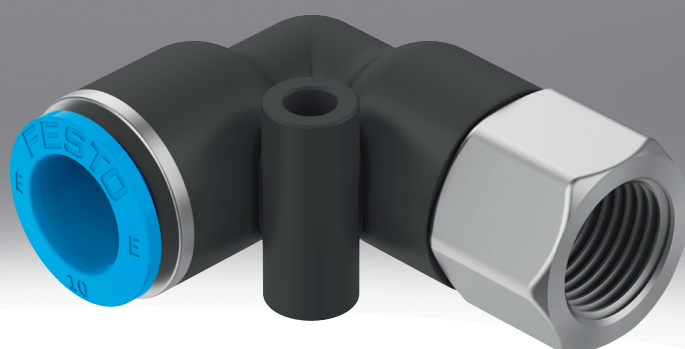


Push-in fitting NPQE-F1A

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.

Additional documents

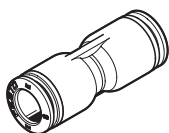
Link [npqe-f1a](#)



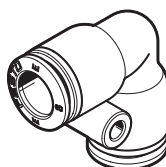
The additional document PUSH-IN-FITTINGS-ADD contains further information on tubing/fitting combinations and thread types, as well as installation instructions.

Design

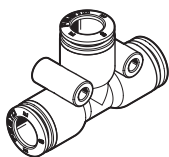
[D] Straight



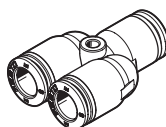
[L] L-shape



[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.

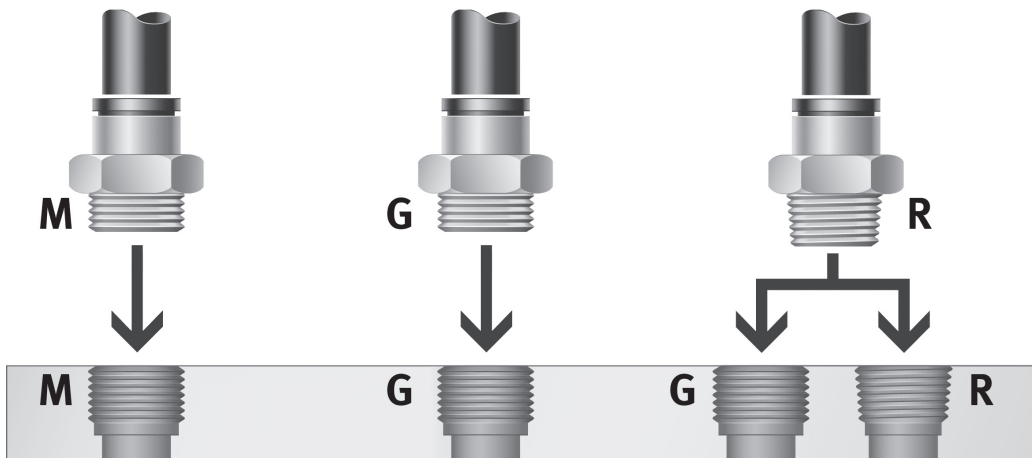
- Insert the tubing as far as the stop. It is important to ensure that the tubing is inserted into the inner seal. Depending on the tolerance between the tubing and the seal, the contact of the tubing with the seal may be incorrectly interpreted as the stop.
- Check that the tubing connection is secure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

Special material properties

[F1A]	Recommended for production plants for manufacturing lithium-ion batteries, F1A
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- The fittings for the production of Li-ion batteries are identified by an „e“ on the releasing ring.

Type code

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

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

Datasheet

General technical data – Push-in fitting

General technical data - Push-in fittings							
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	Any						
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

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	Any					
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 ¹⁾	1 - Low corrosion stress
Variants	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

Materials – push-in fitting

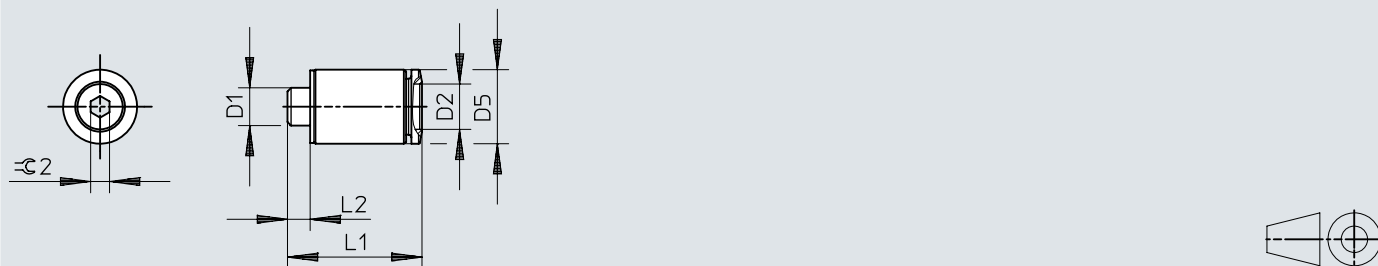
Materials - push-in fitting							
Pneumatic connection, port 1	Male thread M3	Male thread M5	Male thread M7	Male thread G1/8	Male thread G1/4	Male thread R1/8	Male thread R1/4
Colour of release ring	Blue						
Material housing	PBT, High-alloy stainless steel			High-alloy stainless steel		PBT, High-alloy 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	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)						
Variants	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.						
Cleanroom suitability, measured according to ISO 14644-14	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	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)
Variants	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.
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

Dimensions

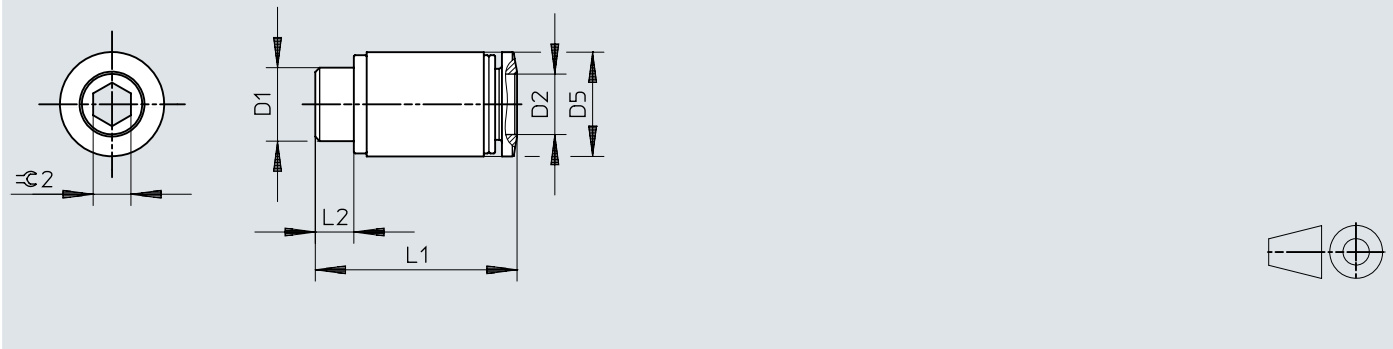
Dimensions – Push-in fitting NPQE-DK, metric thread

[Download CAD data](#) www.festo.com


	D1	D2 $\varnothing$	D5 $\varnothing$	L1	L2	$\varnothing 2$
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

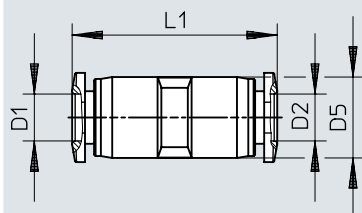
Dimensions – Push-in fitting NPQE-DK, G thread [Download CAD data](#) www.festo.com



	D1	D2 ø	D5 ø	L1	L2	±G 2
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

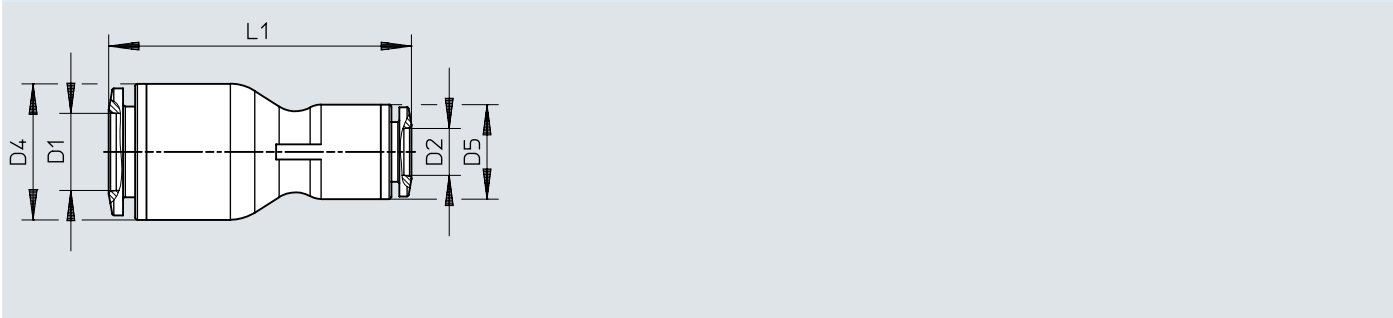
[Download CAD data](#) www.festo.com


	D1 Ø	D2 Ø	D5 Ø	L1
NPQE-D-Q4-E-F1A-P10 ¹⁾	4	4	8,1	26
NPQE-D-Q6-E-F1A-P10 ¹⁾	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



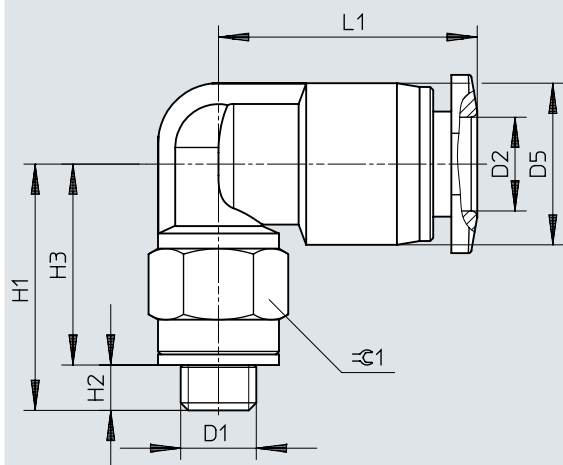
	D1 ø	D2 ø	D4 ø	D5 ø	L1
NPQE-D-Q6-Q4-F1A-P10 ¹⁾	6	4	–	10,7	26,9
NPQE-D-Q8-Q6-F1A-P10	8	6	14	12,5	34,6
NPQE-D-Q10-Q8-F1A-P10	10	8	18	14	39,5
NPQE-D-Q12-Q10-F1A-P10	12	10	20,6	18	44,4

1) Not suitable for safety clip NPAP-QE

Dimensions

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

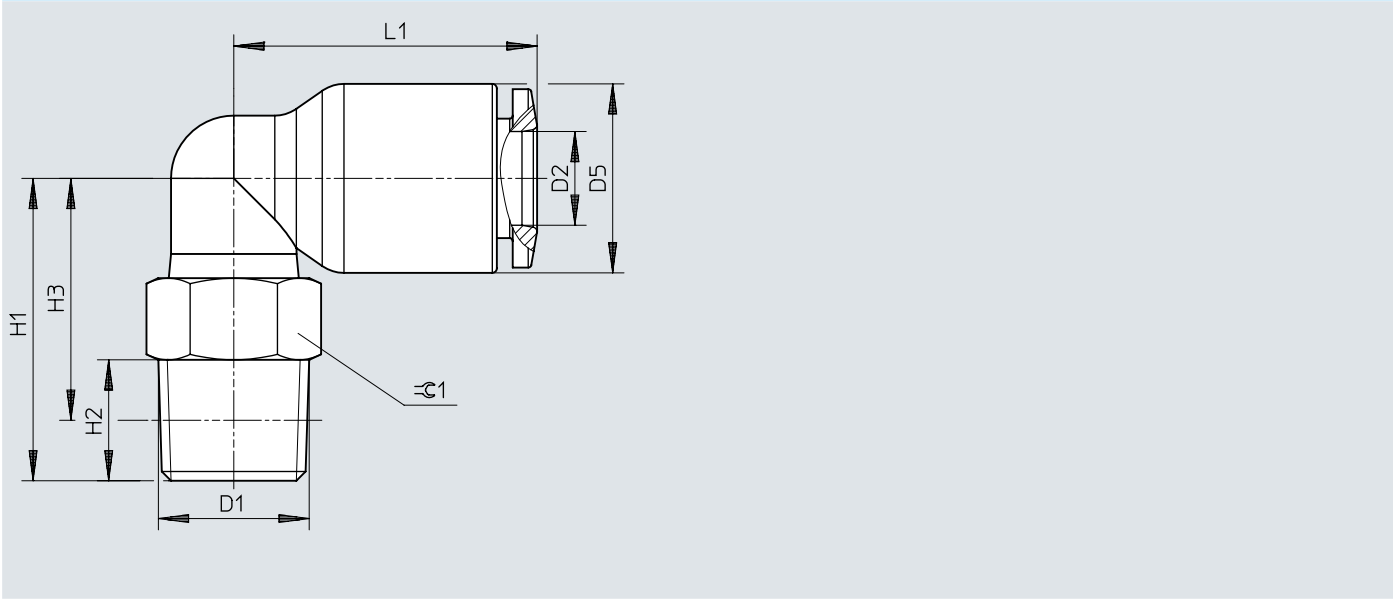
Download CAD data www.festo.com



	D1	D2	D5 ø	H1	H2	H3	L1	±0.1
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

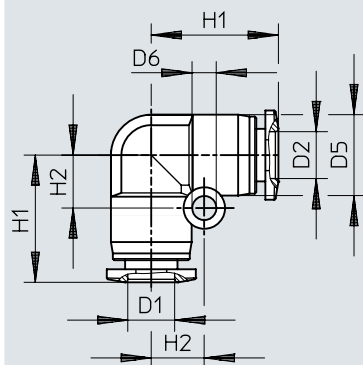
Dimensions – Push-in L-fitting NPQE-L, R thread Download CAD data www.festo.com



	D1	D2	D5 ø	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

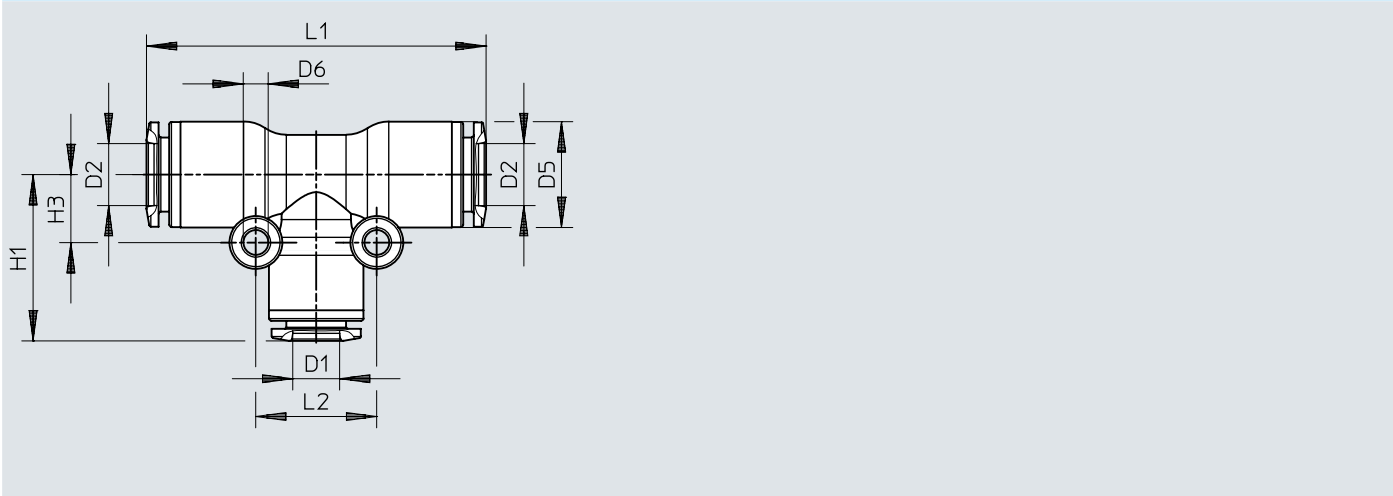
 Download CAD data www.festo.com


	D1 ø	D2 ø	D5 ø	D6 ø	H1	H2
NPQE-L-Q4-E-F1A-P10 ¹⁾	4	4	8,1	3,2	15,1	6
NPQE-L-Q6-E-F1A-P10 ¹⁾	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

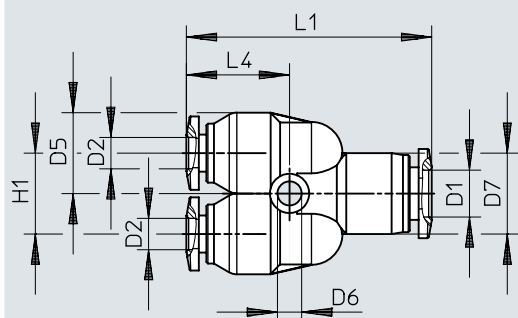


	D1 ø	D2 ø	D5 ø	D6 ø	H1	H3	L1	L2
NPQE-T-Q4-E-F1A-P10 ¹⁾	4	4	8,1	3,2	15,1	6	30,2	12
NPQE-T-Q6-E-F1A-P10 ¹⁾	6	6	10,7	3,2	16,8	7	33,6	14
NPQE-T-Q8-E-F1A-P10	8	8	14	3,3	22,5	9	44,9	18
NPQE-T-Q10-E-F1A-P10	10	10	18	4,3	28	12	56	24

1) Not suitable for safety clip NPAP-QE

Dimensions

Dimensions – Push-in Y-connector NPQE-Y

 Download CAD data www.festo.com


	D1 ø	D2 ø	D5 ø	D6 ø	D7 ø	H1	L1	L4
NPQE-Y-Q4-E-F1A-P10 ¹⁾	4	4	7,8	3,1	7,8	8,1	30,2	13,6
NPQE-Y-Q6-E-F1A-P10 ¹⁾	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
					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	
				Male thread G1/4	8144603	NPQE-DK-G14-Q6-F1A-P10
	Standard	5 mm	For tubing outside diameter of 8 mm	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
					8144605	NPQE-DK-G14-Q10-F1A-P10
		7 mm	For tubing outside diameter of 10 mm		8144606	NPQE-DK-G14-Q12-F1A-P10
			For tubing outer diameter of 12 mm			

Ordering data – Push-in connector NPQE-D

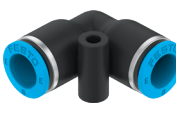
	Size	Nominal size	Pneumatic connection, port 2	Pneumatic connection, port 1	Part no.	Type
	Mini	2.3 mm	For tubing outside diameter of 4 mm	For tubing outer diameter of 4 mm	8158787	NPQE-D-Q4-E-F1A-P10
		4 mm		For tubing outside diameter of 6 mm	8158788	NPQE-D-Q6-Q4-F1A-P10
					8158789	NPQE-D-Q6-E-F1A-P10
	Standard	5.3 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	8158790	NPQE-D-Q8-Q6-F1A-P10
		7.1 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
					8158793	NPQE-D-Q10-E-F1A-P10
		10 mm	For tubing outer diameter of 12 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	8158774	NPQE-L-M3-Q4-F1A-P10
		2.3 mm		Male thread M5	8158775	NPQE-L-M5-Q4-F1A-P10
				Male thread M7	8158777	NPQE-L-M7-Q4-F1A-P10
		For tubing outside diameter of 4 mm	Male thread M5	8158776	NPQE-L-M5-Q6-F1A-P10	
			Male thread M7	8158778	NPQE-L-M7-Q6-F1A-P10	
	Standard	3.4 mm	For tubing outside diameter of 4 mm	Male thread R1/8	8158779	NPQE-L-R18-Q4-F1A-P10
		4 mm			8158780	NPQE-L-R18-Q6-F1A-P10
			For tubing outside diameter of 6 mm	Male thread R1/4	8158783	NPQE-L-R14-Q6-F1A-P10
		6 mm		Male thread R1/8	8158781	NPQE-L-R18-Q8-F1A-P10
			Male thread R1/4	8158784	NPQE-L-R14-Q8-F1A-P10	
		6.5 mm	For tubing outside diameter of 10 mm	Male thread R1/8	8158782	NPQE-L-R18-Q10-F1A-P10
		8.5 mm		Male thread R1/4	8158785	NPQE-L-R14-Q10-F1A-P10
					8158786	NPQE-L-R14-Q12-F1A-P10

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	8158796	NPQE-L-Q4-E-F1A-P10
		4 mm	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	8158797	NPQE-L-Q6-E-F1A-P10
	Standard	7.1 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	8158798	NPQE-L-Q8-E-F1A-P10
		9.3 mm	For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	8158799	NPQE-L-Q10-E-F1A-P10

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	8158800	NPQE-T-Q4-E-F1A-P10
		4 mm	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	8158801	NPQE-T-Q6-E-F1A-P10
	Standard	7.1 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	8158802	NPQE-T-Q8-E-F1A-P10
		9.3 mm	For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	8158803	NPQE-T-Q10-E-F1A-P10

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	8158804	NPQE-Y-Q4-E-F1A-P10
		4 mm	For tubing outside diameter of 6 mm	For tubing outside diameter of 6 mm	8158805	NPQE-Y-Q6-E-F1A-P10
	Standard	8.2 mm	For tubing outside diameter of 8 mm	For tubing outer diameter of 8 mm	8158806	NPQE-Y-Q8-E-F1A-P10
			For tubing outside diameter of 10 mm	For tubing outer diameter of 10 mm	8158807	NPQE-Y-Q10-E-F1A-P10