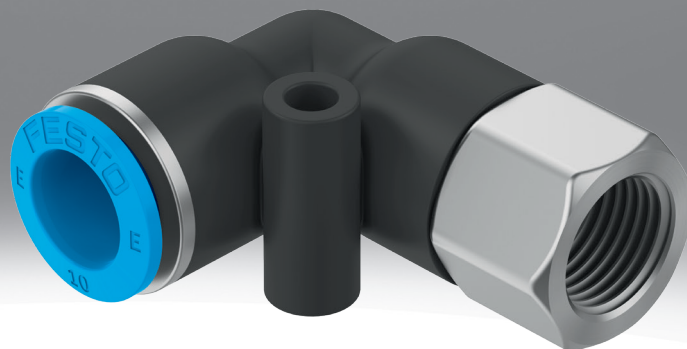


## Push-in fitting NPQE-F1A

**FESTO**



## Characteristics

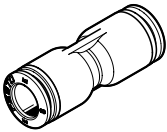
### At a glance

- Push-in fittings and push-in connections for pneumatic applications with a temperature range up to 60 °C and a pressure range up to 8 bar.
- For O.D. tubing 4, 6, 8, 10 or 12 mm, as push-in fitting with connecting thread M3, M5, M7, G1/8, G1/4, R1/8 or R1/4.

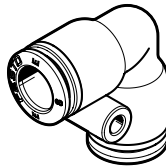
Note: When combining a male R thread and a female G thread, leakage can occur if the female G thread is not manufactured properly or has an unfavourable limit tolerance. In this case, an additional seal is required, e.g. with sealing band. When combining a male R thread and a female G thread, leakage can occur if the female G thread is not manufactured properly or has an unfavourable limit tolerance. In this case, an additional seal is required, e.g. with sealing band.

### Design

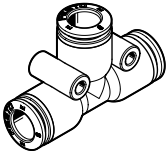
[D] Straight



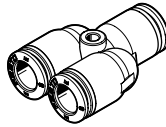
[L] L-shape



[T] T-shape



[Y] Y-shape



### Mounting method

[K] Internal hex

Easier to mount in confined spaces with a hex key.

### Releasing ring

Tube mounting:

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

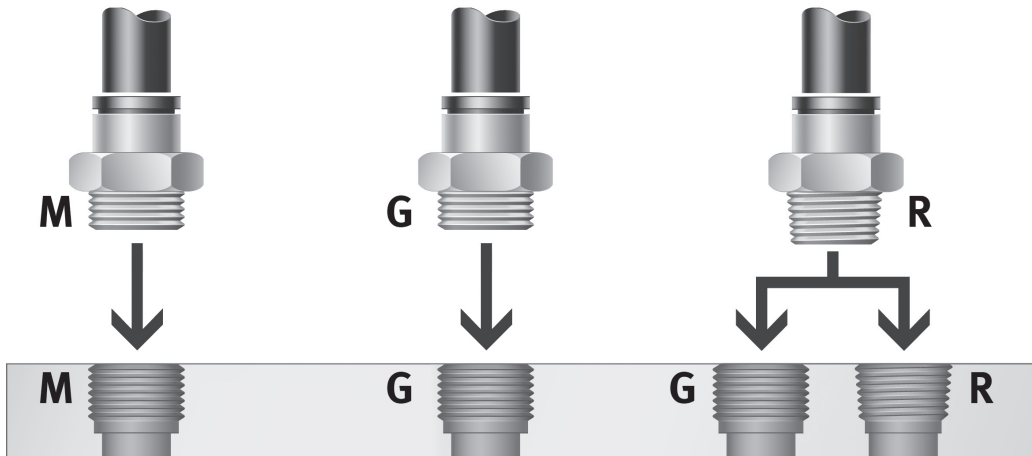
- Insert the tubing as far as the stop. It is important to ensure that the tubing is inserted into the inner seal. Depending on the tolerance between the tubing and the seal, the contact of the tubing with the seal may be incorrectly interpreted as the stop.
- Check that the tubing connection is secure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

Tubing disassembly:

- The tubing can be detached easily by pressing and holding down the releasing ring. Then carefully pull the tubing out of the fitting.
- Before re-using the tubing, remove the damaged part by cutting it off.

## Characteristics

### Pneumatic connection 1



Push-in fittings for different tube outside diameters can be combined with push-in fittings, push-in sleeves, metric male threads, male R and G threads.

Which fitting fits into which thread?

- Metric thread: Threads are comparable to G threads and are mounted in metric cylindrical threads. Tightness is ensured by a chamfered O-ring.
- G thread to ISO 228-1: shorter thread, constant installation depth, replaceable sealing ring, seal on the front, reusable several times thanks to replaceable sealing ring.
- R thread to EN 10226-1 and ISO 7/1: self-locking thread, seal on the thread, no additional sealing surface required, smaller installation dimensions as no shoulder for sealing surface, can be reused up to 5 times. When combining a male R thread with a female G thread, leakage can occur if the female G thread is not manufactured properly or has an unfavourable limit tolerance. In this case, an additional seal is required, e.g. with sealing band. When combining a male R thread with a female G thread, leakage can occur if the female G thread is not manufactured properly or has an unfavourable limit tolerance. In this case, an additional seal is required, e.g. with sealing band.

### Special material properties

[F1A] Recommended for production plants for manufacturing lithium-ion batteries, F1A



- The fittings for the production of Li-ion batteries are identified by an “e” on the releasing ring.
- Metals with copper, zinc or nickel as the main component are excluded from use. Exceptions are nickel in steels, chemically nickel-plated surfaces, circuit boards, cables, electrical plug connectors and coils

## Type code

<b>001</b>		<b>Series</b>
NPQE	Push-in fitting	
<b>002</b>		<b>Design</b>
D	Straight	
L	L-shape	
T	T-shape	
Y	Y-shape	
<b>003</b>		<b>Mounting method</b>
	Standard	
K	Internal hex	
<b>004</b>		<b>Pneumatic connection 1</b>
M3	M3	
M5	M5	
M7	M7	
G14	G1/4	
G18	G1/8	
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	
R14	R1/4	
R18	R1/8	

<b>005</b>		<b>Pneumatic connection 2</b>
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	
<b>006</b>		<b>Special material properties</b>
F1A	Recommended for production plants for manufacturing lithium-ion batteries, F1A	
<b>007</b>		<b>Packaging quantity [pieces]</b>
P10	10	

## Datasheet

## General technical data – Push-in fitting

Pneumatic connection, port 1	Male thread M3	Male thread M5	Male thread M7	Male thread G1/8	Male thread G1/4	Male thread R1/8	Male thread R1/4
Design	L-shape, Straight design			Straight design		L-shape	
Size	Mini			Mini, Standard	Standard		
Design	Push-pull principle						
Mounting position	optional						
Type of seal on screwed plug	Sealing ring					Coating	
Nominal torque	0.3	0.8	2	7	9	–	
Tolerance for nominal tightening torque	± 5%			± 20%		–	
Size of pack	10						

## General technical data

Pneumatic connection, port 1	For tubing outer diameter of 4 mm	For tubing outside diameter of 6 mm	For tubing outer diameter of 8 mm	For tubing outer diameter of 10 mm	For tubing outer diameter of 12 mm
Design	L-shape, T-shape, Y-shape, Straight design				Straight design
Size	Mini		Standard		
Design	Push-pull principle				
Mounting position	optional				
Size of pack	10				

## Operating and environmental conditions

Operating pressure complete temperature range	-0.095 ... 0.8 MPa
Operating pressure complete temperature range	-0.95 ... 8 bar
Operating pressure complete temperature range	-13.775 ... 116 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation possible
Ambient temperature	-5 ... 60°C
Corrosion resistance class CRC <sup>1)</sup>	1 - Low corrosion stress
Variants	Metals with copper, zinc or nickel as main constituent are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils., Metals with copper, zinc or nickel by mass as main constituent are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

1) More information [www.festo.com/x/topic/kbk](http://www.festo.com/x/topic/kbk)

## Materials – push-in fitting

Pneumatic connection, port 1	Male thread M3	Male thread M5	Male thread M7	Male thread G1/8	Male thread G1/4	Male thread R1/8	Male thread R1/4
Colour of release ring	Blue						
Material housing	PBT, High-alloy stainless steel			High-alloy stainless steel		PBT, High-alloy stainless steel	
Material thread seal	NBR, High-alloy stainless steel			Aluminium, TPEE		PTFE	
Material release ring	POM						
Material tubing seal	NBR						
Material tubing clamp component	High-alloy stainless steel						
Note on materials	RoHS-compliant						
LABS (PWIS) conformity	VDMA24364 zone III						
Suitability for the production of Li-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils						
Cleanroom class	Class 4 according to ISO 14644-1						

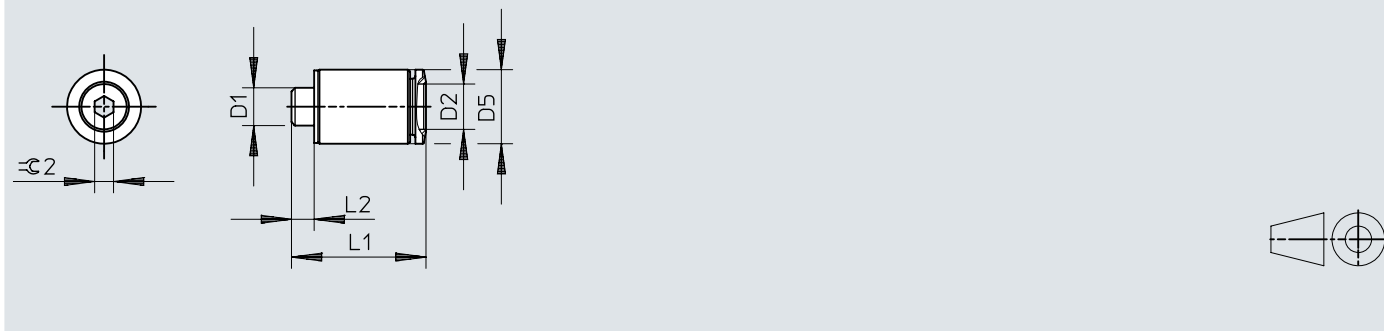
## Datasheet

Materials	
Colour of release ring	Blue
Material release ring	POM
Material tubing seal	NBR
Material tubing clamp component	High-alloy stainless steel
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364 zone III
Suitability for the production of Li-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils
Cleanroom class	Class 4 according to ISO 14644-1

## Dimensions

Dimensions – Push-in fitting NPQE-DK, metric thread

Download CAD data [www.festo.com](http://www.festo.com)

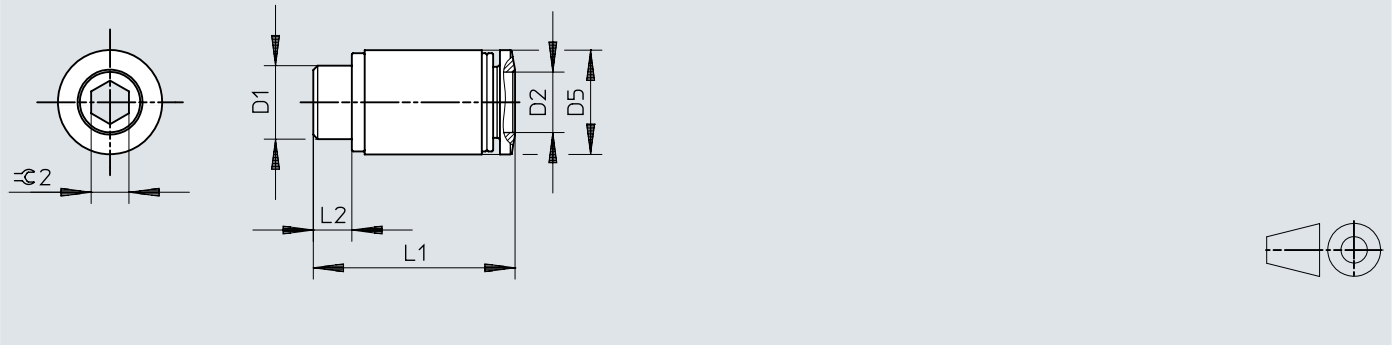


	D1	D2 ∅	D5 ∅	L1	L2	≈ 2
NPQE-DK-M3-Q4-F1A-P10	M3	4	8	16,6	2,5	1,5
NPQE-DK-M5-Q4-F1A-P10	M5	4	8	17,3	3	2,5
NPQE-DK-M5-Q6-F1A-P10		6	10	17,8	3	2,5
NPQE-DK-M7-Q4-F1A-P10	M7	4	10	18,8	5,5	3
NPQE-DK-M7-Q6-F1A-P10		6	10	20,4	5,5	4

## Dimensions

### Dimensions – Push-in fitting NPQE-DK, G thread

Download CAD data [www.festo.com](http://www.festo.com)

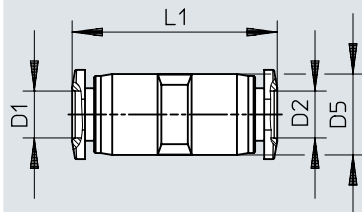


	D1	D2 ø	D5 ø	L1	L2	R2
NPQE-DK-G18-Q4-F1A-P10	G1/8	4	13	16,2	5,1	3
NPQE-DK-G18-Q6-F1A-P10		6	13	18,2	5,1	4
NPQE-DK-G18-Q8-F1A-P10		8	14	25,7	4,2	5
NPQE-DK-G18-Q10-F1A-P10		10	17	28,3	4,2	5
NPQE-DK-G14-Q6-F1A-P10	G1/4	6	17	20,1	4,8	4
NPQE-DK-G14-Q8-F1A-P10		8	17	24,4	4,8	6
NPQE-DK-G14-Q10-F1A-P10		10	17	28,9	4,8	7
NPQE-DK-G14-Q12-F1A-P10		12	20	31,1	4,8	7



## Dimensions

## Dimensions – Push-in fitting NPQE-D

Download CAD data [www.festo.com](http://www.festo.com)

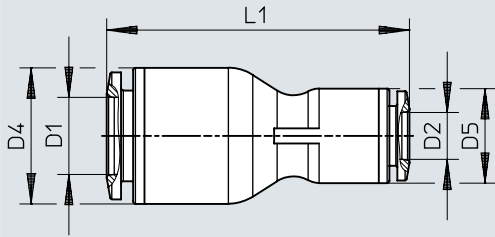
	D1 ∅	D2 ∅	D5 ∅	L1
NPQE-D-Q4-E-F1A-P10 <sup>1)</sup>	4	4	8,1	26
NPQE-D-Q6-E-F1A-P10 <sup>1)</sup>	6	6	10,7	27,1
NPQE-D-Q8-E-F1A-P10	8	8	14	38,5
NPQE-D-Q10-E-F1A-P10	10	10	18	47,2
NPQE-D-Q12-E-F1A-P10	12	12	20,6	48,8

1) Not suitable for safety clip NPAP-QE

## Dimensions

### Dimensions – Push-in connector NPQE-D, reducing

Download CAD data [www.festo.com](http://www.festo.com)

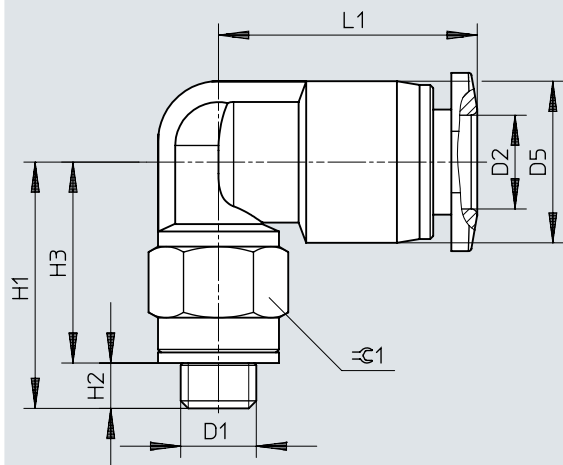


	D1 ø	D2 ø	D4 ø	D5 ø	L1
NPQE-D-Q6-Q4-F1A-P10 <sup>1)</sup>	6	4	–	10,7	26,9
NPQE-D-Q8-Q6-F1A-P10	8	6	14	12,5	34,6
NPQE-D-Q10-Q8-F1A-P10	10	8	18	14	39,5
NPQE-D-Q12-Q10-F1A-P10	12	10	20,6	18	44,4

1) Not suitable for safety clip NPAP-QE

## Dimensions

Dimensions – Push-in L-fitting NPQE-L, metric thread

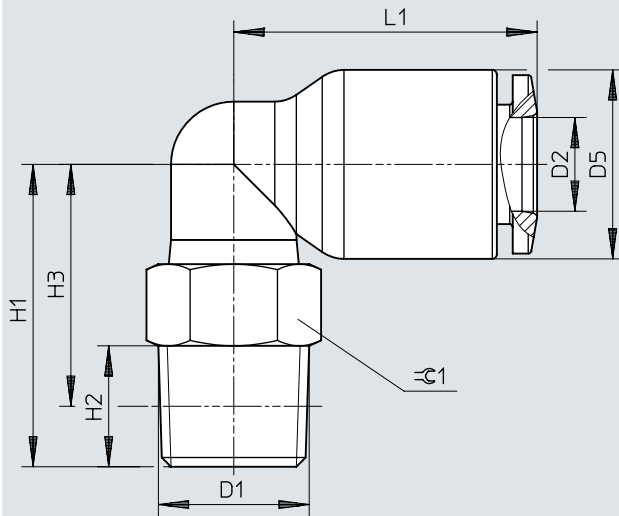
Download CAD data [www.festo.com](http://www.festo.com)

	D1	D2	D5 ∅	H1	H2	H3	L1	$\approx 1^\circ$
NPQE-L-M3-Q4-F1A-P10	M3	4	8,1	14,1	2,5	11,6	16,4	8
NPQE-L-M5-Q4-F1A-P10	M5	4	8,1	14,6	3	11,6	16,4	8
NPQE-L-M5-Q6-F1A-P10		6	10,7	16,3	3	13,3	17,1	8
NPQE-L-M7-Q4-F1A-P10	M7	4	8,1	16,6	5,5	11,1	16,4	10
NPQE-L-M7-Q6-F1A-P10		6	10,7	18,3	5,5	12,8	17,1	10

## Dimensions

### Dimensions – Push-in L-fitting NPQE-L, R thread

Download CAD data [www.festo.com](http://www.festo.com)

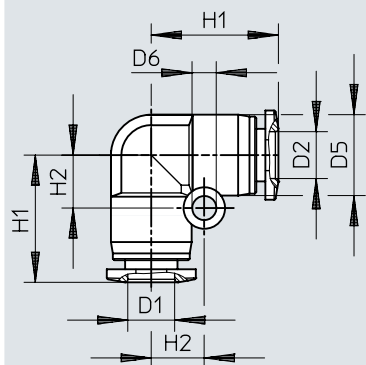


	D1	D2	D5 ∅	H1	H2	H3	L1	R1
NPQE-L-R18-Q4-F1A-P10	R1/8	4	10,5	19	8	15	18,8	10
NPQE-L-R18-Q6-F1A-P10		6	12,5	20	8	16	20,1	10
NPQE-L-R18-Q8-F1A-P10		8	14	23,4	8	19,4	22,5	10
NPQE-L-R18-Q10-F1A-P10		10	18	25,2	8,5	21,2	27	17
NPQE-L-R14-Q6-F1A-P10	R1/4	6	12,5	22,5	11	16,5	20,1	14
NPQE-L-R14-Q8-F1A-P10		8	14	23	11	17	22,5	14
NPQE-L-R14-Q10-F1A-P10		10	18	28,3	11,5	22,3	27	17
NPQE-L-R14-Q12-F1A-P10		12	20,6	29,8	11,5	23,8	28,5	17

## Dimensions

### Dimensions – Push-in L-connector NPQE-L

Download CAD data [www.festo.com](http://www.festo.com)



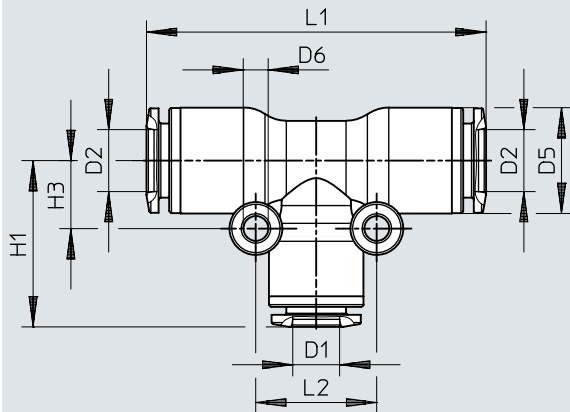
	D1 ∅	D2 ∅	D5 ∅	D6 ∅	H1	H2
NPQE-L-Q4-E-F1A-P10 <sup>1)</sup>	4	4	8,1	3,2	15,1	6
NPQE-L-Q6-E-F1A-P10 <sup>1)</sup>	6	6	10,7	3,2	16,8	7
NPQE-L-Q8-E-F1A-P10	8	8	14	3,3	22,5	10
NPQE-L-Q10-E-F1A-P10	10	10	18	4,3	27,3	12

1) Not suitable for safety clip NPAP-QE

## Dimensions

Dimensions – Push-in T-connector NPQE-T

Download CAD data [www.festo.com](http://www.festo.com)

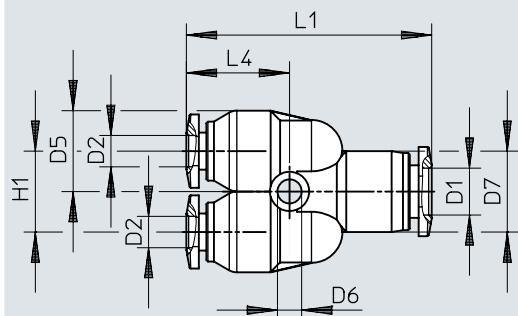


	D1 ø	D2 ø	D5 ø	D6 ø	H1	H3	L1	L2
NPQE-T-Q4-E-F1A-P10 <sup>1)</sup>	4	4	8,1	3,2	15,1	6	30,2	12
NPQE-T-Q6-E-F1A-P10 <sup>1)</sup>	6	6	10,7	3,2	16,8	7	33,6	14
NPQE-T-Q8-E-F1A-P10	8	8	14	3,3	22,5	9	44,9	18
NPQE-T-Q10-E-F1A-P10	10	10	18	4,3	28	12	56	24

1) Not suitable for safety clip NPAP-QE

## Dimensions


## Dimensions – Push-in Y-connector NPQE-Y


Download CAD data [www.festo.com](http://www.festo.com)

	D1 ∅	D2 ∅	D5 ∅	D6 ∅	D7 ∅	H1	L1	L4
NPQE-Y-Q4-E-F1A-P10 <sup>1)</sup>	4	4	7,8	3,1	7,8	8,1	30,2	13,6
NPQE-Y-Q6-E-F1A-P10 <sup>1)</sup>	6	6	10,7	3,2	10,7	10,7	32,6	13,8
NPQE-Y-Q8-E-F1A-P10	8	8	14	3,3	14	15	39,8	17,9
NPQE-Y-Q10-E-F1A-P10	10	10	18	4,3	18	18	49,1	20,5

1) Not suitable for safety clip NPAP-QE


### Ordering data

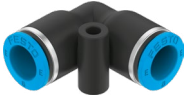
Ordering data							
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type	
	Mini	1.5 mm	For tubing outside diameter of 4 mm	Male thread M3	8158773	NPQE-DK-M3-Q4-F1A-P10	
		2.5 mm		Male thread M5	8144595	NPQE-DK-M5-Q4-F1A-P10	
			For tubing outside diameter of 6 mm		8144596	NPQE-DK-M5-Q6-F1A-P10	
		3 mm	For tubing outside diameter of 4 mm	Male thread M7	8144597	NPQE-DK-M7-Q4-F1A-P10	
				Male thread G1/8	8144599	NPQE-DK-G18-Q4-F1A-P10	
		4 mm	For tubing outside diameter of 6 mm	Male thread M7	8144598	NPQE-DK-M7-Q6-F1A-P10	
				Male thread G1/8	8144600	NPQE-DK-G18-Q6-F1A-P10	
		Standard	5 mm	For tubing outside diameter of 8 mm For tubing outside diameter of 10 mm	Male thread G1/4	8144603	NPQE-DK-G14-Q6-F1A-P10
					Male thread G1/8	8144601	NPQE-DK-G18-Q8-F1A-P10
						8144602	NPQE-DK-G18-Q10-F1A-P10
	6 mm	For tubing outside diameter of 8 mm	Male thread G1/4	8144604	NPQE-DK-G14-Q8-F1A-P10		
	7 mm	For tubing outside diameter of 10 mm		8144605	NPQE-DK-G14-Q10-F1A-P10		
		For tubing outer diameter of 12 mm		8144606	NPQE-DK-G14-Q12-F1A-P10		


Ordering data – Push-in connector NPQE-D						
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type
	Mini	2.3 mm	For tubing outside diameter of 4 mm	For tubing outer diameter of 4 mm	8158787	NPQE-D-Q4-E-F1A-P10
				For tubing outside diameter of 6 mm	8158788	NPQE-D-Q6-Q4-F1A-P10
		4 mm	For tubing outside diameter of 6 mm	8158789	NPQE-D-Q6-E-F1A-P10	
	Standard	5.3 mm	For tubing outside diameter of 6 mm	For tubing outer diameter of 8 mm	8158790	NPQE-D-Q8-Q6-F1A-P10
				For tubing outer diameter of 10 mm	8158791	NPQE-D-Q8-E-F1A-P10
		9.3 mm	For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	8158792	NPQE-D-Q10-Q8-F1A-P10
				For tubing outer diameter of 12 mm	8158793	NPQE-D-Q10-E-F1A-P10
		10 mm	For tubing outer diameter of 12 mm	8158794	NPQE-D-Q12-Q10-F1A-P10	
			8158795	NPQE-D-Q12-E-F1A-P10		




## Ordering data

Ordering data – Push-in L-fitting NPQE-L						
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type
	Mini	1 mm	For tubing outside diameter of 4 mm	Male thread M3	<b>8158774</b>	<b>NPQE-L-M3-Q4-F1A-P10</b>
		2.3 mm	For tubing outside diameter of 4 mm	Male thread M5	<b>8158775</b>	<b>NPQE-L-M5-Q4-F1A-P10</b>
				Male thread M7	<b>8158777</b>	<b>NPQE-L-M7-Q4-F1A-P10</b>
		For tubing outside diameter of 6 mm	Male thread M5	<b>8158776</b>	<b>NPQE-L-M5-Q6-F1A-P10</b>	
			Male thread M7	<b>8158778</b>	<b>NPQE-L-M7-Q6-F1A-P10</b>	
		Standard	3.4 mm	For tubing outside diameter of 4 mm	Male thread R1/8	<b>8158779</b>
					<b>8158780</b>	<b>NPQE-L-R18-Q6-F1A-P10</b>
	4 mm		For tubing outside diameter of 6 mm	Male thread R1/4	<b>8158783</b>	<b>NPQE-L-R14-Q6-F1A-P10</b>
	6 mm		For tubing outside diameter of 8 mm	Male thread R1/8	<b>8158781</b>	<b>NPQE-L-R18-Q8-F1A-P10</b>
				Male thread R1/4	<b>8158784</b>	<b>NPQE-L-R14-Q8-F1A-P10</b>
	6.5 mm	For tubing outside diameter of 10 mm	Male thread R1/8	<b>8158782</b>	<b>NPQE-L-R18-Q10-F1A-P10</b>	
8.5 mm	For tubing outer diameter of 12 mm	Male thread R1/4	<b>8158785</b>	<b>NPQE-L-R14-Q10-F1A-P10</b>		
			<b>8158786</b>	<b>NPQE-L-R14-Q12-F1A-P10</b>		

Ordering data – Push-in L-connector NPQE-L						
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type
	Mini	2.3 mm	For tubing outside diameter of 4 mm	For tubing outer diameter of 4 mm	<b>8158796</b>	<b>NPQE-L-Q4-E-F1A-P10</b>
		4 mm	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	<b>8158797</b>	<b>NPQE-L-Q6-E-F1A-P10</b>
	Standard	7.1 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	<b>8158798</b>	<b>NPQE-L-Q8-E-F1A-P10</b>
		9.3 mm	For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	<b>8158799</b>	<b>NPQE-L-Q10-E-F1A-P10</b>

Ordering data – Push-in T-connector NPQE-T						
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type
	Mini	2.3 mm	For tubing outside diameter of 4 mm	For tubing outer diameter of 4 mm	<b>8158800</b>	<b>NPQE-T-Q4-E-F1A-P10</b>
		4 mm	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	<b>8158801</b>	<b>NPQE-T-Q6-E-F1A-P10</b>
	Standard	7.1 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	<b>8158802</b>	<b>NPQE-T-Q8-E-F1A-P10</b>
		9.3 mm	For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	<b>8158803</b>	<b>NPQE-T-Q10-E-F1A-P10</b>

## Ordering data

Ordering data – Push-in Y-connector NPQE-Y						
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type
	Mini	2.3 mm	For tubing outside diameter of 4 mm	For tubing outer diameter of 4 mm	<b>8158804</b>	<b>NPQE-Y-Q4-E-F1A-P10</b>
		4 mm	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	<b>8158805</b>	<b>NPQE-Y-Q6-E-F1A-P10</b>
	Standard	8.2 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	<b>8158806</b>	<b>NPQE-Y-Q8-E-F1A-P10</b>
			For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	<b>8158807</b>	<b>NPQE-Y-Q10-E-F1A-P10</b>