Instructions manual
Manuel d'instructions
Gebrauchsanleitung
Manuale d'uso
Manual de instrucciones
Manual de instruções

[MANUY1F.0B0] ed.0

ENGLISH

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INTRODUCTION

This machine is a pressure unit as can be seen in the CE declaration of conformity and Data plate. The equipment supplied conforms to the Essential Safety Requirements according to Annex I of Directive 2014/68/UE (PED). Any work involving repairs, modifications, and/or changing pressurized components or parts make safe use of the equipment very risky. Any tasks done must be authorized by the Manufacturer.

This manual contains important information pertinent to operator safety. Read this manual through before beginning operation of the machine.

The manufacturer reserves the right to modify this manual and the machine itself with no prior notice. We therefore recommend checking any updates. This manual must accompany the machine in case of sale or other transfer.

Any repair, modification, or changing of components not formally agreed with and authorized by the manufacturer poses a risk of the conformity to Directive 2014/68/UE being nullified and makes this pressure equipment a significant risk. If not authorized in writing the Manufacturer considers the tasks indicated above to be tampering with the machine, which nullifies the initial declaration of conformity issued, and so they do not accept any direct responsibility.

Braze welding of parts that contribute to the pressure strength of the equipment and the parts directed attached to it was done by adequately qualified personnel, using adequate operating methods. Approval of the operating methods and personnel was entrusted to a competent outside party for category III pressure equipment, and any work on this equipment that involves the need to carry out braze welding must comply with the requirements laid down in annex 1 of Directive 2014/68/UE, or the Manufacturer must be contacted for the relevant information.

- The pressure equipment has been inspected and tested, complete with the safety accessories identified by the manufacturer as being of a direct discharge type with calibrated air pressure. Testing and inspection of the accessories is not necessary prior to starting up.
- The pressure equipment must be subjected to routine inspections and checks when operating, according to the relevant regulations and legal norms.

For the unit in question, it is hereby declared that a competent Authorized Body carried out their part of the final check according to annex I of point 3.2.3 of Directive 2014/68/UE as well as checking safety accessories and control devices in conformity to comma d) of art 5 of Ministerial Decree 329 of 01/12/2004.

List of the critical components in terms of PED safety DIR 2014/68/UE

Condenser, dehydrator filters, distributor, refrigerant storage bottle, airtight compressor, safety pressure switch, pressure transducers, and safety valves.

The operator has to check/substitute the PED critical components before their respective end of life (according to national law)

CARE OF THE MANUAL

This manual must be kept for the entire life of the machine and protected against humidity and excessive heat. Take care not to damage this manual in any way during consultation.

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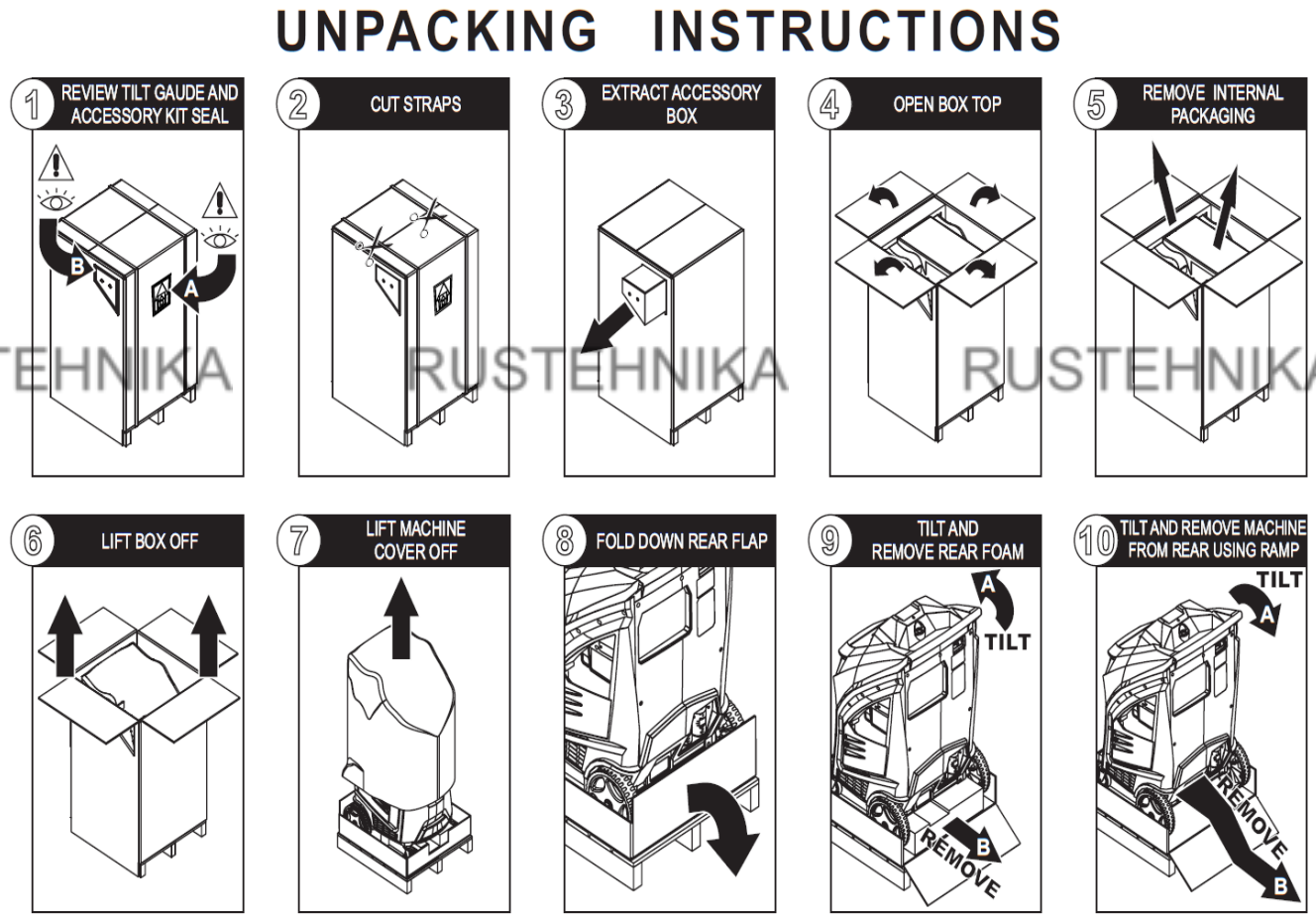
CONDITIONS OF WARRANTY

Refer to CONDITIONS OF WARRANTY booklet supplied with the machine.

UNPACKING INSTRUCTIONS

1. Observe the adhesive labels the incline and the accessory kit
2. Cut the straps
3. Pull out the accessory box
4. Open the upper part of the box
5. Remove the internal package
6. Raise the box
7. Pull out the machine cover
8. Open the rear door to the bottom
9. Tilt and remove sponge protection on the back (tilt - remove)
10. ilt and remove the machine from rear using ramp



NOTE: keep the original packaging and re-use it for further transportation

NOTE: use the handle (ref.7, Fig.12) to move the machine.

GENERAL INFORMATION

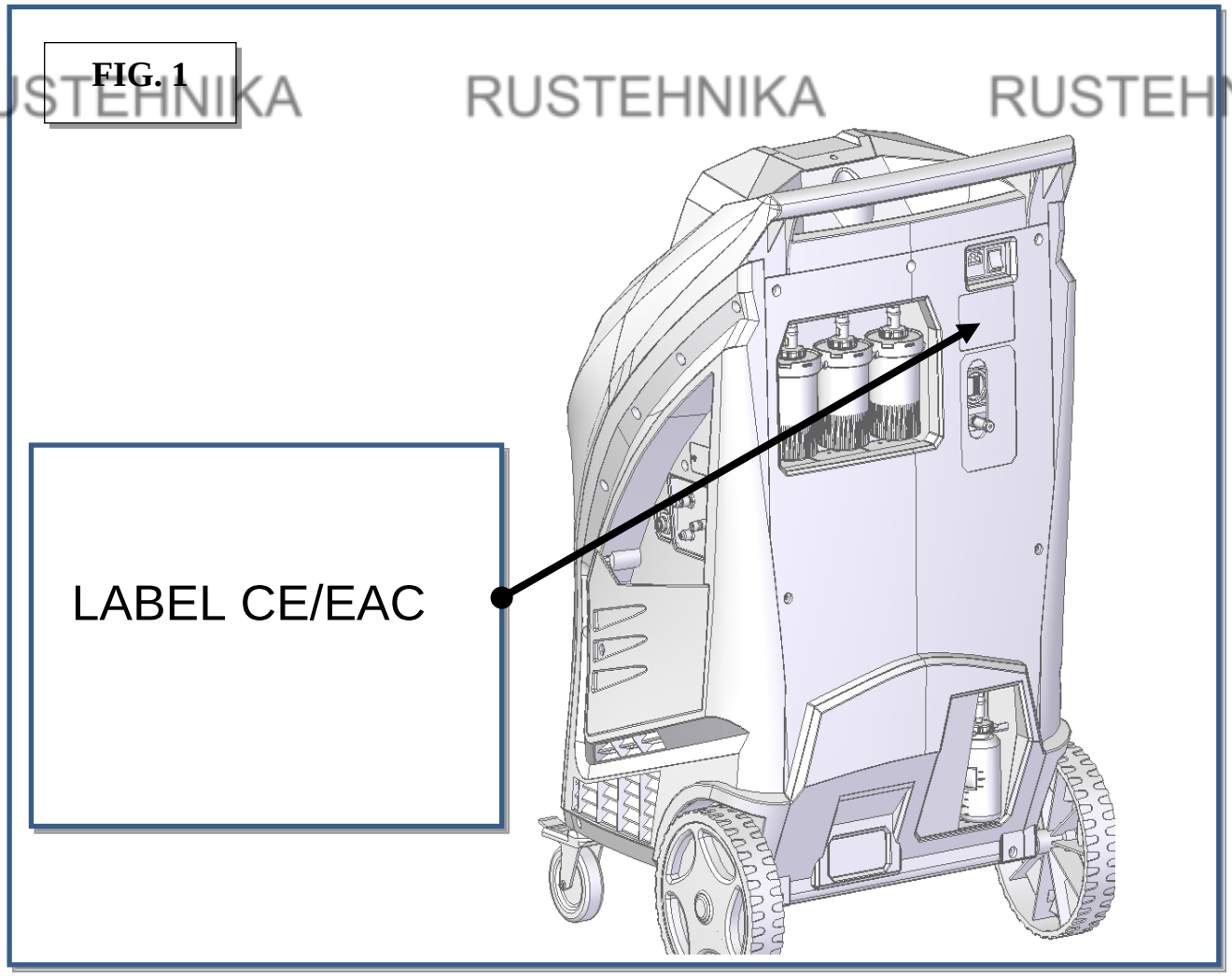
Machine model information are printed on the data plate (see Fig.1). The machine has the following features

Height: 1080 mm Width: 660 mm
Depth: 690 mm Weight: 75 kg
Operating temperature 10/50°C Storage temperature -25/+50°C

Voltage (V)	Power (W)	Frequecy (Hz)	Fuse (A)
100	1100	50/60	16
110	1100	50/60	16
230	1100	50/60	8

Like any equipment with moving parts, the machine inevitably produces noise. The construction system, paneling, and special provisions adopted by the Manufacturer are such that during work the average noise level of the machine is not in excess of 64 dB (A).

FIG. 1



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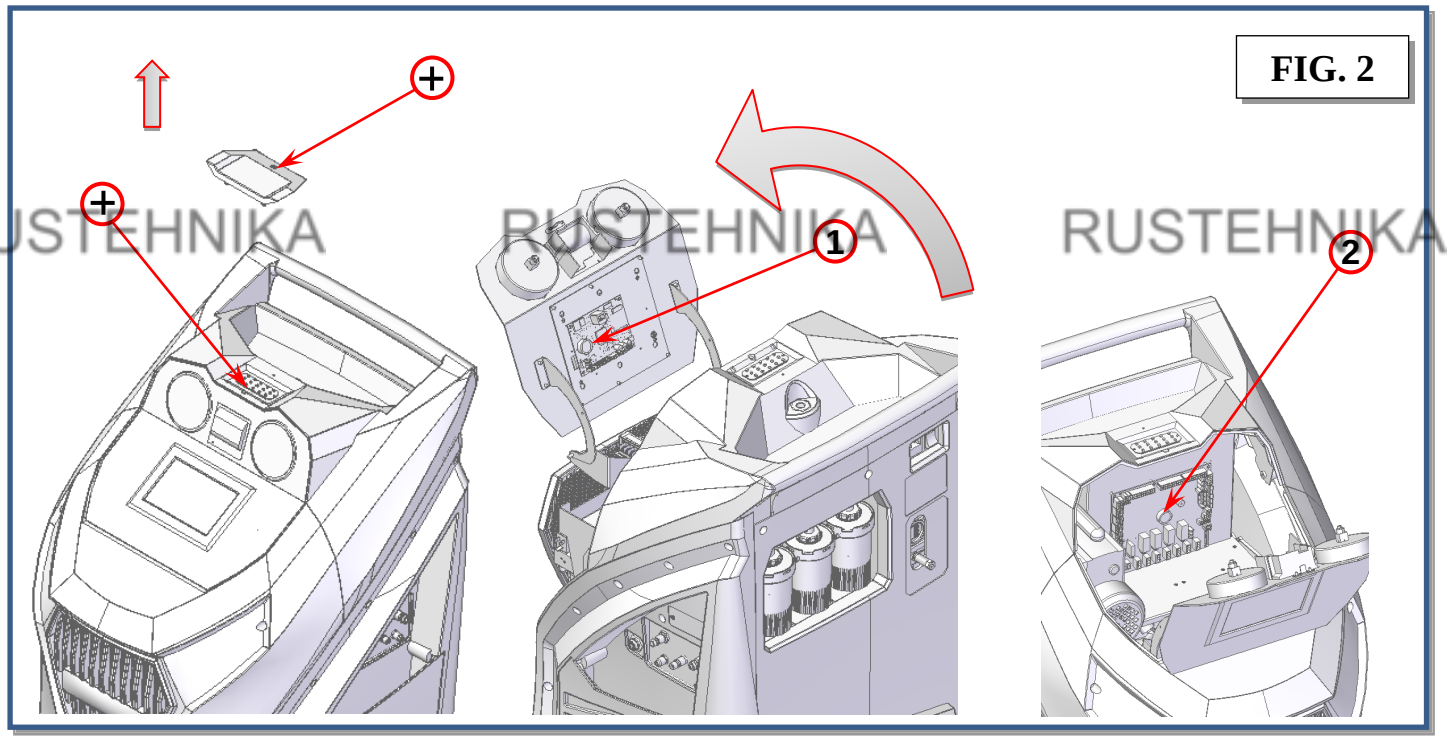
END-OF-LIFE

The symbol on the right indicates that in accordance with Directive 2012/19/UE the machine may not be disposed of as ordinary municipal waste but must be delivered to a specialized center for separation and disposal of WEEE (Waste Electrical and Electronic Equipment) or be returned to the dealer in case of purchase of a new machine. Current legislation provides severe sanctions in the case of disposal of WEEE into the environment. If improperly used or disposed of into the environment, electrical and electronic equipment can release substances dangerous for the environment and for human health.

BATTERY DISPOSAL

The machine uses an electronics card containing a Lithium battery (ref:1-2, Fig.2). When discharged, it must be removed by expert personnel trained in machine demolition.



SAFETY RULES

This machine is a piece of equipment designed to recover R134a or R1234yf (depending on machine model) from air conditioning systems (A/C) for vehicles. The machine must be used by qualified personnel and can only be used correctly after having read this manual that also contains the basic safety rules listed below:

- **Wear gloves and safety glasses**.
- Do not expose to direct sunlight and rain.
- Before doing any task check the vehicle's operating and maintenance handbook to determine the type of refrigeration fluid used in the A/C system.
- No smoking in the vicinity of the machine and while working.

The ambient conditions for using the equipment are as follows:

- Temperature between +10 and +50°C.
- Pressure between 80 kPa (0,8 bar) and 110 kPa (1.1 bar).
- Air with normal oxygen content, generally 21% by volume.

Laying-up the machine: when not in use the machine must be stored in a specific place with the following characteristics:

1. The machine must be stored in a ventilated zone also during storage. It can be avoided that are pit near the machine.

2. There must be no sources of ignition such as heat sources, naked flames, sparks of mechanical origin (e.g. due to grinding), electrical material (especially the storage area for the machine is not to have any electrical power sockets that are less than 900 mm above floor level), stray electrical currents and cathode corrosion (check that the electrical distribution system conforms to the relevant legal provisions), static electricity (check the earth system for the premises' electricity distribution system), and lightning.

3. Storage temperature -25/50 ° C

- Hose must be visually checked periodically, if they are damaged, or aged, substitute them.
- Use the machine away from heat sources, naked flames and/or sparks.
- Always make sure that when you switch off the engine the vehicle's ignition key is turned to the Fully Off position.
- Always connect the machine's piping using the RED rapid coupling to the high pressure branch of the A/C system.
- Always connect the machine's piping using the BLUE rapid coupling to the low pressure branch of the A/C system.

CAUTION: some car manufacturer on the fuel intake manifold install a connector identical to the A/C low pressure fitting.

DANGER: DO NOT connect the recovery station to this connection; you risk to recover petrol.

- Keep the connection pipes away from moving or rotating items or elements (cooling fan, alternator, etc.).
- Keep the connection pipes away from hot items or elements (engine exhaust pipes, radiator, etc.).
- Always fill the A/C system with the quantity of fluid recommended by the manufacturer. Never exceed this quantity.
- Always check the oil levels prior to each operation.
- Always keep the oil at the correct quantity.

- Before connecting the machine to the electrical system, check that the power supply voltage and frequency are the same as the values indicated on the CE plate.

The bottle must be filled to 80% of its maximum capacity to leave a plenum chamber for the gas to absorb any increases in pressure.

- Never touch the taps on the inner bottle.
- Throw the oil taken out of the A/C system and the vacuum pump into the relevant containers for spent oils.
- Change the filters at the intervals laid down, using only filters recommended by the manufacturer.
- Only use the oils recommended by the manufacturer.
- Only use the UV approved by the manufacturer.
- Never confuse the vacuum pump oil with the oil for the air-conditioning systems.

Failure to comply with any of these safety rules leads to any form of guarantee for the machine being rendered null and void.

Machine is provided with class III safety valve, in case of malfunctioning it can create an external sack of flammable gas; keep the machine in well ventilated area.
WARNING: R134a and/or R1234yf vapor/gas refrigerant are heavier than air and may thicken on the floor or inside the cavity/pits and cause choking by reducing oxygen available for breathing.
At high temperatures the refrigerant decomposes releasing toxic and caustic substances, hazardous for the operator and the environment. Avoid inhalation of the refrigerants and A/C system oils.
Exposure can irritate the eyes and airways.
WARNING: The machine must be connected to a socket with effective ground
WARNING: This is a class "A" product. In a domestic environment this product may cause radio interference. In such cases, the user may be required to take adequate measures.

REFRIGERANT AND LUBRICANT - PERSONAL PROTECTIVE EQUIPMENT AND PRECAUTIONS

Handled with caution refrigerants and pressure vessels, since otherwise there could be health risks.
The operator must wear safety glasses, gloves and suitable clothing to work, contact with refrigerant may cause blindness (eyes), and other physical damage (frostbite) to the operator. Avoid contact with the skin, the low boiling temperature (about -26°C for R134a and about -30°C for R1234yf) can cause cold burns.
Do not change the setting of the relevant devices for safety, do not remove the seals of the safety valves and control systems. Do not use external tanks or other storage containers that are not approved, or without safety valves.
During the functioning, the air vents and ventilation equipment must not be blocked or covered

HOSES CONNECTION

Hoses may contain refrigerant under pressure. Before substitute the quick coupler verify the corresponding pressure in the service hoses (gauge).
The machine is equipped with the following safety devices:

	**SAFETY PRESSURE:** stops the compressor in case of excessive pressure **SAFETY VALVE:** opens when the pressure inside the system reaches a level of pressure above the estimated limits. **MAIN SWITCH:** allows the machine's turnoff by sectioning of the power line. Prescribing however disconnection from the mains plug of the power cord before servicing
	**IT IS NOT ALLOWED ANY KIND OF TAMPERING OF THE SAFETY DEVICES MENTIONED ABOVE**

PRECAUTIONS FOR HANDLING AND USE OF R134a FLUIDS

Refrigerant fluids expand to the gaseous state in standard environmental conditions. In order that they may be shipped and used they must be compressed into suitable bottles. We therefore recommend observing all the general precautions applicable to handling of pressurized containers. In the case of R134a in particular, we suggest the following special precautions. Avoid inhaling highly concentrated vapors even for short periods of time, since such vapors can cause loss of consciousness or death. R134a is not flammable, but if the vapor is exposed to open flames or incandescent surfaces it may undergo thermal decomposition and form acid substances. The acrid and pungent odor of these products of decomposition is sufficient to signal their presence. We therefore recommend avoiding use of R134a near open flames and incandescent elements. There exists no evidence of risks deriving from transdermal absorption of R134a Nevertheless, due to the low boiling point of the liquid, it is advisable to wear protective garments such as to ensure that no jets of liquid or gas can come into contact with the skin. The use of goggles to avoid contact with the eyes is especially recommended, since the refrigerant liquid or gas can cause freezing of the ocular fluids. Moreover, we strongly advise users to avoid dispersing the R134a refrigerant fluid utilized in the machine since it is a substance that contributes to raising the temperature of the planet, with a global warming potential(GWP) of 1300.

RULES FOR WORKING WITH R1234yf FLUIDS

Under ambient conditions refrigerant fluids are gases. In order to be able to transport and use them they must be compressed in specific bottles. The precautions for pressure vessels must therefore be applied.

In particular, for R1234yf be careful of the following situations:

- Inhalation of vapours at very high concentrations, even for short periods of time, must be avoided as it can cause unconsciousness and sudden death.
- R1234yf is flammable and if the vapour is exposed to naked flames or red hot surfaces it can undergo thermal decomposition with the formation of acid products. The acrid, pungent odour of these products of decomposition is sufficient to warn of their presence. Avoid finding yourself in the conditions just mentioned.

- There is no proof of risks resulting from the absorption of R1234yf through the skin, however, due to its low boiling point it is advisable to wear protective clothing that can prevent any liquid sprayed or vapour reaching the skin and especially the eyes, where they could cause the eye fluids to congeal.
  - We also recommend no dispersing the R1234yf refrigerant fluid used in the machine, because it is a substance that contributes to heating the planet, with a global warming potential (GWP) of 4.

ANY USE THAT DIFFERS FROM THAT JUST DESCRIBED IS NOT ALLOWED BY THE MANUFACTURER.

Uses not allowed

This machine may not be used for tasks not envisaged or to handle products other than those envisaged, or for uses other than those specified in paragraphs "Conditions of use envisaged".

The following are forbidden:

1. Using the machine with a constructive configuration that differs from that envisaged by the manufacturer.
2. Using the machine in places at risk of explosion and/or fire
3. Adding other systems and/or equipment not considered by the manufacturer in their working design.
4. Using the machine without the perimeter protection and/or the fixed and mobile guards tampered wit or removed.
5. Connecting the machine to energy sources other than those envisaged by the manufacturer.
6. Using the commercial devices for a purpose other than that envisaged by the manufacturer.

Actions not allowed on the part of the operator

The operator tasked with operating, supervising, and maintaining the machine **must not:**

1. Use the machine if they have not been trained and informed beforehand as called for by the law on safety in the workplace
2. Fail to act as described in the operating instructions.
3. Allow unauthorized people to approach and/or use the machine.
4. Tamper with the moving and fixed guards that provide perimeter protection, thereby also exposing other operators and people to risks of a residual nature.
5. Remove or alter the safety signs (such as pictograms, warning signs, and others) on the machine.
6. Use the machine without having first read and understood the behavioral, operating and maintenance information contained in the operating instructions.
7. Leave the maneuvering keys on the electromechanical controls (selectors), pneumatic controls, and doors of the housings for electrical and electronic materials (electrical panels and derivation boxes).
8. Carry out the following operations as they pose residual risks:
   - Adjust the mechanical, pneumatic, or electrical parts on the machine while it is working.
   - Remove the mechanical, pneumatic, or electrical parts on the machine while it is working.
   - Remove the protective devices for mechanical, pneumatic, or electrical parts on the machine while it is working.
   - Allow the machine to run when the electrical panels are open.

These uses, that cannot be avoided by way of construction, must not be allowed.

WARNING
The employer (or safety manager) is obliged to see to it that the machine is not used in an improper manner, putting the health of the operator and people exposed first.
The operator is obliged to inform their employer (or the system safety manager) if there is a danger of improper use of the machine since, as an instructed person, the operator is responsible for the use that is to be made of the machine.

9. If service station fall down, or is hit, or in case of big leakage, or sounds of flowing gas:
   - an internal damage could happen, also if externally the machine seems good, and it is still working;
   - the machine must be taken outdoor or in a very ventilated place.
   - No fire, no smoke, no workers, no cars nearby this service station.
   - The service station must be fully tested by a trained technician before to be used again.

10. Use only the supplied power cord

PRINCIPLES OF OPERATION

In a single series of operations, the machine permits recovering and recycling refrigerant fluids (R134a or R1234yf, depending on machine model) with no risk of releasing the fluids into the environment, and also permits purging the A/C system of humidity and deposits contained in the oil.

The machine is in fact equipped with a built-in evaporator/separator that removes oil and other impurities from the refrigerant fluid recovered from the A/C system and collects them in a container for that purpose.

The fluid is then filtered and returned perfectly recycled to the bottle installed on the machine.

The machine also permits running certain operational and seal tests on the A/C system.

SETUP

The machine is supplied fully assembled and tested.

The machine is without a gas identity (R134a / R1234yf)

Choosing the appropriate kit, the machine works with the R134a or R1234yf gas.

R134A ACCESSORIES KIT CONTENTS

N°1 Power Cord
N°1 R134a hose HP red
N°1 R134a hose LP blue
N°1 Quick coupler HP red R134a
N°1 Quick coupler LP blue R134a
N°1 R134a Tank fitting
N°1 Quick coupler
N° 1 Rechargeable new oil container PAG (empty)
N° 1 Rechargeable new oil container POE (empty)
N° 1 Rechargeable new DYE container (empty)
N° R134a Gas identification plate

R1234YF ACCESSORIES KIT CONTENTS

N°1 Power Cord
N°1 R1234yf hose bypass HP red
N°1 R1234yf hose bypass LP blue
N°1 R1234yf hose HP red
N°1 R1234yf hose LP blue
N°1 Quick coupler HP red R1234yf
N°1 Quick coupler LP blue R1234yf
N°1 R1234yf Tank fitting
N° 2 Quick coupler
N° 1 Rechargeable new oil container PAG (empty)
N° 1 Rechargeable new oil container POE (empty)
N° 1 Rechargeable new DYE container (empty)
N° R1234yf Gas identification plate

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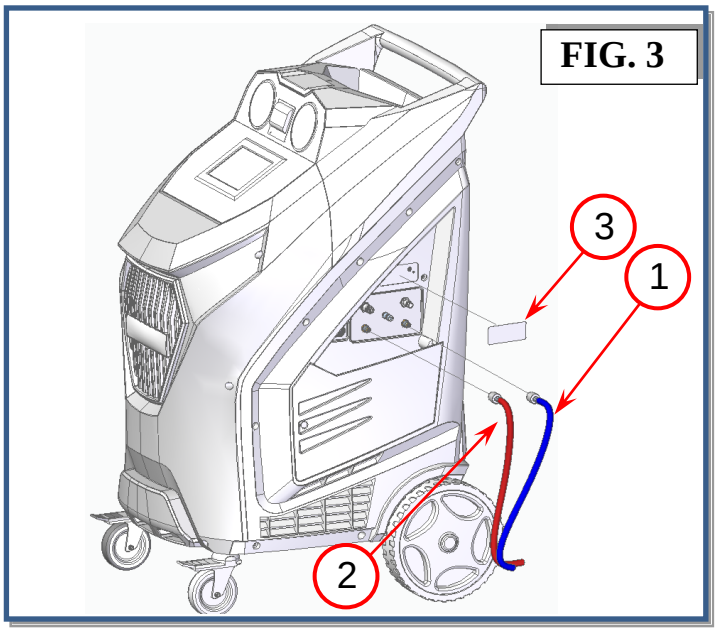
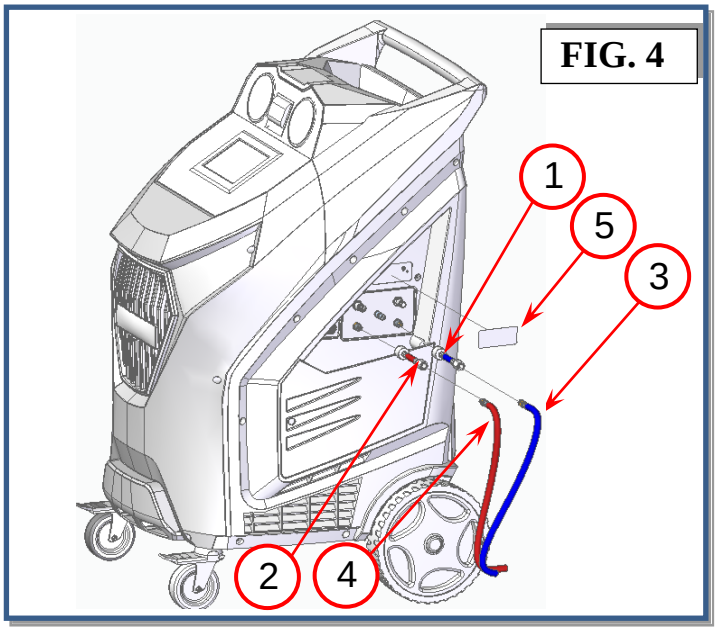
R134A HOSES ASSEMBLY

Referring to Figure 3, mount the hose (ref.1 Fig 3) with the BLUE quick-connect coupling on the male threaded connector indicated by the BLUE LOW PRESSURE symbol and the RED (ref.2 Fig 3) quick-connect coupling on the male threaded connector indicated by the RED HIGH PRESSURE symbol. Mount the self-adhesive gas identity plate (ref.3 Fig 3)



R1234YF ADAPTERS AND HOSES ASSEMBLY

Referring to Figure 4, mount the adapter (ref.1 Fig 4) on the male threaded connector indicated by the BLUE LOW PRESSURE symbol and the RED (ref.2 Fig 4) adapter on the male threaded connector indicated by the RED HIGH PRESSURE symbol.
Mount the hose (ref.3 Fig 4) with the BLUE quick-connect coupling on the adapter female threaded connector and the RED (ref.4 Fig 4) quick-connect coupling on the adapter female threaded connector.
Mount the self-adhesive gas identity plate (ref.5 Fig 4)



RELEASE REFRIGERANT SCALE

- In order to remove the protections under the refrigerant scale the locking nut has to be untightened (ref.1, Fig.5), the knob (ref.2, Fig.5) has to be unscrewed, removed and stored in a safe place.
- Connect the machine to the electrical supply and switch it on
- Check if the value of refrigerant scale is correct.

LOCK REFRIGERANT SCALE

NOTE: in the event that the equipment has to be transported, the refrigerant bottle scale should be locked in place as follows:

1. Switch the machine on.
2. Tighten the knob (ref.2, Fig.5) until the display signals ZERO availability.Tighten the nut (ref.1, Fig.5)

NOTE: Check that the oil containers are properly placed in their housing

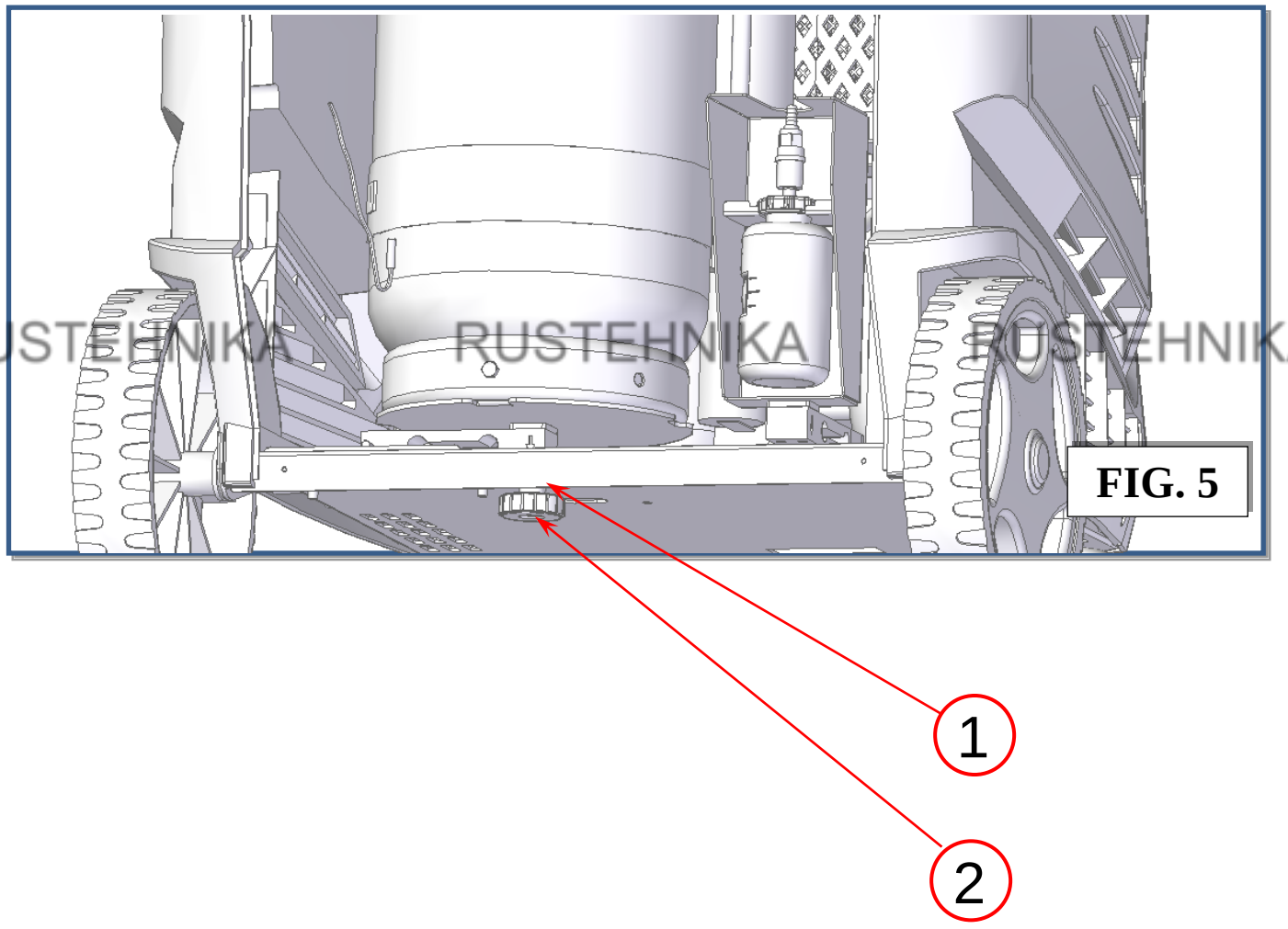


FIG. 5

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THE MACHINE

PLASTIC COVER

Refer to Fig.6.

1. Front plastic cover
2. Rear plastic cover
3. Upper plastic cover

Disassembly: Screw off screws marked (**+**)

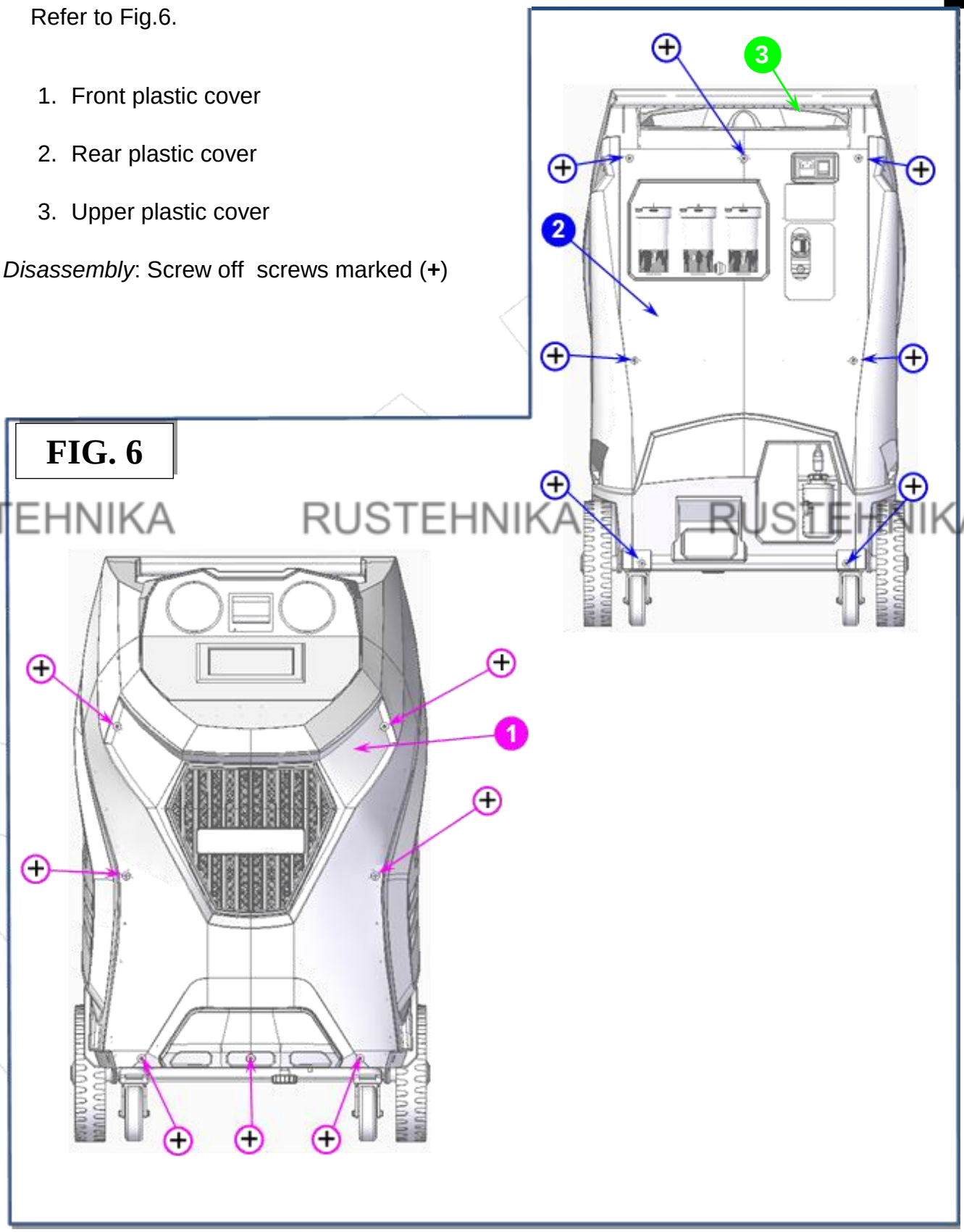

FIG. 6

CONTROL PANEL

Refer to Fig.7:

1) High pressure gauge
2) Low pressure gauge
3) Printer
4) Display touchscreen

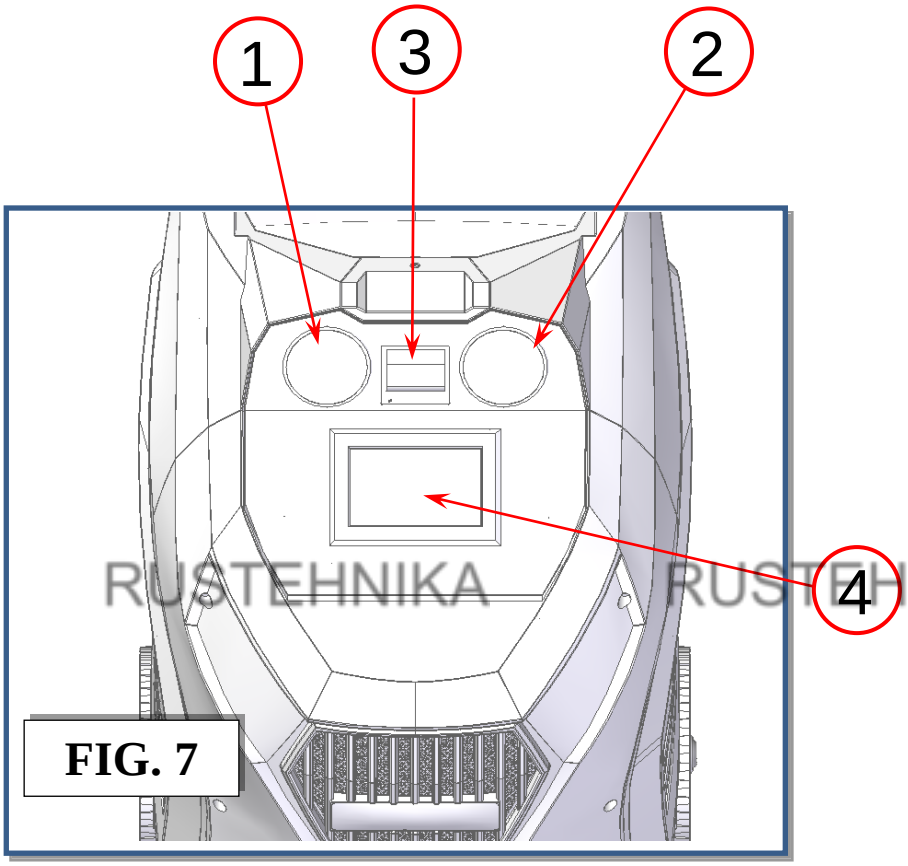

FIG. 7

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DISPLAY ICONS

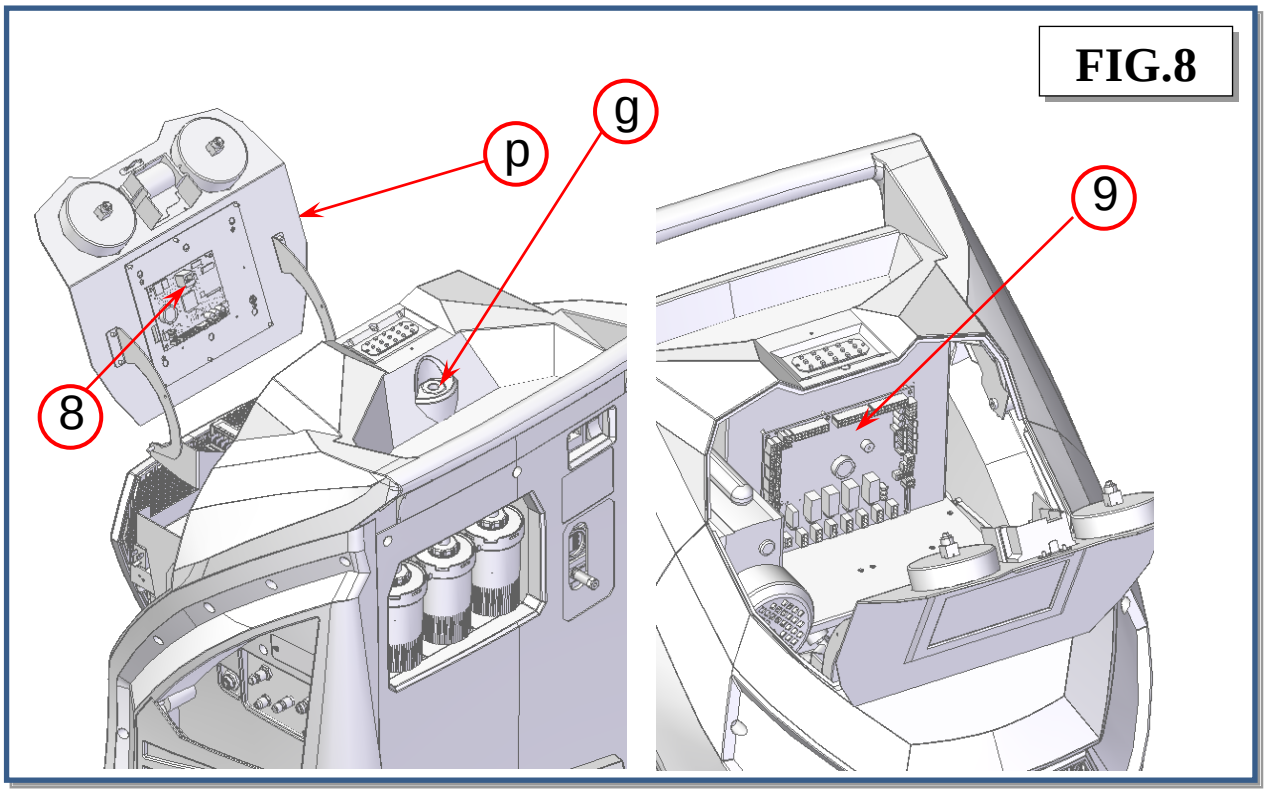
ICON	DESCRIPTION	FUNCTION
	AUTOMATIC PROCEDURE	activates a menu that helps the user set up an automatic recover/vacuum/leak test/charge sequence.
	MANUAL PROCEDURE	activates a menu that helps the user to perform a manual operation:
	PAG OIL	activates a menu that helps the user to perform a PAG OIL injection operation:
	PAG OIL+UV	activates a menu that helps the user to perform a PAG OIL+UV DYE injection operation:
	AUTOMATIC PAG OIL INJECTION PROCEDURE	activates a menu that helps the user set up an automatic PAG OIL injection procedure.
	MANUAL PAG OIL INJECTION PROCEDURE	activates a menu that helps the user set up an manual PAG OIL injection procedure.
	POE OIL	activates a menu that helps the user to perform a POE OIL injection operation:
	POE OIL+UV	activates a menu that helps the user to perform a POE OIL+UV DYE injection operation:
	AUTOMATIC POE OIL INJECTION PROCEDURE	activates a menu that helps the user set up an automatic POE OIL injection procedure.
	MANUAL POE OIL INJECTION PROCEDURE	activates a menu that helps the user set up an manual POE OIL injection procedure.
	NO OIL	No OIL injection in automatic sequence
	PRINT	activates the sending of data to the printer

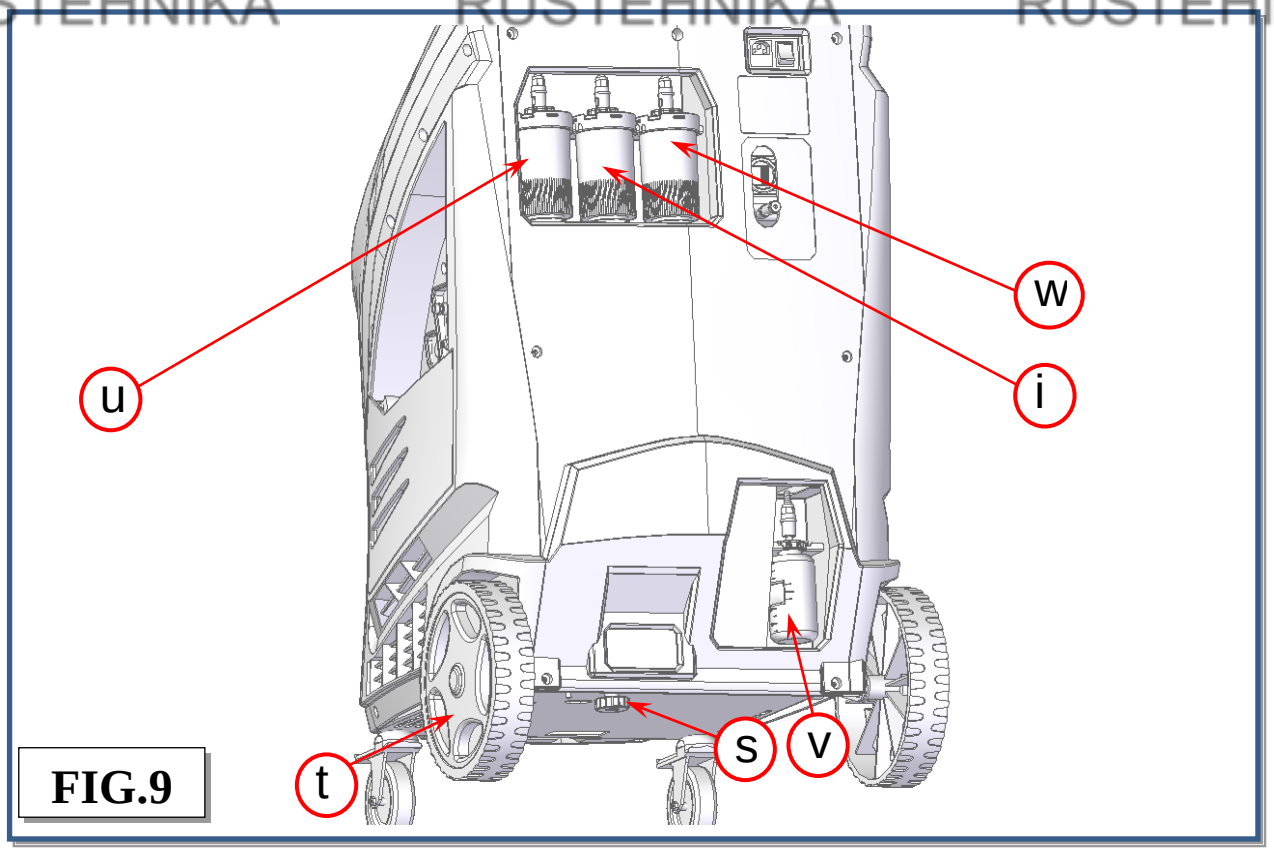
	ENTER	Enter symbol, to confirm
	BACK	Back symbol, to return back without confirm
	STOP	Stop symbol, to stop a phase
	ARROW	Arrow symbol, to move in the menu
Recovery	STANDARD RECOVERY	activates a menu that helps the user to perform a recovery/recycling phase (without SAE J-2788 or SAE J-2843 compliance)
Vacuum	VACUUM	activates a menu that helps the user to perform a vacuum phase
Oil-UV injection	OIL / UV INJECTION	activates a menu that helps the user to perform a oil/uv injection followed by a gas filling phase
Charge	GAS FILLING	activates a menu that helps the user to perform a gas filling phase
A/C pressure check	A/C pressure check	activates A/C pressure check menu
Nitrogen (N2)	NITROGEN TEST	activates a menu that helps the user to perform a NITROGEN TEST
Hybrid – flushing hoses	FLUSHING HOSES	activates a menu that helps the user to perform a FLUSHING HOSES
Flushing kit	A/C FLUSHING	activates a menu that helps the user to perform a A/C FLUSHING
	SETUP	activates the setup menu of the service station
	MAINTENANCE	activates the maintenance menu of the service station
	DATA	activates a menu that contains all the information of the service station

BASIC COMPONENTS

Refer to Fig.8, Fig.9, Fig.10, Fig.11, Fig.12:

a) USB port
b) New oil cartridge PAG
c) Main switch
d) Fuse (8A 230v;16A 100-110v)
e) Socket for electrical supply plug
f) new POE oil cartridge
g) vacuum pump oil filler cap
h) ventilation grid
i) new POE oil container
j) DYE UV cartridge
k) used oil load cell
l) refrigerant tank load cell
m) fan + condenser
n) revolving front wheels
o) manifold
p) folding control panel
q) PAG load cell
r) POE load cell
s) refrigerant tank load cell lock knob
t) rear wheel
u) new oil container PAG
v) used oil container
w) DYE UV container
x) DYE UV load cell
y) 12V power supply
z) dryer filter
1) vacuum pump
2) compressor
3) low pressure service hose outlet
4) high pressure service hose outlet
5) hybrid LP quick fitting
6) hybrid HP quick fitting
7) Handle
8) electronic board UI
9) POWER electronic board





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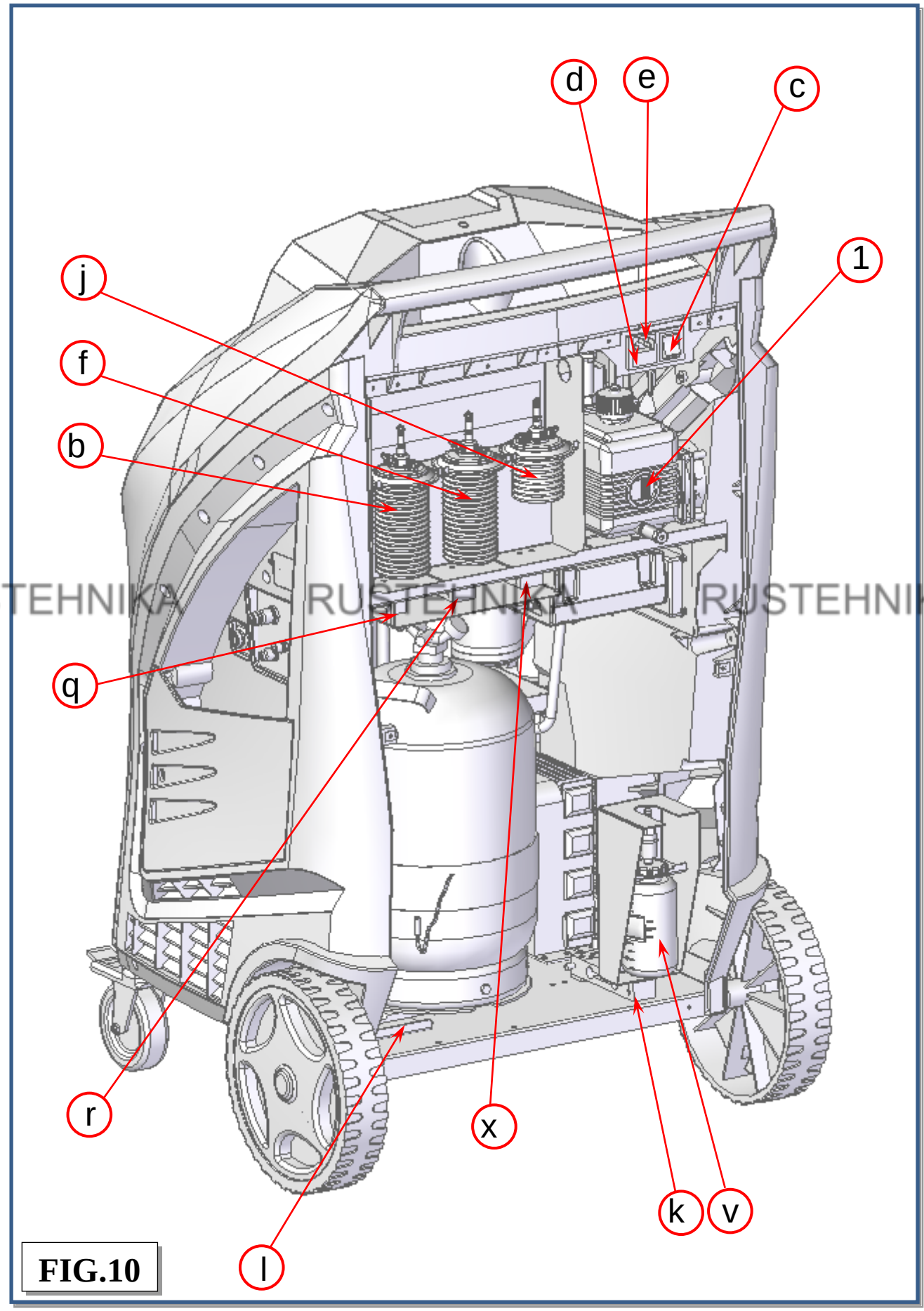

FIG.10

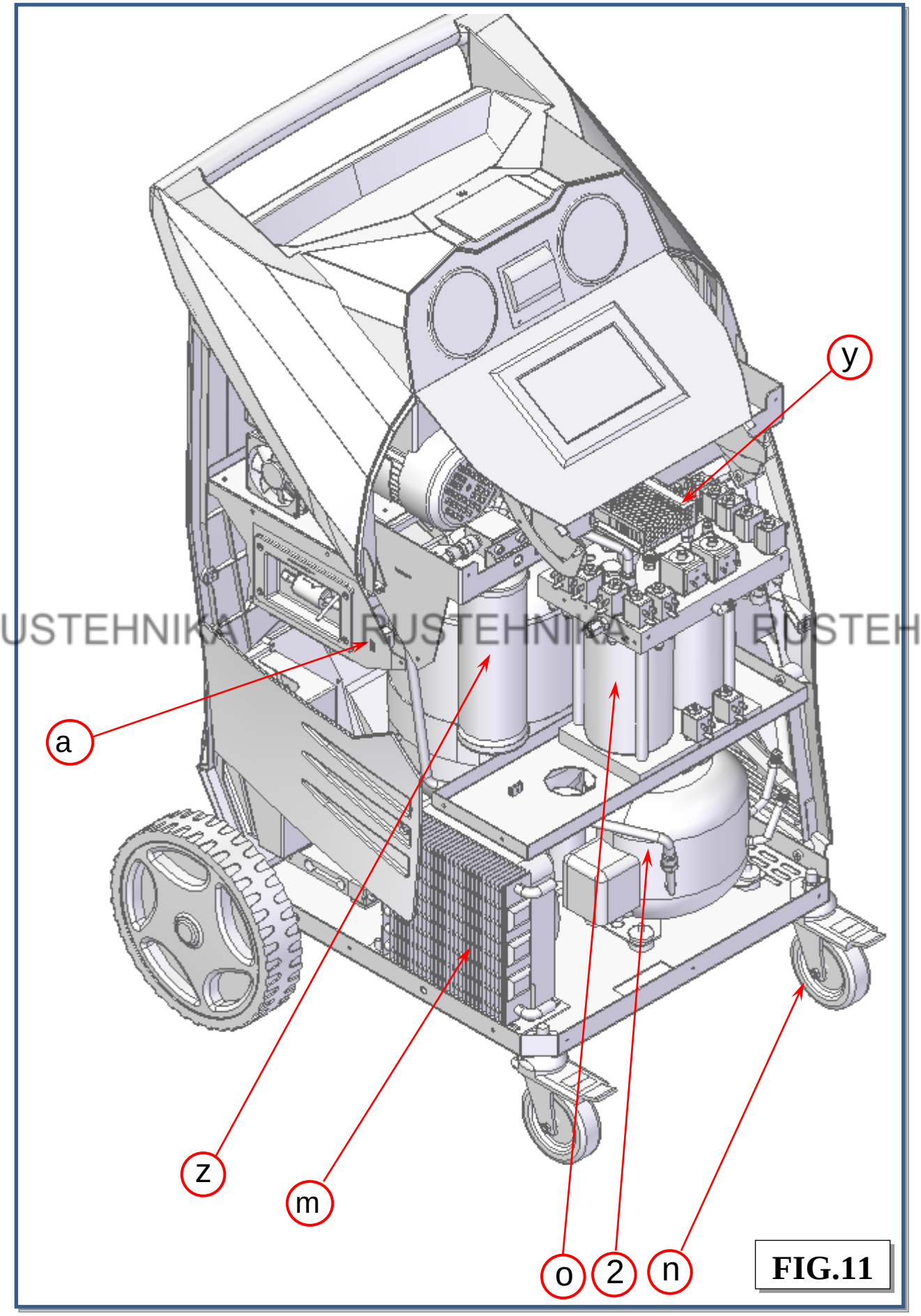

FIG.11

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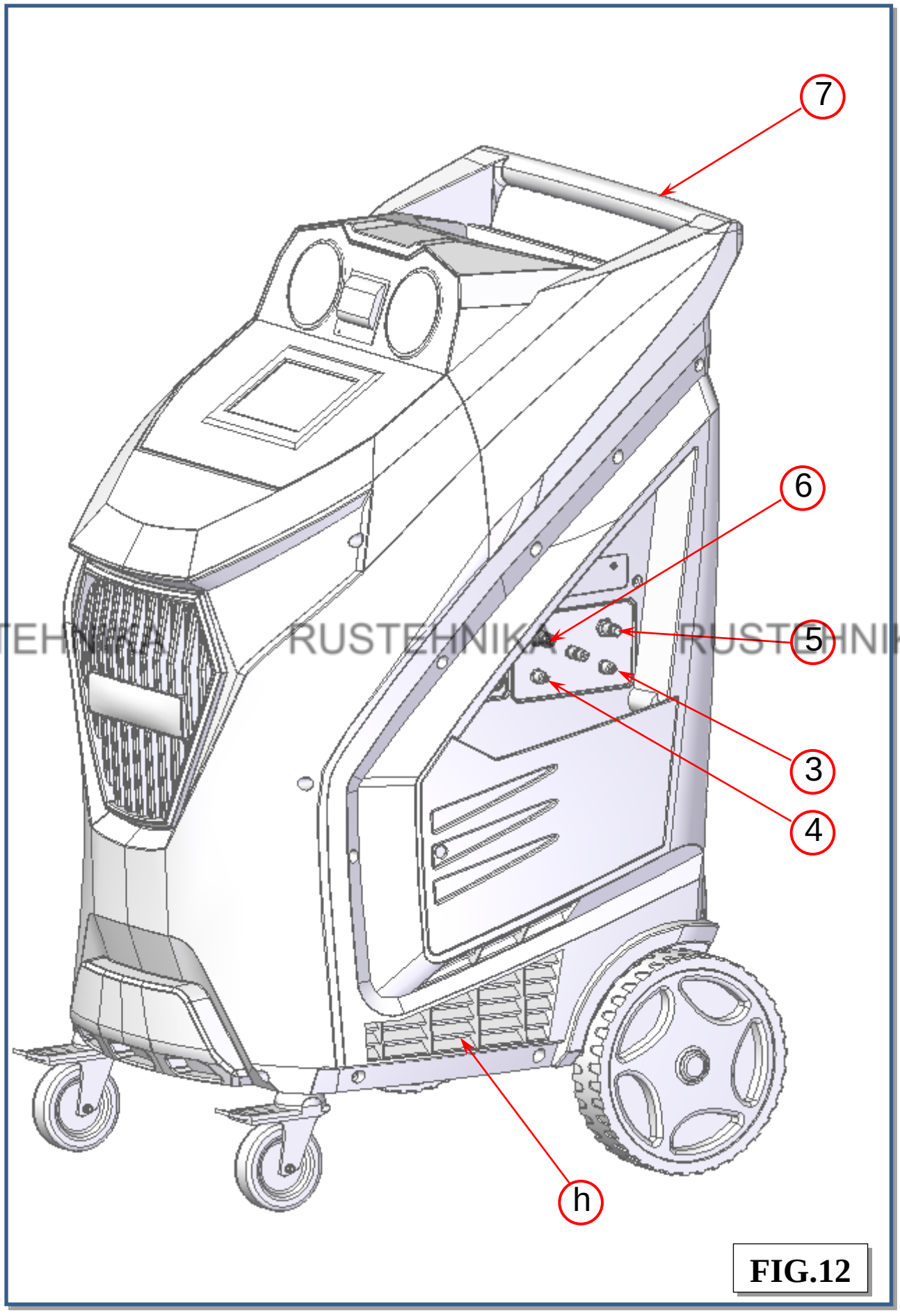


FIG.12

ALARMS

HIGH PRESSURE ALARM: Beeper advise when the pressure of the fluid in the circuit is too high (20bar). The recovery operation is automatically interrupted.

FULL BOTTLE ALARM: Beeper advise when the bottle is filled to more than 80% of maximum capacity.The RECOVERY operation is automatically interrupted (to cancel this alarm, charge one or more A/C systems before recovering any more refrigerant).

EMPTY BOTTLE ALARM: Beeper advise when the quantity of refrigerant fluid contained in the bottle is low (less than 2kg)

VACUUM PUMP OIL CHANGE: Beeper advise after 20 hours of work of the vacuum pump; change the oil of the vacuum pump

SERVICE ALARM: Beeper advise whenever the total recovered refrigerant amounts to 100 kg. To deactivate the alarm, replace the filters and the vacuum pump oil. A code for canceling the alarm is supplied with the spare filters.

ERROR CODES

-The air gas readings were unstable
- The air gas readings were excessively high
- The air calibration resulted in a low output
- The unit is beyond the operating temperature range
- The refrigerant sampled has an excessively large amount of air or there was little or no sample flow due to plugged sample line gas analyzer filter
- System leaks
- Presence of refrigerant into the a/c system
- Low vacuum
- Empty tracer container
- Empty oil container
- Low gas availability
- Vacuum leaks (a/c system flushing)
- Pressure leaks (a/c system flushing)
- Sistem empty
- N2 test not completed
- N2 pressure insufficient
- N2 test leaks
- Comunication error
- Low oil volume
- Check connections
- Empty external bottle
- High pressure alarm

PRELIMINARY OPERATIONS

- Check that the main switch (ref.1, Fig.13) is positioned on O. Connect the machine to the mains and switch it on.

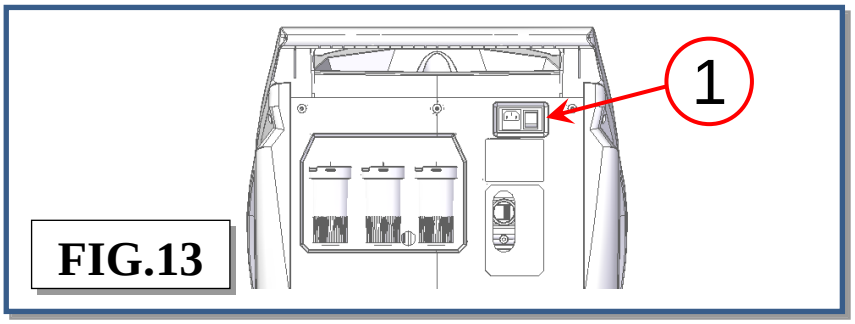


FIG.13

- The operator can check all machine data:

o Check that the OIL container is empty, if necessary replace it as described in the MAINTENANCE.

o Check that the level in the used oil container is less than 200 cc, if necessary empty it as described in the MAINTENANCE chapter.

o Check that at least 2 kg of refrigerant are available in the cylinder, if necessary fill the inner cylinder using an appropriate external refrigerant bottle and following the instructions in the inside of the TANK FILLING inside of the MAINTENANCE menu

Check that the vacuum pump oil level indicator (ref.3, Fig.14) shows at least one-half full. If the level is lower, add oil as explained in the MAINTENANCE section.

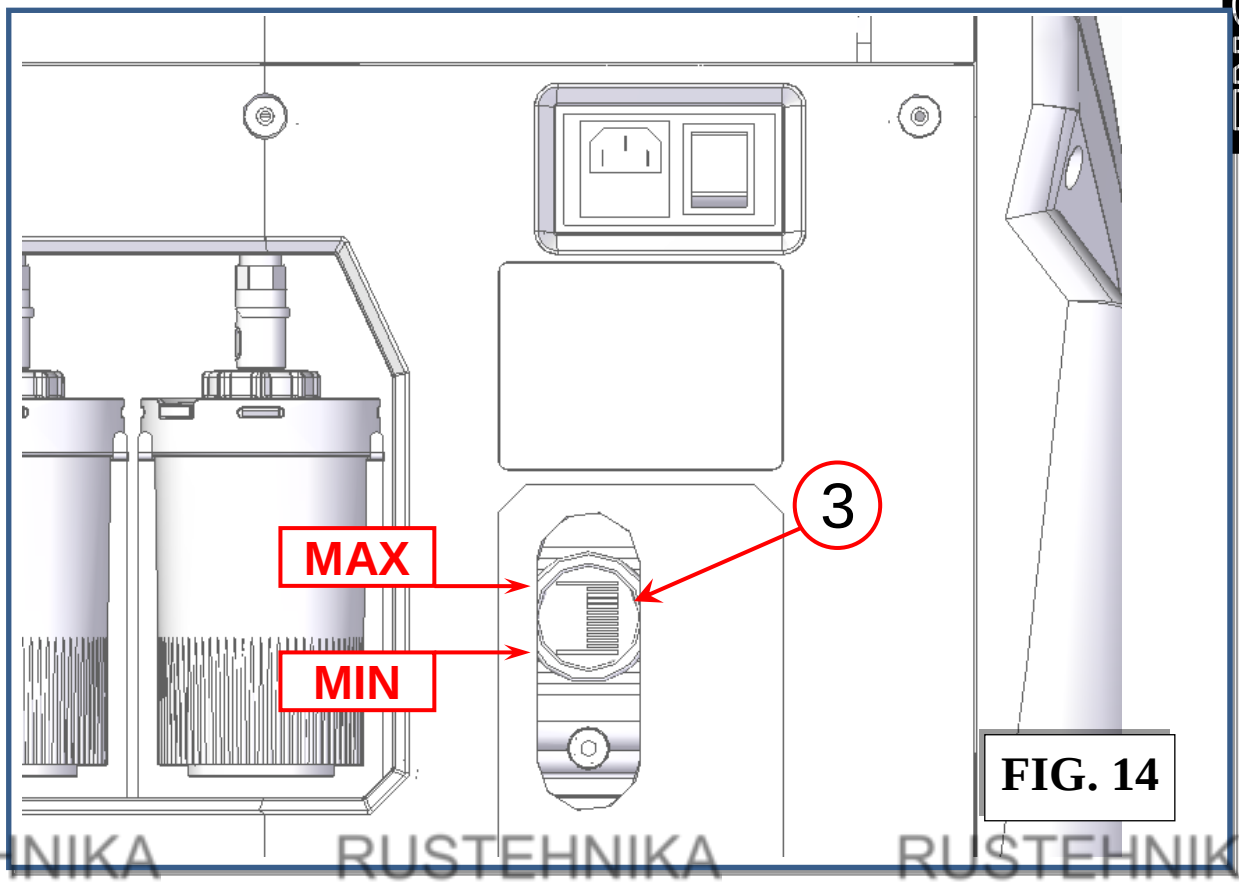


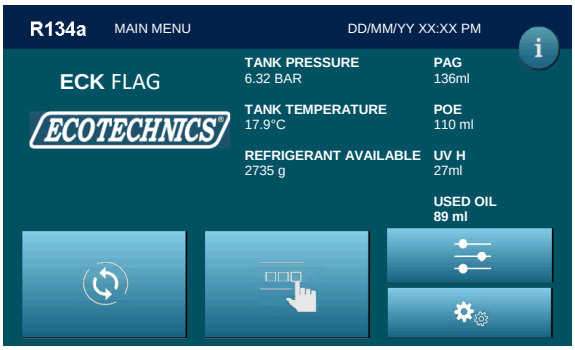
FIG. 14

AUTOMATIC PROCEDURE

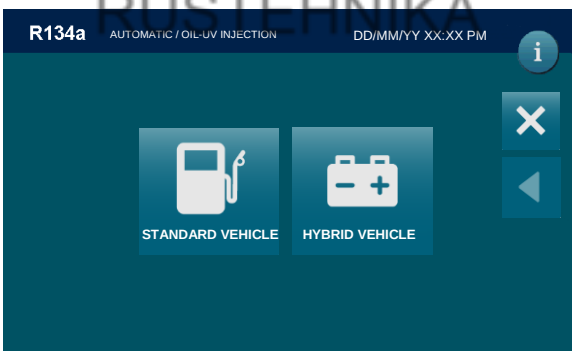
In the automatic mode, all the operations are performed automatically: recovery and recycling, oil discharge, vacuum, new oil reintegration, and charging. The values for the quantity of gas recovered, quantity of oil recovered, vacuum time, quantity of oil reintegrated, and quantity of gas charged into the system are automatically printed at the end of each single operation.

Connect the hoses to the A/C system with the quick-connect couplings bearing in mind that BLUE must be connected to the low-pressure side and RED to high pressure. If the A/C system is equipped with a single quick-connect coupling for high or low pressure, connect only the relative hose.

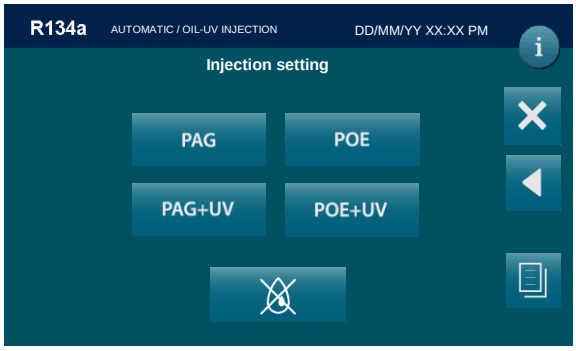
From the MAIN MENU:



Select the AUTOMATIC PROCEDURE  , the following screen is displayed :



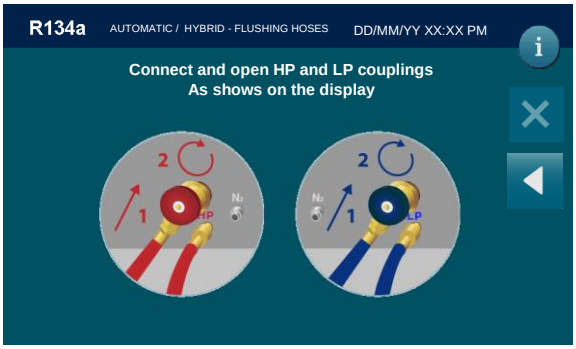
Select the STANDARD VEHICLE  or HYBRID VEHICLE  the following screen will be displayed:



OIL-UV INJECTION is disabled pressing 

NOTE: When HYBRID VEHICLE is selected UV is disabled (except HYBRID UV).

ENGLISH

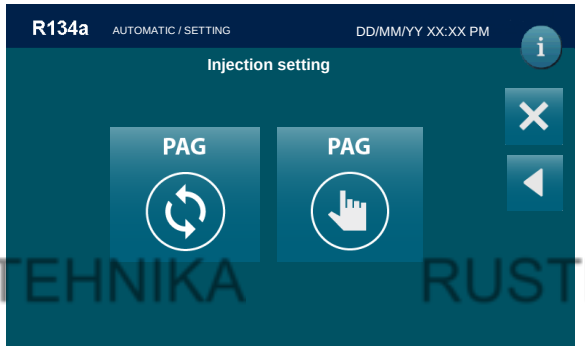


If HYBRID VEHICLE is selected the machine will perform FLUSHING HOSES

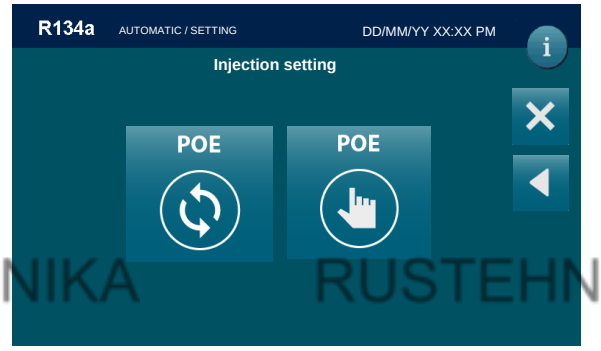
In the OIL-UV INJECTION sequence press the oil type required PAG or POE

By selecting oil symbol PAG or POE the following screen will be displayed:

PAG OIL injection setting



POE OIL injection setting

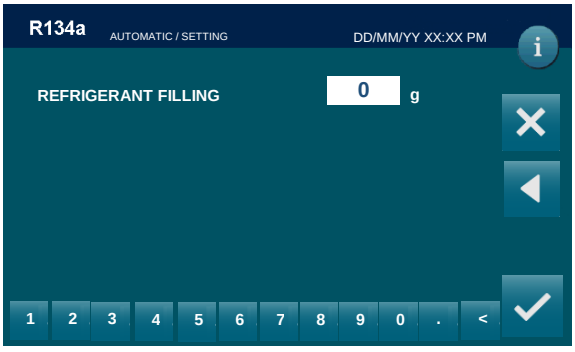


Select PAG/POE oil symbol AUTOMATIC injection for insert the gas quantities and reintegrate the same quantity of oil extracted during recovery. Select PAG/POE oil symbol

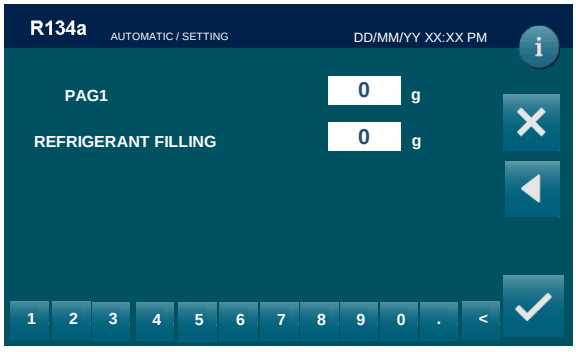
MANUAL injection for insert the gas quantities manually.

Edit REFRIGERANT/OIL CHARGE data:

Automatic oil injection



Manual oil injection



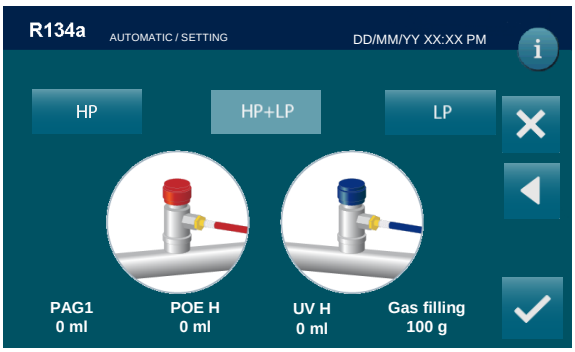
Press ENTER symbol

NOTE: For most systems the quantity of fluid to be refilled is indicated on a plate that is in the vehicle's engine compartment. If this quantity is not known, look for it in the relevant manuals.

Use the keys 0 to 9 to type the quantity (in grams) of refrigerant to be charged into the A/C system.

NOTE: If DATABASE is installed, can be used to insert the value of refrigerant into the GAS FILLING field.

Edit REFRIGERANT CHARGE MODE:



Select the connection mode:

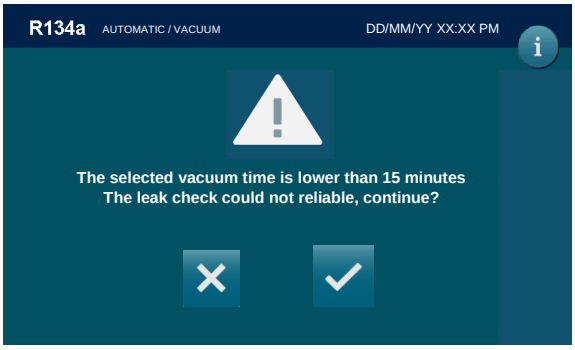
- HP+LP fill the refrigerant from both HP and LP service ports
- HP to fill the refrigerant only from the HP service port,
- LP to fill the refrigerant only from the LP service port,

Press ENTER symbol 

Edit VACUUM data:

Insert the value of the VACUUM TIME, TIME OF CHECK and press  to confirm,  to return back.

NOTE: if selected VACUUM TIME is lower 15 minutes the following popup warning will be displayed:

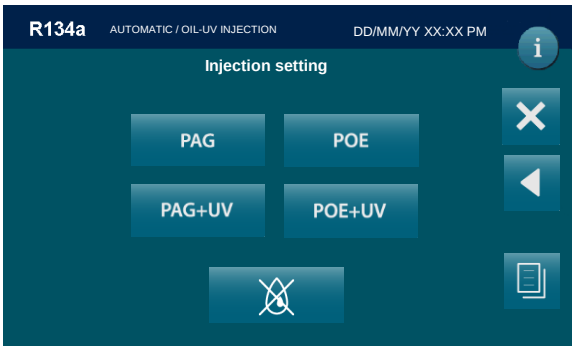


Press  to continue, or press  to go back.

ENGLISH

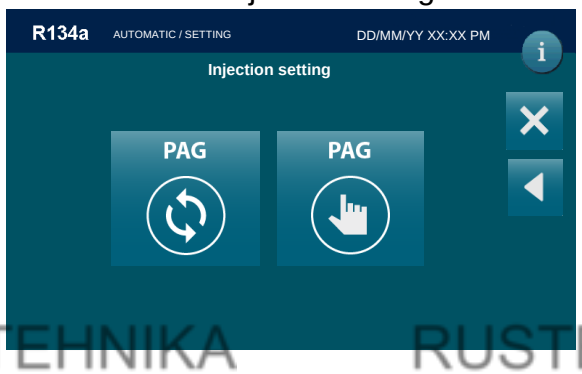
Edit UV data:

In the OIL-UV INJECTION sequence press the oil type required PAG+UV or POE+UV

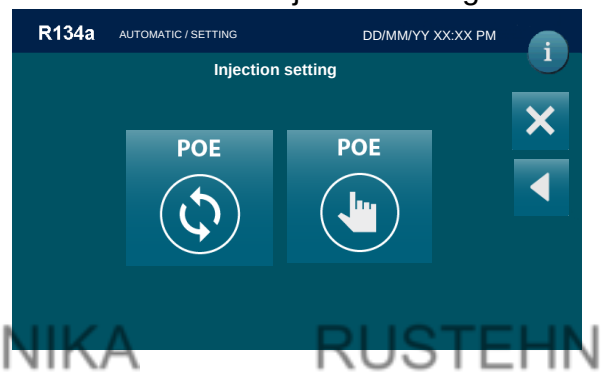


By selecting oil+uv symbol PAG+UV or POE+UV the following screen will be displayed:

PAG OIL injection setting



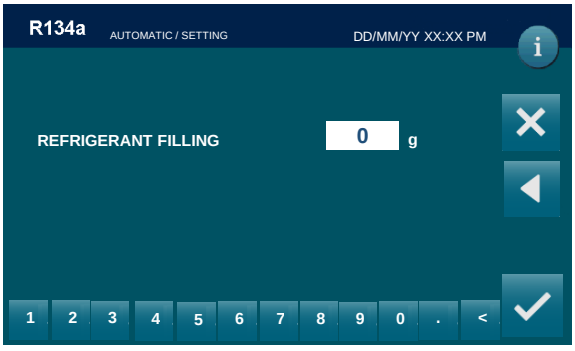
POE OIL injection setting



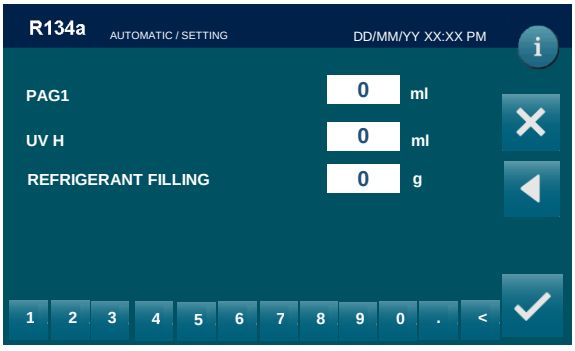
Select PAG/POE oil symbol AUTOMATIC injection for insert the gas quantities and reintegrate the same quantity of oil extracted during recovery. Select PAG/POE oil symbol

MANUAL injection for insert the gas quantities manually.

Automatic oil injection



Manual oil injection



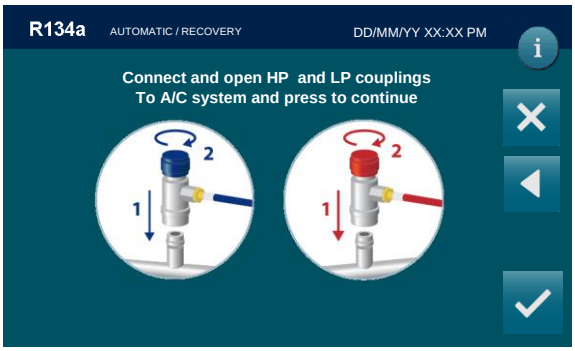
Press ENTER symbol

Use the keys 0 to 9 to type the volume of UV to be injected

** UV is disabled while servicing HYBRID VEHICLE*

START AUTOMATIC PROCEDURE:

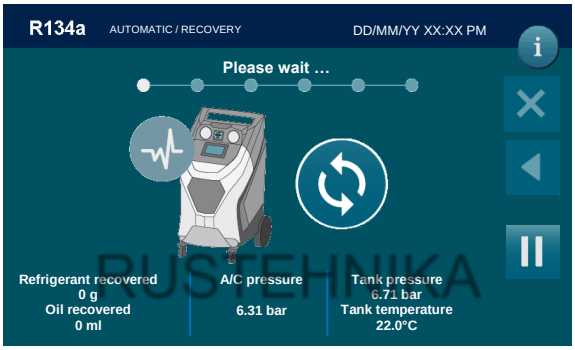
If gas analyzer is installed, The machine will test the purity of the refrigerant gas in the A/C system before beginning recovery (refer to Gas analyzer instruction manual)



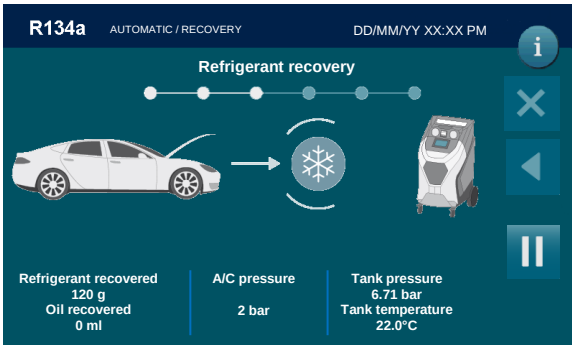
Connect and open HP and LP couplings (or those chosen in the previous point)

to A/C system and press ✓ to continue

the AUTOMATIC PROCEDURE will start, and the following screen will be displayed:

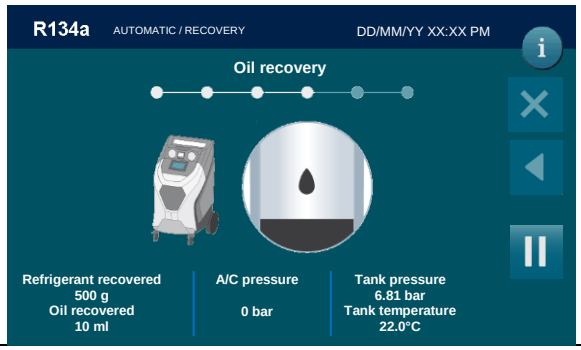


The machine will continue automatically



During the recovery phase, the machine displays the quantity of refrigerant recovered, in grams. Upon completion of recovery, the machine will stop and discharge, while automatically displaying the used oil extracted from the A/C system during the recovery phase.

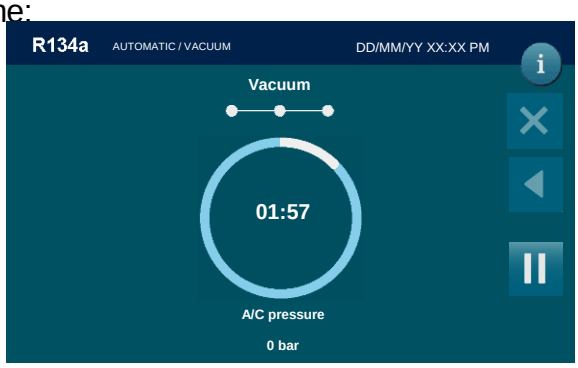
The oil discharge operation lasts 4 minutes.



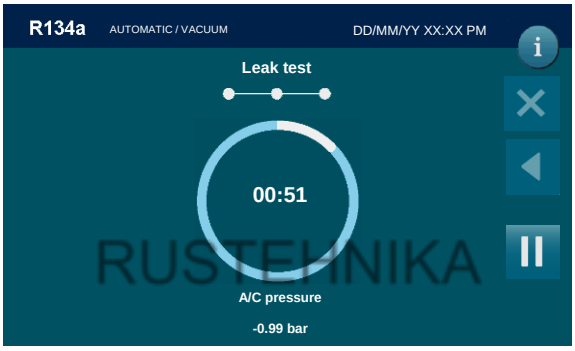
The machine checks whether or not there is air in the bottle and, if necessary, purges the non-condensable gas; The machine will automatically discharge any non-condensable gas.

Allowing the machine to fully complete the procedure will reduce the risk of return flows, which may cause excessive non-condensable gas to be recharged into the air conditioning system. If any residual refrigerant in the A/C system should increase in pressure during this phase, the machine will automatically begin recovering the refrigerant.

Completed the recovery phase, the machine automatically goes on to running the vacuum phase for the preset time:



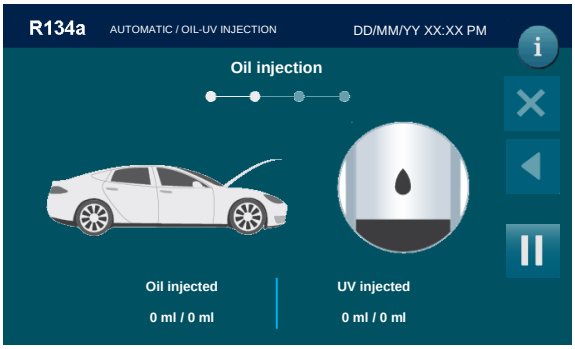
At the end of this phase, the machine will test for leaks in the A/C system :



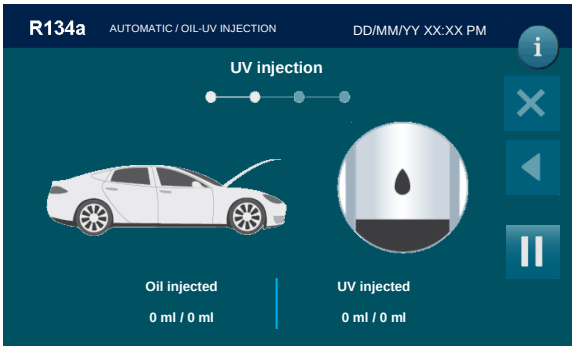
(WARNING! If vacuum time < 15 minutes this test is not reliable). If leaks are found, the machine will stop automatically and display the A/C SYSTEM LEAKS alarm.

Detection of micro-leaks is not guaranteed.

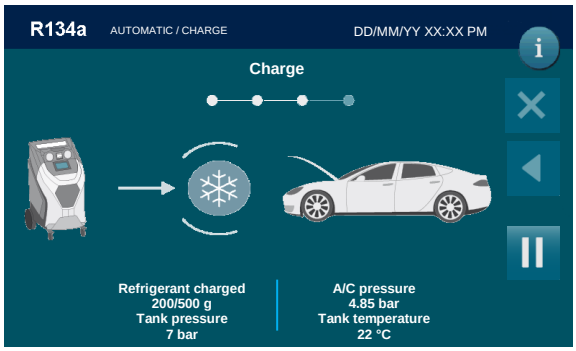
Upon completion of the vacuum phase, new oil will be automatically reintegrated: the volume will be equal to that of the used oil discharged or to the volume set by the operator.



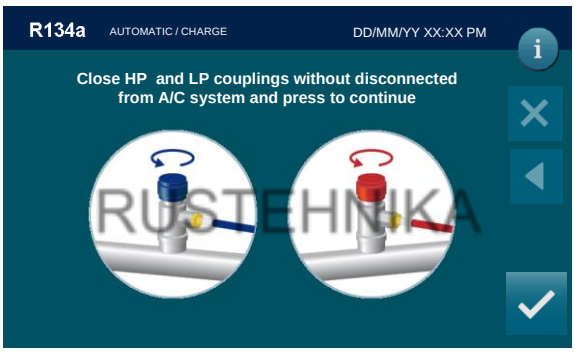
the quantity of UV set by the operator will be automatically reintegrated.



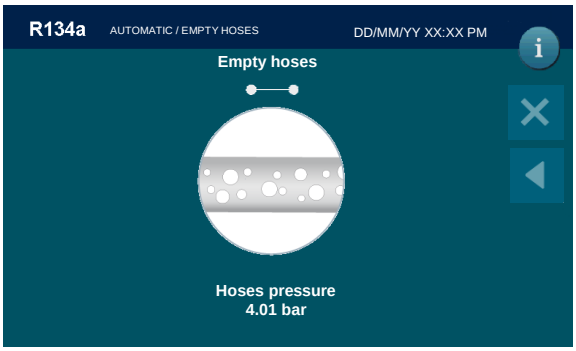
When completed, the system will go on to charging with the preset quantity of refrigerant.



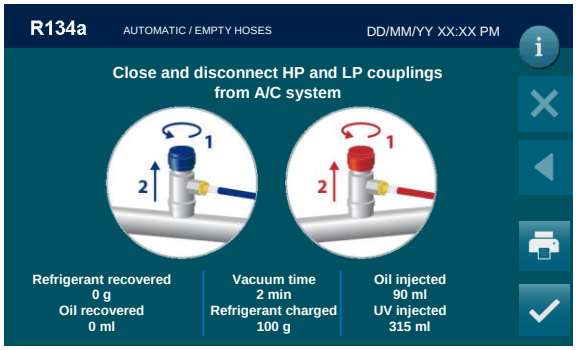
Then the following screen will be displayed**:**



Unscrew HP and LP coupling without disconnect from A/C system end press to continue:



The machine will recover the residual refrigerant into the service hoses, then the following screen will be displayed**:**



Disconnect coupling from A/C system.

Press the symbol for printing.

Type the plate of the car, VIN, Km, Operator and press to confirm. BACK to return back.

Automatic procedure is now successfully completed.

NOTE: Rarely, charging may not run to completion due to pressure balance. In this case, close the high pressure tap (leaving the low-pressure side open), and switch on the A/C system.

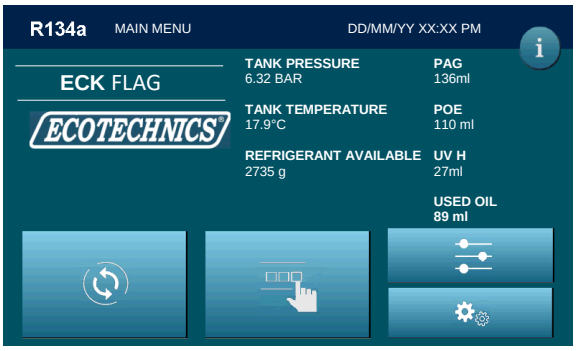
NOTE: The automatic procedure may be run even if the A/C system is empty. In this case the machine will begin with the vacuum phase.

MANUAL PROCEDURE

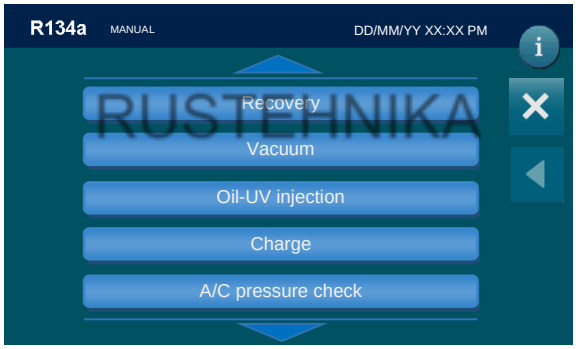
In the MANUAL PROCEDURE, all the operations can be performed singly to the exception of the recovery/recycling phase, which is automatically followed by used oil discharge.

The values for the quantity of gas recovered, quantity of oil recovered, vacuum time, quantity of oil reintegrated, and quantity of gas charged into the system are automatically printed at the end of each single operation.

From the MAIN MENU:



Select the MANUAL PROCEDURE  , the following screen will be displayed:



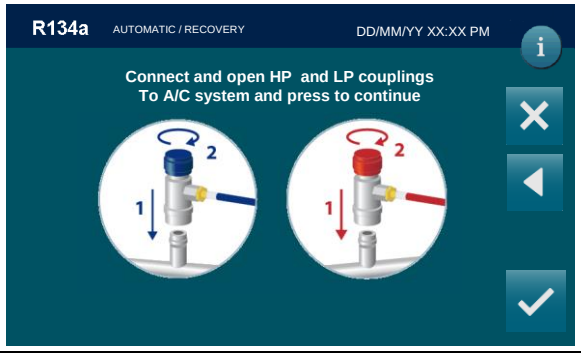
It's vertical rotating menu scrollable with the two arrow 

RECOVERY

Connect the hoses to the A/C system with the quick-connect couplings, bearing in mind that BLUE must be connected to the low-pressure side and RED to high pressure.

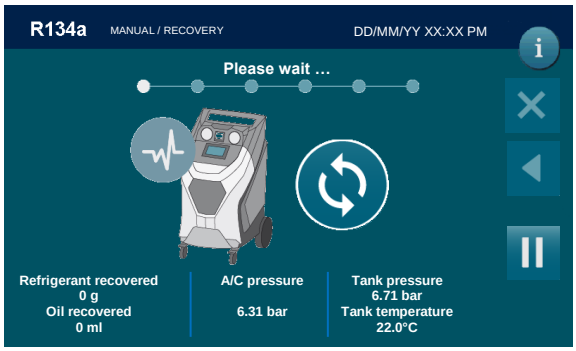
If the A/C system is equipped with a single quick-connect coupling for high or low pressure, connect only the relative hose.

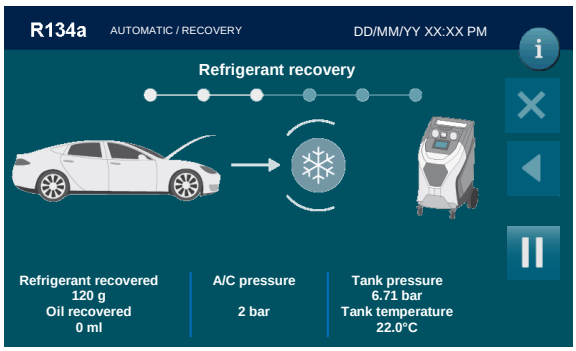
From MANUAL PROCEDURE, RECOVERY, the following screen will be displayed:



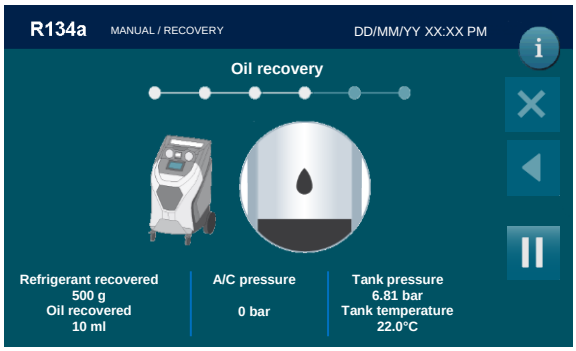
ENGLISH

Connect and open the coupling to the A/C system, then press , press to return back. the following screen will be displayed:

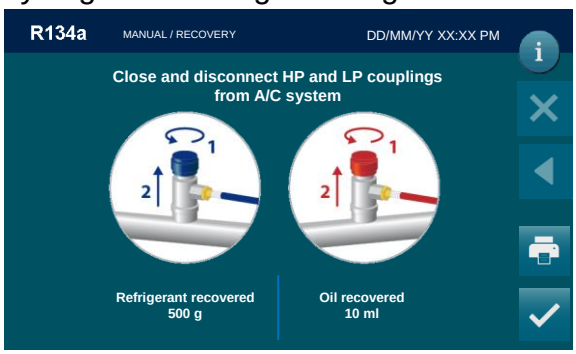




During the recovery phase, the machine displays the quantity of refrigerant recovered, in grams. Upon completion of recovery, the machine will stop and discharge, while automatically displaying the used oil extracted from the A/C system during the recovery phase. The oil discharge operation lasts 4 minutes.



The machine checks whether or not there is air in the bottle and, if necessary, purges the non-condensable gas; The machine will automatically discharge any non-condensable gas.
Allowing the machine to fully complete the procedure will reduce the risk of return flows, which may cause excessive non-condensable gas to be recharged into the air conditioning system. If any residual refrigerant in the A/C system should increase in pressure during this phase, the machine will automatically begin recovering the refrigerant. Following screen will be displayed**:**



Unscrew and disconnect HP and LP coupling from A/C system end press to complete the RECOVERY / RECYCLE PROCEDURE.

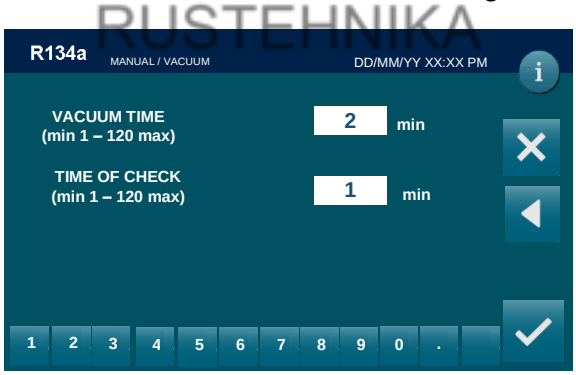
Press the symbol for printing.

Type the plate of the car,VIN, Km, Operator and press to confirm. BACK to return back.

VACUUM

Use the quick-connect couplings to connect the hoses to the A/C system, bearing in mind that BLUE must be connected to the low pressure side and RED to high pressure. If the system is equipped with a single quick-connect coupling for high or low pressure, connect only the relative hose.

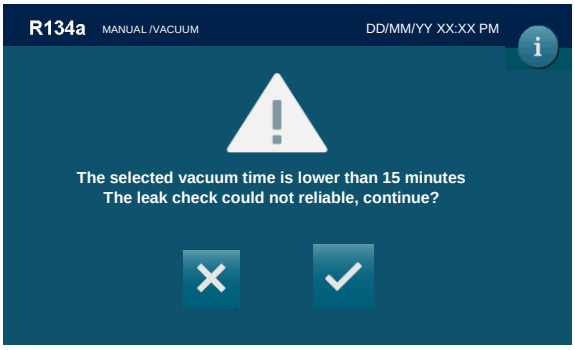
From the MANUAL PROCEDURE, select VACUUM, the following screen will be displayed:



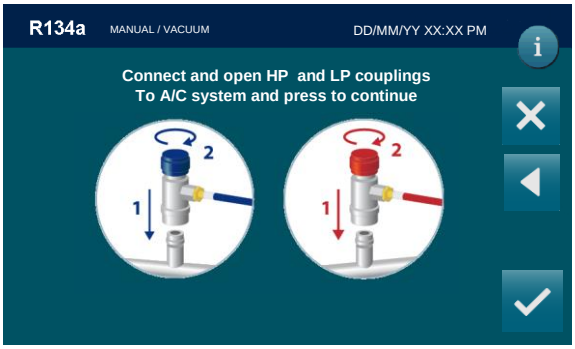
use the KEYPAD to insert the new value of the VACUUM TIME, press to confirm, to return back.

NOTE: use the VACUUM SETTING to change the duration of the LEACK CHECK.

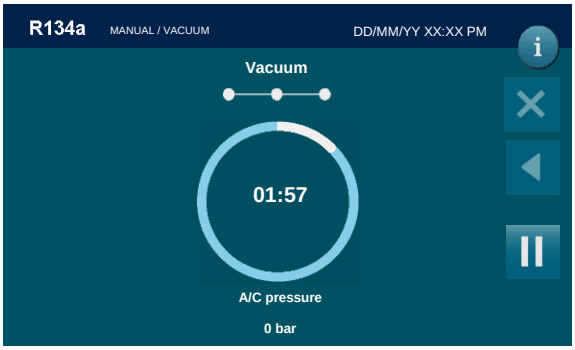
NOTE: if selected VACUUM TIME is lower 15 minutes the following popup warning will be displayed:



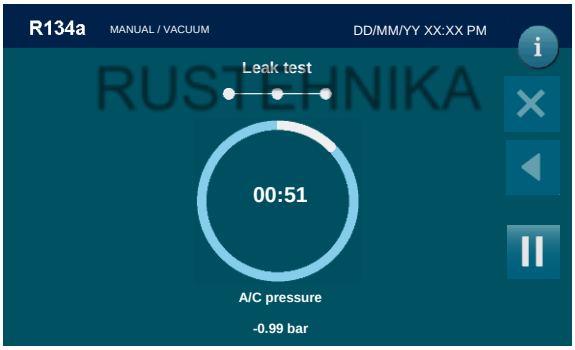
Press ✓ to continue, or press ✕ to go back.



Connect and open the coupling connected to the A/C system, then press ✓ to start the vacuum phase



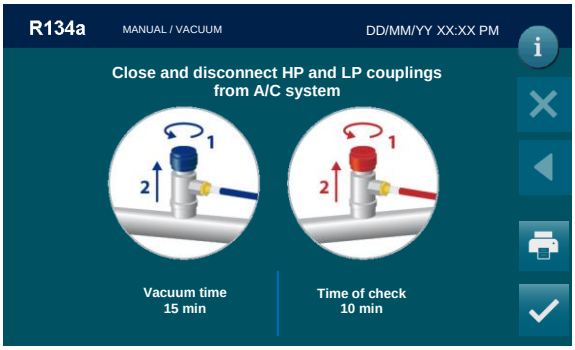
When time of check is reached, the machine will test for leaks in the A/C system:



(WARNING! If vacuum time is lower than 15 minutes this test is not reliable). If leaks are found, the machine will stop automatically and display the A/C SYSTEM LEAKS alarm.

Detection of micro-leaks is not guaranteed.

At the end of the preset vacuum time, the machine will sound and alarm and the following screen will be displayed:



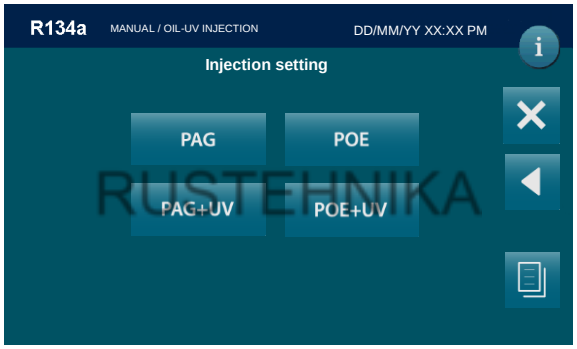
Close and disconnect HP and LP coupling from A/C system, then press ✓ to return to the MAIN MENU; VACUUM PROCEDURE is now successfully completed.

OIL+UV INJECTION

This operation can be carried out ONLY following a VACUUM operation.

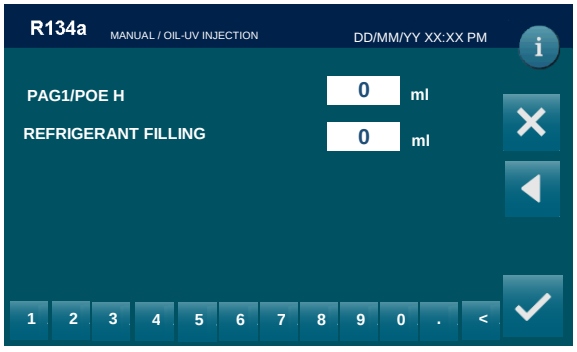
From the MANUAL PROCEDURE, select OIL+UV INJECTION, the following screen is displayed:

Select the STANDARD VEHICLE  or HYBRID VEHICLE  the following screen will be displayed:



EDIT OIL DATA

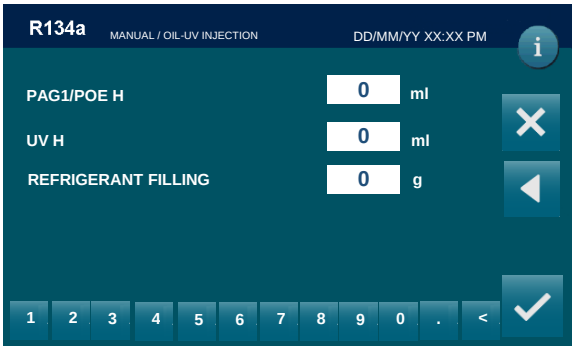
By selecting oil symbol  or  the following screen will be displayed:



Use the keys 0 to 9 to type the volume of oil to be injected.

EDIT UV DATA

By selecting oil symbol  or  the following screen will be displayed:



Use the keys 0 to 9 to type the volume of UV to be injected, can never be more than 10 ml.

** UV is disabled while servicing HYBRID VEHICLE*

EDIT GAS CHARGE DATA

NOTE: For most systems the quantity of fluid to be refilled is indicated on a plate that is in the vehicle's engine compartment. If this quantity is not known, look for it in the relevant manuals.

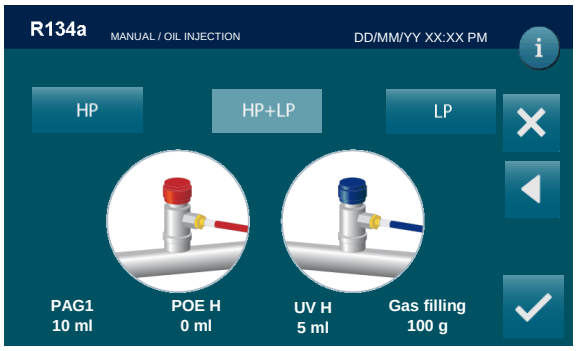
Use the keys 0 to 9 to type the quantity (in grams) of refrigerant to be charged into the A/C system.

NOTE: If DATABASE is installed, can be used to insert the value of refrigerant into the GAS FILLING field.

EDIT GAS CHARGE MODE

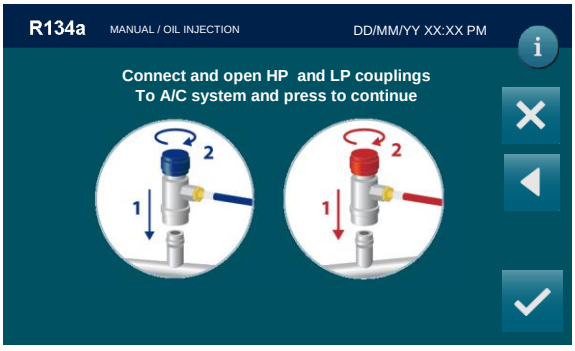
Select the connection mode:

- HP+LP fill the refrigerant from both HP and LP service ports
- HP to fill the refrigerant only from the HP service port,
- LP to fill the refrigerant only from the LP service port,



START PROCEDURE

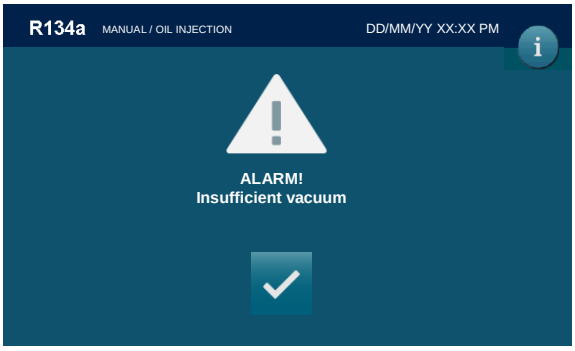
After selected all the procedure data, press  to continue, the following screen will be displayed:



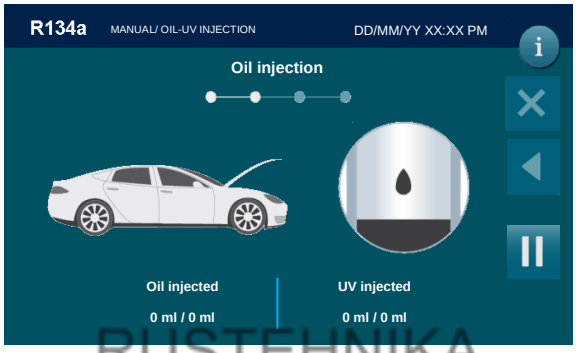
Connect and open the coupling (HP, LP, or HP/LP, depend of the previous choice) connected

to the A/C system, then press , press to return back.

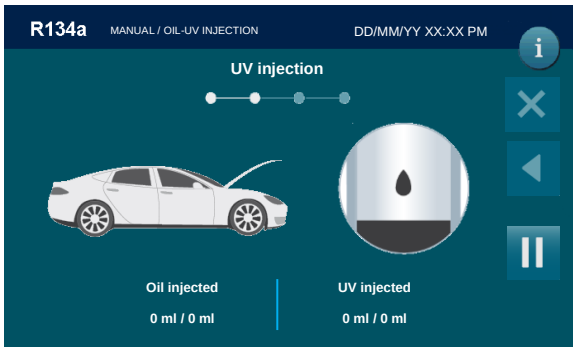
In case of insufficient vacuum will appear the following screen:



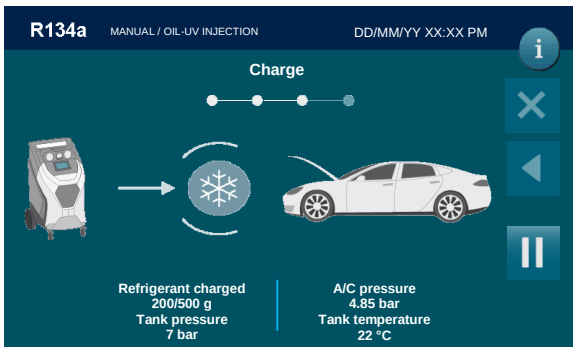
press



Oil will be injected, then if previously selected the UV will be injected:

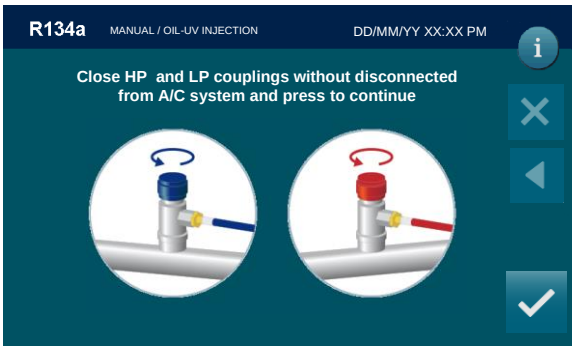


The machine will continue the refilling with the preset quantity of refrigerant.

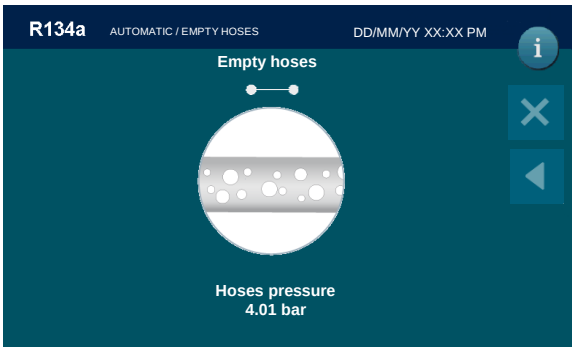


Then the following screen will be displayed**:**

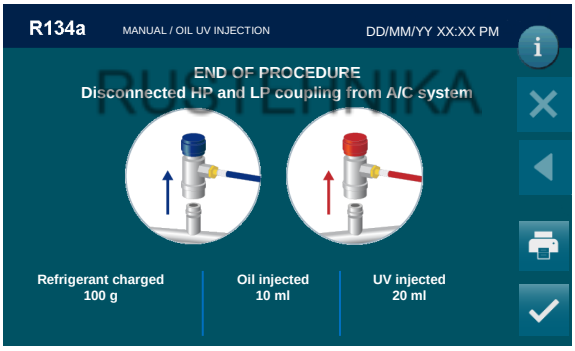
ENGLISH



Unscrew HP and LP coupling without disconnect from A/C system end press to continue:



The machine will recover the residual refrigerant into the service hoses, then the following screen will be displayed**:**



Disconnect coupling from A/C system.

Press the symbol for printing.

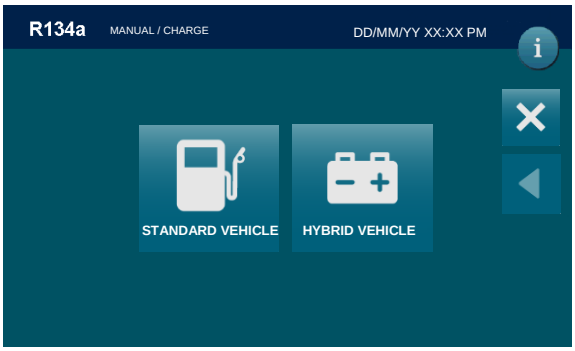
Type the plate of the car, VIN, Km, Operator and press to confirm. BACK to return back.

Procedure is now successfully completed.

NOTE: Rarely, charging may not run to completion due to pressure balance. In this case, close the high pressure tap (leaving the low-pressure side open), and switch on the A/C system.

CHARGE

From the MANUAL PROCEDURE, select CHARGE, the following screen will be displayed:



Select the STANDARD VEHICLE or HYBRID VEHICLE the following screen will be displayed:

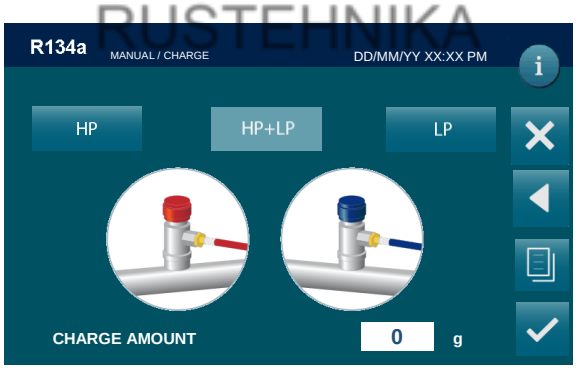
EDIT GAS FILLING DATA

NOTE: For most systems the quantity of fluid to be refilled is indicated on a plate that is in the vehicle's engine compartment. If this quantity is not known, look for it in the relevant manuals.

NOTE: If DATABASE is installed, can be used to insert the value of refrigerant into the GAS FILLING field.

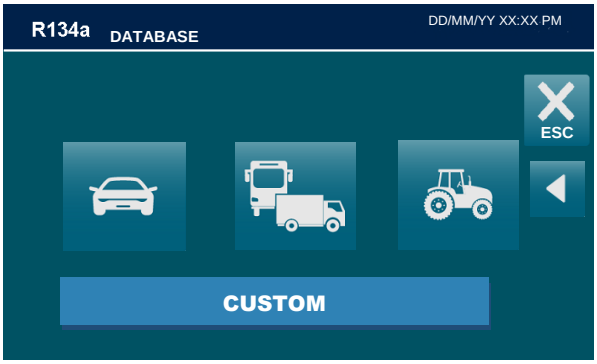
EDIT GAS FILLING MODE

Select the connection mode:



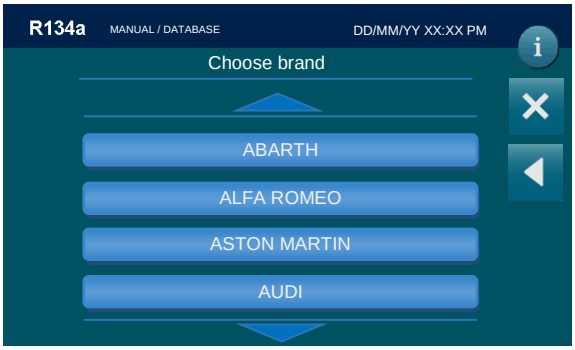
- HP+LP fill the refrigerant from both HP and LP service ports
- HP to fill the refrigerant only from the HP service port,
- LP to fill the refrigerant only from the LP service port,

Use the touchscreen keys 0 to 9 to type the quantity (in grams) of refrigerant to be charged into the A/C system or if installed, press DATABASE button , the following screen will be displayed:



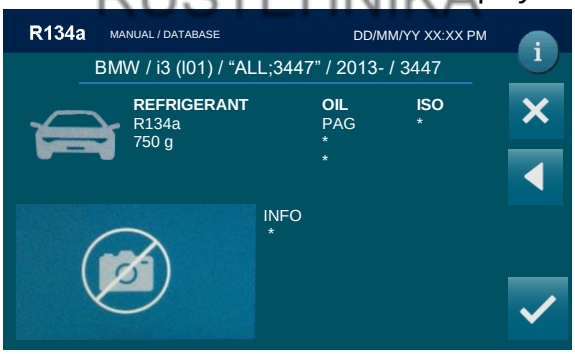
ENGLISH

Select the vehicle typology, the following screen will be displayed:



Select the brand of vehicle you are servicing, (use the arrow keys to change page if necessary), the following screen is displayed (i.e. for BMW):

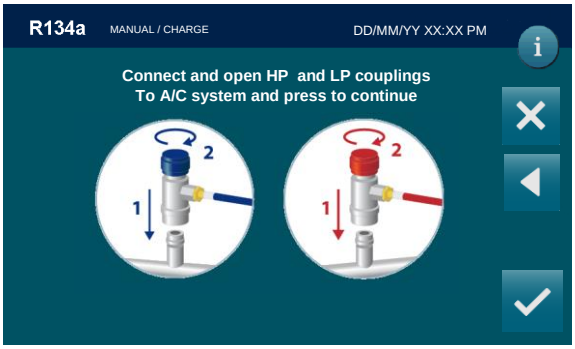
Select the model of vehicle you are servicing. (*If you wish to install DATABASE contact the machine dealer.*), all the information about this model is displayed:



Press  to confirm, and insert the value into the GAS FILLING field.

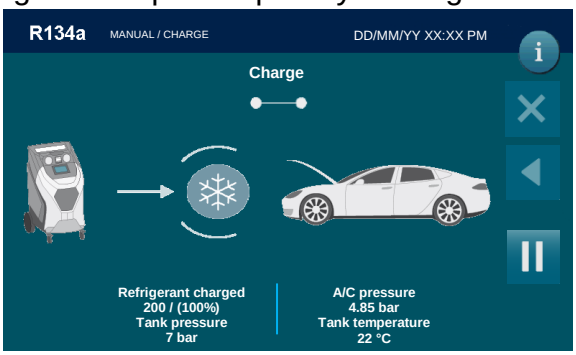
START PROCEDURE

After selected all the procedure data, press  to continue, the following screen will be displayed:

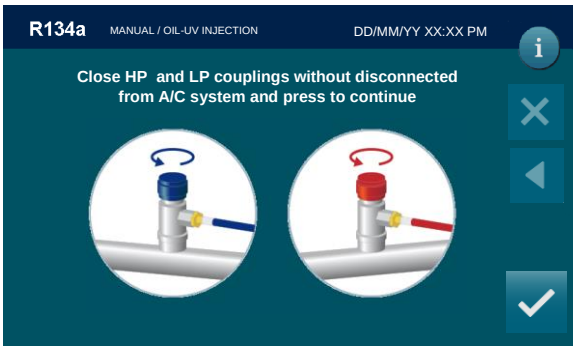


Connect and open the coupling (HP, LP, or HP/LP, depend of the previous choice) connected to the A/C system, then press , press to return back.

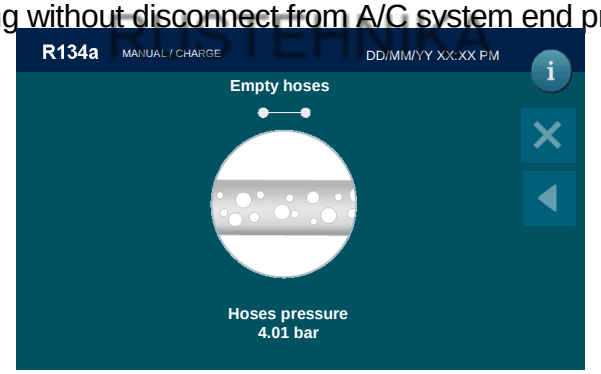
The machine will start the filling with the preset quantity of refrigerant.



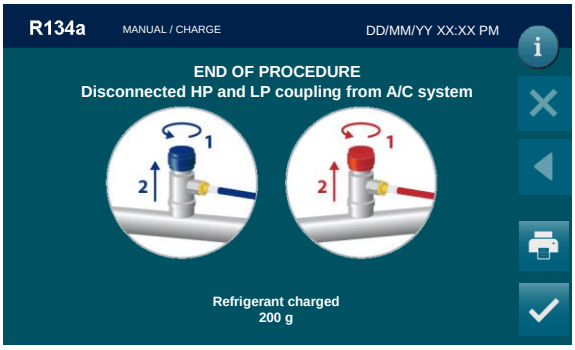
Then the following screen will be displayed**:**



Unscrew HP and LP coupling without disconnect from A/C system end press to continue:



The machine will recover the residual refrigerant into the service hoses, then the following screen will be displayed**:**



Disconnect coupling from A/C system.
Procedure is now successfully completed.

NOTE: Rarely, charging may not run to completion due to pressure balance. In this case, close the high pressure tap (leaving the low-pressure side open), and switch on the A/C system.

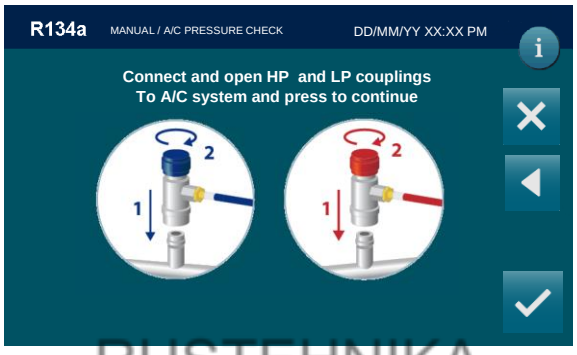
Press the symbol for printing.

ENGLISH

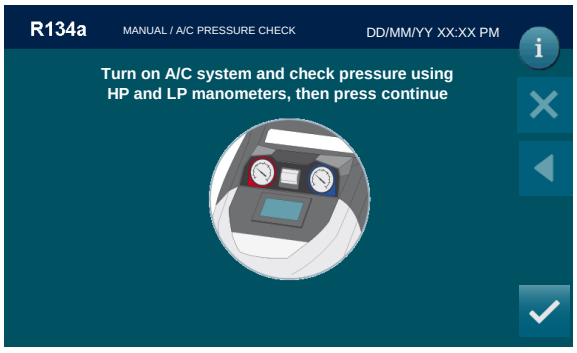
Type the plate of the car,VIN, Km, Operator and press to confirm. BACK to return back.

A/C PRESSURES CHECK

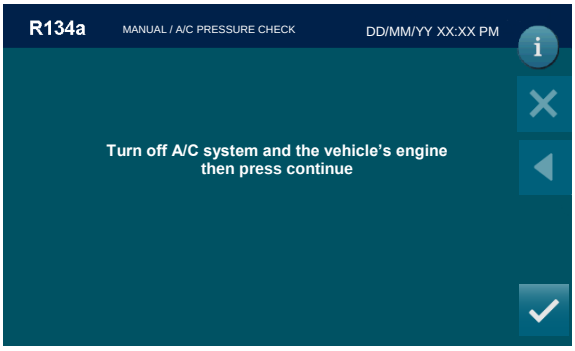
From MANUAL PROCEDURE select A/C PRESSURES CHECK, the following screen will be displayed:



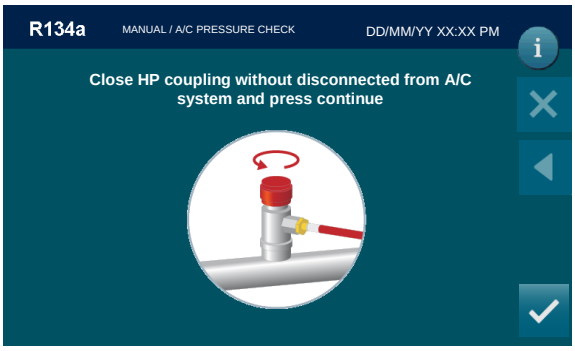
Connect and open the coupling connected to the A/C system, then press , press return back; the following screen is displayed:



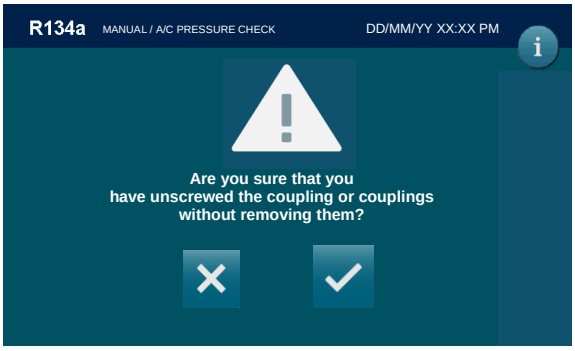
Turn on A/C system and check pressure using HP and LP manometers, then press :



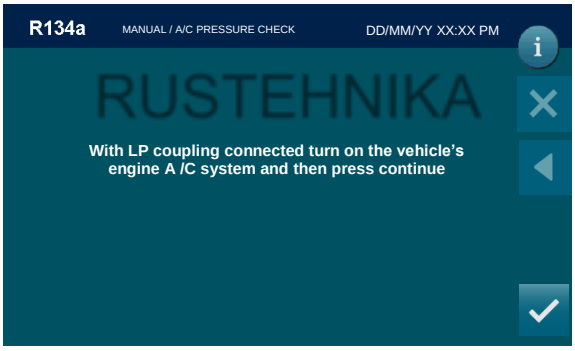
Turn off A/C system and the vehicle's engine then press :



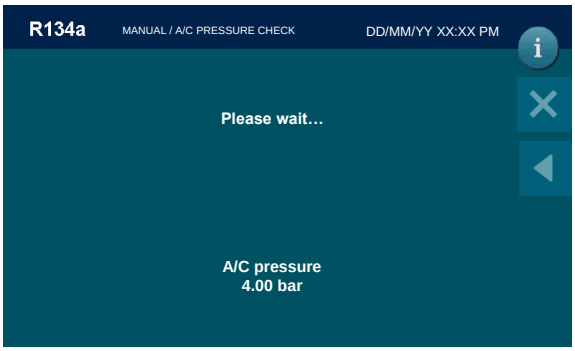
Close HP coupling without disconnect it, then press ✓ :



Press ✓ to continue, or press ✕ to go back:

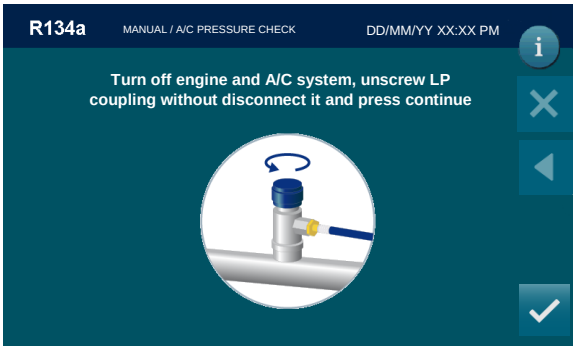


Press ✓ to continue

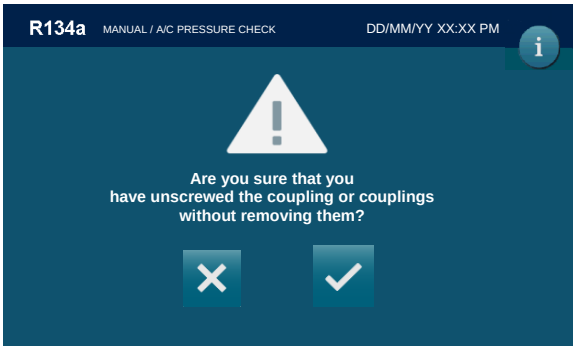


The vehicle's A/C system will recover the refrigerant from the service hoses, then:

ENGLISH

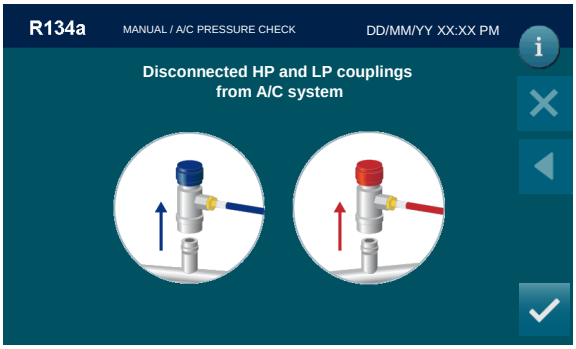


Turn off engine and A/C system, unscrew LP coupling without disconnect it, then press ✓ :



Press ✓ to continue, or press ✗ to go back:

The machine will recover the residual refrigerant into the service hoses, then the following screen will be displayed**:**



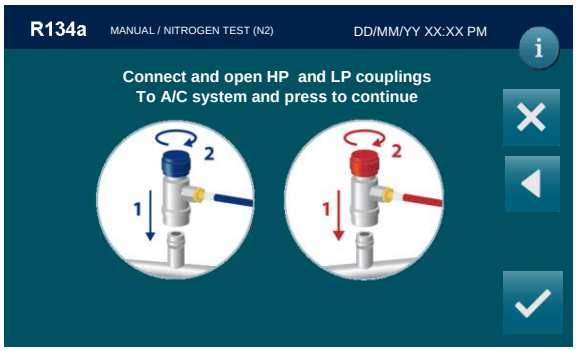
Disconnect coupling from A/C system, press ✓ to return to the MANUAL PROCEDURE MENU; A/C PRESSURES CHECK is now successfully complete

NITROGEN TEST (N_2)

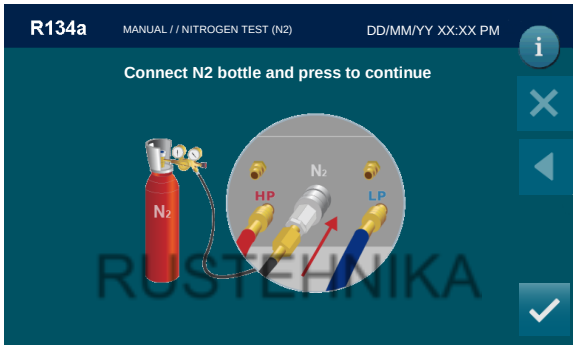
From the MANUAL PROCEDURE, select Nitrogen test (N2):

This operation allows to test the seal of the A/C system using pressurized nitrogen

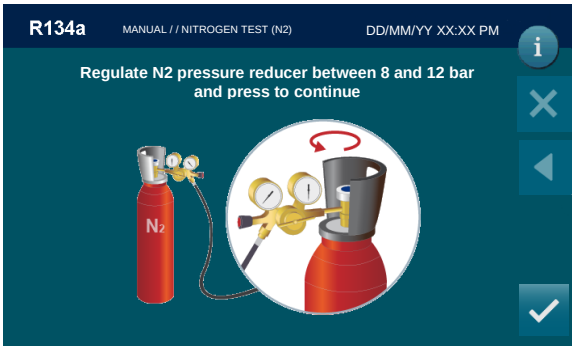
Selecting Nitrogen test (N2) the following screen will be displayed:



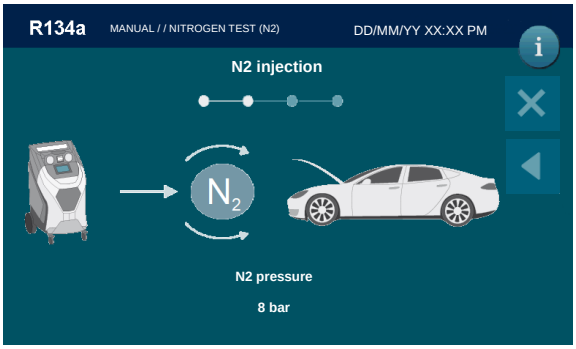
Connect and open HP and LP coupling to A/C system, then press OK to continue; the following screen will be displayed:



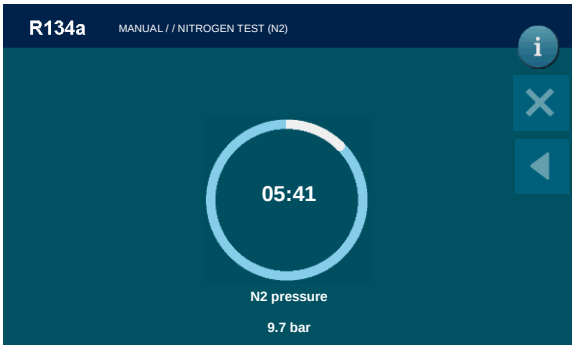
Connect nitrogen bottle and press ✓ :



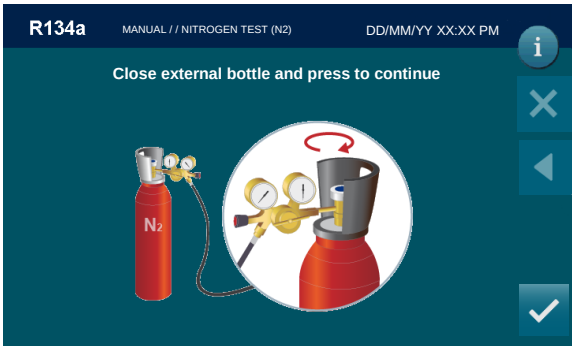
Regulate N2 pressure reducer between 8 and 12 bar and press ✓ :



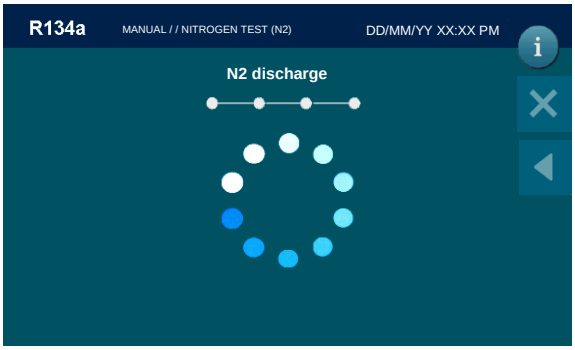
The nitrogen will be injected into the A/C system, the test will start as soon as the pressure is stable:



If leaks are detected, the machine will give an alarm signal, discharge the nitrogen from the system, and display a SYSTEM LEAKS alarm warning. If the test detects no leaks, the machine will discharge the nitrogen:

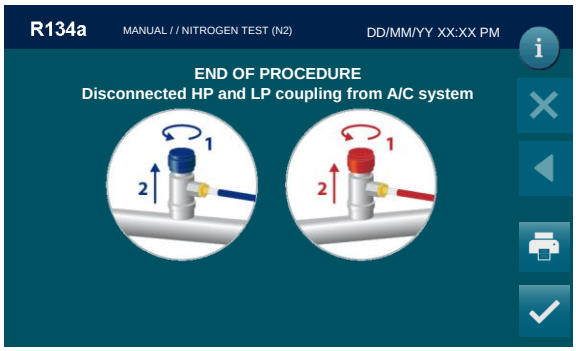


Close external bottle and press to continue



then the machine will sound and alarm and the following screen will be displayed:

Disconnect coupling, then press the following screen will be displayed:



Unscrew and disconnect HP and LP coupling from A/C system end press to complete the N2 TEST.

WARNING: Connect nitrogen supply only to the quick-connect coupling

Press the symbol for printing.

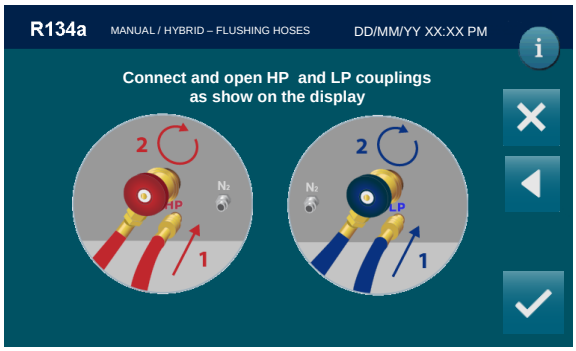
Type the plate of the car,VIN, Km, Operator and press to confirm.

ENGLISH

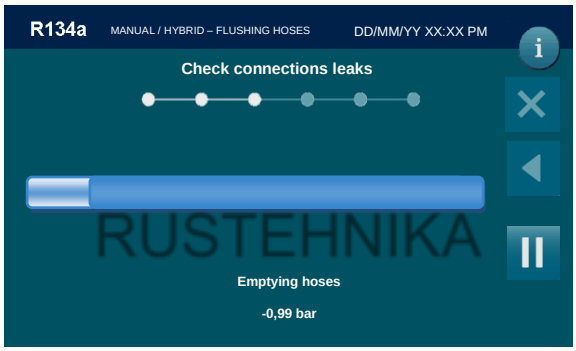
FLUSHING HOSES

This operation makes the machine suitable for a service on vehicles equipped with electrically driven compressors (hybrid vehicles)

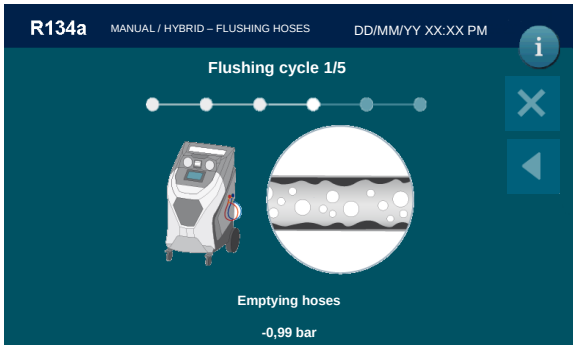
From the MANUAL PROCEDURE, select Hybrid – flushing hoses:



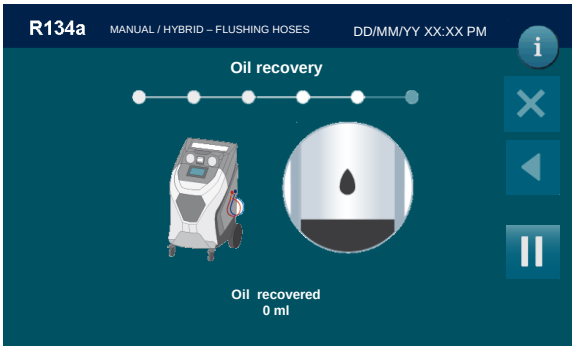
Connect the HP and LP couplers to the respective fitting on the machine, the press ✓ to continue:



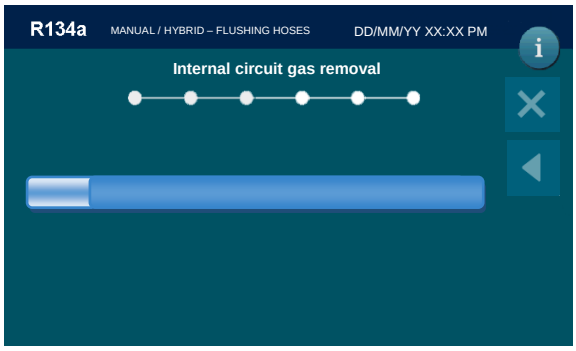
After checking connection leaks, the following screen will be displayed:



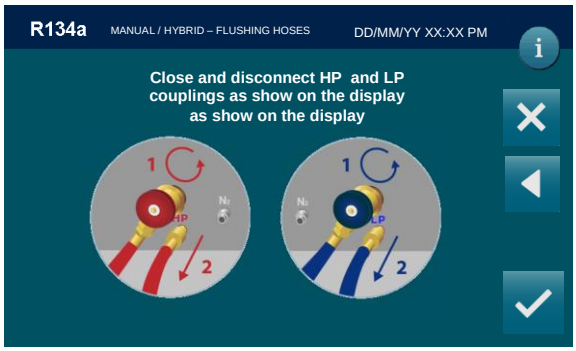
The machine automatically flushing hoses



The machine automatically displaying the used oil extracted



Flushing hoses lasts few minutes, then the machine will sound and alarm and the following screen will be displayed:

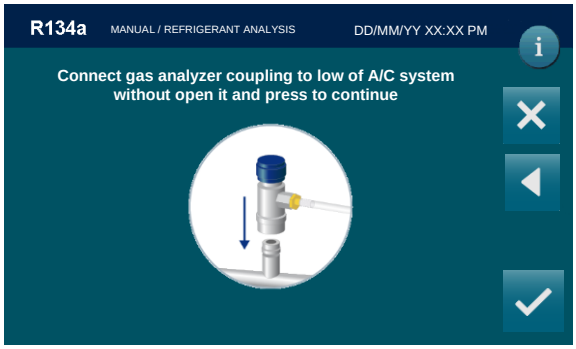


Close and disconnect coupling, then press  to return to the MAIN MENU; FLUSHING HOSES is now successfully completed.

ENGLISH

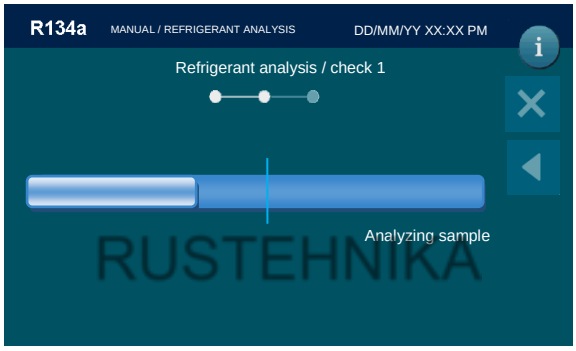
REFRIGERANT ANALYSIS(optional)

From the MANUAL PROCEDURE, select REFRIGERANT ANALYSIS:



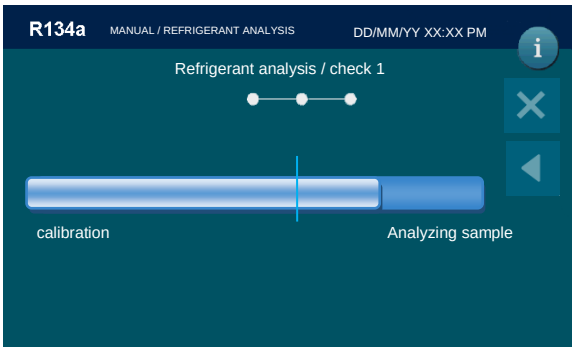
Connect gas analyzer coupling to low of A/C system

without open it and press  to continue

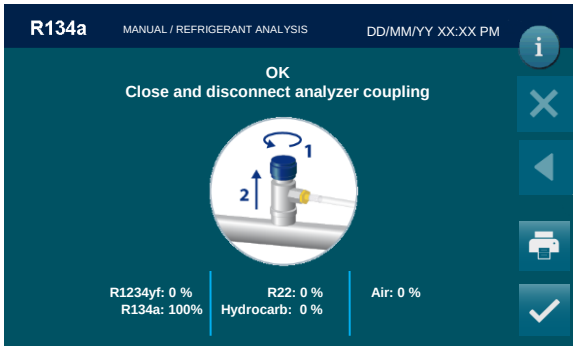


The machine performs an internal calibration before performing the measurement.

Open gas analyzer coupling then press  to continue



The machine performs the measurement then the following screen will be displayed**:**



Close and disconnect analyzer coupling

Press the symbol for printing.

Type the plate of the car,VIN, Km, Operator and press to confirm. to return back.

Procedure is now successfully completed.

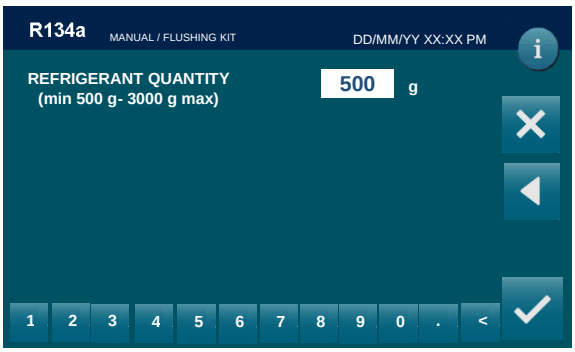
ENGLISH

FLUSHING KIT (optional)

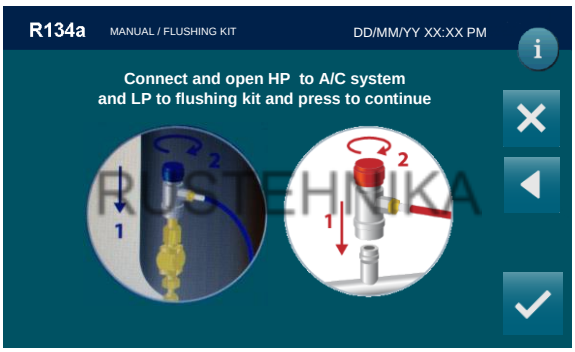
Attention: before flushing, recover the refrigerant of the a/c system using a suitable R&R device, then run at least 20 minutes vacuum.

When flushing a system we recommend disassembling the filter and the expansion valve, in the case of a traditional system, or only the capillary valve in the case of a flooded system. Use the inlet to the evaporator as washing inlet and the outlet of the condenser as flushing outlet.

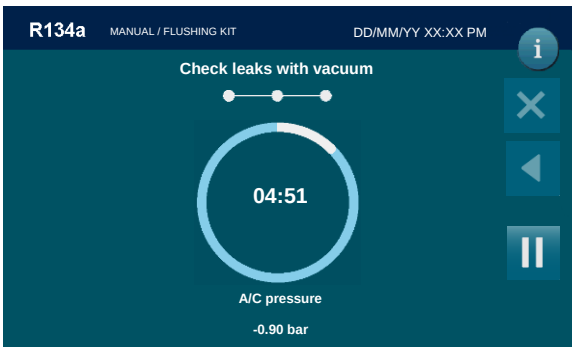
From MANUAL, select FLUSHING KIT, the following screen will be displayed:



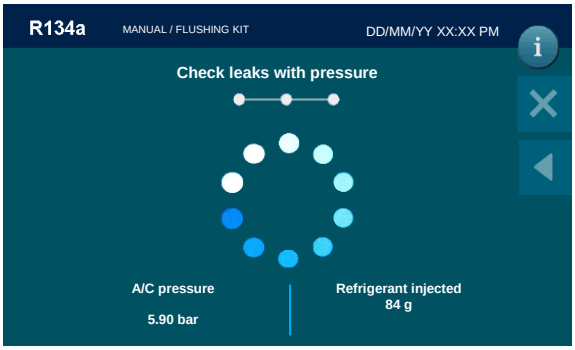
If needed, type the new value; then press  to continue, the following screen will be displayed:



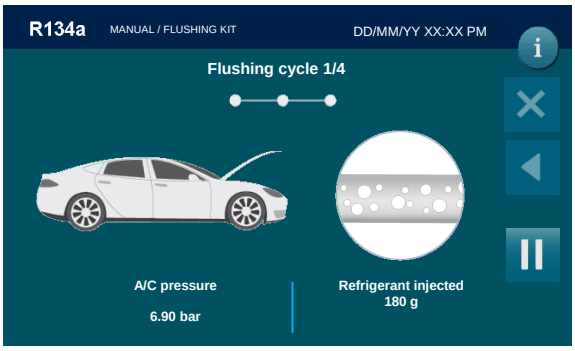
Connect and open HP to A/C system and LP to flushing kit and press  to continue:



The machine check leaks with vacuum

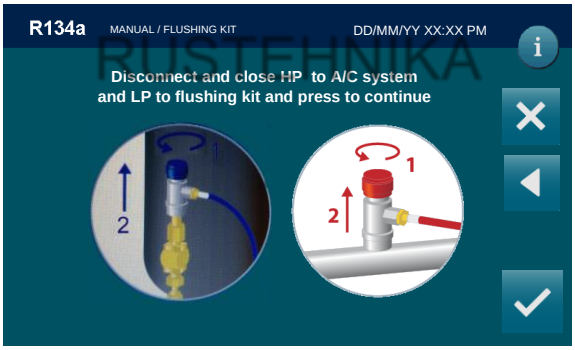


The machine check leaks with pressure



The machine will proceed automatically to 4 flushing cycle

The machine will proceed automatically, displaying the quantity of oil extracted at the end of flushing. When flushing is completed, the following screen is displayed:



Disconnect all the couplings and press  to return to the MAIN MENU; FLUSHING KIT is now successfully completed.

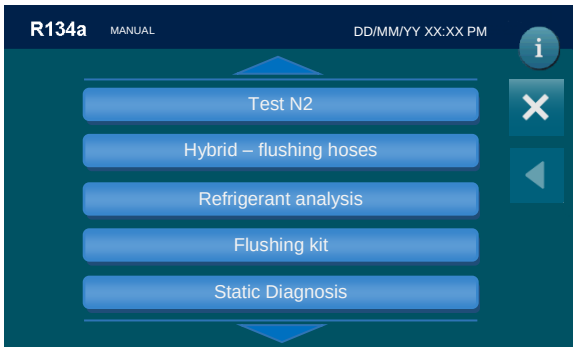
NOTE: for additional information about PRINCIPAL COMPONENTS, ASSEMBLY OF THE FLUSHING KIT, CONNECTION TO THE SYSTEM and FLUSHING KIT MAINTENANCE, please refer to A/C SYSTEM FLUSHING INSTRUCTIONS [MANU029.NFK].

ENGLISH

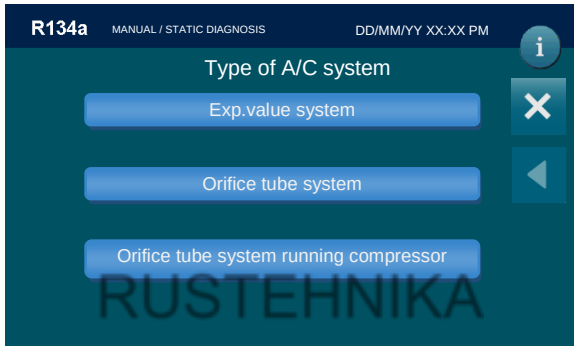
STATIC DIAGNOSIS(optional)

NOTE: during STATIC DIAGNOSIS, it is not necessary connect the service hoses to the A/C system

From the MANUAL PROCEDURE, select STATIC DIAGNOSIS:



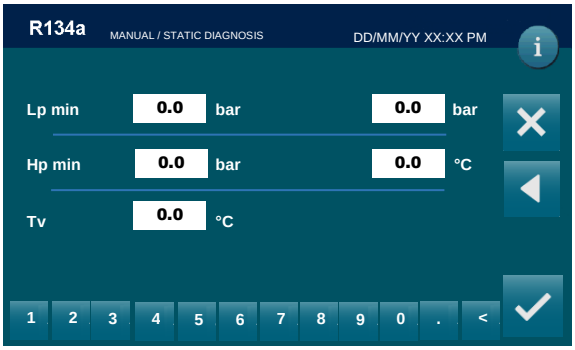
Then select STATIC DIAGNOSIS, the following screen will be displayed:



select the A/C system type

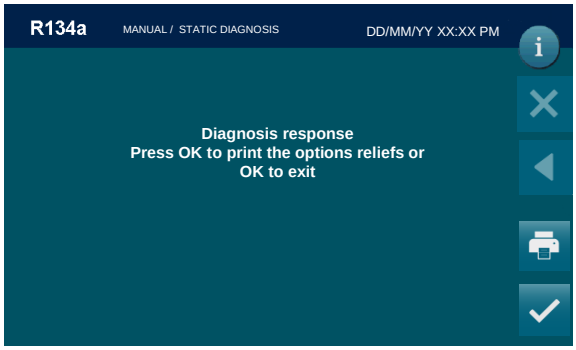
NOTE: Incorrect selection of A/C system type may falsify diagnostic results.

The following screen will be displayed:



Type in, in order, the minimum value of low pressure, the maximum and minimum value of high pressure of the A/C system, and the temperature of the air at the outlet from the vents in the passenger compartment (use the thermometer supplied with the machine to measure).

Then press OK to confirm, the following screen will be displayed:



Press OK to print the diagnosis report: should the diagnosis results not be positive, the printout will list from one to three possible system problems. When checking, always start with the first DIAGNOSIS shown and check each in the order given, applying the REMEDIES listed for each DIAGNOSIS.

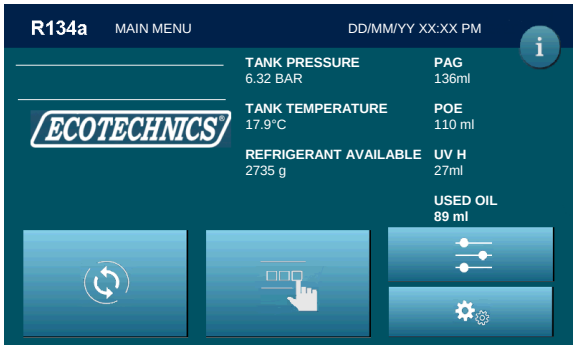
Retest the A/C system with the machine after the first DIAGNOSIS has been checked out and/or repaired, in order to determine whether or not the repair has solved the system problem. Retest after each DIAGNOSIS has been verified and/or the trouble repaired.

OPTIMUM CONDITIONS FOR A/C SYSTEM DIAGNOSTICS: Wind speed ca. 0 km/h. A/C fan set to second speed. A/C temperature control set to maximum cold. External (ambient) temperature from 21°C to 38°C. Engine at 1500 RPM for two minutes. Do not expose the vehicle to direct sunlight during diagnostic testing.

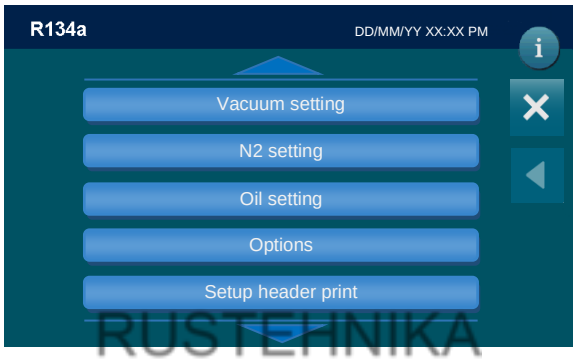
ENGLISH

SETUP

From the MAIN MENU:



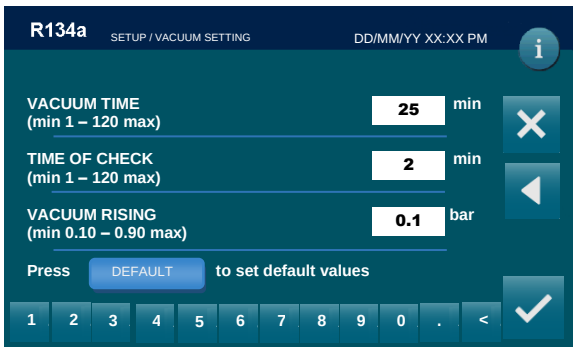
Select the SETUP  , the following screen will be displayed:



VACUUM SETTINGS

Allows to modify the default vacuum time and the default time of check.

From the SETUP, select VACUUM SETTINGS, default setting is displayed:



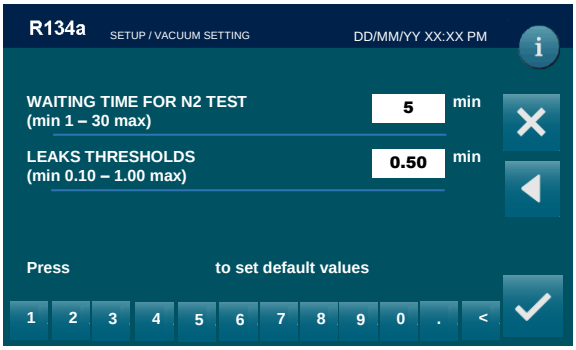
Each value can be modified, within the values shown in parentheses.

NOTE: press INFO to restore default values:

- Vacuum time 25 min
- Time of check 2 min
- Vacuum rising 0,1 mbar

N2 TEST SETTINGS

From the SETUP, select N2 TEST SETTINGS, default setting is displayed:



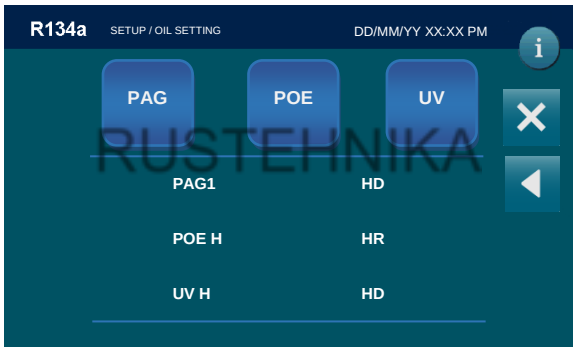
Each value can be modified, within the values shown in parentheses.

NOTE: press INFO to restore default values:

- Waiting time 2 min
- Leaks threshold 500mbar

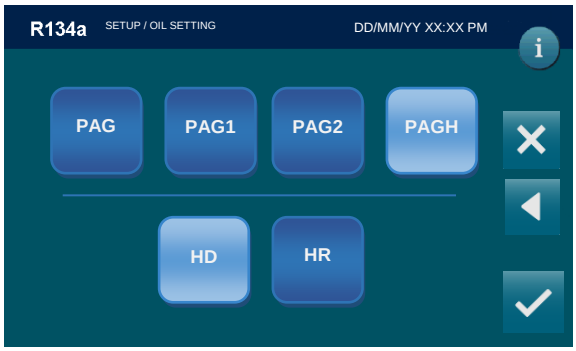
OIL SETTING

From the SETUP MENU, select OIL SETTING:



Select OIL TYPE.

NOTE: this operation is to use different containers, for example, if instead of a PAG you want to use a HYBRID OIL: select PAG CONTAINER 

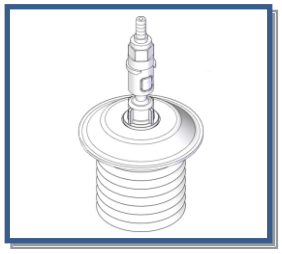


Select HYBRID PAG 

Select the containers type:

(DISPOSABLE CONTAINERS)

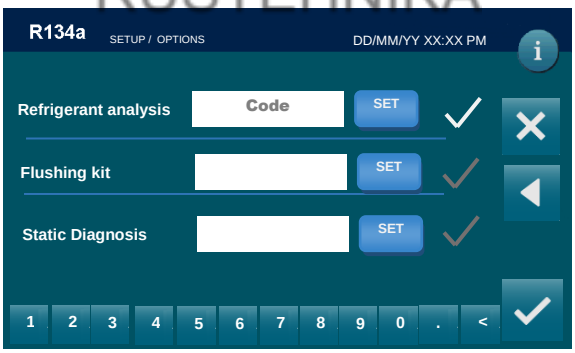
(REFILLABLE CONTAINERS)



then press  to confirm

OPTIONS

From the SETUP MENU, select OPTIONS and the following screen is displayed:



Enter the code **43210791** and then press 

to enable the chosen option.

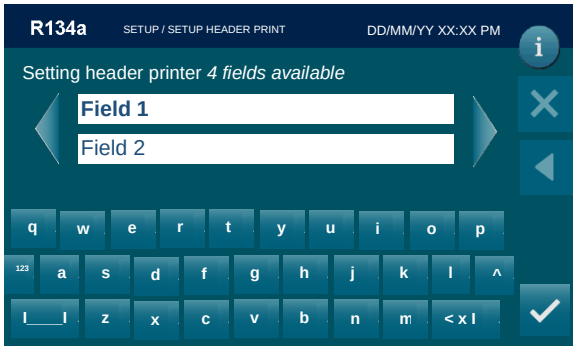
NOTE: -The checkmark on indicates that the option is active 

-The checkmark off indicates that the option isn't active 

SETUP HEADER PRINT

The printout can be personalized by entering 4 lines containing the workshop's details (e.g. Name, address, telephone n° and e-mail).

From the SETUP, select SETUP HEADER PRINT and the following screen is displayed:

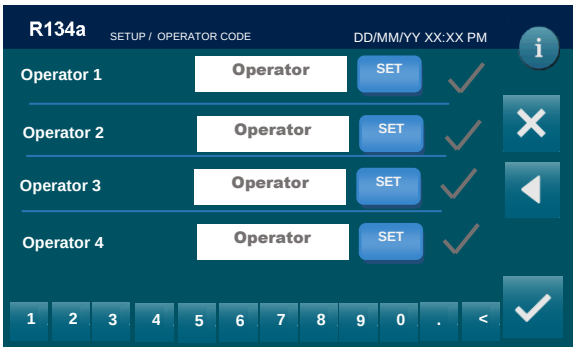


Use the keypad to modify the 4 lines, then press  return to SETUP menu.

Press  to SAVE and return to the SETUP MENU

OPERATOR CODE

From the SETUP, select INSERT OPERATOR CODE and the following screen is displayed:



It is possible to enter an alphanumeric code of 10 symbols to indicate the habilitation nr of the operator. This number will be indicated in all printouts.

Use the keypad to modify operator number, press  to save.

NOTE: -The checkmark on indicates that the operator code is saved 

-The checkmark off indicates that the operator code isn't saved 

Finally press  to SAVE and return to the SETUP MENU

SET DATE - TIME

The machine keeps date and time settings even if it is not used for around one year.

From the SETUP MENU, select DATE-TIME and the following screen is displayed:

Use ARROW ▲▼ to change date and time, press ✓ to confirm, or press ◀ to return to SETUP menu without saving the changes.

LANGUAGE

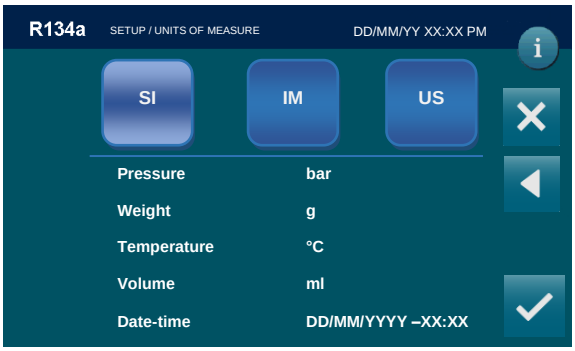
From the SETUP MENU, select LANGUAGE and the following screen is displayed:

NOTE: current language is indicated by black background

Select a language, then press ✓ to confirm and return to the SETUP MENU

UNITS OF MEASURE

From the SETUP MENU, select UNITS OF MEASURE and the following screen is displayed:



Select the unit of measurement to change, then select between international system (SI), imperial system units (IMP) and US customary system (US).

NOTE: current unit of measurement is indicated by black background

Press ✓ to confirm. The machine will reboot to update measure units.

QUICKSETUP

The first time the machine is used, a quicksetup guide appears: the operator is guided through the steps described at the start of the PRELIMINARY OPERATIONS section. The quicksetup can also be found in the SETUP MENU, select QUICKSETUP.

The user will be guided through the following steps:

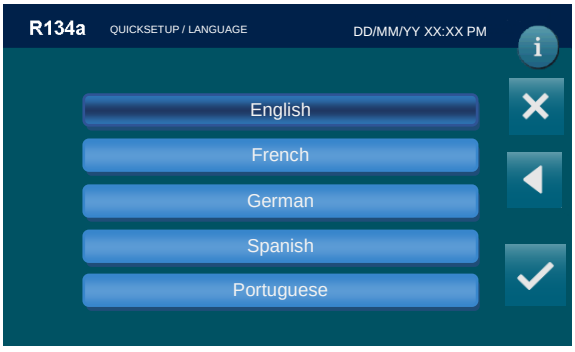
- Language
- Measure units
- License plate recording
- Date and time
- Setup header print
- Vacuum settings
- Leak check test
- Tank filling

Follow the instructions displayed. At the end of the procedure, press ENTER to print a summary report of the guided procedure. Press ESC to exit.

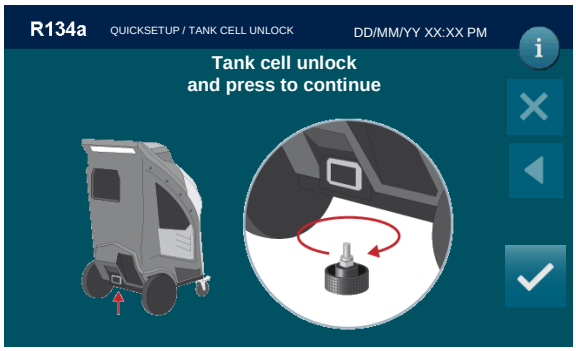
NOTE: If the guided procedure is not completed, it will be displayed again the next time the machine is switched on.

NOTE: To display the QUICKSETUP at any time, select from the menu of the same name under SETUP.

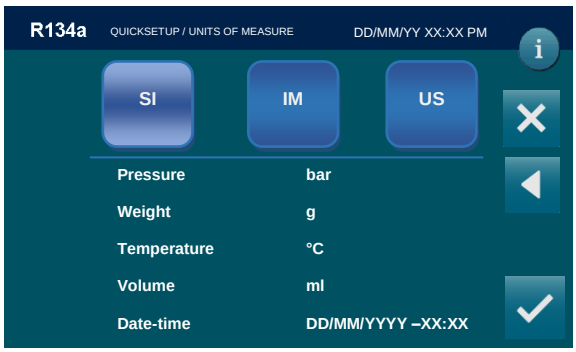
The following screen is displayed:



Select a language, then press to confirm



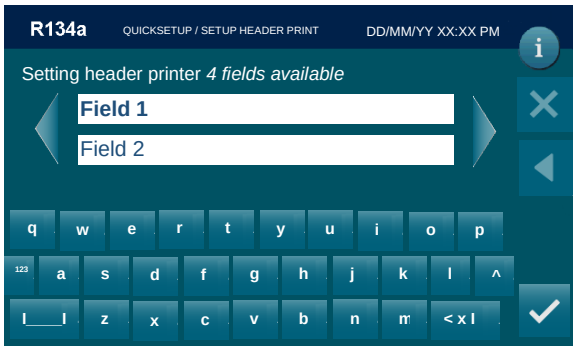
Press to confirm



Select the unit of measurement to change, then select between international system (SI), imperial system units (IMP) and US customary system (US).

Press to confirm

Press to confirm

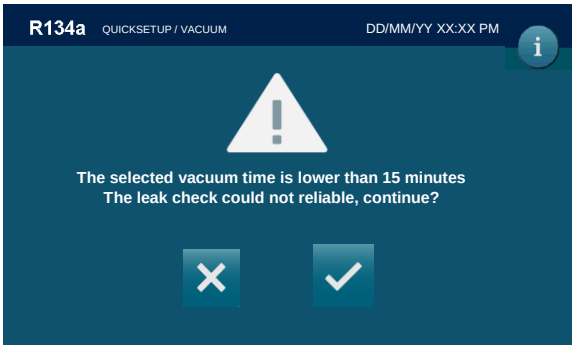


Press to confirm

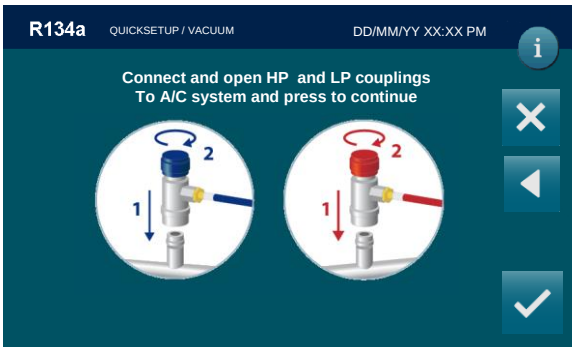
Use the KEYPAD to insert the value of the VACUUM TIME, press to confirm

NOTE: use the VACUUM SETTING to change the duration of the LEACK CHECK.

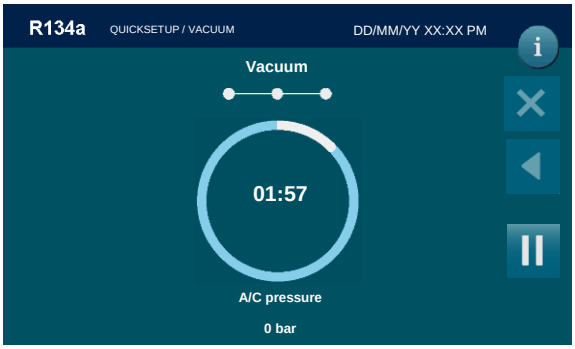
NOTE: if selected VACUUM TIME is lower 15 minutes the following popup warning will be displayed:



Press to continue, or press to go back.

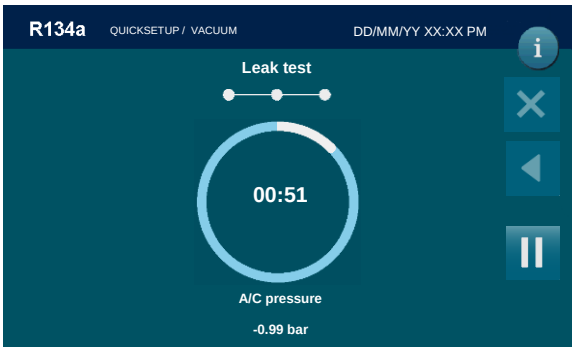


Connect and open the coupling connected to the A/C system, then press to start the vacuum phase



ENGLISH

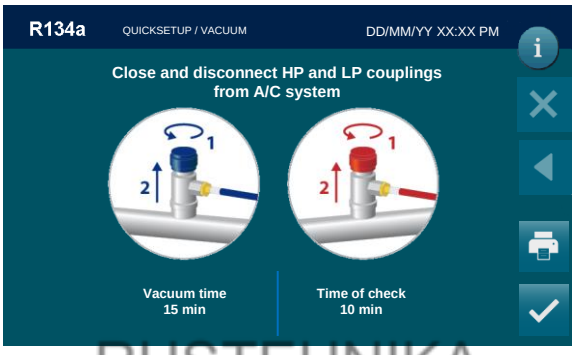
When time of check is reached, the machine will test for leaks in the A/C system:



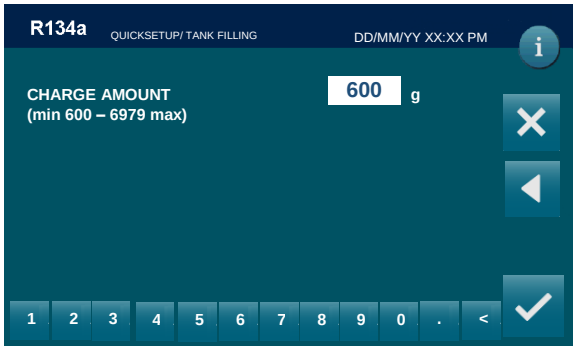
(WARNING! If vacuum time is lower than 15 minutes this test is not reliable). If leaks are found, the machine will stop automatically and display the A/C SYSTEM LEAKS alarm.

Detection of micro-leaks is not guaranteed.

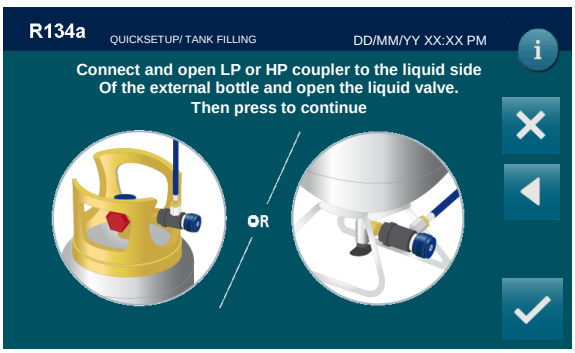
At the end of the preset vacuum time, the machine will sound and alarm and the following screen will be displayed:



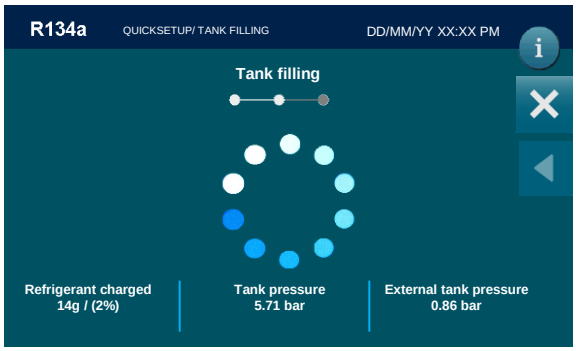
Close and disconnect HP and LP coupling from A/C system, then press ✓



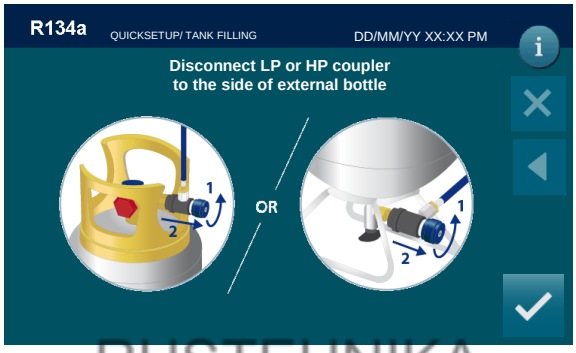
Use the touchscreen keys 0 to 9 to type the quantity (in grams) of refrigerant to be charged into the tank, then press ✓



Connect and open LP or HP coupler to the liquid side of the external bottle and open the liquid valve. Then press ✓ to continue



The machine will proceed automatically, displaying the quantity of refrigerant charged in the tank. When filling is completed, the following screen is displayed:



QUICKSETUP is now successfully completed. Press ✓ return to the MAIN MENU.

ENGLISH

MAINTENANCE

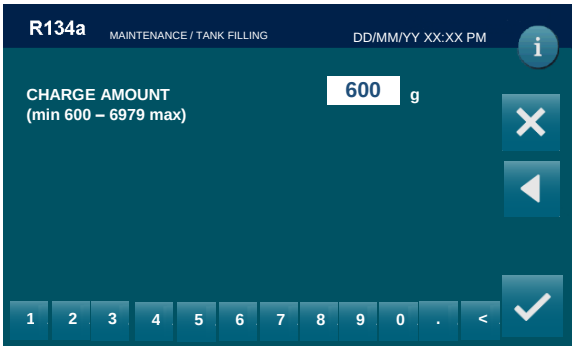
From the MAIN MENU:

Select the MAINTENANCE, the following screen will be displayed:

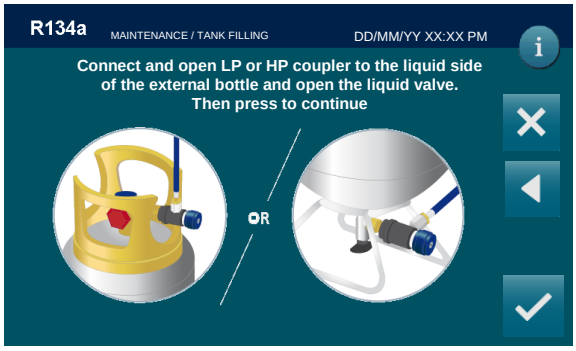
TANK FILLING

This operation must be performed whenever the available refrigerant fluid in the bottle is less than 3 kg and must in any case be performed when the “empty bottle” alarm is displayed.

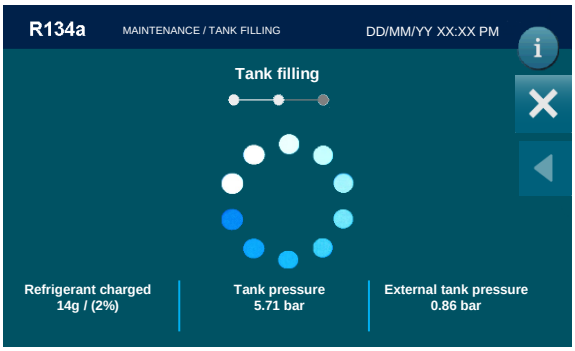
From MAINTENANCE, select TANK FILLING, the following screen will be displayed:



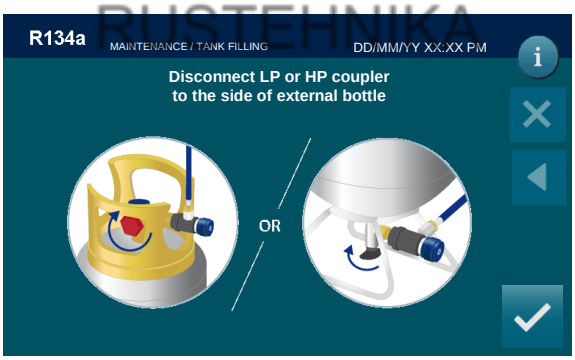
Use the keypad to insert the amount of refrigerant, then press  to continue.



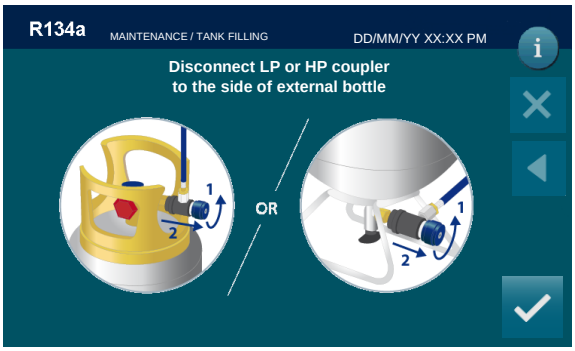
Procure a bottle of appropriate refrigerant (R134a or R1234yf depending on machine model), connect and open LP or HP coupler to the liquid side of the external bottle and open the liquid valve, then press ✓. The BOTTLE FILLING will start



the machine will now fill the machine tank with the preset quantity ~ 500g. When the quantity minus 500 grams is reached, the machine will stop and display:



Close the liquid valve of the external bottle and press ✓, the machine will recover the residual refrigerant from the hoses, then will display the following screen:



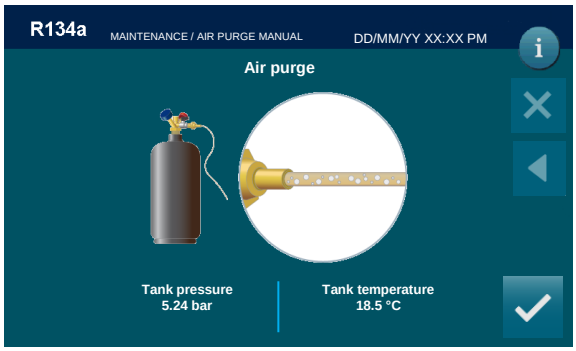
Close and disconnect LP coupling from external bottle and press ✓ .Bottle filling procedure successfully completed. Switch the machine off.

NOTE: if the external bottle is not supplied with a liquid side coupling, upend it to recover liquid refrigerant.

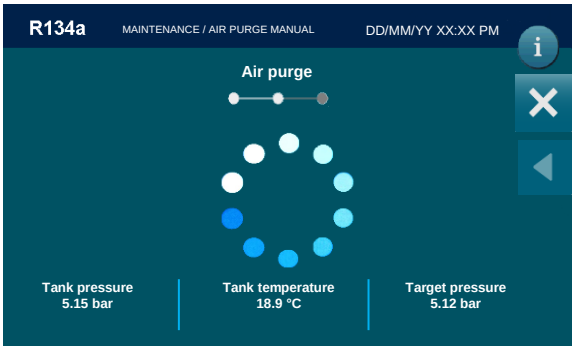
ENGLISH

AIR PURGE MANUAL

From MAINTENANCE, select AIR PURGE MANUAL, the following screen will be displayed:



Press ✓ to continue.

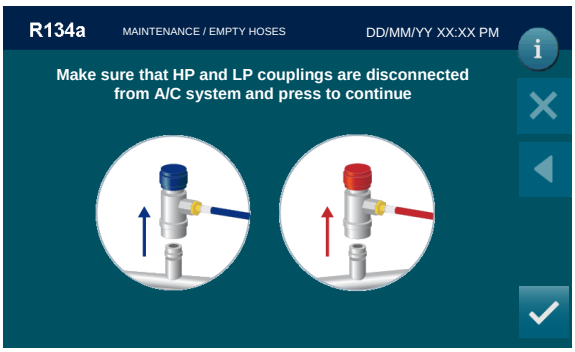


Automatically the machine will start to discharge the air up to the target pressure.

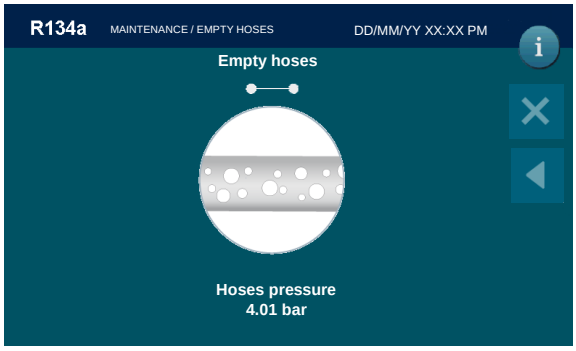
Press ✓ to terminate the Air Purging process, and return to the MAINTENANCE menu.

EMPTY HOSES

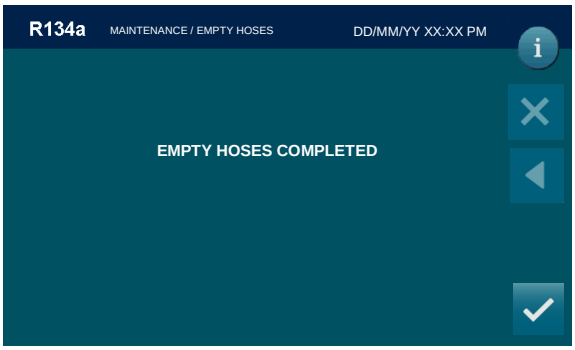
From MAINTENANCE , select EMPTY HOSES, the following screen will be displayed:



Press ✓ to continue.



the machine will recover all the refrigerant into the service hoses; then the machine will sound and alarm and the following screen will be displayed:



Press ✓ to return to the MAINTENANCE MENU; EMPTY HOSES is now successfully completed.

SERVICES ALARM

Replace the filter whenever the machine gives the service alarm signals the presence of humidity in the circuit.

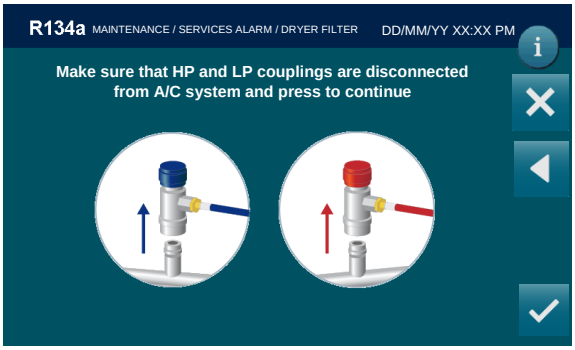
Before performing any operation, check that the replacement filter is the same type as these installed on the machine.

Then proceed as described below:

1) **Wear protective gloves and glasses**
2) Connect the machine to the electrical supply and it turn on
3) Note down the release code on the new filters.

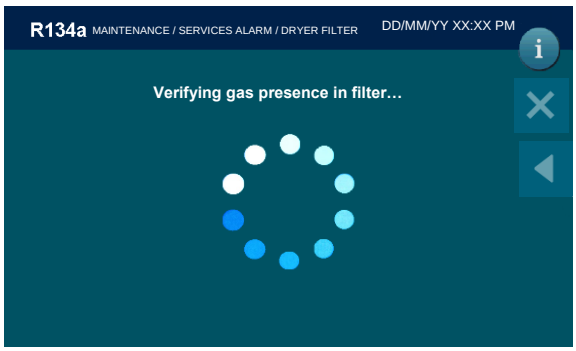
IMPORTANT: Filter replacement must be performed as quickly as possible in order to avoid possible contamination by moisture in the ambient air.
NOTE: If possible, check the seal on the couplings of the new filter, using an electronic leak tester.

4) From MAINTENANCE, select SERVICES ALARM, the following warning message is visualized:

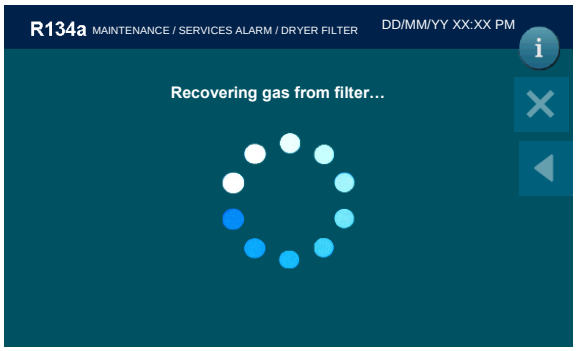


Make sure that HP and LP coupling are disconnected from A/C system or else and press , machine will check presence of refrigerant

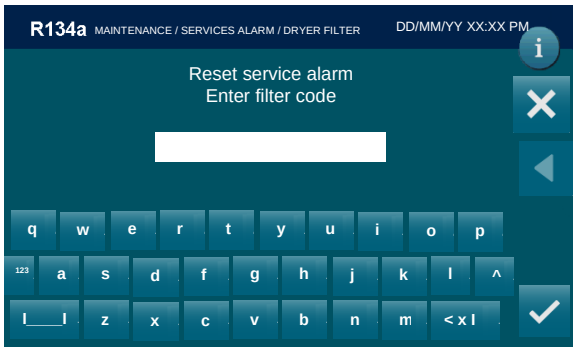
NOTE: An accidental leakage of refrigerant may cause serious damage to skin and eyes, wear protective gloves and goggles.



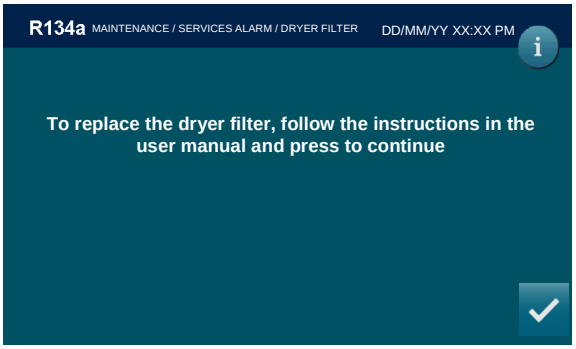
5) And if necessary will recover it



6) then the following screen is displayed:



7) Type the filter code and press to delete the alarm. If the filter code is not available, call the Service Center



8) Remove the dryer filter, use the special wrench (ref Fig.15)

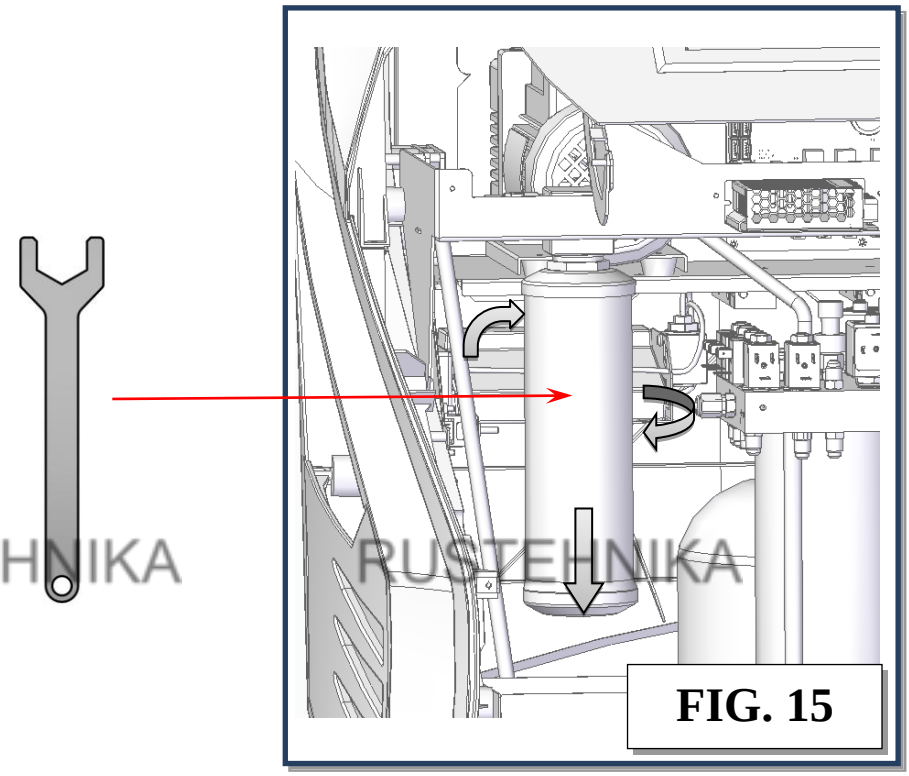


FIG. 15

9) Take the <u>new filter</u>, wet with clean POE oil both o-rings, and verify that they are correctly placed into their seats

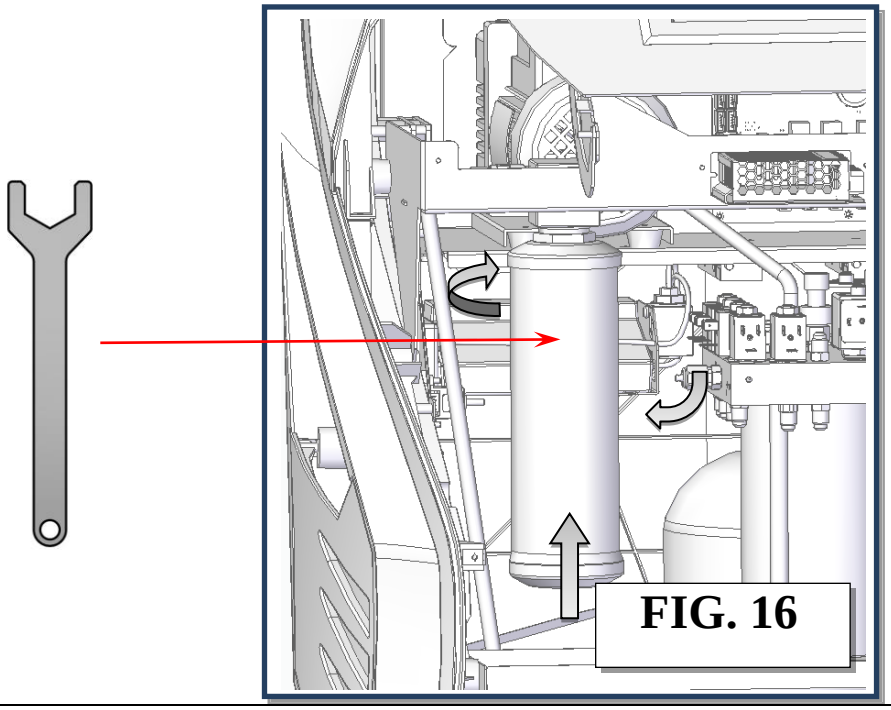
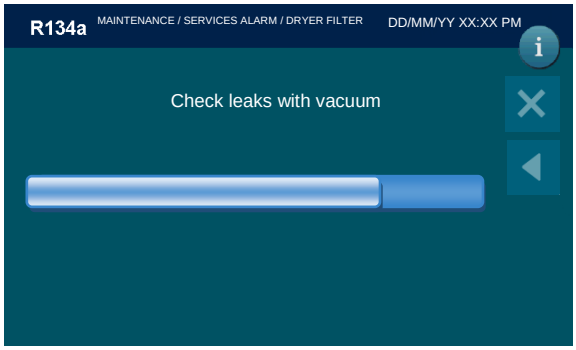
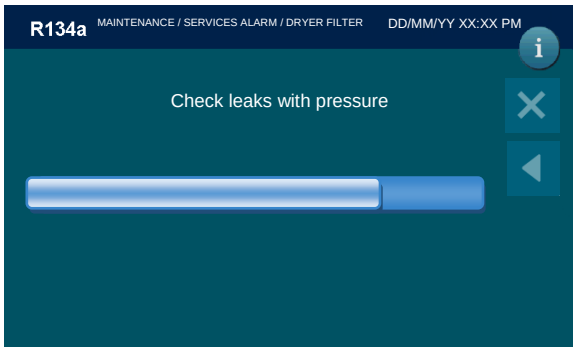


FIG. 16

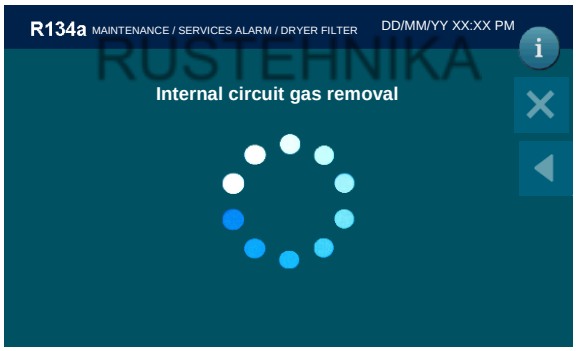
10) Insert the new dryer filter, use the special wrench (ref Fig.16), Press ✓ to continue with vacuum check:



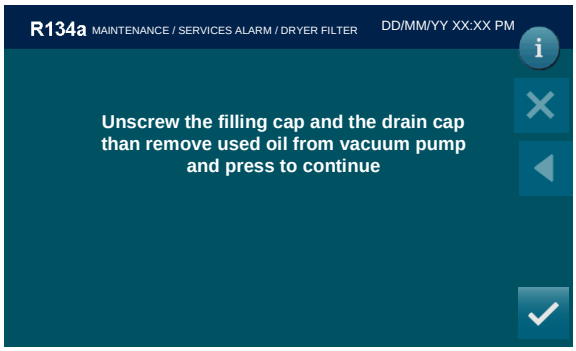
automatically the machine proceeds to the pressure control



11) If no leaks are detected the following screen will be displayed:

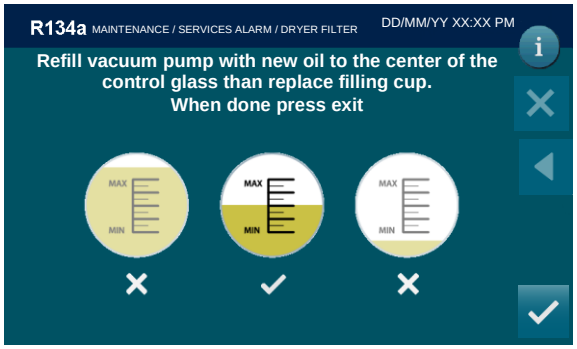


12) Then After few minutes:



13) DRYER FILTER CHANGE is now successfully completed.
The service alarm procedure includes the VACUUM PUMP OIL CHANGE

Press ✓ to continue.



14) Continue with the procedure on page 90 **M.2) OIL CHANGE** than press to return to the MAIN MENU. Alarm procedure is now successfully completed.

SERVICES REPORT

The machine keeps track of the service operations done.

From the MAINTENANCE, select SERVICE REPORT

It's vertical rotating menu scrollable with the two arrow

Press the symbol for printing.

SERVICES ARCHIVE

The machine keeps track of the operations done on refrigerant fluid: recovery, system refilling, inner bottle filling. For any operation, a record is made with date, time, type of operation, quantities involved, operator nr., inner bottle refrigerant fluid availability.

From the MAINTENANCE, select SERVICE ARCHIVE

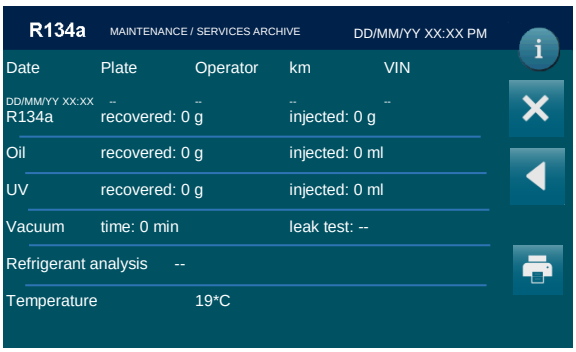
ENGLISH

SEARCH BY PLATE

Selecting SEARCH BY PLATE , the following screen will be displayed:

Use the keypad to insert plate number to search, then press :

A list will be displayed, select service for detailed info:

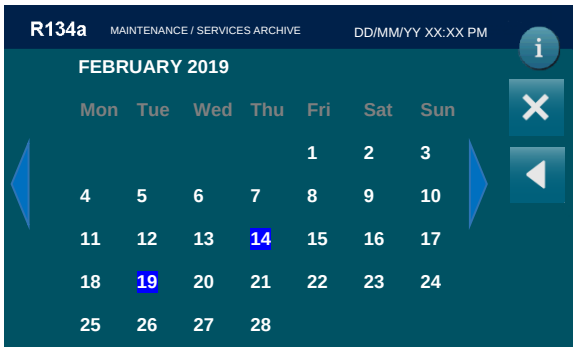


Press to print the report of the service, or press to return to previous menu.

SEARCH BY DATE

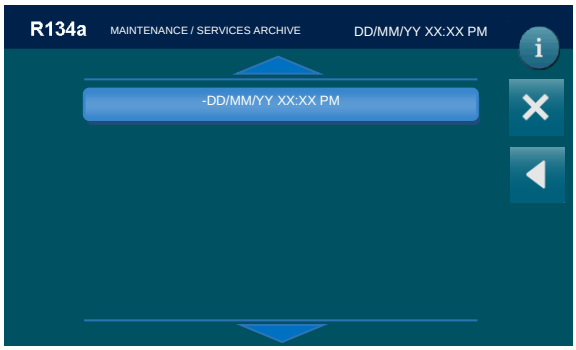
Selecting SEARCH BY DATE , the following screen will be displayed:

Choose the year, the following screen will be displayed:

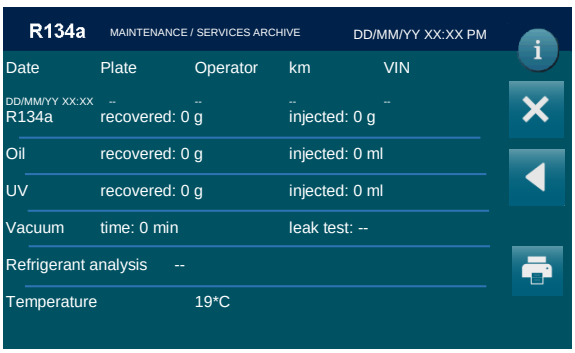


Choose the month and the day the following screen will be displayed:

NOTE: The days in which a service has been performed are highlighted



A list will be displayed, select service for detailed info:

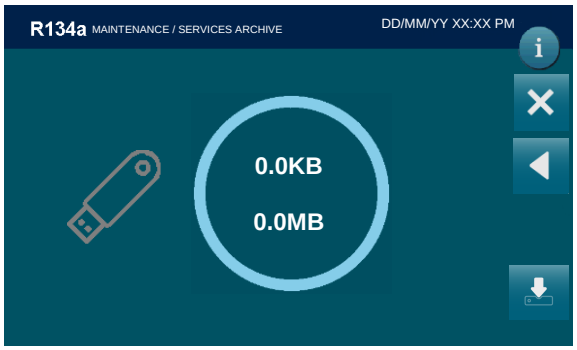


Press to print the report of the service, or press to return to previous menu.

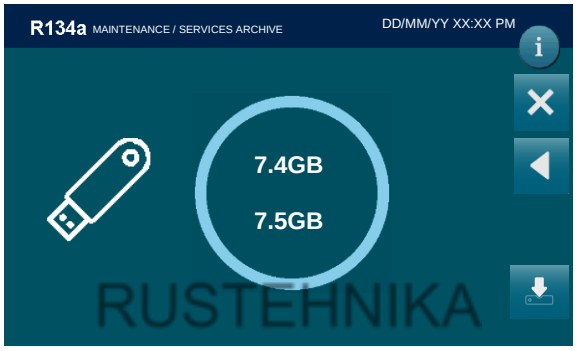
ENGLISH

EXTRACT ARCHIVE

Selecting EXTRACT ARCHIVE  , the following screen will be displayed:



Insert the storage device in the USB port the available space of the usb pen will be displayed

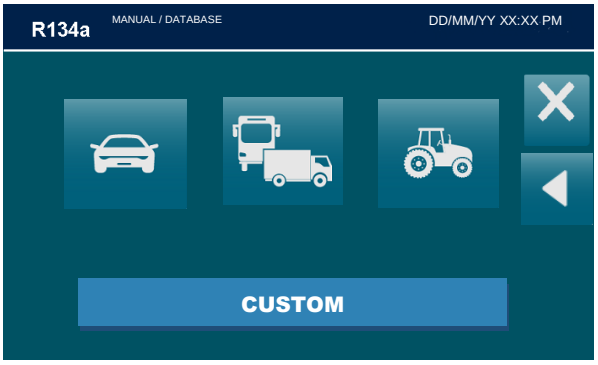


press  , to save to copy a eck_flag.csv file with all the operations into the Pendrive.
Extraction is now completed, the machine will return to the previous menu.

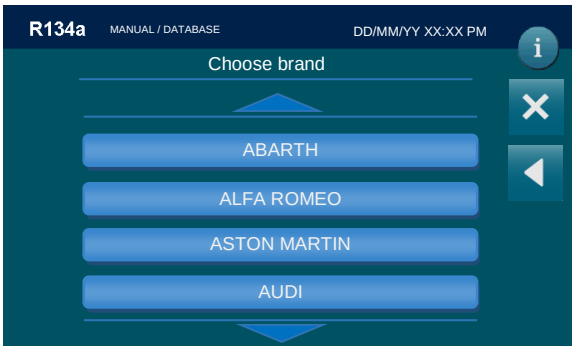
DATABASE

The machine has a database of all vehicles divided by typology

From the MAINTENANCE, select DATABASE

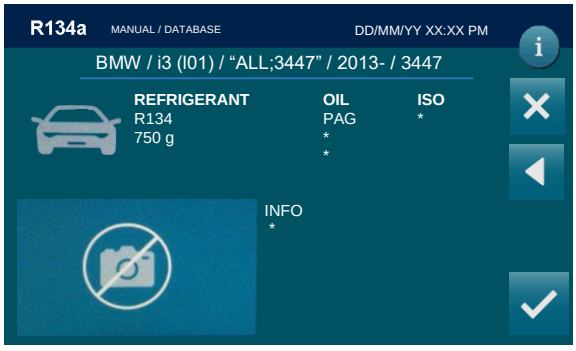


Select the vehicle typology, the following screen will be displayed:



Select the brand of vehicle you are servicing, (use the arrow keys to change page if necessary), the following screen is displayed (i.e. for BMW):

Select the model of vehicle you are servicing. (*If you wish to install DATABASE contact the machine dealer.*), all the information about this model is displayed:

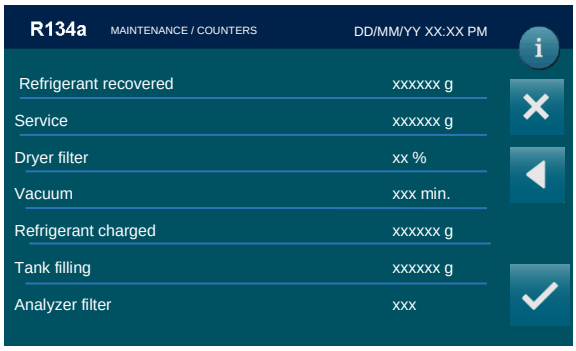


NOTE: select CUSTOM to add a special vehicle and save it in the machine database

COUNTERS

This is used to check total COUNTERS of: recovered gas, service alarm meter, total vacuum minutes, injected gas, gas recovered into the bottle with the bottle refilling function.

From the SETUP MENU, select COUNTERS, the following screen is displayed:



This screen displays the total values for: refrigerant recovered, service alarm COUNTERS, use of the filter %,total vacuum time (minutes), refrigerant charged, refrigerant recovered in the internal bottle using the “tank filling” function, analyzer filter.

VACUUM PUMP

Perform the operations listed below on a routine basis in order to ensure good operation of the vacuum pump:

M1) Oil top-up.

M2) Oil change.

When topping-up or replacing the pump oil, use only the oil recommended by the manufacturer. Contact your retailer for information concerning the correct type of oil.

M.1) OIL TOP-UP

This operation must be performed when the level of the oil falls to less than half on the indicator (ref.3, Fig.17).

NOTE: in order to correctly check the oil level, run the pump for at least 1 minute (running a vacuum procedure in the hose for 1 minute) so that the oil fluidifies.

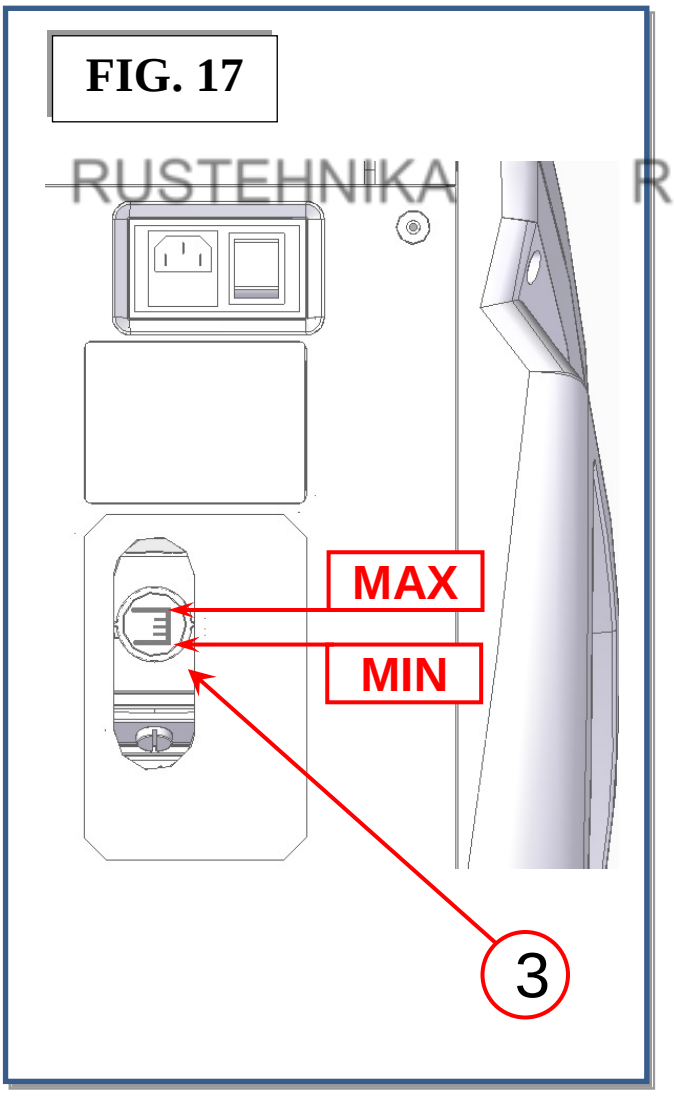
Check the oil level when the pump stops.

To refill the oil, perform the steps listed below in the order given.

Disconnect the *machine* from the mains supply.

Locate the filling cap (ref 1, Fig.18) and screw it completely off.

FIG. 17



The oil must be added through the hole in which the oil cap was lodged by using a proper funnel (ref 5, Fig.18).

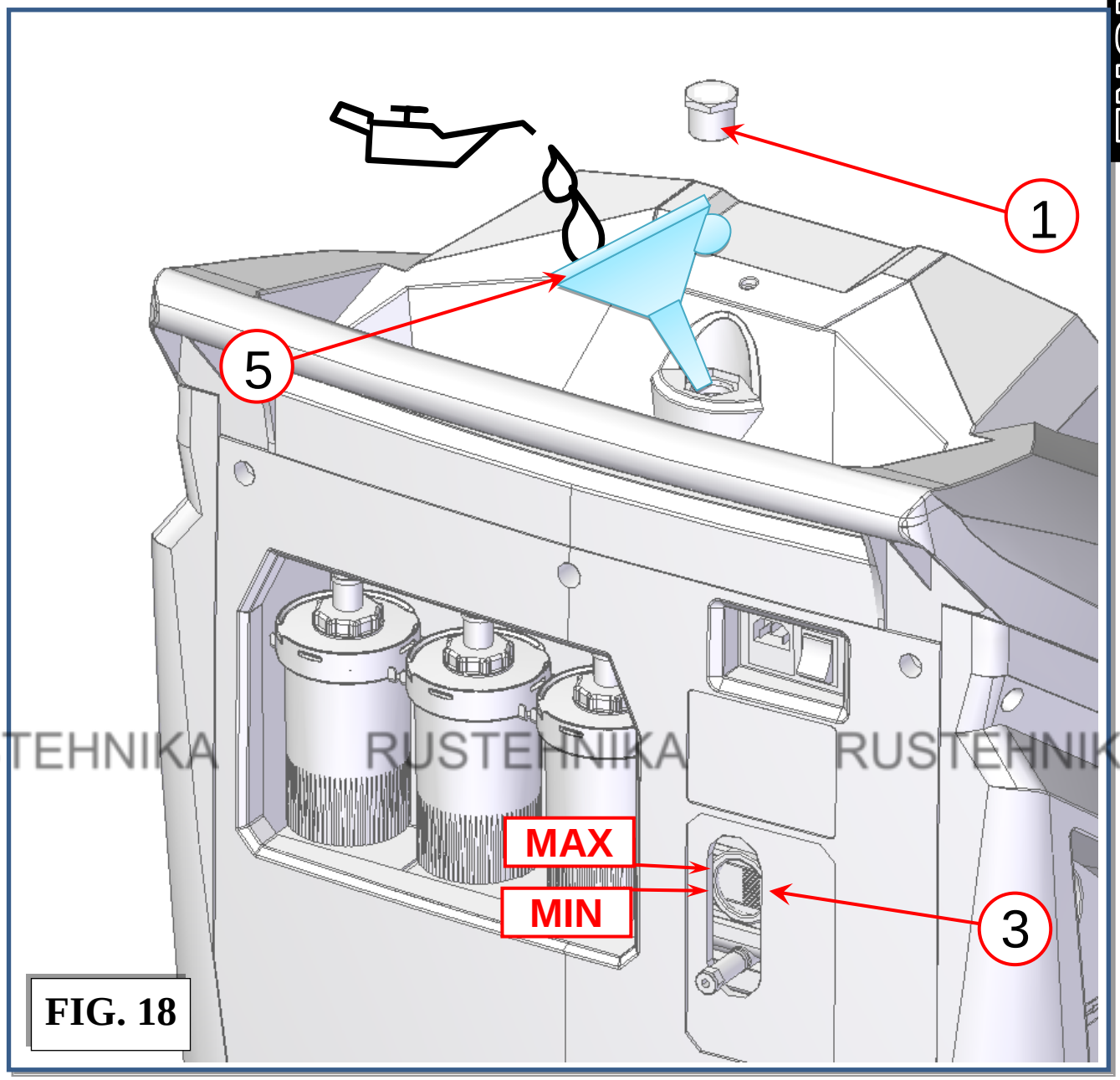


FIG. 18

Add oil a little at a time, waiting for the level to rise before each successive addition, until the oil level is about ½ cm above the red mark on the indicator (ref 3, Fig.18).

Replace the filling cap (ref 1, Fig.18) and tighten down.

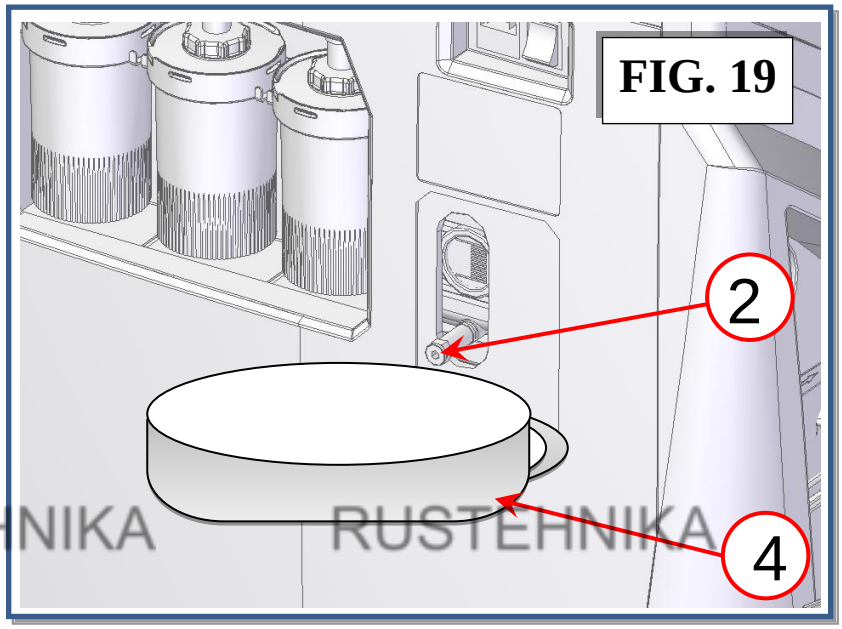
M.2) OIL CHANGE

The vacuum pump oil must be replaced every 20 hours of functioning and in any case every time the refrigerant filters are replaced.

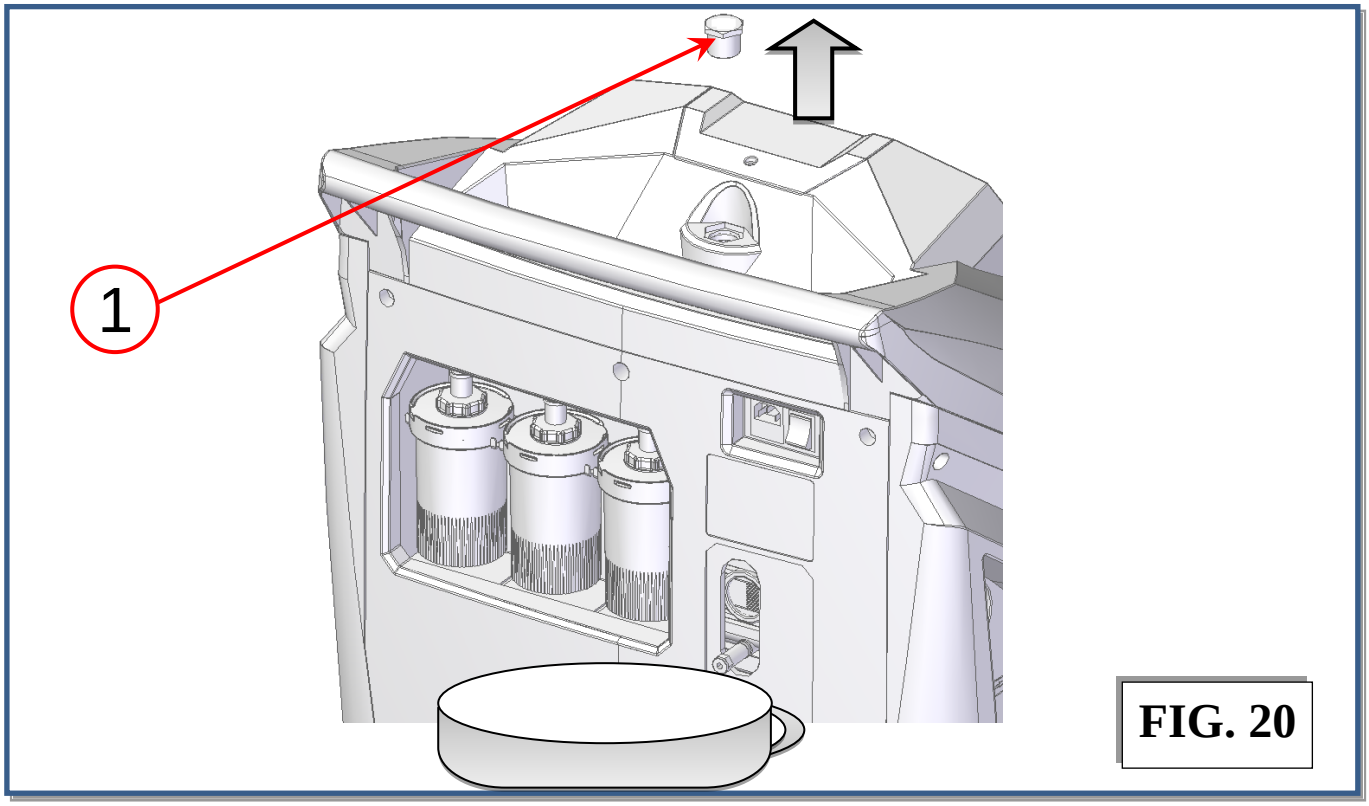
NOTE: alarm message is visualized, to remove alarm message refer to VACUUM PUMP OIL CHANGE paragraph.

The oil must also be replaced whenever it changes color due to absorption of humidity. Before beginning the oil change procedure, procure a container of at least 500 cc capacity in which to collect the used oil. The pump contains about **250 cc of oil**. Use only the oils recommended by the manufacturer (consult your retailer); the use of a non-recommended oil may impair the proper functioning of the pump and void the warranty.

1) Disconnect the machine from the mains supply.
2) Place a container (ref 4 Fig.19). under the drain cap (ref 2, Fig.19).



3) Unscrew the filling cap (ref 1, Fig.20).



4) Unscrew the drain cap (ref 2, Fig.21).

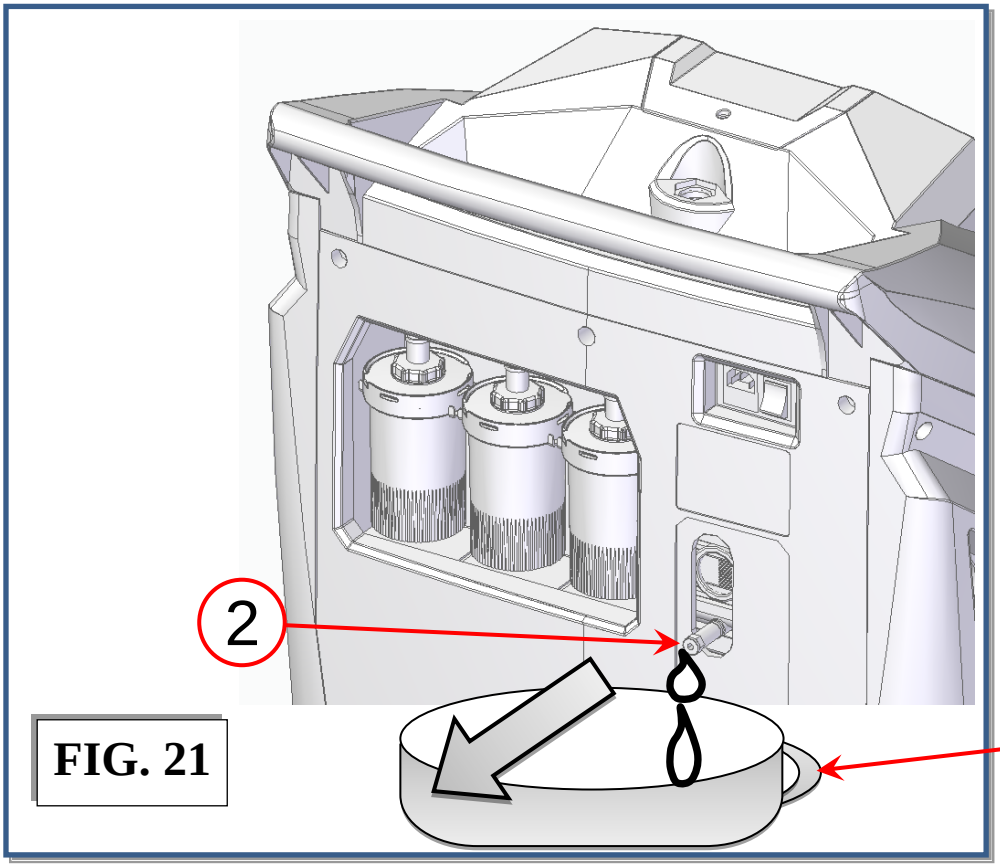
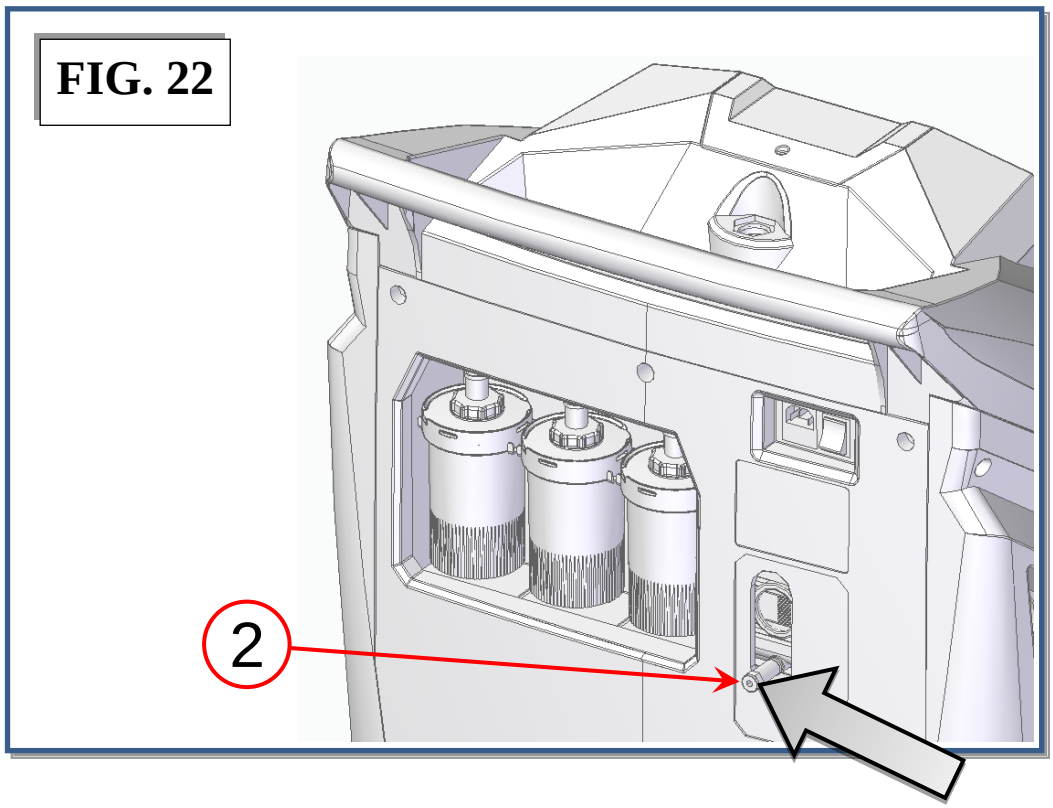


FIG. 21

Allow all the oil to run out into a disposal container (ref 4 Fig.21) (with height < 10 cm).

5) Close the drain cap (ref 2, Fig.22).

FIG. 22



6) Pour in new oil through the filling hole, using a proper funnel (ref 5, Fig.23), until the level rises to the midpoint on the indicator (ref 3, Fig.23).

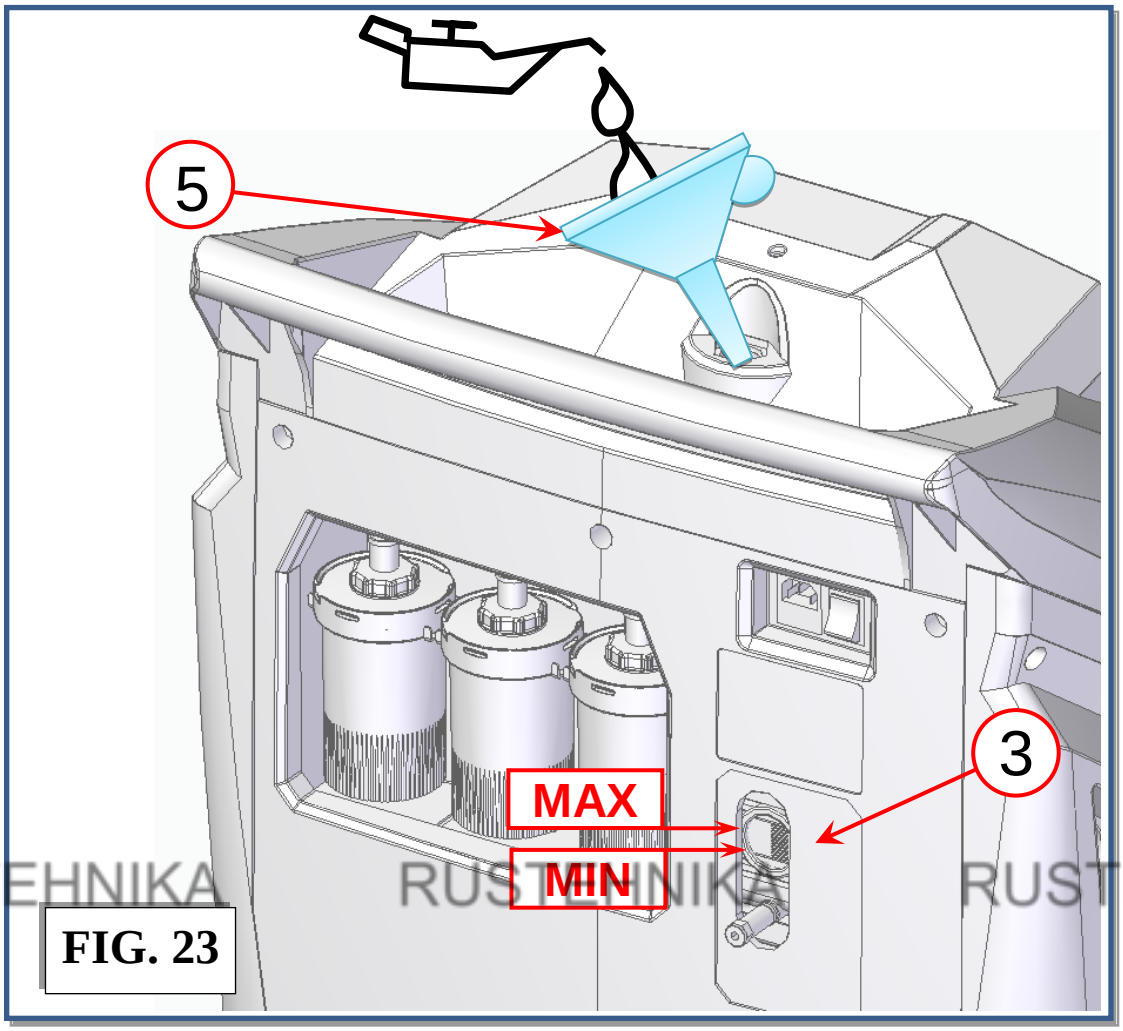


FIG. 23

7) Replace the filling cap (ref 1, Fig.24) and tighten down.

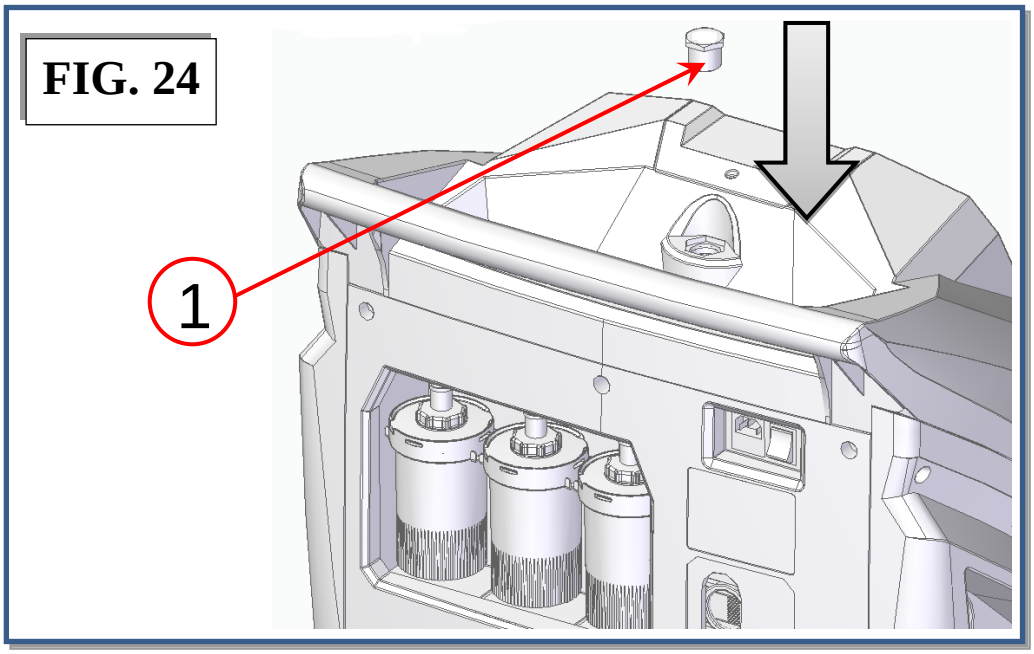


FIG. 24

ENGLISH

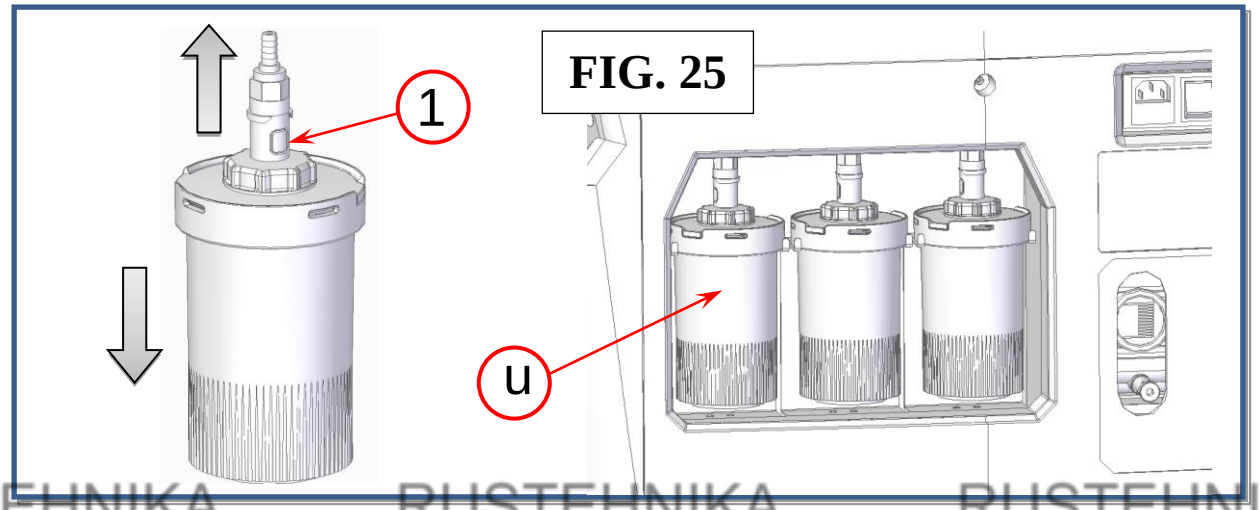
FILLING THE RECHARGEABLE COLLAPSIBLE NEW OIL CONTAINER (PAG)

Types of oil: use only oils recommended by the manufacturer or by the car manufacturers. Always refer to the information provided by the A/C system manufacturer. Never use waste oil.

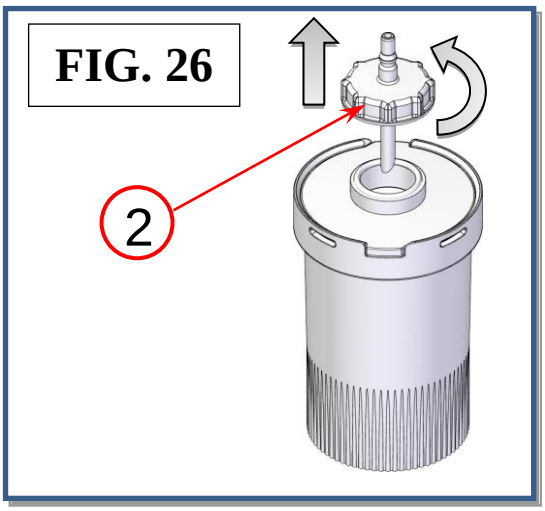
Procedure:

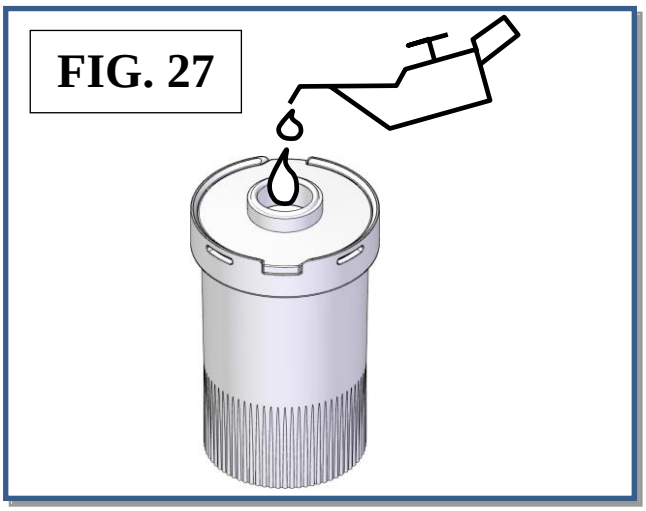
1. Press quick connection button (ref 1, Fig.25) to disconnect the oil container OIL container (ref g, Fig.25);

2. Remove the container from its lodging



3. Hold the container and unscrew the cap (ref 2, Fig.26). Fill the container (Fig.27) with the correct quantity (about 250-260ml) of oil for compressors, of suitable type and grade.





NOTE: in order to reduce humidity and air contamination of new oil, the collapsible container has to be filled almost to the brim.

4. Screw the cap (ref 2, Fig.26) back into the container.
5. Replace the container and hook it up to the quick connection taking care not to exert pressure on the scale in order not to damage it.

FILL THE RECHARGEABLE CONTAINER NEW OIL (POE)

Types of oil: use only oils recommended by the manufacturer or the vehicle manufacturer.

Always refer to the information provided by the manufacturer of the A / C system.

Never use used oil

Procedure:

1. press the quick coupling button (ref 1, Fig.28) and disconnect the oil container

OIL container (ref i, Fig.28);

2. remove the container from its housing

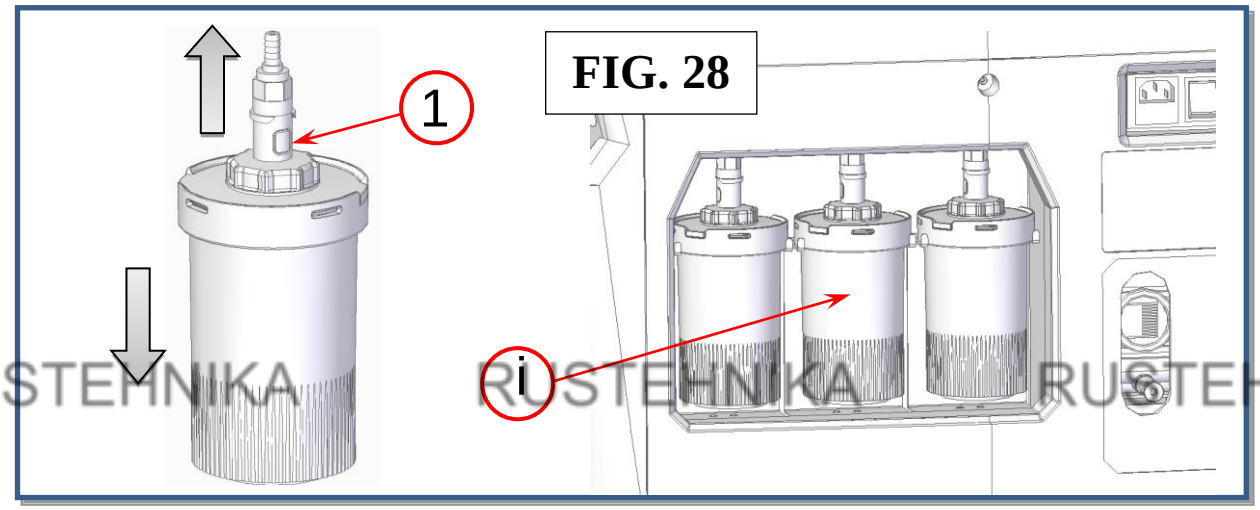


FIG. 28

3. hold the container, and unscrew the cap (ref 2, Fig.26). fill the container (Fig.27) with the correct quantity of compressor oil, of a correct type and grade.
4. Screw the cap (ref 2, Fig.26) back into the container.
5. Replace the container and hook it up to the quick connection taking care not to exert pressure on the scale in order not to damage it.

NOTE: in order to reduce humidity and air contamination of UV, the collapsible container has to be filled almost to the brim.

ENGLISH

REPLACE THE DYE CONTAINER (DYE)

When the level of the DYE drops by a few ml it is best to replace the collapsible cartridge in order to have a sufficient reserve.
Types of oil: use only DYE cartridges recommended by the manufacturer. Always refer to the information provided by the A/C system manufacturer.

Procedure:

1. Press quick connection button (ref 1, Fig.29) to disconnect the DYE cartridge DYE cartridge (ref w, Fig.29);

2. Remove the used cartridge container from its lodging

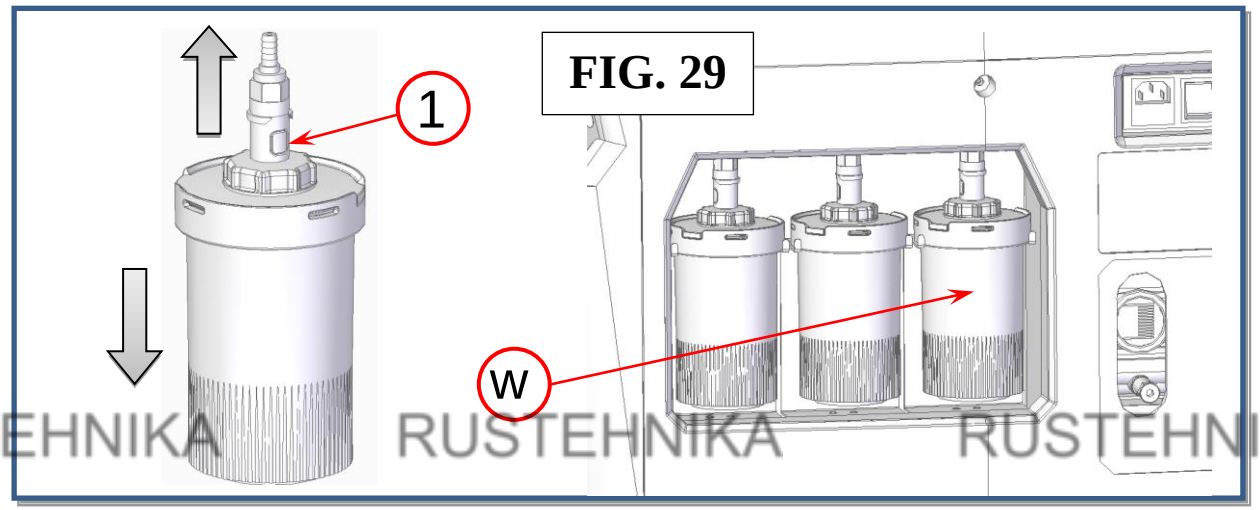


FIG. 29

3. hold the container, and unscrew the cap (ref 2, Fig.26). fill the container (Fig.27) with the correct quantity of compressor oil, of a correct type and grade.

NOTE: In order to reduce the moisture and air contamination of the DYE, the collapsible container must be filled to the top.

4. screw the cap back (ref.2, fig.26) onto the container.

5. re-attach the container and connect it to the quick coupling, taking care not to exert too much force on the scale, so as not to damage it.

REPLACE THE NEW OIL CARTRIDGE (PAG)

when the new / tracer oil level drops to a few ml it is preferable to replace the collapsible cartridge in order to have sufficient reserve.

Types of oil: use only oils recommended by the manufacturer. Always refer to the information provided by the manufacturer of the A / C system.

Procedure:

1. press the quick coupling button (ref 1, Fig.30) and disconnect the oil container

OIL cartridge (ref j, Fig.30);

2. remove the cartridge from its housing

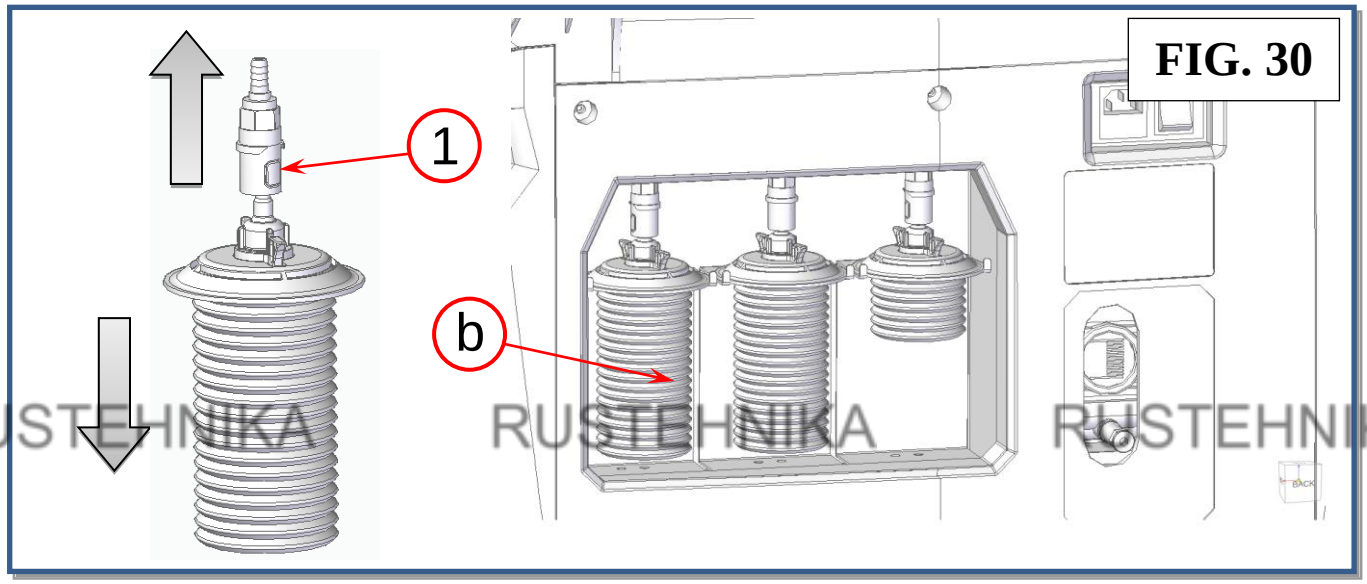


FIG. 30

1. Insert the male insert of the new oil cartridge into the quick connection and replace the cartridge in its housing.

NOTE: Store the cartridge, taking care not to exert too much pressure on the scale so as not to damage it.

ENGLISH

REPLACE THE NEW OIL CARTRIDGE (POE)

when the new / tracer oil level drops to a few ml it is preferable to replace the collapsible cartridge in order to have sufficient reserve.

Types of oil: use only oils recommended by the manufacturer. Always refer to the information provided by the manufacturer of the A / C system.

Procedure:

1. press the quick coupling button (ref 1, Fig.31) and disconnect the oil container

OIL cartridge (ref j, Fig.31);

2. remove the cartridge from its housing

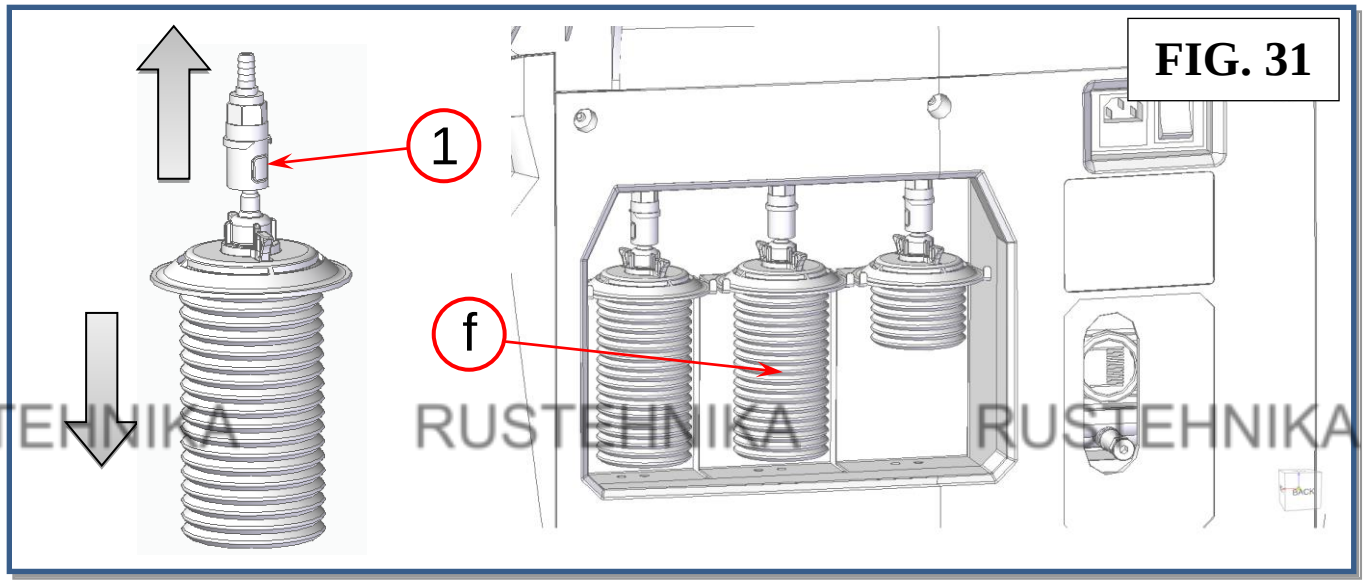


FIG. 31

1. Insert the male insert of the new oil cartridge into the quick connection and replace the cartridge in its housing.

NOTE: Store the cartridge, taking care not to exert too much pressure on the scale so as not to damage it.

REPLACE THE DYE CARTRIDGE (DYE)

when the DYE level drops to a few ml it is preferable to replace the collapsible cartridge in order to have sufficient reserve.

Types of DYE: use only DYE recommended by the manufacturer. Always refer to the information provided by the manufacturer of the A / C system.

Procedure:

1. press the quick coupling button (ref 1, Fig.32) and disconnect the DYE cartridge (ref j, Fig.32);

2. remove the cartridge from its housing

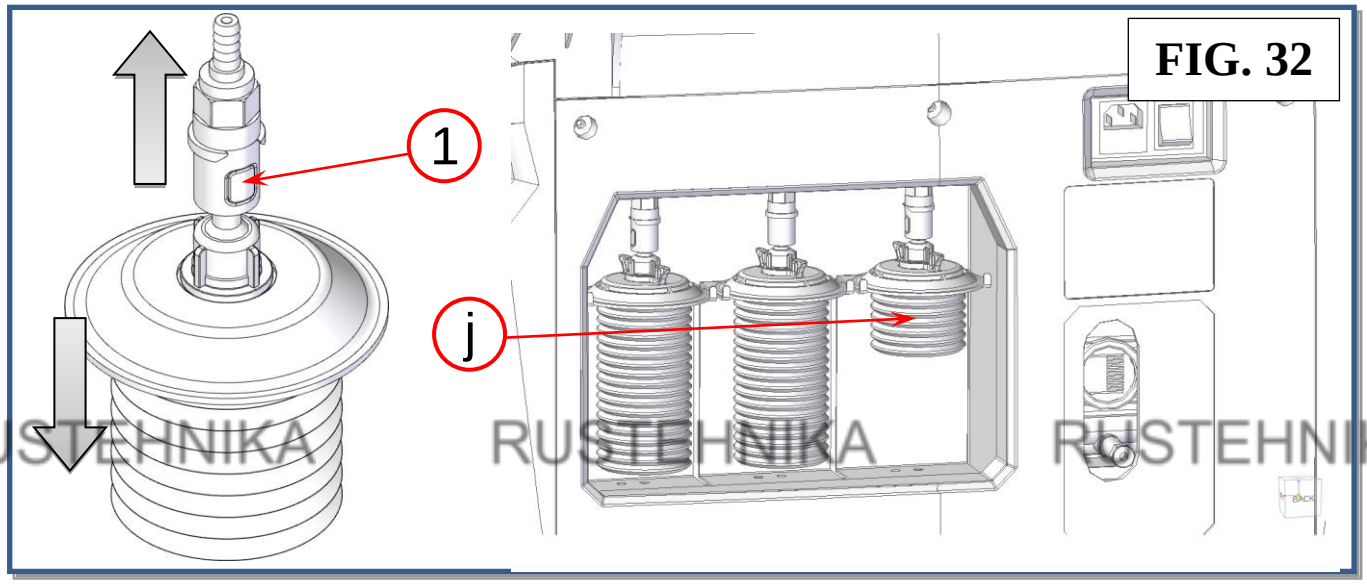


FIG. 32

1. Insert the male insert of the new DYE cartridge into the quick connection and replace the cartridge in its housing.

NOTE: Store the cartridge, taking care not to exert too much pressure on the scale so as not to damage it.

EMPTYING THE USED OIL CONTAINER

Procedure:

1. Press quick connection button (ref 1, Fig.33) to disconnect the used olio container
2. Lift the used oil container out of its lodging (ref v, Fig.33) without exerting pressure on the scale.

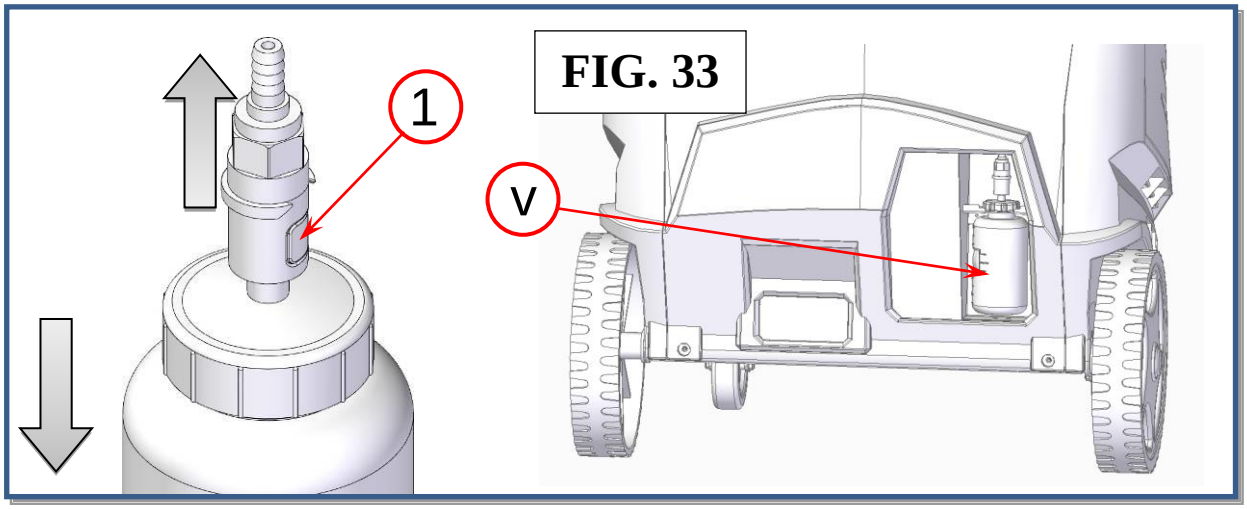


FIG. 33

3. Unscrew the cap (ref 2, Fig.34) while holding the container; empty the used oil into a suitable container for used oils (Fig.35).

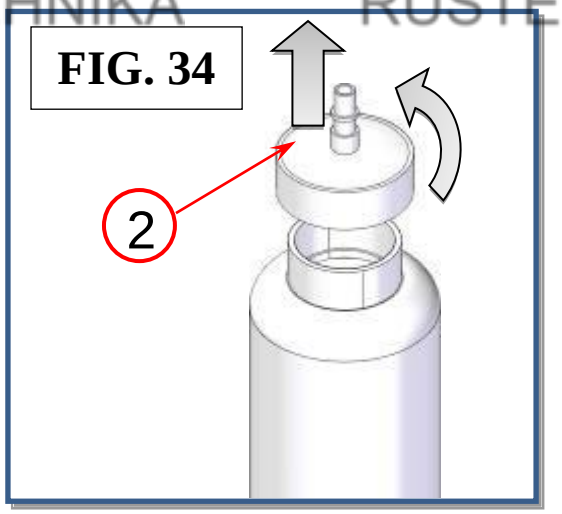


FIG. 34

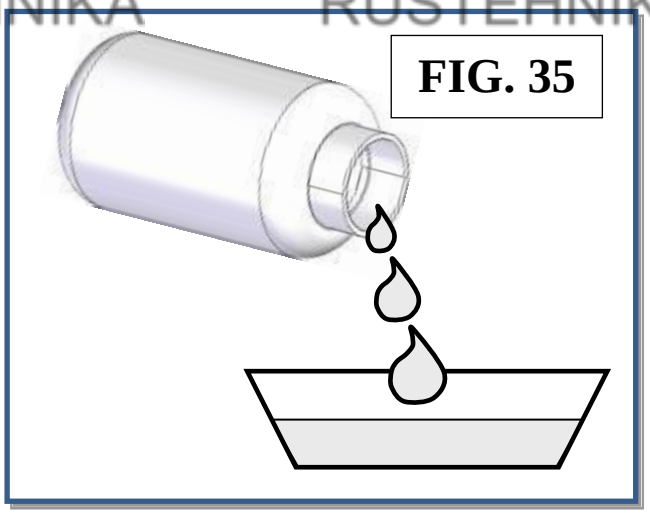


FIG. 35

4. Screw the cap back into the container.
5. Replace the container and hook it up to the quick connection taking care not to exert pressure on the scale in order not to damage it.

NOTE: In order to avoid damage to the oil scale, never exert pressure on it either from above or from below.

REPLACING THE PRINTER PAPER

Open the print cover (ref 3, Fig.36),and replace the paper roll with a new one

Use only heat-sensitive paper of the type described below.

Paper width: 58 mm
Maximum paper roll diameter: 40mm

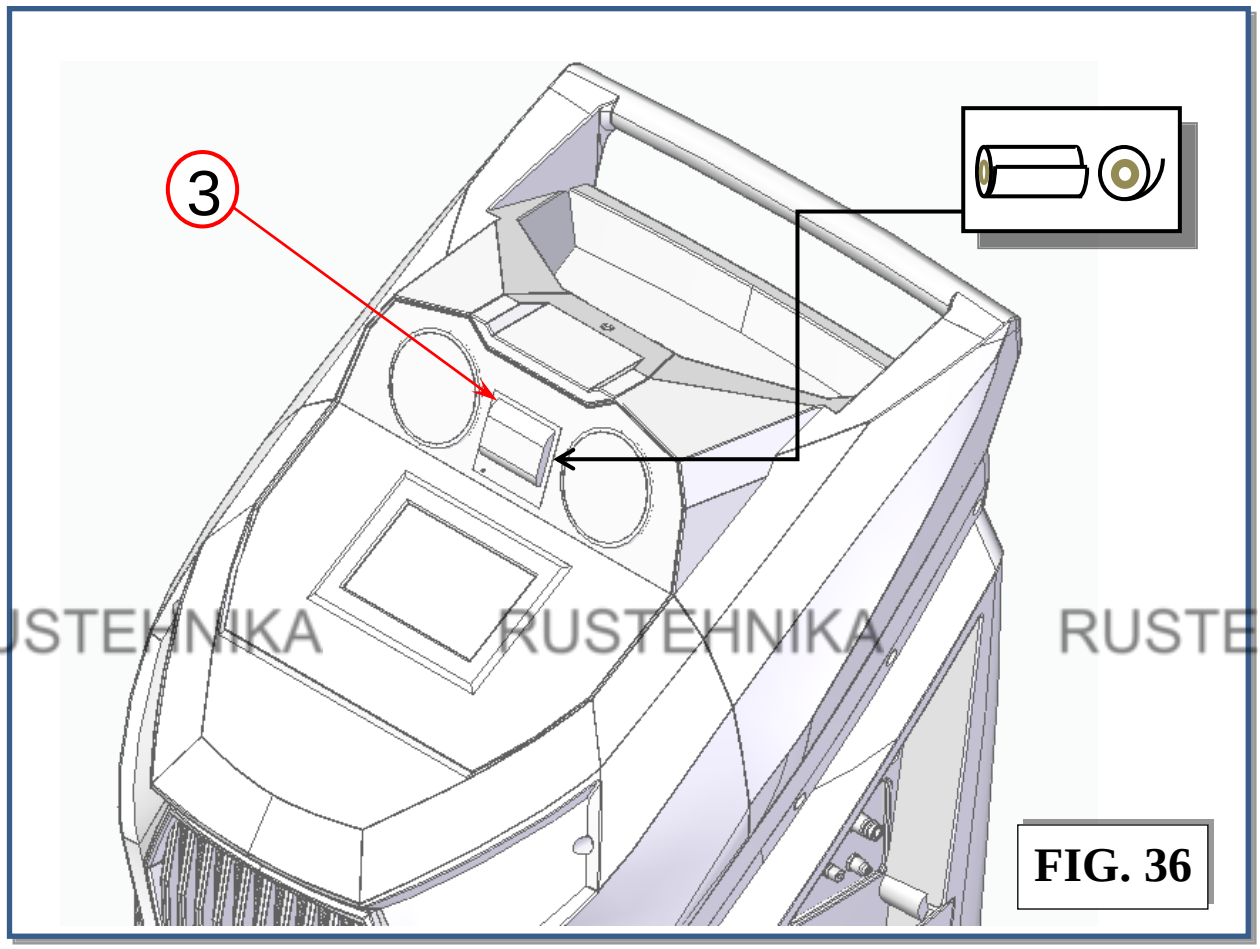
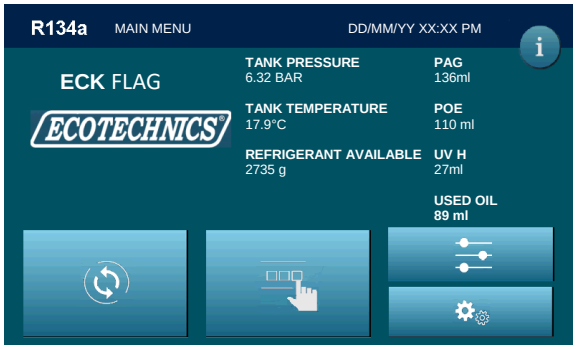


FIG. 36

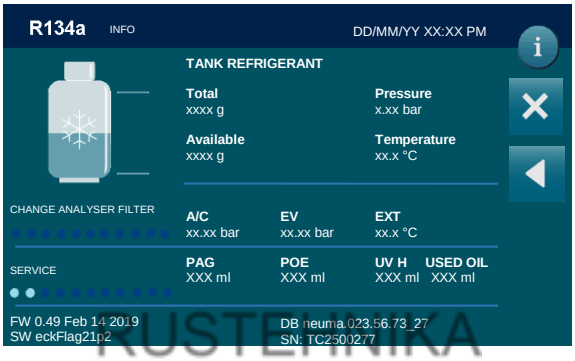
ENGLISH

DATA

This menu shows all data read by the machine. From the MAIN MENU:



Press “i” key  , the following screen will be displayed:



SW V.: Software version

- Tank refrigerant:
  - Total: total amount of refrigerant in the storage bottle.
  - Available: quantity of refrigerant available in the storage bottle.
  - Pressure: refrigerant storage bottle pressure.
  - Temperature: refrigerant storage bottle temperature.
- PAG: quantity of PAG OIL in the container.
- POE: quantity of POE OIL in the container.
- UV H: quantity of DYE in the container.
- USED OIL: quantity of OIL in the USED OIL container.
- A/C : pressure in the service hoses.
- EV: pressure in the evaporator.
- EXT: ambient temperature near the service station.
- Service alarm performed.
- Change analyzer performed.

Press  to return to MAIN MENU.

CODES SUMMARY

OPTION code: 43210791