GB BARBERI
AEROSPACE • SPECIAL VEHICLES

A/C RECHARGE STATION AIR-NEX

P/N GB983-970-500

TECHNICAL MANUAL – SPARE PARTS LIST

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LIST OF EFFECTIVE PAGES

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NOTE:
THE PORTION OF THE TEXT AFFECTED BY THE CHANGE IS INDICATED BY A VERTICAL LINE IN OUTER MARGIN OF THE PAGE.

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TOTAL NUMBER OF PAGES IN THIS PUBBLICATION IS **64** CONSISTING IN THE FOLLOW:

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Is an integral part of this manual :
electrical system schematic diagram GB679 1310 000

Upon receipt of the second and subsequent change to this manual, personnel responsible for maintaining this publication in current status will ascertain that all previous changes have been received and incorporated. Action should be taken promptly if the publication is incomplete

(*) Zero in this column indicates an original page.

INDEX OF CHANGES

0	20/10/2020	Basic Issue	D. Tagliaferro	M. De Fino	N. Barberi
REV.	**DATE:**	**DESCRIPTION**			
CHANGE			***PREPARATED BY/ SIGNATURE***	***APPROVED BY/ SIGNATURE***	***AUTORIZED BY/ SIGNATURE***

CH. 1 INDEX

1.1 INDEX OF CONTENT

1.2 INDEX OF FIGURES

1.3 INDEX OF TABLES

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CH. 2 GENERAL INSTRUCTIONS

2.1 GENERAL NOTES

Manufacturer and its staff (authors of the manual) are not liable for any consequences of improper use of the manual or equipment, and guarantees that the information given in the manual has been thoroughly verified.
The product can be subject to changes and improvements. We reserves the right to change without notice the information contained in the manual.

2.2 GENERAL INSTRUCTIONS

Pressure equipment undergoes checks before commissioning and periodical checks during operation in compliance with rules and law provisions in force in the country where the tool is used.
The operator is responsible for operating the equipment in conformity with local legislation.
The equipment is designed for recovering and recycling R1234yf/R134a refrigerant fluid from aircraft A/C plant.

The switch between the two gas types, from R134a to R1234yf, can only be performed by a technician of an Authorised GB Barberi s.r.l. / MAHLE Service Centre, in accordance with the practice described in Chapter 13 of this manual.
This equipment is intended solely for use by **professionally trained operators** familiar with the basics of refrigeration, refrigeration systems, refrigerants and the hazards associated with pressurised equipment.
A careful reading of the present manual by the owners, the users and the operators is required for a correct and safe use of the tool.

2.3 MANUFACTURER IDENTIFICATION

The AIR-NEX 9320 equipment is manufactured by:

GB Barberi s.r.l - Via Rosselli, 30 - 21018 Sesto Calende (Italy)

Tel. +39 0331 923418,Fax +39 0331 920692, **info**@gbarberi.com**,** **www.gbarberi.com**

By using circuits and components patented by: MAHLE Aftermarket Italy Spa

2.4 ENVIROMENTAL PRECAUTIONS

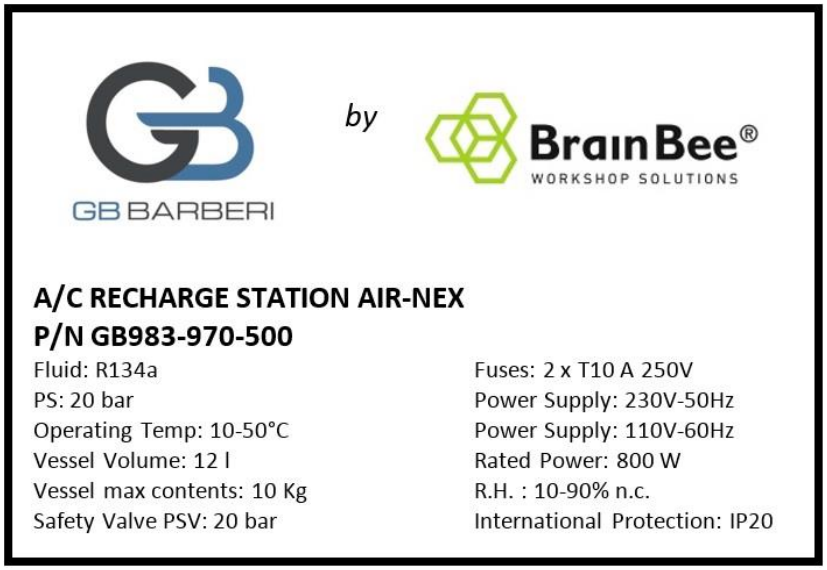
Any service operation with the equipment must be carried out being careful not to disperse fluorinated gases (R134a) into the environment, in order to prevent the greenhouse effect and the subsequent global warming of the planet. The release of refrigerant gas R134a into the atmosphere is forbidden by laws that were enacted within the framework of the Kyoto protocol. For information only, we will mention in particular, for the European Union, REGULATION (EU) No 517/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006. The waste coming from the service activities must be placed in collection centres foreseen by the enforced laws, they must not be dispersed in the environment and they must not be disposed of with urban waste.

2.5 MARKING

The AIR-NEX 9320 equipment has been manufactured in compliance with the Community Directives listed in the Declaration of Conformity supplied with the pressure equipment.
Pressure equipment shall undergo checks before commissioning and periodical checks during operation, in compliance with the rules and law provisions in force in the country where the equipment is used.
The characteristic data of the equipment are indicated on the specific data plate applied behind the equipment.

It is forbidden to remove, damage or tamper the equipment "data plate"

NAMEPLATE



CE MARKING: The CE declaration is enclosed to the tool. Store correctly and provide on request.

CH. 3 SAFETY CONDITIONS

3.1 PERSONAL SAFETY INFORMATIONS

3.1.1 Definitions

DANGEROUS AREA:
Any area within or close to the equipment implying risk for the safety and health of exposed persons.

EXPOSED PERSON:
Any person completely or partially standing in a dangerous area.

OPERATOR:
The person/s charged with operating the machine for its intended purpose.

CLASSIFICATION OF OPERATORS
The operator can be classified according to two main categories, which, in some cases, refer to one single person:

- The operator charged with the equipment operation has the duty to:
  - Starting up and monitoring the machine's automatic cycle;
  - Carry out simple setting operations;
  - Remove the causes of equipment stop not implying breakings of members but simple operation anomalies.

- Maintenance technician a technician trained by an authorised MAHLE or **GB Barberi s.r.l.**. service centre, capable of working on the machine's mechanical and electrical components with its guards open to make adjustments and to service and repair it.

USER
Body or person legally responsible for the equipment.

3.1.2 Personnel safety informations

The **GB Barberi s.r.l.** AIR-NEX 9320 service station is particularly simple and reliable due to its adjustments and functions. When used correctly it presents no hazard for the operator, on condition that he observes the following general safety instructions and that the service station is regularly serviced (incorrect maintenance/use compromise the equipment's safety).

Before operating the service station for the first time, read these instructions carefully. If any part of the instructions is unclear, contact your reseller or the **GB Barberi s.r.l.**
This service station may be used by only one equipment operator, familiar with A/C and refrigeration systems and the hazards associated with refrigerants and high pressure equipment.

WORKPLACE: The equipment must be operated in the open or in a well-ventilated location (at least 1 air change per hour). The workshop has to be equipped with ventilation systems able to ensure the air change in every environment area or to carry out a periodical ventilation by opening the environment areas. Use the tool away from heat sources or hot surfaces. The tool has not to be used in explosion risk environments (potentially explosive atmospheres). Before using it, put the tool on a levelled plane and secure position, blocking it with suitable wheel stops.
Do not expose the tool to direct sunrays, heat sources, rain and jets of water. Do not smoke close to the equipment and during operations (keep at a distance of at least 1 m).
The work area must be monitored by the operator while the equipment is operating.

ATTENTION: the R134a and/or R1234yf refrigerant fumes/gases are heavier than air and can gather on the floor or inside cavities/holes and cause choke by reducing the oxygen available for breathing.
At high temperatures, the refrigerant breaks down releasing toxic and aggressive substances, harmful for the operator and the environment. Avoid inhaling the system coolants and oils. The exposure can irritate eyes and the respiratory tract.

ELECTRICAL CONNECTION: Connect the power cord solely to a mains supply which conforms with the ratings on the machine's nameplate (mounted behind the equipment). Make sure the mains socket is grounded.

Never use the service station with a defective power cord or a different one from that supplied with the machine; if damaged, immediately have it replaced with an original spare or equivalent by a **GB Barberi s.r.l.**. service centre. Before opening the service station, extract completely the supply cable from the plug, or you can get an electric shock.

Do not tamper with or bypass the safety equipment and settings.
Do not leave the machine powered up when not in use; shut off the power supply before leaving the equipment unused for a long time. Do not forget that the tool (pressure tool) must always be protected.

REFRIGERANTS AND LUBRICANTS - INDIVIDUAL SAFETY EQUIPMENT AND PRECAUTIONS: The refrigerants and the pressure vessels have to be handled with care, otherwise there will be possible health risks.

The operator must wear safety glasses, gloves and protective clothing suitable to the work. The contact with the refrigerant can cause blindness (eyes) and other physical damages (freezing) to the operator. Avoid contact with the skin; the refrigerant's low boiling point (approx. –26 °C for R134a and approx. -30 °C for R1234yf) can cause freezing burns.

Further information about safety can be obtained from the safety sheets of lubricant and refrigerant producers.

Do not inhale refrigerant or oil vapour. Keep away from the vent valves and ventilation coupling, especially when non-condensable gas is being vented.

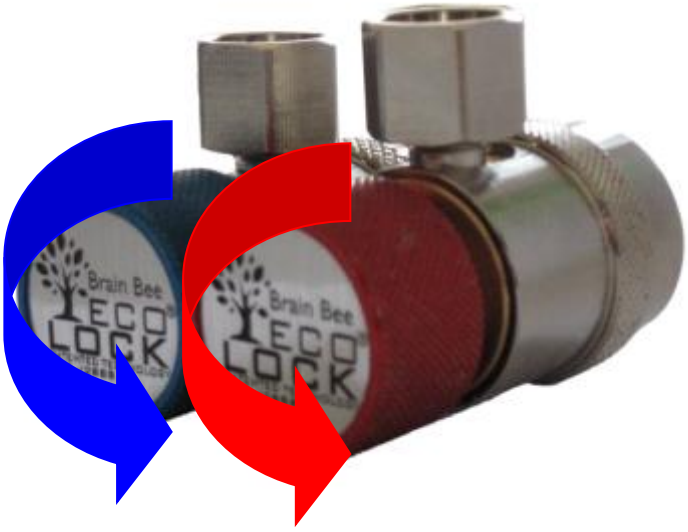
Never direct the quick couplings (taps) towards your face or other persons or animals.

OTHER PROHIBITIONS AND USE LIMITATIONS: Only use pure R134a or R1234yf refrigerants, refrain from using on machines containing other types of refrigerants or mixtures of the two refrigerants or other gases. The mixture with other types of refrigerant produces serious damages to the conditioning and cooling systems. **Mixed gases have to be disposed of according to the current regulations.** Never use AIR-NEX 9320 equipment with systems containing compressed air, mixtures of R134a or R1234yf with air or oxygen may be potentially flammable.
Do not modify the calibration of safety devices. Do not remove the seals of the safety valves and of the control systems. Do not use external tanks or other storage containers that are not homologated or without safety valves.
Make sure the equipment's aeration and ventilation ports are not obstructed or covered while the equipment is operating.

HOSE CONNECTIONS: Hoses may contain pressurised refrigerant. Before changing the service couplers, check the respective pressures in the hoses (pressure gauge).
Before connection to an aircraft A/C system, to an external tank/vessel, check that the quick couplers are closed (unscrewed HP and LP valves).

Scrupulously follow the instructions on the equipment's display.

QUICK COUPLERS CLOSING/OPENING:



Closing (detach from the aircraft):
counter-clockwise

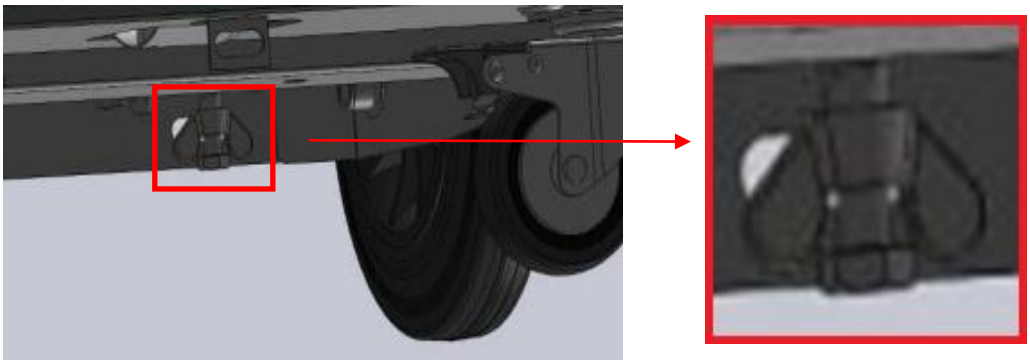
Opening (connect to the aircraft):
clockwise

MAINTENANCE/GENERAL CLEANING: The equipment has to be serviced at the intervals indicated by the equipment itself.

The service station maintenance has to be performed according to the procedures described in this manual and to the current safety regulations.
Use only **GB Barberi s.r.l.** original parts.
When the equipment requires the dryer filter and the vacuum pump oil change, you have to be careful in the replacement.
A/C service station maintenance can be carried out exclusively by a trained operator or by a service man of a **GB Barberi s.r.l. / MAHLE** certified seller.
Do not use chemical agents for the service station cleaning as they could attack the material or the surface.

STOP FOR LONG PERIOD: Store the equipment in a safe place, disconnected from the mains, away from excessive temperatures, humidity and the risk of damaging impact.
Contact the Technical Service to run a safety shutdown of the equipment, and if scrapping the unit, to drain and recycle the R134a or R1234yf gas as required by local legislation.
To resume operation, repeat the installation (there is no need to register the unit anew) and run the commissioning trials and regular operational checks as required by local legislation.

TRANSPORT: If the tool has to be transported, you have to screw the safety screw for the tool scale fixation. The safety device for transport is on the back of the tool and it consists of a bolt with wing-nut. Commissioning: Slacken the wing-nut, unscrew the screw for about 4 mm and fix it again with the wing-nut. Transport: slacken the wing-nut, screw the screw **by hand** and then fix it again with the wing-nut. For the transport of the R134a or R1234yf refrigerant, specific regulations are in force in every country. Therefore, refer to your reseller or your authorised service centre for information.



3.2 IMPORTANT INFORMATION ON SERVICE EQUIPMENT SAFETY

When using the tool, the following operations are not allowed as they might cause, under certain circumstances, danger for persons and cause permanent damage to the tool itself.

- Do not remove or make unreadable labels, signs and/or dangers signs placed on the tool and in the area nearby.

- Do not disable the unit's safety equipment.

- Use only fuses identical to the originals as specified on the nameplate; do not tamper with or attempt to repair the fuses.
If the power supply is known or can be expected to vary beyond the limits specified for the service equipment, immediately disconnect it.

- The electrical system to which the service equipment is connected must be configured as provided by local legislation.

- Only operators or qualified staff instructed or certified for the tool maintenance can open the tool. The equipment contains parts which can cause electrocution: shut off power to the equipment before servicing/repairing it.

3.3 SAFETY DEVICES

The A/C station is equipped with the following safety devices:

	**SAFETY PRESSURE SWITCH**: It stops the compressor in case of excessive pressure. **SAFETY VALVE:** The safety valve opens when the pressure inside the system reaches a level higher than the fixed limits. **SWITCH:** Switches the equipment off by interrupting the power supply. It is advisable to pull the power cord plug out of the mains socket in any case before starting maintenance work.
	**ANY TAMPERING WITH THE ABOVE-MENTIONED SAFETY DEVICES IS PROHIBITED.**

Failure to observe any of the above safety instructions voids the equipment's warranty.

CH. 4 LAYOUT OF THE MANUAL

4.1 USE OF THE MANUAL

🕮	**This manual is an integral part of the equipment and must be kept in the equipment's immediate vicinity by the purchaser**

- If the equipment is sold on to a new user, this manual must accompany it.
- The content of this manual has been drawn up in compliance with the guide lines of the UNI standard 10893:2000.
- Diffusion, modification or use of this manual for own aims is forbidden.
- The manual uses symbols which call the reader's attention to specific points to facilitate its use.
- It includes all technical, operating, shutdown, maintenance, spare parts and safety information.
- In case of doubts on the correct interpretation of the instructions, please contact our technical service to obtain the required clarifications.

	Operations which are potentially hazardous for the operator are highlighted with this symbol. Such operations can cause serious injury.
	Operations requiring special attention are highlighted with this symbol. Such operations shall be carried out correctly to avoid causing damage to objects or to the surrounding environment. This symbol also highlights information to which special attention must be paid.
🕮	Operations which require careful reading of the manual's instructions are highlighted with this symbol.

4.2 SYMBOLS

This paragraph describes the safety symbols which may be posted on the service equipment's housing.

4.2.1 Safety

	ALTERNATING CURRENT
	SAFETY GROUNDING
	CONSULT THE INSTRUCTIONS MANUAL
	CAUTION! ELECTROCUTION HAZARD
	CAUTION !: DO NOT REMOVE THE COVER (maintenance technicians only)
	SEE THE USER MANUAL USE PROTECTIVE GLOVES WEAR PROTECTIVE GOGGLES

4.3 GLOSSARY

To facilitate the comprehension of the manual, we list below the most important technical terms used in it.

Refrigerant: Refrigerant fluid used in advanced motor vehicle A/C systems.
The following refrigerant fluids may be used:
- **R-1234yf** CH2CFCF3 2,3,3,3-Tetrafluoropropene.
- **R-134a** C2H2F4 - 1,1,1,2-Tetrafluoroethane

A/C system: Aircraft air conditioning system.

Equipment: AIR-NEX 9320 service station for recovering, recycling, draining and charging the A/C system.

External tank: Refrigerant bottle used to fill the internal tank.

Internal tank: container for the refrigerant storage.

Phase: Performance of a single function.

Cycle: Sequence of steps.

Recovery: Extraction of refrigerant from the vehicle.

Recycling: Cleaning of the refrigerant, includes: separating out oils, removal of non-condensable gas and single/multiple pass through filters to reduce the humidity, acidity and particulate content of the fluid.

Disposal: disposal of refrigerant for storage followed by destruction/scrapping by an authorised waste management centre.

Vacuum cycle: Draining out of an aircraft A/C system and separation out of condensed matter and humidity, using only the vacuum pump.

Oil injection: Injection of oil into an A/C system to ensure the correct charge as specified by the aircraft manufacturer.

Charge: filling of refrigerant into the A/C system in the amount specified by the manufacturer**.**

System flushing: Cleaning phase for the removal of possible polluting substances from the A/C system or parts of it.

Non condensable gases: Gas stored in the gaseous phase, including air and nitrogen.

4.4 GUIDELINES FOR THE HANDLING OF REFRIGERANT

4.4.1 Precautions for refrigerant storage

The refrigerant removed from the A/C system must be handled with care to prevent or minimise the risk of mixing with other refrigerants.
This machine is suitable for treating R134a or R1234yf refrigerants, individually (not simultaneously).
The external canisters used to store the refrigerants must be clearly marked to prevent mixing different refrigerants.
Vessels shall be free from oil or other contaminants and clearly marked so as to identify the refrigerant contained.

ATTENTION: when handling, using and storing **R-134a** or **R-1234yf** gas and dealing with emergency situations, **MAKE SURE** to refer to the product's safety sheet.
OBTAIN THE SAFETY SHEET FROM YOUR REFRIGERANT SUPPLIER AND FOLLOW ITS INSTRUCTIONS. REFRIGERANT R1234YF IS DEFINED AS FLAMMABLE REFRIGERANT

4.4.2 Conditions of refrigerant and system

The condition of the refrigerant is critical to the operation of the aircraft A/C system. Running repairs properly following failure of damage safeguards the quality of the refrigerant itself (particulates, acids and water).

4.4.3 Recycling capacity

The service equipment's filtering systems must be replaced regularly (see maintenance messages) to ensure effective recycling.

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CH. 5 GENERAL DESCRIPTION

Thanks to the "Hybrid function" system, which allows the pipes of the station to be cleaned of any oil residue, it is possible to use the station for recharging aircraft A / C systems that involve the use of different types of oil.
The advanced technology used for the design, production and implementation of the innovative design, makes ***AIR-NEX 9320*** an extremely innovative, simple, versatile and reliable device in carrying out all operations.
The AIR-NEX 9320 station allows you to implement the following functions:

- Refrigerant recovery and recharging.
- Vacuum generation.
- Flushing.

5.1 AREA OF APPLICATION

The A / C service station is suitable for aircraft with A / C systems operating with R134a or R1234yf refrigerant and can be used for recharging aircraft systems that require the use of the following types of lubricating oil:

- PAG SP20
- PAG 46
- PAG 150
- PAG 244
- POE 46
- POE 68

5.2 INCLUDED ACCESORIES

The A / C service station is equipped with the following components:

- Service hose (high pressure)
- Service hose (low pressure)
- Quick-release coupling (high pressure)
- Quick-release coupling (low pressure)
- New oil bottles
- Used oil bottle
- Adapter for external bottle connection
- Funnel

5.3 DESCRIPTION OF THE UNIT

Fig. 5.1: Front view – left side

1 Rear handle
2 Tool tray
3 Status light
4 Low pressure gauge
5 High pressure gauge
6 Front cover
7 Locking caster
8 Rear wheel
9 New & used oil bottles
10 Printer
11 Touch screen

Fig. 5.2: Rear view

1 Fan
2 Vents
3 Power cord connector and power switch
4 HP & LP quick couplers and hoses

Fig. 5.3: Front view – detail

1 High-pressure gauge
2 Low-pressure gauge
3 Display with Touch screen and USB port

The pressure gauges (Fig. 5.3, Position 1 and 2) on the control panel are used to monitor the pressure during the individual service phases of the air conditioning system of the aircraft. The status of the various phases during maintenance is displayed on the touch screen (Fig. 5.3, Position 3). Using the touch screen (Fig. 5.3, Position 3) it is possible to select the menus and related items. It is possible to insert a type A USB key on the frame of the touch screen (Fig. 5.3, Position 3).

	**DO NOT USE THE UNIT UNLESS THE CHARGING HOSES (HP – LP) ARE CORRECTLY CONNECTED**

5.4 USER INTERFACE

All settings, controls and service functions are available on the touch screen display. It also displays the service equipment's status, the progress of A/C system service and any alarms and warning/error messages.
The touch screen is the basic operator interface and can be operated with the fingers.
When a button is pressed, a beep sounds.
The following icons are available on the display:

Icon	Description
	Device connected via WiFi
--- kg	The residual refrigerant weight (in kg and with visual bar)
	To enable/disable the bar by vertically swiping your finger from top to bottom
	Remote connection "RESOLVE" active
	Icon to send email via WiFi
	Icon to print report via the unit printer
	Icon to print via WiFi on a network printer
1	Document in the print queue
Start	Icon to start cycle
0 g	Recovered refrigerant amount
970 g	Amount of refrigerant to be injected
0 g	Recovered oil amount
10 g	Amount of oil to be injected
04':00"	Vacuum time

Icon	Description
CHECK 04':00"	Vacuum test time
	Function or cycle disabled
	Function or cycle enabled
	Icon to update list
	low light intensity
	high light intensity

To select a function in the menu press the text name of the function, the selection occurs when the finger is released.

If there are functions that need more space on the screen page, for example: the maintenance list, to display the different entries, it is necessary to horizontally swipe on the display with your finger. Lift the finger when you are on the desired position.
If you need to enter free text or identify a set of data, a keypad automatically appears (for example, for entering workshop data or at the end of the service cycle).

5.4.1 Main menu

The Main menu of the graphical user interface allows to select the following functions:

- OneClick
- Cycles
- Additional functions
- Maintenance
- Set up
- Secured service (not available for user; reserved only for customer service personnel)

Each function will be described in the next chapters.

5.5 ECO LOCK® QUICK COUPLERS

ECO LOCK® is the INTELLIGENT COUPLER, Brain Bee patented, that with the suitable automated procedure in the software enables to:

1. reduce the non condensable gas formation inside the vessel ;
2. avoid the refrigerant dispersion in the air during the disconnection (puff effect);
3. check possible SCHRADER valve leaks before disconnection.

CH. 6 TECHNICAL FEATURES

Vessels for R134a or R1234yf fluids	
R134a or R1234yf vessel capacity	12 l
Maximum operating pressure (PS)	20 bar
PED category (Dir.2014/68/EU)	III
Measurement weight of gas content	Weight scale
Safety valve	
Type	AIRTEK - VS14NPT20HNBRPED4 20bar R 1/4 NPT
Calibration pressure	20 bar
PED category (Dir.2014/68/EU)	IV
Containers for oil	
Recovered oil container	250 ml
New oil recovered	250 ml
Pneumatic circuit	
Vacuum pump flow rate	50 l/min
Vacuum level	0,02 mbar
Vacuum pump oil life	60h – extensible to max 1000 h with LONG LIFE PUMP procedure
Refrigerant recovery compressor cubic capacity	14 cc
Dryer filter	Every 100Kg of refrigerant recovered
Non condensable gas discharge	Automatic, with solenoid valve
HP and LP taps	Automatic
Safety pressure switch	
Type	13/18bar 1/4SAE
Trip pressure	18 bar
PED category (Dir.2014/68/EU)	IV
Pneumatic fittings	
Net length of external HP ed LP hoses	4,5 m
HP and LP pressure gauges	Analog 80 mm, pulse-free, 1.0 class
User interface	
Display	Touch screen 7” TFT colours
Keypad	Touch screen
Software updating	Via WiFi
Printer	via Nexusprint software or via thermal printer
Functions and features	
Recovered oil measurement	Automatic weighing, 1 g res., 5 g acc.
New oil automatic charge	With automatic scale, 1 g res., 5g acc.
Hybrid function	Function that allows you to change the type of oil
Flushing	Flushing available with external accessory
Sound level	<70 dB (A)
Battery type for internal Real time clock	Lithium CR-2032 3V 180mAh 3g.
Non-adhesive silicone heating band complete with hooks and springs	
LxH [mm]	580x65
Power	220 W

Overall dimensions	
WxLxH [mm]	650x850x1100
Loadless weight	110 kg
Power supply	
Frequency	50 Hz – 60 Hz
Voltage	230 V ~ +/- 10% - 50 Hz 110 V ~ - 60 Hz (SEE NOTE BELOW)
Power	800 W
Environmental conditions	
Operating temperature	10-50°C
Humidity	10-90% R.H. (non condensing)
Ambient pressure	75 kPa ÷ 106 kPa

ATTENTION !

THE STATION IS EQUIPPED WITH AN AUTOMATIC VOLTAGE DETECTION SYSTEM.

THE STATION CAN WORK WITH ALL THE VOLTAGE AND FREQUENCY USED IN THE WORLD

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CH. 7 INSTALLATION

7.1 EQUIPMENT INSTALLATION

7.1.1 Unpacking

ATTENTION: Risk of personal injury! Incorrect handling could cause equipment to overturn.

	RISK OF OVERTURNING

The manufacturer disclaims all responsibility for damage to objects and/or persons resulting from the equipment being wrongly removed from the pallet, or from the operation being made by unsuitable personnel, with improper means/protections and without complying with the existing laws on manual handling of loads and with the operations described in this manual.

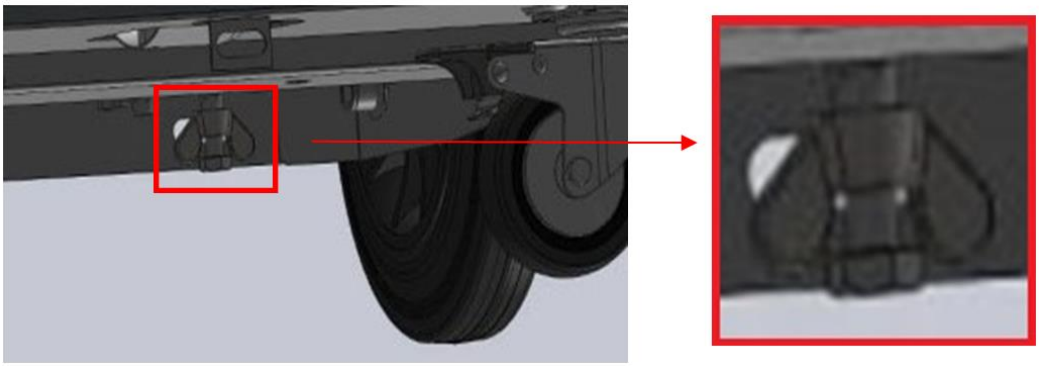
- Remove the front and top covers from the wood box.
- Remove the locks and make sure that the brakes of the front wheels are disengaged
- Remove the equipment from the pallet (more operators are required). To remove the equipment, it can be lifted using a special lifting strap to be inserted into the rear handle (image below).

	RISK OF CRUSHING

Keep the wooden box and scratch protection film for use when returning the unit. The unit rolls on wheels; the two smaller wheels can be locked.
.

AIR-NEX 9320 is supplied with the accumulation tank empty. This prevents problems in shipping the unit.

REFRIGERANT SCALE SCREW RELEASE



The tool is transported, with the scale blocked by a locking screw to avoid the load cell damage. The scale locking screw is placed on the tool bottom (see the box shown above) and is formed by a bolt with wing-nut. For commissioning, slacken the wing-nut, unscrew the screw by 4 mm from the fixing ring nut and fix the wing-nut again.

CH. 8 COMMISSIONING

8.1 CONNECTIONS

The unit has to be positioned on a horizontal surface to ensure the correct operation.
The unit has to be connected to the electric mains following instructions on the identification plate of the unit applied next to the main switch, mainly as to applicable *voltage and power*.
.

8.1.1 Positioning and connections

	**HANDLING:** During handling, the minimum devices required for correct handling shall be ensured, as provided for by accident prevention provisions**.**
	**POSITIONING**: Place the unit in a stable place. The location must be well ventilated, with a good rate of change of air. The unit must be located at least 10 cm from any potential obstacles to its internal ventilation. Keep the unit away from rain and excessive humidity as they can irreparably damage it. In addition, the equipment must never be directly exposed to the sunrays or to excessive dust.
	**INSTALLATION:** the unit must be installed by a specialised technician in scrupulous observance of the instructions given in this manual. The use of the equipment in explosive atmosphere is forbidden**.**
	**CONNECTIONS:** since the unit is connected to the main power supply, it must be properly grounded with its power plug GND pin. Failure to ground the unit can damage it and constitutes a risk of fatal injury to the operator. Position the unit so that the power plug is easy for the operator to access.

1 Power cord connector and Power switch
2 HP&LP aircraft connector/couplers and hoses

⚠	**ATTENTION:** Leave the quick coupling taps closed when the unit is not in use and at the end of aircraft service operations

8.2 SOFTWARE UPDATE

It is possible to check for software updates via Wi-Fi and download them inside the main menu:

- Main Menu
  - Setup
    - Updates check

8.3 INITIAL VERIFICATION

First of all, run the “pressures zero” function (ref. par. 13.4)**,** than execute the following actions in sequence by following the display guided procedure and the illustrations on the screen of the equipment:

- Gas weight check
- Oil weight check
- First vessel filling

It is possible to interrupt the initial verification, which will be re-proposed the next time the station is powered on.
The equipment cannot operate until all the steps of the initial verification have been completed.

	**CAREFULLY ABIDE BY THE FOLLOWING INSTRUCTIONS TO AVOID DANGER TO PERSONS, THE DISCHARGE OF REFRIGERANT IN THE ATMOSPHERE**	

Let us consider as first filling the one carried out during the initial check with internal tank of the equipment free of refrigerant and containing air.

Set the quantity of gas to fill: **add a maximum of 6 kg of refrigerant**, at least 3 kg and follow the guided procedure shown on the display (the display always shows 1 kg more than the actual contents of the vessel to prevent overfilling).

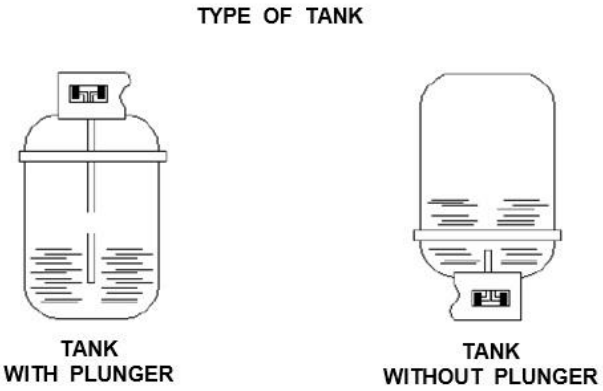
	**ATTENTION:** There must be a maximum of 6 kg of refrigerant in the vessel.

Check that the equipment hoses are not connected and positioned in the hose winder. Start the procedure that initially implies the creation of vacuum in the internal tank. This phase will take 15 minutes and will act on the whole equipment.
Only when the message appears asking to connect the charge tank, connect the supplied **HP** quick coupler (color red) in case of R134a or the **LP** quick coupler (color blue), in case of R1234yf, of the unit to an external refrigerant gas tank using the supplied adaptor.
Open the coupler by turning the knob clockwise. Open the valve on the external tank.
Just right before reaching the planned quantity of refrigerant, the unit will stop and ask the user to close the external refrigerant tank. Then, the device will continue the recovery from the hoses and ends when these are empty. Hence, it is necessary to open the quick-coupler and disconnect it from the external tank. Thanks to the ECO-LOCK function, the refrigerant - usually kept between the cylinder fitting and the hose quick-coupler until the end of the process - will not be released in the environment.

There may be two types of source tanks: with plunger and without plunger.

Tanks **with plunger** shall remain upright to be able to transfer liquid refrigerant; for this type of tanks connect to the L (liquid) coupler.

Tanks **without plunger** have only one valve, so they must be turned upside down to transfer the liquid refrigerant.

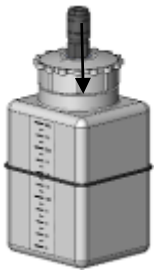


The reference gauge indicates the pressure inside the external tank.

After some minutes the unit will automatically end the function.
At the end the weight of the charged refrigerant will be displayed

8.4 NEW OIL BOTTLE FILLING

To fill the new oil bottle (Fig. 5.1 Pos. 9) it has to be extracted from its housing by means of the quick coupler on the top of the bottle; slightly press downward the coupler ring nut to extract it.



Fill the bottle by paying special attention to the *"oil care"* valve.
This valve is made of a silicon polymer membrane; it compensates pressure variations within the bottle and stops humid air infeed inside thus preserving the new oil inside.

After filling, close the bottle and place it back in its seat.

CH. 9 SET UP

From the SETUP menu it is possible to select parameters and activations before starting cycle:

1) WiFi
- by selecting this entry, the user may check and select the Wi-Fi networks available and connect the station via Wi-Fi.

2) PRINTER
- by selecting this entry, the user can select the print options, such as:
  - start print queue;
  - delete print queue;
  - how to print (instructions);
  - print test.

  There are two print modes available: using the printer of the station or via Wi-Fi using the printer software named NexusPrint to be installed on PC with Windows 7 or later.

3) UPDATE
- by selecting this entry, the user may check if software updates are available and download them. Updates Check starts with this icon 

4) BRIGHTNESS
- by selecting this entry, the user can modify the brightness of touch screen display and Status Led.

5) MAINTENANCE COUNTERS
- by selecting this entry, the user may check the status of station counters and consumables counters.

6) ACCOUNT
- by selecting this entry, you can enter your data, which will be printed on the end of cycle report.

7) LANGUAGE
- by selecting this entry, any language present in the database may be set. In case you choose a language with unintelligible characters: switch off the equipment, press and hold the touch screen while switching on the equipment, you will be directed to the language setting menu.

8) RESOLVE
- by selecting this entry, the user can connect the station to the server via Wi-Fi to allow remote control service session by the dealer. The system will give an ID number and a PIN code to give to dealer.

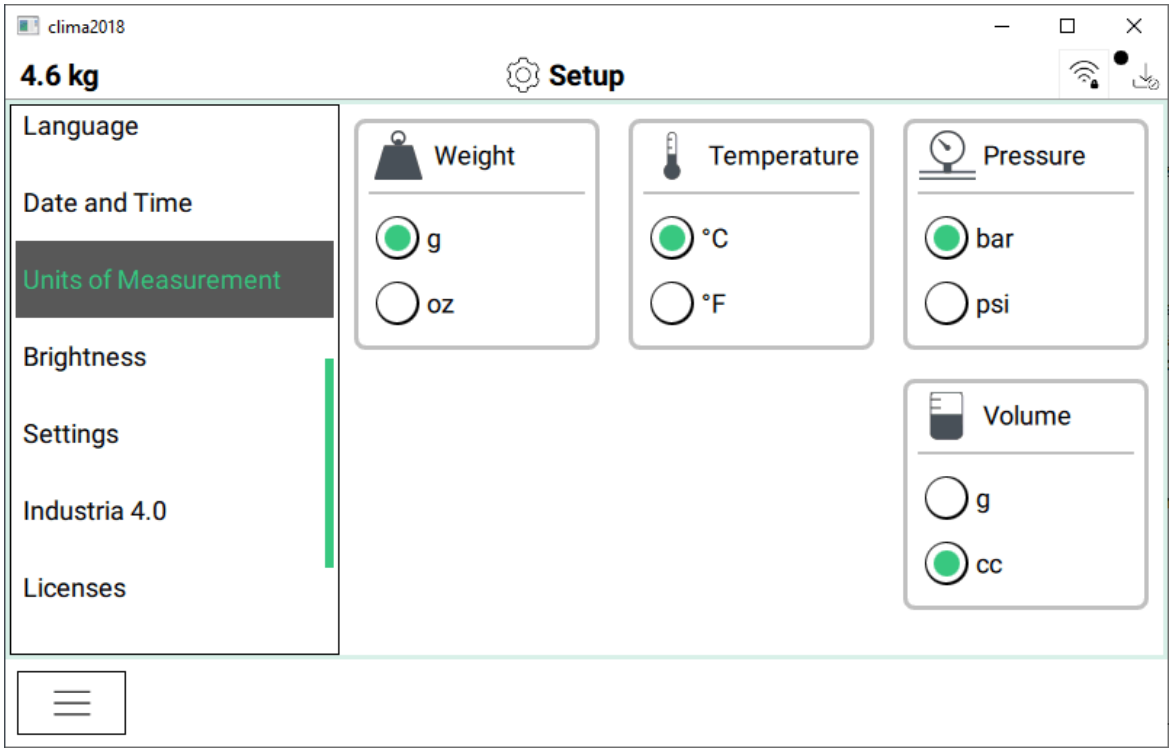
9) SYSTEM INFORMATION
- by selecting this entry, the user can check the station data.

10) DATE AND TIME
- by selecting this entry, the user can change and save the date and time.

11) LICENSES
- by selecting this entry, the user can check the licenses enabled on the station.

12) SETTINGS
- by selecting this entry, the user can enable specific functions.

13) UNITS OF MEASUREMENT
- by selecting this entry, the user can change the units of measurement of weight, temperature, pressure and volume (see following figure).



GB Barberi s.r.l. *reserves the right to add new parameters to make the equipment increasingly versatile and adaptable to market's needs.*

CH. 10 A/C SYSTEM CHARGE

10.1 PRELIMINARY OPERATIONS

The recovery and charge operations have be carried out after the aircraft A/C system has run for some time; however, an excessively hot A/C system has to be avoided since the next charge phase could be adversely affected by high pressures.

Aircraft details necessary for the performance of the charge/recovery/ vacuum cycle are the amount of refrigerant and the type and quantity of oil.

	**ATTENTION:** refer to the helicopter maintenance manual for parameters and procedures for charge / recovery / vacuum cycles, refrigerant quantity, type and quantity of oil

Indeed the amount of oil to be recharged is that extracted during the refrigerant recovery phase which is very small.

SPECIAL FEATURES
Your new A/C service station is equipped with new ECO LOCK® quick couplers. These new couplers offer the following functions:

1. Avoid dispersion of the refrigerant, allowing the recovery by the unit (thus protecting the environment and saving refrigerant).
2. Automatic leak test of the aircraft A/C system valve at the end of the service.

After connecting the quick couplers to the (high pressure) HP and (high pressure) LP connectors of the aircraft, screw the valves only when required by the messages on the tool display.

To recharge the A/C system, you have to know the refrigerant type and also the suitable type of oil. These data are available in the aircraft user manual or in the charging procedures.

As to the oil amount, remember that technical data of the A/C systems and instructions usually present in the aircraft show the total oil amount in the system. In the aircraft A/C system you have to add only the oil amount necessary to restore the amount set by the aircraft manufacturer.

10.2 NON-CONDENSABLE GAS DISCHARGE

The station is equipped with the AIR PURGE SYSTEM function, which allows automatically detecting and purging non-condensable gas (mainly air) accumulated within the tank.
If the station detects non-condensable gas in the tank, it will automatically run the non-condensable gas discharge procedure.
Running this procedure is very important to ensure the ideal working parameters for the station operation. The presence of non-condensable gas in the tank will increase the pressure inside the tank and, therefore, will slow down and reduce the efficiency of charge cycle on the aircraft.
The procedure will take a few minutes, and its duration may vary according to the amount of non-condensable gas within the tank.

If needed, the non-condensable gas discharge procedure can be executed at any time from the maintenance menu.

⚠	**WARNING:** Leave the quick coupling taps closed when the unit is not in use and at the end of vehicle service operations.
	WARNING: For the Air Purge System procedure to be executed manually, the station must have been off for at least one hour.

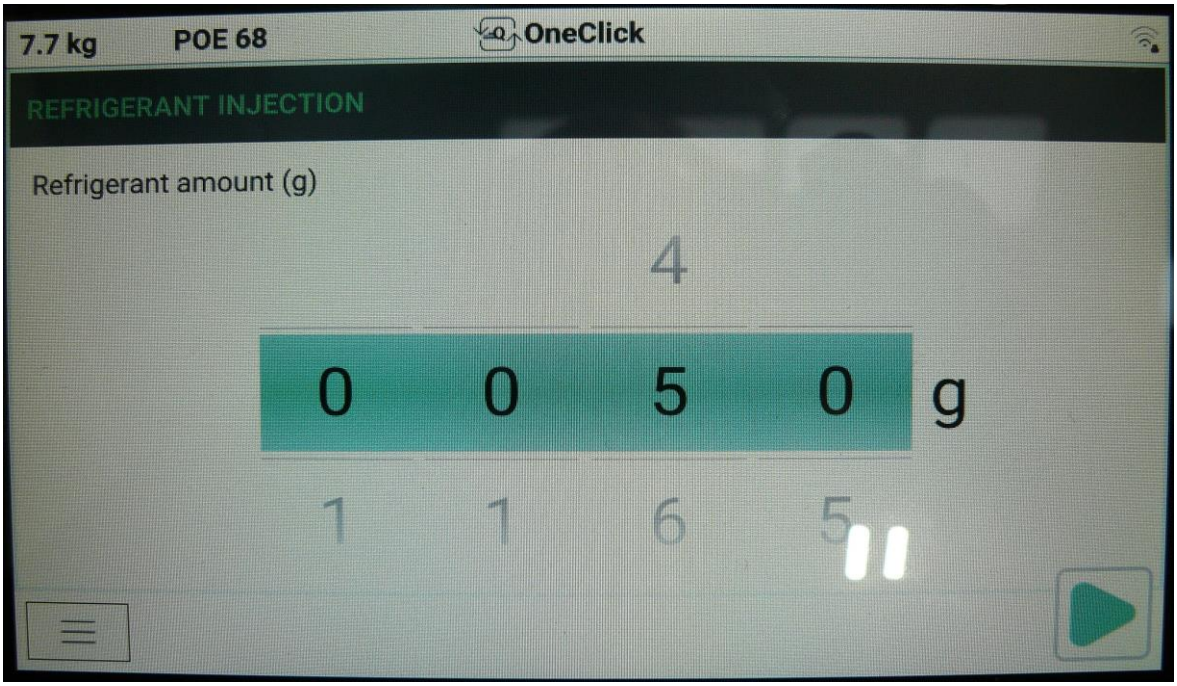
CH. 11 CYCLES

The access to automatic cycles can be achieved by selecting “OneClick” or “Cycles”.

11.1 ONECLICK

Inside this cycle it is possible to set the amount of refrigerant to be injected on the aircraft and than run the following cycles with standard default parameters (uneditable) listed below:

- Recovery
- Vacuum -> vacuum time duration: 20 minutes, vacuum time test duration: 4 minutes
- Injection -> NO OIL



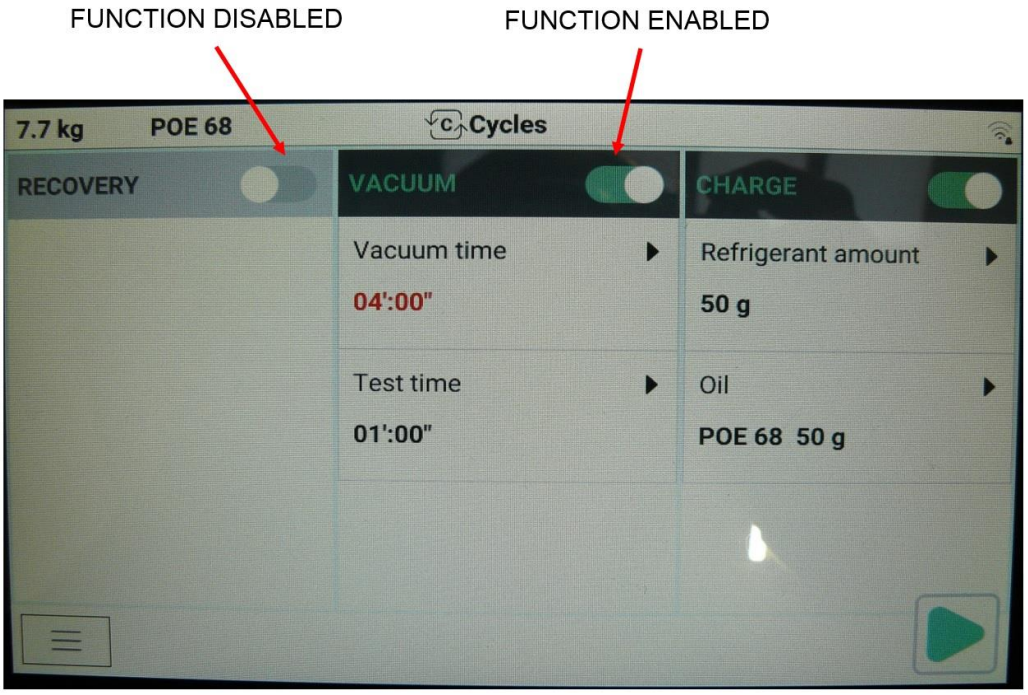
⚠	**ATTENTION:** the parameters of the ONECLICK function cannot be modified, use this function only after verifying that the cycle parameters are compatible with the parameters shown in the helicopter manual

11.2 CYCLES

Inside the Cycles window, it is possible to enable or disable specific cycles (by performing a horizontal swipe on the dot above the function), such as:

- Recovery
- Vacuum
- Injection

and to modify the parameters if needed.



11.3 CYCLE DATA SETTING

⚠	**ATTENTION:** the station keeps in memory the parameters and authorizations related to the last cycle performed: check that the parameters set are those reported in the aircraft maintenance manual; otherwise proceed with the new settings as described below

The following data appears on the main screen:

- Recovery (automatic)
- Vacuum phase (values to be set according to specification)
    - Vacuum time duration
    - Vacuum test time duration

⚠	**ATTENTION:** Set the vacuum time duration and vacuum test time duration values indicated in the aircraft manual or in the relevant procedures

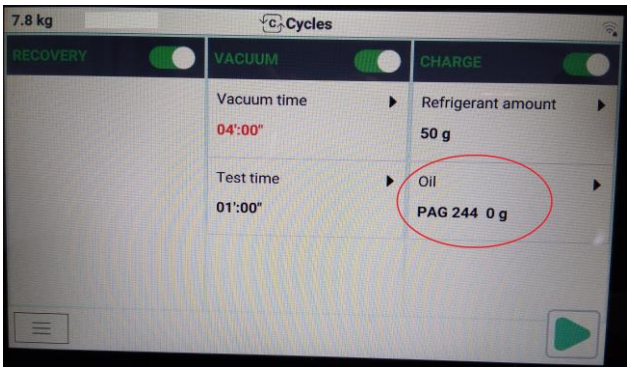
- Amount of refrigerant that will be charged into the system and the amount of refrigerant available in the inner tank of the station. (The system automatically selects which tube to inject from).

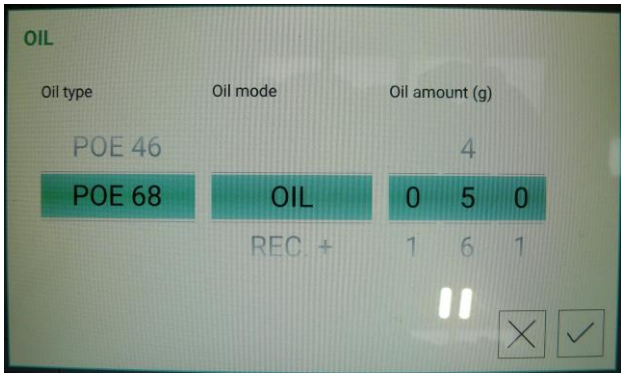
- Oil
  - Oil type: sets the type of oil to use, depending on the aircraft.
  - Oil mode:
    - OIL: It charges the quantity of oil that has been set
    - REC. + It charges the quantity of recovered oil plus the quantity of oil that has been set
    - NO OIL. No oil is charged during the charge cycle
  - Oil amount: <value> g It sets the amount of oil to be injected

At the end of the setup, press the arrow button to start the automatic cycle.

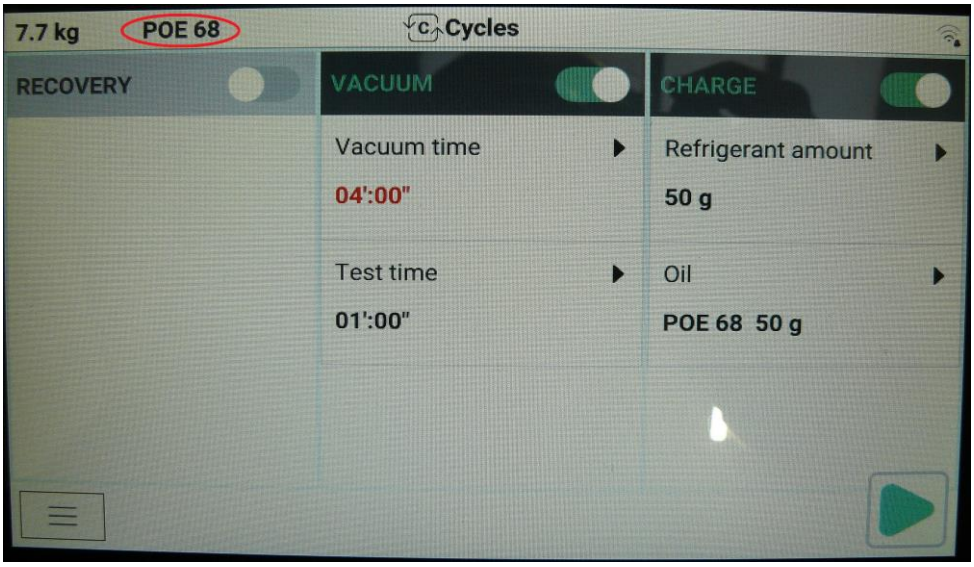
11.4 CHANGE OIL TYPE (HYBRID FUNCTION)

When using the station for the first time, it is possible to select the type of oil to be used:

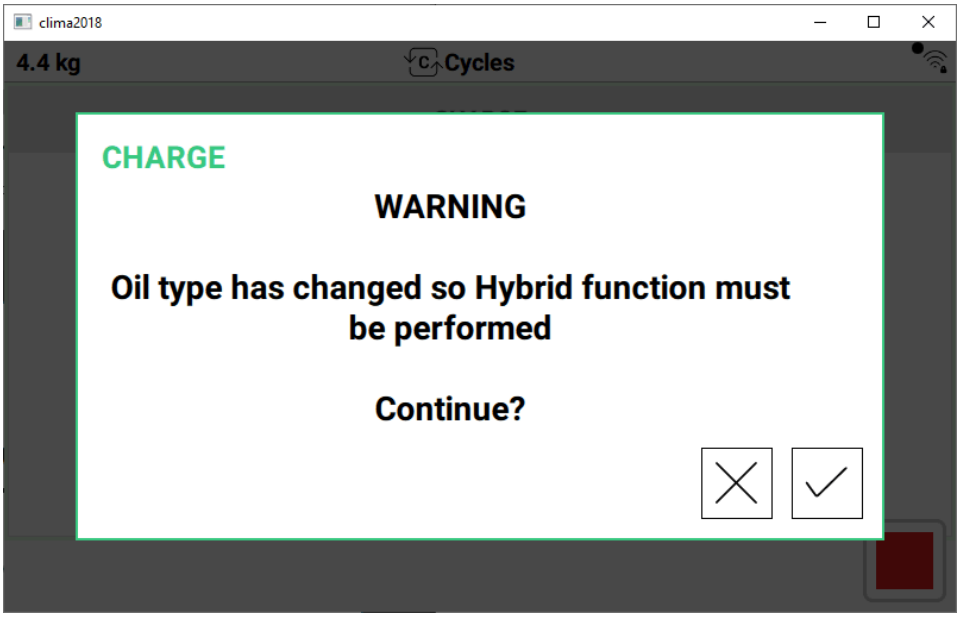




After completing the oil injection phase, the station memorises the type of oil used and shows it on the upper bar.



If the user subsequently wants to change the type of oil, the station will not allow to continue and the notice with the obligation to perform the "Hybrid function" will appear to clean the hoses from any previous oil residue.

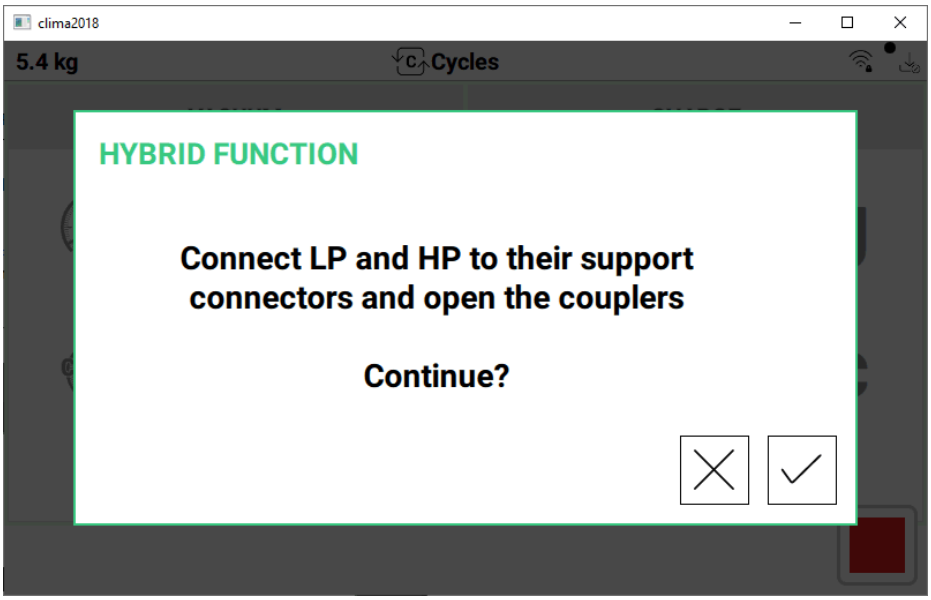


⚠	**ATTENTION:** The station always reports the last type of oil used, if you need to change the type of oil it is ***MANDATORY*** to perform this function

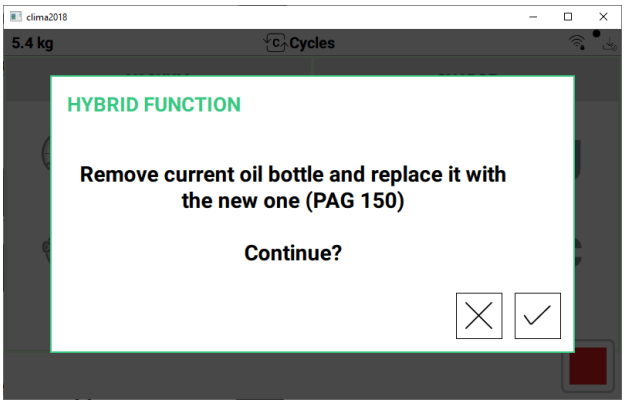
⚠	**ATTENTION:** Check the type of oil required, reported in the aircraft maintenance manual

So, if you change the type of oil from the previous cycle, before connecting the A/C service station hoses to the A/C system of the aircraft, proceed as follows:

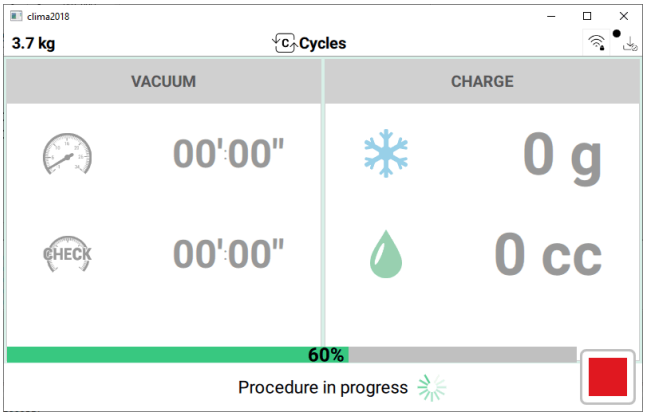
- Select the new oil type
- When required by the software, connect LP and HP quick coupler to their support connectors and open them, as in the pictures below



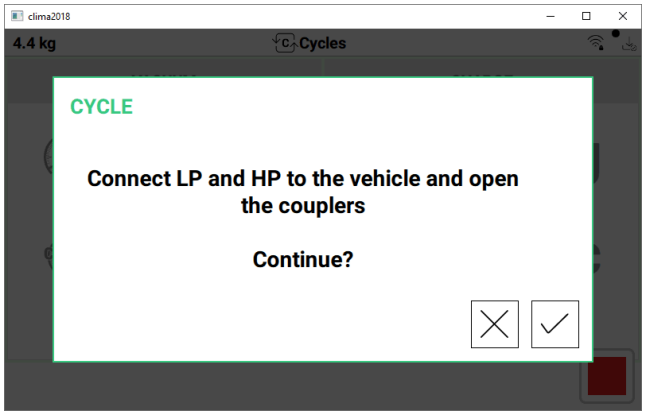
- Change the oil bottle



- Then, press the arrow and the "Hybrid function" flushing function will start



- Follow the instructions shown on the screen to proceed



CH. 12 ADDITIONAL FUNCTIONS

12.1 REFRIGERANT ANALYSIS (OPTIONAL)

By selecting this entry (only if the refrigerant analyser optional is available and enabled inside setting menu), the user can start the analysis of refrigerant present inside the aircraft A/C system.

12.2 FLUSHING (WITH OPTIONAL ACCESSORIES)

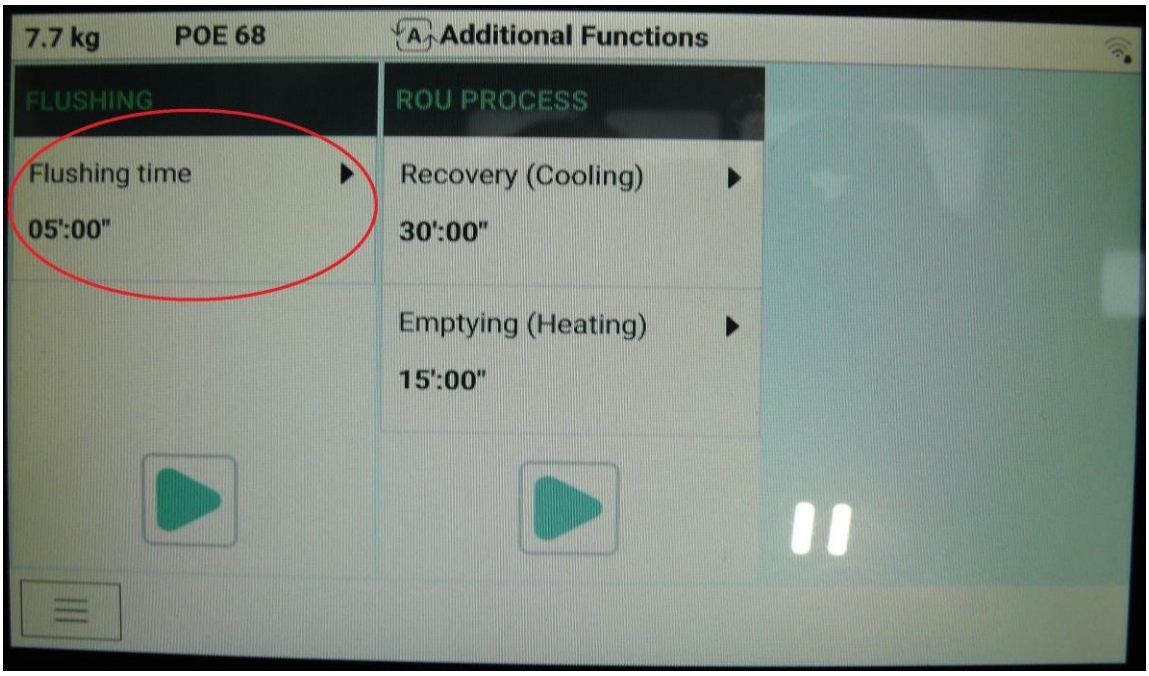
After performing many charge cycles or after replacing components or parts of the A/C circuit on an aircraft, it is advisable to carry out a system flushing.

The system washing (Flushing) consists in purifying the aircraft cooling system through several R1234yf/R134a refrigerant flushes, by recovering it each time, so that the impurities can be filtered little by little through the additional filter.

Thanks to its specific design, AIR-NEX 9320 manages the flushing process so that the process becomes fully automatic.

Once the (optional) flushing kit has been installed, as described in the instructions included in the kit, and after selecting the specific function for the kit being used, start the phase.

It is possible to set the flushing time (figure below)

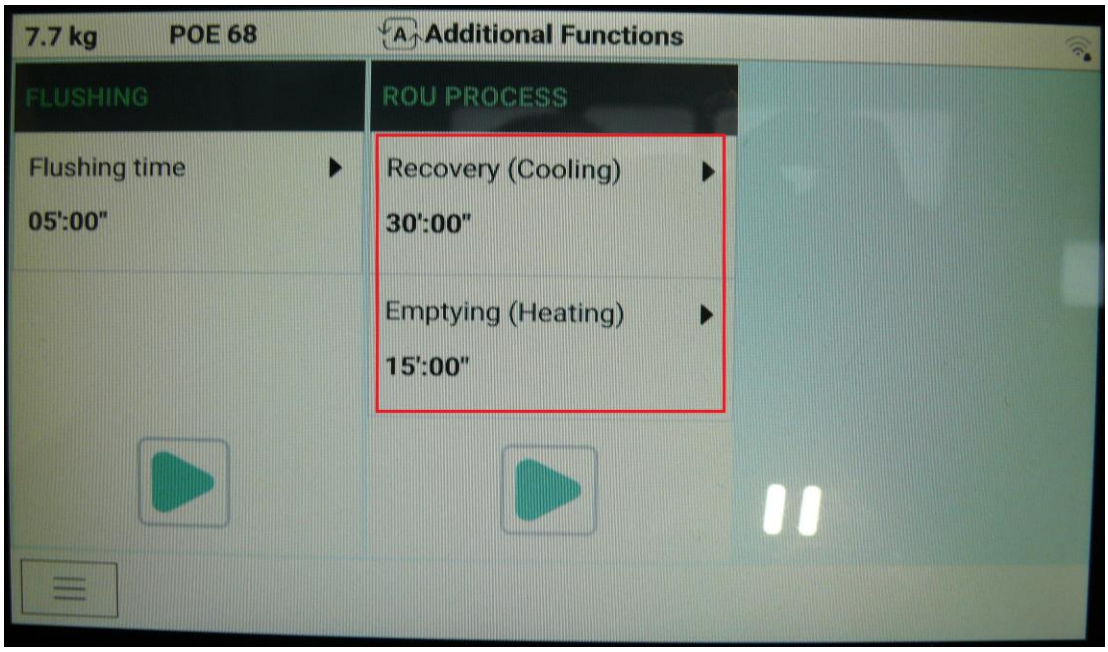


In case of problems or errors during this phase, a message will be displayed, identifying the type of error. It is possible to interrupt the phase in progress at any time.

12.3 ROU PROCESS (WITH OPTIONAL ACCESSORIES)

Once the (optional) kit R.O.U. (recovery only unit) has been installed, as described in the instructions included in the kit, and after selecting the specific function for the kit being used, start the phase.
After selecting this function, default values (editable) are displayed:

- Recovery time
- Emptying time



In case of problems or errors during this phase, a message will be displayed, identifying the type of error. It is possible to interrupt the phase in progress at any time.

CH. 13 MAINTENANCE

13.1 HOSES EMPTYING

To empty the charge hoses completely perform the hoses emptying phase.
Select the hoses emptying function from the menu. Wait the end of the procedure.

13.2 AIR PURGE

In the main menu select MAINTENANCE and press “AIR PURGE”.
By selecting this function, it is possible to manually discharge the non-condensable gases by means of the solenoid valve.

Automatically every 7 days, the station will show the possibility to automatically check (automatic function named AIR PURGE SYSTEM) for non-condensable gases.
.

13.3 VESSEL FILLING

In the main menu select MAINTENANCE and press “VESSEL FILLING”.
Set the quantity of refrigerant to fill and follow the guided procedure shown on the display (the display always shows 1 kg more than the actual contents of the vessel to prevent overfilling).

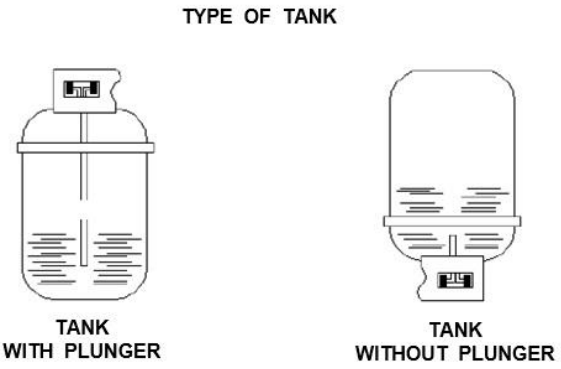
	**ATTENTION**: There must be a maximum of 6 kg of refrigerant in the vessel.

Only when the message appears asking to connect the charge tank, connect the supplied **HP** quick coupler (color red) in case of R134a or the **LP** quick coupler (color blue), in case of R1234yf, of the unit to an external refrigerant gas tank using the supplied adaptor.
When the message appears, open the coupler by turning the knob clockwise. Open the valve on the external tank.
Just right before reaching the planned quantity of refrigerant, the unit will stop and ask the user to close the external refrigerant tank. Then, the device will continue the recovery from the hoses and ends when these are empty. Hence, it is necessary to open the quick-coupler and disconnect it from the external tank. Thanks to the ECO-LOCK function, the refrigerant - usually kept between the cylinder fitting and the hose quick-coupler until the end of the process - will not be released in the environment.

There may be two types of source tanks: with plunger and without plunger.

Tanks **with plunger** shall remain upright to be able to transfer liquid refrigerant; for this type of tanks connect to the L (liquid) coupler.

Tanks **without plunger** have only one valve, so they must be turned upside down to transfer the liquid refrigerant.



The reference gauge indicates the pressure inside the external tank.
After some minutes the unit will automatically end the function. At the end the weight of the charged refrigerant will be displayed

13.4 PRESSURES ZERO

In the main menu select MAINTENANCE and press “PRESSURES ZERO”.
This function allows to determine and store the atmospheric pressure value.
We recommend running this procedure every time the A/C service station will be moved from a location to another with a different altitude.

13.5 SELF LEAK TEST

In the main menu select MAINTENANCE and press “SELF LEAK TEST”.
A leak test is carried out on the internal components of A/C service station.
This phase includes:

- Hoses emptying
- Vacuum test

This test allows to check the tightness of the internal circuits of the equipment from the solenoid valve, allowing the fluid outflow from the internal cylinder, to the manifold, (metallic component housing the check solenoid valves) to the compressor infeed, including the dryer filter leak test.
In case of failed leak test, it is necessary to check the charge hoses conditions and the quick couplers leak, and make the possible repair and then repeat the test.

13.6 LONG LIFE PUMP®

The A/C service station is equipped with a special function named LONG LIFE PUMP® that enables to optimize the vacuum pump oil use by avoiding the replacement every 60 hours of operation.
LONG LIFE PUMP® is a special function allowing to extend even to 1000 hours the life of the pump oil used in the station. LONG LIFE PUMP® function performance is suggested at the end of 60-hour operation intervals of the vacuum pump and can be manually activated in the MAINTENANCE menu pressing LONG LIFE PUMP®.

LONG LIFE PUMP® procedure has to be started only after checking and, if necessary, topping up the pump oil level and lasts 1 hour: during this time the tool cannot be used.

During the procedure the oil is automatically purified from the gaseous polluting residues absorbed during the emptying operations of aircrafts air conditioning systems.
At the end of the procedure, the performance of the vacuum pump is checked and a result is communicated to the operator. In case of negative result, the vacuum pump oil must be replaced.
After 1000 hours of vacuum pump operation since the last oil change, the LONG LIFE PUMP® procedure cannot be activated anymore and you have to replace the oil according to the following instructions.

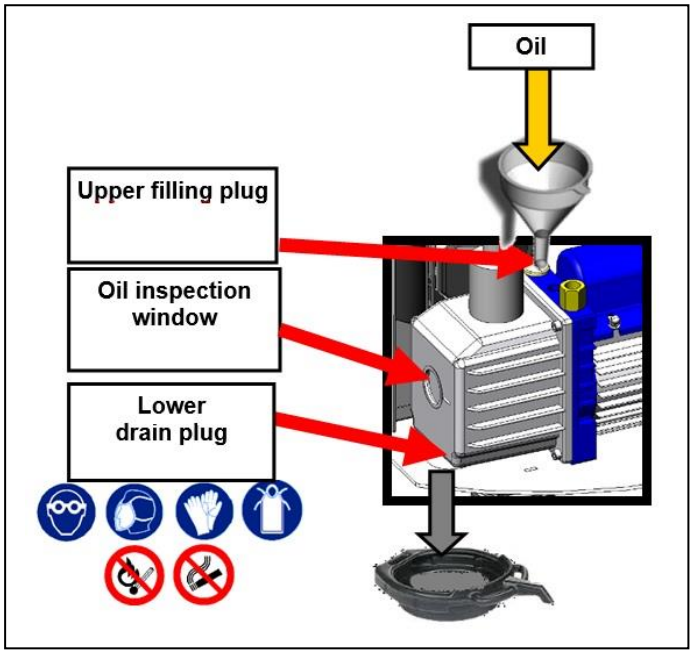
13.7 PUMP OIL CHANGE

Required tools:

- 1 flat screwdriver
- 1 hex key (10 mm)

For replacement, comply with the instructions outlined below:

1. Disconnect the unit from the mains.
2. Remove the 6 screws that fix the front door of the unit and remove it.
3. Place a bowl underneath the machine, right under the pump oil drain hole. Open the upper plug and then the lower plug to drain the used oil contained within the vacuum pump.



4. Once the pump has been emptied, screw the lower plug again.
5. Fill the pump with new oil through the upper opening, using a funnel if needed. Bring new oil level halfway through the oil inspection window.
6. Once the pump has been filled, close the upper plug.
7. Once oil has been replaced, switch on the unit and from the MAINTENANCE menu select PUMP OIL CHANGE: press OK to reset the counter.

13.8 DRYER FILTER CHANGE

The dryer filter must be replaced after having dehydrated 100 kg of refrigerant fluid, since the filter capacity to keep the humidity present in the refrigerant will run out.

To replace the dryer filter, from the MAINTENANCE menu select DRYER FILTER REPLACEMENT: press the arrow to set the counter to zero and to start the filter replacement procedure. Insert the code of the new filter. Now you can replace the filter.
.

Now you can replace the filter.
Required equipment:

n°1 flat screwdriver
n°1 cross screwdriver
n°1 regular or torque hex key (14 mm)
n°1 hex key (16 mm)

For replacement, comply with the instructions outlined below:

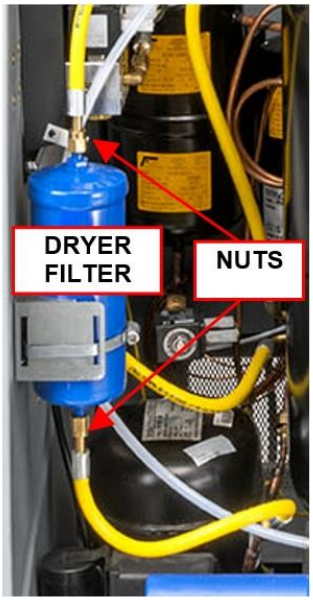
1. Disconnect the HP and LP hoses from other systems/circuits or aircrafts and close the quick couplers
2. Wait the ends the hoses emptying.
3. Confirm to have already worn the personal protective equipment (PPE) and follow the safety regulations in force.

DANGER OF CONTACT WITH R134a/R1234yf REFRIGERANT and aircraft A/C system oil

4. Before opening the doors of the equipment, switch off the equipment and **disconnect the power supply cord.**

DANGEROUS VOLTAGE HAZARD

5. Remove the 6 screws that fix the front door of the unit.
6. Unscrew the 2 connection nuts of the filter by means of the hex keys.
7. Remove the straps that wind up the filter.



8. Install the new filter paying attention to the position of gaskets and to the direction of the arrow indicating the fluid flowing direction.
9. Screw the two connection nuts of the filter.
10. Carry out the automatic leak test requested by the software when switched on again after the filter replacement.

13.9 CALIBRATION CHECK

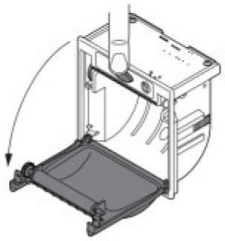
In the main menu select MAINTENANCE and press “CALIBRATION CHECK”.
This function allows to check the status of gas weight scale measure with a reference weight (from 100 g to 10000 g maximum) not included in the scope of delivery. When requested by the software, put the weight above the scale plate as in the picture below.
Calibration must be carried out in case of anomalies or malfunctions.

Reference weight
(not included in the scope of delivery)

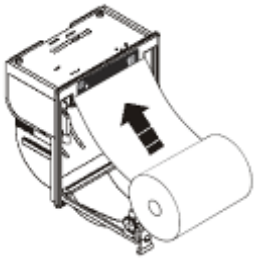
13.10 MAINTENANCE OF PRINTER

To change the roll of paper follow instructions below:

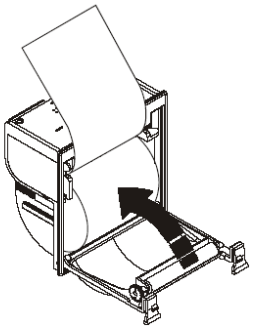
Open the lid of the printer as shown
(note: press the green led as in the picture and only after that open the lid)



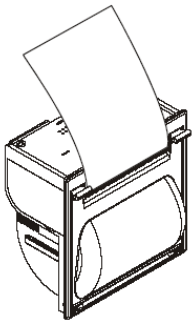
Position the roll of paper inside the housing in the rotation direction indicated in the picture;



Pull the paper out of the housing as indicated in the picture and close the lid;



The printer is ready for printing.



13.11 PERIODIC CHECKS

A/C service stations (pressure equipment set) must be checked over regularly as provided by local legislation.
According the local legislation contact the technical customer service or the competent body for at least the following checks.

- Make sure no corrosion or leakage are present in the tank and in the other cylinder and metallic part of the equipment; under normal conditions of use, the tank life is at least 20 years (in the absence of wear and other types of damages).

- If the automatic safety valve trips, contact technical service to have the unit checked over, resolve any problems and replace the valve if necessary.

- Check presence of the device with references indicated above, wholeness of connection cables and connector, and the correct connection to the equipment printed circuit board. In case the pressure switch must intervene, please contact the technical customer service that will check the equipment and remove any defect.

- Periodically check that the external charging hoses, red (HP) and blue (LP), are in good order and undamaged. In case damages to the hoses are detected, stop using the station and contact the technical customer service for the related replacement.

- Verify that the lubricants (pump oil) and filters (dryer) have been replaced according to the scheduled periodicities for a proper functioning of the equipment.

13.12 PERIODIC INSPECTIONS TABLE

COMPONENT	*INSPECTIONS PERIODICITY*
HP&LP HOSES	CHECK BEFORE EACH USE, THAT THE EXTERNAL CHARGING HOSES, RED (HP) AND BLUE (LP), ARE IN PERFECT CONDITION AND ARE NOT DAMAGED. REPLACE IF DAMAGED
VACUUM PUMP OIL	REPLACING AFTER 60 h / 1000 h IN CASE OF APPLICATION FUNCTION LONG LIFE PUMP® (REF. PAR. 13.6 E 13.7)
DRYER FILTER	REPLACE AFTER DEHYDRATED 100 Kg OF REFRIGERANT (REF. PAR. 13.8)
GAUGES	**NOT SUBJECT TO CALIBRATION** (UNLESS OTHERWISE INIDCATED BY CUSTOMER PROCEDURES)

13.13 REFRIGERANT TYPE REPLACEMENT

Your AIR-NEX 9320 station is supplied with the standard fittings to operate with gas R134a, but it can be easily adapted to be used with refrigerant gar R1234yf.

Contact an authorized Service centre to ask for the adaptation kit.

The adaptation must be performed by a technician of an Authorised **GB Barberi s.r.l. / MAHLE** Service Centre, who will install the specific components for use of R1234yf. He will also carry out all configurations and verifications required by the gas type replacement procedure.

CH. 14 DISPOSAL

14.1 A/C SERVICE UNIT DISPOSAL

At the end of its service life, the unit must be disposed of as follows:

- Contact the service centre to have the refrigerant in the unit recovered and recycled.
- Consign the unit to an authorised collection centre according to local legislation.

14.2 RECYCLED MATERIALS DISPOSAL

Consign the refrigerant recovered from the unit to the refrigerant supplier for proper disposal or recycling.

Lubricants extracted from systems must be consigned to an exhausted oil collection centre.

14.3 PACKING DISPOSAL

Electronic and electrical A/C service equipment must never be disposed of with domestic waste, but recycled appropriately.

The packaging must be disposed of in conformity with local legislation.
This contributes to protecting the environment.

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CH. 15 SPARE PARTS

15.1 GENERAL

This chapter contains the spare parts list of the A/C RECHARGE STATION model AIR-NEX 9320, identified by **P/N GB983-970-500**, manufactured by GB BARBERI s.r.l. - Via Rosselli, 30 - Sesto Calende (VA).

15.2 USE OF THE SPARE PARTS LIST

The columns contained in the spare parts list have the following meanings:

Position column. This column quotes the index numbers which are the same of the parts shown in the figure.

Part number (P/N) column. This column quotes the Part Number of the spare part called up.

Description column. This column lists the name or supplies a concise description of each part or assembly.

Quantity column. This column indicates the quantity of each part required for each assembly or subassembly.

NOTE

Spare parts order must indicated the Part Number (P/N) of the spare and the Serial Number (S/N) of the assembly for which the spare is required.

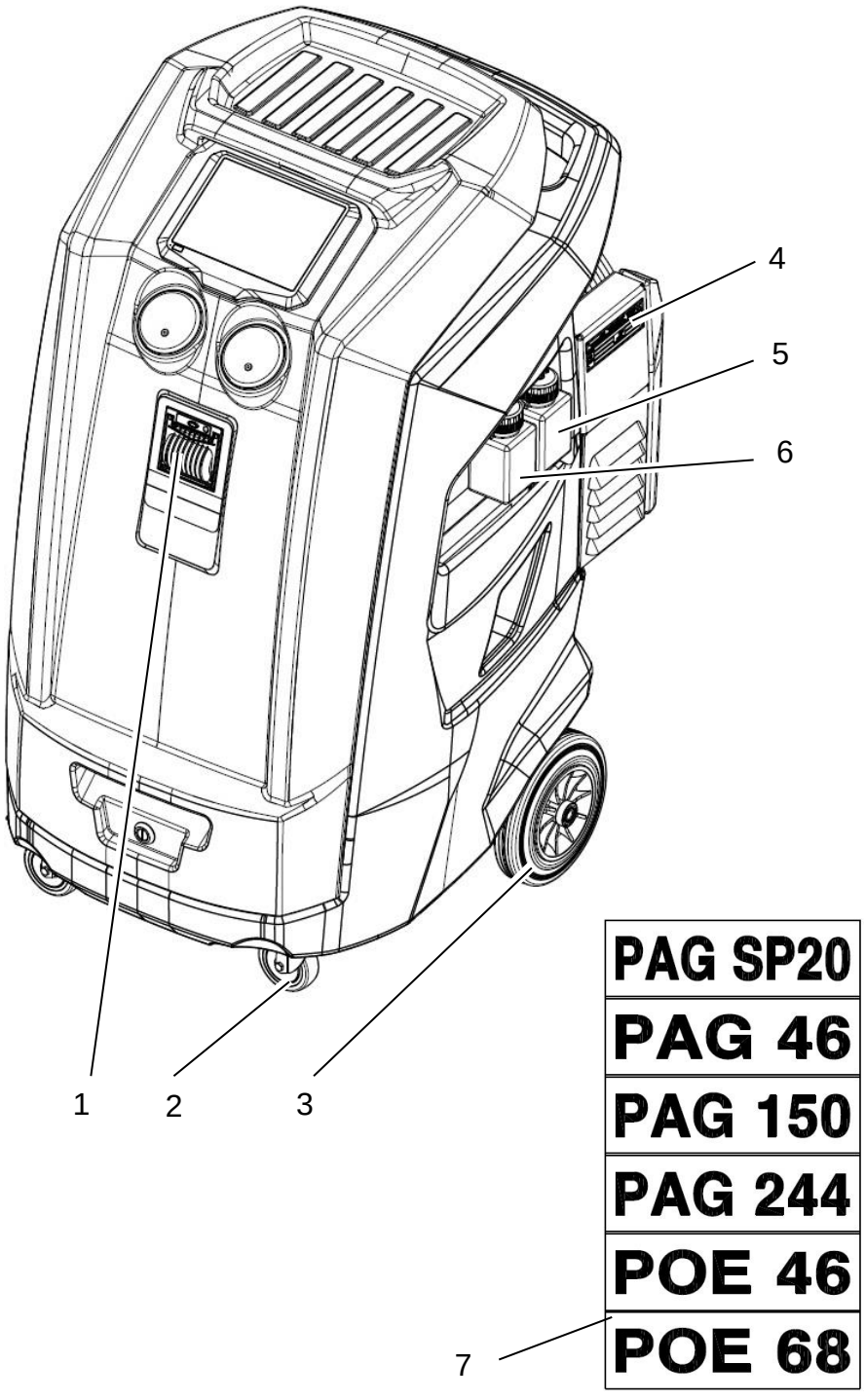
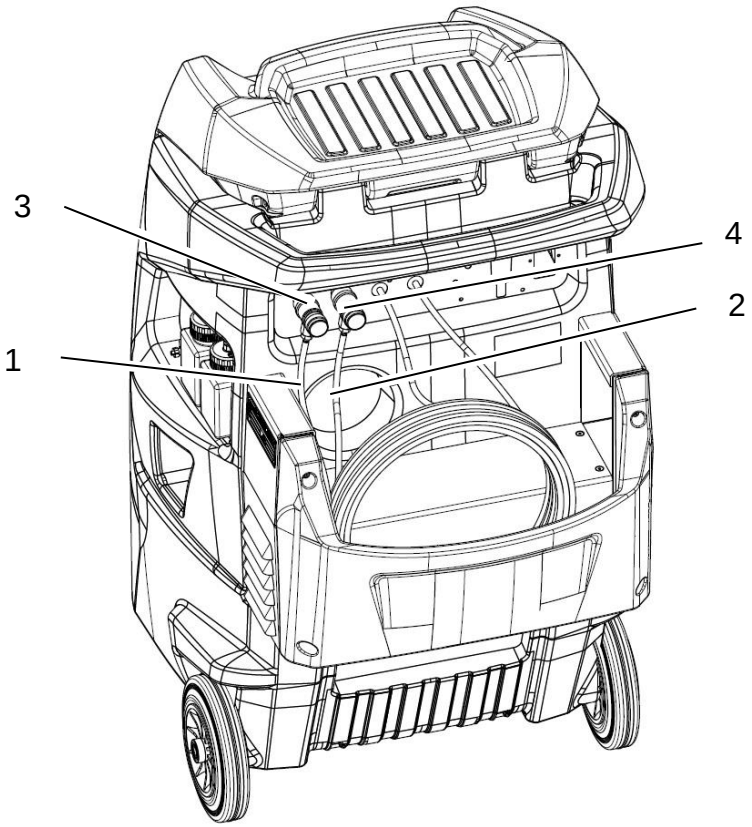


Fig. 15.1 A/C RECHARGE STATION

Table 15.1 A/C RECHARGE STATION (Ref. Fig. 15.1)

Pos.	P/N	Description	Q.ty
1	GB006-760-100	Paper (5 pieces box)	1
2	GB082-200-007	Front wheel	2
3	GB081-500-001	Rear wheel	2
4	GB065-611-009	GB plate	1
5	GB230-405-100	Bottle of new oil	2 (1 spare)
6	GB230-405-200	Bottle exhaust oil	1
7	GB065-600-900	Oil stickers strip	2
	GB965-801-196	Protection cover	1



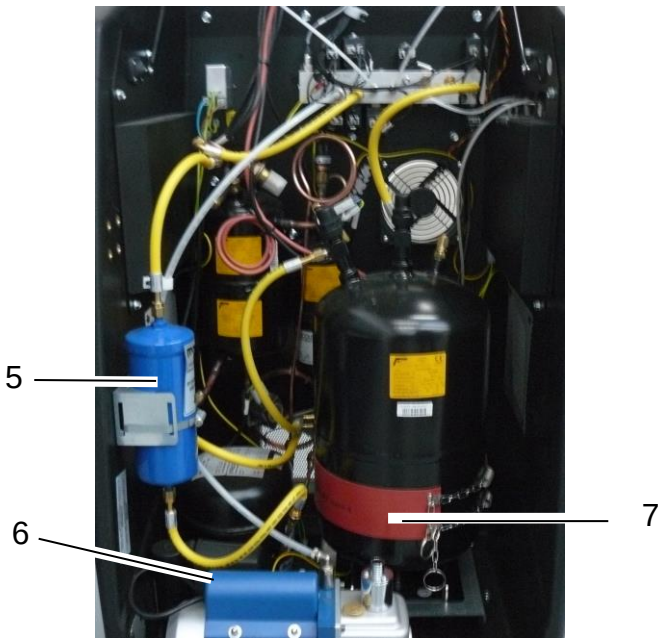


Fig. 15.2 SPARE PARTS

Table 15.2 SPARE PARTS (Ref. Fig. 15.2)

Pos.	P/N	Description	Q.ty
1	GB529-036-100	Red Hose L = 4,5	1
2	GB529-036-200	Blue Hose L= 4,5	1
3	GB481-325-100	HP red quick coupler	1
4	GB481-325-200	LP blue quick coupler	1
5	GB971-910-001	Dryer filter	1
6	GB009-008-200	Vacuum pump oil…(2 bottles of 500 ML)	
7	GB699-930-100	Heating belt	1

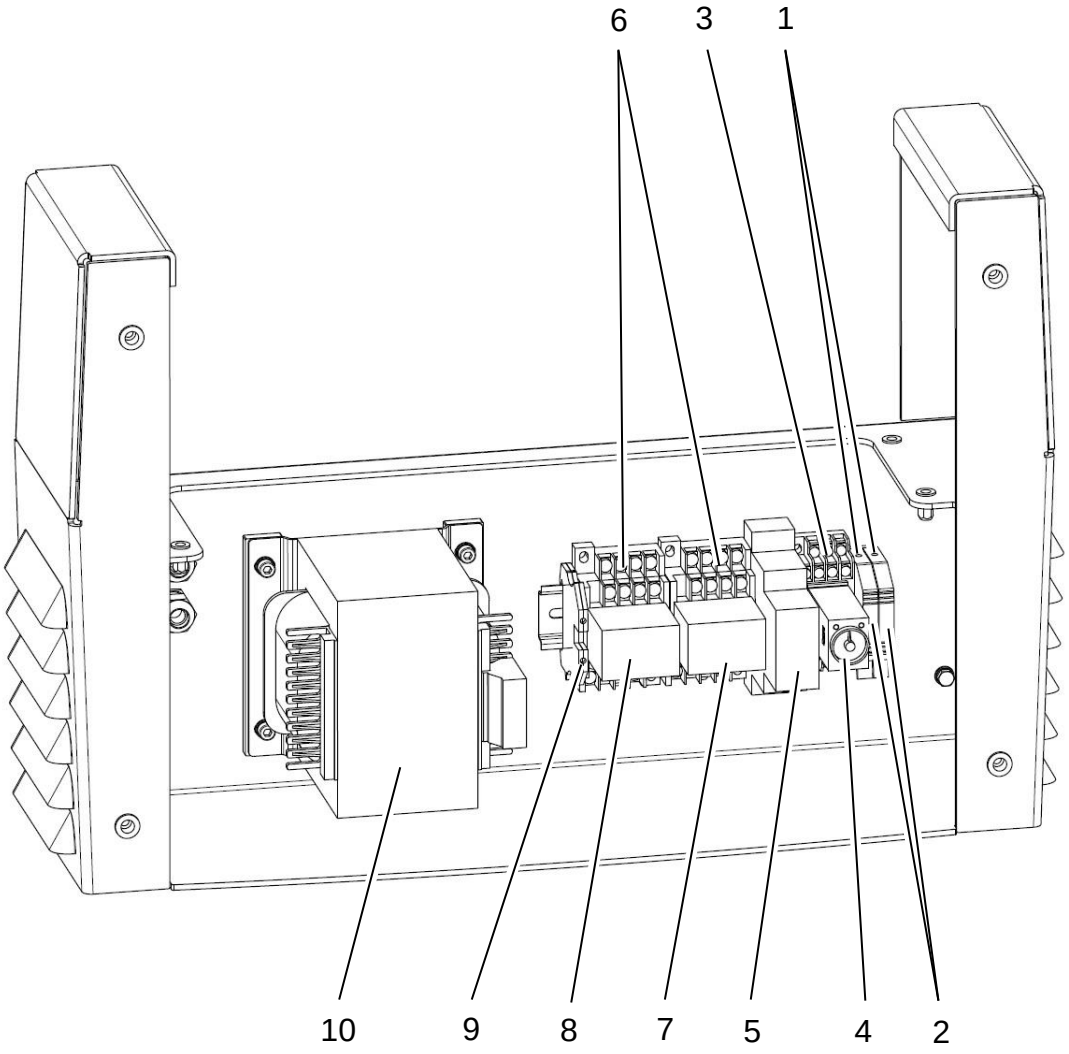


Fig. 15.3 MULTI-TENSION SYSTEM

Table 15.3 MULTI-TENSION SYSTEM (Ref. Fig. 15.3)

Pos.	P/N	Description	Q.ty
1	GB734-104-200	Fuse holder	2
2	GB747-106-010	Fuse 5 x 20 1A	2
3	GB749-012-000	Socket, timer	1
4	GB742-622-100	Timer	1
5	GB741-220-150	Relay	1
6	GB749-015-000	Socket, relay	2
7	GB741-204-149	Relay	1
8	GB741-220-101	Relay	1
9	GB734-152-050	Ground terminal	1
10	GB768-120-030	Auto transformer 1000 VA	1
	GB738-060-005	Power cord	1

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