South East Coast Ambulance Service

Fiat Ducato Van Ambulance 2020

User Manual

User Guide

Foreword:

This document is provided to give an overview of the auxiliary equipment fitted onto the SECAS Ambulance Service FIAT Ducato vehicles as supplied and installed by Wilker Clara. This can be used as an aid to operator familiarisation training and also for equipment maintenance and fault finding. Wherever possible photographs or illustrations are used and supported by text and flow diagrams

Use of this Manual

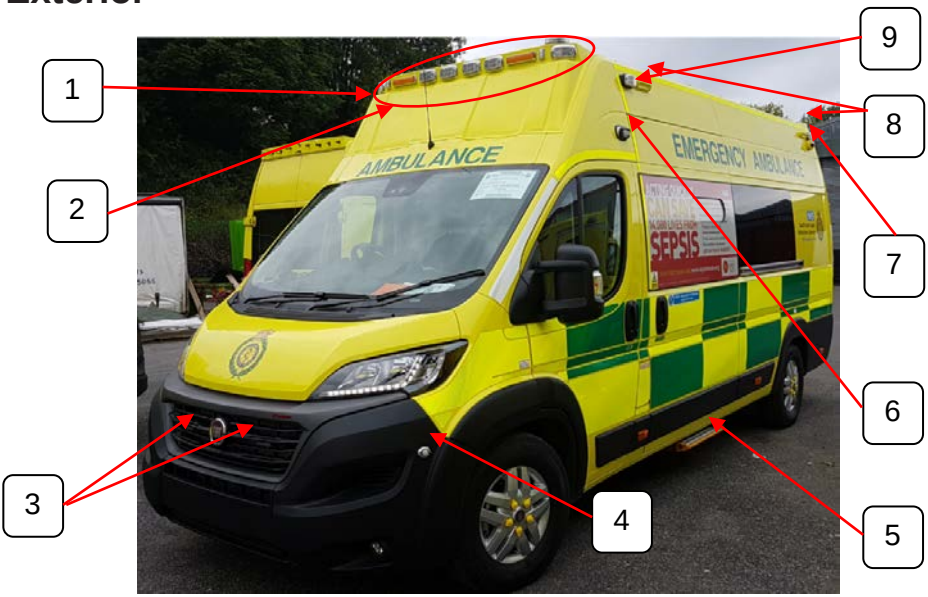
This Manual solely covers the FIAT Ducato 2020 conversions.

The manuals aim is to assist SECAS personnel with their familiarisation training and any maintenance / repair technicians to understand the conversion element and how this interfaces with the FIAT Ducato base vehicle. Due to the nature of the electrical equipment and its installation there is no need to apply a routine maintenance schedule.

The rear internal Access Ramp will need to have regular maintenance and inspections.

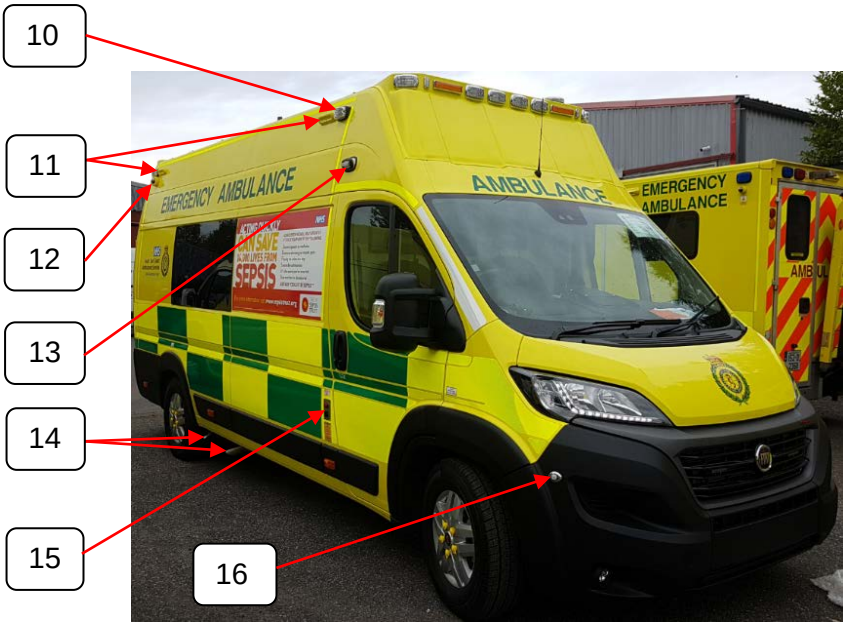
Contents

Exterior



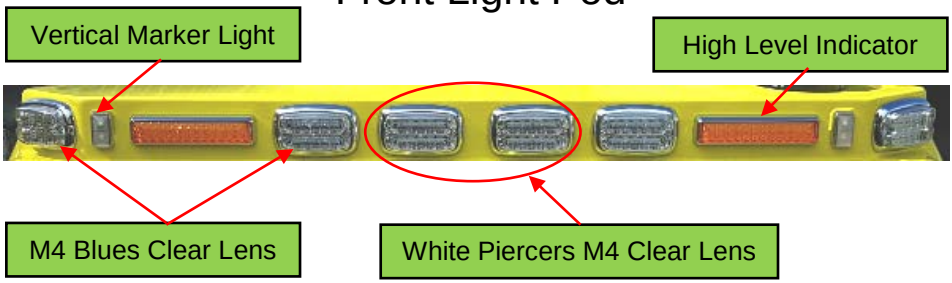
1. Front Emergency Light Cluster.
2. FM Radio Aerial.
3. Flashing Blue Grille Lights.
4. Nearside Fend Off Flashing Blue Light.
5. Automatic side Entrance Step. Step deploys auto when door is opened and retracts auto when door is closed.
6. Nearside Alley Light.
7. Nearside Dome Camera.
8. Nearside Scene Lights.
9. Nearside Blues (Front & Rear High Level).

Exterior continued….



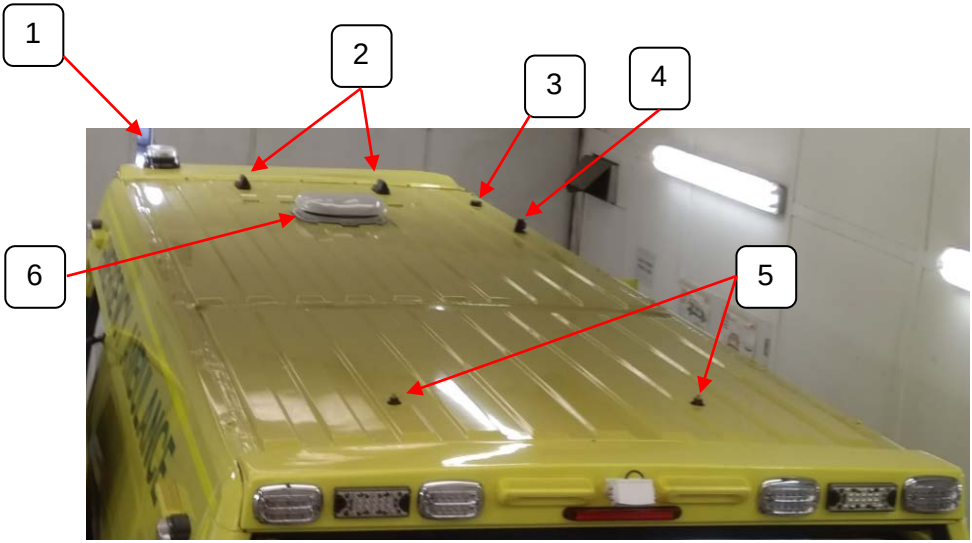
10. Offside Blues (Front and Rear High Level).
11. Offside Scene light.
12. Offside Dome Camera.
13. Offside Alley Light.
14. Saloon Heater and Vehicle Exhaust (caution ***HOT*** do not touch).
15. Shoreline Charge Socket. – DEFA 230Volt.
16. Offside Fend Off Blue Flashing Light.

Front Light Pod



Rear Light Pod

Vehicle Roof



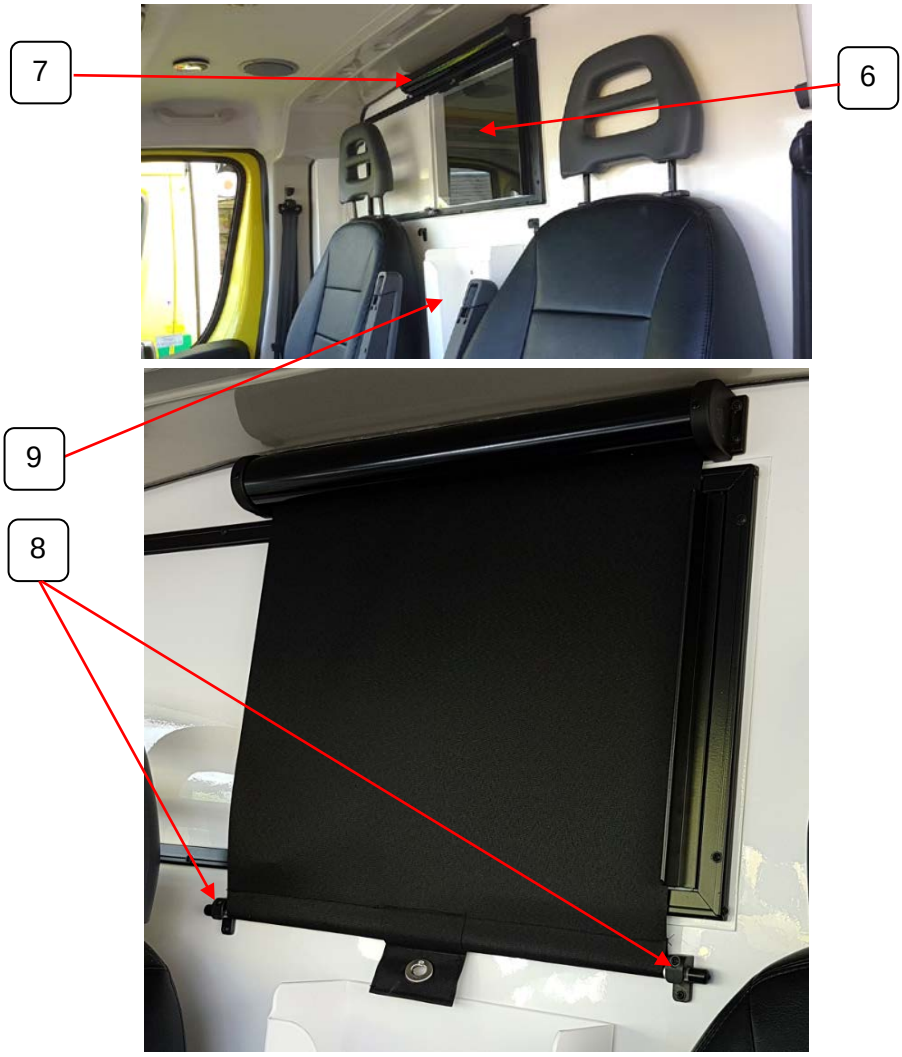
1. Airport Beacon
2. MIMO Antenna
3. GPS Antenna
4. AVA Antenna
5. M8 Aerials
6. Saloon Ventilation

Drivers Cab

1. Drivers ATSR SP3 Touch Screen – see page 11 for details
2. VUE Mirror Monitor - displays Camera images from Saloon & Reverse Camera.
3. Cooler Box with 3 x 12V Rechargeable Torches on Box cabinet.
4. Fire Extinguisher on floor under front seat, open Black Straps to remove cylinder
5. Map Reading Lights, Centre one Red, others White. Press red button for on and off. – Ref. page 12.

Tropicool - Cooler Box 21L

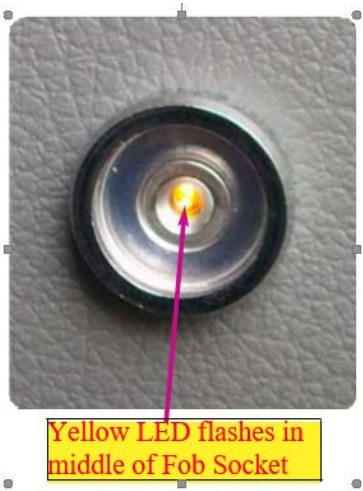
Bulkhead



6. Comms Window – Slide to close and flip up Locking Tab.
7. Roller Blind – Pull down and hook in the two hooks below window.
8. Roller Blind Hooked in Closed position.
9. Glove Box Holder.

Driver ID Fob and Fob Socket

Once the Key is inserted into the ignition the Yellow LED in the middle of the Driver ID Fob Socket starts to flash.



Placing the Driver ID Fob Keys on to the Socket will let the system know the assigned drivers identity.

NOTE: Refer to FIAT hand book for operation of the base vehicle controls

ATSR SP3 Drivers overhead Switch Panel above Mirror Monitor

Indicator which Indicates when It is Safe for Driver to Reverse. A Warning buzzer sounds if it is not Safe to Reverse.

Switch which turns on and off the left scene light when the handbrake is on. This switch will turn on and off the left alley light when the handbrake is off. (The left alley light will automatically turn o ffafter 60 seconds).

Switch which turns on and off the rear scene light. Switch enabling conditions - handbrake on.

Switch which turns on and off the right scene light when the handbrake is on. This switch will turn on and off the right alley light when the handbrake is off. (The right alley light will automatically turn off after 60 seconds).

Contd….

Emergency mode Switch which turns on and off the white piercers, the light-bar piercers,the side blues, the grill/wing blues, the light-bar blues, the light-bar high intensity, Rear POD blues, Speed Limiter OP and arms the siren. Switch enabling conditions - ignition on.

Indicator which flashes and sounds a warning buzzer if any of the Battery voltages drops below 11.5 volts.

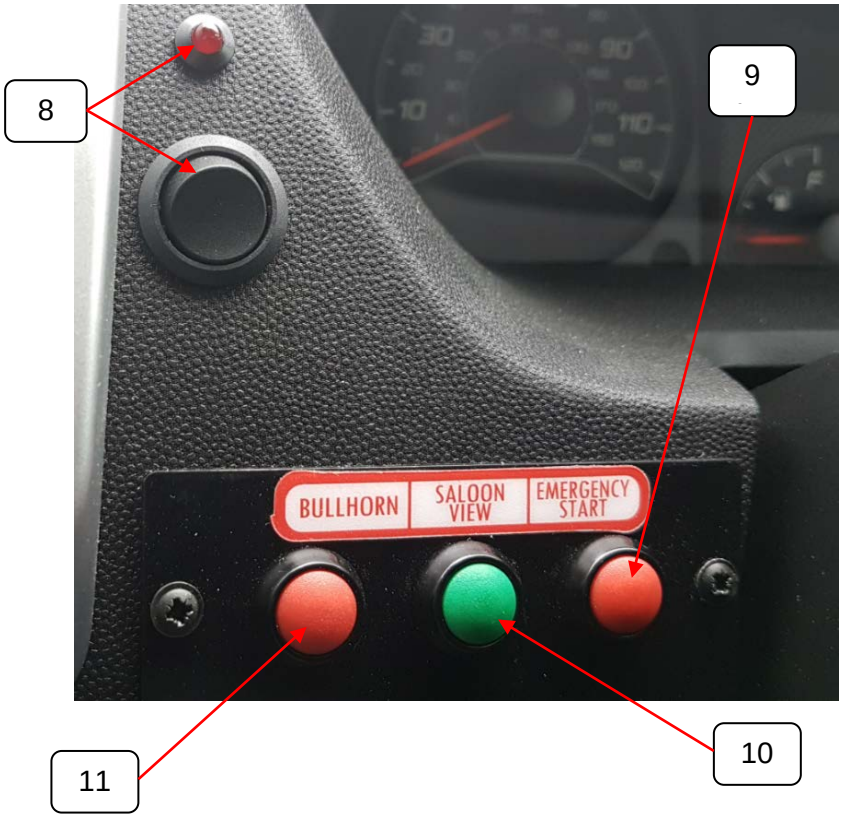
Indicator which flashes when the Side Step/Ramp Input is ON. A Warning buzzer sounds if Side Step/Ramp Input is ON and the handbrake is off.

Indicator which flashes if any of the Doors are Open. A Warning buzzer sounds if any Door is open and the handbrake is off.

Switch which illuminates when the reverse alarm sounds and can be then used to cancel this audible warning. Enabling conditions, Reversing input ON.

Emergency mode switch which turns on and off the side blues, the light-bar blues, the rear reds, the saloon light full switch and the runlock switch, Rear POD blues. Switch enabling conditions - handbrake on.

Driver's Cab Drivers Side



8. Intercom On/Off Switch - Red LED illuminates when the Intercom is on.

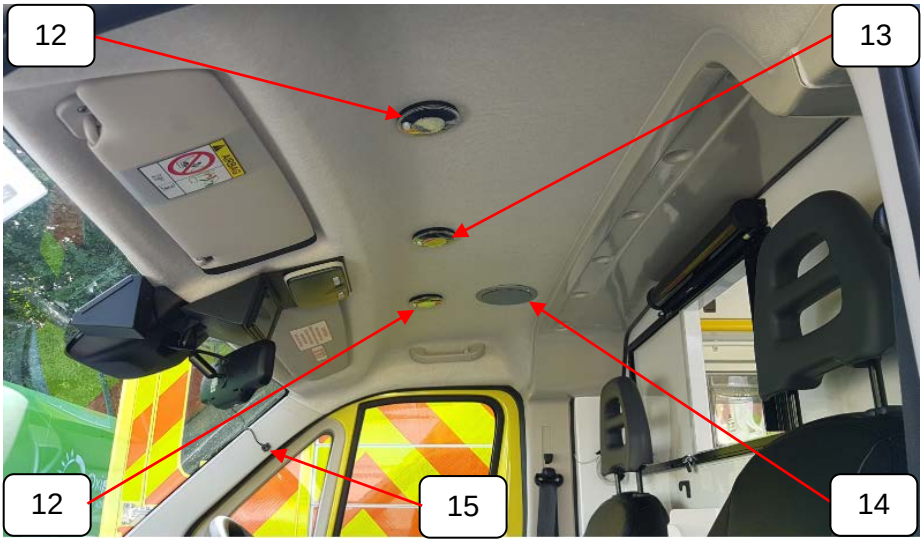
9. Emergency Start Push Button use when main battery is low – hold for a minimum of 30 seconds to parallel all batteries.

10. Saloon Camera View Push Button – Push once and Saloon View is displayed for 10 seconds.

Note: slight delay before Saloon view appears while system boot up

11. Bull Horn – Momentary Push Button, push to operate Bullhorn.

Driver's Cab



12. Two White LED Map Reading Lights one directly over Drivers head & one directly over Passengers head in the Roof Cloth. – Push Red Button on rim once to switch on and once to turn off.

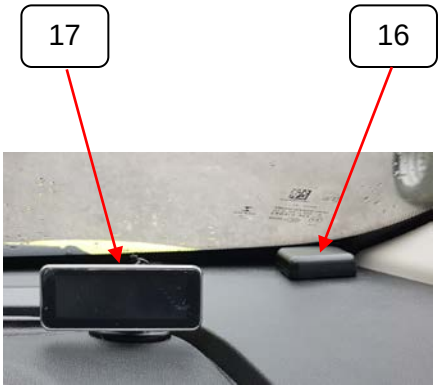
13. One Red LED Map Reading Light in the centre of the Roof Cloth. – Push Red Button on rim once to switch on and once to turn off.

14. Cab speaker – Radio.

15. Intercom Microphone.

16. GPS Antenna for the DVR.

17. Reverse Sensor. - See next page for detail on operation.

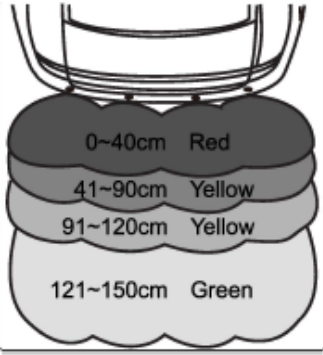


Reverse Sensor Display

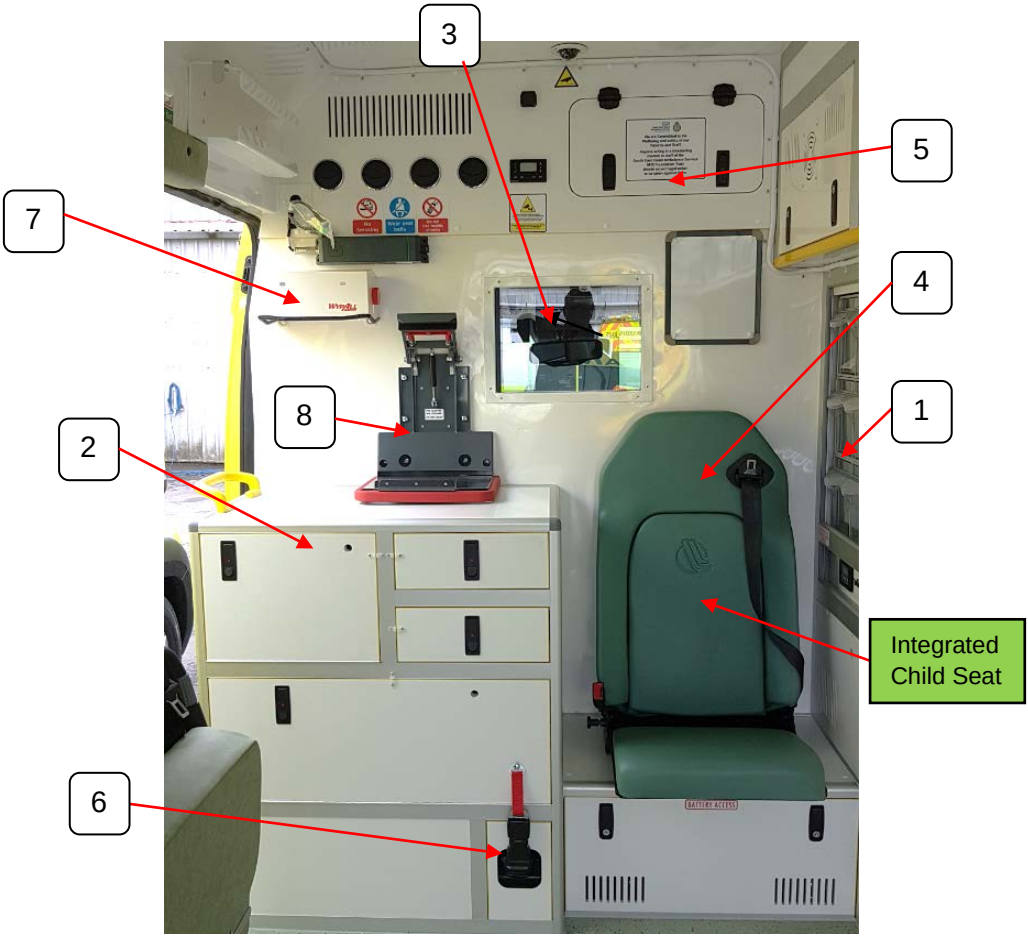
To the front right hand side of the dashboard the Reverse Sensor display is located. Once reverse gear is selected the audible message "Stand well clear vehicle reversing" can be heard through the external Back Chat Speaker located under the rear of the vehicle.

The display Beeps twice once the Ignition is switched on to wake up the system. When reverse gear is selected the display will show the various screens plus Beeps as per diagram below once an object comes into range.

Note: Training is required and care must be taken as the Reverse Sensors are only an aid to the driver.

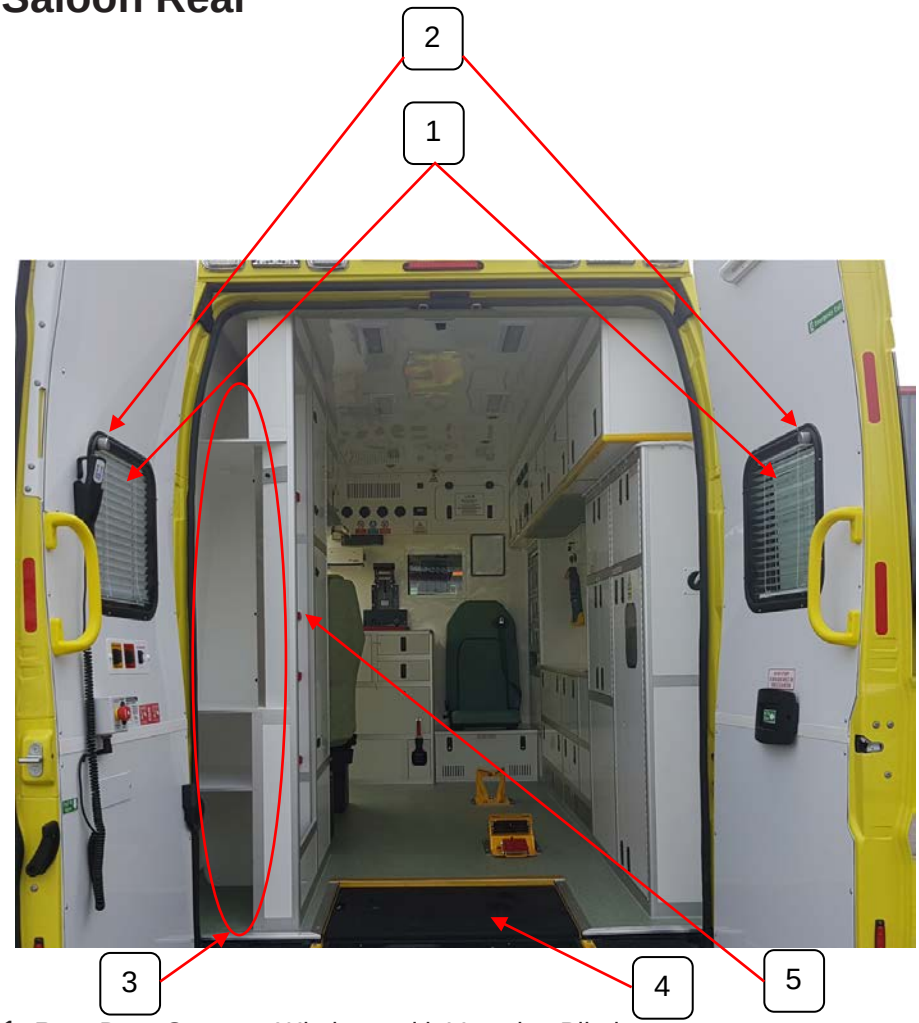
DETECTION RANGE	DISPLAY	BUZZER
Power ON (Normal Self-Testing)		Bi.Bi.
Power ON (System abnormal) EX. 1 Channel CR failed.		Bi
		Bi - Constant
		Bi.Bi.Bi. Progres-sive beeping
		Bi . Bi . 0.5 sec
		Bi ....Bi.... 1.2 sec

Saloon - Bulkhead



1. Prackti Box Storage – Pull top lip to open down.
2. Waist High Locker – Push the black catches to open.
3. Comms Window – Slide to open from drivers side only.
4. EVS Rear Facing Tip-Up Seat - Pull knob at side to lower seat base.
5. Overhead Storage Locker - Push Catches to open
6. Winch Locker – Winch Controls located on Nearside back door.
7. Towel Roll Holder – Disposable paper towelling.
8. Defib bracket

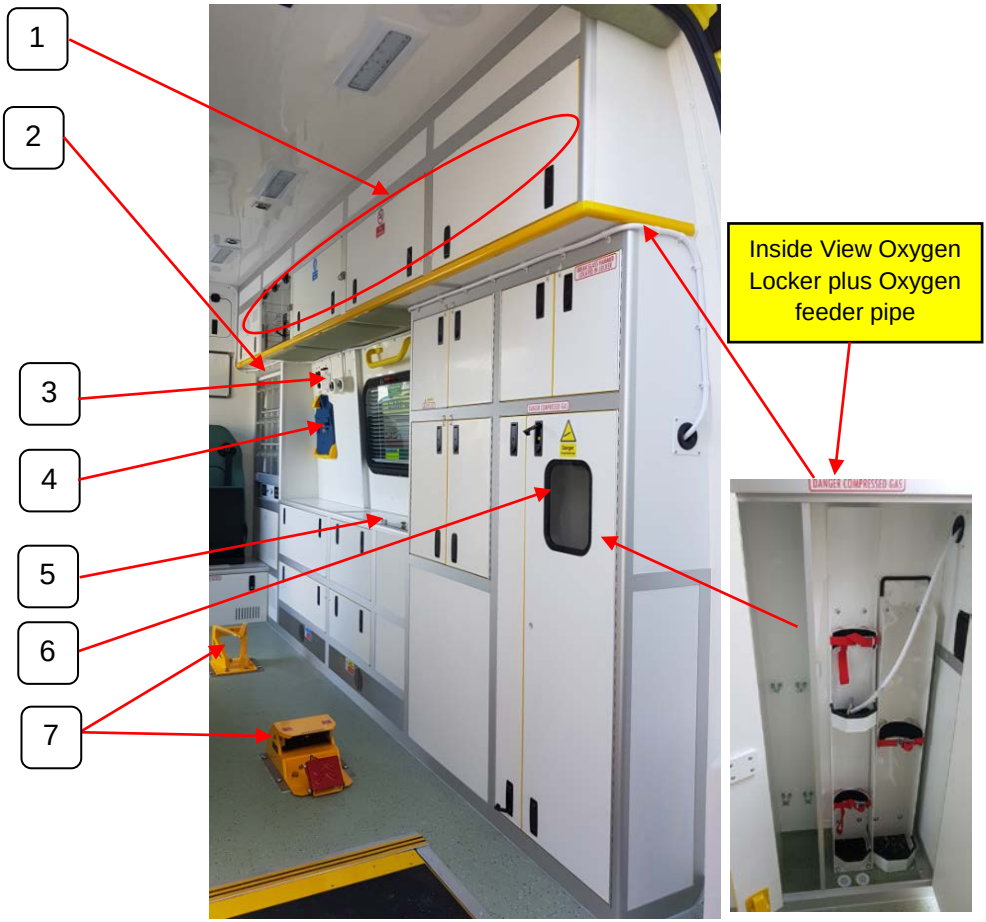
Saloon Rear



1. Rear Door Cassette Windows with Venation Blinds.
2. Blinds can be Open/Closed by turning the Knurled Hand Knob.
3. Storage compartments.
4. Electric EasyLoad fold out ramp – SG Technical Systems Ltd.
5. Scoop & Spinal board storage space

Saloon Offside

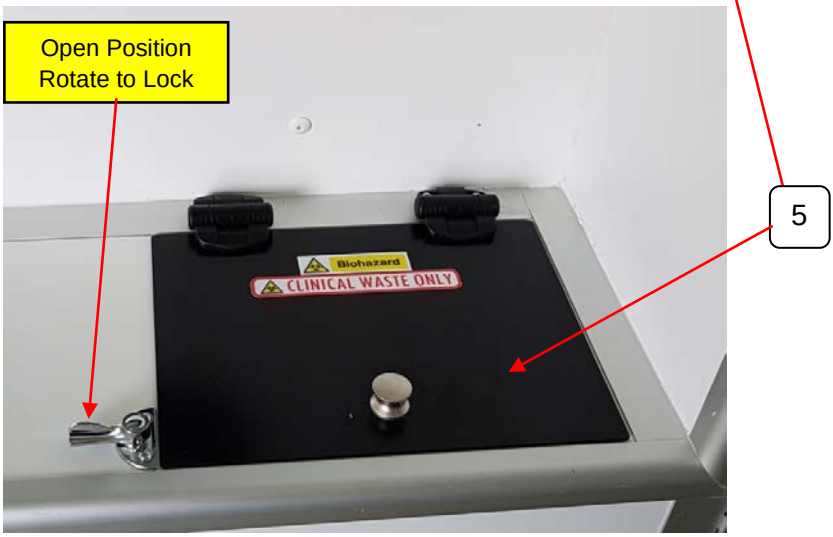
Note: See next page for details.



1. Cantrail Lockers. All Cantrail Lockers are provided with bump pads on the underside to prevent head injury.
2. Prackti Boxes – pull down to open.
3. Oxygen Outlets (Two number Offside).
4. LSU bracket
5. Clinical Waste Disposal Bin – Lift up Flap and Lockable.

Saloon Offside continued….

6. 12V sockets / 220V sockets
7. Incubator terminals (Red + Black -)
8. Oxygen Outlets plus Oxygen Feeder Pipe.
9. LSU Defib Cradle.



Offside Emergency Escape Hatch

10. Pull Silver Ring to dislodge inner window skin. Remove inner Perspex window using Red Handle, this allows access to outer Glass pane.

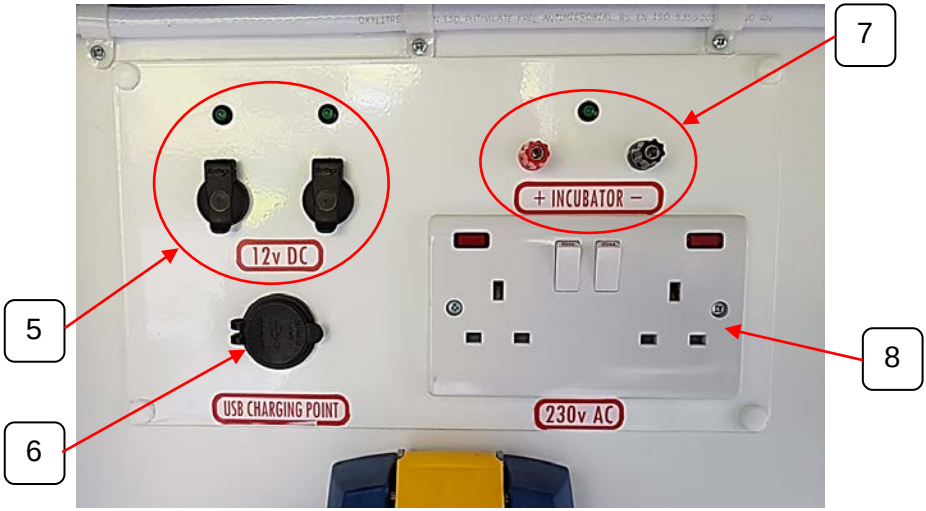
11. Take the Break Glass Hammer from the Offside Tall Locker marked “Break Glass Hammer Located in Locker” and strike the outer pane to shatter the glass.

Note: *Cover your eyes when breaking the Glass with the Break Glass Hammer.*

Offside Attendant's Panel

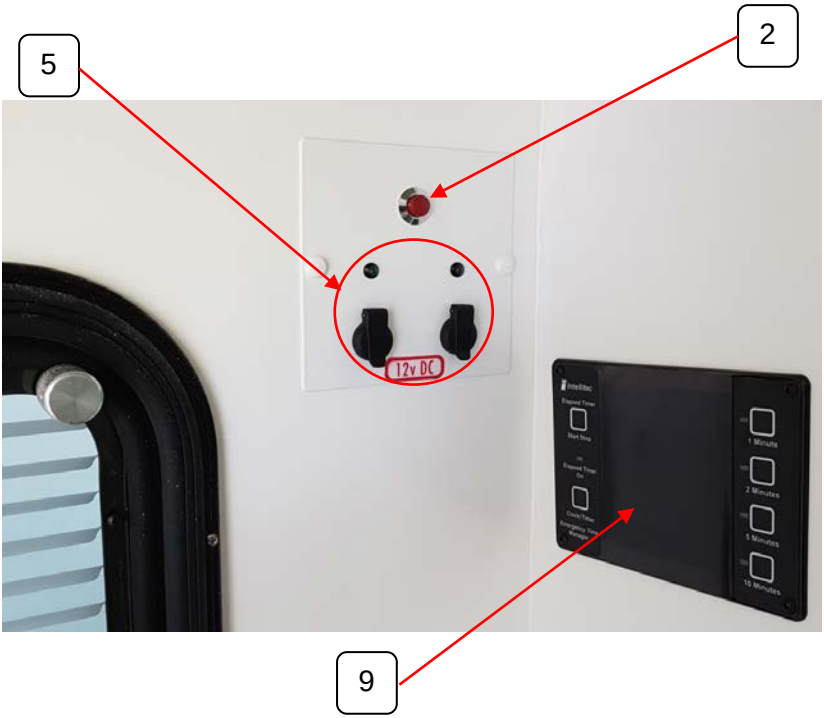
1. Ring – 230Volt Inverter Monitor Panel (see details in appendix).
2. Panic Button. (1 of 3 fitted)
3. Intercom On/Off Switch, Red LED on Indicator and Microphone.
4. Attendants Panel operation see p21 for details.

Offside Panel above LSU



5. 2 x12V Sockets. Green LED's illuminate when Power is available at sockets.
6. USP Charging Point.
7. Incubation Terminals (12VDC).
8. 230Volt AC Sockets.

Offside Panel top right of the Offside Window

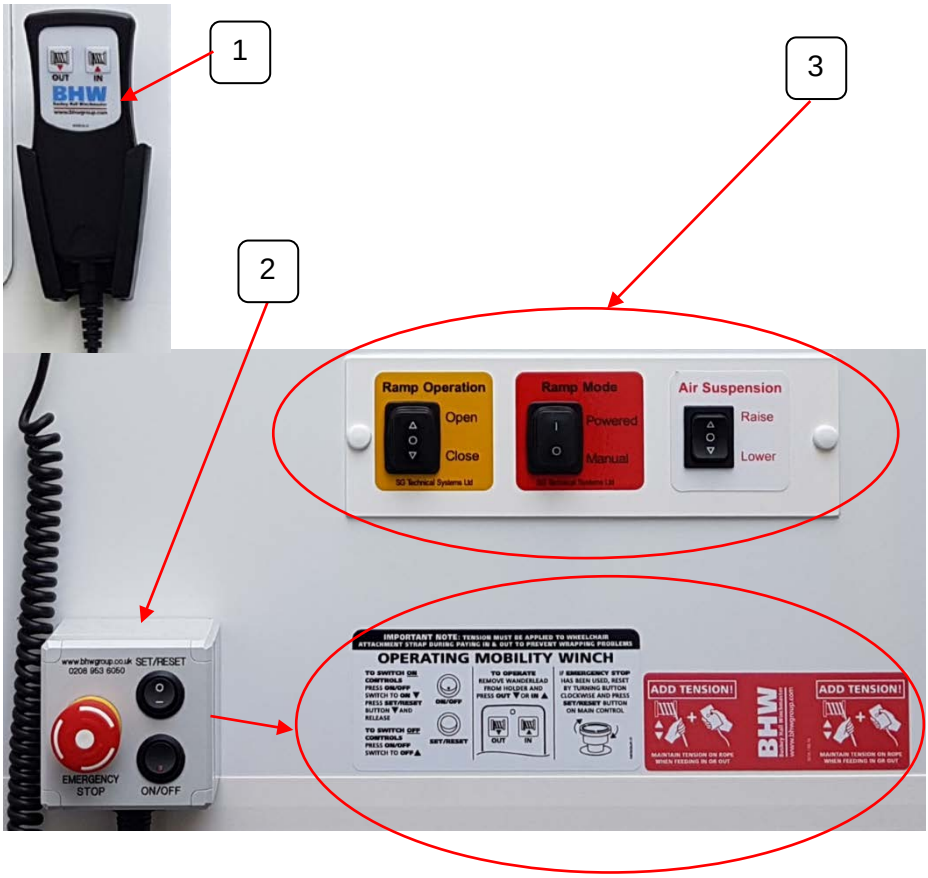


2. Panic Button (2 of 3 fitted - as on Offside Attendants Panel)

5. Two more 2 x12V Sockets. Green LED's illuminate when Power is available at sockets.

9. INTELLITEC Time Management Clock see appendix for operating details

Nearside Rear Door – Winch – Wedge Ramp – Air Suspension Controls



1. Bushey Hall Winch (BHW) Wanderlead Handset in its Cradle. See Appendix for Winch operation details.

2. Controls / Emergency Stop Console fixed to inside of the Offside Door + BHW Instructions Label / Decal.

3. Wedge Ramp and Air Suspension Controls. See Appendix for Wedge Ramp and Air Suspension operation details.

SG Technical Systems - Wedge Ramp

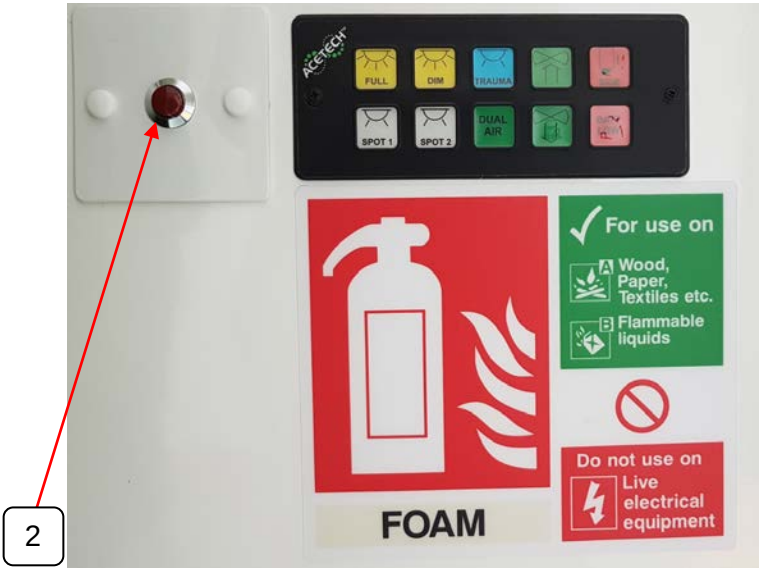
4. S.G Tec Wedge Ramp Folded closed

4

5

5. SG Tec Wedge Ramp opened fully and ready for loading.

Saloon Attendants switch panel located on Nearside between Jany Seats just below the saloon window



2. Panic Button (3 of 3 fitted - as on Offside Attendants Panel)

Details on next page

Continued....

Switch which turns on and o ffthe saloon lights in their full state. This switch will deactivate the trauma switch if it is active.

Switch which turns on and o ffthe saloon lights in their dim state. This switch will deactivate the trauma switch if it is active. Switch enabling conditions - saloon light full switch on.

Switch which turns on and o ffthe trauma lights. This switch when activated will turn o ffthe saloon light full and/or dim switches if they are on.

Switch which turns on and o ffthe vent intake. Switch enabling conditions - dual air switch o ffand ignition on.

Indicator which flashes when the Side Step Input is ON. A Warning buzzer sounds if Side Step Input is ON and the handbrake is off.

Switch which turns on and o ffthe spot lights 1.

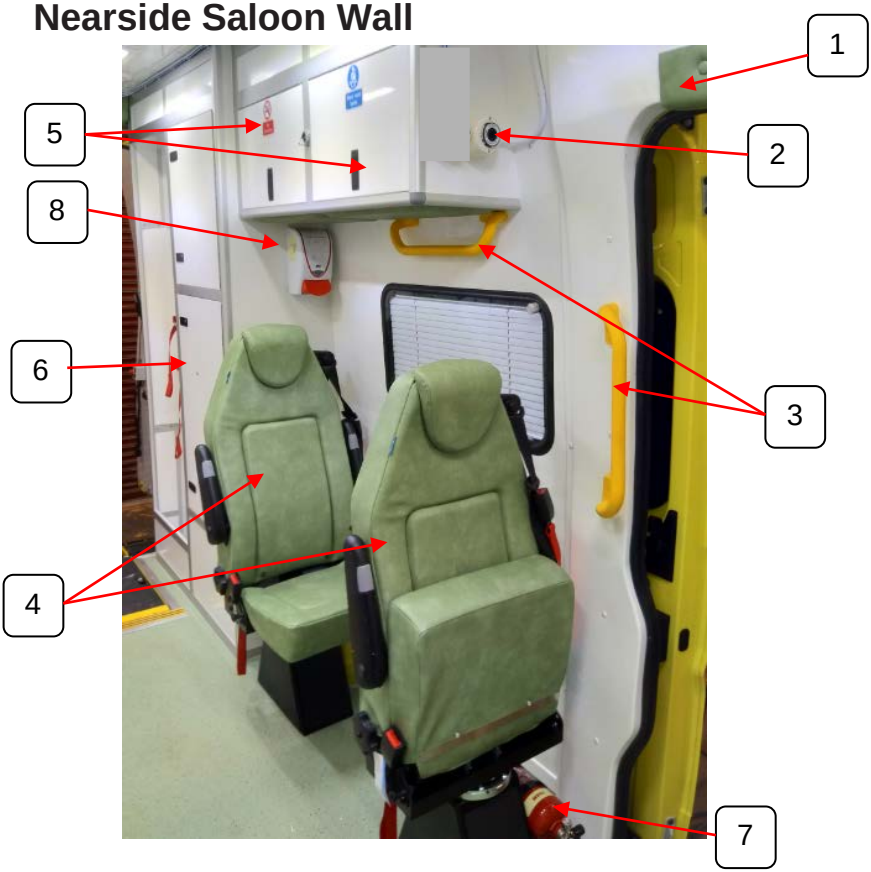
Switch which turns on and o ffthe spot lights 2.

Switch which turns on and o ffthe air conditioning/heater (the rear and side doors must be closed for the air conditioning to activate). After loss of ignition the heater will automatically remain on for 30 minutes unless manually switched off.

Switch which turns on and o ffthe vent extract. Switch enabling conditions - dual air switch o ffand ignition on.

Indicator which flashes and sounds a warning buzzer if the auxiliary battery voltage drops below 11.5 volts.

Nearside Saloon Wall



1. Side door head protection cushion
2. Oxygen
3. Grab rails
4. Jany swivel seats see appendix for details
5. Near side upper storage lockers
6. Near side equipment storage locker
7. 2 Litre Fire Extinguisher (requires routine servicing)
8. Hand wash dispenser

NOTE: When vehicle is in motion Jany Seats must be in the forward facing position and Seat Belts must be fastened.

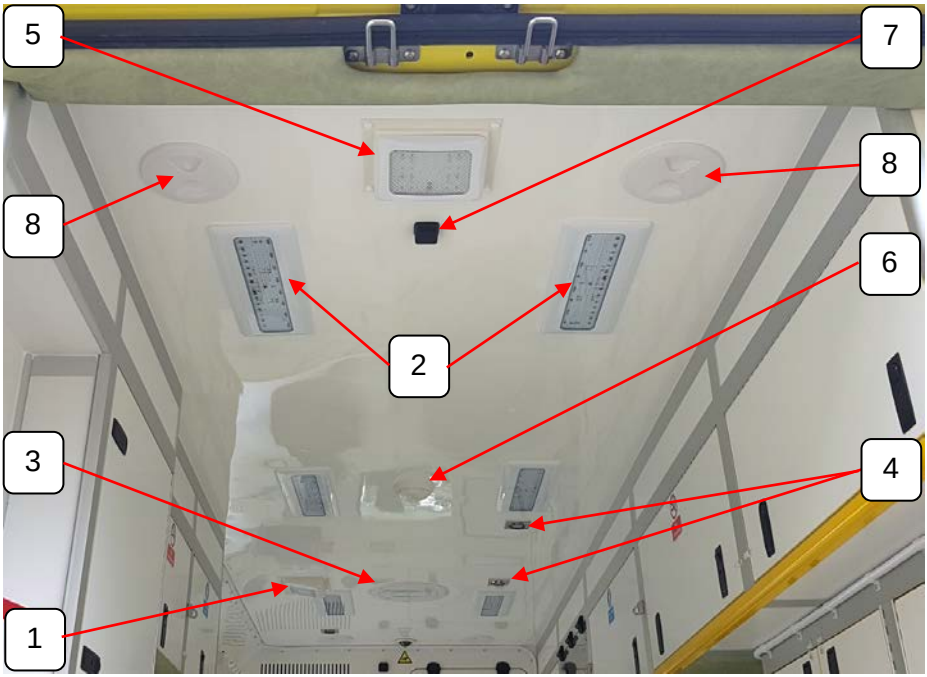
Nearside Rear Storage

MANGAR Elk bracket and 12V Stryker stretcher battery charger

Carry chair storage

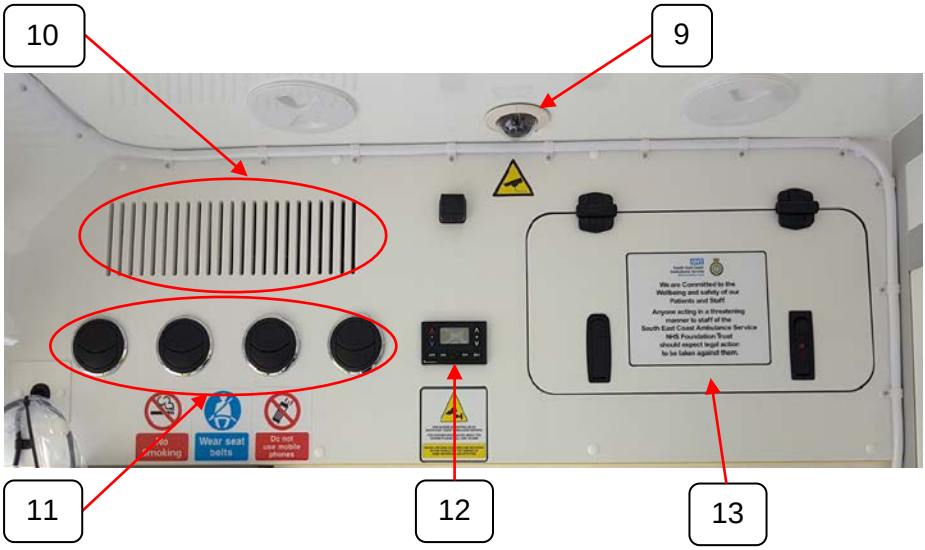
Nearside Entrance and Storage

Ceiling Components

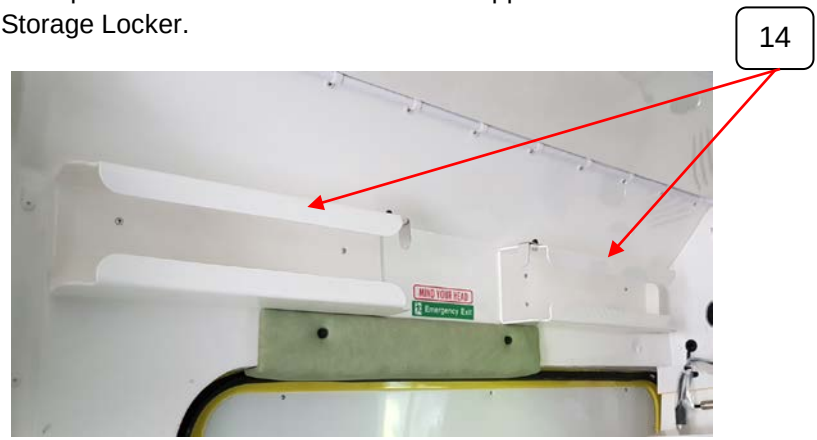


1. Automatic Nearside Entrance Door Light (Illuminates once side door is opened).
2. Six High Level LED Interior Lights.
3. Roof Ventilation operated from the attendant's panel (p18). Open the duct manually by turning anticlockwise.
4. Saloon spot lights.
5. Automatic Rear Door Light (Illuminates once side door is opened).
6. PIR Sensor for Auto Lights On.
7. Climate Control Thermostat.
8. Roof Aerial inspection Ports

Ceiling components continued….

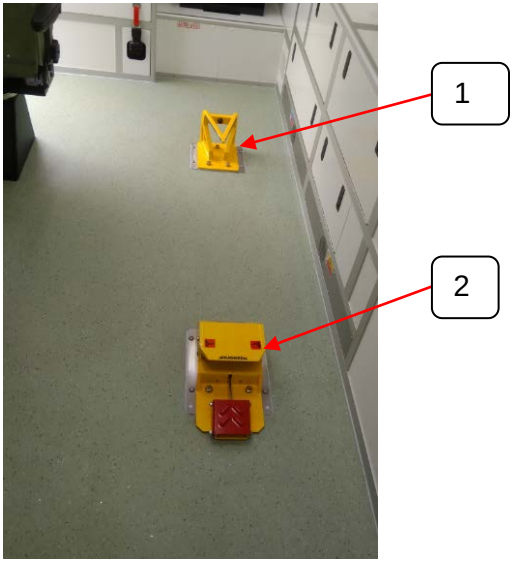


9. Saloon Dome Camera.
10. Air Conditioning Air Intake.
11. Air Conditioning Outlets.
12. Eberspacher Climate Control Panel see appendix for details.
13. Storage Locker.



14. Glove Box Holders above side entrance

Floor

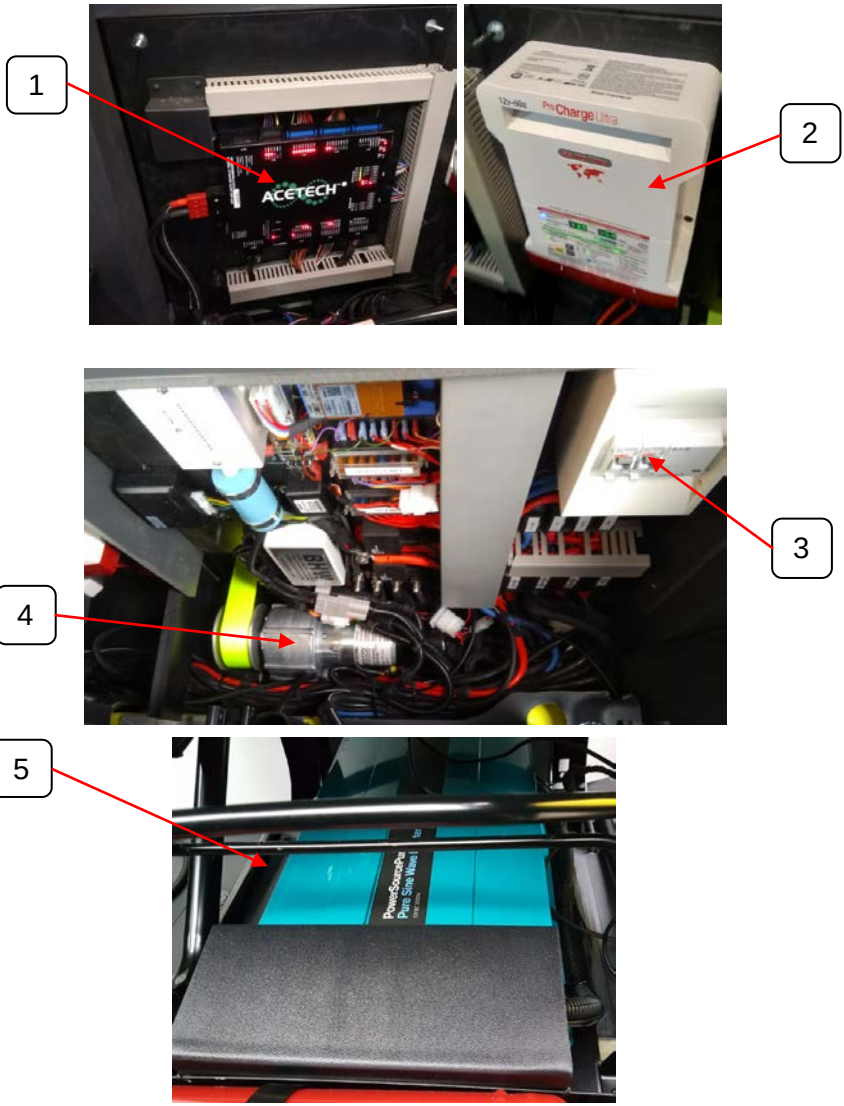


1. Stretcher Head End Guide Lock.

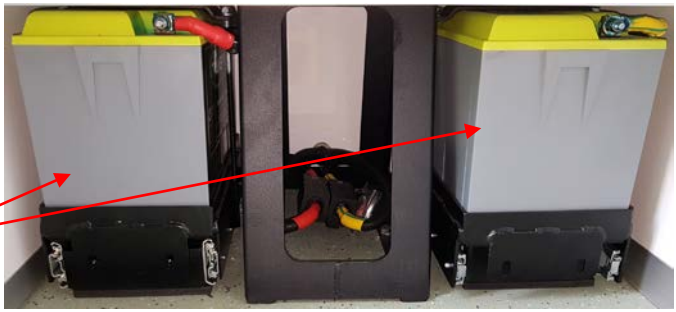
2. Stretcher Foot End Pedal Lock.

Vehicle Electrics

Located behind the driver and passenger seats encased



Details on next page



1. ATSR (AT64) Control Unit.
2. Sterling Pro Charger Ultra 60Amp.
3. RCBO Circuit Breakers.
4. Bushy Hall winch motor.
5. Ring PowerSourcePure 12VDC 2000Watt Inverter (220VAC output), under Passengers seat.
6. Auxiliary Batteries underneath saloon Attendants seat.
7. Telemetry and DVR recording equipment (saloon offside front)

NOTE: ***These Electrical Components should only to be accessed by trained personnel***

Appendix

- Eberspacher 816 Control Panel
- BHW Winch Controls
- Jany Swivel Seat Operation
- Ring Carnation Inverter Monitor Panel
- Intellitec time manager operation
- SG Technical Systems Ltd. Wedge Ramp
- Air Suspension and Ramp Activation Panel
- Vehicle Cleaning and Maintenance

Heater Operating Manual

EBERSPÄCHER UK | CLIMATE CONTROL

DIGITAL AUTOMATIC TEMPERATURE CONTROLLERS – FOR AIR CONDITIONING AND CLIMATE CONTROL

SEE THE BENEFITS DAY AND NIGHT

- High contrast white LED, back-lit for easy reading of display, day and night.
- Digital automatic temperature controls for air conditioning and climate control.
- 1/2 DIN slot dimension to fit standard vehicle interiors.
- Moulded soft-feel, push-button panel.
- Sealed front, to provide long-term protection and continuous reliability.
- 'Hydro Climate' 1/2 DIN line (*Figure 1*).
- 'Dual Air' climate 1/2 DIN line (*Figure 1*).
- 'Double Heat Climate' 1/2 DIN line (*Figure 1*).
- 'Air Conditioning Cooling' Small Dimension Line – SDL (*Figure 2*).

Figure 1

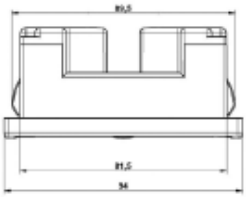
Figure 2

Eberspächer (UK) Ltd
Headlands Business Park, Salisbury Road,
Ringwood, Hampshire BH24 3PB
Tel: 01425 480151 – Fax: 01425 480152
enquiries@eberspacher.com – www.eberspacher.com

Eberspächer

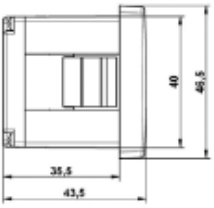
EBERSPÄCHER UK | CLIMATE CONTROL

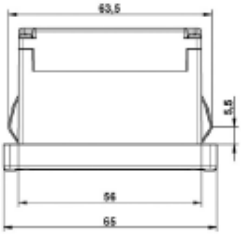
CONTROLLERS – TECHNICAL DATA

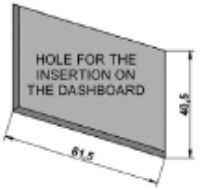


PERFORMANCE / ELECTRICAL AND ENVIRONMENTAL TESTS

Operating Voltage Range:	10.5 ÷16V / 18÷ 32V
Nominal Power Supply:	12V / 24V
Output Rated Current – Each Pin:	Maximum 400mA
Operating Temperature Range:	From -30°C to 85°C
Storage Temperature Range:	From -40°C to 90°C
Water / Duster Resistance on Front Panel:	IP54







PERFORMANCE / ELECTRICAL AND ENVIRONMENTAL TESTS

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Eberspächer (UK) Ltd
Headlands Business Park, Salisbury Road,
Ringwood, Hampshire BH24 3PB
Tel: 01425 480151 – Fax: 01425 480152
enquiries@eberspaecher.com – www.eberspaecher.com

Eberspächer

Important Information

- Always switch off the heater when the fuel tank is being filled.
- Never operate the heater in confined spaces, i.e. garages.
- The maintenance flap must not be opened during operation.
- Failure to comply with the instruction or operation of the heater in confined spaces (i.e. garages) harbours the risk of poisoning.
- The heater may only be used for the purpose specified by the manufacturer and in compliance with the operating instructions supplied with every heater.
- Switch off heater and wait for blower fan to stop before isolating batteries.
- When the heater or the heating system is damaged, an authorised Eberspächer workshop must be called in to repair the damage using genuine spare parts.
- When carrying out electric welding work on the vehicle, disconnect the positive post cable at the battery terminals on the battery and ground to negative.
- Do not place aerosol cans, alcohol, inflammable liquids or inflammable materials near the heater exhaust or hot air outlet.
- Defect fuses must only be replaced by fuses with the prescribed rating.
- Switch on the heater briefly (about 10 minutes) every month. This prevents the fuel pump and burner motor from seizing up.

Eberspächer
A world of comfort

Eberspächer (UK) Ltd. Headlands Business Park, Ringwood, Hampshire BH24 3PB
Tel. (01425) 480151 – Fax. (01425) 480152
Email: enquiries@eberspacher.com – internet: www.eberspacher.com

Winch

BHW
Bushey Hall Winchmaster
www.bhwwgroup.com

OPERATING INSTRUCTIONS

GENERAL NOTES

Once the BHW Winch•Assist has been installed and the circuitry has been checked, the installer should test load the winch to ensure that all aspects of the system are working correctly.

PLEASE NOTE: As with any other electrical device fitted to a vehicle, the BHW Winch•Assist will use additional amounts of vehicle battery power. It is important therefore that the battery is of a suitable strength and regularly charged to eliminate possible power drop. Where possible we recommend that the engine is kept running during operation of the winch.

BHW Winch•Assist winches should be operated by a competent person fully capable of navigating stretchers or wheelchairs and their occupants. We strongly advise that all operators should read the supplied operating instructions carefully and thoroughly so that the use of this Winch•Assist system is fully understood.

The operator(s) should undergo training in the use of this equipment without an occupant. It is advisable to apply a nominal weight on a stretcher or wheelchair to build confidence and skill with winch operation and stretcher / wheelchair control.

The Ambulance team should be fully aware of the position of the Auto Cut Out button for reset purposes and also the Emergency Stop control – which must be sited adjacent to the loading area – i.e. in the rear of the vehicle.

This equipment should only be used with a qualified operator in charge of the task.

BHW Winch•Assist is designed to aid the loading and unloading of stretchers or free rolling wheelchairs and their occupants and shall not be used for any other purposes.

The winch control shall be in the possession of the operator at all times during winch operations for loading or unloading.

When using the equipment at night, adequate lighting must be provided to enable the operator to clearly see the loading and unloading task.

All other personnel should be kept clear of the operation at all times.

The operator is advised to wear gloves during the operation of the winch.

TO OPERATE THE WINCH - TESTING

The installer should test the winch operation unloaded and then loaded with a weighted load (no occupant) by following the winching instructions detailed in 'Loading' on the following page. This will test the system response and performance.

From the Emergency Stop / Control box, usually positioned at the rear of the vehicle, the wanderlead is connected using the jack plug socket underneath the control unit.

The winch is operated by pressing the 'IN' or OUT' buttons on the handset.

The strap should be winched out and in under tension, applied by hand. Failure to do so may result in the strap tangling on the drum.

It is recommended that the winch is tested to a load rating of at least 110% of the rated capacity to prove the integrity of the installation.

BHW
Bonfiey Hall Winchester
www.bhwgroup.com

OPERATING INSTRUCTIONS

PREPARING TO LOAD

Check that the vehicle handbrake is fully engaged.

If an isolation switch has been fitted into the system, turn it on. Check that wanderlead is plugged into the control unit located at the rear of the vehicle.

Prepare the winch and straps for the loading of the stretcher or wheelchair first. It is recommended that the strap is powered out from the winch BEFORE the patient is brought out into position as this will minimise exposure to the elements of the patient once outside.

Press the ON button and the SET button located on the control switch.

SINGLE SPEED UNITS

Use the wanderlead control plugged into the Controls / Emergency Stop console - and holding the strap gently under tension press the 'OUT' button on the wanderlead to power out the strap to the end of the vehicle ramp.

NEVER POWER OUT WITHOUT APPLYING TENSION TO THE STRAP, OR IT MAY TANGLE.

Do not further winch out if the chevrons on the strap are visible.

Ensure that straps are not tangled and clips are ready to use to connect to the stretcher.

Position the stretcher (or wheelchair) centrally in line with the ramp.

Connect the straps from the yoke assembly to the stretcher or wheelchair. Every stretcher or wheelchair brand is different in terms of manufacture, so trials should be undertaken with the stretcher or wheelchair empty to ascertain the best fixing points to ensure that the complete load is stable and balanced during the winching operation.

NEVER ALLOW THE STRAP TO FULLY UNWIND OFF OF THE DRUM – IF THIS HAPPENS, THE WINCH WILL WIND THE STRAP BACK ON THE DRUM THE WRONG WAY.
Attach the webbing straps to suitable anchor points on the load.

Operate the wanderlead 'IN' button to initially take up any slack and apply a slight tension. Disengage any brakes on the load and operate the wanderlead 'IN' button to fully load the stretcher or wheelchair.

For normal loads (up to 85kg) the operator should stand behind the load and guide its direction into the vehicle. For loads over 85kg, more than one carer / operator should be present to safely guide the load from either side, rather than from behind.

When the load is fully winched into the vehicle, apply brakes. Affix travel restraints. Power out the strap slightly and remove the webbing straps from the load.

UNDER NO CIRCUMSTANCES SHOULD THE WINCH BE USED AS A LOAD RESTRAINT DURING A JOURNEY.

Maintaining a slight tension on the strap, power 'IN' any remaining strap length to safely store. Press the ON/OFF switch and safely stow the wanderlead. Turn off the isolator switch (if installed).

DO NOT DRIVE THE VEHICLE WITH THE WINCH ASSIST TURNED ON.

OPERATING INSTRUCTIONS

TO OPERATE THE WINCH - UNLOADING

After the vehicle has stopped and the handbrake is fully engaged, turn on the isolator switch (if fitted) and press the ON/OFF button on the winch control unit.

Retrieve the wanderlead from stowage and press the SET control button to activate the system. With the strap under tension, winch 'OUT' enough slack to allow connection to the load.

With the load still locked in position by its travel restraints, reconnect the webbing straps.

Take up any slack in the strap by carefully winching 'IN'.

Remove the travel restraints and disengage the stretcher or wheelchair brakes.

Ensure that the load is centrally positioned at the top of the ramp, ready for descent.

Press to wanderlead 'OUT' control and guide the load from the vehicle, down the ramp.

SAFETY

EMERGENCY STOP

In the event of an emergency press the EMERGENCY STOP button located on the winch control unit. This will immediately stop the winch.

Where possible, the load should be stabilised and secured until operation can safely continue.

To operate the winch again once any problem has been addressed, it is necessary to turn and unlock the EMERGENCY STOP button and press the SET button on the side of the winch control unit.

MAINTENANCE

REGULAR MONTHLY MAINTENANCE

Externally: The winch and winch area should be kept clean in order to prevent any build up of unwanted material on or around working parts.

- Check that WINCH IN and WINCH OUT are operating the right way round, as fully running out the rope may have reversed the operation. **This is important as it may cause safety features to fail if rope direction has been reversed.**
- Check the EMERGENCY STOP control to ensure it functions correctly by operating the winch and pushing the STOP button.
- Check winch for external damage.
- Check winch mounting for distortion and re-tighten mounting bolts if necessary.
- All external-moving parts should be lubricated with lightweight oil.
- All electrical connections and wiring should be inspected for loose connections, corrosion or fretting.
- Check vehicle battery power levels to ensure optimum operation.

SPARES

If it becomes necessary to obtain replacement parts, referring to the parts page in this manual, call BHW Group sales (0208 953 6050) and quote reference numbers.

CARE OF WEBBING STRAPS

It is most important that the webbing strap is inspected on a regular basis, for cuts, chafes and other damage. If damaged, the webbing straps should be replaced.

WEBBING STRAPS ARE NOT COVERED BY WARRANTY.

Jany Seat Configuration (Library photos)

The rear seats are Jany seat capable of rotating through 0, 45, & 90 degrees.

Warning

For safety reasons the Jany Seats must be in the forward facing position and the attendant / passenger strapped in when the vehicle is in motion.

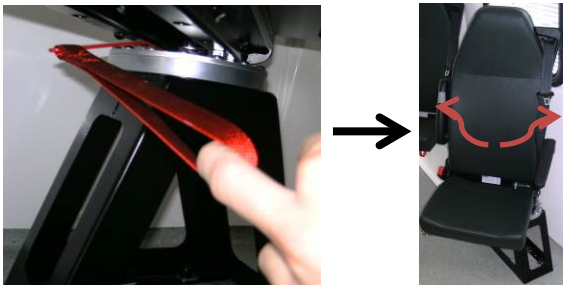
Jany seat forward facing position

Jany seat at 45 degrees

Jany seat at 90 degrees

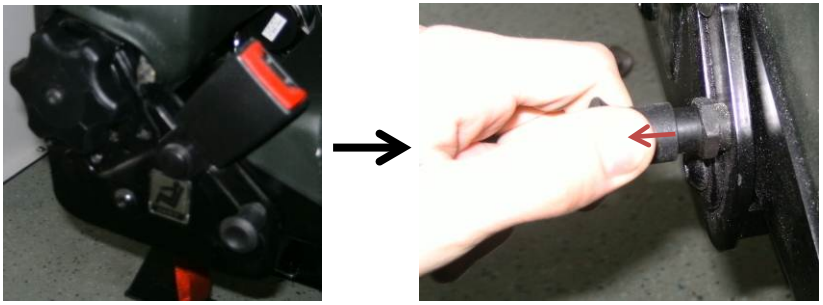
Jany seat (Seat base stowed)

Operating Jany Swivel seat to choosing position



Pull on the red strap and turn the Jany seat to the left or right. Always keep it in the locked position.

Twist regulator wheel anticlockwise to lower backrest and clockwise to rise.



To lift bottom part – pull on the knob marked in red and push bottom part upwards.
To lower – reverse order.

PowerSourcePure

Pure Sine Wave Inverter

12V: RINVPA6 / RINVPA10 / RINVPA20 / RINVPA30
24V: RINVPB10 / RINVPB20

Instructions

Retain these instructions for future reference

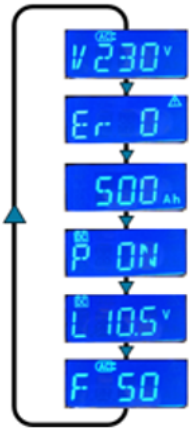
www.ringautomotive.com

Information Mode

Various information modes are available by pressing ▲▼ buttons to move forward or backwards through the screens.

DC Voltage	Input voltage available from the battery supply.
DC Current	Input current being used from the battery supply in order to power the load
AC Voltage	Output voltage available from the AC outlets.
Output Wattage	Output power being consumed by the connected loads.
Hours Remaining	An estimate of time remaining before the battery will be depleted based on the current load. *Current sensor must be fitted for this to display.

Setup Mode
The inverter can be configured by entering the setup mode
To enter Setup Mode press & hold ↵key
Press ▲▼ keys to select item then press ↵ chosen setting will then flash
Adjust setting using ▲▼ then press ↵to set
Press and hold ↵key to exit back to Information Mode



	Setting	Default
Output Voltage	200/220/230/240V	230V
Last Error Code	N/A	N/A
Battery Size	90 – 540Ah (in 30Ah steps)	90Ah
Power Saving Mode	ON/OFF	ON
Low Voltage Cut-off	9-5 – 11.0V (in 0.5V steps)	10.0V
Output Frequency	50/60Hz	50Hz

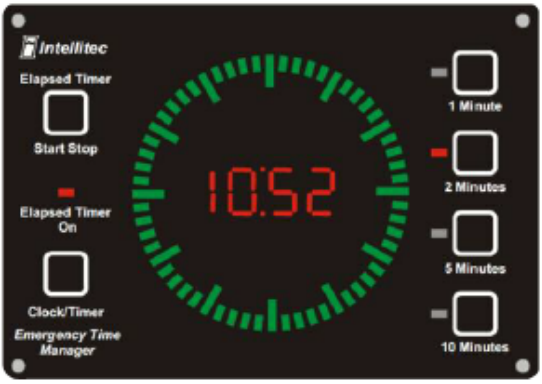
Output Voltage	Sets the AC output voltage. Only change if the application requires a different voltage for optimum performance
Last Error Code	Allows the last error code to be viewed
Battery Size	Sets the Ah rating of the battery supplying the inverter. The value is used when calculating input current and hours remaining in conjunction with the Current Sensor
Power Saving Mode	If the inverter does not detect a load for 10 minutes it will enter a sleep mode to reduce drain on the battery. In this mode the power indicator will flash green
Low Voltage Cut-Off	Sets the voltage at which the inverter will switch off should the input voltage become too low
Output Frequency	Sets the output frequency of the inverter. Only change if the application requires a different frequency for optimum performance

Indicator & Error modes

Power	Illuminates green to show the unit is switched on and power is available from the AC output socket(s)
Overload	Illuminates red if the units has been overloaded due to excessive current or a short circuit
Over Temperature	Illuminates yellow if the unit has overheated
Audible Alarm	An alarm sound will be heard if the unit has switched off due to a fault

Error code	Description	LEDs	Inverter Status	Action
–	Normal operation		ON	None
	Battery low voltage warning		ON	Check for low battery voltage Check cable connections are not loose Reduce load to extend battery life
	Battery low voltage shutdown		OFF	Switch inverter off, recharge battery then switch back on
	Battery high voltage shutdown		OFF	Check battery voltage is correct for inverter model e.g. 24volt battery for a 24volt inverter
	Overload shutdown		OFF	Total load exceeded continuous rating Startup current exceeded surge rating Appliance short circuit fault
	Over temperature shutdown		OFF	Check for adequate ventilation around inverter Check inverter cooling fans are working
–	Power saving mode		SLEEP	None

Emergency Time Manager



The Time Manager provides 4 functions

1). Time of day in hours and minutes
2). Sweep second hand
3). Elapsed time in hours and minutes
4). Four timer buttons set alarm from 1 to 90 minutes

Setting the Clock:

1). To enter the time set mode press and hold the "Clock / Timer" button until the display reads 12:Hr. The LED will light next to the '1' Minute button.

2). Press the "1 Minute" button to select 12 or 24 hour time.

3). Press the "Clock / Timer" button. The LED for the 1 Minute and 2 Minute buttons will light.

4). Press the "1 Minute" button to increase the hour. Press the "2 Minute" button to decrease the hour. When finished press the "Clock Timer" button.

5). Press the "1 Minute" or "2 Minute" buttons to set the minutes. When finished press the "Clock / Timer" button. The correct time should now be set.

Emergency Time Manager contd....

Sweep Second Hand.

Operates in all modes. Made up of 60 LEDs and provides the apparence of a sweep second hand.

4-Digit Display

In "Time of day" and "Elapsed time" modes, it will display hours and minutes.

Audible Alarm

Sounds at the end of a timing event.

Elapsed Time Start Stop Button.

When the *"Elapsed Timer / Start Stop* button is pressed, the 4-digit display will change from time of day and begin counting elapsed time from Zero, in hours and minutes. The display is capable of displaying up to 99 hours, 99 minutes. The "Elapsed Timer On" indicator will illuminate when the elapsed timer is running and will go out when it is paused, or stopped.

When the "Start Stop" button is pressed a second time, the elapsed timer will pause and display elapsed time, if not already doing so. If pressed again, the elapsed timer will resume. When pressed and held for 3 seconds, the elapsed timer will stop and reset to zero.

Clock/Timer Button

When the "Clock/Timer" button is pressed the display will switch between *time of day and elapsed time*. When displaying time of day, the *elapsed time timer* will continue to run in the background.

2016 EasyLoad Powered Wedge Ramp

This documents provides maintenance information for the SG EasyLoad Powered Wedge Ramps, it should be used in conjunction with the associated Operations Manual.

Introduction

The ramp system is designed to provide a single plane access slope into the rear of the vehicle (when open) and to form part of the vehicle cabin floor when close. In the stowed position the rear section of the ramp, projecting out behind the vehicle, is designed to be used as an access step for personnel entering or leaving the cabin via the rear doors. All surfaces designed to accept personnel traffic are covered in hard wearing ant-slip floor covering, see Fig 1 & Fig 2.

The deployed ramp has a safe working load of 450KG.

Contract Number.

Each ramp is fitted with a contract plate, see Fig 4, showing the SG contract number (starting with 'C' and also the SG part Number starting with 'D'). These numbers must be supplied when making parts or technical enquiries.

Fig 1—Ramp closed (stowed)

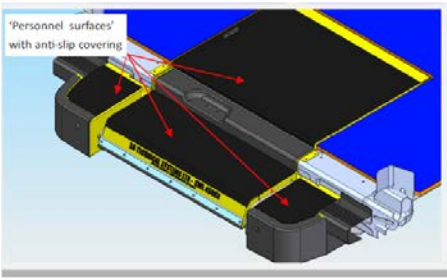
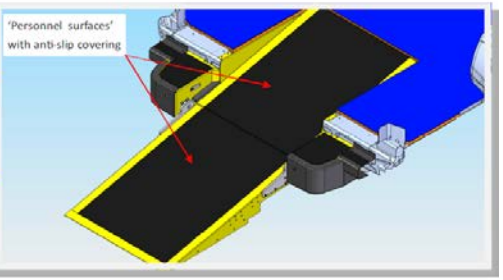
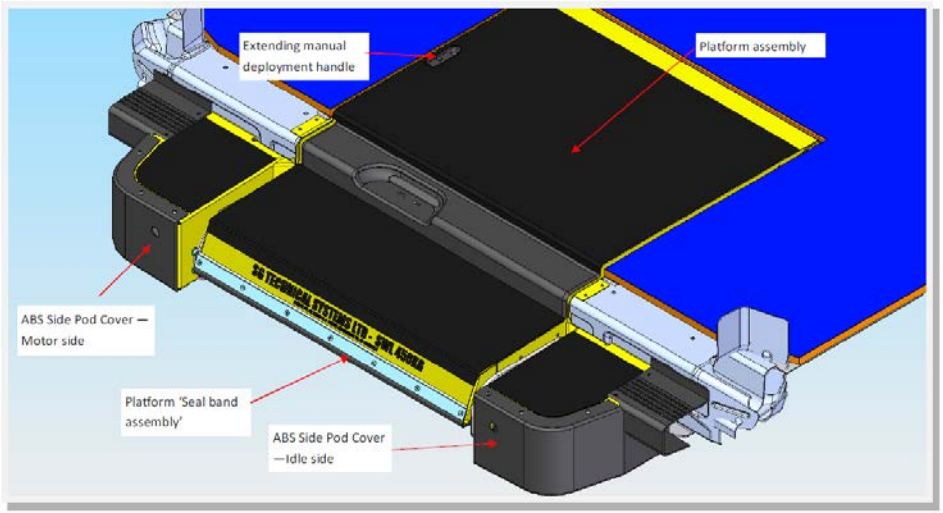


Fig 2—Ramp open (deployed)



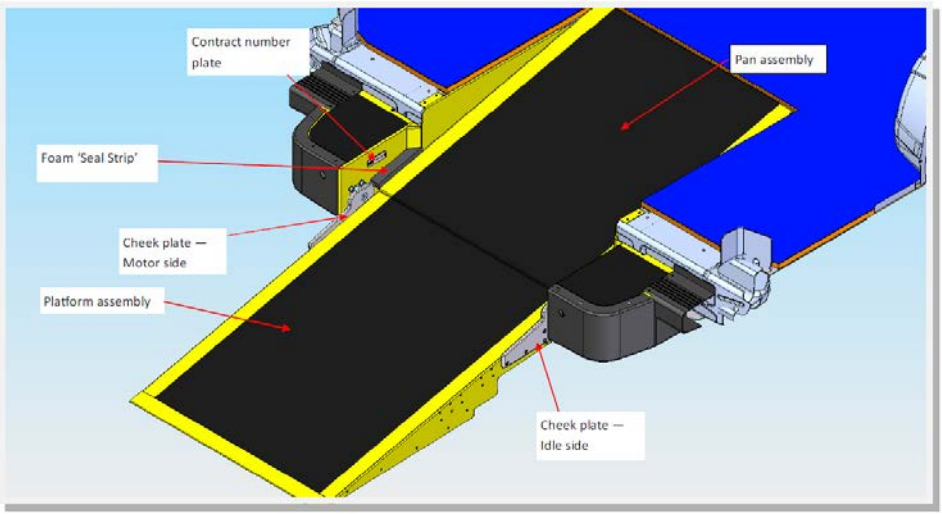
Ramp components 1

Fig 3—Ramp closed



Ramp components 2

Fig 4—Ramp open



Ramp operation:

Normal Powered Operation

To open the ramp platform: PRESS AND HOLD DOWN the open switch.

To close the ramp platform: PRESS AND HOLD DOWN the close switch.

NOTE 1—The Open / Close buttons must be held down. If you remove your finger the motor will stop driving the platform (although the platform may continue to move under gravity and hence can open or close depending upon the platform position when power to the motor is removed.)

NOTE 2—The drive motor will automatically turn off and the platform speed reduce before the ramp reaches the fully open or closed position. You will not damage the ramp by holding down the open / close switch as the platform reaches the fully open or closed positions.

Obstacle detection system

The ramp system has a built in obstacle detection system. Should the movement of the ramp platform be noticeably obstructed whilst the motor is driving the platform the motor will stop driving. When this happens the motor is turned off until the open or close switch, that was being activated, has been released for 0.5 second. The ramp will then respond to open/close signals again.

Manual 'Emergency' operation

In the event that the platform can not be opened / closed under normal electric operation the platform can be open and closed manually.

Step 1 (Opening the ramp)— Switch the 'Manual deployment switch' to the manual deployment position (0).

Step 2 (Opening the ramp)—Grasp the 'Extending manual deployment handle' , see fig 3, and pull to extend the handle. It will extend approx 450mm.

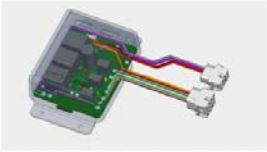
Step 3 (Opening the ramp)—Pull on the extended handle to raise the platform and then lower it to the ground. Allow the handle to retract.

Step 4 (Closing the ramp) - Lift the platform and then lower it into the closed position. (Use the 'extending handle' to lower the platform if required.)

Step 5— **Return the 'Manual deployment switch' to its normal position for ramp powered operation.** (Note: When the switch is in the manual deployment position the open and closed buttons will not work.)

IMPORTANT NOTE: Return the 'Manual deployment switch' to the normal position (1) once manual operation of the ramp is complete.

Ramp 'Zeta 10' control unit



The ramp system includes a dedicated electrical control unit, the SG 'Zeta 10 controller'. This controls the motion of the ramp platform, turning off the drive motor and slowing down the motion of the platform when it nears its open and closed positions. When the platform is closed sufficiently to activate the closed position sensor the Zeta 10 ignores any input from the close switch. When the platform is open sufficiently to activate the open position sensor the Zeta 10 ignores any input from the open switch. (This prevents personnel from accidently trying to drive open and already open ramp or drive close a closed ramp.) Finally the Zeta 10 controls the obstacle detection system, cutting power to the drive motor should the drive current exceed a pre-set limit.

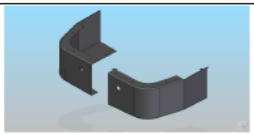
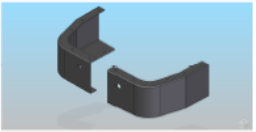
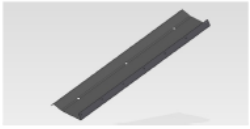
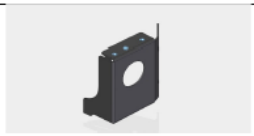
The Zeta 10 is mounted in a clear plastic housing, such that the built in indicator LED's are visible. The LEDs are fitted to enable quick diagnostics of the ramp system electrical inputs and outputs. The below table list the LED's and what they indicate.

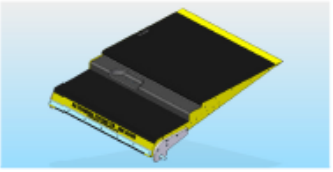
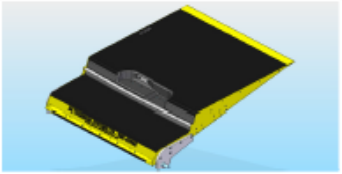
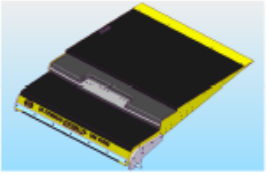
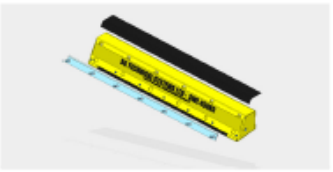
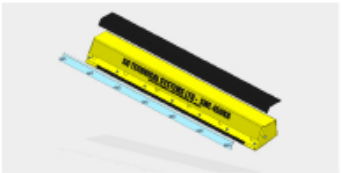
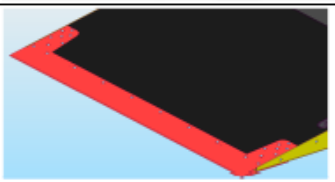
LED 1	RED	Power ON indication: LED is illuminated when 12v is supplied to the Zeta 10.
LED 2	GREEN	Close push button indication: LED is illuminated when the 'close' push button is pressed.
LED 3	YELLOW	Open push button indication: LED is illuminated when the 'open' push button is pressed.
LED 4	WHITE	Platform closed indication: LED is illuminated when the 'platform closed position sensor' is activated. [When ramp is nearly closed / closed]
LED 5	BLUE	Platform open indication: LED is illuminated when the 'platform open position sensor' is activated. [When ramp is deployed]

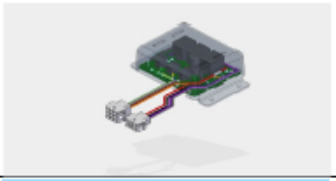
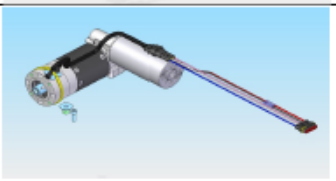
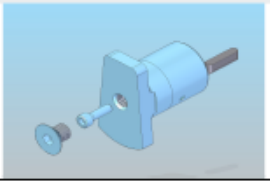
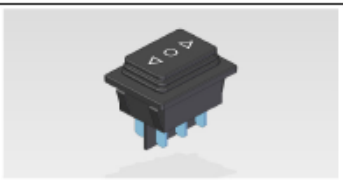
Note: The drivers ramp 'open / close' switch is de-activated when the 'ramp manual deployment switch' is set to the manual deployment position (0). See page 5 of the Operations Manual.

See next page for electrical terminal allocation

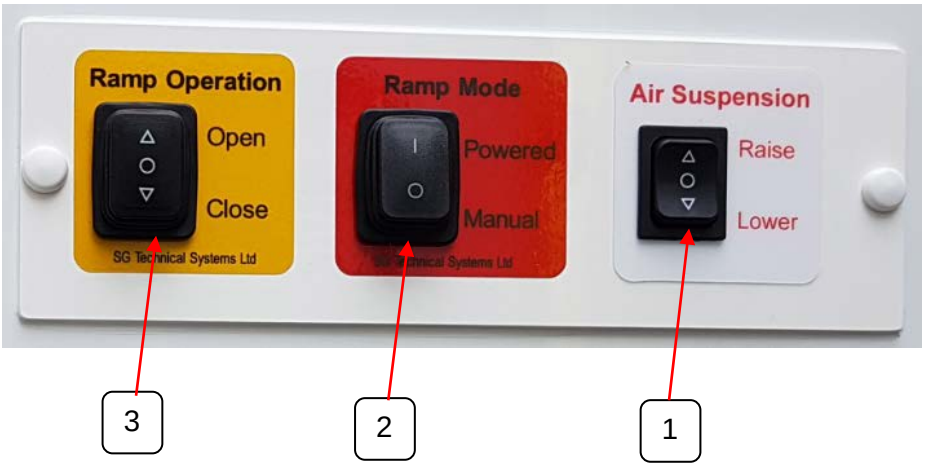
Spares - EasyLoad Ramp

1	D003835 IDLE SHAFT SPARES KIT	
2	D005246 PAIR OF SIDE POD COVERS FOR FIAT DUCATO, PEUGEOT BOXER OR CITREON RELAY	
3	D005250 PAIR OF SIDE POD COVERS FOR RENAULT MASTER, VAUXHALL MOVANO, MAN TGE, VW CRAFTER	
4	D002297 SEAL BAND [808]	
5	D002364 MOTOR GUARD	

6	D002370 EXTENDING HANDLE ASSEMBLY	
7	D002548 PLATFORM ASM + CLAMP STRIP FOR FIAT DUCATO, PEUGEOT BOXER OR CITREON RELAY	
8	D002313 PLATFORM ASSEMBLY FOR RENAULT MASTER & VAUHALL MOVANO	
9	D006290 PLATFORM ASSEMBLY FOR VW CRAFTER & MAN TGE	
10	D002560 SACRIFICIAL END - SPARES KIT FOR FIAT DUCATO / PEUGEOT BOXER OR CITREON RELAY	
11	D003551 SCARIFICIAL END SPARES KIT FOR RENAULT MASTER & VAXHALL MOVAN0	
12	D005858 Kit - NOSE REPAIR	

13	D002432 ZETA 10 CONTROL UNIT	
14	D002820 DRIVE MOTOR ASSEMBLY [LH]	
15	D004075 DUAL SENSORS LOOM - SPARES KIT	
16	D004781 DRIVE HUB SPARES KIT	
17	D002468 ROCKER SWITCH [DOUBLE POLE]	
18	D003956 ROCKER SWITCH	
19	D003977 ROCKER SWITCH	

Air Suspension and SG Tec. Wedge Ramp Activation Panel



1. White - Raise and Lower the Air Suspension

2. *Red - SG Tech. Wedge Ramp Power on and Manual* Switch.

3. Amber – SG Tech. Open and Close Ramp selection.

Vehicle Cleaning and Maintenance Guide Lines

The exterior coatings must be maintained to ensure longevity. This requires careful cleaning and regular inspection of the paint surface.
As there is a wide variety of cleaning equipment and detergents available on the market today, we don't have any preferred washing /cleaning system. However, the following are some simple points which will help to maintain the paint work on your vehicle.

- All mechanical washing equipment will gradually scratch the surface of any vehicle paint thereby reducing the gloss level. However, textile carwash systems or those using soft bristles are preferable. Bristles should be inspected on a very regular basis to ensure they are clean, soft, long and unbroken.

- A detergent tested and recommended for vehicle washing should be used. Detergents being used should never have a PH value higher than PH 9.

- Water used during the washing / cleaning process should be changed regularly. If the water being used contains high levels of dirt, this will lead to additional scratching of the paint film. The temperature of the water should never exceed 50 degrees Celsius.

- All cloths, sponges or brushes used during the cleaning process should also be cleaned free of dirt residue on a regular basis.

- A jet- wash / pressure washer should only be used in accordance with the manufacturer's guidelines and the lance should never be used at a distance closer than 46cm / 18 inches to the refinished paint surface.

- After cleaning with suitable detergents, the coating surface should be rinsed with copious amounts of cold water.

Vehicle Cleaning and Maintenance Guide Lines contd...

Note:

It is incorrect to assume that the higher the detergent PH level and the hotter the water, the quicker and better the clean. These factors will have adverse effects on the refinished surface i.e. bleaching of the colour.

- All stone chips should be touched in to halt corrosion creep. Where the coating is damaged due to deep scratches or collision marks, this should be repaired as soon as possible.

- Listed below are some stubborn common contaminates and methods of removal;

Road Tar	→ Cromax 3919S degreaser
Oil Tree Sap Bird Excrement Brake dust	→ Proprietary Traffic Film Remover

- **In summary, as long as the softest products are used in conjunction with clean water and a general adherence to the above recommendations, the paint work will be fine.**

Vehicle Cleaning and Maintenance Guide Lines contd...

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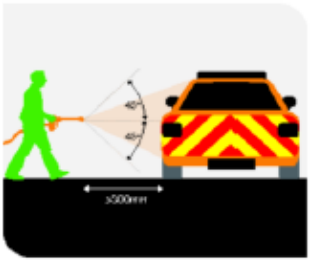
Vehicle Cleaning and Maintenance Guide Lines contd...

LOOK AFTER YOUR LIVERY
Vehicle Cleaning Guidelines

These instructions apply to all makes of prismatic materials including Nikkalite Flexible Crystal Grade (CVF)



Correct

- ✔ Do use a fan spray of water
- ✔ Maximum 75 bar water pressure
- ✔ Maximum water temperature 38°C
- ✔ Do use a mild detergent & clean water
- ✔ Do use a soft brush/cloth
- ✔ Avoid chevron tips, corners and vulnerable areas of kit

Incorrect

- ✘ Do not direct high pressure water at edges of sheeting
- ✘ Do not hold nozzle closer than 300mm to livery
- ✘ Do not direct water at an angle of less than 45° to livery
- ✘ Do not use solvents, abrasive, alcohol based cleaners or vehicle under body cleaning solutions
- ✘ Do not steam clean liveries

Locks and mechanisms

Note: All Locks and mechanical components should be greased regularly with a General Purpose Grease and a moisture dispersing spray oil, (WBD 40) or equivalent can be used to lubricate Lock Barrels and hinges.

Locks and Mechanisms - Lubrication

Note:

All Pivot points, and moving mechanical components should be ***checked, adjusted if necessary***, and greased regularly with a General Purpose Grease such as WD-40 Spray Gease or an equivalent.

Lock Barrels: should be lubricated with a moisture displacing spray oil, such as WD-40 or equivalent.

NOTES