



SCREW TYPE AIR COMPRESSORS

OPERATOR'S MANUAL



TM356-15500
(15hp, 500L Tank)

TM356-20500
(20hp, 500L Tank)

Ver: 1.0

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Industrial Tool & Machinery Sales (hereinafter referred to as ITMS) will, within twelve (12) months from the original date of purchase, repair or replace any goods found to be defective in materials or workmanship.

This warranty is void if the item has been damaged by accident, neglect, improper service or other causes not arising out of defects in materials or workmanship. This warranty does not apply to machines and/or components which have been altered, changed, or modified in any way, or subjected to overloading or use beyond recommended capacities and specifications. Worn componentry due to normal wear and tear is not a warranty claim. Goods returned defective shall be returned prepaid freight to ITMS or agreed repair agent, which shall be the buyer's sole and exclusive remedy for defective goods. ITMS accepts no additional liability pursuant to this guarantee for the costs of travelling or transportation of the product or parts to and from ITMS or the service agent or dealer, such costs are not included in this warranty.

Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

THE MANUFACTURER RESERVES THE RIGHT TO MAKE IMPROVEMENTS AND MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE.

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INTRODUCTION

In the event of breakdown or malfunction of the machine, switch it off and do not tamper with it. If repairs are needed, contact to a technical assistance centre approved by the manufacturer and insist on the use of original spare parts.

Failure to comply with the above may endanger the safety of the machine.

Keep this manual with care for future consultation; the use and maintenance manual is an integral part of the machine.

Read this manual carefully before carrying out any operations on the compressor unit.

The installation of the compressor unit and all operations involving it must be performed in conformity with the regulations in force concerning electric plants and personal safety.

CHARACTERISTICS AND SAFETY PRECAUTIONS

FIG. 1



MACHINE WITH AUTOMATIC START



BEFORE REMOVING THE PROTECTION DEVICES FOR ANY MAINTENANCE WORK ON THE MACHINE, DISCONNECT THE ELECTRICAL POWER SUPPLY. MAKE SURE THAT THERE IS NO INTERNAL RESIDUAL PRESSURE. ALL WORK ON THE ELECTRIC PLANT MUST BE CARRIED OUT BY PROFESSIONALLY SKILLED PERSONNEL.

The manufacturer does not accept responsibility for damage caused as a result of negligence of failure to abide by the instructions given above.

THIS MACHINE IS NOT SUITABLE FOR EXTERNAL INSTALLATION

1.0 GENERAL CHARACTERISTICS

The compressor units use single-stage screw rotary air compressors with oil injection.

The central unit comprises:

compressor; oil separator; oil cooler and output air cooler; fan; electric start; safety and regulation devices; instrument panel.

The system is self-bearing and does not require bolts or other devices to anchor it to the floor.

The unit is completely assembled in the factory; the necessary connections for setting it up are:

- connection to the power mains (see installation chapter)
- connection to the compressed air network (see installation chapter)

The compressor-motor unit is fitted on the machine chassis by means of flexible supports: this allows the compressor unit to be laid directly on the floor without any need of further vibration-damping systems.

2.0 INTENDED USE

The compressor has been built to supply compressed air for industrial use.

The machine cannot be used in premises where there is a risk of fire or explosion or where work is carried out which releases substances into the environment which are dangerous with regard to safety (for example: solvents, inflammable vapours, alcohol, etc.).

In particular the appliance cannot be used to produce air to be breathed by humans or used on direct contact with foodstuffs. These uses are allowed if the compressed air produced is filtered by means of a suitable filtering system as per the applicable standards.

(Consult the manufacturer for these special uses.)

This appliance must be used only for the purpose for which it was specifically designed.

All other uses are to be considered incorrect and therefore unreasonable.

The Manufacturer cannot be held responsible for any damage resulting from improper, incorrect or unreasonable use.

3.0 OPERATION

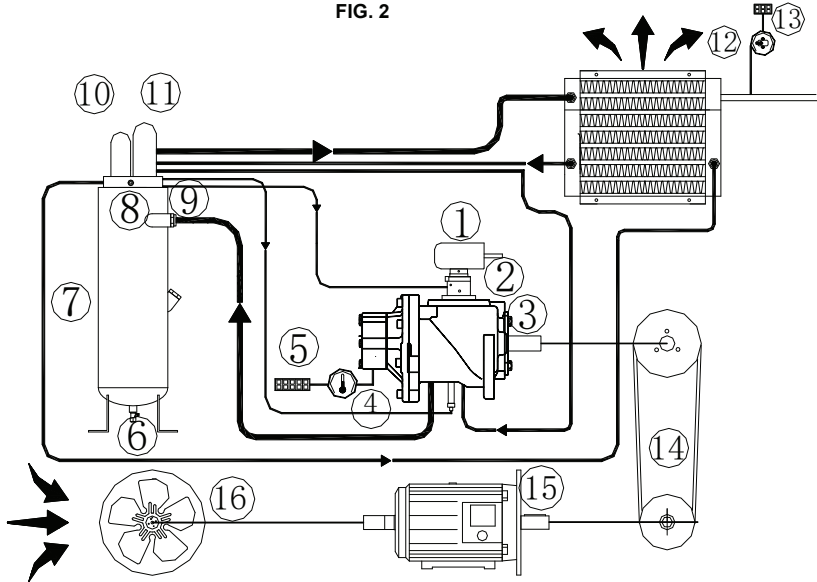
The electric motor and the compressor unit are coupled by means of a belt transmission.

The compressor unit takes in the outside air through the suction valve. The air taken in is filtered by panel pre-filter fitted on the panel of the external covering and by the filter cartridge fitted upstream from the suction valve. Inside the compressor unit, the air and the lubricating oil are compressed and sent to the oil separating filter where the oil is separated from the compressed air; the air is then filtered again by the oil separating cartridge to reduce the amount of suspended oil particles to a minimum. At this point the two flows (of oil and air) are sent to two separate coolers where they are cooled, using a flow of air taken from the environment by a special fan inside the machine.

The cooled oil returns to the circuit while the compressed air is sent to the using network.

Refer to figure 2.

FIG. 2



- | | |
|------------------------|------------------------|
| 1 SUCTION FILTER | 10 OIL FILTER |
| 2 SUCTION REGULATOR | 11 AIR-OIL SEPARATOR |
| 3 SCREW COMPRESSOR | 12 AIR-OIL COOLER |
| 4 TEMPERATURE SENSOR | 13 PRESSURE TRANSDUCER |
| 5 CONTROLLER | 14 BELT PULLY |
| 6 OIL DISCHARGE VALVE | 15 ELECTRIC MOTOR |
| 7 AIR-OIL PRESEPARATOR | 16 FAN |
| 8 OIL SEPARATOR SEAT | |
| 9 SAFETY VALVE | |

4.0 GENERAL SAFETY STANDARDS

The appliance may be used only by specially trained and authorized personnel. Any with the machine or alterations not approved beforehand by the Manufacturer relieve the latter of responsibility for any damage resulting from the above actions.

ATTENTION: UPSTREAM OF THE MACHINE INSTALL AN ISOLATOR KNIFE-SWITCH WITH AN AUTOMATIC CUTOFF AGAINST CURRENT SURGES AND EQUIPPED WITH A DIFFERENTIAL DEVICE FOR CALIBRATIONS SEE WIRING DIAGRAM ON LAST PAGE



ALL WORK ON THE ELECTRIC PLANT, HOWERE SLIGHT, MUST BE CARRIED OUT BY PROFRRSSIONALLY SKILLED PERSONEL.

5.0 DESCRIPTION OF DANGER SIGNALS



1) FLUID EJECTION

FIG. 3



5) HIGH PRESSURE



2) DANGEROUS ELECTRIC VOLTAGE



6) HOT PARTS



3) AIR NOT FIT FOR BREATHING



7) MOVING PARTS



4) NOISE



8) FAN ROTATING



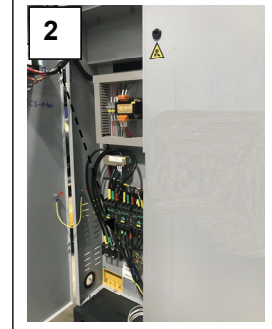
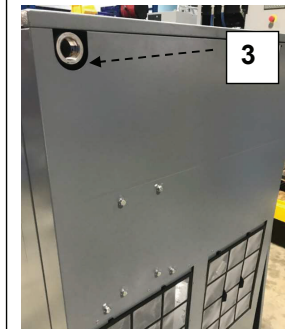
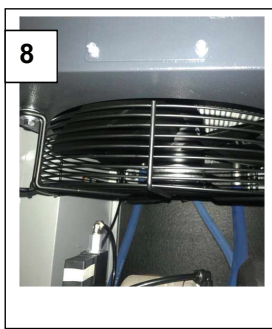
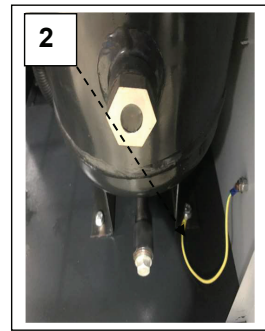
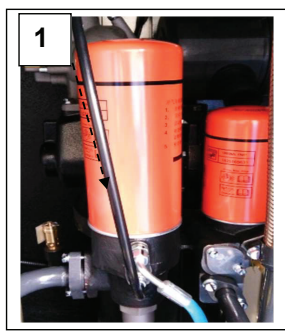
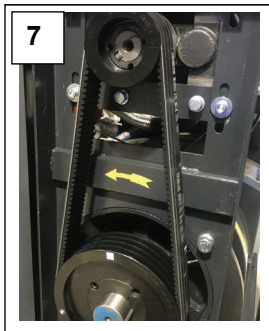
9) MACHINE WITH AUTOMATIC START

6.0 DANGERS ZONES



Risks present on the whole machine

FIG 4



1



2



3



7

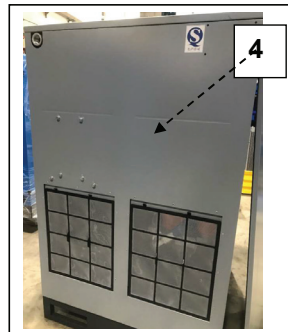
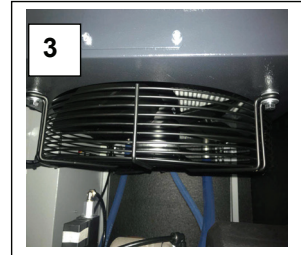
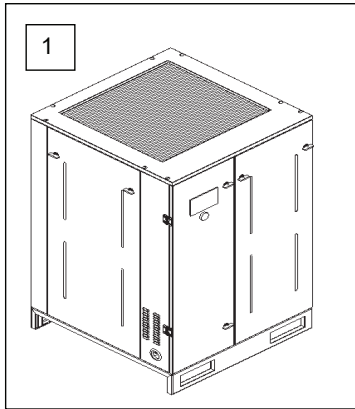


8

7.0 SAFETY DEVICES

- 1 Safety screws
- 2 Side panels and door to the electric panel, opened with a special key
- 3 Fixed protection device - cooling fan
- 4 Fixed protection device - pulleys
- 5 Emergency push button
- 6 Oil filling cap (with safety breather)
- 7 Safety valve

FIG 5



8.0 POSITION OF SIGNS & DATA PLATES

8.1 POSITION OF THE DANGER PLATES

The plates fitted on the compressor unit are part of the machine; they have been applied for safety purposes and must not be removed or spoiled for any reason.

- 1 Machine with automatic start
- 2 Air not fit for breathing Code
- 3 Dangers plate

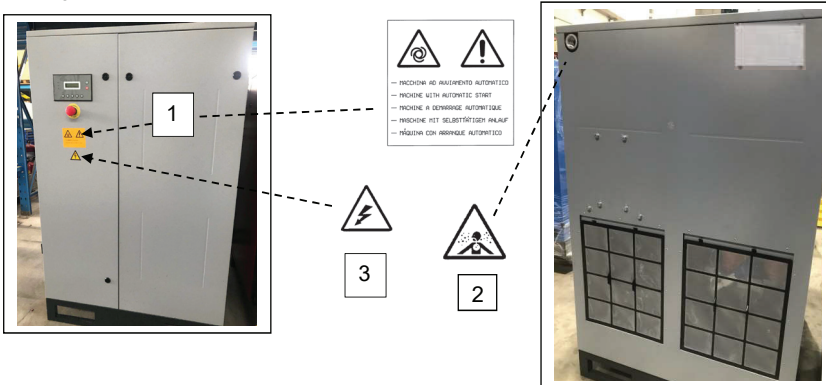
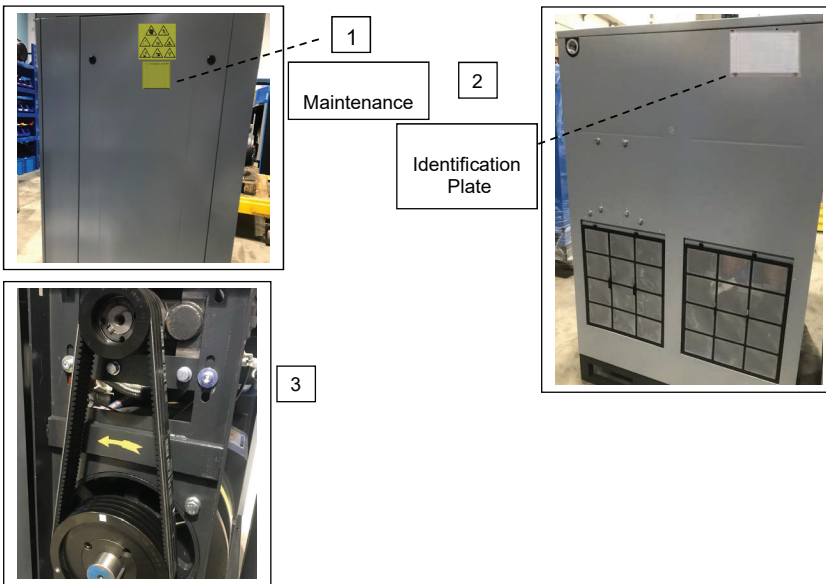


FIG 6

8.2 POSITION OF THE DATA PLATES

- 1) Maintenance program
- 2) Identification plate
- 3) Rotation Direction

FIG. 7



9.0 COMPRESSOR ROOM

9.1 FLOOR

The floor must be even and of industrial type for the total weight of the machine (Please refer to technical data)..

Remember the total weight of the machine when positioning it. (See chapter 13.0)

9.2 VENTILATION

When the machine is operating, the room temperature must not be higher than **40 °C** or lower than **1 °C**. The volume of the room must be about **30 m³**

The room must be provided with 2 openings for ventilation with a surface area of about **0,3 m²** each.

The first opening must be in a high position to evacuate the hot air, the second opening must be low to allow the intake of external air for ventilation.

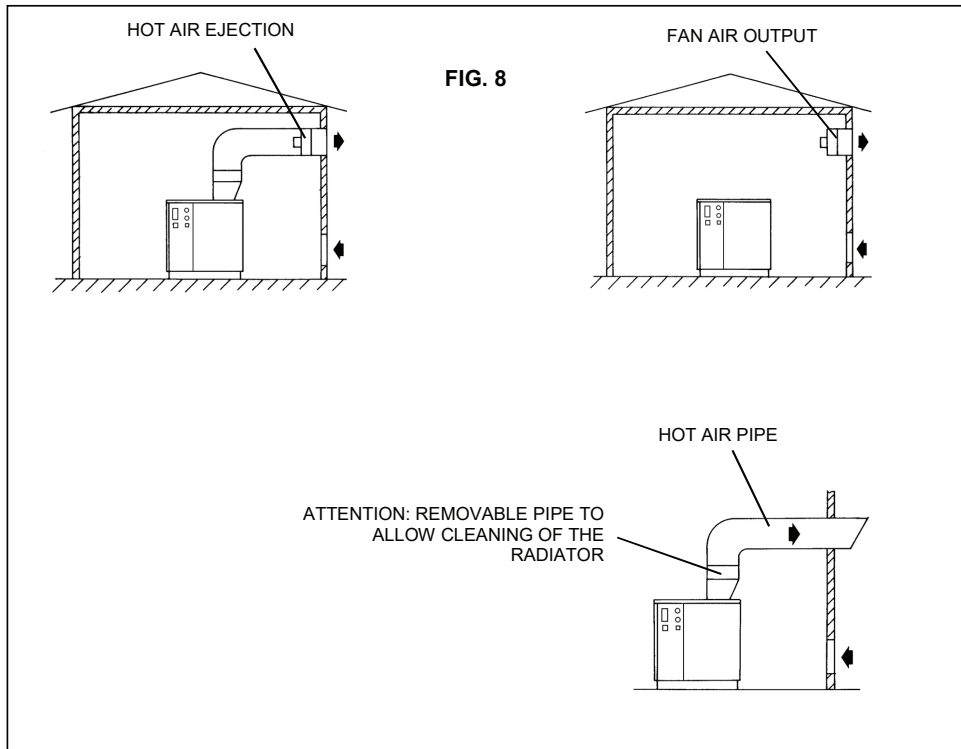
If the environment is dusty it is advisable to fit a filtering panel for this opening.

The hot air ejected by the compressor may be led outside with a duct.

This duct must have a minimum section of **0,5 m²** and it must not be longer than **2 m**.

For longer ducts an extra exhaust fan must be fitted.

9.3 EXAMPLES OF VENTILATION OF THE COMPRESSOR ROOM



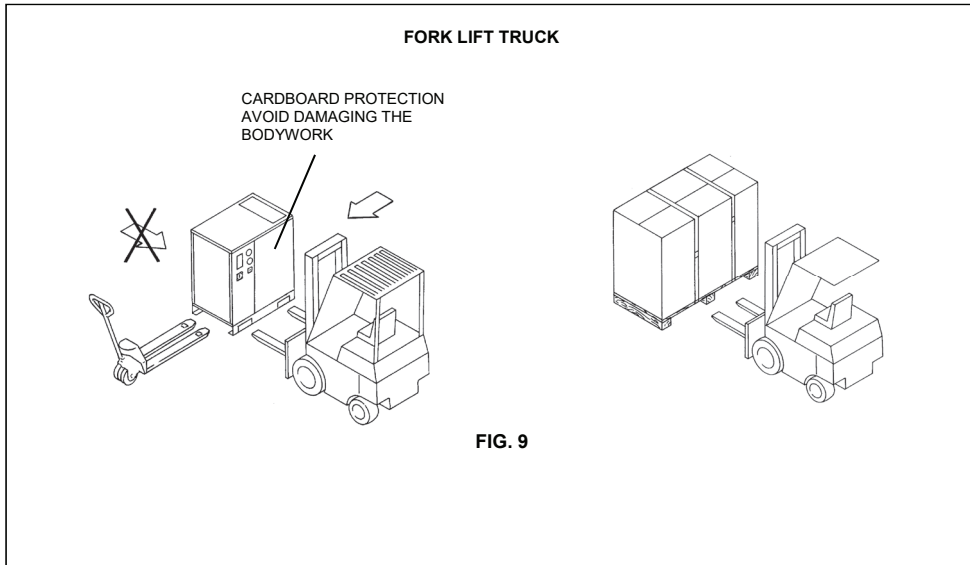
10.0 TRANSPORT AND HANDLING

IT IS FORBIDDEN TO USE METAL CABLES FOR LIFTING



ATTENTION: DO NOT STAND OR WALK PASS UNDER OVERHEAD WEIGHTS

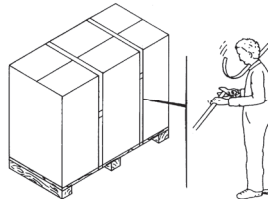
The machine must be transported as shown in the following figures.

**11.0 UNPACKING**

CUTTING THE METAL STRAPPING IS A DANGEROUS OPERATION, SEE FIG.10 DO NOT ABANDON THE CUT PIECES IN THE ENVIRONMENT.

After removing the packing, ensure that the machine has no visibly damaged parts. If you are in doubt, do not use the machine but contact the manufacturer technical assistance service or your dealer. The packing material (plastic bags, polystyrene foam, nails, screws, wood, metal strapping, etc.) must not be left within the reach of children or abandoned in the environment, as they are a potential source of danger and pollution. Dispose of these materials in the approved collection centres.

FIG. 10



12.0 INSTALLATION

12.1 POSITIONING

After unpacking the equipment and preparing the compressor room, put the machine into position, checking the following items:

- ensure that there is sufficient space around the machine to allow maintenance (see Fig. 11).

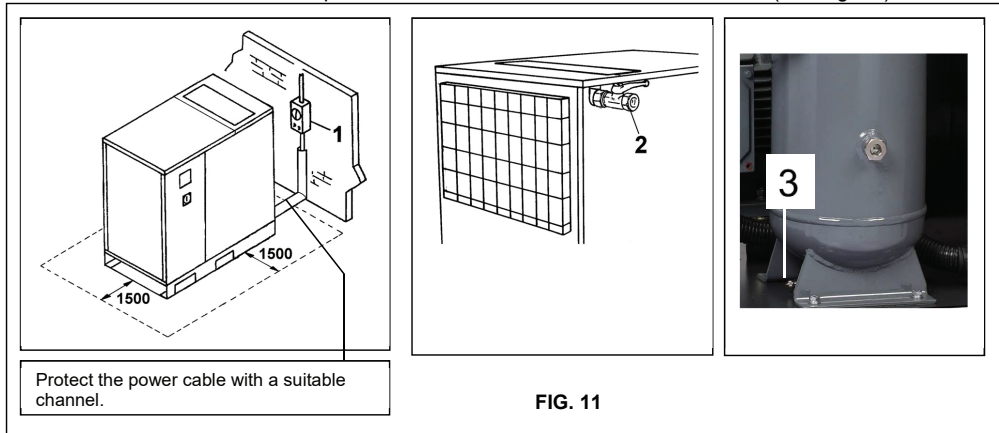


FIG. 11



ENSURE THAT THE OPERATOR CAN SEE THE WHOLE MACHINE FROM THE CONTROL PANEL AND CHECK THE PRESENCE OF ANY UNAUTHORIZED PERSONS IN THE VICINITY OF THE MACHINE.

12.2 ELECTRICAL CONNECTION

- Check that the supply voltage is the same as the value indicated on the machine data plate.
- Check the condition of the line leads and ensure that there is an efficient earth lead.
- Ensure that there is an automatic cut-out device upstream for the machine against overcurrents, with a differential device (see Ref. 1 wiring diagram).
- Connect the machine power cables with the greatest care, according to the local standards in force. These cables must be as indicated on the machine wiring diagram.
- Connect the cables to the charging clamps on the electric panel and make sure they are properly tightened. After the first 50 working hours, check that the screws on the electric terminals are tight.



ONLY PROFESSIONALLY SKILLED PERSONNEL MAY HAVE ACCESS TO THE ELECTRIC PANEL. SWITCH OFF THE POWER BEFORE OPENING THE DOOR OF THE ELECTRIC PANEL.



COMPLIANCE WITH THE REGULATIONS IN FORCE CONCERNING ELECTRIC PLANTS IS FUNDAMENTAL FOR OPERATOR SAFETY AND FOR THE PROTECTION OF THE MACHINE.

12.3 CONNECTION TO THE COMPRESSED AIR NETWORK

Fit a manual isolation valve Ref. 2 Fig. 11 between the machine and the compressed air network so that the compressor may be isolated during maintenance operations.

Condensate must be drained Ref. 3 Fig. 11 from the oil receiver (manually) in conformity with the local regulations in force.



ALL DAMAGE DUE TO THE FAILURE TO COMPLY WITH THESE INDICATIONS CANNOT BE ATTRIBUTED TO THE MANUFACTURER AND MAY CAUSE INVALIDITY OF THE WARRANTY CONDITIONS.

12.4 STARTING UP



BEFORE CARRYING OUT ANY OPERATION ON THE MACHINE, ENSURE THAT THE ELECTRIC POWER SUPPLY HAS BEEN DISCONNECTED.

12.4.1 PREPARING FOR SETTING UP

After checking everything as indicated in Chap. 12, follow the instructions in Fig. 12.

12.4.2 PRELIMINARI CHECKS

- Check the oil level Ref. 1 Fig. 12 when supplied the machine is filled with oil; if the oil is not at the correct level, top up with the same oil as the original type.
- If more than 3 months have passed between the inspection in the factory and the date of installation, lubricate the screw before starting up. Refer to manufacturer or dealer for further instruction:
- If more than 6 months have passed between the inspection in the factory and the date of installation, consult the manufacturer.

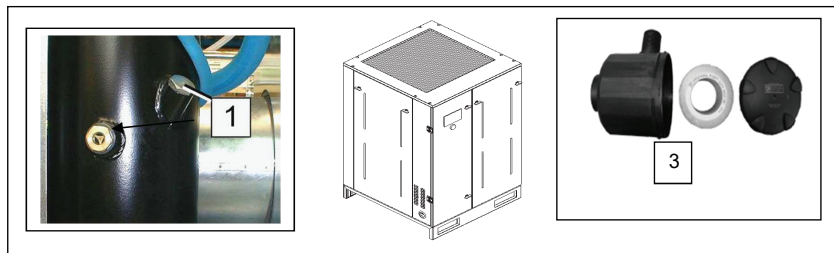


FIG. 12

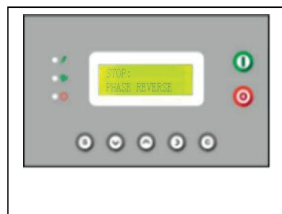


FIG.A

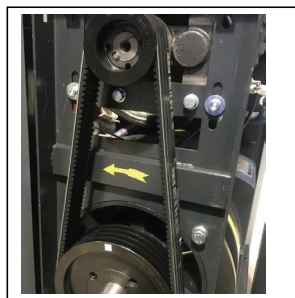


FIG. B

12.4.3 CHECK THE DIRECTION OF ROTATION

- Check that all fixed guards are in their correct position.
- Connect the control board to the power supply with the automatic circuit-breaker.
- Check if controller display "HOST/FAN LACK PHASE" Fig A.
- If YES there may be lack of phase or wrong sequence.

First check if the voltage is stable. If YES then change any two phases.

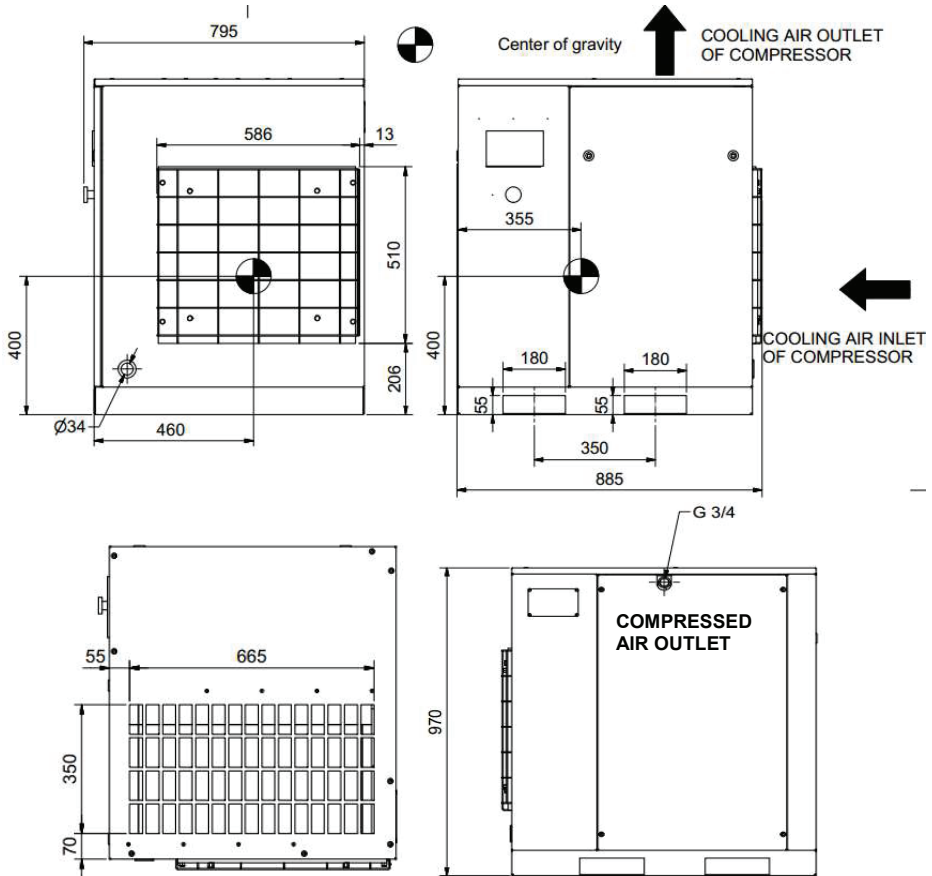
- If NO Compressor is safe to start (It will be good to check motor rotation direction if possible) Fig B



ALL WORK ON THE ELECTRIC PLANT, HOWEVER SLIGHT, MUST BE CARRIED OUT BY PROFESSIONALLY SKILLED PERSONNEL.

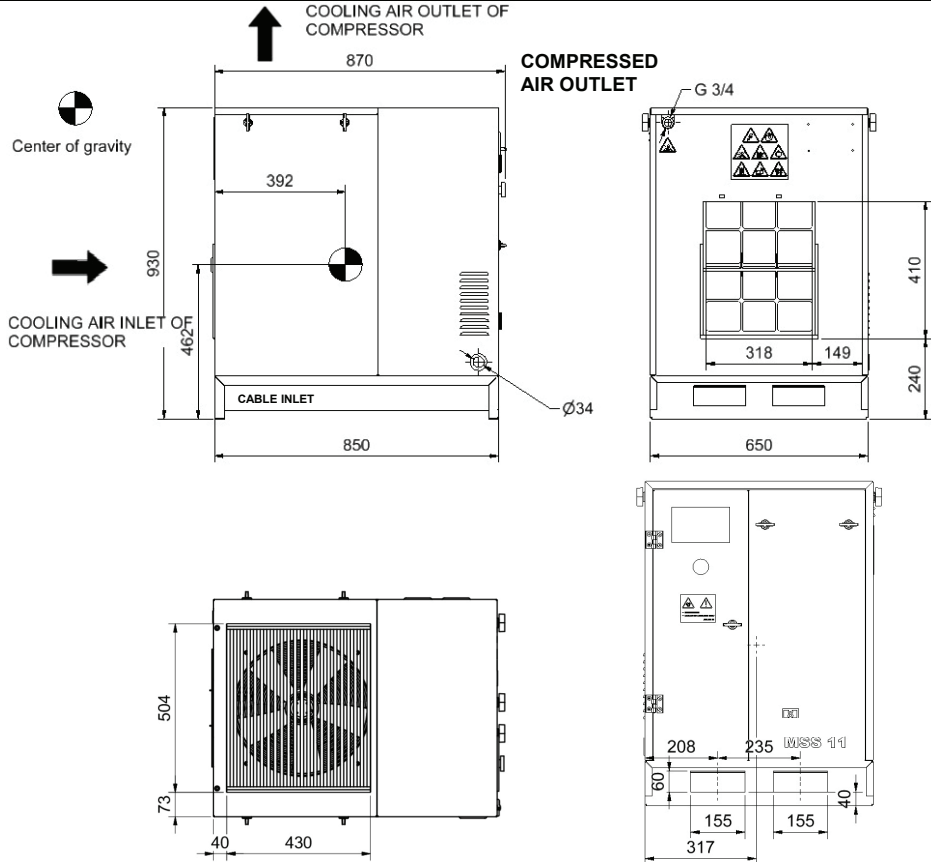
**IT IS ADVISABLE NOT TO DO ANYTHING ON THE MACHINE CONTROL PANEL.
IF ALL THE INSTRUCTIONS FOUND IN THIS MANUAL HAVE BEEN OBSERVED THE MACHINE
CAN BE STARTED.**

13.0a DIMENSIONS AND TECHNICAL DATA (7.5kw)



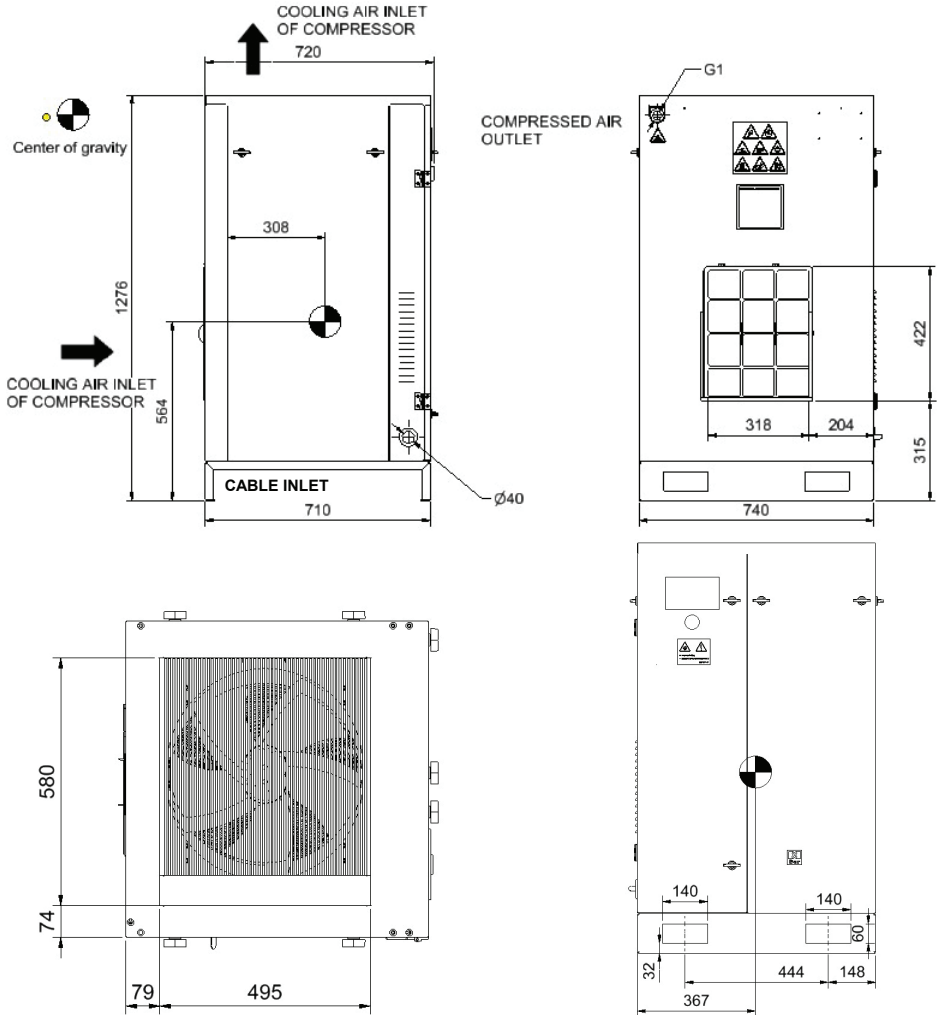
Motor Power kw	7.5	
Max. pressure MPa	0.8	1.0
FAD m ³ /min (50Hz)	1.06	0.72
Noiose product.dB(A)	68	
Net weight kg	235	
Power input kW	9.0	7.7
Oil load (L)	~3.8	

13.0b DIMENSIONS AND TECHNICAL DATA (11—15kw)

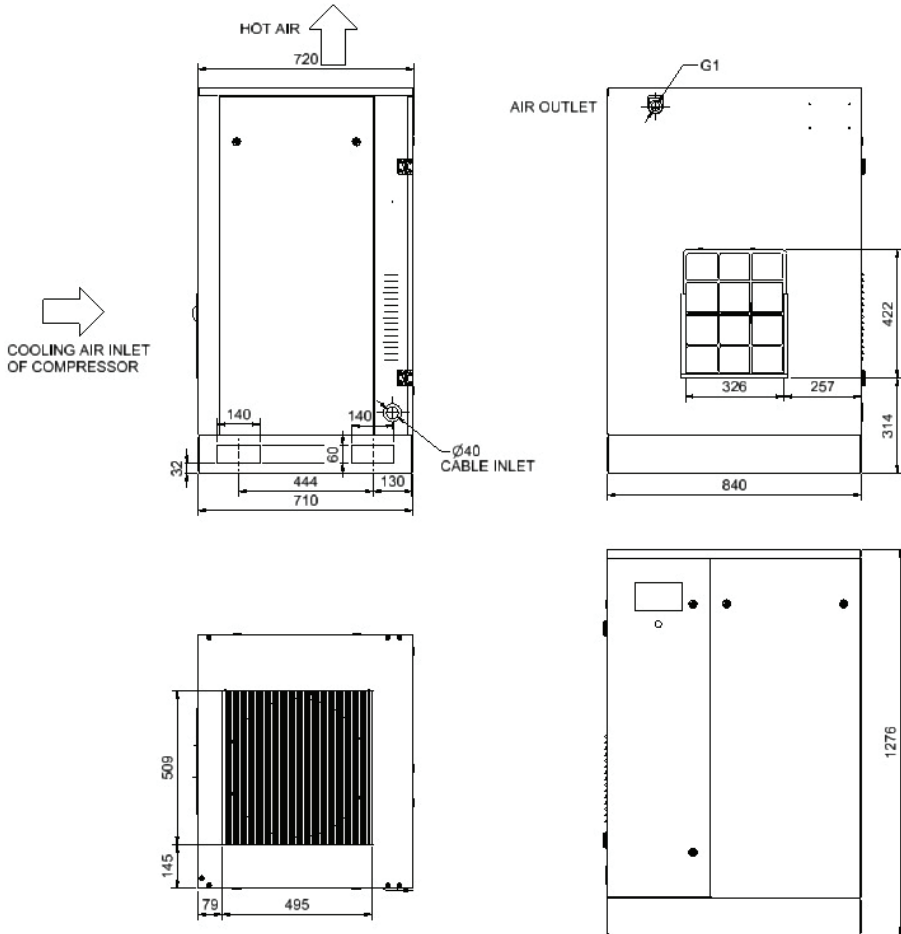


Motor Power kw	11		15	
Max. pressure MPa	0.8	1.0	0.8	1.0
FAD m ³ /min (50Hz)	1.64	1.37	1.95	1.84
Noise product.dB(A)	72.5			
Net weight kg	230			
Power input kW	13.2	12.6	15.7	16.8
Oil load (L)	~3.8			

13.0c DIMENSIONS AND TECHNICAL DATA (18.5—22kw)

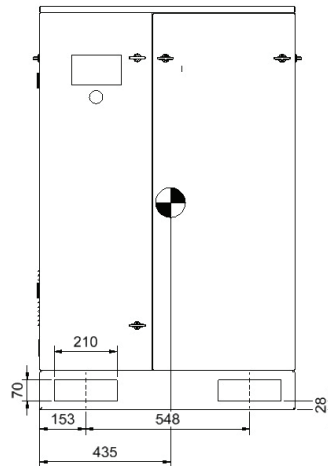
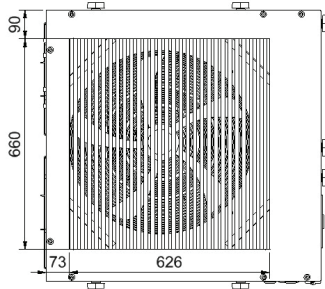
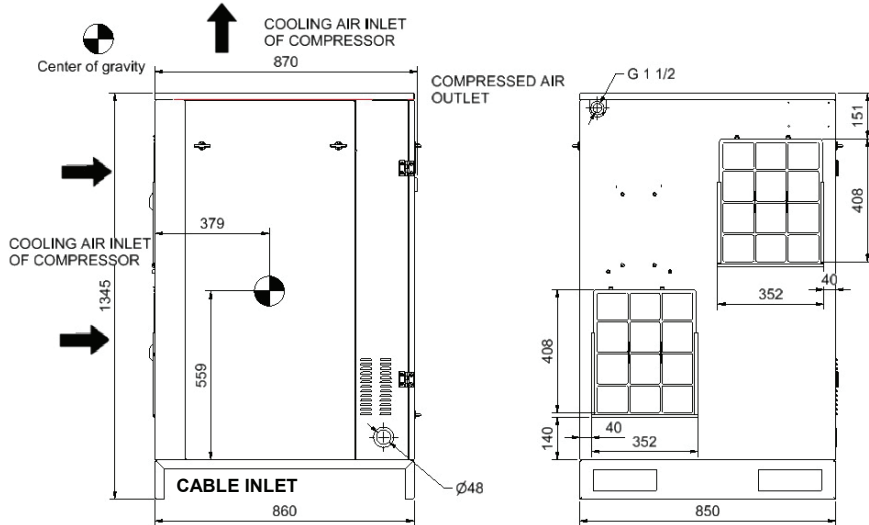


Motor Power kw	18.5	
Max. pressure MPa	0.8	1.0
FAD m ³ /min (50Hz)	2.92	2.46
Noise product dB(A)	71.9	
Net weight kg	330	
Power input kW	22	20.64
Oil load (L)	~8.5	



Motor Power kw	22	
Max. pressure MPa	0.8	1.0
FAD m ³ /min (50Hz)	3.32	2.78
Noise product.dB(A)	71.9	
Net weight kg	350	
Power input kW	22.2	20.4
Oil load (L)	~8.5	

13.0d DIMENSIONS AND TECHNICAL DATA (30—37kw)



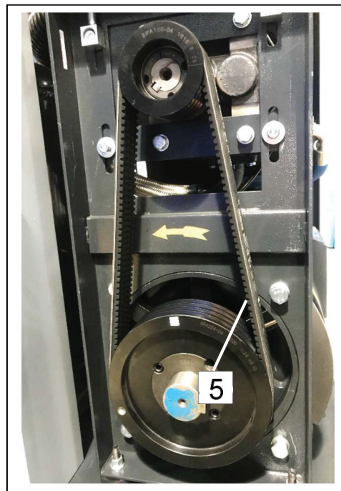
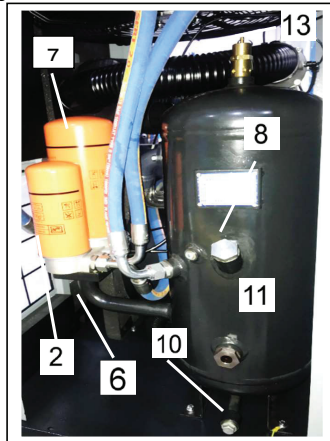
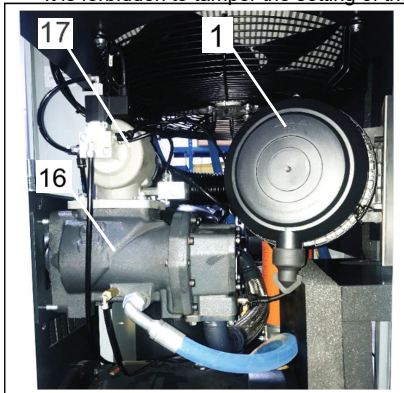
Motor Power kw	30			37		
Max. pressure MPa	0.7	0.8	1.0	0.7	0.8	1.0
FAD m ³ /min (50Hz)	4.93	4.70	3.75	5.44	5.37	4.82
Noise product dB(A)	78.5			78.5		
Net weight kg	490			524		
Power input kW	37.2	36.6	31.8	37.7	39.7	38.9
Oil load (L)	~13.8			~13.8		

14.0 MACHINE ILLUSTRATION

14.1 GENERAL LAY-OUT

- | | |
|--|---------------------|
| 1 Air suction filter | 10 Oil discharge |
| 2 Oil filter | 11 Oil tank |
| 3 Air-oil cooler | 12 Control card |
| 4 Filter panel | 13 Safety valve |
| 5 Belt tightening system | 14 Emergency stop |
| 6 Minimum pressure valve | 15 Electric motor |
| 7 Air-oil separator with oil separating filter | 16 Screw compressor |
| 8 Top-up or oil filling cap | 17 Suction unit |
| 9 Control panel | |

*It is forbidden to tamper the setting of the safety valve



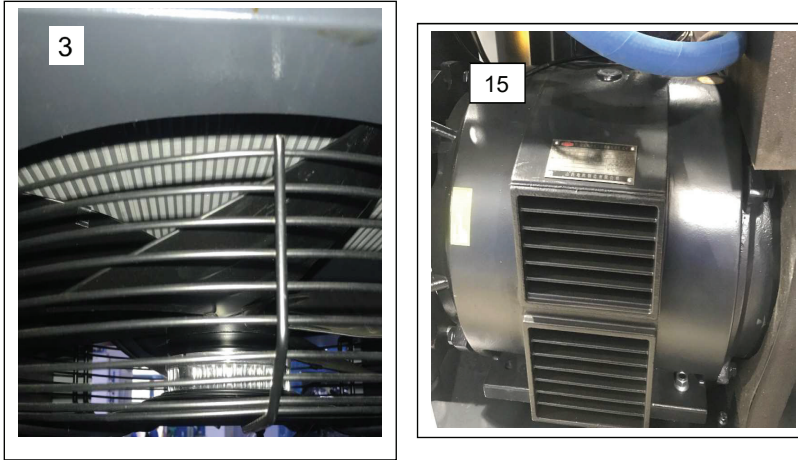


FIG 13

14.2 COMMAND AND CONTROL PANEL

BEFORE CARRYING OUT THE OPERATION TEST, READ CAREFULLY AND ACQUIRE A GOOD KNOWLEDGE OF THE COMMAND FUNCTIONS.

 **NOTICE**








-  Please read instruction manual before usage
-  Installation of AM-100 can be performed only by professional technicians
-  Assembling position shall be considered carefully during mechanical installation in order to ensure good heat dissipation and reduce electromagnetism interferences
-  Wiring shall be performed respectively according to regulations for heavy and weak current to reduce electromagnetism interferences
-  Surge absorber must be communicated with inductive load such as AC contactor of output control of relay
-  Output wiring shall be inspected carefully before switch on
-  Earthing terminal of this body part shall be earthed correctly (the third type of earthing) to increase product's capacity of resisting signal noise.

FIG 14

Features:

- LCD Chinese / English display
- With control functions of starting, stopping and operation for motor.
- With protection functions of preventing reverse rotation of air compressor.
- Temperature measurement and control
- Automatic adjusting of rate of load and controlling of pressure balance
- Selections of remote and local control

14.2.1 Basic Operation

1、Button Explanation

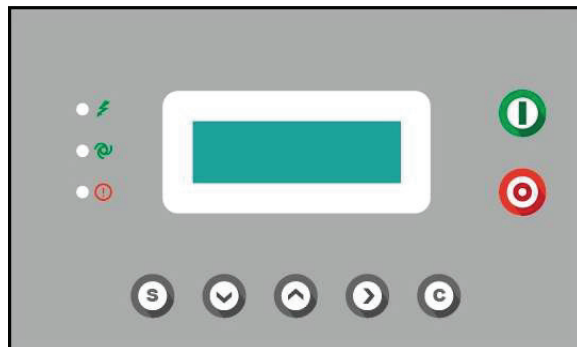











Figure 15

-  — Start Button: Press this button to start the compressor.
-  — Stop button: Press this button to stop the compressor.
-  — Set Button/ Loading / unloading Button: After modification, press this to confirm and save modified data; When the compressor is running ,press this button to load or unload under a certain pressure.
-  — Move up button/increase button: Data at current position is increased by pressing this button when data are modified; Menu is moved upwards when menu is selected.
-  — Move down button / Descending button: Data at current position is descended by pressing this button when data are modified; menu is moved downwards when menu is selected.
-  — Shift button /Enter button: This button services as shift button when data are modified and services as enter button when menu is selected.
-  — Back button / Reset button: This button services as back button when blowing through menu to come back to parent menu. Resetting is carried out by pressing this button for a little long time when failure / shutdowns occur.

2、Indicator instructions

-  — Power: After controller power on, power LED light
-  — Run: Compressor operation, run LED light.



Alarm: Early warning, the fault light flashes; fault shutdown, fault lights lit, clear fault, reset off.

3. Display of status and operations

The display screen will be as follow when the units are powered on:

SCREW
COMPRESSOR



After power on, screen show this page

After 5 seconds, the main page will show up as:

PRES: 0.60MPa
SYS STOP C01



Main page

Press shift button, the main page will show up as:

TEMP: 80℃
SYS STOP C01



Main page

Press "Move down button" to enter into Menu Selection Interface:

RUN PARA.
USER PARA.



Level 1 menu screen

FACTORY PARA.
MOD PARAMETER



Level 1 menu screen

4. Operating parameters

Press "Move down button" or "Move up button" to move the black cursor to "RUN PARA.", press enter button to pop up submenu:

MOTOR(A) A-0100
B-0100 C-0100

Continuously press "Move down button" you can see run parameters and run state parameters as follows:

Fan current, Total run time, Total load time, This run time, This load time, Oil filter time, O-a filter time, Air filter time, Lube time, Grease time, Belt time.....etc.

5. User Parameter (Customer Parameter):

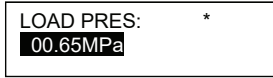
In primary menu., press the move button to move the black slider to the "USER PARA" menu, press the shift button to switch to the following menu:

LOAD PRES:
00.65MPa

In this menu, Press shift button , Switch to the following interface requirements to enter a user password

PASSWORD:0***

After showing this interface, The first bit data of password started flashing, press "increase button" or "descending button" to modify the flashing data equal to the first bit of password, Press the shift button, move the cursor to the next data bit, similarly modify the third and fourth. Finally, press the "Set button" to confirm the input. The system verify the password is correct, switch to the following interface:



The upper right corner with "*" prompt said the System has passed the password authentication

When in this menu (as shown above), press "enter button", then the data of loading pressure start to flash, users can press "increase button" or "Descending button" to modify the data. When finished, press "Set Button" to confirm and save. the controller will keep to confirm.

14.2.2 Early-Warning and Prompts

1. Indication of early warning of oil filter

The Text displays "OIL FILTER LIFE END" when the using time of the oil filter terminates.

2. Indication of early warning for air filter

The Text displays "AIR FILTER LIFE END" when the using time of the oil filter terminates.

3. Indication of early warning for oil separator

Text displays "O/A FILTER LIFE END" when the using time of the oil separator terminates.

4. Indication of early warning for lubricating oil

The Text displays "LUBE LIFE END" when the using time of the lube terminates.

5. Indication of early warning for grease

The Text displays "GREASE LIFE END" when the using time of the grease terminates.

6. Indication of early warning for belt

The Text displays "BELT LIFE END" when the using time of the belt terminates.

7. High air temperature warning

Controller detects the air temperature high, the text display "HIGH TEMPERATURE"

14.2.3 Protection Functions of Controller

1. Motor protection

The air compressor controller provides all-round protection functions of short-circuit, locking, phase failure, overload, imbalance for motor.

Electronic failure	Failure Display	Reason
Short circuit	Display failure "HOST/FAN SHORT"	Wrong setting of short circuit or rated current
Blocked	Display failure "HOST/FAN BLOCK"	Too large load, bearing wear and other mechanical failure
Overload	Display failure "HOST/FAN OVER CARRY"	Too large load, bearing wear and other mechanical failure
Phase failure	Display failure "HOST/FAN LACK PHASE"	Power supply, contactor or phase failure of motor
Unbalance	Display failure "HOST/FAN UNBLANCE"	Poor contact of contactor, inside open-loop of motor

2. Element outlet Over-Temperature Protection

When the element outlet temperature is higher than the upper limit of set temperature, the controller will stop the machine, The display will show "**HIGHT T**".

3. Non-reversing Protection of Air Compressor

When three-phase supply phase sequence connected to the air compressor is not the same with that set for the controller, the failure is displayed as "**PHASE REVERSAL**", as a result, the controller cannot start up the motor. Then just change any arbitrary two-phase power lines leading to check the rotation of motor.

4. Overpressure Protection of Pressure Supply

When the air discharge pressure is higher than the upper limit of set pressure, the controller will stop the machine, the failure is displayed as "**HIGH P**".

5. Malfunction of protection sensor

When pressure sensor or temperature sensor is disfunctional, the controller will stop the machine. the failure is displayed as "****SENSOR FAULT**".

14.2.4 Removal of Common Failures

1. Failures Review

When a fault occurs, the controller in the main interface displays the current fault content. For example, when the pressure sensor failure, it displays the following interface:

STOP:
P SENSOR FAULT

2. Common Failures and Causes

Failure	Reason	Disposal method
Air Exhaust Temperature too high	Bad vent condition, Oil lacking etc.	Check the vent condition and lubricant amount etc.
Temperature Sensor Failure	Cable off or PT100 damaged	Checking the wiring and PT100
Over Pressure	The pressure too high or the pressure sensor failure	Check the pressure and the pressure sensor
Pressure Sensor Failure	Cable or Sensor damaged or incorrect cable connection.	Check the wiring and sensor
Lack Phase	Power phase lacking or the Contactor terminal damaged	Check the power and contactors
Overloaded	Voltage too low, cooler blocked, Bearing Wear off or other mechanical failure or wrong set data etc.	Check the set data, Voltage, motor bearings, cooler and other mechanical system.
Unbalance	Power unbalance, Contactor damaged or the internal short-circuit of the motor	Check the power, contactors and the motor
Rotor Lock	Voltage too low, pipes blocked, Bearing Wear off or other	Check the set data, Voltage, bearings, pipes and other mechanical system.

	mechanical failure or wrong set data etc.	
Short Circuit	Wrong Wiring, Incorrect Data setting etc.	Checking the wiring and set the data correctly
Wrong Phase Sequence	Reversed Phase sequence or phase off	Check the wiring
Overload or Rotor locking during starting process	Host start time set to a value less than the star - delta time delay	Reset the host starting time to be longer than star-delta delay + Load delay time
Main Contactor activate time to time	The emergency button loose	Check the wiring
Air Exhaust Temperature too high	Bad Ventilation, Low Oil etc.	Check the vent condition and Oil level etc.
Temperature Sensor Failure	Cable off or PT100 damaged	Checking the wiring and PT100
Over Pressure	The pressure too high or the pressure sensor failure	Check the pressure and the pressure sensor

14.2.5 Maintenance Alarm

We have set an alarm to remind for ordinary maintenance.

When reaching the maintenance cycle, the corresponding maintenance alarms will appear on the display. After the implementation of maintenance related to the content, the controller has to be reset

Process as follows:

Starting from the main screen (see main menu):

1. Press the down button until the "user parameter" menu.
2. Press the right button to activate the submenus of the user menu
3. Press the down button to "maintenance timer reset" for Oil Filter, Oil/Air Filter, Air Filter, Lube, Grease, Belt
4. Select Parameter & re-set to 0000.
5. Confirm the Reset.

Note: Check (15.2) MAINTENANCE SCHEDULE for components to be changed at respective service interval.

15.0 MAINTENANCE



BEFORE CARRYING OUT ANY MAINTENANCE JOBS IT IS OBLIGATORY TO STOP THE MACHINE AND DISCONNECT IT FROM THE POWER MAINS.

The ■ maintenance jobs described in this chapter may be carried out by the user.

The more complex ■■ maintenance jobs require professionally skilled personnel to carry out.

15.1 GENERAL INFORMATION

Routine maintenance must be carried out according to the maintenance schedule displayed on the machine.

15.2 DRAINING CONDENSATE FROM THE OIL TANK

If the compressor work cycle contemplates long pauses during which the machine cools down, a certain amount of condensate may collect in the oil tank. This happens, for example, when stopping overnight or at weekends.

The condensate must be drained off every 50 hours or every week. This operation may be performed only when the machine is cold, that is when it has been switched off for at least 8 hours.

BEFORE DRAINING THE CONDENSATE IT IS OBLIGATORY TO STOP THE MACHINE AND DISCONNECT IT FROM THE POWER MAINS.

Proceed as follows:

- Press the "STOP" button Ref. 2 Fig. 16
- Turn the isolating switch and block it with the padlock.
- Turn on the supply automatic differential switch.

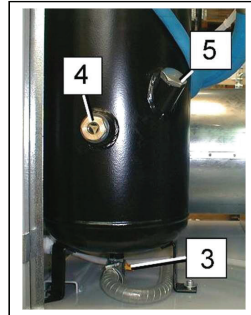
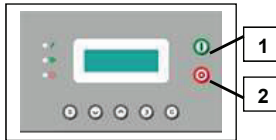


FIG 16

- Wait for the machine to cool down.
- Remove the panels with the key provided.
- SLOWLY turn on the tap Ref. 3 Fig. 16 and let the condensate flow out.
- When the first traces of oil appear, turn off the tap.



CONDENSATE MUST BE DISPOSED OF IN CONFORMITY WITH THE LOCAL REGULATIONS IN FORCE.

- Check the oil level on the indicator Ref. 4 Fig. 16
- If the oil level is low, top up as described in 15.4



USE OIL OF THE SAME TYPE AS THAT ALREADY IN THE MACHINE; DO NOT MIX DIFFERENT TYPES OF OIL

15.3 MAINTENANCE SCHEDULE

- OPERATIONS THAT MAY BE CARRIED OUT BY THE USER
- ■ OPERATIONS THAT REQUIRE SKILLED PERSONNEL

These maintenance intervals are recommended for work environments that are not dusty and are well ventilated.

For particularly dusty environments, double the frequency of intervals. For more information please contact manufacturer or nearest dealer

Running time	Plan		Content
Every 50 hours (Daily/Weekly)		■	Check the temperature reading.
		■	Check the oil level
		■	Clean the filtering panel
		■	Check for possible air or oil leaks.
Every 500 hours (OR monthly)	A	■	Clean the air suction filter (see control board LED)
		■ ■	Check belt tension
		■	Drain condensate from separator tank
		■ ■	Change the oil (see control board LED)

Every 2000 hours (OR 1/2 Year)	B	■ ■	Change the oil filter (see control board LED)
		■	Change the suction filter (see control board LED)
		■ ■	Clean the finned surface of the air-oil cooler
		■ ■	Change the oil separating filter (see control board LED)
		■ ■	Top up Grease on Motor (see control board LED)
Every 4000 hours (OR 1 Years)	C	■ ■	All maintenance content of plan B
		■ ■	Test the emergency stop function
		■ ■	Change the belt
		■ ■	Test the safety valve (or one year, whichever is first)
Every 8000 hours (OR 2 Years)	D	■ ■	All maintenance contents of plan C
		■ ■	Change the suction valve service
		■ ■	Change the MPV service
		■ ■	Change the check valve
		■ ■	Clean the oil carbon (using the company's proprietary carbon cleaning agents)
Every 12000 hours (OR 3 Years)	E	■ ■	All maintenance contents of plan C
		■ ■	Check the bearing of the motor.
Every 20000 hours (OR 4 Years)	F	■ ■	All maintenance contents of plan C
		■ ■	Test and change the motor bearings
		■ ■	Check the Air End bearings.



BEFORE CARRYING OUT ANY MAINTENANCE JOBS IT IS OBLIGATORY TO STOP THE MACHINE AND DISCONNECT IT FROM THE POWER MAINS.

15.4 CHECK OIL LEVEL AND TOP UP

- Switch off the machine using the button Ref. 2 Fig. 16: the machine will stop after running unloaded for few seconds.
- Wait a few minutes for the foam in the air/oil separator tank to abate (check sight glass).
- Check the oil level on the indicator Ref. 4 Fig. 16
- If the oil level is under the minimum, top up.



USE OIL OF THE SAME TYPE AS THAT ALREADY IN THE MACHINE; DO NOT MIX DIFFERENT TYPES OF OIL.



BEFORE CARRYING OUT ANY OPERATION ON THE MACHINE, ENSURE THAT THE ELECTRIC POWER SUPPLY HAS BEEN DISCONNECTED.

Proceed as follows to top up (see 18.0 for oil part number)

- Open the front panel with the special key
- Slowly open the oil plug Ref. 5 Fig. 16
- Top up to maximum level Ref. 4 Fig. 16, with oil of the same type in the compressor.
- Turn off the cap of the oil tank Ref. 5 Fig. 16.
- Close the panel.

Note: If the oil has turned Creamy in Color contaminated with Condensate, Immediately contact dealer or Manufacturer, Do not operate the machine

15.5 CLEANING THE FILTERING PANEL

- Press the "STOP" button Ref. 2 Fig. 16
- Press the "EMERGENCY STOP" Ref. 5 Fig.5.
- Turn power off from the mains.
- Clean the filtering panel with a jet of air or wash it with water, **do not use solvents.**
- Once the operation has been completed, re-assemble the filter panel. Turn the power on.

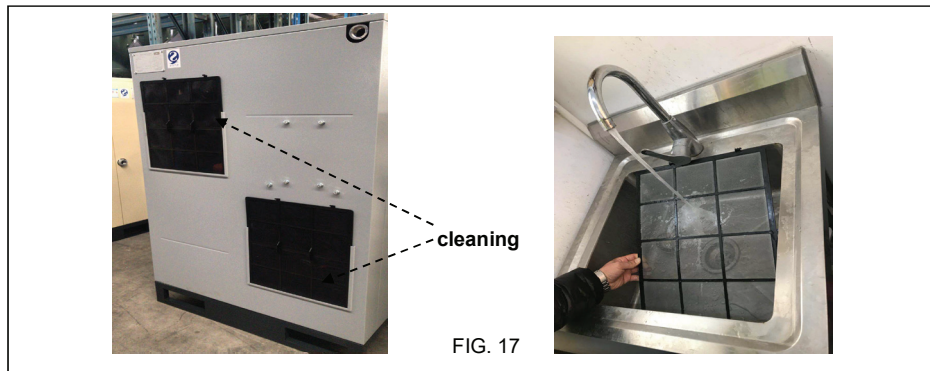


FIG. 17

15.6 CLEANING THE SUCTION FILTER OR CHANGING THE FILTER

- Press the "STOP" button Ref. 2 Fig. 16
- Press the "EMERGENCY STOP" Ref. 5 Fig. 5.
- Turn the power off from the mains.

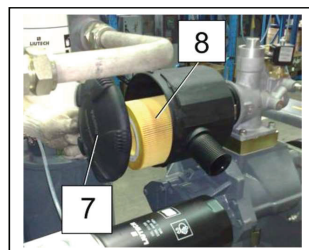


FIG. 17a



HOT PARTS INSIDE

- Remove the cover Ref. 7 Fig. 17a.
- Remove the filter Ref. 8 Fig. 17a.

AVOID DROPPING FOREIGN BODIES INTO THE SUCTION MANIFOLD.

- Clean the filter with a jet of air, working from inside to outside.
- DO NOT USE WATER OR SOLVENTS.** Fit a new filter if required.
- Clean the disk on which the filter rests with a clean cloth.
- Fit the filter and the cover.
- Dispose of the old filter in conformity with the local regulations in force.

15.7 CHANGING THE OIL (see 18.0 part number for oil.)



BEFORE CARRYING OUT ANY MAINTENANCE JOBS IT IS OBLIGATORY TO STOP THE MACHINE AND DISCONNECT IT FROM THE POWER MAINS AND FROM THE COMPRESSED AIR DISTRIBUTION NETWORK.

Oil changing is an important operation for the compressor:
 The oil must be changed when the machine is still warm, that is immediately after stopping it.
 The suggestions listed below should be carefully followed.
 After draining the old oil out of the machine Ref. 2 Fig. 18.

- Completely fill the oil collector , observe level on sight glass Ref. 1 Fig. 18.
- Start the compressor.
- After about 1 minute switch off the machine by pressing "STOP" (Ref. 2 Fig. 16).
 (machine will switch off after a few seconds of idle running.)

AFTER THIS STEP PROCEED AS DESCRIBED IN CHAPTER 15.4

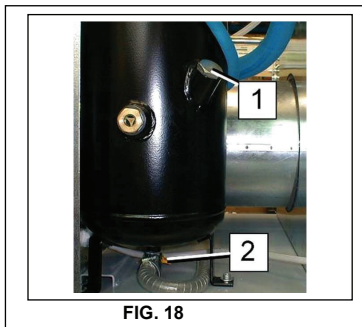


FIG. 18



THE OLD OIL MUST BE DISPOSED OF IN COMPLIANCE WITH THE REGULATIONS IN FORCE.

NOTE ON LUBRICANTS

When delivered the machine is filled with oil; In normal conditions of use, these lubricants have proved to be able to withstand use for as many as 4.000 hours.

However, due to the external polluting agents that get into the compressor with the air suction, it is advisable to change the oil at more frequent intervals, as indicated on the routine maintenance chart.

If the compressor is being used at high temperatures (continuous operation above 90 °C) or in particularly severe conditions, we advise changing the oil at shorter intervals than those recommended in the maintenance chart.

DO NOT TOP UP WITH DIFFERENT OILS

15.8 REPLACING THE OIL SEPERATOR ELEMENT AND OIL FILTER



BEFORE CARRYING OUT ANY MAINTENANCE THE MACHINE MUST BE STOPPED, CUT OFF THE MACHINE FROM THE ELECTRICAL MAINS AND FROM THE COMPRESSED AIR DISTRIBUTION CIRCUIT, CHECK THAT THE MACHINE IS NOT UNDER PRESSURE.

Before proceeding with the replacement of the de-oiler filter or the oil filter check that there is no pressure in the machine: check the pressure gauge Ref. 1,2 Fig. 19.

- Lubricate the filter seals with a little oil before fitting.
- Tightening must be done by hand

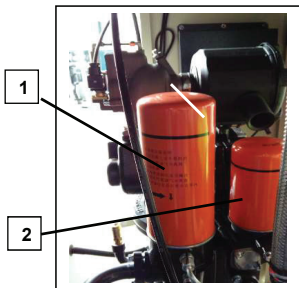


FIG 19



15.9 BELT CHANGE AND TENSIONING



BEFORE CARRYING OUT ANY MAINTENANCE THE MACHINE MUST BE STOPPED, CUT OFF THE MACHINE FROM THE ELECTRICAL MAINS AND FROM THE COMPRESSED AIR DISTRIBUTION CIRCUIT, CHECK THAT THE MACHINE IS NOT UNDER PRESSURE.

Tightening or retightening new belts

Proceed as follows:

- Remove the panel on belt canopy Ref. 1 Fig. 21.
- Slacken the bolt under the motor Ref. 2 Fig. 21
- Loosen the locknut Ref. 2 Fig. 21
- Turn motor pulley and remove the belt one by one Ref. 3 Fig. 21
- Turn motor pulley and install new belt one by one Ref. 3 Fig. 211
- Adjust the belt tension.(Please take the table of belt tension as reference)
- Lock the locknut again Ref. 2 Fig. 21
- Close the bolts again Ref. 2 Fig. 21
- Refit the panel on Belt Canopy Ref. 1 Fig. 21.

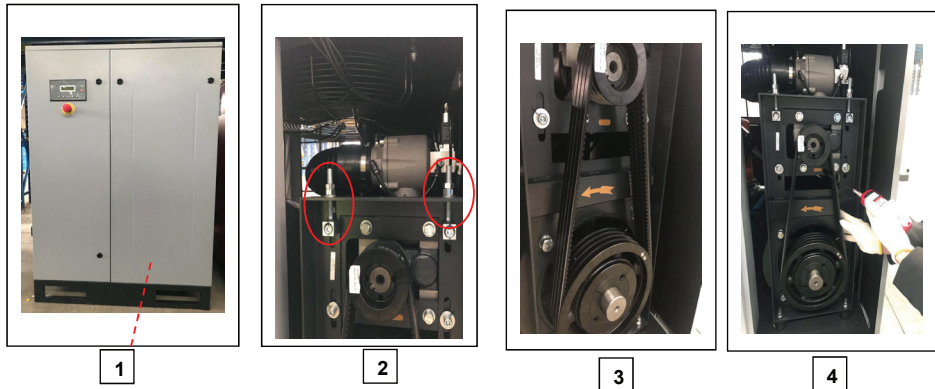


FIG. 20

Model	Working	Code	Qty of	Frequency of new belt (hz)	Frequency of old belt (hz after test)
TH7.5	8	1625 1643 31	2	78.67-81.61	70.01-71.01
	10	1625 1643 32	2	80.5-83.5	71.5-73
TH11	8	1625 1643 31	2	76.98-82.98	67.15-73.15
	10	1625 1643 31	2	91.72-97.72	80.08-86.08
TH15	8	1625 1643 32	3	86.11-92.11	75.15-81.15
	10	1625 1643 32	3	86.74-92.74	75.71-81.71
TH18.5	8	1625 1825 70	2	84.72-90.72	73.93-79.93
	10	1625 1835 14	2	82.37-88.37	71.88-77.88
TH22	8	1625 1834 84	2	84.6-90.6	73.83-79.83
	10	1625 1834 85	2	90.99-96.99	79.44-75.55
TH30	7	1625 1846 47	3	75.58-81.58	65.92-71.92
	8	1625 1846 47	3	76.31-82.31	66.56-72.56
	10	1625 1846 47	3	79.71-85.71	69.54-75.54
TH37	7	1625 1846 46	4	75.59-81.59	65.93-71.93
	8	1625 1846 46	4	75.59-81.59	65.93-71.93
	10	1625 1846 47	4	73.7-79.7	64.27-70.27

16.0 PERIODS OF INACTIVITY

If the machine has to remain inactive for a long period:

- Press the "STOP" button Ref. 1 Fig. 15
- Press the "EMERGENCY STOP" Ref. 2 Fig. 15.
- Turn on the supply power automatic differential switch.
- Turn off the isolation valve.

During periods of inactivity the weather must be protected against atmospheric agents, dust and humidity which could damage the motor and the electrical system.

To restart the machine after periods of inactivity, consult the manufacturer.

17.0 SCRAPPING THE UNIT

If the machine is to be scrapped, it must be dismantled into parts of the same material, to be disposed of according to the local regulations in force.



ALWAYS RESPECT THE REGULATIONS IN FORCE FOR DISPOSING OF OLD OIL AND OTHER POLLUTING MATERIALS SUCH AS SOUND-DEADENING, FOAM, ETC.

18.0 LIST OF SPARE PARTS FOR ROUTINE MAINTENANCE

Code	DESCRIPTION	7.5kw	11kW	15 kW	18.5kW	22kW	30kW	37kW
1625 1551 32	Pre-foam	■						
1625 1833 83	Pre-foam		■	■	■	■	■	■
1625 1737 10	Suction filter	■	■	■				
1625 1737 33	Suction filter				■	■		
1625 1736 72	Suction filter						■	■
1625 1656 30	Oil filter	■						
1625 1656 31	Oil filter		■	■	■	■		
1625 1656 32	Oil filter						■	■
1625 1657 73	Oil separate element	■						
1625 1828 65	Oil separate element		■	■				
1625 1828 66	Oil separate element				■	■		
1625 1828 67	Oil separate element						■	■
1625 1709 10	Unloader kit	■						
1625 1839 60	Unloader kit		■	■				
1625 1835 15	Unloader kit				■	■		
1625 1837 66	Unloader kit						■	■
1625 1708 50	MPV service kit	■						
1625 1848 44	MPV service kit		■	■				
1625 1837 67	MPV service kit				■	■	■	■
1625 1837 68	Unloader solenoid valve kit		■	■	■	■	■	■

Oil-Fluidtech

5L——6215 7159 00


20L——6215 7160 00

209L——6215 7161 00

Motor grease-Screw Guard Slide Blue

Cartridge(400g) ——2908 8521 10

19.0 TROUBLE-SHOOTING AND EMERGENCY REMEDIES

 **N.B. OPERATIONS MARKED ■ ■ MUST BE CARRIED OUT BY PROFESSIONALLY SKILLED PERSONNEL APPROVED THE MANUFACTURER.**

FAULT FOUND	POSSIBLE CAUSES	OBSERVATIONS
1) The machine does not start	1A - no power 1B - the transformer protection device has tripped	- check the power supply line, Chapter 12.2 - replace fuses
2) The machine does not start the pilot lamp Ref. 1 (F) is flashes (see Fig. A)	2A - the main motor protection device has tripped	- reset the automatic switch that protects the fan
3) The machine does not start the pilot lamp Ref. 2 (D) is flashes (see Fig. A)	3A - the oil high temperature thermostat has tripped	- environment temperature too high; improve ventilation in the compressor room, Chapter 9.2 ■ ■ - cooling radiator is dirty, clean the radiator - oil level too low; top up the oil tank
4) The compressor does not reach working pressure	4A - the compressed air consumption is too high 4B - the discharge electrovalve remains open, Ref. EV/SC wiring diagram	■ ■ - check the electric system
5) Excess oil consumption	5A - deteriorated oil separating filter oil level is too high	■ ■ - change the oil separating filter, Chapter 23



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