

Instruction Manual EN

CP COMPRESSOR

Model **CPC 40 - 50 - 60**

62 305 478 65



CPC 50



TECHNICAL DATA STANDARD MACHINES

CPC MODEL		40				50				60			
Nominal pressure at full flow	PSI	100	125	150	175	100	125	150	175	100	125	150	175
Actual flow * (as per ISO 1217 : 1996)	cfm	166	152	137	118	208	185	164	150	268	234	209	196
Motor power	hp	40				50				60			
Ø Discharge orifice	NPT	1.25"				1.25"				1.5"			
Sound level at 3.3 ft (as per ISO 2157 + 3 db(A))	dB (A)	73				75				73			
Capacity	gal	5.02				5.02				6.08			
Carryover	ppm	3				3				3			
* Suction pressure: 14.5 PSI abs - Relative humidity: 0 % - Ambient temperature: 68 °F - Effective discharge pressure : 102 PSI, 138 PSI or 181 PSI (effective)													
Dimensions	L x W x H	43.34 x 54.77 x 60.87				43.34 x 54.77 x 60.87				43.34 x 54.77 x 60.87			
Approximate weight	lbs	1532				1576				1742			

CPC MODEL		40	50	60
Motor power	hp	40	50	60
Main Voltage 230 Volt / 3 / 60Hz				
Nominal current	(A)	123	152	190
Power supply cable		AWG 0	AWG 00	AWG 0000
Fuse protection	(Type J)	150	175	200
Main Voltage 460 Volt / 3 / 60Hz				
Nominal current	(A)	66	79	100
Power supply cable		AWG 0	AWG 00	AWG 0000
Fuse protection	(Type J)	80	100	125

Connection of the electric plate to an external control box

- Install an RC filter on the KM1 coil.
- Install an RC filter on the KM2 coil.
- All connections between external parts and the compressor must be carried out using a shielded cable, which must be grounded at one of its ends.

WARNING: the operation connection cables between the different elements must never follow the same path as the existing power cords. A separate installation from the power cords must be carried out.

- Install an RC filter on all the relay coils of the external operation units.

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IMPORTANT: THERE IS A COPY OF THE WIRING DIAGRAM INSIDE THE ELECTRIC PANEL

ROTARY SCREW COMPRESSOR

CPC 40 - 50 - 60

COMPRESSOR AND MANUFACTURER IDENTIFICATION DATA

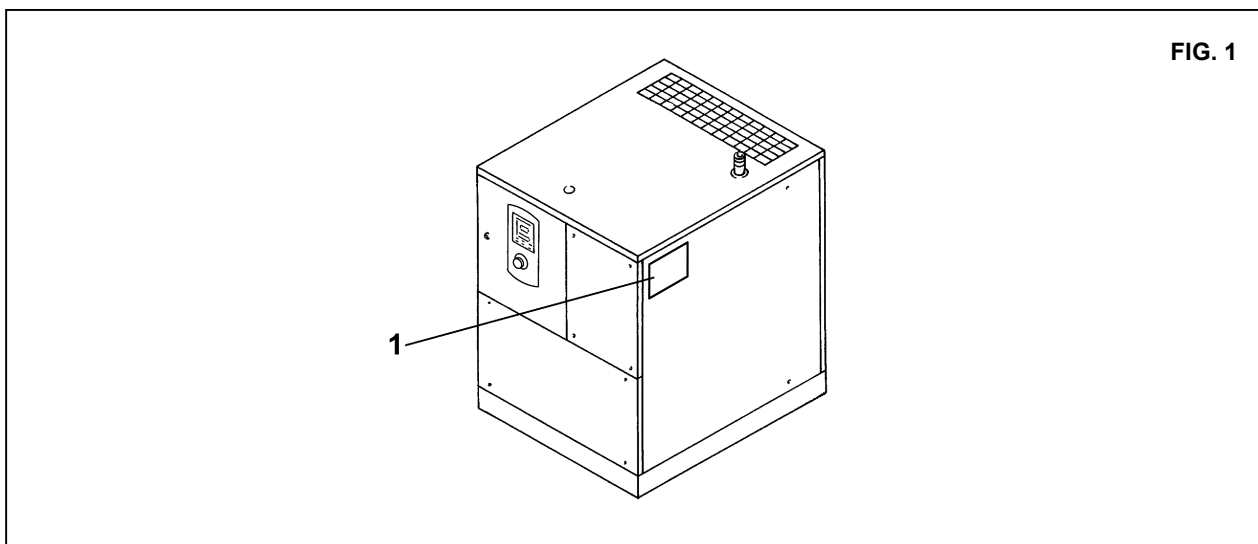


FIG. 1

1) Position of the identification label

INTRODUCTION

In the event of breakdown or malfunction of the compressor, switch it off and do not tamper with it.
If repairs are needed, apply only to a technical assistance center 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 compressor.

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

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 accordance applicable with electrical and safety regulations at the installation site.

CHARACTERISTICS AND SAFETY PRECAUTIONS



COMPRESSOR WITH AUTOMATIC START



BEFORE REMOVING THE PROTECTION DEVICES FOR ANY MAINTENANCE WORK ON THE COMPRESSOR, DISCONNECT THE ELECTRICAL POWER SUPPLY AND MAKE SURE THAT THERE IS NO INTERNAL RESIDUAL PRESSURE.

THE FAILED COMPLIANCE WITH THE INSTRUCTIONS CONTAINED IN THIS HANDBOOK DETERMINES THE EXPIRATION OF THE WARRANTY TERMS.

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

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

THIS COMPRESSOR IS NOT DESIGNED FOR OUTDOOR INSTALLATION

THIS COMPRESSOR CORRESPONDS TO THE SAFETY REQUIREMENTS FORESEEN BY OSHA

THE LUBRICATING LIQUIDS MUST NOT BE DISCHARGED INTO THE ENVIRONMENT. THESE PRODUCTS MUST BE DISPOSED OF IN ACCORDANCE WITH GOVERNMENT REGULATIONS.

1.0 GENERAL CHARACTERISTICS

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

The central unit comprises:

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

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

- connection to the main power (see installation section)
- connection to the compressed air network (see installation section)

The compressor-motor unit is fitted on the compressor 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 compressor 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 compressor cannot be used to produce air to be breathed by humans or used on direct contact with foodstuffs.

This compressor 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

Reference flow diagram in section 25.0.

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 a panel pre-filter fitted on the panel of the cabinet 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 compressor.

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

4.0 GENERAL SAFETY STANDARDS

The compressor may be used only by specially trained and authorized personnel.

Any tampering with the compressor or alterations not approved beforehand by the Manufacturer relieve the latter of responsibility for any damage resulting from the above actions.

The removal of or tampering with the safety devices constitutes a violation of the OSHA regulations.

ATTENTION: UPSTREAM OF THE COMPRESSOR INSTALL AN ISOLATOR KNIFE-SWITCH WITH AN AUTOMATIC DISCONNECT AGAINST CURRENT SURGES (SEE WIRING DIAGRAM)



ALL WORK ON THE ELECTRICALS, EVEN IF SLIGHT, MUST BE CARRIED OUT BY PROFESSIONALLY SKILLED PERSONEL.

5.0 DESCRIPTION OF DANGER SIGNALS

FIG. 2



1) DANGER
This symbol identifies life threatening electrical voltage levels which will result in severe personal injury or death. All electrical work must be performed by a qualified electrician



2) DANGER
Air from this compressor will cause severe injury or death if used for breathing or food processing. Air used for these process must meet OSHA29CFR1910 OR FDA21XDE178.3570 regulations



3) NOISE



4) FAN ROTATING



5) HIGH PRESSURE



6) CAUTION
This symbol identifies hot surfaces which could result in personal injury or property damage.



7) DANGER
This symbol identifies immediate hazards which will result in severe personal injury, death or substantial property damage.



8) FLUID EJECTION




9) COMPRESSOR WITH AUTOMATIC START

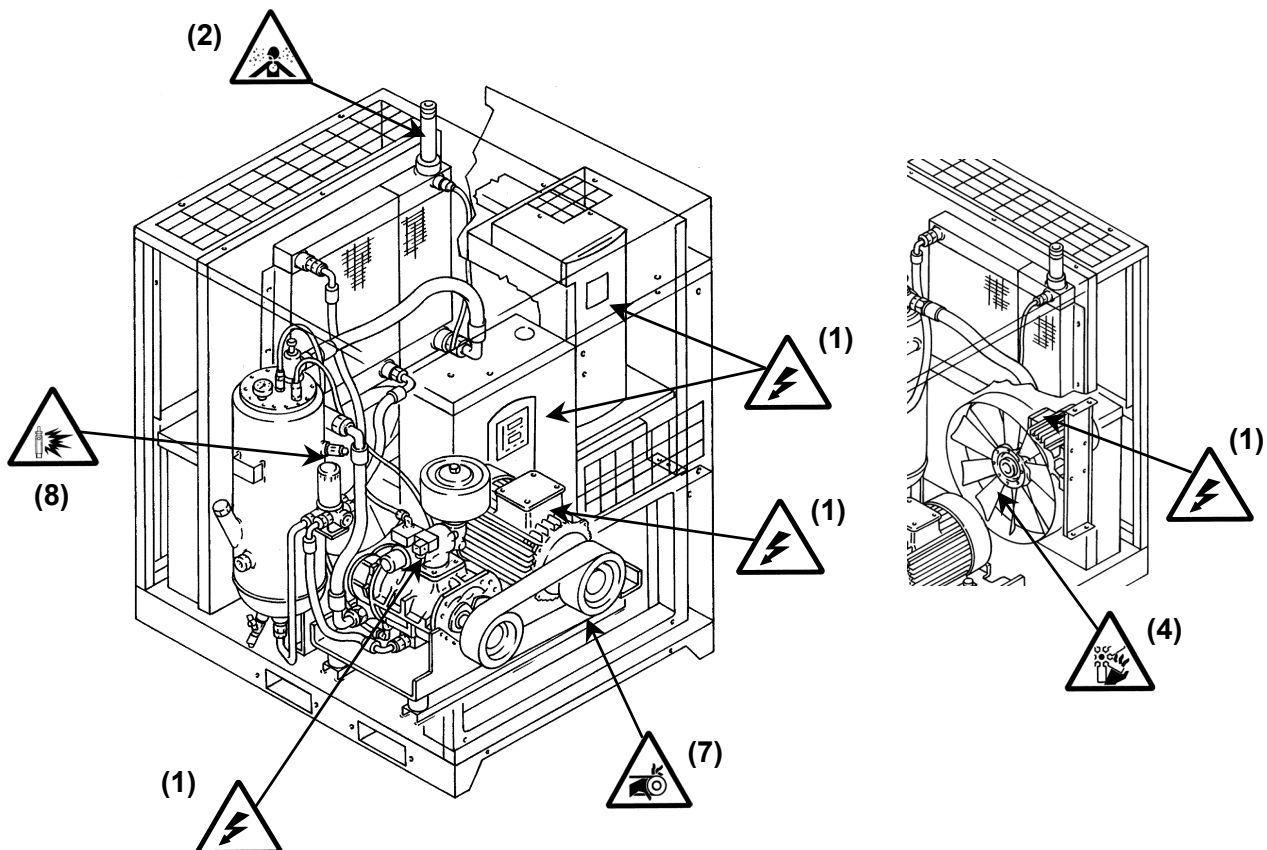


10) WARNING
Identifies hazards or unsafe practices which could result in minor personal injury or property damage.

6.0 DANGER ZONES

FIG. 3

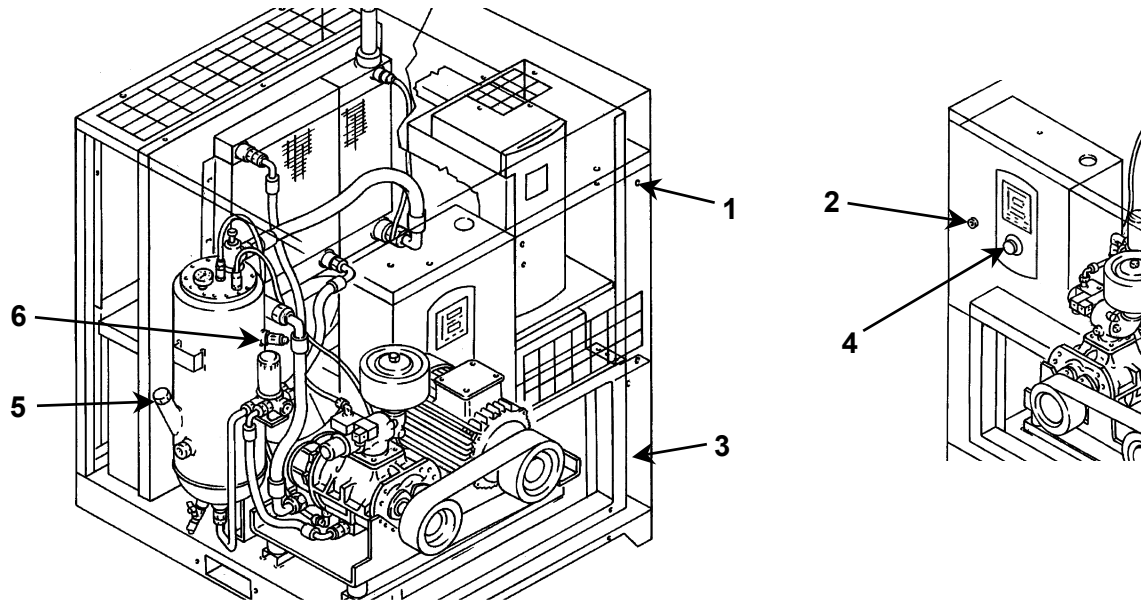

Risks present on the whole compressor



7.0 SAFETY DEVICES

- 1) Safety screws
- 2) Side guard and electrical panel door can be opened using a special key.
- 3) Fixed protection device - pulleys
- 4) Emergency stop button
- 5) Oil filling cap (with safety breather)
- 6) Safety valve (pressure relief valve)

FIG. 4



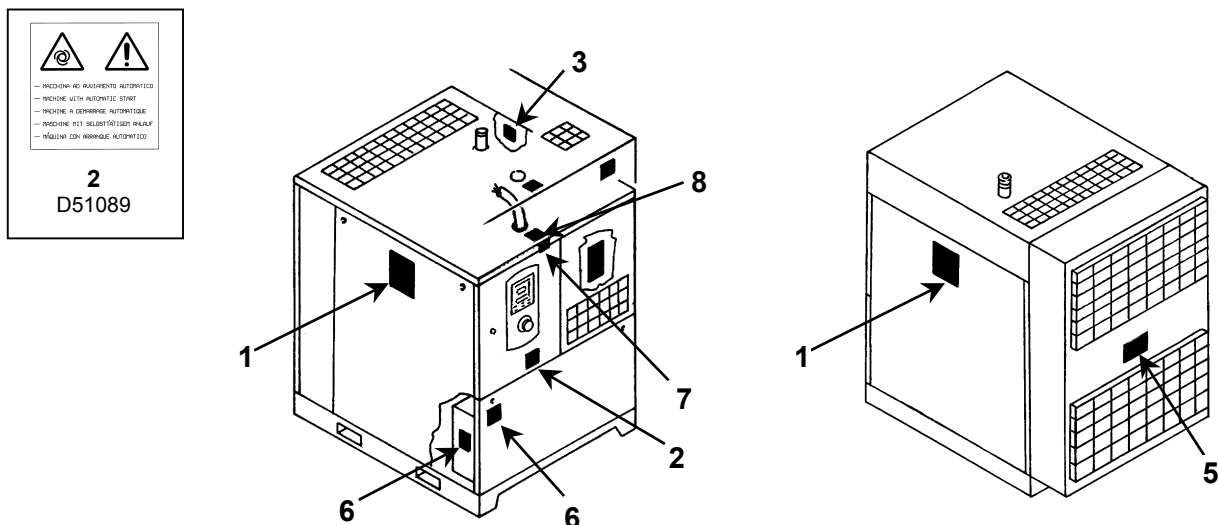
8.0 POSITION OF LABELS

8.1 POSITION OF THE DANGER LABELS

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

- | | |
|--|--------------------------------------|
| 1) Dangers label Code D09688 | 6) Moving parts |
| 2) Label "Compressor with automatic start" | 7) Dangerous electric voltage |
| 3) Air not fit for breathing | 8) Hazard Label (atmospheric events) |
| 5) No lifting label | |

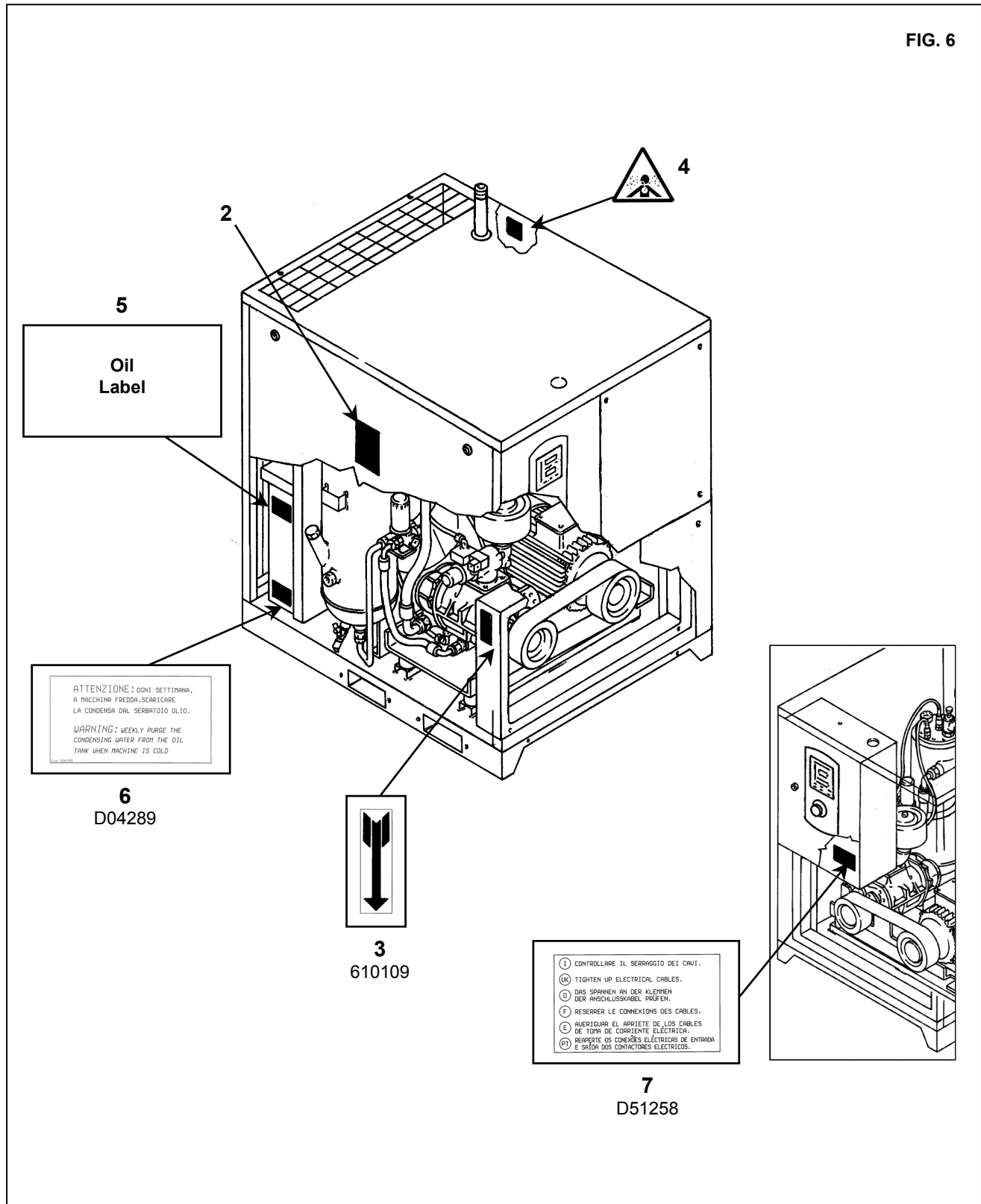
FIG. 5



8.2 POSITION OF THE DATA LABELS

- 1) Identification label
- 2) Maintenance schedule
- 3) Direction of rotation label
- 4) Air not fit for breathing
- 5) Oil label
- 6) Draining condensate
- 7) Electric cable label

FIG. 6



9.0 COMPRESSOR ROOM

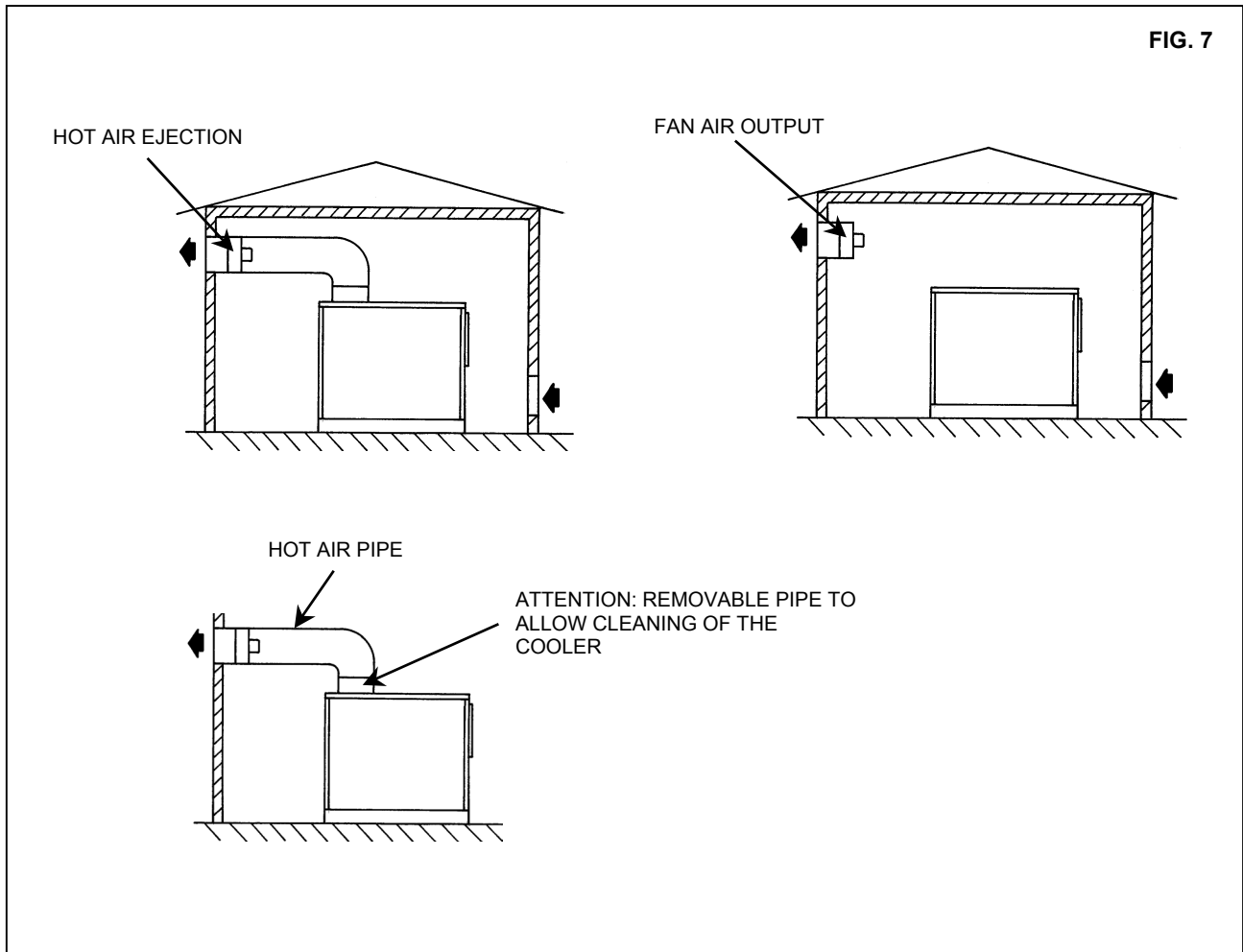
9.1 FLOOR

The floor must be even and of industrial type.
Consider the total weight of the compressor when positioning it.

9.2 VENTILATION

When the compressor is operating, the room temperature must not be higher than **104 °F** or lower than **36 °F**.
If the environment is dusty it is advisable to fit a filtering panel on this opening.
The hot air ejected by the compressor may be led outside with a pipe.
This pipe must have a minimum section of **35.3 sqft** and it must not be longer than **9.8 ft**.
For longer pipes an extra fan must be fitted.

9.3 EXAMPLES OF VENTILATION OF THE COMPRESSOR ROOM



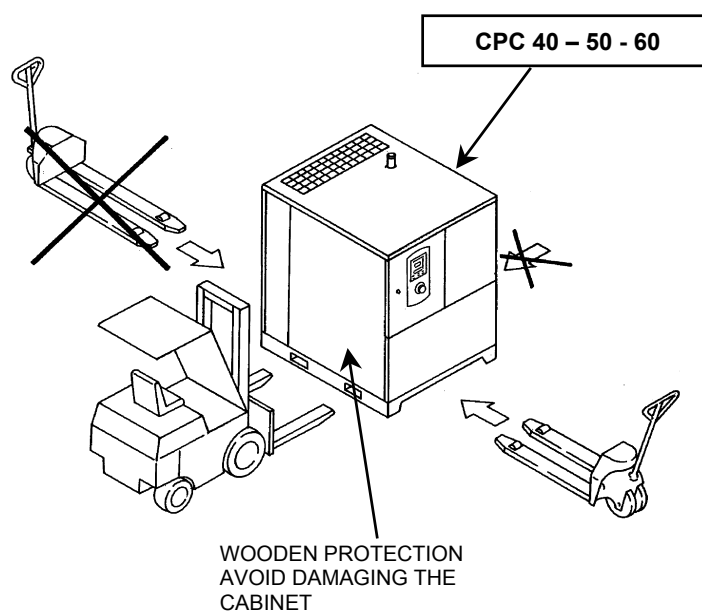
10.0 TRANSPORT AND HANDLING



ATTENTION: the compressor must only be moved with the panels fitted (fig. 8)

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

FIG. 8



11.0 UNPACKING



After removing the packing, ensure that the compressor is unbroken and that there are no visibly damaged parts. If you are unsure, do not use the compressor but request assistance from your local CP distributor. The packing material (plastic bags, polystyrene foam, nails, screws, wood, metal strapping, etc.) must be disposed of appropriately.

12.0 INSTALLATION



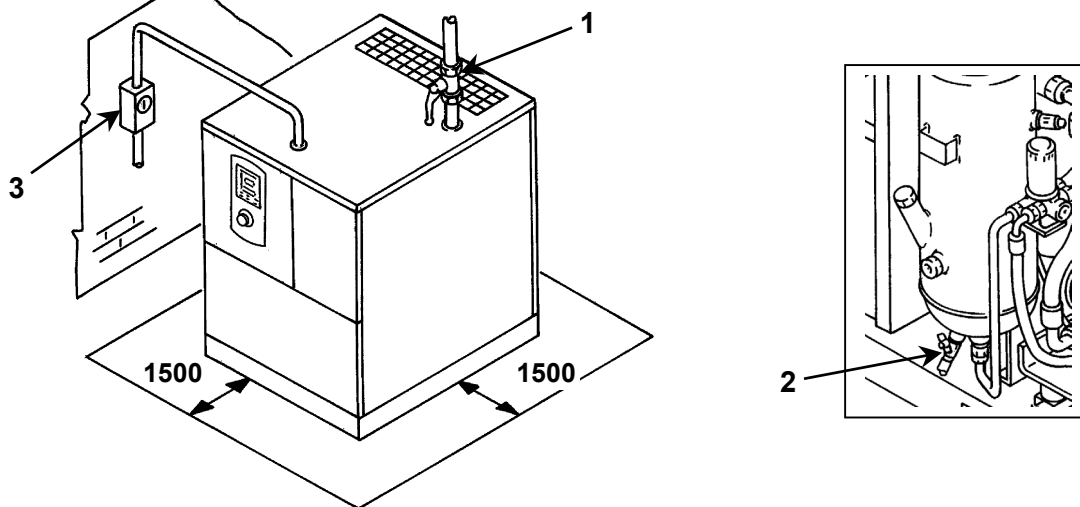
ANY DAMAGE DUE TO FAILURE TO OBSERVE THE PRECAUTIONS GIVEN BELOW CANNOT BE ATTRIBUTED TO THE MANUFACTURER AND MAY RESULT IN WARRANTY DENIAL.

12.1 POSITIONING

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

- ensure that there is sufficient space around the compressor to allow maintenance (see Fig. 10).
- check the compressor is standing on a perfectly flat floor.

FIG. 10





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

12.2 ELECTRICAL CONNECTION



COMPRESSOR WITH AUTOMATIC START

- Check that the supply voltage is the same as the value indicated on the compressor data label.
- Check the condition of the electrical leads and ensure that there is a grounded lead.
- Ensure that there is an automatic disconnect device upstream for the compressor against surges, (see Ref. 3 Fig. 10).
- Connect the compressor power cables with the greatest care, according to the applicable standards. These cables must be as indicated on the compressor wiring diagram.
- After the first 50 working hours, check that the screws on the electric terminals are tight.



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

COMPLIANCE WITH THE APPLICABLE REGULATIONS CONCERNING THE ELECTRICALS IS FUNDAMENTAL FOR OPERATOR SAFETY AND FOR THE PROTECTION OF THE COMPRESSOR

CABLES, PLUGS AND ALL OTHER TYPE OF ELECTRIC MATERIAL USED FOR THE CONNECTIONS MUST BE SUITABLE FOR THE USE AND COMPLY WITH THE REQUIREMENTS STATED BY THE APPLICABLE REGULATIONS.

12.3 CONNECTION TO THE COMPRESSED AIR NETWORK

Fit a bypass valve Ref. 1 Fig. 10 between the compressor and the compressed air network so that the compressor may be isolated during maintenance operations.

Condensate must be drained from the oil receiver (manually) Ref. 2 Fig. 10, in accordance with the local regulations.



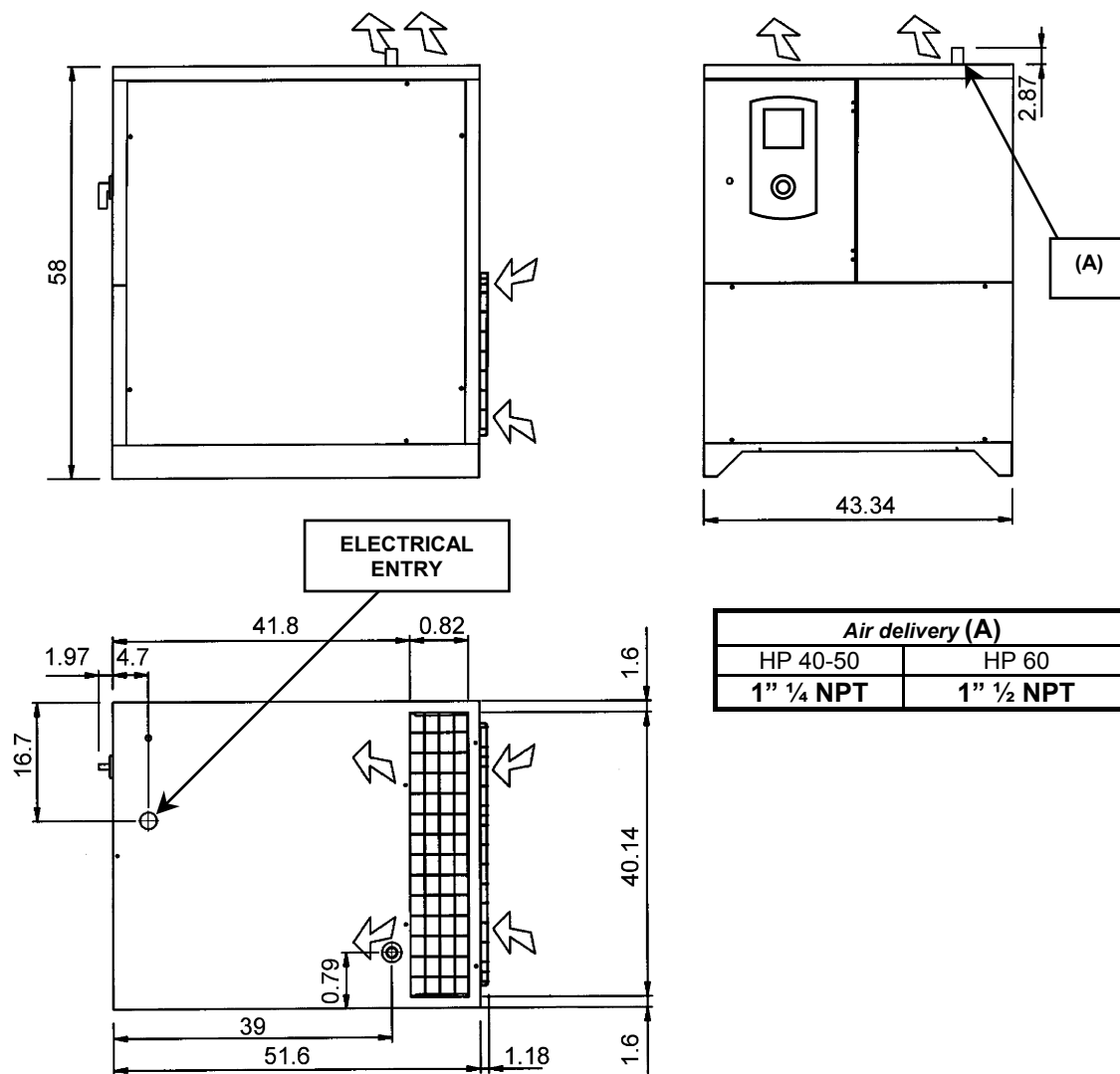
PIPES, FITTINGS AND CONNECTIONS USED TO INSTALL THE COMPRESSOR MUST COMPLY WITH LOCAL REGULATIONS.

ANY DAMAGE DUE TO FAILURE TO OBSERVE THE PRECAUTIONS GIVEN BELOW CANNOT BE ATTRIBUTED TO THE MANUFACTURER AND MAY RESULT IN WARRANTY DENIAL.

12.4 STARTING UP

See part B of this manual, Section 20.0

13.0 DIMENSIONAL DRAWING



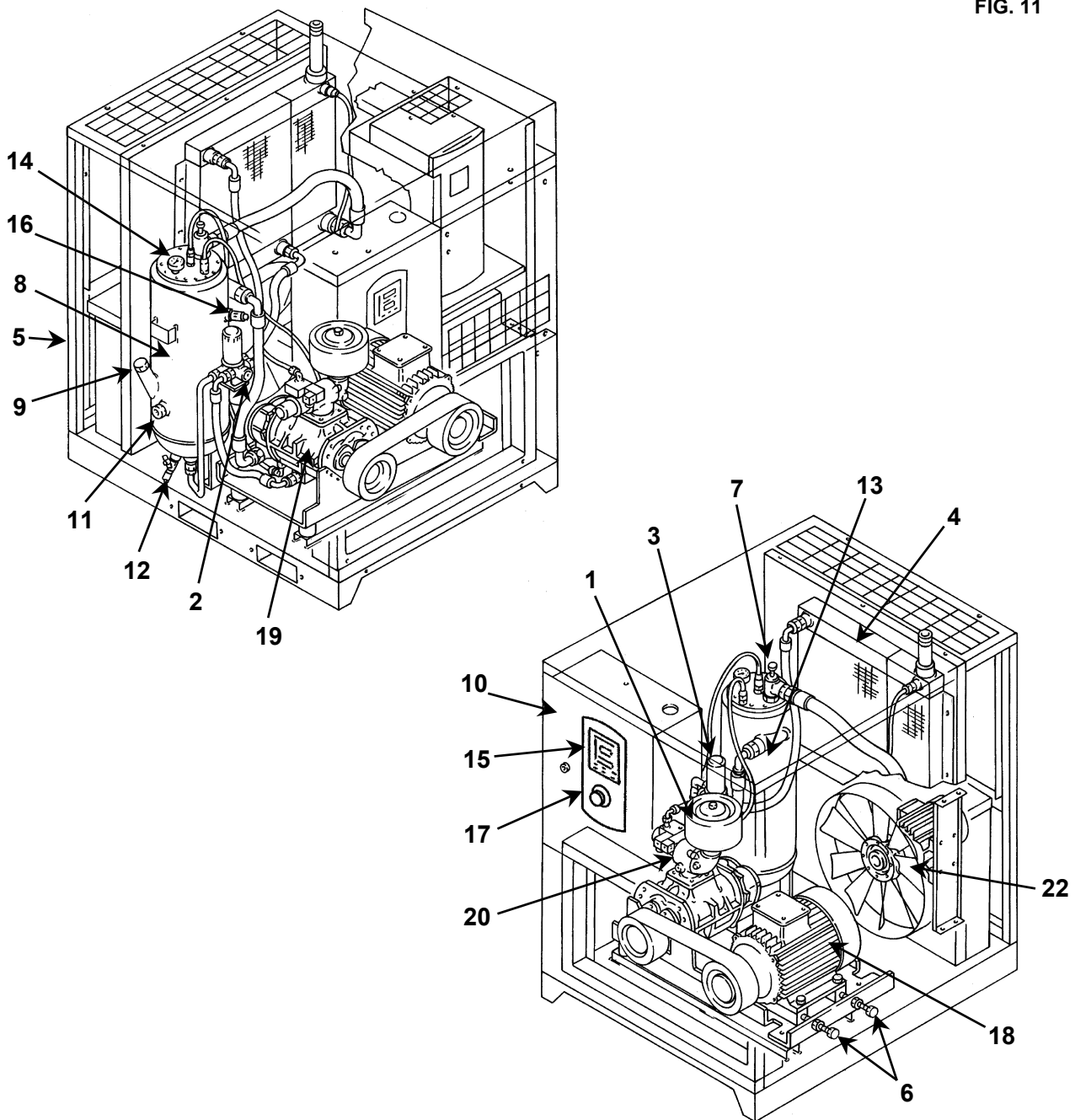
14.0 COMPRESSOR ILLUSTRATION

14.1 GENERAL LAY-OUT

- | | |
|---|--------------------------|
| 1 Air suction filter | 12 Oil discharge |
| 2 Thermostatic valve | 13 SUMP TANK |
| 3 Oil filter | 14 Pressure gauge tank |
| 4 Air-oil cooler | 15 Control card |
| 5 Filter panel | 16 Safety valve |
| 6 Belt tightening system | 17 Emergency stop button |
| 7 Minimum pressure valve | 18 Electric motor |
| 8 Air-oil separator (inside the SUMP TANK) | 19 Screw compressor |
| 9 Top-up or oil filling cap | 20 Suction unit |
| 10 Control panel | 22 Electrical fan |
| 11 Oil gauge | |

* IT IS FORBIDDEN TO TAMPER WITH THE SETTINGS OF THE SAFETY VALVE

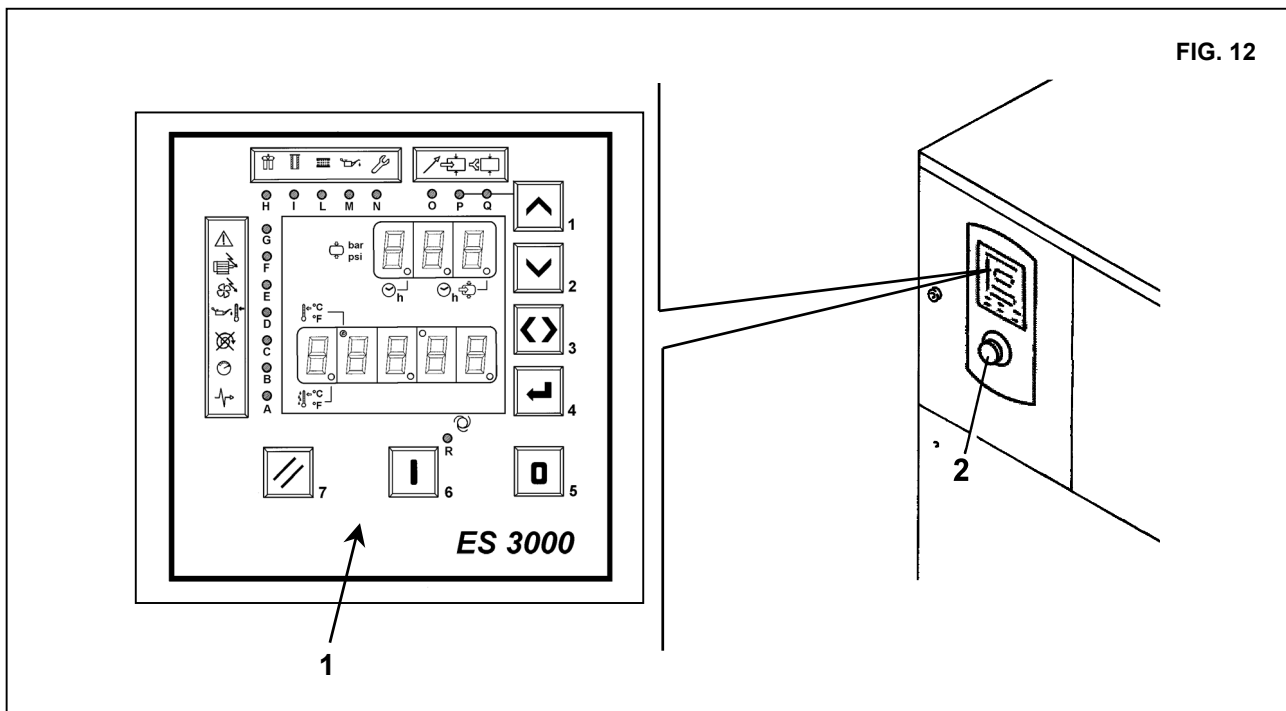
FIG. 11



14.2 CONTROL PANEL



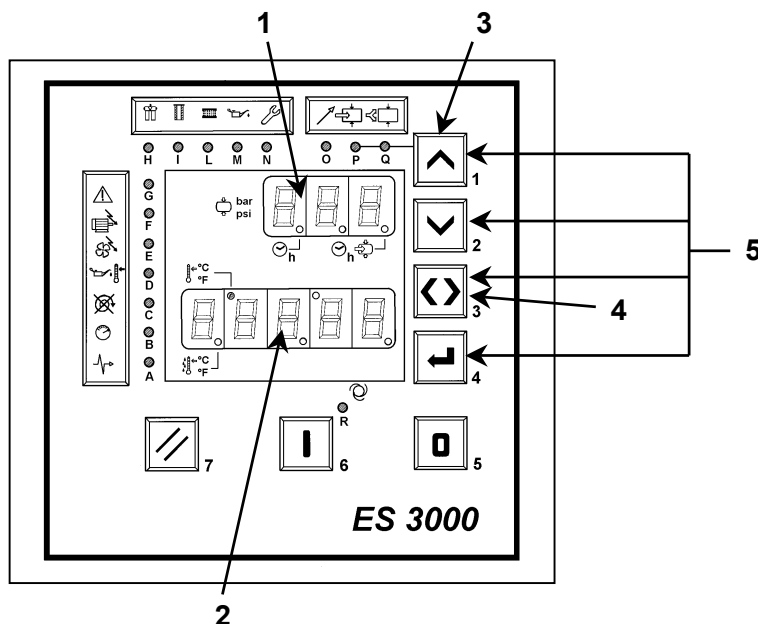
BEFORE OPERATING, CAREFULLY READ AND UNDERSTAND THE COMMAND FUNCTIONS.



- 1) Control panel
- 2) Emergency stop button




14.3 ES 3000 CONTROLLER

FIG. 13









There is an electronic control and diagnostics display on the electric panel ; this display includes the following functions as shown in figure 13.

- 1) Top display: indicates the compressor pressure.
- 2) Bottom display: indicates the temperature, total hours, loaded hours.
- 3) Button to create a vacuum in the compressor.
- 4) Navigate to the next field of the screen on the display Ref. 2
- 5) Buttons to program the controller.







Symbol	Description
 (7)	Pressing the button cancels the stored alarm indication. Pressing the button for more than 3 seconds, the central control unit is tested: all the LEDs must be on.
 (6)	By pressing this button the compressor is switched on. There is a delay of about 15 seconds before start up.
 (5)	Pressing the pushbutton starts the compressor shut down phase: The compressor runs unloaded for a few seconds before stopping.

LED - indicates compressor operating status: **“RED”** pilot lamps (cause compressor stoppage)

Symbol	LED flashing	LED on
 (B)	Overpressure alarm in progress	Compressor stopped for overpressure
 (C)	Wrong rotary way : in progress	Wrong rotary way
 (D)	Oil over temperature alarm in progress (>203 °F)	Compressor stopped for oil over temperature (> 212 °F)
 (E)	Fan motor overload alarm	Compressor lock out due to fan motor overload
 (F)	Motor temperature alarm in progress	Compressor stopped for motor cool down
 (G)	General alarm in progress for fault in pressure or temperature probes.	-





To switch off the red LEDs press **“reset”**

LED - indicates compressor operating status: **“YELLOW”** pilot lamps (do not cause compressor stoppage).

Symbol	LED flashing	LED on
 (A)	Not enabled	Not enabled
 (H)	Warning to replace oil filter	Replace oil filter
 (I)	Warning to replace separator filter	Replace separator filter
 (L)	Warning to replace air filter	Replace air filter
 (M)	Warning to change oil	Change oil
 (N)	Warning for general check	Perform general check

To switch off the **“YELLOW”** LEDs see section 14.6

LED - indicates compressor operating status: **“GREEN”** pilot lamps

Symbol	LED flashing	LED on
 (O)	Not enabled	Not enabled
 (P)	-	Compressor running under load
 (Q)	Manual unloaded operation of compressor	Unloaded operation of compressor
 (R)	Compressor in stand-by for start-up (15 seconds) or in shut-down phase (30 seconds).	Compressor on



ATTENTION: to start up again after a protection has been triggered (alarm) press “RESET” followed by the start button “I” (6)

OPERATION OF THE CONTROLLER

The controller is programmed for Energy Saving; it switches off the compressor, thus reducing idle running to a minimum. The controller is preset to run idle before switching off for a period that is shorter the lower the consumption of air. The controller also indicates when filters require maintenance etc.. (**Yellow LEDs**).

14.4 VIEWING THE HOURS OF OPERATION

To view the total hours of operation press Ref. 3, Fig. 13a, the hours of operation appear in the bottom display and a dot lights up in the top display (confirm LED).

To view the LOADED hours of operation press Ref. 3 Fig. 13a again and a dot lights up on the right side of the top display (confirm LED).

14.5 VIEWING THE HOURS OF OPERATION OF COMPONENTS SUBJECT TO MAINTENANCE

To view the hours of operation of individual components subject to maintenance, proceed according to Section 14.6, to point 4; the operating hours will be viewed on the bottom display.

- Press the button Ref. 3 Fig 13a to exit.

14.6 RESETTING THE MAINTENANCE INTERVAL COUNTERS (YELLOW LEDs excluding LED “A”)

To reset a counter (i.e. Ref. L air filter) after having performed the relevant maintenance, proceed as follows: (see Fig. 13a)

- 1) Press buttons Ref. 7 and Ref. 4 simultaneously until the LED ref. H lights up.
- 2) Release the buttons Ref. 7 and Ref. 4
- 3) Use the buttons Ref. 1 and Ref. 2 to select the LED Ref. L (air filter) relevant to the component in question.
- 4) The operating hours of the component Ref. L (air filter) are viewed on the 5-digit bottom display.
- 5) Press the button Ref. 4 once and the value viewed flashes, press the button Ref. 4 again; the display is now reset and the LED Ref. L is lit.
- 6) Press the button Ref. 3 to exit from RESET
- 7) To reset another component, move to the relevant LED using the buttons Ref. 1 and Ref. 2.

The board exits automatically from programming after 30 seconds of inactivity

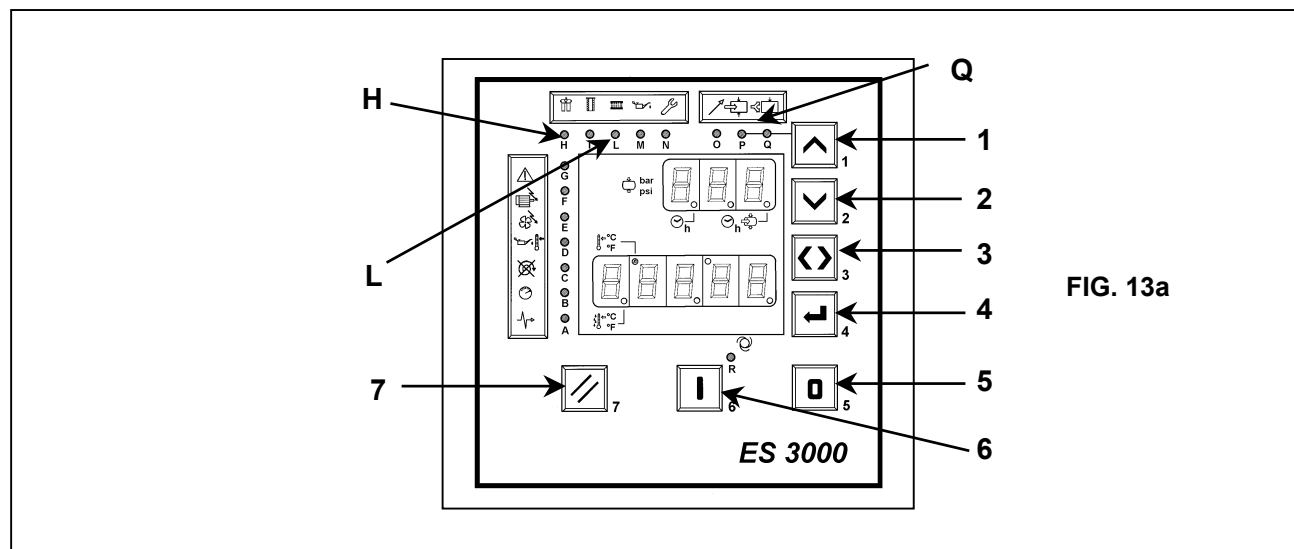


FIG. 13a

14.7 ACTIVATING / DEACTIVATING THE LOAD-UNLOAD OPERATION MODE

- 1) Press the button Ref. 1 Fig. 13a and the LED Ref. Q flashes, the compressor operates in MANUAL UNLOAD mode.
- 2) Press the button Ref. 1 Fig. 13a again and the compressor returns to the automatic cycle.

14.8 OPERATING PARAMETERS OF THE CONTROLLER.

The controller is programmed in the factory with the following parameters:

- P0** = cut-off pressure (116 -145 - 189 PSI)
- P1** = cut-in pressure (94 - 123 - 137 PSI)
- r2** = maximum operating temperature (212 °F)
- t3** = not active
- t4** = not active
- C5** = maximum number of start-ups per hour (10)

The controller is also programmed to measure the pressure in "PSI" (parameter **C7**) and the temperature in °F (parameter **C6**).

The pressure and temperature units of measurement correspond to the table below.

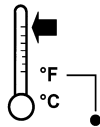
Name of the parameter	Value of the parameter	
C6	0 = °C	1 = °F
C7	0 = bar	1 = °PSI

All parameters described above can be viewed and modified with the procedure indicated in Section 14.9. The parameter number appears in the top display and the value of the parameter appears in the bottom display.

14.9 VIEWING AND MODIFYING THE VALUE OF PARAMETERS.

To view the parameters proceed as follows:

- Press and hold the button 4 Fig. 13a for a few seconds, until "**P0**" (cut-off pressure) appears on the top display: the value of the cut-off pressure in PSI (116, 145 or 189 PSI) appears simultaneously on the bottom display.
- By pressing the button Ref. 1 Fig. 13a all the board parameters (**P0, P1, r2, t3, t4, C5, C6, C7**) will appear in sequence on the top display while the values set for each parameter will appear on the bottom display. To exit press the button Ref. 3 until the luminous dot on the display is positioned on the symbol.



To change the value of parameters follow the example indicated below:

EXAMPLE: the maximum temperature value is to be modified to 203°F.

- Press and hold the button Ref. 4 fig. 13a for a few seconds, until the parameter "**P0**" appears on the top display.
- Press the button Ref. 1 Fig. 13a until reaching the parameter "**r2**" (maximum temperature).
- Press the button Ref. 4 Fig. 13a: the value of the temperature indicated on the bottom display flashes.
- Press the button Ref. 2 Fig. 13a until reaching the value 203.
- Press the button Ref. 4 Fig. 13a to confirm the modification; the value 203 stops flashing.
- Exit from programming by pressing the button Ref. 3 Fig. 13a.

The new maximum temperature value is now 203.

14.10 DISPLAYING A TEMPERATURE LEVEL THAT IS TOO LOW

The controller is programmed in the factory with a minimum temperature level set at (+ 36 °F), if the temperature sensed is lower, it is shown by the bottom display flashing. This fault signal does not mean the compressor cannot be started, but warns the operator that the room temperature is too low.

15.0 ROUTINE MAINTENANCE



BEFORE CARRYING OUT ANY MAINTENANCE IT IS MANDATORY TO STOP THE COMPRESSOR AND DISCONNECT IT FROM THE MAIN POWER.

The maintenance jobs described in this Section may be carried out by the user.
The more complex maintenance jobs which require professionally skilled personnel are listed in the Section on **GENERAL MAINTENANCE FOR TRAINED PERSONNEL (See Section. 21.0)**

15.1 GENERAL INFORMATION

Routine maintenance must be carried out according to the maintenance schedule affixed to the compressor.

15.2 MAINTENANCE SCHEDULE

- **OPERATIONS THAT MAY BE CARRIED OUT BY THE USER**
- ■ **OPERATIONS THAT REQUIRE SKILLED PERSONNEL; THESE OPERATIONS ARE ILLUSTRATED IN PART "B" OF THIS MANUAL.**

These maintenance intervals are recommended for work environments that are not dusty and are well ventilated.
For particularly dusty environments, double the frequency of maintenance.

Every 50 working hours	■	Drain condensate from the SUMP TANK
	■	Check the oil level
	■	Clean the filtering panel
Every 500 hours	■	Clean the air suction filter (see control board LED)
	■ ■	Check belt tension
Every 2000 hours	■ ■	Change the oil filter (see control board LED)
	■	Change the suction filter (see control board LED)
Every 4000 hours	■ ■	Clean the finned surface of the air-oil cooler
	■ ■	Change the oil separating filter (see control board LED)
Every 8000 hours	■ ■	Change the oil (see control board LED)



BEFORE CARRYING OUT ANY MAINTENANCE IT IS MANDATORY TO STOP THE COMPRESSOR AND DISCONNECT IT FROM THE MAIN POWER.

MAINTENANCE ON THE ELECTRICAL COMPONENTS CAN ONLY BE PERFORMED BY QUALIFIED TECHNICIANS OR AUTHORIZED FACTORY PERSONNEL.

CAUTION

When the compressed air cools, part of the moisture sucked in by the compressor condenses. In order to protect the dryer against the risk of an ice plug forming, it is essential to check regularly that the condensate drains are operating properly :

On the compressed air storage reservoir and on the filters :

- With a manual drain, drain regularly according to the moisture content of the ambient air.
- With an automatic drain, set the draining cycle accordingly and check that the drain is in good working condition.

This recommendation is also fundamental in a circuit comprising an absorption dryer (risk of saturation of the alumina).

15.3 DRAINING CONDENSATE FROM THE SUMP TANK

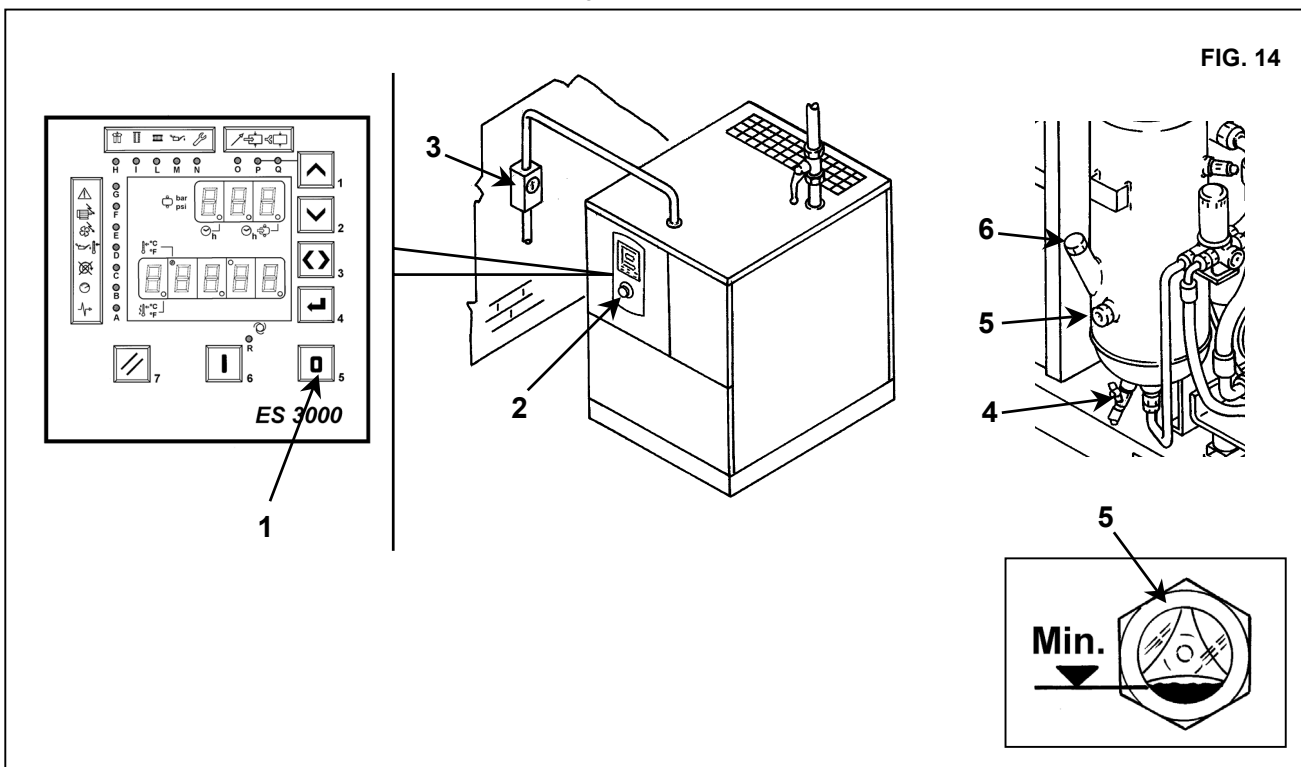
If the compressor experiences long pauses during which the compressor cools down, a certain amount of condensate will gather in the sump tank. This happens, for example, when stopping overnight or on weekends. The condensate must be drained off every 50 hours or every week. This operation may be performed only when the compressor is cold, that is when it has been switched off for at least 8 hours.



BEFORE DRAINING THE CONDENSATE IT IS MANDATORY TO STOP THE COMPRESSOR AND DISCONNECT IT FROM THE MAIN POWER.

Proceed as follows:

- Press the "STOP" button Ref. 1 Fig. 14
- Switch off the compressor
- Turn off main power and lockout disconnect Ref. 3 Fig. 14



- Wait for the compressor to cool down.
- Remove the side maintenance panel using the supplied key.
- SLOWLY turn on the tap Ref. 3 Fig. 14 and let the condensate flow out.
- When the first traces of oil appear, turn off the tap.



CONDENSATE MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

- Check the oil level on the indicator Ref. 4 Fig. 14
- If the oil level is under the minimum, top off as described at point 15.4



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

15.4 CHECK OIL LEVEL AND TOP OFF

- Switch off the compressor using the button Ref. 1 Fig. 14: the compressor will stop after running unloaded for a few seconds.
- Turn off main power and lockout disconnect Ref. 3 Fig. 14
- Remove the side maintenance panel using the supplied key.
- Wait a few minutes for the foam in the sump tank to abate.
- Check the oil level on the indicator Ref. 4 Fig. 14
- If the oil level is under the minimum, top off.



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

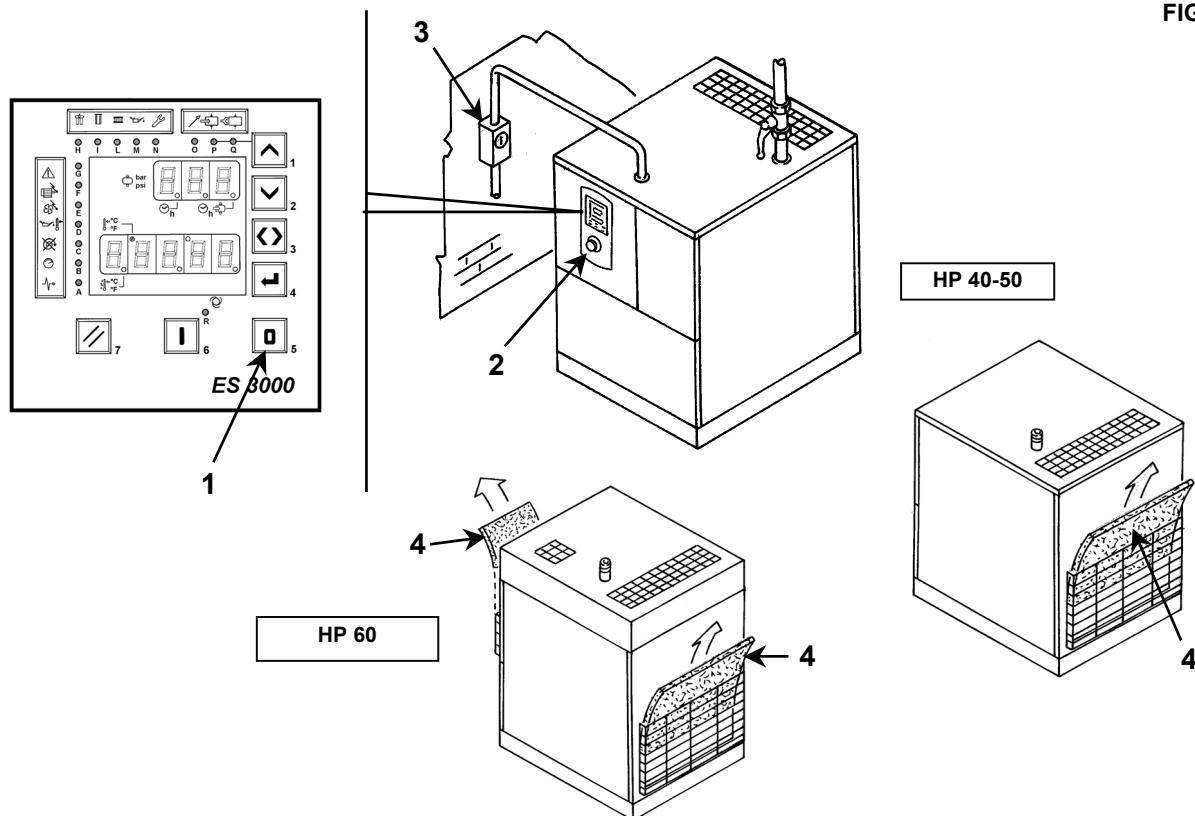
BEFORE CARRYING OUT ANY OPERATION ON THE COMPRESSOR, ENSURE THAT THE ELECTRIC POWER SUPPLY HAS BEEN DISCONNECTED.

- Slowly open the fill port Ref. 6 Fig. 14
- Top off to maximum level Ref. 4 Fig. 14, with oil of the same type in the compressor.
- Replace the cap on the fill ports Ref. 6 Fig. 14.
- Close the side maintenance panel using the supplied key

15.5 CLEANING THE FILTRATION PANEL

- Press the "STOP" button Ref. 1 Fig. 15
- Switch off the compressor
- Turn off main power and lockout disconnect Ref. 3 Fig. 15.
- Remove the filter panel Ref. 4 Fig. 15.
- Clean the filter panel with water, **do not use solvents**.
- Once the operation has been completed, reassemble the filter panel.

FIG. 15



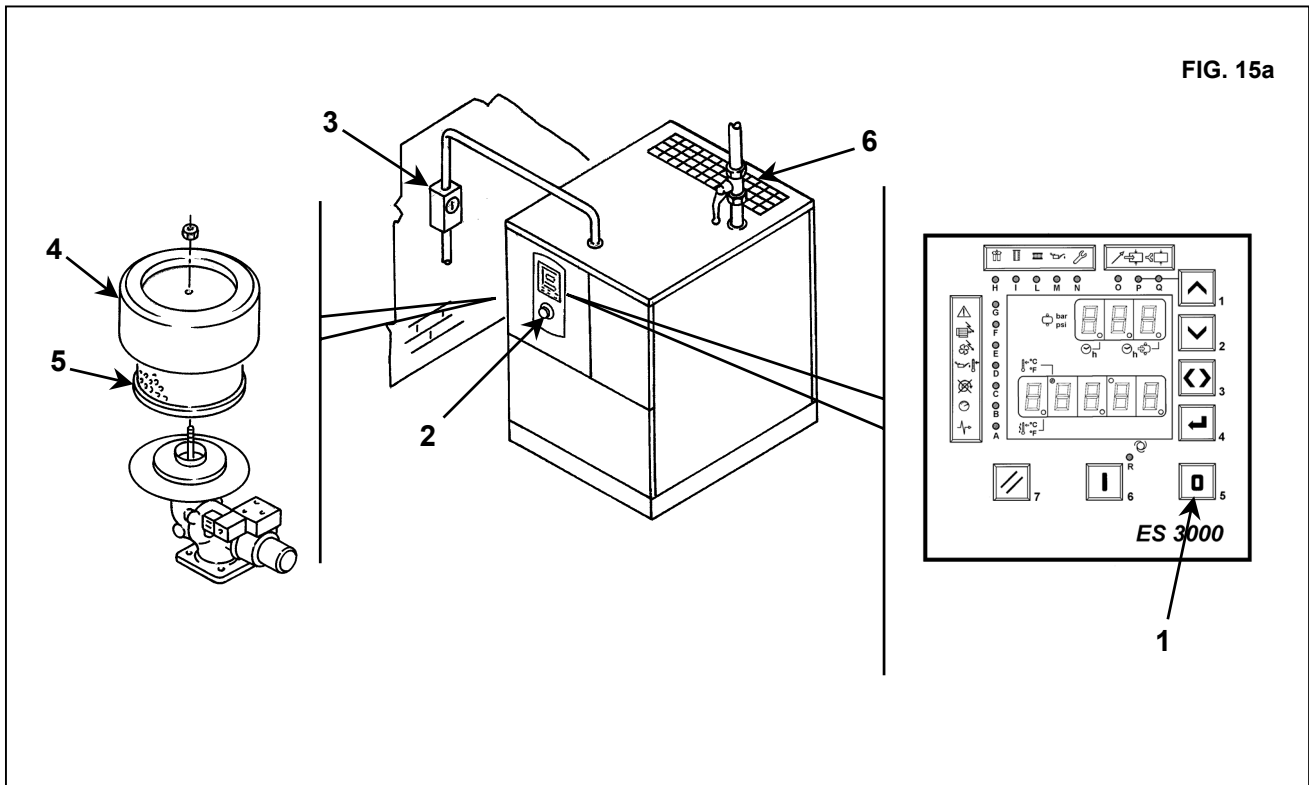
15.6 CLEANING THE SUCTION FILTER OR CHANGING THE FILTER

- Press the "STOP" button Ref. 1 Fig. 15a.
- Switch off the compressor.
- Turn off main power and lockout disconnect Ref. 3 Fig. 15a.



HOT PARTS INSIDE

- Remove the side maintenance panel using the supplied key.
- Remove the cover Ref. 4 Fig. 15a.
- Remove the filter Ref. 5 Fig. 15a.



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. Alternatively, add a new filter.
- Clean the disk on which the filter rests with a clean cloth.
- Replace the filter and the cover.
- If necessary, dispose of the old filter in accordance with local regulations.
- Close the side maintenance panel using the supplied key.

16.0 PERIODS OF INACTIVITY

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

- Press the "STOP" button Ref. 1 Fig. 15a
- Switch off the compressor
- Turn off main power and lockout disconnect Ref. 3 Fig. 15a.
- Turn off the tap Ref. 6 Fig. 15a.

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 compressor after periods of inactivity, consult the manufacturer.

17.0 SCRAPPING THE UNIT

If the compressor is to be scrapped, it must be dismantled into parts of the same material, to be disposed of in accordance with local regulations.



THE LUBRICATING LIQUIDS MUST NOT BE DISCHARGED INTO THE ENVIRONMENT. THESE PRODUCTS MUST BE DISPOSED OF IN ACCORDANCE WITH GOVERNMENT REGULATIONS.

18.0 LIST OF SPARE PARTS FOR ROUTINE MAINTENANCE

Ref	DESCRIPTION	Code	QTY	HP40			HP50			HP60		
				125 PSI	150 PSI	175 PSI	125 PSI	150 PSI	175 PSI	125 PSI	150 PSI	175 PSI
1	Filter panel	2202260554	1	■	■	■	■	■	■	■	■	■
1	Filter panel	2202260554	2									
2	Filter panel (for IVR)	D51210	1									
3	Suction filter	640550	1	■	■	■	■	■	■			
4	Suction filter	641128	1							■	■	■
5	Separator element	640584	1	■	■	■	■	■	■	■	■	■
6	Oil filter	2202260271	1	■	■	■	■	■	■	■	■	■

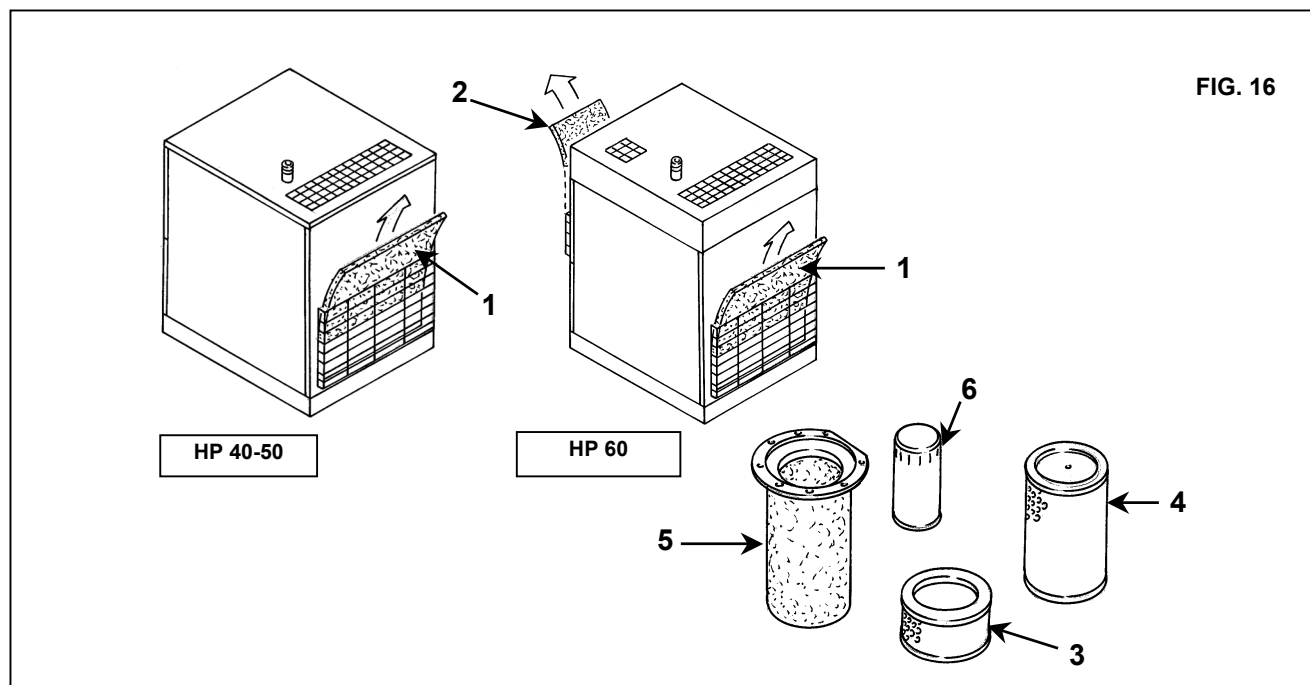


FIG. 16

19.0 TROUBLE-SHOOTING



ALL WORK MUST BE CARRIED OUT BY FACTORY AUTHORIZED PERSONNEL. BEFORE CARRYNG OUT ANY MAINTENANCE IT IS MANDATORY TO STOP THE COMPRESSOR AND DISCONNECT IT FROM THE MAIN POWER.

OPERATIONS MARKED + + MUST BE CARRIED OUT BY FACTORY AUTHORIZED PERSONNEL

PROBLEM	POSSIBLE CAUSES	SOLUTION
1) The compressor does not start	1A - no power 1B - the transformer protection device has tripped	- check the power supply line, Section 12.2 - replace fuses
2) The compressor does not start the pilot lamp Ref. 1 (F) flashes (see Fig. A)	2A - the main motor protection device has tripped	- reset the automatic switch that protects the fan
3) The compressor does not start the pilot lamp Ref. 2 (D) flashes (see Fig. A)	3A - the oil high temperature thermostat has tripped	- ambient temperature too high; improve ventilation in the + + compressor room, Section 9.2 ■ ■ - cooler is dirty, clean the cooler - oil level too low; top off the oil tank
4) The compressor does not start the pilot lamp Ref. 3 (E) flashes (see Fig. A)	4A - The fan motor thermal protection has triggered	- Reset the fan motor thermal protection.
5) The compressor does not reach working pressure	5A - the compressed air consumption is too high 5B - the discharge valve remains open, Ref. EV/SC wiring diagram	+ + ■ ■ - check the electric system
6) Excess oil consumption	6A - deteriorated oil separating filter 6B - oil level is too high	+ + ■ ■ - change the oil separating filter, Section 23 - drain some oil

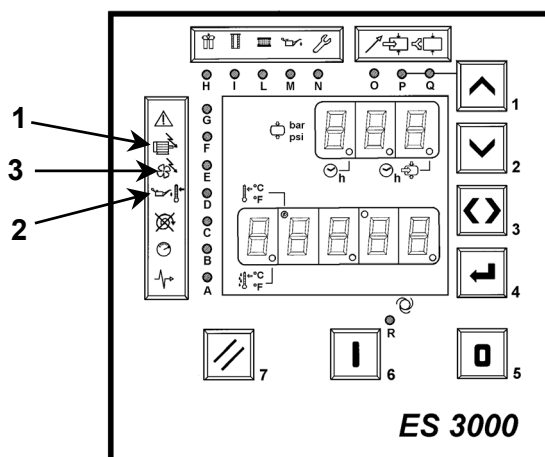


FIG. A

PART “B”



**THIS PART B OF THE INSTRUCTIONS MANUAL IS RESERVED
FOR FACTORY AUTHORIZED PERSONNEL.**



ALWAYS WAIT FOR FIVE MINUTES BEFORE REMOVING THE FRONT COVER.

**ALWAYS CHECK THAT THERE ARE NO DANGEROUS VOLTAGES BEFORE PERFORMING
MAINTENANCE ON THE MOTOR.**

20.0 STARTING UP



COMPRESSOR WITH AUTOMATIC START



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

20.1 PREPARING FOR SETTING UP

After checking everything as indicated in Section. 12, follow the instructions in Fig. 17.

- Fit the sound-deadening panels Ref. 1 Fig. 17.

These parts are packed inside the bodywork.

20.2 PRELIMINARY CHECKS

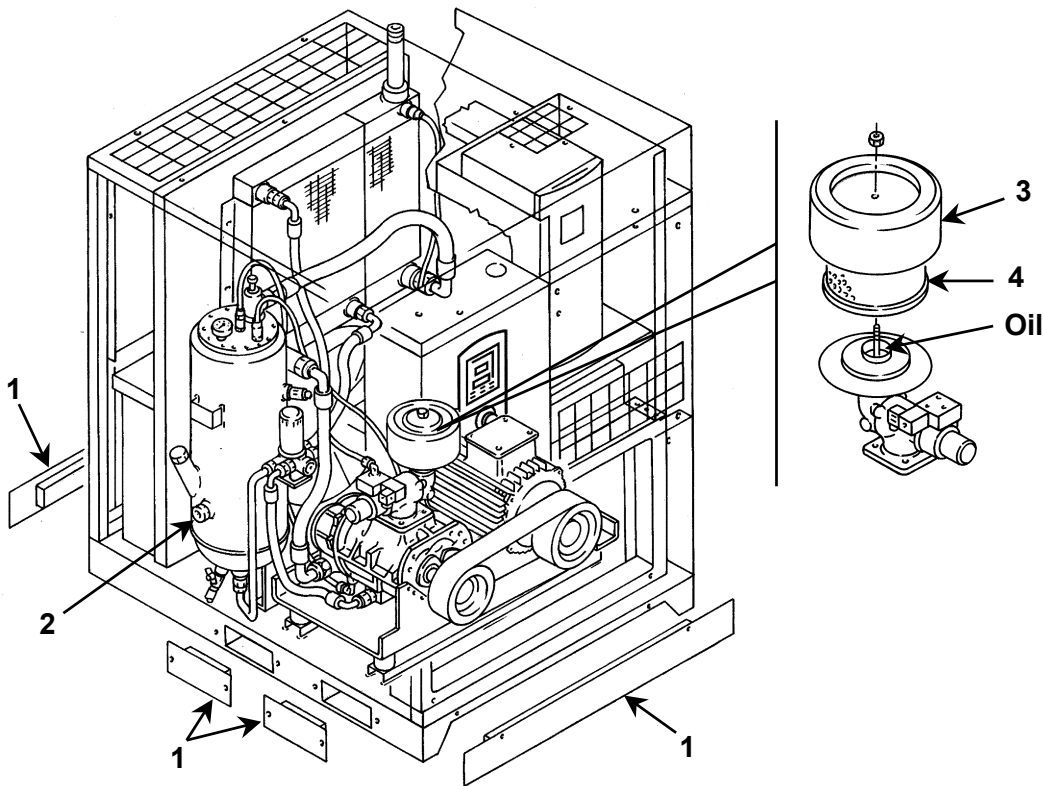
- Check the oil level Ref. 1 Fig. 17 when supplied the compressor is filled with oil; if the oil is not at the correct level, top off with the same oil as the original type.

If more than 3 months have passed between the inspection in the factory and the date of installation, lubricate the screw before starting up, following the procedure described below:

- Remove the side maintenance panel using the supplied key.
- Remove the cover Ref. 3 Fig. 17
- Remove the air filter Ref. 4 Fig. 17
- Pour a little oil into the suction unit.
- Reassemble the air filter Ref. 4 Fig. 17
- Reassemble the cover Ref. 3 Fig. 17

If more than 6 months have passed between the inspection in the factory and the date of installation, consult the manufacturer.

FIG. 17



20.3 CHECK THE DIRECTION OF ROTATION

- Check that all fixed panels are in their correct position.
- Remove the side maintenance guard using the supplied key (Ref. 1 Fig. 17a).
- Connect the controller to the power supply with the automatic circuit-breaker switch of the line.
- Start up the compressor pushing in sequence **I** button Fig. 17A and immediately after about 1 second the **0** button Fig. 17A to stop.
- Check the motor rotation direction is the same as the arrow marked on the compressor.



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

- If the rotation direction is not correct, turn off the power and invert the two connections at point Ref. 2 Fig. 17a

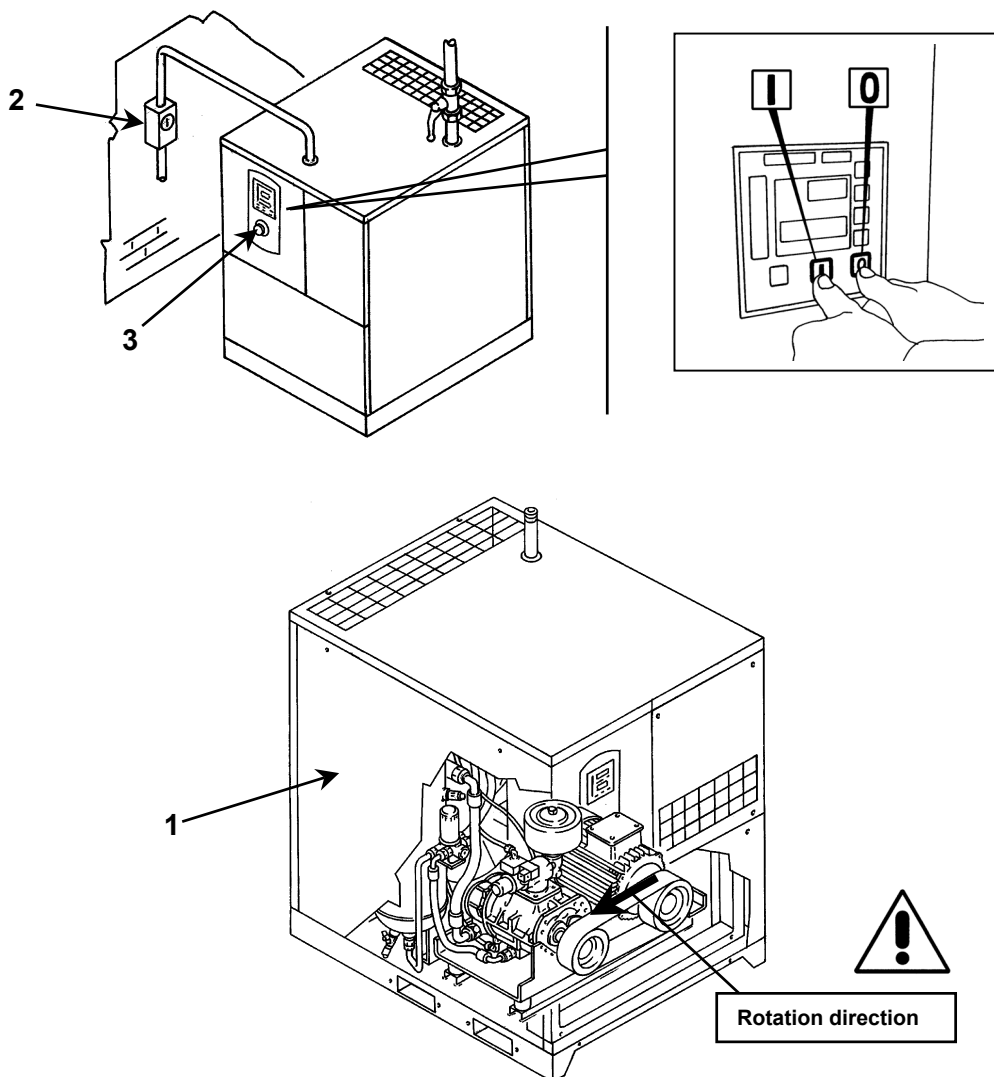
IT IS ADVISABLE NOT TO DO ANYTHING ON THE CONTROLLER.

IF ALL THE INSTRUCTIONS FOUND IN THIS MANUAL HAVE BEEN OBSERVED THE COMPRESSOR CAN BE STARTED.



ATTENTION: compressor start-up is delayed for a few seconds from the moment the controller is Powered or after the scheduled stop.

FIG. 17a



21.0 ROUTINE MAINTENANCE FOR TRAINED PERSONNEL



BEFORE CARRYING OUT ANY MAINTENANCE IT IS MANDATORY TO STOP THE COMPRESSOR AND DISCONNECT IT FROM THE MAIN POWER.

MAINTENANCE SCHEDULE

These maintenance intervals are recommended for work environments that are not dusty and are well ventilated. For particularly dusty environments, double the frequency of maintenance.

Every 50 working hours	■	Drain condensate from the sump tank
	■	Check the oil level
	■	Clean the filter panel
Every 500 hours	■	Clean the air suction filter (see controller LED)
	■ ■	Check belt tension
Every 2000 hours	■ ■	Change the oil filter (see controller LED)
	■	Change the suction filter (see controller LED)
Every 4000 hours	■ ■	Clean the finned surface of the air-oil cooler
	■ ■	Change the oil separating filter (see controller LED)
	■ ■	Change belt
Every 8000 hours	■ ■	Change the oil
	■ ■	Maintenance overhaul on entire compressor

THE OPERATIONS MARKED ■ ARE DESCRIBED IN PART "A" OF THIS MANUAL ON SECTION 15.3

22.0 CHANGING THE OIL



BEFORE CARRYING OUT ANY MAINTENANCE IT IS MANDATORY TO STOP THE COMPRESSOR AND DISCONNECT IT FROM THE MAIN POWER AND FROM THE COMPRESSED AIR DISTRIBUTION NETWORK.

Changing the oil is an important operation for the compressor:

if the lubrication of the bearings is not efficient, the compressor life will be shortened.

The oil must be changed when the compressor is still warm, that is immediately after stopping it.

The suggestions listed below should be followed.

After draining the old oil out of the compressor Ref. 1 Fig. 18.

- Fill the oil tank to the MAX level, Ref. 2 Fig. 18.

- Pour a little oil into the suction unit.

- Start the compressor.

- After about 1 minute switch off the compressor by pressing "STOP" (Ref. 3 Fig. 18) after a few seconds of idle running the compressor will switch off.

PROCEED AS DESCRIBED AT POINT SECTION 15.4

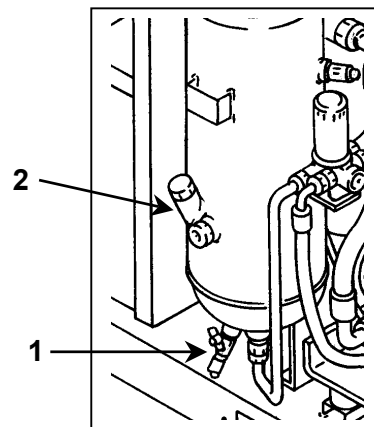
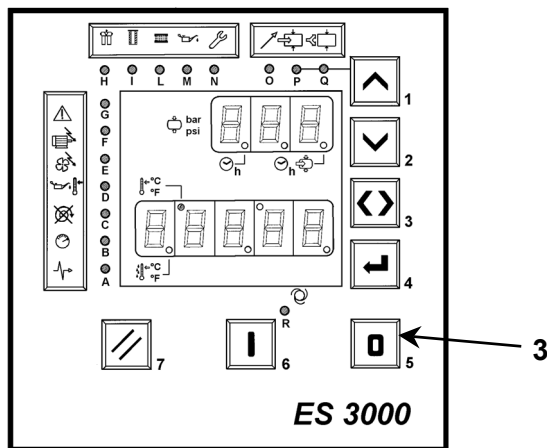
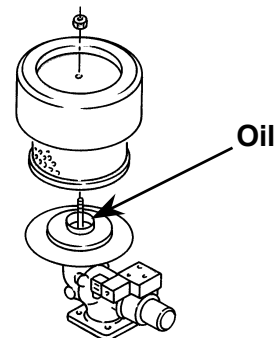


FIG. 18



**THE OLD OIL MUST BE DISPOSED OF IN COMPLIANCE WITH LOCAL REGULATIONS.
DO NOT TOP OFF WITH DIFFERENT OILS**

NOTE ON LUBRICANTS

When delivered, the compressor is filled with oil;

In normal conditions of use, these lubricants have proved to be able to withstand use for as many as 8,000 hours.

If the compressor is being used at high temperatures (continuous operation above 194 °F) or in particularly severe conditions, we advise changing the oil at shorter intervals than those recommended in the maintenance chart.

23.0 CHANGING THE OIL SEPARATION FILTER

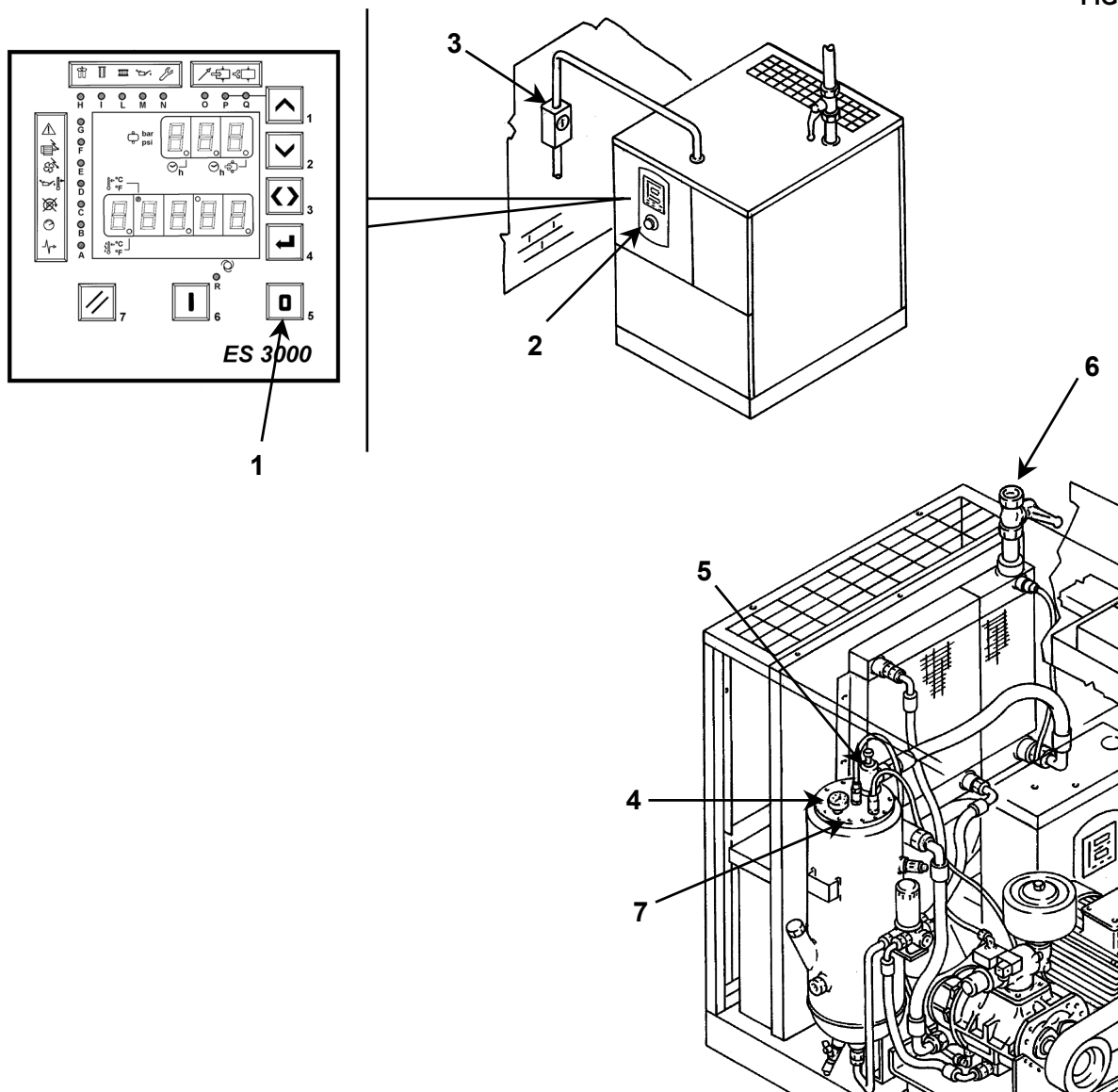


BEFORE CARRYING OUT ANY MAINTENANCE THE COMPRESSOR MUST BE STOPPED, DISCONNECT THE COMPRESSOR FROM THE MAIN POWER AND FROM THE COMPRESSED AIR DISTRIBUTION NETWORK, CHECK THAT THE COMPRESSOR IS NOT UNDER PRESSURE.

Proceed as follows:

- Press the "STOP" button Ref. 1 Fig. 19
- Switch off the compressor
- Turn off main power and lockout disconnect Ref. 3 Fig. 19.
- Check there is no pressure inside the compressor: check the pressure gauge Ref. 4 Fig. 19.
- Let off the internal pressure through the minimum valve Ref. 5 Fig. 19 and the manual valve Ref. 6 Fig. 19.
- Take off the cover Ref. 7 fig. 19
- Change the oil-separation filter.

FIG. 19



24.0 BELT TENSION

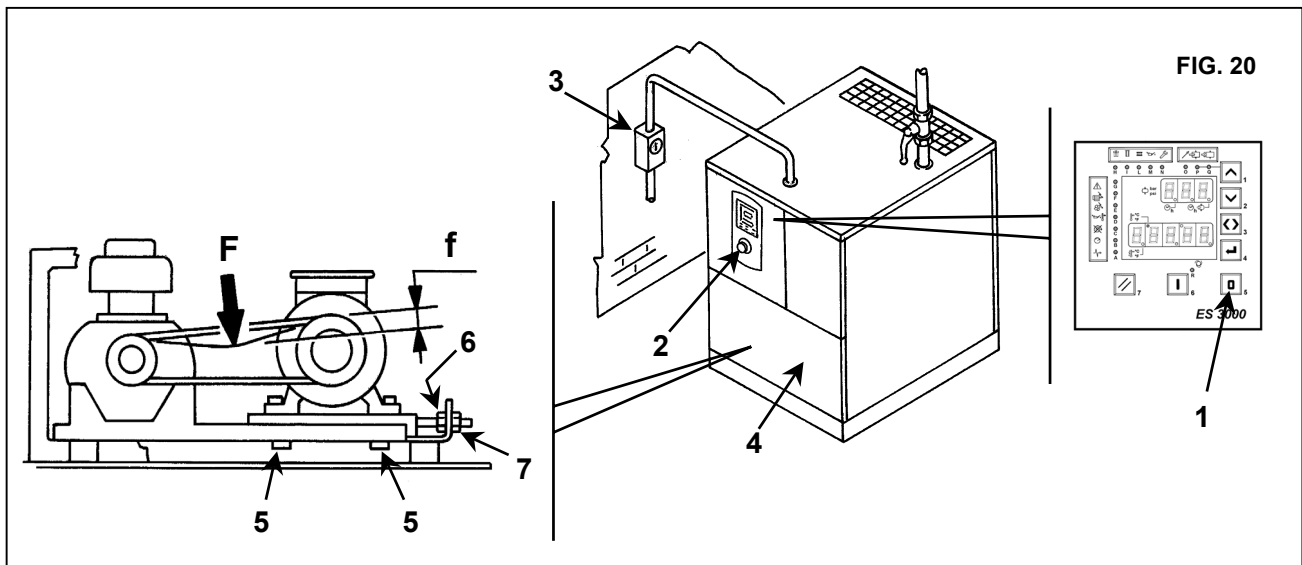


BEFORE CARRYING OUT ANY MAINTENANCE THE COMPRESSOR MUST BE STOPPED, DISCONNECT THE COMPRESSOR FROM THE MAIN POWER AND FROM THE COMPRESSED AIR DISTRIBUTION NETWORK, CHECK THAT THE COMPRESSOR IS NOT UNDER PRESSURE.

Tightening or retightening belts

Proceed as follows:

- Press the "STOP" button Ref. 1 Fig. 20.
- Switch off the compressor
- Turn off main power and lockout disconnect Ref. 3 Fig. 20.
- Remove the panel Ref. 4 Fig. 20.
- Loosen the screws by half a turn Ref. 5 Fig. 20
- Loosen the locknut Ref. 6 Fig. 20
- Adjust the belt tension by turning the nut Ref. 7 Fig. 20.
- Lock the locknut again Ref. 6 Fig. 20
- Close the screws again Ref. 5 Fig. 20
- Fasten the panel with its safety screws Ref. 4 Fig. 20.

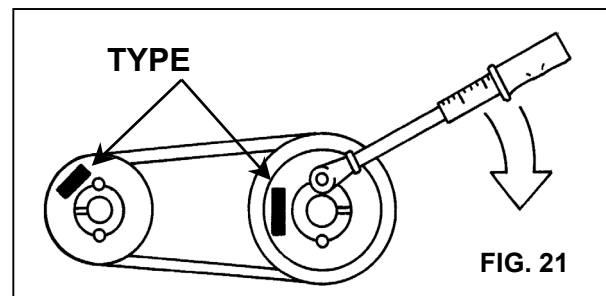


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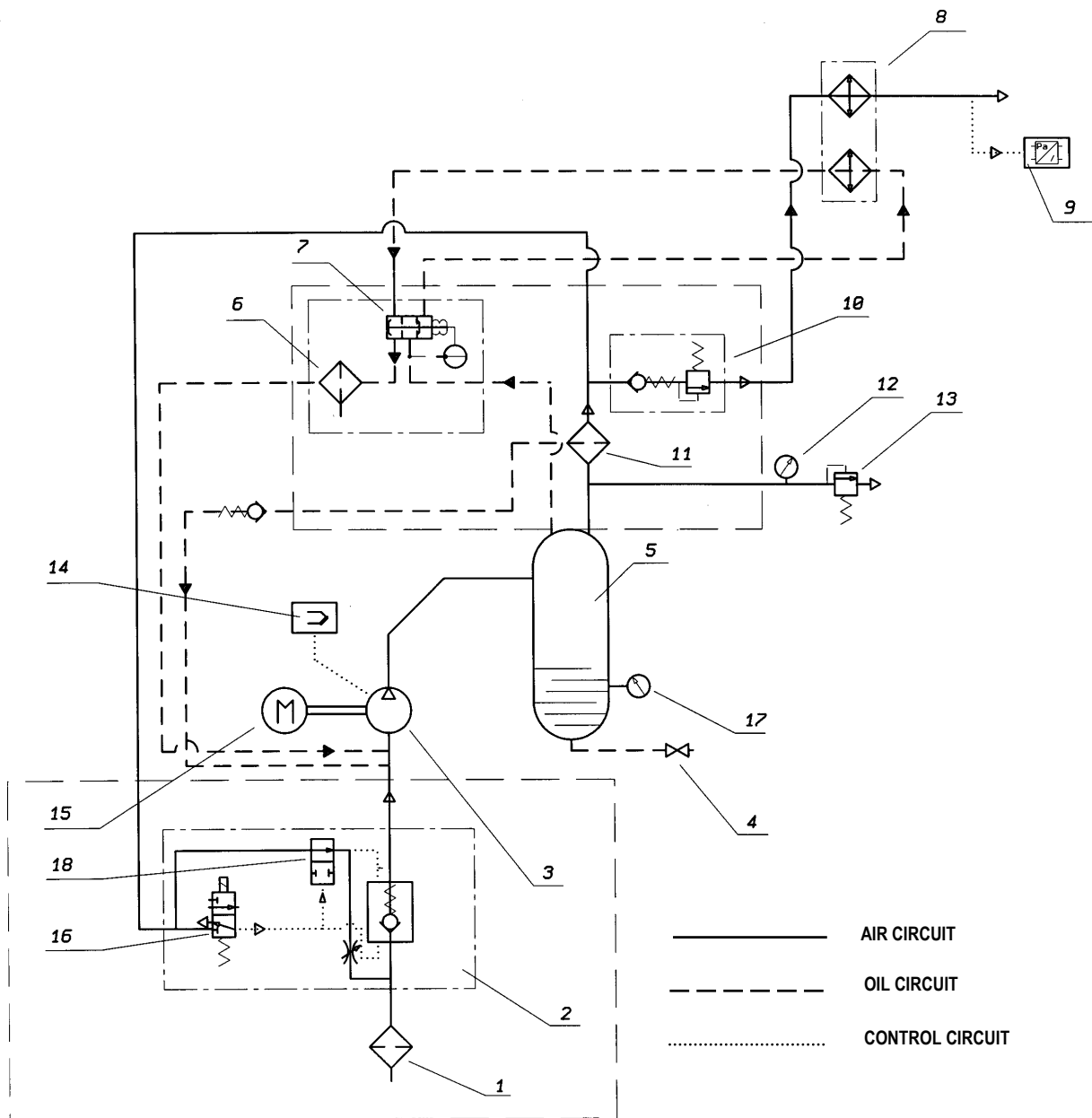
F = 7.7 lbs.	Force to be applied at the center line, at right angles to the new belt.
f = 0.24 in	Clearance after the application of F. (after 100 hr operation F = 5.5 lbs.)

24.1 TIGHTENING TORQUE (Fig. 21)

Type bush	Tightening torque lbs/ft	Key
2012	22.88	5
2517	35.42	6
3020	66.42	8
3535	82.66	10



25.0 FLOW DIAGRAM



- 1 SUCTION FILTER
- 2 SUCTION REGULATOR
- 3 SCREW COMPRESSOR
- 4 OIL DISCHARGE VALVE
- 5 AIR-OIL PRE-SEPARATION
- 6 OIL FILTER
- 7 THERMOSTATIC VALVE
- 8 AIR-OIL COOLER
- 9 PRESSURE TRANSDUCER

- 10 MINIMUM PRESSURE VALVE
- 11 AIR-OIL SEPARATOR
- 12 PRESSURE GAUGE
- 13 SAFETY VALVE
- 14 TEMPERATURE SENSOR
- 15 ELECTRIC MOTOR
- 16 NO-LOAD RUNNING SOLENOID VALVE
- 17 OIL LEVEL
- 18 BLED VALVE

NOTE

NOTE

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