

Pressure boosters DPA

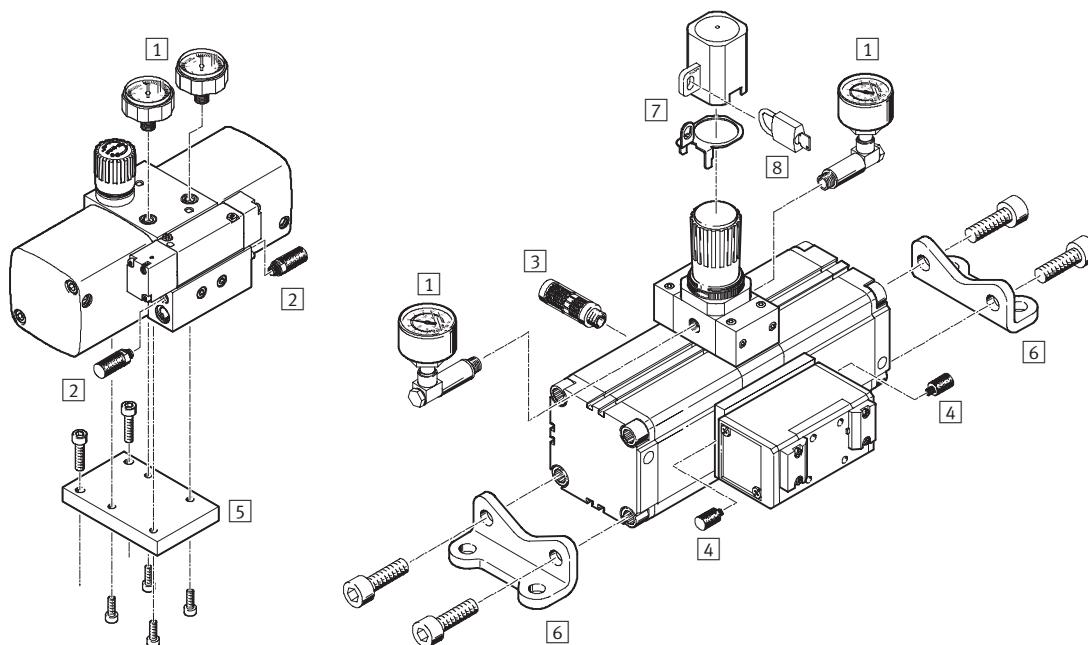
Peripherals overview and type codes

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Peripherals overview

DPA-40

DPA-63/100



Mounting attachments and accessories		
	Brief description	→ Page
1	Pressure gauge set DPA-MA-SET	For monitoring the input and output pressure 3 / 4.7-8
2	Silencer UC	For noise reduction at the exhaust port 3 / 4.7-9
3	Silencer U-...-B	For noise reduction at the exhaust port 3 / 4.7-9
4	Silencer U-M3	For noise reduction at the valve exhaust port (included in the scope of delivery for DPA-40) 3 / 4.7-9
5	Flange mounting FDPA	For mounting the pressure booster on other machine parts 3 / 4.7-7
6	Foot mounting HUA	For mounting the pressure booster on other machine parts 3 / 4.7-7
7	Regulator lock LRVS with lock plate	Prevents unintentional, and in conjunction with an LRVS padlock, unauthorised adjustment of the rotary knob 3 / 4.7-9
8	Padlock LRVS-D	Accessory for LRVS 3 / 4.7-9

Type codes

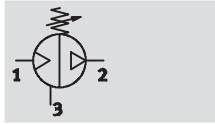
		DPA	—	63	—	16
Basic function						
DPA	Pressure booster					
Piston Ø [mm]						
Output pressure [bar]						
10	4 ... 10 (DPA-40: 4.5 ... 10)					
16	4 ... 16 (DPA-40: 4.5 ... 16)					

Pressure boosters DPA

Technical data

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Funktion

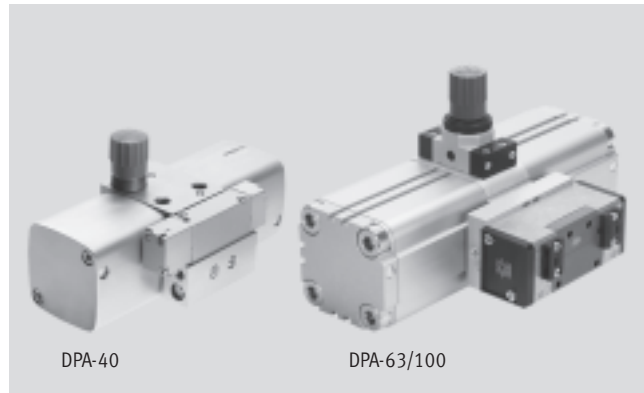


product
design
award
2006



reddot design award
winner 2006

-  - Temperature range
+5 ... +60 °C
-  - Pressure ratio
1:2
-  - [www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)
- Wearing parts kits
→ 3 / 4.7-6



DPA-40

DPA-63/100

Note

Pressure boosters are intended for the occasional bleeding of compressed air. Pressure boosters are not suitable for use as compressor sets, as wear on seals and drive pistons increases significantly during continuous operation without breaks.

Note

The regulator is supplied with a non-compressed regulator spring. After the input pressure is applied, the regulator spring is pretensioned by turning the regulating knob until the desired output pressure is achieved.

A pressure gauge is strongly recommended to monitor the output pressure. In the case of the DPA-63/100, the regulator setting can be secured against unauthorised adjustment by means of the regulator lock LRVS.

All benefits at a glance

- Any assembly position
- Long service life
- Compact construction and good design
- Minimal loss of volume with valve activation
- Short filling times

The pressure booster is a twin-piston pressure intensifier that can compress air.

When the DPA is pressurised with compressed air, integrated directional control and non-return valves automatically facilitate pressure build-up on the secondary side up to twice the normal input pressure, depending on the flow rate.

The air supply to both drive pistons is

controlled by a pneumatic directional control valve, which reverses automatically when the stroke end-position is reached.

The reference value is set using a manually operated regulator, which supplies compressed air to the drive pistons on the secondary side and ensures stable operation of the pressure booster.

The pressure booster starts automatically when the input pressure is applied and the desired output pressure has not yet been reached. When the set output pressure is reached, the pressure booster stops operating to save energy but restarts automatically if the pressure drops due to application operation.

Calculation software

Pressure booster selection should be carried out using the booster selection software.

You can download this software from the Festo home page

→ www.festo.com/download or request a copy on CD-ROM from Festo.

General technical data						
Type	DPA-40-10	DPA-40-16	DPA-63-10	DPA-63-16	DPA-100-10	DPA-100-16
Piston Ø [mm]	40		63		100	
Pneumatic connection 1, 2	G $\frac{1}{4}$		G $\frac{3}{8}$		G $\frac{1}{2}$	
Pneumatic connection 3	M7		G $\frac{3}{8}$		G $\frac{1}{2}$	
Operating medium	Compressed air, filtered, unlubricated, grade of filtration 40 µm					
Design	Twin-piston pressure booster					
Type of mounting	Via female threads					
Assembly position	Any					
Input pressure p1 [bar]	2.5 ... 8	2.5 ... 10	2 ... 8	2 ... 10	2 ... 8	2 ... 10
Output pressure p2 [bar]	4.5 ... 10 ¹⁾	4.5 ... 16 ¹⁾	4 ... 10 ¹⁾	4 ... 16 ¹⁾	4 ... 10 ¹⁾	4 ... 16 ¹⁾
Pressure indicator	G $\frac{1}{8}$ prepared		G $\frac{1}{8}$ prepared		G $\frac{1}{4}$ prepared	

1) The differential pressure between the input and output pressure must be at least 2 bar.

Pressure boosters DPA

Technical data

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Ambient conditions		
Ambient temperature	[°C]	+5 ... +60
Storage temperature	[°C]	+5 ... +60
Corrosion resistance class	CRC ¹⁾	2

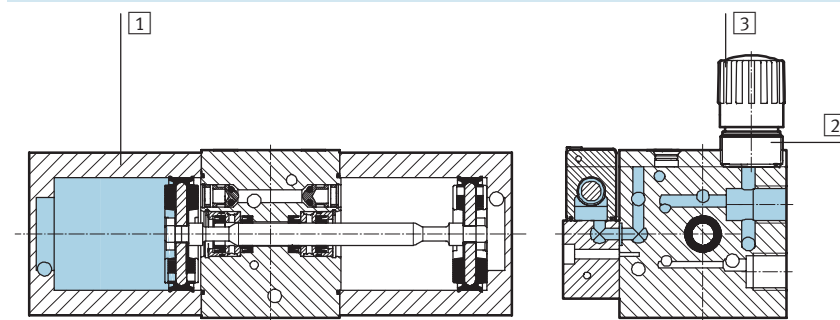
- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weights [g]			
Type	DPA-40	DPA-63	DPA-100
Pressure booster	1,500	6,000	13,000

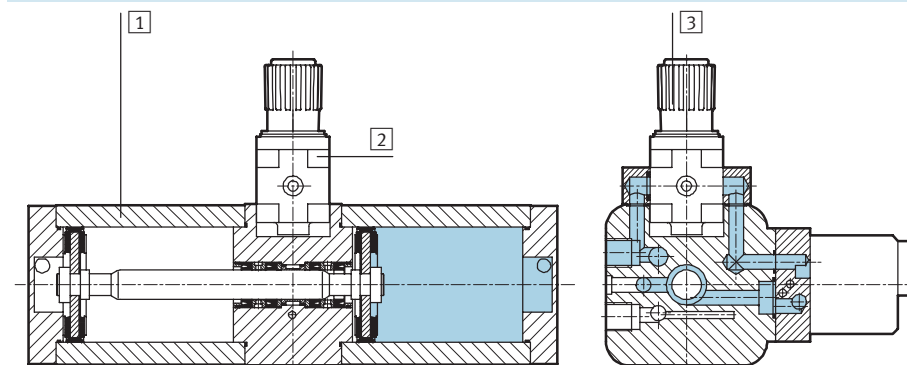
Recommended tubing		
	For input pressure	For output pressure
DPA-40	PAN-10x1,5-SI	PAN-8x1,25-SI
DPA-63	PAN-16x2-SI	PAN-12x1,75-SI
DPA-100	P-19-SW PAN-16x2-SI	PAN-16x2-SI

Materials

Sectional view DPA-40



Sectional view DPA-63/100



Pressure booster		DPA-40	DPA-63/100-10	DPA-63/100-16
1	Housing	Aluminium		
2	Support	Aluminium	Polyester	Aluminium
3	Rotary knob	Polyacetate		
–	Piston/piston rod seals	Hydrogenated nitrile rubber		
–	Non-return valve seals	Nitrile rubber	Fluoro rubber	
–	Regulator/valve seals	Nitrile rubber		

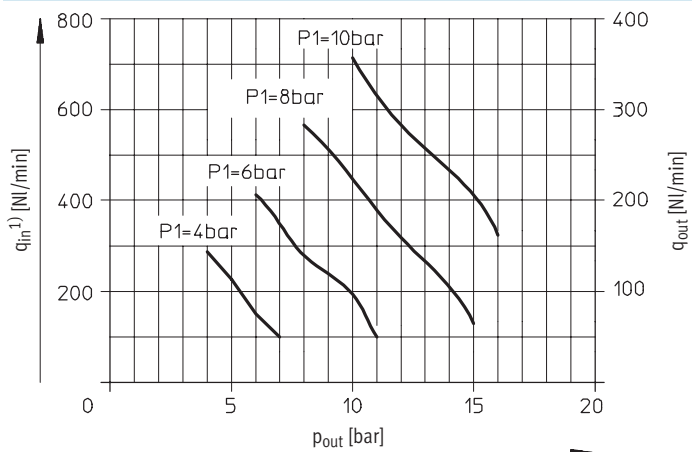
Pressure boosters DPA

Technical data

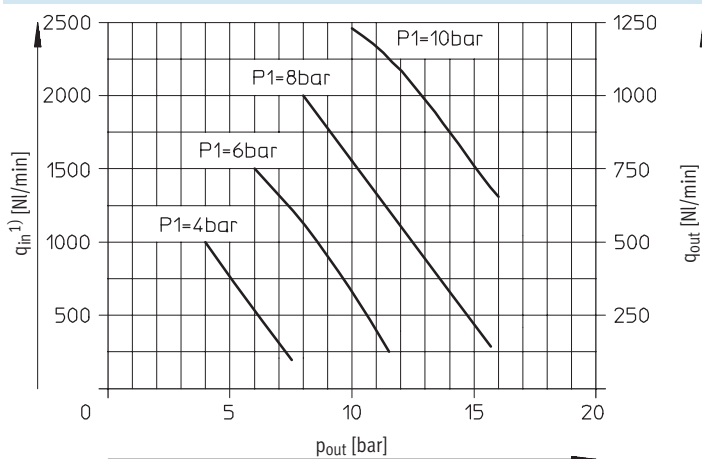
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Flow rate at input $q_{in}^{1)}$ and flow rate at output q_{out} as a function of output pressure p_{out}

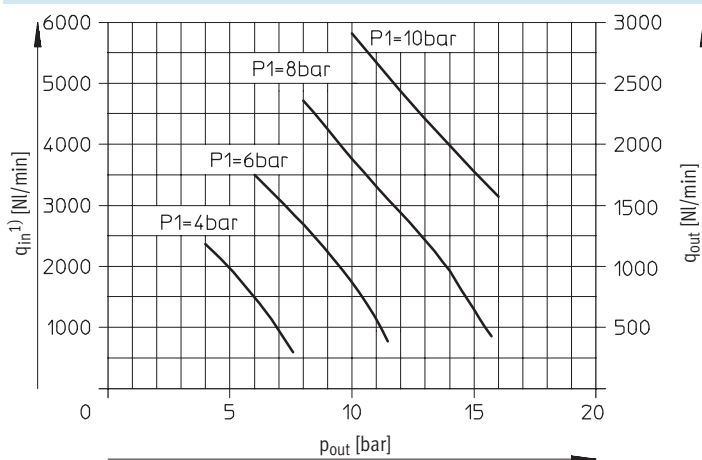
DPA-40



DPA-63



DPA-100



1) Theoretical values without switching losses and friction.

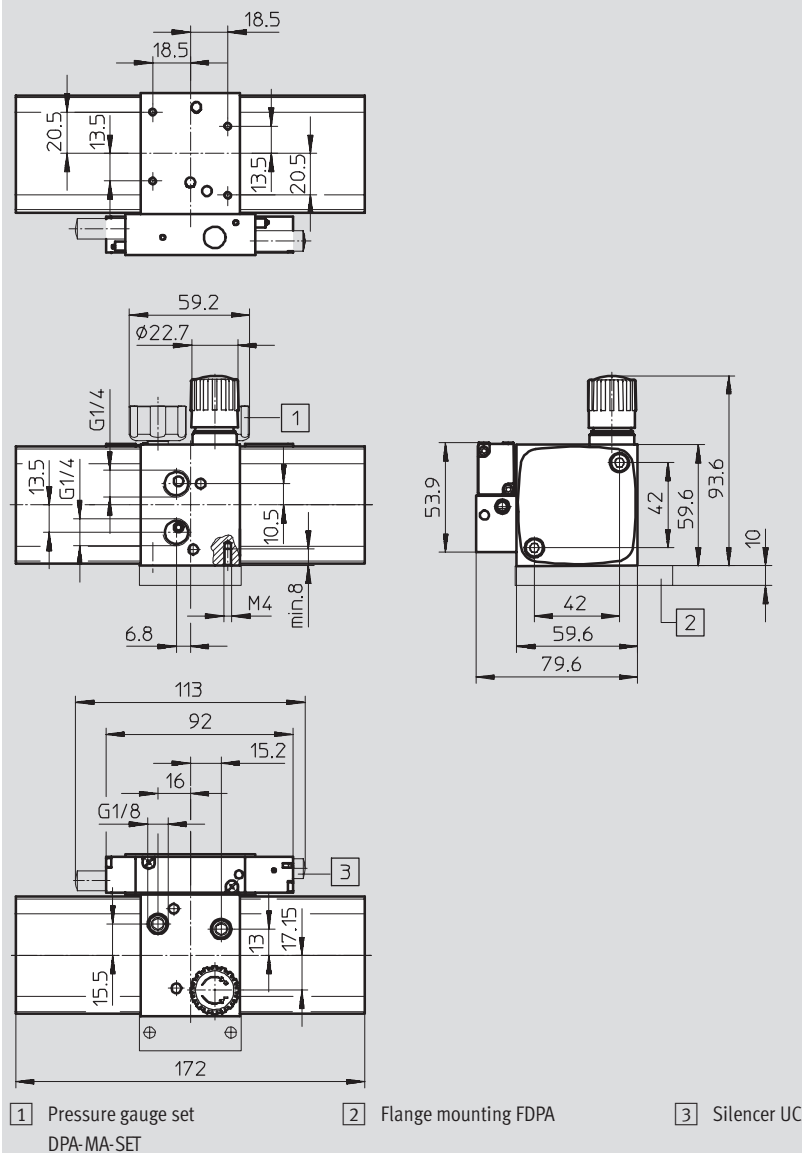
Pressure boosters DPA

Technical data

Dimensions

Download CAD data → www.festo.com/en/engineering

DPA-40



Pressure boosters DPA

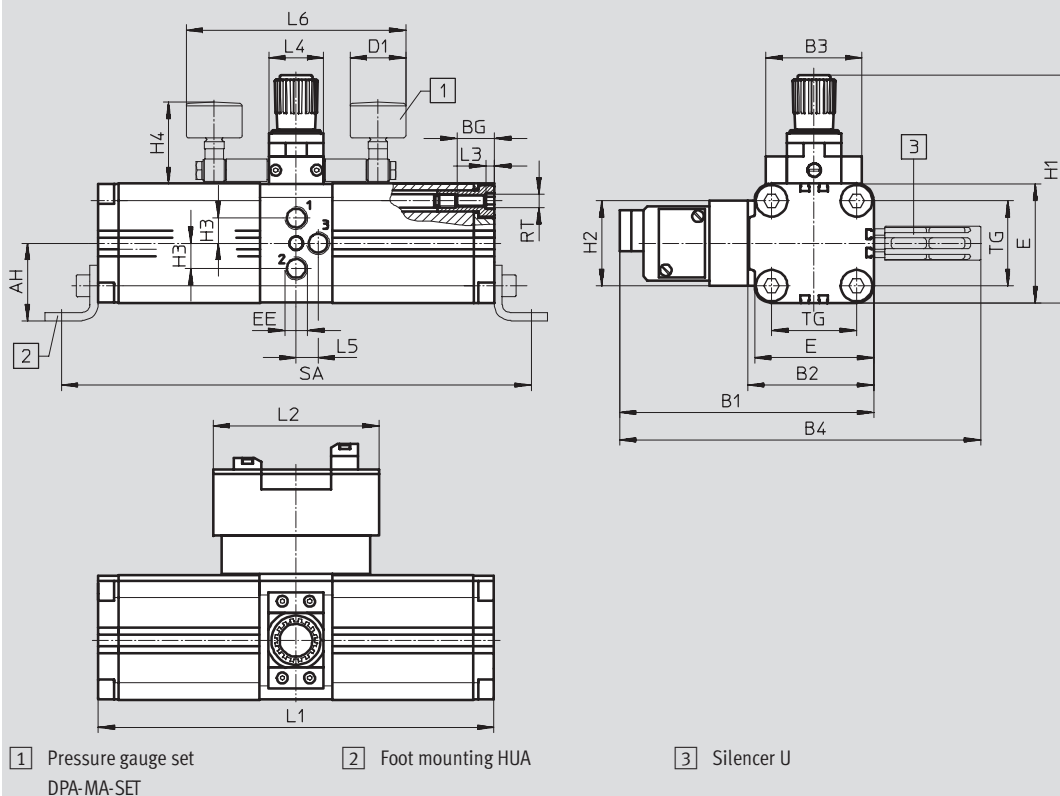
Technical data

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Dimensions

Download CAD data → www.festo.com/en/engineering



DPA-63/100



Type	AH	B1	B2	B3	B4	BG	D1 Ø	E	EE	H1	H2
DPA-63	56.5	187	92.5	70	266	25	41	88	G $\frac{3}{8}$	169	62
DPA-100	81	244	133	102	352	30		128	G $\frac{1}{2}$	244	71

Type	H3	H4	L1	L2	L3	L4	L5	L6	RT	TG	SA
DPA-63	17.5	60	289	122	6	40	19	161	M10	62	343
DPA-100	27	73	367	145.5		55	11	175		103	433

Ordering data

Piston Ø [mm]	Output pressure 4 ¹⁾ ... 10 bar			Output pressure 4 ¹⁾ ... 16 bar		
	Part No.	Type		Part No.	Type	
40	537 273	DPA-40-10	 New	537 274	DPA-40-16	 New
63	184 518	DPA-63-10		193 392	DPA-63-16	
100	184 519	DPA-100-10		188 399	DPA-100-16	

1) For DPA-40: 4.5 bar.

Ordering data – Wearing parts kits

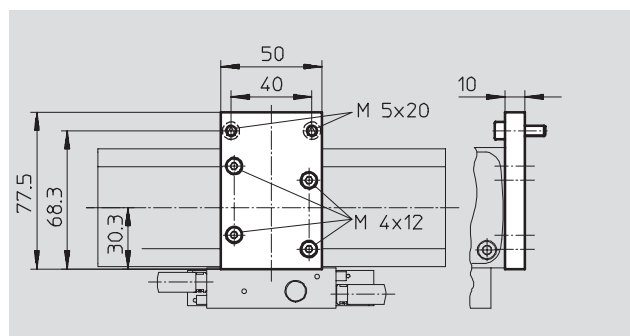
	Part No.	Type
DPA-63	397 400	DPA-63-10/16
DPA-100	397 401	DPA-100-10/16


Pressure boosters DPA

Accessories

Flange mounting FDPA for DPA-40

Material:
Mounting: Anodised aluminium
Screws: Galvanised steel
Free of copper and PTFE

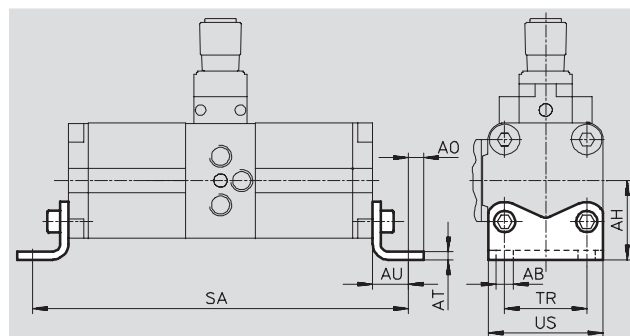


Ordering data					
For type	CRC ¹⁾	Weight [g]	Part No.	Type	
DPA-40	2	120	540 783	FDPA-40	 New

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Foot mounting HUA for DPA-63/100

Material:
Mounting, screws: Galvanised steel
Free of copper and PTFE



Ordering data											
For type	AB Ø	AH	AO	AT	AU	SA	TR	US	CRC ¹⁾	Weight [g]	Part No. Type
DPA-63	11	56.5	11.75	6	27	343	62	85.5	2	550	157 315 HUA-63
DPA-100	13.5	81	11.75	8	33	433	103	126.5	2	1,050	157 317 HUA-100

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

New
DPA-40-MA-SET

Pressure boosters DPA

Accessories

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Pressure gauge set DPA-MA-SET for DPA-40

Material:

Housing: Polyamide

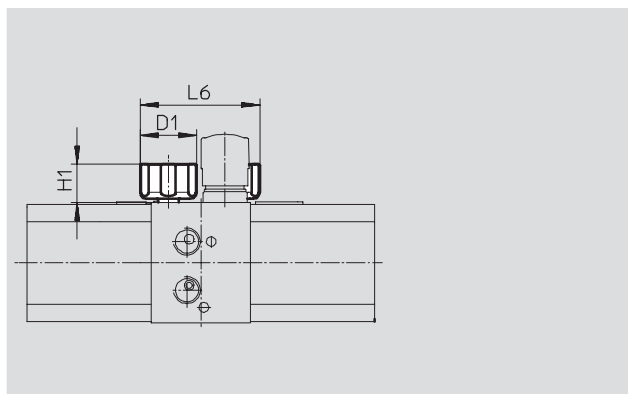
Dial cover: Polystyrene

Connection piece: Polyamide

The pressure gauges generally have to be sealed with PTFE sealing tape.

Single pressure gauge MA-27-...-R1/8:

→ 3 / 4.8-6



for DPA-63/100

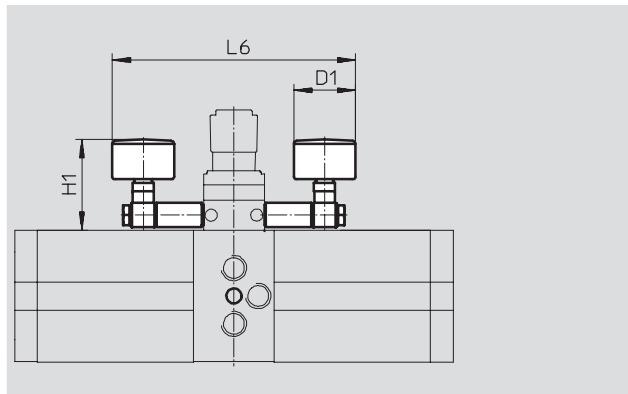
Material:

Housing: Acrylic butadiene styrene

Dial cover: Polystyrene

Connection piece: Brass

If the pressure gauge scale is to be aligned, PTFE sealing tape must be used instead of the included sealing rings.



Dimensions				
For type	Pneumatic connection	D1 Ø	H1	L6
DPA-40	R1/8	28	19	59.2
DPA-63	G1/8	41	60	161
DPA-100	G1/4	41	73	175

Ordering data						
For type	Nominal tubing size, pressure gauge	Accuracy of measurement, class	Weight [g]	Operating pressure 10 bar		Operating pressure 16 bar
				Part No.	Type	Part No. Type
DPA-40	27	4	16	540 781	DPA-40-10-MA-SET	540 782 DPA-40-16-MA-SET
DPA-63	40	2.5	250	526 096	DPA-63-10-MA-SET	526 097 DPA-63-16-MA-SET
DPA-100	40	2.5	305	526 098	DPA-100-10-MA-SET	526 099 DPA-100-16-MA-SET

Pressure boosters DPA

Accessories

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Regulator lock LRVS for DPA-63/100

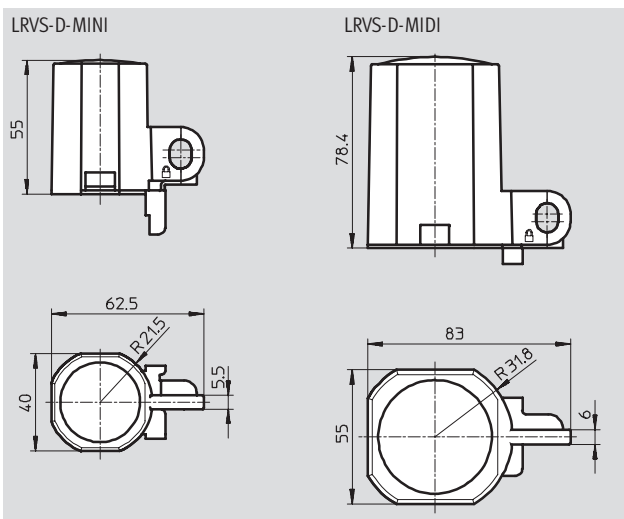
Material:

Cap: Polyacetate





Lock plate: Steel

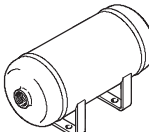

Knurled nut: Aluminium

Free of copper and PTFE



Ordering data			
For type	Weight [g]	Part No.	Type
DPA-63	40	193 781	LRVS-D-MINI
DPA-100	60	193 782	LRVS-D-MIDI

Ordering data				
	Pneumatic connection	Part No.	Type	PU ¹⁾ [m]
Silencer UC				
Technical data → 3 / 6.1-5				
	M7	161 418	UC-M7	
Silencer U-...-B				
Technical data → 3 / 6.1-4				
	G3/8	6843	U-3/8-B	
	G1/2	6844	U-1/2-B	
Silencer U-M3				
Technical data → 3 / 6.1-3				
	M3	163 978	U-M3	
Plastic tubing P/PAN				
	–	152 700	PAN-8x1,25-SI	50
		152 701	PAN-10x1,5-SI	50
		152 702	PAN-12x1,75-SI	50
		152 703	PAN-16x2-SI	50
		2 235	P-19-SW	40

	Volume [l]	Part No.	Type
Air reservoir			
Technical data → 3 / 6.2-1			
	Stainless steel		
0.1	160 233	CRVZS-0.1	
0.4	160 234	CRVZS-0.4	
0.75	160 235	CRVZS-0.75	
2	160 236	CRVZS-2	
5	192 159	CRVZS-5	
10	160 237	CRVZS-10	
20	534 845	CRVZS-20	
Standard			
5	192 160	VZS-5-B	
10	151 923	VZS-10-B	
20	192 161	VZS-20-B	
Padlock LRVS-D			
	–	193 786	LRVS-D

1) Packaging unit.

Individual units
Pressure amplifier

4.7