Corpuls defibrillator user manual



Das beste Energiemanagement ist jenes, über das sich der Anwender keine Gedanken machen muss. Mit dem intelligenten Energiemanagement des corpuls3 stets einsatzbereit aus der Ladehalterung im Einsatzfahrzeug. Sobald sich das Gerät wieder in der Halterung befindet, werden die Akkus automatisch geladen und der corpuls3 ist startklar für den nächsten Einsatz. Das zeitaufwändige und fehleranfällige manuelle Laden und Austauschen der Akkus ist nicht nötig, der Anwender kann sich voll und ganz auf den Patienten konzentrieren. Die Akkus der drei Module sind identisch und extrem leistungsstark. Im Kompaktmodus nutzen sie einfach die Akkureserven der anderen Module. Dadurch ist auch bei lange andauernden Einsätzen immer genug Power verfügbar, um das umfassende Monitoring und die Therapie mit dem Defibrillator/Schrittmacher sicherzustellen. © Copyright 2021 Wakelet Limited.All rights reserved. Turn your PDF publications into a flip-book with our unique Google optimized e-Paper software. Copy QM - Corpuls Extended embed settings Page 1 corpuls User Manual ... User Manual may be reproduced, saved, processed, copied or circulated by means of electronic systems in any form whatsoever without the written agreement of GS Elektromedizinische Geräte G. Stemple GmbH. ENG - Version 2.1 – P/N 04130.2... Page 4 User Manual corpuls Contents Service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address of the sales and service partner Information on the authorised service address In case of enquiries, please contact: Address In case following website: www.corpuls.com ENG - Version 2.1 - P/N 04130.2 ... Page 5 User Manual corpuls Contents corpuls Versions of the user manual Issue Date User M Page 7 User Feedback 182 7.4.13 "Menu item" > "Submenu item" Menu items of the main menu and parameter and curve context menus "Alarm message"... For the product variant HYPERBARIC (HBO). Operating Staff corpuls may only be operated by trained medical staff of for example hospitals, doctor's offices and emergency medical services, as well as of authorities and public safety organisations. User Manual corpuls Intended Use 1.2.2 Maintenance Waintenance work may only be performed by persons who are appropriately trained and authorised by the manufacturer. Failure to observe this will result in invalidation of claims under the warranty. Information and Warning Labels on the Device Please read and follow the instructions in the user manual USB interface (Devices up to 09/2010) User Manual corpuls Safety Warning Notices and Symbols A number of actions during the operation of the corpuls carry risks for patients, users and third parties. Such actions are indicated by warning notices in this user manual. The following symbols are used: "Warning"... Intended Use The corpuls is intended use • for measurement and monitoring of vital functions in addition to • defibrillation, cardioversion or cardiac pacing of patients in the preclinical and clinical field by qualified medical staff trained in the use of the device. The following monitoring functions are performed, the patient's condition must also be regularly monitored even when the alarm function is enabled. corpuls Intended for as intended • operation in the vicinity of readily inflammable substances, •... User Manual corpuls Introduction Introduction Introduction Components corpuls is a portable device with a modular structure which can be used • as a defibrillator/monitor or • as a full patient monitor in its own right. The corpuls Monitoring, provides comprehensive monitoring, diagnostic and therapeutic diagnostic and functions for treatment of emergency and intensive-care patients. Page 19 User Manual corpuls Pivoting device can be tilted vertically up to 30°. Depending on the mission conditions, the monitor can be adjusted to the appropriate visual angle. User Manual corpuls Introduction Device Design Usage options The three modules monitoring unit, patient box and defibrillator/pacer can operate via an infrared connection or, if separated, via radio connection. The connection status is shown on the display of the monitoring unit (see Table 4-2, page 36) and the patient box (see Table 4-3, page 39). Page 21 User Manual corpuls Introduction 4. Modular use: Monitoring unit, patient box and defibrillator/pacer are disconnected mechanically Usage options of the modular corpuls Fig. 3-3 The following combinations are possible when used as a stand-alone patient monitoring system: 1. Compact monitor: Monitoring unit and patient box are connected mechanically 2. User Manual corpuls Introduction 3.2.1 Pairing (Connection Authorisation) The modules of two procedures: • Pairing and • Ad-hoc connected to form a functional unit by means of two procedures: compact device for individual modules of the same type from another corpuls Note It is not possible to connect a monitoring unit to more than one patient box or... Page 23 User Manual corpuls Introduction Starting a Pairing, proceed as follows: mechanically. There are the following options: The message Perform pairing? appears: Confirm the message by pressing the softkey [Start]. The message Perform pairing? does not appears: Confirm the message Perform pairing? does not appears: Confirm the message Perform pairing? appears: Confirm the message by pressing the softkey [Start]. 3 Status LED power supply/charging status 4 On/Off key with operating status LED 5 Defibrillation mode function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 Function keys 6 Insurance card reader 7 Jog dial and alarm light 8 view 1 Cover for LAN interface (option) 2 SIM card slot (slot for SIM card tray) 3 Contact element with patient box 4 Infrared interface with defibrillator/pacer 6 Charging cable magnetic plug socket... User Manual corpuls Introduction 3.2.3 Patient Box and Accessory Bag Fig. 3-7 Patient Box (illustration may differ) 1 Sensor interfaces 2 Multifunction key 3 Multifunction LED operating status/HR/alarm 4 On/Off key 5 Status LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction LED power supply/charging status 6 Display 7 Microphone 8 Acoustic alarm (pulse signal indicator) 9 Infrared interfaces 2 Multifunction 2 Right-hand side Fig. 3-8 Patient Box Interfaces, right hand side, ports for: 1 CO : sensor for capnometry 2 NIBP: sensor for non-invasive blood pressure monitoring (channels 1 and 2) 6 P3 P4: sensor for invasive blood pressure blood pressure monitoring (channels 1 and 2) 6 P3 P4: sensor for invasive blood pressure blood monitoring (channels 3 and 4) 7 CPR: CPR feedback sensor... Page 28 User Manual corpuls Introduction At the moment, connecting USB devices or -cables to the USB slot is not allowed. Caution Accessory Bag An accessory bag is available for the patient box (P/N 04221.1). The accessory bag is used to store the preconnected cables as well as the sensors and ECG electrodes, so that they are quickly accessible during use. User Manual corpuls Introduction 3.2.4 Defibrillator/Pacer Fig. 3-11 Defibrillat Contact element with monitoring unit 8 Infrared interface with monitoring unit 9 Compartment for corPatch electrodes The therapy master cable... User Manual corpuls Introduction 3.2.5 Defibrillator/Pacer SLIM The defibrillator/pacer SLIM differs from the previous defibrillator/pacer unit only in terms of form and weight. The basic functions are identical. Fig. 3-12 Defibrillator/Schrittmacher Slim 1 Carrying handle and lock 2 Therapy socket 3 Contact element with monitoring unit 5 Equipotential bonding pin with insulating cover... User Manual corpuls Introduction 3.2.6 Brackets Various brackets, with and without power supply, are available for the device in compact, semi-modular or modular use. Fig. 3-13 Brackets 1 Defibrillator/compact device brackets, p. 60 contains information on inserting the modules into the brackets. User Manual corpuls Introduction Description of the Monitoring, Diagnostic and Therapeutic Functions 3.3.1 Monitoring and Diagnostic Functions: • ECG • Diagnostic ECG • CPR feedback Optional: • oximetry (SpO ®, ® SpCO SpHb, SpMet •... User Manual corpuls Introduction Non-invasive The noninvasive blood pressure function (NIBP) allows blood pressure blood pressure blood pressure so a part of intensive blood pressure function (IBP) allows the invasive blood pressure function (IBP) and infants is available. Invasive blood pressure function (IBP) allows the invasive blood pressure f medical care of the patient. Page 34 User Manual corpuls Introduction In AED mode, the user is assisted by an automated ECG analysis, verbal instructions (configurable). The defibrillation pulse is triggered by the user. The AED mode algorithm is governed by the current recommendations of the European Resuscitation Council of 2010 (ERC, see www.erc.edu). User Manual corpuls Introduction Frequency 30/min 150/min 5/min DEMAND operating mode Pacing frequency 30/min 150/min 5/min FIX operating mode Pacing frequency 30/min 150/min 5/min mA 150 mA 5 mA Table 3-2 Frequency and intensity Alarm management... User Manual corpuls Introduction 3.4.1 Alarm Signals at the Monitoring unit via the status line, the vital parameter field, the jog dial and by acoustic signals. The positions of the operation- and display elements are described in chapter 4.1 Operating and Display Elements, page 31. Page 37 User Manual corpuls Introduction Alarm signal via the jog dial: Fig. 3-17 Jog dial 1 Not illuminated to indicate an alarm – The alarm with the currently highest priority is indicated by the colour blue, yellow or red (in older devices only red) as well as by the flashing speed of the jog dial. User Manual corpuls Introduction 3.4.2 Alarm Signals at the Patient box display: Fig. 3-18 Alarm message on the patient box display -... User Manual corpuls Introduction Energy Management Energy management is of paramount importance owing to the modular structure Influence of the corpuls and the individual modules can be operated on battery alone or on 12 V DC power supply or via a separate charger (only 230 V AC). 3.5.1 Battery Operation The three modules of corpuls Identical lithium-... Page 40 User Manual corpuls Introduction In case of modular use of the patient box, the remaining running time of the patient box, taking into account the current energy consumption, is displayed (Fig. 3-20). Fig. 3-20 Remaining running time of the patient box 1 Battery symbol and remaining running time in minutes Alternatively, the charging status of the batteries in percent can be viewed in the system info. User Manual corpuls Introduction 3.5.2 Mains Operation with 12 V DC. Use of a mains In combination with a multi-range mains charger, the compact device and the charger individual modules can also be connected to and operated with voltage sources of 100 V to 250 V AC. Page 42 User Manual corpuls Introduction Fig. 3-22 Compact device, power supply (illustration may differ) 1 Power supply (illustration may differ) 1 Power supply (illustration fig. 3-24 Patient box, power supply (illustration may differ) 1 Power supply connection 2 Magnetic clip ENG - Version 2.1 -... User Manual Corpuls General Operating Instructions Operating Instructions General Operating Instructions Operating Instructions Contents and LEDs on the Monitoring Unit Energie Manual Analyse Laden Charge Schock Monitor Pacer Browser Fig. 4-1 Monitoring unit, operating elements and LEDs 1 Alarm key 2 Event key 3 On/Off key... Page 44 User Manual corpuls General Operating unit: • all modules during use as a compact device; • the monitoring unit and all the modules connected mechanically to the monitoring unit during semi-modular use;... Page 45 User Manual corpuls General Operating Instructions Jog dial, it is possible to: • navigate on the display; • open a parameter context menu or curve context menu or curve and adjust settings (see chapter 4.3.2 Parameter Context Menu and Curve Context Menu, p. Page 46 User Manual corpuls General Operating Instructions The time span after which the printer configuration. For more information see chapter 7.1.3 Printer settings, p. 143. Softkeys The softkeys (Fig. 4-1, item 12) are assigned different functions, depending on the current operating mode or selected dialogue. User Manual corpuls General Operating Instructure: Fig. 4-2 Monitoring unit, example of basic structure of the display pages 1 Status line 2 Parameter area 3 Curve and display area 4 Message line 5 Softkey line... Page 48 User Manual corpuls General Operating Instructions Connection with the patient box. The monitoring unit and patient box are connected mechanically and communicate visually via an infrared interface. Page 49 User Manual corpuls General Operating mode are displayed in the bottom half of the display. In case of a diagnostic ECG, all 12 leads are displayed simultaneously as curves. Page 50 User Manual corpuls General Operating Instructions, the screen displayed in video display inverted video. If the Monitor key is held down for more than 3 seconds, the screen display is inverted (see also chapter 7.1.1 General System Settings, p. User Manual corpuls General Operating Instructions 4.1.3 Patient Box Display The patient data are displayed on a separate screen has the following structure: Fig. 4-5 Patient box, displays on the screen (illustration may differ) 1 Connection status with the monitoring unit 2 Remaining running time of the patient box on battery operation 3 Display of a selected vital parameter For the status of the network connection (item 1) of the patient box, the... User Manual corpuls General Operating Instructions 4.1.4 Control Keys and LEDs (illustration may differ) 1 On/Off key 2 LED power supply/charging status 3 Multifunction LED operating status/HR/alarm 4 Multifunction key On/Off key (item 1). User Manual corpuls General Operating Instructions 4.1.5 Control Key and LEDs on the Defibrillator, control key and status LEDs 1 On/Off key 2 Operating status LED 3 Power supply/charging status LED On/Off key (item 1), the defibrillator is switched on or off during modular use. User Manual corpuls General Operating Instructions 4.1.6 Control Key and LEDs on the Defibrillator SLIM, control key and status LEDs 1 On/Off key 2 Operating status LED 3 Power supply/charging status LED On/Off key on the monitoring is switching on and Off 4.2.1 Switching On Compact device Press the On/Off key on the monitoring is status LED 3. Switching On and Off 4.2.1 Switching Off 4.2.1 Switching Off 4.2.1 Switching Off 4.2.1 S unit. All modules are switched on. Switching on in Manuell Manual defibrillation Press the key on the monitoring unit. Compact device All modules are switched off if the softkey [OK] is pressed after the confirmation prompt appears. Fig. 4-9 Confirmation prompt before switching off (Semi) modular use Press the On/Off key on the monitoring unit. Page 57 User Manual corpuls General Operating Instructions Warnings on If no connection with the patient box and/or defibrillator/pacer exists at the time switching off of switching off the monitoring unit or if a timing problem exists between the modules, this is indicated to the user by the message "Check modules": Fig. User Manual corpuls General Operating Instructions Menu Control The menus are controlled with the jog dial, softkeys and the function keys Back and Home. There are four different menu types: • softkey context menu or curve context menu or curve context menus and curve context menus only contain menu items that are relevant for the highlighted field. They can be called up for parameter fields and curve fields and open directly in the highlighted field. Proceed as follows to open a parameter context menu or curve context menu or curve context menu and adjust settings: Rotate the jog dial to highlight the required parameter field or curve. Page 60 User Manual corpuls General Operating Instructions Fig. 4-14 Curve context menu If another value is to be assigned to the parameter field or the required parameter. Select further parameters of the parameter soft he parameter soft he parameter by rotating the jog dial and confirm by pressing the jog dial. User Manual corpuls General Operating Instructions 4.3.3 Main Menu To select the main menu of the device and adjust settings, proceed as follows: Press the jog dial to open the main menu of the device. Fig. 4-15 Main menu of the device. corpuls General Operating Instructions 4.3.4 Configuration Dialogue To adjust settings in the configuration dialogue, proceed as follows: Fig. 4-16 Configuration dialogue (see chapter 4.3.3 Main Menu, p. 49). Rotate the jog dial to highlight the required configuration field. Press the jog dial to select the highlighted configuration field. User Manual corpuls General Operating Instructions Disconnecting and Connecting of modules Note The separating or connecting the Monitoring Unit from the Defibrillator/Pacer Note This procedure applies regardless of whether the patient box is connected to... User Manual corpuls General Operating Instructions 4.4.2 Disconnecting the Patient box from the Monitoring Unit Grasp the monitoring unit by the carrying handle and press the snap lock of the patient box is connected to... the monitoring unit (item C). User Manual corpuls General Operating Instructions 4.4.3 Connecting the Patient box at the bottom on the monitoring unit (item A): The recesses (item 3) of the patient box at the bottom on the monitoring unit. Fit the patient box at the bottom on the monitoring unit (item A): monitoring unit. User Manual corpuls General Operating Instructions 4.4.4 Connecting the Monitoring Unit to the Defibrillator/Pacer At the monitoring unit or not. Raise and tilt the monitoring unit forwards. Fit the monitoring unit onto the defibrillator/pacer at the the Patient Box from the Compact Device Grasp the monitoring unit by the carrying handle and pull both snap locks simultaneously forwards. User Manual corpuls General Operating Instructions Accessory Bag 4.5.1 Fitting the Accessory Bag Insert the patient box (item 1) into the protective cover (item 6). Fig. 4-25 Accessory bag and patient box, front view (illustration may differ) 1 Patient box 2 Accessory bag When a corpuls General Operating Instructions Fig. 4-26 Accessory bag with patient box, rear view (illustration may differ) 4.5.2 Packing the Accessory Bag When inserting the sensor cables and ECG cables, make sure that the plugs snap in place beyond the perceptible pressure point. Fold (gather in loops) but do not roll up the connected cable to avoid damage to the cable and allow rapid removal during mission without forming Caution... Page 70 User Manual corpuls General Operating Instructions Righthand bag Accessory Position Temperature sensor (item 1) Outermost pocket on central section adapter, mainstream (item 5) Elastic band below the patient box... Page 71 User Manual corpuls General Operating Instructions Connecting cables on left-hand side Rainbow ECG-D ECG-M Fig. 4-29 Connecting the plugs on the left-hand side of the patient box Left-hand intermediate cable (item 3) Right-hand pocket on central section... User Manual corpuls General Operating Instructions Insertion Fit the recesses at the bottom of the defibrillator/compact device bracket (item A). The lock on the bracket engages automatically. User Manual corpuls General Operating Instructions 4.6.2 Monitoring unit or not. Inserted into the bracket in the same manner as it is connected to the defibrillator/pacer (see chapter 4.4.4 Connecting the Monitoring Unit to the Defibrillator/Pacer, p. User Manual corpuls General Operating Instructions 4.6.3 Patient box with its bottom side onto the long part of the charging bracket (item A): The recesses on the patient box engage in both pins (item 4) on the charging bracket. User Manual corpuls Operation – Therapy Electrodes for Defibrillation and Pacing 5.1.1 Types of Therapy Electrodes With the introduction of the corPatch easy pre-connected therapy electrodes Note (P/N 04324.3) and Pediatric (P/N 05120.1), for adults (P/N 04324.3) and Pediatric (P/N 05120.1) the higher limits for the body weight of patients have been set. Page 76 User Manual corpuls Operation - Therapy Internal shock The internal shock The internal shock The internal shock and only need to be connected to the therapy master cable of the defibrillator/pacer. User Manual corpuls Operation - Therapy 5.1.2 Connect the therapy master cable (item 1). To disconnect, pull back the red sliding sleeve at the therapy master cable and pull apart the plugs. The plug connectors are twistproof. User Manual corpuls Operation – Therapy If the electrode plug is turned the wrong way and connected by force to the therapy master cable, there will be a malfunction in the paddle interface and an alarm message will be issued. Caution The plug connector has to be disconnected and checked for damage. User Manual corpuls Operation – Therapy Preparing the Patient for Defibrillation, a reddening of the skin and, in case of excessive hair, burn injuries may occur. Caution Recording of the ECG with therapy electrodes or via the 4 pole ECG monitoring cable is impaired if the skin is contaminated or in case of excessive hair. User Manual corpuls Operation – Therapy Defibrillator in AED Mode 5.3.1 Information on the AED Mode 5.3.1 Information on the AED mode is available for patients aged between 1 and AED mode 8 years, it is recommended to use the defibrillator in AED mode with corPatch for children... Page 81 User Manual corpuls Operation – Therapy The curve field in the first line of the screen is pre-set and cannot be configured. The first line of the screen is pre-set and cannot be configured. electrodes, switching automatically between IIauto and DEauto: •... User Manual corpuls is modified during ECG analysis in AED mode (change from a wireless radio connection to a mechanical connection to a mechanical connection of the ECG analysis will be interrupted. WARNING The ECG analysis will be interrupted. must be restarted in this case. User Manual corpuls Operation – Therapy With the introduction of the corPatch easy pre-connected therapy electrodes Note (P/N 05120.1), for adults (P/N 05120.1), for adults (P/N 05120.1), for adults (P/N 05120.1), for adults (P/N 05120.1) the higher limits for the body weight of patients have been set. The manufacturer assures that also the previously supplied therapy electrodes corPatch easy Neonate (P/N 04324.2) can be used for defibrillations with an energy level of up to 100 Joule maximum and up to a body weight of 25 kg. Page 84 User Manual corpuls Operation – Therapy Place the APEX shock paddle (Fig. 5-5, item 1) on the lower left of the thorax beside apex of the heart (5th ICS). Place the STERNUM shock paddle (Fig. 5-5, item 2) to the right of the sternum. Page 85 User Manual corpuls Operation - Therapy During ECG analysis, it is essential to avoid external commotion and vibration. Keep the patient lying down calmly. Do not touch the patient. It is essential to discontinue artificial respiration during ECG analysis. This WARNING leads to false analysis results since the periodic expansion of the chest may simulate an ECG rhythm. User Manual Defibrillation and Cardioversion 5.4.1 Information on Manual Defibrillation and Cardioversion 5.4.1 Information on Manual Defibrillation and Cardioversion 5.4.1 Information and Cardioversion 5.4.1 Informa concerning operation of the defibrillator. They have to assess the ECG and can, depending on the patient, select the necessary energy and trigger the defibrillation- or cardioversion shock. Page 87 User Manual corpuls Operation – Therapy The curve field in the first line of the screen is pre-set and cannot be configured. There, the ECG recorded by the respective therapy electrodes is displayed, switching automatically between IIauto and DEauto: • corPatch electrodes: - DEauto recording, via the corPatch electrodes: - DEauto recording, via the corPatch electrodes: - DEauto recording disabled by default. If the audio recording option is enabled by the person responsible for the device, all surrounding noises are recorded (see chapter 7.4.3 Configuration of the Device), page 163). User Manual corpuls Operation – Therapy To start the charging process, press the Charge Laden The charge Lad takes a maximum of 5 seconds depending on the selected energy setting. Wait until the message Ready for shock is displayed on the screen and the ready-signal is sounding. Page 90 User Manual corpuls Operation – Therapy Place the APEX shock paddle (Fig. 5-8, item 1) on the lower left of the thorax beside apex of the heart (5th ICS). Place the STERNUM shock paddle (Fig. 5-8, item 2) to the right of the sternum. User Manual corpuls Operation – Therapy Note The charging process can be interrupted by pressing simultaneously both shock paddle buttons briefly. Pressing one of the shock paddle buttons briefly. connecting both electrode surfaces of the shock paddles (short-circuiting). User Manual corpuls Operation – Therapy Wait until the message Ready for releasing a defibrillation shock. Keep the Shock key depressed until the shock is delivered to perform defibrillation or cardioversion. User Manual corpuls Operation - Therapy Fit the baby shock electrodes (item 1) and press until the curved edge engages perceptibly. Perform a functional test: Trigger a 10 J shock with short-circuited baby shock electrodes. The two diodes (item 3) light up. Page 94 User Manual corpuls Operation - Therapy Fit the baby shock electrodes (item 2) and press until the curved edge engages perceptibly. Operation - Therapy In patients with an implanted pacer, it is possible that shockable ECG rhythms or arrhythmias will only be detected to a limited external pacer of the device. User Manual corpuls Operation - Therapy "STIM" message Pacer operation is indicated by the message "STIM" in the upper left corner of the curve field. When stimulation is performed, the message "STIM" is flashing. When "STIM" is permanently displayed, the pacer is switched on (e.g. in DEMAND mode in a frequency range in which no stimulation). Page 96 User Manual corpuls Operation Therapy Place the blue-labelled corPatch electrode on the bottom third of the sternum (between 4th and 5th ICS) (item 2). Connect the corPatch electrodes to the therapy master cable. User Manual corpuls Operation – Therapy 5.5.3 Starting the Pacer Function Preparing the Prerequisite: Device is switched on. device Press the Pacer rig. 5-13 Pacer, initial screen 1 Heart rate parameter field 2 Current ECG (recording II/DEauto) 3 Configurable curve field 4 Pacer operating mode... Page 98 User Manual corpuls Operation – Therapy Note The pacer by checking the central pulse. WARNING In patients with an implanted pacer, it is possible that shockable ECG rhythms or arrhythmias will only be detected to a limited extent. Page 99 User Manual corpuls Operation – Therapy OVERDRIVE Press the softkey [OVR] to select the OVERDRIVE function. The pacing frequency will be automatically adjusted to a value just below the patient's frequency. Page 100 User Manual corpuls Operation - Therapy Regularly check effectiveness of the pacer by checking the central pulse. WARNING If the defibrillator/pacer battery low (Defib)"... User Manual corpuls Operation – Therapy Metronome 5.6.1 Information on the Metronome are set according to the current scientific recommendations of international associations for resuscitation (e.g. User Manual corpuls Operation – Therapy 5.6.2 Starting the Prerequisite: The device is in AED- or manual defibrillation mode. device 1. Press the softkey [Metronome 2. User Manual corpuls Operation – Therapy By selecting the pacer mode, the metronome is deactivated. Caution CPR Feedback 5.7.1 Information on CPR Feedback If a corPatch CPR sensor is used, the rate and depth of a thorax compression can be retrofitted For further information, please contact your authorised sales and service partner. The corPatch CPR sensor is a disposable article. Note The corPatch CPR sensor is described in the following. Connect the corPatch CPR sensor (item 1) to the corPatch CPR intermediate cable (item 2) leading to the patient box. Fig. User Manual corpuls Operation - Therapy 5.7.3 Working with CPR Feedback Prerequisite: Device is switched on. The CPR feedback system starts automatically when the corPatch CPR sensor is applied. If necessary select a curve field for displaying the compression progression (CPR) and call up the curve context menu. Assign the CPR curve to the selected curve field. User Manual corpuls offers comprehensive options for monitoring vital parameters and for diagnosis of critical patients. The device starts automatically in monitoring mode. User Manual corpuls Operation - Monitoring mode when it is switched on. Press the Monitoring mode when it is switched on a nerve stimulator may modify or completely in monitoring mode. suppress the ECG representation. In some cases, the ECG of an implanted pacer is displayed instead. Warning In patients with an implanted pacer, it is possible that shockable ECG rhythms or arrhythmias will only be detected to a limited extent. User Manual corpuls Operation – Monitoring and Diagnosis 6.2.3 Preparing ECG Monitoring The ECG can be recorded with the following cables: • 4-pole ECG monitoring cable, (for leads I, II, III, aVR, aVL and aVF) • complementary 6-pole diagnostic cable, (for leads V1 to V6) as a supplement to ECG monitoring (for positioning of ECG electrodes C1 to C6, see chapter 6.3.2 Preparing the Patient for a D-ECG, page 103) User Manual corpuls Operation - Monitoring and Diagnosis Fig. 6-2 ECG monitoring, applying the ECG electrode 3 Position of the red ECG electrode 2 Position of the green ECG electrode 3 Position of the green ECG electrode 3 Position of the green ECG electrode 4 Position of the green ECG electrode 4 Position of the green ECG electrode 5 Position of the green ECG electrode 4 Position of the green ECG electrode 5 Position electrode 5 Position of the green ECG electrode 5 Position of the green ECG electrode 5 Position elec 111 User Manual corpuls Operation - Monitoring and Diagnosis Fig. 6-3 ECG monitoring, initial screen 1 Heart rate parameter field 2 ECG curves, if necessary (see chapter 7.3 Alarm Configuration, p. User Manual corpuls Operation – Monitoring and Diagnosis Fig. 6-4 Real-time printout, section mV-mark (in form of a rectangular impulse) is located at the left margin of the curve field (mV-mark). Its height depends on the set amplification of the ECG curve. Page 113 User Manual corpuls Operation – Monitoring and Diagnosis With automatic adjustment, the device selects the amplification so that the ECG swings can be displayed. With manual adjustment, the amplification affecting x 1 / x 2). User Manual corpuls Operation – Monitoring and Diagnosis 6.2.6 Heart Rate Monitoring In addition to the ECG. To display the heart rate, select the parameter field and open the parameter context menu (see chapter 4.3.2 Parameter Context Menu and Curve Context Menu, p. User Manual corpuls Operation – Monitoring and Diagnosis Abbreviations for AMI: Anterior Myocardial Infarction ECG Measurement/ IMI: Inferior Myocardial Infarction NSTEMI: Non-ST-Elevation Myocardial Infarction With the complementary 6-pole ECG diagnostic cable, the six unipolar thoracic wall leads according to Wilson (C1-C6) can be recorded. Page 116 User Manual corpuls Operation – Monitoring and Diagnosis • Red ECG electrode: right arm (Fig. 6-7, item 1) • Yellow ECG electrode: left arm (Fig. 6-7, item 2) • Green ECG electrode: left leg (Fig. 6-7, item 3) • Black ECG electrode: right leg (Fig. 6-7, item 4) Fig. Page 117 User Manual corpuls Operation – Monitoring and Diagnosis • Red V1-ECG electrode: intercostal space, right parasternally • Brown V4-ECG electrode: intercostal space, left medioclavicular line • Green V3-ECG electrode: between V2 and V4 on the 5 •... User Manual corpuls Operation – Monitoring and Diagnosis Note To check the ECG cable tester is recommended (see chapter 9.8 Approved Accessories, Spare Parts and Consumables, p. 224). The ECG function is compromised if adhesion of the electrodes is impaired due to contaminated skin or excessive hair. Page 119 User Manual corpuls Operation – Monitoring and Diagnosis the right corner at the bottom of the preview screen. It is possible, however, to switch to an alternative diagnostic filter setting, e.g. 0.05 – 40 Hz. For this ® @ purpose press the softkey [Filter]. HES Light and HES are not affected by these filter settings. Page 120 User Manual corpuls Operation – Monitoring and Diagnosis Fig. 6-11 Printout of 12-lead ECG (illustration may differ) Note The D-ECG printout contains the trend values of the last minute at the time the softkey [Print] is pressed. For this reason the D-ECG recorded may originate from an earlier time. Page 121 User Manual corpuls Operation – Monitoring and Diagnosis ® Fig. 6-13 D-ECG printout with HES Light (illustration may differ) ENG - Version 2.1 – P/N 04130.2... Page 122 User Manual corpuls Operation – Monitoring and Diagnosis ® Fig. 6-13 D-ECG printout with ECG analysis and ECG interpretation HES (option) (illustration may differ) ENG - Version 2.1 – P/N 04130.2... User Manual corpuls Operation - Monitoring and Diagnosis ® Coded In case no therapy suggestion can be made for certain reasons, HES provides Explanation. See the following list for relevant codes: Type Code Explanation Localisation More than 30 QRS complexes found of complexes found for encoding and Diagnosis Designation Excluded due to a too small/large distance to earlier or following cycle. Measurement error possible! Excluded due to ECG complex being located too much outside of the examined interval (P- or T-wave partially missing) Table 6-3 Criteria of the representative cycle... User Manual corpuls Operation – Monitoring and Diagnosis Note In general, a visual check of the rhythm- and typing diagram as well as a check of the fiducials should be integral part of the quality check of the computerised ECG evaluation. Note For further information, the HES ECG manual is available in German and English. User Manual corpuls Operation – Monitoring and Diagnosis 6.4.2 Preparing Longterm ECG Prerequisite for the longterm ECG is a 4-pole ECG monitoring cable connected to the patient (see chapter 6.2.4 Performing ECG Monitoring, p. 98). If no 4-pole ECG monitoring cable is present, the DE-lead (if connected) will be recorded. User Manual corpuls Operation – Monitoring and Diagnosis Oximetry 6.5.1 Information on Monitoring (Option) Oximetry is a non-invasive for the description of the description monitoring method for continuous measurement of the arterial oxygen saturation (SpO), the level of methemoglobin (SpHb) in the blood. Page 128 User Manual corpuls Operation - Monitoring and Diagnosis The oximeter may not be operated in the vicinity of ionising (radioactive) radiation, because the measured values might be falsified. Warning Refer to the list of approved accessories (see chapter 9.8 Approved Accessories, Spare Parts and Consumables, p. User Manual corpuls Operation - Monitoring and Diagnosis 6.5.2 Preparing Oximetry Monitoring Handling of a oximetry sensor is described below. Please read and understand the warning notices of the oximetry sensor manufacturer. Warning Do not place the oximetry sensor on the same limb as an NIBP cuff for non- invasive blood pressure monitoring, a catheter or an intravascular access. User Manual corpuls Operation – Monitoring and Diagnosis 6.5.3 Performing Oximetry Measurement Oximetry measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of SpO measurement (pleth) and open the curve field for displaying course of to the selected curve field. Page 131 User Manual corpuls Operation – Monitoring and Diagnosis Printing the The pleth curve can be printed out with the integrated printer. See chapter 7.1.3 plethysmogram Printer settings, p. 143 for more information on configuring the printout. Press the Print key to start or stop real-time printing. Fig. User Manua corpuls Operation – Monitoring and Diagnosis 6.5.4 Adjusting the Representation of the Oximetry Parameters Modifying the The sweep speed curve. The following sweep speed curve. The following sweep speed curve. The following sweep speed curve. Monitoring (option) 6.6.1 Information on CO Monitoring allows recording of the end-expiratory, end-tidal CO concentration (EtCO) and provides information on ventilation, haemodynamics and metabolism in both intubated on the assumption that there is no CO present in the patient's... Page 134 User Manual corpuls Operation – Monitoring and Diagnosis 6.6.2 Preparing CO Monitoring and Diagnosis 6.6.2 Preparing CO Monitoring, nasal adapter 1 CO disposable nasal adapter (YG-120T) 2 CO... Page 135 User Manual corpuls Operation – Monitoring, disposable endotracheal tube adapter 1 Respirator/ventilation bag connection 3 Endotracheal tube connection 3 Endotracheal tube adapter 1 Respirator/ventilation bag connection 2 CO sensor unit to the patient according to the manufacturer's instructions: •... Page 136 User Manual corpuls Operation – Monitoring and Diagnosis 6.6.3 Performing CO Measurement Me (capnogram). Select the parameter field for display of the end-expiratory CO concentration and open the parameter context menu. User Manual corpuls Operation – Monitoring and Diagnosis 6.6.4 Adjusting the Representation of the concentration and open the sweep speed configured curves. The following sweep speeds can be set: •... User Manual corpuls Operation – Monitoring (NIBP) is used for routine monitoring (option) 6.7.1 Information on NIBP Monitoring (option) 6.7.1 Information (option) 6.7.1 Information (option) 6.7.1 Info the blood is measured with the oscillometry method. Page 139 User Manual corpuls Operation - Monitoring and Diagnosis The measurements or automatically at configurable intervals (1 to 60 minutes). Only use NIBP cuffs mentioned in the list of approved accessories (see chapter 9.8 Approved Accessories, Spare Parts and Consumables, p. 224). Caution The corpuls can indicate the results of non-invasive blood pressure... Page 140 User Manual corpuls of non-invasive blood pressure... Page 140 User Manual corpuls can indicate the results of non-invasive blood pressure... Page 140 User Manual corpuls Can be set with the softkey [View] to switch to the trend view. Fig. 6-29 NIBP user surface in trend view. [Mode]: • adult • child •... User Manual corpuls Operation – Monitoring and Diagnosis 6.7.2 Preparing Blood Pressure Monitoring on the upper arm is described below: The index printed on the NIBP cuff has to be used Page 142 User Manual corpuls Operation - Monitoring and Diagnosis Before starting the NIBP measurement, make sure that the selected initial press the softkey [NIBP]. Press the softkey [Mode] repeatedly until the required mode "Adult", "Child" or "Neonate"... User Manual corpuls Operation - Monitoring and Diagnosis 6.7.4 Performing Blood Pressure Interval Monitoring (see chapter 7.4.14 Configuration of Non-Invasive Blood Pressure Measurement (NIBP (Persons Responsible for the Device), page 184). User Manual corpuls Operation – Monitoring and Diagnosis The following table gives an overview of the current assignment: Assignment: Assignment: Assignment: Assignment: Assignment: Assignment: Assignment: Assignment Connection Single pressure channel IBP-1 "P1" and "P2" IBP-2 "P3" and "P4" Table 6-4 IBP monitoring, pressure channel assignment Special convertible adapters for transducer cables from established manufacturers (e.g. Page 145 User Manual corpuls Operation – Monitoring and Diagnosis Fig. 6-32 IBP calibrate further transducer cables. If auto-scaling of the display range in the main menu "IBP" > "Settings" (for further information see chapter 7.2.4 IBP, p. User Manual corpuls Operation – Monitoring starts automatically after application of the transducer(s). Select the curve field for display of the pressure curves and open the curve context menu Assign the corresponding pressure curve (P1-P4) to the selected curve field. User Manual corpuls Operation – Monitoring, section of a printout Invasive blood pressure curve P1 Temperature Monitoring (Option) 6.9.1 Information on Temperature Monitoring Temperature monitoring and Diagnosis 6.9.3 Performing Temperature Monitoring starts automatically after the sensor has been attached. Select the parameter field for display the first temperature value and open the parameter context menu. Assign T1 monitoring to the selected parameter field. Fig. User Manual corpuls can be configuration Configuration Configuration Various different settings • Monitoring functions (ECG, Oximetry, CO, NIBP, IBP) • Alarms • Advanced settings (for persons responsible for the device) The corpuls has user administration. Certain settings are therefore only Note acessible for users with a higher authorisation level (such as persons responsible for the device). The corpuls has user administration. Certain settings "in the main menu. The configuration dialogue opens. Fig. 7-1 System settings, default user level Select the required setting with the jog dial. Table 7-1 shows the possible for the display: • brightness level of the backlit display (not in night mode) • dimmed brightness level for energy saving (not in night mode) • ... User Manual corpuls Configuration 7.1.2 Display Configuration The following settings can be configured: • number and type of the curves displayed • number and type of the parameters displayed • pre-set views In the main menu, select "Signals" > "Curves". Curves The configuration dialogue opens. Page 153 User Manual corpuls Configuration 1. In the main menu, select "Signals" > "Parameters". Parameters The configuration dialogue opens. Fig. 7-3 Displaying parameter fields 2. Select the arrangement of the parameters in the group "Settings" for the following fields: • Horizontal and/or •... Page 154 User Manual corpuls Configuration 1. In the main menu, select "Signals" > "Views". Selecting pre-set views The configuration dialogue opens. Fig. 7-4 Selecting pre-set views 2. Select the required configuration dialogue, press the softkey [OK]. User Manual corpuls Configuration dialogue, press the softkey [OK]. User Manual corpuls Configuration 7.1.3 Printer settings and close the configuration dialogue opens. Fig. 7-5 Printer setting "Same as screen" If in the group "Settings" the checkbox "Same as screen" is ticked, the curves currently displayed on the monitor are printed simultaneously one below the other. Preceding every real-time printout is the designation "REAL-TIME PRINTOUT" on the first page. In the field "Speed" in the group "Settings", select the sweep speed and the time interval after which the printer should stop printing automatically (see Table 7-2 for the values). Page 157 User Manual corpuls Configuration In the main menu, select "Printer" > "Trend". Trends and Printer protocol The configuration dialogue opens. Fig. 7-7 Printer Protocol To obtain in the protocol a chronological list of minute mean values of vital parameters in table form, tick the checkbox "Trends" in the group "Protocol". If the checkbox "Same as screen"... Page 158 User Manual corpuls Configuration Printing To enable printing of the trend values as a single page: individual In the main menu, select "Printer" > "Trend pages For the trend the minute mean values of the parameters are saved. One minute mean values of the parameters are saved. One minute mean values of the parameters are saved. ments 12-lead ECG 12-lead ECG printout Enabled, disabled - Printout of the Enabled, disabled - Printout of the Enabled, disabled - Rep. cycle representative cycle Global info Printout of the D- 25 mm/s, 50 mm/s -... User Manual corpuls Configuration 7.1.4 Configuration of the Fax Transmission (Default User) Settings for Fax The following settings can be configured by the default user for transmitting a Transmission fax: (optional) • Enabling of the GSM connection (aircraft mode) •... Page 161 User Manual corpuls Configuration In the main menu, select "ECG" > "Settings". General settings The configuration dialogue opens. Fig. 7-9 ECG settings Select the settings. Table 7-5 shows the possible values. Field Settings for oximetry monitoring Select the settings. Table 7-6 contains the possible values. Fig. 7-10 Settings for oximetry monitoring Select the settings. Table 7-6 contains the possible values. values. Field Setting Values Increment 12.5 mm/s, -... Page 163 User Manual corpuls Configuration If the check box "Auto Curve" is ticked, the pleth curve will be displayed on the screen as soon as valid oximetry values are measured. Dynamic If the pitch of the QRS tone is to indicate a change in oxygen saturation (SpO Pulse Tone value), tick the checkbox in the "Dynamic"... Page 164 User Manual corputs Configuration Select the settings. Table 7-7 contains the possible values. Field Setting Values 3.13 mm/s, 6.25 mm/s, Sweep speed 12.5 mm/s, 6.25 mm/s, will be displayed on the screen as soon as valid CO values are measured. Page 165 User Manual corpuls Configuration Select the settings. Table 7-8 contains the possible values. Field Setting Values General Sweep speed 12.5 mm/s, 25 mm/s, 50 mm/s, 25 mm/s, 50 mm/s, 25 mm/s Configuration 7.2.5 CPR Feedback In the main menu, select "Defib" > "CPR". Setting Values. Field Settings for CPR feedback Select required settings. Table 7-9 shows the possible values. Field Settings for CPR feedback Select required settings. Table 7-9 shows the possible values. In the main menu, select the menu items "Alarm" > "Settings". The configuration dialogue opens. Fig. 7-14 Alarm settings Select the required setting with the jog dial. The alarm for the occurrence of a ventricular fibrillation (VF) can be disabled. User Manual corpuls Configuration 7.3.2 Configuring Alarm Settings If the value of a vital parameter falls below or exceeds the limit values, an alarm is triggered if the following conditions are met: • Device is not in defibrillation mode. • Alarm mode is set to "Alarm ON": Select the parameter field of the vital pa actually available value range indicated in Table 7-11 depends on the selected upper and lower limit values, as the upper and lower limit selected upper associated upper associat alarm limits In the main menu, select "Alarm" > "Auto limits". The corpuls sets alarm limits automatically depending on the current patient readings. A configuration Advanced Settings (Persons Responsible for the Device) 7.4.1 Authorisation for Persons Responsible for the Device User In contrast to the default user, the person responsible for the device) General System Settings (Person responsible for the device) General system Persons responsible for the device can configure the following (advanced) settings in addition to those described in chapter 7.1.1 General System Settings, p. 137: •... Page 173 User Manual corpuls Configuration Select the required setting with the jog dial. Table 7-12 shows the possible values. Field Setting Value Increment German Language German English, etc. Set time hours: minutes 0-23:00-59 Set date DD.MM.YY from 2000 Time/Date UTC offset hours: minutes 0+12:00-59 Enabled, Autom. Page 174 User Manual corpuls configuration Saving the All the settings configuration Saving the Saving is switched on. Loading The "Load" function allows a reset to the last version saved while device is configuration function (Persons Responsible for the Device) Persons responsible for the device can configuration function settings in addition to those described in chapter 5.3.1 Information on the AED Mode, page 68 and chapter 5.4.1 Information on Manual Defibrillation function settings". Settings ". Settings". Settings ". Settings ". Settings ". Settings". Settings ". S the device) Select the settings. Table 7-13 shows the possible values. Group Settings Values Off, 2, 3, 4, 5, 10, 15 to 200 J Adult Auto energy Man. User Manual corpuls Configuration 7.4.4 Filter Settings (Persons Responsible for the Device) ECG monitoring Persons responsible for the device can adjust further settings in addition to those described in chapter 7.2.1 ECG Monitoring, p. 148. In the main menu, select "ECG" > "Settings". Settings". Settings". Settings The configuration dialogue opens. User Manual corpuls Configuration dialogue opens. User Manual corpus filter corresponds to the lower limit frequency of the filter. Select the settings. Table 7-14 contains the possible values. Fig. 7-21 Alarm settings (persons responsible for the device) Select the settings. Table 7-15 shows the possible values. Fields Settings Values perm.; 15 s; 30 s; 45 s; 60 s; Alarm OFF 75 s, 90 s;... User Manual corpuls Configuration Covert mode If the covert mode function is enabled, all signalisations of the device via speakers (start-up tone, speech messages, ready signal, key tones, alarms etc.) as well as the lightening up of the jog dial are completely disabled. It is recommended to use this function only for special surroundings and not for everyday missions. User Manual corpuls Configured view (only select the required field with the jog dial to confirm). A tick is entered in the check box in the top right corner of the selected view. User Manual corpuls Configuration Fig. 7-23 Entering master data (persons responsible for the device) The standard user can modify some of these master data during the mission, but cannot permanently save these changes (see chapter 8.4 Master Data, p. 188). 7.4.8 Configuration of Telemetry (Persons Responsible for the Device) Abbreviations... Page 183 User Manual corpuls Configuration Configuration Configuration Persons responsible for the device can configuration to fax recipients as short code, • Copy saved connections to fax recipients from the SIM card into the internal memory or vice versa, •... Page 184 User Manual corpuls Configuration Group Field Setting Value Active Enabled, Enable or disable (aircraft disabled aircraft mode mode off) Code numbers from 0-9 Phonebook Memory location internal, SIM D-ECG speed at fax 25 mm/s; Speed transmission 50 mm/s D-ECG Fax Server Network address Numbers, symbols... Page 185 User Manual corpuls Configuration Enter the 4-digit PIN and confirm. The PIN is assigned to you by your mobile communication provider. Select the memory location of the phonebook on the SIM card or • "internal"... Page 186 User Manual corpuls Configuration For a D-ECG transmission to a fax server, tick the checkbox "Fax server". If this field is not enabled, the D-ECG will be sent to a fax machine selected in the phone book. Enter the network address or domain) and confirm. Page 187 User Manual corpuls Configuration Select in the main menu "Telemetry" > "Connections". Saving telemetry connections The configuration dialogue opens. (Fax recipients) Fig. 7-25 Telemetry connections (Persons responsible for the device) Select "Add destination" by pressing the jog dial. Enter the recipient's name. Enter the recipient's name. Enter the recipient's name. Enter the recipient type. Page 188 User Manual corpuls Configuration Select in the main menu "Telemetry" > "Conn. SIM -> Intern" to copy data from the SIM card into the internal memory of the corpuls The connection data are copied by selecting the menu item with the jog dial. Into the opposite direction: Select in the main menu "Telemetry"... Page 189 User Manual corpuls Configuration ® 7.4.9 Bluetooth data interface (Persons Responsible for the Device) ® Bluetooth Data Persons responsible for the device can set the following configurations: interface • Activation of the Bluetooth® data interface (option) • Configuration of the device PIN (option) • Configuration of the device PIN (option) • Configuration of the device PIN (option) • Configuration of the device of the device PIN (option) • Configuration of the device of the device PIN (option) • Configuration of the device PIN (option) • Configuration of the device of the device PIN (option) • Configuration of the de number of the corpuls Note that has to be used to connect the corpuls ® to other Bluetooth devices. In the main menu, select "Bluetooth connections".
Bluetooth devices. In the main menu, select "Bluetooth devices. In the main menu, select "Bluet Device) Settings for ECG Persons responsible for the device can perform the following configurations: measurement and • ECG measurem measure- Therapy Algo. ment/interpretation method STEMI 500 µV – 2500 µV Limit for AMI increments of 100 µV corpuls 300 µV –... User Manual corpuls 300 µV –... User Manual corpuls Configuration If the checkbox at the field "ERC" is deactivated, additional measurements and interpretations of the D-ECG are performed besides the one based on the "STEMI"-algorithm. This include checking for the presence of the Wolff- Parkinson-White (WPW) syndrome, of intraventricular excitation propagation disorders, of an implanted pacer, of QRS intervals longer than 120 ms and of a left branch bundle block. User Manual corpuls Configuration The use of the demo mode during patient care is strictly forbidden. The demo mode may only be used for training purposes. Warning If the corpuls is currently in demo mode and should be used for the device has to be restarted first. User Manual corpuls for the device has to be restarted first. Advanced metronome and for the CPR feedback system in order to adapt to local Metronome Settings variations of resuscitation algorithms. User Manual corpuls Configuration 7.4.14 Configuration 7.4.14 Configuration of Non-Invasive Blood Pressure Measurement (NIBP) (Persons Responsible for the device can configure advanced settings for interval settings, the initial mode and the initial pressure. In the main menu, select "NIBP" > "Settings". Settings and close the configuration dialogue, press the softkey [OK]. To retain the previous settings and close the configuration dialogue opens. Page 197 User Manual corpuls Configuration dialogue opens. dialogue, press the softkey [Cancel]. Note NIBP monitoring is performed in the mode that was last selected: "Adult", "Child"... User Manual corpuls Switching the is switched device on/off on (new mission). An unambiguous mission number is generated, which is printed in the first line on the first page of each printout. User Manual corpuls has an event key located in the top left-hand corner of the monitoring unit. When the Event key is pressed, a time stamp is saved which marks the current ECG data and parameter values. On the basis of this marking, this data can be located, viewed and assessed in the data memory. User Manual corpuls Data Management Master Data (see chapter 7.4.7 Configuration of Master Data (Persons Responsible for the Device), p. 169. These master data are partly contained in the D-ECG printout. If a D-ECG is transmitted to the hospital by fax (optional), this D-ECG can be identified unambiguously by means of these master data. User Manual corpuls automatically generates a log which can be printed out by

Browser pressing the Browser key. Each log printout is preceded by the designation "PROTOCOL PRINTOUT" on the first page. Page 202 User Manual corpuls Data Explanation Mission printout Mission start Date and time at switch-on of the device Universal Time Coordinated Patient Family name, first name Can be edited via the main menu "Patient"... Page 203 User Manual corpuls Data Management The following example shows an extract from a printed protocol: Fig. 8-3 Example of an ECG in the protocol at the time of an event The following entries are included in the chronological list: • alarms, physiological and technical (configurable, see chapter 7.4.5 Alarm Configurable, see chapter 7.4.5 Alarm Configu operation browser gives an overview of all the missions saved on (1) the compact Flash card and its current free memory capacity. User Manual corpuls Data Management Note A protocol that has been compiled with an older software version cannot be printed at a later point. The softkey [Protocol] is greyed out in this case. Note The intended use of the operation browser and of the D-ECG browser is limited to the analysis of the mission after monitoring of the patient. User Manual corpuls Data Mote Protection, page 319 Note For the analysis of data that have been saved with the software version 1.7.1 or lower of the corpuls, the PC application corpuls.net in the corresponding version is needed. Page 207 User Manual corpuls Fax transmission can send a complete report of a 12 lead ECG recording (diagnostic ECG) to any fax machine, fax server, to an e-mail address or the corpuls.web server via the optionally available GSM modem or the LAN interface. User Manual corpuls Data Management 8.8.1 Installing the SIM card For fax transmission you need a SIM card must be inserted in the SIM card slot on the rear side of the monitoring unit (see p. Page 209 User Manual corpuls Data Management 8.8.1 Installing the SIM card and a PIN number from your local network service provider. The SIM card must be inserted in the SIM card must be insert Data Management Select a destination with the jog dial and confirm by pressing the softkey [Cancel] the monitoring mode for patient monitoring can be called up again. User Manual corpuls Data Management Note Via the mission browser, D-ECGs from the current mission can be sent again, see chapter 8.5.2 Mission Browser, page 192. Note Note Depending on the volume of data and the signal level, it may take a few minutes to send the fax. User Manual corpuls Data Management If the user of the corpuls records a D-ECG, it is transferred live to the server Live transmission and can immediately be reviewed via the PC program corpuls.web. The of D-ECG is being transferred. If the connection could not be established or if the live data transmission was aborted, this is being signaled via diverse symbols and alarms in the status line. Page 212 User Manual corpuls Data Management configuration can only be changed by the person responsible for the device who ® can activate this option permanently (see chapter 7.4.9 Bluetooth data interface (Persons Responsible for the device), page 177). If the Bluetooth data interface is activated, the corpuls Connection can receive authorisation... User Manual corpuls Data Management MAC address of the Bluetooth module and serves as identification of the device in a network. The MAC address cannot be changed. Events and When connecting with a ventilator (e. g. Weinmann Medumat Transport), the corpuls trends can store the bluetooth module and serves as identification of the device in a network. events and trends received from the ventilator on the... User Manual corpuls Data Management Symbol If a connection to an external documentation system has been established via Bluetooth[®] data interface, the symbol for "Bluetooth[®] data interface displayed in the status there are additional markings of the above described symbols for telemetry connections. Page 215 User Manual corpuls Data Management Fig. 8-9 Readout of patient data set from the insurance card can be accepted or edited. Press the softkeys [OK] and [Edit] the data set from the insurance card and save the data set. User Manual corpuls Data Management ® 8.10.1 Data Transmission via Bluetooth data interface (P/N. 04211) With the radio module in the patient box interface (option) the user can transfer for example the process data of the corpuls to external... Page 217 User Manual corpuls Data Management Fig. 8-10 Readout of patient information from insurance card and save the data set from the insurance card and save the data set. User Manual corpuls Maintenance and tests Maintenance and Tests General Information Regular maintenance and testing guarantee permanent functional readiness of the corpuls Function by performing a full function and visual check on the corpuls This way, electrical and mechanical malfunctions may be either prevented or detected early on and eliminated quickly. User Manual corpuls Maintenance and tests Measure Function check, visual inspection Visual check of the accessories and consumables User test/device checklist Cleaning the corpuls Disinfecting the corpuls Shock paddles, visual inspection Module connection test Safety-related check (SC) Metrological check (MC) Table 9-1 Maintenance and tests 9.2.1 Function check of the modules of corpuls must be connected mechanically. The mechanical connections have to be heard to click into place. The following measures must be taken: Functional Description... Page 221 User Manual corpuls Maintenance and tests Functional Description... paddles: check of the buttons a confirmative tone Insert shock paddles into defibrillator/ sounds. the shock paddle holder. Page 222 User Manual corpuls Maintenance and tests Functional Description Measures by the user Correct result test. If no obvious damage to Functional Description Measures by the user Correct result test. expected in the configured curve or the complementary ECG fields. Page 223 User Manual corputs Maintenance and tests Functional Description Measurement check of sensor to the patient box. temperature If the temperature value is ... Page 224 User Manual corpuls Maintenance and tests Functional Description Measures by the user Correct result test Select manual mode of the defibrillator. rate) is displayed in a CPR feedback parameter field. ... User Manual corpuls Maintenance and tests 9.2.2 Function check of the Power Supply Check Description Measures by the user Correct result All modules of corpuls Batteries for Check for presence Check if each module of the corpuls Maintenance and tests Check Description Measures by the user Correct result corPatch Check if the corPatch The corPatch Check of the corPatch intermediate cable is intermediate cable is intermediate cable is check Description Measures by the user Correct result corPatch Check if at least two pairs of Check for presence of functional corPatch functional corPatch CPR cPR sensors and functionality of corPatch CPR cPR sensors are present. If technical repairs are not performed by the manufacturer, this many result in damage to the corpuls and loss of any claim under the warranty of GS Elektromedizinische Geräte G. Stemple GmbH. To avoid transport damage when dispatching devices, care should be taken to ensure they are suitably packed. User Manual corpuls Maintenance and tests Loading the Printer Paper roll. It is recommended to load a new roll of paper as soon as this marking is visible. User Manual corpuls Maintenance and tests Push the paper roll holder on both sides slightly outwards (item A) to remove the roll of paper. Insert a new roll of paper into the holder (item 2) so that the end of the paper has its printed side facing upwards and forwards. User Manual corpuls Maintenance and tests Note For changing the battery on the patient box first switch it off and then change the battery within approx. 30 seconds. Under certain circumstances, the set time/date may be lost. Note The rechargeable battery is easier to remove if the respective module is held facing the floor. Page 232 User Manual corpuls Maintenance and tests Fig. 9-4 Monitoring unit, infrared interface 1 Infrared interface 0.7.2 Shock Paddles Cleaning Clean the patient box from the accessory bag. Wipe the infrared interface 0.7.2 Shock Paddles Cleaning Clean the cable, shock paddle handles and the electrode surface with soap solution. Make sure that • no residual electrode gel remains between the electrode gel remains between the electrode surface with soap solution. Prevent moisture entering the plug connector. Dry the plug connection thoroughly. Disinfectant itemised in the current disinfectant itemised in the current disinfectant list of the RKI. User Manual corpuls Maintenance and tests 9.7.6 CO Sensor Never apply liquid directly to the sensors. Caution Cleaning Moisten a soft cloth with an alcohol-based cleaning solution. Wipe the surface with the cloth. Note Avoid scratches on the surface of the CO sensors. User Manual corpuls An up-to-date list can be found at www.corpuls.com/en/service/approved-accessories.html. For further information, consultancy and sales, please contact your authorised sales and service partner. Designation Monitoring unit with printer corpuls 04100.1... Page 237 User Manual corpuls sensor adults and children > 20 04325.2 corPatch CPR intermediate cable 1,0 m 04235.0 Therapy master cable corpuls Maintenance and tests Part number Article 04228.62 MASIMO SpO disposable sensor children 10-50 kg (box of 20 items) HBO 04228.63 MASIMO SpO disposable sensor infants 3-20 kg (box of 20 items) HBO 04228.64 MASIMO SpO disposable sensor neonates 40 kg finger (box of 20 items) HBO 04228.64 MASIMO SpO disposable sensor neonates 40 kg finger (box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 04225.46 MASIMO Rainbow) sensor Adult, box of 5 and tests Part number Article 042 resposable sensors (reusable up to 20 times) Use with P/N 04225.461 HBO 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 HBO 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposable sensor Adult, box of 25 Use with P/N 04225.461 MASIMO® SpO2/Hb/Met(Rainbow) disposa temperature probes (box of 10 pieces) 04231.41 Disposable skin temperature sensor STS-400 (box of 20 pieces) 04205 Option IBP (4-channel) IBP assembly plug (ODU) Page 241 User Manual corpuls Maintenance and tests Part number Article 04401 Charging bracket for Monitoring unit 12 V DC, cable length 1.5 m 04401.003 Charging bracket Monitoring unit with MagCode (cable length 1.5 m) 04401.041 Charging bracket for Monitoring unit without power supply... Page 242 User Manual corpuls Maintenance and tests Part number Article 04410.21 Adapter for stretcher Stryker M1 – head part (incl. set of screws) 04410.3 Adapter for stretcher, adapter for stre 04327.1 Shock spoon size A, 11.00 cm² 04327.2 Shock spoon size B, 18.25 cm² 04327.3 Shock spoon size C, 46.60 cm² 4-pole ECG monitoring adapter cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 04222.1 with AHA-marking (American), cord length 2.0 m 4-pole ECG monitoring cable corpuls 0422.1 m 4-pole ECG number Article 04103) corpuls.web 97041.3 Fax-/E-mail license (for 7 years) corpuls.web 97501 DatamedFT^M device license corpuls 97502 corpuls.web 97503 Support-/maintenance agreements Table 9-13 Data management/Data transmission Part number Article... User Manual corpuls Procedure in case of malfunctions Procedure in Case of Malfunctions 10.1 Device alarms The following table lists all alarms of the malfunction as well as how to eliminate it. Alarm message Priority Explanation/Measure... Page 246 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure The current capacity of the memory card CF card almost full Low priority (CompactFlash® card) amounts to less than 20% of the memory capacity or the number of missions is more than 999. Page 247 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure Check pacer The pacer is stimulating, but there is no connection High priority between the monitoring unit/defibrillator has been interrupted or could not be established: Make sure that the distance between the modules is... Page 248 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure Connect the corPatch electrodes or shock paddles Connect the rapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles Connect therapy master cable of the corpuls electrodes or shock paddles cable of the corpuls electrodes or shock paddles cable of the corpuls electrodes or shock paddles cable of the corpuls electrodes Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure Defibrillator failure (3) Internal error. High priority The corpuls is possibly not functioning correctly and must not be used. Contact authorised sales and service partners. ... Page 250 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure Error GSM module is faulty. Error IBP module Staulty. Low priority ... Page 251 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure HW conflict [MODULE] The wireless connection authorisation (Pairing) has Low priority failed. Due to different hardware versions the modules used can only be used as compact device with an ad-hoc connection. Page 252 User Manual corpuls for the vital parameters SpCO, SpHb or Low priority Low perf. (X) (P-Box) SpMet. The measurement and that there is no commotion caused by the vehicle. Page 253 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure NIBP measurement. Wait up to 20 secs. to start measurement. The Medium priority aborted softkeys are greyed out as long as the selection is NIBP measurem. not available. aborted (P-Box) ... Page 254 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure No APN entered The APN is not configured or has not been saved. Low priority Configure APN anew and save configuration. Contact your mobile communications provider for the respective current APN. Page 255 User Manual corpuls Procedure in case of malfunctions Alarm message Priority (PACER) there is no 4-pole ECG cable connected or individual ECG electrodes are loose. ... Page 256 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure Oxi sensor indicated has come loose from the Oxi sensor loose Medium priority measuring site at the body or from the intermediate... Page 257 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure The pacing therapy must be checked immediately. not be used. Contact authorised sales and service partners. Pacer high impedance ... Page 258 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure Phonebook upload The phonebook source is the SIM card, check the SIM card. If the phonebook source is the corpuls, contact your authorised sales and service partners. Page 259 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority Explanation/Measure "X" stands for a failure number from 1 to 2. Risk of overheating (X) High priority (X) High priorit paddle holder) (2= in the cable socket) too frequently in succession. Page 260 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure SpCO < [NUMBER] % The measured carbon monoxide level exceeds/falls Medium priority SpCO > [NUMBER] % vital signs. SpHb < [NUMBER] g/dl ... Page 261 User Manual corpuls Procedure in case of malfunctions Alarm message Priority Explanation/Measure The measurement Medium priority failed Contact authorised sales and service partners. Error T1/T2 (P-box) Check all connections of the corPatch electrodes. The rapy electrodes High priority loose... The jog dial was pressed starts with a during switching on or is and is not blocked black screen and the black scree malfunctions Malfunction Possible cause Measure ... Page 264 User Manual corpuls Procedure in case of malfunctions Malfunction Possible cause Measure ... Page 264 User Manual corpuls Procedure in case of malfunctions Malfunction Possible cause Measure ... Page 264 User Manual corpuls Procedure in case of malfunctions Malfunction Possible cause Measure ... Page 264 User Manual corpuls Procedure in case of malfunctions Malfunctions Malfunction Possible cause Measure ... Page 264 User Manual corpuls Procedure in case of malfunctions Malfunctions Malfunction Possible cause Measure ... Page 264 User Manual corpuls Procedure in case of malfunctions Ma cause Measure Release shock again. No shock is triggered The shock buttons on the 1 second in manual defibrillation mode. Page 265 User Manual corpuls Procedure in case of malfunctions Malfunction Possible cause Measure Check the contact of the electrodes on The contact between the ECG electrode of the 4 pole ECG monitoring cable. Page 266 User Manual corpuls Procedure in case of malfunctions Malfunction Possible cause Measure The loudspeaker volume is Set the volume to a readily audible value selected too low. (see chapter 7.2.1 ECG Monitoring, p. 148). The opening of the loudspeaker is dirty. Page 267 User Manual corpuls Procedure in case of malfunctions Malfunctions Malfunctions Malfunctions Malfunctions Malfunctions (see chapter 7.2.1 ECG Monitoring, p. 148). interfere with cables of electrosurgical devices if possible. the measurement (e.g. electrosurgical devices). The patient has Take measures according to medical dysfunctional haemoglobin. Page 268 User Manual corputs Procedure in case of malfunctions Malfunctions Malfunctions Malfunction Possible cause Measure The NIBP Too large/too small NIBP Use the correct NIBP cuff size. measurement values cuffs are being used. do not seem plausible. The NIBP cuff cannot The NIBP cuff or the hose Use a new NIBP cuff cannot Nasal tube of the nasal be detected. adapter is obstructed. secretions, the sensor cannot detect the expiratory CO2. ... Page 270 User Manual corpuls Procedure in case of malfunctions Malfunction Troubleshooting Explanation/corrective action. Wait until the photo detector temperature stabilises. Measured ETCO Patient breathing is very The measured value may be inaccurate value is lower than the... Page 271 User Manual corpuls Procedure in case of malfunctions Malfunctions Malfunctions Malfunctions Malfunctions (CO) and the effectively of the measured value is lower than the... Page 271 User Manual corpuls Procedure in case of malfunctions (CO) and the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower the measured value is lower the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower than the effectively of the measured value is lower the me breath collector is too low or not detected far from the lip. detected when the oral breath collector is even though the YG- too far from the patient's lip. Page 272 User Manual corpuls Procedure in case of malfunctions Malfun direction via a non-authorised authorised by Nihon- cannula it may affect the expiratory Kohden is used. ... Page 273 User Manual corpuls Procedure in case of malfunctions Malfunctions Malfunction Possible cause Measure The pressure channel is not Calibrate th cause Measure No printout follows in The roll of paper in the Insert a new roll. Page 274 User Manual corpuls Procedure in case of malfunctions Ma Manual corpuls Procedure in case of malfunctions 10.3 Notifications marked by `- -` do not require further explanation, as they are self-explanatory. The measure to be taken is to follow the instruction given in the Protocol The notifications marked by `- -` do not require further explanatory. and/or are printed out in the protocol (in alphabetical order*): Notification in the Explanation/Measure message line and information in the Explanation/Measure message line that the defibrillator is being charged. Wait until the charging process is finished and the defibrillator signals readiness to shock by issuing the ready-signal. Page 277 User Manual corpuls Procedure in case of malfunctions Notification in the protocol Connect defibrillator and Message line of the monitoring unit. The wireless communication between the defibrillator and the monitoring unit/patient box has been interrupted or could not be established: Make sure that the distance between the modules is not more than... Page 278 User Manual corpuls Procedure in case of malfunctions Notification in the Explanation/Measure message line and information in the established. the protocol Defibrillator powered on Event in the protocol, recording the switching on of the defibrillator/pacer. Demo mode off. Demo mode connection not possible Possibly a wrong fax number has been dialled. Repeat dialing. Fax transmission started Status indication during fax transmission started Status indication to connection to Message in the message line of the monitoring unit. defibrillator unit The wireless communication between the defibrillator and the monitoring unit/patient box has been interrupted or could not be established: Make sure that the distance between the modules is not more than... Page 281 User Manual corpuls Procedure in case of malfunctions Notification in the Explanation/Measure message line and information in the protocol Pacing not possible The corpuls is possibly not functioning correctly and must not be used. Contact authorised sales and service partners. ... Page 282 User Manual corpuls Procedure in case of malfunctions Notification in the Explanation/Measure message line and information in the protocol Re-enter new code: User prompt to re-enter the new access code of the user level should be reset to factory settings. Page 283 User Manual corpuls Procedure in case of malfunctions Notification in the Explanation/Measure message line and information in the protocol Switch off Pacer? - Power Confirmation prompt asking if the stimulation should be switched off. Synd setting: [TEXT] The synd setting: [TEXT] The synd setting if the stimulation should be switched off. Symbols Please read and follow the operating instructions Please read and follow the operating instructions Please read the additional instructions Please read the additional instructions Please read and follow the operating instructions Please read the additional instructions Please read the additional instructions Please read and follow the operating instructions Please read the additional instructions Please read and follow the operating i floating, defibrillation-proof) An insulated application component of this type is authorised... Page 285 User Manual corpuls Appendix On/Off key (patient box) Display in parameter field: alarm enabled Display in status lin error message Display in parameter field: physiological alarm disabled Clock symbol: In the NIBP parameter field: indicates that the NIBP interval measurement is active and an automatic... Page 286 User Manual corpuls Appendix Monitoring unit Patient box Defibrillator/Pacer Battery QRS tone, volume 4 QRS tone, volume 6 QRS tone, volume 8 QRS tone, volume 10 Jog dial configuration dialogue) Event and limit (configuration dialogue) Lower alarm limit (configuration dialogue) Field which can only be edited with special user authorisation (configuration dialogue) Field which can only be edited with special user authorisation (configuration dialogue). Number of bars indicates the charging status. Status of the battery. Number of bars indicates the charging status. Status of the battery. Number of bars indicates the charging status. Status of the battery. Number of bars indicates the charging status. no PIN configured, etc.) Status data transmission Data transmission to server failed. The IP address has been assigned manually or via the DHCP server. Monitoring unit with insurance card reader (optional) Appendix Function Checklist A function check of the corpuls must be performed each time you start duty. The function check guarantees unrestricted function and readiness for use of the corpuls and is an important addition to the automatic self tests performed with a factory configuration to which the device can be reset at any time by the person responsible for the device. The factory configurations of views and alarm limits are also pre-set here. Page 291 User Manual corpuls Appendix Field Value/Setting Printer - D-ECG Format 12-lead ECG Activated Rep. cycle Activated Speed 50mm/s ECG Format 2 x 6 Duration View classic Add. copy Disabled PIN (SIM card) Phonebook... Page 292 User Manual corpuls Appendix Field Value/Setting IP address Network mask Default gateway DNS server prim. DNS server prim. DNS server sec. Radio connection) Disabled PIN (radio connection) 6673 ECG - Settings Display Speed 25mm/s Amplitude QRS tone... Page 293 User Manual corpuls Appendix Field Value/Setting Auto curve Activated Acoustic signal Enabled Activated Dynamic Disabled Volume Acoustic signal Tone 4 Mode FastSat Disabled Averaging 8 Sek. Sensitivity Normal SpHb unit g/dl NIBP - Settings Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial mode Patient Adult 1 initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial pressure... Page 294 User Manual corpuls Appendix Field Value/Setting Automatic Interval 5min Initial Patient Appendix Field Value/Setting Automatic Interval 5min Initial Patient Appendix Field Value/Setting Automatic Interval 5min Initial Patient Appendix Field Value/Setting Appendix Field Value/Setti Auto Energy (AED mode) Adult ± 200] Child ± 50] Locked Activated Authorisation Man. Defib. Disabled Recording Disabled Man. Defib. Disabled Man. Defib. Disabled Nane, last name Activated Address Activated Date of birth: Activated Insurance no. Activated Insurance, or health payer Activated Insurance no. Activated Insurance no SpCO % SpHb g/dl SpHb mmol/l 10.6 SpMet % mmHg RR 1/min NIBP mmHg SYS 80 SYS 200 DIA 40 DIA 100 P1 mmHg SYS 80 SYS 180 DIA 50 DIA 100 P1 mmHg. Page 297 User Manual corpuls Appendix Pre-set Views A selection of six different configured views is available: View 1: Curves: ECG leads I, II, III; Pleth; CO Parameter: HR, SpO, PP, NIBP; CO (horizontal presentation) View 2: Curves: ECG leads II, III; Pleth; CO Parameter: HR, SpO, PP, NIBP (horizontal presentation) User Manual corpuls Appendix Technical Specifications Dimensions (without accessory bag, H x W x D in cm) Monitoring unit 29.5 x 30.5 x 12 [11.6 x 12.0 x 4.7 inches] Patient box 13.5 x 26.5 x 5.5 [5.3 x 10.4 x 2.1 inches] Defibrillator/Pacer unit 29 x 30 x 19... Page 299 User Manual corpuls Appendix Energy management/power supply (lithium-ion battery) Each module with identical lithium-ion battery Battery capacity 4.4 Ah at 7.4 V nominal voltage (each) Battery size 4.2 x 4.6 x 7.6 [1.7 x 1.8 x 3 inches] (H x W x D in cm) Battery weight (in kg) Page 300 User Manual corpuls Appendix Energy management/power supply Operating time Compact device: 7 - 10 h (depending on settings and operational demands) Patient box: approx. 4 - 6 h Monitor unit: approx. 4 h Defibrillator: approx. 200 shocks at 200 Joules Maximum storage period for At 30% battery capacity before storage and within a temperature range from 10 °C -... Page 301 User Manual corpuls Appendix Display, transflective with 750 Cd/m backlighting Screen size, visible Width 171 mm, height 128 mm Screen definition 640 pixels horizontal, 480 pixel vertical, VGA Angle of view Horizontally: 160° Vertically: 160° Vertically: 140° Backlighting Lifetime approx. Page 302 User Manual corpuls Appendix Description/explanation ≥ 20 mV/ 0.2 msec. Detection of implanted pacer Electrode detection (ECG) 80 nA (maximum current) according to IEC 60601-2-27 Active noise cancellation (RL) 1 nA (maximum current) During the mission ECG memory Per 60 min ECG (lead II) and trend-recording a data memory (1-channel recording of lead II or of approx. Page 303 User Manual corpuls Appendix Heart rate Alarm time for tachycardia VT/VF 1 mV, 206/min after 5 s VT/VF 0.5 mV, 206/min after 6 s VT/VF 2 mV, 195/min after 5 s VT/VF 4 mV, 195/min after 6 s VT/VF 1 mV, 195/min after 8 s Table A-15... Page 304 User Manual corpuls Appendix Defibrillation: voltage > 5 kV External shock paddles (type BF): The type is determined by the shock paddles for adults kind of shock electrodes used baby shock paddles (adapter for shock paddles;... Page 305 User Manual corpuls Appendix Biphasic Defibrillation with shock 2, 3, 4, 5, 10, 15 to 100 J for children with paddles or corPatch easy corPatch easy electrodes (Neonates) electrodes and shock spoons... Page 306 User Manual corpuls Appendix Non-invasive Pacer Description/explanation Output Insulated application part Type BF, insulation voltage > 5 kV 30/min. to 150/min Pacing frequency (adjustable in steps of 5/min.) in OVERDRIVE mode 30/min. to 300/min. to 300/min. to 100/min Pacing frequency (adjustable in steps of 5/min.) steps of 1/min.) Intensity of pacing current 10 to 150 mA (0-10 mA, then adjustable in increments of 5 mA) Page 307 User Manual corpuls Appendix Description/Explanation Measuring range 70 to 150 compressions per minute 1.9 cm to 10.16 cm [0.75 inches] Measurement interval Continuous Operating temperature (sensor) -10°C to +60°C Storage temperature (sensor) -30°C to +65°C Relative humidity (sensor) Up to 93% (without condensation) Storage humidity (sensor) Up to 93% (without condensation) Page 308 User Manual corpuls Appendix Description/explanation ± 4/min. Accuracy of pulse rate measurement Table A-25 Oximeter (Option SpO , SpCO, SpHB, SpMet, manufacturer Masimo, Masimo ® Rainbow SET technology Only use the recommended sensors and intermediate cables. Any accessories other than those itemised in the 'list of approved accessories' (see chapter 9.8 Approved Accessories, Spare Parts and Consumables, p. Page 309 User Manual corpuls Appendix Description/explanation Test According to EN 1060-1 and EN 1060-3, Non-invasive blood pressure instruments, part 1 and part 3 Table A-26 Non-invasive blood pressure measurement module (Option NIBP, manufacturer SUNTECH) Only use the recommended NIBP-cuffs and hoses. Any accessories other than those in the 'list of approved accessories'... Page 310 User Manual corpuls Appendix Description/explanation Measurement accuracy 0.1 K ± 0.1 K (25°C to 45°C) Limits of calibration errors ± 0.2 K (other) Minimum necessary 1 min measurement time Maintenance interval Every 2 years (as part of the safety checks) Table A-28 Temperature (optional) Only use the recommended YSI probes of the 400 series or probes that are... Page 311 User Manual corpuls Appendix Description/explanation Sensor weight (without cable) < 10 g Protection IP54 Diameter of the connector of 15 mm airway adapter ± 4 mmHg (≤ 40 mmHg) Accuracy (based on an $\pm 10\%$ of reading value (40 mmHg) Accuracy (based on waveform of the shockwave is comprised of a positive rectangular waveform of 3 msec. duration and a negative rectangular waveform. The amplitude of the waveforms is adjusted automatically to the patient's impedance. Page 313 User Manual corpuls Appendix Shock Release Synchronisation Manual defibrillation), a shock will immediately be delivered asynchronously. If no R-waves are detected in the ECG (e.g. in case of fibrillation), a shock will immediately be delivered asynchronously when the shock button is pressed (shock release). Appendix Precision of the Energy Released for Shock Spoons Selected Accuracy: Nominal energy released in comparison to patient energy impedance (in Joule) Load impedance (in Spare Parts and Consumables, p. 224). GS Elektromedizinische Geräte G. Stemple GmbH cannot undertake any quarantee in this respect for other disposable ECG electrodes. Page 317 User Manual corpuls Appendix • Do not use any damaged oximetry sensors and particularly no oximetry sensors with open optical components. must not be placed on the same extremity as a cuff for non-invasive blood pressure monitoring, a catheter or an intravascular access. The cuff pressure influences pulse oximetry during all pressure monitoring, a catheter or an intravascular access. the oximeter or any sensors. • Elevated levels of methemoglobin (MetHb) will lead to inaccurate SpO measurements. User Manual corpuls Appendix G ECG Analysis during Semi-automatic Defibrillation (AED mode) Procedure The ECG analysis is performed by a program which analyses the ECG in up to three blocks of 4 seconds with the following result: • shock recommended •... Page 320 User Manual corpuls Appendix The following are defined as shockable rhythms: • ventricular fibrillation • ventricular fibr of the data The ECG data used originate from recordings from the AHA Database CD ROM Series 1. Page 321 User Manual corpuls Appendix Assessment and Results Decision-making Reliability of the ECG Analysis Program Sensitivity and specificity. The following parameters were established to assess the reliability of the Parameters algorithm. User Manual corpuls HYPERBARIC (HBO) up to up to 3 barg and an overpressure of 3 barg and a maximum oxygen concentration of 23% 23% oxygen (Certificate No. User Manual corpuls is intended for operation in the electromagnetic environment indicated below. The operator or the user has to make sure that the corpuls is used in such an environment. Emission measurements Compliance Electromagnetic environment -... Page 324 User Manual corpuls Appendix Electromagnetic interference immunity Voltage dips, brief < 5% U Not applicable The device is always operated interruptions and (> 95% dip with a battery buffer. The user fluctuations in the in U) for ½ period must ensure that the battery in the corpuls power supply... Page 325 User Manual corpuls Appendix Electromagnetic interference 80 MHz to 2.5 GHz according to for 80 MHz to 2.5 GHz with magnetic forces of > 3 V/m, disturbances in the ECG signal may selectively occur. Page 326 User Manual corpuls Appendix Electromagnetic interference immunity Comment 1: At 80 MHz and 800 MHz, the higher frequency range applies Comment 2: These guidelines may not be applicable in all cases. Dissipation of electromagnetic variables is influenced by absorption and reflection of the buildings, objects and people. The ISM frequency bands (for industrial, scientific and medical applications between 150 kHz and 80 MHz) are 6.765 MHz;... Page 327 User Manual corpuls When used as a defibrillator/pacer Defibrillator: no unintentional energy release 80 MHz to 800 MHz the warranty. Goods are mentioned in this user manual without any mention of any existing patents, samples or trademarks.
 ® is a registered trademark of GS Elektromedizinische Geräte G. Stemple GmbH. ENG - Version 2.1 – P/N 04130.2... User Manual corpuls Appendix Disposal of the Device and Accessories To further preservation and protection of the environment, avoidance of pollution and recycling of raw materials, the European Commission issued a directive decreeing that electrical and electronic devices have to be taken back and correctly disposed of or recycled by the manufacturer., Devices marked with this symbol therefore may not be disposed of in the normal waste within the European Union. User Manual corpuls personalised data for service provision and patient care is being saved or transferred in encrypted form under strict adherence 4-15 Main menu corpuls Appendix Fig. 8-1 Entering patient data Frequency and intensity 293 Table A-21 Non-invasive pacer188 NIBP 46 disinfection296 sterilisation ...223 oximetry

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