MANUAL FOR USE AND MAINTENANCE

2 Guarantee

The device comes with a guarantee period of 12 months from the date of delivery.

The compressor and the vacuum pump, in case of functioning with an unsuited oil or even without oil, get excluded from the guarantee.

3 Warnings

This symbol is used whenever misinterpretation or a careless approachtowards instructions can do harm to people.

In addition to what is specified on the manual, listed below are some conditions of use for the machine:

- Follow the machine through while moving it and keep it braked;
- Do not expose the station to an ambient temperature above 45 °C; the use in a normal environment must be limited for the strictly necessary time to execute the procedure;
- Do not use the station in a potential explosive environment;
- Do not expose the station to the rain.

HFO1234YF: Attention, please. The HFO1234yf gas is flammable if subject to certain temperatures and if the environment is saturated with it. For this reason, Spin a/c stations suitable for working with this gas are equipped with a fan which starts working as soon as the general switch is positioned on “on”, in so doing allowing the possible evacuation of gas. The a/c station is also supplied with a special software which allows to automatically perform a test at any ignition for the detection of possible gas leaks. In case there is any leak an alarm message appears on the display. Should this happen, turn off your station and get in touch with our technical assistance service.

Do not use the a/c station if the evacuation fan does not work.

4 Environmental notes

NOISE The Machine presents a Lep,d value of less than 70 dB (A).

If positioned in areas with a noise value of more than 80 dB(A), the employer must instruct and inform the operator of the risks involved with the exposure to the noise and he/she must take the necessary precautions according with the authorized doctor.

PACKAGING Do not throw away the packaging, but separate it according to the type of material (eg. Cardboard, wood, plastic material, etc.) and dispose of it in conformity with the local and national laws in force.

OUT OF ORDER At the end of the Machine’s working life:

- Disactivate the Machine, by disconnecting it from the electric power supply and cutting the supply line cable;
- Disassemble the Electronic Panel and the related electronic card-board;
- Disassemble the components, separating the various types.

DISPOSAL At the end of the Machine’s working life, the parts, separated by the type of material, have to be disposed in conformity with the local and national laws in force.

For the electric and electronic devices, called Electrics and electronics Equipments (WEEE), according with EC Directive 2012/19/UE, regarding the reduction of hazardous substances in electrical and electronic equipment and the disposal of waste, the Manufacturer specifies:

- Do NOT dispose of this equipment as common waste; separate collection is mandatory;
- Ask the retailer about collection points authorised for regular disposal;
- Stick to the standards for correct waste management, to prevent potential effects on the environment and human health;
- The symbol on the side indicates that separate collection of waste electrical and electronic equipment is mandatory for scrapping.
- The distributor who doesn’t ensure a separated collection system of professional WEEE shall be punished with a fine from €30.000,00 to €100.000,00.

BATTERIES AND ACCUMULATORS REMOVAL

In conformity with the European Directive 2006/66/CE, the removal instructions of the battery (lithium type CR2032) contained in the station, are provided below:

- Place the station switch in the off position;
- Disconnect the station from the mains power supply;
- Remove the rear panel by unscrewing the fixing screws;
- Remove the round battery from the electronic board.

5 General Information

5.1 Purpose of this manual

This manual is related to the use and maintenance of the recovery, recycling, vacuum and recharging of station OK CLIMA ADVANCE, and intends to provide a complete user guide of the machine and its periodic maintenance.

It is absolutely necessary to read this manual carefully before using this device. The machine is equipped with protection devices designed to prevent any harm or injury to the operator.

The manufacturer declines any responsibility in case of improper use of the machine, or in case of defusing, by the used, of the protection devices mentioned above.
The instruction manual is an integrating part of the machine and

has to remain with it at every time, even in case of sale.
The machine is recognised by a serial number plate, which shows model, year of construction and serial number. The plate is attached to the side of the device. (img.1).

Image 1 – Serial number plate

<u>WARNINGS</u>: THIS DEVICE IS EXCLUSIVELY DESIGNED FOR SPECIALISTS WHO ARE COMPETENT WITH THE USE OF REFRIGERATOR SYSTEMS, REFRIGERATOR GASES AND WITH THE POSSIBLE DAMAGES THAT PRESSURE DEVICES CAN CAUSE. THE OK CLIMA ADVANCE IS ABLE TO ACCOMPLISH THE STEPS OF RECOVERY, RECYCLING, VACUUM AND RECHARGE IN AIR CONDITIONING SYSTEMS OF VEHICLES AND INDUSTRIAL VEHICLES WHICH CONTAIN THE REFRIGERANT R 134A AND HFO1234YF. THE PRODUCER DECLINES ANY RESPONSABILITY REGARDING THE USE OF A REFRIGERANT THAT IS NOT THE RECOMMENDED ONE.

5.2 Safety rules

<u>WHEN WORKING WITH REFRIGERANTS IT IS REQUIRED THE USE OF GLOVES AND GOGGLES.</u>

IF IT IS POSSIBLE, WORK IN A VENTILATED AREA TO AVOID INHALING REFRIGERANT.

IF THE REFRIGERANT GETS ACCIDENTALLY IN CONTACT WITH THE SKIN, PROCEED IN THE FOLLOWING WAY:

1) USE WATER TO UNFREEZE THE AFFECTED AREAS;
2) REMOVE CAREFULLY THE CONTAMINATED PROTECTION CLOTHES;
3) CONSULT A DOCTOR.

WARNING: THE CLOTHES CAN STICK TO THE SKIN IN CASE OF ICE BURNING.

IN CASE OF ACCIDENTAL CONTACT WITH THE EYES PROCEED IN THE FOLLOWING WAY:

1) RINSE THE EYES WITH PLENTY OF WATER;
2) SEEK FOR MEDICAL ASSISTANCE IMMEDIATELY.

IF THE REFRIGERANT IS ACCIDENTALLY SWALLOWED PROCEED IN THE FOLLOWING WAY:

1) RINSE YOUR MOUTH AND DRINK A LOT OF WATER;
2) SEEK FOR MEDICAL ASSISTANCE.

6 Technical Specifications

6.1 Technical properties

Compressor	Hermetic with the automatic recovey of oil
Power	250 watt –
Recovery capacity (liquid fase)	400g/min –
Vacuum pump	Single-stage
Capacity	100lt/min
Vacuum level	$7x10^2$
Vacuum test	Automatic, with audible alarm and display message
Storage bottle	two containers and security valve
Refrigerant capacity	R134a 12,5 Kg – HFO1234yf 12,5 Kg
Low and high pressure gauges	Analogical – Ø80 - cl 1
Precision scale	± 5g
Power supply	230 V / 50 Hz
Loudness	Under 70dB (measured with sound level meter class 2 according to standards IEC 651 and IEC 804)
Hose length	3 mt each
Machine dimensions	590 x 610 x h 1120 mm
Weight	85Kg
24 columns printer	Only printer version

6.2 Keyboard

	“Right / Left arrow” buttons to move along the menù
	“UP / Down arrow” buttons to modify the parameters
	“Enter” button to confirm
	“C” button to exit the functions
	“DataBase” button to enter into the Data Base
	“Print” button to print the last operation performed
	“F” multifunction button

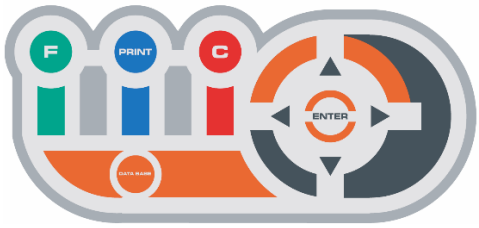

Image 2 – Keypad

6.3 Included accessories

- nr. 1 plastic dispenser of 250 g to inject standard fresh oil
- nr. 1 plastic dispenser of 250 g to drain the used oil
- nr. 1 plastic dispenser of 250 g to inject hybrid fresh oil
- nr. 1 power supply cable
- nr. 1 low pressure quick coupling for R134a
- nr. 1 high pressure quick coupling for R134a
- nr. 1 low pressure quick coupling for HFO1234yf
- nr. 1 high pressure quick coupling for HFO1234yf
- nro. 2 hoses (1 for high pressure and 1 for low pressure) 3mt long

Image 3 – Included Accessories

7 Setup and safety devices

7.1 Recommendations for the correct use of the device

Before switchin-on the device please check if there is oil in the vacuum pump. If the oil is missing fill it up until it reaches the level that can be seen in the spinner. Use only mineral oil for vacuum pumps type AV68 (Art. AV68I).

7.2 Installation

The machine has to be transported and raised in vertical position. Tilting can drain the oil from the vacuum pump and from the compressor. The machine can be moved only on horizontal floors, the use of the machine is not recommended on rough ground outside the workshop.

7.3 Preparation of the station

Before turning on the station make sure that the power voltage is the same as the one indicated on the plate next to the power socket. (img 4).

Image 4 – Power socket

IMPORTANT:

THE STATION MUST BE CONNECTED TO AN ELECTRIC SOCKET PROTECTED AGAINST INDIRECT CONTACTS, ACCORDING TO THE INFORCE RULES IN THE COUNTRY OF USE.

IT IS RECOMMENDED TO FOLLOW CAREFULLY THE SAFETY RULES MENTIONED ABOVE TO SAFEGUARD THE PERSONNEL DEALING WITH REFRIGERANT PRESSURE TREATMENT SYSTEMS.

7.4 Executable processes

The OK CLIMA ADVANCE DUAL performs the following steps: recovery, recycling, vacuum and charging of air conditioning systems for cars and industrial vehicles, which contains refrigerant R134A and HFO1234yf.

It is declined any responsibility for the misuse of other refrigerant.

7.5 Safety devices

- Security valve, calibrated at 16 bar for the internal bottles
- Automatic stop of the compressor in the event of overpressure (>15 bar)
- Automatic discharge of non-condensable gases (with automatic stop of the compressor in the recovery phase)
- Thermical protection of the compressor against overcharge (inside the compressor)
- Electronic alarms for filling over 80% of the capacity and for the minimum gas amount required to perform the recharge (< 1Kg)
- Wrong operating alarm in case of attempting to perform a vacuum with the system under pressure.
- Control display of the oil level in the pump.
- Electronic pressure sensor for the switching off of the recovery compressor and the automatic control of leaks.
- Solenoid valves for complete function automatism.
- Display LCD board with electronic protection (PTC).
- Protection fuse on the starting module.

8 Description of the station

Referred to the following pictures.

REFERENCES	
Img. 6 a	Low pressure gauge
Img. 6 b	Graphic display with data view/pressures/settings/gas amount inside the bottle
Img. 6 c	High pressure gauge
Img. 6 d	Internal R134 bottle pressure gauge
Img. 6 e	9 key Keyboard
Img. 6 f	Internal HFO1234yf bottle pressure gauge
Img. 7 a	Connection fittings for external high pressure (Hp) and low pressure (Lp) hoses
Img. 7 b	High pressure (Hp) and Low pressure (Lp) taps
Img. 7 c	Housing for R134 quick couplings
Img. 7 d	Housing for HFO1234yf quick couplings
Img. 7 e	Main switch with protection fuses

Image 5 - Station

Image 6 - Station

Image 7 - Station

8.1 Printer paper replacement

Image 8 – how to replace the paper

Follow the procedure as shown in the images above.

8.2 Display messages

All reports are shown by messages on the LCD display.

Once the machine is on, the display shows the amount of refrigerant available in the bottle and the room temperature.

If there is a malfunction during any phase, the display will show a warning or error.

9 Preparation of the station

For the preparation of the station please see the pictures of Chapter 8

Image 9 a– High pressure and Low pressure quick couplings

Figura 9 b– High pressure and Low pressure couplings

1 - Screw the hoses (blu = Low pressure (Lp) – red = High pressure (Hp)) onto the connection fittings for external hoses. Img. 7a;

2 - Connect the rapid couplings to the hoses (blue=low pressure – red=high pressure) based on the gas type which you want to work with: R134 (fig. 9a) or HFO-1234yf ones (fig.9b);

3 - Close the High and Low pressure taps – fig.7b;

4 - Plug in the power supply and turn on the main switch (fig. 7e);

5 - Read on the display the amount of refrigerant available in the internal bottle and the gas type for which is set the station;

6 - Fill up the fresh oil bottle (Ha - Hb) with the appropriate oil for cooling (standard and hybrid).

Connecting the quick fittings to the vehicle

To connect the quick fittings to the car unscrew the tap counterclockwise (closed hose), pull up the tap, insert it into the connector of the AC system, releasing the ring. Make sure that the connector is fully inserted. Screw the tap clockwise to open the hose (gas passageway).

Image10a - Oil Tank: [G] Waste– [Hb] Standard - [Ha] Hybrid

Image 10b - Synthetic oil for cooling R134 art 21 CR (optional)

10 Station Usage

10.1 Internal Bottle Refill

The current amount of refrigerant inside the bottle has been inserted to run a station test. For this reason, the gas bottle has to be recharged using an external bottle before starting the station.

Total suggested quantity 5-6 Kg of refrigerant.

NB: check that the station is set on the type of gas that you want to charge (R134a or HFO1234yf)

NB: to change the type of gas you have to place the rapid couplings in the appropriate sites and click on the desired refrigerant, confirm the choice with Enter. Do not perform the refrigerant changing if the rapid couplings are connected to the vehicle!!

NB: if a gas type different from the last one used is selected, the station will perform an internal flushing. In this case, connect the hoses to their seats on the side of the station and wait for the flushing to be completed.

NB: the operator must wait that the flushing step is over before proceeding with other operations. If the flushing gets stopped, the machine will require to perform the flushing again before allowing any other operations.

To charge the OK CLIMA ADVANCE internal bottle, connect the high pressure red hose to an external bottle (liquid side!). Open the bottle tap. Open the high pressure tap.

Use the arrow keys left/right to navigate through the menu and select "Bottle Refill".

Image 11 – Internal bottle refill

To confirm the procedure press “Enter” on the display and the current amount of gas available will be visualized on the display;

Use the arrow keys up/down to program the amount of gas you want to load. It will be possible to program an amount of gas, but do not exceed 80% of the maximum capacity of the bottle;

Press “Enter” to confirm the start of the bottle charging procedure;

The display will show: the amount of recovered gas and the total current amount left in the bottle.

Once the amount of gas is achieved, the display will show a warning message to close the tap of the external bottle and confirm the procedure by pressing “Enter”.

In this way the current gas inside the hoses and in the AC station circuit will be recovered

Take notice: if the programmed amount of gas is not achieved the display will show a message “the external bottle is empty”.

THE INTERNAL BOTTLE IS EQUIPPED WITH A MECHANICAL SECURITY VALVE WHICH OPENS AUTOMATICALLY WHEN THE PRESSURE EXCEEDS 16 BAR. THERE IS A SECOND VALVE ON THE INTERNAL BOTTLE.

10.2 Pressure test

To run a pressure test in the AC machinery the two taps of high and low pressure **have to be closed.**

Connect the high and low pressure hoses to the vehicle.

Start the vehicle at a speed of 1500rpm/min.

Enter the A/C system.

Check the pressures on external gauges (img. 6-a and img. 6-c), with reference to the following table:

Room temperature	Low Pressure	High Pressure
°C 15	0,5 – 2,0	7,5 – 13
°C 20	0,5 – 2,5	10 – 16
°C 25	0,5 – 2,5	12 – 18
°C 30	0,5 – 3	12 – 20

NB: the pressure values in the table are indicative and they could change depending on the AC system of the vehicle.

ATTENTION: the operation has to be performed with engine on and with air conditioning inserted.

To add gas at the AC system program the gas quantity by manual mode (Charge Gas function par. 10.3.1) and open only the low pressure tap (LP)

To remove gas from the AC system, open only the high pressure tap (HP) and do a recovery (Recovery function see par. 10.3.1).

NB: Never open simultaneously the two taps (LP and HP), during the pressures test!

At the end of the test, disconnect the couplings of the AC system, open the taps of the station and do the recovery of the gas (Recovery function see par. 10.3.1).

10.3 Manual cycle

At first select the desired refrigerant (R134 or HFO1234YF) from the page Home.

ATTENTION ! Before selecting the system type make sure that the two HP and LP rapid couplings present at the end of the hoses are connected to the two male couplings present on the station!

NB: to change the type of gas you have to place the rapid couplings in the appropriate sites and click on the desired refrigerant, confirm the choice with Enter. Do not perform the refrigerant changing if the rapid couplings are connected to the vehicle!!

NB: if a gas type different from the last one used is selected, the station will perform an internal flushing. In this case, connect the hoses to their seats on the side of the station and wait for the flushing to be completed.

NB: the operator must wait that the flushing step is over before proceeding with other operations. If the flushing gets stopped, the machine will require to perform the flushing again before allowing any other operations.

Use the arrow “right/left” keys to navigate through the menu and select the option “Manual/Automatic”;

Image12 – Manual cycle

Confirm the option by pressing the “Enter” key.

If the station is preset for Standard and Hybrid systems, the display will show the choice of the type of system Standard / Hybrid.

Select with the “up/down” keys the system type desired and confirm by pressing “Enter” key.

Internal cleaning according to the type of system selected

Take Notice: if it is selected another type of system, different from the previous one completed, it will be executed an internal cleaning.

WARNING! Before selecting the system type ensure that the two quick fittings of high and low pressure located at the end of the hoses are connected to the two male connectors situated on the station (img 6-g)

DO NOT EVER RUN AN INTERNAL CLEANING WITH THE FITTINGS CONNECTED TO THE VEHICLE

WAIT until the end of the cleaning to proceed. The cleaning operation will end when the display shows a message after the oil drain.

WARNING! If the cleaning cycle is interrupted it will be required to initiate the cleaning every time, even selecting the same system type.

Ma**nual cycle operating stage**

In the menu, select the type of operation among those listed:

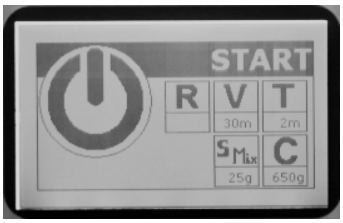

Image 13 – Manual Cycle

– Recovery (R)
– Vacuum (V)
– Vacuum Test (T)
– Oil Injection (Smix - Hmix)
(standard or hybrid according to the system type)
– Gas Charging (C)

Use the arrow “right/left” keys to navigate through the menu and select the different stages.

Use the arrow “up/down” keys to change the information of the selected stage.

Press the “Enter” key to start the procedure.

Take notice : to the oil injection (standard or hybrid) or the gas charging, the system has to be vacuumed (run a vacuum procedure before using it).

10.3.1 Operation description menu “Manual/Automatic”.

Recovery function:

Use the arrow “right/left” keys to navigate through the menu and select the “R” gas recovery symbol;.

Image 14 – Recovery

Open the high and low pressure taps

Confirm by pressing the “Enter” key to recover the refrigerant from the AC system.

The station will try to perform a recovery.

Take notice: when the gauge pressure on the LP and HP is less than 0 bar (absence of pressure) it will start the oil draining.

The recovery will end automatically once the AC system does not contain any gas (pressure <0 bar). You can interrupt the recovery function at any time by pressing the "C" key.

At the end of the recovery, the station will automatically move to the oil draining function;

Image 15 – Recovery

Image 16 – Recovery

If during the oil draining occurs a pressure increase, it is automatically activated the recovery function.

Note: The machine is equipped with a safety device that controls the current gas amount in the internal bottle; trying to perform a recovery with the bottle filled over the alarm threshold (> 80%) the display will show a “full bottle” message. In this case it is necessary to drain extra gas in a rechargeable external bottle.

Vacuum function:

Use the arrow “right/left” keys to navigate through the menu and select the “V” Vacuum symbol;

Use the arrow “up/down” keys to set up the vacuum desired duration (the recommended duration is 20 minutes at least).

Open the high and low pressure taps

To confirm the programmed duration time set and run the vacuum function press the “Enter” key.

Image 17 – Vacuum

Take notice: during the vacuum function it is possible to press the arrow "up/down" keys to modify the vacuum duration (operating duration).

Take notice: if trying to run a vacuum with the system under pressure (>0.2 bar) the display will show a "warning system under pressure" message. In this case it is necessary to run a recovery first.

Take notice: if during the vacuum function occurs a pressure increase, the display will show a "warning system under pressure". In this case it is necessary to run a recovery first.

NOTE: after the vacuum function it will be run a "vacuum test" if programmed with a different value from 0 to the test vacuum parameters.

Test vacuum function:

Use the arrow "right/left" keys to navigate through the menu and select the "T" Vacuum Test symbol;

Use the arrow "up/down" keys to set up the vacuum desired duration (the recommended is 2 minutes at least).

To confirm the programmed duration and run the vacuum function press the "Enter" key.

Image 18 – Vacuum Test

If a vacuum test is set up (> 0), at the end of the vacuum function it will start automatically a vacuum test with the programmed duration. After the programmed duration, if it is not detected any leaks in the AC system the display will show the "Vacuum and Vacuum Test finished, press Enter" message.

If a leak is detected in the station, the display will show a "system leak" message*(only if the leak test was previously programmed);*

in that case it will be necessary to find the leakage with the help of a leak detector lamp or a elettronic leak detector

(accessories upon request).

Oil charging function:

Use the arrow "right/left" keys to navigate through the menu and select the "Oil Charge" symbol (Smix / Hmix) depending on system type selected.

Use the arrows "up/down" to programme the amount of charging oil.

Image 19 – Oil Charge

Open the high and low pressure taps.

Press the “Enter” key to run the oil charging.

Take notice: To inject the oil, the system has to be vacuumed (run a vacuum function in the AC system). With system under pressure it will be visualizes an error “system under pressure” message.

NOTE for AUTOMATIC CYCLE: *by selecting "A" using the down arrow key (below zero) it will be charged the same amount of oil drained during the "Recovery" function.*

Take notice: if select “A” in manual mode the station will not charge oil in the system

Oil charging function for hybrid systems:

From the main menu select “Manual/ Automatic” and press the “Enter” key.

If the station is preset for Standard and Hybrid systems, the display will show the choice of the type of system Standard / Hybrid.

Select with the “up/down” keys the system type desired and confirm by pressing “Enter” key.

WARNING!: run this operation with closed quick fittings

Image 20 – Standard Oil Charge

Image 21 – Hybrid Oil Charge

If selected a different system type from the previous one programmed, the station will start running an Internal Cleaning. The duration of the internal cleaning will be required on the display.

Take Notice: using PAG oil in hybrid vehicles or in electrical vehicles it may damage the vehicle compressor.

Take Notice: it is possible to insert tracer in the car previously mixed with oil in the specific small tank.

Take Notice: always run an internal cleaning to avoid oil contamination.

If the cleaning cycle is interrupted it will be required to initiate the cleaning every time, even selecting the same system type.

The cleaning cycle is completed when the oil drain is finished.

Once the oil draining is finished the display will enter on the “Manual/ Automatic” page.

Use the arrow “right/left” keys to navigate through the menu and select the “Oil Charge” symbol (Hmix).

Use the arrows “up/down” to programme the amount of charging oil.

Open the high and low pressure taps.

Press the “Enter” key to run the oil charging.

Take notice: To inject the oil, the system has to be vacuumed (run a vacuum function in the AC system). With system under pressure it will be visualizes an error “system under pressure” message.

NOTE for AUTOMATIC CYCLE: *by selecting "A" using the down arrow key (below zero) it will be charged the same amount of oil drained during the "Recovery" function.*

Take notice: if select “A” in manual mode the station will not charge oil in the system

Gas charging function:

Ensure that in the internal bottle has a sufficient amount of gas before proceeding.

Use the arrow “right/left” keys to navigate through the menu and select the “C” Gas Charge symbol;

Image 22 – Gas Charge

Use the arrows “up/down” to programme the amount of gas to charge in the AC system.

Open the high and low pressure taps.

Press the “Enter” key to run the procedure.

When the recharge is done the display will show a “Charge cylce finished press Enter” message.

Take notice: if it is not possible to complete the recharge (bottle pressure < = to the AC machinery pressure) close the tap of high pressure and start the engine of the vehicle with the air conditioning on. The remaining part of gas will be aspirated.

Individual stages printing (only Printer version)

At the end of each stage it will possible to print the current procedure by pressing the “Print” key.

The display will show the “Individual Print” message.

Press “Enter” to start the operation.

Take notice: do not pull the paper while printing.

10.4 Automatic Cycle

At first select the desired refrigerant (R134 or HFO1234YF) from the page Home.

ATTENTION ! Before selecting the system type make sure that the two HP and LP rapid couplings present at the end of the hoses are connected to the two male couplings present on the station!

Ensure that in the internal bottle there is a sufficient amount of gas before proceeding.

If the current amount of gas in the internal bottle before starting the stage is less than 1 κg, the display will show a "insufficient gas" message.

Use the arrow "right/left" keys to navigate through the menu and select the option "Manual/Automatic";
Confirm the option by pressing the "Enter" key.

Image 23 – Automatic cycle

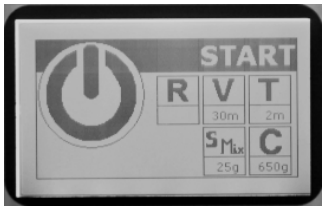

Image 24 – Automatic cycle

The display will show the option "Standard/ Hybrid", select with the "up/down" arrows the system type desired and confirm the procedure by pressing "Enter".

Image 25 – Standard

Image 26 – Hybrid

Take Notice: if it is selected a different system type from the previous one programmed, it will start an Internal Cleaning.

WARNING!: Before selecting the system type ensure that the two quick fittings of high and low pressure located at the end of the hoses are connected to the two male connectors on the station (img 6-g)

DO NOT EVER RUN AN INTERNAL CLEANING WITH THE FITTINGS CONNECTED TO THE VEHICLE

WAIT until the end of the internal cleaning to proceed. The cleaning operation will end when the display shows a message, after the oil drain.

WARNING! If the internal cleaning is interrupted it will be requie every time, even selecting the same system type.

Use the arrow "right/left" keys to navigate through the different functions.Use the arrows "up/down" to set up the functions as described on paragraph 10.3.1 "Operation description menu Manual/Automatic".

Take Notice: it is possible to set up the oil automatically as follows:

1) setting up the desider quantity;

2) Charging the same amount of oil drained after the Recovery function. To set up this option select "A" by using the "down" arrow key (under the 0 value it will be visualized "A").

After changing the parameters, navigate with the arrow keys until the "START" symbol on the left, open "High pressure" and "Low pressure" taps, then press "Enter" to confirm.

It will run automatically the whole cycle.

For the recovery phase, the automatic cycle provides 2 recoveries with a 2 minutes pause in stand-by mode.

Once the cycle is finished the display will show a “Automatic Cycled finished Press ENTER” message.

The current gas inside the OK CLIMA ADVANCE hoses can be recovered by removing the quick fittings from the AC system and selecting the Recovery (see paragraph 10.3.1 manual recovery function).

At the end of the cycle it will be possible to print the operation by pressing the “Print” key (only Printer version).

The display will show a “Individual printing” message. Press “Enter” to start the operation.

Take notice: do not pull the paper while printing.

If leakage is detected, the display will show a "leak system" message *(only if the leaking test was previously programmed), in that case it will be necessary to find the leakage with thehelp of a leak detector lamp or a leak detector (accessories upon request).*

Take notice: if a function standard is positioned on *zero that function will not be executed.*

Take notice: If the current amount of gas in the internal bottle before starting the stage is less than 1 kg, the display will show a “insufficient gas” message. Run an internal bottle recharge.

10.5 Data Base

At first select the desired refrigerant (R134 or HFO1234YF) from the page Home.

ATTENTION ! Before selecting the system type make sure that the two HP and LP rapid couplings present at the end of the hoses are connected to the two male couplings present on the station!

Ensure that in the internal bottle there is a sufficient amount of gas before proceeding.

If the current amount of gas in the internal bottle before starting the stage is less than 1 kg, the display will show a “insufficient gas” message. Run an internal bottle recharge *(see the paragraph Charging Internal Bottle)*

From the main page use the arrow “right/left” keys to navigate through the menu and select the “Data Base” symbol.

Image 27 – Data Base

Press the “Enter” key to enter in the Data Base menu.

Take Notice: It is possible to use the “Data Base” key on the keyboard to access directly the Data Base menu.

Use the arrow “right/left” keys to search the desired category (CAR/TRUCK/TRACTOR/ PERSONAL DATABASE) confirm by pressing the “Enter” key.

Image 28 – CAR

Image 29 – TRUCK

Image 30 – TRACTOR

Image 31 – Personal DataBase

Use the arrow “right/left” keys to search the desired brand and confirm the option by pressing the “Enter” key.

Select the desired vehicle by pressing the “Enter” key.

Use the arrow “right/left” keys to search the version of the selected model. It can be seen on the display the vehicle model, the type of gas used and the amount of current gas in the system.

Select the system type standard/ hybriddesired and confirm the procedure by pressing “Enter”.

Take Notice: if it is selected a different system type from the previous one programmed, it will start an Internal Cleaning.

WARNING!: Before selecting the system type ensure that the two quick fittings of high and low pressure located at the end of the hoses are connected to the two male connectors on the station (img 6-g)

DO NOT EVER RUN AN INTERNAL CLEANING WITH THE FITTINGS CONNECTED TO THE VEHICLE

WAIT until the end of the internal cleaning to proceed. The cleaning operation will end when the display shows a message, after the oil drain.

WARNING! If the internal cleaning is interrupted it will be requie every time, even selecting the same system type.

Select “Start” to run automatically the whole cycle.

The standars can be modify “temporarily” and it’s possible to perform the various functions separately (Recovery (R), Vacuum (V), Vacuum Test (T), Oil Injection (standard/hybrid), Gas Charge (C)) following the instructions contained in section "Manual/Automatic".

10.5.1 Personal DataBase

Parameters Storing

The personal database can contain up to 100 positions.

To store the data you have to enter in the menue DataBase and choose the category PersonalDB.

Select the position on where you want to store the data.

It will appear the following screen:

Image 32 – Personal DataBase

Set the parameters of the functions Vacuum (minutes), Vacuum Test (minutes), Oil Charge (grams), Gas Charge (grams).
Press “C” button to store the data set.

Use of the stored data

At first select the desired refrigerant (R134 or HFO1234YF) from the page Home.

ATTENTION ! Before selecting the system type make sure that the two HP and LP rapid couplings present at the end of the hoses are connected to the two male couplings present on the station!

To use the stored data you have to enter in the menu DataBase and choose the category Personal DB.

Select the position where the data have been yet stored.

It will appear the following screen with the previous stored data:

Image 33 – Personal DataBase

Press “Enter” to pass on the screen Manual/Automatic, from which you can start the automatic cycle or the single functions in manual.

10.6 Printing (only Printer version)

10.6.1 Individual printing

The printing function provides the printing of the last operation executed.

To access this function select “print” from the main menu and confirm by pressing the “Enter” key or press the “Print” key on the keyboard.

Image 34 – Print

Depending on the last operation run, the following operations are possible:

1) Printing of the last operation run (from the manual cycle)

2) Printing with the option of inserting the vehicle's plate, brand and kilometres (from the automatic cycle)

3) Printing with automatic visualization of the vehicle (from the Data Base) with plate and kilometres

10.6.2 Total Printing

To enter the function "Total Printing" select "Print" from the main menu and confirm with "Enter". Use the right/left arrow keys to enter the menu "Total Printing". It is possible to have the reports concerning gas and oil for the considered period of time and for a specific User.

10.7 Utilities

In the "Utilities" menu the following functions can be found:

- INTERNAL CLEANING
- REFILLING WASH*
- RECYCLING WASH*
- NITROGEN TEST*

*__Take notice__: the starred functions can be used only with some additional accessories available upon request.

Please contact your seller to know the kit's prices and availability.

10.7.1 Internal Cleaning

Connect the quick fittings to the male fitting on the station (img 6-g), open the taps and the quick fittings and confirm with “Enter”.

Image 35 – Internal Cleaning

Set the desired duration of time for the cleaning.

Pressing the "Enter" key a cleaning and rinsing of the gas inside the station will take place.

Once the duration of time set has passed, the station will switch to the automatic oil discharge.

The station is able to carry out an auto-cleaning of the internal circuits. The function "Internal Cleaning" is also ideal for the treatment of the gas contained in the internal bottle.

The cleaning will stop automatically once the duration of time set has passed.

***WARNING** to be able to complete a cleaning it is necessary for the bottle to contain at least 4 kg of gas.*

***WARNING**do not make a cleaning with quick fittings connected to a vehicle*

*10.7.2 Refilling wash**

Warning: To be able to carry out the refilling wash of the AC system it is necessary to ask for the 01.000.96 kit at our distributor.

With Spin's washing kit it is possible to carry out the washing of AC systems without the need to strip down any part of the system or with the compressor dismantled.

Image 36 – Refilling Wash

To confirm press the "Enter" key

Set the desired duration time of vacuum (suggested at least 5 min)

To confirm press the "Enter" key

At the end of the washing it is possible to print a statement of the operation.

***Take notice**: Use instructions inside the kit*

***WARNING** to carry out a washing it is necessary to have inside the bottle at least 4 kg of gas*

*10.7.3 Recycling wash**

Warning: function not available in Advance Plus Version.

Warning: The recycling wash is possible only by using a dedicated kit, available upon request.

For the recycling wash it is necessary to use some dedicated fittings to insert in the circuit in the place of the expansion hose.

Image 37 – Recycling Wash

To confirm press the "Enter" key

Set the desired time of vacuum (suggested at least 5 min)

To confirm press the "Enter" key

At the end of the washing it is possible to print a statement of the operation.

***Take notice**: Use instructions inside the kit*

WARNING to be able to carry out a washing it is necessary to have inside the bottle at least 4 kg of gas

10.7.4 Nitrogen Test

The nitrogen test allows the control of the sealing capacity of the AC system under pressure.

To be able to carry out the test it is necessary to request the dedicated kit at your seller.

***Take notice**: Use instructions inside the kit*

The Nitrogen Test is done on a low-pressure hose

Image 38 – Nitrogen Test

10.8 Setup

It is possible to change some settings of “OK CLIMA ADVANCE” by pressing the "Setup" symbol.

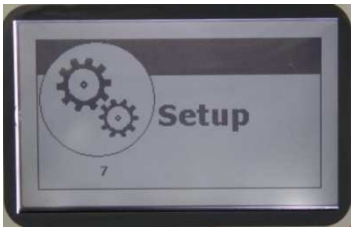

Image 39 – Setup

10.8.1 Software Update

This function allows the update of the AC station's software and Data Base

Image 40 – Software Update

10.8.2 Hose length setting

Use the up/down arrow keys to set the length of the hoses. The station will automatically compensate the amount of gas contained inside the hoses during the recharging phase.

To confirm press the "Enter" key

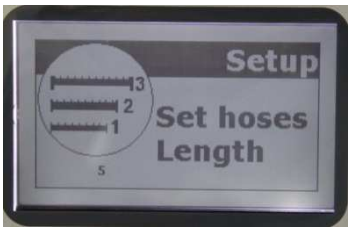

Image 41 – Set hoses Length

10.8.3 Head printing

Use this function to set the head printing.

Nr. 10 rows of 21 letters are available.

Use the right/left arrow keys to move on the grid.

Pressing the "F" key at the same time of the right/left arrow key, it is possible to move vertically on the grid.

Use the up/down arrow keys to select a letter.

Press the "Enter" key to confirm

Image 42 – Print Head

10.8.4 Sensor Control

Use this function to control the machine's status (for Service)

10.8.5 User Management

Use this function to modify user and password. Nr. 10 user's accounts are available.

Image 43 – User Management

Once inside the "User Management" menu, the user (00; 01; 02;…;10) with its password will be shown.

The administrator is user "00" and the default password is "0000".

Take notice: Only the administrator may create or modify other users' passwords.

The default passwords are:

USER	PASSWORD
00	0000
01	0001
02	0002
03	0003
04	0004
05	0005
06	0006
07	0007
08	0008
09	0009
10	0010

To modify the password of the user administrator "00"

Select User "00"

Move with the arrow keys on "password"

To confirm press the "Enter" key

Insert the new password and the old password

To confirm press the "Enter" key

To modify other users' passwords (00 – 10)

Only by entering as user administrator "00" you will be allowed to modify other users' passwords.

Enter in the dedicated page

Insert the number of the user "XX"

Turn it on with on/off

Insert the new password

Insert in the proper square the old password

Take notice: It is not possible to modify the administrator's password

Take notice: It is not possible to use the same password for more than one user

10.8.6 Data Link

It can be uploaded the gas report on a PC with the use of a dedicated software

10.9 Setting

In the Setting menu it is possible to change some settings of “OK CLIMA ADVANCE”.

Image 44 - Setting

10.9.1 Date/Time

Use the "Enter" key to modify date and time. Use the arrow keys to change the datas shown and the "Enter" key to confirm. Confirming the minutes you leave the Date/Time Setting.

Image 45 – Date/Time

10.9.2 Language

Use this function to select the desired language.

10.9.3 Display Setting

It is possible to control the contrast of the display. Use the arrow keys to modify the values shown. Use the "Enter" key to confirm.

Image 46 – Display Setting

10.9.4 Technical Service

For technical assistance only.

Image 47 – Technical Service

10.10 Lock Station

By default this option is off, to put it on ask for information at your seller.

Image 48 – Lock Station

10.11 Info

In the Info menu it is possible to find some useful information aboutOK CLIMA ADVANCE. Pressing the "Enter" key will show on the display a page reporting the following information:

Setting - Version FW - Capacity of the internal bottle - Service Date

Pressing the right arrow key, the last operation run will be shown.

Date and Time –Result –Details of the function.

Pressing again the right arrow key, tha gas report will appear:

Date and Time - Total amount of gas recovered - Total amount of standard oil recharged - Total amount of hybrid oil recharged - Total amount of additive recharged - Total amount of oil discharged - Total amount of time of work of the vacuum pump.

Image 49 – Info

11 Ordinary Maintenance

TO MAINTAIN THE STATION PERFECTLY EFFICIENT, IT IS NECESSARY TO CARRY OUT THE ORDINARY MAINTENANCE

THE ABSENCE OF MAINTENANCE RELEASES THE MANUFACTURER FROM ANY RESPONSIBILITY CONCERNING THE GUARANTEE.

EVERY OPERATION OF ORDINARY MAINTENANCE MUST BE DONE WHILE THE STATION IS DISCONNECTED FROM THE ELECTRIC POWER SUPPLY.

EVERY OPERATION WHICH IS NOT ORDINARY MAINTENANCE MUST BE DONE BY SPECIALIZED AND COMPETENT OPERATORS

Periodically (according to the use), replace the dehydrating filter and the pump oil.

In any case, after 130 kg of gas recovered, a message of maintenance appears on the display - carry out at this moment the maintenance of the station.

11.1 Pump Oil

Replace the pump oil after **100/150 hours** of working or at least **every year** even if the station is used occasionally. The oil's replacement is indispensable also when the presence of contaminating substancies in the oil makes it turbid; in this case the mechanical parts of the pump may be damaged irreparably.
Use mineral oil for vacuum pumps type **AV68I**. The amount needed is around **300 grams**.

11.1.1 Oil Refill

Insert new oil from the "B" cap, until arriving to the level shown in the "C" indicator.

11.1.2 Pump Oil Replacement

Discharge the oil from the "A" cap.
Insert new oil from the "B" cap, until reaching the level shown in the "C" indicator.

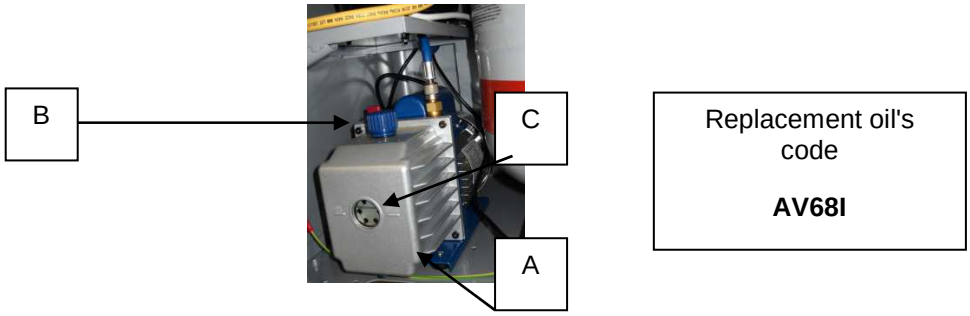

Image 50 - The pump and its elements

WARNING

DO NOT DISCHARGE THE OIL IN THE ENVIRONMENT BUT DISPOSE OF IT AS A SPECIAL WASTE ACCORDING TO THE LAWS IN FORCE.

11.2 Dehydrating Filter Replacement

Replace the dehydrating filter after **130 kg** of recovered gas or at least every **2 years** even if the station is used occasionally.

Activate the filter emptying procedure before dismounting it (contact the technical assistance)

- Disconnect the station from the power supply
- Open the rear/front panel of the station
- Close the taps of the internal bottle
- Slowly unscrew the filter
- Assemble the new filter (according to its direction)

Image 51 – Dehidrating Filter

WARNING

DO NOT DISCHARGE THE FILTER IN THE ENVIRONMENT BUT DISPOSE OF IT AS A SPECIAL WASTE ACCORDING TO THE LAWS IN FORCE.

12 Information on RESIDUAL RISKS

The residual risks remaining, in spite of the protective measures integrated in the machine's design and the complementary measures of protection, are:

1) <u>OVERTURNING OF THE MACHINE</u>

If the operator does not respect the obligation, written on this manual, to accompany the machine while it is being moved and brake it during use, he/she may suffer damages for crushing due to the overturning of the machine.

2) <u>CASTING OF REFRIGERANT GAS</u>

If the operator does not respect the obligation, written on this manual, regarding the correct connection of the machine to the vehicle, by closing the bottle's taps during the operations of extraordinary maintenance and by using protective gloves and goggles, he/she may suffer damages due to the casting of refrigerant gas.

3) <u>SHEARING</u>

If the operator does not respect the obligation, written on this manual, of disconnecting the machine from the electric power supply before entering the machine, he/she may suffer damages due to contact with the vanes of the electric fan.

4) <u>SUFFOCATING DUE TO REFRIGERANT GAS</u>

If the operator does not respect the obligation, written on this manual, regarding the connection of the machine to the vehicle, by closing the bottle's taps during the operations of extraordinary maintenance, by using the machine only in ventilated environments, and by carrying out the correct maintenance of the machine, he/she may suffer damage due to the inhalation of refrigerant gas.

5) <u>DIRECT CONTACT WITH ELEMENTS IN TENSION (LIVE)</u>

If the operator does not respect the obligation, written on this manual, of disconnecting the machine from the electric power supply before entering the machine, he/she may suffer damages due to direct contact with elements in tension (live).

6) <u>INDIRECT CONTACT</u>

If the machine is connected to an unprotected socket, regarding indirect contacts as stated in the laws in force in the country of use, as written on this manual, he/she who comes in indirect contact with parts in tension (live) may suffer damages.

Final notes

The images in this document are given as an indication.

Spin Srl reserves the right to change the models described in this publication at any time and without notice for commercial or technical reasons.