

## 5 > Vacuum



### 5 / 1 Suction pads

		Section
Series VTCF	<b>Flat suction pads (round)</b>  Universal suction pads in NBR or Silicone. Diameters from 3,5 to 95 mm with thread size M3, M5, G1/8, G1/4, both male and female.	<b>5/1.05</b>
Series VTOF	<b>Flat suction pads (oval)</b>  In NBR or Silicone. Diameters from 7x3,5 to 60x20 mm with thread size M3, M5, G1/8, G1/4, both male and female.	<b>5/1.10</b>
Series VTCL	<b>Bellows suction pads (round)</b> <b>1,5 folds</b>  In NBR or Silicone. Diameters from 11 to 53 mm with thread size M5, G1/8, G1/4, both male and female.	<b>5/1.15</b>
Series VTCN	<b>Bellows suction pads (round)</b> <b>2,5 folds</b>  In NBR or Silicone. Diameters from 5 to 52 mm with thread size M5, G1/8, G1/4, both male and female.	<b>5/1.20</b>

## 5 / 2 Ejectors based on Venturi principle

		Section
Series VEB	<b>Basic ejectors</b> Basic ejectors with no moving parts, based on the Venturi principle. Version "L" for porosive workpieces. Version "H" for high vacuum value.	<b>5/2.05</b>
Series VEBL	<b>Basic ejectors</b> Basic ejectors in technopolymer without moving parts, based on the Venturi principle. Different sizes available, with internal nozzle from 0,5 to 2,5 mm and with suction rate from 8 to 207 l/min.	<b>5/2.07</b>
Series VED	<b>Inline ejectors</b> Vacuum ejectors without moving parts, based on the Venturi principle, used for direct installation on suction pads.	<b>5/2.10</b>
Series VEDL	<b>Inline ejectors</b> Vacuum compact ejectors in technopolymer without moving parts, based on the Venturi principle, used for direct installation on suction pads. Available in two sizes with internal nozzle of 0,5 and 0,7 mm and with suction rate from 8 to 16 l/min.	<b>5/2.12</b>
Series VEC	<b>Compact ejectors</b> Vacuum generators with integrated valves and monitoring system. Possibility to command suction and blow-off individually without using external valves.	<b>5/2.15</b>
Series VEM	<b>Compact ejectors</b> Miniaturized vacuum generators with integrated valves and monitoring system. Possibility to command suction and blow-off individually without using external valves.	<b>5/2.20</b>

## 5 / 3 Accessories

		Section
Series NPF	<b>Flexible suction pad mountings</b> The vulcanisation provides flexibility in all directions. Thread G1/4.	<b>5/3.05</b>
Series NPM, NPR	<b>Spring plungers (non rotating)</b> The spring plungers are used in situations where significant height differences of the workpiece have to be compensated for. Thread size M3, M5, G1/8, G1/4, plunger stroke length from 5 to 75 mm.	<b>5/3.10</b>
Series VNV	<b>Check valves</b> These check valves are mainly used on vacuum gripper systems containing multiple suction pads in order to shut off individual suction pads which are not covered. Thread size M5, G1/8, G1/4, G3/8, G1/2.	<b>5/3.15</b>

## 5 / 4 Filters

		Section
Series FVD	<b>Inline vacuum filters</b> For use in vacuum systems with minor to medium levels of dirt. Direct mounting on the suction pad.	<b>5/4.05</b>
Series FVT	<b>Vacuum cup filters</b> Used as pre-filters and fine filters for air with varying amounts of contamination, for the protection of the vacuum generator. Mounted as protection for the ejector.	<b>5/4.10</b>

## Pressure / vacuum switches

	Section
See	<b>2/8...</b>

# Series VTCF flat suction pads (round)

Universal suction pads in NBR or Silicone.

Diameters from 3.5 to 95 mm with thread size M3, M5, G1/8, G1/4, both male and female.



- » Wide range of diameters, all available in materials NBR or Silicone.
- » Low profile, with reduced intrinsic volume which enables short cycle times and/or the use of smaller vacuum generators.
- » Compact design for good resistance towards transversal forces at high accelerations, thus suitable for application with fast movements.
- » Negligible movement of the piece in suction phase.

Series VTCF flat suction pads consist of a nipple and rubber part which are delivered separately. In fact, both components can be ordered separately as spare parts.  
From diameter 60 mm and up a mounting plate is vulcanised into the rubber part to which the nipple should be mounted.

These suction pads are generally used for handling of objects with smooth or slightly curved surfaces such as sheets of different materials, extruded profiles, cardboard boxes, plastic components, wood panels etc.

Applications:

- Handling of flat parts with smooth or slight rough surfaces
- Silicone version for the handling of parts at high temperatures

## GENERAL DATA

<b>Description</b>	robust hard-wearing suction pads consisting of suction pad VTCF and connection nipple
<b>Construction</b>	- nipples and suction pads are supplied not assembled - diameters of 60 mm and more: nipple screwed into supporting plate vulcanised to the pad
<b>Maintenance</b>	it is possible to replace the soft element
<b>Working temperature</b>	NBR version: -30°C ÷ +120°C (for short time <30 sec.); -10°C ÷ +70°C (long-term) SILICONE version: -50°C ÷ +220°C (for short time <30 sec.); -30°C ÷ +180°C (long-term)

## TECHNICAL DATA

Mod./Diameter	Suction force (N)*	Int. volume (cm³)	Min. convex curvature radius (mm)	Internal tube diameter (mm)
VTCF-0035	0,42	0,002	2	2
VTCF-0050	0,75	0,005	4	2
VTCF-0080	2,3	0,03	5	2
VTCF-0100	4	0,07	6	2
VTCF-0150	9	0,4	9	4
VTCF-0200	15,5	0,8	13	4
VTCF-0250	26,5	1,3	18	4
VTCF-0300	34	1,3	26	4
VTCF-0350	44	2,7	31	4
VTCF-0400	57,7	3,8	37	4
VTCF-0500	91	7	41	4
VTCF-0600	125	10	70	6
VTCF-0800	260	25	100	6
VTCF-0950	350	35	150	6

## CODING EXAMPLE

VT	C	F	-	0035	N	-	M3	M
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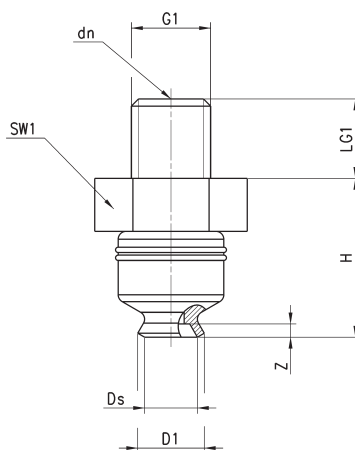
<b>VT</b>	SERIES VT = Suction pad
<b>C</b>	SHAPE C = round
<b>F</b>	VERSION F = flat
<b>0035</b>	DIAMETERS 0035 = 3,5 mm 0050 = 5,0 mm 0080 = 8,0 mm 0100 = 10,0 mm 0150 = 15,0 mm 0200 = 20,0 mm 0250 = 25,0 mm 0300 = 30,0 mm 0350 = 35,0 mm 0400 = 40,0 mm 0500 = 50,0 mm 0600 = 60,0 mm 0800 = 80,0 mm 0950 = 95,0 mm
<b>N</b>	MATERIALS N = NBR S = Silicone
<b>M3</b>	THREAD SIZE M3 = M3 M5 = M5 1/8 = G1/8 1/4 = G1/4
<b>M</b>	THREAD M = male F = female

## Suction pad VTCF-0035 - male thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)



Tolerances for elastomer parts according to M3 - DIN 7715



### DIMENSIONS

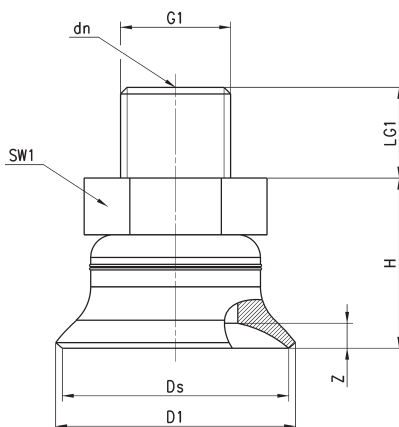
Suction pad with nipple	D1	dn	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCF-0035*-M3M	3,9	1	3,5	M3 M	6	3	5	0,5	VTCF-0035*	NPV-A-M3-M

## Suction pad VTCF-0050 to 0500 - male thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)



Tolerances for elastomer parts according to M3 - DIN 7715



### DIMENSIONS

Suction pad with nipple	D1	dn	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCF-0050*-M5M	5,4	2	5	M5 M	11,5	4,5	8	0,9	VTCF-0050*	NPV-B-M5-M
VTCF-0080*-M5M	8,5	2	8	M5 M	12	4,5	8	1,4	VTCF-0080*	NPV-B-M5-M
VTCF-0100*-M5M	10,7	2	10	M5 M	12,5	4,5	8	1,3	VTCF-0100*	NPV-B-M5-M
VTCF-0150*-1/8M	15,8	2	15	G1/8 M	13	8	14	1,9	VTCF-0150*	NPV-G-1/8-M
VTCF-0200*-1/8M	21,2	2,4	20	G1/8 M	15	8	14	2,3	VTCF-0200*	NPV-H-1/8-M
VTCF-0250*-1/8M	25,8	2,4	25	G1/8 M	19	8	14	3	VTCF-0250*	NPV-L-1/8-M
VTCF-0300*-1/8M	29,6	2,4	28,5	G1/8 M	17	8	14	2	VTCF-0300*	NPV-L-1/8-M
VTCF-0350*-1/8M	35,6	2,4	35	G1/8 M	19	8	14	3	VTCF-0350*	NPV-L-1/8-M
VTCF-0400*-1/8M	41,6	2,4	40	G1/8 M	19	8	14	3,5	VTCF-0400*	NPV-L-1/8-M
VTCF-0500*-1/8M	51,1	2,4	50	G1/8 M	20	8	14	4	VTCF-0500*	NPV-M-1/8-M

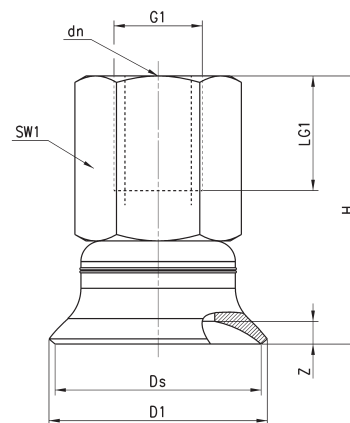
## Suction pad VTCF-0050 to 0500 - female thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)



## DIMENSIONS

Suction pad with nipple	D1	dm	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCF-0100*-1/8F	10,7	2	10	G1/8 F	23,5	9	14	1,3	VTCF-0100*	NPV-F-1/8-F
VTCF-0150*-1/8F	15,8	2	15	G1/8 F	24	9	14	1,9	VTCF-0150*	NPV-G-1/8-F
VTCF-0200*-1/8F	21,2	2	20	G1/8 F	26	9	14	2,3	VTCF-0200*	NPV-H-1/8-F
VTCF-0250*-1/8F	25,8	2,4	25	G1/8 F	30	9	14	3	VTCF-0250*	NPV-L-1/8-F
VTCF-0300*-1/8F	29,6	2,4	28,8	G1/8 F	28	9	14	2	VTCF-0300*	NPV-L-1/8-F
VTCF-0350*-1/8F	35,6	2,4	35	G1/8 F	30	9	14	3	VTCF-0350*	NPV-L-1/8-F
VTCF-0400*-1/8F	41,6	2,4	40	G1/8 F	30	9	14	3,5	VTCF-0400*	NPV-L-1/8-F
VTCF-0500*-1/8F	51,1	2,4	50	G1/8 F	31	9	14	4	VTCF-0500*	NPV-M-1/8-F



Tolerances for elastomer parts according to M3 - DIN 7715

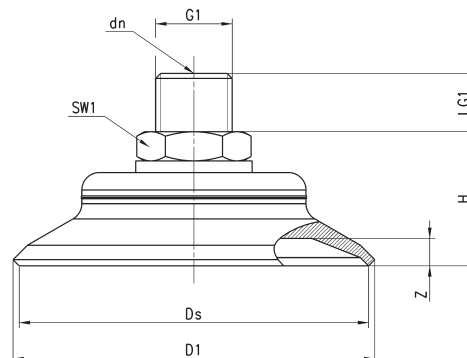
## Suction pad VTCF-0600 to 0950 - male thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)



## DIMENSIONS

Suction pad with nipple	D1	dm	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCF-0600*-1/4M	62,1	5,5	60	G1/4 M	23	10	17	5	VTCF-0600*	NPV-N-1/4-M
VTCF-0800*-1/4M	82,8	5,5	80	G1/4 M	25	10	17	6	VTCF-0800*	NPV-N-1/4-M
VTCF-0950*-1/4M	97,8	5,5	95	G1/4 M	25,5	10	17	6	VTCF-0950*	NPV-N-1/4-M



Tolerances for elastomer parts according to M3 - DIN 7715

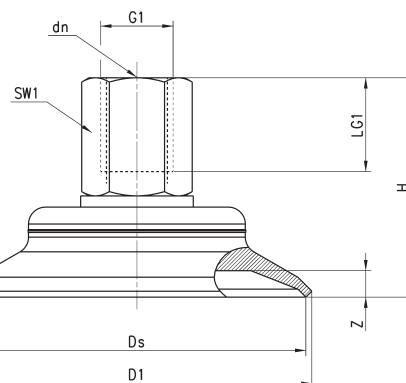
## Suction pad VTCF-0600 to 0950 - female thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)



## DIMENSIONS

Suction pad with nipple	D1	dm	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCF-0600* 1/4F	62,1	5,5	60	G1/4 F	39	11	17	5	VTCF 0600*	NPV-N-1/4-F
VTCF-0800* 1/4F	82,2	5,5	80	G1/4 F	41	11	17	6	VTCF 0800*	NPV-N-1/4-F
VTCF-0950* 1/4F	97,8	5,5	95	G1/4 F	41,5	11	17	5	VTCF 0950*	NPV-N-1/4-F



Tolerances for elastomer parts according to M3 - DIN 7715

# Series VTOF flat suction pads (oval)

Flat suction pads in NBR or Silicone which, thanks to their oval shape, can be used to handle narrow and long workpieces. Diameters from 7x3,5 to 60x20 mm with thread size M3, M5, G1/8, G1/4, both male and female.



- » Wide range of diameters, all available in materials NBR or Silicone.
- » Low profile with reduced intrinsic volume which enables short cycle times and/or the use of smaller vacuum generators.
- » Optimised shape for high suction force with reduced size.
- » Support on the bottom to avoid permanent deformation on the workpiece.
- » Size 30x10 and up equipped with a special clip to prevent unwanted rotation.

**Series VTOF flat oval suction pads consist of a nipple and rubber part. The nipples are inserted directly into the rubber part.**  
**Pads size 30x10 and larger are further equipped with a special clip in order to avoid unwanted rotation during operation.**  
**The suction pads can also be ordered separately without nipples as spare parts.**

**Applications:**

- Handling of narrow workpieces with small undulated gripping surface such as plates, extruded profiles plastic components, etc
- Handling of frame elements as for example doors, windows, etc
- Silicone version for the handling of pieces at high temperatures

## GENERAL DATA

<b>Description</b>	robust and wear resistant pad consisting of rubber part and connection nipple
<b>Construction</b>	- nipples and suction pads are supplied not pre-assembled - size 30x10 mm and up equipped with a clip to avoid rotation
<b>Maintenance</b>	it is possible to replace the rubber part
<b>Working temperature</b>	NBR version: -30°C ÷ +120°C (for short time <30 sec.); -10°C ÷ +70°C (long-term) SILICONE version: -50°C ÷ +220°C (for short time <30 sec.); -30°C ÷ +180°C (long-term)

## TECHNICAL DATA

Mod./Diameter	Suction force (N)*	Volume (cm³)	Min. convex curve radius (mm)	Recommended internal tube diameter (mm)
<b>VTOF-0070-035</b>	1	0,019	3	2
<b>VTOF-0150-050</b>	3,1	0,036	5	2
<b>VTOF-0180-060</b>	4,5	0,058	7	2
<b>VTOF-0300-100</b>	12,2	0,28	10	4
<b>VTOF-0450-150</b>	28,2	0,98	18	6
<b>VTOF-0600-200</b>	50,1	2,3	25	6

## CODING EXAMPLE

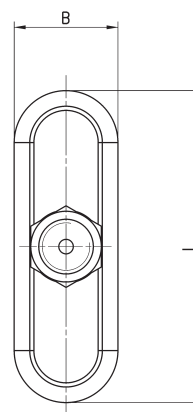
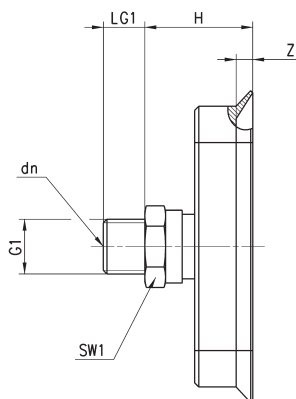
<b>VT</b>	<b>O</b>	<b>F</b>	<b>-</b>	<b>0070-035</b>	<b>N</b>	<b>-</b>	<b>M3</b>	<b>M</b>
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<b>VT</b>	SERIES: VT = suction pad
<b>O</b>	SHAPE: O = oval
<b>F</b>	VERSION: F = FLAT
<b>0070-035</b>	DIMENSIONS: 0070-035 = 7,0 x 3,5 mm 0150-050 = 15,0 x 5,0 mm 0180-060 = 18,0 x 6,0 mm 0300-100 = 30,0 x 10,0 mm 0450-150 = 45,0 x 15,0 mm 0600-200 = 60,0 x 20,0 mm
<b>N</b>	MATERIALS: N = NBR S = Silicone
<b>M3</b>	THREAD SIZE: M3 = M3 M5 = M5 1/8 = G1/8 1/4 = G1/4
<b>M</b>	THREAD: M = male F = female



## Series VTOF suction pad - male thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)

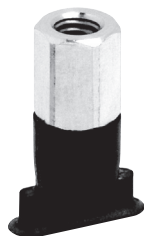
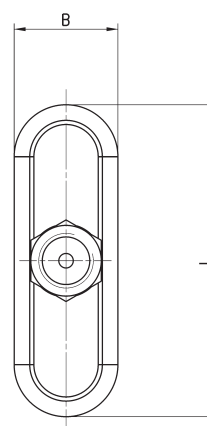
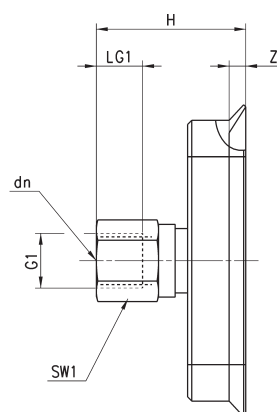
Tolerances on dimensions  
for elastomer parts  
according to M3 - DIN 7715

## DIMENSIONS

Suction pad with nipple	B	dn	G1	H	L	LG1	SW1	Z	Suction pad	Nipple
VTOF-0070-035*-M3M	3,5	1	M3M	8	7	3	5	08	VTOF-0070-035*	NPV-A-M3-M
VTOF-0150-050*-M5M	5	2	M5M	17	15	5	8	07	VTOF-0150-050*	NPV-C-M5-M
VTOF-0180-060*-M5M	6	2	M5M	17	18	5	8	08	VTOF-0180-060*	NPV-C-M5-M
VTOF-0300-100*-1/8M	10	3,5	G1/8 M	17	30	8	14	1,5	VTOF-0300-100*	NPV-P-1/8-M
VTOF-0450-150*-1/4M	15	3,5	G1/4 M	26	45	10	17	2	VTOF-0450-150*	NPV-Q-1/4-M
VTOF-0600-200*-1/4M	20	3,5	G1/4 M	26	60	10	17	2,5	VTOF-0600-200*	NPV-Q-1/4-M

## Series VTOF suction pad - female thread

\* = N for suction pad in NBR - S for suction pad in Silicone (add the required letter when placing an order)

Tolerances on dimensions  
for elastomer parts  
according to M3 - DIN 7715

## DIMENSIONS

Suction pad with nipple	B	dm	G1	H	L	LG1	SW1	Z	Suction pad	Nipple
VTOF-0150-050*-M5F	5	2	M5 F	22	15	5,5	8	0,7	VTOF-0150-050*	NPV-C-M5-F
VTOF-0180-060*-M5F	6	2	M5 F	22	18	5,5	8	0,8	VTOF-0180-060*	NPV-C-M5-F
VTOF-0300-100*-1/8F	10	3,5	G1/8 F	25	30	9	14	1,5	VTOF-0300-100*	NPV-P-1/8-F
VTOF-0450-150*-1/4F	15	3,5	G1/4 F	36	45	12	17	2	VTOF-0450-150*	NPV-Q-1/4-F
VTOF-0600-200*-1/4F	20	3,5	G1/4 F	36	60	12	17	2,5	VTOF-0600-200*	NPV-Q-1/4-F

# Series VTCL bellows suction pads (round) - 1,5 folds

Series VTCL bellows suction pads available in NBR or Silicone which allow an optimal damping when placed on the workpiece. Diameters from 11 to 53 mm with thread size M5, G1/8, G1/4, both male and female.



Series VTCL bellows suction pads (1,5 folds) have a rugged design and consist of a nipple and rubber part.

The nipples are inserted directly into the rubber part.

The rubber parts can also be ordered separately without nipples as spare parts.

Materials: NBR or Silicone

#### Applications:

- Handling of even or uneven workpieces such as panels for car bodies, tubes, cardboard boxes
- Handling of fragile workpieces such as electronics components, injection moulded pieces, etc
- Handling of welded pieces
- Silicone version for handling high temperatures pieces

- » Wide range of diameters, available in NBR or Silicone.
- » Soft, tapered sealing lip for very good adaption to curved or uneven workpiece surfaces in general.
- » High suction force and optimal damping when placed on the workpiece.
- » Support on the bottom to avoid permanent deformation of the workpiece.
- » Very stiff top fold for good stability and good resistance towards transversal forces at high accelerations.
- » Good compensation of possible height differences on the workpiece.
- » Optimised shape with 1,5 folds.

## GENERAL DATA

<b>Description</b>	wear resistant suction pad consisting of rubber part VTCL with 1,5 folds and connection nipple
<b>Construction</b>	nipples and suction pads are supplied not pre-assembled
<b>Maintenance</b>	it is possible to replace the rubber part
<b>Working temperature</b>	NBR version: -30°C ÷ +120°C (for short time <30 sec.); -10°C ÷ +70°C (long-term) SILICONE version: -50°C ÷ +220°C (for short time <30 sec.); -30°C ÷ +180°C (long-term)

## TECHNICAL DATA

Mod./Diameter	Suction force (N)*	Pull-off force (N)* (convex)	Volume (cm³)	Min. curve radius (mm)	Recommended internal tube diam. (mm)
<b>VTCL-110</b>	0,95	3,8	0,225	5	4
<b>VTCL-140</b>	1,2	5	0,42	6	4
<b>VTCL-160</b>	2,3	6,7	0,75	7	4
<b>VTCL-200</b>	4,7	10,7	1,15	9	4
<b>VTCL-250</b>	7,3	17,3	3,15	11	4
<b>VTCL-330</b>	13,6	39,6	4,75	15	6
<b>VTCL-430</b>	22,8	64,5	9,25	30	6
<b>VTCL-530</b>	51,3	95	26,25	40	6

## CODING EXAMPLE

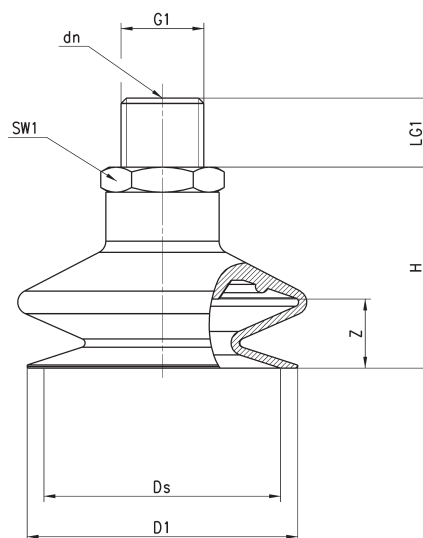
<b>VT</b>	<b>C</b>	<b>L</b>	<b>-</b>	<b>110</b>	<b>N</b>	<b>-</b>	<b>M5</b>	<b>M</b>
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<b>VT</b>	SERIES VT = Suction pad
<b>C</b>	SHAPE C = round
<b>L</b>	VERSION L = bellows 1,5 folds
<b>110</b>	DIAMETERS 110 = 11,0 mm 140 = 14,0 mm 160 = 16,0 mm 200 = 20,0 mm 250 = 25,0 mm 330 = 33,0 mm 430 = 43,0 mm 530 = 53,0 mm
<b>N</b>	MATERIALS N = NBR S = Silicone
<b>M5</b>	THREAD SIZE M5 = M5 1/8 = G1/8 1/4 = G1/4
<b>M</b>	THREAD M = male F = female

## Series VTCL suction pad - male thread



\* = N for suction pad in NBR  
S for suction pad in Silicone  
(add the required letter when placing an order)



## DIMENSIONS

Suction pad with nipple	D1	dn	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCL-110*-1/8M	11	3,5	10,4	G1/8 M	22	7,5	14	4	VTCL-110*	NPV-R-1/8-M
VTCL-110*-M5M	11	2,5	10,4	M 5 M	21	5	7	4	VTCL-110*	NPV-D-M5-M
VTCL-140*-1/8M	13	3,5	12,5	G1/8 M	22	7,5	14	5	VTCL-140*	NPV-R-1/8-M
VTCL-140*-M5M	13	2,5	12,5	M 5 M	21	4,5	7	5	VTCL-140*	NPV-D-M5-M
VTCL-160*-1/8M	16,5	3,5	15,6	G1/8 M	25	7,5	14	6	VTCL-160*	NPV-R-1/8-M
VTCL-160*-M5M	16,5	2,5	15,6	M 5 M	24	5	7	6	VTCL-160*	NPV-D-M5-M
VTCL-200*-1/8M	18,3	3,5	18,1	G1/8 M	21,5	7,5	14	5	VTCL-200*	NPV-R-1/8-M
VTCL-200*-M5M	18,3	2,5	18,1	M 5 M	20,5	4,5	7	5	VTCL-200*	NPV-D-M5-M
VTCL-250*-1/8M	23,7	3,5	22,5	G1/8 M	29	7,5	14	12	VTCL-250*	NPV-R-1/8-M
VTCL-330*-1/4M	33	4,4	30	G1/4 M	31	11	17	12	VTCL-330*	NPV-S-1/4-M
VTCL-430*-1/4M	43	4,4	38	G1/4 M	32	11	17	10	VTCL-430*	NPV-S-1/4-M
VTCL-530*-1/4M	53	4,4	50	G1/4 M	38	11	17	15	VTCL-530*	NPV-S-1/4-M

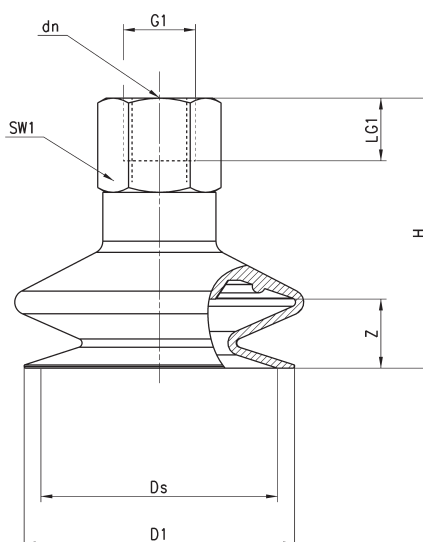


Tolerances for elastomer parts  
according to M3 - DIN 7715

## Series VTCL suction pad - female thread



\* = N for suction pad in NBR  
S for suction pad in Silicone  
(add the required letter when placing an order)



## DIMENSIONS

Suction pad with nipple	D1	dm	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCL-110*-1/8F	11	3,5	10,4	G1/8 F	28	8,5	14	4	VTCL-110*	NPV-R-1/8-F
VTCL-140*-1/8F	13	3,5	12,5	G1/8 F	28	8,5	14	5	VTCL-140*	NPV-R-1/8-F
VTCL-160*-1/8F	16,5	3,5	15,6	G1/8 F	31	8,5	14	6	VTCL-160*	NPV-R-1/8-F
VTCL-200*-1/8F	18,3	3,5	18,1	G1/8 F	27,5	8,5	14	5	VTCL-200*	NPV-R-1/8-F
VTCL-250*-1/8F	23,7	3,5	22,5	G1/8 F	35	8,5	14	12	VTCL-250*	NPV-R-1/8-F
VTCL-330*-1/4F	33	4,4	30	G1/4 F	42	12	17	12	VTCL-330*	NPV-S-1/4-F
VTCL-430*-1/4F	43	4,4	38	G1/4 F	43	12	17	10	VTCL-430*	NPV-S-1/4-F
VTCL-530*-1/4F	53	4,4	50	G1/4 F	49	12	17	15	VTCL-530*	NPV-S-1/4-F



Tolerances for elastomer parts  
according to M3 - DIN 7715)

# Series VTCN bellows suction pads (round) - 2,5 folds

Series VTCN bellows suction pads, available in NBR or Silicone, are suitable to handle uneven workpiece surfaces or workpiece major height differences. Diameters from 5 to 52 mm with thread size M5, G1/8, G1/4, both male and female.



Series VTCN bellows suction pads (2,5 folds) have a rugged design and consist of a nipple and rubber part.

The nipples are inserted directly into the rubber part.

The rubber parts can also be ordered separately without nipples as spare parts.

Materials: NBR or Silicone

Applications:

- Handling of even or uneven workpieces such as plates for car bodies, tubes, cardboard boxes
- Handling of fragile workpieces such as electronics components, injection moulded pieces, etc
- Handling of welded pieces
- Silicone version for handling of pieces at high temperatures

- » Wide range of diameters, in NBR or Silicone versions.
- » Soft, tapered sealing lip for very good adaption to curved or uneven workpiece surfaces in general.
- » High suction force and optimal damping when placed on the workpiece.
- » Support on the bottom to avoid permanent deformation of the workpiece.
- » Very stiff top fold for good stability and good resistance towards transversal forces at high accelerations.
- » Very good compensation of possible height differences on the workpiece.
- » Optimised shape with 2,5 folds.

## GENERAL DATA

<b>Description</b>	wear resistant suction pad consisting of rubber part VTCN with 2,5 folds and connection nipple
<b>Construction</b>	nipples and suction pads are supplied not pre-assembled
<b>Maintenance</b>	it is possible to replace the rubber part
<b>Working temperature</b>	NBR version: -30°C ÷ +120°C (for short time <30 sec.); -10°C ÷ +70°C (long-term) SILICONE version: -50°C ÷ +220°C (for short time <30 sec.); -30°C ÷ +180°C (long-term)

## TECHNICAL DATA

Mod./Diameter	Suction force (N)*	Pull-off force (N)**	Volume (cm <sup>3</sup> )	Min. curve radius (mm) (convex)	Recommended internal tube diameter (mm)
<b>VTCN-050</b>	0,1	0,8	0,033	2	2
<b>VTCN-070</b>	0,1	0,9	0,043	3	4
<b>VTCN-090</b>	0,7	2,3	0,15	5	4
<b>VTCN-120</b>	0,9	3,5	0,6	6	4
<b>VTCN-140</b>	1,2	5,7	0,975	7	4
<b>VTCN-180</b>	2,3	8,5	1,35	9	4
<b>VTCN-200</b>	3,8	12,1	2	10	4
<b>VTCN-250</b>	4,5	19	5,4	12	4
<b>VTCN-320</b>	12	36,9	10	17	6
<b>VTCN-420</b>	13,6	44	19,5	24	6
<b>VTCN-520</b>	27	96	62	35	6

## CODING EXAMPLE

<b>VT</b>	<b>C</b>	<b>N</b>	<b>-</b>	<b>050</b>	<b>N</b>	<b>-</b>	<b>M5</b>	<b>M</b>
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<b>VT</b>	SERIES VT = Suction pad
<b>C</b>	SHAPE C = round
<b>N</b>	VERSION N = bellows, 2,5 folds
<b>050</b>	DIAMETERS 050 = 5,0 mm 070 = 7,0 mm 090 = 9,0 mm 120 = 12,0 mm 140 = 14,0 mm 180 = 18,0 mm 200 = 20,0 mm 250 = 25,0 mm 320 = 32,0 mm 420 = 42,0 mm 520 = 52,0 mm
<b>N</b>	MATERIALS N = NBR S = Silicone
<b>M5</b>	THREAD SIZE M5 = M5 1/8 = G 1/8 1/4 = G 1/4
<b>M</b>	THREAD M = male F = female

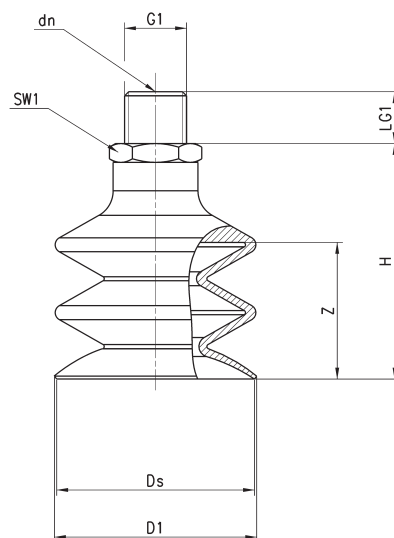
## Series VTCN suction pad - male thread

\* = N for suction pad in NBR  
S for suction pad in Silicone  
(add the required letter when placing an order)



### DIMENSIONS

Suction pad with nipple	D1	dn	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCN-050*-M5M	5,5	2	5	M 5 M	18,5	5	8	3	VTCN-050*	NPV-E-M5-M
VTCN-070*-1/8M	6,5	3,5	5,9	G1/8 M	20	7,5	14	4	VTCN-070*	NPV-R-1/8-M
VTCN-070*-M5M	6,5	2,5	5,9	M 5 M	19	5	7	4	VTCN-070*	NPV-D-M5-M
VTCN-090*-1/8M	9,3	3,5	9	G1/8 M	21	7,5	14	3	VTCN-090*	NPV-R-1/8-M
VTCN-090*-M5M	9,3	2,5	9	M 5 M	20	5	7	3	VTCN-090*	NPV-D-M5-M
VTCN-120*-1/8M	12,7	3,5	12	G1/8 M	27	7,5	14	7	VTCN-120*	NPV-R-1/8-M
VTCN-120*-M5M	12,7	2,5	12	M 5 M	26	5	7	7	VTCN-120*	NPV-D-M5-M
VTCN-140*-1/8M	15	3,5	14,5	G1/8 M	28	7,5	14	9	VTCN-140*	NPV-R-1/8-M
VTCN-140*-M5M	15	2,5	14,5	M 5 M	27	5	7	9	VTCN-140*	NPV-D-M5-M
VTCN-180*-1/8M	18,5	3,5	17,2	G1/8 M	28	7,5	14	9	VTCN-180*	NPV-R-1/8-M
VTCN-180*-M5M	18,5	2,5	17,2	M 5 M	27	5	7	9	VTCN-180*	NPV-D-M5-M
VTCN-200*-1/8M	20	3,5	20	G1/8 M	28	7,5	14	9	VTCN-200*	NPV-R-1/8-M
VTCN-200*-M5M	20	2,5	20	M 5 M	27	5	7	9	VTCN-200*	NPV-D-M5-M
VTCN-250*-1/8M	24,7	3,5	23	G1/8 M	40	7,5	14	18	VTCN-250*	NPV-R-1/8-M
VTCN-320*-1/4M	32,6	4,4	32	G1/8 M	41,5	11	17	15	VTCN-320*	NPV-S-1/4-M
VTCN-420*-1/4M	43,5	4,4	42,6	G1/4 M	50	11	17	20	VTCN-420*	NPV-S-1/4-M
VTCN-520*-1/4M	52,5	4,4	52,5	G1/4 M	53	11	17	25	VTCN-520*	NPV-S-1/4-M



Tolerances for elastomer parts  
according to M3 - DIN 7715

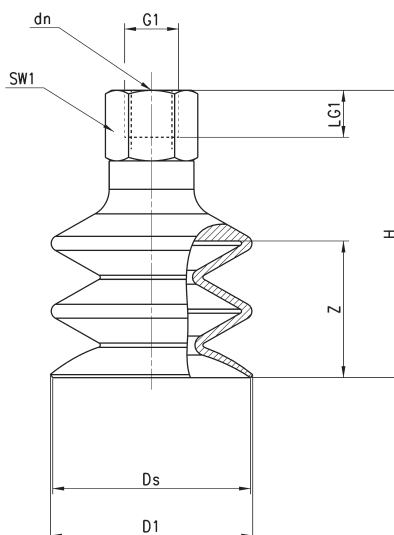
## Series VTCN suction pad - female thread

\* = N for suction pad in NBR  
S for suction pad in Silicone  
(add the required letter when placing an order)



### DIMENSIONS

Suction pad with nipple	D1	dn	Ds	G1	H	LG1	SW1	Z	Suction pad	Nipple
VTCN-050*-M5F	5,5	2	5	M 5 F	18,5	5	8	3	VTCN-050*	NPV-E-M5-F
VTCN-070*-1/8F	6,5	3,5	5,9	G1/8 F	26	8,5	14	4	VTCN-070*	NPV-R-1/8-F
VTCN-090*-1/8F	9,3	3,5	9	G1/8 F	27	8,5	14	3	VTCN-090*	NPV-R-1/8-F
VTCN-120*-1/8F	12,7	3,5	12	G1/8 F	33	8,5	14	7	VTCN-120*	NPV-R-1/8-F
VTCN-140*-1/8F	15	3,5	14,5	G1/8 F	34	8,5	14	9	VTCN-140*	NPV-R-1/8-F
VTCN-180*-1/8F	18,5	3,5	17,2	G1/8 F	34	8,5	14	9	VTCN-180*	NPV-R-1/8-F
VTCN-200*-1/8F	20	3,5	20	G1/8 F	34	8,5	14	9	VTCN-200*	NPV-R-1/8-F
VTCN-250*-1/8F	24,7	3,5	23	G1/8 F	46	8,5	14	18	VTCN-250*	NPV-R-1/8-F
VTCN-320*-1/4F	32,6	4,4	32	G1/4 F	52,5	12	17	15	VTCN-320*	NPV-S-1/4-F
VTCN-420*-1/4F	43,5	4,4	42,6	G1/4 F	61	12	17	20	VTCN-420*	NPV-S-1/4-F
VTCN-520*-1/4F	52,5	4,4	52,5	G1/4 F	64	12	17	25	VTCN-520*	NPV-S-1/4-F



Tolerances for elastomer parts  
according to M3 - DIN 7715

# Series VEB basic ejectors

Basic ejectors with no moving parts, based on the Venturi principle.

Version "L" for porosive workpieces.

Version "H" for high vacuum value.

- » No moving parts for long life and low maintenance
- » Reduced weight
- » Rapid generation of vacuum



**Series VEB basic ejectors are universal ejectors suitable for several industrial applications.**

**They are available in two versions:**

- Version "L" for porosive workpieces
- Version "H" for high vacuum value (85%)

**Applications:**

- Industrial robotics in most sectors
- Wood industry
- Packaging industry
- Food industry

## GENERAL DATA

**Description**

- body in anodized Aluminium
- internal nozzle in brass
- silencer in technopolymer



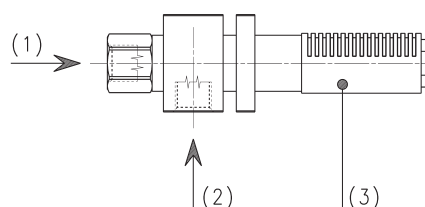
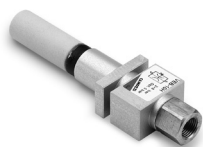
## CODING EXAMPLE

VE	B	-	05	H
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<b>VE</b>	SERIES VE = Vacuum ejector
<b>B</b>	VERSION B = basic
<b>05</b>	NOZZLE DIAMETER (MM) 05 = 0,5 mm 07 = 0,7 mm 10 = 1 mm 15 = 1,5 mm 20 = 2 mm 25 = 2,5 mm 30 = 3 mm
<b>H</b>	SUCTION TYPE H = high vacuum L = high suction rate

## TECHNICAL DATA

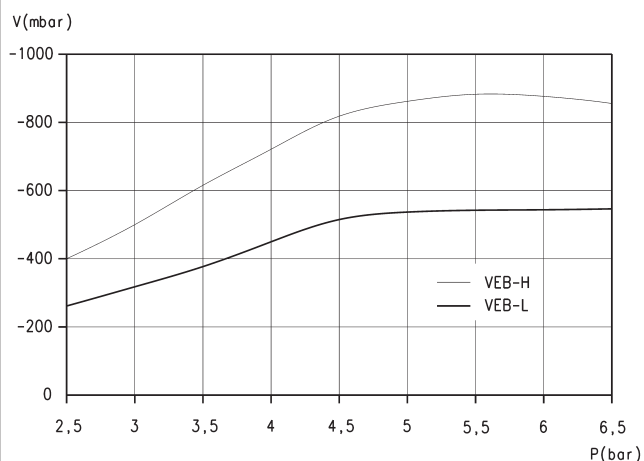
- 1 = Compressed air inlet  
2 = Vacuum inlet  
3 = Exhaust



### TECHNICAL DATA

Mod.	Ø nozzle (mm)	Degree of evacuation (%)	Suction rate max. (l/min)	Suction rate max. (m³/min)	Air consumption (l/min)	Air consumption (m³/h)	Working pressure (bar)	Weight (kg)
<b>VEB-05H</b>	0,5	82	7	0,4	13	0,8	4,5	0,011
<b>VEB-07H</b>	0,7	85	14	0,8	21	1,3	4,5	0,045
<b>VEB-10H</b>	1	85	34	2	49	2,9	5	0,05
<b>VEB-15H</b>	1,5	85	69	4,1	102	6,1	4,5	0,11
<b>VEB-20H</b>	2	85	124	7,4	186	11,2	5	0,13
<b>VEB-20L</b>	2	55	170	10,2	186	11,2	5	0,13
<b>VEB-25H</b>	2,5	85	184	11	275	16,5	5	0,295
<b>VEB-25L</b>	2,5	55	260	15,6	275	16,5	5	0,295
<b>VEB-30H</b>	3	85	240	14,4	392	23,5	5	0,404
<b>VEB-30L</b>	3	55	370	22,2	392	23,5	5	0,404

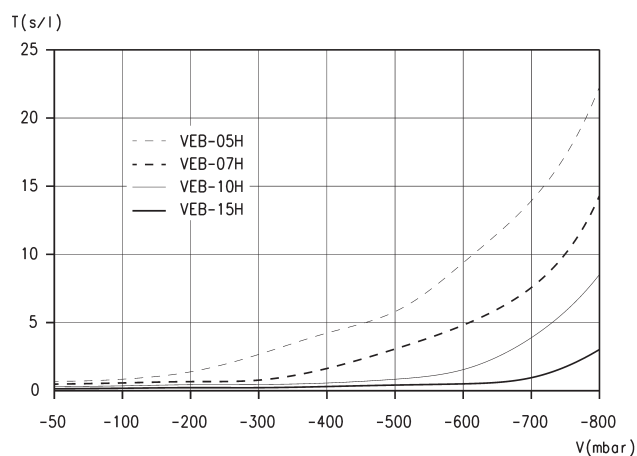
## Diagrams VEB



## LEGEND:

V = vacuum values  
P = working pressure

Note: vacuum reachable with different supply pressures

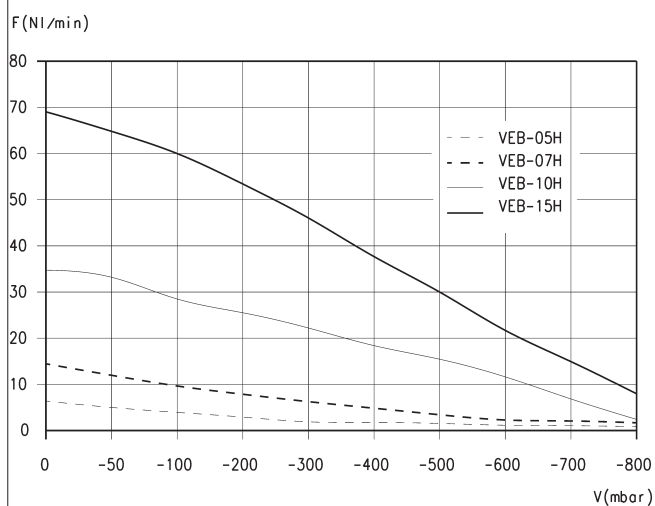


## LEGEND:

T = Evacuation time  
V = Vacuum values

Note: evacuation time for different vacuum values

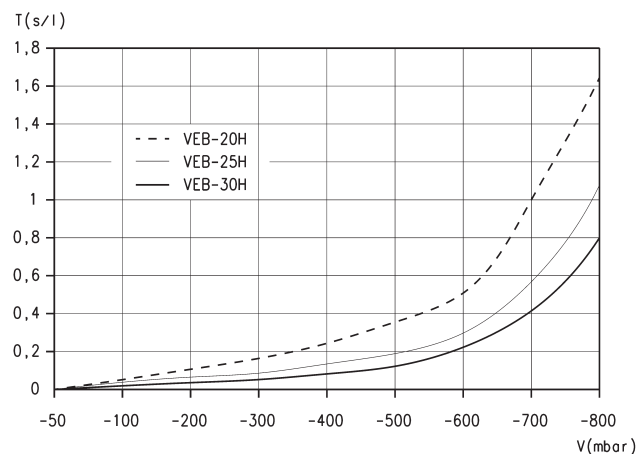
## Diagrams VEB



## LEGEND:

F = Suction rate  
V = Vacuum values

Note: Suction rate with different vacuum values

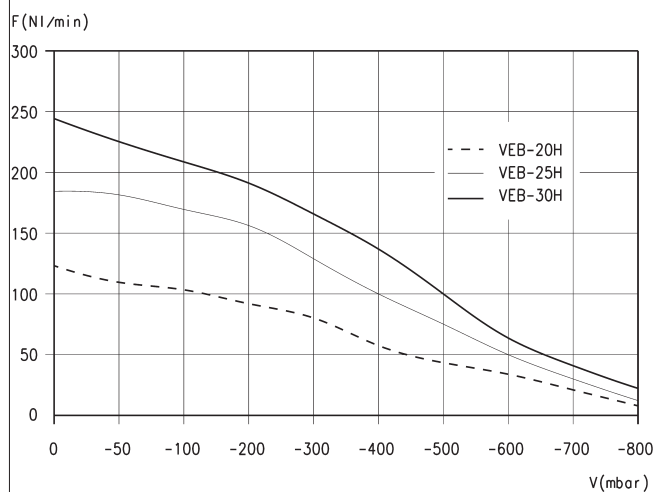


## LEGEND:

T = Evacuation time  
V = Vacuum values

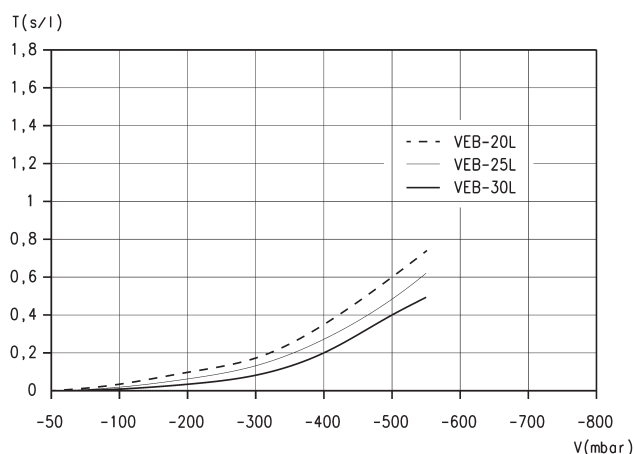
Note: evacuation time for different vacuum values

## Diagrams VEB



LEGEND:  
F = Suction rate  
V = Vacuum values

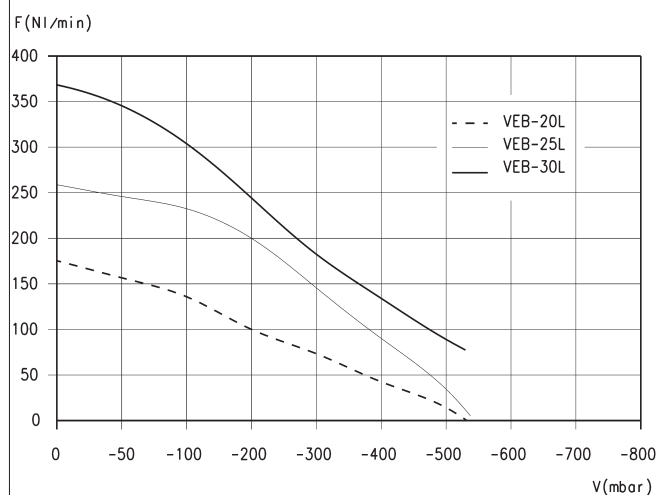
Note: Suction rate with different vacuum values



LEGEND:  
T = Evacuation time  
V = Vacuum values

Note: evacuation time for different vacuum values

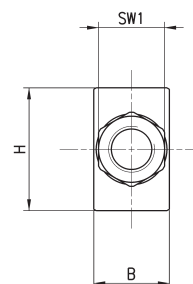
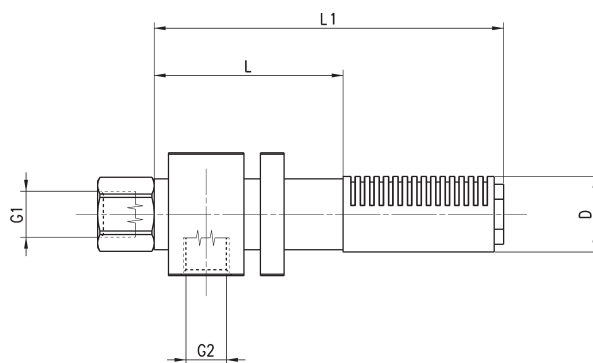
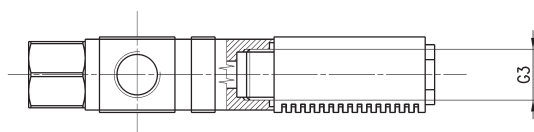
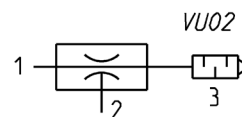
## Diagrams VEB



LEGEND:  
F = Suction rate  
V = Vacuum values

Note: Suction rate with different vacuum values

## EJECTORS VEB 05...30



## DIMENSIONS

Mod.	B	D	G1	G2	G3*	H	L	L1	SW1
<b>VEB-05H</b>	10	7	M5	M5	M5	20	32	50	8
<b>VEB-07H</b>	16	16	G1/8	G1/8	G1/8	26	40	74	14
<b>VEB-10H</b>	16	16	G1/8	G1/8	G1/8	26	45	79	14
<b>VEB-15H</b>	22	21	G1/4	G1/4	G1/4	38	60	101,5	17
<b>VEB-20H</b>	26	25	G1/4	G1/4	G3/8	38	75	125,5	17
<b>VEB-20L</b>	26	25	G1/4	G1/4	G3/8	38	75	125,5	17
<b>VEB-25H</b>	32	30	G3/8	G1/2	G1/2	50	100	161,5	22
<b>VEB-25L</b>	32	30	G3/8	G1/2	G1/2	50	100	161,5	22
<b>VEB-30H</b>	42	40	G3/8	G1/2	G3/4	50	110	194,5	22
<b>VEB-30L</b>	42	40	G3/8	G1/2	G3/4	50	110	194,5	22

# Series VEBL basic ejectors

Basic ejectors in technopolymer without moving parts, based on the Venturi principle.

Different sizes available, with internal nozzle from 0,5 to 2,5 mm and with suction rate from 8 to 207 l/min.



- » No moving parts for long life and low maintenance
- » Reduced weight
- » Rapid generation of vacuum
- » Easy installation, on proper support too
- » Optimized dimensions

Series VEBL basic ejectors are universal ejectors made in technopolymer suitable for several industrial applications such as:

- Industrial robotics in most sectors
- Wood industry
- Packaging industry
- Food industry

## GENERAL DATA

<b>Description</b>	Basic ejector
<b>Materials</b>	<ul style="list-style-type: none"> <li>- body in technopolymer</li> <li>- silencier in technopolymer</li> <li>- internal nozzle in brass</li> </ul>

## CODING EXAMPLE

VE	BL	-	10H	-	T2
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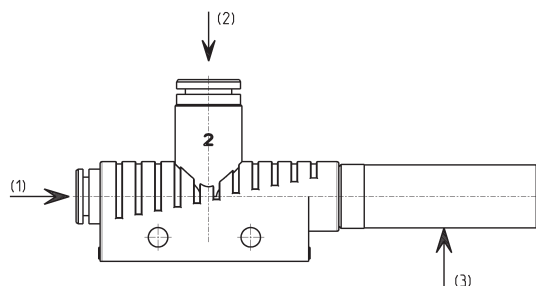
<b>VE</b>	SERIES: VE = Vacuum ejector
<b>BL</b>	VERSION: BL = basic light
<b>10H</b>	NOZZLE DIAMETER: 05H = 0,5 mm 07H = 0,7 mm 10H = 1 mm 15H = 1,5 mm 20H = 2 mm 25H = 2,5 mm
<b>T2</b>	TYPE OF CONNECTION (ON SUPPLY SIDE): T1 = plier - tube Ø4 T2 = plier - tube Ø6 T3 = plier - tube Ø8

## TECHNICAL DATA

- 1 = Compressed air inlet  
2 = Vacuum inlet  
3 = Exhaust



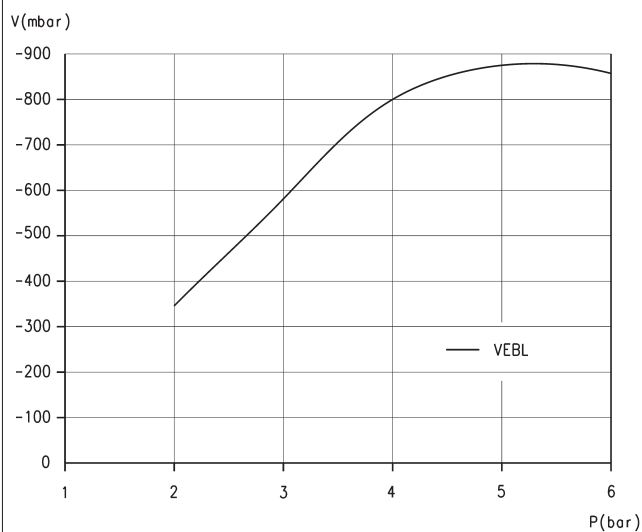
Usable fluids:  
compressed air, oiled  
and not, according to ISO  
8573-1:2001 class 7-4-4



## TECHNICAL DATA

Mod.	Ø nozzle (mm)	Obtainable relative pressure (mbar)	Vacuum flow (l/min)	Air consumption (l/min)	Operating pressure (bar)	Optimum operating pressure (bar)	Operating temperature (bar)	Weight (kg)	Noise level gripped [dB(A)]	Noise level free [dB(A)]	Suggested internal Ø for tubes [mm] up to 2m	Max n° of ejectors for one support
VEBL-05H-T1	0,5	-840	8	13,5	3...6	4,5	0...60	0,0075	53	58	2/2	11
VEBL-07H-T1	0,7	-850	16	22	3...6	4,5	0...60	0,0075	59	65	2/2	11
VEBL-10H-T2	1	-850	38	48	3...6	4,5	0...60	0,022	59	65	4/6	7
VEBL-15H-T2	1,5	-850	71	105	3...6	4,5	0...60	0,022	65	72	4/6	7
VEBL-20H-T3	2	-850	127	197	3...6	4,5	0...60	0,050	68	77	6/8	5
VEBL-25H-T3	2,5	-850	215	311	3...6	4,5	0...60	0,050	70	78	6/8	5

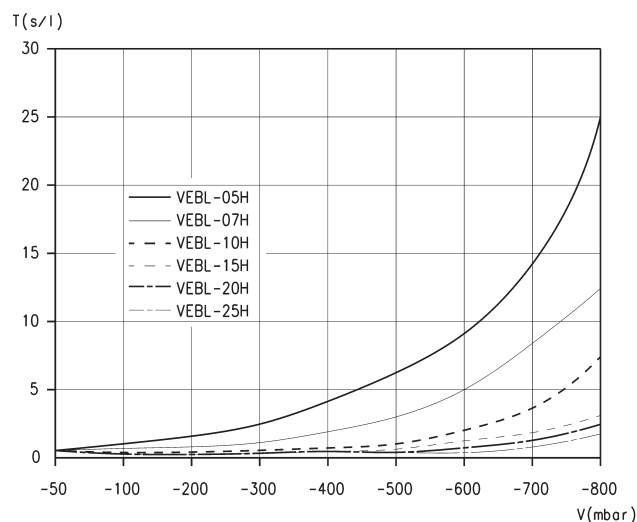
## Diagrams VEBL



### LEGEND:

V = Vacuum values  
P = Working pressure

Note: vacuum reachable with different supply pressures

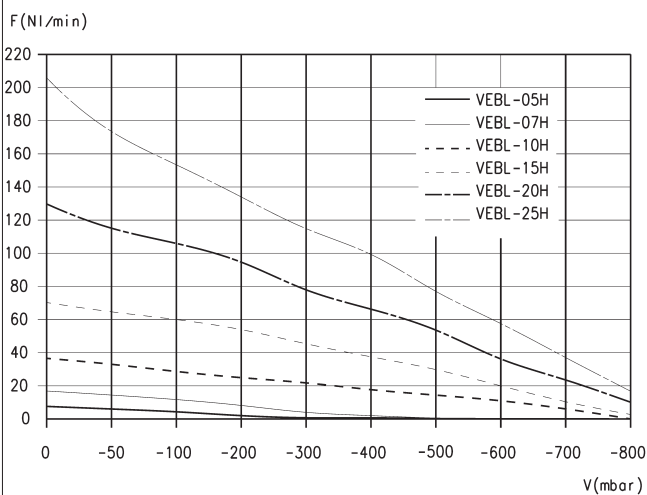


### LEGEND:

T = Evacuation time  
V = Vacuum values

Note: evacuation time for different vacuum values

## Diagrams VEBL

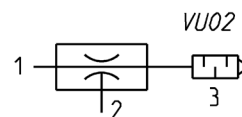


### LEGEND:

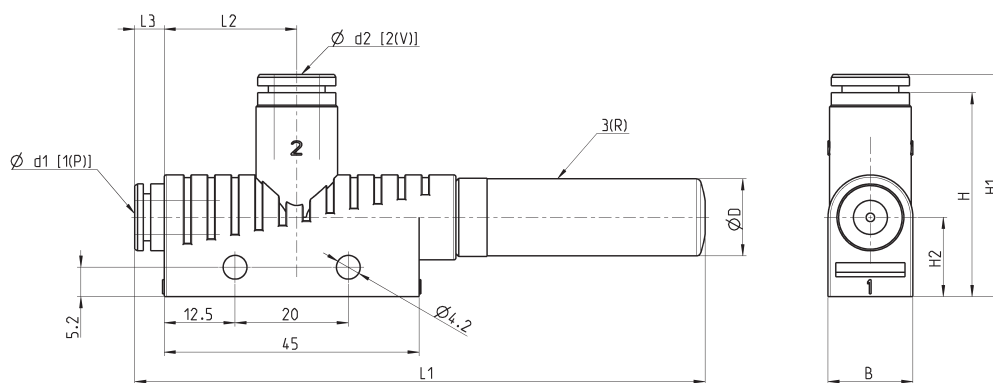
F = Suction rate  
V = Vacuum values

Note: Suction rate with different vacuum values

## Ejectors VEBL-05H...25H



[ P ] = Pressure  
[ V ] = Vacuum  
[ R ] = Exhaust

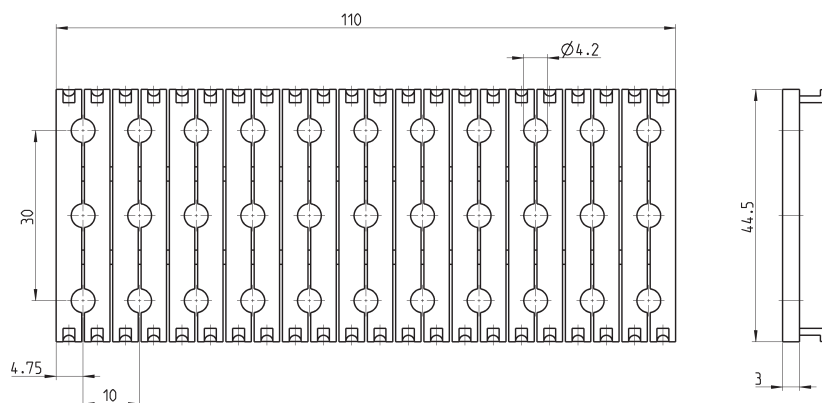
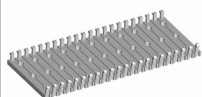


## DIMENSIONS

Mod.	B	d1	d2	D	H	H1	H2	L1	L2	L3
<b>VEBL-05H-T1</b>	10	4	4	9	26	28	12	71	18	2
<b>VEBL-07H-T1</b>	10	4	4	9	26	28	12	71	18	2
<b>VEBL-10H-T2</b>	15	6	8	14	34	40	14	97	22	5,5
<b>VEBL-15H-T2</b>	15	6	8	14	34	40	14	97	22	5,5
<b>VEBL-20H-T3</b>	20	8	10	20	39	45,5	17	168	24,5	5,5
<b>VEBL-25H-T3</b>	20	8	10	20	39	45,5	17	168	24,5	5,5



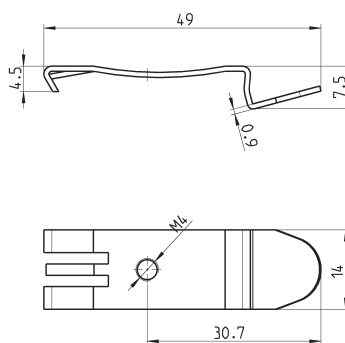
## Accessories VEBL-ST



Mod.

VEBL-ST

## Accessories VEBL-PCF



Mod.

VEBL-PCF

5/2.07.05

# Series VED inline ejectors

Vacuum ejectors without moving parts, based on the Venturi principle, used for direct installation on suction pads.



- » No moving parts for long life and maintenance
- » Easy and fast installation directly at the gripping point
- » Reduced dimensions and weight

These ejectors are used for direct installation inline between the suction pad compressed air supply. This substantially reduces the volume to be evacuated and allows therefore shorter cycle times.

## GENERAL DATA

**Description**

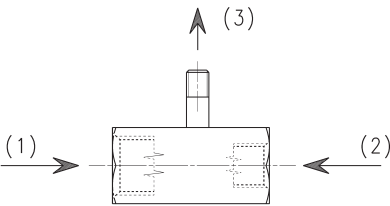
- body in anodized Aluminium
- internal nozzle in brass

CODING EXAMPLE

VE	D	-	07
VE	SERIES VE = Vacuum ejectors		
D	VERSION D = in-line		
07	NOZZLE DIAMETER 07 = 0,7 mm 09 = 0,9 mm		

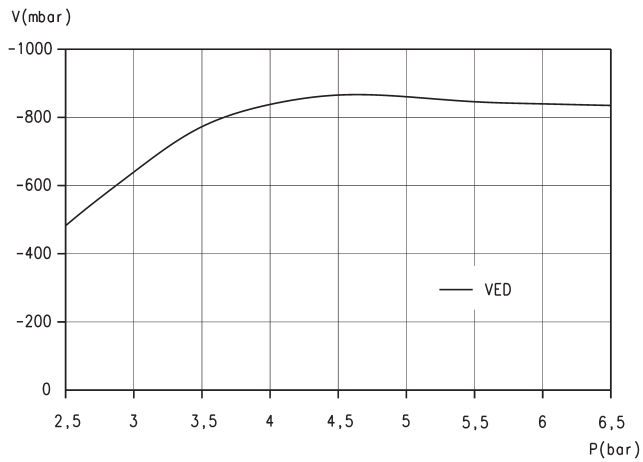
TECHNICAL DATA

- 1 = Compressed Air Inlet
- 2 = Vacuum Inlet
- 3 = Exhaust



TECHNICAL DATA								
Mod.	Ø nozzle (mm)	Degree of evacuation (%)	Suction rate max. (l/min)	Suction rate max. (m³/h)	Air consumption (l/min)	Air consumption (m³/h)	Optimum supply pressure (bar)	Weight (kg)
VED-07	0,7	90	14	0,8	21	1,3	5	0,015
VED-09	0,9	89	21	1,3	36	2,2	5	0,015

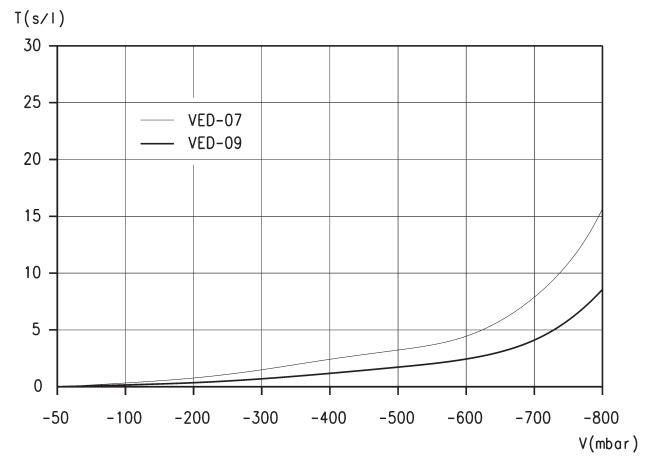
## Diagrams VED



## LEGEND:

V = Vacuum values  
P = Working pressure

Note: vacuum reachable with different supply pressures

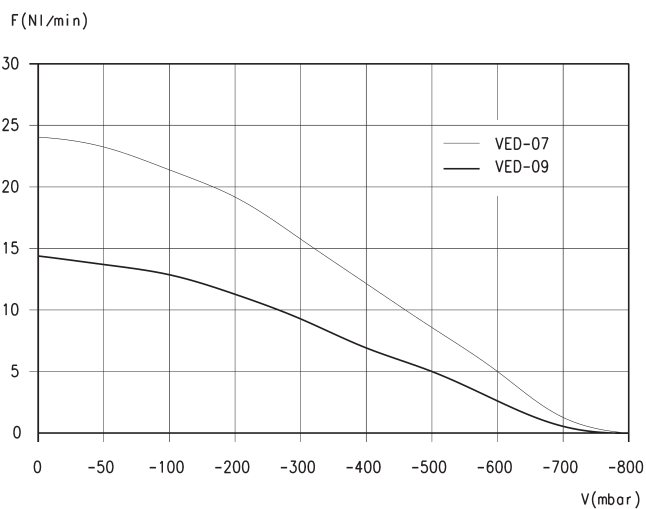


## LEGEND:

T = Evacuation time  
V = Vacuum values

Note: evacuation time for different vacuum values

## Diagrams VED

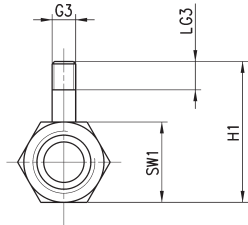
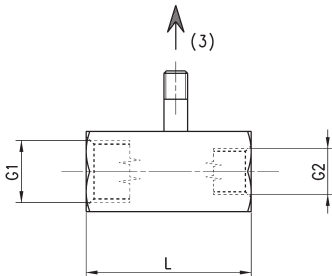
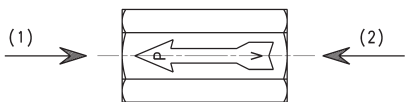
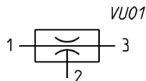


## LEGEND:

F = Suction rate  
V = Vacuum values

Note: Suction rate with different vacuum values

EJECTOR VED 07 and 09



DIMENSIONS							
Mod.	G1	G2	G3*	H1	L	LG3	SW1
<b>VED-07</b>	G1/4	G1/8	M5	29,8	35	5	17
<b>VED-09</b>	G1/4	G1/8	M5	29,8	35	5	17

# Series VEDL inline ejectors

Vacuum compact ejectors in technopolymer without moving parts, based on the Venturi principle, used for direct installation on suction pads. Available in two sizes with internal nozzle of 0,5 and 0,7 mm and with suction rate from 8 to 16 l/min.



- » No moving parts for long life and maintenance
- » Easy and fast installation directly at the gripping point
- » Optimized dimensions
- » Reduced weight, 5 g only, ideal for dynamic applications
- » Low air consumption

Generally, these vacuum compact ejectors are used for direct installation inline between the suction pad and compressed air supply. This substantially reduces the volume to be evacuated and allows therefore shorter cycle times.

## GENERAL DATA

<b>Description</b>	Inline ejectors
<b>Materials</b>	- body in technopolymer - internal nozzle in brass

CODING EXAMPLE

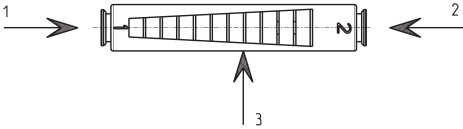
VE	DL	-	05	-	T1
<b>VE</b>	SERIES: VE = Vacuum ejector				
<b>DL</b>	VERSION: DL = inline light				
<b>05</b>	NOZZLE DIAMETER: 05 = 0,5 mm 07 = 0,7 mm				
<b>T1</b>	TYPE OF CONNECTION (ON SUPPLY SIDE): T1 = plier - tube Ø4				

TECHNICAL DATA

- 1 = Compressed air inlet
- 2 = Vacuum inlet
- 3 = Exhaust



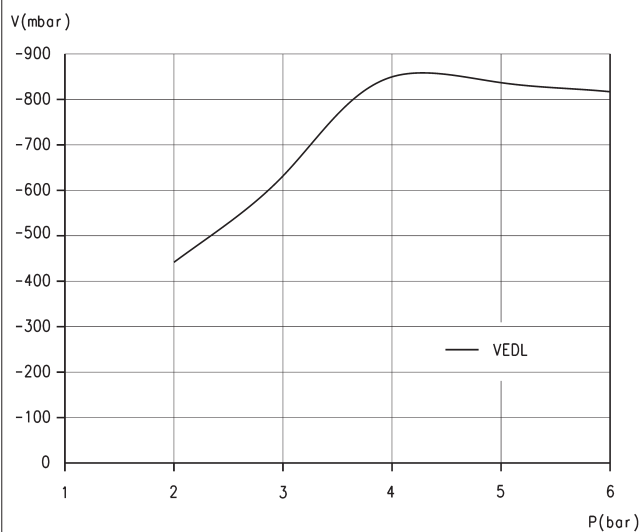
Usable fluids:  
compressed air, oiled  
and not, according to ISO  
8573-1:2001 class 7-4-4



TECHNICAL DATA												
Mod.	Ø nozzle (mm)	Obtainable relative pressure (mbar)	Vacuum flow (l/min)	Air consumption [l/min]	Operating pressure	Optimum operating pressure (bar)	Operating temperature (°C)	Weight (kg)	Noise level gripped [dB(A)]	Noise level free [dB(A)]	Suggested internal Ø for tubes (mm) up to 2 m	
<b>VEDL-05-T1</b>	0,5	-830	8	13	3...6	4,5	0...60	0,005	52	60	2/2	
<b>VEDL-07-T1</b>	0,7	-850	15	25	3...6	4,5	0...60	0,005	55	63	2/2	

5/2.12.02

## Diagrams VEDL

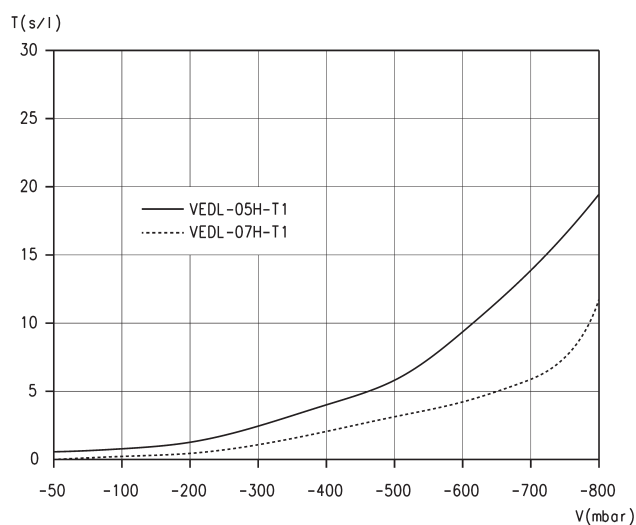


## LEGEND:

V = Vacuum values

P = Working pressure

Note: Vacuum reachable with different supply pressures



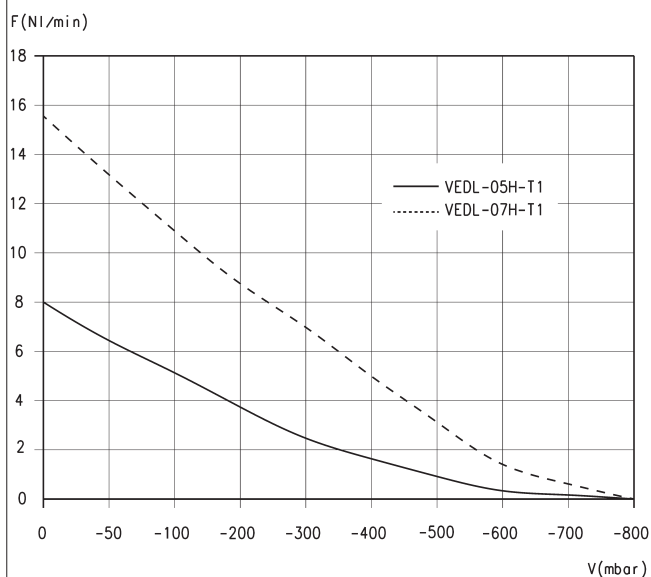
## LEGEND:

T = Evacuation time

V = Vacuum values

Note: Evacuation time for different vacuum values

## Diagrams VEDL



## LEGEND:

F = Suction rate

V = Vacuum values

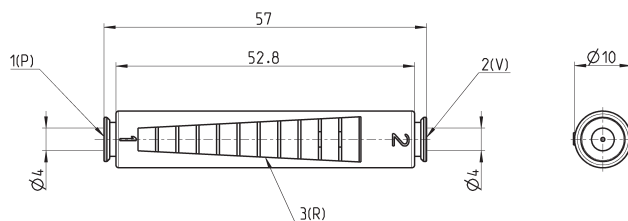
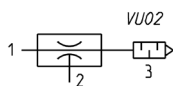
Note: Suction rate with different vacuum values



## Inline ejector VEDL



[ P ] = Pressure  
[ V ] = Vacuum  
[ R ] = Exhaust



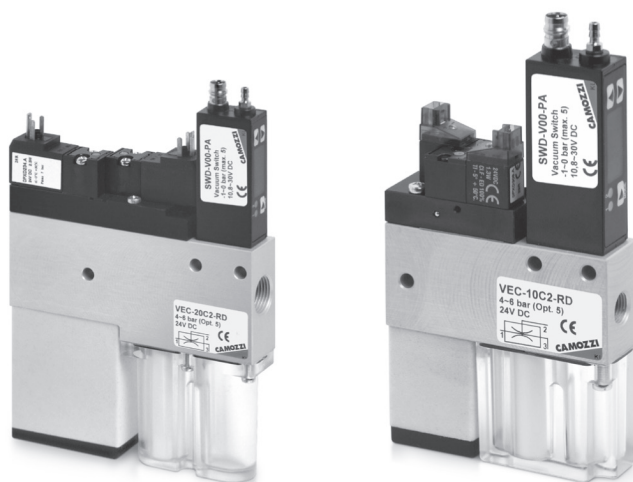
Mod.

VEDL-05-T1

VEDL-07-T1

# Series VEC compact ejectors

Vacuum generators with integrated valves and monitoring system.  
Possibility to command suction and blow-off individually without using external valves.



Vacuum generators with integrated suction and blow-off valves, as well as a monitoring system (vacuum switch). Series VEC compact ejectors allow to control suction and blow-off individually without using external valves.

Versions with integrated air saving functions are available on request. These ejectors are particularly suitable for use in automatic handling systems.

- » Wide range of nozzle sizes, covering a great number of applications.
- » Modularity for easy installation
- » Available with automatic air saving system (optional) for reduced operations costs.
- » Easy monitoring of the vacuum level through integrated vacuum switch (available with or without digital display).

## GENERAL DATA

<b>Description</b>	<ul style="list-style-type: none"> <li>- body in anodized aluminium</li> <li>- valve function for the suction available in normally open (NO) or normally closed (NC) version</li> <li>- blow-off valve (NC), integrated silencer and non-return valve</li> </ul>
<b>Options</b>	<ul style="list-style-type: none"> <li>- mechanic/electronic vacuum switch</li> <li>- automatic air-saving system</li> <li>- mounting fitting plate for the battery mounting</li> </ul>

## CODING EXAMPLE

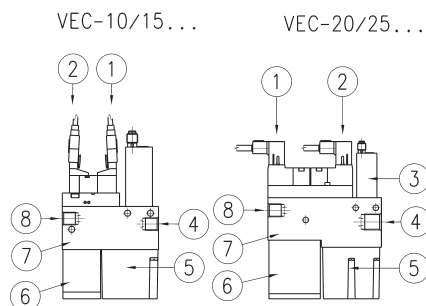
<b>VE</b>	<b>C</b>	<b>-</b>	<b>10</b>	<b>C</b>	<b>2</b>	<b>-</b>	<b>RD</b>
<b>VE</b>	SERIES VE = Vacuum ejector						
<b>C</b>	VERSION C = compact						
<b>10</b>	NOZZLE DIAMETER (MM) 10 = 1,0 mm 15 = 1,5 mm 20 = 2,0 mm 25 = 2,5 mm						
<b>C</b>	VALVE FUNCTION C = NC (suction OFF when not activated) A = NO (suction ON when not activated)						
<b>2</b>	VERSION 2 = with Blow-off valve						
<b>RD</b>	VERSION * RD = with air saving system and digital vacuum switch (with display). It is supplied complete with connectors and cables. * RE = with air saving system and electronic vacuum switch. It is supplied complete with connectors and cables. VD = without air saving system, digital vacuum switch (with display) VE = without air saving system, with electronic vacuum switch						

\* The air saving circuit, where used, switches the suction signal to "ON" apart from the fact that the ejector is NC or NO; this means that, in order to switch the internal loop back to "OFF", it is necessary to activate the signal on the coil controlling it (green cable).

## TECHNICAL DATA

### EJECTOR SYSTEM:

- |                    |                          |
|--------------------|--------------------------|
| 1 = Suction valve  | 5 = Filter               |
| 2 = Blow-off valve | 6 = Silencer             |
| 3 = Vacuum switch  | 7 = Body                 |
| 4 = Vacuum inlet   | 8 = Compressed air inlet |



## TECHNICAL DATA

Mod.	Nozzle Ø (mm)	Degree of evacuation (%)	Suction rate max. (l/min)	Suction rate max. (m³/h)	Air consumption (l/min)	Air consumption (m³/h)	Air cons. blow- off (l/min)	Noise level workp. gripped [db(A)]	Noise level free [db(A)]	Optimum working pressure (bar)	Weight (kg)	Temperature range
<b>VEC-10</b>	1	85	37	2,2	53	3,2	200	66	68	5	0,275	0 / 45°C
<b>VEC-15</b>	1,5	85	65	3,9	117	7	200	68	68	5	0,275	0 / 45°C
<b>VEC-20</b>	2	85	116	7	190	11,4	200	76	78	5 - 6	0,465	0 / 45°C
<b>VEC-25</b>	2,5	85	161	9,7	310	18,6	200	72	82	5 - 6	0,465	0 / 45°C

### Air-saving system

When gripping an object, the ejector remains active until a preset vacuum value is reached. Once reached the preset vacuum value, the ejector is shut OFF. If the vacuum level drops below the preset limit value, the ejector is re-activated by the electronic control circuit until the preset vacuum value is reached again.

Note: VEC ejectors with air-saving system are delivered complete with connectors and cables.



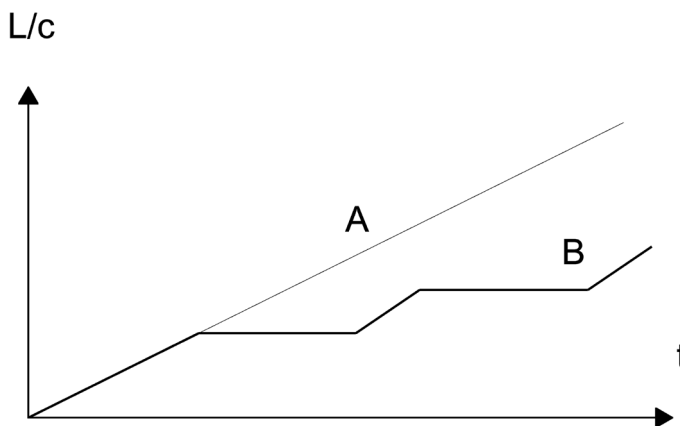
The air saving circuit, where used, switches the suction signal to "ON" apart from the fact that the ejector is NC or NO; this means that, in order to switch the internal loop back to "OFF", it is necessary to activate the signal on the coil controlling it (green cable).

Mod.

<b>VEC-10/15-A</b>	A = version Normally Open
<b>VEC-10/15-C</b>	C = version Normally Closed
<b>VEC-20/25-A</b>	A = version Normally Open
<b>VEC-20/25-C</b>	C = version Normally Closed

### Applications example

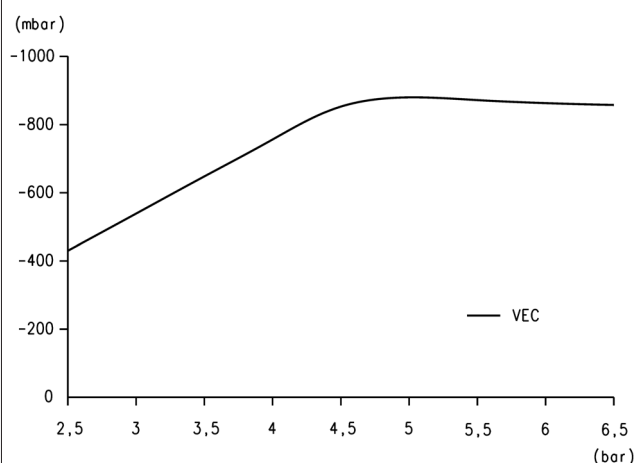
- \* Evacuation time = time necessary for the ejector to reach a vacuum level of -600 mbar
- \*\* Air consumption l/cycle =  $(105/60) \times 5 = (105 / 60) \times 0,05$
- \*\*\* Prod. cycles/day = 8 hours  $\times 3600 \text{ s} = 28.800/20 \text{ s per cycle} = 1440 \text{ cycles} \times 2 \text{ shifts} = 2880 \text{ cycles}$



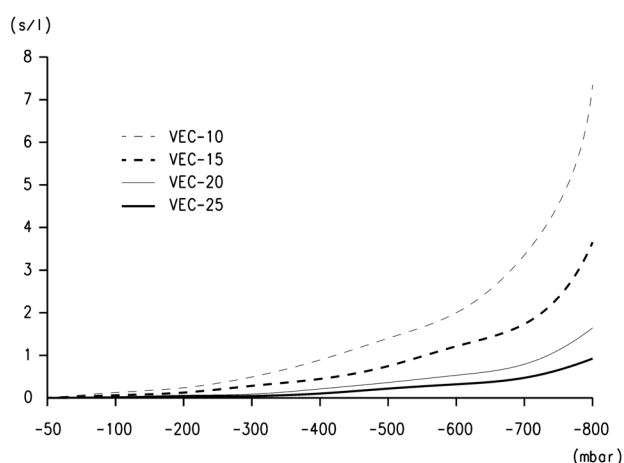
Operating conditions	without air-saving "A"	With air-saving "B"
<b>Model</b>	VEC-15C2-VE	VEC-15C2-RE
<b>Air consumption l/min</b>	105	105
<b>Transport time (sec.)</b>	5	5
<b>Evac. time to -600 mbar (sec.)*</b>	0,05	0,05
<b>Total time vacuum ON (sec.)</b>	5	0,05
<b>Air consumption (l/cycle)**</b>	8,8	0,087
<b>Cycle time (sec.)</b>	20	20
<b>Prod. cycles/day (2-shifts)***</b>	2880	2880
<b>Daily air consumption (l)</b>	25.361	250

In this example the air-saving system saves around 99% of the air.

# DIAGRAMS VEC

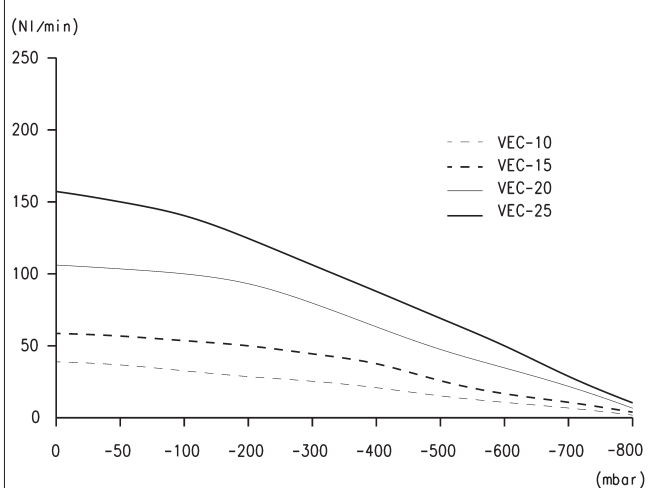


Achievable vacuum at different supply pressures



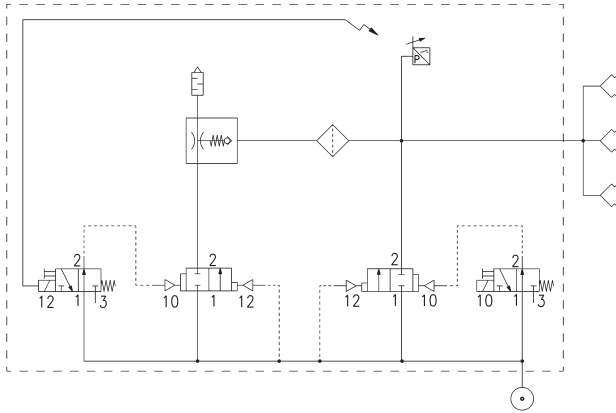
Evacuation time for different vacuum values

# DIAGRAMS VEC

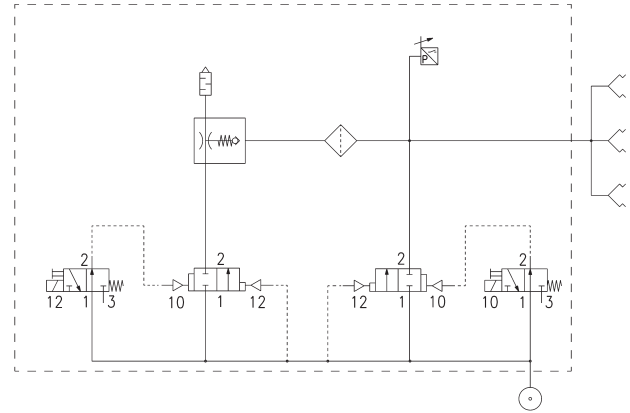


Suction rate for different vacuum values

## Normally Closed valve functions

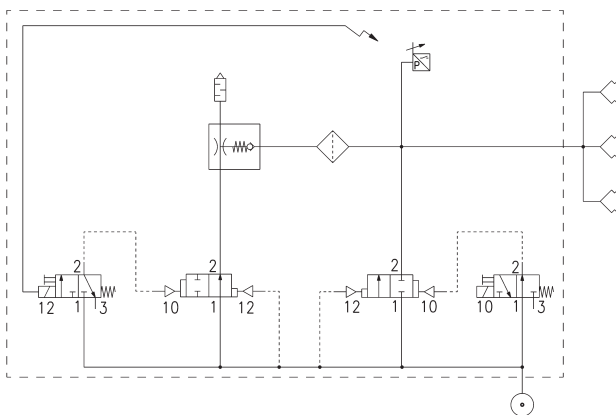


VEC...C2-RD - VEC...C2-RE

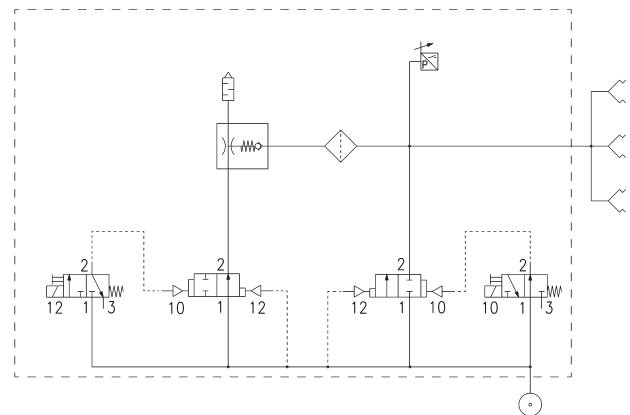


VEC...C2-VD - VEC...C2-VE

## Normally Open valve functions



VEC...A2-RD - VEC...A2-RE



VEC...A2-VD - VEC...A2-VE

## EJECTORS VEC 10 - 15 - 20 - 25



....D = SWD-V00-PA

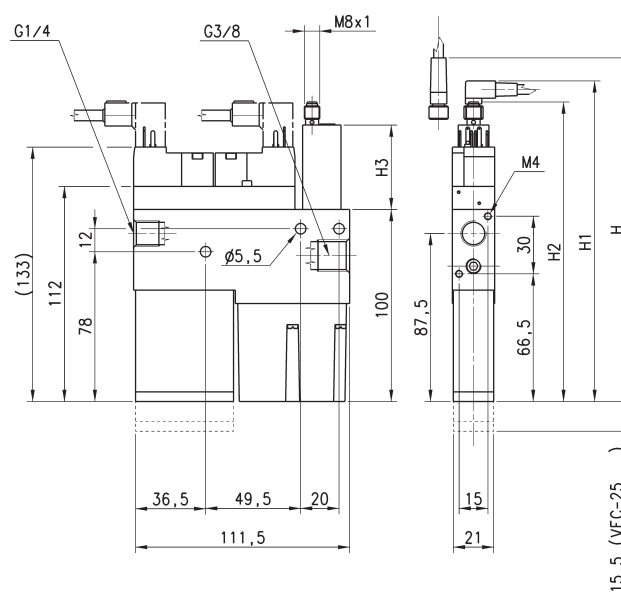
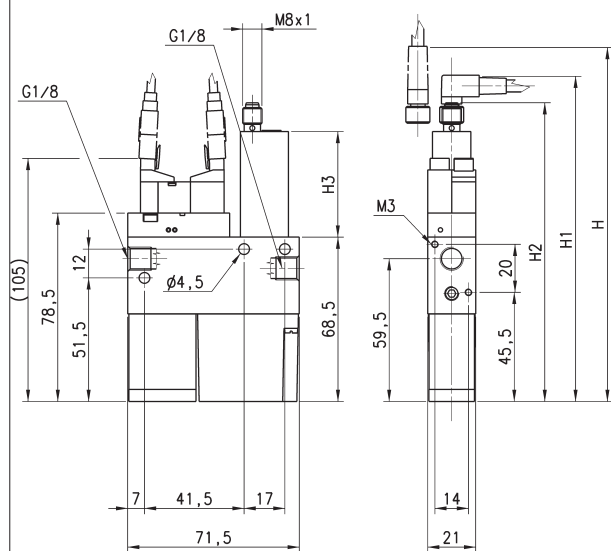
Electronic digital display; 2 digital outputs

...E = SWE-V00-PA

Electronic without digital display; 1 digital output and 1 analog output.

VEC-10/15...

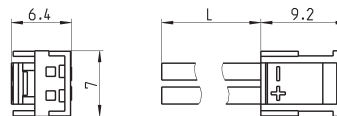
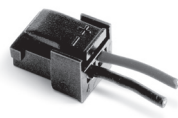
VEC-20/25...



### DIMENSIONS

Mod. [ D ]	Mod. [ E ]	R = With air saving	H	H1	H2	H3
<b>VEC-10...-RD</b>	VEC-10...-RE	R	162	150	139	58,5
<b>VEC-15...-RD</b>	VEC-15...-RE	R	162	150	139	58,5
<b>VEC-20...-RD</b>	VEC-20...-RE	R	195,5	183,5	172,5	58,5
<b>VEC-25...-RD</b>	VEC-25...-RE	R	195,5	183,5	172,5	58,5
<b>VEC-10...-VD</b>	VEC-10...-VE	-	147,5	135,5	124,5	44
<b>VEC-15...-VD</b>	VEC-15...-VE	-	147,5	135,5	124,5	44
<b>VEC-20...-VD</b>	VEC-20...-VE	-	181	169	158	44
<b>VEC-25...-VD</b>	VEC-25...-VE	-	181	169	158	44

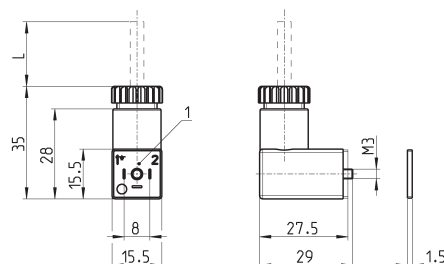
### Connector Mod. 121-8.. for Mod. VEC-10 and VEC-15



Mod.	description	colour	L = cable length (mm)	cable holding
<b>121-803</b>	crimped cable	black	300	crimping
<b>121-806</b>	crimped cable	black	600	crimping
<b>121-810</b>	crimped cable	black	1000	crimping
<b>121-830</b>	crimped cable	black	3000	crimping

### Connector Mod. 126-... DIN 43650 pin spacing 8 mm

For Mod. VEC-20 and VEC-25

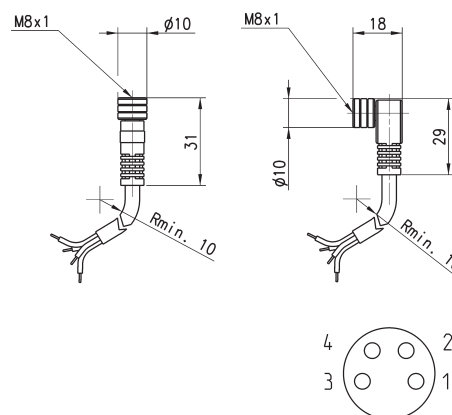


Mod.	description	colour	working voltage	cable length [ L ]	cable holding	tightening torque
<b>126-550-1</b>	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
<b>126-800</b>	connector, without electronics	black	-	-	PG7	0.3 Nm
<b>126-701</b>	connector, varistor + Led	transparent	24 V AC/DC	-	PG7	0.3 Nm

1 = 90° adjustable connector

### Circular M8 4-pole connectors, Female

With PU sheathing, non shielded cable.  
Protection class: IP65

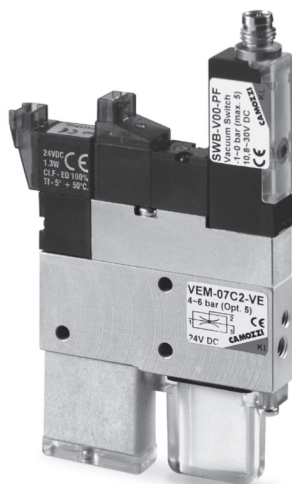


Mod.	Type of connector	Cable length (m)
<b>CS-DF04EG-E200</b>	straight	2
<b>CS-DF04EG-E500</b>	straight	5
<b>CS-DR04EG-E200</b>	90°	2
<b>CS-DR04EG-E500</b>	90°	5



# Series VEM compact ejectors

Miniaturized vacuum generators with integrated valves and monitoring system. Possibility to command suction and blow-off individually without using external valves.



- » Extremely compact with further reduced weight.
- » Modularity for easy installation.
- » Easy monitoring of the vacuum level through integrated vacuum switch.

One of the most important features of Series VEM compact ejector is the extreme compactness. This compactness and low weight makes them suitable for "dynamic" applications such as robots, when assembled directly on the part in motion (gripper head etc.)

The Compact ejector Series VEM have integrated suction-and blow off individually without using external valves. With these it is therefore possible to command suction and blow-off individually without using external valves. The compact ejectors Series VEM are often used in completely automatic handling systems.

## GENERAL DATA

<b>Description</b>	- body in anodized Aluminium - valve function for the suction available in normally open (NO ) or normally closed (NC) version - blow-off valve (NC), integrated silencer and filter
<b>Options</b>	possibility of mounting fitting plate

## CODING EXAMPLE

VE	M	-	05	C	2	-	VE
----	---	---	----	---	---	---	----

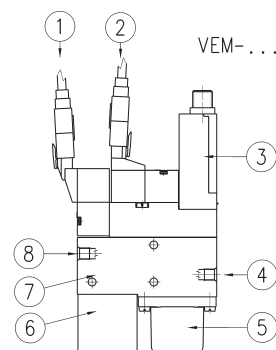
<b>VE</b>	SERIES VE = Vacuum ejector
<b>M</b>	VERSION M = compact, mini
<b>05</b>	NOZZLE DIAMETER 05 = 0,5 mm 07 = 0,7 mm 10 = 1,0 mm
<b>C</b>	VALVE FUNCTION C = NC (suction OFF when not activated) A = NO (suction ON when not activated)
<b>2</b>	VERSION 2 = with Blow-off valve
<b>VE</b>	VALVE TYPE VE = without air saving system, with electronic vacuum switch

## TECHNICAL DATA



## EJECTOR SYSTEM:

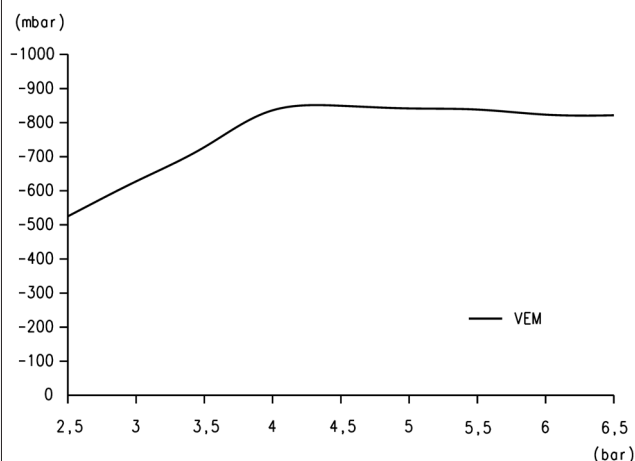
- |                    |                          |
|--------------------|--------------------------|
| 1 = Suction valve  | 5 = Filter               |
| 2 = Blow-off valve | 6 = Silencer             |
| 3 = Vacuum switch  | 7 = Body                 |
| 4 = Vacuum inlet   | 8 = Compressed air inlet |



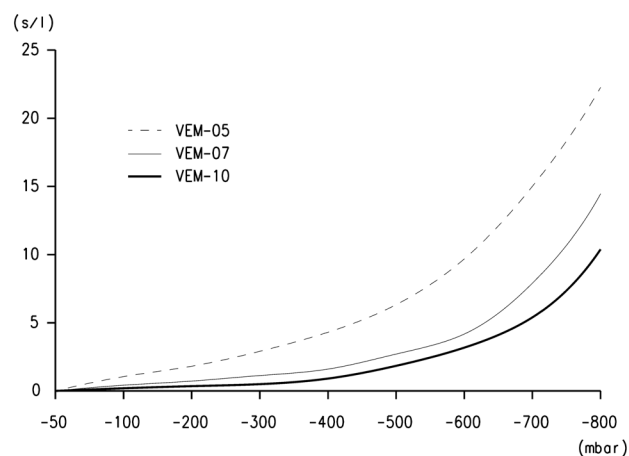
## TECHNICAL DATA

Mod.	Ø nozzle (mm)	Degree of evacuation (%)	Max. Suction rate (l/min)	Max. Suction rate (m³/h)	Air consumption (l/min)	Air cons. during evac. (m³/h)	Air cons. during evac. (l/min)	Noise level workp. gripped [db(A)]	Noise level free [db(A)]	Optimum operating pressure (bar)	Weight (kg)	Temperature range
VEM-05	0,5	85	6	0,4	13	0,8	26	62	62	4,5	0,08	0 / 45°C
VEM-07	0,7	85	12	0,7	21	1,3	26	67	70	4,5	0,08	0 / 45°C
VEM-10	1	85	23	1,4	46	2,8	26	73	76	4,5	0,08	0 / 45°C

## DIAGRAMS VEM

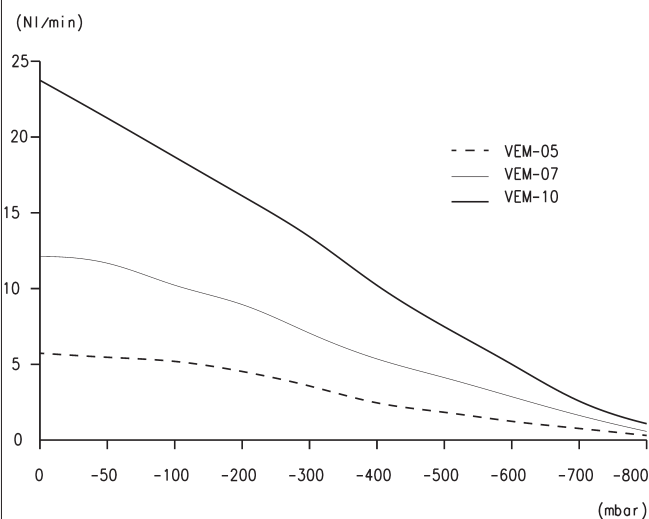


Achievable vacuum at different operating pressures

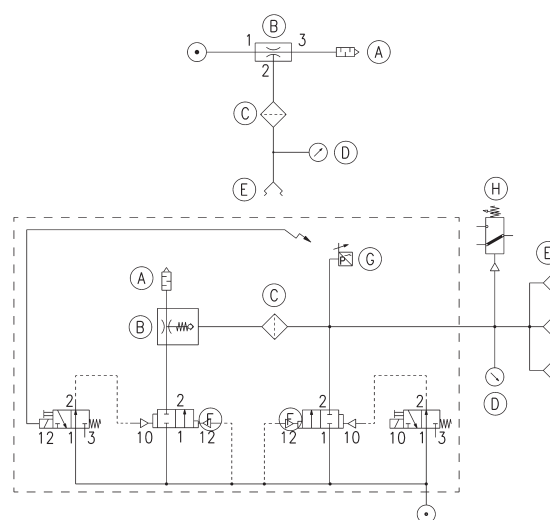


Evacuation time for different vacuum values

## DIAGRAMS VEM and EXAMPLES OF PNEUMATIC SCHEME

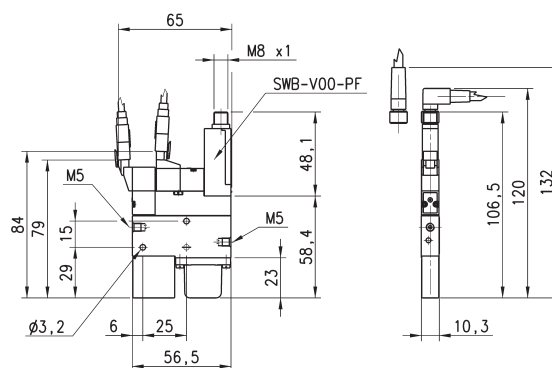


Suction rate for different vacuum values



- A = Silencer
- B = Ejector
- C = Vacuum filter
- D = Vacuum gauge
- E = Suction pad
- F = 2/2 valve
- G = Adjustable vacuum switch internal signal
- H = Adjustable vacuum switch external signal

## Series VEM compact ejectors



Mod.

VEM-05C2-VE

VEM-05A2-VE

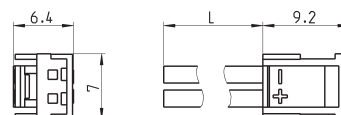
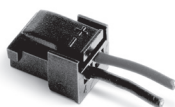
VEM-07C2-VE

VEM-07A2-VE

VEM-10C2-VE

VEM-10A2-VE

## Connector Mod. 121-8..

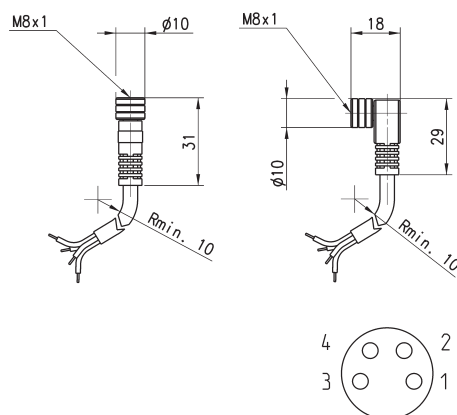


Mod.	description	colour	L = cable length (mm)	cable holding
<b>121-803</b>	crimped cable	black	300	crimping
<b>121-806</b>	crimped cable	black	600	crimping
<b>121-810</b>	crimped cable	black	1000	crimping
<b>121-830</b>	crimped cable	black	3000	crimping

Circular M8 4-pole connectors, Female

Protection class: IP65

Materials: PU non shielded cable



Mod.	Type of connector	Cable length (m)
<b>CS-DF04EG-E200</b>	straight	2
<b>CS-DF04EG-E500</b>	straight	5
<b>CS-DR04EG-E200</b>	90°	2
<b>CS-DR04EG-E500</b>	90°	5

# Series NPF flexible suction pad mountings

The vulcanisation provides flexibility in all directions.  
Thread G1/4



- » Flexible in all directions for optimal adaption to the workpiece (up to 12°)
- » Low pivoting point which reduces the wear on the suction pad.
- » Rubber covered (vulcanised) metal connection for heavy loads.

**Series NPF flexible suction pad mounting allows a better adaption between the suction pad and the workpiece due to its flexibility in all directions.**

#### Applications:

- Suitable for use in conjunction with larger flat suction pads on bigger workpieces which are either inclined or have a tendency to sag during the lifting operation or simply have a slightly irregular shape.
- They can be used in combination with spring plungers for further compensation in height if needed.

## GENERAL DATA

<b>Description</b>	Flexible suction pad mounting
<b>Materials</b>	- Steel body - Vulcanised rubber connection

## CODING EXAMPLE

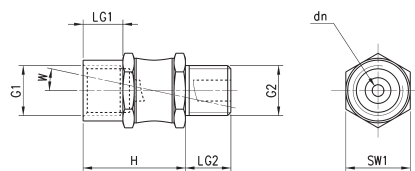
NPF	-	FM	-	1/4	-	M10 X 1,25
-----	---	----	---	-----	---	------------

NPF	SERIES NPF = Flexible suction pad mountings
FM	THREAD VERSION FM = G1 Female / G2 Male
1/4	FEMALE THREAD G1 1/4 = G1/4
M10x1,25	MALE THREAD G2 M10x1,25 = M10x1,25 1/4 = G1/4

## Flexible suction pad mountings Series NPF

\* G1 = Female thread (F)

\*\* G2 = Male thread (M)



## DIMENSIONS

Mod.	dn	G1 *	G2 **	H	LG1	LG2	SW1	W(°)	Vertical load (N)	Bending moment (Nm)	Weight (g)
NPF-FM-1/4-M10X1,25	2,8	G1/4 F	M10X1,25 M	27	10,5	8	17	12	500	8	26
NPF-FM-1/4-1/4	3	G1/4 F	G1/4 M	27	12	12	17	12	750	10	30

# Series NPM and NPR (non rotating) spring plungers

These spring plungers are used in situations where significant height differences of the workpiece have to be compensated for.

Thread size M3, M5, G1/8, G1/4, plunger stroke length from 5 to 75 mm.



- » Spring plungers with lower pressure for soft contact on delicate surfaces, and good compensation in height
- » Wide range of sizes with different stroke lengths covering a wide range of applications
- » Non rotating version available

The spring plungers are used in situations where significant height differences of the workpieces have to be compensated for.

The spring provides furthermore a gentle approach towards the workpiece without further complex controls in fully automated system, which is important when handling sensitive workpieces.

Applications:

- Handling of parts with different heights (for example curved metal sheets)
- Handling of a very fragile parts (for example glass sheets), or parts with a delicate surface

## GENERAL DATA

<b>Description</b>	<ul style="list-style-type: none"> <li>- spring plunger consisting of a high-strength steel rod</li> <li>- guide sleeve</li> <li>- lower spring</li> <li>- threaded fitting (internal thread for suction pads until M5, otherwise external thread)</li> </ul>
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CODING EXAMPLE

NPM	-	FM	-	1/4	-	75
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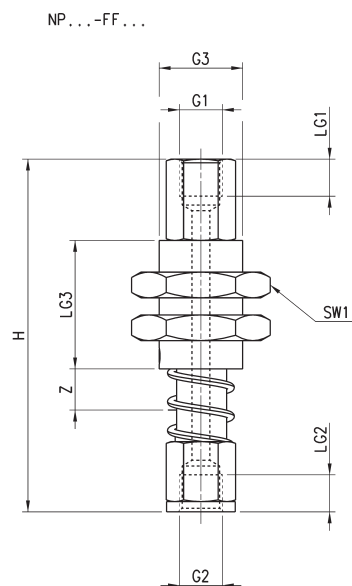
NPM	SERIES NPM = spring plunger NPR = spring plunger - non-rotating
FM	THREAD VERSION FM = female / male FF = female / female
1/4	THREAD M3 = M3 M5 = M5 1/8 = G1/8 1/4 = G1/4
75	COMPENSATION STROKE 05 = 5 mm 10 = 10 mm 15 = 15 mm 20 = 20 mm 25 = 25 mm 50 = 50 mm 75 = 75 mm



# TECHNICAL DATA

Mod.	Spring force (N/mm)	Spring force in rest position (N)	Spring force at half the stroke length (N)	Plunger stroke length (mm)	Max. vertical static load (N)	Max. horizontal static load (N)	Weight (g)
<b>NPM-FF-M3-05</b>	0,596	1,49	2,98	5	550	47	9
<b>NPM-FF-M5-05</b>	0,508	3,3	4,57	5	1500	132	16
<b>NPM-FF-M5-10</b>	0,323	2,75	4,36	10	1500	97	19
<b>NPM-FF-M5-20</b>	0,209	1,78	3,87	20	1500	63	25
<b>NPM-FM-1/8-15</b>	0,221	3,53	5,19	15	3700	385	80
<b>NPM-FM-1/8-25</b>	0,143	3,57	5,36	25	3700	283	90
<b>NPM-FM-1/8-50</b>	0,097	2,92	5,34	50	3700	173	110
<b>NPM-FM-1/4-25</b>	0,711	6,47	15,36	25	2400	747	145
<b>NPM-FM-1/4-50</b>	0,452	1,4	12,7	50	2400	466	175
<b>NPM-FM-1/4-75</b>	0,262	5,38	15,2	75	2400	340	190
<b>NPR-FF-M3-05</b>	0,596	1,49	2,98	5	550	47	9
<b>NPR-FF-M5-05</b>	0,508	3,30	4,57	5	1500	132	16
<b>NPR-FF-M5-10</b>	0,323	2,75	4,36	10	1500	97	19
<b>NPR-FF-M5-20</b>	0,209	1,78	3,87	20	1500	63	25
<b>NPR-FM-1/8-15</b>	0,221	3,53	5,19	15	3700	385	80
<b>NPR-FM-1/8-50</b>	0,097	2,92	5,34	50	3700	173	110
<b>NPR-FM-1/4-25</b>	0,711	6,47	15,36	25	2400	747	144
<b>NPR-FM-1/4-75</b>	0,262	5,38	15,20	75	2400	340	202

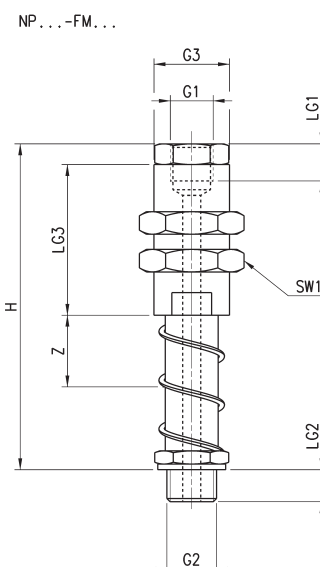
# NPM-NPR Female - Female Version



## DIMENSIONS

Mod.	G1	G2	G3	H	LG1	LG2	LG3	SW1	Z
<b>NPM-FF-M3-05</b>	M3F	M3F	M6X0,75	33,5	3,8	6	10	10	5
<b>NPM-FF-M5-05</b>	M5F	M5F	G1/8	41,2	5,5	6,2	15	14	5
<b>NPM-FF-M5-10</b>	M5F	M5F	G1/8	47,2	5,5	6,2	15	14	10
<b>NPM-FF-M5-20</b>	M5F	M5F	G1/8	59,2	5,5	6,2	15	14	20
<b>NPR-FF-M3-05</b>	M3F	M3F	M6X0,75	33,5	3,8	6	10	10	5
<b>NPR-FF-M5-05</b>	M5F	M5F	G1/8	41,2	5,5	6,2	15	14	5
<b>NPR-FF-M5-10</b>	M5F	M5F	G1/8	47,2	5,5	6,2	15	14	10
<b>NPR-FF-M5-20</b>	M5F	M5F	G1/8	59,2	5,5	6,2	15	14	20

# NPM-NPR Female - Male Version



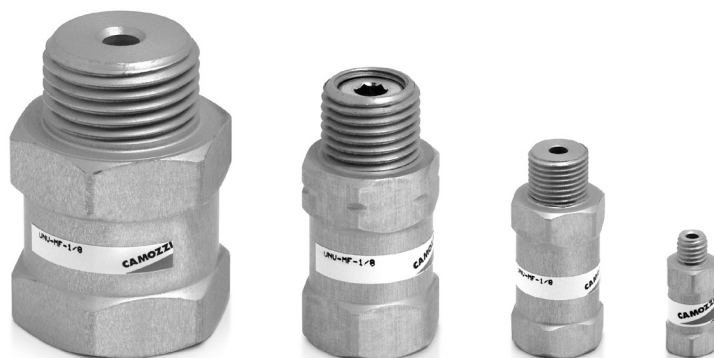
## DIMENSIONS

Mod.	G1	G2	G3	H	LG1	LG2	LG3	SW1	Z
<b>NPM-FM-1/8-15</b>	G1/8	G1/8 M	M16X1	80	8	6,5	30	22	15
<b>NPM-FM-1/8-25</b>	G1/8	G1/8 M	M16X1	93	8	6,5	30	22	25
<b>NPM-FM-1/8-50</b>	G1/8	G1/8 M	M16X1	124	8	6,5	30	22	50
<b>NPM-FM-1/4-25</b>	G1/8	G1/4 M	M20X1,5	95	13	8,5	40	24	25
<b>NPM-FM-1/4-50</b>	G1/8	G1/4 M	M20X1,5	124,5	13	8,5	40	24	50
<b>NPM-FM-1/4-75</b>	G1/8	G1/4 M	M20X1,5	154	13	8,5	40	24	75
<b>NPR-FM-1/8-15</b>	G1/8	G1/8 M	M16X1	80	8	6,5	30	22	15
<b>NPR-FM-1/8-50</b>	G1/8	G1/8 M	M16X1	124	8	6,5	30	22	50
<b>NPR-FM-1/4-25</b>	G1/8	G1/4 M	M20X1,5	95	13	8,5	40	24	25
<b>NPR-FM-1/4-75</b>	G1/8	G1/4 M	M20X1,5	154	13	8,5	40	24	75

# Series VNV check valves

These check valves are mainly used on vacuum gripper systems containing multiple suction pads in order to shut off individual suction pads which are not covered.

Thread size M5, G1/8, G1/4, G3/8, G1/2.



» Enable the de-activation of suction pads not in contact with the workpiece, thus makes it possible to create more versatile “multi use” gripping system.

The check valves Series VNV are mainly used on vacuum gripper systems containing multiple suction pads in order to shut off individual suction pads which are not covered or accidentally pulled away from the workpiece. In this way the gripper system can operate correctly maintaining the vacuum level necessary for the application.

Applications:

- Handling objects with different shape and dimensions with the same gripping system

## GENERAL DATA

- Description**
- ball seat valve with fixed bypass function
  - aluminium body with internal elements in brass
  - integrated dirt filter

## TECHNICAL DATA

Max required suction flow and according different pressures

Mod.	- 0,3 bar (m³/h)	- 0,3 bar (l/min)	- 0,6 bar (m³/h)	- 0,6 bar (l/min)	Max flow (m³/h)	Max flow (l/min)	Weight (g)
<b>VNV-MF-M5</b>	0,12	2	0,22	3,7	2,3	38,3	2,2
<b>VNV-MF-1/8</b>	0,22	3,7	0,43	7,2	15,7	261,7	11,2
<b>VNV-MF-1/4</b>	0,24	4	0,47	7,8	21,9	365	17,5
<b>VNV-MF-1/2</b>	0,7	11,7	1,4	23,3	37	616,7	47,4
<b>VNV-MF-1/8</b>	0,22	3,7	0,43	7,2	15,7	261,7	11,2
<b>VNV-MF-1/4</b>	0,24	4	0,47	7,8	21,9	365	17,5
<b>VNV-MF-1/2</b>	0,7	11,7	1,4	23,3	37	616,7	47,4

## CODING EXAMPLE

<b>VNV</b>	<b>-</b>	<b>MF</b>	<b>-</b>	<b>M5</b>
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**VNV** SERIES  
VNV = Check valve

**MF** THREAD VERSION  
MF= G1 male / G2 female  
FM = G1 female / G2 male

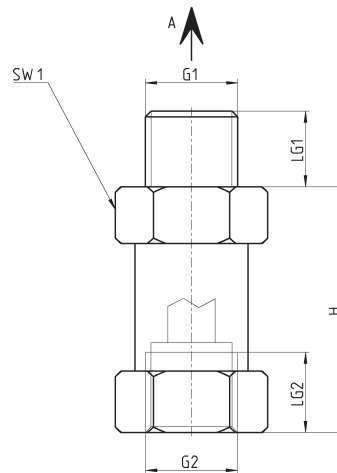
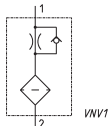
**M5** THREAD  
M5 = M5  
1/8 = G1/8  
1/4 = G1/4  
1/2 = G1/2

## VNV from M5 to G1/2, Male - Female thread

Drawing note:  
A = air flow direction during suction



Table note:  
\* M = Male thread  
\* F = Female thread



### DIMENSIONS

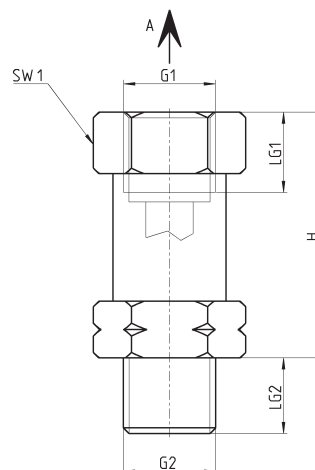
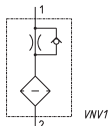
Mod.	G1*	G2*	H	LG1	LG2	SW1
<b>VNV-MF-M5</b>	M 5 M	M 5 F	15,5	4,5	4,5	8
<b>VNV-MF-1/8</b>	G1/8 M	G1/8 F	26	8,5	8	14
<b>VNV-MF-1/4</b>	G1/4 M	G1/4 F	26	11	10	17
<b>VNV-MF-1/2</b>	G1/2 M	G1/2 F	29	14	12	27

## VNV from G1/8 to G1/2 - Female - Male thread

Drawing note:  
A = air flow direction during suction



Table note:  
\* M = Male thread  
\* F = Female thread



### DIMENSIONS

Mod.	G1*	G2*	H	LG1	LG2	SW1
<b>VNV-FM-1/8</b>	G1/8 F	G1/8 M	26	8	8,5	14
<b>VNV-FM-1/4</b>	G1/4 F	G1/4 M	26	10	11	17
<b>VNV-FM-1/2</b>	G1/2 F	G1/2 M	29	12	14	27

# Series FVD inline vacuum filters

For use in vacuum systems with minor to medium levels of dirt.  
Direct mounting on the suction pad.



- » Hose connection and blocking nut
- » Transparent body with an arrow indicating the flow direction
- » Replaceable filter element
- » Transparent cartridge to check the filter's conditions

These filters can be mounted directly on the suction pad.  
The filter element can be easily substituted and its conditions can be checked thanks to its transparent wrapping.

## GENERAL DATA

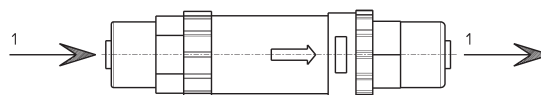
<b>Description</b>	Inline filter
<b>Materials</b>	- body in technopolymer - cloth filter

## CODING EXAMPLE

FVD	-	6/4	-	50
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<b>FVD</b>	SERIES: FVD = inline filter
<b>6/4</b>	CONNECTIONS: 6/4 = tube 6 8/6 = tube 8
<b>50</b>	FILTER ELEMENT: 50 = 50 µm

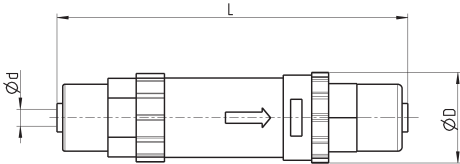
## TECHNICAL DATA



### TECHNICAL DATA

Mod.	Filter element (µm)	Nominal flow (l/min)	Max vacuum (mbar)	Max pressure at 25°C (bar)	Max pressure at 50°C (bar)	Weight (kg)
<b>FVD-6/4-50</b>	50	32	-990	7	5	0,006
<b>FVD-8/6-50</b>	50	66	-990	7	5	0,010

Series FVD inline filter



DIMENSIONS			
Mod.	d	D	L
FVD-6/4-50	6	16	61
FVD-8/6-50	8	23	68



# Series FVT vacuum cup filters

Used as pre-filters and fine filters for air with varying amounts of contamination, for the protection of the vacuum generator.  
Mounted as protection for the ejector.



- » Wide range of sizes
- » Recycling filter cartridge
- » Replaceable filter element
- » Transparent filter cup to check the filter's conditions

These filters can be mounted directly under the ejectors to protect them in case of dusty environmental conditions. The filter element can be substituted very easily and its conditions can be checked thanks to its transparent wrapping. These filters can be wall-mounted through a proper bracket. Filtering of vacuum and air up to 7 bar.

## GENERAL DATA

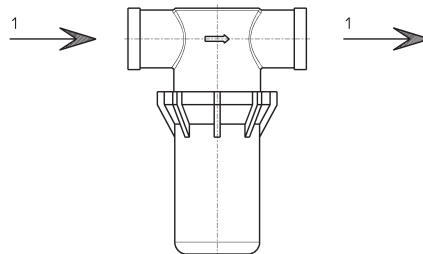
<b>Description</b>	Cup filter
<b>Materials</b>	- body in technopolymer - filter in polyethylene (PE)

## CODING EXAMPLE

FVT	-	FF	-	1/4	-	80
-----	---	----	---	-----	---	----

<b>FVT</b>	SERIES: FVT = cup filter
<b>FF</b>	THREAD SIZE: FF = female-female
<b>1/4</b>	CONNECTIONS: 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 1/2 = G1/2 3/4 = G3/4
<b>80</b>	FILTER ELEMENT: 80 = 80 µm

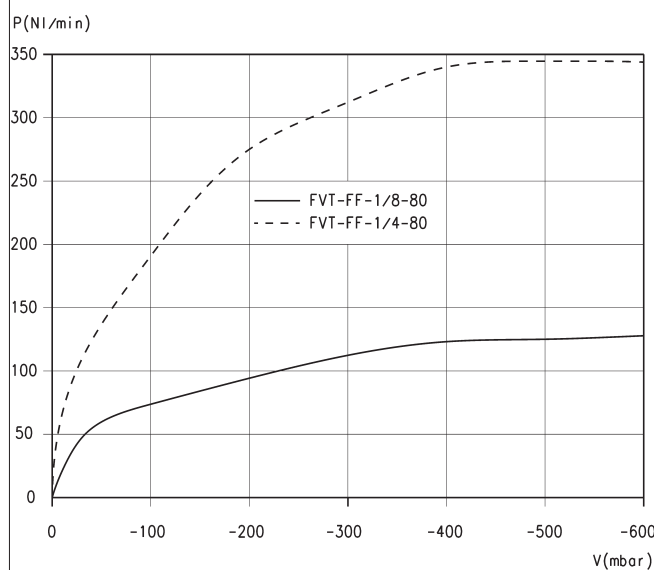
## TECHNICAL DATA



## TECHNICAL DATA

Mod.	Filter element (µm)	Nominal flow (l/min)	Max vacuum (mbar)	Max pressure at 25°C (bar)	Max pressure at 50°C (bar)	Weight (kg)
FVT-FF-1/8-80	80	45	-990	7	5	0,049
FVT-FF-1/4-80	80	110	-990	7	5	0,047
FVT-FF-3/8-80	80	245	-990	7	5	0,079
FVT-FF-1/2-80	80	300	-990	7	5	0,076
FVT-FF-3/4-80	80	600	-990	7	5	0,164

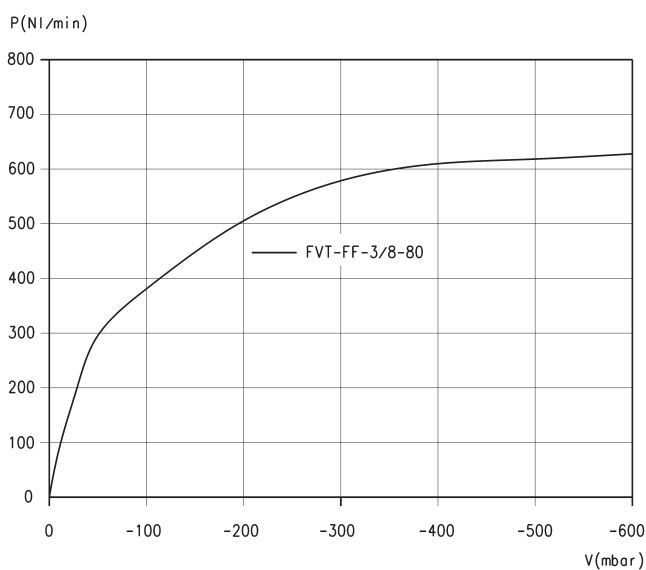
## Diagrams FVT



### LEGEND:

P = Volumetric flow  
V = Vacuum values

Note: Flow rate for different vacuum values

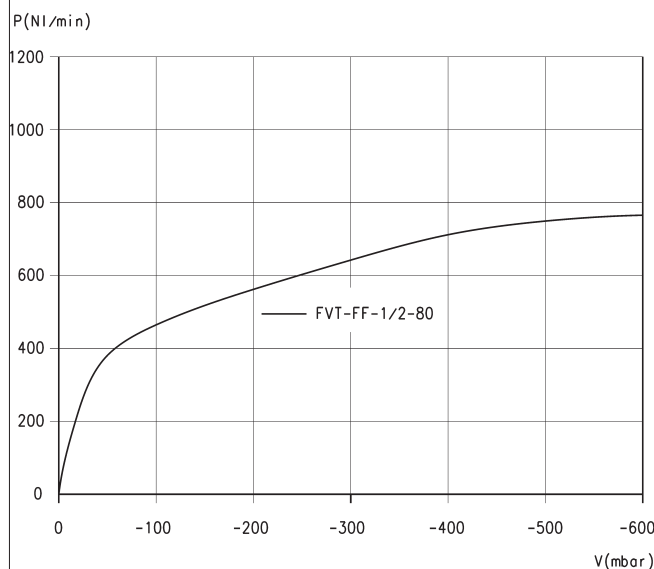


### LEGEND:

P = Volumetric flow  
V = Vacuum values

Note: Flow rate for different vacuum values

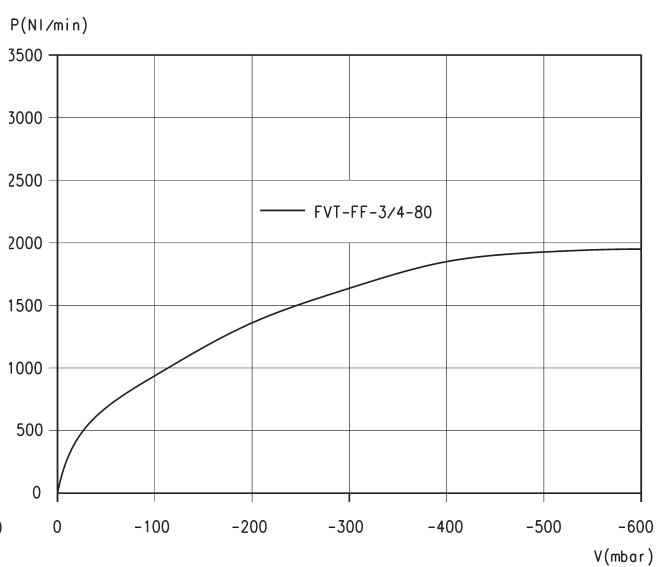
## Diagrams FVT



### LEGEND:

P = Volumetric flow  
V = Vacuum values

Note: Flow rate for different vacuum values

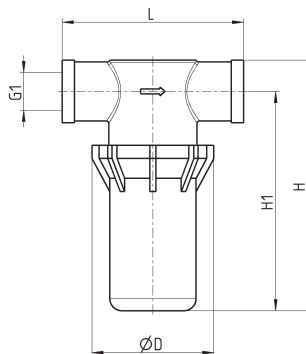
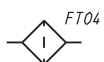


### LEGEND:

P = Volumetric flow  
V = Vacuum values

Note: Flow rate for different vacuum values

## Series FVT cup filter

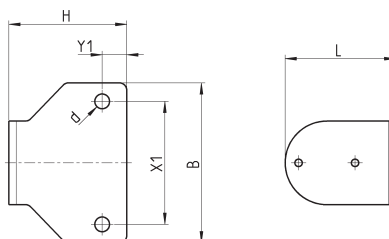


## DIMENSIONS

Mod.	D	G1	H	H1	L
<b>FVT-FF-1/8-80</b>	48	G1/8-F	60	50	58
<b>FVT-FF-1/4-80</b>	48	G1/4-F	60	50	76
<b>FVT-FF-3/8-80</b>	48,5	G3/8-F	101	88	77,2
<b>FVT-FF-1/2-80</b>	48	G1/2-F	101	88	77,2
<b>FVT-FF-3/4-80</b>	75	G3/4-F	137	118	90,5

## Mounting foot bracket

The mod. FVT-FF-1/8-80-B is used on cup filters with ports G1/8, G1/4, G3/8 e G1/2.  
The mod. FVT-FF-3/4-80-B is used on cup filters with ports G3/4.



## DIMENSIONS

Mod.	B	d	H	L	X1	Y1
<b>FVT-FF-1/8-80-B</b>	65	6	48	45	50	10
<b>FVT-FF-3/4-80-B</b>	85	6	52	70	70	10