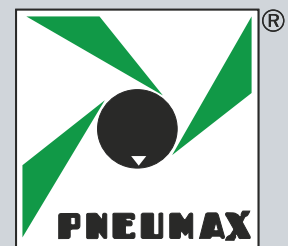


VACUUM GENERATORS **3**

3

PNEUMAX GREEN LINE: TECHNOLOGY & INNOVATION



www.pneumaxspa.com

General details

Vacuum generators of the pneumatic type operate on the Venturi principle: one or more nozzles are fed by compressed air, generating a jet of air that drags (in contact with the environment) the surrounding air and then evacuates. This "dragging" creates a depression which results in generation of a vacuum. The big advantage of pneumatic pumps is that they can operate only when the suction cups connected to them require vacuum.

Advantages:

- 1) Consumption of air (and therefore power) limited to moments of use.
- 2) Installation directly proximate to the suction cups (simplification of layout / savings).
- 3) Short response times and high capacity.
- 4) Flow rates for any requirement.
- 5) No limit to applications.
- 6) Compactness / lightness / reliability / little or no wear.

Types:

In terms of dimensions, functions and operation, we can categorise generators as one of two major types:

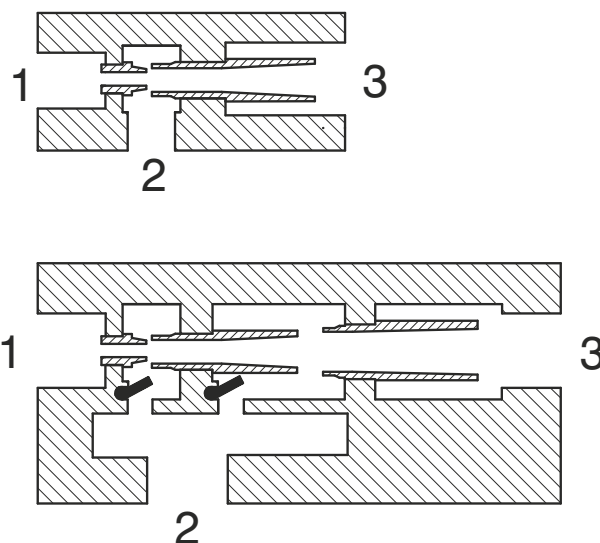
- 1) Single stage, compact and/or miniaturised, with pneumatic or electropneumatic control, for direct-contact installation with suction cup holders and suction cups.
- 2) Multistage with or without integrated functions, with pneumatic or electropneumatic control, for de-localised assembly and for controlling groups of suction cups.

Range:

The **PNEUMAX** range consists of single-stage and multistage equipment of various sizes and types; the single-stage generators use the Venturi effect in a single medium/high throughput nozzle and promptly generate vacuum, flow rate and suction values that are suitable for medium/light applications. Multistage generators having more than one nozzle (ejectors) in a line, using the kinetic energy that this layout generates to ensure, based on the flow rate, limited consumption of energy and attainment of a vacuum level equal to 90%, with various suction capabilities.

Single-stage generators, very fast in switching pressure/vacuum, can also be equipped with a quick-release system for highly cyclical applications. Multistage generators can often be accessorised with integrated management and control functions, such as for example electropneumatic control for power supply and power shut-off, quick-release blowing, a regulator to measure this release, and a vacuum switch to control the degree of vacuum generated. These latter generators can be installed as modules as well, creating actual stand-alone modules for decentralised vacuum generation and management for controlling more than one gripping element.

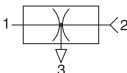
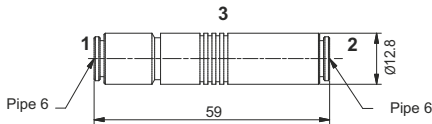
Multistage section





Single stage vacuum generator T06

Ordering code
19T06.S.05.HV.C0

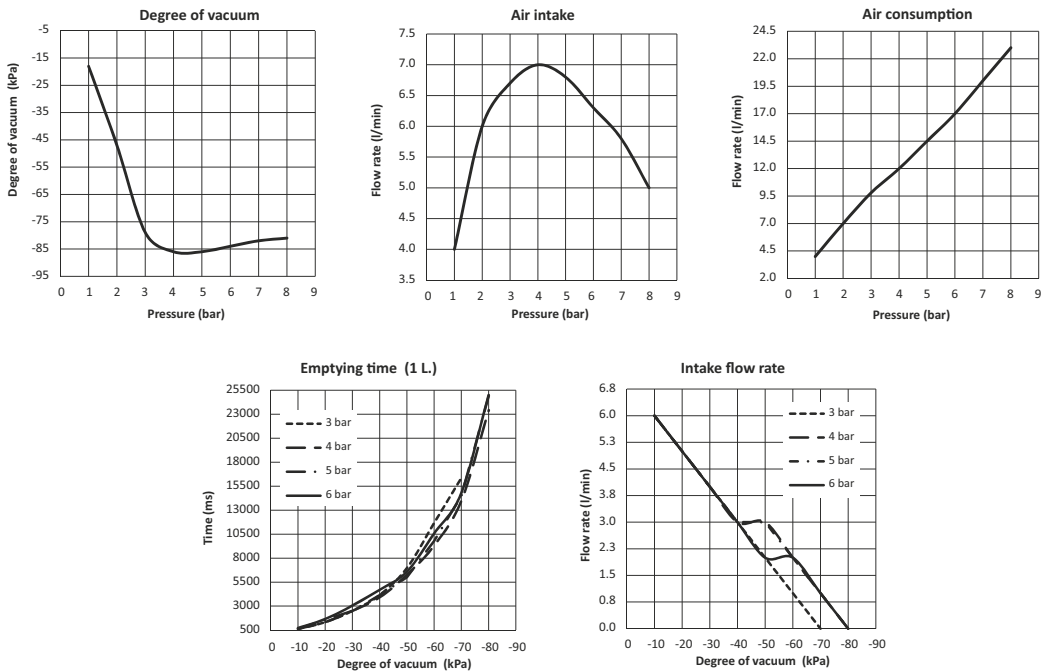


Single stage generators, with operation based on the Venturi principle; their main feature is the presence of feed pressure and connection for the vacuum, on the same axis. This makes it possible to connect the suction cups directly to the generator or through the suction cup holder, so therefore still on the same axis with obvious advantages in terms of system layout and simplicity. The outlet connection has a female thread G 1/8", or on circumference of the T06.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	47	86	84
- Intake flow rate (l/min)	6	7	6
- Air consumption (l/min)	7	12	17

Characteristic curves



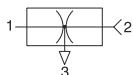
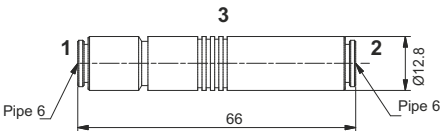
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	7

Single stage vacuum generator T06

Ordering code

19T06.S.07.HV.C0

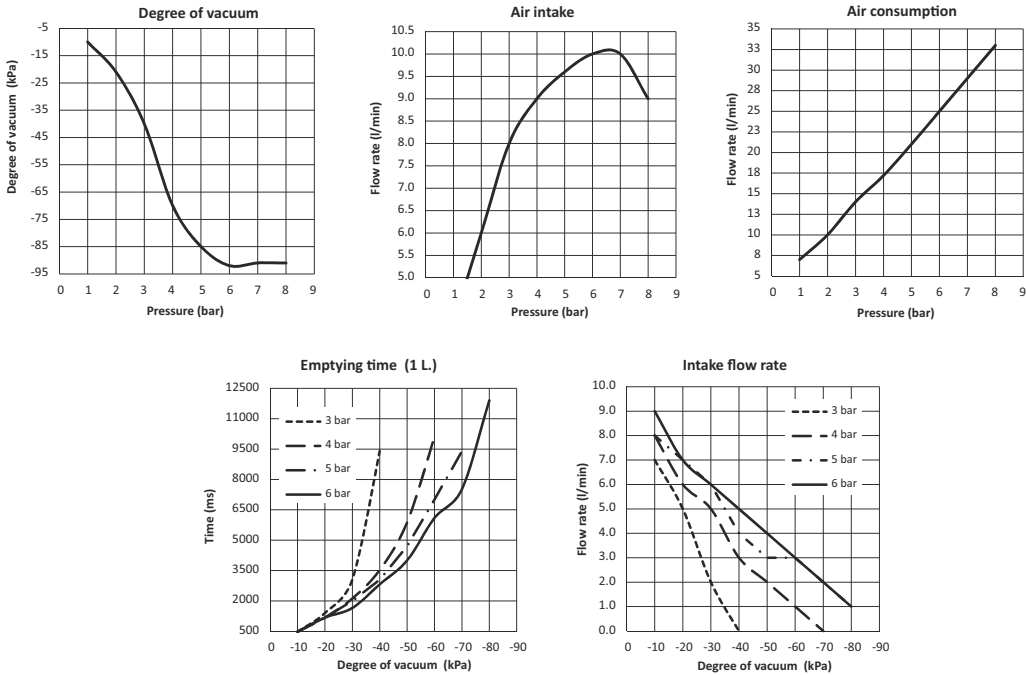


Single stage generators, with operation based on the Venturi principle; their main feature is the presence of feed pressure and connection for the vacuum, on the same axis. This makes it possible to connect the suction cups directly to the generator or through the suction cup holder, so therefore still on the same axis with obvious advantages in terms of system layout and simplicity. The outlet connection has a female thread G 1/8", or on circumference of the T06.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	21	70	92
- Intake flow rate (l/min)	6	9	10
- Air consumption (l/min)	10	17	25

Characteristic curves



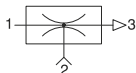
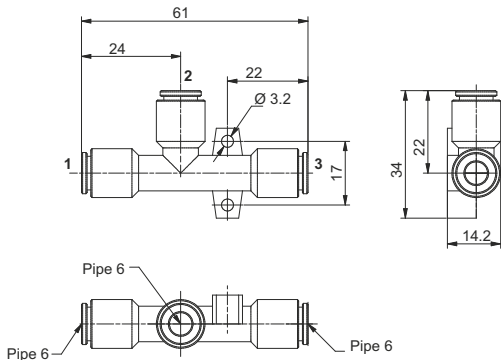
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	8



Single stage vacuum generator T06

Ordering code
19T06.S.07.HV.ZZ

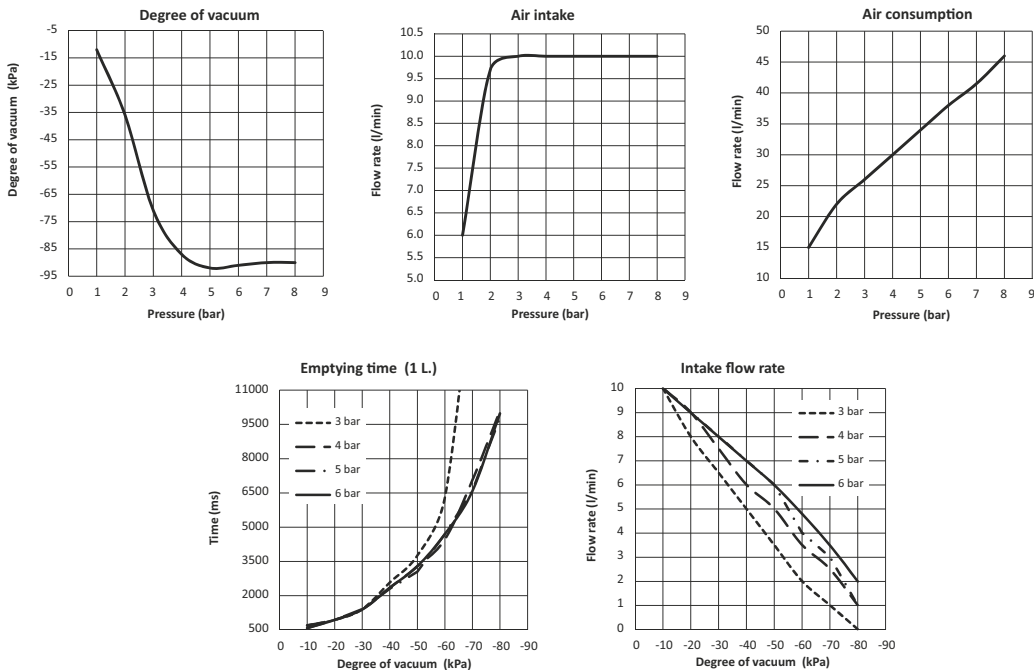


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications that need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and can be applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	36	87	91
- Intake flow rate (l/min)	10	10	10
- Air consumption (l/min)	22	30	38

Characteristic curves



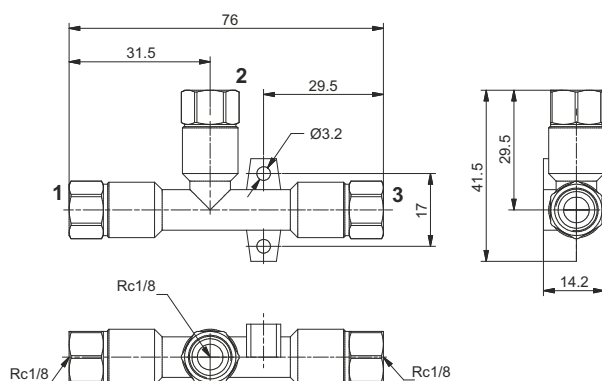
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	12

Single stage vacuum generator T18

Ordering code

19T18.S.07.HV.VV

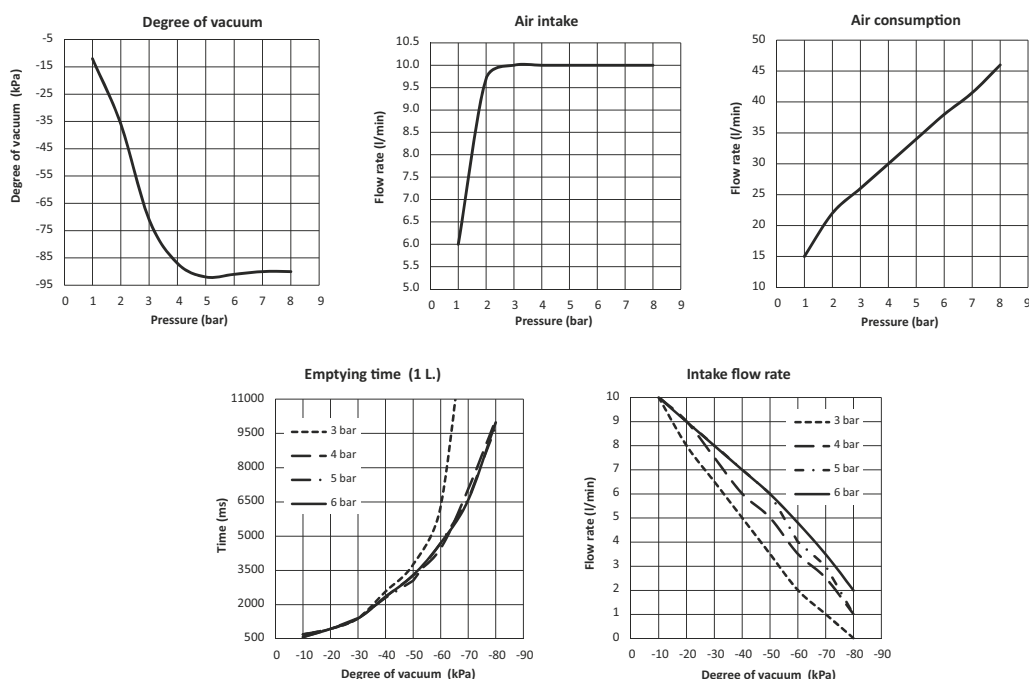


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	36	87	91
- Intake flow rate (l/min)	10	10	10
- Air consumption (l/min)	22	30	38

Characteristic curves

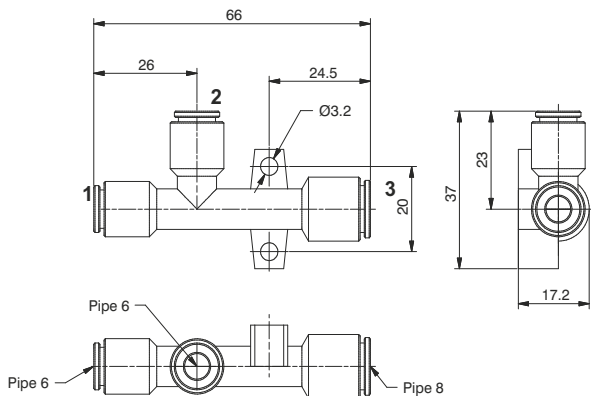


Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	36

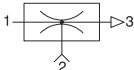


Single stage vacuum generator T06



Ordering code

19T06.S.10.HV.ZY

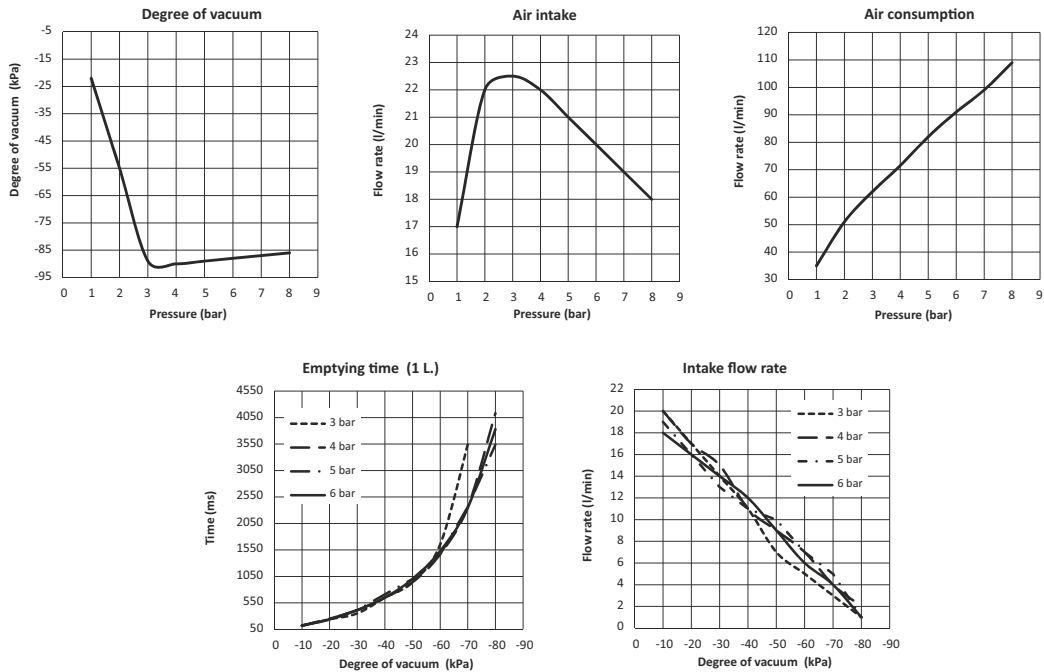


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	55	90	88
- Intake flow rate (l/min)	22	22	20
- Air consumption (l/min)	51	72	91

Characteristic curves



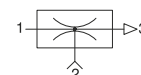
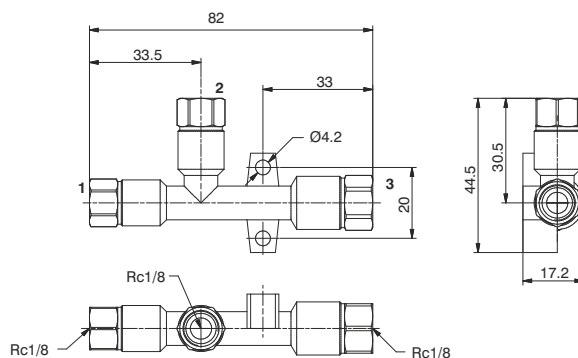
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	15

Single stage vacuum generator T18

Ordering code

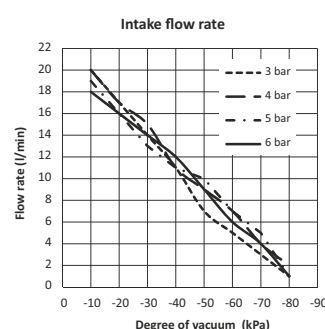
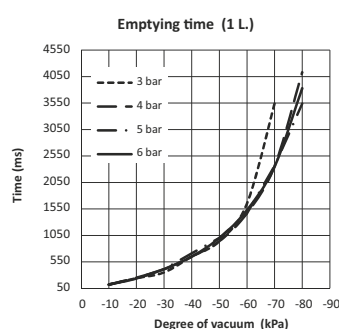
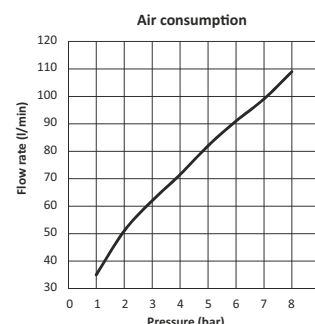
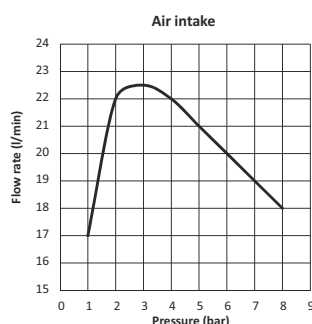
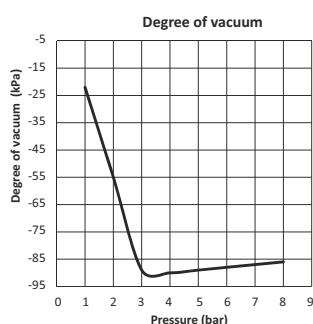
19T18.S.10.HV.VV



Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	55	90	88
- Intake flow rate (l/min)	22	22	20
- Air consumption (l/min)	51	72	91



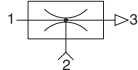
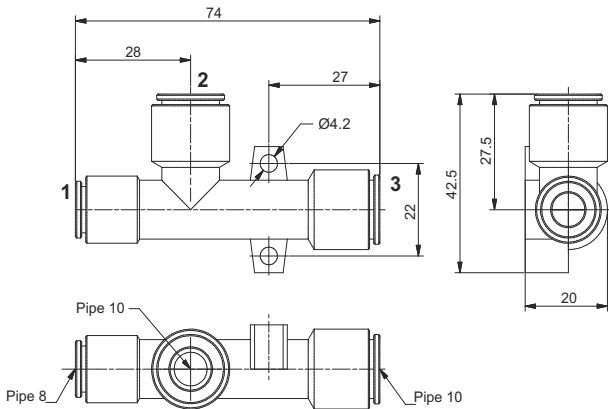
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	46



Single stage vacuum generator T10

Ordering code
19T10.S.13.HV.XX

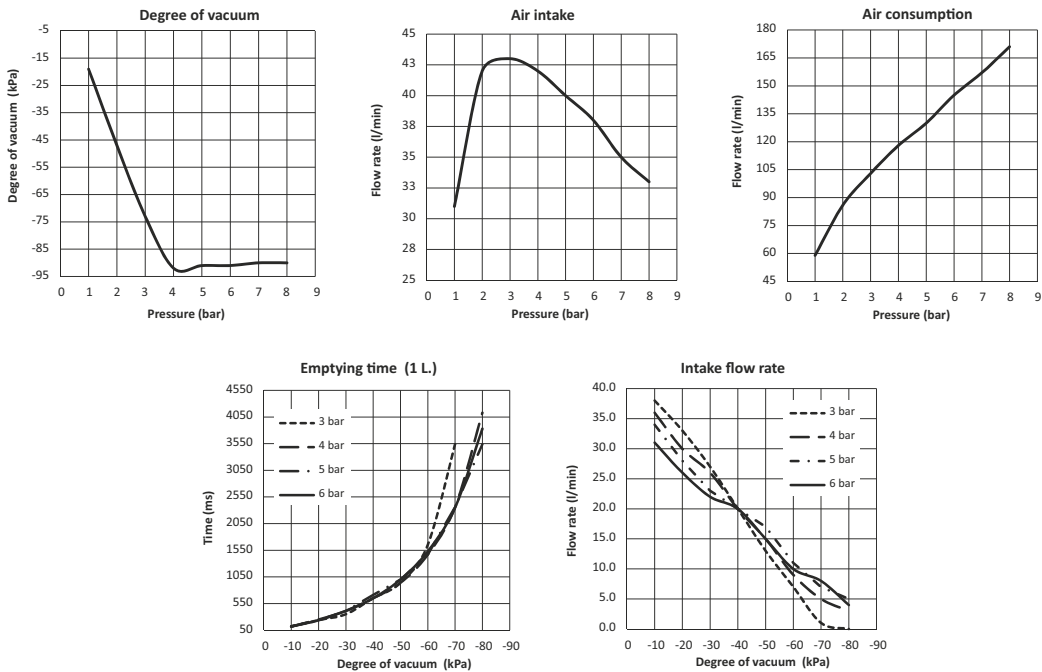


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	47	92	91
- Intake flow rate (l/min)	42	42	38
- Air consumption (l/min)	86	118	145

Characteristic curves



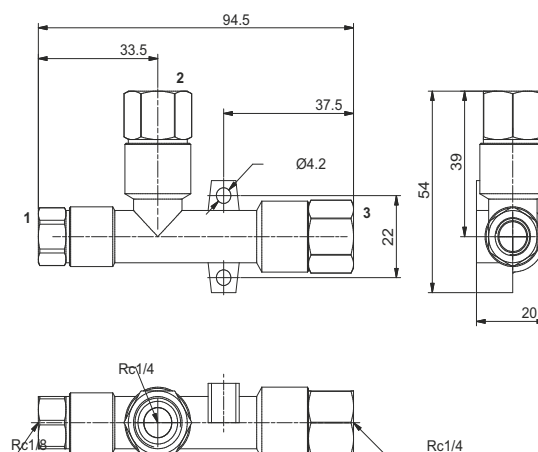
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	25

Single stage vacuum generator T14

Ordering code

19T14.S.15.HV.UU

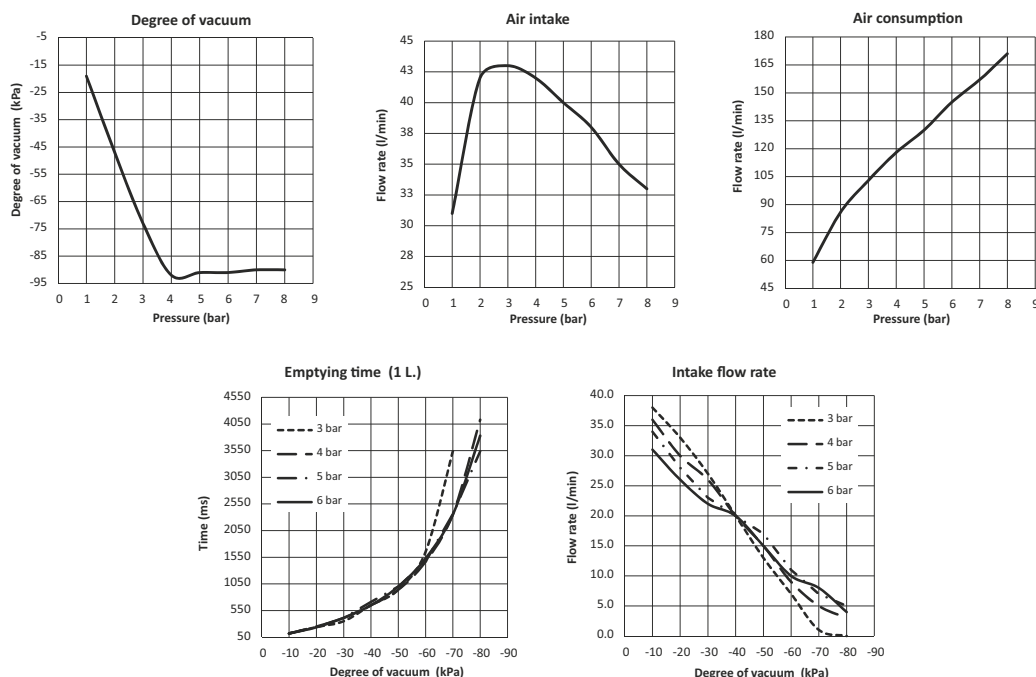


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	47	92	91
- Intake flow rate (l/min)	42	42	38
- Air consumption (l/min)	86	118	145

Characteristic curves



Technical features

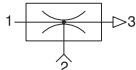
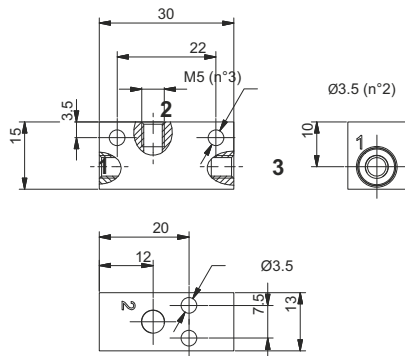
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	86



Generatore di Vacuum monostadio M5

Ordering code

19M05.S.05.SS.00

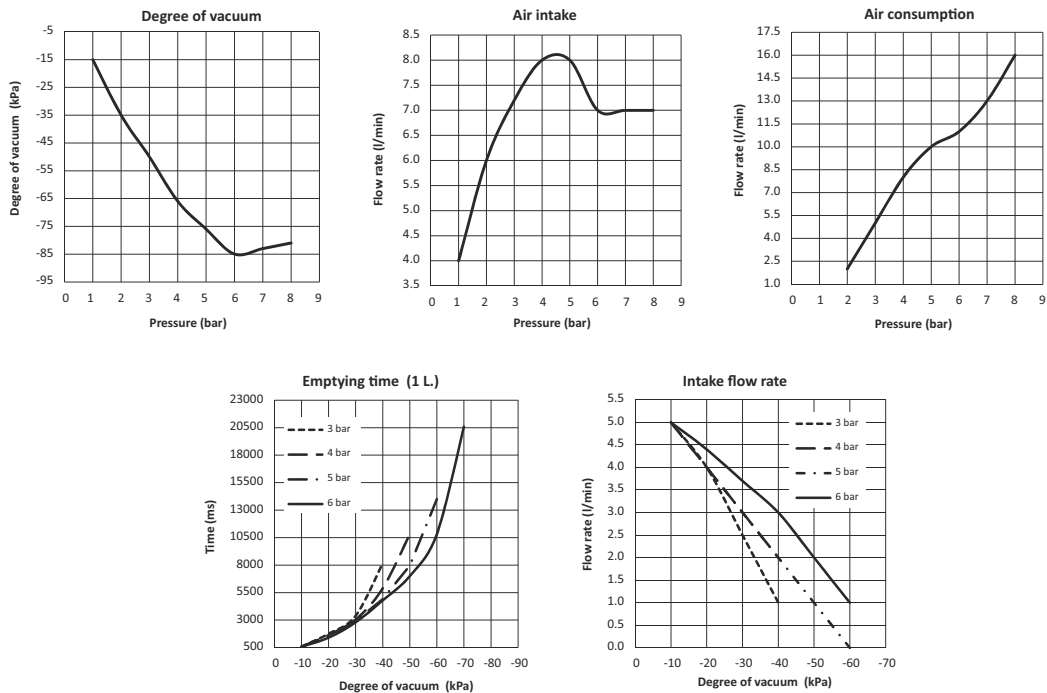


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	35	66	85
- Intake flow rate (l/min)	6	8	7
- Air consumption (l/min)	2	8	11

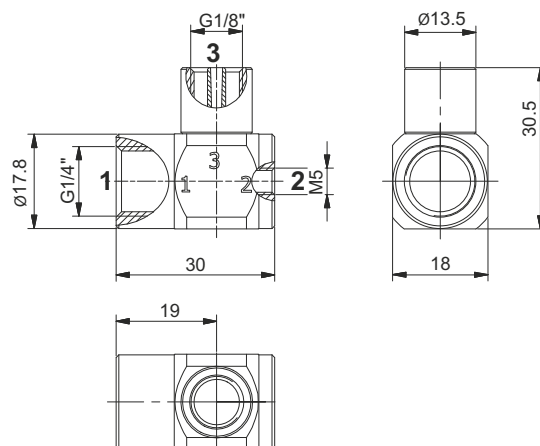
Characteristic curves



Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	15

Single stage vacuum generator M5



Ordering code

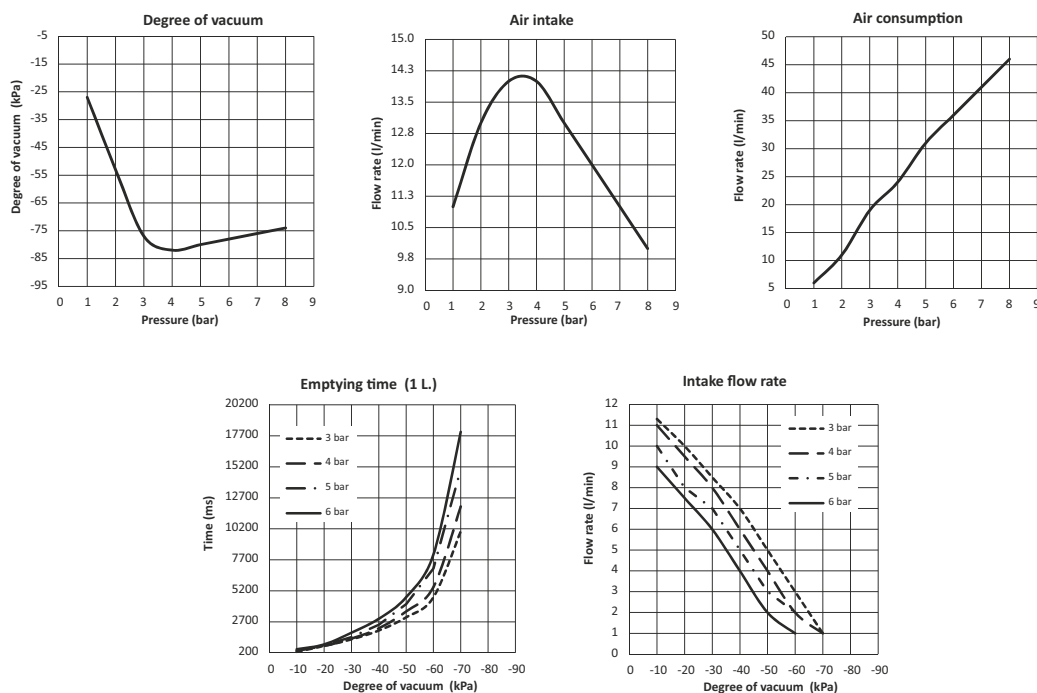
19M05.S.08.SS.L0

Single stage generators, with operation based on the Venturi principle; their main feature is the presence of feed pressure and connection for the vacuum, on the same axis. This makes it possible to connect the suction cups directly to the generator or through the suction cup holder, so therefore still on the same axis with obvious advantages in terms of system layout and simplicity. The outlet connection has a female thread G 1/8", or on circumference of the T06.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	53	82	78
- Intake flow rate (l/min)	13	14	12
- Air consumption (l/min)	11	24	36

Characteristic curves

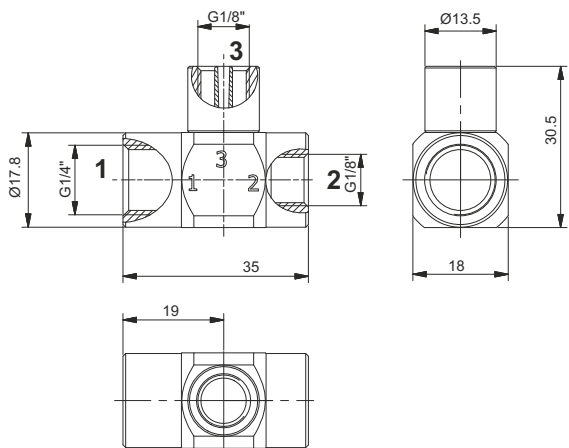


Technical features

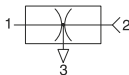
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	24



Single stage vacuum generator G1/8"



Ordering code
19M18.S.08.SS.L0

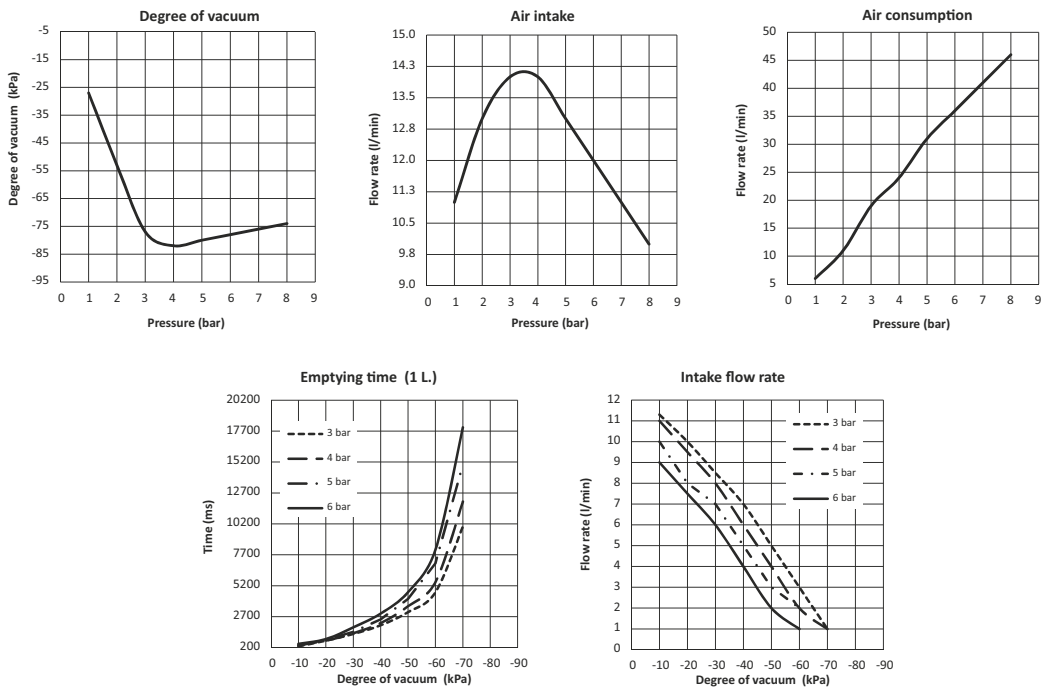


Single stage generators, with operation based on the Venturi principle; their main feature is the presence of feed pressure and connection for the vacuum, on the same axis. This makes it possible to connect the suction cups directly to the generator or through the suction cup holder, so therefore still on the same axis with obvious advantages in terms of system layout and simplicity. The outlet connection has a female thread G 1/8", or on circumference of the T06.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	53	82	78
- Intake flow rate (l/min)	13	14	12
- Air consumption (l/min)	11	24	36

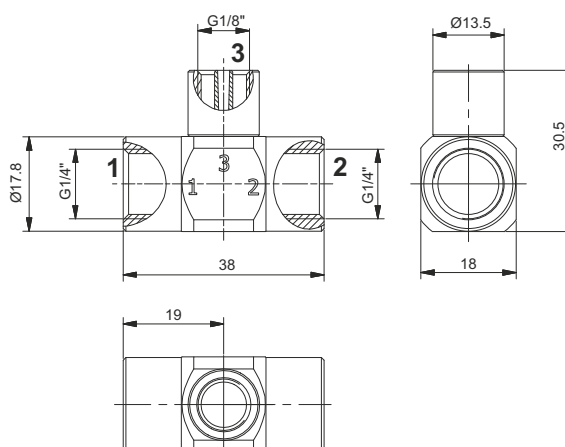
Characteristic curves



Technical features

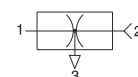
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	26

Single stage vacuum generator G1/4"



Ordering code

19M14.S.08.SS.L0

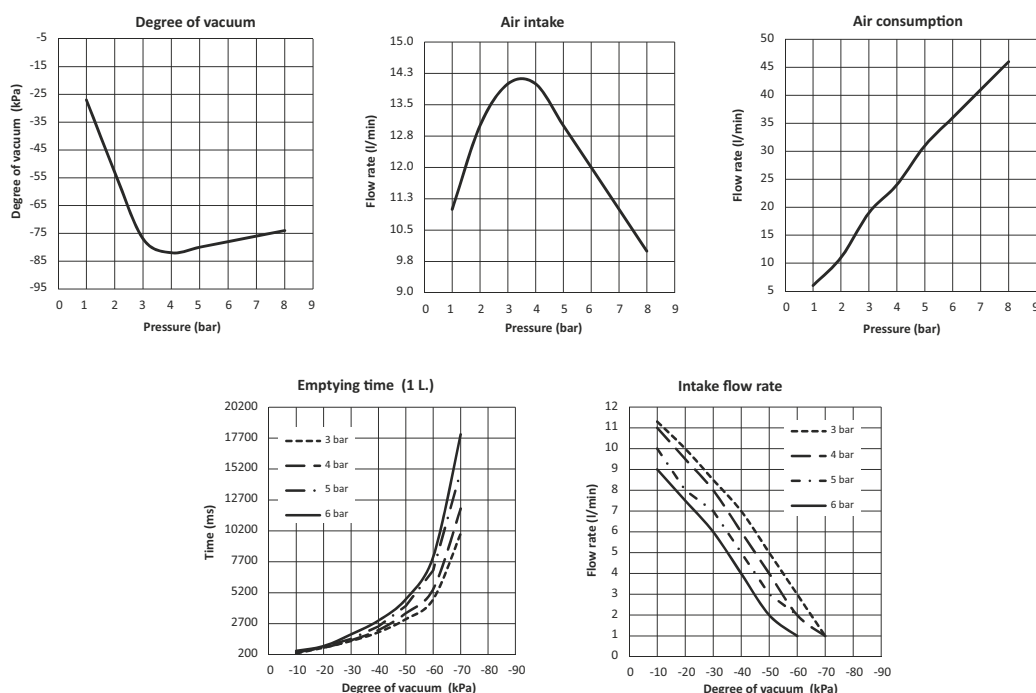


Single stage generators, with operation based on the Venturi principle; their main feature is the presence of feed pressure and connection for the vacuum, on the same axis. This makes it possible to connect the suction cups directly to the generator or through the suction cup holder, so therefore still on the same axis with obvious advantages in terms of system layout and simplicity. The outlet connection has a female thread G 1/8", or on circumference of the T06.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	53	82	78
- Intake flow rate (l/min)	13	14	12
- Air consumption (l/min)	11	24	36

Characteristic curves

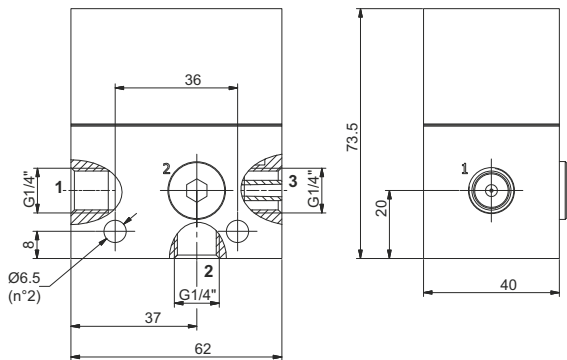


Technical features

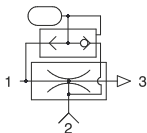
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	26



Single stage vacuum generator G1/4"



Ordering code
19M14.S.10.SS.E0

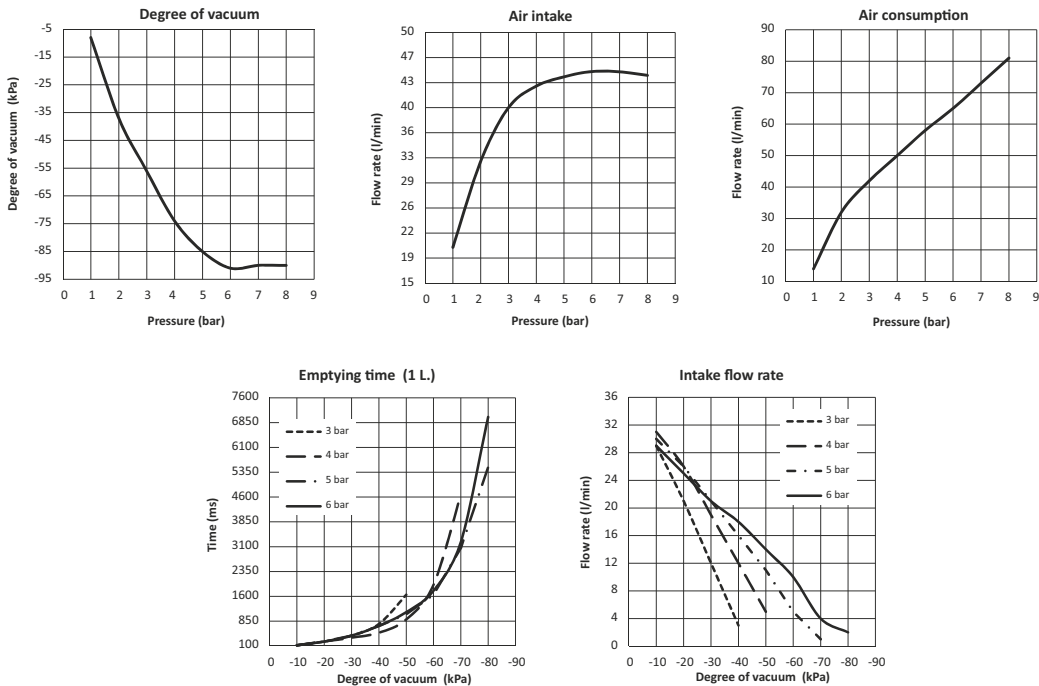


Single-stage generators derived from standard traditional single-stage generators, complete with automatic release system. The pressure supply, in addition to generating the defined vacuum through the Venturi principle, supplies a chamber which serves as a pressure accumulator. When the supply stops, through a non-return valve, the accumulated pressure will be discharged automatically through the vacuum connection, ensuring quick detachment of the gripped piece.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	37	74	91
- Intake flow rate (l/min)	32	43	45
- Air consumption (l/min)	32	50	75

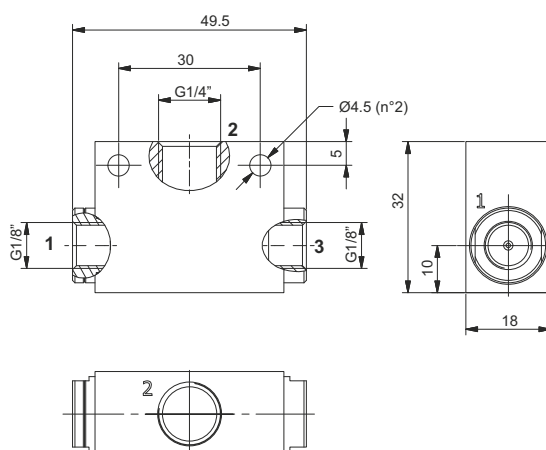
Characteristic curves



Technical features

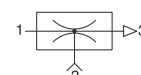
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	346

Single stage vacuum generator G1/4"



Ordering code

19M14.S.10.SS.R0

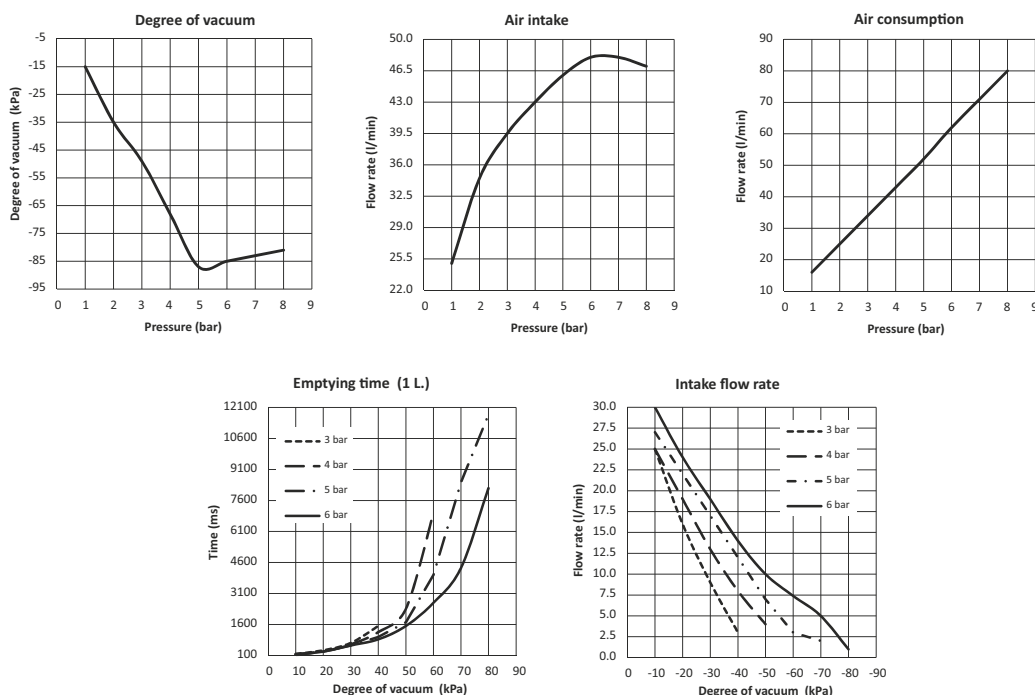


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	35	68	85
- Intake flow rate (l/min)	35	43	48
- Air consumption (l/min)	25	43	62

Characteristic curves

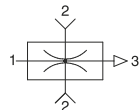
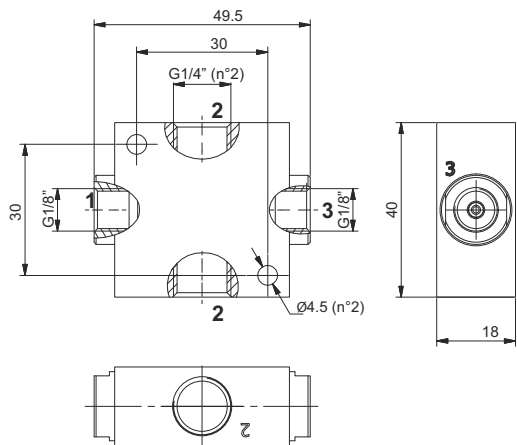


Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	55



Single stage vacuum generator G1/4"



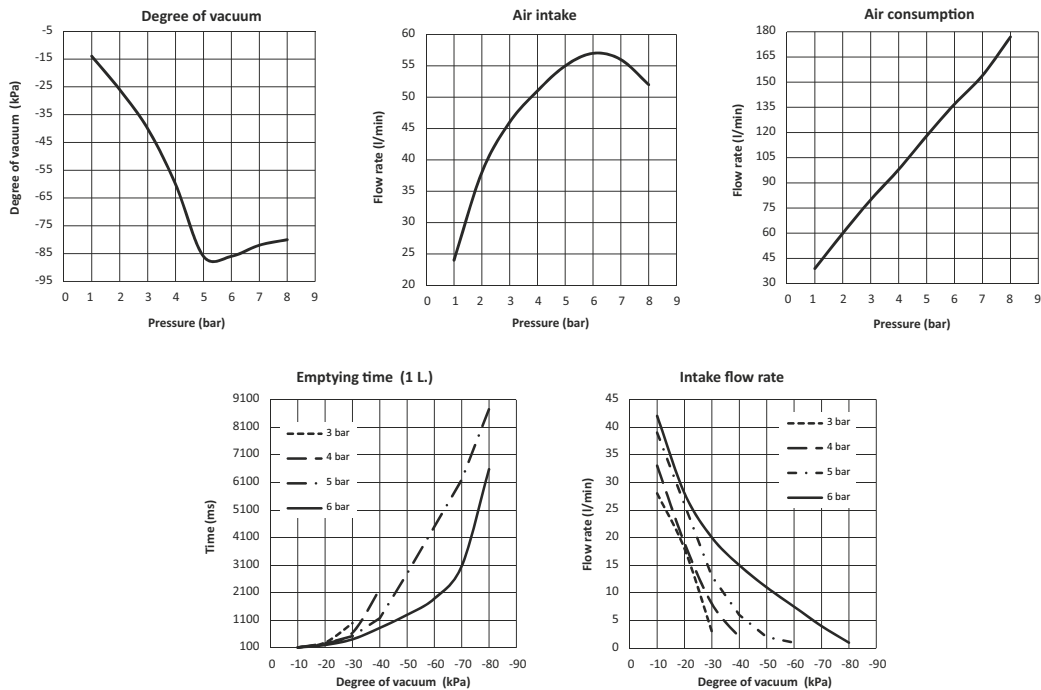
Ordering code
19M14.S.15.SS.RD

Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	26	60	86
- Intake flow rate (l/min)	38	51	57
- Air consumption (l/min)	60	98	137

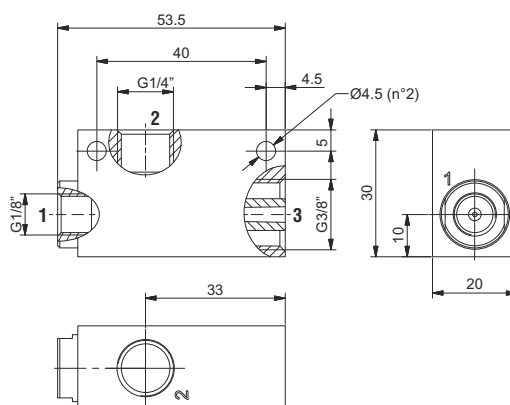
Characteristic curves



Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	68

Single stage vacuum generator G1/4"



Ordering code

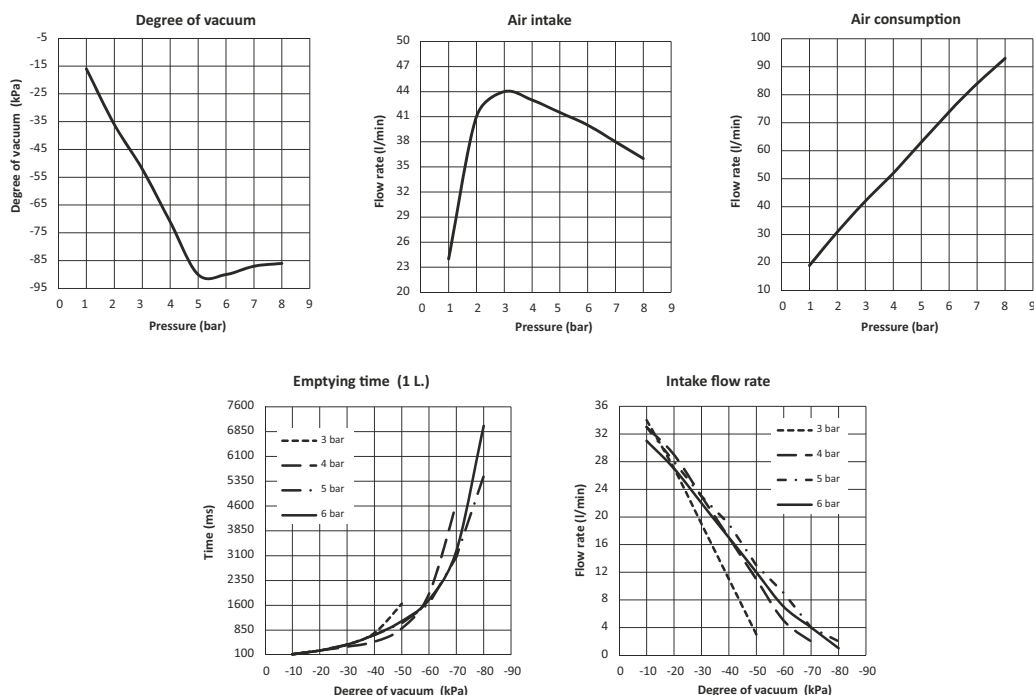
19M14.S.11.SS.00

Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	36	71	90
- Intake flow rate (l/min)	41	43	40
- Air consumption (l/min)	31	52	74

Characteristic curves

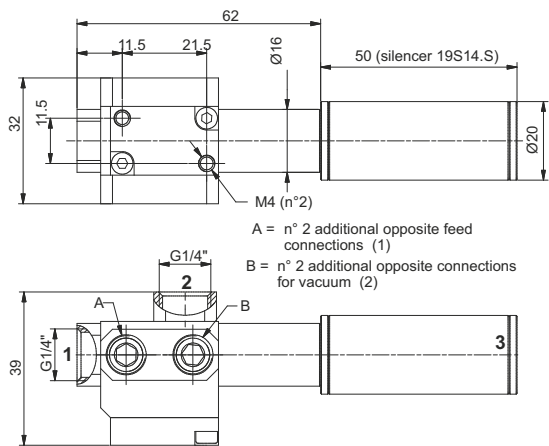


Technical features

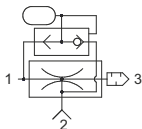
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	67



Single stage vacuum generator G1/4"



Ordering code
19M14.S.12.SL.ES

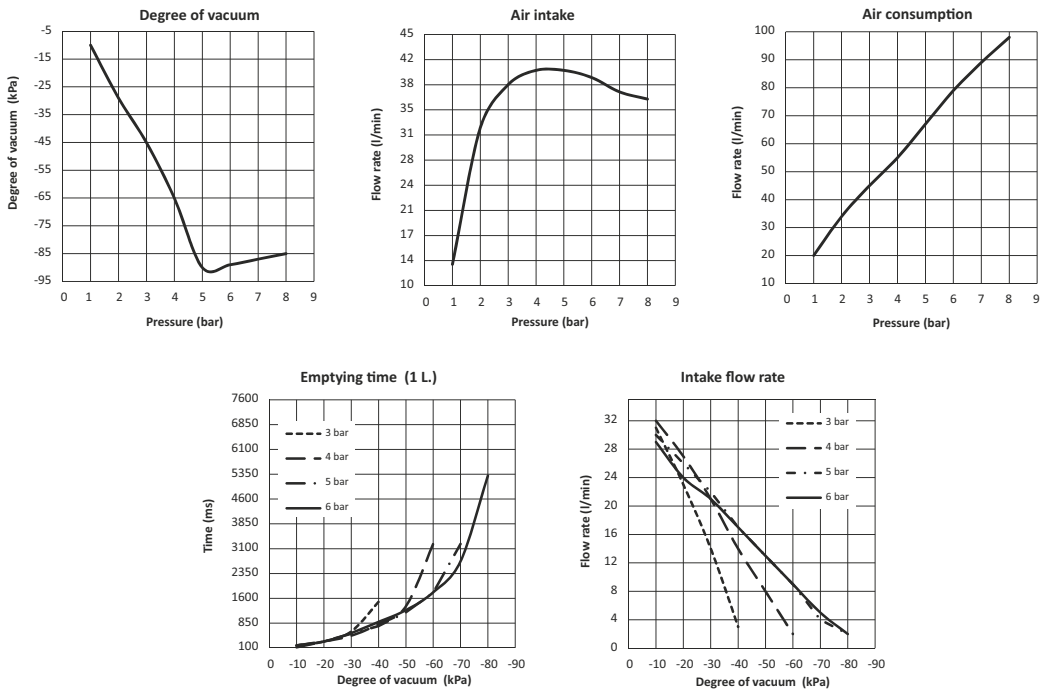


High-performance compact generator for high frequency applications; the presence of the integrated ejector ensures release capacity in the shortest possible time. The fact of it being extremely lightweight allows its application directly onto the robot gripping arms and/or mobile applications. Available with two flow rates in the same overall dimensions.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	29	65	89
- Intake flow rate (l/min)	32	40	39
- Air consumption (l/min)	34	55	79

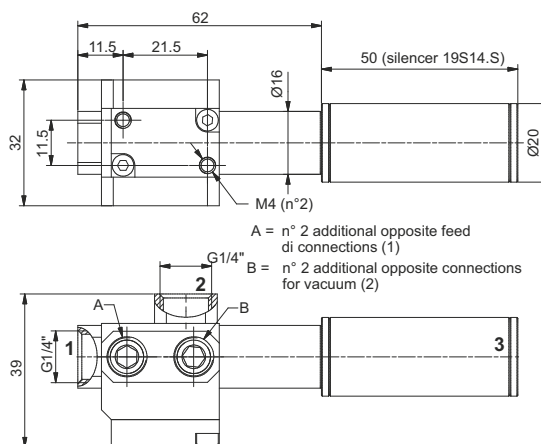
Characteristic curves



Technical features

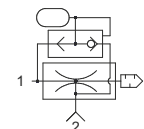
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	83

Single stage vacuum generator G1/4"



Ordering code

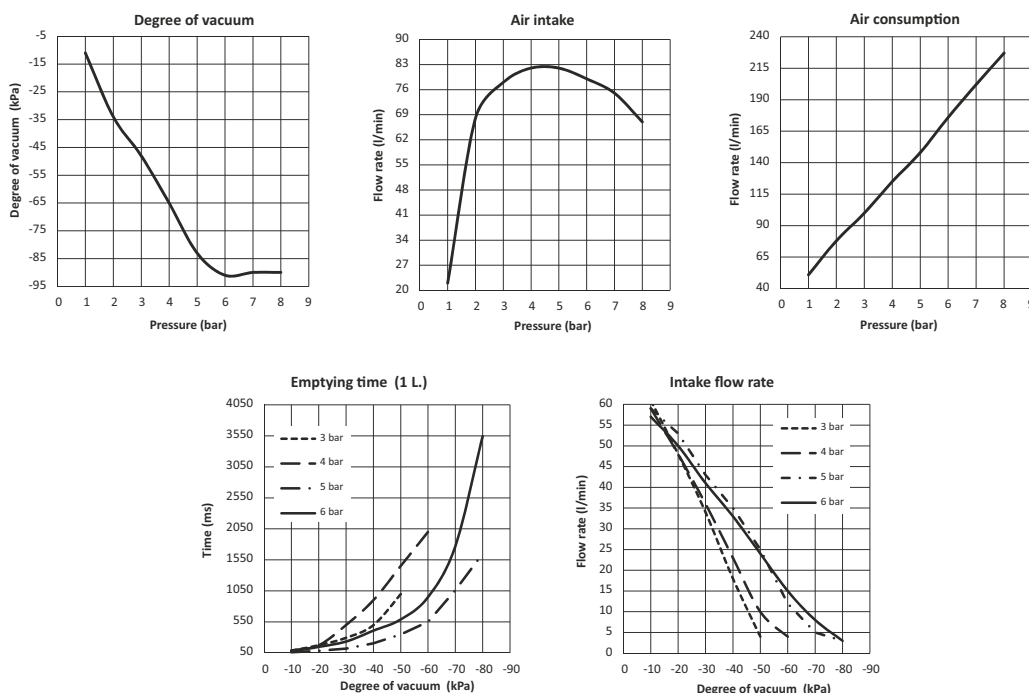
19M14.S.17.SL.ES



High-performance compact generator for high frequency applications; the presence of the integrated ejector ensures release capacity in the shortest possible time. The fact of it being extremely lightweight allows its application directly onto the robot gripping arms and/or mobile applications. Available with two flow rates in the same overall dimensions.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	34	65	91
- Intake flow rate (l/min)	68	82	79
- Air consumption (l/min)	78	125	176



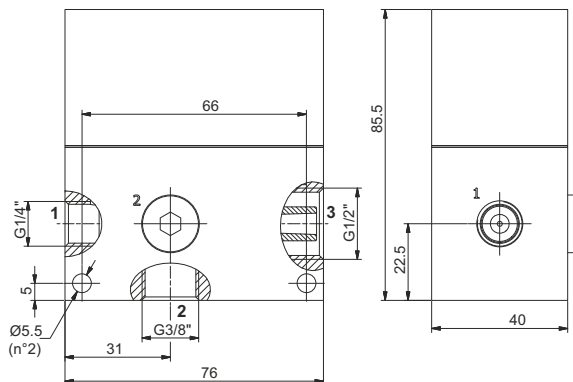
Characteristic curves

Technical features

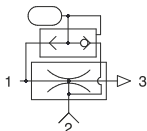
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	83



Single stage vacuum generator G3/8"



Ordering code
19M38.S.14.SS.E0

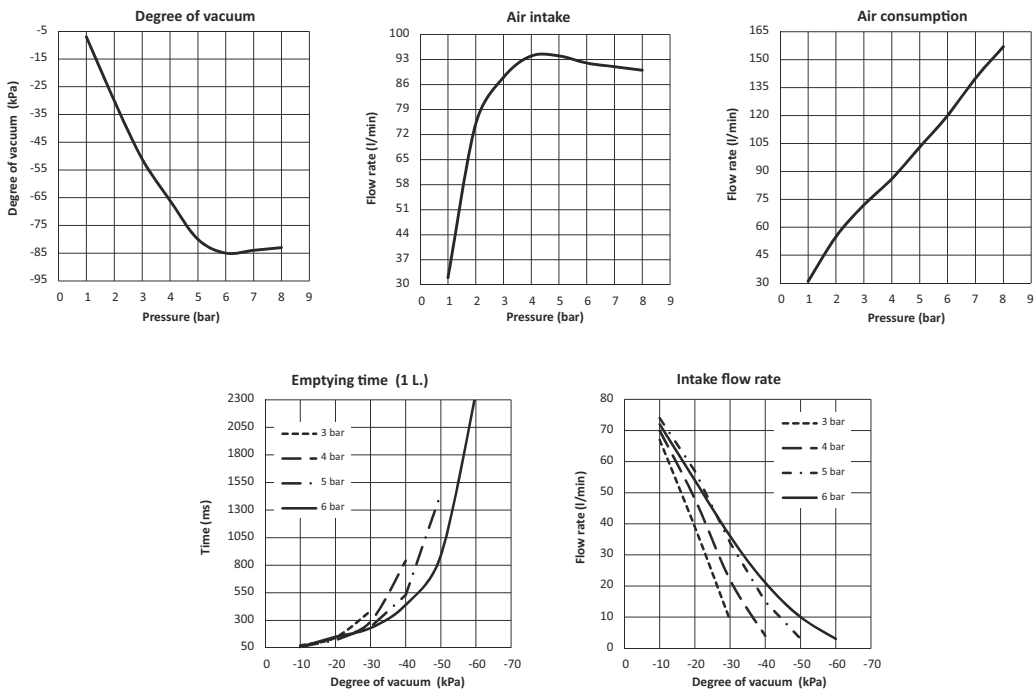


Single-stage generators derived from standard traditional single-stage generators, complete with automatic release system. The pressure supply, in addition to generating the defined vacuum through the Venturi principle, supplies a chamber which serves as a pressure accumulator. When the supply stops, through a non-return valve, the accumulated pressure will be discharged automatically through the vacuum connection, ensuring quick detachment of the gripped piece.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	30	66	85
- Intake flow rate (l/min)	75	94	92
- Air consumption (l/min)	55	86	120

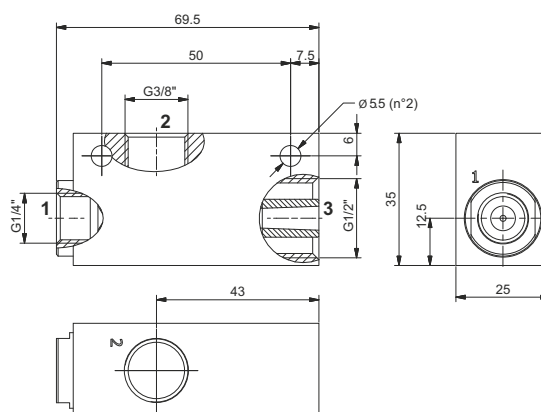
Characteristic curves



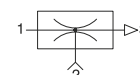
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	480

Single stage vacuum generator G3/8"



Ordering code

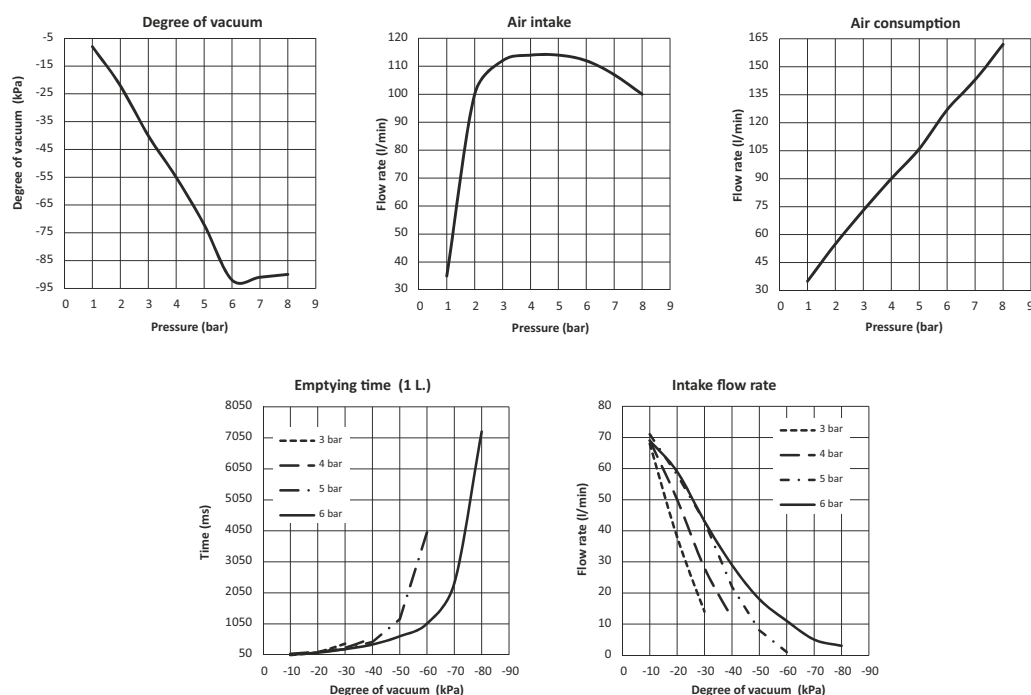
19M38.S.15.SS.00


Single-stage generators, robust and reliable, with compact dimensions and suitable for applications which need the required degree of vacuum to be reached quickly with limited air flows. Operating on the Venturi principle, they have the vacuum connection, orthogonal to the axis of supply and outlet. They can be connected directly to the suction cups and/or suction cup holder and applied in any position.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	22	55	92
- Intake flow rate (l/min)	100	114	112
- Air consumption (l/min)	55	90	127

Characteristic curves



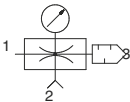
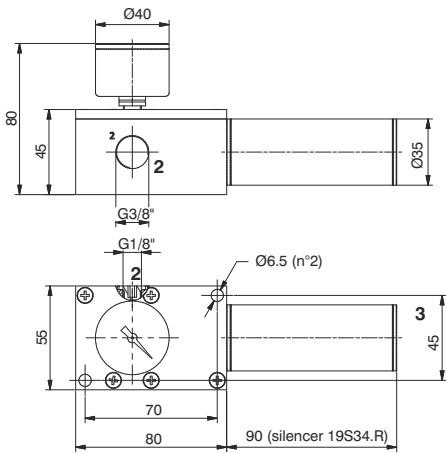
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	122



Single stage vacuum generator G3/8"

Ordering code
19M38.S.18.HV.VS

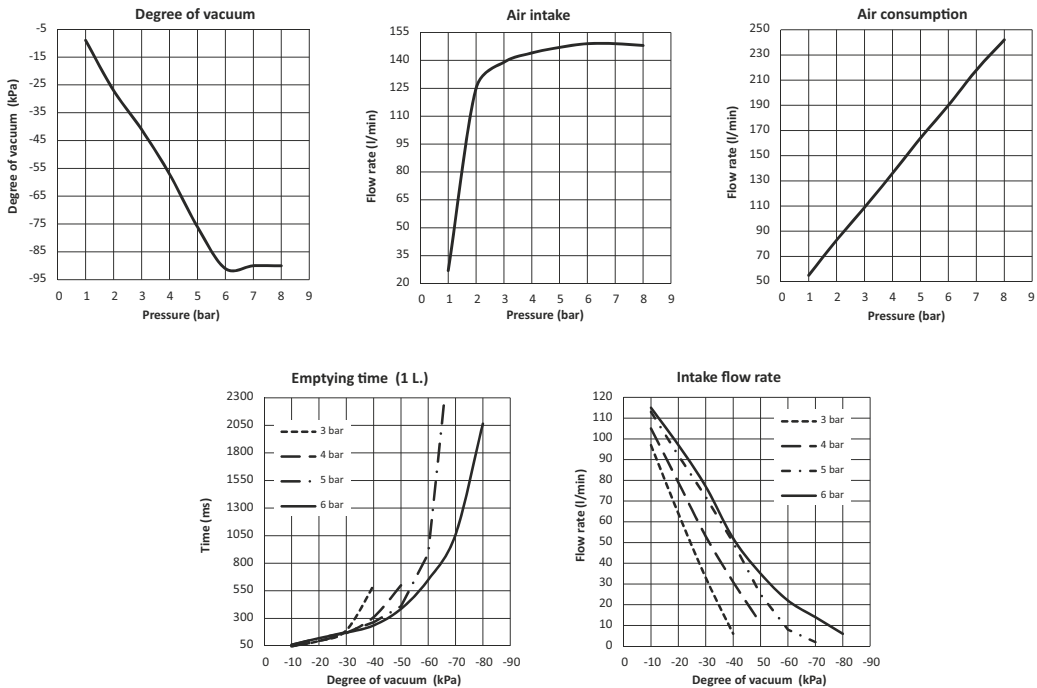


Single-stage generator with high suction capacity due to a pair of nozzles mounted in parallel; they are particularly quiet thanks to a free-flow type silencer, standard-fitted with a vacuum gauge, and allows direct connection with a vacuum switch or alternatively a solenoid valve for quick detachment via direct blowing into the vacuum connection. Suitable for decentralised connection of one or more suction cups.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	27	57	91
- Intake flow rate (l/min)	125	144	149
- Air consumption (l/min)	83	136	190

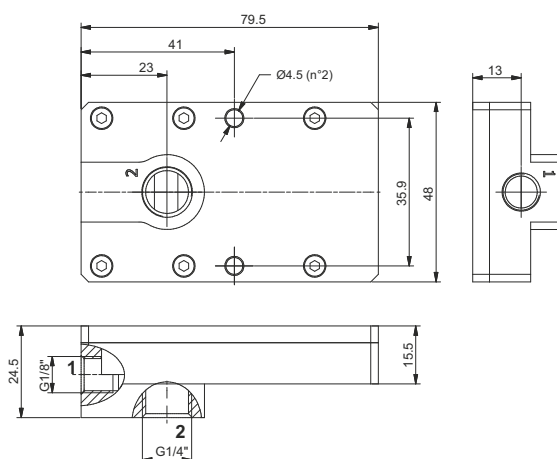
Characteristic curves



Technical features

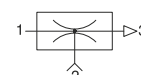
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	450

Multistage vacuum generator G1/4"



Ordering code

19M14.M.09.SS.00

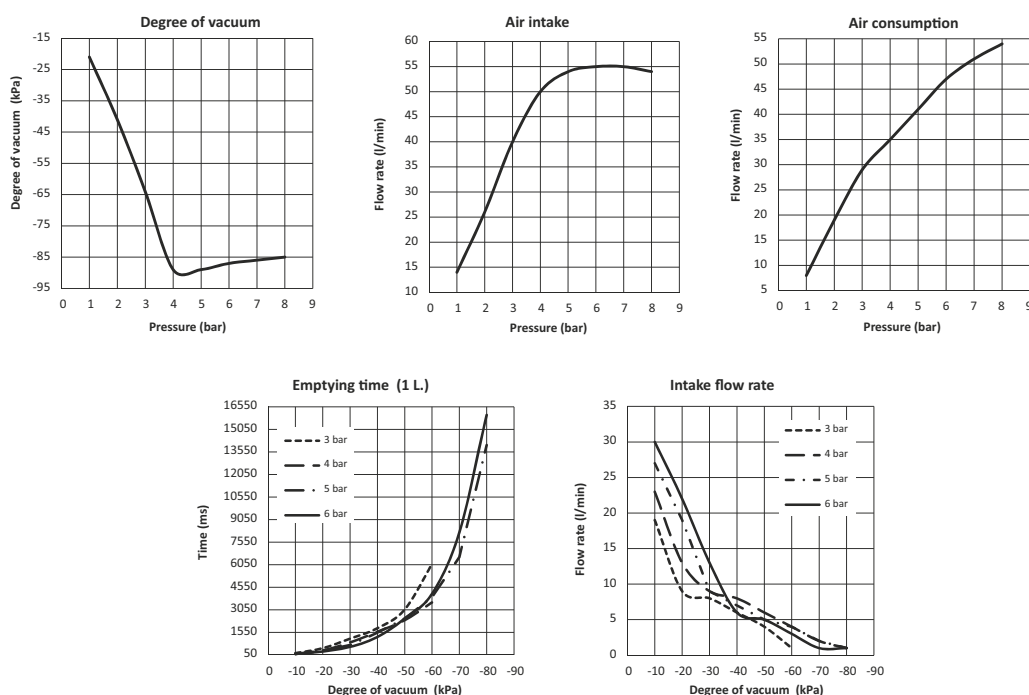


Compact generators comprising a number of modules as a function of the desired performance allow high-suction capacity with low consumption and other degrees of vacuum; as a function of the modules (nozzles 2-4-6-8) used, offer exactly the right performance for the most varied of industrial applications. They ensure a low level of noise thanks to the sound-absorbent material inside of them.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	41	89	87
- Intake flow rate (l/min)	26	50	55
- Air consumption (l/min)	19	35	47

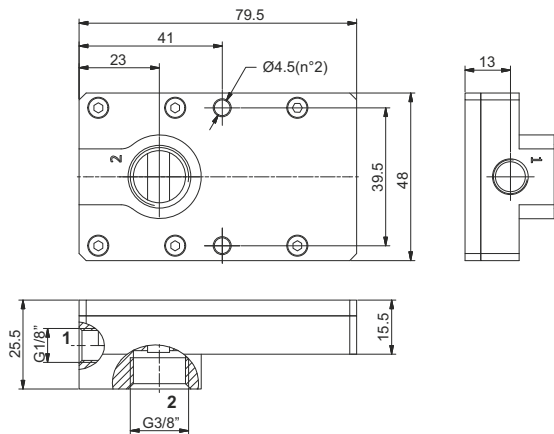
Characteristic curves



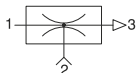
Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	130

Multistage vacuum generator G3/8"



Ordering code
19M38.M.12.SS.00

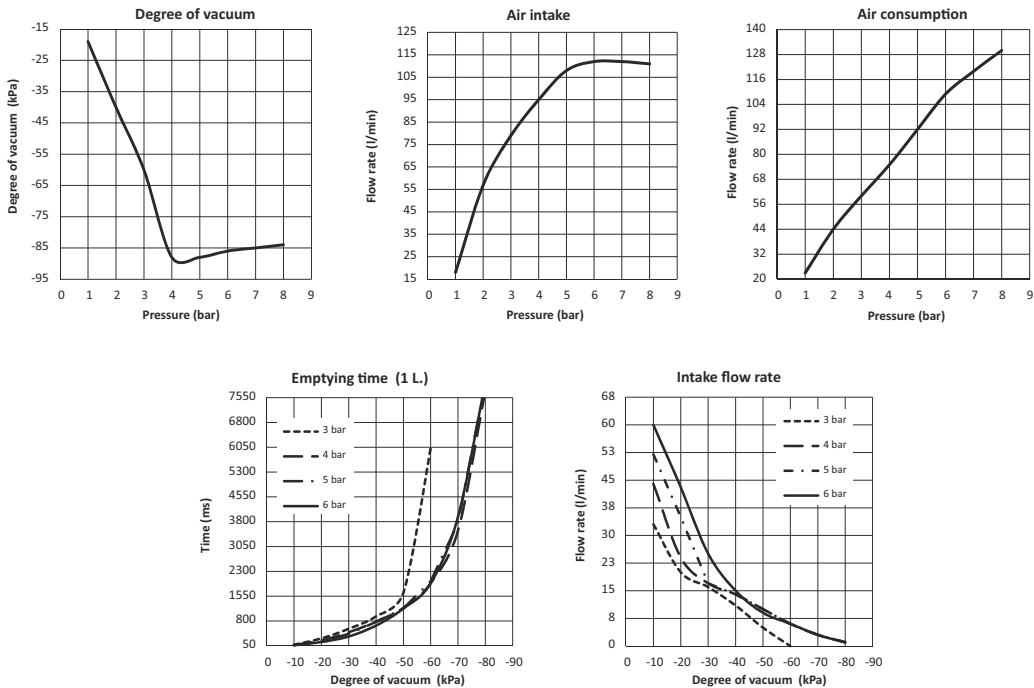


Compact generators comprising a number of modules as a function of the desired performance allow high-suction capacity with low consumption and other degrees of vacuum; as a function of the modules (nozzles 2-4- 6-8) used, offer exactly the right performance for the most varied of industrial applications. They ensure a low level of noise thanks to the sound-absorbent material inside of them.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	88	86
- Intake flow rate (l/min)	57	95	112
- Air consumption (l/min)	44	75	109

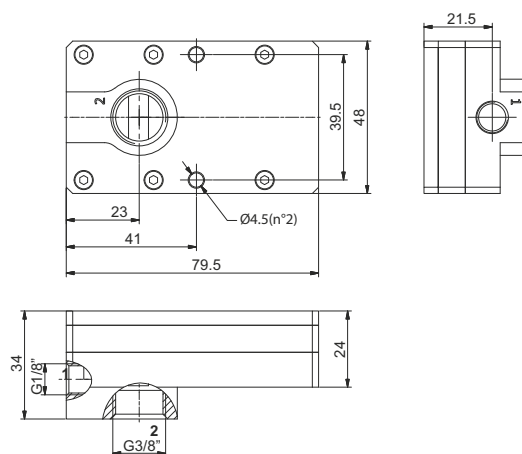
Characteristic curves



Technical features

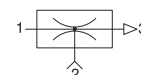
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	132

Multistage vacuum generator G3/8"



Ordering code

19M38.M.15.SS.00

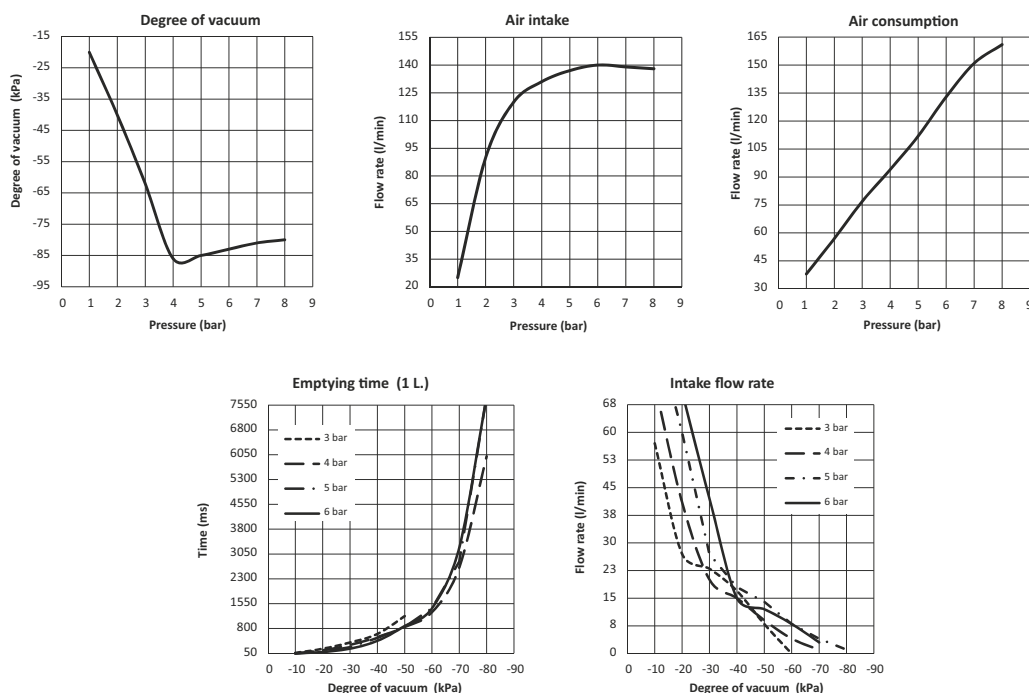


Compact generators comprising a number of modules as a function of the desired performance allow high-suction capacity with low consumption and other degrees of vacuum; as a function of the modules (nozzles 2-4-6-8) used, offer exactly the right performance for the most varied of industrial applications. They ensure a low level of noise thanks to the sound-absorbent material inside of them.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	86	83
- Intake flow rate (l/min)	90	131	140
- Air consumption (l/min)	57	94	133

Characteristic curves

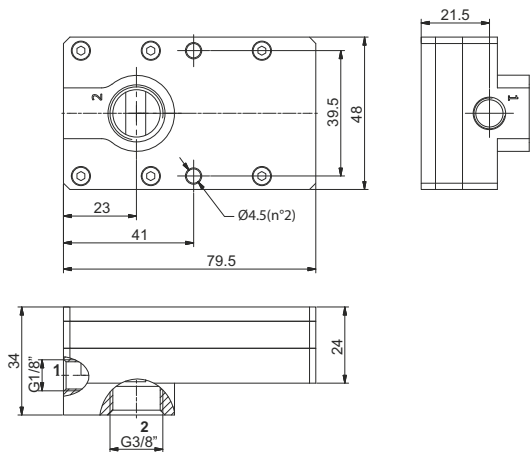


Technical features

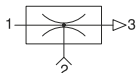
Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	178



Multistage vacuum generator G3/8"



Ordering code
19M38.M.18.SS.00

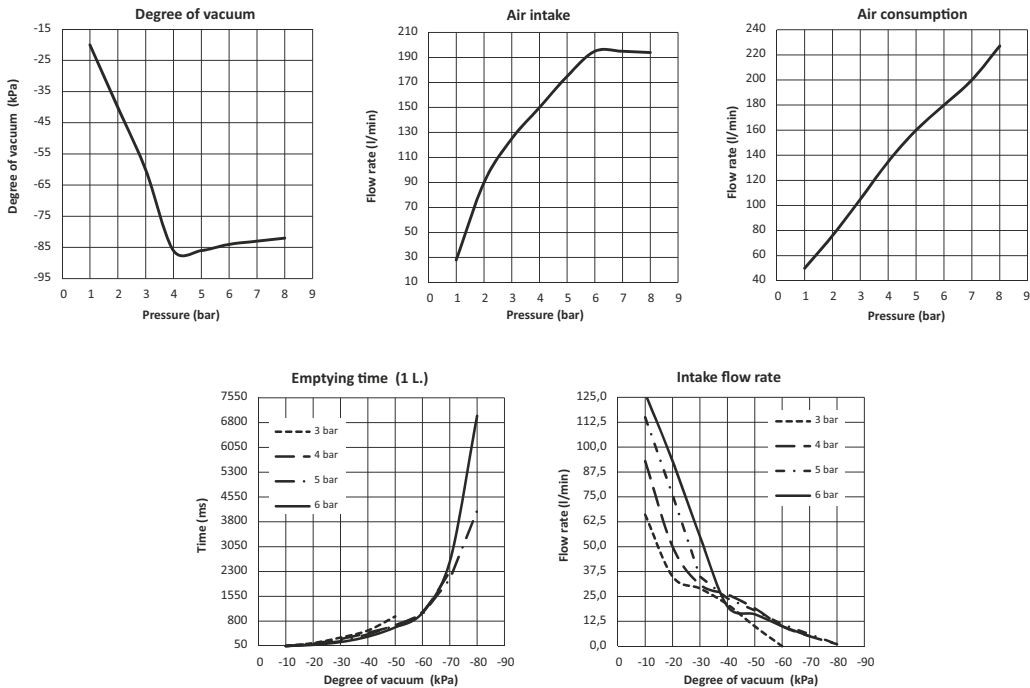


Compact generators comprising a number of modules as a function of the desired performance allow high-suction capacity with low consumption and other degrees of vacuum; as a function of the modules (nozzles 2-4-6-8) used, offer exactly the right performance for the most varied of industrial applications. They ensure a low level of noise thanks to the sound-absorbent material inside of them.

Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	86	84
- Intake flow rate (l/min)	90	150	195
- Air consumption (l/min)	76	135	180

Characteristic curves



Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	1 ÷ 8
Temperature (°C)	-10 ÷ +80
Weight (g)	178

General details

These generators are separate vacuum units that can control a complete vacuum gripping system. They are designed and manufactured to be installed individually, model SE, or to be assembled with intermediate modules, model ME, the latter making it possible to create a multi-position manifold with a single compressed air supply. The modular design allows the number of autonomous vacuum units to be increased as a function of requirements. They are constructed from a piece of anodised aluminium, and inside of this, the multiple ejectors are mounted and the vacuum chambers are fashioned, as well as threaded connections for supply.

The outside components are:

A solenoid pilot valve for controlling the compressed air being supplied

A solenoid pilot valve for controlling the compressed air from the bellows

A vacuum switch with display for controlling and monitoring the system

A flow regulator with setting screw for regulating the air of the bellows

An intake manifold made of aluminium for the vacuum connections with the intake filter and check valve integrated inside it, serving to keep vacuum to be used should the electrical power or compressed air stop being supplied.

By activating the supply solenoid pilot valve, the generator creates vacuum that can be used, and when the maximum preset value is reached, the vacuum switch kicks in and, through the control solenoid pilot valve, cuts off the air supply and restores it when the vacuum value drops below the minimum set value.

This modulation allows considerable savings of compressed air in addition to keeping the degree of vacuum within safety range.

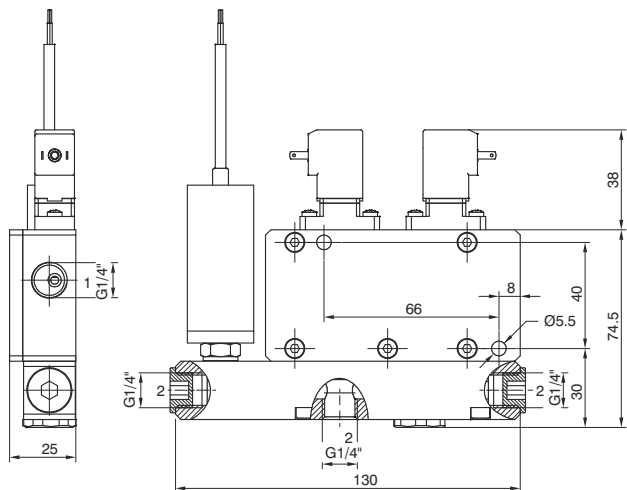
A second vacuum switch signal, which is separate from the first one and is adjustable, can be used to start up the cycle when the degree of vacuum reached is that needed for the application.

Once the cycle has completed, the supply solenoid pilot valve for air supply to the generator powers down and at the same time the release solenoid pilot valve powers up to quickly restore atmospheric pressure within the circuit.

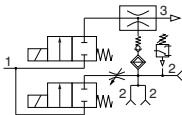
This series of vacuum generators is suitable for controlling suction cup gripping systems for moving glass panes, marble slabs, ceramic slabs, plastic panels, cardboard boxes, wood panels, etc., and, given their particular shape, they lend themselves to applications in the industrial robotics sector where there is increasing demand for high-performance equipment and autonomous vacuum systems for controlling a greater number of gripping elements while keeping weight low and dimensions compact.



Multifunction vacuum generator



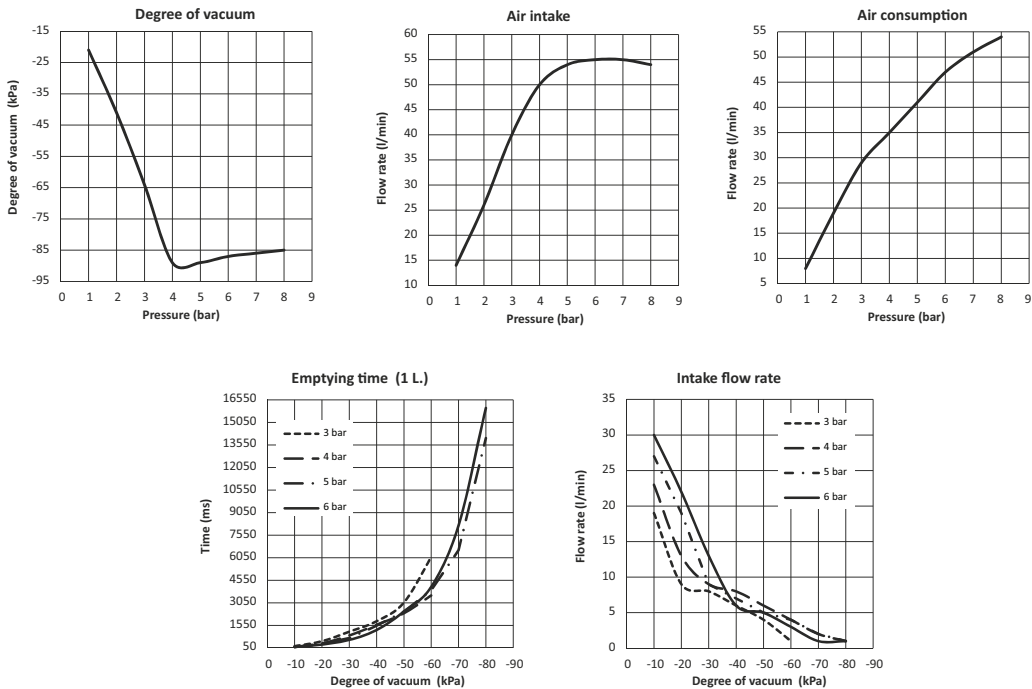
Ordering code
19M14.M.09.SE.ED



Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	41	89	87
- Intake flow rate (l/min)	26	50	55
- Air consumption (l/min)	19	35	47

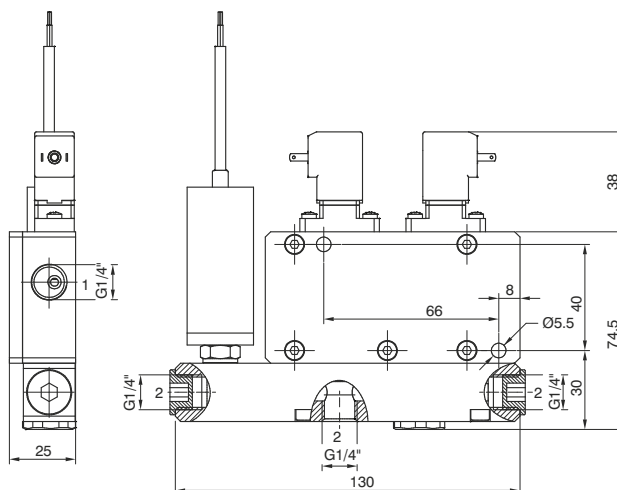
Characteristic curves



Technical features

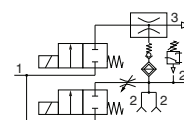
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Tensione di alimentazione	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	538

Multifunction vacuum generator



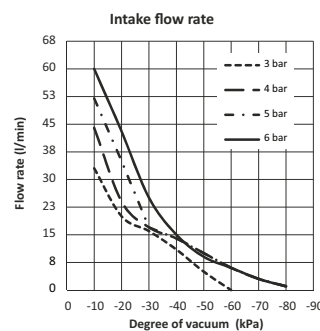
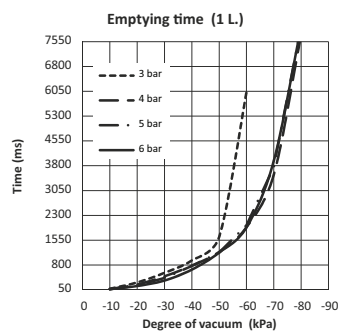
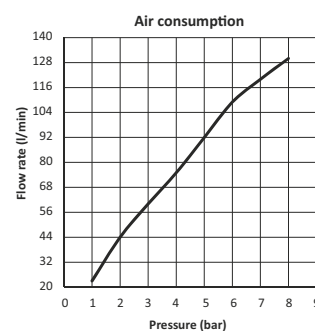
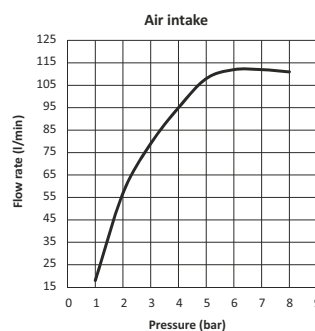
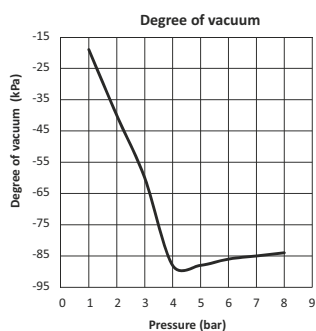
Ordering code

19M14.M.12.SE.ED



Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	88	86
- Intake flow rate (l/min)	57	95	112
- Air consumption (l/min)	44	75	109



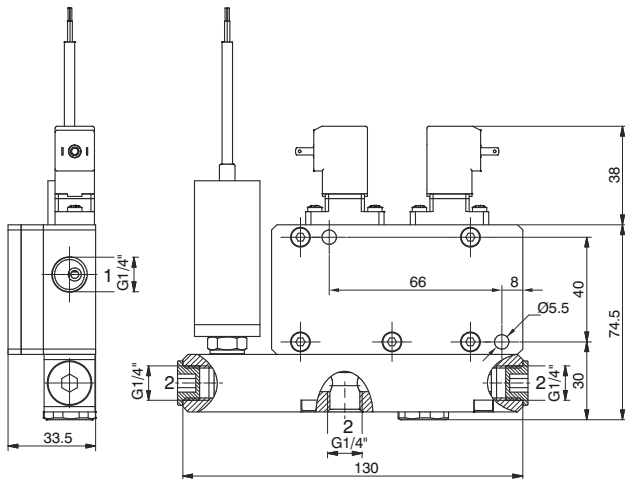
Characteristic curves

Technical features

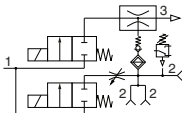
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Tensione di alimentazione	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	538



Multifunction vacuum generator



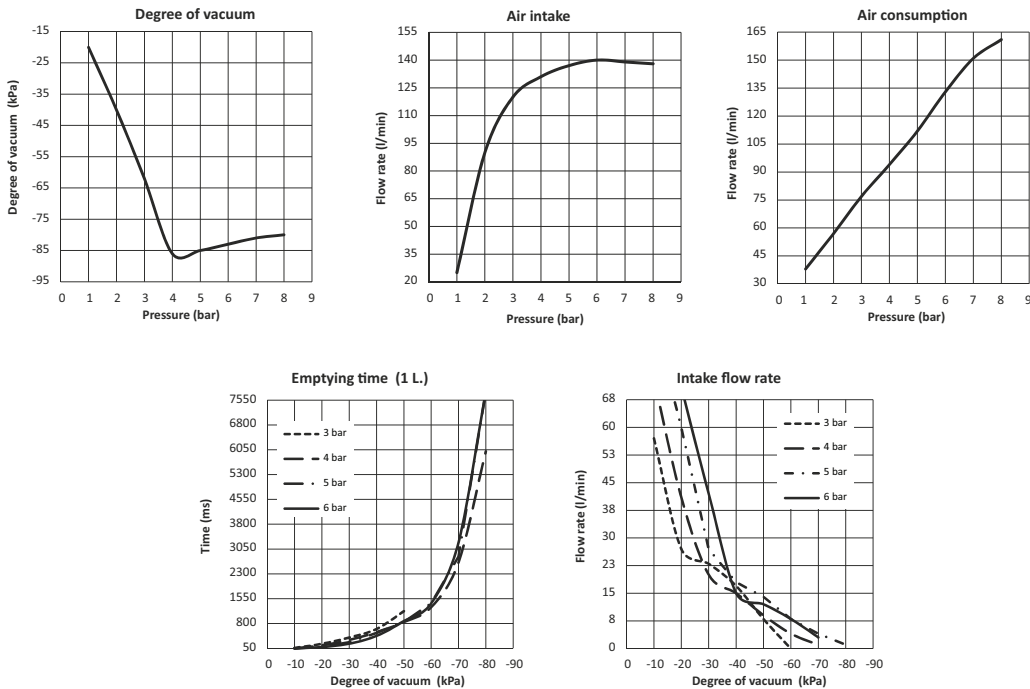
Ordering code
19M14.M.15.SE.ED



Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	86	83
- Intake flow rate (l/min)	90	131	140
- Air consumption (l/min)	57	94	133

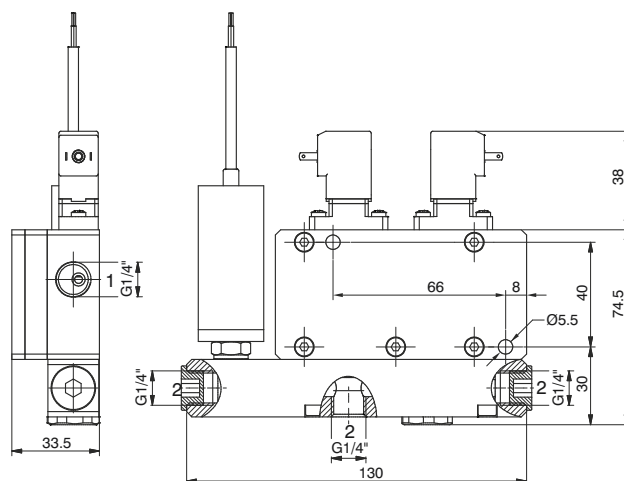
Characteristic curves



Technical features

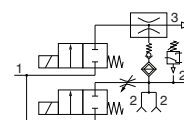
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Tensione di alimentazione	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	661

Multifunction vacuum generator



Ordering code

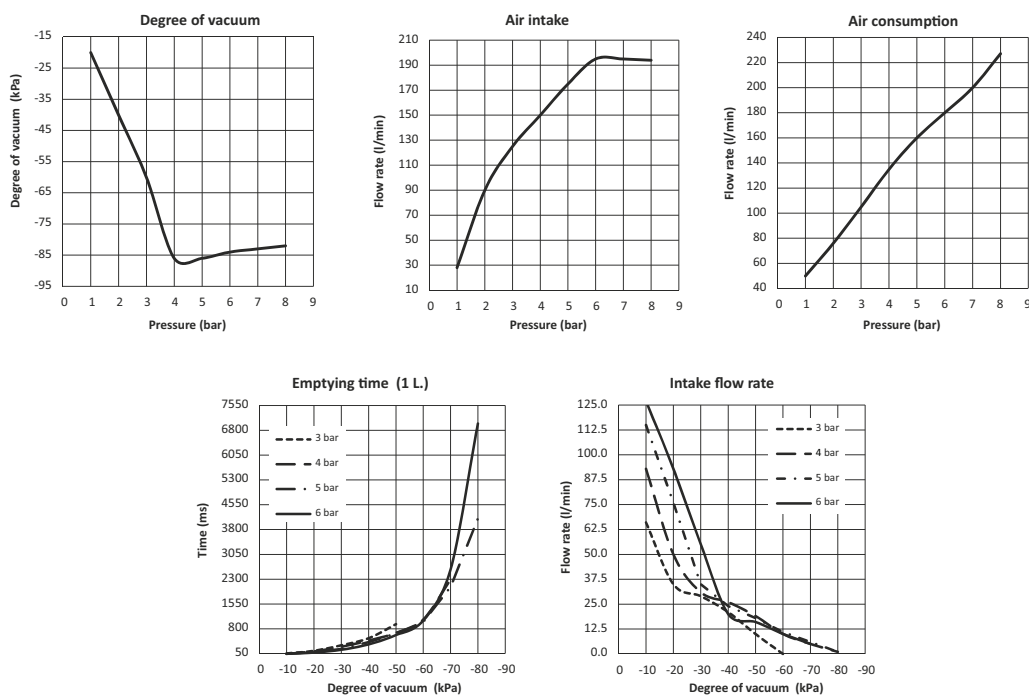
19M14.M.18.SE.ED



Performance characteristics

Supply pressure (bar)	2	4	6
Degree of Vacuum (-kPa)	40	86	84
Intake flow rate (l/min)	90	150	195
Air consumption (l/min)	76	135	180

Characteristic curves



Technical features

Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Tensione di alimentazione	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	661



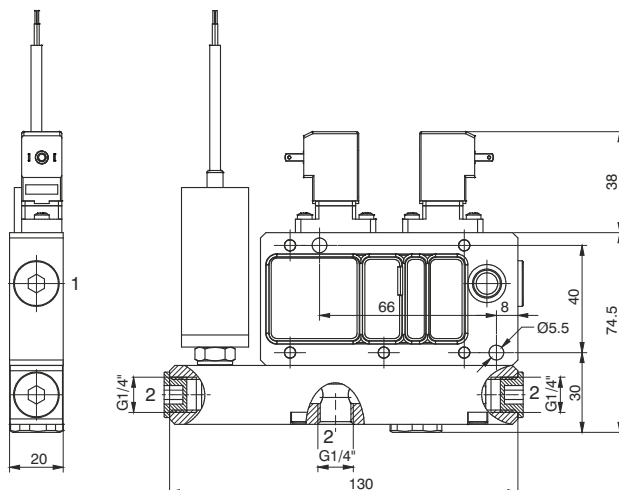
General details

The intermediate "ME" models are multistage and multifunction vacuum generators that are not autonomous and must be hooked up to the "SE" units to operate. They were designed to be enclosed between the cap and the base of the "SE" vacuum generator and attached to the latter via M4 screws; with the distribution manifold inside the generator, the compressed air is distributed without having to use external manifolds.

These can be ordered as individual components in the desired number and capacity, although to mount them onto the "SE" generator, a kit with a number of screws corresponding to the number of modules to be attached is necessary.

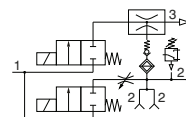
The "ME" vacuum generators comprise the same components as the "SE" generators do, except for the sealing cap; their operation and use are the same as the "SE" vacuum generator on which they are mounted.

Modular multifunction vacuum generators



Ordering code

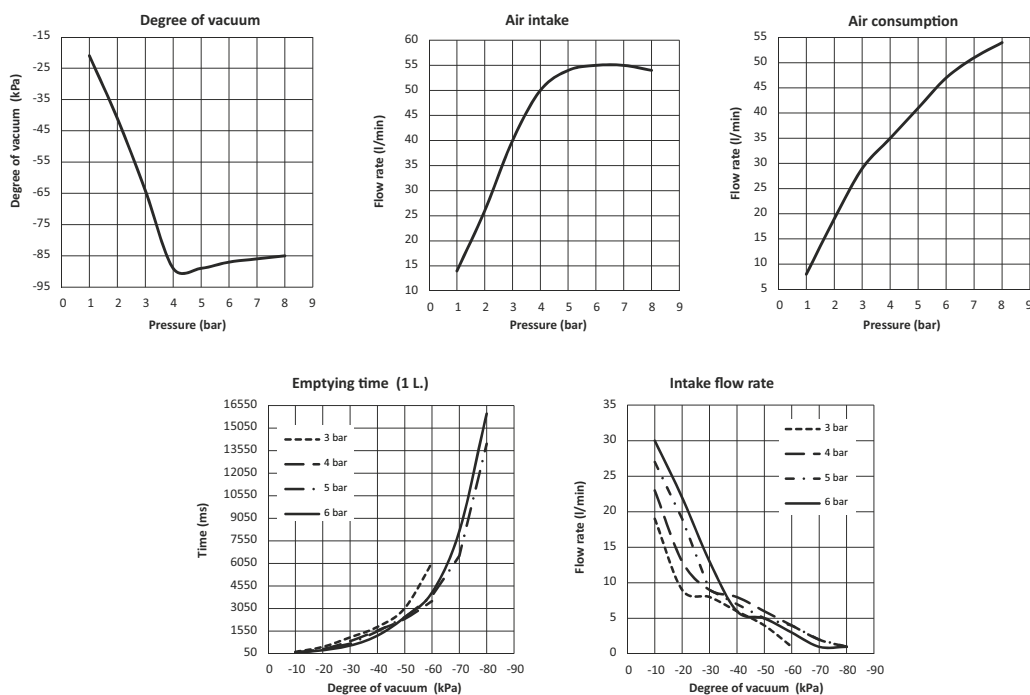
19M14.M.09.ME.ED



Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	41	89	87
- Intake flow rate (l/min)	26	50	55
- Air consumption (l/min)	19	35	47

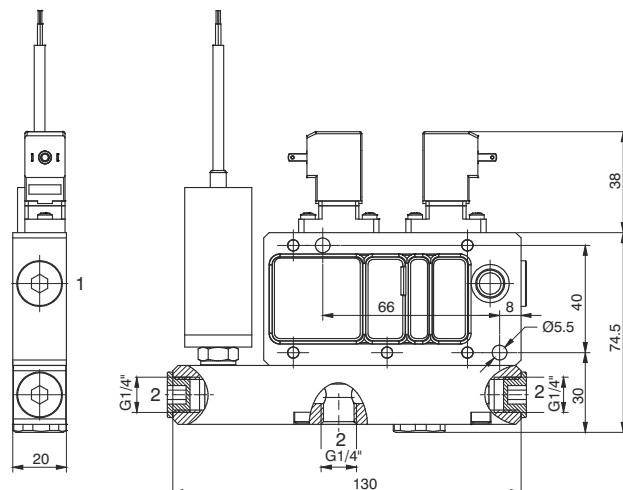
Characteristic curves



Technical features

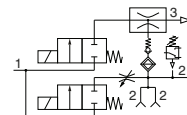
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Supply voltage	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	474

Modular multifunction vacuum generators



Ordering code

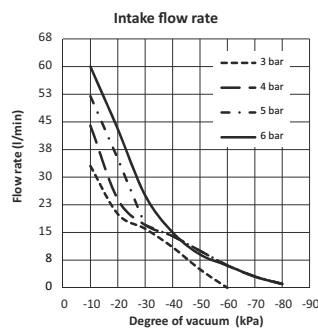
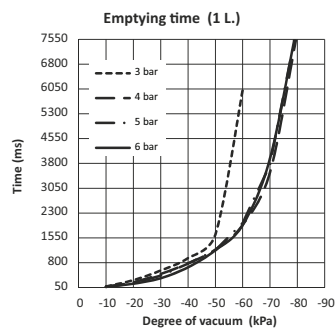
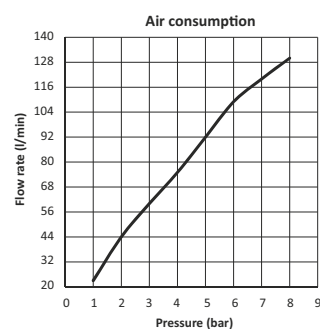
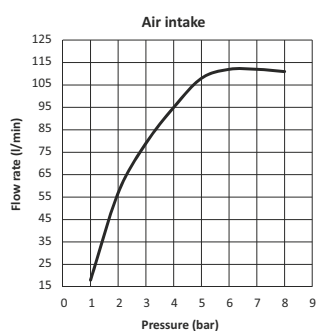
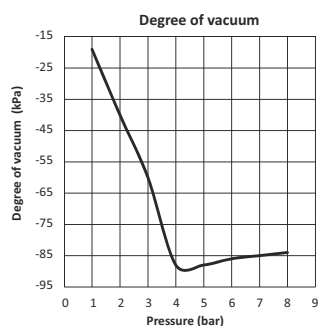
19M14.M.12.ME.ED



Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	88	86
- Intake flow rate (l/min)	57	95	112
- Air consumption (l/min)	44	75	109

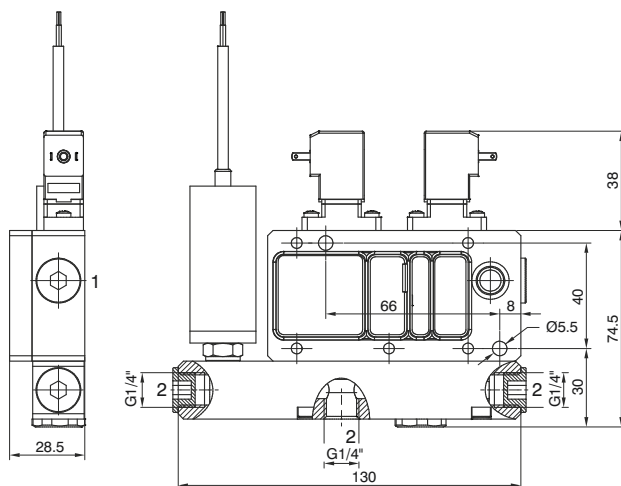
Characteristic curves



Technical features

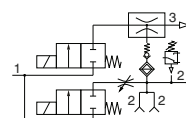
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Tensione di alimentazione	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	474

Modular multifunction vacuum generators



Ordering code

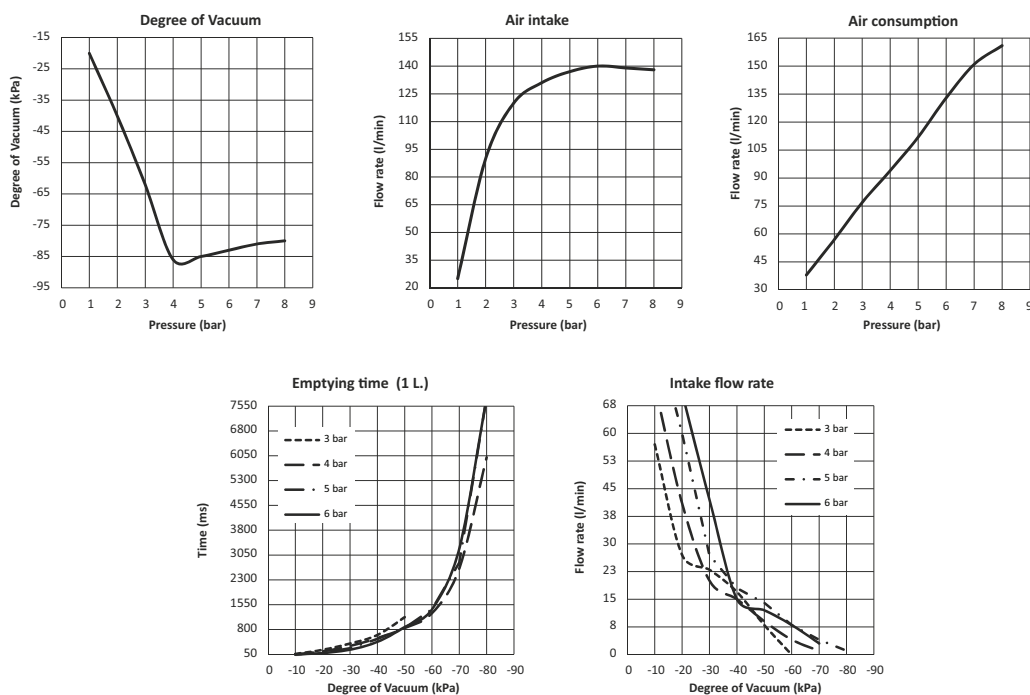
19M14.M.15.ME.ED



Performance characteristics

- Supply pressure (bar)	2	4	6
- Degree of Vacuum (-kPa)	40	86	83
- Intake flow rate (l/min)	90	131	140
- Air consumption (l/min)	57	94	133

Characteristic curves



Technical features

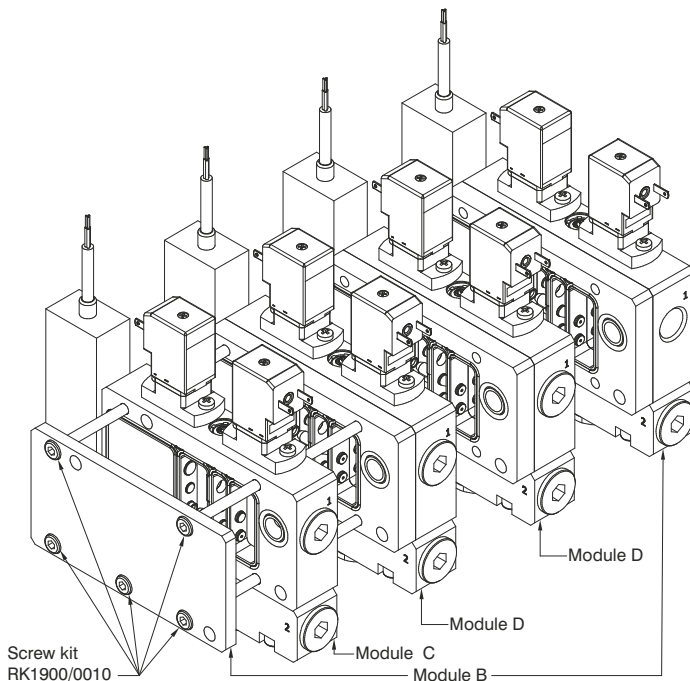
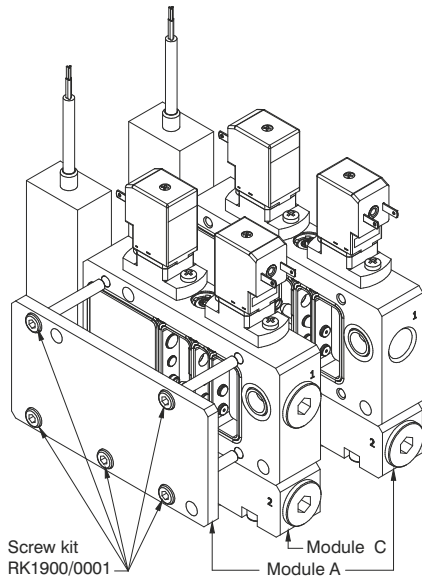
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Supply and release solenoid valve function	N.C.
Power consumption	4 Watt
Supply voltage	24 VDC
Solenoid valve level of protection	IP65
Vacuum switch output	2 PNP
Vacuum switch level of protection	IP40
Temperature (°C)	-10 ÷ +60
Weight (g)	537

Composition of modular vacuum systems

"SE" multifunction vacuum generators can be assembled with one or more "ME" intermediate modules, thus forming a modular vacuum system characterised by a compact shape and reduced size and weight.

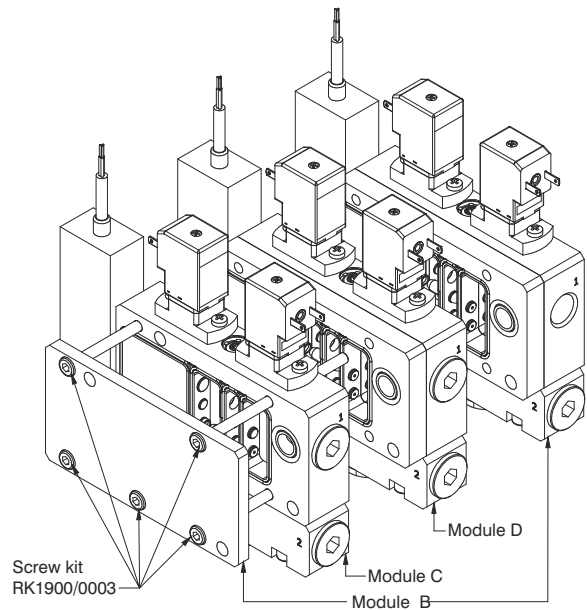
With standard screw kits up to 4 vacuum units A+1C+1D can be assembled together independently but, with use of threaded bars, the manifold can be expanded to many more positions.

Below are a number of examples showing ways the manifold can be put together.

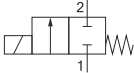
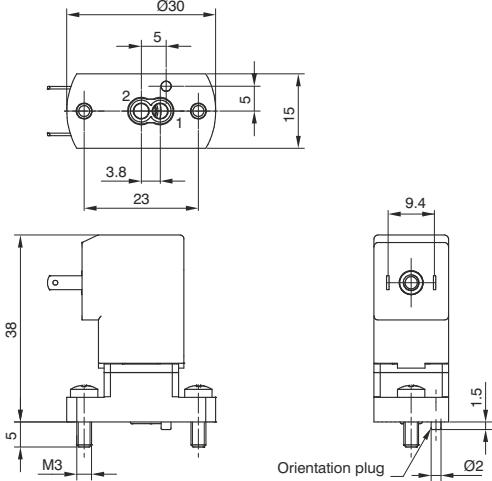
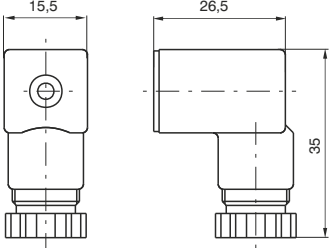


Combinations of standard modules		Codici kit viti	Dimensione vite
	A+1C	RK1900/0001	M4X30
	A+2C	RK1900/0002	M4X50
	A+3C	RK1900/0003	M4X70
	A+1C+1D	RK1900/0004	M4X60
	A+1C+2D	RK1900/0005	M4X90
	A+2C+1D	RK1900/0006	M4X80
	A+3D	RK1900/0007	M4X100
	A+2D	RK1900/0003	M4X70
	A+1D	RK1900/0008	M4X40
	B+1C	RK1900/0008	M4X40
	B+2C	RK1900/0004	M4X60
	B+3C	RK1900/0006	M4X80
	B+1C+1D	RK1900/0003	M4X70
	B+1C+2D	RK1900/0007	M4X100
	B+2C+1D	RK1900/0005	M4X90
	B+2D	RK1900/0006	M4X80
	B+1D	RK1900/0002	M4X50

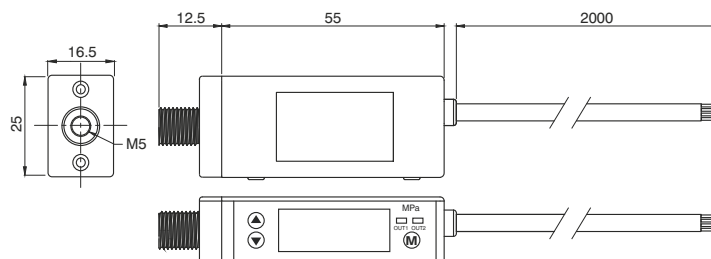
The letters of the modules correspond to purchase codes	
A	19M14.M.09.SE.ED
	19M14.M.12.SE.ED
B	19M14.M.15.SE.ED
	19M14.M.18.SE.ED
C	19M14.M.09.ME.ED
	19M14.M.12.ME.ED
D	19M14.M.15.SE.ED
	19M14.M.18.SE.ED





Mini solenoid valve 15 mm	
	Ordering code
	N221.0F
	
	
Technical features	
Fluid	Unlubricated filtered air
Pressure (bar)	0 ÷ 6
Function	N.C.
Flow rate (NI/m)	185
Operating voltage	24 VDC
Power	4 Watt
Class of insulation	F (155 °C)
Protection class	IP65 (with connector) - IP00 (with Faston)
Temperature (°C)	-5 ÷ +50
Weight (g)	35.5
Connector	
 Weight 13 g	Ordering code
	315.11.00
	

Digital vacuum switch



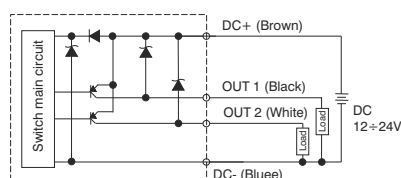
Ordering code

DS.30.C.C.F8.D.0

Technical features

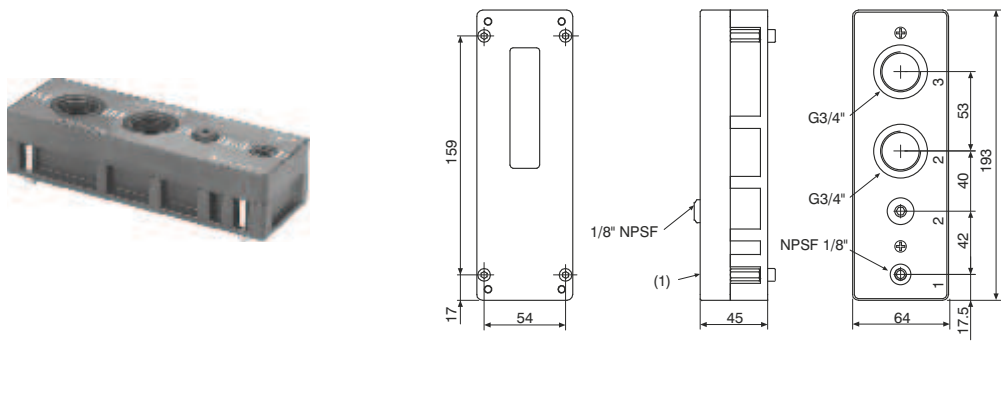
Working pressure range		-100.0 ÷ 100.0 kPa
Regulation pressure range		-100.0 ÷ 100.0 kPa
Maximum supported pressure		300 kPa
Allowed fluids		Air, non-corrosive gases, non-combustible gases
Pressure calibration sensitivity	kPa	0.1
	kgf/cm ²	0.001
	bar	0.001
	psi	0.01
	InHg	0.1
	mmHg	1
	mmH ₂ O	0.1
Supply voltage		Da 12 a 24 VDC ± 10%
Current consumption		≤ 60mA
Digital output		PNP N.A. 2 outputs Maximum load current: 80mA Maximum supply voltage: 30VDC Caduta di tensione : ≤ 1V
Repeatability (Digital output)		± 0.2% Fondo Scala ± 1 digit
Digital output	Type of hysteresis	fixed
	Hysteresis	0.003 bar
Response time		≤ 2.5 ms (anti-interference function: 24ms, 192ms e 768 ms selectable)
Protection from short circuit at output		Present
Display		Display with 3 1/2 digits (sampling 5 times per sec.)
Indicator precision		± 2% F. S. ± 1 digit (at ambient temperature of 25°C ± 3°C)
Indicator		LED Green (output1) LED red (output2)
Ingress protection rating	Protection class	IP40
	Ambient temperature	Operational: 0 ÷ 50°C, Storage: -20 ÷ 60°C (without ice or condensation)
	Ambient humidity	Operativa/Storage: 35 ÷ 85% (without condensation)
	Supported voltage	1000VAC in 1-min. (between body and cable)
	Insulation resistance	50MΩ min. (at 500VDC, between body and cable)
	Vibration	Total amplitude 1.5mm., 10Hz-55Hz-10Hz scanning for 1 minute, 2 hours in each direction of X, Y and Z
	Impacts/shocks	980m/s ² (100G), 3 times in each direction of X, Y and Z
Temperature characteristics		± 2% Full Scale in a range between 0~50°C
Type of connection		G1/8"
Electrical cable		Oil resistant cable
Weight		Approximately 67g (with 2 metres of cable)

Output circuit wiring scheme



Multistage high flow vacuum generator G3/4"

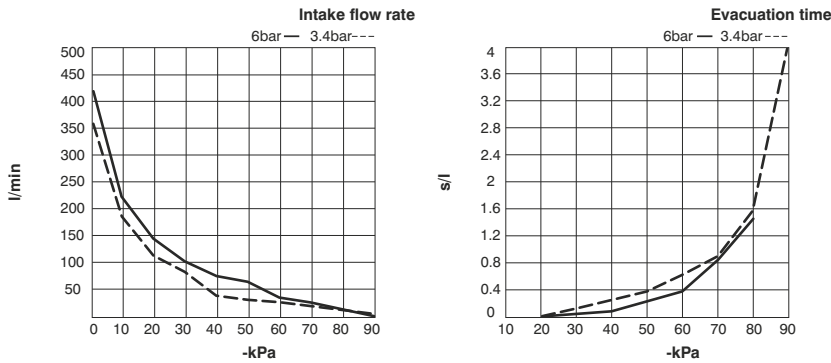
Ordering code
19T34.M.32.HF.QQ



Performance characteristics

- Optimum supply pressure (bar)	3.4
- Supply pressure (bar)	3.4 / 6
- Degree of Vacuum (-kPa)	89 / 92
- Intake flow rate (l/min)	360 / 420
- Air consumption (l/min)	116 / 185

Characteristic curves



Supply pressure (bar)	Air consumption (l/min)	Intake flow rate (l/min) at different levels of vacuum (-kPa)										Degree of Vacuum max. (-kPa)
		0	10	20	30	40	50	60	70	80	90	
3.4	116	360	180	115	80	43	30	22.5	15.5	7.5	1.2	92
6	185	420	240	125	100	82	65	38	12.5	3.5	/	89

Supply pressure (bar)	Air consumption (l/min)	Evacuation time (s/l) a diversi gradi di Vacuum (-kPa)									Degree of Vacuum max. (-kPa)
		10	20	30	40	50	60	70	80	90	
3.4	116	0.022	0.06	0.11	0.21	0.4	0.65	0.95	1.60	4	92
6	185	0.018	0.05	0.08	0.18	0.25	0.40	0.62	1.55	/	89

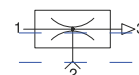
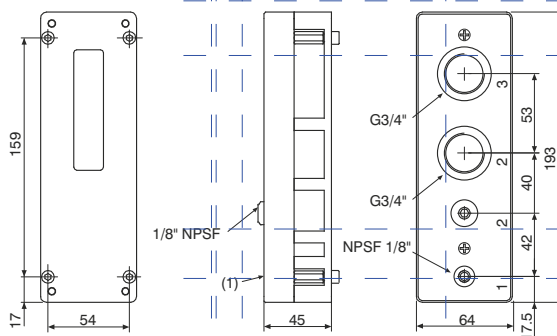
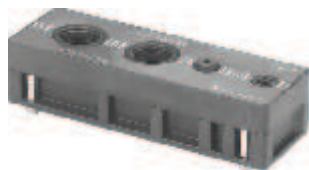
Technical features

- Fluid	Unlubricated filtered air
- Max. supply pressure (bar)	7
- Noise (dBA)	60 ÷ 65
- Temperature (°C)	-20 ÷ 80
- Material	PPS, SS, PA, NBR
- Weight (g)	675

Multistage high flow vacuum generator G3/4"

Ordering code

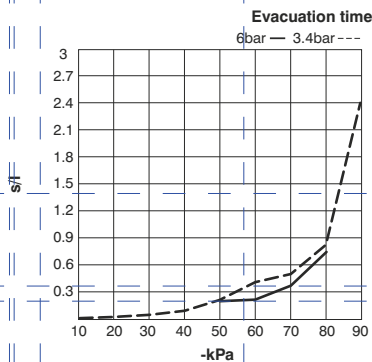
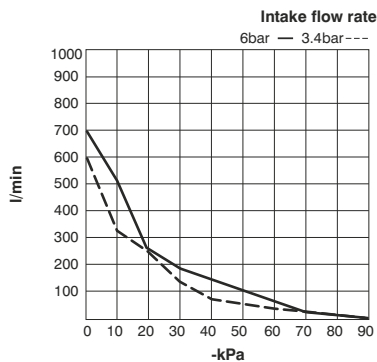
19T34.M.41.HF.QQ



Performance characteristics

- Optimum supply pressure (bar)	3.4
- Supply pressure (bar)	3.4 / 6
- Degree of Vacuum (-kPa)	89 / 92
- Intake flow rate (l/min)	600 / 700
- Air consumption (l/min)	230 / 370

Characteristic curves



Supply pressure (bar)	Air consumption (l/min)	Intake flow rate (l/min) at different levels of vacuum (-kPa)										Degree of Vacuum max. (-kPa)
		0	10	20	30	40	50	60	70	80	90	
3.4	230	600	320	250	135	75	60	46	30	13	1.5	92
6	370	700	510	290	195	160	115	70	22	8	/	89

Supply pressure (bar)	Air consumption (l/min)	Evacuation time (s/l) at different levels of vacuum (-kPa)									Degree of Vacuum max. (-kPa)
		10	20	30	40	50	60	70	80	90	
3.4	230	0.014	0.031	0.06	0.10	0.20	0.34	0.50	0.80	2.5	92
6	370	0.01	0.022	0.048	0.08	0.11	0.20	0.35	0.78	/	89

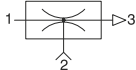
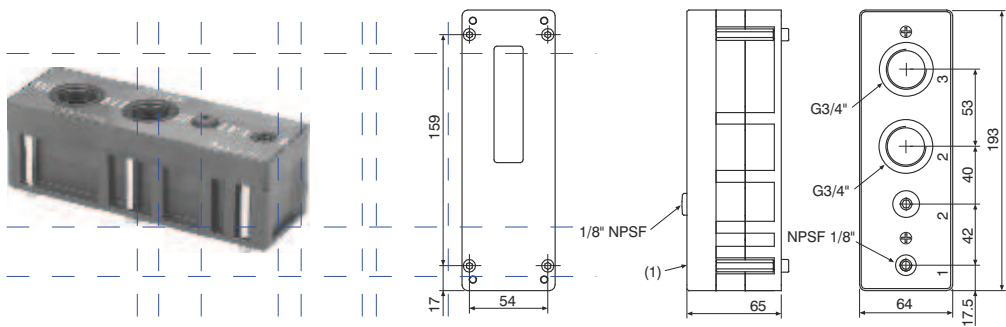
Technical features

- Fluid	Unlubricated filtered air
- Max. supply pressure (bar)	7
- Noise (dBA)	60 ÷ 65
- Temperature (°C)	-20 ÷ 80
- Material	PPS, SS, PA, NBR
- Weight (g)	675



Multistage high flow vacuum generator G3/4"

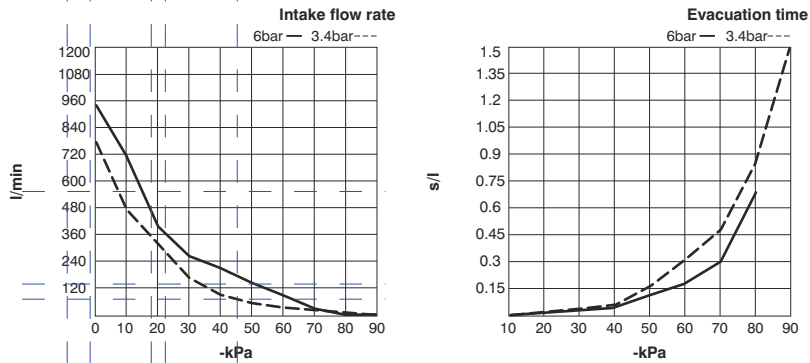
Ordering code
19T34.M.46.HF.QQ



Performance characteristics

- Optimum supply pressure (bar)	3.4
- Supply pressure (bar)	3.4 / 6
- Degree of Vacuum (-kPa)	89 / 92
- Intake flow rate (l/min)	760 / 950
- Air consumption (l/min)	365 / 610

Characteristic curves



Supply pressure (bar)	Air consumption (l/min)	Intake flow rate (l/min) at different levels of vacuum (-kPa)										Degree of Vacuum max. (-kPa)
		0	10	20	30	40	50	60	70	80	90	
3.4	365	760	445	340	175	110	85	70	43	20	1.8	92
6	610	950	710	380	285	230	170	100	32	11	/	89

Supply pressure (bar)	Air consumption (l/min)	Evacuation time (s/l) at different levels of vacuum (-kPa)									Degree of Vacuum max. (-kPa)
		10	20	30	40	50	60	70	80	90	
3.4	365	0.012	0.029	0.058	0.095	0.18	0.31	0.46	0.89	1.5	92
6	610	0.009	0.019	0.045	0.075	0.13	0.18	0.31	0.70	/	89

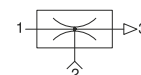
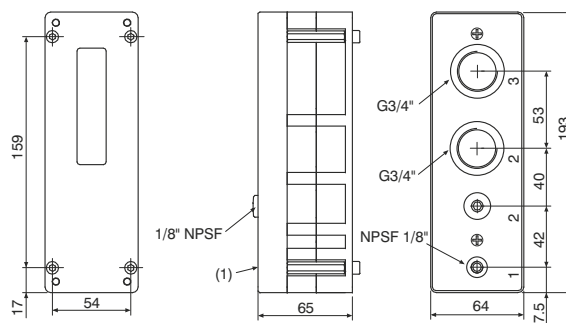
Technical features

- Fluid	Unlubricated filtered air
- Max. supply pressure (bar)	7
- Noise (dBA)	60 ÷ 65
- Temperature (°C)	-20 ÷ 80
- Material	PPS, SS, PA, NBR
- Weight (g)	837

Multistage high flow vacuum generator G3/4"

Ordering code

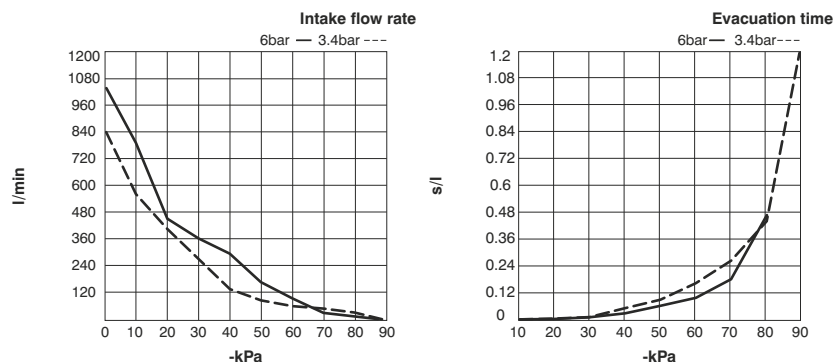
19T34.M.52.HF.QQ



Performance characteristics

- Optimum supply pressure (bar)	3.4
- Supply pressure (bar)	3.4 / 6
- Degree of Vacuum (-kPa)	89 / 92
- Intake flow rate (l/min)	850 / 1010
- Air consumption (l/min)	445 / 720

Characteristic curves



Supply pressure (bar)	Air consumption (l/min)	Intake flow rate (l/min) at different levels of vacuum (-kPa)										Degree of Vacuum max. (-kPa)
		0	10	20	30	40	50	60	70	80	90	
3.4	445	850	550	430	280	145	115	85	60	28	2.2	92
6	720	1010	800	460	385	310	215	125	42	15.5	/	89

Supply pressure (bar)	Air consumption (l/min)	Evacuation time (s/l) at different levels of vacuum (-kPa)									Degree of Vacuum max. (-kPa)
		10	20	30	40	50	60	70	80	90	
3.4	445	0.010	0.025	0.043	0.075	0.11	0.19	0.27	0.45	1.2	92
6	720	0.007	0.018	0.038	0.055	0.08	0.12	0.19	0.47	/	89

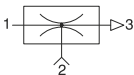
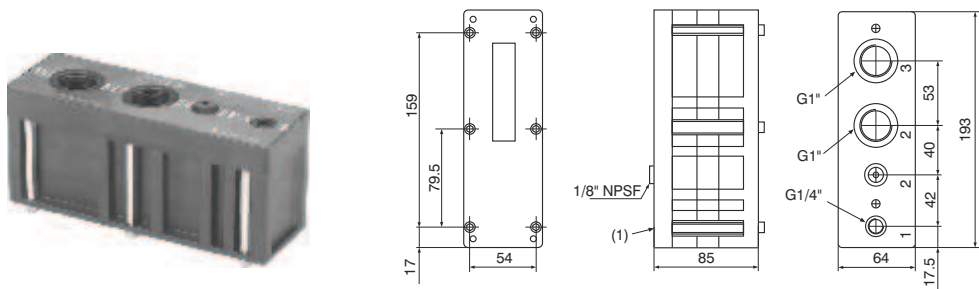
Technical features

- Fluid	Unlubricated filtered air
- Max. supply pressure (bar)	7
- Noise (dBA)	60 ÷ 65
- Temperature (°C)	-20 ÷ 80
- Material	PPS, SS, PA, NBR
- Weight (g)	837



Multistage high flow vacuum generator G1"

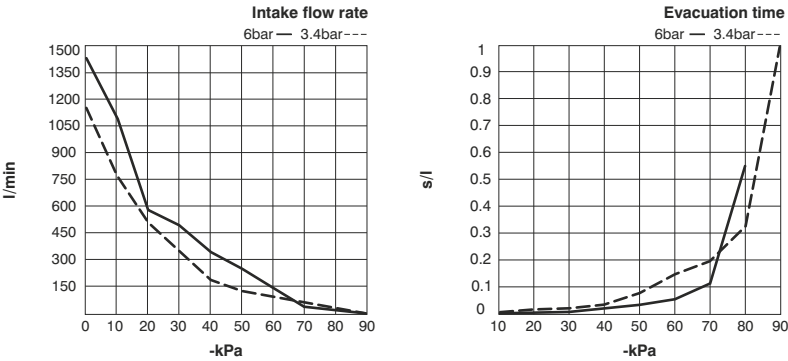
Ordering code
19TG1.M.58.HF.PP



Performance characteristics

- Optimum supply pressure (bar)	3.4
- Supply pressure (bar)	3.4 / 6
- Degree of Vacuum (-kPa)	89 / 92
- Intake flow rate (l/min)	1150 / 1400
- Air consumption (l/min)	545 / 780

Characteristic curves



Supply pressure (bar)	Air consumption (l/min)	Intake flow rate (l/min) at different levels of vacuum (-kPa)										Degree of Vacuum max. (-kPa)
		0	10	20	30	40	50	60	70	80	90	
3.4	545	1150	760	530	350	180	148	115	78	34.5	3.5	92
6	780	1400	1120	560	490	355	260	150	50	25	/	89

Supply pressure (bar)	Air consumption (l/min)	Evacuation time (s/l) at different levels of vacuum (-kPa)									Degree of Vacuum max. (-kPa)
		10	20	30	40	50	60	70	80	90	
3.4	545	0.006	0.015	0.029	0.052	0.085	0.145	0.202	0.330	1	92
6	780	0.005	0.013	0.026	0.045	0.062	0.115	0.194	0.56	/	89

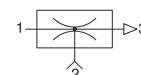
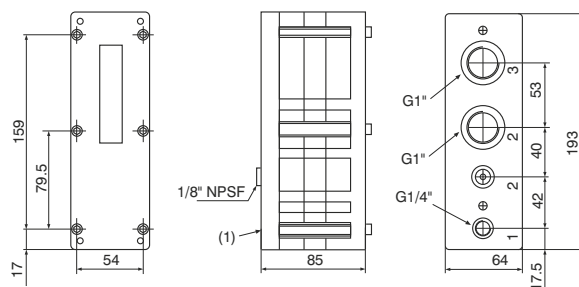
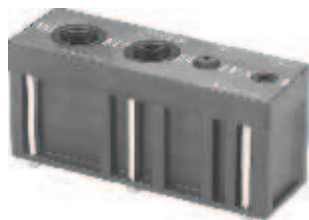
Technical features

- Fluid	Unlubricated filtered air
- Max. supply pressure (bar)	7
- Noise (dBA)	60 ÷ 65
- Temperature (°C)	-20 ÷ 80
- Material	PPS, SS, PA, NBR
- Weight (g)	1075

Multistage high flow vacuum generator G1"

Ordering code

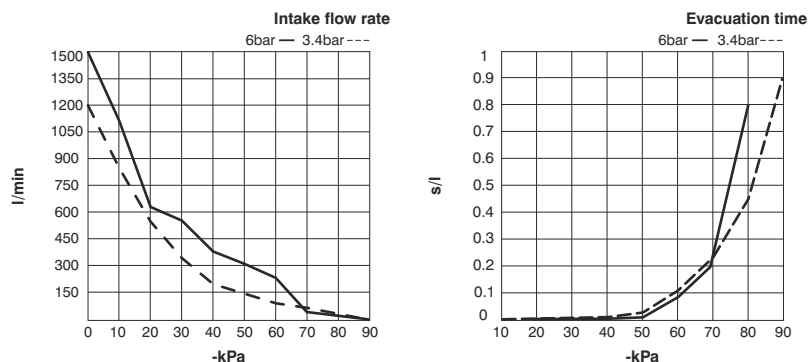
19TG1.M.61.HF.PP



Performance characteristics

- Optimum supply pressure (bar)	3.4
- Supply pressure (bar)	3.4 / 6
- Degree of Vacuum (-kPa)	89 / 92
- Intake flow rate (l/min)	1200 / 1500
- Air consumption (l/min)	655 / 810

Characteristic curves



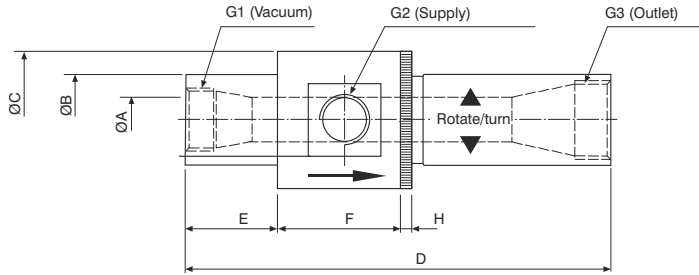
Supply pressure (bar)	Air consumption (l/min)	Intake flow rate (l/min) at different levels of vacuum (-kPa)										Degree of Vacuum max. (-kPa)
		0	10	20	30	40	50	60	70	80	90	
3.4	655	1200	830	550	360	215	170	130	90	36	5	92
6	810	1500	1110	630	560	385	315	210	65	26	/	89

Supply pressure (bar)	Air consumption (l/min)	Evacuation time (s/l) at different levels of vacuum (-kPa)								Degree of Vacuum max. (-kPa)
		10	20	30	40	50	60	70	80	
3.4	655	0.005	0.013	0.027	0.045	0.070	0.105	0.23	0.46	0.9
6	810	0.003	0.009	0.014	0.030	0.060	0.095	0.20	0.8	/

Technical features

- Fluid	Unlubricated filtered air
- Max. supply pressure (bar)	7
- Noise (dBA)	60 ÷ 65
- Temperature (°C)	-20 ÷ 80
- Material	PPS, SS, PA, NBR
- Weight (g)	1075

Adjustable vacuum generator conveyor



Code	ØA	ØB	ØC	D	E	F	H	G1	G2	G3
19M14.S.00.SS.RG	6.5	19	32	94-105	22	32	5	G1/4"	G1/8"	G1/4"
19M38.S.00.SS.RG	10	25	45	155-165	38	45	5	G3/8"	G3/8"	G1/2"
19M12.S.00.SS.RG	13	32	51	155-160	38	51	5	G1/2"	G3/8"	G3/4"
19M34.S.00.SS.RG	19	38	58	175-189	38	51	5	G3/4"	G1/2"	G1"

Baesd on the Ventury principle, these differ from traditional ones because they have a much better ejector and are adjustable - this characteristic makes it possible to change the device's low rate and degree of vacuum without affecting the supply pressure. Their special shape and their operating principle make them suitable for suction and the transfer of powders, granules, sawdust, metal chips, liquid or dry food products, etc., to control suction cups in the presence of large quantities of powders or liquids; these can also be used to suction smoke, coolant fog, water vapour, etc.

Performance characteristics

- Supply pressure (bar)	4÷6 (Max. 7)
- Max. Degree of Vacuum (-kPa)	84
- Max. Intake flow rate (l/min)	3390
- Max. Air consumption (l/min)	2550

		Supply pressure (bar)				
		5.5				
Code	Degree of Vacuum (-kPa)	17	34	50	68	84
19M14.S.00.SS.RG	Air consumption (l/min)	112	169	233	276	342
19M38.S.00.SS.RG		176	327	485	595	825
19M12.S.00.SS.RG		340	625	795	940	1280
19M34.S.00.SS.RG		650	875	1250	1790	2550

		Supply pressure (bar)				
		5.5				
Code	Degree of Vacuum (-kPa)	17	34	50	68	84
19M14.S.00.SS.RG	Intake flow rate (l/min)	280	240	200	162	125
19M38.S.00.SS.RG		846	735	620	520	395
19M12.S.00.SS.RG		1695	1325	1130	990	650
19M34.S.00.SS.RG		3390	2460	1970	1440	1130