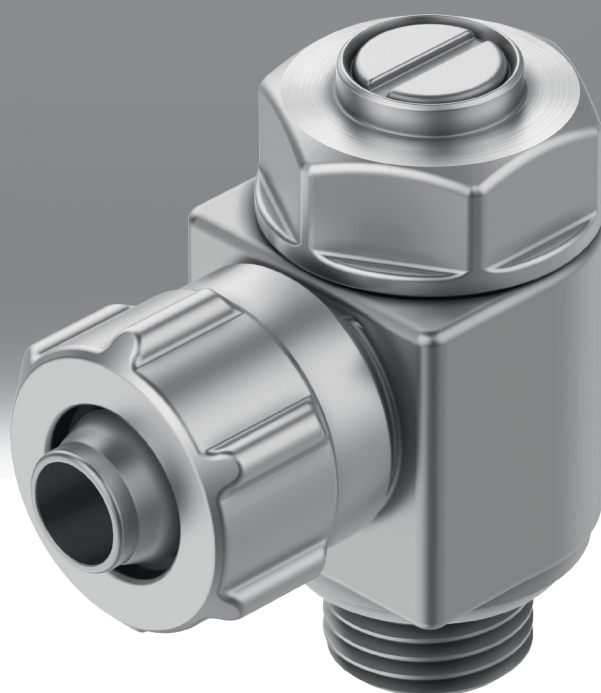


One-way flow control valve GRxA, GRxZ

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.

- Functional combination of one-way flow control valve and piloted check valve
- Flow control valve, flow control at one end
- Polymer, metal or stainless steel design
- Standard, mini, in-line variants with different flow rate ranges
- Connections: thread at both ends, push-in connector at both ends, thread/push-in connector

Additional documents

[Link grla/grlz](#)



The additional document GRLA-GRLZ-ADD contains further information on the application options for the one-way flow control valves GRLA and GRLZ.

Diagrams

[Link grla/grlz](#)

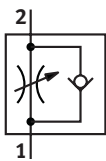


The diagrams shown in this document are also available online. These can be used to display precise values.

Series

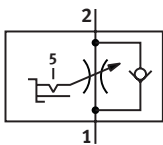
One-way flow control valves can be used to regulate the piston speed of pneumatic drives as they advance and retract.

[GRLA] One-way flow control valve



The throttle function only works in the exhaust air direction, the non-return function works in the opposite direction.

[GRLSA] One-way flow control valve



The throttle function only works in the exhaust air direction, the non-return function works in the opposite direction.
Gradual preselection of the flow rate range using a rotary switch and infinitely variable precision adjustment with hex key using a scale.

Flow rate characteristic

[LF] Low flow

Precise setting for low piston speeds

[MF] Medium flow

Precise setting for medium piston speeds

Type code

001	Series	
GRLA	One-way flow control valve	
GRLSA	One-way flow control valve	
CRGRLA	One-way flow control valve, corrosion resistant	
GRLZ	One-way flow control valve	

002	Pneumatic connection	
M3	Male thread M3	
M5	Male thread M5	
1/8	Male thread G1/8	
1/4	Male thread G1/4	
3/8	Male thread G3/8	
1/2	Male thread G1/2	
3/4	Male thread G3/4	

003	Pneumatic connection 1	
	Connection size as for port 1 or 2	
PK-3	CK connection 3 mm	
PK-4	CK connection 4 mm	
PK-6	CK connection 6 mm	
QS-3	Push-in connector 3 mm	
QS-4	Push-in connector 4 mm	
QS-6	Push-in connector 6 mm	
QS-8	Push-in connector 8 mm	
QS-10	Push-in connector 10 mm	
QS-12	Push-in connector 12 mm	

004	Adjusting component	
	Standard	
RS	Knurled screw	

005	Flow rate characteristic	
	None	
LF	Low flow	
MF	Medium flow	

006	Generation	
	None	
B	Series B	
C	Series C	
D	D series	

Datasheet

General technical data GRLA – push-in connector QS

Pneumatic connection, port 2	M5	G1/8	G1/4	G3/8	G1/2
Pneumatic connection, port 1	QS-3, QS-4, QS-6	QS-3, QS-4, QS-6, QS-8	QS-6, QS-8, QS-10		QS-12
Valve function	Exhaust air one-way flow control function	Exhaust air one-way flow control function, One-way flow control function			
Adjustment component	Knurled screw, Slotted head screw				
Type of mounting	Screw-in	Screw-in, Via male thread			
Mounting position	optional				
Nominal torque	0.8 Nm	3 Nm	5 Nm	10 Nm	15 Nm
Tolerance for nominal tightening torque	± 10%				

General technical data GRLZ – push-in connector QS

Pneumatic connection, port 2	M3	M5	G1/8
Pneumatic connection, port 1	QS-3	QS-3, QS-4, QS-6	QS-3, QS-4, QS-6, QS-8
Valve function	Supply air one-way flow control function		
Adjustment component	Slotted head screw		
Type of mounting	Screw-in		
Mounting position	optional		
Nominal torque	–	0.8	3
Tolerance for nominal tightening torque	–	± 10%	

Operating and environmental conditions GRLA/GRLZ – push-in connector QS

Pneumatic connection, port 2	M5	G1/8	G1/4	G3/8	G1/2
Operating pressure	0.2 ... 10 bar				
Operating pressure complete temperature range	0.2 ... 10 bar				
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	60 ... 110 l/min	100 ... 500 l/min	290 ... 500 l/min	320 ... 975 l/min	925 ... 1,605 l/min
Standard nominal flow rate in flow control direction	100 ... 115 l/min	130 ... 475 l/min	400 ... 480 l/min	495 ... 900 l/min	1,580 l/min
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	135 ... 185 l/min	180 ... 720 l/min	600 ... 760 l/min	740 ... 1,400 l/min	2,220 l/min
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	130 ... 200 l/min	180 ... 760 l/min	570 ... 790 l/min	840 ... 1,620 l/min	1,910 ... 2,500 l/min
Ambient temperature	-10 ... 60°C				
Media temperature	-10 ... 60°C				
Storage temperature	–	-10 ... 40°C			
Maritime classification ¹⁾	See certificate				
Corrosion resistance class CRC ²⁾	0 - No corrosion stress, 1 - Low corrosion stress				

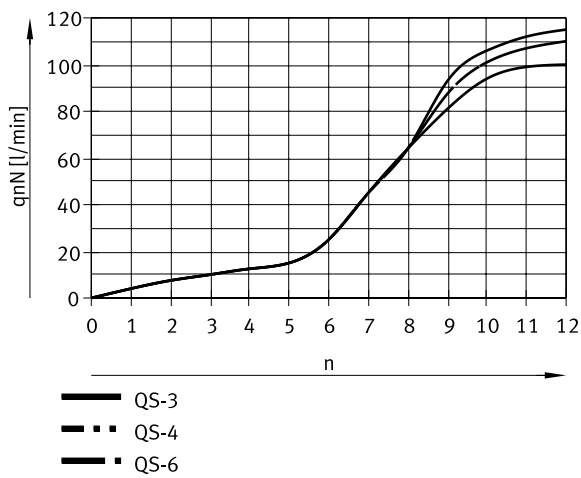
1) More information www.festo.com/catalogue/ger/Support/Downloads.2) More information www.festo.com/x/topic/crc

Datasheet

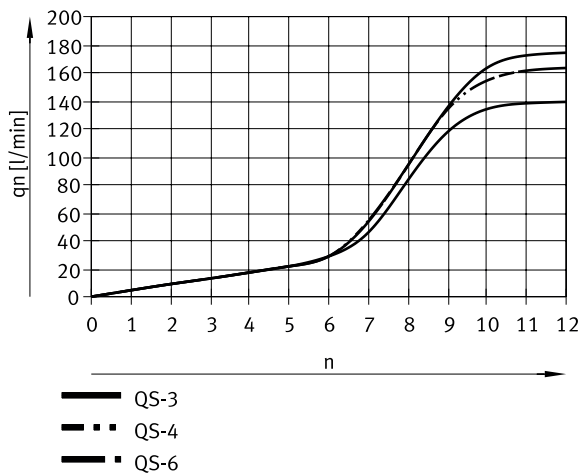
Materials GRLA/GRLZ – push-in connector QS

Material knurled head	Wrought aluminium alloy, Anodised
Material adjusting screw	Brass, High-alloy stainless steel
Material hollow bolt	Wrought aluminium alloy, Anodised
Material release ring	POM
Material swivel fitting	Die-cast zinc, Chromated
Material screwed plug	Wrought aluminium alloy, Brass
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-M5 – push-in connector QS, metal)

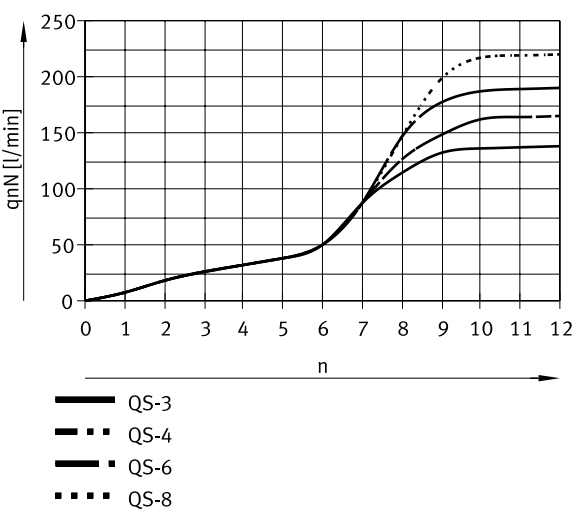


Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-M5 – push-in connector QS, metal)

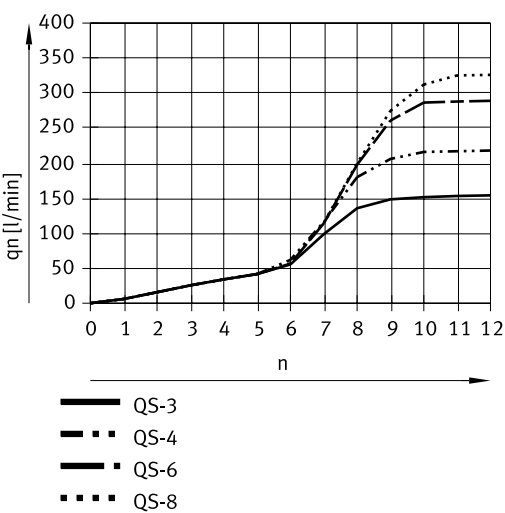


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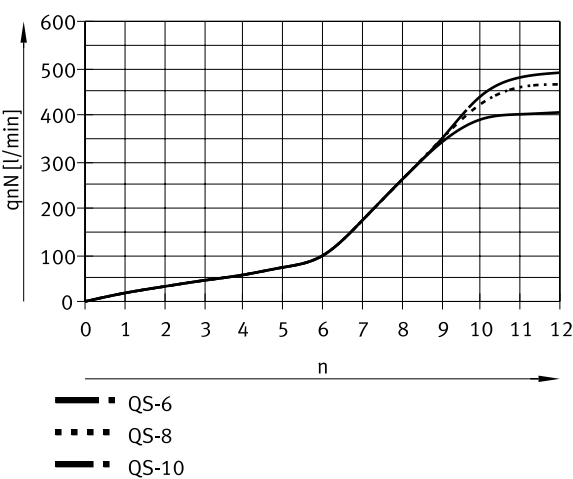
Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-1/8 – push-in connector QS, metal)



Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-1/8 – push-in connector QS, metal)

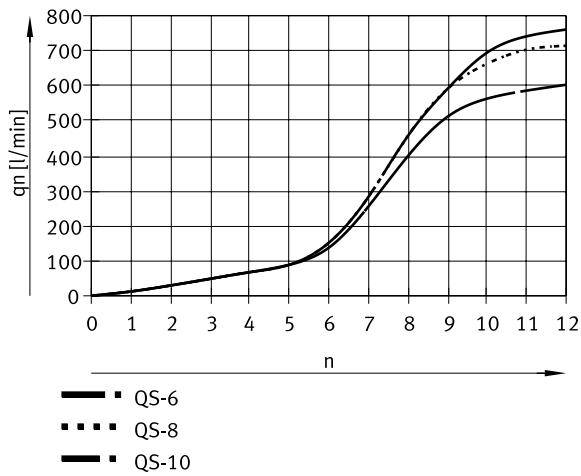


Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of the spindle revolutions n (GRLA-1/8-...-MF, GRLA-1/4 – push-in connector QS, metal)

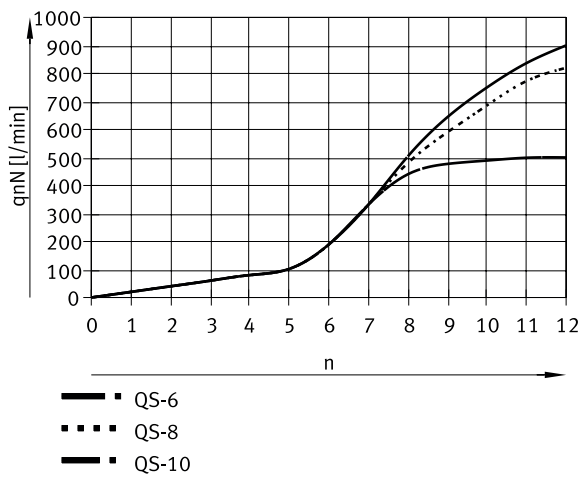


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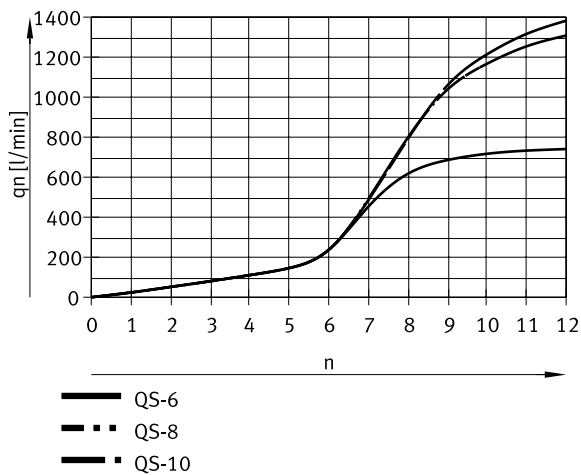
Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA-1/8-...-MF, GRLA-1/4 – push-in connector QS, metal)



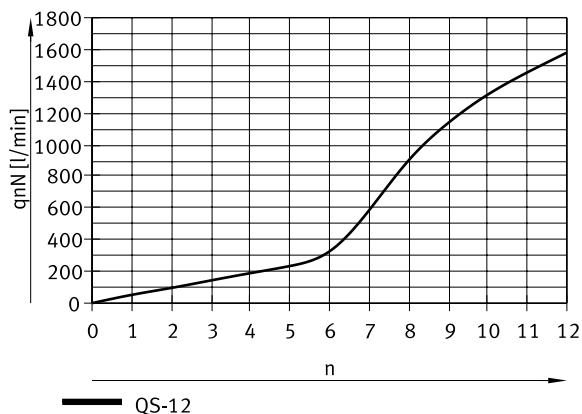
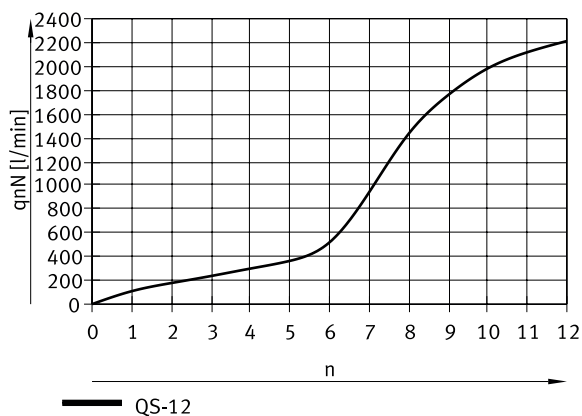
Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-3/8 – push-in connector QS, metal)



Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-3/8 – push-in connector QS, metal)



Datasheet

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-1/2 – push-in connector QS, metal)Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-1/2 – push-in connector QS, metal)

General technical data GRLA – female thread/barbed connector

General technical data G3/4" Female thread, barbed connector						
Pneumatic connection, port 2	Male thread G1/4	M5	G1/8	G3/8	G1/2	G3/4
Pneumatic connection, port 1	Female thread G1/4, For barbed fitting I.D. 4 mm with union nut, For barbed fitting I.D. 6 mm with union nut	M5, PK-3, PK-4	G1/8, PK-3 with union nut, PK-4 with union nut, PK-6 with union nut	G3/8	G1/2	G3/4
Nominal size	6	2	–			
Valve function	Exhaust air one-way flow control function					
Adjustment component	Knurled screw, Slotted head screw			Slotted head screw		
Type of mounting	Screw-in					
Mounting position	optional					
Max. tightening torque	11	1.5	6	20	40	60

General technical data GRLZ – female thread/barbed connector

Pneumatic connection, port 2	Male thread G1/4	M5	G1/8
Pneumatic connection, port 1	Female thread G1/4	M5	G1/8
Nominal size	6	2	–
Valve function	Supply air one-way flow control function		
Adjustment component	Knurled screw, Slotted head screw		
Type of mounting	Screw-in		
Mounting position	optional		
Max. tightening torque	11 Nm	1.5 Nm	6 Nm

Datasheet

Operating and ambient conditions GRLA/GRLZ – female thread/barbed connector

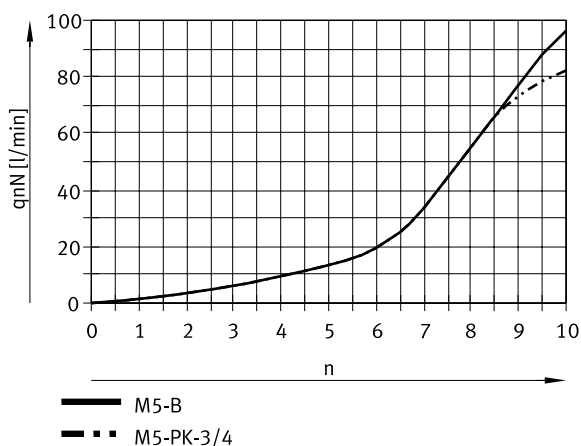
Pneumatic connection, port 2	Male thread G1/4	M5	G1/8	G3/8	G1/2	G3/4
Operating pressure	–	0.2 ... 10 bar	–	–	0.3 ... 10 bar	–
Operating pressure complete temperature range	0.3 ... 10 bar	–	0.3 ... 10 bar	–	–	0.3 ... 10 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Standard nominal flow rate in blocked direction	220 ... 820 l/min	72 ... 95 l/min	100 ... 420 l/min	970 ... 1,600 l/min	1,550 ... 2,200 l/min	3,220 ... 4,320 l/min
Standard nominal flow rate in flow control direction	260 ... 610 l/min	83 ... 95 l/min	110 ... 340 l/min	1,450 l/min	2,100 l/min	4,320 l/min
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	315 ... 1,615 l/min	120 ... 170 l/min	145 ... 760 l/min	1,540 ... 2,540 l/min	2,950 ... 4,190 l/min	5,440 ... 7,300 l/min
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	370 ... 1,200 l/min	140 ... 169 l/min	162 ... 615 l/min	2,300 l/min	4,000 l/min	7,300 l/min
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Ambient temperature	-10 ... 60°C					
Media temperature	-10 ... 60°C					
Maritime classification ¹⁾	See certificate					
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress	–	–	–	–	–

1) GRLA only; more information www.festo.com/catalogue/grla → Support/Downloads.

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

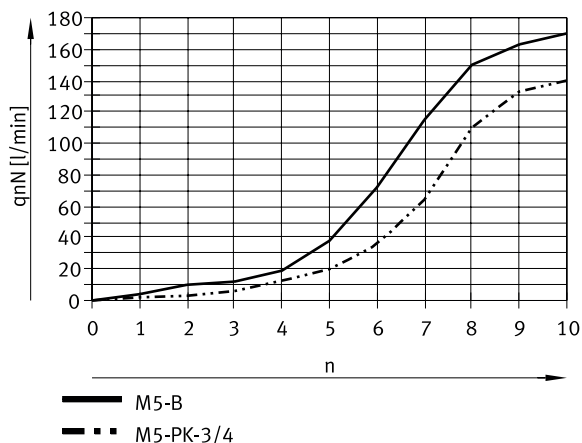
Materials GRLA/GRLZ – female thread/barbed connector

Material adjusting screw	Brass
Material swivel fitting	Die-cast zinc
Material screwed plug	Wrought aluminium alloy, Brass, Nickel-plated
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

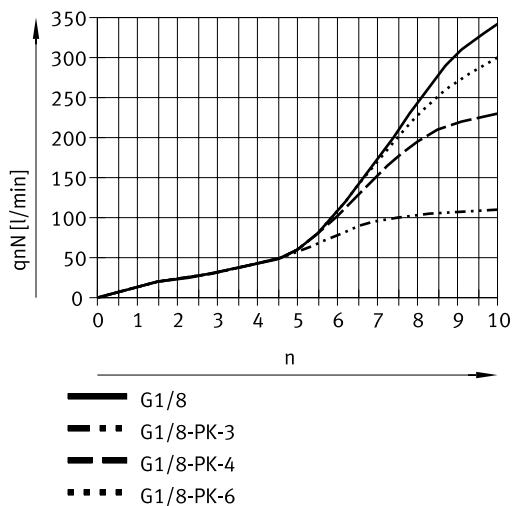
Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-M5 – female thread/barbed connector, metal)

Datasheet

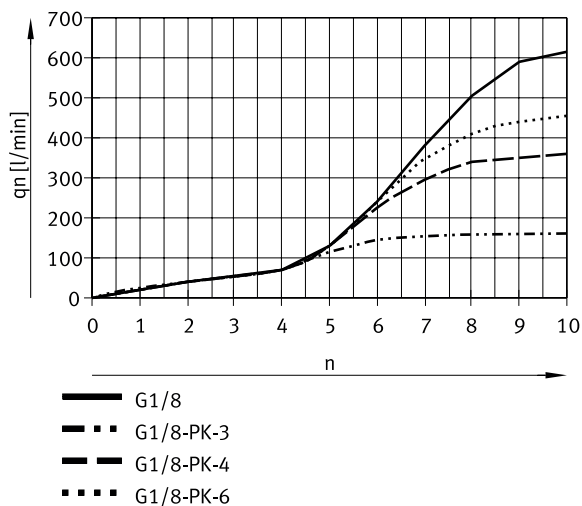
Standard flow rate q_N at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-M5 – female thread/barbed connector, metal)



Standard nominal flow rate q_N at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-1/8 – female thread/barbed connector, metal)

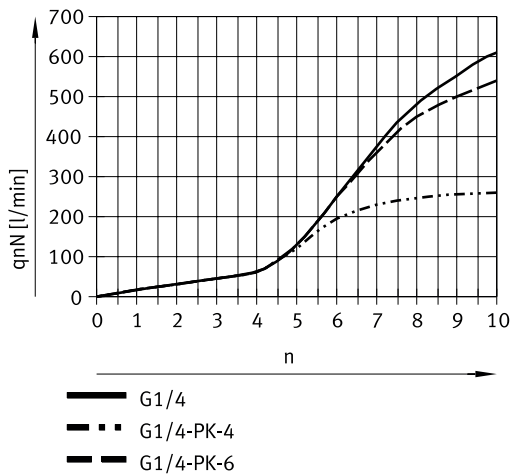


Standard flow rate q_N at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-1/8 – female thread/barbed connector, metal)

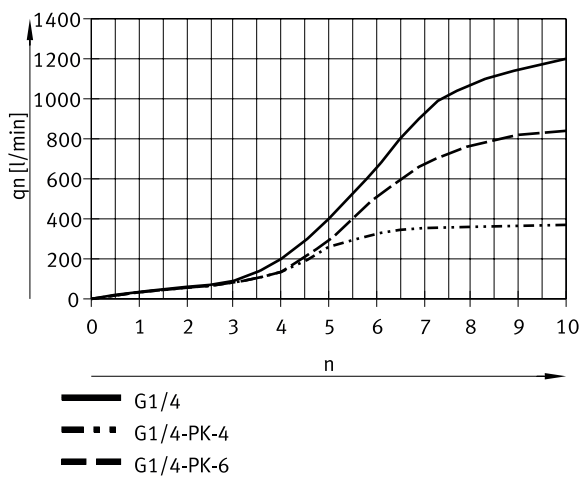


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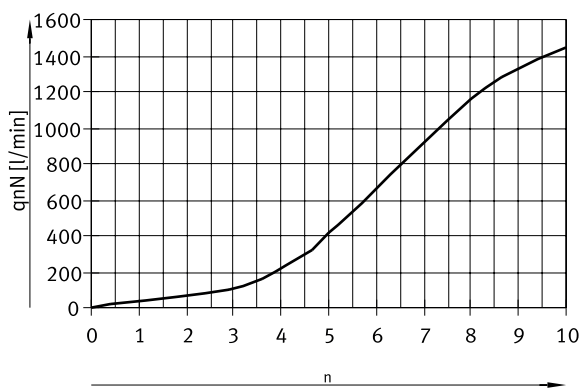
Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-1/4 – female thread/barbed connector, metal)



Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-1/4 – female thread/barbed connector, metal)

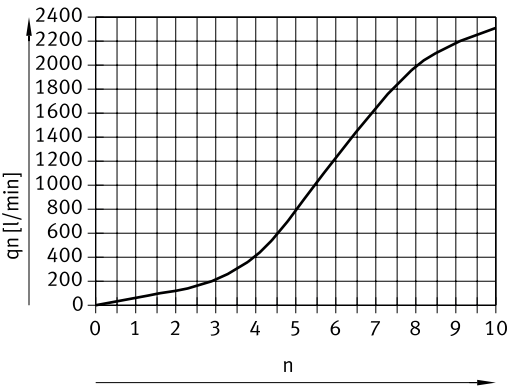


Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-3/8 – female thread/barbed connector, metal)

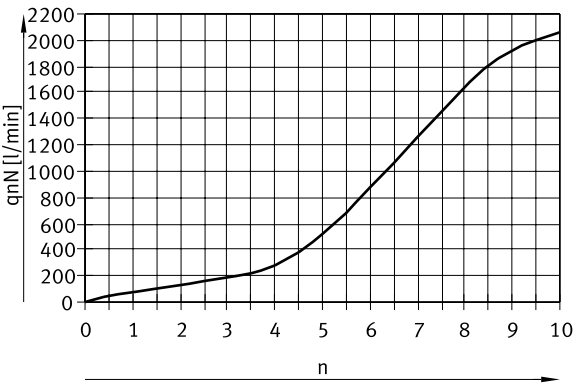


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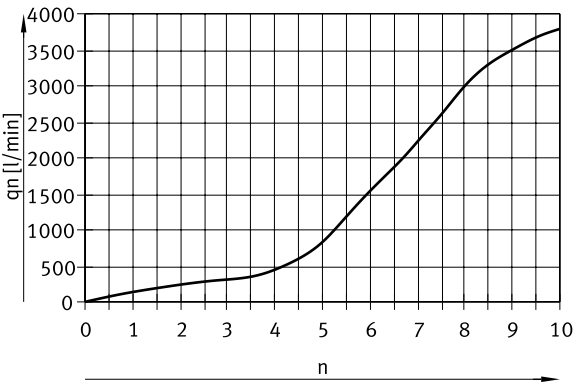
Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-3/8 – female thread/barbed connector, metal)



Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-1/2 – female thread/barbed connector, metal)

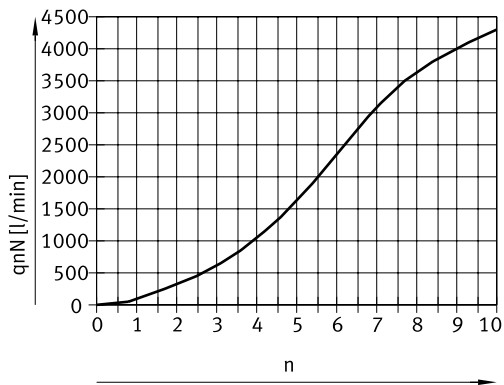


Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-1/2 – female thread/barbed connector, metal)

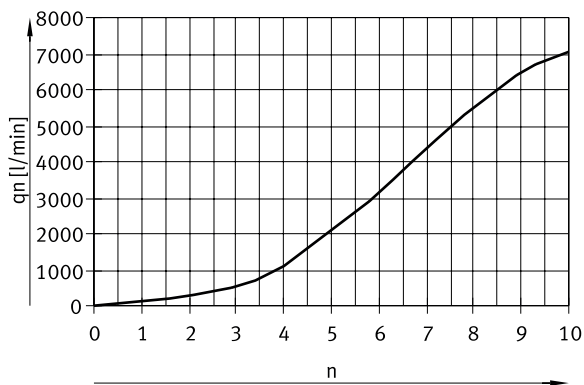


Datasheet

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-3/4 – female thread/barbed connector, metal)



Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-3/4 – female thread/barbed connector, metal)



General technical data GRLSA – push-in connector QS

Pneumatic connection, port 2	G1/8	G1/4
Pneumatic connection, port 1	QS-6	QS-8
Valve function	Exhaust air one-way flow control function	
Adjustment component	Internal hexagon	
Type of mounting	Screw-in	
Mounting position	optional	
Nominal torque	3.5	11
Tolerance for nominal tightening torque	± 20%	± 10%

Datasheet

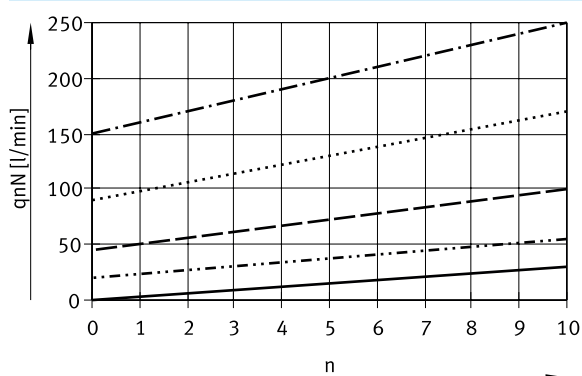
Operating and ambient conditions GRLSA – push-in connector QS

Pneumatic connection, port 2	G1/8	G1/4
Operating pressure complete temperature range	0.2 ... 10 bar	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Standard nominal flow rate in flow control direction	0 ... 250 l/min	0 ... 450 l/min
Standard nominal flow rate in blocked direction	180 ... 310 l/min	390 ... 570 l/min
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	0 ... 410 l/min	0 ... 700 l/min
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	430 ... 540 l/min	820 ... 930 l/min
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	
Storage temperature	-10 ... 40°C	
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress	

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

Materials GRLSA – push-in connector QS

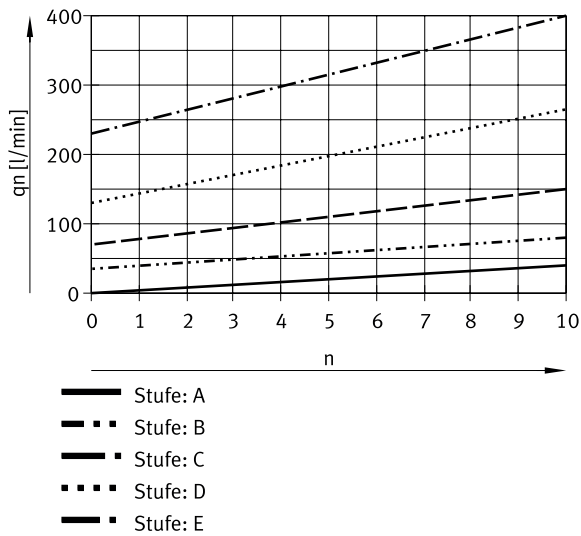
Material adjusting screw	PA-reinforced
Material swivel fitting	Die-cast zinc
Material release ring	POM
Material hollow bolt	Wrought aluminium alloy, Anodised
Material seals	NBR
LABS (PWIS) conformity	VDMA24364-B2-L
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of the flow control screw position (scale) n (GRLSA-1/8 – push-in connector QS, metal)

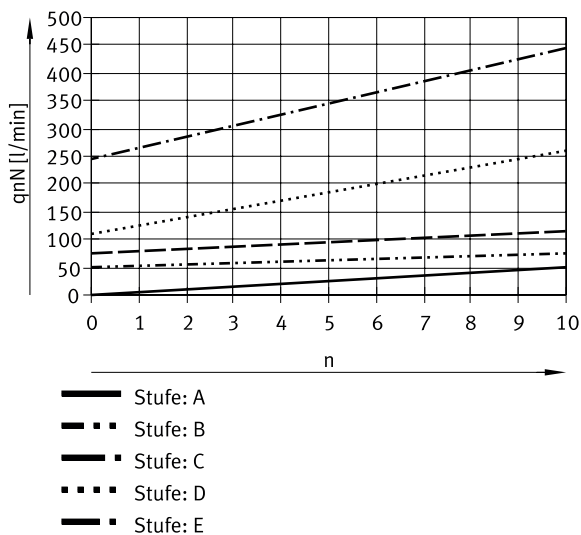
A = Step A
 B = Step B
 C = Step C
 D = Step D
 E = Step E

— Stufe: A
 — · — Stufe: B
 — · — Stufe: C
 · · · Stufe: D
 — · — Stufe: E

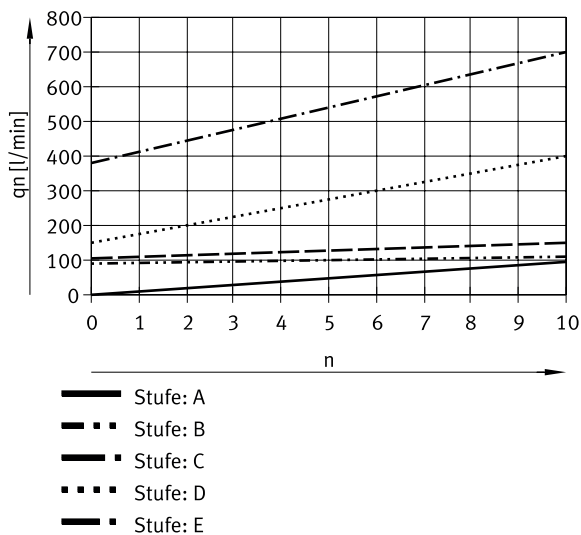
Datasheet

Standard flow rate q_n at 6 → 0 bar as a function of the flow control screw position (scale) n (GRLSA-1/8 - push-in connector QS, metal)

A = Step A
 B = Step B
 C = Step C
 D = Step D
 E = Step E

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of the flow control screw position (scale) n (GRLSA-1/4 – push-in connector QS, metal)

A = Step A
 B = Step B
 C = Step C
 D = Step D
 E = Step E

Standard flow rate q_n at 6 → 0 bar as a function of the flow control screw position (scale) n (GRLSA-1/4 – push-in connector QS, metal)

A = Step A
 B = Step B
 C = Step C
 D = Step D
 E = Step E

Datasheet

General technical data GRLA – push-in connector QS (Mini)

Pneumatic connection, port 2	M3	M5
Pneumatic connection, port 1	QS-3	QS-3, QS-4
Valve function	Exhaust air one-way flow control function	
Adjustment component	Slotted head screw	
Type of mounting	Screw-in	
Mounting position	optional	
Max. tightening torque	0.3 Nm	1.5 Nm

General technical data GRLZ – push-in connector QS (Mini)

Pneumatic connection, port 2	M3	M5
Pneumatic connection, port 1	QS-3	QS-3, QS-4
Valve function	Supply air one-way flow control function	
Adjustment component	Slotted head screw	
Type of mounting	Screw-in	
Mounting position	optional	
Max. tightening torque	0.3 Nm	1.5 Nm

Operating and environmental conditions GRLA/GRLZ – push-in connector QS (Mini)

Pneumatic connection, port 2	M3	M5
Operating pressure	0.2 ... 10 bar	
Operating pressure	–	2.9 ... 145 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 flow control direction	41 l/min	40 ... 48 l/min
Standard nominal flow rate in blocked direction	27 ... 50 l/min	36 ... 75 l/min
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	75 ... 110 l/min	60 ... 150 l/min
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	95 l/min	80 l/min
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	
Maritime classification ¹⁾	See certificate	
Corrosion resistance class CRC ²⁾	1 - Low corrosion stress	

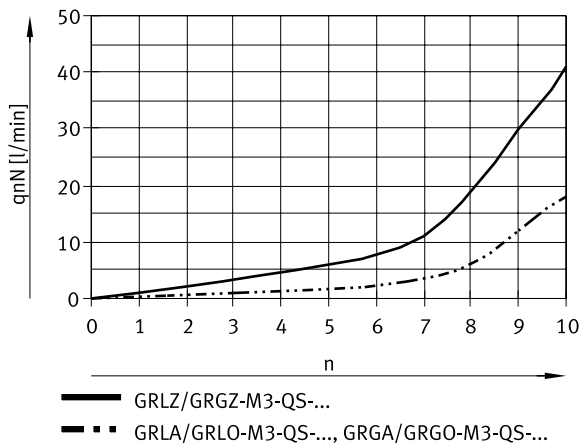
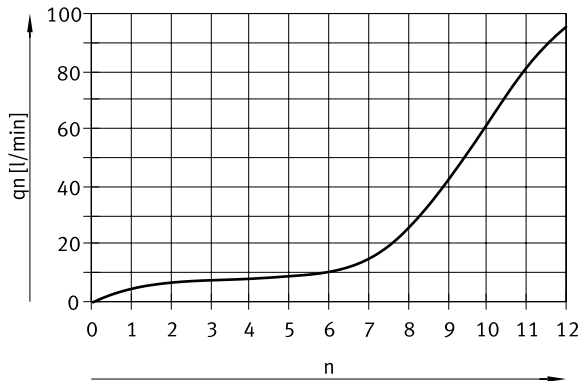
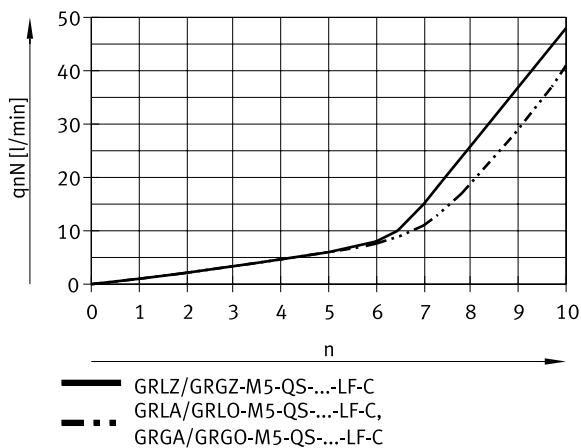
1) GRLA only: more information www.festo.com/catalogue/grla → Support/Downloads.

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

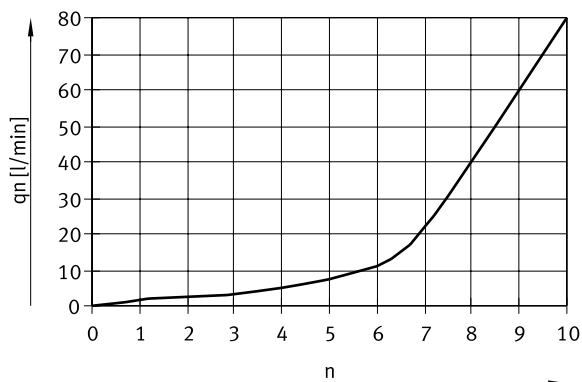
Materials GRLA/GRLZ – push-in connector QS (Mini)

Material adjusting screw	Brass
Material swivel fitting	Die-cast zinc
Material release ring	POM
Material screwed plug	Brass, Nickel-plated
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

Datasheet

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-M3, mini – push-in connector QS, metal)Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-M3, mini – push-in connector QS, metal)Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ-M5, mini – push-in connector QS, metal)

Datasheet

Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ-M5, mini – push-in connector QS, metal)

General technical data GRLA – female thread (Mini)

Pneumatic connection, port 2	M3
Pneumatic connection, port 1	M3
Valve function	Exhaust air one-way flow control function
Adjustment component	Slotted head screw
Type of mounting	Screw-in
Mounting position	optional
Max. tightening torque	0.3 Nm

General technical data GRLZ – female thread (Mini)

Pneumatic connection, port 2	M3
Pneumatic connection, port 1	M3
Valve function	Supply air one-way flow control function
Adjustment component	Slotted head screw
Type of mounting	Screw-in
Mounting position	optional
Max. tightening torque	0.3 Nm

Operating and environmental conditions GRLA/GRLZ – female thread (Mini)

Operating pressure	0.2 ... 10 bar
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 flow control direction	18 l/min
Standard nominal flow rate in blocked direction	18 ... 20 l/min
Standard flow rate in flow control direction 0.6 → 0 MPa (6 → 0 bar, 87 → 0 psi)	33 l/min
Standard flow rate in non-return direction 0.6 → 0 MPa (6 → 0 bar, 87 → 0 psi)	33 ... 37 l/min
Ambient temperature	-10 ... 60°C
Media temperature	-10 ... 60°C
Maritime classification ¹⁾	See certificate
Corrosion resistance class CRC ²⁾	1 - Low corrosion stress

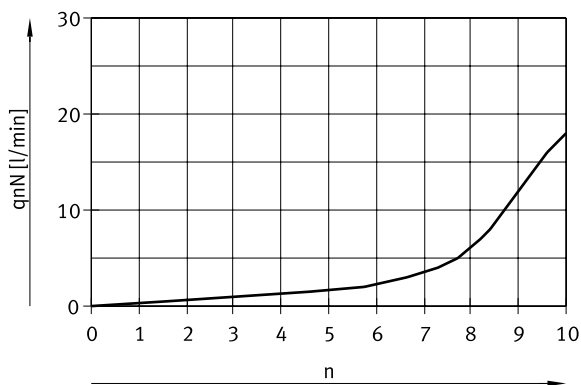
1) GRLA only; more information www.festo.com/catalogue/grla → Support/Downloads.2) More information www.festo.com/x/topic/crc

Datasheet

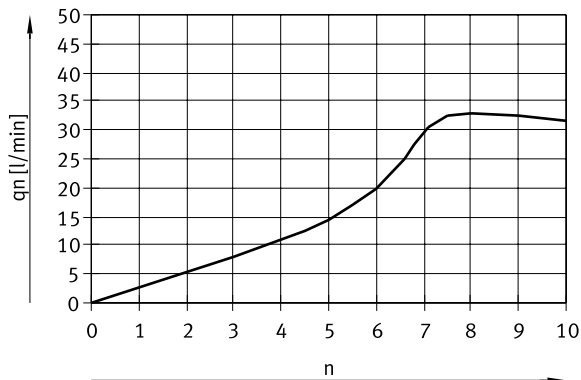
Materials GRLA/GRLZ – female thread (Mini)

Material adjusting screw	Brass
Material swivel fitting	Die-cast zinc
Material screwed plug	Brass, Nickel-plated
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (GRLA/GRLZ, mini – female thread, metal)



Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (GRLA/GRLZ, mini – female thread, metal)



General technical data CRGRLA – female thread (stainless steel)

Pneumatic connection, port 2	M5	G1/8	G1/4	G3/8	G1/2
Pneumatic connection, port 1	M5	G1/8	G1/4	G3/8	G1/2
Valve function	One-way flow control function				
Adjustment component	Slotted head screw				
Type of mounting	Screw-in				
Mounting position	optional				
Max. tightening torque	1.5 Nm	6 Nm	11 Nm	20 Nm	40 Nm
Permissible actuation moment, regulating screw	0.2 Nm	0.5 Nm	1.5 Nm	2 Nm	3 Nm

Datasheet

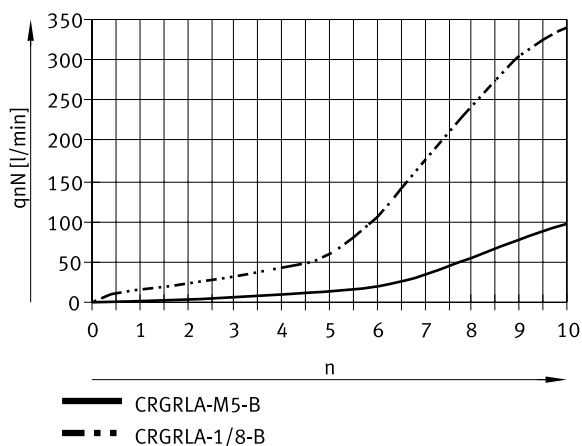
Operating and environmental conditions CRGRLA – female thread (stainless steel)

Pneumatic connection, port 2	M5	G1/8	G1/4	G3/8	G1/2
Operating pressure	0.02 ... 1 MPa	0.03 ... 1 MPa			
Operating pressure	0.2 ... 10 bar	0.3 ... 10 bar			
Operating pressure	2.9 ... 145 psi	4.35 ... 145 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	77 ... 95 l/min	260 ... 420 l/min	450 ... 820 l/min	970 ... 1,600 l/min	1,550 ... 2,200 l/min
Standard nominal flow rate in flow control direction	95 l/min	340 l/min	610 l/min	1,450 l/min	2,100 l/min
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	140 ... 150 l/min	530 ... 590 l/min	1,030 ... 1,345 l/min	2,095 ... 2,665 l/min	3,550 ... 4,325 l/min
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	165 l/min	580 l/min	1,265 l/min	2,515 l/min	4,265 l/min
Ambient temperature	-20 ... 80°C				
Media temperature	-10 ... 60°C				
Storage temperature	-10 ... 40°C				
Corrosion resistance class CRC ¹⁾	3 - high corrosion stress				
Suitable for use with food	See supplementary material information				
Maritime classification ²⁾	See certificate				

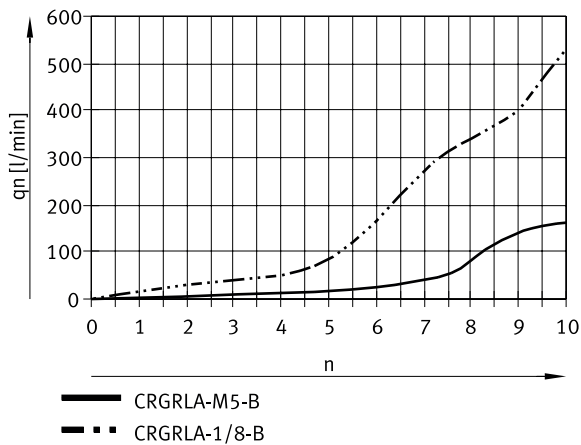
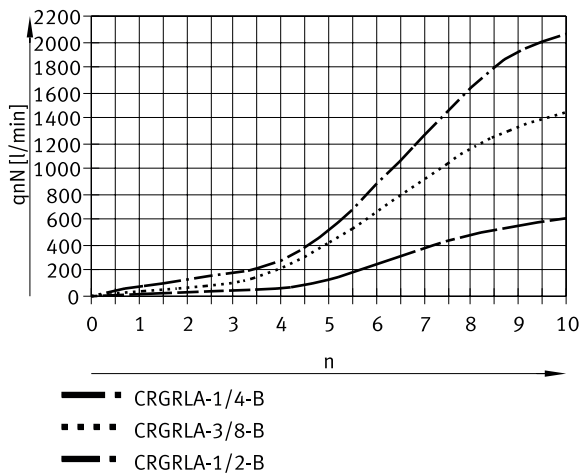
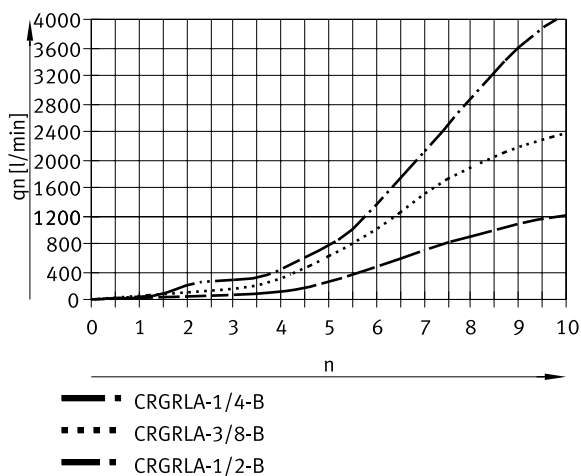
1) More information www.festo.com/x/topic/crc2) More information www.festo.com/catalogue/crgla → Support/Downloads.

Materials CRGRLA – female thread (stainless steel)

Material adjusting screw	High-alloy stainless steel
Material swivel fitting	High-alloy stainless steel
Material hollow bolt	High-alloy steel
Material seals	FPM, PVC
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

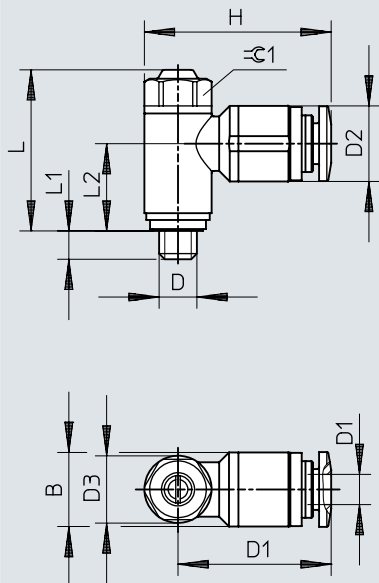
Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (CRGRLA-M5, CRGRLA-1/8 – female thread, stainless steel)

Datasheet

Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (CRGRLA-M5, CRGRLA-1/8 – female thread, stainless steel)Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of spindle revolutions n (CRGRLA-1/4, CRGRLA-3/8, CRGRLA-1/2 – female thread, stainless steel)Standard flow rate q_n at 6 → 0 bar as a function of spindle revolutions n (CRGRLA-1/4, CRGRLA-3/8, CRGRLA-1/2 - female thread, stainless steel)

Dimensions

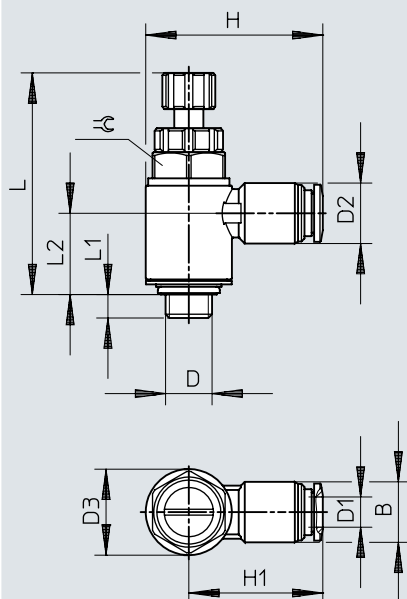
Dimensions – Slotted head screw

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				–	
		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				–	
		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

Dimensions

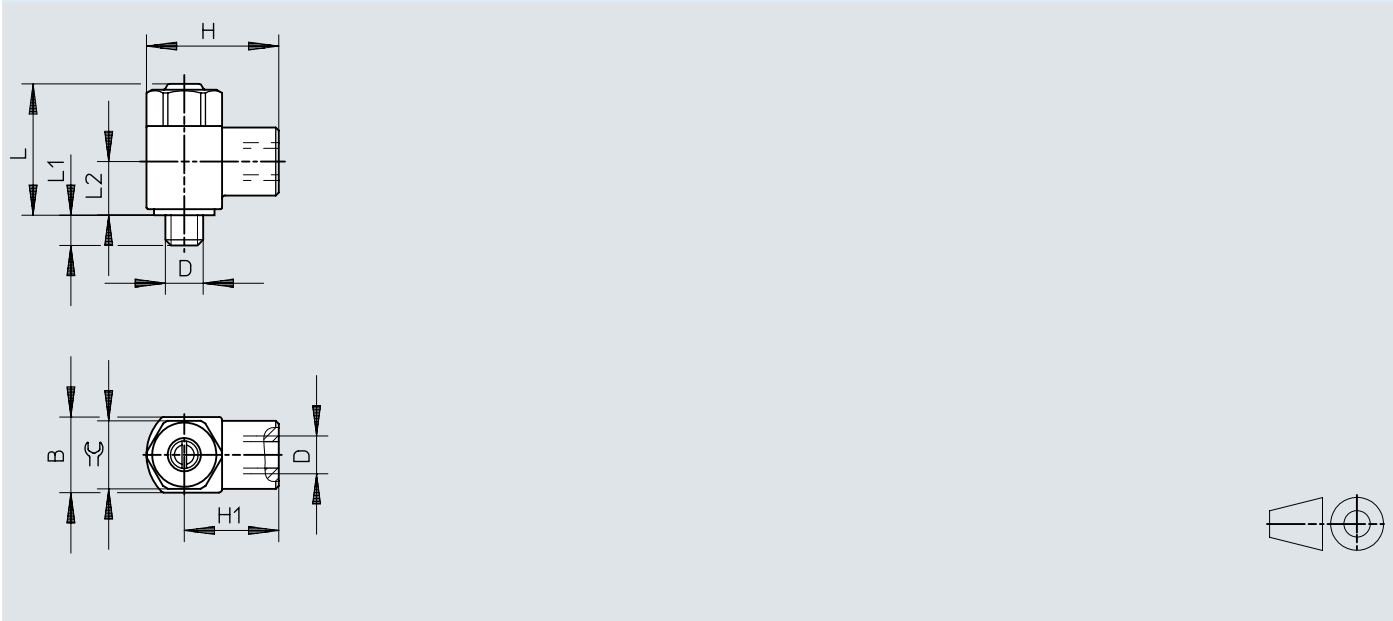
Dimensions – Knurled screw

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	D	D1	B	D2 ø	D3 ø	~H	~H1	~L		L1	~L2	⌀
GRL...-M5	M5	3	–	8,2 +0,15	8,9 ±0,07	22,4	18	31,5	±2,4%	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	40,4	±1,6%	5,05 +0,15/-0,3	14,2	12
		4		10,2 ±0,2		29,4	22,5				–	
		6		12,5 ±0,2		32,6	25,7				–	
		8		14,5 ±0,2		35,6	28,7				–	
GRLA-1/8-...-MF		6	–	12,5 ±0,2	17,8 ±0,15	36,6	27,7	–	–	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	48,5	±1,4%	5,9 +0,17/-0,25	17,2	15
		8		14,5 ±0,2		39,6	30,7				–	
		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	55	±1,3%	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	65,9	±1,1%	8,35 +0,15/-0,3	22,75	24

Dimensions

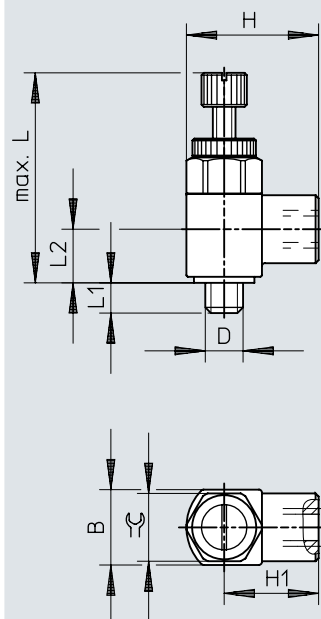
Dimensions – Connection type female thread slotted screw Download CAD data www.festo.com



	D	B	~H	~H1	~L		L1	~L2	≅
GRL...-M5	M5	10 -0,15	17,5	12,5	18	±6,2%	4,0 ±0,3	7,1	9
GRL...-1/8	G1/8	16 -0,15	28	20	26	±3,9%	5,3 +0,45/-0,35	10,3	14
GRL...-1/4	G1/4	20 -0,2	36	26	31,7	±3,2%	8,2 +0,45/-0,35	13,2	17
GRLA-3/8	G3/8	25 -0,2	41	28,5	38,5	±2,9%	8,8 +0,45/-0,35	15,5	22
GRLA-1/2	G1/2	32 -0,2	53	37	50	±2,4%	12,8 ±0,45	18,9	27
GRLA-3/4	G3/4	41 -0,3	64	43,5	61,8	±2,2%	13,5 ±0,5	24,5	36

Dimensions

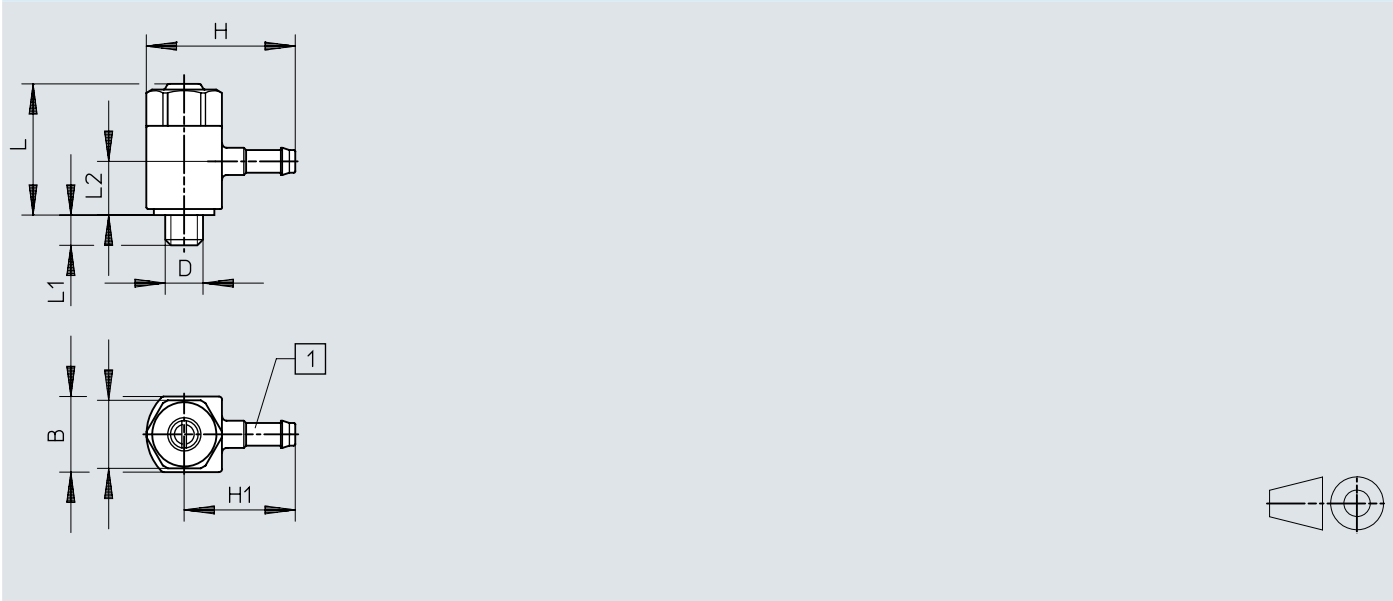
Dimensions – Connection type female thread knurled screw

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	D	B	~H	~H1	~L		L1	~L2	≅
GRL...-M5	M5	10 -0,15	17,5	12,5	28	±3,4%	4,0 ±0,3	7,1	9
GRL...-1/8	G1/8	16 -0,15	28	20	39,4	±2,1%	5,3 +0,45/-0,35	10,3	14
GRL...-1/4	G1/4	20 -0,2	36	26	47,4	±2,0%	8,2 +0,45/-0,35	13,2	17
GRLA-3/8	G3/8	25 -0,2	41	28,5	—		8,8 +0,45/-0,35	15,5	22
GRLA-1/2	G1/2	32 -0,2	53	37	—		12,8 ±0,45	18,9	27
GRLA-3/4	G3/4	41 -0,3	64	43,5	—		13,5 ±0,5	24,5	36

Dimensions

Dimensions – Connection type barbed connector GRL...-M5 Download CAD data www.festo.com

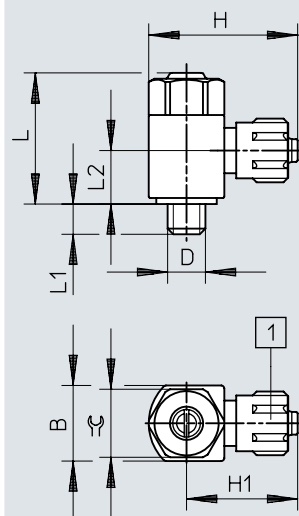


	D	B	~H	~H1	~L		L1	~L2	≅
GRL...-M5-PK-3	M5	10 -0,15	19,7	14,7	18	±5,7%	4,0 ±0,3	8,5	9
GRL...-M5-PK-4		10 -0,15	21,7	16,7	18	±5,7%	4,0 ±0,3	8,5	9

Dimensions

Dimensions – Connection type barbed connector GRL...-1/8, GRL...-1/4

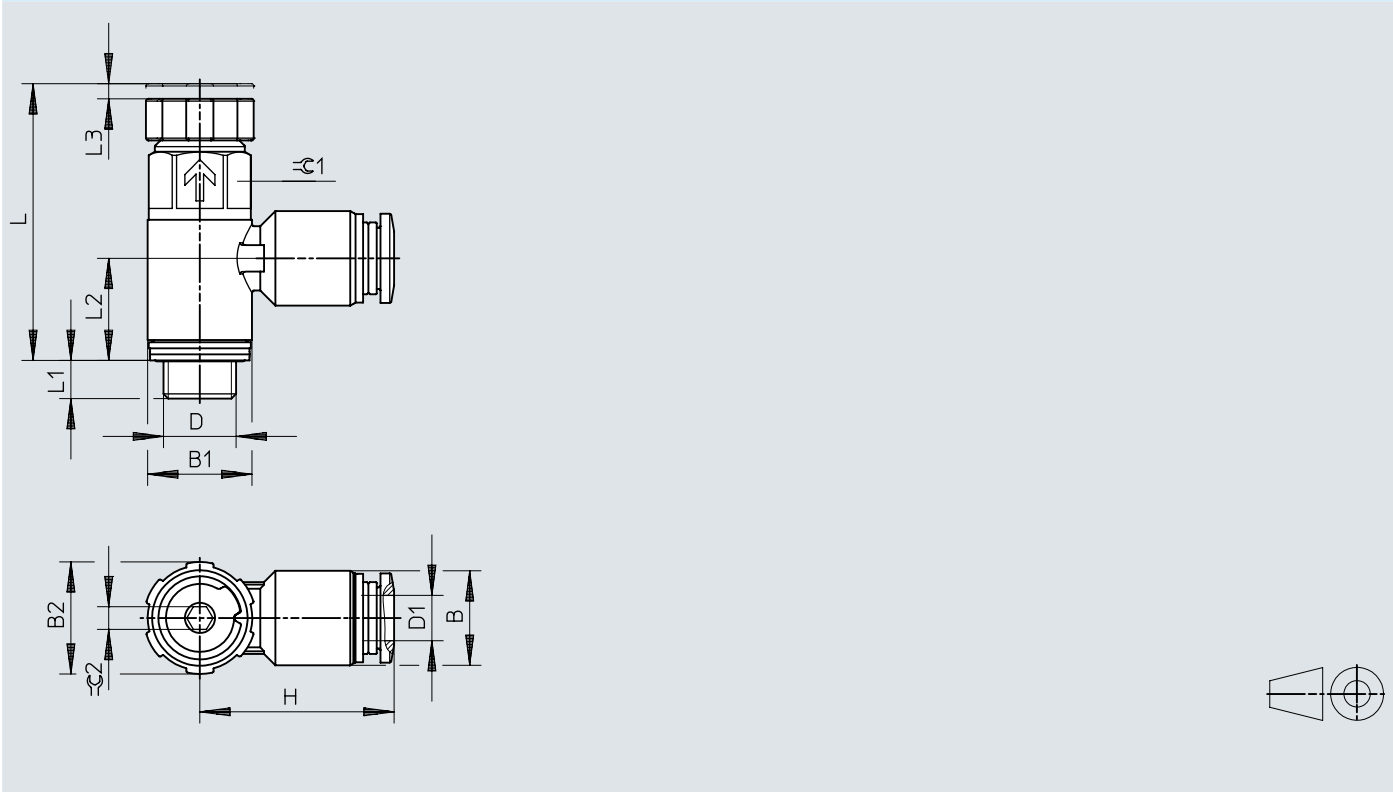
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	D	B	~H	~H1	~L		L1	~L2	≅
GRL...-1/8-PK-3	G1/8	16 -0,15	27,1	19,1	26	±3,9%	5,3 +0,45/-0,35	13,4	14
GRL...-1/8-PK-4		16 -0,15	30,2	22,2	26	±3,9%	5,3 +0,45/-0,35	13,4	14
GRL...-1/8-PK-6		16 -0,15	30,3	22,3	26	±3,9%	5,3 +0,45/-0,35	12,0	14
GRL...-1/4-PK-4	G1/4	20 -0,2	34,2	24,2	31,7	±3,3%	8,2 +0,45/-0,35	16,9	17
GRL...-1/4-PK-6		20 -0,2	34,3	24,3	31,7	±3,3%	8,2 +0,45/-0,35	17,2	17

Dimensions

Dimensions – One-way flow control valves GRLSA, standard Download CAD data www.festo.com

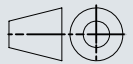
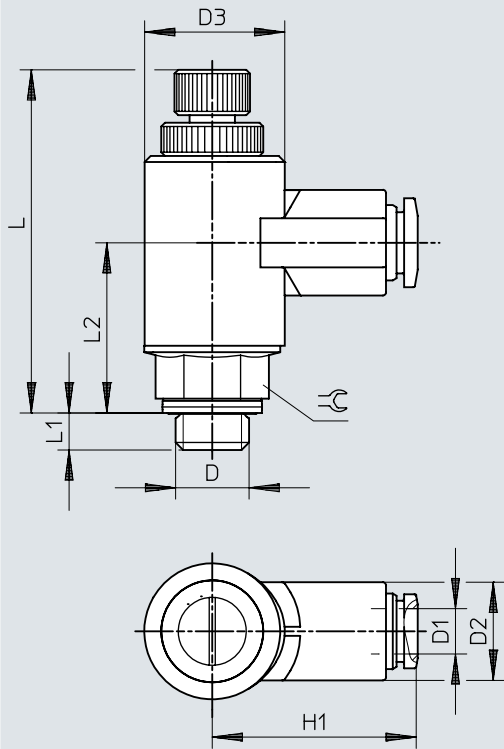


	D	B	B1	B2	H	L	L1	L2	L3	G1	G2
GRLSA-1/8	G1/8	12,5	13,8	15	25,7	36,6	5,1	13,5	2	12	3
GRLSA-1/4	G1/4	14,5	17,8	18,8	30,75	46,5	7	17,2	3	15	3

Dimensions

Dimensions – One-way flow control valves GRLA, standard

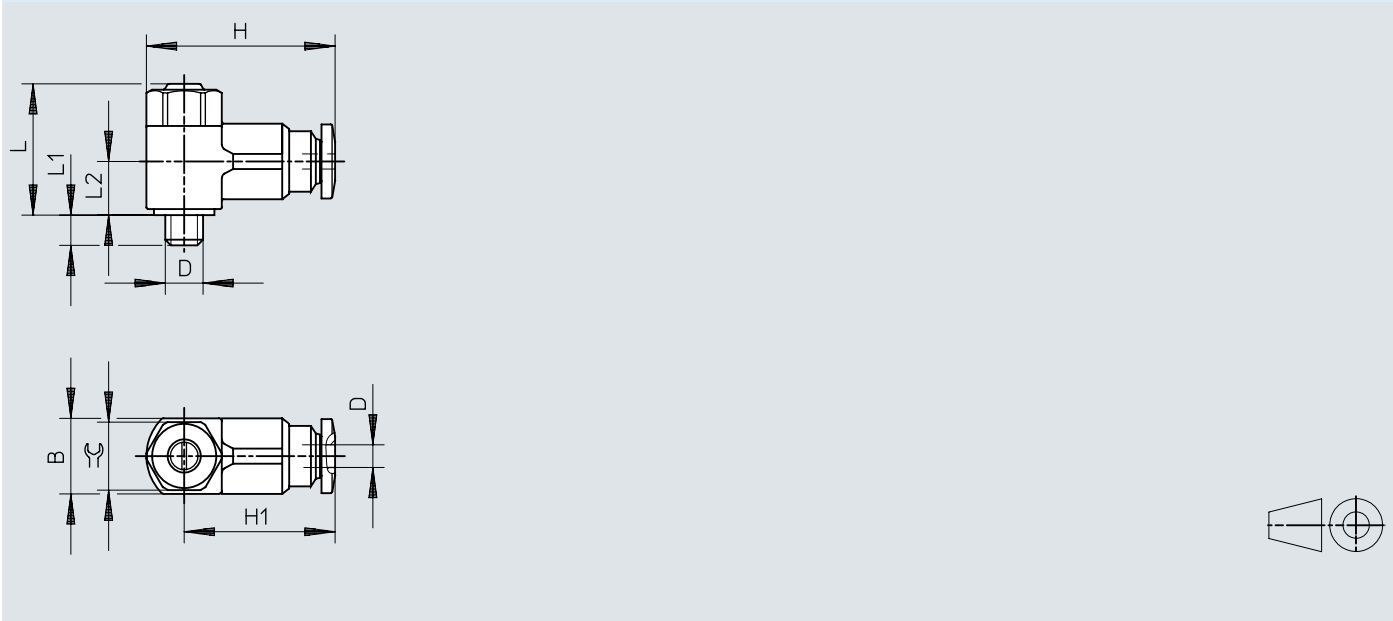
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	D	D1 Ø	D2 Ø	D3 Ø	~H1	~L		~L1	~L2	≈C
GRLA-1/8	G1/8	6	13,0 ±0,25	17,9 -0,1	27,2	48,1	±2,2%	4,9	22,6	13
		8	16,8 ±0,4		35,4	48	±2,3%			
GRLA-1/4	G1/4	6	13,0 ±0,25	17,9 -0,1	27,2	47,8	±2,3%	5,8	22,3	17
		8	16,8 ±0,4		35,4	47,8	±2,4%			
GRLA-3/8	G3/8	6	13,0 ±0,25	17,9 -0,1	27,2	47,8	±2,3%	6,8	22,3	19
		8	16,8 ±0,4		35,4	47,8	±2,4%			

Dimensions

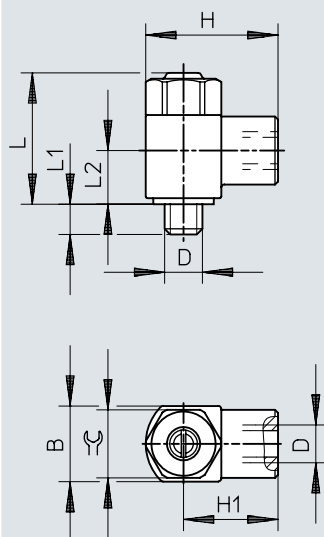
Dimensions – One-way flow control valves GRLA/GRLZ, mini Download CAD data www.festo.com



	D	D1 Ø	B	~H	~H1	~L		L1	~L2	≙
GRLA/GRLZ	M3	3	8 -0,15	20	15,8	16,6	±3,3%	2,3 +0,15/-0,3	7	7
	M5	3	9,8 -0,15	22,4	18,4	17,2	±3,1%	3,1 +0,15/-0,35	7,3	
		4	9,8 -0,15	22,2	18,2	17,2	±3,1%	3,1 +0,15/-0,35	7,3	

Dimensions

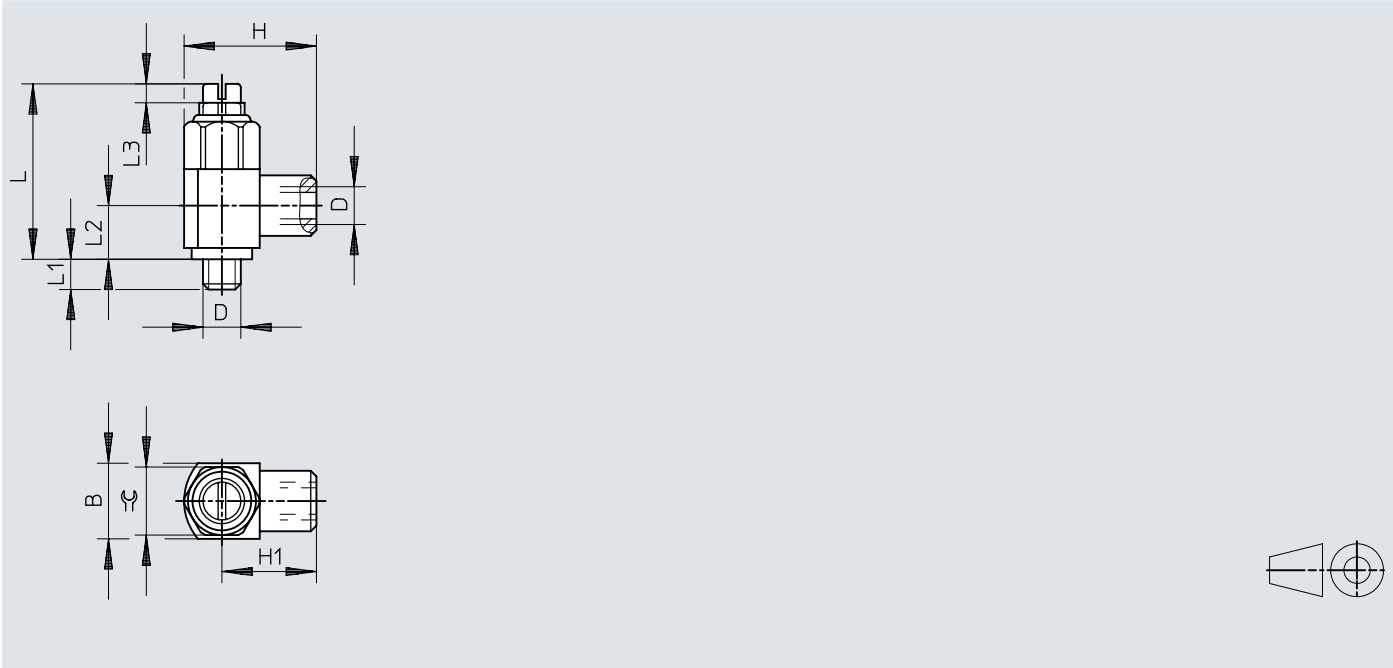
Dimensions – Female thread, metal

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	D	B	~H	~H1	~L		L1	~L2	≅
GRLA/GRLZ	M3	5 -0,1	9	6,5	13,4	±3,9%	2,5 +0,15/-0,3	6,4	4,5

Dimensions

Dimensions – One-way flow control valves CRGRLA-M5, corrosion-resistant Download CAD data www.festo.com

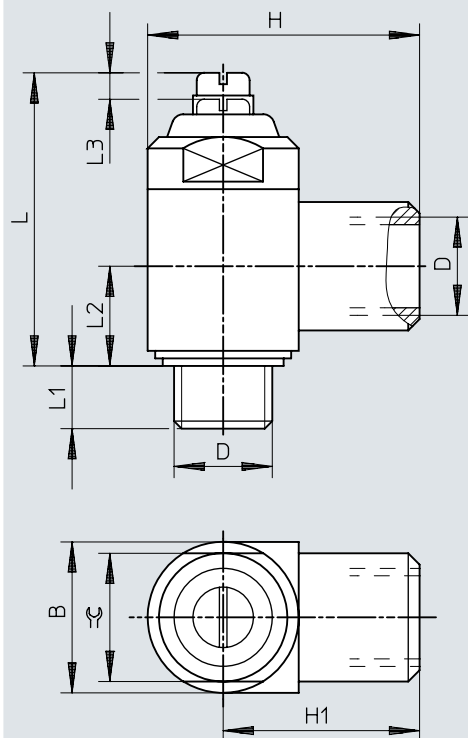


	D	B	H	H1	~L		~L1	~L2	~L3	≈G
CRGRLA-M5	M5	10 -0,25	17,5 ±0,3	12,5	22,9	±3,5%	4	7,1	2,5	9

Dimensions

Dimensions – One-way flow control valves CRGRLA, corrosion-resistant

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	D	B	H	H1	~L		~L1	~L2	~L3	⌀
CRGRLA-1/8	G1/8	16 -0,4	28 +0,4/-0,3	20	33,8	±2,7%	5,5	10,3	3,5	14
CRGRLA-1/4	G1/4	20 -0,3	36 +0,4/-0,2	26	38,8	±2,7%	6,5	13,2	3,5	17
CRGRLA-3/8	G3/8	25 -0,3	41 +0,4/-0,2	28,5	48,5	±2,2%	7,5	15,4	5	22
CRGRLA-1/2	G1/2	32 -0,4	53 ±0,5	37	62,2	±1,7%	9	18,9	7,5	27

Ordering data

Ordering data GRLA – push-in connector QS

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	M5	QS-3	0 - No corrosion stress	13 g	193137	GRLA-M5-QS-3-D
			1 - Low corrosion stress	14 g	197576	GRLA-M5-QS-3-RS-D
		QS-4	0 - No corrosion stress	13 g	193138	GRLA-M5-QS-4-D
			1 - Low corrosion stress	14 g	197577	GRLA-M5-QS-4-RS-D
		QS-6	0 - No corrosion stress	13 g	193139	GRLA-M5-QS-6-D
			1 - Low corrosion stress	14 g	197578	GRLA-M5-QS-6-RS-D
	G1/8	QS-3	0 - No corrosion stress	22 g	193142	GRLA-1/8-QS-3-D
			1 - Low corrosion stress	23 g	197579	GRLA-1/8-QS-3-RS-D
		QS-4	0 - No corrosion stress	22 g	193143	GRLA-1/8-QS-4-D
			1 - Low corrosion stress	23 g	197580	GRLA-1/8-QS-4-RS-D
		QS-6	0 - No corrosion stress	22 g	193144	GRLA-1/8-QS-6-D
				32 g	537075	GRLA-1/8-QS-6-MF-D
		QS-8	0 - No corrosion stress	22 g	193145	GRLA-1/8-QS-8-D
				32 g	537076	GRLA-1/8-QS-8-MF-D
		QS-10	0 - No corrosion stress	22 g	193146	GRLA-1/8-QS-10-D
			1 - Low corrosion stress	23 g	534337	GRLA-1/8-QS-10-RS-D
	G1/4	QS-6	0 - No corrosion stress	42 g	193146	GRLA-1/4-QS-6-D
			1 - Low corrosion stress	50 g	534338	GRLA-1/4-QS-6-RS-D
		QS-8	0 - No corrosion stress	42 g	193147	GRLA-1/4-QS-8-D
			1 - Low corrosion stress	50 g	534339	GRLA-1/4-QS-8-RS-D
		QS-10	0 - No corrosion stress	42 g	193148	GRLA-1/4-QS-10-D
			1 - Low corrosion stress	50 g	534340	GRLA-1/4-QS-10-RS-D
	G3/8	QS-6	0 - No corrosion stress	60 g	193149	GRLA-3/8-QS-6-D
			1 - Low corrosion stress	72 g	534341	GRLA-3/8-QS-6-RS-D
		QS-8	0 - No corrosion stress	60 g	193150	GRLA-3/8-QS-8-D
			1 - Low corrosion stress	72 g	534342	GRLA-3/8-QS-8-RS-D
		QS-10	0 - No corrosion stress	60 g	193151	GRLA-3/8-QS-10-D
			1 - Low corrosion stress	72 g	534343	GRLA-3/8-QS-10-RS-D
	G1/2	QS-12	0 - No corrosion stress	106 g	193152	GRLA-1/2-QS-12-D
			1 - Low corrosion stress	124 g	534344	GRLA-1/2-QS-12-RS-D

Ordering data

Ordering data GRLZ – push-in connector QS

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	M5	QS-3	0 - No corrosion stress	13 g	193153	GRLZ-M5-QS-3-D
		QS-4			193154	GRLZ-M5-QS-4-D
		QS-6			193155	GRLZ-M5-QS-6-D
	G1/8	QS-3		22 g	193156	GRLZ-1/8-QS-3-D
		QS-4			193157	GRLZ-1/8-QS-4-D
		QS-6			193158	GRLZ-1/8-QS-6-D
		QS-8			193159	GRLZ-1/8-QS-8-D

Ordering data GRLA – female thread/barbed connector

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	Male thread G1/4	Female thread G1/4	2 - Moderate corrosion stress	59 g	151175	GRLA-1/4-RS-B
					151172	GRLA-1/4-B
		For barbed fitting I.D. 4 mm with union nut		44 g	151173	GRLA-1/4-PK-4-B
		For barbed fitting I.D. 6 mm with union nut		45 g	151174	GRLA-1/4-PK-6-B
	M5	M5		11 g	151160	GRLA-M5-B
				12 g	151163	GRLA-M5-RS-B
		PK-3		10 g	151161	GRLA-M5-PK-3-B
		PK-4			151162	GRLA-M5-PK-4-B
	G1/8	G1/8		28 g	151165	GRLA-1/8-B
				30 g	151169	GRLA-1/8-RS-B
		PK-3 with union nut		22 g	151166	GRLA-1/8-PK-3-B
		PK-4 with union nut		25 g	151167	GRLA-1/8-PK-4-B
		PK-6 with union nut			151168	GRLA-1/8-PK-6-B
	G3/8	G3/8		97 g	151178	GRLA-3/8-B
	G1/2	G1/2		204 g	151179	GRLA-1/2-B
	G3/4	G3/4		377 g	151180	GRLA-3/4-B

Ordering data GRLZ – female thread/barbed connector

Ordering data GRLZ Female thread/barbed connector						
	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	Male thread G1/4	Female thread G1/4	2 - Moderate corrosion stress	59 g	151198	GRLZ-1/4-RS-B
					151195	GRLZ-1/4-B
	M5	M5		11 g	151183	GRLZ-M5-B
				12 g	151186	GRLZ-M5-RS-B
	G1/8	G1/8		28 g	151188	GRLZ-1/8-B
				30 g	151192	GRLZ-1/8-RS-B

Ordering data GRLSA – push-in connector QS

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	G1/8	QS-6	1 - Low corrosion stress	19.5 g	540661	GRLSA-1/8-QS-6

Ordering data

Ordering data GRLSA – push-in connector QS

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	G1/4	QS-8	1 - Low corrosion stress	34.8 g	540662	GRLSA-1/4-QS-8

Ordering data GRLA/GRLZ – push-in connector QS (Mini)

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	M3	QS-3	1 - Low corrosion stress	7 g	175043	GRLZ-M3-QS-3
					175041	GRLA-M3-QS-3
	M5	QS-4		9 g	175055	GRLZ-M5-QS-3-LF-C
					175053	GRLA-M5-QS-3-LF-C
					175056	GRLA-M5-QS-4-LF-C
					175058	GRLZ-M5-QS-4-LF-C

Ordering data GRLA/GRLZ – female thread (Mini)

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	M3	M3	1 - Low corrosion stress	2 g	175038	GRLA-M3
					175040	GRLZ-M3

Ordering data CRGRLA – female thread (stainless steel)

	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	M5	M5	3 - high corrosion stress	10.2 g	161403	CRGRLA-M5-B
	G1/8	G1/8		37.8 g	161404	CRGRLA-1/8-B
	G1/4	G1/4		71.6 g	161405	CRGRLA-1/4-B
	G3/8	G3/8		126.9 g	161406	CRGRLA-3/8-B
	G1/2	G1/2		262.3 g	161407	CRGRLA-1/2-B