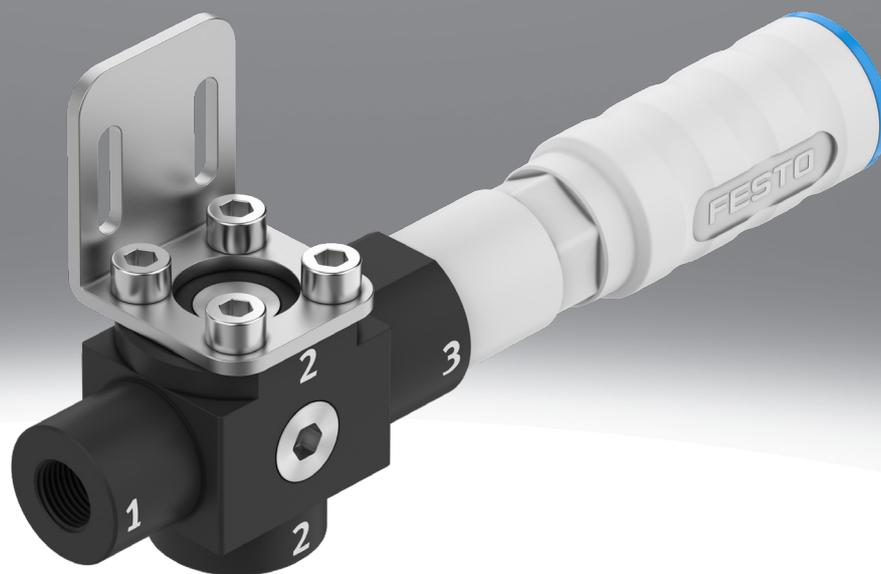


## Vacuum generator OVPN

**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

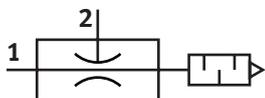
Vacuum generators for high suction volumetric flow rates are optimised for generating a high vacuum at comparatively low suction volumetric flow rates.

### Large suction rate

OVPN 2-stage and 3-stage vacuum generator nozzles and OASP cartridges are available. The 3-stage variants achieve a higher suction volume against atmosphere (up to  $\leq 0.1$  bar) than the 2-stage variants via the 3rd stage, as the 3rd stage evacuates additional volume.

### Exhaust connection

[UA] Open silencer UO



## Type code

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

<b>004</b>	<b>Large suction rate</b>	
<b>2</b>	2-stage	
<b>3</b>	3-stage	
<b>005</b>	<b>Supply air connection</b>	
<b>PG14</b>	G1/4	
<b>006</b>	<b>Vacuum port</b>	
<b>G12</b>	G1/2	
<b>G34</b>	G3/4	
<b>007</b>	<b>Exhaust connection</b>	
<b>UA</b>	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	–		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 <sup>1)</sup>	2 - Moderate corrosion stress

1) More information [www.festo.com/x/topic/crc](http://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

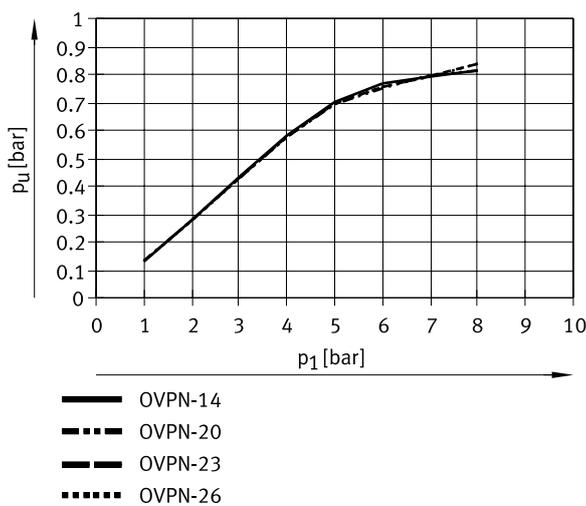
### Performance data – 3-stage

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

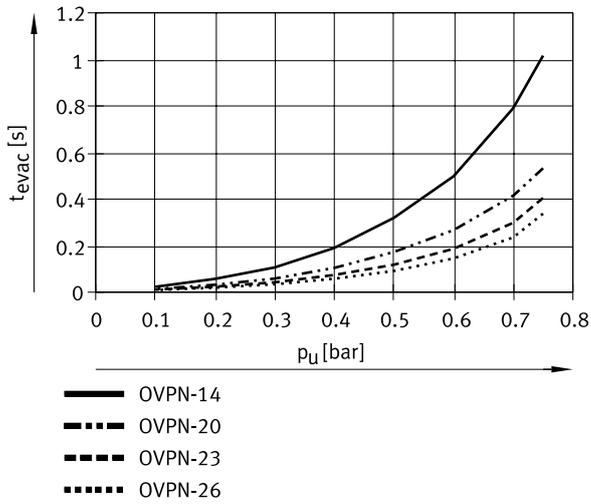
Material housing	POM
Material connecting thread	POM
Material screws	High-alloy stainless steel
Material seals	NBR
Material receiver nozzle	Reinforced PA
Material transmitter nozzle	Reinforced PA
Material silencer	PA-reinforced, PU foam
LABS (PWIS) conformity	VDMA24364-B1/B2-L
Suitability for the production of Li-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. The exceptions are nickel in steel, chemically nickel-plated surfaces, circuit boards, cables, electrical plug connectors and coils
Recommended cleaning/purification	Soap suds (except silencers)

### Vacuum $p_u$ as a function of operating pressure $p_1$

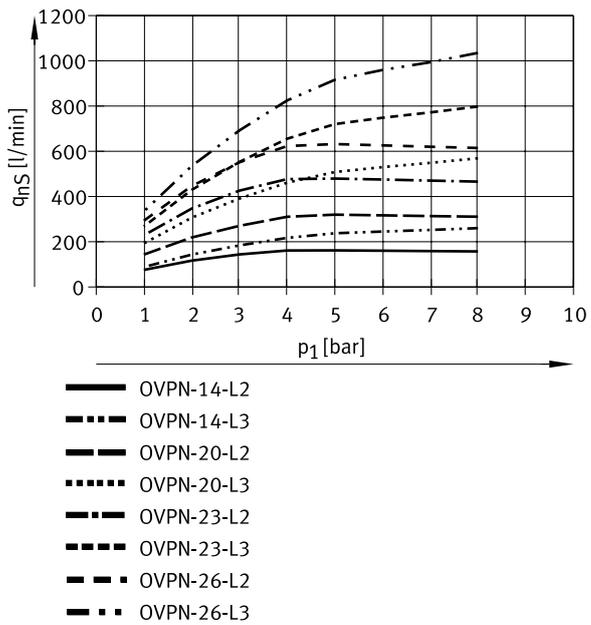


## Datasheet

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

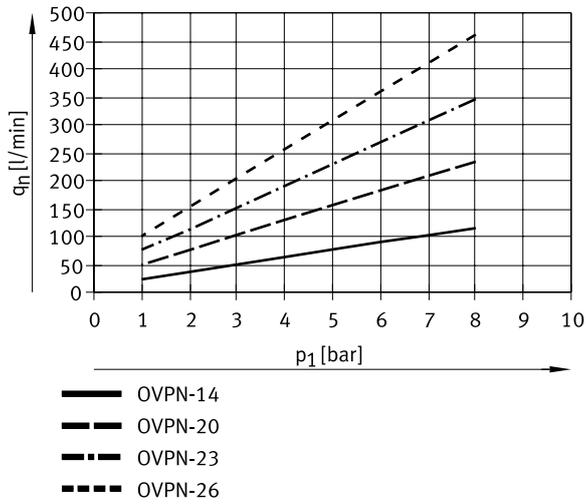


Suction rate  $q_{rS}$  (against atmosphere) as a function of operating pressure  $p_1$



Datasheet

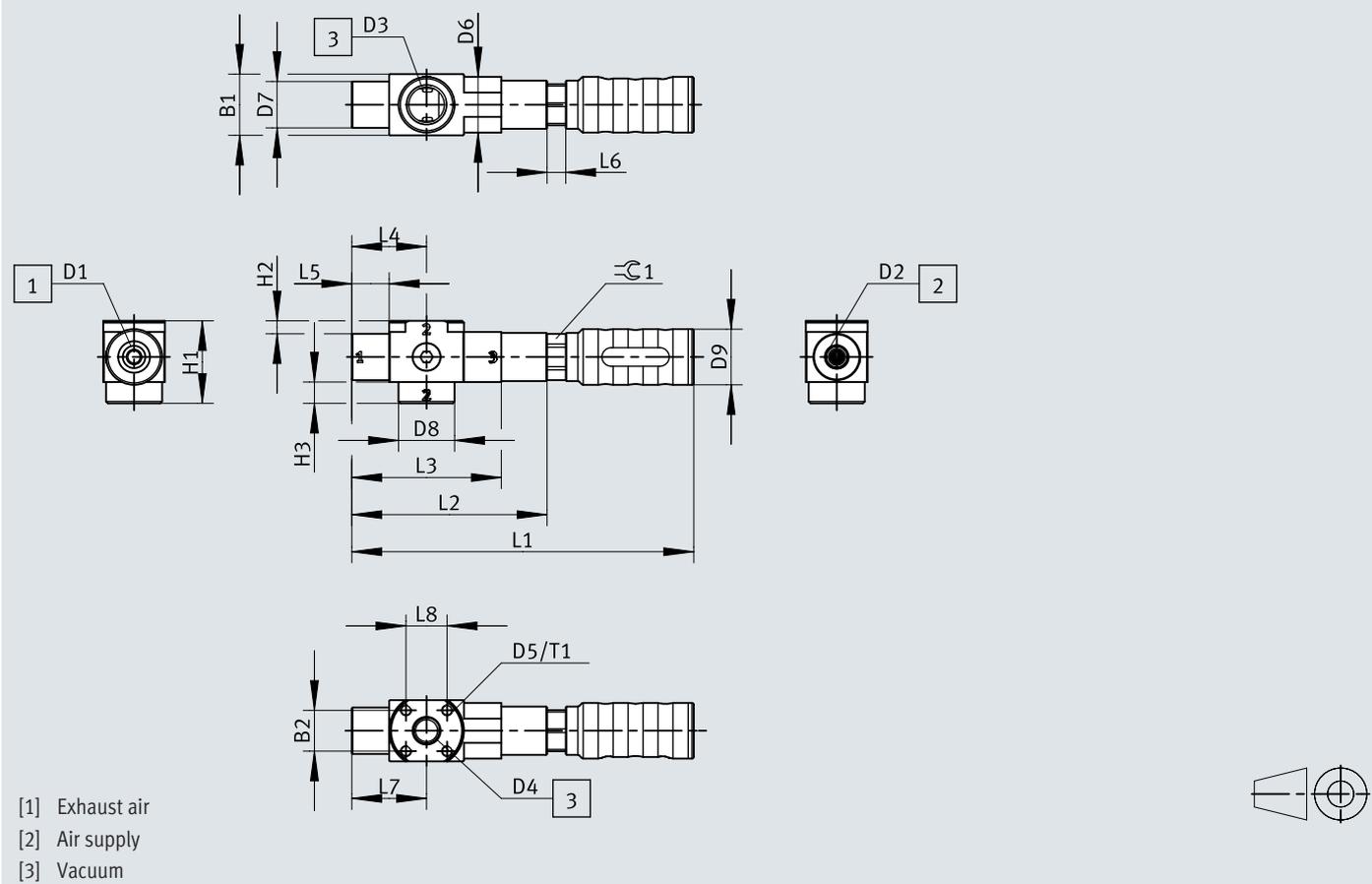
Air consumption  $q_n$  as a function of operating pressure  $p_1$  – high vacuum / high suction rate (VN-05-H/L/M/N)



## Dimensions

Dimensions – OVPN-14-L...-PG14-G12-UA

Download CAD data [www.festo.com](http://www.festo.com)

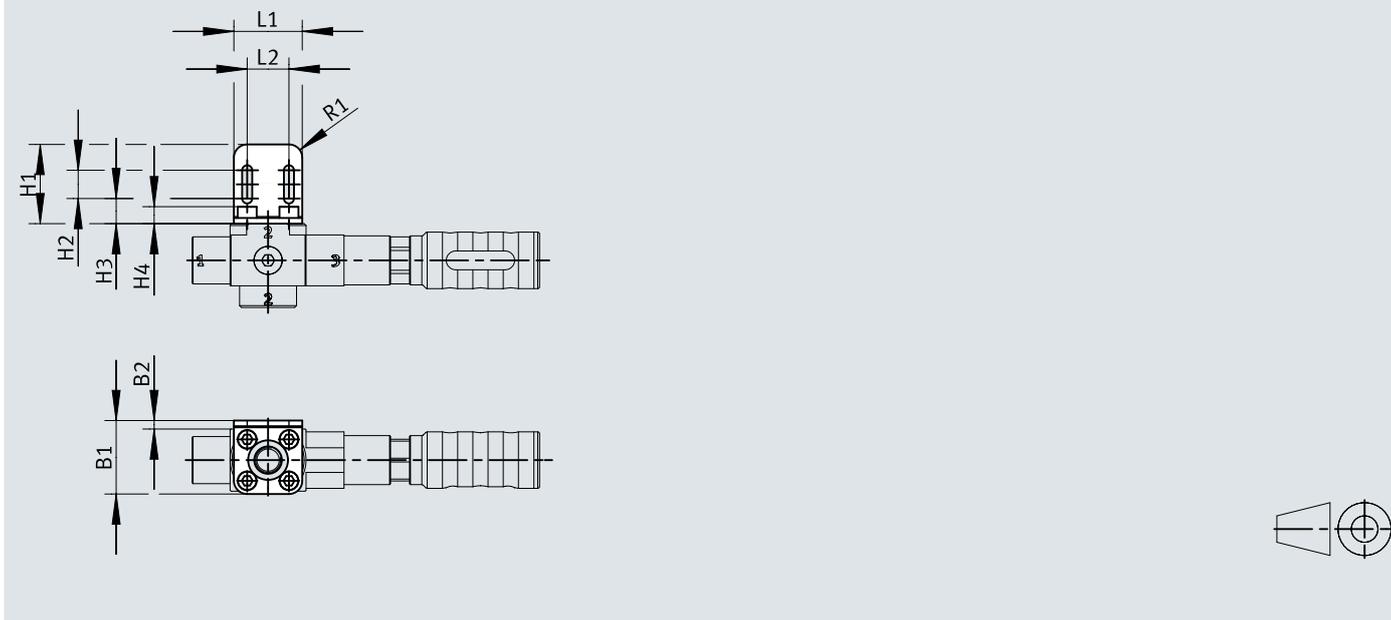


	B1	B2	D1 ∅	D2	D3	D4	D5	D6 ∅	D7 ∅	D8 ∅	D9 ∅	H1
OVPN-14-L2-PG14-G12-UA	33	22	12	G 1/4	G 1/2	G 1/4	M6	30	25	30	30	44,5
OVPN-14-L3-PG14-G12-UA												
	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	T1	≅ 1
OVPN-14-L2-PG14-G12-UA	7	11,5	183	104,5	80	40	20	10	40	22	7	23
OVPN-14-L3-PG14-G12-UA			229,6	150,2								

## Dimensions

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

Download CAD data [www.festo.com](http://www.festo.com)

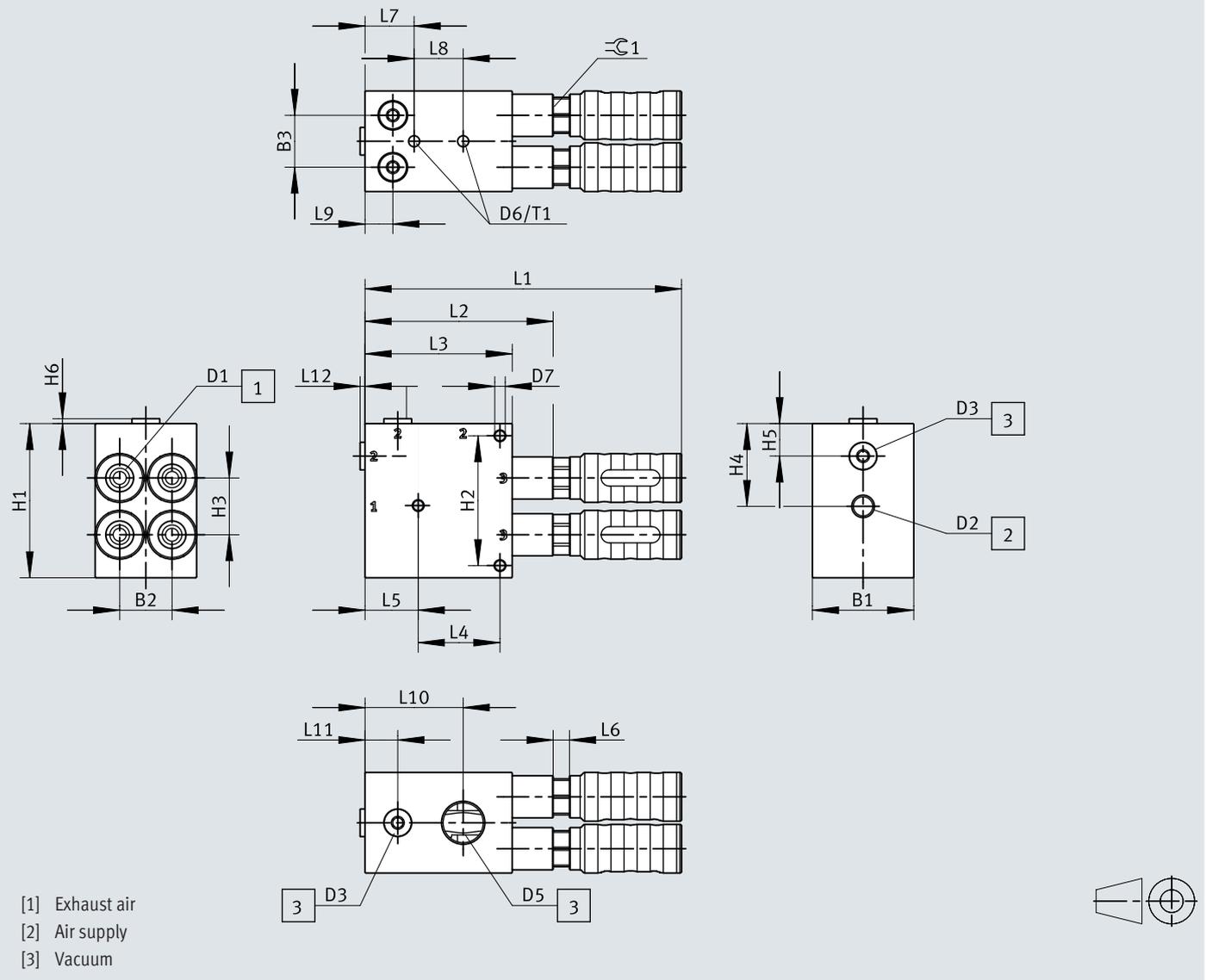


		B1	B2	H1	H2	H3	H4	L1	L2	R1
OVPN-14	OVPN-14-L2-PG14-G12-UA	39	4,5	42	15	13,3	9	36	22	7
	OVPN-14-L3-PG14-G12-UA									

## Dimensions

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

Download CAD data [www.festo.com](http://www.festo.com)



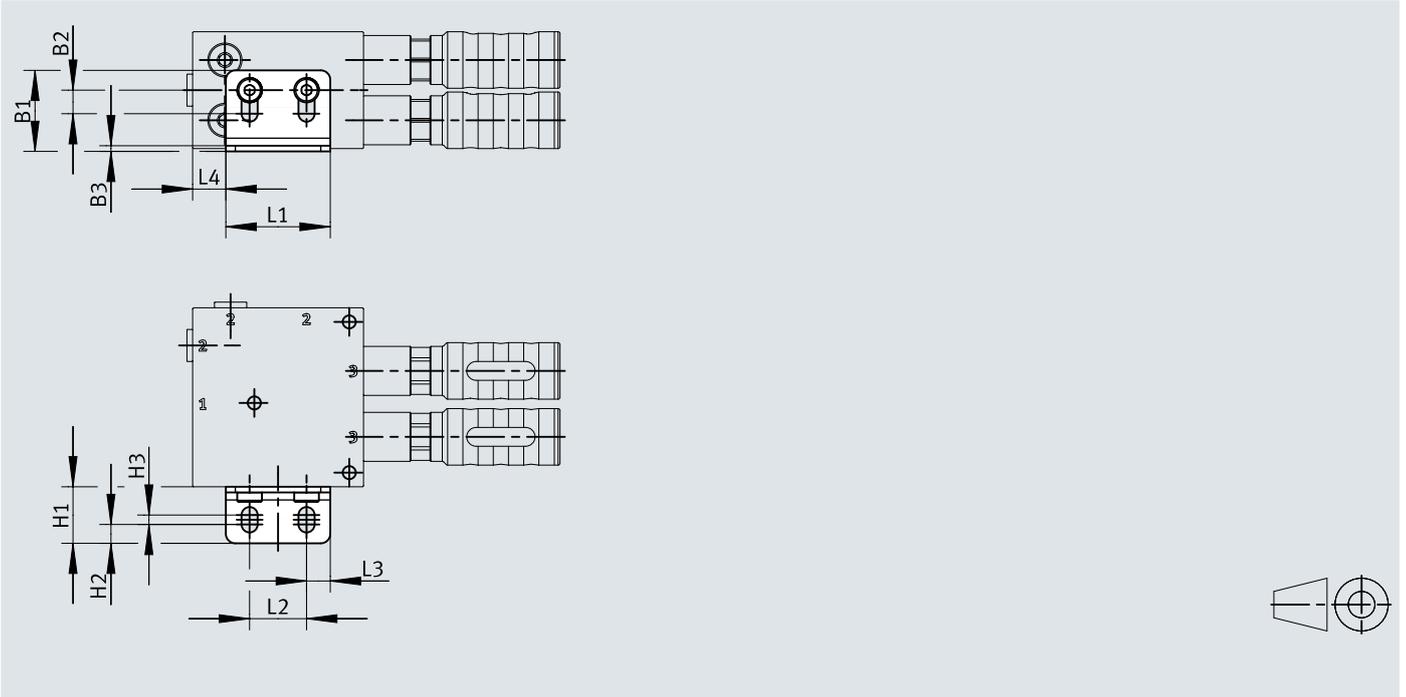
	B1	B2	B3	D1 ø	D2	D3	D4	D5	D6	D7 ø	H1	H2	H3	H4	H5
OVPN-20-L2-PG14-G34-UA	30	-	32	12	G 1/4	G 1/4	G 1/4	G 3/4	M8	6,4	95	80	35	51	20
OVPN-20-L3-PG14-G34-UA	62	32	32	12	G 1/4	G 1/4	G 1/4	G 3/4	M8	6,4	95	80	35	51	20
OVPN-23-L2-PG14-G34-UA															
OVPN-23-L3-PG14-G34-UA															
OVPN-26-L2-PG14-G34-UA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



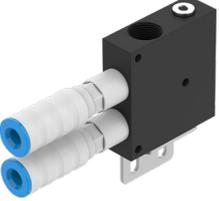
		B1	B2	B3	H1	H2	H3	L1	L2	L3	L4
OVPN-20/23/26	OVPN-20-L2-PG14-G34-UA	43	12,5	3	30	10	5	55	30	12,5	17,5
	OVPN-20-L3-PG14-G34-UA										
	OVPN-23-L2-PG14-G34-UA										
	OVPN-23-L3-PG14-G34-UA										
	OVPN-26-L2-PG14-G34-UA										
	OVPN-26-L3-PG14-G34-UA										

## 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	<b>8199142</b>	<b>OVPN-14-L2-PG14-G12-UA</b>
		Vacuum generator, 3-stage		225 g	<b>8199143</b>	<b>OVPN-14-L3-PG14-G12-UA</b>

### 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	<b>8199144</b>	<b>OVPN-20-L2-PG14-G34-UA</b>
		Vacuum generator, 3-stage		510 g	<b>8199145</b>	<b>OVPN-20-L3-PG14-G34-UA</b>

### Ordering information OVPN-23

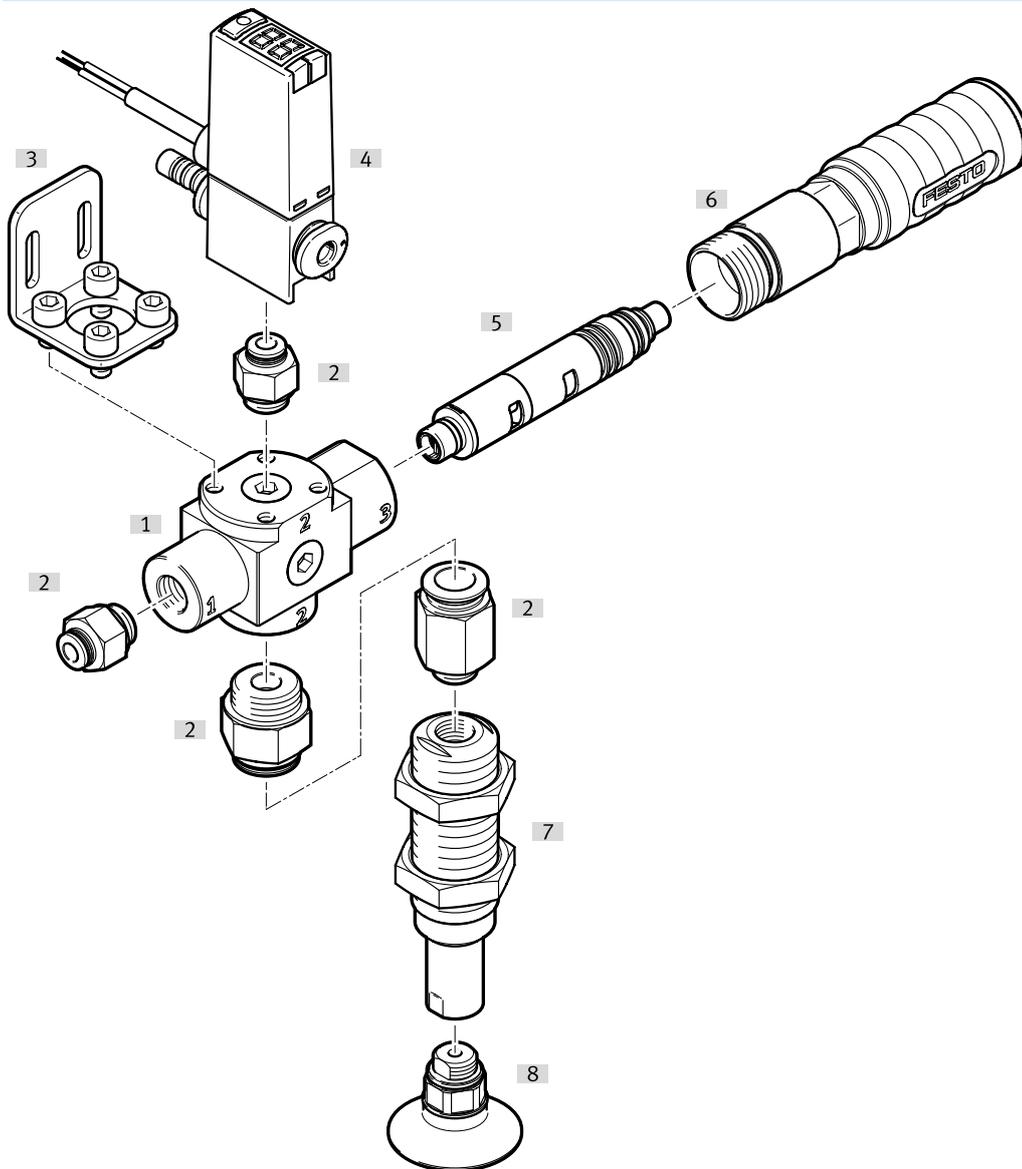
	Grid dimension	Design	Nominal size, Laval nozzle	Product weight	Part no.	Type
	60 mm	Vacuum generator 2-stage	2.3 mm	880 g	<b>8199146</b>	<b>OVPN-23-L2-PG14-G34-UA</b>
		Vacuum generator, 3-stage		940 g	<b>8199148</b>	<b>OVPN-23-L3-PG14-G34-UA</b>

### 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	<b>8199149</b>	<b>OVPN-26-L2-PG14-G34-UA</b>
		Vacuum generator, 3-stage		1,000 g	<b>8199150</b>	<b>OVPN-26-L3-PG14-G34-UA</b>

## Peripherals

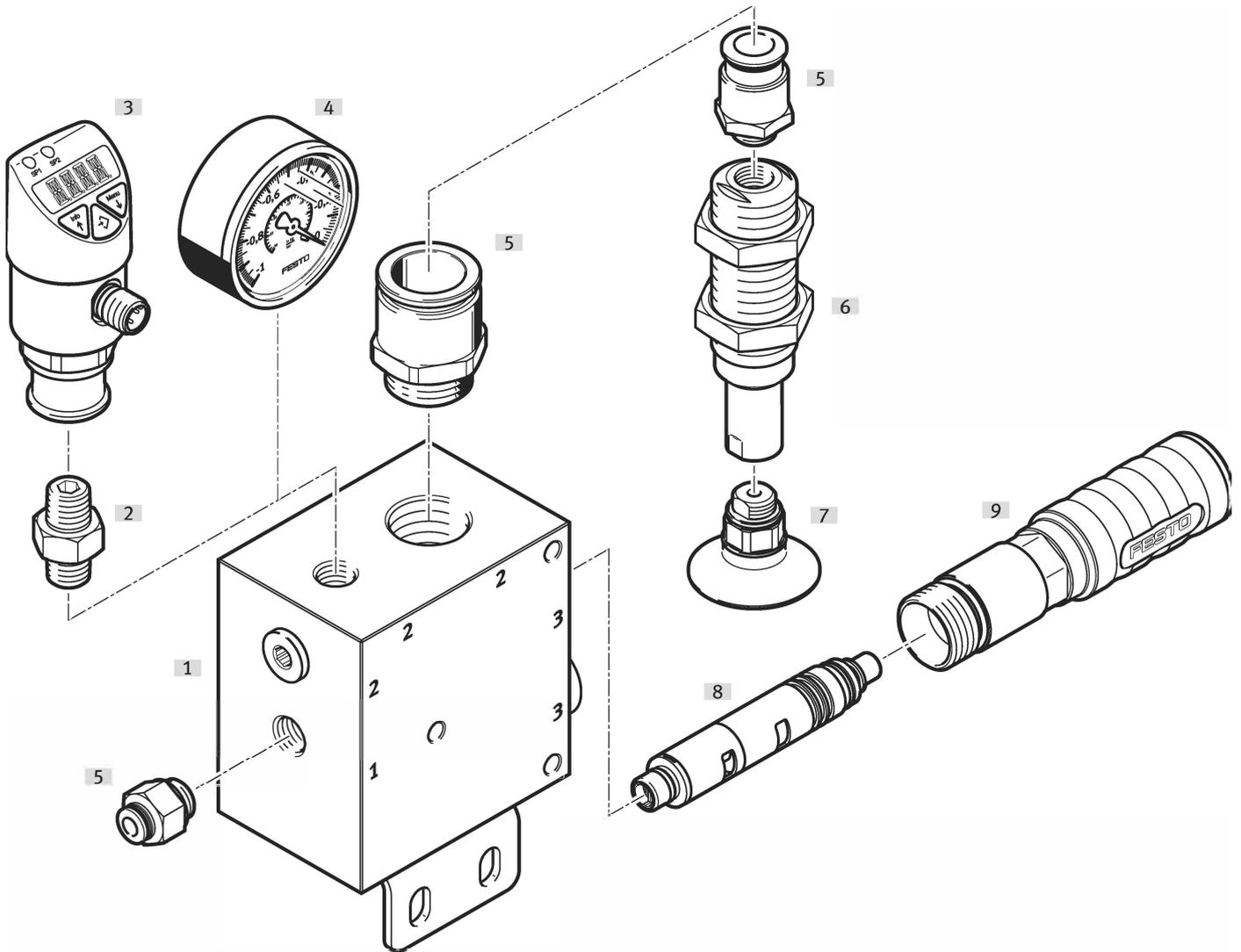
OVPN-14



Accessories		→ Link
Type/order code	Description	
[1] Vacuum generator OVPN		<a href="#">ovpn</a>
[2] Push-in fitting QS		<a href="#">qs</a>
[3] Retainer	Included in the scope of delivery	<a href="#">ovpn</a>
[4] Pressure sensor SPAE	Also suitable for use:Pressure transmitter SPTE	<a href="#">spae</a>
[5] Vacuum generator cartridges OASP	Included in the scope of delivery	15
[6] Silencer open (...-UA)	Included in the scope of delivery	15
[7] Length compensator VAL		<a href="#">val</a>
[8] Suction cup with connector VAS		<a href="#">vas</a>

Peripherals

OVPN-20/23/26



Accessories		→ Link
Type/order code	Description	
[1]	Vacuum generator OVPN	<a href="#">ovpn</a>
[2]	Double nipple ESK	<a href="#">esk</a>
[3]	Pressure sensor SPAW	Also suitable for use: Pressure sensor SPAE, pressure transmitter SPTE/SPTW, pressure switch VPEV <a href="#">spaw</a>
[4]	Vacuum gauge VAM, EN 837-1	<a href="#">vam</a>
[5]	Push-in fitting QS	<a href="#">qs</a>
[6]	Length compensator VAL	<a href="#">val</a>
[7]	Suction cup with connector VAS	<a href="#">vas</a>
[8]	Vacuum generator cartridges OASP	Included in the scope of delivery 15
[9]	Silencer open (...-UA)	Included in the scope of delivery 15

## Accessories

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

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	<b>8199153</b>	<b>OASP-G4-14-L2-UA</b>
	Vacuum generator, 3-stage			123 g	<b>8199155</b>	<b>OASP-G4-14-L3-UA</b>