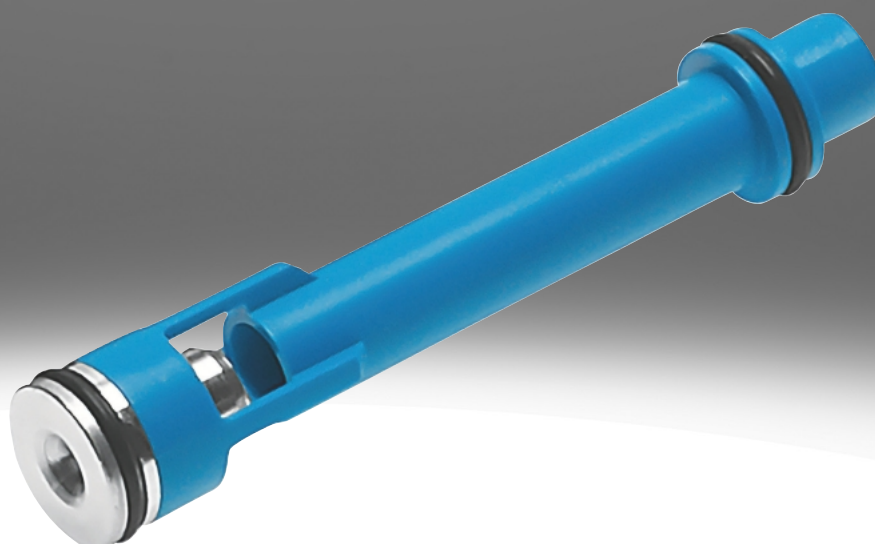


Vacuum generator cartridge VN

FESTO



Characteristics

At a glance

- Decentralised vacuum generation in the housing.
- For installation in customised housings for decentralised vacuum generation

Note: Connecting two vacuum generator cartridges in parallel doubles the suction rate. This corresponds to the next higher performance level.
Example: 2x20-H corresponds to 1x30-H

Diagrams [Link](#) [vn](#)



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

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%

[L] High suction rate/standard

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

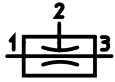
Type code

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	

003	Ejector characteristics	
H	High vacuum/standard	
L	High suction rate/standard	

Datasheet

General technical data



Nominal size, Laval nozzle	0.45	0.7	0.95	1.4	2
Ejector characteristic	Standard, High negative pressure, High suction volume				
Mounting position	optional				

Operating and environmental conditions

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⁾	2 - Moderate corrosion stress

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

Performance data – High vacuum

Nominal size, Laval nozzle	0.45 mm	0.7 mm	0.95 mm	1.4 mm	2 mm
Max. vacuum	92%		93%	92%	
Operating pressure for max. vacuum	4.9 bar	4.4 bar	3.5 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
Air supply time at nominal operating pressure	4.43 s	1.67 s	1.02 s	0.48 s	0.23 s

Performance data – High suction rate

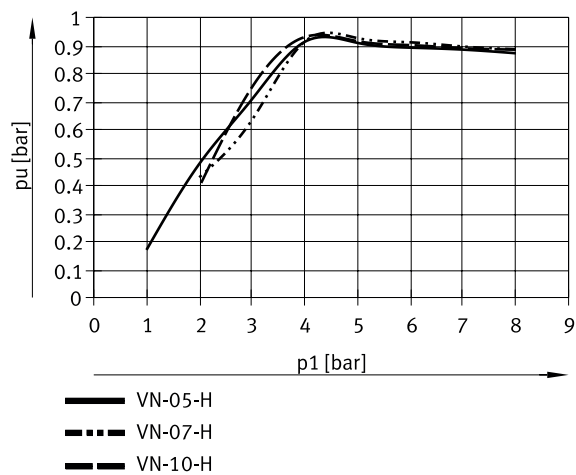
Nominal size, Laval nozzle	0.45 mm	0.7 mm	0.95 mm	1.4 mm	2 mm
Max. suction flow rate against atmosphere	13.6 l/min	30.9 l/min	41.5 l/min	92.6 l/min	184.4 l/min
Air supply time at nominal operating pressure	2.04 s	0.82 s	0.66 s	0.31 s	0.17 s

Materials

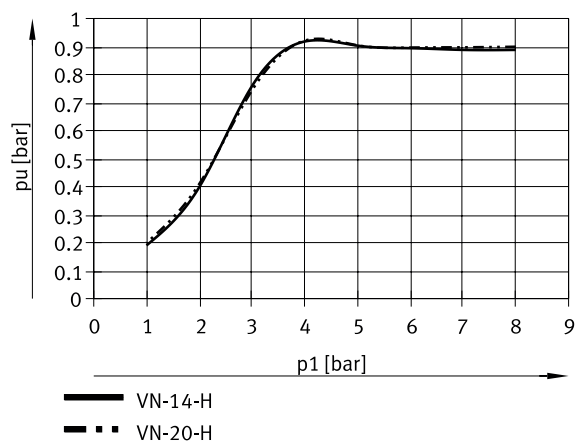
Material seals	NBR
Material receiver nozzle	POM
Material transmitter nozzle	Wrought aluminium alloy
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Datasheet

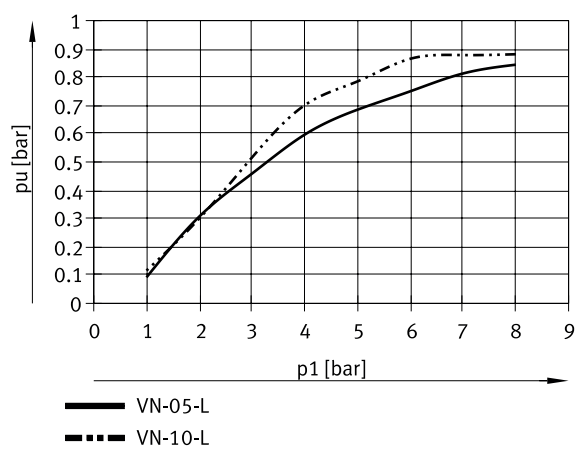
Vacuum p_u as a function of operating pressure p_1 – high vacuum (VN-05/07/10)



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

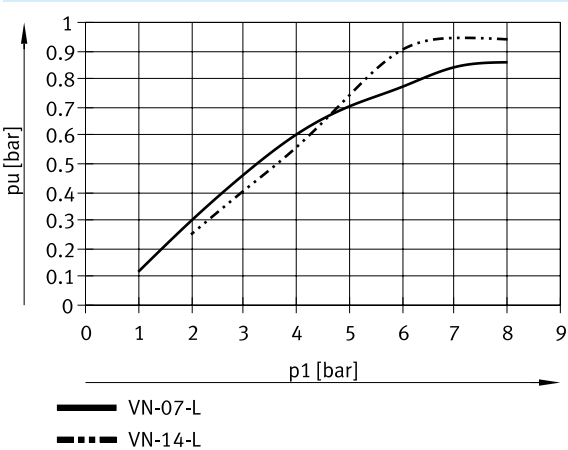


Vacuum p_u as a function of operating pressure p_1 – high suction rate (VN-05/10)

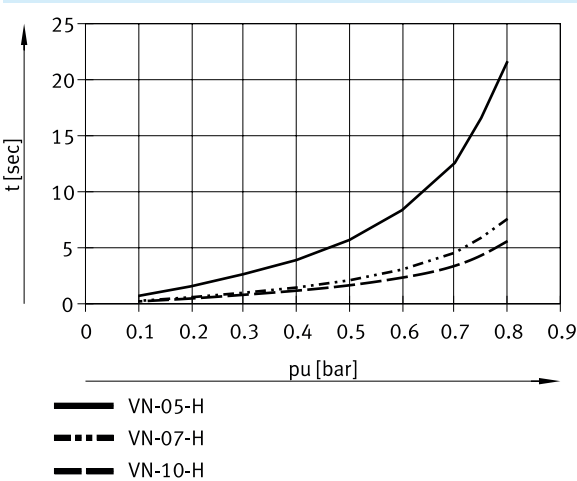


Datasheet

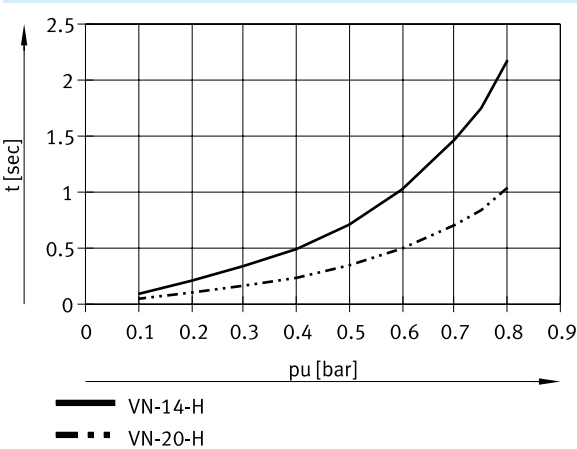
Vacuum p_u as a function of operating pressure p_1 – high suction rate (VN-07/14)



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

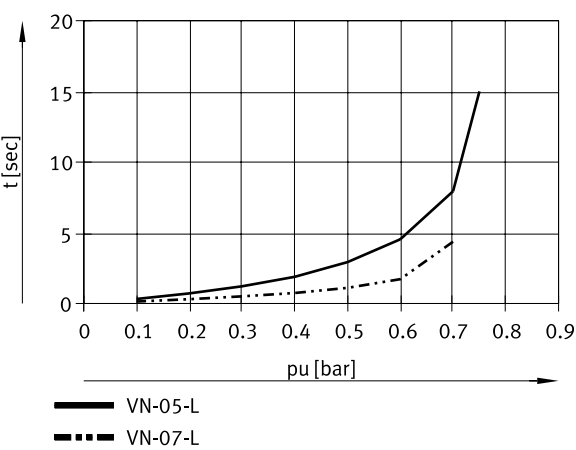


Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high vacuum (VN-14/20)

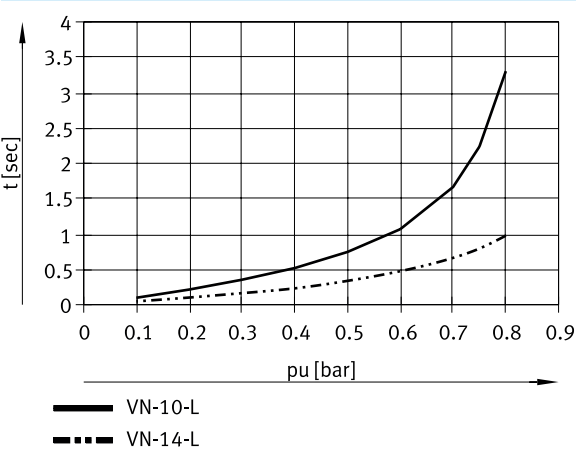


Datasheet

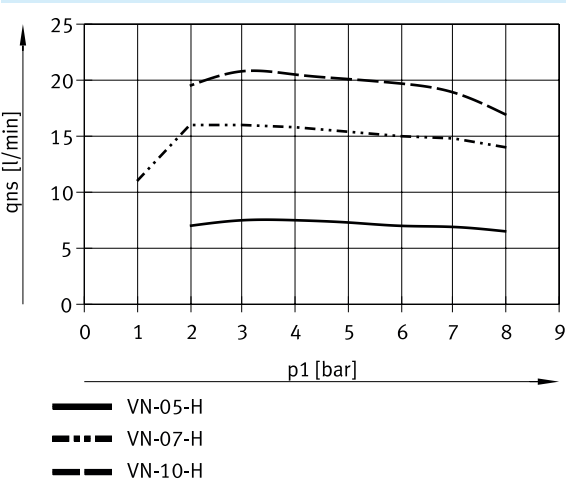
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure – high suction rate (VN-05/07)



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

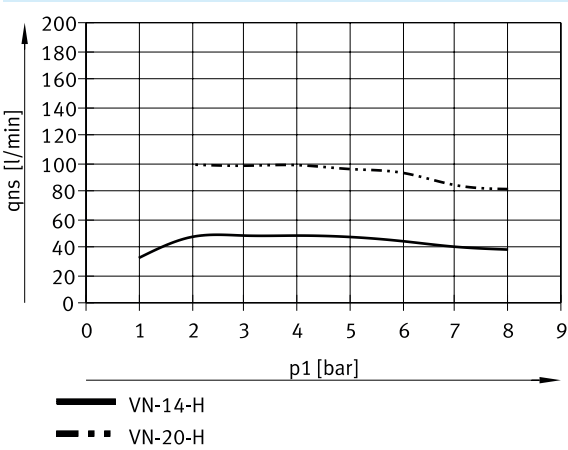


Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (VN-05/07/10)

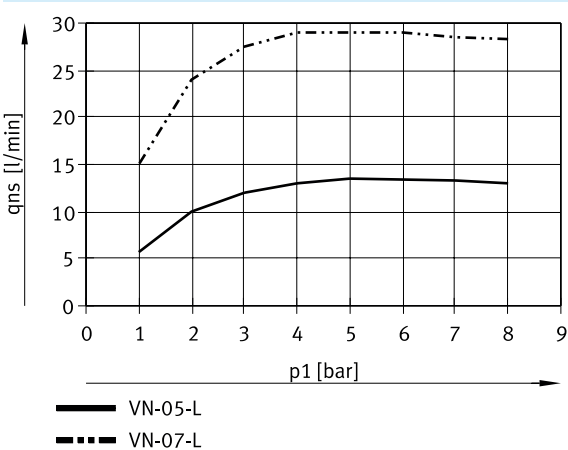


Datasheet

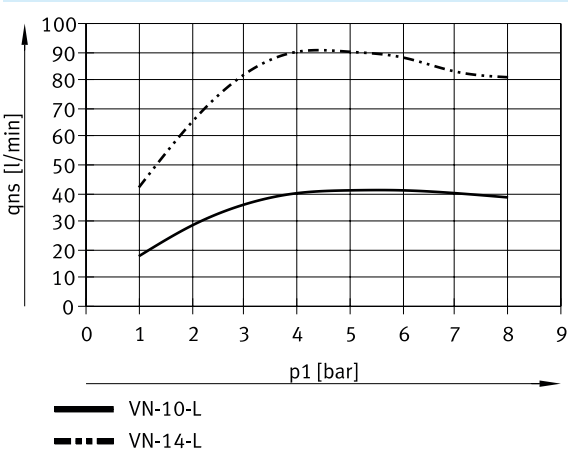
Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high vacuum (VN-14/20)



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

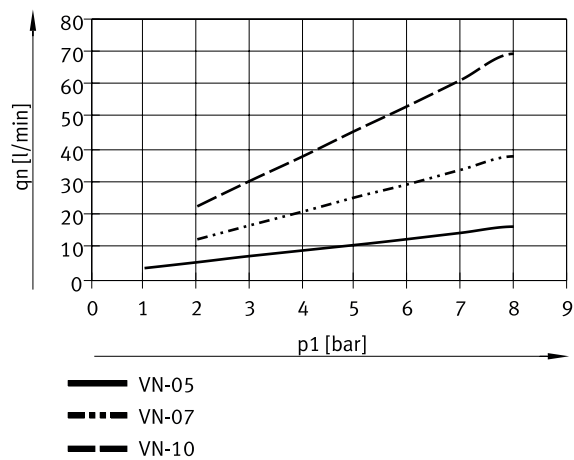


Suction rate q_{ns} (against atmosphere) as a function of operating pressure p_1 – high suction rate (VN-10/14)

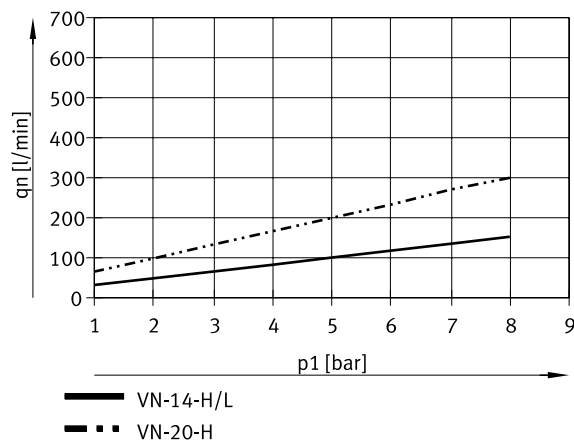


Datasheet

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



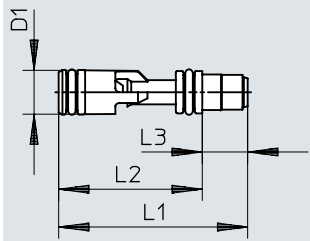
Air consumption q_n as a function of operating pressure p_1 – high vacuum / high suction rate (14/20)



Dimensions

Dimensions – VN-05

Download CAD data [↗](#)



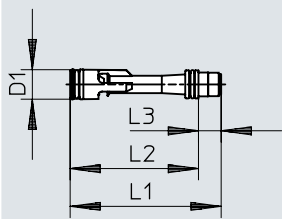
The technical drawing shows a side view of the vacuum generator cartridge. It is a cylindrical component with a central longitudinal hole. The drawing includes four dimension lines: D1 indicates the outer diameter at the left end; L1 indicates the total length of the component; L2 indicates the length of the main body section; and L3 indicates the length of the central hole section.

	D1 Ø	L1	L2 ±0,2	L3 ±0,1
VN-05	5,8	25	19	6

Dimensions

Dimensions – VN-07/10

Download CAD data [↗](#)



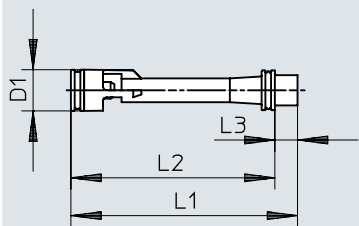
The technical drawing shows a side view of a vacuum generator cartridge. It is a cylindrical component with a flange on the left and a mounting bracket on the right. Dimension lines indicate the following measurements: D1 is the diameter of the flange; L1 is the total length of the cartridge; L2 is the length of the main body; and L3 is the length of the mounting bracket.

	D1 Ø	L1	L2 ±0,2	L3 ±0,1
VN-07/10	7,8	40	34	6

Dimensions

Dimensions – VN-14/20

Download CAD data [↗](#)



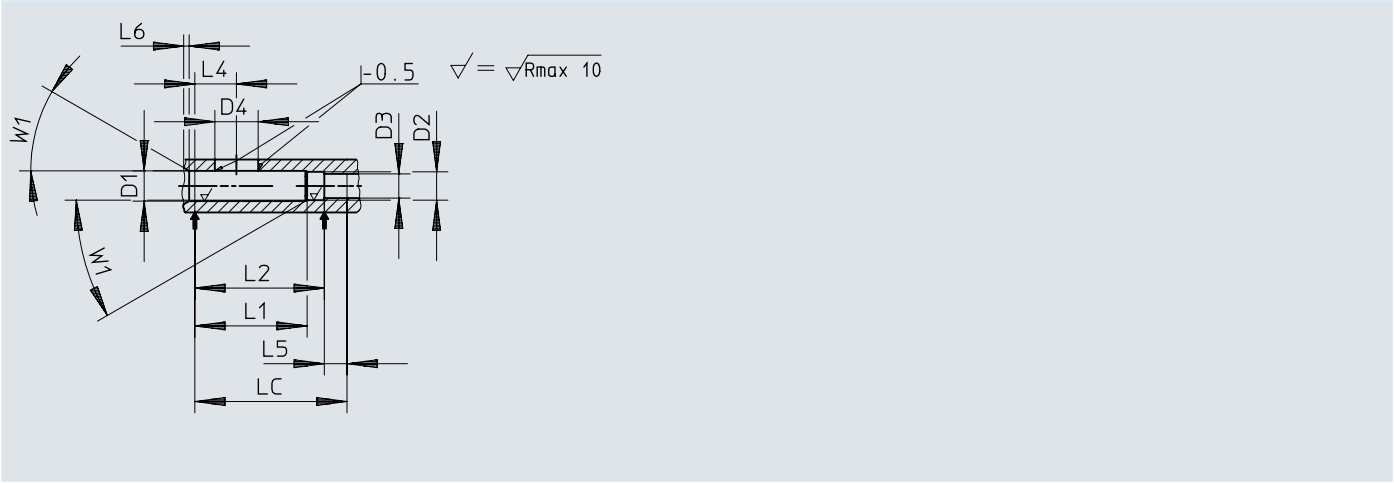
The technical drawing shows a side view of a vacuum generator cartridge. It is a cylindrical component with a flange on the left and a threaded section on the right. Dimension lines indicate the following measurements: D1 is the diameter of the left flange; L1 is the total length of the cartridge; L2 is the length of the main body; and L3 is the length of the threaded section.

	D1 Ø	L1	L2 ±0,25	L3 ±0,1
VN-14/20	10,9	60	54	6

Dimensions

Dimensions – Locating hole for the vacuum generator cartridge

[Download CAD data](#)

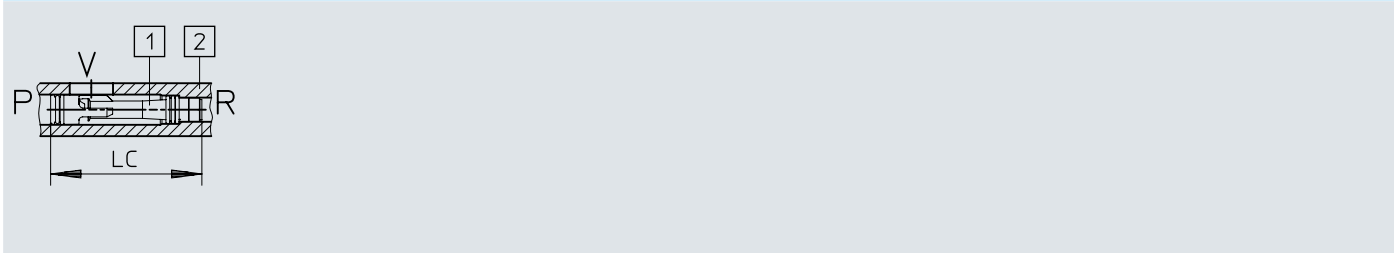


	1)						2)		
	D1 ³⁾ +0,05	D2	D3	L1	L2 ±0,2	LC ⁴⁾	L4 ±0,2	D4	
								min. Ø ⁵⁾	max. Ø
VN-05	6	5,7 ^{+0,05}	4,9 ^{+0,1}	14	19	25	9,5	3,0	3,5
VN-07	8	7,5 ^{+0,05}	6,5 ^{+0,1}	29	34	40	11	6,0	7,5
VN-10									
VN-14	11,1	10,7 ^{-0,05}	9,4 ±0,1	49	54	60	13	12,8	15,6
VN-20									

1) Dimensions of the locating hole
2) Vacuum port

Dimensions

Dimensions – Installing the vacuum generator cartridge [Download CAD data](#)



	LC
VN-05	25
VN-07	40
VN-10	
VN-14	60
VN-20	

Ordering data

Ordering data					
	Ejector characteristic	Nominal size, Laval nozzle	Product weight	Part no.	Type
	Standard, High negative pressure	0.45 mm	0.65 g	547693	VN-05-H
		0.7 mm	1.65 g	547695	VN-07-H
		0.95 mm		547697	VN-10-H
		1.4 mm	3.75 g	547699	VN-14-H
		2 mm		547701	VN-20-H
	Standard, High suction volume	0.45 mm	0.65 g	547694	VN-05-L
		0.7 mm	1.65 g	547696	VN-07-L
		0.95 mm		547698	VN-10-L
		1.4 mm	3.75 g	547700	VN-14-L
		2 mm		547702	VN-20-L