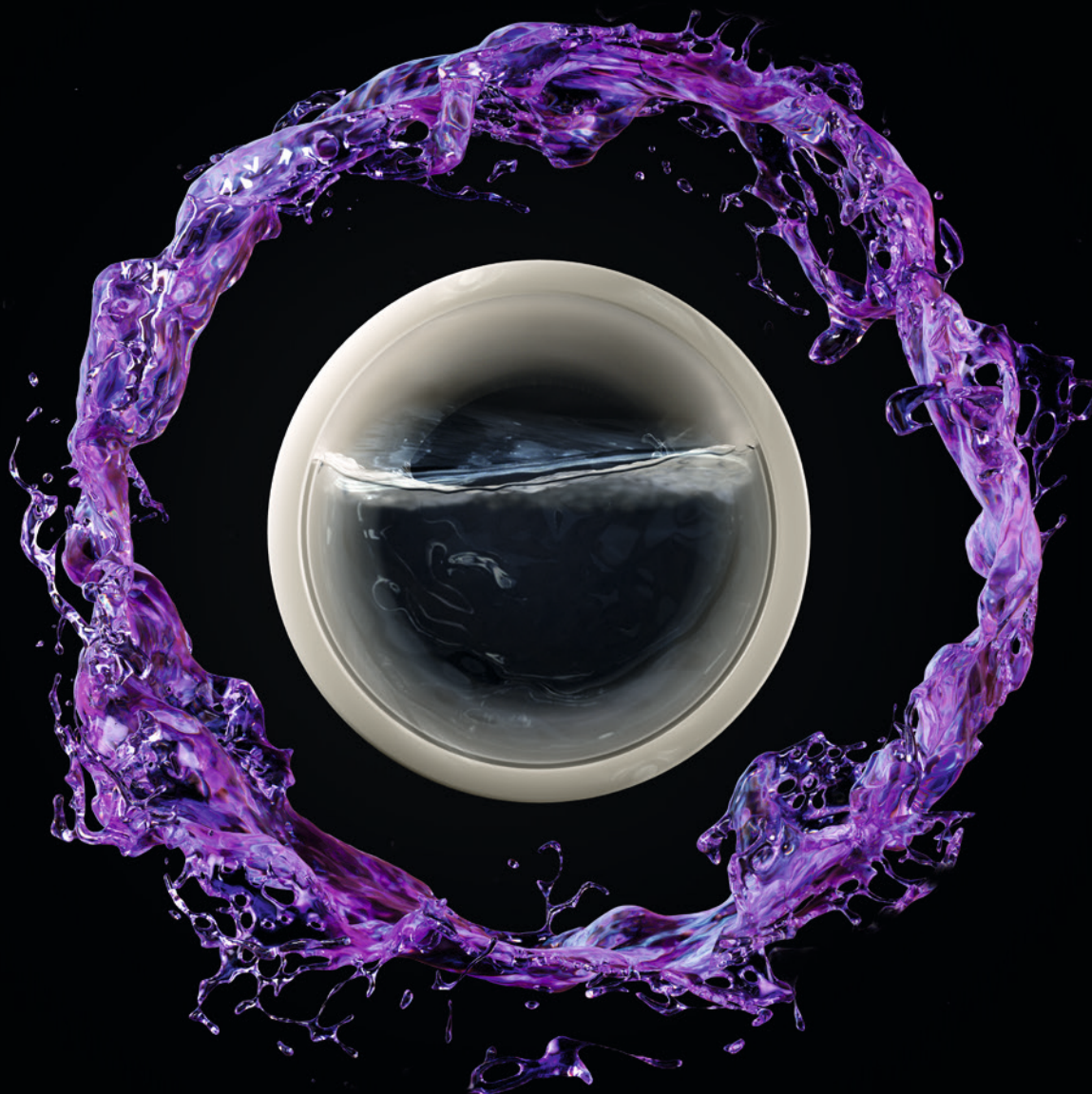


GF Piping Systems

+GF+

Beyond endurance

SYGEF ECTFE



Challenges with harsh chemicals

Extremely aggressive media under high pressure present manufacturers with special challenges.

When aggressive media such as concentrated sulfuric acid (H_2SO_4) or hydrogen peroxide (H_2O_2) is transported under high pressure and temperature conditions, lined steel piping is an often used solution.

PFA or PTFE liners are used due to their chemical resistance and temperature range. But PFA or PTFE are characterized by a relatively low tensile strength and impact resistance, therefore steel is used as an outer layer to ensure mechanical strength.

Lined steel pipes are not an entirely satisfying system solution due to their lengthy assembly times, high weight and exterior corrosion susceptibility.

Corrosion of steel outliners lowers the mechanical properties and can lead to stress cracks in the steel outliner as well as the PFA or PTFE liners. To ensure the safety of lined steel pipes under harsh conditions frequent inspections, repairs and replacements are necessary.

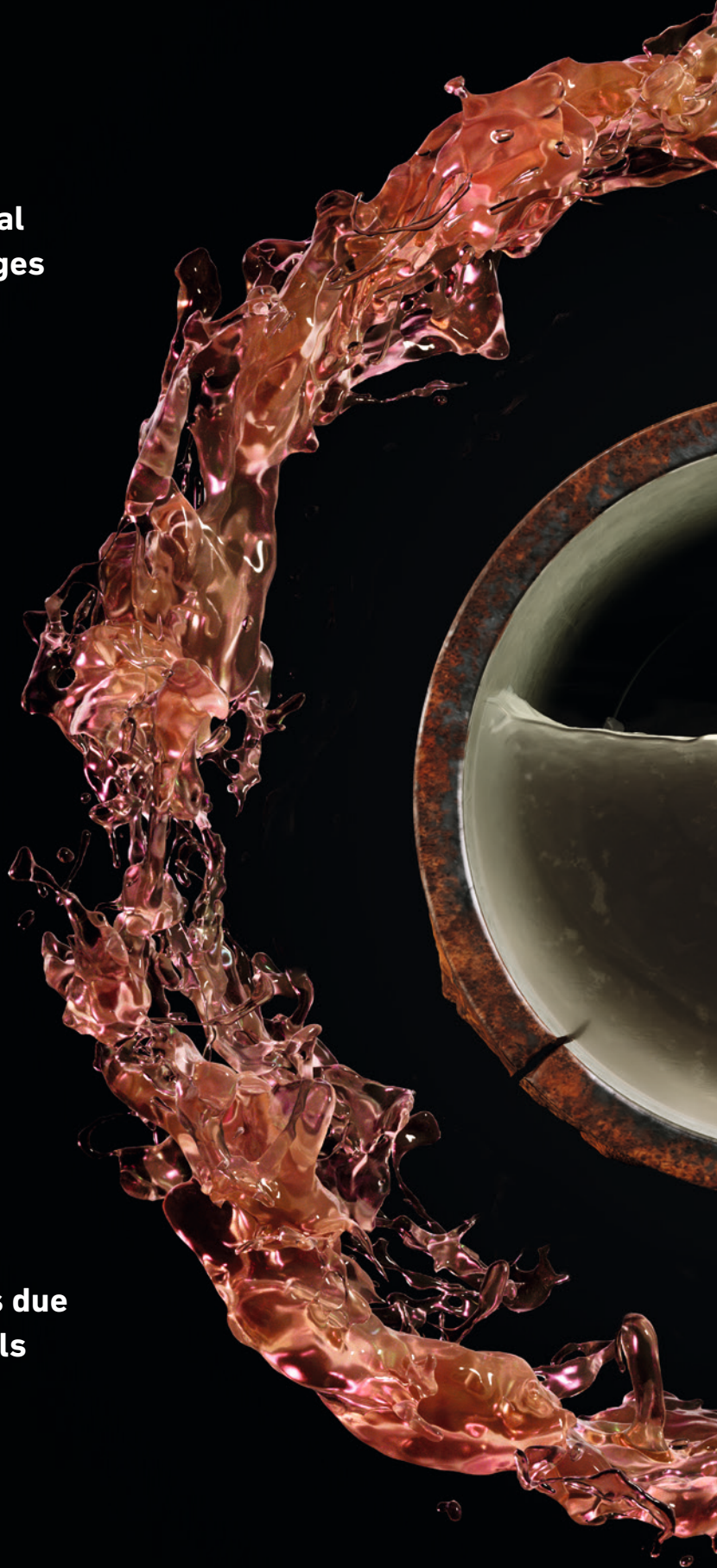
Therefore, to provide the highest level of safety for people, the environment and the production process in a cost effective way GF Piping Systems' SYGEF ECTFE piping system is a more beneficial solution.

+ Corrosion leads to metal degradation and leakages

+ Contamination of the transported media and the environment

+ High frequency of inspections, repairs, and replacements

+ Heavy weight solutions due to high density of metals





**+ High chemical, pressure
and temperature resistance**

+ Safe and reliable

**+ Low weight plastic
solution**

**+ Economic and efficient
operation**

Beyond reliability

The ECTFE system was established as a safe, reliable and cost reducing high-end solution for extremely aggressive media. SYGEF ECTFE is suitable for exceptionally demanding applications in the industrial sector and combines highest chemical, pressure and temperature resistance with economic and efficient operation.

With the SYGEF ECTFE system, GF Piping Systems has expanded its proven solutions with a complete system, which sets new standards for transporting particularly aggressive media such as highly concentrated sulfuric acid. The ECTFE product portfolio includes the complete range of pipes, fitting and innovative jointing technology. This gives users a suitable solution that complements the existing industrial portfolio of PP-, PVC- or PVDF-plastic piping systems.

The ECTFE system from GF Piping Systems was designed specifically as a high-end solution for extreme conditions. The piping system has been proven to be extremely resistant and reliable for the transport of bases or highly concentrated acids. At the same time, users benefit from quick assembly, a long system service life, and lower initial costs than welded PFA systems. The combination with the latest IR

welding technology from GF Piping Systems provides the highest level of safety for people, the environment and the production process. Similar to all SYGEF system solutions, the particularly robust ECTFE system is produced at the world's largest clean room plant for fluoropolymer products in Ettenheim, Germany. The fully controlled processes coupled with unique quality assurance warranties 100% traceability of each individual product.

The ECTFE fluoropolymer system benefits wherever other plastic piping system solutions reach their limits or metal pipes are chemically attacked. Alternative materials like PFA or PTFE can be quickly, reliably and cost-effectively substituted by ECTFE. Compared to PFA ECTFE enables higher pressure ranges and allows a streamlined and efficient installation design. The ECTFE system is about 50% more cost-effective than IR-welded PFA solutions.

Beyond endurance

The SYGEF ECTFE piping system shows its advantages when it comes to manufacturing, transport and filling of concentrated chemicals under high temperature and pressure. This property makes ECTFE an ideal addition to the SYGEF fluoropolymer family. Due to faster assembly, lower initial costs and longer service life compared to alternative solutions, an economical transport of particularly aggressive media is achieved. The system is well suited for the chemical process industry, water treatment and microelectronics.



Safe and reliable

The ECTFE system enables safe handling of chemicals including those with a pH value below 2 and above 12. At the same time, the high-end system solution is absolutely reliable thanks to advanced IR welding technologies.



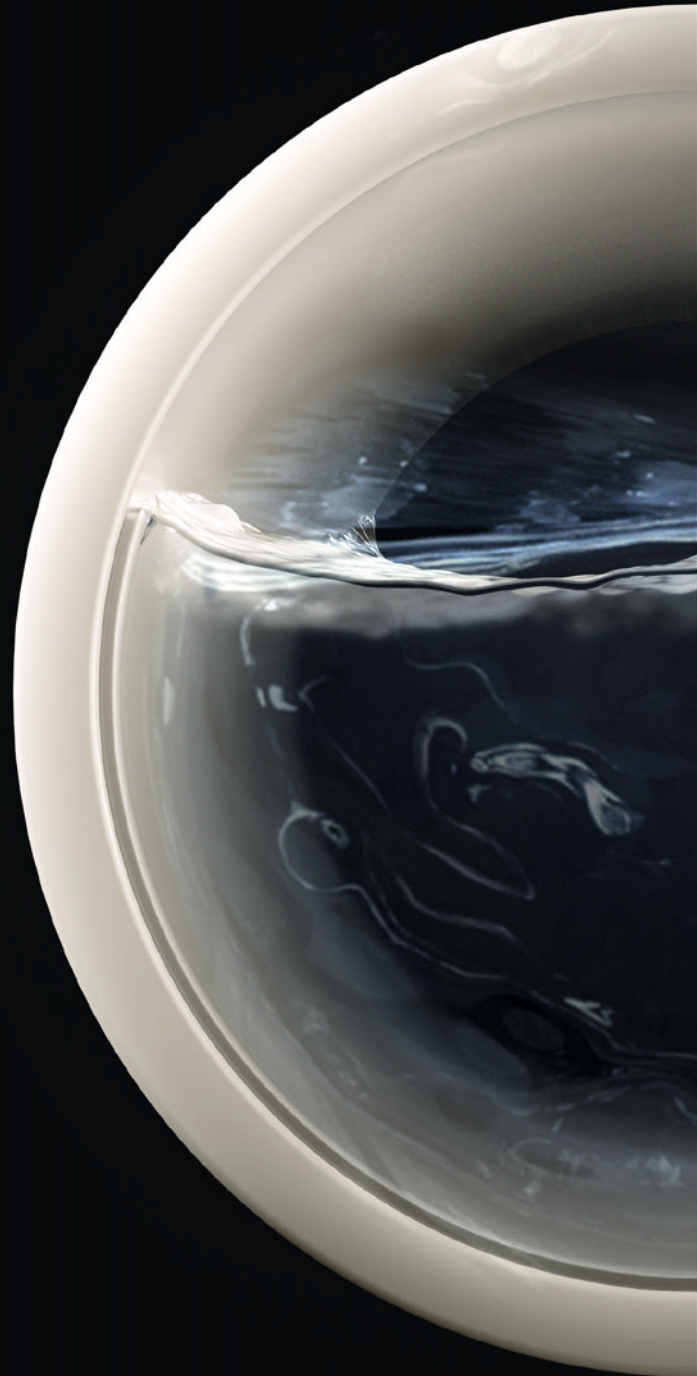
Long system lifetime

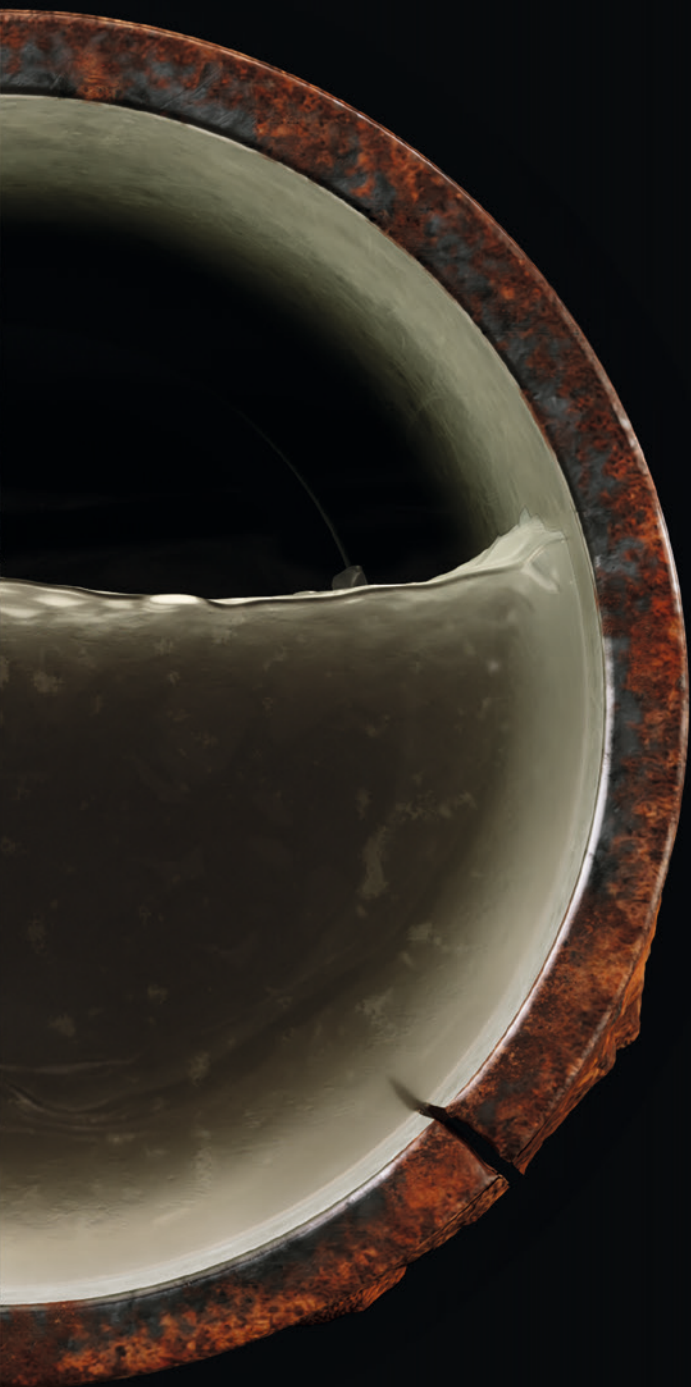
Aggressive media often considerably affect the service life of piping systems. Due to its extremely high chemical resistance, ECTFE reduces maintenance costs and eliminates process interruptions.



200% higher pressure range

Due to its excellent mechanical properties, ECTFE allows a 200% higher pressure range than PFA. This provides users with more efficient processes and higher safety standards.





20% more efficient pipe volume

Thanks to its high mechanical stability, the wall thickness of the ECTFE components has an optimal SDR and is 20% more efficient compared to PFA. Thereby the system enables higher flow rates with equal or less space requirements.



Low initial costs

Compared to the widely used PFA solutions, ECTFE is also characterized by significant cost savings and optimum permeation characteristics. The initial costs are 50 % lower than those of IR-welded PFA piping systems.



85% faster assembly

The ECTFE components are securely connected in a few minutes using most advanced IR-welding technology. Compared to pipes made of lined steel, installation time is significantly reduced.

Full solution provider

GF Piping Systems offers a complete portfolio including pipes, fittings and valves from d20 – d110mm. All components are designed for industrial pressure piping applications with SDR21/ PN10 pressure rating.

All raw material grades used by GF are characterized by excellent behavior in fire tests.

(UL 94 classification: V-0)

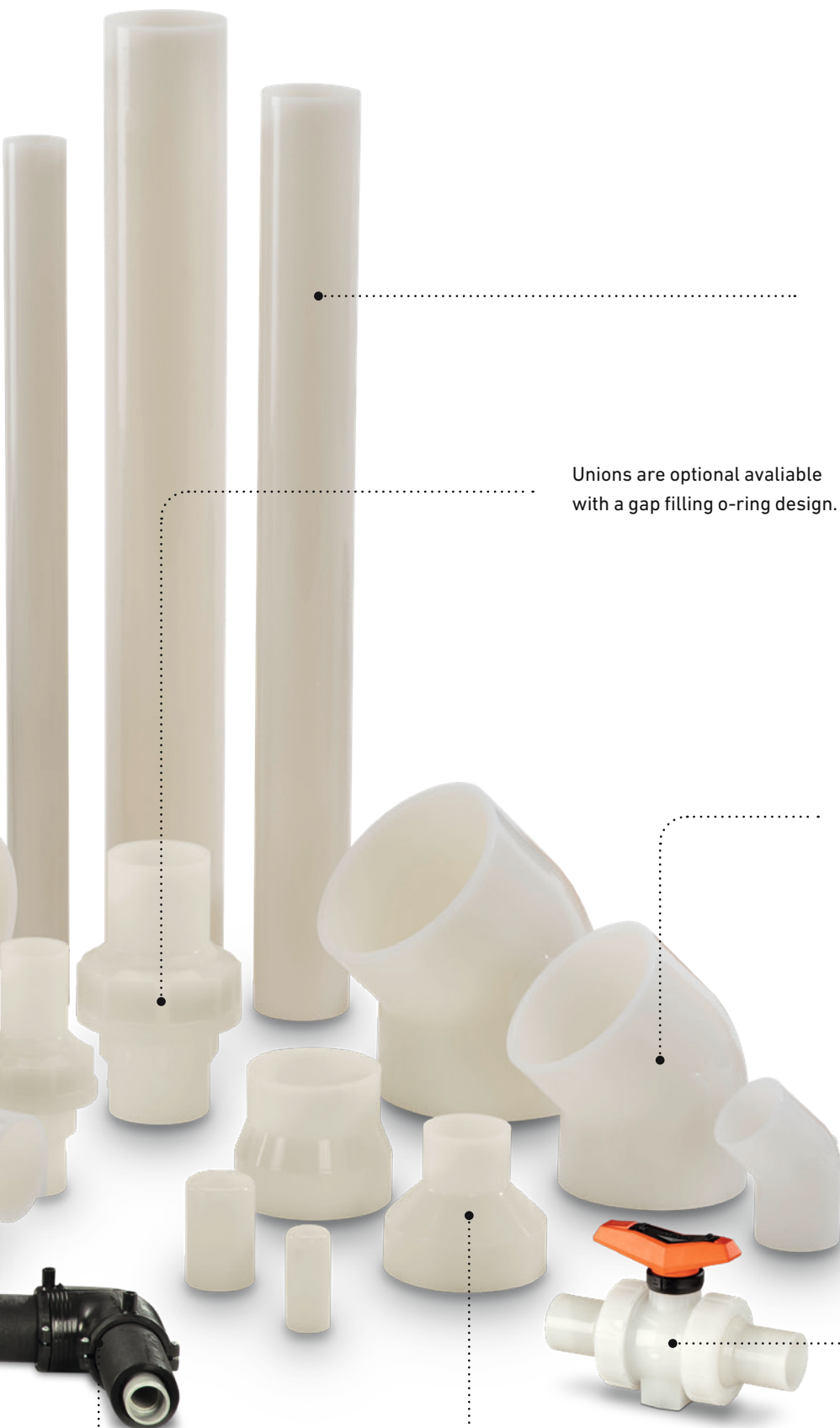
The components have been tested to reach the best fire classification that can be reached by thermoplastic polymers.

(EN ISO 13501-1 classification: B-S1, d0)

All components are eligible for IR-welding which guaranties 100% replicable weldings.

The U3000 Clamp-on ultrasonic flow meter ensures accurate and non-contact flow measurement.





Pipes are capped and individually packed in foil.

Unions are optional available with a gap filling o-ring design.

All pipes and fittings are produced under clean room conditions.

PVDF Ball and Diaphragm Valves with ECTFE ends are extending the portfolio.

If required, GF offers a double containment solution with CONTAIN-IT Plus.

All fittings are individually packed in foils.

Ultra system performance

SYGEF ECTFE

Material	ECTFE Halar
Color	opaque
Density	~1.68 g / cm ³
Thermal expansion coefficient	0.08 – 0.135 mm / mK (DIN 53752 / ASTM D696)
Thermal conductivity at 23°C	0.15 W / mK (ASTM C177)
Tensile stress at 23°C	≥ 30 N / mm ² (EN ISO 527-1)
E-module at 23°C	≥ 1 600 N / mm ² (EN ISO 527-1)
Charpy notched impact strength at 23°C	no breaking (EN ISO 179 / 1eA)
Dimensions	d20 – d110 acc. to ISO 10931
Temperature range raw material	–76 °C to 140 °C
Temperature range applied on chemicals	–20 °C to +80 °C
Surface properties	Inner surface Ra < 0.5 µm (20 µin) for injection moulded and extruded components
Internal stress	Pipes: ≤ 2.5 N / mm ² ; stress relieved by thermal annealing during manufacturing
Packaging	Pipes are capped and individually packed in foil like the fittings
Marking and labeling	During production, all components are embossed with a permanent identification to ensure full traceability: - Brand name - Lot number - Material - Product description - Dimensions - Article number - Pressure rating - Standards Colored labels for differentiation between SYGEF ECTFE and SYGEF Standard PVDF

Safe and reliable

From the characteristics of the raw material to the quality control of the finished part: GF Piping Systems ensures that the warranted properties are met thanks to its unique laboratory expertise.

GF Piping Systems examines the material, jointing technology, and products beyond mandatory standards in detail at its accredited laboratory (OSO/IEC 17025) in Schaffhausen (Switzerland). The guaranteed characteristics of the applied ECTFE raw materials are tested by GF Piping Systems. Despite decades of collaboration with material suppliers, GF Piping Systems strictly adheres to the principle of "trust and verify." SYGEF ECTFE has been and is continuously tested under temperature, also with chemicals, under long-term conditions. So you can be assured that information from our



chemical experts is based on decades of experience and various tests. Your medium is tested by GF Piping Systems under application conditions on real components. Additional details are also provided by the microscopic inspection of the parts morphology and the IR-joints. Besides important insights regarding production process and correct fusion parameters, the effect of test and application conditions is also carefully inspected. Has the product been chemically attacked? Extremely experienced staff members examine the samples and products not only visually but also using infrared microscopy.

Chemical resistance

Chemical resistance at 20 °C			Thermoplastics				Steel		
Detailed evaluation is depending on concentration. Contact ChemRes			semi-crystalline		amorphous		SS 1.4301 / 304	SS 1.4401 / 316	Hastelloy C 276
Media group	Medium	Concentration	ECTFE	PVDF	PVC-U	PVC-C			
Acids	Inorganic oxidizing acids								
	Nitric acid	> 50 %	+	+	0	0	+	+	+
	Chromic acid	> 30 %	+	+	0	0	+	+	+
	Sulfuric acid	≥ 96 - 98 %	+	0	+	-	0	0	+
	Inorganic non-oxidizing acids								
	Hydrochloric acid	<= 37 %	+	+	+	+	-	-	0
	Hydrofluoric acid	> 40 %	+	+	-	-	-	-	0
	Organic acids								
	Formic acid	> 85 %	+	+	0	-	0	+	+
	Acetic acid	> 85 %	+	+	0	-	0	+	+
Bases	Inorganic (caustic soda lye)	<= 50 %	+	-	+	0	+	+	+
Halogens	Chlorine, bromine, iodine, (no fluorine)		0	0	0	0	-	-	0
Fuels / oils	Aliphatic hydrocarbons		+	+	0	0	+	+	+
	Aromatic hydrocarbons		+	+	-	-	+	+	+
Oxidizing agent	Hypochlorite, hydrogen peroxide, ...		+	-	+	0	0	0	+

+ resistant
0 conditionally resistant, please consult gss@georgfischer.com
- not resistant

* Please note: The above list is only intended as a guideline and does not replace an in-depth review of material suitability for the particular application. The information is based on our experience and is state of the art. This data consists only of general indicators. In practice, however, other factors such as concentration, pressure and jointing technology must also be taken into consideration. The technical data is not binding and does not constitute expressly warranted characteristics of the goods. Please contact gss@georgfischer.com for help with selecting the right materials.

Our teams of experts have decades of experience in the chemical resistance of materials. The online tool ChemRes PLUS provides you with the most important basic information. The ChemRes PLUS Online Tool from GF Piping Systems summarizes a large amount of data about materials and media and presents it visually. Choose among all materials and solvent cements of the GF Piping Systems product portfolio and compare them to get a comprehensive overview.



Scan the QR code to visit our chemical resistance online tool.



Ensuring maximum safety under extreme conditions



Dosing sodium hypochlorite

The ECTFE range can also be used effectively for drinking water treatment. In the application example, SYGEF ECTFE is used for a dosing system in water treatment. A sodium hypochlorite solution is dosed into water for disinfection and preparation for drinking water use.

Your benefits

- Extreme corrosion resistance and reliability when handling aggressive chemicals
- Great permeation and temperature resistance
- Low initial and maintenance costs



Storage of acid

The transport of aggressive media in particular, such as highly concentrated sulfuric acid, requires an exceptionally reliable piping system to ensure safe handling at all times. The ECTFE assortment is used to fill the tank and subsequently transport such medias. In this case, one of the tanks contains 98% sulfuric acid, a very corrosive liquid.

- Long system service life
- Low stress installation due to low stress components (pipes and fittings)
- Safe and 100% traceable installation due to the IR welding technology

Customer reference: Merck & Cie

Long-lasting and reliable plastic piping systems for hazardous chemicals



Merck & Cie. is a subsidiary of the German group Merck KGaA and specializes in the Healthcare and Life Science sectors. With several facilities across Switzerland, the company produces high-quality products for the global market. In the field of wastewater treatment, plastic piping systems are used to safely and reliably transport hazardous media. Here, Merck relies on the SYGEF ECTFE system by GF Piping Systems.

Customer benefits

- ECTFE is an exceptionally resistant material for the transport of highly aggressive chemicals and is suitable for high process pressures and temperatures.
- The space-saving components have been designed and tested for especially challenging applications and are particularly suited for tight spaces.
- System components and jointing technology from a single source not only guarantee the best possible welding quality, but also maximum safety.



Scan the QR code to
read the full article.

The pioneer in IR fusion

GF Piping systems has been the pioneer and leader for innovative infrared fusion technology since 1992. We have been working closely together with our customers focussing on their real-life needs. As a result we developed the automated IR-A family, which covers the dimension range from d20 up to d400mm and is the completion of the IR-Plus line-up.



The optimized heating process

Non-contact heating (IR) shortens the heating time by more than 50% compared to conventional butt fusion. The entire equalization process is no longer necessary which solves the problem of varying bead formations. The tendency for melted material to stick to the heating element (especially PVDF) is eliminated.

Advantages of IR fusion:

- Short welding time
- Minimal defined bead
- High reproducibility
- High reliability
- Less thermo-stress
- Best for high purity applications

The Weld-Bead Inspection (WBI) Tool

Built to provide peace of mind for piping systems in the microelectronics sector, the Weld-Bead Inspection Tool from GF Piping Systems assesses the quality of infrared-weld beads more reliably than ever.

When an infrared butt fusion process is used to join plastic piping components together, a weld (or fusion) bead is produced. In the past, experienced welders or quality control managers assess the quality of the bead with the naked eye to see whether it is perfectly fused and as uniform as possible. But there are fewer and fewer qualified workers with this expertise, so why take the risk?

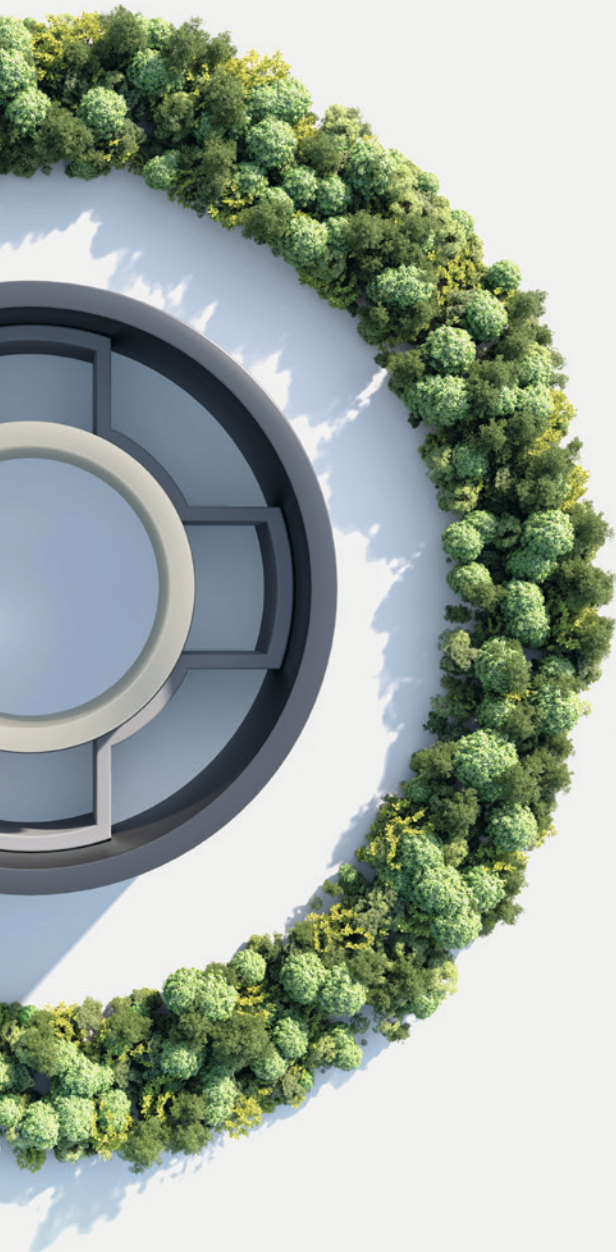
Better to be objective

As small as a computer mouse and packed with state-of-the-art photo-sensory technology: welds for highly demanding applications can now be digitally inspected to ensure potential weaknesses are highlighted objectively, ensuring the risks of leaks resulting in millions of dollars worth of damage are reduced. There has never been a tool like it before that can assess a weld bead and provide a seal of approval as quickly and objectively.



WBI-L assessing the strength of a weld

Protect and preserve



CONTAIN-IT Plus is the ideal solution for the safe transport of hazardous media. When used with SYGEF ECTFE it combines the excellent chemical resistance of ECTFE as an inner pipe with a containment pipe's additional safety. The systems include many features that yield benefits for the plant owner, planner, and installer.

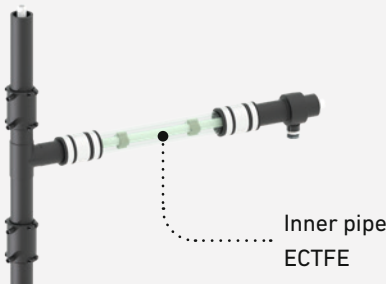
Environmental protection is becoming increasingly important for governments and companies worldwide to ensure good water conditions and sustainable business success. Countries worldwide have defined laws and directives to protect and preserve our water quality, like the Water Framework Directive (2000/60/EC) in the EU and the 40 CFR 280 Requirements in the USA.

All Member States must incorporate these directives into national law and define concrete measures. Nations such as Germany (WHG §62, AwSV §17), the Netherlands (NRB, BRL-K903/08, PGS-31) and the USA (40 CFR 280) have defined double containment systems as a standard for the safe transport of hazardous media.

Outside pipes/fittings	Details
Material	Containment pipe: PE100 & PVC-U (transparent)
Pressure rating	Containment piping system: PE100: PN10/PN16 PVC-U transparent: PN1 Valves: PN6
Operational temperature	-50 °C to +140 °C (depending on inner pipe)
Joining technology	Containment pipe connection: Electrofusion (PE), EPDM-Coupler (PVC-U)



Scan the QR code
to know more.



Together as one

Process automation

We offer a true partnership with a unified vision toward active water conservation. Our solutions for automated flow processes ease the way toward autonomous vessels.



One user experience across the whole control loop

GF Piping Systems is your experienced partner with a full portfolio of measurement, control, and actuation components, which are easy to install and use and have local support through all project phases. We offer the full package with our products and solutions, providing top-quality installation, a highly skilled team of experts standing by our customers' side every step of the way worldwide, and digitalized services ensuring a project is at the forefront of the market.

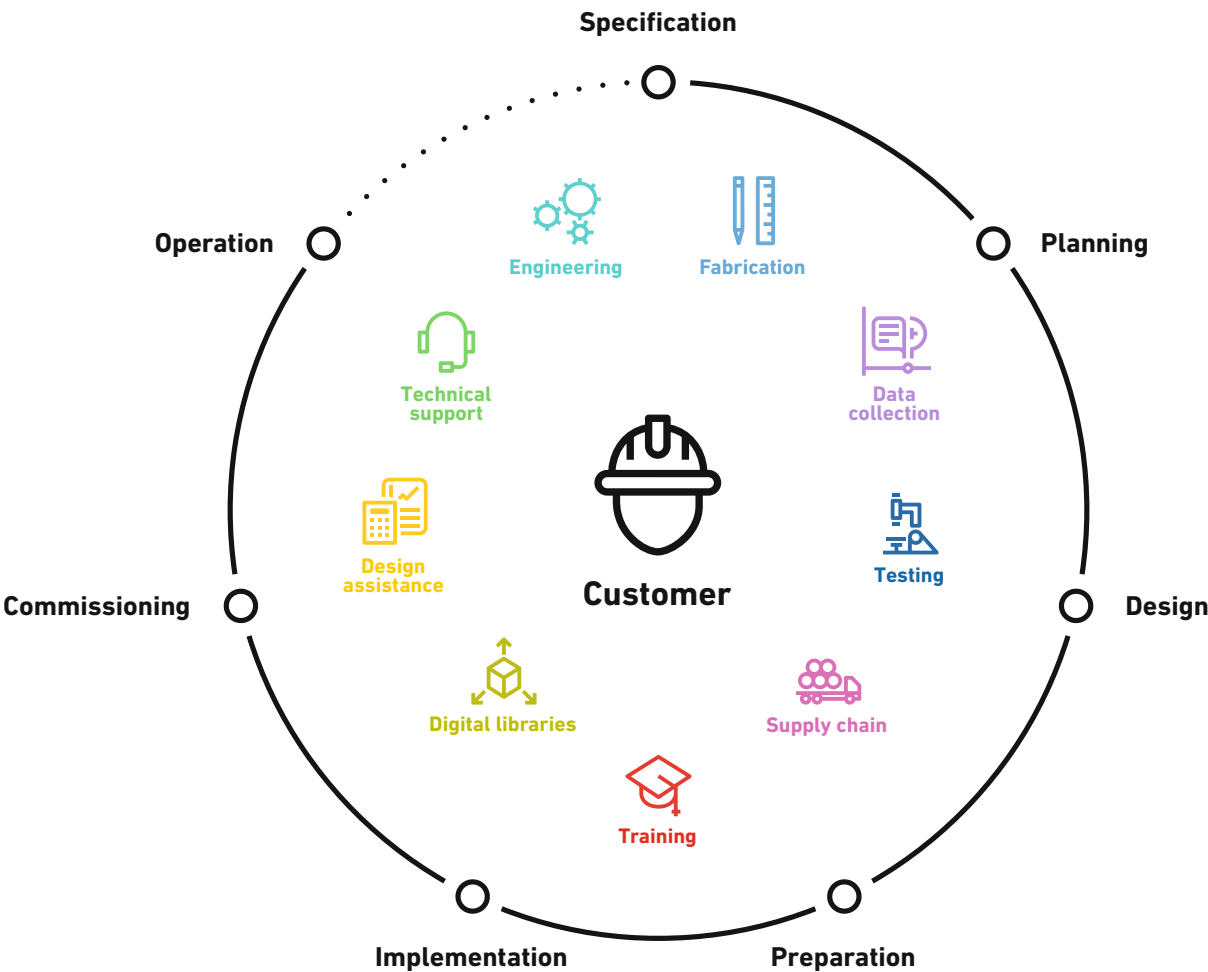
More information at
www.gfps.com/processautomation



The U3000 Clamp-on ultrasonic flow meter ensures accurate and non-contact flow measurement.

Ready when you are

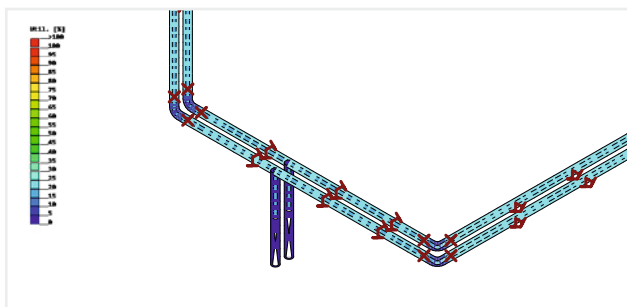
With Specialized Solutions, the global leader GF Piping Systems provides project support every step of the way to achieve construction excellence. Allowing owners and planners to concentrate on their daily business without interruption.



Pipe stress calculations

To evaluate a piping installation regarding dead load, thermal expansion and additional loads the following evaluations and calculations are offered by GFs Advanced Engineering:

- Flexibility of the pipe system geometry
- Stresses in pipes and fittings
- Pipe displacement
- Pipe deformations
- Loads on components
- Loads on supports



Ultra precise design

Optimize planning and execution phases and avoid failures due to improper design and pipe support.

Ultra training support

Increase quality and safety throughout every phase of your project with industry-leading training programs.

Ultra fast response

Reduce project and operation lead times through off-site prefabrication and advanced stock management.

Ultrasonic analysis

The integrity of a piping system is essential for the semiconductor industry. Our weld-bead inspection tools and ultrasonic NDT (Non-Destructive Testing) provides testing options at the point of installation, while Pipe Condition Assessment can be employed during operation to acquire real data about the state of piping systems.

More information at

gfps.com/specialized-solutions

Next steps

In this brochure, you have received the most important information and technical details. But nothing replaces a personal conversation with an expert from GF Piping Systems. It is all about your needs and how we can support you in your daily business challenges. If you have not already done so, make an appointment today.

Find your local contact on the back cover of this brochure or visit our GF Piping Systems website, where you will find specialized contact persons in your area. You will also find additional information on our products, including technical datasheets, operating instructions, and relevant certificates and approvals.

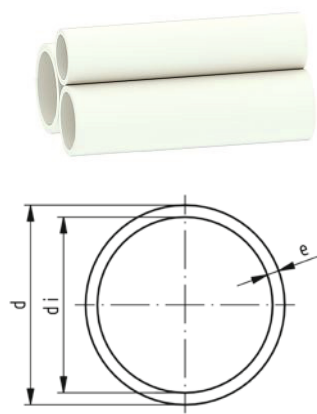
More information at

gfps.com/ectfe

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SYGEF ECTFE Pipes



SYGEF ECTFE Pipe SDR21/PN10

- Model:**
- Material: ECTFE
 - Length: Lengths of 5 m

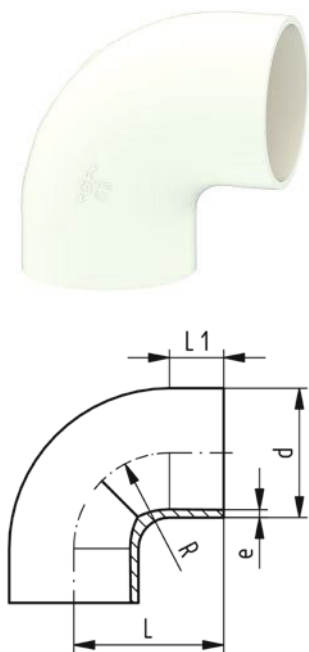
d	PN	FM	Code	Weight	e	di
(mm)	(bar)			(kg)	(mm)	(mm)
20	10	IR	177 480 106	0.182	1.9	16.2
25	10	IR	177 480 107	0.232	1.9	21.2
32	10	IR	177 480 108	0.375	2.4	27.2
40	10	IR	177 480 109	0.476	2.4	35.2
50	10	IR	177 480 110	0.744	3.0	44.0
63	10	IR	177 480 111	0.950	3.0	57.0
75	10	IR	177 480 112	1.357	3.6	67.8
90	10	IR	177 480 113	1.945	4.3	81.4
110	10	IR	177 480 114	2.929	5.3	99.4

SYGEF ECTFE Fittings

SYGEF ECTFE Bend 90° SDR21/PN10

Model:

- Material: ECTFE

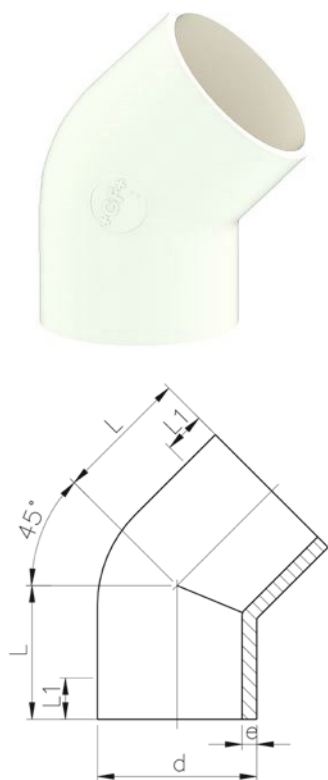


d (mm)	PN (bar)	FM	Code	Weight (kg)	L (mm)	L1 (mm)	R (mm)	e (mm)
20	10	IR	737 018 106	0.016	38	23	15	1.9
25	10	IR	737 018 107	0.022	42	23	19	1.9
32	10	IR	737 018 108	0.038	46	22	24	2.4
40	10	IR	737 018 109	0.055	51	21	30	2.4
50	10	IR	737 018 110	0.095	58	21	37	3.0
63	10	IR	737 018 111	0.137	66	21	45	3.0
75	10	IR	737 018 112	0.243	75	23	62	3.6
90	10	IR	737 018 113	0.423	90	23	77	4.3
110	10	IR	737 018 114	0.705	110	23	98	5.3

SYGEF ECTFE Elbow 45° SDR21/PN10

Model:

- Material: ECTFE



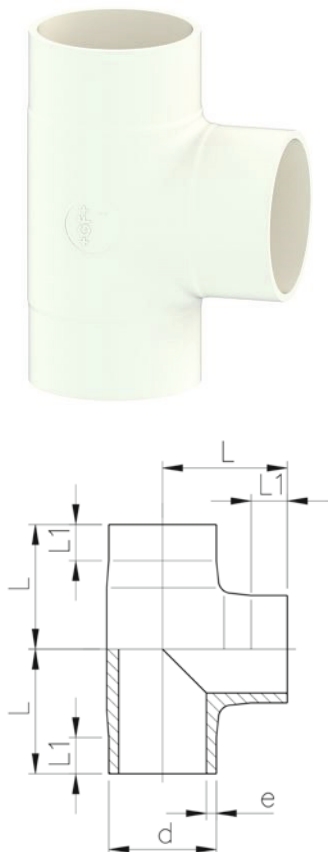
d (mm)	PN (bar)	FM	Code	Weight (kg)	L (mm)	L1 (mm)	e (mm)
20	10	IR	737 158 106	0.014	32	25	1.9
25	10	IR	737 158 107	0.019	34	26	1.9
32	10	IR	737 158 108	0.033	36	26	2.4
40	10	IR	737 158 109	0.042	39	28	2.4
50	10	IR	737 158 110	0.084	42	30	3.0
63	10	IR	737 158 111	0.121	47	31	3.0
75	10	IR	737 158 112	0.160	49	32	3.6
90	10	IR	737 158 113	0.271	57	37	4.3
110	10	IR	737 158 114	0.499	70	46	5.3

SYGEF ECTFE Tee 90° equal SDR21/PN10

Model:

- Material: ECTFE

d (mm)	PN (bar)	FM	Code	Weight (kg)	L (mm)	L1 (mm)	e (mm)
20	10	IR	737 208 106	0.023	38	25	1.9
25	10	IR	737 208 107	0.032	42	27	1.9
32	10	IR	737 208 108	0.056	46	27	2.4
40	10	IR	737 208 109	0.083	51	28	2.4
50	10	IR	737 208 110	0.156	58	28	3.0
63	10	IR	737 208 111	0.270	66	28	3.0
75	10	IR	737 208 112	0.336	75	32	3.6
90	10	IR	737 208 113	0.587	90	39	4.3
110	10	IR	737 208 114	1.054	110	48	5.3

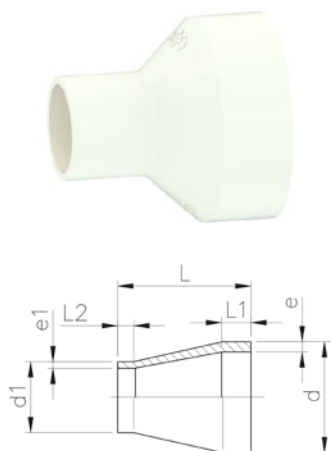


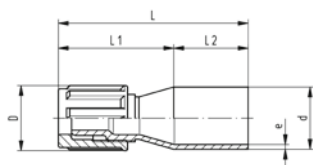
SYGEF ECTFE Reducer SDR21/PN10

Model:

- Material: ECTFE

d (mm)	PN (bar)	FM	Code	Weight (kg)	d1 (mm)	L (mm)	L1 (mm)	L2 (mm)	e (mm)	e1 (mm)
25	10	IR	737 908 107	0.013	20	50	22	22	1.9	1.9
32	10	IR	737 908 108	0.016	20	50	22	22	2.4	1.9
32	10	IR	737 908 118	0.017	25	50	22	22	2.4	1.9
40	10	IR	737 908 109	0.023	20	58	22	24	2.4	1.9
40	10	IR	737 908 119	0.022	25	55	22	24	2.4	1.9
40	10	IR	737 908 129	0.026	32	55	22	24	2.4	2.4
50	10	IR	737 908 110	0.034	25	60	22	25	3.0	1.9
50	10	IR	737 908 120	0.040	32	60	22	25	3.0	2.4
50	10	IR	737 908 130	0.039	40	60	22	25	3.0	2.4
63	10	IR	737 908 111	0.050	32	65	22	25	3.0	2.4
63	10	IR	737 908 121	0.052	40	65	22	25	3.0	2.4
63	10	IR	737 908 131	0.059	50	65	22	25	3.0	3.0
75	10	IR	737 908 112	0.078	40	68	24	25	3.6	2.4
75	10	IR	737 908 122	0.078	50	65	24	25	3.6	3.0
75	10	IR	737 908 132	0.082	63	65	24	25	3.6	3.0
90	10	IR	737 908 113	0.123	63	75	25	30	4.3	3.0
90	10	IR	737 908 123	0.136	75	75	25	35	4.3	3.6
110	10	IR	737 908 114	0.218	63	90	30	30	5.3	3.0
110	10	IR	737 908 124	0.224	75	90	30	35	5.3	3.6
110	10	IR	737 908 134	0.242	90	90	30	35	5.3	4.3



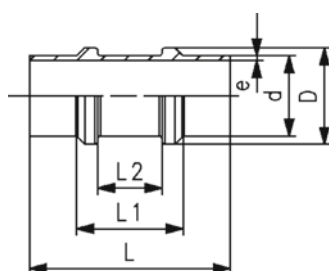


SYGEF ECTFE Flare transition fitting SDR21/PN10

Model:

- Material: ECTFE

d	tube size	PN	FM	Code	Weight	L	L1	L2	D	e
(mm)	(inch)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)
20	¾	10	IR	737 598 106	0.028	75	45	30	20	1.9
20	¾	10	IR	737 598 116	0.022	76	46	30	23	1.9
20	½	10	IR	737 598 126	0.034	76	46	30	26	1.9
20	¾	10	IR	737 598 136	0.043	78	48	30	34	1.9
25	¾	10	IR	737 598 107	0.033	75	45	30	20	1.9
25	¾	10	IR	737 598 117	0.025	76	46	30	23	1.9
25	½	10	IR	737 598 127	0.028	76	46	30	26	1.9
25	¾	10	IR	737 598 137	0.048	78	48	30	34	1.9
25	1	10	IR	737 598 147	0.049	87	57	30	46	1.9
32	½	10	IR	737 598 128	0.036	76	46	30	26	2.4
32	¾	10	IR	737 598 138	0.050	78	48	30	34	2.4
32	1	10	IR	737 598 148	0.050	87	57	30	46	2.4



SYGEF ECTFE Fixpoint fitting SDR21/PN10

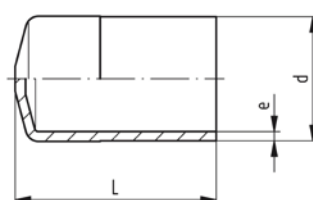
Model:

- Material: ECTFE

Note:

*machined from semifinished product

d	PN	FM	Code	Weight	L	L1	L2	D	e
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)
* 20	10	IR	737 918 606	0.026	100	53	32	28	1.9
* 25	10	IR	737 918 607	0.034	100	53	32	33	1.9
* 32	10	IR	737 918 608	0.051	100	53	32	40	2.4
* 40	10	IR	737 918 609	0.063	100	53	32	48	2.4
* 50	10	IR	737 918 610	0.119	100	53	32	58	3.0
* 63	10	IR	737 918 611	0.124	105	53	32	71	3.0
* 75	10	IR	737 918 612	0.240	125	70	40	87	3.6
90	10	IR	737 918 113	0.335	126	71	40	105	4.3
110	10	IR	737 918 114	0.488	126	71	40	127	5.3



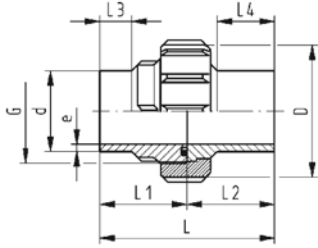
SYGEF ECTFE End cap SDR21/PN10

Model:

- Material: ECTFE

d	PN	FM	Code	Weight	L	e
(mm)	(bar)			(kg)	(mm)	(mm)
20	10	IR	737 968 106	0.009	47	1.9
25	10	IR	737 968 107	0.012	47	1.9
32	10	IR	737 968 108	0.022	52	2.4
40	10	IR	737 968 109	0.032	55	2.4
50	10	IR	737 968 110	0.054	59	3.0
63	10	IR	737 968 111	0.083	66	3.0
75	10	IR	737 968 112	0.124	66	3.6
90	10	IR	737 968 113	0.205	74	4.3
110	10	IR	737 968 114	0.349	80	5.3

SYGEF ECTFE Unions and O-Rings

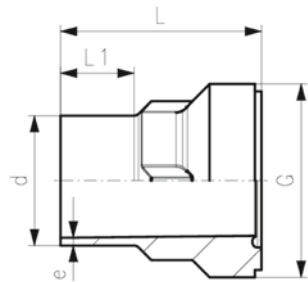


SYGEF ECTFE Union SDR21/PN10 Standard O-ring positioning FKM black

Model:

- Material: ECTFE
- O-Ring: FKM black; FFKM on request

d	PN	FM	Code	Weight	L	L1	L2	L3	L4	G	D	e
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(inch)	(mm)	(mm)
20	10	IR	737 528 206	0.082	106	53	53	24	37	1	43	1.9
25	10	IR	737 528 207	0.123	112	56	56	24	38	1 ¼	53	1.9
32	10	IR	737 528 208	0.166	118	59	59	24	40	1 ½	60	2.4
40	10	IR	737 528 209	0.263	124	62	62	24	41	2	74	2.4
50	10	IR	737 528 210	0.372	130	65	65	24	43	2 ¼	82	3.0
63	10	IR	737 528 211	0.463	136	68	68	24	44	2 ¾	100	3.0

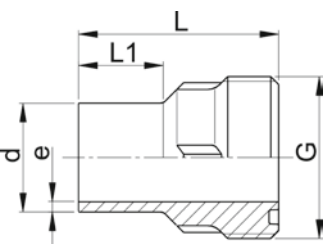


SYGEF ECTFE union bush Type I SDR21/PN10 gap filling O-ring positioning

Model:

- Material: ECTFE
- gap filling O-ring positioning
- suitable for SYGEF ECTFE union

d	PN	FM	Code	Weight	L	L1	G	e
(mm)	(bar)			(kg)	(mm)	(mm)	(inch)	(mm)
20	10	IR	737 648 106	0.024	53	25	1	1.9
25	10	IR	737 648 107	0.038	56	25	1 ¼	1.9
32	10	IR	737 648 108	0.056	59	25	1 ½	2.4
40	10	IR	737 648 109	0.082	62	25	2	2.4
50	10	IR	737 648 110	0.113	65	25	2 ¼	3.0
63	10	IR	737 648 111	0.168	68	25	2 ¾	3.0

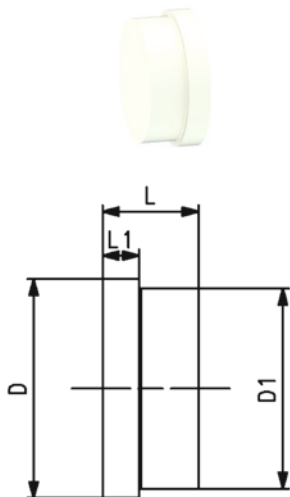


SYGEF ECTFE Union bush Type II SDR21/PN10

Model:

- Material: ECTFE
- Suitable for SYGEF ECTFE Union

d	PN	FM	Code	Weight	L	L1	G	e
(mm)	(bar)			(kg)	(mm)	(mm)	(inch)	(mm)
20	10	IR	737 648 206	0.024	53	25	1	1.9
25	10	IR	737 648 207	0.041	56	25	1 ¼	1.9
32	10	IR	737 648 208	0.056	59	25	1 ½	2.4
40	10	IR	737 648 209	0.089	62	25	2	2.4
50	10	IR	737 648 210	0.116	65	25	2 ¼	3.0
63	10	IR	737 648 211	0.172	68	25	2 ¾	3.0



SYGEF ECTFE Union end blank SDR21/PN10

Model:

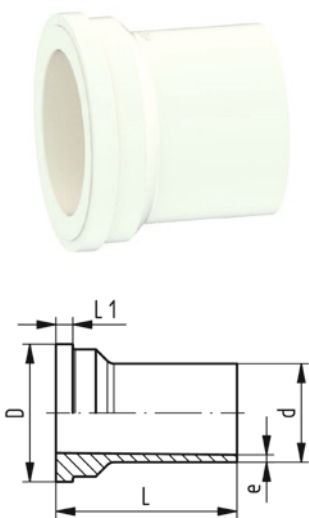
- Material: ECTFE

Note:

machined from semifinished product

Prefabricated Rp/NPT threads on request

d	PN	FM	Code	Weight	*max. Thread	L	L1	D	D1
(mm)	(bar)			(kg)	(inch)	(mm)	(mm)	(mm)	(mm)
20	10	IR	737 600 106	0.026	¼	13	5	30	28
25	10	IR	737 600 107	0.014	⅜	17	5	39	36
32	10	IR	737 600 108	0.030	½	21	6	45	42
40	10	IR	737 600 109	0.050	⅝	23	7	57	53
50	10	IR	737 600 110	0.088	¾	26	8	63	59
63	10	IR	737 600 111	0.124	1	33	8	78	74



SYGEF ECTFE Union end SDR21/PN10

Model:

- Material: ECTFE
- suitable for SYGEF ECTFE union

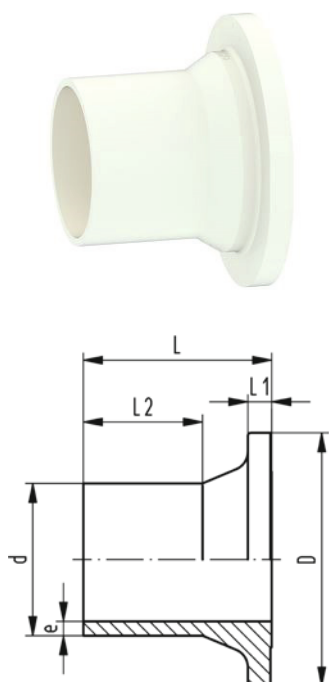
d	PN	FM	Code	Weight	L	L1	D	e
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)
20	10	IR	737 608 106	0.020	53	5	30	1.9
25	10	IR	737 608 107	0.030	56	5	39	1.9
32	10	IR	737 608 108	0.044	59	6	45	2.4
40	10	IR	737 608 109	0.069	62	6	57	2.4
50	10	IR	737 608 110	0.083	65	7	63	3.0
63	10	IR	737 608 111	0.130	68	8	78	3.0

SYGEF ECTFE Valve end SDR21/PN10

Model:

- Material: ECTFE
- Suitable for ball valves 546 Pro and 543 Pro

d	DN	PN	FM	Code	Weight	L	L1	L2	D	e
(mm)	(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)
20	15	10	IR	177 483 048	0.019	52	4	35	38	1.9
25	20	10	IR	177 483 049	0.026	54	5	35	44	1.9
32	25	10	IR	177 483 050	0.043	56	5	35	53	2.4
40	32	10	IR	177 483 051	0.065	67	5	45	65	2.4
50	40	10	IR	177 483 052	0.100	68	6	45	77	3.0
63	50	10	IR	177 483 053	0.150	71	7	45	99	3.0
75	65	10	IR	177 483 054	0.348	65	9	40	125	3.6
90	80	10	IR	177 483 055	0.507	62	10	31	150	4.3
110	100	10	IR	177 483 056	0.820	69	11	37	180	5.3



SYGEF ECTFE Union nut SDR21/PN10

Model:

- Material: ECTFE

d	PN	Code	Weight	L	D	G
(mm)	(bar)		(kg)	(mm)	(mm)	(inch)
20	10	737 690 106	0.023	22	43	1
25	10	737 690 107	0.034	24	53	1 ¼
32	10	737 690 108	0.045	26	60	1 ½
40	10	737 690 109	0.070	29	74	2
50	10	737 690 110	0.100	33	82	2 ¼
63	10	737 690 111	0.151	35	100	2 ¾



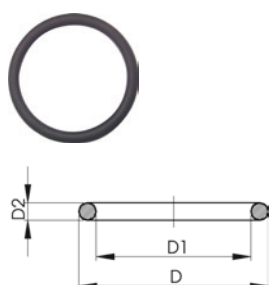
O-ring EPDM/FKM

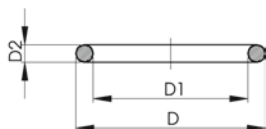
Model:

- For unions and adaptor unions
- Hardness approx. 65° Shore
- EPDM minimum temperature -40°C
- FKM minimum temperature -15°C

* For unions PVC-U, PVC-C and ABS: 21 51 01, 21 51 11, 21 53 03, 21 53 08, 21 55 04, 21 55 13, 21 55 18, 23 51 01 and 29 51 01 only

d	DN	EPDM	Weight	FKM	Weight
(mm)	(mm)	Code	(kg)	Code	(kg)
10 - 12	8	748 410 004	0.002	749 410 004	0.020
16	10	748 410 005	0.002	749 410 005	0.002
20	15	748 410 006	0.002	749 410 006	0.002





d (mm)	DN (mm)	EPDM Code	Weight (kg)	FKM Code	Weight (kg)
25	20	748 410 007	0.002	749 410 007	0.002
32	25	748 410 008	0.003	749 410 008	0.002
40	32	748 410 009	0.003	749 410 009	0.007
50	40	748 410 010	0.004	749 410 010	0.060
63	50	748 410 011	0.005	749 410 011	0.003
*	90	80		749 410 248	0.020

d (mm)	D (mm)	D1 (mm)	D2 (mm)	closest inch (inch)
10 - 12	17.62	12.37	2.62	¼
16	20.78	15.54	2.62	⅜
20	27.28	20.22	3.53	½
25	35.23	28.17	3.53	¾
32	39.99	32.93	3.53	1
40	51.33	40.65	5.34	1 ¼
50	57.68	46.99	5.34	1 ½
63	70.37	59.69	5.34	2
*	90	105.30	5.34	3



O-ring FKM white

For unions with gap filling O-ring positioning
High Purity clean-room product ISO Class 5 (100)

Model:

- For unions with gap filling O-ring position
- Hardness approx. 65° Shore
- FKM white min. temperature -15°C

d (mm)	FKM Code	Weight (kg)	D (mm)	D1 (mm)	D2 (mm)
20	749 411 005	0.002	20.6	15.5	2.62
25	749 411 006	0.002	27.3	20.2	3.53
32	749 411 120	0.002	33.6	26.6	3.53
40	749 411 062	0.002	41.6	34.5	3.53
50	749 411 172	0.003	51.1	44.0	3.53
63	749 411 054	0.003	63.0	55.0	4.00



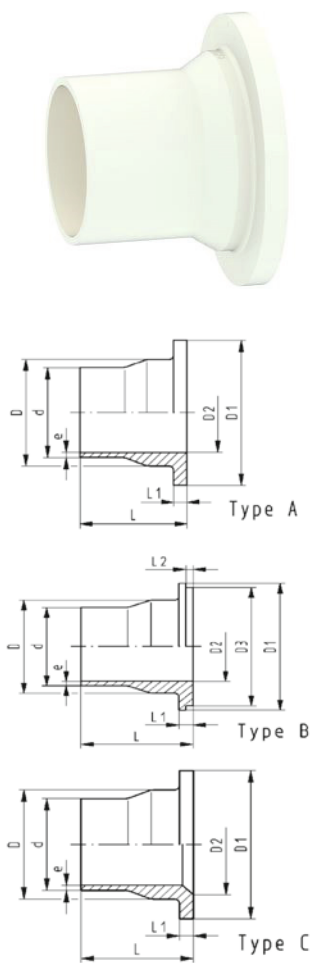
O-Ring Gaskets

Model:

- For unions and adaptor unions
- Hardness approx. 75° shore
- FFKM minimum temperature -20°C

d (mm)	DN (mm)	FFKM Code	SP	Weight (kg)	D1 (mm)	D2 (mm)	D (mm)
20	15	700 245 481	1	0.002	20	3.53	27
25	20	700 245 482	1	0.002	28	3.53	35
32	25	700 245 483	1	0.002	33	3.53	40
40	32	700 245 484	1	0.006	41	5.33	51
50	40	700 245 485	1	0.007	47	5.33	58
63	50	700 245 486	1	0.010	60	5.33	70

SYGEF ECTFE Flange Adaptors, Flanges and Gaskets



SYGEF ECTFE Flange adaptor ISO SDR21/PN10 Jointing face serrated

Model:

- Material: ECTFE

d	DN	PN	FM	Type	Code	Weight
(mm)	(mm)	(bar)				(kg)
20	15	10	IR	A	737 798 106	0.029
25	20	10	IR	B	737 798 107	0.044
32	25	10	IR	B	737 798 108	0.066
40	32	10	IR	B	737 798 109	0.096
50	40	10	IR	B	737 798 110	0.146
63	50	10	IR	A	737 798 111	0.215
75	65	10	IR	A	737 798 112	0.325
90	80	10	IR	B	737 798 113	0.397
110	100	10	IR	C	737 798 114	0.573

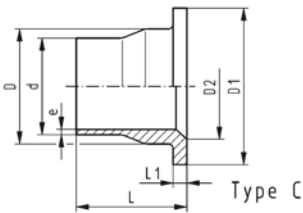
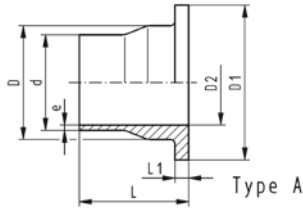
L	L1	L2	D	D1	D2	D3	e
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
54	6	53	26	45	15		1.9
56	7	4	32	58	20	54	1.9
58	7	4	40	68	26	63	2.4
68	8	4	49	78	34	73	2.4
69	8	4	60	88	43	82	3.0
72	9		75	102	56		3.0
80	10		89	122	66		3.6
81	12	4	105	138	78	133	4.3
81	13		125	158	100		5.3

**SYGEF ECTFE Flange adaptor ANSI
SDR21/PN10 Jointing face serrated**

Model:

- Material: ECTFE

d	d	DN	PN	FM	Type	Code	Weight	L	L1	D	D1	D2	e
(mm)	(inch)	(mm)	(bar)				(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
25	¾	20	10	IR	A	737 798 157	0.043	56	7	32	54	20	1.9
32	1	25	10	IR	A	737 798 158	0.063	58	7	40	63	26	2.4
40	1 ¼	32	10	IR	A	737 798 159	0.089	68	8	49	72	34	2.4
50	1 ½	40	10	IR	A	737 798 160	0.140	69	8	60	82	43	3.0
90	3	80	10	IR	A	737 798 163	0.389	81	12	105	138	78	4.3



Flanges PP-Steel

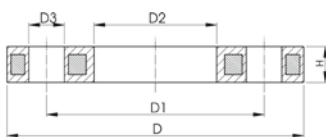
Model:

- Material: PP (30% glass-fibre reinforced) with steel ring
- Metric: ISO 7005, EN 1092, ISO 9624
- ASME: ANSI/ASME B 16.5 class 150, ASTM D4024, BS 1560, BS EN 1759
- Special flange adapter ANSI for d25 - d50 and d90 required

AL: number of holes

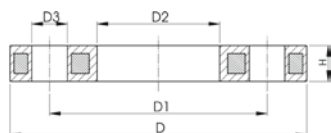
* FM 1613 approved - 15 bar

** Profiled loose flange

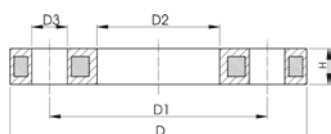
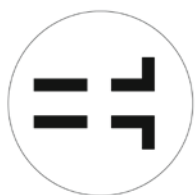


d	DN	D	PN	Standard	Bolt /	Design	Code	Weight	
(mm)	(mm)	(mm)	(bar)		circle			(kg)	
20	15	95	16	Metric	PN10	Butt/Socket	727 700 206	0.216	
25	20	105	16	Metric	PN10	Butt/Socket	727 700 207	0.279	
32	25	115	16	Metric	PN10	Butt/Socket	727 700 208	0.429	
40	32	140	16	Metric	PN10	Butt/Socket	727 700 209	0.621	
50	40	150	16	Metric	PN10	Butt/Socket	727 700 210	0.722	
63	50	165	16	Metric	PN10	Butt/Socket	727 700 211	0.900	
75	65	185	16	Metric	PN10	Butt/Socket	727 700 212	1.110	
*	90	80	200	16	Metric	PN10	Butt	724 700 313	1.390
90	80	200	16	Metric	PN10	Butt	727 700 313	1.390	
*	110	100	223	16	Metric	PN10	Butt	724 700 314	1.407
110	100	220	16	Metric	PN10	Butt	727 700 314	1.407	

d	D1	D2	D3	H max.	AL	SC
(mm)	(mm)	(mm)	(mm)	(mm)		
20	65	28	14	12	4	M12
25	75	34	14	12	4	M12
32	85	42	14	16	4	M12
40	100	51	18	16	4	M16
50	110	62	18	20	4	M16
63	125	78	18	20	4	M16
75	145	92	18	20	4	M16



	d	D1	D2	D3	H max.	AL	SC
	(mm)	(mm)	(mm)	(mm)	(mm)		
*	90	160	108	18	20	8	M16
	90	160	108	18	20	8	M16
*	110	180	128	18	20	8	M16
	110	180	128	18	20	8	M16



Flanges PP-Steel

Model:

- Material: PP (30% glass-fibre reinforced) with steel ring
- Metric: ISO 7005, EN 1092, ISO 9624
- ASME: ANSI/ASME B 16.5 class 150, ASTM D4024, BS 1560, BS EN 1759
- Special flange adapter ANSI for d25 - d50 and d90 required

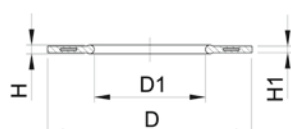
AL: number of holes

* FM 1613 approved - 15 bar

** Profiled loose flange

d	DN	D	PN	Standard	Bolt / circle	Design	Code	Weight
(mm)	(mm)	(mm)	(bar)					(kg)
20	15	95	16	ASME	class 150	Butt/Socket	727 701 206	0.213
25	20	105	16	ASME	class 150	Butt/Socket	727 701 207	0.260
32	25	115	16	ASME	class 150	Butt/Socket	727 701 208	0.416
40	32	140	16	ASME	class 150	Butt/Socket	727 701 209	0.730
50	40	150	16	ASME	class 150	Butt/Socket	727 701 210	0.809
63	50	165	16	ASME	class 150	Butt/Socket	727 701 211	0.866
75	65	185	16	ASME	class 150	Butt/Socket	727 701 212	1.117
90	80	200	16	ASME	class 150	Butt	727 701 313	1.499
110	100	229	16	ASME	class 150	Butt	727 701 314	1.739

d	D1	D2	D3	H max.	AL	SC
(mm)	(mm)	(mm)	(mm)	(mm)		
20	60	28	16	12	4	M12
25	70	34	16	12	4	M12
32	79	42	16	16	4	M12
40	89	51	16	16	4	M16
50	98	62	16	18	4	M16
63	121	78	19	18	4	M16
75	140	92	19	18	4	M16
90	152	108	19	20	4	M16
110	190	128	19	20	8	M16

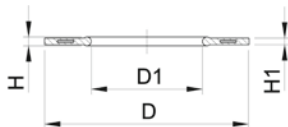


Profile Flange Gasket EPDM/FKM ANSI/ASME

Model:

- Suitable for flanges adaptors PP/PE PVDF
- Hardness: 70° Shore EPDM, 75° Shore FKM
- Centered by the flange bolts
- Dimension D is in accordance with the inner diameter of the bolt circle

d	DN	EPDM	Weight	FKM	Weight	Inch	D	D1	H	H1
(mm)	(mm)	Code	(kg)	Code	(kg)	(inch)	(mm)	(mm)	(mm)	(mm)
25	20	748 440 502	0.010	749 440 502	0.011	3/4	54	27	4	3
32	25	748 440 503	0.011	749 440 503	0.023	1	64	33	4	3
40	32	748 440 504	0.017	749 440 504	0.024	1 1/4	73	42	4	3
50	40	748 440 505	0.030	749 440 505	0.030	1 1/2	83	48	4	3



d (mm)	DN (mm)	EPDM Code	Weight (kg)	FKM Code	Weight (kg)	Inch (inch)	D (mm)	D1 (mm)	H (mm)	H1 (mm)
63	50	748 440 506	0.029	749 440 506	0.042	2	102	60	5	4
75	65	748 440 507	0.046	749 440 507	0.068	2 1/2	121	73	5	4
90	80	748 440 508	0.053	749 440 508	0.083	3	133	89	5	4
110	100	748 440 509	0.088	749 440 509	0.139	4	171	115	6	5



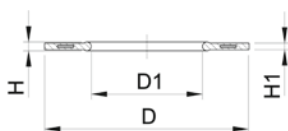
Profile Flange Gasket EPDM/FKM metric

Model:

- For all metric GF Flange Adaptors
- Hardness: 70° Shore EPDM, 75° Shore FKM
- EPDM: approved acc. to DVGW Water W 270, KTW recommendation
- Centering on the inner diameter of the screw crown
- material steel insert: carbon steel
- Rubber-steel body combined with rubber profile cord ring up to d630
- Rubber-steel body ideal for big dimensions (d710 - d1000)

di FA are the suitable inner diameters of flanges adaptors

d (mm)	DN (mm)	PN (bar)	EPDM Code	FKM Code	Weight (kg)	D (mm)	D1 (mm)	di FA (mm)	H (mm)	H1 (mm)
16	10	16	748 440 705	749 440 705	0.012	46	16	6 - 16	4	3
20	15	16	748 440 706	749 440 706	0.013	51	20	10 - 20	4	3
25	20	16	748 440 707	749 440 707	0.014	61	22	12 - 22	4	3
32	25	16	748 440 708	749 440 708	0.019	71	28	18 - 28	4	3
40	32	16	748 440 709	749 440 709	0.026	82	40	30 - 40	4	3
50	40	16	748 440 710	749 440 710	0.039	92	46	36 - 46	4	3
63	50	16	748 440 711	749 440 711	0.050	107	58	48 - 58	5	4
75	65	16	748 440 712	749 440 712	0.082	127	69	59 - 69	5	4
90	80	16	748 440 713	749 440 713	0.083	142	84	73 - 84	5	4
110	100	16	748 440 714	749 440 714	0.127	162	104	94 - 104	6	5

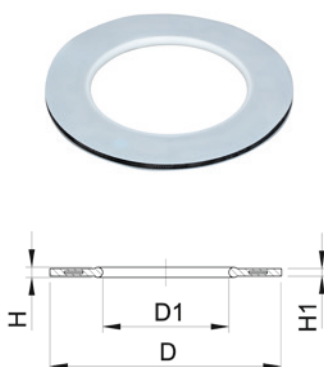


Profile Flange Gasket, metric MPTFE envelope / EPDM inside

Model:

- For all metric GF Flange Adaptors
- Centering on the inner diameter of the bolt circle
- Envelope made of modified PTFE with diffusion barrier
- Ideal for aggressive media, High-Purity and silicone-free / paint compatible (acc. VDMA test)
- EPDM Profile Flange Gasket inside
- Individually bagged
- Suitable for contact with food stuff (conform to FDA 21 § 177.1550)

d (mm)	DN (mm)	PN (bar)	MPTFE/ EPDM Code	D (mm)	D1 (mm)	di FA (mm)	H (mm)	H1 (mm)
20	15	16	747 440 706	51	20	10 - 20	4	3
25	20	16	747 440 707	61	22	12 - 22	4	3
32	25	16	747 440 708	71	28	18 - 28	4	3
40	32	16	747 440 709	82	40	30 - 40	4	3
50	40	16	747 440 710	92	46	36 - 46	4	3
63	50	16	747 440 711	107	58	48 - 58	5	4
75	65	16	747 440 712	127	69	59 - 69	5	4
90	80	16	747 440 713	142	84	73 - 84	5	4
110	100	16	747 440 714	162	104	94 - 104	6	5



SYGEF ECTFE Valves



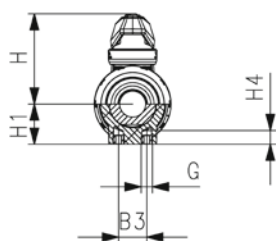
SYGEF Standard Ball Valve type 546 Pro With ECTFE butt fusion spigots (IR) ISO

Model:

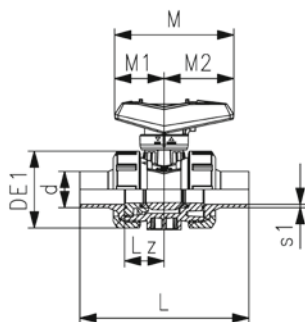
- Lockable lever as standard
- Ball seat PTFE
- Integrated stainless steel mounting inserts
- Z-dimension, valve end and union nut **are compatible** with type 546 (1st Generation)

Option:

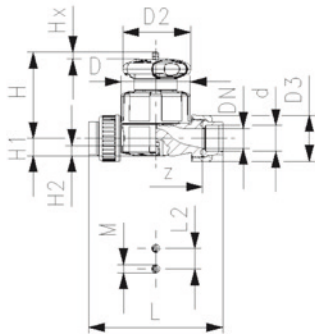
- Interface module for position feedback sensor with LED (PNP, NPN and NAMUR)
- Manual spring return lever "Dead man" (DN10-25)
- Pneumatic or electric actuators from GF
- Individual configuration of valves possible



d (mm)	DN (mm)	Size (inch)	PN (bar)	kv-value (Δp=1 bar) (l/min)	FKM Code	SP Weight (kg)
20	15	½	10	185	175 546 212	1 0.197
25	20	¾	10	350	175 546 213	1 0.302
32	25	1	10	700	175 546 214	1 0.431
40	32	1 ¼	10	1000	175 546 215	1 0.760
50	40	1 ½	10	1600	175 546 216	1 1.011
63	50	2	10	3100	175 546 217	1 1.856
75	65	2 ½	10	5000	175 546 218	1 6.300
90	80	3	10	7000	175 546 219	1 9.500
110	100	4	10	11000	175 546 220	1 15.000



d (mm)	B3 (mm)	DE1 (mm)	G (mm)	H (mm)	H1 (mm)	H4 (mm)	L (mm)	Lz (mm)	M (mm)	M2 (mm)	M1 (mm)	s1 (mm)
20	25	50	M6	60.5	27	12	130	28	82	35	47	1.9
25	25	58	M6	74.0	30	12	143	33	106	44	62	2.3
32	25	68	M8	80.0	36	12	150	36	106	44	62	3.0
40	45	84	M8	95.0	44	15	171	43	131	57	74	3.7
50	45	97	M8	101.5	51	15	191	45	131	57	74	4.6
63	45	124	M8	116.5	64	15	220	51	152	66	86	5.8
75	70	166	M8	169.0	85	15	266	68	270	64	205	8.2
90	70	200	M8	180.0	105	15	264	71	270	64	205	10.0
110	120	238	M12	194.0	123	22	301	82	326	71	255	12.0



SYGEF Standard Diaphragm valve type 514 With ECTFE butt fusion spigots (IR) metric

Model:

- Diaphragm valve material: **PVDF** / end connection material: **ECTFE**
- SDR21/PN10
- Double flow rate compared to predecessor
- One housing nut replaces four screws
- Handwheel with built-in locking mechanism
- For easy installation and removal
- Short overall length

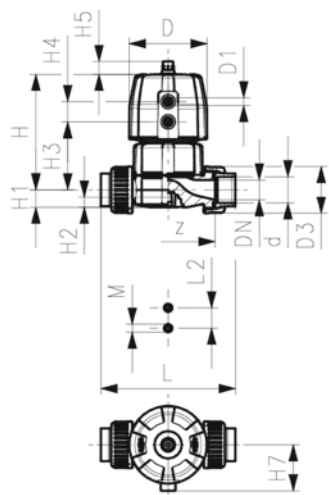
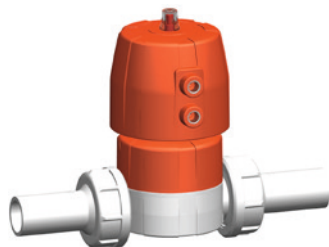
Option:

- Individual configuration of the valve
- Self adjusting multifunctional module with integrated limit switches

* O-Ring material: FKM

d (mm)	DN (mm)	PN (bar)	kv-value ($\Delta p=1$ bar) (l/min)	PTFE/ EPDM* Code	Weight (kg)	PTFE/FKM* Code	Weight (kg)
20	15	10	125	185 514 232	0.358	185 514 252	0.349
25	20	10	271	185 514 233	0.546	185 514 253	0.546
32	25	10	481	185 514 234	0.969	185 514 254	0.969
40	32	10	759	185 514 235	1.683	185 514 255	1.683
50	40	10	1263	185 514 236	2.932	185 514 256	2.932
63	50	10	1728	185 514 237	2.995	185 514 257	2.995

d (mm)	D (mm)	D2 (mm)	D3 (mm)	H (mm)	H1 (mm)	H2 (mm)	L (mm)	L2 (mm)	M	z (mm)	Lift = Hx (mm)	closest inch (inch)
20	65	65	43	73	14	12	128	25	M6	100	7	½
25	80	65	53	81	18	12	150	25	M6	118	10	¾
32	88	87	60	107	22	12	162	25	M6	126	13	1
40	101	87	74	115	26	15	184	45	M8	144	15	1 ¼
50	117	135	82	148	32	15	210	45	M8	164	19	1 ½
63	144	135	100	166	39	15	248	45	M8	194	25	2



**SYGEF Standard Diaphragm valve DIASTAR Ten
DA (Double acting)
With ECTFE butt fusion spigots (IR) metric**

Model:

- Diaphragm valve material: **PVDF** / end connection material: **ECTFE**
- SDR21/PN10
- Double flow rate compared to predecessor
- One housing nut replaces four screws
- Rotating air connection at 90° intervals
- For easy installation and removal
- Short overall length

Option:

- Individual configuration of the valve
- Comprehensive range of accessories available

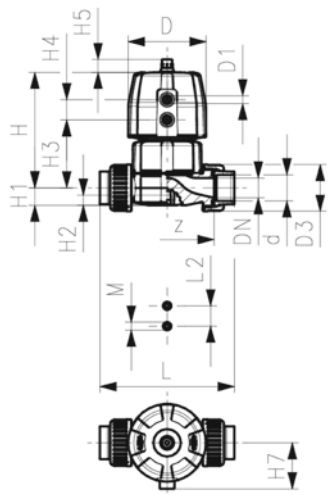
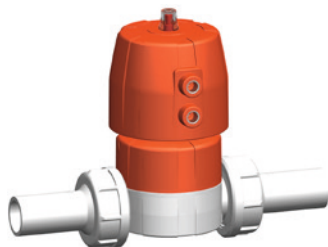
Working Pressure: **one side**

* O-Ring material: FKM

d (mm)	DN (mm)	kv-value (Δp=1 bar) (l/min)	PTFE/ EPDM* Code	Weight (kg)	PTFE/FKM* Code	Weight (kg)
20	15	125	185 654 232	0.565	185 654 252	0.565
25	20	271	185 654 233	1.116	185 654 253	1.116
32	25	481	185 654 234	1.328	185 654 254	1.355
40	32	759	185 654 235	2.116	185 654 255	2.116
50	40	1263	185 654 236	3.426	185 654 256	3.426
63	50	1728	185 654 237	4.518	185 654 257	4.518

d (mm)	D (mm)	D1_G (inch)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	L (mm)	L2 (mm)	M	z (mm)	Lift = Hx (mm)
20	68	⅝	101	14	12	60	24	16	43	128	25	M6	100	7
25	96	⅞	132	18	12	73	25	16	57	150	25	M6	118	10
32	96	⅞	143	22	12	84	25	16	57	162	25	M6	126	13
40	120	⅞	173	26	15	99	26	26	69	184	45	M8	144	15
50	150	⅞	214	32	15	119	36	26	88	210	45	M8	164	19
63	150	⅞	226	39	15	132	36	26	88	248	45	M8	194	23

d (mm)	closest inch (inch)
20	⅝
25	⅞
32	1
40	1 ¼
50	1 ½
63	2



**SYGEF Standard Diaphragm valve DIASTAR Ten
FC (Fail safe to close)
With ECTFE butt fusion spigots (IR) metric**

Model:

- Diaphragm valve material: **PVDF** / end connection material: **ECTFE**
- SDR21/PN10
- Double flow rate compared to predecessor
- One housing nut replaces four screws
- Rotating air connection at 90° intervals
- For easy installation and removal
- Short overall length

Option:

- Individual configuration of the valve
- Comprehensive range of accessories available

* PN: PTFE

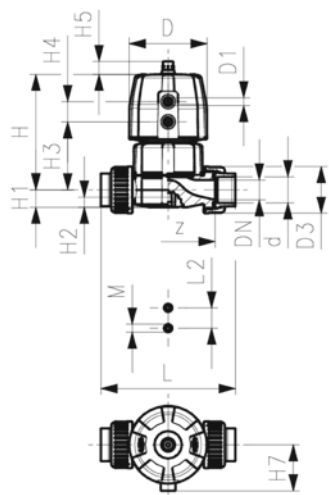
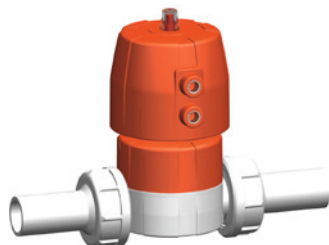
Working Pressure: **one side**

* O-Ring material: FKM

d (mm)	DN (mm)	PN* (bar)	kv-value (Δp=1 bar) (l/min)	PTFE/ EPDM* Code	Weight (kg)	PTFE/FKM* Code	Weight (kg)
20	15	10/10*	125	185 624 232	0.611	185 624 252	0.611
25	20	10/10*	271	185 624 233	1.216	185 624 253	1.216
32	25	10/10*	481	185 624 234	1.565	185 624 254	1.565
40	32	10/10*	759	185 624 235	2.489	185 624 255	2.489
50	40	10/10*	1263	185 624 236	4.266	185 624 256	4.266
63	50	10/6*	1728	185 624 237	5.358	185 624 257	5.358

d (mm)	D (mm)	D1_G (inch)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	L (mm)	L2 (mm)	M	z (mm)	Lift = Hx (mm)
20	68	⅜	101	14	12	60	24	16	43	196	25	M6	100	7
25	96	⅜	132	18	12	73	25	16	57	221	25	M6	118	10
32	96	⅜	143	22	12	84	25	16	57	234	25	M6	126	13
40	120	⅜	173	26	15	99	26	26	69	260	45	M8	144	15
50	150	⅜	214	32	15	119	36	26	88	284	45	M8	164	19
63	150	⅜	226	39	15	132	36	26	88	321	45	M8	194	23

d (mm)	closest inch (inch)
20	⅜
25	⅜
32	1
40	1 ¼
50	1 ½
63	2



SYGEF Standard Diaphragm valve DIASTAR Ten
FO (Fail safe to open)
With ECTFE butt fusion spigots (IR) metric

Model:

- Diaphragm valve material: **PVDF** / end connection material: **ECTFE**
- SDR21/PN10
- Double flow rate compared to predecessor
- One housing nut replaces four screws
- Rotating air connection at 90° intervals
- For easy installation and removal
- Short overall length

Option:

- Individual configuration of the valve
- Comprehensive range of accessories available

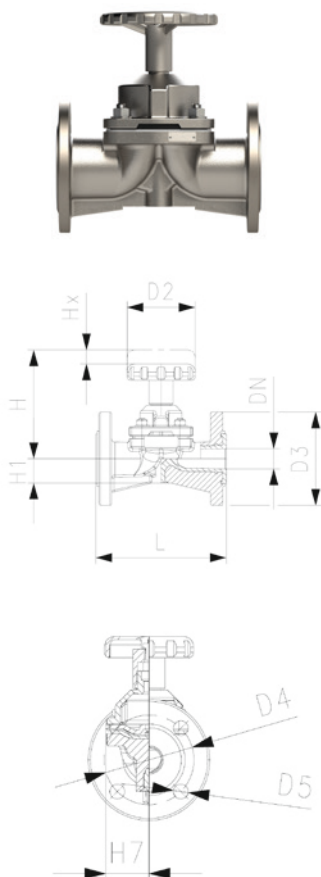
Working Pressure: **one side**

* O-Ring material: FKM

d (mm)	DN (mm)	kv-value ($\Delta p=1$ bar) (l/min)	PN (bar)	PTFE/ EPDM* Code	Weight (kg)	PTFE/FKM* Code	Weight (kg)
20	15	125	10	185 644 232	0.686	185 644 252	0.686
25	20	271	10	185 644 233	1.152	185 644 253	1.152
32	25	481	10	185 644 234	1.385	185 644 254	1.385
40	32	759	10	185 644 235	2.176	185 644 255	2.176
50	40	1263	10	185 644 236	4.176	185 644 256	4.176
63	50	1728	6	185 644 237	5.268	185 644 257	5.268

d (mm)	D (mm)	D1_G (inch)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	L (mm)	L2 (mm)	M	z (mm)	Lift = Hx (mm)
20	68	1/8	101	14	12	60	24	16	43	128	25	M6	100	7
25	96	3/8	132	18	12	73	25	16	57	150	25	M6	118	10
32	96	1/2	143	22	12	84	25	16	57	162	25	M6	126	13
40	120	5/8	173	26	15	99	26	26	69	184	45	M8	144	15
50	150	3/4	214	32	15	119	36	26	88	210	45	M8	164	19
63	150	1/2	226	39	15	132	36	26	88	248	45	M8	194	23

d (mm)	closest inch (inch)
20	3/4
25	1
32	1 1/4
40	1 1/2
50	2
63	2 1/2



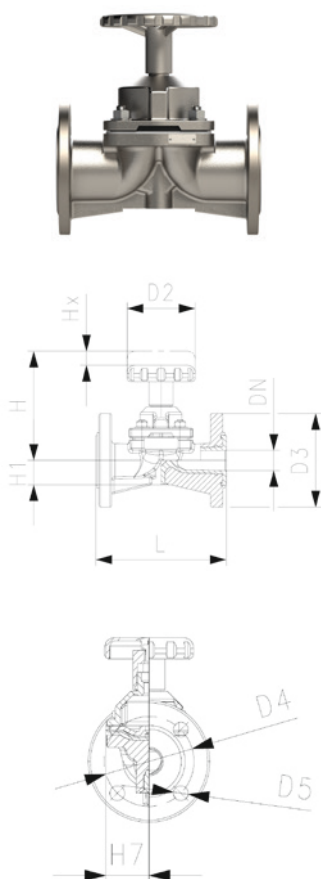
SYGEF ECTFE Type SDV Diaphragm Valve ISO With Handwheel

Model:

- ISO/ DIN flange connection
- Material: PFA lined SSSt valve body, PTFE-T/FKM diaphragm

d	Size	DN	PN	kv-value	Code	Weight
(mm)	(inch)	(mm)	(bar)	(m ³ /h)		(kg)
20	¾	15	10	7.8	160 144 106	2.5
25	¾	20	10	10.0	160 144 107	3.0
32	1	25	10	15.0	160 144 108	3.8
40	1 ¼	32	10	22.5	160 144 109	5.2
50	1 ½	40	10	37.0	160 144 110	7.4
63	2	50	10	65.0	160 144 111	9.7
75	2 ½	65	10	95.0	160 144 112	13.5
90	3	80	8	134.0	160 144 113	18.0
110	4	100	7	200.0	160 144 114	30.0

d	L	D2	D3	D4	D5	H	H1	H7	Hx	Rotation (per stroke)
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
20	130	85	95	65	14	115	24	36	8	4.5
25	150	85	105	75	14	117	26	36	8	4.5
32	160	85	115	85	14	124	30	41	10	5.5
40	180	85	140	100	18	134	35	52	12	7.0
50	200	120	150	110	18	173	41	56	24	12.0
63	230	120	165	125	18	186	44	70	30	15.0
75	290	180	185	145	18	208	55	82	30	12.0
90	310	180	200	160	18	233	60	100	34	13.5
110	350	250	220	180	18	282	72	123	40	13.5



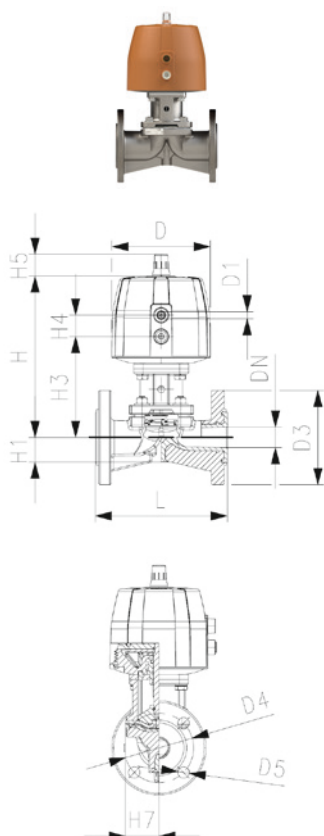
SYGEF ECTFE Type SDV Diaphragm Valve ANSI With Handwheel

Model:

- ANSI flange connection
- Material: PFA lined SSSt valve body, PTFE-T/FKM diaphragm

d	Size	DN	PN	kv-value	Code	Weight
(mm)	(inch)	(mm)	(bar)	(m ³ /h)		(kg)
20	¾	15	10	7.8	160 144 156	2.5
25	¾	20	10	10.0	160 144 157	3.0
32	1	25	10	15.0	160 144 158	3.5
40	1 ¼	32	10	22.5	160 144 159	5.2
50	1 ½	40	10	37.0	160 144 160	6.3
63	2	50	10	65.0	160 144 161	9.0
75	2 ½	65	10	95.0	160 144 162	13.5
90	3	80	8	134.0	160 144 163	16.9
110	4	100	7	200.0	160 144 164	30.3

d	L	D2	D3	D4	D5	H	H1	H7	Hx	Rotation (per stroke)
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
20	130	85	90	60	16	115	24	36	8	4.5
25	150	85	100	70	16	117	26	36	8	4.5
32	146	85	110	80	16	124	30	41	10	5.5
40	180	85	115	89	16	134	35	52	12	7.0
50	174	120	125	98	16	173	41	56	24	12.0
63	200	120	150	121	19	186	44	70	30	15.0
75	290	180	180	140	19	208	55	82	30	12.0
90	260	180	190	152	19	233	60	100	34	13.5
110	327	250	230	191	19	282	72	123	40	13.5



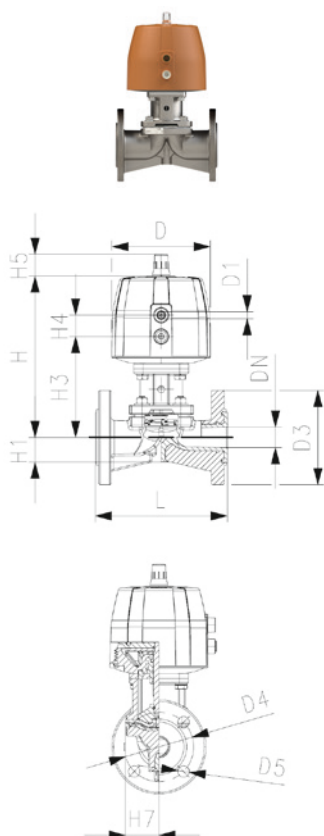
SYGEF ECTFE Type SDV Diaphragm Valve ISO With pneumatic actuator FC (fail safe to close)

Model:

- ISO/ DIN flange connection
- Material: PFA lined SSSt valve body, PTFE-T/FKM diaphragm
- With pneumatic actuator

d	Size	DN	PN	kv-value	Code	Weight
(mm)	(inch)	(mm)	(bar)	(m ³ /h)		(kg)
20	½	15	10	7.8	160 144 206	4.8
25	¾	20	10	10.0	160 144 207	5.3
32	1	25	10	15.0	160 144 208	6.4
40	1 ¼	32	10	22.5	160 144 209	7.8
50	1 ½	40	10	37.0	160 144 210	13.9
63	2	50	10	65.0	160 144 211	16.0
75	2 ½	65	10	95.0	160 144 212	19.8
90	3	80	8	134.0	160 144 213	32.8
110	4	100	7	200.0	160 144 214	46.7

d	L	D	D1	D3	D4	D5	H	H1	H3	H4	H5	H7
(mm)	(mm)	(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
20	130	120	¾	95	65	14	211	24	115	26	23	36
25	150	120	¾	105	75	14	213	26	117	26	23	36
32	160	120	¾	115	85	14	227	30	123	26	23	41
40	180	150	¾	140	100	18	253	35	141	36	36	52
50	200	180	¾	150	110	18	284	41	154	37	36	56
63	230	180	¾	165	125	18	302	44	159	37	36	70
75	290	280	¾	185	145	18	366	55	182	24	46	82
90	310	280	¾	200	160	18	373	60	200	24	46	100
110	350	335	¾	220	180	18	448	72	267	24	46	123



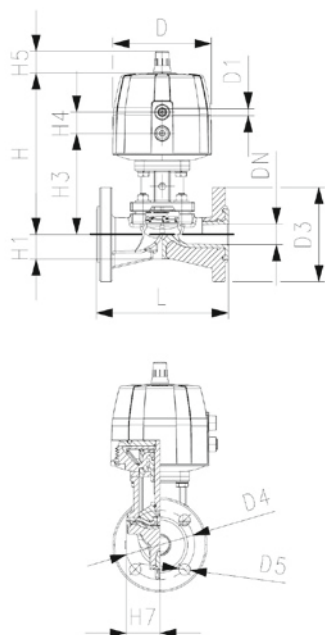
SYGEF ECTFE Type SDV Diaphragm Valve ANSI With pneumatic actuator FC (fail safe to close)

Model:

- ANSI flange connection
- Material: PFA lined SSSt valve body, PTFE-T/FKM diaphragm
- With pneumatic actuator

d	Size	DN	PN	kv-value	Code	Weight
(mm)	(inch)	(mm)	(bar)	(m ³ /h)		(kg)
20	½	15	10	7.8	160 144 256	4.8
25	¾	20	10	10.0	160 144 257	5.3
32	1	25	10	15.0	160 144 258	6.1
40	1 ¼	32	10	22.5	160 144 259	7.8
50	1 ½	40	10	37.0	160 144 260	12.8
63	2	50	10	65.0	160 144 261	15.3
75	2 ½	65	10	95.0	160 144 262	19.8
90	3	80	8	134.0	160 144 263	31.7
110	4	100	7	200.0	160 144 264	47.0

L	D	D1	D3	D4	D5	H	H1	H3	H4	H5	H7
(mm)	(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
130	120	¾	90	60	16	211	24	115	26	23	36
150	120	¾	100	70	16	213	26	117	26	23	36
146	120	¾	110	80	16	227	30	123	26	23	41
180	150	¾	115	89	16	253	35	141	36	36	52
174	180	¾	125	98	16	284	41	154	37	36	56



L	D	D1	D3	D4	D5	H	H1	H3	H4	H5	H7
(mm)	(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
200	180	¾	150	121	19	302	44	159	37	36	70
290	280	¾	180	140	19	366	55	182	24	46	82
260	280	¾	190	152	19	373	60	200	24	46	100
327	335	¾	230	191	19	448	72	267	24	46	123



Spare part membranes For Type SDV

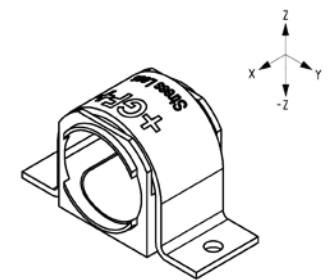
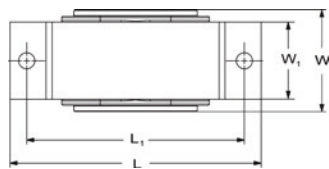
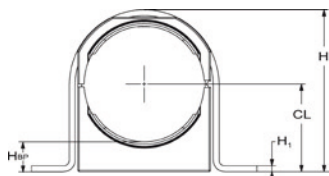
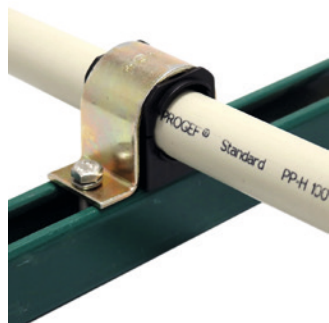
Model:

- PTFE-T/FKM diaphragm for Type SDV

d	DN	PTFE/FKM	Closest inch
(mm)	(mm)	Code	(inch)
20 - 25	15 - 20	747 503 506	½ - ¾
32	25	747 503 508	1
40	32	747 503 509	1 ¼
50	40	747 503 510	1 ½
63	50	747 503 511	2
75	65	747 503 512	2 ½
90	80	747 503 513	3
110	100	747 503 514	4

SYGEF ECTFE Accessories

Stress Less Pipe Guide - Metric

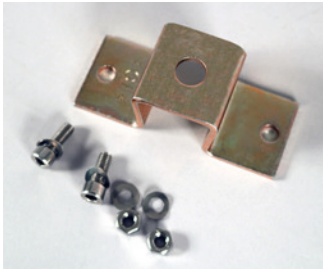


First pipe support system especially designed to eliminate stress transfer to pipe due to thermal expansion or seismic events. Has engineered, designed gap of 3mm between guide insert and pipe OD. Excessive force can never be exerted on the pipe regardless of bolt torque.

- Includes steel hoop and plastic guide insert.
- Hoop is trivalent gold chromium-coated galvanized steel, compliant with ASTM B633.
- Guide insert is Polypropylene, Black, UV resistant.
- Mounts to any flat surface or standard strut support.
- Mounting holes in hoop for bolts size "SC" (not included).
- Recommend using 70,000psi (482 MPa) tensile strength or greater bolts in recommended sizes.
- Fy, Fz, and -Fz are rated design loads, in lb-f (pounds-force) and N (Newtons), for respective y, z, and -z directions.

Size (mm)	GF Code
20	155 484 500
25	155 484 501
32	155 484 502
40	155 484 503
50	155 484 504
63	155 484 505
75	155 484 506
90	155 484 507
110	155 484 508
125	155 484 518
140	155 484 519
160	155 484 509

Size (mm)	H (mm)	CL (mm)	Hbp (mm)	H1 (mm)	L (mm)	L1 (mm)	W (mm)	W1 (mm)	SC	Fz	F-z	Fy
20	41	19	9	3	83	66	50	37	1/4" M6	150lbs / 660N	180lbs / 800N	150lbs / 660N
25	47	23	10	3	88	71	50	37	1/4" M6	150lbs / 660N	180lbs / 800N	150lbs / 660N
32	56	28	12	3	95	78	50	37	1/4" M6	150lbs / 660N	180lbs / 800N	150lbs / 660N
40	58	26	6	3	102	86	50	37	1/4" M6	150lbs / 660N	180lbs / 800N	150lbs / 660N
50	69	33	9	3	111	94	50	37	1/4" M6	150lbs / 660N	180lbs / 800N	150lbs / 660N
63	89	47	16	3	124	107	50	37	5/16" M8	200lbs / 800N	240lbs / 880N	200lbs / 800N
75	108	58	21	3	135	119	50	37	5/16" M8	300lbs / 1300N	360lbs / 1600N	300lbs / 1300N
90	113	58	13	3	151	134	50	37	5/16" M8	450lbs / 2000N	540lbs / 2400N	450lbs / 2000N
110	136	68	13	3	175	159	50	37	5/16" M8	650lbs / 2800N	780lbs / 3400N	600lbs / 2670N
125	152	80	15	3	187	171	50	37	5/16" M8	700lbs / 3100N	840lbs / 3700N	600lbs / 2670N
140	169	90	18	3	202	186	50	37	5/16" M8	700lbs / 3100N	840lbs / 3700N	600lbs / 2670N
160	193	98	18	5	251	227	50	36	3/8" M8	900lbs / 4000N	1080lbs / 4800N	600lbs / 2670N



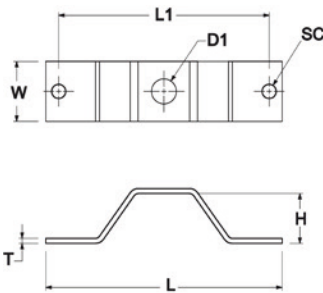
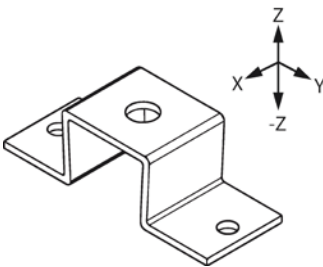
Stress Less Pipe Guide - Clevis Hanger Kit

First pipe support system especially designed to eliminate stress transfer to pipe due to thermal expansion or seismic events. Has engineered, designed gap of 3mm between guide insert and pipe OD. Excessive force can never be exerted on the pipe regardless of bolt torque.

- For use with metric or IPS Stress Less Pipe Supports.
- Does not include pipe guide insert or bracket.
- SC = bolt size.
- Seismic kicker configuration (V-bracing) Fy,z rating plus F-z rating.

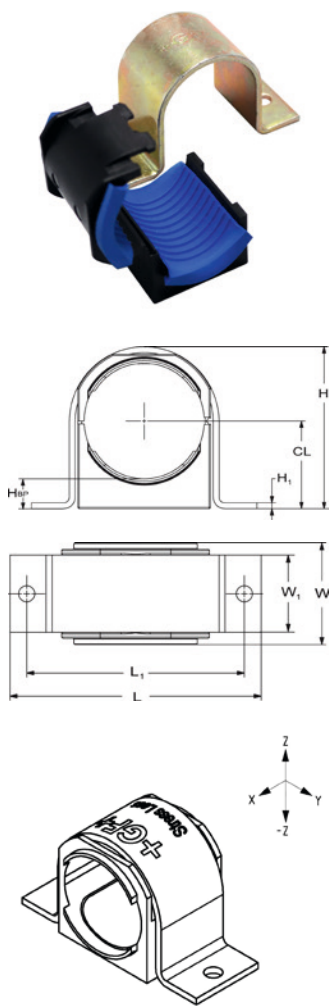
Option:

- Stainless steel hoop bracket available S155484xxx.



Size (mm)	Size (inch)	Code
20	1/2	155 484 540
25	3/4	155 484 541
32	1	155 484 542
40	1 1/4	155 484 543
50	1 1/2	155 484 544
63	2	155 484 545
75	2 1/2	155 484 546
90	3	155 484 547
110	4	155 484 548
125	5	155 484 558
140		155 484 559
160	6	155 484 549
225	8	155 484 550

Size (mm)	Size (inch)	L (mm)	L1 (mm)	H (mm)	T (mm)	w (mm)	D1 (mm)	SC	Fy	F-z
20	1/2	83	66	32	3	38	12.7	1/4" / M6	150lbs / 660N	150lbs / 660N
25	3/4	88	71	32	3	38	12.7	1/4" / M6	150lbs / 660N	150lbs / 660N
32	1	95	78	32	3	38	12.7	1/4" / M6	150lbs / 660N	150lbs / 660N
40	1 1/4	103	86	32	3	38	12.7	1/4" / M6	150lbs / 660N	150lbs / 660N
50	1 1/2	111	94	32	3	38	12.7	1/4" / M6	150lbs / 660N	150lbs / 660N
63	2	124	107	32	3	38	12.7	5/16" / M8	200lbs / 800N	200lbs / 800N
75	2 1/2	136	119	32	3	38	15.9	5/16" / M8	300lbs / 1300N	300lbs / 1300N
90	3	151	134	32	3	38	15.9	5/16" / M8	450lbs / 2000N	450lbs / 2000N
110	4	176	159	32	3	38	19.0	5/16" / M8	600lbs / 2670N	650lbs / 2800N
125	5	187	171	32	3	38	19.0	5/16" / M8	600lbs / 2670N	700lbs / 3100N
140		202	186	32	3	38	19.0	5/16" / M8	600lbs / 2670N	700lbs / 3100N
160	6	251	227	32	5	38	22.2	3/8" / M10	600lbs / 2670N	900lbs / 4000N
225	8	310	286	32	5	38	22.2	3/8" / M10	800lbs / 3560N	1750lbs / 7700N

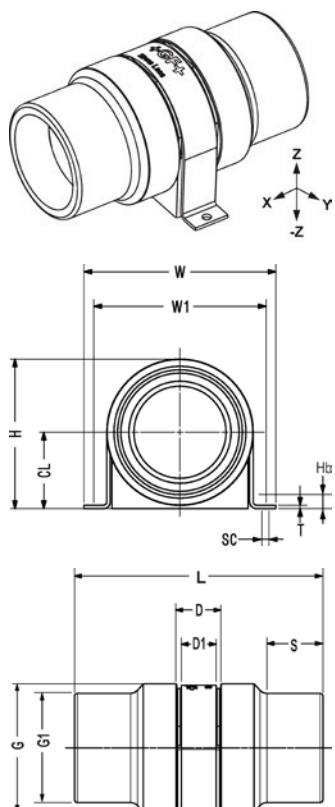


Stress Less Pipe Support - Vertical Metric

- For use as a vertical pipe support. Includes elastomeric insert strips in support to provide friction and snug fit against pipe.
- Bracket provides strength for support during seismic or excessive loading events.
- For metric size pipe 20mm – 63mm.
- Includes steel hoop and plastic guide insert.
- Hoop is trivalent gold chromium-coated galvanized steel, compliant with ASTM B633.
- Guide insert is Polypropylene, Black, UV resistant.
- Mounts to any flat surface or standard strut support.
- Mounting holes in hoop for bolts size "SC" (not included).
- Fx, Fy and Fz are rated design loads, in lb-f (pounds-force) and N (Newtons), for respective x, y and z directions.

Size (mm)	Code
20	155 484 560
25	155 484 561
32	155 484 562
40	155 484 563
50	155 484 564
63	155 484 565

Size (mm)	H (mm)	CL (mm)	Hbp (mm)	H1 (mm)	L (mm)	L1 (mm)	W (mm)	W1 (mm)	SC	Fyz	F-z
20	41	21	11	3	83	66	50	37	1/4" / M6	150lbs / 660N	180lbs / 800N
25	47	25	12	3	88	71	50	37	1/4" / M6	150lbs / 660N	180lbs / 800N
32	56	30	14	3	95	78	50	37	1/4" / M6	150lbs / 660N	180lbs / 800N
40	58	28	8	3	102	86	50	37	1/4" / M6	150lbs / 660N	180lbs / 800N
50	69	35	10	3	111	94	50	37	1/4" / M6	150lbs / 660N	180lbs / 800N
63	89	49	17	3	124	107	50	37	5/16" / M8	200lbs / 800N	240lbs / 880N



Linestop Clamp Kit - SYGEF ECTFE

Model:

- Kit includes ECTFE restraint fitting, galvanized steel hoop bracket and HDPE spacer bracket. Does not include hardware for bolting to unistrut or supporting structure.
- To be used with SYGEF ECTFE (PN10) pipe and fittings.
- Hoop is trivalent gold chromium-coated galvanized steel, compliant with ASTM B633.
- Mounting holes in bracket for bolts size "SC" (not included).
- Recommend using 70,000psi (482 MPa) tensile strength or greater bolts in recommended sizes.
- Fx, Fy and Fz are rated design loads, in lb-f (pounds-force) and N (Newtons), for respective x, y and z directions.

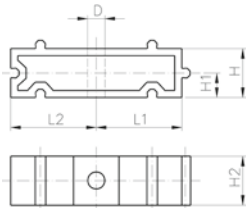
Option:

- Stainless steel hoop bracket available S700225xxx.

Size (mm)	GF Code
20	700 225 320
25	700 225 321
32	700 225 322
40	700 225 323
50	700 225 324
63	700 225 325
75	700 225 326
90	700 225 327
110	700 225 328

H	CL	D	D1	W	W1	G	G1	S	L	T	SC
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
41.0	19.0	46.0	36.6	83.0	66.0	34.0	20.0	14.1	160.0	3.0	1/4" / M8
47.0	23.0	46.0	36.6	88.0	71.0	43.0	25.0	16.0	170.0	3.0	1/4" / M8
56.0	28.0	46.0	36.6	95.0	78.0	52.0	32.0	18.0	170.0	3.0	1/4" / M8
58.0	26.0	46.0	36.6	102.0	86.0	52.0	40.0	20.0	180.0	3.0	1/4" / M8
69.0	33.0	46.0	36.6	111.0	94.0	66.0	50.0	23.0	190.0	3.0	1/4" / M8
89.0	47.0	46.0	36.6	124.0	107.0	80.0	63.0	30.0	210.0	3.0	5/16" / M8
108.0	58.0	46.0	36.6	135.0	119.0	100.0	75.0	31.0	230.0	3.0	5/16" / M8
113.0	58.0	46.0	36.6	151.0	134.0	110.0	90.0	35.0	240.0	3.0	5/16" / M8
136.0	68.0	46.0	36.6	175.0	159.0	134.0	110.0	41.0	260.0	3.0	3/8" / M11

Fxyz	Fx	Fy	Fz	F-z
150lbs / 660N	150lbs / 660N	150lbs / 660N	150lbs / 660N	180lbs / 800N
150lbs / 660N	150lbs / 660N	150lbs / 660N	150lbs / 660N	180lbs / 800N
150lbs / 660N	150lbs / 660N	150lbs / 660N	150lbs / 660N	180lbs / 800N
150lbs / 660N	150lbs / 660N	150lbs / 660N	150lbs / 660N	180lbs / 800N
150lbs / 660N	150lbs / 660N	150lbs / 660N	150lbs / 660N	180lbs / 800N
200lbs / 800N	200lbs / 800N	200lbs / 800N	200lbs / 800N	240lbs / 880N
300lbs / 1300N	300lbs / 1300N	300lbs / 1300N	300lbs / 1300N	360lbs / 1600N
300lbs / 1300N	300lbs / 1300N	450lbs / 2000N	450lbs / 2000N	540lbs / 2400N
450lbs / 2000N	450lbs / 2000N	600lbs / 2670N	650lbs / 2800N	780lbs / 3400N



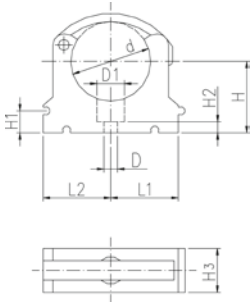
KLIP-IT spacer type 061 PP

Model:

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

d	Inch	Code	SP	Weight	D	L1	L2	H	H1	H2	SC
(mm)	(inch)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
20	½	167 061 156	10	0.005	6	17	19	20	10	16	M5
25	¾	167 061 157	10	0.007	6	19	22	20	10	16	M5
32	1	167 061 158	10	0.006	6	24	27	20	10	16	M5
40	1 ¼	167 061 159	10	0.015	7	34	34	20	10	22	M6
50	1 ½	167 061 160	10	0.017	7	37	37	20	10	22	M6
63	2	167 061 161	10	0.020	9	45	45	20	10	25	M8
75	2 ½	167 061 162	10	0.027	9	52	52	20	10	25	M8
90	3	167 061 163	10	0.039	9	65	65	20	10	28	M8
110	4	167 061 164	10	0.048	9	79	79	20	10	28	M8

KLIP-IT pipe clip type 061 PP metric



Model:

- Material: clip and safety clip PP black, UV resistant
- d16 - d63: height designed for ball valve type 546 and 543
- **Minimum order quantity: standard packagings SP**

	d (mm)	Code	SP	Weight (kg)
*	10	167 061 003	10	0.003
*	12	167 061 004	10	0.003
*	16	167 061 035	10	0.007
*	20	167 061 036	10	0.007
*	25	167 061 037	10	0.009
*	32	167 061 038	10	0.012
	40	167 061 039	10	0.027
	50	167 061 040	10	0.031
	63	167 061 041	10	0.052
	75	167 061 012	10	0.057
	90	167 061 013	10	0.092
	110	167 061 014	10	0.117

	d (mm)	D (mm)	D1 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	L1 (mm)	L2 (mm)	SC	closest inch (inch)
*	10	5	8	20	10	6	12	11	14	M4	¼
*	12	5	8	21	10	6	12	11	14	M5	¼
*	16	6	11	27	10	6	16	14	17	M5	¾
*	20	6	11	27	10	6	16	17	19	M5	½
*	25	6	11	30	10	6	16	19	22	M5	¾
*	32	6	11	36	10	6	16	24	27	M5	1
	40	7	14	44	10	7	22	34	34	M6	1 ¼
	50	7	14	51	10	7	22	37	37	M6	1 ½
	63	9	17	64	10	10	25	45	45	M8	2
	75	9	17	58	10	10	25	52	52	M8	2 ½
	90	9	17	65	10	10	28	65	65	M8	3
	110	9	17	75	10	10	28	79	79	M8	4

SYGEF ECTFE Fusion Machines and Tools



IR-110 A Automated Fusion Machine

Model:

- Fully equipped automated infrared fusion machine with integrated working table for use under clean room conditions
- Welding of PVDF SYGEF (Standard/Plus), ECTFE SYGEF, PP grey PROGEF (Standard/Plus), PP-n PROGEF Natural, PE100 ecoFIT, IR PVC-U
- Dimensions d20-110 mm
- User friendly touch-screen interface 12.1" with various languages
- 4 USB interfaces, LAN Ethernet interface, 230 V Output
- Automated facer, clamping slide and heater
- Integrated video camera and temperature sensors
- Movable clamping units
- Clamping inserts d20-90 mm (8 pcs. per dimension), **not for PVC-U metric**
- End caps PE d20-110 mm (4 pcs. per dimension)
- Shavings collection tray
- Transport box with integrated pallet
- 1-phase AC (50/60 Hz) 230V L/N/PE
- Power supply cable 230V EU Standard
- Torx key (T10) for facing knives
- Cleaning brush
- Label printer

Note:

Clamping inserts PVC-U metric on request

Code	Weight
	(kg)
790 164 001	250



IR-63 M Standard Fusion Machine (without extension cable set & CONNECT box)

Model:

- Manually operated infrared fusion machine with integrated remote welding unit
- Welding of PVDF SYGEF (Standard/Plus), ECTFE SYGEF, PP-H PROGEF (Standard/Plus), PP-n PROGEF Natural, PE100 ecoFIT, PVC-U metric & PFA inch
- Dimensions d20-63 mm
- A safety glass protected 7" touchscreen
- 2x USB-A & 2x USB-C ports
- Clamping slide with movable & exchangeable clamping units
- Half shells d20-50 mm (8 pcs. per dimension)
- End caps PE d20-63 mm (4 pcs. per dimension)
- Pipe stop fix, 2mm facing distance
- Pipe stop adjustable, 0.5-3mm facing distance
- 1-phase AC (50/60 Hz) 230V L/N/PE
- Power supply cable 230 V
- Label printer

Option:

- Half shells PFA inch
- Extension cable set for remote weldings
- CONNECT Welding Data Box

Code	Weight
	(kg)
790 180 001	59.0



IR-110 Plus Fusion Machine (without PVC-U parameter)

Model:

- Fully-equipped manually operated infrared fusion machine for use under clean room conditions
- Welding of PVDF SYGEF (Standard/Plus), ECTFE SYGEF, PP-H PROGEF (Standard/Plus), PP-n PROGEF Natural, PE100 ecoFIT, PFA
- Dimensions d20-110 mm
- Monochrome display with icons and various languages
- 2 USB interfaces
- Heating and facing element
- Clamping slide with movable clamping units
- Clamping inserts d20-90 mm (8 pcs. per dimension)
- End caps PE d20-110 mm (4 pcs. per dimension)
- Pipe stop
- Clean-room compatible accessory tray with tools
- Transport box with integrated pallet
- 1-phase AC (50/60 Hz) 230V L/N/PE
- Power supply cable 230V
- Label printer

Note:

Clamping inserts PFA (inch) on request

Clamping inserts CONTAIN-IT Plus on request

Code	Weight (kg)
790 132 001	110



IR-225 Plus Fusion Machine

Model:

- Fully-equipped manually operated infrared fusion machine with integrated working table for use under clean room conditions
- Welding of PVDF SYGEF (Standard/Plus), ECTFE SYGEF, PP-H PROGEF (Standard/Plus), PP-n PROGEF Natural, PE100 ecoFIT
- Dimensions d63-225 mm
- Monochrome display with icons and various languages
- 2 USB interfaces
- Heating and facing element
- Clamping slide with movable clamping units
- Cooling fan
- Clamping inserts d63-225 mm (8 pcs. per dimension)
- End caps PE d63-225 mm (4 pcs. per dimension)
- Pipe stop
- Transport box with integrated pallet (stainless steel)
- 1-phase AC (50/60 Hz) 230V L/N/PE or 3-phase AC (50/60 Hz) 400V/230VL1/L2/L3/N/PE
- Connecting cable 400V - 230V
- Additional tools
- Label printer

Note:

Clamping inserts CONTAIN-IT Plus on request

Code	Weight (kg)
790 133 009	453



WBI-63 Tool

- Weld bead inspection of PVDF SYGEF (Standard/Plus), ECTFE SYGEF, PP-H PROGEF (Standard/Plus), PE100 ecoFIT
- Dimensions d20-d63 mm
- Clamping units d20-d63 mm
- Tablet with accessories
- Label printer Brother PT-P900W

d-d (mm)	Code	Weight (kg)
20 - 63	790 170 001	14



WBI-225 Tool

- Weld bead inspection of PVDF SYGEF (Standard/Plus), ECTFE SYGEF, PP-H PROGEF (Standard/Plus), PE100 ecoFIT
- Dimensions d20-d225 mm
- Clamping units d20-d225 mm
- Tablet with accessories
- Label printer Brother PT-P900W

d-d (mm)	Code	Weight (kg)
20 - 225	790 170 002	22



Label printer Brother PT-P900Wc

- For IR & BCF fusion machines only
- Label 36 mm included
- Order Label 24 mm separately

Description	Code	Weight (kg)
Label printer Brother PT-P900Wc	790 180 081	2.470
Ribbon white label 24 mm Brother TZe-251	790 180 082	0.100



Cleaning tissue KO-TON-R

Minimum order quantity 100 pieces

- This cleaning tissue is suitable for the cleaning of the welding zone of piping components, because it is lint free and clean room checked.

Code	Weight (kg)
790 122 085	0.005



Tangit KS Cleaner

- Special cleaner for plastic fusion connections in the material of PE, PP, PB, PVDF, ECTFE and PVC-U
- Suitable for Tangit Rapid. Must not be used for solvent cementing
- DVGW approved
- DW 5290 BR 0464

Size	Code	Weight (kg)
1 liter	799 298 023	0.872

PPC Plastic pipe cutter

Model:

- For cutting of plastic pipes d6 - d160
- Suitable for all GF plastic types PE, PVC-U, PVC-C, ABS, PP, PVDF, ECTFE
- Removable deburring tool integrated

Note:

* Additional spare cutting wheel included in the handle

	d (mm)	Article	Code	Weight (kg)	Closest inch (inch)
*	6 - 63	Plastic Pipe cutter (s max. 7.00mm)	790 109 094	0.785	⅝ - 2
	50 - 125	Plastic Pipe cutter (s max. 16.00mm)	790 109 095	1.875	1 ½ - 4



Notes

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Notes

[illegible]

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