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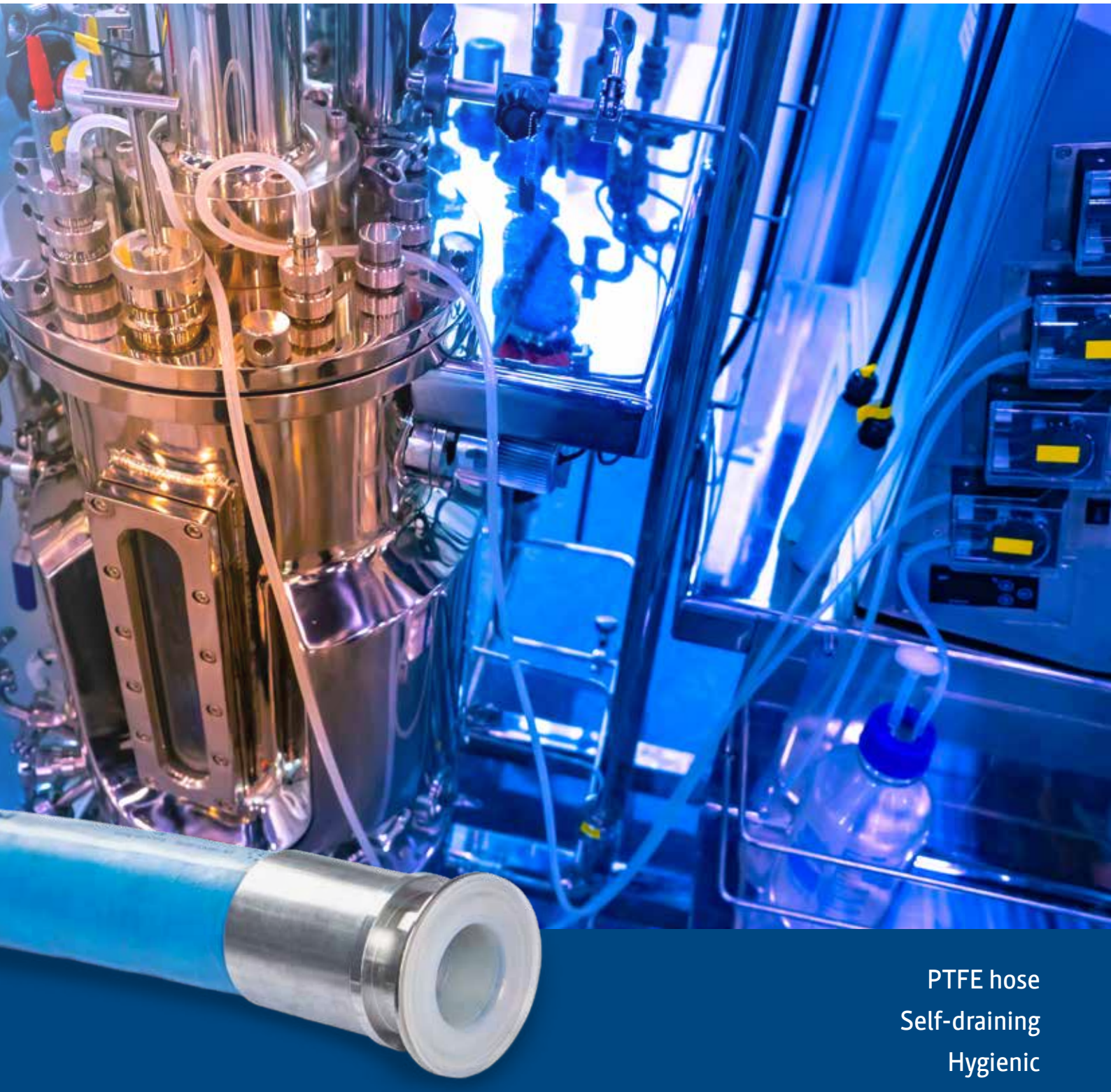
PURE-flow

PTFE Lined Flexible Hoses for Biotech & Pharmaceutical



PTFE hose
Self-draining
Hygienic
Flexible and kink resistant
High purity
CIP/SIP
Chemical resistant
Long service life
Increased flow rate

PURE FLOW® X

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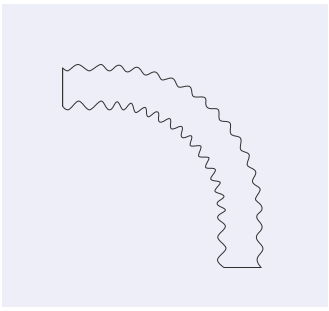
Pure-Flow®: the newest member of the Flow-Family

With the Pure-Flow® range of products, Xtraflex introduces a new PTFE hose design to its range - a smooth-convoluted PTFE hose. This design combines the best of both worlds, the ultimate cleanability of a smooth PTFE hose with the excellent flexibility of a convoluted hose. This makes it ideally suited for pharmaceutical-, biotech- or food applications.

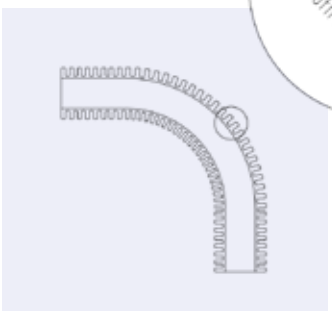
Hose design

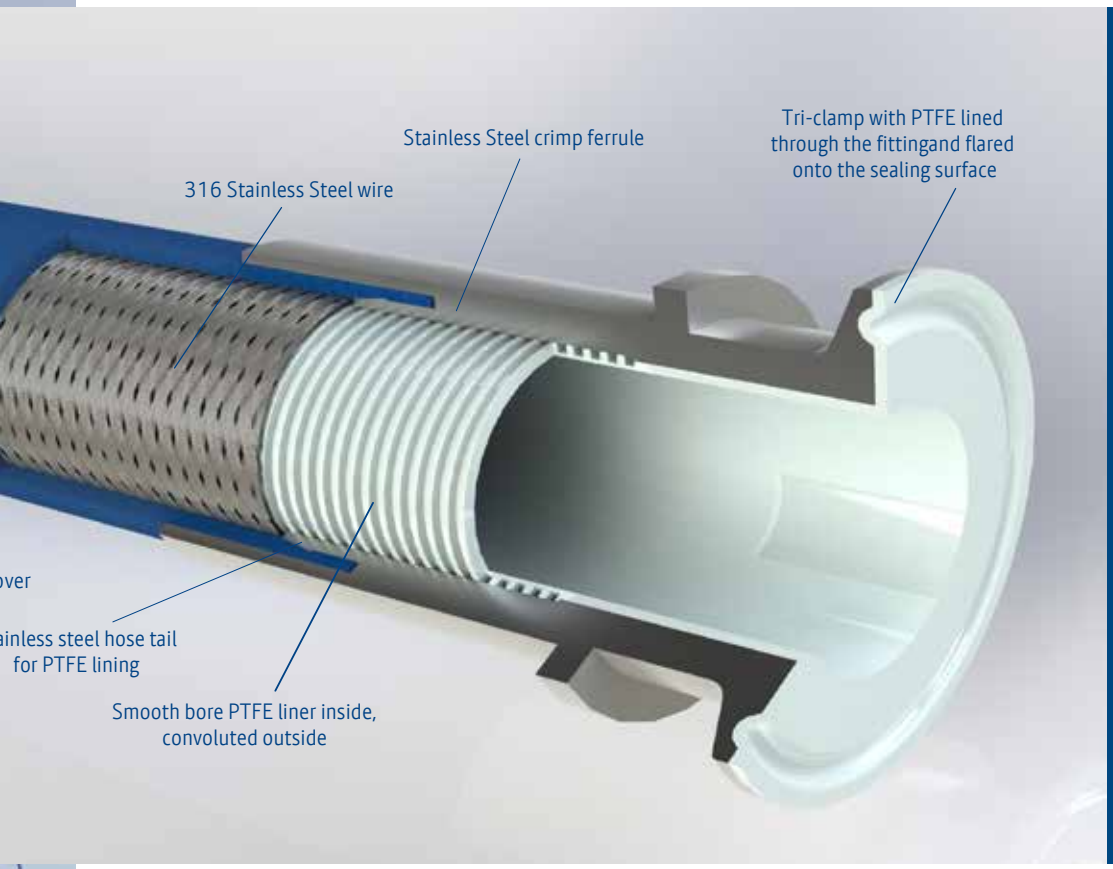
The concept of this hose design makes it possible to create a hose that is **completely smooth on the inside**, but **convoluted on the outside**. All Pure-Flow® braids are made from high tensile AISI 316L Stainless Steel wire. The EPDM rubber cover is available in blue and black (antistatic) as standard. Custom colors for the EPDM cover are also available, upon request.

Convoluted hose liner



Xtra-Flow hose liner





This hose design has several important advantages over a conventional convoluted hose:

- Improved cleanability
- Increased flow rates
- Even better self-draining
- Higher pressure ratings
- Non-whistling
- Less sensitive to deformation at higher temperatures

Pure-Flow® hose liners:
Virgin or anti-static?

Pure-Flow® can be supplied with a virgin (white) or anti-static (black) PTFE liner.

Virgin

All Pure-Flow® hose liners are made out of copolymer PTFE powders that guarantee a very long flex-life. The virgin version of the Pure-Flow® is intended for **general applications** (fluids or gases) **that don't pose any risk for electrostatic build-up**. All hose liners are **FDA and USP CLASS VI approved**.

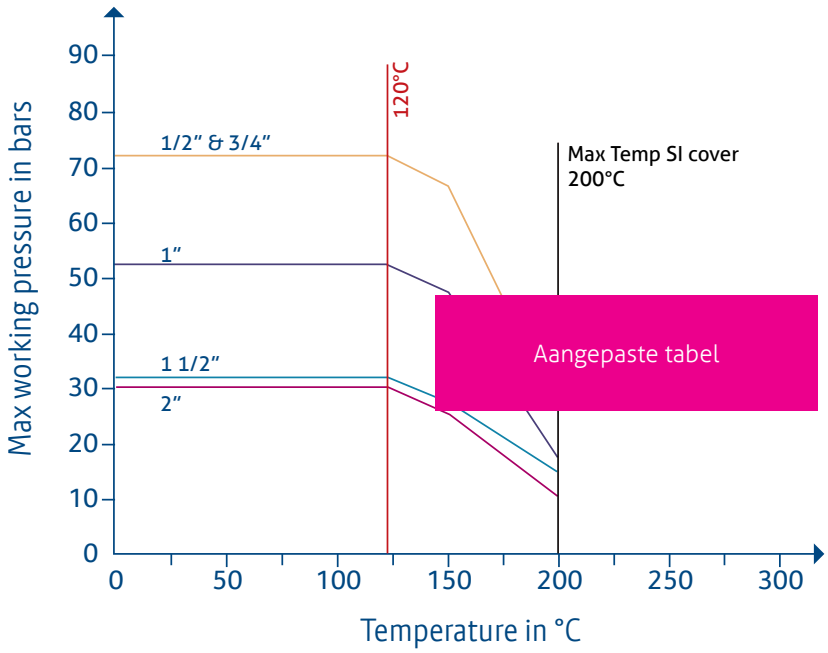
Anti-Static

Virgin PTFE is a very good electrical insulator and therefore carries the risk of electrostatic charge building up in specific applications. Electric charges can build up by processing certain liquids or by processing liquids at high speeds. The higher velocity of the liquid can result in a higher build-up of static charge. Applications with steam are a good example of possible causes for electrostatic build-up. This eventually can lead to electrostatic discharge, which can cause leakage of the hose, fire or even, under specific conditions, an explosion.

To avoid this risk, the hose needs to be made **conductive**. This is achieved **by adding a low percentage of (FDA approved) carbon** to the PTFE. As a result of this carbon, the liner of the hose becomes conductive and therefore **avoids electrostatic build-up**. The hose should be grounded in order to avoid this kind of electrostatic build-up.

Pure-Flow®:
Temperature-pressure rating

Temperature & pressure resistance graph for Pure-Flow®



Due to the Smooth-Convoluted construction of the Pure-Flow®, the pressure rating at higher temperatures is greater than that of a conventional convoluted hose. The thicker wall and smooth profile give the liner more strength and form stability.

Pure-Flow®:
Rolling U-test

Pure-Flow® is a hose that can be used in a large variety of applications. The hose was designed for intense use and has proven to have a service life that exceeds that of other hose designs available in the market.

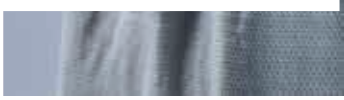
To simulate very intensive use, we have performed the rolling U-test on several Pure-Flow® hose assemblies. This setup allows us to conduct testing on hoses under both pressure and vacuum whilst bending the hose with a roll-movement at a steady pace, and at the minimum bend radius. Test results show that all tested hoses have exceeded 500.000 roll cycles without any problem.

These results confirm that our Pure-Flow® hoses are able to withstand the most demanding applications when it comes to flex-life whilst being put under pressure or vacuum.

As for other Xtraflex hoses, this hose design also guarantees a long and stable service life.

Pure-Flow®:
Specifications

Size	Hose id D1 Nom	Hose od D3 Nom	Bend r	MAX WP (SF4)	BP	Weight	Vacuum Barg 20° C	Ref Virgin	Ref Anti-static
			mm	Barg 20° C		g/m			
1/2"	13,10	23,00	37	114	457	522	-0,9	**TSCMB2EP012**	**TASCMB2EP012**
5/8"	16,30	27,00	50	102	409	603	-0,9	**TSCMB2EP016**	**TASCMB2EP016**
3/4"	19,60	31,00	77	87	347	817	-0,9	**TSCMB2EP020**	**TASCMB2EP020**
7/8"	22,15	35,00	78	85	340	990	-0,9	**TSCMB2EP022**	**TASCMB2EP022**
1"	25,50	38,70	80	81	324	1016	-0,9	**TSCMB2EP025**	**TASCMB2EP025**
1 1/4"	32,40	46,00	100	63	251	1272	-0,9	**TSCMB2EP032**	**TASCMB2EP032**
1 3/8"	34,80	50,00	130	60	240	1541	-0,9	**TSCMB2EP035**	**TASCMB2EP035**
1 1/2"	39,00	52,00	145	55	220	1735	-0,9	**TSCMB2EP040**	**TASCMB2EP040**
1 7/8"	47,70	61,00	210	48	192	2113	-0,9	**TSCMB2EP048**	**TASCMB2EP048**
2"	51,00	67,00	250	47	189	2318	-0,9	**TSCMB2EP050**	**TASCMB2EP050**



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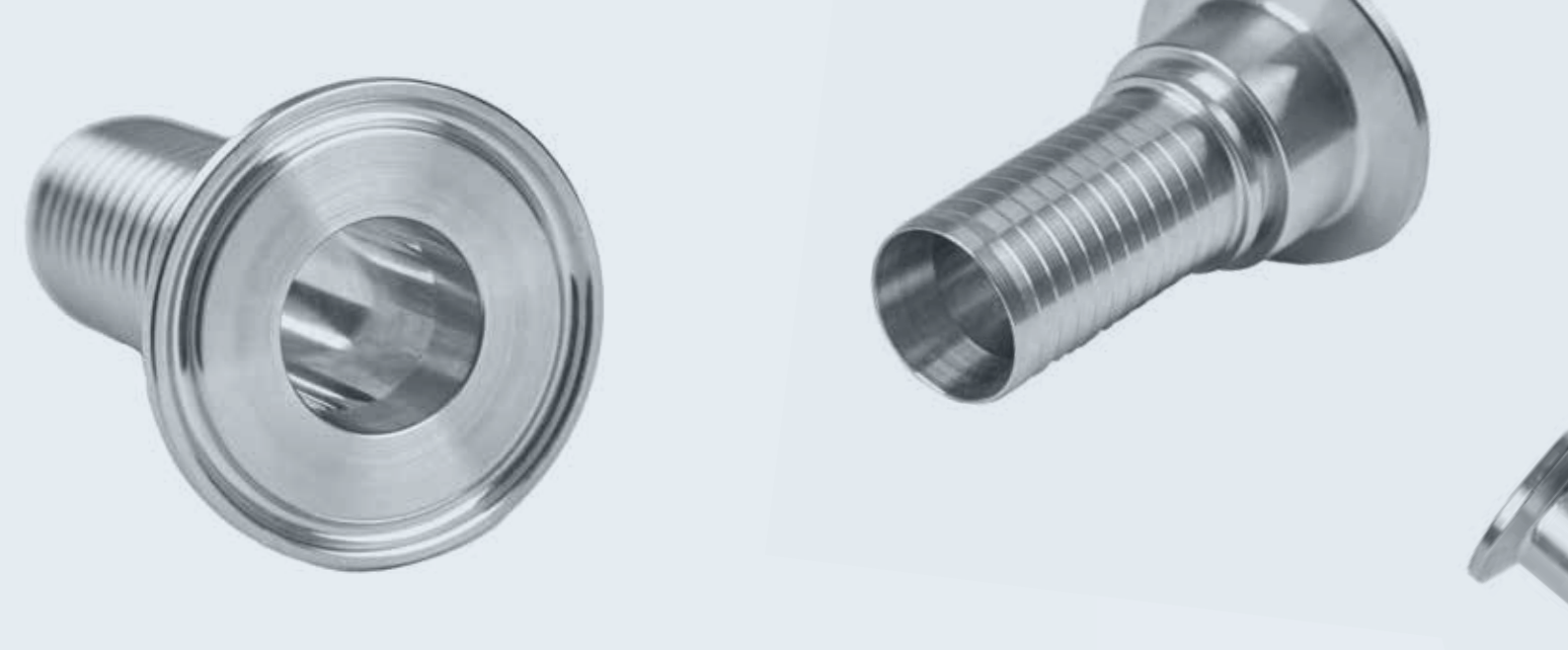
The Specialist in Fluid conduction

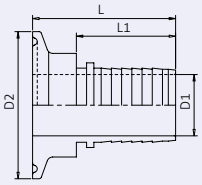
Certificates and approvals

- ATEX
- FDA
- USP-VI
- EN16643
- Pressure Test certification
- EN ISO 9001:2015
- EN ISO 14001:2015
- 3-A Sanitary Standards
- BPSA leachables and extractables testing
- EN45545-2-2013
- Material 3.1



Pure-Flow® fittings

TRI



Triclamps

Triclamp fittings exist in a lot of different dimensions and can be finished according to several **different standards**. Also special triclamp fittings, elbows, adapters and others **can be made to customer order**.

The **most common standards** for triclamp fittings are:

- DIN 32676 Reihe A (DIN sizes)
- DIN 32676 Reihe B (ISO sizes)
- DIN 32676 Reihe C (ASME BPE sizes)

Our standard triclamp fittings are made out of stainless steel AISI 316L (1.4404), crimping ferrules are made out of stainless steel AISI 303/304L (1.4305/1.4301) as standard. Fittings can also be supplied in other materials, to customer specification.

The surface roughness of the inside of the fitting can be made to customer specification or conform the requested standard. To achieve this we use mechanical polishing and electropolishing. Measuring reports and certificates can be ordered for each individual fitting, to confirm the surface roughness of each individual component.

The pressure ratings for triclamp fittings go up to 16 bar (230 psi). Gaskets in different materials can be supplied with the hose/fittings.

DIN 32676 Series A (DIN)

NOMINAL SIZE		FLANGE DIAMETER		ID FITTING		REFERENCE
Inch	DN	Inch	mm	Inch	mm	
1/4	6	0.984	25	0.236	6	TRI252xxx060
5/16	8	0.984	25	0.315	8	TRI252xxx080
3/8	10	1.339	34	0.394	10	TRI342xxx100
1/2	15	1.339	34	0.630	16	TRI342xxx160
3/4	20	1.339	34	0.787	20	TRI342xxx200
1	25	1.988	50.5	1.024	26	TRI502xxx260
1 1/4	32	1.988	50.5	1.260	32	TRI502xxx320
1 1/2	40	1.988	50.5	1.496	38	TRI502xxx380
2	50	2.520	64	1.969	50	TRI642xxx500

DIN 32676 Series B (ISO)

NOMINAL SIZE		FLANGE DIAMETER		ID FITTING		REFERENCE
Inch	DN	Inch	mm	Inch	mm	
1/4	10.2	0.984	25	0.276	7	TRI252xxx070
5/16	13.5	0.984	25	0.406	10.3	TRI252xxx103
3/8	17.2	0.984	25	0.551	14	TRI252xxx140
1/2	21.3	1988	50.5	0.713	18.1	TRI502xxx181
3/4	26.9	1988	50.5	0.933	23.7	TRI502xxx237
1	33.7	1988	50.5	1169	29.7	TRI502xxx297
1 1/4	42.4	2520	64	1512	38.4	TRI642xxx384
1 1/2	48.3	2520	64	1744	44.3	TRI642xxx443
2	60.3	2217	77.5	2217	56.3	TRI772xxx563

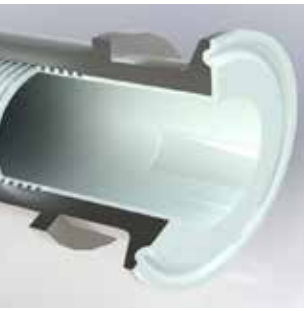
DIN 32676 Series C (ASME)

NOMINAL SIZE		FLANGE DIAMETER		ID FITTING		REFERENCE
Inch	DN	Inch	mm	Inch	mm	
1/4	6	0.984	25	0.180	4.57	TRI252xxx046
3/8	10	0.984	25	0.305	7.75	TRI252xxx078
1/2	15	0.984	25	0.370	9.4	TRI252xxx094
3/4	20	0.984	25	0.620	15.75	TRI502xxx158
1	25	1.988	50.5	0.870	22.1	TRI502xxx221
1 1/2	40	1.988	50.5	1.370	34.8	TRI502xxx348
2	50	2.520	64	1.870	47.5	TRI642xxx475

Other fitting types

While triclamps are the most commonly used fittings in the pharmaceutical and Biotech industry, the possibilities are very broad.

Pure-Flow® hoses can be supplied with DIN/ANSI/JIS flanges, DIN11851/ SMS1145/cam & groove fittings, tube or threaded fittings and many more. Also fittings made to customer specification can be manufactured in our own machine shop.



Lined & flared fittings

With lined & flared fittings, the PTFE liner of the hose itself is being lined through the inside of the fitting and flared onto the sealing surface of the fitting. The advantage of this technique is that there are no transitions between different materials, no gaps or places where residues of fluids can stay behind. This makes cleaning of the hoses even easier.

The possibilities are very broad since all fitting types with a flat sealing surface can be lined and flared. The most popular PTFE flared fittings are triclamps, flanges, cam & groove and DIN 11851 fittings. It is also possible to line and flare several other fitting types.

Thread- & tube fittings

The possibilities for thread and tube fittings for the Pure-Flow® range are very broad. The most common thread and tube fittings can be ordered as standard but also fittings made to customer specification can be made in our machine shop. For more information on the possibilities, please contact our sales team.

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Especialista en conducción de fluidos

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