



Eurovacuum  
Installations and  
Operating manual  
EVM Series  
Vacuum pumps  
Models:  
EVM-S0.7 to EVM-S3.6

Single & Double Stage Diaphragm Vacuum Pump



## Eurovacuum EVM Series Membrane Vacuum Pumps

**Eurovacuum** Company is offering its various products to meet industrial vacuum needs.

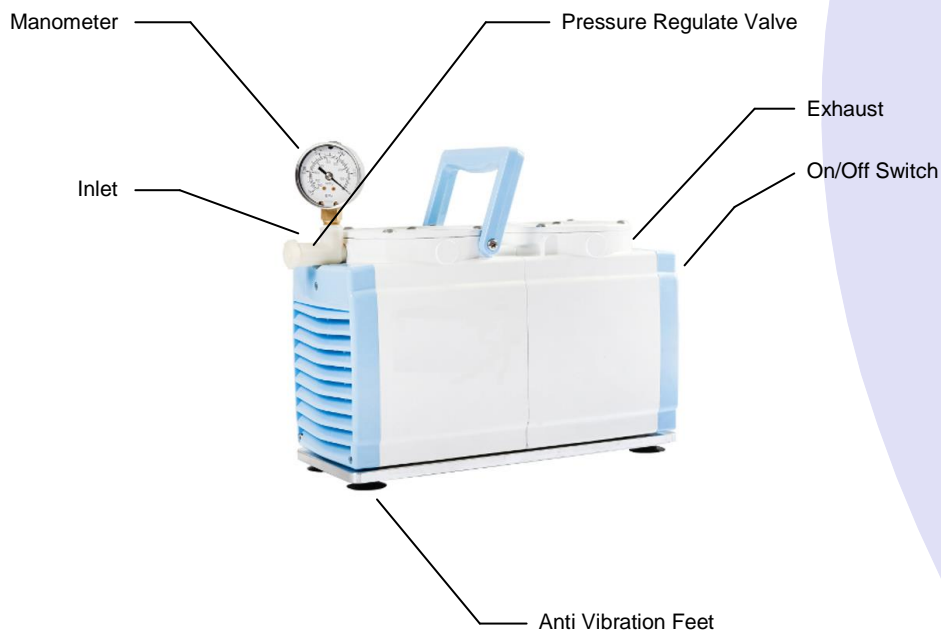
Eurovacuum Company is founded in 2006, with over 30 year experiences in the vacuum Industry its founders have been putting their best efforts continuously to produce high quality Membrane Vacuum Pumps, with diverse range of capacity for use in the industry and laboratories in diverse applications.

### Advantages to the User

- Suitable for pumping of aggressive gas
- Low noise level
- Air-cooling and dry running, no water or oil required
- Small space requirement, easy to install
- Compact design and light weight
- Continuous running of 24 hours possible
- Diaphragm made of polyfluoroprene, long lifetime
- Accessories available for easy adaptation

### Application Examples

- Medicinal products analysis
- Tenuously chemical engineering
- Biochemical pharmacy
- Mechanical test
- Teaching
- Scientific research
- Criminal investigation
- High-accuracy chromatograms
- Evaporate instruments





# Contents



**It is mandatory that these operating instructions be read and understood prior to the vacuum pump installation and start-up.**

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## Foreword

Eurovacuum EVM-series diaphragm vacuum pump has the features of more advanced design, higher efficiency, longer operating life. It is an all new product engaging the new and high technology. It is mainly used in medicinal products analysis, tenuously chemical engineering, biochemical pharmacy, food examination, investigating and solving criminal case, etc. It is the ideal product used with the high-accuracy chromatogram apparatus, and it is the essential equipment in the laboratory.

The body of the EVM-series diaphragm vacuum pump is made of aluminum alloy through die casting. It is antiseptic, sprayed, agile and has a nice design. It has the features of higher antiseptis, wider working range. It can meet requirements of all kinds of working environments.

Using Eurovacuum EVM-series diaphragm vacuum pump, you will enjoy the high-level guarantee and perfect after-sales service.

## Features

1. It can be in service under the condition of no working medium (no oil) and will not produce any pollution. Moreover, there is filtering material in the air exchange bin of the body to guarantee clean air.
2. New technologies and materials are used in production. It is easy to move and can work smoothly, which can guarantee the ideal vacuum and high rate of flow of air stream.



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3. It adopts the operation containing no friction, producing no calories and having no friction exhausts. The standard diaphragm is made of Nitrile Rubber, which has long operating life. The diaphragm for the Corrosion Resistant version is from PTFE.
4. The self-cooling air draft system is designed in the body. This system can keep the machine continuously running for 24 hours.
5. The design can be regulated by pressure to meet the requirements of vacuum or controllable steady air stream within certain range.
6. The axletrees are classical, which are imported abroad. They have the features of steady running, low noise and high operating efficiency

### Technical data

Technical Data		EVM-S0.7	EVM-S1.2	EVM-D1.2
		Single head vacuum	Single head vacuum	Twin head vacuum
Nominal displacement	m <sup>3</sup> /h	0,72	1,2	1,2
Ultimate vacuum	mbar	300	250	50
Motor power	W	75	200	250
Material Diaphragm&Valves			HNBR / PTFE	HNBR / PTFE
Material Pump Head		Nylon	None / PTFE	None / PTFE
Weight	kg	4	7,5	10
Noise level	dB	< 50	< 50	< 50
Admissible ambient temp.	°C	10 to 40	10 to 40	10 to 40
Connections	mm	6	6	6
Dimensions LxWxH	mm	175x98x156	235x140x210	280x130x210

Technical Data		EVM-S1.8	EVM-D1.8	EVM-S3.6
		Single head Vacuum/Pressure	Twin head vacuum	2x Single head Vacuum/Pressure
Nominal displacement	m <sup>3</sup> /h	1,8	1,8	3,6
Ultimate vacuum	mbar	250	25	250
Motor power	W	200	250	250
Material Diaphragm&Valves		HNBR / PTFE	HNBR / PTFE	HNBR / PTFE
Material Pump Head		None / PTFE	None / PTFE	None / PTFE
Weight	kg	8	10	9
Noise level	dB	< 50	< 50	< 50
Admissible ambient temp.	°C	10 to 40	10 to 40	10 to 40
Connections	mm	6	6	6
Dimensions LxWxH	mm	215x165x270	282x130x210	282x155x210

### All pumps are supplied with:

1. vacuum manometer(-1 bar) 1 piece
2. connecting rubber hose (Φ7m m\*Φ12m m\*800m m) 1 piece



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## **OPERATIONAL INSTRUCTIONS**

Read these instructions carefully before you attempt to use this product. Only qualified engineer/electricians suitably trained should undertake the installation and commissioning of this product.

### **Use of the product**

- This product must only be used for the purpose of pumping/evacuating air.
- Do not pump or evacuate any other gases or liquids. Do not pump flammable or explosive gases or operate unit in an atmosphere containing them. Do not allow corrosive gases or particulate material to enter pump. Water vapor, oil-based contaminator or other liquids must be filtered out. Contact Eurovacuum when using in an application other than air.
- Ambient temperature should not exceed 55°C.
- The performance of the product will be adversely affected at high altitudes. Performance is reduced by lower atmospheric pressure found at high altitudes.
- Your reciprocating diaphragm pump is a precision product. Protect it against dirt and excessive moisture.
- Do not try to obtain higher pressure or vacuums than those recommended. Refer to technical data sheet supplied.

### **Installation**

- Refer to the technical sheet supplied for full technical specification.
- Disconnect electrical power supply before installing and/or servicing. Failure to do so could result in electrical shock, personal injury or death.
- To avoid risk of electrocution do not use this product in an area where it could come in contact with water or other liquids. If exposed to the elements it must be weather protected.
- The wiring of the electric engine should be made in accordance with local electrical regulations.
- Ensure that the product ventilation grilles are kept free from obstruction.
- Do not place any objects, fingers, metal, tools etc through the grille holes.
- Check that the mains supply voltage is correct for the products, see nameplate. Contact Eurovacuum immediately if the voltage conditions are different.
- Do not touch the product during and just after operation as all parts of the products get very hot.
- Do not lubricate any part of this oil-less pump. The sealed bearings are permanently lubricated.
- Do not install with pipes that are smaller than the size at the head ports.
- Fit a recommended filter/muffler to the inlet/exhaust port.

### **Mounting**

- To reduce noise and vibration use shock mounts, mount the product in the horizontal plane using anti-vibration mounts, so that they will not resonate.
- Do not block flow of cooling air over pump in any way.
- Connect power supply. Turn the machine's power on. Under the steady operation of pump, connect the vacuum pump and decompression machine with rubber pipe. After that the pump can be started.



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**Product failure**

- Disconnect the electricity supply.
- Do not attempt to dismantle any part of the product before the electricity is disconnected.
- Wait until the product has cooled down.
- Refer to the Trouble Shooting Guide.
- Contact Eurovacuum or distributor for further advice.

**Maintenance & Service**

- Switch the electricity supply OFF and isolate the product.
- Vent all pressure/ vacuum from the product.
- Filter will become blocked quickly in dirty environments.

**Troubleshooting**

Always disconnect power before servicing. If motor fails to start, or it slows down under load, turn it off and unplug it. Make sure that voltage at power outlet agrees with motor nameplate. Examine plug, cord, and switch for deterioration. If pump overheats or is noisy, stop pump immediately for repair.

NOTE: Eurovacuum will not guarantee performance of a field-rebuilt pump.

Possible Reason	Low Pressure	Low Vacuum	Excessive Noise	Over Heating	Will Start	Not
Dirty Filter	√	√				
Dirty Muffler	√	√				
Dirty Valves	√	√				
Damaged Valves	√	√				
Damaged Diaphragm	√	√				
Low Voltage	√	√		√	√	
Wrong Voltage			√	√	√	
Back Pressure On Head					√	
Relief Valve Set Too high				√		
Relief Valve Set Too Low	√	√	√			
Hose Leak	√	√	√			
Check Valve Leak			√		√	

**Inspection**

Regular inspection can prevent unnecessary damage and repairs. A dirty filter or muffler restricts airflow and can cause overheating and noisy. Regularly check filters located under pump head cover. If necessary, clean pump head using only water-based solvents. Do not use petroleum-based components, acids, caustics, or combustible solvents to clean or lubricate any parts. It will reduce service life of pump.



## Service and Installation

Eurovacuum will not guarantee performance of the rebuilt pump. You can return pump to Eurovacuum for repair, or perform the following rebuild procedure for installing.

Each unit contains all or most of the following: three filter elements, two slotted valve screws, two leaf valves, one valve limiter, one valve retainer, and one cover gasket.

Follow these steps to install:

### Pump Disassembly

1. Disconnect pump from electrical power  
Warning: Always disconnect power before servicing. Failure to do so can result in severe personal injury or death
2. Vent all air lines to pump to remove pressure  
Warning: Vent all air lines to pump to remove pressure before servicing. Failure to do so can result in severe personal injury or death.
3. Disconnect air lines to pump
4. Label pressure and vacuum gauges and pump ports so you can reassemble them correctly later. Remove gauges
5. Remove screws in head cover and remove cover and cover gasket. Discard old cover gasket.
6. Remove slotted valve screw, valve limiter and leaf valve. Discard old screw and leaf valve. Remove and discard three old filter elements, noting their position.
7. Remove hex nuts and washers under handle. Remove socket head cap screws and washers from pump head, and remove head. Save four thin washers you find under head.
8. Turn head over. On underside of head, remove valve screw, valve retainer and leaf valve. Discard old screw and leaf valve.
9. If necessary, clean pump head using water-base solvents and/or blow off with air.  
Caution: Do not use petroleum-base compounds, acids, or caustics solvents to clean or lubricate any parts. It will reduce service life of pump. Use only water-base solvents for cleaning.
10. Visibly check diaphragm and retainer plate for excessive wear or corrosion. If replacing diaphragm, remove countersunk screws from diaphragm retainer plate and discard old diaphragm.  
Caution: Do not make any scratch or bur in valve seat areas.

### Pump Reassembly

11. If replacing diaphragm, choose new diaphragm based on primary intended use. Place diaphragm over raised ring the connecting rod. Apply adhesive to countersunk screws and reinstalled retainer plate.
12. On underside of head install a new leaf retainer, and new slotted screws. Orient retainer so that U-shaped mark is visible (facing you).
13. Make sure that valve and valve retainer are secured by raised locating bar so that point directly toward valve seat.
14. Position four thin washer on corners of pump body. Refer to labels made earlier to orient pump head correctly. Install pump head with cap screws and washers.
15. Install new leaf valve, valve limiter, and new slotted screw in top of pump head. Make sure that valve and valve limiter are securely raised locating bar so they point directly toward valve seat.
16. Install new filter element in pump head. Small element goes in recess nearest to inlet port.
17. One of four gasket screw holes is farther from edge than other three. Position new gasket on pump head with side up that allow all four-screw holes to be visible at once. Install head cover using slotted screws.
18. Reinstall handle with hex nuts and washers.
19. Reinstall gauges referring to labels make earlier.



## **YOUR WARRANTY**

Eurovacuum finished products, when properly installed and operated under normal condition of use, are warranted by Eurovacuum to be free from defects in material and workmanship for a period of twelve (12) months from the date of purchase from Eurovacuum or an authorized Eurovacuum representative or Distributor in order to obtain performance under this warranty, the buyer must promptly (in no event later than 30 days after discovery of the defect) give written notice of the defect to Eurovacuum or an authorized Service Center. Buyer is responsible for freight charges both to and from Eurovacuum in all times.

This warranty does not apply to products not supplied by Eurovacuum. The warranties also does not extend to any goods or parts which have been subjected to misuse, lack of maintenance, neglect, damage by accident or transit damage. Eurovacuum maximum liability under this exclusive remedy shall never exceed the cost of the subject product and Eurovacuum reserves the right at its sole discretion to refund the purchase price in lieu of repair or replacement.

Eurovacuum will not be responsible or liable for indirect or consequential damages of any kind, however, arising, including but not limited to those for use of any products, loss of time, inconvenience, lost profit, labor charges, or other incidental or consequential damagers with respect to persons, business, or property, whether as a result of breach of warranty, negligence or otherwise. Notwithstanding any other provision of this warranty, buyer's remedy against Eurovacuum for goods supplied or for non-delivered goods or failure to furnish goods, whether or not based on negligence, strict liability or breach of express or implied warranty, is limited solely, at Eurovacuum option, to replacement of or cure of such non-conforming or non-delivered goods or return of the purchase price for such goods and in no event shall exceed the price or charge for such goods. Eurovacuum expressly disclaims any warranty of merchantability or fitness for a particular use or purpose with respect to the goods sold.

Unauthorized extension of warranties by the customer shall remain the customer's responsibility. Customer is responsible for determining the suitability of Eurovacuum products for customer's use or resale or for incorporating them into objects or applications which customer designs, assembles, constructs or manufactures. This warranty can be modified only by authorized Eurovacuum personnel by signing a specific, written description of any modification.



