USER MANUAL

EN Instruction manual for owner's use

APS 3 COMBI COMPACT

PRODUCT REF.: 360903-C, 360903-C1, 360903-CG

DECLARATION OF CONFORMITY

The following declaration is attached to the compressor in original copy.
All identification data: manufacturer, model, code and serial number are stamped on the CE label.
For any request for copies it is ESSENTIAL to provide ALL data stamped on CE label.

IT	Dichiara sotto la sua esclusiva responsabilità, che il compressore d'aria sopra descritto è conforme a tutte le disposizioni pertinenti delle seguenti direttive comunitarie: 2006/42/CE, 2014/30/UE, 2011/65/UE Sono state applicate le seguenti norme armonizzate nell'ultima versione pubblicata sulla Gazzetta Ufficiale Europea: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
GB	Declares under its sole responsibility that the air compressor described above complies with all relevant regulations of the following EU directives: 2006/42/EC, 2014/30/EU, 2011/65/EU The following harmonised standards have been applied in the latest version published on the Official Journal of the European Union: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
FR	Déclare sous sa responsabilité exclusive que le compresseur à air décrit ci-dessus est conforme à toutes les dispositions pertinentes des directives communautaires suivantes: 2006/42/CE, 2014/30/UE, 2011/65/UE Les normes suivantes harmonisées dans la dernière version publiée au Journal Officiel de l'Union Européenne ont été appliquées: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
DE	Erklärt unter seiner eigenen alleinigen Verantwortung, dass der oben beschriebene Luftkompressor mit allen anwendbaren Vorschriften der folgenden EU-Richtlinien konform ist: 2006/42/EG, 2014/30/EU, 2011/65/EU Die folgenden Harmonisierten Normen wurden in der jüngsten im Amtsblatt der Europäischen Union veröffentlichten Version angewendet: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
ES	Declara bajo su responsabilidad exclusiva, que el compresor de aire antes descrito, es conforme con todas las disposiciones pertinentes de las directivas comunitarias siguientes: 2006/42/CE, 2014/30/UE, 2011/65/UE Se han aplicado las siguientes normas armonizadas en la última versión publicada en el Diario Oficial de la Unión Europea: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
PT	Declara, sob a sua exclusiva responsabilidade, que o compressor de ar descrito acima está em conformidade com todas as disposições pertinentes das seguintes diretivas comunitárias: 2006/42/CE, 2014/30/UE, 2011/65/UE As seguintes normas harmonizadas foram aplicadas na última versão publicada no Jornal Oficial da União Europeia: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
NL	Verklaart op eigen exclusieve verantwoordelijkheid dat de hierboven beschreven luchtcompressor conform is met alle pertinente voorschriften van de volgende communautaire richtlijnen: 2006/42/EG, 2014/30/EU, 2011/65/EU De volgende geharmoniseerde standaards zijn toegepast in de laatste versie gepubliceerd in het Publicatieblad van de Europese Unie: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
DK	Erklærer under eget ansvar, at luftkompressoren beskrevet ovenfor, overholder alle relevante bestemmelser i følgende europæiske direktiver: 2006/42/EC, 2014/30/EU, 2011/65/EU De følgende harmoniserede standarder gør sig gældende for den seneste version, som er offentliggjort i De Europæiske Fællesskabers Tidende: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
SE	Försäkrar på eget ansvar att den berörda luftkompressorn uppfyller alla tillämpliga bestämmelser i följande gemenskapsdirektiv: 2006/42/EG, 2014/30/EU, 2011/65/EU Följande harmoniserade standarder har tillämpats i den senaste versionen, som publicerats i den Euopeiska unionens officiella tidning: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
FI	Vakuuttaa yksinomaisella vastuullaan, että edellä kuvattu ilmakompressori täyttää seuraavien yhteisön direktiivien kaikki asiaa koskevat määräykset: 2006/42/EY, 2014/30/EU, 2011/65/EU Seuraavia harmonisoituja normeja, joiden viimeisin versio on julkaistu Euroopan unionin virallisessa lehdessä, on sovellettu: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
GR	Δηλώνει με αποκλειστική του ευθύνη ότι ο συμπιεστής αέρα που περιγράφεται παραπάνω συμμορφώνεται με όλες τις σχετικές διατάξεις των ακόλουθων κοινοτικών οδηγιών: 2006/42/ΕΚ, 2014/30/ΕΕ, 2011/65/ΕΕ Εφαρμόστηκαν οι εξής εναρμονισμένοι κανονισμοί στην τελευταία έκδοση της Επίσημης Εφημερίδας των Ευρωπαϊκών Κοινοτήτων: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
PL	Deklaruje, na swoją wyłączną odpowiedzialność, że kompensator powietrza opisany powyżej jest zgodny ze wszystkimi odpowiednimi przepisami następujących dyrektyw wspólnotowych: 2006/42/WE, 2014/30/UE, 2011/65/UE Następujące ujednolicone normy mają zastosowanie w najbardziej aktualnej wersji opublikowanej w Dzienniku Urzędowym Unii Europejskiej: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
HR	Pod isključivom vlastitom odgovornošću izjavljuje da je gore opisani kompresor na zrak sukladan svim povezanim smjernicama iz sljedećih europskih direktiva: 2006/42/EZ, 2014/30/EU, 2011/65/EU Slijedeće usklađene norme primjenjuju se u najnovijoj verziji objavljenoj u Službenom listu Europske unije: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
SI	Na izključno lastno odgovornost izjavlja, da je zgoraj opisani kompresor zraka skladen z vsemi pripadajočimi dispozicijami naslednjih evropskih direktiv: 2006/42/EU, 2014/30/EU, 2011/65/EU Uveljavljeni so naslednji harmonizirani standardi zadnje verzije, objavljene v Uradnem listu Evropske skupnosti: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
HU	Kizárólagos felelőssége tudatában kijelenti, hogy a fentiekben megnevezett légkompresszor megfelel a következő uniós irányelvek vonatkozó előírásainak:2006/42/EK, 2014/30/EU, 2011/65/EU Az alábbi harmonizált szabványokat az Európai Unió Hivatalos Lapjában közzétett legutóbbi változatuk szerint alkalmaztuk: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
CZ	Prohlašuje pod svou výhradní odpovědnost, že výše popsaný vzduchový kompresor je v souladu se všemi příslušnými ustanoveními následujících směrnic Společenství: 2006/42/ES, 2014/30/EU, 2011/65/EU Použity byly následující harmonizované normy publikované v Úředním věstníku Evropské unie v nejnovějších verzích: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
SK	Prehlasuje na vlastnú zodpovednosť, že vyššie popísaný vzduchový kompresor je v súlade so všetkými príslušnými ustanoveniami nasledovných smerníc Spoločenstva: 2006/42/ES, 2014/30/EÚ, 2011/65/EÚ Boli použité nasledujúce harmonizované normy publikované v Úradnom vestníku Európskej únie v najnovších verziách: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
RU	Заявляет под собственную эксклюзивную ответственность, что вышеописанный воздушный компрессор соответствует требованиям всех применяемых следующих директив ЕС: 2006/42/ЕС, 2014/30/EU, 2011/65/EU Следующие гармонизированные стандарты были применены в последней редакции, опубликованной в правительственном вестнике ЕС: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
NO	Erklærer under vårt eneansvar at luftkompressoren beskrevet ovenfor oppfyller alle gjeldende krav i følgende EU-direktiver: 2006/42/EC, 2014/30/EU, 2011/65/EU De følgende harmoniserte standardene er brukt i den siste versjonen trykt i den Den europeiske unions tidende (EUT): EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
TR	Kendi sorumluluğu altında, yukarıda açıklanan hava kompresörünün aşağıdaki Avrupa Birliği direktiflerinin ilgili tüm düzenlemelerine uygun olduğunu beyan eder: 2006/42/EC, 2014/30/UE, 2011/65/UE Avrupa Birliği'nin Resmi Gazetesi'nde yayınlanan son sürümde, aşağıdaki uyumlulaştırılmış standartlar uygulanmıştır: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
RO	Declară pe proprie răspundere că compresorul de aer descris mai sus este conform cu toate dispoziţiile directivelor comunitare în vigoare amintite în continuare: 2006/42/CE, 2014/30/UE, 2011/65/UE Au fost aplicate următoarele standarde armonizate în ultima versiune publicată în Jurnalul Oficial al Uniunii Europene: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
BG	Декларира на своя изключителна отговорност, че описаният по-горе въздушен компресор съответства на всички релевантни разпоредби на следните общностни директиви: 2006/42/ЕС, 2014/30/ЕС, 2011/65/ЕС Следните хармонизирани стандарти са приложени в най-новото издание, публикувано в Официален вестник на Европейския съюз: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
RS	Na isključivu sopstvenu odgovornost izjavljuje da je više opisani kompresor na vazduh usaglašen sa svim odgovarajućim smernicama iz sledećih evropskih direktiva: 2006/42/EZ, 2014/30/EU, 2011/65/EU Sledeće usklađene norme primenjuju se u najnovijoj verziji objavljenoj u Službenom glasniku Evropske unije: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
LT	Prisiimdamas visą atsakomybę patvirtina, kad pirmiau aprašytas oro kompresorius atitinka visas tolesnių Europos Bendrijos direktyvų nuostatas: 2006/42/EB, 2014/30/ES, 2011/65/ES Toliau nurodyti darnieji standartai buvo pritaikyti naujausioje versijoje, publikuotoje Europos Sąjungos oficialiajame leidinyje: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
EE	Kinnitab ja kannab ainuisikulist vastutust selle eest, et õhukompressor, mis on eespool kirjeldatud, vastab järgmise EÜ direktiivi kõigile asjakohastele sätetele: 2006/42/EÜ, 2014/30/EL, 2011/65/EL Euroopa Liidu Teatajas avaldatud uusimas versioonis on kohaldatud järgmisi ühtlustatud standardeid: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011
LV	Deklarē savu uz savu izņēmuma atbildību, ka iepriekš aprakstītais gaisa kompresors atbilst visiem attiecīgajiem tiesību aktu noteikumiem, kas minēti sekojošās ES direktīvās: 2006/42/EK, 2014/30/ES, 2011/65/ES Jaunākajai versijai, kas publicēta Eiropas Savienības oficiālajā laikrakstā, ir piemēroti šādi vienotie standarti: EN 1012-1, EN 60204-1, EN 61000-6-2, EN 55011

1. GENERAL INFORMATION

STANDARD OUTFIT

The following accessories are supplied with the compressor:

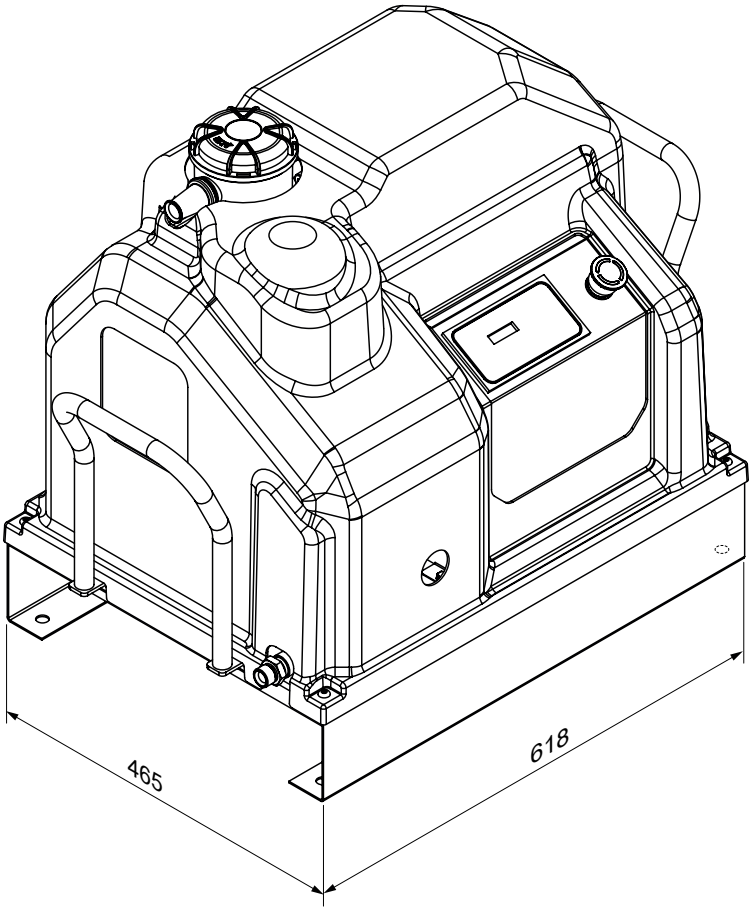
- operating and maintenance manual,
- anti-vibration pads,
- oil/condensate drain pipe.

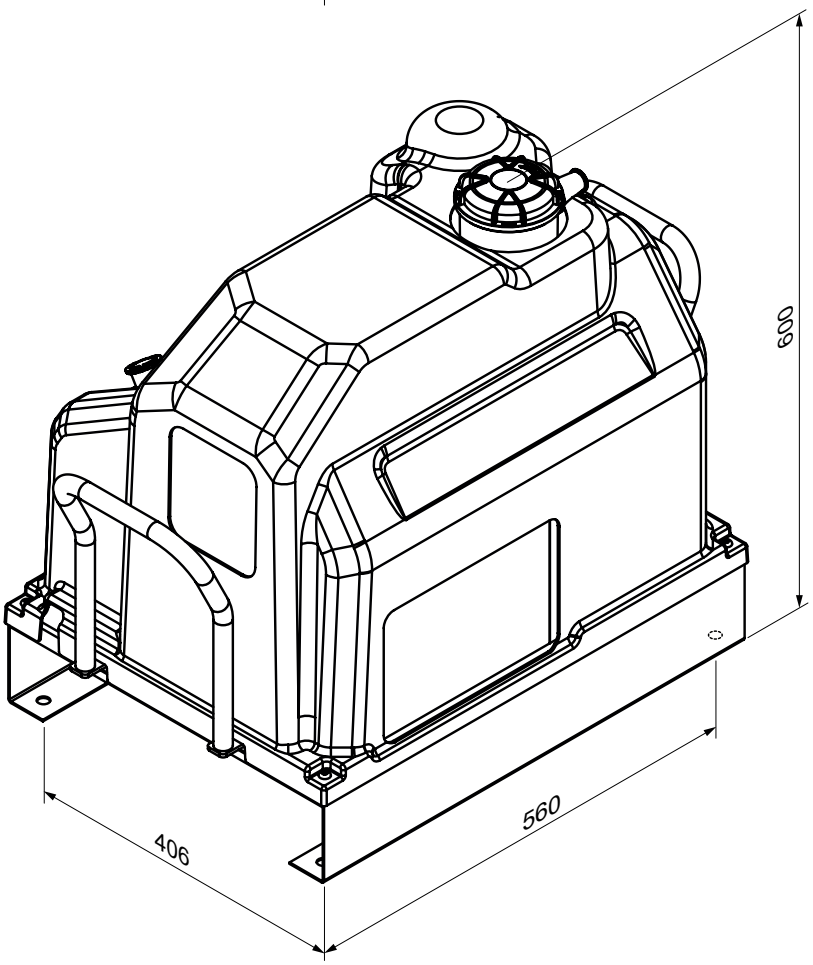
Always check that the above accessories are available. Once the goods have been delivered and accepted, no complaints are accepted.

CONDITION OF THE MACHINE WHEN SUPPLIED

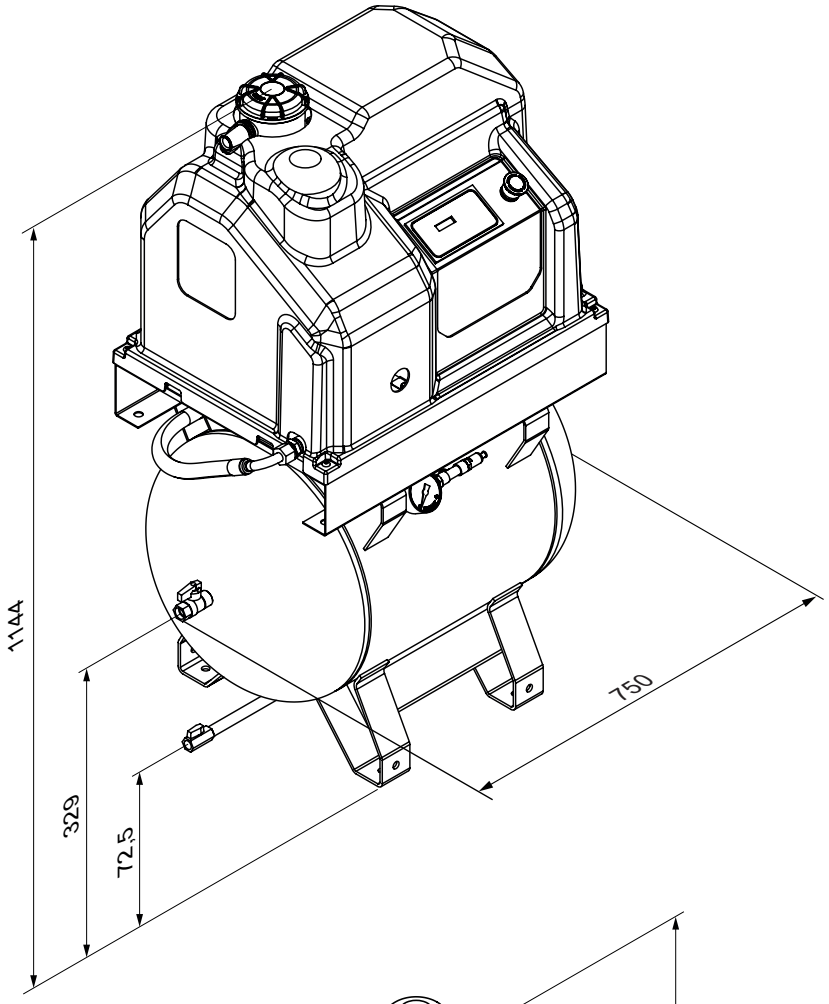
Every compressor is shop tested and delivered ready to be installed and to be commissioned.

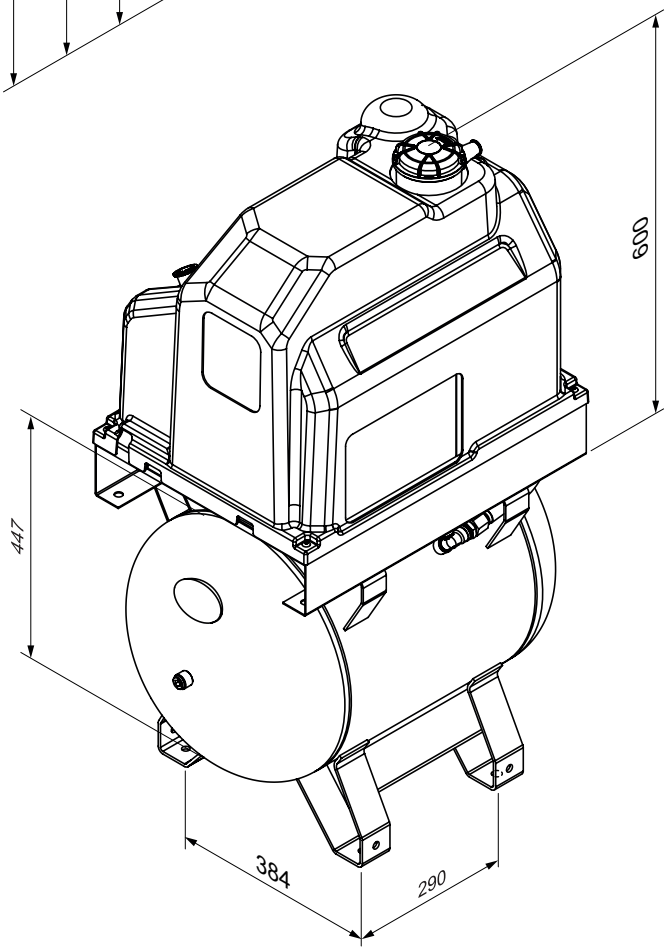
2.1. OVERALL DIMENSIONS





2.2. OVERALL DIMENSIONS





3.1. SAFETY REGULATIONS

GENERAL WARNINGS

- Rotary compressors are intended for heavy continuous industrial use. They are especially suitable for industrial applications requiring high air consumption for a long time.
- The compressor should be run and operated only in compliance with the indications given in this manual. Safely keep this manual in a known and easily reachable place for the whole working life of the compressor.
- A supervisor shall be appointed in the company where the compressor is installed. They shall be responsible for compressor inspections, adjustments and maintenance. Should a substitute be appointed for the supervisor, they shall carefully read the operating and maintenance manual and any remarks about the service and maintenance carried out so far.

SYMBOLS USED IN THE MANUAL

Some symbols are used to highlight danger situations, give recommendations or information. These symbols are usually positioned next to the text, a figure or at the top of a page (in this case they refer to all subjects dealt with in that page). Carefully read the meaning of symbols below.

WARNING!
Important description on service, dangerous situations, safety, accident prevention recommendations and/or very important information.

POWER OFF!
All operations to be strictly carried out only after powering off the machine.

MACHINE STOPPED!
All operations highlighted by this symbol must be strictly carried out only after stopping the machine

SPECIALIZED PERSONNEL!
All operations highlighted by this symbol to be strictly carried out only by a specialized technician.

SYMBOLS USED IN THE MANUAL

Some symbols are used to highlight danger situations, give recommendations or information. These symbols are usually positioned next to the text, a figure or at the top of a page (in this case they refer to all subjects dealt with in that page). Carefully read the meaning of symbols below.

Warning symbols

High temperature risk

Electric shock risk

Risk from hot or dangerous gases in the work area

Pressurised container

Moving mechanical parts

Maintenance in progress

Machine with automatic start-up

Prohibition symbols

Do not open doors when the machine is operating

If necessary, always use the emergency stop button and not the line breaker

Do not use water to put out fires on electrical equipment

Obligation symbols

Carefully read the operating instructions

3.2. SAFETY REGULATIONS

Thoroughly read this page before performing any operation on the compressor

TO DO:

Make sure that mains voltage corresponds to the voltage indicated on the CE label and that cables of suitable cross-section are used for electric connections.
Always check oil level before starting the compressor.
Understand how to stop the compressor rapidly and understand the operation of all controls.
Cut off power before any maintenance work, in order to avoid accidental starting.
Ensure that all parts have been correctly reassembled after any maintenance work.
Keep children and animals away from the working area to avoid injuries caused by devices connected to the compressor.
Ensure that the temperature of the working environment ranges between +5 and + 50 °C.
The compressor must be installed and operated in a non-explosive environment and away from flames.
Allow at least 80 cm between the compressor and the wall to allow free air flow to the fan.
Press the emergency button on the control panel only in case of actual need so as to avoid possible injury to people or damage to the compressor.
When calling for technical assistance and/or advice, always mention model, code and serial number indicated on the CE label.
Always follow the maintenance schedule specified in the manual.

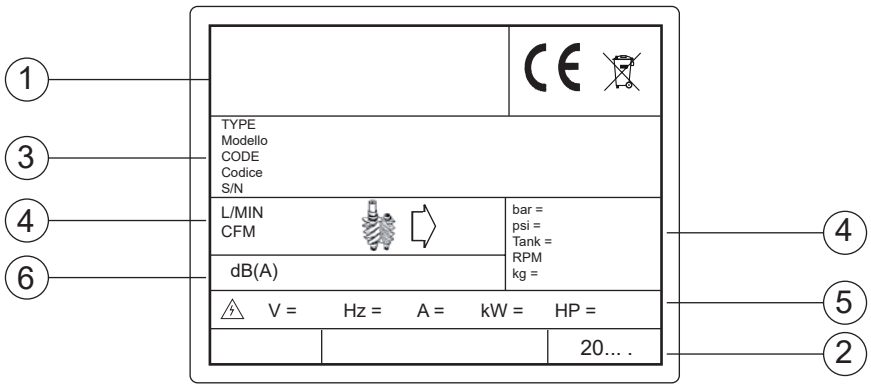
DO NOT:

Do not touch inner parts and pipes as they are very hot during compressor operation and stay hot for some time after the compressor stops.
Do not position flammable items or nylon and cloth items near and/or on top of the compressor.
Do not move the compressor when the tank is under pressure.
Do not operate the compressor if the power cable is damaged or defective or if connection is unstable.
Do not operate the compressor in wet or dusty environments.
Never aim the air jet at people or animals.
Do not allow anyone to operate the compressor without first providing them all required instructions.
Do not hit fans with blunt or metal objects as they might break during compressor operation.
Never operate the compressor without air filter and/or pre-filter.
Do not tamper with safety and adjusting devices.
Never operate the compressor when doors/panels are open or removed.

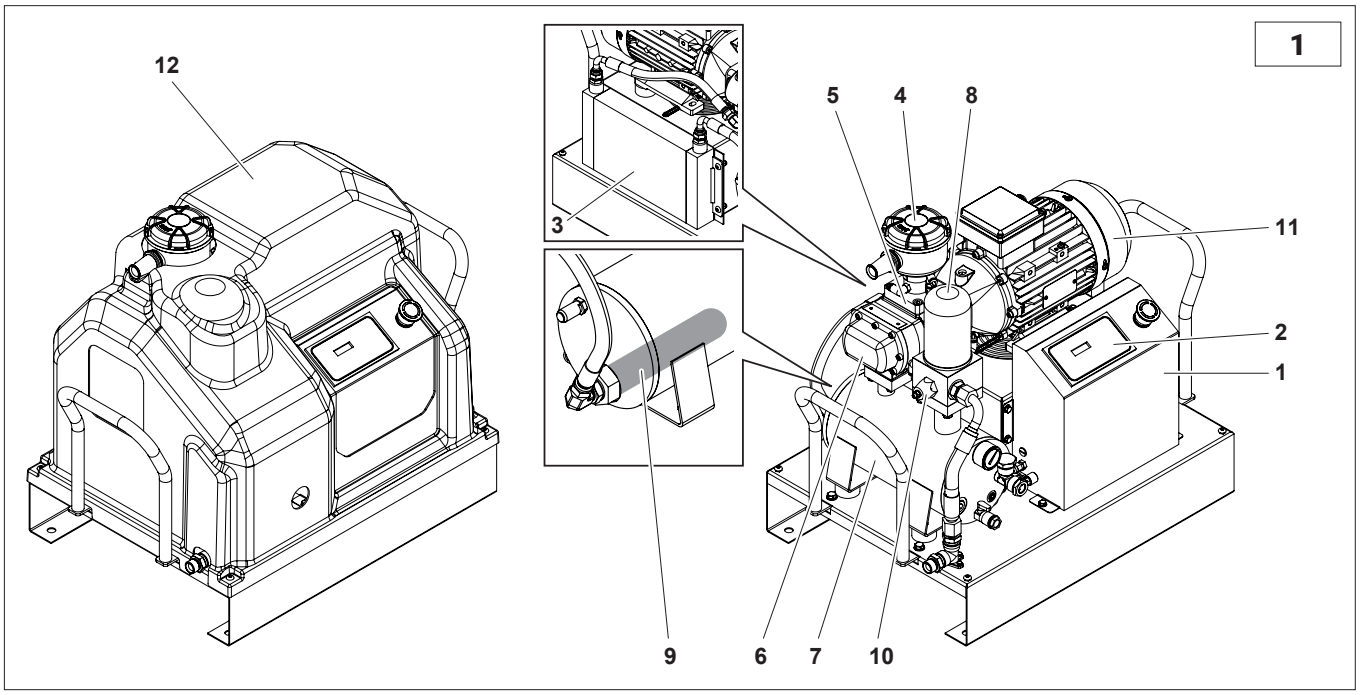
PRODUCT IDENTIFICATION

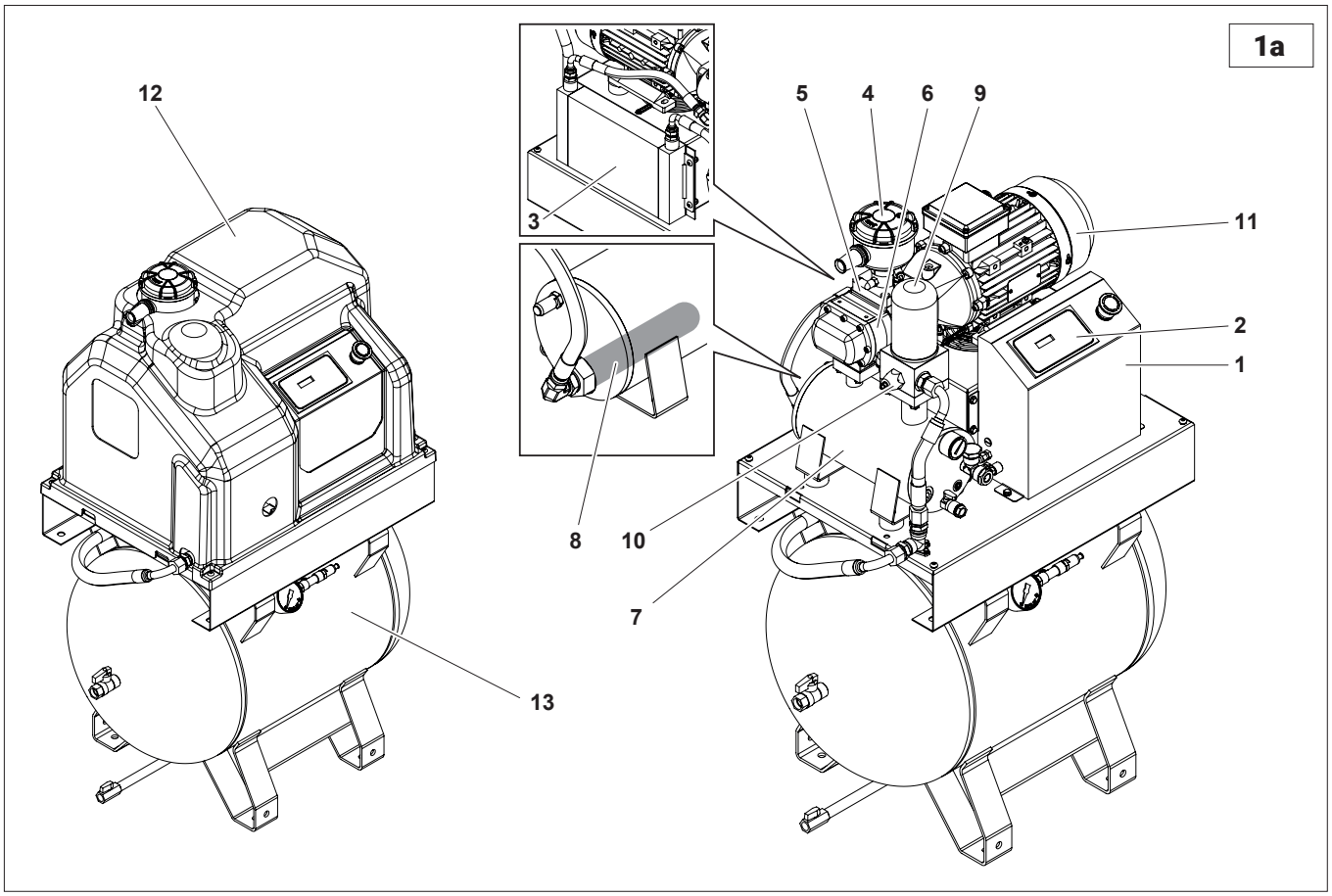
The compressor you have purchased is identified by the CE label showing the following data:

1. Manufacturer's data.
2. Year of manufacture.
3. TYPE = name,
   CODE = code,
   SERIAL NO. = serial number (to be always mentioned when calling for technical assistance).
4. Technical data: air delivery, Max. operating pressure, Tank capacity, Rotations per minute, weight.
5. Electrical data: voltage, frequency, absorption, power.
6. Noise level.



4. INSTALATION





OPIS KOMPRESORA (Rys. 1-1a)

Sprężarka składa sie zasadniczo z następujących podzespołów:

1. Osprzęt elektryczny
2. Sterownik elektroniczny
3. Chłodnica oleju
4. Filtr wlotowy powietrza
5. Regulator ssania
6. Moduł śrubowy
7. Separator oleju
8. Filtr oleju
9. Filtr separatora oleju
10. Zawór ciśnienia minimalnego
11. Silnik elektryczny
12. Obudowa
13. Zbiornik powietrza 90l

5. INSTALLATION

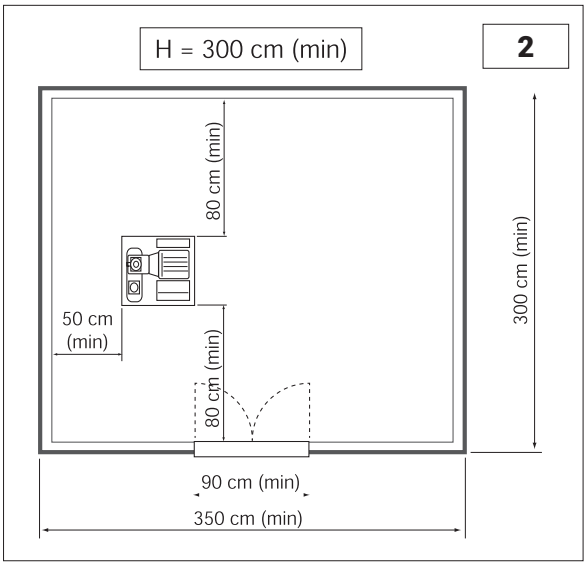
UNPACKING AND HANDLING THE MACHINE

When delivered, the compressor top is protected by cardboard packing.
Wear suitable protective gloves and then cut the outer straps and then remove the cardboard from the top. Check the (outer) good condition of the machine before moving the compressor. Visually check that no parts are damaged. Also ensure that all accessories are available.
Lift the machine using a fork lift truck. Fit the anti-vibration pads into their proper seat and move the machine to the room chosen for its location with maximum care.
Keep all packing materials at least for the warranty period for any future movement. In case of need, it will be safer when shipping it to the technical assistance dept.
Then, dispose of packing materials in compliance with current laws.

LOCATION (fig. 2)

Remove the compressor from the wooden pallet used for transport and position it on the floor, on its shock-absorbers if supplied. The wooden pallet is only used for transport, the compressor must not be placed on the pallet during operation.

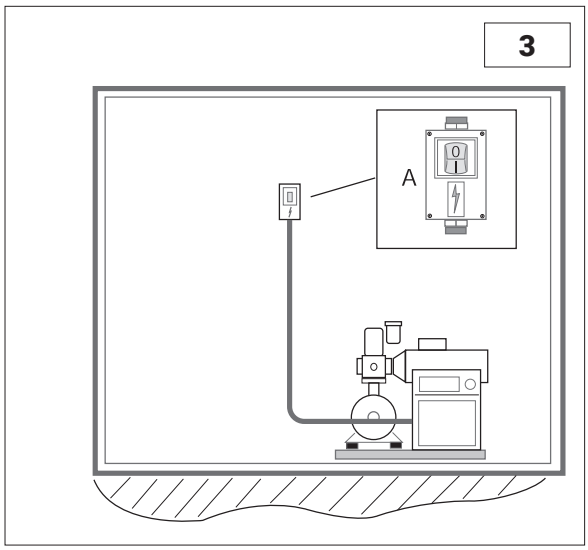
The room chosen for the installation of the compressor should meet the following requirements and comply with what is specified in the current safety and accident prevention regulations:
• **low percentage** of dust in the air,
• **proper room ventilation and size** that allow room temperature under 50°C. In the event of inadequate hot air discharge, fit the exhaust fans as high as possible.
Condensate should be collected either into a pit or a tank.
The dimensions of the spaces are indicative only but it is advisable to



follow them as closely as possible.
ELECTRICAL CONNECTION (fig.3)
• The mains cable should have a cross-section suitable for the machine power and should include no. 3 phase wires and no. 1 earth wire.

• **A fused or magnetothermal switch** must be installed near the point where the cables go into the machine, between the mains cable and the compressor control panel.
• The switch (A) should be easily reached by the operator. The cables should be of the approved type and installed with the following grade of protection: minimum IP44.

NOTE To determine the cables cross-section follow the sizing indications in compliance with the "VDE 0100, Part 430 and 523" Standard, star-delta starter, 30 °C room temperature and cable length lower than 50 meters.



If the compressor has been stopped for more than 30 days, it is needed to manually add some oil into the air-end, in order that air-end is lubricated at first start, as described in the "Screw compressors quick guide installation".
The non-compliance of this prescription could cause a seizing of the air-end. Contact your dealer for more details.

6. TECHNICAL DATA

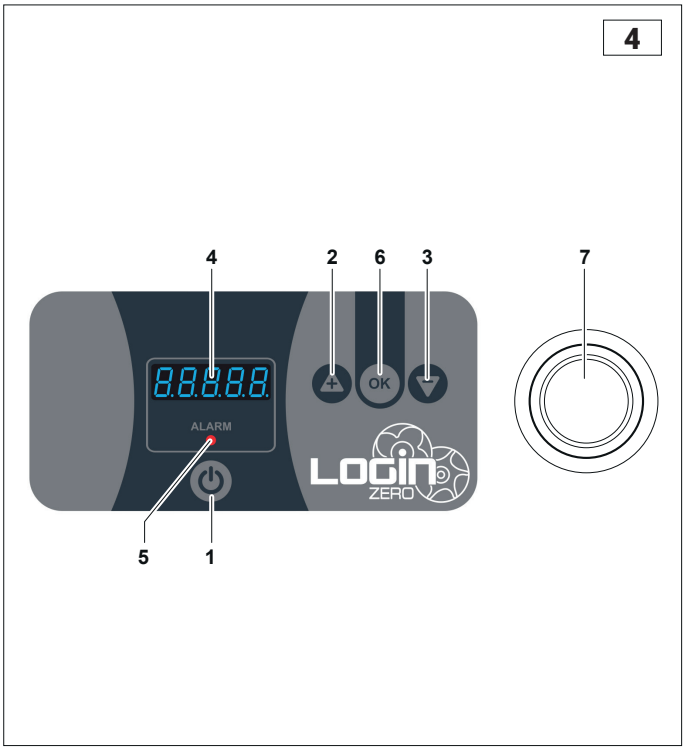
Technical characteristics	Type	2.2 M		2,2	
Operating pressure	bar g	8	10	8	10
Pumping unit	type	FS 14			
Air delivery (pursuant to ISO 1217 annex C)	l/min	292	261	292	261
Oil quantity	l	2,3			
Quantity of top up oil	l	0,3			
Max final air overtemperature	°C	3		3	
Removed heat	kJ/h	7524		7524	
Fan flow rate	m^3/h	600			
Oil residuals in air	mg/m^3	2 - 4			
Electric motor	type	90 MC/2		90 MC/2	
Rated power	kW	2,2		2,2	
Max input power from the mains including ventilation	kW	2,7	3,1	2,7	3,1
Electrical cabinet protection rating	IP	54			
Ambient temperature limit	°C	+2 - +45			
Sound pressure (according to Pneurop/Cagi PN2CPTC2)	dB(A)	65		65	
Electrical data					
Supply voltage	V/Ph/Hz	230/1~/50		400/3~/50	
Auxiliary voltage	V/Ph/Hz	24/1~/50			
Max input current including ventilation	A	12,2	14,1	4,5	5,2
„Electric motor protection rating Degree of insulation"	IP	55/F			
Service factor		1		1,15	
Protective devices					
Oil circuit max temperature	°C	110			
Oil circuit pre-alarm calibration	°C	105			
Motor electronic relay calibration	A	PTC		PTC	
Safety valve calibration	bar	14			
Dimensions and weight					
Length	mm	618 (765 with handle)			
Width	mm	465			
Height	mm	600			
Weight	kg	68		68	
Air outlet	G	1/2"			
Dimensions and weight + 90l tank					
Length	mm	750			
Width	mm	465			
Height	mm	1144			
Weight	kg	105		105	
Air outlet	G	1/2"			

7.1. CONTROLS AND SETTINGS

CONTROL PANEL

The version is equipped with an electronic controller which manages all compressor functions, fig. 4:

1. **START** key:
controls start up of the compressor.
2. **UP ARROW** key/**PLUS** key:
- **UP ARROW**: this scrolls the menu items up.
- **PLUS** key: this increases the value of the parameter during editing.
3. **DOWN ARROW** key/**MINUS** key:
- **DOWN ARROW**: this scrolls the menu items down.
- **MINUS** key: this decreases the value of the parameter during editing.
4. Display:
shows information.
5. Alarm warning lights:
They turn on in case of alarm.
6. **OK** key:
Allows access to the displayed menu.
This allows confirming the value during the parameter editing.
7. Emergency shutdown button:
Pressing this button causes the compressor to stop immediately.
To be used only and exclusively in the event of real need.



GENERAL OPERATING DESCRIPTION

The Compressor control sheet directly controls all loads and checks all probes and inputs to operate the screw compressor by means of start or stop cycles.

OPERATION

If there are no alarms upon start-up, the pressure is shown on the displays alternating with the compressor condition, press the + or – keys to change the display according to the Display table. When the keys are not used for 20 seconds, the display returns to the display no. 1.

Display table:

1.	Compressor condition alternated with pressure 1.5 seconds	
-	**on**	Compressor ON
-	**C on**	Compressor ON + active loading solenoid valve
-	**off**	Compressor OFF
-	**StaBy**	Compressor standby
-	**tIMe**	Compressor waits for the STAND-BY time
Pressure:		
-	**P.10.8**	for bar P10.8
-	**P.156**	for Psi P156
2.	Temperature:	
-	**090C**	for °C
-	**123F**	for °F
3.	**OL. - 0012**	OL. and the line hours flash
4.	**OC. - 00007**	OC. and the load hours flash
5.	**OM. - 01000**	OM. and the maintenance hours flash
6.	**Ci. - 00254**	Ci and the motor start cycles flash

7.2. CONTROLS AND SETTINGS

Start-up procedure:
Press the ON/OFF KEY to perform the compressor start cycle:

1) Waiting for start-up: the display shows TIME and waits for 20 seconds to elapse since the last motor shutdown.
2) Compressor start-up: the display shows ON and the motor starts.
3) Compressor loading phase: the display shows C ON and the solenoid valve relay is energized; this phase lasts until the pressure set by the "1 Offload pressure" parameter is reached.
4) Stand-by phase: "1 Offload pressure" is reached, the display shows STA.BY, the solenoid valve relay is de-energized and the motor stops.
   If in the meantime the pressure has fallen below the pressure set by the "2 Loading pressure" parameter, the cycle resumes from step 2); otherwise the compressor remains into stand-by.

Shut-down procedure:
Press the **ON/OFF** key to start the shutdown procedure. The loading solenoid valve is de-energized. The control unit enters shutdown and the display shows **OFF**.

PARAMETERS MENU:

Reading and programming parameters
With the compressor stopped, press the **OK** key for 3 seconds, the display shows **PASS**, press the **OK** key to access the user parameters.
After accessing the menu, the number of the parameter is shown flashing (e.g. **PAr.-01**), the + and – keys can be used to scroll the parameters, pressing **OK** displays the parameter value, press the + or – keys to edit and press **OK** to confirm, **MEM** will be displayed to confirm that the parameter is stored.
Each parameter has its maximum and minimum and a unit of measure as shown by the parameter table. Press the **ON/OFF** key to quit the parameters.

Table of parameters that can be edited

Parameter no.	Description	Default	min	max	Unit of measure
	User menu				
01	Offload pressure	10.0	0.5	16.0	Bar
02	Loading pressure	8.5	0.5	16.0	Bar
03	BAR/PSI pressure unit of measure	1	1	2	
04	Temperature unit of measure 1=°C or 2=°F	1	1	2	

USER MENU:

01 Offload pressure: Sets the pressure the compressor must stop at, the maximum value that can be set is defined by the "Maximum value to be set" parameter in the factory menu.

02 Loading pressure: Sets the residual pressure required to restart the compressor, the maximum value that can be set is locked to 0.5 bar less than the value set by the "Offload pressure" parameter.

03 Pre. unit of measure: Sets the pressure unit of measure.

04 Temp. unit of measure: Sets the temperature unit of measure.

8. ALARM MESSAGES

ALARMS AND MAINTENANCE

– During operation, alarms may occur, which are shown on the display and by means of the red ALARM LED.
– The ALARM LED remains active only if there are alarms.
– The alarms shown on the display can be reset if no longer active, by briefly pressing the OK key.

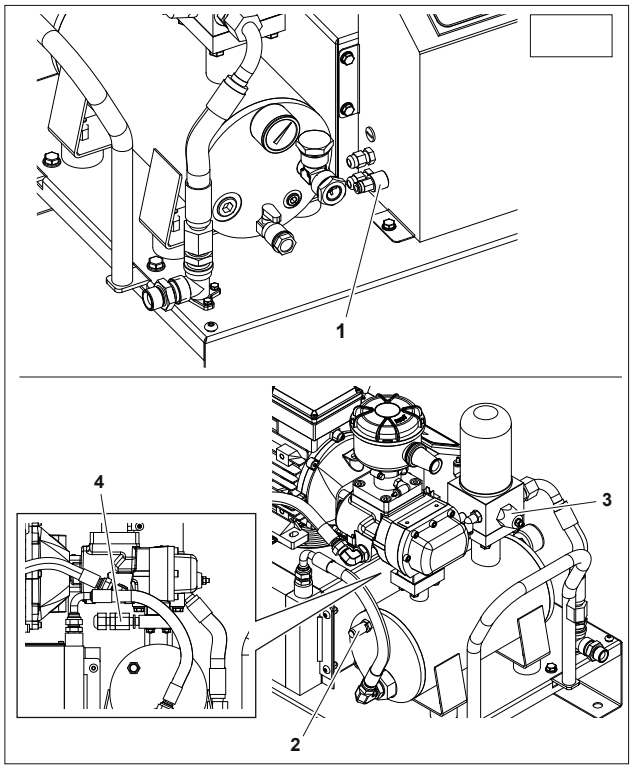
Alarm list:

	Alarms that stop the machine
ALL.00	Emergency input
ALL.01	Motor PTC
ALL.02	Fan thermal breaker
ALL.03	Maximum temperature
ALL.04	Minimum temperature
ALL.05	Temperature sensor faulty
ALL.06	Pressure sensor faulty
ALL.07	Wrong rotation direction or phase absent
ALL.08	Maximum pressure
	Alarms that do not stop the machine
ALL.10	Oil temperature pre-alarm
ALL.11	Maintenance

9. OPERATION

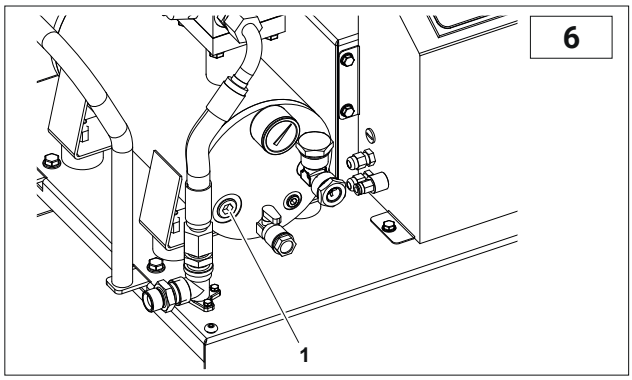
SAFETY AND CONTROL DEVICES (fig.5)

1) Pressure transducer:
regulates STOP and START pressure
2) Safety valve:
opens the air vent to the safety value.
3) Minimum pressure valve:
prevents leakage of compressed air if the pressure is below the calibration value of the valve
4) Maximum temperature probe:
shuts down motor when 110°C is exceeded



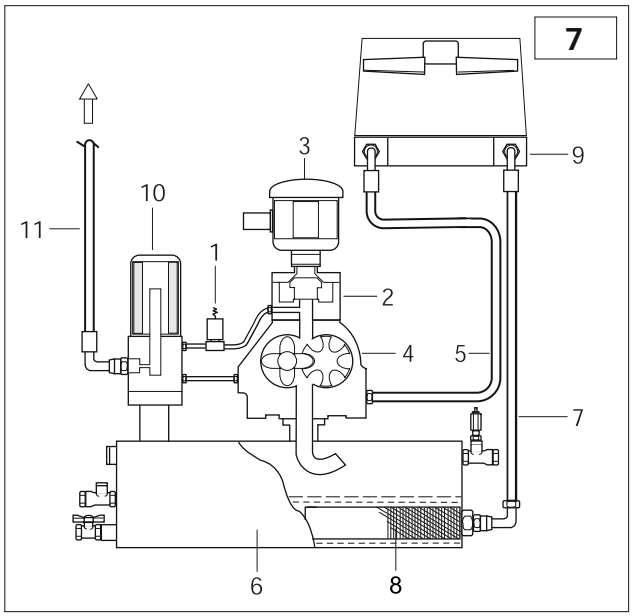
HEATER ELEMENT (OPTIONAL KIT) (fig.6)

Recommended on machines with non-continuous operating cycles.
The heater element immersed in the oil of the oil trap tank (Fig.6) keeps it hot and prevent excessive condensation.
When installed, the operation is automatically controlled by the electronic control unit. The heater element is powered only during the standby stage under specific conditions.



OPERATING CYCLE (fig.6)

1) At start up the motor starts directly; it reaches standard speed after 5-7 seconds.
2) The solenoid valve (1) receives current and closes.
The suction regulator (2) opens and takes in atmospheric air through the filter (3).
3) At this stage, the compressor runs at full speed and begins to compress the air in the tank (6).
4) The compressed air cannot come out from the minimum pressure valve set at 3÷4 bar.
5) The compressed air compresses the oil in the tank (6) and forces it to flow through the filter (8) and pipe (7) to the radiator (9).
6) If the oil temperature is below 75 °C the electric fan remains still.
7) If the oil temperature exceeds 75°C the ventilator starts operating and cooled oil returns to the compressor through pipes (5).
8) The oil reaches the compressor (4) mixing with the intake air creating an air/oil mixture which ensures the seal and the lubrication of the moving parts of the compressor.
9) The air/oil mixture returns to the tank (6) where the air is pre-separated and later a final separation of the oil takes place, through the oil separator filter (10), and finally it is conveyed to the distribution network.
10) Upon standby or shutdown, the motor stops, the solenoid valve (1) is no longer powered and opens, allowing the oil separator tank (6) to be depressurised.



10.1. MAINTENANCE

• Correct maintenance is crucial to achieve maximum efficiency of your compressor, and to lengthen its operating life.
• It is also important to comply with the maintenance intervals recommended, but remember that such intervals are suggested by the manufacturer in the event that the environmental conditions of use of the compressor are optimal (see "Installation" chapter).
• The maintenance intervals can therefore be reduced depending on the environmental conditions the compressor operates in.
• The oil is FSN Original Oil, use of a different oil does not guarantee perfect efficiency and compliance with the maintenance intervals.
• The maintenance operations described in the table below and on the following pages must be carried out by authorised personnel.

Maintenance table

Type of maintenance	Maintenance schedule	
	work hours	or at least
Drain condensate from air tank (if present)	50	weekly
Drain condensate from the oil separator tank	50	weekly
Oil check and top up if necessary	500	once a month
Check radiator for clogging and clean it	500	once a month
Replace air filter	after first 500/every 1000	once a year
Replace oil filter	after first 500/every 1000	once a year
Change oil	after first 500/every 1000	once a year
Change oil separator filter	4000	every two years
Replace drain one-way valve	4000	every two years
Overhaul intake valve	4000	
Overhaul minimum pressure valve	8000	
Replace solenoid valve	8000	
Replace hoses	8000	
Overhaul and/or replace screw unit	16000	
Refer to the motor manual and/or to the motor data plate for electric motor bearing maintenance		

To verify correct machine operation, perform the following checks **after the first 100 hours of work:**
1) Check the **oil level**: top up with the same type of oil if necessary.
2) Check for proper **screw tightening**: in particular the power electric connection screws.
3) Visually check that all **fittings seal properly**.
4) Check **room temperature**.

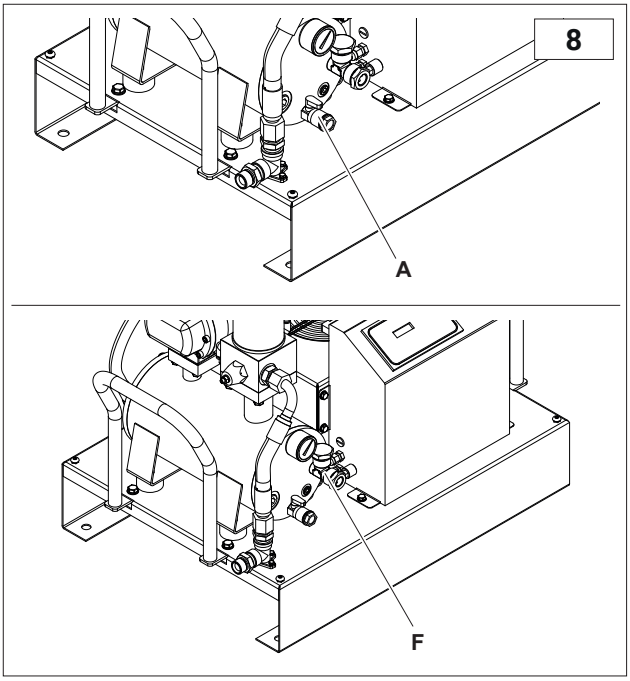
BEFORE MAINTAINING THE MACHINE ALWAYS PERFORM THE FOLLOWING:

√ Press the machine automatic stop button (do not use the emergency button).
√ Power the machine off by means of the external switch on the wall.
√ Close the line cock.
√ Make sure that no compressed air is inside the oil separator tank.
√ Remove cases and/or panels.

10.2. MAINTENANCE

CONDENSATION DRAIN

The oil/air mixture cooling is set at a higher temperature with respect to the dew point of the air (under standard operating conditions of the compressor). However, the condensate in the oil cannot be fully removed.
Drain condensation by opening cock **A** and then close it as soon as oil begins to flow out instead of water. Check the oil level and top up if necessary.
CONDENSATE IS A POLLUTING MIXTURE!
It must not be let into the sewers.

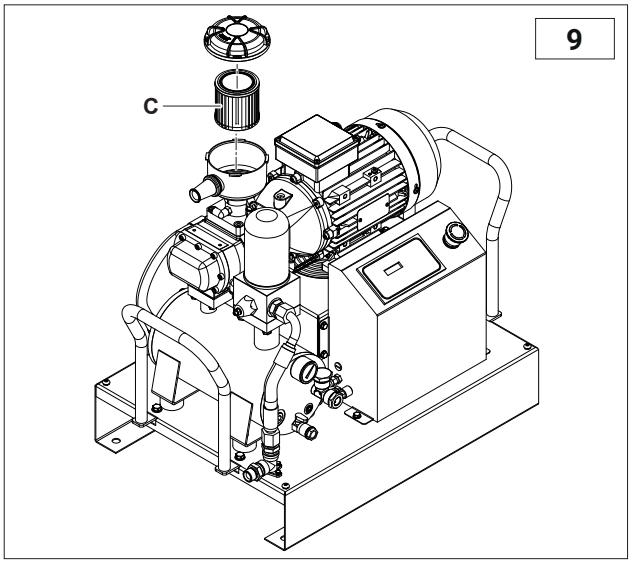


OIL CHECK AND TOP UP IF NECESSARY

Check the oil level by means of indicator on the left side of the oil separator tank; if the level is below the maximum, top up through the port **F**;
For the quantity of oil required to top up from the minimum to the maximum level, see the technical data table.

CLEAN / REPLACE AIR FILTER

Clean the air filter C from the inside towards the outside using compressed air. Check against the light for possible cuts: replace the filter if any. The filter cartridge and the cover should be assembled with care, so that no dust goes into the compression unit.



CLEANING THE RADIATOR

Clean the radiator in case of excessive over temperature and at least once a year.
Proceed as follows:
• Remove the radiator unit and spray (with spray gun + solvent) from the outside towards the inside;
• check for proper air flow through the radiator.

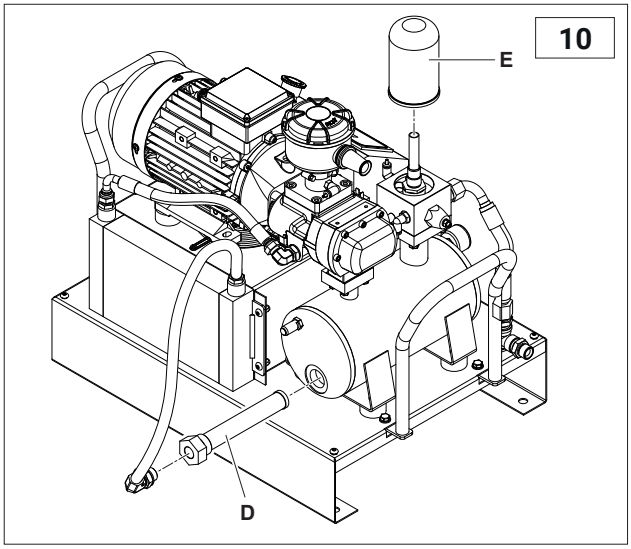
CHANGE OIL FILTER

Change oil filter D: this must occur when the tank is not under pressure and without oil.
Always apply some oil on the O ring seal of the filter, before refitting it manually.

CHANGE OIL SEPARATOR FILTER

The oil separator filter E cannot be cleaned, but must be replaced.
• Unscrew filter manually (or if necessary use an appropriate filter tool) turning it anticlockwise.
• After having slightly greased the oil separator filter seal and O-ring, fit the new filter by turning clockwise.

Warning: replacements must be performed at the same time of the oil change.



10.3. MAINTENANCE

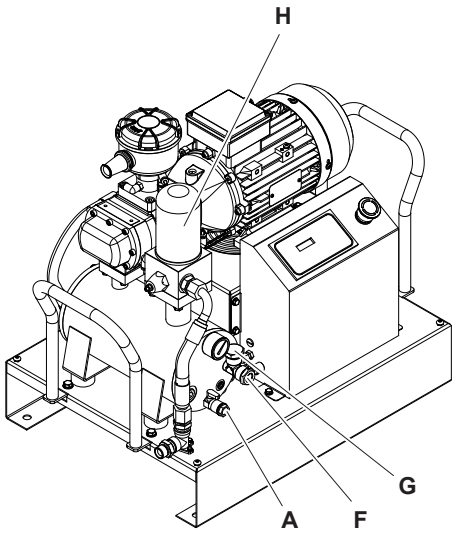
CHANGE OIL

When the compressor temperature is over 70°C, change the oil.
• Insert the supplied hose onto cock **A**.
• Remove the used oil separator filter **H**.
• Open cock **A** and allow oil to flow into a collection tray, until complete drainage. Close the cock and remove the pipe.
• Remove cap **G** and pour new oil from port **F** (quantity for complete refilling: see the technical data table).
• Close the cap **G**.
• Install the new oil separator filter **H**.
• Power the machine on.
• Start the machine and wait for 5 minutes, then stop the machine.
• Vent all air.
• Wait for 5 minutes and check the oil level; top up if necessary.
SPENT OIL CAN POLLUTE THE ENVIRONMENT! For its disposal, operate in accordance to current environmental protection laws.
• The oil used for the first time is: FSN Original Oil included in the following list:

Description	Type of oil
RotEnergyPlus 46cST	Synthetic lubricant ISO 46 for industrial use
RotEnergyFood 46cST	Synthetic lubricant ISO 46 for foodstuff use
RotarECOFLUID 46cST	Mineral lubricant ISO 46 for industrial use

A label attached to the compressor tank indicates the exact type of oil used before first installation. You are advised to use that type of oil in all the oil changes planned for scheduled maintenance (for the time intervals, refer to the maintenance table).

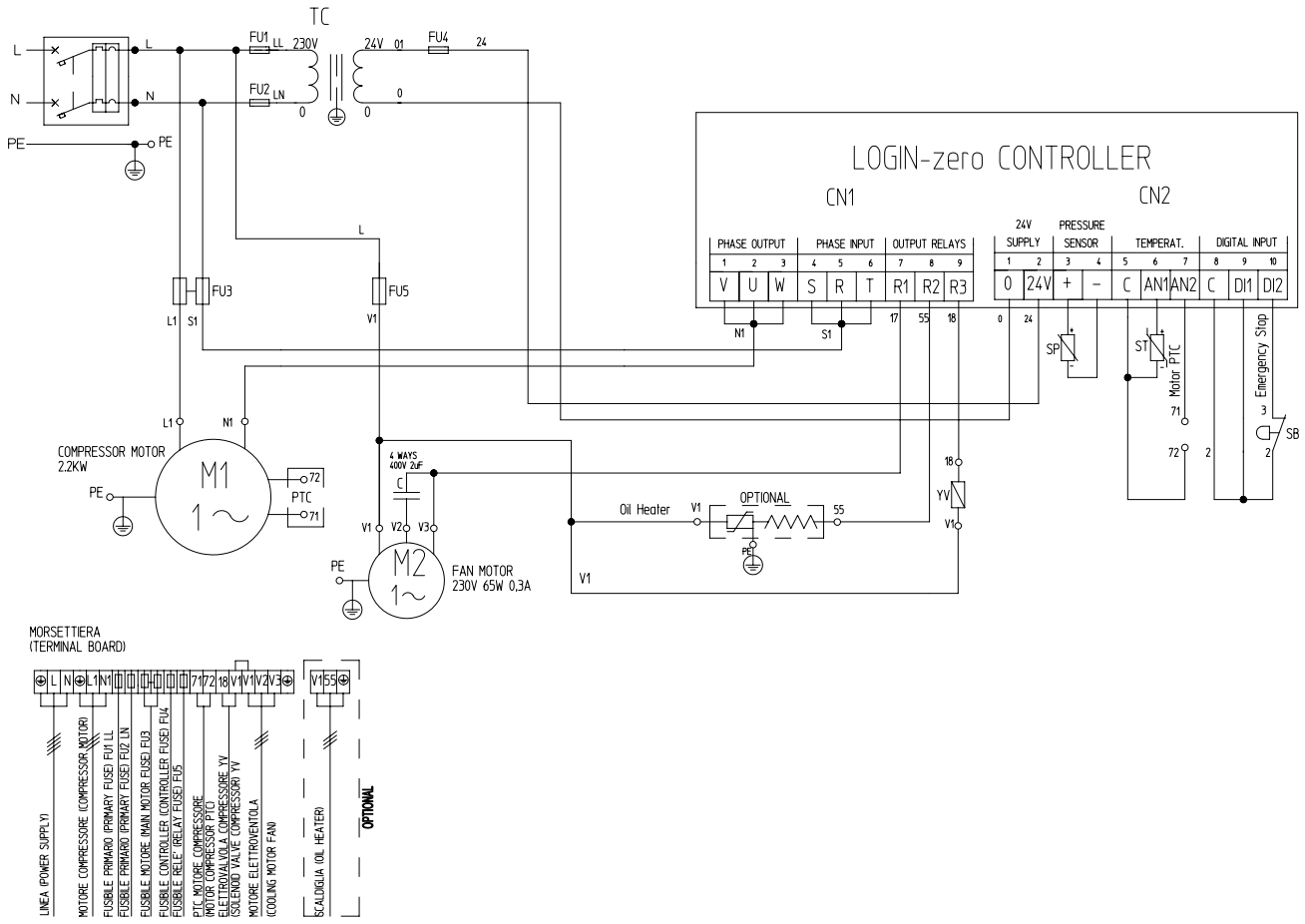
11



11. TROUBLESHOOTING

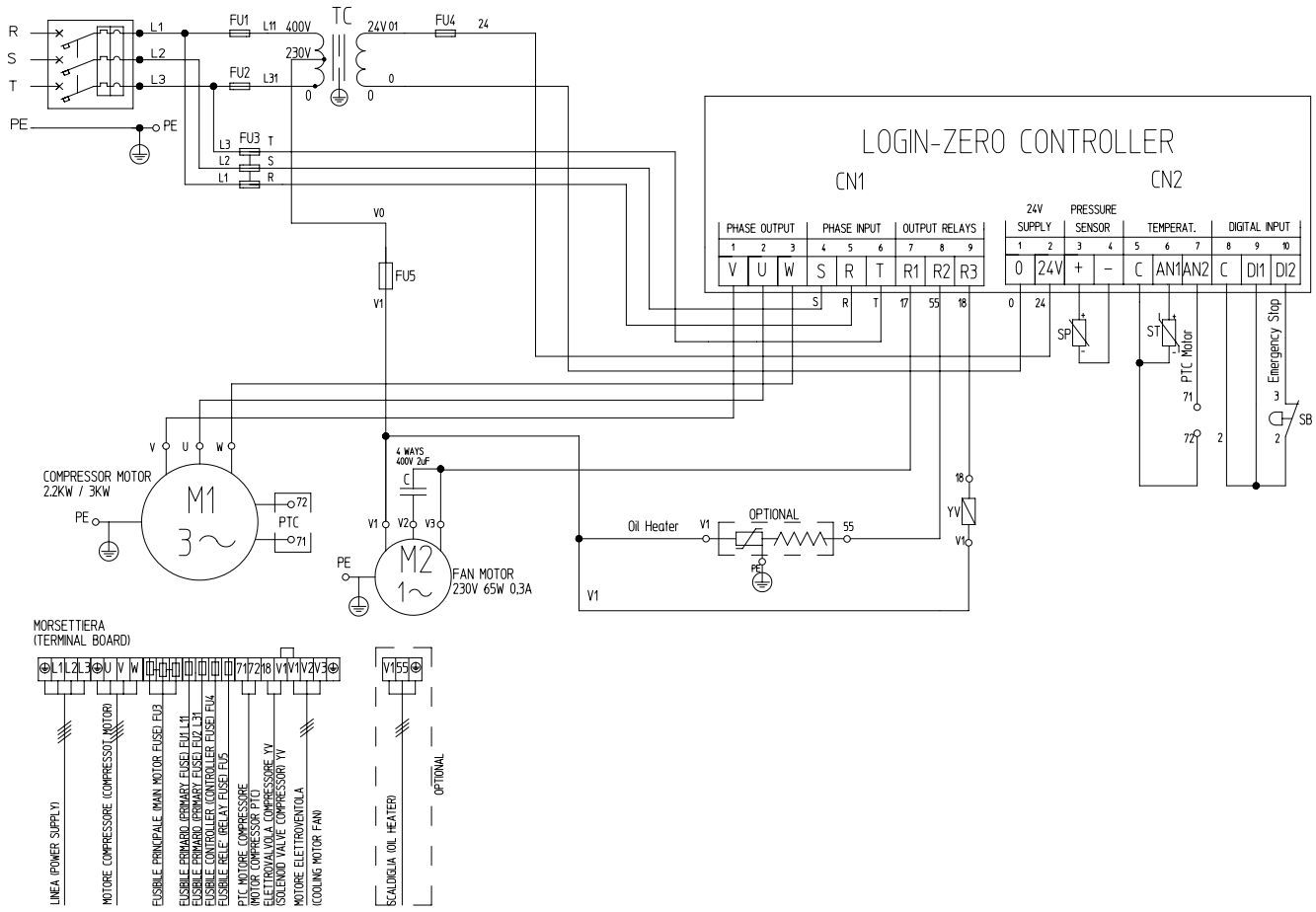
Issue	Cause	Solution
Motor stopped (thermal relay operation signal)	Voltage too low	Check voltage, press Reset and then restart.
	Overtemperature	Check motor absorption and relay setting. In case of regular absorption press Reset and restart.
	Electric fan motor overtemperature	Check electric fan motor and clixon condition
High oil consumption	Faulty drainage	Check oil drain hose and check valve
	Oil level too high	Check oil level and drain some, if necessary
	Oil separator filter broken	Replace oil separator filter
	Oil separator filter seal leaking	Replace oil separator nipple seals
Intake filter leaks oil	Suction regulator stays open	Check regulator and solenoid valve
Safety valve opening	Pressure too high	Check service pressure switch setting
	Suction regulator does not close at the end of the cycle	Check regulator and solenoid valve
	Oil separator filter clogged	Replace oil separator filter
Sensor for compressor temperature triggered	Room temperature too high	Increase ventilation
	Radiator clogged	Clean radiator with solvent
	Oil level too low	Top up oil
	Electric fan does not start	Check electric fan motor and clixon condition
Poor compressor performance	Air filter dirty or clogged	Clean or replace the filter
Compressor does not compress air while running	Regulator closed. It cannot open because it is dirty.	Remove intake filter and check for proper manual opening. Remove and clean, if necessary.
Compressor compresses air beyond max. pressure value	Regulator open. It cannot close because it is dirty.	Remove and clean regulator
Compressor does not start	Oil separator filter clogged	Replace oil separator filter
	Min. pressure valve does not close perfectly	Remove the valve, clean and replace seal, if necessary
Compressor hard to start	Voltage too low	Check mains voltage
	Pipes leaking	Tighten fittings

12.1. WIRING DIAGRAM - Single-phase Version



Ref.	Denomination	2.2KW
TC	Transformer (TRANSFORMER) 80VA 230V-0V Sec. 24V-0V	
ST	Temperature probe (TEMPERATURE PROBE)	
BP	Pressure sensor (PRESSURE SENSOR)	
SB	Emergency button (EMERGENCY BUTTON) + no.2 NC 230V 10A	
FU1-FU2	Transformer ceramic fuse (CERAMIC FUSES)	1A
FU3	2x Ceramic fuse 230V Motor (CERAMIC FUSE)	16A
FU4	Secondary fuse 24V (CERAMIC FUSE)	1A
FU5	Ceramic fuse 230V relay (CERAMIC FUSE)	2A

12.2. WIRING DIAGRAM - Three-phase Version



Ref.	Denomination	2.2KW	3KW
TC	Transformer (TRANSFORMER) 80VA 400V-230V-0V Sec. 24V-0V		
ST	Temperature probe (TEMPERATURE PROBE)		
BP	Pressure sensor (PRESSURE SENSOR)		
SB	Emergency button (EMERGENCY BUTTON) + no.2 NC 230V 10A		
FU1-FU2	Transformer ceramic fuse (CERAMIC FUSES)	1A	1A
FU3	3x Ceramic fuse 400V Motor (CERAMIC FUSE)	10A	12A
FU4	Secondary fuse 24V (CERAMIC FUSE)	1A	1A
FU5	Ceramic fuse 230V relay (CERAMIC FUSE)	2A	2A