OPERATION AND MAINTENANCE MANUAL FOR KV 25-30-40 COMPRESSORS

CE

ENGLISH VERSION

BACKGROUND

Never use the compressor in an inappropriate way, but only as recommended by the **Manufacturer**. The **Manufacturer** reserves the right to update the technical data contained in this manual without prior notice. Before using the compressor, carefully read the instructions in the following manual.

IMPORTANCE OF THE MANUAL

This **INSTRUCTION MANUAL** is your guide to **INSTALLATION**, **USE**, **MAINTENANCE** of the compressor you purchased. We advise you to strictly follow all the recommendations contained in it, as the good functioning and duration of the compressor depend on the correct use and methodical application of the maintenance instructions given below. It should be remembered that, should difficulties or inconveniences arise, the **AUTHORIZED ASSISTANCE CENTERS** are at your complete disposal for any clarification or possible intervention. The **Manufacturer** therefore declines any responsibility for incorrect use or inadequate maintenance of the compressor. The **INSTRUCTION MANUAL** is an integral part of the compressor. Keep this manual for the duration of the compressor.
Ensure that any updates received by the **Manufacturer** are incorporated into the manual. Transfer the manual to any other user or subsequent owner of the compressor.

Preservation of the manual:

- Use the manual in such a way as not to damage all or part of the contents.
- Do not remove, tear or rewrite parts of the manual for any reason.
- Keep the manual in an environment protected from humidity and heat.

SYMBOLS USED

The following **SYMBOLS** are used throughout the course of this publication to draw the attention of the operator to the behavior to be adopted in every operating situation
These symbols can be placed next to a text, next to a figure or at the top of the page. Pay the utmost attention to the meaning of the symbols: their function is that of not having to repeat the technical concepts or safety warnings, therefore to be considered "**reminders**". Consult the table below whenever there are any doubts about their meaning.

	**READ THE INSTRUCTION BOOKLET** Before positioning, operating or working on the compressor, read the user and maintenance manual carefully.
	**ATTENTION** highlights an important description regarding dangerous conditions, safety warnings, information of the utmost importance.
	**STOPPING MACHINE** every operation must be carried out with the machine stopped.
	**CAUTION MACHINE IN PRESSURE** each operation must be performed with the machine without pressure inside the oil separator tank (0 bar).
	**REMOVE TENSION** every operation on the machine must be carried out with the power supply switched off.
	**QUALIFIED PERSONNEL** any intervention highlighted by this symbol is the exclusive responsibility of a specialized technician.

CONTENTS

1 GENERAL WARNINGS AND INFORMATION FOR THE USER

1.1 DEFINITION OF REGULATED RELATIONSHIPS

1.1.1 DECLARATIONS

The compressor must be used solely as indicated in this manual. This manual must be kept on hand in a known, easily accessible place because it should be used throughout the machine's entire working life.
When making any requests, always indicate model and serial number.

DECLARATION OF CONFORMITY

ITALYCO S.r.l., the manufacturer, on its own responsibility, declares that the air compressor identified by the label on the front page of this document, complies with the essential requirements laid out in the following DIRECTIVES – STANDARDS written in the certificate of conformity attached to the machine.

ITALYCO S.r.l. holds the relevant technical dossier.

1.1.2 WARRANTY

ITALYCO S.r.l. guarantees its products from manufacturing or design defects for a period of 24 months from the date of initial start-up. To inform ITALYCO S.r.l. of this date, fill out the special form supplied with the machine technical documentation and send it in.
If no communication is received, the warranty shall be recognized for 12 months starting from the date on which the unit was shipped; that is the date indicated on the ITALYCO S.r.l. invoice.

The warranty does not cover parts subject to wear.

Repair works covered under the warranty can only be performed by ITALYCO S.r.l. or a ITALYCO S.r.l. Authorized Service Centre.

Shipment of any product being returned for service under the warranty must be authorized in advance, and in writing, by ITALYCO S.r.l. Moreover, ITALYCO S.r.l., in its unquestionable wisdom, can decide whether to authorize such shipment or have one of its Authorized Service Centres do the work.

In both cases, shipment to ITALYCO S.r.l. must be made carriage paid with shipping costs charged in the invoice. Repairs or replacements covered by the warranty include free replacement of parts of the machine that are recognized as defective.

The warranty does not cover damages caused by negligence, by incorrect use or installation or by non compliance with the warnings indicated in the “Operation and Maintenance Manual”. Moreover the warranty is voided if modifications or repairs are made with non original ITALYCO S.r.l. spare parts or performed by anyone not authorized to do so by ITALYCO S.r.l.

Defective parts replaced under the warranty are retained by the Authorized Service Centre. The warranty does not cover repairs or reimbursement for damage due to shipping (to or from the Authorized Service Centre). The warranty does not cover any type of reimbursement for injuries or damages to people or things derived from improper use of the model purchased or due to machine down time (the customer must take steps to prevent this). Service covered under the warranty is guaranteed only to purchasers who have met their contractual and administrative obligations and who are able to show the documentation certifying the purchase period. This is the only valid warranty recognized by ITALYCO S.r.l. court having jurisdiction.
For any disputes the competent court is that of Bologna, Italy.

1.1.3 RETURNS

Returns are made using the RMA (return material authorization) procedure.
To open said procedure, the customer must send a request to ITALYCO S.r.l.

2 CE MARKING

The CE marking certifies that the compressor complies with the health and safety requirements outlined in the European Directives indicated in the EC declaration of conformity.
The marking is printed with silver lettering on a black polyester adhesive label (L:90mm H:80mm).
The label is placed as indicated in figure 1 and bears the following information:

- **CE marking**
- **Compressor model**
- **Serial number**
- **Maximum working pressure**
- **Power supply voltage and frequency**
- **Nominal power**
- **Weight**
- **Manufacture year**

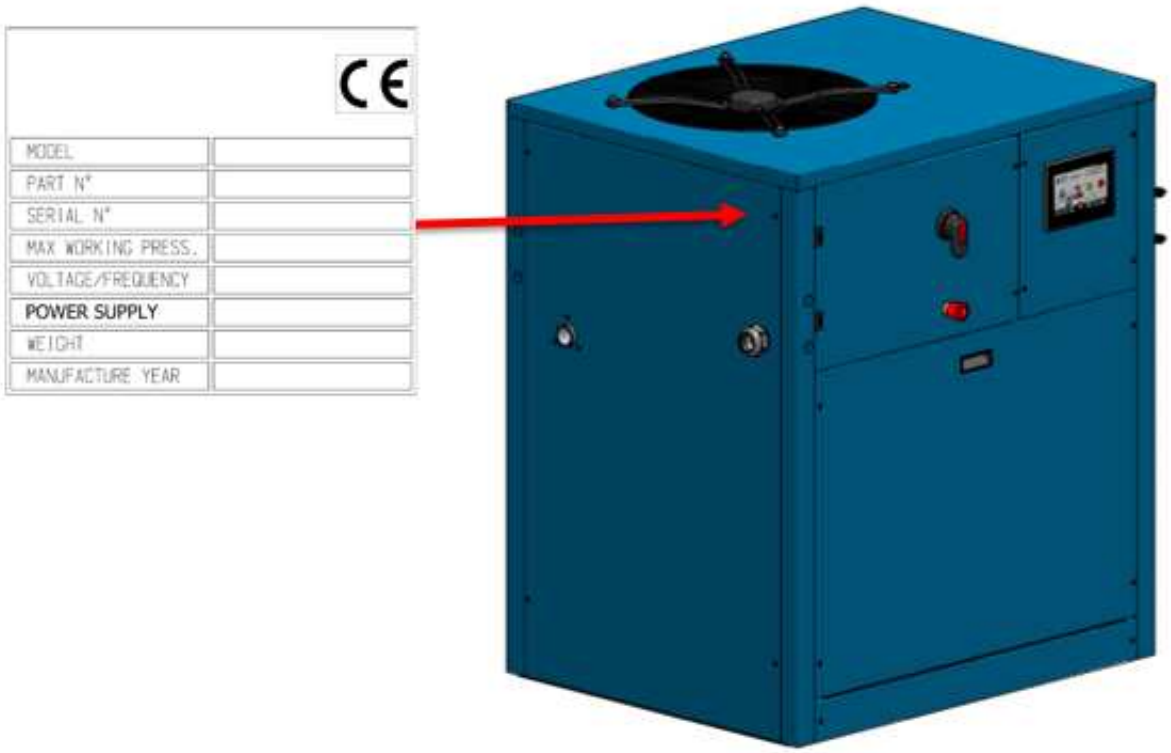


Figure 1

2.1 CAUTIONS AND SAFETY WARNINGS

Read this operation manual carefully before performing any operations. Non-compliance with the instructions contained herein can lead to injury and property damage.

- The machine has been designed and built to operate as reported below. Any other use is considered unacceptable.

- Only qualified personnel can install and service the machine. Always follow accident prevention standards.

- The manufacturer is relieved of any responsibility for injuries and machine or property damage caused by incorrect use of the compressor, non-compliance or inadequate compliance with the safety criteria reported herein, modifications (even minor modifications) and by use of non original spare parts.

2.1.1 INSTRUCTIONS FOR SAFE OPERATION

CAUTION!
Below is a list of important instructions for safe use of the compressor. Follow these instructions carefully. Improper use or maintenance of the compressor can cause user injury.

1. Never Touch any Moving Parts
Never allow parts of the body to come near moving parts of the machine.

2. Never Use the Compressor if the Protection Guards have been Removed
Never use the compressor unless all guards are assembled. If maintenance requires removing any of the guards, make sure that they are properly reinstalled before starting up the unit. Never bypass the safety devices installed on the compressor. This is strictly forbidden.

3. Protective Grids
Never insert objects or body parts into protective grids as this can cause injury and can damage the compressor.

4. Use the Compressor Correctly
Always operate the compressor following the instructions given in this manual. Never allow children or unauthorized persons to use the machine.

5. Always Wear Eye Protection
Always wear goggles or other equivalent form of eye protection. Do not direct air toward parts of the body, your own or others.

6. Work Clothing
Do not wear inappropriate clothing or accessories. If necessary, wear a cap that covers the hair.

7. Use the Compressor Sensibly
Never use the compressor while under the effect of alcohol, drugs or medications that can cause drowsiness.

8. Personnel Intervention
Before performing any form of intervention, the personnel must be aware of all compressor functions and controls.

9. Compressor Usage
Never use the compressor for any purpose other than those specified in the user's manual.

10. Air Jets
Never direct air jet toward persons or animals.

11. Hot Parts
To prevent burns, never touch the hoses, motor or other hot parts.

12. Work Area
Keep the compressor work area clean and well ventilated. Never use the compressor in a place containing paints, solvents or combustible/explosive materials.

13. Compressor Maintenance
Check the outside of the compressor. If the power supply cord is damaged, repair or replace it. If necessary, contact an Authorized Service Centre.

14. Check for Defective Parts and Air Leaks
Check alignment of moving parts, hoses, pressure gauges, pressure reducers, pneumatic connections or other parts important to compressor function. Make certain that all screws, bolts and lids are thoroughly secured. Any damaged parts must be repaired by an Authorized Service Centre.

15. Protect yourself against Thermal Shocks
Prevent accidentally coming into contact with metal parts of the compressor such as hoses, tanks or grounded parts. Never use the compressor if water or moisture is present in the area.

16. Disconnect the Compressor
When servicing the compressor or when it is not running, always disconnect it from the power supply and completely vent the pressure in the tank.

17. Handling
Never move the compressor while it is connected to the power supply or when the tank is pressurized. Before unplugging the compressor make certain that the switch is set to OFF.

18. Precautions for the Power Supply Cord
Never unplug the unit by pulling on the cord. Never step on or crush the power supply cord.
Keep it away from heat, oil or sharp surfaces. Never turn off the compressor by pulling on the power supply cord. Use the red emergency button to stop the compressor.

19. Electrical Extension Cords
If the compressor is used outdoor, use power supply cords rated for outdoor use.

20. Cleaning of the Intake Grid and Plastic Parts
Keep the ventilation grid clean. If the unit is used in a particularly dirty environment, clean the grid regularly. Never use solvents, thinners or other substances containing hydrocarbons as they can damage the plastic parts. Clean with soapy water or an appropriate liquid cleaner.

21. Compressor Rated Voltage
Use the compressor at the voltage indicated on the label. Using the compressor at a different voltage can burn out or damage the electric motor.

22. Compressor Defects
If the compressor makes strange noises or vibrates excessively during operations, check that it is functioning properly and, if necessary, contact an Authorized Service Centre.

23. Spare Parts
Use only original spare parts which can be purchased from our distributors. Use of non original spare parts voids the warranty and can lead to compressor malfunction. Repairs must be carried out by an Authorized Service Centre.

24. Pneumatic Circuit
Use hoses, connections and pneumatic tools rated to handle pressures above the operating pressure.

25. Tank
Never unscrew any tank connections without first checking to ensure that the pressure has been vented. Never make holes, welds or modifications on the tank.

26. Compressor Modifications
Never make any unauthorized modifications to the compressor. Such modifications can cause damage and serious injury. Consult an Authorized Service Centre for any operations.

27. Using the Compressor for Painting
Never use the compressor in confined spaces or near open flames. Make certain that the work area is adequately ventilated. In addition, wear a special mask to protect nose and mouth.

28. Keep the Compressor Horizontal
To ensure correct functioning of the compressor, it is advisable to work in a near-to horizontal position.

KEEP THIS MANUAL INTACT AND ON HAND, AVAILABLE TO ANYONE USING THE COMPRESSOR!

WE RESERVE THE RIGHT TO MAKE ANY MODIFICATIONS WE DEEM NECESSARY WITHOUT PRIOR NOTICE!

2.2 CONTACTS AND USEFUL ADDRESSES

Our technical services department is at your disposal, ready to provide any information you may need and to help you resolve any problems that may arise.

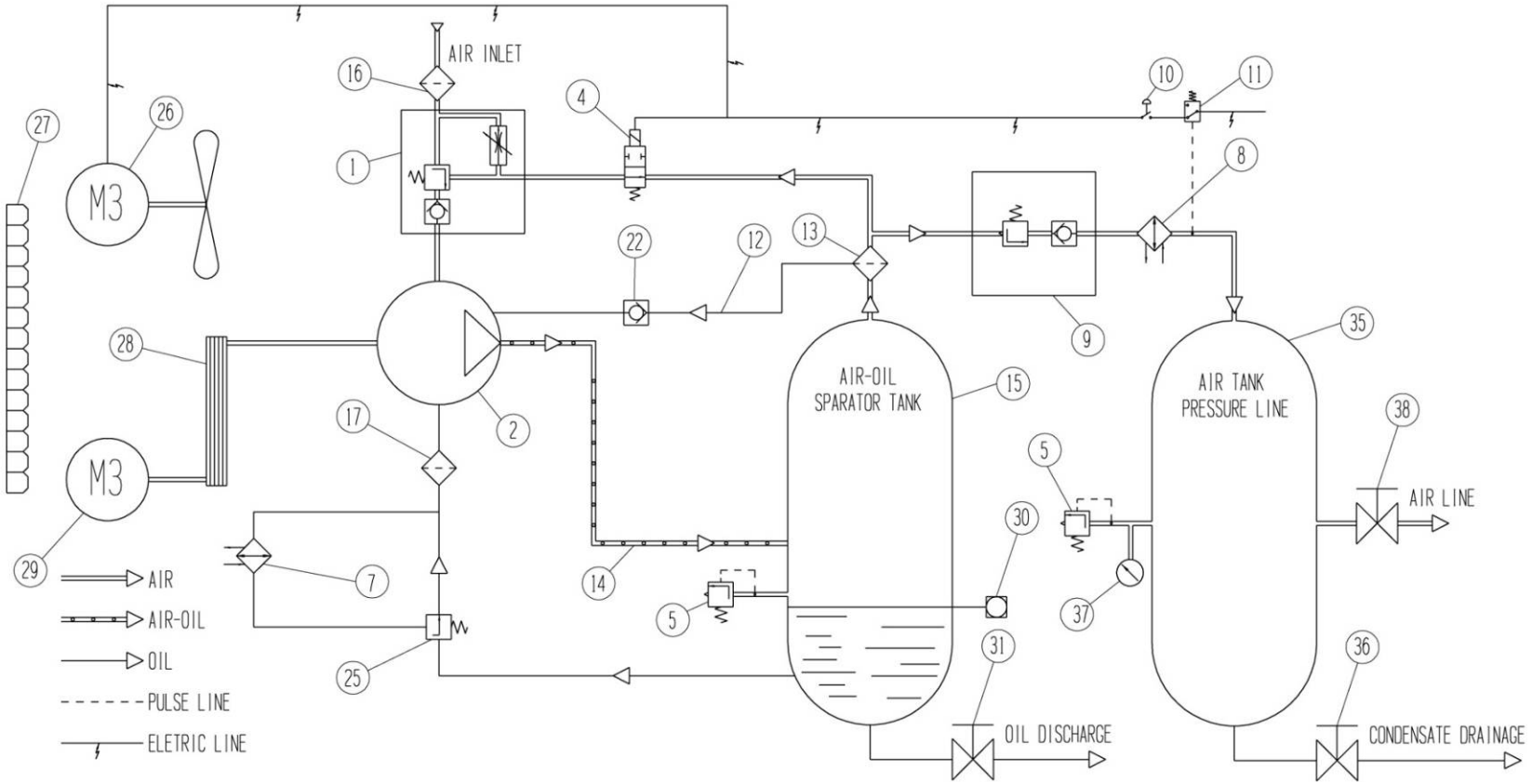
For any information, please log onto our website **www.italyco.net**

For any clarifications you may require, contact our **customer services department** or your area **retailer**.
Only original spare parts can guarantee best performance of our compressors.
We recommend carefully following the instructions given in the chapter on **maintenance** and **always use only original spare parts.**

Using not original parts automatically voids the warranty.

3 DESCRIPTION OF THE MACHINE AND OPERATING PRINCIPLE

3.1 MACHINE DESCRIPTION



1- Suction valve
2- Screw compressor
4- 3/2 Solenoid valve
5- Pressure relief safety valve
7- Oil radiator
8- Air radiator
9- Low pressure valve
10- Power button
11- Pressure switch
12- Oil return from separator
13- Oil separator filter
14- Air/oil delivery hose from screw assembly
15- Air/oil separator tank
16- Suction filter
17- Oil filter
22- Oil recovery window
25- Thermostatic valve
26- Electric cooling fan
27- Suction pre-filter panel
28- Drive belt
29- Electric motor
30- Oil level
31- Oil discharge
32- Control panel
33- Electric panel
34- oil filling cap
35- Air tank
36- Condensate drainage
37- pressure gauge
38- Air outlet line lever cock

3.2 OPERATING PRINCIPLE

- During the initial phase of start up, the electric motor ref. 29 (with "star" power supply), rotates slowly. The solenoid valve ref. 4 is not powered and thus the suction valve ref. 1 it controls remains closed. The length of this phase can be set.

- During the second phase, the "delta" power supply accelerates the motor to reach the set operating r.p.m. The solenoid valve ref. 4 is powered and the suction valve ref. 1 is opened, thus allowing air to pass through the suction filter ref. 16 and enter the screw compressor ref. 2. This starts the compression phase.

- The air/oil mixture delivered by the screw compressor ref. 2 is conveyed into the air/oil separator tank ref. 15.

- An initial portion of the oil is separated from the air mechanically and deposits at the bottom of the tank while the air collects at the top.

- By force of pressure the air is forced to flow through the oil separator filter ref. 13 and, after further separation of the oil, it is sent on to the low pressure valve ref. 9. This allows passage of the air only after the pressure set point has been reached. When this happens, the air passes through the air radiator ref. 8, where it is cooled, and then continues on to the operating tank ref. 35.
  The oil removed from the air inside the oil separator filter is sent, through the oil return from separator line ref. 12, into the screw compressor. The amount of oil can be monitored through oil recovery window ref. 22.

- In the model with drier, the air passes through the drier before reaching the operating tank.

- Unless the unit has an automatic drainage, the condensate accumulated inside the tank must be eliminated manually through the condensate drainage ref. 36.

- The pressure sends oil at the bottom of the tank to the thermostatic valve ref. 25. This valve sends the oil with a temperature above the set point to the oil radiator ref. 7 where it is cooled. Once cooled, the oil returns to the thermostatic valve, is mixed with hot oil coming from the tank and is again checked by the thermostatic valve. Once the temperature set point (low) is exceeded, the oil is sent to the oil filter ref. 17 and then into the screw compressor.

- When the set maximum working pressure is reached, the pressure switch ref. 11 remove power from the solenoid valve ref. 4 and trips the circuit. The suction valve ref. 1 closes air flow and the compressor enters in "no-load" operating mode. This situation remains in force until the system minimum pressure setting is reached.
  If consumption is low or has stopped unit will continue operate in no-load mode for a set amount of time and then reverts to stand-by mode.

4 DATA AND TECHNICAL SPECIFICATIONS

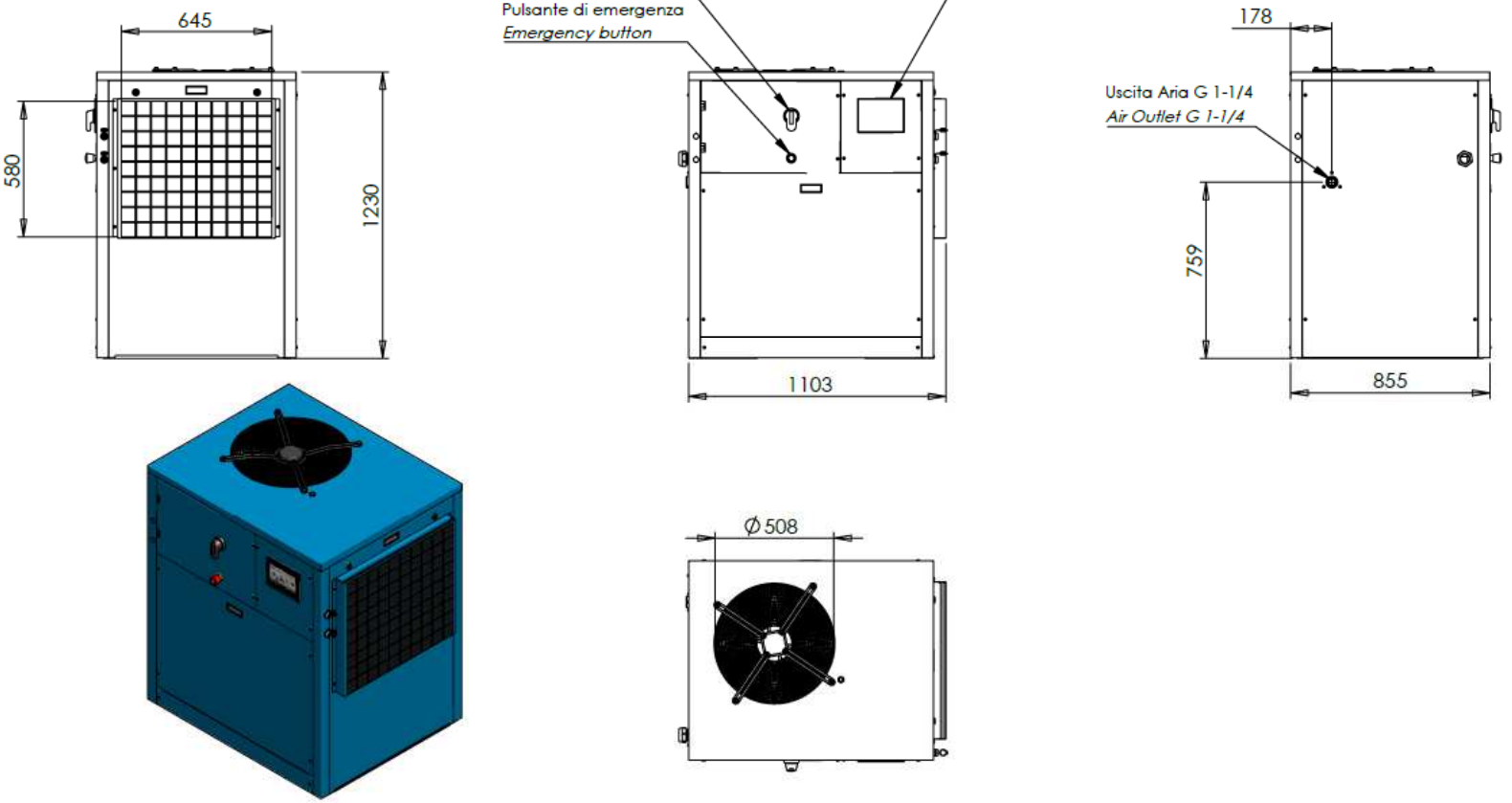
Modello	KV 25	KV 30	KV 40
Machine type	Oil injected screw compressor		
Drive	Belt drive		
Type of screw	Pack Smart V90C	Pack Smart V110C	Pack Smart V110C
Type of fluid handled	air	air	air
Flow rate (ISO 1217:2009 annex C) **	2.54 m^3/min - 90 cfm	3.02 m^3/min - 107 cfm	4.21 m^3/min - 149 cfm
Max. working pressure	13 bar g - 188.5 psi g	13 bar g - 188.5 psi g	13 bar g - 188.5 psi g
Min. working presure	5 bar g - 72.5 psi g	5 bar g - 72.5 psi g	5 bar g - 72.5 psi g
Maximum power consumption**	18.5 kW - 25 hp	22 kW - 30 hp	30 kW - 40 hp
Max. air/oil outlet temperature	105 °C - 221°F	105 °C - 221°F	105 °C - 221°F
Max. environmental temperature	45 °C - 113 °F	45 °C - 113 °F	45 °C - 113 °F
Min. environmental temperature*	5 °C - 41 °F	5 °C - 41 °F	5 °C - 41 °F
Weight	387,5 kg – 854,3 lb	520 kg – 1146,4 lb	520 kg – 1146,4 lb
Power supply voltage	See machine label		
Motor efficiency	IE 3	IE 3	IE 3
Service factor	S1-100%	S1-100%	S1-100%
Electric motor protection rating	IP 55	IP 55	IP 55
Insulation class	F	F	F
Oil charge	7,2 liters	10 liters	10 liters
Air outlet connection	1 1/4”	1 1/4”	1 1/4”
Maximum fan flow rate	5993 m^3/h	5993 m^3/h	5993 m^3/h
Oil residue in air	<3 ppm	<3 ppm	<3 ppm
Electric motor	MEC160	MEC180	MEC180
Noise level	66	66	67

* When the environmental temperature is below 5°C, an ISO VG 32 lubricant must be used
** Value detected with working pressure: **10 bar g**
***Noise measured in an open field at 1 metre from the unit ±3 dB(A) at maximum working pressure.

5 DIMENSIONS

Dimensioni di ingombro
KV 25-30-40

Overall dimensions
KV 25-30-40



TIPO / TYPE	CODICE / CODE	DATA / DATE	REVISIONE / REVISION
Dimensioni di ingombro / Overall dimensions	KV 25-30-40	04/2022	00

6 INSTALLATION

6.1 CHARACTERISTICS AND STORAGE CONDITIONS

During periods of inactivity, before being unpacked (storage), the compressor must be kept at a temperature of between +5 °C and +45 °C and in a dry place sheltered from the weather.
Once unpacked, when the unit is not going to be used (prior to start-up or when production is interrupted), the compressor should be protected with a tarpaulin to protect dust from gathering on the mechanical and electric mechanisms.
If the compressor has remained inactive for a long period of time, before starting it up again, change the oil and check function.

6.2 TRANSPORT

To ensure that the unit is protected and does not incur shipping damages, the compressor is screwed onto a wooden pallet and covered with a cardboard box.
All shipping information is printed on the compressor package (data and pictograms).

6.3 UNPACKING

When unpacking the unit, carefully check that the contents match what is indicated in the shipping documents.

The user must dispose of packaging in compliance with current national regulations.

The machine must be unpacked by qualified personnel using suitable tools.

6.4 HANDLING

The compressor is to be lifted with a fork lift truck rated for the weight of the unit.

- Check that the outside packaging is intact.
- Unpack the machine carefully.
- Check that the outside of the machine is intact.
- Dispose of the packaging in compliance with current environmental regulations.

The compressor should be handled as indicated in figures 2

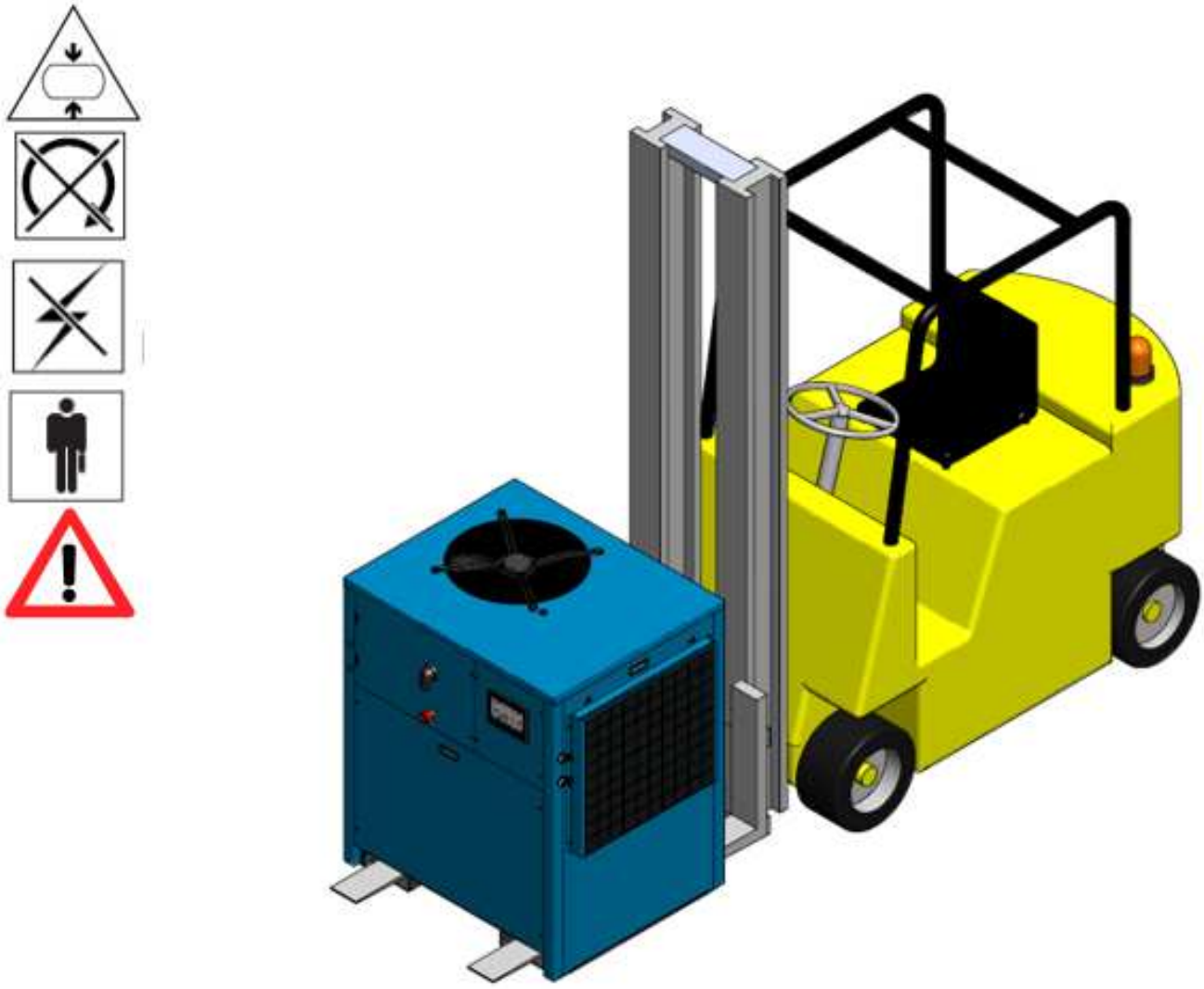


Figure 2

THE COMPRESSOR CAN BE LEFT ON THE PALLET WHICH MAKES SUBSEQUENT MOVEMENT EASIER.

6.5 LOCATION

Install the compressor at the site point indicated at the time the order was placed. If the unit is installed at a different site, **the manufacturer cannot be held responsible for any ensuing problems.**

Unless specified otherwise at the time the order is placed, the compressor must run normally under the environmental conditions indicated below.

The room where the compressor is installed must comply with current accident prevention standards and must meet the following requirements:

- Protected from rain and frost.
- Relatively free of dust. In time, a dusty environment can lead to damage and operating problems.
- Adequately ventilated and of such size that environmental temperature remains steady (min. 5°C, max. 45°C) when the machine is running. At the maximum admissible environmental temperature (45°C) and with a relative humidity above 80% machine performance can reduce. Likewise, machine performance may be reduced when the unit is installed at an altitude of 1000 m above sea level.
- If hot air exhaust is inadequate, install exhaust fans at the highest position possible (see figure 4).
- Lighting: the compressor is built considering current standards and seeking to reduce shadow zones to the barest minimum, thus facilitating operator intervention; as the compressor room lighting system is deemed important for personnel safety, there must not be any shadows, glaring lights or stroboscopic effects due to the lighting.
- Potentially explosive and/or flammable atmospheres: in its standard configuration, the compressor is not designed to work in environments where there is the risk of explosion and/or fire;

6.6 FOUNDATIONS

Once the position for the compressor has been identified, check that it is set on a flat surface. The machine does not require foundations or any specific preparation of the support surface (foundation works).

CAUTION!!

- **The ducting must not exceed 3 metres in length; if this proves necessary, install a fan on the outlet side (see figure 4).**
- **The ducts must maintain a section that generates a maximum pressure loss of 40 Pa.**
- **Condensation must not be discharged into the environment or into the sewers. The well must be fit with a valve and removable container, or it must be connected to a special unit to separate the oil from the water.**

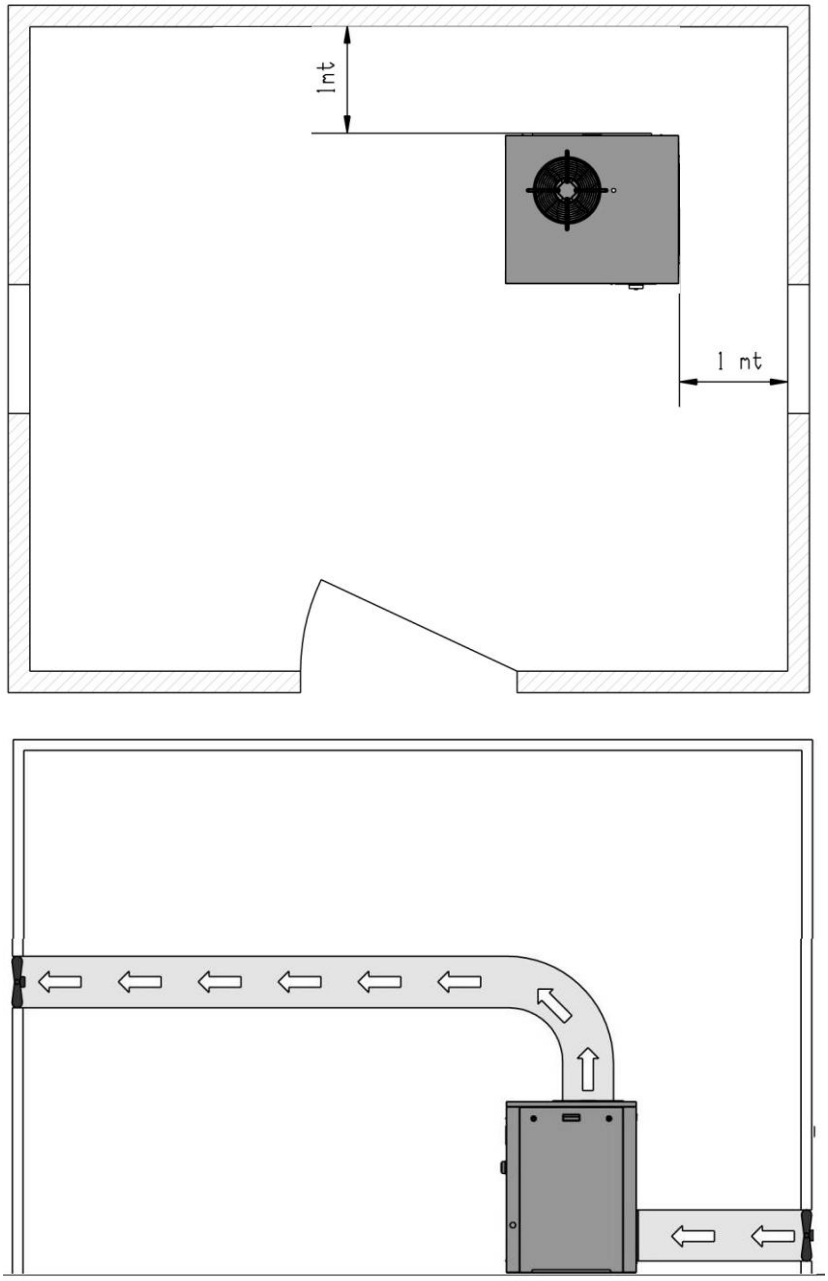


Figura 4

6.7 CONNECTION AND START-UP

6.7.1 GENERAL WARNINGS

When starting up the unit for the first time, make certain that:

- The power supply matches the requirements indicated on the label.
- The wall-mounted general switch is proportioned according to the indications in the technical data table (see chapter 6.7.3.3).
- The oil is at the correct level (see chapter 9.1.6).
- The electrical connections have been made using cables of adequate section (see chapter 6.7.3.2)

CAUTION!
Carefully comply with the SAFETY WARNINGS regarding use of the machine.

For the European market the compressors and tanks are built according to the Directives in force mentioned in the declaration of conformity attached to the machine

Check the label on the compressor and at the beginning of this manual for indication of your model.

6.7.2 CONNECTING THE POWER SUPPLY CORD OF THE COMPRESSOR

1- Insert the power supply cord through the cable seal and run it as indicated by the red arrow in figure 5.

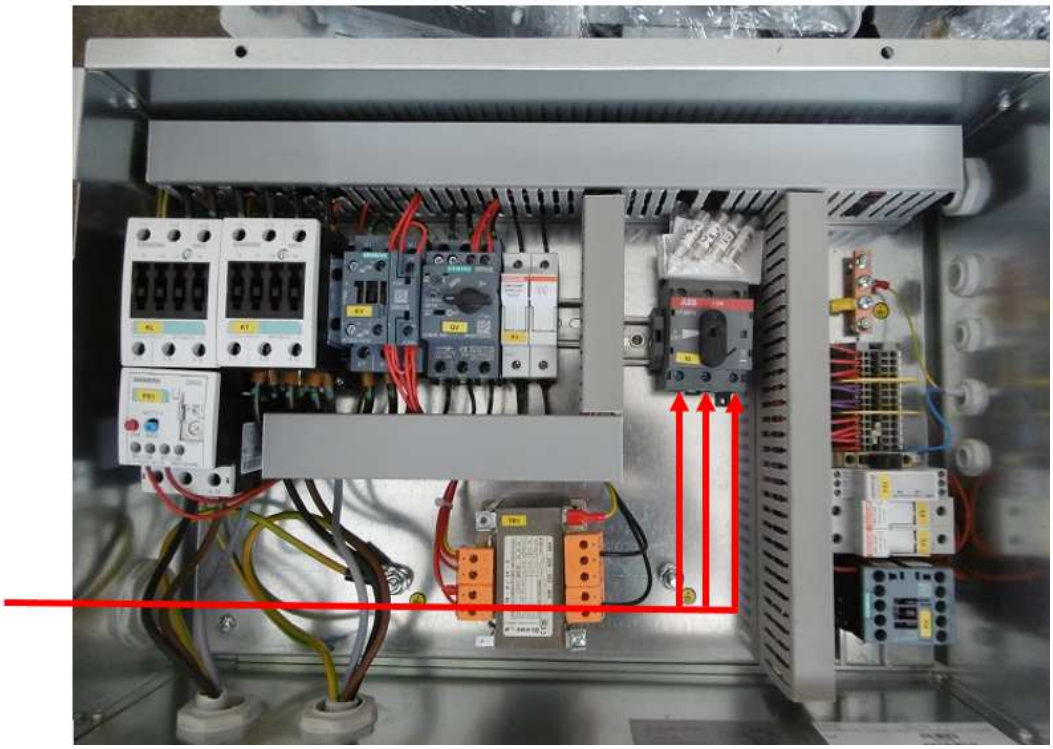


Figure 5

2- Connect L1 L2 L3 to the disconnecting switch as indicated in figure 6.

Figure 6

6.7.3 CONNECTING THE COMPRESSOR TO THE ELECTRICAL POWER SUPPLY

The machine is connected to the electrical power network by the customer, at his own expense and responsibility, using qualified personnel and in compliance with accident prevention standard EN 60204

6.7.3.1 Ground connection

To protect the operator from electric shocks, the compressor must be grounded during use. The ground connection must be carried out by a qualified technician or by a specialized service centre. The ground connection on the compressor power supply cord must be connected only to the terminal on the compressor itself.
Before replacing the plug of the power supply cord, make certain that the ground is connected.

6.7.3.2 Sizing the Power Supply Cable

Never use damaged cables. Always make certain that the cable is in good condition. Use only cables with an adequate size to the compressor's maximum current absorption. If the cable is too thin, there will be a drop in voltage, power loss and the unit will overheat. The cable section must be proportioned to the cable length and to the ambient temperature of the room where the cables are used. The values indicated below refer to an ambient temperature within 40°C:

KW	220/240 V 50/60 Hz	380/415 V 50/60 Hz
18.5	25 mm²	10 mm²
22	25 mm²	16 mm²
30	50 mm²	25 mm²

Avoid all risks of electric discharges. Never use the compressor if the power supply cord or extension cord are damaged. Check the electrical cables regularly. Never use the compressor in dangerous environments where electrical discharges can occur.

Installation must be performed by a qualified technician.

6.7.3.3 Fuses and Magnetothermal Switch


It is advisable to install the outlet, the Magnetothermal Switch and fuses near the compressor (not more than 3 metres away). The Magnetothermal Switch and fuses must have the characteristics indicated in the table below:

POWER KW	Rated voltage 220/240 V		Rated voltage 380/415 V	
	Magnetotermico	**Fusibile**	**Magnetotermico**	**Fusibile**
18.5	80 A	80 aM	50 A	50 aM
22	100 A	100 aM	63 A	63 aM
30	125 A	125 aM	80 A	80 aM
The values refer to **aM** (time-lag) fuses. The values refer to **"D-type"** switches.				

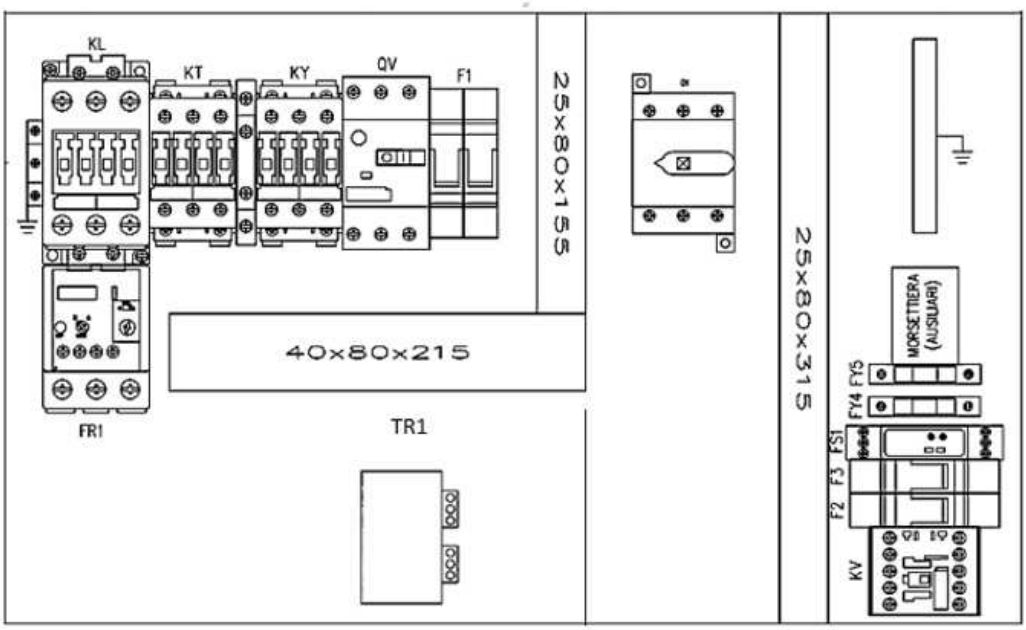
- Always check that the installed power, in kW, is at least double the absorbed power rating of the electric motor.
- The line voltage must match the electrical parameters indicated on the machine label; the acceptable variation must not exceed 6%.
- The power supply plug must not be used as a switch; it must be plugged into a power outlet controlled by an adequate differential switch (circuit breaker).

Never use the ground in place of the neutral. Ground connection must be performed in compliance with accident prevention standards (EN 60204). Make certain that the line voltage matches that required for good compressor function.

6.7.4 INFORMATION ON THERMAL RELAY CALIBRATION

CAUTION!!

Turn off power to the compressor before performing any work on the electric box. To ensure that the compressor will operate properly at full continuous load at maximum working pressure, make certain that the room temperature does not exceed + 45°C.
Make certain that the compressor working temperature remains below the set cut-off value - SEE PARAMETER ON ELECTRICAL CONTROLLER (T. MAX).
Check the air/oil exchanger and keep it clean.
For problems related to high environmental temperature, we recommend using special oils rated for high temperatures and contact an Authorized Service Centre to solve the problem.



REF.	DESCRIPTION
KL	LINE CONTACTOR
KY	STAR CONTACTOR
KT	DELTA CONTACTOR
KV	FAN CONTACTOR
FR1	MOTOR OVERLOAD REALY
QV	FAN OVERLOAD REALY
FS1	PHASE SEQUENCE RELAY
Q1	MAIN SWITCH
TR1	TRANSFORMER
F1	TRANSFORMER FUSE
F2	CONTROL CIRCUIT FUSE
F3	MAINBOARD FUSE
FY4	LOAD/UNLOAD VALVE FUSE

Adjustment of thermal relay **FR1** must reflect the values indicated in the table below; if the thermal relay trips, check absorption and voltage at the line terminals during operation and check the power connections inside the electrical panel and on the motor terminals. The thermal relay **FR1** is set as indicated in the table below:

- For models with STAR/DELTA start-up:

Power kW	Rated voltage 380/415V-3ph	Rated voltage 220/240V-3ph
18.5	23 A	37 A
22	25 A	44 A
30	34 A	60 A

6.7.5 WIRING DIAGRAM

The specific scheme of the machine is contained in the specific electric box.

6.7.6 COMPRESSOR CONNECTION TO ELECTRICAL POWER SUPPLY

Be sure to use the pneumatic hoses for air compressed with features and cross section appropriate to the compressor. Do not repair a faulty hose, but proceed with the replacement.

Connect the compressor to the pneumatic system using the special female connection on the compressor and indicated in the image. It is recommended to use a pipe with a diameter equal to or greater than the compressor outlet. To avoid malfunctions in the pressure control, any shut-off and check valves must be installed near the tank / manifold.
Attention: DO NOT INSTALL IN IMMEDIATE vicinity of the compressor

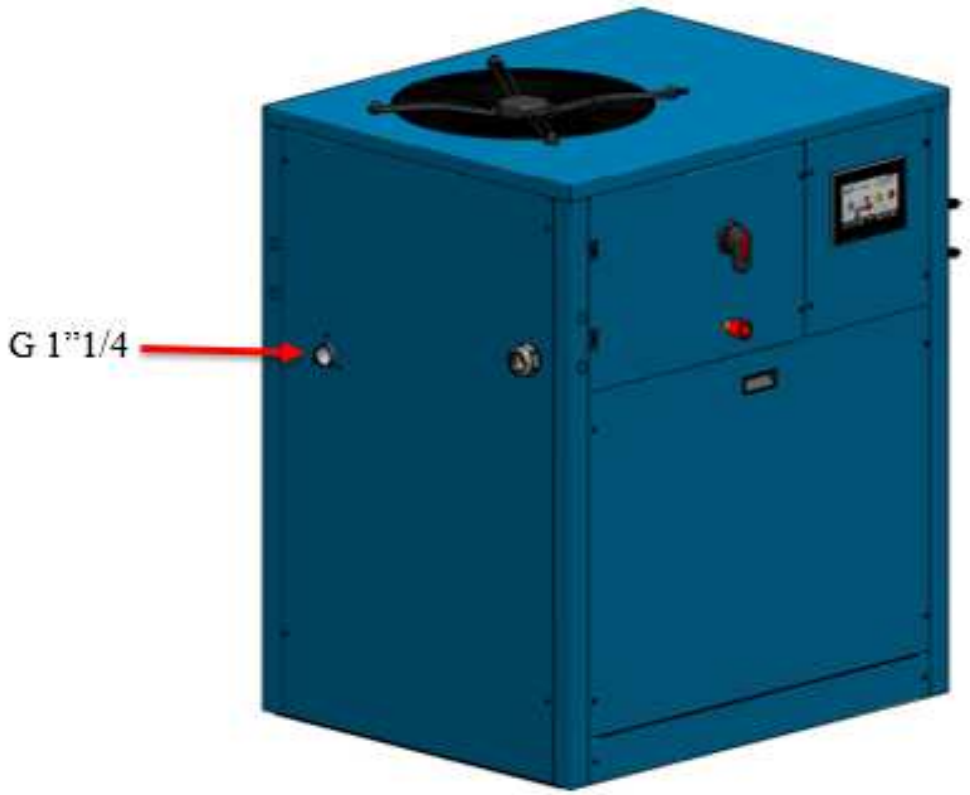


Figure 8

A check valve is already installed inside the compressor.

6.7.7 FIRST START-UP

The first compressor start up (operational testing) must be performed by a qualified technician. Remember, for the technical warranty to be valid, that the registered test report (R.C.R.) attached to the documentation must be filled out (see notes on sales clauses).

After having taken all compressor assembly steps, prepare the machine for first start-up.

Every time the compressor is turned on, the control panel runs a check on the power supply line phases to ensure that the screw assembly is turning in the right direction.

- If the power supply line phases have been correctly positioned, the screw will turn as indicated by the arrow in **figure 9**.

- If the power supply line phases are not positioned correctly, the machine blocked alarm will appear on the panel.
  In this case, switch connection of the two power supply phases on the line and start up the compressor again.

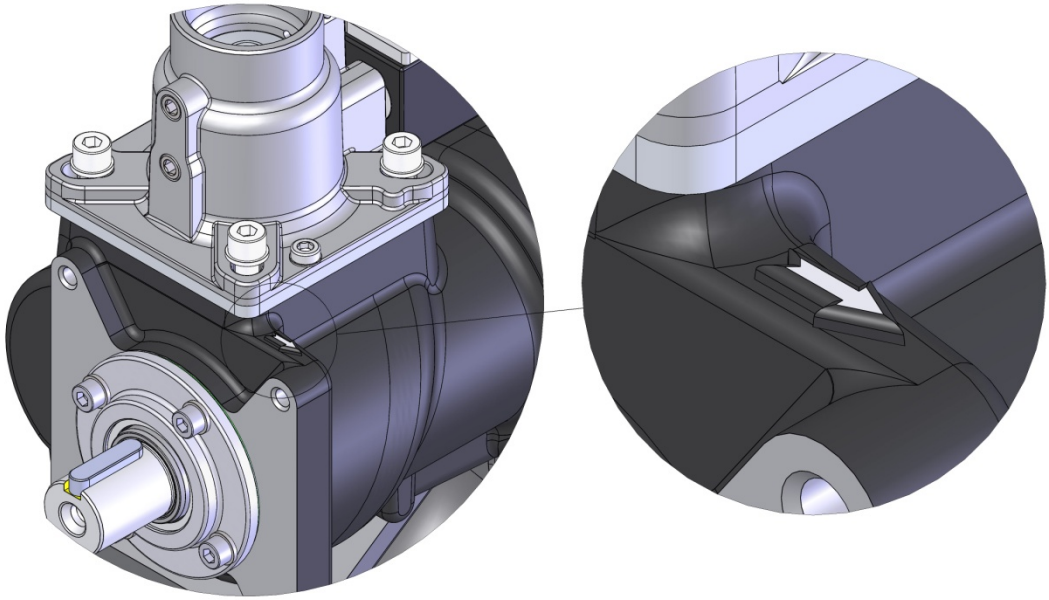


Figure 9

WARNING!
Reverse screw rotation - turning opposite the direction indicated by the arrow in relief on the body of the machine (see figure 9) - can damage the screw assembly!

WARNING!
If the electric motor is replaced, when it is started up once more, always visually inspect the assembly to ensure that the screw is turning in the right direction.

WARNING!
Always carefully follow the SAFETY WARNINGS regarding use of the machine. This is extremely important.

6.8 CLEANING AND DISINFECTION

Keeping the installation site and the compressor clean is essential to good machine operation and keeps operating and maintenance costs down (see chap. 6.5).

Installation site and compressor disinfection is essential to guarantee good air quality in the compressor room and in the area where the compressed air is used (workshop).

6.9 REINSTALLATION AND REUSE

Reinstallation and reuse of the machine must be performed by qualified personnel and only after checking the condition of the machine itself.
The points indicated in the previous chapters hold here as well.

6.10 DEMOLITION AND DISPOSAL 

If the compressor is to be demolished and disposed of, this must be performed in compliance with current regulations.
Always contact an authorized waste disposal and recycling facility.

7 OPERATION AND USE

7.1 DESCRIPTION OF THE OPERATION

For the operation of the machine see chap. 3.

7.2 RANGE OF APPLICATIONS

The machine is suited to all those applications requiring compressed air at the flow rate and pressure outlined in the technical data sheet (see chap. 4).

7.3 PROPER AND IMPROPER USE

CAUTION!
The compressor is designed and built solely to produce compressed air.
The manufacturer is relieved of any responsibility for risks ensuing from any other use.

CAUTION!
Any use of the compressor that differs from the agreements made at the time of purchase relieves the manufacturer of any responsibility for ensuing injury or property damage or damage to the machine itself.

CAUTION!
The electrical system cannot be used in flame-proof areas and with flammable products.

CAUTION!
Never direct air jet toward persons or animals.
Never use compressed air for breathing or in production processes where the air produced is in direct contact with foodstuffs, unless previously treated and filtered.

7.4 OPERATING AND ENVIRONMENTAL LIMITS

The operating and environmental limits are indicated in the table containing the technical data and characteristics (see chap.4).

7.5 WORKSTATION AND DANGEROUS AREAS

During normal operation of the machine, the operator works on the side where the electronic controller is located. Once correctly connected to the electrical and pneumatic system, the machine is completely protected on the outside and thus there are no dangerous areas accessible during normal operation.

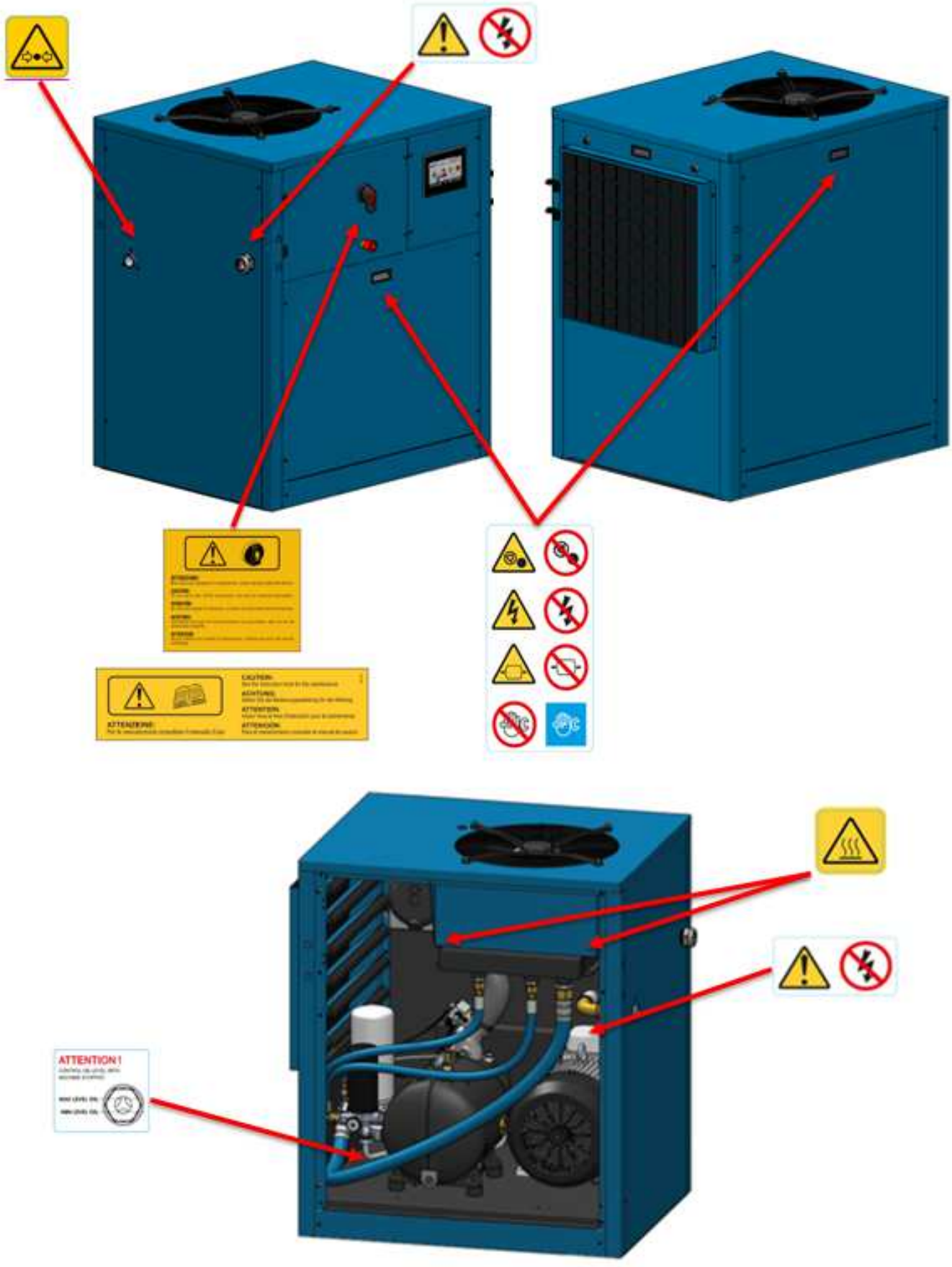
When scheduled and unscheduled maintenance is performed, the machine is completely open. These operations must be performed under safe conditions by qualified personnel (see chap. 9).

7.6 SAFETY DEVICES AND SIGNALS

The machine is equipped with safety devices and signals to prevent situations dangerous for the operator and the machine itself.
These devices and signals come in the form of labels placed at dangerous points, and alarms that are displayed on the electronic controller.

SIGNAL	MEANING
	**ATTENTION:** **Do not perform any maintenance operations on this machine before:** • **having stopped all moving parts** • **have disconnected the power supply** • **have completely discharged the pressurized air.** **Maintenance and repair must be performed by specialized and authorized personnel!**
	**ATTENTION:** **Hot surface**
	**ATTENTION:** **Component or pressurized system**
	**ATTENTION:** **Risk of electric shock**
	**ATTENTION:** **Check the oil level with the machine stopped**
	**ATTENTION:** **For maintenance consult the user manual**
	**ATTENTION:** **Do not use to turn off the compressor, use only for technical intervention**

7.6.1 POSITION OF THE LABELS



7.7 PERSONAL PROTECTIVE EQUIPMENT, SAFE WORKING PROCEDURES AND TRAINING

Use of the compressor does not require any PPE.
Our technical services department is at your disposal, ready to provide any information you may need and to help you resolve any problems that may arise.
For any information, please log onto our website **www.italyco.net**.For any clarifications you may require, contact our **customer services department** or your area **retailer**.

7.8 COMPRESSOR LUBRICATION

7.8.1 GENERAL RECOMMENDATIONS

CAUTION!
Before performing any operation involving draining or topping up compressor oil, unplug the compressor and wait until the system has reached atmospheric pressure.
Use adequate protection when handling lubricants.

We recommend a lubricant compatible with the ISO VG 46 oil (mineral-based oil) used during testing. The pour point must be at least -8+10°C and the flash point higher than +200°C.

Oilscrew plus 46

For use of incompatible oils, follow the procedure described in chapter 7.8.2

Never mix different types of oil

We recommend using oil with a VG32 rating for cold climates and VG68 for tropical climates.

Before starting up compressors without oil, feed **approximately 0.8 *l*** of lubricant in through the regulator intake opening while keeping the suction valve shutter lowered and manually turning the screw rotors in the right direction.

CAUTION!
When lowering the suction valve shutter be careful not to damage the throttle valve O-ring.

Feed the mineral-based lubricant into the oil tank using the special top-up hole and fill until the right level is read on the window. The amount of oil to be fed is indicated in Ch. 4**.**

Start up the compressor, initially switching it on and off sequentially and quickly and then starting it up.

Once initially filled with oil, turn off the compressor, vent the pressure and, if necessary, top up the lubricant from the top-up hole until the right level is read on the window.

7.8.2 USING THE COMPRESSOR WITH SYNTHETIC OILS

If you wish to use a synthetic lubricant, carefully follow the procedure below.

- Drain all mineral oil from the compressor circuit using the oil drain cock.

- Feed the synthetic lubricant or detergent oil into the oil tank through the top-up hole and fill up to the correct level.

- Before starting up the compressor or the first time after installation, feed **approximately 0.8 *l*** of lubricant in through the regulator intake opening while keeping the suction valve shutter lowered and manually turning the screw rotors in the right direction.

CAUTION!
When lowering the suction valve shutter be careful not to damage the throttle valve O-ring.

- Start up the compressor, initially switching it on and off sequentially and quickly and then starting it up.
- Then turn off the compressor and drain all lubricant from the system using the cock.
- Through the oil top-up hole, feed new synthetic lubricant in until it reaches the set level; then start up the compressor and run it steady for about 10 minutes.
- Turn off the compressor, vent the pressure and, if necessary, top up by feeding the lubricant through the top-up hole until the right level is read on the window.

WARNING!
If the above-mentioned "washing" cycle is not performed, the mixing of incompatible lubricants may cause problems in lubrication. Use adequate protection when handling lubricants.
Dispose of mineral lubricants in compliance with current environmental regulations.

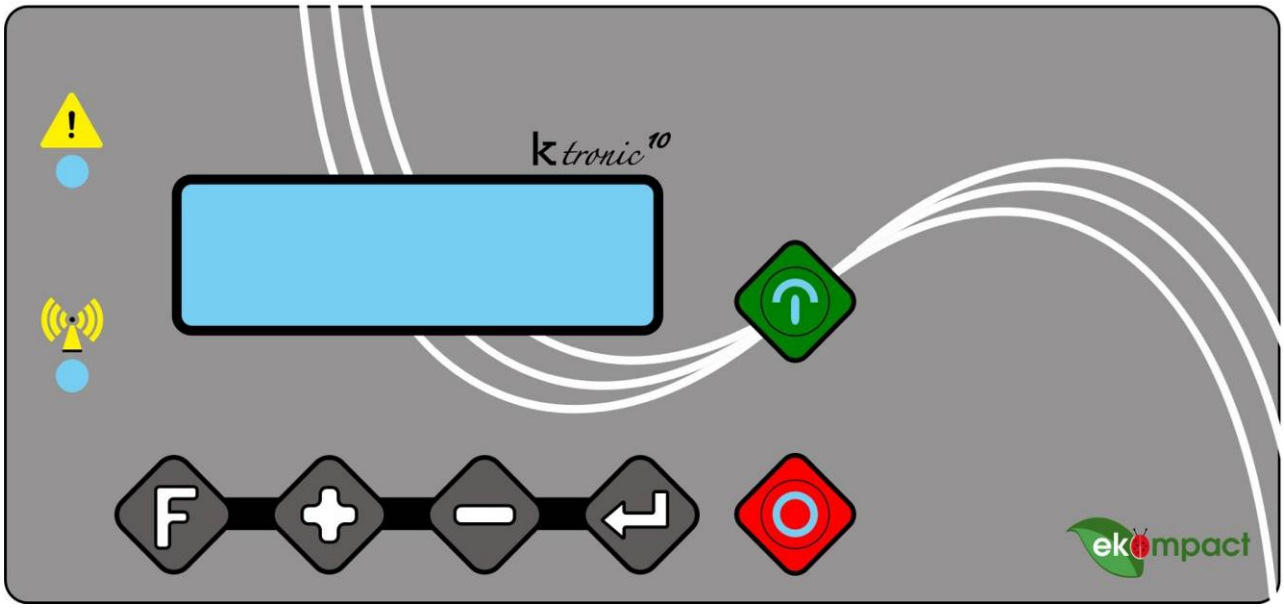
WARNING!
Before performing any operation involving draining or topping up compressor oil, unplug the compressor and wait until the system has reached atmospheric pressure.
<u>Use adequate protection when handling lubricants.</u>

8 INSTRUCTIONS FOR THE USER

8.1 DESCRIPTION OF THE CONTROL DEVICES KTRONIC10

ELECTRONIC CONTROLLER

Ktronic10



8.1.1 BUTTON LAYOUT KTRONIC10

START BUTTON

Pressing without alarms starts the compressor

STOP BUTTON

When pressed, this button stops the compressor after a set period of time

ALARM WARNING

Indicator LED light INTERMITTENT (3 flash + pause) => MAINTENANCE SERVICE
Indicator LED light FLASHING (1flash + pause) => ALARMS IN PROGRESS
Indicator LED light PERMANENT => IS IN PROGRESS REMOTE CONTROL
Indicator LED light OFF => STANDART WORK

REMOTE CONTROL

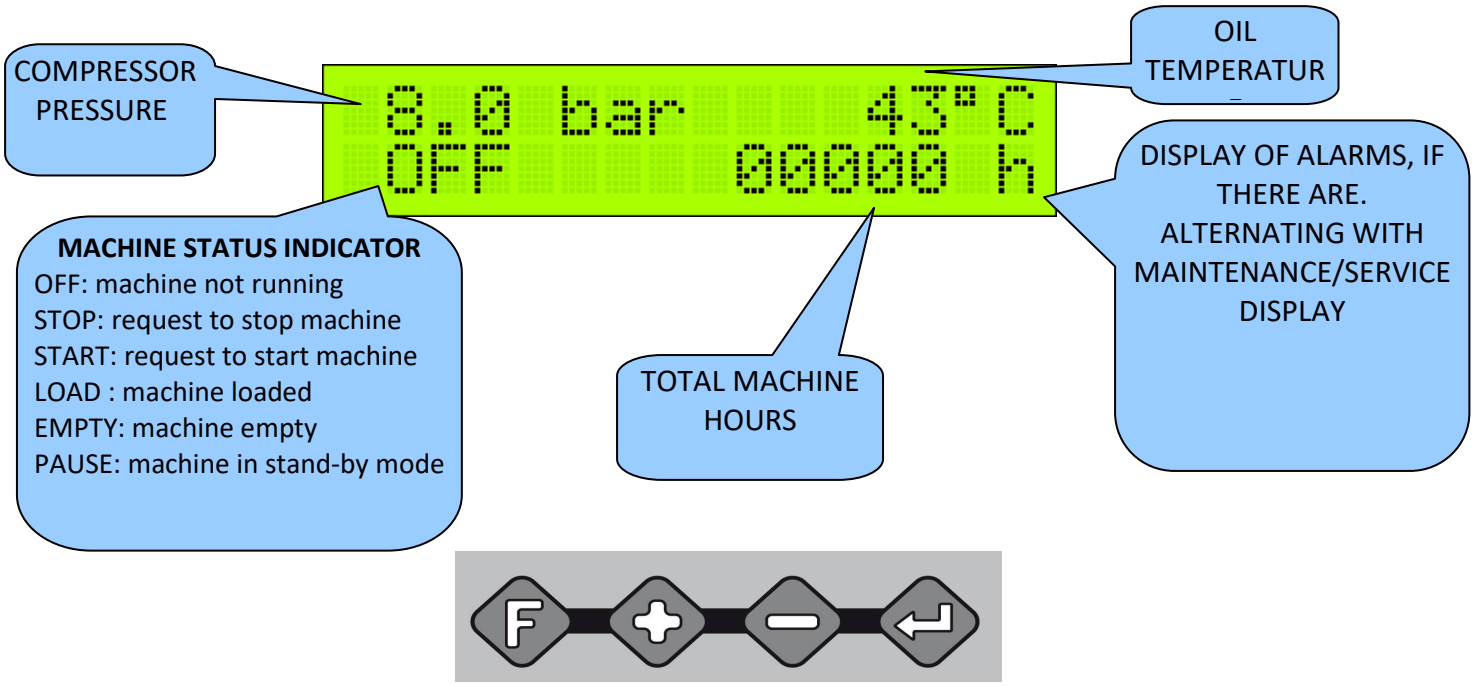
Indicator LED light ON = REMOTE CONTROL IN PROGRESS

8.1.2 ALARMS LIST KTRONIC10

TYPE OF ALARM	DESCRIPTION
"ALLARME NTC > " "NTC alarm"	Temperature probe failure
"ALTA T. OLIO" "OIL HIGH TEMP.AL"	T.MAX setting exceeded
"BASSA T. OLIO" "OIL LOW TEMP."	T. MIN setting exceeded
"TERMICO COMPRES. O ALLARME INVERTER "MOTOR TH. SWITCH or INVERTER FAULT "	Main motor thermal relay setting exceeded or global INVERTER ALARM
"TERMICO VENTIL." "FUN TH. SWITCH AL"	Electric fan thermal relay setting exceeded
"ALLARME TRASDUT." "PRESSURE TRD AL."	Transducer failure
"EMERGENZA ATTIVA" "Emergency SWITCH"	Mushroom head emergency stop button pressed
"ANOMALIA FASI " "AC. Phase ERROR "	Phase sequence inverted
"ALLARME SISTEMA!" "SISTEM ALARM !!!"	General alarm
"ALLARME ALTA PRESSIONE !" "HIGH PRESSURE ALARM !!!"	When pressure value is exceeded P.MAX + 1.0 bar

8.1.3 DESCRIPTION OF THE OPERATIONS TO BE PERFORMED KTRONIC10

MAIN PAGE



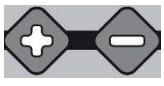
PROGRAMMING KEYPAD

Tasto:  **Multifunzione**

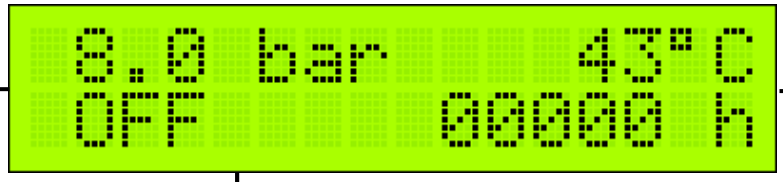
- RESET CURRENTLY SAVED ALARMS.
- SWITCHES FROM MAIN PAGE OF THE CURRENT MENU TO A SUBPAGE.
- IN DATA ENTRY MODE, THIS KEY SELECTS THE SETTING SUBFIELD IN MAINTENANCE MODE AND, IF KEPT PRESSED FOR 4 SECTIONS, CANCELS AND RESETS THE TIME ON THE MAINTENANCE TIMER.
- WHEN PRESSED ON ANY PAGE, AFTER A 5 SECOND DELAY, IT RETURNS TO THE MAIN MENU.

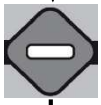
Tasto:  **Enter**

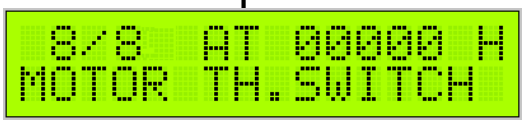
- THIS KEY ACTIVATES THE DATA CHANGE MODE AND SAVES THE MODIFICATIONS.
- WHEN IN DATA ENTRY MODE, THE VALUE TO BE MODIFIED FLASHES ON THE SCREEN.
- IF THE PAGE SELECTED HAS SEVERAL FIELDS THAT CAN BE MODIFIED, USING  MAKES IT POSSIBLE TO MOVE BETWEEN FIELDS.

Tasti: 

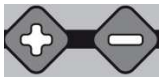
- NORMALLY USED IN DATA ENTRY MODE TO CHANGE PAGE.
- THESE KEYS ARE USED TO MODIFY THE SELECTED VALUE, KEEPING THEM PRESSED FOR MORE THAN 1 SECOND AUTOMATICALLY INCREASES OR DECREASES THE VALUE (RAPID MODIFICATION).



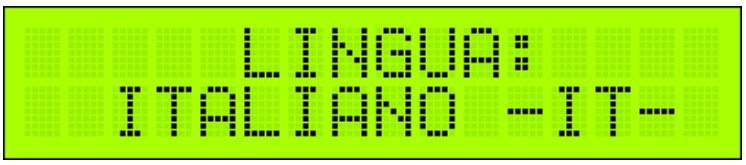




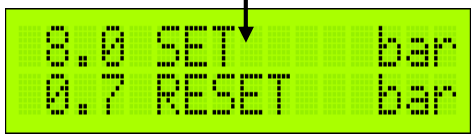
ALARMS HISTORY PAGE 8/8
SCROLL HISTORY USING



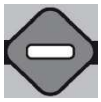
to continue scrolling through the screens



language available



Description of pressure calibration for Set (STOP) and Reset (START)



Selectable by client. If power limiter = 0 there are no KW limits

8.2 DESCRIPTION OF THE CONTROL DEVICES KTRONIC100

ELECTRONIC CONTROLLER

Ktronic100

8.2.1 BUTTON LAYOUT KTRONIC100

START BUTTON

if there is no active alarm, pressing this button starts the compressor

STOP BUTTON

when pressed, this button stops the compressor after a set period of time

BUTTON SETTINGS

Accesses the menu of the compressor settings

BUTTON MAINTENANCE

Enters menu verification and maintenance settings

BUTTON ALARMS
Access the list of alarms consultation

HOME BUTTON
Back to the main screen

BUTTON INDICATORS
Accesses to the operating parameters screen

BUTTON HISTORY
Accesses the history screen operation of the compressor

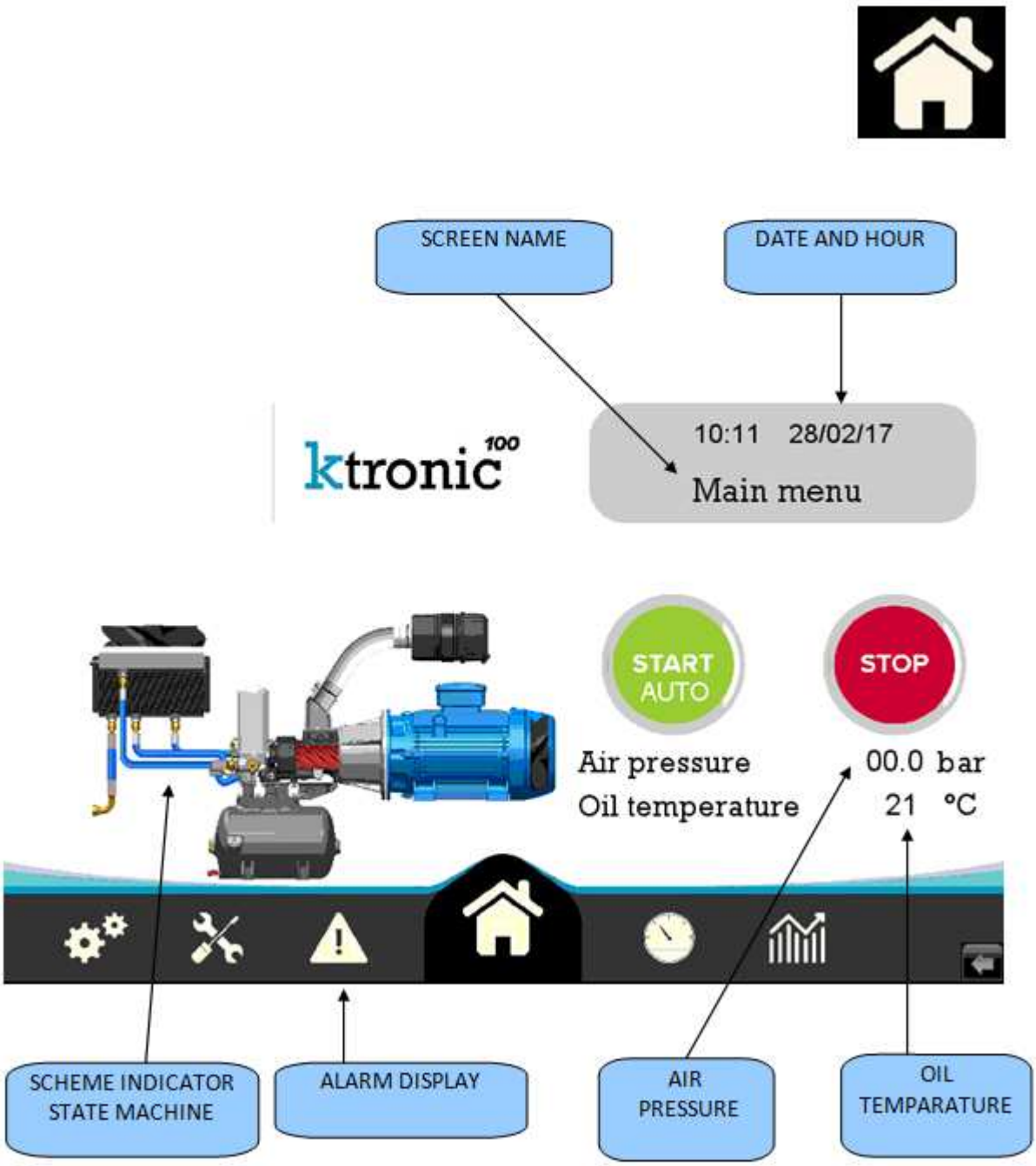
BUTTON TIMER
Access the system timer and related schedules

8.2.2 ALARM LIST KTRONIC100

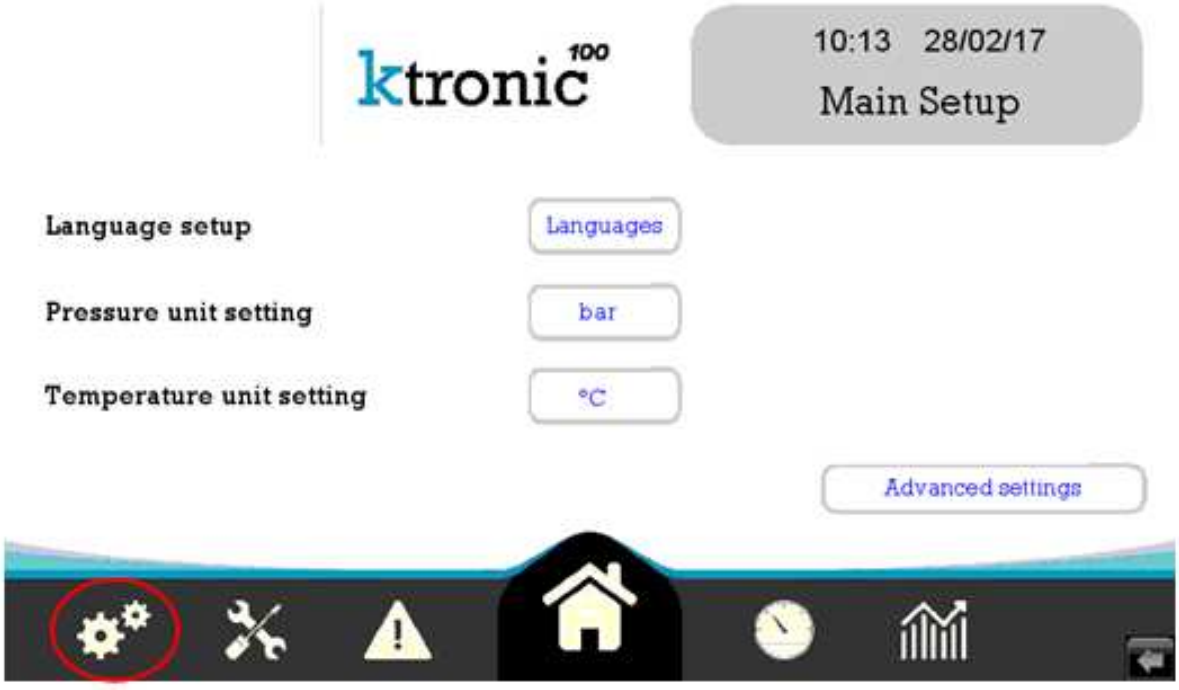
TYPE OF ALARM	DESCRIPTION
"NTC alarm"	Faulty temperature sensor
"OIL HIGH TEMP.AL"	Exceeded the value set T. MAX
"OIL LOW TEMP."	Exceeded T. MIN value set
"MOTOR TH. SWITCH "	Exceeding the value set on the main motor thermal relay
"FUN TH. SWITCH AL"	Exceeding the set value on the thermal electroventilator relay
"PRESSURE TRD AL."	Faulty transducer
"Emergency SWITCH"	Emergency push inserted
"AC. Phase ERROR "	Phase order reversed
"SISTEM ALARM !!!"	Generic alarm
"HIGH PESSURE ALARM !!!"	On exceeding the value set P.max + 1.0 bar

8.2.3 DESCRIPTION OF THE OPERATIONS TO BE PERFORMED KTRONIC100

MAIN PAGE



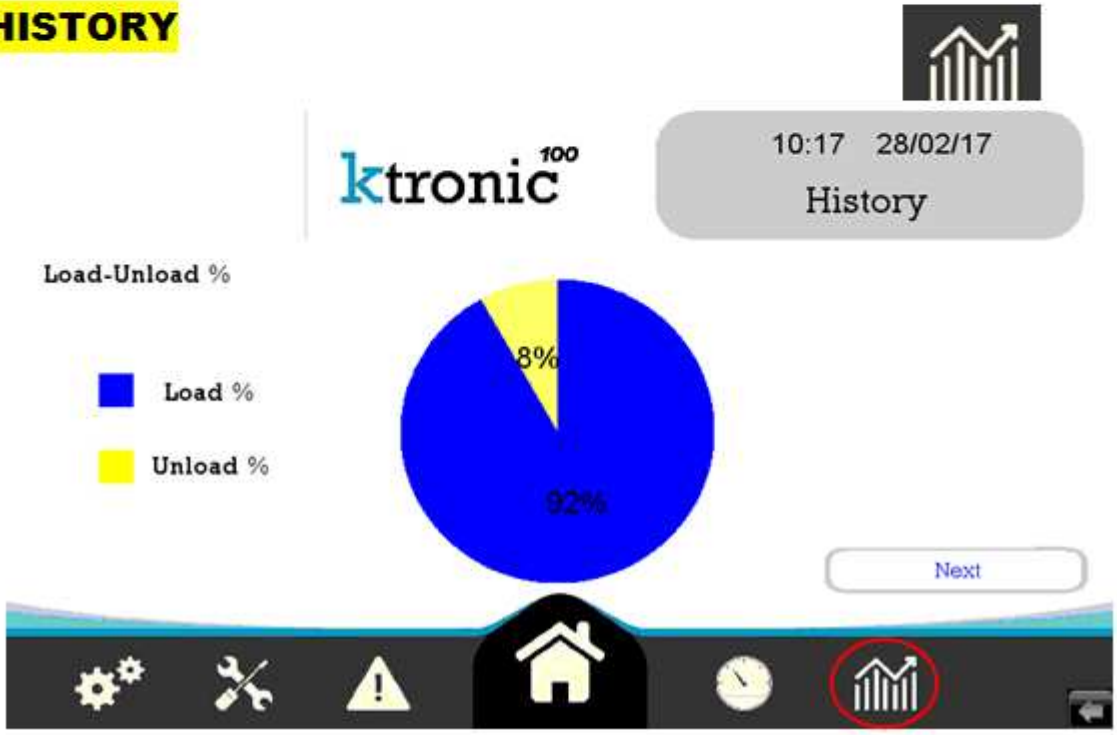
MAIN SETUP



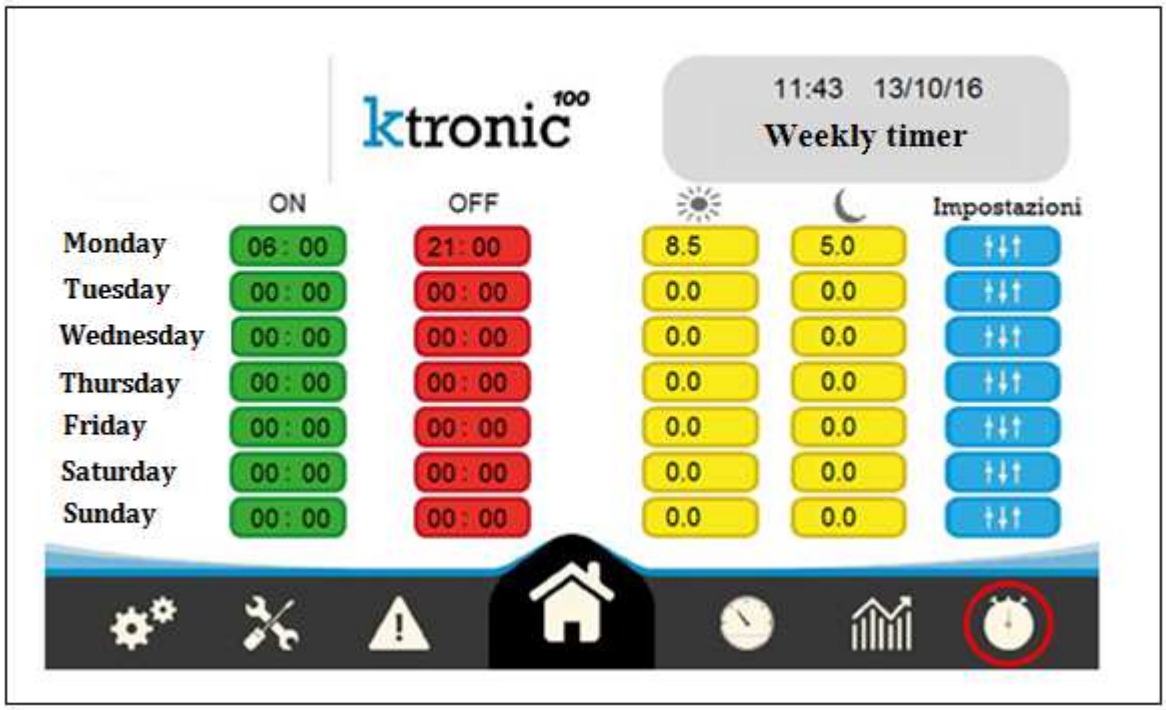
MAINTENANCE

INDICATORS

HISTORY



WEEKLY TIMER



8.3 START, STOP AND EMERGENCY STOP FUNCTIONS

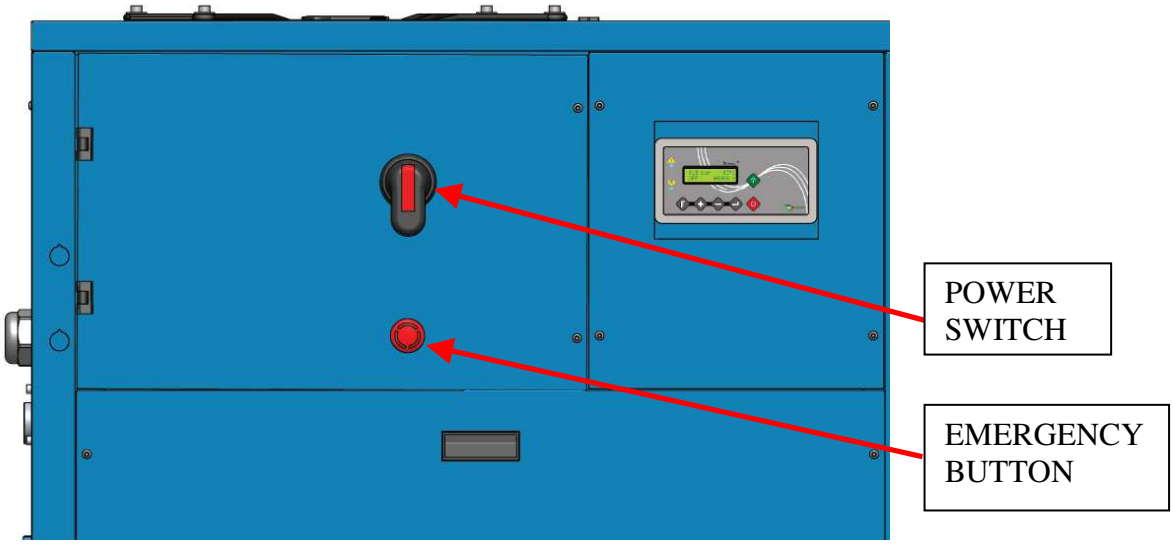


Figure 11

START See chap. 8.1.1 KTRONIC10, 8.2.1 KTRONIC100
STOP See chap. 8.1.1 KTRONIC10, 8.2.1 KTRONIC100

EMERGENCY STOP

Achieved by pressing the **Emergency button** (see figure 11).

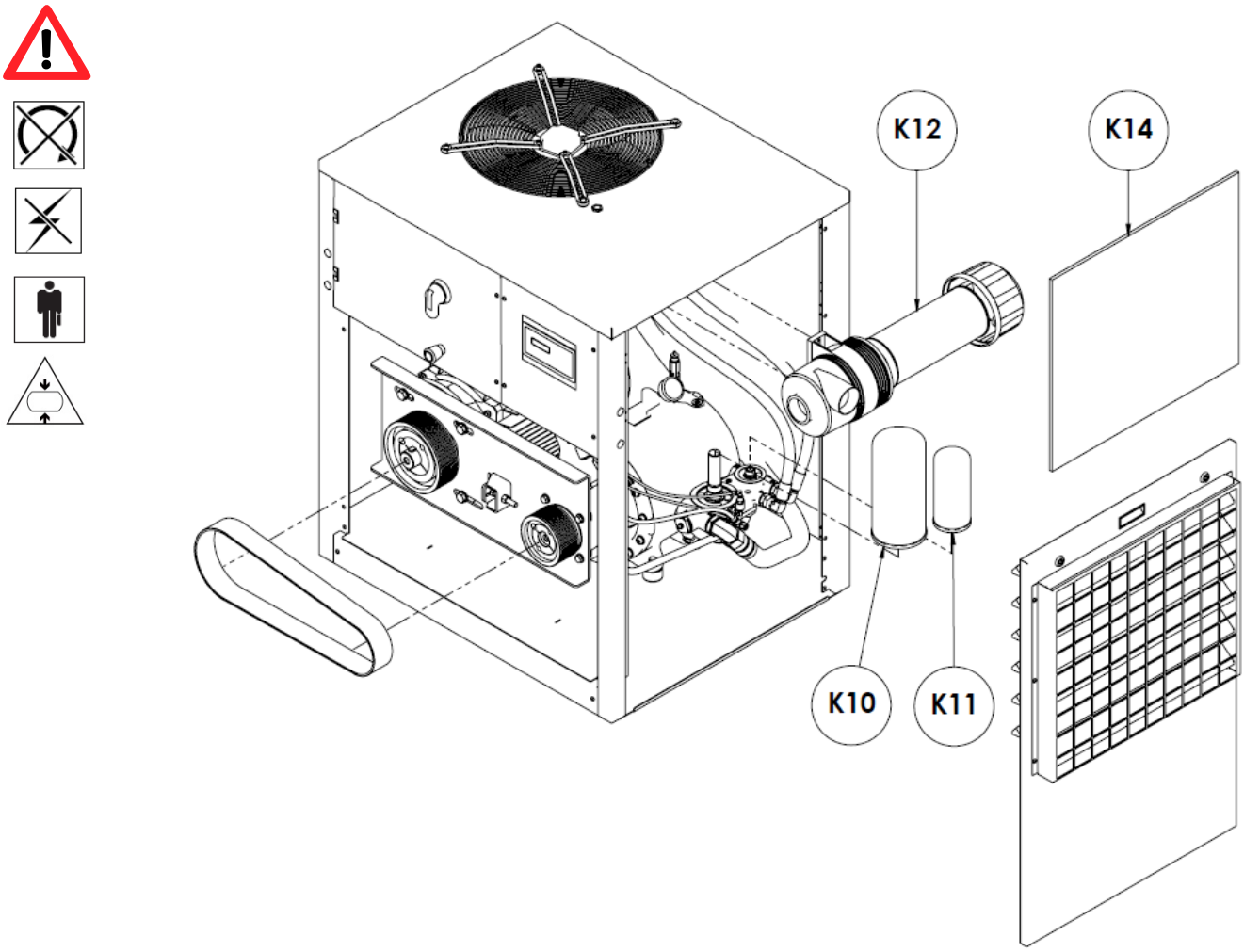
This mechanically engaged button immediately stops the compressor if an emergency arises. When this button is engaged, the compressor cannot perform any operation.

8.4 RESET CONDITIONS

To reset emergency button functions, turn the button clockwise; this will enable the compressor to start.

9 COMPRESSOR MAINTENANCE

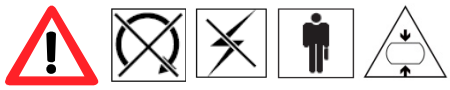
9.1 SCHEDULED MAINTENANCE



CAUTION!!! USE ONLY ORIGINAL SPARE PARTS!!!

CAUTION!!! HOT PARTS INSIDE!!!

9.1.1 BELT TENSIONING



Make certain that the pulleys installed on the shaft are properly aligned with each other and that the belts are correctly tightened.

For belt drive, we recommend using a “POLY V” belt.
The recommended tension values are given in the table below.

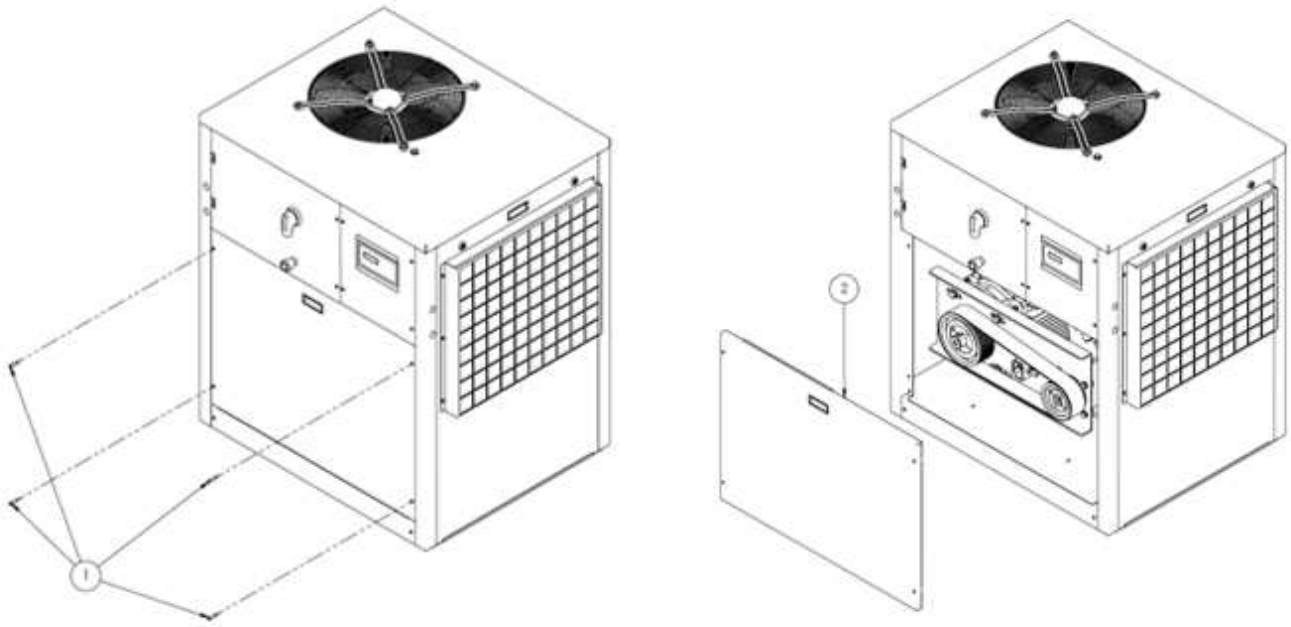
MODEL	INITIAL TENSION WITH NEW BELT		BELT TENSION ALREADY TESTED OR RETENSIONING	
	N	Hz	N	Hz
KV 25 – 8bar-	1084	115	723	94
KV 25 – 10bar-	1079	117	719	95
KV 25 – 13bar-	1111	115	740	94
KV 30 - 8bar-	1699	70	1133	57
KV 30 -10bar-	1732	71	1155	58
KV 30 -13bar-	1719	73	1146	59
KV 40 -8bar-	2032	79	1355	64
KV 40 -10bar-	2013	77	1342	63
KV 40 -13bar-	2191	80	1461	65

CAUTION!!!
THE BELT CAN BE TIGHTENED USING AN OPTIKRIK BELT TENSION GAUGE (see chap. 9.1.2)

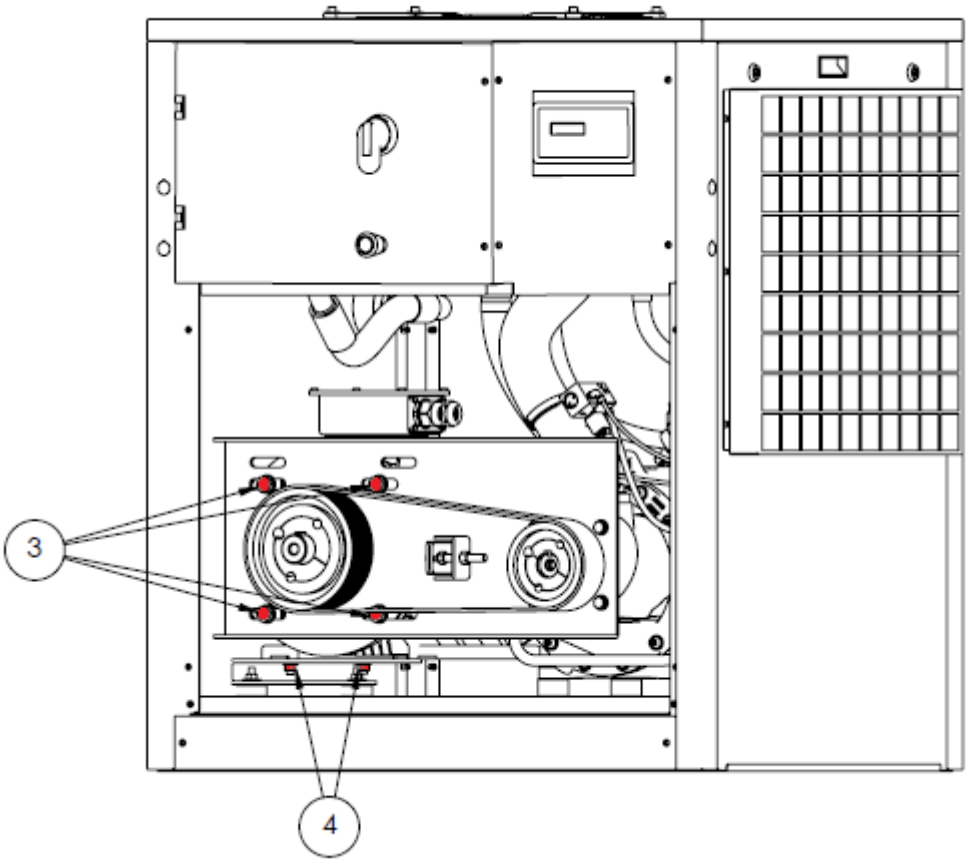
CAUTION!!!
MAKE CERTAIN THAT THE PULLEYS INSTALLED ON THE SHAFT ARE PROPERLY ALIGNED WITH EACH OTHER AND THAT THE BELTS ARE CORRECTLY TIGHTENED.

CAUTION!!!
EXCESSIVE BELT TENSION DECREASES THE LIFE OF THE SCREW BEARINGS.
WHEN THE MACHINE IS RUNNING, THE DRIVE MUST BE PROTECTED TO PREVENT INJURY.

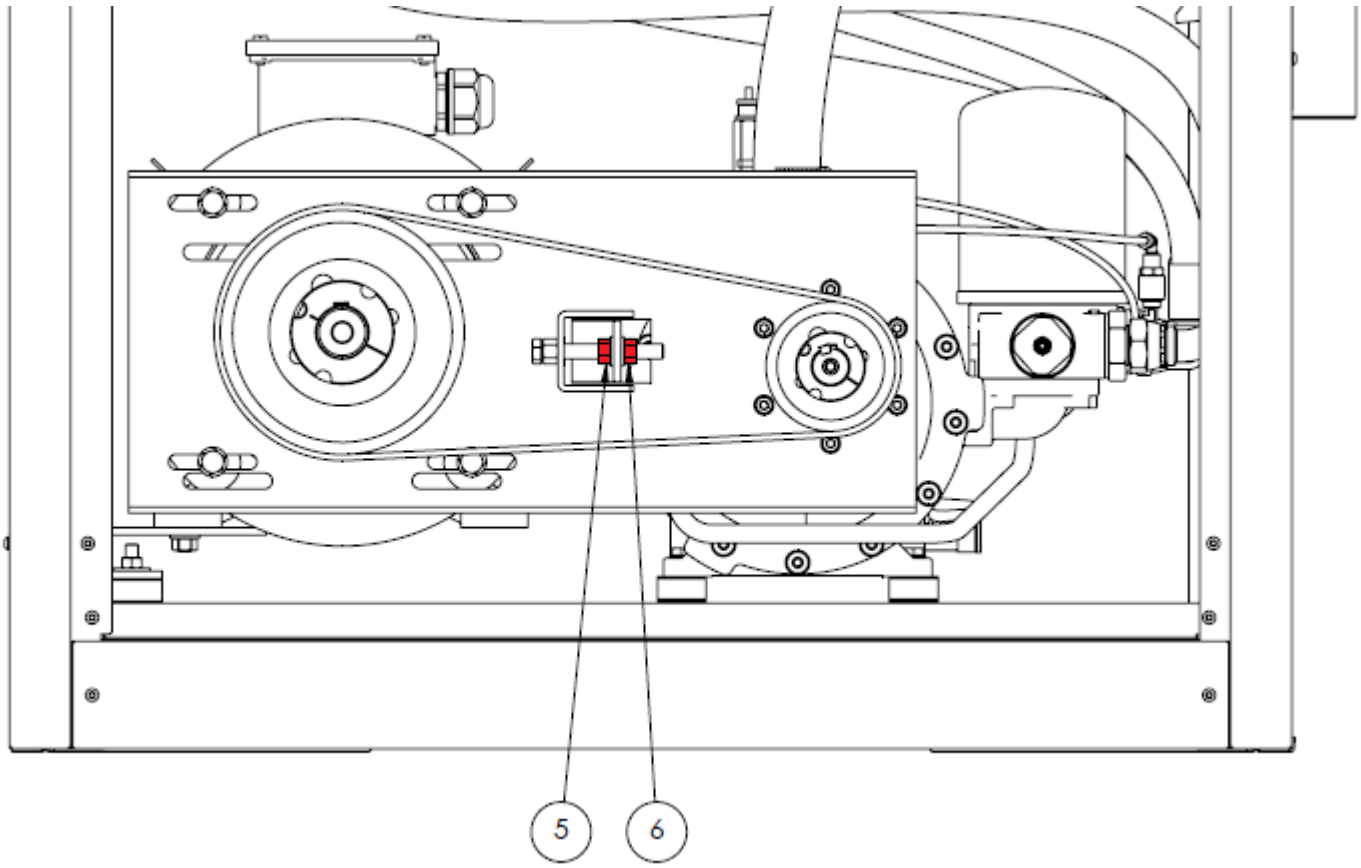
1- Loosen the screws (1) and open the panel (2)



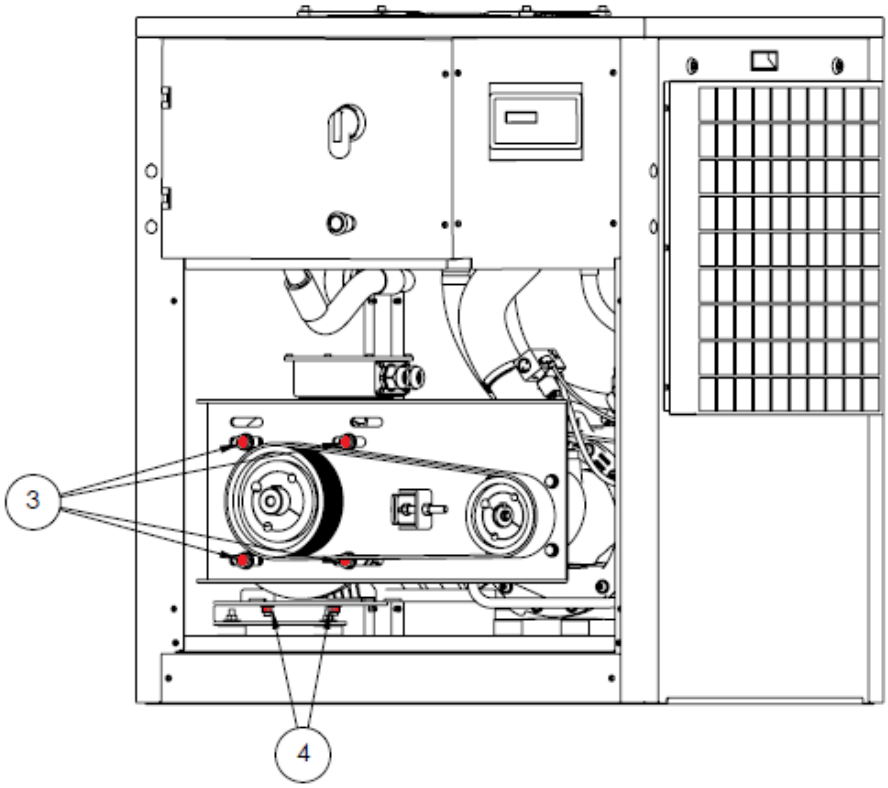
2- Loosen the electric motor fixing screws (3) and (4).



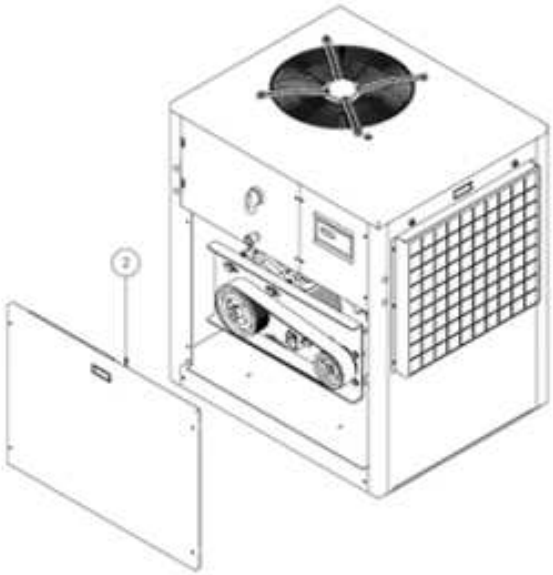
3- Unscrew the nuts (6) and (5) to reduce the tension and to make it possible to remove the belt. Once replaced, screw the nut (6) to increase the tension and to reach the value shown on page. 51. Once the correct tension is achieved, tighten the nut (5).

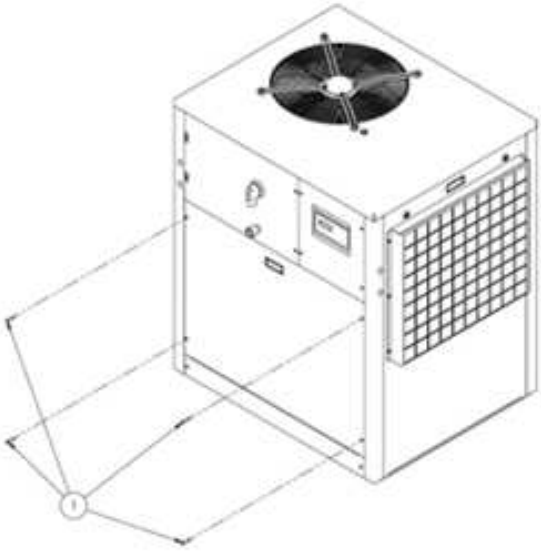


4- Tighten the screws (3) with a torque of 198 Nm for the KV 30-40 and 79Nm for the KV 25 and then the screws (4) with a torque of 79Nm.



5- Close the panel (2) and tighten screws (1).





9.1.2 USING AN OPTIKRIK TENSION GAUGE

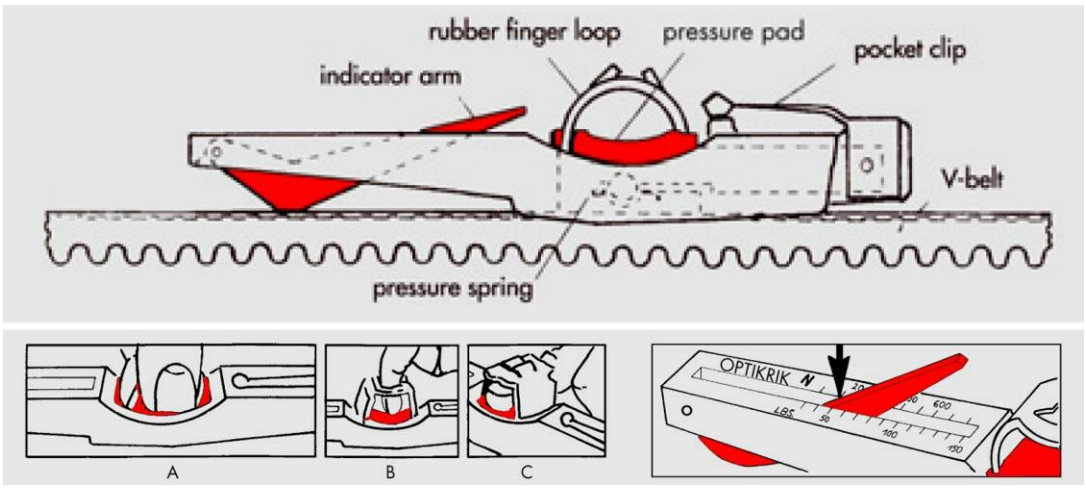


Figure 13

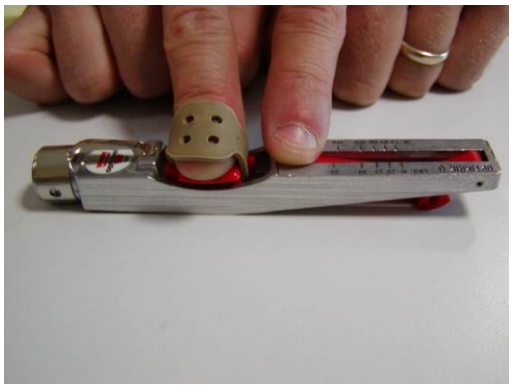


Figure 14

Figure 15

1-Figure 13 (A, B or C) shows the three correct ways to grip the gauge so that the pressure is applied only on the *pressure pad*.

2-Reset the *indicator arm* by lowering it completely as indicated in figure 14.

3-Position the tension gauge on the taut side of the belt, with the part resting of the *indicator arm* set at the mid-point between the pulleys, as indicated in figure 15.
Check gauge alignment ensuring that it is parallel with the belt branch.

4-Press slowly on the *pressure pad*.
When you hear a “click”, immediately stop and remove the tension gauge; this must be done very carefully to prevent compromising the measurement reading taken by the *indicator arm*.

5-Read the tension on the indicator arm as shown in figure 13.

9.1.3 SUCTION PRE-FILTER MAINTENANCE

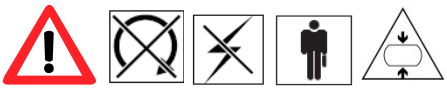


Figure 16

Remove the pre-filter panel so it can be cleaned or replaced.

CLEAN THE PANEL WITH A JET OF AIR OR WASH IT WITH WATER. DO NOT USE SOLVENTS.

THE PRE-FILTER PANEL MUST BE CLEANED OR REPLACED WITH THE MACHINE OFF AND WITH THE UNIT AT ATMOSPHERIC PRESSURE.

OIL LEVEL CHECKS AND TOP UPS MUST BE PERFORMED WITH THE MACHINE OFF AND WITH THE UNIT AT ATMOSPHERIC PRESSURE.

THE OIL REMOVED MUST BE DISCARDED IN COMPLIANCE WITH CURRENT LAW.

IN SEVERE WORKING ENVIRONMENTS (e.g.: PARTICULARLY DUSTY WORK SITES), THE MAINTENANCE INTERVAL MUST BE SHORTER.

INCORRECT MAINTENANCE OF THE OIL FILTER, AIR FILTER AND OIL SEPARATOR CAN DAMAGE THE UNIT.
LEAVING CARTRIDGES IN OPERATION FOR LONGER THAN THE INDICATED TIME CAN DAMAGE THE COMPRESSOR.

ALWAYS CAREFULLY COMPLY WITH THE SAFETY WARNINGS REGARDING USE OF THE MACHINE. THIS IS ABSOLUTELY ESSENTIAL.

MAINTENANCE MUST BE CARRIED OUT BY SPECIALISED PERSONNEL. ALWAYS FOLLOW CURRENT ACCIDENT PREVENTION STANDARDS (USE ADEQUATE PROTECTION).

9.1.4 REPLACING THE OIL FILTER

Perform all maintenance as described in this manual or following the indications provided by the retailer or Authorized Service Centre. Open the rear panel and remove the filter cartridge using the special spanner. Then replace the spent cartridge with a new one.

Before screwing down the filter cartridge, oil the gasket.
Manually screw down the new cartridge.

Figure 17

9.1.5 REPLACING THE OIL SEPARATOR FILTER

Replace the oil separator filter after the number of hours indicated in the manual or after checking its differential pressure. To do so, open the rear panel and remove the filter cartridge using the special spanner. Then replace the spent cartridge with a new one.

Before screwing down the oil separator cartridge, oil the gasket.
Manually screw down the new cartridge.

Figure 18

9.1.6 CHANGING THE OIL

Change the oil as indicated in the table point 9.1.9. Extending the number of hours before replacement depends on the type of oil used but in no case can oil be used for more than one year**.** If the compressor is not used frequently (a couple of hours a day), we recommend changing the oil every 6 months and periodically opening the oil drain cock to check for condensation residues.

When the oil drain cock is opened, oil starts flowing out of the screw assembly. Always keep on all necessary equipment to collect the oil.

Unscrew the oil filling cap on the oil separator tank and open the drain cock.
Once emptied, close the drain cock.
Then top up the oil until the right level is read on the window (see figure 19). Then tighten the oil filling cap once more.
After having replaced the oil and oil filter, run the compressor for about 10 minutes, turn it off and check the oil level. If necessary, top up.

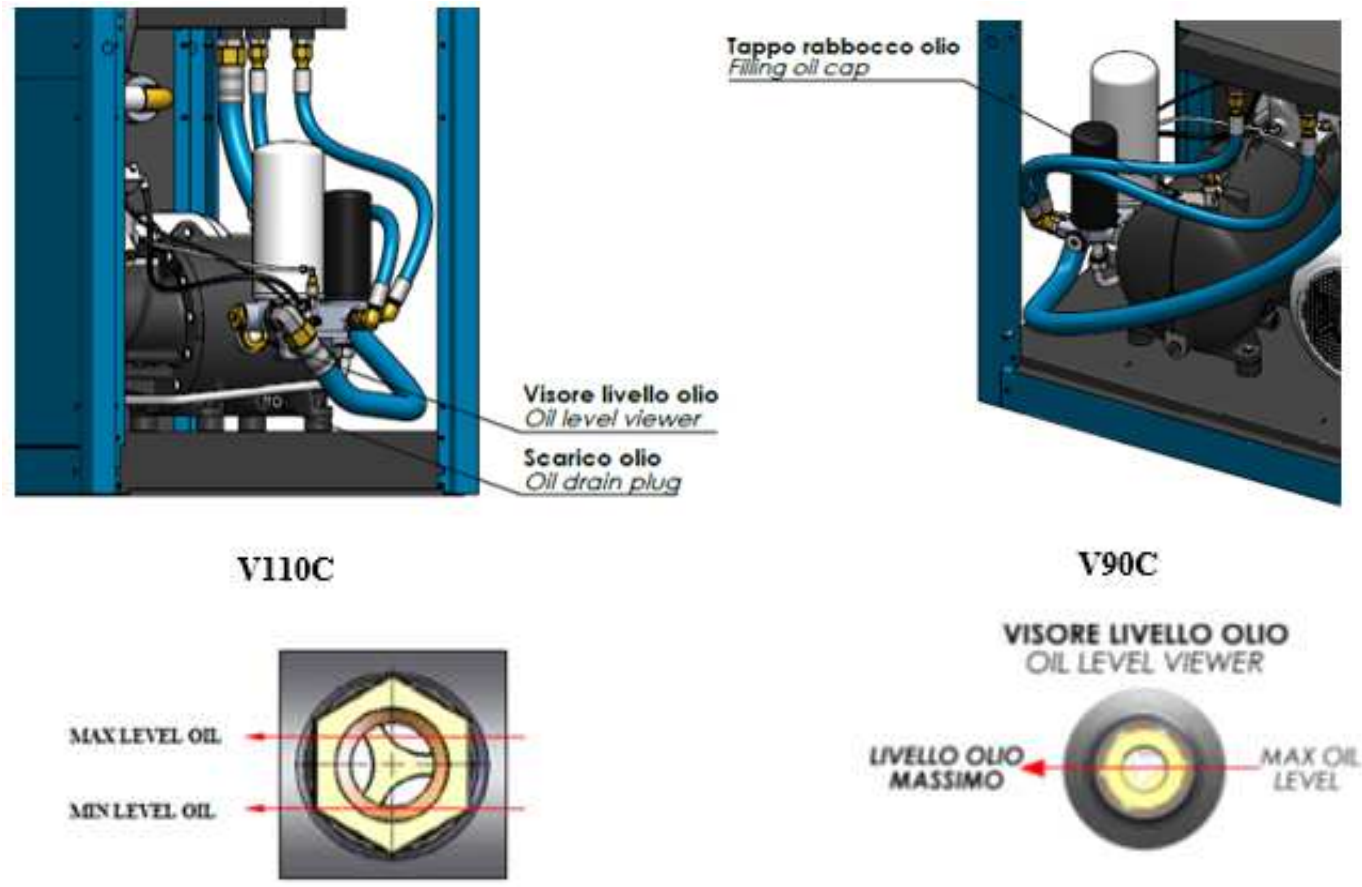


Figure 19

Never mix different types of oil. Make certain that the oil circuit is completely empty before performing any maintenance. Always replace the filter at each oil change.

9.1.7 REPLACING THE AIR FILTER

Replace the cartridge following the indications in the maintenance table; in dusty environments we recommend replacing the filter early, **contact an Authorized Service Centre for information.** To replace the cartridge, unscrew the upper lid. Always clean the container paying particular attention not to let any material fall into the suction valve.

Figure 20

9.1.8 BEARINGS MOTOR LUBRIFICATION

The motors must be relubricated at regular intervals, as indicated in the table chap. 9.1.9 with the following procedure: Remove the closing caps of the grease drain (it is located at 180° with respect to the greaser) as well as any protection of the greaser; always clean the greaser and pour the grease by using the special pump, turning the rotor to permit the thorough distribution of the grease on the bearing. Introduce the quantity of advised grease (see table) and remove the lubrication pump. Then start the motor and leave it going for 3-5 minutes with grease drain open to permit the exceeding grease to go out. Switch the motor off, close the drain cap and place the greaser cover back.

LUBRICATION INTERVALS FOR MOTOR WITH REGREASING DEVICES (HOUR)							
IEC size	**Giri/min – rpm**						
	3600	**3000**	**1800**	**1500**	**1000**	**750**	**Grease Qty. (g)**
180	6000	8500	13000	16000	19500	23000	40
200	4000	6000	11000	13000	17000	21000	50

9.1.9 MAINTENANCE SCHEDULE

The table below reports the compressor maintenance schedule.
The hours of operation indicated in the table refer to optimal use of the machine and can thus vary depending on the work site and number of cycles.

The **Manufacturer** recommends keeping a log of the maintenance works performed on the compressor.

MS: Maintenance staff **SP: Service and distribution partners ITALYCO**

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Compressor unit	Visual	Daily	General Inspection unit	MS

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Oil level	Control	Weekly	level Control	MS
Prefilter air intake	Control		General control and cleaning (if necessary)	
Oil radiators / air	Control		Cleaning (if necessary) of the radiators from various material / powder / oil residues, etc.	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Oil filter	Replacement	500	Replacing the oil filter and oil recovery level	SP
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	
Pipes, fittings, components	Control		Visual inspection leaks oil / air	
Belt drive	Control		belt tensioning control and eventual	
Oil cooler	Control		Control of the cooling system efficiency and / temperature	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement	2000	filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Replacing Oil (type Mineral)	Replacement		lubricating oil Substitution	
Main electric motor bearings	Control and greasing		Grease the motor bearings with grease specification	
Belt drive	Control		belt tensioning control and eventual	

Maintenance with mineral oil every 2000 hours
To be repeated at 6000 hours – 10000 hours -14000 -18000 -22000 hours – 26000 hours – 30000 hours – 34000 hours -36000 hours – 38000 hours

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement	4000 or year	filter and pre-filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Oil replacement (type Minerale)	Replacement		lubricating oil Substitution	
Oil replacement (type Semi-synthetic /synthetic)	Replacement		lubricating oil Substitution	
Main electric motor bearings	Control and greasing		Grease the motor bearings with grease specification	
Belt drive	Control		belt tensioning control and eventual	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

Maintenance with semi-synthetic/synthetic oil every 4000 hours
To be repeated to 20000 hours -28000 hours -36000 hours

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement	8000	filter and pre-filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Oil replacement (type Minerale)	Replacement		lubricating oil Substitution	
Oil replacement (type Semi-synthetic /synthetic)	Replacement		lubricating oil Substitution	
Suction regulator	**Revision**		**Revision vacuum controller with dedicated spare parts kit**	
Minimum air pressure regulator	**Revision**		**Revision minimum air pressure controller with dedicated spare parts kit**	
Thermostatic oil circuit regulator	**Revision**		**Revision oil thermostatic controller with dedicated spare parts kit**	
Main electric motor bearings	Control and greasing		Grease the motor bearings with grease specification	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement	12000	filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Replacing Oil (type Mineral)	Replacement		lubricating oil Substitution	
Replacing Oil (type semi-synthetic/ synthetic)	Replacement		lubricating oil Substitution	
Main electric motor bearings	Control and greasing		Grease the motor bearings with grease specification	
Belt drive	Replacement		Substitution of the belt and its tension	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement	16000	filter and pre-filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Oil replacement (type Mineral)	Replacement		lubricating oil Substitution	
Oil replacement (type synthetic)	Replacement		lubricating oil Substitution	
Suction regulator	**Revision**		**Revision vacuum controller with dedicated spare parts kit**	
Minimum air pressure regulator	**Revision**		**Revision minimum air pressure controller with dedicated spare parts kit**	
Thermostatic oil circuit regulator	**Revision**		**Revision oil thermostatic controller with dedicated spare parts kit**	
Oil Hoses / Air	**Replacement**		**Substitution of the flexible pipes of the oil circuits and air**	
Direct drive	Revision		Substitution of the ring damper in the drive coupling and coupling occurs	
Main electric motor bearings	Control and greasing		Grease the motor bearings with grease specification	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement	24000	filter and pre-filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Oil replacement (type Mineral)	Replacement		lubricating oil Substitution	
Oil replacement (type synthetic)	Replacement		lubricating oil Substitution	
Suction regulator	**Revision**		**Revision vacuum controller with dedicated spare parts kit**	
Minimum air pressure regulator	**Revision**		**Revision minimum air pressure controller with dedicated spare parts kit**	
Thermostatic oil circuit regulator	**Revision**		**Revision oil thermostatic controller with dedicated spare parts kit**	
Belt drive	**Replacement**		**Substitution of the belt and its tension**	
Main electric motor bearings	**Replacement**		**Replacement of motor bearings (as shown in the table) and greasing with specific fat**	
Electric fan bearings	**Replacement**		**Replacing the motor bearings of the fan (as in the table) and greasing with specific fat**	
Oil Hoses / Air	**Replacement**		**Substitution of the flexible pipes of the oil circuits and air**	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control/ maintenance
Air filter	Replacement	32000	filter and pre-filter replacement	SP
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Oil replacement (type Mineral)	Replacement		lubricating oil Substitution	
Oil replacement (type synthetic)	Replacement		lubricating oil Substitution	
Suction regulator	**Revision**		**Revision vacuum controller with dedicated spare parts kit**	
Minimum air pressure regulator	**Revision**		**Revision minimum air pressure controller with dedicated spare parts kit**	
Thermostatic oil circuit regulator	**Revision**		**Revision oil thermostatic controller with dedicated spare parts kit**	
Direct drive	**Revision**		**Substitution of the ring damper in the drive coupling and coupling occurs**	
Belt drive	**Replacement**		**Substitution of the belt and its tension**	
Oil Hoses / Air	**Replacement**		**Substitution of the flexible pipes of the oil circuits and air**	
Main electric motor bearings	Control and greasing		Grease the motor bearings with grease specification	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

Component Verification	Maintenance Control Type	HOURS	DESCRIPTION OF OPERATION	Operator control / maintenance
Air filter	Replacement		filter and pre-filter replacement	
Oil filter	Replacement		Replacing the oil filter and oil recovery level	
Air separator filter/oil	Replacement		Changing the air / oil separator filter	
Oil replacement (type Mineral)	Replacement		lubricating oil Substitution	
Oil replacement (type synthetic)	Replacement		lubricating oil Substitution	
Group-pack smart lives	**General review**		**Full pack-smart lives Revision General**	
Seal SCREW motor side	**Revision**	40000	**Replacing oil seal of the main screw shaft with spare parts kit for**	SP
Direct drive	**Revision**		**Substitution of the ring damper in the drive coupling and coupling occurs**	
Belt drive	**Replacement**		**Substitution of the belt and its tension**	
Main electric motor bearings	**Replacement**		**Replacement of motor bearings (as shown in the table) and greasing with specific fat**	
Electric fan bearings	**Replacement**		**Replacing the motor bearings of the fan (as in the table) and greasing with specific fat**	
Oil Hoses / Air	**Replacement**		**Substitution of the flexible pipes of the oil circuits and air**	
Electric / remote control switch panel	Control and tightening		Terminals main electrical panel terminals and contactors star / delta	

9.2 UNSCHEDULED MAINTENANCE

Unscheduled maintenance must be performed by an Authorized Service Centre.

For any information, please log onto our website **www.italyco.net**

For any clarifications you may require, contact our **customer services department** or your area **retailer**.

10 TROUBLESHOOTING

Problem	Cause	Resolution
High oil temperature limit has tripped causing machine to stop.	Low oil level Too high environmental temperature Air oil exchanger clogged Temperature probe failure	Top up oil level and check that exchanger is clean and the electric fan is functioning properly. Check environmental temperature parameters. Replace temperature probe.
Motor thermal protection has tripped causing machine to stop. Main motor overloaded.	Low line voltage. Phase missing. High oil separator pressure.	Make certain that electric power supply is correct. Check that the 3 power phases are at approximately the same value and that the cables are firmly secured to the terminal. Check that the cables are not damaged. Make certain that the main motor ventilation is free of any fouling or foreign objects. If the motor is running in two phases, have it checked by a qualified technician. If necessary, have the motor repaired or replaced. The oil separator differential pressure is above 1.0 bar causing high system absorption. Have the unit checked by qualified personnel. Environmental temperature too high: air the room. To start up the machine again, reset it using the special button on the control panel.
Fan motor or electric cooling fan motor thermal protection has tripped causing the machine to stop.	The thermal protection of the electric fan motor has tripped. High power absorption. High temperature.	Make certain that electric power supply is correct. Make certain that the 3 power phases are at approximately the same value. Make certain that the power cords are firmly tightened to the terminal. Make certain that the power supply cords are not damaged. Make certain the cooling fan air intake grid is free of any fouling or foreign objects. If the motor is running in two phases, have it checked by a qualified technician. If necessary, have the motor repaired or replaced. Magnetothermal switch failure, fuse blown, replace the damaged fuse.

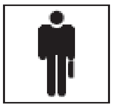
Problem	Cause	Resolution
High pressure safety has tripped causing the machine to stop.	The pressure exceeds the alarm set point. Transducer does not detect pressure properly.	Check line pressure, vent pressure and return to operating set point.
Low temperature safety has tripped causing machine to stop.	Environmental temperature below the electronic controller setting.	In this phase, if the start button is pressed intermittently, the machine starts in STAR mode and the temperature should return to above the setting. As soon as it does, the machine will start running again in automatic mode. Check the environmental temperature and, if necessary, use a heating resistance on the oil circuit. Contact an Authorized Service Centre.
Compressor runs but does not charge.	Suction valve does not open. Auxiliary power disconnected, solenoid valve fuses blown.	Make certain that the transducer is connected both electrically and pneumatically. Check that the solenoid valve installed on the suction regulator is functioning properly. Possible check valve or minimum pressure valve failure. Contact an Authorized Service Centre. Check the fuses for the solenoid valve installed on the terminal inside the starter itself.
When starting up the unit for the first time, the machine does not start. Phase anomaly alarm.	The line phases are not correct.	Invert two power supply phases on the main switch. WARNING!!! UNPLUG THE MACHINE.
Oil leaking from air filter.	Oil level is too high. Suction valve defective.	Drain the oil until the correct level is reached. For the valve, contact an Authorized Service Centre.
Pressure relief safety valve vented.	During no-load operation the machine is not depressurized. Oil separator cartridge clogged.	Contact an Authorized Service Centre.
Excessive oil consumption.	Oil not suitable for the compressor operation. Air-oil separator cartridge spent or defective. Oil recovery viewer clogged. Oil level too high.	Replace oil, fill machine with the oil indicated by the manufacturer. Replace oil separator cartridge. Clean or replace oil recovery viewer. Top up oil until it reaches the level indicated in the manual.

11 COMMERCIAL PARTS, SPARE PARTS AND PERTINENT DOCUMENTATION

For any information, please log onto our website **www.italyco.net**

For any clarifications you may require, contact our **customer services department** or your area **retailer**.

12 APPENDIX



12.1 MAINTENANCE CHECK SHEET

MAINTENANCE CHECK SHEET

Operation hours	Prefilter panel		Air filter cartridge		Oil filter cartridge		Separator filter cartridge			Oil		Belt			Date	Sign
	Pulizia	Sostituzione	Pulizia	Sostituzione	Sostituzione		Differenza di pressione	Sostituzione	Controllo	Rabbocco	Sostituzione	Controllo	Tensionamento	Sostituzione		

WARNING!

- Never touch moving parts while the compressor is running.

- All compressor maintenance operations must be performed with the machine off (at environmental pressure and temperature) and with the unit unplugged.

- Maintenance must be carried out by qualified personnel. Always follow current accident prevention standards (use adequate protection).

The manufacturer reserves the right to make any modifications to the present manual it deems fit and to do so without prior notice.

The manufacturer is relieved of any responsibility for injuries and property damage caused by incorrect use of the compressor assembly, non-compliance or inadequate compliance with the safety criteria indicated herein, modifications (even minor modifications) and by tampering and use of non original spare parts.