

Push-in fitting NPQO

FESTO



Characteristics

At a glance

Push-in fittings and connectors from the NPQO series are designed for installation in machines, devices and automation solutions to connect tubing together or to create a connection between a tube and a thread to discharge media.

NPQO works according to the push-pull principle, similar to existing products such as the QS series.

To ensure safe use, NPQO follows the relevant industry standards: Compliance with ISO 15001 and ASTM 693 guarantees compatibility with oxygen. In addition to using FDA-listed materials, NPQO has also been assessed for biocompatibility with respiratory tracts in healthcare (ISO 18562).

- FDA-listed materials
- Suitable for oxygen in accordance with ISO 15001 and ASTM G 93
- Biocompatibility according to standard ISO 18562

Design

Overview of push-in fittings

[L] Straight shape



[L] L-shape



Note: the push-in L-fittings and connectors can be rotated during mounting, but are then unsuitable for rotating or oscillating movements during operation.

Design

Overview of the push-in connectors

[D] Straight



[T] T-shape



[L] L-shape



Type code

001	Series	
NPQO	Push-in fitting	

002	Design	
D	Straight	
L	L-shape	
T	T-shape	

003	Pneumatic connection 1	
M5	M5	
G14	G1/4	
G18	G1/8	
G38	G3/8	
Q4	Push-in connector 4 mm	
Q6	Push-in connector 6 mm	
Q8	Push-in connector 8 mm	
Q10	Push-in connector 10 mm	
Q12	Push-in connector 12 mm	

004	Pneumatic connection 2	
E	Same size as connection 1	
Q4	Push-in connector 4 mm	
Q6	Push-in connector 6 mm	
Q8	Push-in connector 8 mm	
Q10	Push-in connector 10 mm	
Q12	Push-in connector 12 mm	

005	Packaging quantity [pieces]	
P5	5	
P10	10	

Datasheet

General technical data, push-in fittings

Design	Push-pull principle
Mounting position	optional
Type of seal on screwed plug	O-ring

General technical data, push-in connectors

Design	Push-pull principle
Mounting position	optional

Tightening torques for push-in fittings

Pneumatic connection, port 1	Male thread M5	Male thread G1/8	Male thread G1/4	Male thread G3/8
Max. tightening torque	2.5 Nm	6 Nm	9 Nm	10 Nm
Nominal torque	2.25 Nm	5 Nm	8 Nm	9 Nm

Operating and environmental conditions, push-in fittings, for a tubing outer diameter of 4 to 8 mm

Design	L-shape	Straight design
Temperature-dependent operating pressure	-0.09 ... 1.6 MPa	–
Temperature-dependent operating pressure	-0.9 ... 16 bar	–
Operating pressure complete temperature range	-0.09 ... 0.3 MPa	-0.09 ... 2 MPa
Operating pressure complete temperature range	-0.9 ... 3 bar	-0.9 ... 20 bar
Ambient temperature ¹⁾	0 ... 60°C	0 ... 120°C
Media temperature	0 ... 120°C	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases Carbon dioxide Air Oxygen Nitrogen	
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress	
Suitable for use with food	See supplementary material information	
Oxygen suitability according to standard	ASTM G 93 ISO 15001	
Biocompatibility according to standard	ISO 18562	

1) Note the operating range of the plastic tubing.

2) More information visit www.festo.com/x/topic/kbk

Datasheet

Operating and environmental conditions, push-in fittings, for a tubing outer diameter of 10 to 12 mm		
Design	L-shape	Straight design
Temperature-dependent operating pressure	-0.09 ... 1.2 MPa	–
Temperature-dependent operating pressure	-0.9 ... 12 bar	–
Operating pressure complete temperature range	-0.09 ... 0.3 MPa	-0.09 ... 2 MPa
Operating pressure complete temperature range	-0.9 ... 3 bar	-0.9 ... 20 bar
Ambient temperature ¹⁾	0 ... 60°C	0 ... 120°C
Media temperature	0 ... 120°C	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases Carbon dioxide Air Oxygen Nitrogen	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases Carbon dioxide Oxygen Nitrogen
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress	
Suitable for use with food	See supplementary material information	
Oxygen suitability according to standard	ASTM G 93 ISO 15001	ASTM G 93
Biocompatibility according to standard	ISO 18562	

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Operating and environmental conditions, push-in connectors, for a tubing outer diameter of 4 to 8 mm					
Temperature-dependent operating pressure	-0.09 ... 1.6 MPa				
Temperature-dependent operating pressure	-0.9 ... 16 bar				
Operating pressure complete temperature range	-0.09 ... 0.3 MPa				
Operating pressure complete temperature range	-0.9 ... 3 bar				
Ambient temperature ¹⁾	0 ... 60°C				
Media temperature	0 ... 120°C				
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases Carbon dioxide Air Oxygen Nitrogen				
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress	–	2 - Moderate corrosion stress		
Suitable for use with food	–	See supplementary material information	–	See supplementary material information	
Oxygen suitability according to standard	ASTM G 93 ISO 15001				
Biocompatibility according to standard	ISO 18562	–	ISO 18562	–	ISO 18562

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Datasheet

Operating and environmental conditions, push-in connectors, for a tubing outer diameter of 10 to 12 mm

Temperature-dependent operating pressure	-0.09 ... 1.2 MPa		
Temperature-dependent operating pressure	-0.9 ... 12 bar		
Operating pressure complete temperature range	-0.09 ... 0.3 MPa		
Operating pressure complete temperature range	-0.9 ... 3 bar		
Ambient temperature ¹⁾	0 ... 60°C		
Media temperature	0 ... 120°C		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases Carbon dioxide Air Oxygen Nitrogen		
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress	–	2 - Moderate corrosion stress –
Suitable for use with food	–	See supplementary material information	
Oxygen suitability according to standard	ASTM G 93	ASTM G 93 ISO 15001	
Biocompatibility according to standard	ISO 18562		

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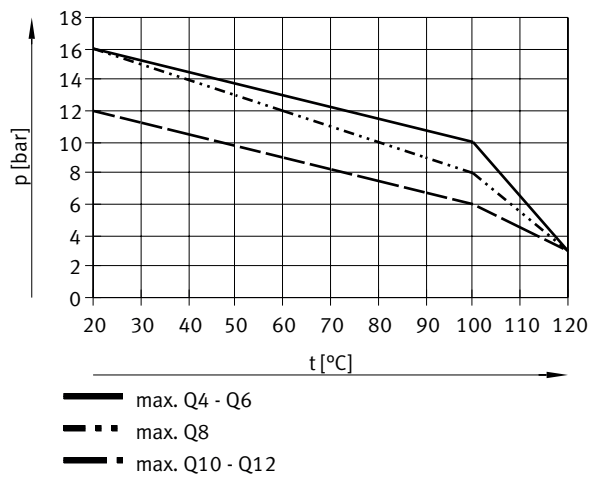
Materials, push-in fittings

Design	L-shape	Straight design
Material screwed plug	High-alloy stainless steel	
Material housing	PVDF	High-alloy stainless steel
Material release ring	PVDF	
Material tubing clamp component	High-alloy stainless steel	
Material thread seal	FPM	
Material tubing seal	FPM	
Note on materials	RoHS-compliant	
LABS (PWIS) conformity	VDMA24364 zone III	

Materials, push-in connectors

Material housing	PVDF
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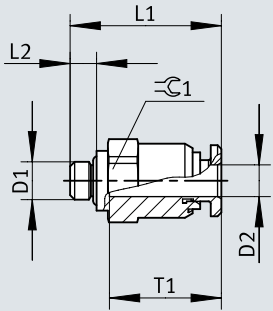
Datasheet

Operating pressure p as a function of the temperature of medium t for push-in L-fitting NPQO-L and push-in fittings

Dimensions

Dimensions – Push-in fitting NPQO-D

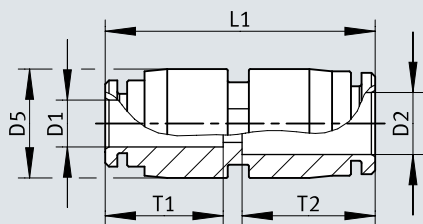
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	D1	D2 ∅	L1	L2	T1	=C1
NPQO-D-M5-Q4-P10	M5	4	20	3,5	14,8	10
NPQO-D-M5-Q6-P10	M5	6	21,4	3,5	15,6	12
NPQO-D-G18-Q4-P10	G1/8	4	19	5	14,8	13
NPQO-D-G18-Q6-P10	G1/8	6	20,1	5	15,6	13
NPQO-D-G18-Q8-P10	G1/8	8	25,2	5	17,6	14
NPQO-D-G14-Q6-P10	G1/4	6	21,6	7	15,6	17
NPQO-D-G14-Q8-P10	G1/4	8	22,9	7	17,6	17
NPQO-D-G14-Q10-P5	G1/4	10	29,3	7	20,1	17
NPQO-D-G38-Q10-P5	G3/8	10	25,6	6	20,1	19
NPQO-D-G38-Q12-P5	G3/8	12	27,5	8	22	22

Dimensions

Dimensions – Push-in connector NPQO-D

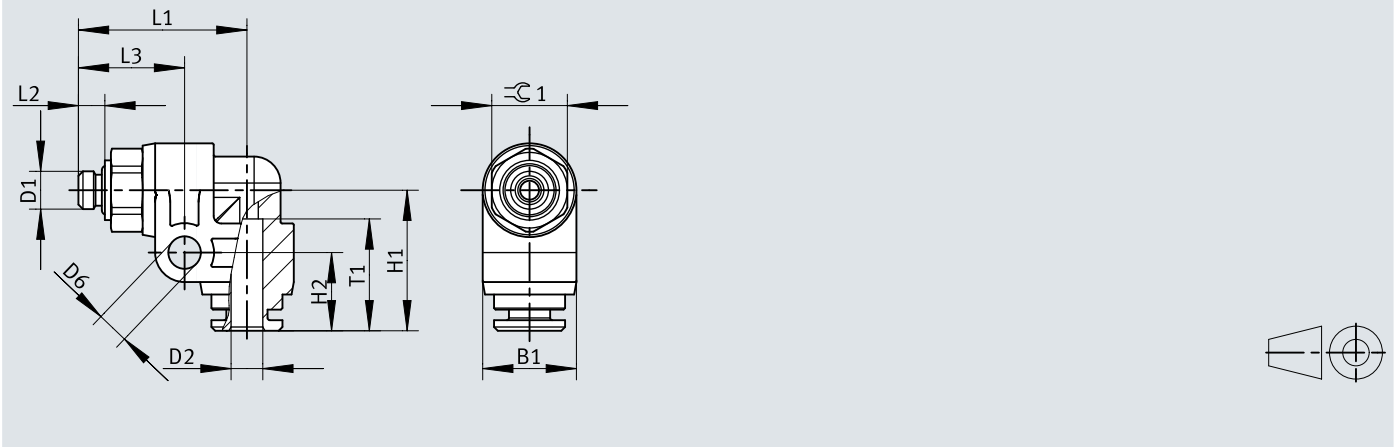
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	D1 ∅	D2 ∅	D5 ∅	L1	T1	T2
NPQO-D-Q4-E-P10	4	4	10,4	30,1	14,8	14,8
NPQO-D-Q6-E-P10	6	6	12,4	32,2	15,6	15,6
NPQO-D-Q6-Q4-P10	4	6	12,4	31,8	14,8	15,6
NPQO-D-Q8-E-P10	8	8	14,4	36,2	17,85	17,85
NPQO-D-Q8-Q6-P10	6	8	14,4	35,7	15,6	17,6
NPQO-D-Q10-E-P5	10	10	17,2	41,2	20,1	20,1
NPQO-D-Q10-Q8-P5	8	10	17,2	40,5	17,6	20,1
NPQO-D-Q12-E-P5	12	12	21	45	22,25	22,25
NPQO-D-Q12-Q10-P5	10	12	21	44,9	20,1	22

Dimensions

Dimensions – Push-in L-fitting NPQO-L

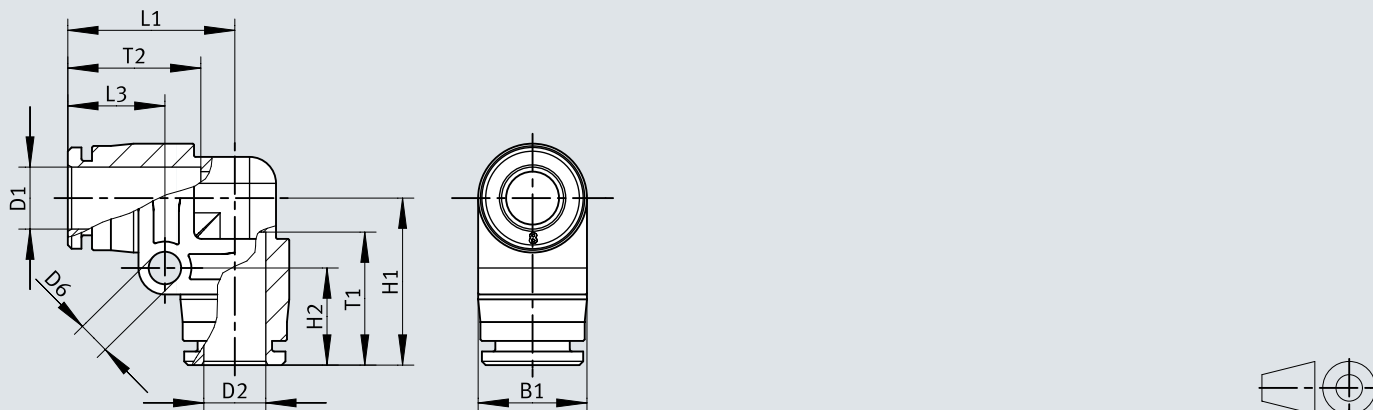
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	B1	D1	D2 ∅	D6 ∅	H1	L1	L2	L3	T1	$\varnothing 1$
NPQO-L-M5-Q4-P10	12,4	M5	4	4,3	18,6	22,3	3,5	14,05	14,8	10
NPQO-L-M5-Q6-P10	12,4	M5	6	4,3	19	22,6	3,5	14,35	15,6	12
NPQO-L-G18-Q4-P10	12,4	G1/8	4	4,3	18,6	24,3	5	16,05	14,8	13
NPQO-L-G18-Q6-P10	12,4	G1/8	6	4,3	19	24,3	5	16,05	15,6	13
NPQO-L-G18-Q8-P10	14,4	G1/8	8	4,3	22,1	26,9	5	17,65	17,6	14
NPQO-L-G14-Q6-P10	12,4	G1/4	6	4,3	19	26,8	7	18,55	15,3	17
NPQO-L-G14-Q8-P10	14,4	G1/4	8	4,3	22,1	29,4	7	20,15	17,6	17
NPQO-L-G14-Q10-P5	17,2	G1/4	10	4,3	26,1	32,7	7	20,7	19,8	17
NPQO-L-G38-Q10-P5	17,2	G3/8	10	4,3	26,1	33,7	8	21,7	20,1	19
NPQO-L-G38-Q12-P5	23	G3/8	12	4,3	31	38,5	8	26,5	22	22

Dimensions

Dimensions – Push-in L-connector NPQO-L

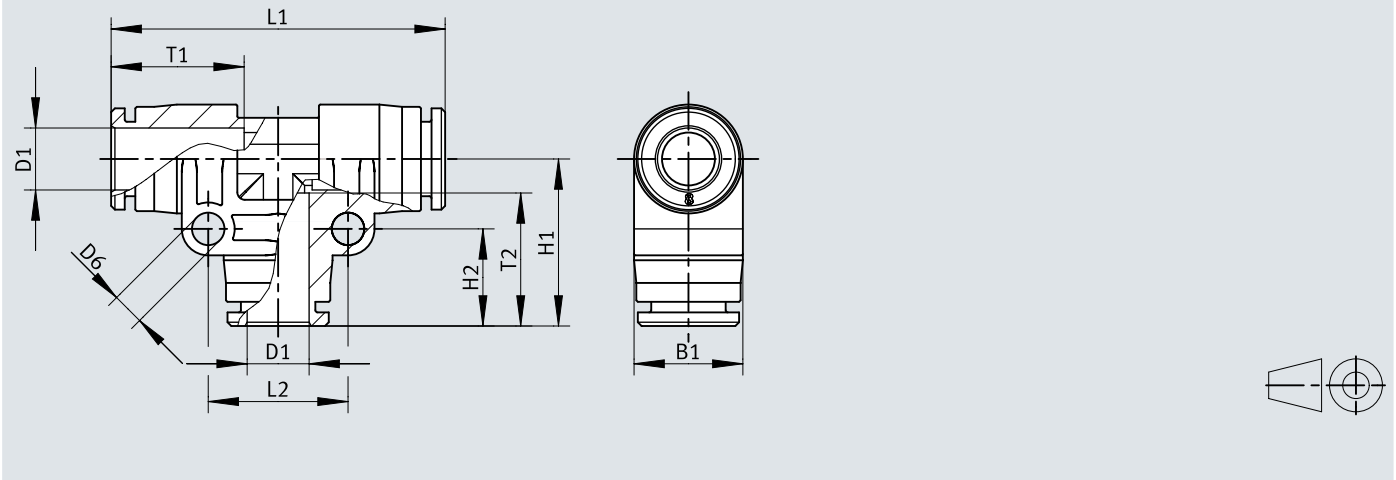
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	B1	D1 ∅	D2 ∅	D6 ∅	H1	H2	L1	L3	T1	T2
NPQO-L-Q4-E-P10	12,4	4	4	4,3	18,6	10,35	18,6	10,35	14,8	14,8
NPQO-L-Q6-E-P10	12,4	6	6	4,3	19	10,75	19	10,75	15,6	15,6
NPQO-L-Q8-E-P10	14,4	8	8	4,3	22,1	12,85	22,1	12,85	17,6	17,6
NPQO-L-Q10-E-P5	17,2	10	10	4,3	26,1	14,1	26,1	14,1	20,1	20,1
NPQO-L-Q12-E-P5	23	12	12	4,3	31	19	31	19	22	22

Dimensions


Dimensions – Push-in T-connector NPQO-T


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	B1	D1 ∅	D2 ∅	D6 ∅	H1	H2	L1	L2	T1	T2
NPQO-T-Q4-E-P10	12,4	4	4	4,3	18,6	10,35	37,2	16,5	14,8	14,8
NPQO-T-Q6-E-P10	12,4	6	6	4,3	19	10,75	38	16,5	15,6	15,6
NPQO-T-Q8-E-P10	14,4	8	8	4,3	22,1	12,85	44,2	18,5	17,6	17,6
NPQO-T-Q10-E-P5	17,2	10	10	4,3	26,1	14,1	52,2	24	20,1	20,1
NPQO-T-Q12-E-P5	21	12	12	4,3	31	19	62	24	22	22


Ordering data

Push-in fitting NPQO-D								
	Pneumatic connection, port 1	Pneumatic connection, port 2	Tubing insertion depth	Product weight	Size of pack	Nominal size	Part no.	Type
		For tubing outside diameter of 6 mm	15.6 mm	7.41 g 17.08 g	10	2.5 mm	8203293	NPQO-D-M5-Q6-P10
						4.2 mm	8203297	NPQO-D-G14-Q6-P10
		For tubing outside diameter of 10 mm	20.1 mm	24.31 g	5	8.3 mm	8203300	NPQO-D-G38-Q10-P5
	Male thread M5		14.8 mm	5.41 g	10	2.5 mm	8203292	NPQO-D-M5-Q4-P10
	Male thread G1/8		15.6 mm	8.51 g		4.2 mm	8203295	NPQO-D-G18-Q6-P10
		For tubing outside diameter of 4 mm	14.8 mm	8.8 g		3.2 mm	8203294	NPQO-D-G18-Q4-P10
		For tubing outside diameter of 8 mm	17.6 mm	12.35 g	6.2 mm	8203296	NPQO-D-G18-Q8-P10	
	Male thread G1/4			15.75 g	5		8203298	NPQO-D-G14-Q8-P10
		For tubing outside diameter of 10 mm	20.1 mm	21.34 g		7.2 mm	8203299	NPQO-D-G14-Q10-P5
	Male thread G3/8	For tubing outer diameter of 12 mm	22 mm	28.46 g		10.3 mm	8203301	NPQO-D-G38-Q12-P5


Push-in connector NPQO-D									
	Pneumatic connection, port 1	Pneumatic connection, port 2	Tubing insertion depth	Product weight	Size of pack	Nominal size	Part no.	Type	
		For tubing outer diameter of 12 mm	22.25 mm	22.62 g	5	11 mm	8203319	NPQO-D-Q12-E-P5	
		For tubing outer diameter of 4 mm	14.8 mm	4.76 g	10	3 mm	8203312	NPQO-D-Q4-E-P10	
		For tubing outside diameter of 4 mm					8203314	NPQO-D-Q6-Q4-P10	
		For tubing outside diameter of 6 mm		15.6 mm	6.37 g	5	5 mm	8203313	NPQO-D-Q6-E-P10
		For tubing outside diameter of 6 mm		6.43 g	8203316			NPQO-D-Q8-Q6-P10	
		For tubing outside diameter of 6 mm	17.6 mm	9.01 g	8203315			NPQO-D-Q8-E-P10	
		For tubing outer diameter of 8 mm	For tubing outside diameter of 8 mm	17.85 mm	9.19 g	5	7 mm	8203318	NPQO-D-Q10-Q8-P5
		For tubing outer diameter of 10 mm	For tubing outside diameter of 8 mm	20.1 mm	13.57 g			8203317	NPQO-D-Q10-E-P5
		For tubing outer diameter of 10 mm	For tubing outside diameter of 10 mm		14.12 g				
		For tubing outer diameter of 12 mm	For tubing outside diameter of 10 mm	22 mm	21.66 g			8203320	NPQO-D-Q12-Q10-P5

Ordering data

Push-in L-fitting NPQO-L								
	Pneumatic connection, port 1	Pneumatic connection, port 2	Tubing insertion depth	Product weight	Size of pack	Nominal size	Part no.	Type
	Male thread M5	For tubing outside diameter of 4 mm	14.8 mm	11.14 g	10	2.5 mm	8203302	NPQO-L-M5-Q4-P10
		For tubing outside diameter of 6 mm	15.6 mm	13.22 g		2.6 mm	8203303	NPQO-L-M5-Q6-P10
	Male thread G1/8			16.33 g		4 mm	8203305	NPQO-L-G18-Q6-P10
		For tubing outside diameter of 4 mm	14.8 mm	15.49 g		2.5 mm	8203304	NPQO-L-G18-Q4-P10
		For tubing outside diameter of 8 mm	17.6 mm	19.8 g		6 mm	8203306	NPQO-L-G18-Q8-P10
	Male thread G1/4	For tubing outside diameter of 6 mm	15.3 mm	25.67 g		4 mm	8203307	NPQO-L-G14-Q6-P10
		For tubing outside diameter of 8 mm	17.6 mm	27.96 g	6 mm	8203308	NPQO-L-G14-Q8-P10	
	Male thread G3/8	For tubing outside diameter of 10 mm	19.8 mm	33.09 g	5	8 mm	8203309	NPQO-L-G14-Q10-P5
			20.1 mm	41.79 g		8203310	NPQO-L-G38-Q10-P5	
		For tubing outer diameter of 12 mm	22 mm	60.3 g		10 mm	8203311	NPQO-L-G38-Q12-P5

Push-in L-connector NPQO-L								
	Pneumatic connection, port 1	Pneumatic connection, port 2	Tubing insertion depth	Product weight	Size of pack	Nominal size	Part no.	Type
		For tubing outside diameter of 8 mm	17.6 mm	10.91 g	10	7 mm	8203323	NPQO-L-Q8-E-P10
	For tubing outer diameter of 4 mm		14.8 mm	7.58 g		3 mm	8203321	NPQO-L-Q4-E-P10
	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	15.6 mm	7.6 g		5 mm	8203322	NPQO-L-Q6-E-P10
	For tubing outer diameter of 10 mm	For tubing outside diameter of 10 mm	20.1 mm	17.6 g	5	9 mm	8203324	NPQO-L-Q10-E-P5
	For tubing outer diameter of 12 mm		22 mm	33.77 g		11 mm	8203325	NPQO-L-Q12-E-P5

Ordering data

Push-in T-connector NPQO-T								
	Pneumatic connection, port 1	Pneumatic connection, port 2	Tubing insertion depth	Product weight	Size of pack	Nominal size	Part no.	Type
		For tubing outside diameter of 4 mm	14.8 mm	11.3 g	10	3 mm	8203326	NPQO-T-Q4-E-P10
	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	15.6 mm	11.38 g		5 mm	8203327	NPQO-T-Q6-E-P10
	For tubing outer diameter of 8 mm	For tubing outside diameter of 8 mm	17.6 mm	15.98 g		7 mm	8203328	NPQO-T-Q8-E-P10
	For tubing outer diameter of 10 mm	For tubing outside diameter of 10 mm	20.1 mm	25.77 g	5	9 mm	8203329	NPQO-T-Q10-E-P5
	For tubing outer diameter of 12 mm	For tubing outer diameter of 12 mm	22 mm	42.84 g		11 mm	8203330	NPQO-T-Q12-E-P5