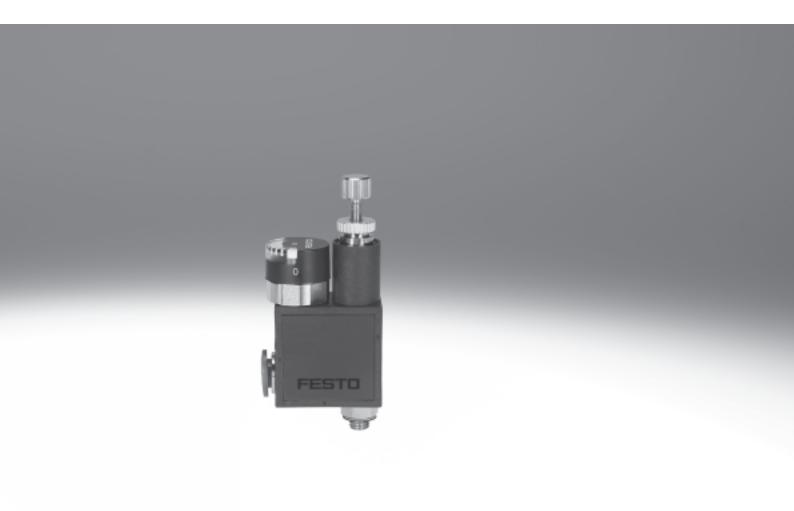
Pressure and differential pressure regulators

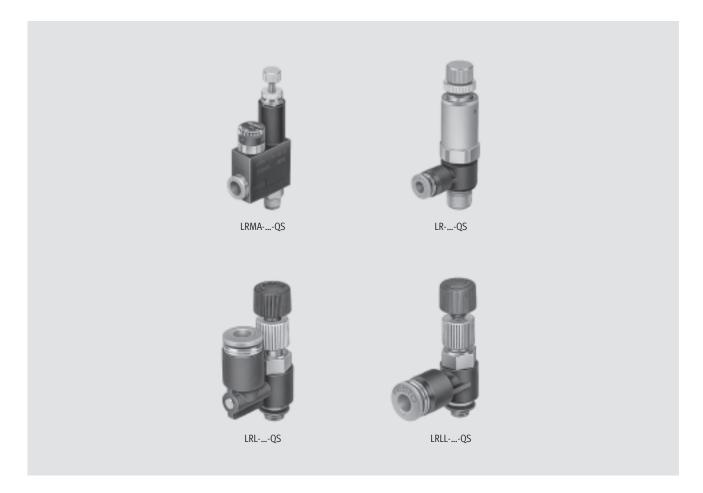




Pressure and differential pressure regulators

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Features



Pressure regulators LR, LRMA

Flow rate 22 ... 127 l/min

- With threaded and push-in connector
- Screw-in thread M5, R¹/8, R¹/4
- Push-in connector for tubing O.D. 4 ... 8 mm
- Push-in connector, can be rotated 360°

The pressure regulator maintains an essentially constant output pressure on the secondary side independent of pressure fluctuations on the primary side and air consumption. The primary pressure at the screw-in thread is reduced when air is exhausted from the QS push-in connector.

Differential pressure regulators LRL, LRLL

Flow rate 30 ... 760 l/min

- With threaded and push-in connector
- Screw-in thread
 M5, R¹/₈, R¹/₄, R³/₈, R¹/₂
- Push-in connector for tubing O.D. 4 ... 12 mm
- Push-in connector, can be rotated 360°

The differential pressure regulator maintains a manually adjusted differential pressure between the primary pressure at the screw-in thread and the output pressure at the QS push-in connector. Pressure applied at the QS push-in connector can be exhausted with no change in pressure at the thread connection end thanks to an integrated non-return valve.

Note

The differential pressure regulator has no exhaust, i.e. increasing secondary pressure cannot be reduced.

Pressure and differential pressure regulators Product range overview

FESTO

Function	Design	Туре	Pneumatic con	nection					→ Page/Internet					
			Thread	For tubi										
				4	6	8	10	12	-					
Pressure regulating	With QS push-in	connector and screw-in	thread	•										
valve without pressure	A	LRQS	M5			_	_	_	5					
gauge				-	-	_	_	-						
			R1/8				_	_						
			R1⁄4			_			_					
			K 1 /4	-			-	-						
	With QS push-in connector at both ends													
		LR-QS	-		1		1	1	5					
							_	_						
	Or													
Pressure regulator	With QS push-in	connector and screw-in	thread											
with pressure gauge	0	LRMAQS	M5			_	_	_	9					
					-		_	_						
			R1/8				_	_						
			R1⁄4						_					
	W B		K 1 /4	-	-	-	-	-						
	With QS push-in	connector at both ends												
	6	LRMA-QS	-						9					
	a													
							_	_						
	State J													
			<u> </u>					1						
Differential pressure	With QS push-in	connector at top and sc	rew-in thread											
regulator		LRLQS	M5		•	-	-	-	12					
without pressure gauge			R1/8				-	-						
			R1⁄4	-				-						
	Se la companya de la		R ³ /8	-	-				4					
			R1/2	-	-	-	-							
	With QS push-in	connector on side and s							42					
		LRLLQS	M5 R ¹ ⁄8	-		-	-	-	12					
			R ¹ /8 R ¹ /4	-			-	-	-					
			R ¹ /4 R ³ /8	_	-			-	-					
	~ 3		R ³ /8		-	-	-		-					
	L		11/2		1		1							

1) Tubing → www.festo.com

Pressure and differential pressure regulators Type codes

	[LR	LL	- [3⁄8	- Q	S-8
Туре							
Pressure regu	lator			1			
LR	Without pressure gauge						
LRMA	With pressure gauge						
Differential p	essure regulator						
LRL	Outlet on top						
LRLL	Outlet on the side						
Screw-in thre	ad		1				
M5	Metric thread M5					1	
1/8	Pipe thread R1/8						
1/4	Pipe thread R ¹ ⁄4						
3⁄8	Pipe thread R3/8						
1/2	Pipe thread R ¹ /2						
Tubing conne	ction						
Type of conne	ction				-		
QS	Push-in connector for standard O.D. tubing	5					
For tubing O.I).						
4	4 mm						
6	6 mm						
8	8 mm						
10	10 mm						
12	12 mm						

Pressure regulators LR

Function



Flow rate 22 ... 127 l/min

- Minimal dimensions
- Constant output pressure
- Version without pressure gauge
- Screw-in thread M5 ... R1/4 or
- push-in connector \varnothing 4 ... 8 mm



General technical data	1	
Design		Directly actuated piston regulator with through pressure supply
Regulating function		With secondary venting, output pressure constant
Actuator lock		Knurled screw with lock nut
Mounting position		Any
With QS push-in conne	ctor and metric thread with seali	ng ring
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
With QS push-in conne	ctor and PTFE-coated pipe thread	
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
	Threaded seal	Polytetrafluoroethylene
With QS push-in conne	ctor at both ends	
Type of mounting		Via through-holes
Materials	Housing	Polybutylene terephthalate

Operating and environmental conditions									
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]							
Input pressure	[bar]	09							
Pressure regulation range	[bar]	18							
Ambient temperature	[°C]	0 60							

Pressure regulators LR Technical data

.

Weights [g]									
Screw-in thread	M5	R1/8	R1⁄4						
With QS push-in connector and metric thread with sealing ring									
QS-4	16	-	-						
QS-6	16	6 – –							
With QS push-in conn	ector and PTFE-coated pipe thread								
QS-4	-	32.5	-						
QS-6	-	33.5	54						
QS-8	-	35	55						

Weights [g]

Treights [5]	101										
With QS push-in connector at both ends											
QS-4	33										
QS-6	33										
QS-8	56										

rate [l/min]			
M5	R1⁄8	R1/4	
tor and metric thread with seali	ng ring		
22	-	-	
41	-	-	
-			
tor and PTFE-coated pipe thread	l		
-	46	-	
-	63	98	
-	69	101	
	tor and metric thread with seali 22 41	M5 R½ ctor and metric thread with sealing ring - 22 - 41 - tor and PTFE-coated pipe thread - 46 - 63	M5 R½ R¼ tor and metric thread with sealing ring - - 22 - - 41 - - tor and PTFE-coated pipe thread - - 46 - - - 63 98

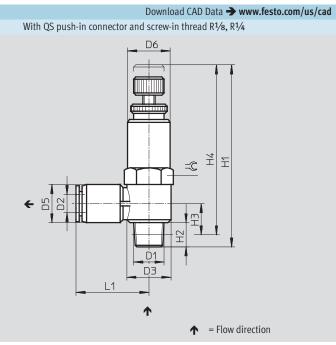
Standard nominal flow rate [l/min]								
With QS push-in connector at both ends								
QS-4	67							
QS-6	70							
QS-8	127							

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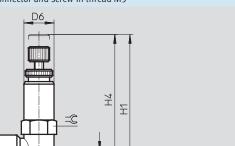
Pressure regulators LR Technical data

Dimensions

With QS push-in connector and screw-in thread M5 D6 H4 Ŧ <u>=C</u> 0.6 HZ Ш L1



Screw-in thread D1	D2 Ø	D3 Ø	D5 D6 H1 H2 H3 Ø Ø					H1		H1		H1		H1		H1		H1				4	L1	2=
					min.	max.			min.	max.														
M5	4	9.8	8	10	44.6	48.75	2.9	7.6	41.7	45.8	16	10												
	6	9.8	10.5	10	44.6	48.7	2.9	8.4	41.7	45.8	17.8	10												
R1/8	4	14.4	10	14	56	60	7.8	10.5	52	56	21.4	14												
	6	14.4	12.4	14	56	60	7.8	10.7	52	56	23.5	14												
	8	14.4	14.4	14	56	60	7.8	11.7	52	56	26.9	14												
R1/4	6	18.4	12.4	17	60.8	64.8	11.3	12.2	54.8	58.8	25.5	17												
	8	18.4	14.4	17	60.8	64.8	11.3	13.2	54.8	58.8	28.4	17												



Pressure regulators LR

Dimensions

With QS push-in connector at both ends L1 L2 D2 B3 Ø, m è B2 DЗ D2 Т 6 되면 HZ ← 친독 L3 L

Download CAD Data 🗲 www.festo.com/us/cad

← = Flow direction	
--------------------	--

Push-in	В	B1	B2	D1	D2	D3	Н		H1	H2	H3	H4	H5	L	L1	L2	L3
connector				Ø	Ø	Ø	min.	max.									
QS-4	15	0	1	4	3.2	15	50	63	17	19	25	4	0	44	22	20	30
QS-6	15	9	1	6	5.2	15	29	60	17	19	25	4	9	45	22.5	20	50
QS-8	19	13	1	8	3.2	19	63.5	67.5	21	21	29	4	9	57	28.5	23	39

rdering data					
	Description	Screw-in thread	For tubing O.D. [mm]	Part No.	Туре
Q	With QS push-in connector and metric thread with sealing ring	M5	4	153532	LR-M5-QS-4
			6	153533	LR-M5-QS-6
	With QS push-in connector and PTFE-coated pipe thread	R1/8	4	153534	LR-1/8-QS-4
			6	153535	LR-1/8-QS-6
			8	153536	LR-1/8-QS-8
		R1⁄4	6	153537	LR-1/4-QS-6
			8	153538	LR-1/4-QS-8
6	With QS push-in connector at both ends	-	4	153540	LR-QS-4
			6	153541	LR-QS-6
			8	153542	LR-QS-8

Pressure regulators LRMA, with pressure gauge Technical data

Function



Flow rate 36 ... 124 l/min

- Minimal dimensions
- Constant output pressure
- Version with pressure gauge
- Screw-in thread M5 ... R1/4 or
- push-in connector \varnothing 4 ... 8 mm



LRMA-...-QS-

LRMA-QS-..

General technical data	а	
Design		Directly actuated piston regulator with through pressure supply
Regulating function		With secondary venting, output pressure constant
Actuator lock		Knurled screw with lock nut
Mounting position		Any
	ector and metric thread with sealing	
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
With QS push-in conne	ector and PTFE-coated pipe thread	
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
	Threaded seal	Polytetrafluoroethylene
With QS push-in conne	ector at both ends	
With QS push-in conne Type of mounting	ector at both ends	Via through-holes

Operating and environmental conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]
Input pressure	[bar]	0 9
Pressure regulation range	[bar]	18
Ambient temperature	[°C]	0 60

Weights [g]			
Screw-in thread	M5	R1/8	R1⁄4
With QS push-in connector	and metric thread with sealing ring		
QS-4	28	-	-
QS-6	28	-	-
With QS push-in connector	and PTFE-coated pipe thread		
QS-4	-	54.5	-
QS-6	-	54.5	55
QS-8	-	83.5	83.5

Weights [g]	
With QS push-in connector a	at both ends
QS-4	45
QS-6	45
QS-8	68

Pressure regulators LRMA, with pressure gauge

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Technical data

Standard nominal flow rate	[l/min]		
Screw-in thread	M5	R1⁄8	R1⁄4
With QS push-in connector a	nd metric thread with sealing ring		
QS-4	36	-	-
QS-6	42	-	-
With QS push-in connector a	nd PTFE-coated pipe thread		
QS-4	-	60	-
QS-6	-	75	96
QS-8	-	87	97

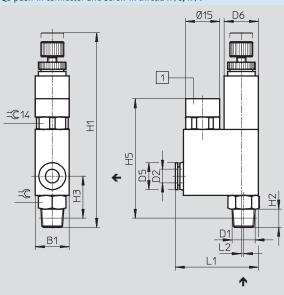
Standard nominal flow rate [l/min]

With QS push-in connector a	at both ends
QS-4	50
QS-6	76
QS-8	124

Dimensions

With QS push-in connector and screw-in thread M5

 $\label{eq:Download CAD Data \twoheadrightarrow www.festo.com/us/cad With QS push-in connector and screw-in thread R1/8, R1/4$



1 Pressure gauge

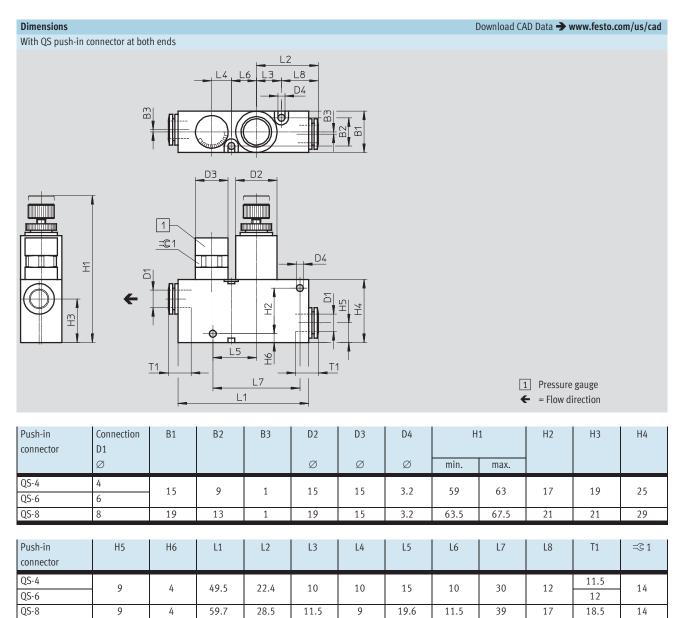
▲ = Flow direction

Screw-in thread	D2	B1	D5	D6	Н	1	H2	H3	Н	4	H5	L1	L2	-C
D1	Ø		Ø	Ø	min.	max.			min.	max.				
M5	4	15.1	9.8	11	57.1	61.2	3.5	11.8	53.6	57.7	42.8	28	1.1	8
	6	15.1	11.8	11	57.1	61.2	3.5	11.8	53.6	57.7	42.8	28.1	1.1	8
R1/8	4	15.1	10	15	77.5	81.5	8	18.5	-	-	51.5	36	0.5	12
	6	15.1	12	15	77.5	81.5	8	18.5	-	-	51.5	36.5	0.5	12
	8	15	14	15	77.5	81.5	8	18.5	-	-	51.5	36.5	1	12
R1/4	6	19	12	19	85.5	89.5	11	22.5	-	-	57	39.5	0.5	16
	8	19	14	19	85.5	89.5	11	22.5	-	-	57	39.5	1	16

Pressure regulators LRMA, with pressure gauge

FESTO

Technical data



Ordering data					
	Description	Screw-in thread	For tubing O.D.	Part No.	Туре
			[mm]		
6	With QS push-in connector and metric thread with sealing ring	M5	4	153488	LRMA-M5-QS-4
<u>s</u>			6	153490	LRMA-M5-QS-6
	With QS push-in connector and PTFE-coated pipe thread	R1/8	4	153489	LRMA-1/8-QS-4
			6	153491	LRMA-1/8-QS-6
			8	153493	LRMA-1/8-QS-8
		R1⁄4	6	153492	LRMA-1/4-QS-6
			8	153494	LRMA-1/4-QS-8
	With QS push-in connector at both ends	-	4	153495	LRMA-QS-4
- Conception			6	153496	LRMA-QS-6
			8	153497	LRMA-QS-8
				1	

Differential pressure regulators LRL/LRLL Technical data

Function



Flow rate 30 ... 760 l/min

- Minimal dimensions
- Constant differential pressure between the input and output
- With screw-in thread M5 ... $R^{1/2}$ or push-in connector \varnothing 4 ... 12 mm



LRL-...-QS

-0S

General technical data							
Pneumatic connection 1	M5	M5 R ¹ /8 R ¹ /4		R3⁄8	R1/2		
Pneumatic connection 2	QS-4, QS-6	QS-4, QS-6, QS-8	QS-6, QS-8, QS-10	QS-8, QS-10, QS-12	QS-12		
Design Directly actuated piston regulator with through pressure supply							
Regulating function With return flow, differential pressure constant							
Type of mounting	Can be screwed in						
Mounting position	Any						
Actuator lock	Knurled screw with lock nut						
Pressure regulation range [bar]	2 6						

Operating and environmental conditions					
Input pressure [bar]	0 9				
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]				
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)				
Ambient temperature [°C]	0 +60				

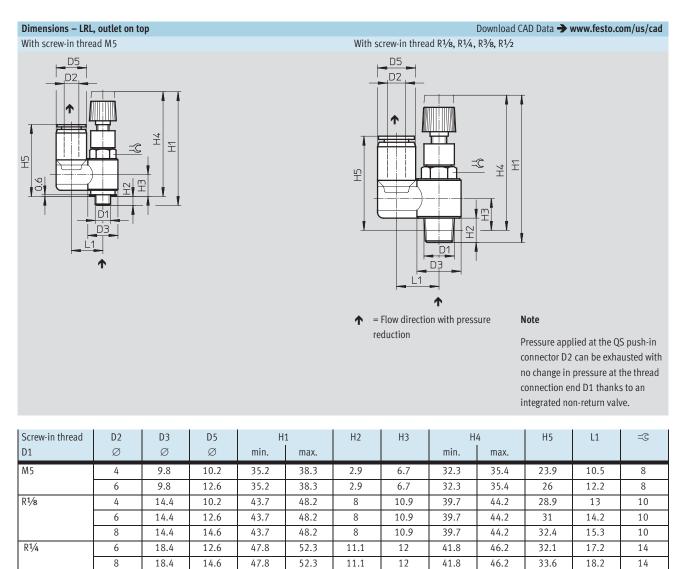
Standard nominal flow rate		Inc. 101/					D2/			D1 (
Screw-in thread	M5	<u>.</u>	R1⁄8		R1⁄4		R3⁄8		R1/2		
	open	closed	open	closed	open	closed	open	closed	open	closed	
LRL, outlet on top											
QS-4	30	30	96	93	-	-	-	-	-	-	
QS-6	30	30	115	115	241	240	-	-	-	-	
QS-8	-	-	120	115	224	224	463	393	-	-	
QS-10	-	-	-	-	231	231	476	423	-	-	
QS-12	-	-	-	-	-	-	438	379	760	730	
		•	•	•		•	•	•	•	•	
LRLL, outlet on the side											
QS-4	30	30	100	96	-	-	-	-	-	-	
QS-6	32	31	155	140	267	266	-	-	-	-	
QS-8	-	-	115	110	268	264	474	340	-	-	
QS-10	-	-	-	-	269	262	456	411	-	-	
QS-12	-	-	-	-	-	-	518	423	730	700	

Materials				
Housing	Reinforced PBT			
Threaded plug	Nickel plated brass			
Threaded seal	PTFE			
Note on materials	RoHS-compliant			

Differential pressure regulators LRL/LRLL

FESTO

Technical data



10

8

10 12

12

R3⁄8

R1⁄2

18.4

22

22

22

28

17.8

14.6

17.8

21.2

21.2

47.8

54.5

54.5

54.5

59.8

52.3

59

59

59

64.3

11.1

13.2

13.2

13.2

16

12

15.4

15.4

15.4

18.2

41.8

48.2

48.2

48.2

51.6

46.2

52.6

52.6

52.6

56.1

35.9

37.8

40.1

42.8

47

19.8

19.2

20.2

23.4

23.4

14

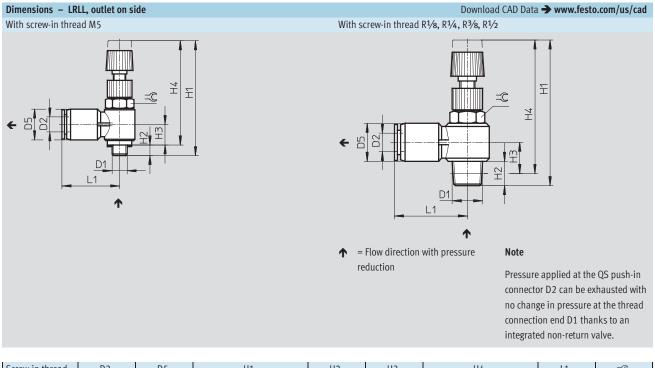
19

19

24

24

Differential pressure regulators LRL/LRLL Technical data



Screw-in thread	D2	D5	Н	1	H2	H3	H4		L1	S=
D1	Ø	Ø	min.	max.			min.	max.		
M5	4	9.9	35.7	38.8	3.4	7.1	32.3	35.4	19.9	8
	6	12.4	35.7	38.8	3.4	8.3	32.3	35.4	24	8
R1⁄8	4	10	44.5	48.5	8	9.5	40.5	44.5	21.5	10
	6	12.5	44.5	48.5	8	10.5	40.5	44.5	23.5	10
	8	14.5	44.5	48.5	8	11.5	40.5	44.5	27	10
R1⁄4	6	12.5	48.5	52	11.5	12	42.5	46	25.5	14
	8	14.5	48.5	52	11.5	13	42.5	46	28.5	14
	10	17.5	48.5	52	18.5	15	42.5	46	31	14
R3⁄8	8	14.5	56	59	13	15	49.5	52.5	29	19
	10	17.5	56	59	13	16.5	49.5	52.5	31	19
	12	21	56	59	13	18	49.5	52.5	37	24
R1/2	12	21	62	64.5	16	19.5	54	56.5	36.5	24

Differential pressure regulators LRL/LRLL Technical data

Ordering data			Weight		
	Pneumatic connection	Pneumatic connection			Туре
	1	2	[g]		
Outlet on top					
	M5	QS-4	9.5	153510	LRL-M5-QS-4
		QS-6	11	153512	LRL-M5-QS-6
	R1/8	QS-4	21	153511	LRL-1/8-QS-4
		QS-6	22	153513	LRL-1/8-QS-6
		QS-8	23	153515	LRL-1/8-QS-8
	R1/4	QS-6	38	153514	LRL-1/4-QS-6
		QS-8	39	153516	LRL-1/4-QS-8
		QS-10	43	153518	LRL-1/4-QS-10
	R3/8	QS-8	70	153517	LRL-¾-QS-8
		QS-10	74	153519	LRL-3/8-QS-10
		QS-12	78	153520	LRL-3/8-QS-12
	R1/2	QS-12	110	153521	LRL-1/2-QS-12
	·	•	· ·		
Outlet on the side					
	M5	QS-4	9	153498	LRLL-M5-QS-4
		QS-6	10	153500	LRLL-M5-QS-6
	R1/8	QS-4	19	153499	LRLL-1/8-QS-4
		QS-6	20	153501	LRLL-1/8-QS-6
		QS-8	22	153503	LRLL-1/8-QS-8
	R1/4	QS-6	37	153502	LRLL-1/4-QS-6
		QS-8	38	153504	LRLL-1/4-QS-8
		QS-10	42	153506	LRLL-1/4-QS-10
	R3⁄8	QS-8	67	153505	LRLL-3/8-QS-8
		QS-10	69	153507	LRLL-3/8-QS-10
		QS-12	73	153508	LRLL-3/8-QS-12
	R1/2	QS-12	105	153509	LRLL-1/2-QS-12

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