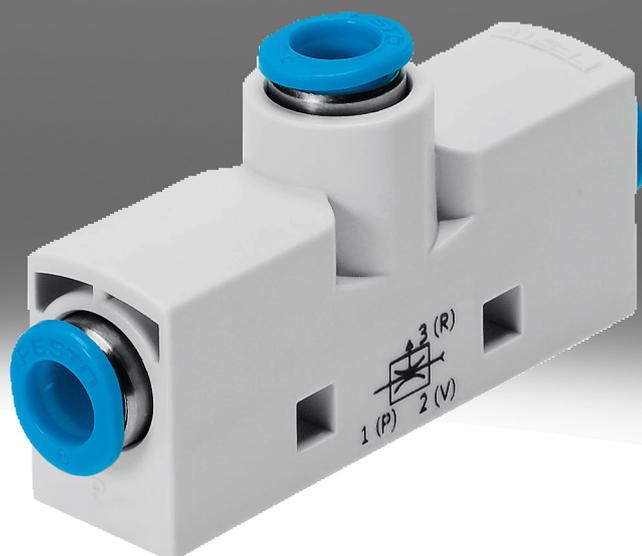


Vacuum generator, pneumatic VN

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
- 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
- Without or with integrated vacuum switch for monitoring the vacuum with PNP output
- Available in straight or T-shape

2 functional principles:

- Standard: vacuum connection 90° to supply port (T-shape)
- Inline: Vacuum connection in line with the supply port (straight shape / T-shape)

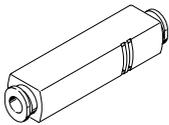
Diagrams

[Link](#)  vn



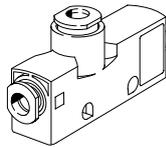
Housing type

[I2] Straight shape, pitch 10 mm



- Grid dimension: 10 mm (13 mm also available)
- Particularly compact housing
- Compressed air and vacuum connection in one line, can be installed directly in the tubing line

[T2] T-shape, pitch 10 mm



- Grid dimension: 10 mm (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 reach vacuums of up to 93%
- Vacuum generators for high vacuum can achieve very short evacuation times because of the high suction volumetric flow rate at relatively low vacuum.
- With the standard functional principle, the compressed air and vacuum ports are offset by 90°

[M] High vacuum/inline

- Vacuum generators for high vacuum reach vacuums of up to 93%
- Vacuum generators for high vacuum can achieve very short evacuation times because of the high suction volumetric flow rate at relatively low vacuum.
- With the inline functional principle, the compressed air and vacuum ports are arranged in one line

[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.
- With the standard functional principle, the compressed air and vacuum ports are offset by 90°

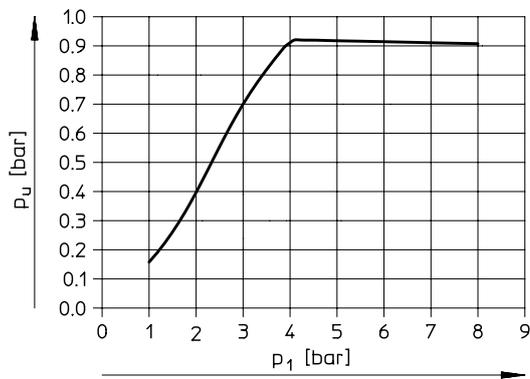
[N] High suction rate/inline

- 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.
- With the inline functional principle, the compressed air and vacuum ports are arranged in one line

Characteristics

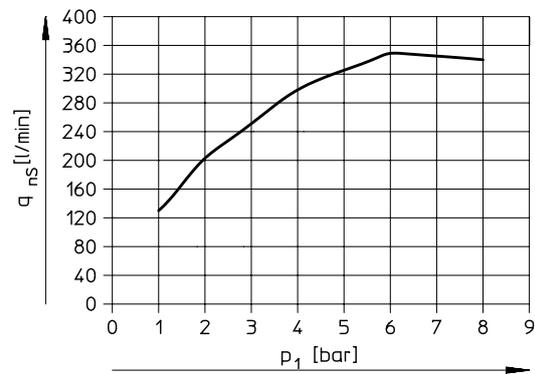
Vacuum type

[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

Electrical output

[P] Switching output PNP

- Optionally with integrated vacuum switch for monitoring the vacuum with PNP outlet
- Threshold value comparator with fixed or variable hysteresis
- Teach-in setting option for threshold value and hysteresis

Integrated function

[A] Ejector pulse, pneumatic

- Optionally with additional function: integrated ejector pulse
- The ejector pulse makes it easy to deposit a workpiece quickly, safely and precisely.

Special material properties

[F1A] Recommended for production plants for manufacturing lithium-ion batteries, F1A

Suitable for battery production with reduced Cu/Zn/Ni values (F1a).

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	
M	High vacuum/inline	
N	High suction rate/inline	

004	Housing type	
I2	Straight shape, pitch 10 mm	
I3	Straight shape, grid dimension 13 mm (with ejector pulse pneumatic (A), grid dimension 14.5 mm)	
T2	T-shape, pitch 10 mm	
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	
PQ1	Push-in connector 4 mm	
PQ2	Push-in connector 6 mm	
PQ3	Push-in connector 8 mm	
PQ4	Push-in connector 10 mm	
PI2	Female thread M5	
PI4	Female thread G1/8	
PI5	Female thread G1/4	

006	Vacuum connection	
VQ1	Push-in fitting QS-4	
VQ2	Push-in fitting QS-6	
VQ3	Push-in fitting QS-8	
VQ5	Push-in fitting QS-12	
VI2	Female thread M5	
VI4	Female thread G1/8	
VI5	Female thread G1/4	
VI6	Female thread G3/8	
VA4	Male thread G1/8	
VA5	Male thread G1/4	
VT1	Push-in sleeve 4 mm	
VT2	Push-in sleeve 6 mm	

007	Switching function	
	None	
O1	Threshold value with fixed hysteresis, 2 teach-in points, N/O contact	
O2	Threshold value with variable hysteresis, N/O contact	

008	Electrical output	
	None	
P	Switching output PNP	

009	Exhaust port	
	Exhaust in the housing	
RQ1	Push-in fitting QS-4	
RQ2	Push-in fitting QS-6	
RQ3	Push-in fitting QS-8	
RI2	Female thread M5	
RI4	Female thread G1/8	
RI5	Female thread G1/4	
RO1	Silencer UO	
RO2	Silencer UOM	

010	Integrated function	
	None	
A	Ejector pulse, pneumatic	

011	Special material properties	
F1A	Recommended for production plants for manufacturing lithium-ion batteries, F1A	

Datasheet

General technical data – Standard

Design	T-shape											
Grid dimension	10 mm		14 mm			16 mm			18 mm		24 mm	
Nominal size, Laval nozzle	0.45 mm	0.7 mm	0.45 mm	0.7 mm	0.95 mm	0.45 mm	0.7 mm	0.95 mm	1.4 mm	2 mm	3 mm	
Pneumatic connection, port 1	M5 QS-4		G1/8 QS-6			QS-6			G1/8 G1/4 QS-6 QS-8		G1/4 QS-10	
Pneumatic connection, port 3	M5 QS-4 Open silencer		G1/8 QS-6 Open silencer			Open silencer			QS-8 Open si- lencer	G1/4 QS-8 Open si- lencer	Open silencer	
Vacuum connection	M5 QS-4		G1/8 QS-6			QS-6			G1/4 QS-8		G1/4 G3/8 QS-12	
Type of mounting	With through-hole With accessories		With through-hole With H-rail With accessories			With through-hole			With through- hole With ac- cessories	With through- hole With H-rail With ac- cessories	With through-hole With accessories	
Mounting position	optional											

General technical data – In-line

Design	Straight shape							T-shape				
Grid dimension	10 mm		13 mm			14.5 mm		10 mm		14 mm		
Nominal size, Laval nozzle	0.45 mm	0.7 mm	0.45 mm	0.7 mm	0.95 mm	0.45 mm	0.7 mm	0.45 mm	0.7 mm	0.45 mm	0.7 mm	
Pneumatic connection, port 1	QS-4		QS-6					M5, QS-4		G1/8, QS-6		
Pneumatic connection, port 3	Not ducted					–		M5, QS-4, Open silencer		G1/8, QS-6, Open silencer		
Vacuum connection	QS-4, Push-in sleeve QS-4		QS-6, Push-in sleeve QS-6		QS-6		M5, QS-4		G1/8, QS-6			
Type of mounting	In-line installation							With through-hole, With accessories				
Mounting position	optional											

Operating and environmental conditions (with push-in fitting)

Operating pressure	1 ... 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 ... 60°C										
Media temperature	0 ... 60°C										
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress 2 - Moderate corrosion stress										

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

Performance data – High vacuum (standard)

Nominal size, Laval nozzle	0.45 mm		0.7 mm		0.95 mm		1.4 mm		2 mm	3 mm
Max. vacuum	88%	92%	88%	92%	89%	93%	88%	92%	93%	
Operating pressure for max. vacuum	4.5 bar	4.9 bar	4.7 bar	4.4 bar	4.5 bar	3.5 bar	5 bar	3.5 bar	3.7 bar	
Max. suction flow rate against atmosphere	6.2 l/min	7.2 l/min	16 l/min	16.2 l/min	25 l/min	21.8 l/min	51.6 l/min	48.8 l/min	98 l/min	186 l/min
Operating pressure for max. suction flow rate	2.1 bar	3 bar	2.1 bar	3 bar	3.1 bar	3 bar	5.1 bar	4 bar	2 bar	3 bar
Air supply time at nominal operating pressure	4.8 s	3.63 s	1.9 s	1.5 s	1.1 s	0.96 s	0.5 s	0.43 s	0.2 s	0.1 s
Sound pressure level at nominal operating pressure	53 dB(A)	56 dB(A) 62 dB(A)	64 dB(A)	65 dB(A) 66 dB(A)	71 dB(A) 74 dB(A)	70 dB(A) 71 dB(A)	69 dB(A)		63 dB(A)	78 dB(A)

Datasheet

Performance data – High vacuum (in-line)

Nominal size, Laval nozzle	0.45 mm		0.7 mm		0.95 mm
Max. vacuum	86%	93%	86%	93%	86%
Operating pressure for max. vacuum	6 bar	4.3 bar	5.8 bar	4.3 bar	5.8 bar
Max. suction flow rate against atmosphere	6.1 l/min	7.2 l/min	13.5 l/min	16.6 l/min	28 l/min
Operating pressure for max. suction flow rate	6.3 bar	2 bar	7 bar	2 bar	5 bar
Air supply time at nominal operating pressure	4.7 s	4.1 s	2 ... 2.1 s	1.69 s	0.96 s
Sound pressure level at nominal operating pressure	53 dB(A)	66 dB(A)	59 dB(A)	75 dB(A)	–

Performance data – High suction volume flow (standard)

Nominal size, Laval nozzle	0.45 mm		0.7 mm		0.95 mm			1.4 mm		2 mm	3 mm	
Max. suction flow rate against atmosphere	13.6 l/min	15.7 l/min	30.9 l/min	38.8 l/min	40.5 l/min	41.5 l/min	62.7 l/min	90 l/min	92.6 l/min	188 l/min	339 l/min	
Operating pressure for max. suction flow rate	5 bar		4 bar	6.2 bar	5 bar			4 bar	8 bar	5 bar	3 bar	6 bar
Air supply time at nominal operating pressure	1.93 s	1.7 s	0.79 s	0.5 s	0.62 s	–	0.46 s	0.25 s	0.28 s	0.15 s	0.1 s	
Sound pressure level at nominal operating pressure	52 ... 54 dB(A)	53 dB(A)	63 ... 64 dB(A)	66 dB(A)	72 dB(A)	66 dB(A)	72 ... 73 dB(A)	77 dB(A)	69 dB(A)	60 dB(A)	70 dB(A)	

Performance data – High suction rate (in-line)

Nominal size, Laval nozzle	0.45 mm			0.7 mm			
Max. suction flow rate against atmosphere	12 l/min			13.3 l/min			32.6 l/min
Operating pressure for max. suction flow rate	6 bar			5 bar			4 bar
Air supply time at nominal operating pressure	1.57 s			2.24 s			0.89 s
Sound pressure level at nominal operating pressure	48 dB(A)			68 dB(A)			78 dB(A)

Materials

Integrated function	Ejector pulse valve, pneumatic	Ejector pulse valve, pneumatic Open silencer	Pressure sensor Open silencer	Open silencer
Material housing	PA-reinforced POM-reinforced		POM-reinforced	
Material silencer	–	Wrought aluminium alloy PE POM PU foam	PE	Die-cast aluminium Wrought aluminium alloy PE POM PU foam
Material connecting thread	Anodised wrought aluminium alloy		–	Wrought aluminium alloy Anodised wrought aluminium alloy Nickel-plated brass POM
Material fitting	Brass, Nickel-plated			
Material transmitter nozzle	Wrought aluminium alloy			
Material receiver nozzle	POM			
Material seals	NBR			
Note on materials	RoHS-compliant		–	RoHS-compliant
LABS (PWIS) conformity ¹⁾	VDMA24364-B1/B2-L	VDMA24364-B1/B2-L VDMA24364 zone III	VDMA24364-B1/B2-L	VDMA24364-B1/B2-L VDMA24364 zone III

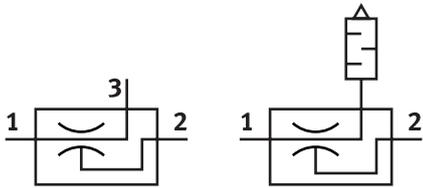
1) RO2: VDMA24364 zone III

Datasheet

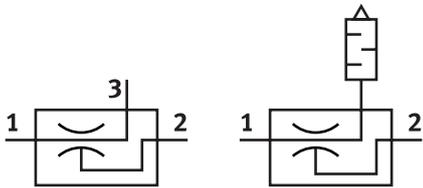
Additional material specifications – products for battery production (F1A)

Suitability for the production of Li-ion batteries	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)
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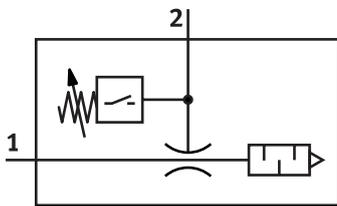
Function - Standard



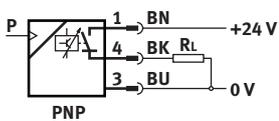
Function - Inline



Function - VN-P (with integrated vacuum switch)



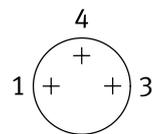
Electrical outputs - VN-P (with integrated vacuum switch)



Plug M8

Note: The specified wire colours apply when using socket outlet cables NEBA-M8, 3-pin

Pin assignments - VN-P (with integrated vacuum switch)



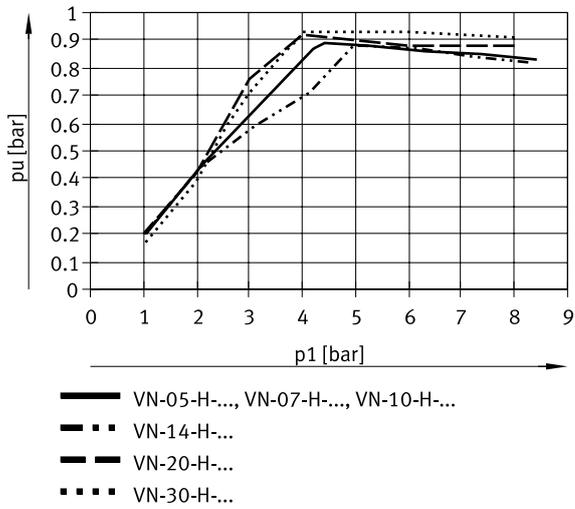
1 = +24 V

3 = 0 V

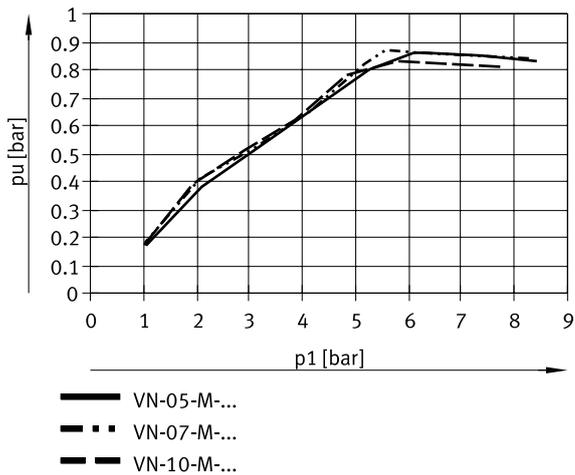
4 = Output A

Datasheet

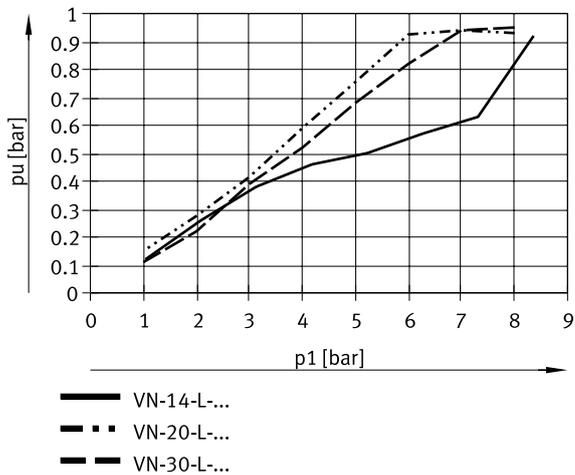
Vacuum p_u as a function of operating pressure p_1 – high vacuum (VN-05/07/10/14/20/30-H)



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

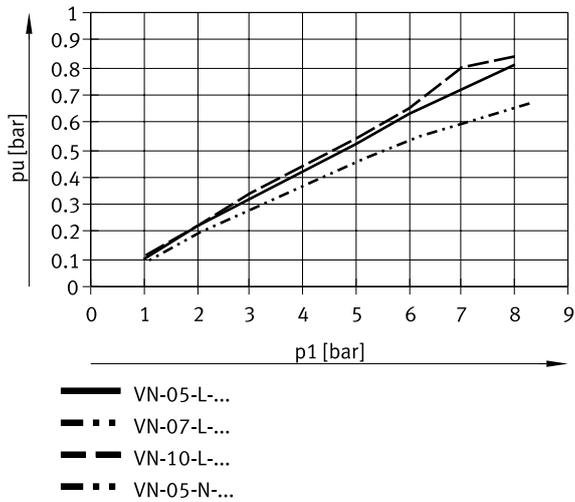


Vacuum p_u as a function of operating pressure p_1 – high suction rate (VN-14/20/30-L)

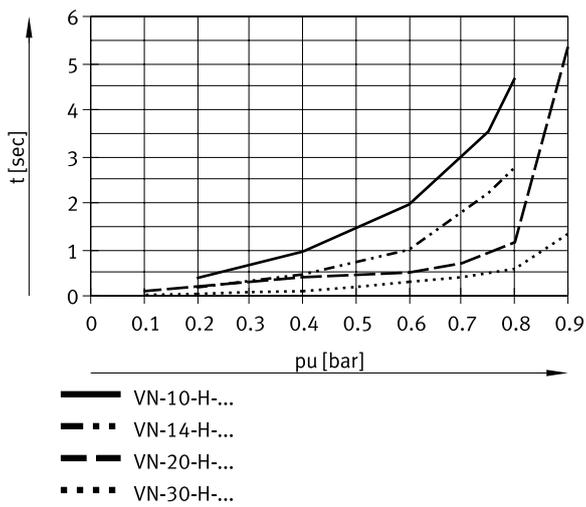


Datasheet

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

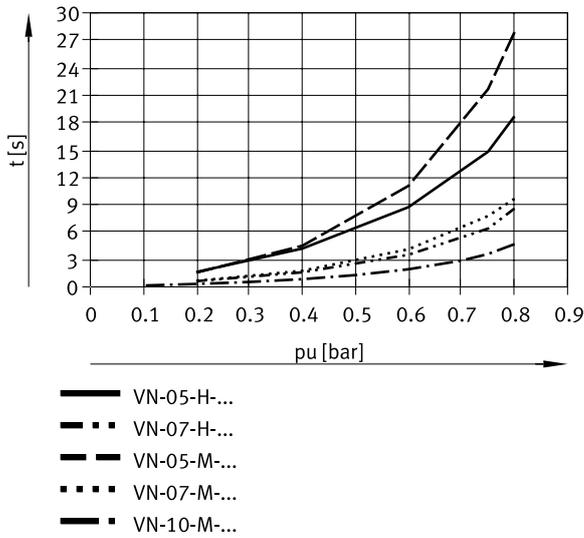


Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum (VN-10/14/20/30-H)

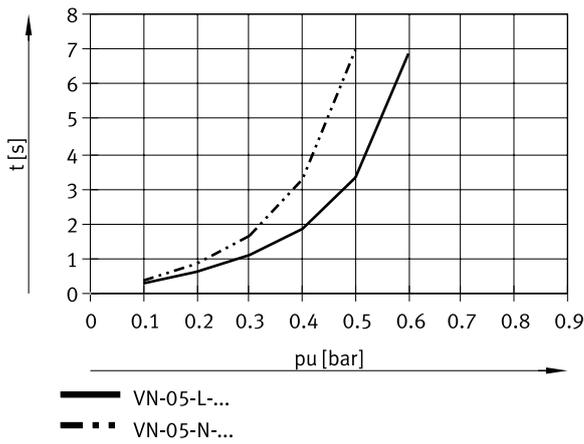


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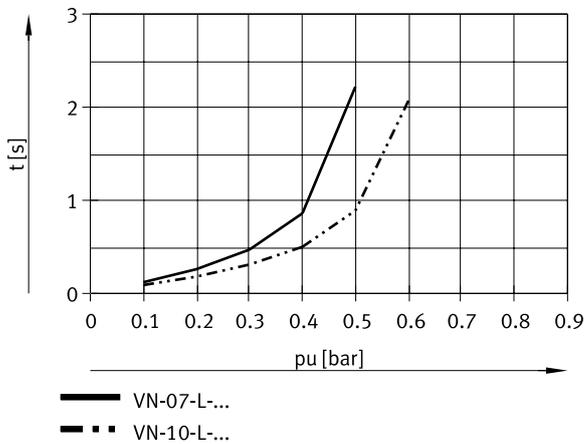
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum (VN-05/07-H; VN-05/07/10-M)



Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (VN-05-L/N)

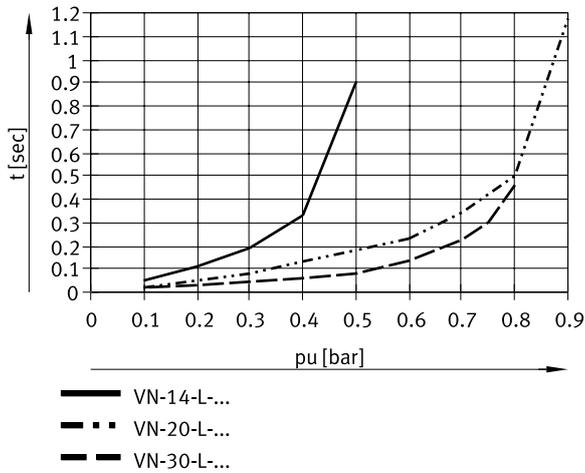


Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (VN-07/10-L)

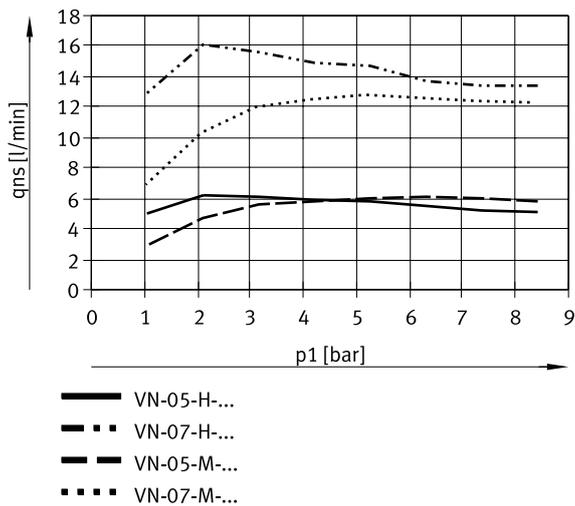


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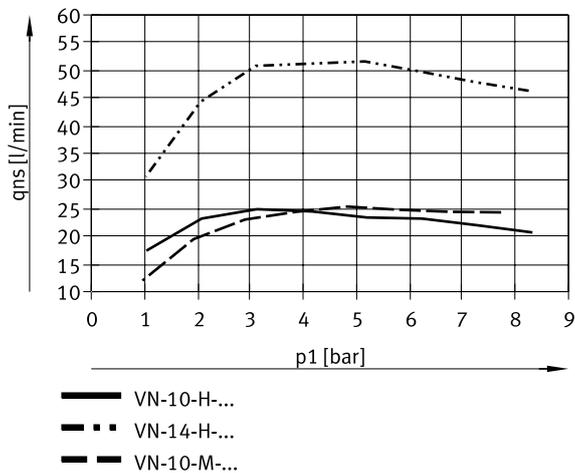
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (VN-14/20/30-L)



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

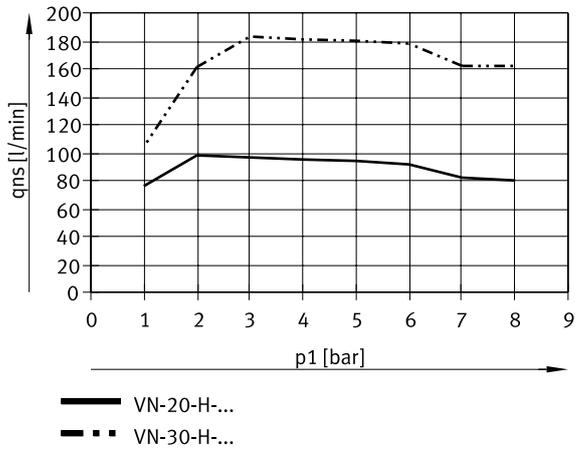


Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (VN-10/14-H; VN-10-M)

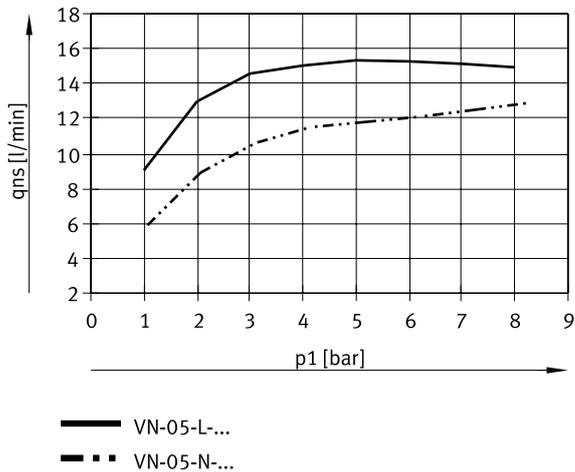


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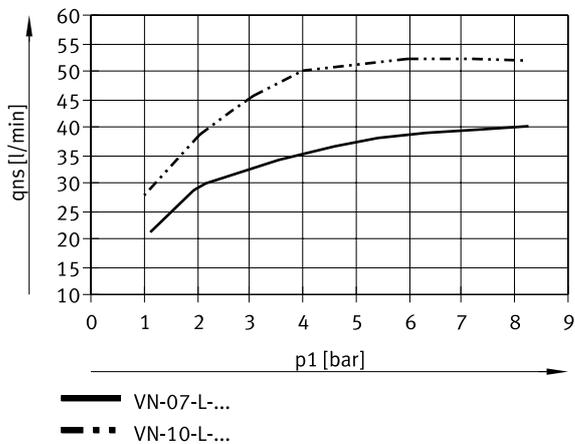
Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (VN-20/30-H)



Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (VN-05-L/N)

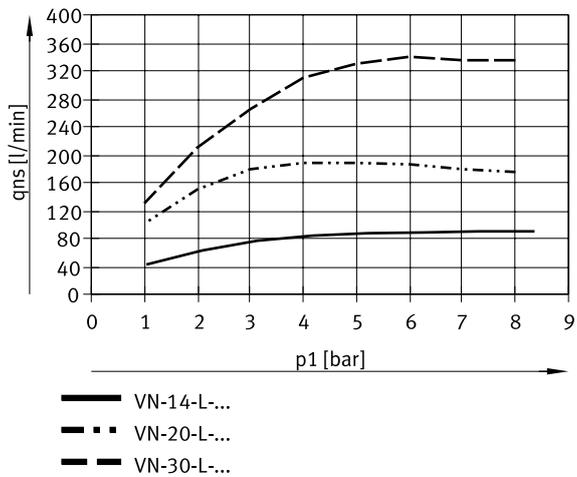


Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (VN-07/10-L)

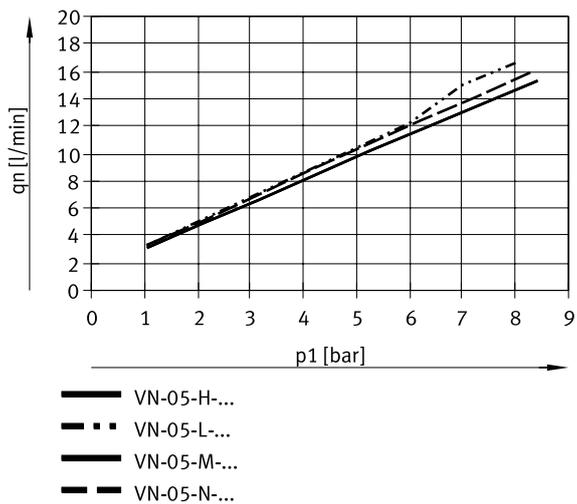


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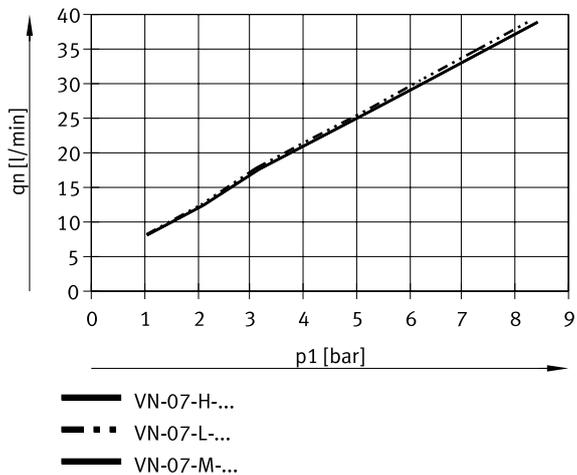
Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (VN-14/20/30-L)



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

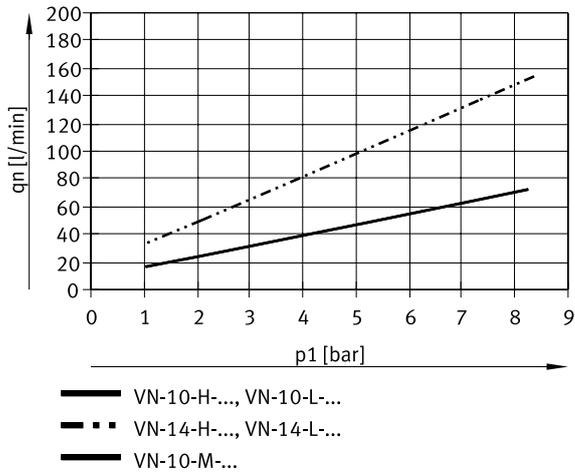


Air consumption q_n as a function of operating pressure p_1 – high vacuum / high suction rate (VN-07-H/L/M)

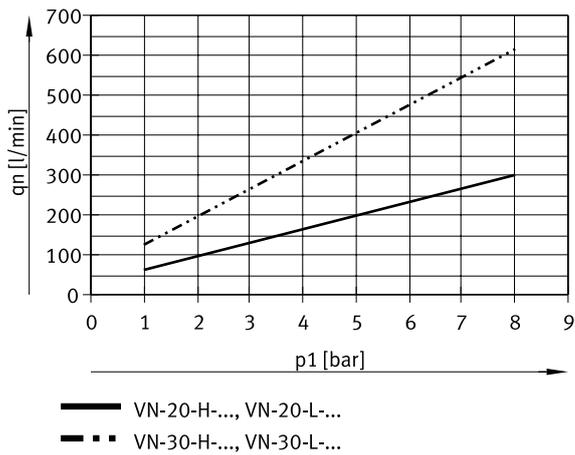


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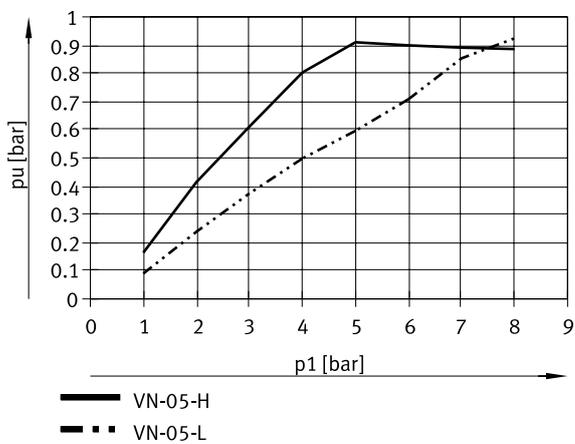
Air consumption q_n as a function of operating pressure p_1 – high vacuum / high suction rate (VN-10/14-H/L; VN-10-M)



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

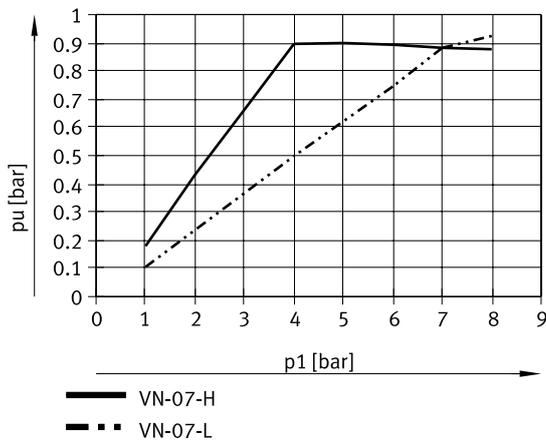


Vacuum p_u as a function of operating pressure p_1 – high vacuum/high suction rate (VN-05-H/L-...-P)

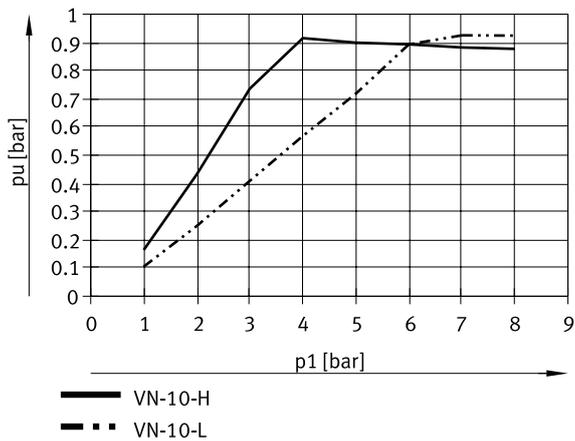


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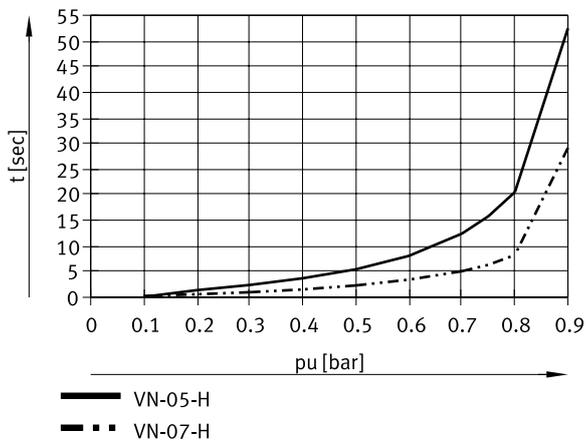
Vacuum p_u as a function of operating pressure p_1 – high vacuum/high suction rate (VN-07-H/L-...-P)



Vacuum p_u as a function of operating pressure p_1 – high vacuum/high suction rate (VN-10-H/L-...-P)

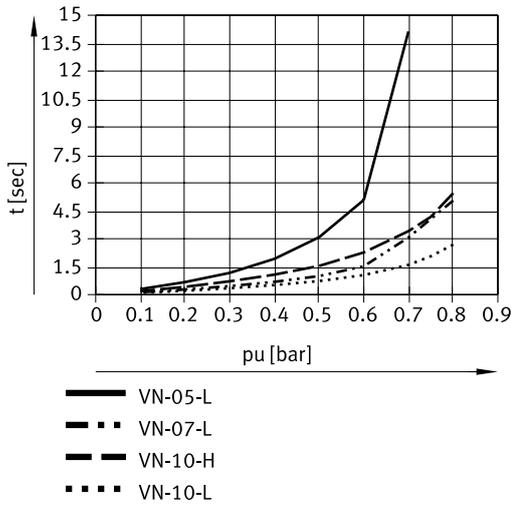


Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum/high suction rate (VN-05/07-H-...-P)

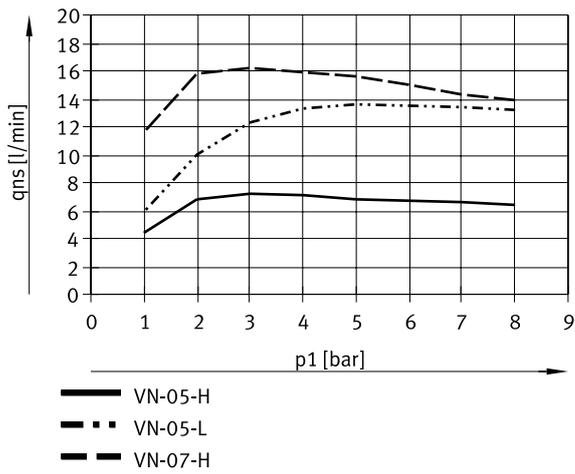


Datasheet

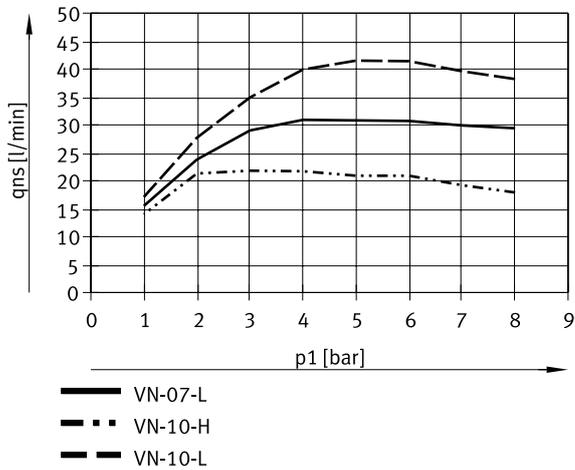
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum/high suction rate (VN-05/07/10-L-...-P; VN-10-H-...-P)



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

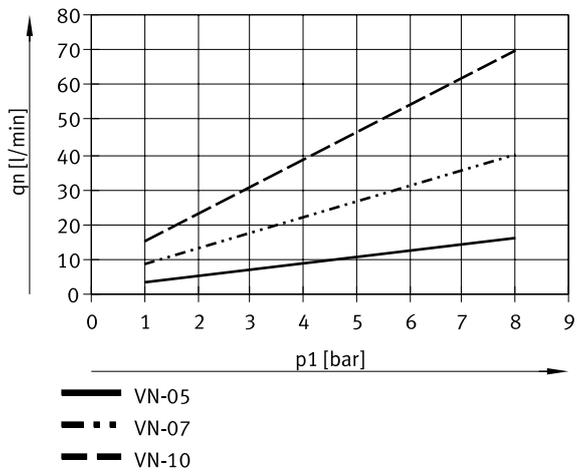


Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum/high suction rate (VN-07/10-L-...-P; VN-10-H-...-P)



Datasheet

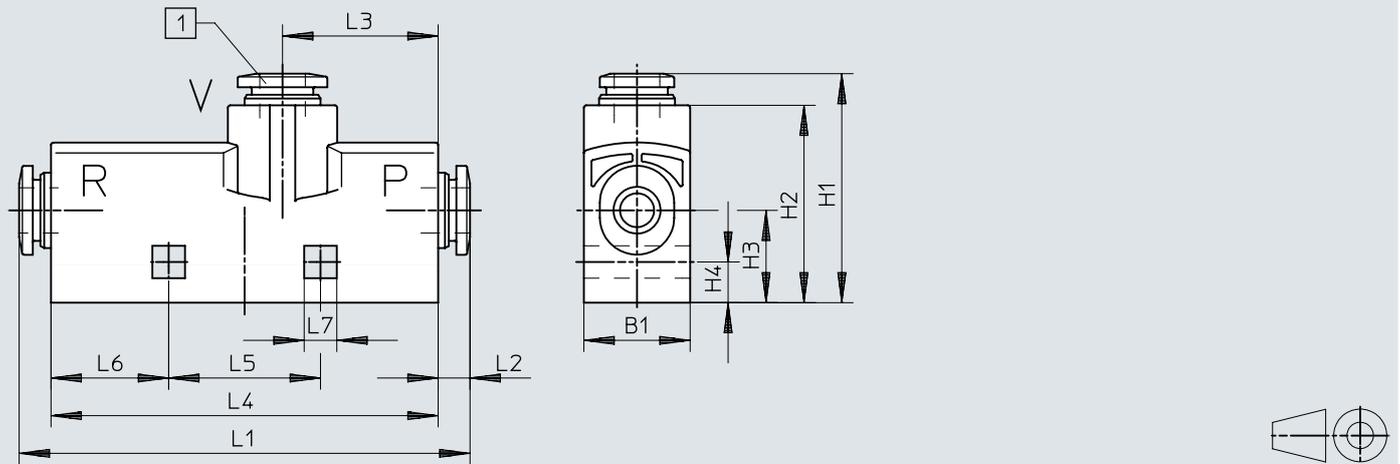
Air consumption q_n as a function of operating pressure p_1 – high vacuum / high suction rate (VN-05/07/10-...-P)



Dimensions

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

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[1] Push-in fitting

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PQ1-VQ1-RQ1	10	QS-4	QS-4	QS-4	31,3	27,7	12,5	5,4
VN-...-T3-PQ2-VQ2-RQ2	14	QS-6	QS-6	QS-6	30,4	26,2		
VN-...-T4-PQ2-VQ3-RQ3	18		QS-8	QS-8	35,9	30,7		

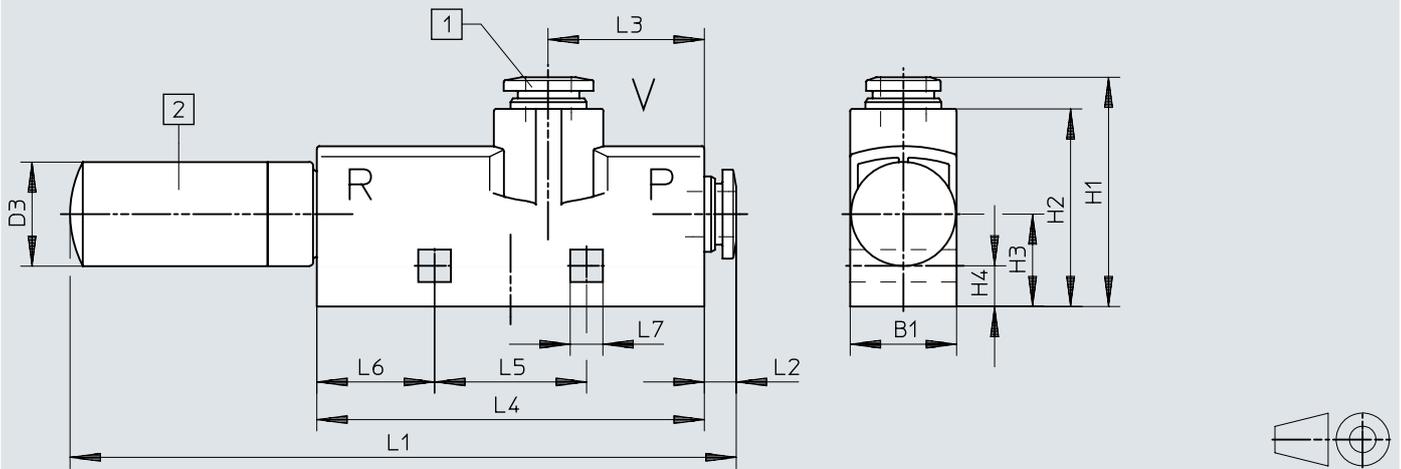
	L1	L2	L3	L4	L5	L6	L7
VN-...-T2-PQ1-VQ1-RQ1	58,2	3,6	24,3	51	20	15,5	4,3
VN-...-T3-PQ2-VQ2-RQ2	59,4	4,2	25,5				
VN-...-T4-PQ2-VQ3-RQ3	63,8						

1) Connections

Dimensions

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

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- [1] Push-in fitting
- [2] Silencer

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PQ1-VQ1-RO1	10	QS-4	QS-4	9,8 ²⁾	31,3	27,7	12,5	5,4
VN-...-T3-PQ2-VQ2-RO1	14	QS-6	QS-6	13,8 ²⁾	30,4	26,2		
VN-...-T4-PQ2-VQ3-RO2	18		QS-8	17,8 ²⁾	35,9	30,7		

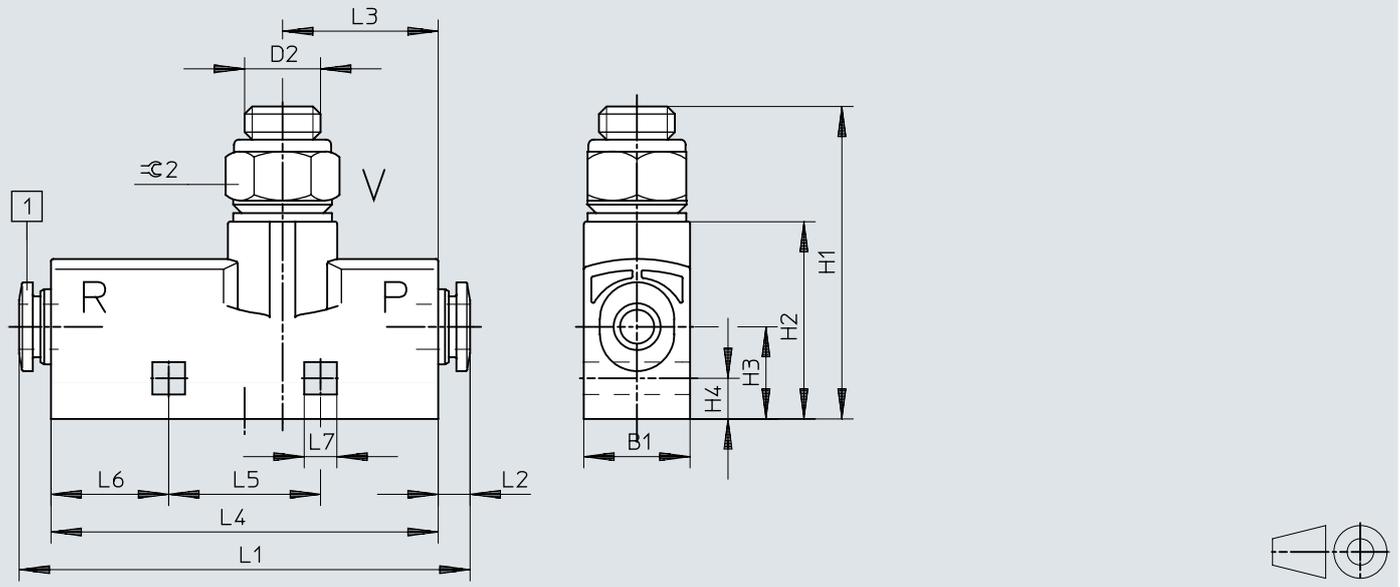
	L1	L2	L3	L4	L5	L6	L7
VN-...-T2-PQ1-VQ1-RO1	86,8	3,6	24,3	51	20	15,5	4,3
VN-...-T3-PQ2-VQ2-RO1	97,6	4,2	25,5				
VN-...-T4-PQ2-VQ3-RO2	112,4						

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-...-T...-PQ...-VA...-RQ...

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[1] Push-in fitting

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T3-PQ2-VA4-RQ2	14	QS-6	G1/8	QS-6	41,5	26,2	12,5	5,4
VN-...-T4-PQ2-VA5-RQ3	18		G1/4	QS-8	50,5	30,7		

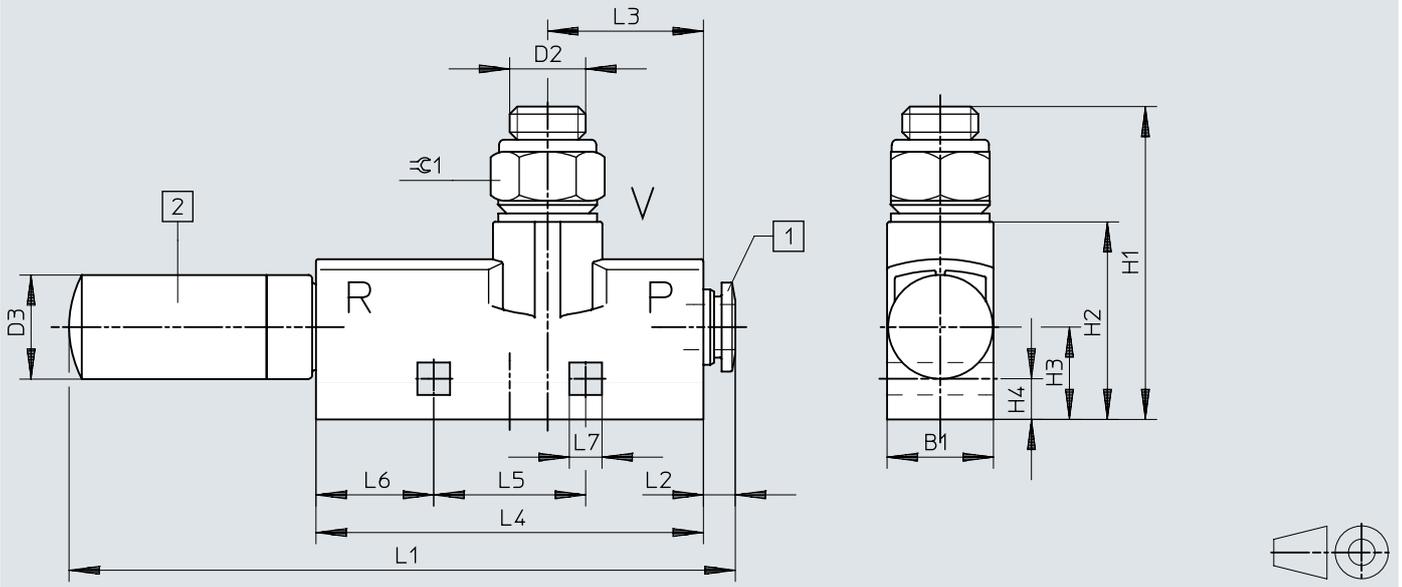
	L1	L2	L3	L4	L5	L6	L7	∅2
VN-...-T3-PQ2-VA4-RQ2	59,4	4,2	25,5	51	20	15,5	4,3	13
VN-...-T4-PQ2-VA5-RQ3	63,8							17

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-...-T...-PQ...-VA...-RO...

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- [1] Push-in fitting
- [2] Silencer

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T3-PQ2-VA4-RO1	14	QS-6	G1/8	13,8 ²⁾	41,5	26,2	12,5	5,4
VN-...-T4-PQ2-VA5-RO2	18		G1/4	17,8 ²⁾	50,5	30,7		

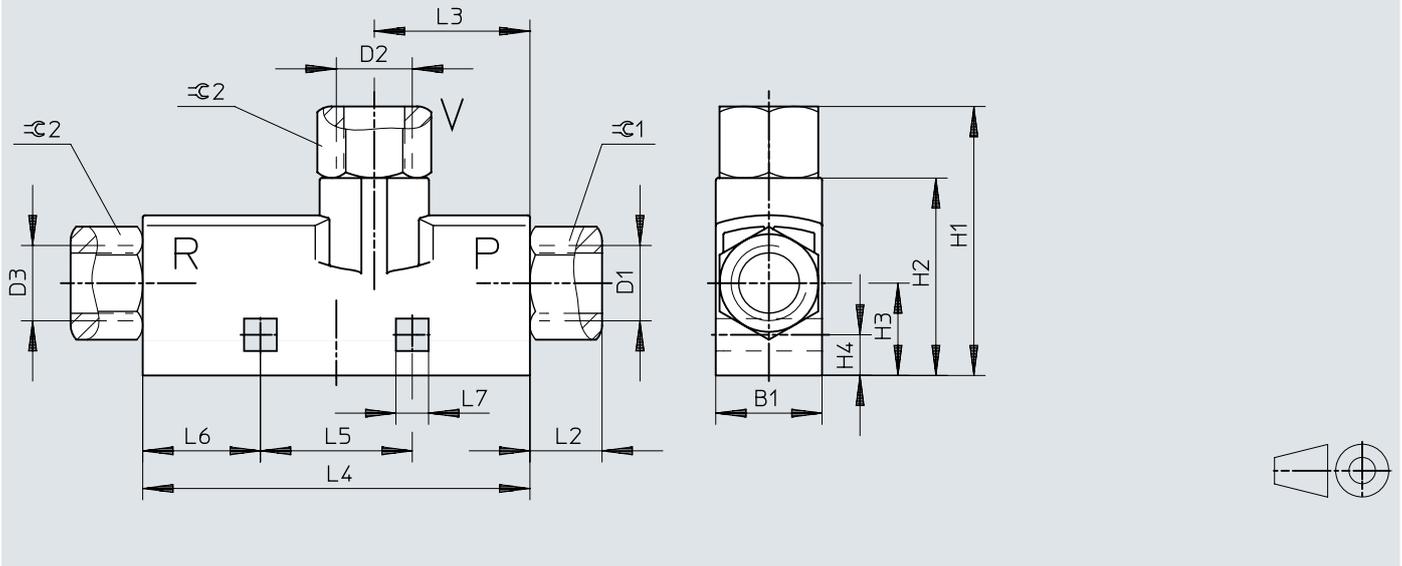
	L1	L2	L3	L4	L5	L6	L7	⌀2
VN-...-T3-PQ2-VA4-RO1	97,6	4,2	25,5	51	20	15,5	4,3	13
VN-...-T4-PQ2-VA5-RO2	125,5							17

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-...-T...-PI...-VI...-RI...

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	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PI2-VI2-RI2	10	M5	M5	M5	32,7	27,7	12,5	5,4
VN-...-T3-PI4-VI4-RI4	14	G1/8	G1/8	G1/8	35,7	26,2		
VN-...-T4-PI4-VI5-RI5	18		G1/4	G1/4	48,2	30,7		

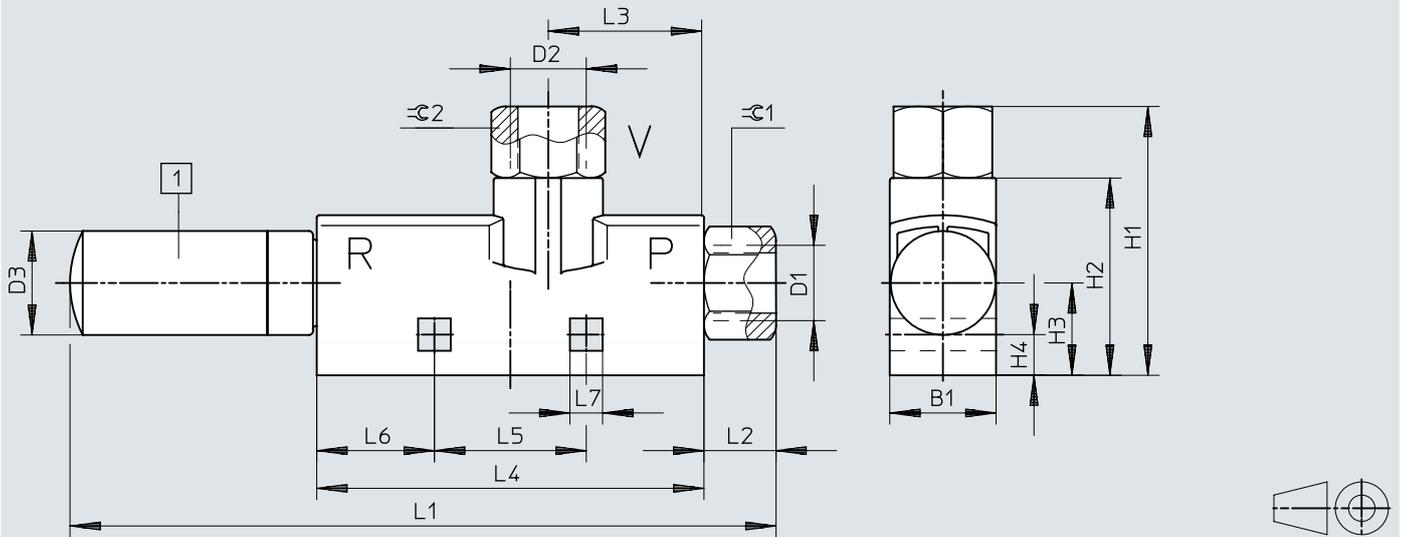
	L1	L2	L3	L4	L5	L6	L7	=C1	=C2
VN-...-T2-PI2-VI2-RI2	61	5	24,3	51	20	15,5	4,3	9	9
VN-...-T3-PI4-VI4-RI4	70	9,5	25,5					13	13
VN-...-T4-PI4-VI5-RI5	81,4							13	17

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-...-T...-PI...-VI...-RO...

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[1] Silencer

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PI2-VI2-RO1	10	M5	M5	9,8 ²⁾	32,7	27,7	12,5	5,4
VN-...-T3-PI4-VI4-RO1	14	G1/8	G1/8	13,8 ²⁾	35,7	26,2		
VN-...-T4-PI4-VI5-RO2	18		G1/4	17,8 ²⁾	48,2	30,7		

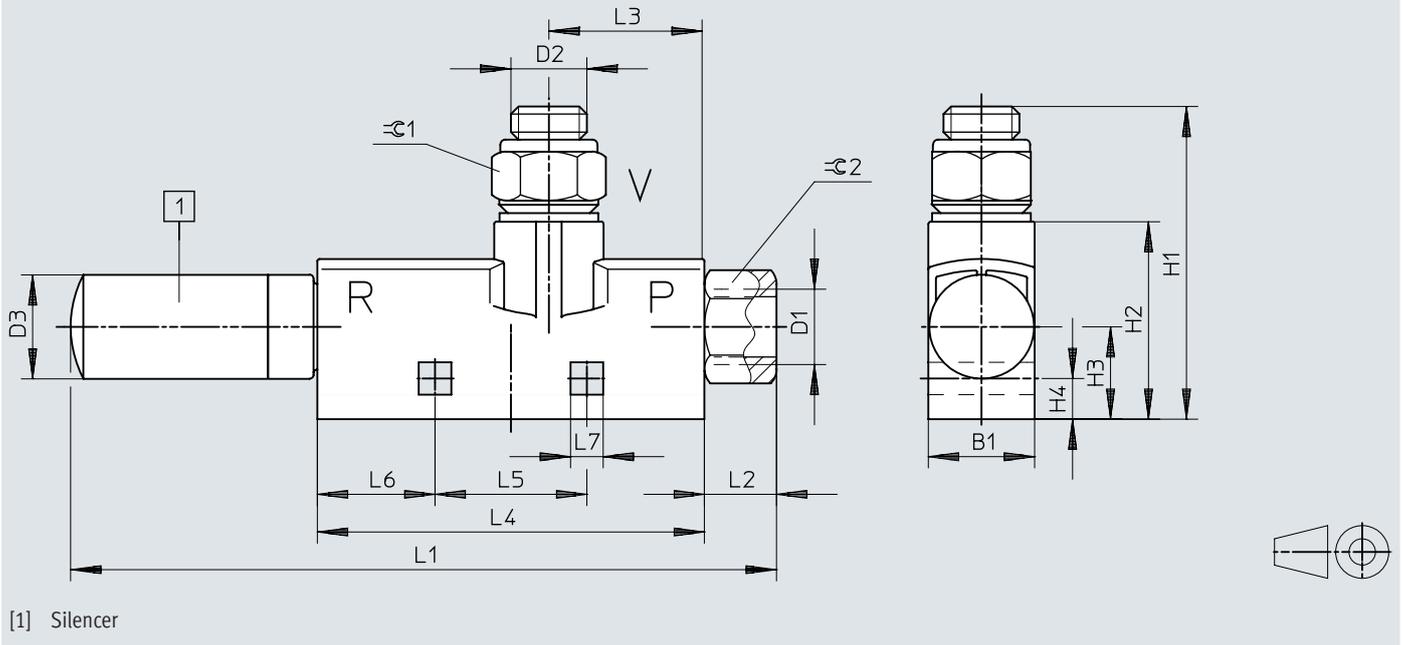
	L1	L2	L3	L4	L5	L6	L7	≡C1	≡C2
VN-...-T2-PI2-VI2-RO1	88,2	5	24,3	51	20	15,5	4,3	9	9
VN-...-T3-PI4-VI4-RO1	102,9	9,5	25,5					13	13
VN-...-T4-PI4-VI5-RO2	128,8			17	17				

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-10

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[1] Silencer

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-10-L-T3-PI4-VA4-RO1	14	G1/8	G1/8	13,8 ²⁾	41,5	26,2	12,5	5,4

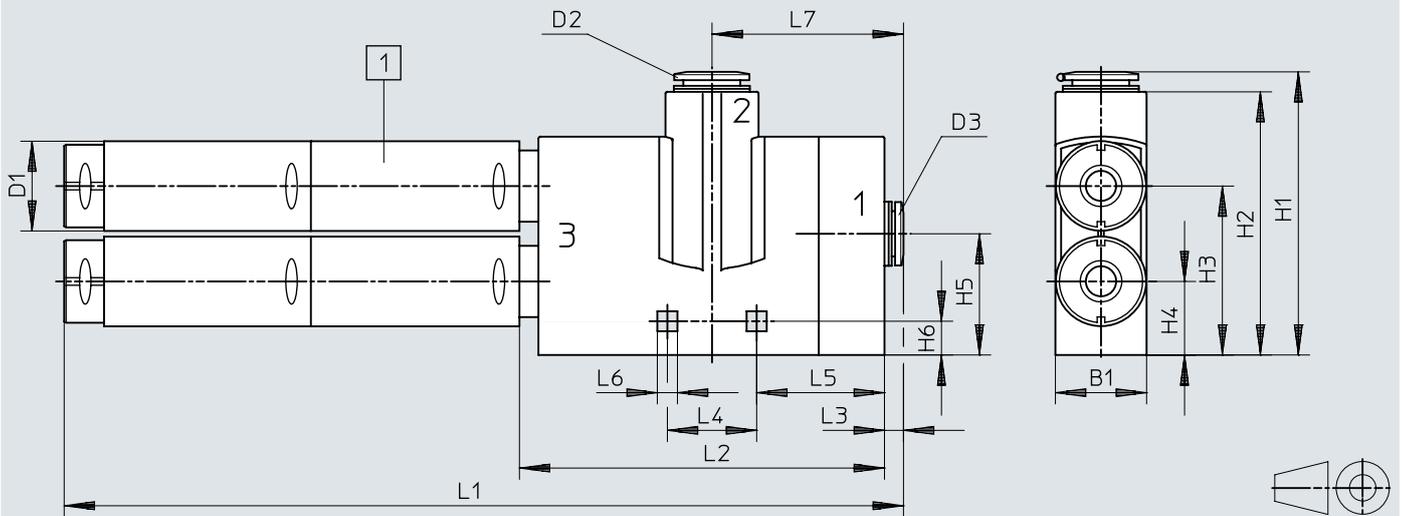
	L1	L2	L3	L4	L5	L6	L7	⌀C1	⌀C2
VN-10-L-T3-PI4-VA4-RO1	103	9,5	25,5	51	20	15,5	4,3	13	13

1) Connections

Dimensions

Dimensions – T-shape/standard, VN-20/30, VN-...-T6-PQ4-VQ5-RO2

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[1] Silencer

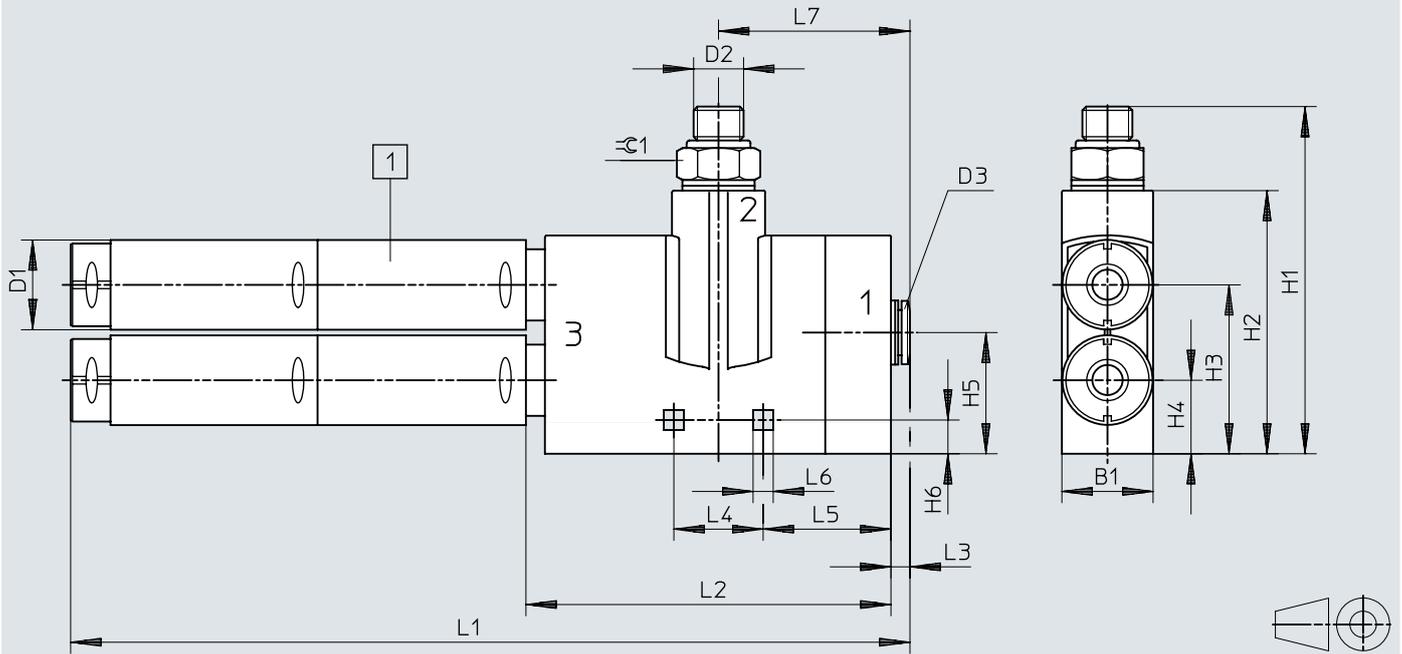
	B1	D1 ∅	D2	D3	H1	H2	H3	H4
VN-...-T6-PQ4-VQ5-RO2	24	23,8	QS12	QS10	75,1	69,8	44,8	19,5

	H5	H6	L1	L2	L3	L4	L5	L6	L7
VN-...-T6-PQ4-VQ5-RO2	32,2	9	221	96,1	5	23,5	33,7	5,3	50,4

Dimensions

Dimensions – T-shape/standard, VN-20/30, VN-...-T6-PQ4-VA5-RO2

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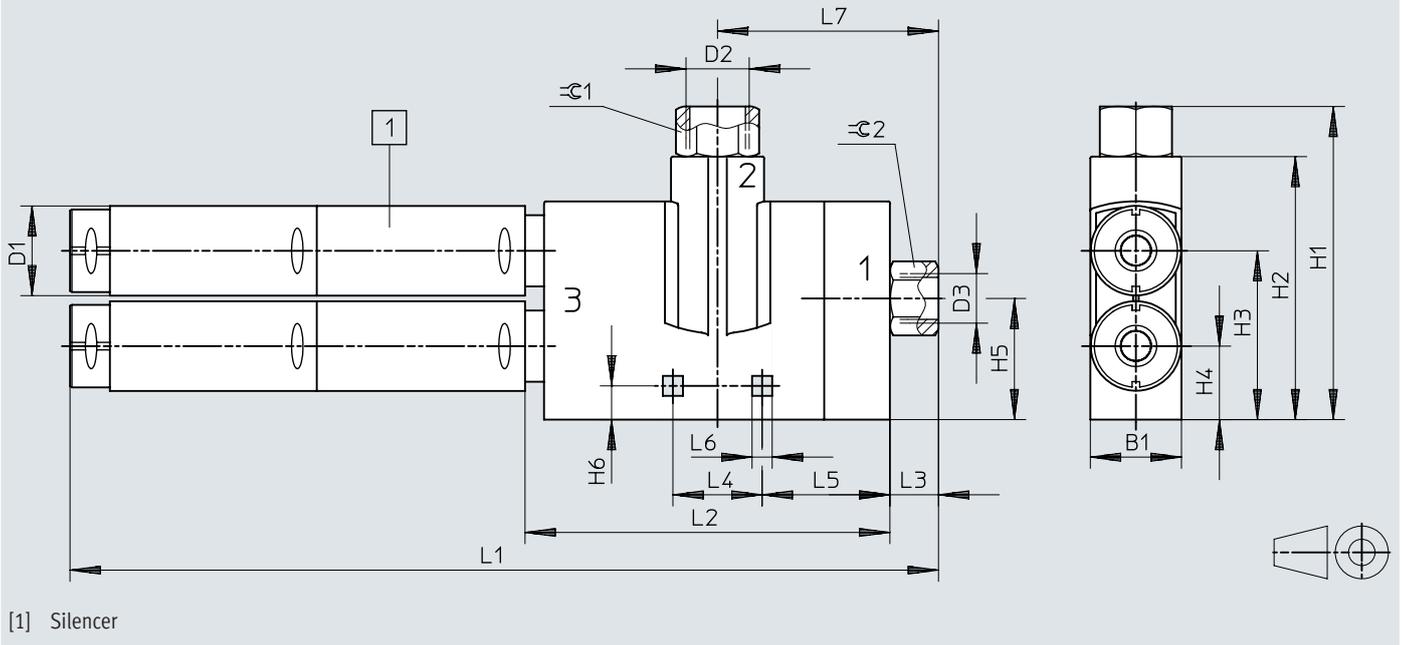
[1] Silencer

	B1	D1 ∅	D2	D3	H1	H2	H3	H4	H5
VN-...-T6-PQ4-VA5-RO2	24	23,8	G1/4	QS10	92,1	69,8	44,8	19,5	32,2
	H6	L1	L2	L3	L4	L5	L6	L7	≙C1
VN-...-T6-PQ4-VA5-RO2	9	221	96,1	5	23,5	33,7	5,3	50,4	19

Dimensions

Dimensions – T-shape/standard, VN-20/30, VN-...-T6-PI5-VI6-RO2

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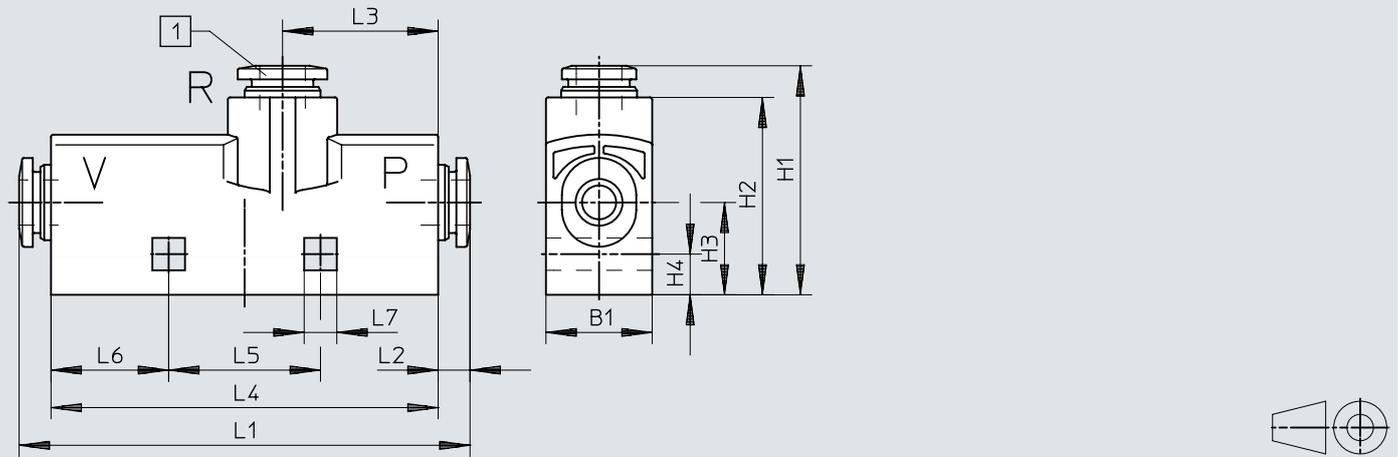
	B1	D1 ∅	D2	D3	H1	H2	H3	H4	H5	H6
VN-...-T6-PI5-VI6-RO2	24	23,8	G3/8	G1/4	83,1	69,8	44,8	19,5	32,2	9

	L1	L2	L3	L4	L5	L6	L7	≈C1	≈C2
VN-...-T6-PI5-VI6-RO2	228,8	96,1	12,8	23,5	33,7	5,3	50,4	19	17

Dimensions

Dimensions – Shape/in-line, VN-05/07, VN-...-T...-PQ...-VQ...-RQ...

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[1] Push-in fitting

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PQ1-VQ1-RQ1	10	QS-4	QS-4	QS-4	31,3	27,7	12,5	5,4
VN-...-T3-PQ2-VQ2-RQ2	14	QS-6	QS-6	QS-6	30,4	26,2		

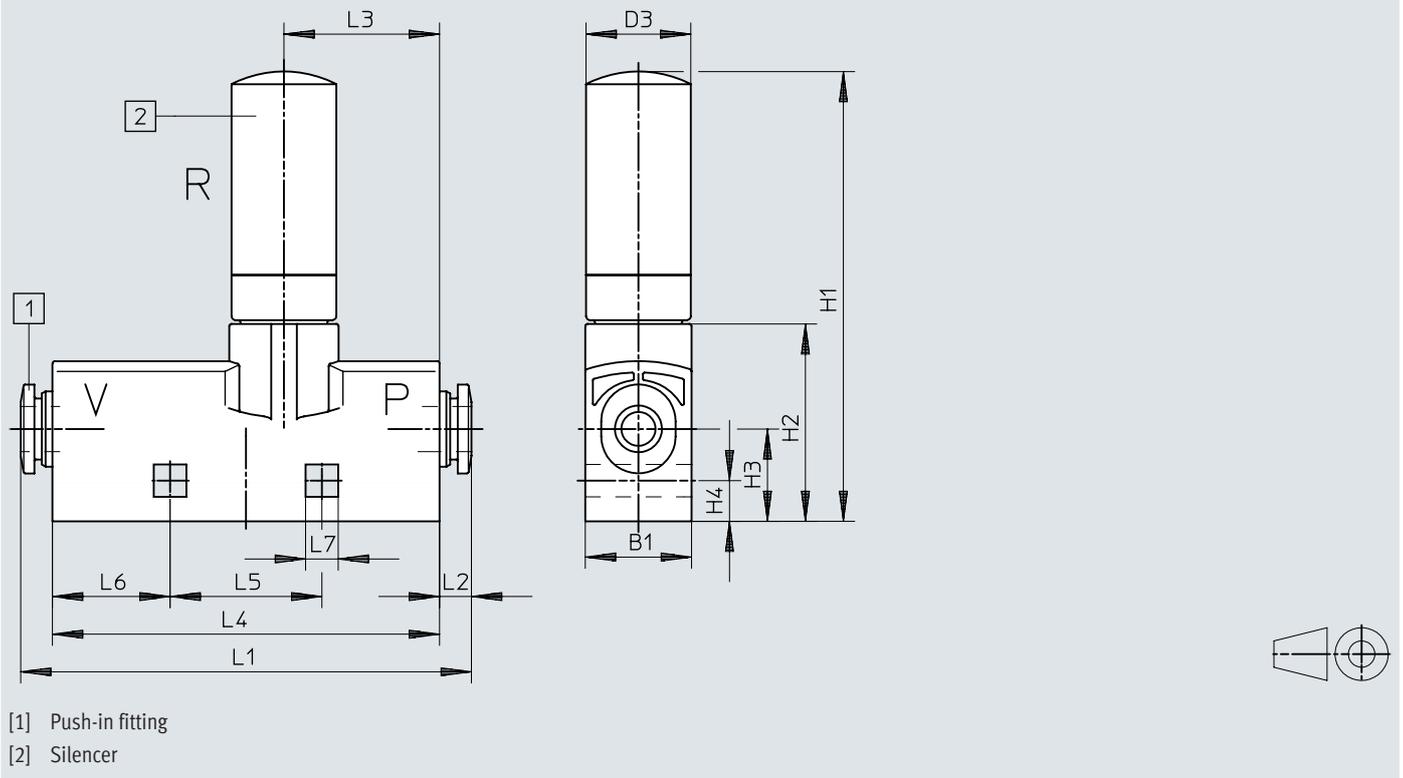
	L1	L2	L3	L4	L5	L6	L7
VN-...-T2-PQ1-VQ1-RQ1	58,2	3,6	24,3	51	20	15,5	4,3
VN-...-T3-PQ2-VQ2-RQ2	59,4	4,2	25,5				

1) Connections

Dimensions

Dimensions – T-shape/inline, VN-05/07, VN-...-T...-PQ...-VQ...-R01

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- [1] Push-in fitting
- [2] Silencer

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PQ1-VQ1-R01	10	QS-4	QS-4	9,8 ²⁾	59,9	27,7	12,5	5,4
VN-...-T3-PQ2-VQ2-R01	14	QS-6	QS-6	13,8 ²⁾	68,6	26,2		

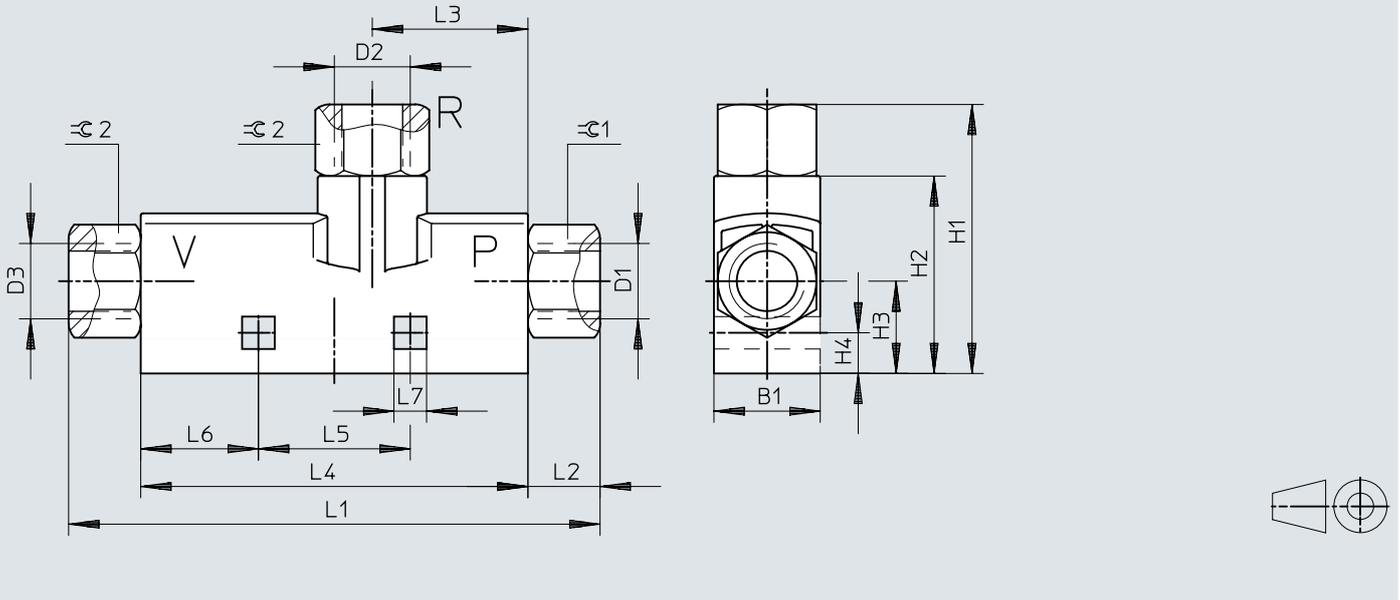
	L1	L2	L3	L4	L5	L6	L7
VN-...-T2-PQ1-VQ1-R01	58,2	3,6	24,3	51	20	15,5	4,3
VN-...-T3-PQ2-VQ2-R01	59,4	4,2	25,5				

1) Connections

Dimensions

Dimensions – T-shape/in-line, VN-05/07, VN-...-T...-PI...-VI...-RI...

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	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PI2-VI2-RI2	10	M5	M5	M5	32,7	27,7	12,5	5,4
VN-...-T3-PI4-VI4-RI4	14	G1/8	G1/8	G1/8	35,7	26,2		

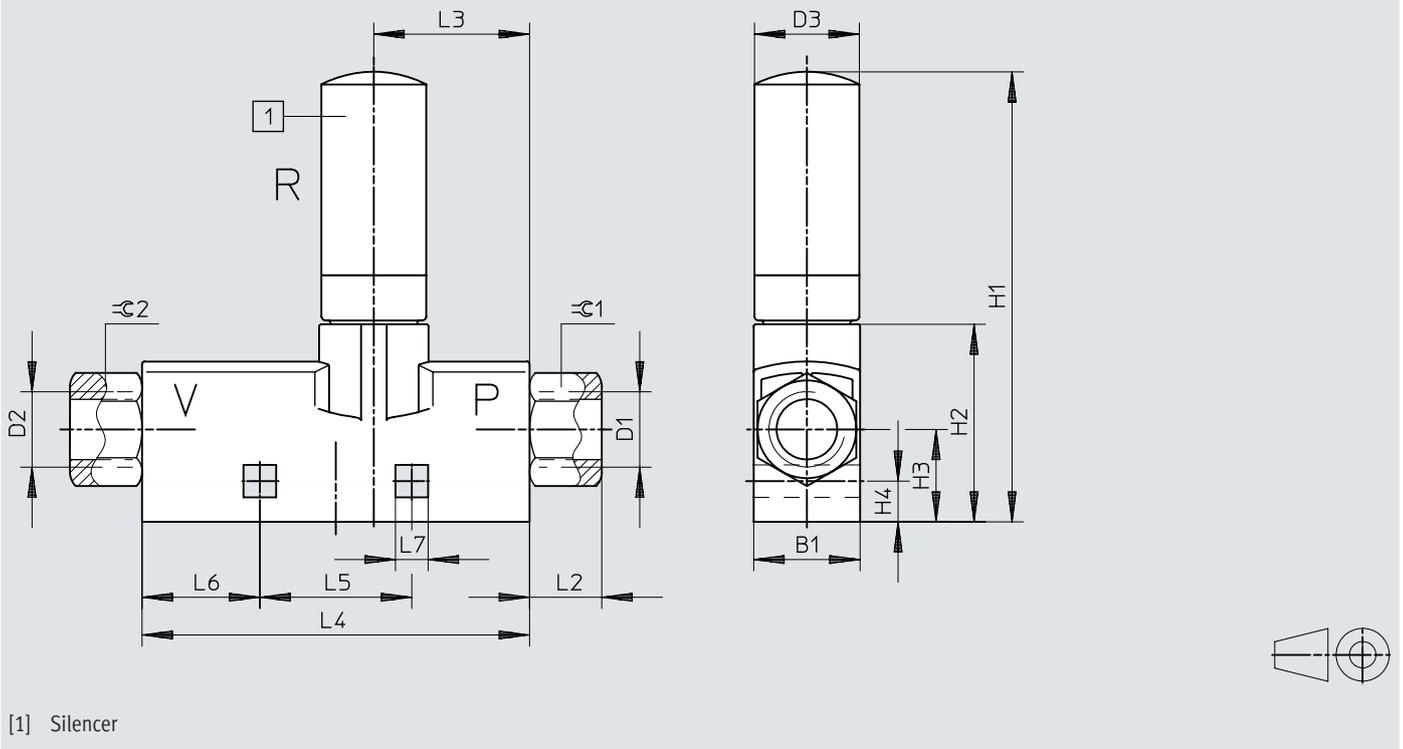
	L1	L2	L3	L4	L5	L6	L7	≅1	≅2
VN-...-T2-PI2-VI2-RI2	61	5	24,3	51	20	15,5	4,3	9	9
VN-...-T3-PI4-VI4-RI4	70	9,5	25,5					13	13

1) Connections

Dimensions

Dimensions – T-shape/inline, VN-05/07, VN-...-T...-PI...-VI...-R01

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[1] Silencer

	B1	1)			H1	H2	H3	H4
		P D1	V D2	R D3				
VN-...-T2-PI2-VI2-R01	10	M5	M5	9,8 ²⁾	59,9	27,7	12,5	5,4
VN-...-T3-PI4-VI4-R01	14	G1/8	G1/8	13,8 ²⁾	68,6	26,2		

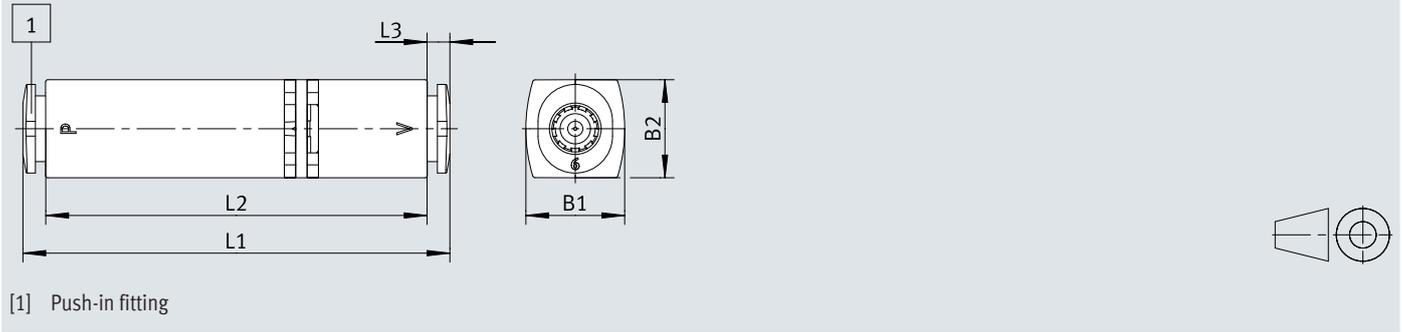
	L1	L2	L3	L4	L5	L6	L7	≙C1	≙C2
VN-...-T2-PI2-VI2-R01	61	5	24,3	51	20	15,5	4,3	9	9
VN-...-T3-PI4-VI4-R01	70	9,5	25,5					13	13

1) Connections

Dimensions

Dimensions – Straight shape/in-line, VN-05/07-...-I...-PQ...-VQ...

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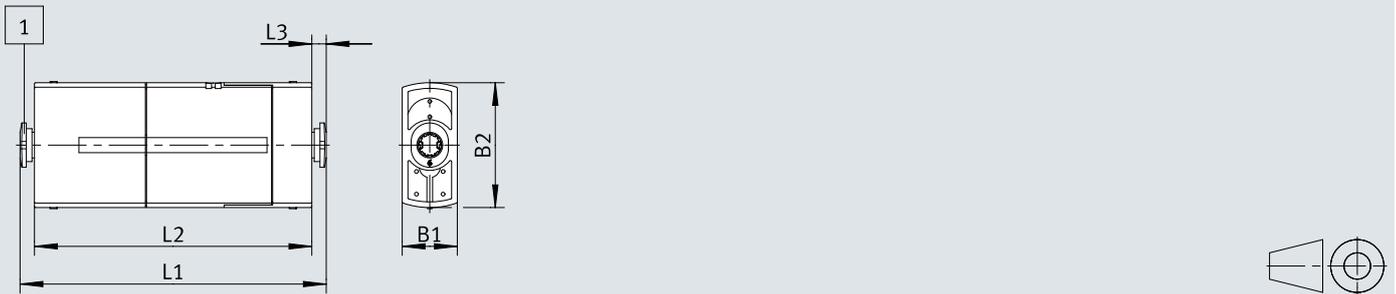
	1)		B1	B2	L1	L2	L3
	P	V					
VN-05-M-I3-PQ2-VQ2	BMS-TQ-6-B	BMS-TQ-6-B	13	13	56,2	50,3	3
VN-07-M-I3-PQ2-VQ2							
VN-05-N-I3-PQ2-VQ2							
VN-05-M-I2-PQ1-VQ2	BMS-TQ-4-B	BMS-TQ-4-B	10	10	55,4	50,2	2,6
VN-07-M-I2-PQ1-VQ2							

1) Connections

Dimensions

Dimensions – Straight design/inline, VN-...-I3-PQ2-VQ2(-A)

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[1] Push-in fitting

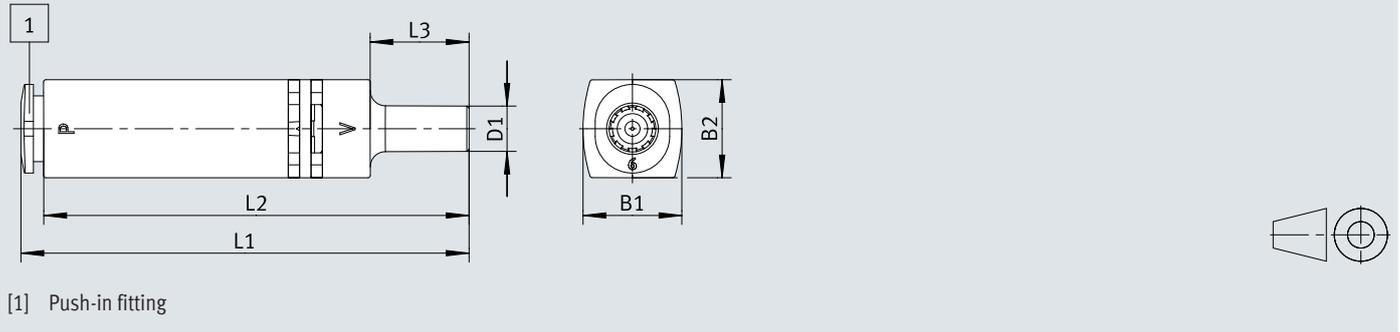
	1)		B1	B2	L1	L2	L3
	P	V					
VN-05-M-I3-PQ2-VQ2-A	BMS-TQ-6-B	BMS-TQ-6-B	14,5	33,1	80,6	73	3,8
VN-05-N-I3-PQ2-VQ2-A					96,6	89	
VN-07-M-I3-PQ2-VQ2-A							
VN-07-N-I3-PQ2-VQ2-A							
VN-10-M-I3-PQ2-VQ2	QS-6	QS-6	13	22	66,1	57,7	4,2

1) Connections

Dimensions

Dimensions – Straight shape/in-line, VN-05/07-...-I...-PQ...-VT...

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[1] Push-in fitting

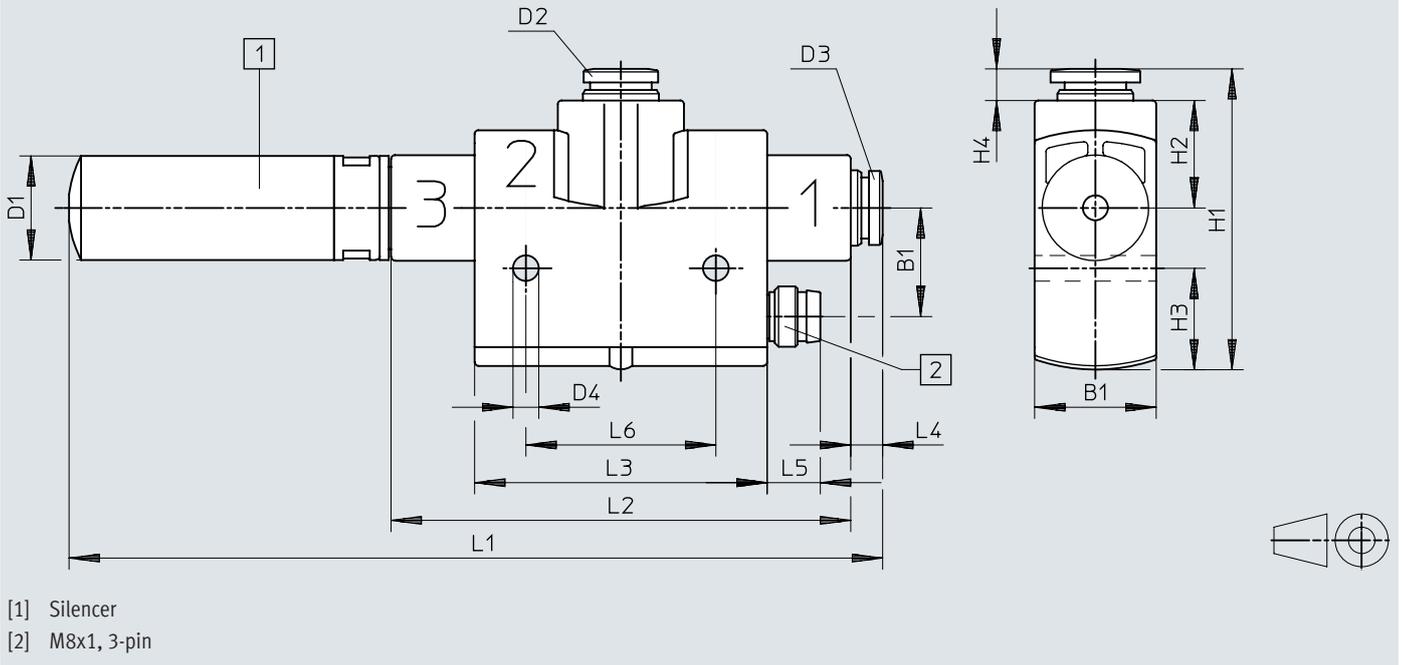
	1)		B1	B2	D1 ∅	L1	L2	L3
	P	V						
VN-05-M-I3-PQ2-VT2	BMS-TQ-6-B	-	13	13	6	59	56	13
VN-07-M-I3-PQ2-VT2								
VN-05-N-I3-PQ2-VT2								
VN-05-M-I2-PQ1-VT2	BMS-TQ-4-B	-	10	10	4	60,6	58	15
VN-07-M-I2-PQ1-VT2								

1) Connections

Dimensions

Dimensions – VN-P, with integrated vacuum switch

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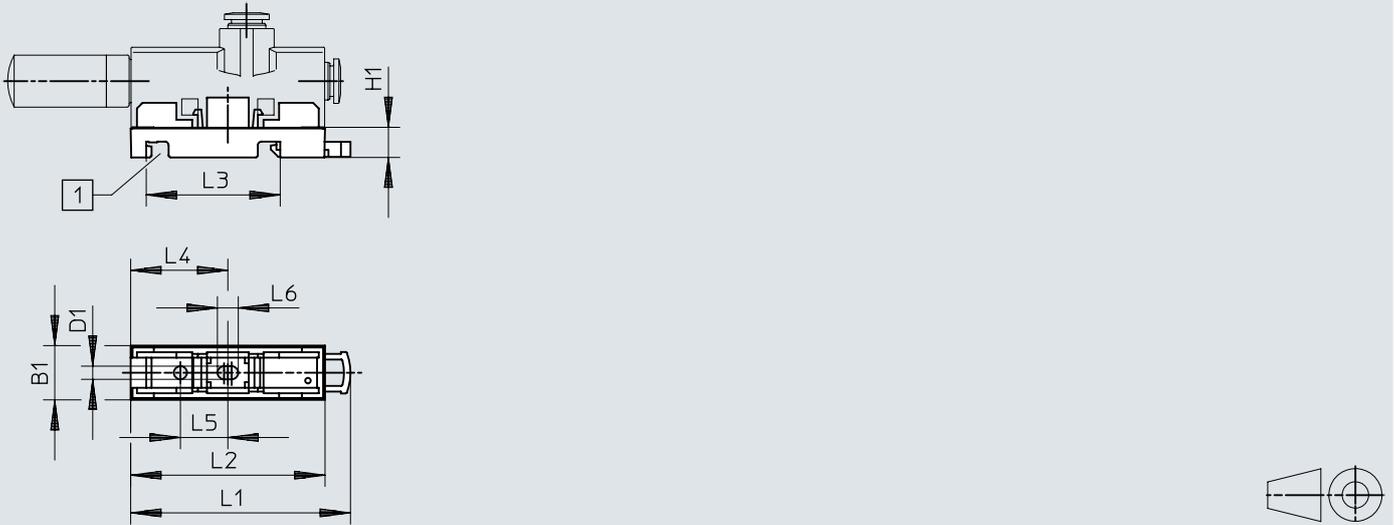


	B1	D1 ∅	D2	D3	D4 ∅	H1	H2	
VN-05	16	13,8	QS6	QS6	3,4	40	14,3	
VN-07			BMS-TQ-6-B	BMS-TQ-6-B		~39		
VN-10								
	H3	H4	L1	L2	L3	L4	L5	L6
VN-05	13,5	4,2	93,6	44,2	38,5	4,2	7	25
VN-07		2,9	~106	60,5		2,9		
VN-10								

Dimensions

Dimensions – Mounting plate VN-...-BP-NRH

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[1] Suitable for H-rail 35x7.5 according to DIN EN 50 022

	B1	D1	H1	L1	L2	L3	L4	L5
VN-T2-BP-NRH	10,4	3,5	8	56,5	51	25,5	12,5	5,5
VN-T3-BP-NRH	14,4	3,5	8	57,9	51,2	25,6	12,5	5,5
VN-T4-BP-NRH	18,4							
VN-T6-BP-NRH	24	4,3	7,3	98	91	45,5	32,5	6,3

Ordering data

Standard, high vacuum H										
Grid dimension ¹⁾	Design	Nominal size, Laval nozzle	Integrated function	Product weight	Part no.	Type				
10 mm	T-shape	0.45 mm	None	13 g	526104	VN-05-H-T2-PI2-VI2-R01				
					526102	VN-05-H-T2-PI2-VI2-RI2				
				15 g	193569	VN-05-H-T2-PQ1-VQ1-R01				
					526100	VN-05-H-T2-PQ1-VQ1-RQ1				
		0.7 mm		13 g	526105	VN-07-H-T2-PI2-VI2-R01				
					526103	VN-07-H-T2-PI2-VI2-RI2				
				15 g	526101	VN-07-H-T2-PQ1-VQ1-RQ1				
					193570	VN-07-H-T2-PQ1-VQ1-R01				
				14 mm	T-shape	0.45 mm	None	24 g	8187682	VN-05-H-T3-PQ2-VQ2-R01-F1A
									22 g	193478
24 g	193498	VN-05-H-T3-PI4-VI4-RI4								
	26 g	193488	VN-05-H-T3-PQ2-VQ2-R01							
193507		VN-05-H-T3-PI4-VI4-R01								
193516	VN-05-H-T3-PQ2-VA4-RQ2									
0.7 mm	Ejector pulse, pneumatic	49 g	537225			VN-05-H-T3-PI4-VI4-R01-A				
			532620			VN-05-H-T3-PQ2-VQ2-R01-A				
	None	24 g	8187683			VN-07-H-T3-PQ2-VQ2-R01-F1A				
			22 g			193479		VN-07-H-T3-PQ2-VQ2-RQ2		
24 g	193499	VN-07-H-T3-PI4-VI4-RI4								
	26 g	193517	VN-07-H-T3-PQ2-VA4-RQ2							
193508		VN-07-H-T3-PI4-VI4-R01								
193489	VN-07-H-T3-PQ2-VQ2-R01									
18 mm	T-shape	0.95 mm	None	24 g	8187684	VN-10-H-T3-PQ2-VQ2-R01-F1A				
					22 g	193480	VN-10-H-T3-PQ2-VQ2-RQ2			
				24 g		193500	VN-10-H-T3-PI4-VI4-RI4			
					26 g	193490	VN-10-H-T3-PQ2-VQ2-R01			
				193509		VN-10-H-T3-PI4-VI4-R01				
				193518	VN-10-H-T3-PQ2-VA4-RQ2					
		Ejector pulse, pneumatic		50 g	532642	VN-10-H-T3-PI4-VI4-R01-A				
					532638	VN-10-H-T3-PQ2-VQ2-R01-A				
					None	27 g	526147	VN-10-H-T4-PQ2-VQ3-RQ3		
							526153	VN-10-H-T4-PQ2-VA5-RQ3		
549251	VN-10-H-T4-PQ2-VQ3-R02									
549252	VN-10-H-T4-PQ2-VA5-R02									
24 mm	T-shape	1.4 mm	None	36 g	8187685	VN-14-H-T4-PQ2-VQ3-R02-F1A				
					27 g	193482	VN-14-H-T4-PQ2-VQ3-RQ3			
				33 g		193520	VN-14-H-T4-PQ2-VA5-RQ3			
					36 g	547707	VN-14-H-T4-PQ2-VQ3-R02			
		193502		VN-14-H-T4-PI4-VI5-RI5						
		40 g		547705	VN-14-H-T4-PI4-VI5-R02					
				42 g	547706	VN-14-H-T4-PQ2-VA5-R02				
		Ejector pulse, pneumatic			85 g	532646	VN-14-H-T4-PQ3-VQ3-R02-A			
				532719		VN-14-H-T4-PI5-VI5-R02-A				
		2 mm		None	2 mm	None	182 g	193495	VN-20-H-T6-PQ4-VQ5-R02	
526141	VN-20-H-T6-PI5-VI6-R02									
189 g	526145		VN-20-H-T6-PQ4-VA5-R02							
	182 g		193497				VN-30-H-T6-PQ4-VQ5-R02			
183 g			526142				VN-30-H-T6-PI5-VI6-R02			
	189 g		526146				VN-30-H-T6-PQ4-VA5-R02			

1) F1A: Products for battery production

Ordering data

Standard, high suction rate L										
Grid dimension	Design	Nominal size, Laval nozzle	Integrated function	Product weight	Part no.	Type				
10 mm	T-shape	0.45 mm	None	13 g	526118	VN-05-L-T2-PI2-VI2-R01				
					526116	VN-05-L-T2-PI2-VI2-RI2				
14 mm	T-shape	0.45 mm	None	15 g	526114	VN-05-L-T2-PQ1-VQ1-RQ1				
					193595	VN-05-L-T2-PQ1-VQ1-R01				
				22 g	193581	VN-05-L-T3-PI4-VI4-RI4				
					193561	VN-05-L-T3-PQ2-VQ2-RQ2				
				24 g	193571	VN-05-L-T3-PQ2-VQ2-R01				
					193590	VN-05-L-T3-PI4-VI4-R01				
					193599	VN-05-L-T3-PQ2-VA4-RQ2				
				26 g	193609	VN-05-L-T3-PQ2-VA4-R01				
				Ejector pulse, pneumatic	49 g	532621	VN-05-L-T3-PQ2-VQ2-R01-A			
						537226	VN-05-L-T3-PI4-VI4-R01-A			
				0.7 mm	None	None	22 g	193582	VN-07-L-T3-PI4-VI4-RI4	
								193562	VN-07-L-T3-PQ2-VQ2-RQ2	
							24 g	193572	VN-07-L-T3-PQ2-VQ2-R01	
								193600	VN-07-L-T3-PQ2-VA4-RQ2	
	193591	VN-07-L-T3-PI4-VI4-R01								
26 g	193610	VN-07-L-T3-PQ2-VA4-R01								
Ejector pulse, pneumatic	50 g	532629	VN-07-L-T3-PQ2-VQ2-R01-A							
		532633	VN-07-L-T3-PI4-VI4-R01-A							
0.95 mm	None	None	22 g				193563	VN-10-L-T3-PQ2-VQ2-RQ2		
							193583	VN-10-L-T3-PI4-VI4-RI4		
			24 g	193592	VN-10-L-T3-PI4-VI4-R01					
				193601	VN-10-L-T3-PQ2-VA4-RQ2					
				193573	VN-10-L-T3-PQ2-VQ2-R01					
			26 g	543315	VN-10-L-T3-PI4-VA4-R01					
				193611	VN-10-L-T3-PQ2-VA4-R01					
			Ejector pulse, pneumatic	50 g	532639	VN-10-L-T3-PQ2-VQ2-R01-A				
	532643	VN-10-L-T3-PI4-VI4-R01-A								
18 mm	T-shape	None	None	27 g	526157	VN-10-L-T4-PQ2-VQ3-RQ3				
				33 g	526163	VN-10-L-T4-PQ2-VA5-RQ3				
				36 g	549253	VN-10-L-T4-PQ2-VQ3-R02				
				42 g	549254	VN-10-L-T4-PQ2-VA5-R02				
				1.4 mm	27 g	193565	VN-14-L-T4-PQ2-VQ3-RQ3			
					33 g	193603	VN-14-L-T4-PQ2-VA5-RQ3			
					36 g	193585	VN-14-L-T4-PI4-VI5-RI5			
						547710	VN-14-L-T4-PQ2-VQ3-R02			
					40 g	547708	VN-14-L-T4-PI4-VI5-R02			
					42 g	547709	VN-14-L-T4-PQ2-VA5-R02			
				Ejector pulse, pneumatic	85 g	532647	VN-14-L-T4-PQ3-VQ3-R02-A			
					94 g	532720	VN-14-L-T4-PI5-VI5-R02-A			
				24 mm	T-shape	None	None	182 g	193578	VN-20-L-T6-PQ4-VQ5-R02
								183 g	526131	VN-20-L-T6-PI5-VI6-R02
189 g	526135	VN-20-L-T6-PQ4-VA5-R02								
3 mm	183 g	526132	VN-30-L-T6-PI5-VI6-R02							
	189 g	526136	VN-30-L-T6-PQ4-VA5-R02							

Ordering data

In-line, high vacuum M									
Grid dimension	Design	Nominal size, Laval nozzle	Integrated function	Product weight	Part no.	Type			
10 mm	Straight shape	0.45 mm	None	8 g	193587	VN-05-M-I2-PQ1-VT1			
				11 g	193580	VN-05-M-I2-PQ1-VQ1			
		0.7 mm		8 g	193588	VN-07-M-I2-PQ1-VT1			
				11 g	193586	VN-07-M-I2-PQ1-VQ1			
	T-shape	0.45 mm		13 g	526112	VN-05-M-T2-PI2-VI2-RO1			
					526110	VN-05-M-T2-PI2-VI2-RI2			
				15 g	526108	VN-05-M-T2-PQ1-VQ1-RO1			
					526106	VN-05-M-T2-PQ1-VQ1-RQ1			
				13 g	526113	VN-07-M-T2-PI2-VI2-RO1			
		0.7 mm			526111	VN-07-M-T2-PI2-VI2-RI2			
				15 g	526109	VN-07-M-T2-PQ1-VQ1-RO1			
					526107	VN-07-M-T2-PQ1-VQ1-RQ1			
				13 mm	Straight shape	0.45 mm	12 g	193555	VN-05-M-I3-PQ2-VT2
							16 g	193552	VN-05-M-I3-PQ2-VQ2
0.7 mm	12 g	193556	VN-07-M-I3-PQ2-VT2						
	16 g	193553	VN-07-M-I3-PQ2-VQ2						
0.95 mm	23 g	193554	VN-10-M-I3-PQ2-VQ2						
	14 mm	T-shape	0.45 mm		22 g	193536	VN-05-M-T3-PQ2-VQ2-RQ2		
				193544	VN-05-M-T3-PI4-VI4-RI4				
0.7 mm			24 g	193548	VN-05-M-T3-PI4-VI4-RO1				
				193540	VN-05-M-T3-PQ2-VQ2-RO1				
		22 g	193537	VN-07-M-T3-PQ2-VQ2-RQ2					
			193545	VN-07-M-T3-PI4-VI4-RI4					
14.5 mm		Straight shape	0.45 mm	Ejector pulse, pneumatic	38 g	532624	VN-05-M-I3-PQ2-VQ2-A		
					41 g	532634	VN-07-M-I3-PQ2-VQ2-A		
	0.7 mm								

In-line, high suction rate N						
Grid dimension	Design	Nominal size, Laval nozzle	Integrated function	Product weight	Part no.	Type
13 mm	Straight shape	0.45 mm	None	12 g	193637	VN-05-N-I3-PQ2-VT2
				16 g	193635	VN-05-N-I3-PQ2-VQ2
14 mm	T-shape			22 g	193619	VN-05-N-T3-PQ2-VQ2-RQ2
					193627	VN-05-N-T3-PI4-VI4-RI4
				24 g	193623	VN-05-N-T3-PQ2-VQ2-RO1
					193631	VN-05-N-T3-PI4-VI4-RO1
14.5 mm	Straight shape		Ejector pulse, pneumatic	38 g	532625	VN-05-N-I3-PQ2-VQ2-A
				41 g	532635	VN-07-N-I3-PQ2-VQ2-A

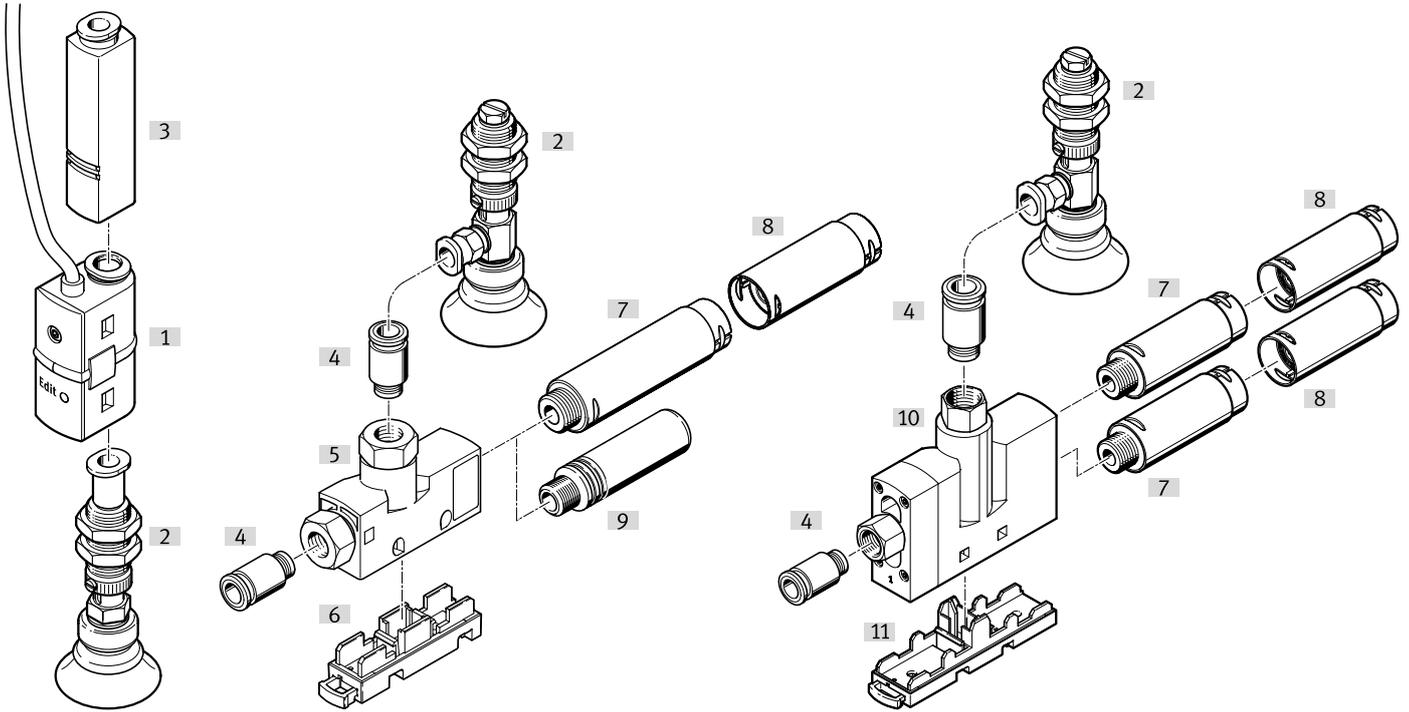
Standard, high vacuum H						
Grid dimension	Switching function	Nominal size, Laval nozzle	Product weight	Part no.	Type	
16 mm	Threshold value comparator, Threshold value with fixed hysteresis	0.45 mm	33 g	536796	VN-05-H-T4-PQ2-VQ2-O1-P	
		0.7 mm	36 g	536800	VN-07-H-T4-PQ2-VQ2-O1-P	
		0.95 mm		536804	VN-10-H-T4-PQ2-VQ2-O1-P	
	Threshold value comparator, Threshold value with variable hysteresis	0.45 mm	33 g	536797	VN-05-H-T4-PQ2-VQ2-O2-P	
		0.7 mm	36 g	536801	VN-07-H-T4-PQ2-VQ2-O2-P	
		0.95 mm		536805	VN-10-H-T4-PQ2-VQ2-O2-P	

Ordering data

Standard, high suction rate L					
Grid dimension	Switching function	Nominal size, Laval nozzle	Product weight	Part no.	Type
16 mm	Threshold value comparator, Threshold value with fixed hysteresis	0.45 mm	33 g	536798	VN-05-L-T4-PQ2-VQ2-01-P
		0.7 mm	36 g	536802	VN-07-L-T4-PQ2-VQ2-01-P
		0.95 mm		536806	VN-10-L-T4-PQ2-VQ2-01-P
	Threshold value comparator, Threshold value with variable hysteresis	0.45 mm	33 g	536799	VN-05-L-T4-PQ2-VQ2-02-P
		0.7 mm	36 g	536803	VN-07-L-T4-PQ2-VQ2-02-P
		0.95 mm		536807	VN-10-L-T4-PQ2-VQ2-02-P

Peripherals

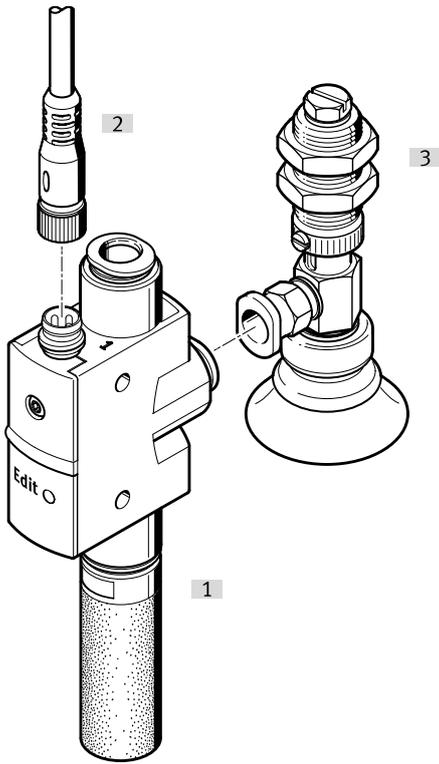
Peripherals overview VN



Accessories		→ Link
Type/order code	Description	
[1]	Pressure switch SDE5	SDE5
[2]	Suction gripper ESG	ESG
[3]	Vacuum generator	VN-05/07/10/14; straight shape
[4]	Push-in fitting QS	QS
[5]	Vacuum generator	VN-05/07/10/14; T-shape
[6]	Mounting plate VN-...-BP-NRH	43
[7]	Silencer UOM	43
[8]	Silencer extension UOMS	43
[9]	Silencer UO	43
[9]	Silencer AMTE	43
[10]	Vacuum generator	VN-20/30; T-shape
[11]	Mounting plate VN-...-BP-NRH	43

Peripherals

Peripherals overview VN-P



Accessories		→ Link
Type/order code	Description	
[1] Vacuum generator	VN-P; with integrated vacuum switch	VN
[2] Plug-socket with cable, 3-pin NEBU-M8		44
[3] Suction gripper ESG		ESG

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 AMTE (short version)

	Pneumatic connection	Sound pressure level	Material shock absorber insert	Product weight	Part no.	Type
	M5	71 dB(A)	Bronze	1.1 g	1206621	AMTE-M-H-M5
	G1/8	92 dB(A)		5 g	1206622	AMTE-M-H-G18
	G1/4	95 dB(A)		9.5 g	1206623	AMTE-M-H-G14

Silencer AMTE (long version)

	Pneumatic connection	Sound pressure level	Material shock absorber insert	Product weight	Part no.	Type
	M5	72 dB(A)	Bronze	1.5 g	1205858	AMTE-M-LH-M5
	G1/8	76 dB(A)		7.5 g	1205860	AMTE-M-LH-G18
	G1/4	83 dB(A)		13 g	1205861	AMTE-M-LH-G14

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

Accessories

Connecting cables NEBA, straight

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	2.5 m	8078223	NEBA-M8G3-U-2.5-N-LE3
				5 m	8078224	NEBA-M8G3-U-5-N-LE3

Connecting cables NEBA, angled

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	2.5 m	8078230	NEBA-M8W3-U-2.5-N-LE3
				5 m	8078231	NEBA-M8W3-U-5-N-LE3