

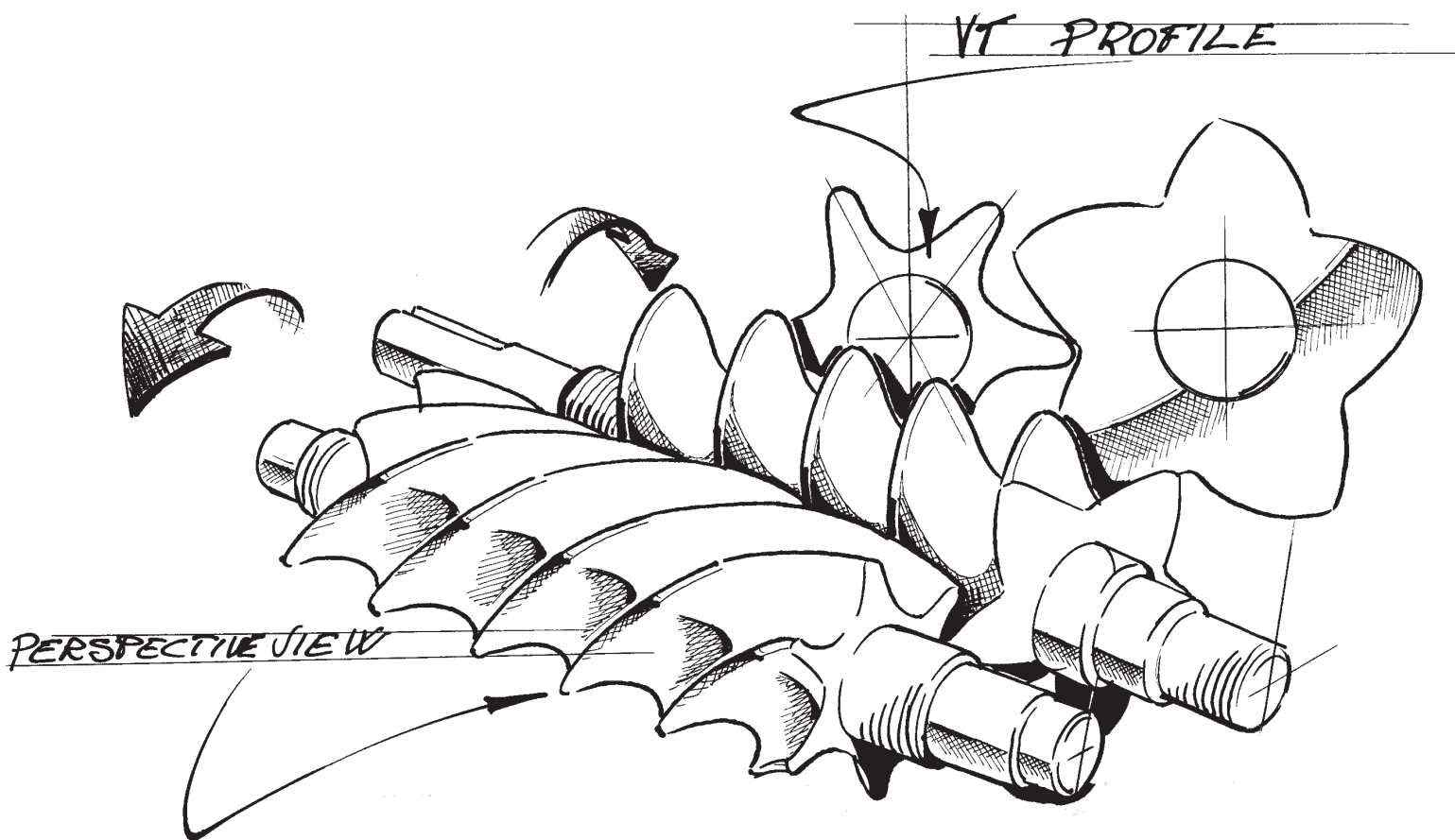
USE AND MAINTENANCE HANDBOOK

EDITION 05/1999

VERSION 1.2

ROTARY SCREW COMPRESSORS

GENESIS – OASIS series **7.5-15 hp**



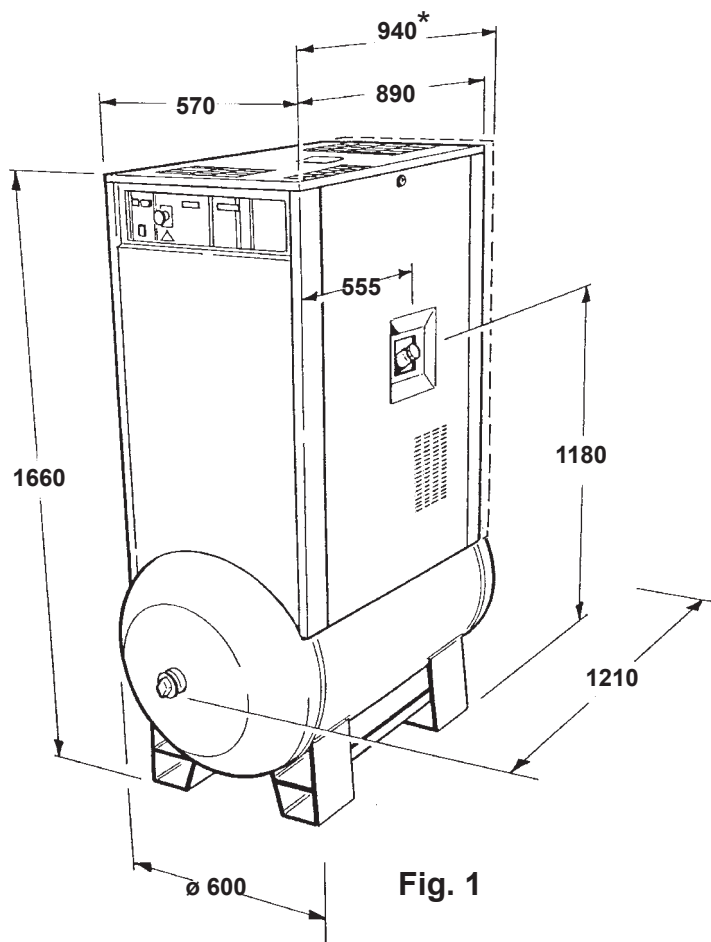


Fig. 1

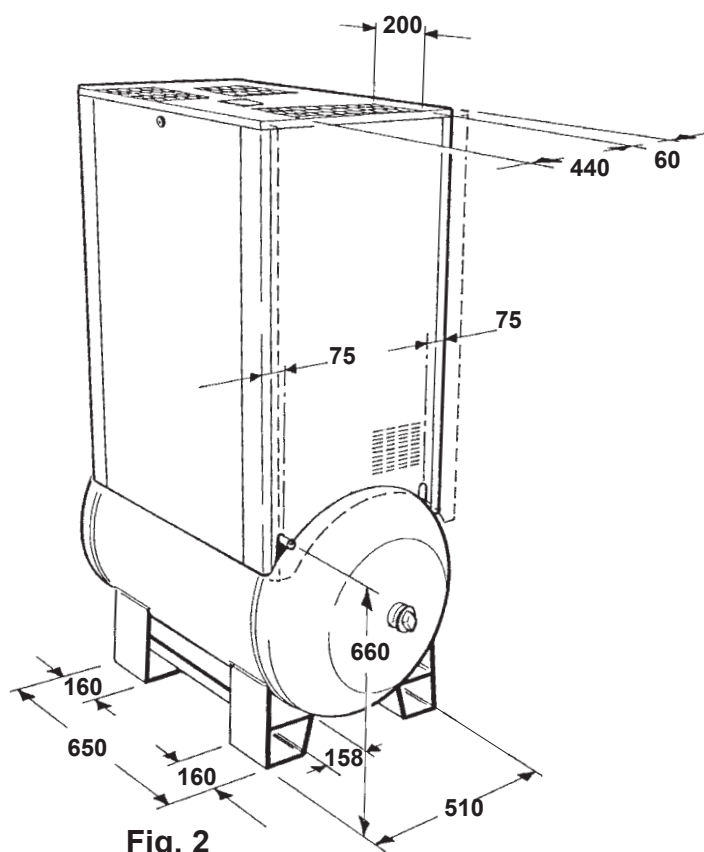


Fig. 2

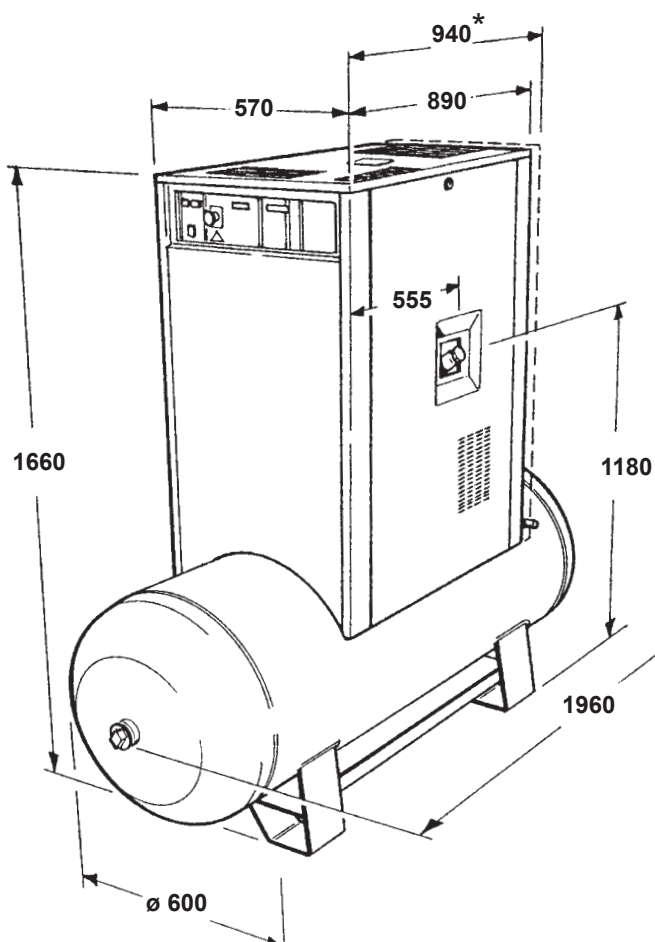


Fig. 3

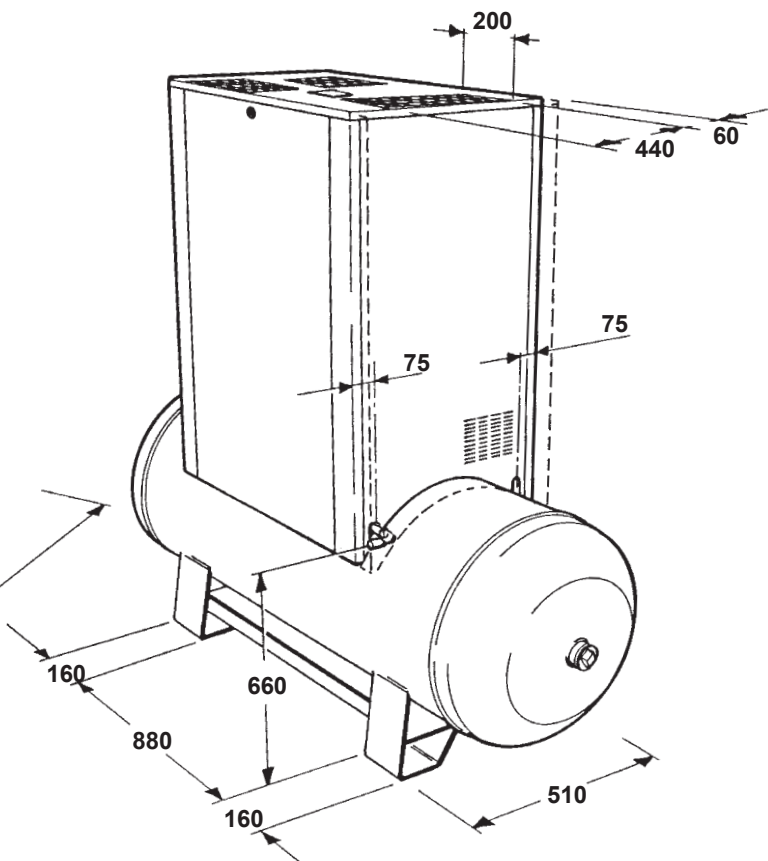


Fig. 4

* Solo sulle versioni a 15 hp
 Seulement pour les modèles a 15 hp
 Only with 15 hp models
 Nur 15 hp bei Ausführungen
 Sólo para versiones de 15 hp

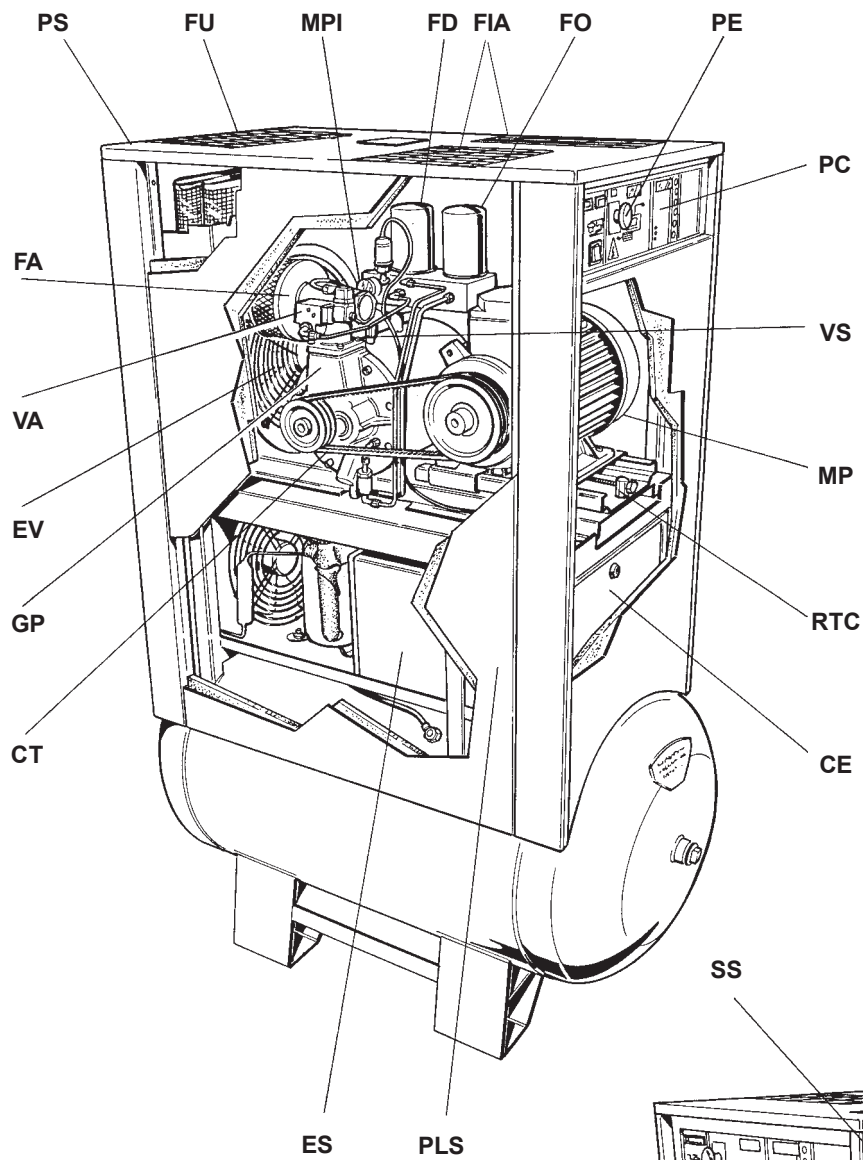


Fig. 5

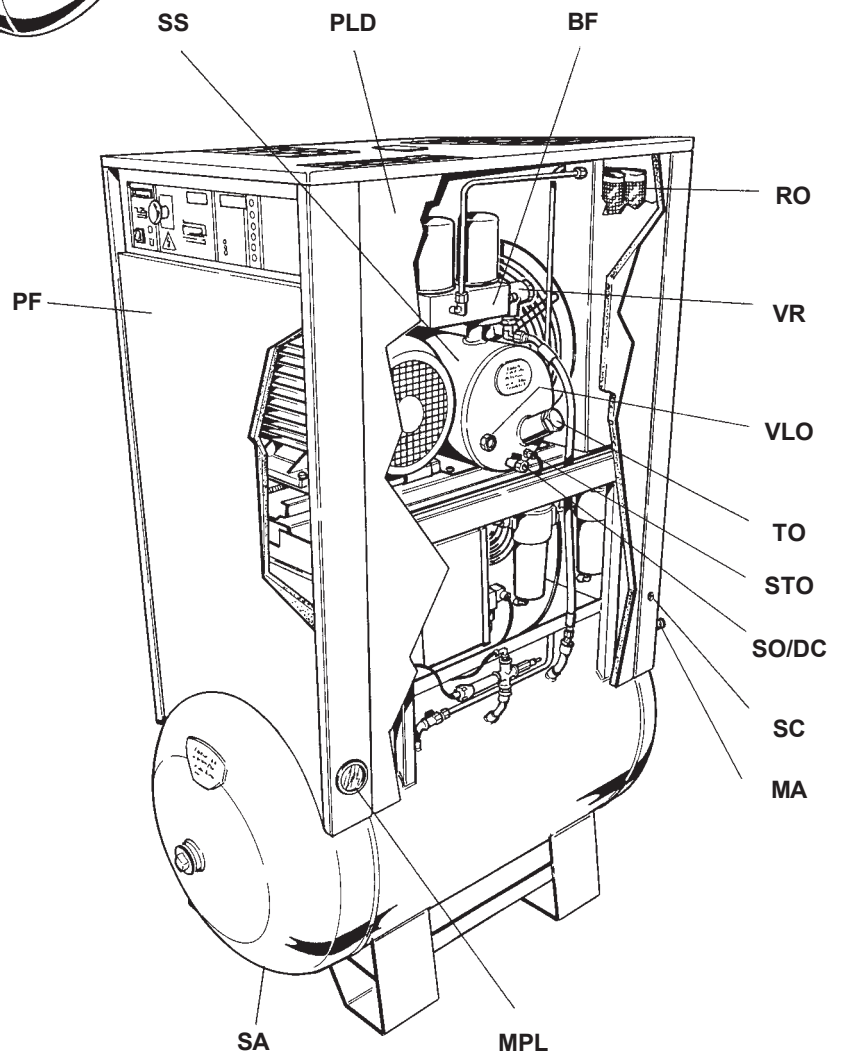


Fig. 6

Legenda					
	Italiano	Français	English	Deutsch	Español
BF	Blocchetto di filtrazione	Groupe de filtration	Oil filter and separator block	Halter für Öl und Abscheiderfilter	Bloque de filtración del aceite
BS	Botola superiore	Trappe supérieure	Top panel lid	Deckel	Tapa superior
CE	Cassetta elettrica	Armoire électrique	Starter/control box	Starter/Kontroll Box	Cuadro eléctrico
CT	Cinghie di trasmissione	Courroies de transmission	Transmission belts	Antriebsriemen	Correas de transmisión
DC	Drenaggio condensa	Evacuation de l'eau de condensation	Condensate drain	Kondensatentwässerung	Drenaje de la condensación
DI1/DI2	Display multifunzione	Ecran-afficheur multifonctions	Display	Display	Visor Multifuncional
ES	Essiccatore	Sécheur	Air dryer	Kältetrockner	Secador
EV	Elettroventilatore	Ventilateur électrique	Electric fan	elektrischer Ventilator	Electroventilador
FA	Filtro aria	Filtre à air	Air filter	Luftfilter	Filtro de aire
FFA	Fascetta filtro aria	Collier du filtre à huile	Air filter clip	Luftfilter Clip	Abrazadera filtro de aire
FIA	Feritoia ingresso aria	Prise d'air	Air inlet	Lufteinlass	Rejilla de entrada del aire
FD	Filtro disoleatore	Filtre deshuileur	Separator filter	Abscheider-Filter	Filtro de separación
FO	Filtro olio	Filtre à huile	Oil filter	Öl-Filter	Filtro aceite
FU	Feritoia uscita aria calda	Orifice de sortie de l'air chaud	Heated air outlet	Auslass für heisse Luft	Rejilla de salida del aire caliente
GP	Gruppo pompante a vite brevettato	Groupe de pompe à vis breveté	Patented screw pumping unit	Patentierter Verdichter	Grupo de bombeo de tornillo patentado
IE	Interruttore luminoso on/off essiccatore	Interrupteur lumineux de mise sous/hors tension du sécheur	Air dryer on/off switch	Kältetrockner Schalter	Interruptor luminoso on/off del secador
K1-K6	Pulsanti del pannello di controllo	Boutons sur panneau de commande	Control panel switches	Schalter der Kontroll-Anzeige	Pulsadores del tablero de control
L1-L8	Led del pannello di controllo	LED sur panneau de commande	Control panel led	Led	Led del tablero de control
MA	Mandata aria	Refoulement d'air	Air outlet	Druckluft Auslass	Salida aire
MP	Motore principale	Moteur principal	Electric motor	Elektromotor	Motor principal
MPI	Manometro pressione interna	Manomètre de pression intérieure	Compressor pressure gauge	Manometer für Innendruck	Manómetro de presión interior
MPL	Manometro pressione di linea	Manomètre de pression de ligne	Net pressure gauge	Manometer für Druck in Leitung	Manómetro de presión de línea

	Italiano	Français	English	Deutsch	Español
PC	Pannello di controllo	Panneau de commande	Control panel	Kontroll-Anlage	Tablero de control
PE	Pulsante di arresto di emergenza	Bouton d'arrêt d'urgence	Emergency stop switch button	Not-Ausschalter	Pulsador de emergencia
PF	Pannello frontale	Panneau avant	Front panel	Frontseite	Panel frontal
PLS/PLD	Pannello laterale sinistro/destro	Panneau latéral gauche/droit	Left/right side panel	Seitenteil rechts/links	Panel lateral izquierdo/derecho
PS	Pannello superiore	Panneau supérieur	Top panel	Oberseite	Panel superior
RF	Rotore femmina	Rotor femelle	Female rotor	weiblich Läufer	Rotor hembra
RM	Rotore maschio	Rotor mâle	Male rotor	männlich Läufer	Rotor macho
RO	Radiatore olio	Radiateur à huile	Oil cooler	Öl-Kühler	Radiador aceite
RSC	Rubinetto spurgo condensa del serbatoio aria	Robinet d'évacuation de l'eau de condensation du réservoir à air	Air receiver condensate outlet	Kondensat-Auslass am Behälter	Grifo de purga de la condensación del depósito de aire
RTC	Registro di tensionamento delle cinghie di trasmissione	Tendeur des courroies de transmission	Belt tensioning	Riemenspannung	Regulación del tensado de las correas
SA	Serbatoio aria	Réservoir à air	Air receiver	Druckluft Behälter	Depósito de aire
SC	Scarico condensa	Orifice d'évacuation de l'eau de condensation	Condensate outlet	Kondensat-Auslass	Descarga condensados
SO	Scarico olio	Orifice de vidange de l'huile	Oil outlet	Öl Auslass	Descarga de aceite
SS	Serbatoio separatore miscela aria/olio	Réservoir séparateur du mélange air/huile	Two-stage centrifugal air/oil separator	Luft/Öl-Abscheider	Depósito separador mezcla aire - aceite
STO	Sensore di temperatura olio	Capteur de température de l'huile	Oil temperature sensor	Öl-Temperaturfühler	Sensor temperatura aceite
TE	Termometro essiccatore	Thermomètre du sécheur	Air dryer thermometer	Trockner Thermometer	Termómetro del secador
TM	Targa metallica dei dati macchina	Plaquette métallique d'identification machine	Serial number and general machine data plate	Seriennummer und allgemeine Maschinen Daten	Placa metálica con los datos de la máquina
TO	Tappo olio	Bouchon de remplissage huile	Oil filler plug	Öl-Filter Verschluss	Tapón del aceite
VA	Valvola di aspirazione	Soupape d'admission	Intake valve	Ansaugventil	Válvula de aspiración
VLO	Visore livello olio	Indicateur du niveau d'huile	Minimum oil level indicator	Anzeige Öl-Füllmenge	Visor nivel de aceite
VR	Valvola di ritegno e di minima pressione	Clapet de retenue et de pression minimum	Minimum pressure and check valve	Mindestdruck-Kontrollventil	Válvula de retención y de presión mínima
VS	Valvola di sicurezza	Soupape de surpression	Safety valve	Sicherheitsventil	Válvula de seguridad

Table of contents

1 Foreword	page 4
2 Symbols	5
3 Warranty Terms	7
4 Performance and Specifications	8
4.1 Compressor rating data	8
4.2 Compressor	8
4.3 Air receiver	8
4.4 Electrical motors and drives	8
4.5 Power supply	9
4.6 Recommended oil specifications and capacity ..	10
4.7 Air dryer (PLUS version only)	10
4.8 Clearance requirements and system layouts	10
4.9 Weights	11
4.10 Noise level	11
5 Safety Precautions	12
5.1 General precautions.....	12

5.2 Safety precautions for maintenance operations...	13
6 Handling and Installation	14
6.1 Handling instructions	14
6.2 Installation requirements	15
6.3 Air connection	18
6.4 Electrical connection	18
7 Start-up and Operation	20
7.1 Checks to be carried out prior to start-up	20
7.2 CONTROLTRONIK control panel	21
7.2.1 Compressor control panel	22
7.2.2 Mimic panel	24
7.2.3 Dryer control panel (PLUS version only)	24
7.2.4 Emergency stop button	25
7.3 Starting and stopping the compressor	25
7.4 Operating warnings and faults	27
7.5 Parameter configuration	29
8 Troubleshooting	33
9 Maintenance	35

Table of contents

9.1 Operating cycle	35
9.2 General maintenance operations table	36
9.3 Cleaning or replacing the air filter	38
9.4 Checking oil level, topping up and changing the oil.....	38
9.5 Replacing the oil filter and the separator filter	40
9.6 Draining the condensate	41
9.7 Replacing the fuses.....	43
10 Spare Parts and Service Centres	44
10.1 Spare parts and consumable material codes ...	45
11 Machine Data Plate	46
12 Diagrams	47
12.1 Pneumatic-hydraulic system diagram	48
12.2 Power circuit wiring diagram.....	49
12.3 Auxiliary circuit wiring diagram	50
12.4 Wiring diagram for component location.....	51

1

Foreword

Dear Customer,

The machine in your possession is a **compressed air station with a lubricated rotary screw compressor**, incorporating state-of-the-art compressed air technology.

The high energy output, low noise **GENESIS-OASIS** series screw compressors are complete with a monitoring system for independent, programmed management. Major features incorporated in the design phase include versatility of use, reliability, low running and maintenance costs, compact size, and top flight performance. This range of compressors has also been designed and constructed complying with the strict quality control standards that are one of the main features of all products manufactured at our plants.

The product is EC marked and complies with current European Directives, as shown in the Declaration of Conformity attached to this handbook.

The compressor must be installed by specialised personnel of authorised service centres.

Before starting the machine, read all sections of this handbook and always comply with the instructions provided which explain correct use and routine maintenance of the compressor and the precautions to be taken to ensure operator safety.

As concerns general maintenance, we recommend arranging a **scheduled maintenance contract** with our Authorised Centres.

2

Symbols



This symbol highlights operations or types of behaviour that could result in fatal injury or serious accidents to operators who must always be informed of these and take the necessary precautions.



You will find this symbol next to descriptions of operations which must be carried out by Authorised Service Centres only.



This symbol means that you must not put your hands inside the machine when it is running.



This symbol indicates the presence of rotating parts inside the compressor. Do not carry out maintenance or repair operations when the machine is running.



This symbol indicates the presence of electrical voltage inside the machine.



This symbol indicates the possibility of remote start-up of the compressor. Place this symbol on the machine if it is programmed for remote control.



This symbol indicates the position of the forklift truck or pallet-truck forks for handling the compressor.

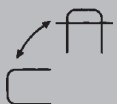
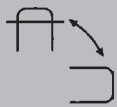
Symbols



This symbols indicates the oil fill plug.



This symbol indicates direction of rotation of the main electrical motor and fan.



These symbols indicate the direction in which to turn the key (provided) to open and close the machine and electrical cabinet panels.



This symbol is provided to remind you that waste oil, condensates and filters removed from the machine are polluting materials and must be disposed of in compliance with the local laws in force.



This symbol indicates a slow flashing control panel LED.



This symbol indicates a fast flashing control panel LED.

3

Warranty Terms

The product was tested before delivery. The air end is guaranteed for twenty-four months and the remaining machine parts are guaranteed for twelve months from the date of the invoice.

The warranty is conditional upon the compressor having been installed, commissioned, serviced and operated in accordance with the recommendations laid down within this manual.

The Customer is required to fill out the warranty card completely and send it within thirty days from the date of purchase (as attested by the postmark) to the supplier of the machine. According to the terms of the warranty, the Manufacturer undertakes only to repair or replace, free of charge, the product or parts of this found to be faulty following examination by the Manufacturer's technical personnel or authorised repair company whose judgement will be binding. This warranty does not cover labour which will therefore be charged to the customer.

The warranty, which excludes all and any liability for direct or indirect injury or damage, is restricted to construction and manufacturing defects of machine component parts only. The warranty does not include parts which, due to their specific use, are liable to wear and tear such as seals, belts, etc. and all consumables such as air filter, oil filter, oil separator filter, etc. The warranty does not cover repairs due to damage caused by insufficient or incorrect maintenance or unsuitable application.

The warranty shall be null and void in the case of failure to comply with the instructions given in this handbook, use of non-original spares and scheduled maintenance carried out directly by the Customer without the related invoice for the original parts.

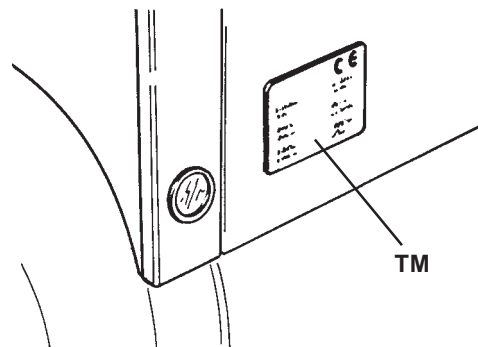
The information given in this handbook is for guidance purposes only and is not binding. The Manufacturer reserves the right to make any product modifications its considers necessary without prior notice.

4

Performance and specifications

4.1 Compressor rating data

Fig. 7



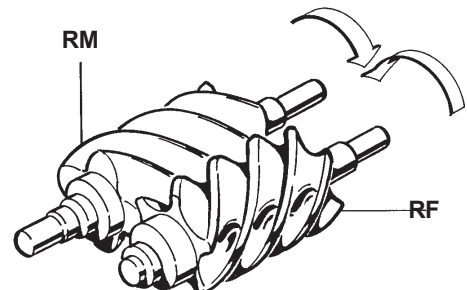
A metal plate TM indicating the compressor specifications is applied to the machine. Plate location is shown in **figure 7**. A copy of the plate (with respective data) is shown in **figure 30**, page 46.

4.2 Compressor

Fig. 8

Patented VT rotary air-end unit, single stage, encapsulated BA51 model, oil injection lubricated:

- drive male rotor RM, five lobes, offset profile
- driven female rotor RF, six flutes, offset profile



4.3 Air receiver

Capacity of 275 or 500 litres, according to model. Type-approved 11 bar or 17 bar according to model.

4.4 Electrical motors and drives

Compressor motor

Two-pole, enclosed, three-phase asynchronous motor (rated speed of 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, protection rating IP54, insulation class F, service class S1 (reference MP in **figure 5**).

Fan

Two-pole, three-phase asynchronous electrical fan, protection rating IP44, insulation class B (reference EV in **figure 5**).

Drives

- Motor and compressor: by means of removable taper bushing pulleys and toothed V-belts (reference CT in **figure 5**)
- Fan: direct coaxial.

4.5 Power supply

Three-phase power supply. **Voltage and frequency according to rating data.** Supply cables with a minimum cross-section area as shown in the following table. Mains fuses and ground circuit breaker as shown in the following table.

400 V powered compressors

Model	Power cable cross-section area mm ²	Main fuses AM (motor rated) or ground circuit breaker setting A	Circuit breaker A
0708	2,5	16	16
0710			
0713			
0715			
1008	4	20	20
1010			
1013			
1015			
1508	6	25	25
1510			
1513			
1515			

230 V powered compressors

Model	Power cable cross-section area mm ²	Main fuses Am (motor rated) or ground circuit breaker setting A	Circuit breaker A
0708	6	25	25
0710			
0713			
0715			
1008	10	40	40
1010			
1013			
1015			
1508	16	50	50
1510			
1513			
1515			

Tab. 1

Tab. 2

4.6 Recommended oil specifications and capacity

The compressor is filled with **AGIP OTE 32** oil.

Total oil capacity: **4,5 ltr**

Top up with oil with the **same specifications** as the oil in the machine.

If the use of another type of oil is required (as shown in the following table), drain the system completely and replace the filter cartridge.

Tab. 3

Make	Mineral oil
AGIP	OTE 32 *
BP	ENERGOL RC-R 32
ESSO	EXXCOCLUB 32 TERESSO 32
FUCHS	RENOLIN DTA VG 32
IP	VERETUM OIL 32
KLUBER	SUMMIT TM 10
MOBIL	DTE LIGHT 24
Q8	SCARLATTI 46
ROLOIL	LR CCW 32
SHELL	COMPTELLA 46 *

* preferred oil types

Contact the Manufacturer's Technical Department before using oils with other specifications.

4.7 Air dryer (PLUS version only)

Thermostat controlled cooling cycle, direct expansion, with Freon R134a gas. Pressure dew point temperature 3° C. Clean air filtering degree 0.01 µm.

Timed condensate drain controlled by the **CONTROLTRONIK** panel.

4.8 Clearance requirements and system layouts

The clearance requirements of the compressor are shown in the drawings in **figures 1, 2, 3 and 4.**

The hydraulic/pneumatic system diagram and the wiring diagrams (operation and location) are shown in Chapter 12.

4.9 Weights

Tab. 4

Model	Standard version weight kg		Plus version weight kg	
	275 litres	500 litres	275 litres	500 litres
0708	298	333	328	363
0710				
0713	298	333	328	363
0715				
1008	305	340	335	370
1010				
1013	305	340	335	370
1015				
1508	320	355	350	385
1510				
1513	320	355	350	385
1515				

4.10 Noise level

Tab. 5

Model	Noise level dB(A)*
0708	63
0710	
0713	
0715	
1008	64
1010	
1013	
1015	
1508	66
1510	
1513	
1515	

* ± 3 dB(A) to Standards PNEUROP/Cagi

5

Safety Precautions

5.1 General precautions



Use of the machine by unskilled personnel without adequate supervision is not allowed. Keep children and animals away from the working area. Do not direct compressed air jets towards yourself or other people.

Always use goggles to protect your eyes from objects which can be moved by the air jet.

Never operate on the machine with bare feet or wet hands.



The compressor is designed solely to produce compressed air and **cannot therefore be used for any other type of gas.**



The compressed air produced by the machine cannot be used for respiratory assistance, pharmaceutical or sanitary purposes or in production plants where the output air comes into direct contact with food-stuff, unless an additional adequate air treatment system is employed.

The air taken in by the compressor must be absolutely free from dust, vapours, explosive or flammable gas, solvents or paint powder and toxic fumes of any sort.

Use of compressed air requires knowledge of and compliance with the safety precautions to be adopted for the individual applications (inflating, pneumatic tools, painting, washing with water-based detergents only, etc.).



Place the specific hazard symbol on machines that can be remote operated.

Before starting the machine, make sure that all the guards are correctly fitted and that no-one can be directly or indirectly injured by the sudden flow of compressed air within the pipework system without notice.

Correct machine cooling is ensured only if all the unit panels - designed to curtail noise output and to protect users - are completely fitted.

Machine operation is fully automatic. The machine carries out the various work cycles, as required by the user, according to the settings. After use, stop the machine and disconnect the main panel power.

Use of the machine for other purposes shall be considered as improper use and the Manufacturer shall not be liable for any resulting damage to injury.

5.2 Safety precautions for maintenance operations

Ordinary maintenance operations can be carried out by the user as described in this handbook.

Only the use of original spare parts will grant a long, safe and reliable service life of the equipment.

Refer to Chapter 9 for instructions on the operations which can be carried out by the user.

All major maintenance operations can be carried out only by the qualified and skilled personnel of Authorised Service Centres.

Disconnect the power supply, discharge the air and wait for the machine to cool before performing any operation or removing the guards.

After disconnecting the power, lock out the circuit breaker to prevent accidental start-up while operating on the compressor. Additionally, close the shut-off valve between the compressor and the line.

All the air has been discharged from the machine only when pressure gauge MPI shows zero pressure.

No changes must be made to machine internal electrical, pneumatic, hydraulic circuits and/or to the settings. In particular, do not modify the maximum working pressure values and the valve settings, especially the safety valves.

Do not use solvents, flammable or toxic fluids to clean the machine parts. Use alkaline detergents only. Never use detergents to clean the motor or the electrical/electronic components.

Do not weld or carry out mechanical machining operations on the receivers. If damaged or rusted, replace the parts, as they are subject to specific safety regulations.

At the end of each operation, refit the guards carefully. Comply with the precautions for the initial start-up.

Remember that waste oil, condensate and machine filters are pollutants. Dispose of these products in compliance with local legislation.

Careful scheduled maintenance will contribute to maintaining machine efficiency and user safety conditions in time.



6

Handling and Installation

6.1 Handling instructions

Use a fork **lift truck** for handling the compressor. For 275-litre receiver versions, position the forks in the machine base unit supporting feet (**figure 9**).

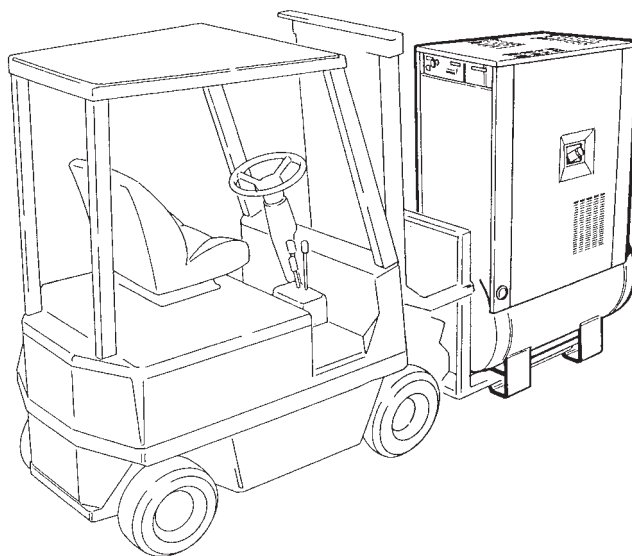


Fig. 9

For 500-litre versions, lift the machine from the side and position the forks between the machine base unit supporting feet (**figure 10**).

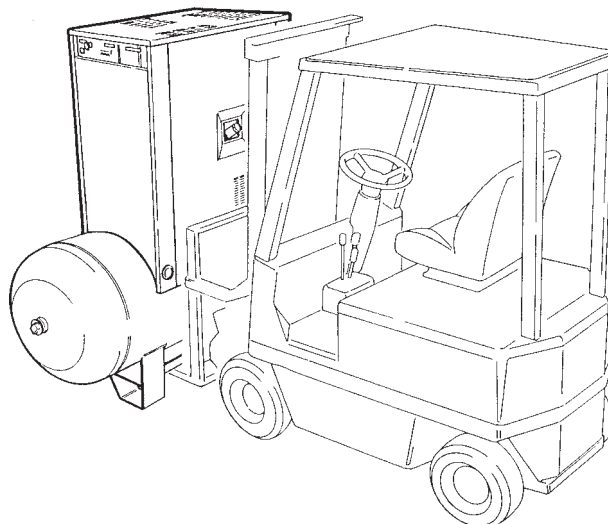


Fig. 10

Alternatively, a **pallet-truck** can be used for short distances. Avoid any excess stress on the metal structure. Lift 275-litre receiver versions from the front/rear (**figure 11**) and 500 litre receiver versions from the side (**figure 12**).

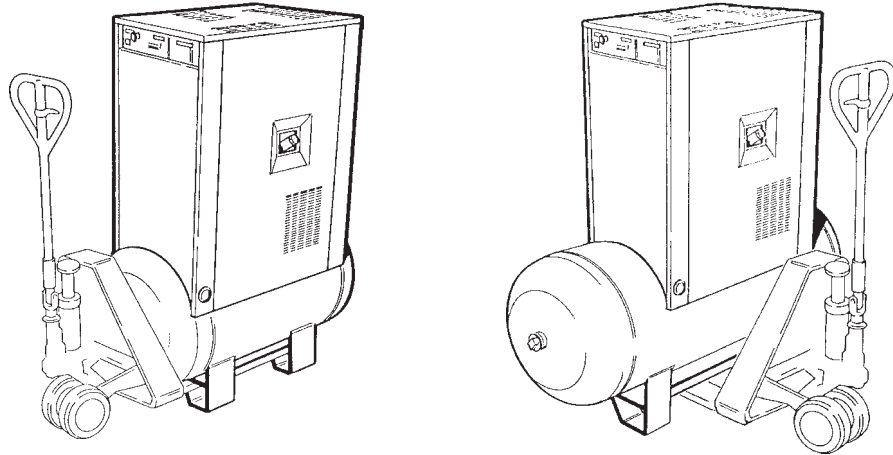


Fig. 11 and 12

Do not exert force on the sides of the machine to prevent damage to the unit and control panel when using a lifting device for handling. Make sure that the load is balanced.

Receivers under pressure, even if small, must never be transported.



6.2 Installation requirements

Figure 13 shows an example of outdoor installation.

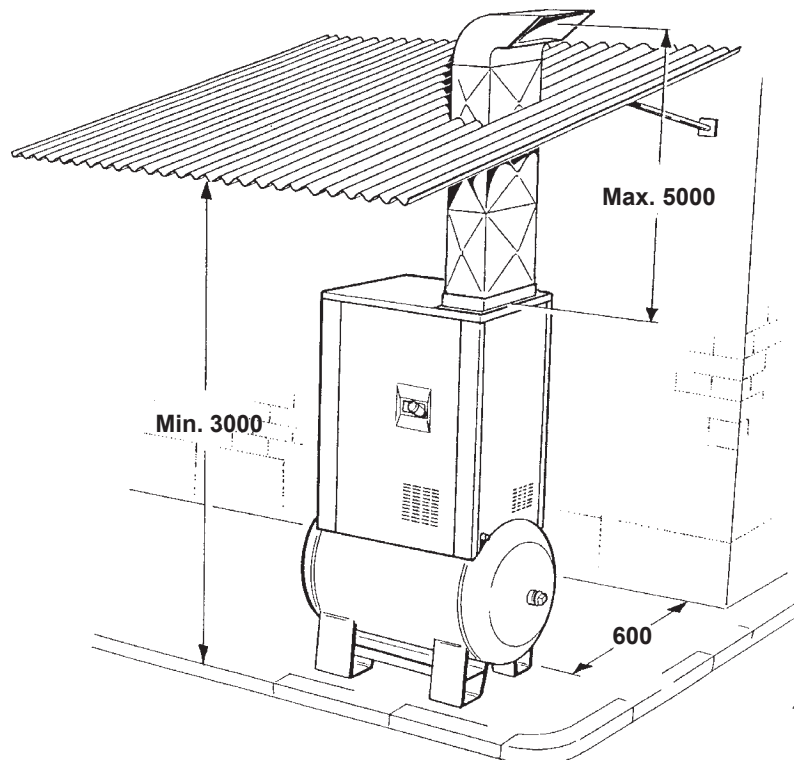


Fig. 13

Dimensions expressed in millimetres



Some general precautions are indicated below.

The machine should be installed by Authorised Centre skilled personnel to ensure that machine installation site is suitable.

The compressor must be protected against atmospheric agents. Suitable protection is required if the compressor is located outdoors. A duct for evacuating the hot air produced by the machine is required if the lean-to roof is less than 3 m from the ground. Locate the duct to prevent recirculation. The duct should not be higher than 5 m. Respect the minimum distance of 0.6 m from the building walls.

The machine is ready to be installed and does not require foundations. Site the compressor on level ground, in a stable position, with the weight evenly distributed on the supports.

The compressor working limit conditions are:

- Maximum installation altitude (above sea level):1000 m
- Minimum ambient temperature:+5° C
- Maximum ambient temperature:+40° C

Heat the environment if the minimum required temperature cannot be ensured.

Please note that the machine performance rating shown in this handbook can be ensured only if the machine is installed at an altitude below the operative limit indicated.

Contact the Manufacturer's Technical Department for particular environmental conditions.

The dimensions of the installation site and the air evacuation devices must be suited to ensure that ambient temperature is within the limits indicated during operation. If a suitable hot air discharge opening is not provided, install one or more air evacuation hoods. The hoods should be installed as high as possible in relation to the dimensions of the premises.

The machine cooling air and the heating ducts (where relevant) must be dimensioned so that air speed does not exceed 3 m/s. The maximum length of the ducts is 6 m. If this is not so, fit an auxiliary fan in the hot air duct. For guidance purposes, duct cross-section area should be equal to that of the compressor hot air outlet grid (reference FU in **figure 5**).

Figure 14 shows a typical installation example. For simplicity, three possible compressor room hot air evacuation configurations are shown (grid, extractor, duct and fan).

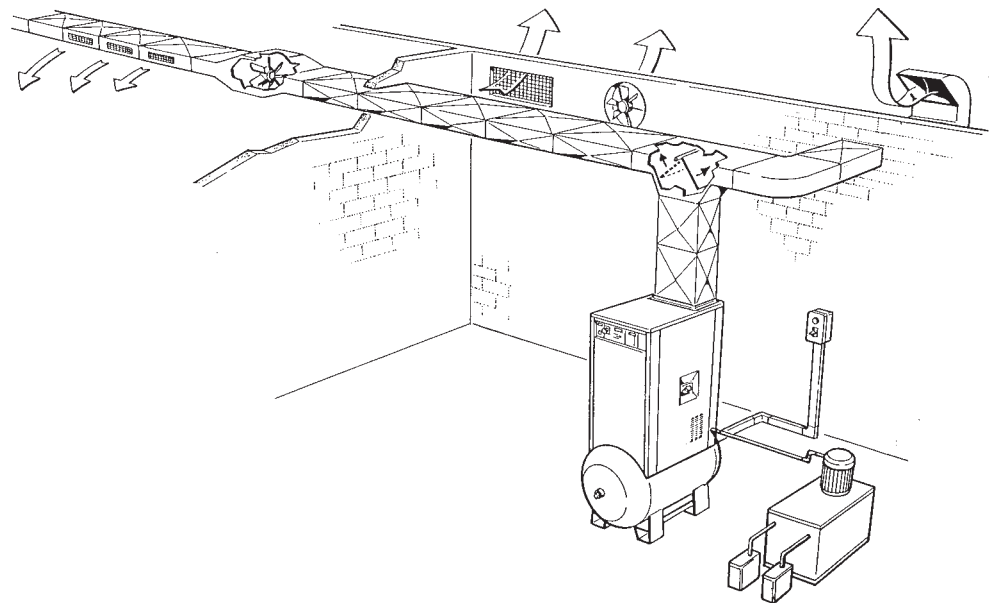


Fig. 14

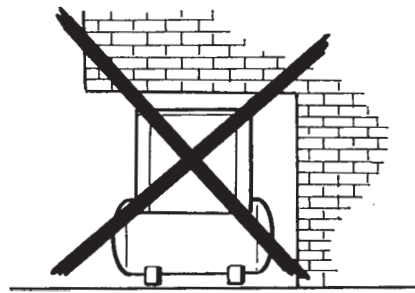


Fig. 15

The compressor should not be installed in a recess which does not allow correct ventilation. Hot air flow should not be obstructed in any way and recirculation must be prevented (**figure 15**). Comply with the minimum distance from the walls as shown in **figure 16**.

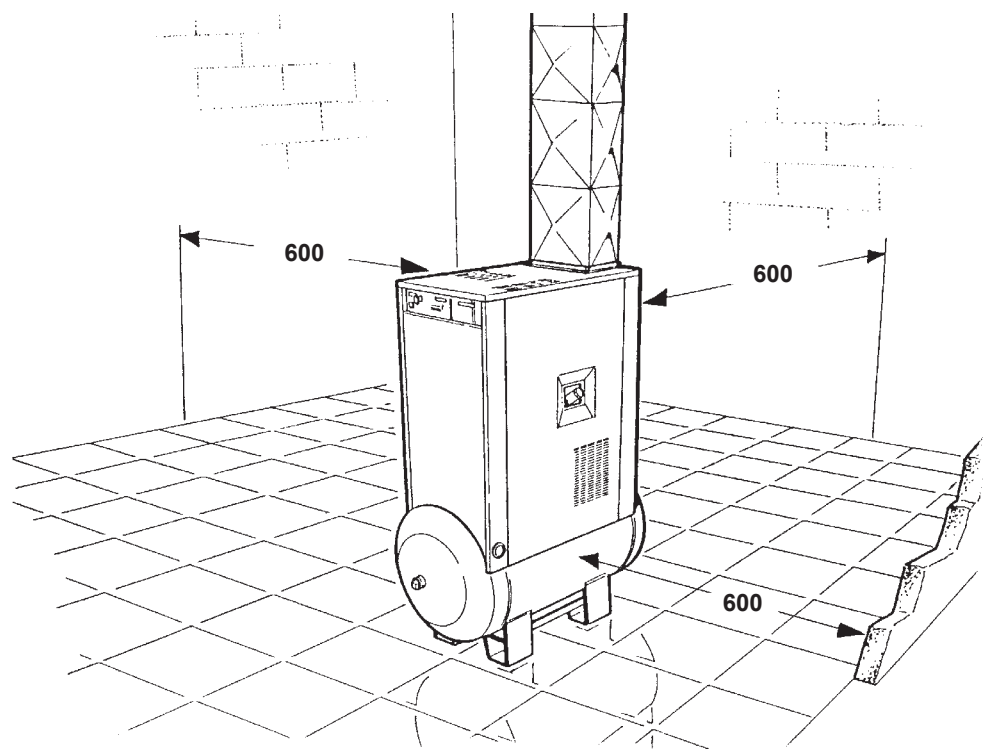


Fig. 16

Dimensions expressed in millimetres



The position of the compressor in the room should allow easy inspections. If the compressor is installed in the working environment, keep at suitable safety distance according to the type of process carried out at the premises in order to prevent hazards or damage to the machine due to the products used.

The machine is not suitable for use in “explosion hazard” environments.



The air taken in by the compressor must be absolutely free from dust, vapours, explosive or flammable gas, solvents or paint powder and toxic fumes of any sort. Replace the filters more frequently - with special reference to the air filter - if the machine is used in critical environments (presence of ceramic, marble, cement, dust, etc.).

6.3 Air connection

When connecting the compressor to the receiver or to the distribution line, it is good practice to insert a hose of suitable size and specifications (pressure and temperature) to the MA sleeve (**figure 6**). The compressed air lines must be in perfect conditions and suitably fastened.



In particular, hoses which are not perfectly secured may cause severe injuries due to unpredictable movements. Make sure that the hose ends are firmly secured before pressurising them. **The condensate drain outlet must be connected with a suitable pipe to a collection system complying with local legislation for disposal of polluting substances.**

6.4 Electrical connections

The electrical power system must include a **main circuit breaker with fuses or ground circuit breaker which can be locked out**. The device must be suited to the machine specifications and set up to prevent accidental contacts in order to protect the personnel.

The setting of the protection device and the rating of the line circuit breaker must comply with the tables in paragraph 4.5. The circuit breaker must be positioned near the machine. Comply with local accident prevention specifications (**figure 14**). The supply cable should present an adequate cross-sectional area suited for the current draw (see the tables in paragraph 4.5).

The electrical systems must be made according to best practice principles. A skilled electrician must check **the efficiency of the earth system**.

The supply cables must be secured in the correct glands and the electrical panel must be tightly closed to achieve the prescribed IP44 protection.



Connect the machine only to type-approved sockets. The sockets must be earthed and tested.

Have correct fastening of the electrical wires of the various components checked by skilled personnel regularly.

Chapter 12 contains the operational and layout wiring diagrams of the auxiliary and power circuits. The same diagrams are also shown inside the machine control box (reference CE in **figure 5**).

7

Start-up and Operation

7.1 Checks to be carried out before start-up

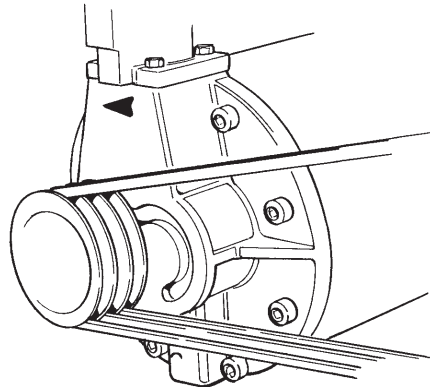
N.B.: The Customer is responsible for installing the machine and making the required electrical and hydraulic connections.



Initial system start-up must be carried out by skilled personnel who will make the various checks required and follow the respective instructions.

- Each machine was thoroughly tested at the plant before shipping.
- **You should monitor the compressor during the first hours of operations to check for faults.**
- Follow the installation prescriptions given in Chapters 5 and 6.
- Remove all packaging materials and tools.
- Connect the compressor to the air receiver or to the distribution line as shown in paragraphs 6.2 and 6.3
- Check the oil level in the receiver: see paragraph 9.4. If the level is low, top up with lubricating oil of suitable specifications.
- Check for correspondence between the compressor plate data with the actual specifications of the electrical system. A variation of $\pm 10\%$ with respect to the rated value is allowed.
- Connect the machine to the electrical system as described in paragraph 6.4.

Fig. 17



Compliance with the correct voltage phase sequence is fundamental since this defines the direction of rotation of the motor. The direction of rotation must be that shown by the arrow on the compressor air-end (figure 17). Note that even a few seconds of incorrect rotation may cause serious damage. A phase sequence checking device to prevent mistakes is fitted in the electrical panel.

The machine is now ready to be started.

The compressor settings are ready for immediate use. The starting and stopping procedures are described in paragraph 7.3.

Before starting the machine read the following paragraph and Chapter 9 on maintenance operations for in-depth knowledge of the machine, the monitoring system and the controls.

7.2 CONTROLTRONIK control panel

The compressor is fitted with a **control panel** (reference PC in **figure 5**) - called **CONTROLTRONIK** - for setting up and monitoring machine operation. The operation parameters were entered by the Manufacturer during set-up and testing. The parameters were tested for several hours in the various operating conditions.

The features offered by this electronic control system include:

- fully automatic compressor operation
- real-time operating parameter display
- programming and signalling of the Manufacturer's maintenance schedule
- operating parameter customisation
- machine self-protection system to signal fault pre-alarms and automatically stop the machine in the event of serious problems
- remote machine control
- remote compressor monitoring via personal computer and dedicated software (optional).

The CONTROLTRONIK panel has four sections:

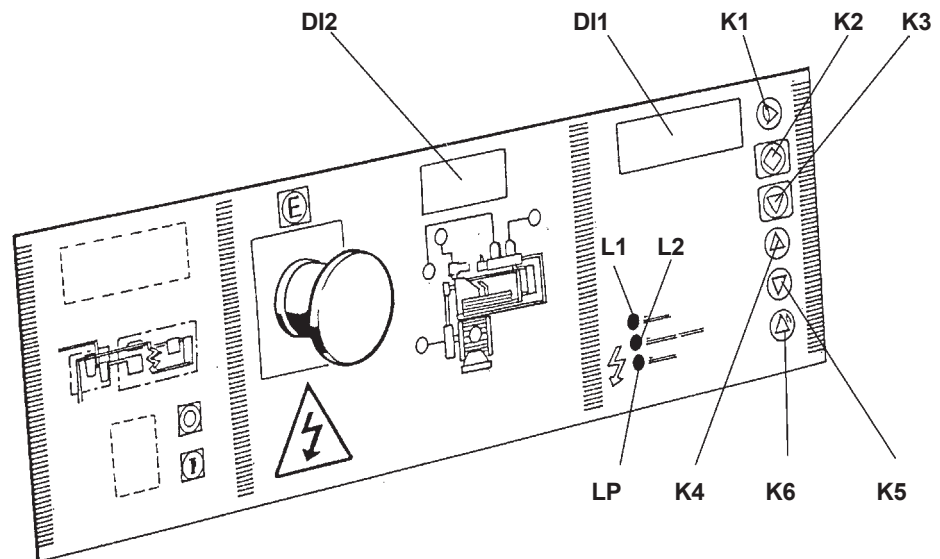
- compressor control panel
- mimic panel
- dryer control panel
- emergency stop button

7.2.1 Compressor control panel

The panel comprises:

- a compressor control keyboard
- setting LED's
- two light displays

Fig. 18



Control keyboard

- **K1** Parameter display button
- **K2** Compressor START button
- **K3** Compressor STOP button (this is not the emergency stop button)
- **K4** Increase values
- **K5** Decrease values
- **K6** Reset and quit menu button

Setting LEDS

- **L1** AUTOSTART enabled warning LED. Use of this function is under the sole responsibility of the user since it is not allowed by EC standards.
- **L2** Remote compressor control enabled LED. For remote compressor management. The local START and STOP controls are disabled.
- **LP** Control board power LED.

Light displays

- **D11** Five seven-segment character multifunctional display for displaying the various operating parameters: pressure, temperature, times, etc.

The five characters can be combined to write short messages (compatibly with the structure of the segments). For example, the STOP message is displayed in the following way:

STOP

The operating parameters can be displayed both when the machine is stopped and when it is running. Press button K1:



The following messages will appear in sequence when the button K1 is pressed again:

- **air-oil mixture temperature (same as that shown on display D12)**
- **delivery air temperature (optional)**
- **motor total working hours** alternating with
- **compressor working hours** alternating with
- **hours to next maintenance operation** alternating with

Hr.TOt

Hr.cAr

Hr.SEr

The first message will be displayed cyclically when button K1 is pressed again.

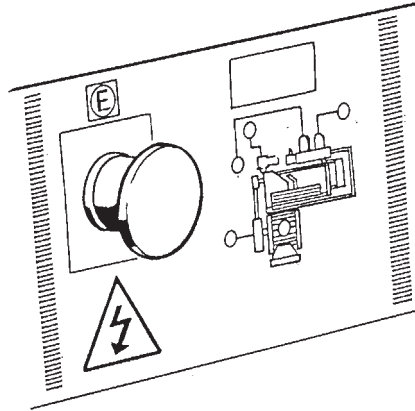
N.B. The hour counter on a new compressor will show the number of hours for which the machine was tested at the factory.

- **D12** Three seven-segment character display for constant display of the air-end outlet air-oil mixture temperature.

7.2.2 Mimic panel

The **mimic panel** provides a quick reference on compressor running status.

Fig. 19



Mimic panel LED's

There are two groups of mimic panel LEDs:

- **Maintenance schedule LED's:**
yellow: these LED's indicate the operating conditions that require an ordinary maintenance operation. **The compressor will not stop automatically when the LED's are on.**
- **Fault and machine stop LED's:**
red: these LED's indicate faulty operating conditions **that may cause machine stops according to their severity.**

For details of the indications of the individual LED's, see paragraph 7.4.

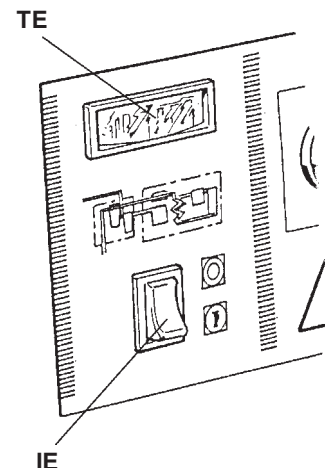
7.2.3 Dryer control panel (PLUS version only)

Compressors with a dryer feature the following:

- **Light switch IE** for starting and stopping the dryer.
- **Dryer thermometer TE** indicating the dewpoint.

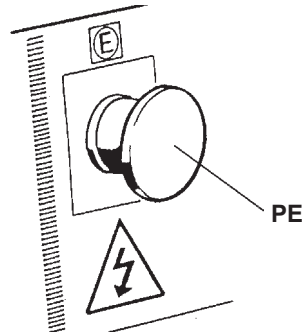
The TE gauge should be in the yellow sector when the dryer is running at the correct temperature.

Fig. 20



7.2.4 Emergency stop button

Fig. 21



The red EMERGENCY STOP button PE stops the machine immediately. Use this button for emergencies only in conditions which appear hazardous for the operator or for the machine (see “Compressor emergency STOP” below).

7.3 Starting and stopping the compressor

Starting the compressor

The monitoring system runs an **INITIAL RESET** sequence when the machine is switched on (powered) to check that the electronic systems are in perfect working order.

The following messages will be shown in sequence on display DI1 during the test sequence and LED LP will come on with steady light:

8.8.8.8.
AbAc
E04

The last caption specifies the microprocessor software version.

After running the tests, there are two possible configurations:

- **AUTOMATIC** operation (standard setting)

Display DI1 will show the following message **A 0.0**
alternating with **OFF**

- **CONTINUOUS** operation (after customisation)

Display DI1 will show the following message **c 0.0**
alternating with **OFF**

The digits indicate line air pressure (compressor outlet).

N.B.: The numeric value at start-up may not be zero if the line is pressurised.

Press the green START button K2 to start the compressor:



See paragraph 7.4 and Chapter 8 if the compressor does not start.

The following contacts will be made in sequence: **LINE – STAR – DELTA**. After a pre-set time, the intake valve will be activated and the display DI1 will indicate the increasing pressure:

A. 2.5

The DOT next to the operating mode letter indicates that the **intake valve is open and that the machine is running at full load**.

During operation, the delivery pressure will increase. The monitoring system will off-load the compressor by closing the intake valve (DOT off) when the predefined maximum line pressure threshold is reached. When the pressure drops below a predefined minimum threshold, the intake valve is opened and the machine returns to working at full load.

■ **Stopping the compressor**

Machine starting and stopping is timed.

Simply press the K3 STOP button to stop the compressor:



The compressor will not stop immediately. The following sequence of machine stop operations will be started:

The control unit off-loads the machine. Display DI1 will indicate, for example:

A 5.0

alternating with

StoP

after the predefined idling time, the compressor is stopped (the motor is stopped). Press K2 START again to start the compressor before the timeout. The following message will appear on the display DI1

on

alternating with the delivery pressure.

The compressor will not start until after the timeout at which point the machine will run the sequence for normal start-up. This function prevents restarting the compressor when it is still pressurised, avoiding electrical motor overload.

If the machine idles for more than five minutes (standard value) and there is no additional request for compressed air, the motor will be stopped automatically and the machine will switch to stand-by. The following message will appear on display DI1:

ON

alternating with the line pressure.

This function promotes a considerable energy saving when the request for compressed air is low or zero.

Obviously, the compressor will start automatically (according to the automatic start-up sequence) when line pressure drops below the threshold.

Compressor **EMERGENCY STOP**

Press the PE red EMERGENCY STOP button to stop instantaneously the compressor in a hazardous situation. The emergency stop button is intercepted by the monitoring unit which displays:



and all the LED's will flash.

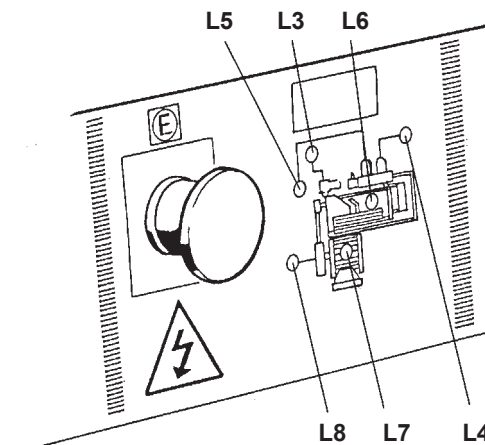
To reset, release the EMERGENCY STOP button lock and press button K6.



7.4 Operating warnings and faults

The **system diagnostics** continuously monitor machine operating conditions and promptly indicate the maintenance operations required or the faults that have occurred.

Fig. 22



Scheduled maintenance messages (YELLOW LIGHT)

The scheduled maintenance messages indicate the need to carry out maintenance on the compressor. Although the machine is not stopped by the monitoring system, **carry out the operation as soon as possible** to prevent malfunctioning and damage.



L3 Clogged air filter LED. Replace air filter FA when this LED flashes. The following message will appear on display DI1 if the filter is completely clogged:

dPA 1r

In this case replace the filter immediately .



L4 Clogged separator filter LED. Replace the separator filter cartridge when this LED flashes (air-oil separator).



L5 Clogged oil filter LED. Replace the cartridge when this LED flashes.

Alarm messages and machine stops (RED LIGHT)



L6 HIGH COMPRESSOR TEMPERATURE ALARM LED - LED flashing slowly to indicate that the pressure is approaching the maximum value of 110 °C (it starts flashing when the temperature reaches 100 °C). The machine will not stop.



L6 HIGH COMPRESSOR TEMPERATURE ALARM LED - LED flashing fast to indicate that the maximum temperature threshold has been exceeded. The compressor will stop.



L7 MOTOR THERMAL SWITCH TRIPPED ALARM LED - This LED flashes to indicate that the motor thermal switch has tripped for overcurrent. The compressor stops and cannot be started until the problem has been solved.



L8 INCORRECT MOTOR DIRECTION OF ROTATION LED - This LED flashes to indicate that the motor power line phase sequence is wrong. The compressor cannot be started. Solve the problem by reversing the connection between the two power line phases.



DI1 Multifunctional display: temperature sensor damaged



DI1 Multifunctional display: pressure sensor damaged

Eliminate the cause of the alarm and press the K6 RESET button . This will clear the alarm message and the system controlled machine stop (where relevant).

The alarm condition will remain on the control panel also after power down if the technical cause which generated it is not repaired and the alarm is not reset by means of button K6.

Other machine stop conditions

- **Mains micro interruptions.** Any **fluctuations or disturbances** on the power supply, considered dangerous for correct operation of the compressor, are intercepted by the monitoring device in order to prevent machine damage. When this occurs, the symbol appears on display DI1 and the compressor is promptly stopped.



To reset the system, check normal power conditions and press button K6. If the problem occurs frequently, check the electromechanical connections, the sockets and the mains voltage.

- **Overpressure.** The following message will appear on display DI1

P C O

to indicate that the maximum pressure sensor has tripped due to faulty pressure increases. Check the system and the electrical connections, where relevant. This problem may occur if the separator filter FD is clogged or damaged. In this case, replace it immediately. Press button K6 to reset and start the machine. Call a Specialised Centre if the problem persists.

7.5 Parameter configuration

The machine was configured at the plant during testing. **The end user, however, can change some operating parameters to customise machine performance to the specific applications.** The scheduled maintenance operations can be reset after being carried out by the user.



Other parameter changes cannot be made Customer but only by Authorised Service Centre skilled personnel.

Operating parameter customisation procedure

To access the **customisation menu** press buttons K4 and K5 at the same time and hold them down until all the LED's (from L1 to L8) flash at the same time. Wait for a few seconds. The following message will appear on display DI1:

- 00 -

Start-up and Operation

Press button K4. The following message will appear on the display:

- 01 -

This step must be carried out rapidly in a few seconds otherwise the monitoring system will return to the standard main menu display.

Various customisations can be made in menu - **01**. Also in this case, the parameters are displayed on a cyclical basis. Press button K1 to shift from one parameter to the next. Use buttons K4 and K5 to edit the parameter:





increases the parameter value displayed



decreases the parameter value displayed

The parameters are listed below in the sequence in which they appear on the display. The **identification symbol** is shown next to each parameter to facilitate recognition of the parameter displayed.


-  **Maximum running pressure.** The maximum running pressure may vary from a minimum of 4 bar to maximum compressor plate pressure. The standard value is that of the compressor plate.
-  **Minimum pressure.** This is the pressure threshold below which the compressor switches back to full load operation. The maximum threshold is the maximum running pressure decreased by 0.1 bar and the minimum pressure is 3 bar. The standard value is given by the ratio (maximum running pressure – 1 bar).

Example: $P_{\max} = 10 \text{ bar}$ standard value
 $P_{\min} = 9 \text{ bar}$ standard value

-  **Pressure unit of measurement.** The pressure can be expressed in:


bar or **PSI**

The standard unit is “bar”.

-  **Temperature unit of measurement.** The temperature can be expressed in:

degrees Celsius **CELS** or degrees Fahrenheit **FAHR**

The standard unit is “degrees Celsius”.

-  **Condensate outlet opening time.** This is the time for which the condensate evacuation solenoid valve remains open. The parameter can be set from a minimum of 0.4 s to a maximum of 10 s. The standard value is 5 s.

Note: This setting has no effect in “STANDARD” versions.

- **Time between subsequent draining.** This is the time for which the condensate evacuation solenoid valve remains closed. The parameter can be set from a minimum of 10 s to a maximum of 1800 s (30 min). The standard value is 60 s.
- **Running type and idling time.** Set 0 for **continuous operation**. A value higher than 2 will set the **idling time expressed in minutes**. The standard value is 5 minutes.

Note that this timing will affect the number of start-ups which the machine can carry out automatically in an hour. For this reason, you should not set times of less than 5 minutes to limit the number of hourly start-ups to less than 10-12. This will avoid over-stressing the mechanical and electrical parts.

IMPORTANT: Wait for display DI1 to stop flashing briefly to store the parameters modified by means of the buttons K4 and K5. This is the only way to go to another parameter with the certainty that the previous parameter was stored. If you do not want to store the value edited, simply go to the next display without waiting for the flashing to stop.

Press the K6 RESET button at the end of the customisation procedure. The monitoring unit will redisplay the main menu.

Scheduled maintenance function resetting procedure

Reset the scheduled maintenance counter after carrying out a maintenance operation.

Press buttons K4 and K5 at the same time to access the respective menu until all the LED's (from L1 to L8) flash at the same time.

Wait for a few seconds. The following message will appear on display DI1:

- 00 -

This step must be carried out rapidly in a few seconds otherwise the monitoring system will return to the standard main menu display.

Press button K4 twice. The following message will appear on the display:

- 02 -

A table which contains the scheduled maintenance operations signalled by the monitoring unit is given below. See Chapter 9 for other operations.

Tab. 6

Operation	First 100 hour maintenance	First 1000 hour maintenance	Every 1000 hours	Every 2000 hours	Warning LED
Check air filter	●				
Replace air filter		●	●		L3
Change oil				●	<i>OILCH</i>
Replace oil filter	●	●	●		L5
Replace separator filter				●	L4

8

Troubleshooting





The following table shows the most frequent problems. The operation should be carried out by a qualified and skilled person where shown. For all other cases, contact a Specialised Centre.

Problem	Indication	Possible causes	Operation
The compressor stops when it is running and either the red warning LED comes on or a message appears on D11	L6 flashing fast with temperature at D11 and D12 > 110°C	Low Cooling oil	Check fan operation. Call the Service Centre if problems are found
		Low Oil	Top up or change oil
		FO clogged	Replace FO
		Ambient temperature or air recirculation too high	Improve air exchange and check installation requirements
		Oil radiator RO clogged	Call the Service Centre
	L7 flashing	Excessive current intake MP	
	Message flashing on D11	Internal overpressure FD or VR problems	
	L6 blinking and message flashing on D11	Temperature sensor problems	
	Message flashing on D11	Pressure sensor problems	
	Message flashing on D11	Mains micro interruptions	Check voltage conditions, reset by pressing button K6 and restart by pressing button K2
Oil in the mains		FD problems Inefficient oil recovery	Call the Service Centre
Oil in the machine		Leaking fittings	Fasten the fittings
		Air-oil separator leaks	Call the Service Centre
		Safety valve VS tripped	
		FA leaks	
The safety valve VS tripped		Pressure detector problems	Call the Service Centre
		FD clogged	
		CPU problems	

Tab. 7

Troubleshooting

Tab. 8

Problem	Indication	Possible causes	Operation
The compressor stops when it is running and either the red warning LED comes on or a message appears on DI1	L6 flashing fast with temperature at DI1 and DI2 > 110°C	Low Cooling oil	Check fan operation. Call the Service Centre if problems are found
		Low Oil	Top up or change oil
		FO clogged	Replace FO
		Ambient temperature or air recirculation too high	Improve air exchange and check installation requirements
		Oil radiator RO clogged	Call the Service Centre
	L7 flashing	Excessive current intake MP	
	Message  flashing on DI1	Internal overpressure FD or VR problems	
	L6 blinking and message  flashing on DI1	Temperature sensor problems	
	Message  flashing on DI1	Pressure sensor problems	
	Message  flashing on DI1	Mains micro interruptions	Check voltage conditions, reset by pressing button K6 and restart by pressing button K2
Oil in the mains		FD problems	Call the Service Centre
		Inefficient oil recovery	
Oil in the machine		Leaking fittings	Fasten the fittings
		Air-oil separator leaks	Call the Service Centre
		Safety valve VS tripped	
		FA leaks	
The safety valve VS tripped		Pressure detector problems	Call the Service Centre
		FD clogged	
		CPU problems	

9

Maintenance

Perform the **schedule maintenance operations** to maintain the compressor performance.

Some ordinary maintenance operation can be carried out by skilled personnel appointed by the Customer. Use only original spare parts. Instructions are provided in the following paragraphs.



Before performing any maintenance operations read the operator safety precautions in Chapter 5 carefully. These precautions must be followed scrupulously for all maintenance operations

9.1 Operating cycle

The compressor unit consists of two VT series patented rotors (one male and one female) with special offset profiles mounted on roller bearings able to stand axial and radial thrust. The male rotor drives and the female rotor is driven. The two rotors are not in direct contact thanks to a thin film of oil which protects the coupled surfaces.

The oil serves various purposes. It lubricates the bearings and the rotors, eliminates the heat produced by the compressed air, it creates an “airtight fluid seal” and reduces hazardous gaps in the air-end unit.

Machine start-up is ensured by means of a **star-delta** system. During the star phase, the intake valve VA is closed. This allows idle start-up with less effort and reduced power consumption.

After a certain predefined time, the control panel PC switches to delta connection. After a short transient period, motor MP reaches its rated speed of rotation. This opens the intake valve and starts the normal work cycle.

The air is drawn through the filter FA and passes into the air-end unit where it is mixed with the oil injected. The air is gradually compressed and pushed into the separator receiver where initial oil separation occurs by gravity. The oil is deposited on the bottom of the receiver.

The air - still mixed with small oil droplets - follows the receiver contour and passes through separator filter FD where the oil is separated by coalescence. The oil is deposited on the bottom of the filter. It is recovered by means of a scavenge pipe and conveyed back to the air-end unit.

The purified air passes through the check and minimum pressure valve VR which opens only when a threshold (corresponding to approximately 4 bar) is exceeded. This ensures correct system lubrication in all operating conditions.

The air without oil is conveyed to external receiver SA which also acts as heat exchanger. In machines with a dryer (PLUS versions), the air is treated here to eliminate humidity and oil particles which may still be suspended.

The oil on the bottom of receiver SS is conveyed under pressure to the oil radiator RO where it is cooled. It then passes into the filter FO and returns to the air-end unit.

Temperature sensor STO in the receiver is connected to the microprocessor so to constantly monitor the temperature inside the air-end unit.

Once the rated running pressure has been reached, the intake valve closes. The internal receiver pressure is vented to reach a value of approximately 2 bars which can be read (during setting or overhauling) on internal pressure gauge MPI. This value is obtained by means of minimal amount of intake air through a hole on the intake valve. This ensures that the pressure required for correct system lubrication is maintained. Consequently, the machine can idle with reduced power intake.

After the predefined "idling" time, the machine stops and stands by. It will start up again if the pressure drops below the minimum threshold. The ordinary stop is timed (approximately 30 seconds). The machine "idles" and the receiver is progressively drained.

The machine is also protected against any type of overpressure (internal faults or faults related to other compressors in parallel).

The maximum pressure switch stops the machine before safety valve VS trips to prevent undesirable leakage of oil.

9.2 Ordinary maintenance operations table














The following table shows all the maintenance operations required by the machine.



You will find this symbol next to operations requiring the intervention of Service Centre personnel.

Maintenance

Tab. 9

Operation	Reference	To be carried out by a Service Centre	After the first 100 hours	After the first 1000 hours	Every 500 hours	Every 1000 hours	Every 2000 hours	Every 4000 hours
Check oil filter	9.3		●	●	●			
Replace air filter *	9.3			●		●		
Overhaul minimum pressure valve								●
Overhaul intake valve								●
Replace oil filter	9.5		●	●		●		
Check - top up oil level	9.4		●	●	●			
Change oil	9.4						●	
Replace separator filter	9.5						●	
Check oil recovery system				●		●		
Check fitting tightness			●	●		●		
Check electrical terminal connections			●	●		●		
Drain air receiver condensate	9.6		●	●	●			
Drain air-oil receiver condensate	9.6		●	●	●			
Check condensate draining			●	●		●		
Clean radiators				●		●		
Clean dryer condenser (PLUS versions)				●		●		
Replace dryer filters (PLUS versions)				●		●		
Check belt tension and wear			●	●		●		
Replace drive belts								●
Check settings and adjustments							●	
Check safety device operation							●	

*This frequency relates to operation in normally **dusty environments**. In the case of **critically dusty environments**, the panel may signal the need to replace the air filter before the scheduled maintenance time. In this case, replace the filter as soon as possible. The skilled personnel employed for installation will be able to objectively evaluate the environmental conditions.

9.3



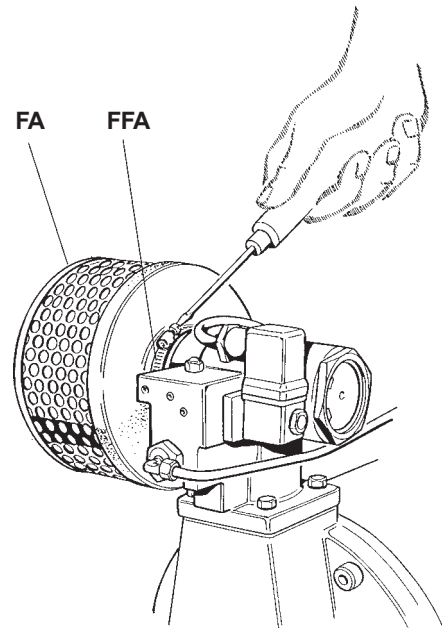
Cleaning or replacing the air filter

Before performing any maintenance operations read the operator safety precautions in Chapter 5 carefully. These precautions must be followed scrupulously for all maintenance operations.

- Remove the left-hand side panel PLS by loosening the two upper screws
- Loosen the clip FFA shown in **figure 23** and remove air filter FA
- Clean the filter by directing a jet of air inside it or replace the filter as prescribed in the maintenance schedule. Do not use fluids or detergents to clean the filter

Fig. 23

- Fit the filter fully on the intake valve .
- Position the clip so that after fastening it fits on the notched filter sleeve portion
- Fasten the clip
- Refit the left-hand side panel PLS



To reset the scheduled maintenance counter, see paragraph 7.5 (“Scheduled maintenance function resetting procedure”).

9.4



Checking oil level, topping up and changing the oil

Before performing any maintenance operations read the operator safety precautions in Chapter 5 carefully. These precautions must be followed scrupulously for all maintenance operations.

Checking the level and topping up

Check the oil level in the machine circuit frequently when the machine is at a standstill for over thirty minutes.

This operation is very simple. Simply check the sight glass on the oil receiver (reference VLO in **figure 24**).

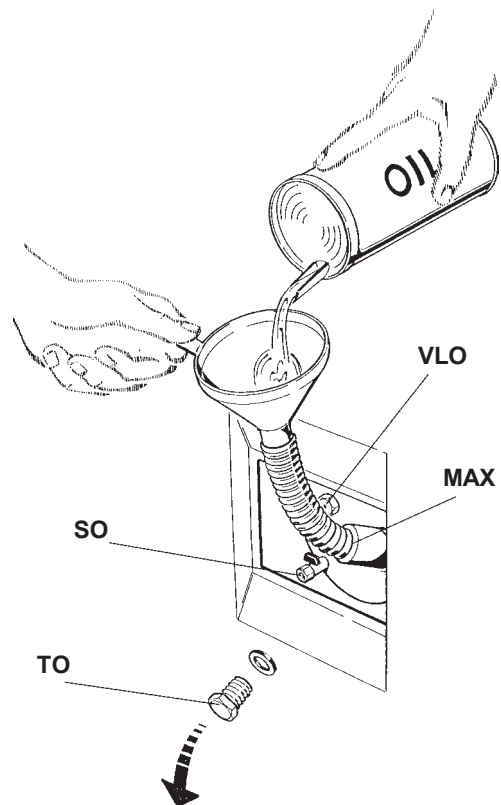
The sight glass should be covered by the oil. In other words, if you can see the top of the oil, you will need to top up.

Never let the oil drop to a level which is no longer visible through the sight glass!

At maximum level, the oil will reach the filler sleeve.

Top up, when required, as follows:

- Loosen oil filler plug TO. Be careful not to lose the seal
- Use a funnel and lip to pour oil into the filler sleeve
- Use the oil described in paragraph 4.6 only for topping up. Oil will flow out of the filler sleeve if too much oil is poured in
- Check that the plug seal is correctly positioned and fasten the plug (not too tight)



Check the plug seal regularly and replace it, if required.

Changing the oil

Change the oil at the frequency shown in the maintenance schedule in paragraph 9.2 or when you plan to use a different oil from that in the machine.

Fig. 24



Carry out this operation when the oil is still warm so that its viscosity is low and fluidity high. In any case, lubricant temperature must not cause burns.

Proceed as follows:

- Loosen oil filler plug TO. Be careful not to lose the seal
- Loosen oil outlet plug SO
- Connect a drain pipe leading to a suitable container to outlet SO



Remember that waste oil, condensate and machine filters are polluting material. Dispose of these products in compliance with local legislation.

- Open outlet SO and drain the lubricant
- After draining, close outlet SO
- Refit outlet plug SO
- Refill with oil as described in the paragraph “**Checking the level and topping up**”
- Check that the plug seal is correctly positioned and fasten the plug (not too tight)
- Open the cut-off valve between the compressor and the distribution line. Switch the circuit breaker on and **test the machine** by running it for a few minutes. Then inspect the machine for oil leakage
- Top up the oil level as described in the paragraph “**Checking the level and topping up**”

To reset the scheduled maintenance counter, see paragraph 7.5 (“Scheduled maintenance function resetting procedure”).

9.5

Replacing the oil filter and the separator filter

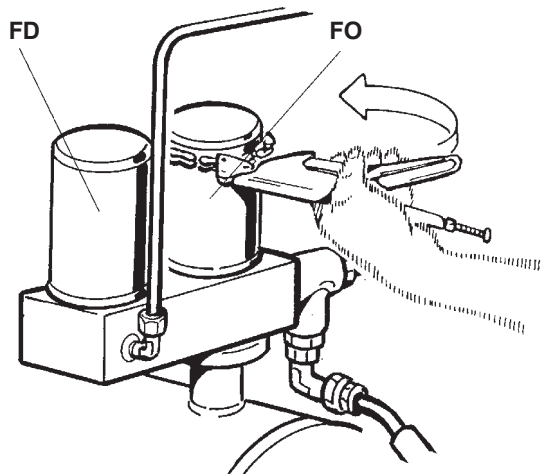


Before performing any maintenance operations read the operator safety precautions in Chapter 5 carefully. These precautions must be followed scrupulously for all maintenance operations.

- Remove the right-hand side panel PLD with the key provided

Fig. 25

- Loosen oil filter cartridge FO or separator filter FD with a specific tool (figure 25)



- Lubricate the seal before fitting the new cartridge (figure 26)

- Fasten the filter by hand. **Do not use a tool to fasten the cartridge. You could damage it!**

- Refit the right-hand side panel PLD

- Open the shut-off valve between the compressor and the distribution line. Switch the circuit breaker on and **test the machine** by running it for a few minutes. Then inspect the machine for oil leakage



Fig. 26



Remember that waste oil, condensate and machine filters are polluting material. Dispose of these products in compliance with local legislation.

To replace the separator filter in 15 hp machines, extract the cartridge through lid BS, on the top panel PS (figure 27).

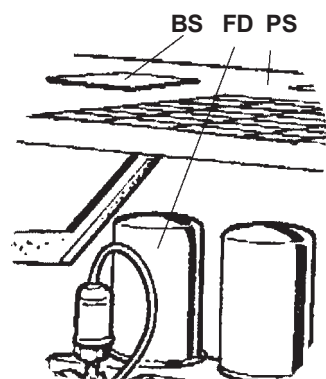


Fig. 27

To reset the scheduled maintenance counter, see paragraph 7.5 ("Scheduled maintenance function resetting procedure").

9.6 Draining the condensate



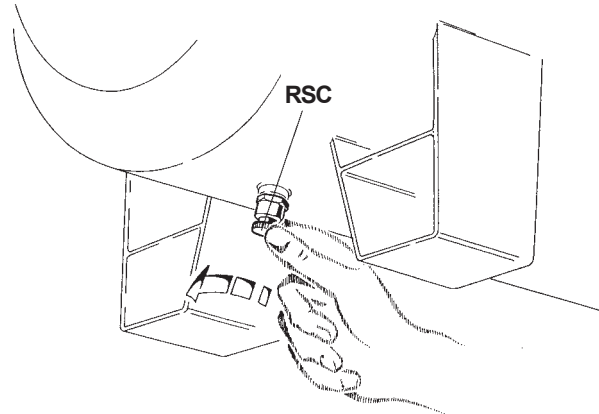
Before performing any maintenance operations read the operator safety precautions in Chapter 5 carefully. These precautions must be followed scrupulously for all maintenance operations.

Fig. 28

Air receiver

Drain the condensate that forms in the air receiver as follows:

- Place a suitable container under condensate outlet RSC located under air receiver SA
- Make sure that the shut-off valve between the compressor and the distribution line is closed
- Open the outlet. Use pliers if necessary
- Let the condensate drain out of the receiver completely



Remember that waste oil, condensate and machine filters are polluting material. Dispose of these products in compliance with local legislation.

Air-oil separator

Drain the condensate accumulated in the air-oil separator frequently, by exploiting the fluid stratification principle.

The frequency of this operation will depend on environmental conditions (e.g. low temperature, high humidity) and the frequency of compressor cold starts.

The compressor must be at a standstill for longer than one hour to carry out this operation.

- Connect the clear tube leading to a suitable container to condensate drain outlet DC



Remember that waste oil, condensate and machine filters are polluting materials. Dispose of these products in compliance with local legislation.

- Open drain outlet SO. Follow the operation and close outlet SO as soon as oil starts flowing out
- Check the oil level and top up, if required, as described in the paragraph “Checking the level and topping up”

The air receiver and separator condensate should be drained manually on a weekly basis - or more frequently. The user is responsible for this maintenance operation.

9.7



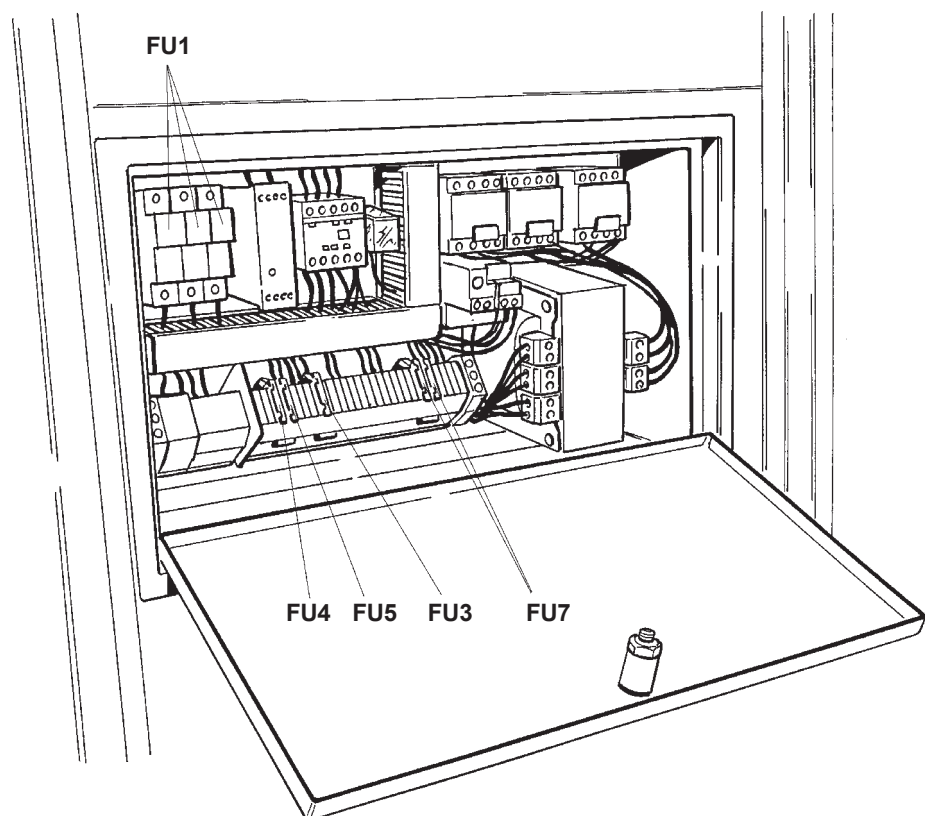
Replacing the fuses

Before performing any maintenance operations read the operator safety precautions in Chapter 5 carefully. These precautions must be followed scrupulously for all maintenance operations.

- Remove the front panel PF
- Open the control box CE with the key provided
- Replace the damaged fuses. Follow the amperage specifications provided in paragraph 12.4
- Close the control box CE
- Refit the front panel PF

Refer to **figure 29** and the wiring diagram shown in paragraph 12.4.

Fig. 29



10

Spare Parts and Service Centres

The Manufacturer provides an efficient after-sales service through a large service network and a Technical Department for solving any problems.

Always specify the compressor model and serial number (see Chapter 11) when communicating with Authorised Service Centres and the Manufacturer.

To locate the Service Centre closest to the compressor installation site, call or send a fax to:

from Italy  **011-9246400**

FAX **011-9241096**

from abroad  **+39011-9246400**

FAX **+39011-9241096**

10.1 Spare parts and consumable material codes

The following tables show the most commonly used spare parts. Contact an Authorised Service Centre for other spare parts.

Tab. 10

Model	Air filter	Oil filter	Separator filter	Oil filler plug sea
	Code	Code	Code	Code
0708	9056293	9056238	9056237	9056811
0710				
0713		9056282		
0715				
1008		9056238		
1010				
1013		9056282		
1015				
1508		9056113	9056292	
1510				
1513				
1515				

Tab. 11


Model	Drive belt			
	50Hz motor		60Hz motor	
	Quantity and type	Code	Quantity and type	Code
0708	2 XPZ 937	9075245	2 XPZ 937	9075245
0710	2 XPZ 962	9075246	2 XPZ 962	9075246
0713	2 XPZ 1014	9075258	2 XPZ 987	9075247
0715	2 XPZ 987	9075247	2 XPZ 1030	9075235
1008	2 XPZ 1030	9075235	2 XPZ 987	9075247
1010	2 XPZ 987	9075247	2 XPZ 962	9075246
1013	2 XPZ 962	9075246	2 XPZ 937	9075245
1015	2 XPZ 937	9075245		
1508	3 XPZ 1138	9075256	3 XPZ 1061	9075257
1510	3 XPZ 1061	9075257	3 XPZ 1014	9075258
1513	3 XPZ 1014	9075258	3 XPZ 1138	9075256
1515	3 XPZ 987	9075247		

11

Machine Data Plate

Facsimile of the **TM** metal plate with the specific data of the compressor (positioned as shown on page 8).

Fig. 30

<input type="text"/>		<input type="text"/>		
MODELLO MODEL	<input type="text"/>	MATRICOLA SERIAL NUMBER	<input type="text"/>	
PORTATA ARIA LIBERA FREE AIR DELIVERY	<input type="text"/> m ³ /min	PRESSIONE DI ESERCIZIO WORKING PRESSURE	<input type="text"/> bar	
POTENZA INSTALLATA INSTALLED POWER	<input type="text"/> kW	TENSIONE E FREQUENZA VOLTAGE AND FREQUENCY	<input type="text"/> V - Hz	
MASSA COMPLESSIVA TOTAL MASS	<input type="text"/> kg	LIVELLO SONORO NOISE LEVEL	<input type="text"/> dB(A)	

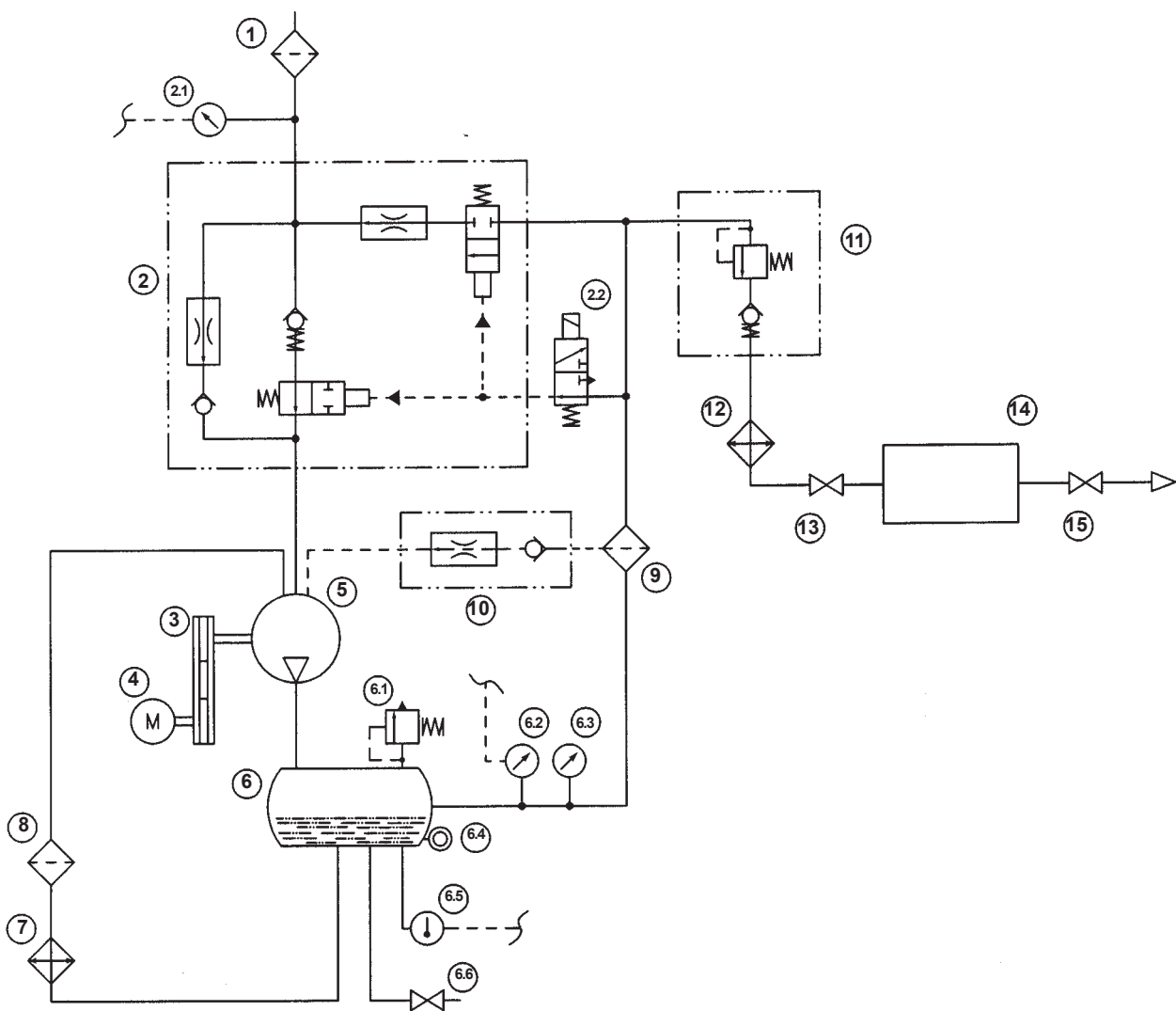
12

Diagrams

Attachments:

- 12.1 Pneumatic-hydraulic system diagram
- 12.2 Power circuit wiring diagram
- 12.3 Auxiliary circuit wiring diagram
- 12.4 Wiring diagram for component location

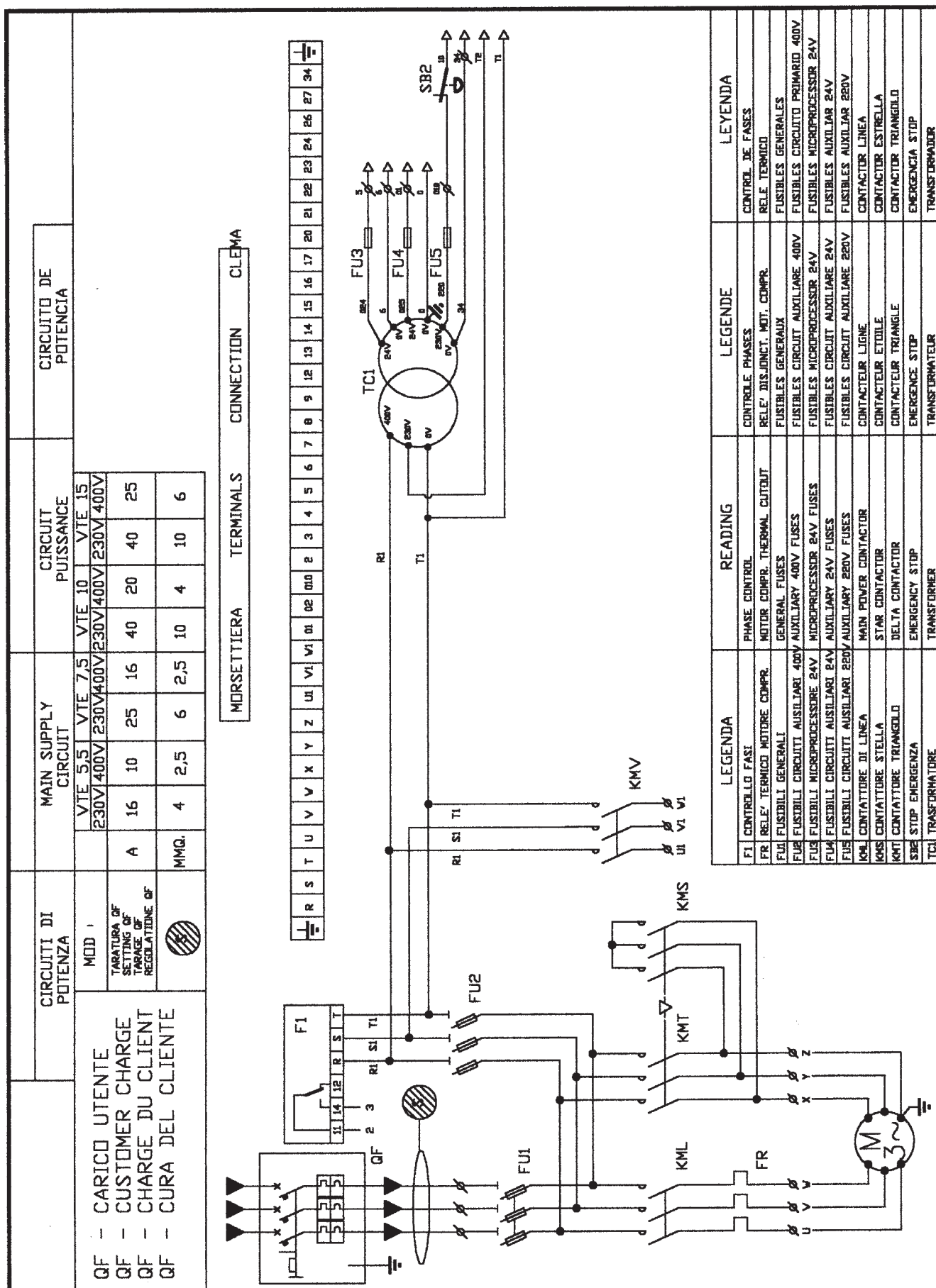
12.1 Pneumatic-hydraulic system diagram



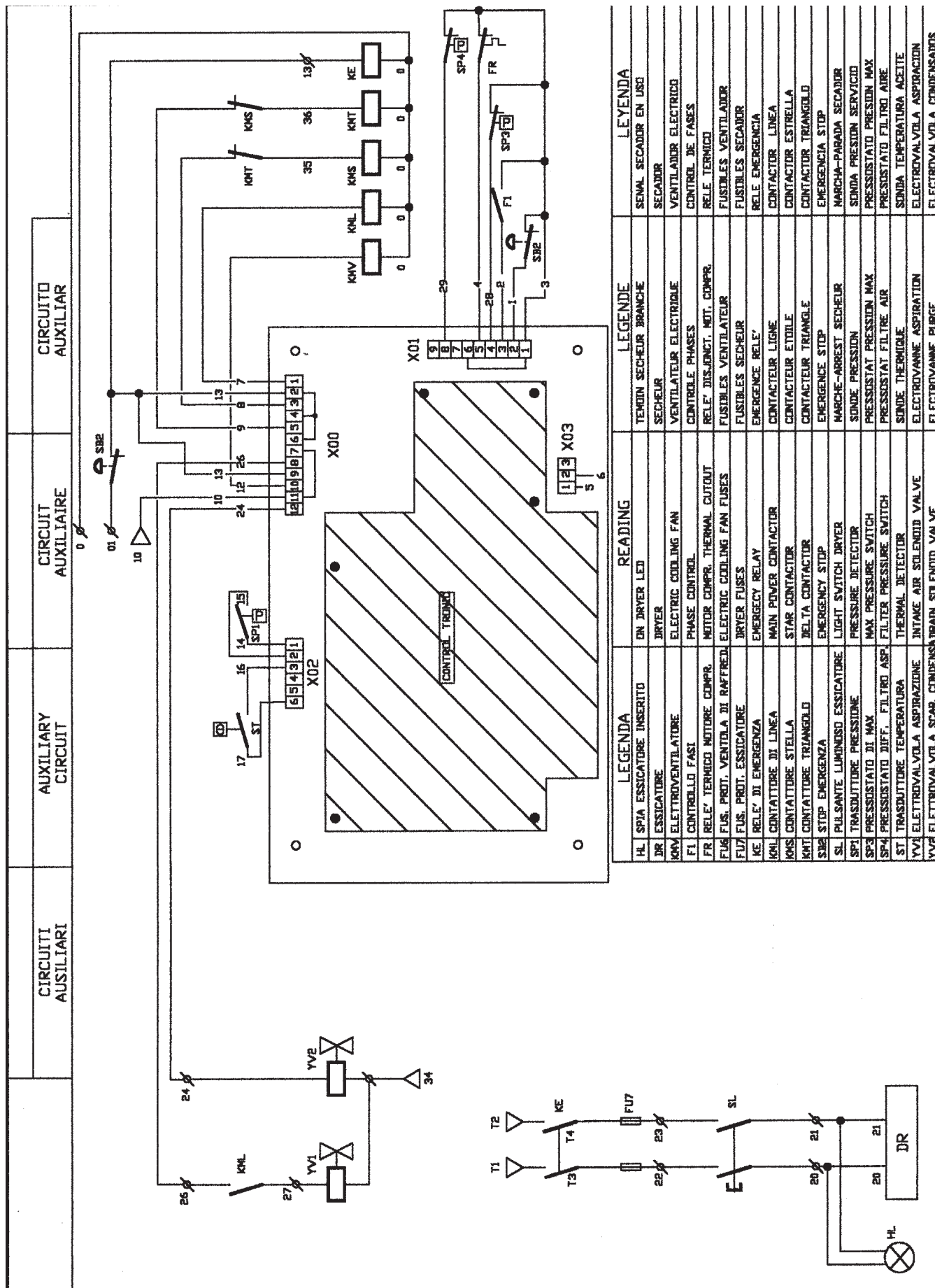
Hydraulic-pneumatic system reading

1	Air filter	6.4	Oil level indicator
2	Intake unit	6.5	Oil temperature sensor
2.1	Clogged air filter vacuum sensor	6.6	Oil drain outlet
2.2	Intake unit control solenoid valve NO	7	Air-oil exchanger
3	Drive	8	Oil filter
4	Motor	9	Separator filter
5	Air-end	10	Oil recovery
6	Oil receiver	11	Minimum and retaining pressure valve
6.1	Safety valve	12	Air-air exchanger
6.2	Clogged separator filter safety pressure switch	13	Outlet
6.3	Pressure gauge	14	Dryer ¹ (PLUS versions only)
		15	Outlet

¹See specific handbook



12.3 Auxiliary circuit wiring diagram



12.4 Wiring diagram for component location

