Customised tubing PAN, PEN, PLN, PUN

FESTO

Characteristics

At a glance

Customised tubing PUN, PAN, PEN, PLN for different requirements for pressure, temperature, flexibility and environmental influences.

- PUN: polyurethane tubing; very resistant to stress cracks; suitable for energy chains; operating media: compressed air, vacuum
- PAN: polyamide tubing; thermally and mechanically highly resilient; very resistant to microbes; operating media: compressed air, vacuum
- PEN: polyethylene tube; highly resistant to chemicals and extremely resistant to hydrolysis; largely resistant 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 tube; highly resistant to chemicals, microbes and hydrolysis; for suitability 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 details, such 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: from 1500 m/3000 m (or less depending on type) depending on diameter
- Customised design: specific printing possible
- Individual colour selection for easier recognition and handling
- 9 basic colours, other colours available on request
- Select, size and order quickly, easily and reliably with 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. They help you size your system correctly, tap into unimagined productivity reserves and generate additional productivity along the entire value chain. In every phase of your project, from the initial contact to the modernisation of your machine, you will come across a number of different tools that will be of use to you.

- Flow calculation: Determine the nominal flow rate by entering parameters such as input pressure, output pressure, tube length and internal diameter (www.festo.com/x/flowrate-calculation).
- Media resistance: Evaluate 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

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

[CM] Antistatic

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

Characteristics

[V0] Flame-retardant

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

Note: Before the plastic tubing PAN-V0 can be inserted into the push-in fitting QS-V0, the tubing's PVC sheath must be cut by length X. The integrated stop that is included as an accessory with the tubing cutter PAN-V0S ensures that the sheath is always cut to the correct length X. The design of the blade means that the inner polyamide tubing does not get damaged.
See the downloadable product PDF for the dimensional drawing.

[MF] Automotive approval certificate (DIN 73378)

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

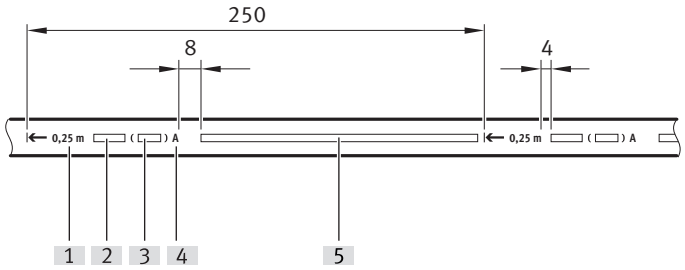
[R] Sturdy

- 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

Labelling text

The tubing can be customised with printing as an option.

[TXT] Specific tubing labelling



[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 black tubing (BL) & translucent black (TBL)
- All PEN & PLN tubing (depending on the tubing colour, the printed inscription looks to be between almost white and grey)

Note:

- The specific printing can comprise a maximum of 90 characters.
- Accepted characters: A-Z, a-z, 0-9, # ; , % < & = ‘ > (@) [* +] ^ - _ . ` / | : ~
- The pressure 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	

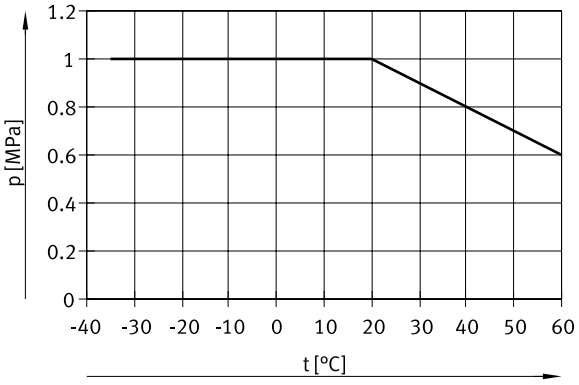
002	Colour	
BL	Blue	
BR	Brown	
GE	Yellow	
GN	Green	
NT	Natural	
RT	Red	
SI	Silver	
SW	Black	
TBL	Translucent blue	
TGE	Translucent yellow	
TGN	Translucent green	
TRT	Translucent red	
TSW	Translucent black	
WS	White	

Datasheet

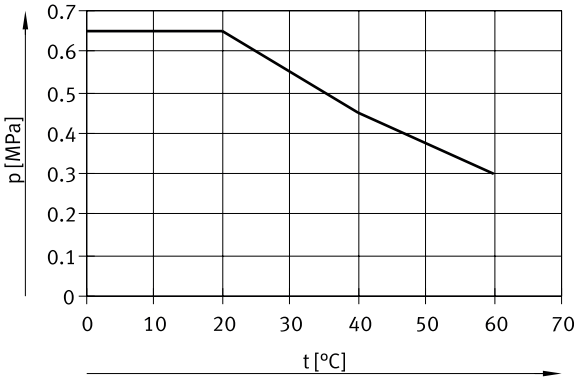
Operating and environmental conditions				
Short type code	PAN-MF, PAN, PAN-R	PLN	PEN	PUN-H, PUN-V0, PUN, PUN-V0-C, PUN-CM
Outside diameter	4 ... 16 mm			3 ... 16 mm
Inside diameter	2.5 ... 12 mm	2.9 ... 12 mm	2.7 ... 10.8 mm	2 ... 11 mm
Temperature-dependent operating pressure	-0.95 ... 35 bar	-0.95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

Materials				
Short type code	PAN-MF, PAN, PAN-R	PLN	PEN	PUN-H, PUN-V0, PUN, PUN-V0-C, PUN-CM
Material tubing	PA12-P TPE-A	Packaging unit		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	Element installed statically, no meaningful evaluation possible according to ISO 14644-1			

Operating pressure p as a function of temperature t



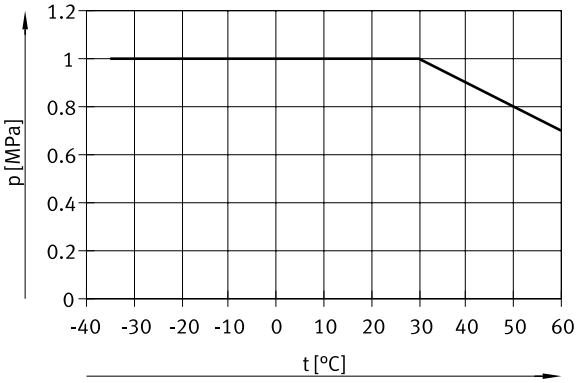
Operating pressure p as a function of temperature t (PUN-H; medium: water)



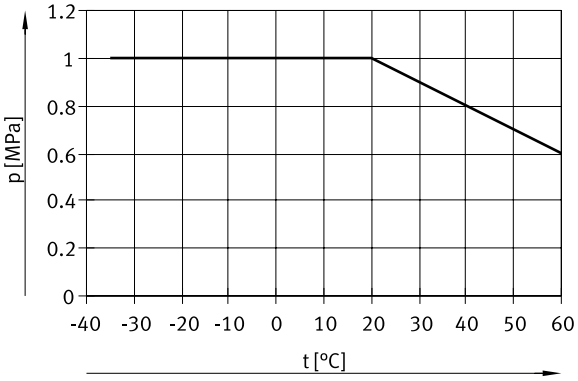
Deviating maximum operating pressures apply to the medium water, with a safety factor of s=4.

Datasheet

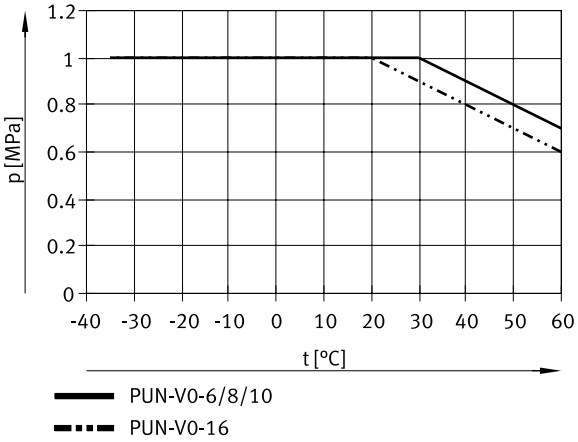
Operating pressure p as a function of temperature t (PUN)



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

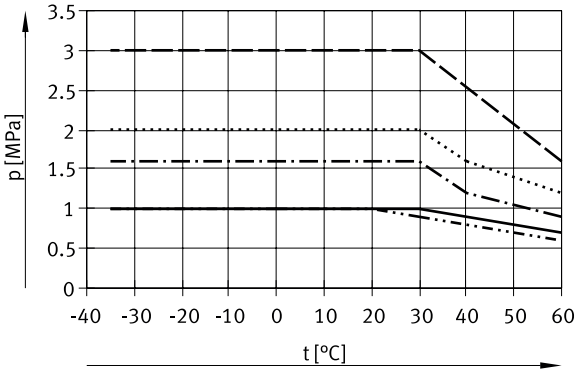


Operating pressure p as a function of temperature t



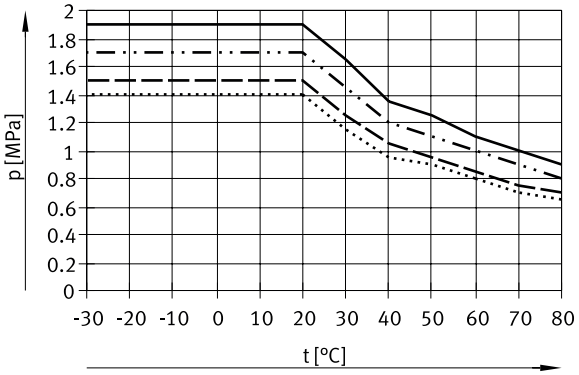
Datasheet

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

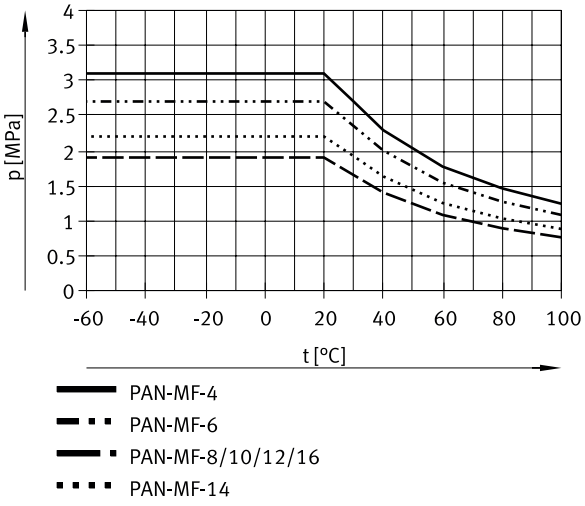
Operating pressure p as a function of temperature t (PAN)



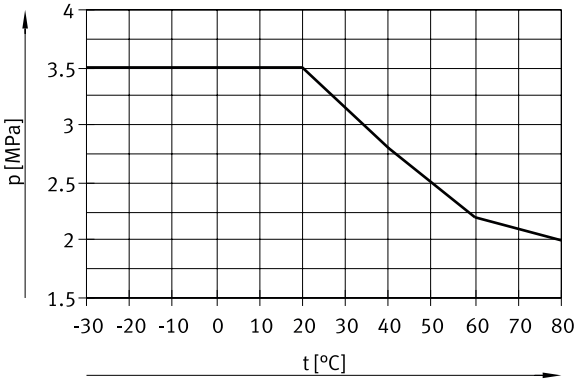
- PAN-6
- PAN-4/8
- PAN-10/12/14
- PAN-16

Datasheet

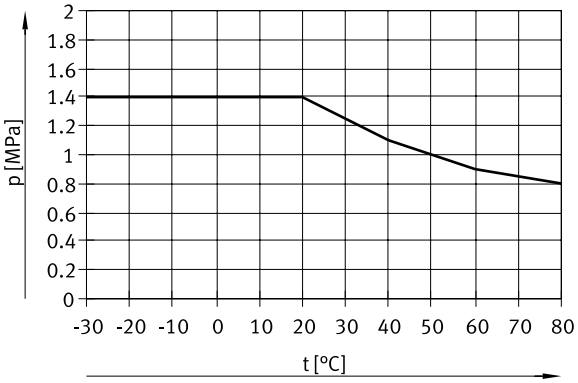
Operating pressure p as a function of temperature t (PAN-MF)



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

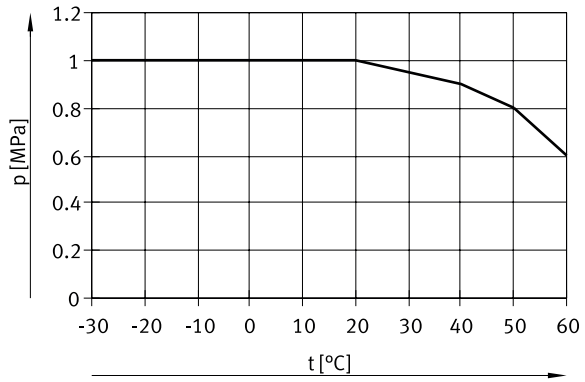


Operating pressure p as a function of temperature t (PAN-R; external Ø 22 ... 28 mm)

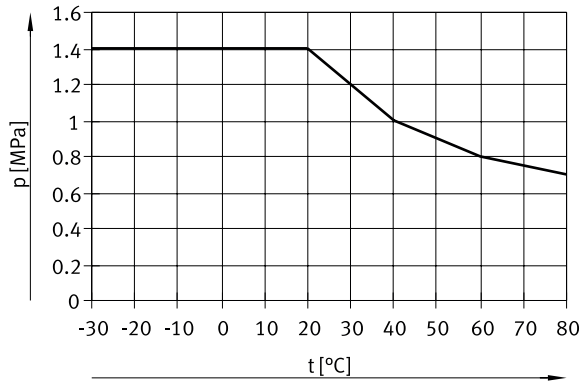


Datasheet

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

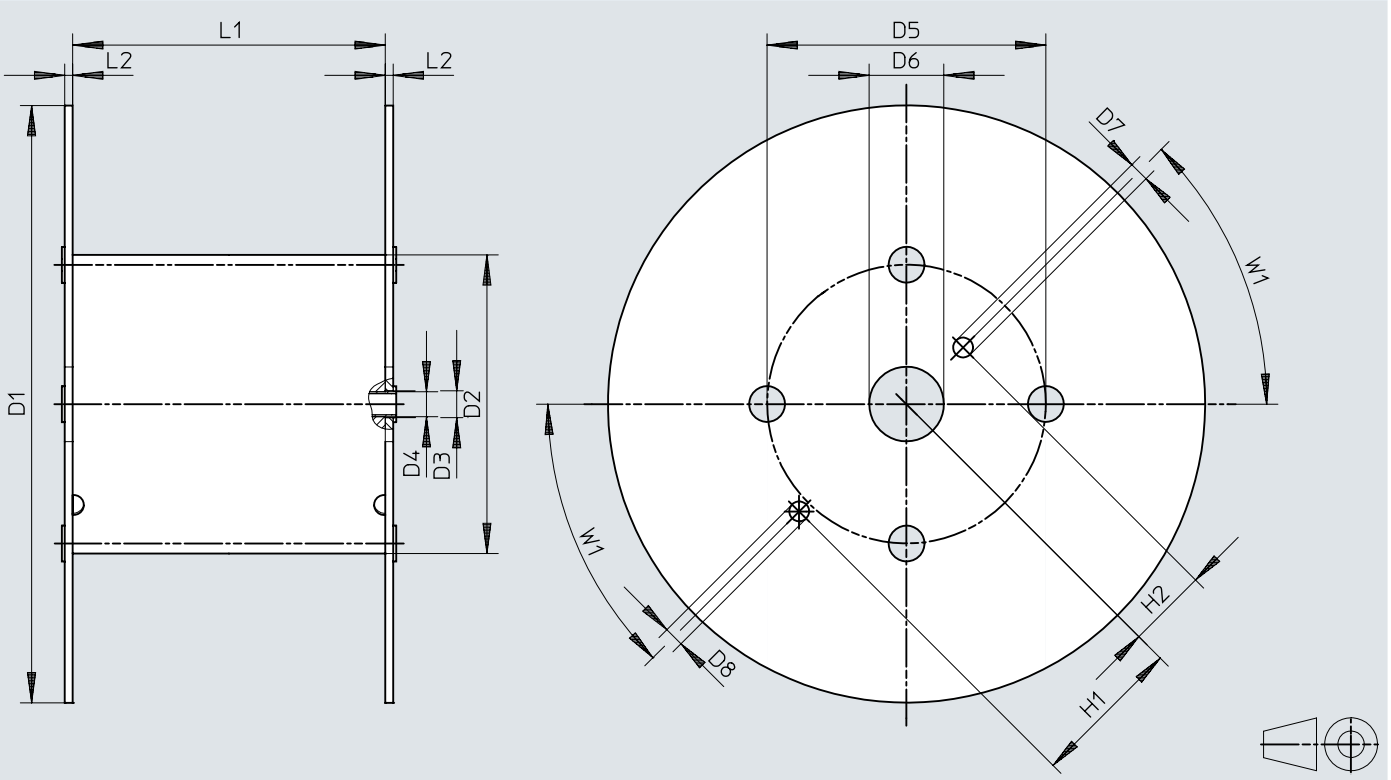


Operating pressure p as a function of temperature t (PLN)



Dimensions

Dimensions – Reel Download CAD data www.festo.com

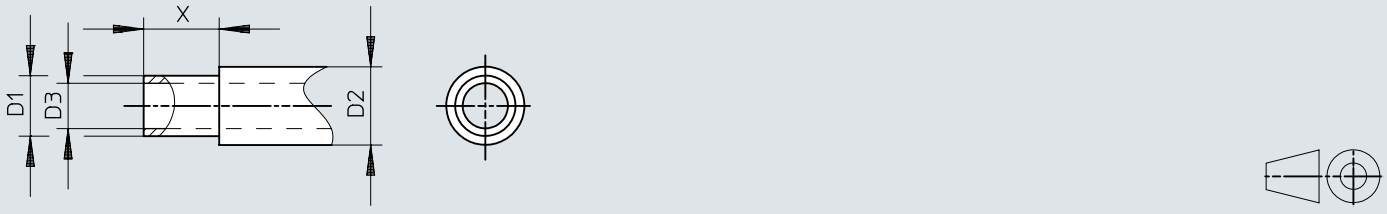


	D1 ø	D2 ø	D3 ø	D4 ø	D5 ø	D6 ø	D7 ø	D8 ø	H1	H2	L1	L2	W1
PAN-4x0,75-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PAN-6x1-...-500													
PAN-8x1,25-...-400		310			280						254		
PAN-10x1,5-...-300	600												
PAN-12x1,75-...-200													
PAN-16x2-...-100	545												
PAN-MF-4x0,75-...-500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

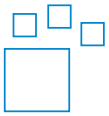
Download CAD data www.festo.com



	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 information – Modular product system



Short 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

Ordering data DPA-40-...-MA-SET

Inside diameter	Colour	Product weight	Part no.	Type
4 mm	Grey	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**