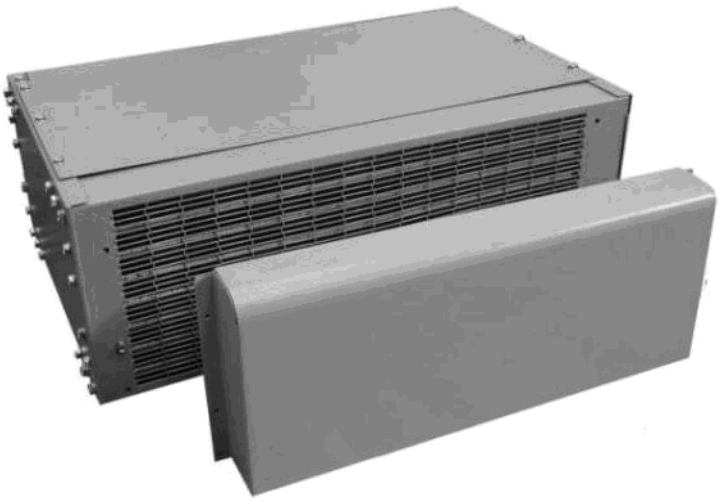
CE

Telair

AIR CONDITIONER

Split BIPOWER



Split BiPower

7000H

MANUAL FOR INSTALLATION AND USER MANUAL

GB ENGLISH

V.001 - OCTOBER 2005

Telair
Via E. Majorana, 49 48022 Lugo (RA) ITALY

CE STATEMENT OF COMPLIANCE

Under the EEC Machine Directive 89/392/EEC, attachment II A

We hereby declare that the air conditioner, the data of which are provided below, has been designed and built to comply with the essential requirements in terms of safety and health laid down by the European Directive on Machine Safety.

This statement shall fail to be valid should any changes be made to the machine without our approval in writing.

Machine: AIR CONDITIONER

Model: SPLIT BIPower 7000H

Serial Number ……

Directive of reference:

Machine Directive (89/392/EEC) in the 91/31/EEC version.
Low Voltage Directive (73/23/EEC).

Electromagnetic compatibility (89/336/EEC) in the 93/31/EEC version.

Harmonized standards applied, especially: EN 292-1; EN 292-2; EN 60204-1.

DATE ……October 3rd, 2005

THE CHAIRMAN

INDEX

1 FOREWORD

Read this manual carefully before carrying out any kind of operation on the air conditioner.

1.1. Purpose and scope of application of this manual

This manual has been drawn up by the Manufacturer in order to provide the essential information and instruction needed to carry out every maintenance and use operation on the air conditioner in a proper and safe manner.
It is an integral part of the equipment of the air conditioner, and must be kept carefully throughout its lifetime and protected against any agent which might deteriorate it. It must follow the air conditioner if this is reinstalled on another vehicle or if there is a change of property.
The information contained in this manual is addressed to the staff which must install the air conditioner, and to all those involved in maintenance and use.
This manual lays down the purpose for which the machine was built and contains all the information needed to ensure its safe and proper use.
Constant compliance with the instructions contained in it ensure the safety of the user, economy of use and longer machine life.
In order to make it easier to consult, it has been subdivided into sections which identify the main ideas; to consult it quickly, refer to the table of contents.
The parts of the text which must not be ignored are highlighted in bold type and preceded by symbols which are explained below.
We strongly suggest reading the contents of this manual and of the documents of reference carefully: this is the only way to ensure proper operation of the air conditioner through time, its reliability and the prevention of any damage to people or things.

Note: *the information provided here was correct at the time of going to press, but may be modified at any time without prior notice*.

1.2 Symbols and definitions

This means you must be careful to avoid serious consequences which could lead to the death or injury of people.

This means a situation which could take place within the lifetime of a product, system or installation considered to be hazardous in terms of injury to people, damage to property or to the environment or financial loss.

This means you must pay attention in order to incur serious consequences which could lead to damage to material goods, such as resources or the product.

This refers to information which is especially important.

Drawings and photos are provided by way of example only. Although the machine you actually have may differ from the illustration in this manual, its safety and the information provided for are guaranteed.

The manufacturer, in order to pursue a policy of constant development and updating of the product, may make changes without giving prior notice.

1.3 General information

Every ***SPLIT LINE*** air conditioner consists of two separate units:

1) ***CONDENSER UNIT*** which can be installed outside the vehicle, inside the double bottom, inside the garage or a bench or a cabinet. The purpose of this unit is to drive our hot air during the conditioning stage and cold air during the heat pump stage.

2) ***EVAPORATOR UNIT*** (or AERATOR) which must be installed on the roof of the vehicle in the place of a porthole (39,5 x 39,5) or else on an opening of the same size made on an area of your choice on the roof itself. It has the purpose of cooling the air inside the vehicle.

Both units are connected to each other by two very thin hoses (6 and 10 mm). The hoses are connected to the two units by coupling joints which do not require any special tool.

All the **SPLIT BIPOWER** air conditioners have been designed for **230 Volt AC** and **12 Volt DC** feeding.

WARNING ***The 230 Volt feeder takes priority; when you connect the SPLIT BIPOWER air conditioner to a power source, the battery disconnects automatically.***

2 AIR CONDITIONER IDENTIFICATION

2.1 Components (Fig. 1)

A) 1 CONDENSER UNIT
B) 4 SILENT BLOCKS
C) 1 SUCTION CONVEYOR
D) 1 EXTENSION 6 m TUBE D. 6 mm
E) 1 EXTENSION 6 m TUBE D. 10 mm
G) 1 EXTENSION CONTROL CABLE
H) 1 EVAPORATOR UNIT
I) 1 COLD AIR CONVEYOR
L) 1 DIFFUSER WITH CONTROLS

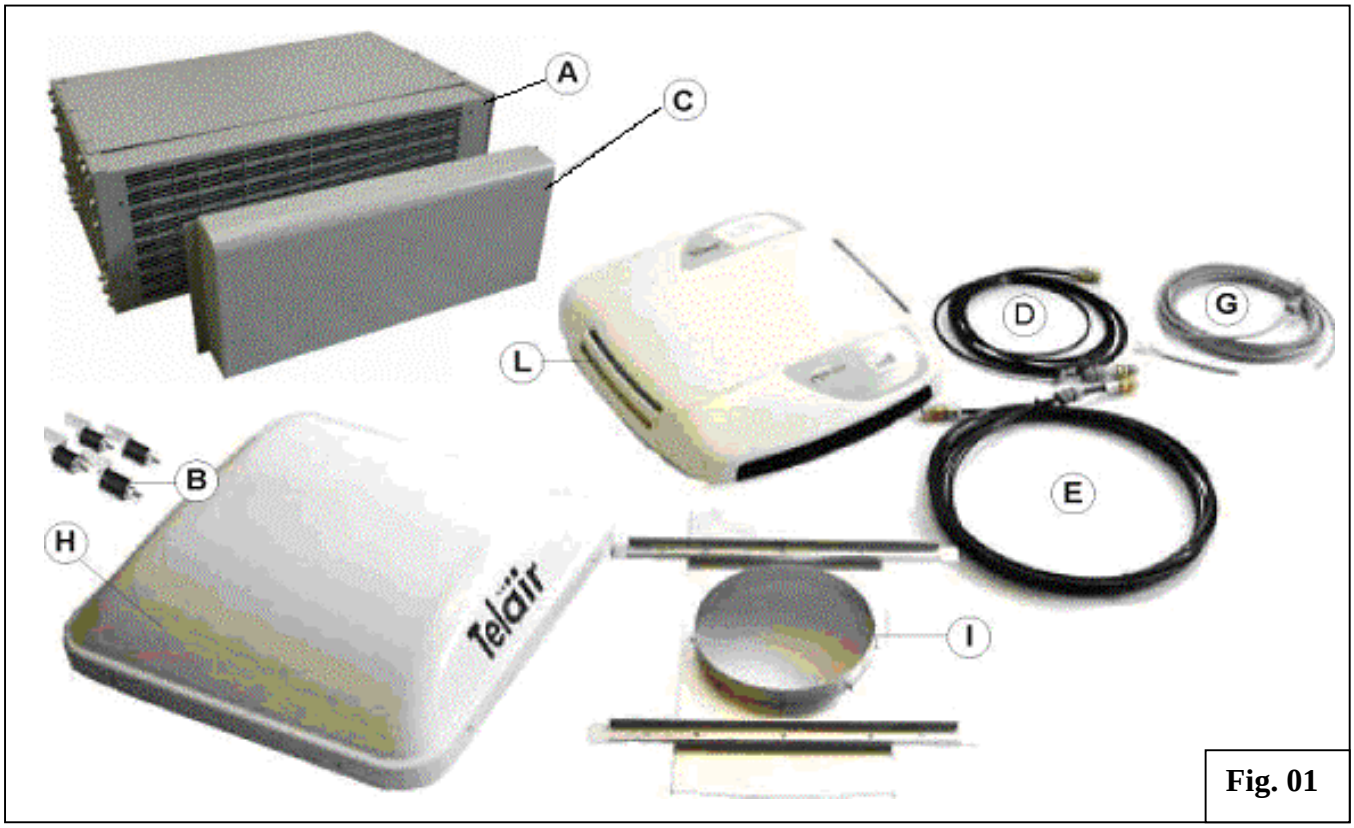


Fig. 01

2.2 ID plate

1 Model
2 Machine code
3 Serial number
4 Cooling power
5 Compressor and fan consumption
6 Heating power
7 Type and quantity of refrigerating gas
8 Weight

(1) Split BiPower 7000H

(2) CODE: 03151 **(3)** S.N.051036001
(4) Cooling capacity: ..... 1.85 kW
(6) Heating capacity: ..... 1.85 kW
Frequency: ..... 50 Hz
(5) Inlet Power: .....650W = / 920 W~
Voltage: ..... 12 Vdc / 230 Vac
(7) Gas: ..... gr 360 -.R134a
(8) Weight:.....45 kg

8 0 1 5 5 6 4 0 0 6 0 4 0 7 CE

2.3 Technical features

Split BiPower 7000H		
Refrigerating power	6500 BTU/1.85 kW	
Heat pump power	1.85 kW	
Feeding	12 Vdc / 230Vac-50 Hz	
Consumption	54 A/12 Vdc	4.0 A/230 Vac
Pick-up current	14 A ~ (0.15 sec.)	
Absorbed power	650W = / 920 W~	
Refrigerating gas	R 134 a	
Required power generator	2200 W	
Number of fan speeds	**2** + auto	
Air supply	300 m^3/h	
Diffuser height	7 cm	
Dimensions (H x L x W)	20 x 65.1 x 47 cm	
Weight	45 kg	

3 TRANSPORT, HANDLING, STORAGE

3.1 Storage

During transport, the air conditioner is protected by a suitable carton packaging. The air conditioner must be stored in a horizontal position, in a covered, dry and ventilated environment.
The package is made to allow up to five (5) condensing parts and up to five (5) evaporating parts to be stacked.

CAUTION ***Do not turn the package upside down. The right position is shown by the symbol stamped on the package (↑).***

DANGER ***Stacking a larger number of items than the number specified above, complete with their packaging, is dangerous not only for the integrity of the equipment, but is also hazardous for people.***

3.2 Weight

Weight not including packaging.
Split BiPower 7000H *condensing part* .... **kg 45**
Split BiPower 7000H *evaporating part* . **kg 13,5**

3.3 Handling

The air conditioners, complete with their packaging, can be handled using ordinary hoisting and transport means.
The boxes are fitted with spacers which allow you to introduce transpallet forks.

DANGER ***When hoisting and transporting, comply with accident prevention and safety rules. Use hoisting and transport equipment with a capacity greater than the load to be hoisted***

4 INSTALLATION

4.1 Preliminary information

INFORMATION ***Before installing the air conditioner, you must by all means read these instructions in order not to make any mistake while installing.***

WARNING ***Improper installation of the air conditioners may lead to irreparable damage to the equipment and compromise the safety of the user.***

Should the air conditioners be installed in a manner which does not comply with the instructions of this manual, the Manufacturer shall not be held liable for any failure or for the safety of the air conditioner, according to the law DM 89/392/EEC. The Manufacturer shall also not be liable, in such a case, for any damage to things or injury to people.

DANGER ***Installation must be performed only by qualified and properly trained staff.***

4.2 Installation

WARNING ***Before installing, you must cut off all the power supply to the vehicle.***

- Battery positive pole
- Generator unit (if any)
- Outside power source.

DANGER ***To comply with the above instructions may lead to electrical discharge.***

DANGER ***Before getting onto the roof of the vehicle, make sure it is strong enough to be walked on. Check with the provider of the vehicle. Should it not be strong enough, you must set up a special trestle with scaffolding.***

4.3 Installing the condenser unit

When you install the condenser unit, remember it must always communicate towards the outside via at least two openings **Fig. 02 Ref. (1) and (2).**
In fact, the condenser unit sucks air in from the outside via the opening **Fig. 02 Ref. (1)**, then – after having used it to cool the condenser inside – it again drives the heated air out via the opening **Fig. 02 Ref. (2).**
Two kinds of installations can be made:

4.3.1 "A" type installation

The condenser unit sucks in the outside air from the side and drives the hot air out towards the bottom.

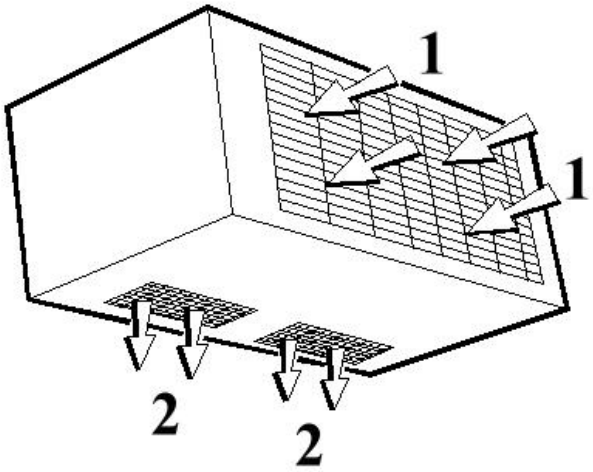


Fig. 02 type A
1 AIR INLET FROM THE OUTSIDE
2 AIR OUTLET FROM THE INSIDE

4.3.2 "B" type installation

The condenser unit sucks in the outside air from the bottom and drives the hot air out towards the bottom too. This kind of installation calls for greater attention, since it is of the utmost importance that the hot air which is driven out is not sucked back in via the opening **Fig. 03 Ref. (1)**, as this would diminish the efficiency of the conditioner.

Should the condenser unit be installed outside the vehicle, do not place the air inlet hole against a wall which could limit the passage of air. If the unit is too close to the ground (less than 40 cm), the hot air – driven out from **Fig. 03 Ref. (2)** – as it springs back from the ground could be sucked in again by the opening **Fig. 03 Ref. (1).**

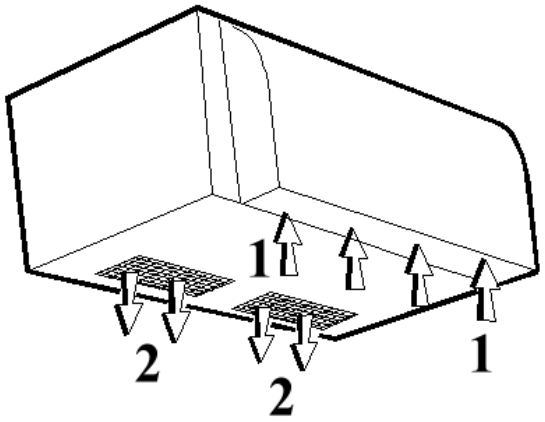


Fig. 03 type B
1 AIR INLET FROM THE OUTSIDE
2 AIR OUTLET FROM THE INSIDE

If you install the condenser unit inside the vehicle, you must be careful to keep the flow of the sucked in outside air separate from that of the hot air driven out, and also prevent the expelled hot air from getting inside the vehicle.
To separate the two air flows, use a soft sponge adhesive liner **Fig. 04 Ref. (3)**, placing it against the floor, in order to prevent the hot air coming out from **Fig. 04 Ref. (2)** from being sucked in through the opening **Fig. 04 Ref. (1).**

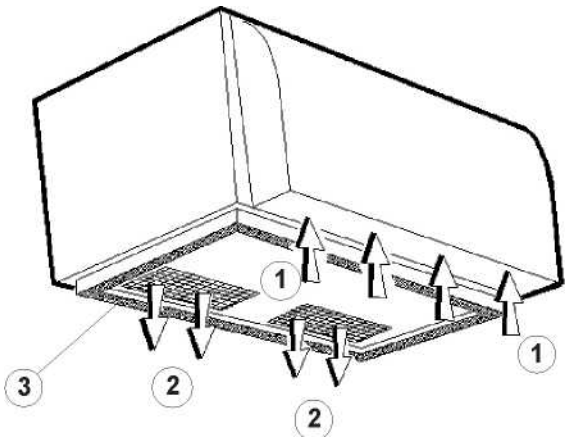


Fig. 04

After having prepared the area of installation of the condenser unit, you should connect the gas pipes and the extension cables, before finally fastening the unit in place.

The metal container has been set up so as to let both gas pipes, the 2 extension cables, the 230 Volt feeding cable out on the short side **Fig.05 Ref. 3.** and the 12 Vdc feeding cables of the air conditioner out on the long side **Fig. 05 Ref. 2**

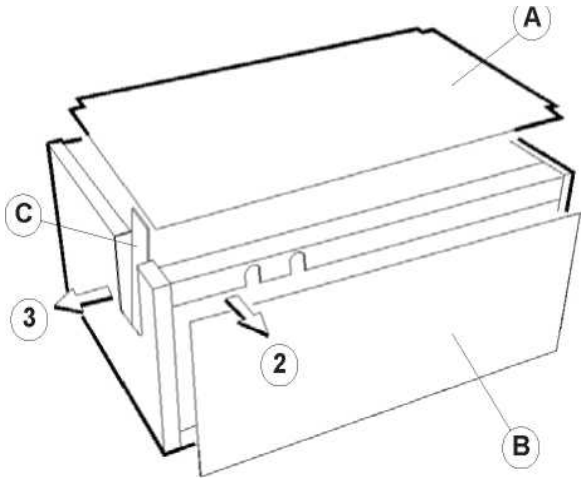


Fig. 05

Connect both extension cables to the relevant connector inside the condenser unit **Fig. 06.**

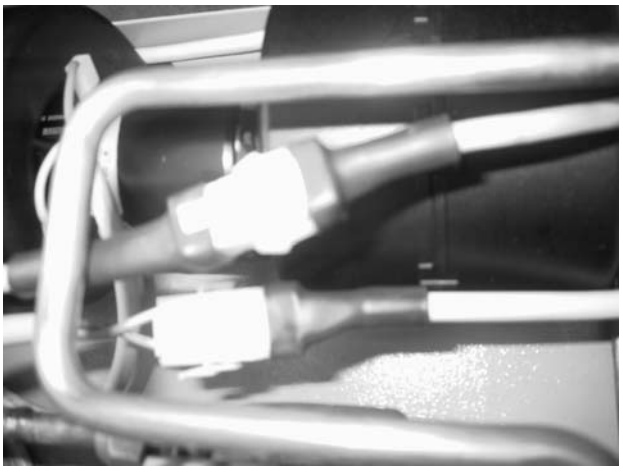


Fig. 06

The extension cables and the feeding cable are provided with fairleads which must be housed in the suitable seat **fig. 07**

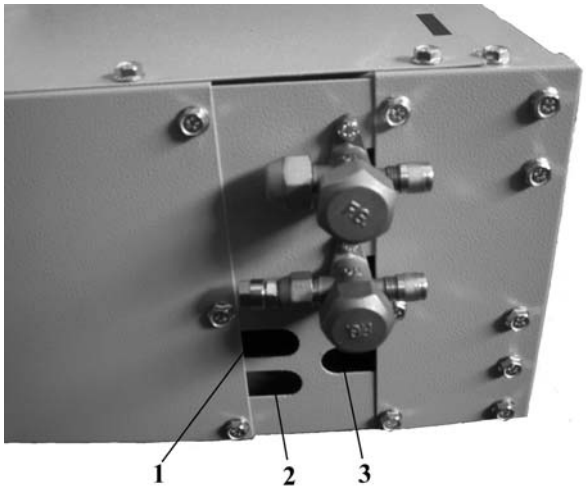


Fig. 07

as shown on **Fig. 08**

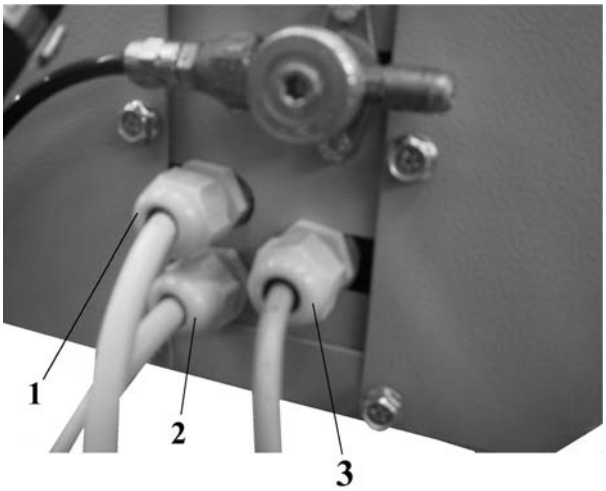


Fig. 08

4.3.3 230 Vac power supply of the condenser unit

In order to power-supply the condenser unit, it is necessary to arrange a three-pole (phase-neutral-earth) cable having a **minimum cross section of 2.5 mm^2** for each pole. The electric cable must be connected, at one end, to the **thermomagnetic switch** (which should previously have been installed in the switchboard of the vehicle). The other end of the cable must be connected – via a suitable

shielded terminal board – to the power supply cable which must previously be let out by positioning the fairlead **Fig. 08**

4.3.4 12 Vdc power supply of the condenser unit

In order to power-supply the condenser unit, it is necessary to arrange a red cable **(+)** and a black cable **(-)**. These must have a **minimum cross section of 25 mm²** for each pole. The electric cable must be connected, at one end, to the 2 poles **(+ / -)** of a battery.

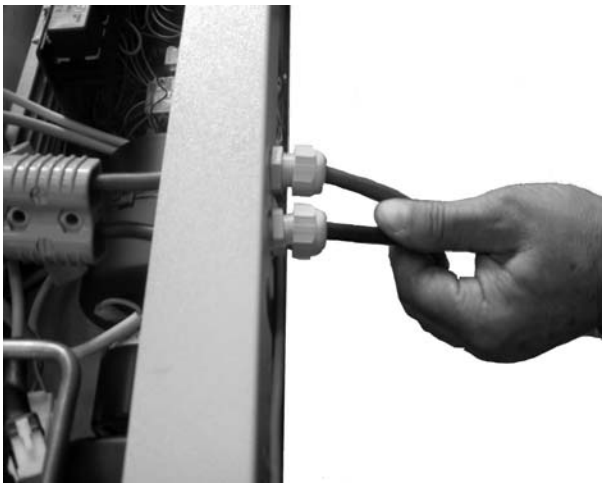


Fig. 09

The other end of the cable must go through the two fairleads which have previously been housed in the suitable seats **Fig. 09**
Afterwards the two cables must be connected to the supplied connector, via the suitable plugs **Fig. 10**

DANGER ***Before making any electrical connection, always make sure that there is no voltage inside the distribution switchboard and at the end of the cables***

DANGER ***The electrical cable must be placed into suitable sheaths which are able to ensure proper insulation under every conditions of use of the vehicle.***

Fig. 10

4.4 How to fasten the condenser unit

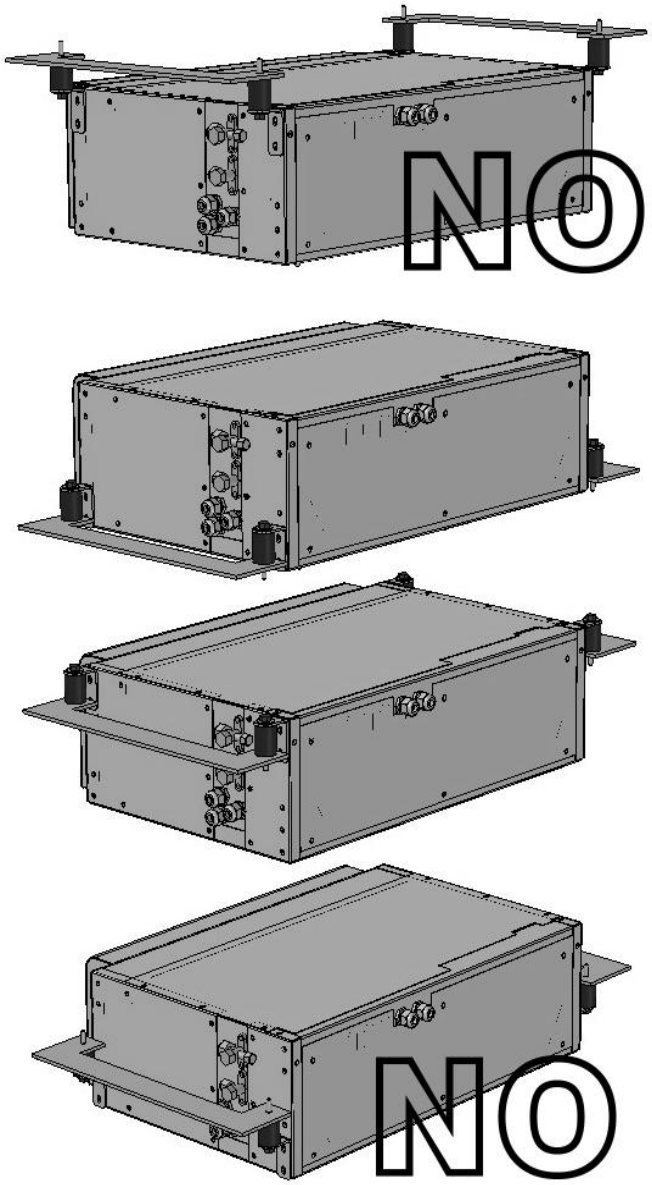


Fig. 11

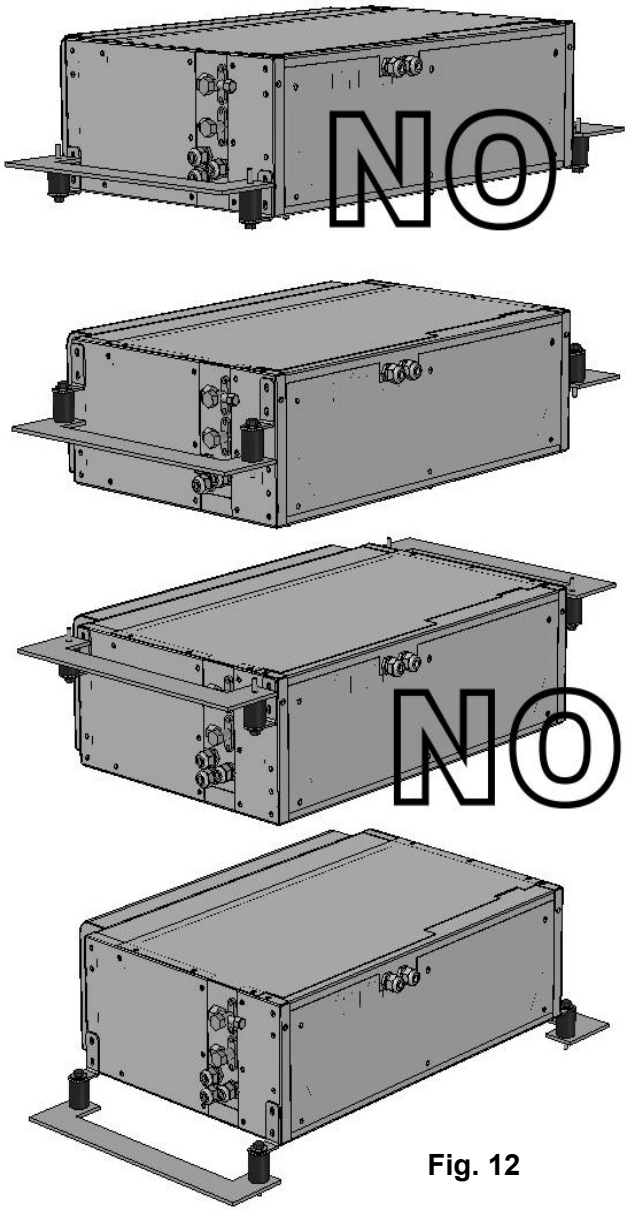


Fig. 12

The condenser unit may be installed either suspended on two brackets (not provided with the supply) on the outside of the vehicle, or resting on the floor on the inside.

Every conditioner comes provided with 4 L-shaped brackets **Fig. 09 Ref. 3** and 4 silent-blocks **Fig. 09 Ref. 3.**
In order to avoid transmitting any vibrations from the condenser unit to the floor, it is important to fasten the unit onto the silent-blocks.

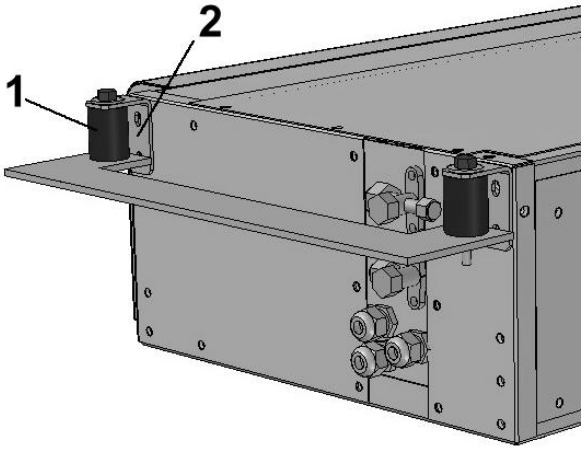


Fig. 13

Special attention should be paid when positioning the silent-blocks which must be subject to compression **Fig. 12** and **Fig. 13**

4.6 How to connect the pipes in the condenser unit

Screw out the plug **Fig. 14 Ref. 1** of the service low pressure valve **Fig. 14 Ref. 2**
Screw out the plug **Fig.14 Ref.5** of the service high pressure valve **Fig. 14 Ref. 3** paying attention NOT TO SCREW OUT the fitting **Fig. 14 Ref. 4**

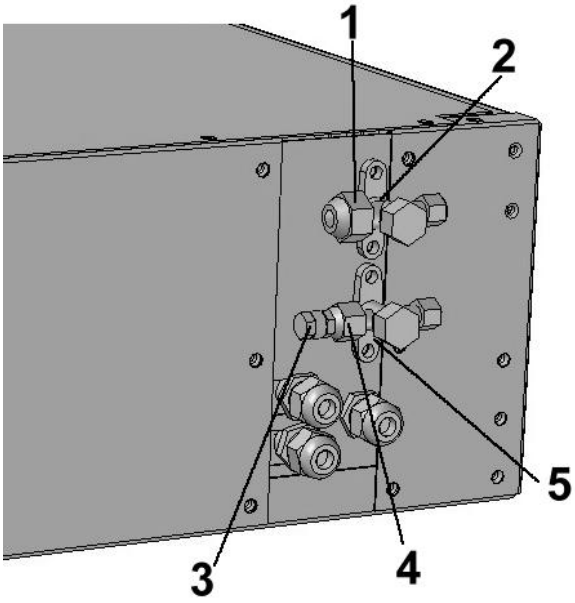


Fig. 14

Keep the plugs of **Fig. 15 Ref. 1** and **Ref. 3** together with the user manual.
Screw down the fitting integral to the low pressure pipe on the service low pressure valve **Fig. 15 Ref. 2.**

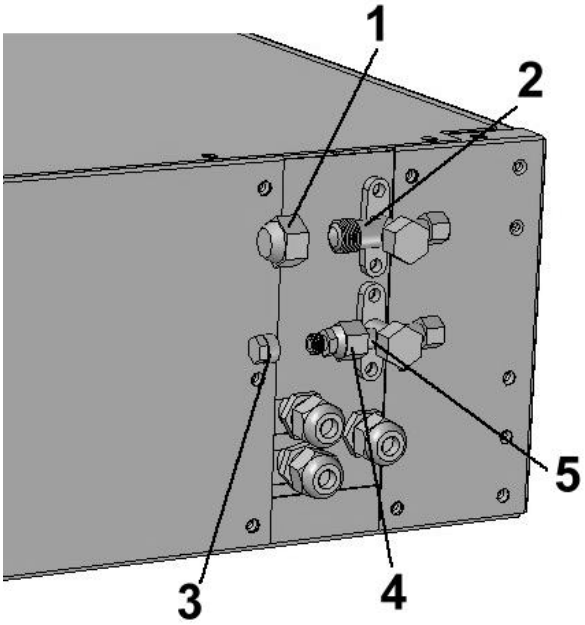


Fig.15

Screw down the nut integral to the high pressure pipe on the fitting **Fig 15 Ref. 4** which is located on the service high pressure valve **Fig. 15 Ref. 5**.
Hold the fitting **Fig. 15 Ref. 4** still by means of the suitable wrench.
You will get a connection as shown on **Fig. 16**

Fig. 16

5 INSTALLING THE EVAPORATING (AERATOR) UNIT

The evaporator unit may be installed in either of two ways:

- using the ventilation holes (ventilation portholes) already present on the vehicle.
- opening a new hole.

5.1 Using the ventilation port

This solution can be applied on condition that the porthole measures 395x395 mm.
First remove the porthole after having taken out the screws which fasten it to the roof of the vehicle.
Scrape away all the sealing material located around the opening **Fig. 17 Ref. 1** and suitable close the holes of the screws and the joint lines using silicone or putty of a kind easily available in specialized shops **Fig. 17 Ref. 2.**

INFORMATION ***Every kind of scrap, glue, silicon, liners and so on should not be disposed of within the environment, but should be put in special containers and delivered to Collection and Disposal Centres*.**

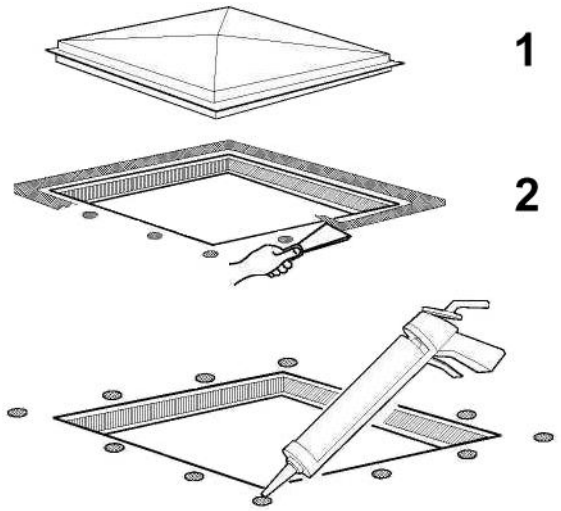


Fig. 17

5.2 Opening a new hole

On the roof, chose an central area between two stanchions and use a felt pen to mark off a square measuring 395 mm on each side **Fig. 18 Ref. 1.**
Use a small saw to carefully cut the opening on the roof. Be careful not to cut any electric wires **Fig. 18 Ref. 2.**

CAUTION ***Wear goggles and safety gloves before using any electrical tools or manual saws.***

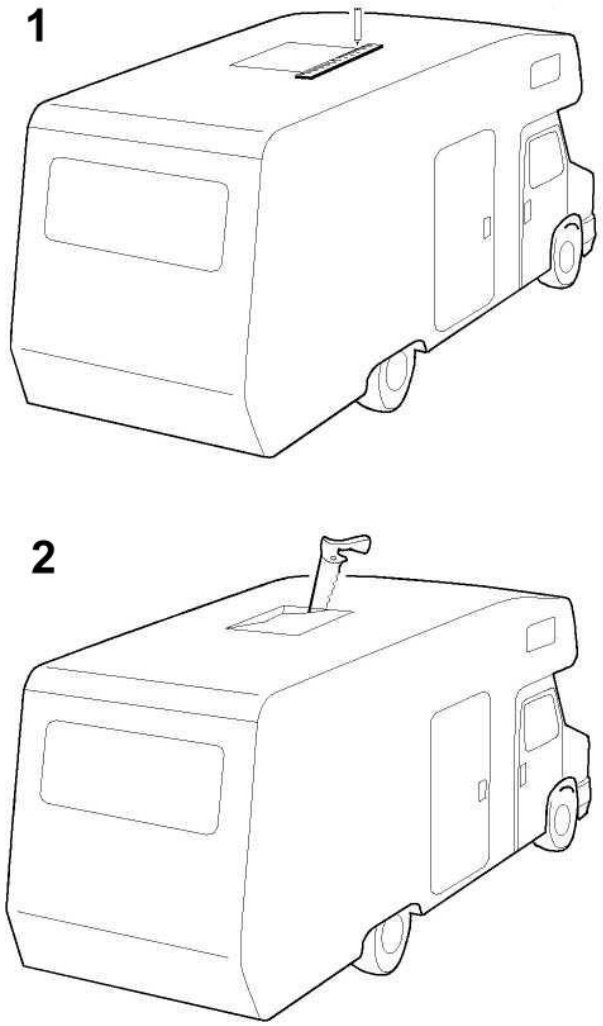


Fig. 18

Place a reinforcing frame (**Fig. 19**) along the profile of the opening**.**

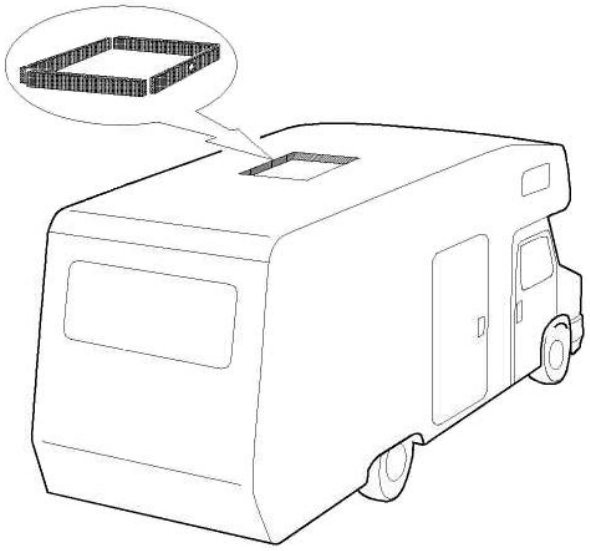


Fig. 19

5.3 Positioning the evaporating unit

Before positioning the evaporating unit on the roof of the vehicle, you must spread a proper amount of slow-drying sealant around the edges of the opening. Put the evaporating unit onto the roof of the vehicle and place it over the opening, previously treated with the sealant. Make sure that the side holes (which are on the bottom) **Fig. 20 Ref. 1** face the driving direction of the vehicle,

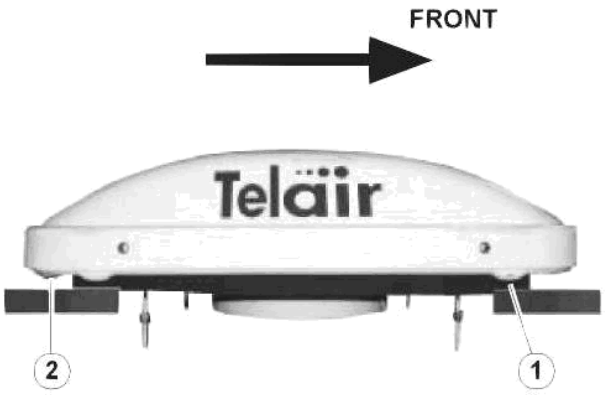


Fig. 20

while the rear holes **Fig. 20 Ref. 2** follow the rear of the vehicle.
The arrow on **Fig. 20** shows the driving direction of the vehicle.

INFORMATION

Place the outside unit on the roof as shown on the figure and centre it over the 39,5 x 39,5 hole.

Connect the cable coming from the condenser unit **Fig. 21 Ref. 1** to the relevant cable of the evaporating unit **Fig. 21 Ref. 2**

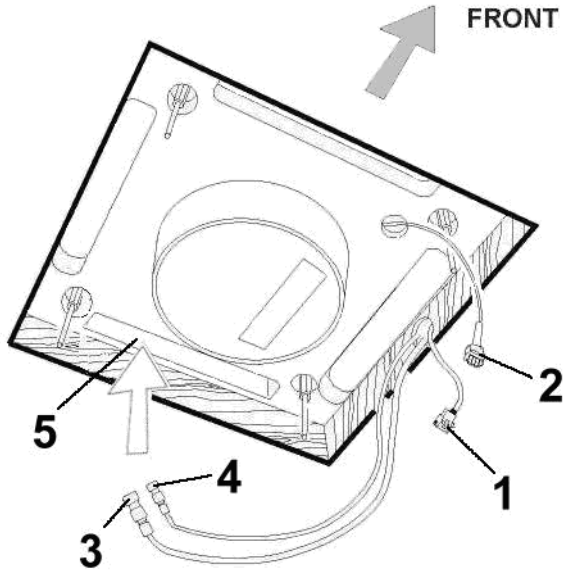


Fig. 21

Insert the fittings **Fig. 21 Ref. 3** and **4** into the slit **Fig. 21 Ref. 5.**
Wrap the two pipes in view with anti-condensation material

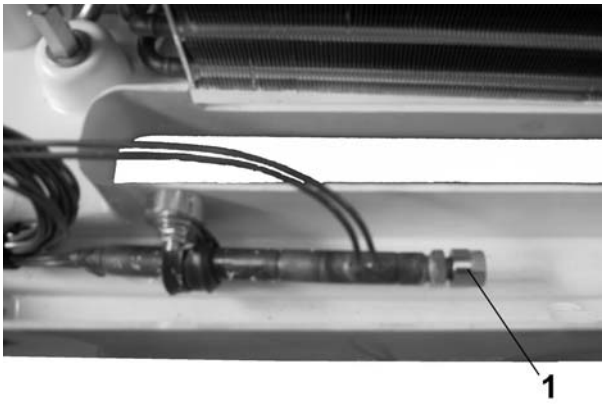


Fig. 22

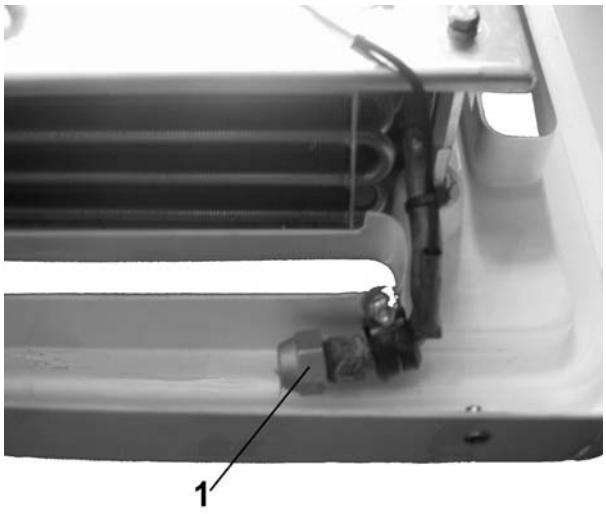


Fig. 23

By acting from above the camper it is possible to remove the protection plugs **Fig. 22 Ref. 1 and Fig. 23 Ref. 1** which are in the evaporating unit.

Connect the fittings of the evaporator to the respective fittings integral to the pipes which you had previously let through the slit **Fig. 21 Ref. 5**
Wrap the two fittings with anti-condensation material.

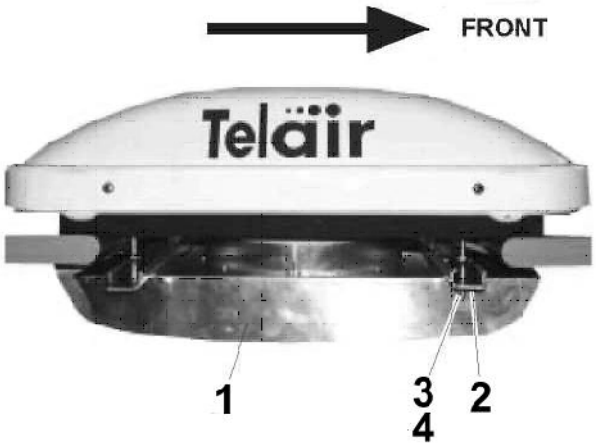


Fig. 24

Introduce the aluminium air conveyor **Fig. 24 Ref. 1** into the plastic tube of the evaporator and push it down until the 2 fastening brackets **Fig. 24 Ref. 2** to the roof of the vehicle, leading the 4 fastening screws out of the holes **Fig. 24 Ref. 3.**

Note: *The air conveyor has been designed to be installed on vehicles with a roof having a thickness between 30 and 60 mm. With thicker roofs, one can ask for a suitable conveyor.*

WARNING ***Do not crush the sealing liner too much: it must not be less than 12 mm thick.***
If you crush the liner too much, this will damage the supporting base of the air conditioner, compromising the sealing of the joint and generating loud noise inside the vehicle when working.

5.4 Installing the diffuser

After anchoring the unit to the roof of the vehicle, take both air outlet flaps out of the diffuser.
Position the diffuser temporarily **Fig. 25 Ref. 1** and mark the 6 holes for future fastening which will then be on the aluminium conveyor, then drill the holes with a 3 mm drill.

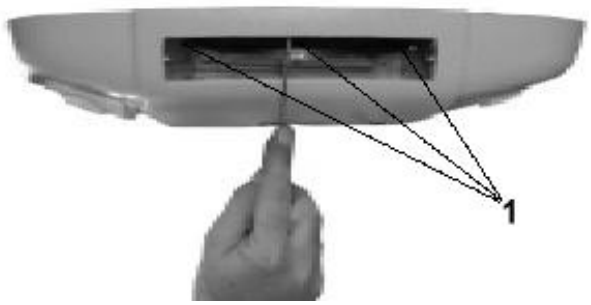


Fig. 25

Connect the connector of the panel **Fig. 26 Ref. 1** and that of the temperature probe **Fig. 26 Ref. 2** and fasten the diffuser to the aluminium conveyor by means of the suitable 6 self-tapping screws supplied with the unit.
Put the air outlet flaps back on.

Fig. 26

Make sure that the power supply cable is not too long, as it could obstruct the suction openings.

6 SETTING AT WORK

6.1 Foreword

The ***SPLIT BIPOWER 7000H*** air conditioner consists of four basic sections:

- **compressor:** this makes the refrigerating gas circulate inside the system;
- **condenser:** this cools the refrigerant, changing its state from gaseous to liquid;
- **injector:** this is placed in the evaporator and changes the state of the refrigerant from liquid to gaseous;
- **evaporator:** this is cooled by the refrigerant change of state and has the function of cooling the air which is let through it.

A thermostat regulates the temperature of the air spread around.

The ***SPLIT BIPOWER 7000H*** air conditioner can provide cool air in summer and warm air in winter.

Before starting up the air conditioner – after a long period during which the vehicle has been exposed to the sun – it is good practice to open the doors and windows to let out the heat which has been accumulated inside. When the temperature inside the vehicle has reached the same level as the outdoor temperature, close the doors and windows and start up the air conditioning system, opening the doors and windows only in case of need.

The ***SPLIT BIPOWER 7000H*** air conditioner is able to run at both 12 Volts (battery) and at 230 Volts (power mains). The 12 Volt or 230 Volt power supply is selected by a special circuit which, when a mains voltage at 230 Volts is present, cuts the connection to the 12 Volt battery off automatically and activates the connection to the power mains. On the other hand, when the plug is taken out of the 230 Volt power source, the circuit automatically restores the connection to the 12 Volt battery.

WARNING ***If the conditioner is made to run at 12 Volts, with the vehicle parked, remember that a good 100 Ah battery completely charged will last for no more than one hour. If the battery is not in a good condition, or is smaller, this time will diminish drastically. In any case, we suggest you do NOT use the battery until it runs out, as this would damage it irreparably and make it unusable in the future.***

6.2 Activating the refrigerant fluid

The condenser unit is already preloaded with such an amount of refrigerating gas as necessary for proper operation of the air conditioner.
Perform the following steps to let the gas circulate inside the air conditioner.

6.2.1 Screw out the guard of the service high pressure valve **Fig. 27 Ref. 1**.

6.2.2 Insert a hexagon wrench **Fig. 28 Ref. 1** in the body of the service high pressure valve **Fig. 28 Ref. 2** and rotate it by 90° counterclockwise, keeping it open for 8 seconds

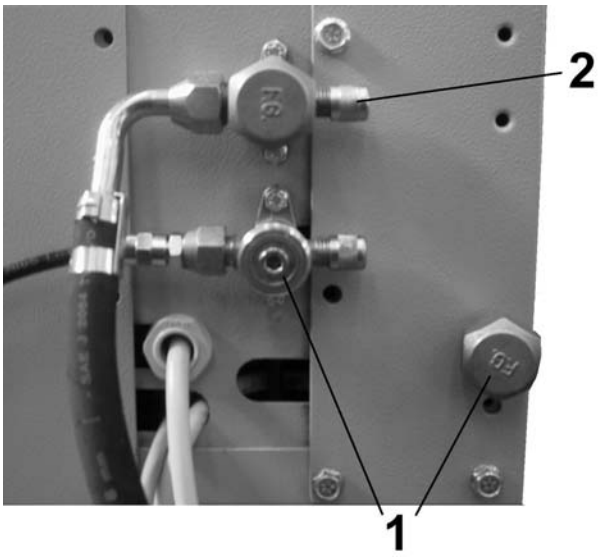


Fig. 27

6.2.3 Close the valve **Fig. 28 Ref. 2** again by rotating the hexagon wrench by 90°
6.2.4 Screw out the protection plug of the bleed valve **Fig. 27 Ref. 2** placed on the service low pressure valve.
6.2.5 Push the needle **Fig. 29 Ref. 1** placed inside the bleed valve and let all the air out
6.2.6 Screw down the protection plug of the bleed valve **Fig. 27 Ref. 2** again.

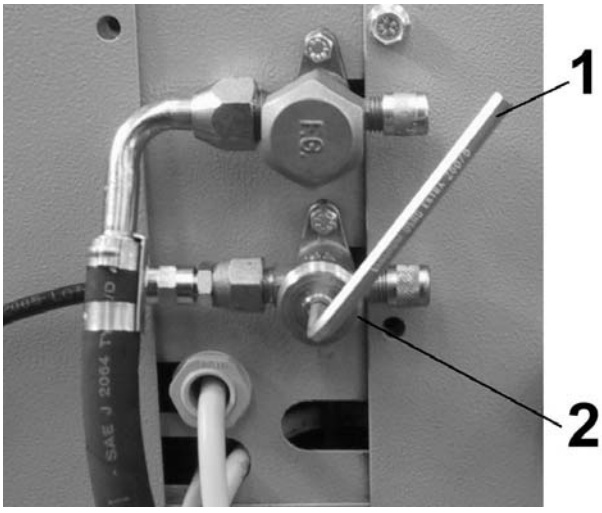


Fig. 28

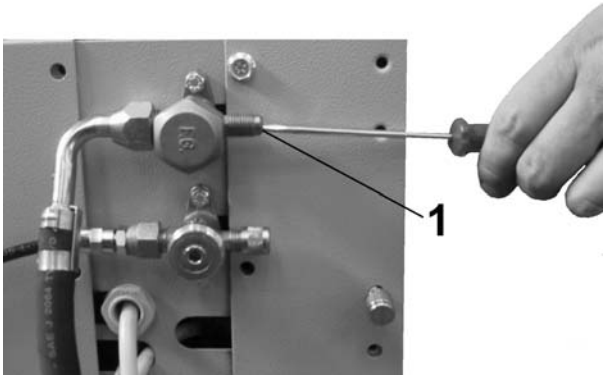


Fig. 29

6.2.7 Fully open the service high pressure valve **Fig. 30 Ref. 1**
6.2.8 Screw out the guard of the service low pressure valve **Fig. 30 Ref. 3** and open the valve **Fig. 30 Ref. 4** in full.
6.2.9 Screw down the guards of the valves **Fig. 30 Ref. 2** and **3** again.

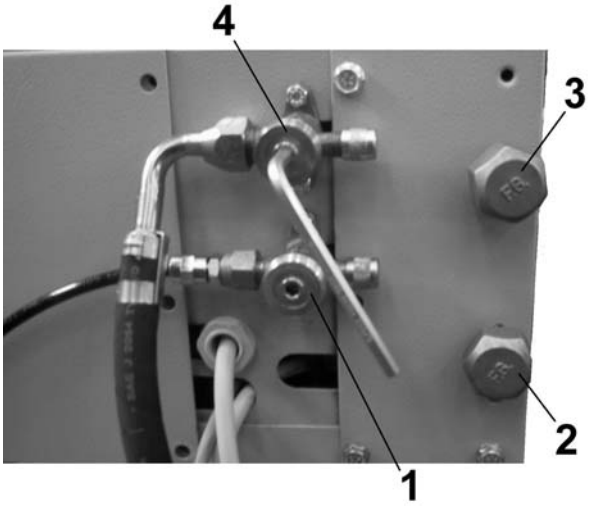


Fig.30

INFORMATION ***The Manufacturer is not liable for damages resulting from improper use of the air conditioner.***

6.3 Preliminary checks

Before switching on the air conditioner for the very first time:

- Check that condensate drainage holes are unobstructed.
- Check that power voltage and frequency are as indicated in the previous section.
- Check that air flow through relative ducts and vents is unobstructed. To ensure maximum efficiency always keep external ventilation grilles clear.

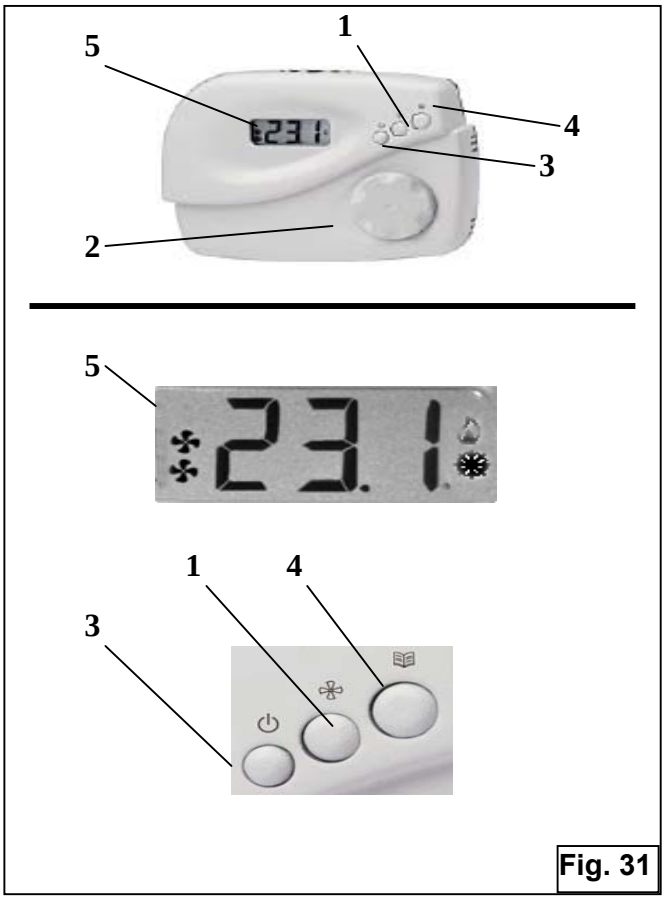


Fig. 31

6.4 Control panel (Fig. 31)

Fan speed key **(Fig. 31 ref. 1)**.
Thermostat adjuster **(Fig. 31 ref. 2)**
On/off switch **(Fig. 31 ref. 3)**
Menu key **(Fig. 31 ref. 4)**
Display **(Fig. 31 ref. 5)**

6.4.1 Switching on

To switch the air conditioner on press the on/off key **(Fig. 31 ref. 3)** and at the same time, the display is active.

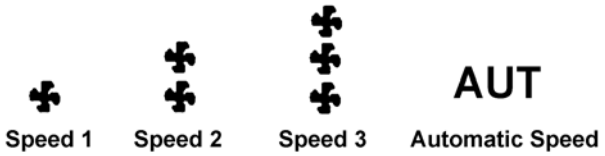
WARNING ***After switching on the conditioner there is a 3-minute pause before the compressor is started and cold air outflow begins.***

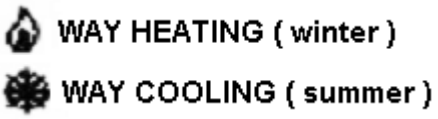
INFORMATION ***The conditioner features an automatic thermostat with a minimum working temperature of 16°C (+/- 1°C). Below this temperature the thermostat does not enable the compressor: this prevents ice forming inside the unit. Fans and the heating function remain enabled.***

6.4.2 Display Fig. 31 Rif. 5

The display shows the **Temperature Setting (SET)**. Temperature is set via the thermostat knob **(Fig. 31 Ref. 2)**.

Press the menu key **(Fig. 31 Ref. 4)** on the display and the ambient temperature (TA) inside the vehicle is displayed for a few seconds.
The display then reverts to the temperature setting.In addition to temperature, the Display **(Fig. 31 Ref. 5)** also shows the following:

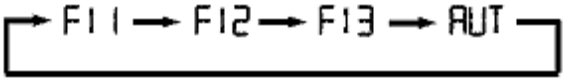




6.4.3 Setting fan speed

Press the **speed key Fig. 31 Rif. 1**

If pressed once the display shows the fan speed setting: this is shown for a few seconds before the display reverts to ambient temperature (TA). To modify fan speed keep pressing the key: fan speed will be adjusted according to the following sequence



In which F11, F12 and F13 are the three fixed speeds and AUT is automatic speed. F11 indicates slow fan speed, F12 medium speed and F13 high speed.
If one of the three fixed speeds is set the control panel always activates ventilation at that same speed. If, instead, fan speed is set to AUT, the control panel step by step **(Fig. 31)** automatically selects the most appropriate fan speed in consideration of the temperature setting and the temperature in the vehicle interior.

6.4.4 Thermostat (Fig. 31 Ref. 2)

Rotate the thermostat to set the desired temperature on the display.

INFORMATION ***The control panel (Fig. 20) allows automatic control of temperature in the vehicle interior.***
If, for example, we set a temperature of 25°C the conditioner will produce cold air as long as the temperature inside the vehicle is higher than 25°C.
When the temperature inside the vehicle (ambient temperature) is lower than the set value (25°C) the air conditioner activates the built-in heater to generate warm air.

WARNING ***Correct use of the thermostat is very important. If you set a temperature much lower than outdoor temperature (more than 8°C lower) you run the risk of falling ill (catching colds etc.) and energy consumption increases.***

6.4.5 Cooling mode

- When this symbol is displayed constantly the air conditioner is generating cold air.

- When the symbol **flashes**, the air conditioner is restoring gas pressures inside its interior and will start producing cold air after 3 minutes.

- When neither the symbol not the heating symbol appear this means that:
  a) ambient temperature has reached the set temperature so the compressor is off and only the ventilation fans are working.
  b) temperature **is less than 16°C** and the thermostat is set to minimum.

In this case, as long as ambient temperature remains below the 16°C threshold, only the fans work; the compressor is shut down.

6.4.6 Heating by heat pump

When this symbol is displayed, the air conditioner is generating warm air through the heat pump.
Should the air conditioner be turned off, during the heating stage, the fan will anyway go on running for a few minutes in order to eliminate the heat accumulated inside the air conditioner; then it will stop by itself.

A steady symbol indicates that the compressor is running. A flashing symbol indicates the stand-by function during which the compressor is at standstill and is going to be started again.

WARNING ***The outdoor limit temperature of operation of the air conditioner is – 5 °C.***

6.4.7 Switching off

To switch the air conditioner off press the on/off key **Fig. 31 Rif. 3**

CAUTION ***After turning off the air conditioner, using the thermostat knob or else the ON-OFF switch, you must wait at least 3 minutes before turning it back on again, in order to allow the refrigerant to stabilize its pressure. Failure to comply with this rule may lead to irreparable damage to the compressor of the air conditioner.***

7 SAFETY RULES

- Always use power sockets which are connected to earth and are protected by differential cut-off switches.
- Never use the air conditioner near flammable liquids.
- Never use the air conditioner for any purpose other than those provided for by the Manufacturer.
- Do not modify or tamper with any part of the air conditioner.
- Use original spare parts.
- Maintenance and repairs must be carried out by specialized personnel.
- Do not put your hands inside the ventilation grids.
- Do not put any foreign matter into the ventilation outlets.
- Should the air conditioner suffer from any forceful impact, have specialized technicians check it out before using it again.
- In case of fire, never open the top lid of the air conditioner, but use approved type fire extinguishers.
- Do not use water to put out fire.

8 TROUBLESHOOTING

If the air conditioner fails to work properly, this usually will not be due to a fault but simply to improper use. For example:

- The air conditioner is undersized compared to the volume of air to be conditioned.
- The walls of the vehicle are not sufficiently insulated.
- The doors are opened too frequently.
- There are too many people inside the vehicle.
- Voltage is too low.

Following is a list of troubles which may come up, their reasons and how to solve them.

INFORMATION ***If the air conditioner is working poorly, first make sure:***

- ***That the direct power supply is never less than 205 V, or else that the battery has not run out;***
- ***The suction filters are not jammed;***
- ***The air diffusion outlets are open.***

1) The air conditioner fails to start up:

• make sure that the cool air / warm air switch **Fig. 31 Ref. 2** is not in "0" position and that the thermostat is in its all-cool position **Fig. 31 Ref. 3.**

• Then make sure that the sockets are powered, connecting a household appliance or using a voltmeter.

2)The compressor does not work:

• for the compressor to work, the thermostat **Fig. 31 Ref. 3** must be set at a temperature at least 5 degrees lower than that of the indoor environment of the vehicle and the warm / cool selector must be in cool position.

3) The evaporator fan does not work:

• make sure that the ON-OFF switch **Fig. 31 Ref. 2** is **not** in "**0**" position and that the fan speed selector **Fig. 31 Ref. 1** is **not** blocked in an intermediate position.

4) The condenser fan does not work:

- *Call in a technician.*

5) The air conditioner has a poor yield:

- If the air conditioner has a poor yield, you must clean the air filter, the condenser and the evaporator, using specific detergents.
  We suggest washing the air conditioner before using it, after a long period of time during which it has not been used. If the air conditioner does not recover its initial yield even after the exchangers have been cleaned, check the load of the refrigerating gas.

9 DISPOSAL

To dispose of the air conditioner, please refer to specialized shops.

INFORMATION ***The waste material must not be disposed of in the environment, but dispatched to special Collection Centres.***

10 MAINTENANCE

Maintenance operations

In order to ensure proper efficiency of the air conditioner, once a year you must carry out a thorough cleaning of the condenser, or have a technician carry it out.

DANGER ***Before accessing the air conditioner, you must by all means disconnect the 230 and 12 Volt power supply and wait for every part to cool down.***

Take off the outside lid and spray a specific detergent on the heat exchangers (evaporator and condenser) and rinse with water to remove all dirt.

- Make sure the condensate outlet holes on the evaporator are free **Fig. 20 Ref. 1** and **2.**
- Make sure the sealing liners are in proper condition and that no water is leaking into the vehicle.
- Make sure that both active carbon filters (**Fig. 32 Ref. 1**) on the diffuser inside the vehicle are in proper condition. In any case, it is good practice to replace them at least once a year.
- Make sure that the insulation of the power cables is intact and remove any trace of humidity.
- Make sure all the screws are tightly fastened.
- During winter storage in the garage, we suggest you disconnect the air conditioner from the power source and from the battery.

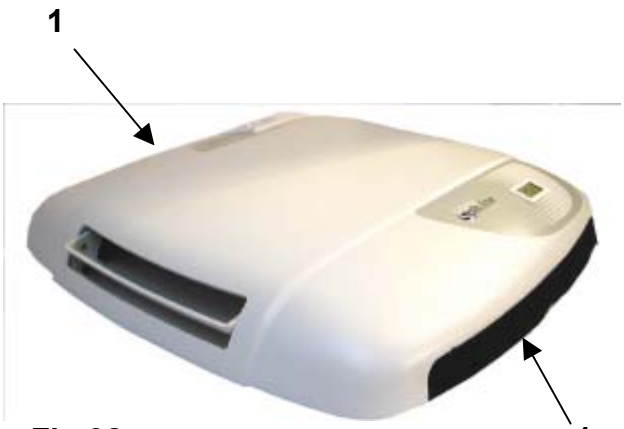


Fig.32

GENERAL TERMS OF WARRANTY

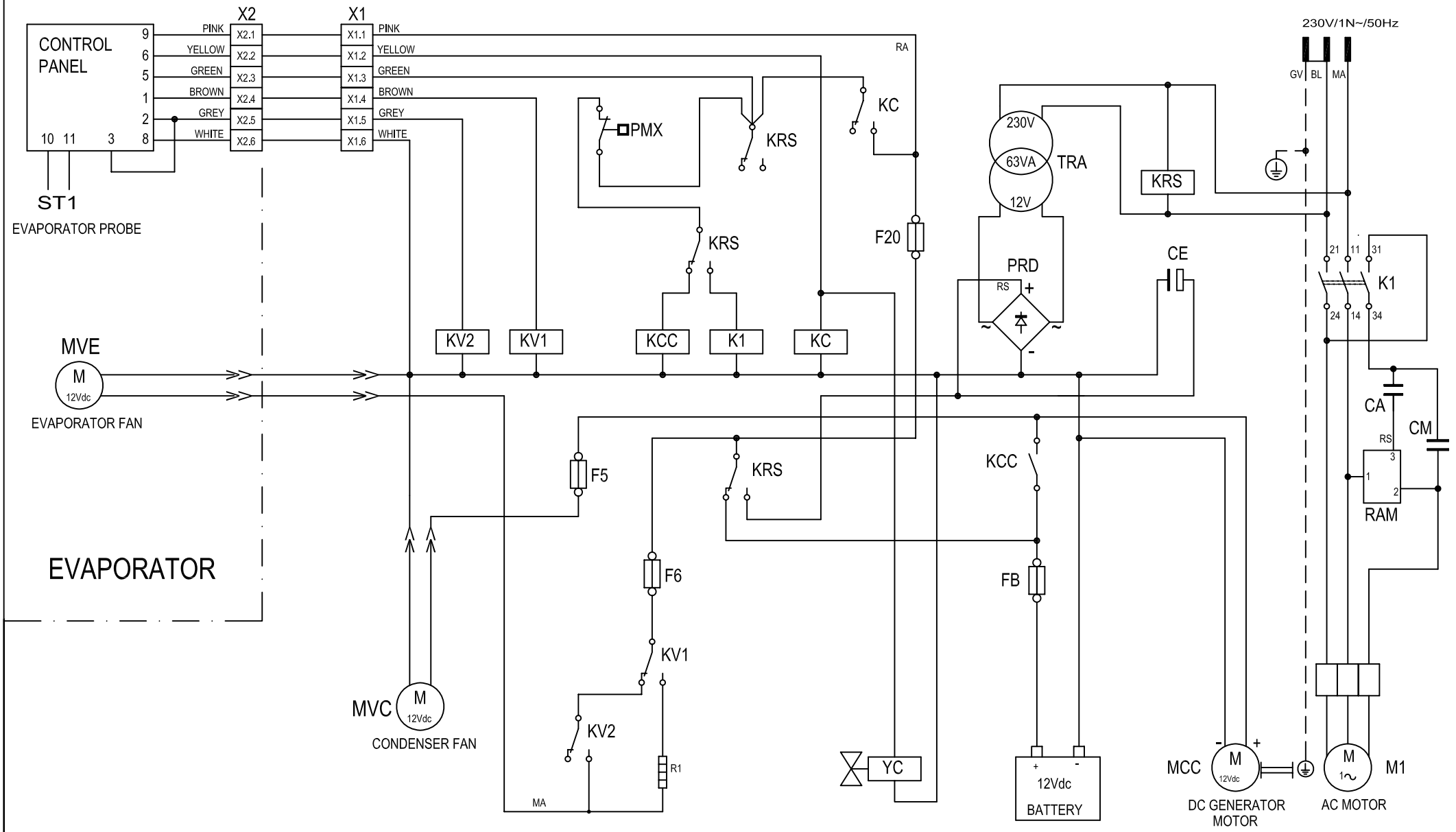
Telair guarantees that its products are without faults or defects in their material and/or construction.

The effects of the warranty are understood to be limited to the right to obtain replacement or repair free of cost of any part which should turn out to be defective, within 12 months from the date of purchase of the product and in ***Telair***'s opinion.

It is understood that the purchaser has no right whatsoever:
- to terminate the contract;
- to claim damages for people or things;
- to demand an extension of the warranty in case of any product defect or malfunction.

Any transport charges are on the account of the purchaser, as well as any expenses for on-site checks requested by the purchaser and accepted by ***Telair***.

The warranty shall be valid only if the customer is able to show a document evidencing the date of purchase (invoice or receipt).
This document must be kept whole and must be submitted to the ***Telair*** after-sales centre when asking for operation under warranty.



SPLIT Bipower 7000H

CA = STARTER CONDENSER
CE = COND. 2200uF
CM = GEAR CONDENSER
F5 = FUSE MVC
F6 = FUSE MVE
F20 = AUX. CIRC. FUSE
FB = BATTERY FUSE
K1 = COMP. RELAY
KC = RELAY HEAT PUMP
KRS = NET STREET RELAY
KV1 = MED. VEL. RELAY
KV2 = LOW VEL. RELAY
KCC = RELAY MCC
MVC = CONDENSING FAN MOTOR
MVE = EVAPORATING FAN MOTOR
MCC = DC GENERATOR MOTOR
M1 = AC MOTOR
PMX = HIGHT PRESSURE SENSOR
PRD = DIODE BRIDGE
R1 = RESISTANCE
RAM = START COMPRESSOR RELAY
YC = SOLENOID VALVE HEAT PUMP

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