400		<b>167 060 025</b>	-	1.450	17	300	228	288	30	50	M16	

## KLIP-IT Pipe Clips Type 061H, PP metric



### Model:

- For mm-pipes d16-d63
- Material: PP black, UV resistant
- **Minimum order quantity: standard packagings SP**
- Height designed for Ball Valve Type 546
- \* d16 to d32 without bracket

d	Code	SP	kg	D	D1	L1	L2	H	H1	H2	H3	SC	
[mm]				[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
*16	<b>167 061 035</b>	10	0.006	6	11	14	17	27	10	6	16	M5	
*20	<b>167 061 036</b>	10	0.008	6	11	17	19	27	10	6	16	M5	
*25	<b>167 061 037</b>	10	0.009	6	11	19	22	30	10	6	16	M5	
*32	<b>167 061 038</b>	10	0.012	6	11	24	27	36	10	6	16	M5	
40	<b>167 061 039</b>	10	0.027	7	14	34	34	44	10	7	22	M6	
50	<b>167 061 040</b>	10	0.031	7	14	37	37	51	10	7	22	M6	
63	<b>167 061 041</b>	10	0.054	9	17	45	45	64	10	10	25	M8	

# Solvent Cement and Tools

## TANGIT ABS Solvent Cement



- 0,75 l can

Code	kg
799 298 022	0.650



## Tangit Cleaner

Model:

- For PVC-U, PVC-C, ABS
- 1 litre tin

Code	kg
799 298 010	0.900



## Cap for cement

- Cap prevents the evaporation of the solvent whilst using the Tangit cement

Code	kg
799 298 028	0.030



## Round Brushes

d-d [mm]		Code	kg
6 - 10	4 mm (for Fittings 6-10mm)	799 299 001	0.005
12 - 32	8 mm (for Fittings 12-32mm)	799 299 002	0.009



## Flat Brushes

d-d [mm]		Code	kg
40 - 63	25x3 mm (for Fittings 40-63mm)	799 299 003	0.015
75 - 225	50x5 mm (for Fittings 75-225mm)	799 299 004	0.026
250 - 400	75x6 mm (for Fittings 250-400mm)	799 299 005	0.045



## Chamfering Tool

Size	d-d [mm]	Code	SP	kg
1	16 - 75	799 495 145	-	0.720
2	32 - 200	799 495 146	-	0.992



## PPC Plastic pipe cutter

- For cutting plastic pipes d10 - d160

d-d [mm]	Article	Code	SP	kg	
10 - 63	PPC 63, s max. = 7,2mm	<b>790 109 001</b>	-	0.852	
50 - 110	PPC 110, s max. = 12.7mm	<b>790 109 002</b>	-	1.662	
110 - 160	PPC 160, s max. = 19,0mm	<b>790 109 003</b>	-	2.016	

# Ball valves electric

## Ball valve type 107 ABS 100-230V

With manual emergency override

With solvent cement sockets metric



### Model:

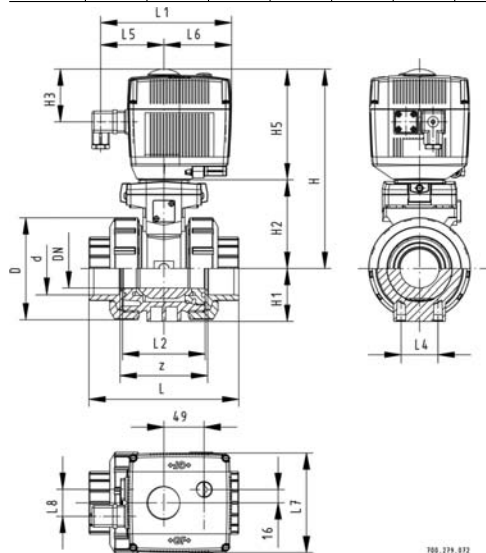
- Built on with electric actuator EA11
- Voltage 100-230 V, 50-60 Hz
- Control range 90° <
- Control time 5 s/90° <
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 107 082</b>	2.072
20	15	10	185	<b>199 107 083</b>	2.072
25	20	10	350	<b>199 107 084</b>	2.189
32	25	10	700	<b>199 107 085</b>	2.189
40	32	10	1000	<b>199 107 086</b>	2.592
50	40	10	1600	<b>199 107 087</b>	2.914
63	50	10	3100	<b>199 107 088</b>	3.772

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
16	50	200	27	64	64	137	92	161	56	25	77	83	122	33	64
20	50	200	27	64	64	137	95	161	56	25	77	83	122	33	64
25	58	209	30	73	64	137	110	161	65	25	77	83	122	33	72
32	68	209	36	73	64	137	123	161	71	25	77	83	122	33	79
40	84	220	44	84	64	137	146	161	85	45	77	83	122	33	94
50	97	220	51	84	64	137	157	161	89	45	77	83	122	33	95
63	124	243	64	106	64	137	183	161	101	45	77	83	122	33	107





## Ball valve type 107 ABS 100-230V With manual emergency override With threaded sockets Rp

### Model:

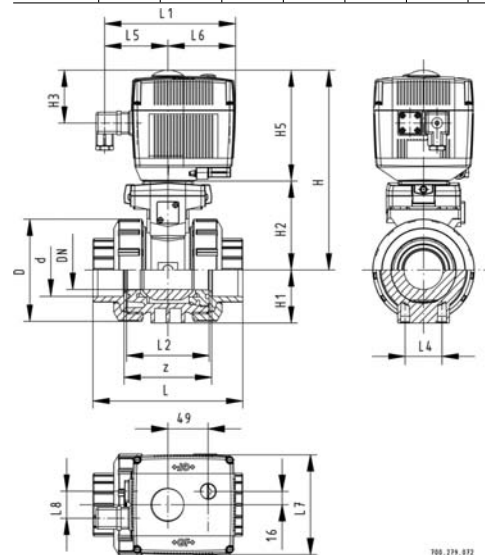
- Built on with electric actuator EA11
- Voltage 100-230 V, 50-60 Hz
- Control range 90° <
- Control time 5 s/90° <
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 107 682</b>	2.100
1/2	15	10	185	<b>199 107 683</b>	2.100
3/4	20	10	350	<b>199 107 684</b>	2.200
1	25	10	700	<b>199 107 685</b>	2.300
1 1/4	32	10	1000	<b>199 107 686</b>	2.600
1 1/2	40	10	1600	<b>199 107 687</b>	3.000
2	50	10	3100	<b>199 107 688</b>	3.800

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
3/8	50	200	27	64	64	137	92	161	56	25	77	83	122	33	64
1/2	50	200	27	64	64	137	95	161	56	25	77	83	122	33	64
3/4	58	209	30	73	64	137	110	161	65	25	77	83	122	33	72
1	68	209	36	73	64	137	123	161	71	25	77	83	122	33	79
1 1/4	84	220	44	84	64	137	146	161	85	45	77	83	122	33	94
1 1/2	97	220	51	84	64	137	157	161	89	45	77	83	122	33	95
2	124	243	64	106	64	137	183	161	101	45	77	83	122	33	107





## Ball valve type 107 ABS 24V With manual emergency override With solvent cement sockets metric

### Model:

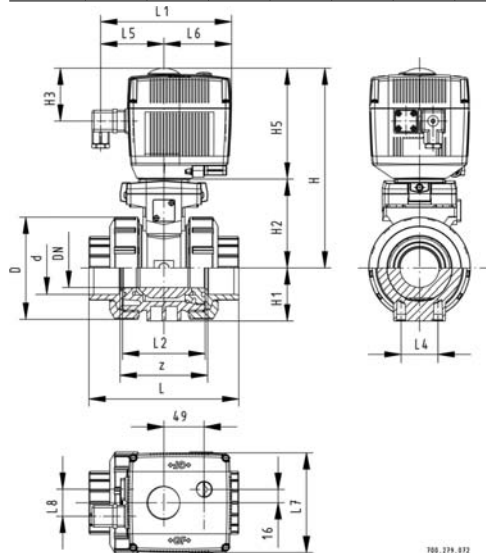
- Built on with electric actuator EA11
- For easy installation and removal
- Integrated stainless steel mounting inserts
- Voltage 24 V AC/DC
- Control range 90° <
- Control time 5 s/90° <

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 107 092</b>	2.072
20	15	10	185	<b>199 107 093</b>	2.072
25	20	10	350	<b>199 107 094</b>	2.189
32	25	10	700	<b>199 107 095</b>	2.189
40	32	10	1000	<b>199 107 096</b>	2.592
50	40	10	1600	<b>199 107 097</b>	2.914
63	50	10	3100	<b>199 107 098</b>	3.772

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
16	50	200	27	64	64	137	92	161	56	25	77	83	122	33	64
20	50	200	27	64	64	137	95	161	56	25	77	83	122	33	64
25	58	209	30	73	64	137	110	161	65	25	77	83	122	33	72
32	68	209	36	73	64	137	123	161	71	25	77	83	122	33	79
40	84	220	44	84	64	137	146	161	85	45	77	83	122	33	94
50	97	220	51	84	64	137	157	161	89	45	77	83	122	33	95
63	124	243	64	106	64	137	183	161	101	45	77	83	122	33	107



700\_279\_072





## Ball valve type 107 ABS 24V With manual emergency override With threaded sockets Rp

### Model:

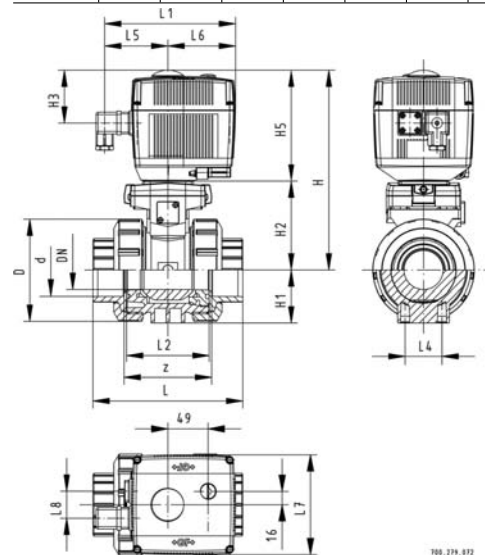
- Built on with electric actuator EA11
- For easy installation and removal
- Integrated stainless steel mounting inserts
- Voltage 24 V AC/DC
- Control range 90° <
- Control time 5 s/90° <

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 107 692</b>	2.100
1/2	15	10	185	<b>199 107 693</b>	2.100
3/4	20	10	350	<b>199 107 694</b>	2.200
1	25	10	700	<b>199 107 695</b>	2.300
1 1/4	32	10	1000	<b>199 107 696</b>	2.600
1 1/2	40	10	1600	<b>199 107 697</b>	3.000
2	50	10	3100	<b>199 107 698</b>	3.800

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
3/8	50	200	27	64	64	137	92	161	56	25	77	83	122	33	64
1/2	50	200	27	64	64	137	95	161	56	25	77	83	122	33	64
3/4	58	209	30	73	64	137	110	161	65	25	77	83	122	33	72
1	68	209	36	73	64	137	123	161	71	25	77	83	122	33	79
1 1/4	84	220	44	84	64	137	146	161	85	45	77	83	122	33	94
1 1/2	97	220	51	84	64	137	157	161	89	45	77	83	122	33	95
2	124	243	64	106	64	137	183	161	101	45	77	83	122	33	107





## Ball valve type 130 ABS 100-230V With manual emergency override With solvent cement sockets metric

### Model:

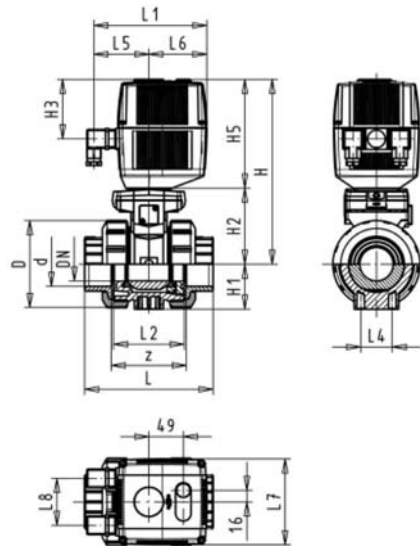
- Built on with electric actuator EA21
- For easy installation and removal
- Integrated stainless steel mounting inserts
- Voltage 100-230 V, 50-60 Hz
- Control range 90° <
- Control time 5 s/90° <

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 130 702</b>	2.100
20	15	10	185	<b>199 130 703</b>	2.100
25	20	10	350	<b>199 130 704</b>	2.200
32	25	10	700	<b>199 130 705</b>	2.300
40	32	10	1000	<b>199 130 706</b>	2.600
50	40	10	1600	<b>199 130 707</b>	3.000
63	50	10	3100	<b>199 130 708</b>	3.800

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
16	50	231	27	64	94	167	92	180	56	25	97	83	122	66	64
20	50	231	27	64	94	167	95	180	56	25	97	83	122	66	64
25	58	240	30	73	94	167	110	180	65	25	97	83	122	66	72
32	68	240	36	73	94	167	123	180	71	25	97	83	122	66	79
40	84	251	44	84	94	167	146	180	85	45	97	83	122	66	94
50	97	251	51	84	94	167	157	180	89	45	97	83	122	66	95
63	124	273	64	106	94	167	183	180	101	45	97	83	122	66	107





## Ball valve type 130 ABS 100-230V With manual emergency override With threaded sockets Rp

### Model:

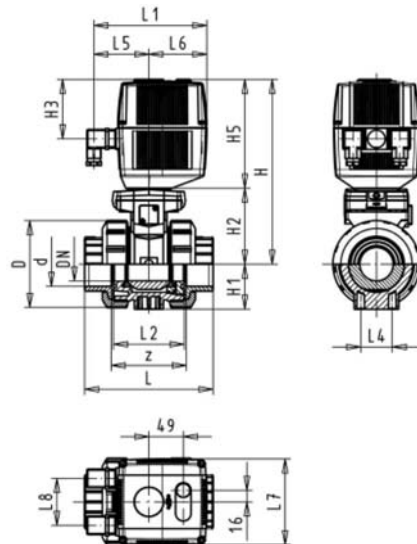
- Built on with electric actuator EA21
- For easy installation and removal
- Integrated stainless steel mounting inserts
- Voltage 100-230 V, 50-60 Hz
- Control range 90° <
- Control time 5 s/90° <

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 130 722</b>	2.100
1/2	15	10	185	<b>199 130 723</b>	2.100
3/4	20	10	350	<b>199 130 724</b>	2.200
1	25	10	700	<b>199 130 725</b>	2.300
1 1/4	32	10	1000	<b>199 130 726</b>	2.600
1 1/2	40	10	1600	<b>199 130 727</b>	3.000
2	50	10	3100	<b>199 130 728</b>	3.800

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
3/8	50	231	27	64	94	167	92	180	56	25	97	83	122	66	64
1/2	50	231	27	64	94	167	95	180	56	25	97	83	122	66	64
3/4	58	240	30	73	94	167	110	180	65	25	97	83	122	66	72
1	68	240	36	73	94	167	123	180	71	25	97	83	122	66	79
1 1/4	84	251	44	84	94	167	146	180	85	45	97	83	122	66	94
1 1/2	97	251	51	84	94	167	157	180	89	45	97	83	122	66	95
2	124	273	64	106	94	167	183	180	101	45	97	83	122	66	107





## Ball valve type 130 ABS 24V With manual emergency override With solvent cement sockets metric

### Model:

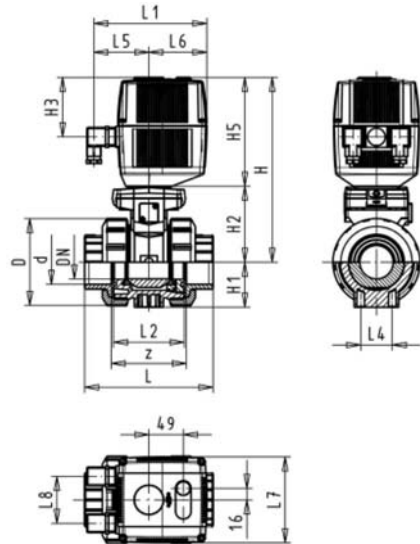
- Built on with electric actuator EA21
- Voltage 24 V AC/DC
- Control range 90°<
- Control time 5 s/90°<
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 130 742</b>	2.100
20	15	10	185	<b>199 130 743</b>	2.100
25	20	10	350	<b>199 130 744</b>	2.200
32	25	10	700	<b>199 130 745</b>	2.300
40	32	10	1000	<b>199 130 746</b>	2.600
50	40	10	1600	<b>199 130 747</b>	3.000
63	50	10	3100	<b>199 130 748</b>	3.800

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
16	50	231	27	64	94	167	92	180	56	25	97	83	122	66	64
20	50	231	27	64	94	167	95	180	56	25	97	83	122	66	64
25	58	240	30	73	94	167	110	180	65	25	97	83	122	66	72
32	68	240	36	73	94	167	123	180	71	25	97	83	122	66	79
40	84	251	44	84	94	167	146	180	85	45	97	83	122	66	94
50	97	251	51	84	94	167	157	180	89	45	97	83	122	66	95
63	124	273	64	106	94	167	183	180	101	45	97	83	122	66	107





## Ball valve type 130 ABS 24V With manual emergency override With threaded sockets Rp

### Model:

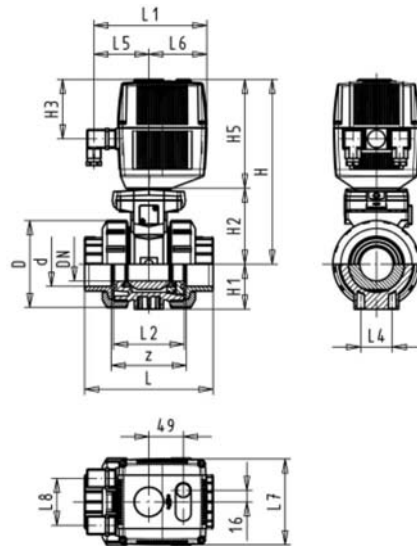
- Built on with electric actuator EA21
- Voltage 24 V AC/DC
- Control range 90°<
- Control time 5 s/90°<
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 130 762</b>	2.100
1/2	15	10	185	<b>199 130 763</b>	2.100
3/4	20	10	350	<b>199 130 764</b>	2.200
1	25	10	700	<b>199 130 765</b>	2.300
1 1/4	32	10	1000	<b>199 130 766</b>	2.600
1 1/2	40	10	1600	<b>199 130 767</b>	3.000
2	50	10	3100	<b>199 130 768</b>	3.800

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	z [mm]
3/8	50	231	27	64	94	167	92	180	56	25	97	83	122	66	64
1/2	50	231	27	64	94	167	95	180	56	25	97	83	122	66	64
3/4	58	240	30	73	94	167	110	180	65	25	97	83	122	66	72
1	68	240	36	73	94	167	123	180	71	25	97	83	122	66	79
1 1/4	84	251	44	84	94	167	146	180	85	45	97	83	122	66	94
1 1/2	97	251	51	84	94	167	157	180	89	45	97	83	122	66	95
2	124	273	64	106	94	167	183	180	101	45	97	83	122	66	107





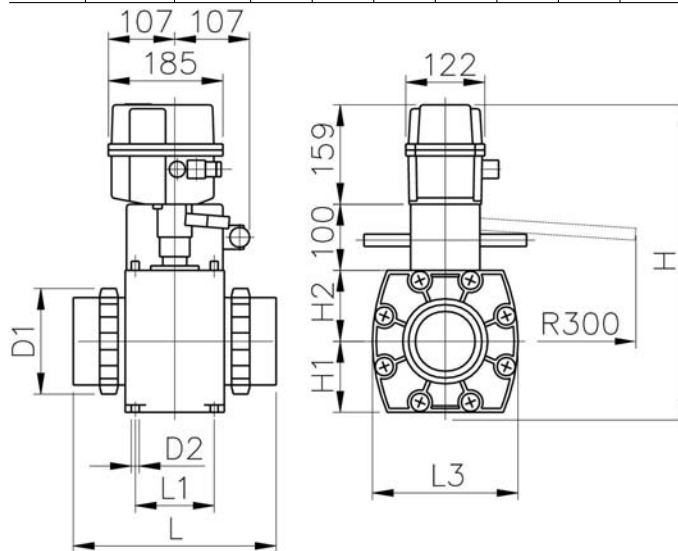
## Ball valve type 108 ABS 115/230V With manual override Unions with solvent cement sockets metric

### Model:

- Adjustable voltages for 115/230 V, 50-60 Hz
- For easy installation and removal
- Control range 90°<
- Control time 8 s/90°<

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	Type	EPDM Code	kg
75	65	10	5000	EA 30	<b>199 108 012</b>	7.900
90	80	10	7000	EA 30	<b>199 108 013</b>	9.400
110	100	6	11000	EA 30	<b>199 108 014</b>	12.900

d [mm]	D1 [mm]	D2 [mm]	L [mm]	L1 [mm]	L3 [mm]	H [mm]	H1 [mm]	H2 [mm]
75	135.00	10.00	233	72	160	407	75	73
90	158.00	10.00	267	88	188	435	88	88
110	188.00	12.00	318	104	225	482	110	113





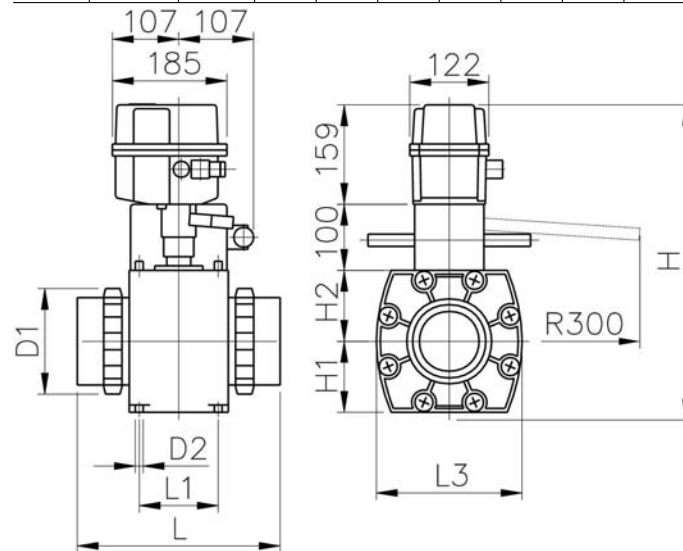
## Ball valve type 108 ABS 24V With manual override Unions with solvent cement sockets metric

### Model:

- Voltage 24 V AC/DC
- For easy installation and removal
- Control range 90° <
- Control time 8 s/90° <

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	Type	EPDM Code	kg
75	65	10	5000	EA 30	<b>199 108 015</b>	9.400 12.900
90	80	10	7000	EA 30	<b>199 108 016</b>	
110	100	6	11000	EA 30	<b>199 108 017</b>	

d [mm]	D1 [mm]	D2 [mm]	L [mm]	L1 [mm]	L3 [mm]	H [mm]	H1 [mm]	H2 [mm]
75	135.00	10.00	233	72	160	407	75	73
90	158.00	10.00	267	88	188	435	88	88
110	188.00	12.00	318	104	225	482	110	113





**3-Way ball valve type 175 ABS**  
**Horizontal/L-port 100/230V**  
**With manual emergency override**  
**With solvent cement sockets metric**

**Model:**

- Built on with electric actuator EA21
- Voltage 100-230 V, 50-60 Hz
- For easy installation and removal
- Control range 90°<
- Integrated stainless steel mounting inserts
- Control time 5 s/90°<

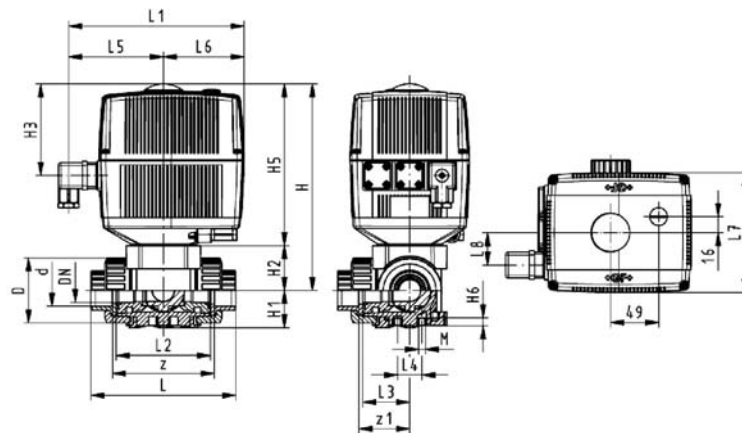
**Option:**

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	50	<b>199 175 162</b>	
20	15	10	75	<b>199 175 163</b>	
25	20	10	150	<b>199 175 164</b>	
32	25	10	280	<b>199 175 165</b>	
40	32	10	480	<b>199 175 166</b>	
50	40	10	620	<b>199 175 167</b>	3.359
63	50	10	1230	<b>199 175 168</b>	4.728

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]
16	45	197	29	31	93	166	8	108	182	72	36	25	99	83	122
20	45	197	29	31	93	166	8	111	182	72	36	25	99	83	122
25	52	205	33	39	93	166	8	131	182	86	43	25	99	83	122
32	65	210	38	44	93	166	8	148	182	96	48	25	99	83	122
40	78	216	44	50	93	166	9	176	182	116	58	45	99	83	122
50	92	229	50	63	93	166	9	206	182	137	69	45	99	83	122
63	116	242	61	76	93	166	9	262	182	179	90	45	99	83	122

d [mm]	L8 [mm]	M	z [mm]	z1 [mm]
16	33	6	80	40
20	33	6	80	40
25	33	6	94	47
32	33	6	104	52
40	33	8	126	63
50	33	8	144	72
63	33	8	186	93







## 3-Way ball valve type 175 ABS Horizontal/T-port 100/230V With manual emergency override With solvent cement sockets metric

### Model:

- Built on with electric actuator EA21
- Voltage 100-230 V, 50-60 Hz
- For easy installation and removal
- Control range 90°<
- Integrated stainless steel mounting inserts
- Control time 5 s/90°<

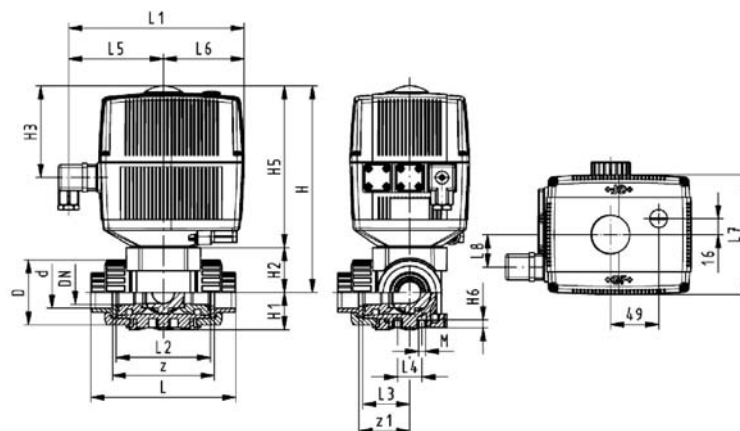
### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	140	<b>199 175 172</b>	
20	15	10	200	<b>199 175 173</b>	2.121
25	20	10	470	<b>199 175 174</b>	2.303
32	25	10	793	<b>199 175 175</b>	2.801
40	32	10	1290	<b>199 175 176</b>	
50	40	10	1910	<b>199 175 177</b>	3.359
63	50	10	3100	<b>199 175 178</b>	4.728

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]
16	45	197	29	31	93	166	8	108	182	72	36	25	99	83	122
20	45	197	29	31	93	166	8	111	182	72	36	25	99	83	122
25	52	205	33	39	93	166	8	131	182	86	43	25	99	83	122
32	65	210	38	44	93	166	8	148	182	96	48	25	99	83	122
40	78	216	44	50	93	166	9	176	182	116	58	45	99	83	122
50	92	229	50	63	93	166	9	206	182	137	69	45	99	83	122
63	116	242	61	76	93	166	9	262	182	179	90	45	99	83	122

d [mm]	L8 [mm]	M	z [mm]	z1 [mm]
16	33	6	80	40
20	33	6	80	40
25	33	6	94	47
32	33	6	104	52
40	33	8	126	63
50	33	8	144	72
63	33	8	186	93





## 3-Way ball valve type 175 ABS Horizontal/L-port 24V With manual emergency override With solvent cement sockets metric

### Model:

- Built on with electric actuator EA21
- Voltage 24 V AC/DC
- For easy installation and removal
- Control range 90°<
- Integrated stainless steel mounting inserts
- Control time 5 s/90°<

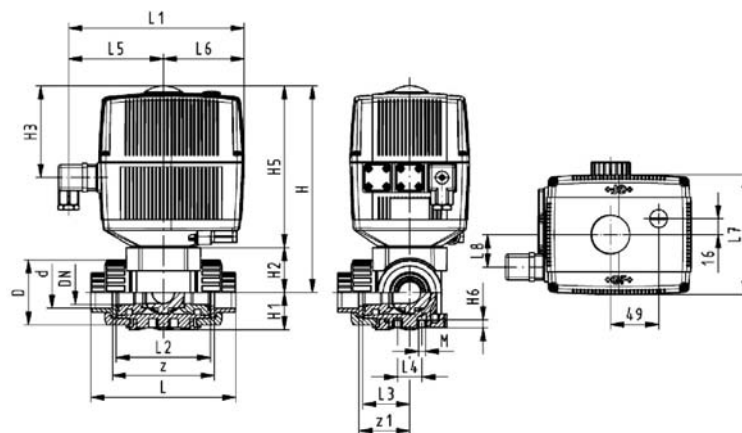
### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	50	<b>199 175 342</b>	2.303
20	15	10	75	<b>199 175 343</b>	
25	20	10	150	<b>199 175 344</b>	
32	25	10	280	<b>199 175 345</b>	
40	32	10	480	<b>199 175 346</b>	
50	40	10	620	<b>199 175 347</b>	4.728
63	50	10	1230	<b>199 175 348</b>	

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]
16	45	197	29	31	93	166	8	108	182	72	36	25	99	83	122
20	45	197	29	31	93	166	8	111	182	72	36	25	99	83	122
25	52	205	33	39	93	166	8	131	182	86	43	25	99	83	122
32	65	210	38	44	93	166	8	148	182	96	48	25	99	83	122
40	78	216	44	50	93	166	9	176	182	116	58	45	99	83	122
50	92	229	50	63	93	166	9	206	182	137	69	45	99	83	122
63	116	242	61	76	93	166	9	262	182	179	90	45	99	83	122

d [mm]	L8 [mm]	M	z [mm]	z1 [mm]
16	33	6	80	40
20	33	6	80	40
25	33	6	94	47
32	33	6	104	52
40	33	8	126	63
50	33	8	144	72
63	33	8	186	93





## 3-Way ball valve type 175 ABS Horizontal/T-port 24V With manual emergency override With solvent cement sockets metric

### Model:

- Built on with electric actuator EA21
- Voltage 24 V AC/DC
- Control range 90°<
- Control time 5 s/90°<
- For easy installation and removal
- Integrated stainless steel mounting inserts

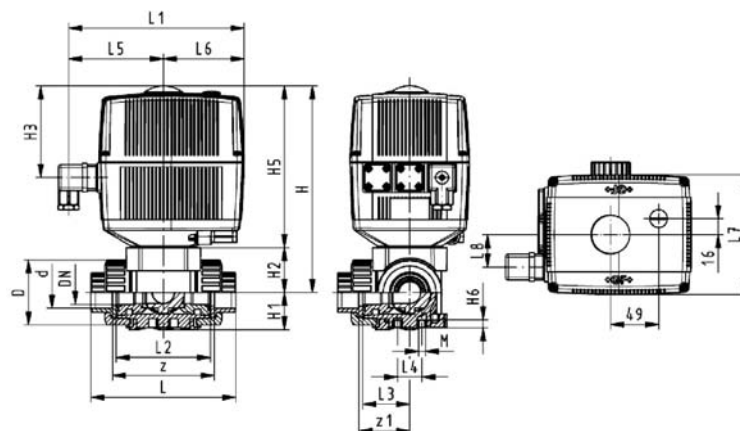
### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	140	<b>199 175 352</b>	
20	15	10	200	<b>199 175 353</b>	
25	20	10	470	<b>199 175 354</b>	
32	25	10	793	<b>199 175 355</b>	
40	32	10	1290	<b>199 175 356</b>	
50	40	10	1910	<b>199 175 357</b>	3.680
63	50	10	3100	<b>199 175 358</b>	5.052

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]
16	45	197	29	31	93	166	8	108	182	72	36	25	99	83	122
20	45	197	29	31	93	166	8	111	182	72	36	25	99	83	122
25	52	205	33	39	93	166	8	131	182	86	43	25	99	83	122
32	65	210	38	44	93	166	8	148	182	96	48	25	99	83	122
40	78	216	44	50	93	166	9	176	182	116	58	45	99	83	122
50	92	229	50	63	93	166	9	206	182	137	69	45	99	83	122
63	116	242	61	76	93	166	9	262	182	179	90	45	99	83	122

d [mm]	L8 [mm]	M	z [mm]	z1 [mm]
16	33	6	80	40
20	33	6	80	40
25	33	6	94	47
32	33	6	104	52
40	33	8	126	63
50	33	8	144	72
63	33	8	186	93



# Ball valves pneumatic

## Ball valve type 230 ABS FC (Fail safe to close) With manual override With solvent cement sockets metric



### Model:

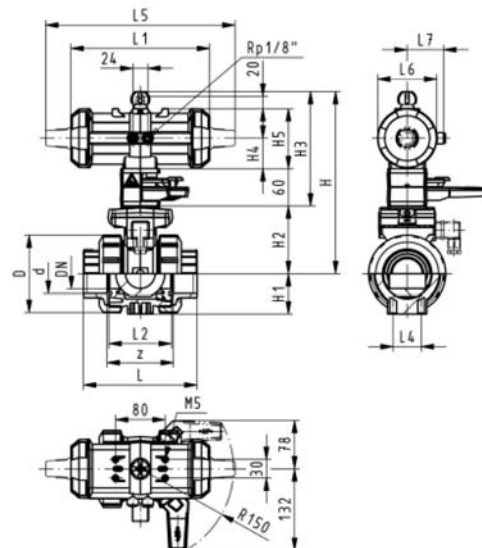
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 230 702</b>	1.459
20	15	10	185	<b>199 230 703</b>	1.459
25	20	10	350	<b>199 230 704</b>	1.576
32	25	10	700	<b>199 230 705</b>	1.700
40	32	10	1000	<b>199 230 706</b>	2.751
50	40	10	1600	<b>199 230 707</b>	3.073
63	50	10	3100	<b>199 230 708</b>	3.931

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
16	50	230	27	62	168	40	97	92	194	56	25	261	76	48	64
20	50	230	27	62	168	40	97	95	194	56	25	261	76	48	64
25	58	239	30	71	168	40	97	110	194	65	25	261	76	48	72
32	68	239	36	71	168	40	97	123	194	71	25	261	76	48	79
40	84	271	44	84	187	51	115	146	224	85	45	305	95	59	94
50	97	271	51	84	187	51	115	157	224	89	45	305	95	59	95
63	124	293	64	106	187	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FC (Fail safe to close) With manual override With threaded sockets Rp

### Model:

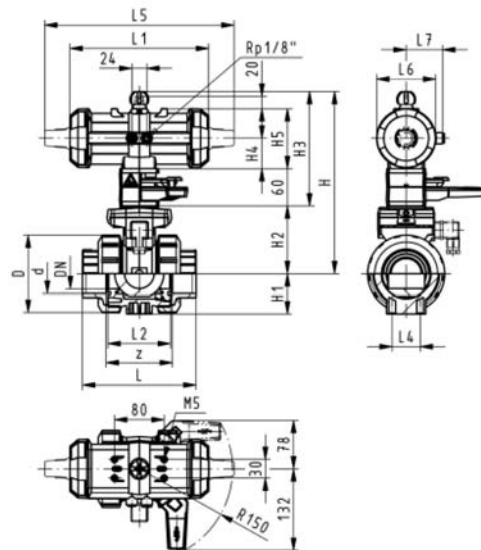
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 230 722</b>	1.459
1/2	15	10	185	<b>199 230 723</b>	1.459
3/4	20	10	350	<b>199 230 724</b>	1.576
1	25	10	700	<b>199 230 725</b>	1.700
1 1/4	32	10	1000	<b>199 230 726</b>	2.751
1 1/2	40	10	1600	<b>199 230 727</b>	3.073
2	50	10	3100	<b>199 230 728</b>	3.931

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
3/8	50	230	27	62	168	40	97	92	194	56	25	261	76	48	64
1/2	50	230	27	62	168	40	97	95	194	56	25	261	76	48	64
3/4	58	239	30	71	168	40	97	110	194	65	25	261	76	48	72
1	68	239	36	71	168	40	97	123	194	71	25	261	76	48	79
1 1/4	84	271	44	84	187	51	115	146	224	85	45	305	95	59	94
1 1/2	97	271	51	84	187	51	115	157	224	89	45	305	95	59	95
2	124	293	64	106	187	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FO (Fail safe to open) With manual override With solvent cement sockets metric

### Model:

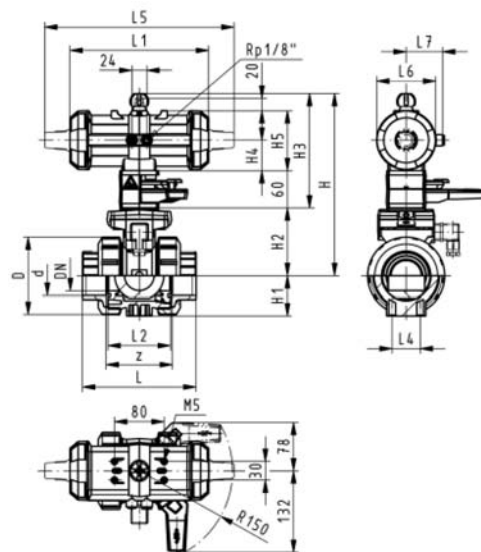
- Built on with pneumatic actuator PA11/21
- Control time 90°(<) 1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 230 742</b>	1.459
20	15	10	185	<b>199 230 743</b>	1.459
25	20	10	350	<b>199 230 744</b>	1.576
32	25	10	700	<b>199 230 745</b>	1.700
40	32	10	1000	<b>199 230 746</b>	2.751
50	40	10	1600	<b>199 230 747</b>	3.073
63	50	10	3100	<b>199 230 748</b>	3.931

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
16	50	230	27	62	168	40	97	92	194	56	25	261	76	48	64
20	50	230	27	62	168	40	97	95	194	56	25	261	76	48	64
25	58	239	30	71	168	40	97	110	194	65	25	261	76	48	72
32	68	239	36	71	168	40	97	123	194	71	25	261	76	48	79
40	84	271	44	84	187	51	115	146	224	85	45	305	95	59	94
50	97	271	51	84	187	51	115	157	224	89	45	305	95	59	95
63	124	293	64	106	187	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FO (Fail safe to open) With manual override With threaded sockets Rp

### Model:

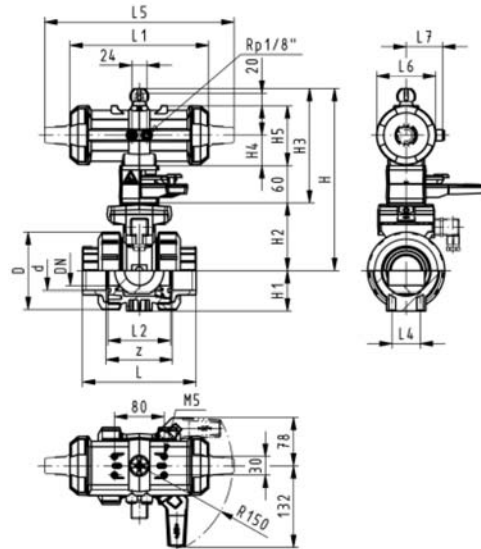
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 230 762</b>	1.459
1/2	15	10	185	<b>199 230 763</b>	1.459
3/4	20	10	350	<b>199 230 764</b>	1.576
1	25	10	700	<b>199 230 765</b>	1.700
1 1/4	32	10	1000	<b>199 230 766</b>	2.751
1 1/2	40	10	1600	<b>199 230 767</b>	3.073
2	50	10	3100	<b>199 230 768</b>	3.931

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
3/8	50	230	27	62	168	40	97	92	194	56	25	261	76	48	64
1/2	50	230	27	62	168	40	97	95	194	56	25	261	76	48	64
3/4	58	239	30	71	168	40	97	110	194	65	25	261	76	48	72
1	68	239	36	71	168	40	97	123	194	71	25	261	76	48	79
1 1/4	84	271	44	84	187	51	115	146	224	85	45	305	95	59	94
1 1/2	97	271	51	84	187	51	115	157	224	89	45	305	95	59	95
2	124	293	64	106	187	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS DA (Double acting) With manual override With solvent cement sockets metric

### Model:

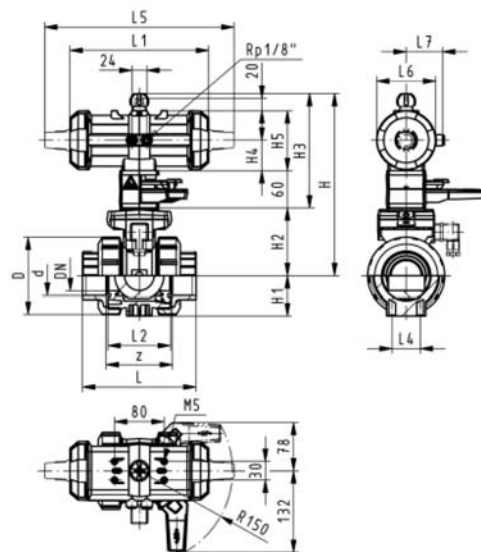
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 230 782</b>	1.459
20	15	10	185	<b>199 230 783</b>	1.459
25	20	10	350	<b>199 230 784</b>	1.576
32	25	10	700	<b>199 230 785</b>	1.700
40	32	10	1000	<b>199 230 786</b>	2.751
50	40	10	1600	<b>199 230 787</b>	3.073
63	50	10	3100	<b>199 230 788</b>	3.931

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
16	50	230	27	62	168	40	97	92	194	56	25	261	76	48	64
20	50	230	27	62	168	40	97	95	194	56	25	261	76	48	64
25	58	239	30	71	168	40	97	110	194	65	25	261	76	48	72
32	68	239	36	71	168	40	97	123	194	71	25	261	76	48	79
40	84	271	44	84	187	51	115	146	224	85	45	305	95	59	94
50	97	271	51	84	187	51	115	157	224	89	45	305	95	59	95
63	124	293	64	106	187	51	115	183	224	101	45	305	95	59	107







## Ball valve type 230 ABS DA (Double acting) With manual override With threaded sockets Rp

### Model:

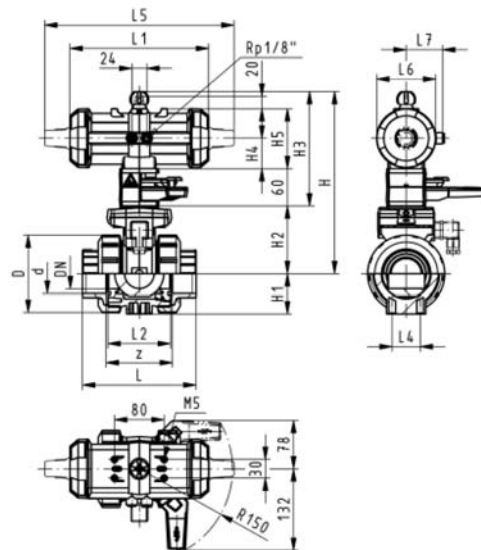
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 230 802</b>	1.459
1/2	15	10	185	<b>199 230 803</b>	1.459
3/4	20	10	350	<b>199 230 804</b>	1.576
1	25	10	700	<b>199 230 805</b>	1.700
1 1/4	32	10	1000	<b>199 230 806</b>	2.751
1 1/2	40	10	1600	<b>199 230 807</b>	3.073
2	50	10	3100	<b>199 230 808</b>	3.931

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
3/8	50	230	27	62	168	40	97	92	194	56	25	261	76	48	64
1/2	50	230	27	62	168	40	97	95	194	56	25	261	76	48	64
3/4	58	239	30	71	168	40	97	110	194	65	25	261	76	48	72
1	68	239	36	71	168	40	97	123	194	71	25	261	76	48	79
1 1/4	84	271	44	84	187	51	115	146	224	85	45	305	95	59	94
1 1/2	97	271	51	84	187	51	115	157	224	89	45	305	95	59	95
2	124	293	64	106	187	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FC (Fail safe to close) Without manual override With solvent cement sockets metric

### Model:

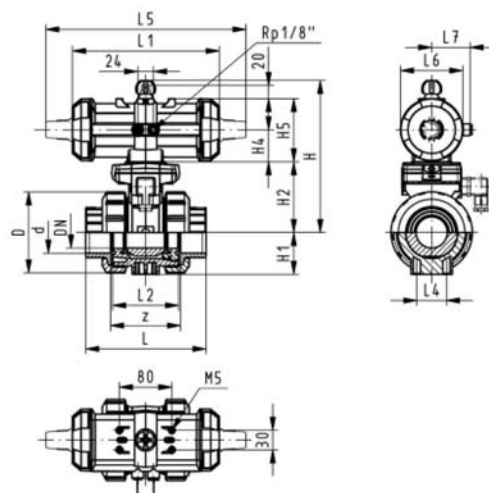
- Built on with pneumatic actuator PA11/21
- Control time 90°(<) 1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 230 822</b>	1.459
20	15	10	185	<b>199 230 823</b>	1.459
25	20	10	350	<b>199 230 824</b>	1.576
32	25	10	700	<b>199 230 825</b>	1.700
40	32	10	1000	<b>199 230 826</b>	2.751
50	40	10	1600	<b>199 230 827</b>	3.073
63	50	10	3100	<b>199 230 828</b>	3.931

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
16	50	167	27	62	40	97	92	194	56	25	261	76	48	64
20	50	167	27	62	40	97	95	194	56	25	261	76	48	64
25	58	176	30	71	40	97	110	194	65	25	261	76	48	72
32	68	176	36	71	40	97	123	194	71	25	261	76	48	79
40	84	210	44	84	51	115	146	224	85	45	305	95	59	94
50	97	210	51	84	51	115	157	224	89	45	305	95	59	95
63	124	232	64	106	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FC (Fail safe to close) Without manual override With threaded sockets Rp

### Model:

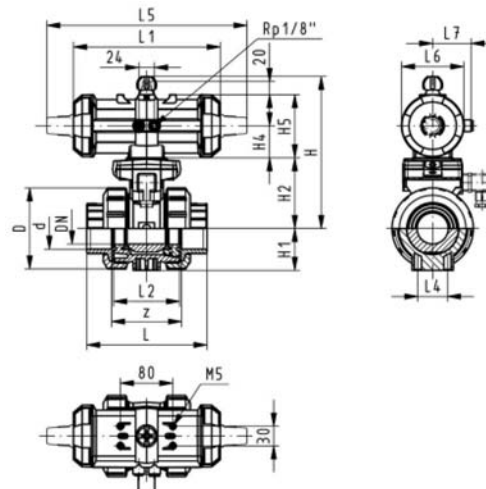
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 230 842</b>	1.200
1/2	15	10	185	<b>199 230 843</b>	1.200
3/4	20	10	350	<b>199 230 844</b>	1.300
1	25	10	700	<b>199 230 845</b>	1.400
1 1/4	32	10	1000	<b>199 230 846</b>	2.500
1 1/2	40	10	1600	<b>199 230 847</b>	2.800
2	50	10	3100	<b>199 230 848</b>	3.700

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
3/8	50	167	27	62	40	97	92	194	56	25	261	76	48	64
1/2	50	167	27	62	40	97	95	194	56	25	261	76	48	64
3/4	58	176	30	71	40	97	110	194	65	25	261	76	48	72
1	68	176	36	71	40	97	123	194	71	25	261	76	48	79
1 1/4	84	210	44	84	51	115	146	224	85	45	305	95	59	94
1 1/2	97	210	51	84	51	115	157	224	89	45	305	95	59	95
2	124	232	64	106	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FO (Fail safe to open) Without manual override With solvent cement sockets metric

### Model:

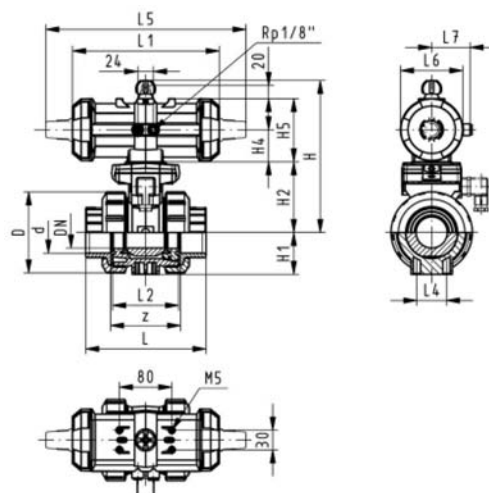
- Built on with pneumatic actuator PA11/21
- Control time 90°(<) 1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 230 862</b>	1.459
20	15	10	185	<b>199 230 863</b>	1.459
25	20	10	350	<b>199 230 864</b>	1.576
32	25	10	700	<b>199 230 865</b>	1.700
40	32	10	1000	<b>199 230 866</b>	2.751
50	40	10	1600	<b>199 230 867</b>	3.073
63	50	10	3100	<b>199 230 868</b>	3.931

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
16	50	167	27	62	40	97	92	194	56	25	261	76	48	64
20	50	167	27	62	40	97	95	194	56	25	261	76	48	64
25	58	176	30	71	40	97	110	194	65	25	261	76	48	72
32	68	176	36	71	40	97	123	194	71	25	261	76	48	79
40	84	210	44	84	51	115	146	224	85	45	305	95	59	94
50	97	210	51	84	51	115	157	224	89	45	305	95	59	95
63	124	232	64	106	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS FO (Fail safe to open) Without manual override With threaded sockets Rp

### Model:

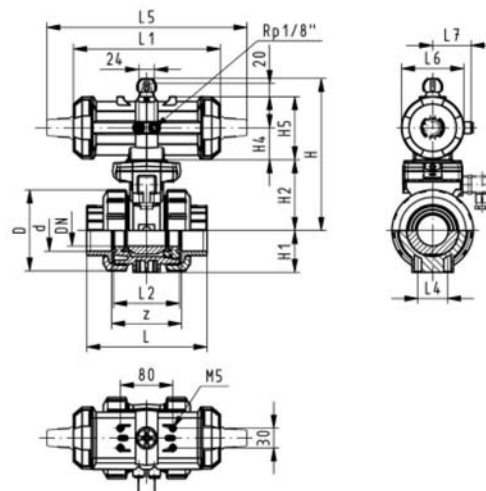
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 230 882</b>	1.200
1/2	15	10	185	<b>199 230 883</b>	1.200
3/4	20	10	350	<b>199 230 884</b>	1.300
1	25	10	700	<b>199 230 885</b>	1.400
1 1/4	32	10	1000	<b>199 230 886</b>	2.500
1 1/2	40	10	1600	<b>199 230 887</b>	2.800
2	50	10	3100	<b>199 230 888</b>	3.700

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
3/8	50	167	27	62	40	97	92	194	56	25	261	76	48	64
1/2	50	167	27	62	40	97	95	194	56	25	261	76	48	64
3/4	58	176	30	71	40	97	110	194	65	25	261	76	48	72
1	68	176	36	71	40	97	123	194	71	25	261	76	48	79
1 1/4	84	210	44	84	51	115	146	224	85	45	305	95	59	94
1 1/2	97	210	51	84	51	115	157	224	89	45	305	95	59	95
2	124	232	64	106	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS DA (Double acting) Without manual override With solvent cement sockets metric

### Model:

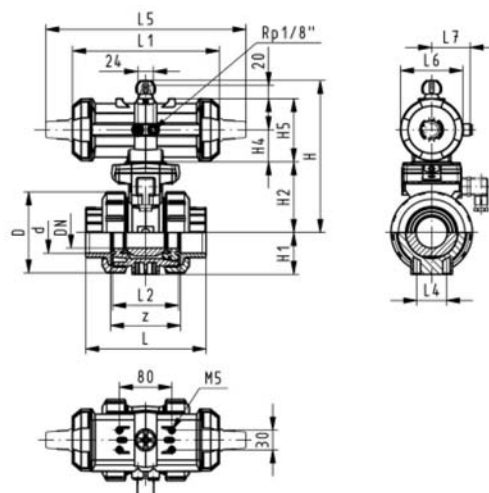
- Built on with pneumatic actuator PA11/21
- Control time 90°(<) 1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

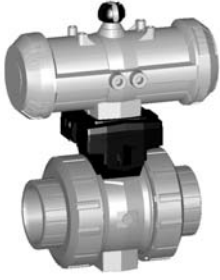
### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	70	<b>199 230 902</b>	1.459
20	15	10	185	<b>199 230 903</b>	1.459
25	20	10	350	<b>199 230 904</b>	1.576
32	25	10	700	<b>199 230 905</b>	1.700
40	32	10	1000	<b>199 230 906</b>	2.751
50	40	10	1600	<b>199 230 907</b>	3.073
63	50	10	3100	<b>199 230 908</b>	3.931

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
16	50	167	27	62	40	97	92	194	56	25	261	76	48	64
20	50	167	27	62	40	97	95	194	56	25	261	76	48	64
25	58	176	30	71	40	97	110	194	65	25	261	76	48	72
32	68	176	36	71	40	97	123	194	71	25	261	76	48	79
40	84	210	44	84	51	115	146	224	85	45	305	95	59	94
50	97	210	51	84	51	115	157	224	89	45	305	95	59	95
63	124	232	64	106	51	115	183	224	101	45	305	95	59	107





## Ball valve type 230 ABS DA (Double acting) Without manual override With threaded sockets Rp

### Model:

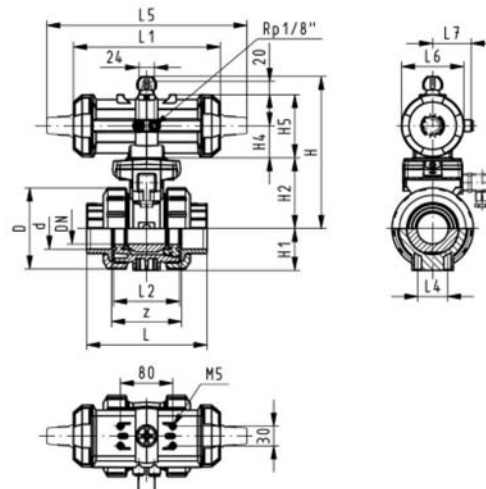
- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-2 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)

Rp [inch]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
3/8	10	10	70	<b>199 230 922</b>	1.200
1/2	15	10	185	<b>199 230 923</b>	1.200
3/4	20	10	350	<b>199 230 924</b>	1.300
1	25	10	700	<b>199 230 925</b>	1.400
1 1/4	32	10	1000	<b>199 230 926</b>	2.500
1 1/2	40	10	1600	<b>199 230 927</b>	2.800
2	50	10	3100	<b>199 230 928</b>	3.700

Rp [inch]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	z [mm]
3/8	50	167	27	62	40	97	92	194	56	25	261	76	48	64
1/2	50	167	27	62	40	97	95	194	56	25	261	76	48	64
3/4	58	176	30	71	40	97	110	194	65	25	261	76	48	72
1	68	176	36	71	40	97	123	194	71	25	261	76	48	79
1 1/4	84	210	44	84	51	115	146	224	85	45	305	95	59	94
1 1/2	97	210	51	84	51	115	157	224	89	45	305	95	59	95
2	124	232	64	106	51	115	183	224	101	45	305	95	59	107





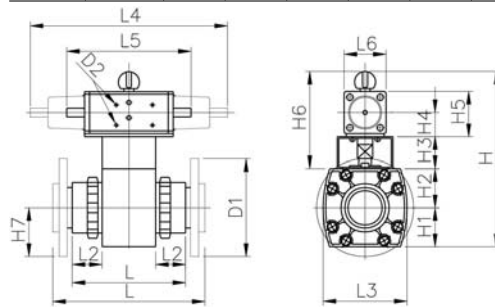
## Ball valve type 208 ABS FC (Fail safe to close) Without manual override Unions with solvent cement sockets metric

### Model:

- Control time 90° <) 0,5-2 s
- For easy installation and removal

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
75	65	10	5000	<b>199 208 216</b>	8.500
90	80	10	7000	<b>199 208 217</b>	13.500
110	100	10	11000	<b>199 208 218</b>	18.000

d [mm]	D2_G [inch]	L [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L6 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]
75	1/4	233	72	160	376	80	337	75	73	60	46	86	189
90	1/4	267	82	188	439	100	395	88	88	70	56	106	219
110	1/4	318	95	225	439	100	451	110	113	80	56	106	229



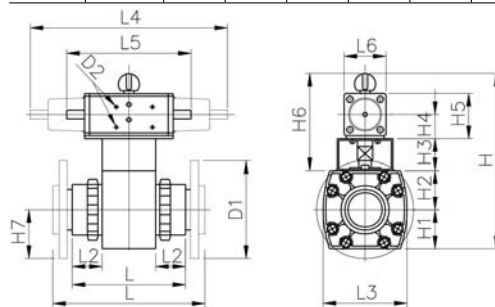
## Ball valve type 208 ABS FO (Fail safe to open) Without manual override Unions with solvent cement sockets metric

### Model:

- Control time 90° <) 0,5-2 s
- For easy installation and removal

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
75	65	10	5000	<b>199 208 226</b>	8.500
90	80	10	7000	<b>199 208 227</b>	13.500
110	100	10	11000	<b>199 208 228</b>	

d [mm]	D2_G [inch]	L [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L6 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]
75	1/4	233	72	160	376	80	337	75	73	60	46	86	189
90	1/4	267	82	188	439	100	395	88	88	70	56	106	219
110	1/4	318	95	225	439	100	451	110	113	80	56	106	229







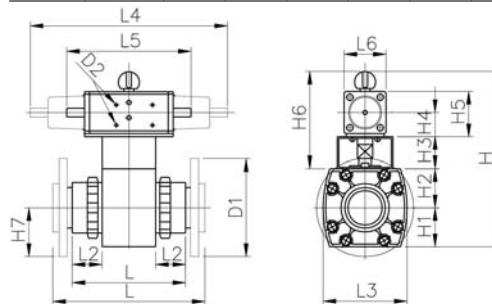
## Ball valve type 208 ABS DA (Double acting) Without manual override Unions with solvent cement sockets metric

### Model:

- Control time 90° <) 0,5-2 s
- For easy installation and removal

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
75	65	10	5000	<b>199 208 236</b>	6.400
90	80	10	7000	<b>199 208 237</b>	13.500
110	100	10	11000	<b>199 208 238</b>	18.000

d [mm]	D2_G [inch]	L [mm]	L2 [mm]	L3 [mm]	L5 [mm]	L6 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]
75	3/8	233	72	160	228	65	321	75	73	60	38	71	173
90	3/8	267	82	188	258	80	375	88	88	70	46	86	199
110	3/8	318	95	225	258	80	431	110	113	80	46	86	209





### 3-Way ball valve type 275 ABS

#### Horizontal/L-port FC (Fail safe to close)

#### Without manual override

#### With solvent cement sockets metric

#### Model:

- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-3 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

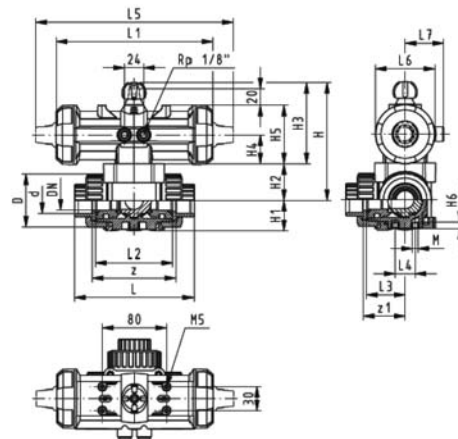
#### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code
16	10	10	50	<b>199 275 162</b>
20	15	10	75	<b>199 275 163</b>
25	20	10	150	<b>199 275 164</b>
32	25	10	280	<b>199 275 165</b>
40	32	10	480	<b>199 275 166</b>
50	40	10	620	<b>199 275 167</b>
63	50	10	1230	<b>199 275 168</b>

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]
16	45	136	29	31	105	40	77	8	108	194	72	36	25	261	73
20	45	136	29	31	105	40	77	8	111	194	72	36	25	261	73
25	52	144	33	39	105	40	77	8	131	194	86	43	25	261	73
32	65	149	38	44	105	40	77	8	148	194	96	48	25	261	73
40	78	177	44	50	127	51	99	9	176	224	116	58	45	305	94
50	92	190	50	63	127	51	99	9	206	224	137	69	45	305	94
63	116	203	61	76	127	51	99	9	262	224	179	90	45	305	94

d [mm]	L7 [mm]	M	z [mm]	z1 [mm]
16	48	6	80	40
20	48	6	80	40
25	48	6	94	47
32	48	6	104	52
40	59	8	126	63
50	59	8	144	72
63	59	8	186	93





### 3-Way ball valve type 275 ABS Horizontal/L-port DA (Double acting) Without manual override With solvent cement sockets metric

#### Model:

- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-3 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

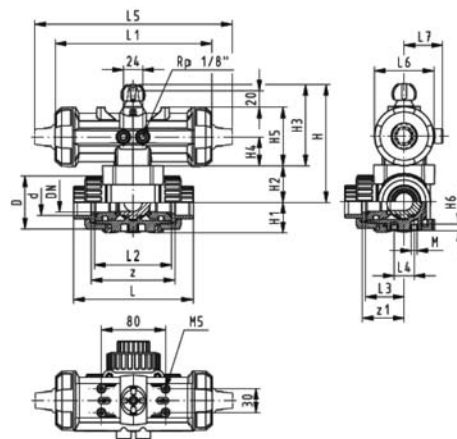
#### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	50	<b>199 275 342</b>	2.060
20	15	10	75	<b>199 275 343</b>	
25	20	10	150	<b>199 275 344</b>	
32	25	10	280	<b>199 275 345</b>	
40	32	10	480	<b>199 275 346</b>	
50	40	10	620	<b>199 275 347</b>	
63	50	10	1230	<b>199 275 348</b>	

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]
16	45	136	29	31	105	40	77	8	108	194	72	36	25	261	73
20	45	136	29	31	105	40	77	8	111	194	72	36	25	261	73
25	52	144	33	39	105	40	77	8	131	194	86	43	25	261	73
32	65	149	38	44	105	40	77	8	148	194	96	48	25	261	73
40	78	177	44	50	127	51	99	9	176	224	116	58	45	305	94
50	92	190	50	63	127	51	99	9	206	224	137	69	45	305	94
63	116	203	61	76	127	51	99	9	262	224	179	90	45	305	94

d [mm]	L7 [mm]	M	z [mm]	z1 [mm]
16	48	6	80	40
20	48	6	80	40
25	48	6	94	47
32	48	6	104	52
40	59	8	126	63
50	59	8	144	72
63	59	8	186	93





## 3-Way ball valve type 275 ABS

### Horizontal/T-port FC (Fail safe to close)

### Without manual override

### With solvent cement sockets metric

#### Model:

- Built on with pneumatic actuator PA11/21
- For easy installation and removal
- Integrated stainless steel mounting inserts
- Control time 90° < 1-3 s

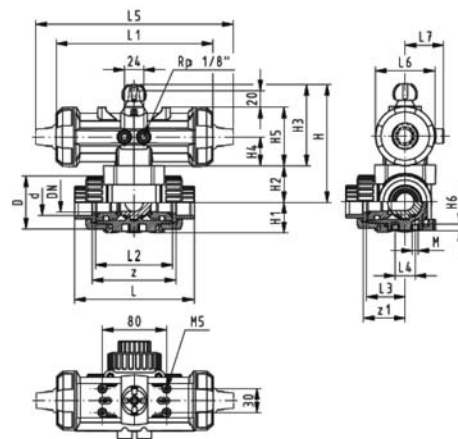
#### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	140	<b>199 275 172</b>	4.397
20	15	10	200	<b>199 275 173</b>	
25	20	10	470	<b>199 275 174</b>	
32	25	10	793	<b>199 275 175</b>	
40	32	10	1290	<b>199 275 176</b>	
50	40	10	1910	<b>199 275 177</b>	
63	50	10	3100	<b>199 275 178</b>	

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]
16	45	136	29	31	105	40	77	8	108	194	72	36	25	261	73
20	45	136	29	31	105	40	77	8	111	194	72	36	25	261	73
25	52	144	33	39	105	40	77	8	131	194	86	43	25	261	73
32	65	149	38	44	105	40	77	8	148	194	96	48	25	261	73
40	78	177	44	50	127	51	99	9	176	224	116	58	45	305	94
50	92	190	50	63	127	51	99	9	206	224	137	69	45	305	94
63	116	203	61	76	127	51	99	9	262	224	179	90	45	305	94

d [mm]	L7 [mm]	M	z [mm]	z1 [mm]
16	48	6	80	40
20	48	6	80	40
25	48	6	94	47
32	48	6	104	52
40	59	8	126	63
50	59	8	144	72
63	59	8	186	93





## 3-Way ball valve type 275 ABS Horizontal/T-port DA (Double acting) Without manual override With solvent cement sockets metric

### Model:

- Built on with pneumatic actuator PA11/21
- Control time  $90^\circ <$  1-3 s
- For easy installation and removal
- Integrated stainless steel mounting inserts

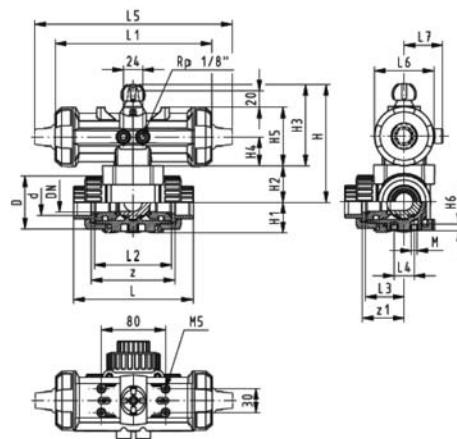
### Option:

- Individual configuration of the valve (see form)

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code
16	10	10	140	<b>199 275 352</b>
20	15	10	200	<b>199 275 353</b>
25	20	10	470	<b>199 275 354</b>
32	25	10	793	<b>199 275 355</b>
40	32	10	1290	<b>199 275 356</b>
50	40	10	1910	<b>199 275 357</b>
63	50	10	3100	<b>199 275 358</b>

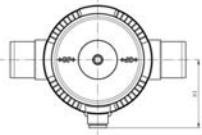
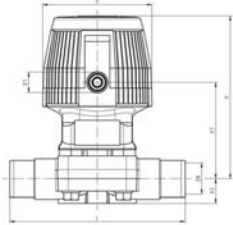
d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]
16	45	136	29	31	105	40	77	8	108	194	72	36	25	261	73
20	45	136	29	31	105	40	77	8	111	194	72	36	25	261	73
25	52	144	33	39	105	40	77	8	131	194	86	43	25	261	73
32	65	149	38	44	105	40	77	8	148	194	96	48	25	261	73
40	78	177	44	50	127	51	99	9	176	224	116	58	45	305	94
50	92	190	50	63	127	51	99	9	206	224	137	69	45	305	94
63	116	203	61	76	127	51	99	9	262	224	179	90	45	305	94

d [mm]	L7 [mm]	M	z [mm]	z1 [mm]
16	48	6	80	40
20	48	6	80	40
25	48	6	94	47
32	48	6	104	52
40	59	8	126	63
50	59	8	144	72
63	59	8	186	93



# Diaphragm valves pneumatic

## Diaphragm valve type DIASTAR Eco ABS FC (Fail safe to close) With solvent cement spigots metric



### Model:

- Working pressure 6 bar one side

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
20	15	6	72	<b>199 024 181</b>	0.510
25	20	6	120	<b>199 024 182</b>	1.033
32	25	6	238	<b>199 024 183</b>	1.291
40	32	6	341	<b>199 024 184</b>	1.909
50	40	6	460	<b>199 024 185</b>	2.477
63	50	6	685	<b>199 024 186</b>	3.103

d [mm]	D [mm]	D1_G [inch]	D2 (M)	L [mm]	L1 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Lift = Hx [mm]
20	68	1/8	M6	124	25	99	59	14	44	8
25	96	1/8	M6	144	25	130	71	18	56	10
32	96	1/8	M6	154	25	143	85	21	56	12
40	120	1/8	M8	174	45	170	97	26	68	14
50	120	1/8	M8	194	45	182	109	33	68	16
63	120	1/8	M8	224	45	199	126	39	68	16



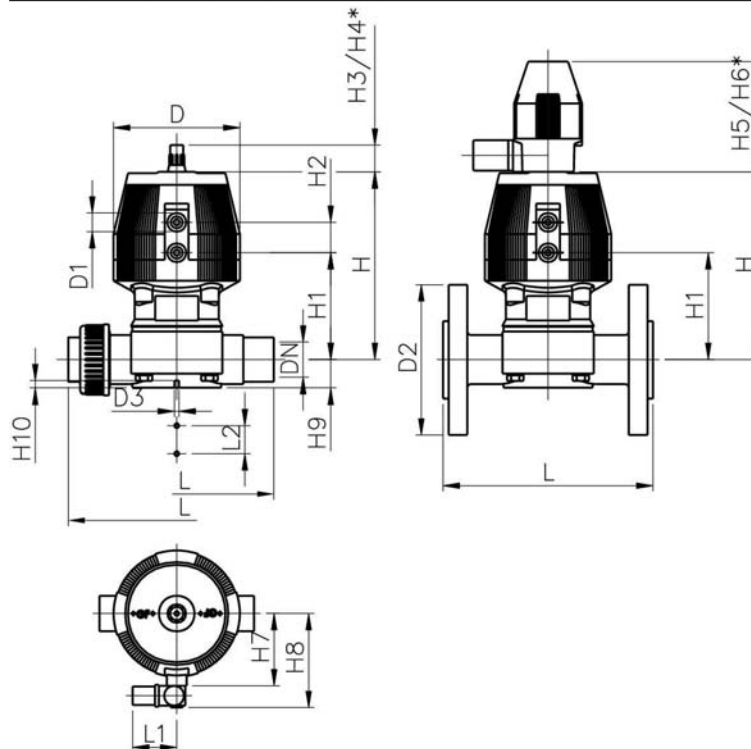
## Diaphragm valve type DIASTAR ABS Series 028 FC (Fail safe to close) With solvent cement spigots metric

- With position indicator / Working pressure: **one side**

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
20	15	10	72	<b>199 028 941</b>	0.470
25	20	10	120	<b>199 028 942</b>	0.900
32	25	10	238	<b>199 028 943</b>	1.190
40	32	10	341	<b>199 028 944</b>	1.650
50	40	10	460	<b>199 028 945</b>	3.050
63	50	10	685	<b>199 028 946</b>	5.200

d [mm]	D [mm]	D1_G [inch]	D3[M] [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	H7 [mm]
20	68	1/8	6	124	60	25	99	59	24	23	44	100	155	44
25	96	1/8	6	144	60	25	130	71	25	23	44	100	155	56
32	96	1/8	6	154	60	25	143	85	25	23	44	100	155	56
40	120	1/8	8	174	60	45	170	97	26	36	64	100	160	68
50	150	1/4	8	194	60	45	203	108	36	36	64	100	170	85
63	150	1/4	8	224	60	45	220	126	36	36	64	100	170	85

d [mm]	H8 [mm]	H9 [mm]	H10 [mm]	Lift = Hx [mm]
20	76	14	12	8
25	88	18	12	10
32	88	21	12	12
40	100	26	15	14
50	117	33	15	18
63	117	39	15	22





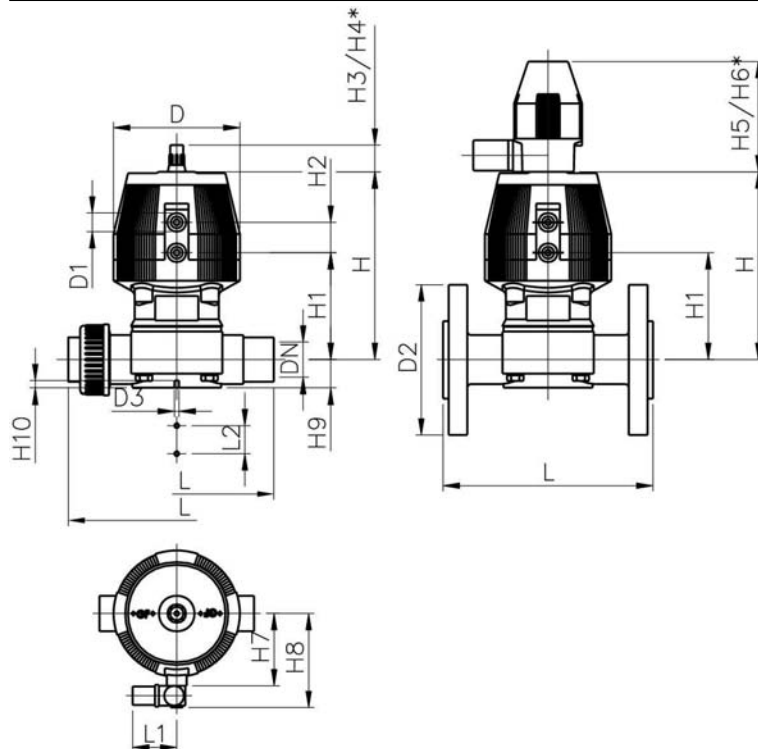
## Diaphragm valve type DIASTAR ABS Series 025 FC (Fail safe to close) With solvent cement spigots metric

- With position indicator / Working pressure: both sides

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
20	15	10	72	<b>199 025 941</b>	0.607
25	20	10	120	<b>199 025 942</b>	0.766
32	25	10	238	<b>199 025 943</b>	1.320
40	32	10	341	<b>199 025 944</b>	2.562
50	40	10	460	<b>199 025 945</b>	3.500
63	50	10	685	<b>199 025 946</b>	4.351

d [mm]	D [mm]	D1_G [inch]	D3[M] [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	H7 [mm]
20	96	3/8	6	124	60	25	128	69	25	23	44	100	155	56
25	96	3/8	6	144	60	25	130	71	25	23	44	100	155	56
32	120	1/2	6	154	60	25	166	93	26	36	64	100	155	68
40	150	1/2	8	174	60	45	201	106	36	36	64	100	160	85
50	180	3/4	8	194	60	45	233	119	37	36	64	100	170	101
63	180	3/4	8	224	60	45	247	133	37	36	64	100	170	101

d [mm]	H8 [mm]	H9 [mm]	H10 [mm]	Lift = Hx [mm]
20	86	14	12	8
25	88	18	12	10
32	100	21	12	12
40	117	26	15	14
50	133	33	15	18
63	133	39	15	22







## Diaphragm valve type DIASTAR ABS Series 025 FC (Fail safe to close) With fixed flanges ABS metric

- With position indicator / Working pressure: **one side**

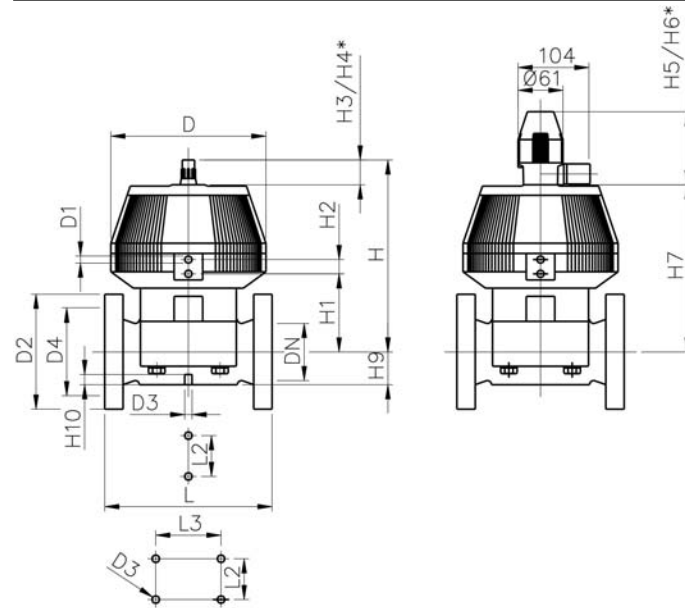
\* with backing flanges UP-GF metric

\*\* with fixed flanges ABS metric and Inch ANSI

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
*75	65	2 ½	10	992	<b>199 025 947</b>	13.600	
**90	80	3	10	1700	<b>199 025 948</b>	17.400	
110	100	4	8	2700	<b>199 025 949</b>	24.700	

d [mm]	D [mm]	D1_G [inch]	D2 [mm]	D3[M] [mm]	D4 [mm]	L [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]
*75	280	¼	185.00	8	145.0	290	70	344	148	24	46	100
**90	280	¼	200.00	12	160.0	310	120	348	150	24	46	100
110	335	¼	225.00	12	180.0	350	120	395	176	24	46	100

d [mm]	H5 [mm]	H6 [mm]	H7 [mm]	H9 [mm]	H10 [mm]
*75	129	195	298	46	15
**90	129	195	302	57	15
110	129	195	349	69	20





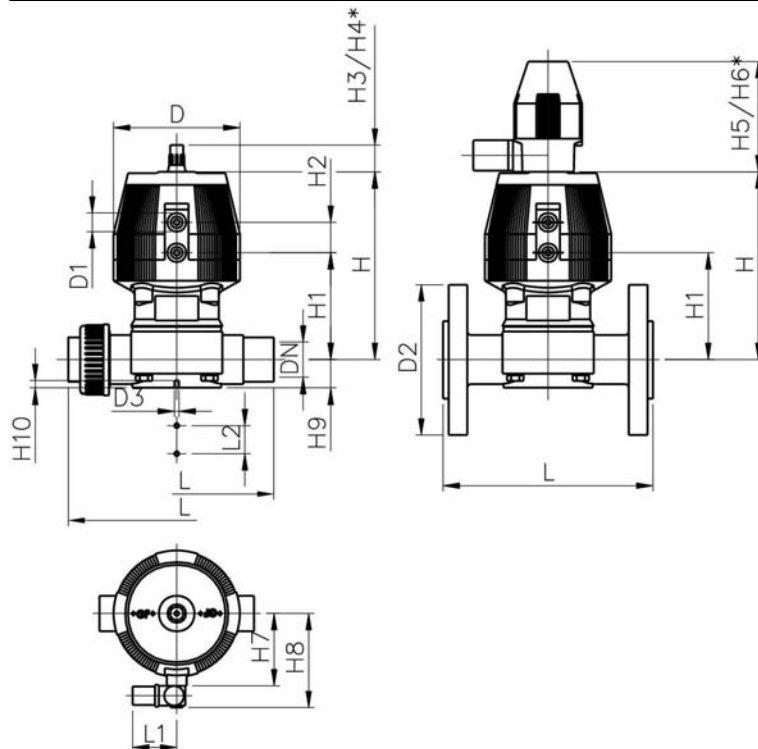
## Diaphragm valve type DIASTAR ABS Series 025 FO (Fail safe to open) With solvent cement spigots metric

- With position indicator / Working pressure: both sides

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
20	15	10	72	<b>199 025 951</b>	0.404
25	20	10	120	<b>199 025 952</b>	0.690
32	25	10	238	<b>199 025 953</b>	0.980
40	32	10	341	<b>199 025 954</b>	1.230
50	40	10	460	<b>199 025 955</b>	2.210
63	50	10	685	<b>199 025 956</b>	4.360

d [mm]	D [mm]	D1_G [inch]	D3[M] [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	H7 [mm]
20	68	1/8	6	124	60	25	99	59	24	23	44	100	155	44
25	96	1/8	6	144	60	25	130	71	25	23	44	100	155	56
32	96	1/8	6	154	60	25	143	85	25	23	44	100	155	56
40	120	1/8	8	174	60	45	170	97	26	36	64	100	160	68
50	150	1/4	8	194	60	45	203	108	36	36	64	100	170	85
63	150	1/4	8	224	60	45	220	126	36	36	64	100	170	85

d [mm]	H8 [mm]	H9 [mm]	H10 [mm]	Lift = Hx [mm]
20	76	14	12	8
25	88	18	12	10
32	88	21	12	12
40	100	26	15	14
50	117	33	15	18
63	117	39	15	22





## Diaphragm valve type DIASTAR ABS Series 025 FO (Fail safe to open) With fixed flanges ABS metric

- With position indicator / Working pressure: **one side**

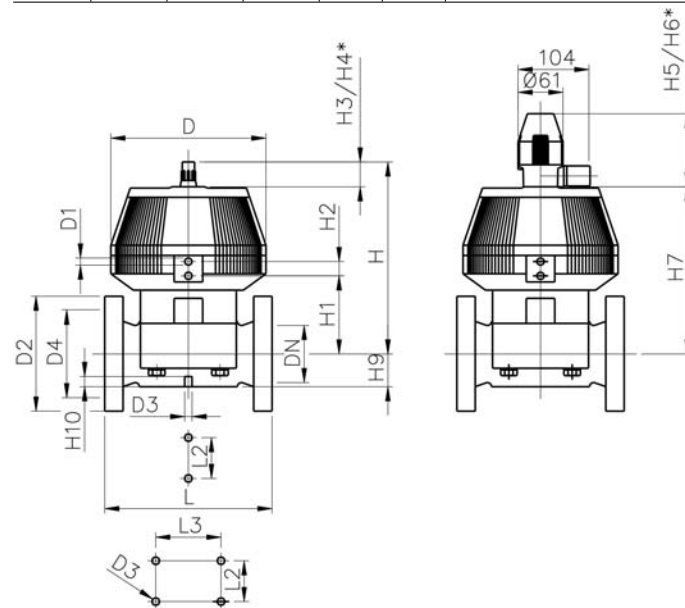
\* with backing flanges UP-GF metric

\*\* with fixed flanges ABS metric and Inch ANSI

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
*75	65	2 ½	10	992	<b>199 025 957</b>	13.600	
**90	80	3	10	1700	<b>199 025 958</b>	13.800	
110	100	4	8	2700	<b>199 025 959</b>		

d [mm]	D [mm]	D1_G [inch]	D2 [mm]	D3[M] [mm]	D4 [mm]	L [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]
*75	280	¼	185.00	8	145.0	290	70	344	148	24	46	100
**90	280	¼	200.00	12	160.0	310	120	348	150	24	46	100
110	335	¼	225.00	12	180.0	350	120	395	176	24	46	100

d [mm]	H5 [mm]	H6 [mm]	H7 [mm]	H9 [mm]	H10 [mm]
*75	129	195	298	46	15
**90	129	195	302	57	15
110	129	195	349	69	20



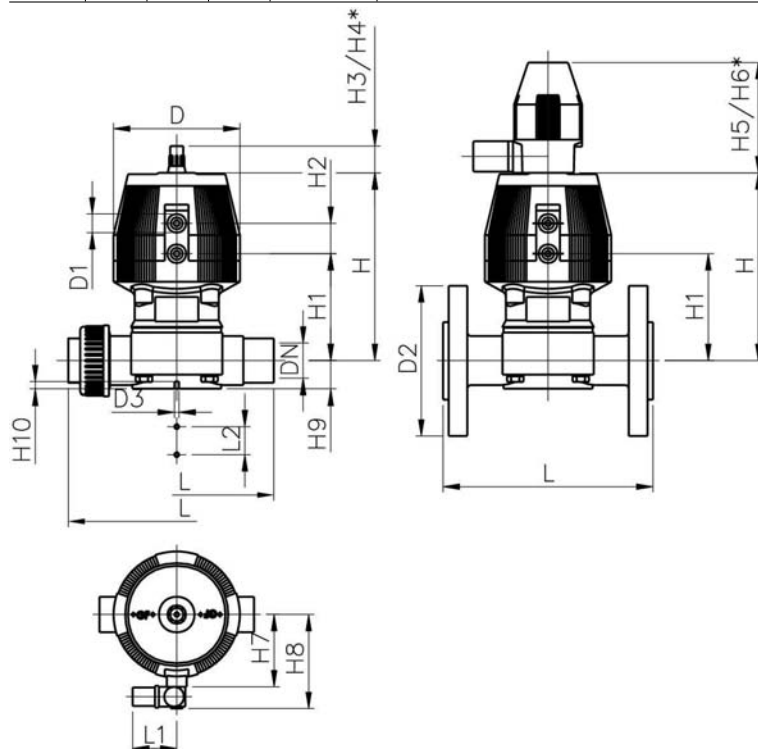


## Diaphragm valve type DIASTAR ABS Series 025 DA (Double acting) With solvent cement spigots metric

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
20	15	10	72	<b>199 025 961</b>	0.404
25	20	10	120	<b>199 025 962</b>	0.690
32	25	10	238	<b>199 025 963</b>	1.260
40	32	10	341	<b>199 025 964</b>	1.230
50	40	10	460	<b>199 025 965</b>	2.210
63	50	10	685	<b>199 025 966</b>	4.360

d [mm]	D [mm]	D1_G [inch]	D3[M] [mm]	L [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	H7 [mm]
20	68	1/8	6	124	60	25	99	59	24	23	44	100	155	44
25	96	1/8	6	144	60	25	130	71	25	23	44	100	155	56
32	96	1/8	6	154	60	25	143	85	25	23	44	100	155	56
40	120	1/8	8	174	60	45	170	97	26	36	64	100	160	68
50	150	1/4	8	194	60	45	203	108	36	36	64	100	170	85
63	150	1/4	8	224	60	45	220	126	36	36	64	100	170	85

d [mm]	H8 [mm]	H9 [mm]	H10 [mm]	Lift = Hx [mm]
20	76	14	12	8
25	88	18	12	10
32	88	21	12	12
40	100	26	15	14
50	117	33	15	18
63	117	39	15	22





## Diaphragm valve type DIASTAR ABS Series 025 DA (Double acting) With fixed flanges ABS metric

- With position indicator / Working pressure: **one side**

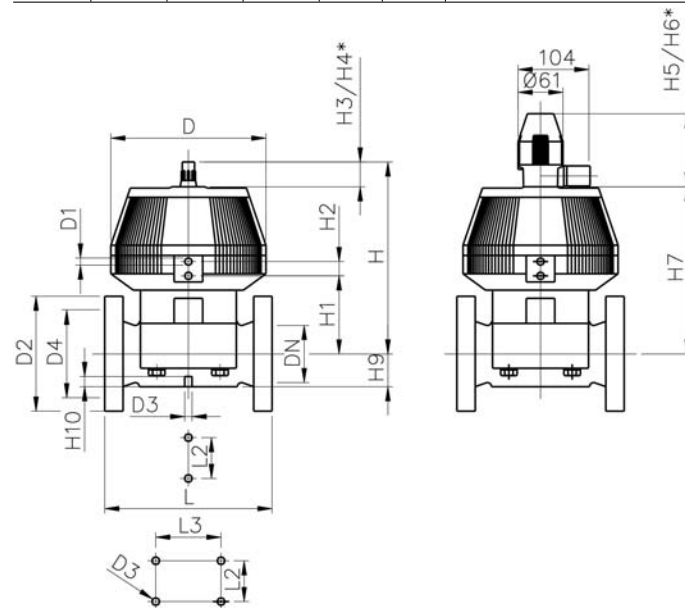
\* with backing flanges UP-GF metric

\*\* with fixed flanges ABS metric and Inch ANSI

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
*75	65	2 ½	10	992	<b>199 025 967</b>	17.400	
**90	80	3	10	1700	<b>199 025 968</b>		
110	100	4	8	2700	<b>199 025 969</b>		

d [mm]	D [mm]	D1_G [inch]	D2 [mm]	D3[M] [mm]	D4 [mm]	L [mm]	L2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]
*75	280	¼	185.00	8	145.0	290	70	344	148	24	46	100
**90	280	¼	200.00	12	160.0	310	120	348	150	24	46	100
110	335	¼	225.00	12	180.0	350	120	395	176	24	46	100

d [mm]	H5 [mm]	H6 [mm]	H7 [mm]	H9 [mm]	H10 [mm]
*75	129	195	298	46	15
**90	129	195	302	57	15
110	129	195	349	69	20



# Butterfly valves electric

## Butterfly valve type 140 ABS 100-230V Without manual override

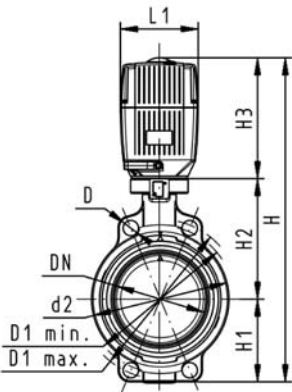


### Model:

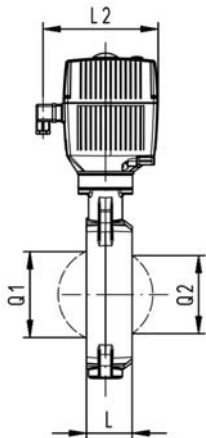
- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Voltage 100-230 V, 50-60 Hz
- Control time 15 s/90° (<) EA31
- Control time 8s/90° (<) EA41
- Control range 90° (<)
- Actuator with integrated emergency manual override standard

\* Available on request

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>199 140 502</b>	
*75	65	2 ½	10	2200	<b>199 140 503</b>	
90	80	3	10	3000	<b>199 140 504</b>	4.359
110	100	4	10	6500	<b>199 140 505</b>	4.895
*140	125	5	10	11500	<b>199 140 506</b>	
160	150	6	10	16600	<b>199 140 507</b>	6.218
225	200	8	10	39600	<b>199 140 508</b>	12.029



d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	L2 [mm]
*63	EA-31	19	120.0	125.0	104	400	77	134	188	45	122	180
*75	EA-31	19	139.7	145.0	115	413	83	140	188	46	122	180
90	EA-31	19	150.0	160.0	131	428	89	146	188	49	122	180
110	EA-31	19	175.0	190.5	161	460	104	167	188	56	122	180
*140	EA-31	23	210.0	215.9	187	487	117	181	188	64	122	180
160	EA-31	24	241.3	241.3	215	508	130	189	188	72	122	180
225	EA-41	23	290.0	295.0	267	575	158	210	208	73	125	180



d [mm]	Q1 [mm]	Q2 [mm]
*63	35.74	
*75	50.93	30.62
90	64.01	46.24
110	84.46	69.96
*140	110.71	94.50
160	136.08	121.54
225	175.62	166.23



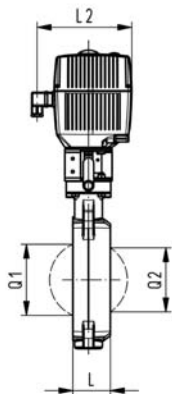
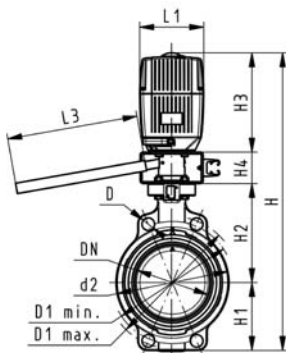
## Butterfly valve type 140 ABS 100-230V With manual override



### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Voltage 100-230 V, 50-60 Hz
- Control time 15 s/90°<) EA31
- Control time 8s/90°<) EA41
- Control range 90°<)
- Actuator with integrated emergency manual override standard

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
*63	50	2	10	1470	<b>199 140 482</b>		
*75	65	2 ½	10	2200	<b>199 140 483</b>		
90	80	3	10	3000	<b>199 140 484</b>	5.859	
110	100	4	10	6500	<b>199 140 485</b>	6.395	
*140	125	5	10	11500	<b>199 140 486</b>		
160	150	6	10	16600	<b>199 140 487</b>	7.718	
225	200	8	10	39600	<b>199 140 488</b>	13.529	

d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L [mm]	L1 [mm]
*63	EA-31	19	120.0	125.0	104	460	77	134	188	60	45	122
*75	EA-31	19	139.7	145.0	115	473	83	140	188	60	46	122
90	EA-31	19	150.0	160.0	131	488	89	146	188	60	49	122
110	EA-31	19	175.0	190.5	161	520	104	167	188	60	56	122
*140	EA-31	23	210.0	215.9	187	547	117	181	188	60	64	122
160	EA-31	24	241.3	241.3	215	568	130	189	188	60	72	122
225	EA-41	23	290.0	295.0	267	635	158	210	208	60	73	125

d [mm]	L2 [mm]	L3 [mm]	Q1 [mm]	Q2 [mm]
*63	180	200	35.74	
*75	180	200	50.93	30.62
90	180	200	64.01	46.24
110	180	250	84.46	69.96
*140	180	250	110.71	94.50
160	180	250	136.08	121.54
225	180	250	175.62	166.23



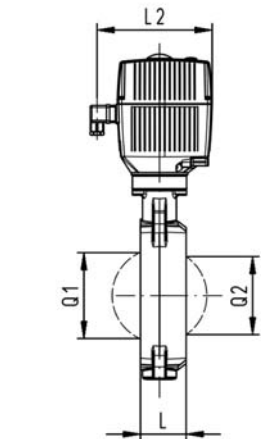
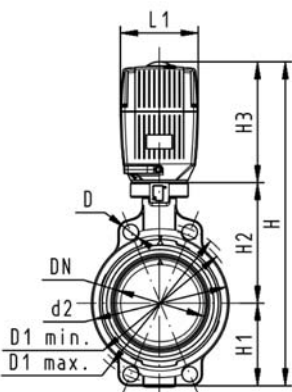
## Butterfly valve type 140 ABS 24V Without manual override



### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Voltage 24 V AC/DC
- Control time 15 s/90°<) EA31
- Control time 8s/90°<) EA41
- Control range 90°<)
- Actuator with integrated emergency manual override standard

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>199 140 542</b>	
*75	65	2 ½	10	2200	<b>199 140 543</b>	
90	80	3	10	3000	<b>199 140 544</b>	4.359
110	100	4	10	6500	<b>199 140 545</b>	4.895
*140	125	5	10	11500	<b>199 140 546</b>	
160	150	6	10	16600	<b>199 140 547</b>	6.218
225	200	8	10	39600	<b>199 140 548</b>	12.029

d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	L2 [mm]
*63	EA-31	19	120.0	125.0	104	400	77	134	188	45	122	180
*75	EA-31	19	139.7	145.0	115	413	83	140	188	46	122	180
90	EA-31	19	150.0	160.0	131	428	89	146	188	49	122	180
110	EA-31	19	175.0	190.5	161	460	104	167	188	56	122	180
*140	EA-31	23	210.0	215.9	187	487	117	181	188	64	122	180
160	EA-31	24	241.3	241.3	215	508	130	189	188	72	122	180
225	EA-41	23	290.0	295.0	267	575	158	210	208	73	125	180

d [mm]	Q1 [mm]	Q2 [mm]
*63	35.74	
*75	50.93	30.62
90	64.01	46.24
110	84.46	69.96
*140	110.71	94.50
160	136.08	121.54
225	175.62	166.23





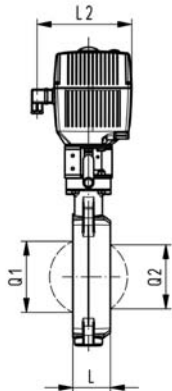
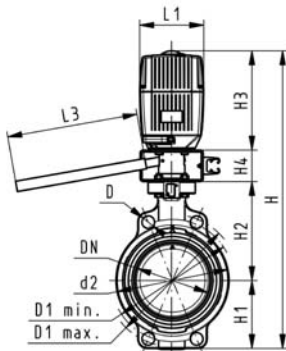
## Butterfly valve type 140 ABS 24V With manual override



### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Voltage 24 V AC/DC
- Control time 15 s/90°<) EA31
- Control time 8s/90°<) EA41
- Control range 90°<)
- Actuator with integrated emergency manual override standard

\* Available on request



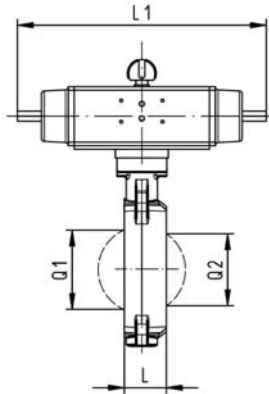
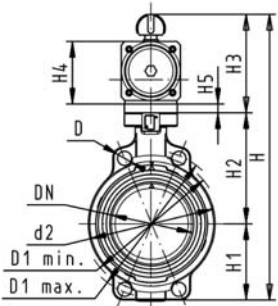
d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	
*63	50	2	10	1470	<b>199 140 522</b>		
*75	65	2 ½	10	2200	<b>199 140 523</b>		
90	80	3	10	3000	<b>199 140 524</b>	5.859	
110	100	4	10	6500	<b>199 140 525</b>	6.395	
*140	125	5	10	11500	<b>199 140 526</b>		
160	150	6	10	16600	<b>199 140 527</b>	7.718	
225	200	8	10	39600	<b>199 140 528</b>	13.529	

d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L [mm]	L1 [mm]
*63	EA-31	19	120.0	125.0	104	460	77	134	188	60	45	122
*75	EA-31	19	139.7	145.0	115	473	83	140	188	60	46	122
90	EA-31	19	150.0	160.0	131	488	89	146	188	60	49	122
110	EA-31	19	175.0	190.5	161	520	104	167	188	60	56	122
*140	EA-31	23	210.0	215.9	187	547	117	181	188	60	64	122
160	EA-31	24	241.3	241.3	215	568	130	189	188	60	72	122
225	EA-41	23	290.0	295.0	267	635	158	210	208	60	73	125

d [mm]	L2 [mm]	L3 [mm]	Q1 [mm]	Q2 [mm]
*63	180	200	35.74	
*75	180	200	50.93	30.62
90	180	200	64.01	46.24
110	180	250	84.46	69.96
*140	180	250	110.71	94.50
160	180	250	136.08	121.54
225	180	250	175.62	166.23

# Butterfly valves pneumatic

## Butterfly valve type 240 ABS FC (Fail safe to close) Without manual override



### Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Control range 90° <

\* Available on request

d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>199 240 402</b>	
*75	65	2 ½	10	2200	<b>199 240 403</b>	
90	80	3	10	3000	<b>199 240 404</b>	3.399
110	100	4	10	6500	<b>199 240 405</b>	5.133
*140	125	5	10	11500	<b>199 240 406</b>	
160	150	6	10	16600	<b>199 240 407</b>	9.779
225	200	8	10	39600	<b>199 240 408</b>	13.529

d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]
*63	PA-30 FC	19	120.0	125.0	104	327	77	134	117	70	15	45
*75	PA-30 FC	19	139.7	145.0	115	340	83	140	117	70	15	46
90	PA-35 FC	19	150.0	160.0	131	361	89	146	126	78	15	49
110	PA-40 FC	19	175.0	190.5	161	400	104	167	129	86		56
*140	PA-45 FC	23	210.0	215.9	187	436	117	181	139	96		64
160	PA-50 FC	24	241.3	241.3	215	468	130	189	149	106		72
225	PA-55 FC	23	290.0	295.0	267	529	158	210	161	118		73

d [mm]	L1 [mm]	L2 [mm]	Q1 [mm]	Q2 [mm]
*63	276	65	35.74	
*75	276	65	50.93	30.62
90	326	72	64.01	46.24
110	370	80	84.46	69.96
*140	411	90	110.71	94.50
160	423	100	136.08	121.54
225	452	112	175.62	166.23



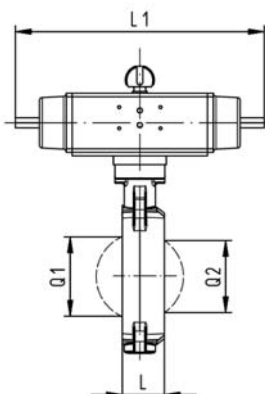
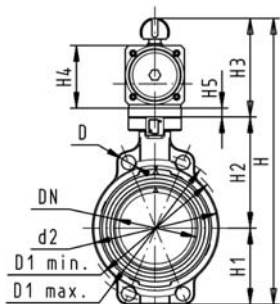
# Butterfly valve type 240 ABS FO (Fail safe to open) Without manual override



## Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Control range 90° <

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>199 240 422</b>	3.399
*75	65	2 ½	10	2200	<b>199 240 423</b>	
90	80	3	10	3000	<b>199 240 424</b>	
110	100	4	10	6500	<b>199 240 425</b>	
*140	125	5	10	11500	<b>199 240 426</b>	
160	150	6	10	16600	<b>199 240 427</b>	9.779
225	200	8	10	39600	<b>199 240 428</b>	13.529

d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]
*63	PA-30 FO	19	120.0	125.0	104	327	77	134	117	70	15	45
*75	PA-30 FO	19	139.7	145.0	115	340	83	140	117	70	15	46
90	PA-35 FO	19	150.0	160.0	131	361	89	146	126	78	15	49
110	PA-40 FO	19	175.0	190.5	161	400	104	167	129	86		56
*140	PA-45 FO	23	210.0	215.9	187	436	117	181	139	96		64
160	PA-50 FO	24	241.3	241.3	215	468	130	189	149	106		72
225	PA-55 FO	23	290.0	295.0	267	529	158	210	161	118		73

d [mm]	L1 [mm]	L2 [mm]	Q1 [mm]	Q2 [mm]
*63	276	65	35.74	
*75	276	65	50.93	30.62
90	326	72	64.01	46.24
110	370	80	84.46	69.96
*140	411	90	110.71	94.50
160	423	100	136.08	121.54
225	452	112	175.62	166.23



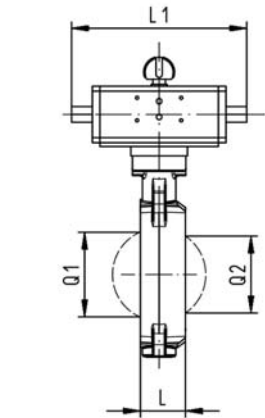
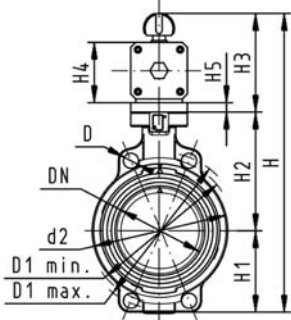
# Butterfly valve type 240 ABS DA (Double acting) Without manual override



## Model:

- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI B 16.5 Class 150, BS 1560: 1958, JIS B 2220
- Overall length according to EN 558-1, ISO 5752
- Control range 90°<

\* Available on request



d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
*63	50	2	10	1470	<b>199 240 442</b>	2.730
*75	65	2 ½	10	2200	<b>199 240 443</b>	
90	80	3	10	3000	<b>199 240 444</b>	
110	100	4	10	6500	<b>199 240 445</b>	
*140	125	5	10	11500	<b>199 240 446</b>	
160	150	6	10	16600	<b>199 240 447</b>	6.258
225	200	8	10	39600	<b>199 240 448</b>	7.529

d [mm]	Actuator unit type	D [mm]	D1 min. [mm]	D1 max. [mm]	d2 [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]
*63	PA-35 DA	19	120.0	125.0	104	317	77	134	107	60	15	45
*75	PA-35 DA	19	139.7	145.0	115	330	83	140	107	60	15	46
90	PA-40 DA	19	150.0	160.0	131	348	89	146	113	66	15	49
110	PA-45 DA	19	175.0	190.5	161	372	104	167	102	71		56
*140	PA-45 DA	23	210.0	215.9	187	408	117	181	111	78		64
160	PA-55 DA	24	241.3	241.3	215	448	130	189	129	86		72
225	PA-55 DA	23	290.0	295.0	267	507	158	210	139	96		73

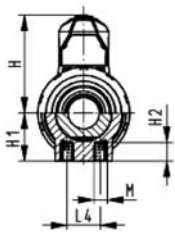
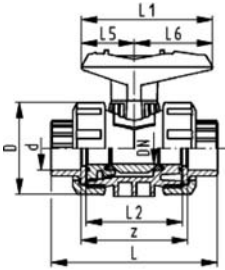
d [mm]	L1 [mm]	L2 [mm]	Q1 [mm]	Q2 [mm]
*63	177	55	35.74	
*75	177	55	50.93	30.62
90	190	60	64.01	46.24
110	198	65	84.46	69.96
*140	235	72	110.71	94.50
160	250	80	136.08	121.54
225	279	90	175.62	166.23

# Product Range Silicon Free/Paint Compatible

## Ball valve type 546 ABS SF

With mounting inserts

With solvent cement sockets metric



### Model:

- Silicone-free / paint-compatible
- Ball seals PVDF
- For easy installation and removal
- z-dimension, valve end and valve nut are **not compatible** with type 346
- Integrated stainless steel mounting inserts

### Option:

- Individual configuration of the valve (see form)
- Multifunctional module with integrated limit switches

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
16	10	10	71	<b>169 546 601</b>	0.112
20	15	10	185	<b>169 546 602</b>	0.114
25	20	10	350	<b>169 546 603</b>	0.178
32	25	10	700	<b>169 546 604</b>	0.258
40	32	10	1000	<b>169 546 605</b>	0.457
50	40	10	1600	<b>169 546 606</b>	0.642
63	50	10	3100	<b>169 546 607</b>	1.175

d [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	M	z [mm]
16	50	57	27	12	92	77	56	25	32	45	M6	64
20	50	57	27	12	95	77	56	25	32	45	M6	64
25	58	67	30	12	110	97	65	25	39	58	M6	72
32	68	73	36	12	123	97	71	25	39	58	M6	79
40	84	90	44	15	146	128	85	45	54	74	M8	94
50	97	97	51	15	157	128	89	45	54	74	M8	95
63	124	116	64	15	183	152	101	45	66	87	M8	107



## Ball valve type 370 ABS SF

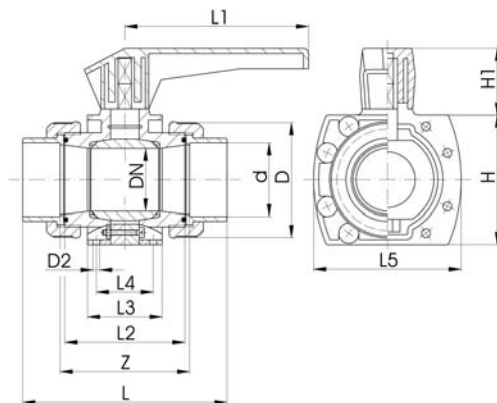
Unions with solvent cement sockets metric

### Model:

- Silicone-free / paint-compatible
- For easy installation and removal
- Ball seals PVDF

d [mm]	DN [mm]	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg
75	65	10	5000	<b>169 370 278</b>	2.385
90	80	10	7000	<b>169 370 279</b>	3.510
110	100	10	11000	<b>169 370 280</b>	6.738

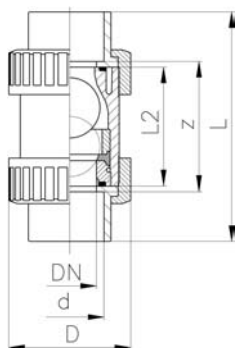
d [mm]	z [mm]	D [mm]	D2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	H [mm]	H1 [mm]
75	145	135	10.00	233	205	139	90	72	160	148	74
90	165	158	10.00	267	205	155	104	88	188	176	74
110	196	188	12.00	318	250	186	128	104	225	223	78



## Ball check valve type 360 ABS SF With solvent cement sockets metric

### Model:

- Silicone-free / paint-compatible
- For easy installation and removal
- Ball is sealing at a minimum water column 1m
- Vibration free even at high flow velocity
- Installation position vertical, flow direction from down upward



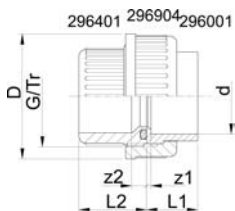
d [mm]	DN [mm]	Inch	PN	kv-value ( $\Delta p=1$ bar) [l/min]	EPDM Code	kg	z [mm]	D [mm]	L [mm]	L2 [mm]
16	10	3/8	10	170	<b>169 360 601</b>	0.105	71	45	99	63
20	15	1/2	10	150	<b>169 360 602</b>	0.105	71	45	102	63
25	20	3/4	10	330	<b>169 360 603</b>	0.175	82	56	120	75
32	25	1	10	390	<b>169 360 604</b>	0.271	87	67	131	79
40	32	1 1/4	10	710	<b>169 360 605</b>	0.445	98	82	150	89
50	40	1 1/2	10	900	<b>169 360 606</b>	0.715	101	98	163	95
63	50	2	10	1390	<b>169 360 607</b>	1.271	121	120	197	115

29 51 01

## Unions for solvent cement jointing, ABS metric SF

### Model:

- Silicone-free / paint-compatible
- Union End: solvent socket metric
- Union bush: Solvent cement socket metric
- Gasket: O-ring EPDM No. 48 41 00



d [mm]	PN	EPDM Code	kg	z1 [mm]	z2 [mm]	D [mm]	L [mm]	L1 [mm]	G/Tr
16	10	<b>729 510 155</b>	0.025	3	8	35	19	24	3/4
20	10	<b>729 510 156</b>	0.035	3	9	43	21	26	1
25	10	<b>729 510 157</b>	0.050	3	9	53	24	29	1 1/4
32	10	<b>729 510 158</b>	0.070	3	9	60	27	32	1 1/2
40	10	<b>729 510 159</b>	0.130	3	10	74	32	38	2
50	10	<b>729 510 160</b>	0.170	3	10	83	33	40	2 1/4
63	10	<b>729 510 161</b>	0.340	3	10	103	40	46	2 3/4
75	10	<b>729 510 162</b>	0.461	3	18	135	47	62	Tr108x5
90	10	<b>729 510 163</b>	0.694	5	18	158	56	69	Tr128x5
110	10	<b>729 510 164</b>	1.069	5	11	188	66	72	Tr154x6

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# General Condition of Supply of Georg Fischer Piping Systems Limited, Schaffhausen

## 1 General

- 1.1 These General Conditions shall apply to all Products supplied by Georg Fischer to the Purchaser. They shall also apply to all future business even when no express reference is made to them.
- 1.2 Any deviating or supplementary conditions especially Purchaser's general conditions of purchase and verbal agreements shall only be applicable if accepted in writing by Georg Fischer.
- 1.3 The written form shall be deemed to be fulfilled by all forms of transmission, evidenced in the form of text, such as telefax, e-mail, etc.

## 2 Tenders

- 2.1 Tenders shall only be binding if they contain a specifically stated period for acceptance.

## 3 Scope of Delivery

- 3.1 Georg Fischer's product range is subject to change.
- 3.2 The confirmation of order shall govern the scope and execution of the contract.

## 4 Data and Documents

- 4.1 Technical documents such as drawings, descriptions, illustrations and data on dimensions, performance and weight as well as the reference to standards are for information purposes only. They are not warranted characteristics and are subject to change.
- 4.2 All technical documents shall remain the exclusive property of Georg Fischer and may only be used for the agreed purposes or as Georg Fischer may consent.

## 5 Confidentiality, Protection of Personal Data

- 5.1 Each party shall keep in strict confidence all commercial or technical information relating to the business of the other party, of which it has gained knowledge in the course of its dealing with the other party. Such information shall neither be disclosed to third parties nor used for other purposes than those for which the information has been supplied.
- 5.2 In the context of the contractual relation with the Purchaser personal data may be processed. The Purchaser agrees to the disclosure of said data to third parties such as foreign subcontractors and suppliers etc.

## 6 Local Laws and Regulations, Export Controls

- 6.1 The Purchaser shall bring to the attention of Georg Fischer all local laws and regulations at the place of destination which bear connection with the execution of the contract and the adherence to relevant safety regulations and approval procedures.
- 6.2 In case of re-exports, Purchaser shall be responsible for compliance with pertinent export control regulations.

## 7 Price

- 7.1 Unless agreed otherwise, the prices shall be deemed quoted net ex works (according to Incoterms of the ICC, latest version) including standard packing. All supplementary costs such as the cost of carriage, insurance, export-, transit- and import duties etc. shall be borne by the Purchaser. The Purchaser shall also bear the costs of all taxes, fees, duties etc. connected with the contract.
- 7.2 If the costs of packing, carriage, insurance, fees and other supplementary costs are included in the tender price or contract price or are referred to specifically in the tender or confirmation of order, Georg Fischer reserve the right to revise their prices accordingly should any change occur in the relevant tariffs.

## 8 Terms of Payment

- 8.1 The Purchaser shall make payment in the manner agreed by the parties without any deductions such as discounts, costs, taxes or dues.
- 8.2 The Purchaser may only withhold or off-set payments due against counter claims which are either expressly acknowledged by Georg Fischer or finally awarded to the Purchaser. In particular, payment shall still be made when unessential items are still out-standing provided that the Products already delivered are not rendered unusable as a result.

## 9 Retention of Title

- 9.1 The Products shall remain the property of Georg Fischer until the Purchaser shall have settled all claims, present and future, which Georg Fischer may have against him.
- 9.2 Should the Purchaser resell Products to which title is reserved, in the ordinary course of business, he shall hereby be deemed to have tacitly assigned to Georg Fischer the proceeds deriving from their sale together with all collateral rights, securities and reservations of title until all claims held by Georg Fischer shall have been settled. Until revoked by Georg Fischer, this assignment shall not preclude Purchaser's right to collect the assigned receivables.
- 9.3 To the extent the value of the Products to which title is reserved together with collateral securities exceeds Georg Fischer's claims against the Purchaser by more than 20%, Georg Fischer shall re-assign the above proceeds to Purchaser at his request.

## 10 Delivery

- 10.1 The term of delivery shall commence as soon as the contract has been entered into, all official formalities such as import and payment permits have been obtained and all essential technical issues have been settled. The term of delivery shall be deemed duly observed when, upon its expiry, the Products are ready for despatch.
- 10.2 Delivery is subject to the following conditions, i.e. the term of delivery shall be reasonably extended:
  - a) if Georg Fischer are not supplied in time with the information necessary for the execution of the contract or if subsequent changes causing delays are made by the Purchaser.
  - b) if Georg Fischer are prevented from performing the contract by force majeure. Force majeure shall equally be deemed to be any unforeseeable event beyond Georg Fischer's control which renders Georg Fischer's performance commercially unpractical or impossible, such as delayed or defective supplies from sub contractors labour disputes, governmental orders or regulations, shortages in materials or energy, serious disturbances in Georg Fischer's works, such as the total or partial destruction of plant and equipment or the breakdown of essential facilities, serious disruptions in transport facilities, e.g. impassable roads.  
Should the effect of force majeure exceed a period of six months, either party may cancel the contract forthwith.  
Georg Fischer shall not be liable for any damage or loss of any kind whatsoever resulting therefrom, any suspension or cancellation being without prejudice to Georg Fischer's right to recover all sums due in respect of consignments delivered and costs incurred to date.
  - c) if the Purchaser is in delay with the fulfilment of his obligations under the contract, in particular, if he does not adhere to the agreed conditions of payment or if he has failed to timely provide the agreed securities.
- 10.3 If for reasons attributable to Georg Fischer the agreed term of delivery or a reasonable extension thereof is exceeded, Georg Fischer shall not be deemed in default until the Purchaser has granted to Georg Fischer in writing a reasonable extension thereof of not less than one month which equally is not met.  
The Purchaser shall then be entitled to the remedies provided at law, it being however understood that, subject to limitations of Art. 16, damage claims shall be limited to max. 10% of the price of the delayed delivery.
- 10.4 Part shipments shall be allowed and Georg Fischer shall be entitled to invoice for such partial deliveries.
- 10.5 If the Purchaser fails to take delivery within a reasonable time of Products notified as ready for despatch, Georg Fischer shall be entitled to store the Products at the Purchaser's expense and risk and to invoice them as delivered. If Purchaser fails to effect payment, Georg Fischer shall be entitled to dispose of the Products.
- 10.6 Should Purchaser cancel an order without justification and should Georg Fischer not insist on the performance of the contract, Georg Fischer shall be entitled to liquidated damages in the amount of 10% of the contract price, Georg Fischer's right to prove and claim higher damages remaining reserved. Purchaser shall be entitled to prove, that Georg Fischer has suffered no or a considerably lower damage.

## 11 Packing

- 11.1 If the Products are provided with additional packing over and above the standard packing, such packing shall be charged additionally.

## 12 Passing of Risk

- 12.1 The risk in the Products shall pass to the Purchaser as soon as they have left Georg Fischer's works (EXWORKS, Incoterms ICC, latest version), even if delivery is made carriage-paid, under similar clauses or including installation or when carriage is organized and managed by Georg Fischer.
- 12.2 If delivery is delayed for reasons beyond Georg Fischer's control, the risk shall pass to the Purchaser when he is notified that the Products are ready for despatch.

## 13 Carriage and Insurance

- 13.1 Unless agreed otherwise, the Purchaser shall bear the cost of carriage.
- 13.2 The Purchaser shall be responsible for transport insurance against damage of whatever kind. Even when such insurance is arranged by Georg Fischer it shall be deemed taken out by the order of and for the account of the Purchaser and at his risk.
- 13.3 Special requests regarding carriage and insurance shall be communicated to Georg Fischer in due time. Otherwise carriage shall be arranged by Georg Fischer at their discretion, but without responsibility, by the quickest and cheapest method possible.  
In case of carriage-paid delivery transport arrangements shall be made by Georg Fischer. If the Purchaser specifies particular requirements, any extra costs involved shall be borne by him.
- 13.4 In the event of damage or loss of the Products during carriage the Purchaser shall mark the delivery documents accordingly and immediately have the damage ascertained by the carrier. Not readily ascertainable damages sustained during carriage shall be notified to the carrier within six days after receipt of the Products.

## 14 Inspection, Notification of Defects and Damages

- 14.1 The Products will be subject to normal inspection by Georg Fischer during manufacture. Additional tests required by the Purchaser shall be agreed upon in writing and shall be charged to the Purchaser.
- 14.2 It shall be a condition of Georg Fischer's obligation under the warranties stated hereinafter that Georg Fischer be notified in writing by the Purchaser of any purported defect immediately upon discovery. Notice concerning weight, numbers or apparent defects is to be given latest within 30 days from receipt of the Products, notice of other defects immediately latest within 7 working days after discovery, in any event within the agreed warranty period.
- 14.3 Purchaser shall not dispose of allegedly defective Products until all warranty and/or damage claims are finally settled. At its request, defective Products are to be placed at Georg Fischer's disposal.
- 14.4 At its request, Georg Fischer shall be given the opportunity to inspect the defect and/or damage, prior to commencement of remedial work, either itself or by third party experts.

## 15 Warranty

- 15.1 At the written request of the Purchaser, Georg Fischer undertake to repair or replace at their discretion, as quickly as possible and free of charge all Products supplied which demonstrably suffer from faulty design, materials or workman-ship or from faulty operating or installation instructions.  
In order to protect employees from toxic or radioactive substances which may have been transported through defective parts returned to Georg Fischer's sales organisation, said parts must be accompanied by a Material Safety Disclosure Form. The form may be obtained from Georg Fischer's local sales company or via [www.piping.georgfischer.com](http://www.piping.georgfischer.com).  
Replaced parts shall become property of Georg Fischer.
- 15.2 For Products which are manufactured to specifications, drawings or patterns supplied by the Purchaser, Georg Fischer's warranty shall be restricted to proper materials and workmanship.
- 15.3 The Purchaser shall be entitled to cancel the contract or to demand a reduction in the contract price if also a second attempt to repair or replace the Products has failed.
- 15.4 For Products or essential components manufactured by a third party and supplied by Georg Fischer under this contract, Georg Fischer's warranty is limited to the warranty provided by said third party.
- 15.5 This warranty shall not apply to damage resulting from normal wear and tear, improper storage and maintenance, failure to observe the operating instructions, overstressing or overloading, unsuitable operating media, unsuitable construction work or unsuitable building ground, improper repairs or alterations by the Purchaser or third parties, the use of other than original spare parts and other reasons beyond Georg Fischer's control.
- 15.6 No action or claim may be brought by the Purchaser on account of any alleged breach of warranty or any other obligation of Georg Fischer after the expiration of twelve (12) months from receipt of the Products by the end user or at the latest within eighteen (18) months of the Products being despatched by Georg Fischer.
- 15.7 In case of Products for use in domestic installations or in utilities
  - Georg Fischer will assume the costs of dismantling the defective Product and restoring the damaged object as well as, in case of negligence, all other direct damages caused by the defective Product (damage to property and injury to or death of persons) up to CHF 1 000 000 per occurrence.
  - the statute of limitations for warranty or damage claims - contrary to Section 15.6 - will be 5 years from the date of installation.

## 16 Limitation of Liability

- 16.1 All cases of breach of contract and the relevant consequences as well as all rights and claims on the part of the customer, irrespective of what ground they are based, are exhaustively covered by these general conditions of supply. In particular, any claims not expressly mentioned for damages, reduction of price, termination of or withdrawal from the contract are excluded. In no case whatsoever shall the customer be entitled to claim damages other than compensation for costs of remedying defects in the supplies. This in particular refers, but shall not be limited, to loss of production, loss of use, loss of orders, loss of profit and other direct or indirect or consequential damage. This exclusion of liability, however, does not apply to unlawful intent or gross negligence on the part of Georg Fischer and in case of strict liability under applicable product liability statutes, but does apply to unlawful intent or gross negligence of persons employed or appointed by Georg Fischer to perform any of its obligations.

## 17 Severability

- 17.1 Should any term or clause of these General Conditions in whole or in part be found to be unenforceable or void, all other provisions shall remain in full force and effect and the unenforceable or void provision shall be replaced by a valid provision, which comes closest to the original intention of the unenforceable or invalid provision.

## 18 Place of Performance and Jurisdiction

- 18.1 Place of performance for the Products shall be the Georg Fischer works from which the Products are despatched.
- 18.2 Any civil action based upon any alleged breach of this contract shall be filed and prosecuted exclusively in the courts of Schaffhausen, Switzerland.  
Georg Fischer however reserves the right to file actions in any court having jurisdiction over controversies arising out of or in connection with the present contract.
- 18.3 The contract shall be governed by Swiss law without regard to conflict of law provisions that would require the application of another law.

# GF Piping Systems → worldwide at home

Our sales companies and representatives ensure local customer support in over 100 countries.

[www.piping.georgfischer.com](http://www.piping.georgfischer.com)



The technical data are not binding and not expressly warranted characteristics of the goods. They are subject to change. Our General Conditions of Sale apply.

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