Customised tubing PAN, PEN, PLN, PUN

FESTO



Characteristics

At a glance

Customized hose PUN, PAN, PEN, PLN for different requirements for pressure, temperature, flexibility and environmental influences.

- PUN: Polyurethane tubing; high resistance to stress cracks; suitable for energy chains; operating media: compressed air, vacuum
- PAN: Polyamide tubing; thermally and mechanically highly resilient; high resistance to microbes; operating media: compressed air, vacuum
- PEN: Polyethylene hose; high resistance to chemicals and very high resistance to hydrolysis; extensive resistance to common cleaning agents and lubricants; suitable for energy chains; operating media: compressed air, vacuum, water (for water, see manufacturer's declaration at www.festo.com/certificates/PEN_S)
- PLN: Polyethylene hose; high resistance to chemicals, microbes and hydrolysis; for suitability for use in the food industry, see www.festo.com/certificates/PLN; operating media: compressed air, vacuum, water (for water according to manufacturer's declaration, see www.festo.com/certificates/PLN)

Additional documents

Link online

The additional document TUBING-ADD contains further information on application detailssuch as tubing-fitting combinations, installation instructions, and measurement procedures.

Ordering data - modular system

Link online

This product and all its product options can be ordered online via the configurator.

- Individual lengths: delivered in units of 25, 50, 100, 200 ... 500 m
- Minimum order quantity: depending on diameter from 1500m/3000m (or less depending on type)
- Customized design: specific printing possible
- Individual color selection easier recognition and handling
- 9 basic colors, other colors on request
- Select, size and order easily, quickly and reliably via the configurator

Engineering Tools

Link engineering tools

Save time with engineering tools: Smart engineering for the optimal solution. Our goal is to increase your productivity. Our engineering tools play an integral part in achieving this goal. Throughout the entire value chain, they help you size your system correctly, tap into unimagined productivity reserves or generate additional productivity. In every phase of your project, from initial contact to modernization of your machine, you will come across a number of tools that will prove beneficial to you.

- Flow calculation: Determine the nominal flow rate by entering parameters such as input pressure, outlet pressure, tube length and internal diameter (www.festo.com/x/flowrate-calculation).
- Media resistance: Assess the resistance of various types of materials and tubing from Festo to different chemicals and media (www.festo.com/x/media-resistance).

Alternative material characteristic

[H] Hydrolysis-resistant

- High resistance to microbes and hydrolysis
- Food grade see www.festo.com/certificates/PUN_H
- Suitable for energy chains
- Operating media: compressed air, vacuum, water

[CM] Anti-static

- Provides maximum protection for electric and electronic components while offering the proven reliability of the standard PUN tubing.
- Plastic tubing, antistatic, electrically conductive
- Suitable for energy chains
- Operating medium compressed air, vacuum

Characteristics

[V0] Flame retardant

- Flame retardant according to UL 94 V0 ... V2
- For use in the close vicinity of welding applications
- Highly resistant to microbes
- Suitable for energy chains
- Operating media: compressed air, vacuum, water

Note: Before the plastic tubing PAN-V0 can be inserted into the push-in fitting QS-V0, the PVC sheathing of the tubing has to be cut to length by dimension X (see dimensional drawing). The integrated stop in the PAN-V0S tubing cutter, which is available as an accessory, ensures that the sheathing is always cut to the correct length X. The blade design prevents damage to the inner polyamide tubing.
Fora dimensional drawing, see the downloadable product PDF.

[MF] Automotive approval certificate (DIN 73378)

- Ideal for use in mobile pneumatics: meets standard DIN 73378
- High thermal and mechanical load capacities
- Meets the requirements according to DIN 73378 “Polyamide tubing for use in motor vehicles”
- Operating media: compressed air, mineral oil

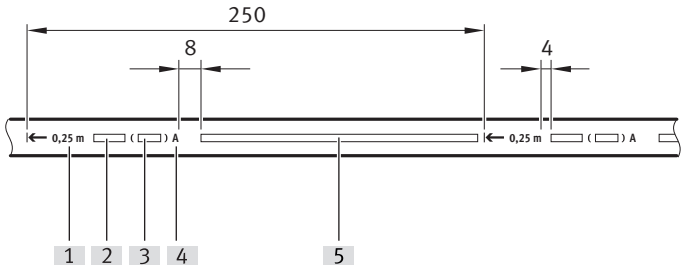
[R] Robust

- Powerful performance at pressure ranges up to 20 bar: e.g. in applications using the pressure booster DPA
- For applications with high pressure ranges
- Highly resistant to microbes
- Operating medium compressed air, vacuum

Labeling text

The tubing can be customized with printing as an option.

[TXT] Specific hose labeling



[1] Section marker
[2] Production period and factory according to FN 940065
[3] Monthly information in plain text
[4] Material coding
[5] Specific printing

Printing ink: Black RAL 9011. Exceptions are as follows:

- Printing ink = white for tubing in the color black (SW) & translucent black (TSW)
- All PEN & PLN tubing (depending on the tubing color, the printed inscription appears between almost white and gray)

Note:

- The specific printing can comprise a maximum of 90 characters.
- Accepted characters: A-Z, a-z, 0-9, # ; , % < & = ‘ > (@) [* +] ^ - _ . ` / | : ~
- The print is repeated every 250 mm.
- The section marker at intervals of 250 mm can be deselected.

Type code

001	Series	
PLN	Plastic tubing, polyethylene, standard O.D.	
PEN	Plastic tubing	
PAN	Standard O.D. tubing	
PUN	Plastic tubing, polyurethane	

002	Color	
BL	Blue	
BR	Brown	
GE	Yellow	
GN	Green	
NT	Natural	
RT	Red	
SI	Silver	
SW	Black	
TBL	Translucent blue	
TGE	Translucent yellow	
TGN	Translucent green	
TRT	Translucent red	
TSW	Translucent black	
WS	White	

Datasheet

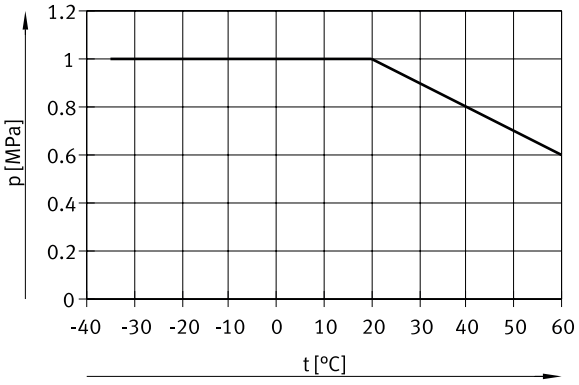
Operating and environmental conditions

Type code	PAN-MF, PAN, PAN-R	PLN	PEN	PUN-H, PUN, PUN-V0, PUN-V0-C, PUN-CM
Outside diameter	4 ... 16 mm			3 ... 16 mm
Inside diameter	2.5 ... 12 mm	2.9 ... 12 mm	2.7 ... 10.8 mm	2 ... 11 mm
Temperature-dependent operating pressure	-0.95 ... 35 bar	-0.95 ... 14 bar	-0.95 ... 10 bar	-0.95 ... 30 bar
Operating medium	Compressed air as per ISO 8573-1:2010 [7:-:-], Mineral oil	Compressed air as per ISO 8573-1:2010 [7:-:-], Water (liquid, ice-free)		Compressed air as per ISO 8573-1:2010 [7:-:-]
Ambient temperature	-60 ... 100°C	-30 ... 80°C	-30 ... 60°C	-35 ... 60°C
Certification	TÜV			
Certificate issuing authority	B 013277 0527 00			
Tubing characteristics	–		Suitable for energy chains	

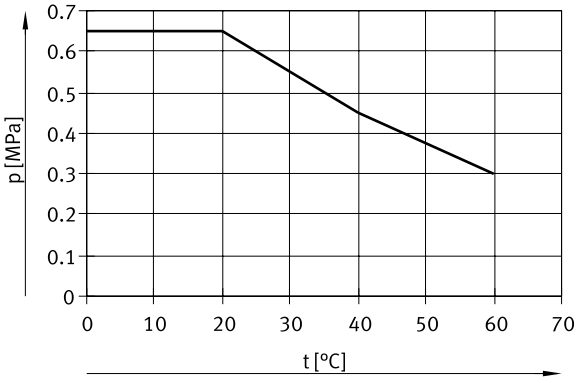
Materials

Type code	PAN-MF, PAN, PAN-R	PLN	PEN	PUN-H, PUN, PUN-V0, PUN-V0-C, PUN-CM
Material of pneumatic tubing	PA12-P TPE-A	Protective grounding		TPE-U(PU)
Shore hardness	–		D 52 +/-3	–
Note on materials	RoHS compliant			
LABS (PWIS) conformity	VDMA24364-B2-L			
Cleanroom suitability, measured according to ISO 14644-14	Statically installed element, no meaningful evaluation possible according to ISO 14644-1			

Operating pressure p as a function of temperature t



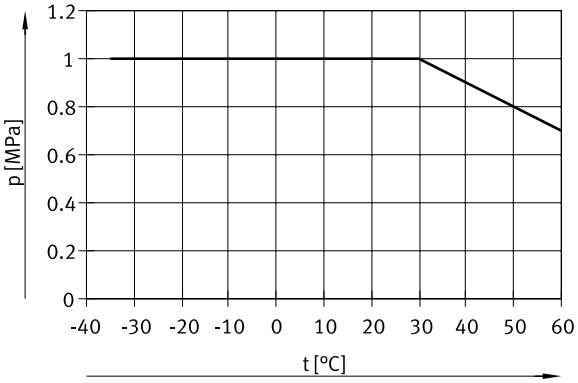
Operating pressure p as a function of temperature t (PUN-H; medium: water)



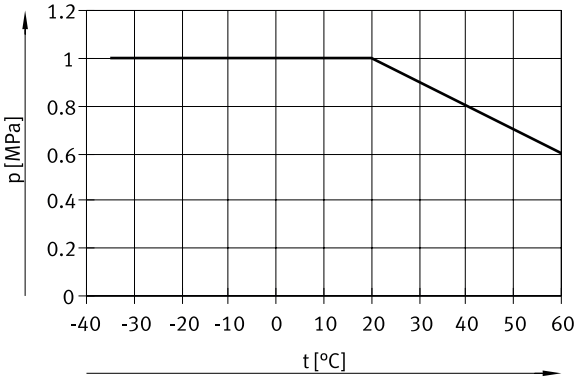
Deviating maximum operating pressures apply to the medium water, with a safety factor of s=4.

Datasheet

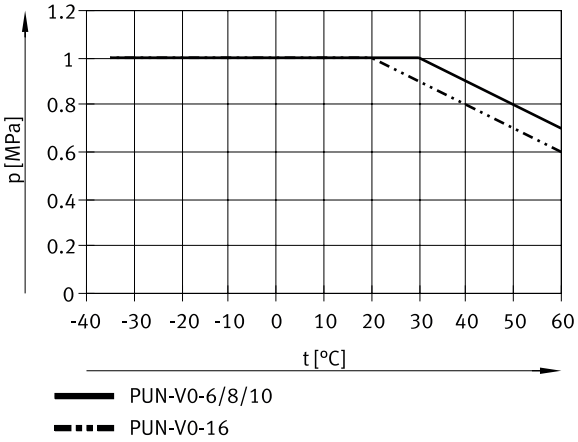
Operating pressure p as a function of temperature t (PUN)



Operating pressure p as a function of temperature t (PUN-CM)

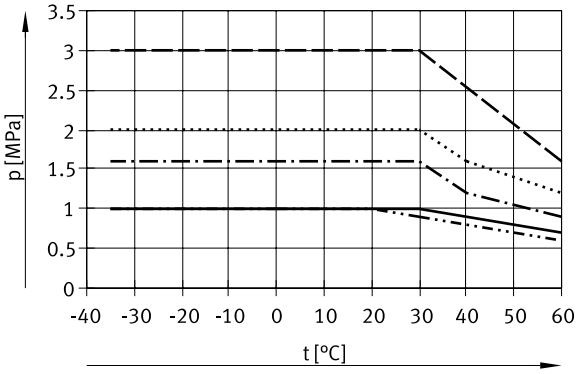


Operating pressure p as a function of temperature t



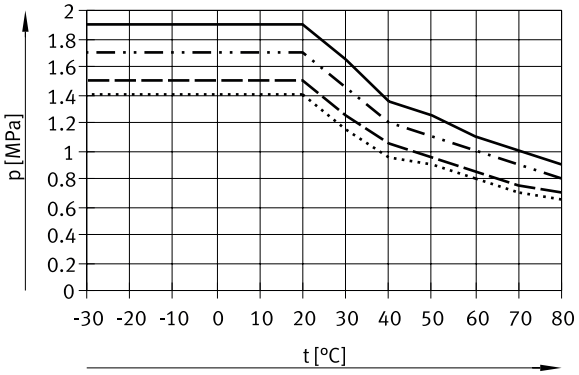
Datasheet

Operating pressure p as a function of temperature t



- PUN-V0-...-C
- PUN-V0-14x2-...-C
- PUN-V0-6x2-...-C
- PUN-V0-8x2-...-C
- PUN-V0-10x2-...-C

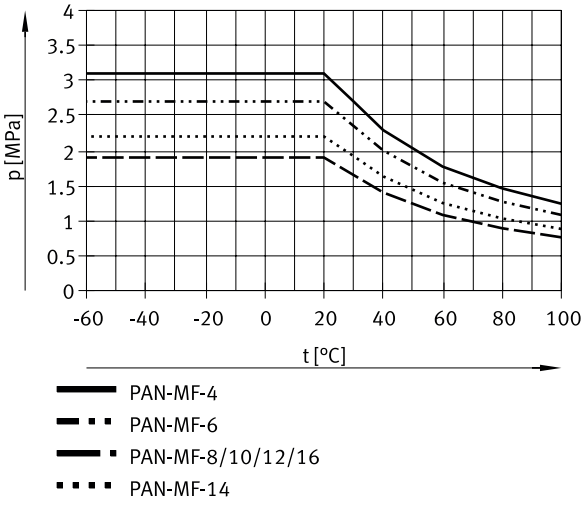
Operating pressure p as a function of temperature t (PAN)



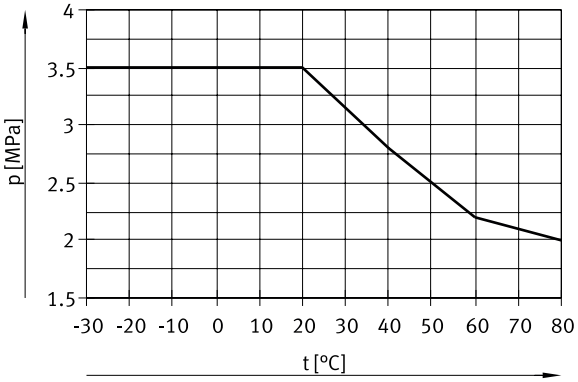
- PAN-6
- PAN-4/8
- PAN-10/12/14
- PAN-16

Datasheet

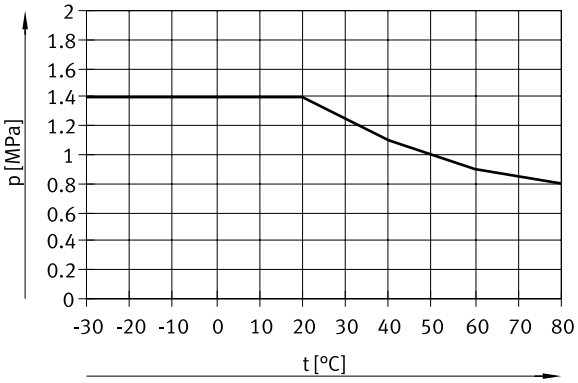
Operating pressure p as a function of temperature t (PAN-MF)



Operating pressure p as a function of temperature t (PAN-R; external Ø 4 ... 16 mm)

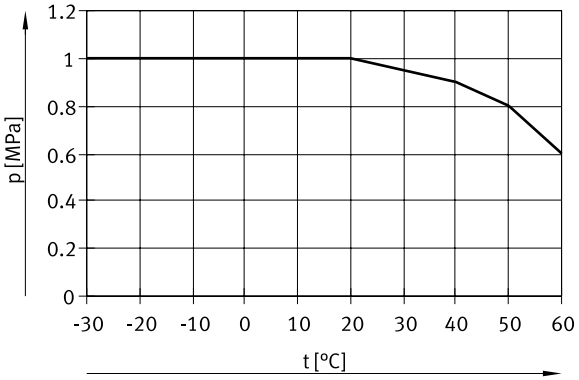


Operating pressure p as a function of temperature t (PAN-R; external Ø 22 ... 28 mm)

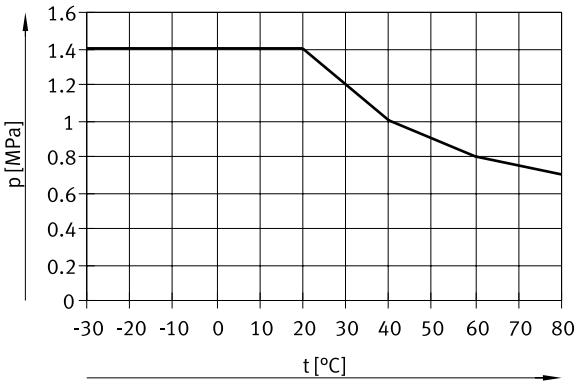


Datasheet

Operating pressure p as a function of temperature t (PEN)

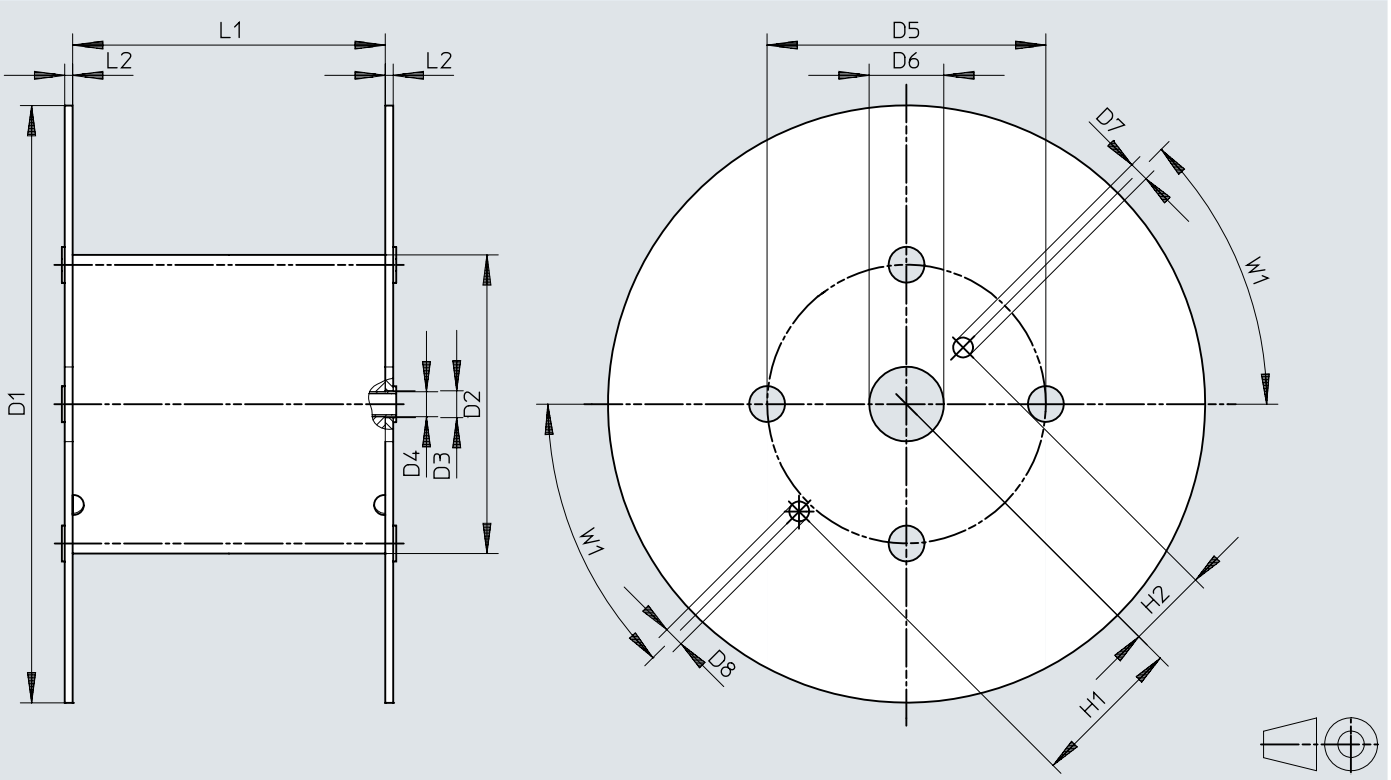


Operating pressure p as a function of temperature t (PLN)



Dimensions

Dimensions – Reel Download CAD data www.festo.com

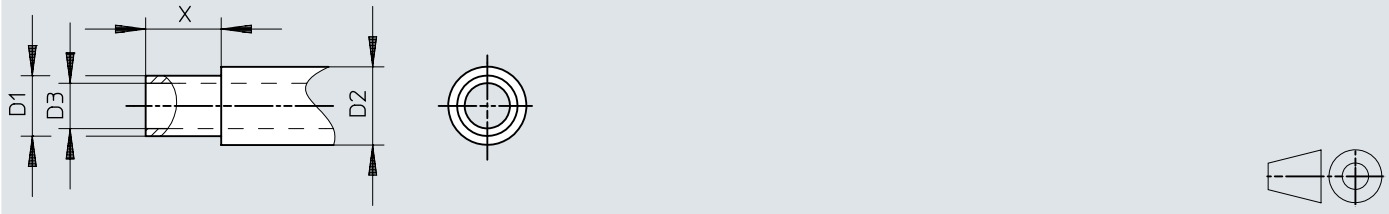


	D1 ø	D2 ø	D3 ø	D4 ø	D5 ø	D6 ø	D7 ø	D8 ø	H1	H2	L1	L2	W1
PAN-4x0,75-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PAN-6x1-...-500													
PAN-8x1,25-...-400		310			280						254		
PAN-10x1,5-...-300	600												
PAN-12x1,75-...-200													
PAN-16x2-...-100	545												
PAN-MF-4x0,75-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PAN-MF-6x1-...-500	600	310			280						114		
PEN-4x0,75-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PEN-6x1-...-500													
PEN-8x1,25-...-400		310			280						254		
PEN-10x1,5-...-300	600												
PEN-12x1,75-...-200													
PEN-16x2,5-...-100	545												
PUN-3x0,5-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PUN-4x0,75-...-500													
PUN-6x1-...-500	600	310			280						114		
PUN-8x1,25-...-400	545										254		
PUN-10x1,5-...-300	600												
PUN-12x2-...-200													
PUN-16x2,5-...-100	545												
PUN-H-3x0,5-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PUN-H-4x0,75-...-500													
PUN-H-6x1-...-500													
PUN-H-8x1,25-...-400		310			280	75	20	20	152,5	80,5	254	8	45°
PUN-H-10x1,5-...-300	600												
PUN-H-12x2-...-200													
PUN-H-16x2,5-...-100	545												

Dimensions

Dimensions – Tubing cutter PAN-V0S

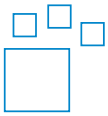
Download CAD data www.festo.com



	D1 ø	D2 ø	D3 ø	X
PAN-V0S-4	4	6	2,5	14,7±1
PAN-V0S-6	6	8	4	15,7±1
PAN-V0S-8	8	10	6	16,7±1
PAN-V0S-10	10	12	7,5	19,2±1
PAN-V0S-12	12	14	9	22,7±1

Ordering data

Ordering data – Modular product system



Type code	Part no.	Type
PAN PAN-MF PAN-R	**553610**	**PAN**
PEN	**553769**	**PEN**
PLN	**553850**	**PLN**
PUN PUN-CM PUN-H PUN-V0 PUN-V0-C	**553573**	**PUN**

Accessories

Tubing cutter PAN-V0S



Inside diameter	Color	Product weight	Part no.	Type
4 mm	Gray	20 g	**133180**	**PAN-V0S-4**
6 mm			**133181**	**PAN-V0S-6**
8 mm		21 g	**133182**	**PAN-V0S-8**
10 mm			**133183**	**PAN-V0S-10**
12 mm			**133184**	**PAN-V0S-12**