HAMMER TOOLS

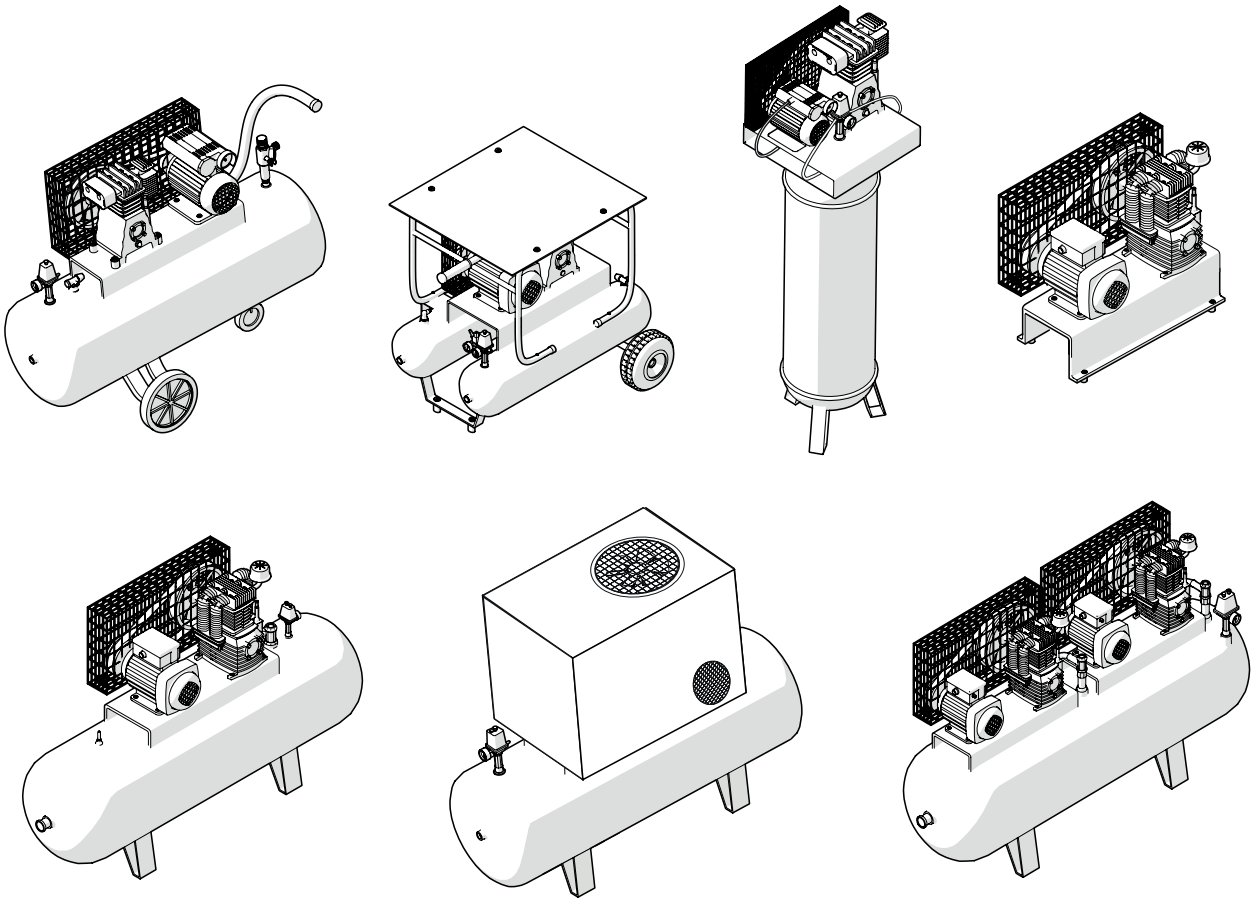
# HAMMER TOOLS

## OPERATING AND MAINTENANCE MANUAL

Piston compressors

English

**KK 4.0 / KK 5.5 / KK 7.5 / KK 7.5 P / KK 7.5 PV**



*01/2024 - REV. 02*

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# 1 : GENERAL INFORMATION

## 1.1 General Information

The compressor must only be used as indicated in this manual, which must be stored carefully in a known and easily accessible place, as it must follow the machine's entire operating life. Always indicate model and serial number for any request.

We ask you to carefully follow these operating instructions, which describe the possible uses and operation of your device.

**The manufacturer accepts no liability for damage to persons or property caused by incorrect or improper use of the device.**

The manufacturer reserves the right to make the necessary changes to the various models in order to comply with the technical standards in force.

In case of complaints, please contact your dealer's customer service department.



## 1.2 Manufacturer's data

| **Manufacturer:** | |
|---|---|
| Address: | |
| Telephone/Fax: | |
| E-mail | |
| WebSite | |

## 1.3 Service

Our service department is at your complete disposal to provide all the information you need to solve any problems that may arise. If you have any questions, please contact customer service or your local dealer. Only by using genuine spare parts can we guarantee the best performance of our compressors. The instructions given in the maintenance chapter should be strictly followed.

Before calling for assistance, get the name of the model

**The use of non-genuine spare parts will automatically invalidate the warranty.**

Fig. 1.1

**DEALER STAMP AND AUTHORISED SERVICE REFERENCE**

## 1.4 Introduction and Safety

**Please read the instructions in this manual carefully before using the device. This will help you familiarise with your new device.**

The best prevention for injuries is care and caution when using the device.

Observe the information provided by the plates of each type attached to the machine. Damaged plates must be replaced immediately.

Keep this document handy so that it can be consulted at any time and passed on to any subsequent owners.

**Please read the safety messages in the introduction to this manual and consider safety notes such as: "Caution", "Warning" and "Danger" in the text.**

| | |
|---|---|
|  | This symbol means: **NOTE**<br>This symbol is intended to highlight correct methods, procedures and behaviour to be adopted in order to use the product optimally. |
|  | This symbol means: **WARNING**<br>This symbol is intended to highlight safety information. Failure to follow these instructions may result in minor injuries or damage to equipment. |
|  | This symbol means: **CAUTION**<br>This symbol is intended to highlight safety information. Read it carefully. Failure to follow these instructions may result in death, serious injury or damage to equipment. |
|  | This symbol means: **DANGER**<br>This symbol is intended to highlight a dangerous situation for oneself and others. Read it carefully. Failure to follow these instructions will result in serious injury or death. |

## 1.5 Device identification

**Nameplate**

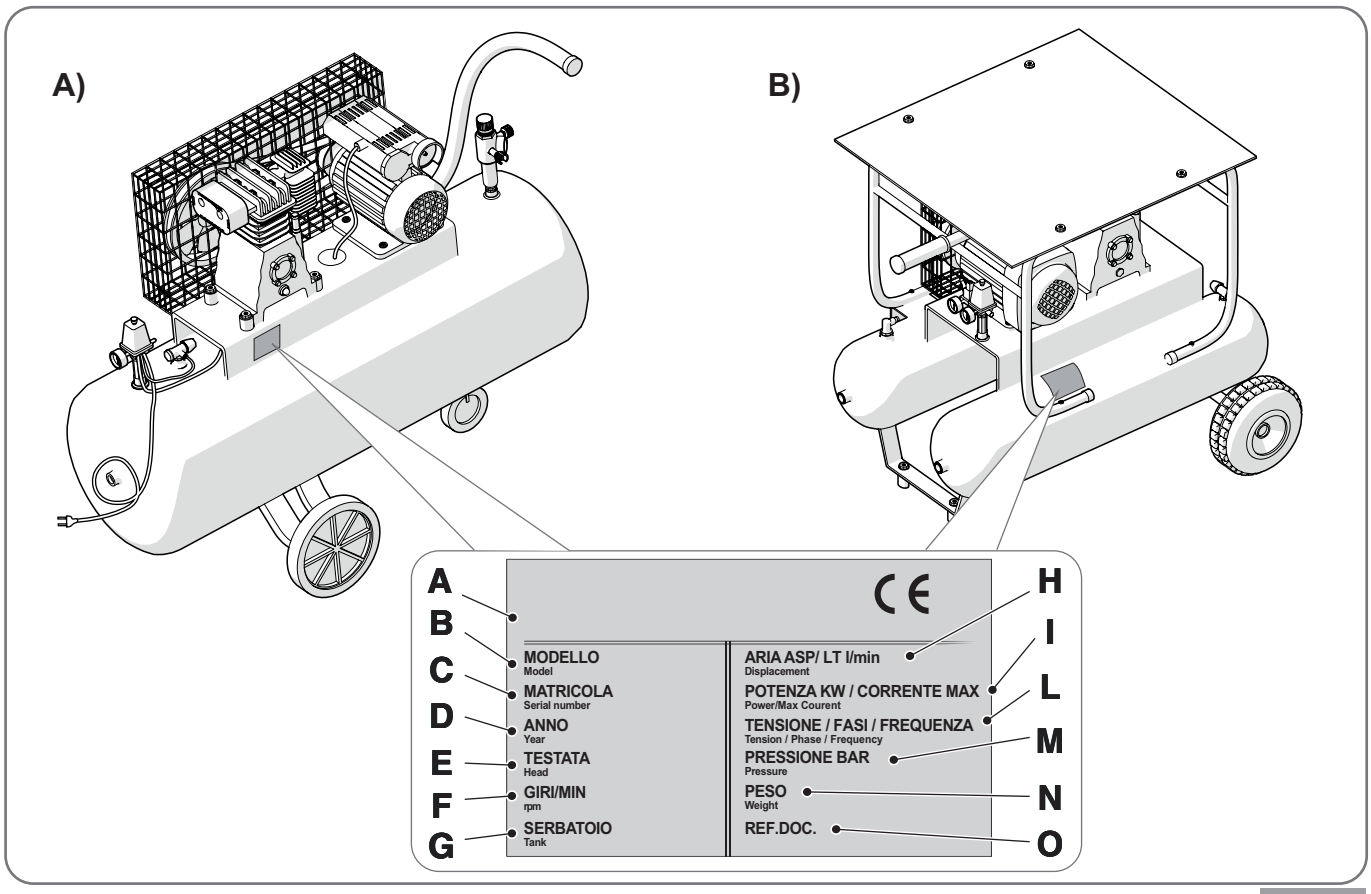



Fig. 1.2

The following data are stated on the identification plate:

A - Manufacturer's data
B - Model
C - Serial number
D - Year of manufacture
E - Head
F - RPM
G - Tank
H - Intake air (l/min)
I - Power (kW), Maximum current (A)
L - Voltage (V), Phases, Frequency (Hz)
M - Pressure (Bar)
N - Weight (kg)
O - Reference documents

| | |
|---|---|
| ⚠ | **WARNING:** Depending on the model, the plate is located either on the compressor base **A)**, or on the air tank **B)**. |

| | |
|---|---|
| ❗ | **NOTE:** It is advisable to write down the data and serial numbers of the product in order to have a ready reference in case of need. |

| | |
|---|---|
| ❗ | **NOTE:** For efficient service and spare parts service, always quote the data on this plate. |

**EC Declaration of Conformity**

The manufacturer of the equipment described herein, to which this declaration relates, declares under their sole responsibility that this equipment complies with the basic safety, health and protection requirements of the relevant existing EC directives and that the relevant test reports, in particular the EC declaration of conformity duly issued by the manufacturer or their authorised representative, are available for inspection by the competent authorities and can be requested through the vendor of the equipment.

**Location of safety decals**

| SYMBOL | MEANING | SYMBOL | MEANING |
|---|---|---|---|
| | **Read the User Manual carefully** | | **Be careful:** Hot surface |
| | **Do not inhale** | | **Be careful**: Live machine |
| | **Do not disperse in the environment** | | **Be careful:** Moving parts |
| | **Do not carry out work requiring authorised personnel** | | **Be careful:** Component or system under pressure. Completely discharge the pressurised air. |

**CAUTION:** Safety decals must never be removed from their original position. If, due to maintenance or deterioration, they should be removed or become illegible, they must be restored by applying them in the correct position as indicated.

**NOTE:** The models in your possession may differ from the pictures below.

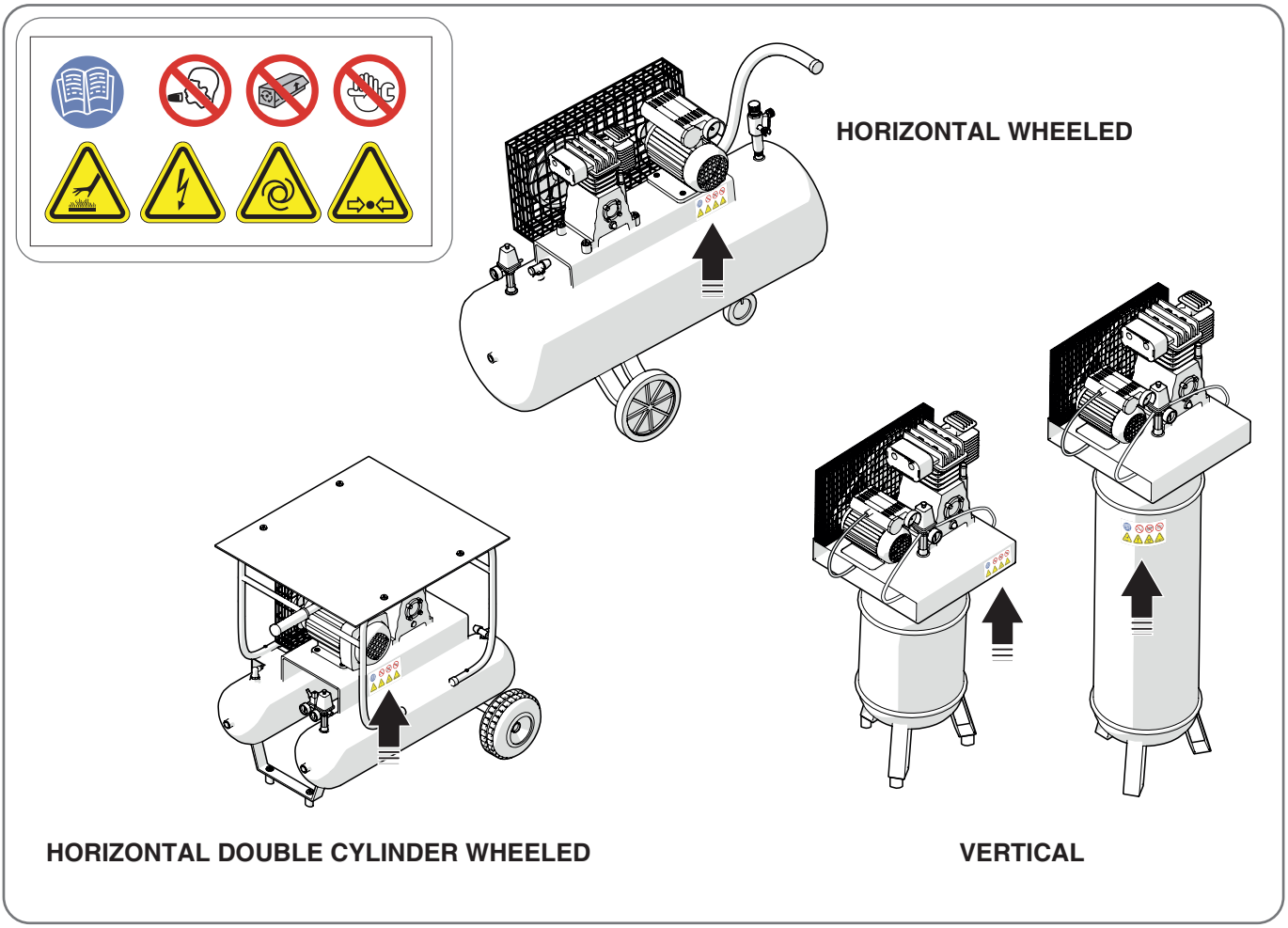
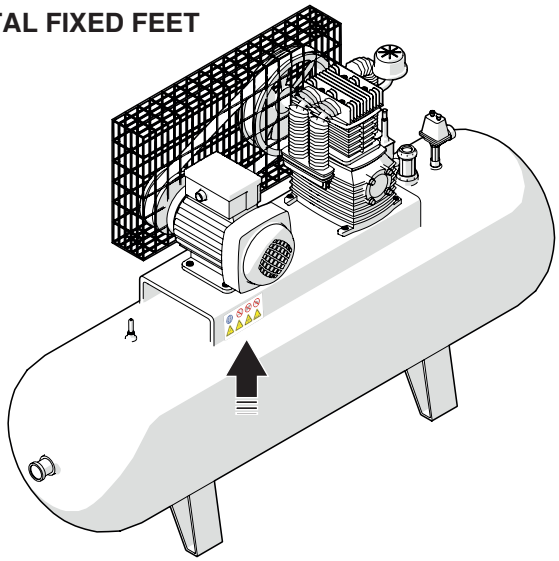
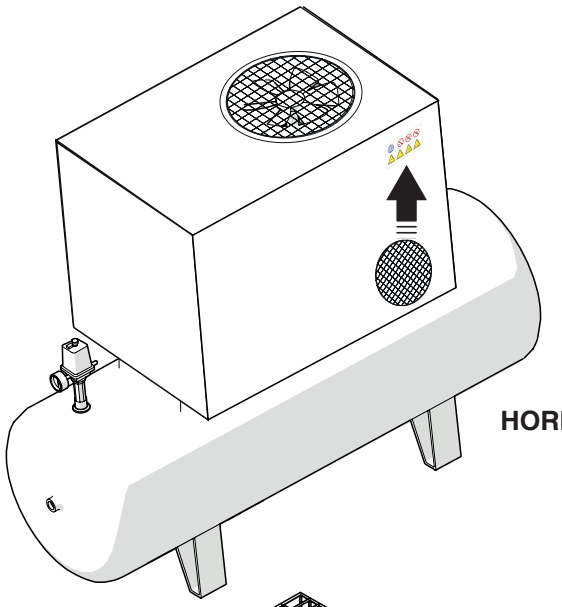



Fig. 1.3

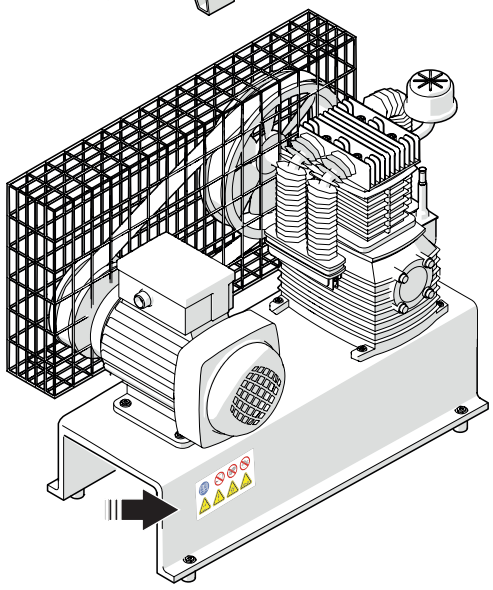


HORIZONTAL FIXED FEET

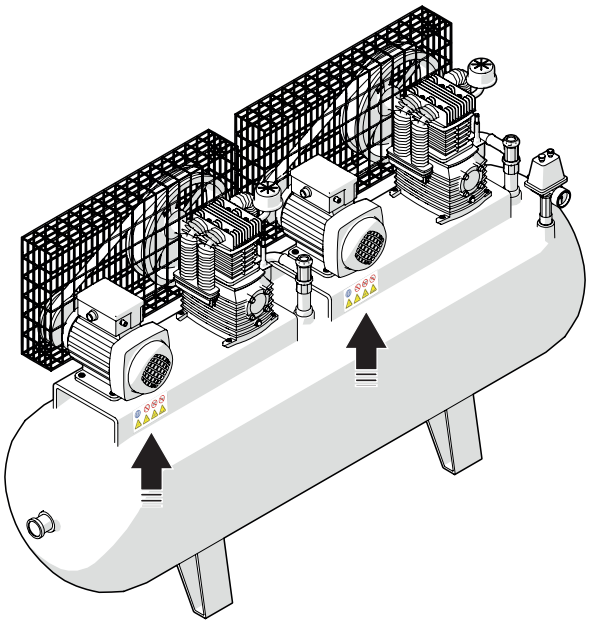




HORIZONTAL FIXED FEET SILENT



ON BASE (WITH AND WITHOUT TANK)



DOUBLE-HEAD TANDEM

Fig. 1.4

## 1.6 Warranty Conditions

The electric compressor is guaranteed for a duration of 12 months from the date of the purchase invoice. Warranty only covers the free replacement of parts found to be defective, excluding wear parts and electrical parts. Misuse of the compressor or tampering with it automatically invalidates Warranty. Transport and labour costs are also excluded from Warranty. A returned electro-compressor, even if under warranty, shall be shipped carriage paid.

**Warranty is not valid if the date of purchase and the dealer's stamp are missing.**

# 2 : GENERAL SAFETY RULES

## 2.1 Important Warnings

Below are important instructions for the safe use of the compressor, which must be followed carefully.

| | |
|---|---|
|  | **DANGER:** The compressor must be used in a suitable environment (well ventilated, with an ambient temperature between +5 °C and +40 °C; the unit can operate correctly when the relative humidity does not exceed 50% at a maximum temperature of +40 °C and, if necessary, higher relative humidities at lower temperatures such as 90% at 20 °C) and never in the presence of dust, acids, paints, solvents, vapours, explosive or flammable gases.<br>The compressor is not designed to work in the presence of explosive atmospheres.<br>The device can operate at altitudes up to 1000 m above mean sea level.<br>It is absolutely forbidden to make unauthorised modifications to the compressor. These can cause serious injuries or accidents to persons. Consult an authorised service centre for all operations.<br>Do not use the device barefoot or with wet hands and feet.<br>Do not clean the machine with flammable liquids or solvents. Use only a damp cloth, making sure you have unplugged the plug from the electric power socket.<br>The electrical system to which the compressor is connected must have an efficient earthing system and a disconnector with protection against short circuits, earth discharges and current leakage.<br>Check regularly for lubricating oil leaks. Lubricating oil has a flash point of 230 °C and poses a fire risk if the compressor temperature is too high. |

| | |
|---|---|
|  | **CAUTION:** Improper use or maintenance of the compressor can result in physical injury to the user. The use of the compressor is closely linked to the compression of air. Do not use the machine for any other type of gas.<br>The compressed air produced by this machine cannot be used in the pharmaceutical, food or hospital sector except after special treatment, and cannot be used to fill diving cylinders.<br>Never operate the compressor without all guards in place. If maintenance requires the removal of some guards, make sure that at the next start-up, all guards are correctly installed. It is absolutely forbidden to inhibit the safety devices installed in the compressor.<br>Do not insert objects or body parts into the unit, in order to avoid physical damage or damage to the compressor.<br>Always use goggles or equivalent eye protection.<br>Never direct the air jet towards people, animals or your own body. Never direct the jet of liquid spray from tools connected to the compressor towards the compressor itself.<br>Do not use the device barefoot or with wet hands and feet.<br>The compressor must not be used under the influence of alcohol, drugs or medication that can induce drowsiness.<br>Before any intervention, personnel must be familiar with all compressor functions and controls.<br>Never use the compressor for purposes other than those specified in the instruction manual.<br>To avoid burns, do not touch pipes, motor and other hot parts.<br>Check the external appearance of the compressor. If the power cable is damaged, repair or replace it. If necessary, contact a service centre.<br>Check alignment of moving parts, hoses, pressure gauges, pressure reducers, pneumatic connections or other parts of importance in compressor operation. Check that each screw, bolt or cover is properly secured. Any damaged parts must be repaired by a service centre.<br>Prevent accidental contact of your body with metal parts of the compressor such as pipes, tanks or earthed parts. Never use the compressor in the presence of water or moisture and do not leave it exposed to the weather (rain, sun, fog, snow), **General IP rating 20**.<br>To carry out any service operation or to switch off the compressor when not in use, disconnect the compressor from the mains and discharge the tank pressure completely. |

**CAUTION:** Do not allow inexperienced persons to use the compressor. Keep children and animals away from the work area.

The appliance is not intended for use by persons (including children) whose physical, sensory or mental capacities are impaired or who lack experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance through a person responsible for their safety.

**CAUTION:** Do not transport the compressor while it is connected to the mains or with the tank under pressure. Always only use the pressure switch to switch off the compressor, or use the switch on the electrical panel for models that have one. Do not switch the compressor off by unplugging it, to avoid restarting with pressure in the head.

Do not step on the cable or crush it. Keep it away from heat, oil or sharp surfaces. Do not switch off the compressor by pulling the power cable. Use the red emergency button (if fitted) to stop the compressor.

Avoid unscrewing any connections from the tank without first checking that it is unloaded. **It is absolutely forbidden to drill, weld or modify the tank. In the event of defects or corrosion, it must be completely replaced.**

**WARNING:** Ensure that the working environment is clean and has adequate air exchange. Do not wear inappropriate clothing or accessories. If necessary, wear caps that cover your hair to prevent it from getting caught in the moving parts of the machine. Also, protect your nose and mouth with a mask.

Check alignment of moving parts, hoses, pressure gauges, pressure reducers, pneumatic connections or other parts of importance in compressor operation. Check that each screw, bolt or cover is properly secured. Any damaged parts must be repaired by a service centre.

Always maintain a safety distance of at least 4 metres between the compressor and the work area.

Use electrical cable extensions with a maximum length of 5 metres and a suitable cable cross-section. The use of extension cords differing in length and cross-section as well as adapters and multiple sockets is not recommended.

If used externally, use appropriate power cables for outdoors.

Keep the ventilation grille clean. Clean the grille regularly if the environment is particularly dirty. Do not use solvents, thinners or other substances containing hydrocarbons, as they can damage plastic parts. If necessary, use soapy water or appropriate liquids.

Operate the compressor at the voltage specified on the rating plate. If the compressor is operated at a different voltage, the electric motor may burn out or be damaged.

If the compressor operates emitting strange noises or excessive vibrations, check its functionality and contact the service centre if necessary.

Use hoses, couplings and pneumatic tools that support a higher pressure than that of use.

The compressor in operation must be placed on a stable, horizontal surface to ensure proper lubrication.

**NOTE:** Use the compressor according to the instructions in this manual

The manufacturer reserves the right to make changes/updates to the manual without prior notice.

Use only genuine spare parts, available from our distributors. Use of non-genuine spare parts will void the warranty and cause the compressor to malfunction.

## 2.2 Transport and storage

Transport and storage must take place under the following conditions:

- storage temperatures within a range of -25 °C to +55 °C and for short periods not exceeding 24 hours up to +70 °C;
- relative humidity 90% max;
- closed, dry environment, protected from the weather and raised 10 cm above the ground.

## 2.3 Residual risks

### 2.3.1 Operating risks

| | |
|---|---|
| ⚠ | **CAUTION:** Extreme care must be taken when operating the compressor, as the motor and compressor heads, air delivery hose and check valve become hot and can cause severe burns on contact. Similarly, moving parts (motor pulley and flywheel) can create serious hazards. **Take particular care and do not remove existing guards.** |

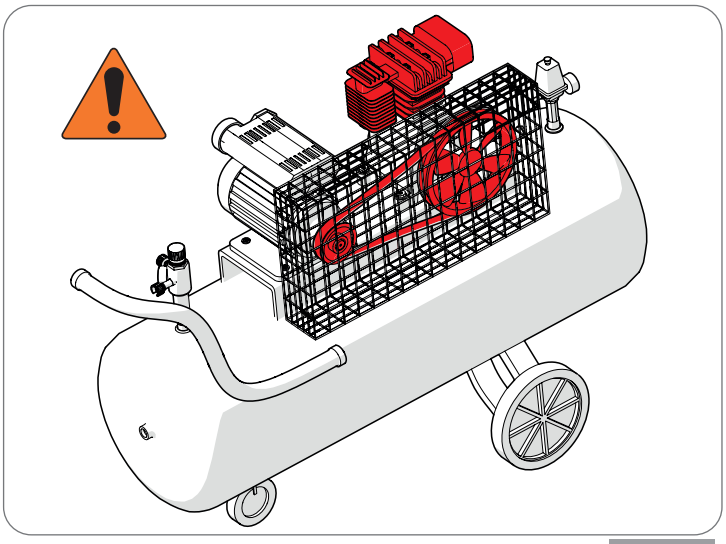


Fig. 2.1

## 2.4 Environmental Protection

### 2.4.1 Packaging

Follow local regulations for their disposal.

| | |
|---|---|
| ⚠ | **WARNING:** Packaging material (plastic bags, polystyrene parts, pallets, metal supports, etc.) is a source of danger to children. Keep packaging material out of the reach of children. |

### 2.4.2 Disposal

| | |
|---|---|
| ⚠ | **WARNING:** Dispose of the appliance in accordance with the legal regulations in force in the country where the product is installed. Before disposal, completely relieve the tank of pressure and cut the power cable to render it unusable. |

| | |
|---|---|
| ⚠ | **DANGER:** Lubricating oils are pollutants and are therefore considered hazardous waste. When dismantling the compressor, collect the oils in containment systems to avoid environmental contamination. Prevent waste products from polluting the soil or groundwater or being released into the environment.<br>Disposal must be carried out in accordance with applicable regional, national and local regulations. |

# 3 : PRODUCT FAMILIES

## 3.1 Models

**NOTE:** The models in your possession may differ from the pictures below. **Please refer to the identification plate** and product catalogue for further details.

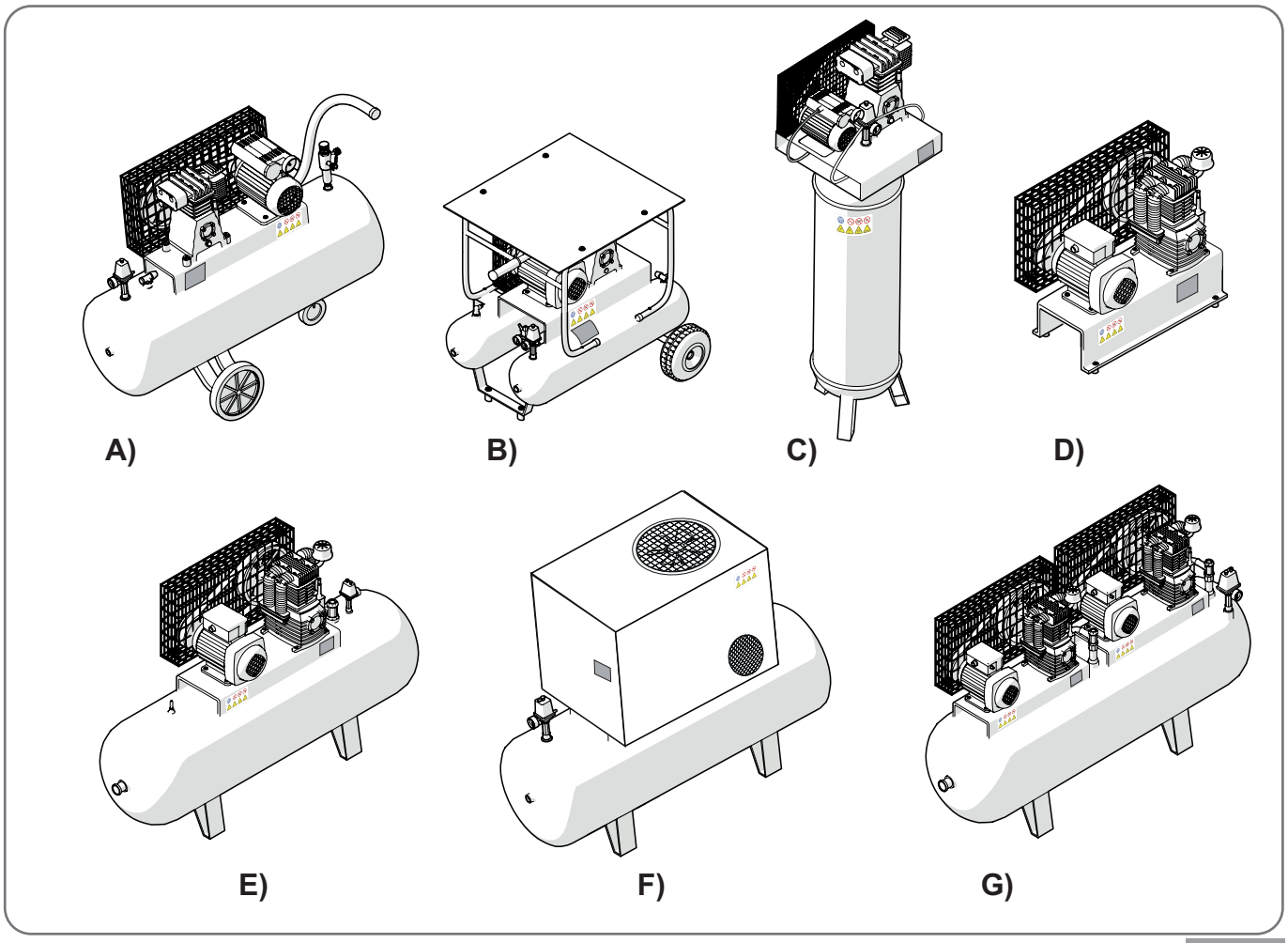



Fig. 3.1

**A) HORIZONTAL WHEELED**
**B) HORIZONTAL WHEELED DOUBLE-TANK**
**C) VERTICAL**
**D) ON BASE (WITH AND WITHOUT TANK)**
**E) HORIZONTAL FIXED FEET**
**F) HORIZONTAL FIXED FEET SILENT**
**G) DOUBLE-HEAD TANDEM**

**CUSTOMISED SPECIAL VERSIONS** (some models can be customised according to customer requirements)

| Features | Description |
|---|---|
| /B | on base |
| /MOTO | petrol engine |
| /DIESEL | diesel engine |
| /TWIN | double tank |
| /VER | vertical tank |
| /20V | 20L tank on trolley |
| /CAR | wheeled tank |
| /M | single-phase compressor |
| /TD | tandem pumps |
| /PF | tank on fixed feet |
| /T | three-phase compressor |
| /DRY | model with dryer |

## 3.2 General description of the machine

### 3.2.1 HORIZONTAL WHEELED - HORIZONTAL DOUBLE TANK WHEELED

**NOTE:** The models in your possession may differ from the pictures below. Please refer to the identification plate and product catalogue for further details.

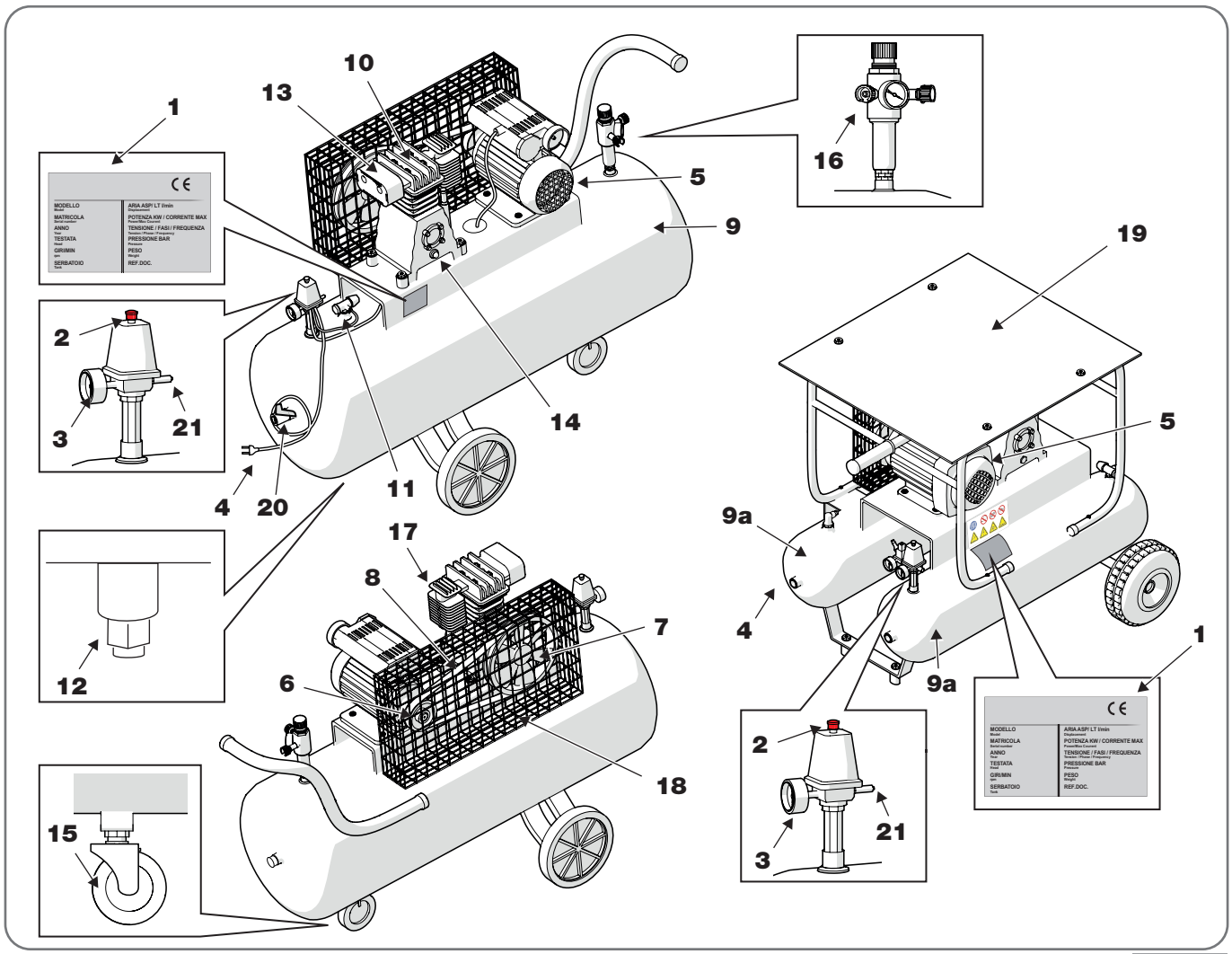



Fig. 3.2

**Features**

| | | | |
|---|---|---|---|
| **1** | Plate data and production lot ref. | **11** | Check valve |
| **2** | Run-stop pressure switch | **12** | Condensate drain |
| **3** | Tank pressure gauge | **13** | Air filter |
| **4** | Power supply cable | **14** | Oil level |
| **5** | Motor | **15** | Pivoting wheel |
| **6** | Pulley | **16** | Pressure reducer, double outlet |
| **7** | Flywheel | **17** | Cooling manifold (some models are equipped with a double cooling manifold) |
| **8** | Drive belt | **18** | Metal belt guard |
| **9** | Tank | **19** | Frame with table top |
| **9a** | Twin version (double tank) | **20** | Air outlet tap direct from tank |
| **10** | Head | **21** | Safety valve |

## 3.2.2 VERTICAL

**NOTE:** The models in your possession may differ from the pictures below. Please refer to the identification plate and product catalogue for further details.

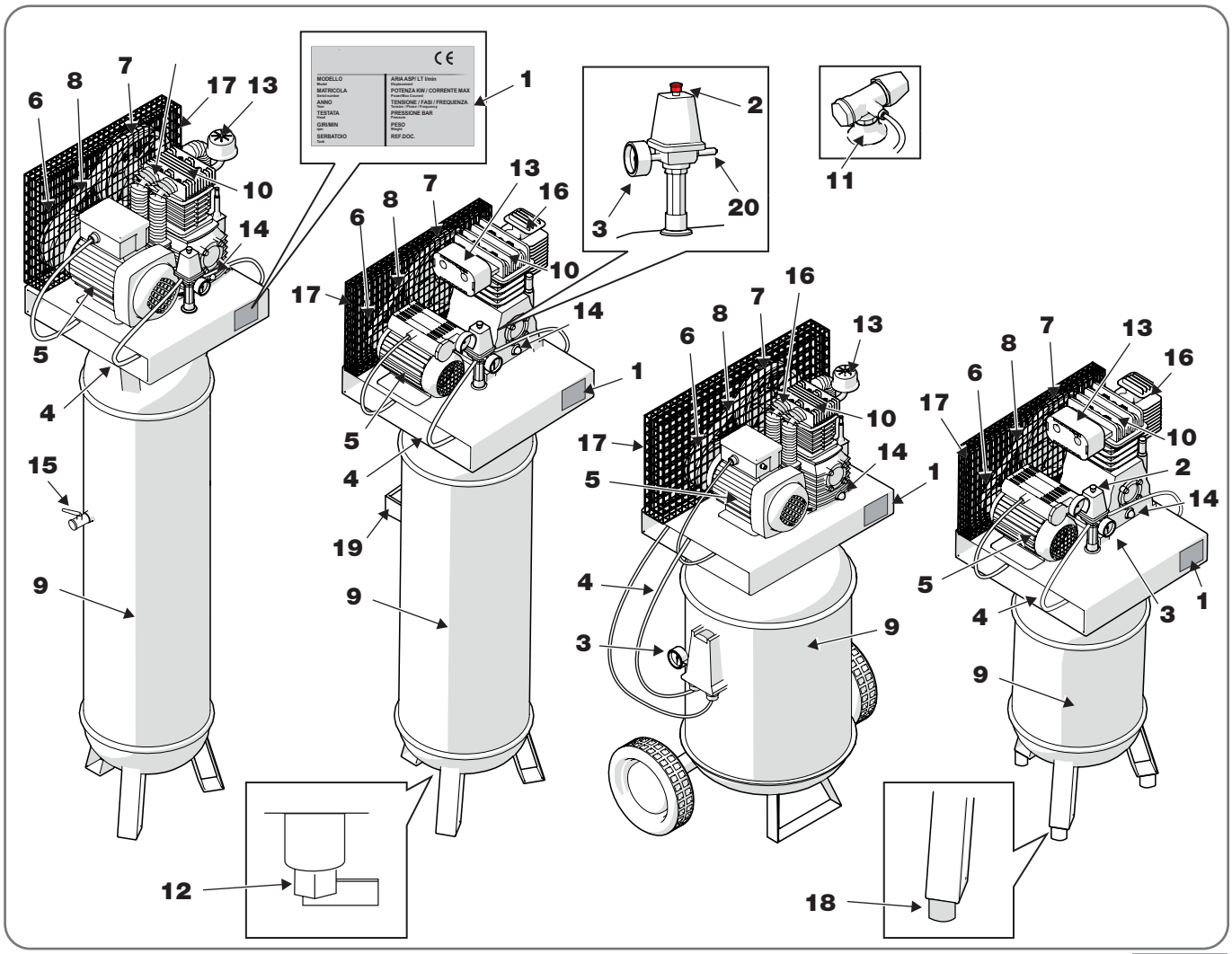



Fig. 3.3

**Features**

| | | | |
|---|---|---|---|
| **1** | Plate data and production lot ref. | **12** | Condensate drain |
| **2** | Run-stop pressure switch | **13** | Air filter |
| **3** | Tank pressure gauge | **14** | Oil level |
| **4** | Power supply cable | **15** | Air outlet tap direct from tank |
| **5** | Motor | **16** | Cooling manifold (some models are equipped with a double cooling manifold) |
| **6** | Pulley | **17** | Metal belt guard |
| **7** | Flywheel | **18** | Anti-vibration pads |
| **8** | Drive belt | **19** | Rear brackets (optional on request) |
| **9** | Tank | **20** | Safety valve |
| **10** | Head | | |
| **11** | Check valve | | |

## 3.2.3 HORIZONTAL FIXED FEET

**NOTE:** The models in your possession may differ from the pictures below. Please refer to the identification plate and product catalogue for further details.

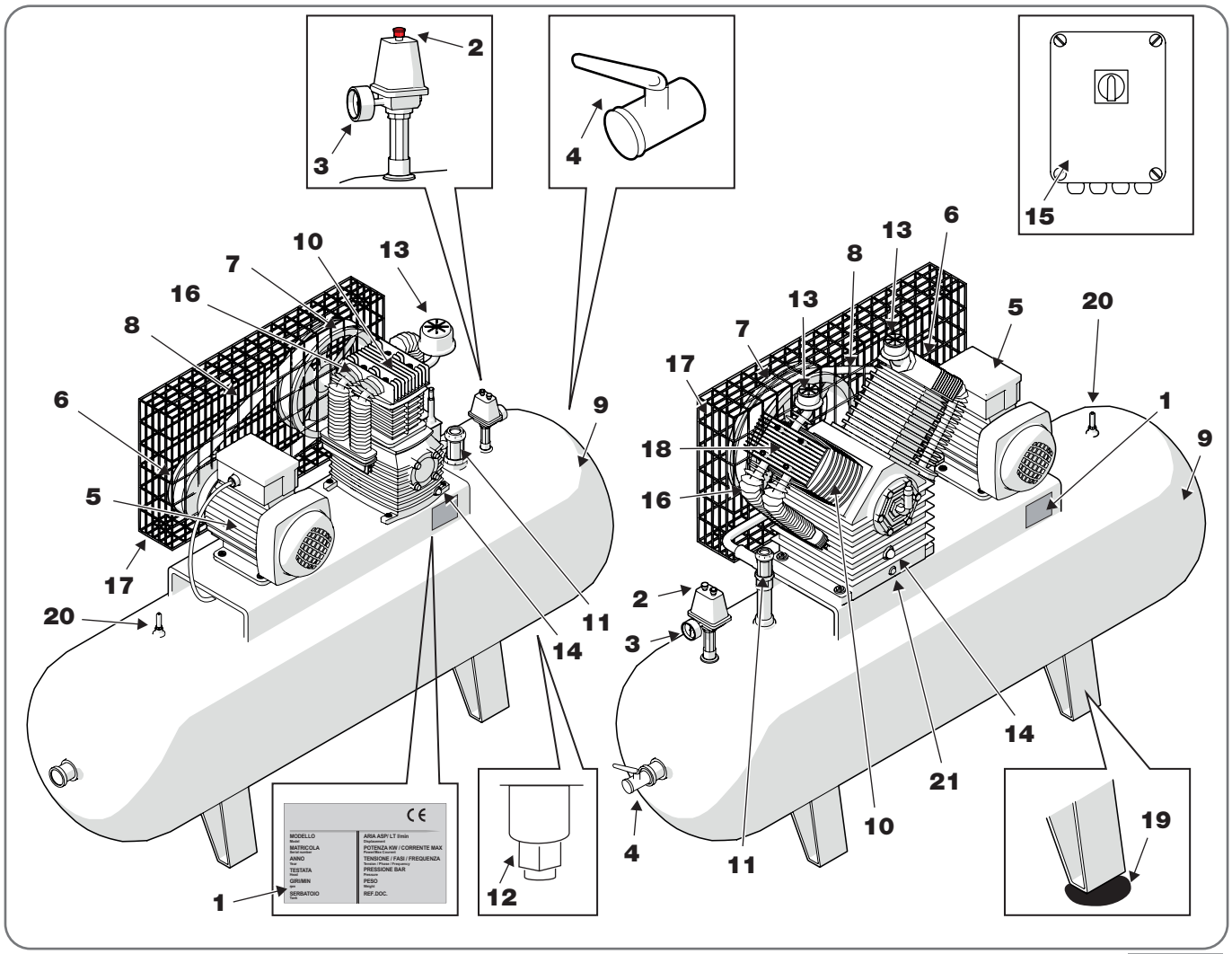



Fig. 3.4

**Features**

| | | | |
|---|---|---|---|
| **1** | Plate data and production lot ref. | **12** | Condensate drain |
| **2** | Run-stop pressure switch | **13** | Air filter |
| **3** | Tank pressure gauge | **14** | Oil level |
| **4** | Air outlet tap direct from tank | **15** | Star/delta starter |
| **5** | Motor | **16** | Cooling manifold (some models are equipped with a double cooling manifold) |
| **6** | Pulley | **17** | Metal belt guard |
| **7** | Flywheel | **18** | Version with 4 V-cylinders |
| **8** | Drive belt | **19** | Fixed feet with anti-vibration mounts |
| **9** | Tank | **20** | Safety valve |
| **10** | Head | **21** | Oil drain plug |
| **11** | Check valve | | |

## 3.2.4 HORIZONTAL FIXED FEET SILENT

**NOTE:** The models in your possession may differ from the pictures below. Please refer to the identification plate and product catalogue for further details.

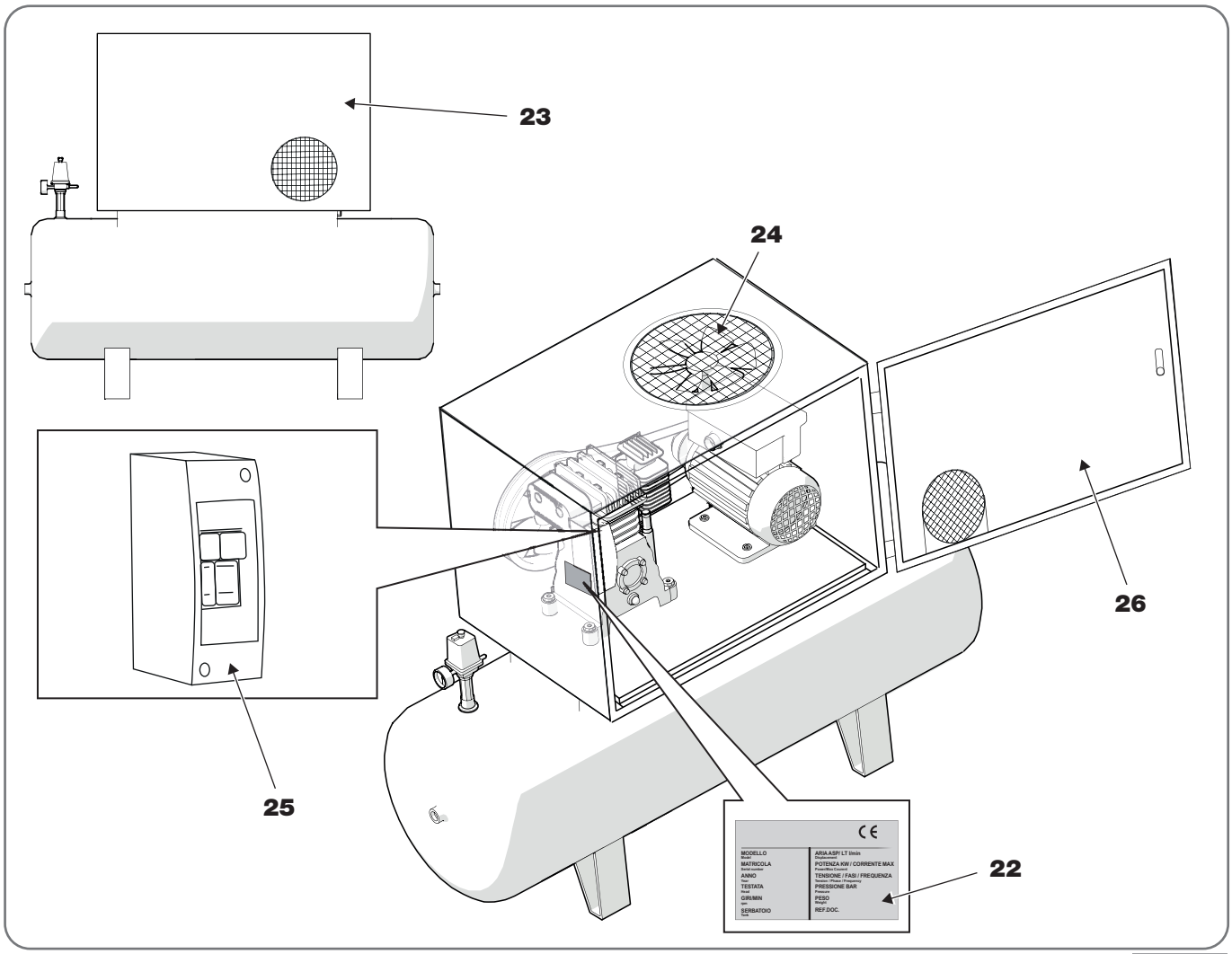



Fig. 3.5

**Features**

**NOTE:** The internal characteristics of this compressor are identical to those of the "HORIZONTAL FIXED FEET" model (Fig.3.4) with the following additional specifications.

| | |
|---|---|
| **22** | Plate data and production lot ref. |
| **23** | Box fitted with sound-absorbing material |
| **24** | Fan |
| **25** | Fuse box |
| **26** | Box door |

## 3.2.5 DOUBLE-HEAD TANDEM

**NOTE:** The models in your possession may differ from the pictures below. Please refer to the identification plate and product catalogue for further details.

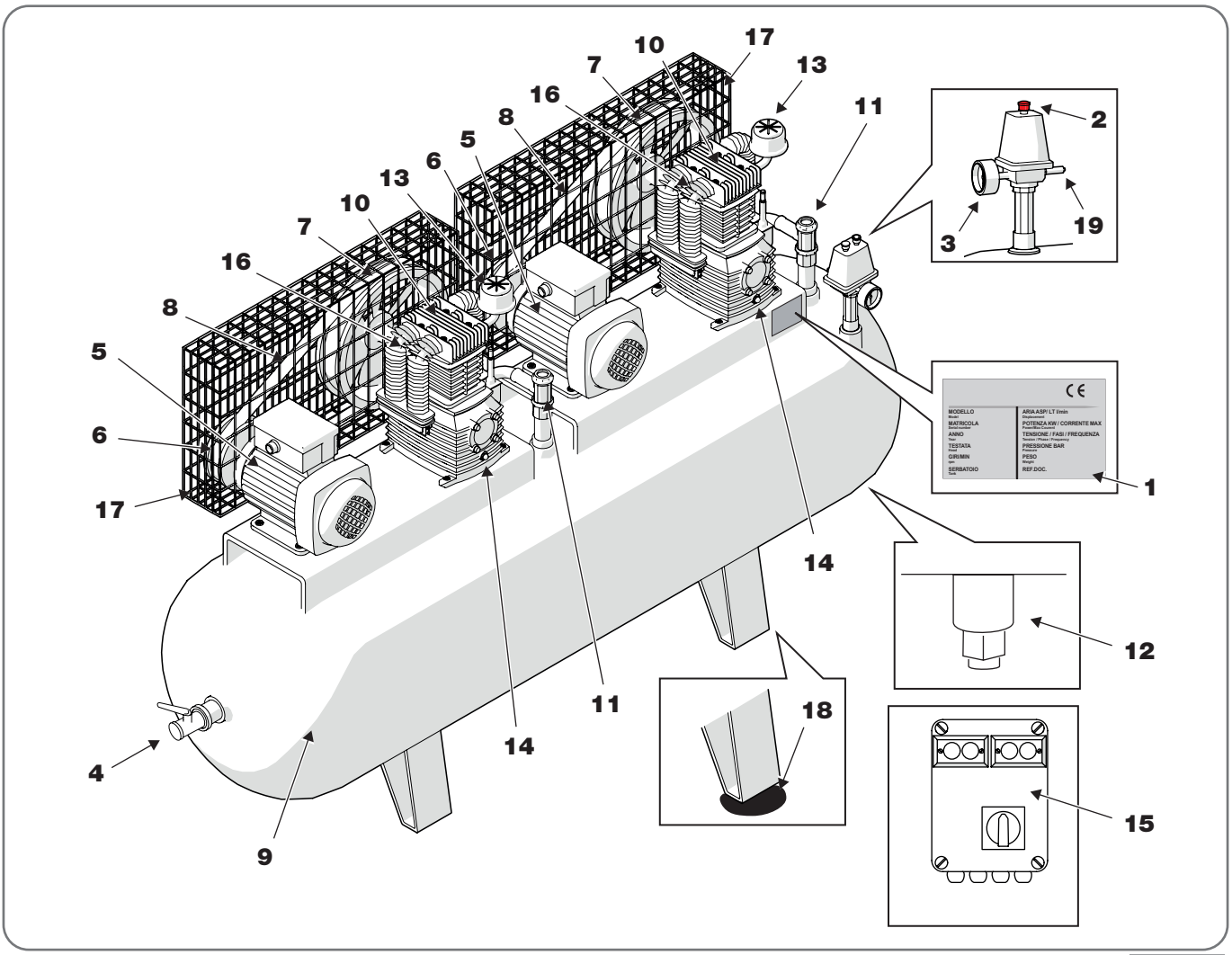



Fig. 3.6

**Features**

| | | | |
|---|---|---|---|
| **1** | Plate data and production lot ref. | **11** | Check valve |
| **2** | Run-stop pressure switch | **12** | Condensate drain |
| **3** | Tank pressure gauge | **13** | Air filter |
| **4** | Air outlet tap direct from tank | **14** | Oil level |
| **5** | Motor | **15** | Timed starter control unit. |
| **6** | Pulley | **16** | Cooling manifold (some models are equipped with a double cooling manifold) |
| **7** | Flywheel | **17** | Metal belt guard |
| **8** | Drive belt | **18** | Fixed feet with anti-vibration mounts |
| **9** | Tank | **19** | Safety valve |
| **10** | Head | | |

## 3.2.6 ON BASE (WITH AND WITHOUT TANK)

**NOTE:** The models in your possession may differ from the pictures below. Please refer to the identification plate and product catalogue for further details.

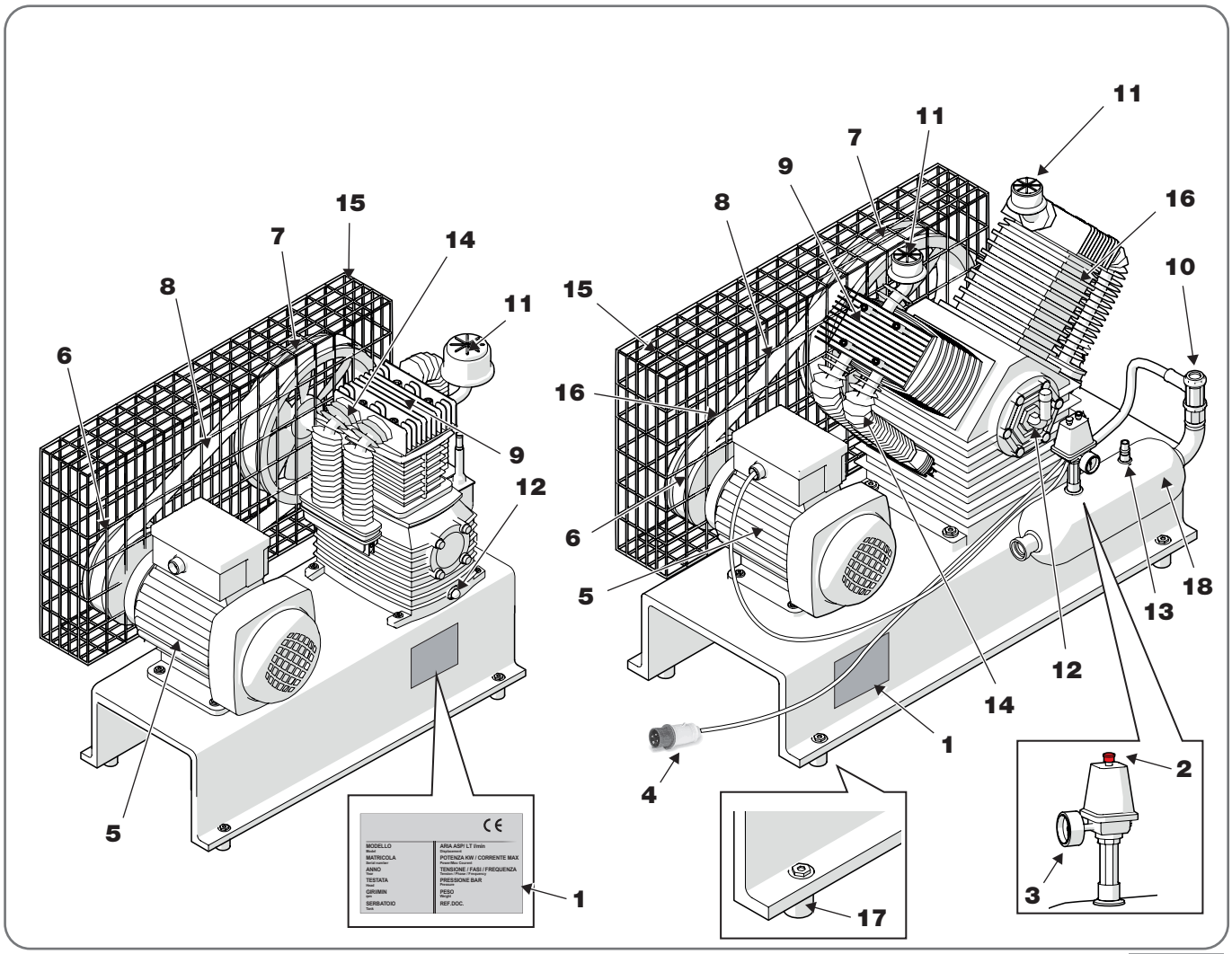



Fig. 3.7

**Features**

| | | | |
|---|---|---|---|
| **1** | Plate data and production lot ref. | **11** | Air filter |
| **2** | Run-stop pressure switch | **12** | Oil level |
| **3** | Tank pressure gauge | **13** | Safety valve |
| **4** | Power supply cable | **14** | Cooling manifold (some models are equipped with a double cooling manifold) |
| **5** | Motor | **15** | Metal belt guard |
| **6** | Pulley | **16** | Version with 4 V-cylinders |
| **7** | Flywheel | **17** | Vibration dampers |
| **8** | Drive belt | **18** | Tank |
| **9** | Head | | |
| **10** | Check valve | | |

## 3.3 Location

The room where the compressor is put into operation must have the characteristics required by current accident prevention regulations and meet the following requirements:

- Low dust content.
- Adequate ventilation and dimensions to allow room temperature (min 5°, max 40°) to be maintained when the machine is in operation.

During operation, the compressor develops heat, some of which is evacuated by the compressor itself into the room, so it is necessary to position it at least 30 cm from the walls and that there are adequate openings to ensure good cooling, and also not to allow the machine to suck in the air it produces.

| | |
|---|---|
| ⚠ | **WARNING:** If there is no supply of fresh air, provide for the installation of auxiliary fans for forced ventilation. These fans must be adequate to ensure good heat removal; they must therefore have a capacity of 15-20% more than the amount of air required for the overall cooling of all the compressors present. |

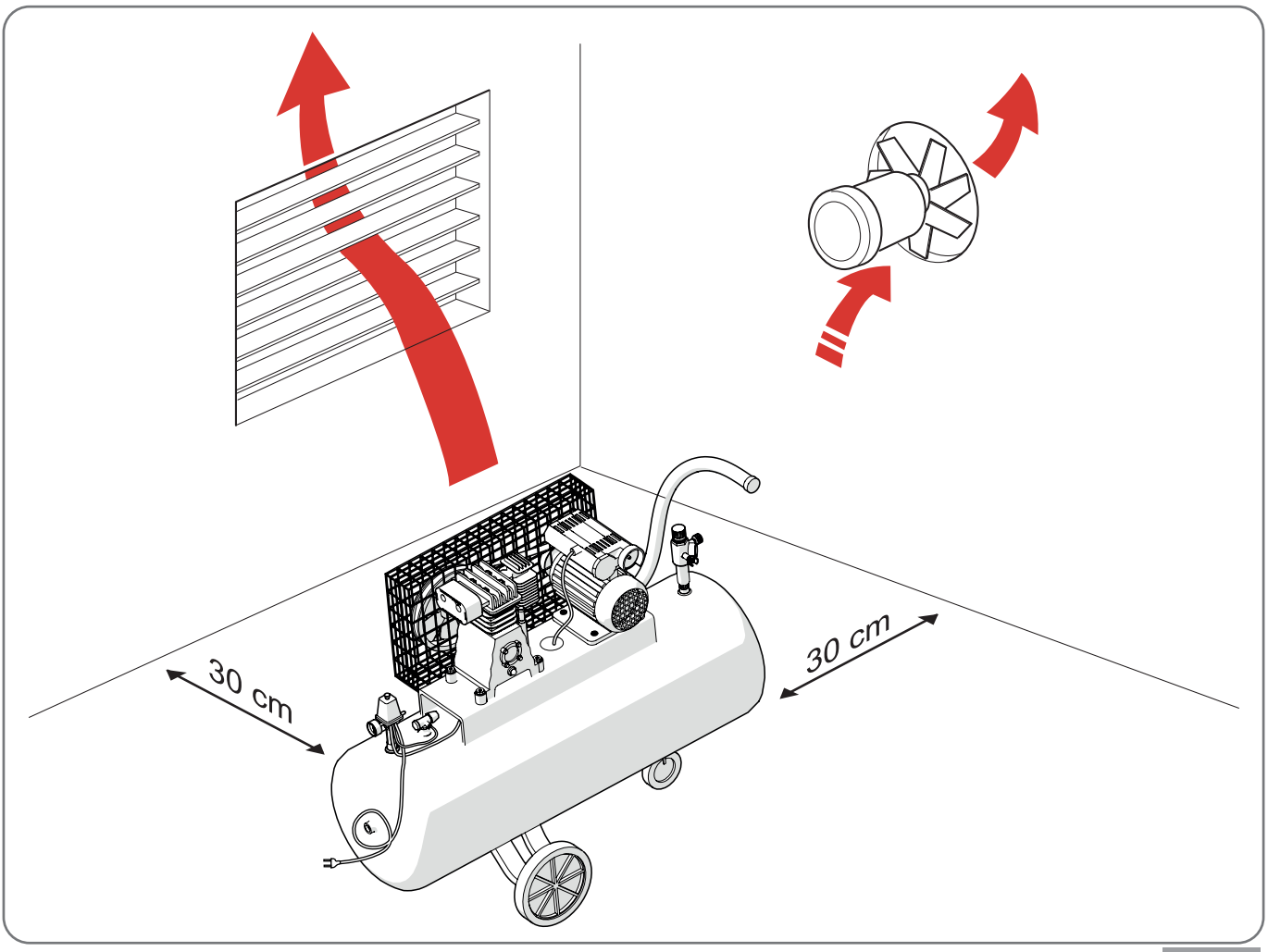



Fig. 3.8

| | |
|---|---|
| ❗ | **NOTE:** Make sure the compressor is placed on a flat surface before starting it up. |

# 4 : MODES OF USE

## 4.1 General checks

| | |
|---|---|
|  | **CAUTION:** Strictly observe the **SAFETY WARNINGS** on the operational use of the machine described in Chapter 2 "GENERAL SAFETY RULES".<br>Check your model on the identification plate on the compressor and at the beginning of this manual. |

### 4.1.1 Using the compressor

**The compressors have been designed and built solely to produce compressed air.**

The electro-compressor essentially consists of a tank made of sheet metal of suitable thickness, a motor (electric motor or internal-combustion engine depending on the model) with a pulley connected via a belt drive to a pump with its flywheel. The motor drives the pump that compresses air and sends it into the tank. This is all controlled by a pressure switch whose function is to keep the pressure in the tank itself within set minimum and maximum values, automatically shutting down and restarting the motor. The electrical and pneumatic systems are built with certified materials and assembled according to the relevant regulations. Electrical, pneumatic and structural protection is also provided to safeguard the operator's safety.

| | |
|---|---|
|  | **CAUTION:** Any use other than that intended releases the manufacturer from any risks that might occur.<br>The use of the compressor other than as agreed at the time of purchase excludes the manufacturer from any liability for damage to property, persons and the machine itself. |

**The electrical system is not suitable for use in potentially explosive environments and for flammable products.**

| | |
|---|---|
|  | **CAUTION:** Never direct the air jet at people or animals. Do not use compressed air for breathing purposes or in production processes where the air produced, unless previously treated or filtered, is in direct contact with foodstuffs. |

### 4.1.2 Compressor lubrication

| | |
|---|---|
|  | **CAUTION:** Before carrying out any oil extraction or topping up operations on the compressor, disconnect the electric power supply and wait until the system is at ambient pressure. Handle the lubricant with appropriate protection.<br>Never mix different types of oil. |

Use a lubricant compatible with the SAE 15W40 (mineral base) oil used during testing.

However, it is recommended to use a suitable oil at ambient temperature.

Add the mineral lubricant into the tank through the filler up to the level indicated by the display.

Start up the compressor, initially alternating between switching on and off briefly, then for about 10 minutes continuously.

Then, switch off the compressor, relieve the pressure and top up the lubricant through the filler up to the level indicated by the display.

## 4.2 Using the machine

### 4.2.1 Preliminary checks before starting to use the compressor

| | |
|---|---|
| ⚠ | **CAUTION:** Before starting to use the compressor, it is essential to carry out the following checks. |

- if necessary, fit the cocks by simply screwing them into their respective fittings;
- if necessary, fit the intake filter (in case it was removed);
- check the oil level via the transparent sight glass;
- check that the mains voltage corresponds to that indicated on the rating plate, the permissible tolerance range must be within ± 5%;
- **the use of extension cords is not recommended**. If an extension cable is to be used, the wire cross-section of the power cable must be proportionate to its length, for a maximum length of 20 metres.

| | |
|---|---|
| ⚠ | **CAUTION:** Electro-compressors must be connected to a power socket protected by a suitable earth-leakage circuit breaker or three fuses of the delayed tripping type. |

| | |
|---|---|
| ⚠ | **CAUTION:** The power cable must not remain in traction. |

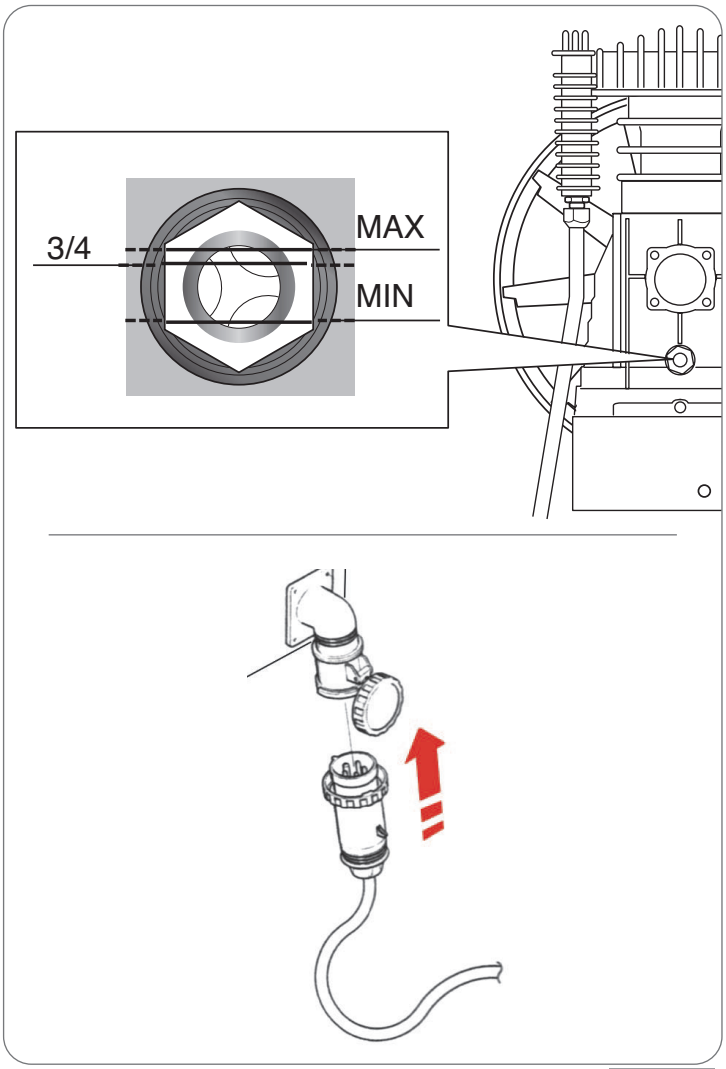



Fig. 4.1

All compressors (fitted with a tank) are equipped with a safety valve that intervenes in the event of pressure switch malfunction, guaranteeing machine safety.

| | |
|---|---|
| ℹ | **NOTE:** The safety valve is located in different positions depending on the model. |

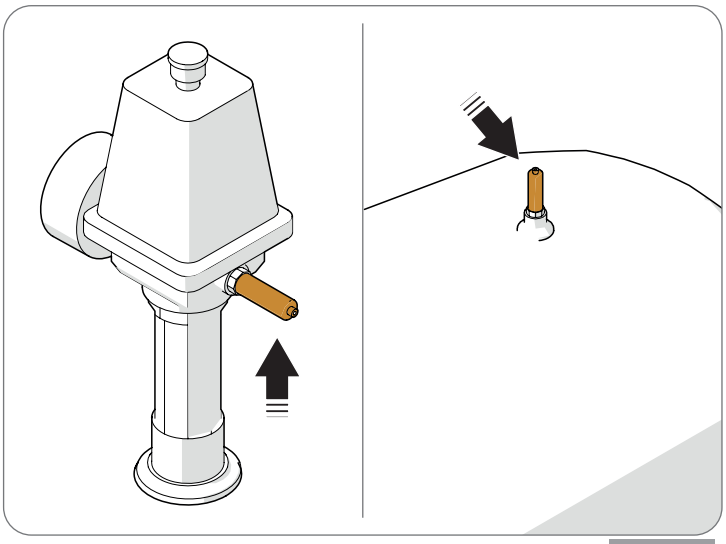


Fig. 4.2

### 4.2.2 Starting and stopping the electro-compressor

Lower the pressure switch knob into the 'OFF' position, insert the plug into the power socket and start the compressor by raising the pressure switch knob into the 'ON' position.

Please refer to the enclosed pressure switch manual for any start&stop pressure adjustments.

| | |
|---|---|
| | **NOTE:** Observe the maximum pressure stipulated by the compressor manufacturer, otherwise the warranty will be voided |

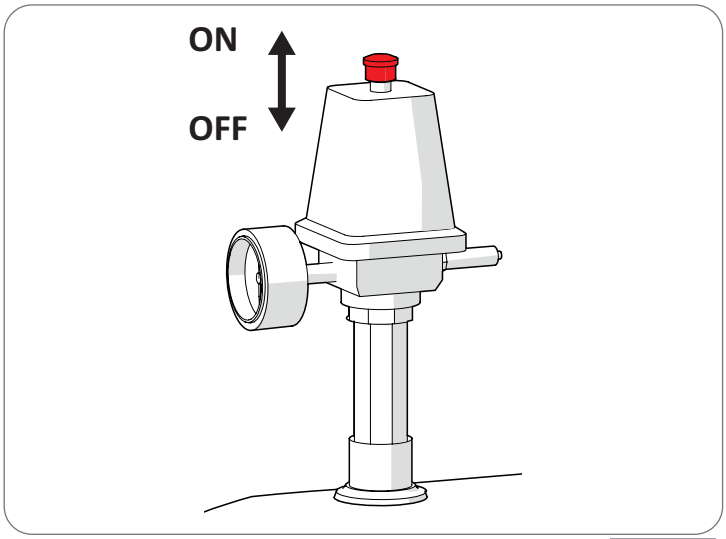



Fig. 4.3

Some models are equipped with a remote pressure switch that protects the motor from voltage overloads. When the motor overheats, the pressure switch automatically switches off to prevent damage. To reactivate the compressor, press the restart button, then put the run/stop button back to ON.

Please refer to the enclosed pressure switch manual for any start&stop pressure adjustments.

| | |
|---|---|
| | **NOTE:** Observe the maximum pressure stipulated by the compressor manufacturer, otherwise the warranty will be voided |

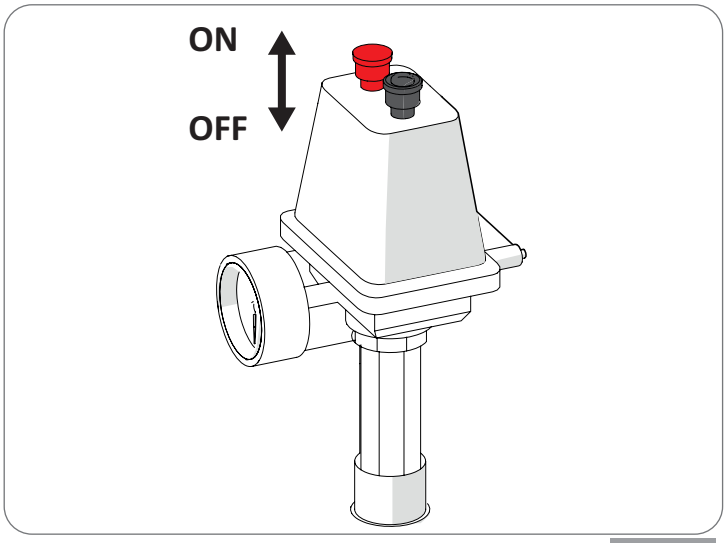



Fig. 4.4

Some models **(A)** are equipped with a star/delta starter that allows reduced voltage motor starting, without any mechanical jerking and limiting the currents during starting.

In the tandem versions **(B)**, the accompanying control unit allows the use of only one of the two compressor units (with alternating use, if desired) or both at the same time, depending on requirements. In the latter case, starting will be slightly differentiated to avoid excessive inrush current consumption (timed start-up).

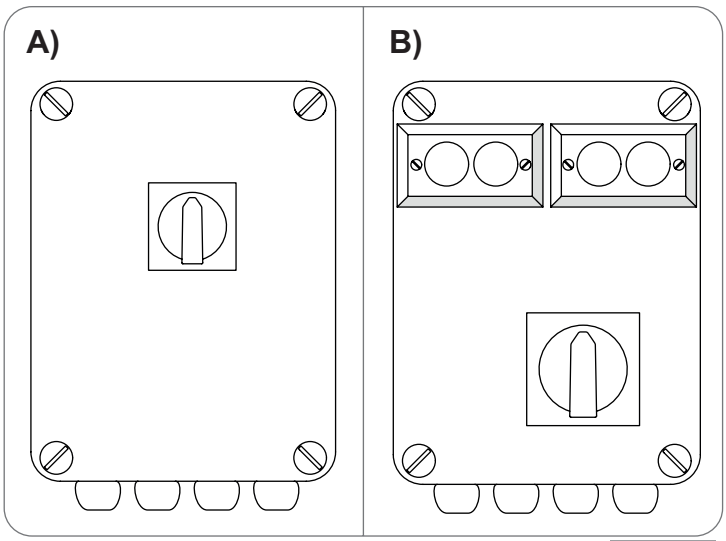



Fig. 4.5

At first start-up in compressors operating with three-phase voltage, check the exact direction of rotation of the unit's cooling flywheel by means of the **arrow A** located on the motor fan cover.

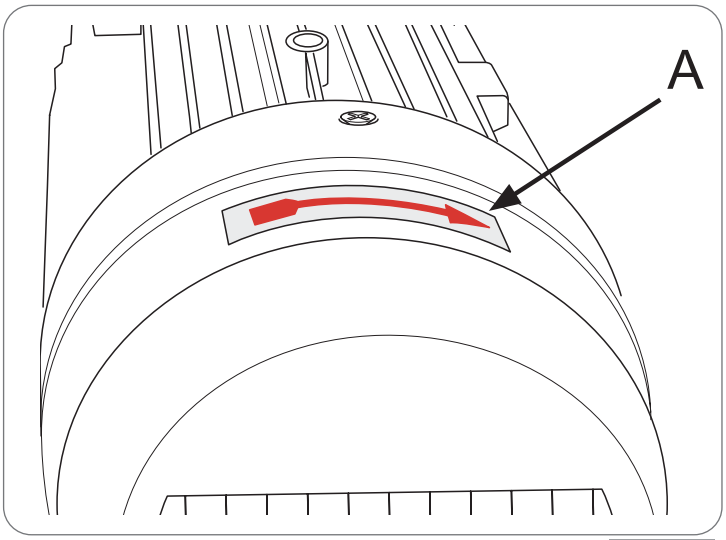



Fig. 4.6

Operation of the compressor is fully automatic, controlled by the pressure switch, which stops it when the pressure in the tank reaches the maximum value and restarts it when it drops to the minimum value. Before starting work, leave the compressor running for a few minutes, with the air cock fully open, which is to promote good lubrication distribution.

**After the first 5 hours of work, check the tightening of the head screws**. To stop the electro-compressor, simply lower the pressure switch knob into the 'OFF' position.

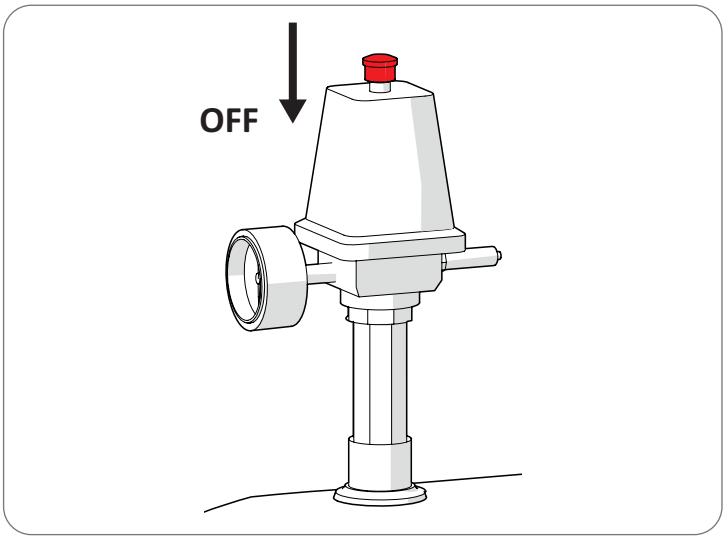



Fig. 4.7

## 4.3 Adjusting the operating pressure

Unlock the pressure reducer knob by pulling it upwards, adjust the pressure to the desired value by turning the knob clockwise to increase it, anticlockwise to decrease it, once the optimum pressure is obtained lock the knob downwards.

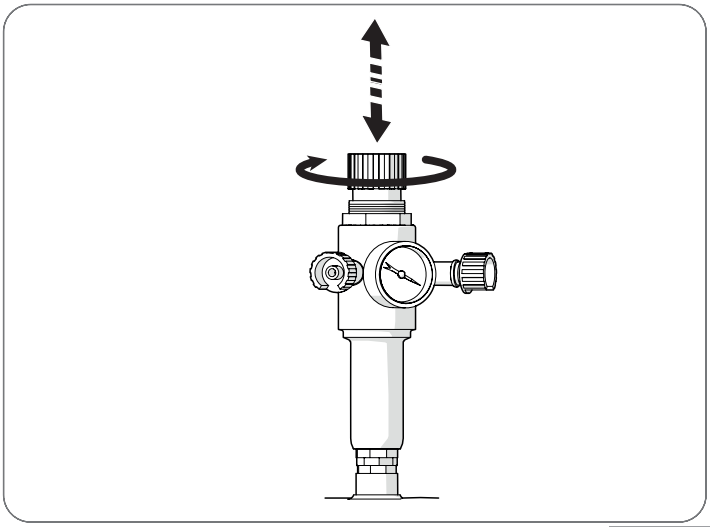


Fig. 4.8

# 5 : MAINTENANCE

## 5.1 Condensate drain

The life of the machine is conditioned by the quality of maintenance.

| | |
|---|---|
| ⚠ | **CAUTION:** Before carrying out any maintenance or cleaning, it is imperative to switch off the appliance, unplug it and empty the tank completely. |

| | |
|---|---|
| ❗ | **NOTE:** Drain condensate from the tank at least once a week by opening drain cock A on the side of the compressor.<br>The condensate drain is located in different positions depending on the model. |

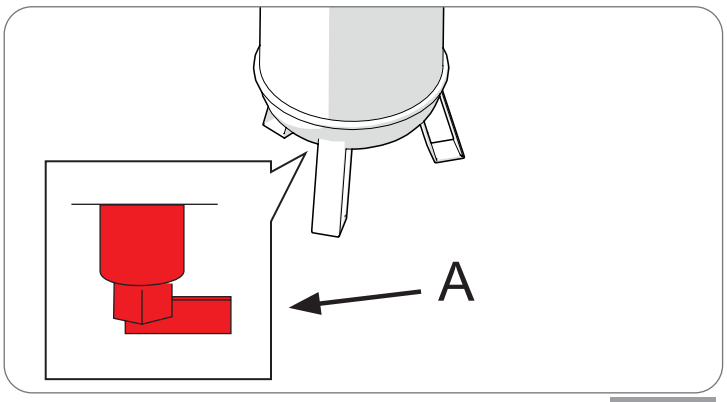



Fig. 5.1

## 5.2 Oil change - Oil top-up

After the first 200 operating hours, replace the pump oil completely.

1 - Unscrew oil drain plug **B**, drain off all the oil, screw plug **B**back in.

2 - Unscrew the oil filler cap **C**. Fill with oil up to the level indicated on the transparent sight glass and screw the cap back on.

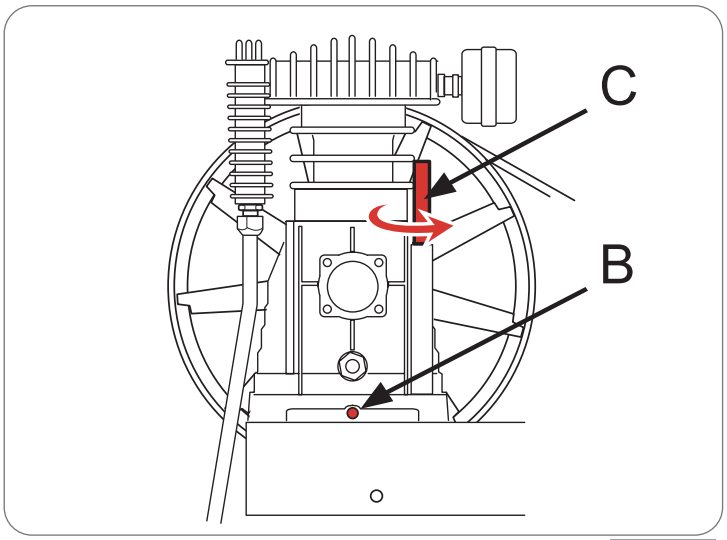



Fig. 5.2

Every week check the pump oil level, top up if necessary.

For operation at an ambient temperature of 0°C to -10°C, use a suitable oil.

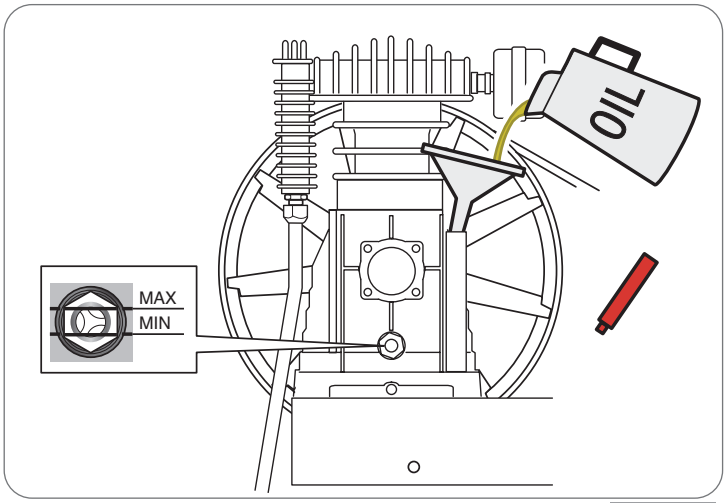



Fig. 5.3

## 5.3 Suction filter maintenance

Every 50 operating hours the suction filter should be removed and the filter element **D** should be cleaned by blowing with compressed air in the opposite direction to the usual passage. Replace the complete filter every 500 hours.

| | |
|---|---|
| | **NOTE:** The filter varies depending on the model. |

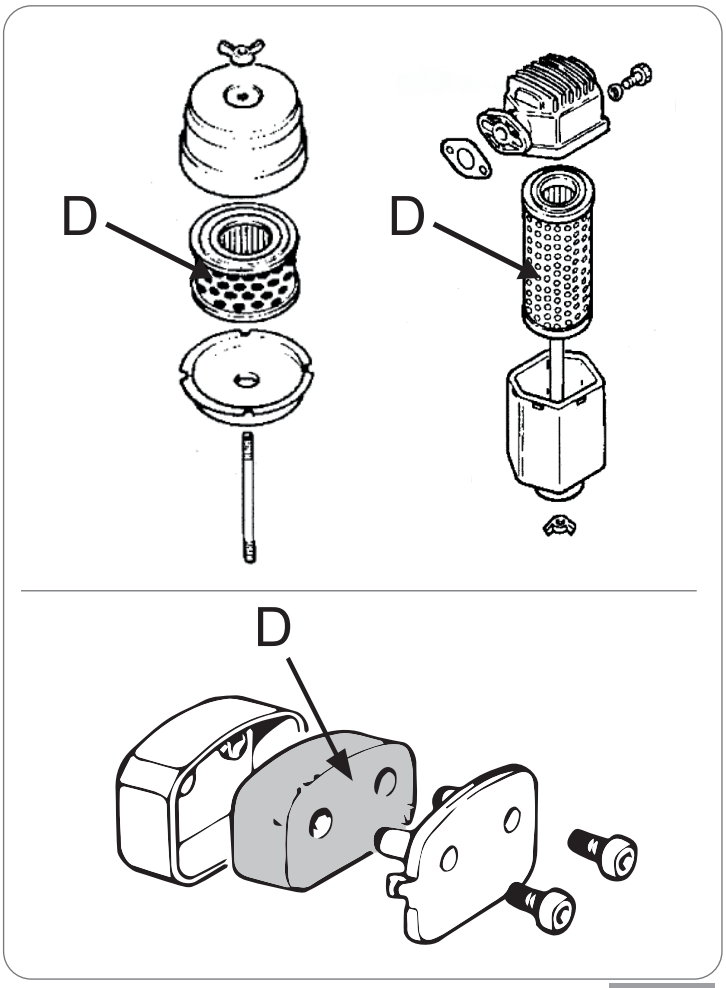



Fig. 5.4

## 5.4 Belt tensioning

The belt drive requires good cleaning and exact belt tensioning, since low tension values cause slippage on the pulley with overheating, rapid belt wear and loss of efficiency. High values lead to excessive load on the bearings, resulting in increased bearing wear and overheating of the motor. The tension value can be considered correct if, when pressing with a finger in the middle area, a deflection of approx. **0.8–1 cm** is obtained.

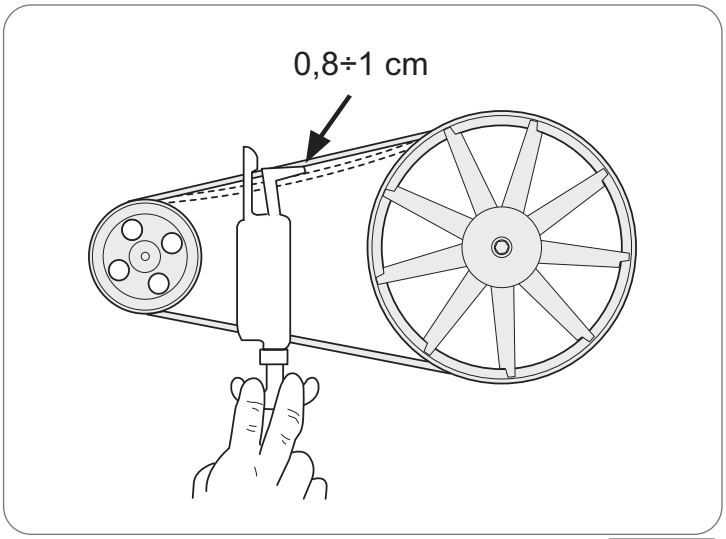



Fig. 5.5

Check the belt tensioning once a month. Should adjustment be necessary, proceed as follows:

1 - Loosen the motor fixing screws **A**;

2 - Pull the motor until the correct belt tension is reached;

3 - Tighten the motor fixing screws **A**.

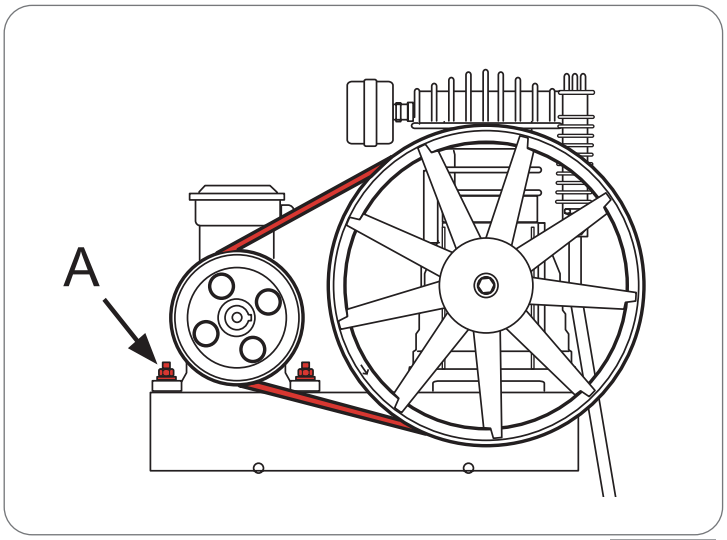



Fig. 5.6

## 5.5 Check valve

| | |
|---|---|
| | **CAUTION:** Before carrying out this operation, relieve the pressure. |

| | |
|---|---|
| | **NOTE:** The position of the check valve varies depending on the model. |

If the check valve due to wear or dirt on the sealing disc does not prevent air from returning from the tank, unscrew the hexagon head **A** of the valve. Clean seat. Clean or replace rubber disc **B**. Mount with care.

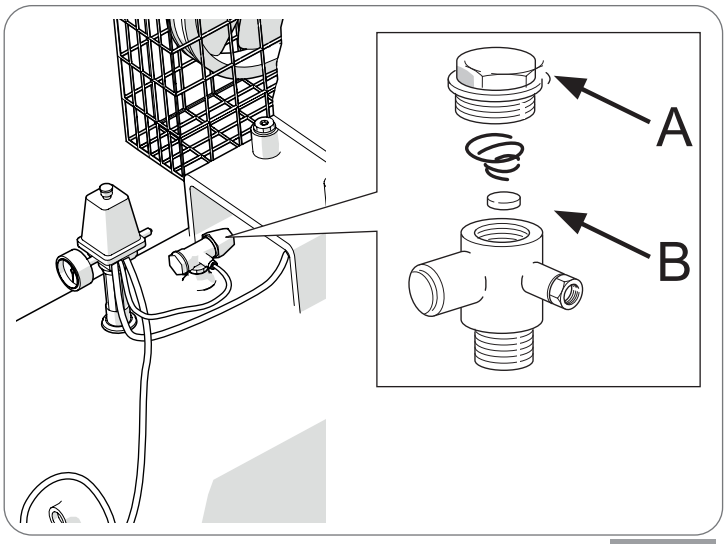
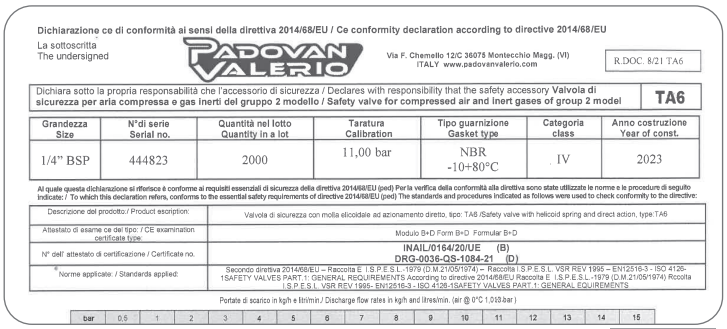



Fig. 5.7

## 5.6 Safety valve

| | |
|---|---|
| | **CAUTION:** Before carrying out this operation, relieve the pressure. |

The safety valve must be replaced every 3 years according to the certificate delivered with the machine documents.



Dichiarazione ce di conformità ai sensi della direttiva 2014/68/EU / Ce conformity declaration according to directive 2014/68/EU

La sottoscritta
The undersigned

PADOVAN VALERIO

Via F. Chemello 12/C 36075 Montecchio Magg. (VI)
ITALY www.padovanvalerio.com

R.DOC. 8/21 TA6

Dichiara sotto la propria responsabilità che l'accessorio di sicurezza / Declares with responsibility that the safety accessory **Valvola di sicurezza per aria compressa e gas inerti del gruppo 2 modello / Safety valve for compressed air and inert gases of group 2 model** **TA6**

| Grandezza Size | N°di serie Serial no. | Quantità nel lotto Quantity in a lot | Taratura Calibration | Tipo guarnizione Gasket type | Categoria class | Anno costruzione Year of const. |
|---|---|---|---|---|---|---|
| 1/4" BSP | 444823 | 2000 | 11,00 bar | NBR -10+80°C | IV | 2023 |

Al quale questa dichiarazione si riferisce è conforme ai requisiti essenziali di sicurezza della direttiva 2014/68/EU (ped) Per la verifica della conformità alla direttiva sono state utilizzate le norme e le procedure di seguito indicate: / To which this declaration refers, conforms to the essential safety requirements of directive 2014/68/EU (ped) The standards and procedures indicated as follows were used to check conformity to the directive:

| | |
|---|---|
| Descrizione del prodotto / Product esoription: | Valvola di sicurezza con molla elicoidale ad azionamento diretto, tipo: TA6 /Safety valve with helicoid spring and direct action, type:TA6 |
| Attestato di esame ce del tipo: / CE examination certificate type: | Modulo B+D Form B+D Formular B+D |
| N° dell' attestato di certificazione / Certificate no. | INAIL/0164/20/UE (B)<br>DRG-0036-QS-1084-21 (D) |
| Norme applicate: / Standards applied: | Secondo direttiva 2014/68/EU – Raccolta E I.S.P.E.S.L.-1979 (D.M.21/05/1974) – Raccolta I.S.P.E.S.L. VSR REV.1995 – EN12516-3 - ISO 4126-1SAFETY VALVES PART.1: GENERAL RSQUIREMENTS According to directive 2014/68/EU Raccolta E I.S.P.E.S.L.-1979 (D.M.21/05/1974) Raccolta I.S.P.E.S.L. VSR REV.1995- EN12516-3 - ISO 4126-1SAFETY VALVES PART.1: GENERAL EQUIREMENTS |

Portate di scarico in kg/h e lit/min / Discharge flow rates in kg/h and litres/min. (air @ 0°C 1,013 bar)

| bar | 0,5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Fig. 5.8

## 5.7 Special precautions

If the compressor remains idle for more than a few days, empty the tank of condensate. Do not transport the tank under pressure.

## 5.8 Maintenance Summary

The following table summarises all the cleaning, checks and maintenance work to be carried out for good operating conditions. The proposed intervals of frequency refer to medium harsh operating and environmental conditions.

The working hours given in the table refer to optimal machine utilisation and may therefore vary depending on the working environment and number of cycles.



| | |
|---|---|
|  | **CAUTION:** Use only genuine spare parts!<br>Pay particular attention to hot parts inside! |

**ROUTINE MAINTENANCE**

| | |
|---|---|
| - Oil level control | every 50 hours |
| - Oil change | every 1000 hours or 1 year |
| - Condensate drain | weekly |
| - Air filter | Cleaning: every 50 hours<br>Replacement: every 500 hours |
| - Tightening head screws | The check must be carried out before the compressor is started up for the first time. |
| - Belt tensioning check | Periodically |

# 6 : TROUBLE, CAUSES AND REMEDIES

## 6.1 Troubleshooting

Each compressor is assembled and scrupulously tested in the factory before shipment and is unlikely to be subject to failure or breakdown. However, we propose below a summary of the main causes of verifiable anomalies and the measures needed to remedy them.

| ANOMALIES | POSSIBLE CAUSES | REMEDIES |
|---|---|---|
| The compressor does not start or stops while running for no apparent reason. | Power failure. | Check the power socket. |
| The compressor stops after one start attempt due to high motor strain. | Start with loaded compressor head. | Discharge the compressor head by pressing the pressure switch button. |
| | Low temperature. | Improve environmental conditions. |
| | Insufficient voltage. | Check that the mains voltage corresponds to the nameplate voltage. Remove any extensions. |
| | Incorrect or insufficient lubrication. | Check level, top up and replace oil if necessary. |
| The motor and/or compressor heat up irregularly. | Insufficient ventilation. | Improve the environment. |
| | Clogging of air passages. | Check and clean the air filter if necessary. |
| | Poor lubrication. | Top up or replace oil (Fig.5.2 and (Fig.5.2). |

| | | |
|---|---|---|
| Decreased performance, frequent starts. Low pressure values. | Excessive consumption. | Reduce compressed air requirements. |
| | Clogging of suction filters. | Clean/replace the suction filter (Fig.5.4). |
| | Leaks from joints and/or pipes. | Replace gaskets. |
| | Belt slip. | Check the tension of the belts (Fig.5.5 and Fig.5.4 ). |
| Air leakage from the pressure switch valve. | Check valve which, due to wear or dirt on the seal stop, does not perform its function correctly. | Unscrew the hexagon head of the check valve, clean the seat and the special rubber disc (replace if worn). Reassemble and tighten carefully (Fig.5.7). |
| | Open condensate drain cock. | Close the condensate drain cock. |
| | Rilsan tube not correctly engaged on pressure switch. | Connect the Rilsan tube correctly inside the pressure switch |
| The compressor vibrates when running and the motor makes an irregular humming noise. If it stops, it does not start again, despite the hum of the motor. | SINGLE-PHASE MOTORS: defective capacitor. | Have the capacitor replaced. |
| | THREE-PHASE MOTORS: A phase is missing in the three-phase power supply system due to a probable fuse failure. | Check the fuses inside the switch cabinet or electrical box and replace damaged ones if necessary. |
| Abnormal presence of oil in the network. | Excessive oil level within the unit. | Check oil level. |
| | Segment wear. | Contact the Service Centre. |
| Leakage of condensate from the drain cock. | Presence of dirt/sand inside the cock. | Clean the cock. |

## 6.2 Wiring diagram

**Wiring diagram single-phase models without/with motor protection circuit breaker**

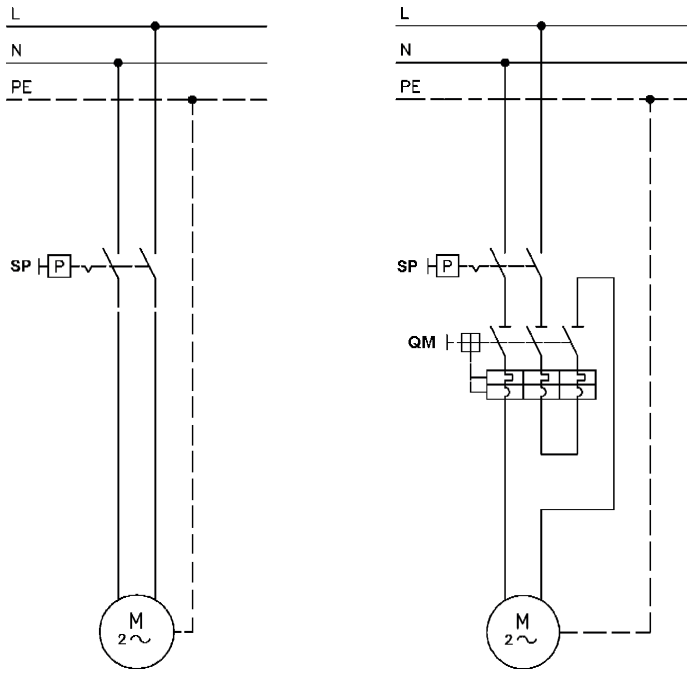



Fig. 6.1

| Components | Description |
|---|---|
| QM | Thermal motor protection circuit breaker |
| SP | Air pressure switch |
| PE | Earth |

## Wiring diagram three-phase models without/with motor protection circuit breaker or remote pressure switch

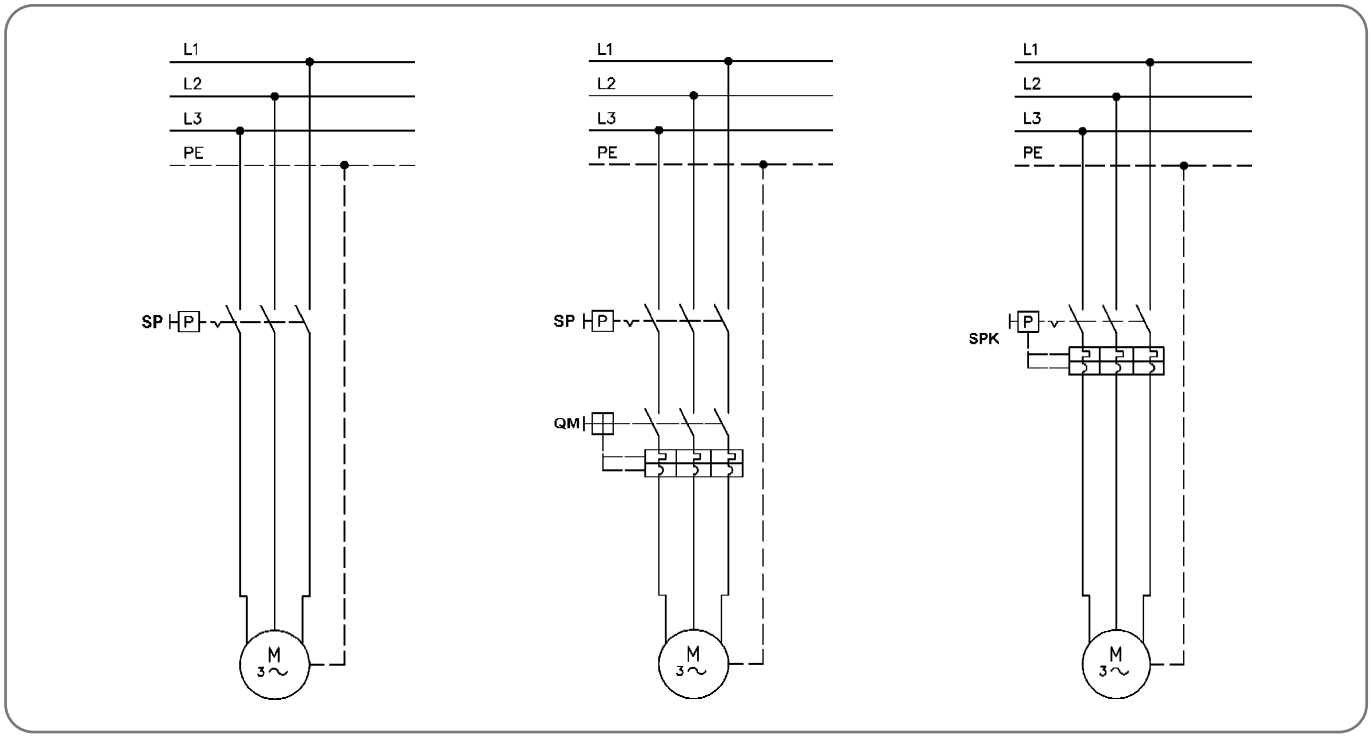



Fig. 6.2

| Components | Description |
|---|---|
| QM | Thermal motor protection circuit breaker |
| SP | Air pressure switch |
| PE | Earth |
| SPK | Remote pressure switch |

## Wiring diagram star/delta starter models 7.5 / 10 HP (5.6 / 7.5 kW)

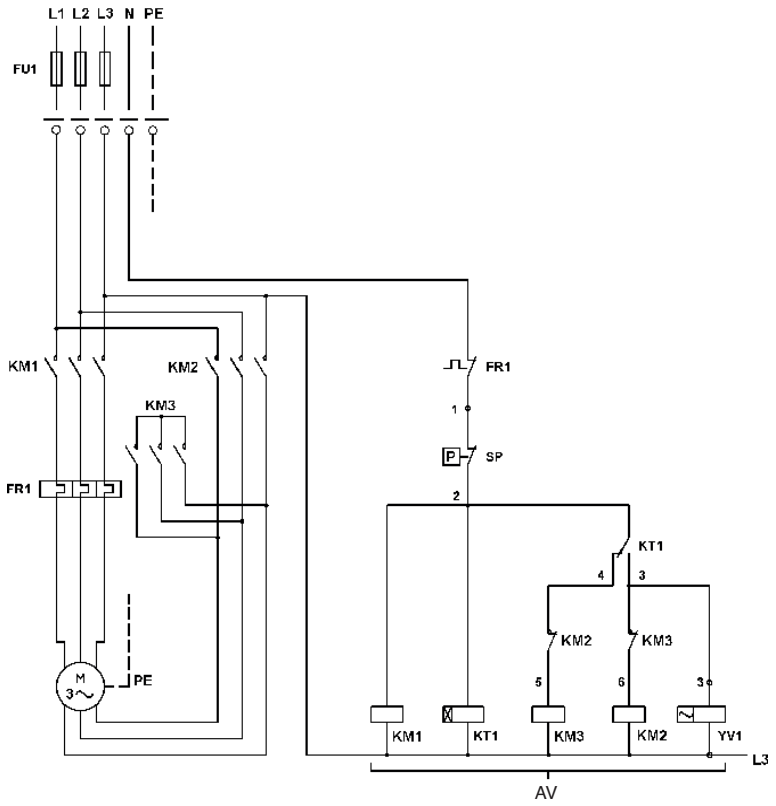



Fig. 6.3

| Components | Description |
|---|---|
| AV | Motor starting |
| FR1 | Thermal relay |
| YV1 | Solenoid valve |
| SP | Air pressure switch |
| KT1 | Timer |
| PE | Earth |
| KM1 | Line contactor |
| KM2 | Delta contactor |
| KM3 | Star contactor |
| FU1 | Fuses |

## Wiring diagram star/delta starter models 15 / 20 HP (11.2 / 15 kW)

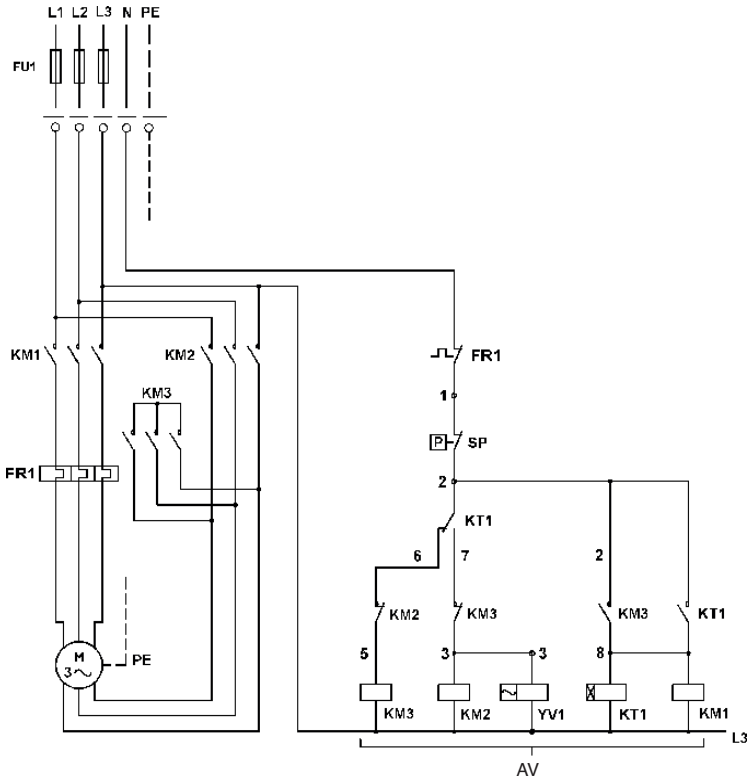



Fig. 6.4

| Components | Description |
|---|---|
| AV | Motor starting |
| FR1 | Thermal relay |
| YV1 | Solenoid valve |
| SP | Air pressure switch |
| KT1 | Timer |
| PE | Earth |
| KM1 | Line contactor |
| KM2 | Delta contactor |
| KM3 | Star contactor |
| FU1 | Fuses |

## Wiring diagram direct start tandem TD models

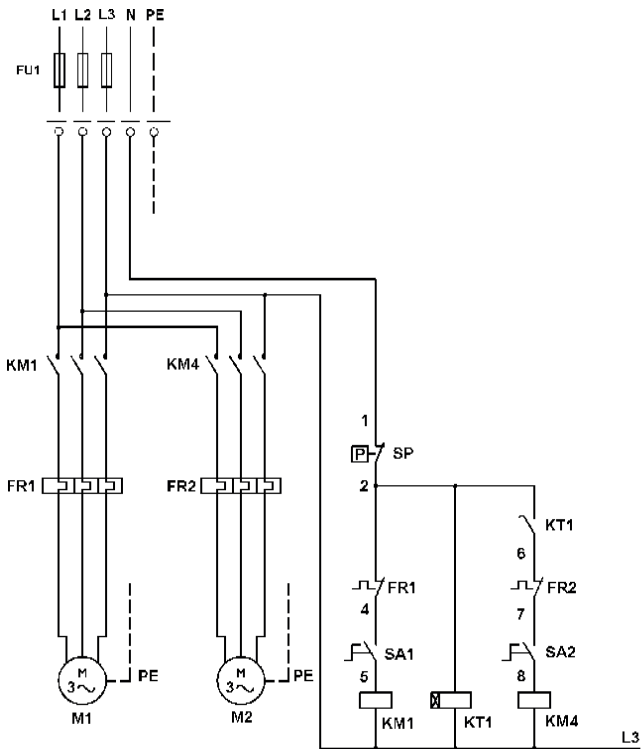



Fig. 6.5

| Components | Description |
|---|---|
| SA | Selector |
| FR | Thermal relay |
| YV | Solenoid valve |
| SP | Air pressure switch |
| KT | Timer |
| PE | Earth |
| KM1/4 | Line contactor |
| KM2/5 | Delta contactor |
| KM3/6 | Star contactor |
| M1 | Motor 1 |
| M2 | Motor 2 |
| FU1 | Fuses |

## Wiring diagram star/delta starter TD tandem models

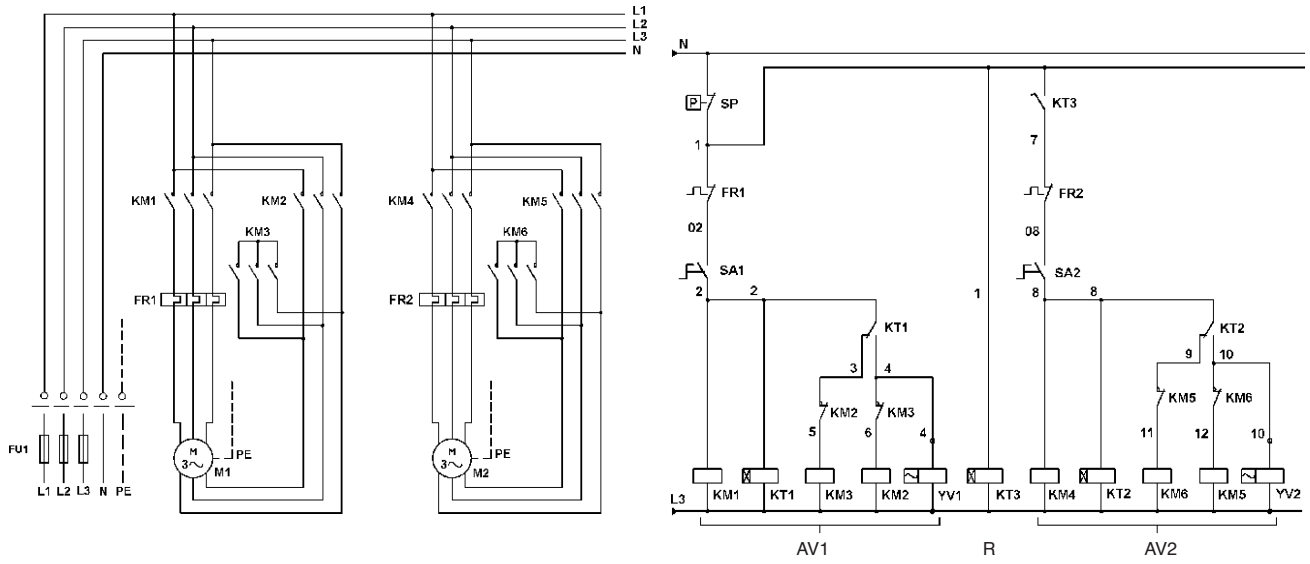



Fig. 6.6

| Components | Description |
|---|---|
| AV 1/2 | Motor starting |
| R | Delay |
| SA | Selector |
| FR | Thermal relay |
| YV | Solenoid valve |
| SP | Air pressure switch |
| KT | Timer |
| PE | Earth |
| KM1/4 | Line contactor |
| KM2/5 | Delta contactor |
| KM3/6 | Star contactor |
| M1 | Motor 1 |
| M2 | Motor 2 |
| FU1 | Fuses |