

Additional information push-in fittings

FESTO



Application



Choosing the right fitting is effortless. With a system that includes well over 1000 types of standard and function fittings, Festo offers the right solution for every connection.

Summary of tubing/fitting combinations

Applications	Fitting	Tubing	Description
Standard	QS	PEN	Suitable for a wide range of tasks and attractively priced. Flexible thanks to highly resistant materials, easy to install thanks to optimised bending radii. High level of abrasion resistance in dynamic applications.
	QS	PUN	Maximum flexibility in standard applications thanks to an extremely wide range of options for combining the different types.
	QS	PAN	Meets all requirements, even for standard applications with increased pressure and temperature ranges.
High pressures	NPQM	PAN-MF	Meets DIN standard 73378: ideal for use in mobile pneumatics. Suitable for increased temperature ranges combined with high pressure ranges.
	NPQH	PAN-R	Powerful in pressure ranges up to 20 bar, for example in applications with the pressure booster DPA.
	NPQR	PUN-H-SF	Use in areas with higher pressure ranges and humidity. Tubing PUN-H-SF is resistant to kinking and hydrolysis and is suitable for water applications.
Resistant to chemicals and hydrolysis	NPQP	PLN	Resistant to cleaning agents, FDA-compliant and economical. Can be used instead of the combination with stainless steel fittings.
	NPKA	PUN-H	Hydrolysis-resistant and suitable for water applications. Combination suitable for use in cleanrooms, FDA-compliant and corrosion-resistant because it's 100% polymer. Very easy to install with the "one-click principle".
	NPQR	PFAN/PTFEN	Optimised design, fewer edges where dirt can collect – all at an attractive price. For high temperatures up to 150 °C. Pressure range up to 16 bar. Maximum corrosion resistance (CRC 4).
	NPCK	PFAN/PTFEN	Easy to clean thanks to the union nut's edge-free design. Maximum corrosion resistance (CRC 4) and FDA-compliant. Suitable for a wide range of media.
Resistant to chemicals and hydrolysis, food-safe	NPQR	PUN-H-F/PFAN	Food-safe to Regulation (EC) No. 1935/2004 and FDA-listed materials. Can be used in the food and packaging industry in combination with PUN-H-F and PFAN.
	NPQH	PFAN/PTFEN	For high temperatures up to 150 °C. Food-safe to Regulation (EC) No. 1935/2004, FDA-listed materials and resistant to cleaning agents.
Anti-static	NPQM	PUN-CM	Anti-static tubing plus solid metal fitting: maximum protection for electric and electronic components.
Flame-retardant	NPQM	PUN-V0	Very safe in areas where there is a risk of fire thanks to flame-retardant properties. The tubing has been tested to DIN 5510-2.
Resistant to welding spatter	NPQH	PUN-V0-C	Ideal for applications involving welding spatter. Reliable thanks to a tubing wall thickness of 2 mm for all diameters.
	QS-V0	PAN-V0	Safe even in the immediate vicinity of welding spatter thanks to double-walled tubing with special fitting.
Battery production	NPQE-F1A ¹⁾	PUN-H	Suitable in battery production areas.

1) F1A = Free of copper, zinc and nickel

Push-in fittings – Product range

QSM, mini series

Datasheets → Internet: qsm



Compact push-in fittings for maximum component density in confined spaces. For pneumatic applications with a temperature range up to 80 °C and a pressure range up to 14 bar. Tubing O.D. of 2, 3, 4 and 6 mm with connecting threads M3, M5, M6, M7, R1/8 and G1/8.

QS, standard series

Datasheets → Internet: qs



Wide selection of push-in fittings for pneumatic applications with a temperature range up to 80°C and a pressure range up to 14 bar. Tubing O.D. of 4, 6, 8, 10, 12, 16 and 22 mm with connecting thread R1/8 ... R1/2 and G1/8 ... G3/4.

QS-V0, resistant to welding spatter

Datasheets → Internet: qs-v0



Flame-retardant push-in fitting for use in all areas where there is a risk of fire, for example welding systems in the automotive industry, and in the construction industry. For pneumatic applications with a temperature range up to 60 °C and a pressure range up to 10 bar. Tubing O.D. of 4, 6, 8, 10 and 12 mm with connecting thread R1/8 ... R1/2 and G1/8 ... G1/2.

NPQH

Datasheets → Internet: npqh



All metal push-in fitting made of chemically nickel-plated brass. High corrosion resistance CRC3 and chemical resistance. For pneumatic applications with a temperature range up to 150 °C and a pressure range up to 20 bar. Tubing O.D. of 4, 6, 8, 10, 12 and 14 mm with connecting thread M5, M7 and G1/8 ... G1/2.

NPQM

Datasheets → Internet: npqm



Attractively priced metal push-in fitting for pneumatic applications with a temperature range up to 70°C and a pressure range up to 16 bar. Tubing O.D. of 3, 4, 6, 8, 10, 12 and 14 mm with connecting thread M5, M7 and G1/8... G1/2.

NPQP

Datasheets → Internet: npqp



Polypropylene fitting for use in applications with extreme media influences. For pneumatic applications with a temperature range up to 60 °C and a pressure range up to 10 bar. Tubing O.D. of 4, 6, 8, 10 and 12 mm with connecting thread R1/8 ... R1/2.

NPQR, stainless steel

Datasheets → Internet: npqr



Stainless steel push-in fitting. Maximum corrosion resistance CRC 4 and chemical resistance. For pneumatic applications with a temperature range up to 150 °C and a pressure range up to 16 bar. Tubing O.D. of 4, 6, 8, 10 and 12 mm with connecting thread M5, M7 and G1/8 ... G1/2.

Additional information push-in fittings

Functional push-in fittings – Product range

QSK,
push-in fitting, self-sealing

Datasheets → Internet: qsk



Push-in fitting blocks the air flow after the tubing is disconnected. For pneumatic applications with a temperature range up to 60 °C and a pressure range up to 14 bar.
Tubing O.D. of 4, 6, 8, 10 and 12 mm with connecting thread M5, R1/8 ... R1/2 and G1/8 ... G1/2.

QSR,
push-in fitting, rotatable

Datasheets → Internet: qsr



Push-in fitting with swivel joint, rotatable by 360°. The ball bearing enables rotating movements in the application up to max. 500 rpm. For pneumatic applications with a temperature range up to 60 °C and a pressure range up to 14 bar.
Tubing O.D. of 4, 6, 8, 10 and 12 mm with connecting thread M5, R1/8 ... R1/2 and G1/8 ... G1/2.

Quick connectors – Product range

NPCK

Datasheets → Internet: npck



Stainless steel fitting for use in areas subject to intensive cleaning. Maximum corrosion resistance CRC 4. For pneumatic applications with a temperature range up to 120 °C and a pressure range up to 12 bar.
Tubing O.D. 4, 6, 8 and 10 mm with connecting thread M5 and G1/8 ... G3/8.

Click fittings – Product range

NPKA

Datasheets → Internet: npka



Polymer fitting for easy installation with one hand. Hydrolysis-resistant, FDA-compliant and easy to clean. For pneumatic applications with a temperature range up to 60 °C and a pressure range up to 10 bar.
Tubing O.D. of 6 mm with connecting thread G1/8.

Which fitting fits which thread?

Metric thread

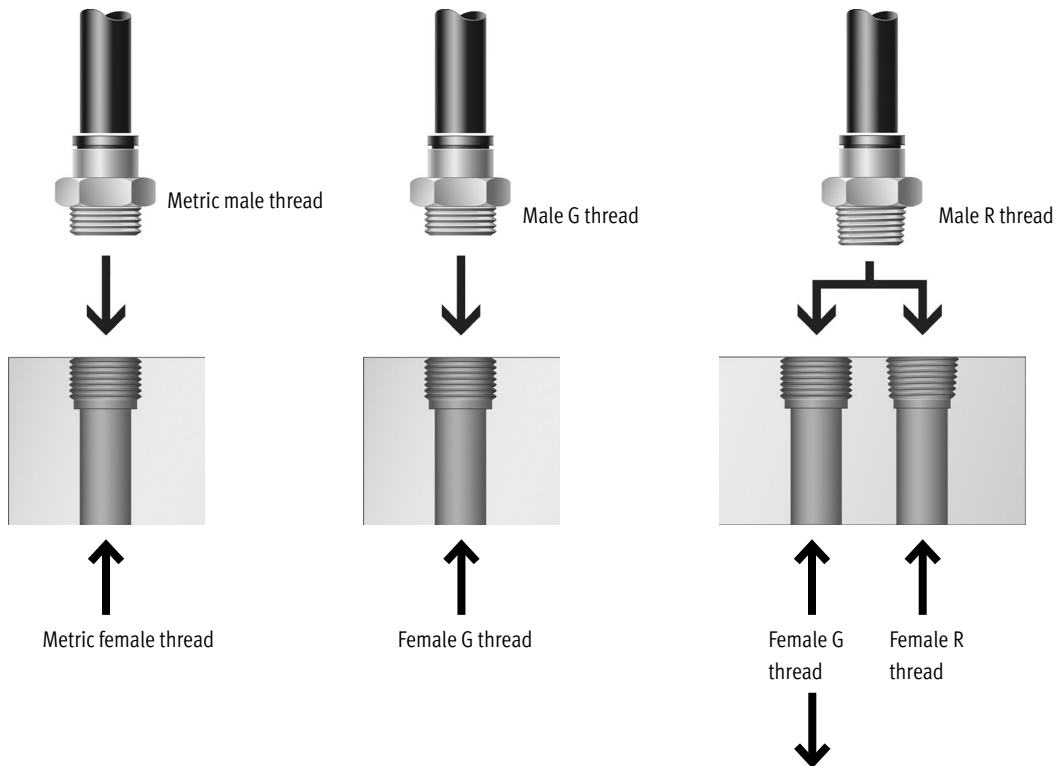
- These threads are comparable with G threads and are fitted as cylindrical metric threads
- Sealing is guaranteed as the O-ring sits in a groove that seals against the tube.

G thread to ISO 228-1

- Shorter thread
- Constant installation depth
- Replaceable sealing ring
- Sealing on the front
- Can be re-used a number of times thanks to replaceable sealing ring.

R thread to EN 10226-1 and ISO 7/1

- Self-sealing thread
- Sealing via coated threads
- No additional sealing surface required
- Smaller installation dimensions since there is no need for an offset for the sealing surface
- Can be reused up to 5 times.



Note

If male R threads are combined with female G threads, leakage can occur if the female G thread was not manufactured cleanly or if it is not within permissible tolerances. In this case additional sealing, e.g. using a sealing band, is required.

Note

All R threads are coated with a sealing material. This coating replaces the conventional sealing ring. Simply screw in the R thread by hand and tighten it by turning it 1 or 2 times using an open-ended spanner. The fitting can be re-installed up to five times.

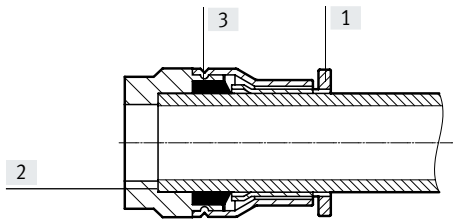
When screwing in R threads several times, you must make sure that the abraded particles from the sealing material coating cannot enter the compressed air system.

Mounting/dismounting the tubing

Mounting

The prerequisite for ensuring that the inner seal [3] is securely held and protected against damage is that the tube is cut into straight lengths and deburred.

- 1) Insert tubing as far as the stop [2].
It is important to ensure that the tubing is inserted into the inner seal [3]. Depending on the tolerance between the tubing and the seal, the contact of the tubing with the seal may be incorrectly interpreted as the stop.
- 2) Check that the tubing connection is secure by pulling gently on the tube.



Dismounting

- 1) The tubing can be detached easily by pressing and holding down the releasing ring [1]. Carefully remove the tubing from the fitting.
- 2) Before re-using the tubing, remove the damaged part by cutting it off.

Note

In the case of push-in fittings with internal hex, ensure that the allen key does not damage any internal parts when it is inserted into the fitting. It is therefore necessary to ensure that the tool (allen key) is centred during assembly and disassembly.

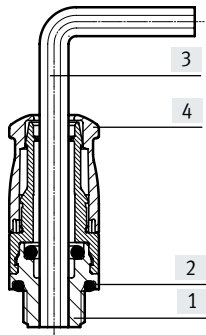
Tubing insertion depth ¹⁾

Tubing O.D. 4 mm (12 with QSW)	15 mm
Tubing O.D. Ø 6 mm (12 with QSW)	17 mm
Tubing O.D. Ø 8 mm	18.1 mm
Tubing O.D. Ø 10 mm	20.2 mm
Tubing O.D. Ø 12 mm	23.4 mm
Tubing O.D. Ø 16 mm	24.5 mm
Tubing O.D. Ø 22 mm	27.54 mm

¹⁾ The indicated tubing insertion depths are reference values and may vary slightly depending on the type..

Mounting and removal click fittings NPKA

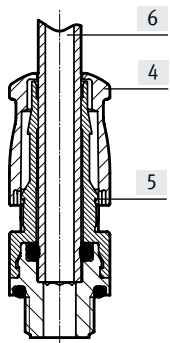
Mounting



- [1] Screwed trunnion
- [2] Sealing ring
- [3] Allen key
- [4] Sleeve

- Screw the screwed plug and the sealing ring on to the counterpart and tighten in accordance with the nominal tightening torque.

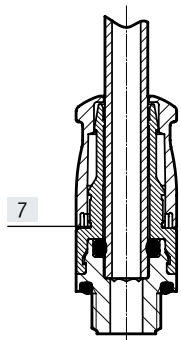
- Special feature of the straight design NPKA-D: insert the long side of an Allen key completely into the click fitting through the sleeve. Use the entire contact surface of the internal hexagon.



- [4] Sleeve
- [5] Stop contour 1
- [6] Plastic tubing

- Pull the sleeve as far as the stop contour 1 of the clamping collet, until you hear and feel the sleeve click in.

- Insert the plastic tubing through the open sleeve, clamping collet and tubing seal as far as the tube bearing shoulder.



- [7] Stop contour 2

- Push the sleeve as far as the stop contour 2 of the clamping collet, until you hear and feel the sleeve click in.

- The closed sleeve pushes the clamping segment of the clamping collet against the plastic tubing, holding it in place.

Removal

In order to disassemble it, follow the steps in reverse order.