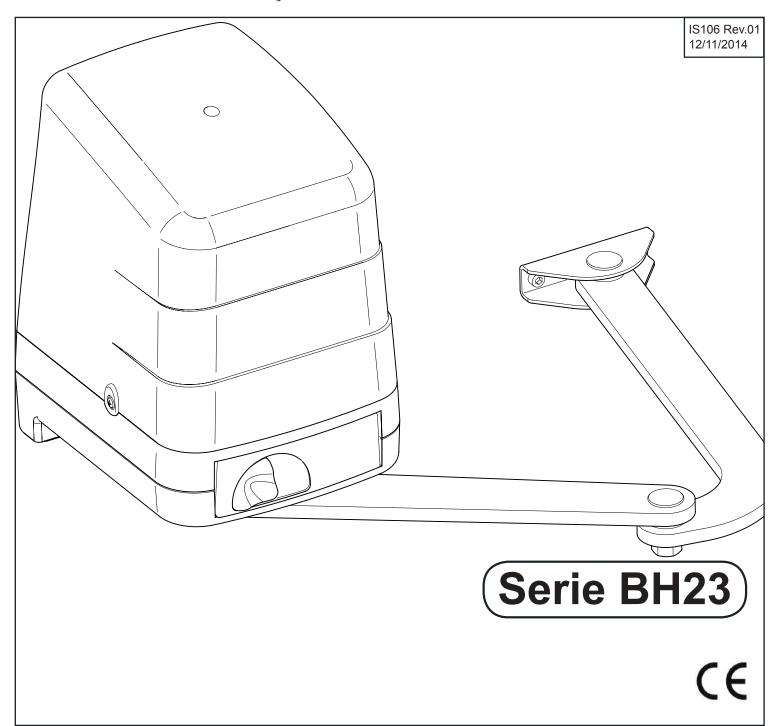
AUTOMAZIONI PER CANCELLI A BATTENTE • SWING GATES AUTOMATION
• AUTOMATISIERUNG FÜR DREHTORE • AUTOMATISME POUR PORTAILS À BATTANT
• AUTOMATISMOS PARA CANCELAS BATIENTES • AUTOMAÇÕES PARA PORTÕES DE BATENTE



# progettisti di tecnologia

ISTRUZIONI E AVVERTENZE PER L'INSTALLATORE • INSTRUCTIONS AND RECOMMENDA-TIONS FOR THE INSTALLER • ANWEISUNGEN UND HINWEISE FÜR DEN INSTALLATEUR

- INSTRUCTIONS ET AVERTISSEMENTS POUR L'INSTALLATEUR
  - INSTRUCCIONES Y ADVERTENCIAS PARA EL INSTALADOR
    - INSTRUÇÕES E AVISOS PARA O INSTALADOR



### **GB** RECOMMENDATIONS REGARDING THE INSTALLATION AND MAINTENANCE BOOKLET

### THIS BOOKLET IS INTENDED SOLELY FOR PROFESSIONALLY QUALIFIED INSTALLERS

THIS INSTALLATION AND MAINTENANCE BOOKLET IS AN INTEGRAL PART OF THE PRODUCT AND MUST BE GIVEN TO THE USER.

KEEP THIS INSTALLATION AND MAINTENANCE BOOKLET TOGETHER WITH ALL THE INFORMATIVE MATERIAL

### SYMBOLS USED IN THE BOOKLET

ഥ Referred to information that must be read for your own safety and that of others and to avoid damage to property.

# Referred to recommendations for recycling

FOR YOUR SAFETY: Carefully read the recommendations and warnings contained in this booklet since they give important information regarding safety of use and maintenance, regardless of whether you have previous experience with the same model or not,

### PLEASE DO NOT HESITATE TO GET IN TOLICH WITH ROGER TECHNOLOGY FOR FURTHER EXPLANATIONS OR ADVICE

PURCHASED MODEL: This installation and maintenance booklet describes all the available models of the product. You may therefore find some information regarding a variation that is not available on the model you have purchased.

### IMPORTANT GENERAL RECOMMENDATIONS AND OBLIGATIONS FOR THE INSTALLER

Caution: only professionally qualified technicians must carry out installation, electrical connections, adjustments and maintenance on the system. Incorrect installation or misuse of the product could lead to severe injury to persons or serious damage to property.

### **END USE**

This product must only be used for the purpose for which it has been designed. Any other use is to be considered improper and therefore dangerous. The manufacturer cannot be held liable for any injury or damage caused by inappropriate, incorrect or unreasonable use.

### **ALTERATIONS**

Caution: do not alter or replace product parts. It could be highly dangerous and cause injury to persons and damage to property. Any alteration or replacement of parts made on this product relieves the manufacturer of all and any liability for resulting damage or injury.

### CONNECTION TO THE MAINS ELECTRICITY SUPPLY

Caution: before connecting to the mains electricity supply, check and proceed as follows:

1) always ensure there is a residual current circuit breaker with 0.03 A threshold installed between the equipment and the mains power outlet;

2) install a suitable double-pole linked switch having a contact separation of at least 3 mm in both poles with overload and short circuit protection and dedicated to

3) the yellow-green earth wire must be connected to the terminal marked with the symbol

🗥 Caution: the safety of this equipment is only guaranteed when it is effectively earthed in conformity with current safety standards and regulations

riangle This fundamental safety requirement must be checked; if in doubt, check the earthing system

A Caution: connect the metal framework of the gate/door to the earthing system

⚠ The manufacturer cannot be held liable for any damage or injury caused by failure to earth the installation

🛆 Caution: do not work in wet or damp environments without having taken suitable precautions against electric shock

riangle Caution: always cut off the power supply before carrying out any adjustment, maintenance or cleaning

 $\Delta$  Caution: do not install the equipment in an explosive atmosphere; the presence of flammable gases or fumes is a safety hazard

⚠ Caution: only use original Roger Technology parts when required during maintenance

🛆 Caution: ensure that all the connections have been made, the efficiency of the safety devices checked and the thrust force set to minimum before the automation is put into normal use.

PRELIMINARY OPERATIONS: Before connecting the equipment to the power supply, ensure that the data stamped on the rating plate correspond to those of the mains electricity supply and that the model conforms to the size and weight of the gate

 $oldsymbol{\Lambda}$  Caution: this equipment may exert very high forces that could be a source of danger

🗥 Caution: before carrying out the installation, carefully check that the gate, post, guides and gate stops for open and close positions are robust and firm and that manually-operated movements are smooth and regular

### **RISK ANALYSIS**

🕰 Caution: the installer must analyse the risks that can be present with a gate/door that is automated or to be automated and must find solutions to eliminate each and every hazard

FINAL CHECKS: Check correct operation of the safety devices and the limit microswitches, check that the thrust force is within the limits recommended by current regulations and check that the safety stops for the open and close positions are firmly fixed

GATE/DOOR RATING PLATE: Clearly indicate on the gate/door that it is automatic and remote controlled

PACKAGING: Place the pack according to the arrows on the packaging and then remove the packaging. Check that the equipment is intact and undamaged; if in doubt do not use the equipment and contact only professionally qualified persons

🗥 Caution: the packaging (plastic bags, polystyrene foam, nails, cardboard boxes, etc.) must not be left within each of children since it is a potential source of danger

# Dispose of or recycle the packaging in accordance with current applicable legislation

# **DEMOLITION**: There are no particular risks from the automation system itself; if possible recycle the various parts separately (aluminium, iron, electrical parts, etc.)

### SPECIAL RECOMMENDATIONS FOR THE USER

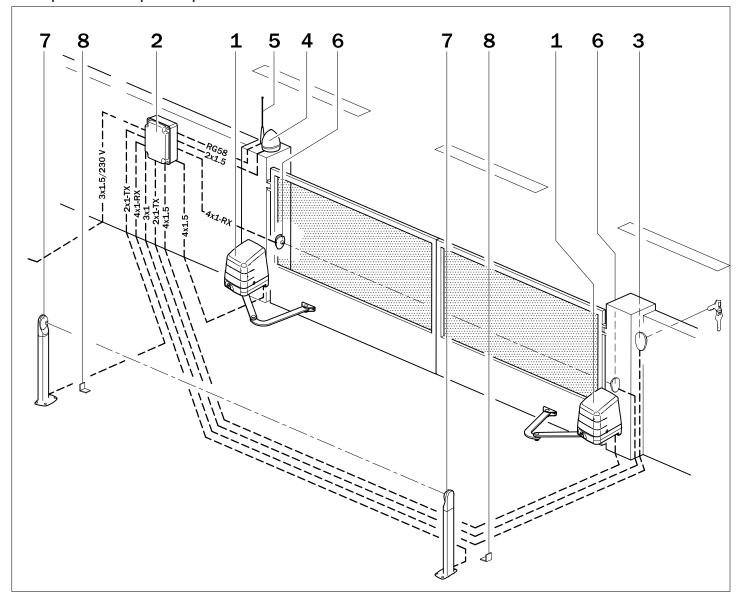
🛆 Caution: the installer must give the end user all the automation system operating instructions and warnings and in particular those concerning the emergency override for manual opening

🕰 Caution: the installer must provide a set of special warnings for the user (see user guide) and if necessary display them or have them displayed in a suitable place

Serie BH23

# IMPIANTO TIPO SERIE BH23 • STANDARD SYSTEM BH23 RANGE • ANLAGE SERIE BH23 • INSTALLATION TYPE SÉRIE BH23 • INSTALACIÓN TIPO SERIE BH23 • SISTEMA DO TIPO SÉRIE BH23

- 1) Automatismo BH23 Automatism BH23 Automatisierung BH23 Automatisme BH23 Automatismo BH23 Automatismo BH23
- 2) Centrale di comando Control unit Steuerzentrale Centrale de commande Central de mando Central de comando
- 3) Selettore a chiave Key selector Schlüsseltaster Sélecteur à clé Selector de llave Selector de chave
- 4) Lampeggiante Flashing light Blinkleuchte Clignotant Luz intermitente Luz intermitente
- 5) Antenna Antenna Antenne Antenne Antena
- 6) Fotocellula esterna External photocell Externe Lichtschranke Cellule photoélectrique externe Fotocélula exterior Fotocélula exterior
- 7) Fotocellula interna Internal photocell Interne Lichtschranke Cellule photoélectrique interne Fotocélula interior Fotocélula interior
- 8) Blocco in apertura Stop for open position Endanschlag beim Öffnen Blocage en ouverture Dispositivo de bloqueo de apertura Batente de abertura



ISTRUZIONI MOTORE BRUSHLESS PER CANCELLI A BATTENTE SERIE BH23 • INSTRUCTIONS BRUSHLESS MOTOR FOR SWING GATES SERIES BH23 • HINWEISE VON BRUSHLESS MOTOR FÜR DREHTORE SERIES BH23 • INSTRUCTIONS DU MOTOR BRUSHLESS POUR PORTAILS BATTANTS SÉRIE BH23 • INSTRUCCIONES DE MOTOR BRUSHLESS PARA PUERTAS BATIENTES SERIE BH23 • INSTRUÇÕES MOTOR BRUSHLESS PARA PORTÕES SERIES BH23

# MODELLI E CARATTERISTICHE • MODELS AND SPECIFICATIONS • MODELLE UND EIGENSCHAFTEN • MODÈLES ET CARACTÉRISTIQUES • MODELOS Y CARACTERÍSTICAS • MODELOS E CARACTERÍSTICAS

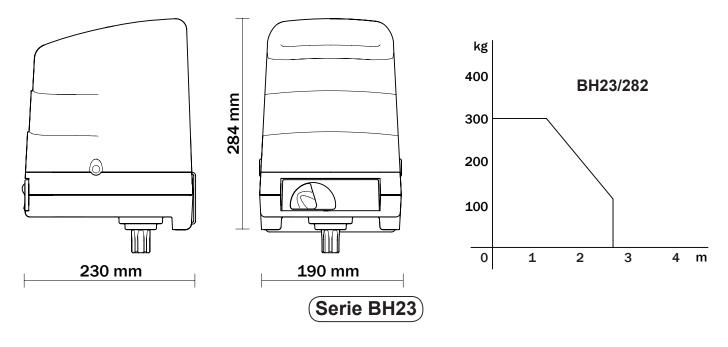
BH23/282

per cancelli a battente fino a 300 Kg, larghezza massima anta 2800 mm (vedi grafico), sistema rilevamento ostacolo ad encoder, con bracci corti STD • for swing gates up to 300 kg, maximum leaf width 2800 mm (see graph), obstacle detection system with encoder, with STD short arms • für Drehtore bis 300 Kg, max. Flügelbreite 2800 mm (siehe grafische Darstellung), Hinderniserhebungssystem mit Encoder, standard-teleskoparme STD • Pour portails à battant jusqu'à 300 Kg, largeur maximum vantail 2800 mm (voir graphique), système de détection de l'obstacle à encodeur, bras télescopiques standards STD • Para cancelas batientes de hasta 300 kg, con una anchura máxima de la hoja de 2800 mm (véase el gráfico), sistema de detección de obstáculos con encoder, provisto de brazos cortos STD • para portões de batente de até 300 Kg, largura máxima da folha 2800 mm (veja o gráfico), sistema de detecção de obstáculos com encoder, com braços curtos STD

# DATI TECNICI • TECHICAL DATA • TECHNISCHE DATEN • DONNEES TECHNIQUES • DATOS TECNICOS • CARACTERÍSTICAS TÉCNICAS

BH23		BH23/282
ALIMENTAZIONE • POWER SUPPLY • EINSPEISUNG • ALIMENTATION • ALIMENTAÇÃO MOTORE BRUSHLESS • BRUSHLESS MOTOR • BRUSHLESS MOTOR • MOTOR BRUSHLESS • MOTOR BRUSHLESS	V	24
POTENZA NONIMALE • RATED POWER • NENNLEISTUNG • PUISSANCE NOMINALE • POTENCIA NOMINAL • POTÊNCIA NOMINAL	w	160
INTERMITTENZA • JOGGING • AUSSETZENDER BETRIEB • INTERMITTENCE • INTERMITENCIA • INTERMITÊNCIA	%	USO INTENSIVO INTENSIVE USE INTENSIVE NUTZUNG UTILISATION INTENSIVE USO INTENSIVO USO INTENSIVO
TEMPERATURA DI ESERCIZIO • WORKING TEMPERATURE• BETRIEBSTEMPERATUR • TEMPERATURE DE SERVICE • TEMPERATURA DE FUNCIONAMIENTO • TEMPERATURA DE FUNCIONAMENTO	°C	-20 +55
GRADO DI PROTEZIONE • PROTECTION RATING • SCHUTZGRAD • DEGRE DE PROTECTION • GRADO DE PROTECCION • GRAU DE PROTECÇÃO	IP	43
PESO OPERATORE • OPERATOR WEIGHT • ANTRIEBSGEWICHT • POIDS OPERATEUR • PESO DEL OPERADOR • PESO DO OPERADOR	kg	12,1
TEMPO APERTURA PER 90° • 90° OPENING TIME • ÖFFNUNGSZEIT FÜR 90° • TEMPS OUVERTURE POUR 90° • TIEMPO PARA APERTURA DE 90° • TEMPO DE ABERTURA PARA 90°	s	12" - 20"
SPINTA • TRUST • SCHUB • POUSSEE • EMPUJE • IMPULSO	N	50 - 280
CICLI DI MANOVRA GIORNO (APERTURA/CHIUSURA - 24 ORE NON STOP) • OPERATING CYCLES PER DAY (OPENING/CLOSING - 24 HOURS NO STOP) • BETRIEBSZYKLEN PRO TAG (ÖFFNEN/ SCHLIESSEN - 24 STUNDEN NON-STOP) • CYCLES DE FONCTIONNEMENT PAR JOUR (OUVERTURE / FERMETURE 24 HEURES SANS ARRÊT) • CICLOS DE MANIOBRA POR DÌA (APERTURA/CIERRE – 24 HORAS SIN PARAR) • CICLOS DE MANOBRA POR DÌAS (ABERTURA/ENCERRAMENTO - 24 HORAS NON-STOP)	n°	1900

# MISURE DI INGOMBRO • EXTERNAL DIMENSIONS • AUSSENMASSE • DIMENSIONS D'ENCOMBREMENT • DIMENSIONES TOTALES • DIMENSÕES



### VERIFICHE PRELIMINARI PRIMA DI INSTALLARE • PRELIMINARY CHECKS PRIOR TO INSTALLATION • VOR DER INSTALLATION DURCHZUFÜHRENDE KONTROLLEN • CONTRÔLES PRÉLIMINAIRES AVANT L'INSTALLATION • CONTROLES PREVIOS ANTES DE LA INSTALACIÓN • CONTROLOS PRELIMINARES ANTES DA INSTALAÇÃO

### VERIFICHE PRELIMINARI PRIMA DI INSTALLARE

Controllare che il cancello abbia i requisiti necessari per essere automatizzato:

- 1- La struttura del cancello sia solida ed appropriata
- 2- le cerniere siano in buono stato e ben ingrassate
- 3- Il movimento manuale sia fluido e regolare per tutta la sua corsa senza inceppamenti
- 4- Prevedere sempre un fermo meccanico di arresto in apertura e chiusura, ben fissato al suolo

### (GB)

### PRELIMINARY CHECKS PRIOR TO INSTALLATION

Check that the gate has the necessary requirements to be automated

- 1- The gate structure must be solid and suitable
- 2- The hinges must be in good condition and well greased
- 3- Manual movement must be smooth and regular without sticking at any point
- 4- Gate stops for the open and close positions must always be installed firmly fixed to the ground

### 

### VOR DER INSTALLATION DURCHZUFÜHRENDE **KONTROLLEN**

Sicherstellen, dass das Tor die erforderlichen Voraussetzungen für eine Automatisierung erfüllt:

- 1- Die Torstruktur ist robust und geeignet.
- 2- Die Scharniere müssen in gutem Zustand und gut gefettet sein.
- 3- Die manuelle Bewegung des Tors läuft den gesamten Fahrweg über ungehindert leicht und regelmäßig.
- 4- Immer einen mechanischen Endanschlag für Tor-Auf / Tor-Zu vorsehen, der fest am Untergrund angebracht

### (F)

### CONTRÔLES PRÉLIMINAIRES AVANT L'INSTALLATION

S'assurer que le portail possède les caractéristiques requises pour être automatisé:

- 1- Structure du portail solide et appropriée
- 2- Charnières en bon état et bien graissées
- 3- Mouvement manuel fluide et régulier sur toute la course sans à-coups
- 4- Prévoir toujours un dispositif mécanique d'arrêt en ouverture et fermeture, bien fixé au sol

### (E)

### **CONTROLES PREVIOS ANTES DE LA INSTALACIÓN**

Controle que la cancela tenga los requisitos necesarios para ser automatizada:

- 1- La estructura de la cancela sea sólida y apropiada.
- 2- Los goznes estén en buen estado y bien engrasados.
- 3- El movimiento manual sea fluido y correcto por toda su carrera, sin obstrucciones.
- 4- Predisponga siempre un tope mecánico de apertura y cierre, bien fijado al suelo



### CONTROLOS PRELIMINARES ANTES DA INSTALAÇÃO

Controle se o portão possui os requisitos necessários para ser automatizado:

- 1- a estrutura do portão deve ser sólida e apropriada;
- 2- se as dobradiças estão em bom estado e bem lubrificadas;
- 3- o movimento manual deve ser fluido e regular em todo o seu curso sem impedimentos:
- 4- instale sempre uma segurança mecânica de paragem na abertura e fecho, bem fixada no pavimento

### ISTRUZIONI DI MONTAGGIO E POSIZIONAMENTO STAFFE • INSTRUCTIONS FOR POSITIONING AND MOUNTING THE BRACKETS • MONTAGEANLEITUNG UND POSITIONIERUNG DER MONTAGEPLATTE/BÜGEL • INSTRUCTIONS DE MONTAGE ET POSITIONNEMENT ÉTRIERS

• INSTRUCCIONES DE MONTAJE Y COLOCACIÓN DE LAS ABRAZADERAS • INSTRUÇÕES DE MONTAGEM E POSICIONAMENTO DOS SUPORTES



### ISTRUZIONI DI MONTAGGIO E POSIZIONAMENTO STAFFE FIG. 1 E 2

Individuare nel pilastro le quote di montaggio A e B della staffa principale (particolare 1), in funzione anche dell'angolo di apertura massimo desiderato, come indicato in tabella 1, quindi, a cancello chiuso, individuare la posizione di fissaggio della staffa anteriore (particolare 2), preferibilmente centrato nel cancello, in corrispondenza di un solido traverso. Se non emergono problemi, procedere al fissaggio delle staffe, ponendo particolare attenzione al fissaggio in bolla.



Attenzione: se il fissaggio viene eseguito mediante saldatura elettrica, non saldare le staffe con l'attuatore montato: le correnti di saldatura potrebbero provocare danni all'attuatore.



### **(B)** INSTRUCTIONS FOR POSITIONING AND MOUNTING THE **BRACKETS FIG.1 AND 2**

Take the measurements A and B for mounting the main bracket (part 1) and mark on the gatepost, also in relation to the maximum required openin angle, as given in table 1. With the gate closed, mark the position for fixing the front bracket (part 2), preferably at the centre of the gate on a solid crosspiece. If there are no problems, proceed with fixing the brackets, paying particular attention that they are level.



Caution: if the fixing is done by electric welding, do not weld the brackets with the actuator mounted since the welding current could damage the actuator.

Serie BH23

## MONTAGEANLEITUNG UND POSITIONIERUNG DER MONTAGEPLATTE/BÜGEL ABB 1 UND ABB2

An der Säule die Montagemaße A und B der Montageplatte (**Bauteil 1**), je nach gewünschtem größten Öffnungswinkel, anhand **Tabelle 1** ausfindig machen. Dann bei geschlossenem Tor die Stelle zur Befestigung des vorderen Bügels (**Bauteil 2**), vorzugsweise am Tor zentriert, auf Höhe eines robusten Querträgers, ausmachen. Wenn keine Probleme auftreten, Montageplatte und Bügel anbringen. Dabei darauf achten, dass die Befestigung genau senkrecht erfolgt.

Achtung: Wenn die Befestigung durch elektrisches Verschweißen erfolgt, die Montageplatte /Bügel nicht bei montiertem Antrieb anschweißen. Der Schweißstrom kann den Antrieb beschädigen.

### F INSTRUCTIONS DE MONTAGE ET POSITIONNEMENT ÉTRIERS FIG.1 ET 2

Déterminer, sur le pilier, les cotes de montage A et B de l'étrier principal (détail 1) en tenant également compte de l'angle d'ouverture maximum désiré, comme indiqué sur le tableau 1, puis, avec le portail fermé, déterminer la position de fixation de l'étrier avant (détail 2), de préférence centrée par rapport au portail, au niveau d'une traverse solide. Si aucun problème ne se pose, fixer les étriers en étant particulièrement attentifs à ce qu'ils soient d'aplomb.

Attention: si la fixation est effectuée par soudure électrique, ne pas souder les étriers avec l'actionneur monté:les courants de soudure pourraient endommager ce dernier.

# Particolare 1

TAB. 1

QUOTA "A" mm	QUOTA "B" mm	ANGOLO APERTURA
130	50	90°
130	80	90°
130	100	90°
140	120	90°
150	50	95°
160	160	95°
180	180	95°
180	200	100°
200	200	100°
230	200	105°
250	250	105°
300	250	110°

### E) INSTRUCCIONES DE MONTAJE Y COLOCACIÓN DE LAS ABRAZADERAS FIG. 1 Y 2

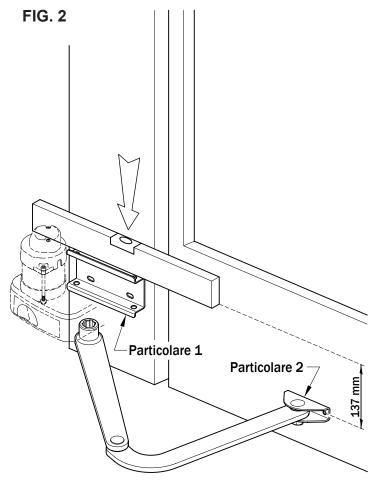
Identifique en el pilar las medidas de montaje A y B de la abrazadera principal (detalle 1), en función, también, del ángulo de apertura máximo deseado, como se indica en la tabla 1; a continuación, con la cancela cerrada, determine la posición de fijación de la abrazadera delantera (detalle 2), preferiblemente centrada en la cancela, en correspondencia de un sólido travesaño. Si no surgen problemas, proceda a la fijación de las abrazaderas, controlando atentamente que la fijación sea perfectamente horizontal.

Atención: si la fijación se realiza mediante soldadura eléctrica, no solde las abrazaderas con el servomotor montado, pues las corrientes de soldadura podrían provocar daños al servomotor.

# P INSTRUÇÕES DE MONTAGEM E POSICIONAMENTO DOS SUPORTES FIG.1 E 2

localize no pilar as quotas de montagem A e B do suporte principal (pormenor 1), de acordo com o ângulo de abertura máxima desejado, conforme indica a tabela 1, e então, com o portão fechado, localize a posição de fixação do suporte anterior (pormenor 2), de preferência centrado no portão, junto de uma sólida travessa. Se não houver problemas, continue a fixar os suportes, e tome muita atenção ao nivelar.

Atenção: se a fixação for feita mediante soldadura eléctrica, não solde os suportes com o actuador montado: as correntes de soldadura podem causar danos ao actuador.



(Serie BH23)

### INSTALLAZIONE DELL'ATTUATORE • INSTALLATION OF THE ACTUATOR

- INSTALLATION DES ANTRIEBS INSTALLATION DE L'ACTIONNEUR
- INSTALACIÓN DEL SERVOMOTOR INSTALAÇÃO DO ACTUADOR

### INSTALLAZIONE DELL'ATTUATORE

Procedere al montaggio dell'attuatore come indicato in **fig. 3**.

Attenzione: l'attuatore può essere installato indifferentemente a destra o a sinistra, orientandolo come indicato in fig.3.

Posizionare l'attuatore all'interno della staffa principale (punto 1) infilare i 2 bulloni (punto 2) ed eseguire il fissaggio. Procedere all'assemblaggio e all'installazione dei bracci snodati come indicato in fig.4.

### **GB** INSTALLATION OF THE ACTUATOR

Proceed with mounting the actuator as shown in fig. 3

Caution: the actuator may be installed on the right or the left in the position shown in **fig.3**. Position the actuator inside of the main bracket **(1)** insert the 2 bolts **(2)** and secure. Assemble and install the articulated arms as shown in **fig.4**.

### **D** INSTALLATION DES ANTRIEBS

Die Montage des Antriebs entsprechend **Abb. 3** vornehmen.

Achtung: Der Antrieb kann sowohl rechts als auch links montiert werden. Den Antrieb wie auf **Abb. 3** dargestellt, ausrichten.

Den Antrieb in der Montageplatte positionieren (Punkt 1), die 2 Bolzen einführen (Punkt 2) und befestigen. Den Zusammenbau und die Montage der Gelenkarme, wie auf Abb. 4 gezeigt, vornehmen.

### **INSTALLATION DE L'ACTIONNEUR**

Procéder au montage de l'actionneur comme indiqué sur la **fig. 3** 

Attention: l'actionneur peut être monté indifféremment à droite ou à gauche, en l'orientant comme indiqué sur la fig.3.

Positionner l'actionneur dans l'étrier principal (point1), enfiler les 2 boulons (point 2) et fixer.

Procéder à l'assemblage et à l'installation des bras articulés comme indiqué sur la fig.4

### **E** INSTALACIÓN DEL SERVOMOTOR

Proceda al montaje del servomotor como se muestra en la **fig. 3** 

Atención: el servomotor puede instalarse indiferentemente a la derecha o a la izquierda, orientándolo como se indica en la **fig. 3**.

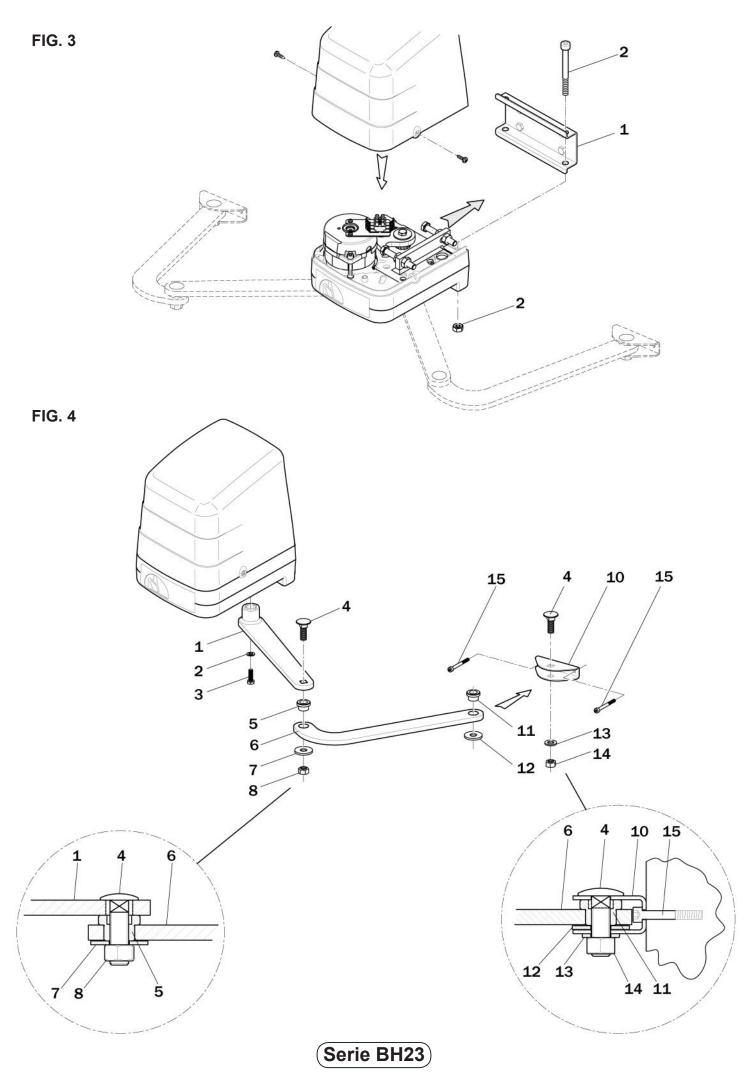
Coloque el servomotor al interior de la abrazadera principal **(punto 1)**, introduzca los 2 pernos **(punto 2)** y realice la fijación. Efectúe el ensamblaje y la instalación de los brazos articulados como se ilustra en la **fig. 4**.

### P INSTALAÇÃO DO ACTUADOR

Faça a montagem do actuador conforme ilustra a fig. 3

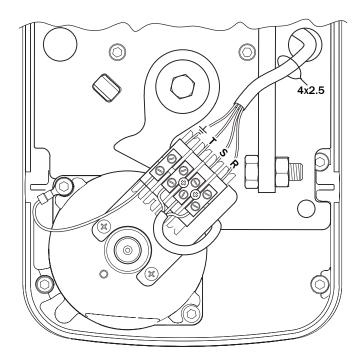
Atenção: o actuador pode ser instalado indiferentemente à direita ou à esquerda, posicionando-o conforme ilustra a fig. 3.

Posicione o actuador na suporte principal (pormenor 1), coloque os 2 parafusos (pormenor 2) e faça a fixação. Faça a montagem e a instalação dos braços articulados conforme ilustra a fig. 4



# COLLEGAMENTI ELETTRICI • ELECTRICAL CONNECTIONS • ELEKTRISCHE ANSCHLÜSSE • CONNEXIONS ÉLECTRIQUES • CONEXIONES ELÉCTRICAS • LIGAÇÕES ELÉCTRICAS

FIG. 1



REGOLAZIONE DEL FERMO MECCANICO IN APERTURA E CHIUSURA SERIE BH23 • GATE STOPS FOR OPEN AND CLOSE POSITIONS SERIES BH23 • MECHANISCHE FESTSTELLVORRICHTUNGEN FÜR TOR-AUF / TOR-ZU SERIES BH23 • ARRÊTS MÉCANIQUES EN OUVERTURE ET FERMETURE SÉRIE BH23 • TOPES MECÁNICOS DE APERTURA Y DE CIERRE SERIE BH23 • SEGURANÇAS MECÂNICAS NA ABERTURA E FECHO SERIES BH23

FIG. 2

