

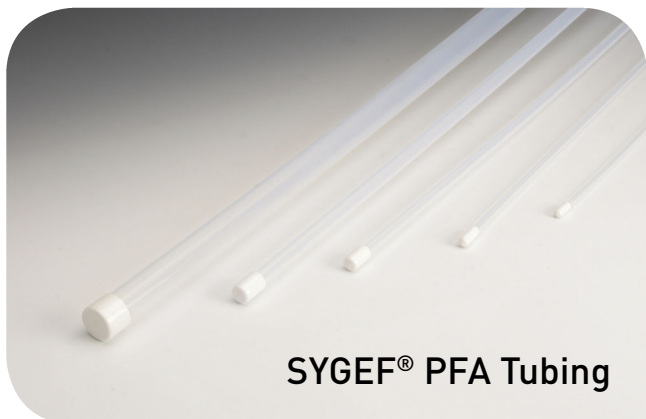
Product Range  
2007

**SYGEF® PFA**  
**High Purity Piping Systems**

**Tubes, Fittings, Valves**  
**in PFA HP**



# SYGEF® PFA



SYGEF® PFA Tubing



SYGEF® PFA Fittings



SYGEF® PFA Valves



SYGEF® PFA Tools

SYGEF® PFA completes the Total Plastic Solution for the distribution of high purity chemicals. The highly innovative PFA tubing, valves and Flaretype fittings sustain your needs up to 200 °C. We offer written guarantees of life span and chemical resistance on request.

## SYGEF® PFA – Product Specification

	SYGEF®PFA Tubing	SYGEF® PFA Fittings	SYGEF® PFA Valves
	TL/TIL	LQ3 Series	LVQ Series
<b>Material</b>	Super PFA Mitsui DuPont 451HP-J	PFA Mitsui DuPont 440HP-J	PFA Mitsui DuPont 440HP-J
Colour	Translucent (as a material colour)	Translucent (as a material colour)	Translucent (as a material colour)
Melting Point	≥ 300 °C	from 300 to 310 °C	from 300 to 310 °C
Density	from 2.12 to 2.17 g/cm <sup>3</sup>	from 2.12 to 2.17 g/cm <sup>3</sup> (ASTM D792)	from 2.12 to 2.17 g/cm <sup>3</sup> (ASTM D792)
Linear Expansion Intensity	≥ 26.0 MPa	...	...
Tensile Strength	...	from 24 to 34 MPa (ASTM D638)	from 24 to 34 MPa (ASTM D638)
Elong ation	≥ 300% (ASTM D638)	≥ 300% (ASTM D638)	≥ 300% (ASTM D638)
Flexural Modulus	...	from 0.66 to 0.69 GPa (ASTM D790)	from 0.66 to 0.69 GPa (ASTM D790)
Thermal Conductivity	0.25 W/mK (ASTM C177)	0.25 W/mK (ASTM C177)	0.25 W/mK (ASTM C177)
Surface Resistivity	≥ 10 <sup>18</sup> Ω cm	≥ 10 <sup>18</sup> Ω cm	≥ 10 <sup>18</sup> Ω cm

	<b>SYGEF®PFA Tubing</b>	<b>SYGEF® PFA Fittings</b>	<b>SYGEF® PFA Valves</b>
	<b>TL/TIL</b>	<b>LQ3 Series</b>	<b>LVQ Series</b>
<b>Dimension</b>	from 1/8" to 1" from 4 mm to 19 mm (other dimensions on request)	from 1/8" to 1" (other dimensions on request)	from 1/4" to 1" (other dimensions on request)
<b>Pressure Rating</b>	from -98 KPa (-0.98 bar) to 1.0 MPa (10 bar)	from -98 KPa (-0.98 bar) to 1.0 MPa (10 bar)	LVQ 20 to 40: from -98KPa (-0.98 bar) to 0.5MPa (5 bar) LVQ 50 to 60: from -98KPa (-0.98 bar) to 0.4 MPa (4 bar)
<b>Temperature Rating</b>	from 0 to 260°C	Nut PFA: from 0 to 200°C	fluid Temperature: from 0 to 100°C ambient Temperature: from 0 to 60°C
<b>Production</b>	Extrusion: Produced under clean room class 10.000 (U.S. Fed. Std. 209E) conditions	Injection Molding: Produced and assembled under clean room class 10.000 (U.S. Fed. Std. 209E) conditions or better	Injection Molding: Produced and assembled under clean room class 10.000 (U.S. Fed. Std. 209E) conditions or better
<b>Surface Finish</b>	Ra max $\leq$ 0.2 $\mu$ m (as a guaranteed value) Ra = 0.04 $\mu$ m* (typical representative value) * not guaranteed	In conformity with SEMI F57 Ra max $\leq$ 0.38 $\mu$ m	In conformity with SEMI F57 Ra max $\leq$ 0.38 $\mu$ m
<b>Marking</b>	Tube laser marked during the production process to ensure full traceability Brand Name (SYGEF® PFA) Lot Number Material, Dimension, Pressure Rating	Die - sinking Size and Lot Number	Die - sinking Size and Lot Number
<b>Labeling</b>	Brand Name (SYGEF® PFA) Product Description (PFA Tube) Model Number (e.g. TIL-xx) Material (DuPont 451 HP-J) Lot Number Length	Brand Name (SYGEF® PFA) Product Description (PFA Fitting) Model Number (e.g. LQ3-xx) Material (DuPont 440 HP-J) Lot Number Dimension	Brand Name (SYGEF® PFA) Product Description (PFA Valve) Model Number (e.g. LVQ-xx) Material (DuPont 440 HP-J) Lot Number Dimension
<b>Testing and Inspection</b>	Visual Inspection Dimensional Inspection Pressure Testing Surface Finish Periodic Leach-out per Semi F40/F57 Inclusions	Visual Inspection Dimensional Inspection Pressure Testing Surface Finish Periodic Leach-out per Semi F40/F57 Inclusions	Visual Inspection Dimensional Inspection Operation Inspection Valve Leakage Testing Back Pressure Leakage Testing Pilot Pressure Leakage Testing External Leakage Testing Inclusions
<b>Approvals / Conformance</b>	FDA 21 CFR 177.1550 ( as a material) Flammability UL-94 V-0 SEMI F57 (Conformity)	FDA 21 CFR 177.1550 (as a material) SEMI F57 (Conformity)	FDA 21 CFR 177.1550 (as a material) SEMI F57 (Conformity)
<b>Documentation <sup>(1)</sup></b>	Certificate of Conformance with FDA EN 10204 2.2 EN 10204 3.1	Certificate of Conformance with FDA EN 10204 2.2 EN 10204 3.1	Certificate of Conformance with FDA EN 10204 2.2 EN 10204 3.1
<b>Packing</b>	Tube capped and double bagged in a specified inner and outer bag under cleanroom class 10.000 (U.S. Fed. Std. 209E) conditions	Each Fitting double bagged in a specified inner and outer bag under cleanroom class 10.000 (U.S. Fed. Std. 209E) conditions	Each Valve double bagged in a specified inner and outer bag under cleanroom class 10.000 (U.S. Fed. Std. 209E) conditions
<b>Main Applications</b>	Fluid compatibility: Inert gas, DI Water, Chemical fluids according to chemical resistance data sheet		

<sup>(1)</sup> on Request

**SYGEF® PFA** → packed to preserve value














Any questions? Would you like for us to contact you?

[www.piping.georgfischer.com/direct?sygef\\_pfa](http://www.piping.georgfischer.com/direct?sygef_pfa)

[sygef\\_pfa@georgfischer.com](mailto:sygef_pfa@georgfischer.com)

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# SYGEF® PFA

## SYGEF PFA Tube TIL

### 20m coils inch



**Model:**

- Roll 20m
- Inch Size
- Metric Size on demand

d [inch]	e [mm]	Code	SMC Code	kg/m
1/8	0,5	737 011 000	TIL01-20	0.010
3/16	0,8	737 011 001	TIL05-20	0.020
1/4	1,2	737 011 002	TIL07-20	0.040
3/8	1,6	737 011 003	TIL11-20	0.080
1/2	1,6	737 011 004	TIL13-20	0.120
3/4	1,6	737 011 005	TIL19-20	0.190
1	1,6	737 011 006	TIL25-20	0.250

### 50m coils inch



**Model:**

- Roll with 50m
- Inch Size
- Metric Size on demand

**Note:**

- Roll-length 31m, Fittings on request

d [inch]	e [mm]	Code	SMC Code	kg/m
1/8	0,5	737 010 000	TIL01-50	0.010
3/16	0,8	737 010 001	TIL05-50	0.020
1/4	1,2	737 010 002	TIL07-50	0.040
3/8	1,6	737 010 003	TIL11-50	0.080
1/2	1,6	737 010 004	TIL13-50	0.120
3/4	1,6	737 010 005	TIL19-50	0.190
1	1,6	737 010 006	TIL25-50	0.250
*1 1/4	1,9	737 010 007	TIL32-31	0.370

# SYGEF® PFA

## 100m coils inch



### Model:

- Roll 100m
- Inch Size
- Metric Size on demand

d [inch]	e [mm]	Code	SMC Code	kg/m
1/8	0,5	737 012 000	TIL01-100	0.010
3/16	0,8	737 012 001	TIL05-100	0.020
1/4	1,2	737 012 002	TIL07-100	0.040
3/8	1,6	737 012 003	TIL11-100	0.080
1/2	1,6	737 012 004	TIL13-100	0.120
3/4	1,6	737 012 005	TIL19-100	0.190
1	1,6	737 012 006	TIL25-100	0.250

## 300m coils inch



### Model:

- Roll 300m
- Inch Size
- Metric Size on demand

### Note:

- made to order
- Delivery time on request

d [inch]	e [mm]	Code	SMC Code	kg/m
1/8	0,5	737 013 000	TIL01-300	0.010
3/16	0,8	737 013 001	TIL05-300	0.020
1/4	1,2	737 013 002	TIL07-300	0.040
3/8	1,6	737 013 003	TIL11-300	0.080
1/2	1,6	737 013 004	TIL13-300	0.120
3/4	1,6	737 013 005	TIL19-300	0.190

## Special coils inch



### Model:

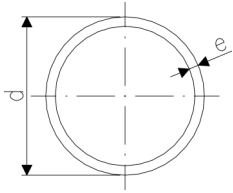
- Inch Size
- Metric Size on demand

### Note:

- made to order
- Delivery time on request

d [inch]	e [mm]	Länge [m]	Code	SMC Code
1/8	0,5	1500	737 015 000	TIL01-1500
1/4	1,2	2000	737 015 002	TIL07-2000
3/8	1,6	1500	737 015 003	TIL11-1500
1/2	1,6	1000	737 015 004	TIL13-1000
3/4	1,6	400	737 015 005	TIL19-400
1	1,6	200	737 015 006	TIL25-200
1 1/4	1,9	100	737 015 007	TIL32-100

# SYGEF<sup>®</sup> PFA



## 2m rods inch

### Model:

- 2m rods
- Inch Size
- Metric Size on demand

### Note:

- \* 1 1/4 Pipe and Fitting on request

d [inch]	e [mm]	Code	SMC Code	kg/m	
1/8	0,5	<b>737 014 000</b>	<b>TIL01-2S</b>	0.010	
3/16	0,8	<b>737 014 001</b>	<b>TIL05-2S</b>	0.020	
1/4	1,2	<b>737 014 002</b>	<b>TIL07-2S</b>	0.040	
3/8	1,6	<b>737 014 003</b>	<b>TIL11-2S</b>	0.080	
1/2	1,6	<b>737 014 004</b>	<b>TIL13-2S</b>	0.120	
3/4	1,6	<b>737 014 005</b>	<b>TIL19-2S</b>	0.190	
1	1,6	<b>737 014 006</b>	<b>TIL25-2S</b>	0.250	
1 1/4	1,9	<b>737 010 008</b>	<b>TIL31-2S</b>	0.350	



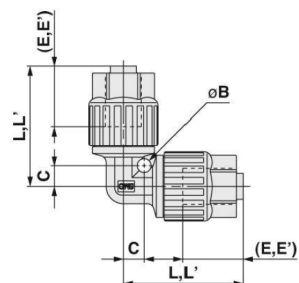
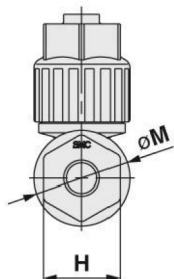
# SYGEF® PFA

## PFA-Fitting

### Union Elbow LQ3E

Model:

- All PFA

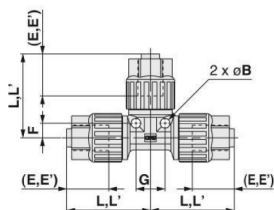
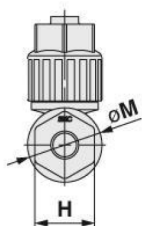


d [inch]	Code	SMC Code	kg	B [mm]	C [mm]	E [mm]	H [mm]	L [mm]	M [mm]
1/8	737 020 000	LQ3E1A	0.020	3.5	4.8	10.0	11	28.5	14
1/4	737 020 001	LQ3E2A	0.050	4.0	6.0	17.0	16	34.5	20
3/8	737 020 002	LQ3E3A	0.075	5.0	9.0	22.5	21	47.5	25
1/2	737 020 003	LQ3E4A	0.100	6.0	10.0	24.5	24	52.5	29
3/4	737 020 004	LQ3E5A	0.250	7.0	14.0	27.0	32	64.0	37
1	737 020 005	LQ3E6A	0.400	8.0	18.0	30.0	41	78.0	49

### Union Tee LQ3T

Model:

- All PFA



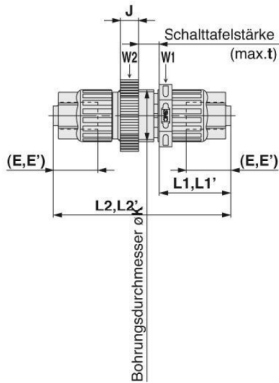
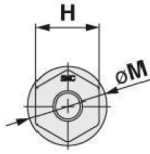
d [inch]	Code	SMC Code	kg	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	M [mm]
1/8	737 020 006	LQ3T1A	0.050	3.5	10.0	4.8	9.5	11	28.5	14
1/4	737 020 007	LQ3T2A	0.110	4.0	17.0	6.0	12.0	16	34.5	20
3/8	737 020 008	LQ3T3A	0.170	5.0	22.5	9.0	18.0	21	47.5	25
1/2	737 020 009	LQ3T4A	0.220	6.0	24.5	10.0	20.0	24	52.5	29
3/4	737 020 010	LQ3T5A	0.330	7.0	27.0	14.0	28.0	32	64.0	37
1	737 020 011	LQ3T6A	0.440	8.0	30.0	18.0	36.0	41	78.0	49

# SYGEF® PFA

## Panel Mount Union LQ3P

Model:

- All PFA



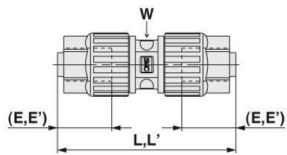
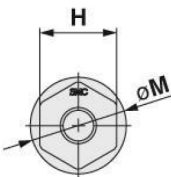
d [inch]	Code	SMC Code	kg
1/8	737 020 012	LQ3P1A	0.020
1/4	737 020 013	LQ3P2A	0.050
3/8	737 020 014	LQ3P3A	0.075
1/2	737 020 015	LQ3P4A	0.100
3/4	737 020 016	LQ3P5A	0.250
1	737 020 017	LQ3P6A	0.400

d [inch]	E [mm]	E' [mm]	H [mm]	J [mm]	K [mm]	L1 [mm]	L1' [mm]	L2 [mm]	L2' [mm]	M [mm]	t [mm]	W1 [mm]	W2 [mm]
1/8	10.0	9.0	11	6	14.5	23.5	22.5	58	56.0	14	8	16	17
1/4	17.0	16.0	16	7	20.5	28.0	27.0	69	67.0	20	8	21	24
3/8	22.5	19.5	21	7	24.5	39.0	36.0	89	83.0	25	8	26	28
1/2	24.5	22.5	24	9	30.5	44.5	42.5	100	96.0	29	8	32	36
3/4	27.0	24.0	32	9	36.5	50.5	48.0	117	112.0	37	13	41	43
1	30.0	26.0	41	10	48.5	60.0	56.0	136	127.5	49	13	50	55

## Union LQ3U

Model:

- All PFA



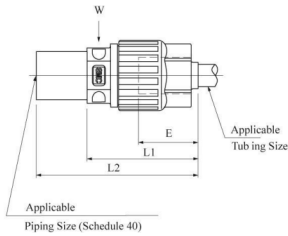
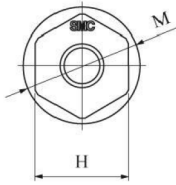
d [inch]	Code	SMC Code	kg	E [mm]	H [mm]	L [mm]	M [mm]
1/8	737 020 018	LQ3U1A	0.020	10.0	11	28.5	14
1/4	737 020 019	LQ3U2A	0.050	17.0	16	34.5	20
3/8	737 020 020	LQ3U3A	0.075	22.5	21	47.5	25
1/2	737 020 021	LQ3U4A	0.100	24.5	24	52.5	29
3/4	737 020 022	LQ3U5A	0.250	27.0	32	64.0	37
1	737 020 023	LQ3U6A	0.400	30.0	41	78.0	49

# SYGEF® PFA

## Schedule 40 Fusible Adapter LQ3A

### Model:

- All PFA
- With welding adaptor PFA



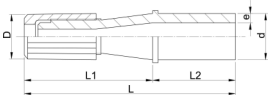
D [inch]	d [inch]	Code	SMC Code	kg	E [mm]	H [mm]	L1 [mm]	L2 [mm]	
1/4	1/4	737 020 024	LQ3A2A	0.050	17.0	16	31.5	45.5	
1/4	1/2	737 020 025	LQ3A2B	0.100					
1/4	3/4	737 020 026	LQ3A2C	0.250					
3/8	1/4	737 020 027	LQ3A3A	0.050	22.5	21	42.0	56.0	
3/8	1/2	737 020 028	LQ3A3B	0.100	22.5	21	42.0	68.0	
3/8	3/4	737 020 029	LQ3A3C	0.250					
1/2	1/2	737 020 030	LQ3A4A	0.100	24.5	24	47.0	80.0	
1/2	3/4	737 020 031	LQ3A4B	0.250	24.5	24	47.0	80.0	
1/2	1	737 020 032	LQ3A4C	0.400					
3/4	1/2	737 020 033	LQ3A5A	0.100	27.0	32	57.0	95.0	
3/4	3/4	737 020 034	LQ3A5B	0.250	27.0	32	57.0	95.0	
3/4	1	737 020 035	LQ3A5C	0.400	27.0	32	57.0	95.0	
1	3/4	737 020 036	LQ3A6A	0.250	30.0	41	66.5	104.5	
1	1	737 020 037	LQ3A6B	0.400	30.0	41	66.5	104.5	



## Flare Transition Fitting, PN 10, PVDF-HP

### Model:

- Welding dimension: PN16



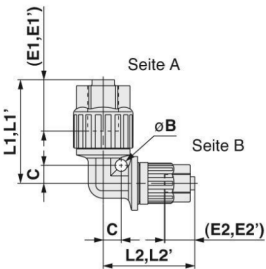
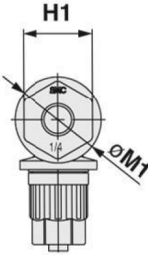
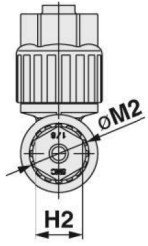
d [mm]	tube size [inch]	PN	Code	kg	D [mm]	e [mm]	L [mm]	L1 [mm]	L2 [mm]	
20	1/4	16	735 991 430	0.017	19	1.9	74	43	31	
20	3/8	16	735 991 431	0.020	22	1.9	77	46	31	
20	1/2	16	735 991 432	0.025	25	1.9	79	48	31	
20	3/4	16	735 991 433	0.017	34	1.9	83	52	31	
25	1/4	16	735 991 435	0.020	19	1.9	74	43	31	
25	3/8	16	735 991 436	0.022	22	1.9	77	46	31	
25	1/2	16	735 991 437	0.027	25	1.9	79	48	31	
25	3/4	16	735 991 438	0.045	34	1.9	83	52	31	
25	1	16	735 991 439	0.014	37	1.9	84	58	31	
32	1/2	16	735 991 442	0.034	25	2.4	79	48	31	
32	3/4	16	735 991 443	0.050	34	2.4	83	52	31	
32	1	16	735 991 444	0.035	37	2.4	89	58	31	

# SYGEF<sup>®</sup> PFA

## Union Elbow Reducing LQ3E.A-R

Model:

- All PFA



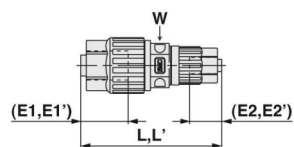
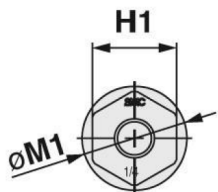
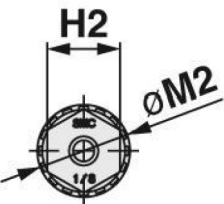
D [inch]	d [inch]	Code	SMC Code	kg
¼	⅛	737 020 038	LQ3E2A-R1	0.050
⅜	¼	737 020 039	LQ3E3A-R1	0.075
⅝	⅜	737 020 040	LQ3E3A-R2	0.075
½	⅝	737 020 041	LQ3E4A-R1	0.100
½	¼	737 020 042	LQ3E4A-R2	0.100
¾	½	737 020 043	LQ3E5A-R1	0.250
¾	⅜	737 020 044	LQ3E5A-R2	0.250
¾	¼	737 020 045	LQ3E5A-R3	0.250
1	¾	737 020 046	LQ3E6A-R1	0.400
1	½	737 020 047	LQ3E6A-R2	0.400

D [inch]	B [mm]	C [mm]	E1 [mm]	E2 [mm]	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]	M1 [mm]	M2 [mm]
¼	4	6	17.0	10.0	16	11	34.5	30.5	20	14
⅜	5	9	22.5	17.0	21	16	47.5	38.0	25	20
⅝	5	9	22.5	10.0	21	11	47.5	33.5	25	14
½	6	10	24.5	22.5	24	21	52.5	48.5	29	25
½	6	10	24.5	17.0	24	16	52.5	39.0	29	20
¾	7	14	27.0	24.5	32	24	64.0	58.5	37	29
¾	7	14	27.0	22.5	32	21	64.0	53.5	37	25
¾	7	14	27.0	17.0	32	16	64.0	43.5	37	20
1	8	18	30.0	27.0	41	32	78.0	70.0	49	37
1	8	18	30.0	24.5	41	24	78.0	64.5	49	29

## Union Reduction LQ3U.A-R

Model:

- All PFA



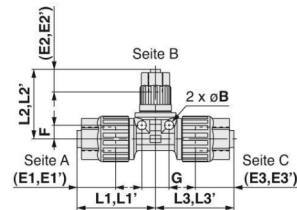
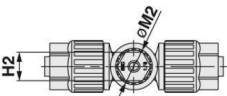
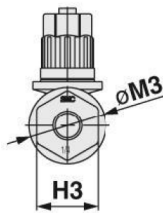
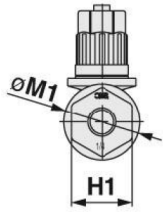
D [inch]	d [inch]	Code	SMC Code	kg	E1 [mm]	E2 [mm]	H1 [mm]	H2 [mm]	L [mm]	M1 [mm]	M2 [mm]	W [mm]
¼	⅛	737 020 048	LQ3U2A-R1	0.050	17.0	10.0	16	11	51.0	20	14	14
⅜	¼	737 020 049	LQ3U3A-R1	0.075	22.5	17.0	21	16	66.5	25	20	18
⅝	⅜	737 020 050	LQ3U3A-R2	0.075	22.5	10.0	21	11	62.0	25	14	18
½	⅝	737 020 051	LQ3U4A-R1	0.100	24.5	22.5	24	21	82.5	29	25	22
½	¼	737 020 052	LQ3U4A-R2	0.100	24.5	17.0	24	16	72.5	29	20	22
¾	½	737 020 053	LQ3U5A-R1	0.250	27.0	24.5	32	24	95.5	37	29	30
¾	⅜	737 020 054	LQ3U5A-R2	0.250	27.0	22.5	32	21	91.0	37	25	30
¾	¼	737 020 055	LQ3U5A-R3	0.250	27.0	17.0	32	16	81.0	37	20	30
1	¾	737 020 056	LQ3U6A-R1	0.400	30.0	27.0	41	32	112.5	49	37	36
1	½	737 020 057	LQ3U6A-R2	0.400	30.0	24.5	41	24	106.5	49	29	36

# SYGEF® PFA

## Union Tee Reducing LQ3T.A-R

Model:

- All PFA



d-d-d [inch]	Code	SMC Code	kg
1/4-1/8-1/4	737 020 058	LQ3T2A-R1	0.110
1/4-1/4-1/8	737 020 059	LQ3T2A-R5	0.110
3/8-1/4-3/8	737 020 060	LQ3T3A-R1	0.170
3/8-1/8-3/8	737 020 061	LQ3T3A-R2	0.170
3/8-3/8-1/4	737 020 062	LQ3T3A-R5	0.170
3/8-1/4-1/4	737 020 063	LQ3T3A-R7	0.170
1/4-3/8-1/4	737 020 064	LQ3T3A-R9	0.110
1/2-3/8-1/2	737 020 065	LQ3T4A-R1	0.220
1/2-1/4-1/2	737 020 066	LQ3T4A-R2	0.220
1/2-1/2-3/8	737 020 067	LQ3T4A-R5	0.220
1/2-1/2-1/4	737 020 068	LQ3T4A-R6	0.220
1/2-3/8-3/8	737 020 069	LQ3T4A-R7	0.220
1/2-1/4-1/4	737 020 070	LQ3T4A-R8	0.220
3/8-1/2-3/8	737 020 071	LQ3T4A-R9	0.170
3/4-1/2-3/4	737 020 072	LQ3T5A-R1	0.330
3/4-3/8-3/4	737 020 073	LQ3T5A-R2	0.330
3/4-1/4-3/4	737 020 074	LQ3T5A-R3	0.330
3/4-3/4-1/2	737 020 075	LQ3T5A-R5	0.330
3/4-3/4-3/8	737 020 076	LQ3T5A-R6	0.330
3/4-1/2-1/2	737 020 077	LQ3T5A-R7	0.330
1/2-3/4-1/2	737 020 078	LQ3T5A-R9	0.220
3/8-3/4-3/8	737 020 079	LQ3T5A-R10	0.170
3/4-1/2-1/4	737 020 080	LQ3T5A-R11	0.330
1-3/4-1	737 020 081	LQ3T6A-R1	0.440
1-1/2-1	737 020 082	LQ3T6A-R2	0.440
1-1/4-1	737 020 083	LQ3T6A-R4	0.440
1/2-1-1/2	737 020 084	LQ3T6A-R10	0.440

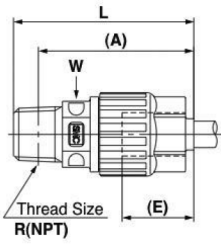
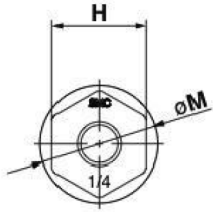
d-d-d [inch]	B [mm]	E1 [mm]	E2 [mm]	E3 [mm]	G [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	M1 [mm]	M2 [mm]	M3 [mm]
1/4-1/8-1/4	4	17.0	10.0	17.0	12	16	11	16	34.5	30.5	34.5	20	14	20
1/4-1/4-1/8	4	17.0	17.0	10.0	12	16	16	11	34.5	34.5	30.5	20	20	14
3/8-1/4-3/8	5	22.5	17.0	22.5	18	21	16	21	47.5	38.0	47.5	25	20	25
3/8-1/8-3/8	5	22.5	10.0	22.5	18	21	11	21	47.5	33.5	47.5	25	14	25
3/8-3/8-1/4	5	22.5	22.5	17.0	18	21	21	16	47.5	47.5	38.0	25	25	20
3/8-1/4-1/4	5	22.5	17.0	17.0	18	21	16	16	47.5	38.0	38.0	25	20	20
1/4-3/8-1/4	5	17.0	22.5	17.0	18	16	21	16	38.0	47.5	38.0	20	25	20
1/2-3/8-1/2	6	24.5	22.5	24.5	20	24	21	24	52.5	48.5	52.5	29	25	29
1/2-1/4-1/2	6	24.5	17.0	24.5	20	24	16	24	52.5	39.0	52.5	29	20	29
1/2-1/2-3/8	6	24.5	24.5	22.5	20	24	24	21	52.5	52.5	48.5	29	29	25
1/2-1/2-1/4	6	24.5	24.5	17.0	20	24	24	16	52.5	52.5	39.0	29	29	20
1/2-3/8-3/8	6	24.5	22.5	22.5	20	24	21	21	52.5	48.5	48.5	29	25	25
1/2-1/4-1/4	6	24.5	17.0	17.0	20	24	16	16	52.5	39.0	39.0	29	20	20
3/8-1/2-3/8	6	22.5	24.5	22.5	20	21	24	21	48.5	52.5	48.5	25	29	25
3/4-1/2-3/4	7	27.0	24.5	27.0	28	32	24	32	64.0	58.5	64.0	37	29	37
3/4-3/8-3/4	7	27.0	22.5	27.0	28	32	21	32	64.0	54.5	64.0	37	25	37
3/4-1/4-3/4	7	27.0	17.0	27.0	28	32	16	32	64.0	44.5	64.0	37	20	37
3/4-3/4-1/2	7	27.0	27.0	24.5	28	32	32	24	64.0	64.0	58.5	37	37	29
3/4-3/4-3/8	7	27.0	27.0	22.5	28	32	32	21	64.0	64.0	54.5	37	37	25
3/4-1/2-1/2	7	27.0	24.5	24.5	28	32	24	24	64.0	58.5	58.5	37	29	29
1/2-3/4-1/2	7	24.5	27.0	24.5	28	24	32	24	58.5	64.0	58.5	29	37	29
3/8-3/4-3/8	7	22.5	27.0	22.5	28	21	32	21	54.5	64.0	54.5	25	37	25
3/4-1/2-1/4	7	27.0	24.5	17.0	28	32	24	16	64.0	58.5	44.5	37	29	20
1-3/4-1	8	30.0	27.0	30.0	36	41	32	41	78.0	70.0	78.0	49	37	49
1-1/2-1	8	30.0	24.5	30.0	36	41	24	41	78.0	64.5	78.0	49	29	49
1-1/4-1	8	30.0	17.0	30.0	36	41	16	41	78.0	50.0	78.0	49	20	49
1/2-1-1/2	8	24.5	30.0	24.5	36	41	41	24	64.5	78.0	64.5	29	49	29

# SYGEF® PFA

## Male Connector LQ3H-MN

### Model:

- All PFA
- Male Thread NPT
- d1 = NPT-Thread

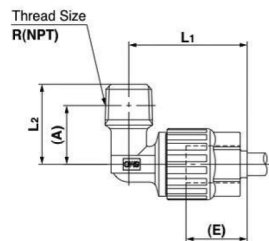
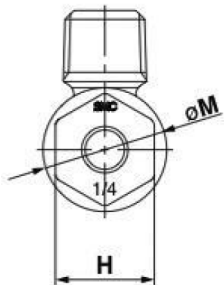


d [inch]	d1 [inch]	Code	SMC Code	A [mm]	E [mm]	H [mm]	L [mm]	M [mm]	W [mm]
1/8	1/8	737 020 085	LQ3H1A-MN	29.5	10.0	11	33.5	14	10
1/4	1/8	737 020 086	LQ3H2A-MN	37.5	17.0	16	43.5	20	14
1/4	1/4	737 020 087	LQ3H2B-MN	37.5	17.0	16	43.5	20	14
3/8	1/8	737 020 088	LQ3H3A-MN	48.5	22.5	21	55.0	25	18
3/8	1/4	737 020 089	LQ3H3B-MN	48.5	22.5	21	55.0	25	18
3/8	3/8	737 020 090	LQ3H3C-MN	48.5	22.5	21	55.0	25	18
1/2	1/4	737 020 091	LQ3H4A-MN	56.0	24.5	24	64.0	29	22
1/2	3/8	737 020 092	LQ3H4B-MN	56.0	24.5	24	64.0	29	22
1/2	1/2	737 020 093	LQ3H4C-MN	56.0	24.5	24	64.0	29	22
3/4	3/8	737 020 094	LQ3H5A-MN	66.5	27.0	32	76.0	37	30
3/4	1/2	737 020 095	LQ3H5B-MN	66.5	27.0	32	76.0	37	30
3/4	3/4	737 020 096	LQ3H5C-MN	66.5	27.0	32	76.0	37	30
1	1/2	737 020 097	LQ3H6A-MN	77.5	30.0	41	88.0	49	36
1	3/4	737 020 098	LQ3H6B-MN	77.5	30.0	41	88.0	49	36
1	1	737 020 099	LQ3H6C-MN	77.5	30.0	41	88.0	49	36

## Male Elbow LQ3L-MN

### Model:

- All PFA
- Male Thread NPT
- d1 = NPT-Thread



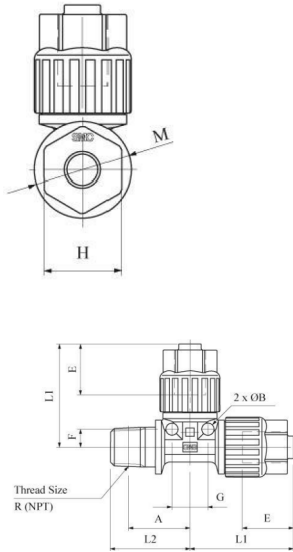
d [inch]	d1 [inch]	Code	SMC Code	A [mm]	E [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]
1/8	1/8	737 020 100	LQ3L1A-MN	29.5	10.0	11	26.0	16.5	14
1/4	1/8	737 020 101	LQ3L2A-MN	37.5	17.0	16	33.5	22.5	20
1/4	1/4	737 020 102	LQ3L2B-MN	37.5	17.0	16	33.5	22.5	20
3/8	1/8	737 020 103	LQ3L3A-MN	48.5	22.5	21	46.0	28.0	25
3/8	1/4	737 020 104	LQ3L3B-MN	48.5	22.5	21	46.0	28.0	25
3/8	3/8	737 020 105	LQ3L3C-MN	48.5	22.5	21	46.0	28.0	25
1/2	1/4	737 020 106	LQ3L4A-MN	56.0	24.5	24	54.5	33.0	29
1/2	3/8	737 020 107	LQ3L4B-MN	56.0	24.5	24	54.5	33.0	29
1/2	1/2	737 020 108	LQ3L4C-MN	56.0	24.5	24	54.5	33.0	29
3/4	3/8	737 020 109	LQ3L5A-MN	66.5	27.0	32	64.0	40.0	37
3/4	1/2	737 020 110	LQ3L5B-MN	66.5	27.0	32	64.0	40.0	37
3/4	3/4	737 020 111	LQ3L5C-MN	66.5	27.0	32	64.0	40.0	37
1	1/2	737 020 112	LQ3L6A-MN	77.5	30.0	41	77.0	46.0	49
1	3/4	737 020 113	LQ3L6B-MN	77.5	30.0	41	77.0	46.0	49
1	1	737 020 114	LQ3L6C-MN	77.5	30.0	41	77.0	46.0	49

# SYGEF® PFA

## Male Run Tee LQ3R-MN

### Model:

- All PFA
- Male Thread NPT Nr. 3
- d1 = NPT-Thread

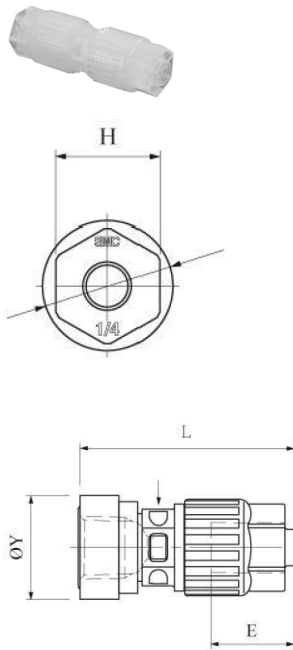


d [inch]	d1 [inch]	Code	SMC Code	A [mm]	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]
1/8	1/8	737 020 130	LQ3R1A-MN	15.5	3.5	10.0	4.8	9.5	11	28.5	19.0	14
1/4	1/8	737 020 131	LQ3R2A-MN	20.0	4.0	17.0	6.0	12.0	16	34.5	23.5	20
1/4	1/4	737 020 132	LQ3R2B-MN	20.5	4.0	17.0	6.0	12.0	16	34.5	26.5	20
3/8	1/8	737 020 133	LQ3R3A-MN	23.0	5.0	22.5	9.0	18.0	21	47.5	26.5	25
3/8	1/4	737 020 134	LQ3R3B-MN	23.5	5.0	22.5	9.0	18.0	21	47.5	29.5	25
3/8	3/8	737 020 135	LQ3R3C-MN	24.5	5.0	22.5	9.0	18.0	21	47.5	30.5	25
1/2	1/4	737 020 136	LQ3R4A-MN	27.0	6.0	24.5	10.0	20.0	24	52.5	33.0	29
1/2	3/8	737 020 137	LQ3R4B-MN	28.0	6.0	24.5	10.0	20.0	24	52.5	34.0	29
1/2	1/2	737 020 138	LQ3R4C-MN	29.5	6.0	24.5	10.0	20.0	24	52.5	37.0	29
3/4	3/8	737 020 139	LQ3R5A-MN	33.0	7.0	27.0	14.0	28.0	32	64.0	39.0	37
3/4	1/2	737 020 140	LQ3R5B-MN	34.5	7.0	27.0	14.0	28.0	32	64.0	42.0	37
3/4	3/4	737 020 141	LQ3R5C-MN	35.0	7.0	27.0	14.0	28.0	32	64.0	44.0	37
1	1/2	737 020 142	LQ3R6A-MN	42.5	8.0	30.0	18.0	36.0	41	78.0	50.0	49
1	3/4	737 020 143	LQ3R6B-MN	43.0	8.0	30.0	18.0	36.0	41	78.0	52.0	49
1	1	737 020 144	LQ3R6C-MN	43.0	8.0	30.0	18.0	36.0	41	78.0	53.0	49

## Female Connector LQ3H-FN

### Model:

- All PFA
- Female Thread NPT
- d1 = NPT-Thread



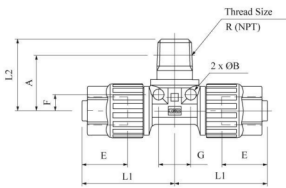
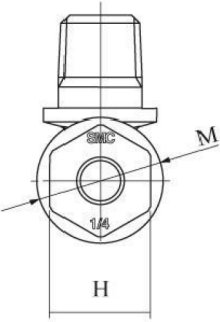
d [inch]	d1 [inch]	Code	SMC Code	E [mm]	H [mm]	L [mm]	M [mm]	W [mm]	Y [mm]
1/8	1/8	737 020 145	LQ3H1A-FN	10.0	11	35.0	14	10	18.5
1/4	1/8	737 020 146	LQ3H2A-FN	17.0	16	40.0	20	14	18.5
1/4	1/4	737 020 147	LQ3H2B-FN	17.0	16	45.0	20	14	21.5
3/8	1/8	737 020 148	LQ3H3A-FN	22.5	21	50.5	25	18	18.5
3/8	1/4	737 020 149	LQ3H3B-FN	22.5	21	55.0	25	18	21.5
3/8	3/8	737 020 150	LQ3H3C-FN	22.5	21	55.5	25	18	25.0
1/2	1/4	737 020 151	LQ3H4A-FN	24.5	24	55.5	29	22	21.5
1/2	3/8	737 020 152	LQ3H4B-FN	24.5	24	58.0	29	22	25.0
1/2	1/2	737 020 153	LQ3H4C-FN	24.5	24	66.0	29	22	29.5
3/4	3/8	737 020 154	LQ3H5A-FN	27.0	32	67.0	37	30	25.0
3/4	1/2	737 020 155	LQ3H5B-FN	27.0	32	72.0	37	30	29.5
3/4	3/4	737 020 156	LQ3H5C-FN	27.0	32	73.5	37	30	36.0
1	1/2	737 020 157	LQ3H6A-FN	30.0	41	81.5	49	36	29.5
1	3/4	737 020 158	LQ3H6B-FN	30.0	41	83.0	49	36	36.0
1	1	737 020 159	LQ3H6C-FN	30.0	41	90.6	49	36	44.5

# SYGEF<sup>®</sup> PFA

## Male Branch Tee LQ3B-MN

### Model:

- All PFA
- Male Thread NPT Nr. 2
- d1 = NPT-Thread



d [inch]	d1 [inch]	Code	SMC Code	A [mm]	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]
1/8	1/8	737 020 115	LQ3B1A-MN	15.5	3	10.0	4.8	9.5	11	28.5	19.0	14
1/4	1/8	737 020 116	LQ3B2A-MN	20.0	4	17.0	6.0	12.0	16	34.5	23.5	20
1/4	1/4	737 020 117	LQ3B2B-MN	20.5	4	17.0	6.0	12.0	16	34.5	26.5	20
3/8	1/8	737 020 118	LQ3B3A-MN	23.0	5	22.5	9.0	18.0	21	47.5	26.5	25
3/8	1/4	737 020 119	LQ3B3B-MN	23.5	5	22.5	9.0	18.0	21	47.5	29.5	25
3/8	3/8	737 020 120	LQ3B3C-MN	24.5	5	22.5	9.0	18.0	21	47.5	30.5	25
1/2	1/4	737 020 121	LQ3B4A-MN	27.0	6	24.5	10.0	20.0	24	52.5	33.0	29
1/2	3/8	737 020 122	LQ3B4B-MN	28.0	6	24.5	10.0	20.0	24	52.5	34.0	29
1/2	1/2	737 020 123	LQ3B4C-MN	29.5	6	24.5	10.0	20.0	24	52.5	37.0	29
3/4	3/8	737 020 124	LQ3B5A-MN	33.0	7	27.0	14.0	28.0	32	64.0	39.0	37
3/4	1/2	737 020 125	LQ3B5B-MN	34.5	7	27.0	14.0	28.0	32	64.0	42.0	37
3/4	3/4	737 020 126	LQ3B5C-MN	35.0	7	27.0	14.0	28.0	32	64.0	44.0	37
1	1/2	737 020 127	LQ3B6A-MN	42.5	8	30.0	18.0	36.0	41	78.0	50.0	49
1	3/4	737 020 128	LQ3B6B-MN	43.0	8	30.0	18.0	36.0	41	78.0	52.0	49
1	1	737 020 129	LQ3B6C-MN	43.0	8	30.0	18.0	36.0	41	78.0	53.0	49

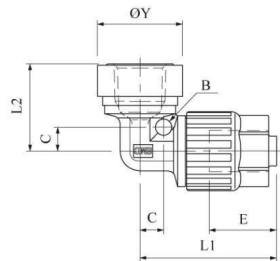
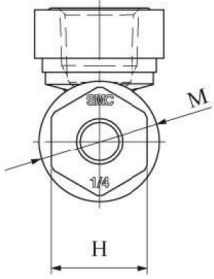


# SYGEF® PFA

## Female Elbow LQ3L-F

### Model:

- All PFA
- Female Thread NPT
- d1 = NPT-Thread



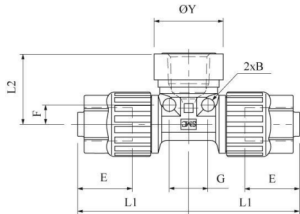
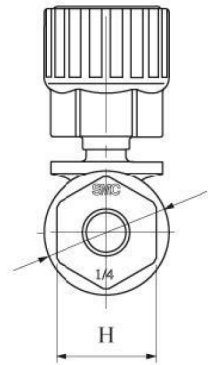
d [inch]	d1 [inch]	Code	SMC Code	B [mm]	C [mm]	E [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]	Y [mm]
1/8	1/8	737 020 160	LQ3L1A-F	3.5	4.8	10.0	11	28.5	19.5	14	18.5
1/4	1/8	737 020 161	LQ3L2A-F	4.0	6.0	17.0	16	34.5	20.0	20	18.5
1/4	1/4	737 020 162	LQ3L2B-F	4.0	6.0	17.0	16	34.5	22.0	20	21.5
3/8	1/8	737 020 163	LQ3L3A-F	5.0	9.0	22.5	21	47.5	23.0	25	18.5
3/8	1/4	737 020 164	LQ3L3B-F	5.0	9.0	22.5	21	47.5	24.0	25	21.5
3/8	3/8	737 020 165	LQ3L3C-F	5.0	9.0	22.5	21	47.5	25.5	25	25.0
1/2	1/4	737 020 166	LQ3L4A-F	6.0	10.0	24.5	24	52.5	23.5	29	21.5
1/2	3/8	737 020 167	LQ3L4B-F	6.0	10.0	24.5	24	52.5	26.0	29	25.0
1/2	1/2	737 020 168	LQ3L4C-F	6.0	10.0	24.5	24	52.5	30.0	29	29.5
3/4	3/8	737 020 169	LQ3L5A-F	7.0	14.0	27.0	32	64.0	30.5	37	25.0
3/4	1/2	737 020 170	LQ3L5B-F	7.0	14.0	27.0	32	64.0	35.5	37	29.5
3/4	3/4	737 020 171	LQ3L5C-F	7.0	14.0	27.0	32	64.0	37.0	37	36.0
1	1/2	737 020 172	LQ3L6A-F	8.0	18.0	30.0	41	78.0	41.0	49	29.5
1	3/4	737 020 173	LQ3L6B-F	8.0	18.0	30.0	41	78.0	42.5	49	36.0
1	1	737 020 174	LQ3L6C-F	8.0	18.0	30.0	41	78.0	46.0	49	44.5

# SYGEF® PFA

## Female Branch Tee LQ3B-F

### Model:

- d1 = NPT-Thread
- All PFA
- Female Thread NPT Nr. 2



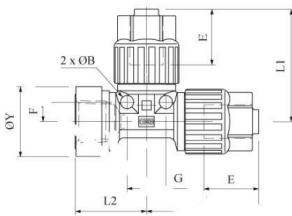
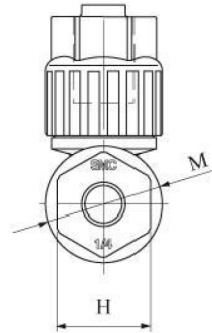
d [inch]	d1 [inch]	Code	SMC Code	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]	Y [mm]
1/8	1/8	<b>737 020 175</b>	<b>LQ3B1A-F</b>	3.5	10.0	4.8	9.5	11	28.5	19.5	14	18.5
1/4	1/8	<b>737 020 176</b>	<b>LQ3B2A-F</b>	4.0	17.0	6.0	12.0	16	34.5	20.0	20	18.5
1/4	1/4	<b>737 020 177</b>	<b>LQ3B2B-F</b>	4.0	17.0	6.0	12.0	16	34.5	22.0	20	21.5
3/8	1/8	<b>737 020 178</b>	<b>LQ3B3A-F</b>	5.0	22.5	9.0	18.0	21	47.5	23.0	25	18.5
3/8	1/4	<b>737 020 179</b>	<b>LQ3B3B-F</b>	5.0	22.5	9.0	18.0	21	47.5	24.0	25	21.5
3/8	3/8	<b>737 020 180</b>	<b>LQ3B3C-F</b>	5.0	22.5	9.0	18.0	21	47.5	25.5	25	25.0
1/2	1/4	<b>737 020 181</b>	<b>LQ3B4A-F</b>	6.0	24.5	10.0	20.0	24	52.5	23.5	29	21.5
1	3/8	<b>737 020 182</b>	<b>LQ3B4B-F</b>	6.0	24.5	10.0	20.0	24	52.5	26.0	29	25.0
1/2	1/2	<b>737 020 183</b>	<b>LQ3B4C-F</b>	6.0	24.5	10.0	20.0	24	52.5	30.0	29	29.5
3/4	3/8	<b>737 020 184</b>	<b>LQ3B5A-F</b>	7.0	27.0	14.0	28.0	32	64.0	30.5	37	25.0
3/4	1/2	<b>737 020 185</b>	<b>LQ3B5B-F</b>	7.0	27.0	14.0	28.0	32	64.0	35.5	37	29.5
3/4	3/4	<b>737 020 186</b>	<b>LQ3B5C-F</b>	7.0	27.0	14.0	28.0	32	64.0	37.0	37	36.0
1	1/2	<b>737 020 187</b>	<b>LQ3B6A-F</b>	8.0	27.0	18.0	36.0	41	78.0	41.0	49	29.5
1	3/4	<b>737 020 188</b>	<b>LQ3B6B-F</b>	8.0	27.0	18.0	36.0	41	78.0	42.5	49	36.0
1	1	<b>737 020 189</b>	<b>LQ3B6C-F</b>	8.0	27.0	18.0	36.0	41	78.0	46.0	49	44.5

# SYGEF® PFA

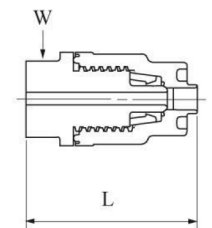
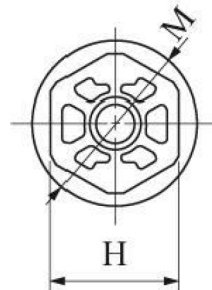
## Female Run Tee LQ3R-FN

### Model:

- All PFA
- Female Thread NPT Nr. 2
- d1 = NPT-Thread



d [inch]	d1 [inch]	Code	SMC Code	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]	Y [mm]
1/8	1/8	737 020 190	LQ3R1A-FN	3.5	10.0	4.8	9.5	11	28.5	19.5	14	18.5
1/4	1/8	737 020 191	LQ3R2A-FN	4.0	17.0	6.0	12.0	16	34.5	20.0	20	18.5
1/4	1/4	737 020 192	LQ3R2B-FN	4.0	17.0	6.0	12.0	16	34.5	22.0	20	21.5
3/8	1/8	737 020 193	LQ3R3A-FN	5.0	22.5	9.0	18.0	21	47.5	23.0	25	18.5
3/8	1/4	737 020 194	LQ3R3B-FN	5.0	22.5	9.0	18.0	21	47.5	24.0	25	21.5
3/8	3/8	737 020 195	LQ3R3C-FN	5.0	22.5	9.0	18.0	21	47.5	25.5	25	25.0
1/2	1/4	737 020 196	LQ3R4A-FN	6.0	24.5	10.0	20.0	24	52.5	23.5	29	21.5
1/2	3/8	737 020 197	LQ3R4B-FN	6.0	24.5	10.0	20.0	24	52.5	26.0	29	25.0
1/2	1/2	737 020 198	LQ3R4C-FN	6.0	24.5	10.0	20.0	24	52.5	30.0	29	29.5
3/4	3/8	737 020 199	LQ3R5A-FN	7.0	27.0	14.0	28.0	32	64.0	30.5	37	25.0
3/4	1/2	737 020 200	LQ3R5B-FN	7.0	27.0	14.0	28.0	32	64.0	35.5	37	29.5
3/4	3/4	737 020 201	LQ3R5C-FN	7.0	27.0	14.0	28.0	32	64.0	37.0	37	36.0
1	1/2	737 020 202	LQ3R6A-FN	8.0	27.0	18.0	36.0	41	78.0	41.0	49	29.5
1	3/4	737 020 203	LQ3R6B-FN	8.0	27.0	18.0	36.0	41	78.0	42.5	49	36.0
1	1	737 020 204	LQ3R6C-FN	8.0	27.0	18.0	36.0	41	78.0	46.0	49	44.5



## Tubing Plug LQ3-P

### Model:

- All PFA
- Used to block tubes which are not used

d [inch]	Code	SMC Code	kg	L [mm]	W [mm]	H [mm]	M [mm]
1/8	737 020 211	LQ3-1P03-2	0.001	25.5	10	11	14
1/4	737 020 212	LQ3-2P07-2	0.003	32.0	14	16	20
3/8	737 020 213	LQ3-3P11-2	0.004	42.0	18	21	25
1/2	737 020 214	LQ3-4P13-2	0.050	47.0	22	24	29
3/4	737 020 215	LQ3-5P19-2	0.100	57.0	30	32	37
1	737 020 216	LQ3-6P25-2	0.150	66.5	36	41	49

# SYGEF® PFA

## Union Nut LQ3-N

**Model:**

- All PFA

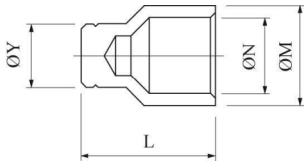
d [inch]	Code	SMC Code
1/8	737 020 217	LQ3-1N03
1/4	737 020 218	LQ3-2N07
3/8	737 020 219	LQ3-3N11
1/2	737 020 220	LQ3-4N13
3/4	737 020 221	LQ3-5N19
1	737 020 222	LQ3-6N25



## Blanking Plug LQ3-P

**Model:**

- All PFA
- Used to block fittings which are not used



d [inch]	Code	SMC Code	kg	L [mm]	M [mm]	N [mm]	Y [mm]
1/8	737 020 205	LQ3-1P03-1	0.001	9.5	5.0	4.0	3.2
1/4	737 020 206	LQ3-2P07-1	0.003	13.5	10.0	7.6	6.4
3/8	737 020 207	LQ3-3P11-1	0.004	18.5	13.5	10.9	9.5
1/2	737 020 208	LQ3-4P13-1	0.050	20.5	16.6	14.0	12.7
3/4	737 020 209	LQ3-5P19-1	0.100	23.5	23.5	20.9	19.1
1	737 020 210	LQ3-6P25-1	0.150	27.5	31.7	29.1	25.4

# SYGEF® PFA

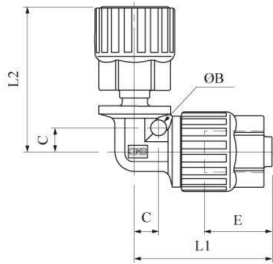
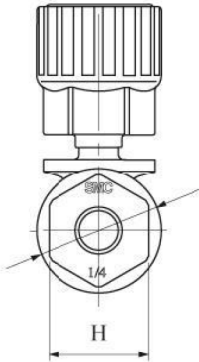
## PFA-Space Saver

### Space Saver Union Elbow LQ3E-S



Model:

- All PFA

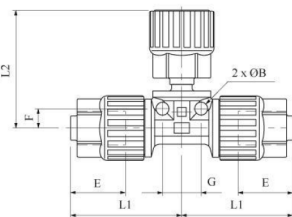
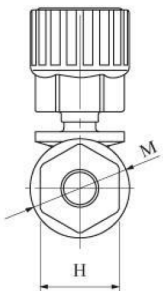


d [inch]	Code	SMC Code	kg	B [mm]	C [mm]	E [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]
1/8	737 021 000	LQ3E1A-S	0.020	3.5	4.8	10.0	11	28.5	30.5	14
1/4	737 021 001	LQ3E2A-S	0.050	4.0	6.0	17.0	16	34.5	39.5	20
3/8	737 021 002	LQ3E3A-S	0.075	5.0	9.0	22.5	21	47.5	49.5	25
1/2	737 021 003	LQ3E4A-S	0.100	6.0	10.0	24.5	24	52.5	54.5	29
3/4	737 021 004	LQ3E5A-S	0.250	7.0	14.0	27.0	32	64.0	66.0	37
1	737 021 005	LQ3E6A-S	0.400	8.0	18.0	30.0	41	78.0	80.0	49

### Space Saver Branch Tee LQ3T-SB

Model:

- All PFA



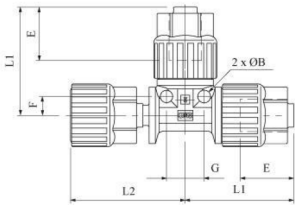
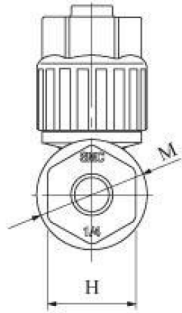
d [inch]	Code	SMC Code	kg	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]
1/8	737 021 006	LQ3T1A-SB	0.050	3.5	10.0	4.8	9.5	11	28.5	30.5	14
1/4	737 021 007	LQ3T2A-SB	0.110	4.0	17.0	6.0	12.0	16	34.5	39.5	20
3/8	737 021 008	LQ3T3A-SB	0.170	5.0	22.5	9.0	18.0	21	47.5	49.5	25
1/2	737 021 009	LQ3T4A-SB	0.220	6.0	24.5	10.0	20.0	24	52.5	54.5	29
3/4	737 021 010	LQ3T5A-SB	0.330	7.0	27.0	14.0	28.0	32	64.0	66.0	37
1	737 021 011	LQ3T6A-SB	0.440	8.0	30.0	18.0	36.0	41	78.0	80.0	49

# SYGEF® PFA

## Space Saver Run Tee LQ3T-SR

Model:

- All PFA

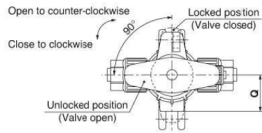


d [inch]	Code	SMC Code	kg	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L1 [mm]	L2 [mm]	M [mm]
1/8	737 021 012	LQ3T1A-SR	0.050	3.5	10.0	4.8	9.5	11	28.5	30.5	14
1/4	737 021 013	LQ3T2A-SR	0.110	4.0	17.0	6.0	12.0	16	34.5	39.5	20
3/8	737 021 014	LQ3T3A-SR	0.170	5.0	22.5	9.0	18.0	21	47.5	49.5	25
1/2	737 021 015	LQ3T4A-SR	0.220	6.0	24.5	10.0	20.0	24	52.5	54.5	29
3/4	737 021 016	LQ3T5A-SR	0.330	7.0	27.0	14.0	28.0	32	64.0	66.0	37
1	737 021 017	LQ3T6A-SR	0.440	8.0	30.0	18.0	36.0	41	78.0	80.0	49

# SYGEF® PFA

## High Purity PFA Valves LVQ

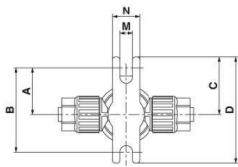
### Hand-operated diaphragm valve with hand-lever



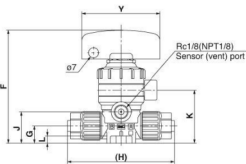
**Model:**

- 90° closing travel (Quarter-turn)
- lockable
- Diaphragm: PTFE (DAIKIN 112)

d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code	kg
1/4	5	737 061 000	LVQH20-Z07-1	0.200
3/8	19	737 061 001	LVQH30-Z11-1	0.300
1/2	27	737 061 002	LVQH40-Z13-1	0.400
3/4	72	737 061 003	LVQH50-Z19-1	0.700
1	115	737 061 004	LVQH60-Z25-1	0.800

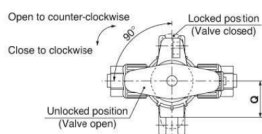


d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	Q [mm]
1/4	25.5	46	31.5	58	33.6	81.0	12.0	77	21.8	37.0	5	7	15	31.3	21.0
3/8	23.5	47	29.5	59	45.4	99.0	16.5	95	32.0	50.0	6	7	20	37.2	25.0
1/2	23.5	47	29.5	59	45.4	104.5	22.0	109	37.5	55.5	6	7	20	37.2	25.0
3/4	35.0	70	41.0	82	75.0	145.0	25.0	141	50.2	78.2	10	7	20	50.8	38.5
1	35.0	70	41.0	82	75.0	154.5	32.0	150	60.0	88.0	10	7	20	50.8	38.5



d [inch]	R [mm]	W [mm]
1/4	25.3	64.0
3/8	31.2	82.0
1/2	31.2	87.5
3/4	45.0	128.0
1	45.0	137.5

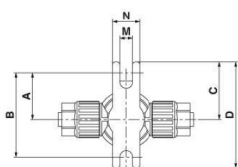
### Hand-operated diaphragm valve with Flow-Adjustment



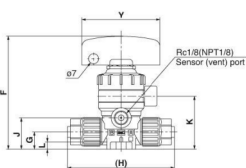
**Model:**

- Flow adjustable
- Adjustment lockable
- Diaphragm: PTFE (DAIKIN 112)

d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code	kg
1/4	5	737 062 000	LVQH20-Z07-2	0.200
3/8	19	737 062 001	LVQH30-Z11-2	0.300
1/2	27	737 062 002	LVQH40-Z13-2	0.400
3/4	72	737 062 003	LVQH50-Z19-2	0.700
1	115	737 062 004	LVQH60-Z25-2	0.800



d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	Q [mm]
1/4	25.5	46	31.5	58	33.6	81.0	12.0	77	21.8	37.0	5	7	15	31.3	21.0
3/8	23.5	47	29.5	59	45.4	99.0	16.5	95	32.0	50.0	6	7	20	37.2	25.0
1/2	23.5	47	29.5	59	45.4	104.5	22.0	109	37.5	55.5	6	7	20	37.2	25.0
3/4	35.0	70	41.0	82	75.0	145.0	25.0	141	50.2	78.2	10	7	20	50.8	38.5
1	35.0	70	41.0	82	75.0	154.5	32.0	150	60.0	88.0	10	7	20	50.8	38.5



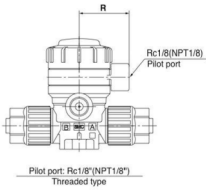
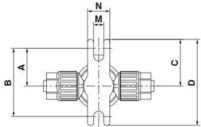
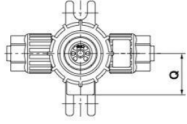
d [inch]	R [mm]	W [mm]
1/4	25.3	64.0
3/8	31.2	82.0
1/2	31.2	87.5
3/4	45.0	128.0
1	45.0	137.5

# SYGEF® PFA

## Diaphragm valves pneumatic FC Fail safe to close

### Model:

- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)
- With position indicator



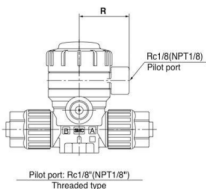
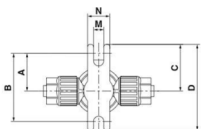
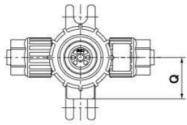
d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code
1/4	5	737 040 000	LVQ20-Z07R-4
3/8	19	737 040 001	LVQ30-Z11R-4
1/2	27	737 040 002	LVQ40-Z13R-4
3/4	72	737 040 003	LVQ50-Z19R-4
1	115	737 040 004	LVQ60-Z25R-4

d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	Q [mm]	R [mm]
1/4	25.5	46	31.5	58	7	15	21.0	25.3
3/8	23.5	47	29.5	59	7	20	25.0	31.2
1/2	23.5	47	29.5	59	7	20	25.0	31.2
3/4	35.0	70	41.0	82	7	20	38.5	45.0
1	35.0	70	41.0	82	7	20	38.5	45.0

## Diaphragm valves pneumatic FO Fail safe to open

### Model:

- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)

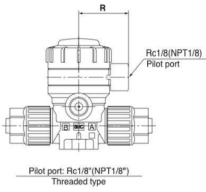
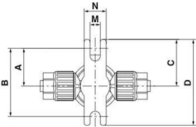
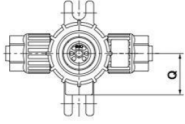


d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	Q [mm]	R [mm]
1/4	5	737 041 000	LVQ21-Z07R	25.5	46	31.5	58	7	15	21.0	25.3
3/8	19	737 041 001	LVQ31-Z11R	23.5	47	29.5	59	7	20	25.0	31.2
1/2	27	737 041 002	LVQ41-Z13R	23.5	47	29.5	59	7	20	25.0	31.2
3/4	72	737 041 003	LVQ51-Z19R	35.0	70	41.0	82	7	20	38.5	45.0
1	115	737 041 004	LVQ61-Z25R	35.0	70	41.0	82	7	20	38.5	45.0



# SYGEF® PFA

## Diaphragm valves pneumatic FC Fail safe to close



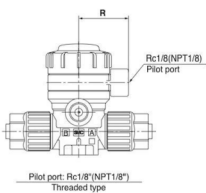
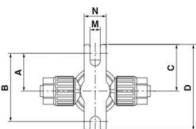
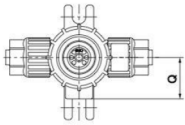
### Model:

- For high back pressure (0,42 MPa / 4,2 bar)
- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)

d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code
1/4	5	737 050 000	LVQ20-Z07R-5
3/8	19	737 050 001	LVQ30-Z11R-5
1/2	27	737 050 002	LVQ40-Z13R-5
3/4	72	737 050 003	LVQ50-Z19R-5
1	115	737 050 004	LVQ60-Z25R-5

d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	Q [mm]	R [mm]
1/4	25.5	46	31.5	58	7	15	21.0	25.3
3/8	23.5	47	29.5	59	7	20	25.0	31.2
1/2	23.5	47	29.5	59	7	20	25.0	31.2
3/4	35.0	70	41.0	82	7	20	38.5	45.0
1	35.0	70	41.0	82	7	20	38.5	45.0

## Diaphragm valves pneumatic FO Fail safe to open



### Model:

- For high back pressure (0,42 MPa / 4,2 bar)
- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)

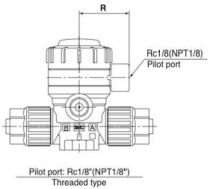
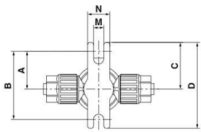
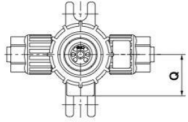
d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code
1/4	5	737 051 000	LVQ21-Z07R-5
3/8	19	737 051 001	LVQ31-Z11R-5
1/2	27	737 051 002	LVQ41-Z13R-5
3/4	72	737 051 003	LVQ51-Z19R-5
1	115	737 051 004	LVQ61-Z25R-5

d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	Q [mm]	R [mm]
1/4	25.5	46	31.5	58	7	15	21.0	25.3
3/8	23.5	47	29.5	59	7	20	25.0	31.2
1/2	23.5	47	29.5	59	7	20	25.0	31.2
3/4	35.0	70	41.0	82	7	20	38.5	45.0
1	35.0	70	41.0	82	7	20	38.5	45.0

# SYGEF® PFA

## High temperature-High purity-Valves for Chemicals LVQ

### Diaphragm valves pneumatic FO Fail safe to open

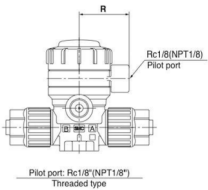
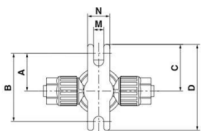
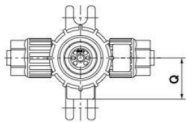


**Model:**

- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)
- Maximum Temperature ≤ 180°

d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	Q [mm]	R [mm]
¼	5	737 042 000	LVQ20-Z07-J	25.5	46	31.5	58	7	15	21.0	25.3
⅜	19	737 042 001	LVQ30-Z11-J	23.5	47	29.5	59	7	20	25.0	31.2
½	27	737 042 002	LVQ40-Z13-J	23.5	47	29.5	59	7	20	25.0	31.2
¾	72	737 042 003	LVQ50-Z19-J	35.0	70	41.0	82	7	20	38.5	45.0
1	115	737 042 004	LVQ60-Z25-J	35.0	70	41.0	82	7	20	38.5	45.0

### Diaphragm valves pneumatic FC Fail safe to close



**Model:**

- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)
- Maximum Temperature ≤ 180°

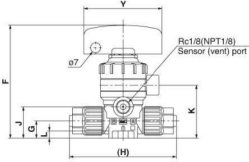
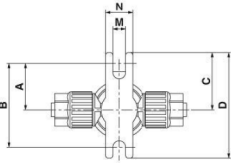
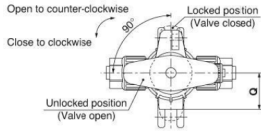
d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	Q [mm]	R [mm]
¼	5	737 043 000	LVQ21-Z07-J	25.5	46	31.5	58	7	15	21.0	25.3
⅜	19	737 043 001	LVQ31-Z11-J	23.5	47	29.5	59	7	20	25.0	31.2
½	27	737 043 002	LVQ41-Z13-J	23.5	47	29.5	59	7	20	25.0	31.2
¾	72	737 043 003	LVQ51-Z19-J	35.0	70	41.0	82	7	20	38.5	45.0
1	115	737 043 004	LVQ61-Z25-J	35.0	70	41.0	82	7	20	38.5	45.0

# SYGEF® PFA

## Hand-operated diaphragm valve with Flow-Adjustment

### Model:

- Flow adjustable
- Adjustment lockable
- Diaphragm: PTFE (DAIKIN 112)
- Maximum Temperature ≤ 180°



d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code
1/4	5	737 063 000	LVQH20-Z07-2-J
3/8	19	737 063 001	LVQH30-Z11-2-J
1/2	27	737 063 002	LVQH40-Z13-2-J
3/4	72	737 063 003	LVQH50-Z19-2-J
1	115	737 063 004	LVQH60-Z25-2-J

d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	G [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]	Q [mm]	Y [mm]
1/4	25.5	46	31.5	58	81.0	12.0	77	21.8	37.0	5	7	15	21.0	55.0
3/8	23.5	47	29.5	59	99.0	16.5	95	32.0	50.0	6	7	20	25.0	80.0
1/2	23.5	47	29.5	59	104.5	22.0	109	37.5	55.5	6	7	20	25.0	80.0
3/4	35.0	70	41.0	82	145.0	25.0	141	50.2	78.2	10	7	20	38.5	110.0
1	35.0	70	41.0	82	154.5	32.0	150	60.0	88.0	10	7	20	38.5	110.0

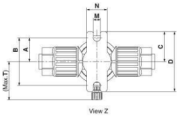
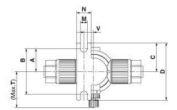
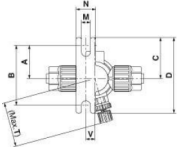
# SYGEF<sup>®</sup> PFA

## High Purity Valves with integrated Bypass LVQ

### Diaphragm valves pneumatic FC Fail safe to close

**Model:**

- Pilote Port R 1/8"
- Diaphragm: PTFE (DAIKIN 112)
- Bypass Flow adjustable
- No dead legs when valve closed
- With position indicator



d [inch]	kv-value ( $\Delta p=1$ bar) [l/min]	Code	SMC Code							
1/4	5	737 044 000	LVQ20-Z07R-2							
3/8	19	737 044 001	LVQ30-Z11R-2							
1/2	27	737 044 002	LVQ40-Z13R-2							
3/4	72	737 044 003	LVQ50-Z19R-2							
1	115	737 044 004	LVQ60-Z25R-2							

d [inch]	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	N [mm]	T [mm]	U [mm]	V [mm]	
1/4	25.5	46	31.5	58	7	15	35.3	10.6	7	
3/8	23.5	47	29.5	59	7	20	36.9	16.5	10	
1/2	23.5	47	29.5	59	7	20	37.9	22.0		
3/4	35.0	70	41.0	82	7	20	64.0	25.0	17	
1	35.0	70	41.0	82	7	20	66.0	32.0		

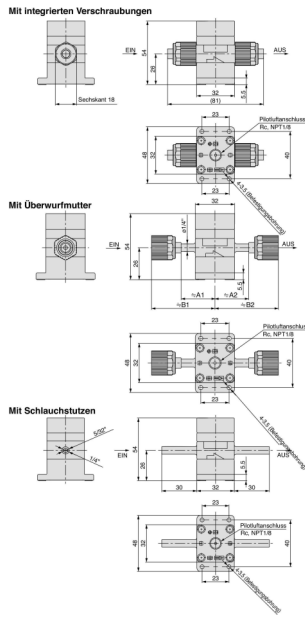
# SYGEF® PFA

## PFA Pressure Regulator

### Regulator for Chemicals and High Purity Media LVR



Serie SRF



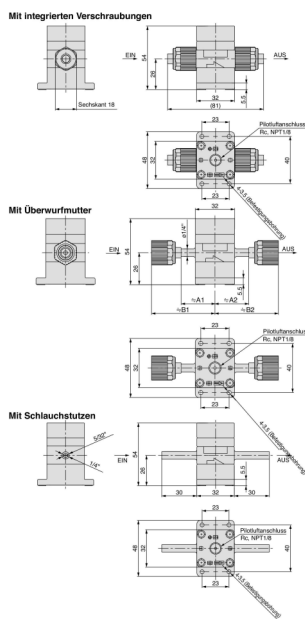
**Model:**

- Pressure Adjustment Range 0,2 - 4 bar
- pneumatically operated
- Integrated LQ3 Fittings
- High Volume Flow
- Suitable for UPW and CMP

d [inch]	Scale range	Code	SMC Code
1/4	240	737 033 010	LVR20-Z07N
1/2	2100	737 033 011	LVR40-Z13N
3/4	5400	737 033 012	LVR50-Z19N



Serie SRF



### Regulator for High Purity Media SRF10

**Model:**

- Hose Connector
- Pressure Adjustment Range 0,2 - 4 bar
- pneumatically operated
- Pilote Port R 1/8"
- UPW

d [inch]	Scale range	Code	SMC Code	kg
1/4	120	737 033 000	SRF10-T07	0.200
3/8	300	737 033 001	SRF30-T11	0.300
3/4	1200	737 033 002	SRF50-T19	0.700

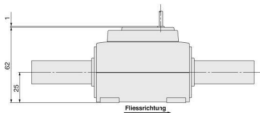
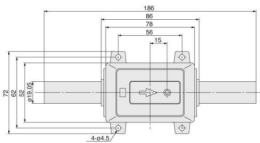
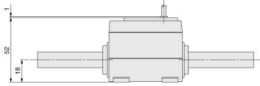
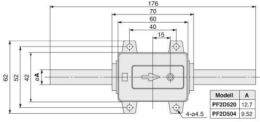
# SYGEF® PFA

## Digital Flow Switch

### Digital Flow Switch analog output 1-5V

**Model:**

- Vortex-System
- Sensor Unit

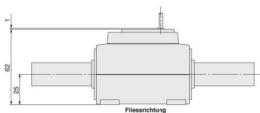
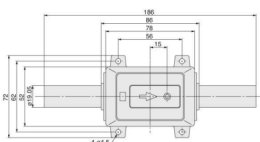
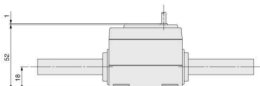
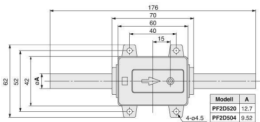


d [inch]	Scale range [l/h]	Code	SMC Code	kg	
3/8	24-240	<b>737 034 000</b>	<b>PF2D504-11-1</b>	0.300	
1/2	108-1200	<b>737 034 002</b>	<b>PF2D520-13-1</b>	0.400	
3/4	240-2400	<b>737 034 004</b>	<b>PF2D540-19-1</b>	0.700	

### Digital Flow Switch analog output 4-20 mA

**Model:**

- Vortex-System
- Sensor Unit



d [inch]	Scale range [l/h]	Code	SMC Code		
3/8	24-240	<b>737 034 001</b>	<b>PF2D504-11-2</b>		
1/2	108-1200	<b>737 034 003</b>	<b>PF2D520-13-2</b>		
3/4	240-2400	<b>737 034 005</b>	<b>PF2D540-19-2</b>		

# SYGEF® PFA

## Display Unit for digital Flow Switch

### Indicating device PF2D301-A



**Model:**

- With unit switching function (l/min to gal/min (US))
- Panel mounting

Code	SMC Code	
737 034 006	PF2D301-A	



### Fix Display

**Model:**

- Fixed SI Unit (l/min)
- Panel mounting

Code	SMC Code	
737 034 007	PF2D301-A-M	

# SYGEF® PFA

## Tools



### Cold Flare Tool

**Model:**

- Lever type tool including insert pin and tube holder for 1/8" + 1/4"

d-d [inch]	Code	SMC Code	kg
1/8 + 1/4	737 060 010	LQ3-GB-N	0.500

### Insert pin and tube holder

**Model:**

- for tube holder (737 060 010)

d-d [inch]	Code	SMC Code
1/8 + 1/4	737 060 015	LQ3-GPB-N

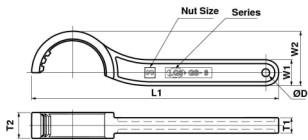


### Tool-Set Box

**Model:**

- Parts case:  
insert pins,  
insert pin jig

d-d [inch]	Code	SMC Code	kg
1/4 - 1	737 060 013	LQ3-GPS-N	2.500



### Dedicated Nut Spanner for LQ3 Hyperflare Fittings

Code	SMC Code	kg	D [mm]	L1 [mm]	W1 [mm]	W2 [mm]	T1 [mm]	T2 [mm]
737 060 000	LQ3-GS-1	0.010	3	59	8	13	7	7
737 060 001	LQ3-GS-2	0.020	3	73	8	17	6	10
737 060 002	LQ3-GS-3	0.030	3	96	10	21	6	10
737 060 003	LQ3-GS-4	0.040	4	104	12	25	8	15
737 060 004	LQ3-GS-5	0.050	4	124	18	33	10	15
737 060 005	LQ3-GS-6	0.060	5	152	25	44	10	20

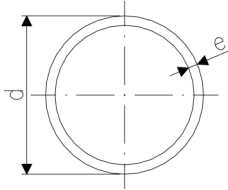


# SYGEF® PFA

## Protective Pipes and Accessories

### Pipes PVC-U, transparent

#### Series S 10, SDR 21, nominal pressure PN 10



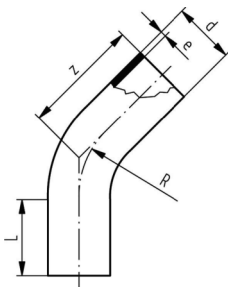
**Model:**

- Material: PVC-U, Polyvinylchloride unplasticized DIN 8061
- Colour: transparent
- Dimension: DIN EN ISO 15493, DIN 8062
- Pipe length: 5m, with plain ends

d [mm]	PN	Code	kg/m	e [mm]	di [mm]
32	10	192 017 083	0.264	1.8	29
50	10	192 017 085	0.552	2.4	45
75	10	192 017 087	1.220	3.6	68

### Elbow PVC-U transparent

#### R = 5 x d

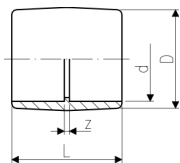


**Model:**

- Bend 90°/45°
- PVDF-Elbow on request
- Price depends on quantity number. Please ask for a quotation.

Pipe Outside d [mm]	e [mm]	Code
32	1,8	700xxxxx1
50	2,4	700xxxxx2
75	3,6	700xxxxx3

### Sockets equal, PVC-U metric



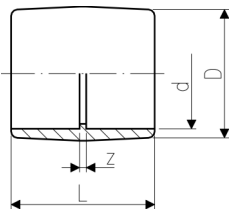
**Note:**

- \* Socket d355 and d400 fabricated from pipe

d [mm]	d [inch]	PN	Code	kg	z [mm]	D [mm]	L [mm]
75	2 ½	16	721 910 112	0.191	4	87	92

# SYGEF® PFA

## Socket equal, PVC-U transparent metric



d [mm]	PN	Code	kg	z [mm]	D [mm]	L [mm]
32	16	752 910 108	0.028	3	40	47
50	16	752 910 110	0.069	3	60	65



## Tangit Solvent Cement for PVC-U

- 0.125 kg tube
- Tin à 0.250, 0.500 und 1.000 kg (Net)

Code	kg	kg/m
799 298 000	0.142	0.142
799 298 001	0.330	0.330
799 298 002	0.625	0.625
799 298 003	1.180	1.180



## Dytex Special Solvent Cement

### Model:

- Special solvent cement, transparent.
- For concentrated acids and strong oxidizing agents the use of Dytex is recommended
- 1.350 kg (net) tin

Code	kg	kg/m
799 298 012	1.465	1.465



## Cap for cement

- Cap prevents the evaporation of the solvent whilst using the Tangit cement

Code	kg	kg/m
799 298 028	0.030	0.030



## Dytex Solvent/Cleaner

### Model:

- 1 litre tin

Code	kg	kg/m
799 298 013	1.380	1.380

# SYGEF® PFA

## Round Brushes



d-d [mm]		Code	kg	kg/m	
6 - 10	4 mm (for Fittings 6-10mm)	<b>799 299 001</b>	0.005	0.005	
12 - 32	8 mm (for Fittings 12-32mm)	<b>799 299 002</b>	0.009	0.009	

## Flat Brushes



d-d [mm]		Code	kg	kg/m	
40 - 63	25x3 mm (for Fittings 40-63mm)	<b>799 299 003</b>	0.015	0.015	
75 - 225	50x5 mm (for Fittings 75-225mm)	<b>799 299 004</b>	0.026	0.026	
250 - 400	75x6 mm (for Fittings 250-400mm)	<b>799 299 005</b>	0.045	0.045	

## Chamfering Tool



Size	d-d [mm]	Code	kg	kg/m	
1	16 - 75	<b>799 495 145</b>	0.720	0.720	
2	32 - 200	<b>799 495 146</b>	0.992	0.992	

## Pipe cutter



d-d [mm]	Code	kg	kg/m	
32 - 63	<b>761 066 792</b>	0.700	0.700	
75 - 110	<b>761 066 834</b>	1.430	1.430	

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# General Condition of Supply of Georg Fischer Piping Systems Limited, Schaffhausen

## 1 General

- 1.1 These General Conditions shall apply to all Products supplied by Georg Fischer to the Purchaser. They shall also apply to all future business even when no express reference is made to them.
- 1.2 Any deviating or supplementary conditions especially Purchaser's general conditions of purchase and verbal agreements shall only be applicable if accepted in writing by Georg Fischer.
- 1.3 The written form shall be deemed to be fulfilled by all forms of transmission, evidenced in the form of text, such as telefax, e-mail, etc.

## 2 Tenders

- 2.1 Tenders shall only be binding if they contain a specifically stated period for acceptance.

## 3 Scope of Delivery

- 3.1 Georg Fischer's product range is subject to change.
- 3.2 The confirmation of order shall govern the scope and execution of the contract.

## 4 Data and Documents

- 4.1 Technical documents such as drawings, descriptions, illustrations and data on dimensions, performance and weight as well as the reference to standards are for information purposes only. They are not warranted characteristics and are subject to change.
- 4.2 All technical documents shall remain the exclusive property of Georg Fischer and may only be used for the agreed purposes or as Georg Fischer may consent.

## 5 Confidentiality, Protection of Personal Data

- 5.1 Each party shall keep in strict confidence all commercial or technical information relating to the business of the other party, of which it has gained knowledge in the course of its dealing with the other party. Such information shall neither be disclosed to third parties nor used for other purposes than those for which the information has been supplied.
- 5.2 In the context of the contractual relation with the Purchaser personal data may be processed. The Purchaser agrees to the disclosure of said data to third parties such as foreign subcontractors and suppliers etc.

## 6 Local Laws and Regulations, Export Controls

- 6.1 The Purchaser shall bring to the attention of Georg Fischer all local laws and regulations at the place of destination which bear connection with the execution of the contract and the adherence to relevant safety regulations and approval procedures.
- 6.2 In case of re-exports, Purchaser shall be responsible for compliance with pertinent export control regulations.

## 7 Price

- 7.1 Unless agreed otherwise, the prices shall be deemed quoted net ex works (according to Incoterms of the ICC, latest version) including standard packing. All supplementary costs such as the cost of carriage, insurance, export-, transit- and importlicences etc. shall be borne by the Purchaser. The Purchaser shall also bear the costs of all taxes, fees, duties etc. connected with the contract.
- 7.2 If the costs of packing, carriage, insurance, fees and other supplementary costs are included in the tender price or contract price or are referred to specifically in the tender or confirmation of order, Georg Fischer reserve the right to revise their prices accordingly should any change occur in the relevant tariffs.

## 8 Terms of Payment

- 8.1 The Purchaser shall make payment in the manner agreed by the parties without any deductions such as discounts, costs, taxes or dues.
- 8.2 The Purchaser may only withhold or off-set payments due against counter claims which are either expressly acknowledged by Georg Fischer or finally awarded to the Purchaser. In particular, payment shall still be made when unessential items are still out-standing provided that the Products already delivered are not rendered unusable as a result.

## 9 Retention of Title

- 9.1 The Products shall remain the property of Georg Fischer until the Purchaser shall have settled all claims, present and future, which Georg Fischer may have against him.
- 9.2 Should the Purchaser resell Products to which title is reserved, in the ordinary course of business, he shall hereby be deemed to have tacitly assigned to Georg Fischer the proceeds deriving from their sale together with all collateral rights, securities and reservations of title until all claims held by Georg Fischer shall have been settled. Until revoked by Georg Fischer, this assignment shall not preclude Purchaser's right to collect the assigned receivables.
- 9.3 To the extent the value of the Products to which title is reserved together with collateral securities exceeds Georg Fischer's claims against the Purchaser by more than 20%, Georg Fischer shall re-assign the above proceeds to Purchaser at his request.

## 10 Delivery

- 10.1 The term of delivery shall commence as soon as the contract has been entered into, all official formalities such as import and payment permits have been obtained and all essential technical issues have been settled. The term of delivery shall be deemed duly observed when, upon its expiry, the Products are ready for despatch.
- 10.2 Delivery is subject to the following conditions, i.e. the term of delivery shall be reasonably extended:
  - a) if Georg Fischer are not supplied in time with the information necessary for the execution of the contract or if subsequent changes causing delays are made by the Purchaser.
  - b) if Georg Fischer are prevented from performing the contract by force majeure. Force majeure shall equally be deemed to be any unforeseeable event beyond Georg Fischer's control which renders Georg Fischer's performance commercially unpractical or impossible, such as delayed or defective supplies from sub contractors labour disputes, governmental orders or regulations, shortages in materials or energy, serious disturbances in Georg Fischer's works, such as the total or partial destruction of plant and equipment or the breakdown of essential facilities, serious disruptions in transport facilities, e.g. impassable roads.  
Should the effect of force majeure exceed a period of six months, either party may cancel the contract forthwith.  
Georg Fischer shall not be liable for any damage or loss of any kind whatsoever resulting therefrom, any suspension or cancellation being without prejudice to Georg Fischer's right to recover all sums due in respect of consignments delivered and costs incurred to date.
  - c) if the Purchaser is in delay with the fulfilment of his obligations under the contract, in particular, if he does not adhere to the agreed conditions of payment or if he has failed to timely provide the agreed securities.
- 10.3 If for reasons attributable to Georg Fischer the agreed term of delivery or a reasonable extension thereof is exceeded, Georg Fischer shall not be deemed in default until the Purchaser has granted to Georg Fischer in writing a reasonable extension thereof of not less than one month which equally is not met.  
The Purchaser shall then be entitled to the remedies provided at law, it being however understood that, subject to limitations of Art. 16, damage claims shall be limited to max. 10% of the price of the delayed delivery.
- 10.4 Part shipments shall be allowed and Georg Fischer shall be entitled to invoice for such partial deliveries.
- 10.5 If the Purchaser fails to take delivery within a reasonable time of Products notified as ready for despatch, Georg Fischer shall be entitled to store the Products at the Purchaser's expense and risk and to invoice them as delivered. If Purchaser fails to effect payment, Georg Fischer shall be entitled to dispose of the Products.
- 10.6 Should Purchaser cancel an order without justification and should Georg Fischer not insist on the performance of the contract, Georg Fischer shall be entitled to liquidated damages in the amount of 10% of the contract price, Georg Fischer's right to prove and claim higher damages remaining reserved. Purchaser shall be entitled to prove, that Georg Fischer has suffered no or a considerably lower damage.

## 11 Packing

- 11.1 If the Products are provided with additional packing over and above the standard packing, such packing shall be charged additionally.

## 12 Passing of Risk

- 12.1 The risk in the Products shall pass to the Purchaser as soon as they have left Georg Fischer's works (EX WORKS, Incoterms ICC, latest version), even if delivery is made carriage-paid, under similar clauses or including installation or when carriage is organized and managed by Georg Fischer.
- 12.2 If delivery is delayed for reasons beyond Georg Fischer's control, the risk shall pass to the Purchaser when he is notified that the Products are ready for despatch.

## 13 Carriage and Insurance

- 13.1 Unless agreed otherwise, the Purchaser shall bear the cost of carriage.
- 13.2 The Purchaser shall be responsible for transport insurance against damage of whatever kind. Even when such insurance is arranged by Georg Fischer it shall be deemed taken out by the order of and for the account of the Purchaser and at his risk.
- 13.3 Special requests regarding carriage and insurance shall be communicated to Georg Fischer in due time. Otherwise carriage shall be arranged by Georg Fischer at their discretion, but without responsibility, by the quickest and cheapest method possible.  
In case of carriage-paid delivery transport arrangements shall be made by Georg Fischer. If the Purchaser specifies particular requirements, any extra costs involved shall be borne by him.
- 13.4 In the event of damage or loss of the Products during carriage the Purchaser shall mark the delivery documents accordingly and immediately have the damage ascertained by the carrier. Not readily ascertainable damages sustained during carriage shall be notified to the carrier within six days after receipt of the Products.

## 14 Inspection, Notification of Defects and Damages

- 14.1 The Products will be subject to normal inspection by Georg Fischer during manufacture. Additional tests required by the Purchaser shall be agreed upon in writing and shall be charged to the Purchaser.
- 14.2 It shall be a condition of Georg Fischer's obligation under the warranties stated hereinafter that Georg Fischer be notified in writing by the Purchaser of any purported defect immediately upon discovery. Notice concerning weight, numbers or apparent defects is to be given latest within 30 days from receipt of the Products, notice of other defects immediately latest within 7 working days after discovery, in any event within the agreed warranty period.
- 14.3 Purchaser shall not dispose of allegedly defective Products until all warranty and/or damage claims are finally settled. At its request, defective Products are to be placed at Georg Fischer's disposal.
- 14.4 At its request, Georg Fischer shall be given the opportunity to inspect the defect and/or damage, prior to commencement of remedial work, either itself or by third party experts.

## 15 Warranty

- 15.1 At the written request of the Purchaser, Georg Fischer undertake to repair or replace at their discretion, as quickly as possible and free of charge all Products supplied which demonstrably suffer from faulty design, materials or workman-ship or from faulty operating or installation instructions.  
In order to protect employees from toxic or radioactive substances which may have been transported through defective parts returned to Georg Fischer's sales organisation, said parts must be accompanied by a Material Safety Disclosure Form. The form may be obtained from Georg Fischer's local sales company or via [www.piping.georgfischer.com](http://www.piping.georgfischer.com). Replaced parts shall become property of Georg Fischer.
- 15.2 For Products which are manufactured to specifications, drawings or patterns supplied by the Purchaser, Georg Fischer's warranty shall be restricted to proper materials and workmanship.
- 15.3 The Purchaser shall be entitled to cancel the contract or to demand a reduction in the contract price if also a second attempt to repair or replace the Products has failed.
- 15.4 For Products or essential components manufactured by a third party and supplied by Georg Fischer under this contract, Georg Fischer's warranty is limited to the warranty provided by said third party.
- 15.5 This warranty shall not apply to damage resulting from normal wear and tear, improper storage and maintenance, failure to observe the operating instructions, overstressing or overloading, unsuitable operating media, unsuitable construction work or unsuitable building ground, improper repairs or alterations by the Purchaser or third parties, the use of other than original spare parts and other reasons beyond Georg Fischer's control.
- 15.6 No action or claim may be brought by the Purchaser on account of any alleged breach of warranty or any other obligation of Georg Fischer after the expiration of twelve (12) months from receipt of the Products by the end user or at the latest within eighteen (18) months of the Products being despatched by Georg Fischer.
- 15.7 In case of Products for use in domestic installations or in utilities
  - Georg Fischer will assume the costs of dismantling the defective Product and restoring the damaged object as well as, in case of negligence, all other direct damages caused by the defective Product (damage to property and injury to or death of persons) up to CHF 1 000 000 per occurrence.
  - the statute of limitations for warranty or damage claims - contrary to Section 15.6 - will be 5 years from the date of installation.

## 16 Limitation of Liability

- 16.1 All cases of breach of contract and the relevant consequences as well as all rights and claims on the part of the customer, irrespective of what ground they are based, are exhaustively covered by these general conditions of supply. In particular, any claims not expressly mentioned for damages, reduction of price, termination of or withdrawal from the contract are excluded. In no case whatsoever shall the customer be entitled to claim damages other than compensation for costs of remedying defects in the supplies. This in particular refers, but shall not be limited, to loss of production, loss of use, loss of orders, loss of profit and other direct or indirect or consequential damage. This exclusion of liability, however, does not apply to unlawful intent or gross negligence on the part of Georg Fischer and in case of strict liability under applicable product liability statutes, but does apply to unlawful intent or gross negligence of persons employed or appointed by Georg Fischer to perform any of its obligations.

## 17 Severability

- 17.1 Should any term or clause of these General Conditions in whole or in part be found to be unenforceable or void, all other provisions shall remain in full force and effect and the unenforceable or void provision shall be replaced by a valid provision, which comes closest to the original intention of the unenforceable or invalid provision.

## 18 Place of Performance and Jurisdiction

- 18.1 Place of performance for the Products shall be the Georg Fischer works from which the Products are despatched.
- 18.2 Any civil action based upon any alleged breach of this contract shall be filed and prosecuted exclusively in the courts of Schaffhausen, Switzerland.  
Georg Fischer however reserves the right to file actions in any court having jurisdiction over controversies arising out of or in connection with the present contract.
- 18.3 The contract shall be governed by Swiss law without regard to conflict of law provisions that would require the application of another law.

# GF Piping Systems → worldwide

Our sales companies and representatives ensure local customer support in over 100 countries.

[www.piping.georgfischer.com](http://www.piping.georgfischer.com)



The technical data are not binding and not expressly warranted characteristics of the goods. They are subject to change. Our General Conditions of Sale apply.

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