

FROMM

Manual battery Robot FR3xx/FR4xx

Stretch Wrapping machine's

Version 01 Machines

Version 01 List

Website : www.fromm-stretch.com

Manual battereriy robot FR3xx/FR4xx.V01.EN01/a.servisi/ © 06/10

CBHF1-SM • CBHF1-V2 • CBHF2

ELECTRONIC BATTERY CHARGER ELEKTRONISCHES LADEGERÄT CARICA BATTERIE ELETTRONICO CHARGE BATTERIE ELECTRONIQUE CARGA BATERÍAS ELECTRÓNICO

OPERATING MANUAL

BENUTZER-HANDBUCH

MANUALE OPERATIVO

MANUEL D'USAGE

MANUAL OPERATIVO



Attention: read carefully the operating manual before using the battery charger.



Achtung: Bitte lesen Sie das Benutzerhandbuch mit Aufmerksamkeit, bevor Sie das Ladegerät benutzen.



Attenzione: leggere attentamente il manuale operativo prima di utilizzare il carica batterie.



Attention: lire attentivement le manuel d'usage avant d'utiliser le chargeur de batteries.



Atención: leer atentamente el manual operativo, antes de utilizar el cargador de baterías.

S.P.E. ELETTRONICA
INDUSTRIALE

IMPORTANT SAFETY INSTRUCTION. SAVE THESE INSTRUCTIONS. THIS MANUAL CONTAINS IMPORTANT SAFETY AND OPERATING INSTRUCTION

(a) FAILURE TO INSTALL AND OPERATE THE CHARGER IN ACCORDANCE WITH THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE CHARGER OR INJURY TO THE OPERATOR

(b) WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS, BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON IT IS OF THE UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ AND FOLLOW THE INSTRUCTIONS PROVIDED EXACTLY

(c) TO REDUCE RISK OF BATTERY EXPLOSION, FOLLOW THESE INSTRUCTIONS AND THOSE MARKED ON THE BATTERY

(d) EXPLOSIVE GASES MAY RESULT FROM CHARGING. PROVIDE ADEQUATE VENTILATION DURING CHARGING. NEVER SMOKE OR ALLOW AN OPEN SPARK OR FLAME IN THE VICINITY OF THE BATTERY

(e) TO REDUCE THE RISK OF INJURY, CHARGE ONLY LEAD-ACID OR GEL AND AGM TYPE BATTERIES (BE SURE THAT THE SELECTED CHARGING CURVE IS SUITABLE FOR THE TYPE OF BATTERIES THAT HAVE TO BE CHARGED). DO NOT ATTEMPT TO CHARGE ANY OTHER TYPE OF CHARGEABLE OR NON-RECHARGEABLE BATTERY; THESE BATTERIES MAY BURST, CAUSING PERSONAL INJURY AND DAMAGE

(f) NEVER CHARGE A FROZEN BATTERY

(g) STUDY ALL BATTERY MANUFACTURER'S SPECIFIC PRECAUTIONS SUCH AS REMOVING OR NOT REMOVING CELL CAPS WHILE CHARGING AND RECOMMENDED RATES OF CHARGE

(h) NEVER PLACE THE CHARGER DIRECTLY ABOVE OR BELOW THE BATTERY BEING CHARGED; GASES OR FLUIDS FROM THE BATTERY WILL CORRODE AND DAMAGE THE CHARGER. LOCATE THE CHARGER AS FAR AWAY FROM THE BATTERY AS DC CABLES PERMIT.

(i) DO NOT ATTEMPT TO OPEN THE CHARGER. THERE IS RISK OF ELECTRIC SHOCK EVEN IF THE CHARGER IS UNPLUGGED. NO USER SERVICEABLE COMPONENTS INSIDE

(j) IF SAFE OPERATION OF THE CHARGER CAN NO LONGER BE ENSURED, STOP AND SECURE IT AGAINST OPERATION

(k) IF THE SUPPLY CORD IS DAMAGED, IT MUST BE REPLACED BY A QUALIFIED PERSON IN ORDER TO AVOID HAZARD

(l) IT IS RECOMMENDED TO DISCONNECT THE AC POWER BEFORE CONNECTING OR DISCONNECTING THE CHARGER TO THE BATTERY

(m) THE CHARGER IS NOT INTENDED FOR OUTDOOR USE

(n) CHARGER SURFACE MAY BE HOT WHILE PLUGGED IN AND FOR A PERIOD OF TIME THEREAFTER

(o) FAILURE TO INSTALL AND USE THE CHARGER IN ACCORDANCE WITH THESE INSTRUCTIONS MAY IMPAIR THE PROTECTION PROVIDED BY THE CHARGER AND MAY VOID THE MANUFACTURERS WARRANTY

(p) DO NOT INSTALL THE CHARGER IN A CLOSED-IN AREA OR RESTRICT VENTILATION IN ANY WAY. UNITS WITH FANS MUST HAVE AT LEAST 30 mm OF CLEARANCE ON THE VENTED ENDS OF THE CHARGER

(q) USE OF AN ADAPTER IS NOT ALLOWED IN CANADA. IF A GROUNDING TYPE RECEPTACLE IS NOT AVAILABLE, DO NOT USE THIS APPLIANCE UNTIL THE PROPER OUTLET IS INSTALLED BY A QUALIFIED ELECTRICIAN

(r) DO NOT INSTALL ON OR OVER COMBUSTIBLE SURFACES

(s) THE CHARGER IS NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT EXPRESS WRITTEN APPROVAL OF SPE

(t) SPECIFICATIONS MENTIONED IN THIS PUBLICATION ARE SUBJECT TO CHANGE WITHOUT ANY NOTICE. THIS PUBLICATION SUPERSEDES AND REPLACES ALL INFORMATION PREVIOUSLY SUPPLIED

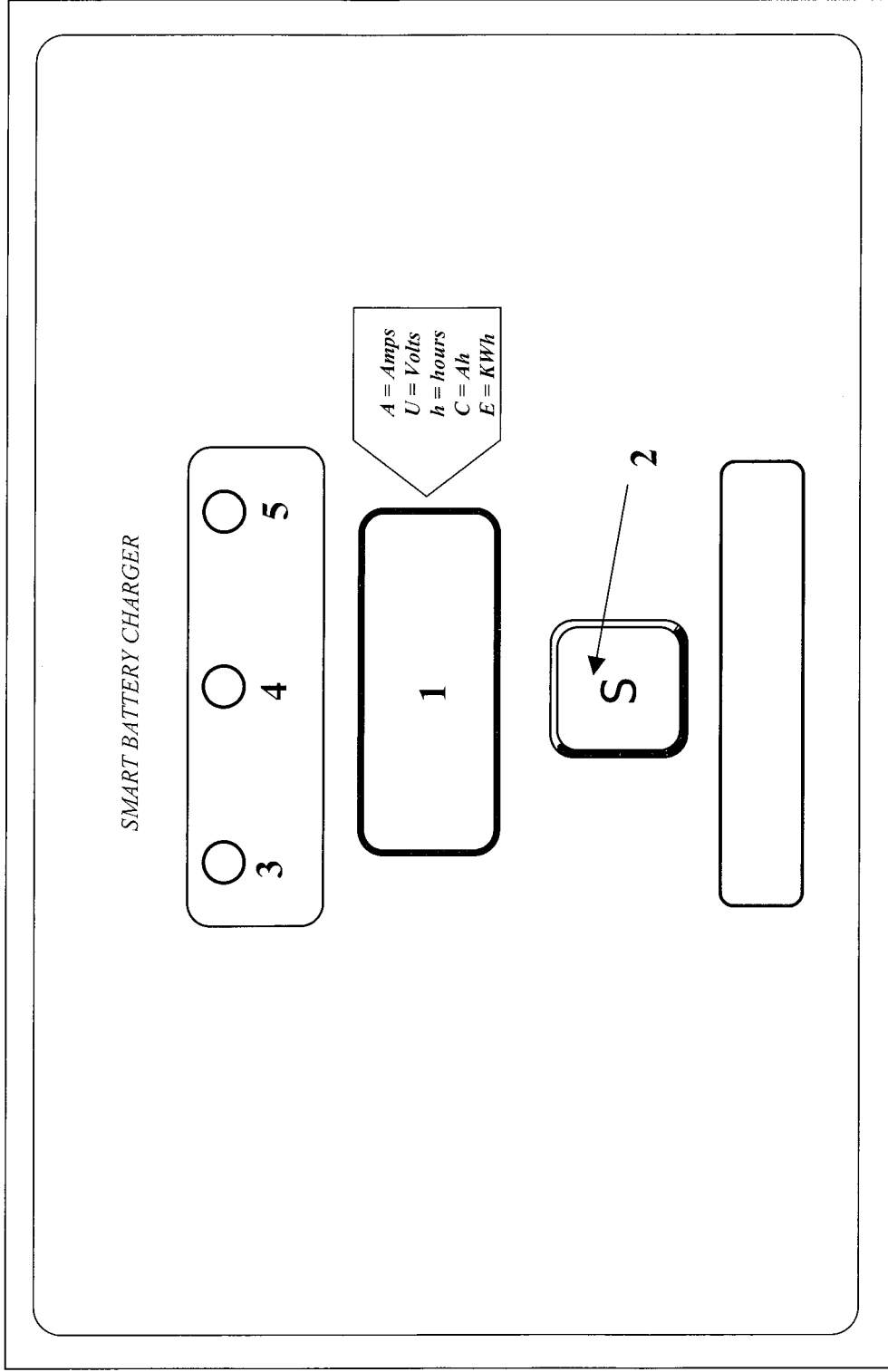
(u) THE APPLIANCE IS NOT TO BE USED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF EXPERIENCE AND KNOWLEDGE, UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION

(v) CHILDREN BEING SUPERVISED NOT TO PLAY WITH THE APPLIANCE

(w) THE BATTERY TERMINAL NOT CONNECTED TO THE CHASSIS HAS TO BE CONNECTED FIRST. THE OTHER CONNECTION IS TO BE MADE TO THE CHASSIS, REMOTE FROM THE BATTERY AND FUEL LINE. THE BATTERY CHARGER IS THEN TO BE CONNECTED TO THE SUPPLY MAINS.

(x) AFTER CHARGING, DISCONNECT THE BATTERY CHARGER FROM THE SUPPLY MAINS. THEN REMOVE THE CHASSIS CONNECTION AND THEN THE BATTERY CONNECTION.

FRONT PANEL OF BATTERY CHARGER



OPERATING MANUAL

GENERAL INFORMATION AND WARNINGS

- Electronic automatic battery charger with microprocessor suitable for any battery type.
- Fully automatic charging cycle with electronic setting; protected against overload, short-circuit at clamps and reversed polarity.
- Never disconnect the battery while charging: this could cause sparks.
- Never use the equipment in the rain, in areas used for washing or in damp areas.
- Before starting to charge, make sure the voltage of the equipment suits the voltage of the battery, that the charging current suits the capacity of the battery and that the selected charging curve (for lead-acid batteries or airtight gel batteries) is correct for the type of battery to be charged. In addition, make sure the rated input voltage of the charger suits the available supply voltage and the system is equipped with grounding.
- If necessary, replace the fuse with another of the same type and value as indicated on the rating plate.
- Use battery chargers only in well ventilated areas.
- Pay attention to any remarks of the battery manufacturer.

For lead-acid batteries with liquid electrolyte:

- Control the water level after each charging process.
- Refill with distilled water only.
- Caution! The gases generated during charging are explosive. Do not smoke in the vicinity of the batteries. When working with cables and electrical equipment, avoid open flames and sparks.
- Attention: Use protective glasses and gloves during battery maintenance. Battery acid causes injuries. In case of contact with battery acid, wash the affected parts with a lot of fresh water and consult a doctor if necessary.

CONTROLS (see figure behind the cover)

1. Three-digit display + symbol (1), to view A = the charging current, U = the battery voltage, h = the charging time, C = the charging ampere-hours [Ah], E = the energy used [KWh].
2. Button for the Selection of the display mode (2): A, U, h, C, E. After about 10 seconds the display returns to the visualization of the charging current.
3. Red control indicator (3): when it is on, the charging cycle has started.
4. Yellow control indicator (4): when it is on, the final phase of the charging cycle has started.
5. Green control indicator (5): when it is on, the charging cycle has finished.

OPERATION

- Plug the cord into a socket.
- Connect the battery, checking the polarity.
- Now, the battery charger's display will show a sequence of details on the charger's internal programming: after the name "SPE", it will show the software release installed in the equipment, then, in sequence, the following parameters: battery voltage, charging current, charging curve number and, finally, the words "GEL" or "Acd" depending on the set up charging curve being suitable for airtight gel batteries or lead-acid batteries. **Make sure the type of batteries to be charged (gel or lead-acid batteries) matches the displayed details ("GEL" or "Acd", respectively). If it doesn't, contact our dealer.** Now, a test is run on the battery voltage to decide if the charging process should be started or not. If the battery is not connected to the battery charger, the display will show the word "bat". The word will stay on, even if the test is failed (for instance, reversed polarities or incorrect battery connection). If the test is passed, the display will show the battery voltage for approximately 5 seconds and the battery will begin to be charged. The charging cycle progress will be shown by red (3), yellow (4) and green (5) LED indicators. At the end of the charge, when the green indicator (5) is on, unplug their cord from the socket and operate the machine.

PROBLEMS	SOLUTIONS AND CHECKS
The battery charger does not switch on	Check that the plug is connected to the supply mains and that the fuse is efficient.
The charging cycle does not start and the message 'bat' is displayed	Check the connection to the battery and the polarity.
The yellow indicator (4) will not light up even 15 hours from the starting of the charging cycle, and the display shows E03.	Check the battery for possible faulty components.
The message E01 is displayed	This means that the maximum voltage admissible by the battery has been exceeded. The charging is interrupted.
If the battery charger is provided with a safety thermostat and the message E02 is displayed.	This means that the maximum temperature has been exceeded. The charging is interrupted.
The message E03 is displayed	This means that the maximum time for the charging phase has been exceeded. The charging is interrupted.
The message SCt is displayed	This means that the total safety timer has interrupted the charging.
The message Srt is displayed	This signals a possible internal short circuit.

BENUTZER-HANDBUCH

ALLGEMEINE INFORMATIONEN UND WARNUNGEN

- Für jeden Batterietyp geeignetes elektronisches automatisches Ladegerät mit Mikroprozessor.
- Vollkommen automatischer, elektronisch gesteuerter Ladevorgang. Schutz gegen Überlast, Kurzschluß an den Klemmen and Umpolung.
- Die Batterie niemals während des Ladevorganges abklemmen, da Funken entstehen könnten.
- Das Gerät niemals bei Regen, in Waschräumen und bei hoher Luftfeuchtigkeit im allgemeinen verwenden.
- Vor Beginn des Ladevorgangs überprüfen, ob das Gerät der Batteriespannung entspricht, ob der Ladestrom entsprechend der Batteriekapazität eingestellt ist und ob die gewählte Ladekurve (für Bleisäure- und hermetisches Gelbatterien) des zu ladenden Batterietyps korrekt ist. Weiterhin kontrollieren, ob die Eingangsspannung des Ladegerätes, dessen Daten auf dem Firmenschild angegeben sind, der verfügbaren Ladespannung entspricht und ob die Anlage geerdet ist.
- Sofern erforderlich, Die Schmelzsicherung durch eine Sicherung gleichen Typs und mit den gleichen Stromwerten ersetzen (siehe Typenschild).
- Das Ladegerät nur an einem gut belüfteten Ort verwenden.
- Die Hinweise des Herstellers der Batterie beachten.

Für Bleisäurebatterien mit flüßigem Elektrolyt:

- Nach jedem Ladezyklus den Wasserstand kontrollieren.
- Nur mit destilliertem Wasser nachfüllen.
- Achtung! Die während des Ladevorganges abgegebenen Gase sind explosiv. In der unmittelbaren Nähe der Batterien nicht rauchen. Bei Arbeiten mit Kabeln und elektrischen Geräten sind offenes Feuer and Funken zu meiden.
- Achtung: Während der Wartungsarbeiten Schutzbrille and Handschuhe tragen. Die in der Batterie enthaltene Säure ist ätzend. Bei Kontakt mit der Säure aus der Batterie die betroffene Stelle mit Leitungswasser spülen und umgehend einen Arzt aufsuchen.

STEUERUNGEN (siehe Rückseite des Deckblattes)

1. 3-stellige Anzeige + Symbol (1), zur Anzeige von A = Ladestrom, U = Batteriespannung, h = Ladezeit, C = Ladeameperestunden [Ah], E = gebrauchte Energie [KWh].
2. Druckknopf zur Auswahl der Anzeigemodalität (2): A, U, h, C, E. Nach zirka 10 Sekunden geht die Anzeige immer zum Ladestrom zurück.
3. Roter Kontrollanzeiger leuchtet (3): der Ladezyklus hat begonnen
4. Gelber Kontrollanzeiger leuchtet (4): die Endphase des Ladezyklus läuft.
5. Grüner Kontrollanzeiger leuchtet (5): der Ladezyklus ist beendet.

BETRIEB

- Den Stecker des Elektrokabels in eine Steckdose einführen.
- Die Batterie unter Beachtung der Polarität am Ladestecker anschliessen.
- An diesem Punkt werden auf dem Display des Batterie-Ladegerätes in Sequenz verschiedene Informationen über das interne Programm des Ladegerätes angezeigt: Nach der Anzeige **“SPE”** wird die im Gerät installierte Software-Version dargestellt und danach die folgenden Parameter: Batteriespannung, Ladestrom, Zahl der Ladekurve und zuletzt die Mitteilung **“GEL”** oder **“Acd”** jenachdem ob die eingegebene Ladekurve hermetischen GEL-Batterien oder Bleisäurebatterien entspricht. **Kontrollieren, ob die zu ladende Batterie (Gel- oder Bleisäurebatterie) mit den auf dem Display dargestellten Daten (entweder “GEL” oder “Acd”) übereinstimmt. Ist dies nicht der Fall den Wiederverkäufer kontaktieren.** An diesem Punkt wird ein Test über die Batteriespannung ausgeführt, um zu entscheiden ob der Ladeprozeß begonnen werden kann oder nicht. Ist die Batterie nicht mit dem Ladegerät verbunden erscheint auf dem Display die Anzeige (**bat**). Diese Anzeige bleibt auch im Falle eines negativen Testergebnisses erhalten (z.B. ausgetauschte Polarität oder falsche Verbindung mit der Batterie). Wenn der Test ein positives Ergebnis gebracht hat, wird auf dem Display etwa fünf Sekunden lang der Wert der Batteriespannung angezeigt und der Ladevorgang begonnen. Das Fortschreiten des Ladezyklus wird über drei LED-Leuchtanzeigen rot (3), gelb (4) und grün (5) angezeigt.

Am Ende der Ladung, bei eingeschaltetem grünem Anzeiger (5), den Stecker des Elektrokabels aus der Steckdose entfernen und die Maschine benutzen.

PROBLEME	LÖSUNGEN UND ÜBERPRÜFUNGEN
Das Ladegerät schaltet nicht ein.	Überprüfen, ob das Netzkabel in der Steckdose gesteckt ist, und ob die Sicherung intakt ist.
Der Ladezyklus startet nicht und die Schrift 'bat' wird angezeigt.	Der Anschluß zur Batterie und die richtige Polarität überprüfen.
Die gelbe Anzeige (4) leuchtet auch nach 15 Stunden nach Beginn des Ladezyklus nicht auf und auf dem Display erscheint die Anzeige E03 .	Die Batterie kontrollieren: Sie könnte defekte Bestandteile haben.
Die Schrift E01 wird angezeigt.	Das bedeutet, daß die maximale Spannung, die von der Batterie angenommen werden kann, überschritten wurde. Die Ladung wird unterbrochen.
Bei mit Schutz-Thermoschalter versehenen Ladegeräten wird die Schrift E02 angezeigt.	Das bedeutet, daß die maximale Temperatur überschritten wurde. Die Ladung wird unterbrochen.
Die Schrift E03 wird angezeigt.	Das bedeutet, daß die maximale Dauer für die Ladezeit überschritten wurde. Die Ladung wird unterbrochen.
Die Schrift ScT wird angezeigt.	Das bedeutet, daß der totale Schutztimer die Ladung unterbrochen hat.
Die Schrift Srt wird angezeigt.	Das signalisiert einen möglichen internen Kurzschluß.

MANUALE OPERATIVO

INFORMAZIONI GENERALI ED AVVERTENZE

- Carica batterie elettronico automatico a microprocessore adatto per tutti i tipi di batterie.
- Ciclo di carica completamente automatico con regolazione elettronica; protezione in caso di sovraccarico, cortocircuito ai morsetti e inversione di polarità.
- Non sconnettere mai la batteria durante la carica: questa operazione potrebbe provocare scintille.
- Non usare mai l'apparecchio in presenza di pioggia, in locali adibiti a lavaggio o in ambienti umidi.
- Controllare, prima di iniziare la carica, che l'apparecchio soddisfi la tensione della batteria, che la corrente di carica sia appropriata alla capacità della batteria e che la dinamica di ricarica selezionata (per batterie al Pb-Acido o per batterie ermetiche al Gel) sia corretta per il tipo di batteria da caricare. Inoltre verificare che la tensione di ingresso del caricatore indicata sui dati di targa soddisfi la tensione di alimentazione disponibile e che l'impianto sia provvisto di messa a terra.
- In caso di necessità sostituire il fusibile con uno di uguale tipo e valore come indicato dai dati di targa.
- Usare il carica batteria solo in area ben ventilata.
- Fare attenzione ad ogni indicazione fornita dal costruttore di batterie.

Per batterie al piombo acido con elettrolito liquido:

- Controllare il livello dell'acqua dopo ogni ciclo di carica.
- Riempire di nuovo solo con acqua distillata.
- Attenzione! I gas emanati durante la carica sono esplosivi. Non fumare nelle immediate vicinanze delle batterie. Quando si lavora con cavi e apparecchi elettrici, evitare fiamme libere e scintille.
- Attenzione: usare occhiali protettivi e guanti durante la manutenzione. L'acido della batteria provoca danni. In caso di contatto con l'acido della batteria, lavare la parte interessata con acqua fresca e consultare un medico se necessario.

ELEMENTI DI COMANDO (vedi la figura nel retro della copertina)

1. Display a 3 digit + simbolo (1), per visualizzare A = corrente di carica, U = tensione di batteria, h = tempo di carica, C = amperora di carica [Ah], E = energia utilizzata [KWh].
2. Tasto di Selezione della modalità di visualizzazione del display (2): A, U, h, C, E. Dopo circa 10 secondi il display torna sempre a visualizzare la corrente di carica.
3. Segnalatore rosso di controllo (3): quando è acceso significa che è iniziato il ciclo di carica.
4. Segnalatore giallo di controllo (4): quando è acceso significa che è in atto la fase finale del ciclo di carica.
5. Segnalatore verde di controllo (5): quando è acceso significa che è terminato il ciclo di carica.

FUNZIONAMENTO

- Inserire la spina del cavo di alimentazione in una presa di corrente.
- Collegare la batteria rispettando la polarità.
- A questo punto, sul display del carica batterie vengono visualizzate in sequenza diverse informazioni relative alla programmazione interna del caricatore: dopo la scritta **"SPE"** viene presentata la versione del software installato nell'apparecchio, poi, in successione, vengono visualizzati i seguenti parametri: tensione di batteria, corrente di carica, numero della curva di carica e, infine, la scritta **"GEL"** oppure **"Acd"** a seconda che la curva di carica impostata sia adatta per batterie ermetiche al Gel o per batterie al Pb-Acido. **Verificare che il tipo di batterie da caricare (al Gel o al Pb-acido) corrisponda con l'indicazione data dal display (rispettivamente "GEL" o "Acd"). In caso contrario contattare il vostro rivenditore.** A questo punto viene eseguito un test sulla tensione di batteria per decidere se iniziare o meno il processo di carica. Se la batteria non è connessa al carica batterie sul display appare la scritta **"bat"**. La scritta permane anche in caso di esito negativo del test (ad esempio, polarità invertita o errata connessione con la batteria). Se il test ha dato esito positivo, viene visualizzato a display il valore della tensione di batteria per un tempo di circa 5 secondi ed inizia la carica della batteria. L'avanzamento del ciclo di carica è segnalato tramite tre segnalatori luminosi a led: rosso (3), giallo (4) e verde (5).
Alla fine della carica, con segnalatore verde acceso (5), staccare la spina del cavo di alimentazione dalla presa di corrente ed utilizzare la macchina.

PROBLEMI	SOLUZIONE E VERIFICHE
Il carica batteria non si accende.	Controllare la presenza della spina nella presa di rete e l'efficienza dei fusibili.
Non inizia il ciclo di carica e il display presenta la scritta "bat" .	Controllare la connessione con la batteria ed il rispetto della polarità.
Non si accende il segnalatore giallo (4) anche dopo 15 ore dall'inizio del ciclo di carica ed il display presenta la scritta E03 .	Controllare la batteria: potrebbe avere elementi difettosi.
Il display presenta la scritta E01 .	Significa che è stata superata la massima tensione ammessa dalla batteria. La carica viene interrotta.
Se il carica batterie è provvisto di termostato di sicurezza e il display presenta la scritta E02 .	Significa che è stata superata la massima temperatura. La carica viene interrotta.
Il display presenta la scritta E03 .	Significa che è stata superata la durata massima prevista per la fase di carica. La carica viene interrotta.
Il display presenta la scritta SCt .	Significa che è intervenuto il timer di sicurezza totale ad interrompere la carica.
Il display presenta la scritta Srt .	Segnala un possibile cortocircuito interno.

MANUEL D'USAGE

INFORMATIONS GENERALES ET AVERTISSEMENTS

- Chargeur de batteries électronique automatique à microprocesseur indiqué pour tous les types de batteries.
- Cycle de charge entièrement automatique avec réglage électronique; protections en cas de surcharge, court-circuit aux bornes ou inversion de polarité.
- Ne jamais débrancher la batterie durant la charge: ceci pourrait provoquer des étincelles.
- Ne jamais utiliser l'appareil sous la pluie, dans des locaux de lavage ou des pièces humides.
- Avant d'amorcer le processus de chargement, vérifier que l'équipement soit prévu pour satisfaire la tension de la batterie, que le courant de chargement soit indiqué par rapport à la capacité de la batterie et que la courbe de chargement sélectionnée (pour des batteries au Plomb-Acide ou pour des batteries étanches au Gel) soit correcte par rapport au type de batterie à charger. Vérifier en outre que la tension d'entrée du chargeur de batteries indiquée sur la plaquette de celui-ci soit adéquate pour satisfaire la tension d'alimentation disponible et que l'équipement soit pourvu de mise à la terre.
- En case de nécessité, remplacer le fusible par un fusible de type et de valeur identiques, comme indiqué sur la plaquette.
- Utiliser le chargeur de batteries uniquement dans des zones bien ventilées.
- Faire attention aux indications fournies par le fabricant de la batterie.

Pour batteries au plomb acide avec électrolyte liquide:

- Contrôler le niveau d'eau après chaque cycle de charge.
- Faire la mise à niveau uniquement avec de l'eau distillée.
- Attention: les gaz dégagés durant la charge sont explosifs. Ne pas fumer à proximité des batteries. Eviter les flammes libres et les étincelles en cas de manipulation avec des câbles ou des appareils électriques.
- Attention: utiliser des lunettes de protection ainsi que des gants durant la manipulation. L'acide de la batterie provoque des dommages. En cas de contact avec l'acide de la batterie, laver la partie concernée avec de l'eau fraîche et consulter un médecin en cas de nécessité.

ELEMENTS DE COMMANDE (voir la figure sur le verso de la couverture)

1. Visuel à 3 chiffres + symbole (1), pour afficher A = courant de charge, U = tension de batterie, h = temps de charge, C = ampère heure de charge [Ah], E = énergie utilisée [kWh].
2. Touche de Sélection de la modalité d'affichage du visuel (2): A, U, h, C, E. Après environ 10 secondes le visuel affiche toujours à nouveau le courant de charge.
3. Avertisseur rouge de contrôle (3): lorsqu'il est allumé, il signale que le cycle de charge a commencé.
4. Avertisseur jaune de contrôle (4): lorsqu'il est allumé, il signale que la phase finale du cycle de charge est en cours.
5. Avertisseur vert de contrôle (5): lorsqu'il est allumé, il signale que le cycle de charge est terminé.

FONCTIONNEMENT

- Branchez la prise du câble d'alimentation à une fiche.
- Connecter la batterie en respectant la polarité.
- A ce moment-là, l'afficheur du chargeur de batteries montrera une séquence de renseignements concernant la programmation interne du chargeur de batteries: après l'affichage du sigle "SPE" on pourra lire la version du logiciel installé dans l'équipement; ensuite les paramètres suivants seront affichés dans l'ordre indiqué ci-dessous: tension de la batterie, courant de chargement, numéro de la courbe de chargement et, enfin, le sigle "GEL" ou "Acd" selon que la courbe de chargement établie soit indiquée pour des batteries étanches au Gel ou pour des batteries au Plomb-Acide. **Vérifier que le type de batteries à charger (au Gel ou au Plomb-acide) corresponde à l'indication montrée sur l'afficheur (respectivement "GEL" ou "Acd"). Au cas contraire, contacter votre revendeur.** A ce point-là un test de la tension de la batterie est effectué pour décider s'il faut amorcer le processus de chargement. Si la batterie n'est pas connectée au chargeur de batteries, l'afficheur montrera le code "bat". Ce code reste aussi affiché si le résultat du test est négatif (par exemple, si la polarité est inversée ou la batterie est connectée de façon incorrecte). Si le résultat du test est positif, l'afficheur montre la valeur de la tension de la batterie pendant 5 secondes environ et le processus de chargement de la batterie est amorcé. La progression du cycle de chargement est signalé par trois voyants à led: rouge (3), jaune (4) et vert (5).
A la fin de la charge, avec l'avertisseur vert (5) allumé, débranchez la prise du câble d'alimentation de la fiche et utilisez la machine.

PROBLEMES	SOLUTIONS ET VERIFICATIONS
Le chargeur de batterie ne se met pas en marche.	Contrôler si la fiche est bien enfoncée dans la prise de courant ainsi que l'efficacité du fusible.
Le cycle de charge ne démarre pas et sur le visuel s'affiche le message 'bat'	Contrôler la connexion à la batterie et si la polarité est bien conforme.
La led jaune (4) ne s'allume pas, même 15 heures après le démarrage du cycle de chargement, et le code E03 apparaît sur l'afficheur.	Contrôler la batterie: il pourrait y avoir des éléments défectueux.
Le visuel affiche le message E01	Indique que la tension maximale autorisée par la batterie a été dépassée. La charge est interrompue.
Si le chargeur de batteries est doté d'un thermostat de sécurité et le visuel affiche le message E02	Indique que la température maximale a été dépassée. La charge est interrompue.
Le visuel affiche le message E03	Indique que la durée maximale prévue pour la phase de charge a été dépassée. La charge est interrompue.
Le visuel affiche le message Sct	Indique que le compteur temps de sécurité totale s'est déclenché pour interrompre la charge.
Le visuel affiche le message Srt	Indique un court-circuit interne possible.

MANUAL OPERATIVO

INFORMACION GENERAL Y ADVERTENCIAS

- Cargador de baterías electrónico automático por microprocesador para todos los tipos de baterías.
- Ciclo de carga completamente automático con ajuste electrónico, protección en caso de sobrecarga, cortocircuito en los bornes e inversión de polaridad.
- La batería no debe desconectarse jamás durante la carga: esta operación podría causar chispas.
- El aparato no debe usarse jamás bajo la lluvia, en lugares donde se lava o en ambientes húmedos.
- Antes de iniciar la carga, controlar que el aparato esté conforme a la tensión de la batería, que la corriente de carga corresponda a la capacidad de la batería y que la curva de recarga seleccionada (para baterías al Plomo-Ácido o para baterías herméticas al Gel) sea apropiada al tipo de batería a cargar. Comprobar además que la tensión de entrada del cargador, indicada en la placa de características, esté conforme a la alimentación disponible y que la instalación disponga de conexión a tierra.
- Si es necesario, sustituir el fusible con otro del mismo tipo y valor, como se indica en la placa de características.
- Usar el cargador de baterías sólo en áreas bien ventiladas.
- Prestar mucha atención a las indicaciones proporcionadas por el fabricante de las baterías.

Para baterías al plomo ácido con electrolito líquido:

- Controlar el nivel del agua después de cada ciclo de carga.
- Llenar nuevamente sólo con agua destilada.
- ¡Atención! Los gases emanados durante la carga son explosivos. No fumar en proximidad de las baterías. Cuando se manejan cables o equipos eléctricos, evitar llamas libres o chispas.
- Atención: usar gafas de protección y guantes de seguridad durante las operaciones de mantenimiento. El ácido de la batería causa daños. En caso de contacto con el ácido de la batería, lavar muy bien la parte interesada con agua fresca y consultar un medico si fuera necesario.

DISPOSITIVOS DE MANDO (véase figura detrás de la cubierta)

1. Display de 3 dígit + símbolo (1), para visualizar A = corriente de carga, U = tensión de la batería, h = tiempo de carga, C = amperio-hora de carga (Ah), E = energía utilizada [KWh].
2. Tecla de Selección de la modalidad de visualización del display (2): A, U, h, C, E. Después de unos 10 segundos el display visualiza nuevamente la corriente de carga.
3. Indicador de mando rojo (3): cuando está iluminado significa que el ciclo de carga ha comenzado.
4. Indicador de mando amarillo (4): cuando está iluminado significa que el ciclo de carga está terminando.
5. Indicador de mando verde (5): cuando está iluminado significa que el ciclo de carga ha terminado.

FUNCIONAMIENTO

- Introducir el enchufe del cable de alimentación en una toma de corriente.
- Conectar la batería, respetando la polaridad.
- En el display del cargador de baterías se visualizan en secuencia varias informaciones relativas a la programación interior del cargador: después del mensaje "SPE" se visualiza la versión del software instalado en el aparato, luego en secuencia se visualizan los siguientes parámetros: tensión de la batería, corriente de carga, número de la curva de carga y, en fin, el mensaje "GEL" o bien "Acd", si la curva de carga seleccionada es idónea a las baterías herméticas al Gel o a las baterías al Plomo-Ácido. **Comprobar que el tipo de batería a cargar (al Gel o al Plomo-Ácido) corresponda con la indicación visualizada en el display (respectivamente "GEL" o "Acd"). De lo contrario contactar su revendedor.** A este punto se efectúa una prueba de tensión de la batería para decidir si comenzar o no el proceso de carga. Si la batería no está conectada al cargador de baterías, en el display se visualiza el mensaje "bat". El mensaje permanece también en caso de resultado negativo de la prueba (por ejemplo, polaridad invertida o conexión incorrecta a la batería). Si la prueba ha tenido un éxito positivo, en el display se visualiza el valor de la tensión de la batería por unos 5 segundos y luego comienza la carga de la batería. El avance del ciclo de carga se señala por medio de tres indicadores luminosos de led: rojo (3), amarillo (4) y verde (5). Al final de la carga, con el indicador verde iluminado (5), desconectar el enchufe del cable de alimentación de la toma de corriente y utilizar la máquina.

INCONVENIENTES	SOLUCION Y CONTROLES
El cargador de baterías no se enciende.	Controlar que el enchufe esté conectado a la toma de la red y comprobar la eficacia de los fusibles.
No comienza el ciclo de carga y el display visualiza el mensaje "bat".	Controlar la conexión a la batería y que la polaridad esté conforme.
Después de 15 horas del comienzo del ciclo de carga aún no se ilumina el indicador amarillo (4) y el display visualiza el mensaje E03.	Controlar la batería: podría tener elementos defectuosos.
El display visualiza el mensaje E01.	Significa que la tensión es superior al valor máximo permitido por la batería. La carga se interrumpe.
El cargador de baterías dispone de un termostato de seguridad y el display visualiza el mensaje E02.	Significa que la temperatura es superior al valor máximo permitido. La carga se interrumpe.
El display visualiza el mensaje E03.	Significa que el tiempo de carga es superior al valor máximo permitido. La carga se interrumpe.
El display visualiza el mensaje Sct.	Significa que se ha activado el timer de seguridad total que interrumpe la carga.
El display visualiza el mensaje Srt.	Señala un posible cortocircuito interno.

TECHNICAL FEATURES OF THE CBHF1-SM SERIES (Robot FR3xx/FR4xx)

The innovative characteristics of the CBHF1-SM range of battery charger are the following:

1. Advanced Mosfet technology with **high frequency** and insulation transformer.
2. Charging process fully controlled by microprocessor.
3. Visualization on a lit display of the charging current, of the battery voltage, of the charging time, of the electric charge supplied in Ah's and of the electric energy absorbed in KWh's.
4. Possibility to change the charging curve by means of microswitches (DIP-switches), choosing from 16 standard pre-programmed curves for lead-acid, Gel and VRLA batteries. Any other optional curve available on request.
5. Possibility to change the battery voltage and the charging current by means of the relevant microswitches.
6. Charging process starting in the "soft start" mode, storing of the data of the cycle just finished and automatic reset upon connection of a new battery.
7. Protection against polarity inversions, short-circuits, over-voltages or anomalies by means of an output relay.
8. Battery to battery charger connection without sparks on the output terminals with obvious advantages for the active safety, thanks to the recognition of the battery voltage downstream the normally opened output relay.
9. Alphanumeric signals of possible anomalies.
10. Insensitive charge parameters in case of $\pm 10\%$ network voltage
11. Efficiency > 85%.
12. Output ripple at maximum charge lower than 100mV.
13. Start of the charge cycle also with 2V batteries.
14. Thermal protection against over heating.
15. An auxiliary relay that permits the partial or total disconnection of an electric traction machine is available in should the batteries have to be re-charged with the battery charger placed on board the machine. In this way the relay prevents the machine from starting while the battery charger is operating. This is a safety device.

OPERATING PRINCIPLE

On switching on a new battery charger of the CBHF1-SM series, programming data are displayed (these parameters depend on internal dipswitch configuration).

After the "**SPE**" logo you can see on display the version of software installed on the machine. At this time the following programmed parameters are displayed on sequence according to internal dipswitch configuration (see tables on page n. 4):

battery voltage, charging current, number of charging curve and is displayed the message "**GEL**" if programmed charging curve is suitable for gel batteries or "**Acid**" if programmed charging curve is suitable for Lead-Acid (Wet) batteries. After these operations the charger is ready to check the battery voltage and to decide whether to start the charging process. If the battery is not connected to the battery charger, the message 'bat' will be displayed. The same message is displayed also in case of negative result of the testing (for example, reversed polarity or battery having a wrong voltage). If the result of the testing is positive, the value of the battery voltage is displayed for about 5 seconds, with output relay open. After 5 seconds the charging of the battery can start. The output relay closes and the current of the first phase rises slowly till it reaches the nominal value programmed.

If the user disconnects the battery from the battery charger during the charging process, after a few seconds the battery charger will re-initialize and prepare to start a new charging process.

The display always shows the charging current of the battery. The battery voltage, the time since the beginning of the charge, the charge yielded in Ah's and the energy consumed in KWh can be seen only by pressing the button S.

The progress of the charging process is shown by three LED's: red, yellow and green, as in the whole range of the battery chargers.

The green LED indicates the stop of the charging or the last phase in case of deep charging process; in the former case, the relay is opened to disconnect galvanically the battery from the battery charger.

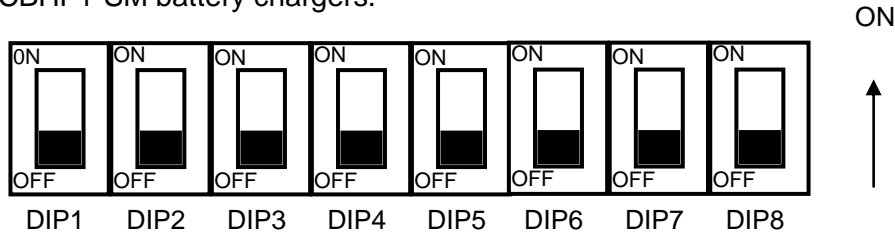
Technical remarks

- When the maximum voltage admissible for a specific battery is reached (value given by the manufacturer) the error message '**E01**' is displayed, and the process is terminated.
 - By using an internal thermostat, the charging can be interrupted in case of excessive battery charger over-temperature. In this case the error message '**E02**' is displayed.
 - Possibility of setting each single charging phase. On exceeding this time, the charge will be interrupted and the error message '**E03**' will be displayed.
 - The display of the message '**Sct**' indicates safety timer operation.
 - The message '**Srt**' will be displayed in case of internal short circuit.
-

On the next page we have written the meaning of dipswitch. Through the set of 8 dipswitches it is possible to change the charging curve (16 charging curves are available for Wet and Gel batteries and it is possible to customize the charging profile under the specifications of battery manufacturers), the battery voltage (12V or 24V) and the charging current (4A or 8A or 10A or 12A). The set of 8 dipswitch is easy to find (is located under the front label of the charger, lifting the corner on the bottom-left) without opening the charger.

CBHF1-SM DIP SWITCH CONFIGURATION

In the following tables you can find meaning of all different position of dipswitch for programming CBHF1-SM battery chargers.



➤ DIP1 DIP2 DIP3 DIP4 for the selection of the CHARGING CURVE

DIP1	DIP2	DIP3	DIP4	CHARGING CURVE
ON	ON	ON	ON	0
OFF	ON	ON	ON	1 (curve for Lead-acid (Wet) traction batteries)
ON	OFF	ON	ON	2
OFF	OFF	ON	ON	3
ON	ON	OFF	ON	4
OFF	ON	OFF	ON	5
ON	OFF	OFF	ON	6 (curve for Sealed Lead-acid and GEL batteries from Trojan and other manufacturers)
OFF	OFF	OFF	ON	7
ON	ON	ON	OFF	8
OFF	ON	ON	OFF	9
ON	OFF	ON	OFF	10
OFF	OFF	ON	OFF	11 (curve for GEL batteries from Sonnenschein, DETA and other manufacturers)
ON	ON	OFF	OFF	12
OFF	ON	OFF	OFF	13
ON	OFF	OFF	OFF	14
OFF	OFF	OFF	OFF	15

➤ DIP5 DIP6 DIP7 for the selection of the CURRENT I1

DIP5	DIP6	DIP7	CORRENTE
ON	ON	ON	4A
OFF	ON	ON	8A
ON	OFF	ON	10A
OFF	OFF	ON	12A

➤ DIP8 for the selection of the battery voltage

DIP8	Vb
ON	12
OFF	24

PRE-PROGRAMMED CURVES FOR CBHF1-SM

Tab.1

CURVE	CURVE TYPE	DIPSWITCH DP1-DP2-DP3-DP4
00	IUa SO (IUa + float charge 2,30VPC) = IUUo Technology for charging DRYFIT TRACTION BLOCK (TRACTION GEL batteries). In compliance with the DIN 41773 regulations.	ON-ON-ON-ON
01	IUIa Lead-Acid Technology for charging TRACTION Lead-Acid batteries.	OFF-ON-ON-ON
02	IUUa (2,45VPC) Technology for charging SEALED LEAD-ACID batteries.	ON-OFF-ON-ON
03	IUUa (2,40VPC) Technology for charging Sealed Lead-acid and GEL batteries batteries from Trojan and other manufacturers.	OFF-OFF-ON-ON
04	IUIa Lead-Acid + float charge at 2,30VPC Technology for charging TRACTION lead-acid batteries.	ON-ON-OFF-ON
05	IUUa (2,45VPC) + float charge at 2,30VPC Technology for charging SEALED LEAD-ACID batteries.	OFF-ON-OFF-ON
06	IUUa (2,40VPC) + float charge at 2,30VPC Technology for charging Sealed Lead-acid batteries and GEL batteries from Trojan and other manufacturers.	ON-OFF-OFF-ON
07	IUIa PzV Technology for charging large capacity DRYFIT PzV (A800) GEL batteries. In compliance with the DIN 41773 regulations.	OFF-OFF-OFF-ON
08	IUIa GNB Technology for charging GNB Sealed Lead-Acid batteries.	ON-ON-ON-OFF
09	IUo (2,35VPC) Technology for charging Lead-Acid start-up batteries.	OFF-ON-ON-OFF
10	IUIa drysafe (HAGEN) Technology for charging DRYSAFE HAGEN batteries.	ON-OFF-ON-OFF
11	IUIa per TRACTION BLOCK + float charge 2,30VPC Technology for charging DRYFIT TRACTION BLOCK batteries from Sonnenschein, DETA and other manufacturers. In compliance with the DIN 41773 regulations. (This curve is an alternative of curve 00)	OFF-OFF-ON-OFF
12	IUIa for Lead-Acid batteries (2,40VPC) Technology for charging Lead-Acid starting batteries with stop.	ON-ON-OFF-OFF
13	IUIa for Lead-Acid batteries (2,60VPC) Technology for charging Lead-Acid starting batteries with stop.	OFF-ON-OFF-OFF
14	---	ON-OFF-OFF-OFF
15	---	OFF-OFF-OFF-OFF

NOTES:

A: charging curves with charge stop.

B: charging curves equivalent to group A but with a float charge of 2,30VPC (maintenance charge).

The occurred problem

Charge the battery for 8 hours and after a few pallet the battery charger show orange led.

Possible remedies

Attention: if the tension was interrupted during 8 hours of charging then when re-start the tension, the battery charger start again from zero.

1. Check all the connection (battery-battery charger);
2. Check the “Dip Switch Configuration”;
3. Discharger completely the battery;
4. Charger again the battery for 8-10 hours (finally shows=green led);
5. After have charger completely the battery, don't keep away the plug of the tension and touch the button ”S” on the battery charger (reads and writes the values A, U, h, C, E);
6. Check with the tension meter the voltage of the two batteries, max voltage must be 27 Volt;

The tension between the two batteries must be the same, if isn't so, the battery that has less voltage has a part in “short-circuit”.

Should the problem persist, contact the Customer After-Sales Service of Manufacturer.