

GF Piping Systems

+GF+

SYGEF ECTFE

Your Solution for Aggressive
Chemical Applications



Your Solution for Aggressive Chemical Applications



When conveying aggressive media such as concentrated sulfuric acid (H_2SO_4) and hydrogen peroxide (H_2O_2) with pressure and temperature conditions, the capabilities of many plastic piping systems can be quickly exceeded. At the same time lined steel piping systems have challenges due to the labor intensive joining procedures, high weight, and susceptibility to exterior corrosion.

In contrast, the SYGEF ECTFE system from GF Piping Systems was designed specifically as a robust solution for extreme chemical applications. 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.



+ 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 extremely reliable thanks to the advanced IR welding technology.

+ Long system lifetime

Aggressive chemicals affect the service life of piping systems. With its high chemical resistance and low stress joints, you can count on years of trouble free operation.

+ 200 % higher pressure range

Due to its excellent mechanical properties, ECTFE allows up to 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 has 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 up to 50% lower than those of IR-welded PFA piping systems.

+ 85% faster assembly

The ECTFE components are joined in a few minutes using the advanced IR-welding technology. Compared to systems made of lined steel, installation time is significantly reduced.

Characteristics of SYGEF ECTFE

Overview of SYGEF ECTFE products and system characteristics

System range

Products	d	20	25	32	40	50	63	75	90	110
	DN	15	20	25	32	40	50	65	80	100
Pipes										
Fittings										
Unions										
Flange rings										
Gaskets										
Valves ²										
Automation										
Pipe clips										
IR welding machines										

² on request

System properties

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 (73.4 °F)	0.15 W / mK (ASTM C177)
Tensile stress at 23°C (73.4 °F)	≥ 30 N / mm ² (EN ISO 527-1)
E-module at 23°C (73.4 °F)	≥ 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 (-104.8 °F to 284 °F)
Temperature range applied on chemicals	0 °C to +80 °C (32 °F to 176 °F)
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 - Material - Dimensions - Pressure rating - Lot number - Product description - Article number - Standards Colored labels for differentiation between SYGEF ECTFE and SYGEF Standard PVDF

Chemical resistance

Chemical resistance at 20 °C (68 °F)			Thermoplastics				Steel		
Detailed evaluation is depending on concentration. Contact ChemRes			semi-crystalline		amorphous		SS	SS	
Media group	Medium	Concentration	ECTFE	PVDF	PVC-U	PVC-C	1.4301 / 304	1.4401 / 316	Hastelloy C 276
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 your Georg Fischer representative
 - 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 industry 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 your Georg Fischer representative for help with selecting the correct materials.

Online tool Chemical resistance

Our team 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.

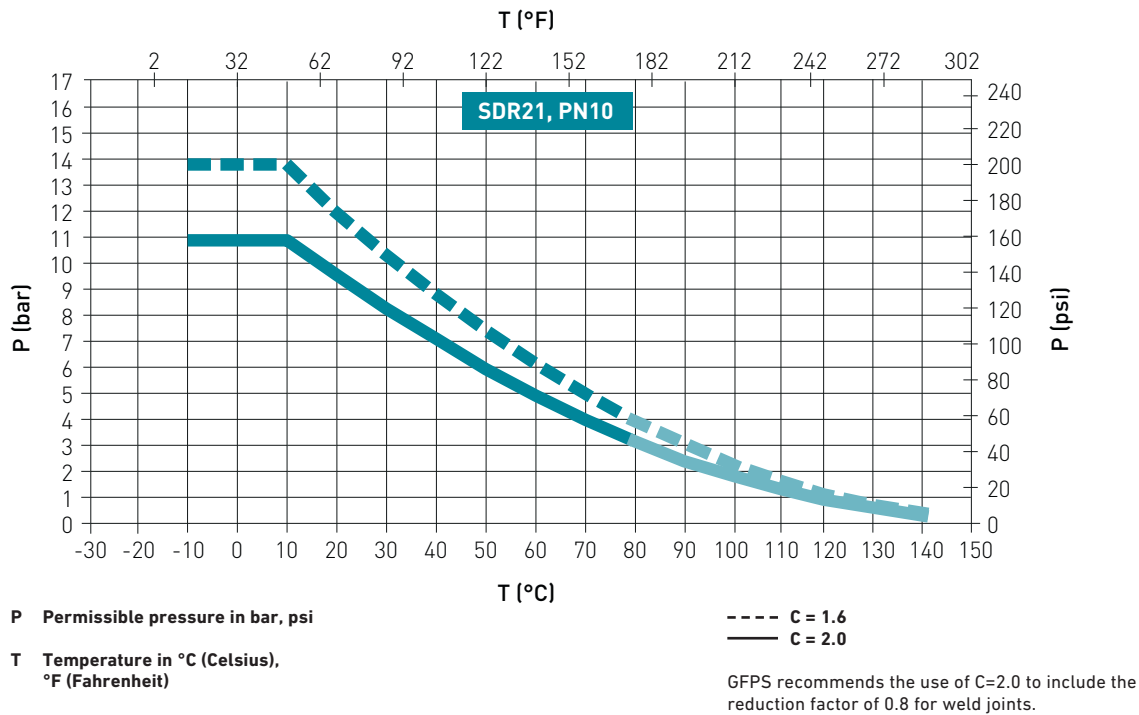
The ChemRes PLUS Online Tool from GF Piping Systems summarizes a large amount of data about materials and media and presents it visually. Choose among all materials and solvent cements of the GF Piping Systems product portfolio and compare them to get a comprehensive overview.



- Select the medium you want to transport
- Select the pressure/temperature point corresponding to your requirements
- ChemRes PLUS shows you the suitable materials in a clearly arranged table

More information at
www.gfps.com

Pressure-temperature diagram



The pressure/ temperature curve based on medium water, operating temperature of 20°C (68 °F), valid life time of 25 years and the design factor of C = 2.0 or C = 1.6 respectively

More information regarding technical specifications can be found online in our planning fundamentals: www.gfps.com
For special requests and additional planning support please contact: gss@georgfischer.com

System components



Pipes



Fittings



Valves



Automation



Jointing technology



Customizing and training

Application

Storage of acid

The transport of aggressive media, such as highly concentrated sulfuric acid, requires an exceptionally reliable piping system to ensure safe handling at all times. The ECTFE system 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.



Application

Dosing sodium hypochlorite

The ECTFE system 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.



Fast and easy installation thanks to infrared

In the area of pressure piping systems for industrial applications there are high requirements for mechanical stability, reproducibility and quality of the jointing technology. The IR-110 A is the new generation of infrared welding machines from GF Piping Systems. With its automation, intuitive handling and system safety, it ensures the highest efficiency for all users.



User-friendly and easy to operate: The IR-110 A

Advantages of welding with the IR-110 A

Compared to conventional butt welding, the infrared technology is distinguished by short fusion times, high reproducibility and highest reliability. The contact-free jointing of the components by IR-welding reduces the warm-up time by more than 30%, eliminating the adaptation, which often results in various weld bead formations. Sticking of the pipe

surface to the heating element is not possible. The IR-110 A from GF Piping Systems impresses with a fully automated welding process that reduces application errors and directly detects and reports faults. An integrated process and quality control system makes the welding process traceable and reportable at all times and ensures the best product quality.



Macro-image of IR (infrared) welding



Lateral cut of IR (infrared) welding

SYGEF ECTFE

Product range

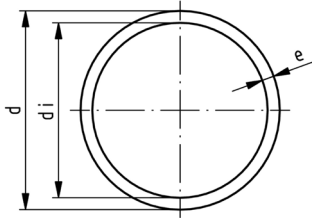




SYGEF ECTFE pipe SDR21/PN10

Model:

- Material: ECTFE
- Supplied in 5m (16.4 foot) length

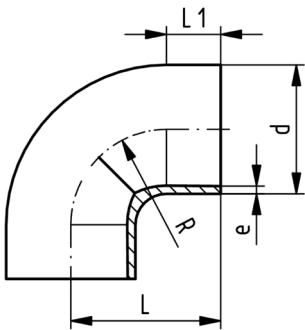


d (mm)	PN (bar)	FM	Part No.	weight (kg)	e (mm)	di (mm)
20	10	IR	177 480 106	0.210	1.9	16.2
25	10	IR	177 480 107	0.269	1.9	21.2
32	10	IR	177 480 108	0.435	2.4	27.2
40	10	IR	177 480 109	0.563	2.4	35.2
50	10	IR	177 480 110	0.850	3.0	44.0
63	10	IR	177 480 111	1.090	3.0	57.0
75	10	IR	177 480 112	1.550	3.6	67.8
90	10	IR	177 480 113	2.230	4.3	81.4
110	10	IR	177 480 114	3.330	5.3	99.4

SYGEF ECTFE bend 90° SDR21/PN10

Model:

- Material: ECTFE

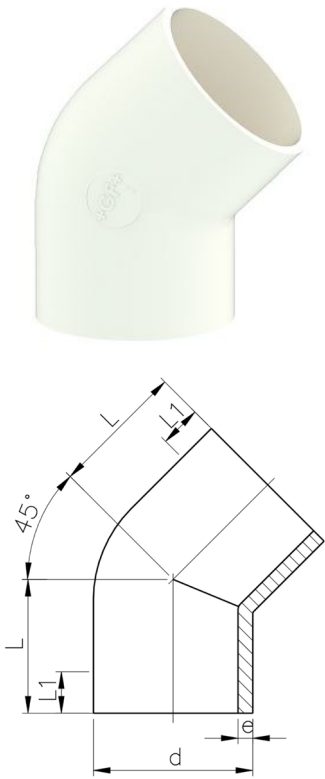


d (mm)	PN (bar)	FM	Part No.	weight (kg)	e (mm)	L (mm)	L1 (mm)	R (mm)
20	10	IR	737 018 106	0.016	1.9	38	23	15
25	10	IR	737 018 107	0.022	1.9	42	23	19
32	10	IR	737 018 108	0.038	2.4	46	22	24
40	10	IR	737 018 109	0.055	2.4	51	21	30
50	10	IR	737 018 110	0.095	3.0	58	21	37
63	10	IR	737 018 111	0.137	3.0	66	21	45
75	10	IR	737 018 112	0.243	3.6	75	23	62
90	10	IR	737 018 113	0.423	4.3	90	23	77
110	10	IR	737 018 114	0.705	5.3	110	23	98

SYGEF ECTFE elbow 45° SDR21/PN10

Model:

- Material: ECTFE

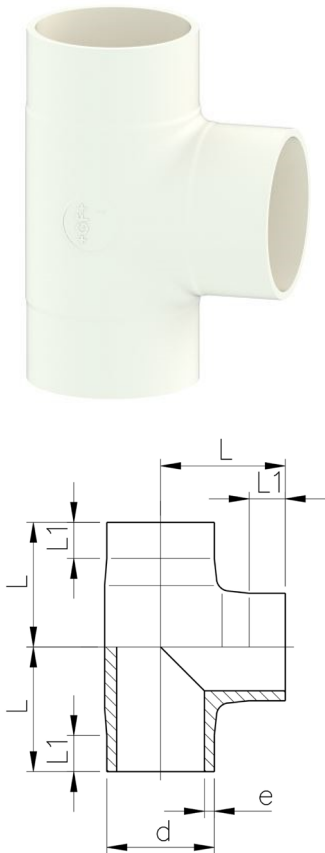


d (mm)	PN (bar)	FM	Part No.	weight (kg)	e (mm)	L (mm)	L1 (mm)
20	10	IR	737 158 106	0.014	1.9	32	25
25	10	IR	737 158 107	0.019	1.9	34	26
32	10	IR	737 158 108	0.033	2.4	36	26
40	10	IR	737 158 109	0.042	2.4	39	28
50	10	IR	737 158 110	0.084	3.0	42	30
63	10	IR	737 158 111	0.121	3.0	47	31
75	10	IR	737 158 112	0.160	3.6	49	32
90	10	IR	737 158 113	0.271	4.3	57	37
110	10	IR	737 158 114	0.499	5.3	70	46

SYGEF ECTFE tee 90° equal SDR21/PN10

Model:

- Material: ECTFE

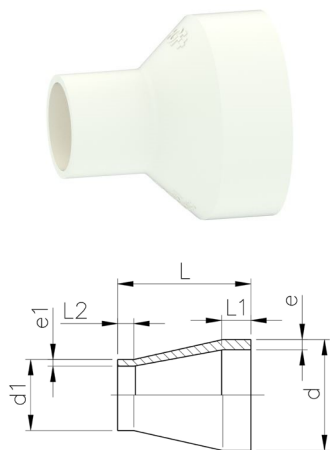


d (mm)	PN (bar)	FM	Part No.	weight (kg)	e (mm)	L (mm)	L1 (mm)
20	10	IR	737 208 106	0.023	1.9	38	25
25	10	IR	737 208 107	0.032	1.9	42	27
32	10	IR	737 208 108	0.056	2.4	46	27
40	10	IR	737 208 109	0.083	2.4	51	28
50	10	IR	737 208 110	0.156	3.0	58	28
63	10	IR	737 208 111	0.270	3.0	66	28
75	10	IR	737 208 112	0.336	3.6	75	32
90	10	IR	737 208 113	0.587	4.3	90	39
110	10	IR	737 208 114	1.054	5.3	110	48

SYGEF ECTFE reducer SDR21/PN10

Model:

- Material: ECTFE

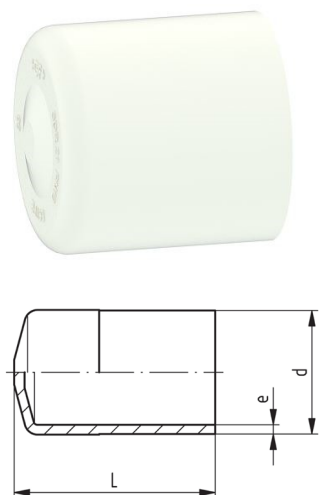


d - d1 (mm)	PN (bar)	FM	Part No.	weight (kg)	e (mm)	e1 (mm)	L (mm)	L1 (mm)	L2 (mm)
25 - 20	10	IR	737 908 107	0.012	1.9	1.9	50	22	22
32 - 20	10	IR	737 908 108	0.017	2.4	1.9	50	22	22
32 - 25	10	IR	737 908 118	0.018	2.4	1.9	50	22	22
40 - 20	10	IR	737 908 109	0.024	2.4	1.9	58	22	24
40 - 25	10	IR	737 908 119	0.025	2.4	1.9	55	22	24
40 - 32	10	IR	737 908 129	0.029	2.4	2.4	55	22	24
50 - 25	10	IR	737 908 110	0.046	3.0	1.9	60	22	25
50 - 32	10	IR	737 908 120	0.050	3.0	2.4	60	22	25
50 - 40	10	IR	737 908 130	0.040	3.0	2.4	60	22	25
63 - 32	10	IR	737 908 111	0.066	3.0	2.4	65	22	25
63 - 40	10	IR	737 908 121	0.078	3.0	2.4	65	22	25
63 - 50	10	IR	737 908 131	0.076	3.0	3.0	65	22	25
75 - 40	10	IR	737 908 112	0.097	3.6	2.4	68	24	25
75 - 50	10	IR	737 908 122	0.100	3.6	3.0	65	24	25
75 - 63	10	IR	737 908 132	0.080	3.6	3.0	65	24	25
90 - 63	10	IR	737 908 113	0.150	4.3	3.0	75	25	30
90 - 75	10	IR	737 908 123	0.150	4.3	3.6	75	25	35
110 - 63	10	IR	737 908 114	0.257	5.3	3.0	90	30	30
110 - 75	10	IR	737 908 124	0.213	5.3	3.6	90	30	35
110 - 90	10	IR	737 908 134	0.282	5.3	4.3	90	30	35

SYGEF ECTFE end cap SDR21/PN10

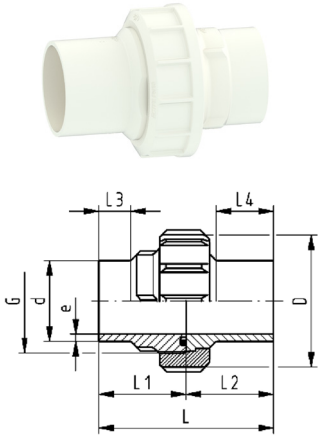
Model:

- Material: ECTFE



d (mm)	PN (bar)	FM	Part No.	weight (kg)	e (mm)	L (mm)
20	10	IR	737 968 106	0.009	1.9	47
25	10	IR	737 968 107	0.012	1.9	47
32	10	IR	737 968 108	0.022	2.4	52
40	10	IR	737 968 109	0.034	2.4	55
50	10	IR	737 968 110	0.060	3.0	59
63	10	IR	737 968 111	0.091	3.0	66
75	10	IR	737 968 112	0.135	3.6	67
90	10	IR	737 968 113	0.221	4.3	74
110	10	IR	737 968 114	0.379	5.3	82

SYGEF ECTFE union SDR21/PN10

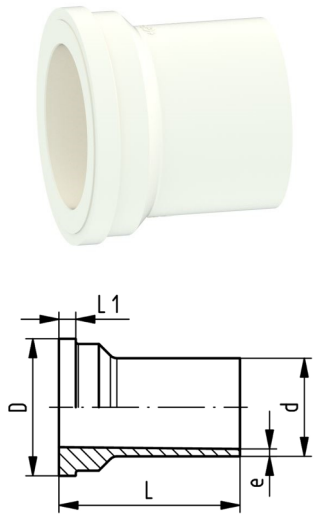


Model:

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

d	PN	FM	Part No.	weight	e	D	L	L1	L2	L3	L4	G
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(inch)
20	10	IR	737 528 206	0.082	1.9	43	106	53	53	24	37	1
25	10	IR	737 528 207	0.123	1.9	53	112	56	56	24	38	1 ¼
32	10	IR	737 528 208	0.166	2.4	60	118	59	59	24	40	1 ½
40	10	IR	737 528 209	0.263	2.4	74	124	62	62	24	41	2
50	10	IR	737 528 210	0.372	3.0	82	130	65	65	24	43	2 ¼
63	10	IR	737 528 211	0.463	3.0	100	136	68	68	24	44	2 ¾

SYGEF ECTFE union end SDR21/PN10

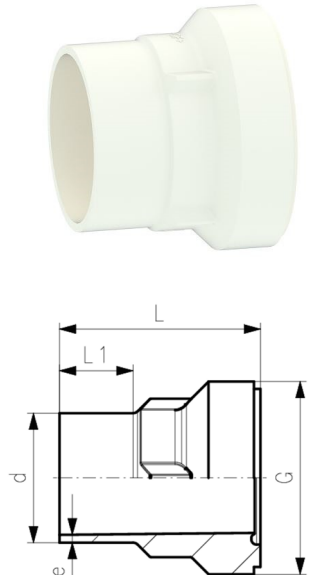


Model:

- Material: ECTFE
- suitable for SYGEF ECTFE union

d	PN	FM	Part No.	weight	e	L	L1	D
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)
20	10	IR	737 608 106	0.020	1.9	53	5	30
25	10	IR	737 608 107	0.030	1.9	56	5	39
32	10	IR	737 608 108	0.044	2.4	59	6	45
40	10	IR	737 608 109	0.069	2.4	62	6	57
50	10	IR	737 608 110	0.083	3.0	65	7	63
63	10	IR	737 608 111	0.130	3.0	68	8	78

SYGEF ECTFE union bush Type I SDR21/PN10



Model:

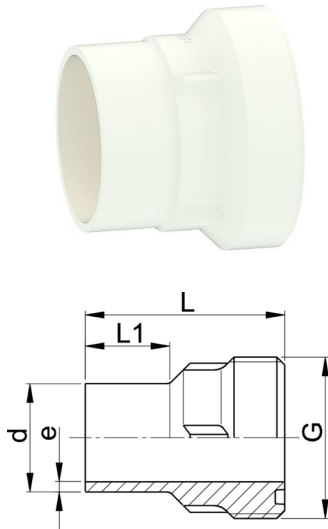
- Material: ECTFE
- gap filling O-ring positioning
- suitable for SYGEF ECTFE union

d	PN	FM	Part No.	weight	e	L	L1	G
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(inch)
20	10	IR	737 648 106	0.024	1.9	53	25	1
25	10	IR	737 648 107	0.038	1.9	56	25	1 ¼
32	10	IR	737 648 108	0.056	2.4	59	25	1 ½
40	10	IR	737 648 109	0.082	2.4	62	25	2
50	10	IR	737 648 110	0.113	3.0	65	25	2 ¼
63	10	IR	737 648 111	0.168	3.0	68	25	2 ¾

SYGEF ECTFE union bush Type II SDR21/PN10

Model:

- Material: ECTFE
- Suitable for SYGEF ECTFE Union



d	PN	FM	Part No.	weight	e	L	L1	G (R/Rp BS Thread)
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(inch)
20	10	IR	737 648 206	0.025	1.9	53	25	1
25	10	IR	737 648 207	0.039	1.9	56	25	1 ¼
32	10	IR	737 648 208	0.055	2.4	59	25	1 ½
40	10	IR	737 648 209	0.081	2.4	62	25	2
50	10	IR	737 648 210	0.110	3.0	65	25	2 ¼
63	10	IR	737 648 211	0.158	3.0	68	25	2 ¾

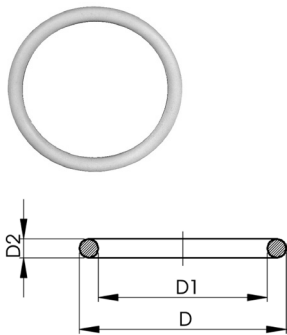
SYGEF ECTFE union nut SDR21/PN10

Model:

- Material: ECTFE

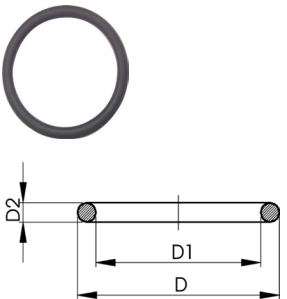


d	PN	Part No.	weight	L	D	G
(mm)	(bar)		(kg)	(mm)	(mm)	(inch)
20	10	737 690 106	0.023	22	43	1
25	10	737 690 107	0.034	24	53	1 ¼
32	10	737 690 108	0.045	26	60	1 ½
40	10	737 690 109	0.070	29	74	2
50	10	737 690 110	0.100	33	82	2 ¼
63	10	737 690 111	0.151	35	100	2 ¾



O-Ring, FKM white

d (mm)	FKM Part No.	D (mm)	D1 (mm)	D2 (mm)
20	749 411 005	20.6	15.5	2.6
25	749 411 006	27.3	20.2	3.5
32	749 411 120	33.6	26.6	3.5
40	749 411 062	41.6	34.5	3.5
50	749 411 172	51.1	44.0	3.5
63	749 411 054	63.0	55.0	4.0
75	749 411 013	79.9	69.2	5.3
90	749 411 014	92.6	81.9	5.3
110	749 411 015	117.0	101.0	5.3

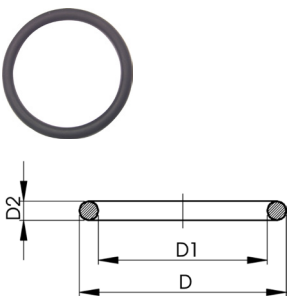


O-Ring Gasket

Model:

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

d (mm)	DN (mm)	EPDM Part No.	weight (kg)	FKM Part No.	weight (kg)	D (mm)	D1 (mm)	D2 (mm)	closest inch (inch)
10 - 12	8	748 410 004	0.002	749 410 004	0.002	17.62	12.37	2.62	1/4
16	10	748 410 005	0.004	749 410 005	0.002	20.78	15.54	2.62	3/8
20	15	748 410 006	0.002	749 410 006	0.002	27.28	20.22	3.53	1/2
25	20	748 410 007	0.002	749 410 007	0.002	35.23	28.17	3.53	3/4
32	25	748 410 008	0.003	749 410 008	0.002	39.99	32.93	3.53	1
40	32	748 410 009	0.003	749 410 009	0.007	51.33	40.65	5.34	1 1/4
50	40	748 410 010	0.004	749 410 010	0.006	57.68	46.99	5.34	1 1/2
63	50	748 410 011	0.005	749 410 011	0.003	70.37	59.69	5.34	2
75	65	748 410 014	0.007	749 410 014	0.012	92.60	81.92	5.34	2 1/2
90	80	748 410 015	0.008	749 410 015	0.015	111.68	101.00	5.34	3
*	90	748 410 248	0.008	749 410 248	0.020	105.30	94.62	5.34	3
110	100	748 410 016	0.016	749 410 016	0.031	134.00	120.20	6.99	4



O-Ring Gaskets

Model:

- For unions and adaptor unions
- Hardness approx. 75° Shore
- FFPM minimum temperature -20°C

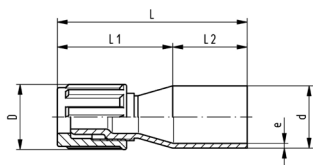
d (mm)	DN (mm)	FFPM Part No.	SP	weight (kg)	D1 (mm)	D2 (mm)	D (mm)
20	15	700 245 481	1	0.002	20	4	27
25	20	700 245 482	1	0.002	28	4	35
32	25	700 245 483	1	0.002	33	4	40
40	32	700 245 484	1	0.006	41	5	51
50	40	700 245 485	1	0.007	47	5	58
63	50	700 245 486	1	0.010	60	5	70



SYGEF ECTFE flare transition fitting SDR21/PN10

Model:

- Material: ECTFE

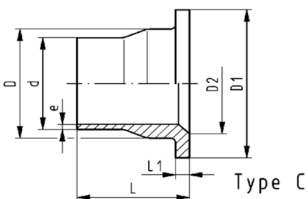
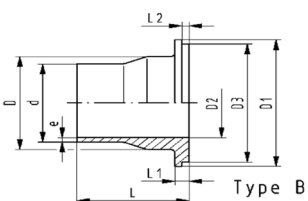
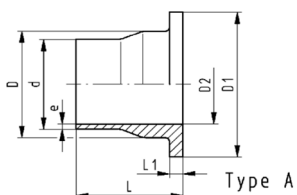


d	tube size	PN	FM	Part No.	weight	e	L	L1	L2	D
(mm)	(inch)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)
20	¾	10	IR	737 598 106	0.028	1.9	75	45	30	20
20	¾	10	IR	737 598 116	0.022	1.9	76	46	30	23
20	½	10	IR	737 598 126	0.034	1.9	76	46	30	26
20	¾	10	IR	737 598 136	0.043	1.9	78	48	30	34
25	¾	10	IR	737 598 107	0.033	1.9	75	45	30	20
25	¾	10	IR	737 598 117	0.025	1.9	76	46	30	23
25	½	10	IR	737 598 127	0.028	1.9	76	46	30	26
25	¾	10	IR	737 598 137	0.048	1.9	78	48	30	34
25	1	10	IR	737 598 147	0.102	1.9	87	57	30	46
32	½	10	IR	737 598 128	0.036	2.4	76	46	30	26
32	¾	10	IR	737 598 138	0.050	2.4	78	48	30	34
32	1	10	IR	737 598 148	0.050	2.4	87	57	30	46

SYGEF ECTFE flange adaptor ISO serrated SDR21/PN10

Model:

- Material: ECTFE



d	DN	PN	FM	Part No.	weight
(mm)	(mm)	(bar)			(kg)
20	15	10	IR	737 798 106	0.029
25	20	10	IR	737 798 107	0.044
32	25	10	IR	737 798 108	0.066
40	32	10	IR	737 798 109	0.088
50	40	10	IR	737 798 110	0.146
63	50	10	IR	737 798 111	0.215
75	65	10	IR	737 798 112	0.325
90	80	10	IR	737 798 113	0.397
110	100	10	IR	737 798 114	0.573

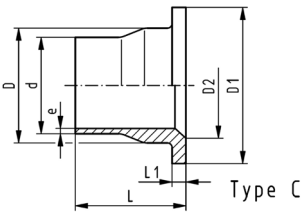
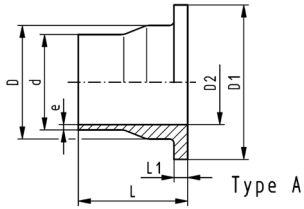
e	D	D1	D2	D3	L	L1	L2	Type
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1.9	26	45	15		54	6	53	A
1.9	32	58	20	54	56	7	4	B
2.4	40	68	26	63	58	7	4	B
2.4	49	78	34	73	68	8	4	B
3.0	60	88	43	82	69	8	4	B
3.0	75	102	56		72	9		A
3.6	89	122	66		80	10		A
4.3	105	138	78	133	81	12	4	B
5.3	125	158	100		81	13		C

SYGEF ECTFE flange adaptor ANSI serrated SDR21/PN10

Model:

- Material: ECTFE

d	d	DN	PN	FM	Part No.	weight	e	D	D1	D2	L	L1	Type
(inch)	(mm)	(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
3/4	25	20	10	IR	737 798 157	0.043	1.9	32	54	20	56	7	A
1	32	25	10	IR	737 798 158	0.063	2.4	40	63	26	58	7	A
1 1/4	40	32	10	IR	737 798 159	0.089	2.4	49	72	34	68	8	A
1 1/2	50	40	10	IR	737 798 160	0.140	3.0	60	82	43	69	8	A
3	90	80	10	IR	737 798 163	0.389	4.3	105	138	78	81	12	A

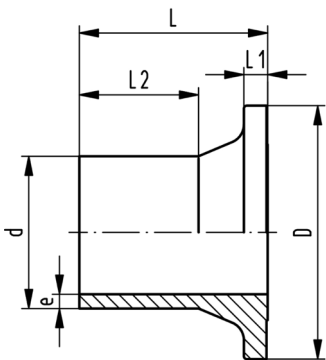


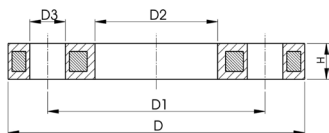
SYGEF ECTFE valve End SDR21 PN10

Model:

- Material: ECTFE
- Suitable for Ball valve 546

d	PN	FM	Part No.	weight	D	L	L1	L2	e
(mm)	(bar)			(kg)	(mm)	(mm)	(mm)	(mm)	(mm)
20	10	IR	177 483 048	0.019	38	37	4	25	1.9
25	10	IR	177 483 049	0.026	44	39	5	25	1.9
32	10	IR	177 483 050	0.043	53	40	5	25	2.4
40	10	IR	177 483 051	0.065	65	43	5	25	2.4
50	10	IR	177 483 052	0.100	77	51	6	25	3.0
63	10	IR	177 483 053	0.150	99	60	7	28	3.0
75	10	IR	177 483 054	0.348	125	65	9	41	3.6
90	10	IR	177 483 055	0.507	150	62	10	33	4.3
110	10	IR	177 483 056	0.820	180	69	11	37	5.3





Backing flange PP-Steel For socket systems metric

Model:

- **Bolt circle PN 10**
- PP-GF (30% glass-fibre reinforced) with steel ring
- UV-resistant.
- Connecting dimension: ISO 7005, EN 1092, BS 4504, DIN 2501

AL: number of holes

1) Suitable for socket -and butt fusion systems

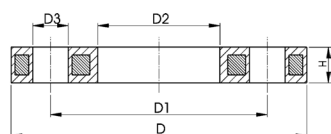
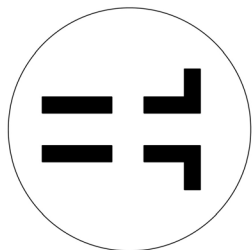
2) Not for BS

3) Connecting dimension: ISO 2536. bolt circle acc. DN125. suitable for flange adaptor d125/ DN100

4) Connecting dimension: ISO 2536. bolt circle acc. DN225. suitable for flange adaptor d250/ DN250

5) Combined version, bolt circle metric - ANSI

	d	DN	PN	Part No.	weight	D	D1	D2	D3	H max.	H	AL
	(mm)	(mm)	(bar)		(kg)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1	20	15	16	727 700 206	0.216	95	65	28	14	12	12	4
1	25	20	16	727 700 207	0.279	105	75	34	14	12	12	4
1	32	25	16	727 700 208	0.429	115	85	42	14	16	16	4
1	40	32	16	727 700 209	0.621	140	100	51	18	16	16	4
1	50	40	16	727 700 210	0.722	150	110	62	18	20	20	4
1	63	50	16	727 700 211	0.900	165	125	78	18	20	20	4
1	75	65	16	727 700 212	1.110	185	145	92	18	20	20	4
	90	80	16	727 700 213	1.369	200	160	110	18	20	20	8
2	110	100	16	727 700 214	1.522	220	180	133	18	20	20	8
2	125	125	16	727 700 815	2.475	250	210	150	18	26	26	8
	140	125	16	727 700 816	2.033	250	210	167	18	26	26	8
2/5	160	150	16	727 700 817	3.167	285	241	190	22	26	26	8
5	200	200	16	727 700 819	6.143	340	297	226	22	29	29	8
5	225	200	16	727 700 820	4.448	340	297	250	22	29	29	8
	250	250	16	727 700 821	7.179	395	350	277	22	32	32	12
4	250	225	16	727 700 031	8.340	395	325	277	22	32	32	8
	280	250	16	727 700 822	5.547	395	350	310	22	32	32	12
	315	300	16	727 700 823	6.980	445	400	348	22	36	36	12
	355	350	16	727 700 824	12.465	515	460	388	23	42	42	16
	400	400	16	727 700 825	17.607	574	515	442	26	42	42	16



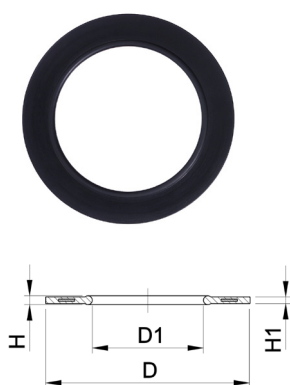
Backing flange PP-Steel For butt fusion systems Inch/ANSI

Model:

- UV-resistant.
- Bolt circle class 150

AL: number of holes

d (mm)	d (inch)	PN (bar)	Part No.	weight (lb)	D (mm)	D1 (mm)	D2 (mm)	D3 (mm)	H (mm)	AL	SC
20	1/2	16	727 701 206	0.470	95	60	28	16	12	4	M12
25	3/4	16	727 701 207	0.573	105	70	34	16	12	4	M12
32	1	16	727 701 208	0.917	115	79	42	16	16	4	M12
40	1 1/4	16	727 701 209	1.609	140	89	51	16	16	4	M16
50	1 1/2	16	727 701 210	1.784	150	98	62	16	18	4	M16
63	2	16	727 701 211	1.909	165	121	78	19	18	4	M16
75	2 1/2	16	727 701 212	2.463	185	140	92	19	18	4	M16
90	3	16	727 701 213	3.289	200	152	110	19	20	4	M16
110	4	16	727 701 214	3.737	229	190	133	19	20	8	M16
160	6	16	727 700 717	7.696	285	241	178	22	26	8	M20
200	8	16	727 700 719	12.346	340	297	235	22	29	8	M20
225	8	16	727 700 720	12.198	340	297	238	22	29	8	M20
²⁵⁰ / ₂₈₀	10	10	727 701 321	13.228	406	362	293	25	30	12	M24
315	12	10	727 701 322	26.015	483	432	338	25	34	12	M24
355	14	10	727 701 323	39.463	540	476	376	29	42	12	M27
400	16	10	727 701 324	54.013	597	539	429	29	44	16	M27
⁴⁵⁰ / ₅₀₀	20	10	727 701 325	74.075	712	635	540	32	53	20	M30



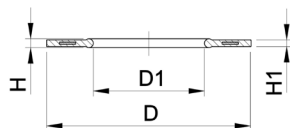
Profile Flange Gasket, metric EPDM / FKM

Model:

- For all metric GF Flange Adaptors
- Profile Gasket with steel insert (type G-ST-P/K)
- Hardness: 70° Shore **EPDM**, 75° Shore **FKM**
- **EPDM**: approved acc. to DVGW W 270, KTW recommendation
- Centering on the inner diameter of the screw crown
- material steel insert: carbon steel

di FA are the suitable inner diameters of flange adaptors

d (mm)	PN (bar)	DN (mm)	EPDM Part No.	FKM Part No.	weight (lb)	D (mm)	D1 (mm)	H (mm)	H1 (mm)	di FA (mm)
16	16	10	748 440 705	749 440 705	0.026	46	16	4	3	6 - 16
20	16	15	748 440 706	749 440 706	0.029	51	20	4	3	10 - 20
25	16	20	748 440 707	749 440 707	0.031	61	22	4	3	12 - 22
32	16	25	748 440 708	749 440 708	0.042	71	28	4	3	18 - 28
40	16	32	748 440 709	749 440 709	0.057	82	40	4	3	30 - 40
50	16	40	748 440 710	749 440 710	0.086	92	46	4	3	36 - 46
63	16	50	748 440 711	749 440 711	0.110	107	58	5	4	48 - 58
75	16	65	748 440 712	749 440 712	0.181	127	69	5	4	59 - 69
90	16	80	748 440 713	749 440 713	0.183	142	84	5	4	73 - 84
110	16	100	748 440 714	749 440 714	0.280	162	104	6	5	94 - 104
125	16	100	748 440 715	749 440 715	0.231	162	123	6	5	113 - 123
140	16	125	748 440 716	749 440 716	0.381	192	137	6	5	127 - 137
160 - 180	16	150	748 440 717	749 440 717	0.456	218	160	8	6	150 - 160
200	16	200	748 440 719	749 440 719	0.580	273	203	8	6	192 - 203
225	16	200	748 440 720	749 440 720	0.562	273	220	8	6	207 - 220
250	16	250	748 440 721	749 440 721	1.019	328	252	8	6	238 - 252
280	16	250	748 440 722	749 440 722	0.712	328	274	8	6	264 - 274
315	16	300	748 440 723	749 440 723	1.210	378	306	8	6	296 - 306
355	16	350	748 440 724	749 440 724	1.918	438	355	10	7	340 - 355
400	16	400	748 440 725	749 440 725	2.399	489	400	10	7	385 - 400
450	16	500	748 440 726	749 440 726	1.583	594	403	10	7	393 - 403
500	16	500	748 440 727	749 440 727	1.583	594	447	10	7	437 - 447
560	16	600	748 440 728	749 440 728	2.035	695	494	10	7	484 - 494
630	16	600	748 440 729	749 440 729	2.035	695	555	10	7	545 - 555

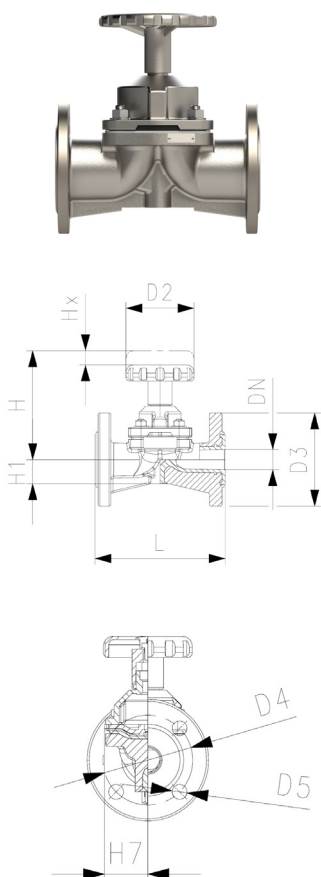


Profile Gasket ANSI with Steel Reinforcement Ring

Model:

- Suitable for flange adaptors PP/PE
- Hardness: 70° Shore **EPDM**, 75° Shore **FKM**
- The seal is designed so that it is centered by the flange bolts. The dimension D is in accordance with the centering on the inner diameter of the bolt circle.
- Dimension D is in accordance with the inner diameter of the bolt circle.

d (mm)	EPDM Part No.	FKM Part No.	D (mm)	D1 (mm)	H (mm)	H1 (mm)
25	748 440 502	749 440 502	54	27	4	3
32	748 440 503	749 440 503	64	33	4	3
50	748 440 505	749 440 505	83	48	4	3
63	748 440 506	749 440 506	102	60	5	4
90	748 440 508	749 440 508	133	89	5	4
110	748 440 509	749 440 509	171	115	6	5
160 / 180	748 440 717	749 440 717	218	160	8	6
225	748 440 720	749 440 720	273	220	8	6
250	748 440 517	749 440 517	337	273	8	6
315	748 440 518	749 440 518	406	325	8	6
355	748 440 519	749 440 519	448	356	10	7
400	748 440 520	749 440 520	512	406	10	7
450	748 440 521	749 440 521	547	457	10	7
500	748 440 522	749 440 522	604	508	10	7



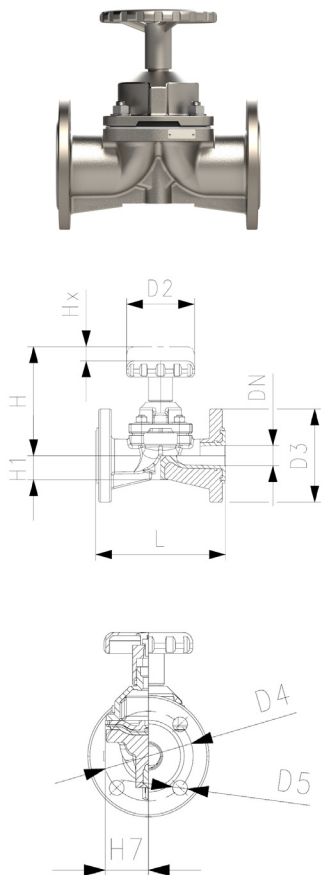
Type SDV Diaphragm Valve - with Handwheel - SYGEF ECTFE

Model:

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

d	d	DN	PN	Part No.	weight
(inch)	(mm)	(mm)	(bar)		(kg)
½	20	15	10	160 144 106	2.5
¾	25	20	10	160 144 107	3.0
1	32	25	10	160 144 108	3.8
1 ¼	40	32	10	160 144 109	5.2
1 ½	50	40	10	160 144 110	7.4
2	63	50	10	160 144 111	9.7
2 ½	75	65	10	160 144 112	13.5
3	90	80	8	160 144 113	18.0
4	110	100	7	160 144 114	30.0

L	D2	D3	D4	D5	H	H1	H7	Hx	Umdr.	kv-value
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(max.(m³/hr))
										(m³/h)
130	85	95	65	14	115	24	36	8	4.5	7.8
150	85	105	75	14	117	26	36	8	4.5	10.0
160	85	115	85	14	124	30	41	10	5.5	15.0
180	85	140	100	18	134	35	52	12	7.0	22.5
200	120	150	110	18	173	41	56	24	12.0	37.0
230	120	165	125	18	186	44	70	30	15.0	65.0
290	180	185	145	18	208	55	82	30	12.0	95.0
310	180	200	160	18	233	60	100	34	13.5	134.0
350	250	220	180	18	282	72	123	40	13.5	200.0



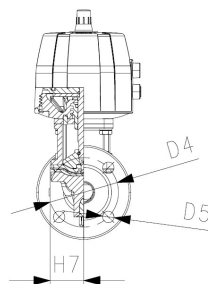
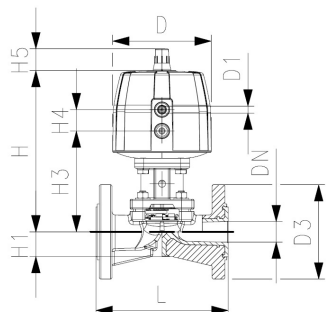
Type SDV Diaphragm Valve - with Handwheel - SYGEF ECTFE

Model:

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

d	d	DN	PN	Part No.	weight
(inch)	(mm)	(mm)	(bar)		(kg)
½	20	15	10	160 144 156	2.5
¾	25	20	10	160 144 157	3.0
1	32	25	10	160 144 158	3.5
1 ¼	40	32	10	160 144 159	5.2
1 ½	50	40	10	160 144 160	6.3
2	63	50	10	160 144 161	9.0
2 ½	75	65	10	160 144 162	13.5
3	90	80	8	160 144 163	16.9
4	110	100	7	160 144 164	30.3

L	D2	D3	D4	D5	H	H1	H7	Hx	Umdr.	kv-value
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(max.(m ³ /hr))
										(m ³ /h)
130	85	95	65	14	115	24	36	8	4.5	7.8
150	85	105	75	14	117	26	36	8	4.5	10.0
146	85	108	85	14	124	30	41	10	5.5	15.0
180	85	140	100	18	134	35	52	12	7.0	22.5
174	120	127	110	18	173	41	56	24	12.0	37.0
200	120	152	125	18	186	44	70	30	15.0	65.0
290	180	185	145	18	208	55	82	30	12.0	95.0
260	180	190	160	18	233	60	100	34	13.5	134.0
327	250	229	180	18	282	72	123	40	13.5	200.0



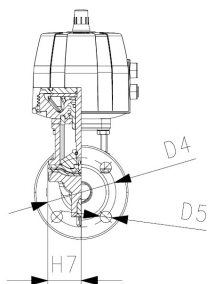
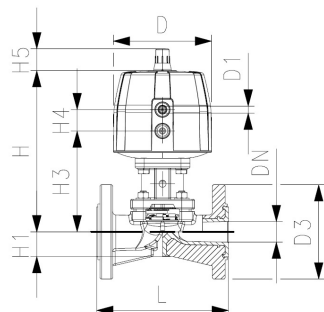
Type SDV Diaphragm Valve - with pneumatic actuator - SYGEF ECTFE FC (fail safe to close)

Model:

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

d (inch)	d (mm)	DN (mm)	PN (bar)	Part No.	weight (kg)
½	20	15	10	160 144 206	4.8
¾	25	20	10	160 144 207	5.3
1	32	25	10	160 144 208	6.4
1 ¼	40	32	10	160 144 209	7.8
1 ½	50	40	10	160 144 210	13.9
2	63	50	10	160 144 211	16.0
2 ½	75	65	10	160 144 212	19.8
3	90	80	8	160 144 213	32.8
4	110	100	7	160 144 214	46.7

L (mm)	D (mm)	D1 (inch)	D3 (mm)	D4 (mm)	D5 (mm)	H (mm)	H1 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	kv-value (max.(m³/hr)) (m³/h)
130	96	⅜	95	65	14	211	24	115	26	23	36	7.8
150	96	⅜	105	75	14	213	26	117	26	23	36	10.0
160	96	⅜	115	85	14	227	30	123	26	23	41	15.0
180	120	½	140	100	18	253	35	141	36	36	52	22.5
200	150	½	150	110	18	284	41	154	37	36	56	37.0
230	150	½	165	125	18	302	44	159	37	36	70	65.0
290	280	¾	185	145	18	366	55	182	24	46	82	95.0
310	280	¾	200	160	18	373	60	200	24	46	100	134.0
350	335	¾	220	180	18	448	72	267	24	46	123	200.0



Type SDV Diaphragm Valve - with pneumatic actuator - SYGEF ECTFE FC (fail safe to close)

Model:

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

d (inch)	d (mm)	DN (mm)	PN (bar)	Part No.	weight (kg)
½	20	15	10	160 144 256	4.8
¾	25	20	10	160 144 257	5.3
1	32	25	10	160 144 258	6.1
1 ¼	40	32	10	160 144 259	7.8
1 ½	50	40	10	160 144 260	12.8
2	63	50	10	160 144 261	15.3
2 ½	75	65	10	160 144 262	19.8
3	90	80	8	160 144 263	31.7
4	110	100	7	160 144 264	47.0

L (mm)	D (mm)	D1 (inch)	D3 (mm)	D4 (mm)	D5 (mm)	H (mm)	H1 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	kv-value (max.(m³/hr)) (m³/h)
130	96	⅜	95	65	14	211	24	115	26	23	36	7.8
150	96	⅜	105	75	14	213	26	117	26	23	36	10.0
146	96	⅜	115	85	14	227	30	123	26	23	41	15.0
180	120	½	140	100	18	253	35	141	36	36	52	22.5
174	150	½	150	110	18	284	41	154	37	36	56	37.0
200	150	½	165	125	18	302	44	159	37	36	70	65.0
290	280	¾	185	145	18	366	55	182	24	46	82	95.0
260	280	¾	200	160	18	373	60	200	24	46	100	134.0
327	335	¾	220	180	18	448	72	267	24	46	123	200.0

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