



**Eurovacuum  
Installations and  
Operating manual  
EVDR-Series  
Models:  
EVDR-DV(V)060 till  
DV(V)140**

**Dry Rotary Vane Vacuum & Compressor**

# Contents



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

## **1.0 INSTALLATION**

- 1.1 General description
- 1.2 Unpacking and Storage
- 1.3 Location
- 1.4 Power Requirements
- 1.5 Pressure Connections

## **2.0 SAFETY**

- 2.1 General Notices
- 2.2 Warning Label and explanation
- 2.3 Risks and warnings

## **3.0 OPERATION**

- 3.1 Start-up
- 3.2 Stopping the Compressor
- 3.3 Operating conditions

## **4.0 MAINTENANCE**

- 4.1 Vanes check
- 4.2 Filter check
- 4.3 Maintenance chart

## **5.0 PROBLEM SOLVING**

## **6.0 TECHNICAL DATA**

**1.0 INSTALLATION**

**1.1 General description**

The EVDR Vacuum Pump & Compressors are able to run 24 hours a day and especially suited for harsh industrial applications. They are supplied with self-lubricated long life graphite vanes to insure a long time between service, combined with the easy accessible service of the compressor, this results in a very short service down time for the EVDR-series.

**1.2 Unpacking and Storage**

Inspect the box and compressor carefully for any signs of damage incurred in transit. Since all compressors are ordinarily shipped EXW from our factory or regional warehouse, such damage is the normal responsibility of the carrier and should be reported to them.

The compressor should be stored in a dry environment with normal air humidity (RH 0~80%, -10°C to 45°C), not for more than 12 months.

**1.3 Location**

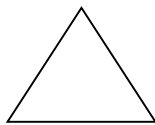
Install the compressor in a horizontal position on a level surface so that the compressor can be evenly supported on its rubber feet. Leave 10 ~ 15 cm of access around the compressor to allow proper cooling. Also, adequate ventilation must be provided for the cooling of the compressor and motor. Ambient temperatures should not exceed 45°C.

**1.4 Power Requirements**

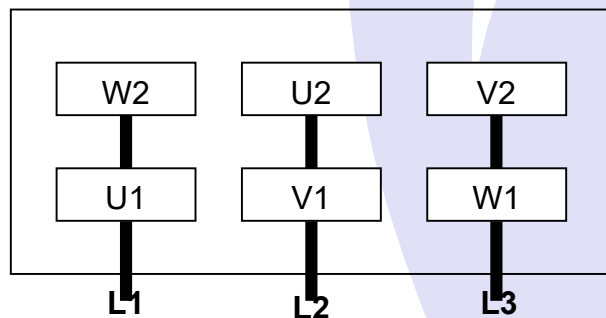
A schematic diagram for the electrical motor terminal connections is located in the junction box of the motor or on the motor nameplate. Typical wirings for Three Phase Motors are as below:

**Wiring Scheme- Three Phase Motor**

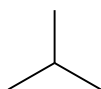
**Low Voltage**



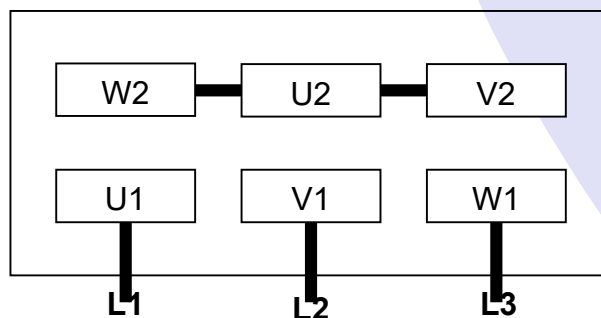
**Delta Connection**



**High Voltage**



**Star Connection**





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The motor must be connected according to the electrical codes through a fused switch in order to protect the motor against electrical or mechanical overload conditions. The overload of the motor starter must be set at a level equal to the full load motor current listed on the motor nameplate.

Check the rotation connection before starting the compressor, the correct direction of rotation is marked by an arrow on the compressor casing.

Avoid more than 10 switches per hour.

***After electrical connections have been made, the rotation of the motor must be checked. If backward, reverse any two leads of the three at the power connection.***

### 1.5 Pressure Connections

Use a pipe size that is at least the size of the vacuum inlet and compressor outlet connections. Smaller lines result in a reduced capacity.

Units operating in parallel on a common main line should have a manual or automatic operated shut-off valve or check valve, installed in the pipe lines adjacent to the compressor flange, also with pipelines exceeding 2 mtr in length it is highly recommended to install a non-return valve

The following thread sizes are standard on the compressors

<u>Model</u>	<u>Vacuum connection(s)</u>	<u>Pressure connection</u>
EVDR-DV(V)060 & DV(V)080	G 1"	G 3/4"
EVDR-DV(V)100 & DV(V)140	G 1 1/2"	G 1"

### 2.0 SAFETY

Please read the following safety notice carefully before operating the compressor.

#### 2.1 General Notices

- Understand fully this installation and operating manual before operation.
- Any other person except authorized operator should not operate the compressor.
- When the compressor is not properly working, it should be stopped immediately.
- Eurovacuum shall have no liability for any accident and failure arising from no compliance with instructions in this manual.



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### 2.2 Warning labels and its explanation

Following warning label is shown and attached on EVDR series compressor

#### 2.2.1 No oil

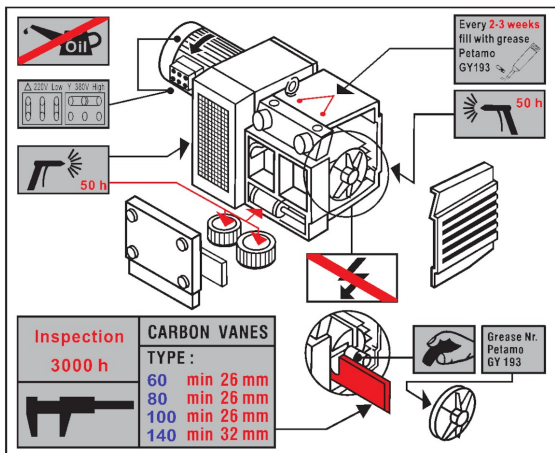
No oil should be used in this compressor and the intake of oil and oil mist must be prevented

#### 2.2.2 Electrical connections

How to connect the electric wires

#### 2.2.3 Vane inspection

Inspect the size of the vanes after 3.000 hours of running



(drawing just as sample)

#### 2.2.4 Location of the labels

The label shall be shown on the top of sound shield of the compressor.

### 2.3 Risks and warnings

#### 2.3.1 Risk of burns

During operation the surface of the compressor may reach temperatures of more than 70°C.

- Avoid contact with the compressor during and after directly after operation.

#### 2.3.2 Risk of damage to hearing

If people are present near to the compressor over extended periods then there is a risk hearing damage.

- Ear protection must be used.
- Do not lubricate the compression chamber of the compressor with oil or grease

#### 2.3.3 Damage to the compressor

- Do not lubricate the compression chamber of the compressor with oil or grease
- Avoid more than 10 on/off switches of the compressor per hour



### 3.0 OPERATION

#### 3.1 Start-up

Check rotation of the motor as described in paragraph 1.4 Power Requirements.

#### 3.2 Stopping the compressor

To stop the compressor, turn off the power.

#### 3.3 Operating Conditions

The EVDR-DV(V)xxx are designed to run below set pressures according to the motor power for continuous operation. Operation over maximum pressure level may result in failure of and severe damage to the machine. Pressure Regulator installed is set at maximum allowable pressure (see the table for set of pressure) at factory.

**Caution: Any non-compliance may lead to severe injury to persons and damage to the compressor.**

The vacuum & pressure can be adjusted by turning the vacuum or pressure regulating valves. The regulating valve or safety valve is set at permissible operating pressure and will be opened to discharge the pressure if the compressor runs over the setting pressure for a safety operation.

**Caution: Do not run the compressor without regulating valve or safety valve. Do not set the regulating valve or safety valve at over permissible pressure. The compressor may be damaged severely.**

The standard version is for use of dry air only, and may not be used in hazardous areas. Handling of humid air or gases containing aggressive chemicals is possible only with specially configured units. Consult Eurovacuum for assistance.

The ambient and suction air temperature must be between 5 and 45°C.

**Caution: Any non compliance may lead to severe injury to persons and damage to the compressor.**

**Caution: Maximum number of motor starts per hour should not exceed 10 per hour. Excessive starting of the motor can cause overheating and premature failure of the motor.**



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#### **4.0 MAINTENANCE**

To ensure optimum performance, the following maintenance steps should be followed:

##### **4.1 Vanes check**

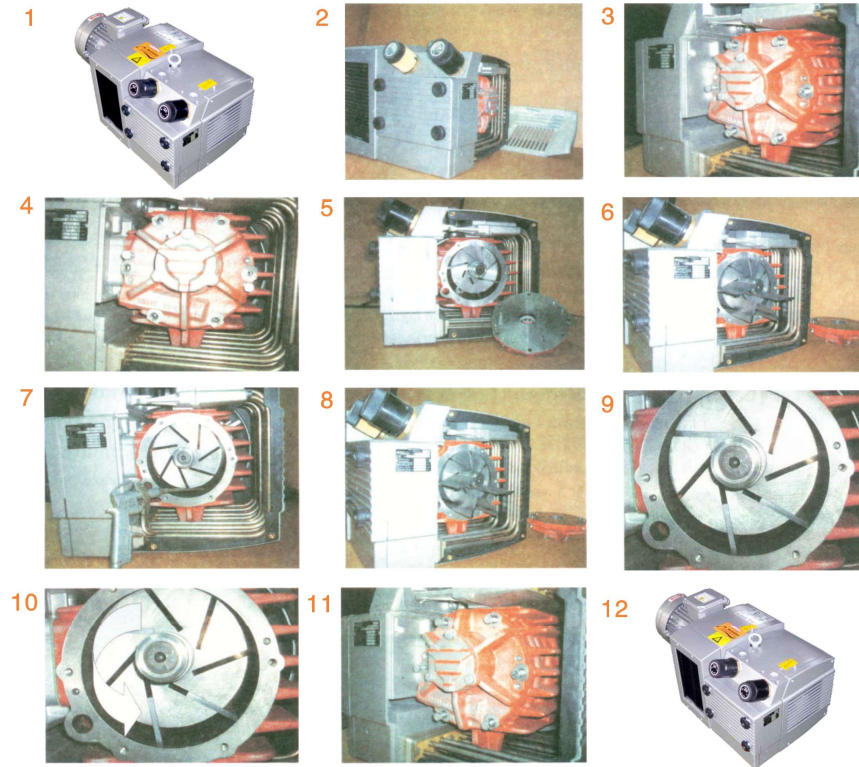
Check the vanes width every 3.000 operating hours or annually.

The vanes width minimum sizes, if smaller width then they must be replace.

Model	Normal width	Minimum width
EVDR-DV(V)060	39 mm	26 mm
EVDR-DV(V)080	39 mm	26 mm
EVDR-DV(V)100	39 mm	26 mm
EVDR-DV(V)140	48 mm	32 mm

**Caution: Only use original Eurovacuum vanes or order them at [www.vanes.shop](http://www.vanes.shop)**

**The procedure on how to replace the carbon vanes:**



***Before starting this work make sure that the electric power on the compressor is switched off and secured for your safety and make sure that the compressor is cooled off.***

Picture 1: Loosen the 4 socket head screws on the Air Guide Cover.

Picture 2: Remove the Air Guide Cover.

Picture 3: Loosen the 6 hex. head screws of the Lid (end-plate).

Picture 4: Tighten 2 hex. head screws into the lock holes of the Lid and push off the Lid evenly by screwing both screws simultaneously. (Note: do not disassemble if still hot!)

Picture 5: Remove the Lid.

Picture 6: Remove the Carbon Vanes.

Picture 7: Blow out dust and dirt from the compressor housing by means of compressed air.

Picture 8: Install original Carbon Vanes in the Rotor.

Picture 9: Take care that the beveled side (angled side) of the vane rests flat against the inside of the compression chamber.

Picture 10: Turn the rotor in the anti-clockwise direction and look if the vanes fall from the rotor slot smoothly. If not, then use some abrasive paper to grind the vane channel in the rotor and clean out the dust.

Picture 11: Install the Lid and tighten the 6 hex. Head screws.

Picture 12: Install the Air Guide Cover and tighten the socket head screws.

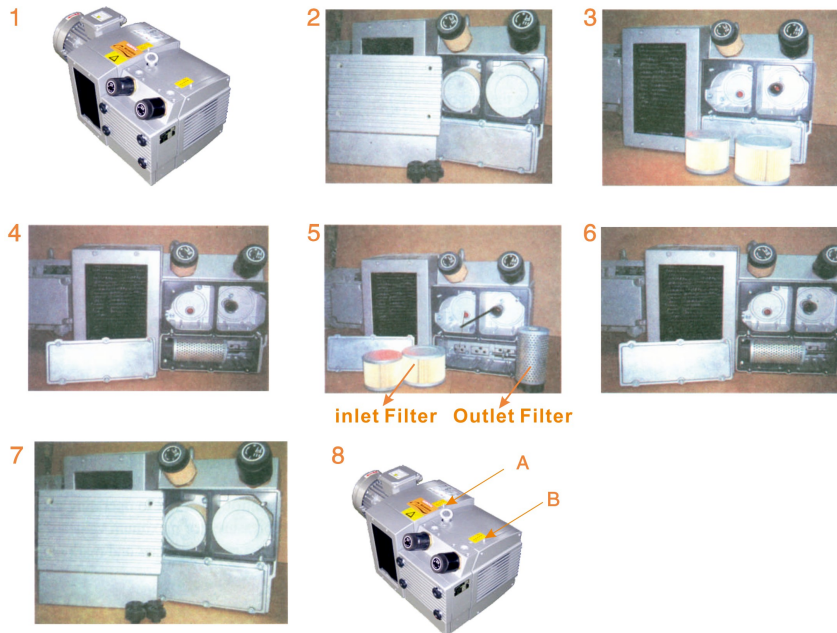
Don't forget to grease the special greasing points on the compressor within 2-3 weeks. (grease filling must be performed during working of the compressor)



#### 4.2 Filter check

Check the filter cartridges inside the enclosure cover of the compressor and clean/replace them when necessary. You can order these from Eurovacuum or at [www.vanes.shop](http://www.vanes.shop)

#### The procedure on how to replace the filter(s) and fill with grease:



**Before starting this work make sure that the electric power on the compressor is switched off and secured for your safety and make sure that the compressor is cooled off.**

Picture 1: Loosen the 4 knobs on the filter cover.

Picture 2: Remove the filter cover.

Picture 3: Remove the air filter(s).

Picture 4: Loosen the socket head screws on the dust separator and remove it.

Picture 5: Remove the filter cartridge and blow out dust and dirt from the cooling channel (compressor body) and suction filter.

Picture 6: Install new filter cartridges in the compressor housing and the dust separator.

Picture 7: Close the dust separator and install the screws on it. Close the filter housing by installing the cover and screw the knobs back on it.

Picture 8: Fill the grease points A and B (when the compressor is running) by use of the grease piston that is supplied with the compressor.

**Please don't forget to fill the grease points every 2 or 3 weeks with grease (while the compressor is running)**

#### 4.3 Maintenance Chart

**Weekly:** Check inline inlet filter element/mesh. More often if high concentrations of particles in inlet stream.

**Monthly:** Clean the compressor of dust and dirt. When inlet filter is installed: check the filter cartridge, replace if needed.

**Every 3.000 operating hours:** Check the vanes size. Replace vanes if under the size.

**Semi-Annually:** Check cooling fan. More often if dirty environment.



## 5.0 PROBLEM SOLVING

### 5.1 Problem

Compressor does not start.

#### 5.1.1 Possible Cause

Wrong voltage supplied.

*Remedy* : Check the power supply and compare it with the compressor motor data.

#### 5.1.2 Possible Cause

Damaged electric motor.

*Remedy* : Call service agent for service or exchange program.

### 5.2 Problem

Compressor does not reach its usual pressure level.

#### 5.2.1 Possible Cause

Filters are clogged with debris.

*Remedy* : Clean the filters or replace them if needed .

#### 5.2.2 Possible Cause

Pressure regulator is out of order.

*Remedy* : Clean and check the regulator or replace it with new one.

#### 5.2.3 Possible Cause

Vanes are stuck.

*Remedy* : Free the vanes or replace them.

#### 5.2.4 Possible Cause

Vanes are worn out.

*Remedy* : Replace the vanes and clean the compressor inside.

### 5.3 Problem

Compressor is runs very noisily.

#### 5.3.1 Possible cause

The compressor runs in the wrong direction.

*Remedy* : Check and change the rotation direction if needed.

#### 5.3.2 Possible cause

Defective bearings.

*Remedy* : Repair the compressor or call service agent for service or exchange program.



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#### **5.4 Problem**

The compressor runs too hot.

##### **5.4.1 Possible cause**

Ambient temperature is too high.

*Remedy* : Check the ambient temperature and take care of extra cooling.

##### **5.4.2 Possible cause**

Insufficient cooling.

*Remedy* : Remove dust and dirt from the compressor.

##### **5.4.3 Possible Cause**

Filters clogged.

*Remedy* : replace filter cartridges.



## 6.0 TECHNICAL DATA

Technical Data		EVDR-DV060	EVDR-DV080
Nominal displacement at 50/60Hz	m <sup>3</sup> /h	60 / 72	80 / 96
Ultimate vacuum	bar(g)	-0,6	-0,6
Ultimate pressure	bar(g)	+0,6	+0,6
Motor power at 50/60Hz	kW	3,0 / 3,6	4,0 / 4,8
Nominal speed at 50/60Hz	rpm	1420 / 1710	1420 / 1710
Noise level at 50/60Hz	dB(A)	75 / 77 +/-3	75 / 77 +/-3
Cooling	medium	air	air
Admissible ambient temp.	°C	0 to 45	0 to 45
Connection (vacuum)	G(BSP)	1"	1"
Connection (pressure)	G(BSP)	¾"	¾"

Technical Data		EVDR-DV100	EVDR-DV140
Nominal displacement at 50/60Hz	m <sup>3</sup> /h	100 / 120	140 / 168
Ultimate vacuum	bar(g)	-0,6	-0,6
Ultimate pressure	bar(g)	+0,6	+0,6
Motor power at 50/60Hz	kW	5,5 / 6,6	7,5 / 9,0
Nominal speed at 50/60Hz	rpm	1430 / 1720	1430 / 1720
Noise level at 50/60Hz	dB(A)	77 / 79 +/-3	77 / 79 +/-3
Cooling	medium	air	air
Admissible ambient temp.	°C	0 to 45	0 to 45
Connection (vacuum)	G(BSP)	1½"	1½"
Connection (pressure)	G(BSP)	1"	1"

Technical Data		EVDR-DVV060	EVDR-DVV080
Nominal displacement at 50/60Hz	m <sup>3</sup> /h	60 / 72	80 / 96
Ultimate vacuum	bar(g)	-0,6	-0,6
Ultimate pressure	bar(g)	+0,6	+0,6
Motor power at 50/60Hz	kW	3,0 / 3,6	4,0 / 4,8
Nominal speed at 50/60Hz	rpm	1420 / 1710	1420 / 1710
Noise level at 50/60Hz	dB(A)	75 / 77 +/-3	75 / 77 +/-3
Cooling	medium	air	air
Admissible ambient temp.	°C	0 to 45	0 to 45
Connection (vacuum)	G(BSP)	1"	1"
Connection (pressure)	G(BSP)	¾"	¾"

Technical Data		EVDR-DVV100	EVDR-DVV140
Nominal displacement at 50/60Hz	m <sup>3</sup> /h	100 / 120	140 / 168
Ultimate vacuum	bar(g)	-0,6	-0,6
Ultimate pressure	bar(g)	+0,6	+0,6
Motor power at 50/60Hz	kW	5,5 / 6,6	7,5 / 9,0
Nominal speed at 50/60Hz	rpm	1430 / 1720	1430 / 1720
Noise level at 50/60Hz	dB(A)	77 / 79 +/-3	77 / 79 +/-3
Cooling	medium	air	air
Admissible ambient temp.	°C	0 to 45	0 to 45
Connection (vacuum)	G(BSP)	1½"	1½"
Connection (pressure)	G(BSP)	1"	1"

