

Spiral tubing PUN-S

Dimensionally stable

FESTO

Flexible in use:
the dimensionally stable
spiral tubing PUN-S



Info 404 →→

Spiral tubing PUN-S Stays in shape – for maximum flexibility!



Extremely flexible in use, unsurpassed in elasticity, unbeatable in resetting force. Available as PUN-S with straight outlets for motion sequences in machines – available as single or duo tubing. Or as a pre-assembled solution PUN-SG with rotatable threaded outlets for supplying compressed air tools.

Stays in shape

High reset capability – ideal as a replacement for chain link trunking in motion sequences.

Long service life

Reliable in use with exactly the same resistances as the proven tubing PUN. Fibre-reinforced version PUN-SG for use in harsh environments.

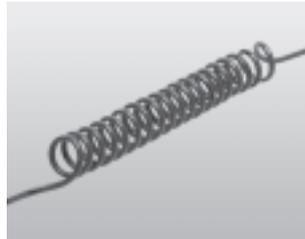
Festo plug and work®!

Pre-assembled variants PUN-SG mean compressed air tools can be coupled with the minimum of assembly effort.

Flexibility in selection and use

Wide range of different working lengths, connection sizes and colours; with standard inside and outside diameters.

Resistant to abrasion and mineral oil for maximum service life: PUN-S, a member of the proven PUN family.



Flexible compressed air supply



Dimensionally stable



Fits perfectly

Consistently flexible

Reliable execution of motion sequences thanks to the high elasticity ...

... and high reset capability of the spiral tubing.

Standard inside and outside diameters mean it fits all Festo fittings and couplings.

Advantages for designers

Advantages for purchasers

Outstanding reliability and economy

- High reset capability for reliable and safe execution of motion sequences (since there is no permanent deformation)
- Economical and practical since dependency on expensive chain link trunking is reduced
- Easy to work with and highly reliable through the use of known material properties (www.festo.com/media_resistance)

- Lower ordering costs since dependency on expensive chain link trunking is reduced
- Simplified ordering through the use of existing chemical resistance data
- Highly reliable through the use of proven tubing materials

Long service life

- Thanks to the proven quality of the PUN tubing
- Reliable in use in workshop environments thanks to the resistance of the tubing to abrasion and mineral oil

- Long service life resulting from the absence of permanent deformation means reduced costs

Flexibility in selection and use

- Wide selection of working lengths, single or duo tubing, colours, etc. for a perfect fit in a wide range of machine and system concepts
- Covers all connection options in configuration with Festo's wide range of fittings

- Everything from a single source: wide selection of spiral tubing and matching fittings reduces ordering costs
- Minimum installation time through "Plug and Work" solutions for PUN-SG

Spiral plastic tubing

Product range overview

Version	Type	∅ [mm]	Colour			Operating medium		
			Blue	Black	Blue/black	Compressed air	Vacuum	Water (not drinking water)
Spiral tubing		Outside ∅						
	PUN-S Polyurethane	4, 6, 8, 10, 12	■	■	-	■	■	-
	PUN-S-DUO Polyurethane	4, 6, 8, 10, 12	-	-	■	■	■	-
Spiral tubing, pre-assembled		Inside ∅						
	PUN-SG Polyurethane	6.4; 7.9	■	-	-	■	■	■
	PPS Polyamide	4.75; 6.35	■	-	-	■	■	■

Spiral plastic tubing

Product range overview

Type	Food industry approval	Fire protection classification to UL 94	Antistatic	Halogen-free	PWIS-free to FN 942 010	Suitable for chain link trunking	German Technical Control Board (TÜV) tested	Resistance						Shore hardness (D)	→ Page
								Chemicals	Microbes	UV radiation	Hydrolysis	Stress cracks			
Spiral tubing															
PUN-S	-	-	-	■	■	■	■	-	-	++ ¹⁾	+	++	52	7	
PUN-S-DUO	-	-	-	■	■	■	■	-	-	+	+	+	52	9	
Spiral tubing, pre-assembled															
PUN-SG	-	-	-	■	■	-	-	+	++	+	++	+	87 ³⁾	10	
PPS	-	-	-	■	■	■	-	+	++	+	+	+	60	11	

- ++ Highly suitable
- + Limited suitability (upon request)
- Unsuitable
- 1) Black
- 3) Shore hardness (A)

Spiral plastic tubing

Type codes

PUN - 8 x 1.25 - S - 1 - DUO - BL

Material

PUN	Polyurethane
PPS	Polyamide

Outside Ø [mm]

Wall thickness [mm]

Design

S	Spiral
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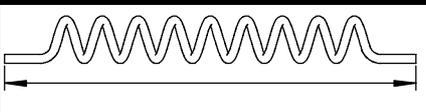
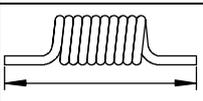
Working length [m]

Twin tubing

DUO	Twin tubing
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Colour

SW	Black
BL	Blue
BS	Blue/black

Length specifications		
	Working length	With tensile load, 80% of the maximum section length
	Block length	Without tensile load

 Note
 The working length represents 80% of the maximum permissible expansion. This maximum expansion is the limiting value before permanent deformation takes place.

Spiral plastic tubing PUN-S

Technical data

Spiral plastic tubing PUN-S

Highly flexible plastic tubing

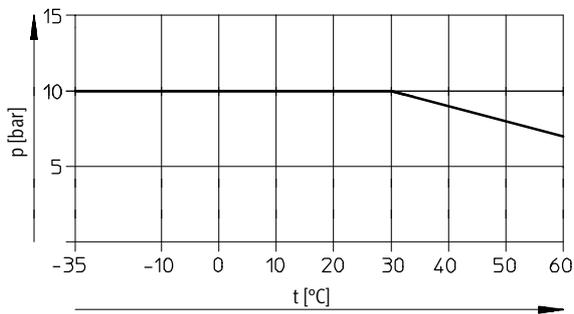
 Temperature range
-35 ... +60 °C

 Pressure
-0.95 ... +7 bar

Material:
Polyurethane
Free of copper, PTFE and silicone



Operating pressure p as a function of temperature t



Possible fittings



Push-in fitting QS,
Quick Star¹⁾
→ www.festo.com



Quick connector CK
→ www.festo.com



Push-in fitting QS-F,
Quick Star, metal
→ www.festo.com

1) Recommended fitting

Dimensions and ordering data

Outside Ø [mm]	Inside Ø [mm]	Winding Ø [mm]	Working length [m]	Number of windings	Weight [kg/m]	Colour	Part No.	Type
4	2.6	25	0.5	20	0.013	Blue	197 587	PUN-4x0,75-S-0,5-BL
						Black	197 602	PUN-4x0,75-S-0,5-SW
			1	45	0.027	Blue	197 588	PUN-4x0,75-S-1-BL
						Black	197 603	PUN-4x0,75-S-1-SW
						1.5	70	0.042
Black	197 604	PUN-4x0,75-S-1,5-SW						
6	4	40	1	23	0.051	Blue	197 590	PUN-6x1-S-1-BL
						Black	197 605	PUN-6x1-S-1-SW
			2	52	0.110	Blue	197 591	PUN-6x1-S-2-BL
						Black	197 606	PUN-6x1-S-2-SW
			6	168	0.350	Blue	197 592	PUN-6x1-S-6-BL
						Black	197 607	PUN-6x1-S-6-SW
8	5.7	60	1	12	0.650	Blue	197 593	PUN-8x1,25-S-1-BL
						Black	197 608	PUN-8x1,25-S-1-SW
			2	27	0.140	Blue	197 594	PUN-8x1,25-S-2-BL
						Black	197 609	PUN-8x1,25-S-2-SW
			6	87	0.440	Blue	197 595	PUN-8x1,25-S-6-BL
						Black	197 610	PUN-8x1,25-S-6-SW

Spiral plastic tubing PUN-S

Technical data

FESTO

Dimensions and ordering data							
Outside Ø [mm]	Inside Ø [mm]	Winding Ø [mm]	Working length [m]	Number of windings	Weight [kg/m]	Colour	Part No. Type
10	7	80	1	9.5	0.110	Blue	197 596 PUN-10x1,5-S-1-BL
						Black	197 611 PUN-10x1,5-S-1-SW
			2	22	0.250	Blue	197 597 PUN-10x1,5-S-2-BL
						Black	197 612 PUN-10x1,5-S-2-SW
			6	70	0.760	Blue	197 598 PUN-10x1,5-S-6-BL
						Black	197 613 PUN-10x1,5-S-6-SW
12	8	95	1	9	0.200	Blue	197 599 PUN-12x2-S-1-BL
						Black	197 614 PUN-12x2-S-1-SW
			2	20	0.420	Blue	197 600 PUN-12x2-S-2-BL
						Black	197 615 PUN-12x2-S-2-SW
			6	64	1.300	Blue	197 601 PUN-12x2-S-6-BL
						Black	197 616 PUN-12x2-S-6-SW

Spiral plastic tubing PUN-S-DUO

Technical data

**DUO spiral plastic tubing
PUN-S-DUO**

 - Temperature range
-35 ... +60 °C

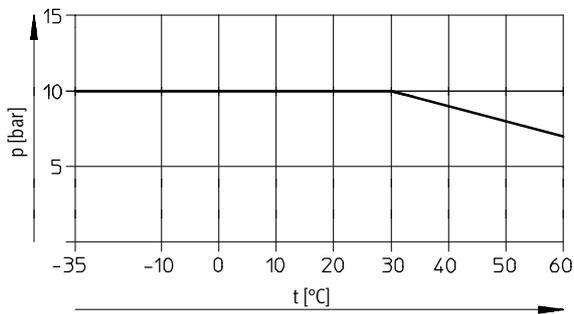
Highly flexible plastic tubing

 - Pressure
-0.95 ... +7 bar

Material:
Polyurethane
Free of copper, PTFE and silicone



Operating pressure p as a function of temperature t



Possible fittings



Push-in fitting QS,
Quick Star¹⁾
→ www.festo.com



Quick connector CK
→ www.festo.com



Push-in fitting QS-F,
Quick Star, metal
→ www.festo.com

1) Recommended fitting

Dimensions and ordering data

Outside Ø [mm]	Inside Ø [mm]	Winding Ø [mm]	Working length [m]	Number of windings	Weight [kg/m]	Colour	Part No.	Type
4	2.6	25	0.5	20	0.025	Blue/black	197 617	PUN-4x0,75-S-0,5-DUO-BS
			1	45	0.055		197 618	PUN-4x0,75-S-1-DUO-BS
			1.5	70	0.084		197 619	PUN-4x0,75-S-1,5-DUO-BS
6	4	40	1	23	0.102	Blue/black	197 620	PUN-6x1-S-1-DUO-BS
			2	52	0.230		197 621	PUN-6x1-S-2-DUO-BS
			6	168	0.700		197 622	PUN-6x1-S-6-DUO-BS
8	5.7	60	1	12	0.130	Blue/black	197 623	PUN-8x1,25-S-1-DUO-BS
			2	27	0.280		197 624	PUN-8x1,25-S-2-DUO-BS
			6	87	0.870		197 625	PUN-8x1,25-S-6-DUO-BS
10	7	80	1	9.5	0.220	Blue/black	197 626	PUN-10x1,5-S-1-DUO-BS
			2	22	0.490		197 627	PUN-10x1,5-S-2-DUO-BS
			6	70	1.520		197 628	PUN-10x1,5-S-6-DUO-BS
12	8	95	1	9	0.390	Blue/black	197 629	PUN-12x2-S-1-DUO-BS
			2	20	0.830		197 630	PUN-12x2-S-2-DUO-BS
			6	64	2.600		197 631	PUN-12x2-S-6-DUO-BS

Spiral plastic tubing PUN-SG, pre-assembled

Technical data

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Spiral plastic tubing
PUN-SG

-  - Temperature range
-40 ... +60 °C

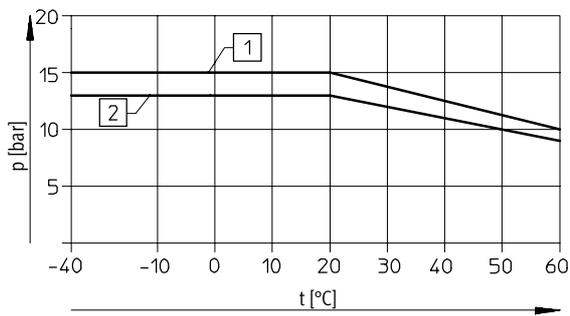
Highly flexible and hydrolysis
resistant pneumatic tubing with fabric
reinforcing and captive rotatable
fittings.

-  - Pressure
-0.95 ... +9 bar

Material:
Polyurethane



Operating pressure p as a function of temperature t



- 1 PUN-10x1,5-SG
- 2 PUN-12x2-SG

Dimensions and ordering data

Outside Ø [mm]	Inside Ø [mm]	Connection	Working length [m]	Weight [kg/m]	Colour	Part No.	Type
9.5	6.4	G $\frac{1}{4}$	2.4	0.180	Blue	533 463	PUN-10x1,5-SG-2,4-BL- $\frac{1}{4}$
			4.8	0.340		533 464	PUN-10x1,5-SG-4,8-BL- $\frac{1}{4}$
			6	0.430		533 465	PUN-10x1,5-SG-6-BL- $\frac{1}{4}$
11.7	7.9	G $\frac{3}{8}$	4.8	0.480		533 466	PUN-12x2-SG-4,8-BL- $\frac{3}{8}$
			6	0.560		533 467	PUN-12x2-SG-6-BL- $\frac{3}{8}$

Spiral plastic tubing PPS, pre-assembled

Technical data



Spiral plastic tubing PPS

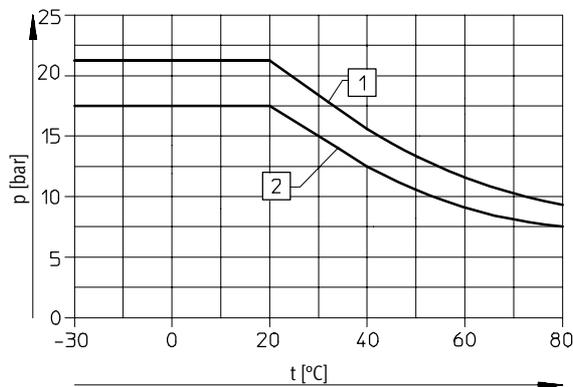
This hydrolysis resistant plastic tubing demonstrates high thermal and mechanical load capacities. Each length of tubing is delivered ready for installation with 2 rotatable fittings and suitable sealing rings. Kinks at the tubing ends are prevented with the anti-kinking springs.

Temperature range
-30 ... +80 °C

Material:
Polyamide
Free of copper, PTFE and silicone
→ Ordering data



Operating pressure p as a function of temperature t

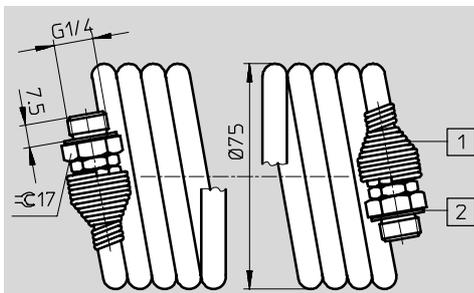


- 1 PPS-4
- 2 PPS-6

Dimensions and ordering data

Outside Ø [mm]	Inside Ø [mm]	Connection	Working length [m]	Block length [mm]	Colour	Part No.	Type	Part No.	Type
6.35	4.75	G1/4	7.5	340	Blue	19 798	PPS-4-7,5-1/4-BL	165 871	PPS-4-7,5-1/4-CT-BL ¹⁾
			15	670		19 799	PPS-4-15-1/4-BL	165 870	PPS-4-15-1/4-CT-BL ¹⁾
7.95	6.35		7.5	430		19 796	PPS-6-7,5-1/4-BL	165 873	PPS-6-7,5-1/4-CT-BL ¹⁾
			15	800		19 797	PPS-6-15-1/4-BL	165 872	PPS-6-15-1/4-CT-BL ¹⁾

1) Free of copper, PTFE and silicone



- 1 Kink protection spring
- 2 Captive seal

Core Range

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All technical data subject to change according to technical update.

100 % service with 100 % partnership

Welcome to a world of service from Festo.

Global presence, always close at hand

- 52 national Festo companies in constant on-line communication
- A presence in almost 176 countries, with a total of 10,500 staff
- Worldwide networking for consistent standards of consultancy, sales and service

Personal advice

- Worldwide support provided by over 1,000 highly-qualified technical consultants

Software service

- Electronic catalogue:
Database-supported general catalogue on CD-ROM in 20 languages and a wealth of advantages:
- Fast reliable product search functions
 - Automatic selection of accessories
 - Sizing of pneumatic circuits
 - Calculation and sizing programs with direct links to search functions

Take advantage of this genuine alternative to our printed catalogue.

Festo Design Tool – provides support for designers using 2D- and 3D drawings for CAD systems.

FluidDraw – allows fast and easy drafting of circuit diagrams, with direct import of data from the electronic catalogue.

Info service

- Full product documentation with detailed technical information
- Attractive regular customer magazines showing useful application examples and new product information
- The latest information available via the Internet at the click of a mouse from <http://www.festo.com>

Everything from a single source

- Our catalogue includes over 16,400 products
- All our components are precisely coordinated
- Drives and drive accessories
- Handling and vacuum technology
- Positioning
- Valves and valve accessories
- Valve terminals and bus systems
- Proportional technology
- Compressed air preparation
- Tubing, fittings, mounting accessories
- Sensors and pressure switches
- Pneumatic control technology
- Electronic control technology

Customer service

- Telephone advice via hotlines
- Fast on-site service
- Reliable maintenance and complaints service

Spare parts service

- Short delivery distances thanks to worldwide local spare-parts service
- Supply from fully stocked Festo warehouses
- Prompt deliveries of Festo components
- For particularly urgent cases, Festo sales offices hold stocks of a good range of almost all accessories and standard components



Delivery service

- Fast deliveries of catalogue products ex stock
- Non-standard stroke and special-design cylinder production (SMS) in 28 countries
- Fully-automated Customer Service Center (production and logistics) in St. Ingbert-Rohrbach, Germany
- Customer Service Center handles over 7,400 orders comprising 16,000 items every day
- Daily movement of 6,500 crates weighing a total of 50,000 kg
- Direct deliveries to customers throughout Europe

Festo automation components

Important components in our product range

Compressed air preparation

- D series service units
- MS series service units



Control technology

- Individual valve CPE
- Valve terminal CPV
- Modular valve terminal MPA and electrical terminal CPX
- Smart Positioning Controller SPC200
- Controller FEC Standard FC640



Long linear movement

- Rodless cylinder DGPL
- Electric toothed-belt drive DGE
- Standard cylinder DNC and DSNU
- Compact cylinder ADVU



Short linear movement

- Linear module HMP
- Guided drive DFM
- Mini slide SLT
- Flat slide SLG
- Linear module HMPL
- Short-stroke cylinder ADVC



Rotary movement

- Rotary drive DRQD
- Swivel module DSM
- Swivel/linear module DSL



Gripping, mechanical ...

- Precision gripper HGPP
- Micro gripper HGWM
- Three-point gripper HGD



... or with vacuum

- Suction gripper ESG
- Vacuum generator VADMI
- Vacuum generator VN



Connecting and installing

- Basic elements
- Screw connectors
- Couplings
- Fittings and restrictors
- Tubing



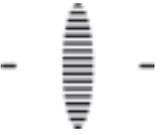
Checking, counting, sorting

- Checkbox family



Further products and details: <http://catalog.festo.com> or consult your Festo technical advisor.

Pneumatic Pictograms

	Stroke length		Service
	Flow rate		Repair service
	Voltage		Worldwide service
	Force		Hotline
	Pressure		Collection facility
	Temperature		Delivery time
	Diameter		In stock
	Vacuum		Note
	Width		Type discontinued
			New
			Spare parts service