



High Performance Tubing & Fittings



freephone

0800 975 79 71

This product guide is intended to assist in the general identification and selection of a select range of products. It is an edited version of the manufacturers' detailed guides and specification data, and has been produced to supplement their publications - not replace them,

If you require further information, please contact our sales team on 0800 975 79 71

“We promise you the best...

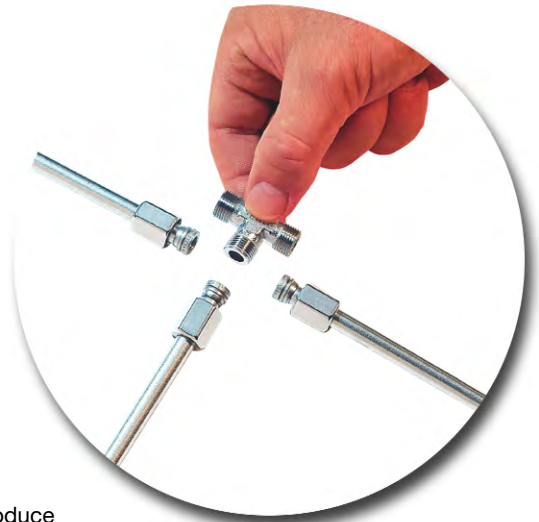
Serto and Saint Gobain

High Performance and High Purity

By bringing together products from world class manufacturers, we are able to offer a comprehensive range of high quality compression fittings and tubing to meet the demands of the most challenging applications.

Serto - The clever connection

Serto are an innovative Swiss company manufacturing compression fittings in both plastics and metals - for a multitude of industrial and commercial applications. They invented - and are still the only company in the world to produce stainless steel and brass tube unions that can be fitted and disassembled without having to move or “spring” the tube.



Saint Gobain - High Purity tubes and fittings

Saint Gobain Performance Plastics are a global leader in high performance polymer tubing, and have an unrivalled reputation for providing solutions for demanding applications with innovative technology. Available in a number of different materials including PVDF, PTFE and PFA together with the industry leading TYGON range, the tubing is manufactured in a wide range of bores and wall thickness.



**...exceptional service,
friendly professional advice,
unique solutions”**

contents

Compression Fittings

PVDF Page 4



Low cost connections for demanding applications. PVDF is non-toxic, UV resistant, and approved by FDA for use in contact with foodstuffs.
4-16mm
10 Bar Max
From -40°C to +120°C

PA (Nylon) Page 6



Comprehensive range suitable for non-aggressive and pneumatic applications. Made from heat stabilized grey polyamide 6.6 the fittings are simple and fast to install.
6-12mm
10 Bar Max
from -40°C to +80°C

Stainless Steel Page 8



Extensively used where high purity gasses or extremely aggressive acids need to be conveyed safely and reliably.
1.6 - 28mm
250 Bar Max
From -110°C to +300°C

Brass Page 10



This user friendly system is simple and cost effective and is used extensively in machine and equipment manufacturing. The wide range of uses can be expanded with the nickel plated version available to special order.
2 - 35mm
125 Bar Max
From -40°C to +180°C

PFA Flare Grip® II Page 14



Designed to meet a wide range of semiconductor, pharmaceutical, laboratory and life science applications.
1/4" - 1"
19 Bar Max
Up to 204°C

Valves Page 28



A selection of valves is available in all materials. From simple stop valves to fine regulating, elbow regulating and Taper Seat non return, there is a valve to suit most applications

Tubing & Hoses

Tygon® - 4040-A Page 22



- Compatible with most petroleum based products
- Resists swelling and cracking
- Ozone and UV resistant

Tygon® - 3603 Page 23



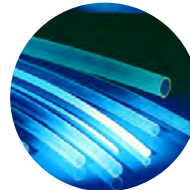
- Outstanding chemical resistance
- Lot to lot consistency for reproducible results
- Increases productivity in peristaltic pumps
- Outlasts other clear tubing 2 to 1

Versilic Page 24



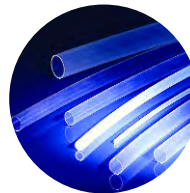
- Peroxide cured silicone
- Meets FDA, European and French regulations for food contact
- From -5°C to +200°C

PVDF Page 25



- Excellent Chemical Resistance
- UV Stable
- Low permeation
- Low specific weight
- Good rigidity

PFA Page 26

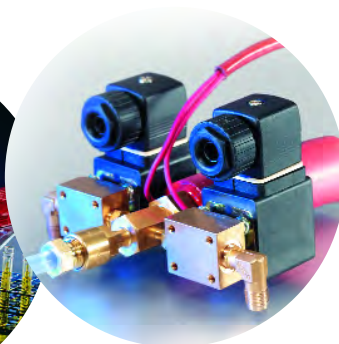
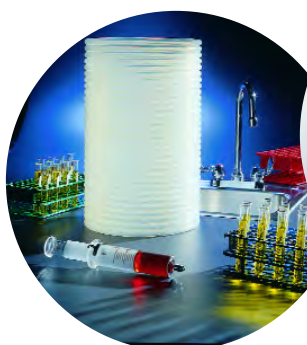


- Temperature stability from -70°C to +260°C.
- Excellent resistance to pressure
- Outstanding chemical resistance
- Good light transmission

PTFE Page 27



- Resistant to most aggressive media
- Long term temperature stability from -70°C to +260°C
- Lowest friction coefficient of all fluoroplastics



Serto Fittings



Compression Ferrule

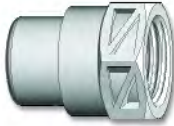
SO 20001 - PN10



Size	Code
6x4	SO20001-6-4
6	SO20001-6
8	SO20001-8
10	SO20001-10
12	SO20001-12
16	SO20001-16

Female Adaptor

SO 20030 - PN10



Size	Code
6x1/8	SO20030-6-1/8
6x1/4	SO20030-6-1/4
8x1/4	SO20030-8-1/4
10x1/4	SO20030-10-1/4
10x3/8	SO20030-10-3/8
12x3/8	SO20030-12-3/8
12x1/2	SO20030-12-1/2
16x3/8	SO20030-16-3/8
16x1/2	SO20030-16-1/2
16x3/4	SO20030-16-3/4

Straight Union

SO 21021 - PN10



Size	Code
* 4	SO21021-4
* 6	SO21021-6
* 8	SO21021-8
* 10	SO21021-10
▼ 10/7	SO21021-10/7
▼ 12	SO21021-12
▼ 12/9	SO21021-12/9
▼ 16/13	SO21021-16/13

* With reduction compression ferrule
 ▼ For tubes with wall thickness of 1.5mm

Male Adaptor Union

SO 21121 - PN10



Size	Code
* 4x1/8	SO21121-4-1/8
* 4x1/4	SO21121-4-1/4
* 4x3/8	SO21121-4-3/8
* 4x1/2	SO21121-4-1/2
6x1/8	SO21121-6-1/8
6x1/4	SO21121-6-1/4
6x3/8	SO21121-6-3/8
6x1/2	SO21121-6-1/2
8x1/8	SO21121-8-1/8
8x1/4	SO21121-8-1/4
8x3/8	SO21121-8-3/8
8x1/2	SO21121-8-1/2
10x1/4	SO21121-10-1/4
10x3/8	SO21121-10-3/8
10x1/2	SO21121-10-1/2
▼ 10/7x1/4	SO21121-10/7-1/4
▼ 10/7x3/8	SO21121-10/7-3/8
▼ 10/7x1/2	SO21121-10/7-1/2
12x1/4	SO21121-12-1/4
12x3/8	SO21121-12-3/8
12x1/2	SO21121-12-1/2
▼ 12/9x1/4	SO21121-12/9-1/4
▼ 12/9x3/8	SO21121-12/9-3/8
▼ 12/9x1/2	SO21121-12/9-1/2
▼ 16/13x3/8	SO21121-16/13-3/8
▼ 16/13x1/2	SO21121-16/13-1/2
▼ 16/13x3/4	SO21121-16/13-3/4

* With reduction compression ferrule
 ▼ For tubes with wall thickness of 1.5mm

Male Adaptor Union

SO 21124 - With edge seal - PN10



Size	Code
* 4x1/8	SO21124-4-1/8
* 4x1/4	SO21124-4-1/4
* 4x3/8	SO21124-4-3/8
* 4x1/2	SO21124-4-1/2
6x1/8	SO21124-6-1/8
6x1/4	SO21124-6-1/4
6x3/8	SO21124-6-3/8
6x1/2	SO21124-6-1/2
8x1/8	SO21124-8-1/8
8x1/4	SO21124-8-1/4
8x3/8	SO21124-8-3/8
8x1/2	SO21124-8-1/2
10x1/4	SO21124-10-1/4
10x3/8	SO21124-10-3/8
10x1/2	SO21124-10-1/2
12x1/4	SO21124-12-1/4
12x3/8	SO21124-12-3/8
12x1/2	SO21124-12-1/2

* With reduction compression ferrule

Female Adaptor Union

SO 21221 - PN10



Size	Code
* 4x1/8	SO21221-4-1/8
* 4x1/4	SO21221-4-1/4
* 4x3/8	SO21221-4-3/8
* 4x1/2	SO21221-4-1/2
6x1/8	SO21221-6-1/8
6x1/4	SO21221-6-1/4
6x3/8	SO21221-6-3/8
6x1/2	SO21221-6-1/2
8x1/4	SO21221-8-1/4
8x3/8	SO21221-8-3/8
8x1/2	SO21221-8-1/2
10x1/4	SO21221-10-1/4
10x3/8	SO21221-10-3/8
10x1/2	SO21221-10-1/2
▼ 10/7x1/4	SO21221-10/7-1/4
▼ 10/7x3/8	SO21221-10/7-3/8
▼ 10/7x1/2	SO21221-10/7-1/2
12x3/8	SO21221-12-3/8
12x1/2	SO21221-12-1/2
▼ 12/9x3/8	SO21221-12/9-3/8
▼ 12/9x1/2	SO21221-12/9-1/2
▼ 16/13x3/8	SO21221-16/13-3/8
▼ 16/13x1/2	SO21221-16/13-1/2

* With reduction compression ferrule
 ▼ For tubes with wall thickness of 1.5mm

Panel Mount Union

SO 21521 - PN10



Size	Code
* 4	SO21521-4
* 6	SO21521-6
* 8	SO21521-8
* 10	SO21521-10
▼ 10/7	SO21521-10/7
▼ 12	SO21521-12
▼ 12/9	SO21521-12/9
▼ 16/13	SO21521-16/13

* With reduction compression ferrule
 ▼ For tubes with wall thickness of 1.5mm

Elbow Union

SO 22021 - PN10



Size	Code
* 4	SO22021-4
6	SO22021-6
8	SO22021-8
10	SO22021-10
▼ 10/7	SO22021-10/7
12	SO22021-12
▼ 12/9	SO22021-12/9
▼ 16/13	SO22021-16/13

- * With reduction compression ferrule
- ▼ For tubes with wall thickness of 1.5mm

Elbow Union

SO 22221 - Female adaptor - PN10



Size	Code
* 4x1/8	SO22221-4-1/8
* 4x1/4	SO22221-4-1/4
6x1/8	SO22221-6-1/8
6x1/4	SO22221-6-1/4
8x1/4	SO22221-8-1/4
10x1/4	SO22221-10-1/4
10x3/8	SO22221-10-3/8
▼ 10/7x1/4	SO22221-10/7-1/4
▼ 10/7x3/8	SO22221-10/7-3/8
12x3/8	SO22221-12-3/8
12x1/2	SO22221-12-1/2
▼ 12/9x3/8	SO22221-12/9-3/8
▼ 12/9x1/2	SO22221-12/9-1/2
▼ 16/13x3/8	SO22221-16/13-3/8
▼ 16/13x1/2	SO22221-16/13-1/2
▼ 16/13x3/4	SO22221-16/13-3/4

- * With reduction compression ferrule
- ▼ For tubes with wall thickness of 1.5mm

Male Adaptor Elbow Union

SO 22421 - PN10

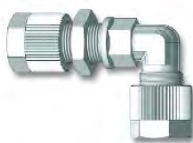


Size	Code
* 4x1/8	SO22421-4-1/8
* 4x1/4	SO22421-4-1/4
6x1/8	SO22421-6-1/8
6x1/4	SO22421-6-1/4
8x1/8	SO22421-8-1/8
8x1/4	SO22421-8-1/4
10x1/4	SO22421-10-1/4
10x3/8	SO22421-10-3/8
▼ 10/7x1/4	SO22421-10/7-1/4
▼ 10/7x3/8	SO22421-10/7-3/8
12x1/4	SO22421-12-1/4
12x3/8	SO22421-12-3/8
12x1/2	SO22421-12-1/2
▼ 12/9x1/4	SO22421-12/9-1/4
▼ 12/9x3/8	SO22421-12/9-3/8
▼ 12/9x1/2	SO22421-12/9-1/2
▼ 16/13x3/8	SO22421-16/13-3/8
▼ 16/13x1/2	SO22421-16/13-1/2

- * With reduction compression ferrule
- ▼ For tubes with wall thickness of 1.5mm

Panel Mount Elbow Union

SO 22721 - PN10

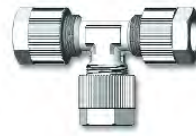


Size	Code
* 4	SO22721-4
6	SO22721-6
8	SO22721-8
10	SO22721-10
▼ 10/7	SO22721-10/7
12	SO22721-12
▼ 12/9	SO22721-12/9
▼ 16/13	SO22721-16/13

- * With reduction compression ferrule
- ▼ For tubes with wall thickness of 1.5mm

Tee Union

SO 23021 - PN10



Size	Code
* 4	SO23021-4
6	SO23021-6
8	SO23021-8
10	SO23021-10
▼ 10/7	SO23021-10/7
12	SO23021-12
▼ 12/9	SO23021-12/9
▼ 16/13	SO23021-16/13

- * With reduction compression ferrule
- ▼ For tubes with wall thickness of 1.5mm

Tee Union

SO 23221 - Female adaptor - PN10



Size	Code
* 4x1/8	SO23221-4-1/8-4
* 4x1/4	SO23221-4-1/4-4
6x1/8	SO23221-6-1/8-6
6x1/4	SO23221-6-1/4-6
8x1/4	SO23221-8-1/4-8
10x1/4	SO23221-10-1/4-10
10x3/8	SO23221-10-3/8-10
▼ 10/7x1/4	SO23221-10/7-1/4-10/7
▼ 10/7x3/8	SO23221-10/7-3/8-10/7
12x3/8	SO23221-12-3/8-12
12x1/2	SO23221-12-1/2-12
▼ 12/9x3/8	SO23221-12/9-3/8-12/9
▼ 12/9x1/2	SO23221-12/9-1/2-12/9
▼ 16/13x3/8	SO23221-16/13-3/8-16/13
▼ 16/13x1/2	SO23221-16/13-1/2-16/13
▼ 16/13x3/4	SO23221-16/13-3/4-16/13

- * With reduction compression ferrule
- ▼ For tubes with wall thickness of 1.5mm

Taper Seat Non Return Valve

SO CV23A21 - PN10 - FPM



Size	Code
4	SOCV23A21-4-4
6	SOCV23A21-6-6
8	SOCV23A21-8-8
10	SOCV23A21-10-10
12	SOCV23A21-12-12

Regulating Valve

SO NV21A21 - PN10 - PTFE



Size	Code
4	SONV21A21-4-4
6	SONV21A21-6-6
8	SONV21A21-8-8
10	SONV21A21-10-10
12	SONV21A21-12-12

Elbow Regulating Valve

SO NV21A21E - PN10 - PTFE



Size	Code
4	SONV21A21E-4-4
6	SONV21A21E-6-6
8	SONV21A21E-8-8
10	SONV21A21E-10-10
12	SONV21A21E-12-12



Compression Ferrule

SO 30001 - PN10

Size	Code
6	SO30001-6
8	SO30001-8
10	SO30001-10
12	SO30001-12

Panel Mount Union

SO 31521 - PN10

Size	Code
6	SO31521-6
8	SO31521-8
10	SO31521-10
10/7	SO31521-10/7
12	SO31521-12
12/9	SO31521-12/9



▼ For tubes with wall thickness of 1.5mm

Straight Union

SO 31021 - PN10

Size	Code
6	SO31021-6
8	SO31021-8
10	SO31021-10
10/7	SO31021-10/7
12	SO31021-12
12/9	SO31021-12/9



▼ For tubes with wall thickness of 1.5mm

Elbow Union

SO 32021 - PN10

Size	Code
6	SO32021-6
8	SO32021-8
10	SO32021-10
10/7	SO32021-10/7
12	SO32021-12
12/9	SO32021-12/9



▼ For tubes with wall thickness of 1.5mm

Male Adaptor Union

SO 31121 - PN10

Size	Code
6x1/8	SO31121-6-1/8
6x1/4	SO31121-6-1/4
6x3/8	SO31121-6-3/8
8x1/8	SO31121-8-1/8
8x1/4	SO31121-8-1/4
8x3/8	SO31121-8-3/8
10x1/4	SO31121-10-1/4
10x3/8	SO31121-10-3/8
10/7x1/4	SO31121-10/7-1/4
10/7x3/8	SO31121-10/7-3/8
12x1/4	SO31121-12-1/4
12x3/8	SO31121-12-3/8
12x1/2	SO31121-12-1/2
12/9x1/4	SO31121-12/9-1/4
12/9x3/8	SO31121-12/9-3/8
12/9x1/2	SO31121-12/9-1/2



▼ For tubes with wall thickness of 1.5mm

Male Adaptor Elbow Union

SO 32421 - PN10

Size	Code
6x1/8	SO32421-6-1/8
6x1/4	SO32421-6-1/4
8x1/8	SO32421-8-1/8
8x1/4	SO32421-8-1/4
10x1/4	SO32421-10-1/4
10x3/8	SO32421-10-3/8
10/7x1/4	SO32421-10/7-1/4
10/7x3/8	SO32421-10/7-3/8
12x1/4	SO32421-12-1/4
12x3/8	SO32421-12-3/8
12x1/2	SO32421-12-1/2
12/9x1/4	SO32421-12/9-1/4
12/9x3/8	SO32421-12/9-3/8
12/9x1/2	SO32421-12/9-1/2



▼ For tubes with wall thickness of 1.5mm

Female Adaptor Union

SO 31221 - PN10

Size	Code
6x1/8	SO31221-6-1/8
6x1/4	SO31221-6-1/4
6x3/8	SO31221-6-3/8
6x1/2	SO31221-6-1/2
8x1/8	SO31221-8-1/8
8x1/4	SO31221-8-1/4
8x3/8	SO31221-8-3/8
8x1/2	SO31221-8-1/2
10x1/4	SO31221-10-1/4
10x3/8	SO31221-10-3/8
10x1/2	SO31221-10-1/2
10/7x1/4	SO31221-10/7-1/4
10/7x3/8	SO31221-10/7-3/8
12/9x3/8	SO31221-12/9-3/8
12/9x1/2	SO31221-12/9-1/2



▼ For tubes with wall thickness of 1.5mm

Panel Mount Elbow Union

SO 32721 - PN10



Size	Code
6	SO32721-6
8	SO32721-8
10	SO32721-10
12	SO32721-12

Single Banjo

SO 32821 - 10Bar BSP



Size	Code
6x1/8	SO32821-6-1/8
6x1/4	SO32821-6-1/4
8x1/8	SO32821-8-1/8
8x1/4	SO32821-8-1/4
10x1/4	SO32821-10-1/4
10/7x1/4	SO32821-10/7-1/4

Tee Union

SO 33021 - PN10



Size	Code
6	SO33021-6
8	SO33021-8
10	SO33021-10
10/7	SO33021-10/7
12	SO33021-12
12/9	SO33021-12/9

▼ For tubes with wall thickness of 1.5mm

Male Adaptor Tee Union

SO 33721 - PN10



Size	Code
6x1/8	SO33721-6-1/8-6
6x1/4	SO33721-6-1/4-6
8x1/8	SO33721-8-1/8-8
8x1/4	SO33721-8-1/4-8
10x1/4	SO33721-10-1/4-10
10x3/8	SO33721-10-3/8-10
10/7x1/4	SO33721-10/7-1/4-10/7
10/7x3/8	SO33721-10/7-3/8-10/7

▼ For tubes with wall thickness of 1.5mm

Single Banjo with Valve

SO 37721 - 10Bar BSP



Size	Code
6-1/8	SO37721-6-1/8
6-1/4	SO37721-6-1/4
8-1/8	SO37721-8-1/8
8-1/4	SO37721-8-1/4
10-1/4	SO37721-10-1/4

Compression Ferrule

SO 40001



Size	Code
2	SO4001-2
3	SO4001-3
4	SO4001-4
5	SO4001-5
6	SO4001-6
8	SO4001-8
10	SO4001-10
12	SO4001-12

Female Adaptor

SO 40030



Size	Code
6x1/8	SO40030-6-1/8
6x1/4	SO40030-6-1/4
6x3/8	SO40030-6-3/8
8x1/8	SO40030-8-1/8
8x1/4	SO40030-8-1/4
8x3/8	SO40030-8-3/8
10x1/4	SO40030-10-1/4
10x3/8	SO40030-10-3/8
12x1/4	SO40030-12-1/4
12x3/8	SO40030-12-3/8
12x1/2	SO40030-12-1/2

Straight Union

SO 41021



Size	Code
2	SO41021-2
3	SO41021-3
4	SO41021-4
5	SO41021-5
6	SO41021-6
8	SO41021-8
10	SO41021-10
12	SO41021-12

Male Adaptor Union

SO 41121



Size	Code
2x1/8	SO41121-2-1/8
3x1/8	SO41121-3-1/8
4x1/8	SO41121-4-1/8
4x1/4	SO41121-4-1/4
4x3/8	SO41121-4-3/8
5x1/8	SO41121-5-1/8
5x1/4	SO41121-5-1/4
5x3/8	SO41121-5-3/8
6x1/8	SO41121-6-1/8
6x1/4	SO41121-6-1/4
6x3/8	SO41121-6-3/8
6x1/2	SO41121-6-1/2
8x1/8	SO41121-8-1/8
8x1/4	SO41121-8-1/4
8x3/8	SO41121-8-3/8
8x1/2	SO41121-8-1/2
10x1/4	SO41121-10-1/4
10x3/8	SO41121-10-3/8
10x1/2	SO41121-10-1/2
12x1/4	SO41121-12-1/4
12x3/8	SO41121-12-3/8
12x1/2	SO41121-12-1/2
12x3/4	SO41121-12-3/4

* With reduction compression ferrule

Male Adaptor Union

SO 41124 - With edge seal



Size	Code
2x1/8	SO41124-2-1/8
3x1/8	SO41124-3-1/8
4x1/8	SO41124-4-1/8
4x1/4	SO41124-4-1/4
5x1/8	SO41124-5-1/8
5x1/4	SO41124-5-1/4
6x1/8	SO41124-6-1/8
6x1/4	SO41124-6-1/4
6x3/8	SO41124-6-3/8
6x1/2	SO41124-6-1/2
8x1/8	SO41124-8-1/8
8x1/4	SO41124-8-1/4
8x3/8	SO41124-8-3/8
8x1/2	SO41124-8-1/2
10x1/4	SO41124-10-1/4
10x3/8	SO41124-10-3/8
10x1/2	SO41124-10-1/2
12x1/4	SO41124-12-1/4
12x3/8	SO41124-12-3/8
12x1/2	SO41124-12-1/2

* With reduction compression ferrule

Female Adaptor Union

SO 41221



Size	Code
3x1/8	SO41221-3-1/8
4x1/8	SO41221-4-1/8
4x1/4	SO41221-4-1/4
5x1/8	SO41221-5-1/8
5x1/4	SO41221-5-1/4
6x1/8	SO41221-6-1/8
6x1/4	SO41221-6-1/4
6x3/8	SO41221-6-3/8
6x1/2	SO41221-6-1/2
8x1/8	SO41221-8-1/8
8x1/4	SO41221-8-1/4
8x3/8	SO41221-8-3/8
8x1/2	SO41221-8-1/2
10x1/4	SO41221-10-1/4
10x3/8	SO41221-10-3/8
10x1/2	SO41221-10-1/2
12x1/4	SO41221-12-1/4
12x3/8	SO41221-12-3/8
12x1/2	SO41221-12-1/2
12x3/4	SO41221-12-3/4

* With reduction compression ferrule

Panel Mount Union

SO 41521



Size	Code
3	SO41521-3
4	SO41521-4
5	SO41521-5
6	SO41521-6
8	SO41521-8
10	SO41521-10
12	SO41521-12

* With reduction compression ferrule

Elbow Union

SO 42021



Size	Code
2	SO42021-2
3	SO42021-3
4	SO42021-4
5	SO42021-5
6	SO42021-6
8	SO42021-8
10	SO42021-10
12	SO42021-12

Female Adaptor Elbow Union

SO 42321 - With wall flange



Size	Code
* 8x ³ / ₈	SO42321-8- ³ / ₈
* 10x ³ / ₈	SO42321-10- ³ / ₈
* 10x ¹ / ₂	SO42321-10- ¹ / ₂
* 12x ³ / ₈	SO42321-12- ³ / ₈
* 12x ¹ / ₂	SO42321-12- ¹ / ₂

* With reduction compression ferrule

Male Adaptor Elbow Union

SO 42421



Size	Code
* 3x ¹ / ₈	SO42421-3- ¹ / ₈
* 4x ¹ / ₈	SO42421-4- ¹ / ₈
* 4x ¹ / ₄	SO42421-4- ¹ / ₄
* 5x ¹ / ₈	SO42421-5- ¹ / ₈
* 5x ¹ / ₄	SO42421-5- ¹ / ₄
* 6x ¹ / ₈	SO42421-6- ¹ / ₈
* 6x ¹ / ₄	SO42421-6- ¹ / ₄
* 8x ¹ / ₈	SO42421-8- ¹ / ₈
* 8x ¹ / ₄	SO42421-8- ¹ / ₄
* 8x ³ / ₈	SO42421-8- ³ / ₈
* 10x ¹ / ₄	SO42421-10- ¹ / ₄
* 10x ³ / ₈	SO42421-10- ³ / ₈
* 10x ¹ / ₂	SO42421-10- ¹ / ₂
* 12x ¹ / ₄	SO42421-12- ¹ / ₄
* 12x ³ / ₈	SO42421-12- ³ / ₈
* 12x ¹ / ₂	SO42421-12- ¹ / ₂

* With reduction compression ferrule

Panel Mount Elbow Union

SO 42721 - Max panel thickness 5mm



Size	Code
* 4	SO42721-4
* 5	SO42721-5
* 6	SO42721-6
* 8	SO42721-8
* 10	SO42721-10
* 12	SO42721-12

* With reduction compression ferrule

Tee Union

SO 43021



Size	Code
2	SO43021-2
3	SO43021-3
4	SO43021-4
5	SO43021-5
6	SO43021-6
8	SO43021-8
10	SO43021-10
12	SO43021-12

Tee Union

SO 43221 - Female adaptor



Size	Code
* 4x ¹ / ₈	SO43221-4- ¹ / ₈ -4
* 4x ¹ / ₄	SO43221-4- ¹ / ₄ -4
* 4x ³ / ₈	SO43221-4- ³ / ₈ -4
* 5x ¹ / ₈	SO43221-5- ¹ / ₈ -5
* 5x ¹ / ₄	SO43221-5- ¹ / ₄ -5
* 5x ³ / ₈	SO43221-5- ³ / ₈ -5
* 6x ¹ / ₈	SO43221-6- ¹ / ₈ -6
* 6x ¹ / ₄	SO43221-6- ¹ / ₄ -6
* 6x ³ / ₈	SO43221-6- ³ / ₈ -6
* 8x ¹ / ₈	SO43221-8- ¹ / ₈ -8
* 8x ¹ / ₄	SO43221-8- ¹ / ₄ -8
* 8x ³ / ₈	SO43221-8- ³ / ₈ -8
* 10x ¹ / ₄	SO43221-10- ¹ / ₄ -10
* 10x ³ / ₈	SO43221-10- ³ / ₈ -10
* 10x ¹ / ₂	SO43221-10- ¹ / ₂ -10
* 12x ³ / ₈	SO43221-12- ³ / ₈ -12
* 12x ¹ / ₂	SO43221-12- ¹ / ₂ -12
* 12x ³ / ₄	SO43221-12- ³ / ₄ -12

* With reduction compression ferrule

Taper Seat Non Return Valve

SO CV03A21 - FPM



Size	Code
4	SOCV03A21-4
5	SOCV03A21-5
6	SOCV03A21-6
8	SOCV03A21-8
10	SOCV03A21-10
12	SOCV03A21-12

Regulating Valve

SO NV01C21 - PTFE



Size	Code
4	SONV01C21-4-4
5	SONV01C21-5-5
6	SONV01C21-6-6
8	SONV01C21-8-8
10	SONV01C21-10-10
12	SONV01C21-12-12

Elbow Regulating Valve

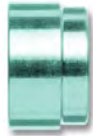
SO NV01A21E - NBR



Size	Code
4	SONV01A21E-4-4
5	SONV01A21E-5-5
6	SONV01A21E-6-6

Compression Ferrule

SO 50001



Size	Code
2	SO50001-2
3	SO50001-3
4	SO50001-4
5	SO50001-5
6	SO50001-6
8	SO50001-8
10	SO50001-10
12	SO50001-12

Female Adaptor

SO 50030



Size	Code
6x ¹ / ₈	SO50030-6- ¹ / ₈
6x ¹ / ₄	SO50030-6- ¹ / ₄
6x ³ / ₈	SO50030-6- ³ / ₈
6x ¹ / ₂	SO50030-6- ¹ / ₂
8x ¹ / ₈	SO50030-8- ¹ / ₈
8x ¹ / ₄	SO50030-8- ¹ / ₄
8x ³ / ₈	SO50030-8- ³ / ₈
8x ¹ / ₂	SO50030-8- ¹ / ₂
10x ¹ / ₄	SO50030-10- ¹ / ₄
10x ³ / ₈	SO50030-10- ³ / ₈
10x ¹ / ₂	SO50030-10- ¹ / ₂
12x ¹ / ₄	SO50030-12- ¹ / ₄
12x ³ / ₈	SO50030-12- ³ / ₈
12x ¹ / ₂	SO50030-12- ¹ / ₂

Straight Union

SO 51021



Size	Code
2	SO51021-2
3	SO51021-3
4	SO51021-4
5	SO51021-5
6	SO51021-6
8	SO51021-8
10	SO51021-10
12	SO51021-12

Male Adaptor Union

SO 51121



Size	Code
2x ¹ / ₈	SO51121-2- ¹ / ₈
3x ¹ / ₈	SO51121-3- ¹ / ₈
4x ¹ / ₈	SO51121-4- ¹ / ₈
* 4x ¹ / ₄	SO51121-4- ¹ / ₄
* 5x ¹ / ₈	SO51121-5- ¹ / ₈
* 5x ¹ / ₄	SO51121-5- ¹ / ₄
6x ¹ / ₈	SO51121-6- ¹ / ₈
6x ¹ / ₄	SO51121-6- ¹ / ₄
6x ³ / ₈	SO51121-6- ³ / ₈
6x ¹ / ₂	SO51121-6- ¹ / ₂
8x ¹ / ₈	SO51121-8- ¹ / ₈
8x ¹ / ₄	SO51121-8- ¹ / ₄
8x ³ / ₈	SO51121-8- ³ / ₈
8x ¹ / ₂	SO51121-8- ¹ / ₂
10x ¹ / ₄	SO51121-10- ¹ / ₄
10x ³ / ₈	SO51121-10- ³ / ₈
10x ¹ / ₂	SO51121-10- ¹ / ₂
10x ³ / ₄	SO51121-10- ³ / ₄
12x ¹ / ₄	SO51121-12- ¹ / ₄
12x ³ / ₈	SO51121-12- ³ / ₈
12x ¹ / ₂	SO51121-12- ¹ / ₂

* With reduction compression ferrule

Male Adaptor Union

SO 51124 - With edge seal



Size	Code
2x ¹ / ₈	SO51124-2- ¹ / ₈
3x ¹ / ₈	SO51124-3- ¹ / ₈
* 4x ¹ / ₈	SO51124-4- ¹ / ₈
* 4x ¹ / ₄	SO51124-4- ¹ / ₄
* 5x ¹ / ₈	SO51124-5- ¹ / ₈
* 5x ¹ / ₄	SO51124-5- ¹ / ₄
6x ¹ / ₈	SO51124-6- ¹ / ₈
6x ¹ / ₄	SO51124-6- ¹ / ₄
6x ³ / ₈	SO51124-6- ³ / ₈
6x ¹ / ₂	SO51124-6- ¹ / ₂
8x ¹ / ₈	SO51124-8- ¹ / ₈
8x ¹ / ₄	SO51124-8- ¹ / ₄
* 8x ³ / ₈	SO51124-8- ³ / ₈
8x ¹ / ₂	SO51124-8- ¹ / ₂
10x ¹ / ₄	SO51124-10- ¹ / ₄
10x ³ / ₈	SO51124-10- ³ / ₈
10x ¹ / ₂	SO51124-10- ¹ / ₂
10x ³ / ₄	SO51124-10- ³ / ₄
12x ¹ / ₄	SO51124-12- ¹ / ₄
12x ³ / ₈	SO51124-12- ³ / ₈
12x ¹ / ₂	SO51124-12- ¹ / ₂
12x ³ / ₄	SO51124-12- ³ / ₄

* With reduction compression ferrule

Female Adaptor Union

SO 51221



Size	Code
* 3x ¹ / ₈	SO51221-3- ¹ / ₈
4x ¹ / ₈	SO51221-4- ¹ / ₈
* 4x ¹ / ₄	SO51221-4- ¹ / ₄
5x ¹ / ₈	SO51221-5- ¹ / ₈
* 5x ¹ / ₄	SO51221-5- ¹ / ₄
6x ¹ / ₈	SO51221-6- ¹ / ₈
6x ¹ / ₄	SO51221-6- ¹ / ₄
6x ³ / ₈	SO51221-6- ³ / ₈
6x ¹ / ₂	SO51221-6- ¹ / ₂
8x ¹ / ₄	SO51221-8- ¹ / ₄
* 8x ³ / ₈	SO51221-8- ³ / ₈
* 8x ¹ / ₂	SO51221-8- ¹ / ₂
10x ¹ / ₄	SO51221-10- ¹ / ₄
10x ³ / ₈	SO51221-10- ³ / ₈
10x ¹ / ₂	SO51221-10- ¹ / ₂
12x ¹ / ₄	SO51221-12- ¹ / ₄
12x ³ / ₈	SO51221-12- ³ / ₈
12x ¹ / ₂	SO51221-12- ¹ / ₂

* With reduction compression ferrule

Panel Mount Union

SO 51521



Size	Code
2	SO51521-2
3	SO51521-3
4	SO51521-4
5	SO51521-5
6	SO51521-6
8	SO51521-8
10	SO51521-10
12	SO51521-12

Elbow Union

SO 52021



Size	Code
* 2	SO52021-2
* 3	SO52021-2
4	SO52021-4
5	SO52021-4
6	SO52021-5
8	SO52021-8
10	SO52021-10
12	SO52021-12

* With reduction compression ferrule

Tee Union

SO 53021



Size	Code
2	SO53021-2
3	SO53021-3
4	SO53021-4
5	SO53021-5
6	SO53021-6
8	SO53021-8
10	SO53021-10
12	SO53021-12

Elbow Union

SO 52221 - Female adaptor



Size	Code
* 4x1/8	SO5221-4-1/8
* 5x1/8	SO5221-5-1/8
6x1/8	SO5221-6-1/8
6x1/4	SO5221-6-1/4
8x1/8	SO5221-8-1/8
8x1/4	SO5221-8-1/4
* 8x3/8	SO5221-8-3/8
10x1/4	SO5221-10-1/4
10x3/8	SO5221-10-3/8
12x3/8	SO5221-12-3/8
* 12x1/2	SO5221-12-1/2

* With reduction compression ferrule

Tee Union

SO 53221 - Female adaptor



Size	Code
* 4x1/8	SO53221-4-1/8-4
* 5x1/8	SO53221-5-1/8-5
6x1/8	SO53221-6-1/8-6
6x1/4	SO53221-6-1/4-6
8x1/8	SO53221-8-1/8-8
8x1/4	SO53221-8-1/4-8
8x3/8	SO53221-8-3/8-8
10x1/4	SO53221-10-1/4-10
10x3/8	SO53221-10-3/8-10
12x3/8	SO53221-12-3/8-12
* 12x1/2	SO53221-12-1/2-12

* With reduction compression ferrule

Male Adaptor Elbow Union

SO 52421

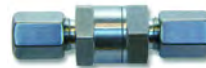


Size	Code
* 2x1/8	SO52421-2-1/8
* 3x1/8	SO52421-3-1/8
4x1/8	SO52421-4-1/8
5x1/8	SO52421-5-1/8
6x1/8	SO52421-6-1/8
6x1/4	SO52421-6-1/4
8x1/8	SO52421-8-1/8
8x1/4	SO52421-8-1/4
8x3/8	SO52421-8-3/8
10x1/4	SO52421-10-1/4
* 10x3/8	SO52421-10-3/8
12x1/4	SO52421-12-1/4
12x3/8	SO52421-12-3/8
* 12x1/2	SO52421-12-1/2

* With reduction compression ferrule

Taper Seat Non Return Valve

SO CV53B21 - FPM



Size	Code
4	SOCV53B21-4-4
5	SOCV53B21-5-5
6	SOCV53B21-6-6
8	SOCV53B21-8-8
10	SOCV53B21-10-10
12	SOCV53B21-12-12

Regulating Valve

SO NV51A21 - PN10 - PTFE



Size	Code
2	SONV51A21-2-2
3	SONV51A21-3-3
4	SONV51A21-4-4
5	SONV51A21-5-5
6	SONV51A21-6-6
8	SONV51A21-8-8
10	SONV51A21-10-10
12	SONV51A21-12-12

Panel Mount Elbow Union

SO 52721



Size	Code
6	SO52721-6
8	SO52721-8
10	SO52721-10
12	SO52721-12

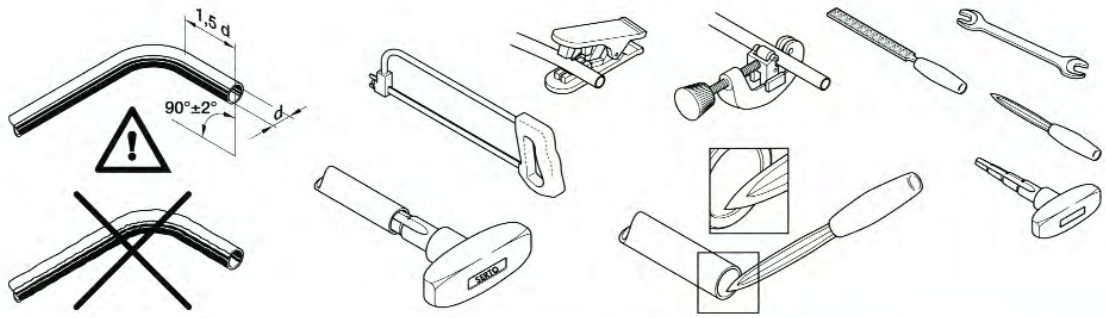
Elbow Regulating Valve

SO NV51A21E - PTFE



Size	Code
2	SONV51A21E-2-2
3	SONV51A21E-3-3
4	SONV51A21E-4-4
5	SONV51A21E-5-5
6	SONV51A21E-6-6
8	SONV51A21E-8-8
10	SONV51A21E-10-10
12	SONV51A21E-12-12

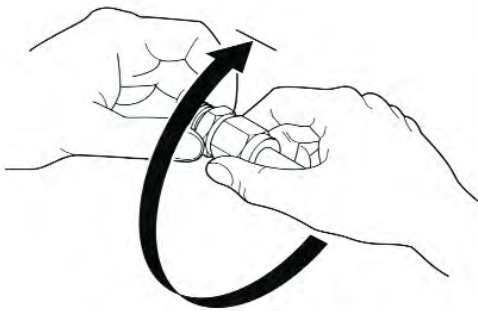
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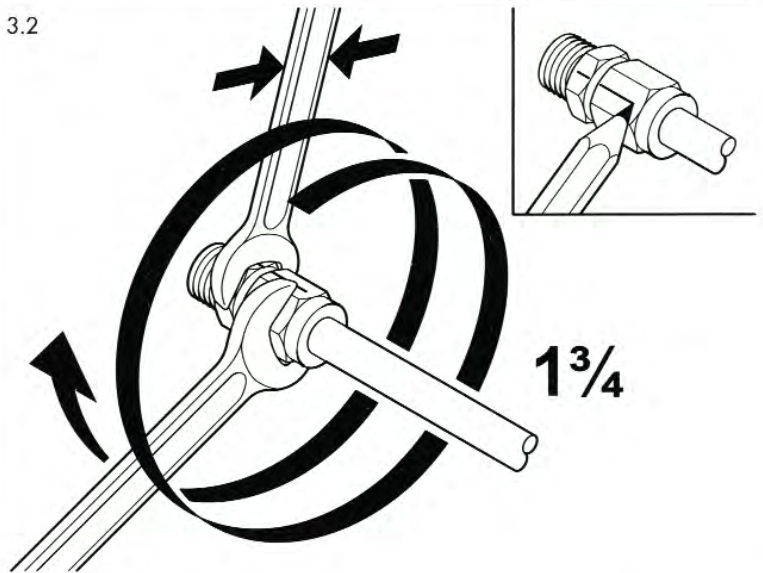
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3.1

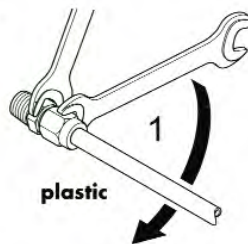
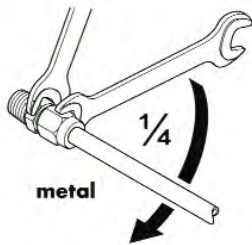
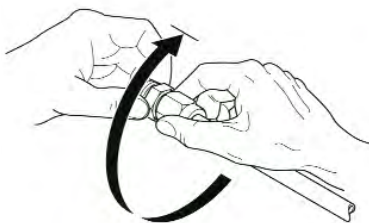


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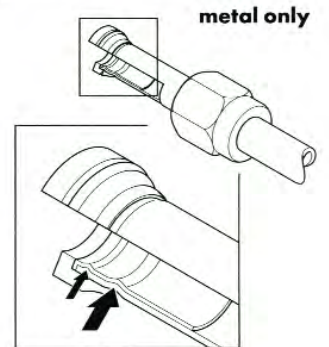


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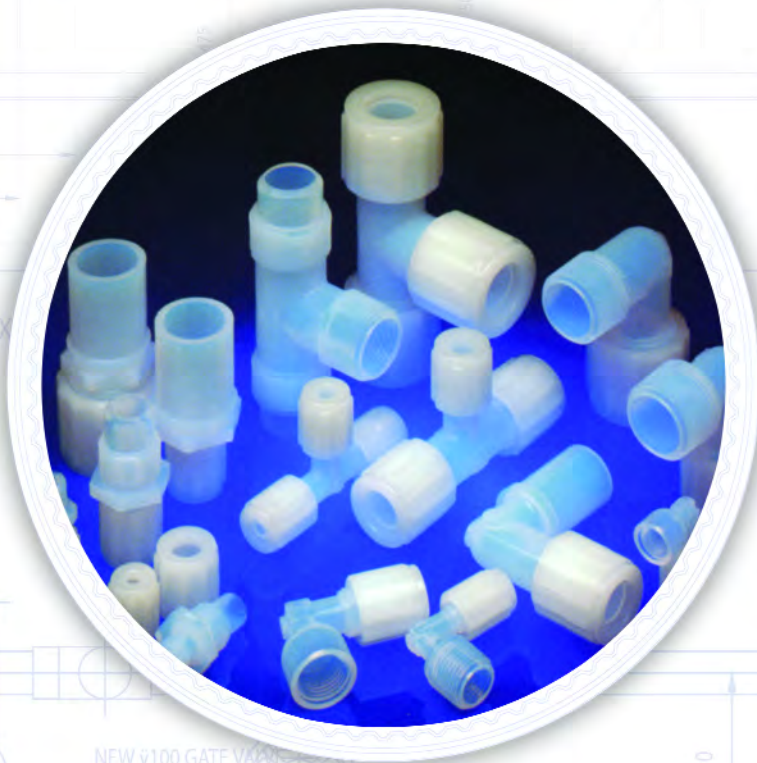
Repeated fitting of the union



5



Saint Gobain Flare Grip® II Fittings



Union Adapter Female



Size	Code
1/4x1/8	FMF42UAFN-1
1/4x1/4	FMF44UAFN-1
1/4x3/8	FMF46UAFN-1
1/4x1/2	FMF48UAFN-1
3/8x1/8	FMF62UAFN-1
3/8x1/4	FMF64UAFN-1
3/8x3/8	FMF66UAFN-1
3/8x1/2	FMF68UAFN-1
1/2x1/4	FMF84UAFN-1
1/2x3/8	FMF86UAFN-1
1/2x1/2	FMF88UAFN-1
1/2x3/4	FMF812UAFN-1
1/2x1	FMF816UAFN-1
3/4x1/2	FMF128UAFN-1
3/4x3/4	FMF1212UAFN-1
3/4x1	FMF1216UAFN-1
1x1/2	FMF168UAFN-1
1x3/4	FMF1612UAFN-1
1x1	FMF1616UAFN-1

Union Adapter Male



Size	Code
1/4x1/8	FMF42UAMN-1
1/4x1/4	FMF44UAMN-1
1/4x3/8	FMF46UAMN-1
1/4x1/2	FMF48UAMN-1
1/4x3/4	FMF412UAMN-1
3/8x1/8	FMF62UAMN-1
3/8x1/4	FMF64UAMN-1
3/8x3/8	FMF66UAMN-1
3/8x1/2	FMF68UAMN-1
3/8x3/4	FMF612UAMN-1
3/8x1	FMF616UAMN-1
1/2x1/8	FMF82UAMN-1
1/2x1/4	FMF84UAMN-1
1/2x3/8	FMF86UAMN-1
1/2x1/2	FMF88UAMN-1
1/2x3/4	FMF812UAMN-1
1/2x1	FMF816UAMN-1
3/4x1/2	FMF128UAMN-1
3/4x3/4	FMF1212UAMN-1
3/4x1	FMF1216UAMN-1
1x1/2	FMF168UAMN-1
1x3/4	FMF1612UAMN-1
1x1	FMF1616UAMN-1

Straight Union



Size	Code
1/4	FMF4SUN-1
3/8	FMF6SUN-1
1/2	FMF8SUN-1
3/4	FMF12SUN-1
1	FMF16SUN-1

Straight Union Reducer



Size	Code
3/8x1/4	FMF64SURN-1
1/2x1/4	FMF84SURN-1
1/2x3/8	FMF86SURN-1
3/4x1/4	FMF124SURN-1
3/4x3/8	FMF126SURN-1
3/4x1/2	FMF128SURN-1
1x1/2	FMF168SURN-1
1x3/4	FMF1612SURN-1

Union Adapter Male Panel



Size	Code
1/4x1/8	FMF42UAMPN-1
1/4x1/4	FMF44UAMPN-1
3/8x3/8	FMF66UAMPN-1
1/2x1/4	FMF84UAMPN-1
1/2x3/8	FMF86UAMPN-1
1/2x1/2	FMF88UAMPN-1
3/4x1/2	FMF128UAMPN-1
3/4x3/4	FMF1212UAMPN-1
1x3/4	FMF1612UAMPN-1
1x1	FMF1616UAMPN-1

Elbow Adapter Male



Size	Code
1/4x1/8	FMF42EAMN-1
1/4x1/4	FMF44EAMN-1
1/4x3/8	FMF46EAMN-1
1/4x1/2	FMF48EAMN-1
3/8x1/8	FMF62EAMN-1
3/8x1/4	FMF64EAMN-1
3/8x3/8	FMF66EAMN-1
3/8x1/2	FMF68EAMN-1
3/8x3/4	FMF612EAMN-1
1/2x1/4	FMF84EAMN-1
1/2x3/8	FMF86EAMN-1
1/2x1/2	FMF88EAMN-1
1/2x3/4	FMF812EAMN-1
3/4x1/2	FMF128EAMN-1
3/4x3/4	FMF1212EAMN-1
3/4x1	FMF1216EAMN-1
1x3/4	FMF1612EAMN-1
1x1	FMF1616EAMN-1

Union Elbow



Size	Code
1/4	FMF4UEN-1
3/8	FMF6UEN-1
1/2	FMF8UEN-1
3/4	FMF12UEN-1
1	FMF16UEN-1



Please note:

Fittings supplied with PVDF nuts as standard.

For PFA nuts replace suffix -1 with -3

Elbow Adapter Female



Size	Code
1/4x1/8	FMF42EAFN-1
1/4x1/4	FMF44EAFN-1
3/8x1/4	FMF64EAFN-1
3/8x3/8	FMF66EAFN-1
3/8x1/2	FMF68EAFN-1
1/2x1/4	FMF84EAFN-1
1/2x3/8	FMF86EAFN-1
1/2x1/2	FMF88EAFN-1
1x1	FMF1616EAFN-1

Union Elbow Reducer



Size	Code
3/8x1/4	FMF64UERN-1
1/2x1/4	FMF84UERN-1
1/2x3/8	FMF86UERN-1
3/4x1/4	FMF124UERN-1
3/4x3/8	FMF126UERN-1
3/4x1/2	FMF128UERN-1
1x3/4	FMF1612UERN-1

Union Elbow Female Flare



Size	Code
3/8	FMF6FFUEN-1
1/2	FMF8FFUEN-1
3/4	FMF12FFUEN-1
1	FMF16FFUEN-1

Nut



Size	Code
1/4	FMF4N-1
3/8	FMF6N-1
1/2	FMF8N-1
3/4	FMF12N-1
1	FMF16N-1

Panel Nut

PVDF



Size	Code
1/4	FMF4PN
3/8	FMF6PN
1/2	FMF8PN
3/4	FMF12PN
1	FMF16PN

Union Tee



Size	Code
1/4	FMF4UTN-1
3/8	FMF6UTN-1
1/2	FMF8UTN-1
3/4	FMF12UTN-1
1	FMF16UTN-1

Union Tee Reducer



Size	Code
3/8x3/8x1/4	FMF664UTRN-1
3/8x3/8x1/2	FMF668UTRN-1
3/8x3/8x3/4	FMF6612UTRN-1
1/2x1/2x1/4	FMF884UTRN-1
1/2x1/2x3/8	FMF886UTRN-1
3/4x3/4x1/4	FMF12124UTRN-1
3/4x1/2x3/4	FMF12812UTRN-1
1x1x1/2	FMF16168UTRN-1
1x1x3/4	FMF161612UTRN-1
3/8x1/4x3/8	FMF646UTRN-1
1/2x1/4x1/2	FMF848UTRN-1
3/4x1/2x3/4	FMF12812UTRN-1
3/4x1/4x1/2	FMF1248UTRN-1
1/2x1/4x1/4	FMF844UTRN-1
1/2x3/8x3/8	FMF866UTRN-1
3/4x1/2x1/2	FMF1288UTRN-1

Male Branch Tee



Size	Code
1/4x1/4x1/8	FMF442MBTN-1
1/4x1/4x1/4	FMF444MBTN-1
3/8x3/8x1/8	FMF662MBTN-1
3/8x3/8x1/4	FMF664MBTN-1
3/8x3/8x3/8	FMF666MBTN-1
1/2x1/2x1/4	FMF884MBTN-1
1/2x1/2x3/8	FMF886MBTN-1
1/2x1/2x1/2	FMF888MBTN-1
3/4x3/4x1/4	FMF12124MBTN-1
3/4x3/4x1/2	FMF12128MBTN-1
3/4x3/4x3/4	FMF121212MBTN-1
1x1x1/4	FMF16164MBTN-1
1x1x1	FMF161616MBTN-1



Please note:

Fittings supplied with PVDF nuts as standard.

For PFA nuts replace suffix -1 with -3

Furon® FastFLARE™ Forming Tool



Furon FastFLARE forming tools are ideal for cold flaring PFA tubing. For use with Furon Flare Grip® and Flare Grip II PFA fittings.

Usage Guide

1. Install nut on tubing
2. Insert flaring tool spreader tip all the way into the end of the tube
3. Maintain insertion pressure while lightly squeezing the flaring tool to expand the spreader tip
4. Relax squeezing pressure and rotate tube slightly
5. Repeat step 2 several times, progressively increasing pressure until maximum spreading expansion is reached

Note:

1. Tubing will be pushed off the spreader tip slightly each time
2. It is critical to repeat and rotate the expanding/spreading process several times to ensure proper flaring

Ordering Information

Part No.	Description
1101021	1/4 (6.35mm)
1101022	3/8 (9.53mm)
1101023	1/2 (12.7mm)
1101024	3/4 (19.5mm)
1101025	1 (25.4mm)



Burst Pressure vs. Temperature

PFA Tubing

Temp °F	Temp °C	1/4"		3/8"		1/2"		3/4"		1"	
		psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)
75	(24)	900	(6206)	800	(5516)	670	(4620)	440	(3034)	320	(2206)
200	(93)	631	(4353)	603	(4159)	474	(3270)	302	(2082)	221	(1527)
250	(121)	575	(3963)	549	(3787)	432	(2977)	275	(1895)	202	(1390)
300	(149)	528	(3638)	504	(3477)	396	(2733)	252	(1740)	185	(1276)
350	(177)	471	(3248)	450	(3104)	354	(2440)	225	(1553)	165	(1139)
400	(204)	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

PVDF Nut

Temp °F	Temp °C	1/4"		3/8"		1/2"		3/4"		1"	
		psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)
75	(24)	900	(6206)	800	(5516)	670	(4620)	440	(3034)	320	(2206)
200	(93)	631	(4353)	603	(4159)	474	(3270)	302	(2082)	221	(1527)
250	(121)	575	(3963)	549	(3787)	432	(2977)	275	(1895)	202	(1390)
300	(149)	528	(3638)	504	(3477)	396	(2733)	252	(1740)	185	(1276)
350	(177)	471	(3248)	450	(3104)	354	(2440)	225	(1553)	165	(1139)
400	(204)	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

PFA Nut

Temp °F	Temp °C	1/4"		3/8"		1/2"		3/4"		1"	
		psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)
75	(24)	900	(6206)	800	(5516)	670	(4620)	440	(3034)	320	(2206)
200	(93)	631	(4353)	603	(4159)	474	(3270)	302	(2082)	221	(1527)
250	(121)	575	(3963)	549	(3787)	432	(2977)	275	(1895)	202	(1390)
300	(149)	528	(3638)	504	(3477)	396	(2733)	252	(1740)	185	(1276)
350	(177)	471	(3248)	450	(3104)	354	(2440)	225	(1553)	165	(1139)
400	(204)	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Maximum Operating Pressure vs. Temperature

PFA Tubing

Temp °F	Temp °C	1/4"		3/8"		1/2"		3/4"		1"	
		psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)
75	(24)	275	(1896)	235	(1620)	170	(1172)	110	(758)	77	(531)
200	(93)	130	(896)	115	(793)	85	(586)	55	(379)	40	(276)
250	(121)	85	(586)	75	(517)	55	(379)	35	(241)	25	(172)
300	(149)	60	(414)	55	(379)	40	(276)	25	(172)	20	(138)
350	(177)	35	(241)	30	(207)	20	(138)	15	(103)	9	(62)
400	(204)	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

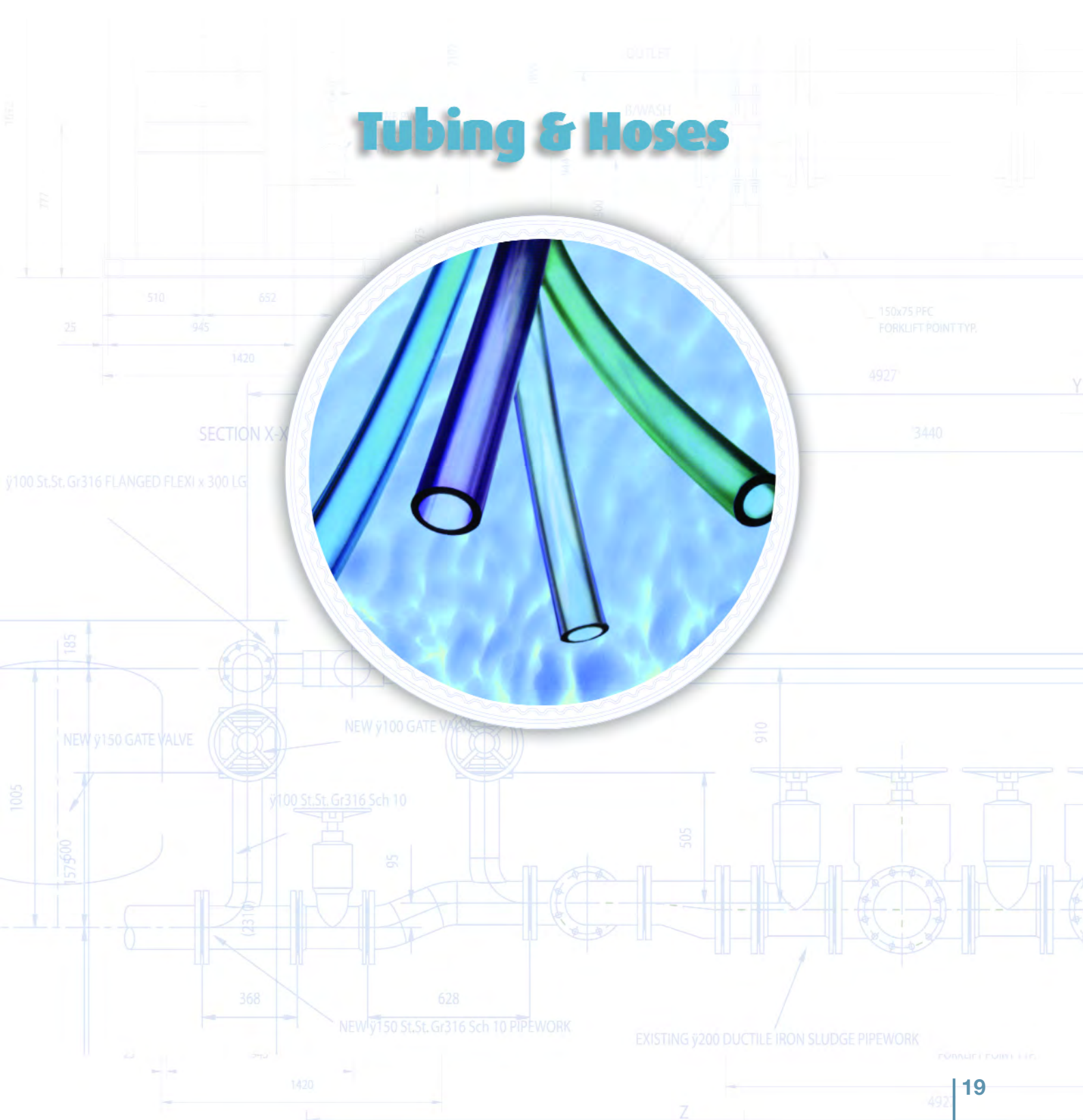
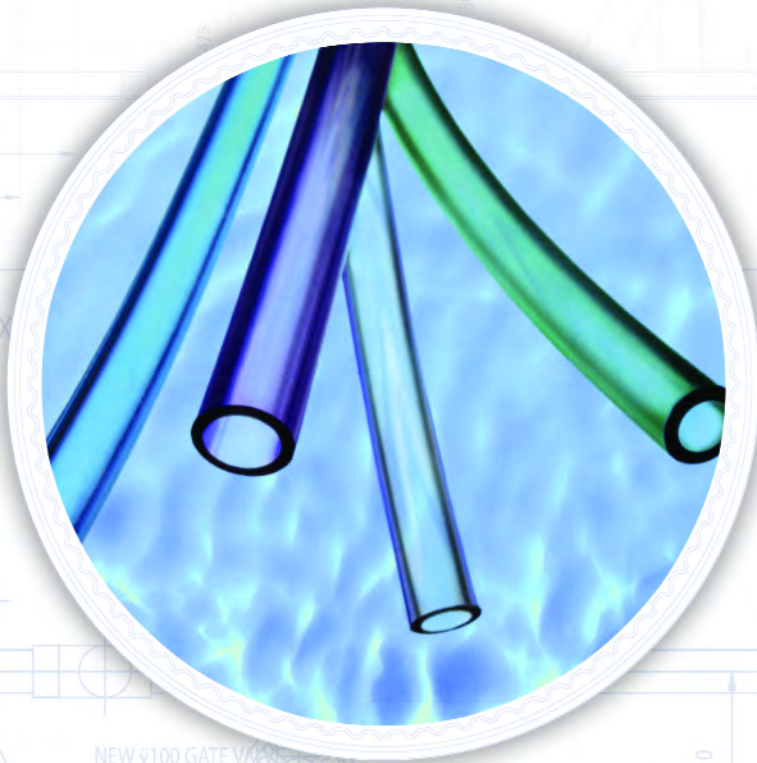
PVDF Nut

Temp °F	Temp °C	1/4"		3/8"		1/2"		3/4"		1"	
		psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)
75	(24)	275	(1896)	235	(1620)	170	(1172)	110	(758)	77	(531)
200	(93)	130	(896)	115	(793)	85	(586)	55	(379)	40	(276)
250	(121)	85	(586)	75	(517)	55	(379)	35	(241)	25	(172)
300	(149)	60	(414)	55	(379)	40	(276)	25	(172)	20	(138)
350	(177)	35	(241)	30	(207)	20	(138)	15	(103)	9	(62)
400	(204)	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

PFA Nut

Temp °F	Temp °C	1/4"		3/8"		1/2"		3/4"		1"	
		psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)	psi	(kPa)
75	(24)	275	(1896)	235	(1620)	170	(1172)	110	(758)	77	(531)
200	(93)	130	(896)	115	(793)	85	(586)	55	(379)	40	(276)
250	(121)	85	(586)	75	(517)	55	(379)	35	(241)	25	(172)
300	(149)	60	(414)	55	(379)	40	(276)	25	(172)	20	(138)
350	(177)	35	(241)	30	(207)	20	(138)	15	(103)	9	(62)
400	(204)	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Tubing & Hoses

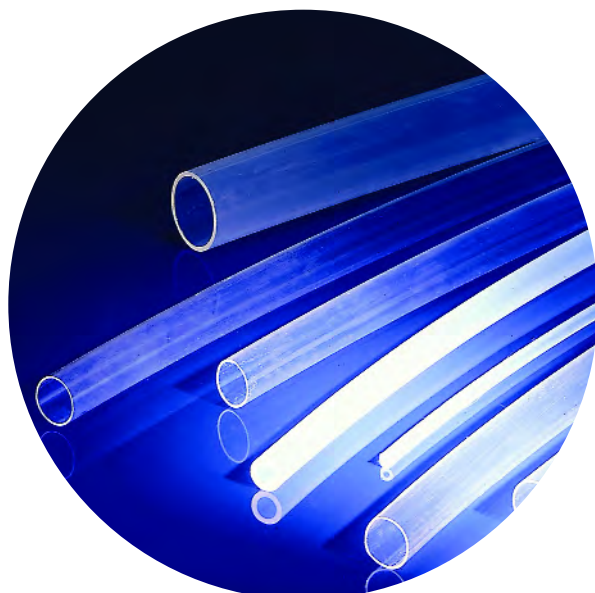


Product Overview

Tubing Formulation	Product Description
Tygon® Beverage Tubing Formulation B-44-3	The most widely specified clear, flexible plastic tubing. Smooth, non-porous bore. Meets FDA, 3A and NSF Criteria.
Tygon® Food, Milk and Dairy Tubing Formulation B-44-4X	The preferred tubing for bulk transfer applications. Available in up to a 6" inside diameter. Meets FDA, 3A and NSF criteria.
Tygon® Pressure Tubing Formulation B-44-4X I.B.	Handles four times the pressure of non-reinforced tubing without sacrificing flexibility. Meets FDA, 3A and NSF criteria.
Norprene® Food Process Tubing Formulation A-60-F	Provides high flexural fatigue and temperature resistance. Resists cracking and deterioration. Meets FDA, 3A and NSF criteria.
Tygonprene™ Pump Tubing Formulation XL-60	Provides flexibility and long life in peristaltic pump applications.
Tygon® Laboratory Tubing Formulation R-3603	Compatible with virtually all inorganic chemicals. Consistent performance lot-to-lot. Also available in vacuum tubing sizes.
Pharmed® Tubing	Unequaled flex life in peristaltic pumps, outlasts silicone tubing by up to 30 times. Tested to ISO 10993 guidelines, meets USP Class VI, FDA and NSF criteria.
Tygon® Ultra-Soft Tubing Formulation R-1000	Minimal resistance to compression along with unequaled flexibility and drapeability. Flexible to -100°F (-73°C). Durometer hardness Shore A, 40.
Tygon® Sanitary Silicone Pressure Tubing Formulation 3370 I.B.	Provides the highest level of biocompatibility with increased resistance to pressure. Platinum-cured. Meets USP Class VI, FDA and NSF criteria.
Tygon® Sanitary Silicone Tubing Formulation 3350	Ultra-smooth inner bore inhibits bacteria-sized particle entrapment. Platinum-cured. Tested to ISO10993 guidelines, meets USP Class VI, FDA and NSF criteria.
Versilic™ High Strength Silicone Tubing Formulation SPX-50	Designed for optimal performance in applications where flexibility, resiliency and durability are required. Peroxide cured. Meets USP Class VI, FDA and NSF criteria.
Tygon® Medical/Surgical Tubing Formulation S-50-HL	Flexible, crystal clear. Established performance in peristaltic pump applications. Tested to ISO 10993 guidelines, meets USP Class VI criteria.
Tygon® High-Purity Tubing Formulation 2275	Extremely low sorption. Contains no plasticizers. Provides an uncompromising fluid path. Tested to ISO 10993 guidelines, meets USP, Class VI, FDA and NSF criteria.



Tubing Formulation	Product Description
Tygon® Ultra Chemical Resistant Tubing Formulation 2075	Unequaled combination of chemical resistance, clarity and flexibility.
Tygon® Plasticizer Free Tubing Formulation 2001	Provides flexibility, clarity, chemical resistance and superior flex life. Meets FDA criteria.
Tygon® Long Flex Life Pump Tubing Formulation LFL	Longest flex life of any clear Tygon® tubing formulation. Low particulate spallation. Meets USP Class VI and FDA criteria.
Norprene® Industrial Grade Tubing Formulation A-60-G	Provides superior abrasion, weathering and flexural fatigue resistance. Outstanding replacement for general purpose rubber tubings.
Tygon® Fuel and Lubricant Tubing Formulation F-4040-A	Resists swelling and hardening caused by hydrocarbon-based fluids. Significantly reduces risk of failure due to cracking and leakage.
Tygothane® Precision Polyurethane Tubing Formulation C-210-A	Able to withstand rugged daily use. Close dimensional tolerances help provide secure attachment to fittings. Meets FDA criteria.
Tygothane® Precision Polyurethane Pressure Tubing Formulation C-544-A I.B.	Excellent wear properties for use in physically demanding environments. Reinforced for elevated working pressure. Meets FDA and NSF 61 criteria.
Tygon® UV Resistant Tubing Formulation R-3400	Highly resistant to degradation from weathering, sunlight and ozone. Opaque black colour protects light-sensitive fluids.
Fluran® Severe Environment Tubing Formulation F-5500-A	Handles the most aggressive solutions at temperatures as high as 400°F (204°C). Black in colour. Food grade available upon request.
Tygon® High-Purity Pressure Tubing Formulation 2275 I.B.	Extremely low sorption rate helps to maintain fluid integrity. Contains no plasticizers. Meets USP Class VI and FDA criteria.
Tygon® Inert Tubing Formulation SE-200	Combines clarity and flexibility with the inertness of a fluoropolymer. Meets FDA and USP Class VI criteria.
Norprene® Pressure Tubing Formulation A-60-F I.B.	Provides a unique combination of resistance to chemical degradation, heat, abrasion and pressure. Meets FDA, 3A and NSF criteria.
Tygon® Silver Antimicrobial Tubing	Antimicrobial tubing that decreases bacterial growth. Meets FDA and NSF criteria.



Tygon® fuel and lubricant tubing

TYGON® F-4040-A

Specially designed to handle most fuels and industrial lubricants, Tygon® F-4040-A resists the swelling and hardening caused by hydrocarbon-based fluids. This significantly reduces the risk of failure due to cracking and leakage. Its minimum extractability safeguards the liquid or vapour being transferred against adulteration.

Extremely flexible, Tygon® F-4040-A simplifies installation. It is translucent yellow for positive identification and to allow easy flow monitoring.

Features and benefits

- Compatible with most petroleum-based products
- Resists swelling and cracking
- Ozone and UV light resistant



Sizes						Minimum Bend Radius		Max. Working Pressure at 22.7°C**		Vacuum Rating at 22.7°C**	
mm			Inches								
ID	OD	Wall Thickness	ID	OD	Wall Thickness	mm	Inches	Bar	PSI	mm*	Inches*
2.03	3.55	0.76	0.08	0.14	0.03	6.35	1/4	2.76	40	759.46	29.9
2.40	4.80	1.20	3/32	3/16	3/64	6.35	1/4	3.45	50	759.46	29.9
3.20	6.40	1.60	1/8	1/4	1/16	9.53	3/8	3.45	50	759.46	29.9
4.80	8.00	1.60	3/16	5/16	1/16	15.88	5/8	2.41	35	759.46	29.9
6.40	9.60	1.60	1/4	3/8	1/16	25.40	1	2.07	30	558.80	22
8.00	11.20	1.60	5/16	7/16	1/16	34.92	13/8	1.72	25	355.60	14
9.50	12.70	1.60	3/8	1/2	1/16	47.62	17/8	1.38	20	254.00	10
9.50	15.90	3.20	3/8	5/8	1/8	28.57	11/8	2.41	35	759.46	29.9
11.10	14.30	1.60	7/16	9/16	1/16	60.32	23/8	1.03	15	177.80	7
12.70	15.90	1.60	1/2	5/8	1/16	73.02	27/8	1.03	15	12.00	5
12.70	19.10	3.20	1/2	3/4	1/8	44.45	13/4	2.07	30	558.80	22
15.90	22.30	3.20	5/8	7/8	1/8	63.50	21/2	1.72	25	355.60	14
19.00	25.40	3.20	3/4	1	1/8	82.55	31/4	1.38	20	254.00	10

* Inch of Mercury

** Working pressures are calculated at a 1:5 ratio relative to burst pressure using ASTM D1599

Typical Physical Properties	ASTM Method	Value
Hardness	D2240-02	57
Colour		Translucent Yellow
Tensile Strength	D412-98	1820 (12.5)
Ultimate Elongation	D412-98	310
Tear Resistance	D1004-94	167 (29)
Specific Gravity	D792-00	1.26
Water Absorption	D570-98	0.49
Compression Set Constant Deflection	D395-01 Method B	65
Brittle Temperature	D746-98	-37
Maximum recommended Operating Temperature		74
Dielectric Strength	D149-97	15.8
Tensile Modulus @ 100% Elongation	D412-98	910 (6.3)
Tensile Set	D412-98	50

Tygon® laboratory tubing

TYGON® R-3603

Crystal-clear and flexible, Tygon® Laboratory Tubing handles virtually all inorganic chemicals found in the lab and can be used in corrosive atmospheres.

The glassy-smooth inner bore helps prevent buildup so that cleaning is facilitated. Available also with extra-heavy walls, Tygon® R-3603 V will withstand full vacuum at room temperature.

Features and benefits

- Outstanding chemical resistance
- Lot-to-lot consistency for reproducible results
- Increases productivity in peristaltic pumps - outlasts other clear tubing 2 to 1



Sizes						Minimum Bend Radius		Max. Working Pressure at 22.7°C**		Vacuum Rating at 22.7°C**	
mm			Inches								
ID	OD	Wall Thickness	ID	OD	Wall Thickness	mm	Inches	Bar	PSI	mm*	Inches*
2.00	4.00	1.00				7		2.76	40	759.46	29.9
3.00	5.00	1.00				13		2.07	30	759.46	29.9
4.00	6.00	1.00				16		1.72	25	533.40	21
5.00	8.00	1.50				19		2.07	30	759.46	29.9
6.00	9.00	1.50				22		1.72	25	558.80	22
7.00	10.00	1.50				29		1.38	20	381.00	15
8.00	12.00	2.00				29		1.72	25	533.40	21
10.00	14.00	2.00				42		1.38	20	355.60	14

* Inch of Mercury

** Working pressures are calculated at a 1:5 ratio relative to burst pressure using ASTM D1599

Typical Physical Properties	ASTM Method	Value
Hardness	D2240-02	55
Colour		Clear/Translucent
Tensile Strength	D412-98	1650 (11.4)
Ultimate Elongation	D412-98	450
Tear Resistance	D1004-94	125 (22)
Specific Gravity	D792-00	1.18
Water Absorption	D570-98	0.24
Compression Set Constant Deflection	D395-01 Method B	61
Brittle Temperature	D746-98	-50
Maximum recommended Operating Temperature		74
Dielectric Strength	D149-97	23.9
Tensile Modulus @ 100% Elongation	D412-98	650 (4.5)
Tensile Set	D412-98	107

tubes & hoses

Versilic® tubing

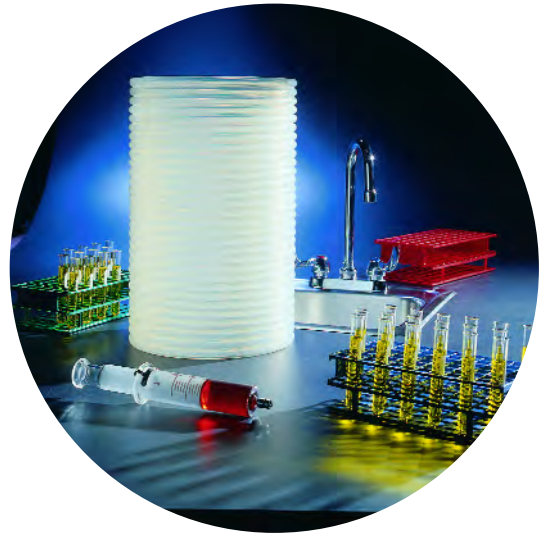
Versilic®

62 Shore A Versilic® tubing is biologically neutral and does not inhibit cell culture. It stays flexible down to -50°C and maintains its chemical, mechanical and electrical performance up to +200°C, peak at 230°C.

It meets European Pharmacopoeia test requirements, USP Class VI biological tests, and ISO 10993 biocompatibility (systemic toxicity, irritation, cytotoxicity, hemolysis, sensitisation, Ames test). It meets FDA, European and French regulations regarding food contact. Versilic® may be used as a CE marked (Class 2A max.) non invasive medical device tubing for up to 29 days contact.

Features and benefits

- Peroxide cured silicone
- Meets FDA, European and French regulations for food contact
- Temperature resistance: -50°C to +200°C

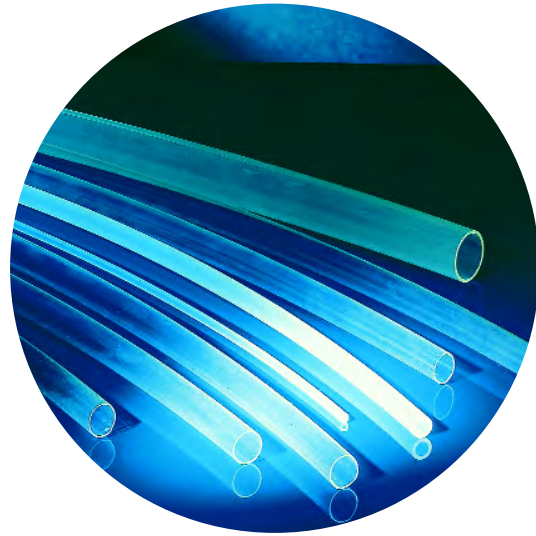


Typical Physical Properties	ASTM Method	Value
Hardness	D2240-02	62
Colour		Translucent
Tensile Strength	D412-98	1305 (9)
Ultimate Elongation	D412-98	> 270
Tear Resistance	D1004-94	100 (18)
Specific Gravity	D792-00	1.16
Water Absorption	D570-98	0.06
Compression Set Constant Deflection	D395-01 Method B	36
Brittle Temperature		-50
Maximum recommended Operating Temperature	D746-98	200
Tensile Set	D412-98	7.5

PVDF tubing

PVDF

PVDF tubes are an economic alternative to the other fluoroplastics because of their low specific weight. PVDF is meltable with thermal forming processes. PVDF tubing is safe and non-toxic. PVDF tubes are resistant to most inorganic chemicals such as acids and salts - even at elevated temperatures or when highly concentrated. Our PVDF tubing has an excellent resistance to aliphatic and aromatic hydrocarbons, organic acids, alcohols and aromatic compounds. On the other hand PVDF can be dissolved by dimethylformamide and dimethylacetamide. PVDF is also attacked by some amines, pyridine, ketones, hot alkalis and fuming sulfuric acid (oleum). If these substances are to be handled the recommended choice will be fluoroplastic like PTFE, PFA and MFA. The permeation values of PVDF are low.



Product Facts and Data at a Glance

- Favourable price/performance ratio
- Favourable resistance to chemicals
- Fusibility
- High rigidity
- Stable at temperatures between -50°C and 140°C
- Long factory lengths possible
- Low permeation

Standard Sizes		
Inner Diameter (mm)	Wall Thickness (mm)	Tolerance (mm)
1	1	+/-0.10mm
2	1	+/-0.10mm
3	1	+/-0.10mm
4	1	+/-0.10mm
5	1	+/-0.10mm
6	1	+/-0.10mm
8	1	+/-0.10mm
10	1	+/-0.10mm

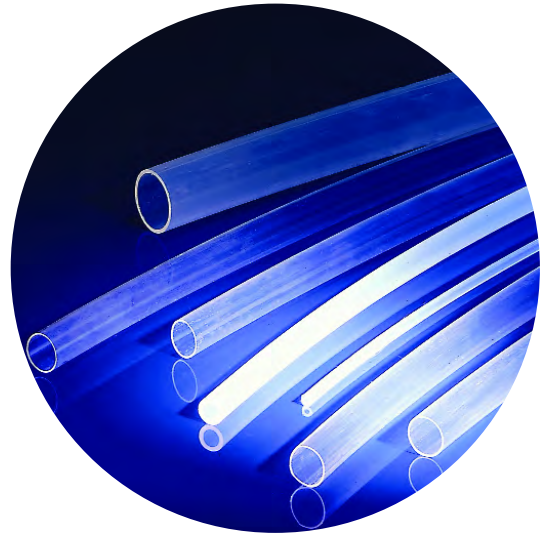
Tools up to 110mm diameter are available in different wall thicknesses

PFA tubing

PFA

PFA is an outstanding fluoroplastic with the best temperature stability of all meltable fluoroplastics. Our PFA tubing is distinguished by its excellent chemical and physical properties largely identical with those of PTFE. The essential differences in comparison with PTFE are low cold flow, improved mechanical properties, reduced permeation and improved light transmittance. Welding is possible as with all melt processable fluoroplastics, because PFA enters the phase of liquefaction at approximately 310°C. Using suitable colouring agents, our PFA tubes can be supplied in various colours and with fillers on request.

Our PFA-tubes are exclusively produced on basis of excellent raw material from well known manufacturers like Dupont, Dyneon or Daikin. We also deliver HP (high purity) and antistatic tubes in addition to tubes made of all "common" PFA-Types.



Product Facts and Data at a Glance

- Temperatures stability from -70°C to +260°C
- Excellent resistance to pressure
- Large factory lengths possible
- Very narrow tolerances on request
- Also available in cut-to-length sections
- Customized sizes - tooling costs not charged in most case

Standard Tolerances for FEP-, MFA-, PFA-Tubing			
Inner Diameter (mm)	Tolerance (mm)	Wall Thickness (mm)	Tolerance (mm)
1 - 7	+/-0.10	0.10 - 0.30	+/-0.05
7 - 15	+/-0.15	0.20 - 1.00	+/-0.10
15 - 30	+/-0.20	0.20 - 2.00	+/-0.15
30 - 80	+/-0.25	0.20 - 5.00	on request
80 - 110	+/-0.30	0.20 - 5.00	on request

Tolerances not listed here should be discussed with our sales staff and indicated on your order sheet

PTFE tubing

PTFE

PTFE (polytetrafluoroethylene) is better known as Teflon® to most users. Its excellent antifriction properties in connection with high temperature stability of up to +260°C and wide resistance to aggressive liquids, have made Teflon® PTFE well known in recent years. Our PTFE tubes are put to use in many different fields of application. Due to these various uses, our tubes are subject not only to the DIN EN ISO standard 9001 introduced in 1997, but also to many other standards for a variety of requirements, such as the UL approval, MIL, AMS, ASTM, DIN and the biocompatibility test. In order to meet the user's demand for top quality, 01 tubing represents state-of-the-art technology, with only the purest (virgin) raw materials being used for production. As for the medical sector, we supply tubing manufacturing in a strictly clean room environment. In addition to the milk white colour of the PTFE material, our tubes are available in 10 other colours, even bi-coloured. Our PTFE tubes are used in many different fields of application. There are a number of applications where PTFE may be the suitable material but not exactly the right choice for our customers. In such cases we shall always endeavour to find a more suitable alternative. To meet our customer's specifications, we have developed antistatic tubing, tubing with improved thermal conductivity and high abrasive resistance. Please find our standard sizes in the following table.

PTFE tubing supplied by IFK Isoflour is manufactured to the standard tolerances shown in the table below. Other tolerances are available upon request. Please contact our sales team for further information. We will be pleased to assist you with any information you require.



Standard Tolerances according to GKV

Inner Diameter (mm)	Tolerance (mm)	Wall Thickness (mm)	Tolerance (mm)
1 - 5	+/-0.20	0.1 - 0.3	+/-0.05
5 - 7	+/-0.25	0.3 - 0.6	+/-0.10
7 - 10	+/-0.30	0.6 - 1.0	+/-0.15
10 - 15	+/-0.35	1.0 - 2.0	+/-0.20

Tolerances not listed here should be discussed with our sales staff and indicated on your order sheet

valves

Valves

Saint Gobain Performance Plastics comprehensive range of Furon valves benefit from State of the art, patent protected technology. The newest generation of Furon valves are constructed from high purity, injection moulded flouropolymers including high purity PFA.

Innovative designs and construction ensure optimal systems performance, media purity, and maintenance free operation.

The range of valves available are shown below.



Furon® UPM 1000 Valve



- 2-way and 3-way high purity PFA valves
- Pneumatic, Manual Quarter Turn, and Manual Multi-turn
- 1/4" 1/2" 3/4" Orifice

Furon® J-Series Valve



- 2-way high purity PFA chemical distribution valves
- Pneumatic, Manual Toggle, and Manual Multi-turn
- 3/4" Orifice

Furon® HPV High Performance Diaphragm Valve



- 2-way and 3-way high purity PFA valves
- Pneumatic, Manual Quarter Turn, and Manual Multi-turn
- 1/4" Orifice

Furon® RDVM and SMDVM Self-Manifolding Distribution Valve



- 2-way high purity PFA chemical distribution valves
- Pneumatic, Manual Quarter Turn, and Manual Multi-turn
- 1/4" Orifice

Furon® CDV-1000 Compact Diaphragm Valve

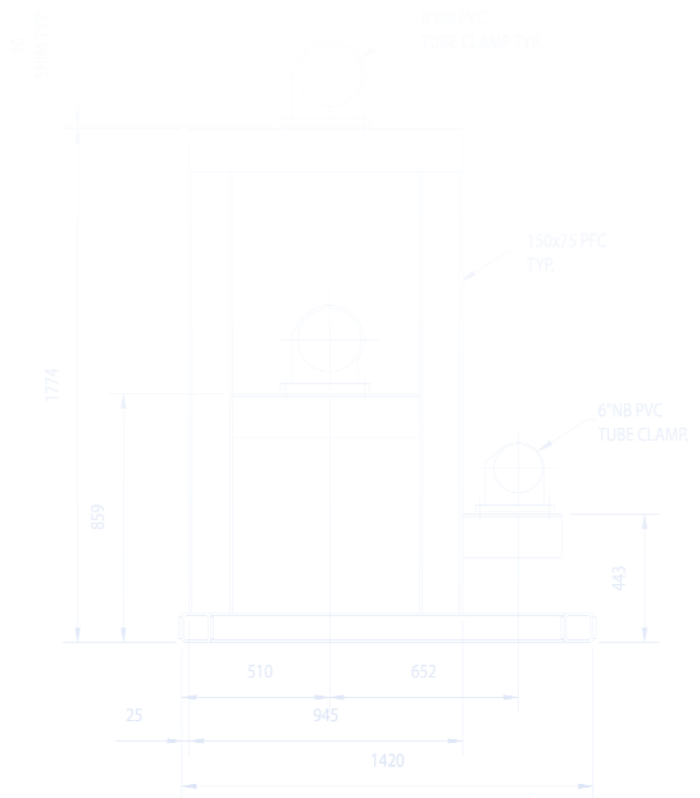


- 2-way and 3-way high purity PFA & PTFE valves
- Pneumatic and Manual Multi-turn
- 1/2" Orifice

Furon® MCVM Mini & LCVM Large Check Molded Valve



- one way media actuated high purity valve
- High purity PFA and PTFE construction
- Metal-free design



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SECTION X-Y

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NEW ϕ 100 GATE VALVE

ϕ 100 St.St. Gr316 Sch 10

910

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EXISTING ϕ 200 DUCTILE IRON SLUDGE PIPEWORK

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