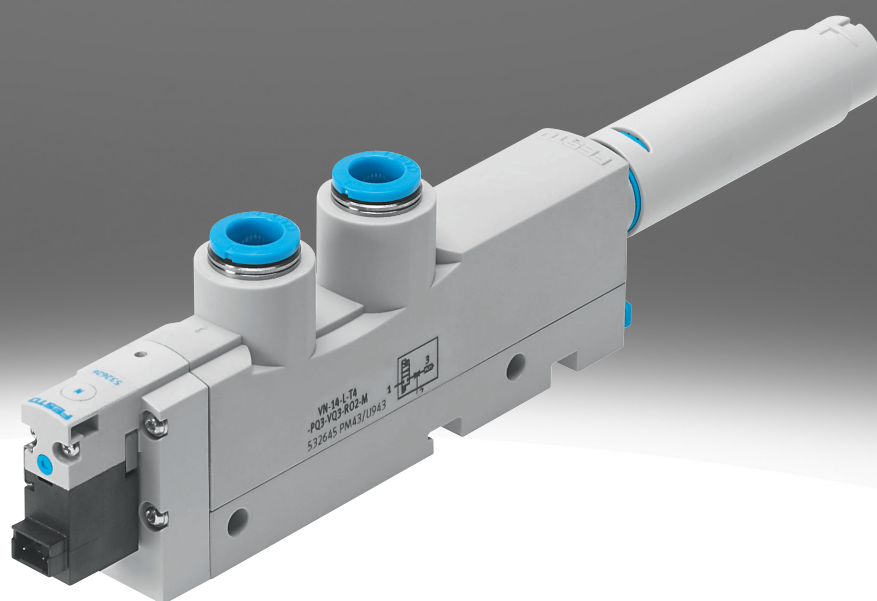


Vacuum generator, electropneumatic VN

FESTO



Characteristics

At a glance

[Link vn](#)

All vacuum generators from Festo have a single-stage design and operate according to the Venturi principle.

- Minimal space requirement
- Compact and sturdy design
- Wear- and maintenance-free
- With solenoid valve vacuum on/off
- Especially effective as it can be used directly in the working area
- Polymer housing
- Versatile connection variants
- Easy to mount thanks to the double-sided latching function of the mounting plate

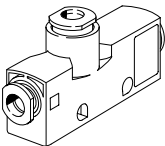
Diagrams

[Link vn](#)


The diagrams shown in this document are also available online. These can be used to display precise values.

Housing type

[T3] T-shape, pitch 14 mm



- Grid dimension: 14 mm (18 mm / 24 mm also available)
- Direct or indirect mounting with screws or mounting plate
- Possibility of connecting a silencer

Ejector characteristics

[H] High vacuum/standard

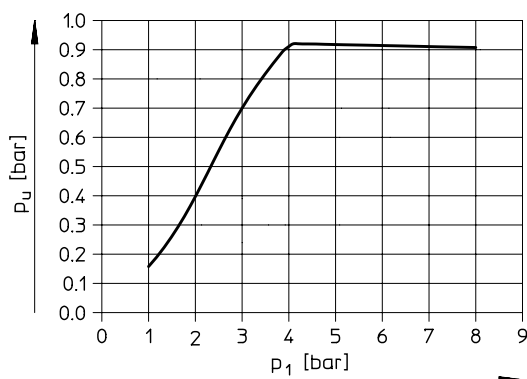
- Vacuum generators for high vacuum can achieve very short evacuation times because of the high suction volumetric flow rate at relatively low vacuum.
- Vacuum generators for high vacuum reach vacuums of up to 93%
- With the standard functional principle, the compressed air and vacuum ports are offset by 90°

[L] High suction rate/standard

- Vacuum generators for high suction volumetric flow rates up to 339 l/min are particularly suitable for short evacuation times
- Vacuum generators for high suction volumetric flow rates are optimised for generating a high vacuum at comparatively low suction volumetric flow rates.

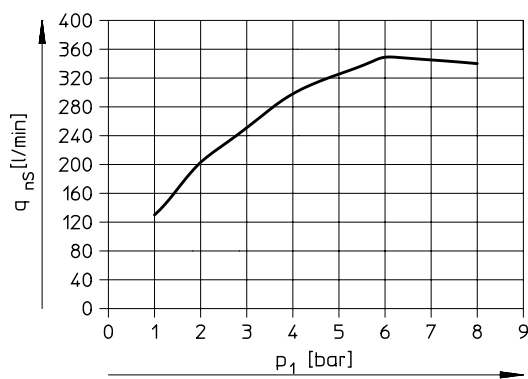
Vacuum type

[H] High vacuum



Vacuum p_u as a function of operating pressure p_1

[L] High suction rate



Suction volumetric flow rate q_{ns} as a function of operating pressure p_1

Type code

001	Series	
VN	Vacuum generator	
002	Nominal width of Laval nozzle	
05	0.45 mm	
07	0.70 mm	
10	0.95 mm	
14	1.4 mm	
20	2.0 mm	
30	3.0 mm	
003	Ejector characteristics	
H	High vacuum/standard	
L	High suction rate/standard	
004	Housing type	
T3	T-shape, pitch 14 mm	
T4	T-shape, grid dimension 18 mm (with switching output PNP (P), grid dimension 16 mm)	
T6	T-shape, pitch 24 mm	

005	Compressed air connection	
PQ2	Push-in connector 6 mm	
PQ3	Push-in connector 8 mm	
PQ4	Push-in connector 10 mm	
006	Vacuum connection	
VQ2	Push-in fitting QS-6	
VQ3	Push-in fitting QS-8	
VQ5	Push-in fitting QS-12	
007	Exhaust port	
RO1	Silencer UO	
RO2	Silencer UOM	
008	Integrated function	
B	Electric on/off valve and pneumatic ejector pulse	
M	Electric on/off valve	

Datasheet

General technical data

Grid dimension	14 mm	18 mm	24 mm
Pneumatic connection, port 1 ¹⁾	QS-6	QS-8	QS-10
Pneumatic connection, port 3	Open silencer		
Vacuum connection	QS-6	QS-8	QS-12
Type of mounting	With through-hole, With H-rail, With accessories		With through-hole, With accessories
Mounting position	optional		

1) Note: This product complies with ISO 1179-1 and ISO 228-1.

Operating and environmental conditions

Operating pressure	2 ... 8 bar
Nominal operating pressure	6 bar
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 ... 50°C
Media temperature	0 ... 50°C
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress

1) Corrosion resistance class CRC 1 to Festo standard FN 940070. Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive pins).

Performance data – High vacuum

Grid dimension	14			18		24	
Max. vacuum	92%			93%		92%	
Nominal size, Laval nozzle	0.45	0.7	0.95	1.4	2	3	
Operating pressure for max. vacuum	4.9 bar	4.4 bar	3.5 bar			3.7 bar	
Max. suction flow rate against atmosphere	7.2 l/min	16.2 l/min	21.8 l/min	48.8 l/min	98 l/min	186 l/min	
Operating pressure for max. suction flow rate	3 bar			4 bar	2 bar	3 bar	
Air supply time at nominal operating pressure ¹⁾	3.9 s	1.69 s	1.06 s	0.5 s	0.24 s	0.13 s	
Sound pressure level at nominal operating pressure	56 dB(A)	65 dB(A)	71 dB(A)	69 dB(A)	63 dB(A)	78 dB(A)	

1) Length of time for reducing the vacuum to a residual vacuum of -0.05 bar after switching off the operating pressure.

Performance data – High suction volume flow

Grid dimension	14						18		24	
Max. suction flow rate against atmosphere	7.2 l/min	13.6 l/min	16.2 l/min	21.8 l/min	30.9 l/min	40.5 l/min	48.8 l/min	92.6 l/min	98 l/min	186 l/min
Nominal size, Laval nozzle	0.45	0.7	0.95	0.7	0.95	1.4	2		3	
Operating pressure for max. suction flow rate	3 bar	5 bar	3 bar	4 bar	5 bar	4 bar	5 bar	2 bar	3 bar	
Air supply time at nominal operating pressure ¹⁾	3.9 s	1.97 s	1.69 s	1.06 s	0.83 s	0.67 s	0.5 s	0.32 s	0.24 s	0.13 s
Sound pressure level at nominal operating pressure	56 dB(A)	52 dB(A)	65 dB(A)	71 dB(A)	64 dB(A)	72 dB(A)	69 dB(A)	63 dB(A)	78 dB(A)	

1) Time required to reduce the vacuum to a residual vacuum of -0.05 bar after switching off the operating pressure.

Technical data on/off valve

Operational voltage range DC	21.6 ... 26.4 V
Duty cycle	100%
Degree of protection	IP40
Valve function	2/2
Manual override	Non-detenting

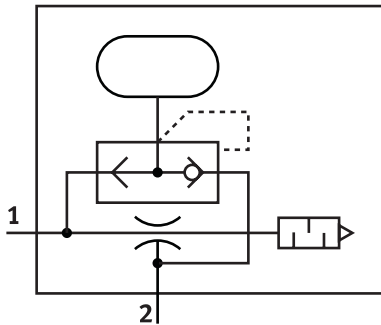
Datasheet

Materials

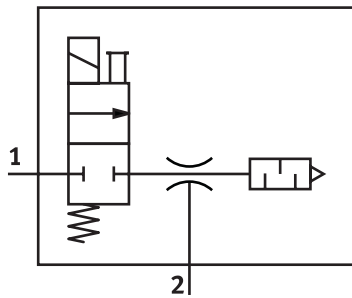
Material housing	PA-reinforced, POM-reinforced
Material silencer	Wrought aluminium alloy, PE, POM, PU foam
Material fitting	Brass, Nickel-plated
Material connecting thread	Anodised wrought aluminium alloy
Material transmitter nozzle	Wrought aluminium alloy
Material receiver nozzle	POM
Material screws	Steel
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity ¹⁾	VDMA24364-B1/B2-L VDMA24364 zone III

1) R02: VDMA24364 zone III

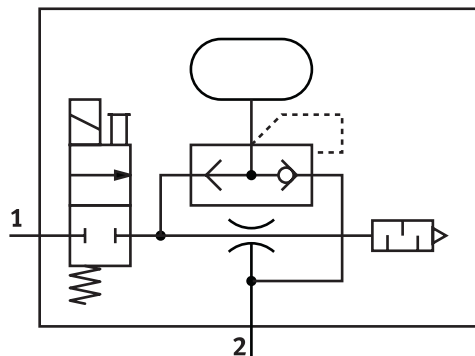
Function - VN-A (Standard/Inline, pneumatic ejector impulse)



Function - VN-M (standard, electric switch-on valve)

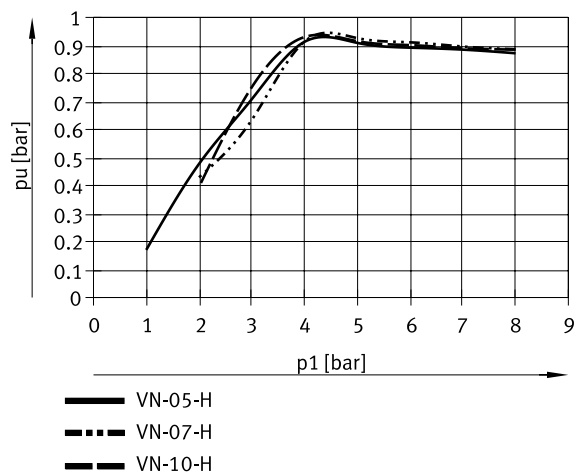


Function - VN-B (standard, electric switch-on valve, pneumatic ejector pulse)

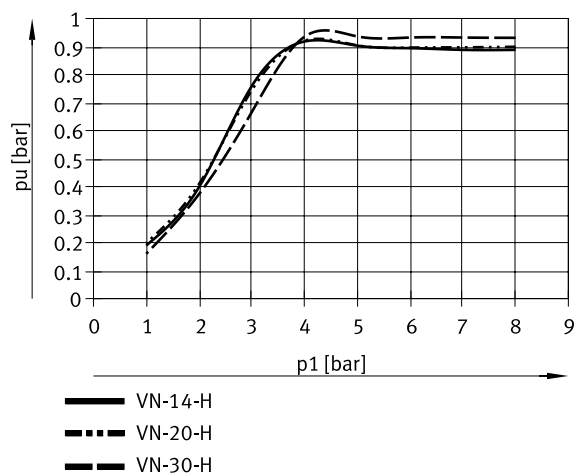


Datasheet

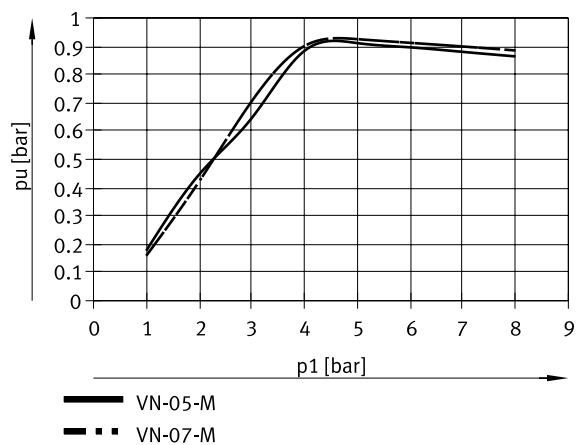
Vacuum p_u as a function of operating pressure p_1 – high vacuum (standard, VN-05/07/10)



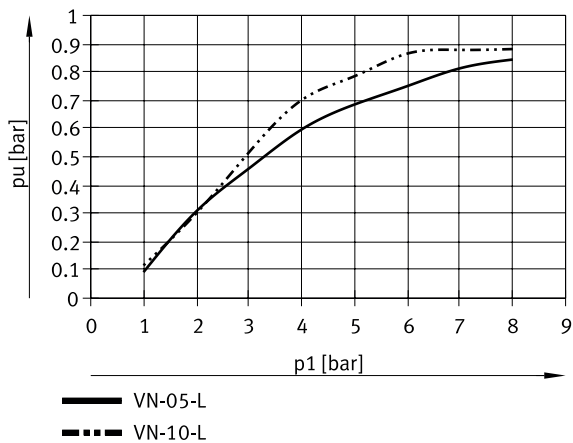
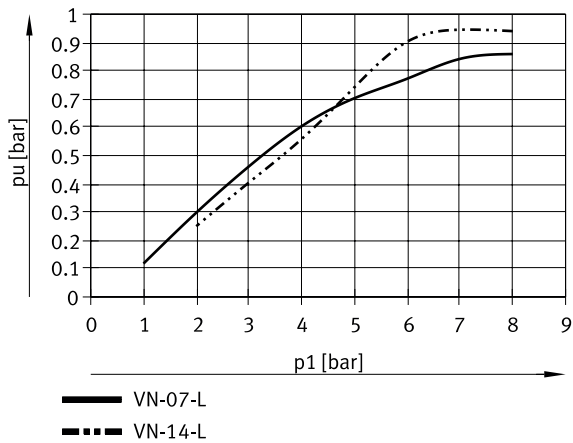
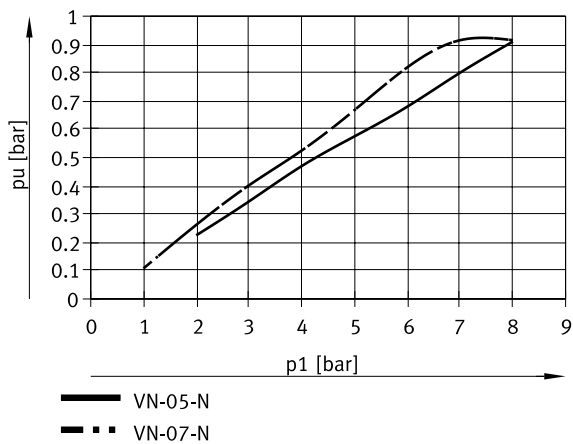
Vacuum p_u as a function of operating pressure p_1 – high vacuum (standard, VN-14/20/30)



Vacuum p_u as a function of operating pressure p_1 – high vacuum (inline; VN-05/07)

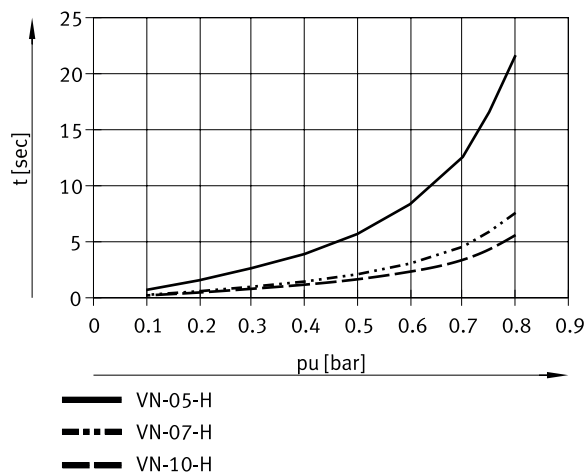


Datasheet

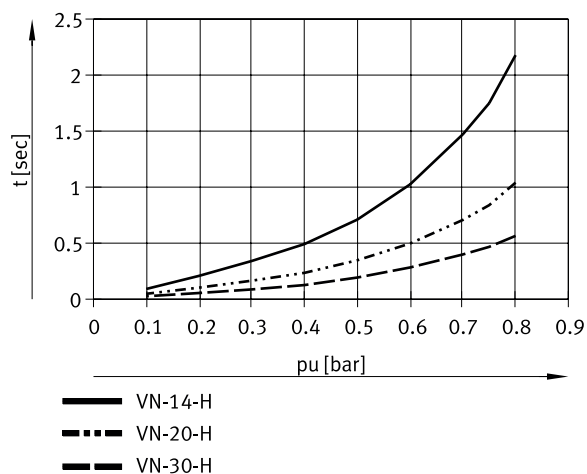
Vacuum p_u as a function of operating pressure p_1 – high suction rate (standard; VN-05/10)Vacuum p_u as a function of operating pressure p_1 – high suction rate (standard; VN-07/14)Vacuum p_u as a function of operating pressure p_1 – high suction rate (inline; VN-05/07)

Datasheet

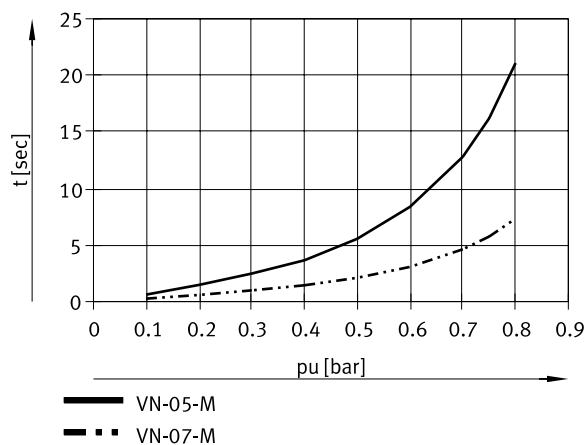
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum (standard; VN-05/07/10)



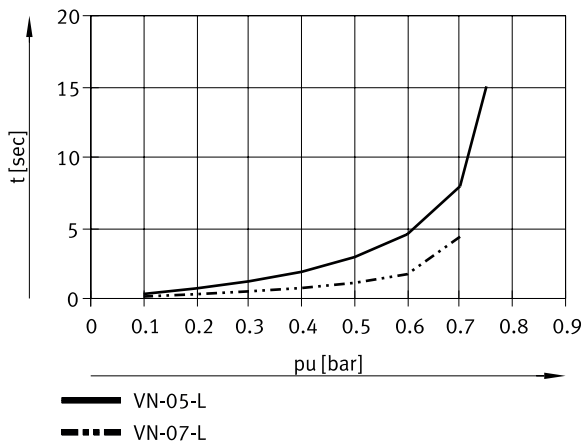
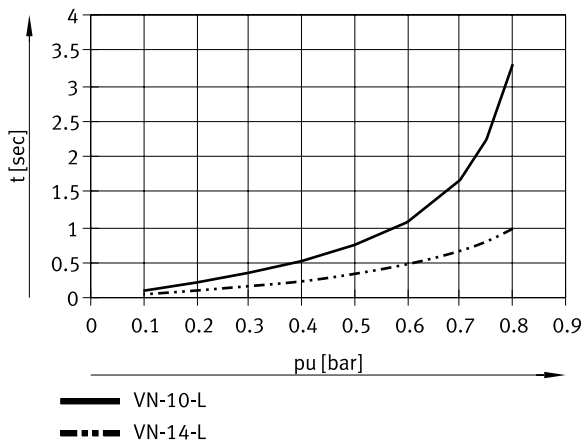
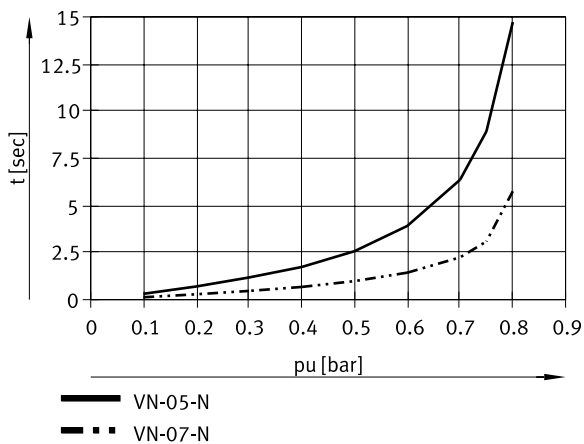
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum (standard; VN-14/20/30)



Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum (inline; VN-05/07)

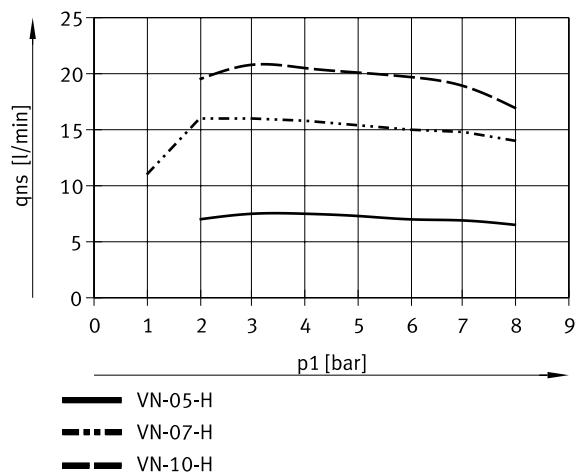


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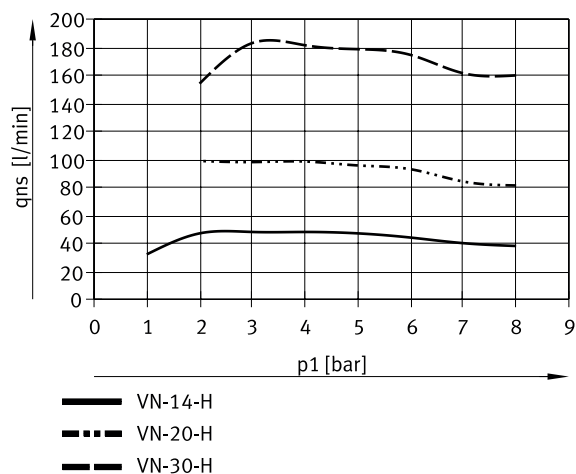
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (standard; VN-05/07)Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (standard; VN-10/14)Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (inline; VN-05/07)

Datasheet

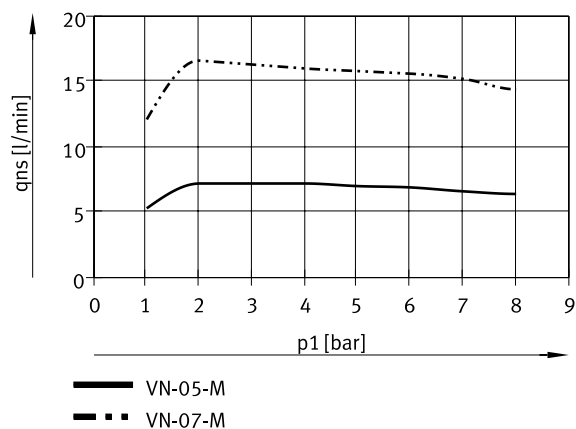
Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (standard; VN-05/07/10)



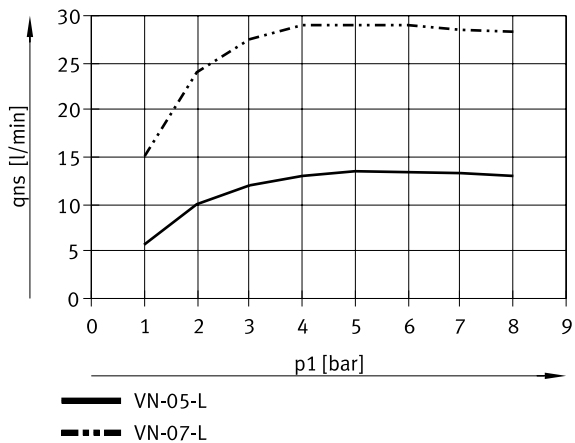
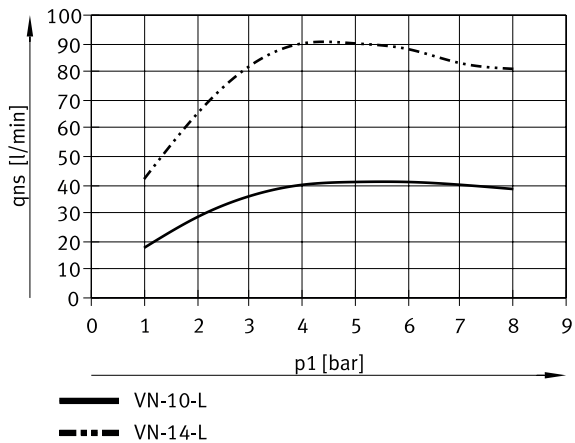
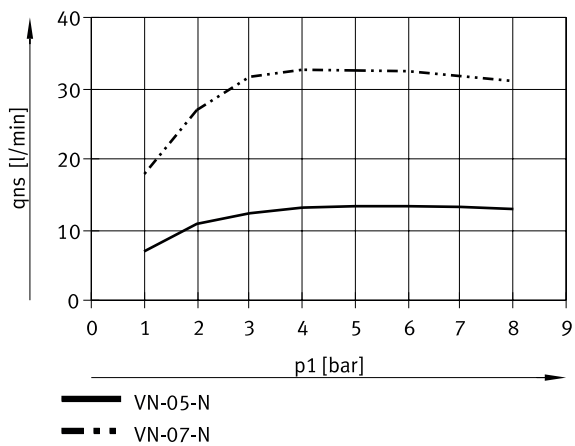
Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (standard; VN-14/20/30)



Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (inline; VN-05/07)

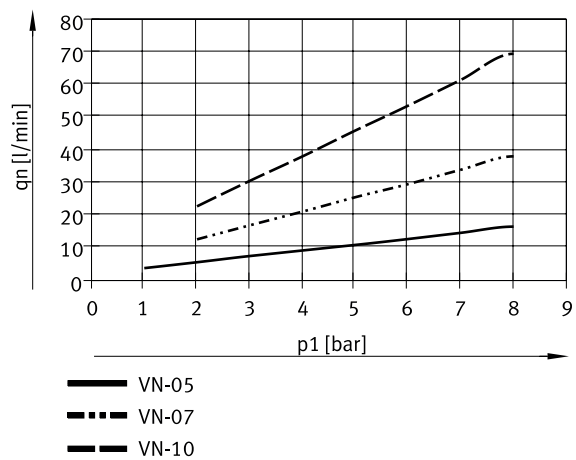


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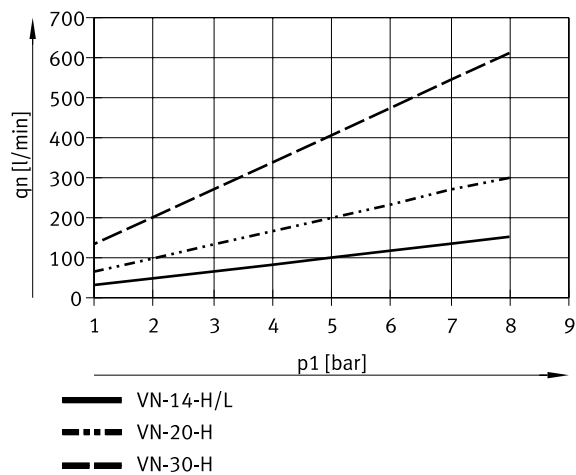
Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (standard; VN-05/07)Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (standard; VN-10/14)Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (inline; VN-05/07)

Datasheet

Air consumption q_n as a function of operating pressure p_1 – high vacuum / high suction rate (05/07/10)



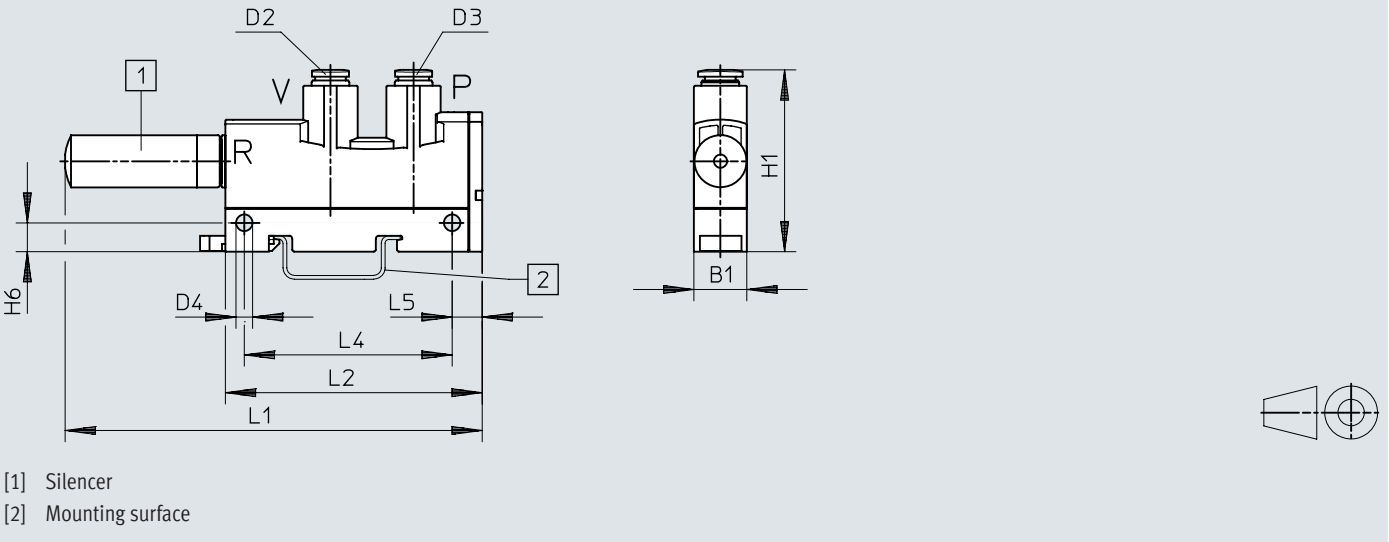
Air consumption q_n as a function of operating pressure p_1 – high vacuum / high suction rate (14/20/30)



Dimensions

Dimensions – T-shape/standard, VN-...-T...-PQ...-VQ...-R0...-A

Download CAD data www.festo.com

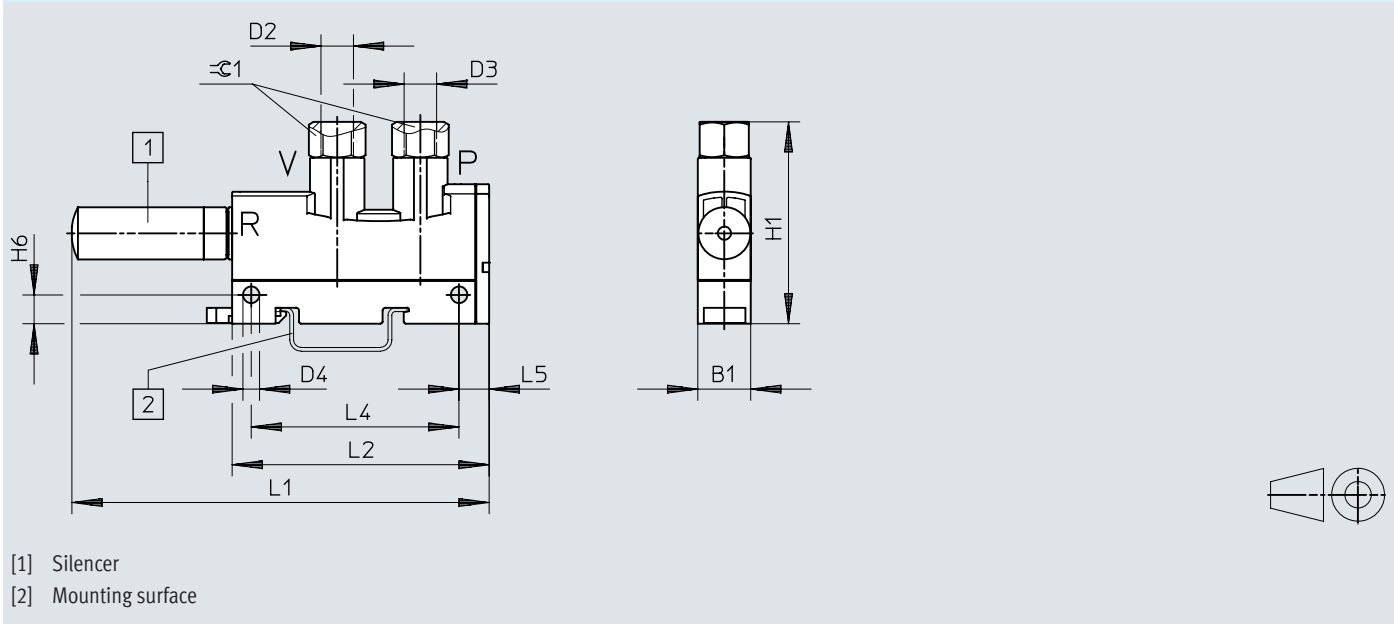


	B1	1)		D4 Ø	H1	H2	L1	L2	L4	L5
		V D2	P D3							
VN-05-...-T3-PQ2-VQ2-R01-A	14	QS-6	QS-6	4,4	48	7,6	110	68	55	8
VN-07-...-T3-PQ2-VQ2-R01-A							119			
VN-10-...-T3-PQ2-VQ2-R01-A										
VN-14-...-T4-PQ3-VQ3-R02-A	18	QS-8	QS-8			50	7,5	166	98	63

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-...-T...-PI...-VI...-RO...-A Download CAD data www.festo.com



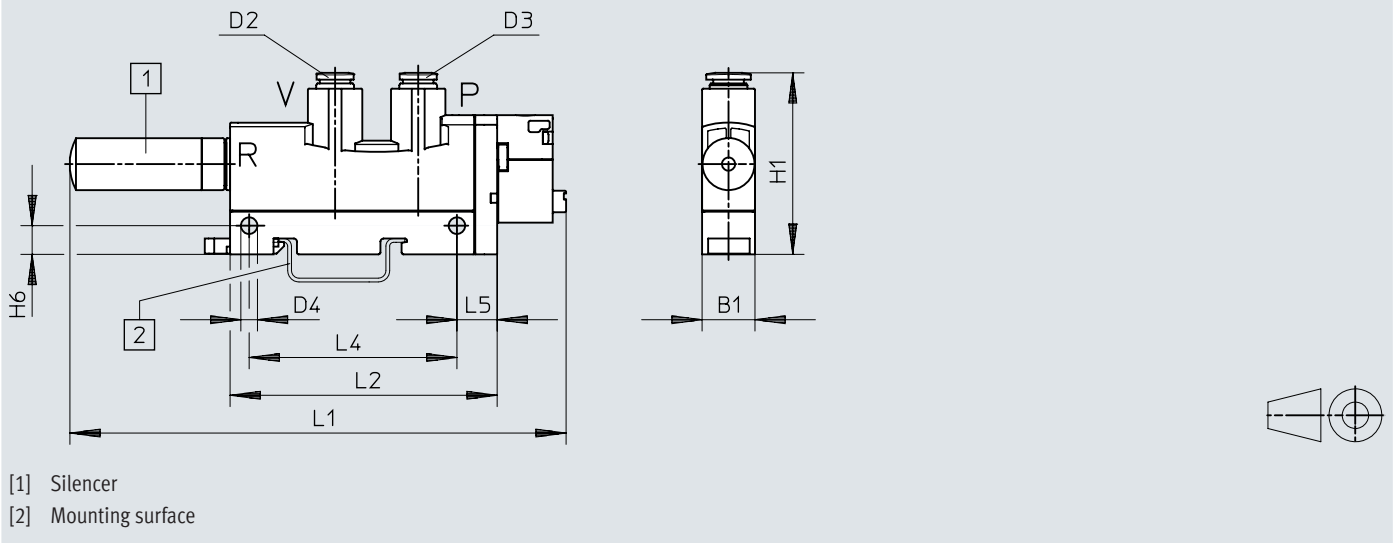
	B1	1)		D4 Ø	H1	H6	L1	L2	L4	L5	≈ 1
		V D2	P D3								
VN-05-...-T3-PI4-VI4-RO1-A	14	G1/8	G1/8	4,4	53	7,6	110	68	55	8	13
VN-07-...-T3-PI4-VI4-RO1-A							119				
VN-10-...-T3-PI4-VI4-RO1-A	18	G1/4	G1/4	4,4	62	7,5	166	98	63	8,7	17
VN-14-...-T4-PI5-VI5-RO2-A											

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-...-T...-PQ...-VQ...-RO...-M/B

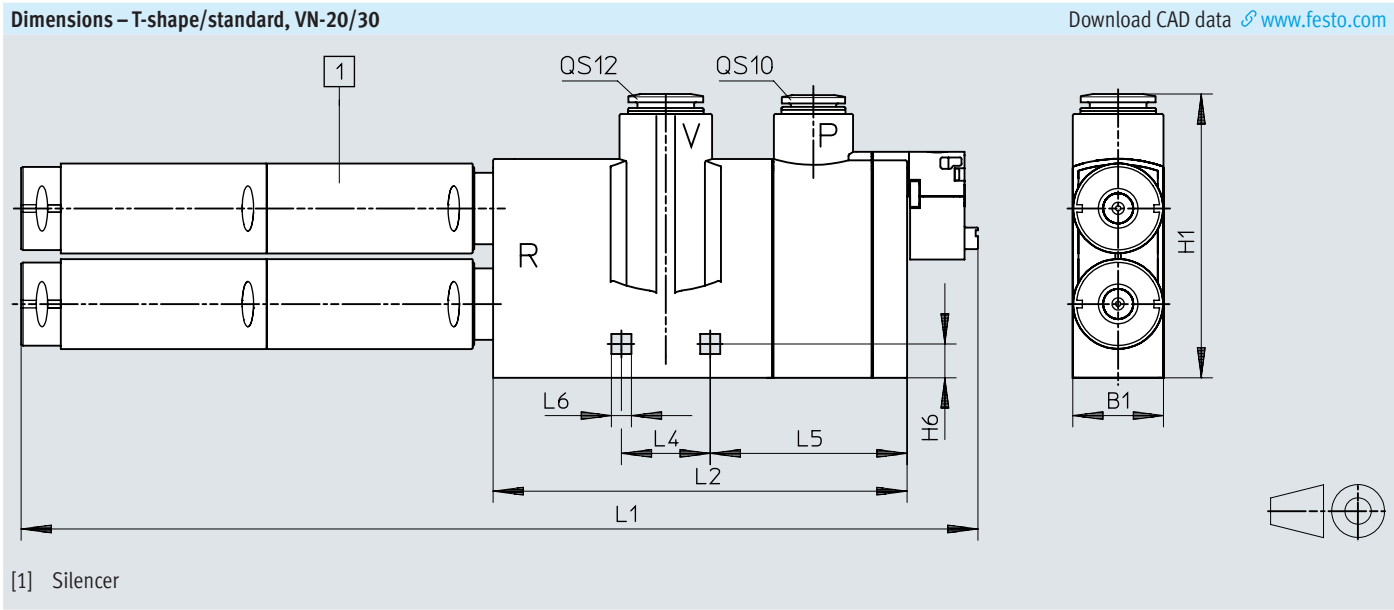
Download CAD data www.festo.com



	B1	1)		D1 Ø	H1	H2	L1	L2	L4	L6
		V D2	P D3							
VN-05-...-T3-PQ2-VQ2-R01-M/B	14	QS-6	QS-6	4,4	48	7,6	132	71	55	10,7
VN-07-...-T3-PQ2-VQ2-R01-M/B							141			
VN-10-...-T3-PQ2-VQ2-R01-M/B										
VN-14-...-T4-PQ3-VQ3-R02-M/B	18	QS-8	QS-8			50	7,5	192	106	63

1) Connections

Dimensions

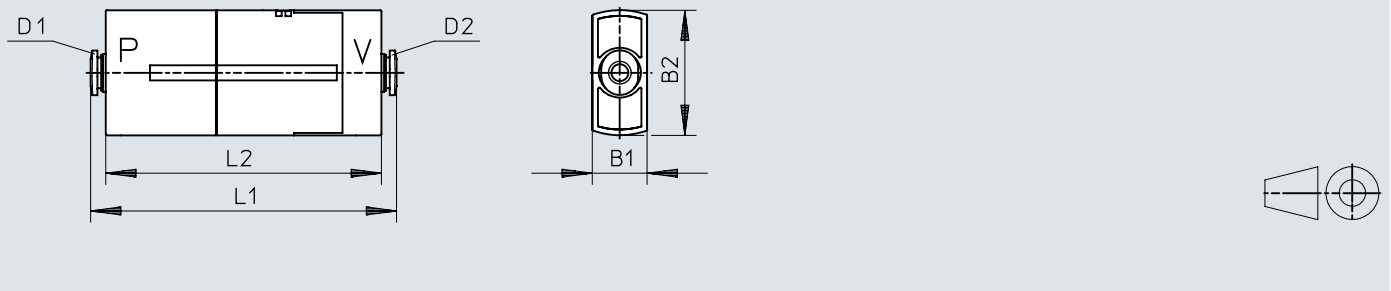


	B1	D2	D3	H1	H6	L1	L2	L4	L5	L6
VN-...-T6-PQ4-VQ5-RO2-M	24	QS12	QS10	75	9	253	110	23,5	52	5,3

Dimensions

Dimensions – Straight shape/in-line, VN-05/07

Download CAD data www.festo.com

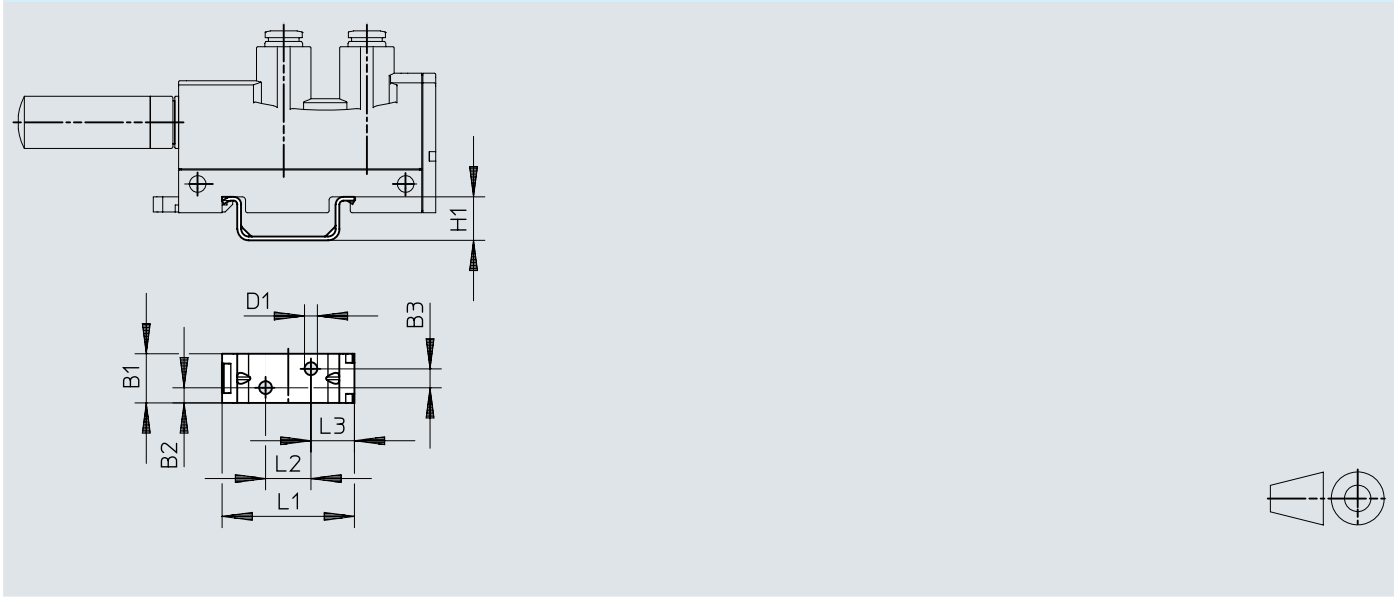


	B1	1)		B2	L1	L2
		P	V			
VN-05-...-I3-PQ2-VQ2-A	14,5	QS-6	QS-6	33,1	81	73
VN-07-...-I3-PQ2-VQ2-A					97	89

1) Connections

Dimensions

Dimensions – Mounting plate VN-...-BP [Download CAD data](#) www.festo.com



	B1	B2	B3	D1 Ø	H1	L1	L2	L3
VN-T3-BP	13	4	5	3,4	11,5	35	12	11,5
VN-T4-BP	17	6	5	3,4	11,5	35	12	11,5

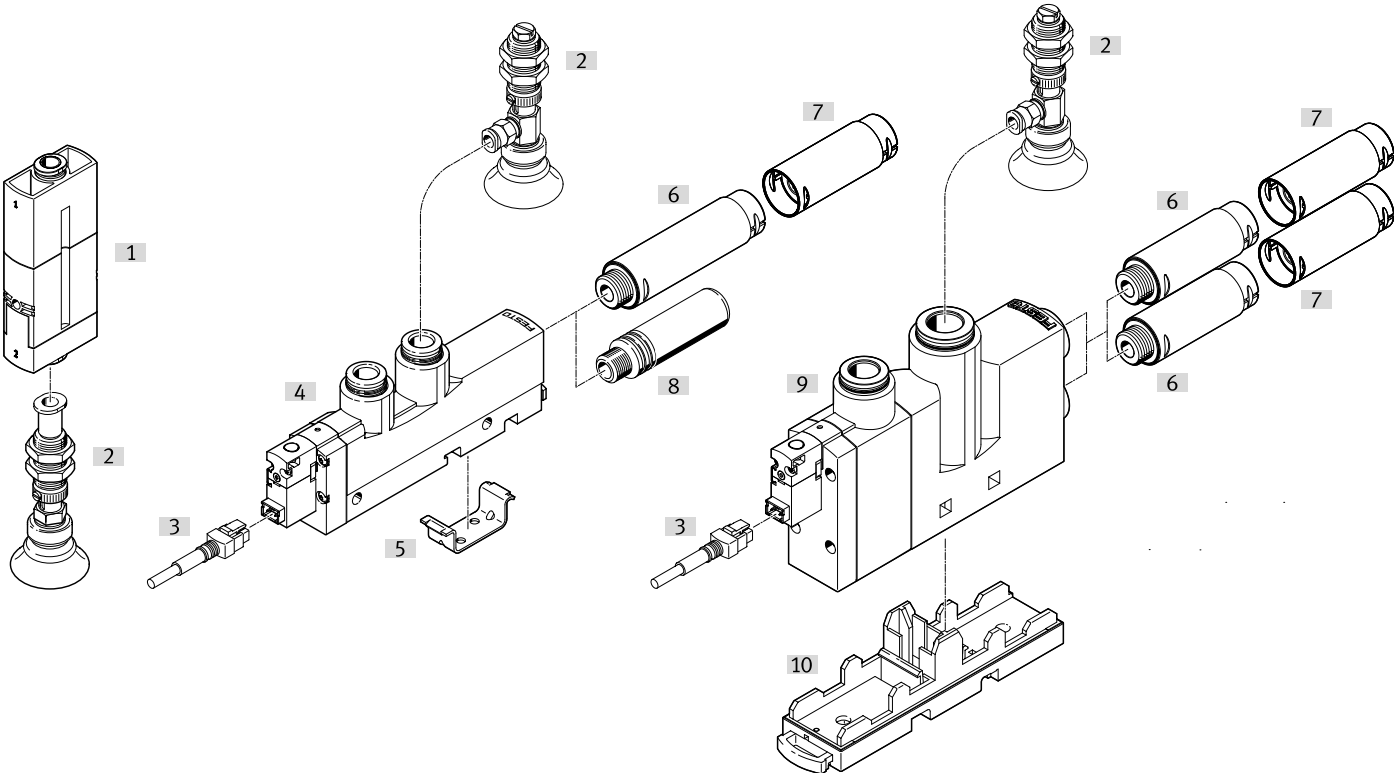
Ordering data

Standard, high vacuum H						
Grid dimension	Design	Nominal size, Laval nozzle	Integrated function	Product weight	Part no.	Type
14 mm	T-shape	0.45 mm	Electric on/off valve and pneumatic ejector pulse	62 g	532622	VN-05-H-T3-PQ2-VQ2-R01-B
			Electric on/off valve	60 g	532618	VN-05-H-T3-PQ2-VQ2-R01-M
		0.7 mm	Electric on/off valve and pneumatic ejector pulse	63 g	532630	VN-07-H-T3-PQ2-VQ2-R01-B
			Electric on/off valve	61 g	532626	VN-07-H-T3-PQ2-VQ2-R01-M
		0.95 mm	Electric on/off valve and pneumatic ejector pulse	63 g	532640	VN-10-H-T3-PQ2-VQ2-R01-B
			Electric on/off valve	61 g	532636	VN-10-H-T3-PQ2-VQ2-R01-M
18 mm	T-shape	1.4 mm	Electric on/off valve and pneumatic ejector pulse	100 g	532648	VN-14-H-T4-PQ3-VQ3-R02-B
Electric on/off valve			98 g	532644	VN-14-H-T4-PQ3-VQ3-R02-M	
24 mm		2 mm	215 g	532656	VN-20-H-T6-PQ4-VQ5-R02-M	
		3 mm		532662	VN-30-H-T6-PQ4-VQ5-R02-M	

Standard, high suction rate L						
Grid dimension	Design	Nominal size, Laval nozzle	Integrated function	Product weight	Part no.	Type
14 mm	T-shape	0.45 mm	Electric on/off valve and pneumatic ejector pulse	62 g	532623	VN-05-L-T3-PQ2-VQ2-R01-B
			Electric on/off valve	60 g	532619	VN-05-L-T3-PQ2-VQ2-R01-M
		0.7 mm	Electric on/off valve and pneumatic ejector pulse	63 g	532631	VN-07-L-T3-PQ2-VQ2-R01-B
			Electric on/off valve	61 g	532627	VN-07-L-T3-PQ2-VQ2-R01-M
		0.95 mm	Electric on/off valve and pneumatic ejector pulse	63 g	532641	VN-10-L-T3-PQ2-VQ2-R01-B
			Electric on/off valve	61 g	532637	VN-10-L-T3-PQ2-VQ2-R01-M
18 mm	T-shape	1.4 mm	Electric on/off valve and pneumatic ejector pulse	100 g	532649	VN-14-L-T4-PQ3-VQ3-R02-B
			Electric on/off valve	98 g	532645	VN-14-L-T4-PQ3-VQ3-R02-M

Peripherals

Peripherals overview



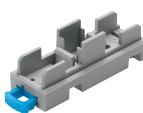
Accessories		→ Link
Type/order code	Description	
[1]	Vacuum generator	VN-05/07-...-A; straight shape
[2]	Suction gripper ESG	ESG
[3]	Plug socket with cable, 2-pin, NEBV	22
[4]	Vacuum generator	VN-05/07/10/14-...-A/M/B; T-shape
[5]	Mounting plate VN-T3/T4-BP	21
[6]	Silencer UOM	21
[7]	Silencer extension UOMS	21
[8]	Silencer UO	21
[9]	Vacuum generator	VN-20/30-...-M; T-shape
[10]	Mounting plate VN-T6-BP-NRH	21

Accessories

Silencer UO						
	Pneumatic connection	Design	Material shock absorber insert	Product weight	Part no.	Type
	M7	Open silencer	PE	2.5 g	197582	UO-M7
	G1/8			5 g	197583	UO-1/8
	G1/4			8 g	197584	UO-1/4

Silencer UOM						
	Pneumatic connection	Design	Material shock absorber insert	Product weight	Part no.	Type
	G1/4	Open silencer	PU foam	11.1 g	538432	UOM-1/4
	G3/8			22.7 g	538433	UOM-3/8

Silencer extension UOMS						
	Design	Type of mounting	Material shock absorber insert	Product weight	Part no.	Type
	Open silencer	Snapping in	PU foam	8.6 g	538436	UOMS-1/4
				17.5 g	538437	UOMS-3/8

Mounting plate VN-...-BP-NRH					
	Type of mounting	LABS (PWIS) conformity	Product weight	Part no.	Type
	With through-hole, With H-rail	VDMA24364-B1/B2-L	3.5 g	193641	VN-T3-BP-NRH
			4.5 g	195279	VN-T4-BP-NRH
			5.5 g	196951	VN-T2-BP-NRH
			12.4 g	196956	VN-T6-BP-NRH

Mounting plate VN-...-BP					
	Type of mounting	LABS (PWIS) conformity	Product weight	Part no.	Type
	With through-hole	VDMA24364-B1/B2-L	4.8 g	547436	VN-T3-BP
			6.4 g	547437	VN-T4-BP

Plug socket with cable NEBV (2 single cables)						
	Electrical connection 2, connection type	Electrical connection 2, connector system	Cable length	Product weight	Part no.	Type
	2x single wires	Open end	0.5 m	4 g	566654	NEBV-H1G2-KN-0.5-N-LE2
			1 m	7 g	566655	NEBV-H1G2-KN-1-N-LE2
			5 m	31 g	566657	NEBV-H1G2-KN-5-N-LE2

Accessories

Plug socket with cable NEBV (cable 2-core)						
	Electrical connection 2, connection type	Electrical connection 2, connector system	Cable length	Product weight	Part no.	Type
	Cable	Open end	0.5 m	8 g	566658	NEBV-H1G2-P-0.5-N-LE2
			1 m	16 g	566659	NEBV-H1G2-P-1-N-LE2
			2.5 m	35 g	566660	NEBV-H1G2-P-2.5-N-LE2
			5 m	70 g	566661	NEBV-H1G2-P-5-N-LE2