



	Ambulance
Setup type	QTX_M
On base vehicle	Man TGE
In compliance with	EN 1789 (EUROPEAN STANDARD)

BASE VEHICLE

BASE VEHICLE FEATURES	
Vehicle	MAN TGE
Version	MAN TGE 3.180 Van 2 2.0 130 kw/177Hp, MANUAL gearbox, front-wheel drive (UYBB8A 3R2), high roof, 3.5 Ton Load capacity
Colour	White
Seats in driver's cab	2 (TWO)

OPTIONS SUPPLIED

4UF - Driver and passenger airbags with passenger airbag deactivation
 8FA - Second battery with circuit breaker relay and battery control
 9JA - 12V socket and 2 drink holders on the dashboard
 EU1 - 12V sockets in the driver's cab (3 in the dashboard)
 8J3- Emergency braking assistance
 LT2 - Intelligent Speed Assist
 7L6 - Star&stop system
 8T2 - Cruise control with speed limiter
 6I1 - Lane keeping assistant active
 8QJ - 2 click keys with remote control
 IS0 - Electrical terminal block and functional control unit. pers. 1 with bodybuilder program incl. preparation of the telematic system
 QK1 -Multifunctional camera
 QV3 - Digital radio reception (DAB+)
 EM2 - Tiredness detector
 1G2 - Spare wheel (steel rims) with normal size tyre
 UG1 - Hill start assist system
 7X2 - Front and rear parking control system
 1AS - Electronic stability control system (ESP) and anti-lock wheel system with electronic differential lock.
 6XN - Electrically adjustable and heated exterior mirrors
 6N0 - Front mudflaps
 J0V - Battery 520 A (92 Ah)
 8GU - 230 A alternator
 I8U - Man Media Van Navigation
 2FE - Multifunctional steering wheel
 VG0 - Summer tyres
 XXX - Standard cabin headliner
 B4B4 - Candy White
 8FE - 2nd battery with exclusion relay (AGM battery)
 NY4 - AGM battery and alternator with increased capacity
 C1G - 4 Steel rims 6 1 / 2J x 16 BLACK
 1ND - Full wheel covers
 ZTO - Elimination of dividing wall
 8WH - Fog lights with cornering light
 8IT - LED main headlights with LED daytime running lights
 4HS - Heated rear window with wiper and washer system
 IS3 - Electrical terminal block and customized functionality control unit 1 with bodybuilder programming and telematic system preparation
 1F1 - Front/rear towing eyes
 ZFP - Van Window Package
 ZNX- Man media van Navigation radio package
 2MG - Reinforced springing/cushioning and reinforced stabilization
 6N3 - Front mudflaps
 EU4 - 4 12 V sockets in the driver's cab (three in the dashboard, one in the seat frame)
 KA2 - "Rear View" reversing camera
 3SE - Right comfort seat, in the 1st row of seats
 7C0 - Without access handles in the rear pillars
 6B0 - Without fixing eyelets
 QT5 - Without rear step
 ZEA - Without TGE EDITION
 8X3 - Heated windscreen washer nozzles (without headlight washer system and without washer fluid level indicator)
 QL5 - Glass front side windows, tinted rear side windows and rear window (privacy)
 4EM - Side window in the passenger compartment / cargo compartment, front right, sliding
 4DM - Side window in passenger compartment / cargo compartment, front left, sliding
 3R2 - High roof painted in body colour

1. AMBULANCE EXTERIOR

1.1 SUPPORTS FOR SIGNALLING DEVICES		Specifications/Notes		
				
*	Pre-formed white BASIC front spoiler positioned flush with the bodywork, designed to support: - Pair of flashing lights or, alternatively, the light bar, - Predisposition for housing the main and secondary siren - Predisposition for housing the tilting search light. Furthermore, the spoiler is supplied as standard with: - n. 2 side search lights (one on each side) which illuminate the side/perimeter area of the vehicle - n. 2 blue appendages with fixed light for vehicle recognition from above.	1		
*	Pre-formed white BASIC rear spoiler positioned flush with the bodywork, designed to support traditional flashing lights and complete with: - n. 2 orange signaling lights with 3 LEDs synchronous with the insertion of the indicators, - n. 2 white signaling lights with 7 LEDs synchronous with reverse gear, - n. 2 headlights for loading area lighting, white color with 7 LEDs, - third stop. - n. 2 side search lights (one on each side) which illuminate the side/perimeter area of the vehicle	1		
1.2 VISUAL INDICATORS - EXTERNAL LIGHTING		Qty	Specifications/Notes	€
SIGNAL LIGHT FRONT				
*	Light kit with LED technology mounted on the front grille of the vehicle: N. 2 NR6 MULTIFLASH LIGHTS (NEW)	1		
*	LED swinging searchlight with electric control mod. Intav Omnilux	1		
SIGNAL LIGHT BACK				

*	Manual disconnection of the Rear Spoiler Light.	1	
*	Additional and access lighting on board. "" SIDE LIGHT "" luminous side drip installed in correspondence with the sliding side door; Composed of a black anodized aluminum body resistant to atmospheric agents, high intensity, low spectrum LED light source, which guarantees uniform emission in the lateral entry and exit area of the vehicle; "hot" source with 1000 lumen emission and operation suited to the sliding door for ascent and descent operations and evening perimeter clearing of the ambulance use areas. The profile shaped with a "curved groove" prevents water from dripping from the sliding door when opening it, guaranteeing users safe and dry transit operations, as well as a floor in the access area free from slippery surfaces"		

1.3 HORNS		Qty	Specifications/Notes
*	Reverse signaling device for moving ambulance (buzzer)	1	
*	Reverse beeper disconnection via pushbutton on control panel.	1	
*	Electronic two-tone siren mod. HT 100 with double loudspeaker and related control unit. Power 100W. Installed on the roof.	1	
*	Electronic two-tone siren mod. HT 50 with double loudspeaker and related control unit. Power 50W. Installed on the roof.		

1.4 MECHANIZATIONS		Qty	Specifications/Notes
*	Rear bumper cover by means of aluminum rice grain sheet, with rubber profiles on the outside, to protect stretcher loading/unloading operations	1	
*	Reduced-thickness mechanical sidestep with the following features: ▪ Synchronous with sliding door by mechanical linkage ▪ Aluminum almond pattern non-slip surface ▪ Rounded side edges ▪ Galvanized metal structure protected by cataphoresis ▪ Useful platform dimensions: 1150 x 270 x 70 mm ▪ Maximum distributed weight load capacity: 200 Kg	1	

1.5 DECORATIONS, COLORING PATTERN, BRANDING AND MATTING		Qty	Specifications/Notes
*	Public Assistance base decoration consisting of: ▪ ECNALUBMA mirror lettering applied to the front hood ▪ Reflective perimeter band made of 3M adhesive paper in orange color and height 20cm ▪ Band applied on the inside of the rear doors made of orange color reflective paper height 20cm ▪ Additional band at the top of the vehicle	1	ALTERNATIVELY, DECORATION COMPLYING WITH "ITALIAN RED CROSS" To be defined afterwards

	- No. 5 international rescue symbols (Aesculapian staff medicine cross) - Basic name of the association and/or entity - Matting of sanitary compartment glazing at 3/4 height by application of adhesive film	
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2. DRIVER'S CAB

2.1 TRANSFORMATIONS, HOUSINGS AND COMPARTMENTS		Qty	Specifications/Notes
*	Fitting of dashboard made of thermoformed plastic material (ABS), for housing the front control panel, in the central part of the dashboard 	-	
*	Radio stand for No. 1 RT radio device made of thermoformed plastic material (ABS), shaped and placed in the central part under the dashboard	1	

2.2 PLANT AND EQUIPMENT		Qty	Specifications/Notes
*	Front control panel housed in the driver's cab with 7" color touch screen panel combined with mechanical push button panel for main services. New concept panel with BACK-UP function. Innovative system that allows you to view and control the rear panel services, normally accessible only from the sanitary compartment This function reaches its maximum application in case of failure of one of the control panels The front panel controls the following services: - system on/off - main and secondary siren - siren to horn switch - upper and front visibility aids - cruise lights - electric door in partition wall - inverter 12/220V - reverse buzzer cutoff - side step cutoff - sanitary compartment speaker cutoff - right side lights - left side lights - sanitary compartment air conditioner - urgency (simultaneous activation of several devices) - ignition by second battery - air suspension control Large display (4,3 inches) suitable for displaying the following functions: - all services - Step return light - sanitary compartment doors open indicator light - 220V mains light on - Engine pre-heater light - outdoor temperature	1	
	MAGLITE LED outdoor searchlight , complete with yellow cone and charging base	1	-

3. AMBULANCE SANITARY COMPARTMENT

3.1 STRUCTURAL TRANSFORMATIONS		Qty	Specifications/Notes
*	Fitting of the load-bearing frame of the outfitting by screwing to the original holes in the vehicle and bonding by structural glue of specially made carpentry elements. This processing technique helps maintain the elasticity of the vehicle's load-bearing frame, eliminating inside vibration and noise.	-	
*	Complete insulation of the sanitary compartment by fitting of panels made of sound-absorbing, heat-insulating and fireproofing material (thickness 50mm).	-	

*	Sanitary compartment flooring made by aluminium floor with integrated rails, non-slip, nonabsorbent, porosity-free, and watertight. Washable with running water, resistant to major detergents. Special profile edge flush with the plane to prevent cracking, tested following European standard for seats and steacher holder 	- 
*	Fitting at the rear and side profiles of the flatbed of non-slip, rice grain aluminum door sills, designed to prevent wear and tear of the floor at the up/down points, most subject to wear and tear Light side door blue	- 
*	Rear bumper cover by means of aluminum rice grain sheet, aluminum sheet and rubber profiles to protect the loading/unloading area of the stretcher Rear Light side door blue	- 

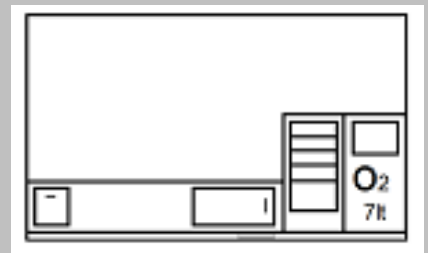
3.2 STANDARD FINISH COATINGS	Qty	Specifications/Notes
* Left and right side covering completely made of newly developed FCS (Fiber Composite Spraying) polyurethane, shockproof, soft to the touch with a SOFT TOUCH effect, resistant to external agents and made up of individually replaceable modules.	-	Available colors: ▪ Grey / Silver

*	Upholstery of seats, armchairs and inserts made of class 1 material, self-extinguishing, certified, perfectly cleanable and disinfectable.	-	Silver color

3.3 UNDER-ROOF PAVILION - INTERNAL LIGHTING		Qty	Specifications/Notes
*	"Roof pavilion on MAN TGE 4x2 completely made of newly developed FCS (Fiber Composite Spraying) polyurethane, shockproof, soft to the touch with SOFT TOUCH effect, resistant to external agents, integrated: n. 12 air conditioning exhaust vents, n. 2 appropriately positioned handles, n. 2 infusion bag holders, sanitary compartment air intake and exhaust grille. Technical console positioned in the central part of the pavilion above the patient which includes: n. 5 LED technology spot lights, n. 2 universal IV stands. Highly efficient and durable lighting system, with LED technology, adjustable on three different levels: Low Light white color with low brightness, High light white color with high brightness, Night Light blue color with low brightness. The LEDs are positioned along the ceiling, creating an X shape for maximum illumination of the sanitary compartment, completely eliminating any shadow area.	-	
NIGHT LIGHT		DAY LIGHT	
			

3.4 LEFT SIDE	Qty	Specifications/Notes
FURNITURE (Upper part)		
		
Front wall cabinet, position A, made of FCS (Fiber Composite Spraying) polyurethane, shockproof, 450mm long with pressure opening, internal lighting, door equipped with glass for easy identification of the material.	1	
Rear wall cabinet, position C, made of shock-proof FCS (Fiber Composite Spraying) polyurethane, 1500mm long with pressure opening, internal lighting, door and fixed lower part, equipped with glazing for easy identification of the material.		

*	Hanging system control structure, integrating: - Preparation of oxygen sockets recessed in the lower part of the structure - Electrical control panel - Oxygen supply control - Fixed secretion aspirator control - Predisposition for overhead oxygen flow meter		
*	Rear control panel for the sanitary compartment with 10" color touch screen panel combined with mechanical push button panel for main services. New concept panel with BACK-UP function. Innovative system that allows you to view and control the front panel services, normally accessible only from the driver's compartment in case of front panel failure. This function reaches its maximum application in case of failure of one of the control panels The rear panel controls the following services: - system on/off - sanitary compartment lighting - compartment lighting and furniture - ventilation - air-conditioning - fixed secretion aspiration - sound alarm services - electric door in partition wall - heated compartment - cooled compartment - power inverter 12/220V - room sterilizer Large display (4,3 inches) suitable for displaying the following functions: - all services - oxygen system low pressure reading - oxygen system high pressure reading - main battery voltage - secondary battery voltage - 220V external power supply The system described above is equipped with a self-diagnosis system capable of alerting operators/repairers to any malfunction, allowing for immediate resolution of any problems.	1	
	FURNITURE (Lower part)		



Cylinder column with quick-removal door and transparent plexiglass inspection window

*

1



*	Integrated drawer unit with ABS drawers and injection-molded polyurethane fronts, push/pull opening system and hold in open position. Drawers available in 2 sizes: ▪ "small" (LxWxH: 32x20x8, capacity 5 l) ▪ "large" (LxWxH: 32x20x 19, capacity 12 l). Possible configurations according to the following scheme: ▪ 4 "small" drawers and 1 "large" drawer ▪ 2 "small" drawers and 2 "large" drawers	1	
*	Wheel arch cover structure, with compartment closed by sliding door	1	
SUPPORT AND HOUSING STRUCTURES			
*	ONE-pieces FRS (Fexible Rack System)equipment support structure made of thermoformed plastic material with steel core. Featuring two rows of holes that allow different configurations of bracket mounting through screwing. Supplied with no.1 shelf and belts each.	2	

3.5 RIGHT SIDE		Qty	Specifications/Notes
WALL CABINETS, COMPARTMENTS AND FURNITURE			
*	Rear wall cabinet, made of shock-proof FCS (Fiber Composite Spraying) polyurethane, 1200mm long with pressure opening, internal lighting, door and fixed lower part, equipped with glazing for easy identification of the material.	1	
*	Cabinet for housing 2/3 l oxygen cylinders, positioned in the right rear corner.		
3.6 DIVIDING BULKHEAD		Qty	Specifications/Notes
FURNITURE AND COMPARTMENTS			
*	Division between the sanitary compartment and the driver's cab via a load-bearing bulkhead, with a rounded shock-proof profile, designed to obtain maximum driving comfort and maximum usability of the sanitary compartment, completely made of shock-resistant FCS (Fiber Composite Spraying) polyurethane, with SOFT TOUCH effect, resistant to external agents, integral fixed and openable glazing, glove compartment (allows the storage of 3 glove boxes), sedan chair housing with lower locks open for easy cleaning, large object compartment (117 litres) closed with Internally lit door, positioned in the upper part of the driver's cabin equipped with glass and a lift handle on the sliding door side.	-	
SUPPORT AND HOUSING STRUCTURES			

*	Housing for evacuation chair with castor base, polyurethane protective band and adjustable restraint straps. Various chair types	1	
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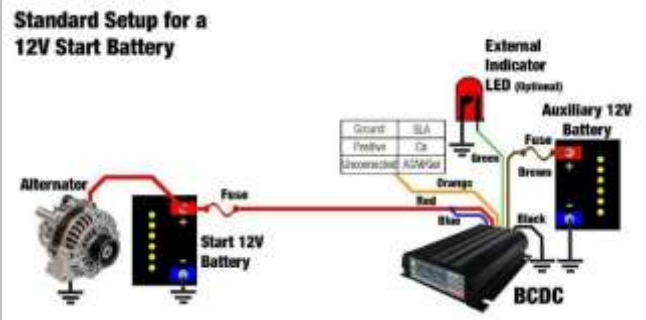
	3.7 SEATING	Qty	Specifications/Notes
	STRETCHER HEAD SEAT (OPPOSITE TO THE DIRECTION OF TRAVEL)		
*	NEW Seat mod. TAF LINER 2 (M1 approval) specially designed for professional emergency use and produced under exclusive license. Single-seater consisting of a liftable seat with ultra-low profile and anti-vibration return springs, reclining backrest for "long haul" use and foldable; headrest integrated into the backrest with increased padding; double armrest that can be raised on the left and right sides of the backrest; pre-tensioned 4-point seat belts with the possibility of "crossed containment" setup thanks to the presence of two receptors on the sides of the seat. NEW It is equipped with a revolutionary dynamic passenger retention system "DBR" Dynamic Body Retention: "double safe" seat belts, capable of transforming, if necessary, the "normal" pre-tensioned use of the belt into a "special" static shoulder strap " with high containment. Complete with ISOFIX hooks for the transport of neonatal/pediatric restraint systems and the warning system with seat belt always fastened and "man sitting" sensor with acoustic signal in the driving cab to inform the driver of any operators not correctly fastened. Swivel base to restore clearance with 90° step rotation for easier set-up for the doctor and on-board staff. Highly resistant two-tone black / carbon gray coating, easily washable and anti-allergic, in class 1 and resistant to even aggressive detergents and disinfectants; facilitated removal system for maintenance and/checking of parts subject to maintenance.	1	
	SEATS BESIDE THE STRETCHER (IN THE TRAVEL DIRECTION)		

*	NEW Seat mod. TAF LINER 2 (M1 approval) specially designed for professional emergency use and produced under exclusive license. Single-seater consisting of a liftable seat with ultra-low profile and anti-vibration return springs, reclining backrest for "long haul" use and foldable; headrest integrated into the backrest with increased padding; double armrest that can be raised on the left and right sides of the backrest; pre-tensioned 4-point seat belts with the possibility of "crossed containment" setup thanks to the presence of two receptors on the sides of the seat. NEW It is equipped with a revolutionary dynamic passenger retention system "DBR" Dynamic Body Retention: "double safe" seat belts, capable of transforming, if necessary, the "normal" pre-tensioned use of the belt into a "special" static shoulder strap " with high containment. Complete with ISOFIX hooks for the transport of neonatal/pediatric restraint systems and the warning system with seat belt always fastened and "man sitting" sensor with acoustic signal in the driving cab to inform the driver of any operators not correctly fastened. Swivel base to restore clearance with 90° step rotation for easier set-up for the doctor and on-board staff. Highly resistant two-tone black / carbon gray coating, easily washable and anti-allergic, in class 1 and resistant to even aggressive detergents and disinfectants; facilitated removal system for maintenance and/checking of parts subject to maintenance.	1	 SEAT FRONT OF STRECHER
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	3.8 VARIOUS FITTINGS OF THE SANITARY COMPARTMENT	Qty	Specifications/Notes	
*	Vertical grab bar, on the side of the sliding door, made of iron core covered with non-slip injection rubber material	1		
*	Universal storage support for No.3 personal protective helmets on left rear door.	1		

4. INSTALLATIONS

4.1 ELECTRICAL INSTALLATIONS	Qty	Specifications/Notes
POWER CAN-BUS electrical system with the following characteristics: <u>Fault Tolerant CAN-BUS:</u> - Increased resistance for the communication bus: even in case of deteriorated wiring, communications are guaranteed. <u>Fault Tolerant system:</u> - Redundancy of system controllers with recovery method upon fault removal. <u>Fault Tolerant interface:</u> - Possibility of interchange between front and rear display to control the system even in case of failure of the other interface, as well as facilitating in case of needing remote controls. <u>Minimum 6 control units for load actuation:</u> - The splitting of the users ensures a higher reliability level as well as better rationalization of the ambulance system. Touch Screen interface. <u>Realization of vehicle lighting and signaling completely with LED technology:</u> - Increased energy efficiency and longer service life of the lighting units. <u>Complete realization of load control through MosFet technology with automotive protection degree:</u> - By limiting the number of fuses as much as possible and removing relay solutions altogether, a longer equipment life is guaranteed <u>System diagnosis:</u> - All system devices are equipped with independent diagnosis/protection control. - The control panels (displays) provide feedback for each malfunction, informing the user of the fault and guiding the service centre to resolve the malfunction. <u>System security:</u> - All system devices are equipped with protection control. The protection system limits the consumption of some large users (air conditioning, 220v sockets) if the vehicle is switched off or with the engine idling, even to the point of switching off the system if it is left on with the vehicle switched off	1	

*	Electrical socket panel consisting of: N. 4 DIN 12V/16A sockets (Jack type) N. 1 Schuko socket 220V/16A with voltage indicator light, powered by Inverter - No. 1 industrial-type electrical outlet 2P 12V/16A, purple color, for neonatal incubator 12V current indicator light 220V current indicator light Standard Setup for a 12V Start Battery 	1	
*	Additional service battery for the sanitary compartment, AGM Start-Stop Plus 100 Ah , with high resistance to deep discharge.	1	
*	External socket Mod. SCAME for 220V mains connection equipped with closing door, pins protected by internal barrier, automotive type, approved for vehicle recharging according to IEC/EN 61851-1. This type of socket inhibits vehicle starting even if there is no 220V voltage	1	
*	12/220-volt power inverter, which can be switched on and off from the control panel in the sanitary compartment, dedicated design and architecture for ambulance use (not commercial inverter), high strength, CE compliance, with the following features: - Guaranteed maximum deliverable power: 1700 watts - Starting power: 2550 watts - Wave: true sine wave - Self-protection device	1	
*	System for emergency starting of vehicle from service battery in sanitary compartment, switchable from main control panel	1	

4.2 AIR CONDITIONING, VENTILATION AND STERILIZATION	Qty	Specifications/Notes
* The air-mixing ventilation system with centrifugal fan provides the possibility of continuous recirculation of air into the sanitary compartment every 3 minutes independently of the temperature settings of the air conditioner. The roof fan/aspirator has 7 different speeds partialized by the CAN system with a very low noise level 65 dB(A). Maximum flow rate in ventilation 420 m3/h. Maximum aspiration flow rate 400 m3/h. An external air lock and recirculation function is standard in all setup versions	1	
* The new air conditioning system in the sanitary compartment is independent from the vehicle's original system, the hot and cold air inlet circuits are separate for greater efficiency, and the temperature can be set from both the front and rear touch-screen panels.	1	

	The heating unit, with a capacity of 450 m3/h, is inside the equipped column on the left side and feeds hot air through a dedicated grille. The evaporator of the refrigeration unit, with a capacity of 900 m3/h, is located on the roof at the rear of the vehicle and feeds cold air through the No. 8 vents located at the pavilion. This new location has many advantages: greater thermal efficiency, more spacious blanket compartment, quieter driver's cab, and the evaporator easily accessible for maintenance.	
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4.3 OXYGEN - SUCTION - AIR SYSTEMS		Qty	Specifications/Notes
OXYGEN THERAPY			
*	Centralized oxygen therapy system with analog reading pressure gauge and automatic full/empty cylinder exchanger, certified EN 1789 (93/42 CE), made with piping according to law and high-strength materials. System consisting of: ▪ 2-socket distribution ramp to UNI standard ▪ 2 precision pressure reducers equipped with pressure gauges ▪ 1 type 0-1 low pressure circuit opening/closing tap (open/closed) ▪ 1 flow meter with humidifier jar, with 0-30 l/min flow adjustment connected to the additional outlet	1	
*	Roof drop medical oxygen delivery point with 0-25 l/min flow regulator 	1	
SECRETION SUCTION			

*	Fixed secretes suction system , OB 500 , suction power 30 l/min, CE certified, complete with: ▪ vacuum regulating valve from 0 to 1000 Mbar ▪ 1000 ml secretion collection jar, for disposable bags	1	
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4.4 RADIO EQUIPMENT	Qty	Specifications/Notes
* CARBON rod ¼ wave antenna - VHF range 140-175 MHz	1	
* STEEL rod ¼-wave antenna for UHF range 140-175 MHz	1	
* GPS range antenna	1	

5. SANITARY EQUIPMENTS

5.1 STRETCHERS AND STRETCHER SUPPORTS	Qty	Specifications/Notes
STRETCHER SUPPORT		
* Stretcher support with lateral translation with loading flap and 2 space for spinal board and scoop recovery. Tested with 10 G Dynamic Crash Test	1	
MAIN STRETCHER		
* "FROG" yellow self loading stretcher with trendelenburg Made of welded stainless steel powder coated, this is a really strong and reliable device. The Ø 200 mm wheels (2 fixed with brake and 2 rotating with self-centring system) are made of soft material that allows high comfort level to the patient. This model of stretcher has trendelenburg position to 0° from 20° too. • Rigid platform made of reinforced thermoplastic material. • Reclining backrest 0°- 80°, operated by a gas piston, can be locked in any position. • Folding sides. • Vertical legs protected by plastic buffers. • Casters are self-centring so that the stretcher can be positioned in the ambulance without them having to be turned manually. • Front trolley can be lowered to reduce overall dimensions of the stretcher.	1	

5.2 UTILITY MATERIAL		Qty	Specifications/Notes	
*	4 kg fire extinguisher housed in the sanitary compartment	1		
*	4 kg fire extinguisher housed in the driver's cab	1		