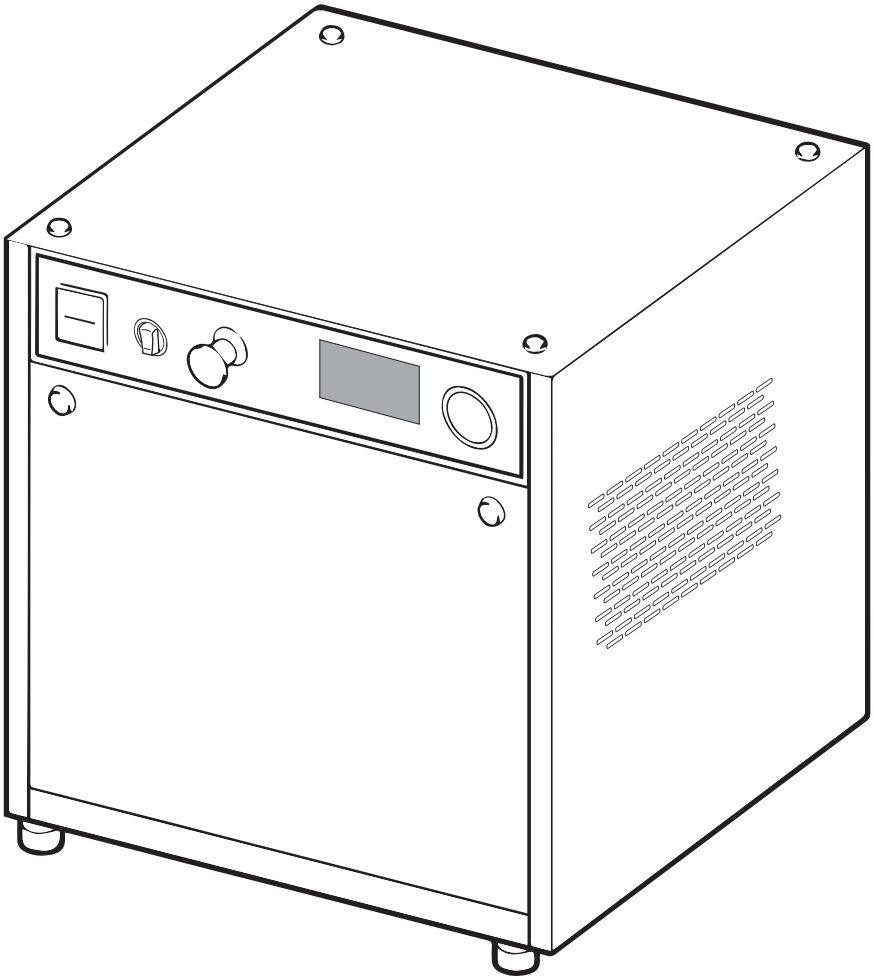
HAMMER TOOLS

HAMMER TOOLS | KK 7.5 PVS

OPERATING AND MAINTENANCE MANUAL

English

Large silenced electric compressors – AL series



Translation of the supplied German manual

01/2024 - REV. 02

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1 : GENERAL INFORMATION

1.1 General

The compressor must only be used in accordance with this manual. Keep the manual in a known, easily accessible place throughout the machine's service life. Always state the model and serial number in any further enquiry.

Follow this operating manual, which describes the permitted use and operation of your equipment.

The manufacturer accepts no liability for personal injury or property damage caused by incorrect or improper use of the equipment.

The manufacturer reserves the right to make any necessary changes to the various models to meet the requirements of applicable technical standards.

For complaints, please contact our authorised dealer's customer service department.

1.2 Manufacturer information

Manufacturer:	
Address:	
Telephone/Fax:	
Email	
Website	

1.3 Customer service

Our customer service department is always available to provide all the information needed to resolve any problems. For further enquiries, contact customer service or your local dealer. Only original spare parts guarantee optimum compressor performance. Follow the instructions in the Maintenance chapter carefully.

Before contacting customer service, have the model designation ready

Using non-original spare parts automatically voids the warranty.

Fig. 1.1

AUTHORISED DEALER'S STAMP AND CUSTOMER SERVICE DETAILS

1.4 Introduction and safety

Read the instructions in this manual carefully before commissioning the equipment. This will help you become familiar with your new equipment.

The best accident prevention is care and attention when using the equipment.

Observe the information on all signs attached to the machine. Replace damaged signs immediately.

Keep this document close at hand for reference at any time and to pass on to future owners.

Read the safety information in the introduction to this manual carefully and observe the safety instructions highlighted as 'Warning', 'Caution' and 'Danger' in the text.

	**This symbol means: NOTE. It indicates the correct methods, procedures and conduct to follow for optimum use of the product.**
	**This symbol means: CAUTION. It highlights safety information. Failure to follow these instructions may cause minor injury or equipment damage.**
	**This symbol means: WARNING. It highlights safety information that must be read carefully. Failure to follow these instructions may cause serious injury or equipment damage.**
	**This symbol means: DANGER. It indicates a situation that is dangerous to the user or other people. Read this information carefully. Failure to follow these instructions will result in serious or fatal accidents.**

1.5 Equipment identification

Rating plate

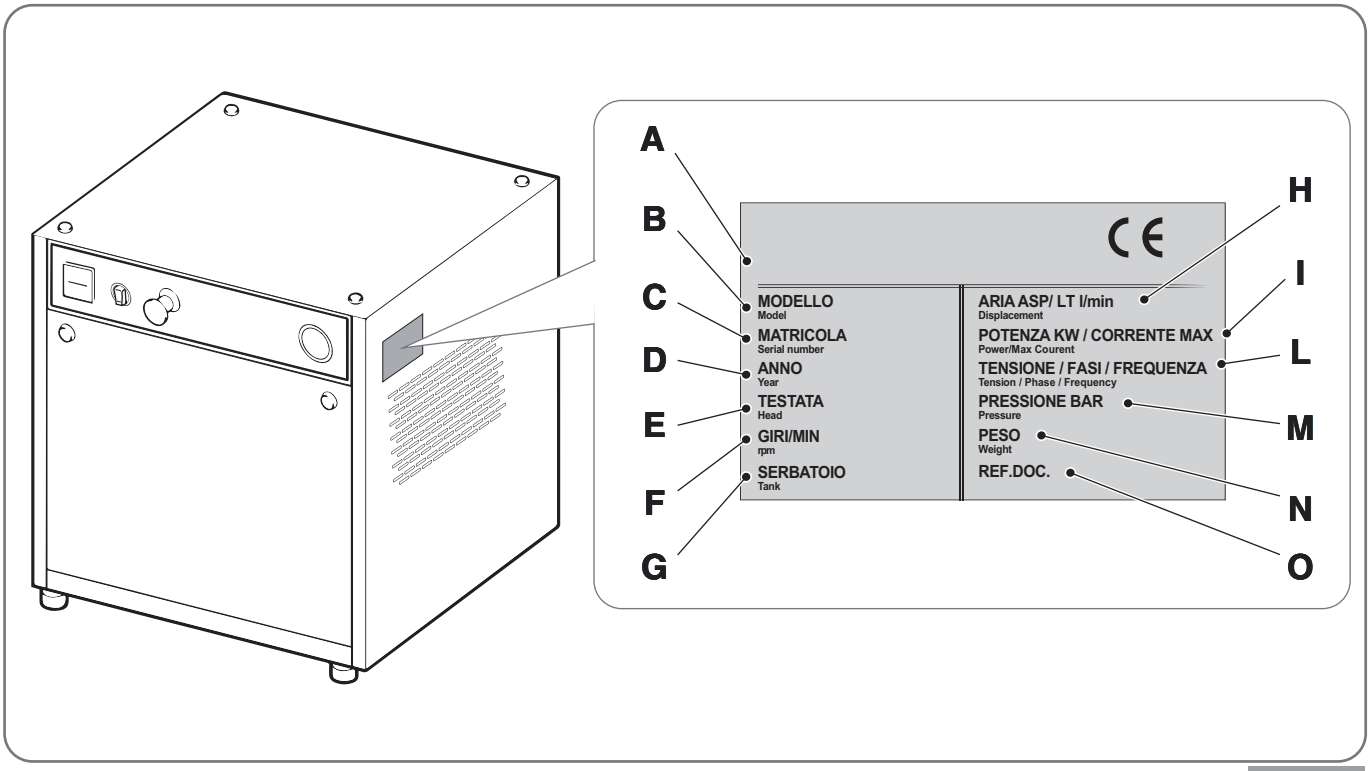


Fig. 1.2

The rating plate gives the following information:
A - Manufacturer information
B - Model
C - Serial number
D - Year of manufacture
E - Compressor head
F - rpm
G - Tank
H - Air intake capacity (l/min)
I - Power (kW), max. current (A)
L - Voltage (V), number of phases, frequency (Hz)
M - Pressure (bar)
N - Weight (kg)
O - Reference documents

	NOTE: We recommend recording the product data and serial numbers so they are immediately available when needed.

	NOTE: Always quote the information on this rating plate for efficient customer service and spare parts support.

EC declaration of conformity

The manufacturer of the equipment described here, to which this declaration relates, declares under its sole responsibility that this equipment meets the essential safety, health and protection requirements of the relevant EC directives. The corresponding test reports, in particular the CE declaration of conformity duly issued by the manufacturer or its authorised representative, are available for inspection by the competent authorities and may be requested from the equipment seller.

Location of safety labels

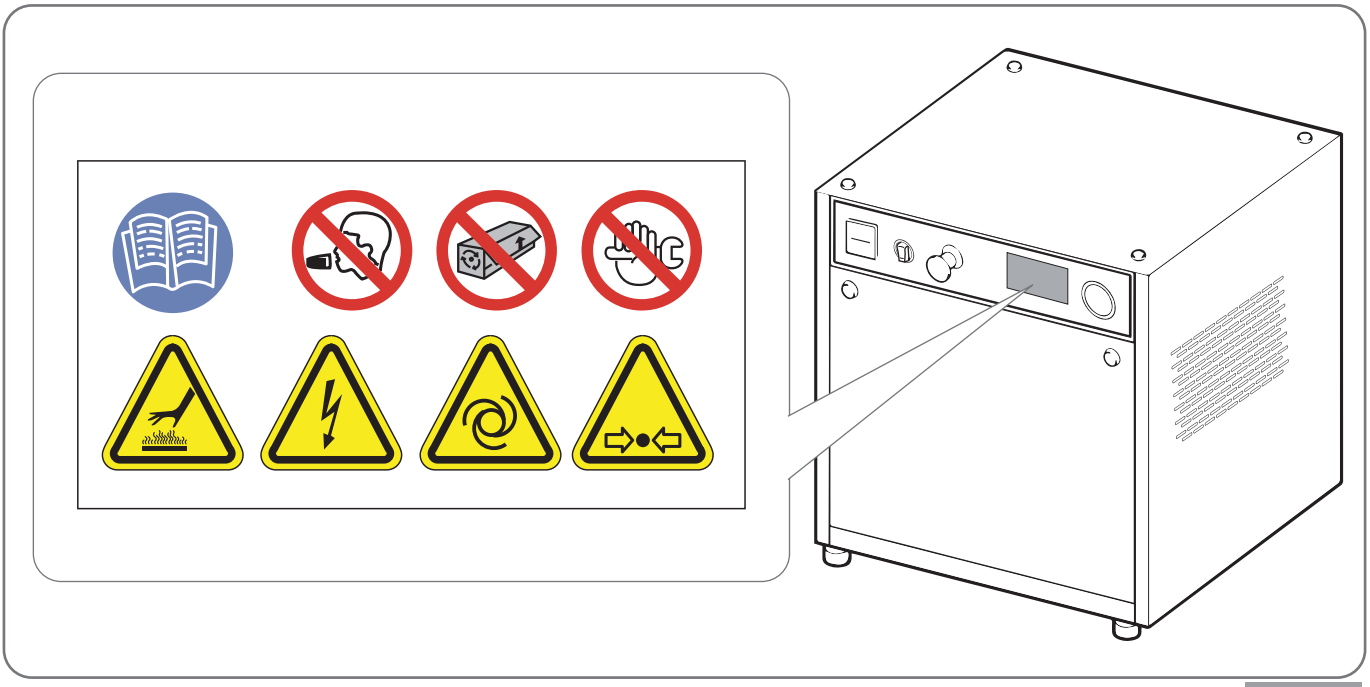


Fig. 1.3

SYMBOL	MEANING	SYMBOL	MEANING
	**Read the operating manual carefully**		**Caution: hot surface**
	**Do not breathe in**		**Caution: live electrical equipment**
	**Do not release into the environment**		**Caution: moving machine parts**
	**Do not carry out work requiring authorised personnel**		**Caution: pressurised component or system. Release all compressed air.**

1.6 Warranty terms

The electric compressor warranty lasts 12 months from the invoice date. It covers only free replacement of parts acknowledged to be defective, excluding wear parts and electrical parts. Improper use or modification of the compressor automatically voids the warranty. Transport and labour costs are also excluded. The electric compressor must be returned carriage paid even during the warranty period.

The warranty is invalid without the purchase date and the seller's stamp.

2 : GENERAL SAFETY RULES

2.1 Important information

The following important safety rules for operating the compressor must be strictly observed.

	**DANGER: Operate the compressor in suitable rooms with adequate ventilation and an ambient temperature between +5 °C and +40 °C. Correct operation is assured when relative humidity does not exceed 50 % and the maximum temperature is +40 °C; higher relative humidity may be possible at lower temperatures, e.g. 90 % at 20 °C. Never operate the compressor in the presence of dust, acids, paints, solvents, vapours or explosive or flammable gases. The compressor is not designed for use in explosive atmospheres. It can operate at altitudes up to 1,000 m above sea level. Unauthorised modifications to the compressor are strictly forbidden; they may cause serious injury or accidents. Consult an authorised service centre for all work. Do not use the equipment barefoot or with wet hands or feet. Do not clean it with flammable liquids or solvents. Use only a damp cloth and first ensure that the plug is removed from the mains socket. The electrical installation supplying the compressor must be effectively earthed and fitted with a disconnecting device protecting against short circuits, earth discharges and residual currents. 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.**

	**WARNING: Incorrect use or maintenance of the compressor may injure the user. The compressor is intended for compressing air. Do not use the machine with other gases. Its compressed air must not be used in pharmaceutical, food or hospital applications without special treatment, or to fill diving equipment. Never use the compressor unless all protective covers are fitted. If covers must be removed for maintenance, ensure they are correctly refitted before restarting. Never bypass the compressor's built-in safety devices. Do not insert objects or body parts into protective grilles, to avoid injury or compressor damage. Always wear safety goggles or equivalent eye protection. Never direct the air jet at people, animals or your own body. Never direct liquid sprayed by tools connected to the compressor at the compressor itself. Do not use the compressor under the influence of alcohol, drugs or medicines that cause drowsiness. Before any work, personnel must be familiar with all compressor functions and controls. Never use the compressor for tasks other than those described in this manual. To prevent burns, do not touch pipes, the motor or other hot components. Inspect the compressor's condition. A damaged power cable must be repaired or replaced; contact a service centre if necessary. Check that moving parts run smoothly and that pipes, pressure gauges, pressure reducers, compressed-air connections and other components essential to operation are secure. Ensure all screws, bolts and covers are tight. Damaged parts must be repaired by a service centre. Avoid accidental bodily contact with metal compressor parts such as earthed pipes and tanks. Never use the compressor where water or moisture is present, or expose it to weather (rain, sun, fog, snow); general protection rating IP 20. For all maintenance work, or when shutting down the compressor while not in use, disconnect it from the power source and fully release the pressure in the tank.**

	**WARNING: The compressor must not be used by untrained personnel. Keep children and animals away from the work area. This equipment is not intended for use by people (including children) with reduced physical, sensory or mental abilities, or lacking experience and/or knowledge, unless supervised or instructed in its use by a person responsible for their safety.**

	**WARNING: Do not transport the compressor while connected to the mains or while its tank is pressurised. To switch off, use only the pressure switch or, on models so equipped, the switch in the control cabinet. Do not stop it by unplugging it, to avoid restarting with a pressurised compressor head. Do not step on or crush the cable. Keep it away from heat, oil and sharp surfaces. Do not switch off by pulling the power cable. Use the red emergency-stop button (if fitted) to stop the compressor. Do not unscrew any tank connection without first ensuring the tank is depressurised. Drilling, welding or modifying the tank is strictly forbidden. If defective or corroded, it must be replaced completely.**

	**CAUTION: Ensure adequate ventilation in the work area. Do not wear unsuitable clothing or accessories. If necessary, cover your hair to prevent it becoming caught in moving machine parts. Also protect your nose and mouth with a suitable mask. Check that moving parts run smoothly and that pipes, pressure gauges, pressure reducers, compressed-air connections and other components essential to operation are secure. Ensure all screws, bolts and covers are tight. Damaged parts must be repaired by a service centre. Always keep at least 4 metres between the compressor and the work area. Use extension cables no longer than 5 metres, with a suitable conductor cross-section. Longer cables, adapters and multiple sockets are not recommended. For outdoor use, use cables designed for that purpose. Keep the intake grille clean. Clean it regularly if the ambient air is particularly dirty. Do not use solvents, thinners or other substances containing hydrocarbons, as they may damage plastic parts. Use soapy water or suitable liquids if needed. Operate the compressor at the voltage shown on the rating plate. A different voltage may burn out or damage the motor. If abnormal noise or excessive vibration occurs, check the compressor's operation and contact the service centre if necessary. Use pipes, fittings and pneumatic tools rated above the operating pressure. During operation, the compressor must stand level on a stable base to ensure correct lubrication.**

	**NOTE: Use the compressor in accordance with this manual. The manufacturer reserves the right to change the manual without prior notice. Use only original spare parts, available from our authorised dealers. Non-original spare parts void the warranty and impair compressor performance. Repairs must be carried out by an authorised centre.**

2.2 Noise emissions

The maximum sound level measured 1 m from the operator's workstation is Leq < 78 dB(A). Measurement uncertainty corresponds to 90 % confidence, U = ±3 dB(A).

The measured values for each model are listed in the tables in chapter ‘3 TECHNICAL DATA AND FEATURES’.

2.3 Personal protective equipment (PPE)

Use personal protective equipment: hearing protection and safety footwear.

2.4 Vibration

Under operating conditions that comply with the instructions for correct use, no vibration capable of creating a hazardous situation occurs.

2.5 Transport and storage

Transport and storage must meet the following conditions:

- Storage temperature between -25 °C and +55 °C; briefly, for no more than 24 hours, up to +70 °C;
- Relative humidity: 90 % maximum;
- Enclosed, dry room protected from weather; 10 cm above the floor.

2.6 Environmental protection

2.6.1 Packaging

Follow local disposal regulations.

	**CAUTION: Packaging materials (plastic bags, polystyrene parts, pallets, metal brackets, etc.) are hazardous to children. Keep packaging out of children's reach.**

2.6.2 Disposal

	**CAUTION: Dispose of the equipment in accordance with the laws in the country of installation. Before disposal, completely release the tank pressure and cut the power cable to render it unusable.**

	**DANGER: Lubricating oils are pollutants and therefore hazardous waste. When disposing of the compressor, collect all oil in containers that prevent environmental contamination. Waste materials must not contaminate soil or groundwater or be released into the environment. Dispose of them in accordance with regional, national and local regulations.**

3 : TECHNICAL DATA AND FEATURES

3.1 Model

General features

	NOTE: Your model may differ from the illustrations below. Refer to the rating plate and product catalogue for further details.

Dimensions

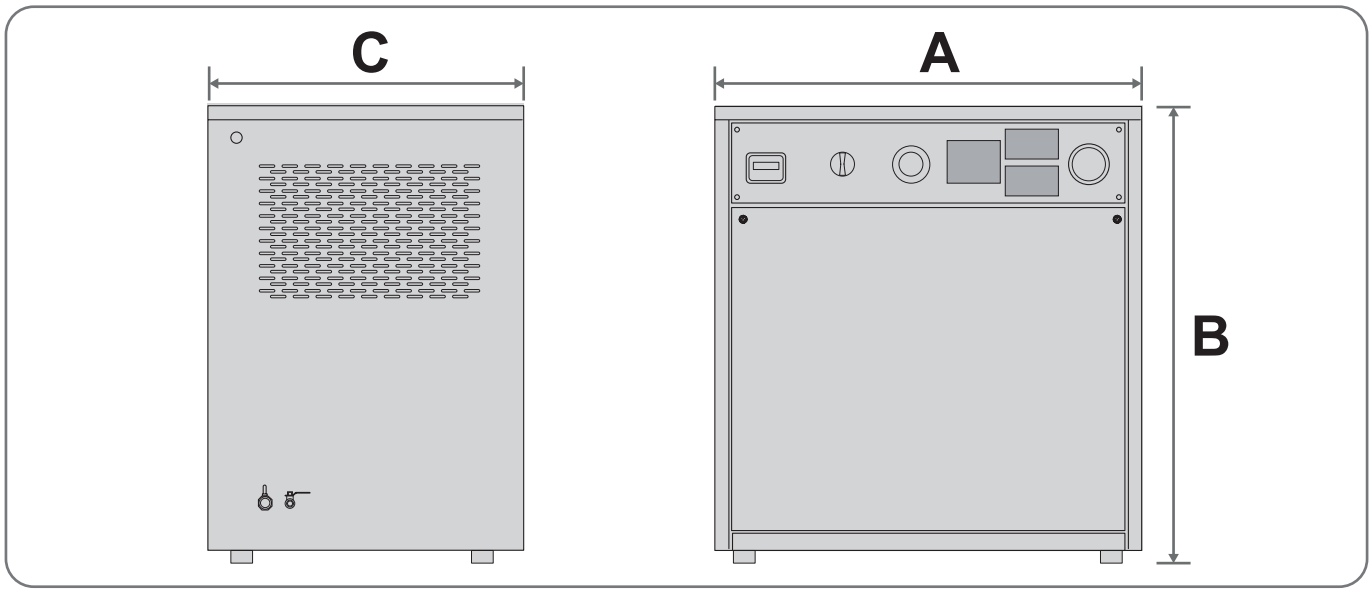


Fig. 3.1

A (mm)	B (mm)	C (mm)	900	1000	680		

Panel thickness

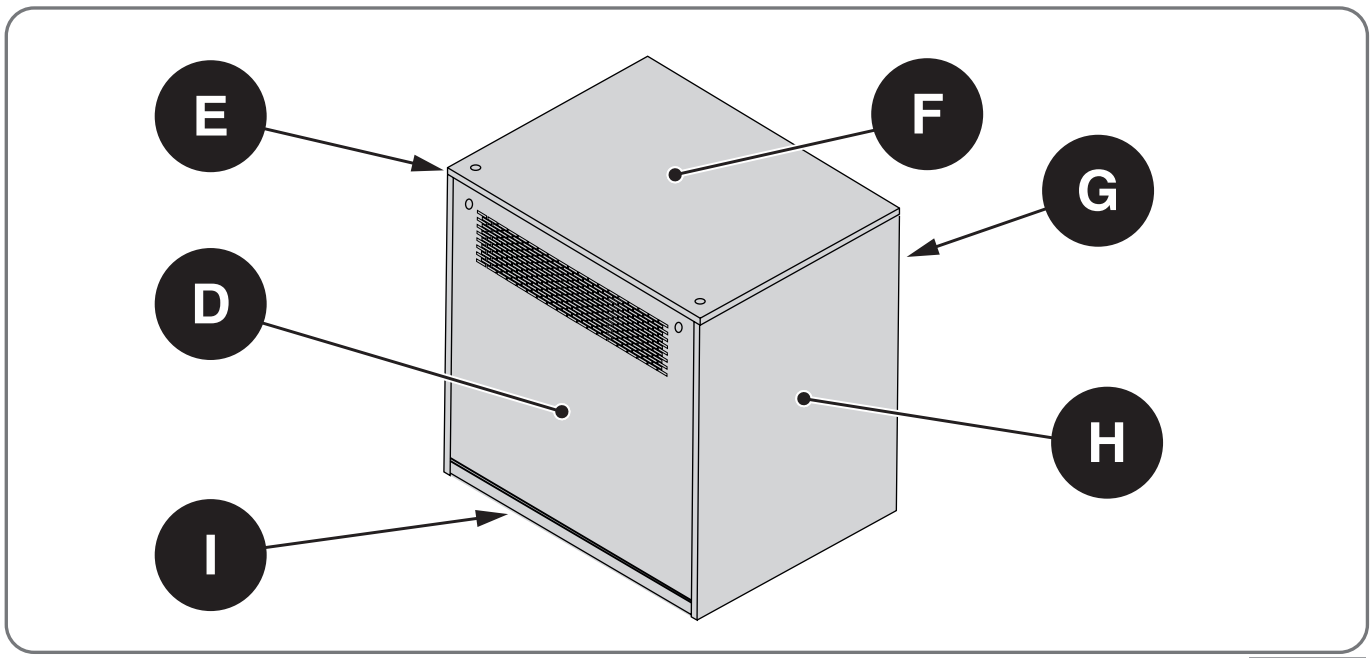


Fig. 3.2

D	E	F	G	H	I
10/10	10/10	10/10	10/10	10/10	50/10

Symbols

	Motor power		Max. current draw
	Cable cross-section	III	Fuses
	Oil quantity		Tank capacity
	Air intake capacity		Revolutions per minute
	Cylinders		Noise emissions
	Maximum pressure		
	Net weight		

Technical specifications

Model					III		
	PS	kW	A	mm2	A	l	Nr.
GS35/500/S	4	3	13,7	4 X 2.5	20	1,9	2
GS35/600/S	5,5	4,1	8,5	4 X 2.5	20	1,9	2
GS38/650/S	5,5	4,1	8,5	4 X 2.5	20	1,3	2
GS38/850/S	7,5	5,6	11,7	4 X 2.5	20	1,3	2
GS50/1200/S	10	7,5	16,2	4 X 4	25	1,9	2

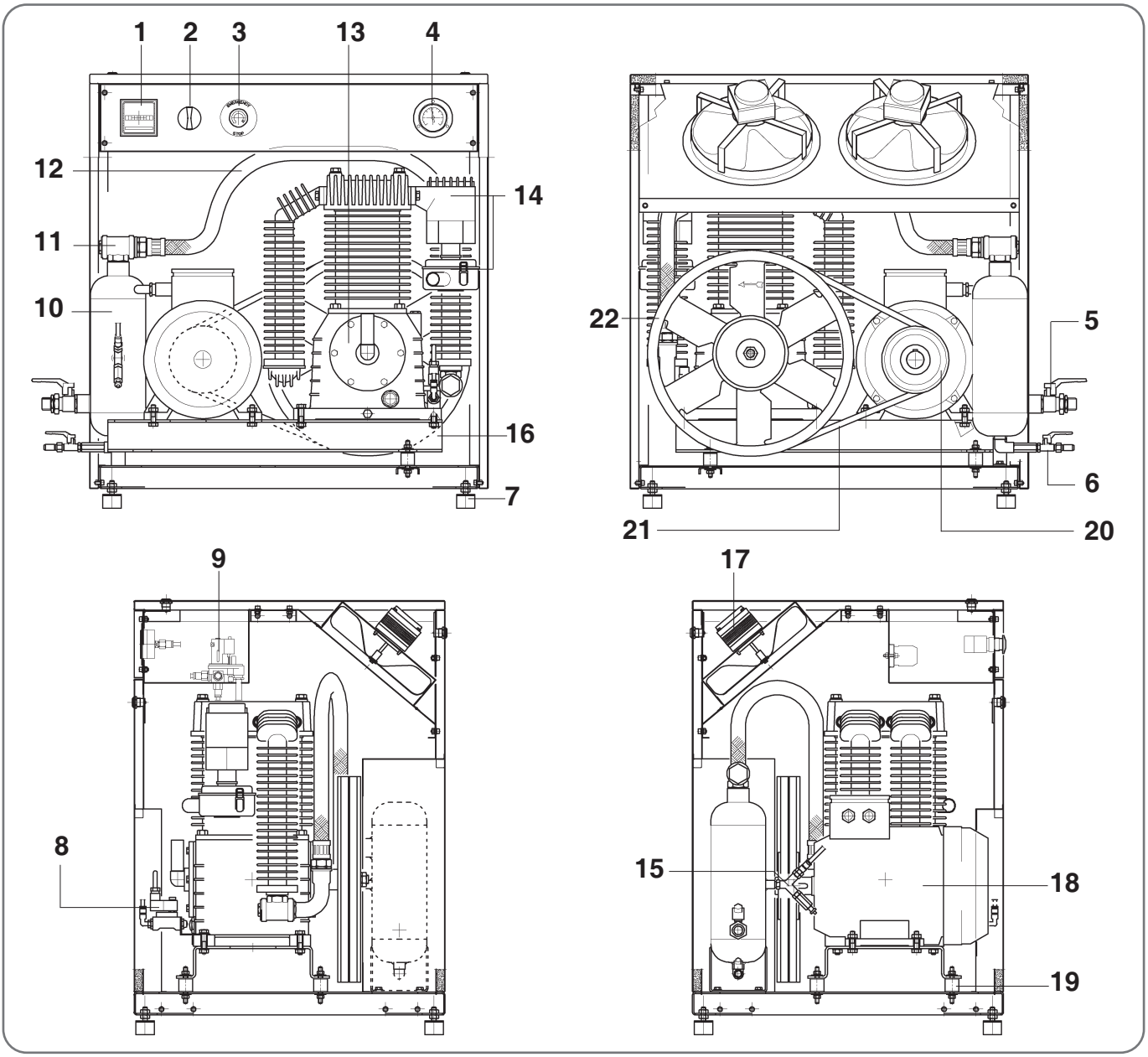
Model									
	l	l/min	cfm	RPM	bar	PSI	LpAm db (A)	LWA db (A)	kg
GS35/500/S	3	500	17,6	1450	11*	159	61	81	140
GS35/600/S	3	600	21,2	1400	11*	159	62	82	147
GS38/650/S	3	650	23	900	11*	159	62	82	168
GS38/850/S	3	850	30	1150	11*	159	63	83	175
GS50/1200/S	3	1182	42	1100	11*	159	64	84	220

* These models are available in a 15 bar version; refer to the rating plate.

CUSTOM SPECIAL VERSIONS (some models can be adapted to customer requirements)

3.2 General machine description

NOTE: Your model may differ from the illustrations below. Refer to the rating plate and product catalogue for further details.



Features Fig. 3.3

1	Hour meter	**12**	Pressure line
2	Pressure switch, start-stop	**13**	Pump unit
3	Emergency-stop button	**14**	Intake filter
4	Tank pressure gauge	**15**	Safety valve
5	Line valve	**16**	Support frame
6	Condensate drain	**17**	Cooling solenoid valve
7	Vibration damper	**18**	Electric motor
8	Drain / unloading solenoid valve	**19**	Silent block
9	Pressure switch	**20**	Motor pulley
10	Air tank	**21**	Drive belt
11	Non-return valve	**22**	Compressor flywheel

3.3 Transport and lifting

The compressor is supplied on a pallet and can be lifted with a forklift.

Always use lifting equipment (e.g. forklifts, cranes) and accessories (slings, hooks, etc.) suitable for the load's weight and in good condition.

WARNING: Lifting must only be performed by qualified personnel.

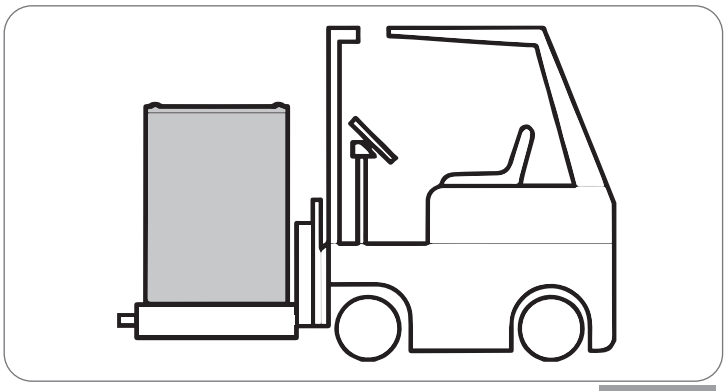


Fig. 3.4

3.4 Location

The room in which the compressor is installed must comply with applicable accident-prevention regulations and meet these requirements:

- It must have a low dust level.
- It must be adequately ventilated and large enough to keep the ambient temperature, while the machine is running, between a minimum of 5 °C and a maximum of 40 °C.

The silenced compressor has removable panels to simplify maintenance and repairs. Sufficient clearance from walls or other machines is therefore essential to allow freedom of movement. During operation, the compressor generates heat, some of which is released into the surroundings. Position it at least 30 cm from walls, provide suitable openings for adequate cooling, and ensure it cannot draw in the air it has itself discharged.

Where possible, the workplace should have sufficient natural light and equipment providing adequate artificial lighting to ensure operator health and safety. Minimum room lighting (between 300 and 500 lux) must provide clear visibility at every point of the SILOS and allow safety symbols and pictograms to be recognised correctly. Maximum lighting must not dazzle operating personnel.

CAUTION: If fresh-air supply is not possible, install auxiliary fans for forced ventilation. These fans must ensure effective heat removal; their airflow capacity must therefore be 15–20 % above the air volume needed to cool all installed compressors.

NOTE: Ensure the compressor stands on a level surface. No special preparation of the supporting surface is needed. Vibration dampers with matching nuts and washers are available on request.

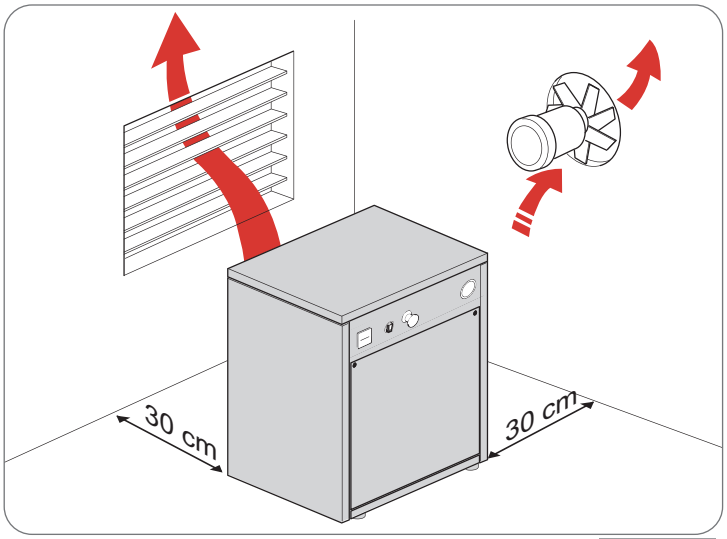


Fig. 3.5

4 : OPERATING INSTRUCTIONS

4.1 General checks

	**WARNING: Strictly observe the SAFETY INSTRUCTIONS for machine operation in chapter 2, 'GENERAL SAFETY RULES'. Identify your model from the compressor's rating plate and the information at the beginning of this manual.**

4.1.1 Using the compressor

The compressors were designed and built solely to produce compressed air.

	**WARNING: Any use other than the intended purpose releases the manufacturer from liability for resulting risks. Use differing from the conditions agreed at purchase releases the manufacturer from liability for personal injury, property damage or damage to the machine itself.**

The electrical system is not suitable for work in environments requiring explosion protection or with flammable products.

	**WARNING: Never direct compressed air at people or animals. Do not use the air for breathing or in production processes where it directly contacts food without prior treatment or filtration.**

4.1.2 Compressor lubrication

	**WARNING: Before draining or adding oil, disconnect the compressor from the mains and wait until the system reaches atmospheric pressure. Wear personal protective equipment when handling lubricants. Never mix different types of oil.**

Use SAE 15W40 engine oil as the lubricant.

At ambient temperatures between -10° and 0°, use SAE 5W50 synthetic oil.

In all cases, use a lubricating oil suited to the ambient temperature.

Pour mineral lubricant into the reservoir through the filler neck until it reaches the level indicated on the sight glass.

Start the compressor, first switching it on and off briefly several times, then running it continuously for about 10 minutes.

Then stop the compressor, release the pressure and add lubricant through the filler neck until it reaches the level indicated on the sight glass.

4.1.3 Connecting the compressor to the electrical supply

	**WARNING: The customer must arrange the machine's mains connection at their own responsibility. Avoid all risks of electrical discharge. Never use the compressor with a damaged power or extension cable. Check all power cables regularly. Never use the compressor in hazardous environments where electrical discharges may occur.**

EARTH CONNECTION

The compressor must be earthed during operation to protect the operator from electric shock. Connection must be carried out by a specialised technician or service centre. Connect the earth conductor of the compressor's supply cable only to the compressor's own terminal. Before replacing the power cable plug, ensure the earth conductor is connected.

EXTENSION CABLES (IF REQUIRED)

Extension cables are not recommended. If one must nevertheless be used, ensure it is in perfect condition; do not use damaged extension cables. Its conductor cross-section must suit the compressor's current draw. A cable that is too thin can cause voltage drops, loss of power and overheating. The extension cable's cross-section must be appropriate to its length.

4.2 Using the machine

4.2.1 Preliminary checks before starting the compressor

⚠	**WARNING: The following preliminary checks are essential before using the compressor.**

- If required, fit the valves by simply screwing them into the corresponding connections;

- Check the oil level at the sight glass;

- Check that the mains voltage matches the rating plate; the permitted tolerance must remain within ±5 %;

- Fit the compressor's outgoing cable with a suitable power plug rated for the motor's power consumption;

- Extension cables are not recommended. If one must be used, the power cable's conductor diameter must be proportional to its length, with a maximum length of 20 m.

⚠	**WARNING: Electric compressors must be connected to a mains socket protected by a residual-current device or three slow-blow fuses.**

⚠	**WARNING: The power cable must not be taut.**

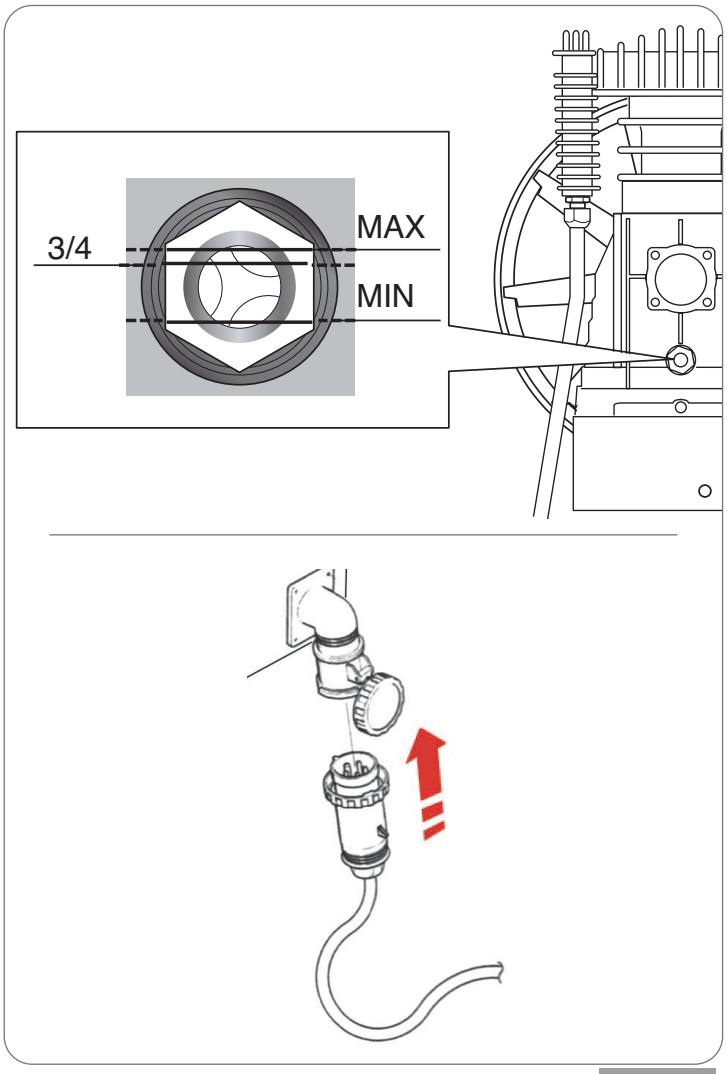


Fig. 4.1

All compressors equipped with a tank have a safety valve that operates if the pressure switch malfunctions, ensuring machine safety.

ⓘ	**NOTE: The safety valve's location varies by model.**

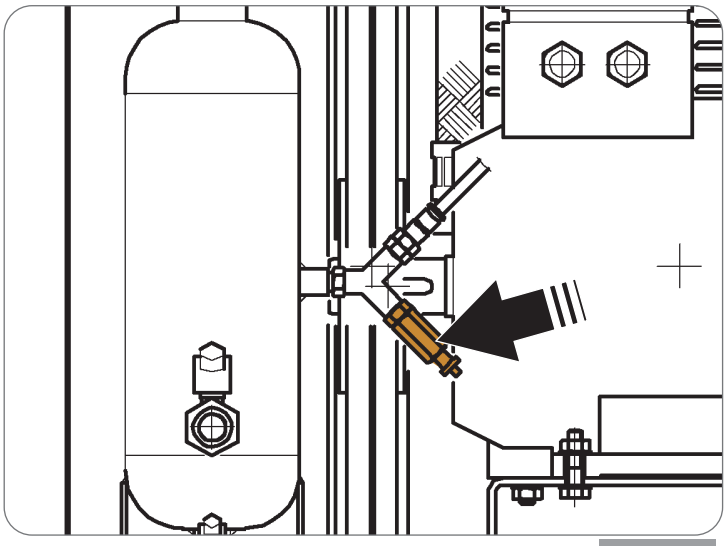


Fig. 4.2

4.2.2 Starting and stopping the electric compressor

CAUTION: Switch the compressor on and off only with the on/off switch (Fig. 4.5) on the front control panel. At first start-up of three-phase compressors, check the unit's cooling flywheel rotates correctly, using arrow A on the motor's fan cover.

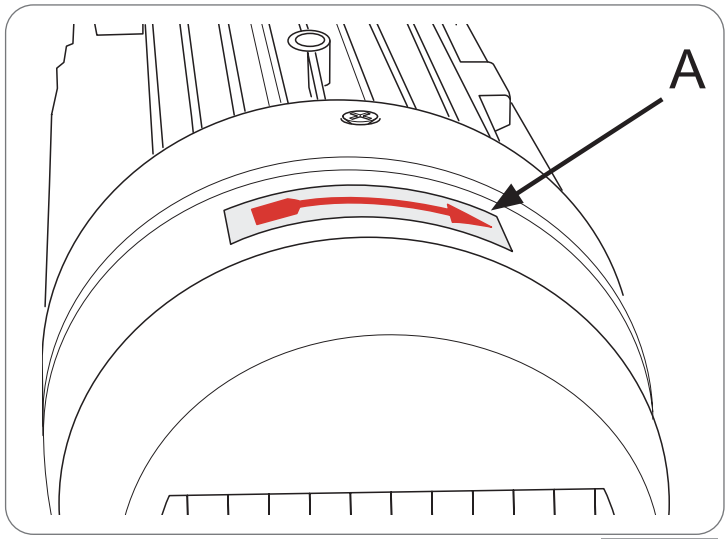


Fig. 4.3

Reversing flywheel rotation

For a mains socket, use a flat-blade screwdriver to turn the phase connection plate for conductors L1 and L2 through 180°.

If connected to a control cabinet, use a screwdriver to interchange the terminals to which phase conductors L1 and L2 are connected.

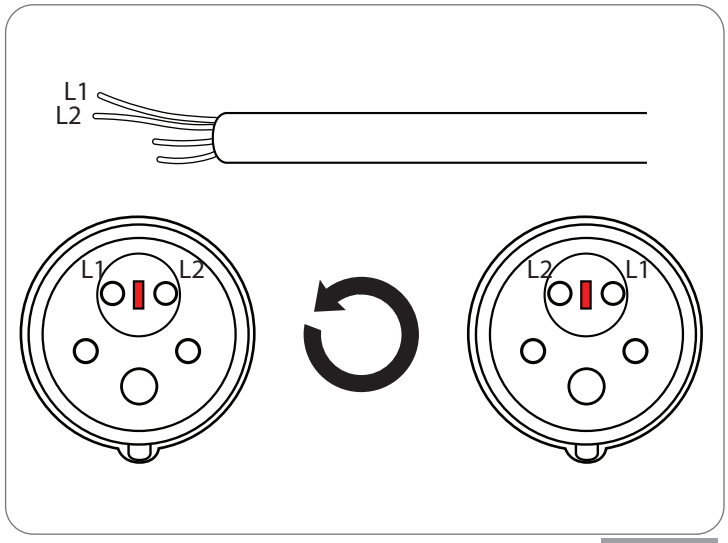


Fig. 4.4

The compressor operates fully automatically, controlled by the pressure switch, which stops it when tank pressure reaches the maximum value and restarts it when pressure falls to the minimum. Before starting work, run the compressor for a few minutes with the air valve fully open to distribute the lubricant properly.

After the first 5 operating hours, check that the head bolts are tight. To stop the electric compressor, operate on/off switch B on the front control panel. Turn the switch clockwise to start the compressor and anticlockwise to stop it.

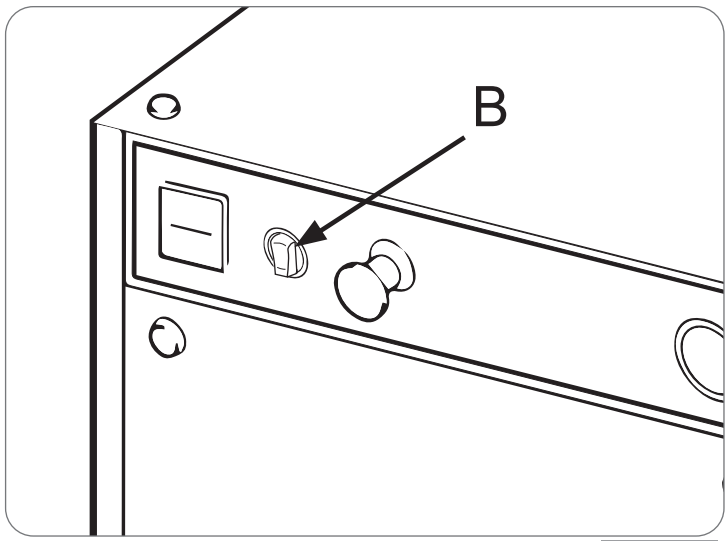


Fig. 4.5

In danger or an emergency, press the emergency-stop button (F, red mushroom button on a yellow background).

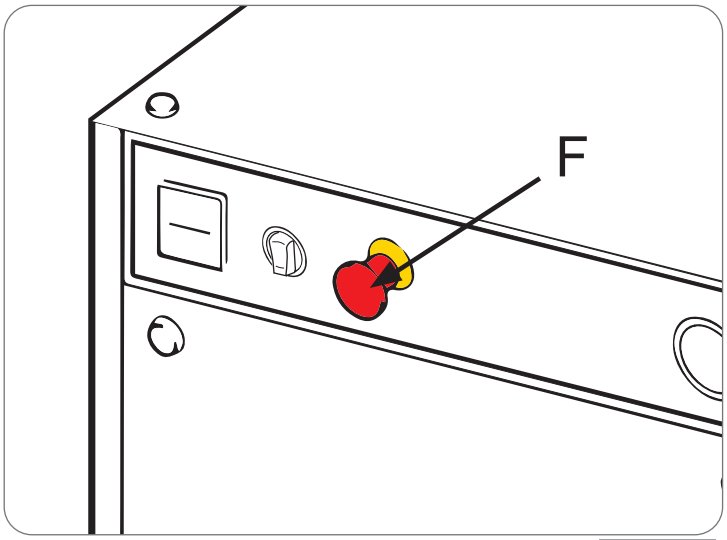


Fig. 4.6

5 : MAINTENANCE

Maintenance of your equipment must only be carried out by the manufacturer.

The manufacturer is NOT liable for personal injury and/or property damage caused by work differing from the procedures in this manual. After every inspection, maintenance operation or adjustment, ensure protective covers are refitted and safety devices work correctly.

	DANGER: Maintenance or repair with the power connected is forbidden. Ensure the supply has been disconnected before removing protective covers.
	WARNING: Do not perform maintenance or repairs until the motor and compressor head have cooled sufficiently.
	WARNING: Do not clean the compressor with a pressure washer or pressurised water. Wipe away dust and dirt with a damp cloth.

5.1 Condensate drain

The machine's service life depends on the quality of maintenance.

	WARNING: Before any maintenance or cleaning, switch off the equipment, unplug it and completely drain the tank.

Drain condensate from the tank at least weekly by opening drain valve A on the side of the compressor.

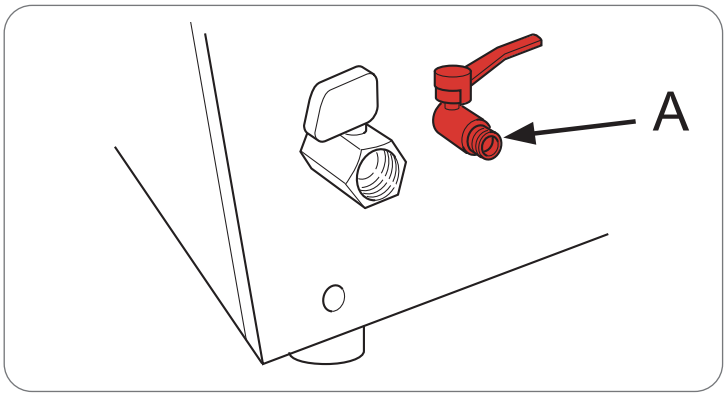


Fig. 5.1

5.2 Oil change – topping up oil

Change all the oil in the pump unit after the first 200 operating hours, then every 500 hours.

1 - Unscrew drain plug B, drain all the oil and refit plug B.
2 - Unscrew filler plug C. Add oil until it reaches the level indicated on the sight glass, then refit the plug.

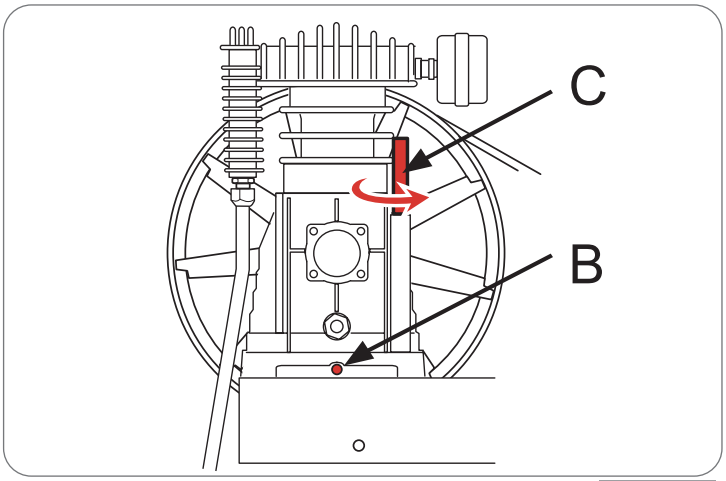


Fig. 5.2

Check the pump unit's oil level once a week and top up if necessary.

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

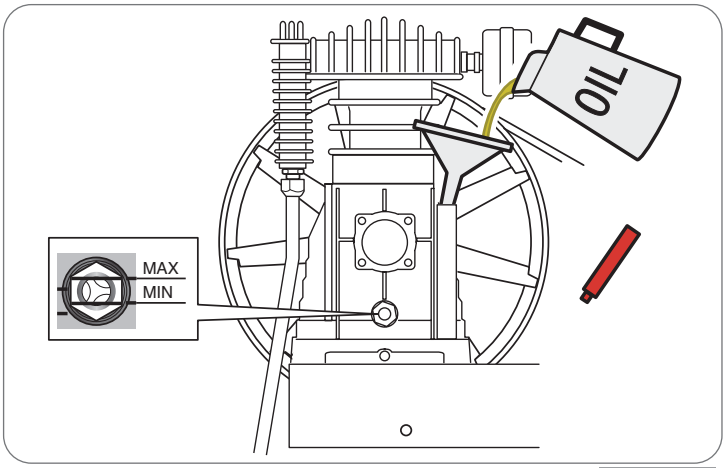


Fig. 5.3

5.3 Intake filter maintenance

Every 50 operating hours, remove the intake filter and clean filter element D by blowing compressed air against the normal direction of flow. Replace the complete filter every 500 hours.

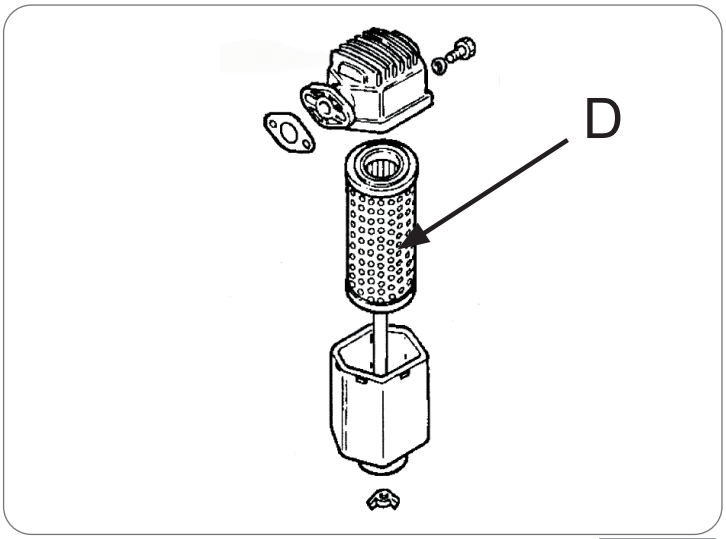


Fig. 5.4

5.4 Belt tension

Keep the belt drive clean and the belt correctly tensioned. Insufficient tension causes slipping on the pulley, overheating, rapid belt wear and loss of performance. Excessive tension overloads the bearings, increasing wear and overheating the motor. Tension is correct when finger pressure at the belt's midpoint produces approximately 0.8–1 cm deflection.

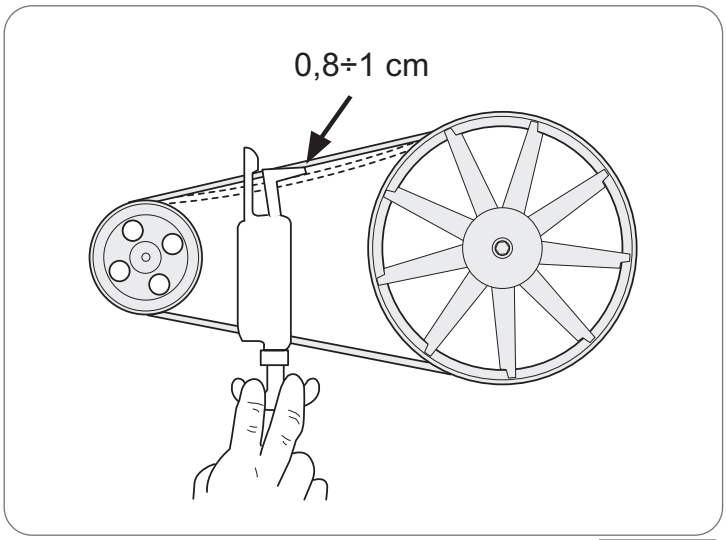


Fig. 5.5

Check belt tension once a month. To retension the belt:
1 - Loosen motor mounting bolts A;
2 - Pull the motor until the correct belt tension is reached;
3 - Tighten motor mounting bolts A.

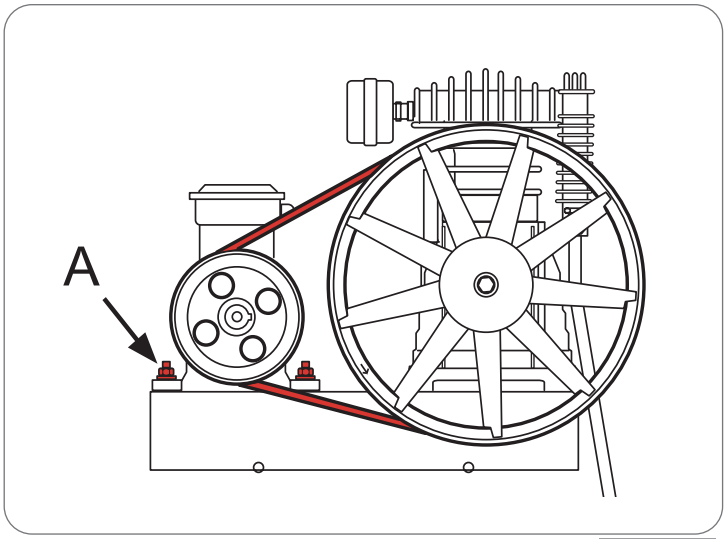


Fig. 5.6

5.5 Non-return valve

WARNING: Release the pressure before carrying out this operation.

If the non-return valve fails to prevent air flowing back from the tank due to wear or dirt on the sealing disc, unscrew hexagonal valve head A. Clean the seat. Clean or replace rubber disc B. Reassemble carefully.

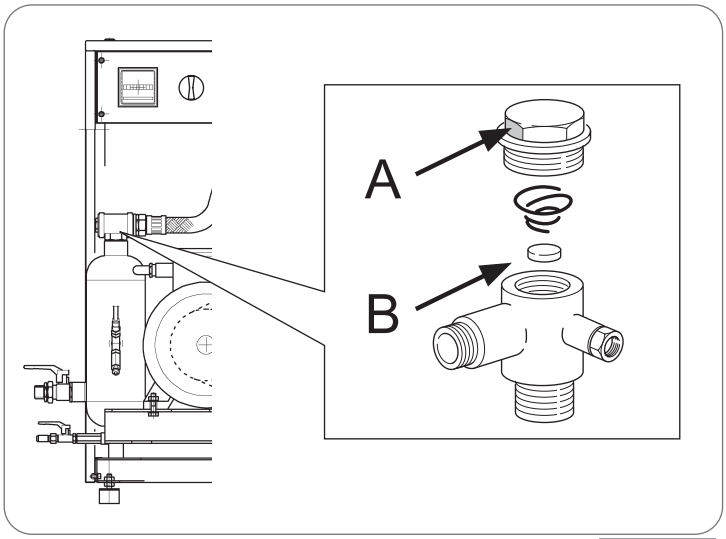
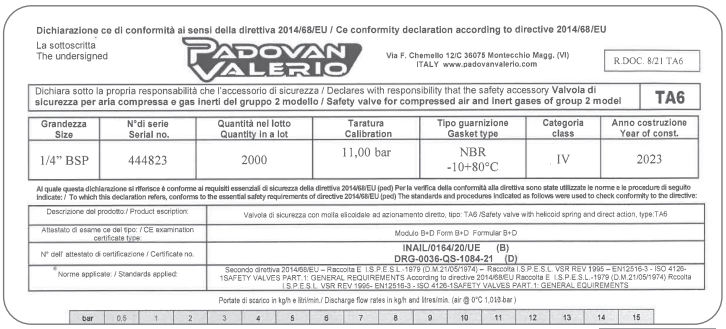


Fig. 5.7

5.6 Safety valve

WARNING: Release the pressure before carrying out this operation.

Replace the safety valve every 3 years, as specified in the certificate supplied with the machine documentation.



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 escription:	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) 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 REQUIREMENTS 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 litresimin. (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 Emergency stop

Press the compressor's emergency-stop button (F) and check that the power supply is disconnected.

Turn the button to reset it and wait until it is released.

Carry out this check regularly, every 200 operating hours.

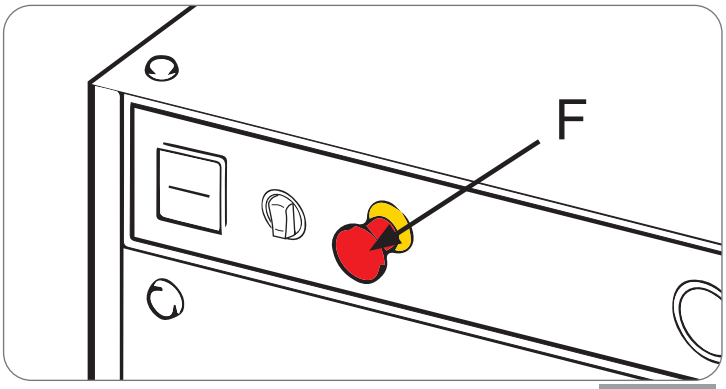


Fig. 5.9

5.8 Special precautions

If the electric compressor will not be used for more than a few days, drain the condensate from the tank. Do not transport the tank while pressurised.

5.9 Maintenance schedule

The table below summarises the cleaning, inspection and maintenance work needed to maintain correct operating conditions. The intervals shown apply to moderately demanding operating and environmental conditions.

The operating hours in the table refer to optimum machine use and may therefore vary with the working environment and number of cycles.

WARNING: Use only original spare parts! Beware of hot parts inside!

ROUTINE MAINTENANCE

- Oil level check	every 50 hours
- Oil change	every 500 hours or after 1 year
- Condensate drainage	weekly
- Air filter	Cleaning: every 50 hours Replacement: every 500 hours
- Head bolt tightness	Check before the compressor is started for the first time.
- Belt tension check	Regularly
- Power cable condition and earthing check	Every 500 hours
- Check the condition of the insulation material	Every 500 hours
- Check for oil seepage/leaks	Every 150 hours
- Check safety systems	Every 200 hours

6 : FAULTS, CAUSES AND REMEDIES

6.1 Troubleshooting

Every electric compressor is carefully assembled and tested at the factory before dispatch, so failures or breakages are unlikely. Nevertheless, the following table lists the main causes of possible faults and the actions needed to remedy them.

FAULTS	POSSIBLE CAUSES	REMEDY
Incorrect rotation direction (three-phase supply).	Phases interchanged.	Interchange socket wires L1 and L2 (Fig. 4.4).
The compressor will not start or stops during operation for no apparent reason.	No power supply.	Check the socket.
	Thermal protection has tripped.	Check the fault indicator and press the reset button. If the problem persists, contact a service centre.
After attempting to start, the compressor stops because thermal protection has tripped due to motor overload.	Starting with a pressurised compressor head.	Release the pressure in the compressor head by operating the pressure-switch button.
	Low temperature.	Improve ambient conditions.
	Insufficient voltage.	Check that the mains voltage matches the rating plate. Remove any extension cables.
	Incorrect or insufficient lubrication.	Check the oil level. Top up or change the oil if necessary.
Abnormal heating of the motor and/or compressor.	Inadequate ventilation.	Improve ambient conditions.
	Air passages blocked.	Check the air filter and clean if necessary.
	Insufficient lubrication.	Top up or change the oil (Fig. 5.2 and Fig. 5.3).
Reduced performance, frequent starting. Low pressure.	Incorrect motor rotation direction.	Interchange socket wires L1 and L2.
	Excessive consumption.	Reduce compressed-air demand.
	Blocked intake filters.	Clean/replace intake filters (Fig. 5.4).
	Leaking connections and/or pipes.	Replace seals and/or tighten fittings.
Air escaping from the pressure-switch valve.	Belt slipping.	Check belt tension (Fig. 5.5 and Fig. 5.6).
	The non-return valve does not work correctly due to wear or dirt on the sealing seat.	Unscrew the non-return valve's hexagonal head. Clean the seat and special rubber disc (replace if worn). Refit and tighten securely (Fig. 5.7).
	Condensate drain valve open.	Close the condensate drain valve.
	Rilsan tube incorrectly connected to the pressure switch.	Connect the Rilsan tube correctly to the pressure switch.
The compressor draws air continuously but pressure does not rise.	Damaged solenoid-valve diaphragm.	Contact customer service.

6.2 Wiring diagrams

	NOTE: For custom special versions, refer to the enclosed wiring diagram.

6.2.1 GS35/500/S 230V single-phase

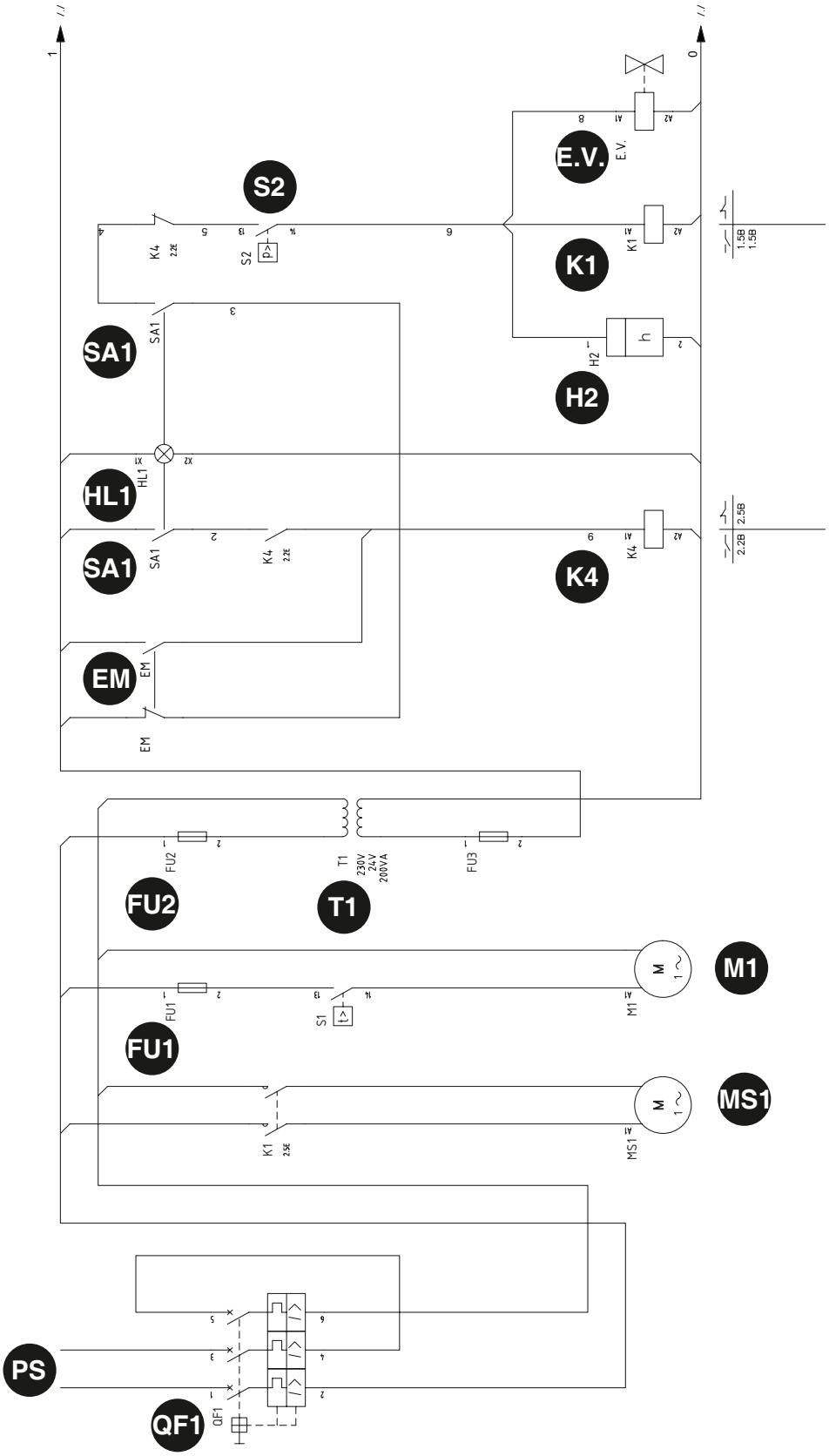


Fig. 6.1

MODEL	4 PS single-phase
Rated voltage	230V 3PH+PE
Frequency	50HZ
Power	4 HP
Rated current	10A
Auxiliary circuit voltage	24-230VAC
ICC	6KA

Part no.	Description	Part no.	Description
PS	Supply	**SA1**	ON selector switch
QF1	Thermal-magnetic motor circuit breaker	**HL1**	Mains indicator light
K1	Compressor relay	**K4**	Operating relay
FU1	Fan fuse	**S2**	Pressure switch
FU2	Transformer fuse	**H2**	Hour meter
FU3	Additional transformer fuse	**E.V.**	Solenoid valve
T1	Transformer	**MS1**	3kW motor
EM	Emergency-stop button	**M1**	Fan 1

6.2.2 GS35/500/S - GS35/600/S - GS38/650/S

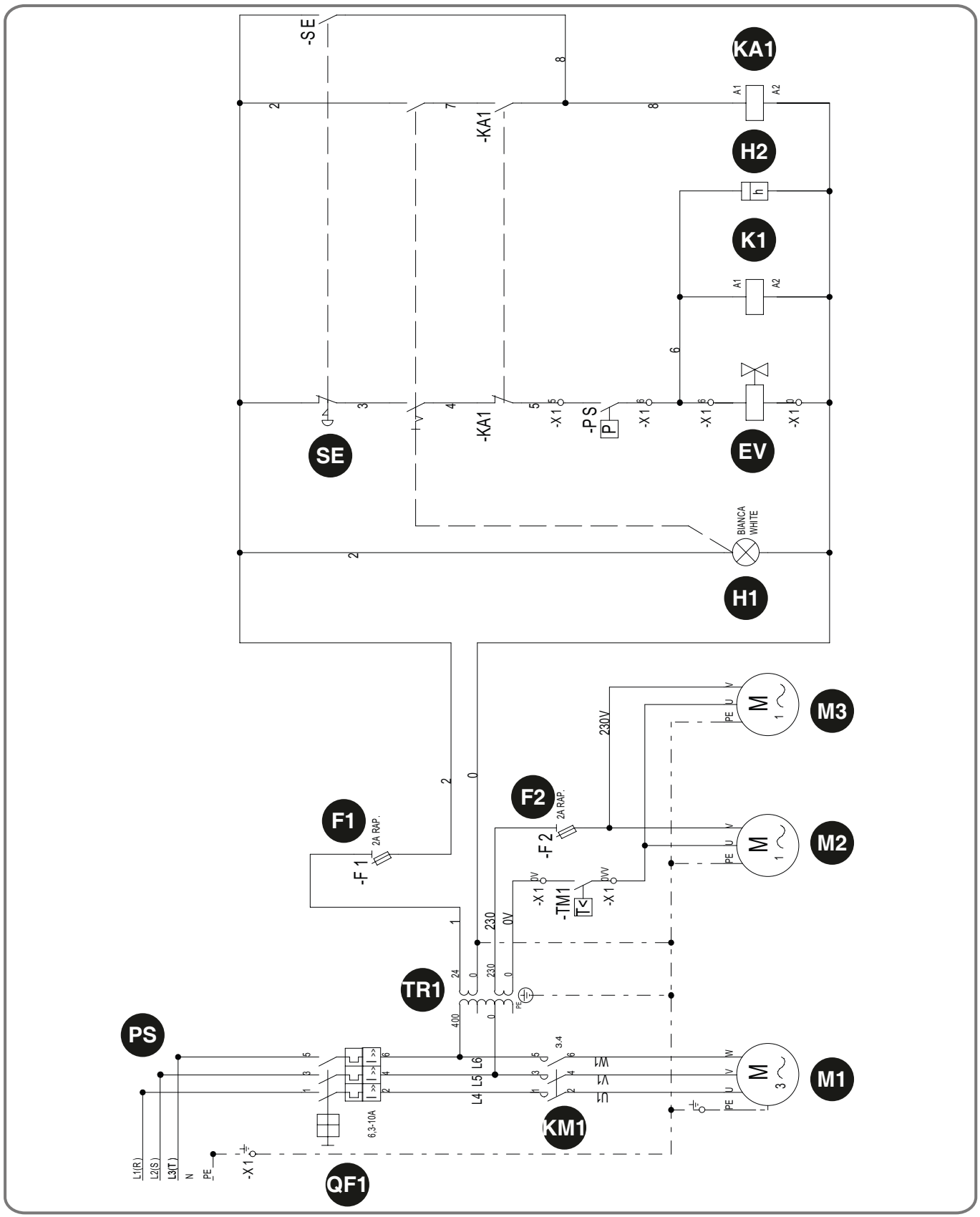


Fig. 6.2

MODEL	4/5.5 PS direct-on-line
Rated voltage	400V 3PH+PE
Frequency	50HZ
Power	4 - 5,5 PS
Rated current	10A
Auxiliary circuit voltage	24-230VAC
ICC	6KA

Part no.	Description	Part no.	Description
PS	Supply	**H1**	ON/OFF switch
M1	Compressor motor	**EV**	Solenoid valve
M2	Fan motor 1	**K1**	Contactor
M3	Fan motor 2	**H2**	Operating hour meter
SE	Emergency-stop button	**KA1**	Auxiliary relay
QF1	Thermal-magnetic circuit breaker	**KM1**	Contactor
F1	Fuse 1	**F2**	Fuse 2
TR1	Transformer		

6.2.3 GS38/850/S direct-on-line

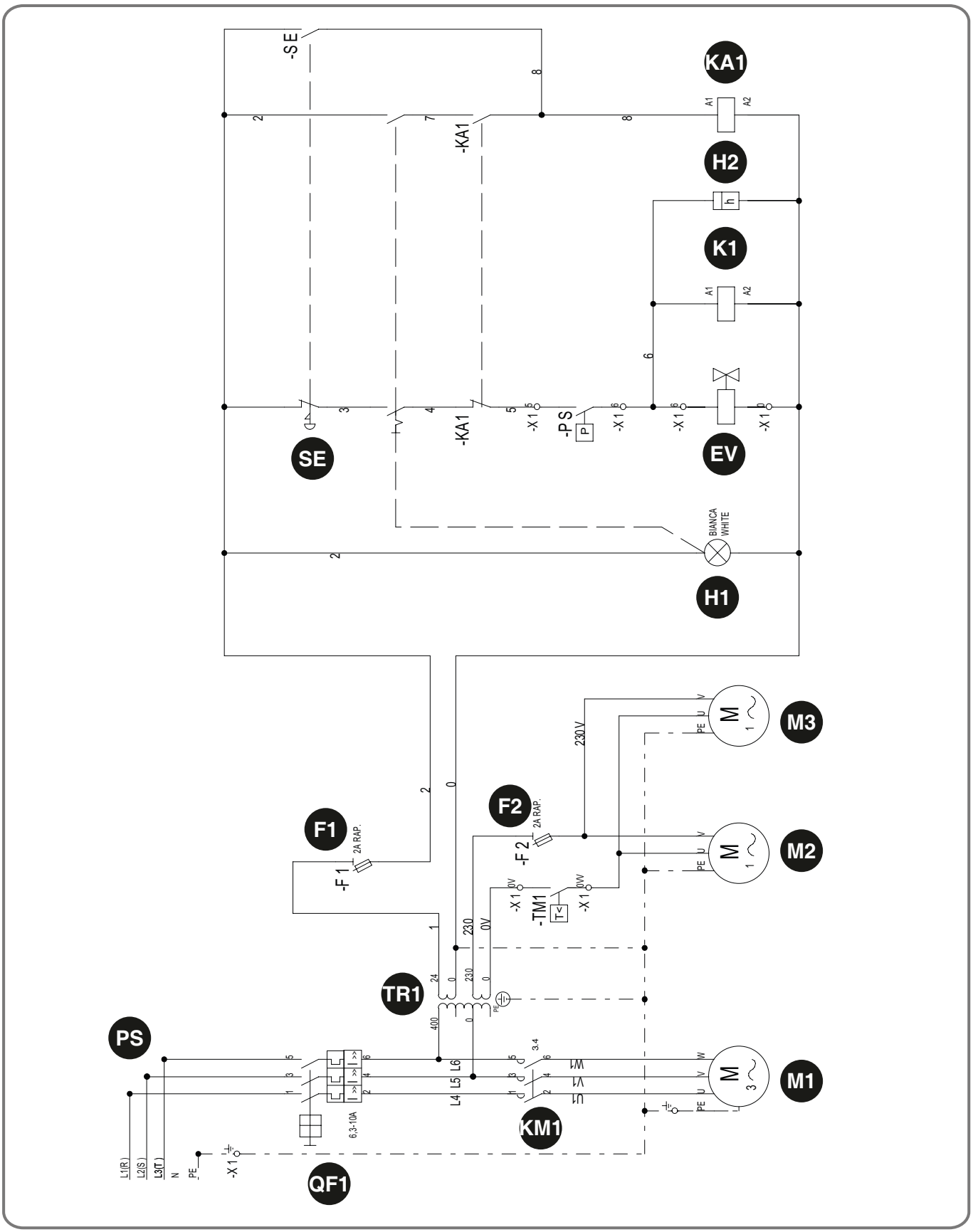


Fig. 6.3

MODEL	7.5 PS direct-on-line
Rated voltage	400V 3PH+PE
Frequency	50HZ
Power	7,5 HP
Rated current	12A
Auxiliary circuit voltage	24-230VAC
ICC	6KA

Part no.	Description	Part no.	Description
PS	Supply	**H1**	ON/OFF switch
M1	Compressor motor	**EV**	Solenoid valve
M2	Fan motor 1	**K1**	Contactor
M3	Fan motor 2	**H2**	Operating hour meter
SE	Emergency-stop button	**KA1**	Auxiliary relay
QF1	Thermal-magnetic circuit breaker	**KM1**	Contactor
F1	Fuse 1	**F2**	Fuse 2
TR1	Transformer		

6.2.4 GS38/850/S star-delta starting

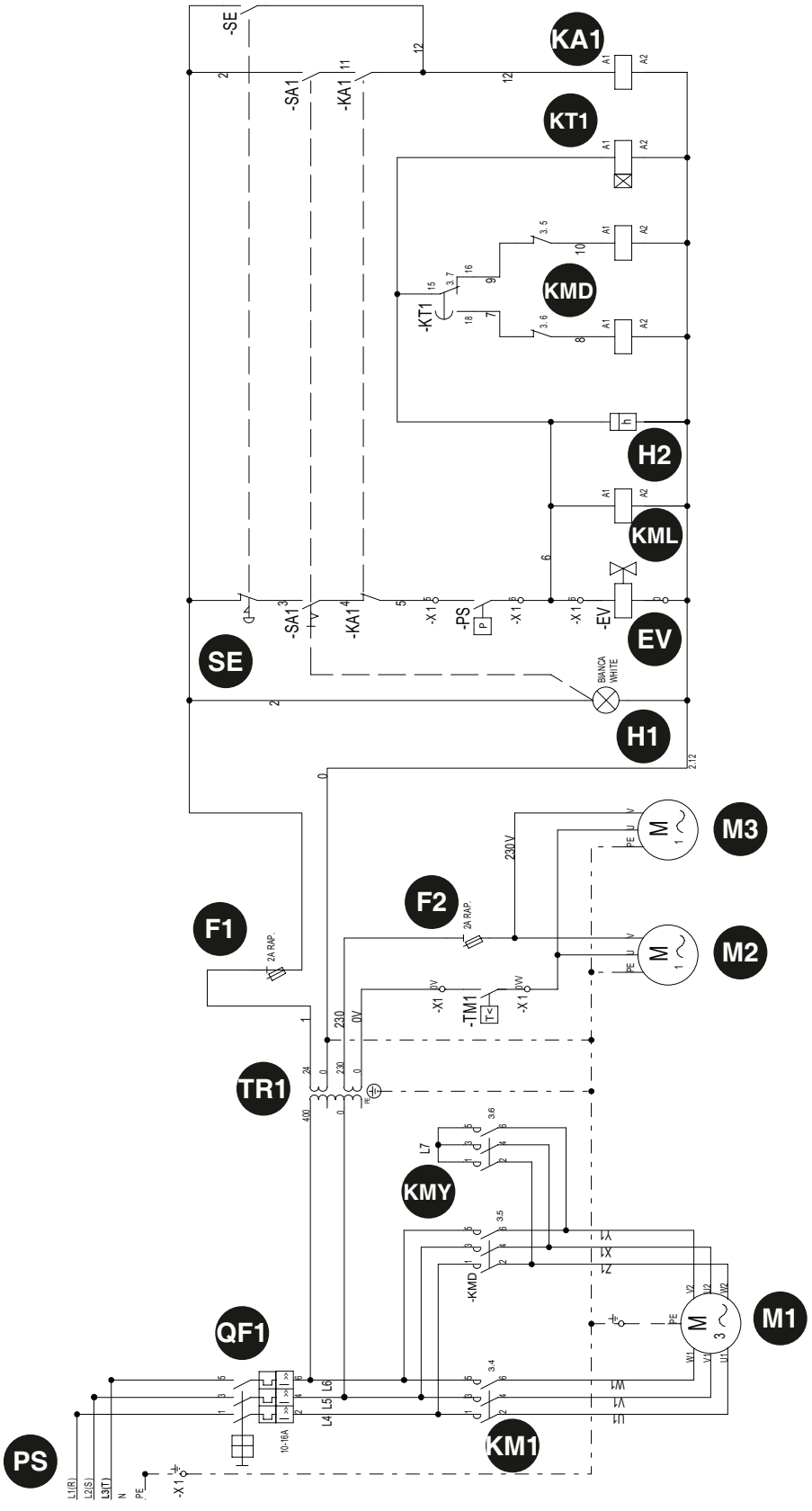


Fig. 6.4

MODEL	7.5 PS star-delta starting
Rated voltage	400V 3PH+PE
Frequency	50HZ
Power	7,5 HP
Rated current	10A
Auxiliary circuit voltage	24-230VAC
ICC	6KA

Part no.	Description	Part no.	Description
PS	Supply	H1	ON/OFF switch
M1	Compressor motor	EV	Solenoid valve
M2	Fan motor 1	K1	Contactor
M3	Fan motor 2	H2	Operating hour meter
SE	Emergency-stop button	KA1	Auxiliary relay
QF1	Thermal-magnetic circuit breaker	KM1	Contactor
F1	Fuse 1	F2	Fuse 2
TR1	Transformer		

6.2.5 GS50/1200/S star-delta starting

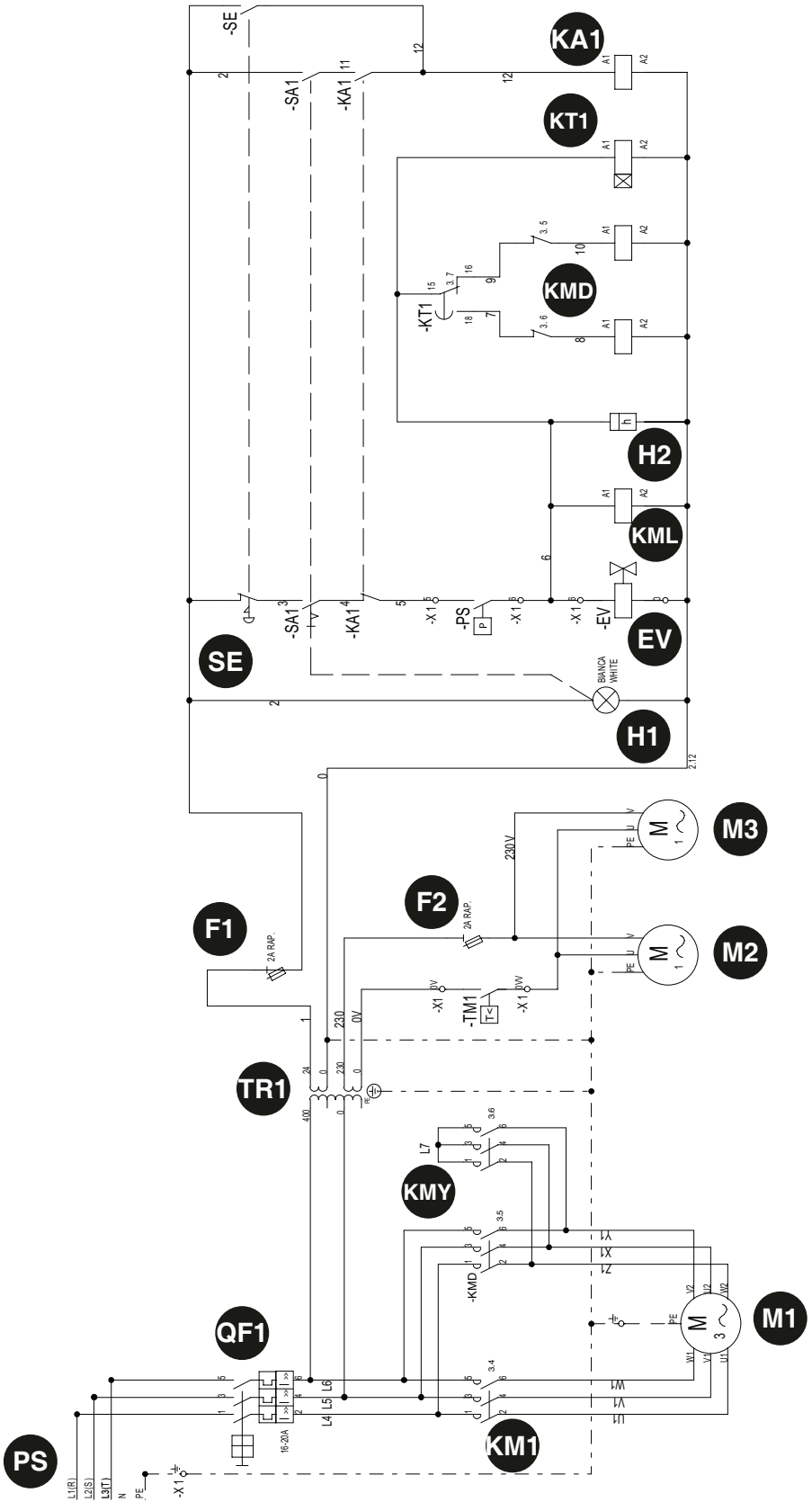


Fig. 6.5

MODEL	10 PS star-delta starting
Rated voltage	400V 3PH+PE
Frequency	50HZ
Power	10 HP
Rated current	17A
Auxiliary circuit voltage	24-230VAC
ICC	6KA

Part no.	Description	Part no.	Description
PS	Supply	**H1**	ON/OFF switch
M1	Compressor motor	**EV**	Solenoid valve
M2	Fan motor 1	**K1**	Contactor
M3	Fan motor 2	**H2**	Operating hour meter
SE	Emergency-stop button	**KA1**	Auxiliary relay
QF1	Thermal-magnetic circuit breaker	**KM1**	Contactor
F1	Fuse 1	**F2**	Fuse 2
TR1	Transformer	**KML**	Contactor
KT1	Timer	**KMD**	Contactor