



CARTWRIGHT
VEHICLE CONVERSIONS

2021

Welfare Conversion - User Manual



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Produced by
Cartwright Vehicle Conversions Ltd

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Introduction

This manual provides user information and guidance relating to the conversion produced by Cartwright Vehicle Conversions Limited as well as contact information for Warranty and Technical assistance.

Important Notice

1. When using the welfare facilities ensure the handbrake is always engaged. The facilities are best operated with the engine running where possible.
 2. Use water sparingly this will prevent unnecessary servicing.
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Contact Information

For further information please contact:

Cartwright Vehicle Conversions Limited
The Old Brickworks
Epworth Road
Belton
NE Lincs
DN9 1NY

Tel No. 01302 279265 or
Email: sales@cartwrightvc.com

Warranty

If you encounter an issue with the vehicle, please head to our website and fill in all relevant sections

<http://www.cartwrightconversions.co.uk/customer-support/>

Vehicle Conversion

Side entry step

The vehicle is fitted with a side entry step on the left-hand side of the vehicle to assist with the entry/exiting through the side door



The step is operated (opened and closed) with the respective function of the door.

Therefore, opening the door will move the step into the position to use it and closing the door will retract the step under the vehicle into the stowed position.

Ensure sufficient distance is kept away from the vehicle when operating the door so the step does not make contact with the anyone outside of the vehicle.

Door mechanical connection



Link arm



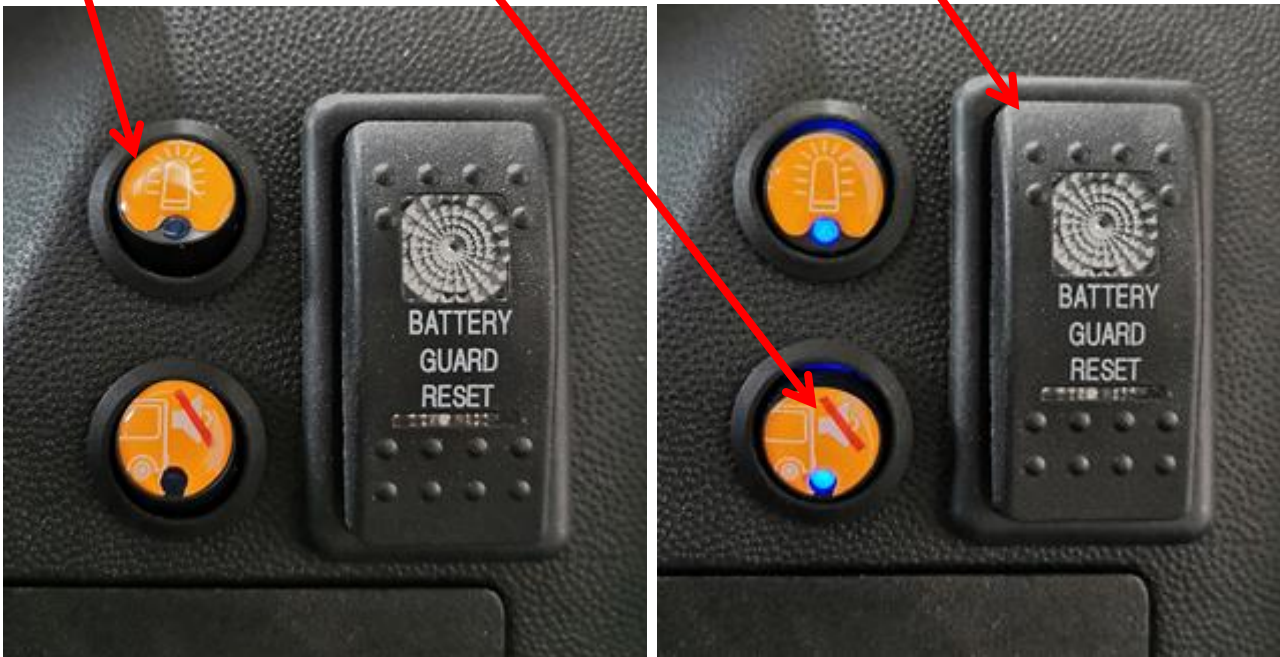
The step is maintenance free but any restriction in movement should be reported for investigation and ensure safe use



Cab Area

In the cab area you will find the following:

Amber Beacon switch, Reverse Alarm switch and Battery Guard Reset



Amber Beacon Switch:

The Amber Beacon Switch enables/disables the flashing beacons that are mounted onto the roof. Push the button down to turn on and push up to turn them off

Reverse Alarm Switch:

The Reverse Alarm Switch enables/disables the alarm noise when the vehicle is in reverse. Push the button down to turn on and push up to turn them off. We recommend you have them turned off during the hours of 10pm and 7am in residential areas to show consideration to local residents

Battery Guard Reset:

The Reverse The Battery Guard constantly monitors the available battery power when the engine or charging system is off. If the battery voltage drops below 12.1V a voltage sensitive timer is triggered within the ECU.

If the available battery voltage remains below 12.1V uniformly for a full 4 minutes, the ECU will pulse the latching relay and the battery will be disconnected, to guarantee starting power.

At this stage there will be no power at ignition, the vehicle operator must press the flashing reset switch and power to ignition is restored.

The operator can also manually disconnect the battery by pressing and holding the reset switch for 3 seconds.

Saloon Area

In the saloon area you will find the following:

Emergency Break Glass Hammer, Smoke Detector, Coat Hooks, USB Port, Waste Bin, Microwave, Water Boiler, Hand Wash Station, Hand Towel Dispenser, Fresh Water Container, Electric Control Panel, Thermostat and Heater Control



Emergency Break Glass Hammer

This is provided, above the offside window for breaking the glass in an emergency.

Smoke Detector

This is located above the seating area, this is battery operated and should be tested regularly.

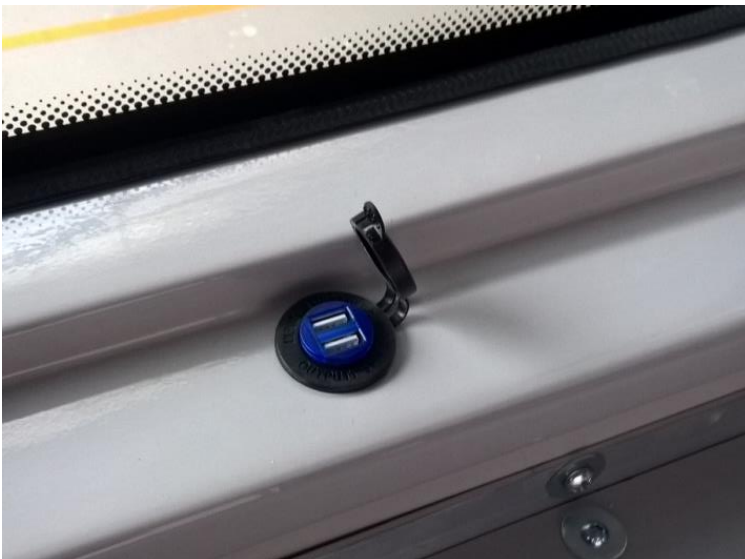
Hand Towel Dispenser

This is within the mess unit, towels dispense from underneath and can be refilled by pressing the white key through the top and pulling down the front



USB Port

This is located next to the table in the window surround, this holds 2 USB's



Microwave

This is within the mess unit. Refer to the Microwave manual provided inside. To turn on at the main, press the socket button on the electrical control panel (see description below)



Water Boiler

This is within the mess unit, this is turned on by the mains push button on the control panel (see below for further instruction) and with the switch in bottom right-hand corner of the boiler, when the boiler requires filling the 'Add Water' light illuminates amber, when there is a sufficient amount of water then the 'Heating' light illuminates red and when water is ready to be used the 'Ready' light illuminates green



Hand Wash Station

This is within the mess unit and the rear toilet area, there are 3 individual pouches these are hand cream, hand cleaner and hand sanitiser. To replace the pouches, press the button on the right side and pull the front down. To use press the pump at the front of required dispenser.



Fresh Water Container

This is within the mess unit, this requires checking daily to ensure there is enough water in there at all times. To fill, unscrew the black cap on the top of the unit and fill with water, tighten the cap when full.



Electric Control Panel

This is on the nearside wall. To use each item, ensure the button is pushed in before use. Pump is for the water pump, this is needed to use the water. Lights is for the full vehicle, these work on sensors so will turn off if the vehicle is not in use. Boiler is to heat the water boiler within the mess unit. Socket is to use the microwave.



Thermostat

This is on the nearside wall next to the electrical control panel. This controls the heating and works the same as a household thermostat.



Heater Controls

This is on the nearside wall and controls the thermo top EVO hot water and heating – see below for further instructions.



Webasto Thermo Top EVO Welfare Diesel Hot Water & Heating

Start up

The Instant Hot Water and Heating System is activated by means of the switch on the control panel.

A green light will illuminate, indicating that the water heater has begun operation. The heater start-up phase can last 2 to 3 minutes and comprises of the ventilation of the heater, the burner ignition and the control of the flame.

To obtain fresh hot water whilst also heating the interior of the Welfare Vehicle

- Select the desired room temperature on the Thermostat (around 1/2 way).
- The blower fan will switch on until the chosen temperature is reached at the thermostat.
- It will switch off when the temperature is above the setting and will turn on when the temperature is below the setting.

Turning the dial up (clockwise) increases the temperature and down (anti-clockwise) reduces the temperature.

After approximately 5 minutes (after combustion has been established) the plate heat exchanger should deliver hot water almost straight away.

The safety thermostatic mixing valve limits the water temperature to approximately 48°C. (this threshold can be regulated between 30 and 48°C)

The heating system utilises the vehicle's own diesel fuel supply. The heater's "intelligent" operating system allows it to be much more economical when in constant heating use by adjusting its heat output accordingly between 1.8-5.0kW output. With both fan heaters on the system will draw approximately 4 to 5 Amps, so if you are not connected to a mains electricity supply, it is advisable to start the engine of the Welfare Vehicle at least once a day, for approximately 15 to 30 minutes in order to recharge the batteries. External temperatures of - 20 °C and below can result in a temporary loss of vehicle battery capacity from 25 to 50%, therefore good maintenance of the vehicle's batteries is essential, ideally supported by using the charging system of the Welfare Vehicle.

Important

The heating circuit must always be protected by antifreeze with a corrosion inhibitor, and for extreme winter conditions a winter grade fuel is recommended.

Whenever the Welfare Vehicle is not in use the freshwater circuit must be drained including the fresh water side of the plate heat exchanger. Failure to do so may cause damage in freezing conditions.

Summer Mode—Hot Water Only

In warmer conditions, when you do not require any heating but only hot water, leave the blowers turned off & fresh hot water will be produced much faster.

Also the current draw of the heating system will be much less.

The system only needs to be switched on for the period of hot water requirement. Switch the system off when not required.

Shut down

When the heater is switched off by means of the switch on the control panel the green light will extinguish and the heater will begin its shut down cycle.

This phase includes purging of the combustion chamber and will last approximately 2 – 3 minutes before the combustion air fan automatically switches off. The blowers will also switch off automatically.

Important

In Winter when the system is not in use. Drain the freshwater system. There may be an optional fresh water drain tap under the plate heat exchanger.

The Webasto heater coolant circuit uses an Antifreeze Mixture. Use the same ratio and type as recommended by the vehicle converter.

For further information refer to the product installation/operation handbook.

The Webasto Diesel Heating System

MULTI CONTROL– This is most often located close to the door to the mess vehicle. (It is used for activation of the Webasto heater. The heater is switched on using the top RH button symbol and will activate the quick start in the settings menu.

Green = Heating

Blue = Ventilation—Blower Fan only

Red = Error along with an error code in the display.



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Please refer to the Multi Control manual for further information, regarding functionality and timers. Note—The system is limited to **1hr Run Time**. For preheating the Timer function can be used.

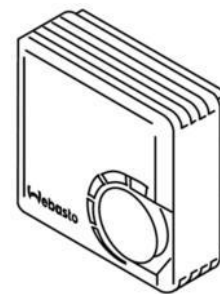
Temperature Control Thermostat

This is used to regulate the ambient temperature in the living area. .

Note— The Webasto heater must be switched on for the fan blower to blown air heating fan will switch on until the chosen temperature is reached at thermostat.

It will switch off when the temperature is above the setting and will turn on temperature is below the setting.

Operation for heating is when the system temperature is above 50°C. For Hot turn the Thermostat anti clockwise to the lowest setting. This stops the blown fan from operating.



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Water only
air heating

THE THERMOSTATIC MIXER VALVE

This is used to determine the hot water temperature supplied to the taps (adjustable from 30 to 48°C, anti-clockwise to increase the temperature, clock-wise to decrease the temperature). **Typically this is around 42-45c. Adjust as required. Anti clockwise = hotter (+)**

Operation– Once activated, the Webasto Thermo EVO heater will use the vehicle’s own fuel in a combustion process to heat the coolant via a heat exchanger. The heated coolant is then circulated round the heating circuit passing through the freshwater plate heat exchanger & blower heaters by an integrated water pump. The Webasto unit is self-regulating & operates in a similar way to a domestic central heating system.

Rear Toilet Area

In the rear area you will find the following:

Toilet and Cassette, Hand Wash Station, Hand Towel Dispenser, Coat Hooks and Waste Bin



Hand Wash Station and Hand Towel Dispenser

Same as in the Saloon area.

Waste Bin

This is fixed so that it does not move when the vehicle is in transit, there is another located in the saloon area

Toilet Cassette

Located in the bottom left-hand corner behind the hatch is the 19.3ltr toilet cassette.

To Fill

Pull the top tube out towards you, unscrew the cap, fill slowly with clean water until the float is at the top of the tube. NB Filling too quickly may cause air locks, there is also a funnel on top of the cassette should you find that easier to use



To Empty

Empty daily to reduce overflowing



Pull the handle on the bottom of the cassette up and towards you.



Slide the cassette out



Pull out the bottom tube and unscrew the cap.

To empty the waste, press the small yellow button on the top of the cassette, tilt the cassette into a suitable container/toilet until it is empty. Re-fit the cap and push the cassette firmly back into place.