INSTRUCTION MANUAL

"Safety and operating instructions for the vehicle".

AMBULANCE
MB Sprinter

Table of contents

1. Information general

1.1. Introduction

Please read this manual carefully before operating a specialised vehicle.

The manual provides data on construction, operation, maintenance and indicates how to proceed in the event of a fault or breakdown.

Proper operation and adjustment of the assemblies, carried out in accordance with the recommendations, is of fundamental importance for the reliable and long-lasting operation of the vehicle. Therefore, periodic operation, adjustment and maintenance of the equipment should be carried out carefully.

It is important to remember that these activities should be planned and executed in such a way that the vehicle is ready for action at any time.

Minor faults should be rectified immediately and all repairs should be carried out by trained personnel. In order to increase their longevity, regular inspection and maintenance should be carried out. In this manual you will find all the information you need regarding use and maintenance. If you have any questions, please contact:

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1.2. Explanation of symbols used in instructions

The following symbols are used throughout the remainder of this manual:

Notes marked with this symbol are for information purposes.

Notes marked with this symbol warn of a risk to the health and life of the user if the recommendations are not followed.

Notes marked with this symbol warn of a danger to the health and life of the user caused by the presence of high voltage electricity.

Notes marked this symbol definitively prohibit certain activities.

2 ıical.

2.1. Dimensions of the base vehicle (fig. no. 1-3).

Length:	5932mm
Height:	2620mm
Overall width (excluding rear-view mirrors):	2020mm
Wheelbase:	3665mm

a) b)

Fig. 1. a) Front view of the vehicle, b) Rear view of the vehicle.

Figure 2: Right-hand side view of the vehicle.

Figure 3: Left-hand side view of the vehicle.

2.2. Installation electrical

2.2.1. Power supply at standstill

The vehicle has an external socket for a 230V power supply.

2.2.2. Power supply while driving

The vehicle has a 12V installation. Power is supplied from two batteries (a 92Ah factory starter battery and an additional 92Ah battery). The alternator used on the vehicle is of 3kW.

NOTE!
It is forbidden to use the electrical system without first the operating instructions!

2.3. Other

Table 1 provides information on the vehicle's transport parameters.

Table 1 Transport parameters.

Total number of seats:	**5/6***
Maximum number of seats used in the driver's cab	2
Maximum number of seats used in the medical compartment	2/3*
Stretcher position in the medical compartment	1

* Number of seating positions depends on body version and version of base vehicle

No more than 5 seats are allowed in the vehicle while driving.

No open flames are allowed in the vehicle.

Smoking and electronic cigarettes are strictly prohibited inside the vehicle.

3. Security

3.1. Information general

When cleaning, do not use any harsh cleaning agents as they may damage the paintwork, seals or lubricants.

Damage, discolouration may occur if the disinfectant is not used as described. If the disinfectant is used as indicated, no damage, discolouration will occur. The manufacturer's instructions must be followed. In particular, the duration of action on the surface in question must not be exceeded and the disinfectant must be completely removed.

'WAS' recommends the use of Swish QUATO-78 Plus for disinfection. It is a ready-to-use alcohol-free preparation for the rapid disinfection of medical surfaces and equipment.

Health and safety issues are not further described in these operating instructions. The manufacturer assumes that the recipient of the appliance complies with health and safety regulations.

Please read the operating instructions before using the vehicle!

Please  Safety instructions must be observed at all times!

Any unauthorised interference with the construction of the vehicle or its equipment is unacceptable!

3.2. Safety tips

The vehicle has been built using the latest technology and taking into account existing road vehicle standards and regulations. If used incorrectly, the following may occur:

- **Danger to life of user or third parties.**
- **Risk of damage to vehicle or equipment.**
- **Danger of reducing the efficiency of the vehicle or equipment.**

Anyone authorised to install, commission, operate, maintain and repair must read the operating instructions and safety notes.

The vehicle may only be operated by designated and trained personnel. The competences for the different activities within the framework of the user must be clearly determined and observed so that no ambiguities occur with regard to safety.
This applies in particular to work on electrical and mechanical equipment, which may only be carried out by specialists specially trained for this purpose. For all work involving assembly, commissioning, operation, changes to the application conditions and the nature of the work, maintenance, inspection and repair, the procedures specified in the manual must be observed!

Any way of working that affects the safe operation of the vehicle must be avoided. The operator must ensure that untrained persons do not operate the vehicle or its equipment.
The user shall ensure that the vehicle is only used when it is in good working order.

3.3. Use in accordance with

The vehicle has been designed and manufactured exclusively for the purpose of being used in accordance with its intended use. Any use of which goes beyond recognised is as not compliant! The manufacturer is not liable for any resulting defects. The user alone bears the risk. Intended use also includes compliance with the manufacturer's operating and maintenance instructions.

The vehicle may only be operated, maintained and started up by persons who are familiar with the equipment and have been informed of the possible dangers.

Existing accident prevention regulations and other generally recognised technical rules must be observed when operating the vehicle.

Independent modifications to the vehicle exclude the manufacturer's liability for resulting defects.

3.4. Alterations

Work on component settings **must only be carried out by WAS and authorised WAS services.**
Any unauthorised modifications without the manufacturer's knowledge are strictly prohibited!

3.5. Installation electrical

In areas where there may be a risk of electric shock or a risk to health and life, components of the vehicle's electrical equipment have been marked with appropriate descriptions.

Ensure that the required disconnection processes are carried out before any electrical work!

3.6. Passengers and equipment vehicle

Where there may be a risk of injury or danger to the health and life of vehicle operators, appropriate warning notices have been affixed to vehicle equipment.

The manufacturer's recommendations must be strictly adhered to!

4. Service

4.1. Electrical installation and control

4.1.1. External power socket 230V

The vehicle is equipped with an external 230V connection socket (Fig. 4) , which is located on the left at the rear of the vehicle. The socket is coupled with a rectifier, which allows two batteries to be charged and electrical equipment to be used to a certain extent when the vehicle is stationary.

Fig. 4 Location of external 230V power socket.

To connect the plug to the socket, first lift the flap ([a] fig. 5) and then insert the plug of the power cord ([b] fig. 5). Once the plug is inserted into the socket and the cable is connected to the external 230V power supply, the light above the socket lights up to indicate that the external power supply is connected.

Photo 5 shows the plug locked in the external socket.

Fig. 5. How to connect the power supply to the external socket. a) Lift the flap b) Connect the plug to the socket.

When an external 230V power supply is connected, a spin and isolation relay located in the driver's cab connects the original battery to the secondary battery. The rectifier is switched on and both batteries are charged. The state of charge of the batteries is indicated by battery voltage gauges or battery status on the control panel in the driver's compartment. When the external power supply is disconnected, a relay separates the batteries. The relay also ties up the batteries when the engine is started and similarly separates them when the engine is stopped. Thanks to this use of automatic battery coupling, battery maintenance is straightforward and is limited to periodic checks of the state of both batteries.

When the external power supply is connected, it is not possible to start the engine. This is ensured by a special start interlock system that protects the external socket from possible damage. The fact that the external power supply is connected is indicated by a bell which is activated when an attempt is made to start the vehicle.

The socket has a starting lock.
If the power supply is connected, the vehicle cannot be started.

In the circuit of the connected 230V voltage source, use only the original cable with which the vehicle is factory-equipped!

Handle the power cable carefully so that it is not damaged by doors, engine compartment flap, etc. Ensure that no sharp objects are pressed against the cable causing damage to the insulation.

The cable for connecting an external power supply is suitable for outdoor use in various weather conditions (IP44 protection class).

When the external power cable is not in use (i.e. plugged into an outlet), the plug of the connection cable should always be protected by a protective cover. Always use original connection cables with DEFA Mini Plug sockets. The connection cable should be connected to a grounded socket. When not in use, the connection cable should be disconnected from the mains socket and from the vehicle's Mini Plug socket. To avoid damage to the ambulance's external socket, disconnect the plug from the wall socket first, then from the ambulance's charging socket. Failure to follow the order in which plugs are disconnected from the power source may result in damage to the electrical system, which is not covered by the warranty.

Failure to follow the sequence in which the plugs are disconnected from the power supply may result in damage to the electrical installation, which is not subject to warranty!

The ambulance should be connected using a 230V external installation cable only to a socket with a protective contact (with a residual current circuit breaker max. 30mA).

4.1.2. Electrical system in the driver's compartment

The electrical system is designed and constructed so that the medical compartment consumers draw their current only from the secondary battery; only the exterior lighting (blue lights) uses the main battery. This arrangement preserves sufficient energy to run the vehicle from the main battery.
Both batteries (with a total capacity of 184 Ah) are charged by an alternator (3 kW) and both by an automatic charger when connected to 230V. During charging from the 230V mains, it is not possible to start the vehicle. When the ignition key is turned, an acoustic signal indicating that the external socket is connected is activated.

The main battery (92 Ah) is located in the floor recess in the driver's cab, on the driver's side (Figure 6).

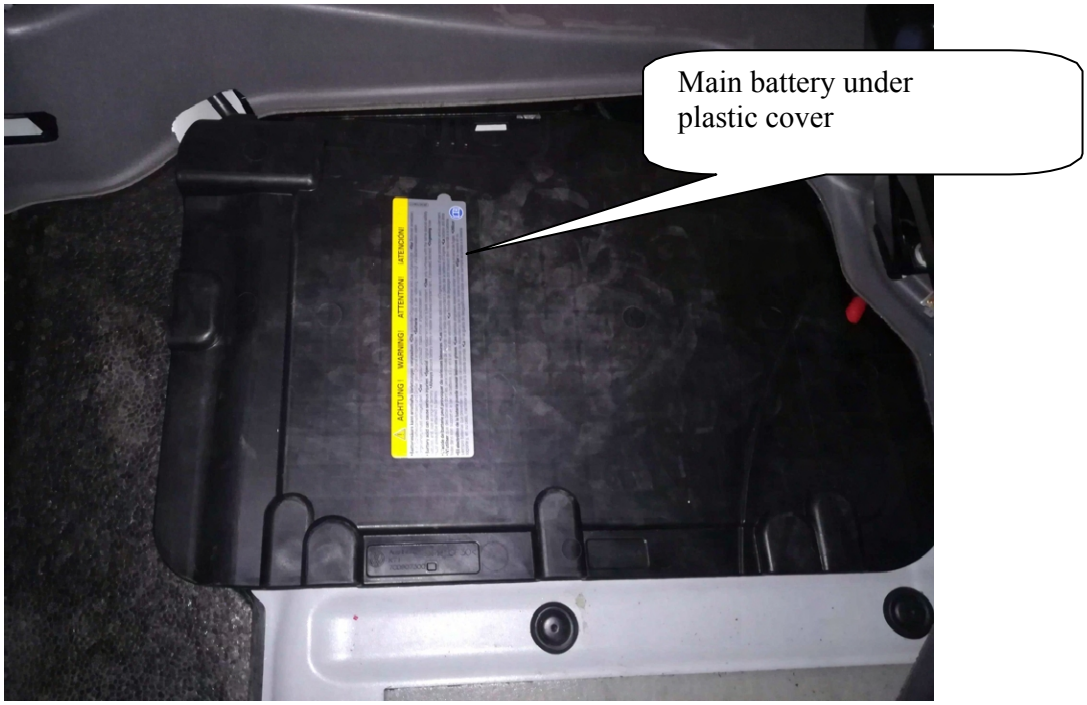


Fig. 6. Location of main battery

The secondary battery (92 Ah) is located under the passenger seat, in the front of the base. (Fig. 7).

Fig. 7. Location of secondary battery with information label

4.1.2.1. Automatic charger rechargeable

The automatic, maintenance-free battery charger with overload protection is located in the cab behind the base of the passenger seat (Figure 8).

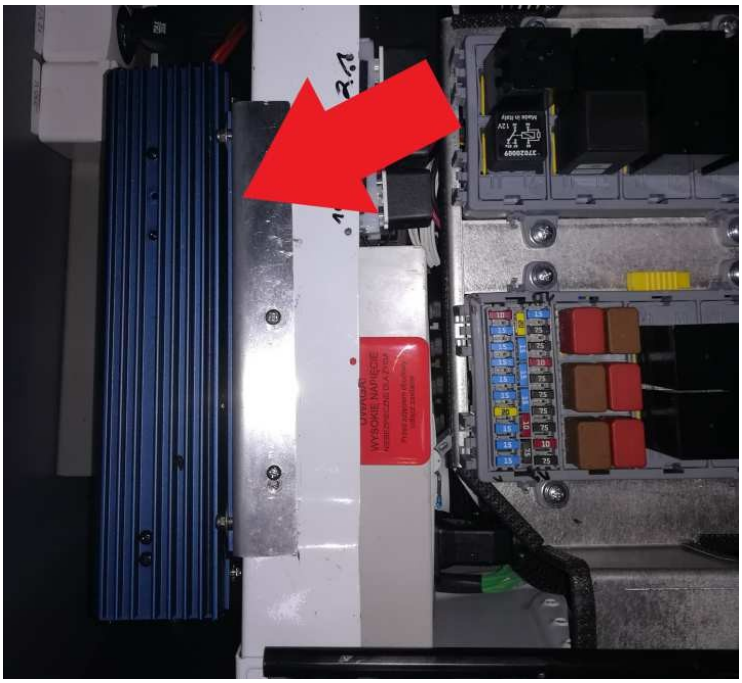


Fig. 8. Location of the battery charger

The photo below shows a projection of the left rectifier panel located behind the passenger seat (Figure 9).

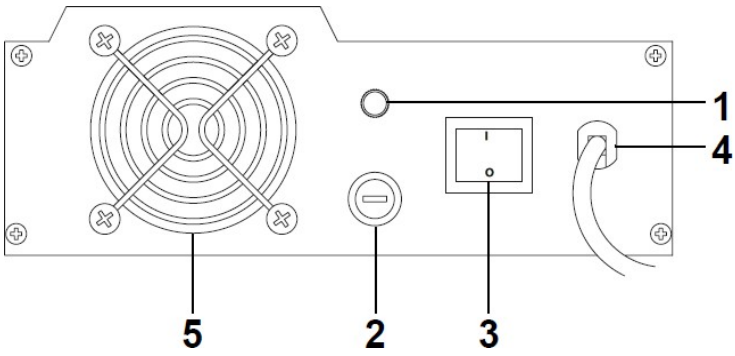


Fig. 9. Left-hand panel view of the rectifier

1. Output for additional temperature sensor (not used)
2. Fuse T4A/250V
3. Power switch

It should be in the "I" position

4. Power cable.

Any tampering with the cable connection is prohibited!

5. Fan

The photo below shows a projection of the right-hand rectifier panel located behind the passenger seat (Figure 10).

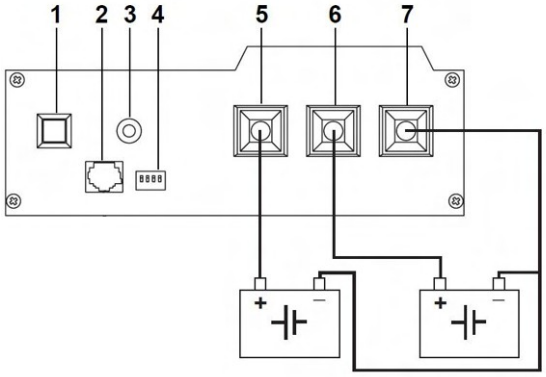


Fig. 10 View of the rectifier's right-hand panel

1. Switch for even power distribution between batteries

The switch should be pressed

2. RJ45 socket for connecting an external control panel
3. LED battery level indicator.

- **Red - Charge level from 10% to 50%**
- **Colour yellow - Charge level from 51% to 90%**
- **Green colour - Charge level above 90%**

4. Charging mode switches

Any tampering with the switch position is prohibited!

Changing the position of the switches may result in damage to the base vehicle batteries and electrical system components. And the repair will not be covered by the warranty!

5. "+" connector for main battery supply
6. "+" connector for additional battery supply
7. Power supply "-" connector for both batteries

Any tampering with the wiring connection is prohibited!

4.1.2.2. Residual current circuit breaker (installation 230V)

In the driver's compartment, inside the base of the passenger seat, there is a residual-current switch that cuts off the 230V power supply in the vehicle (Fig. 11). The residual-current switch serves to protect the circuit of the 230V installation, protects personnel from electric shock, and reacts to an excessive load on the circuits with consumers supplied with 230V.

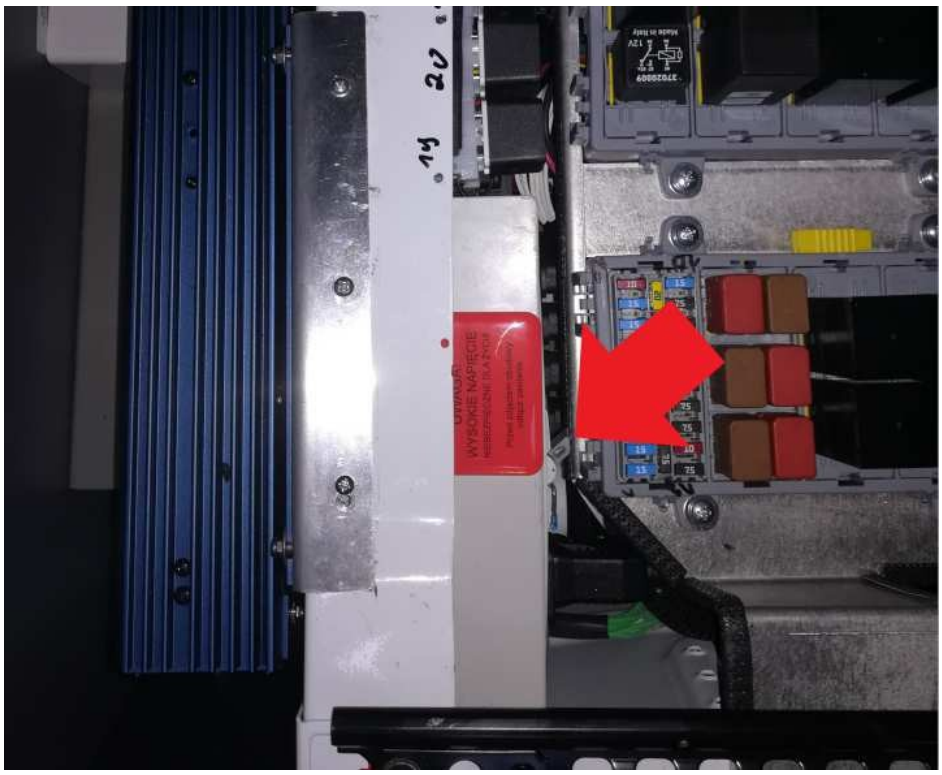


Fig. 11. Location of the switch in the base of the passenger seat

NOTE!
Electrical voltage dangerous to life and health. Special care must be taken!

Photos 12a and 12b show in which position the switch pawl is in the 'on' and 'off' positions.

a) b)

Fig. 12. a) residual current circuit breaker in the "ON" position
b) residual current circuit breaker in the "OFF" position

4.1.2.3. Main power switch for the medical compartment

At the base of the driver's seat is the main power switch for the medical compartment (Figure 13).

Fig. 13. Auxiliary battery switch

When the ambulance is scheduled to be parked for long periods, it is recommended that the power supply to the medical compartment is disconnected to avoid accidental discharge of the secondary battery.

Charging of the secondary battery takes place regardless of whether the switch is on or off.

The position of the switch is indicated by a warning label next to the switch (Figure 14).

Fig. 14. Position label for secondary battery switch

4.1.2.4. Fiamm pneumatic trumpets (optional)

The ambulance is equipped with pneumatic signals suitable for continuous operation with its own compressor lubrication system. They are switched on from the driver's cab, depending on the control used, from the control panel or key switch and from the keypad for the emergency lighting.

When activated, the trumpets operate for a period of one cycle, which lasts 10 seconds.
The compressed air compressor is located in the engine compartment, on the right side of the vehicle. An information plate on the front belt informs of the need to check the oil level.

Check the oil level in the Fiamm compressor every 14 days.

Fig. 15 Location of the Fiamm trumpet compressor

To top up the oil in the compressor, unscrew the transparent reservoir and top it up with the correct oil.

When operating the trumpets, remember to check the oil level in the oil tank at the compressor. It is recommended to use Hydrol type gear oil.

4.1.3. Control of on-board equipment

For a detailed description of the functions, please refer to the separate operating instructions for the ambulance equipment control keypads or the operating instructions for the keypad set. The version of the enclosed manual depends on the ambulance equipment version.

4.1.3.1. Control panels

The on-board equipment is controlled by a control panel, which is located on the left wall of the furniture body (Figure 16) and in the centre of the cockpit of the driver's cab (Figure 17).

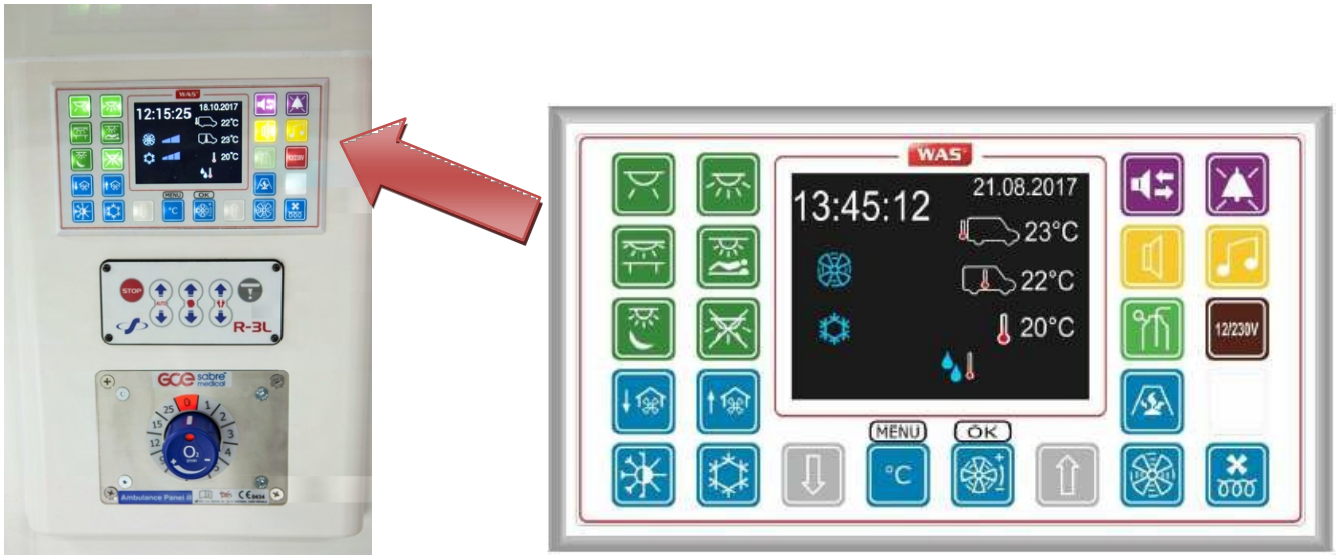


Fig. 16. Location of the control panel in the medical compartment

Fig. 17. Location of the control panel in the driver's cab

Control panels are used to control selected components of the car and to display basic information.

4.1.3.2. keyboard control.

The on-board equipment is controlled by a push-button unit, which is located on the left wall of the furniture body (Figure 18) and in the centre of the driver's cab cockpit (Figure 19).

Fig. 18. Location of the set of controls in the driver's cab

Figure 19: Location of the set of controls in the medical compartment.

Push-button assemblies are used to control selected components of the car.

4.1.4. Independent air heating of the medical compartment

Standard equipment on the ambulance includes an air heating system for the medical compartment and an engine preheating system (DEFA engine heater) to heat the

the engine before it is started. The system extended with an additional heater mounted in the medical compartment is optional equipment.

An additional engine-independent heating system is supplied from the fuel tank. The heating system ensures automatic maintenance of a constant temperature in the compartment with the possibility of adjusting the temperature in 1°C increments. The heating system is mounted outside the vehicle. The heating system's exhaust is designed and positioned so that it does not cause exhaust fumes to enter the vehicle.

The heating is controlled via a control panel or dedicated control device. Please see separate control device manual for details.

The warm air is supplied through a diffuser located in the base of the cabinet by the right-hand sliding door (Fig. 20).

Fig. 20 Location of the warm air diffuser

NOTE!
To ensure proper operation of the heating system and to keep it in good condition, it is recommended to run the heating system at least once a month for a period of min. 15 minutes, despite the warm seasons.

NOTE!

It is forbidden to block the heating inlet and outlet. This risks damaging the unit and ultimately destroying it.

4.1.5. Air conditioning of the medical compartment

The ambulance is equipped with dual evaporator air conditioning for the medical compartment and driver's cabin, with independent temperature and air speed control for both the medical compartment and driver's cabin.

a) driver's compartment - air-conditioning with temperature *and* intensity control and closed-circuit operation - factory VW Crafter
b) medical compartment - air-conditioning ensuring automatic maintenance of constant temperature in the compartment through 4 cooled air outlets with temperature control in 1°C steps

The control of the air conditioning in the driver's cab is explained in the owner's manual of the base vehicle. The air-conditioning is controlled via a touch panel or a dedicated control device. Please refer to the separate control device manual for details.

A prerequisite for the operation of the medical compartment air conditioning is that the ambulance engine is running and the driver's compartment air conditioning is switched on (Figure 21).

Fig. 21 Location of the button for activating the driver's compartment air conditioner

NOTE!
To ensure proper operation of the air conditioning system and to keep it in good condition, it is recommended to run the air conditioning at least once a month for at least 15 minutes, despite cold weather
seasons.

The direction of the air supply in the medical compartment is regulated by adjusting the outlet diffusers of the evaporator, which is mounted in the partition wall of the medical compartment (Figure 22).

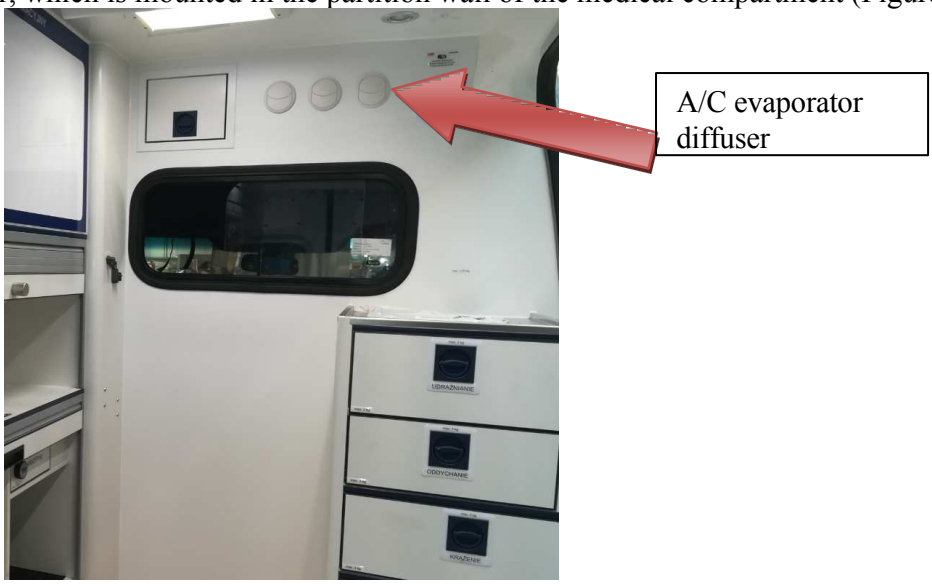


Fig. 22 Location of the medical compartment air conditioning evaporator with fresh air intake.

NOTE!
It is forbidden to block the fresh air intake grilles of the air conditioner. This risks damaging the evaporator and ultimately destroying it.

NOTE!
It is recommended that the air conditioning pollen filter be changed every year for the medical compartment.

NOTE!
After 1,000 km - no more than 1,500 km - from the installation of the unit, an inspection must be carried out under warranty. Carry out the inspection at the nearest authorised Auto Klimat service centre.
Make entries in the Auto Climate warranty card provided.

As the factory air-conditioning system of the base vehicle was extended with a second evaporator for the medical compartment, the air-conditioning system installation was supplemented with an additional quantity of R134a gas. After the expansion, there should be 1030g of gas in the system for the proper functioning of the air conditioning system. This is indicated by a label in the engine compartment (fig. 23).

Fig. 23. Label in the engine compartment indicating the necessary amount of R134a gas.

NOTE!
It is advisable to carry out an inspection of the air conditioning system every year, including checking the amount of gas in the system.

4.1.6. Control of the ventilation system of the medical compartment

The medical compartment is equipped with a ventilation system (supply and exhaust) providing 20 air changes per hour even when the vehicle is not in motion (Figure 24).

Fig. 24. Ceiling fan

The fan shutter is opened/closed by rotating the shutter by catching one of the two knobs integrated into the shutter body.

The control of the ventilation of the medical compartment is carried out via the control panel or one of the switches. For details, see separate control equipment manual.

The supply and exhaust fan has its own diffuser lighting. The lighting starts automatically when the right sliding door or the rear wing door is opened. It goes out when these doors are closed.

4.1.7. Control of stationary 230 V mains-supplied medical compartment heater (DEFA 2100 W)

A DEFA heater with a power output of 2100W. It is located in the right rear part of the medical compartment (fig. 25). The unit operates only when the 230V external power supply is connected via an external socket

Fig. 25. Location of stationary 230V mains-powered medical compartment heater (DEFA 2100 W)

Control is via a control panel or dedicated control device. See separate control device manual for details.

The fan heater operates within the temperature range of up to 18 degrees Celsius that prevails in the medical compartment (when the external 230V power supply is connected). When the temperature in the medical compartment rises to 19 degrees Celsius, the thermo fan switches off.

Switching on the air supply may cause "88.8" to appear on the internal temperature display for 2 seconds. After two seconds, the temperature reading appears on the display.

In addition, the thermo-fan has the ability to adjust the heat output, which is done by a three-position switch located on the heater. In order for the heater to operate at maximum capacity, the switch should be set in position II (fig. 26).

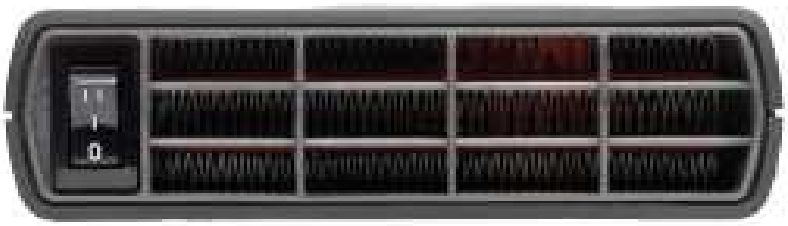


Fig. 26. DEFA 2100 thermoelectric heater with three-position power switch The interior heater is attached to a bracket from which it can be easily removed by pulling in the direction of the air outlet, and reattached by sliding the heater onto the rails of the bracket in the opposite direction to that of removal.

It is forbidden to stand on the heater or place objects on it! This can lead to damage to the heater or its attachment!
Damage caused in this way is not subject to warranty!

4.1.8. Control of the sound system of the medical compartment

In the medical section, two speakers are mounted in the ceiling, connected to the radio in the driver's cab. Depending on the version of the control system, the volume is adjusted from the integrated control panel or dial (fig. 27).

Fig. 27 Speaker knob

4.1.9. Control of the fluid warmer infusion warmer

The thermobox is a drawer (Figure 28) located in the lower part of the cabinet in the medical compartment, used to heat IV fluids.

Figure 28: Storage compartment with IV fluid heating function "Thermobox".

The commissioning of the thermobox is carried out via a dedicated control device. Please refer to the separate control device manual for details.

4.1.10. Lighting

4.1.10.1. Compartment lighting medical

The medical compartment of the ambulance is fitted with lighting, the activation of which is carried out via a control panel or dedicated control device. See separate control device manual for details.
The control operates the following lighting:

- LED lamps
- LED spotlights (so-called spot lights) above the patient's head and above the case cabinet;
- additional LED so-called "night" lighting (integrated into the lamps)

  The night lighting lights up:
  - automatically when the compartment door is opened,
  - by means of a control.

In addition, there is a diffuser light located inside the supply and exhaust fan, the principle of operation of which is described in para. 4.1.6.

If the door of the medical compartment is open, over an hour, there may be a brief switch-on of the ceiling lamps due to the base vehicle's on-board computer waking up.

Activation of the lights from the medical compartment level is additionally carried out by means of switches located at the right rear wing door and at the right sliding door on the cabinet with drawers. The appropriate switch must be pressed depending on how illuminated the medical compartment is to be. For details, see separate instructions for the controls.

4.1.10.2. Work surface lighting outside ambulance

The ambulance is equipped with exterior lighting consisting of LED lamps made with white diffused light technology and placed two each on the roof on the right and left sides and at the rear of the body. The lamps provide uniform illumination of the area around the vehicle. The positioning of the lamps ensures that they do not collide with other vehicle components. Operation of the lamps is controlled from a control panel located in the driver's and medical compartments, as well as independently by switches located at the rear and right front doors. The lamps on the left and right sides are housed in IP66-rated housings integrated into the vehicle body. The lamps at the rear are integrated into the priority lighting or as additional lamps (Fig. 29-31).

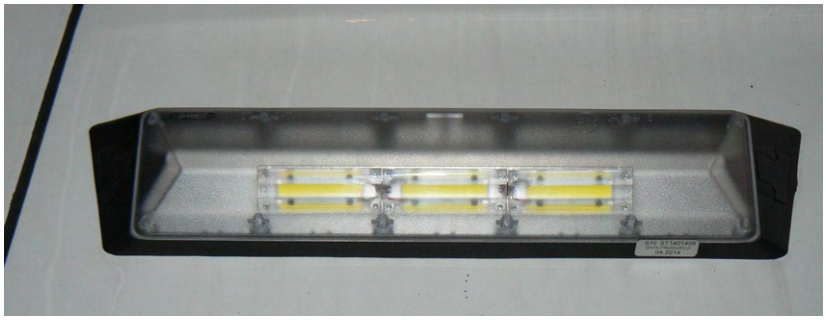


Fig. 29. Work lights located in housings integrated into the vehicle body - left and right sides of the ambulance

Fig. 30. Work lights integrated with priority lighting - rear of ambulance

Fig. 31. Additional work lights with direction indicators

To switch on the working lights from the driver's cab or medical compartment, press the appropriate button on the touch panel or dedicated control device. Please refer to the separate control device manual for details.

Activation of the lights from the medical compartment level is additionally carried out by means of switches located at the rear body door and at the right sliding door on the drawer cabinet, the appropriate switch must be pressed depending on which side of the vehicle you wish to have illuminated. For details, please refer to the separate controls manual.

In addition, the rear working lights come on automatically when reverse gear is engaged, thus illuminating the area behind the ambulance during reversing manoeuvres.

NOTE!
Control takes place using what is known as *a soft start*, i.e. a slowly increasing current in the circuit of the work light bulbs. Therefore, when the lamps are switched on, there is a momentary delay and then a smooth increase in light intensity. This control method significantly reduces the current surge, which increases service life of the bulbs.

4.1.10.3. Lighting privileged

The ambulance is equipped with the following priority lighting:

- LED light bar at the front of the vehicle
- LED light bar at the rear of the vehicle/ or single warning light (so-called "rooster")
- Two blue LED flashing lights at the height of the blue front belt
- Two LED flashing lights mounted on the side panels of the front and rear wings on the left and right sides (optional).
- Two LED flashing lights mounted on the side panels at the rear of the vehicle on the left and right sides (optional).
- Two blue LED pulse lights mounted on the outer surfaces (housing) of the exterior rear-view mirrors (optional).
- A loudspeaker is mounted in the front of the vehicle.
- Low-frequency speaker in the front of the vehicle(optional).

The external lighting is controlled via a keypad mounted inside the driver's cab to the right of the steering wheel (fig.32) or via a control panel or possibly a dedicated control device. Please refer to the separate control device manual for details. The keypad (with built-in microphone) allows the control of the combined public address and alarm device. The activation of one function from the keypad is signalled by a corresponding indicator light on the button.

Fig. 32. Position of the manipulator in the driver's compartment

Figure 33: View of the ambulance with emergency lighting fitted.

4.1.10.4. Lighting in the technical compartment behind the left-hand door sliding door.

The compartment is equipped with LED lighting that is automatically activated when the compartment door is opened (Figure 34).

Fig. 34. LED lighting of the technical compartment

4.1.11. Control of the sliding door system between the driver's compartment and the medical compartment

The medical compartment is separated from the driver's compartment by a reinforced, insulated wall allowing communication between the medical staff and the driver with the possibility of passing from one compartment to the other.

Sliding doors do not have the possibility to open while the vehicle is moving, there is no possibility to move the vehicle with the door open - in accordance with the requirements of EN 1789+A2.

According to EN 1789+A2, the sliding door system operates under certain conditions:

- With the base vehicle's engine switched off, there is unrestricted opening of the sliding doors, so passage from the driver's compartment to the medical compartment is also unrestricted.
- When the ambulance is in motion (the engine is then running) it is not possible to open the sliding doors.
- When the engine of the base vehicle is running and the ambulance is not moving, then it is possible to open the sliding doors. This is realised via the control panel or a dedicated control device. See separate control device manual for details.
- When the sliding door is not closed and the engine of the base vehicle is started, an audible signal is activated in the driver's cabin to indicate that the sliding door is immediately closed.

NOTE: It is prohibited to drive with the sliding doors open. Close the sliding doors before starting the engine.

ATTENTION: It is forbidden to carry out modifications and alterations which might conflict with the guidelines of the EN 1789+A2 standard.

4.1.12. Installation oxygen

The ambulance has a central oxygen installation. The design of the oxygen installation allows the oxygen panels to be supplied simultaneously from both oxygen cylinders.
The oxygen plant includes:

a) 2 oxygen consumption sockets on the left wall and 1 socket in the ceiling above the stretcher, The sockets are of monoblock panel type construction terminated with AGA type quick-connectors.
b) GCE wall-mounted flow meter with GCE ceiling oxygen socket (optional).

c) 2 oxygen regulators with pressure gauge for 10-litre cylinders, regulator design allowing assembly and disassembly without the need for a spanner (optional accessory)
d) Steel oxygen cylinder 10l (optional).
e) Oxygen regulator with pressure gauge for 2.7 litre cylinders (optional)
f) Steel oxygen cylinder 2.7l (optional)

Fig. 35 Oxygen sockets with oxygen humidifier

4.1.13. Vacuum system (optional)

The ambulance is equipped with a stationary vacuum installation. The installation is equipped with a suction power control and a vacuum manometer. The set contains: sterilisable plastic jar with a capacity of at least 1 l with overflow valve, quickly removable for replacement, 1.5 m long silicone suction tube with catheter connector. The jar is located in a cabinet on the left wall of the vehicle, behind the oxygen cylinder storage compartment (Fig. 36).

Figure 36 Location of the vacuum jar in the vehicle.

The vacuum pump is switched on via the control panel or a dedicated control device. For details, see separate control device manual.

Fig. 37 Location of suction power regulator

4.1.14. Operation radio

In the driver's cab, a CD player is mounted in the left DIN frame of the headliner (fig. 38).

Fig. 38 CD player

NOTE!
For detailed information on operating the z-radio, please refer to the operating instructions of the z-radio.

NOTES:
It is forbidden to use a mobile phone while driving without using the hands-free system

4.1.15. Installation communications

The ambulance is equipped with a communication system with radios:

a) Digital-to-analogue car radio (Figure 40)
b) Portable digital-to-analogue radio (optional)

The ambulance may have a public address system for the fixed radio both compartments (driver and medical) with volume control in the medical compartment (Figure 39) (optional).

Fig.39. Microphone for the medical compartment.

Figure 40: View of radio in the overhead compartment.

NOTE!
For detailed information on the operation of the radio, refer to the technical documentation provided by the radio manufacturer.

4.1.16. Searchlight wireless

A 12V wireless searchlight (with its own battery) is mounted in the driver's cab with a docking station connected to the cigarette lighter socket (Figure 41).

Fig. 41. Wireless searchlight in the driver's cab

4.1.17. Searchlight on flexible cable in the driver's cab

In the driver's cab (on the partition wall behind the passenger seat), there is a 12V searchlight (on a flexible cable) powered from the cigarette lighter socket (Figure 42).

Fig. 42. Searchlight on flexible hose in the driver's cab

4.2. Equipment interior

All lockers built-in of furniture described are described on labels informational labels o the maximum permissible weight that can be transported inside.

Please absolutely respect values maximum values weights of the equipment to be transported!
Placing equipment with greater weight can cause injury and loss of health to passengers.

4.2.1. Cabinet locking system - "KLIK".

The furniture fittings are equipped with the "KLIK" locking system (Fig. 43). To open, simply press the central part of the opening mushroom. To close, the above element must be pressed again.

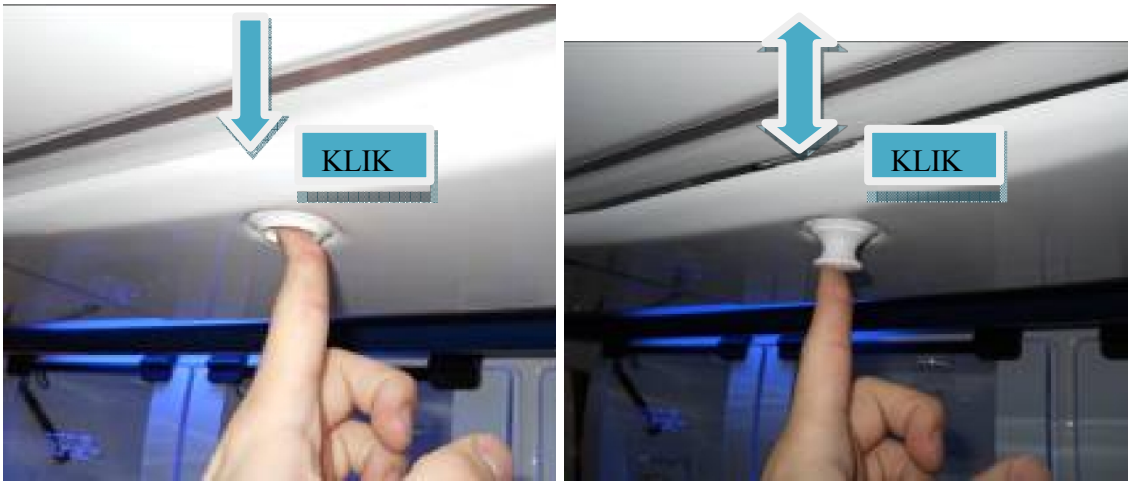


Fig. 43 Opening system for furniture components "KLIK".

4.2.2. Cabinet closing system - "PUSH"

The cabinet components are equipped with the "PUSH" locking system (Fig. 44). To open, simply press the central part of the cabinet flap (where the "PUSH" sticker is located). To close the cabinet, the cabinet flap must be lowered and the middle part pressed down so that the locks engage.

Fig. 44 "PUSH" opening system for furniture elements.

4.2.3. Opening drawers / cabinets

To open a drawer or cabinet, turn the handle (fig. 48) to the left or right and then slide the drawer outwards.

Fig. 45 Opening drawers, cabinets

4.2.4. Opening the lockers of the furniture development

Ensure that all lockers, cupboards, shelves and drawers are secured and closed while driving (Figure 46).

Figure 46: Storage compartments, shelves and drawers.

It is imperative that you keep the lockers closed while driving! Failure to close risks the contents being carried falling out and may cause injury and loss of health to passengers.

4.2.5.] sher of the medical compartment and driver's compartment.

Two fire extinguishers were placed in the ambulance.

a) Factory base vehicle powder extinguisher with 2 kg extinguishing agent - 1 pc. (mounted on the base of the passenger seat in the driver's cab) - Fig. 47

Fig. 47 Driver's compartment fire extinguisher

b) 1 kg powder extinguisher - 1 pc. (to be fixed in the medical compartment) - Fig. 48

Fig. 48 Medical compartment fire extinguisher

Both fire extinguishers are secured with a webbing strap in addition to their original mountings. It is imperative that the fire extinguishers are fastened to these straps when the ambulance is in motion! There is a risk of possible injury and loss of health to passengers.

4.2.6. Fastening seat belts

Each seat is fitted with a three-point seat belt with retractor. It is the responsibility of each passenger to wear a seat belt while driving (Figure 49).

Fig. 49. M1 category armchair - Ambis (prod. INTAP)

Before driving, every passenger is required to wear a seat belt!

The seat belt does not work in the side-facing position!

It is not permitted to exceed the maximum number of seats during the ride than that shown in Table 1.

4.2.7. Ambis chair operation (prod. INTAP)

Depending on the ambulance configuration, one or two Ambis swivel seats are placed on the right side of the medical compartment. Ambis seats have armrests, 3-point seat belts and a swivel base. For optimum use of medical compartment space, the seat and armrests can be folded vertically, and the seat can be folded towards the wall thanks to its swivel base.

To unfold the seat, the seat must first be rotated to a position parallel to the direction of travel. This is using a lever located next to the seat. To turn, pull the lever upwards and rotate the seat (Fig. 50). The latch automatically locks the seat in position.

Fig. 50 Using the lever to rotate the seat through an angle of 90^0

Fig. 51 Lowering the seat

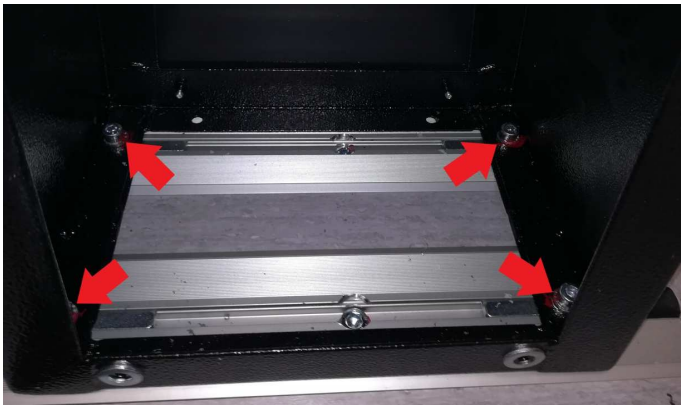
4.2.8. Rearward-facing seats

Each ambulance is equipped with a stretcher-bed , depending on the equipment version: Ambis Intap on the Easy Silde base (manufactured by Ambis), PROTEGO (manufactured by Intap) and SIM 2 (manufactured by Intap).

4.2.8.1. Ambis on a sliding base (manufactured by OKB)

One Ambis swivel chair is placed at the head of the stretcher. It has armrests, 3-point safety belts and a swivel base. In order to optimise the space in the medical compartment, the seat and armrests can be folded vertically and the seat can be folded towards the wall thanks to the swivel base of the chair. In addition, to optimise the workspace and access to the storage compartments in the main cabinet, the chair is placed on a sliding Easy Silde base (manufactured by Intap). The position is adjusted manually.

1. Unscrew the base cap (4 screws) with Allen key 3.
2. Loosen the 4 screws securing the base to the rail with an Allen spanner 6



3. Move the seat base to the desired position.
4. Screw the base to the rail with 4 **new** M8x20 cl. 8.8 DIN912 screws using an Allen key 6.
5. Tighten bolts with a torque spanner to **M=27Nm**
6. Screw on the seat base cap with 4 screws using an Allen key 3.

Fig. 52 Seat displacement lock

ATTENTION: It is forbidden to drive the ambulance with the seat sliding unlatched! You must IMMEDIATELY use new fixing bolts and tighten with a torque spanner with a torque of M=27Nm.

Riding with the seat travel not locked could result in loss of health or of life!

4.2.8.2. Armchair Protego

The Protego chair is located at the front of the medical compartment. It is attached to a base under which there is an additional heater. The seat has an adjustable backrest angle and manual position adjustment. The seat is also equipped with an additional safety belt, allowing the transport of a child from 10kg to 25kg. The seat belt is attached to the base to which the seat is attached, as well as to a reinforced partition wall.

Fig.53 Protego armchair

4.2.9. Hatch roof

The vehicle is fitted with a manually opening roof hatch (Figure 54). Control of the roof hatch is carried out manually by pushing or pulling on the hatch cover.

Fig. 54 Manual roof hatch installed in the medical compartment

4.2.10. Table service medical

NOTE!
Detailed information concerning the way operation of the table can be found in the original table manufacturer's operating instructions.

4.2.11. Dedicated spaces for medical equipment inside the medical compartment

4.2.11.1. Oxygen cylinder 2.7l.

The medical compartment is equipped with a 2.7 litre aluminium oxygen cylinder with regulator. The cylinder is fixed to the cabinet, or to the wall of the vehicle in the right rear part of the medical compartment. The cylinder is fixed with special brackets to ensure quick access and stable installation (Figure 55).

Fig. 55. 2.7 litre oxygen cylinder

Ensure that both cylinder mounting buckles are fastened. Carriage of cylinders with unfastened securing buckles risks injury or loss of health to passengers.

4.2.11.2. Kramer splints

Depending on the body version, the Kramer rail recess is located in:
a) the left-hand wall furniture box, and access to the rails is by opening the wing doors (Fig.56).
b) in the technical locker (see section 4.2.12.1.)

Fig. 56. Location of Kramer rail recess

4.2.11.3. Chest compression device chest compression device

The chest compression device is located, depending on the body version:

a) In the cupboard to the left of the medical compartment
b) On the body of the left wheel arch

Harness set fitted to carry a massager weighing no more than 15kg. transporting the massager, it must be clipped with the harness.

Figure 57: Storage compartment for the compression device.

Ensure that both fixing buckles of the massager are fastened. Carrying the massager with the attachment buckles unfastened risks the health or life of the passengers.

4.2.11.4. Bags medical

Two spaces are provided in the ambulance body for two medical bags. Both carrying positions are equipped with harnesses with buckles for quick access. In addition, a cabinet located in the rear of the medical compartment is fitted with a pull-out work surface to allow the medical bags to be laid out on it.

Fig. 58 Medical bag recess at right sliding door.

Figure 59: Cabinet with pull-out work surface in the right rear of the vehicle.

Ensure that both fixing buckles of the bag are fastened. Carrying a medical bag with the fastening buckles unfastened risks loss of health or life for the passengers.

4.2.12. Equipment of technical compartment behind left sliding door

4.2.12.1. Kramer rail

Depending on the equipment version, space for a set of Kramer splints is located in the technical section next to the oxygen cylinder basket. Assembly by means of an expander. (Fig.60).

Fig. 60. Kramer splint set fitted in the technical locker

4.2.12.2. Storage basket for two 10 litre oxygen cylinders

The oxygen cylinders are located in the technical compartment after opening the left sliding door (Figure 61).

Figure 61: Location of the 10 litre oxygen cylinder rack.

In order to replace oxygen cylinders, it is necessary to:

- disconnect the oxygen hose from the cylinder
- unlock the cylinder clamp (fig. 62)

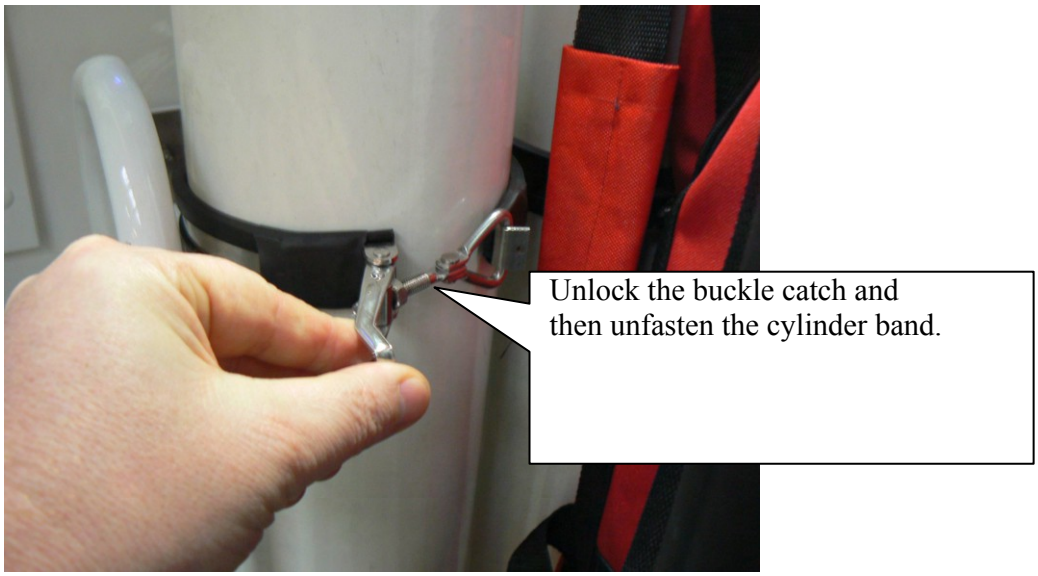


Figure 62: Method of unlocking the 10l oxygen cylinder rack.

Optionally, the locker can be fitted with an additional basket for a further two 10l cylinders. The method of cylinder attachment is analogous to that shown in Fig.62.

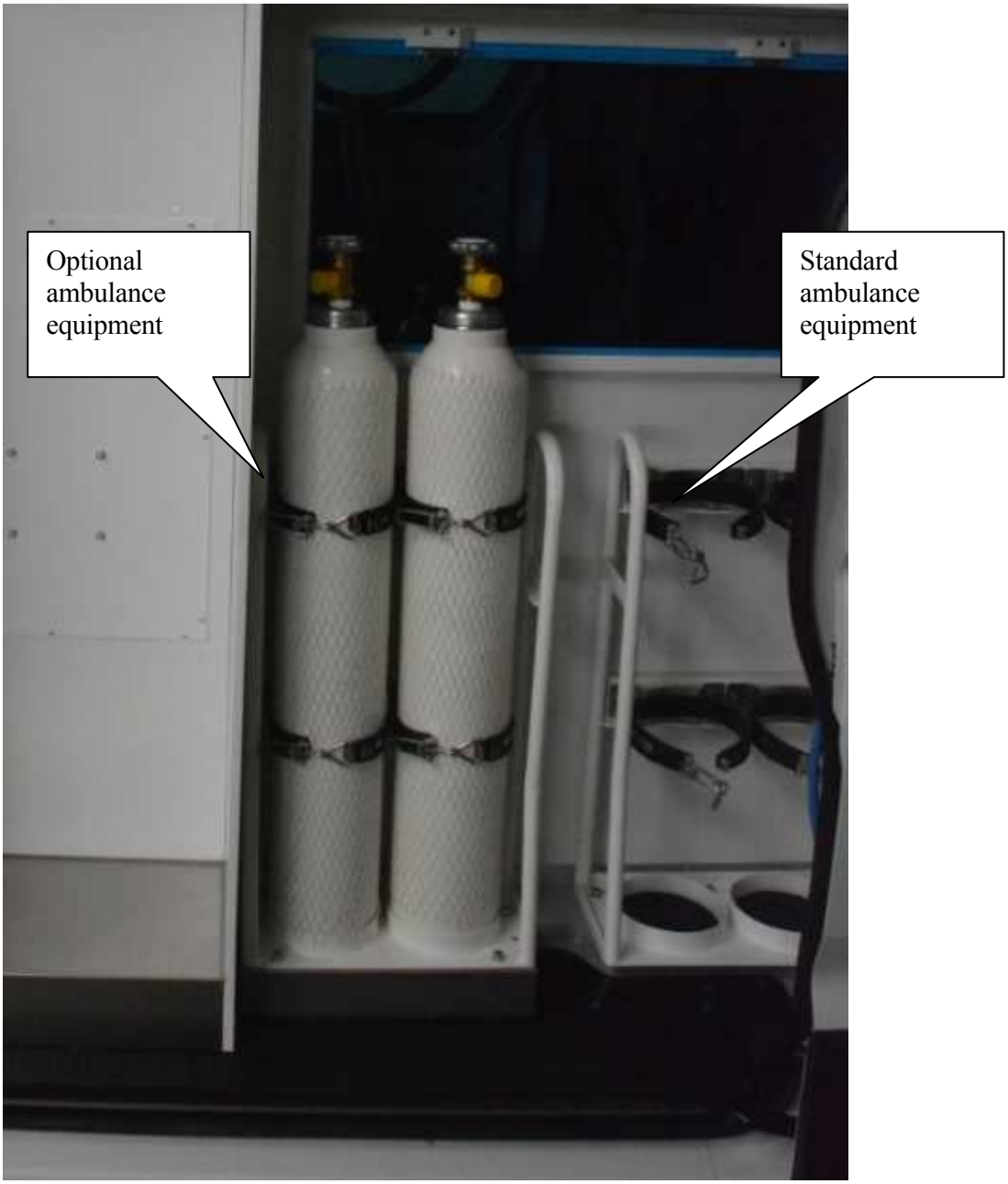


Fig.63 Technical compartment with two baskets for 10l cylinders.

4.2.12.3. Orthopaedic board, paediatric board, pick-up stretcher and cardiac chair

The equipment is located in the technical compartment after opening the left sliding door (Figure 64).

Fig. 64. Fixing of orthopaedic equipment behind the left sliding door.

Medical equipment is immobilised in its mountings by means of webbing straps. It is imperative that the stretcher is fastened to this strap when the ambulance is moving!

The pick-up stretcher mounts (fig. 65.) of the orthopaedic board allow for their independent removal

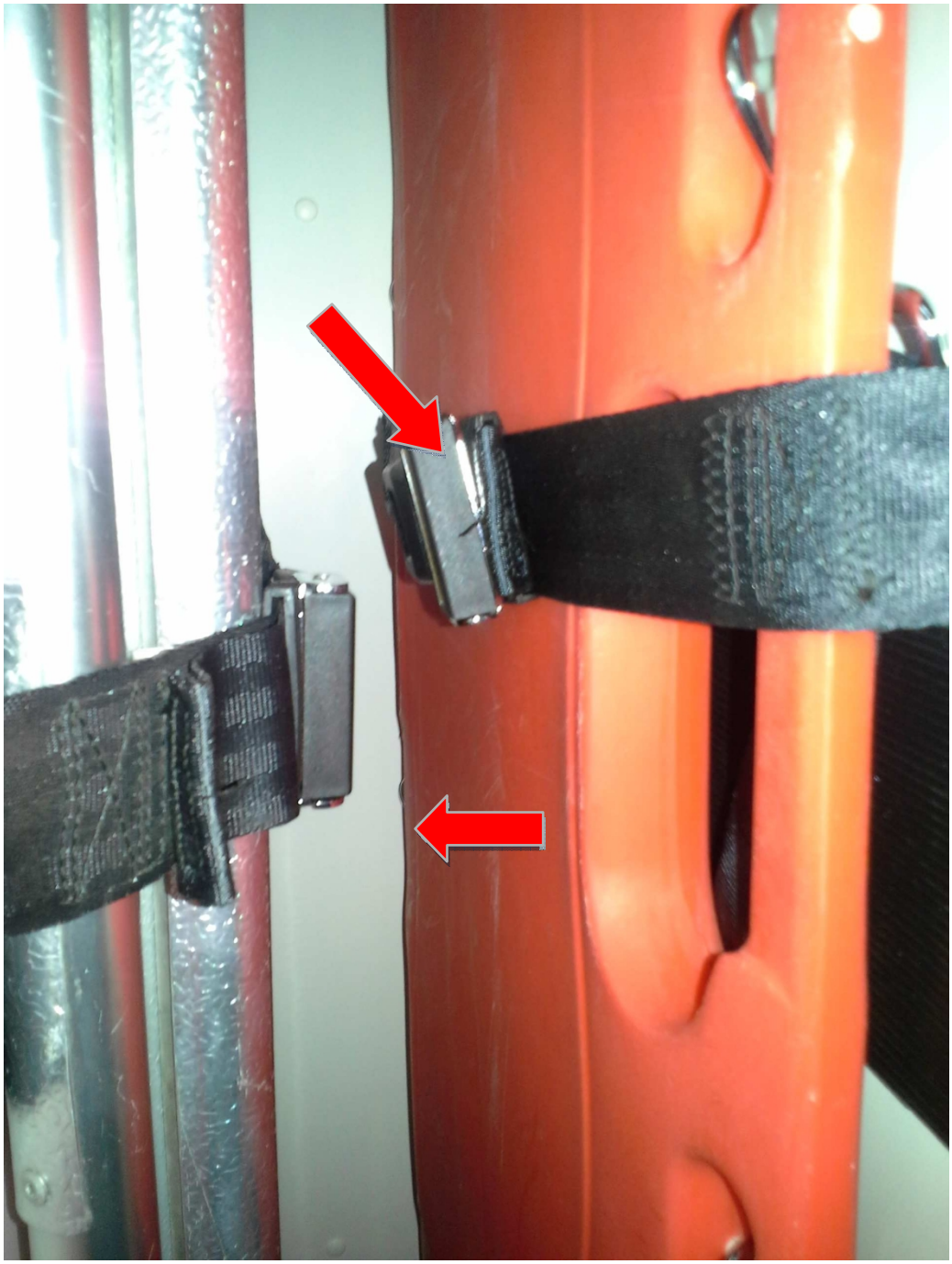


Fig. 65. Method of attaching the pick-up stretcher and orthopaedic board.

Medical equipment is immobilised in its mountings by means of webbing straps. It is imperative that the stretcher is fastened to this strap when the ambulance is moving!

5. Transport and storage

Transporting the vehicle or towing it should be done in accordance with the instructions of the base vehicle.

If the vehicle is parked for an extended period, it is recommended that an external 230V power socket be plugged into the mains (Fig. 66).

Fig. 66. Connection of external 230V power supply.

If the vehicle is stored and not in use for an extended period of time, an inspection of the vehicle's basic components should be carried out prior to operation, e.g:

- tyre pressure monitoring,
- checking the pressure at the rear suspension air system pressure gauges,
- operating fluid levels,
- brake fluid level,
- engine oil level,
- efficiency of the electrical installation,
- battery voltage,
- the efficiency of the braking system.

Please keep special caution when connecting the 230V power supply.

The manufacturer's recommendations must be strictly adhered to!

If defects are found, WAS service.

6. Service on

6.1. Fuses and relays

The fuses are located at the rear of the driver's seat base. They are accessed by moving the seat forward as far as possible (fig. 67).

Fig. 67 Location of fuses under the driver's seat.

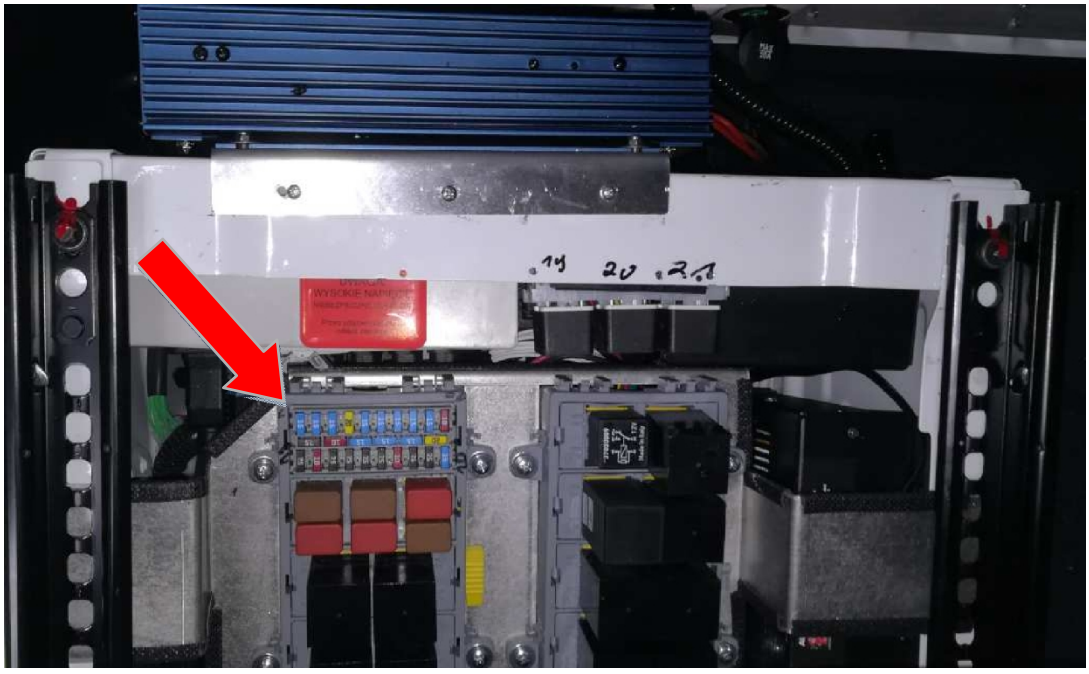


Fig. 68 Location of fuses under the passenger seat.

A detailed description of the arrangement and function of the fuses and relays in the seat bases be found in Appendix 4 of this manual. The occupancy of fuses and relays depends on the equipment version of the ambulance.

6.2. Maintenance and service

In order to maintain the high performance and reliability of equipment and appliances, it is absolutely essential that the inspection and maintenance instructions are carefully followed, and particular attention should be paid to:

a) all seals of equipment built into the body of the ambulance, were periodically checked and replaced immediately if necessary,
b) the external and internal lighting of the ambulance was inspected in detail after each action,
c) all lubrication points on the vehicle were supplied with the best lubricants and fluids according to the lubrication and refilling plan,
d) all damage and defects were rectified immediately.

6.3. Daily technical inspection of the vehicle.

Apart from checking the technical condition of the chassis, the technical condition of the bodywork and electrics must be checked, in particular:

a) the technical condition of the fixings in the medical compartment,
b) check that drawers, cabinets are working properly and lock them in the retracted position before leaving,
c) check the correct functioning of the medical table, its stretcher attachments, travel and table extension,
d) check that the signals and blue lights are functioning correctly,
e) exterior and interior lighting of the ambulance

6.4. Maintenance of equipment and bodywork ambulance

Carry out equipment maintenance in accordance with the enclosed WAS Emergency Ambulance Maintenance and Inspection Manual.

7. Guarantee

Details of the warranty period can be found on the ambulance's warranty card.

Basic guidance:

In order to maintain the warranty, an annual warranty inspection by a WAS service technician is a prerequisite. If the ambulance is equipped with a panel-based control system, information about the date of the next warranty inspection is displayed graphically (see the operating instructions for the control keypads for details). In addition, each ambulance is equipped with a label with information on the dates of the annual inspection of the ambulance body (Fig.69).

Fig.69 Ambulance body inspection date label

WAS must be informed immediately in matters of warranty. The performance of service work by external companies requires the prior written approval of the WAS service department.

The manufacturer's recommendations must be strictly adhered to!

Any unauthorised modifications without the manufacturer's knowledge are strictly prohibited and will void the warranty!

Defects relating to the base vehicle should be reported to the nearest authorised VW service stations throughout Poland.

Minor faults associated with the special body should be rectified immediately and any repairs should be carried out by the bodybuilder. Below to the bodybuilder:

W.A.S. WIETMARSCHER POLSKA Sp. z o.o.

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Ostaszewo 57a
87-148 Łysomice
tel. +48 56/674 41 31
Fax +48 56/674 41 47
e-mail:handel@was.pl http://www.was.pl

Contact the company's service:
+48 606 476 324
Fax +48 56/678 52 07
E-Mailserwis@was.pl

8. Information additional

Manufacturer's comments

Manufacturer reserves reserves the right to introduce changes construction and technological changes which do not impair the quality of the product.

9. Annexes to instructions

- User manual for WAS Easy Touch keyboards
- Operating instructions for the clipboard thermostat with IV fluid warming function "Thermobox"
- Description of fuses and relays in a paramedic ambulance
- Operating instructions for the RT-90 digital air conditioner controller
- Operating instructions Webasto AirTop Evo 5500
- Code lock operating instructions
- AutoClimat Sp. z o.o. service network.