



### 1. DESCRIPTION OF OPERATION





#### 1.1. Operation of the Automatic – Semi-automatic Air Conditioning Unit

In Air Conditioning Operation, it is possible to vary:


- The temperature set for operation
- Speed of the air in the Evaporators
- Flaps for internal/external air.
- Switch on de-humidification
- Block compressor inlet. (ECO)

Any variation in the speed, position of the flaps, De-humidification or Compressor blocking places the air conditioning system in semi-automatic mode and it can be switched to fully automatic mode by pressing the AUTO button.


### 1.1.1 Changing the Set Temperature


The Temperature can be set between 17°C and 27°C (63-82°F) using the <sup>(8)</sup> and <sup>(7)</sup> keys.


When the temperature level is set below 17°C (63°F), the system engages forced chill mode (LO) and activates its maximum cooling power. (The screen displays LO)


When the temperature is set above 27°C (82°F), the system engages forced heat mode (HI) and activates its maximum heating power (the screen displays HI). By pressing key <sup>(8)</sup> the selected temperature for the propulsion air increases. Each keystroke increases this temperature.


By pressing key <sup>(7)</sup> the selected temperature for the propulsion air decreases. Each keystroke decreases this temperature.

The key <sup>(2)</sup> is used to vary the speed of the air propelled by the anti-vapour fans. There are two air speeds, indicated by the colour of led No. 7.

The state of the fans varies according to the key pressed <sup>(2)</sup> stopped (led off), minimum speed (led shows green), maximum speed (led shows red).


The key  is optional and it is not present in all the items in the Ecomaster Basic D family. It is used in order to place the anti-vapour flaps so that air propulsion goes to the feet or to the windscreen. If led No. 8 is off, this means that the air is directed to the windscreen; if it is showing red it means that the air goes to the feet.


In order to handle the flap selecting the inlet of the outside fresh air, key <sup>(3)</sup> must be pressed. If led No. 9 is showing green, the flap will be placed so that the inlet of external air is allowed. On the contrary, if led No. 9 is red, the air will be re-circulating from inside the vehicle.


The Ecomaster Basic D control will automatically close the air flaps leaving them in recirculation position (led No. 9 showing red) in case the temperature control for passengers requires the activation of air conditioning. Nevertheless, the driver can open the flaps again by hand and leave them in renewal position (led No. 9 showing green) by pressing key <sup>(3)</sup>.

The control turns off each time the electricity supply is interrupted, through the general switch disconnection, and the activation of any outlet is impossible. As soon as it is powered on, it will turn on in the same conditions when it was turned off, that is to say, it remembers the previous state of all of the outlets.

### 1.1.2. Varying the speed of the Evaporator Ventilators

The speed of the evaporators can be varied from levels 1 to 3. When the speed is altered, the system goes into manual mode and the led located next to key <sup>(1)</sup> will be switched off.

If the <sup>(1)</sup> key is pressed, the system automatically recovers the corresponding speed and the led will shine again to indicate manual operation.

To alter the speed, press the <sup>(2)</sup> key. Pressing it once will display the current speed on the screen; if it is pressed again, the value of the speed will be increased in a closed loop (from 3 it will change to 1).


#### Note:


If the bus is not equipped with roof-mounted heaters and the interior temperature is less than 12°C, speed 0 may be selected while the system is warming up.

If speed 0 is selected manually as in the preceding example then, once the interior temperature increases to 12.5°C, the system will automatically take on the corresponding speed and will set itself to Automatic.

### 1.1.3. Changing the flap position

The position of the flaps can be changed from external air to internal air. When the position is changed, the system switches to manual mode.

If the key <sup>(1)</sup> is pressed, the system automatically recovers the corresponding position.



To alter the flaps, press key <sup>(3)</sup>. Pressing it once will indicate the current position; pressing it again will change the position.

If the Coaster Climax is operating in air-conditioning mode and the interior temperature is 2°C higher than that selected (Set), the flaps will switch to Automatic mode and will close.




### 1.1.4. Activation of ECO.

If the <sup>(4)</sup> key is pressed, the letters ECO will appear on screen and the compressor will be disconnected. The system switches into Semi-automatic mode.

Pressing the <sup>(4)</sup> key will have no effect if the system is not working in De-humidification mode.

If the <sup>(1)</sup> or <sup>(4)</sup> key is pressed, the ECO option will be switched off.


### 1.1.5. Activation of De-humidification (Reheat).

If the <sup>(6)</sup> key is pressed, De-humidification will be activated. This will remain in operation for 15 minutes or until the <sup>(6)</sup> or <sup>(1)</sup> key is pressed again.

“Reheat” cannot be activated if there are no heaters installed on the roof unit.

Selecting the de-humidification option cancels out the ECO option.

### 1.1.6. Check Temperatures

The internal and external temperatures can be checked by pressing the <sup>(5)</sup> key. The interior temperature is displayed first, then the exterior temperature when the key is pressed again, and so on in a loop.

## 2. ERROR DETECTION AND WARNINGS

When the system receives the signal from the battery disconnecter (+30), it first checks the outputs to check what charges are applied and to make sure there is no short-circuit.

It also checks the status of the probes.

If any anomaly is detected, it will indicate the error(s) on the Display using the following codes:

CODE	ERROR
SOND. INT	Internal Probe shorted or open
SOND. ICE	Ice Probe shorted or open
SOND.CHN	Channelling Probe shorted or open
SOND.EXT	Driver's External Probe shorted or open
BOMBA PR	Main Pump Outlet Shorted
BOMBA RC	Recirculating pump outlet shorted
COMP	Compressor outlet shorted
V.TECHO	Roof valve outlet shorted
V.SUELO	Floor valve outlet shorted
ESTRIBO1	Speed 1 heater outlet shorted
ESTRIBO2	Speed 2 heater outlet shorted
AIRE	Recirculating flaps outlet shorted
VENT DER	Right adjustable evaporator ventilator outlet shorted
VENT IZQ	Left adjustable evaporator ventilator outlet shorted
REG CON	Corto Salida Ventiladores Condensador Regulables
VENT1	Corto Salida Velocidad 1 Ventiladores Evaporador
VENT2	Corto Salida Velocidad 2 Ventiladores Evaporador
VENT3	Corto Salida Velocidad 3 Ventiladores Evaporador
AIRE ANT	Corto Salida Recirculación Antivaho
CALEFAC1	Corto Salida Calefactor Bajo Piso Velocidad 1
CALEFAC2	Corto Salida Calefactor Bajo Piso Velocidad 2
POT	Error en la Auto Configuración del Pot

If any of the above errors appears, the Ecomaster Clima will start to operate in accordance with the default operating programme. It is possible that the vehicle's interior temperature may not be regulated correctly under these conditions so it is recommended that the system should be reviewed by technical service personnel.