



M SERIES

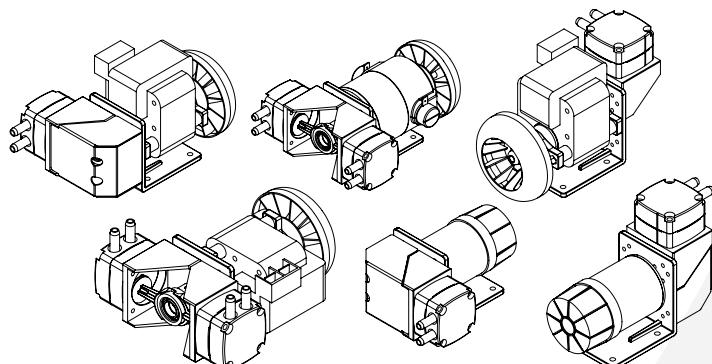
M41S AC04/DC52

M41BX AC04/ DC53

M71S AC05/DC54

M71BX AC08/DC55

***Diaphragm vacuum pumps
and compressors***



***Operating and maintenance
instructions***

Publication Number:
LI 4964.P1 May 2021

Operating and maintenance instructions

EN

Index

1. General information	page 3
2. Product specifications	page 4
2.1 Machine description.....	page 4
2.2 Expected use.....	page 4
2.3 Forbidden use.....	page 4
3. Safety measures	page 5
4. Transport – Handling	page 5
4.1 Unpacking and components control	page 5
5. Installation and operation	page 5
5.1 Location.....	page 5
5.2 Electric connection.....	page 5
5.3 Motor-condenser connection.....	page 6
5.4 Motor- breaker-condenser connection.....	page 7
5.5 Series and parallel connection.....	page 8
6. De-commissioning	page 9
6.1 Servicing	page 9
6.2 Spare parts.....	page 9
7. De-commissioning	page 9

Attachments

Technical data sheet, exploded view and parts list (RDT)
EC declaration of conformity (DC)

Operating and maintenance instructions

EN

1. General information

This manual contains information necessary for the proper operation of the pump in order to prevent unsuitable use and for the safety of the operators. Do not attempt any other type of operation without having first contacted our **Service Department**. The information provided herewith does not intend to replace, integrate or change any rules, regulations, law by decree, directive or law of specific character in force in the Country where the installation takes place.

The suggestions given to the staff engaged in the installation and servicing assumes that the personnel is expert and prepared in facing any problem of servicing, both mechanical and electrical. For any questions or information not included in this manual, please contact our Service Department, always providing: model (type), serial number, year of manufacture, stated on the pump name plate.



Symbols used:



WARNING:
Instructions that, if not followed,
could result in serious
personal injuries.



ELECTRIC SAFETY



NOTE:
Instructions that, if not followed,
could result in pump damages.



HOT SURFACES



**HARMFUL SUBSTANCES
EMISSIONS**



**DO NOT DISPOSE INTO
THE ENVIRONMENT**

Operating and maintenance instructions

EN

2. Product specifications

2.1 Machine description

The machine is formed by the following main parts:

- The electric motor, which could be either a DC or an AC single phase motor.
- The pump itself, formed by its external housing and by a diaphragm operated by means of a rod.
- A cooling fan.
- The equipment is manufactured as a single stage pump or as a two-stage pump (two identical pumps, connected in series or in parallel).
- It is oil-free and any lubrication is required.

2.2 Expected use

Vacuum pumps or compressors series M have been designed to handle air and small quantity of water vapour. Used as a pump, it is suitable for the evacuation of closed systems or for the operation at a maximum 40 mbar continuous vacuum. Used as a compressor, it achieves a max. pressure of 3 bar. The recommended ambient temperature must be between 5°C and 40°C.

2.3 Forbidden use



ATTENTION:

This pump/compressor MUST NOT handle:

- Liquids or solid substances,
- Dangerous, explosive or aggressive gases and vapours.
- DO NOT install the equipment in a potentially explosive environment.

3. Safety measures



ATTENTION:

Despite of all the precautions adopted when designing the equipment, there are some risk elements that arise during operation and servicing.

DANGERS OF MECHANICAL ORIGIN (PRESSURE, VACUUM, CONTACT WITH THE FAN)

The pump/compressor must be installed inside a protection housing.



ATTENTION:

It is forbidden to operate the pump/compressor before the machine where it has to be included or assembled has been declared suitable to comply with Directive 2006/42/EC (Machine Directive).



ELECTRIC SAFETY

Some components of the electric equipment are electrically charged during operation. To prevent serious injuries to persons or objects always check the terminal conditions prior to attempting any work on the equipment.

4. Transport – Handling

4.1 Unpacking and components control

When receiving the machine, check that the packing is intact or if it shows signs of damages occurred during transportation.

If there is no damage, proceed to the unpacking and check further check the machine. In case damages or defects are found, inform immediately PVR and the carrier, whose representative will contact you or it may be dispatched to the site to inspect and file full damage report.

5. Installation and operation

5.1 Location

The machine could be installed anywhere, taking care – if possible – to leave some room on the fan side to allow an easier air flow.

To prevent any condensate from entering the pump, the machine must be installed in the highest point of the system.

5.2 Electric connection

Connect the current to the motor terminals.



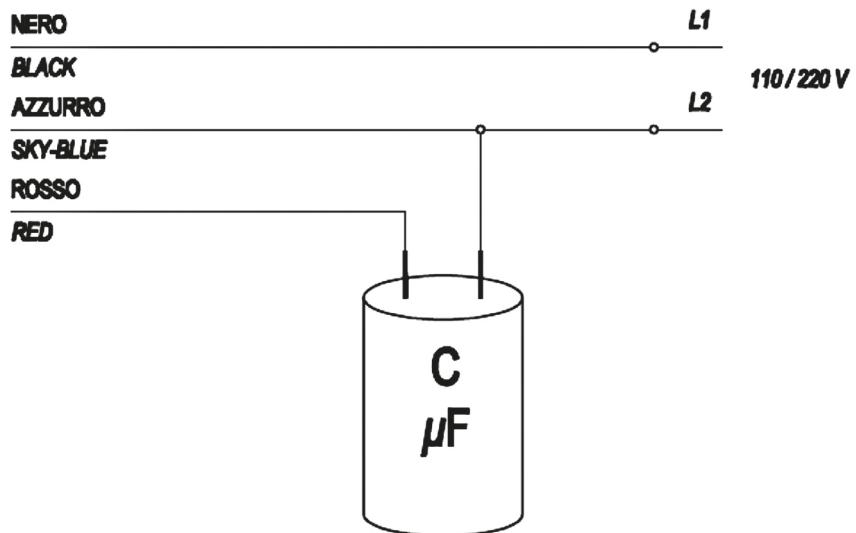
ATTENTION:

This operation must be carried out after having disconnected electric power.

Operating and maintenance instructions

EN

5.3 Motor-condenser connection

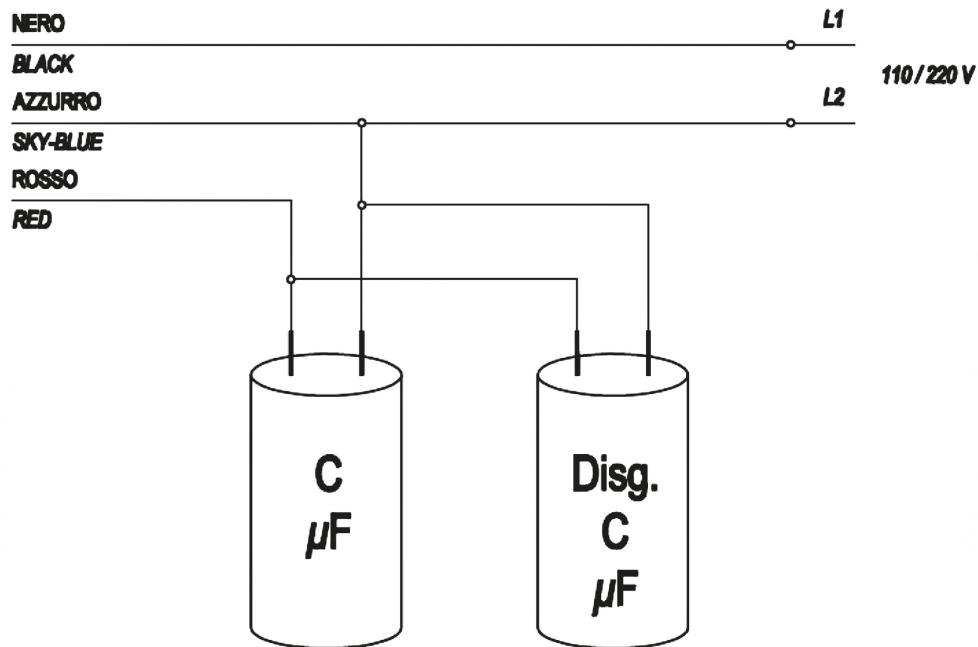


CAPACITOR		
Item	Description	C μ F
MN3A01C1A	DIAPHRAGM PUMPS M41BX AC 01 230V 50HZ	4
MN3A01C1B	DIAPHRAGM PUMPS M41BX AC 01 230V 50HZ	4
M01A05A2	DIAPHRAGM PUMPS M71S AC 05 110V 60HZ VITON	16
M01A05A2I	DIAPHRAGM PUMPS M71S AC 05 110V 60HZ EPDM	16
M01A05C1	DIAPHRAGM PUMPS M71S AC 05 230V 50HZ VITON	4
M01A05C1I	DIAPHRAGM PUMPS M71S AC 05 230V 50HZ EPDM	3,15
M01A07A2	DIAPHRAGM PUMPS M71S AC 07 110V 60HZ MEC 50 VITON	10
M01A07A2I	DIAPHRAGM PUMPS M71S AC 07 110V 60HZ MEC 50 EPDM	10
M01A07C1	DIAPHRAGM PUMPS M71S AC 07 230V 50HZ MEC 50 VITON	4
M01A07C1I	DIAPHRAGM PUMPS M71S AC 07 230V 50HZ MEC 50 EPDM	4
M03A08A2	DIAPHRAGM PUMPS M71 BX AC 08 110V 60HZ VITON	16
M03A08C1	DIAPHRAGM PUMPS M71 BX AC 08 230V 50HZ VITON	5
M03A08C1I	DIAPHRAGM PUMPS M71 BX AC 08 230V 50HZ EPDM	5
M07A05C1G	DIAPHRAGM PUMPS M71S AC 05 230V 50HZ NBR	3,15
MQ1A08C1	DIAPHRAGM PUMPS M78S AC 08 230V 50HZ VITON	5

Operating and maintenance instructions

EN

5.4 Motor-breaker-condenser connection

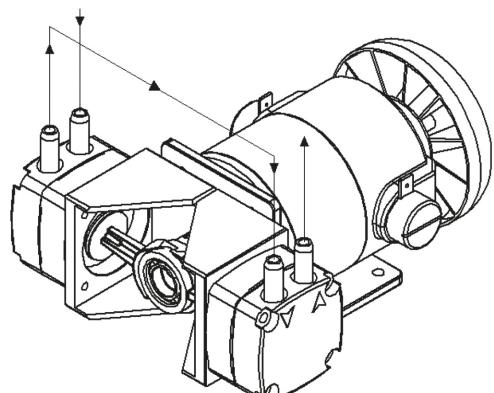


CAPACITOR		Cond.	Disg.
Item	Description	C	C μ F
MO3A08C1	DIAPHRAGM PUMPS M71 BX AC 08 230V 50HZ VITON	5	10

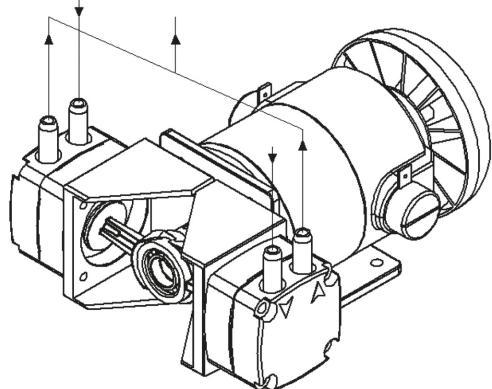
Operating and maintenance instructions

EN

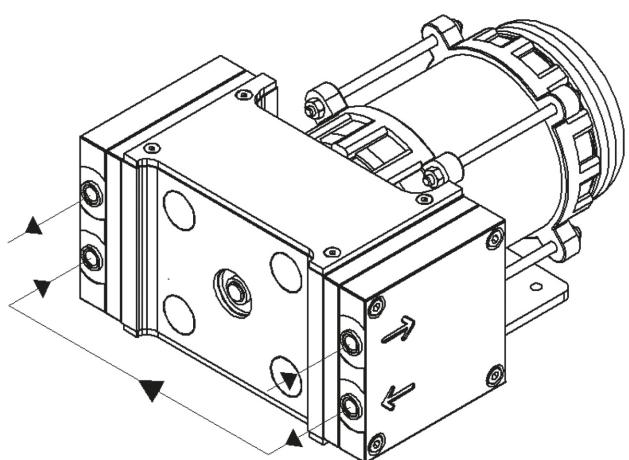
5.5 Series and parallel connection



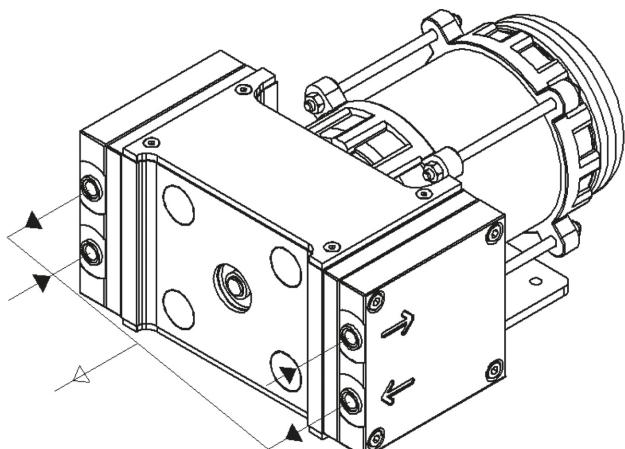
M41 BX SERIE
M41 BX SERIES



M41 BX PARALLELO
M41 BX PARALLEL



M71 BX SERIE
M71 BX SERIES



M71 BX PARALLELO
M71 BX PARALLEL

6. Servicing and spare parts

6.1 Servicing

Depending on the expected use, a regular and periodical control of all the parts in movement and therefore subject to wear must be checked.

6.2 Spare parts

Pump sectional drawing and parts list are available upon request.

7. De-commissioning

In case of pump disposal, separate the pump parts by materials and trash the parts in accordance with the local regulations in the Country of use.



PVR Srl

HEADQUARTERS:

Via Santa Vecchia, 107 - 23868 Valmadrera (LC), Italy
T +39 03411918 51 - F +39 03411918 599
info@pvr.it - www.pvr.it

LOCAL UNIT:

Via IV Novembre, 104F
23868 Valmadrera (LC), Italy