EASYREC45

PORTABLE REFRIGERANT RECOVERY UNIT

User's manual
ENGLISH

WIGAM

Sistemi e strumenti per condizionamento e refrigerazione
Air conditioning and refrigeration systems and instruments
Anlagen und Geräte für Klima- und Kälteanlagen
Systèmes et instruments pour conditionnement et refrigération
Sistemas e instrumentos para el acondicionamiento y refrigeración

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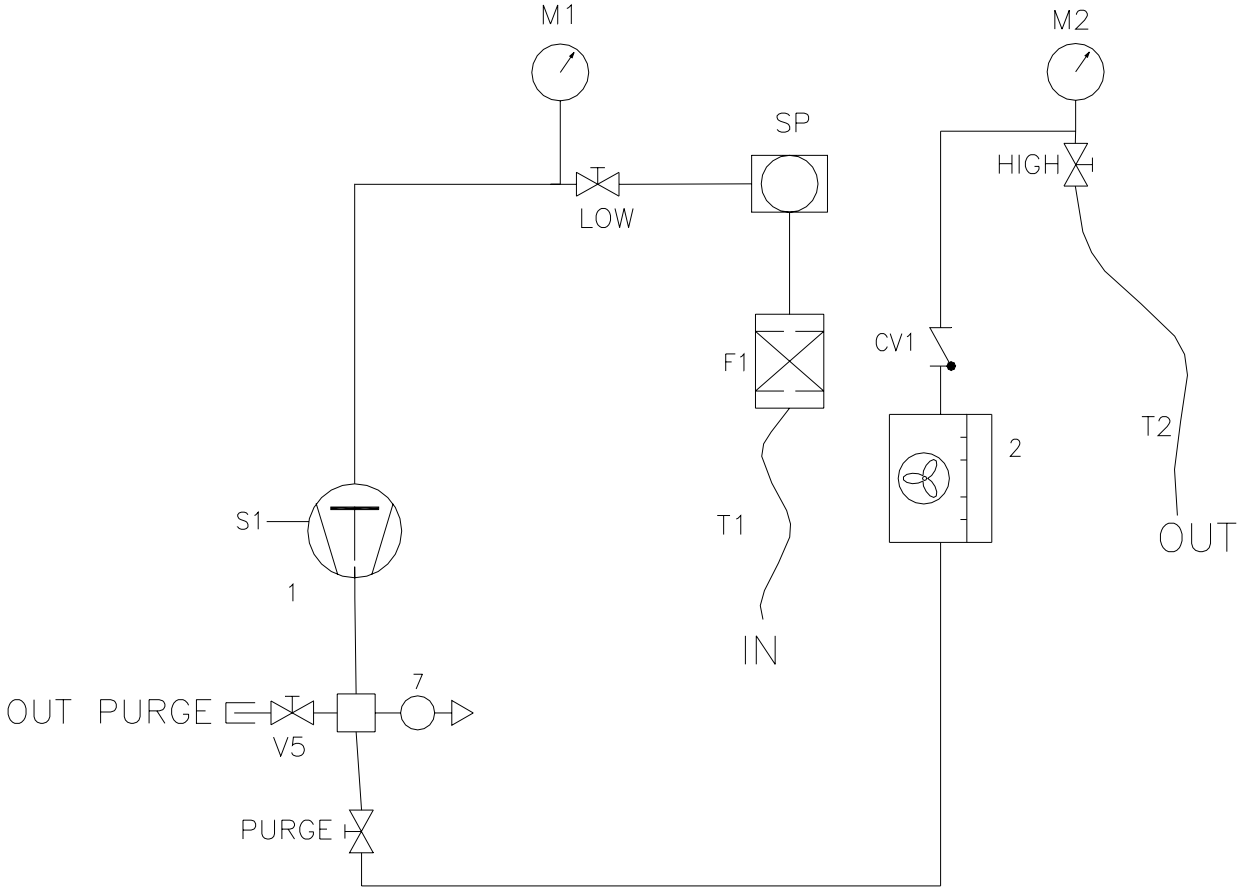
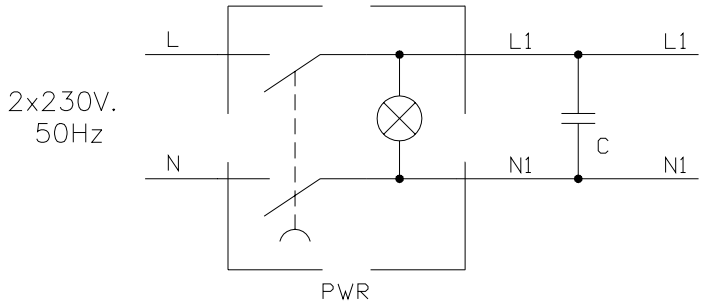
SOMMARIO

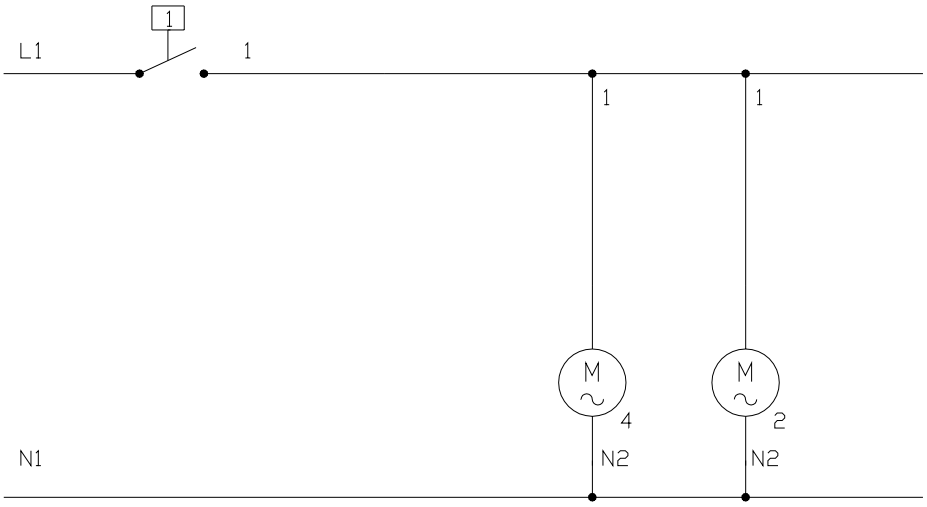
Hydraulic diagram



PWR	Main switch	**OUT**	¼"sae delivery connection
M1	Suction pressure gauge	**IN**	¼"sae suction connection
M2	Delivery pressure gauge	**F1**	Filter drier
LOW	Valve on low pressure line	**V5**	PURGE discharge valve
HIGH	Valve on high pressure line	**PURGE**	PURGE valve function
SP	Sight glass	**S1**	Compressor service connection
CV1	Check valve on delivery line	**1**	Compressor
2	Condensor – fan	**7**	Max pressure switch (27bar)
T2	Delivery flexible hose	**T1**	Suction flexible hose

Wiring diagram





PWR	Main Switch	**C**	Condenser
1	MAX pressare switch	**4**	Compressor
2	Fan		

WARNING

Safety precautions

a) 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.

b) 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.

c) Do not operate the unit with different refrigerant than the one it has been designed for.

d) 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.

e) Avoid skin contact; the low boiling temperature of the refrigerant (about -30°C) can cause freezing.

f) Avoid breathing refrigerant vapors.

g) It is recommended to wear suitable protections like safety glasses and gloves; contact with refrigerant may cause blindness and other personal injuries.

h) 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.

i) Always make sure that the unit is connected to a suitably protected mains supply provided with an efficient earth connection.

j) 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.

k) Operate the unit only in locations with suitable ventilation and a high number of air changes.

l) 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.

m) Never fill any tank with liquid refrigerant to more than 75% of its maximum capacity.

n) 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.

o) The equipment must always work under the operator's control.

p) Protect the unit from dripping.

q) Do not modify the calibration of safety valves and control systems.

r) 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.

1. Introduction to the recovery unit EASYREC45

Considering its reduced volume and the extreme facility of transportation, the unit is suited for interventions on civil conditioner, automotive vehicle conditioners, dispensers, domestic and commercial refrigerators and dehumidifiers.
The unit is supplied with an oil-less compressor without lubricant.

2. Standard equipment and component description.

2.1 RECOVERY COMPRESSOR

The unit model EASYREC45 is equipped with an oil less compressor and is adapt for any type of CFC, HCFC and HFC refrigerant.

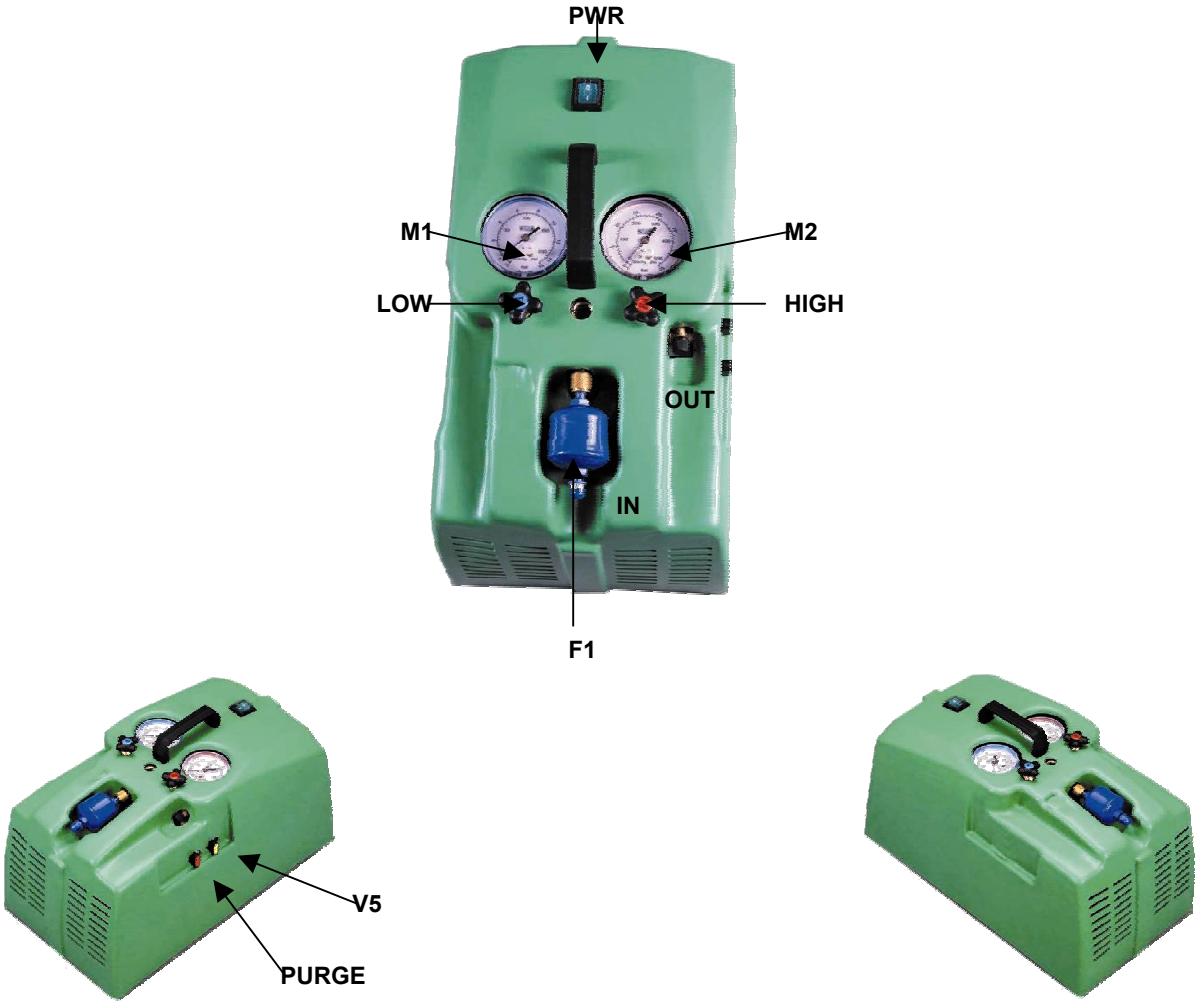
2.2 FILTER

The filter drier is equipped by ¼" sae threaded male connections. A knurled female swivel connection connects the filter to the cooling system and allows the manual removal of the filter for the periodic maintenance.

2.3 PRESSURE GAUGES

The unit EASYREC45 is equipped with two dry pressure gauges Ø80mm, that can be adjusted, with braked movement "PULSE FREE" to eliminate needle vibrations and allow a more accurate reading. One pressure gauge on the suction line and one on the discharge line, allow the pressure checking during recovery and refrigerant transfer with the Push-pull method.

3. Control panel



PWR	Main switch	**OUT**	¼" sae delivery connection
M1	Suction pressure gauge	**IN**	¼" sae suction connection
M2	Delivery pressure gauge	**F1**	Filter drier
LOW	Valve on low pressure line	**V5**	PURGE discharge valve
HIGH	Valve on high pressure line	**PURGE**	PURGE function valve

4. Recupero del refrigerante dall'impiato A/C

4.1 WARNING

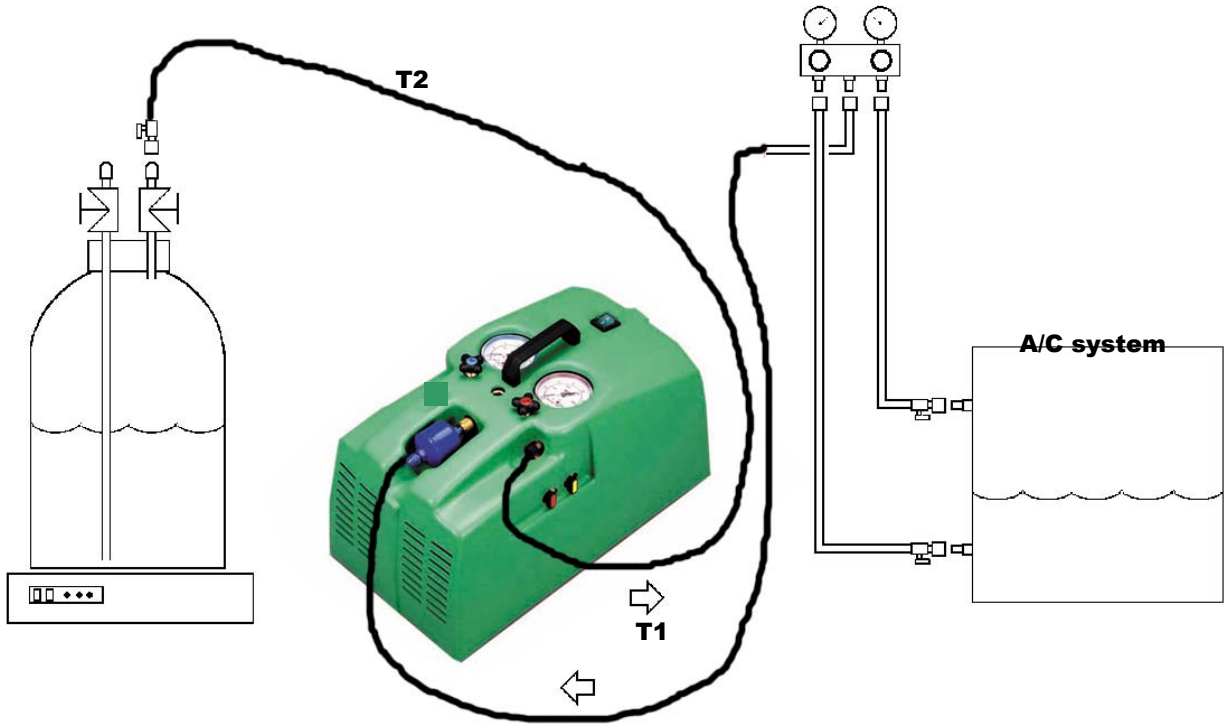
To recovery the refrigerant in a quick and efficient way, it is recommended to connect the recovery unit to the cooling system trough a 2-way manifolds and flexible hoses with ball valves, which are not included on the standard equipment.
Before starting the operation of refrigerant recovery , the manifold, the flexible hoses and the filter drier should have been in advance evacuated.
During refrigerant recovery, the cooling system must be extinguished.

4.2 REFRIGERANT RECOVERY

ATTENTION

During all the recovery phase be sure that the PURGE valve will be opened and that the V5 and V6 valve will be closed

a) By flexible hoses equipped by a ball valve, connect the refrigerant circuit to the recovery unit as shown by the picture.



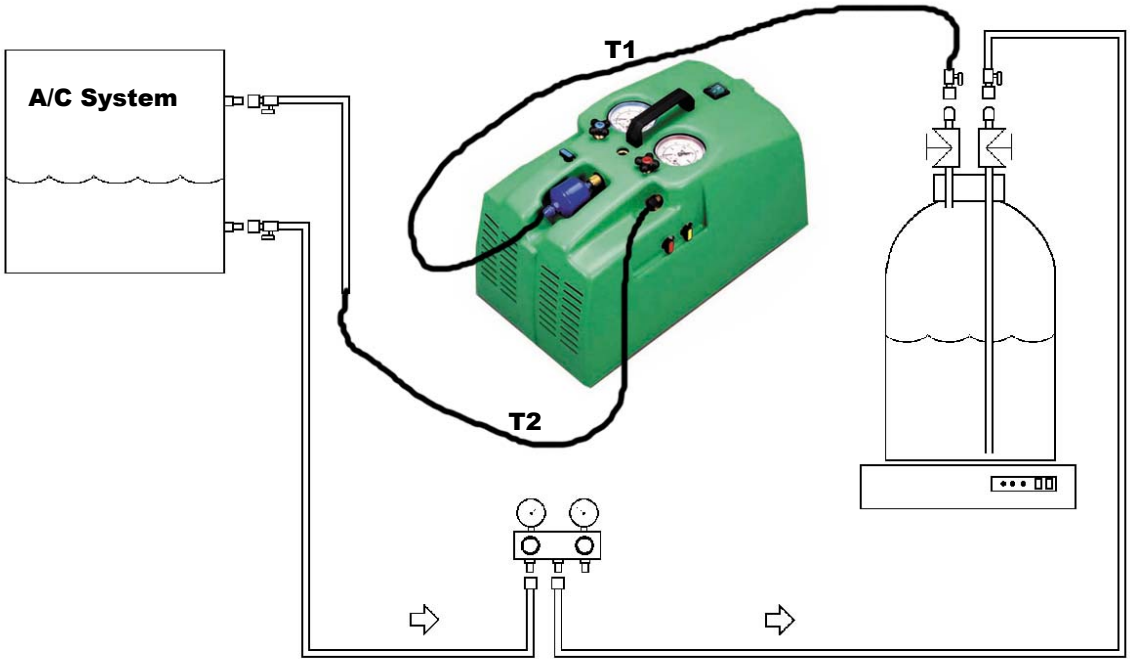
b) Connect the T2 flexible hose valve (delivery) to the cylinder of stockage.
c) Open the manifold valve (manifold is not supplied with the unit)
d) Open the stockage-cylinder's valve
e) Open the T1 and T2 flexible hoses valves (flexible hoses not supplied with the unit)
g) Switch the recovery's unit on (green switch of the control panel in position **I**), the starting of the switch's warning light indicate that the recycling is beginning.
Slowly open the LOW valve regulating the pressure on the M1 blue pressure gauge to avoid that it twill be higher than 4 bar.
When the inside pressure of 2 bar has been reached (low blue pressure gauge – M1), turn the unit off putting the PWR switch at 0 and close valve HIGH

5. Refrigerant transfer with push-pull method

Duly connected by the push-pull method, the recovery unit allows the rapid transfer of the liquid refrigerant from the refrigerant system to an external cylinder.

5.1 WARNING

Connect the recovery unit and the refrigerant circuit by a 2-way manifold, flexible hoses with ball valve, a cylinder with double valves (liquid-vapour) and a filter drier; these items are supplied separately on request and must be connect as shown by the picture:



Before use, make sure that all the flexible hoses, the filter drier, the stockage-cylinder and the recovery unit have been in advance evacuated or that they contain the same refrigerant as the one to be transferred.
Make the refrigerant's transfer with the refrigerant's system turned off.
The stockage-cylinder must have a capacity equal to the quantity of refrigerant that has to be removed, anyhow, it must be not charged further than 75% of its maximum capacity.
It is recommended the use of an electronic scale in order to check the refilling of the stockage-cylinder.

5.2 REFRIGERANT'S TRANSFER

a) Operate on the refrigerant's system in order that the most part of the refrigerant will be pumped in the liquid receiver
b) By flexible hoses with ball valve, connect the manifold to the connection of the cooling system liquid receiver of and to the stockage-cylinder liquid valve (with tube) (see the above figure)
c) By a flexible hose (T1) with ball valve, connect the recovery unit filter drier (IN) to the stockage-cylinder vapour valve (valve without tube)
d) By a flexible hose (T2) connect the exit connection (OUT) of the recovery unit to the vapour connection of the A/C system
e) Open the LOW and HIGH valves of the recovery unit
f) Open the V1 and V2 valves of the flexible hoses T1 and T2 of the recovery unit
g) Open the connections flexible hoses ball valves
h) Open the manifold valves
i) Open the stockage-cylinder valves

k) Keep the warning switch 0-I in position I; the starting of the warning light of the green switch indicates that the refrigerant transfer has begun.

Watch the manifold sight glass; the refrigerant transfer from the liquid receiver to the stockage-cylinder is complete when you can see through the sight glass that the liquid refrigerant has stopped flowing.

l) When the refrigerant transfer has been completed, close the cylinder vapour valve (valve without tube)
m) Close the V1 valve and wait to read on the low pressure gauge M1 a pressure of -0.2 bar
n) Turn the recovery unit off (warning light **0-1** in position **0**)
o) Close the cylinder liquid valve and the flexible hose ball valve connected to it.
p) Close the V2 valve of the T2 flexible hose connected to the filter drier
q) Close all the manifold and flexible hoses valves used for the connections

The recovery of the residuals gaseous refrigerant from the inside refrigerant system can be done connecting the unit as shown in "4.2 Refrigerant Recovery"

6. Unit's drainage before the use with different "PURGE" refrigerant

6.1 WARNING

Once the filter drier has been used with a type of refrigerant, it is closely imbued with it; so, before use the recovery unit with a different refrigerant, it is necessary to substitute the filter drier and eliminate the residual refrigerant from the unit itself.

6.2 DRAINAGE – "PURGE" FUNCTION

Considering the humble quantity of residual refrigerant in the unit, drainage can be effected disposing of a big capacity cylinder duly evacuated.

a) Through a flexible hose connect the PU connection, placed on the rear right side of the unit, to the connection in vapour phase of an empty cylinder and verify that the PURGE (right side), V6 (left side) valves on the control panel will be closed.
b) By a T2 flexible hose, connect the delivery connection (OUT) to the suction connection (IN) on the F1 filter.
c) Open the V5 valve
d) Verify that the LOW, HIGH valves and its eventuals valves on the T2 flexible hose will be opened.
e) Start the unit keeping the PWR switch in position 1
f) Wait till the pressure read on the M1 blue pressure gauge of low pressure reaches -0.2 bar
g) Switch the unit off keeping the PWR switch in position 0-
h) Close the LOW and HIGH valves and disconnect the T2 hose from the filter
i) Close the V5 valve and open the PURGE valve

7. Ordinary maintenance

7.1 REQUIRED MATERIAL

n°1 MG111 filter drier
n°1 G19020 kit of 10 gaskets for flexible hose with ¼" SAE connections

7.2 PERIODICAL INTERVENTATIONS FOR ORDINARY MAINTENANCE

a) Replace the swivel connections gaskets of the flexible hoses as soon as they present wear marks.
b) Replace the F1 filter each time a type of refrigerant is changed and at least once every 6 months.

8. Max pressure switch resetting

When the pressure of 27 BAR has been reached, the max pressure switch, which the unit is due, operates restraining all the functions.
To start the unit remove the RESET plastic cap on the right side of the unit and revive the max pressure switch.

9. Technical features

Model	EASYREC45		
Refrigerant	CFC-HCFC-HFC		
Compressor	dry		
Recovery speed	Vapour	kg/h	15
	Liquid	kg/h	45
	Push-Pull	kg/h	200
Noise level	dB(A) <70		
Use of temperature(°C)	0 ÷ +40		
Storage temperature (°C)	-10 ÷ +50		
Protection degree	IP20		
Power set up	525W		
Electrical supply	230/1/50-60		
Dimensions (mm)	410 x 390 x 260		
Weight (Kg)	16		

Loc.Spedale 10/b 52018 Castel San Niccolò (AR) ITALY
Tel. ++39-0575-5011 Fax. ++39-0575-501200
www.wigam.com - ufficio.tecnico@wigam.com