# **FESTO**



Key features

## **FESTO**

## Function

The pressure booster is a twin-piston pressure intensifier intended solely for compressing air.

When the DPA is pressurised with compressed air, integrated non-return valves automatically facilitate pressure build-up on the secondary side. The output pressure p2 can increase to up to twice the value of the

supply pressure p1. The required output pressure is set using a manually operated pressure regulator. In the case of pressure boosters without a pressure regulator, the output pressure is always twice the supply pressure.

The air supply to both drive pistons is controlled by a pneumatic directional

control valve that reverses automatically when the stroke end position is reached.

The pressure booster starts automatically when the supply pressure is applied and the desired output pressure has not yet been reached.

When the set output pressure is

reached, the pressure booster switches to energy-saving mode but restarts automatically if the pressure drops during system operation. With the DPA with sensing option, it is also possible to record individual strokes of the drive piston with the aid of an external sensor and adding counter.

## Note

Pressure boosters are intended for the occasional relieving of compressed air. They are not suitable as a replacement for compressors, as wear on seals and drive pistons increases significantly during continuous operation without breaks.

## Note

The pressure regulator is supplied with a non-tensioned regulator spring (DPA-...-10/16 only). After the supply pressure is applied, the regulator spring is pretensioned by turning the regulator knob until the desired output pressure p2 is achieved.

A pressure gauge is strongly recommended to monitor the output pressure p2. In the case of the DPA-63/100, the regulator setting can be secured against unauthorised adjustment by means of the regulator lock LRVS.

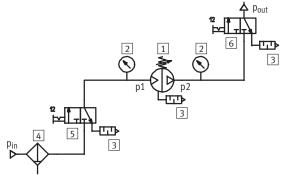
## Connection to the compressed air network

#### Supply pressure side

The use of a 3/2-way on-off valve (e.g. HE-...-D, HEE-...-D or a similar type) in the air supply line to the pressure booster is recommended. The 3/2-way on-off valve must not be opened until the supply pressure p<sub>in</sub> has already built up.

## Output pressure side

The connection of a 3/2-way on-off valve on the output pressure side of the pressure booster is recommended for safe venting of the output pressure  $p_{out}$ . If a 3/2-way valve is not used, the output pressure can only be vented by fully releasing the regulator spring (regulator knob turned all the way to the left).



## Note

If there is a soft-start valve in the system, it is essential that a 3/2-way on-off valve is inserted between the soft-start valve and pressure booster.

## Note

In the case of pressure boosters without pressure regulator, external venting must be ensured via a 3/2-way on-off valve.

- Pressure booster
- 2 Pressure gauge
- 3 Silencer
- 4 Filter

- 5 3/2-way on-off valve on the supply pressure side
- 6 3/2-way on-off valve on the output pressure side

Key features

## Installation with air reservoir

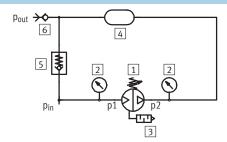
An air reservoir (e.g. CRVZS) should always be used on the output pressure side to compensate for pressure fluctuations. The air reservoir evens out the pulsation of the pressure booster. An effective way of filling the air reservoir with the supply pressure p1 is via a connecting cable. The pressure booster only has to make up

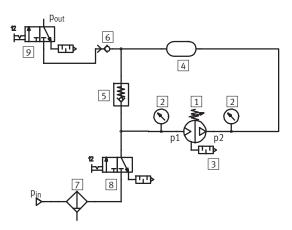
the difference between the supply and output pressures. The air reservoir is filled faster. A non-return valve prevents the air from flowing back out of the reservoir.

This configuration corresponds to the scope of delivery of the pressure booster/air reservoir combination that can be ordered (→ 16).

## Circuitry with 2 on-off valves

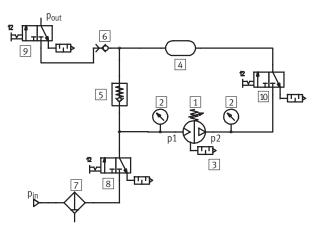
The air reservoir is vented via the regulator knob of the pressure booster.





## Circuitry with 3 on-off valves

The air reservoir is vented via the additional on-off valve.



- 1 Pressure booster
- 2 Pressure gauge
- 3 Silencer
- 4 Air reservoir
- 5 Non-return valve
- 6 Quick coupling socket
- 7 Filter
- 8 3/2-way on-off valve on the supply pressure side
- 9 3/2-way on-off valve on the output pressure side
- 10 3/2-way on-off valve for venting the air reservoir

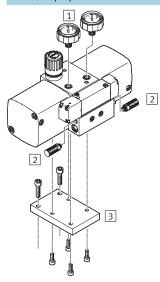


Product range overview

Function	Version	Туре	Piston ∅ [mm]	→ Page/Internet				
Pressure booster	Standard	Standard						
		DPA	40, 63, 100	5				
	Without pressure regul	ator, double supply pres	sure					
		DPAD	40, 63, 100	5				
	With sensing option							
		DPAA	63, 100	5				
Pressure booster/ air reservoir combination		DPACRVZS	40, 63, 100	16				

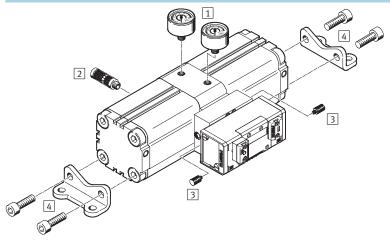
Peripherals overview

# DPA-40-10/16/D



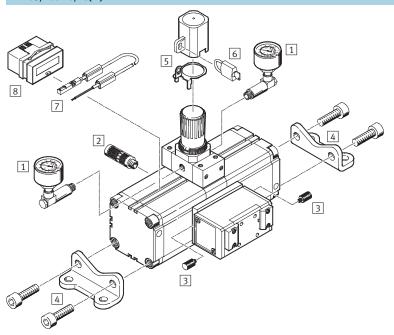
Mou	Mounting attachments and accessories				
		Brief description	→ Page/Internet		
1	Pressure gauge set	For monitoring the supply and output pressure	22		
	DPA-MA-SET				
2	Silencer	For noise reduction at the exhaust port	25		
	UC				
3	Flange mounting	For mounting the pressure booster on other machine parts	21		
	FDPA				

## DPA-63/100-D



Mou	Mounting attachments and accessories				
		Brief description	→ Page/Internet		
1	Pressure gauge MA	For monitoring the supply and output pressure	23		
2	Silencer UB	For noise reduction at the exhaust port	25		
3	Silencer U-M3	For noise reduction at the valve exhaust port	25		
4	Foot mounting HUA	For mounting the pressure booster on other machine parts	21		

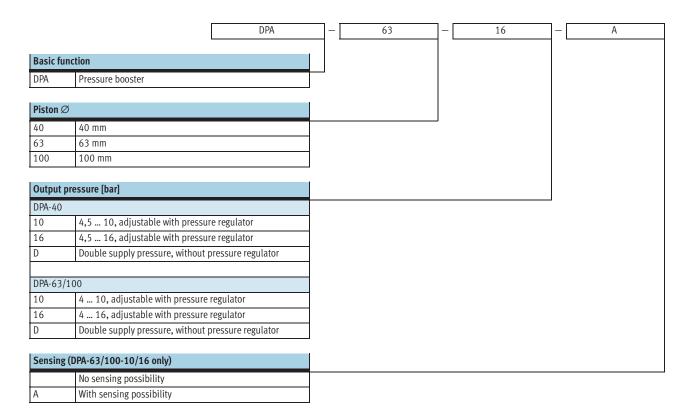
## DPA-63/100-10/16(-A)



Μοι	Mounting attachments and accessories				
		Brief description	→ Page/Internet		
1	Pressure gauge set DPA-MA-SET	For monitoring the supply and output pressure	22		
2	Silencer UB	For noise reduction at the exhaust port	25		
3	Silencer U-M3	For noise reduction at the valve exhaust port	25		
4	Foot mounting HUA	For mounting the pressure booster on other machine parts	21		
5	Regulator lock LRVS-D with lock plate	Prevents unintentional, and in conjunction with an LRVS padlock, unauthorised adjustment of the rotary knob	25		
6	Padlock LRVS-D	Accessory for regulator lock LRVS-D	25		
7	Proximity sensor SME-8M/SMT-8M	For registering individual strokes of the drive piston (only DPAA)	24		
8	Adding counter CCES	For counting the switching cycles (only DPAA)	24		

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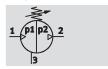
Type codes



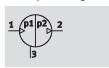
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Technical data

Function with pressure regulator



without pressure regulator



Temperature range

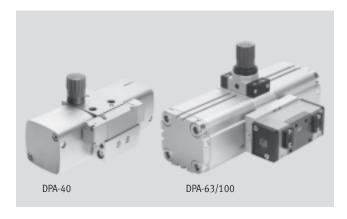
+5 ... +60 °C

Pressure

1:2 www.festo.com/en/ Spare\_parts\_service

Wearing parts kits

**→** 15



- Any mounting position
- Long service life
- Compact construction and attractive design
- Minimal loss of volume due to valve actuation
- Short filling times

General technical data – DPA with pressure regulator												
Type DPA-		No sensir	ng option					With sensi	ng option			
		40-10	40-16	63-10	63-16	100-10	100-16	63-10-A	63-16-A	100-10-A	100-16-A	
Piston Ø	[mm]	40		63		100		63		100		
Pneumatic connection 1, 2		G1/4		G3/8	G3/8		G½		G3/8		G <sup>1</sup> / <sub>2</sub>	
Pneumatic connection 3		M7	M7		G3/8		G½		G3/8			
Constructional design		Twin-pist	Twin-piston pressure booster					Twin-piston pressure booster				
		-						With magn	et on piston			
Type of mounting		Via female thread										
Mounting position		Any										
Pressure indication		G1/8 prep	ared	G½ prep	ared	G¹/₄ prepa	ared	G½ prepa	red	G1/4 prepa	red	

Note: This product conforms to ISO 1179-1 and ISO 228-1

General technical data – DPA without pressure regulator				
Type DPA-		40-D	63-D	100-D
Piston Ø	[mm]	40	63	100
Pneumatic connection 1, 2		G <sup>1</sup> / <sub>4</sub>	G3/8	G <sup>1</sup> / <sub>2</sub>
Pneumatic connection 3		M7	G3/8	G <sup>1</sup> / <sub>2</sub>
Constructional design		Twin-piston pressure booster		
Type of mounting		Via female thread		
Mounting position		Any		
Pressure indication		G½ prepared		



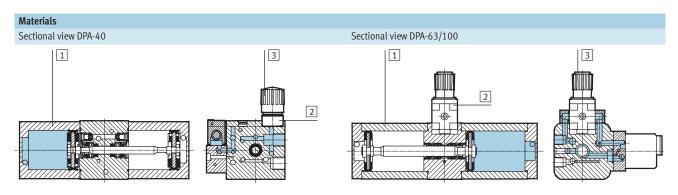


Operating and environmental conditions								
Type DPA-		DPA with pressure i	DPA with pressure regulator				DPA without pressure regulator	
		40-10	40-16	63/100-10(-A)	63/100-16(-A)	40-D	63/100-D	
Operating pressure	[bar]	2.5 8	2.5 10	2 8	2 10	2.5 8	2 8	
Pressure regulation range	[bar]	4.5 10 <sup>1)</sup>	4.5 16 <sup>1)</sup>	4 10 <sup>1)</sup>	4 16 <sup>1)</sup>	5 16	4 16	
Operating medium		Compressed air in a	accordance with ISO	8573-1:2010 [7:4:4	<u>i]</u>			
Note on operating/pilot mediu	n	Operation with lubricated medium not possible						
Ambient temperature	[°C]	+5 +60						
Storage temperature	[°C]	+5 +60						
Corrosion resistance class CRC <sup>2)</sup>		2						

- The differential pressure between the supply and output pressure must be at least 2 bar.
   Corrosion resistance class 2 as per Festo standard 940 070
   Components subject to moderate corrosion stress. 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.

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

Recommended tubing				
Type DPA-	40	63	100	
For supply pressure	PAN-10x1,5	PAN-16x2	P-19-SW, PAN-16x2	
For output pressure	PAN-R-8x1,5	PAN-R-16x3	PAN-R-16x3	

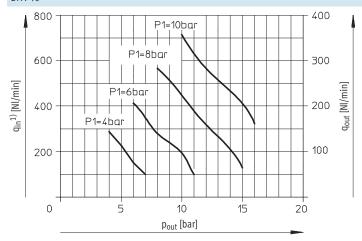


Pres	sure booster	DPA-40	DPA-63/100-10	DPA-63/100-16
1	Housing	Aluminium		
2	Support	Aluminium	Polyester	Aluminium
3	Rotary knob	Polyacetate		
-	Piston/piston rod seals	Hydrogenated nitrile rubber	Polyurethane	
-	Non-return valve seals	Nitrile rubber	Fluoro elastomer	
-	Regulator/valve seals	Nitrile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

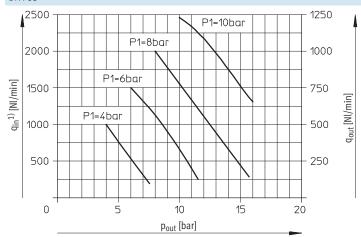
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Technical data

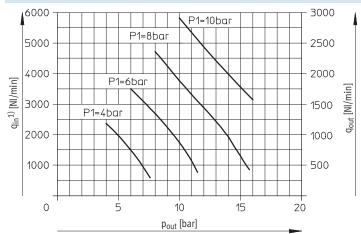
# Flow rate at input $q_{in}^{\,1)}$ and flow rate at output $q_{out}$ as a function of output pressure $p_{out}$ DPA-40



## DPA-63



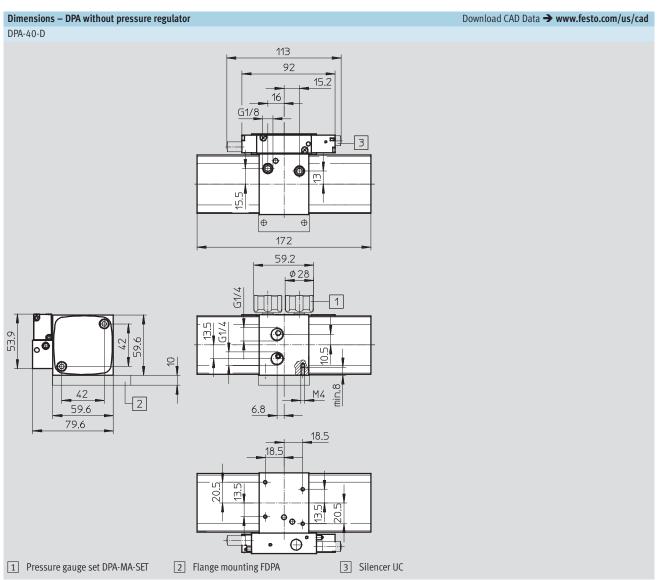
## DPA-100



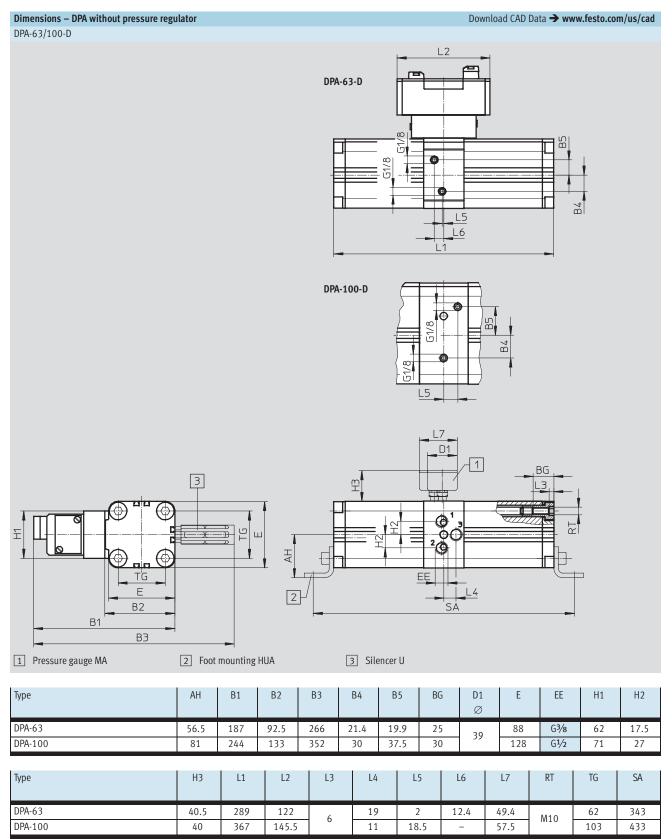
1) Theoretical values without switching losses and friction.

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Technical data

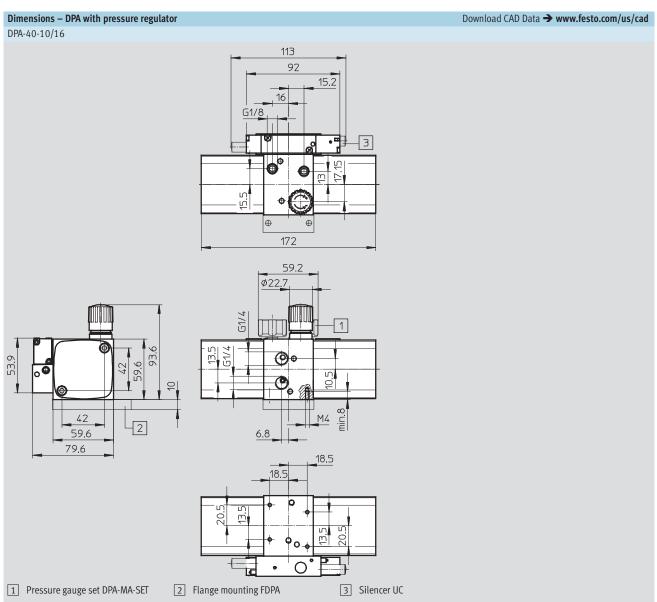


Technical data

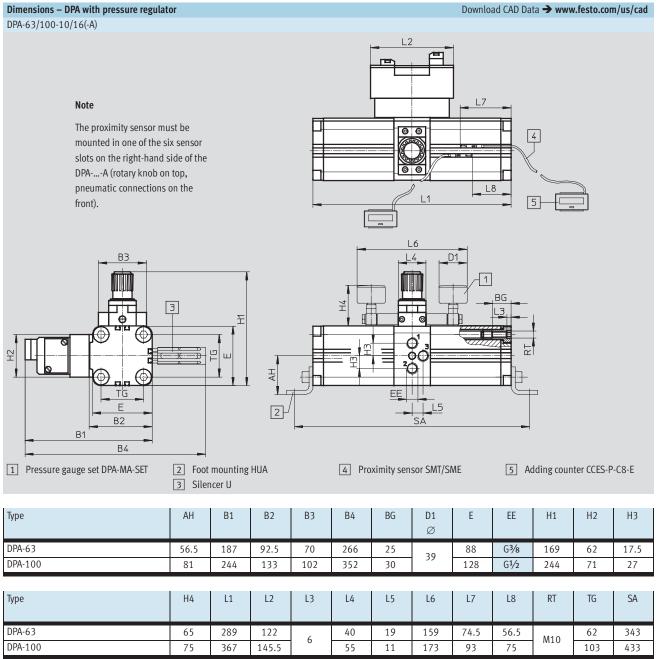


**FESTO** 

Technical data



Technical data





Technical data

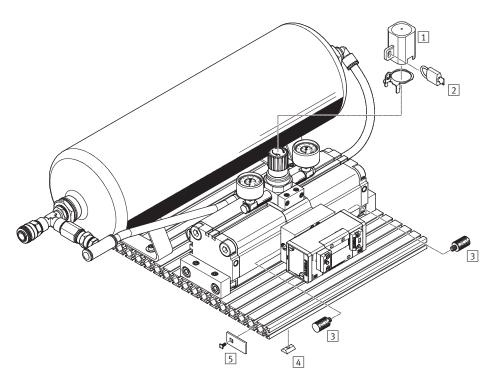
Ordering data			
Piston Ø	Output pressure 4 <sup>1)</sup> 10 bar	Output pressure 4 <sup>1)</sup> 16 bar	Double supply pressure
[mm]	Part No. Type	Part No. Type	Part No. Type
No sensing option			
40	537273 DPA-40-10	537274 DPA-40-16	549396 DPA-40-D
63	184518 DPA-63-10	193392 DPA-63-16	549397 DPA-63-D
100	184519 DPA-100-10	188399 DPA-100-16	549398 DPA-100-D
With sensing option			
63	549399 DPA-63-10-A	549400 DPA-63-16-A	-
100	549401 DPA-100-10-A	549402 DPA-100-16-A	-

<sup>1)</sup> For DPA-40: 4.5 bar

Ordering data – W	Ordering data – Wearing parts kits					
Туре	Product series	Part No.	Туре			
DPA-40-10/16		707308	DPA-40-10/16			
DPA-63-10/16	From SN to VN	397400	DPA-63-10/16			
	From VD	738338	DPA-63-10/16			
DPA-100-10/16	From SN to VN	397401	DPA-100-10/16			
	From VD	738339	DPA-100-10/16			

# Pressure boosters DPA, with air reservoir Peripherals overview



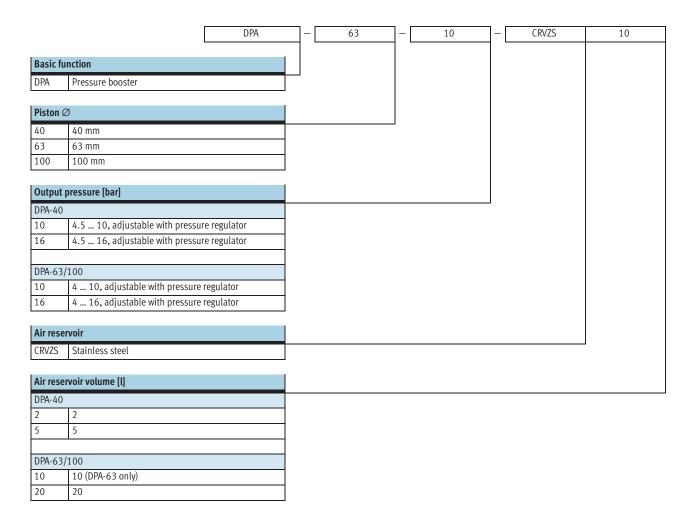


Acce	ssories		
		Brief description	→ Page/Internet
1	Regulator lock (DPA-63/100 only)	Prevents unintentional, and in conjunction with a padlock LRVS-D, unauthorised	25
	LRVS-D with lock plate	adjustment of the rotary knob	
2	Padlock (DPA-63/100 only)	Accessory for regulator lock LRVS-D	25
	LRVS-D		
3	Silencer (DPA-63/100 only)	For noise reduction at the valve exhaust port	25
	U-M3		
4	Slot nut	For attaching the slotted profile plate	On request
	IPM-VN-05-15/M5-ST	DPA-40: 4 pieces, DPA-63/100: 6 pieces	
5	Cover	For covering the cut edge of the slotted profile plate	On request
	IPM-AN-05-20X40-PA	DPA-40: 5 pieces per cut edge, DPA-63/100: 10 pieces per cut edge	

# Pressure boosters DPA, with air reservoir



Type codes



# Pressure boosters DPA, with air reservoir

**FESTO** 

Technical data

Function Pressure booster with pressure regulator



Temperature range

+5 ... +60 °C

Pressure

1:2 www.festo.com/en/ Spare\_parts\_service

Wearing parts kits

**→** 20



Combination of pressure booster, air reservoir in stainless steel design, bypass with non-return valve for constant filling of the air reservoir

with the system pressure, pressure gauge set, silencer, fitting and quick coupling.

- Convenient all-in-one solution
- Ideally matched components
- Combination fully mounted on a slotted profile plate

General technical data											
Pressure booster DPA		40-10	40-16	40-10	40-16	63-10	63-16	63-10	63-16	100-10	100-16
Air reservoir		CRVZS2	CRVZS2	CRVZS5	CRVZS5	CRVZS10	CRVZS10	CRVZS20	CRVZS20	CRVZS20	CRVZS20
Piston Ø [	mm]	40	40			63				100	
Pneumatic connection 1		QS-10				QS-12				QS-16	
Pneumatic connection 2		KD4									
Pneumatic connection 3 Silencer											
Constructional design		Twin-piston pressure booster									
	·	With air res	ervoir								
		With pressu	ire gauge								
		With non-re	turn valve								
Type of mounting		Via slot nut	S								
Mounting position	ounting position Any Condensate drain under			e drain unde	neath						
Air reservoir volume [	[1]	2	•	5		10	•	20			
Product weight [	[g]	4,400		7,300		16,000		21,500		30,000	

Operating and environmental co	Operating and environmental conditions										
Pressure booster DPA		40-10	40-16	40-10	40-16	63-10	63-16	63-10	63-16	100-10	100-16
Air reservoir		CRVZS2	CRVZS2	CRVZS5	CRVZS5	CRVZS10	CRVZS10	CRVZS20	CRVZS20	CRVZS20	CRVZS20
Operating pressure [b	bar]	2.5 8				2 8					
Pressure regulation range [l	bar]	4.5 10	4.5 16	4.5 10	4.5 16	4 10	4 16	4 10	4 16	4 10	4 16
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]									
Note on operating/pilot medium		Operation with lubricated medium not possible									
Ambient temperature [c	°C]	+5 +60									
Storage temperature [c	°C]	+5 +60									
Corrosion resistance class CRC <sup>1)</sup> 2											
CE mark (see declaration of conformity) –			In accordan	ce with EU P	ressure Equi	pment Direct	tive				

1) Corrosion resistance class 2 as per Festo standard 940 070 Components subject to moderate corrosion stress. 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.

Materials							
Pressure booster → 9							
Air reservoir High-alloy stainless steel							
Slotted profile plate Aluminium							

## Pressure boosters DPA, with air reservoir

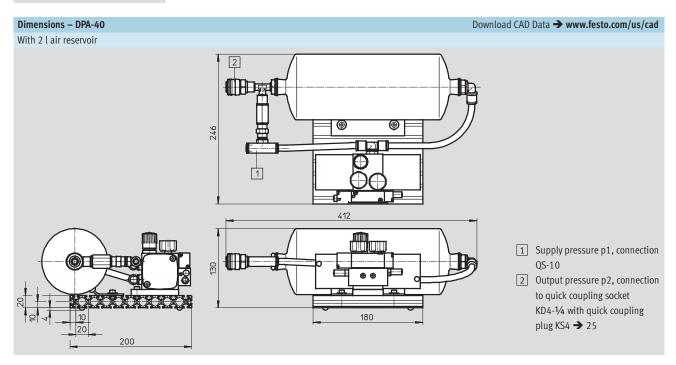


Technical data

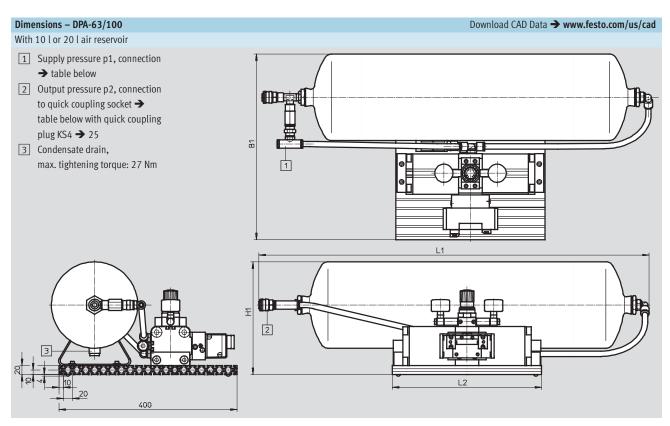
Recommended tubing								
Type DPA- 40 63 100								
For supply pressure	PAN-10x1,5	PAN-12x1,75	PAN-16x2					
' '	PAN-R-8x1,5, PAN-R-10x1,9, PAN-R-12x2,2	PAN-R-16x3	PAN-R-16x3					

## Note

Flow rates → 10



# With 5 I air reservoir 1 Supply pressure p1, connection QS-10 2 Output pressure p2, connection to quick coupling socket KD4-1/4 with quick coupling plug KS4 → 25 3 Condensate drain, max. tightening torque: 27 Nm



Туре	B1	H1	L1	L2	1	2 Quick coupling socket	
DPA-63-10-CRVZS10	400	215	695	335	QS-12	KD4-3/8	
DPA-63-16-CRVZS10	400	213	093	333	Q3-12	ND4-78	
DPA-63-10-CRVZS20	417	253	877	335	QS-12	KD4- <sup>3</sup> / <sub>8</sub>	
DPA-63-16-CRVZS20	417	233	677	)))	Q3-12	KD4-98	
DPA-100-10-CRVZS20	487	253	880	410	QS-16	KD4-1/2	
DPA-100-16-CRVZS20	407	233	000	410	Q3-10	ND4-72	

Ordering data								
Piston $\varnothing$	Volume	Output pressure 4 <sup>1)</sup> 10 bar	Output pressure 4 <sup>1)</sup> 16 bar					
[mm]	[1]	Part No. Type	Part No. Type					
40	2	552928 DPA-40-10-CRVZS2	552929 DPA-40-16-CRVZS2					
	5	552930 DPA-40-10-CRVZS5	552931 DPA-40-16-CRVZS5					
63	10	552932 DPA-63-10-CRVZS10	552933 DPA-63-16-CRVZS10					
	20	552934 DPA-63-10-CRVZS20	552935 DPA-63-16-CRVZS20					
100	20	552936 DPA-100-10-CRVZS20	552937 DPA-100-16-CRVZS20					

<sup>1)</sup> For DPA-40: 4.5 bar

Ordering data – Wearing parts kits							
Туре	Product series	Part No.	Туре				
DPA-40-10/16		707308	DPA-40-10/16				
DPA-63-10/16	From SN to VN	397400	DPA-63-10/16				
	From VD	738338	DPA-63-10/16				
DPA-100-10/16	From SN to VN	397401	DPA-100-10/16				
	From VD	738339	DPA-100-10/16				



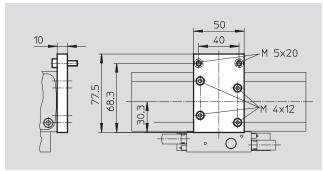
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# Flange mounting FDPA for DPA-40

Material:

Mounting: anodised aluminium Screws: galvanised steel Free of copper and PTFE





Ordering data									
For type	CRC <sup>1)</sup>	Weight [g]	Part No.	Туре					
DPA-40	2	120	540783	FDPA-40					

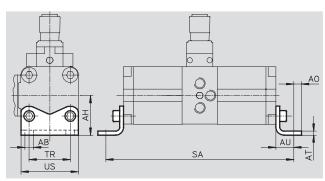
1) Corrosion resistance class 2 as per Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Foot mounting HUA for DPA-63/100

Material:

Mounting, screws: galvanised steel Free of copper and PTFE





Ordering data	Ordering data											
For type	AB	AH	AO	AT	AU	SA	TR	US	CRC <sup>1)</sup>	Weight	Part No.	Туре
	Ø									[g]		
DPA-63	11	56.5	11.75	6	27	343	62	85.5	2	550	157315	HUA-63
DPA-100	13.5	81	11.75	8	33	433	103	126.5	2	1,050	157317	HUA-100

<sup>1)</sup> Corrosion resistance class 2 as per Festo standard 940 070 Components subject to moderate corrosion stress. 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.

Accessories

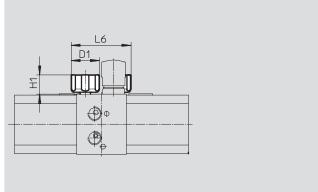
# Pressure gauge set DPA-MA-SET for DPA-40-10/16/D

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-...-R½:
Technical data → Internet: ma-27

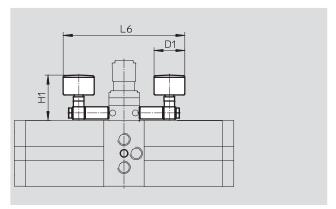




## for DPA-63/100-10/16

Material: Housing: acrylic butadiene styrene Dial cover: polystyrene Connection piece: brass





Dimensions	Dimensions								
For type	Pneumatic connection	D1	H1	L6					
		Ø							
DPA-40	R1/8	28	19	59.2					
DPA-63	G½8	39	65	159					
DPA-100	G1/4	39	75	173					

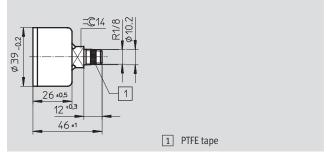
Ordering data	Ordering data									
· · ·	Nominal tubing size, pressure	Measurement accuracy class	Weight	Operating pressure 10 bar	Operating pressure 16 bar					
	gauge		[g]	Part No. Type	Part No. Type					
DPA-40	27	4	16	540781 DPA-40-10-MA-SET	540782 DPA-40-16-MA-SET					
DPA-63	40	2.5	250	526096 DPA-63-10-MA-SET	526097 DPA-63-16-MA-SET					
DPA-100	40	2.5	305	526098 DPA-100-10-MA-SET	526099 DPA-100-16-MA-SET					

Accessories

# Pressure gauge MA, to EN 837-1 for DPA-63/100-D

Material: Housing: acrylic butadiene styrene (colour: black) Inspection window: polystyrene Threaded plug/Materials in contact with the medium: brass Conforms to RoHS





General technical data	
Nominal tubing size	40
Pneumatic connection	R½
Operating medium	Neutral liquids
	Neutral gases
	Not permitted: Oxygen
	Not permitted: Acetylene
Design	Bourdon tube pressure gauge
Based on standard	EN 837-1
Type of mounting	Inline installation
Connection position	Centred, rear side
Ambient temperature [°C]	-20 +60
Temperature of medium [°C]	-20 +60
Measurement accuracy class	2.5
Continuous load factor	0.75
Intermittent load factor	0.66
Protection class	IP43
Weight [g]	60

Ordering data							
For type	Pressure control	Operating pressure	Indicating range		Part No.	Туре	
		[bar]	[bar]	[psi]			
DPA-63/100-D	For supply pressure	0 16	0 16	0 232	529046	MA-40-16-1/8-EN-DPA	
	For output pressure	0 25	0 25	0 360	526167	MA-40-25-½-EN	

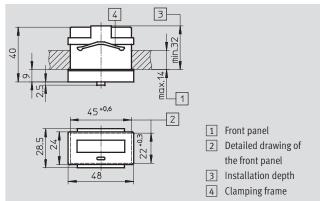
**FESTO** 

Accessories

Adding counter CCES for DPA-63/100-...-A

Material: Housing: Polycarbonate Conforms to RoHS





Ordering data	Technical data → Internet: cces				
For type	Display	Power supply	Weight	Part No.	Туре
			[g]		
DPA-63/100A	8-digit	Lithium battery (nominal value retention 7 years)	30	549403	CCES-P-C8-E

	Ordering data – Proximity sensor SME/SMT for adding counter CCES						ata → Internet: sme-8m, smt-8m
		Switching element	Switch output	Electrical connection	Cable length	Part No.	Туре
		function			[m]		
ſ		N/O contact	Contacting, bipolar	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE
			PNP	Cable, 3-wire	2.5	543867	SMT-8M-PS-24V-K-2,5-0E

## Note

Please note the following points:

- The abovementioned proximity sensor SME can be connected to the adding counter as a 2-wire switch without additional power supply.
- If using other proximity sensors, an additional power supply is needed
- and the clock pulse input of the adding counter must be reprogrammed from NPN to PNP.
- Screened cables must be used for cables longer than 3 m.
- The maximum permissible cable length is 30 m.

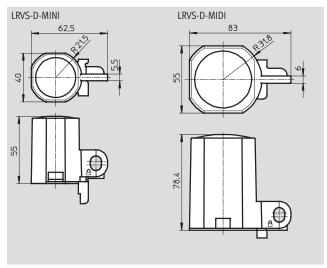
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Accessories

# Regulator lock LRVS for DPA-63/100

Material: Cap: polyacetal Lock plate: steel Knurled nut: aluminium Free of copper and PTFE





Ordering data					
For type	Weight	Part No.	Туре		
	[g]				
DPA-63	40	193781	LRVS-D-MINI		
DPA-100	60	193782	LRVS-D-MIDI		

Ordering data								
	Pneumatic connection	Part No.	Туре		Volume [l]	Part No.	Туре	PU <sup>1)</sup> [m]
Silencer UC			Technical data → Internet: u	Compressed air	reservoir		Technical data 🗲 Inte	rnet: vzs
	M7	161418	UC-M7		Stainless steel	'		
					0.1	160233	CRVZS-0.1	
				(C) 1	0.4	160234	CRVZS-0.4	
					0.75	160235	CRVZS-0.75	
Silencer UB			Technical data → Internet: u		2	160236	CRVZS-2	
1	G3/8	6843	U-3/8-B		5	192159	CRVZS-5	
	G½	6844	U-1/2-B		10	160237	CRVZS-10	
					20	534845	CRVZS-20	
Silencer U-M3	Luc	1	Technical data → Internet: u		Standard	1.00	\/70 aa B	
	M3	163978	U-M3		20	192161	VZS-20-B	
Quick coupling p	olug KS4	T	echnical data → Internet: ks4	Plastic tubing P	/PAN	ī	echnical data → Inter	net: pan
	Male thread			for supply press	sure			
<b>5</b>	G1/4	2154	KS4-1/4-A		-	553909	PAN-10x1,5-BL	50
	G3/8	2155	KS4-3/8-A			553910	PAN-12x1,75-BL	50
	G <sup>1</sup> / <sub>2</sub>	531676	KS4-1/2-A			553911	PAN-16x2-BL	50
	Female thread					2235	P-19-SW	40
	G1/4	531678	KS4-1/4-I					
	G3/8	531679	KS4-3/8-I	Plastic tubing P	AN-R	Te	chnical data ➤ Intern	et: pan-r
	G <sup>1</sup> / <sub>2</sub>	531680	KS4-1/2-I	for output press	sure			
					-	541676	PAN-R-8x1,5-SI	50
Padlock LRVS-D						541677	PAN-R-10x1,9-SI	50
	_	193786	LRVS-D			541678	PAN-R-12x2,2-SI	50
<b>3</b>						541679	PAN-R-16x3-SI	50

1) Packaging unit

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