

# high purity

High purity thermoplastic piping systems have evolved to satisfy the stringent demands of the chemical, pharmaceutical and semi conductor industries.

Agri high purity piping products offer an unrivalled choice of dimensions, components and special geometries of fittings, which meet and exceed the demands of ultra pure water (UPW) users.

PVDF (polyvinylidene fluoride) has become the material of choice for UPW distribution systems, thanks to its level of purity, surface characteristics and pressure temperature capabilities.

PolyPure (natural polypropylene) is a natural unpigmented polypropylene offering good chemical resistance and excellent weldability. PolyPure is most suitable for use in less critical UPW systems up to 50°C where great demands are placed upon chemical resistance.

High purity polypropylene (PP-Pure) systems are especially suitable for applications in the chemical and semi conductor industries. UPW reclaim systems, cold and hot UPW piping, as well as drain and waste systems are ideal applications for PP-Pure.

Ideal for the semiconductor, electronic, biotechnology, healthcare, university, and laboratory industries, Harvel LXT® low-extractable piping is made from an innovative clean PVC compound that offers ease of installation.

## application guide

- Temperature range: PVDF-HP -40°C to +140°C  
PP-Pure 0°C to 95°C  
Polypure 0°C to 50°C  
LXT 0°C to 60°C

- Lightweight
- Easy to install
- Minimal contamination of flow stream
- Suitable for ultrapure liquids in electronics and pharmaceutical industries

## standards and approvals

|                        |                        |
|------------------------|------------------------|
| PVDF-HP                | : BS EN ISO 10931:2005 |
| Polypropylene Pipe     | : DIN 8077/8078        |
| Polypropylene Fittings | : DIN 16962            |
| LXT Pipe               | : ASTM D 1785          |
| LXT Fittings           | : ASTM D 2467          |

## section guide

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# about: high purity

High purity plastic piping systems are manufactured from specially formulated materials and undergo additional processes and packaging so that they meet the requirements of industries transporting ultra-pure water, fine chemicals and foodstuffs.

Plastic systems for high purity applications have evolved from standard grade materials during the past fifteen years. Extensive studies on the leach out behaviour of the plastic raw materials has led to the development of new variants with extremely low-extractable contaminants, especially TOC and trace metals. Strictly controlled manufacturing processes also guarantee a superior product with an extremely smooth internal surface to resist microbiological growth.

These high integrity systems are available in a selection of materials to meet a range of budgets. Installation methods vary from solvent cement welding to computer controlled infra-red non-contact fusion welding with full weld traceability. The choices available suit a wide range of applications, including:-

- Pure water distribution
- Dialysis and other medical units
- Fine chemical handling
- Food and drinks processing
- Biotechnology processes



## Manufacturing high purity systems

The process begins with the special grades of thermoplastic materials that have been developed for this application. Using only virgin compounds, product traceability begins at this point, with all batches being completely traceable back to raw material.

Pipe and fittings production takes place under strictly controlled conditions. Optimizing processing conditions and providing smooth internal surfaces greatly reduce the potential for extractable and particle contaminants.

Harvel LXT® piping, and PURAD® PP-Pure and Polypure piping are produced on designated extrusion and injection moulding equipment, with particular reference to stringent controls to enhance product quality. Products are immediately packaged in sealed bags so that they reach the point of installation without the risk of any contamination.

PURAD® PVDF UHP piping is manufactured in a class 100/1000 cleanroom on dedicated production equipment. After manufacturing, all UHP fittings and valves are cleaned in an automatic process carried out in a class 100 environment. As with other high purity systems, UHP products are immediately packaged so that no contamination can occur on route to the job site.

Detailed manufacturing records are kept and all high purity systems can be supplied with certificates of conformity including quality control records.



## Harvel LXT®

Ideal for the semiconductor, electronic, biotechnology, healthcare, university, and laboratory industries, Harvel LXT® low-extractable piping is made from an innovative clean PVC compound that offers a number of advantages:

- Extremely low extractable containments, particularly trace metals and Total Oxidizable Carbon (TOC)
- Fast reliable installation with simple inexpensive joining methods
- Speciality one-step fast setting solvent cement joining system rinses up quickly
- Unique blue translucent material allows visual joint integrity inspection
- Ultra-smooth interior pipe surface minimizes the potential for bacterial growth and particle generation
- Rigid Schedule 80 dimensions for pressure service requires fewer supports than flexible plastic systems

Harvel LXT® material also meets the toxicological requirements of NSF International Standard 61 as being safe for use in potable water applications, and also complies with the provisions of Title 21 of the United States FDA Code of Federal Regulations as being safe for the use in food contact applications.

### Physical Properties

| LXT® Physical Properties  | Value                                 | Test Method |
|---|---------------------------------------|-------------|
| Cell Classification   | 12343                                 | ASTM D1784  |
| Specific Gravity  | 1.327 (g/cu.Cm @ 73°F)                | ASTM D792   |
| Tensile Strength, @ yield   | 463 bar (6720 psi)                    | ASTM D638   |
| Tensile Modulus of Elasticity   | 26,497 bar (384,200 psi)              | ASTM D638   |
| Flexural Strength, @ yield  | 786 bar (11,400 psi)                  | ASTM D790   |
| Flexural Modulus of Elasticity  | 26,069 bar (378,000 psi)              | ASTM D790   |
| Izod Impact<br>(avg 2 complete breaks)<br>(avg 3 partial & 2 complete breaks) | 1.3 ft-lbs /inch<br>10.9 ft-lbs /inch | ASTM D256   |
| Coefficient of Linear Expansion   | $3.89 \times 10^{-5}$ in/in°F         | ASTM D696   |
| Compressive Strength  | 602 bar (8732 psi)                    | ASTM D695   |
| Heat Distortion Temperature   | 67°C (152°F)                          | ASTM D648   |
| Hardness, Shore D   | 82.2±3                                | ASTM D2240  |
| Maximum Temperature Use   | 60°C (140°F)                          |             |

Although the extractable contaminants of Harvel LXT® are much lower than common PVC piping, Harvel LXT® has physical properties very similar to those of conventional PVC systems. As a result, Harvel LXT® products exhibit the well-known physical characteristics and other benefits of conventional PVC piping, such as good chemical and corrosion resistance, low thermal conductivity, high strength-to-weight ration, good impact resistance, and ease of installation.

### Joining

The Harvel LXT® system utilizes a one-step solvent cementing system specifically formulated for use with this product (Harvel LXT® One-Step Cement). Unlike conventional PVC solvent cements, this system contains fewer contaminants and cures quickly, reducing the potential for TOC contamination. Jointing is accomplished quickly and efficiently utilizing inexpensive tools, thereby greatly reducing installation costs.

| LXT® Leach Out Values |                          |             |
|-----------------------|--------------------------|-------------|
| Element               | DL (Detection Limit) ppb | Harvel LXT® |
| TOC                   | 5                        | 59          |
| Flouride              | 2                        | *           |
| Chloride              | 0.25                     | 2.33        |
| Aluminum              | 0.05                     | 0.30        |
| Barium                | 0.01                     | 0.04        |
| Calcium               | 3                        | 7           |
| Magnesium             | 0.02                     | 0.81        |
| Sodium                | 0.06                     | 0.83        |
| Tin                   | 0.02                     | 0.93        |
| Zinc                  | 0.06                     | 0.49        |

\* = Below Detection Limit

### Leach out behaviour

Static leach out tests provide valuable information on the purity of a material, providing the worst case scenario since the test water is stagnant during the test.

- All samples pre-rinsed identically with UPW prior to test
- Independent Laboratory Extractable Analysis (Balazs Analytical Laboratory)
- Seven-Day Static Leach @ ambient temperature
- 450mL 18.2 megohm ultra-pure water
- 120-square-inch wet surface contact area
- Based on 1" diameter pipe without solvent-cemented joint
- Concentration units expressed as ug/L of Leachate (ppb)

### Pressure ratings for Harvel LXT® system

Harvel LXT® piping is produced to Schedule 80 dimensions in strict accordance with ASTM D1785. Harvel LXT® fittings are produced to Schedule 80 dimensions per ASTM D2467. The maximum operating pressure is expressed at an operating temperature of 20°C. Under higher temperature conditions the maximum operating pressure will reduce.

| Pipe Size | Max. Operating Pressure | Working Temperature °C | Pressure De-Rating Factor |
|-----------|-------------------------|------------------------|---------------------------|
| 1/2"      | 29 Bar                  | 20                     | 1.00                      |
| 3/4"      | 23 Bar                  | 30                     | 0.80                      |
| 1"        | 22 Bar                  | 40                     | 0.58                      |
| 1 1/4"    | 18 Bar                  | 50                     | 0.39                      |
| 1 1/2"    | 17 Bar                  | 60                     | 0.22                      |
| 2"        | 14 Bar                  |                        |                           |
| 3"        | 13 Bar                  |                        |                           |
| 4"        | 11 Bar                  |                        |                           |
| 6"        | 10 Bar                  |                        |                           |

# about: high purity

## Polypure® Natural Polypropylene Piping System

Polypure is manufactured from a natural random copolymer polypropylene (PPR) offering superior mechanical properties compared to homopolymer polypropylene (PPH). The low crystallinity of the material also makes the fusion welded joints more reliable. The material also offers low leach out characteristics and superior quality.

Polypure is ideal for applications:

- in pure water distribution
- handling chemicals from DSP- and CPM-systems in the semiconductor industry
- handling process fluids in biotechnology
- in food and drinks processing

### Installation

The Polypure system is assembled using infra red non-contact butt fusion (IR) or conventional butt fusion methods. Both methods provide superior mechanical properties that exceed the mechanical strength of



socket fusion. However the preferred method is infra red non-contact butt fusion (IR) which produces reduced weld bead sizes for cleaner system operation. IR fusion also gives high repeatability of the welding process and complete traceability for each welded joint.

### UV resistance

Polypure is not UV resistant and therefore if installed in an exposed situation it should be insulated or given a suitable protection layer such as AGRUCOAT.

### Pressure ratings for Polypure

Although Polypure is capable of operating at working temperatures up to 95°C, at high temperatures discolouration of the material occurs (although this has no effect on the mechanical, thermal and/or electrical properties). It is therefore recommended that the maximum operating temperature is 50°C.

| Temperature | Pressure Rating (bar): Polypure |          |          |
|-------------|---------------------------------|----------|----------|
|             | 10 years                        | 25 years | 50 years |
| 10°C/50°F   | 15.5                            | 14.9     | 14.5     |
| 20°C/68°F   | 13.2                            | 12.8     | 12.4     |
| 30°C/86°F   | 11.1                            | 10.7     | 10.4     |
| 40°C/104°F  | 9.4                             | 9.1      | 8.8      |
| 50°C/122°F  | 7.9                             | 7.6      | 7.4      |
| 60°C/140°F  | 6.6                             | 6.4      | 6.2      |
| 70°C/158°F  | 5.6                             | 4.7      | 4.0      |
| 80°C/176°F  | 3.8                             | 3.0      | -        |
| 95°C/203°F  | 2.0                             | -        | -        |



## PP-Pure High Purity Grade Polypropylene Piping System

PP-Pure is manufactured from grey random copolymer polypropylene (PPR) offering superior mechanical properties compared to homopolymer polypropylene (PPH). It provides the same ease of welding and jointing reliability as polypure due to the low crystallinity of the material. PP-Pure also offers low leach out characteristics and superior surface quality.

PP-Pure is available in a wider range of diameters than Polypure (up to 315mm) and is ideal for applications:

- in ultra-pure water distribution for less critical applications than PVDF

### Installation

The PP-Pure system is assembled using infra red non-contact butt fusion (IR) or conventional butt fusion methods. Both methods provide superior mechanical properties that exceed the mechanical strength of socket fusion. However the preferred method is infra red non-contact butt fusion (IR) which produces reduced weld bead sizes for cleaner system operation. IR fusion also gives high repeatability of the welding process and complete traceability for each welded joint.

### UV resistance

PP-Pure is not UV resistant and therefore if installed in an exposed situation it should be insulated or given a suitable protection layer such as AGRUCOAT.

### Packaging

PP-Pure pipes are manufactured, cleaned and immediately double bagged and capped in a class 10,000 environment. PP-Pure fittings and valves are 100% inspected and then cleaned/rinsed with UPW water. In a class 100 room, the products are purged with dry air and double bagged in silicon free antistatic packaging.

### Pressure ratings for PP-Pure

PP-Pure is capable of operating at working temperatures up to 95°C in accordance with the following pressures:

| Temperature | Pressure Rating (bar): PP-Pure |          |          |
|-------------|--------------------------------|----------|----------|
|             | 10 years                       | 25 years | 50 years |
| 10°C/50°F   | 19.3                           | 18.7     | 18.2     |
| 20°C/68°F   | 16.4                           | 16.0     | 15.5     |
| 30°C/86°F   | 13.9                           | 13.4     | 13.1     |
| 40°C/104°F  | 11.8                           | 11.3     | 11.0     |
| 50°C/122°F  | 9.9                            | 9.6      | 9.3      |
| 60°C/140°F  | 8.3                            | 8.0      | 7.7      |
| 70°C/158°F  | 7.0                            | 6.1      | 5.1      |
| 80°C/176°F  | 4.8                            | 3.8      | -        |
| 95°C/203°F  | 2.6                            | -        | -        |

## PVDF UHP Ultra High Purity Grade Piping System

PVDF UHP is an extremely pure polymer, containing no stabilizers or additives. It is particularly suitable for ultra-pure water systems in the semi-conductor industry and is chemically inert and resistant to virtually all media. PVDF UHP is UV resistant and therefore may be installed in an exposed situation if required

It has high mechanical strength and very good chemical resistance, even at high temperatures. It has extremely low flammability: Class V0 according to UL 94. It is also safe for use in continuous contact with food stuffs in accordance with FDA regulations.

### Installation

PVDF UHP is assembled using infra red non-contact butt fusion (IR) or high purity fusion (HPF) electro-fusion methods.

### Packaging

PVDF UHP pipes are manufactured and immediately double bagged and capped in a class 100 environment. Fittings and valves are 100% inspected and then cleaned/rinsed with UPW water. In a class 100 clean room, the products are purged with dry air and double bagged in silicon free antistatic packaging.

### Pressure ratings for PVDF UHP

PVDF UHP is capable of operating at working temperatures up to 120°C in accordance with the following working pressures:

|          | Pressure Rating (bar): PVDF UHP SDR33/PN10 |      |      |      |      |       |
|----------|--|------|------|------|------|-------|
|          | 20°C                                       | 40°C | 60°C | 80°C | 95°C | 120°C |
| 10 years | 11.0                                       | 9.1  | 7.1  | 5.4  | 4.1  | 1.5   |
| 25 years | 10.9                                       | 9.0  | 7.0  | 5.3  | 3.3  | 1.3   |
| 50 years | 10.8                                       | 8.8  | 6.9  | 5.2  | 2.9  | -     |
|          | Pressure Rating (bar): PVDF UHP SDR21/PN16 |      |      |      |      |       |
|          | 20°C                                       | 40°C | 60°C | 80°C | 95°C | 120°C |
| 10 years | 17.3                                       | 14.3 | 11.1 | 8.4  | 6.4  | 2.4   |
| 25 years | 17.1                                       | 14.1 | 11.0 | 8.3  | 5.3  | 2.0   |
| 50 years | 17.0                                       | 13.9 | 10.8 | 8.2  | 4.5  | -     |

### Leach out behaviour

The following are the results of static leach out tests on PVDF UHP pipe at 85°C for 7 days in accordance with SEMI guidelines:

|           | PVDF-UHP | SEMI spec |
|-----------|----------|-----------|
| Fluoride  | 7732     | 60000     |
| Chloride  | 78,0     | 3000      |
| Nitrite   | < 9,1    | 100       |
| Bromide   | < 5,5    | 100       |
| Nitrate   | < 18,7   | 100       |
| Phosphate | 74,2     | 300       |
| Sulphate  | 11,4     | 300       |
| Lithium   | 0,9      | 2         |
| Sodium    | 6,8      | 15        |
| Potassium | 3,8      | 15        |
| Magnesium | 2,5      | 5         |
| Calcium   | 19,5     | 30        |
| Iron      | 1,1      | 5         |
| Copper    | 0,7      | 15        |
| Nickel    | 0,2      | 1         |
| Zinc      | 3,1      | 10        |
| Manganese | 0,5      | 5         |
| Aluminum  | 2,0      | 10        |
| Barium    | < 0,3    | 15        |
| Boron     | < 0,7    | 10        |
| Chromium  | < 0,7    | 1         |
| Lead      | < 0,3    | 1         |
| Strontium | < 0,3    | 0,5       |
| TOC       | 8975     | 60000     |

## Physical properties of Polypure, PP-Pure and PVDF UHP

|                       | Properties                              | Standards  | Units                              | PVDF UHP           | P-Pure/Polypure    |
|-----------------------|---|------------|------------------------------------|--------------------|--------------------|
| Mechanical properties | Density at 23°C                         | ISO 1183   | g/cm <sup>3</sup>                  | 1.78               | 0.91               |
|                       | Melt flow rate MFR at 230°C/5kg         | ISO 1133   | g/10 min                           | 6-24               | 1.25               |
|                       | Tensile stress at yield                 | ISO 527    | MPa                                | 50                 | 25                 |
|                       | Elongation at yield                     | ISO 527    | %                                  | 9                  | 12                 |
|                       | Elongation at break                     | ISO 527    | %                                  | 80                 | > 300              |
|                       | Impact strength unnotched at +23°C      | ISO 179    | kJ/m <sup>2</sup>                  | 124                | no break           |
|                       | Impact strength notched at +23°C        | ISO 179    | kJ/m <sup>2</sup>                  | 11                 | 25                 |
|                       | Ball indentation hardness acc. Rockwell | ISO 2039-1 | MPa                                | 80                 | 45                 |
|                       | Flexural strength                       | ISO 178    | MPa                                | 80                 | 20                 |
|                       | Modulus of elasticity                   | ISO 527    | MPa                                | 2000               | 900                |
| Thermal properties    | Vicat softening point VST/B/50          | ISO 306    | °C                                 | 140                | 65                 |
|                       | Heat deflection temperature HDT/B       | ISO 75     | °C                                 | 145                | 70                 |
|                       | Linear coefficient of thermal expansion | DIN 53752  | K <sup>-1</sup> x 10 <sup>-4</sup> | 1.2                | 1.6                |
|                       | Thermal conductivity at +20°C           | DIN 52612  | w/(mxk)                            | 0.13               | 0.24               |
|                       | Flammability                            | UL94       |                                    | V-0                | 94-HB              |
| Electrical properties | Volume resistance                       | VDE 0303   | OHM cm                             | > 10 <sup>13</sup> | > 10 <sup>16</sup> |
|                       | Surface resistance                      | VDE 0303   | OHM                                | > 10 <sup>12</sup> | > 10 <sup>13</sup> |
|                       | Relative dielectric constant at 1 MHz   | DIN 53483  | -                                  | 7.25               | 2.3                |
|                       | Dielectric strength                     | VDE 0303   | kV/mm                              | 22                 | 70                 |
|                       | Physiologically non-toxic               | EEC 90/128 | -                                  | Yes                | Yes                |
|                       | FDA                                     | -          | -                                  | Yes                | Yes                |
|                       | UV stable                               | -          | -                                  | Yes                | Yes                |
|                       | Colour                                  | -          | -                                  | natural            | 1)                 |

1) Polypure: natural  
PP-Pure: grey, RAL 7032

## pvdf-uhp pipes and fittings - metric sizes

AGRU high purity pipes, fittings and valves are produced on dedicated production lines separated from all other manufacturing areas. Precise controls on manufacturing and thorough testing ensures that minimal contamination levels are not exceeded.

Pipes are carefully cut to length without producing swarf, capped off and packed to prevent dust contamination. Fittings and valves are thoroughly washed then double bagged to ensure they arrive on site free from any contamination.

Fittings are available in socket fusion or fusion spigot forms. The fusion spigot fittings are particularly suitable for high purity applications, as special welding techniques (HPF electrofusion or infra-red) permit joints to be made with minimal contamination.



### Pipe

#### SDR 33/S-16/PN10

| Size | Wall (mm) | kg/m  | Code           | Price/m |
|------|-----------|-------|----------------|---------|
| 20   | -         | -     | -              | -       |
| 25   | -         | -     | -              | -       |
| 32   | -         | -     | -              | -       |
| 40   | -         | -     | -              | -       |
| 50   | -         | -     | -              | -       |
| 63   | -         | -     | -              | -       |
| 75   | -         | -     | -              | -       |
| 90   | 2.8       | 1.48  | 35 705 0090 33 | 137.75  |
| 110  | 3.4       | 2.20  | 35 705 0110 33 | 205.01  |
| 125  | 3.9       | 2.84  | 35 705 0125 33 | 364.75  |
| 140  | 4.3       | 3.52  | 35 705 0140 33 | 328.17  |
| 160  | 4.9       | 4.54  | 35 705 0160 33 | 422.55  |
| 180  | 5.5       | 5.74  | 35 705 0180 33 | 534.65  |
| 200  | 6.2       | 7.19  | 35 705 0200 33 | 669.59  |
| 225  | 6.9       | 8.95  | 35 705 0225 33 | 833.30  |
| 250  | 7.7       | 11.09 | 35 705 0250 33 | 1032.40 |
| 280  | 8.6       | 13.86 | 35 705 0280 33 | 1290.51 |
| 315  | 9.7       | 17.55 | 35 705 0315 33 | 1634.16 |

#### SDR 21/S-10/PN16

| Wall (mm) | kg/m  | Code           | Price/m |
|-----------|-------|----------------|---------|
| 1.9       | 0.21  | 35 705 0020 21 | 19.62   |
| 1.9       | 0.27  | 35 705 0025 21 | 25.07   |
| 2.4       | 0.44  | 35 705 0032 21 | 41.07   |
| 2.4       | 0.55  | 35 705 0040 21 | 51.18   |
| 3.0       | 0.85  | 35 705 0050 21 | 79.36   |
| 3.0       | 1.09  | 35 705 0063 21 | 101.48  |
| 3.6       | 1.55  | 35 705 0075 21 | 144.40  |
| 4.3       | 2.22  | 35 705 0090 21 | 207.23  |
| 5.3       | 3.32  | 35 705 0110 21 | 309.72  |
| 6.0       | 4.24  | 35 705 0125 21 | 394.55  |
| 6.7       | 5.31  | 35 705 0140 21 | 494.82  |
| 7.7       | 6.96  | 35 705 0160 21 | 648.22  |
| 8.6       | 8.74  | 35 705 0180 21 | 814.14  |
| 9.6       | 10.83 | 35 705 0200 21 | 999.96  |
| 10.8      | 13.67 | 35 705 0225 21 | 1272.81 |
| 11.9      | 16.73 | 35 705 0250 21 | 1557.46 |
| 13.4      | 21.30 | 35 705 0280 21 | 1988.13 |
| -         | -     | -              | -       |

Standard length 5 metres.



### Pipework Support

PVDF pipework requires more support than for metallic systems. As working temperature increases, the distance between supports is reduced.

| PN10 Pipe Size | Support Centres/m |      |       |       |
|----------------|-------------------|------|-------|-------|
|                | 20°C              | 60°C | 100°C | 140°C |
| 16             | 0.85              | 0.75 | 0.65  | 0.55  |
| 20             | 0.95              | 0.80 | 0.70  | 0.60  |
| 25             | 1.00              | 0.90 | 0.80  | 0.70  |
| 32             | 1.10              | 0.95 | 0.85  | 0.75  |
| 40             | 1.25              | 1.10 | 0.95  | 0.80  |
| 50             | 1.40              | 1.20 | 1.10  | 0.95  |
| 63             | 1.50              | 1.30 | 1.15  | 1.00  |
| 75             | 1.65              | 1.40 | 1.25  | 1.10  |
| 90             | 1.80              | 1.55 | 1.35  | 1.20  |
| 110            | 2.00              | 1.75 | 1.55  | 1.30  |

### Temperature De-Rating factors

Pressure ratings for PVDF pipework systems are always quoted at 20°C. As working temperature increases, the maximum working pressure decreases by the factor indicated.

For short term operating temperatures not listed, please enquire.

| Working Temperature (°C) | Pressure De-Rating Factor |
|--------------------------|---------------------------|
| 20                       | 1.00                      |
| 30                       | 0.90                      |
| 40                       | 0.82                      |
| 50                       | 0.74                      |
| 60                       | 0.66                      |
| 70                       | 0.56                      |
| 80                       | 0.51                      |
| 90                       | 0.44                      |
| 100                      | 0.39                      |
| 110                      | 0.34                      |
| 120                      | 0.29                      |
| 130                      | 0.24                      |
| 140                      | 0.19                      |

## HPF Electrofusion Socket



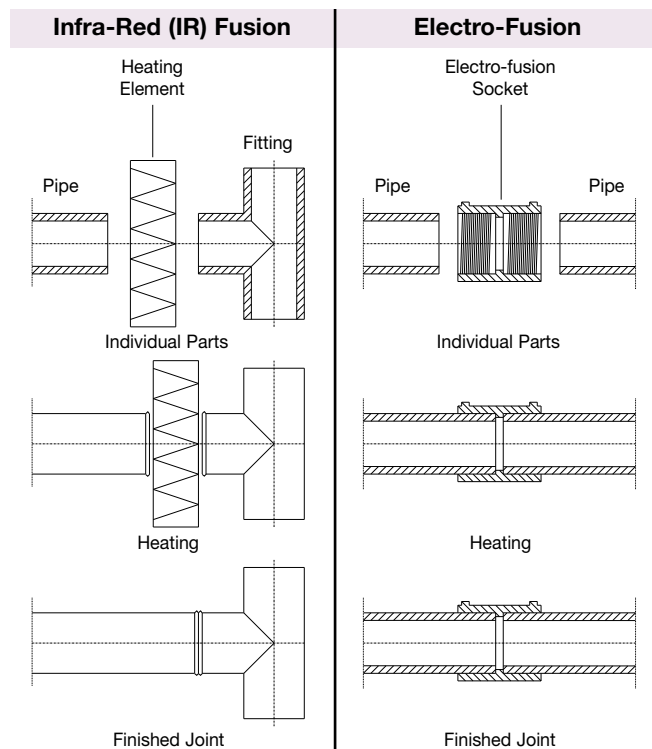
| Size | Code          | Price |
|------|---------------|-------|
| 20   | 35073 0020 21 | 12.09 |
| 25   | 35073 0025 21 | 12.45 |
| 32   | 35073 0032 21 | 13.79 |
| 40   | 35073 0040 21 | 15.04 |
| 50   | 35073 0050 21 | 16.08 |
| 63   | 35073 0063 21 | 20.65 |



HPF 400 Electrofusion Welding Equipment - available for sale or hire.

## Joining PVDF Systems

PVDF-UHP pipe to pipe and pipe to fitting joints are easy to make, using IR fusion or electrofusion welds, with or without a balloon.



Welding equipment is available for sale or hire. See Tools and Installation Equipment. Detailed installation instructions, as well as free training, is available on request.

## spigot fittings for IR and HPF welding

### Tee 90°



#### PN10

| Size | Code           | Price   |
|------|----------------|---------|
| 20   |                |         |
| 25   |                |         |
| 32   |                |         |
| 40   |                |         |
| 50   |                |         |
| 63   |                |         |
| 75   |                |         |
| 90   | 35 006 0090 33 | 168.13  |
| 110  | 35 006 0110 33 | 179.92  |
| 125  | 35 006 0125 33 | 299.40  |
| 140  | 35 006 0140 33 | 329.63  |
| 160  | 35 006 0160 33 | 399.69  |
| 180  | 35 006 0180 33 | 463.11  |
| 200  | 35 006 0200 33 | 549.40  |
| 225  | 35 006 0225 33 | 703.51  |
| 250  | 35 006 0250 33 | 876.07  |
| 280  | 35 006 0280 33 | 1246.27 |
| 315  | 35 006 0315 33 | 1616.46 |

#### PN16

| Code           | Price   |
|----------------|---------|
| 35 006 0020 21 | 8.48    |
| 35 006 0025 21 | 10.67   |
| 35 006 0032 21 | 15.49   |
| 35 006 0040 21 | 24.63   |
| 35 006 0050 21 | 27.14   |
| 35 006 0063 21 | 57.82   |
| 35 006 0075 21 | 110.31  |
| 35 006 0090 21 | 189.54  |
| 35 006 0110 21 | 235.25  |
| 35 006 0125 21 | 406.33  |
| 35 006 0140 21 | 452.04  |
| 35 006 0160 21 | 519.15  |
| 35 006 0180 21 | 629.78  |
| 35 006 0200 21 | 747.75  |
| 35 006 0225 21 | 957.18  |
| 35 006 0250 21 | 1790.49 |
| 35 006 0280 21 | 2278.67 |

### Tee 90°

Elongated



|    |  |  |
|----|--|--|
| 20 |  |  |
| 25 |  |  |
| 32 |  |  |

#### PN16

|                |       |
|----------------|-------|
| 35 066 0020 21 | 18.28 |
| 35 066 0025 21 | 21.09 |
| 35 066 0032 21 | 25.37 |

### Reducing Tee 90°

Elongated



#### PN10

|           |                |        |
|-----------|----------------|--------|
| 63 x 32   |                |        |
| 90 x 63   |                |        |
| 110 x 63  |                |        |
| 110 x 90  | 35 065 1190 33 | 296.45 |
| 160 x 63  |                |        |
| 160 x 90  | 35 065 1690 33 | 524.32 |
| 160 x 110 | 35 065 1611 33 | 547.92 |

#### PN16

|                |        |
|----------------|--------|
| 35 065 6332 21 | 110.61 |
| 35 065 9063 21 | 194.68 |
| 35 065 1163 21 | 292.78 |
| 35 065 1190 21 | 292.78 |
| 35 065 1663 21 | 546.45 |
| 35 065 1690 21 | 566.35 |
| 35 065 1611 21 | 586.27 |

Non-standard sizes can be made to order. Please enquire for details.

#### PN10/16\*

|           |                |        |
|-----------|----------------|--------|
| 90 x 63   | 35 065 9063 31 | 183.64 |
| 110 x 63  | 35 065 1163 31 | 283.92 |
| 160 x 63  | 35 065 1663 31 | 516.94 |
| 160 x 90  | 35 065 1690 31 | 544.24 |
| 160 x 110 | 35 065 1611 31 | 570.78 |

\*Branch dimension PN16, Run dimension PN10.

### Reducing Tee 90°



#### PN10

|        |                |         |
|--------|----------------|---------|
| 63x20  |                |         |
| 63x25  |                |         |
| 75x20  |                |         |
| 75x25  |                |         |
| 75x32  |                |         |
| 90x20  | 35 307 9020 31 | 727.84  |
| 90x25  | 35 307 9025 31 | 727.84  |
| 90x32  | 35 307 9032 31 | 727.84  |
| 110x20 | 35 307 1120 31 | 886.39  |
| 110x25 | 35 307 1125 31 | 886.39  |
| 110x32 | 35 307 1132 31 | 886.39  |
| 140x20 | 35 307 1420 31 | 1131.21 |
| 140x25 | 35 307 1425 31 | 1131.21 |
| 140x32 | 35 307 1432 31 | 1131.21 |
| 160x20 | 35 307 1620 31 | 1352.45 |
| 160x25 | 35 307 1625 31 | 1659.23 |
| 160x32 | 35 307 1632 31 | 1659.23 |

#### PN16

|                |         |
|----------------|---------|
| 35 307 6320 21 | 448.36  |
| 35 307 6325 21 | 448.36  |
| 35 307 7520 21 | 567.09  |
| 35 307 7525 21 | 580.37  |
| 35 307 7532 21 | 580.37  |
| 35 307 9020 21 | 727.84  |
| 35 307 9025 21 | 727.84  |
| 35 307 9032 21 | 727.84  |
| 35 307 1120 21 | 886.39  |
| 35 307 1125 21 | 886.39  |
| 35 307 1132 21 | 886.39  |
| 35 307 1420 21 | 1131.21 |
| 35 307 1425 21 | 1131.21 |
| 35 307 1432 21 | 1131.21 |
| 35 307 1620 21 | 1659.23 |
| 35 307 1625 21 | 1659.23 |
| 35 307 1632 21 | 1659.23 |

## Instrumentation Fitting

1" BSP or NPT female threaded connection



| Size | Code           | Price          |
|------|----------------|----------------|
| 20*  |                |                |
| 25*  |                |                |
| 32   |                |                |
| 40*  |                |                |
| 50*  |                |                |
| 63   |                |                |
| 75*  |                | on application |
| 90   | 35 031 0090 33 |                |
| 110  | 35 031 0110 33 |                |
| 125  | 35 031 0125 33 |                |
| 140  | 35 031 0140 33 |                |
| 160  | 35 031 0160 33 |                |
| 200* | 35 304 0200 33 |                |
| 225* | 35 304 0225 33 |                |

\*Machined

## PN16

| Code           | Price          |
|----------------|----------------|
| 35 304 0020 21 |                |
| 35 304 0025 21 |                |
| 35 031 0032 21 |                |
| 35 304 0040 21 |                |
| 35 304 0050 21 |                |
| 35 031 0063 21 |                |
| 35 304 0075 21 | on application |
| 35 031 0090 21 |                |
| 35 031 0110 21 |                |
| 35 031 0125 21 |                |
| 35 031 0140 21 |                |
| 35 031 0160 21 |                |
| 35 304 0200 21 |                |
| 35 304 0225 21 |                |

## Instrumentation Fitting

1/8" to 1/2" BSP or NPT female threaded connection



| Size | Code           | Price   |
|------|----------------|---------|
| 20*  |                |         |
| 25*  |                |         |
| 32   |                |         |
| 40*  |                |         |
| 50*  |                |         |
| 63   | 35 030 0063 33 | 140.70  |
| 75*  |                |         |
| 90   | 35 030 0090 33 | 182.15  |
| 110  | 35 030 0110 33 | 229.06  |
| 125  | 35 030 0125 33 | 334.95  |
| 140  | 35 030 0140 33 | 403.23  |
| 160  | 35 030 0160 33 | 486.27  |
| 200* | 35 303 0200 33 | 1478.96 |
| 225* | 35 303 0225 33 | 1771.23 |

\*Machined

## PN16

|                |                |
|----------------|----------------|
| 35 303 0020 21 | 103.96         |
| 35 303 0025 21 | 116.64         |
| 35 030 0032 21 | on application |
| 35 303 0040 21 | 177.11         |
| 35 303 0050 21 | 222.50         |
| 35 030 0063 21 | 140.70         |
| 35 303 0075 21 | 783.65         |
| 35 030 0090 21 | 189.54         |
| 35 030 0110 21 | 237.62         |
| 35 030 0125 21 | 362.09         |
| 35 030 0140 21 | 416.93         |
| 35 030 0160 21 | 506.64         |
| 35 303 0200 21 | 1478.96        |
| 35 303 0225 21 | 1771.23        |

## Instrumentation Fitting

No threaded connection



| Size | Code           | Price   |
|------|----------------|---------|
| 20*  |                |         |
| 25*  |                |         |
| 32   |                |         |
| 40*  |                |         |
| 50*  |                |         |
| 63   |                |         |
| 75*  |                |         |
| 90   | 35 030 1090 33 | 192.48  |
| 110  | 35 030 1110 33 | 241.89  |
| 125  | 35 030 1125 33 | 353.97  |
| 140  | 35 030 1140 33 | 426.24  |
| 160  | 35 030 1160 33 | 513.26  |
| 200* | 35 303 1200 33 | 924.24  |
| 225* | 35 303 1225 33 | 1107.64 |

\*Machined

## PN16

|                |         |
|----------------|---------|
| 35 303 1020 21 | 65.05   |
| 35 303 1025 21 | 73.01   |
| 35 030 1032 21 | 84.95   |
| 35 303 1040 21 | 110.76  |
| 35 303 1050 21 | 139.08  |
| 35 030 1063 21 | 148.96  |
| 35 303 1075 21 | 490.41  |
| 35 030 1090 21 | 200.58  |
| 35 030 1110 21 | 250.74  |
| 35 030 1125 21 | 382.73  |
| 35 030 1140 21 | 440.26  |
| 35 030 1160 21 | 534.65  |
| 35 303 1200 21 | 924.74  |
| 35 303 1225 21 | 1107.64 |



### Optional Connections

Instrumentation fittings may be ordered with single or multiple ports and with a variety of connections. Please enquire for details.



# PURAD pvdf-uhp spigot fittings

## Bend 90°



### PN10

| Size | Code           | Price   |
|------|----------------|---------|
| 110  | 35 001 0110 33 | 159.29  |
| 125  | 35 001 0125 33 | 283.17  |
| 140  | 35 001 0140 33 | 320.05  |
| 160  | 35 001 0160 33 | 370.19  |
| 180  | 35 001 0180 33 | 439.53  |
| 200  | 35 001 0200 33 | 518.42  |
| 225  | 35 001 0225 33 | 614.29  |
| 250  | 35 001 0250 33 | 759.55  |
| 280  | 35 001 0280 33 | 997.01  |
| 315  | 35 001 0315 33 | 1284.61 |

### PN16

| Code           | Price   |
|----------------|---------|
| 35 001 0110 21 | 217.54  |
| 35 001 0125 21 | 384.93  |
| 35 001 0140 21 | 435.09  |
| 35 001 0160 21 | 502.91  |
| 35 001 0180 21 | 597.34  |
| 35 001 0200 21 | 704.99  |
| 35 001 0225 21 | 836.24  |
| 35 001 0250 21 | 1032.40 |
| 35 001 0280 21 | 1554.51 |

## Multi-Bend 90°

Elongated



### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   |                |        |
| 25   |                |        |
| 32   |                |        |
| 40   |                |        |
| 50   |                |        |
| 63   |                |        |
| 75   |                |        |
| 90   | 35 068 0090 33 | 138.84 |
| 110  | 35 068 0110 33 | 187.52 |

### PN16

| Code           | Price  |
|----------------|--------|
| 35 068 0020 21 | 5.68   |
| 35 068 0025 21 | 7.66   |
| 35 068 0032 21 | 15.03  |
| 35 068 0040 21 | 23.60  |
| 35 068 0050 21 | 35.68  |
| 35 068 0063 21 | 60.11  |
| 35 068 0075 21 | 102.25 |
| 35 068 0090 21 | 170.67 |
| 35 068 0110 21 | 255.65 |

## Elbow 45°

Elongated



### PN10

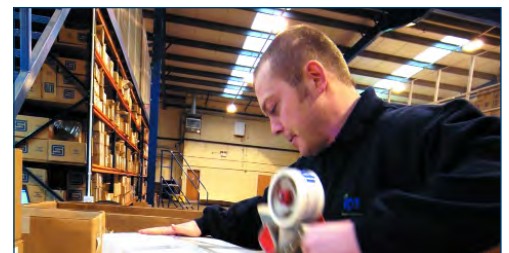
| Size | Code           | Price  |
|------|----------------|--------|
| 20   |                |        |
| 25   |                |        |
| 32   |                |        |
| 40   |                |        |
| 50   |                |        |
| 63   |                |        |
| 75   |                |        |
| 90   | 35 060 0090 33 | 123.30 |
| 110  | 35 060 0110 33 | 160.76 |
| 140  | 35 060 0140 33 | 368.71 |
| 160  | 35 060 0160 33 | 415.17 |

### PN16

| Code           | Price  |
|----------------|--------|
| 35 060 0020 21 | 7.52   |
| 35 060 0025 21 | 8.26   |
| 35 060 0032 21 | 12.17  |
| 35 060 0040 21 | 19.32  |
| 35 060 0050 21 | 25.37  |
| 35 060 0063 21 | 40.11  |
| 35 060 0075 21 | 101.10 |
| 35 060 0090 21 | 144.09 |
| 35 060 0110 21 | 207.23 |
| 35 060 0140 21 | 432.14 |
| 35 060 0160 21 | 484.50 |

## Fast Delivery

We deliver using our own dedicated vehicles or next day carrier. Using our standard delivery service you can expect to receive your order within 24 hours - to your warehouse, factory or job-site



# PURAD pvdf-uhp spigot fittings

## Union

FPM Seals



| Size | Code | Price |
|------|------|-------|
| 20   |      |       |
| 25   |      |       |
| 32   |      |       |
| 40   |      |       |
| 50   |      |       |
| 63   |      |       |

FDA Approved O-Ring

## PN16

| Code           | Price  |
|----------------|--------|
| 35 024 0020 21 | 26.10  |
| 35 024 0025 21 | 33.19  |
| 35 024 0032 21 | 40.72  |
| 35 024 0040 21 | 56.78  |
| 35 024 0050 21 | 79.21  |
| 35 024 0063 21 | 118.28 |

## Restrained Fitting

Provides anchor point in pipe runs



Requires a correctly sized retaining clip. See below.

### PN10

|      |                |         |
|------|----------------|---------|
| 20*  |                |         |
| 25*  |                |         |
| 32   |                |         |
| 40*  |                |         |
| 50*  |                |         |
| 63   |                |         |
| 75*  |                |         |
| 90   | 35 028 0090 33 | 114.03  |
| 110  | 35 028 0110 33 | 168.88  |
| 125  | 35 028 0125 33 | 254.43  |
| 140  | 35 028 0140 33 | 300.13  |
| 160  | 35 028 0160 33 | 387.17  |
| 180* | 35 301 0180 33 | 754.73  |
| 200* | 35 301 0200 33 | 902.40  |
| 225* | 35 301 0225 33 | 1080.64 |

\*Machined

### PN16

|                |         |
|----------------|---------|
| 35 301 0020 21 | 65.71   |
| 35 301 0025 21 | 103.25  |
| 35 028 0032 21 | 23.31   |
| 35 301 0040 21 | 132.84  |
| 35 301 0050 21 | 177.28  |
| 35 028 0063 21 | 49.12   |
| 35 301 0075 21 | 315.98  |
| 35 028 0090 21 | 120.81  |
| 35 028 0110 21 | 179.92  |
| 35 028 0125 21 | 264.75  |
| 35 028 0140 21 | 314.90  |
| 35 028 0160 21 | 404.87  |
| 35 301 0180 21 | 754.73  |
| 35 301 0200 21 | 902.40  |
| 35 301 0225 21 | 1080.64 |

## Retaining Clip

For restrained fitting.



|      |                |       |
|------|----------------|-------|
| 20   | 14 348 0020 00 | 2.79  |
| 25   | 14 348 0025 00 | 3.08  |
| 32   | 14 348 0032 00 | 3.31  |
| 40   | 14 348 0040 00 | 3.48  |
| 50   | 14 348 0050 00 | 4.28  |
| 63*  | 14 049 0063 00 | 8.96  |
| 75*  | 14 049 0075 00 | 10.44 |
| 90*  | 14 049 0090 00 | 10.76 |
| 110* | 14 049 0110 00 | 11.59 |
| 125* | 14 049 0125 00 | 12.77 |
| 140* | 14 049 0140 00 | 21.50 |
| 160* | 14 049 0160 00 | 23.45 |
| 180* | 14 049 0180 00 | 26.31 |
| 200* | 14 049 0200 00 | 40.74 |
| 225* | 14 049 0225 00 | 45.09 |

\*Complete with stainless steel clamp



## Free Training

We can provide free installer training either on site or at our bespoke training facility.

Contact Tony Charlton or Tom Tate on:

**0800 975 79 71**



# PURAD pvdf-uhp spigot fittings

## Concentric Reducer

Elongated



### PN10

| Size      | Code           | Price  |
|-----------|----------------|--------|
| 25 x 20   |                |        |
| 32 x 20   |                |        |
| 32 x 25   |                |        |
| 40 x 20   |                |        |
| 40 x 25   |                |        |
| 40 x 32   |                |        |
| 50 x 20   |                |        |
| 50 x 25   |                |        |
| 50 x 32   |                |        |
| 50 x 40   |                |        |
| 63 x 25   |                |        |
| 63 x 32   |                |        |
| 63 x 40   |                |        |
| 63 x 50   |                |        |
| 75 x 50   |                |        |
| 75 x 63   |                |        |
| 90 x 50   |                |        |
| 90 x 63   |                |        |
| 90 x 75   |                |        |
| 110 x 63  |                |        |
| 110 x 90  | 35 067 1190 33 | 59.44  |
| 140 x 63  |                |        |
| 140 x 110 | 35 067 1411 33 | 97.21  |
| 160 x 110 | 35 067 1611 33 | 132.74 |
| 160 x 140 | 35 067 1614 33 | 176.26 |
| 225 x 160 | 35 067 2216 33 | 429.94 |
| 250 x 160 | 35 067 2516 33 | 461.64 |
| 250 x 225 | 35 067 2522 33 | 494.09 |
| 315 x 160 | 35 067 3116 33 | 514.79 |
| 315 x 250 | 35 067 3125 33 | 603.44 |

### PN16

| Code           | Price  |
|----------------|--------|
| 35 067 2520 21 | 6.78   |
| 35 067 3220 21 | 9.01   |
| 35 067 3225 21 | 9.01   |
| 35 067 4020 21 | 11.35  |
| 35 067 4025 21 | 11.35  |
| 35 067 4032 21 | 12.09  |
| 35 067 5020 21 | 12.68  |
| 35 067 5025 21 | 13.28  |
| 35 067 5032 21 | 13.28  |
| 35 067 5040 21 | 13.28  |
| 35 067 6325 21 | 19.32  |
| 35 067 6332 21 | 19.32  |
| 35 067 6340 21 | 19.32  |
| 35 067 6350 21 | 19.32  |
| 35 067 7550 21 | 37.45  |
| 35 067 7563 21 | 37.45  |
| 35 067 9050 21 | 48.54  |
| 35 067 9063 21 | 48.54  |
| 35 067 9075 21 | 48.97  |
| 35 067 1163 21 | 58.56  |
| 35 067 1190 21 | 59.44  |
| 35 067 1463 21 | 97.21  |
| 35 067 1411 21 | 97.21  |
| 35 067 1611 21 | 132.74 |
| 35 067 1614 21 | 176.26 |
| 35 067 2216 21 | 429.94 |
| 35 067 2516 21 | 461.64 |
| 35 067 2522 21 | 494.09 |

### PN10/PN16\*

| Size      | Code           | Price  |
|-----------|----------------|--------|
| 90 x 63   | 35 067 9063 31 | 41.15  |
| 110 x 63  | 35 067 1163 31 | 49.26  |
| 160 x 110 | 35 067 1611 31 | 114.32 |

| Code | Price |
|------|-------|
|      |       |
|      |       |
|      |       |

\*Larger O.D. PN10, Smaller O.D. PN16

## Concentric Reducer

Machined



### PN10

| Size      | Code           | Price  |
|-----------|----------------|--------|
| 63 x 20   |                |        |
| 75 x 20   |                |        |
| 75 x 25   |                |        |
| 75 x 32   |                |        |
| 75 x 40   |                |        |
| 90 x 20   |                |        |
| 90 x 25   |                |        |
| 90 x 32   |                |        |
| 90 x 40   |                |        |
| 110 x 20  |                |        |
| 110 x 25  |                |        |
| 110 x 32  |                |        |
| 110 x 40  |                |        |
| 110 x 50  |                |        |
| 110 x 75  |                |        |
| 125 x 63  |                |        |
| 125 x 90  | 35 317 1290 33 | 247.05 |
| 125 x 110 | 35 317 1211 33 | 247.05 |
| 140 x 90  | 35 317 1490 33 | 289.82 |
| 140 x 125 | 35 317 1412 33 | 289.82 |
| 200 x 140 | 35 317 2014 33 | 575.94 |
| 200 x 160 | 35 317 2016 33 | 575.94 |
| 280 x 160 | 35 317 2816 33 | 943.92 |
| 280 x 225 | 35 317 2822 33 | 943.92 |

### PN16

| Code           | Price  |
|----------------|--------|
| 35 317 6320 21 | 111.79 |
| 35 317 7520 21 | 117.79 |
| 35 317 7525 21 | 117.69 |
| 35 317 7532 21 | 117.69 |
| 35 317 7540 21 | 117.69 |
| 35 317 9020 21 | 131.41 |
| 35 317 9025 21 | 131.41 |
| 35 317 9032 21 | 131.41 |
| 35 317 9040 21 | 131.41 |
| 35 317 1120 21 | 205.01 |
| 35 317 1125 21 | 205.01 |
| 35 317 1132 21 | 205.01 |
| 35 317 1140 21 | 205.01 |
| 35 317 1150 21 | 205.01 |
| 35 317 1175 21 | 205.01 |
| 35 317 1263 21 | 247.05 |
| 35 317 1290 21 | 247.05 |
| 35 317 1211 21 | 247.05 |
| 35 317 1490 21 | 289.82 |
| 35 317 1412 21 | 289.82 |
| 35 317 2014 21 | 575.94 |
| 35 317 2016 21 | 575.94 |
| 35 317 2816 21 | 943.92 |
| 35 317 2822 21 | 943.92 |

# PURAD pvdf-uhp spigot fittings

## Cap

Elongated



### PN10

| Size | Code           | Price |
|------|----------------|-------|
| 20   |                |       |
| 25   |                |       |
| 32   |                |       |
| 40   |                |       |
| 50   |                |       |
| 63   |                |       |
| 75   |                |       |
| 90   | 35 064 0090 33 | 37.32 |
| 110  | 35 064 0110 33 | 48.38 |

### PN16

| Code           | Price |
|----------------|-------|
| 35 064 0020 21 | 7.97  |
| 35 064 0025 21 | 9.07  |
| 35 064 0032 21 | 10.25 |
| 35 064 0040 21 | 18.88 |
| 35 064 0050 21 | 23.00 |
| 35 064 0063 21 | 37.01 |
| 35 064 0075 21 | 45.60 |
| 35 064 0090 21 | 48.68 |
| 35 064 0110 21 | 69.91 |

## Cap

Machined

### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 125  | 35 302 0125 33 | 145.53 |
| 140  | 35 302 0140 33 | 231.63 |
| 160  | 35 302 0160 33 | 266.74 |
| 200  | 35 302 0200 33 | 377.17 |
| 225  | 35 302 0225 33 | 441.80 |

### PN16

| Code           | Price  |
|----------------|--------|
| 35 302 0125 21 | 203.27 |
| 35 302 0140 21 | 247.98 |
| 35 302 0160 21 | 291.87 |
| 35 302 0200 21 | 416.19 |
| 35 302 0225 21 | 466.37 |

## Cap

1/2" BSP or NPT female threaded



### PN10

| Size | Code            | Price          |
|------|-----------------|----------------|
| 20   |                 |                |
| 25   |                 |                |
| 32   |                 |                |
| 40   |                 |                |
| 50   |                 |                |
| 63   |                 |                |
| 75   |                 |                |
| 90   | 35 064 1090 33  | on application |
| 110  | 35 064 1110 33  | on application |
| 125  | 35 302 1125 33* |                |
| 140  | 35 302 1140 33* |                |
| 160  | 35 302 1160 33* |                |
| 180  | 35 302 1180 33* |                |
| 200  | 35 302 1200 33* |                |

### PN16

| Code            | Price          |
|-----------------|----------------|
| 35 064 1020 21  |                |
| 35 064 1025 21  |                |
| 35 064 1032 21  |                |
| 35 064 1040 21  |                |
| 35 064 1050 21  |                |
| 35 064 1063 21  |                |
| 35 064 1075 21  |                |
| 35 064 1090 21  | on application |
| 35 064 1110 21  | on application |
| 35 302 1125 21* |                |
| 35 302 1140 21* |                |
| 35 302 1160 21* |                |
| 35 302 1180 21* |                |
| 35 302 1200 21* |                |

\*Machined

## AutoCad Software

AGRU CAD software is developed to run under AutoCad R12-DOS, R13-Windows, R14-Windows and Windows 2000  
It is specifically produced to design plastic piping systems.

There are several unique features:-

- Drawing on centre lines (products centred automatically)
- Parts list generation
- Prefab parts list (pipe cutting lengths are shown)
- Automatic calculation of expansion loops

AGRU CAD contains the full AGRU range in PP, PVDF and ECTFE.





# PURAD pvdf-uhp spigot adaptor fittings

## Sanitary Joint Adaptor



### PN16

| Size | Code           | Price |
|------|----------------|-------|
| 20   | 35 306 0020 21 | 58.38 |
| 25   | 35 306 0025 21 | 58.38 |
| 32   | 35 306 0032 21 | 58.38 |
| 40   | 35 306 0040 21 | 90.87 |
| 50   | 35 306 0050 21 | 90.87 |
| 63   | 35 306 0063 21 | 98.23 |

Note: Sanitary clamp not included

## Sanitary Joint Gasket



### FPM

| Size | Code           | Price          |
|------|----------------|----------------|
| 20   | 88 379 0020 21 |                |
| 25   | 88 379 0025 21 |                |
| 32   | 88 379 0032 21 | on application |
| 40   | 88 379 0040 21 |                |
| 50   | 88 379 0050 21 |                |
| 63   | 88 379 0063 21 |                |

## Sanitary Joint Twinclamp

Stainless Steel



| Size     | Code           | Price          |
|----------|----------------|----------------|
| 20/25/32 | 90 048 2032 21 |                |
| 40/50    | 90 048 4050 21 | on application |
| 63       | 90 048 0063 21 |                |

## Machine Hire

Don't have the tools?  
We have a dedicated fleet of welding equipment available to hire on a weekly basis.



# PURAD pvdf-uhp spigot flanges

## Stub Flange

DIN standard



Also available to JIS standards. Please enquire for details.

### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   |                |        |
| 25   |                |        |
| 32   |                |        |
| 40   |                |        |
| 50   |                |        |
| 63   |                |        |
| 75   |                |        |
| 90   | 35 012 0090 33 | 57.37  |
| 110  | 35 012 0110 33 | 81.12  |
| 125  | 35 012 0125 33 | 121.82 |
| 140  | 35 012 0140 33 | 192.48 |
| 160  | 35 012 0160 33 | 250.00 |
| 180  | 35 012 0180 33 | 317.10 |
| 200  | 35 012 0200 33 | 422.55 |
| 225  | 35 012 0225 33 | 450.59 |
| 250  | 35 012 0250 33 | 540.53 |
| 280  | 35 012 0280 33 | 668.12 |
| 315  | 35 012 0315 33 | 803.80 |

### PN16

| Code           | Price   |
|----------------|---------|
| 35 012 0020 21 | 4.49    |
| 35 012 0025 21 | 5.24    |
| 35 012 0032 21 | 5.61    |
| 35 012 0040 21 | 9.07    |
| 35 012 0050 21 | 10.67   |
| 35 012 0063 21 | 15.64   |
| 35 012 0075 21 | 45.14   |
| 35 012 0090 21 | 61.06   |
| 35 012 0110 21 | 84.95   |
|                |         |
| 35 012 0140 21 | 261.05  |
| 35 012 0160 21 | 337.74  |
| 35 012 0180 21 | 431.42  |
| 35 012 0200 21 | 574.46  |
| 35 012 0225 21 | 612.81  |
| 35 012 0250 21 | 817.10  |
| 35 012 0280 21 | 1073.70 |

## Stub Flange

ANSI standard



### PN10

|     |                |         |
|-----|----------------|---------|
| 20  |                |         |
| 25  |                |         |
| 32  |                |         |
| 40  |                |         |
| 50  |                |         |
| 63  |                |         |
| 75  |                |         |
| 90  | 35 012 1090 33 | 71.84   |
| 110 | 35 012 1110 33 | 101.48  |
| 125 | 35 012 1125 33 | 152.66  |
| 160 | 35 012 1160 33 | 312.67  |
| 200 | 35 012 1200 33 | 528.01  |
| 225 | 35 012 1225 33 | 562.68  |
| 250 | 35 012 1250 33 | 675.50  |
| 315 | 35 012 1315 33 | 1004.39 |

### PN16

|                |         |
|----------------|---------|
| 35 012 1020 21 | 5.67    |
| 35 012 1025 21 | 6.57    |
| 35 012 1032 21 | 7.01    |
| 35 012 1040 21 | 11.35   |
| 35 012 1050 21 | 13.35   |
| 35 012 1063 21 | 19.46   |
| 35 012 1075 21 | 56.32   |
| 35 012 1090 21 | 76.26   |
| 35 012 1110 21 | 106.19  |
|                |         |
| 35 012 1160 21 | 421.80  |
| 35 012 1200 21 | 717.54  |
| 35 012 1225 21 | 765.47  |
| 35 012 1250 21 | 1020.60 |

## Stub Flange

Chamfered



For use with butterfly valve

|     |  |  |
|-----|--|--|
| 90  |  |  |
| 110 |  |  |
| 140 |  |  |
| 160 |  |  |
| 180 |  |  |
| 200 |  |  |
| 225 |  |  |
| 250 |  |  |
| 280 |  |  |

### PN16

|                |         |
|----------------|---------|
| 35 012 9090 21 | 76.26   |
| 35 012 9110 21 | 106.19  |
| 35 012 9140 21 | 326.68  |
| 35 012 9160 21 | 421.80  |
| 35 012 9180 21 | 539.07  |
| 35 012 9200 21 | 717.54  |
| 35 012 9225 21 | 765.47  |
| 35 012 9250 21 | 1020.60 |
| 35 012 9280 21 | 1342.13 |



### Chamfered Stub Flange

The chamfered stub flange allows a wafer-style butterfly valve to fully open without restriction.

## Blind Flange

Machined, DIN standard  
Non Pressure



Also available drilled to  
JIS standards.  
Please enquire for  
details.

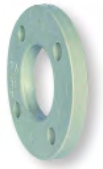
### NP10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 35 334 0020 00 | 87.60  |
| 25   | 35 334 0025 00 | 92.93  |
| 32   | 35 334 0032 00 | 98.68  |
| 40   | 35 334 0040 00 | 127.87 |
| 50   | 35 334 0050 00 | 138.35 |
| 63   | 35 334 0063 00 | 154.14 |
| 75   | 35 334 0075 00 | 173.31 |
| 90   | 35 334 0090 00 | 215.33 |
| 110  | 35 334 0110 00 | 244.08 |
| 125  | 35 334 0125 00 | 244.08 |
| 140  | 35 334 0140 00 | 301.62 |
| 160  | 35 334 0160 00 | 359.14 |
| 180  | 35 334 0180 00 | 359.14 |
| 200  | 35 334 0200 00 | 492.61 |
| 225  | 35 334 0225 00 | 515.47 |

### ANSI 150

| Code           | Price  |
|----------------|--------|
| 35 334 1020 00 | 87.60  |
| 35 334 1025 00 | 92.93  |
| 35 334 1032 00 | 98.68  |
| 35 334 1040 00 | 127.87 |
| 35 334 1050 00 | 138.35 |
| 35 334 1063 00 | 154.14 |
| 35 334 1075 00 | 173.31 |
| 35 334 1090 00 | 210.91 |
| 35 334 1110 00 | 260.31 |
| 35 334 1125 00 | 216.08 |
| 35 334 1160 00 | 430.66 |
| 35 334 1200 00 | 592.89 |

## Backing Ring



Polypropylene with steel  
core.  
Also available drilled to  
JIS standards.  
Please enquire for  
details.

### NP10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 11 014 0020 11 | 6.79   |
| 25   | 11 014 0025 11 | 7.46   |
| 32   | 11 014 0032 11 | 9.55   |
| 40   | 11 014 0040 11 | 12.11  |
| 50   | 11 014 0050 11 | 14.14  |
| 63   | 11 014 0063 11 | 16.40  |
| 75   | 11 014 0075 11 | 18.20  |
| 90   | 11 014 0090 11 | 21.50  |
| 110  | 11 014 0110 11 | 25.57  |
| 125  | 11 014 0125 11 | 25.57  |
| 140  | 11 014 0140 11 | 39.38  |
| 160  | 11 014 0160 11 | 45.09  |
| 180  | 11 014 0180 11 | 45.09  |
| 200  | 11 014 0200 11 | 64.20  |
| 225  | 11 014 0225 11 | 64.20  |
| 250  | 11 014 0250 11 | 102.52 |
| 280  | 11 014 0280 11 | 102.52 |
| 315  | 11 014 0315 11 | 128.83 |

### ANSI 150

| Code           | Price  |
|----------------|--------|
| 11 013 0020 11 | 6.79   |
| 11 013 0025 11 | 7.46   |
| 11 013 0032 11 | 9.55   |
| 11 013 0040 11 | 12.11  |
| 11 013 0050 11 | 14.14  |
| 11 013 0063 11 | 16.40  |
| 11 013 0075 11 | 18.20  |
| 11 013 0090 11 | 21.50  |
| 11 013 0110 11 | 25.57  |
| 11 013 0160 11 | 45.09  |
| 11 013 0200 11 | 64.20  |
| 11 013 0250 11 | 102.52 |
| 11 013 0315 11 | 128.83 |

## Seal Clean Gasket

ePTFE



### PN10

| Size | Flange   | Code           | Price  |
|------|----------|----------------|--------|
| 20   | DIN/ANSI | 88 372 0020 21 | 6.65   |
| 25   | DIN      | 88 372 0025 21 | 10.24  |
| 25   | ANSI     | 88 372 1025 21 | 9.53   |
| 32   | DIN      | 88 372 0032 21 | 14.25  |
| 32   | ANSI     | 88 372 1032 21 | 12.52  |
| 40   | DIN      | 88 372 0040 21 | 16.35  |
| 40   | ANSI     | 88 372 1040 21 | 15.01  |
| 50   | DIN      | 88 372 0050 21 | 19.59  |
| 50   | ANSI     | 88 372 1050 21 | 18.38  |
| 63   | DIN      | 88 372 0063 21 | 28.10  |
| 63   | ANSI     | 88 372 1063 21 | 27.68  |
| 75   | DIN      | 88 372 0075 21 | 39.89  |
| 75   | ANSI     | 88 372 1075 21 | 38.27  |
| 90   | DIN      | 88 372 0090 21 | 46.53  |
| 90   | ANSI     | 88 372 1090 21 | 44.62  |
| 110  | DIN/ANSI | 88 372 0110 21 | 63.47  |
| 125  | DIN/ANSI | 88 372 0125 21 | 53.24  |
| 140  | DIN      | 88 372 0140 21 | 86.66  |
| 160  | DIN/ANSI | 88 372 0160 21 | 113.52 |
| 180  | DIN      | 88 372 0180 21 | 98.98  |
| 200  | DIN/ANSI | 88 372 0200 21 | 172.99 |
| 225  | DIN/ANSI | 88 372 0225 21 | 152.49 |
| 250  | DIN/ANSI | 88 372 0250 21 | 232.81 |
| 280  | DIN      | 88 372 0280 21 | 203.44 |
| 315  | DIN/ANSI | -              | -      |

### PN16

| Code           | Price  |
|----------------|--------|
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| -              | -      |
| 88 372 0090 33 | 44.66  |
| 88 372 1090 33 | 42.80  |
| 88 372 0110 33 | 60.74  |
| 88 372 0125 33 | 48.00  |
| 88 372 0140 33 | 82.18  |
| 88 372 0160 33 | 111.50 |
| 88 372 0180 33 | 96.31  |
| 88 372 0200 33 | 167.16 |
| 88 372 0225 33 | 147.75 |
| 88 372 0250 33 | 221.06 |
| 88 372 0280 33 | 196.61 |
| 88 372 0315 33 | 241.15 |

## Agru Diaphragm Valve

**Description:** In-line diaphragm valve with position indicator

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 120°C

**Construction:**

**Body:** PVDF-HP

**Diaphragm:** PTFE (EPDM Backed) or EPDM

**End Connections:** Fusion spigots, flanged BS4504 EN1072 PN10



### Fusion Spigots

PTFE Diaphragm  
(EPDM Backed)

| Size | Code           | Price   |
|------|----------------|---------|
| 20   | 35 342 1020 21 | 191.73  |
| 25   | 35 342 1025 21 | 204.29  |
| 32   | 35 342 1032 21 | 226.40  |
| 40   | 35 342 1040 21 | 322.28  |
| 50   | 35 342 1050 21 | 387.89  |
| 63   | 35 342 1063 21 | 491.15  |
| 75   | 35 342 1075 21 | 1358.34 |
| 90   | 35 342 1090 21 | 1609.08 |
| 110  | 35 342 1011 21 | 1942.40 |

### Fusion Spigots - Union

PTFE Diaphragm

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 35 340 0020 21 | 230.06 |
| 25   | 35 340 0025 21 | 255.17 |
| 32   | 35 340 0032 21 | 295.73 |
| 40   | 35 340 0040 21 | 398.22 |
| 50   | 35 340 0050 21 | 481.55 |
| 63   | 35 340 0063 21 | 638.63 |

### Flanged BS4504 PN10

PTFE Diaphragm

| Size | Code           | Price   |
|------|----------------|---------|
| 20   | 35 242 1020 21 | 230.06  |
| 25   | 35 242 1025 21 | 255.17  |
| 32   | 35 242 1032 21 | 295.73  |
| 40   | 35 342 2040 21 | 398.22  |
| 50   | 35 342 2050 21 | 481.55  |
| 63   | 35 342 2063 21 | 638.63  |
| 75   | 35 242 1075 21 | 1358.34 |
| 90   | 35 342 2090 21 | 1803.77 |
| 110  | 35 342 2011 21 | 2411.41 |
| 140  | 35 342 2014 21 | 3123.77 |

## Diaphragm Valve Mounting Plate

- Ensures clearance of union nut from mounting surface
- Complete with two fixing screws

| valve size | thickness (mm) | code    | price |
|------------|----------------|---------|-------|
| 20         | 16.0           | 14 0103 | 5.51  |
| 25         | 23.0           | 14 0102 | 5.51  |
| 32         | 23.0           | 14 0102 | 5.51  |
| 40         | 18.5           | 14 0123 | 8.96  |
| 50         | 23.5           | 14 0109 | 8.96  |
| 63         | 23.5           | 14 0109 | 8.96  |

Also suitable for use with T-Diaphragm valve.





## Agru Ball Valve

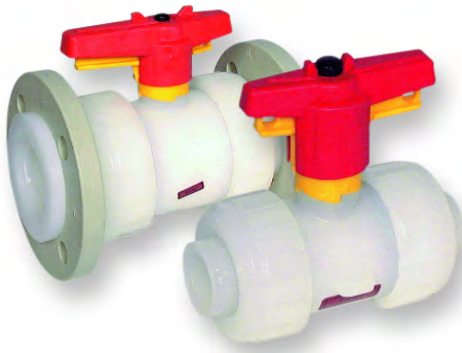
**Description:** In-line double union ball valve with lockable handle  
**Mounting:** In any position  
**Maximum Fluid Pressure at 20°C:** Sizes 16mm to 75mm - 16 bar;  
 Sizes 90mm to 110mm - 10 bar  
**Fluid Temperature Range:** 0°C - 120°C  
**Construction:**  
**Body:** PVDF-HP  
**Seals:** FPM  
**Seats:** PTFE  
**End Connections:** Fusion spigots, flanged BS4504 PN10

### Fusion Spigots

|            | Size | Code           | Price   |
|------------|------|----------------|---------|
| FPM Seals  | 20   | 35 335 1520 21 | 109.73  |
| PTFE Seals | 25   | 35 335 1525 21 | 141.59  |
|            | 32   | 35 335 1532 21 | 181.42  |
|            | 40   | 35 335 1540 21 | 239.68  |
|            | 50   | 35 335 1550 21 | 339.96  |
|            | 63   | 35 335 1563 21 | 470.48  |
|            | 75   | 35 335 1575 21 | 808.24  |
|            | 90   | 35 335 1590 33 | 1069.28 |

### Flanged BS4504 PN10/16

|            | Size | Code           | Price          |
|------------|------|----------------|----------------|
| FPM Seals  | 20   | 35 335 1720 21 |                |
| PTFE Seals | 25   | 35 335 1725 21 |                |
|            | 32   | 35 335 1732 21 |                |
|            | 40   | 35 335 1740 21 | on application |
|            | 50   | 35 335 1750 21 |                |
|            | 63   | 35 335 1763 21 |                |
|            | 75   | 35 335 1775 21 |                |
|            | 90   | 35 335 1790 33 |                |



## Agru Laboratory/Sampling Ball Valve

**Description:** In-line ball valve for laboratory or sampling use  
**Mounting:** In any position  
**Maximum Fluid Pressure at 20°C:** 10 bar  
**Fluid Temperature Range:** 0°C - 120°C  
**Construction:**  
**Body:** PVDF-HP  
**Seals:** FPM  
**Seats:** PTFE  
**End Connections:** 1/4" R or NPT Threaded; Hose Connection included



| Connections       | Size | Code           | Price |
|-------------------|------|----------------|-------|
| R Male x Female   | 1/4" | 35 337 0000 11 | 19.76 |
| NPT Male x Female | 1/4" | 35 337 1000 11 | 19.76 |

## Agru T-Diaphragm Valve

**Description:** Diaphragm valve on T branch with position indicator

**Mounting:** In any position (usually horizontal on the run)

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 120°C

**Construction:**

**Body:** PVDF-HP

**Diaphragm:** PTFE (EPDM backed)

**End Connections:** Fusion Spigots



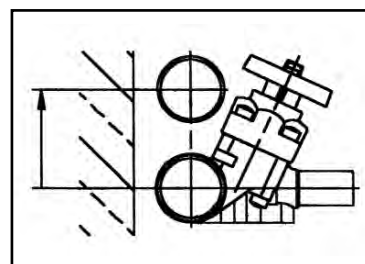
### Fusion Spigots

PTFE Diaphragm  
(EPDM Backed)

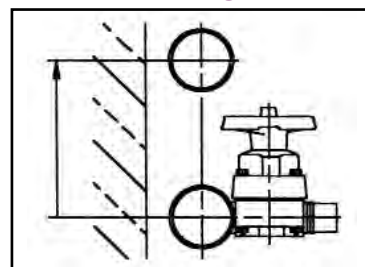
| Size   | Code            | Price   |
|--------|-----------------|---------|
| 20/20  | 35 343 2020 21  | 306.05  |
| 25/20  | 35 343 2520 21  | 306.05  |
| 25/25  | 35 343 2525 21  | 306.05  |
| 32/20  | 35 343 3220 21  | 366.51  |
| 32/25  | 35 343 3225 21  | 366.51  |
| 32/32  | 35 343 3232 21  | 366.51  |
| 40/20  | 35 343 4020 21  | 425.51  |
| 40/25  | 35 343 4025 21  | 425.51  |
| 40/32  | 35 343 4032 21  | 425.51  |
| 50/20  | 35 343 5020 21  | 451.31  |
| 50/25  | 35 343 5025 21  | 451.31  |
| 50/32  | 35 343 5032 21  | 451.31  |
| 63/20  | 35 343 6320 21  | 490.41  |
| 63/25  | 35 343 6325 21  | 490.41  |
| 63/32  | 35 343 6332 21  | 490.41  |
| 63/40  | 35 343 6340 21  | 806.75  |
| 63/50  | 35 343 6350 21  | 806.75  |
| 63/63  | 35 343 6363 21  | 806.75  |
| 75/25  | 35 343 7525 21  | 780.20  |
| 75/32  | 35 343 7532 21  | 780.20  |
| 75/40  | 35 343 7540 21  | 976.36  |
| 75/50  | 35 343 7550 21  | 976.36  |
| 75/63  | 35 343 7563 21  | 976.36  |
| 90/25  | 35 343 9025 21  | 1044.21 |
| 90/25  | 35 343 9025 31* | 927.69  |
| 90/32  | 35 343 9032 21  | 1044.21 |
| 90/32  | 35 343 9032 31* | 927.69  |
| 90/40  | 35 343 9040 21  | 1274.30 |
| 90/40  | 35 343 9040 31* | 1209.39 |
| 90/50  | 35 343 9050 21  | 1274.30 |
| 90/50  | 35 343 9050 31* | 1209.39 |
| 90/63  | 35 343 9063 21  | 1274.30 |
| 90/63  | 35 343 9063 31* | 1209.39 |
| 110/25 | 35 343 1125 21  | 1166.63 |
| 110/25 | 35 343 1125 31* | 1107.64 |
| 110/32 | 35 343 1132 21  | 1166.63 |
| 110/32 | 35 343 1132 31* | 1107.64 |
| 110/50 | 35 343 1150 21  | 1402.60 |
| 110/50 | 35 343 1150 31* | 1333.28 |
| 110/63 | 35 343 1163 21  | 1659.23 |
| 110/63 | 35 343 1163 31* | 1333.28 |

The wall thickness of the spigot is in accordance with PN16 except for \* which has PN10 on the run and PN16 on the branch.

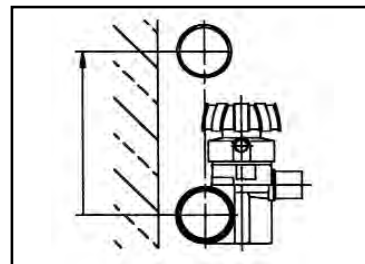
### AGRU T-DIAPHRAGM VALVE



### Conventional Design



### Conventional Design



Also available with rinsing branch.  
Enquire for details.

## Agru Check (Non-Return) Valve

**Description:** In-line spring weighted cone check valve  
**Mounting:** In any position  
**Maximum Fluid Pressure at 20°C:** Sizes 16mm to 75mm - 16 bar;  
 Size 90mm - 10 bar  
**Fluid Temperature Range:** 0°C - 120°C  
**Construction:**  
**Body:** PVDF-HP  
**Seals:** FPM  
**Spring:** Stainless Steel sleeved in PTFE  
**End Connections:** Fusion spigots



### Fusion Spigots

| PTFE Seals | Size | Code           | Price   |
|------------|------|----------------|---------|
|            | 20   | 35 336 1520 21 | 168.88  |
|            | 25   | 35 336 1525 21 | 213.14  |
|            | 32   | 35 336 1532 21 | 250.00  |
|            | 40   | 35 336 1540 21 | 365.77  |
|            | 50   | 35 336 1550 21 | 470.48  |
|            | 63   | 35 336 1563 21 | 632.01  |
|            | 75   | 35 336 1575 21 | 917.36  |
|            | 90   | 35 336 1590 33 | 1206.45 |

## Agru Wafer Check Valve

**Description:** Wafer style flap check valve  
**Mounting:** In any position, between flanges to BS4504  
 EN1072 PN10. Optional spring return for mounting in  
 horizontal position or for pulsating flow.  
**Maximum Fluid Pressure at 20°C:** 10 bar  
**Fluid Temperature Range:** 0°C - 120°C  
**Construction:**  
**Body:** PVDF-HP  
**Seals:** FPM  
**Spring (optional):** Stainless Steel, PTFE coated  
**End Connections:** Flange mounted (flanges not included)



### No Spring Return

| FPM Seals | Size | Code           | Price   |
|-----------|------|----------------|---------|
|           | 40   | 35 339 3040 33 | 277.29  |
|           | 50   | 35 339 3050 33 | 283.17  |
|           | 63   | 35 339 3063 33 | 306.05  |
|           | 75   | 35 339 3075 33 | 353.22  |
|           | 90   | 35 339 3090 33 | 424.76  |
|           | 110  | 35 339 3110 33 | 584.79  |
|           | 125  | 35 339 3125 33 | 800.86  |
|           | 140  | 35 339 3140 33 | 800.86  |
|           | 160  | 35 339 3160 33 | 1112.05 |
|           | 180  | 35 339 3180 33 | 1112.05 |
|           | 225  | 35 339 3225 33 | 2651.82 |
|           | 280  | 35 339 3280 33 | 2974.80 |

### Stainless Steel Spring Return

| FPM Seals | Size | Code           | Price   |
|-----------|------|----------------|---------|
|           | 40   | 35 339 1040 33 | 384.93  |
|           | 50   | 35 339 1050 33 | 390.11  |
|           | 63   | 35 339 1063 33 | 417.38  |
|           | 75   | 35 339 1075 33 | 471.23  |
|           | 90   | 35 339 1090 33 | 555.29  |
|           | 110  | 35 339 1110 33 | 721.96  |
|           | 125  | 35 339 1125 33 | 980.80  |
|           | 140  | 35 339 1140 33 | 980.80  |
|           | 160  | 35 339 1160 33 | 1293.45 |
|           | 180  | 35 339 1180 33 | 1293.45 |
|           | 225  | 35 339 1225 33 | 2716.70 |
|           | 280  | 35 339 1280 33 | 3072.17 |

## Agro Pneumatically Actuated Diaphragm Valve

**Description:** In-line pneumatically operated diaphragm valve

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C-120°C

**Construction:**

**Body:** PVDF-HP

**Diaphragm:** PTFE (EPDM backed)

**End Connections:** Fusion Spigots

**Actuation:**

**Housing Material:** Glass reinforced polypropylene

**Air Actuators:** Fail-safe close, fail-safe open, double acting

**Protection:** IP65

**Manual Override:** Optional

**Position Indicator:** Included

**Contacts:** Optional

**Pilot Valve:** Solenoid, not included



### Fusion Spigots

Fail-safe close  
PTFE Diaphragm  
(EPDM Backed)

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 35 341 0020 21 | 381.92 |
| 25   | 35 341 0025 21 | 411.31 |
| 32   | 35 341 0032 21 | 446.42 |
| 40   | 35 341 0040 21 | 631.30 |
| 50   | 35 341 0050 21 | 709.40 |
| 63   | 35 341 0063 21 | 818.32 |

### Fusion Spigots

Fail-safe open  
PTFE Diaphragm  
(EPDM Backed)

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 35 341 1020 21 | 381.92 |
| 25   | 35 341 1025 21 | 411.31 |
| 32   | 35 341 1032 21 | 446.42 |
| 40   | 35 341 1040 21 | 631.30 |
| 50   | 35 341 1050 21 | 709.40 |
| 63   | 35 341 1063 21 | 818.32 |

### Fusion Spigots

Double Acting  
PTFE Diaphragm  
(EPDM Backed)

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 35 341 2020 21 | 381.92 |
| 25   | 35 341 2025 21 | 411.31 |
| 32   | 35 341 2032 21 | 446.42 |
| 40   | 35 341 2040 21 | 631.30 |
| 50   | 35 341 2050 21 | 709.40 |
| 63   | 35 341 2063 21 | 818.32 |



## Custom Actuation

We can provide standard actuation or design solutions for your control systems. Call Tony Welsh on:

**0800 975 79 71**



## Agru Pneumatically Actuated T-Diaphragm Valve

**Description:** Diaphragm valve on T branch with pneumatic actuation

**Mounting:** In any position (usually horizontal on the run)

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 120°C

**Construction:**

**Body:** PVDF-HP

**Diaphragm:** PTFE (EPDM backed)

**End Connections:** Fusion Spigots

**Actuation:**

**Housing Material:** Glass reinforced polypropylene

**Air Actuators:** Fail-safe close, fail-safe open, double acting

**Protection:** IP65

**Manual Override:** Optional

**Position Indicator:** Included

**Contacts:** Optional

**Pilot Valve:** Solenoid, not included



### Fusion Spigots

PTFE Diaphragm  
(EPDM Backed)

| size   | code            |                 |                 | price   |
|--------|-----------------|-----------------|-----------------|---------|
|        | fail-safe close | fail-safe open  | double acting   |         |
| 20/20  | 35 345 2020 21  | 35 346 2020 21  | 35 347 2020 21  | 546.75  |
| 25/20  | 35 345 2520 21  | 35 346 2520 21  | 35 347 2520 21  | 546.75  |
| 25/25  | 35 345 2525 21  | 35 346 2525 21  | 35 347 2525 21  | 546.75  |
| 32/20  | 35 345 3220 21  | 35 346 3220 21  | 35 347 3220 21  | 621.26  |
| 32/25  | 35 345 3225 21  | 35 346 3225 21  | 35 347 3225 21  | 621.26  |
| 32/32  | 35 345 3232 21  | 35 346 3232 21  | 35 347 3232 21  | 621.26  |
| 40/20  | 35 345 4020 21  | 35 346 4020 21  | 35 347 4020 21  | 685.03  |
| 40/25  | 35 345 4025 21  | 35 346 4025 21  | 35 347 4025 21  | 685.03  |
| 40/32  | 35 345 4032 21  | 35 346 4032 21  | 35 347 4032 21  | 685.03  |
| 50/20  | 35 345 5020 21  | 35 346 5020 21  | 35 347 5020 21  | 740.91  |
| 50/25  | 35 345 5025 21  | 35 346 5025 21  | 35 347 5025 21  | 740.91  |
| 50/32  | 35 345 5032 21  | 35 346 5032 21  | 35 347 5032 21  | 740.91  |
| 63/20  | 35 345 6320 21  | 35 346 6320 21  | 35 347 6320 21  | 819.74  |
| 63/25  | 35 345 6325 21  | 35 346 6325 21  | 35 347 6325 21  | 819.74  |
| 63/32  | 35 345 6332 21  | 35 346 6332 21  | 35 347 6332 21  | 819.74  |
| 63/40  | 35 345 6340 21  | 35 346 6340 21  | 35 347 6340 21  | 1188.06 |
| 63/50  | 35 345 6350 21  | 35 346 6350 21  | 35 347 6350 21  | 1188.06 |
| 63/63  | 35 345 6363 21  | 35 346 6363 21  | 35 347 6363 21  | 1188.06 |
| 75/25  | 35 345 7525 21  | 35 346 7525 21  | 35 347 7525 21  | 1100.65 |
| 75/32  | 35 345 7532 21  | 35 346 7532 21  | 35 347 7532 21  | 1100.65 |
| 75/40  | 35 345 7540 21  | 35 346 7540 21  | 35 347 7540 21  | 1544.91 |
| 75/50  | 35 345 7550 21  | 35 346 7550 21  | 35 347 7550 21  | 1544.91 |
| 75/63  | 35 345 7563 21  | 35 346 7563 21  | 35 347 7563 21  | 1544.91 |
| 90/25  | 35 345 9025 21  | 35 346 9025 21  | 35 347 9025 21  | 1236.78 |
| 90/25  | 35 345 9025 31* | 35 346 9025 31* | 35 347 9025 31* | 1137.90 |
| 90/32  | 35 345 9032 21  | 35 346 9032 21  | 35 347 9032 21  | 1236.78 |
| 90/32  | 35 345 9032 31* | 35 346 9032 31* | 35 347 9032 31* | 1137.90 |
| 90/40  | 35 345 9040 21  | 35 346 9040 21  | 35 347 9040 21  | 1698.26 |
| 90/40  | 35 345 9040 31* | 35 346 9040 31* | 35 347 9040 31* | 1610.82 |
| 90/50  | 35 345 9050 21  | 35 346 9050 21  | 35 347 9050 21  | 1698.26 |
| 90/50  | 35 345 9050 31* | 35 346 9050 31* | 35 347 9050 31* | 1610.82 |
| 90/63  | 35 345 9063 21  | 35 346 9063 21  | 35 347 9063 21  | 1698.26 |
| 90/63  | 35 345 9063 31* | 35 346 9063 31* | 35 347 9063 31* | 1610.82 |
| 110/25 | 35 345 1125 21  | 35 346 1125 21  | 35 347 1125 21  | 1337.12 |
| 110/25 | 35 345 1125 31* | 35 346 1125 31* | 35 347 1125 31* | 1243.95 |
| 110/32 | 35 345 1132 21  | 35 346 1132 21  | 35 347 1132 21  | 1337.12 |
| 110/32 | 35 345 1132 31* | 35 346 1132 31* | 35 347 1132 31* | 1243.95 |
| 110/50 | 35 345 1150 21  | 35 346 1150 21  | 35 347 1150 21  | 1960.51 |
| 110/50 | 35 345 1150 31* | 35 346 1150 31* | 35 347 1150 31* | 1891.74 |
| 110/63 | 35 345 1163 21  | 35 346 1163 21  | 35 347 1163 21  | 2208.45 |
| 110/63 | 35 345 1163 31* | 35 346 1163 31* | 35 347 1163 31* | 2128.20 |

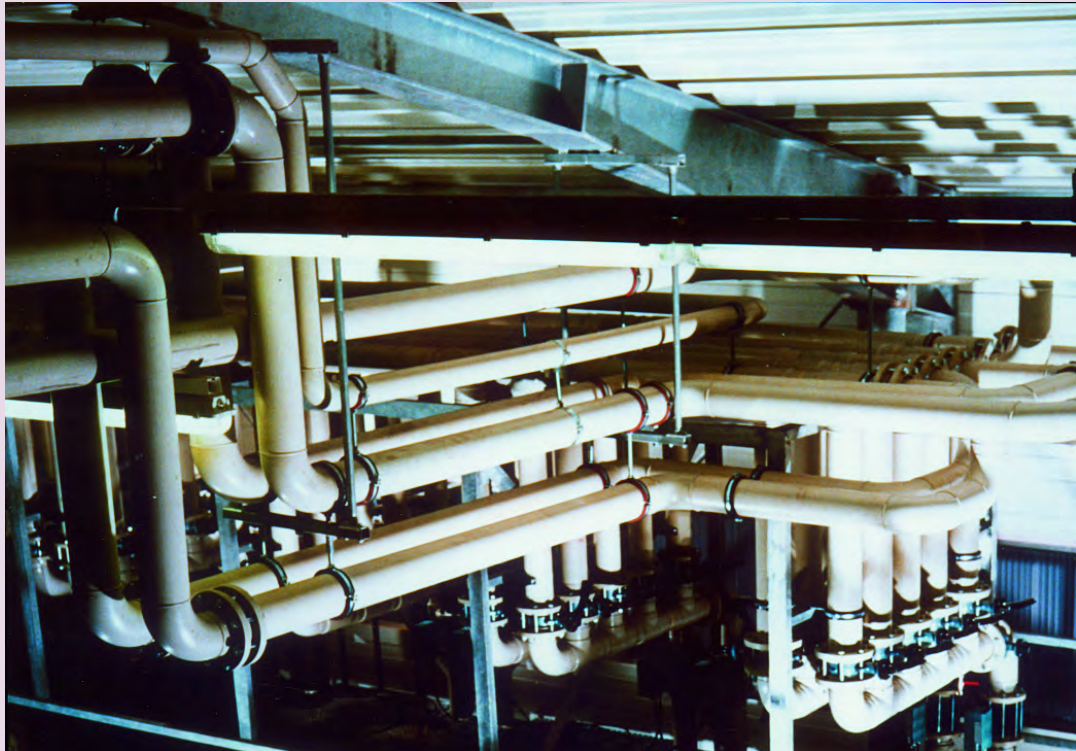
The Wall thickness of the spigot is in accordance with PN16 except for \* which has PN10 on the run and PN16 on the branch.

# pipes and fittings - metric sizes

AGRU High Purity Polypropylene systems offer high strength, very good chemical resistance and non-toxicity for less critical high purity applications such as DI water return lines.

High Purity Polypropylene (PP-Pure) pipes are manufactured from beige grey virgin PP material on specifically designated equipment. The pipes are then cleaned and packaged in clean room class 10,000 conditions. Moulded fittings are cleaned in an automatic cleaning facility under class 100 clean room conditions, then double packaged for shipment.

PP-Pure systems can be joined using AGRU butt fusion, socket fusion, or IR non-contact butt welding equipment. Details are shown in the tools and installation equipment section.



### Pipe Availability

We typically hold over  
**120 miles of pipe**  
in stock for immediate despatch



## Pipe

### SDR11/S-5/PN10

| Size | Wall | kg/m | Code           | Price/m |
|------|------|------|----------------|---------|
| 20   | 2.5  | 0.14 | 72 705 0020 11 | 4.24    |
| 25   | 2.7  | 0.19 | 72 705 0025 11 | 5.82    |
| 32   | 3.0  | 0.27 | 72 705 0032 11 | 8.20    |
| 40   | 3.7  | 0.41 | 72 705 0040 11 | 10.14   |
| 50   | 4.6  | 0.64 | 72 705 0050 11 | 15.79   |
| 63   | 5.8  | 1.0  | 72 705 0063 11 | 24.88   |
| 75   | 6.9  | 1.4  | 72 705 0075 11 | 34.41   |
| 90   | 8.2  | 2.0  | 72 705 0090 11 | 49.60   |
| 110  | 10.0 | 3.0  | 72 705 0110 11 | 73.86   |
| 125  | 11.4 | 3.9  | 72 705 0125 11 | 95.47   |
| 140  | 12.8 | 4.9  | 72 705 0140 11 | 119.29  |
| 160  | 14.6 | 6.4  | 72 705 0160 11 | 156.34  |
| 180  | 16.4 | 8.1  | 72 705 0180 11 | 175.72  |
| 200  | 18.2 | 9.9  | 72 705 0200 11 | 216.67  |
| 225  | 20.5 | 12.6 | 72 705 0225 11 | 274.74  |
| 250  | 22.8 | 15.5 | 72 705 0250 11 | 338.02  |
| 280  | 25.5 | 19.5 | 72 705 0280 11 | 422.90  |
| 315  | 28.7 | 24.6 | 72 705 0315 11 | 536.06  |

Standard length 5 metres.



## Pipework Support

Polypropylene pipework requires more support than for metallic systems. As working temperature increases, the distance between supports is reduced.

| Pipe Size | Support Centres/m |      |       |
|-----------|-------------------|------|-------|
|           | 20°C              | 60°C | 100°C |
| 20        | 0.80              | 0.65 | 0.45  |
| 25        | 0.85              | 0.75 | 0.50  |
| 32        | 1.00              | 0.85 | 0.55  |
| 40        | 1.10              | 0.95 | 0.60  |
| 50        | 1.25              | 1.05 | 0.70  |
| 63        | 1.40              | 1.20 | 0.80  |
| 75        | 1.55              | 1.30 | 0.85  |
| 90        | 1.65              | 1.45 | 0.95  |
| 110       | 1.85              | 1.60 | 1.05  |
| 125       | 2.00              | 1.70 | 1.10  |
| 140       | 2.10              | 1.80 | 1.15  |
| 160       | 2.25              | 1.90 | 1.25  |
| 180       | 2.40              | 2.00 | 1.30  |
| 200       | 2.50              | 2.15 | 1.35  |
| 225       | 2.65              | 2.30 | 1.45  |
| 250       | 2.75              | 2.35 | 1.50  |
| 280       | 2.90              | 2.45 | 1.60  |
| 315       | 3.05              | 2.60 | 1.65  |
| 355       | 3.20              | 2.70 | 1.75  |
| 400       | 3.40              | 2.90 | 1.85  |



### Pipe Supports

Pipe Supports should be free of sharp edges which can damage a pipe wall. Care should also be taken to ensure that supports allow for expansion and contraction of the pipe without restraint.

# spigot fittings for IR and butt fusion welding

## Tee 90°



### PN10

| Size | Code           | Price   |
|------|----------------|---------|
| 20   | 72 006 0020 11 | 5.00    |
| 25   | 72 006 0025 11 | 5.00    |
| 32   | 72 006 0032 11 | 6.25    |
| 40   | 72 006 0040 11 | 9.90    |
| 50   | 72 006 0050 11 | 13.40   |
| 63   | 72 006 0063 11 | 20.85   |
| 75   | 72 006 0075 11 | 42.00   |
| 90   | 72 006 0090 11 | 62.55   |
| 110  | 72 006 0110 11 | 91.89   |
| 125  | 72 006 0125 11 | 126.42  |
| 140  | 72 006 0140 11 | 160.81  |
| 160  | 72 006 0160 11 | 269.50  |
| 180  | 72 006 0180 11 | 345.46  |
| 200  | 72 006 0200 17 | 495.13  |
| 225  | 72 006 0225 11 | 588.92  |
| 250  | 72 006 0250 11 | 748.99  |
| 280  | 72 006 0280 11 | 1012.55 |
| 315  | 72 006 0315 11 | 1438.43 |

## Multi-Bend 90° PN10

Elongated



| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 72 068 0020 11 | 7.47   |
| 25   | 72 068 0025 11 | 7.79   |
| 32   | 72 068 0032 11 | 8.07   |
| 40   | 72 068 0040 11 | 10.52  |
| 50   | 72 068 0050 11 | 13.21  |
| 63   | 72 068 0063 11 | 18.84  |
| 75   | 72 068 0075 11 | 26.01  |
| 90   | 72 068 0090 11 | 37.78  |
| 110  | 72 068 0110 11 | 71.85  |
| 125  | 72 068 0125 11 | 101.23 |
| 140  | 72 068 0140 11 | 135.35 |
| 160  | 72 068 0160 11 | 164.91 |
| 180  | 72 068 0180 11 | 195.24 |
| 200  | 72 068 0200 11 | 290.93 |
| 225  | 72 068 0225 11 | 347.06 |

## Reducing Tee 90°



### PN10

| Size    | Code           | Price  |
|---------|----------------|--------|
| 90x32   | 72 016 9032 11 | 57.92  |
| 90x50   | 72 016 9050 11 | 59.57  |
| 110x32  | 72 016 1132 11 | 85.47  |
| 110x50  | 72 016 1150 11 | 87.27  |
| 125x63  | 72 016 1263 11 | 122.09 |
| 140x63  | 72 016 1463 11 | 153.37 |
| 140x75  | 72 016 1475 11 | 153.37 |
| 140x90  | 72 016 1490 11 | 156.34 |
| 140x110 | 72 016 1411 11 | 156.34 |
| 160x125 | 72 016 1612 11 | 258.37 |
| 180x63  | 72 016 1863 11 | 320.90 |
| 180x75  | 72 016 1875 11 | 320.90 |
| 225x125 | 72 016 2212 11 | 558.40 |
| 250x110 | 72 016 2511 11 | 737.08 |
| 250x160 | 72 016 2516 11 | 751.97 |

## Bend 90°

### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 250  | 72 001 0250 11 | 553.18 |
| 280  | 72 001 0280 11 | 719.22 |
| 315  | 72 001 0315 11 | 993.20 |



## Reducing Tee 90°

Elongated



### PN10

| Size    | Code           | Price  |
|---------|----------------|--------|
| 63x50   | 72 065 6350 11 | 30.23  |
| 75x32   | 72 065 7532 11 | 47.21  |
| 75x50   | 72 065 7550 11 | 47.21  |
| 75x63   | 72 065 7563 11 | 48.24  |
| 90x63   | 72 065 9063 11 | 67.31  |
| 90x75   | 72 065 9075 11 | 67.90  |
| 110x63  | 72 065 1163 11 | 99.77  |
| 110x75  | 72 065 1175 11 | 99.77  |
| 110x90  | 72 065 1190 11 | 101.12 |
| 125x90  | 72 065 1290 11 | 138.64 |
| 125x110 | 72 065 1211 11 | 138.64 |
| 160x63  | 72 065 1663 11 | 273.25 |
| 160x75  | 72 065 1675 11 | 275.48 |
| 160x90  | 72 065 1690 11 | 275.48 |
| 160x110 | 72 065 1611 11 | 282.19 |
| 180x90  | 72 065 1890 11 | 409.49 |
| 180x160 | 72 065 1816 11 | 409.49 |
| 200x63  | 72 065 2063 11 | 460.12 |
| 200x90  | 72 065 2090 11 | 464.58 |
| 200x125 | 72 065 2012 11 | 475.01 |
| 200x160 | 72 065 2016 11 | 480.21 |
| 225x75  | 72 065 2275 11 | 638.81 |
| 225x90  | 72 065 2290 11 | 638.81 |
| 225x110 | 72 065 2211 11 | 641.78 |
| 225x160 | 72 065 2216 11 | 644.04 |
| 225x180 | 72 065 2218 11 | 646.25 |

## Elbow 45°

Elongated



### PN10

| Size | Code           | Price   |
|------|----------------|---------|
| 20   | 72 060 0020 11 | 8.56    |
| 25   | 72 060 0025 11 | 9.01    |
| 32   | 72 060 0032 11 | 9.69    |
| 40   | 72 060 0040 11 | 12.44   |
| 50   | 72 060 0050 11 | 17.27   |
| 63   | 72 060 0063 11 | 31.44   |
| 75   | 72 060 0075 11 | 38.28   |
| 90   | 72 060 0090 11 | 48.84   |
| 110  | 72 060 0110 11 | 93.67   |
| 125  | 72 060 0125 11 | 115.54  |
| 140  | 72 060 0140 11 | 151.89  |
| 160  | 72 060 0160 11 | 174.96  |
| 180  | 72 060 0180 11 | 262.07  |
| 200  | 72 060 0200 11 | 288.13  |
| 225  | 72 060 0225 11 | 311.97  |
| 250  | 72 060 0250 11 | 603.81  |
| 280  | 72 060 0280 11 | 911.29  |
| 315  | 72 060 0315 11 | 1140.61 |

## Cap

Elongated



### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 72 064 0020 11 | 7.29   |
| 25   | 72 064 0025 11 | 7.97   |
| 32   | 72 064 0032 11 | 10.04  |
| 40   | 72 064 0040 11 | 12.44  |
| 50   | 72 064 0050 11 | 16.23  |
| 63   | 72 064 0063 11 | 21.45  |
| 75   | 72 064 0075 11 | 33.21  |
| 90   | 72 064 0090 11 | 50.33  |
| 110  | 72 064 0110 11 | 68.19  |
| 125  | 72 064 0125 11 | 73.71  |
| 140  | 72 064 0140 11 | 92.18  |
| 160  | 72 064 0160 11 | 103.19 |
| 180  | 72 064 0180 11 | 134.18 |
| 200  | 72 064 0220 11 | 151.14 |
| 225  | 72 064 0225 11 | 167.53 |
| 250  | 72 064 0250 11 | 299.30 |
| 280  | 72 064 0280 11 | 425.14 |
| 315  | 72 064 0315 11 | 571.05 |

# PURAD pp-pure spigot fittings

## Reducer

Concentric



### PN10

| Size    | Code           | Price  |
|---------|----------------|--------|
| 25x20   | 72 067 2520 11 | 6.25   |
| 32x20   | 72 067 3220 11 | 6.93   |
| 32x25   | 72 067 3225 11 | 6.93   |
| 40x20   | 72 067 4020 11 | 10.04  |
| 40x25   | 72 067 4025 11 | 10.04  |
| 40x32   | 72 067 4032 11 | 10.04  |
| 50x25   | 72 067 5025 11 | 12.44  |
| 50x32   | 72 067 5032 11 | 12.44  |
| 50x40   | 72 067 5040 11 | 12.44  |
| 63x32   | 72 067 6332 11 | 16.53  |
| 63x40   | 72 067 6340 11 | 16.53  |
| 63x50   | 72 067 6350 11 | 16.53  |
| 75x50   | 72 067 7550 11 | 25.62  |
| 75x63   | 72 067 7563 11 | 25.62  |
| 90x63   | 72 067 9063 11 | 35.89  |
| 90x75   | 72 067 9075 11 | 35.89  |
| 110x63  | 72 067 1163 11 | 48.24  |
| 110x90  | 72 067 1190 11 | 48.24  |
| 125x63  | 72 067 1263 11 | 57.92  |
| 125x90  | 72 067 1290 11 | 57.92  |
| 125x110 | 72 067 1211 11 | 58.07  |
| 140x125 | 72 067 1412 11 | 83.26  |
| 160x90  | 72 067 1690 11 | 111.10 |
| 160x110 | 72 067 1611 11 | 111.53 |
| 160x125 | 72 067 1612 11 | 111.53 |
| 160x140 | 72 067 1614 11 | 107.81 |
| 180x125 | 72 067 1812 11 | 144.44 |
| 180x160 | 72 067 1816 11 | 144.44 |
| 200x160 | 72 067 2016 11 | 158.60 |
| 225x160 | 72 067 2216 11 | 254.63 |
| 250x160 | 72 067 2516 11 | 344.71 |
| 250x200 | 72 067 2521 11 | 360.36 |
| 250x225 | 72 067 2522 11 | 360.36 |
| 280x250 | 72 067 2825 11 | 480.21 |
| 315x200 | 72 067 3120 11 | 617.97 |
| 315x225 | 72 067 3122 11 | 617.97 |
| 315x250 | 72 067 3125 11 | 617.97 |

## Stub Flange



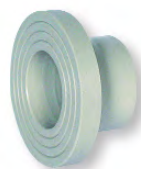
Also available to ANSI and JIS Standards. Please enquire for details.

### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 72 012 0020 11 | 5.66   |
| 25   | 72 012 0025 11 | 5.66   |
| 32   | 72 012 0032 11 | 6.73   |
| 40   | 72 012 0040 11 | 7.97   |
| 50   | 72 012 0050 11 | 9.75   |
| 63   | 72 012 0063 11 | 12.20  |
| 75   | 72 012 0075 11 | 14.37  |
| 90   | 72 012 0090 11 | 20.70  |
| 110  | 72 012 0110 11 | 26.50  |
| 125  | 72 012 0125 11 | 32.02  |
| 140  | 72 012 0140 11 | 37.39  |
| 160  | 72 012 0160 11 | 47.07  |
| 180  | 72 012 0180 11 | 73.12  |
| 200  | 72 012 0200 11 | 80.56  |
| 225  | 72 012 0225 11 | 89.63  |
| 250  | 72 012 0250 11 | 136.10 |
| 280  | 72 012 0280 11 | 148.78 |
| 315  | 72 012 0315 11 | 175.72 |

## Stub Flange

Chamfered



For use with butterfly valve

### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 110  | 72 012 9110 11 | 33.21  |
| 140  | 72 012 9140 11 | 46.75  |
| 160  | 72 012 9160 11 | 58.82  |
| 180  | 72 012 9180 11 | 91.42  |
| 200  | 72 012 9200 11 | 100.66 |
| 225  | 72 012 9225 11 | 112.13 |
| 250  | 72 012 9250 11 | 170.50 |
| 280  | 72 012 9280 11 | 186.13 |
| 315  | 72 012 9315 11 | 218.89 |

## Backing Ring

Drilled to NP10



Polypropylene with steel core. Also available in ANSI and JIS standards. Please enquire for details.

### NP10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 11 014 0020 11 | 6.79   |
| 25   | 11 014 0025 11 | 7.46   |
| 32   | 11 014 0032 11 | 9.55   |
| 40   | 11 014 0040 11 | 12.11  |
| 50   | 11 014 0050 11 | 14.14  |
| 63   | 11 014 0063 11 | 16.40  |
| 75   | 11 014 0075 11 | 18.20  |
| 90   | 11 014 0090 11 | 21.50  |
| 110  | 11 014 0110 11 | 25.57  |
| 125  | 11 014 0125 11 | 25.57  |
| 140  | 11 014 0140 11 | 39.38  |
| 160  | 11 014 0160 11 | 45.09  |
| 180  | 11 014 0180 11 | 45.09  |
| 200  | 11 014 0200 11 | 64.20  |
| 225  | 11 014 0225 11 | 64.20  |
| 250  | 11 014 0250 11 | 102.52 |
| 280  | 11 014 0280 11 | 102.52 |
| 315  | 11 014 0315 11 | 128.83 |

## Union

FPM Seals



### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 72 024 0120 11 | 34.25  |
| 25   | 72 024 0125 11 | 37.22  |
| 32   | 72 024 0132 11 | 44.83  |
| 40   | 72 024 0140 11 | 63.29  |
| 50   | 72 024 0150 11 | 89.63  |
| 63   | 72 024 0163 11 | 121.80 |

FDA Approved O-Ring

## Male Adaptor

BSP or NPT male thread



### PN10 - BSP

| Size       | Code           | Price |
|------------|----------------|-------|
| 20 x 1/2   | 72 033 2020 11 | 7.39  |
| 25 x 3/4   | 72 033 2525 11 | 8.86  |
| 32 x 1     | 72 033 3232 11 | 11.25 |
| 40 x 1 1/4 | 72 033 4040 11 | 13.47 |
| 50 x 1 1/2 | 72 033 5050 11 | 22.04 |
| 63 x 2     | 72 033 6363 11 | 27.85 |

## Restrained Fitting

Provides anchor point in pipe runs



Shown here in PVDF. Machined. Requires a correctly sized retaining clip.

### PN10

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 72 301 0020 11 | 68.19  |
| 25   | 72 301 0025 11 | 71.17  |
| 32   | 72 301 0032 11 | 71.17  |
| 40   | 72 301 0040 11 | 73.55  |
| 50   | 72 301 0050 11 | 78.78  |
| 63   | 72 301 0063 11 | 83.85  |
| 75   | 72 301 0075 11 | 107.51 |
| 90   | 72 301 0090 11 | 123.88 |
| 110  | 72 301 0110 11 | 142.05 |
| 125  | 72 301 0125 11 | 189.85 |
| 140  | 72 301 0140 11 | 217.41 |
| 160  | 72 301 0160 11 | 291.86 |
| 180  | 72 301 0180 11 | 628.40 |
| 200  | 72 301 0200 11 | 402.80 |
| 225  | 72 301 0225 11 | 655.94 |

## Female Adaptor

BSP or NPT female thread



### PN10 - BSP

| Size       | Code           | Price |
|------------|----------------|-------|
| 20 x 1/2   | 72 032 2020 11 | 9.46  |
| 25 x 3/4   | 72 032 2525 11 | 10.65 |
| 32 x 1     | 72 032 3232 11 | 14.00 |
| 40 x 1 1/4 | 72 032 4040 11 | 16.08 |
| 50 x 1 1/2 | 72 032 5050 11 | 25.19 |
| 63 x 2     | 72 032 6363 11 | 30.09 |

## PP-Pure Check (Non-Return) Valve

**Description:** In-line spring weighted cone check valve

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** Sizes 16mm to 75mm - 10 bar;  
Size 90mm - 6 bar

**Fluid Temperature Range:** 0°C - 80°C

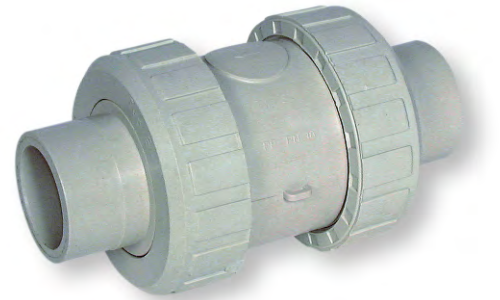
**Construction:**

**Body:** Polypropylene HP

**Seals:** FPM or EPDM

**Spring:** Stainless steel sleeved in PTFE

**End Connections:** Fusion spigots, fusion sockets, BSP female threaded or flanged BS4504 EN1072 PN10



### Fusion Spigots

| FPM Seals | Size | Code           | Price  |
|-----------|------|----------------|--------|
|           | 20   | 72 336 1320 11 | 107.97 |
|           | 25   | 72 336 1325 11 | 127.76 |
|           | 32   | 72 336 1332 11 | 147.86 |
|           | 40   | 72 336 1340 11 | 177.95 |
|           | 50   | 72 336 1350 11 | 217.41 |
|           | 63   | 72 336 1363 11 | 288.88 |
|           | 75   | 72 336 1375 11 | 682.00 |

Also available as an air release or foot valve and with Fusion Socket, BSP Female Threaded or Flanged connections. Please enquire for details.

## PP-Pure Wafer Check Valve

**Description:** Wafer style flap check valve

**Mounting:** In any position, between flanges to BS4504 EN1072 PN10.

Optional spring return for mounting in horizontal position or for pulsating flow.

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 80°C

**Construction:**

**Body:** Polypropylene HP

**Seals:** FPM

**Spring (optional):** Stainless steel, PTFE coated

**End Connections:** Flange mounted (flanges not included)



### No Spring Return

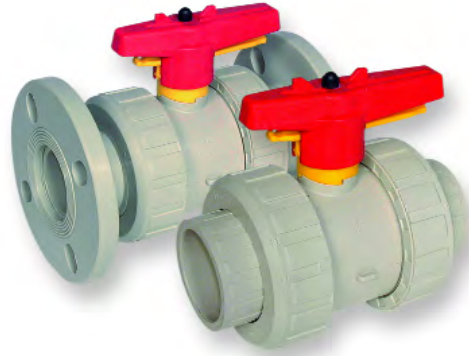
| FPM Seals | Size | Code           | Price   |
|-----------|------|----------------|---------|
|           | 40   | 72 339 1340 11 | 314.94  |
|           | 50   | 72 339 1350 11 | 326.12  |
|           | 63   | 72 339 1363 11 | 384.92  |
|           | 75   | 72 339 1375 11 | 388.65  |
|           | 90   | 72 339 1390 11 | 448.20  |
|           | 110  | 72 339 1311 11 | 564.35  |
|           | 140  | 72 339 1314 11 | 661.89  |
|           | 160  | 72 339 1316 11 | 608.28  |
|           | 225  | 72 339 1322 11 | 1545.63 |
|           | 280  | 72 339 1328 11 | 2145.71 |
|           | 315  | 72 339 1331 11 | 2739.86 |

### Stainless Steel Spring Return

| FPM Seals | Size | Code           | Price   |
|-----------|------|----------------|---------|
|           | 40   | 72 339 1140 11 | 536.82  |
|           | 50   | 72 339 1150 11 | 547.24  |
|           | 63   | 72 339 1163 11 | 584.45  |
|           | 75   | 72 339 1175 11 | 586.69  |
|           | 90   | 72 339 1190 11 | 702.09  |
|           | 110  | 72 339 1111 11 | 823.45  |
|           | 140  | 72 339 1114 11 | 972.36  |
|           | 160  | 72 339 1116 11 | 1146.57 |
|           | 225  | 72 339 1122 11 | 1724.33 |
|           | 280  | 72 339 1128 11 | 2544.77 |
|           | 315  | 72 339 1131 11 | 3345.90 |

## PP-Pure Ball Valve

**Description:** In-line double union ball valve with lockable handle  
**Mounting:** In any position  
**Maximum Fluid Pressure at 20°C:** Sizes 16mm to 75mm - 10 bar;  
 Size 90mm - 6 bar  
**Fluid Temperature Range:** 0°C - 80°C  
**Construction:**  
**Body:** Polypropylene HP **Seals:** FPM or EPDM **Seats:** PTFE  
**End Connections:** Fusion sockets, fusion spigots, BSP female threaded or flanged BS4504 EN1072 PN10



### Fusion Spigots

|            | Size | Code           | Price  |
|------------|------|----------------|--------|
| FPM Seals  | 20   | 72 335 1520 11 | 105.29 |
| PTFE Seats | 25   | 72 335 1525 11 | 125.97 |
|            | 32   | 72 335 1532 11 | 141.90 |
|            | 40   | 72 335 1540 11 | 178.69 |
|            | 50   | 72 335 1550 11 | 222.62 |
|            | 63   | 72 335 1563 11 | 282.19 |
|            | 75   | 72 335 1575 11 | 641.78 |

Also available with Fusion Socket, BSP Female Threaded or Flanged connections. Please enquire for details.

## PP-Pure Diaphragm Valve

**Description:** In-line diaphragm valve  
**Mounting:** In any position  
**Maximum Fluid Pressure at 20°C:** 10 bar  
**Fluid Temperature Range:** 0°C - 80°C  
**Construction:**  
**Body:** Polypropylene HP **Diaphragm:** PTFE (EPDM Backed)  
**End Connections:** Fusion spigots or flanged BS4504 EN1072 PN10



### Flanged BS4504 PN10

|                | Size | Code           | Price   |
|----------------|------|----------------|---------|
| PTFE Diaphragm | 20   | 72 242 1520 11 | 314.19  |
|                | 25   | 72 242 1525 11 | 341.74  |
|                | 32   | 72 242 1532 11 | 403.53  |
|                | 40   | 72 342 1740 11 | 507.04  |
|                | 50   | 72 342 1750 11 | 629.87  |
|                | 63   | 72 342 1763 11 | 787.70  |
|                | 75   | 72 242 1575 11 | 1148.06 |
|                | 90   | 72 342 1790 11 | 1489.06 |
|                | 110  | 72 342 1711 11 | 2202.31 |
|                | 140  | 72 342 1714 11 | 2991.50 |

### Fusion Spigots

|                | Size | Code           | Price   |
|----------------|------|----------------|---------|
| PTFE Diaphragm | 20   | 72 342 1520 11 | 251.65  |
|                | 25   | 72 342 1525 11 | 268.03  |
|                | 32   | 72 342 1532 11 | 310.48  |
|                | 40   | 72 342 1540 11 | 392.37  |
|                | 50   | 72 342 1550 11 | 472.02  |
|                | 63   | 72 342 1563 11 | 599.36  |
|                | 75   | 72 342 1575 11 | 1079.57 |
|                | 90   | 72 342 1590 11 | 1145.57 |
|                | 110  | 72 342 1511 11 | 1761.56 |

### Fusion Spigots - Union

|                | Size | Code           | Price  |
|----------------|------|----------------|--------|
| PTFE Diaphragm | 20   | 72 340 0020 11 | 273.25 |
|                | 25   | 72 340 0025 11 | 294.11 |
|                | 32   | 72 340 0032 11 | 323.13 |
|                | 40   | 72 340 0040 11 | 417.70 |
|                | 50   | 72 340 0050 11 | 500.32 |
|                | 63   | 72 340 0063 11 | 610.51 |

## PP-Pure T-Diaphragm Valve

**Description:** Diaphragm valve on T-branch with position indicator  
**Mounting:** In any position (usually horizontal on the run)  
**Maximum Fluid Pressure at 20°C:** 10 bar  
**Fluid Temperature Range:** 0°C - 80°C  
**Construction:**  
**Body:** Polypropylene HP **Diaphragm:** PTFE (EPDM Backed)  
**End Connections:** Fusion spigots

### Fusion Spigots

|                | Size  | Code           | Price  |
|----------------|-------|----------------|--------|
| PTFE Diaphragm | 40/20 | 72 343 4021 11 | 490.64 |
|                | 40/25 | 72 343 4026 11 | 490.64 |
|                | 40/32 | 72 343 4033 11 | 490.64 |



## pipes and fittings - metric sizes

PolyPure Natural Polypropylene piping is manufactured and protective packed using a special grade of natural polypropylene raw material. The products arrive on site clean and ready for use to handle foodstuffs, pharmaceutical chemicals, or indeed any fluid which requires extra cleanliness.

PolyPure also has another unique benefit - the pipes and fittings are translucent, allowing full visibility of the fluid flow throughout the system.

PolyPure systems are joined together using a simple butt weld technique utilising standard equipment. For guaranteed reliability, joints can also be made using the latest fully automatic SP series welding equipment. This state-of-the-art machine provides the highest quality welds, and will record all weld information, thereby allowing full traceability from raw material to installed pipework.

PolyPure contains no additives, and is FDA approved.



### PolyPure Pipe

| size | wall | kg/m  | code           | price/m |
|------|------|-------|----------------|---------|
| 20   | 2.5  | 0.136 | 16.705.0020.11 | 2.25    |
| 25   | 2.7  | 0.186 | 16.705.0025.11 | 3.14    |
| 32   | 2.9  | 0.260 | 16.705.0032.11 | 4.32    |
| 40   | 3.7  | 0.412 | 16.705.0040.11 | 6.56    |
| 50   | 4.6  | 0.638 | 16.705.0050.11 | 10.20   |
| 63   | 5.8  | 1.010 | 16.705.0063.11 | 16.23   |
| 90   | 8.2  | 2.020 | 16.705.0090.11 | 31.44   |
| 110  | 10.0 | 3.01  | 16.705.0110.11 | 46.75   |

Standard length 5 metres.



#### Pressure Ratings

PolyPure systems are suitable for use at pressures up to 10 bar at 20°C. The maximum operating temperature is 50°C.

## Tee 90°



| Size | Code           | Price |
|------|----------------|-------|
| 20   | 16.006.0020.11 | 4.08  |
| 25   | 16.006.0025.11 | 4.08  |
| 32   | 16.006.0032.11 | 5.07  |
| 40   | 16.006.0040.11 | 7.61  |
| 50   | 16.006.0050.11 | 10.20 |
| 63   | 16.006.0063.11 | 15.94 |
| 90   | 16.006.0090.11 | 47.65 |
| 110  | 16.006.0110.11 | 69.99 |



## Union

FPM Gasket

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 16.024.0020.11 | 29.78  |
| 25   | 16.024.0025.11 | 37.82  |
| 32   | 16.024.0032.11 | 46.46  |
| 40   | 16.024.0040.11 | 64.78  |
| 50   | 16.024.0050.11 | 90.23  |
| 63   | 16.024.0063.11 | 134.90 |

FDA Approved O-Ring

## Cap

Elongated

| Size | Code           | Price |
|------|----------------|-------|
| 20   | 16.064.0020.11 | 5.89  |
| 25   | 16.064.0025.11 | 6.49  |
| 32   | 16.064.0032.11 | 8.20  |
| 40   | 16.064.0040.11 | 10.14 |
| 50   | 16.064.0050.11 | 13.18 |
| 63   | 16.064.0063.11 | 17.42 |



## Multi-Bend 90°



|     |                |       |
|-----|----------------|-------|
| 20  | 16.068.0020.11 | 7.01  |
| 25  | 16.068.0025.11 | 7.29  |
| 32  | 16.068.0032.11 | 7.89  |
| 40  | 16.068.0040.11 | 9.80  |
| 50  | 16.068.0050.11 | 12.33 |
| 63  | 16.068.0063.11 | 17.64 |
| 75  | 16.068.0075.11 | 23.48 |
| 90  | 16.068.0090.11 | 34.05 |
| 110 | 16.068.0110.11 | 64.85 |

## Bend 90°



|    |                |      |
|----|----------------|------|
| 20 | 16.001.0020.11 | 5.07 |
| 40 | 16.001.0040.11 | 6.61 |
| 50 | 16.001.0050.11 | 8.34 |

Please note: Withdrawn, residual stocks only



## Female Adaptor

NPT Threaded

| Size       | Code           | Price |
|------------|----------------|-------|
| 20 x 1/2   | 16.032.2021.11 | 9.60  |
| 25 x 3/4   | 16.032.2526.11 | 10.86 |
| 32 x 1     | 16.032.3233.11 | 14.22 |
| 40 x 1 1/4 | 16.032.4041.11 | 16.23 |
| 50 x 1 1/2 | 16.032.5051.11 | 25.62 |
| 63 x 2     | 16.032.6364.11 | 32.02 |

## Male Adaptor

NPT Threaded

| Size       | Code           | Price |
|------------|----------------|-------|
| 20 x 1/2   | 16.033.2021.11 | 7.52  |
| 25 x 3/4   | 16.033.2526.11 | 9.01  |
| 32 x 1     | 16.033.3233.11 | 11.39 |
| 40 x 1 1/4 | 16.033.4041.11 | 13.69 |
| 50 x 1 1/2 | 16.033.5051.11 | 22.49 |
| 63 x 2     | 16.033.6364.11 | 28.30 |

## Elbow 90°

Elongated



|    |                |      |
|----|----------------|------|
| 20 | 16.061.0020.11 | 7.01 |
| 32 | 16.061.0032.11 | 7.89 |

Please note: Withdrawn, residual stocks only



## Elbow 45°

Elongated



|     |                |       |
|-----|----------------|-------|
| 20  | 16.060.0020.11 | 7.61  |
| 25  | 16.060.0025.11 | 8.20  |
| 32  | 16.060.0032.11 | 9.83  |
| 40  | 16.060.0040.11 | 11.55 |
| 50  | 16.060.0050.11 | 13.10 |
| 63  | 16.060.0063.11 | 24.00 |
| 90  | 16.060.0090.11 | 37.22 |
| 110 | 16.060.0110.11 | 71.34 |

## Concentric Reducer

Elongated



|       |                |       |
|-------|----------------|-------|
| 25x20 | 16.067.2520.11 | 5.07  |
| 32x20 | 16.067.3220.11 | 5.66  |
| 32x25 | 16.067.3225.11 | 5.66  |
| 50x25 | 16.067.5025.11 | 10.14 |
| 50x32 | 16.067.5032.11 | 10.14 |
| 63x32 | 16.067.6332.11 | 12.57 |
| 63x50 | 16.067.6350.11 | 12.57 |

## Concentric Reducer



|        |                |       |
|--------|----------------|-------|
| 63x16  | 16.007.6316.11 | 9.01  |
| 110x63 | 16.007.1163.11 | 19.06 |



## Stub Flange

DIN Standard

| Size | Code           | Price |
|------|----------------|-------|
| 20   | 16.012.0020.11 | 4.62  |
| 25   | 16.012.0025.11 | 4.62  |
| 32   | 16.012.0032.11 | 5.43  |
| 40   | 16.012.0040.11 | 6.12  |
| 50   | 16.012.0050.11 | 7.44  |
| 63   | 16.012.0063.11 | 9.30  |
| 90   | 16.012.0090.11 | 15.79 |
| 110  | 16.012.0110.11 | 20.24 |

Also available ANSI



## Sanitary Joint Adaptor

| Size | Code           | Price |
|------|----------------|-------|
| 20   | 16.306.0020.11 | 13.86 |
| 25   | 16.306.0025.11 | 13.86 |
| 32   | 16.306.0032.11 | 13.86 |
| 40   | 16.306.0040.11 | 16.83 |
| 50   | 16.306.0050.11 | 16.83 |
| 63   | 16.306.0063.11 | 19.81 |

Note: Sanitary clamp not included



## Seal Clean Gasket

ePTFE - DIN Standard Flange

| Size | Code           | Price |
|------|----------------|-------|
| 20   | 88.372.0020.11 | 7.02  |
| 25   | 88.372.0025.11 | 10.78 |
| 32   | 88.372.0032.11 | 14.25 |
| 40   | 88.372.0040.11 | 17.71 |
| 50   | 88.372.0050.11 | 21.04 |
| 63   | 88.372.0063.11 | 30.48 |
| 75   | 88.372.0075.11 | 43.18 |
| 90   | 88.372.0090.11 | 50.40 |
| 110  | 88.372.0110.11 | 69.13 |



## Sanitary Joint Gasket

FPM

| Size | Code           | Price          |
|------|----------------|----------------|
| 20   | 88.379.0020.21 |                |
| 25   | 88.379.0025.21 |                |
| 32   | 88.379.0032.21 | on application |
| 40   | 88.379.0040.21 |                |
| 50   | 88.379.0050.21 |                |
| 63   | 88.379.0063.21 |                |



## Stub Gasket

FPM

| Size | Code      | Price |
|------|-----------|-------|
| 20   | 862-_-005 | 2.34  |
| 25   | 862-_-007 | 3.48  |
| 32   | 862-_-010 | 4.59  |
| 40   | 862-_-012 | 7.36  |
| 50   | 862-_-015 | 8.05  |
| 63   | 862-_-020 | 10.60 |
| 90   | 862-_-030 | 20.01 |
| 110  | 862-_-040 | 34.14 |

Complete code when ordering  
Insert 'I' for NP10/16; 'A' for ANSI 150;  
'E' for Table D/E



## Sanitary Joint Twinclamp

| Size     | Code           | Price          |
|----------|----------------|----------------|
| 20/25/32 | 90.048.2032.21 |                |
| 40/50    | 90.048.4050.21 | on application |
| 63       | 90.048.0063.21 |                |



## Backing Ring

PN10

| Size | Code           | Price |
|------|----------------|-------|
| 20   | 11.014.0020.11 | 6.79  |
| 25   | 11.014.0025.11 | 7.46  |
| 32   | 11.014.0032.11 | 9.55  |
| 40   | 11.014.0040.11 | 12.11 |
| 50   | 11.014.0050.11 | 14.14 |
| 63   | 11.014.0063.11 | 16.40 |
| 90   | 11.014.0090.11 | 21.50 |
| 110  | 11.014.0110.11 | 25.57 |

Polypropylene with steel core.

## PolyPure Diaphragm Valve

**Description:** In-line diaphragm valve with position indicator

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 50°C

**Construction:**

**Body:** Polypropylene Natural

**Diaphragm:** PTFE (EPDM backed)

**End Connections:** Fusion spigots



### Fusion Spigots

PTFE Diaphragm  
(EPDM Backed)

| Size | Code           | Price  |
|------|----------------|--------|
| 20   | 16.342.1520.11 | 167.53 |
| 25   | 16.342.1525.11 | 178.69 |
| 32   | 16.342.1532.11 | 206.99 |
| 40   | 16.342.1540.11 | 262.07 |
| 50   | 16.342.1550.11 | 314.19 |
| 63   | 16.342.1563.11 | 399.83 |

## PolyPure T-Diaphragm Valve

**Description:** Diaphragm valve on T-branch with position indicator

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 50°C

**Construction:**

**Body:** Polypropylene Natural

**Diaphragm:** PTFE (EPDM backed)

**End Connections:** Fusion spigots



| Size  | Code           | Price  |
|-------|----------------|--------|
| 20/20 | 16.343.2021.11 | 261.35 |
| 32/20 | 16.343.3221.11 | 301.86 |
| 32/25 | 16.343.3226.11 | 301.86 |
| 32/32 | 16.343.3233.11 | 301.86 |
| 40/20 | 16.343.4021.11 | 314.70 |
| 40/25 | 16.343.4026.11 | 314.70 |
| 40/32 | 16.343.4033.11 | 314.70 |
| 50/20 | 16.343.5021.11 | 329.55 |
| 50/32 | 16.343.5033.11 | 329.55 |
| 63/32 | 16.343.6333.11 | 345.08 |

### Technical Resources

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## pipes and fittings - inch sizes

Harvel LXT® piping is produced from an innovative PVC compound that has been specifically formulated to reduce leachable contamination when exposed to ultra-pure water environments. Minor ingredients necessary for processing have been scrupulously selected to address their potential for contamination, and are then carefully blended in precise ratios. This results in a much cleaner material than conventional PVC compounds, and compares well with alternate materials typically used for UPW piping applications. This has been validated with extensive static and dynamic leach studies during exposure to 18.2 MΩ ultra-pure water conducted by a reputable third party.

Harvel LXT® material meets the toxicological requirements of NSF International Standard 61 as being safe for use in potable water applications, and also complies with the provisions of Title 21 of the United States FDA Code of Federal Regulations as being safe for use in food contact applications.



### LXT Pipe

| Size  | Nominal Bore | Maximum Pressure (bar) | Weight/m | O.D.(mm) | Minimum Wall (mm) | Code      | Price/L (4.57m) |
|-------|--------------|------------------------|----------|----------|-------------------|-----------|-----------------|
| 1/2   | 15           | 29                     | 0.32     | 21.4     | 2.8               | 800-005BL | 52.35           |
| 3/4   | 20           | 23                     | 0.43     | 26.5     | 2.9               | 800-007BL | 70.72           |
| 1     | 25           | 22                     | 0.63     | 33.6     | 3.4               | 800-010BL | 104.10          |
| 1 1/4 | 32           | 18                     | 0.87     | 42.2     | 3.6               | 800-012BL | 143.53          |
| 1 1/2 | 40           | 17                     | 1.06     | 48.3     | 3.7               | 800-015BL | 174.33          |
| 2     | 50           | 14                     | 1.47     | 60.3     | 3.9               | 800-020BL | 241.37          |
| 3     | 75           | 13                     | 3.00     | 88.9     | 5.5               | 800-030BL | 492.90          |
| 4     | 100          | 11                     | 4.38     | 114.3    | 6.0               | 800-040BL | 720.53          |
| 6     | 150          | 10                     | 8.36     | 168.3    | 7.1               | 800-060BL | 1670.25         |

### Tee 90°



| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 801-005BL | 5.23   |
| 3/4   | 801-007BL | 6.38   |
| 1     | 801-010BL | 9.42   |
| 1 1/4 | 801-012BL | 14.67  |
| 1 1/2 | 801-015BL | 22.01  |
| 2     | 801-020BL | 34.94  |
| 3     | 801-030BL | 100.97 |
| 4     | 801-040BL | 168.83 |
| 6     | 801-060BL | 253.25 |



### Short Radius Bend 90°

| Size  | Code       | Price |
|-------|------------|-------|
| 1/2   | 806-005SBL | 4.61  |
| 3/4   | 806-007SBL | 5.54  |
| 1     | 806-010SBL | 10.96 |
| 1 1/4 | 806-012SBL | 17.51 |
| 1 1/2 | 806-015SBL | 25.89 |
| 2     | 806-020SBL | 43.75 |

### Reducing Tee 90°



| Size    | Code      | Price  |
|---------|-----------|--------|
| 1x3/4   | 801-131BL | 8.79   |
| 1 1/2x1 | 801-211BL | 19.08  |
| 2x1     | 801-249BL | 24.16  |
| 2x1 1/2 | 801-251BL | 24.16  |
| 3x2     | 801-338BL | 44.29  |
| 4x3     | 801-422BL | 71.60  |
| 6x3     | 801-530BL | 303.76 |
| 6x4     | 801-532BL | 303.76 |



### Socket

| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 829-005BL | 2.33   |
| 3/4   | 829-007BL | 2.68   |
| 1     | 829-010BL | 4.94   |
| 1 1/4 | 829-012BL | 7.45   |
| 1 1/2 | 829-015BL | 15.34  |
| 2     | 829-020BL | 22.01  |
| 3     | 829-030BL | 35.81  |
| 4     | 829-040BL | 65.15  |
| 6     | 829-060BL | 138.30 |

### Elbow 90°



| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 806-005BL | 3.23   |
| 3/4   | 806-007BL | 3.87   |
| 1     | 806-010BL | 7.68   |
| 1 1/4 | 806-012BL | 12.26  |
| 1 1/2 | 806-015BL | 18.12  |
| 2     | 806-020BL | 30.63  |
| 3     | 806-030BL | 78.53  |
| 4     | 806-040BL | 144.98 |
| 6     | 806-060BL | 217.48 |



### Elbow 45°

| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 817-005BL | 5.18   |
| 3/4   | 817-007BL | 7.08   |
| 1     | 817-010BL | 8.51   |
| 1 1/4 | 817-012BL | 14.79  |
| 1 1/2 | 817-015BL | 16.38  |
| 2     | 817-020BL | 25.89  |
| 3     | 817-030BL | 97.38  |
| 4     | 817-040BL | 142.05 |
| 6     | 817-060BL | 213.09 |

### Union

EPDM O-Ring



| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 897-005BL | 8.93   |
| 3/4   | 897-007BL | 11.21  |
| 1     | 897-010BL | 14.67  |
| 1 1/4 | 897-012BL | 21.15  |
| 1 1/2 | 897-015BL | 28.90  |
| 2     | 897-020BL | 43.56  |
| 3     | 897-030BL | 73.81  |
| 4     | 897-040BL | 102.14 |



### Flange

ANSI 150

| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 854-005BL | 15.38  |
| 3/4   | 854-007BL | 16.46  |
| 1     | 854-010BL | 18.34  |
| 1 1/4 | 854-012BL | 18.89  |
| 1 1/2 | 854-015BL | 19.28  |
| 2     | 854-020BL | 25.64  |
| 3     | 854-030BL | 43.78  |
| 4     | 854-040BL | 55.37  |
| 6     | 854-060BL | 124.05 |

### Union

FPM O-Ring



| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 857-005BL | 10.96  |
| 3/4   | 857-007BL | 13.38  |
| 1     | 857-010BL | 18.57  |
| 1 1/4 | 857-012BL | 25.02  |
| 1 1/2 | 857-015BL | 34.94  |
| 2     | 857-020BL | 53.07  |
| 3     | 857-030BL | 90.01  |
| 4     | 857-040BL | 124.59 |



### Socket

Plain x NPT Female Thread  
ST/ST Reinforced

| Size  | Code        | Price |
|-------|-------------|-------|
| 1/2   | 835-005SRBL | 4.84  |
| 3/4   | 835-007SRBL | 5.94  |
| 1     | 835-010SRBL | 9.55  |
| 1 1/4 | 835-012SRBL | 12.32 |
| 1 1/2 | 835-015SRBL | 15.41 |
| 2     | 835-020SRBL | 29.22 |
| 3     | 835-030SRBL | 39.52 |
| 4     | 835-040SRBL | 63.43 |

### Reducing Bush



| Size        | Code      | Price  |
|-------------|-----------|--------|
| 3/4x1/2     | 837-101BL | 3.53   |
| 1x1/2       | 837-130BL | 5.21   |
| 1x3/4       | 837-131BL | 5.21   |
| 1 1/4x1/2   | 837-166BL | 7.39   |
| 1 1/4x1     | 837-168BL | 7.39   |
| 1 1/2x3/4   | 837-210BL | 10.03  |
| 1 1/2x1     | 837-211BL | 10.03  |
| 1 1/2x1 1/4 | 837-212BL | 10.03  |
| 2x1         | 837-249BL | 14.33  |
| 2x2 1/2     | 837-251BL | 14.33  |
| 3x2         | 837-338BL | 39.43  |
| 4x3         | 837-422BL | 68.25  |
| 6x4         | 837-532BL | 108.43 |



### Reducing Bush

Plain x NPT Female Thread

| Size      | Code      | Price |
|-----------|-----------|-------|
| 1/2x1/4   | 838-072BL | 4.53  |
| 1/2x3/8   | 838-073BL | 4.53  |
| 3/4x1/4   | 838-098BL | 2.98  |
| 3/4x1/2   | 838-101BL | 2.98  |
| 1x3/8     | 838-129BL | 4.70  |
| 1x1/2     | 838-130BL | 4.70  |
| 1x3/4     | 838-131BL | 4.70  |
| 1 1/2x3/4 | 838-210BL | 12.34 |

### Reducing Bush

Plain x NPT Female Thread  
ST/ST Reinforced

| Size    | Code        | Price |
|---------|-------------|-------|
| 1/2x1/4 | 838-072SRBL | 9.66  |
| 3/4x1/4 | 838-098SRBL | 13.34 |
| 1x1/4   | 838-128SRBL | 13.71 |



### Cap



| Size  | Code      | Price  |
|-------|-----------|--------|
| 1/2   | 847-005BL | 4.99   |
| 3/4   | 847-007BL | 5.24   |
| 1     | 847-010BL | 9.32   |
| 1 1/4 | 847-012BL | 11.25  |
| 1 1/2 | 847-015BL | 16.06  |
| 2     | 847-020BL | 22.20  |
| 3     | 847-030BL | 53.09  |
| 4     | 847-040BL | 89.52  |
| 6     | 847-060BL | 188.09 |



### Adaptor

Plain Socket x NPT Male Thread

| Size  | Code      | Price |
|-------|-----------|-------|
| 1/2   | 836-005BL | 5.93  |
| 3/4   | 836-007BL | 6.56  |
| 1     | 836-010BL | 11.36 |
| 1 1/4 | 836-012BL | 13.27 |
| 1 1/2 | 836-015BL | 19.08 |
| 2     | 836-020BL | 27.57 |
| 3     | 836-030BL | 43.51 |
| 4     | 836-040BL | 61.89 |



### Reducing Socket



| Size        | Code      | Price  |
|-------------|-----------|--------|
| 3/4x1/2     | 829-101BL | 6.22   |
| 1x3/4       | 829-131BL | 9.07   |
| 1 1/4x1     | 829-168BL | 18.42  |
| 1 1/2x1     | 829-211BL | 19.32  |
| 1 1/2x1 1/4 | 829-212BL | 23.87  |
| 2x1         | 829-249BL | 21.79  |
| 2x1 1/2     | 829-251BL | 21.79  |
| 3x2         | 829-338BL | 53.46  |
| 4x2         | 829-420BL | 101.93 |
| 4x3         | 829-422BL | 98.11  |
| 6x4         | 829-532BL | 127.60 |

### Tank Adaptor

Plain x NPT Female Thread EPDM Gasket

| Size  | Code       | Price  |
|-------|------------|--------|
| 1/2   | 871E-005BL | 19.17  |
| 3/4   | 871E-007BL | 21.91  |
| 1     | 871E-010BL | 24.29  |
| 1 1/4 | 871E-012BL | 29.29  |
| 1 1/2 | 871E-015BL | 32.18  |
| 2     | 871E-020BL | 47.66  |
| 3     | 871E-030BL | 87.72  |
| 4     | 871E-040BL | 172.86 |

### LXT Cement

| Size              | Code     | Price |
|-------------------|----------|-------|
| Pint (473ml) tin  | LXT5-020 | 20.65 |
| Quart (946ml) tin | LXT5-030 | 33.62 |

## LXT Diaphragm Valve

**Description:** In-line diaphragm valve with position indicator

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 60°C

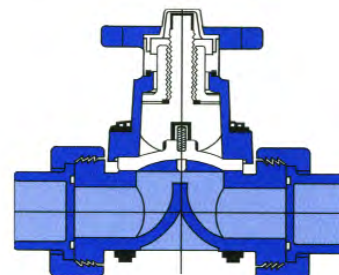
**Construction:**

**Body:** LXT

**Diaphragm:** PTFE (EPDM Backed)

**Seals:** EPDM

**End Connections:** Solvent Sockets, NPT Female Threaded (both supplied with valve)



### Inch Solvent Cement Unions

PTFE Diaphragm  
EPDM Seals

| Size  | Code        | Price  |
|-------|-------------|--------|
| 1/2   | 2729T-005BL | 185.54 |
| 3/4   | 2729T-007BL | 199.35 |
| 1     | 2729T-010BL | 233.00 |
| 1 1/4 | 2729T-012BL | 314.98 |
| 1 1/2 | 2729T-015BL | 382.31 |
| 2     | 2729T-020BL | 502.26 |

## LXT True Union Ball Valve

**Description:** In-line double union valve

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** Sizes 1/2" to 2" - 16 bar; Sizes 3" to 4" - 10 bar

**Fluid Temperature Range:** 0°C - 60°C

**Construction:**

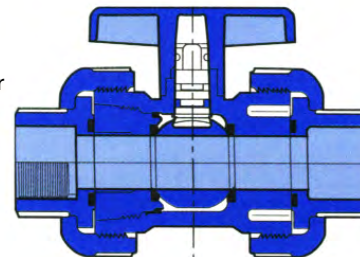
**Body:** LXT

**Seats:** PTFE

**Seals:** EPDM or FPM

**End Connections:** Solvent Sockets, NPT Female Threaded

Sizes 1/2" to 2" have both plain and threaded connections supplied with valve



### Inch Solvent Cement Unions

EPDM Seals  
PTFE Seats

| Size  | Code       | Price  |
|-------|------------|--------|
| 1/2   | 2329-005BL | 70.76  |
| 3/4   | 2329-007BL | 86.72  |
| 1     | 2329-010BL | 110.02 |
| 1 1/4 | 2329-012BL | 145.84 |
| 1 1/2 | 2329-015BL | 190.72 |
| 2     | 2329-020BL | 269.25 |
| 3     | 2329-030BL | 498.24 |
| 4     | 2329-040BL | 842.29 |

### Inch Solvent Cement Unions

FPM Seals  
PTFE Seats

| Size  | Code       | Price   |
|-------|------------|---------|
| 1/2   | 2339-005BL | 82.64   |
| 3/4   | 2339-007BL | 97.76   |
| 1     | 2339-010BL | 132.44  |
| 1 1/4 | 2339-012BL | 184.78  |
| 1 1/2 | 2339-015BL | 241.98  |
| 2     | 2339-020BL | 316.73  |
| 3     | 2339-030BL | 615.57  |
| 4     | 2339-040BL | 1040.04 |

## LXT Lab Fixtures

**Description:** Gooseneck or panel style laboratory valve

**Mounting:** Bench or panel mount

**Maximum Fluid Pressure at 20°C:** 10 bar

**Fluid Temperature Range:** 0°C - 60°C

**Construction:**

**Body:** LXT

**Seats:** PTFE

**Seals:** EPDM

**End Connections:** 3/8" NPT Female Threaded

### Gooseneck Style Bench Mounted

| Size | Code      | Price  |
|------|-----------|--------|
| 3/8  | LF1002-BL | 226.18 |

### Turret Style Panel Mounted

| Size | Code      | Price  |
|------|-----------|--------|
| 3/8  | LF3002-BL | 225.50 |

## LXT Horizontal T-Port Ball Valve

**Description:** In-line horizontal 3-way T-port ball valve

**Mounting:** In any position

**Maximum Fluid Pressure at 20°C:** Sizes 1/2" to 2" - 16 bar; Sizes 3" to 4" - 10 bar

**Fluid Temperature Range:** 0°C - 60°C

**Construction:**

**Body:** LXT

**Seats:** PTFE

**Seals:** EPDM

**End Connections:** Solvent Sockets, NPT Female Threaded

Sizes 1/2" to 2" have both plain and threaded connections supplied with valve

### Inch Solvent Cement Unions

|            | Size      | Code         | Price   |
|------------|-----------|--------------|---------|
| EPDM Seals | 1/2       | 182901-005BL | 257.16  |
| PTFE Seats | 3/4       | 182901-007BL | 281.01  |
|            | 1         | 182901-010BL | 286.30  |
|            | 2         | 182901-020BL | 293.89  |
|            | 3/4x1/2   | 182901-101BL | 261.39  |
|            | 1x1/2     | 182901-130BL | 271.19  |
|            | 1x3/4     | 182901-131BL | 286.30  |
|            | 1 1/4x1/2 | 182901-166BL | 290.10  |
|            | 1 1/4x3/4 | 182901-167BL | 291.61  |
|            | 1 1/4x1   | 182901-168BL | 334.25  |
|            | 1 1/2x1/2 | 182901-209BL | 325.84  |
|            | 1 1/2x3/4 | 182901-201BL | 291.61  |
|            | 1 1/2x1   | 182901-211BL | 346.85  |
|            | 2x1/2     | 182901-247BL | 372.08  |
|            | 2x3/4     | 182901-248BL | 401.48  |
|            | 2x1       | 182901-249BL | 302.34  |
|            | 2x1 1/2   | 182901-251BL | 461.11  |
|            | 3x1/2     | 182901-333BL | 489.81  |
|            | 3x1       | 182901-335BL | 489.81  |
|            | 3x1 1/2   | 182901-337BL | 584.40  |
|            | 3x2       | 182901-338BL | 641.16  |
|            | 4x1       | 182901-417BL | 630.66  |
|            | 4x1 1/2   | 182901-419BL | 702.13  |
|            | 4x2       | 182901-420BL | 836.65  |
|            | 6x2       | 182901-528BL | 1092.81 |
|            | 8x2       | 182901-578BL | 1612.36 |

## LXT True Union Ball Check Valve

**Description:** In-line ball check valve

**Mounting:** Vertical

**Maximum Fluid Pressure at 20°C:** Sizes 1/2" to 2" - 16 bar; Sizes 3" to 4" - 10 bar

**Fluid Temperature Range:** 0°C - 60°C

**Construction:**

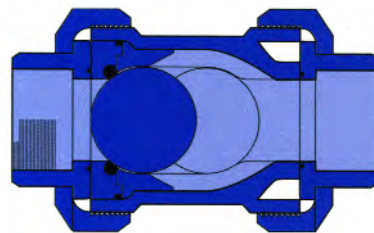
**Body:** LXT

**Seats:** PTFE

**Seals:** EPDM

**End Connections:** Solvent Sockets, NPT Female Threaded

Sizes 1/2" to 2" have both plain and threaded connections supplied with valve



### Inch Solvent Cement Unions

|            | Size  | Code       | Price   |
|------------|-------|------------|---------|
| EPDM Seals | 1/2   | 2229-005BL | 103.57  |
| PTFE Seats | 3/4   | 2229-007BL | 125.15  |
|            | 1     | 2229-010BL | 143.25  |
|            | 1 1/4 | 2229-012BL | 253.71  |
|            | 1 1/2 | 2229-015BL | 268.40  |
|            | 2     | 2229-020BL | 448.76  |
|            | 3     | 2229-030BL | 630.01  |
|            | 4     | 2229-040BL | 1181.79 |

### Inch Solvent Cement Unions

|            | Size  | Code       | Price   |
|------------|-------|------------|---------|
| FPM Seals  | 1/2   | 2239-005BL | 114.78  |
| PTFE Seats | 3/4   | 2239-007BL | 138.08  |
|            | 1     | 2239-010BL | 155.50  |
|            | 1 1/4 | 2339-012BL | 263.22  |
|            | 1 1/2 | 2239-015BL | 284.93  |
|            | 2     | 2239-020BL | 466.02  |
|            | 3     | 2239-030BL | 671.01  |
|            | 4     | 2239-040BL | 1245.13 |