

MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS SERIES MVG - GENERAL DESCRIPTION

These generators are true independent vacuum units that can control an entire vacuum gripping system. Their distinctive features are their compact size and great suction flow rate.

They are composed of a mono-block anodised aluminium structure onto which are assembled:

- A modular and silenced multi-stage vacuum generator;
- A micro solenoid valve for supplying compressed air to the generator;
- A micro solenoid valve for blowing the exhaust compressed air;
- An adjustable flow regulator for dosing the exhaust air;
- A unidirectional check valve, located on the suction inlet, for maintaining the vacuum in case of electricity failure;
- A digital vacuum switch provided with display and commutation LEDs, for managing the compressed air supply and for signalling the safety cycle start-up;
- An anodised aluminium manifold provided with vacuum connections and a built-in filter easy to inspect.

By activating the compressed air power micro solenoid valve, the generator creates vacuum for use. As soon as the preset maximum value is reached, the digital vacuum switch acts on the electric coil of the micro solenoid valve and stops the air supply, reactivating it when the vacuum falls below the minimum level.

Besides maintaining the level of vacuum within set safety values (hysteresis), this modulation allows for considerable compressed air savings.

A second signal from the vacuum switch (also adjustable and independent with respect to the first) can be used to start the cycle when the level of vacuum reached is suitable for use.

Once the work cycle is completed, the micro solenoid valve that supplies air to the generator is deactivated while, at the same time, the ejection solenoid valve is activated for quick restoration of the atmospheric pressure upon use.

The multi-function MVG vacuum generators can be installed in any position and are suitable for suction gripping systems, handling metal sheets, glass, marble, ceramics, plastic, cardboard, wood, etc. and, in particular, for the industrial robotics sector, where equipment with excellent performance but with limited weight and bulk are increasingly required.

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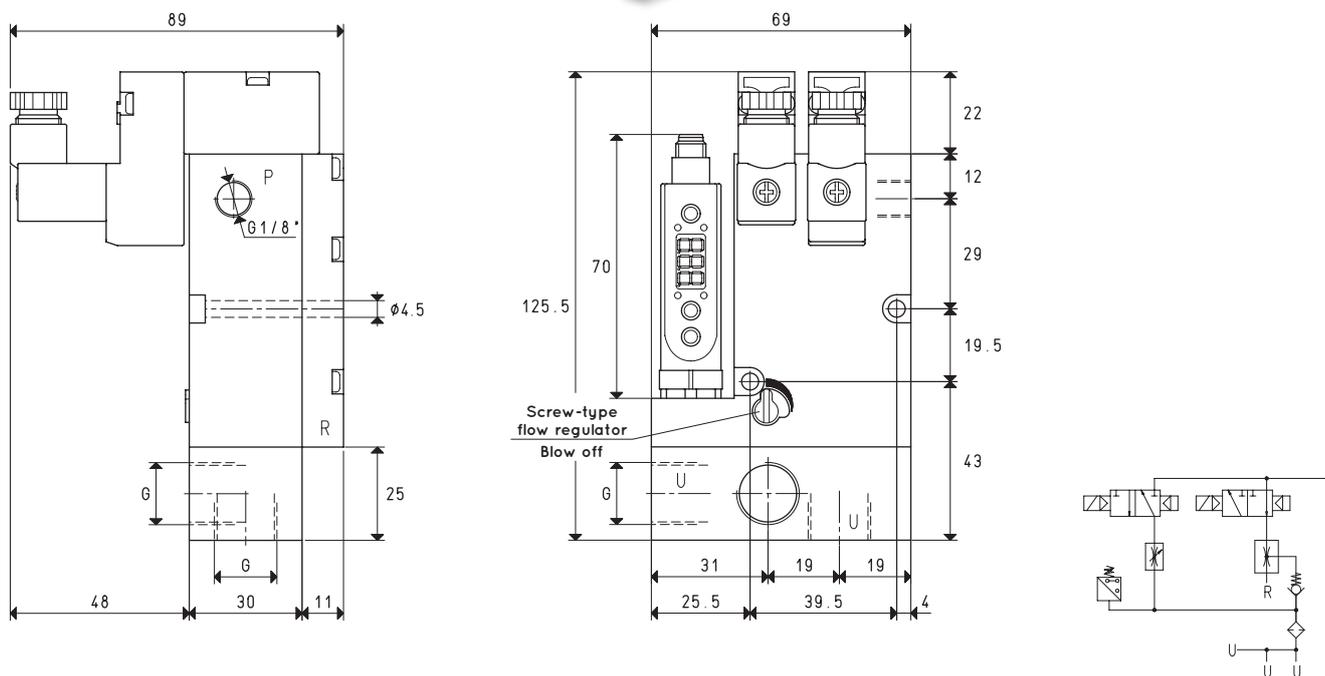


MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS MVG 3 and MVG 7

3D drawings are available on vuototecnica.net



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P=COMPRESSED AIR CONNECTION

R=EXHAUST

U=VACUUM CONNECTION

Item		MVG 3			MVG 7		
Intake air flow rate	m ³ /h	2.8	3.0	3.2	5.6	6.0	6.6
Maximum level of vacuum	-KPa	50	70	85	50	70	85
Final pressure	mbar abs.	500	300	150	500	300	150
Supply pressure	bar	3	4	5	3	4	5
Optimal supply pressure	bar			5			5
Air consumption	NI/s	0.5	0.6	0.8	0.8	1.0	1.3
Max quantity of air blown at 5 bar	l/min			205			205
Supply solenoid valve position	NO/NC			NO			NO
Ejection solenoid valve position	NC			NC			NC
Supply voltage	V			24 DC			24 DC
Electrical absorption	W			1 x 2			1 x 2
Vacuum switch output				PNP			PNP
Degree of protection	IP			65			65
Temperature of use	°C			-10 / +60			-10 / +60
Noise level at optimal supply pressure	dB(A)			66			70
Weight	Kg			0.666			0.670
G	Ø			G1/4"			G3/8"

Note: To order a generator with NC supply solenoid valve, indicate item code MVG .. NC.

Without digital vacuum switch, indicate code MVG .. SV.

Without ejection solenoid valve, indicate code MVG .. SC.

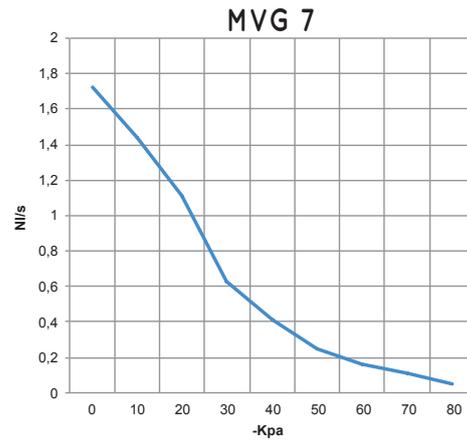
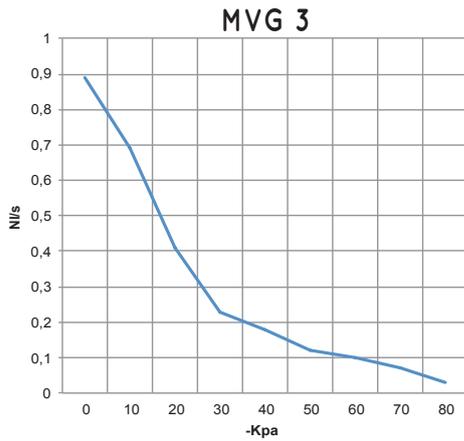
Note: All vacuum values indicated in the table are valid at the normal atmospheric pressure of 1013 mbar and obtained with a constant supply pressure.

Vacuum generator supply must be carried out with non-lubricated compressed air, 5 micron filtration, in accordance with standard ISO 8573-1 class 4.

MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS MVG 3 and MVG 7

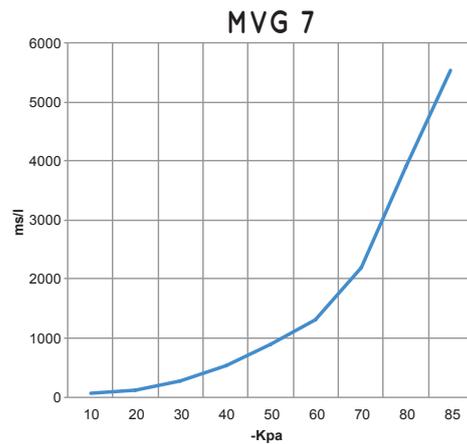
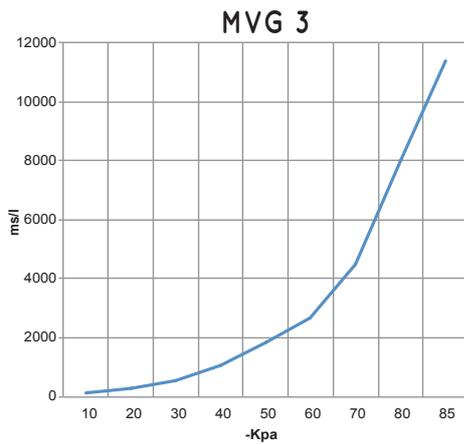


Air flow rate (NI/s) at different level of vacuum (-KPa) at optimal supply pressure



Generator item	Supp. press. bar	Air consumption NI/s	Air flow rate (NI/s) at different levels of vacuums (-KPa) at optimal supply pressure										Max vacuum -KPa
			0	10	20	30	40	50	60	70	80		
MVG 3	5.0	0.8	0.89	0.69	0.41	0.23	0.18	0.12	0.10	0.07	0.03	85	
MVG 7	5.0	1.3	1.83	1.44	1.11	0.63	0.41	0.25	0.16	0.11	0.05	85	

Evacuation rates (ms/l = s/m³) at different levels of vacuums (-KPa) at optimal supply pressure



Generator item	Supp. press. bar	Air consumption NI/s	Evacuation rates (ms/l= s/m ³) at different levels of vacuums (-KPa) at optimal supply pressure										Max vacuum -KPa
			10	20	30	40	50	60	70	80	85		
MVG 3	5.0	0.8	119	274	552	1088	1845	2694	4499	8009	11373	85	
MVG 7	5.0	1.3	58	133	268	529	897	1310	2188	3895	5531	85	

ACCESSORIES AND SPARE PARTS UPON REQUEST

Item		MVG 3	MVG 7
Sealing kit and reed valves	item	00 KIT MVG 3	00 KIT MVG 7
Exhaust silencer	item		00 15 150
Electrical connection cable with axial connector, for vacuum switch	item		00 12 20
Electrical connection cable with radial connector, for vacuum switch	item		00 12 21
Set of electrical connection cables, with built-in NO energy saving device and connectors	item		00 15 202
Set of electrical connection cables, with built-in NC energy saving device and connectors	item		00 15 203
Digital vacuum switch	item		12 10 10
NO supply solenoid valve	item		00 15 436
NC supply solenoid valve	item		00 15 437

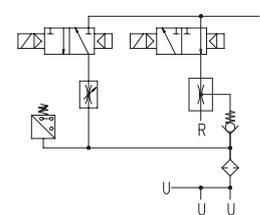
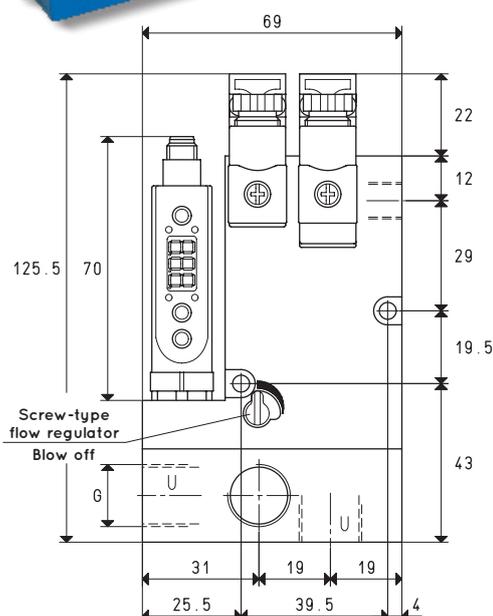
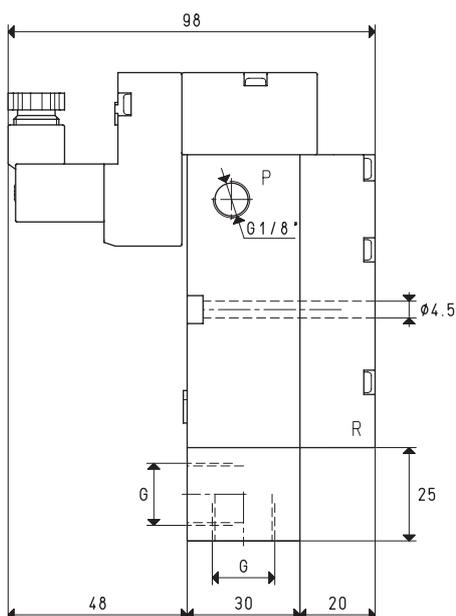


MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS MVG 10 and MVG 14

3D drawings are available on vuototecnica.net



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P=COMPRESSED AIR CONNECTION R=EXHAUST U=VACUUM CONNECTION

Item		MVG 10			MVG 14		
Intake air flow rate	m ³ /h	7.7	8.4	9.2	10.2	11.2	12.2
Maximum level of vacuum	-KPa	50	70	85	50	70	85
Final pressure	mbar abs.	500	300	150	500	300	150
Supply pressure	bar	3	4	5	3	4	5
Optimal supply pressure	bar			5			5
Air consumption	NI/s	0.9	1.3	1.7	1.3	1.7	2.1
Max quantity of air blown at 5 bar	l/min			205			205
Supply solenoid valve position	NO/NC			NO			NO
Ejection solenoid valve position	NC			NC			NC
Supply voltage	V			24 DC			24 DC
Electrical absorption	W			1 x 2			1 x 2
Vacuum switch output				PNP			PNP
Degree of protection	IP			65			65
Temperature of use	°C			-10 / +60			-10 / +60
Noise level at optimal supply pressure	dB(A)			62			70
Weight	Kg			0.716			0.720
G	Ø			G3/8"			G3/8"

Note: To order a generator with NC supply solenoid valve, indicate item code MVG .. NC.

Without digital vacuum switch, indicate code MVG .. SV.

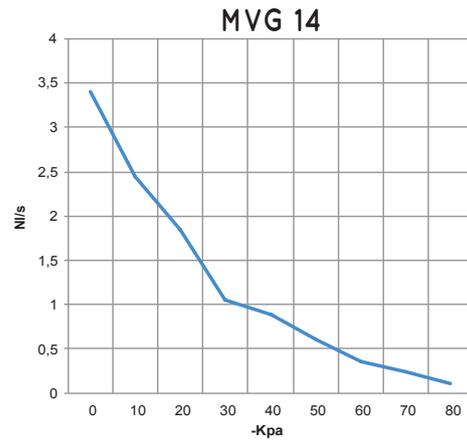
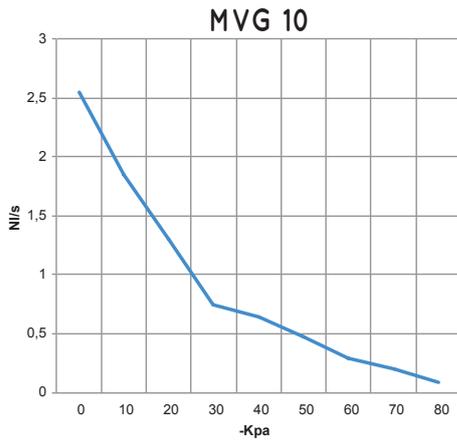
Without ejection solenoid valve, indicate code MVG .. SC.

Note: All vacuum values indicated in the table are valid at the normal atmospheric pressure of 1013 mbar and obtained with a constant supply pressure.

Vacuum generator supply must be carried out with non-lubricated compressed air, 5 micron filtration, in accordance with standard ISO 8573-1 class 4.

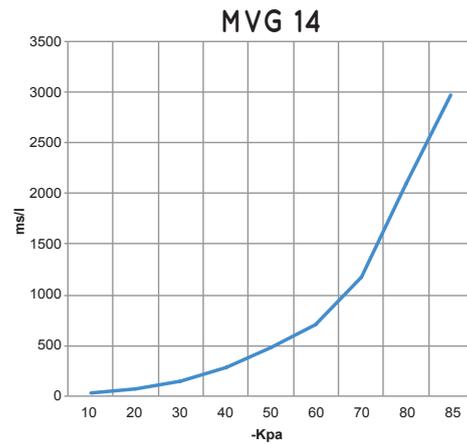
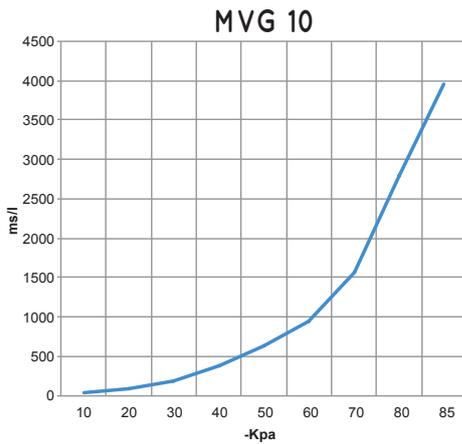
MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS MVG 10 and MVG 14

Air flow rate (NI/s) at different level of vacuum (-KPa) at optimal supply pressure



Generator item	Supp. press. bar	Air consumption NI/s	Air flow rate (NI/s) at different levels of vacuums (-KPa) at optimal supply pressure										Max vacuum -KPa
			0	10	20	30	40	50	60	70	80		
MVG 10	5.0	1.7	2.55	1.85	1.30	0.75	0.64	0.48	0.30	0.20	0.09	85	
MVG 14	5.0	2.1	3.40	2.45	1.84	1.05	0.88	0.61	0.36	0.24	0.11	85	

Evacuation rates (ms/l = s/m³) at different levels of vacuums (-KPa) at optimal supply pressure



Generator item	Supp. press. bar	Air consumption NI/s	Evacuation rates (ms/l = s/m³) at different levels of vacuums (-KPa) at optimal supply pressure										Max vacuum -KPa
			10	20	30	40	50	60	70	80	85		
MVG 10	5.0	1.7	41	95	192	379	642	938	1567	2790	3962	85	
MVG 14	5.0	2.1	31	71	144	284	482	704	1175	2092	2971	85	

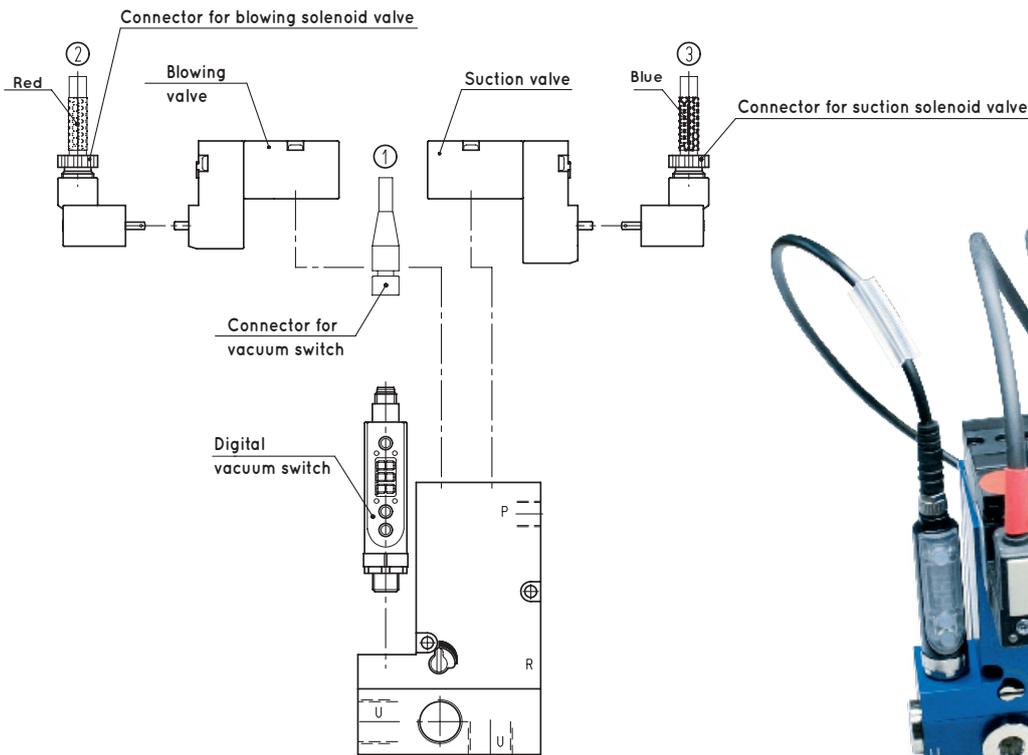
ACCESSORIES AND SPARE PARTS UPON REQUEST

Item		MVG 10	MVG 14
Sealing kit and reed valves	item	00 KIT MVG 10	00 KIT MVG 14
Exhaust silencer	item		N°2 00 15 150
Electrical connection cable with axial connector, for vacuum switch	item		00 12 20
Electrical connection cable with radial connector, for vacuum switch	item		00 12 21
Set of electrical connection cables, with built-in NO energy saving device and connectors	item		00 15 202
Set of electrical connection cables, with built-in NC energy saving device and connectors	item		00 15 203
Digital vacuum switch	item		12 10 10
NO supply solenoid valve	item		00 15 436
NC supply solenoid valve	item		00 15 437



ACCESSORIES AND SPARE PARTS FOR MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS, SERIES MVG

3D drawings are available on vuototecnica.net



Cable set with built-in energy saving device for MVG.. generator

Item	Description
00 15 202	Set of cables with built-in energy saving device for connection to: - Digital vacuum switch - NO micro supply solenoid valve - NC micro ejection solenoid valve Cable length - 5 m

Note: The IO-Link signal cannot be handled by the energy-saving cable set.

Cable set with built-in energy saving device for MVG..NC generator

Item	Description
00 15 203	Set of cables with built-in energy saving device for connection to: - Digital vacuum switch - NC micro supply solenoid valve - NC micro ejection solenoid valve Cable length - 5 m

Note: The IO-Link signal cannot be handled by the energy-saving cable set.



Connector

Item	Description
00 15 157	Connector with LED for micro solenoid valves



M8 3 PIN Connector

Item	Description
00 07 424	M8 3 PIN Connector with LED for micro solenoid valves



Cable with axial connector

Item	Description
00 12 20	Electrical connection cable with M8 - 4 pin axial connector for digital vacuum switch length 5 m



Cable with radial connector

Item	Description
00 12 21	Electrical connection cable with M8 - 4 pin radial connector for digital vacuum switch length 5 m



Replacement plate for micro blowing solenoid valve

Item	Description
00 15 178	Replacement plate for micro blowing solenoid valve



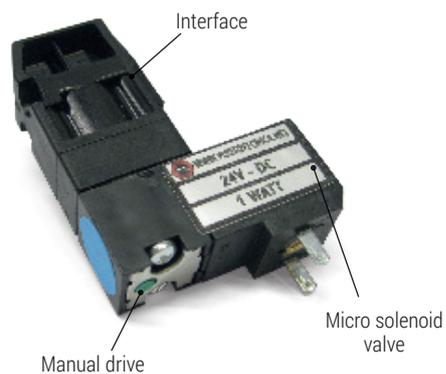


ACCESSORIES AND SPARE PARTS FOR MULTI-STAGE AND MULTI-FUNCTION VACUUM GENERATORS, SERIES MVG

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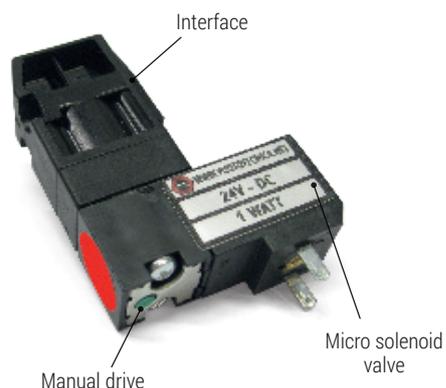
NO micro supply solenoid valve

Item	Description
00 15 436	NO micro solenoid valves with built-in low absorption electrical coil and interface



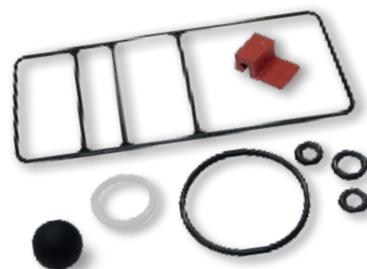
NC supply and blowing micro solenoid valve

Item	Description
00 15 437	NC micro solenoid valves with built-in low absorption electrical coil and interface



Sealing kit and reed valves

Item	By generators item
00 KIT MVG 3	MVG 3
00 KIT MVG 7	MVG 7
00 KIT MVG 10	MVG 10
00 KIT MVG 14	MVG 14
00 KIT MVG 18	MVG 18



Sound absorbing material on the exhaust

Item	By generators item	Quantity
00 15 150	MVG 3	1 piece
	MVG 7	1 piece
	MVG 10	2 pieces
	MVG 14	2 pieces



Digital vacuum switch

Item	Description
12 10 10	Digital vacuum switch

