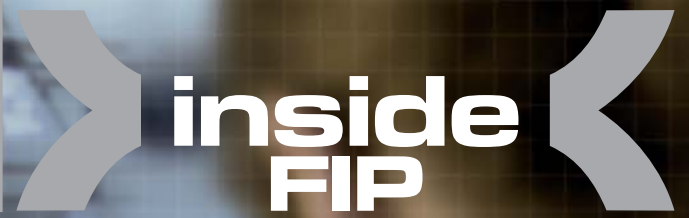


# inside FIP



FORMATURA  
INIEZIONE  
POLIMERI



## personality

Creativity, innovation, consciousness, competence: in FIP all our energies are devoted to the market needs.



Since more than 50 years we design and produce injection moulded valves and fittings in thermoplastic materials for pressure pipeline systems.

We increase our knowledge taking care to the experience and the needs of those who work to offer the most suitable solutions according the application.

**We like challenging  
the market to find  
innovative  
solutions:  
growing means  
having new ideas,  
improving and  
getting on,  
always...**



## **Worldwide leading actors**

We are constantly developing products featuring design, innovation, functionality, reliability and safety.

We are specialists in the production of valves, we design and produce in Europe to operate throughout the world.

We offer complete solutions process and service lines.

**Our products  
are reference points  
for the sector.**



**World Wide**



## **A real commitment**

We are constantly investing in research and development and process technologies to improve the product offer and production efficiency and logistics.

To satisfy our customers needs, we operate with Quality System in accordance with ISO 9001.

We take care of the environment to protect people and natural resources, with standard ISO 14001.

## **Innovation, Quality and Caring for the Environment.**



**Innovation**



# FIP inside

## Solutions

Applied Research in chemical-physical characteristics of thermoplastic materials have found that these materials are strongly resistant to chemical and electrochemical corrosion, during the industrial moving of fluids.

Taking advantage of thermoplastic resins' versatility, you can implement valves and fittings, that are suitable to various needs, according to the application required.

FIP is studying and offering proper solutions for industrial systems in chemical, textile, pharmaceutical, food, electronic, mining and other fields; in order to produce highly efficient products, operating in environments where high temperatures and aggression of fluids demand reliable and long lasting products.

## PP-H System



The PP-H range in homopolymer Propylene includes a complete series of ball valves, butterfly valves, diaphragm valves, check valves, sediment strainers, pipes and fittings for heat socket fusion, fittings for butt welding, to be used in the construction of process and service lines for the convey under pressure of industrial fluids at maximum operating temperatures of 100°C.

The entire range is made of the last generation of homopolymer polypropylene resins MRS 100 ( PP-H 100 ) according the classification DIN 8077-8078, DIN 16962 and approved by DIBT - Deutsche Institut für Bautechnik for use in industrial processes.

Main properties and characteristics:

- > **High chemical resistance:** the use of PP-H resins guarantees excellent chemical resistance especially in case of halogens and alkaline solutions and enables constant optimal mechanical properties thanks to the use of special additives. PP-H resins are totally compatible also for the convey of raw and drinking water, demineralised water and spa water for therapeutic and kinotherapeutic applications
- > **Optimal thermal stability:** mainly in the intermediate temperature range from 10°C to 80 °C PP-H finds its ideal application in industry, guaranteeing excellent mechanical and impact resistance with high safety factors.
- > **Lifetime:** PP-H resins have a high value in the circumferential breaking strength (Minimum Required Strength MRS = 10.0 MPa at 20°C) and ensure extremely extended lifetime of installations, without signs of significant mechanical or physical deterioration.



<b>Material:</b>	PP-H (100) Polypropylene homopolymer
<b>Colour:</b>	RAL 7032 – beige
<b>Reference Standards:</b>	<ul style="list-style-type: none"> <li>&gt; Socket Fusion and Butt</li> <li>&gt; Welding according to DIN 16962 for coupling to pipes complying with DIN 8077 - UN 8318 EN ISO 15494 - BS 4991</li> <li>&gt; Parallel threads according to UNI ISO 228/1- DIN 2999- BS 21</li> <li>&gt; Flanging according to ISO 2084, DIN 8063, DIN2501, ANSI B16.5 150</li> </ul>
<b>Range:</b>	<p>Pipe: from d20 mm to d400 mm</p> <p>Fittings:</p> <ul style="list-style-type: none"> <li>&gt; Butt Welding from d20 mm to d400 mm</li> <li>&gt; Socket Fusion from d20 mm to d110 mm, threaded from R½" up to R2"</li> </ul> <p>Valves:</p> <ul style="list-style-type: none"> <li>&gt; Ball valves: from d16 mm to d110 mm</li> <li>&gt; Butterfly valves: from d50 mm to d315 mm</li> <li>&gt; Diaphragm valves: from d16 mm to d110 mm</li> <li>&gt; Check valves: from d20 mm to d315 mm</li> <li>&gt; Sediment strainer: from d20 mm to d110 mm</li> </ul>
<b>Working Pressure classes:</b>	PN10 bar
<b>Working temperature range:</b>	from 0 °C to 100 °C



# autom

FIP produces its valves in accordance to the PED regulation 97 /23/CE for pressure fixtures, and the guidelines drawn by the new European standards EN 16135, EN 16136, EN 16137, EN 16138.

## PVDF System



The range in PVDF includes a complete series of ball valves, butterfly valves, diaphragm valves, check valves, pipes and fittings for heat socket fusion, to be used in the construction of process lines and service lines to convey industrial fluids in the operating temperature range from  $-40^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$ . The entire range is produced in **SOLEF™** resins by SOLVAY S.A. classified according to ASTM D 3222 and compliant with requirements stated in ISO/WD 10931 for the use of PVDF pipeline systems in industrial processes.

Main properties and characteristics:

- > **Excellent chemical resistance:** The characteristics of PVDF remain unchanged in a temperature range of  $-40^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$ . The PVDF pipeline systems is therefore ideal for all applications where high operating temperatures are required, with an extremely low level of fluid contamination, and optimal resistance to ageing under the effect of atmospheric agents and UV radiation.
- > **Excellent thermal stability:** The characteristics of PVDF remain unchanged in a temperature range of  $-40^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$ . The PVDF pipeline systems is therefore ideal for all applications where high operating temperatures are required, with an extremely low level of fluid contamination, and optimal resistance to ageing under the effect of atmospheric agents and UV radiation.
- > **Fire resistance:** SOLEF™ resins guarantee optimal fire resistance without the need for flame retardants (Limit of Oxygen Index, LOI=44%). Also, smoke emissions during combustion are moderate. SOLEF™ PVDF resins are classified UL-94, class V-0.
- > **Purity:** SOLEF™ PVDF resin is an extremely pure polymer, which, unlike other plastic materials does not contain stabilizers, plastifiers, lubricants or flame retardants. It is therefore ideal to convey ultra-pure water and chemicals, where contamination-free properties are required with respect to the conveyed fluid.
- > **Lifetime:** SOLEF™ PVDF resins feature a high value in the circumferential breaking strength (Minimum Required Strength MRS = 25.0 MPa at  $20^{\circ}\text{C}$ ) and ensure extremely extended lifetime of installations, without signs of significant mechanical or physical deterioration.

<b>Material:</b>	PVDF Polyvinylidene Fluoride - Compound SOLEF® 1008
<b>Colour:</b>	translucent white
<b>Reference Standards:</b>	<ul style="list-style-type: none"> <li>&gt; Socket Fusion according to ISO 10931 for coupling to pipes complying with ISO 10931</li> <li>&gt; Flanging ISO 2084, DIN 8063, DIN 2501, ANSI B16.5 150</li> </ul>
<b>Range:</b>	Pipe: from d16 mm to d110 mm Fittings: Socket Fusion from d16 mm to d110 mm Valves: <ul style="list-style-type: none"> <li>&gt; Ball valves: from d16 mm to d110 mm</li> <li>&gt; Butterfly valves: from d50 mm to d315 mm</li> <li>&gt; Diaphragm valves: from d16 mm to d110 mm</li> <li>&gt; Check valves: from d20 mm to d63 mm</li> </ul>
<b>Working Pressure classes:</b>	PN16 bar
<b>Working temperature range:</b>	From $-40^{\circ}\text{C}$ to $+140^{\circ}\text{C}$

## Automation

Moreover, referring to Industrial, FIP obtained the TA-Luft certification concerning the limitations of light through the upper hemisphere, passing hardest tests VDI2440 and PAS. Another strong involvement in the protection of the environment and all the people who manage the installations.

All valves, two or three-way, can be motorized by electrical or pneumatic actuators, fulfilling the requirements of the automation market and flow control. The large number of accessories complete the different functions of the system, from the simple reporting status, to the transmission and position control, through both analogical and digital, traditional or BUS systems.

# C-PVC TemperFIP 100 System



<b>Material:</b>	C-PVC Chlorinated Polyvinylchloride, made of CORZAN® resins only.
<b>Colour:</b>	RAL 215 - Light grey
<b>Reference Standards:</b>	<ul style="list-style-type: none"> <li>&gt; Solvent welding (by means of GLUE TEMPERFIP) - metric size according to ISO 727, inches series according to ASTM F439</li> <li>&gt; Parallel threads according to DIN 2999, BS 21, ISO-UNI 228/1</li> <li>&gt; Flanging ISO 2084, DIN 8063, DIN 2501, ANSI B16.5 150</li> </ul>
<b>Range:</b>	Pipe: from d16 mm to d160 mm Fittings: > socket from d16 mm to d160 mm; > Threaded BSP: from R1/2" to R2" Valves: > Ball valves: from d16 mm to d110 mm > Butterfly valves: from d50 mm to d315 mm > Diaphragm valves: from d20 mm to d110 mm > Check valves: from d20 mm to d63 mm > Sediment strainer: from d20 mm to d63 mm
<b>Working Pressure classes:</b>	PN16 bar
<b>Working temperature range:</b>	From 0 °C to 100 °C

The **C-PVC TEMPERFIP100** system includes a complete range of ball valves, butterfly valves, diaphragm valves, check valves and sediment strainers, pipes and fittings for solvent welding to convey industrial fluids under pressure at a maximum operating temperatures of 100°C. The system includes also the Primer Cleaners and the TEMPERGLUE Solvent Cements that assure long lasting high quality joints. The entire range is made of **CORZAN™** C-PVC resins, classified to ASTM D1784 –23447-B and complying with DIN 8079, DIN 8080 and EN ISO 15493 requirements for industrial processes plastic pipeline systems applications.

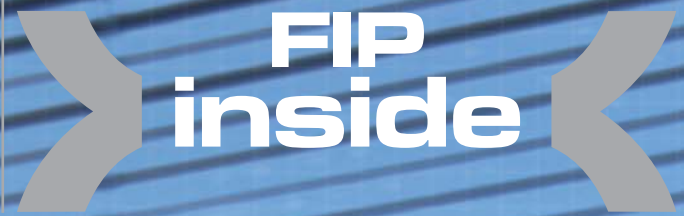
Main properties and characteristics:

- > **High chemical resistance:** the use of **CORZAN™** resins, obtained from processes of post-chlorination of homopolymer PVC is a guarantee of high chemical resistance, especially to strong inorganic acids, bases and alkaline solutions, besides the optimal mechanical properties remain unchanged during the transfer of hot industrial fluids. **CORZAN™** resins offer total compatibility also for the transfer of treated and untreated drinking water as well as demineralised water and spa water for therapeutic and kinotherapeutic applications.
- > **Optimal thermal stability:** above all in the intermediate temperature range from 20°C to 85 °C C-PVC is ideal for industrial applications, guaranteeing optimal mechanical resistance, good rigidity, very low coefficients of thermal expansion and optimal safety factors in service.
- > **Resistance to fire:** **CORZAN™** C-PVC resins guarantee excellent resistance to fire, thanks to a flame onset temperature of 482°C and a high limit of oxygen index LOI = 60%. **CORZAN™** C-PVC resins are classified VO, 5VB e 5VA to UL94.
- > **Lifetime:** **CORZAN™** C-PVC resins feature a high value in the circumferential breaking strength (Minimum Required Strength MRS = 25.0 MPa at 20°C) and ensure extremely extended lifetime of installations, without signs of significant mechanical or physical deterioration.



Thanks to a high degree of flexibility, the "Automation" division FIP aims to satisfy the customer's specific requirements to make the product even more personal; FIP can also provide actuators and accessories in agreement with the ATEX Directive 94 /9/CE, suitable for installation in so-called "dangerous" areas, because of potentially explosive atmospheres.





## Every where

The success of thermoplastic materials in particularly demanding fields, together with the ease of installation, the minimum maintenance and long life, has brought them even in most conventional pressure pipeline systems.

Everywhere, an increasing number of water distribution systems, such as water treatment (house and industrial), irrigation, gardening, farming (field and greenhouse), sports facilities, swimming-pool, aqua parks, baths, are made of thermoplastic materials.

Thanks to the extreme versatility of FIP valves and components, and their high costs/performance ratings, you can choose the most appropriate solution, according to the application.



# U-PVC Manual Valves

The U-PVC range includes ball valves, butterfly valves, diaphragm valves as well as check valves, sediment strainers, air release, foot valves, angle seat valves to be used in the construction of process and service lines to convey industrial fluids at maximum operating temperatures of 60°C.

The entire range is produced using U-PVC resins complying with the standards UNI EN 1452 and in observance to the requirements of DIN 8063 and EN ISO 15493 for the use of plastic pipes in industrial processes.

Main properties and characteristics

- > **Good chemical resistance:** U-PVC resins guarantee excellent chemical resistance with regard to most acids and alkalis, aliphatic hydrocarbons and saline solutions. U-PVC resins are also totally compatible for the handling of food grade fluids, treated and untreated drinking water, as well as demineralised water according to current national and international standards.
- > **Good thermal stability:** Mostly in the intermediate temperature range between 20°C and 50°C, U-PVC finds its ideal application in industrial and water supplies, assuring optimal performance in terms of mechanical resistance, good rigidity, low coefficients of thermal expansion and optimal safety factors in service.
- > **Lifetime:** U-PVC resins feature is an high value in the material strength (Minimum Required Strength MRS = 25.0 Mpa at 20°C) and an extremely extended lifetime.



U-PVC  
Manual  
Valves



<b>Material:</b>	U-PVC Unplasticized Polyvinyl Chloride
<b>Colour:</b>	Grey
<b>Reference Standards:</b>	<ul style="list-style-type: none"> <li>&gt; Solvent welding: metric size according to ISO 727, UNI EN 1452, DIN 8063</li> <li>&gt; Solvent welding: plain inch according to BS 4346/1, plain tapered to ASTM 2467/76 and JIS standard</li> <li>&gt; Parallel threads according to UNI ISO 228/1, DIN 2999, BS 21; tapered threads to ASA B 2.1 and JIS standard</li> <li>&gt; Connection with stub flanges according to ISO 2084, DIN 8063, DIN 2501, UNI EN 1452, ANSI B16.5 150</li> </ul>
<b>Range:</b>	<ul style="list-style-type: none"> <li>&gt; Ball valves: from d16 mm to d110 mm</li> <li>&gt; Butterfly valves: from d50 mm to d315 mm</li> <li>&gt; Diaphragm valves: from d12 mm to d110 mm</li> <li>&gt; Check valves: from d16 mm to d315 mm</li> <li>&gt; Sediment strainer: from d16 mm to d110 mm</li> </ul>
<b>Working Pressure classes:</b>	PN16 20 °C
<b>Working temperature range:</b>	From 0 °C to 60 °C



# U-PVC Fittings



The U-PVC range is a complete range of fittings for solvent welding, threaded connection for use in the construction of process and service lines to convey industrial fluids at maximum operating temperatures of 60°C. The entire range is produced using U-PVC resins compliant with the standards EN 1452 and ISO 4422 and in observance of the requirements of DIN 8063 and EN ISO 15493 for the use of plastic pipes in industrial processes.

Main properties and characteristics:

- > **Good chemical resistance:** U-PVC resins guarantee excellent chemical resistance with regard to most acids and alkalis, aliphatic hydrocarbons and saline solutions. U-PVC resins are also totally compatible for the handling of food grade fluids, treated and untreated drinking water, as well as demineralised water according to current national and international standards.
- > **Good thermal stability:** Mostly in the intermediate temperature range between 20°C and 50°C, U-PVC finds its ideal application in industrial and water supplies, assuring optimal performance in terms of mechanical resistance, good rigidity, low coefficients of thermal expansion and optimal safety factors in service.
- > **Lifetime:** U-PVC resins feature is an high value in the material strength (Minimum Required Strength MRS = 25.0 Mpa at 20°C) and an extremely extended lifetime.

<b>Material:</b>	U-PVC Unplasticized Polyvinyl Chloride
<b>Colour:</b>	Grey
<b>Reference Standards:</b>	> Solvent welding: metric size according to ISO 727, UNI EN 1452, DIN 8063, ISO 15493; inch ends according to BS 4346/1. > Parallel threads according to UNI ISO 228/1, DIN 2999, BS 21
<b>Range:</b>	Fittings: > socket from d12 mm to d315 mm > socket, in inches, from R <sup>3</sup> / <sub>8</sub> " to 4"
<b>Working Pressure classes:</b>	PN16 bar
<b>Working temperature range:</b>	From 0 °C to 60 °C



U-PVC Fittings



# MAGNUM<sup>®</sup> Systems



**MAGNUM<sup>®</sup>** is a system of polypropylene mechanical compression fittings specifically designed to join PE pipes with U-PVC, PVC-C, PP, PE-X, copper, lead and steel pipes through a combination of specific quick release connections and several patented tightening mechanisms.

The **MAGNUM<sup>®</sup>** System is very flexible, since it is composed of four different series of fittings, always supplied in pre-mounted configurations: **Magnum, MagnumMAX, MagnumUNI, MagnumOT.**

The specific configuration of the compression chamber and the special design of the internal sealing components, which are mechanically fitted together, provide a reliable hydraulic and mechanical sealing and an easy insertion of the pipe (without any preparation) through a reduced interference and a user friendly installation even in critical conditions.

**MAGNUM<sup>®</sup>** provides a high mechanical resistance, derived from a strong framework and a wide insertion depth, plus an exceptional resistance to corrosion.

**MAGNUM<sup>®</sup>** is therefore the ideal solution for several applications: water supply, irrigation, gardening, swimming pool systems, mining and telecommunications.

Adopting the special clinching ring ZCKO, instead of the standard one, MagnumOT can also be used to join pipes in all plastic materials (U-PVC-PVC-C, PP, PE-X) for diameters ranging from d16 mm to d63 mm.

<b>Reference standards:</b>	<ul style="list-style-type: none"><li>&gt; Compression system according to ISO 14236, UNI 9561, UNI 9562, DIN 8076-3</li><li>&gt; Parallel threads according to ISO 7, BS 21, DIN 2999</li></ul>
<b>Range:</b>	<ul style="list-style-type: none"><li>&gt; Magnum and MagnumMAX from d16 to d110</li><li>&gt; Magnum OT from d20x1/2" to d63x2"</li><li>&gt; Magnum UNI from d20x15-21 to d32x27-34</li></ul>
<b>Working pressure classes:</b>	PN16 bar





**FORMATURA**  
**INIEZIONE**  
**POLIMERI**

Since 1954 FIP produces injection moulded valves and fittings in thermoplastic materials for pressure pipeline systems thus becoming nowadays the largest European valves manufacturer.

FIP is a company of the Aliaxis Group: a worldwide industrial holding gathering together a series of companies manufacturing and marketing plastic plumbing products for building industrial and public utilities applications.

FIP products are manufactured on EU production sites, operating to the Quality Assurance System in compliance with ISO 9001 and with the Environmental Management System ISO 14001 standards requirements.

In FIP products there are over 50 years of know-how powered by a strong quest for innovation.

**FIP**  
**Formatura**  
**Iniezione**  
**Polimeri**

Loc. Pian di Parata  
16015 Casella Genova Italy  
tel. +39 010 9621.1  
fax +39 010 9621.209  
info@fipnet.it  
www.fipnet.it

