



**User's manual**

**COOLIUS 4000 HP automatic a/c service unit**

**Art.-No.W050200011**





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## Safety precautions

- This equipment is designed for trained personnel only, who must know the refrigeration fundamentals, cooling systems, refrigerants and possible damage that pressurized equipment may cause.
- Only use refrigerant R134a. The unit must not be used with a different refrigerant than the one it has been designed for.
- Carefully read the instructions contained in this manual; strict observance of the procedures described is fundamental to the operator's safety, the perfect state of the unit and constant performances as declared.
- The unit must always work under the operator's direct supervision
- Before performing any operation, make sure that the hoses used for connections have been previously evacuated and that they do not contain non-condensable gases.
- Avoid skin contact; the low boiling temperature of the refrigerant (about  $-30^{\circ}\text{C}$ ) can cause freezing.
- Avoid breathing refrigerant vapours.
- It is recommended to wear suitable protections like safety glasses and gloves; contact with refrigerant may cause blindness and other personal injuries.
- Do not smoke near the unit and do not operate near open flames and hot surfaces; the high temperatures decompose the refrigerant releasing toxic and caustic substances which are hazardous for the operator and the environment.
- Always make sure that the unit is connected to a suitably protected mains supply provided with an efficient earth connection.
- Before performing maintenance operations or when the unit will not be used for a long period of time, turn the unit off by turning the main switch to 0 and disconnect the power supply cord; absolutely follow the sequence of operations.
- Operate the unit only in locations with suitable ventilation and a high number of air changes.
- Before disconnecting the unit, make sure that the cycle has been completed and that all valves are closed in order to avoid release of refrigerant to the atmosphere
- Never fill any tank with liquid refrigerant to more than 75% of its maximum capacity.
- During operations avoid release of refrigerant to the environment; this precaution is required by international environmental standards and is essential to avoid difficult leak detection in a refrigerant polluted environment.
- Protect the unit from dripping.
- Do not expose the unit to direct sunlight, rain and to the inclemency of the weather.
- Do not modify the calibration of safety valve and control systems.
- If you recover refrigerant from a cooling system equipped with a water evaporator and/or condenser, it is necessary to drain water from the evaporator and/or condenser or to keep the circulation pump running during the entire recovery operation in order to avoid frosting.
- Disconnect the unit from the power supply if not used.

## General information

Perform a good vacuum cycle before charging refrigerant into the system!

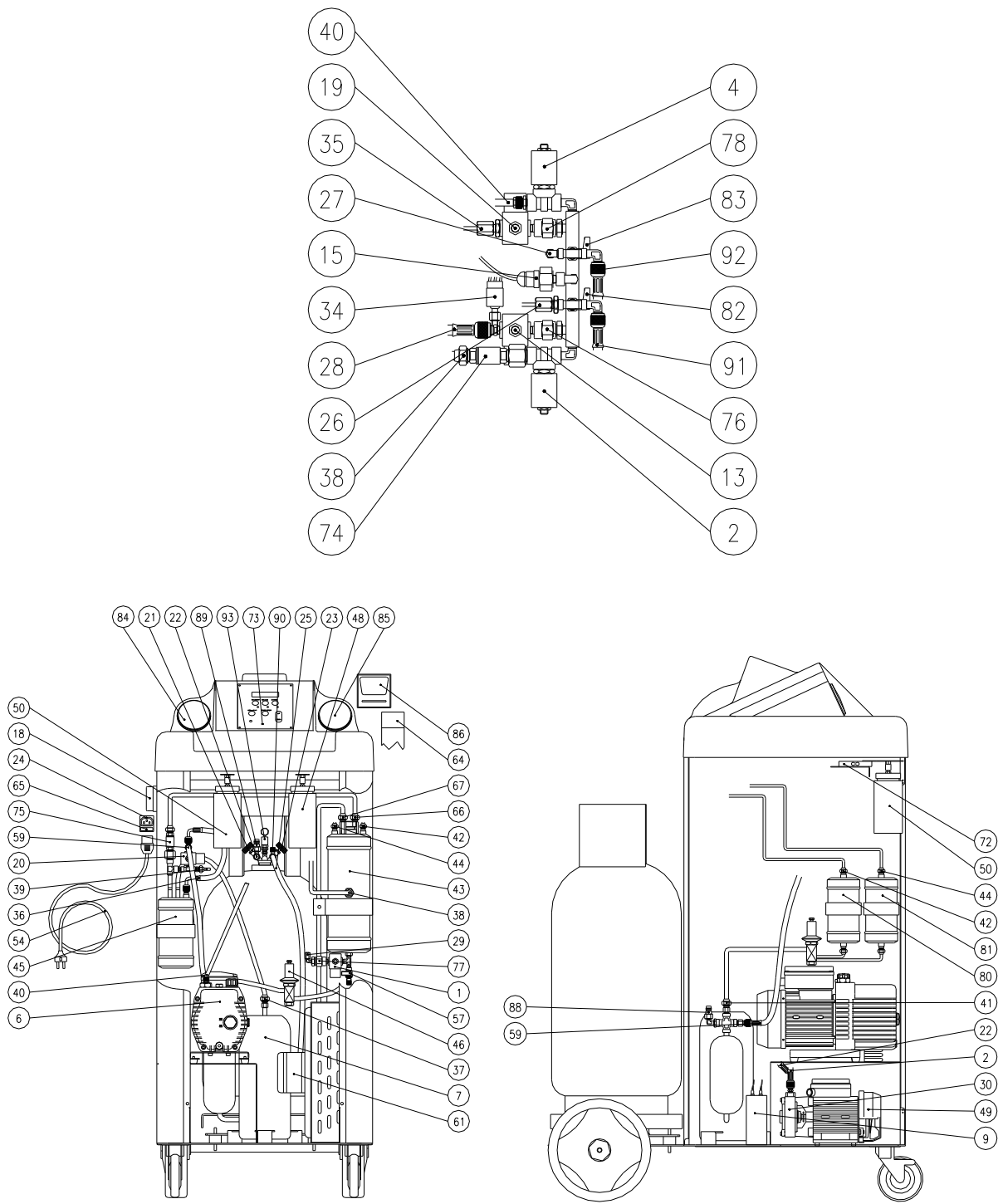
Perform the refrigerant charging phase after having charged oil or UV!

Empty the used oil bottle before starting the recovery phase!

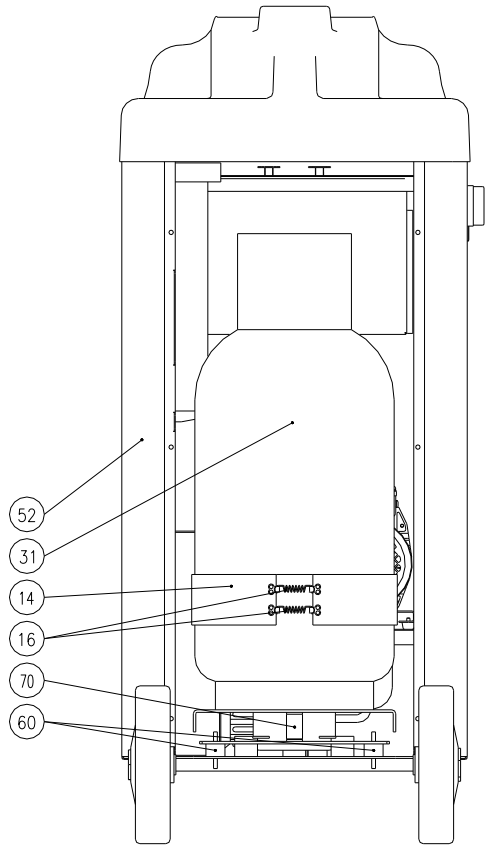
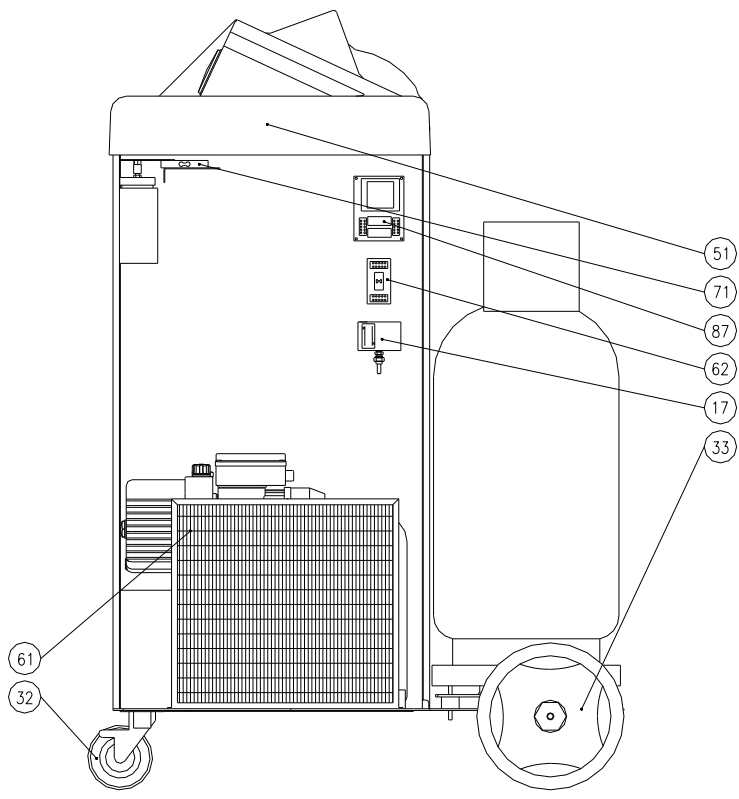
### **WARNING!**

If you do not pay attention to the above safety precautions, you could damage the recovery unit and the car A/C system!

# Layout drawings

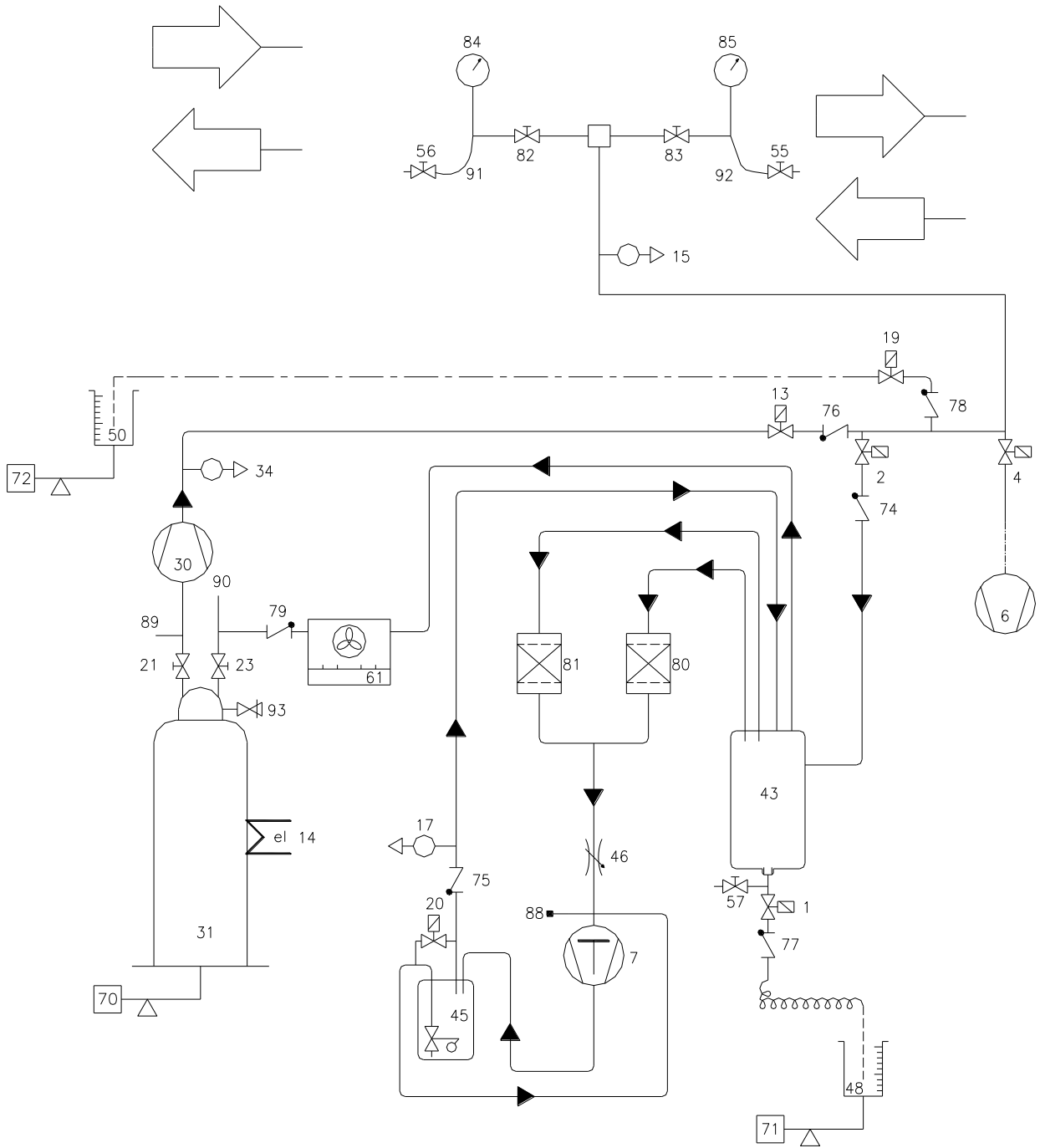


Picture 1



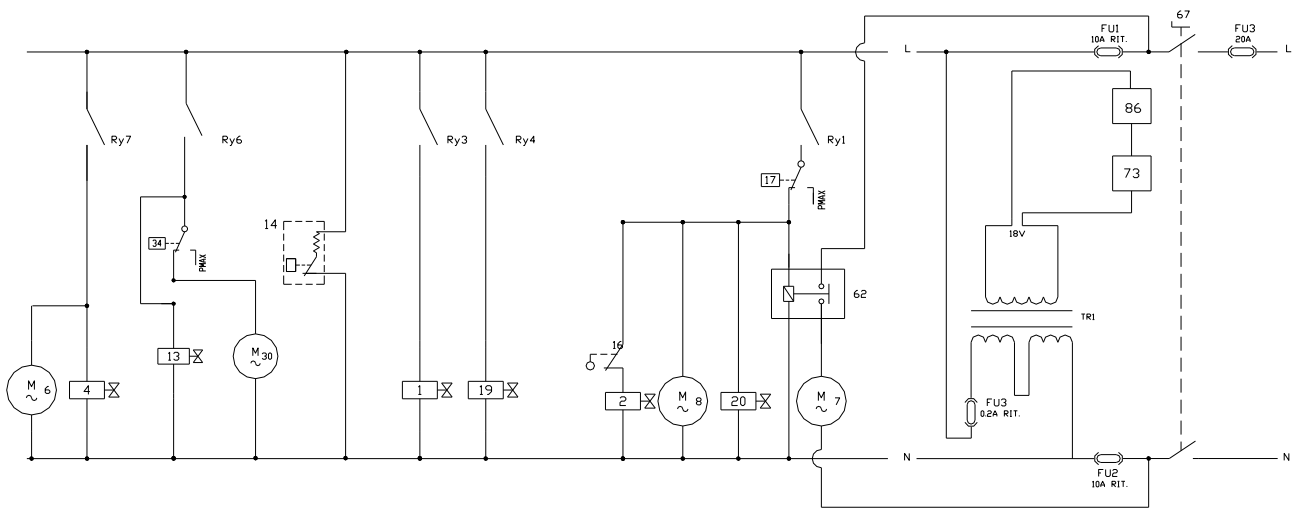
Picture 2

# Hydraulic diagram



Picture 3

# Electric diagram



Picture 4



## Legend

1	Solenoid valve – oil discharge line	48	Oil discharge bottle
2	Solenoid valve - recovery line	49	Refrigerant charge pump
4	Solenoid valve - vacuum line	50	Oil/UV charging bottle
6	Vacuum pump	51	Plastic cover
7	Compressor	52	Frame
9	Compressor starting condenser	53	Front door
10	Vacuum pump oil filler plug	54	Power cable
11	Vacuum pump sight glass	55	HIGH quick coupler
12	Vacuum pump oil drain plug	56	LOW quick coupler
13	Solenoid valve - refrigerant charging line	57	Manual discharge valve on the distiller
14	Heater belt with thermostat on the bottle	59	Oil return hose to compressor
15	Pressure transducer	60	Vibration damping feet on the scale
16	Spring for heater belt	61	Condenser with fan
17	Safety pressure switch	62	Remote control witch for recovery compressor
18	Main power switch	64	Thermal paper roll
19	Solenoid valve - oil/UV charging line	65	Fuse on outlet (10A)
20	Solenoid valve - pressure return to compressor	66	Distiller coil inlet tube
21	Liquid valve on the bottle	67	Distiller coil outlet tube
22	Refrigerant charge hose (bottle-pump)	68	Rear door
23	Vapour valve on the bottle	69	Handle
24	Power outlet (with fuse)	70	Load cell - 100 kg (refrigerant)
25	Condenser / bottle connecting hose	71	Load cell - 5 kg (oil discharge)
26	Capillary hose connecting LOW valve to LP gauge	72	Load cell - 5 kg (oil charge)
27	Capillary hose connecting HIGH valve to HP gauge	73	Control board
28	Refrigerant charge hose (pump-valve block)	74	Check valve - recovery line
29	Oil discharge capillary tube	75	Check valve – compressor delivery line
30	Refrigerant charge pump motor	76	Check valve – refrigerant charging line
31	Complete refrigerant bottle	77	Check valve – oil discharge line
32	Front wheel with brake	78	Check valve – oil charging line
33	Rear wheel Ø 250	79	Check valve - compressor delivery line (condenser)
34	Safety pressure switch on refrigerant charging line	80	Filter drier
35	Oil injection capillary tube	81	Filter drier
36	Hose - pressure return to compressor	82	Manual valve - LOW
37	Compressor/compressor oil separator connecting hose	83	Manual valve - HIGH
38	Valves assembly - distiller connecting hose	84	LP gauge
39	Safety switch capillary hose	85	HP gauge
40	Vacuum pump hose	86	Printer
41	Compressor suction hose	87	Electric feeder
42	Distiller/filter F1 connecting hose	88	Service connection for compressor evacuation
43	Distiller / separator	89	Bottle service connection
44	Distiller/filter F2 connecting hose	90	Bottle service connection (1/4" SAE)
45	Oil separator – complete compressor	91	LOW flexible hose
46	Flow regulation valve with hoses	92	HIGH flexible hose
47	Handle support	93	Safety valve

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# 1 Introduction to recovery unit COOLIUS-HP

Unit COOLIUS-HP permits quick and efficient recovery of refrigerant from the A/C system, refrigerant recycling, system evacuation, check for tightness, additive or lubricant injection, the subsequent charge with refrigerant and measurement of the operating pressures.

Unit COOLIUS-HP permits to control all functions by means of 3 electronic scales (Refrigerant, Discharged Oil from A/C system, new Oil/Uv), 1 pressure transducers.

## 1.2 Technical specifications

Refrigerant	R134a
Maximum storage capacity	40 kg
Refrigerant supply	4 kg
Maximum recovery rate	1,0 kg/min
Maximum oil capacity	500 g
Oil supply	50 g
Power supply	230/1/50
Power input	1400 W
Storage temperature	-10 ÷ +50 °C
Working temperature	0 ÷ 40 °C
Protection degree	IP24
Noise level	< 70dB (A)
Maximum refrigerant charge	The maximum refrigerant quantity available for charging is calculated by subtracting 4 kg from the weight of the refrigerant contained in the bottle and indicated on the display

$$\text{max kg for charging} = \text{kg in bottle} - 4 \text{ kg}$$

Model	Couplers and connections
COOLIUS-HP	1/4" SAE with quick couplers

## 2 Components description and standard equipment

### 2.1 High vacuum pump

Essential component for extracting from the cooling system the residues of technical gases used for pressing, ambient air and vapour contained in it as well as water possibly formed through vapour condensation. The high vacuum pump the unit is equipped with is rotary vane type, lubricated by oil injection.

### 2.2 Refrigerant charging pump

Rotary gear pump enables to have high refrigerant charging rates

### 2.3 Refrigerant bottle

Maximum capacity	kg	40
Weight of empty bottle	kg	22

It is provided with two connections, one of which with tube (liquid refrigerant) and one without tube (vapour refrigerant), safety valve and heater belt with thermostat. The non condensable gases discharge is controlled automatically by the software.

### 2.4 Distiller/Separator

Single body construction, featuring:

- Distillation chamber with automatic flow control
- Separating chamber for the oil removed from recovery compressor and return

- Heat exchanger chamber outlet gas / recovered refrigerant

## 2.5 Compressor

Compressor is of the hermetic type

## 2.6 Filters drier

Filters are anti-acid and have a water absorption capacity of 40 g of water. The can filter more than 300 kg of fluid.

## 2.7 Flexible hoses

Their flexibility assures easy connection in any situation. They withstand A/C system operating pressures and maintain their passage section even when operating in vacuum.

Unit **COOLIUS-HP** features hoses with quick coupler valves.

Inner and outer hoses are in conformity with SAE J2916 standard.

## 2.8 Quick coupler valves

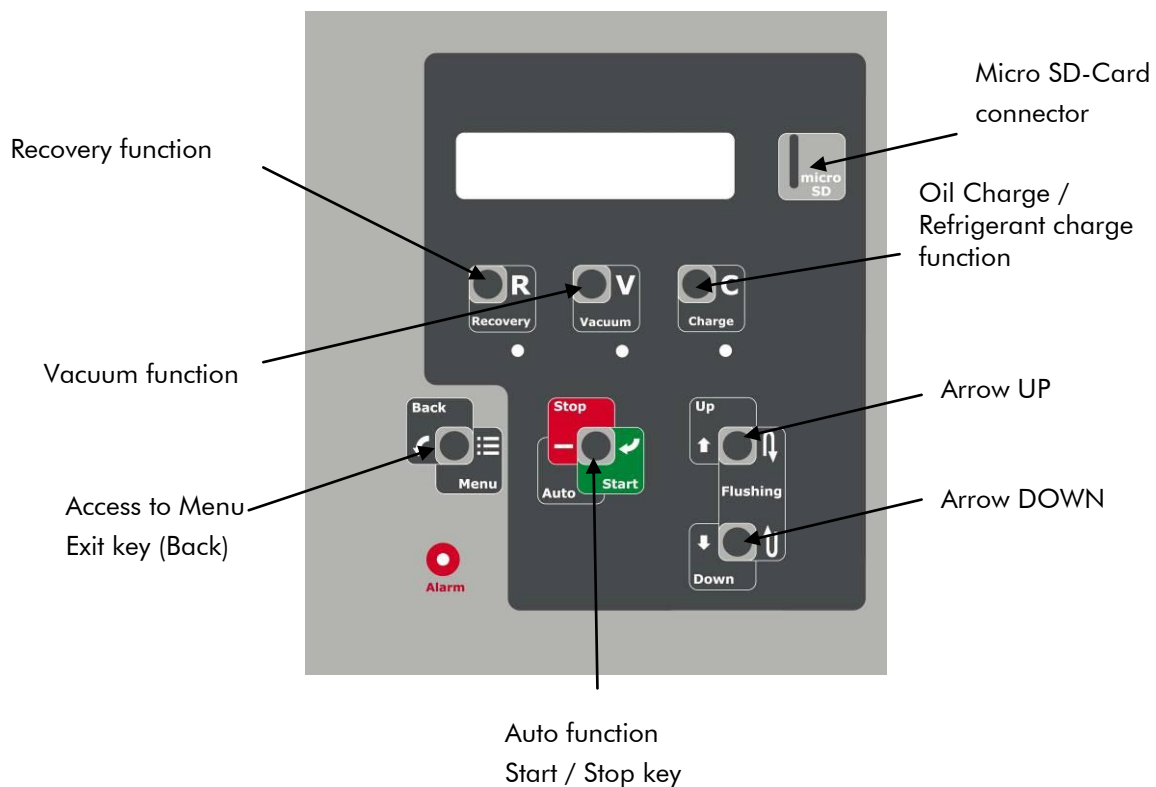
Mounted on the hose ends and provided with a coloured operating ring (blue = low pressure, ref. **91**; red = high pressure, ref. **92**) for quick identification.

## 2.9 Printer

The printer allows to print a report on paper with the values programmed by the operator and executed by the unit, with the possibility to re-print the report. Use paper (cod. n° 0764 95 002) as spare part.

## 2.10 Control module

The unit is equipped with a large 7" color display, on which you will find the following information (Picture 5):



Picture 5



Access to the Refrigerant Recovery function



Access to the Vacuum function



Access to the Oil charge/ Refrigerant charge function



**Standby** – Access to the Menu for the modification of the unit's settings parameters  
**During a function setting** – Back to the standby screen (during refrigerant charge, press for more than 1 second)

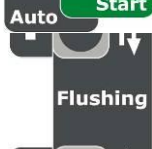
**During Refrigerant charge setting** – Access to the Database



**Standby** – Access to the Automatic function

**During a function** – Start and end of the function

**During a function under way** – if pressed for more than 3 seconds, it stops the function for emergency



**When pressed singly** – enables to shift through the various ranges and modify the numerical values

**When pressed both at the same time** – Start of the Flushing function



### 3 Preparing unit COOLIUS-HP for operation

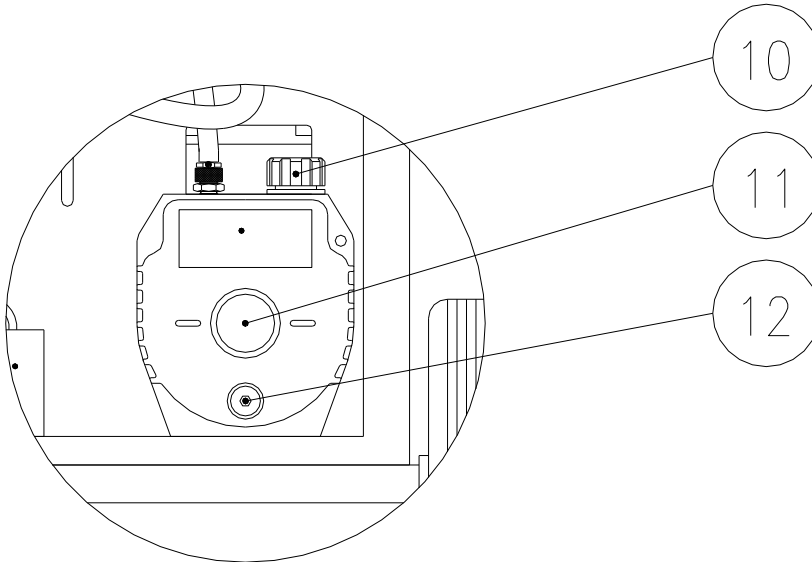
**⚠ WARNING!**

The presence of the synoptic sticker does not exempt the operator from carefully reading this manual and strictly observing the described procedures.



#### 3.1 Checking the vacuum pump oil level

Before checking the oil level, the unit must be placed on a level surface and its power supply must be **turned off**.

The user must check that the vacuum pump oil level covers half of the sight glass (see drawing below).



#### 3.2 Turning COOLIUS-HP unit on for the first time

1. Place the **87** switch on position 1
2. The unit will automatically ask for the interface language; select the language by means of the  arrows and confirm with .
3. Then, the zeroing of all the scales will start. The process is completely automatic and will take about 1 minute.
4. At the end of the procedure, the values of the scales will appear on the display.

R	1	3	4	a			0	.	0	0	0	k	g	≡	
1	0	:	3	4			0	8	/	1	0	/	1	2	▼

Standby screen 1

O	l	i	o		i	n							0	g	▲	
O	l	i	o		o	u	t							0	g	≡

Standby screen 2

5. The next times you will turn the unit on, the display will show the software and hardware version of the unit and the standby screen will appear right away.



## 4 Using unit COOLIUS-HP

### 4.1 Refrigerant recovery


**⚠ WARNING!**

During recovery, regulate the **82** and **83** valves on the control panel, so that the input pressure never rises over 5 bar

1. Turn on the engine with closed hood
2. Turn the air-conditioner on and have it run for some minutes
3. Open the hood and set the air-conditioner fan to maximum speed
4. Have the vehicle engine run slowly (800 - 1200 revolutions/min) for a few minutes
5. Turn the vehicle engine off and have the air-conditioner fan run at maximum speed and start the recovery operations
6. Connect the hoses to the A/C system which needs a maintenance. Open the hand-wheels on the couplers.
7. Turn the **87** switch to position 1.
8. Open the **82** and **83** valves according to how the connection on the system was made
9. Press the Recovery key

				R	e	c	o	v	e	r	y				
R	1	3	4	a							A	L	L		

10. The unit sets the recovery function on ALL by default: in this way, the unit recovers all the refrigerant there is inside the car.

11. Press the  key to start the function. During the recovery cycle, the recovered refrigerant quantity appears on the display.

				R	e	c	.	u	n	d	e	r		w	a	y	
R	1	3	4	a							0	.	0	0	0	k	g

12. In case of emergency, it is possible to leave the function by pressing the STOP key for more than 3 seconds.
13. During the cycle, the unit performs the automatic oil discharge


				O	i	l		d	i	s	c	h	a	r	g	e	
																0	g

14. Wait until the recovery cycle is completed; a beep will let the user know that the cycle is over and the quantities of recovered refrigerant and oil will be displayed.

				R	1	3	4	a					1	.	1	0	0	k	g		
				O	i	l	o						O	u	t				1	0	g







6. Confirm with  and then the screen for setting the oil/UV quantity will appear

O	i	l										S	A	M	E	
O	i	l			M	a	x					1	5	0	g	

7. The units sets SAME by default. During the oil injection phase, the same quantity of oil that has been recovered during recovery will be re-injected into the system.
8. The units checks the maximum quantity that can be charged and indicates it on the second line of the display.
9. In case you would like to set a different quantity than SAME, you can modify it the quantity by means

of the  arrows and confirm with .


**⚠ WARNING!**  
If you do not want to inject oil/UV, set the value on 0 grams

### Suggested quantities for refilling the A/C system with oil




According to the type of A/C system component you have replaced, you need to fill in the lubricant quantity indicated below, even if no oil has been extracted during recovery.

Evaporator: 50cc  
 Condenser: 30cc  
 Filter: 10cc  
 Pipes: 10cc

In any case the operator must follow the instructions of the A/C system manufacturer.

1. Press  and the screen for setting the refrigerant quantity will appear


R	1	3	4	a					0	,	3	0	0	k	g	▲
D	a	t	a	b	a	s	e									▼

2. If you press  on the first line, the refrigerant quantity can be set manually, by means of the  arrows and confirming with .

R	1	3	4	a					0	,	3	0	0	k	g	
M	a	x							4	,	6	6	5	k	g	

3. Otherwise, on the second line, you can gain access to the database and choose between Standard Database (containing the main cars on the market) and Personal Database (created by the user).

D	b		S	t	a	n	d	a	r	d						
D	b		P	e	r	s	o	n	a	l						

4. After having set the refrigerant quantity either by means of the manual menu or by means of the database menu, you will have the  screen (cycle start) where the settings will be summarized on the second line.

*	S	t	a	r	t		S	t	a	r	t	*			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

5. Press  to start the function.

**⚠ WARNING!**

*The refrigerant charge cycle is performed "by steps" in order to reach a high precision. You may hear subsequent "clicks" inside the unit during this phase.*

6. When the function is completed, a beep will let the operator know that the cycle is over and the display will show the information on the cycle just performed.

R	1	3	4	a					0	,	3	0	0	k	g
O	i	l			i	n							5	g	

#### 4.4 Automatic cycle


1. Connect the hoses to the A/C system which needs a maintenance
2. Turn the **87** switch to position 1.
3. Open the **82** and **83** valves according to how the connection on the system was made
4. Press the Auto key

**⚠ WARNING!**



*At the cycle start, the unit will check the available volume inside the bottle. In case the total weight on the scale exceeds 8.000 kg, COOLIUS-HP unit will display the following alarm signal: "Check bottle weight". The same check is performed for the oil quantity in the "New Oil" dosimeter*

5. The operator will be asked to select the type of charge: whether it will be effected through a single hose (blue or red) or whether it will be effected through both hoses. This enables the unit to calculate the correct value of the pre-charge (when it is set).

2		h	o	s	e	s		L	+	H					▲
1		h	o	s	e										▼

6. Confirm with  and then the screen for setting Vacuum will appear

				V	a	c	u	u	m						
T	i	m	e										3	0	'



7. Modify the vacuum time by means of the  arrows and confirm with .

**⚠ WARNING!**  
*The function of refrigerant recovery will be performed in case refrigerant is detected in the A/C system when connecting the unit to it.*

8. Now the screen for setting the oil/UV quantity appears

O	i	l								S	A	M	E		
O	i	l			M	a	x			1	5	0	g		

9. The units sets SAME by default. During the oil injection phase, the same quantity of oil that has been recovered during recovery will be re-injected into the system.
10. The units checks the maximum quantity that can be charged and indicates it on the second line of the display.
11. In case you would like to set a different quantity than SAME, you can modify it the quantity by means

of the  arrows and confirm with .


**⚠ WARNING!**  
*If you do not want to inject oil/UV, set the value on 0 grams*

**Suggested quantities for refilling the A/C system with oil**




According to the type of A/C system component you have replaced, you need to fill in the lubricant quantity indicated below, even if no oil has been extracted during recovery.

- Evaporator: 50cc
- Condenser: 30cc
- Filter: 10cc
- Pipes: 10cc

In any case the operator must follow the instructions of the A/C system manufacturer.

12. Press  and the screen for setting the refrigerant quantity will appear

R	1	3	4	a				0	,	3	0	0	k	g	▲
D	a	t	a	b	a	s	e								▼

13. If you press  on the first line, the refrigerant quantity can be set manually, by means of the  arrows and confirming with .

R	1	3	4	a				0	,	3	0	0	k	g	
M	a	x						4	,	6	6	5	k	g	

14. Otherwise, on the second line, you can gain access to the database and choose between Standard Database (containing the main cars on the market) and Personal Database (created by the user).

D	b		S	t	a	n	d	a	r	d					
D	b		P	e	r	s	o	n	a	l					

15. After having set the refrigerant quantity either by means of the manual menu or by means of the database menu, you will have the START screen (cycle start) where the settings will be summarized on the second line.

*	S	t	a	r	t		S	t	a	r	t	*			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

16. Press  to start the function.

17. When the function is completed, a beep will let the operator know that the cycle is over and the display will show the information on the cycle just performed.

R	1	3	4	a					1	.	1	0	0	k	g
O	i	l			O	u	t				1	0	g	.	


V	a	c	u	u	m							3	0	'	
V	a	c	u	u	m		t	e	s	t				O	K

O	i	l									1	0	g	.	
R	1	3	4	a					0	.	7	0	0	k	g



T

## 4.5 Flushing

1. Connect the hoses to the A/C system which needs a maintenance
2. Turn the **87** switch to position 1.
3. Open the **82** and **83** valves according to how the connection on the system was made

4. Press the  arrows at the same time to gain access to the function menu

V	a	c	u	u	m						1	0	'		
F	l	u	s	h	.	c	y	c	l	e	s		3		

5. Set the vacuum time by means of the  arrows and press  to confirm

6. Set the number of cycles by means of the  arrows and press  to start the function

7. When the function is completed, a beep will let the operator know that the cycle is over and the display will show the information on the cycle just performed

**⚠ WARNING!**

*At the cycle start, the unit will check the available volume inside the bottle. In case the total weight on the scale is lower than 10.000 kg, COOLIUS-HP unit will display the following alarm signal: "Check bottle weight". It is indeed necessary to have at least 10.000 kg of refrigerant inside the bottle to perform this function.*

## 4.6 Checking the A/C system operating pressures

1. Make sure that the **82** and **83** valves are closed and that the **87** switch is on position 0
2. Connect the **91** hose to the A/C system low pressure side
3. Connect the **92** hose to the A/C system high pressure side
4. Start the compressor of the A/C system
5. Read the pressure and its corresponding evaporation temperature on the **84** pressure gauge
6. Read the pressure and its corresponding condensing temperature on the **85** pressure gauge
7. Compare the values with the ones suggested by the cooling system manufacturer

## 4.7 Disconnecting the unit from the A/C system


At the end of the charging function or at the end of the checking of the operating pressures, some liquid refrigerant is still inside the hoses. In order to minimize the residual quantity of refrigerant inside the hoses, follow the below procedure:

1. Close the hand-wheel of the quick coupler ref. **55** (red) and disconnect the **92** hose from the A/C system while the A/C system compressor is running
2. Make sure that the **91** hose is connected to the A/C system
3. Open the **82** and **83** valves in order to have all the liquid refrigerant sucked by the A/C system
4. As soon as the pressures on the high and low pressure gauges are the same and do not exceed 2 ÷ 3 bar, close the hand-wheel of the quick coupler ref. **56** (blue) and disconnect the **91** hose from the A/C system
5. Perform a recovery cycle to suck the remaining refrigerant from the hoses so that the unit is immediately ready for the next operation
6. Turn the unit off (**87** switch in position 0)
7. Close the **82** and **83** valves
8. Carefully screw the protective caps on the A/C system service valves
9. Using a leak detector, check the A/C system for leaks

**⚠ WARNING!**





*The introduction of tracer additives and the following use of a UV leak detector will make it easier to locate the point of the possible leak in the future*

## 4.8 Setting Menu




If you press the  key in the standby screen, you can gain access to the setting menu of the unit.

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## Car plate

By pressing the  key, it is possible to type the plate of the car on which you are making maintenance. You can modify each single field by means of the  arrows and move forward by means of the  key. Move forward up to the last field available with the  key.








## Language

By pressing the  key, it is possible to change the language of the unit. Shift through the languages by means of the  arrows and confirm with .




## Unit of measurement

By pressing the  key, it is possible to modify the unit of measurement (INTERNATIONAL or IMPERIAL). Shift by means of the  keys and confirm with .

## Inner Database

By pressing the  key, it is possible to make your own database. Shift to the field you want to modify by means of the  keys and confirm with . Modify each digit by means of the  arrows and confirm with . Then type the value of the refrigerant charge by means of the  arrows and confirm with .


## Date and Hour

By pressing the  key, it is possible to set the date and hour. Modify each value by means of the  arrows and confirm with .

## Calibration

See section 5.1 below




## Service

By pressing the  key, it is possible to make some service operations using several keys combinations

Password: Recovery - Down - Charge - Vacuum: Cancellation of all the data saved on the SD-Card.

Password: Vacuum - Charge - Down - Up : total zeroing of all the scales


## Contrast regulation

By pressing the  key, it is possible to modify the value of the display contrast by means of the  arrows and confirming with .


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## Data exportation

By pressing the  key, it is possible to export the services performed by the unit into the SD-card (from inside memory to SD-Card). The unit creates a .txt file to import into your own PC. In case the message "ERROR CODE 08" appears, re-start the unit and try again the exportation procedure. To cancel all the data saved in the memory card, follow the procedure explained at "**Service**"

## Workshop data

By pressing the  key, it is possible to modify the 6 lines available on the report to write some information about your own workshop. Once the information have been written, they will be printed on each report.

# 5 Service procedures

## 5.1 Emptying the internal refrigerant bottled


1. Make a vacuum of at least 15 minutes in an external bottle able to contain the refrigerant there is in the internal bottle of the unit.
2. Remove the rear closing door ref. **68**.
3. By means of the HP quick coupler ref. **55** (red), connect the **92** hose to the **89** service connection of the internal bottle (after having removed the protection cap).
4. Connect a service hose (with valve opener) between the valve of the external bottle (previously evacuated) and the **90** service connection of the internal bottle.
5. Close the valve ref. **23**.
6. Open the **83** valve and close the **82** valve.
7. Turn the hand-wheel of the coupler ref. **55** (red) to open it
8. Start the Recovery "ALL" automatic function to empty the internal bottle completely; recovery will stop automatically when there will be no more refrigerant inside the unit.
9. Disconnect the service hose from the **90** service connection and remount the protection
10. Start the Vacuum function by opening the **83** valve on the control panel and perform vacuum and vacuum test for about 30 minutes
11. At the end of the vacuum and vacuum test function, disconnect the **92** hose from the **89** service connection, remount the protection cap and proceed with the scale calibration (see section 5.1.1)
12. At the end of operations, re-open the valve ref. **23** and reassemble the rear door.

## 5.2 "Zero" scale check

The following procedure allows to zero all the scales of the unit at the same time. Such procedure must be performed when the scales do not show the correct value of 0 when the unit is completely empty.

1. Make sure that the refrigerant bottle of the unit and the oil bottles are empty.
2. Wait at least 2 minutes so that the bottle/scale assembly stabilizes before proceeding.

3. Press the  key

4. Select "Service" by means of the  arrows.

5. Confirm by pressing the  key.

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6. Press the following keys in succession: Vacuum, Charge, Down, Up.
  7. When coming back to the standby screen, all the scales will be placed on the value 0.

## 6 Routine maintenance

### 6.1 Material for routine maintenance

n°1 filter direr, model XH412  
n°1 bottle mineral oil for vacuum pump, model K1L  
n°1 bottle of oil for compressor, model SW32  
n°1 kit of gaskets, model G19020

### 6.2 Periodic operations

1. Check all swivel connections for tightening every 10 operations
2. Check the vacuum pump oil level; the oil must be changed at least every 100 hours of operation or once every six months even if the unit is not used frequently. The pump must be off when checking the oil level. Anyway, the unit will inform the operator when the oil must be changed.


### 6.3 Changing the vacuum pump oil

The vacuum pump oil must be change whenever the message “Change vacuum pump oil” appears on the display when the unit is turned on.

The oil also needs to be changed whenever it becomes cloudy. Contaminated oil reduces vacuum pump performances and irreversibly damages its mechanical components.

All draining and refilling operations must be performed when the pump is turned off.

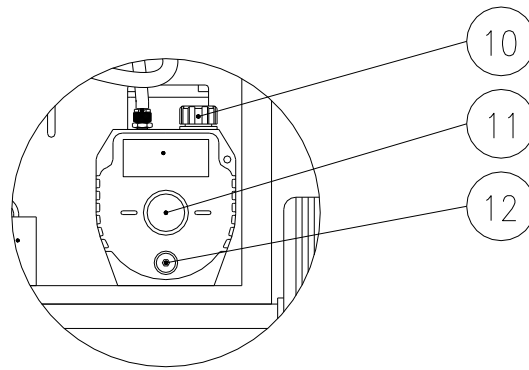
To avoid reduction of the pump efficiency and to maintain its performances, use only K1L oil for maintenance.

1. Before draining the oil, have the pump run for at least 10 minutes with the **82** and **83** valves closed.
2. Turn the recovery unit off by turning the **87** switch to position 0 and disconnect the power cord; strictly observe the sequence of operations
3. Remove the front door ref. **53** of the unit
4. Unscrew the drain plug ref. **12** located at the bottom of the pump
5. Completely drain the oil
6. Screw the drain plug on again
7. Unscrew the filler plug ref. **10** situated on top of the pump
8. Slowly refill the pump with oil until the level covers half of the sight glass (ref. **11**) located on the side of the pump
9. Screw the oil plug on again and re-install the previously removed panel again
10. When the oil change procedure is completed, turn the unit on by turning the **87** switch to position 1
11. When the message “Change vacuum pump oil” appears on the display, if you press the  key, then the counter is set at zero.

#### **WARNING!**

*Do not pollute environment with oil; it is a special waste and must be disposed of according to the regulations in force*





## 6.4 Replacing the filter drier

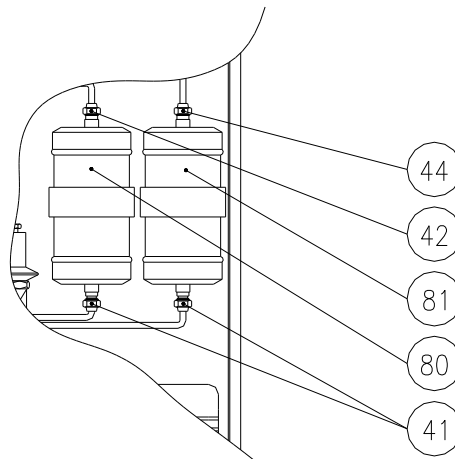
The filter must be replaced whenever the message "Replace filter" appears on the display when the unit is turned on.

The replacement must be effected at the end of the recovery cycle.

1. Turn the recovery unit off by turning the **87** switch to position 0 and disconnect the power cord; strictly observe the sequence of operations
2. Remove the rear door of the unit
3. Remove the old filters ref. **80**, **81** by unscrewing connections ref. **41**, **42** and **44**

### **⚠ WARNING!**



*This equipment is designed for trained personnel only, who must know the refrigeration fundamentals, cooling systems, refrigerants and possible damage that pressurized equipment may cause.*



### **⚠ WARNING!**

*Do not pollute environment with the used filters; it is a special waste and must be disposed of according to the regulations in force.*

4. Remove the gaskets from inside the hoses (ref. **41**, **42** and **44**)
5. Install new gaskets
6. Install new filter driers
7. Remove the protective cap on the **88** connection
8. Connect the valve ref. **56** to the **88** service connection
9. Open the **82** valve and close the **83** valve

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10. Plug in the unit and turn the **87** switch to position I
  11. Press the Vacuum key to start the vacuum pump and keep evacuating for about 30 minutes
  12. When the vacuum operation is complete, close the **82** valve and disconnect the valve ref. **56** from the **88** service connection
  13. Remount the protective cap on the **88** connection, the plastic cover and the rear door
  14. When the filter replacement procedure is completed, turn the unit on by turning the **87** switch to position I
  15. When the message "Replace filter" appears on the display, if you press the  key, you enter the procedure for filter replacement. It is necessary to type the serial number of the filter and then confirm by pressing the  key.

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## 7 Troubleshooting

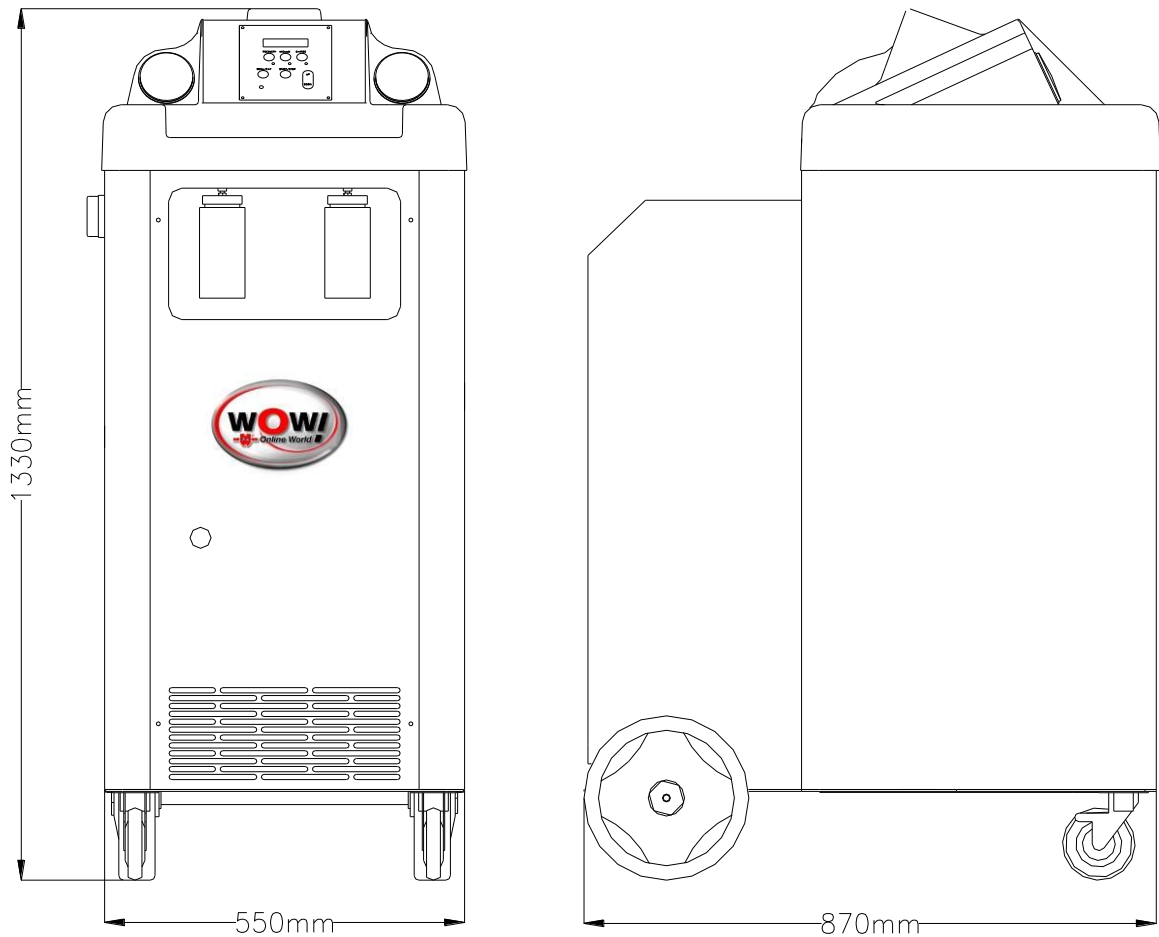
If there is a problem in the unit, this will be displayed with an alarm message. You can recognize the alarm screen easily from the symbol on the left upper side of the screen and from the red led.

Message	Type of error	Solution
No refrigerant	After connecting the unit to the A/C system, the values of the pressure sensors do not vary	Make sure that the unit is connected to the A/C system correctly. Make sure that the A/C system has no refrigerant inside
Refrigerant bottle full	The refrigerant bottle has reached its maximum capacity	Provide to empty the bottle from the refrigerant
Max time reached	The maximum time to complete the cycle has been reached	Re-start the cycle and in case the same problem occurs, contact the after-sales service.
Oil discharge bottle full	The oil discharge bottle has reached its maximum capacity	Provide to empty the bottle from the oil discharged
Max number of attempts reached	The recovery cycle has started more than 3 times	Re-start the recovery cycle and if the problem still occurs, contact the after-sales service
Presence of refrigerant	The unit has found refrigerant when starting the vacuum function. Presence of refrigerant inside the A/C system	Perform a recovery cycle before starting the vacuum function
Vacuum leak	During the vacuum test, there was an abnormal rise of pressure	The A/C system is not completely tight. Provide to find the leak in the A/C system and proceed with a new vacuum cycle.
Max pressure	The maximum pressure inside the recovery circuit has been reached.	Make sure that all connections on the recovery delivery line are open correctly.
Replace filter	The filter capacity is almost full	Provide to replace the filter soon
Change vacuum pump oil	The vacuum pump oil must be changed	Provide to changed the vacuum pump oil
Error code 08	Error during the record of the SD-card	Re-start the unit

## 8 Accessories and spare parts

<b>Code</b>	<b>Description</b>
14015013	XH412 anti-acid filter drier
12002003	K1 L mineral oil for vacuum pump, bottle of 1.000cc
12002006	Ester oil for compressor
14020014001	G19020 kit of gaskets for 1/4sae hoses - 10pcs

## 9 Weight and dimensions



Net weight with empty internal bottle

140 kg



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**COOLIUS 4000 HP** produced by Wigam spa for WOW! Würth Online World GmbH

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**WOW! Würth Online World GmbH**

Schliffenstraße Falkhof

74653 Künzelsau

☎ +49 (0) 7940-981 88 0

☎ +49 (0)7940-981 88 1098

[info@wow-portal.com](mailto:info@wow-portal.com)

<http://www.wow-portal.com>