Push-in fittings CRQS, stainless steel

FESTO

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Features

Application

Effortless selection of the right fitting. Festo offers a secure solution for every connection. The convenient push-in fitting system includes well over 1000 types of standard and function fittings.

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.
Resistant to chemicals, food safe and hydrolysis resistant	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 clean rooms, FDA compliant and corrosion resistant thanks to 100% polymer construction. Very easy to install thanks to the “one click principle”.
	NPQH	PFAN/PTFEN	For high temperatures up to 150 °C. Suitable for use in the food industry, FDA compliant and resistant to cleaning agents.
	NPCK	PFAN/PTFEN	Easy to clean thanks to the union nut’s edge-free design. Maximum resistance to corrosion (CRC 4) and FDA compliant. Suitable for a wide range of media.
	CRQS	PFAN/PTFEN	Maximum resistance to corrosion (CRC 4) and to aggressive acids and lyes.
Anti-static	NPQM	PUN-CM	Anti-static tubing plus solid metal fitting: maximum protection for electrical 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 mediate vicinity of welding spatter thanks to the double-walled tubing with special fitting.

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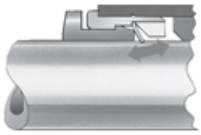
Features

CRQS, the stainless steel fitting

Highest process reliability in every case
Highest corrosion resistance and maximum robustness: the CRQS stays leak-proof even when subjected to extreme temperature, pressure and resistance.

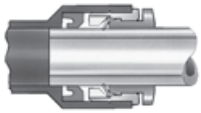
Unlimited use in the food industry
The push-in fitting CRQS can be used in combination with the plastic tubing PFAN, which is approved for use in the food industry, in all areas of the Food & Packaging industry, e.g. wherever the use of stainless steel is stipulated. Used together, they easily resist all cleaning agents and lubricants and can also be used with highly aggressive acids and lyes.

Simply "plug and work"



The stainless steel retaining claw within the fitting holds the tubing securely without damaging its surface. Vibration and pressure surges are safely absorbed.

Reliably connected



A fluoro elastomer sealing ring guarantees a perfect seal between the standard tubing and the body of the fitting.
Standard tubing is suitable for use with compressed air and vacuum.

Orientable

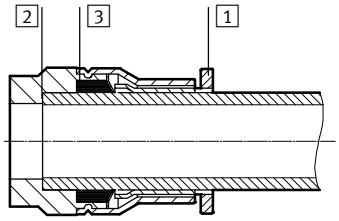
The fitting can be aligned after assembly.

Tube assembly/disassembly

Mounting

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

1) Pull out releasing ring [1].
2) Insert tubing until the end stop [2].
   It is important to ensure that the tubing is inserted into the inside seal [3]. Depending on the tolerance position of the tubing and the seal, the contact of the tubing with the seal may be wrongly interpreted as the end stop.
3) Check that the tubing connector is securely held by pulling gently on the tube.



Dismantling

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

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Features

Which fitting fits which thread?

Metric thread

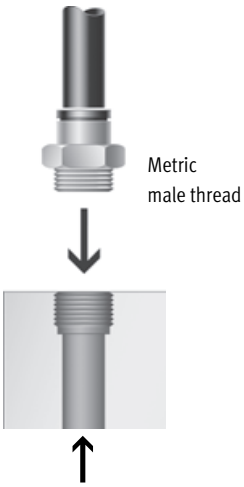
- Shorter thread
- Constant installation depth
- Replaceable sealing ring
- Sealing on front face
- Can be re-used a number of times thanks to replaceable sealing ring
- Sealing is guaranteed as the O-ring sits in a groove that seals against the tube

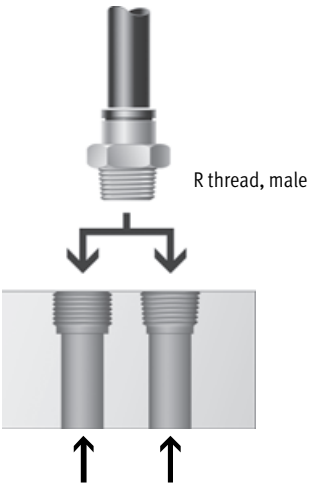
R thread to EN 10226-1 and ISO 7/1

- Self-sealing thread
- 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

An appropriate sealing material is required to seal the push-in fitting CRQS with R thread.





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Technical data

General technical data	
Size	Standard
Design	Push-pull principle
Mounting position	Any
Type of seal on threaded plug	Sealing ring (metric thread only)
Usable lines	PFAN

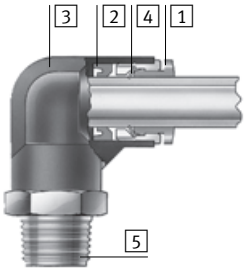
Operating and environmental conditions	
Operating pressure [bar] complete temperature range	–0.95 ... +10
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:–:–]
	Water as per manufacturer's declaration[2)]
Note on operating/pilot medium	Operation with lubricated medium possible
Ambient temperature [°C]	–15 ... +120
Corrosion resistance class CRC[1)]	4
Food-safe	See supplementary material information[2)]
Maritime classification	See certificate[2)]

1) Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (➔ also FN 940082) using appropriate media.

2) Additional information www.festo.com/sp ➔ Certificates.

Materials

Sectional view



Push-in fitting CRQS		
1	Releasing ring	High-alloy stainless steel
2	Tubing seal	FPM
3	Housing	High-alloy stainless steel
4	Tube retaining claw	High-alloy stainless steel
5	Threaded coupling	High-alloy stainless steel
–	Nut (push-in bulkhead connector CRQSS only)	High-alloy stainless steel
Note on materials		RoHS-compliant

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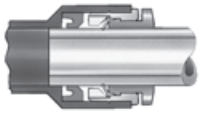
Technical data

Tubing insertion depth



Tubing O.D. [mm]		4	6	8	10	12	16
Tubing insertion depth	[mm]	18	19.5	21.5	25.5	27	32

Recommended tightening torque

When using push-in fittings with internal hex, ensure that the Allen key is not inserted too far into the fitting to prevent the risk of damage to components behind the fitting.

- Note

For sealing of the R-thread a suitable coating is required. This coating replaces the conventional sealing ring. Simply screw in the R-thread by hand and tighten it with 1 or 2 turns of a spanner. The fitting can be reinstalled 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.

Connecting thread	Nominal tightening torque [Nm]
M thread	
M5	1.33 ±20%

Possible push-in fitting/tubing combinations

Thread	Tubing O.D. [mm]					
	4	6	8	10	12	16
M5	++	+	–	–	–	–
R1/8	+	++	+	–	–	–
R1/4	–	+	++	+	–	–
R3/8	–	–	–	++	+	–
R1/2	–	–	–	–	++	+

\+ Possible thread/tubing O.D. combinations

++ Optimum thread/tubing O.D. combinations (with regard to flow)

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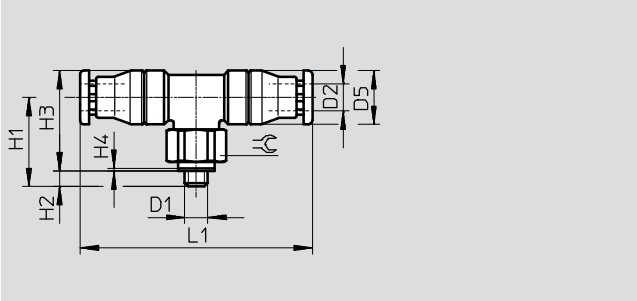
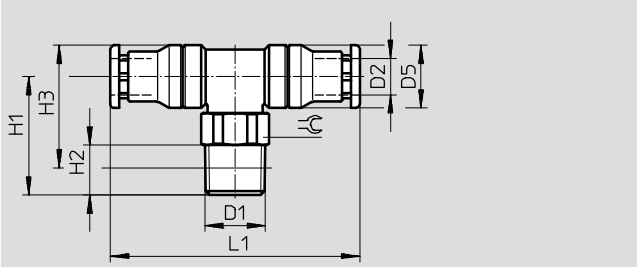
Technical data

Push-in T-fitting CRQST
Orientable
Male thread with external hex

M thread



R thread



Dimensions and ordering data

Pneumatic connection		Nominal size	Dimensions [mm]							Weight/ piece	Part No.	Type	PU[1]
Male thread D1	For tubing O.D. D2	[mm]	D5 ∅	H1	H2	H3	H4	L1	⌯	[g]			
Metric thread with sealing ring													
M5x0.8	4	2	9.8	17	3	18.9	0.5	44.4	10	17	**164200**	**CRQST-M5-4**	**1**
	6	2	11.8	19	3	21.9	0.5	47.3	12	24	**164201**	**CRQST-M5-6**	**1**
R thread													
R1/8	6	3.7	11.8	20.5	8	22.4	–	47.3	12	25	**164202**	**CRQST-1/8-6**	**1**
	8	5	13.8	23	8	25.9	–	52.5	14	33	**164203**	**CRQST-1/8-8**	**1**
R1/4	8	5	13.8	25	11	25.9	–	52.5	14	38	**164204**	**CRQST-1/4-8**	**1**
	10	5.9	16.8	28.5	11	30.9	–	61	17	56	**164205**	**CRQST-1/4-10**	**1**
R3/8	10	5.9	16.8	28.5	12	30.6	–	61	17	62	**164206**	**CRQST-3/8-10**	**1**
	12	8.1	19.8	30	12	33.6	–	66.6	21	85	**164207**	**CRQST-3/8-12**	**1**
R1/2	12	8.1	19.8	34	15	35.7	–	66.6	22	105	**164208**	**CRQST-1/2-12**	**1**
	16	9.5	23.7	36	15	39.7	–	81.4	24	128	**164209**	**CRQST-1/2-16**	**1**

1) Packaging unit