

One-way flow control valves, NPT

FESTO



One-way flow control valves, NPT

Product range overview and type codes

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Product range overview									
Version	Valve function	Design	Type	Connection direction	Pneumatic connection 1	Pneumatic connection 2	qn ¹⁾ [cfm]	Adjusting element	→ Page/ Internet
Standard	Exhaust air one-way flow control function		GRLA	Elbow outlet	QB-1/8, QB-5/32, QB-3/16, QB-1/4, QB-5/16, QB-3/8, QB-1/2	UNF10-32, NPT1/8-27, NPT1/4-18, NPT3/8-18, NPT1/2-14	1.7 ... 48.1	Slotted head screw	3
In-line installation	One-way flow control function		GR	Straight	QB-5/32, QB-3/16, QB-1/4, QB-5/16, QB-3/8, QB-1/2	QB-5/32, QB-3/16, QB-1/4, QB-5/16, QB-3/8, QB-1/2	1.7 ... 14	Slotted head screw	7

1) Standard nominal flow rate in direction of flow control.

Type code GRLA

		GRLA	-	1/2	-	QB	-	3/8	-	U
Type										
GRLA	One-way flow control valve									
Pneumatic connection 2										
10-32-UNF	Male thread UNF									
1/8, 1/4, 3/8, 1/2	Male thread NPT									
Pneumatic connection 1										
Connection type										
QB	Push-in connector for tubing O.D.									
Tubing O.D.										
1/8, 5/32, 3/16, 1/4, 5/16, 3/8, 1/2										
Generation										
U	U series									

Type code GR

		GR	-	QB	-	1/2	-	U
Type								
GR	One-way flow control valve, in-line installation							
Pneumatic connection 1 and 2								
Connection type								
QB	Push-in connector for tubing O.D.							
Tubing O.D.								
5/32, 3/16, 1/4, 5/16, 3/8, 1/2								
Generation								
U	U series							

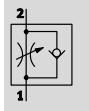
One-way flow control valves GRLA, NPT

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Technical data

One-way flow control function

Exhaust air



-  Temperature range
32 ... 140 °F
-  Operating pressure
-13.8 ... +116 psi



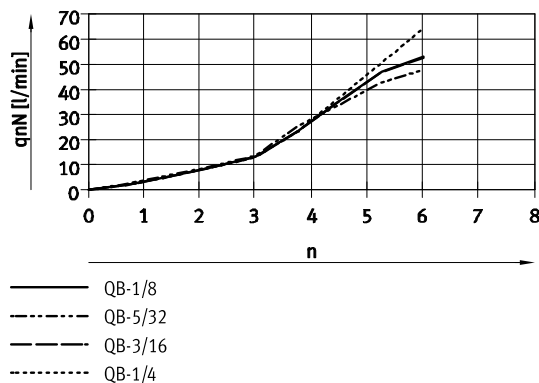
- Push-in connector QB
- Swivel connection can be rotated around installation axis after mounting

General technical data					
Valve function	Exhaust air one-way flow control function				
Pneumatic connection 2	UNF10-32	NPT $\frac{1}{8}$ -27	NPT $\frac{1}{4}$ -18	NPT $\frac{3}{8}$ -18	NPT $\frac{1}{2}$ -14
Pneumatic connection 1	QB- $\frac{1}{8}$, QB- $\frac{5}{32}$, QB- $\frac{3}{16}$, QB- $\frac{1}{4}$	QB- $\frac{5}{32}$, QB- $\frac{3}{16}$, QB- $\frac{1}{4}$, QB- $\frac{5}{16}$	QB- $\frac{5}{32}$, QB- $\frac{3}{16}$, QB- $\frac{1}{4}$, QB- $\frac{5}{16}$, QB- $\frac{3}{8}$	QB- $\frac{3}{16}$, QB- $\frac{1}{4}$, QB- $\frac{5}{16}$, QB- $\frac{3}{8}$, QB- $\frac{1}{2}$	QB- $\frac{5}{16}$, QB- $\frac{3}{8}$, QB- $\frac{1}{2}$
Adjusting element	Slotted head screw				
Actuation type	Manual				
Type of mounting	Screw-in with male thread				
Mounting position	Any				
Max. tightening torque [ft-lbf]	1.1	5.2	8.9	16.2	20.7

Operating and environmental conditions	
Operating pressure for entire temperature range [psi]	-13.8 ... +116
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature [°F]	32 ... 140
Temperature of medium [°F]	32 ... 140

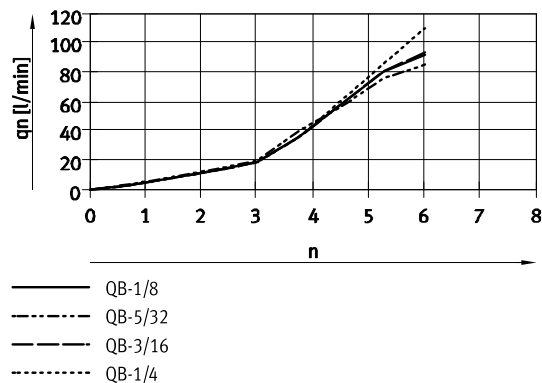
Standard nominal flow rate q_{nN} [l/min] at 6 bar $\rightarrow$ 5 bar as a function of turns of the flow control screw n

Pneumatic connection UNF10-32



Standard flow rate q_n in non-return direction at 6 bar $\rightarrow$ 0 bar as a function of turns of the flow control screw n

Pneumatic connection UNF10-32



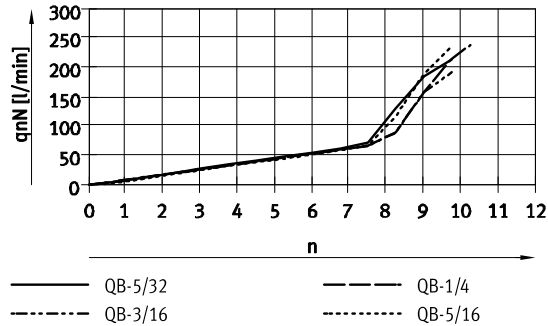
One-way flow control valves GRLA, NPT

Technical data

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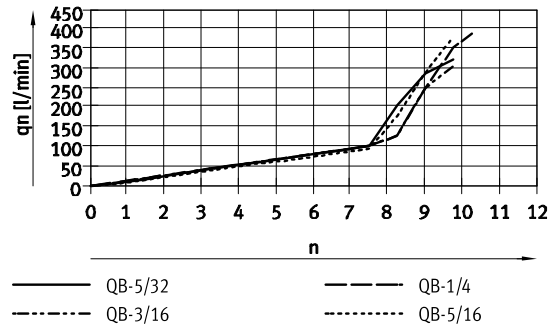
Standard nominal flow rate q_{nN} [l/min] at 6 bar $\rightarrow$ 5 bar
as a function of turns of the flow control screw n

Pneumatic connection NPT $\frac{1}{8}$ -27

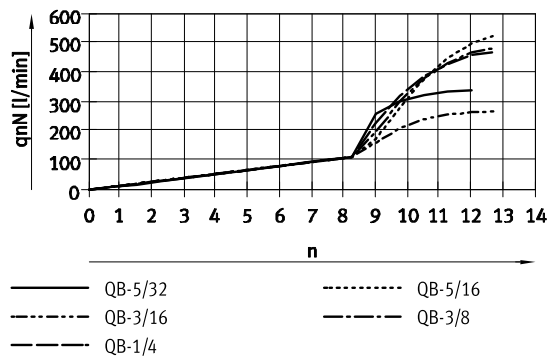


Standard flow rate q_n in non-return direction at 6 bar $\rightarrow$ 0 bar
as a function of turns of the flow control screw n

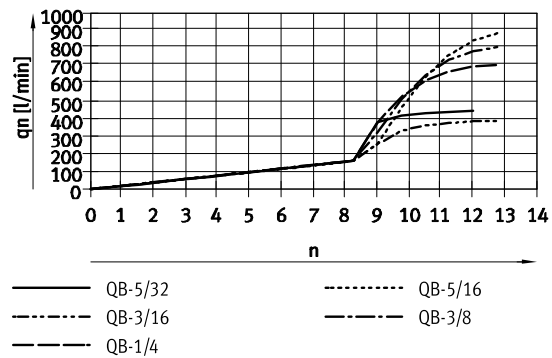
Pneumatic connection NPT $\frac{1}{8}$ -27



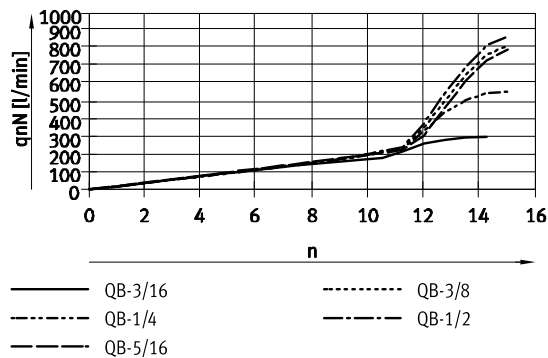
Pneumatic connection NPT $\frac{1}{4}$ -18



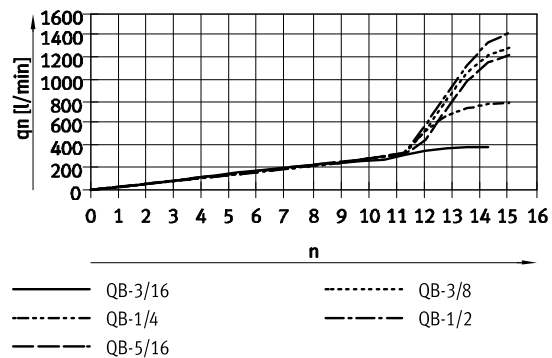
Pneumatic connection NPT $\frac{1}{4}$ -18



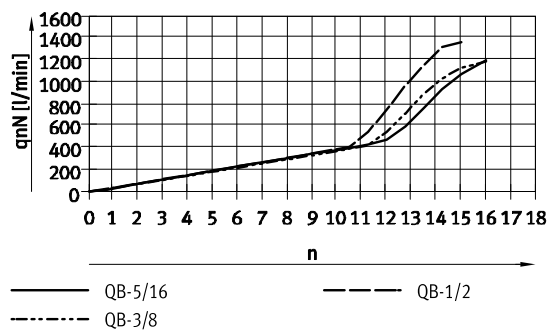
Pneumatic connection NPT $\frac{3}{8}$ -18



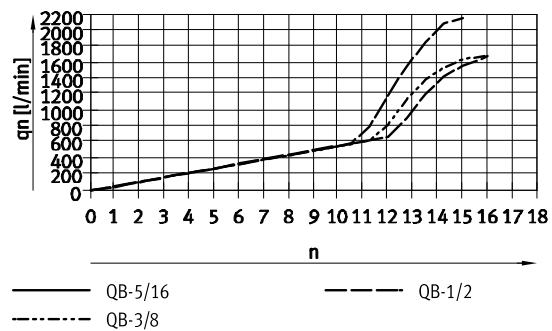
Pneumatic connection NPT $\frac{3}{8}$ -18



Pneumatic connection NPT $\frac{1}{2}$ -14



Pneumatic connection NPT $\frac{1}{2}$ -14

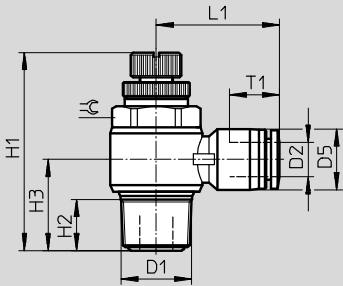


One-way flow control valves GRLA, NPT

Technical data

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Materials	
Stud end connector	Nickel-plated brass
Hollow bolt	Nickel-plated brass
Releasing ring	POM
Knurled head	Nickel-plated brass
Regulating screw	Nickel-plated brass
Swivel connection	PBT, reinforced
Seals	NBR
Note on materials	Contains paint-wetting impairment substances
	RoHS compliant

Dimensions		Download CAD data → www.festo.com
		

Type	Connection D1	Tubing O.D. D2	D5	H1		H2	H3	L1	T1	90°
				Min.	Max.					
GRLA-10-32-UNF	UNF10/32	1/8	7.8	26.9	29.1	3.6	10.3	16.5	11.4	5/16
		5/32	10.5				10.3	20.3	14.9	
		3/16	11.5				10.4	21.6	15.9	
		1/4	13.0				10.6	23.7	16.8	
GRLA-1/8	NPT1/8	5/32	10.5	34.9	39.8	8.2	15.1	23.7	14.9	7/16
		3/16	11.5				15.1	24.3	15.9	
		1/4	13.0				15.2	24.9	16.8	
		5/16	14.5				16.2	26.6	18.7	
GRLA-1/4	NPT1/4	5/32	10.5	40.6	47.0	11.0	18.4	25.6	14.9	19/32
		3/16	11.5				18.4	26.2	15.9	
		1/4	13.0				18.4	26.8	16.8	
		5/16	14.5				19.2	28.5	18.7	
		3/8	17.5				20.7	30.9	20.1	
GRLA-3/8	NPT3/8	3/16	11.5	47.9	54.9	13.1	21.9	27.8	15.9	3/4
		1/4	13.0				21.9	28.4	16.8	
		5/16	14.5				21.9	29.6	18.7	
		3/8	17.5				22.6	30.7	20.1	
		1/2	20.8				24.1	34.0	22.9	
GRLA-1/2	NPT1/2	5/16	14.5	53.9	61.3	16.5	26.5	32.4	18.7	15/16
		3/8	17.5				26.5	33.2	20.1	
		1/2	20.8				27.7	36.5	22.9	

One-way flow control valves GRLA, NPT

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Technical data

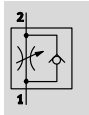
Ordering data								
Pneumatic connection		Standard nominal flow rate qnN at 6 bar → 5 bar		Standard flow rate qn at 6 bar → 0 bar		Weight	Part No.	Type
		In direction of flow control	In non-return direction	In direction of flow control	In non-return direction			
2	1	[cfm]	[cfm]	[cfm]	[cfm]	[oz]		
Slotted head screw								
UNF10-32	QB-1/8	1.87	1.45 ... 1.91	3.3	3.23 ... 3.4	0.3	564839	GRLA-10-32-UNF-QB-1/8-U
	QB-3/32	1.7	1.31 ... 1.73	3	3 ... 3.14	0.35	564840	GRLA-10-32-UNF-QB-3/32-U
	QB-3/16	1.87	1.41 ... 1.911	3.3	3.32 ... 3.43	0.34	564841	GRLA-10-32-UNF-QB-3/16-U
	QB-1/4	2.26	1.73 ... 2.3	3.9	3.92 ... 4.1	0.38	564842	GRLA-10-32-UNF-QB-1/4-U
NPT1/8-27	QB-3/32	7.56	5.83 ... 7.7	11.5	11.4 ... 11.9	0.66	534656	GRLA-1/8-QB-3/32-U
	QB-3/16	6.78	5.23 ... 6.92	10.9	10.9 ... 11.3	0.66	534657	GRLA-1/8-QB-3/16-U
	QB-1/4	8.44	6.5 ... 8.62	13.8	13.8 ... 14.3	0.7	534658	GRLA-1/8-QB-1/4-U
	QB-5/16	8.37	6.43 ... 8.55	13.5	13.5 ... 14	0.77	534659	GRLA-1/8-QB-5/16-U
NPT1/4-18	QB-3/32	12	9.25 ... 12.25	15.7	15.7 ... 16.4	1.2	564843	GRLA-1/4-QB-3/32-U
	QB-3/16	9.5	7.31 ... 9.68	13.6	13.6 ... 14.2	1.2	534660	GRLA-1/4-QB-3/16-U
	QB-1/4	16.6	12.78 ... 16.91	25	25 ... 26	1.26	534661	GRLA-1/4-QB-1/4-U
	QB-5/16	18.7	14.37 ... 19.1	31.4	31.4 ... 32.6	1.33	534662	GRLA-1/4-QB-5/16-U
NPT3/8-18	QB-3/8	17.13	13.2 ... 17.5	28.5	28.5 ... 29.6	1.38	534663	GRLA-1/4-QB-3/8-U
	QB-3/16	10.6	8.1 ... 10.8	13.7	13.7 ... 14.3	2.31	564844	GRLA-3/8-QB-3/16-U
	QB-1/4	19.7	15.2 ... 20.1	28.1	28.1 ... 29.2	2.35	534664	GRLA-3/8-QB-1/4-U
	QB-5/16	28.1	21.65 ... 28.7	43.5	43.5 ... 45.2	2.46	534665	GRLA-3/8-QB-5/16-U
NPT1/2-14	QB-3/8	29	22.3 ... 29.5	45.8	45.8 ... 47.6	2.48	534666	GRLA-3/8-QB-3/8-U
	QB-1/2	30.7	23.6 ... 31.3	50.5	50.5 ... 52.5	2.61	534667	GRLA-3/8-QB-1/2-U
	QB-5/16	42.4	32.6 ... 43.2	59.3	59.6 ... 61.6	3.66	564845	GRLA-1/2-QB-5/16-U
	QB-3/8	41.8	32.2 ... 42.7	59.7	59.7 ... 62.1	3.85	564846	GRLA-1/2-QB-3/8-U
	QB-1/2	48.1	37.1 ... 49.1	76.1	76.1 ... 79.1	4.2	564847	GRLA-1/2-QB-1/2-U

One-way flow control valves GR, NPT

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Technical data

One-way flow control function



- Temperature range
32 ... 140 °F
- Operating pressure
-13.8 ... +116 psi

- One-way flow control valve for in-line installation
- Push-in connector QB



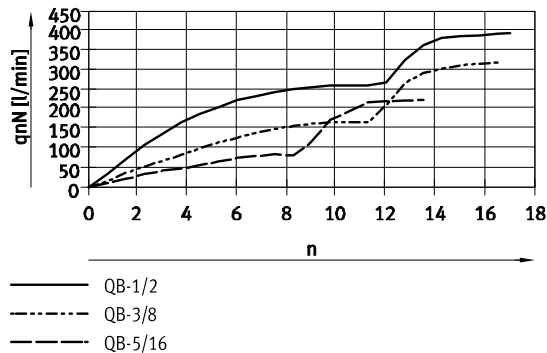
General technical data

Valve function	One-way flow control function					
Pneumatic connection 2	QB-5/32	QB-3/16	QB-1/4	QB-5/16	QB-3/8	QB-1/2
Pneumatic connection 1	QB-5/32	QB-3/16	QB-1/4	QB-5/16	QB-3/8	QB-1/2
Adjusting element	Slotted head screw					
Actuation type	Manual					
Type of mounting	In-line installation With through-hole					
Mounting position	Any					

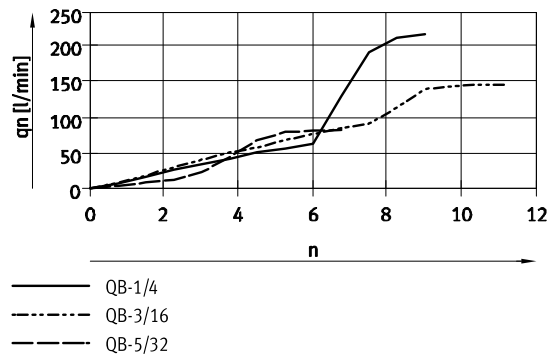
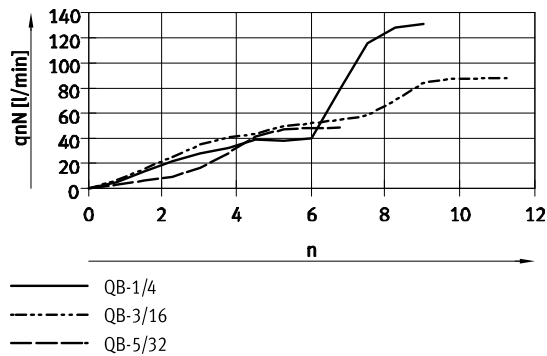
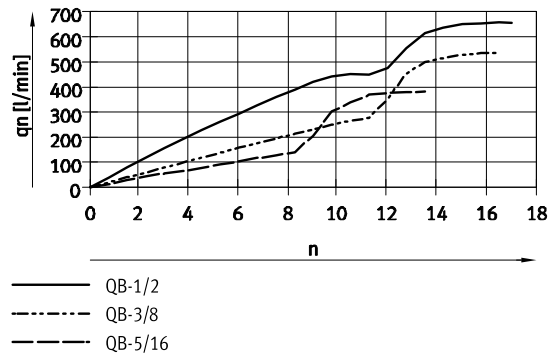
Operating and environmental conditions

Operating pressure [psi]	-13.8 ... +116
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature [°F]	32 ... 140
Temperature of medium [°F]	32 ... 140

Standard nominal flow rate q_{nN} at 6 bar $\rightarrow$ 5 bar
as a function of turns of the flow control screw n



Standard flow rate q_n at 6 bar $\rightarrow$ 0 bar
as a function of turns of the flow control screw n



One-way flow control valves GR, NPT

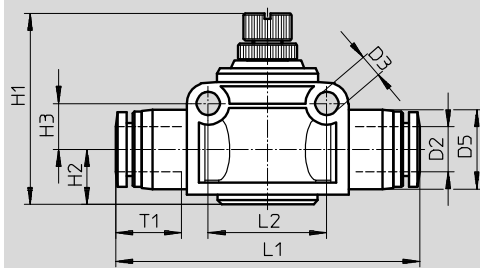
Technical data

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Materials	
Housing	PBT, reinforced
Stud end connector	Nickel-plated brass
Releasing ring	POM
Knurled head	Nickel-plated brass
Regulating screw	Nickel-plated brass
Seals	NBR
Note on materials	Contains paint-wetting impairment substances
	RoHS-compliant

Dimensions

Download CAD data → www.festo.com

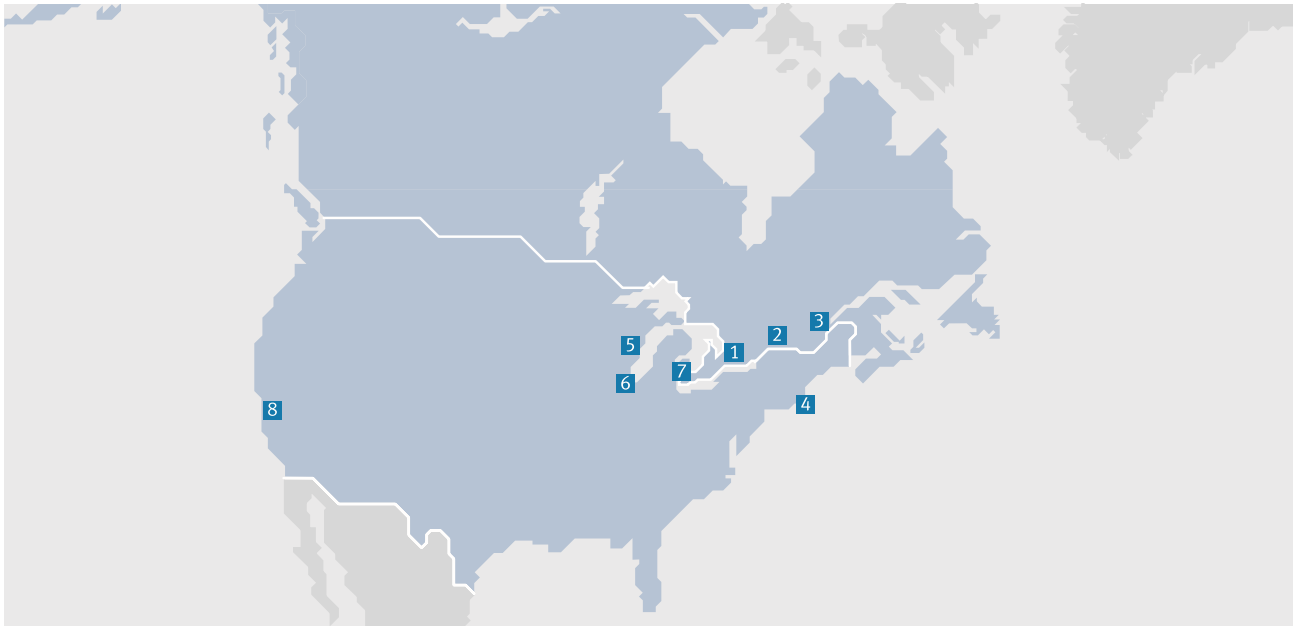


Type	Tubing O.D. D2	D3	D5	H1		H2	H3	L1	L2	T1
				Min.	Max.					
GR-QB- $\frac{5}{32}$ -U	$\frac{5}{32}$	3.2	10.5	26.4	28.9	7.6	5.6	44.8	15.4	14.9
GR-QB- $\frac{3}{16}$ -U	$\frac{3}{16}$	4.3	11.6	33.1	38.5	7.6	8.0	49.9	20.4	15.9
GR-QB- $\frac{1}{4}$ -U	$\frac{1}{4}$	4.3	13.1	33.5	38.9	9.4	8.0	50.1	20.4	16.8
GR-QB- $\frac{5}{16}$ -U	$\frac{5}{16}$	4.4	14.8	35.5	41.5	10.2	8.5	56.4	22.0	18.7
GR-QB- $\frac{3}{8}$ -U	$\frac{3}{8}$	4.3	17.5	40.7	48.6	11.4	10.3	61.4	28.1	20.1
GR-QB- $\frac{1}{2}$ -U	$\frac{1}{2}$	4.4	20.5	45.5	53.4	14.0	12.1	70.7	32.0	22.9

Ordering data

Pneumatic connection		Standard nominal flow rate q _{nN} at 6 bar → 5 bar		Standard flow rate q _n at 6 bar → 0 bar		Weight	Part No.	Type
		In direction of flow control	In non-return direction	In direction of flow control	In non-return direction			
2	1	[cfm]	[cfm]	[cfm]	[cfm]	[oz]		
Slotted head screw								
QB- $\frac{5}{32}$	QB- $\frac{5}{32}$	1.7	0.6 ... 1.7	3	2.4 ... 3.2	0.4	534680	GR-QB- $\frac{5}{32}$ -U
QB- $\frac{3}{16}$	QB- $\frac{3}{16}$	3.1	2.6 ... 3.1	5.3	4.8 ... 5.1	1	534681	GR-QB- $\frac{3}{16}$ -U
QB- $\frac{1}{4}$	QB- $\frac{1}{4}$	4.7	5 ... 5.5	7.8	10.6 ... 10.7	1	534682	GR-QB- $\frac{1}{4}$ -U
QB- $\frac{5}{16}$	QB- $\frac{5}{16}$	8	5.7 ... 8.1	13.5	13.8 ... 13.9	1.5	534683	GR-QB- $\frac{5}{16}$ -U
QB- $\frac{3}{8}$	QB- $\frac{3}{8}$	11.4	8.1 ... 11.7	19	20.5 ... 21.8	2.7	534684	GR-QB- $\frac{3}{8}$ -U
QB- $\frac{1}{2}$	QB- $\frac{1}{2}$	14	10.8 ... 12.7	23.2	16.6 ... 20.2	4.2	534685	GR-QB- $\frac{1}{2}$ -U

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