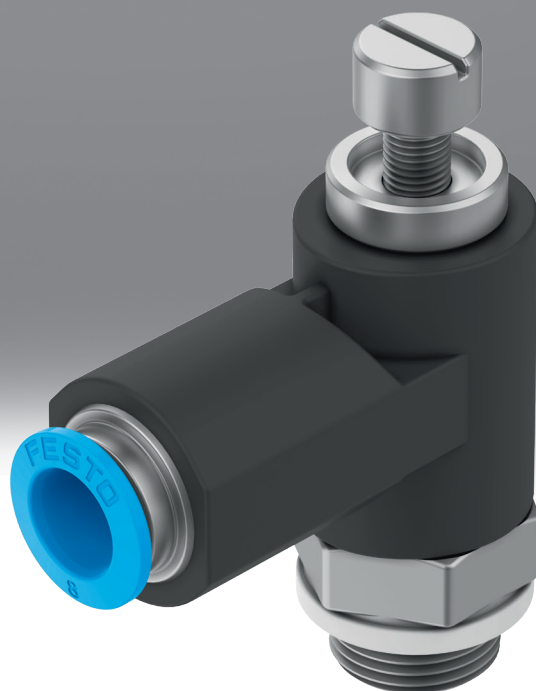


One-way flow control valve GRxA-NPT

FESTO



Characteristics

At a glance

One-way flow control valve for precise adjustment of the flow rate. Lightweight, compact and sturdy thanks to the polymer/metal combination.

- Flow control valve, flow control at one end
- For direct or inline mounting with different flow rate ranges
- Connections: plug-in connection on both sides, thread/plug-in connection

Diagrams

Link [grla](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

Type code

001	Series
GRLA	One-way flow control valve
002	Pneumatic connection
1/8	Male thread G1/8
1/4	Male thread G1/4
3/8	Male thread G3/8
1/2	Male thread G1/2
10-32-UNF	Male thread UNF
1/8-NPT	Male thread 1/8 NPT
1/4-NPT	Male thread 1/4 NPT
3/8-NPT	Male thread 3/8 NPT
1/2-NPT	Male thread 1/2 NPT

003	Pneumatic connection 1
	Connection size as for port 1 or 2
QB-1/8	Push-in connector 1/8"
QB-5/32	Push-in connector 5/32"
QB-1/4	Push-in connector 1/4"
QB-5/16	Push-in connector 5/16"
QB-3/8	Push-in connector 3/8"
QB-1/2	Push-in connector 1/2"
004	Generation
B	Series B
U	Series U

Datasheet

General technical data

Pneumatic connection, port 2	Male thread 1/4 NPT	10-32 UNF-2A	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Pneumatic connection, port 1	Female thread 1/4 NPT	10-32 UNF-2B, QB-5/32, QB-1/8, QB-1/4	1/8 NPT, QB-5/32, QB-1/4, QB-5/16	QB-1/4, QB-5/16, QB-3/8	3/8 NPT, QB-1/4, QB-5/16, QB-3/8, QB-1/2	1/2 NPT, QB-3/8, QB-1/2
Valve function	Exhaust air one-way flow control function					
Adjustment component	Slotted head screw					
Type of mounting	Screw-in	Screw-in, Via male thread				
Mounting position	optional					
Nominal torque	-					
Tolerance for nominal tightening torque	-					

Operating and environmental conditions

Pneumatic connection, port 2	Male thread 1/4 NPT	10-32 UNF-2A	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Operating pressure complete temperature range	0.3 ... 10 bar	-13.793 ... 116.001 psi	0.3 ... 10 bar, -13.793 ... 116.001 psi	-13.793 ... 116.001 psi	-13.793 ... 116.001 psi, 0.3 ... 10 bar	-13.793 ... 116.001 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Standard nominal flow rate in blocked direction	450 ... 820 l/min	5.881 ... 10.325 cfm	26.172 ... 38.697 cfm	57.371 ... 85.743 cfm	68.235 ... 140.511 cfm	144.551 ... 220.418 cfm
Standard nominal flow rate in flow control direction	610 l/min	7.63 ... 10.15 cfm	33.94 ... 37.89 cfm	74.52 ... 83.95 cfm	88.44 ... 137.82 cfm	187.65 ... 215.93 cfm
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	1,200 l/min	13.5 ... 17.5 cfm	51.6 ... 61.9 cfm	112.2 ... 141 cfm	126.1 ... 226.7 cfm	268 ... 341.6 cfm
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	-	13.467 ... 18.406 cfm	51.176 ... 64.195 cfm	112.229 ... 146.347 cfm	126.145 ... 235.681 cfm	268.003 ... 355.092 cfm
Ambient temperature	-10 ... 60°C	-10 ... 60°C, 32 ... 140°F		32 ... 140°F	-10 ... 60°C, 32 ... 140°F	
Media temperature	-10 ... 60°C	-10 ... 60°C, 32 ... 140°F		32 ... 140°F	-10 ... 60°C, 32 ... 140°F	
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress	1 - Low corrosion stress				

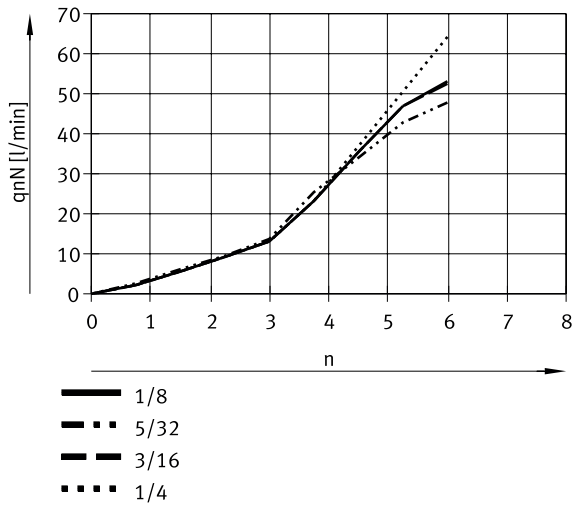
1) More information www.festo.com/x/topic/crc

Materials

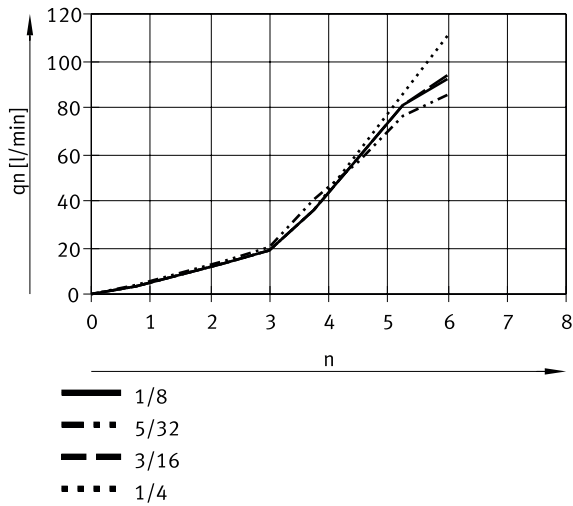
Material knurled head	Brass, Nickel-plated
Material adjusting screw	Brass, Nickel-plated
Material hollow bolt	Wrought aluminium alloy, Brass, Nickel-plated
Material release ring	POM
Material swivel fitting	PBT-reinforced, Die-cast zinc
Material screwed plug	Wrought aluminium alloy, Brass, Nickel-plated
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L, VDMA24364 zone III
Cleanroom class	Class 4 according to ISO 14644-1

Datasheet

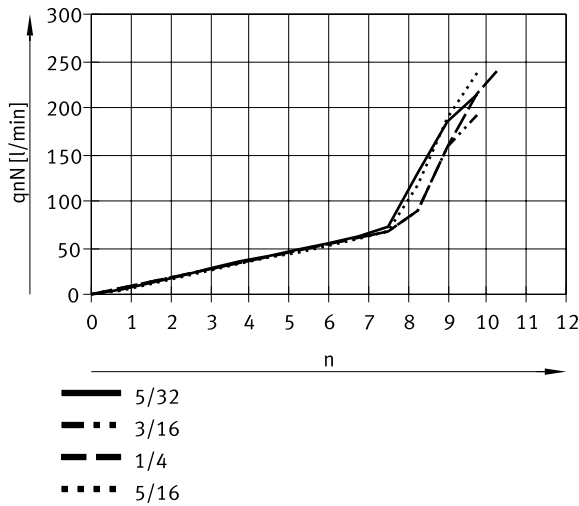
Standard nominal flow rate q_{nN} at 6 → 5 bar depending on the turns of the flow control screw n (pneumatic connection – UNF10-32)



Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic connection UNF10-32)

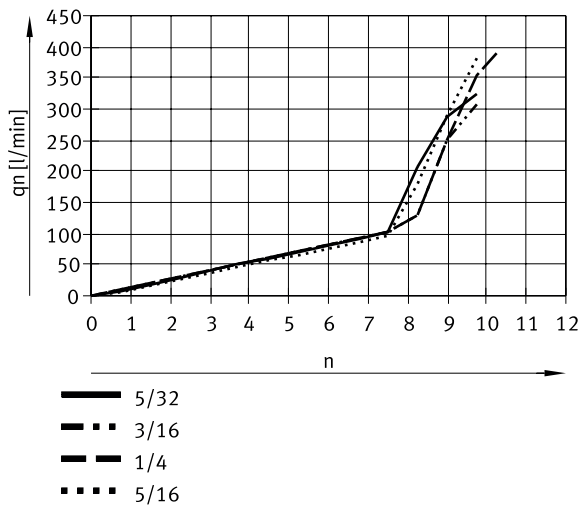


Standard nominal flow rate q_{nN} at 6 → 5 bar depending on the turns of the flow control screw n (pneumatic connection NPT1/8-27)

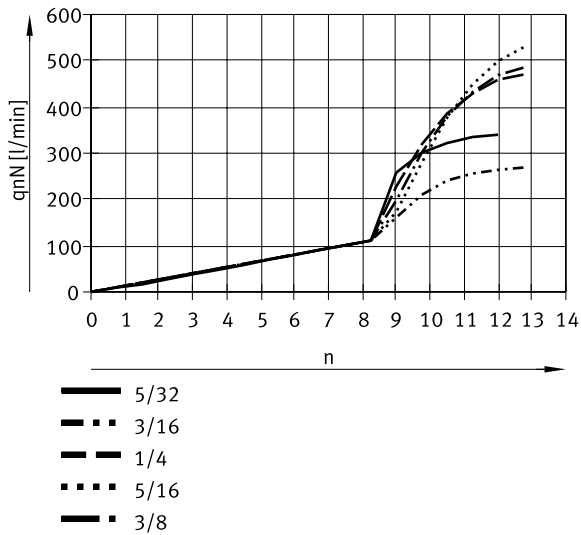


Datasheet

Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic port NPT1/8-27)

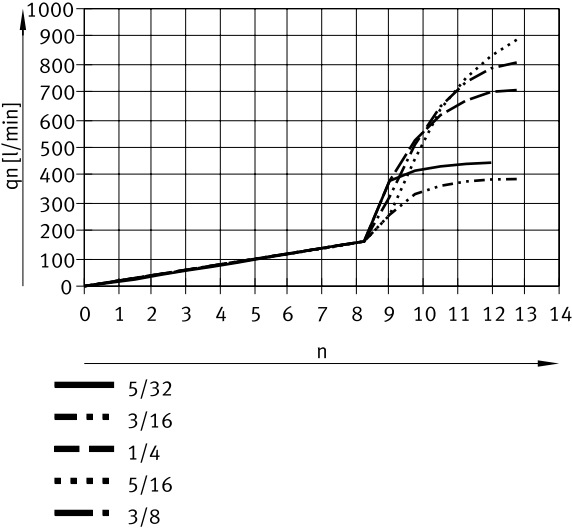


Standard nominal flow rate q_{nN} at 6 → 5 bar depending on the turns of the flow control screw n (pneumatic connection NPT1/4-18)

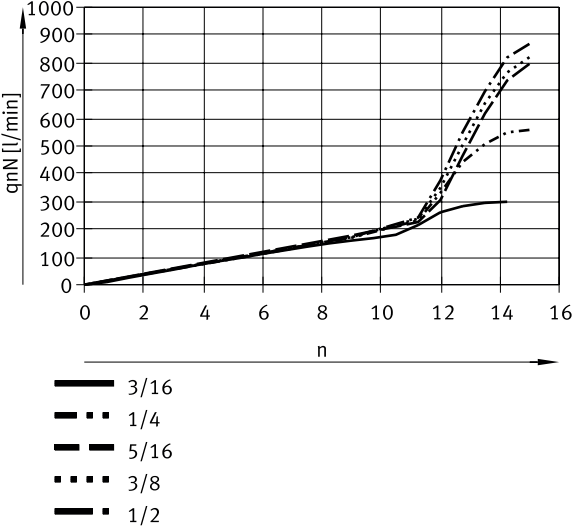


Datasheet

Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic connection NPT1/4-18)

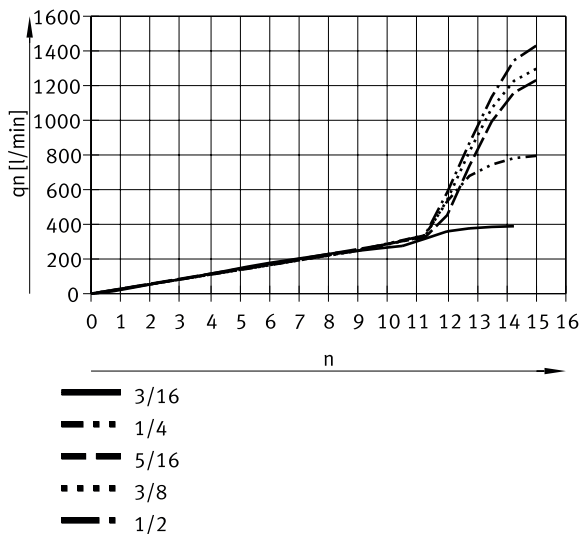


Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of the turns of the flow control screw n (pneumatic port NPT3/8-18)

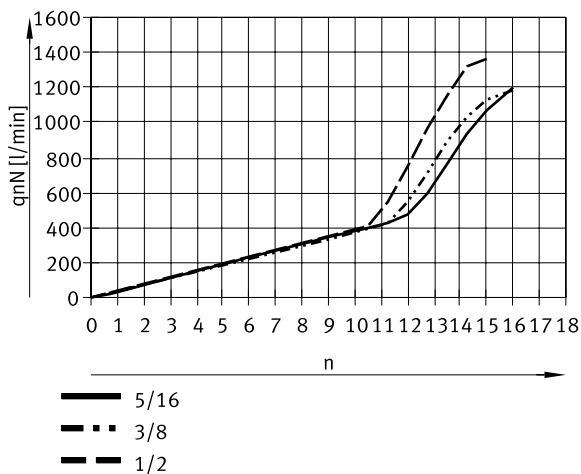


Datasheet

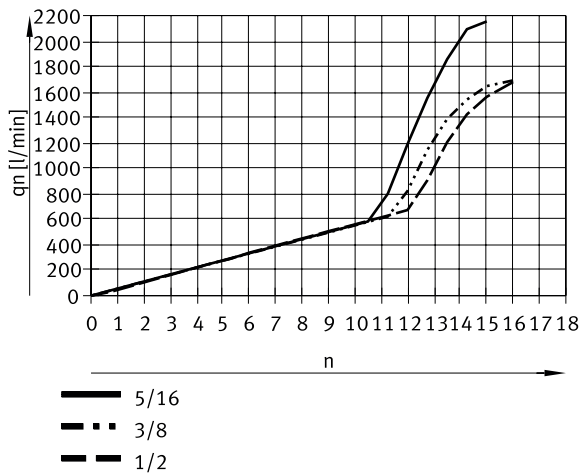
Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic connection NPT3/8-18)



Standard nominal flow rate q_{nN} at 6 → 5 bar depending on the turns of the flow control screw n (pneumatic connection NPT1/2-14)

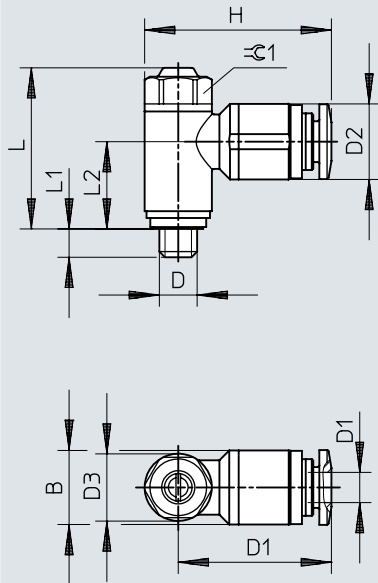


Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic port NPT1/2-14)




Dimensions

Dimensions – One-way low control valves GRLA, NPT

 Download CAD data www.festo.com


	D	D1	B	D2 ø	D3 ø	~H	~H1	~L	L1	~L2	≙C	
GRL...-M5	M5	3	–	8,2 +0,15	8,9 ±0,07	22,4	18	20,8	±3,3%	3,9 +0,1/-0,45	10,7	8
		4	9,8 ±0,2	10,0 ±0,2		24,7	20,3				9,7	
		6	–	12,0 ±0,2		26,5	22					
GRL...-1/8	G1/8	3	–	10,2 ±0,2	13,8 ±0,07	31,9	25	26,5	±2,1%	5,05 +0,15/-0,3	14,2	12
		4		10,2 ±0,2		29,4	22,5				13,5	
		6		12,5 ±0,2		32,6	25,7					
		8		14,5 ±0,2		35,6	28,7					
GRLA-1/8-...-MF	G1/8	6	–	12,5 ±0,2	17,8 ±0,15	36,6	27,7	30,9	±1,9%	5,05 +0,15/-0,3	17	15
		8		14,5 ±0,2		39,6	30,7					
GRLA-1/4	G1/4	6	–	12,5 ±0,2	17,8 ±0,15	36,6	27,7	31,5	±1,9%	5,9 +0,17/-0,25	17,2	15
		8		14,5 ±0,2		39,6	30,7				16,1	
		10		17,5 ±0,2		42,0	33,1					
GRLA-3/8	G3/8	6	–	12,5 ±0,2	22,4 ±0,15	39,8	28,6	35,3	±1,7%	6,9 +0,15/-0,3	19,55	19
		8		14,5 ±0,2		44,1	32,9					
		10		17,5 ±0,2		46,7	35,5					
GRLA-1/2	G1/2	12	–	20,5 ±0,15	27,8 ±0,15	55,3	41,4	42,6	±1,4%	8,35 +0,15/-0,3	22,75	24

Ordering data

Ordering data							
	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type	
	Male thread 1/4 NPT	Female thread 1/4 NPT	2 - Moderate corrosion stress		151547	GRLA-1/4-NPT-B	
	10-32 UNF-2A	10-32 UNF-2B				151572	GRLA-10-UNF-B
		QB-5/32	1 - Low corrosion stress	9.923 oz	★ 564840	GRLA-10-32-UNF-QB-5/32-U	
		QB-1/8		8.505 oz	★ 564839	GRLA-10-32-UNF-QB-1/8-U	
		QB-1/4		10.773 oz	★ 564842	GRLA-10-32-UNF-QB-1/4-U	
	1/8 NPT	1/8 NPT				151539	GRLA-1/8-NPT-B
		QB-5/32	1 - Low corrosion stress	18.711 oz	★ 534656	GRLA-1/8-QB-5/32-U	
		QB-1/4		19.845 oz	★ 534658	GRLA-1/8-QB-1/4-U	
		QB-5/16		21.829 oz	★ 534659	GRLA-1/8-QB-5/16-U	
	1/4 NPT	QB-1/4		35.721 oz	★ 534661	GRLA-1/4-QB-1/4-U	
		QB-5/16		37.706 oz	★ 534662	GRLA-1/4-QB-5/16-U	
		QB-3/8		39.123 oz	★ 534663	GRLA-1/4-QB-3/8-U	
	3/8 NPT	3/8 NPT				151555	GRLA-3/8-NPT-B
		QB-1/4	1 - Low corrosion stress	66.623 oz	★ 534664	GRLA-3/8-QB-1/4-U	
		QB-5/16		69.741 oz	★ 534665	GRLA-3/8-QB-5/16-U	
		QB-3/8		70.308 oz	★ 534666	GRLA-3/8-QB-3/8-U	
		QB-1/2		73.993 oz	★ 534667	GRLA-3/8-QB-1/2-U	
	1/2 NPT	1/2 NPT				151559	GRLA-1/2-NPT-B
		QB-3/8	1 - Low corrosion stress	109.148 oz	★ 564846	GRLA-1/2-QB-3/8-U	
		QB-1/2		119.07 oz	★ 564847	GRLA-1/2-QB-1/2-U	