



*Streaming Water.
Streaming Life!*

SWIVEL FITTINGS TECHNICAL MANUAL

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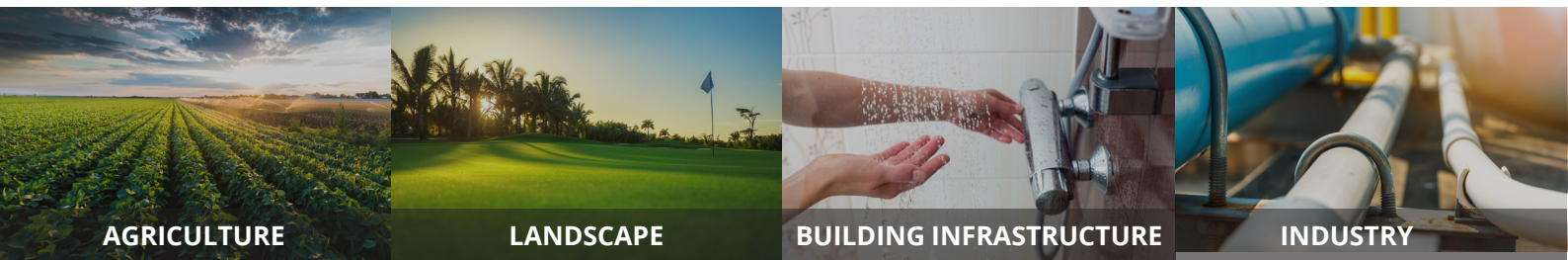
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HISTORY

Founded in 1969, Elysée was initially dedicated to the cultivation of flowers. This gave the founders firsthand experience and a full understanding of the diversity of irrigation needs. With such knowledge and experience, the natural next step in the business was to start designing and developing irrigation systems. This was a stepping-stone to further expansion, this time into the field of water supply and piping systems.

Elysée manufactures and supplies piping systems & fittings for Building & Infrastructure, Irrigation, Landscape and Industry.

Based in Cyprus, a key location at crossroads of three continents, Elysée serves more than 65 destinations in Europe, the Middle East, South Africa, Japan, Australia and New Zealand.



OUR VISION

"To be a green leader worldwide through Innovative, Smart, Easy to use Piping Systems."

GREEN COMPANY

Elysée acknowledges that businesses have a tremendous impact to climate change and can help in the fight against it. For this reason, we are setting a strategic approach to help us ultimately lead the way to a circular economy model, a testimony of our commitment to quality, towards the fulfillment of our goals for sustainability. Generally, a company's minimized carbon footprint is what leads to carbon neutrality. We are dedicated to our dream to guide Life on a green path. Our goal is to continue striving for becoming a leading sustainable world supplier in piping systems, thus, keep offering to the public a wide selection of the most trustworthy products and of the highest standards. At the same time, we are taking all the necessary steps to ultimately become a Green Leader and an exemplary model for other Cypriot & European businesses.

STREAMING WATER. STREAMING LIFE.

Our love for water led to Elysée conception. From all the resources in the planet we consider water as the most valuable. Water is a living cycle. It moves, transforms and makes life possible. Our respect for the value of natural resources and our commitment to preserve them has always been Elysée's primary concern.



WHY ELYSÉE

- **Green company.** Elysée acknowledges that businesses have a tremendous impact to climate change and can help in the fight against it. For this reason, we are setting a strategic approach to help us ultimately lead the way to a circular economy model.
- **Easy to Use.** Elysee products are developed in close collaboration with end users. Designed for durability, simplicity of installation, and long-term performance.
- **Know-how.** Elysee has a strong position in the Plastic Piping Systems market because to its 40 years of expertise.
- **Truly International.** Presence in more than 65 countries in all 5 continents through an ever-increasing family of distributors.
- **Reliability & Quality Assurance.** Elysee is certified by the most reputable international standardization organizations such as DVGW, OVGW, WRAS and KIWA among others.

RESEARCH AND DEVELOPMENT

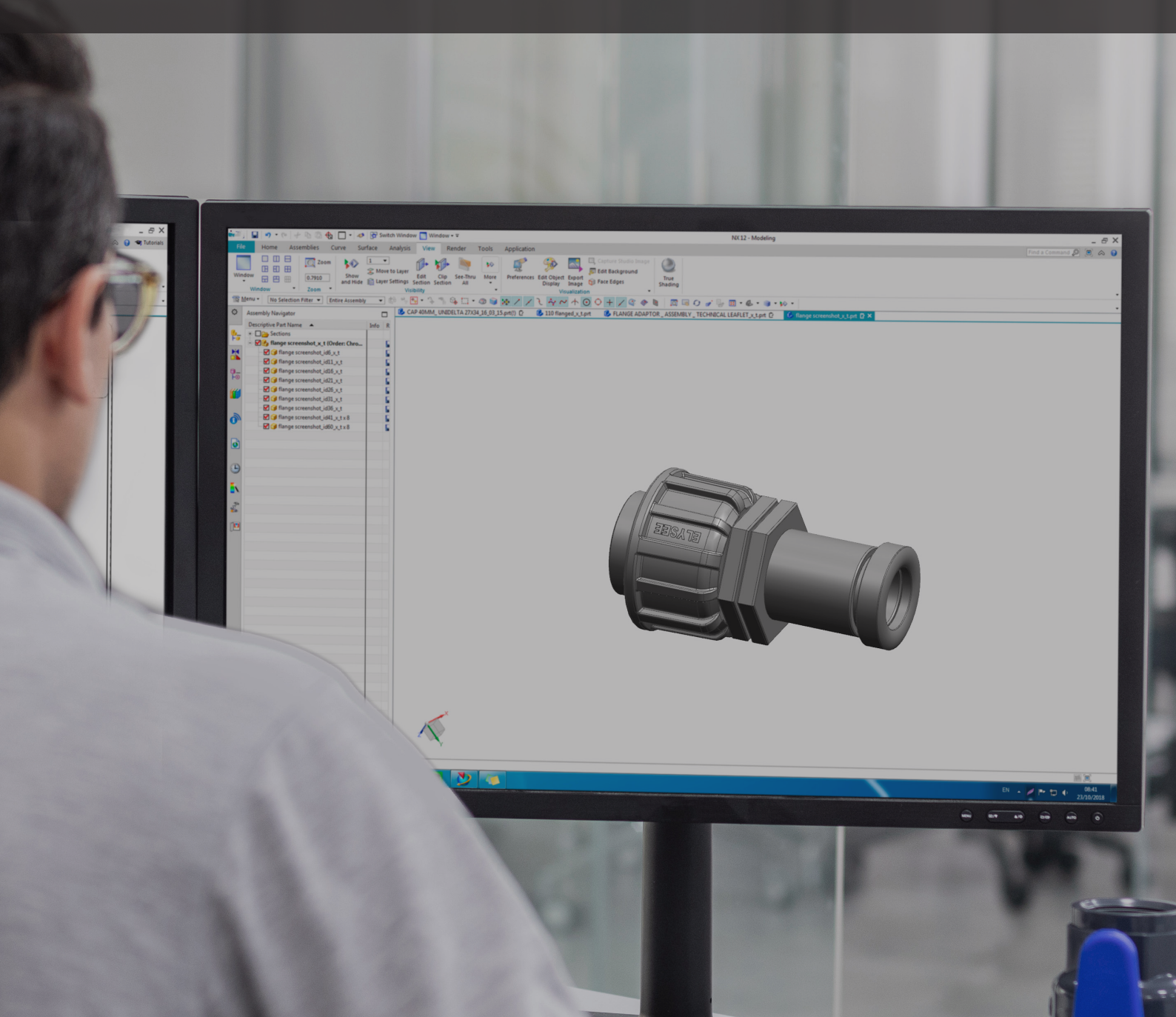
Since 2005, Elysée has made significant investments in Research and Development (R&D) activities. The company establishes an in-house R&D department to conduct significant research and innovation activities, increasing the company's competitive edge over the competitors. Indeed, R&D is critical to the business brand and performance both locally and worldwide.

Several patents and industrial designs have been granted, with others pending.

The R&D team is made up of great mechanical engineers and product designers that work on many projects with the goal of designing and developing breakthrough product solutions as well as re-engineering the current ones.

3D printing and CNC machines are used for prototyping new parts and testing methods to ensure quality requirements are met. 3D scanners and smart measuring devices are assigned for reserve engineering, improving and inspecting current products. Moreover, the R&D team contributes to the enhancement of all production stages, assuring productivity, procedure implementation, and operational efficiency.

Furthermore, Elysée focuses on Research, Technology and Innovation research through innovative actions and funding programs.



QUALITY A MATTER OF PRINCIPLE AND PRACTICE

Quality has been a primary element guiding Elysée activities from its beginnings. By introducing and implementing a quality management system, we monitor our operations and efficiency, to enhance our overall performance. Today, Elysée Irrigation Ltd is delighted to have globally recognized pipe system accreditation, demonstrating its dedication to excellence. Elysée has kept quality as the key foundation of all its operations, hence being reputable for its high-quality products in all aspects.

Our Quality Control (QC) team is composed of potent mechanical and technical engineers, along with highly trained inspectors who pay attention to detail according to the standards followed. Through carefully constructed Quality Control Guidelines, the team daily monitors the production lines and ensures the best quality of products, according to international standards to meet customers' satisfaction.

With advanced technology at hand, we perform daily quality inspections using smart measuring devices, specialized testing machines and an upgraded database. Furthermore, having our own state of the art 3D scanner gives a lead on constant failure-point detection, generating reports and proceeding with corrective actions for further improvements were required.

From raw material to end-product and into the hands of the customer, our goal has always been to deliver the optimum quality possible. All products undergo in-house laboratory tests and in external accredited labs, in compliance with current relevant standards. This ensures and guarantees our products, as they are thoroughly checked and approved by professional bodies.»

WARRANTY

Our warranty includes the repair or replacement of defective parts in our production plant or in the after-sale service location. Replacement or repair of parts under this warranty will not extend the warranty period of the original product. No warranties are given in regard to normal wear and tear due to use of the products. The expenses for return and shipment of defective materials shall be paid by the buyer.

This warranty does not cover those cases in which the product:

- Has been incorrectly handled
- Has been repaired, maintained, or modified by an unauthorized person
- Has been repaired or maintained with other than original pieces
- Has been installed or placed in operation incorrectly

CERTIFICATIONS

Elysée's products are designed to meet the general standards and are conducted to variety of tests to verify that they meet the product requirements. Elysée holds more than 30 notable International Product Certifications, including DVGW, KIWA, SII, WRAS, SAI, OVGW and SVGW.

ISO9001, ISO 14001, ISO 45001, and EMAS certifications demonstrate Elysée's dedication to quality, environmental preservation, and employee safety at all phases of manufacturing, from raw materials to sales.



SWIVEL FITTINGS

INTRODUCTION

Elysee offers a comprehensive new series of swivel fittings commonly used for water installations and mainly for irrigation systems. Swivel fittings are versatile components that offer convenience and flexibility in various piping applications, whereas tight space makes the connection through normal fittings difficult.

The safe-driven approach enables quick and easy connections of swivel fittings with any type of threaded pipes, with a variety of threaded fittings, and any other threaded irrigation components, providing a secure leak-free connection.

Due to the ergonomic and robust design of the swivel fittings, the nut can rotate freely around the main body making an easy and efficient connection with the other components.

A massive rubber seal is employed, instead of an insufficient O-ring, that allows installations even at an angle of 150° that may occur during the assembling of components, mainly inside valve boxes.

A complete range of swivel fittings with various configurations is available, including manifolds, couplings, elbows, tees, and even compression adaptors with an output of 25mm & 32mm hoses. The selection between the three available configurations of manifold, with 2 – 3 or 4 outlets, covers the requirements for any landscape project.

They are strictly made of raw materials that are resistant to corrosion and can withstand exposure to hard weather conditions.

PRODUCT SPECIFICATIONS

FEATURES

- A complete range with various configurations.
- Durable against rough handling and misuse.
- Manufactured by well-engineered raw materials.
- Designed for extensive rigidity and flexibility.
- Speed-ups installation and simplifies maintenance.
- High-resistive rubber seal against chemicals and fertilizers.
- Hand-tight installation for reducing physical strain.
- Black-colored nut for maximum protection against UV radiation.
- Ergonomic design enabling quick field installation and reuse.
- Sealing without the use of PTFE tape or other sealing material.



MATERIALS AND COMPONENTS

1. BODY

Polypropylene Copolymer (PP-B)

The body is the core component of a swivel fitting system. It is available only in 1" size bit in several configurations to satisfy the requirements and arrangements of the flow direction. It has a snagging arrangement internally to position the safety ring and the rubber seal, ensuring that the assembled components are firmly connected.

2. NUT

Polypropylene Copolymer (PP-B)

The main purpose of this component is to rotate independently against any other fitting of the system that carries also a BSP thread, providing flexibility and ease of installation. A female BSP thread is applied internally to enable the connection with another stable male BSP threading fittings. Externally, it has an ergonomic ribbed surface for gripping and easy handling during assembly.

3. SAFETY RING

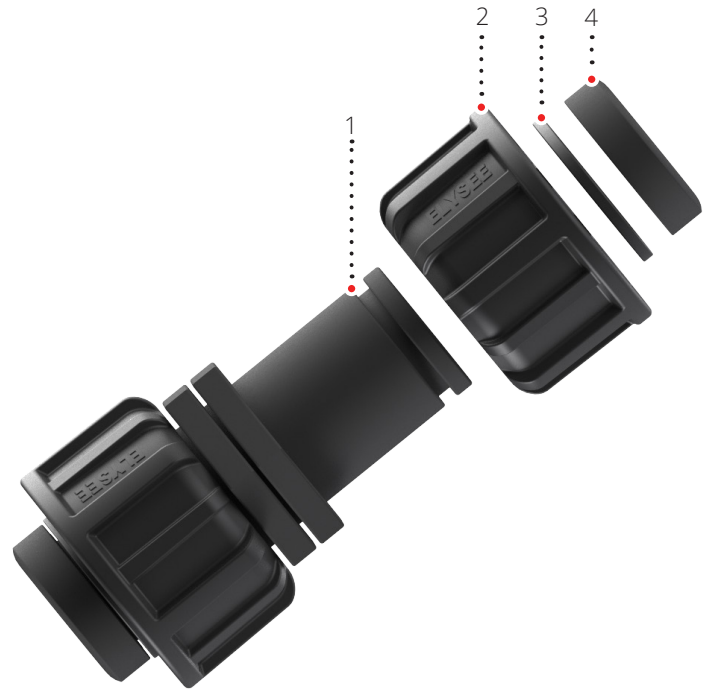
Polyacetal (POM)

The safety ring is engaged for keeping the nut in position, together with the body as one part, during installation and operation. The polyacetal material has sufficient stiffness and hardness with high-end load resistance preventing the disassembly of the nut from the main body.

4. RUBBER SEAL

EPDM70

The specially designed rubber seal is made of EPDM 70, ensuring high resistance to chemicals and fertilizers. Its shape allows safe installations at an angle ensuring a leak-free connection.



TECHNICAL DATA

QUALITY MANAGEMENT

Swivel fittings are manufactured in accordance with internal specifications conforming to the company's CYS EN ISO 9001. Fittings are produced and inspected in accordance with the applicable international and/or highest market standards. The complete range is checked on a regular basis according to the company's testing methods to verify that all requirements and regulations are met.

TESTING OF FITTINGS

Several tests are carried out to verify the compliance of fittings with the relevant standards and or market requirements through the in-house testing laboratories proving the conformance to the intended use and the environmental conditions they are likely to encounter. The testing methods and parameters are according to the related standards as indicated below:

- EN ISO 3126
- ISO 7
- EN ISO 1167
- ISO 19899

Hydrostatic Pressure test:

Fittings are subjected to a controlled pressure and temperature observing how it reacts, determining if will

withstand various loads or stresses, detecting leaks, and ensuring that equipment functions properly before use. All fitting are tested under hydrostatic pressure at 20°C and must withstand a pressure 2.5 times the indicated pressure rating of the fitting.

DIMENSIONS AND CHARACTERISTICS

Threads (BSP) are manufactured according to ISO 7, BS 21, EN 10226, AS 1722, and any other equivalent standard.

OPERATING PRESSURE

Fittings are suitable for working pressures up to 10 bar @ 20°C and/or not exiting the maximum designated by the relevant standard of the other auxiliaries..

APPLICATION FIELDS

The swivels are useful for connecting components, commonly used in various piping and fluid transfer applications such as plumbing, irrigation systems, and other applications where flexibility and movement in tight spaces are required.

CHEMICAL EFFECTS

Chemicals can affect the strength, flexibility, surface appearance, color, dimensions or weight of polypropylene. The basic modes of interaction causing these changes are:

- Chemical attack on the polymer chain, which results in the reduction of physical properties, including oxidation, reaction of functional groups in or on the chain.
- Depolymerisation.
- Physical change, including absorption of solvents resulting in softening and swelling of the plastic, permeation of solvent through the plastic and dissolution in a solvent.
- Stress cracking from the interaction of a "stress cracking agent" with internal or external stresses.
- Since several factors can affect the chemical resistance of a given product, they should be tested specifically under the required conditions. In a case of a chemical use, a detailed chart is available upon request.

Chemical	Concentration	PP-B	EPDM	Chemical	Concentration	PP-B	EPDM
Acetic acid	10%	A	A	Lubricating oils		B	C
Acetic acid	50%	A	A	Methane (natural gas)	tg-G	A	C
Acetone	tg-L	A	A	Methanol (methyl alcohol)	tg-L	A	A
Benzene	tg-L	B	C	Methyl acetate	tg-L	A	B
Benzine	Work-S	B	C	Methyl chloride	tg-G	C	B
Benzoic acid	Saturated	A	C	Methylene acetate	tg-L	B	A
Boric acid	Saturated	A	A	Methyl ethyl ketone	tg-L	A	B
Butyl acetate	tg-L	B	A	Nitric acid	6.30%	A	B
Calcium hydroxide	Saturated	A	A	Oleic acid	tg-L	A	C
Carbon dioxide, gas	tg-G	A	A	Oxalic acid	Saturated	A	A
Carbon Disulfide	tg-L	A	C	Oxygen	tg-G	A	C
Carbon monoxide, gas	tg-G	A	A	Ozone	tg-G		A
Carbon tetrachloride	tg-L	C	C	Petroleum	Work-S	A	C
Caustic soda solution	50%	A	A	Petroleum ether	Work-S	B	C
Chlorine, gas	tg-L	C	C	Phenol	10%	A	C
Chlorine, water	Saturated	A	C	Phenylhydrazine	tg-L	B	B
Chloroacetic acid, mono	Solution	A	B	Phosphoric acid	50%	A	C
Chloroform	tg-L	B	C	Phosphorus chloride	tg-L	A	A
Chlorosulphonic acid	tg-S	C	C	Phosphorus pentoxide	tg-L	A	C
Citric acid	10%	A	A	Phtalic acid	Saturated	A	A
Compressed air with oil		B	B	Potassium carbonate	Saturated	A	A
Cyclohexane	tg-L	A	C	Potassium nitrate	50%	A	A
Cyclohexanol	Saturated	A	C	Potassium sulphate	Saturated	A	A
Cyclohexanone	tg-L	B	B	Propane	tg-L ; tg-G	A	C
Diesel oil		B	C	Proponic acid	50%	A	A
Ethyl alcohol	tg-L	A	A	Sodium acetate	Saturated	A	A
Ethyl alcohol + acetic acid	Work-S	A	B	Potassium permanganate	Saturated	A	A
Ethyl benzene	tg-L	B	C	Potassium persulphate	Saturated	A	A
Ethyl chloride	tg-G	B	B	Sodium acetate	Saturated	A	A
Ethyl ether	tg-L	A	B	Sodium chlorate	Saturated	A	A
Ethylene chloride	tg-L	B	B	Sodium hydroxide	40%	A	A
Fluorine	tg-G	C	C	Sodium Hypochlorite	12.50%	B	A
Formic acid	50%	A	A	Sodium sulphate	Saturated	A	A
Frigen 12 (Freon 12)	Work-S	C	B	Sulphur dioxide	tg-G	A	B
Fuel oil (Gasoline)	Work-S	B	C	Sulphur trioxide	tg-G	C	C
Gelatine	Solution	A	A	Sulphuric acid	40%	A	C
Glucose	Solution	A	A	Sulphurous acid	Saturated	A	C
Glycerine	tg-L	A	A	Sulphuryl chloride	tg-L	C	C

Chemical	Concentration	PP-B	EPDM	Chemical	Concentration	PP-B	EPDM
Glycolic acid	37%	A	C	Tartaric acid	Saturated	A	A
Heptane	tg-L	A	C	Tetrachloroethane	tg-L	B	C
Hexane	tg-L	A	C	Toluene	tg-L	B	C
Hydrobromic acid	50%	A	A	Trichloroethane	tg-L	B	B
Hydrochloric acid	10%	A	A	Trichloromethane	tg-L	B	C
Hydrocyanic acid	tg-L	A	A	Triethanolamine	Solution	A	
Hydrofluoric acid	40%	A	A	Trioctyl phosphate		A	A
Hydrogen	tg-G	A	C	Turpentine oil		C	C
Hydrogen chloride	tg-G	A	C	Vegetable oils and fats		A	C
Hydrogen peroxide	10%	A	A	Vinegar	Work-S	A	B
Hydrogen sulphide	Saturated	A	A	Vinyl acetate	tg-L	A	A
Lactic acid	10%	A	A	Xylene	tg-L	C	C

Notes of Table: **A Resistant:** no indication that serviceability would be impaired. **B Variable resistance:** depending on conditions of use. **C Not resistant:** not recommended for service applications under any conditions.

Diluted = Diluted solution in concentrations up to 10%

Solution = Solution in concentrations up to 10% but not saturated

Saturated = Saturated solution

tg-L = Pure substance in liquid state

tg-G = Pure substance in gaseous state

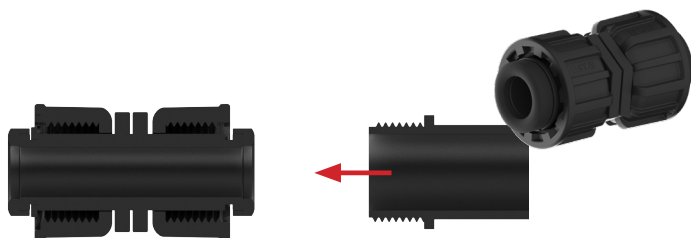
tg-S = Pure substance in solid state

Work-S = Solution in the concentration usually used in the industry

ASSEMBLY PROCEDURE

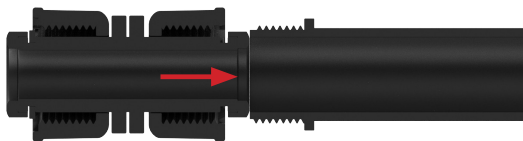
STEP 1

Push coaxially any of the two components that can move freely until the rubber seal of the swivel meets the male threaded component.



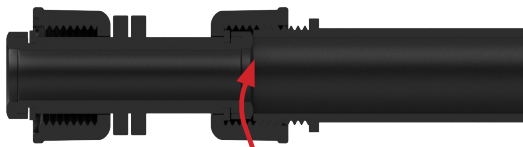
STEP 2

While holding the two components attached, push the swivel nut until it meets the male threaded component.



STEP 3

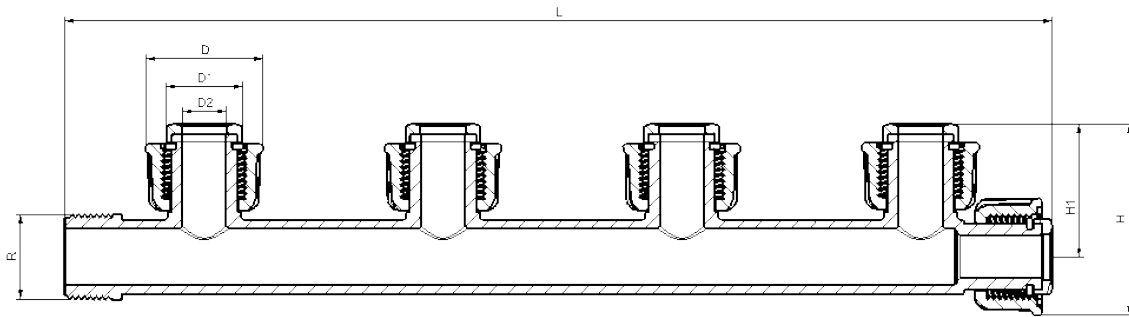
Rotate the right-handed nut until it is fastened firmly. The fitting can be hand fastened or a wrench can be used for additional security, improving the leak-free operation.



Don't hesitate to ask for additional information for special assemblies and installation.

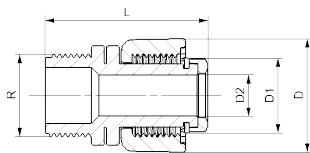
AVAILABLE FITTING & DIMENSIONS

No.525 Manifold Swivel M. x F.



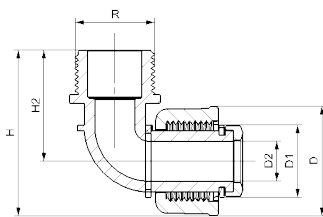
Code	Description/ Size	L (mm)	R (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	D2 (mm)
525020303	No.2 x 1"	199.5	1"	74.5	52	45.5	30	16.5
525030303	No.3 x 1"	292.5	1"	74.5	52	45.5	30	16.5
525040303	No.4 x 1"	384	1"	74.5	52	45.5	30	16.5

No.520 Adaptor Swivel F. x M.



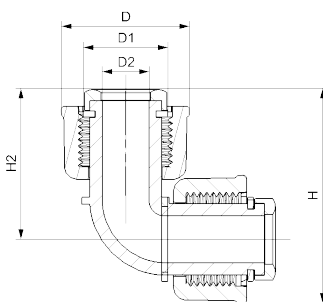
Code	Description/ Size	L (mm)	R (mm)	D (mm)	D1 (mm)	D2 (mm)
520000303	1"	65.5	1"	45.5	30	16.5

No.522 Elbow Swivel M. x F.



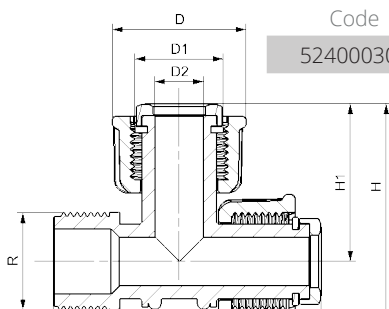
Code	Description/ Size	R (mm)	D (mm)	D1 (mm)	D2 (mm)	H (mm)	H2 (mm)
522A00303	1"	26	45.5	30	16.5	69	46

No.522 Elbow Swivel F. x F.



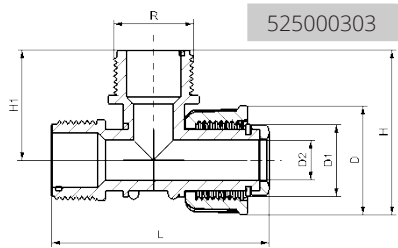
Code	Description/ Size	R (mm)	D (mm)	D1 (mm)	D2 (mm)	H (mm)	H2 (mm)
522000303	1"	1"	45.5	30	16.5	76.5	53.5

No.524 Tee Swivel M. x F. x F.

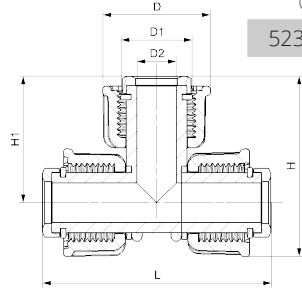


Code	Description/ Size	L (mm)	R (mm)	D (mm)	D1 (mm)	D2 (mm)	H (mm)	H2 (mm)
524000303	1"	91	1"	45.5	30	16.5	76	53.5

No.525 Tee Swivel M. x M. x F.

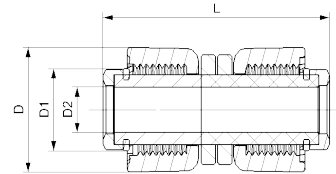
	Code	Description/ Size	L (mm)	R (mm)	D (mm)	D1 (mm)	D2 (mm)	H (mm)	H2 (mm)
	525000303	1"	91	1"	45.5	30	16.5	69	46

No.523 Tee Swivel F. x F. x F.

	Code	Description/ Size	L (mm)	R (mm)	D (mm)	D1 (mm)	D2 (mm)	H (mm)	H2 (mm)
	523000303	1"	96.5	1"	45.5	30	16.5	76	53.5

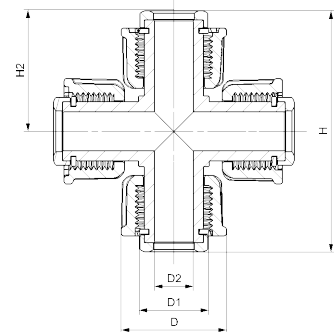
No.521 Coupling Swivel F. x F.

Code	Description/ Size	L (mm)	D (mm)	D1 (mm)	D2 (mm)
521000303	1"	83	45.5	30	16.5



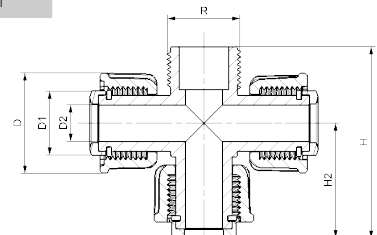
No.527 Cross Swivel F. x F. x F. x F.

Code	Description/ Size	H (mm)	H2 (mm)	D (mm)	D1 (mm)	D2 (mm)
527003303	16 mm x 1/2"	105	52.5	45.5	30	16.5

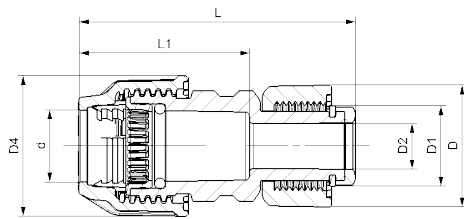


No.528 Cross Swivel M. x F. x F. x F.

Code	Description/ Size	H (mm)	H2 (mm)	D (mm)	D1 (mm)	D2 (mm)	R (mm)
528003303	16 mm x 1/2"	87	52.5	45.5	30	16.5	1"



No.521 Compression Fitting Swivel F. x F.



Code	Description/ Size	L (mm)	L1 (mm)	D (mm)	D1 (mm)	D2 (mm)	D4 (mm)	d (mm)
330T02503	25 x 1" (PN 16)	102.5	63.5	45.5	30	16.5	52	27
330T03203	30 x 1" (PN 16)	111.5	72.5	45.5	30	16.5	62.5	33.5
360T02503A	25 x 1" (PN 10)	98	58.5	45.5	30	16.5	52	27
360T03003A	30 x 1" (PN 10)	103.5	63.5	45.5	30	16.5	62.5	33.5

NOTES

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FEEDBACK

Please scan the QR code on the right side of this page to help us understand more about your experience with us.

We strive to provide the best service to our customers, and your feedback is highly valuable to us.





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