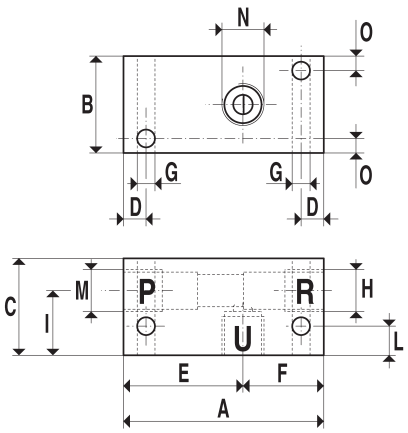
[Tables showing the quantity of evacuated air and the evacuation times of vacuum generators, at the different vacuum levels.]

Generator Item No.	Max. vacuum level -KPa	Supply pressure bar (g)	Vacuum air flow (Nl/s) at different vacuum levels (-KPa)									
			0	10	20	30	40	50	60	70	80	90
15 01 10	80	6	0.638	0.605	0.534	0.396	0.300	0.193	0.117	0.086	---	---
15 02 10	80	6	0.638	0.605	0.534	0.396	0.300	0.193	0.117	0.086	---	---
15 03 10	85	6	1.388	1.316	1.163	0.864	0.656	0.423	0.257	0.190	0.019	---
15 04 10	85	6	1.388	1.316	1.163	0.864	0.656	0.423	0.257	0.190	0.019	---
PVP 1	87	5	0.277	0.264	0.232	0.175	0.129	0.084	0.054	0.034	0.004	---
PVP 2	85	4	0.361	0.344	0.302	0.227	0.168	0.109	0.071	0.045	0.005	---
PVP 2 M	85	4	0.361	0.344	0.302	0.227	0.168	0.109	0.071	0.045	0.005	---
PVP 3	85	4	0.500	0.476	0.418	0.314	0.233	0.151	0.098	0.062	0.007	---
PVP 7	85	6	2.277	2.159	1.908	1.417	1.076	0.694	0.422	0.312	0.031	---
M 3	85	6	0.972	0.789	0.591	0.354	0.261	0.186	0.125	0.087	0.052	---
M 7	85	6	1.944	1.578	1.182	0.709	0.522	0.373	0.250	0.174	0.104	---
M 10	85	6	2.916	2.366	1.774	1.063	0.783	0.560	0.375	0.262	0.156	---
M 14	85	6	3.888	3.155	2.365	1.418	1.045	0.746	0.500	0.349	0.208	---
MVG 3	85	6	0.972	0.789	0.591	0.354	0.261	0.186	0.125	0.087	0.052	---
MVG 7	85	6	1.944	1.578	1.182	0.709	0.522	0.373	0.250	0.174	0.104	---
MVG 10	85	6	2.916	2.366	1.774	1.063	0.783	0.560	0.375	0.262	0.156	---
MVG 14	85	6	3.888	3.155	2.365	1.418	1.045	0.746	0.500	0.349	0.208	---
GV 1	90	5	0.250	0.237	0.209	0.155	0.118	0.076	0.046	0.034	0.003	---
GV 2	90	5	0.250	0.237	0.209	0.155	0.118	0.076	0.046	0.034	0.003	---
GV 3	90	5	0.250	0.237	0.209	0.155	0.118	0.076	0.046	0.034	0.003	---
PVP 12 M	90	6	4.16	2.95	1.93	0.97	0.69	0.55	0.41	0.27	0.16	---
PVP 25 M	90	6	6.94	5.25	3.40	1.61	1.15	0.92	0.69	0.48	0.27	---
PVP 40 M	90	6	11.11	7.93	5.29	2.64	1.89	1.51	1.13	0.79	0.45	---
PVP 70 M	90	6	18.88	13.49	8.99	4.49	3.21	2.57	1.93	1.35	0.77	---
PVP 100 M	90	6	27.22	19.44	12.96	6.48	4.63	3.70	2.78	1.94	1.11	---
PVP 140 M	90	6	41.66	29.76	19.84	9.92	7.08	5.67	4.26	2.98	1.70	---
PVP 170 M	90	6	47.22	33.73	22.48	11.24	8.03	6.42	4.83	3.38	1.93	---
PVP 200 M	90	6	55.00	39.28	26.19	13.09	9.35	7.48	5.62	3.93	2.25	---
PVP 250 M	90	6	69.44	49.60	33.06	16.53	11.80	9.44	7.10	4.96	2.84	---
PVP 300 M	90	6	83.33	59.52	39.68	19.84	14.17	11.33	8.52	5.96	3.40	---
PVP 25 MD	90	6	11.11	7.77	5.22	2.58	1.85	1.47	1.11	0.77	0.44	---
PVP 35 MD	90	6	13.88	9.71	6.52	3.23	2.31	1.84	1.38	0.97	0.55	---
PVP 50 MD	90	6	15.55	11.78	7.30	3.62	2.59	2.06	1.55	1.08	0.62	---
PVP 60 MD	90	6	21.94	15.35	10.20	5.12	3.65	2.92	2.19	1.53	0.87	---
PVP 75 MD	90	6	24.72	17.30	11.49	5.77	4.11	3.30	2.47	1.73	0.98	---
PVP 150 MD	90	6	50.00	35.00	23.33	11.66	8.33	6.66	5.00	3.33	2.00	---
PVP 300 MD	90	6	97.22	68.05	45.36	22.68	16.19	12.96	9.72	6.47	3.88	---
PVP 450 MD	90	6	141.66	99.16	66.11	33.05	23.61	18.88	14.16	9.44	5.66	---
PVP 600 MD	90	6	183.33	128.33	85.55	42.77	30.55	24.44	18.33	12.22	7.33	---

Generator Item No.	Max. vacuum level -KPa	Supply pressure bar (g)	Air consumption Nl/s	Evacuation time (ms/l = s/cum) at the different vacuum levels (-KPa)									
				10	20	30	40	50	60	70	80	85	90
15 01 10	80	6	1.6	167	334	568	874	1407	1955	3270	5918	---	---
15 02 10	80	6	1.6	167	334	568	874	1407	1955	3270	5918	---	---
15 03 10	85	6	1.8	77	154	262	403	650	903	1510	2737	3887	---
15 04 10	85	6	1.8	77	154	262	403	650	903	1510	2737	3887	---
PVP 1	87	5	0.6	379	767	1304	1996	3213	4467	7460	13525	19206	---
PVP 2	85	4	0.9	296	599	1018	1559	2510	3488	5826	10563	15000	---
PVP 2 M	85	4	0.9	296	599	1018	1559	2510	3488	5826	10563	15000	---
PVP 3	85	4	1.1	210	425	723	1106	1780	2475	4133	7494	10642	---
PVP 7	85	6	3.2	47	95	161	247	397	552	923	1673	2376	---
M 3	85	6	0.9	110	253	508	1001	1698	2479	4140	7369	10464	---
M 7	85	6	1.8	55	126	254	500	849	1239	2070	3684	5232	---
M 10	85	6	2.4	36	83	166	327	555	811	1355	2411	3424	---
M 14	85	6	3.2	27	62	124	245	416	608	1016	1808	2568	---
MVG 3	85	6	0.9	110	253	508	1001	1698	2479	4140	7369	10464	---
MVG 7	85	6	1.8	55	126	254	500	849	1239	2070	3684	5232	---
MVG 10	85	6	2.4	36	83	166	327	555	811	1355	2411	3424	---
MVG 14	85	6	3.2	27	62	124	245	416	608	1016	1808	2568	---
GV 1	90	5	0.4	428	856	1455	2241	3608	5015	8375	15176	---	55847
GV 2	90	5	0.4	428	856	1455	2241	3608	5015	8375	15176	---	55847
GV 3	90	5	0.4	428	856	1455	2241	3608	5015	8375	15176	---	55847
PVP 12 M	90	6	1.6	21.3	54.7	120.1	290.4	519.9	804.8	1425.9	2375.0	---	8750
PVP 25 M	90	6	3.2	12.0	31.1	72.3	174.2	310.8	478.2	802.0	1407.4	---	5184
PVP 40 M	90	6	3.2	8.1	20.2	44.5	106.9	191.3	292.8	487.5	843.4	---	3104
PVP 70 M	90	6	6.4	4.7	11.7	25.8	62.0	111.0	169.9	282.8	489.4	---	1801
PVP 100 M	90	6	9.6	3.3	8.2	18.1	43.5	77.9	119.2	198.6	343.6	---	1264
PVP 140 M	90	6	12.8	2.2	5.5	12.1	29.0	51.9	79.5	132.4	229.0	---	843
PVP 170 M	90	6	16.0	1.9	4.7	10.4	25.0	44.8	68.8	114.3	197.8	---	728
PVP 200 M	90	6	19.2	1.6	4.0	8.8	21.1	37.8	57.8	96.3	166.6	---	613
PVP 250 M	90	6	24.0	1.3	3.2	7.1	17.0	30.5	46.6	77.4	134.0	---	493
PVP 300 M	90	6	28.8	1.1	2.7	5.9	14.3	25.5	39.0	64.8	112.1	---	413
PVP 25 MD	90	6	3.2	8.1	20.2	45.1	108.3	194.5	297.2	500.0	863.6	---	3181
PVP 35 MD	90	6	4.8	6.4	16.2	36.0	86.7	155.4	239.1	396.9	690.9	---	2545
PVP 50 MD	90	6	6.4	5.4	14.5	32.1	77.3	138.8	212.9	356.5	612.9	---	2258
PVP 60 MD	90	6	8.0	4.1	10.4	22.8	54.9	98.0	150.6	251.6	436.8	---	1610
PVP 75 MD	90	6	9.6	3.7	9.2	20.2	48.8	86.7	133.6	222.5	387.8	---	1428
PVP 150 MD	90	6	16.0	1.8	4.5	9.9	24.0	43.1	66.1	90.1	190.4	---	701
PVP 300 MD	90	6	32.0	0.9	2.3	5.1	12.4	22.1	34.0	46.4	98.1	---	362
PVP 450 MD	90	6	48.0	0.6	1.6	3.5	8.5	15.2	23.3	31.8	67.3	---	248
PVP 600 MD	90	6	64.0	0.5	1.2	2.7	6.5	11.7	18.0	24.6	52.0	---	192

[Vacuum generators]

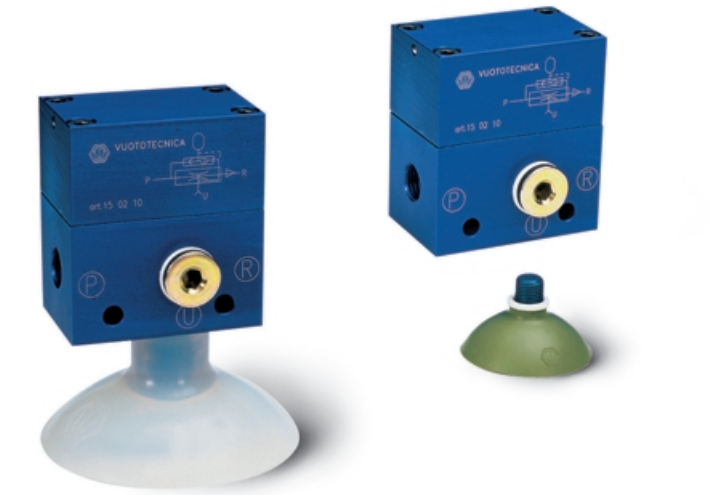


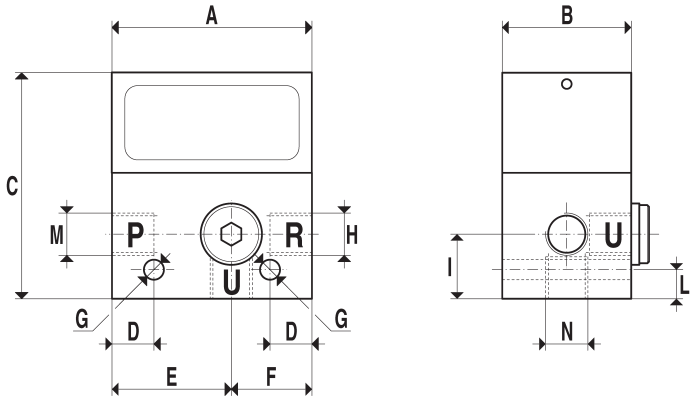
Vacuum generators operate using the Venturi principle.
When feeding the generator with compressed air in port P, a depression is produced at connection U and at point R the feeding air with the sucked air is released.
By interrupting to feed P, the vacuum effect in U stops.
The described vacuum generators are generally used for moving by means of cups non-porous objects or on equipment where the capacity and the vacuum degree requirements are very low.

Art.		15 01 10	15 03 10
Vacuum air flow	cum/h	2.3	5
Maximum vacuum level	-KPa	80	85
Final pressure	mbar (a).	200	150
Supply pressure	bar (g)	4÷6	4÷6
Max supply pressure	bar (g)	7	7
Air consumption at 6 bar	Nl/s	1.6	1.8
Working temperature	°C	-20/+80	-20/+80
Weight	Kg	0.140	0.300
A		62	76
B		30	30
C		30	35
D		7	5
E		37	22.6
F		25	53.4
G	ø	5.5	5.5
H	ø gas	1/4”	1/2”
I		20	21.5
L		9	5
M	ø gas	1/4”	1/4”
N	ø gas	1/4”	3/8”
O		4.5	---

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Vacuum generators with ejector]



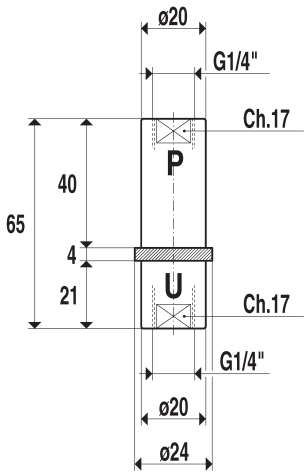


Also these vacuum generators operate using the Venturi principle.
When feeding the generator with compressed air in port P, a depression is produced at connection U and at point R the feeding air with the sucked air is released and, at the same time a chamber contained in the generator is fed which, when the feeding in P stops, releases through the connection U the compressed air stored in it, thus rapidly re-establishing the atmospheric pressure at the using point.
If for example at the using point U a cup is connected, by means of this system it will get detached much more rapidly compared to the previously described vacuum generators.

Art.		15 02 10	15 04 10
Vacuum air flow	cum/h	2.3	5
Maximum vacuum level	-KPa	80	85
Final pressure	mbar (a)	200	150
Supply pressure	bar (g)	4÷6	4÷6
Max supply pressure	bar (g)	7	7
Air consumption at 6 bar	Nl/s	1.6	1.8
Working temperature	°C	-20/+80	-20/+80
Weight	Kg	0.350	0.510
A		62	76
B		40	40
C		70	86
D		13	5
E		37	22.6
F		25	53.4
G	ø	6.5	5.5
H	ø gas	1/4”	1/2”
I		20	21.5
L		9	5
M	ø gas	1/4”	1/4”
N	ø gas	1/4”	3/8”

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

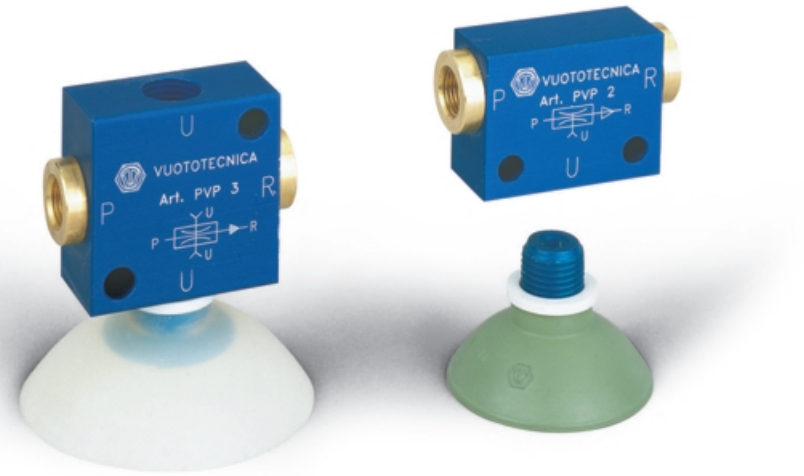
[Vacuum generators in line PVP1]



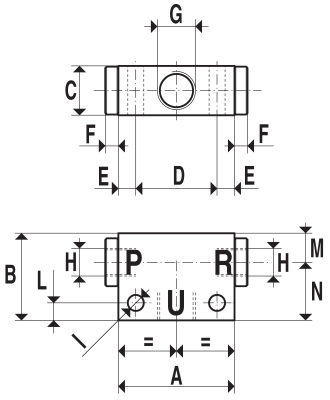
This new range of vacuum generator operates using the Venturi principle.
The feature that distinguishes these from the standard models, are the ports for connection to the supply air and vacuum. These are on the same axis whilst the exhaust port is perpendicular on the body of the unit.
This design offers the advantages of small dimensions, ease of assembly and simple maintenance.
They are equipped with a stainless steel mesh vacuum filter and with a special microfibre silencer on the exhaust, which makes them particularly quiet in operation.
They can be assembled directly on the cup support or holder.

Art.		PVP 1
Vacuum air flow	cum/h	1
Maximum vacuum level	-KPa	87
Final pressure	mbar (a)	130
Supply pressure	bar (g)	5
Max supply pressure	bar (g)	6
Air consumption at 5 bar	Nl/s	0.6
Working temperature	°C	-20/+80
Weight	Kg	0.044

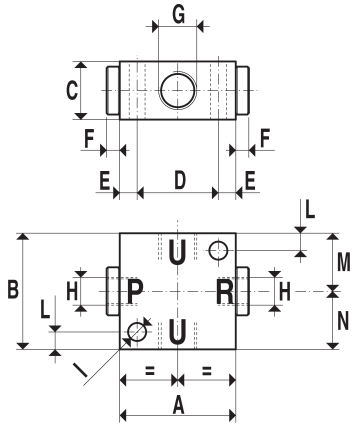
N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.



[Vacuum generators PVP2 and PVP3]



Art. PVP2



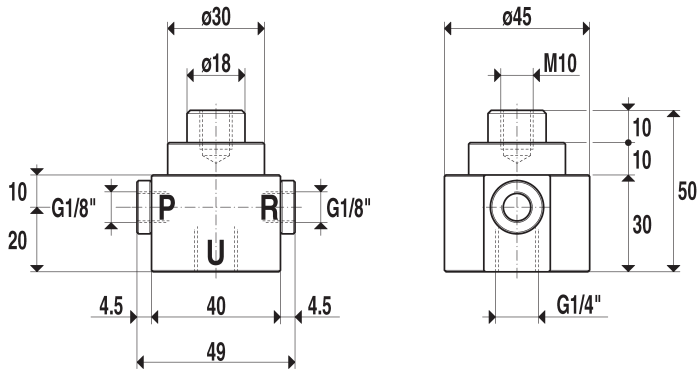
Art. PVP3

With particularly small dimensions, in relation to their performance, these vacuum generators operate using the Venturi principle.
When feeding the generator with compressed air in port P, a depression is produced at connection U and at point R the feeding air with the sucked air is released.
By interrupting to feed P, the vacuum effect in U stops.
The described vacuum generators are generally used for moving by means of cups non-porous objects or on equipment where the capacity and the vacuum degree requirements are very low.

Art.		PVP 2	PVP 3
Vacuum air flow	cum/h	2	3
Maximum vacuum level	-KPa	85	85
Final pressure	mbar (a)	150	150
Supply pressure	bar (g)	4	4
Max supply pressure	bar (g)	6	6
Air consumption at 4 bar	Nl/s	0.9	1.1
Working temperature	°C	-20/+80	-20/+80
Weight	Kg	0.070	0.100
A		40	40
B		30	40
C		17	20
D		28	27
E		6	6.5
F		4.5	4.5
G	ø gas	1/4”	1/4”
H	ø gas	1/8”	1/8”
I	ø	5.5	6
L		6	6.5
M		10	20
N		20	20

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Vacuum generators PVP2M]



The vacuum generators shown on this page are based on the same Venturi principle of those previously described and offer the same performance. However they are designed in such a way as to offer the facility to directly mount the vacuum cup, which is ideal for small pick and place applications.

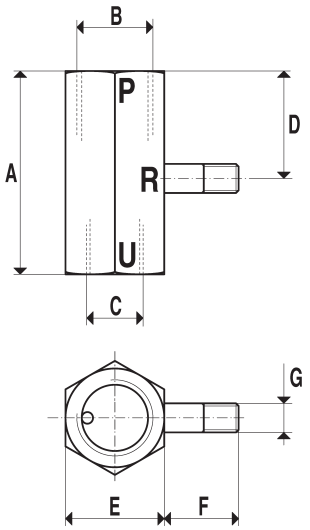
Being a complete vacuum pick and place assembly they can be mounted directly onto the machinery or level compensating units. These vacuum generators are suitable for machine loaders, handling of plates, glass slabs, plastic panels and other similar products.

Art.		PVP 2M
Vacuum air flow	cum/h	2
Maximum vacuum level	-KPa	85
Final pressure	mbar (a)	150
Supply pressure	bar (g)	4
Max supply pressure	bar (g)	6
Air consumption at 4 bar	Nl/s	0.9
Working temperature	°C	-20/+80
Weight	Kg	0.162

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Index]

[Vacuum generators in line GV1, GV2 and GV3]

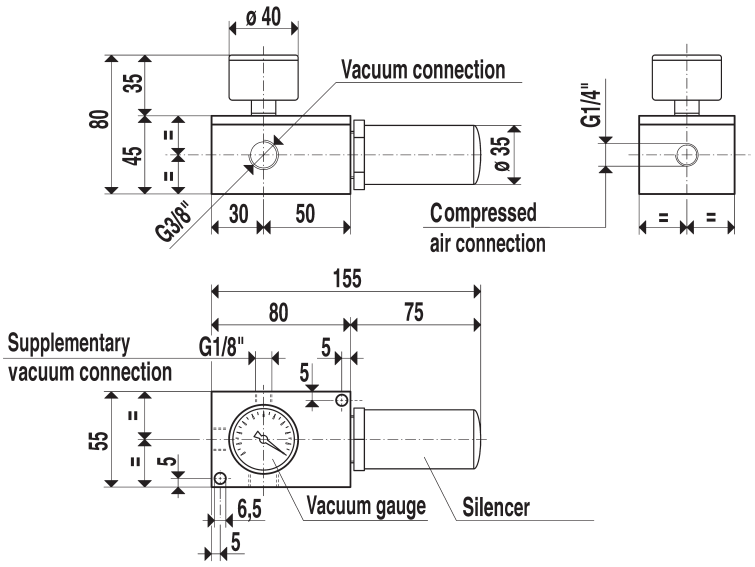


This new range of vacuum generator operates using the Venturi principle.
The feature that distinguishes these from the standard models, are the ports for connection to the supply air and vacuum. These are on the same axis whilst the exhaust port is perpendicular on the body of the unit.
This design offers the advantages of small dimensions, ease of assembly and simple maintenance. They can be assembled directly on the cup supports or holders.

Art.		GV1	GV2	GV3
Vacuum air flow	cum/h	0.9	0.9	0.9
Maximum vacuum level	-KPa	90	90	90
Final pressure	mbar (a)	100	100	100
Supply pressure	bar (g)	4÷5	4÷5	4÷5
Max supply pressure	bar (g)	6	6	6
Air consumption at 5 bar	Nl/s	0.4	0.4	0.4
Working temperature	°C	-20/+80	-20/+80	-20/+80
Weight	Kg	0.019	0.020	0.021
A		30	35	38
B	ø	G1/4"	G1/4"	G1/4"
C	ø	M5	G1/8"	G1/4"
D		18.5	18.5	18.5
E	Ch.	17	17	17
F		13	13	13
G	ø	M5	M5	M5

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Vacuum generators PVP7]



Vacuum generators PVP 7 operate using the Venturi principle previously described for the generators PVP 2 and PVP 3. They are different from these ones for their higher suction capacity, which is possible by the coupling, in parallel, of two ejectors.

Thanks to a special silencer installed on their outlet, they are particularly noiseless.

They are currently equipped with a vacuum gauge for the direct reading of the vacuum degree.

On the supplementary connection of the generator it is possible to install a small vacuum switch to signal the vacuum degree or, a pneumatic solenoid valve for a quicker air introduction at the using point. These vacuum generators can be used to interlock one or more cups or machines, where the capacity and vacuum degree requirement is rather restricted.

Art.		PVP 7		
Vacuum air flow	cum/h	7.2	7.7	8.2
Maximum vacuum level	-KPa	60	73	85
Final pressure	mbar (a)	400	270	150
Supply pressure	bar (g)	4	5	6
Air consumption	Nl/s	2.3	2.7	3.2
Working temperature	°C		-20/+80	
Weight	Kg		0.470	

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Vacuum generators with multiple ejectors General description]

The vacuum generators with multiple ejectors are instruments able to produce a maximum depression of 90% equal to a final vacuum of 100 mbar (a), with different suction capacities. They work using compressed air at 4÷6 bar (g). They consist of multiple ejectors and their number changes according to the suction capacity.

WORKING PRINCIPLE

Every ejector is based on the application of the Venturi pipe: the feeding fluid (compressed air) is led at high speed by a convergent pipe into the fluid that has to be extracted (volume of the air to be sucked); the mixture formed, is led to another divergent pipe where its kinetic energy is transformed in pressure energy, suitable to let it enter into the ambient at a higher pressure (atmospheric pressure at the outlet).

TECHNICAL FEATURES

The advantage of the vacuum generators with multiple ejectors is the one of exploiting kinetic energy of the feeding compressed air through several ejectors, suitably sized, before releasing it into the atmosphere.

This system allows, with the same suction capacity, a lower compressed air consumption compared to the traditional ejectors.

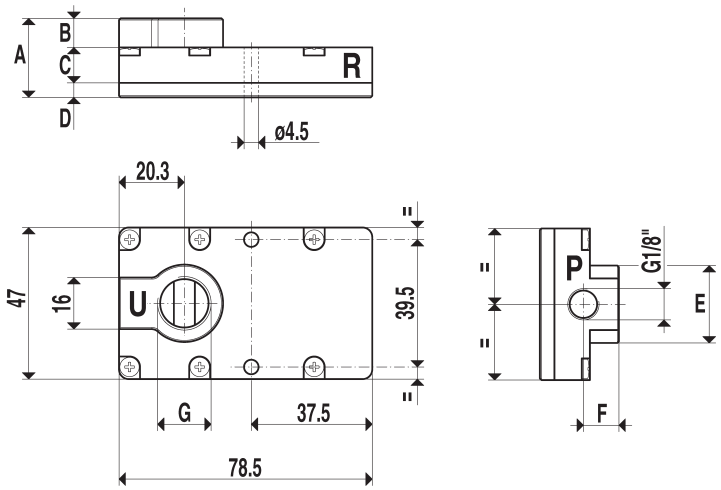
The suction capacity is indirectly proportional to the differential of pressure existing between the pressure of the fluid to be sucked and the external one (atmospheric pressure).

The small size and weight make vacuum generators with multiple ejectors very compact related to their high vacuum flow capacity. As there are no moving parts, these units can be continuously used without any heat development and this makes them particularly noiseless when operating.

As they have no electrical connections, they are explosion-proof and they can be used in working environments with temperatures ranging from -20° to + 80°C.

They are completely made with stainless steel materials. Due to their design sufficient vacuum air filtration is required to maintain efficient operation and eliminate the need for servicing.

[Vacuum generators M3, M7, M10 and M14]



P= Compressed air connection, R= Air exhaust, U= Vacuum connection

Comprising of a new multiple ejector design, assembled on compact modules, this range of vacuum generator is distinctive in regards to the high vacuum flow capacity in relation to their small size.

With a compressed air supply of 4 ÷ 6 bar, they are able to produce a maximum depression equal to 85% and a vacuum flow capacity of 3,5 ÷ 14 cum/h, according to the number of the modules they are composed of.

The filter-silencer is integral to the unit.

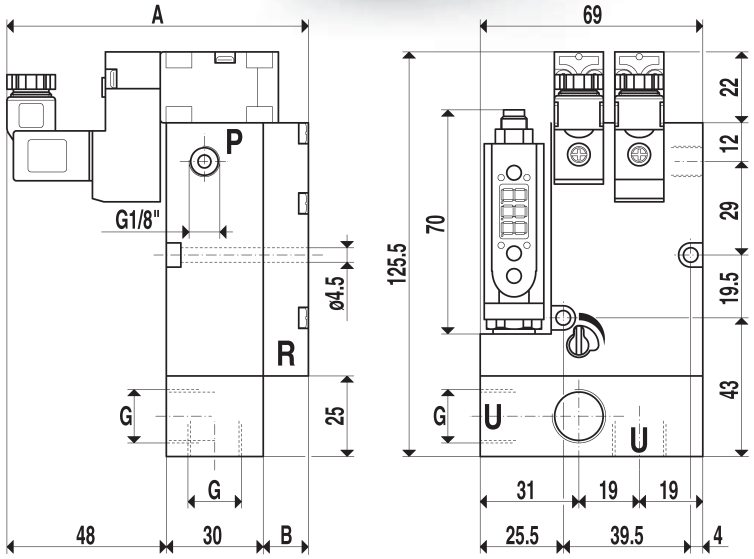
Manufactured completely in anodized aluminium, they can be installed in any position.

These multiple ejector vacuum generators are suitable for vacuum cup grip systems, particularly in the field of industrial robotics, where devices with a very good working performance, but with very small sizes and weights, are required.

Art.		M3	M7	M10	M14
Supply pressure	bar (g)	6	6	6	6
Maximum vacuum level	-KPa	85	85	85	85
Final pressure	mbar (a)	150	150	150	150
Air consumption at 6 bar	Nl/s	0.9	1.8	2,4	3.2
Vacuum air flow	cum/h	3.5	7	10.5	14
Working temperature	°C	-10/+80	-10/+80	-10/+80	-10/+80
Weight	Kg	0.109	0.111	0.144	0.145
A		24.5	25.5	34.5	34.5
B		9	10	10	10
C		11	11	20	20
D		4.5	4.5	4.5	4.5
E	.	20	24	24	24
F		11	12	12	12
G	ø gas	1/4"	3/8"	3/8"	3/8"

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Multi-function vacuum generators]



P= Compressed air connection, R= Air exhaust, U= Vacuum connection

Art.		MVG3	MVG7	MVG10	MVG14
Supply pressure	bar (g)	6	6	6	6
Maximum vacuum level	-KPa	85	85	85	85
Final pressure	mbar (a)	150	150	150	150
Air consumption at 6 bar	Nl/s	0.9	1.8	2.4	3.2
Vacuum air flow	cum/h	3.5	7	10.5	14
Blow air capacity at 6 bar (g)	l/min	222	222	222	222
Position of supply solenoid valve	NO/NC	NO	NO	NO	NO
Position of ejecting solenoid valve	NO/NC	NC	NC	NC	NC
Voltage	V	24DC	24DC	24DC	24DC
Current input	W	1.4x2	1.4x2	1.4x2	1.4x2
Vacuum switch output		PNP	PNP	PNP	PNP
Class of protection	IP	65	65	65	65
Working temperature	°C	-10/+60	-10/+60	-10/+60	-10/+60
Weight	Kg	0.666	0.670	0.716	0.720
A		89	89	98	98
B		11	11	20	20
G	ø gas	1 /4"	3/8"	3/8"	3/8"

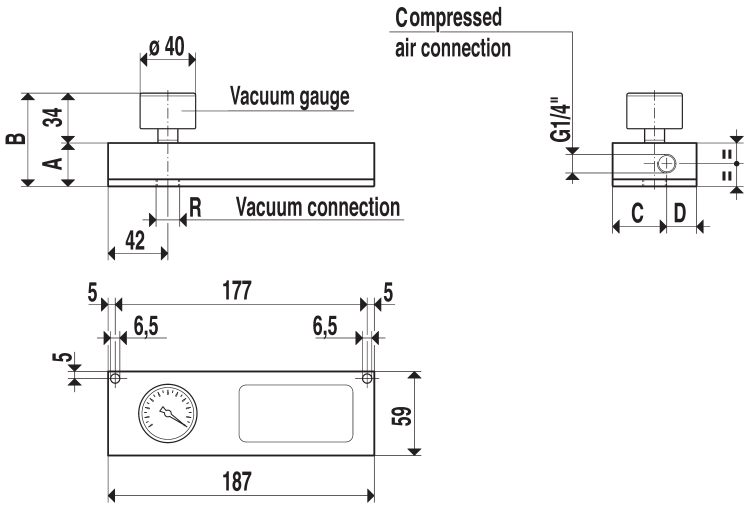
N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

This new range of vacuum generators are complete stand alone units offering the user an entire vacuum control system.
They are distinct in their design and operation characteristics offering very strong vacuum and ejector performance in a very compact assembly.
Contained within an anodized aluminium base, they consist of:

- A modular and silenced multi stage vacuum generator.
- A micro solenoid valve to supply the compressed air to the generator.
- A micro solenoid valve for the compressed air ejector.
- An adjustable flow regulator for the compressed air ejector
- A unidirectional check valve on the vacuum port to enable a safe, secure grip during a power failure.
- A digital vacuum switch with electronic display and switching indicator for starting the compressed air and offering a signal to indicate a safe lift condition.
- An anodized aluminium manifold which contains the vacuum ports and integral filter designed for ease of inspection.

Once the compressed air micro solenoid valve has been switched, the vacuum generator makes vacuum at the application; when the maximum preset value is reached, the vacuum switch, acting on the electric coil of the micro solenoid valve, stops the supply of the compressed air and restores it when the vacuum falls below the minimum value.
This modulation, apart from keeping the vacuum level within the preset security values (hysteresis), allows a remarkable compressed air saving.
A second signal from the vacuum switch, adjustable and independent from the first, can be used to allow the start of the cycle, when the required vacuum level is reached and suitable for the application.
When the working cycle has finished, the micro solenoid valve for the supply of compressed air to the generator switches off and, at the same time, the ejecting micro solenoid valve switches on for the rapid restoration of the atmospheric pressure within the application.
These units may be installed in any position.
These multi-function vacuum generators are suitable for vacuum cup gripping systems, for the handling of plates, glass, marble, ceramic, plastics, cardboard, wood etc. and in particular for use in the field of the industrial robotics, where devices with very good operating performance, but also with compact sizes and low weights, are required.

[Vacuum generators PVP 12M and 25M]



These vacuum generators fed by compressed air at an optimum pressure of 4 ÷ 6 bar, can produce a maximum depression of 90%, equal to a final vacuum of 100 mbar, with a suction capacity of 12 ÷ 25 cum/h at the normal atmospheric pressure. Depending on the suction capacity, they are made up of one or two sets of ejectors based on the Venturi principle.

The innovation of these generators consists in the exploitation of the kinetic energy of the feeding compressed air through several ejectors on line, properly sized, before releasing it into the atmosphere.

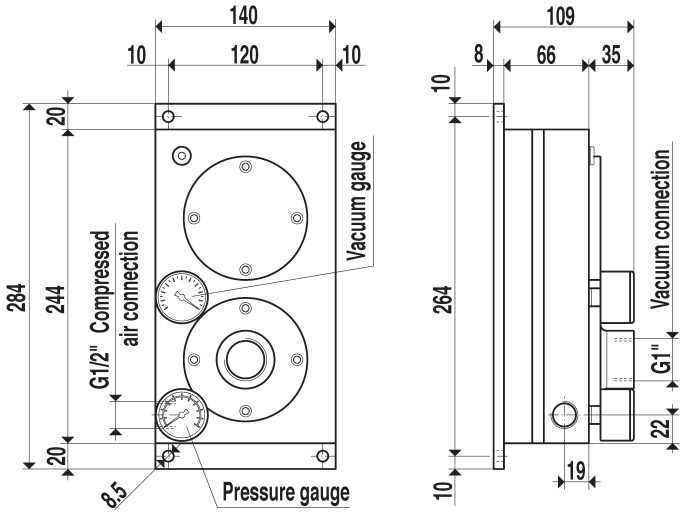
With the same suction capacity, this system allows a lower compressed air consumption compared to the traditional ejectors.

They are completely made in anodized aluminium.

Art.		PVP 12M	PVP 25M
Supply pressure	bar (g)	4 5 6	4 5 6
Maximum vacuum level	-KPa	65 85 90	65 85 90
Final pressure	mbar (a)	350 150 100	350 150 100
Air consumption	Nl/s	1.2 1.4 1.6	2.4 2.8 3.2
Vacuum air flow	cum/h	12 13.5 15	21 23 25
Working temperature	°C	-20/+80	-20/+80
Weight	Kg	0.600	0.880
A		31	52
B		65	86
C		38	29.5
D		21	29.5
R	ø gas	3/8"	3/8"

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Vacuum generators PVP 40M ÷ 100M]



Art.		PVP 40M	PVP 70M	PVP 100M
Supply pressure	bar (g)	4 5 6	4 5 6	4 5 6
Maximum vacuum level	-KPa	65 82 90	65 82 90	65 82 90
Final pressure	mbar (a)	350 180 100	350 180 100	350 180 100
Air consumption	Nl/s	2.4 2.8 3.2	4.8 5.6 6.4	7.2 8.4 9.6
Vacuum air flow	cum/h	32 36 40	56 62 68	80 89 98
Working temperature	°C	-20/+80	- 20/+80	- 20/+80
Weight	Kg	4.2	4.2	4.2

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

Designed specifically for incorporation in the Octopus lifting system, this new range of vacuum generators with multiple ejectors are very versatile in their applications and represent a real evolution in comparison with traditional vacuum pumps with rotating vanes.

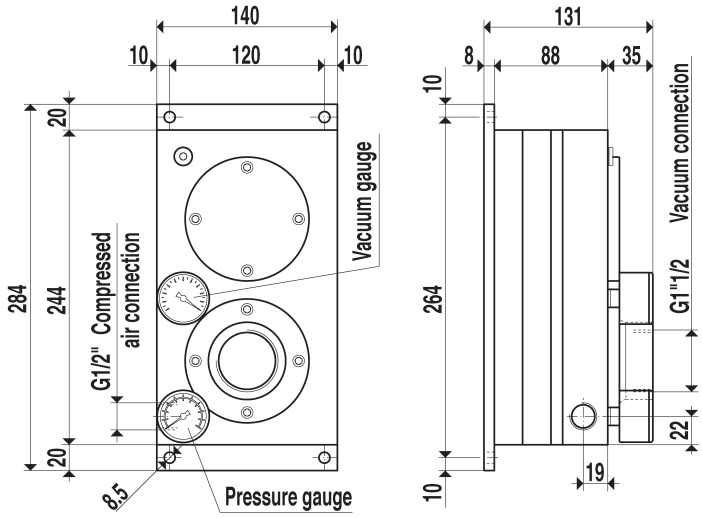
Composed of a new design of ejectors, these generators have an exceptional ratio between the compressed air consumption vs. vacuum airflow offering a very efficient system. They also have the benefit of adjusting the vacuum level simply by changing the compressed air inlet pressure.

One of the particular concerns during the design of these new generators was the noise level and as such, due to the absence of moving parts, which would be subject to vibration and wear, they are very quiet in operation.

Moreover, as their working principle is by venturi, they do not emit heat and as they are constructed of light alloys their weight is very low.

A good filtration of both the compressed air supply and vacuum air intake offers an exhaust discharge free of oil vapour, water condensate or impurities into the working environment, with periodic cleaning of the filters as the only maintenance required.

[Vacuum generators PVP 140M ÷ 200M]



Designed specifically for incorporation in the Octopus lifting system, this new range of vacuum generators with multiple ejectors are very versatile in their applications and represent a real evolution in comparison with traditional vacuum pumps with rotating vanes.

Composed of a new design of ejectors, these generators have an exceptional ratio between the compressed air consumption vs. vacuum airflow offering a very efficient system. They also have the benefit of adjusting the vacuum level simply by changing the compressed air inlet pressure.

One of the particular concerns during the design of these new generators was the noise level and as such, due to the absence of moving parts, which would be subject to vibration and wear, they are very quiet in operation.

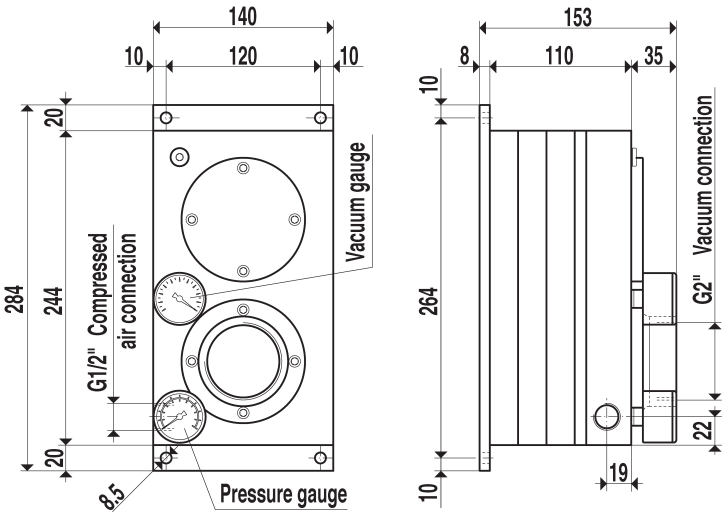
Moreover, as their working principle is by venturi, they do not emit heat and as they are constructed of light alloys their weight is very low.

A good filtration of both the compressed air supply and vacuum air intake offers an exhaust discharge free of oil vapour, water condensate or impurities into the working environment, with periodic cleaning of the filters as the only maintenance required.

Art.		PVP 140M			PVP 170M			PVP 200M		
Supply pressure	bar (g)	4	5	6	4	5	6	4	5	6
Maximum vacuum level	-KPa	70	85	90	70	85	90	70	85	90
Final pressure	mbar (a)	300	150	100	300	150	100	300	150	100
Air consumption	Nl/s	9.6	11.2	12.8	12.0	14.0	16.0	14.4	16.8	19.2
Vacuum air flow	cum/h	125	140	150	140	155	170	170	188	198
Working temperature	°C	-20/+80			-20/+80			-20/+80		
Weight	Kg	5.1			5.1			5.1		

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Vacuum generators PVP 250M and 300M]



Designed specifically for incorporation in the Octopus lifting system, this new range of vacuum generators with multiple ejectors are very versatile in their applications and represent a real evolution in comparison with traditional vacuum pumps with rotating vanes.

Composed of a new design of ejectors, these generators have an exceptional ratio between the compressed air consumption vs. vacuum airflow offering a very efficient system. They also have the benefit of adjusting the vacuum level simply by changing the compressed air inlet pressure.

One of the particular concerns during the design of these new generators was the noise level and as such, due to the absence of moving parts, which would be subject to vibration and wear, they are very quiet in operation.

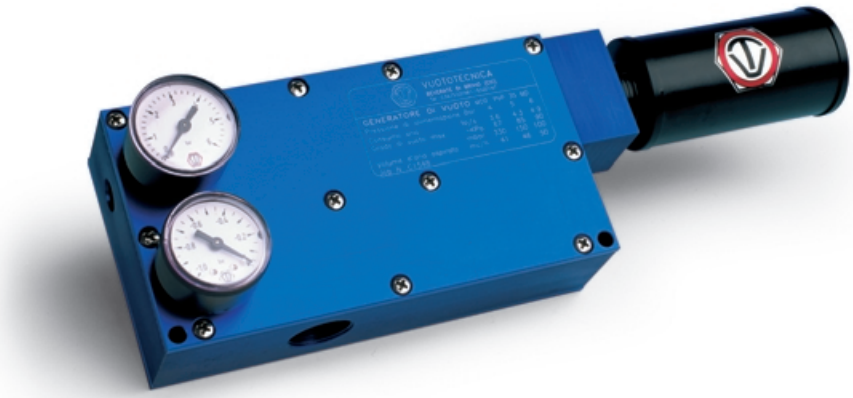
Moreover, as their working principle is by venturi, they do not emit heat and as they are constructed of light alloys their weight is very low.

A good filtration of both the compressed air supply and vacuum air intake offers an exhaust discharge free of oil vapour, water condensate or impurities into the working environment, with periodic cleaning of the filters as the only maintenance required.

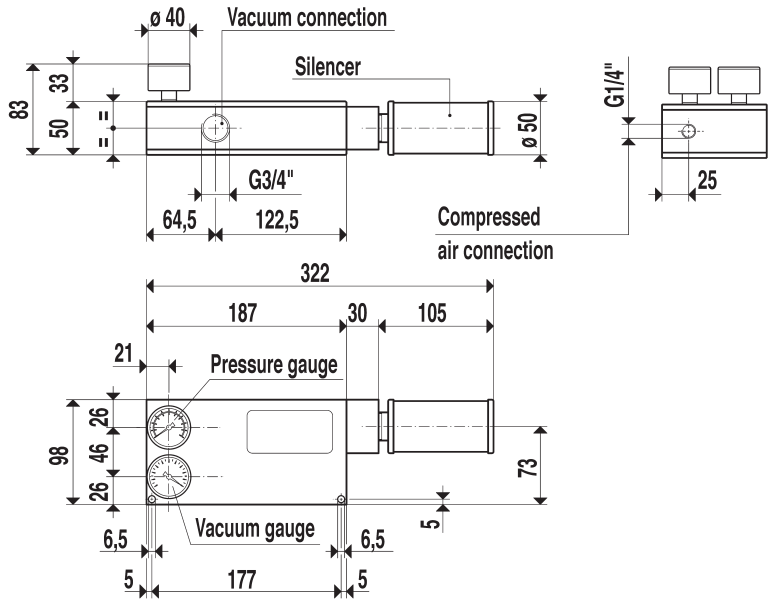
Art.		PVP 250M			PVP 300M		
Supply pressure	bar (g)	4	5	6	4	5	6
Maximum vacuum level	-KPa	70	85	90	70	85	90
Final pressure	mbar (a)	300	150	100	300	150	100
Air consumption	Nl/s	18.0	21.0	24.0	21.6	25.2	28.8
Vacuum air flow	cum/h	200	225	250	225	250	300
Working temperature	°C	-20/+80			-20/+80		
Weight	Kg	6			6		

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Index]



[Vacuum generators PVP 25MD, 35MD and 50MD]

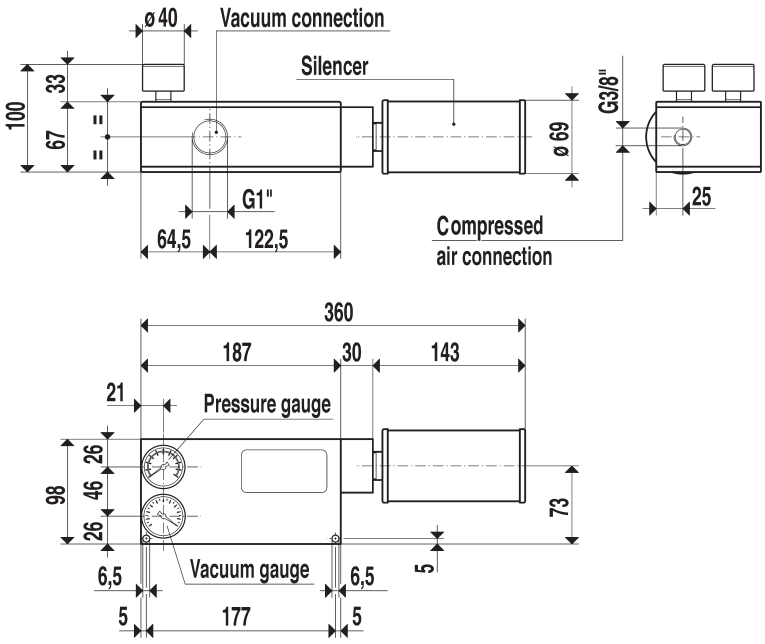


Art.		PVP 25MD	PVP 35MD	PVP 50MD
Supply pressure	bar (g)	4 5 6	4 5 6	4 5 6
Maximum vacuum level	-KPa	67 85 90	67 85 90	67 85 90
Final pressure	mbar (a)	330 150 100	330 150 100	330 150 100
Air consumption	Nl/s	2.4 2.8 3.2	3.6 4.2 4.8	4.8 5.6 6.4
Vacuum air flow	cum/h	33 37 40	41 46 50	46 51 56
Working temperature	°C	-20/+80	-20/+80	-20/+80
Weight	Kg	1.710	1.730	1.750

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

A line of ejectors of new design enabled us to develop this range of vacuum generators which have a very good ratio between the quantity of consumed air and the sucked one (volumetric efficiency) and for the possibility of the user to select the vacuum degree or the capacity depending on the pressure of the feeding air.
Fed by compressed air at an optimum pressure of 4 ÷ 6 bar, they are able to produce a maximum depression of 90%, equal to a final vacuum of 100 mbar, with suction capacities ranging from 33 to 56 cum/h, measured at the normal atmospheric pressure of 1013 mbar. Depending on the suction capacity, they consist of two, three or four sets of new ejectors based on the Venturi principle. The innovation of these generators consists in the exploitation of the kinetic energy of the feeding compressed air through several ejectors on line, properly sized, before releasing it into the atmosphere.
With the same suction capacity, this system allows a lower compressed air consumption compared to the traditional Venturi systems.
They are entirely manufactured in anodized aluminium, with lamellar valves and gaskets in special compounds, and they are all equipped, currently, with a silencer on the air outlet.

[Vacuum generators PVP 60MD and 75MD]



Art.		PVP 60MD			PVP 75MD		
Supply pressure	**bar (g)**	4	5	6	4	5	6
Maximum vacuum level	**-KPa**	67	85	90	67	85	90
Final pressure	**mbar (a)**	330	150	100	330	150	100
Air consumption	**Nl/s**	6.0	7.0	8.0	7.2	8.4	9.6
Vacuum air flow	**cum/h**	65	73	79	73	82	89
Working temperature	**°C**	-20/+80			-20/+80		
Weight	**Kg**	2.160			2.180		

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

A line of ejectors of new design enabled us to develop this range of vacuum generators which have a very good ratio between the quantity of consumed air and the sucked one (volumetric efficiency) and for the possibility of the user to select the vacuum degree or the capacity depending on the pressure of the feeding air.

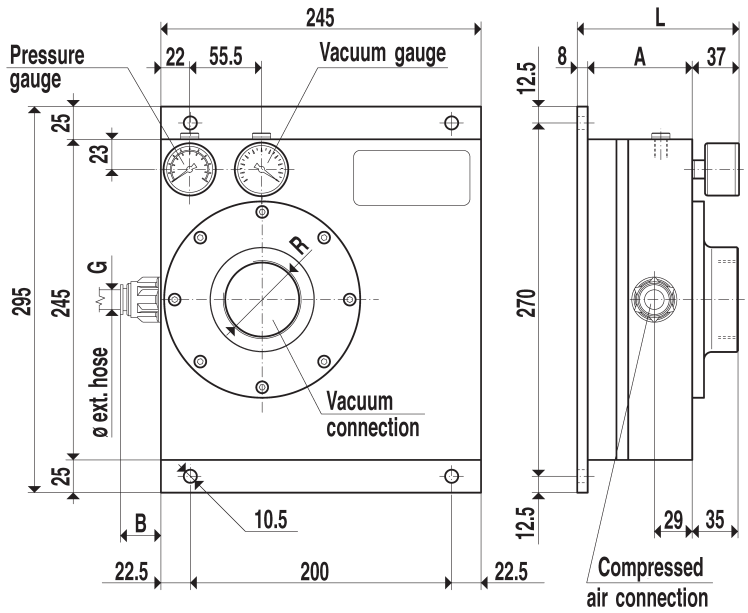
Fed by compressed air at an optimum pressure of 4 ÷ 6 bar, they are able to produce a maximum depression of 90%, equal to a final vacuum of 100 mbar, with suction capacities ranging from 65 to 89 cum/h, measured at the normal atmospheric pressure of 1013 mbar. Depending on the suction capacity, they consist of five or six sets of new ejectors based on the Venturi principle.

The innovation of these generators consists in the exploitation of the kinetic energy of the feeding compressed air through several ejectors on line, properly sized, before releasing it into the atmosphere.

With the same suction capacity, this system allows a lower compressed air consumption compared to the traditional Venturi systems.

They are entirely manufactured in anodized aluminium, with lamellar valves and gaskets in special compounds, and they are all equipped, currently, with a silencer on the air outlet.

[Modular vacuum generators PVP 150MD÷ 600MD]

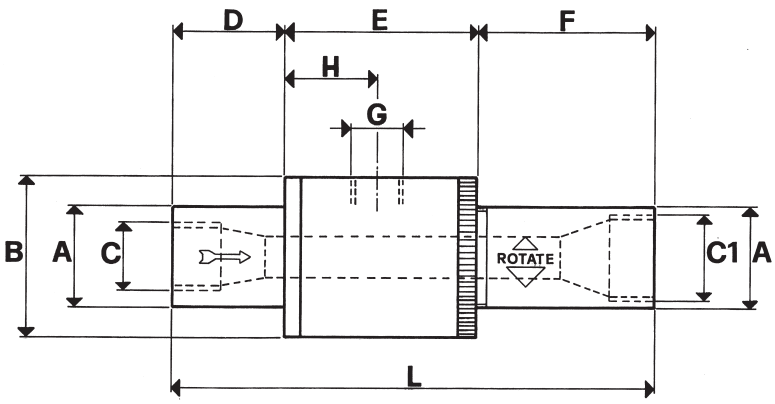


The particular configuration of these new vacuum generators allowed us to reach high suction capacities with very small overall dimensions.
The ejectors used have the same features as those previously described, but they are assembled on modular frames instead of being fixed directly to the generator body.
The overlap of one or more modular frames determines the capacity of the generators.
Fed by compressed air filtered with an ideal pressure of 6 bar, they can create a 90% maximum vacuum, with suction capacities ranging from 180 to 660 cum/h, measured at the normal atmospheric pressure of 1013 mbar.
They are entirely manufactured in anodized aluminium, with lamellar valves and gaskets in special compounds. Designed with sound levels in mind these units are extremely quiet in their operation.

Art.		PVP 150MD	PVP 300MD	PVP 450MD	PVP 600MD
Supply pressure	bar (g)	6	6	6	6
Maximum vacuum level	-KPa	90	90	90	90
Final pressure	mbar (a)	100	100	100	100
Air consumption at 6 bar	Nl/s	16	32	48	64
Vacuum air flow	cum/h	180	350	510	660
Working temperature	°C	-20/+80	-20/+80	-20/+80	-20/+80
Weight	Kg	7.8	8.8	9.9	11.1
A		80	100	122	142
B		30	30	48	48
G	ø	15	15	22	22
R	ø gas	1”1/2	2”	2”1/2	3”
L		125	145	167	187

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

[Adjustable vacuum generators Conveyor]



Conveyor	Art.	PVR 25	PVR 50	PVR 100	PVR 200
Supply pressure	bar (g)	6	6	6	6
Maximum vacuum level	-KPa	75	75	75	75
Final pressure	mbar (a)	250	250	250	250
Air consumption	Nl/s	6.6	13.2	20.7	42.4
Vacuum air flow	cum/h	25	50	100	200
Working temperature	°C	-20/+80	-20/+80	-20/+80	-20/+80
Weight	Kg	0.150	0.280	0.430	0.550
A	ø	19	26	32	38
B	ø	32	38	50	57
C	ø gas	1/4"	3/8"	1/2"	3/4"
C1	ø gas	1/4"	1/2"	3/4"	1"
D		19	35	35	35
E		47	54	60	60
F		34	61	55	77
G	ø gas	1/8"	1/4"	3/8"	1/2"
H		22	25	28	28
L		100	150	150	172

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

OPERATING PRINCIPLE

The operation of these vacuum generators is based on the Venturi principle.

Unlike those previously described, the ejector they are provided with, besides having a far higher flow diameter, is also adjustable.

This feature allows to modify capacity and vacuum degree of the device, without changing the pressure degree of the feeding air.

Also the compressed air consumptions are in relation with the actual performances of the vacuum generator.

FEATURES

The particular configuration of the adjustable vacuum generators and their operating principle with straight flow allow to suck and transfer products of different kind, without interferences, like the flow generators; however, unlike the latter ones, they can pass far bigger differences in height.

They are suitable for transferring powders, granulated products, sawdust, corn, metal chips, liquid or dry foodstuffs, etc.; for interlocking cups in the presence of powders or liquids; or for extracting fumes, refrigerating fogs, water or oil condensates, etc.

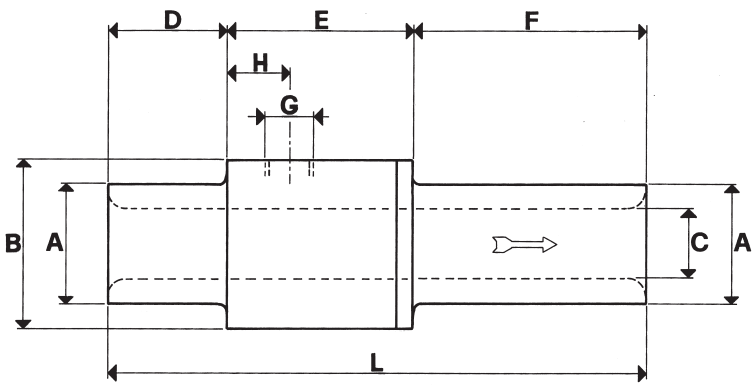
The absence of moving parts allows continuous use without heat development.

As no electric current is required, they can also be used in hazardous environments where an ignition source would be dangerous.

They are entirely manufactured in anodized anticorodal aluminium.

Due to their features, a good filtration of the feeding compressed air is sufficient, in order to avoid any kind of maintenance.

[Flow vacuum generators Vacuum Jet]



Art.		CX7	CX10	CX13	CX19	CX25	CX38	CX50
Supply pressure	bar (g)	3÷6	3÷6	3÷6	3÷6	3÷6	3÷6	3÷6
Maximum vacuum level	-KPa	10	10	10	10	10	10	5.0
Final pressure	mbar (a)	900	900	900	900	900	900	950
Air consumption	Nl/s	0.9÷1.6	1.5÷2.6	4.1÷6.9	6.1÷10	9.4÷16.6	15.2÷27.7	15.2÷27.7
Vacuum air flow	cum/h	15	32	61	115	150	185	250
Working temperature	°C	-20/+80	-20/+80	-20/+80	-20/+80	-20/+80	-20/+80	-20/+80
Weight	Kg	0.110	0.104	0.280	0.500	0.560	0.800	1.090
A	ø	19	19	25	32	38	51	64
B	ø	32	32	45	54	60	75	90
C	ø	7	10	13	19	25	38	50
D		15	15	30	43	42	42	42
E		42	42	55	65	66	66	66
F		33	33	55	82	82	82	82
G	ø gas	1/8"	1/8"	1/4"	3/8"	3/8"	3/8"	1/2"
H		13	13	18	22	22	22	22
L		90	90	140	190	190	190	190

N.B.: All the vacuum values shown in the table are valid at normal atmospheric pressure of 1013 mbar (a) and obtained with a constant supply pressure.

OPERATING PRINCIPLE

The feeding compressed air, blown into a ring chamber concentric to the device, flows at a very high speed towards the centre of the main pipe, thus forming a cyclonic effect.

The latter has the property to create a vacuum inside the device and induce a large volume of air towards its exit. Consequently, by changing the feeding air pressure, the depression and the amount of air sucked will also change.

FEATURES

The particular configuration of the flow vacuum generators and their operating principle with straight flow allow to suck and transfer products of different kind, without interferences.

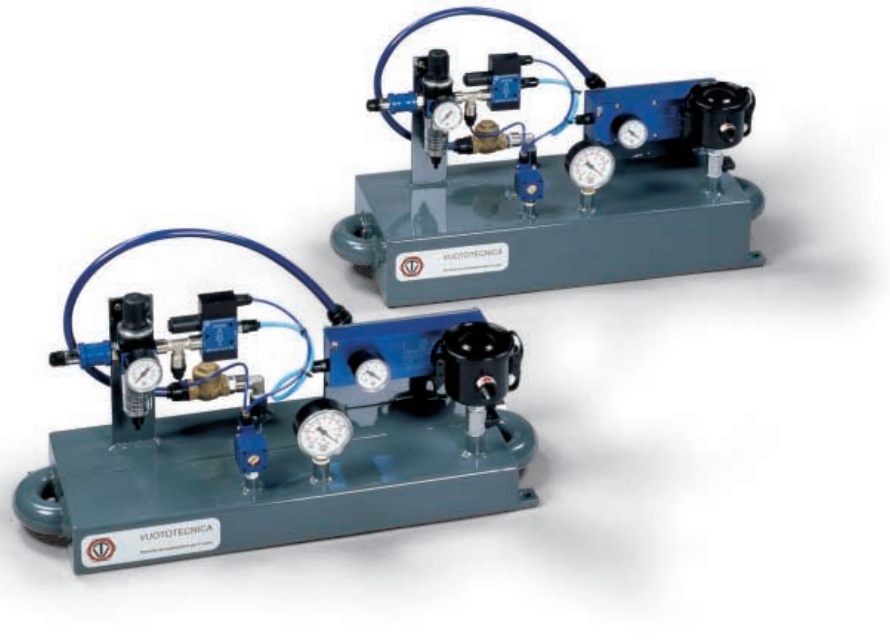
Actually, vacuum jets are suitable for transferring powders, granulated products, sawdust, corn, metal chips, liquid or dry foodstuffs, etc.; or for extracting fumes, refrigerating fogs, water or oil condensates, etc.

The absence of moving parts allows continuous use without heat development.

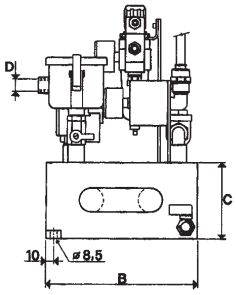
As no electric current is required, they can also be used in hazardous environments where an ignition source would be dangerous.

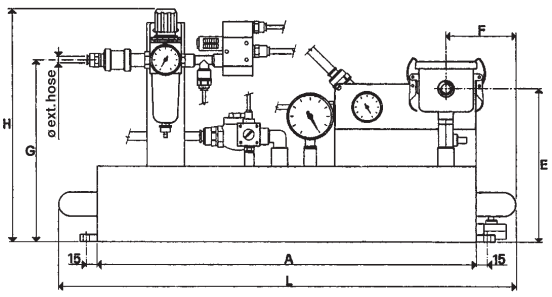
They are entirely manufactured in anodized anticorodal aluminium.

Due to their features, a good filtration of the feeding compressed air is sufficient, in order to avoid any kind of maintenance.



[Small Venturi pumpsets]





Art.	Tank Litres	Generator Mod.	A	B	C	D Ø	E	F	G	H	L	Hose ext. Ø
DOP 06	6	PVP 12M	500	200	60	3/8"	150	95	180	250	620	8
	6	PVP 25M	500	200	60	3/8"	150	95	180	250	620	8
DOP 10	10	PVP 12M	500	200	100	3/8"	210	95	240	310	620	8
	10	PVP 25M	500	200	100	3/8"	210	95	240	310	620	8
DOP 20	20	PVP 25MD	1000	200	100	1/2"	225	135	270	340	1110	8
	20	PVP 35MD	1000	200	100	1/2"	225	135	270	340	1110	8

The small Venturi pumpsets are little self-contained units for the vacuum production, fed only by compressed air, with a peculiar feature being their limited size.

They consist of:

- A small welded steel plate tank.
- A vacuum generator operated by compressed air.
- A pneumatic vacuum switch for adjusting the vacuum degree.
- A vacuum gauge for direct reading of the vacuum degree.
- A manual valve for intercepting vacuum.
- A suction filter mod. FC
- A pressure regulator with filter.
- A pneumatically operated valve for feeding the vacuum generator.
- A sleeve valve for intercepting compressed air.

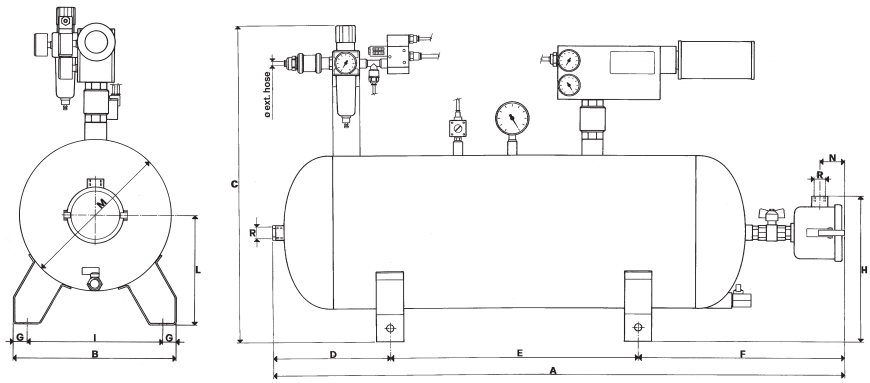
The holding of the vacuum degree in the tank, preset by means of the vacuum switch, is fully automatic.

The small Venturi pumpsets are suitable for equipping small stationary or mobile operating units which require vacuum, such as:

- Trolleys with cups for fixing and moving glasses and crystals.
- Stirrup systems with vacuum for the ski. maintenance, to drill or pantograph marbles, to polish pewter, copper or silver objects etc.
- Tackles with cups for lifting television sets, various electrical household appliances, to fix glasses into window and door frames, to feed plates into presses etc.

The small Venturi pumpsets do not require electric current, but just compressed air at a pressure of 4 ÷ 6 bar; because of this feature, their use is recommended in hazardous environments where an ignition source would be dangerous.

[Venturi pumpsets]



The Venturi pumpsets are self-contained units for the vacuum production, fed only by compressed air. They consist of:

- A welded steel plate tank.
- A vacuum generator operated by compressed air.
- A pneumatic vacuum switch for the adjustment of the operative vacuum degree range.
- A vacuum gauge for direct reading of the vacuum degree in the tank.
- A manual valve for intercepting vacuum.
- A suction filter mod. FC
- A pressure regulator with filter.
- A pneumatically operated valve for feeding the vacuum generator.
- A sleeve valve for intercepting compressed air.
- A cock for draining condensate from the tank.

They are normally used for moving particularly heavy or valuable loads, because also in the event of sudden electric current failure, they allow the cups to hold the load for a certain time after failure (variable according to the tank capacity).

They are also recommended in multi-point applications, to centralize vacuum.

In both cases the use of the pumpset is particularly profitable under the point of view of the energy saving, because the generator starts working only when vacuum is required by the machines.

The Venturi pumpsets do not require electric current, but just compressed air at a pressure of 4 ÷ 6 bar; because of this feature, their use is recommended in hazardous environments where an ignition source would be dangerous.

Art.	Tank Litres	Generator Mod.	A	B	C	D	E	F	G	H	I	L	M Ø	N	R Ø	Hose ext.ø
DOP 25	25	PVP 25MD	780	270	550	200	250	330	30	225	210	185	240	40	1/2"	8
	25	PVP 35MD														
DOP 50	50	PVP 50MD	1080	300	590	220	460	400	27.5	245	245	205	280	40	1/2"	12
	50	PVP 60MD														
DOP 100	100	PVP 75MD	1340	355	670	290	570	480	30	300	295	255	350	45	1"	12
DOP 150	150	PVP 150MD	1460	410	800	270	735	455	30	360	350	280	400	45	1"	18
DOP 300	300	PVP 300MD	1930	510	910	320	980	630	30	440	450	340	500	80	1"1/2	18