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2 Symbols use

2.1 In the documentation

2.1.1 Warning notices - Structure and meaning

Warning notices warn of dangers to the user or people in the vicinity. Warning notices also indicate the consequences of the hazard as well as preventive action. Warning notices have the following structure:

Warning symbol	KEY WORD – Nature and source of hazard! Consequences of hazard in the event of failure to observe action and information given. Hazard prevention action and information.
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The key word indicates the likelihood of occurrence and the severity of the hazard in the event of non-observance:

Key word	Probability of occurrence	Severity of danger if instructions not observed
DANGER	Immediate impending danger	Death or severe injury
WARNING	Possible impending danger	Death or severe injury
CAUTION	Possible dangerous situation	Minor injury

2.1.2 Symbols in this documentation

Symbol	Designation	Explanation
	Attention	Warns about possible property damage.
	Information	Practical hints and other useful information.
1. 2.	Multi-step operation	Instruction consisting of several steps.
	One-step operation	Instruction consisting of one step.

2.2 In the product



Observe all warning notices on products and ensure they remain legible.

	 Wear protective goggles
	 Wear protective gloves

3 Important notes



Before start up, connecting and operating MAHLE products it is absolutely essential that the Original instructions/owner's manual and, in particular, the safety instructions are studied carefully. By doing so you can eliminate any uncertainties in handling MAHLE products and thus associated safety risks upfront; something which is in the interests of your own safety and will ultimately help avoid damage to the device.

When a MAHLE product is handed over to another person, not only the Original instructions but also the safety instructions and information on its designated use must be handed over to the person.

3.1 User group

The product may be used by skilled and instructed personnel only. Personnel scheduled to be trained, familiarized, instructed or to take part in a general training course may only work with the product under the supervision of an experienced person.

All work conducted on pressurized equipment may be performed by persons with sufficient knowledge and experience in the field of refrigeration, cooling systems and coolants and, also be aware of the risks involved in the use of pressurized devices.

To minimize the risk of possible ignition due to incorrect parts or improper service component parts shall be replaced with like components and servicing shall be done by factory authorized service personnel.

3.2 Agreement

By using the product you agree to the following regulations:

Copyright

Software and data are the property of MAHLE or its suppliers and protected against copying by copyright laws, international agreements and other national legal regulations. Copying or selling of data and software or any part thereof is impermissible and punishable; in the event of any infringements MAHLE reserves the right to proceed with criminal prosecution and to claim for damages.

Liability

All data in this program is based—where possible—on manufacturer and importer details. MAHLE does not accept liability for the correctness and completeness of software and data; liability for damage caused by faulty software and data is ruled out. Whatever the event, MAHLE liability is restricted to the amount for which the customer actually pays for this product. This disclaimer of liability does not apply to damages caused by intent or gross negligence on the part of MAHLE.

Warranty

Any use of non-approved hardware and software will result in a modification to our product and thus to exclusion of any liability and warranty, even if the hardware or software has in the meantime been removed or deleted.

No changes may be made to our products. Our products may only be used in combination with original accessories and original service parts. Failing to do so, will render null and void all warranty claims.

This product may only be operated using MAHLE approved operating systems. If the product is operated using an operating system other than the approved one, then our warranty obligation pursuant to our supply conditions will be rendered null and void. Furthermore, we will not be held liable for damage and consequential damage incurred through the use of a non-approved operating system.

3.3 Obligation of contractor

The contractor is obliged to ensure that all measures geared towards the prevention of accidents, industrial diseases, labor-related health risks are taken and measures towards making the workplace fit for people to work in are carried out.

Basic rules

The contractor is bound to ensure that all electrical equipment and operating material is set up, modified and maintained by skilled electricians only or under the guidance and supervision of a skilled electrician in accordance with electrical engineering principles.

Furthermore, the contractor must ensure that all electrical equipment and operating material is operated in keeping with electrical engineering principles.

If a piece of electrical equipment or operating material is found to be defective, i.e. it does not or no longer complies with electrical engineering principles, the contractor must ensure that the fault is rectified immediately and, in the event that imminent danger exists, also ensure that the electrical equipment or the electrical operating material is not used.

Tests:

- The contractor must ensure that all electrical systems and equipment are tested by a qualified electrician or under the guidance of a qualified electrician to ensure they are in proper working order:
 - Before starting for the first time.
 - After modification or repair before starting for the first time.

- At given intervals. Set intervals such as to ensure that faults that can be expected to occur are determined in good time.

- The test is to take the electrical engineering principles relating hereto into account.
- Upon request of the trade association, a test manual is to be maintained into which specific entries are made.

3.4 Safety regulations

3.4.1 ACX1250

Always carefully study and follow all the safety regulations before using the MAHLE product.



Avoid all skin contact with the refrigerant. The low boiling point of the refrigerant (approx. -30 °C) can lead to frostbite. Should refrigerant come into contact with the skin, remove any moistened clothing immediately and rinse the area of skin affected with generous amounts of water.

- Avoid all skin contact with the UV dye. Should UV dye come into contact with the skin, remove any moistened clothing immediately and rinse the area of skin affected with generous amounts of water.
- R1234yf is colorless, with weak characteristic smell and heavier than air. It may flow into repair pits. Should refrigerant escape, provide

for sufficient ventilation (particularly in repair pits) and leave the workshop.

	<p>Never inhale refrigerant, dye and oil vapors. The vapors can irritate the eyes, nose and respiratory system. If liquid refrigerant or UV dye comes into contact with the eyes, rinse them thoroughly with water for 15 minutes. Then obtain medical attention even if no pain is felt.</p>
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- Never swallow UV dye. Should it be swallowed inadvertently, never attempt to induce vomiting. Drink generous amounts of water and obtain medical attention.
- Before connecting the ACX1250 to a vehicle air conditioning system or an external refrigerant bottle, make sure the quick-release couplings are not leaking. Only ever use external refrigerant bottles provided with safety valves and certified in line with the applicable standards.
- Before switching off the ACX1250, make sure all charging and drainage operations have been completed. This prevents damage to the unit and reduces risk of refrigerant escaping into the environment.

	<p>Never use compressed air with R1234yf. Certain mixtures of air and R1234yf are highly flammable. Such mixtures are a potential hazard and may lead to fire or explosions and thus cause damage or injury.</p>
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- Refrigerant extracted from a vehicle air conditioning system may be contaminated with moisture, lubricant, dirt and traces of other gases.
- If the refrigerant has been contaminated by being mixed with other gases, remove the contaminated refrigerant and add fresh R1234yf before using the ACX1250 for A/C service.
- R1234yf is not to be used in areas in which there is a danger of explosion. Fire, open flames and smoking are prohibited. Welding and soldering are not permitted.
- The ACX1250 unit should not be exposed to excess moisture or be operated in wet areas.
- R1234yf is not to be mixed with other refrigerants. The mixing of refrigerants could damage the vehicle air conditioning system.

	<p>If high-voltage components or high-voltage wires are handled incorrectly, there is a risk of fatal injury from high voltage and the possible transmission of current through the body.</p>
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- De-energizing is only to be performed by a qualified electrician, a qualified electrician for specific tasks (hybrid) or a power systems engineer.
- Work on vehicles with high-voltage components is only ever to be performed in a safe, de-energized condition by persons with the minimum qualification "Trained to perform electrical work".
- Even after deactivating a high-voltage vehicle electrical system,

- the high-voltage battery may still be live.
- Operating condition cannot be established from any running noise, as the electric machine is silent when stationary.
 - In gear positions "P" and "N" the engine or electric motor may start spontaneously depending on the charge of the high-voltage battery.
 - Never open or damage high-voltage batteries.
 - On vehicles that have been in an accident, never touch high-voltage components or exposed high-voltage wires before deactivating high-voltage vehicle electrical system.
 - The ACX1250 must be constantly monitored when in operation. Never leave the ACX1250 unattended when in operation.
 - Vehicle A/C service using the ACX1250 must be prepared and implemented such that the vehicle air conditioning system circuit does not have to be opened (for example by removing the radiator or engine).
 - Position the ACX1250 on all four wheels on a flat, vibration-proof surface so that proper operation of the scales is guaranteed.
 - The ACX1250 can be secured in position by locking the caster brake.
 - The ACX1250 must always be transported in its operating position. Never lay the ACX1250 on its side, as oil could then escape from the vacuum pump or the built in compressor could be damaged.
 - There are no additional safety systems for protecting the ACX1250 against damage resulting from natural catastrophes.
- Never remove any components from inside the ACX1250 except for maintenance or repair purposes.
 - Follow the pertinent legal regulations or directives to ensure safe handling of pressurized devices.
 - We recommend calibrating the scales at least once per year. Contact customer service for calibration of the scales.
 - The ACX1250 must be subjected to regular maintenance by service personnel or authorized agents to ensure the safety of the unit.
 - Disconnect power before performing any maintenance or service to unit.
 - Never perform any maintenance work which is not expressly recommended in this manual. Contact customer service if components have to be replaced other than in the course of maintenance work.
 - ACX1250 must be connected to a properly grounded electrical connection.
 - If there is damage to the ACX1250, terminate usage immediately and contact customer service.
 - The service hoses and service quick-release couplings must be regularly checked for wear and replaced if damaged.
 - The ACX1250 must be operated in an environment that will provide at least four air changes per hour.
 - Observe local laws or directives as to ensure the safety of the pressurized device.
 - For safety reasons it is advisable to use a residual current operated circuit breaker (rccb) with the following specifications:

Parameters	Specification
Rated voltage	120 VAC \pm 10 %
Rated frequency	50/60 Hz
Rated current	15 A
Rated tripping current	30 mA
Tripping switch	C

- Avoid using an extension cord with the unit. If necessary, use a good condition (three wire grounded, #14AWG or larger) extension cord of the shortest possible length. In addition, the current drawn by all devices connected to the wall socket must not exceed 15A total.

3.5 Safety devices

Description	Function
Pressure switch	Switches the compressor off if the normal operating pressure is exceeded.
Safety valve	The safety valve opens if the design pressure is exceeded.
Circuit Breaker	Interrupts the power supply if overcurrent is applied to the ACX1250
Vents	The ACX1250 is provided with vents in the bottom of the housing to ensure the exchange of air even when switched off.

4 Product description

4.1 Application

ACX1250 features all the functions required for vehicle A/C service.

The following functions can be implemented:

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



The ACX1250 can only be operated with R1234yf. The ACX1250 is not to be used for service work on vehicles with air conditioning systems employing refrigerants other than R1234yf, as this will cause damage. Prior to A/C service check the type of refrigerant used in the vehicle air conditioning system.

4.2 Scope of delivery

Description
Service hose (high pressure)
Service hose (low pressure)
Quick-release coupling (high pressure)
Quick-release coupling (low pressure)
Used oil bottle
Original instructions
Adapter for external bottle connection
Hose Flushing Adapter
R-1234-yf refrigerant identifier mandatory for ACX1250 (sold separately)

4.3 Description of the unit



Fig. 1: Left-Front view

- 1 Rear handle and grip
- 2 Tool tray and storage
- 3 Display and operating unit
- 4 ACX1250 front housing
- 5 Locking caster
- 6 Rear wheel
- 7 Used oil bottle
- 8 Low-side parking
- 9 High-side parking
- 10 Service hose



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



Fig. 2: Rear view (detail)

- 1 Fan
- 2 Vents



Fig. 3: Right-rear view (detail)

- 1 Power cord connector
- 2 Power switch
- 3 USB type B (Device port to PC)
- 4 USB type A (Host port to USB Memory Stick)



The USB type-A connector can only be used with USB 2.0 portable memory devices with Mass storage service for reports export and station update, or for connection to refrigerant identifier.

Do not connect other types of

devices, such as USB keyboards or other units.



Fig. 4: Display and operating unit

- 1 High-pressure gauge
- 2 Low-pressure gauge
- 3 LCD Display with Touch screen
- 4 Printer (Optional)

The pressure gauges (Fig. 4, Pos. 1, 2) of the display and operating unit are used to monitor the pressure during the individual vehicle A/C service phases. The status of the various service phases during maintenance is displayed on the multicolor LCD screen (Fig. 4, Pos. 3).

The menu selection and the necessary entries are made by way of the touch screen (Fig. 4, Pos. 3) integrated in the LCD display. MAHLE supplies a USB stick for updating the ACX1250 software. If required, the USB stick can be inserted in the USB type A socket (Fig. 3, Pos. 4) to perform updating of the firmware/software.

4.4 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 error messages.

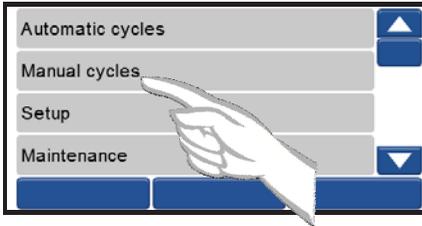
The touch screen is the basic operator interface and can be operated with the fingers or some other object, such as a pen.

When a button is pressed, a beep sounds.

The following functions keys are available:

	To move up in the menu options
	To move down in the menu options
	Scroll bar to move in the menu options
DATA VALUE	Arrows to decrease or increase the data value
	To enter in the data changing or switching the data to next option
	To return to the previous page
	To save the programmed cycle in a personal memory
	To confirm and to go head
	To begin the cycle
	To answer NO to the displayed question
	To answer YES to the displayed question
	To interrupt the operation in progress

To select a function in the menu press the text name of the function, the selection occurs when the finger is released, the selected entry is pointed out with a different color (from grey to blue) and the menu screen page changes.

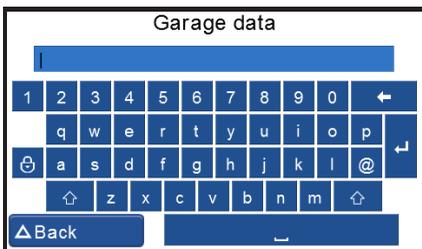


If there are descriptions that need more space on the screen page, for example the manual cycles list (see the screen page below), or in case of setup, it is possible to display the different entries by moving the scroll bar to the right side. For this reason, it is necessary to touch the blue point on the scroll bar and slide up or down with the finger.

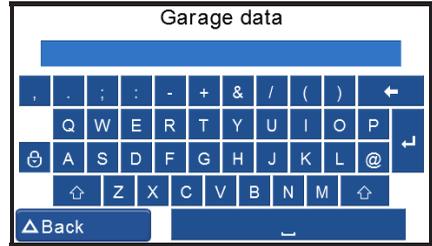
Lift the finger when you are on the desired position.

By touching the arrows, the menu moves one line up or down depending on whether it is touched on the arrow up or on arrow down.

If you need to enter free text or identify a set of data, a keypad automatically appears (for example, for entering workshop data (if the printer is present) or at the end of the service cycle).



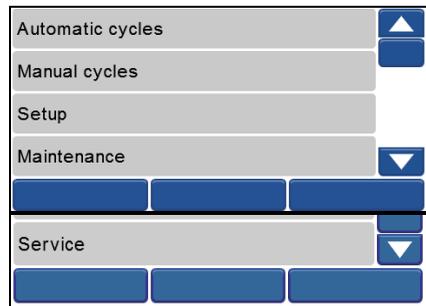
If this key  is active, it is possible to switch to the symbols keyboard.



4.4.1 Main menu

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

- Automatic cycles
- Manual cycles
- Setup
- Maintenance
- Service



Each function will be described in the next chapters.

4.5 Eco lock® quick couplers

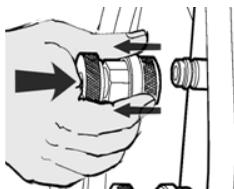
ECO LOCK® is the INTELLIGENT COUPLER, that with the suitable

automated procedure in the software enables to:

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



To connect the coupling, position the coupling on the parking coupler, pull back the knurled section of the coupling element and press carefully onto the connection.



5 Technical features

Tank for R1234yf with safety valve	
R1234yf tank capacity	12 L
Service pressure	400 psi
Maximum content	22 lbs
Weight of gas content	Scale
Containers for oil	
Recovered PAG oil container	250 ml
Pneumatic circuit	
Vacuum pump	1.8 CFM Dual Stage

Vacuum pump oil quantity	250 ml
Refrigerant recovery compressor cubic capacity	0.87 cu. In. /14 cc
Dryer filter	75 kg of recovered R1234yf
Non condensable gases discharge	Automatic with AIR PURGE SYSTEM function, with solenoid valve
HP and LP taps	Automatic
Safety pressure switch	
Type	13/18bar 1/4SAE
Trip pressure	18 bar
Pneumatic fittings	
Net length of external HP and LP hoses	3 m
HP and LP pressure gauges	Analog 80 mm, pulse-free, 1.0 class
Low Side max. press	217 PSIG
High Side max. press	261 PSIG
User interface	
Display	Graphic 4,3" TFT WideScreen 480x272, 65536 colors
Keypad	Touch screen
Software updating	USB type-A with USB 2.0 key USB type-B with direct connection to PC.
Printer (optional)	Thermal, 24 columns
Functions	

R1234yf recovery, exhausted oil recovery, vacuum, recharge	Automatic and manual
Recycling mode	Single or MULTIPASS
Memory for customized cycles	100 records
Recovered oil measurement	Automatic weighing, 1 g res., 5 g acc.
Electric compressor function	With integrated flushing system
Flushing	With integrated solenoid valves
Database	Autodata, complete electronic (cars and industrial vehicles only)
System pressure diagnostics	Manual and automatic
Alarms	
Dryer filter replacement control	Active
Vacuum pump oil replacement control	Active
Full/empty tank check	Active
Full oil container control	Visual
Empty oil container control	Visual
Overall dimensions	
H x W x D	1050 x 655 x 850 mm
Loadless weight	85 kg
Power supply	
Frequency	60 Hz
Voltage	120 VAC 1 Phase
Total max load	7.5 A
Overcurrent	12 A

thermal protection with circuit breaker	
Environmental conditions	
Operating temperature	50 to 122 °F
Humidity	10 to 90% R.H. (non condensing)
Storage temperature and humidity	-13 to 50 °F, 10 to 90% R.H. (non condensing)
Ambient pressure	75 kPa ÷ 106 kPa
Max operating altitude	2000 m
Pollution degree	2
Water degree	0
Certification	SAE J2788 UL 1963 CAN/CSA STD C22.2 NO. 120-M91

5.1 R1234yf gas identifier for ACX1250

Voltage	12 VDC
Power	12 W
Ambient temperature	10-50°C
Type of connection	USB 2.0
Gas pressure	1,7-16 bar
Type of identified gas	R1234yf with regard to R134a contaminants and hydrocarbons.

6 Installation

6.1 Equipment installation

6.1.1 Unpacking ACX1250



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.

- Cut the strap and remove the carton.
- Cut the straps securing the unit to the pallet.
- Remove the equipment from the pallet (2 operators required)



- Lift both front wheels by levering with the handle and on rear wheels (this way the operators must not lift the full weight of the unit)

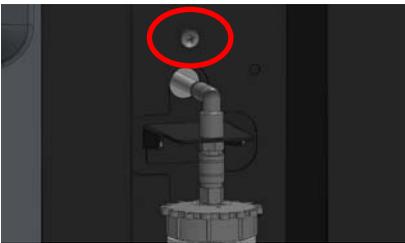


- Slowly lower the unit from the pallet by means of the rear wheels

► Keep the pallet, carton and scratch protection film for use when returning the unit. The unit rolls on wheels; the two smaller wheels can be locked.

ACX1250 is supplied with the accumulation tank empty. This prevents problems in shipping the unit.

SCALES SCREW RELEASE



The tool is transported, with the scale blocked by a locking screw to avoid the load cell damage. The scales locking screw is placed on the equipment bottom/right side (see the box shown above) and is formed by a bolt. For commissioning, unscrew the screws.

7 Commissioning

7.1 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.

7.1.1 Positioning and connection

	<p>HANDLING: During handling, the minimum devices required for correct handling shall be ensured, as provided for by accident prevention provisions.</p>
	<p>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.</p>
	<p>INSTALLATION: the unit must be installed by a specialised technician in scrupulous observance of in accordance with electrical engineering principles. The use of the equipment in explosive atmosphere is forbidden.</p>
	<p>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.</p>



Power mains connection

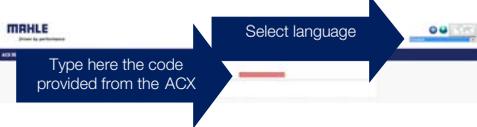
Vehicle A/C system connections

Visit www.arcticproacxregistration.com
 To register your ACX enter:
 123456789012 to receive Counter Code
 Enter Counter Code here _ _ _ _ and
 press ENTER

2. Go to the ACX Registration web site: www.arcticproacxregistration.com
3. Select your country



4. FIRST STEP online registration



5. SECOND STEP online registration
 - Enter your company information and address for receiving the counter code
 - Now you get the counter code



7.3 Software update

NEW SOFTWARE IS AVAILABLE ON ACX MANAGER

After a year of usage you will get a reminder to check for new software for installation on ACX Manager

HOW TO GET AND INSTALL NEW SOFTWARE FOR MAHLE ACX DEVICES

1. Go to the ACX Registration web site: www.arcticproacxregistration.com

	ATTENTION: Leave the quick coupling taps closed when the unit is not in use and at the end of vehicle service operations.
	ATTENTION: The power supply cord shall not be unplugged while the equipment is operating.

7.2 Registration

WHY YOU NEED TO REGISTER YOUR A/C SERVICE UNIT:

- WARRANTY starts with date of registration
- Registration mandatory within 30 days from first tank filling
- After 30 days without registration the unit stops working

HOW TO PROCEED:

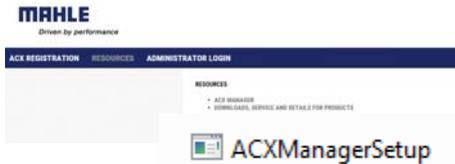
1. Power ACX on : the following messages are displayed

Please register your ACX now
 X-days left before ACX shuts off !

ENTER to proceed ESC to skip

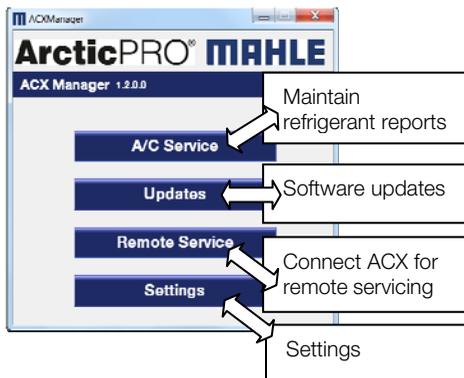
2. Select your country (see ACX registration process)

3. Choose submenu RESOURCES and install ACX MANAGER



Activate the setup file to store the ACX Manager program on your PC

4. ACX Manager



5. Software Update of the ACX unit

- Choose "Updates"
- Transfer from the PC to ACX via standard USB Flash drive

DATABASE updates always incremental:

- No missing model from one version to another
- New (added) models identified in gray or with a #
- Unlocking of new (added) models requires a new activation
- Activation can be performed any times (before or after ACX registration)
- Activation via a "1-time-token" USB stick

(available for purchasing at MAHLE Distribution Partners)

7.4 First verification

Execute the following actions in sequence by following the display guided procedure and the illustrations on the screen of the equipment:

- Gas weight check
- First tank filling

It is possible to interrupt the initial check and print a report with the equipment printer in which the checking status is reported.

The equipment cannot operate in automatic mode until all the steps of the initial check have been completed.



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

Set the quantity of gas to fill (at least 3 kg) and follow the guided procedure shown on the display.

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 recharge tank, connect the LP quick coupler (color blue) of the unit to an external refrigerant gas tank using the supplied adaptor.

When the message occurs 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 LP 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 **LP** 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 Setup

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

ECO LOCK®

- by selecting this entry, you can enable the ECO LOCK® function (the ECO LOCK® quick coupler must be present on the car).

RECHARGE MODE

- by selecting this entry, one may decide whether to enable use of the Quick Mode or Zero Tolerance recharge method

PRESSURE CHECK

- by selecting this entry, one can enable or disable the pressure check.

RECOVERED GAS AND OIL PRINTING

- selecting this entry, you can choose whether you want to enable displaying and printing of the recovered gas quantity.

REPORTS SAVING MODE

- by selecting this entry, you can save the reports of the performed charges (automatic cycles or Reg. 842/2006).

REPORT DATA

- select what data you would like to include in the saved and printed report:
 - -license plate
 - -km
 - -client's name
 - -technician's name

UNIT OF MEASURE

- selecting this entry, you can modify the pressure unit of measurement (switching from Bar to PSI)

CLOCK ADJUSTMENT

- by selecting this entry, date and time of the station may be changed.

GARAGE DATA

- by selecting this entry, one can enter the garage data to be printed on the end of cycle report. The type of data shown in the print-out are the following

Row 1: Company name
 Row 2: Address
 Row 3: Postcode and city
 Row 4: Telephone Number
 Row 5: Fax Number

Follow the instructions below:

When you click a line, the keyboard is displayed. Through this keyboard, you can enter values and confirm with the button „Enter“. The screen-page automatically changes. When the data are entered, save them through the disk icon.

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, keep pressed the

touch screen and switch on the equipment in the meanwhile, you will be directed to the language setting menu.

STARTUP SCREEN

- by selecting this entry, you can decide whether the startup screen of the unit will be the databank page or the main menu page.

DEFAULT SETUP

- By selecting this entry, you can restore the unit default settings.



MAHLE reserves the right to add new parameters to make the equipment increasingly versatile and adaptable to market's needs.

9 A/C system recharge

9.1 Preliminary operations

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

The vehicle must not be prepared in a special way; connecting hoses have to be attached by identifying their position.

Vehicle details necessary for the performance of the charge/recovery/vacuum cycle are the amount of refrigerant and the type and quantity of oil. These data are often found on the engine compartment plate or on the technical manuals.

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 gas, allowing the recovery by the tool (thus protecting the environment and saving refrigerant).
2. Automatic leak test of the car 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 vehicle, screw the valves only when required by the messages on the tool display.

amount of non-condensable gas within the tank.



	CAUTION: Handle, move and use the refrigerant recovery/recycling equipment carefully to avoid either damaging the refrigerant tubing, or increasing the risk of a leak.
--	--

9.2 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.

Periodically, basically every week, the station, the first time it is switched on that day, will suggest running the AIR PURGE SYSTEM procedure

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 recharge cycles on the vehicle.

The procedure will take a few minutes, and its duration may vary according to the

	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.

9.3 Quick mode and zero tolerance recharge mode

ACX1250 can apply two different refrigerant recharge modes; the first one is called Quick mode and features the opening of the recharge valve by injecting gas through the HP port. By the Quick Mode part of the refrigerant remains into the hoses and is compensated by software calculation.

Whenever the recharge is not completed the UNIT shifts automatically to the Zero Tolerance mode.

The Zero Tolerance function is the second recharge procedure, an alternative to the Quick Mode.

It features a more accurate recharge and guarantees a successful recharge (it however requires a longer time and the operator's intervention).

If the car A/C system is equipped with both couplers or with LP coupler only, there are two slightly different working modes; in any case if only the HP coupler is available the Zero Tolerance mode is not applicable.

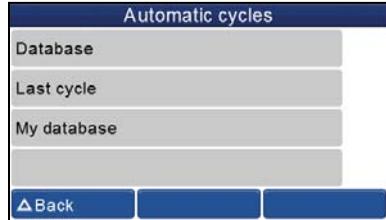
With both HP and LP couplers available the Zero Tolerance features the injection of the selected refrigerant amount into the system through the HP hose; then refrigerant remained into the HP hose is sucked by the car system – engine and compressor running – through LP (after disconnecting and closing the HP coupler).

In case the LP coupler only is available the station charges the system with 50% of the selected amount with car compressor off and waits for 10 minutes before recalling the operator. This wait time – quite rare since most of cars are equipped with HP coupler too – allows the refrigerant injected near the compressor – that is LP side – to evaporate to prevent any damage to the compressor during the admission of liquid phase refrigerant. Then, after car and A/C system switch ON recharge continues through timed injection of refrigerant through hose LP, such injections start exclusively if the LP pressure is lower than 3 bar (this threshold is adjustable).



10 Automatic cycles

The access to Automatic cycle can be achieved selecting Database, Last Cycle or My database (a 100 personal automatic cycles).



10.1 Automatic cycle data loading

10.1.1 Database

MAHLE offers customers purchasing ACX1250 the possibility of enhancing potentials of the UNIT through the database.

This database contains all data related to the A/C system of most vehicles. Hence, it will be possible to speed up the recharge operations of the system with the aid of the data provided by the database.

- Maker
- Model
- Version / engine capacity
- Year
- System

10.1.2 Last cycle

It loads the parameters of the last automatic cycle

10.1.3 My database

It allows loading the parameters of the automatic cycle previously saved by the user.

10.2 Automatic cycle data setting

After selecting the type of A/C system the main page is shown with the following preset values (this below is an example):

Vacuum	00:30:00 04:00
Refrigerant amount	▼ 500 g ▲
Couplers	LP-HP
▲ Back	<input type="checkbox"/> Save <input type="radio"/> Start

- Vacuum phase (recommended values but changeable – they do not depend by the car selected)
- Vacuum duration
- Leak test duration

Vacuum	
Vacuum time	▼ 00:30:00 ▲
Test time	▼ 04:00 ▲
▲ Back	<input type="radio"/> Ok

- amount of refrigerant that will be charged into the system and the amount of refrigerant available in the inner tank of the UNIT.

Refrigerant amount	▼ 620 g ▲
--------------------	-----------

- Injection type: It allows selecting from which hose the service is carried out, according to the type of system.
 - Injection from HP hose (red)
 - Injection from LP hose (blue)
 - Injection from HP hose (red) and LP hose (blue)

- Injection from HP hose (red) on the system low pressure side. Specific for some Renault models.

Couplers	LP-HP
----------	-------

At the end of the setup, press the “START” button to start the automatic cycle.

Or press Save if you want to save this cycle with a name in a My Database record.

10.2.1 Electric Compressor Function

Before connecting the ACX1250’s hoses to the A/C system of the vehicle, select the Vehicle Compressor Type.

Vehicle compressor type	
Electric (high voltage)	<input checked="" type="checkbox"/>
Mechanic	<input type="checkbox"/>
Continue?	
▲ No	<input type="radio"/> Yes

If the selected type is Electric (high voltage), a special function named “Electric Compressor Function” will be executed to clean the hoses from any previous oil residue.

When the following message appears:

Electric compressor function	
Connect LP and HP to their support connectors	<input type="checkbox"/>
Continue?	
▲ No	<input type="radio"/> Yes

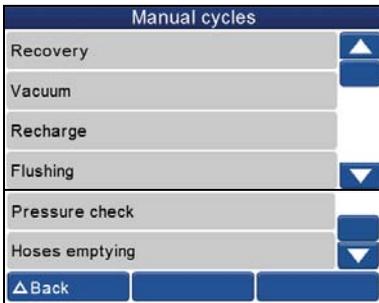
Connect LP and HP quick coupler to their support connectors on ACX1250.



After the connection, press “YES” to proceed and follow the instructions showed on the screen.

11 Manual cycles

The access to manual cycles can be achieved selecting the functions in the following menu.



11.1 Recovery

In the MANUAL CYCLES menu select RECOVERY function.

Press and start the recovery function and follow the tool instructions. If there is no pressure inside the system, this function cannot be started.



POSSIBLE ERROR INDICATION

Too high pressure in the A/C service unit.

Valves or couplers closed or system empty.

11.2 Vacuum

From the main menu select MANUAL CYCLES and press VACUUM.



Connect the HP – LP couplers or the single coupler to the vehicle system and screw the couplers. Now set the time for the vacuum and control phase, if different from the default settings. The vacuum phase is automatically followed by the “vacuum test” phase.

Press START to start the vacuum phase.



POSSIBLE ERROR INDICATION

System pressurized



POSSIBLE ERROR INDICATION

System not tight

11.3 Recharge

In the main menu select MANUAL CYCLES and then RECHARGE.



- Amount of refrigerant that will be charged into the system and the amount of refrigerant contained in the inner tank of the UNIT.



- Injection type: It allows selecting from which hose the service is carried out, according to the type of system.
 - Injection from HP hose (red)
 - Injection from LP hose (blue)
 - Injection from HP hose (red) and LP hose (blue)
 - Injection from HP hose (red) on the system low pressure side. Specific for some Renault models.



Connect the couplers to the vehicle fittings and follow the instructions on the screen page. Press START to begin the refrigerant filling phase.

impossible.



THIS PHASE HAS TO BE CARRIED OUT EXCLUSIVELY ON A/C SYSTEM UNDER VACUUM (AFTER A VACUUM PHASE HAS BEEN PULLED).

11.4 Flushing (with optional accessories)

After performing a lot of recharge cycles or after replacing components or parts of the /AC circuit on a vehicle it is advisable to carry out a system flushing.

The system washing (Flushing) consists in purifying the vehicle cooling system through several R1234yf gas 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, ACX1250 automatically manage 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.

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.



POSSIBLE ERROR INDICATION

The amount of refrigerant in the A/C service units tank is less than that required. Closed hoses, injection



11.5 Pressure check

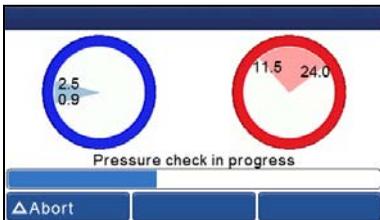
To check the vehicle A/C system status – for instance in case there is no flow of cold air from flaps – pressure values can be checked.

Connect the **HP** - **LP** couplers or the single coupler to the vehicle system.

Under the sequence guided by the software perform the following preliminary operations on the vehicle:

1. Turn on the A/C system
2. Set temperature at minimum level.
3. Set fan speed at maximum level; close all the flaps except the central one and set air distribution to central position.
4. Keep engine at accelerated idle at constant speed for at least 2 minutes.
5. Check the pressure values within about 3 - 5 minutes.

In the **MANUAL CYCLES** menu, select the **PRESSURE CHECK** function.



Follow the automatic procedure.

And at the end make sure that both values on LP and HP gauges fall within the values shown on the display.

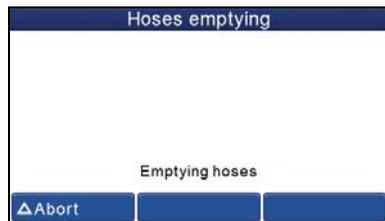


PRESSURE VALUES CHANGE CONSIDERABLY WHEN AMBIENT TEMPERATURE CHANGES. KEEP THIS IN MIND WHEN CHECKING PRESSURE VALUES

It is possible to interrupt the phase in progress at any time.

11.6 Hoses emptying

To empty the recharge hoses completely perform the **HOSES EMPTYING** phase. Select in the menu the **HOSES EMPTYING** function.

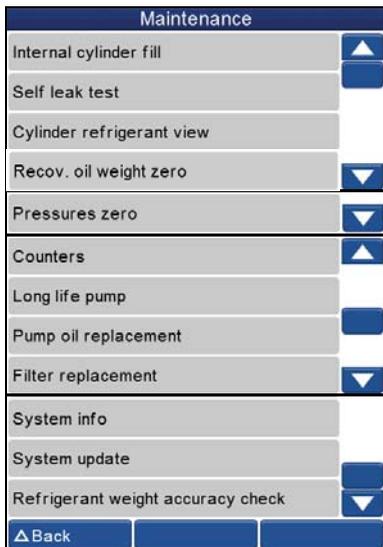


Wait the end of the procedure.

12 Maintenance

ACX1250 is a remarkably reliable unit, manufactured using the highest quality components, making use of the most advanced production techniques. Please contact an authorized technical service centre for purchasing original spare parts.

The access to manual cycles can be achieved selecting the functions in the following menu.



Set the quantity of gas to fill and follow the guided procedure shown on the display. The set value is limited to avoid to fill too much the internal cylinder.

Only when the message appears asking to connect the recharge tank, connect the LP quick coupler (color blue) of the unit to an external refrigerant gas tank using the supplied adaptor.

When the message occurs 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 LP 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.

	INTERVENTIONS ON SERVICE STATION COMPONENTS WHICH ARE NOT MENTIONED IN THE FOLLOWING PARAGRAPHS ARE PROHIBITED.
	MAKE SURE THE TOOL IS UNPLUGGED FROM THE POWER MAINS BEFORE OPENING.

12.1 Internal cylinder fill

In the main menu select MAINTENANCE and press “INTERNAL CYLINDER FILL”.



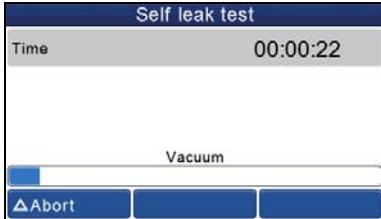
The LP gauge indicates the pressure inside the external tank.

After some minutes the unit will automatically end the function.

At the end the weight of the charged refrigerant will be displayed.

12.2 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 ACX1250.

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.

12.3 Cylinder refrigerant view

In the main menu select MAINTENANCE and press "CYLINDER REFRIGERANT VIEW".



The available refrigerant for next recharging is 2 kg less than the total contents of the cylinder.

Two kg is the minimum quantity that should be always left in an operating ACX1250.

12.4 Recov. Oil weight zero

In the main menu select MAINTENANCE and press "RECOV OIL WEIGHT ZERO".

This function allows to set to zero the value of the scale of the recovered oil.

Be sure the container is empty and continue.



Empty exhausted oil container

Continue?



12.5 Pressure zero

In the main menu select MAINTENANCE and press "PRESSURE ZERO".

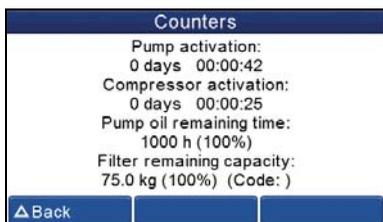
This function allows to determine and store the atmospheric pressure value.

We recommend running this procedure every time the ACX1250 will be moved from a location to another with a different altitude.

12.6 Counters

In the main menu select MAINTENANCE and press "COUNTERS".

In the COUNTERS page, at any time, the vacuum pump and compressor hours of life can be displayed; besides, remaining time before replacement of vacuum pump oil and dryer filter can also be displayed.



This is useful to understand if some maintenance activity should be performed.

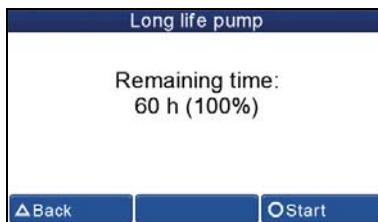
12.7 Long life pump special function - vacuum pump oil change

The ACX1250 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 vehicles air conditioning systems.

At the end of the procedure, the vacuum pump performance check is carried out and a result to the operator is signalled.

In case of negative result you have to replace the vacuum pump oil.

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.

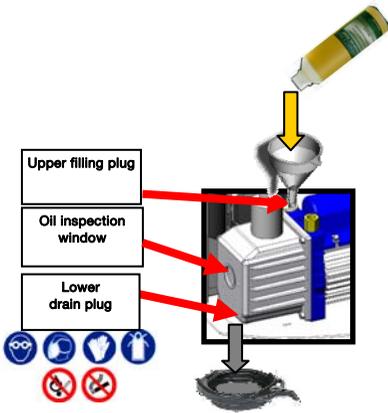
Required tools:

- 1 Hex screwdriver (2.5 mm)
- 1 Medium-sized flathead screwdriver
- 1 Hex key (10 mm)

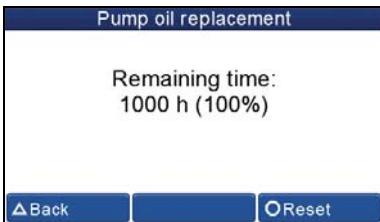
For replacement, comply with the instructions outlined below:

1. Disconnect the unit from the mains.
2. Remove the six 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 exhausted 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 REPLACEMENT: press the “RESET” key to set the counter.



12.7.1 Oil pump visual check

Without opening the equipment is always possible to remove the rubber tap in the

following position to check level and the clearness of the oil inside the pump.



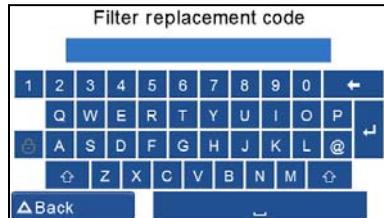
12.8 Dryer filter change

The dehydrator filter must be replaced after having dehydrated 75 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 “START” 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.

Required tools:

- 1 Hex screwdriver (2.5 mm)

- 1 regular or torque Hex key (24 mm)
- 1 Hex key (17 mm)

For replacement, comply with the instructions outlined below:

1. disconnect the HP and LP hoses from other systems/circuits or vehicles 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.



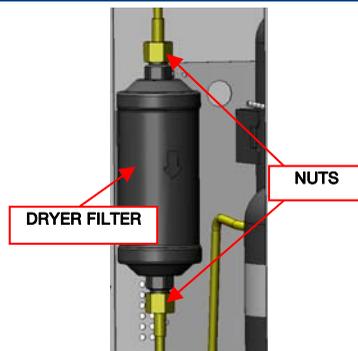
DANGER OF CONTACT WITH R1234yf REFRIGERANT and motor vehicle A/C system oil

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



DANGEROUS VOLTAGE HAZARD

5. Remove the six 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. Replace the front panel
11. Carry out the automatic leak test requested by the software when switched on again after the filter replacement.

12.9 System info

In the main menu select MAINTENANCE and press "INFO".

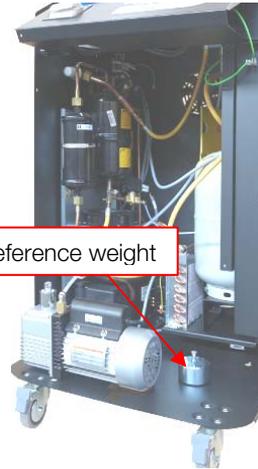
In the INFO page, at any time, the software version and the serial number can be displayed.



12.10 System update

The firmware (software) can be updated by way of a USB stick.(where the new version is stored)

1. Insert the USB stick in USB port (fig.3 pos.4)
2. Power on ACX1250.
3. In the main menu select MAINTENANCE and press "SYSTEM UPDATE".
4. A message will appear that the unit is loading an update.
5. The unit may load an updated language file, database file and configuration file while updating.
6. Once unit is updated, the software version string on the introduction screen during power up will change



12.11 Refrigerant weight accuracy check

An automatic procedure is provided to check the refrigerant scale accuracy.

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



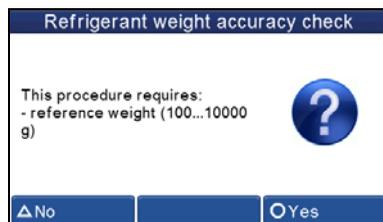
DANGEROUS VOLTAGE HAZARD

1. Remove the six screws that fix the front door of the unit.
2. Unscrew the reference weight placed on the floor of the equipment

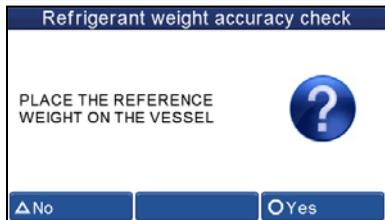


Be carefully, connect the cord and switch on ACX1250.
Do not touch cables inside and operate without other people or animals around.

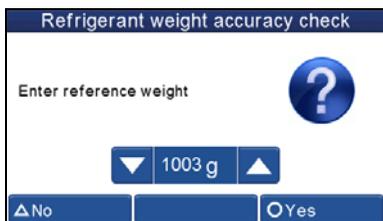
3. In the main menu select MAINTENANCE and press "REFRIGERANT WEIGHT ACCURACY CHECK".



4. Follow the messages on the screen and when the following page appears place the weight below the tank, over the two screws of the load cell



5. Insert the reference value and wait the response of the check



6. After the response switch off the equipment and **disconnect the power supply cord.**



DANGEROUS VOLTAGE HAZARD

7. Screw the reference weight in its position on the floor of the equipment
8. Replace the front panel of the unit.



IN CASE THE ACCURACY TEST FAILS, ASK THE INTERVENTION OF A SERVICE TECHNICIAN FOR THE SCALE RE-CALIBRATION

12.12 Maintenance of printer

To change the roll of paper follow instructions below:

1. Open the lid of the printer as shown



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



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



4. The printer is ready for printing.



12.13 Periodic checks

A/C service stations (pressure equipment set) must be checked over regularly as provided by local legislation.

According to 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 ACX1250 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 Disposal

13.1 A/C service unit disposal

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

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

13.2 Recycled materials disposal

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

extracted from vehicles' A/C systems must be consigned to an exhausted oil collection center.

13.3 Packaging 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.

14 Spare parts

Spare parts available to the user:

- 3 m red charging hose



- 3 m blue charging hose



- Blue LP quick coupler and red HP quick coupler



- Dryer filter



- Vacuum pump oil

Consumables available to the user:

- Thermal paper rolls

Further spare parts are available through the Service Centers authorised by MAHLE or by its reseller.



USING NON
ORIGINAL/UNAPPROVED
SPARE PARTS OR
ACCESSORIES CAN
COMPROMISE THE SAFETY OF
ACX1250.

15 Message and alarm codes

Please find below the list of message and alarm codes that could be detected by the software of the ACX1250 station. If there are alarms, it is advisable to apply to Your supplier or service Partner.

Notice/Warning messages are coded with Wxxx code on the title of the window.

CODE	MESSAGE	When it occurs	Possible situations	Actions
W008	REPLACE VACUUM PUMP OIL	When required after Pump Monitoring System procedure	Pump oil contaminated	Replace pump oil
W009	REPLACE DRYER FILTER	every year since installation	Filter capacity is finished	Replace dryer filter
W025	REFRIGERANT QUANTITY TOO HIGH	During the programming of the inner tank charge amount	Amount required greater than that available in internal tank	Decrease the set quantity.
W026	RECHARGE CYLINDER EMPTY OR DISCONNECTED	During the tank filling phase	Recharging tank empty or hoses/taps clogged/closed	Check tank, hoses, taps.
W029	CYLINDER NEARLY FULL	During the refrigerant recovery or hoses emptying phase.	The tank is close to its maximum capacity.	Decrease quantity of gas by filling (injecting) an external suitable tank (with safety valve)
W032	NO PRESSURE - VEHICLE WITHOUT REFRIGERANT OR DISCONNECTED	During the refrigerant recovery phase		Check connections and leaks in A/C system
W036	FURTHER OIL INJECTION NOT POSSIBLE	During oil injection phase	Insufficient vacuum level	Increase the vacuum phase time, check the A/C system tightness.
W044	CYLINDER EMPTY	During flushing or Tank refrigerant internal re cycling phase	Gas level is too low for the procedure to be completed	Fill the internal tank with gas
W045	LP VERY LOW, CHECK CIRCUIT BEFORE CONTINUING	During flushing phase	LP hose disconnected, flushing couplings not properly connected or leak in circuit being flushed.	Reconnect LP and/or the fittings and eliminate any leaks.
W047	POSSIBLE LEAKAGE	During the refrigerant recovery phase	Vehicle A/C system may have leaks	--

Alarm messages are coded Axxx in the window title bar.

Alarms immediately terminate the procedure and prevent its resumption.

CODE	MESSAGE	When it can occur	Possible causes	Actions
A000	EEPROM NOT WORKING	Electronics fault	EEPROM damaged	Replace the logic electronic board
A001	EEPROM DATA CORRUPT	Electronics fault	EEPROM damaged	Replace the logic electronic board
A002	PRESSURE SAFETY SWITCH ACTIVATED	Pressure above 18 bar	High pressure in the internal tank or circuit between compressor and tank obstructed or closed.	Verify <ul style="list-style-type: none"> ▪ If internal CYLINDER pressure level is over 18 bar, wait for pressure reduction ▪ disconnect equipment from the mains, use safety protection, open equipment and verify if the valve between compressor and internal CYLINDER are open
A003	ADC NOT WORKING	Electronics fault	ADC analog-digital converter damaged	Replace the logic electronic board.
A032	CIRCUIT STILL UNDER PRESSURE	During the vacuum, cylinder filling or leak test phase in vacuum	The vehicle A/C system is pressurized	Recover the refrigerant gas from the vehicle before starting another vacuum phase.
A033	CIRCUIT LEAKAGE	During the vacuum, cylinder filling or leak test phase, both under pressure and in vacuum	Leakage in the circuit or in the vehicle fittings.	Identify the leak position in the vehicle or connected system and have it repaired by trained and qualified staff according to local legislation.
A034	VACUUM LEVEL TOO LOW	During tracer injection and oil injection phase. The necessary vacuum level has not been reached.	Vehicle A/C system is pressurised notwithstanding the vacuum phase, possible presence of leakages inside A/C system. Vacuum phase time not sufficient or phase not executed (manual cycle).	Repeat cycle, increase vacuum time, if leakages has been identified, identify the leak position in the vehicle or connected system and have it repaired by trained and qualified staff according to local legislation.

CODE	MESSAGE	When it can occur	Possible causes	Actions
A035	CYLINDER EMPTY	During the gas injection and flushing phase	Refrigerant gas is too low for the procedure to be completed	Fill the internal tank
A036	CYLINDER REFRIGERANT QUANTITY TOO LOW	During the gas injection and flushing phase	Gas amount in internal tank less than required	Fill the internal tank
A037	FURTHER REFRIGERANT INJECTION NOT POSSIBLE	During gas injection phase	Hoses not connected to vehicle A/C system; tap closed; Vacuum not sufficient presence of pressure in the circuit	Caution: before proceeding, empty out the hoses. Repeat the recovery procedure and increase the vacuum phase duration
A038	CIRCUIT LEAKAGE OR DISCONNECTED	During flushing phase	Leakages or obstructions in the circuit to be flushed	Check the connection to the A/C system or identify the leak in the circuit and have it repaired by trained and qualified staff according to local legislation.
A039	FURTHER OIL INJECTION NOT POSSIBLE	During oil injection phase	Insufficient vacuum level	Increase vacuum phase duration.
A043	CYLINDER FULL	During the gas recovery and hoses emptying phase	Internal tank full, maximum capacity level reached	Decrease quantity of gas by filling (injecting) an external suitable tank (with safety valve)
A047	LP LEAKAGE	During the gas recovery and hoses emptying phase	At the end of the gas injection, in the Eco-Lock Lock patented technology quick couplers disconnection phase, during the vehicle fittings leak test	Empty the vehicle (follow the procedure guided by the displayed messages)
A048	HP LEAKAGE	During the gas recovery and hoses emptying phase	At the end of the gas injection, in the Eco-Lock Lock patented technology quick couplers disconnection phase, during the vehicle fittings leak test	Empty the vehicle (follow the procedure guided by the displayed messages)
A049	LP AND/OR HP LEAKAGE	During the gas recovery and hoses emptying phase	At the end of the gas injection, in the Eco-Lock Lock patented technology quick couplers disconnection phase,	Empty the vehicle (follow the procedure guided by the displayed messages)

			during the vehicle fittings leak test	
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