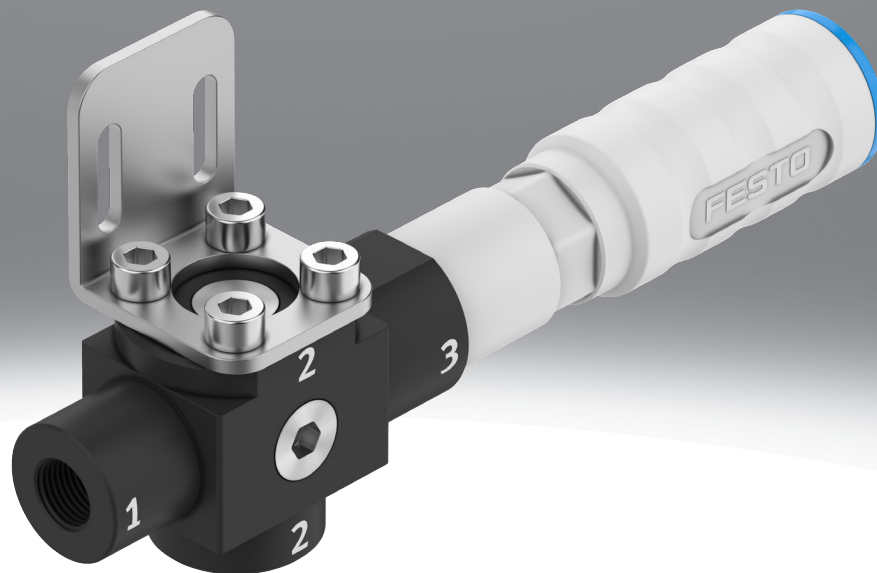


Vacuum generator OVPN

FESTO



Characteristics

At a glance

For handling porous materials in the packaging industry: the multi-stage pneumatic vacuum generator OVPN with optimised air consumption for maximum suction volume flow.

- Vacuum generator with very high suction capacity ideal for porous materials
- Nozzle technology with maximum energy efficiency
- Sustainable operation thanks to optimised air consumption
- High initial suction rate
- Reduced sound pressure level thanks to an integrated, open silencer

Vacuum generation

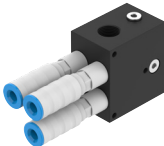
[14] Laval nozzle 1.4 mm



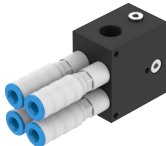
[20] Laval nozzle, 2.0 mm



[23] Laval nozzle 2.3 mm



[26] Laval nozzle 2.6 mm



Vacuum type

[L] High suction rate

Vacuum generators for high suction volumetric flow rates are optimised for generating a high vacuum at comparatively low suction volumetric flow rates.

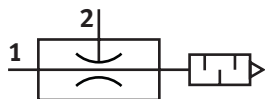
Large suction rate

2- and 3-stage vacuum generators OVPN and OASP cartridges are available. The 3-stage variants achieve a higher suction volume relative to atmospheric pressure (up to ≤ 0.1 bar) than the 2-stage variants because the third stage evacuates additional volume.

Exhaust connection

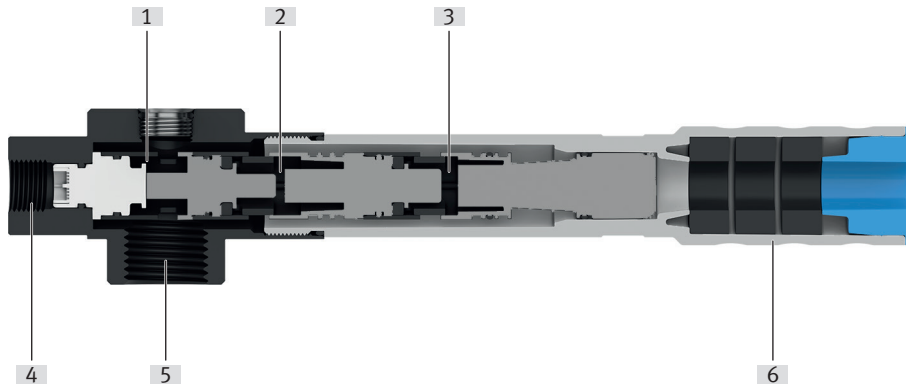
The exhaust air can optionally be discharged via an open silencer (-UA).

[UA] Open silencer UO



Characteristics

Description



- [1] Stage 1
- [2] Stage 2
- [3] Stage 3
- [4] Compressed air connection
- [5] Vacuum connection
- [6] Silencer

The vacuum generator OVPN is designed for generating a vacuum. The vacuum is generated according to the Venturi principle using the vacuum generator cartridge OASP.

With the multi-stage vacuum generators OVPN, the vacuum flows through several Venturi nozzles connected in series. The suction volumes of the individual nozzles add up to the total suction capacity. The 3-stage variant is shown.

Depending on the vacuum achieved, the check valves close one stage chamber after the other, so that at the end of evacuation only the first stage is still active and the maximum achievable suction volume flow is available.

Type code

001	Series	
OVPN	Vacuum generator	
002	Vacuum generation	
14	Laval nozzle 1.4 mm	
20	Laval nozzle, 2.0 mm	
23	Laval nozzle 2.3 mm	
26	Laval nozzle 2.6 mm	
003	Vacuum type	
L	High suction rate	

004	Large suction rate	
2	2-stage	
3	3-stage	
005	Supply air connection	
PG14	G1/4	
006	Vacuum port	
G12	G1/2	
G34	G3/4	
007	Exhaust connection	
UA	Open silencer U0	

Datasheet

General technical data – Standard

Grid dimension	29.4 mm	33 mm	60 mm	
Nominal size, Laval nozzle	2 mm	1.4 mm	2.3 mm	2.6 mm
Pneumatic connection, port 1	G1/4			
Pneumatic connection, port 3	Open silencer			
Vacuum connection	G3/4	G1/2	G3/4	
Type of mounting	Direct mounting via through-hole Via mounting bracket	Via mounting bracket	Direct mounting via through-hole Via mounting bracket	
Design	Vacuum generator 2-stage, Vacuum generator, 3-stage			
Ejector characteristic	High suction rate			
Mounting position	optional			
Integrated function	Open silencer			
Silencer design	Open			

Operating and environmental conditions

Operating pressure	0.1 ... 0.8 MPa
Operating pressure	1 ... 8 bar
Operating pressure	14.5 ... 116 psi
Nominal operating pressure	0.6 MPa
Nominal operating pressure	6 bar
Nominal operating pressure	87 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation not possible
Ambient temperature	0 ... 60°C
Media temperature	0 ... 60°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress

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

Performance data – 2-stage

Nominal size, Laval nozzle	1.4 mm	2 mm	2.3 mm	2.6 mm
Max. vacuum	81%			
Operating pressure for max. vacuum	0.79 MPa			
Operating pressure for max. vacuum	7.9 bar			
Operating pressure for max. vacuum	114.55 psi			
Operating pressure for max. suction flow rate	0.4 MPa	0.5 MPa	0.4 MPa	0.5 MPa
Operating pressure for max. suction flow rate	4 bar	5 bar	4 bar	5 bar
Operating pressure for max. suction flow rate	58 psi	72.5 psi	58 psi	72.5 psi
Max. suction flow rate against atmosphere	160 l/min	317 l/min	475 l/min	626 l/min
Air supply time at nominal operating pressure	0.37 s	0.19 s	0.13 s	0.1 s
Sound pressure level at nominal operating pressure	60 dB(A)	66 dB(A)	68 dB(A)	65 dB(A)

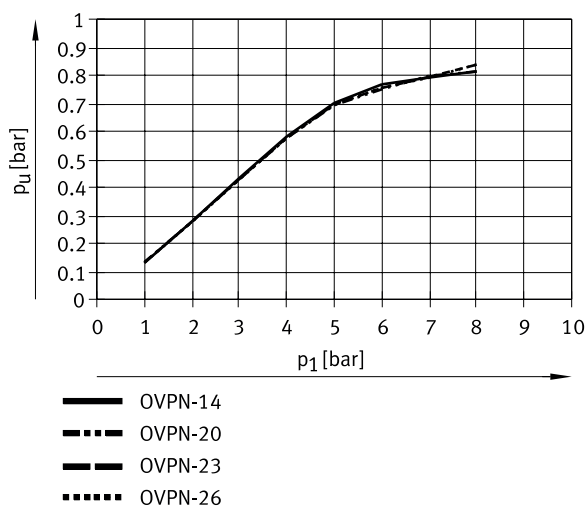
Datasheet

Performance data – 3-stage

Nominal size, Laval nozzle	1.4 mm	2 mm	2.3 mm	2.6 mm
Max. vacuum	81%			
Operating pressure for max. vacuum	0.79 MPa			
Operating pressure for max. vacuum	7.9 bar			
Operating pressure for max. vacuum	114.55 psi			
Operating pressure for max. suction flow rate	0.8 MPa			
Operating pressure for max. suction flow rate	8 bar			
Operating pressure for max. suction flow rate	116 psi			
Max. suction flow rate against atmosphere	245 l/min	530 l/min	748 l/min	960 l/min
Air supply time at nominal operating pressure	0.37 s	0.19 s	0.13 s	0.1 s
Sound pressure level at nominal operating pressure	60 dB(A)	64 dB(A)	72 dB(A)	69 dB(A)

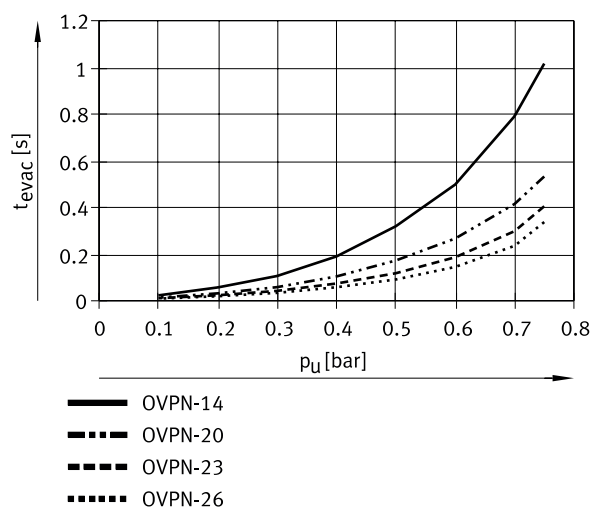
Materials

Material housing	POM
Material connecting thread	POM
Material screws	High-alloy stainless steel
Material seals	NBR
Material receiver nozzle	Reinforced PA
Material transmitter nozzle	Reinforced PA
Material silencer	PA-reinforced, PU foam
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Suitability for the production of Li-ion batteries	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)
Recommended cleaning/purification	Soapsuds (except silencers)

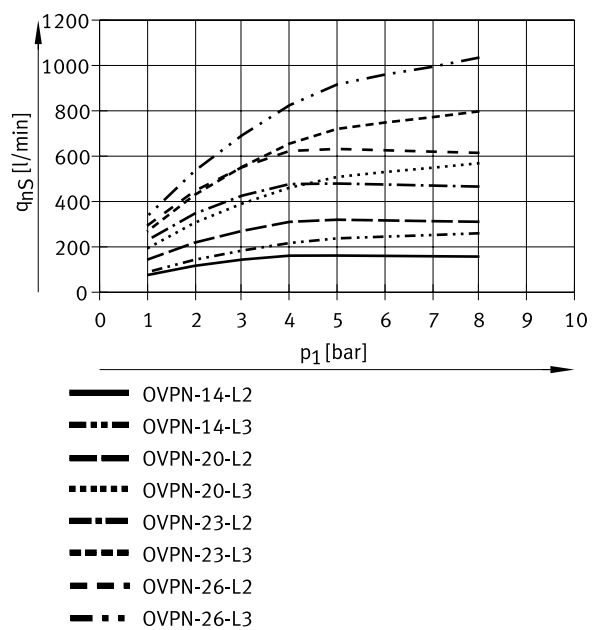
Vacuum p_u as a function of operating pressure p_1 

Datasheet

Evacuation time t as a function of vacuum p_u for a volume of 1 l at an operating pressure of 6 bar

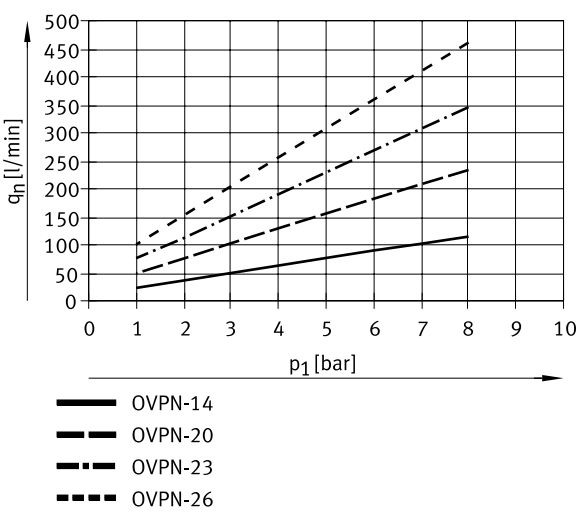


Suction rate q_{nS} (with respect to the atmosphere) as a function of operating pressure p_1



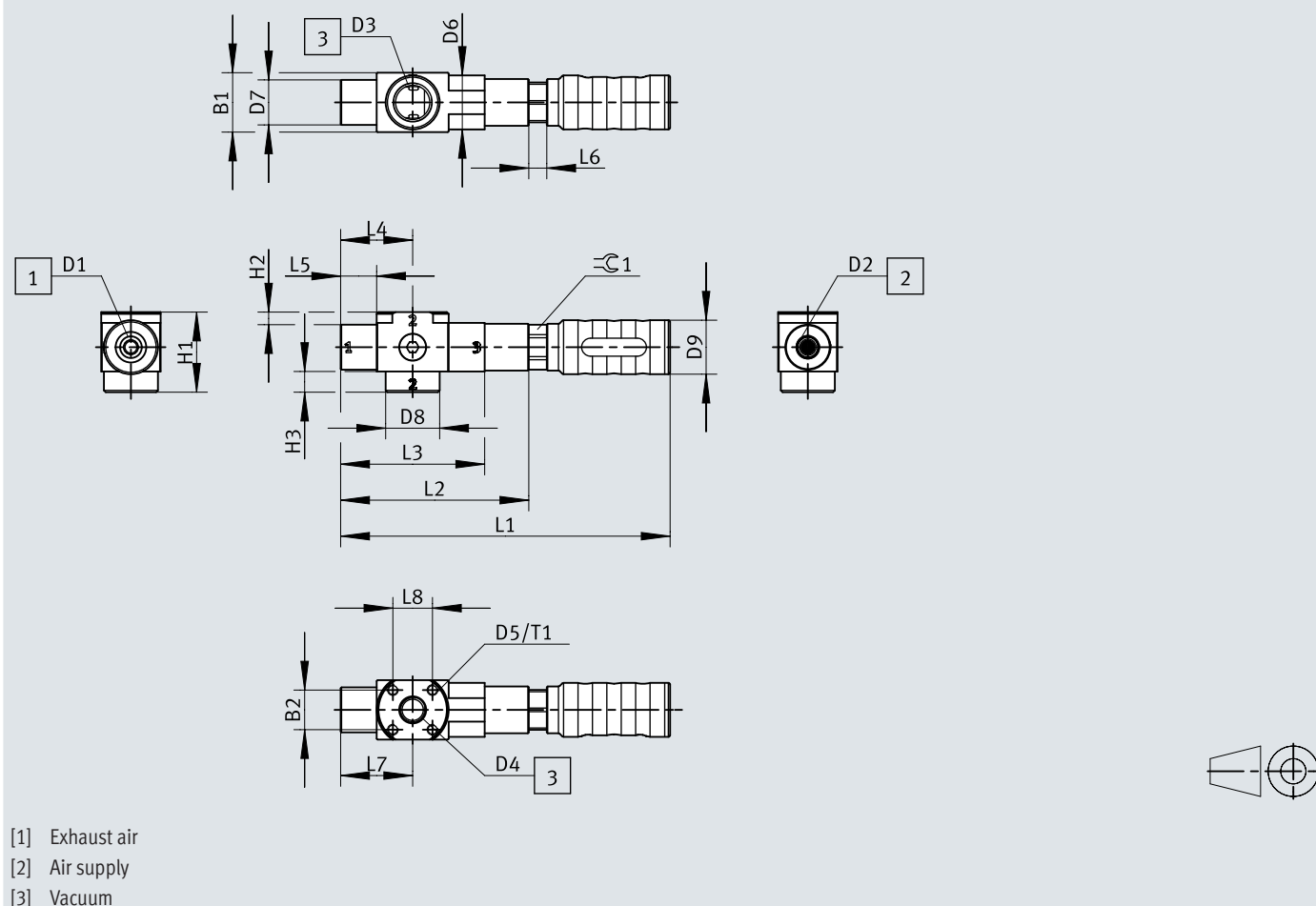
Datasheet

Air consumption q_n as a function of operating pressure p_1



Dimensions

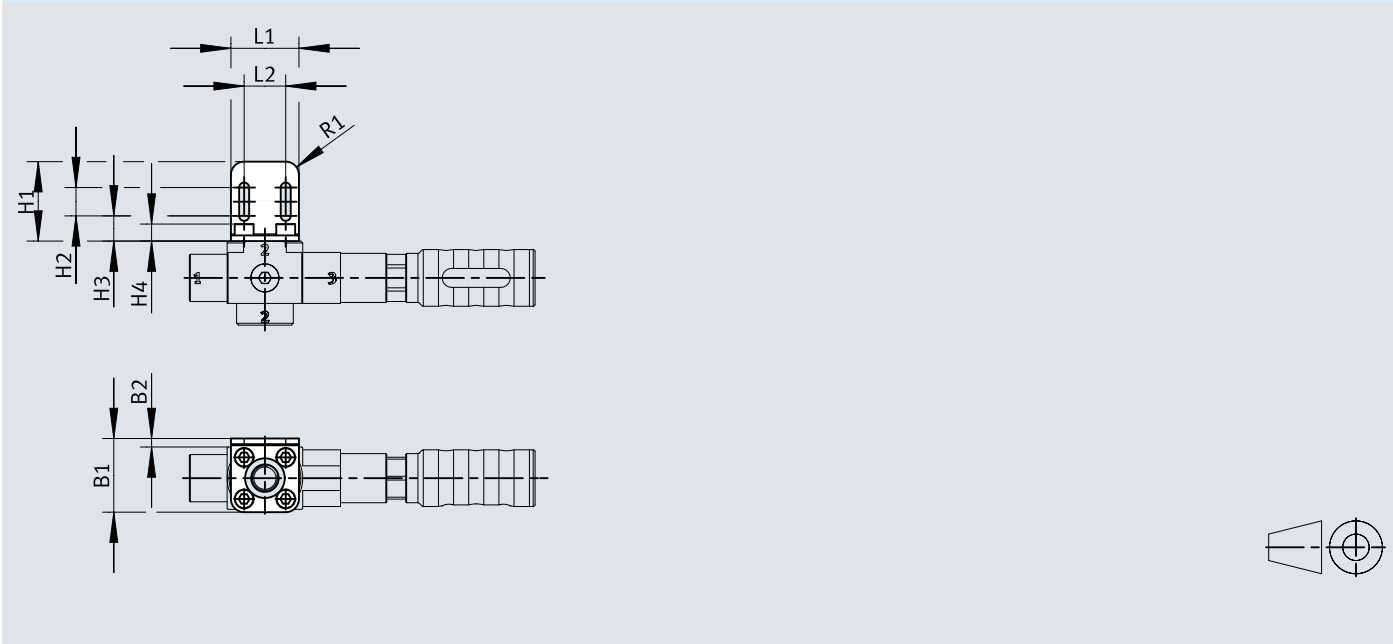
Dimensions – OVPN-14-L...-PG14-G12-UA

Download CAD data www.festo.com

	B1	B2	D1 Ø	D2	D3	D4	D5	D6 Ø	D7 Ø	D8 Ø	D9 Ø	H1
OVPN-14-L2-PG14-G12-UA	33	22	12	G 1/4	G 1/2	G 1/4	M6	30	25	30	30	44,5
OVPN-14-L3-PG14-G12-UA												
	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	T1	≈ 1
OVPN-14-L2-PG14-G12-UA	7	11,5	183	104,5	80	40	20	10	40	22	7	23
OVPN-14-L3-PG14-G12-UA			229,6	150,2								

Dimensions

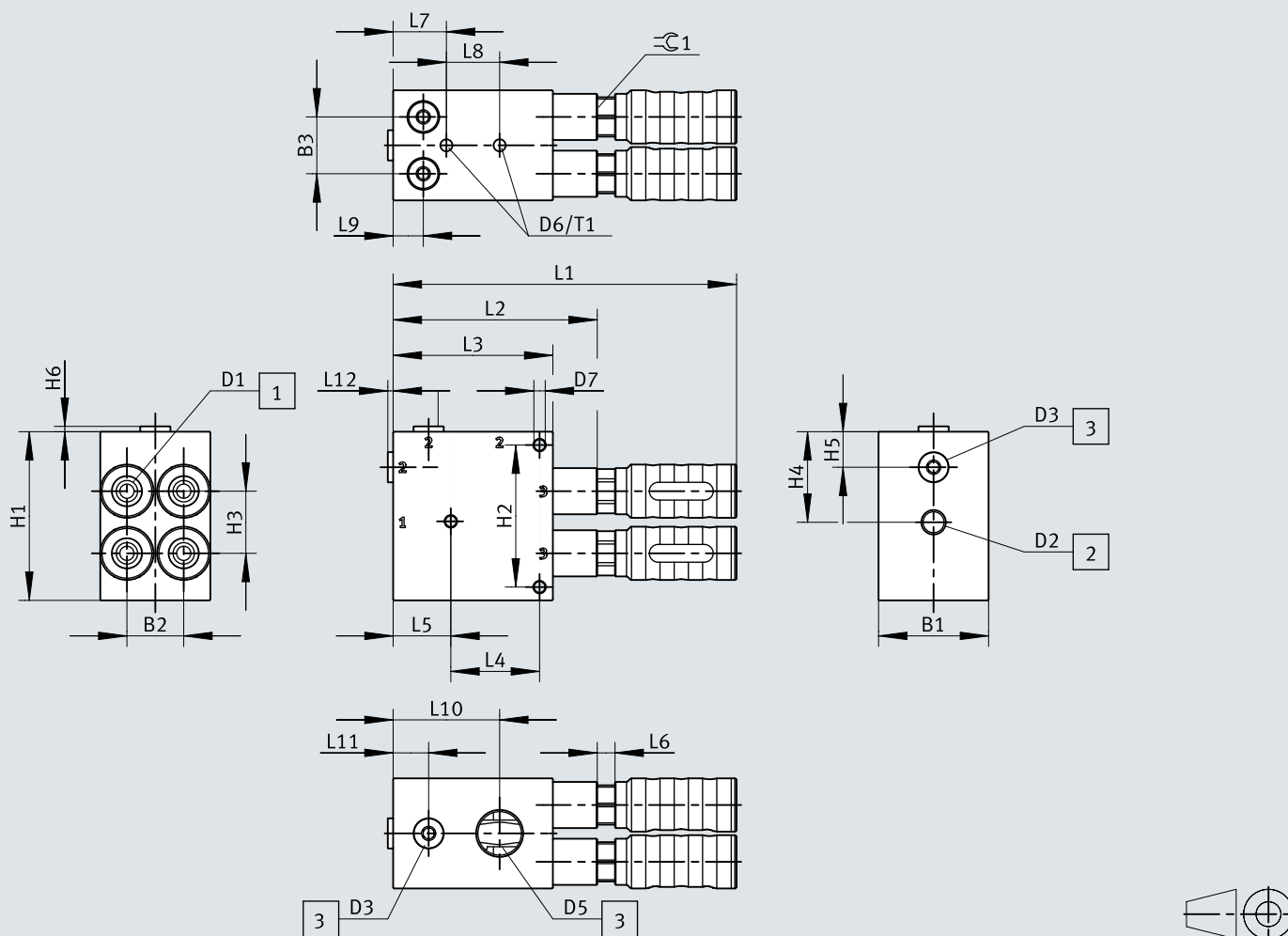
Dimensions – OVPN-14 (OVPN-14-L...-PG14-G12-UA) [Download CAD data](#) www.festo.com



		B1	B2	H1	H2	H3	H4	L1	L2	R1
OVPN-14	OVPN-14-L2-PG14-G12-UA	39	4,5	42	15	13,3	9	36	22	7
	OVPN-14-L3-PG14-G12-UA									

Dimensions

Dimensions – OVPN-...-L...-PG14-G34-UA

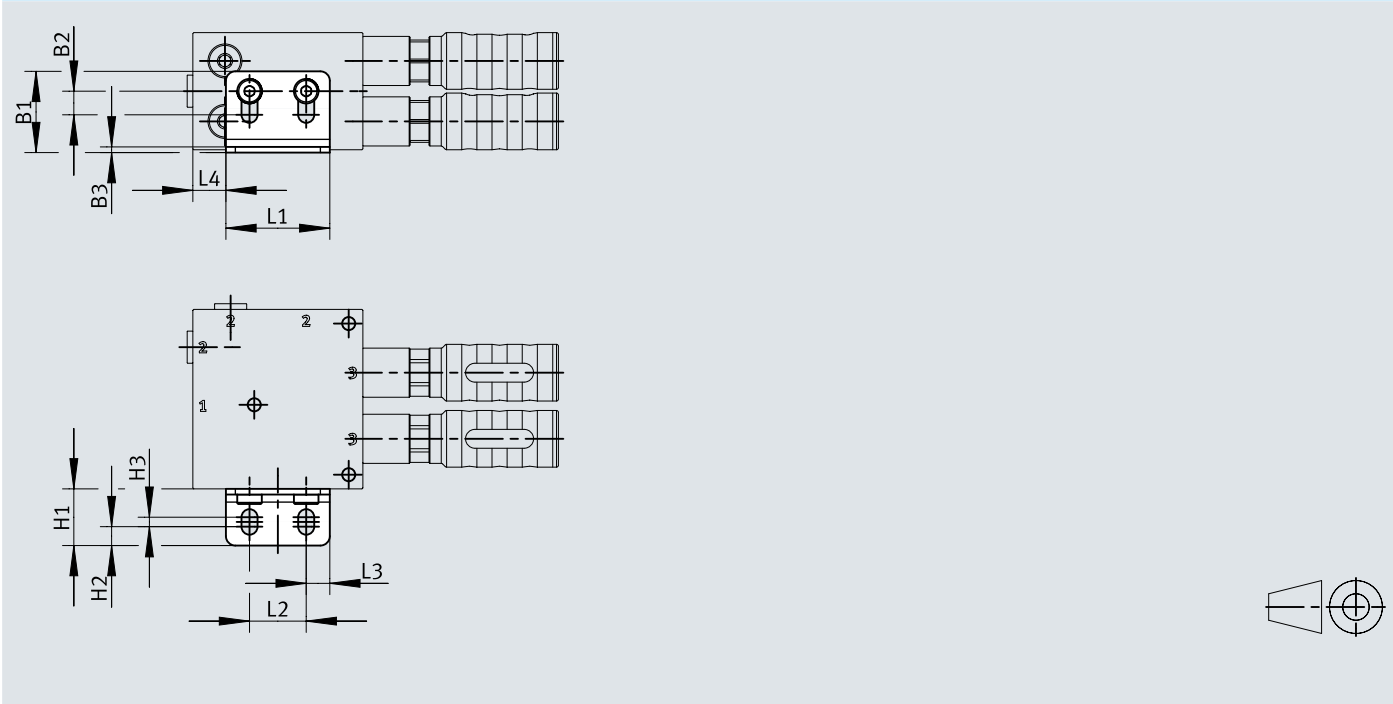
Download CAD data www.festo.com

	B1	B2	B3	D1 ø	D2	D3	D4	D5	D6	D7 ø	H1	H2	H3	H4	H5
OVPN-20-L2-PG14-G34-UA	30	–	32	12	G 1/4	G 1/4	G 1/4	G 3/4	M8	6,4	95	80	35	51	20
OVPN-20-L3-PG14-G34-UA															
OVPN-23-L2-PG14-G34-UA	62	32													
OVPN-23-L3-PG14-G34-UA															
OVPN-26-L2-PG14-G34-UA															
OVPN-26-L3-PG14-G34-UA															

	H6	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	T1	±0.1
OVPN-20-L2-PG14-G34-UA	3	193,1	114,6	90	50	32,5	10	30	30	15	60	25	3	8	23
OVPN-20-L3-PG14-G34-UA		239,6	160,2												
OVPN-23-L2-PG14-G34-UA		193,1	114,6							17					
OVPN-23-L3-PG14-G34-UA		239,6	160,2												
OVPN-26-L2-PG14-G34-UA		193,1	114,6												
OVPN-26-L3-PG14-G34-UA		239,6	160,2												

Dimensions

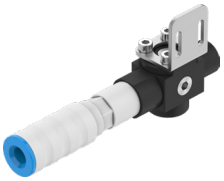
Dimensions – OVPN-20/23/26 (OVPN-...-L...-PG14-G34-UA) [Download CAD data](#) www.festo.com



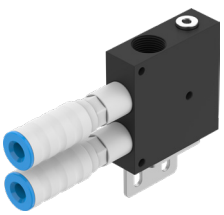
		B1	B2	B3	H1	H2	H3	L1	L2	L3	L4
OVPN-20/23/26	OVPN-20-L2-PG14-G34-UA	43	12,5	3	30	10	5	55	30	12,5	17,5
	OVPN-20-L3-PG14-G34-UA										
	OVPN-23-L2-PG14-G34-UA										
	OVPN-23-L3-PG14-G34-UA										
	OVPN-26-L2-PG14-G34-UA										
	OVPN-26-L3-PG14-G34-UA										

Ordering data

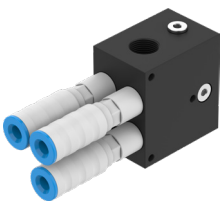
Ordering information OVPN-14

	Grid dimension	Design	Nominal size, Laval nozzle	Product weight	Part no.	Type
	33 mm	Vacuum generator 2-stage	1.4 mm	205 g	8199142	OVPN-14-L2-PG14-G12-UA
		Vacuum generator, 3-stage		225 g	8199143	OVPN-14-L3-PG14-G12-UA

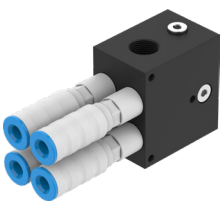
Ordering information OVPN-20

	Grid dimension	Design	Nominal size, Laval nozzle	Product weight	Part no.	Type
	29.4 mm	Vacuum generator 2-stage	2 mm	470 g	8199144	OVPN-20-L2-PG14-G34-UA
		Vacuum generator, 3-stage		510 g	8199145	OVPN-20-L3-PG14-G34-UA

Ordering information OVPN-23

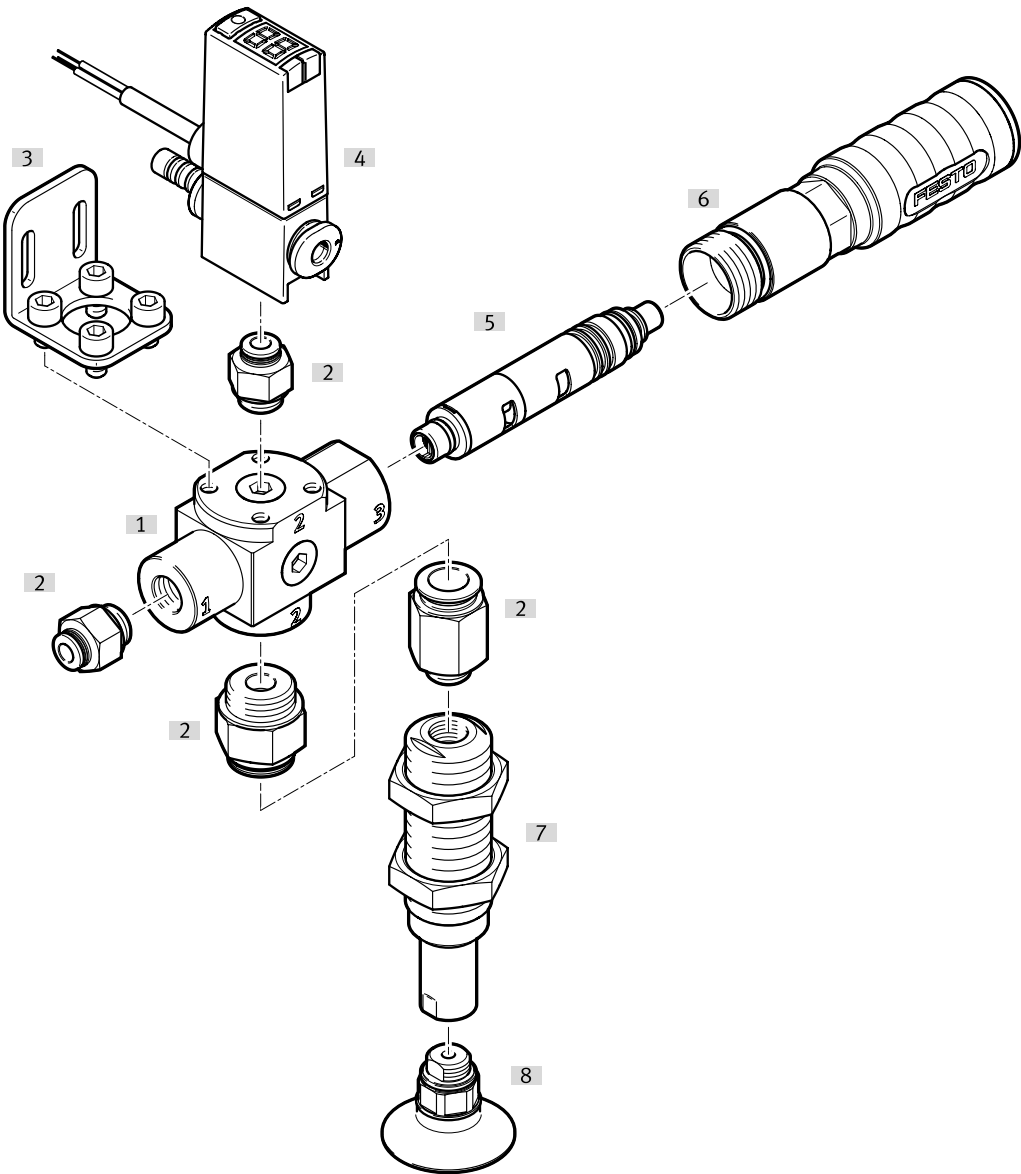
	Grid dimension	Design	Nominal size, Laval nozzle	Product weight	Part no.	Type
	60 mm	Vacuum generator 2-stage	2.3 mm	880 g	8199146	OVPN-23-L2-PG14-G34-UA
		Vacuum generator, 3-stage		940 g	8199148	OVPN-23-L3-PG14-G34-UA

Ordering information OVPN-26

	Grid dimension	Design	Nominal size, Laval nozzle	Product weight	Part no.	Type
	60 mm	Vacuum generator 2-stage	2.6 mm	915 g	8199149	OVPN-26-L2-PG14-G34-UA
		Vacuum generator, 3-stage		1,000 g	8199150	OVPN-26-L3-PG14-G34-UA

Peripherals

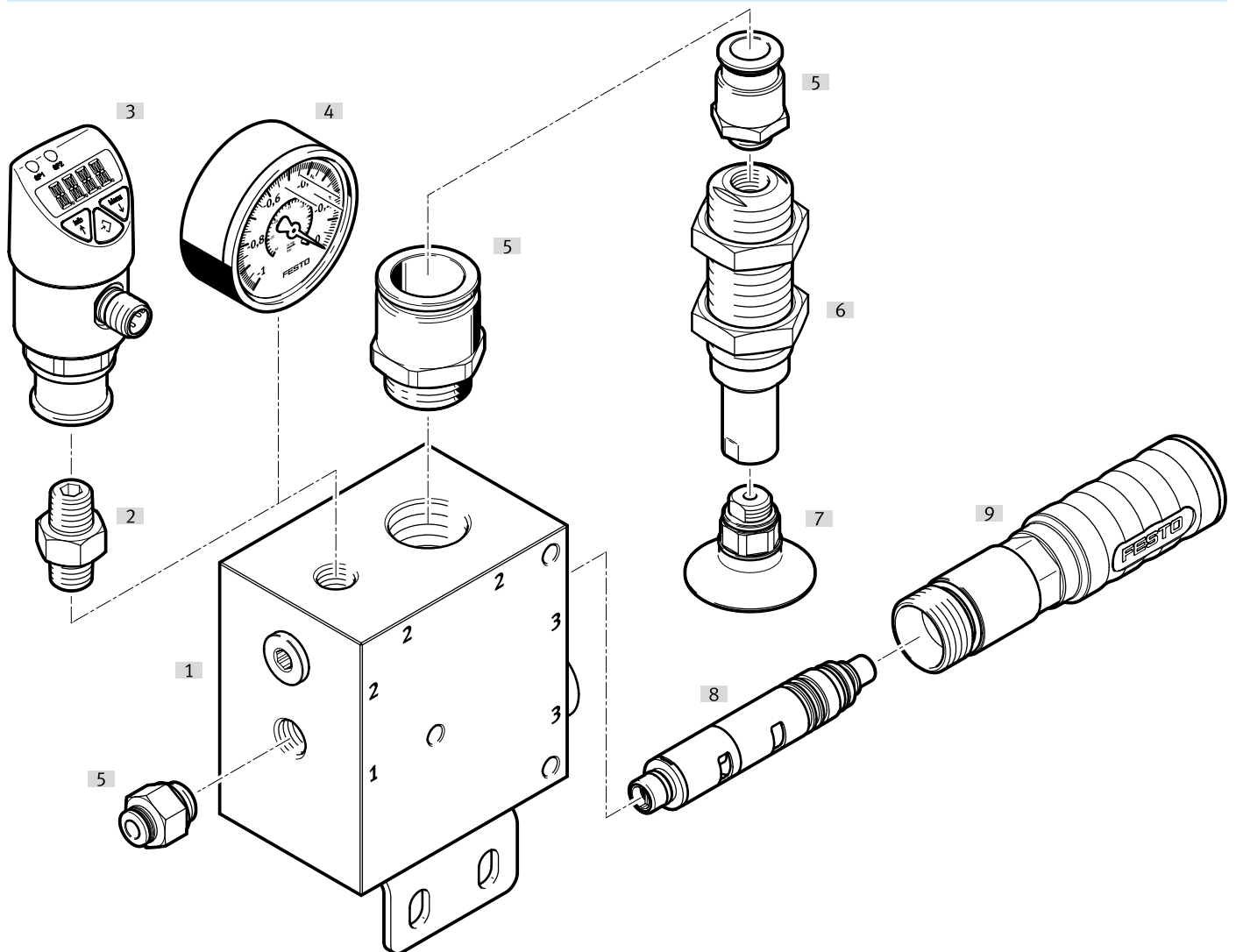
OVPN-14



Accessories		→ Link
Type/order code	Description	
[1] Vacuum generator OVPN		ovpn
[2] Push-in fitting QS		qs
[3] Retainer	Included in the scope of delivery	ovpn
[4] Pressure sensor SPAE	Also suitable for use: Pressure transmitter SPTE	spae
[5] Vacuum generator cartridges OASP	Included in the scope of delivery	16
[6] Silencer open (...-UA)	Included in the scope of delivery	16
[7] Length compensator VAL		val
[8] Suction cup with connection VAS(B)		vas

Peripherals

OVPN-20/23/26



Accessories		→ Link
Type/order code	Description	
[1] Vacuum generator OVPN		ovpn
[2] Double nipple ESK	Included in the scope of delivery	esk
[3] Pressure sensor SPAW	Also suitable for use: Pressure sensor SPAE, pressure transmitter SPTE/SPTW, pressure switch VPEV	spaw
[4] Vacuum gauge VAM		vam
[5] Push-in fitting QS		qs
[6] Length compensator VAL		val
[7] Suction cup with connection VAS(B)		vas
[8] Vacuum generator cartridges OASP	Included in the scope of delivery	16
[9] Silencer open (...-UA)	Included in the scope of delivery	16

Accessories

Vacuum generator cartridges OASP				
	Design	Product weight	Part no.	Type
	Vacuum generator 2-stage	31 g	8199152	OASP-G4-14-L2
	Vacuum generator, 3-stage	45 g	8199154	OASP-G4-14-L3

Vacuum generator cartridges OASP-...-UA (with open silencer)						
	Design	Integrated function	Sound pressure level at nominal operating pressure	Product weight	Part no.	Type
	Vacuum generator 2-stage	Open silencer	60 dB(A)	102 g	8199153	OASP-G4-14-L2-UA
	Vacuum generator, 3-stage			123 g	8199155	OASP-G4-14-L3-UA