ROTECH

Vehicle Access Control
Pedestrian Access Control
Safety & Security Equipment

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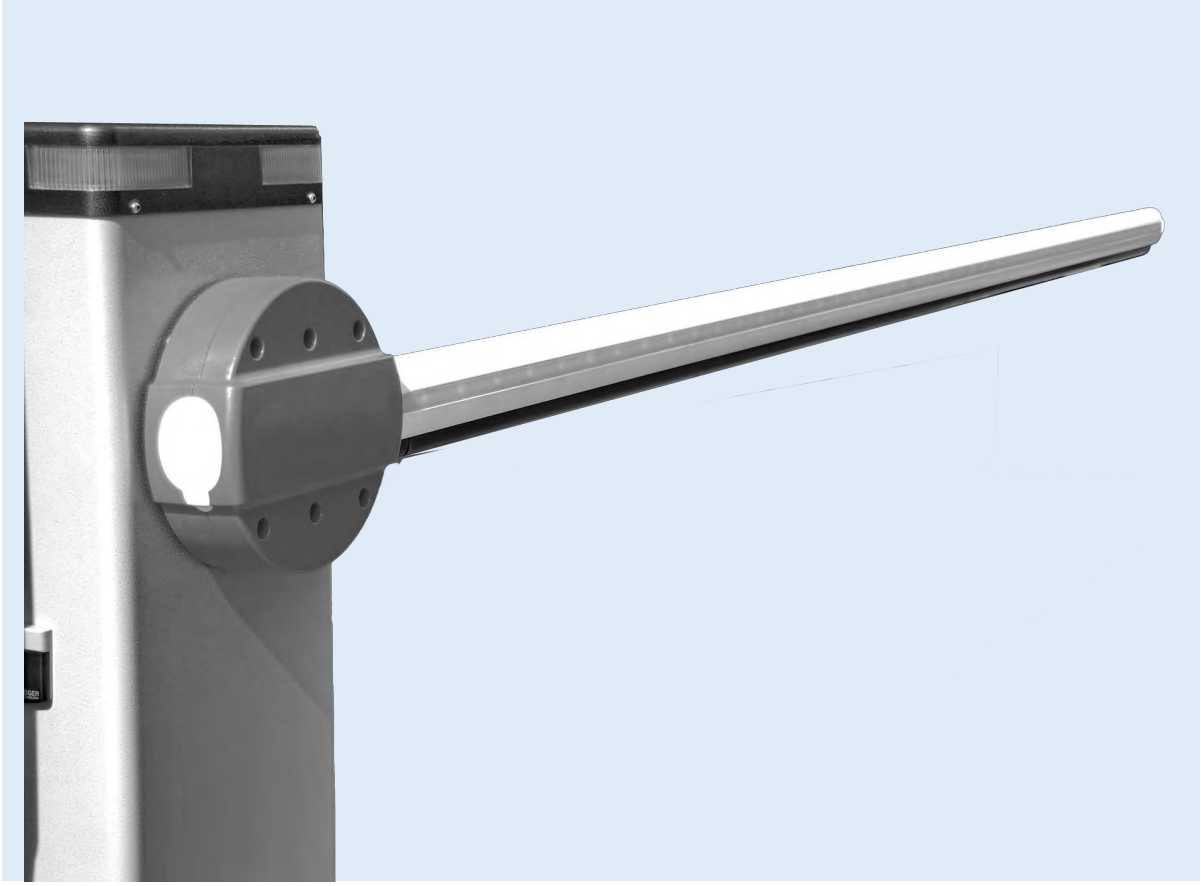
SENTINEL AG SERIES BOOM GATE

Quick Set-Up Instructions (0717)



NOTE: The Quick Set-Up Mechanical Installation Instructions below provide basic information for setting up the AG Automatic Boom Gate.

For more detailed installation information please refer to the full set up instructions document.

QUICK SET-UP MECHANICAL INSTALLATION

The following quick set-up instructions are extracts from various sections of the complete Mechanical Installation Instructions:

- **Installing the boom gate cabinet:** *Chapter 10 –10.5 Fig 1-9*

  IMPORTANT: Fit boom pole before fitting spring

- **Unlocking the mechanism** *Chapter 21 Fig 1-2*

  Turn the key anti clockwise TWO COMPLETE TURNS so the mechanism is unlocked, you will now be able to manually move the drive mechanism.

- **Fitting the balance spring** *Chapter 11 Fig 10 -11*

  - Install the balance spring using the holes as shown in **Fig 10 -11**
  - Adjust the spring tension so that when placed a 45 degrees the pole will rise slowly to the open position.

When the pole and spring are fitted and adjusted the auto learn function can be started.

10. INSTALLATION

10.1 Preliminary checks

- Check that the material received is in good condition and suitable for the application.
- Check that the operating limits of the product are not exceeded.
- Check that the site chosen for installation meets the overall space requirements of the product and that there are no obstacles hindering open or close manoeuvres.
- Check the concrete base for the barrier installation. The base must be cast in accordance with proper working practices, perfectly level and clean.

10.2 Installing base plate

The illustrations herein are indicative only. The space necessary for fastening the automation system and the accessories may vary depending on the overall dimensions of the installation. The installer is responsible for determining the most suitable solution.

- Excavate a foundation pit measuring 1m x 1m x 0.4 m and fill with concrete reinforced with steel mesh.
- Fasten the 4 anchor ties to the plate (fig. 1). **N.B.:** the bottom nut must be tightened to the end of the thread on the screw so that the length Z is at least 40 mm.
- Sink the base plate with the anchors in the centre of the foundation pit, so that the surface is flush with the concrete and perfectly level. The corrugated cable conduits must protrude by a few centimetres from the centre of the plate.
- **Installation on existing surfaces.** Place the base plate on the surface and trace the positions of the fastener points. Drill the surface and fit 4 expansion anchor bolts (purchased separately).

10.3 Installing the barrier

N.B.: the barrier is configured by default for installation on the right hand side (viewed from inspection hatch side).

- Undo and remove the washers and nuts from the anchors on the base plate (fig. 3).
- Undo and remove the two screws fastening the head (fig. 4).
- Open the inspection hatch, turning the key clockwise by 90° (fig. 5).
- Lift the head and disconnect the ground cable from the connector lugs on the cabinet (fig. 6).
- Place the head carefully on a suitable surface or in a safe place to avoid damage.
- Remove the inspection hatch.
- Place the cabinet on the plate. The anchors on the base plate must fit through the four slots.
- Fit the washers and nuts removed previously. Move the cabinet as necessary in the slots to adjust the position of the barrier correctly. Tighten the nuts securely (fig. 7).

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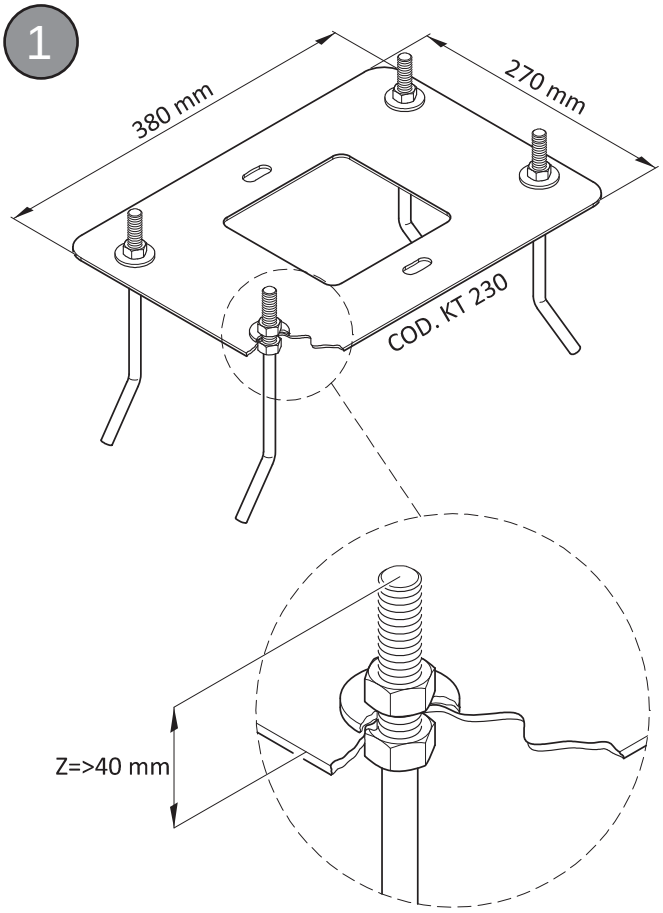

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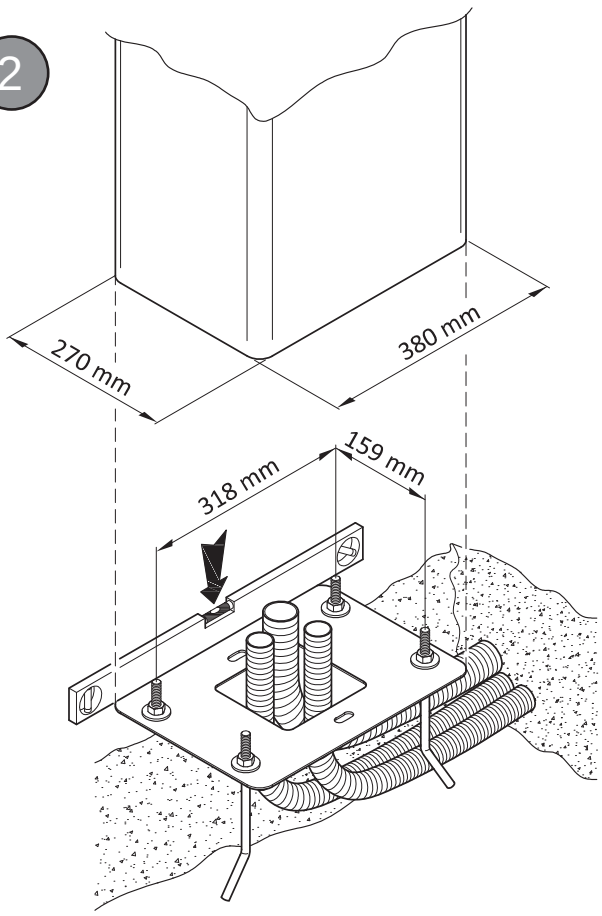

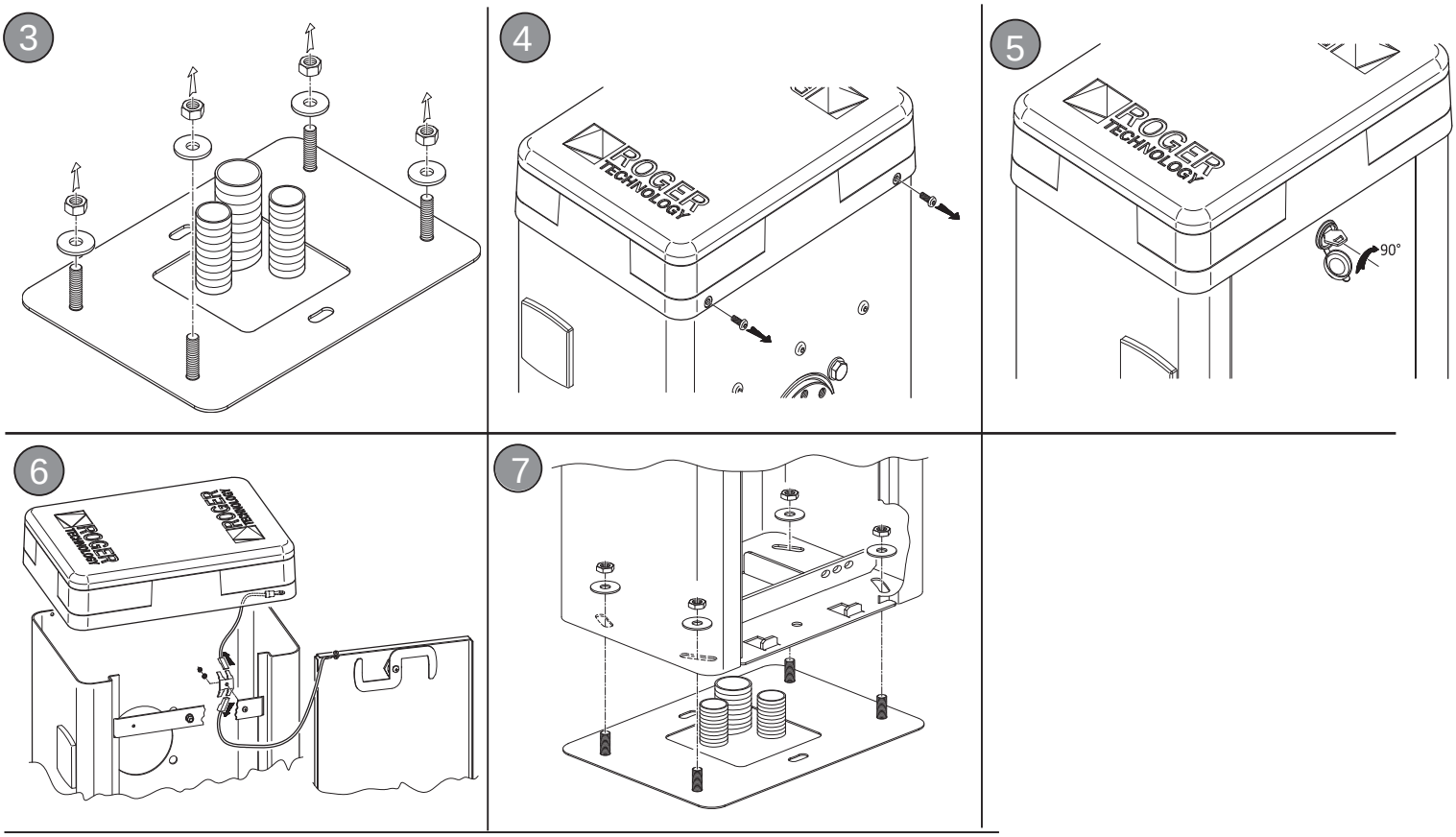

21 RELEASE AND LOCK PROCEDURE

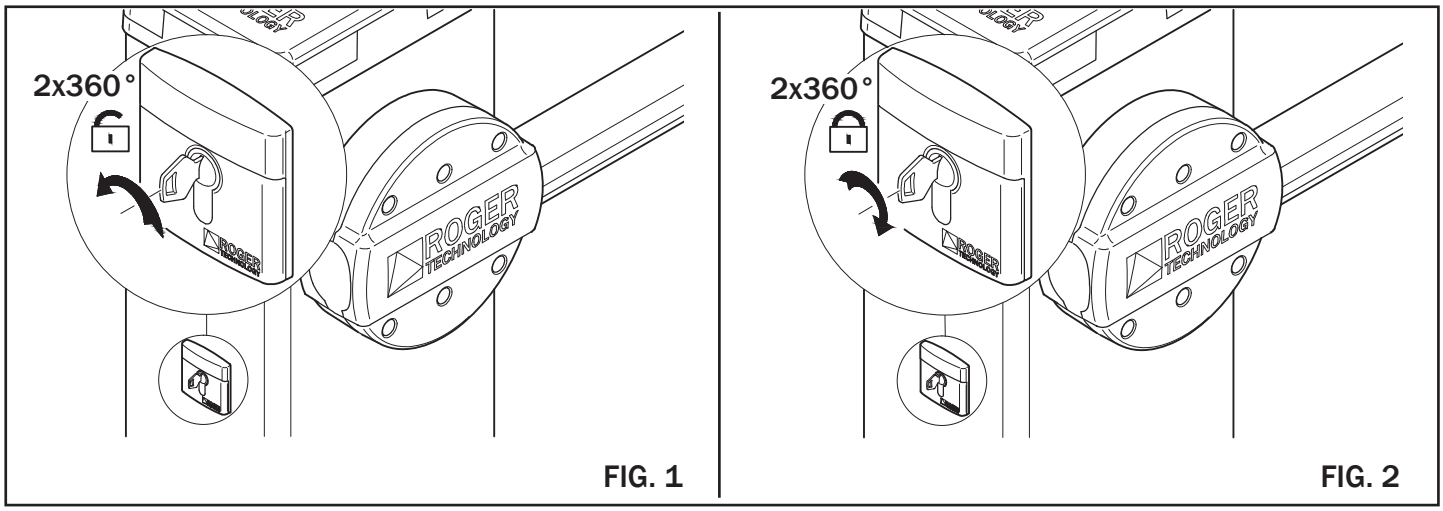

FIG. 1 FIG. 2

In some situations, such as in the event of a power outage or scheduled or extraordinary maintenance, it is necessary to release the automation.
The operation of the release of the automation must be carried out when the boom is is stopped in the closed position (horizontal).
Moreover, ensure that at the time of release, no person, animal, item or vehicle is passing by or stopped within range of automation.

RELEASE AND MANUAL OPERATION

Insert the key included into the lock and turn it anticlockwise by 360° making 2 complete turns, as indicated in fig. **1**.
Move the boom manually.

RESTORING AUTOMATIC OPERATION

To lock the barrier again, turn the key clockwise by 360° making 2 complete turns, as indicated in fig. **2**.
Remove the key and give to the user.

10.4 Selecting direction of opening

AG barriers are configured by default for installation on the right hand side (seen from the side door). For left hand installations:

- Unlock the barrier (see chapter 21).
- Turn the linkage lever as shown in fig. 8.
- Move the mechanical stop.
- Lock the barrier (see chapter 21).

10.5 Installing the boom (fig. 9)

- Unlock the barrier (see chapter 21).
- Turn the linkage lever into the position necessary for installing the boom horizontally.
- Lock the barrier.
- Fasten the boom mounting base [A] to the flange [C] with the 8 zinc plated M10 screws [B], tightening securely.
- Fit the brackets [G] and partially tighten the M10 screws.
- Insert the boom through the hole, and push it against the steel plate [E].
- Fasten the mounting brackets [G] to the boom mounting base [A] with the 6 zinc plated M10 screws, tightening securely.
- Fit the plastic end cap [F].
- Fit the aluminium cover [H], and fasten with the 6 stainless steel M10 screws [K].

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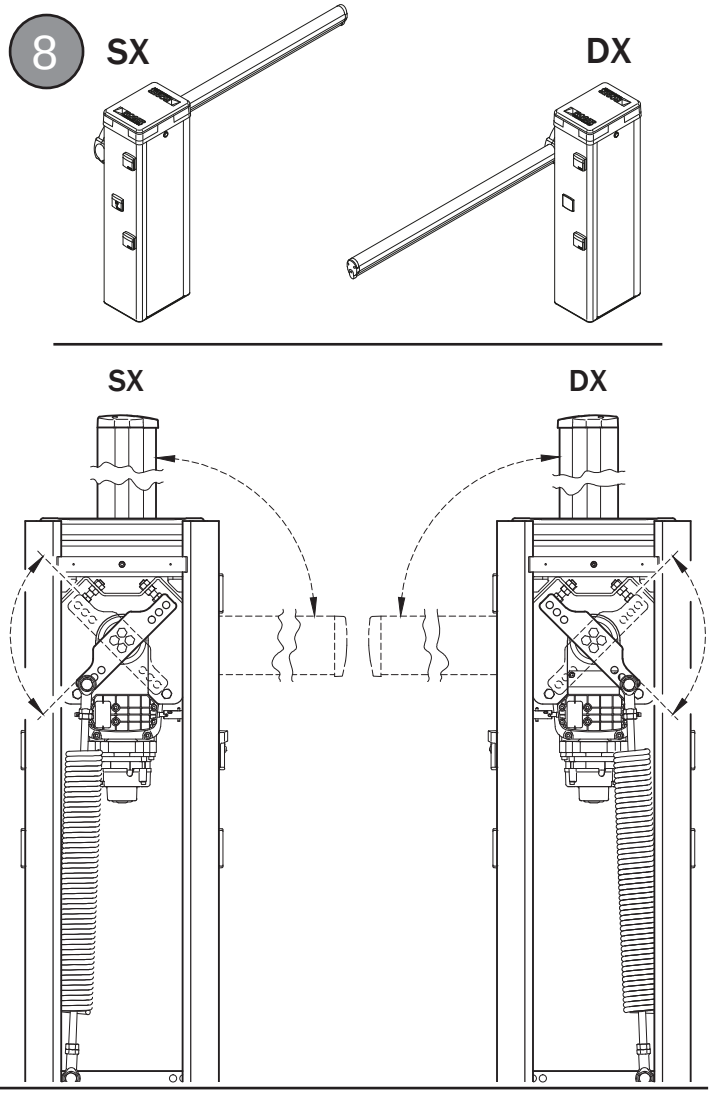

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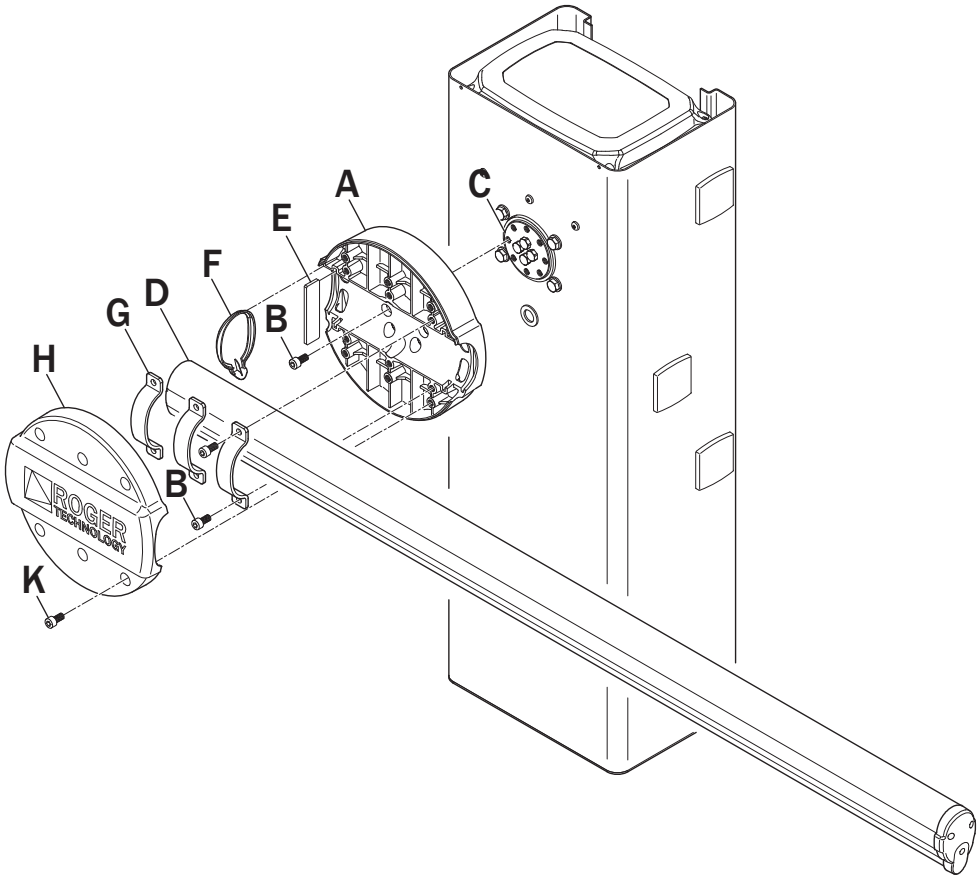

11 INSTALLING AND ADJUSTING THE SPRING

- Unlock the barrier (see chapter 21) and move the boom into the completely open vertical position.
- Select the most suitable spring (see tables in paragraph 11.1).
- Use the screws included to fasten the spring to the linkage lever (fig. 10) on the correct side for the direction of aperture and in using the most appropriate mounting hole to allow the barrier to function correctly.
- The springs are colour coded for identification: 72 mm diameter springs (**AG/SP72/01**) are red, 83 mm diameter springs (**AG/SP83/01**) are yellow and 85 mm diameter springs (**AG/SP85/01**) are grey. The coloured part of the spring must always be at the top.
  IMPORTANT: Using the holes furthest from the centre of the linkage lever (**A-1**) will result in a higher spring tension when the barrier is operating. Using the holes closest to the centre of the linkage lever (**C-3**) will result in a lower spring tension.
- Secure the springs to the fixed structure (fig. 11) by fastening to the steel cross boom of the barrier using the screws included.
- Lubricate the pivot points with lithium based grease (EP LITIO) (fig. 12). A 100 g tub of lithium grease may be ordered separately with article code **RS/GR1/100**.
- To adjust the spring tension, loosen the nuts as indicated in fig. 12, then turn the spring clockwise to reduce the tension or anticlockwise to increase tension (fig. 13).
- Lift the boom manually to an angle of 45° and let go. The boom should slowly rise to fully open position, then tighten the lock nuts securely.

Springs for 4 & 6 metre boom gates should be connected to the bottom hole A and the top hole 1

Springs for 3 metre boom gates should be connected bottom hole C and top hole 3

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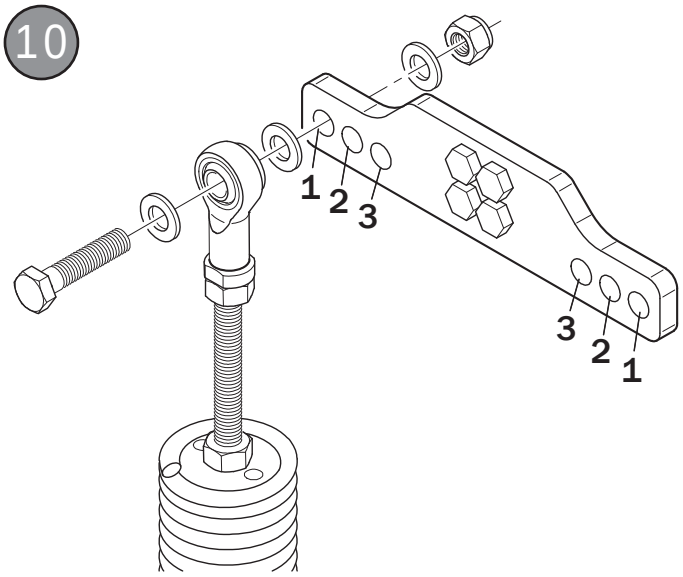

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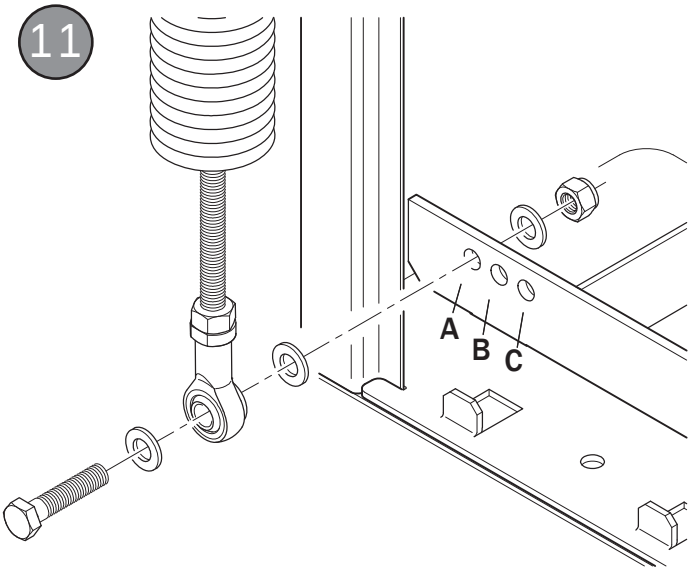

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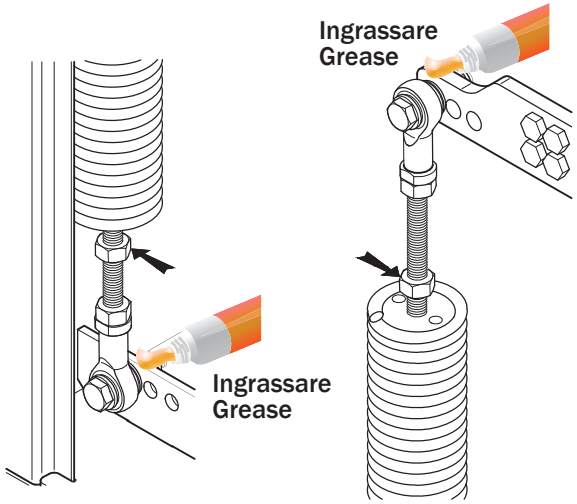

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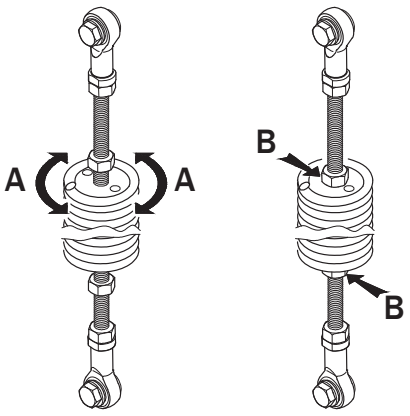
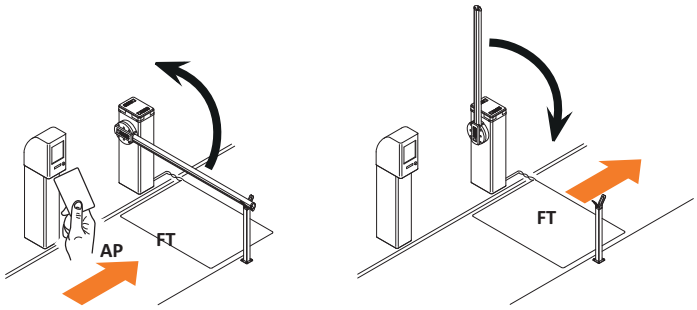


Examples of applications in parking access mode.

The **AG** controller manages the system in parking access mode.
This function is enabled with parameter 83.
N.B.: the input **FT** cannot be disabled in the following operating situations. If the contact (NC) is opened during a closing manoeuvre, the barrier reopens and remains open until the contact is closed again.
The automatic closing time is enabled if parameter 21 is different to 00. Adjust an automatic closing time that allows the vehicle to complete the crossing.

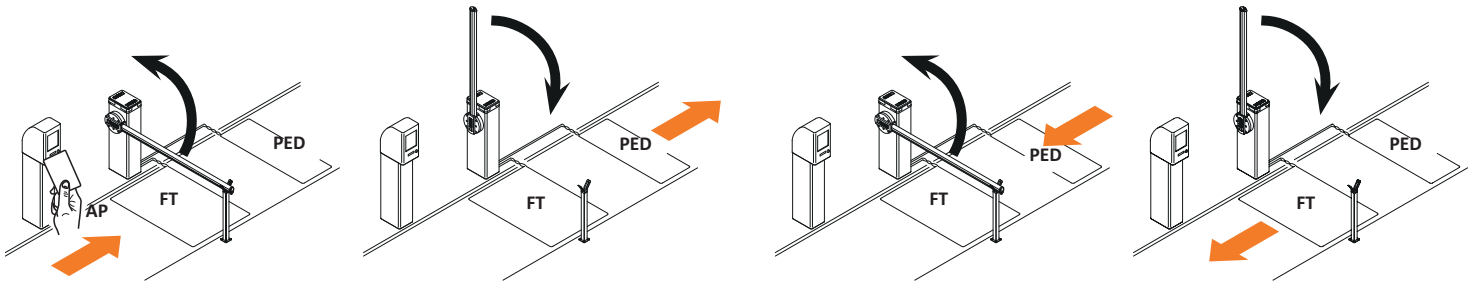
• Bi-directional mode with immediate closure (83 01)

When entering and leaving the parking area, the barrier is opened with an AP open command (terminal block).
Once the vehicle has crossed the barrier and released contact **FT** ((NC) (e.g. from magnetic loop), the barrier closes immediately. When parameter 21=00, the barrier open and remains open until the vehicle has completed the passage. If the vehicle moves back, the barrier remains open.
NOTE: it is possible to add further 5 s delay before closing, setting A5 99.



• Directional mode 1 (83 02)

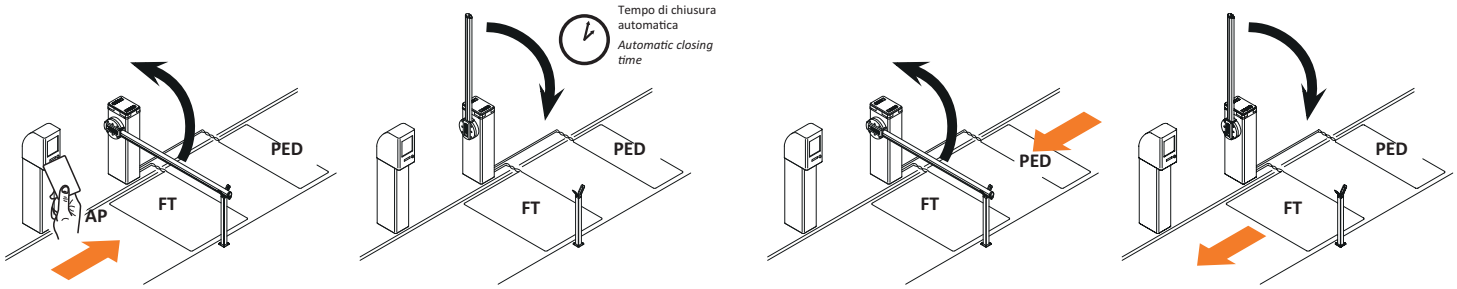
When entering the parking area, the barrier is opened with an **AP** open command (terminal block). Once the vehicle has crossed the barrier and released contacts **FT** (NC) and **PED** (NO), the barrier closes. When leaving the parking area, the barrier is opened by a **PED** command received from the magnetic loop.
Once the vehicle has crossed the barrier and released contact **FT** (NC), the barrier closes.
When parameter 21=00, the barrier open and remains open until the vehicle has completed the passage. If the vehicle moves back, the barrier remains open.
NOTE: it is possible to add further 5 s delay before closing, setting A5 99.



• Directional mode 2 (83 03)

When entering, the barrier is opened with an **AP** open command (terminal block), and closes after the automatic closing time set with parameter 21.

NOTE: in order to have the automatic closing, it is recommended to set parameter 21 different to 00.
When leaving the parking area, the barrier is opened by a **PED** (NO) command received from the magnetic loop.
Once the vehicle has crossed the barrier and released contact **FT** (NC), the barrier closes.
NOTE: it is possible to add further 5 s delay before closing, setting A5 99.



NOTE: The Quick Set-Up Electrical Instructions below provide basic information for setting up the AG Automatic Boom Gate.

For more detailed installation information please refer to the full set up instructions document.

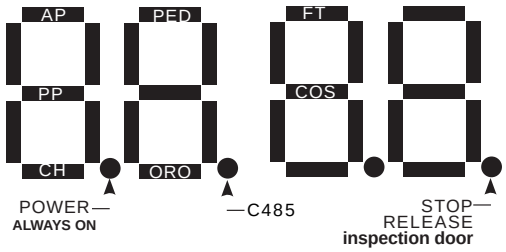
QUICK SET-UP ELECTRICAL INSTALLATION

The following quick set-up instructions are extracts from various sections of the complete Electrical Installation Instructions

Warning:

When the boom gate is shipped the control panel is programed with a factory setting which caters for 80% of installations.

DO NOT make any adjustments to the control panel and DO NOT fit any auxiliary items such as PE beams before you have run the auto learn.



Display Function Description

AP Input (NO) Open Command

PED Input (NO) Partial Open or Partial Open or in Parking Mode Loop (NC)

PP Input (NO) Open / Close Toggle (See Parameter A4)

CH Input (NO) Close Command

ORO Input (NO) Time Lock - When Input is activated, Barrier opens and remains open until the time period finishes.

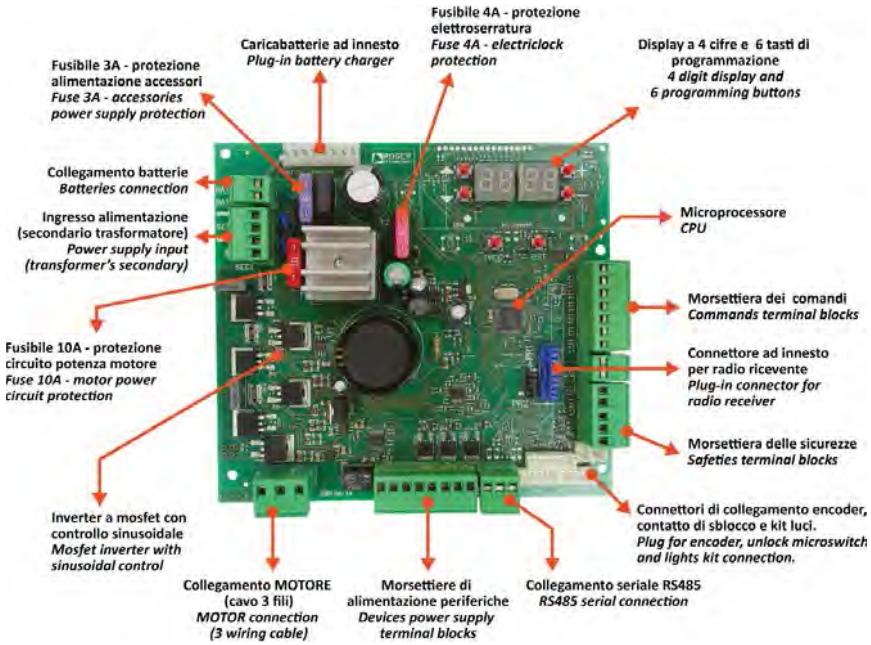
FT Input (NC) for Photocel or Safety Loop

COS Input (NC) or 8K2 OHM for sensing edge on Barrier. If not used Jumper 23 (COS) to 22 (COM) or set parameter 73 00

Auto Learn

- ☐ Switch on power, 1 red bar on display flashes
- ☐ Ensure the pole is lowered and the safety inputs are bridged out (STOP and FT)
- ☐ The display is now in status mode, 1 bar solid and the other flashing
- ☐ Press the up arrow twice until A1 is displayed
- ☐ The display should be in set up mode (displaying input status). Using the + or – buttons, set the following values, and then press program button.
    - For a 3 or 4 metre pole set the value to 01
    - For a 6 metre pole set the value to 02

  Then press the program button once to exit set up
- ☐ Press the PROGRAM button and hold until APP is displayed
- ☐ Turn the key TWO TURNS to the unlocked position – the display will change to PHASE
- ☐ When the display flashes PHASE return the key TWO TURNS to the locked position
    - The display will change to AUTO and the pole will cycle to the raised and then lowered position
    - (If during this process the display changes to APPE it is most likely the FT input is not bridged to COM)
- ☐ Test operation of the boom gate, if satisfactory connect auxiliaries, PE Beams etc.
    - It is recommended to connect each control device in turn and test each separately



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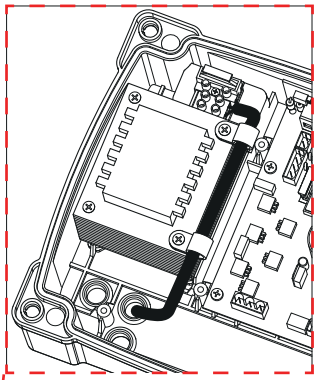

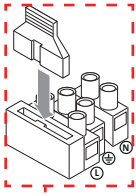
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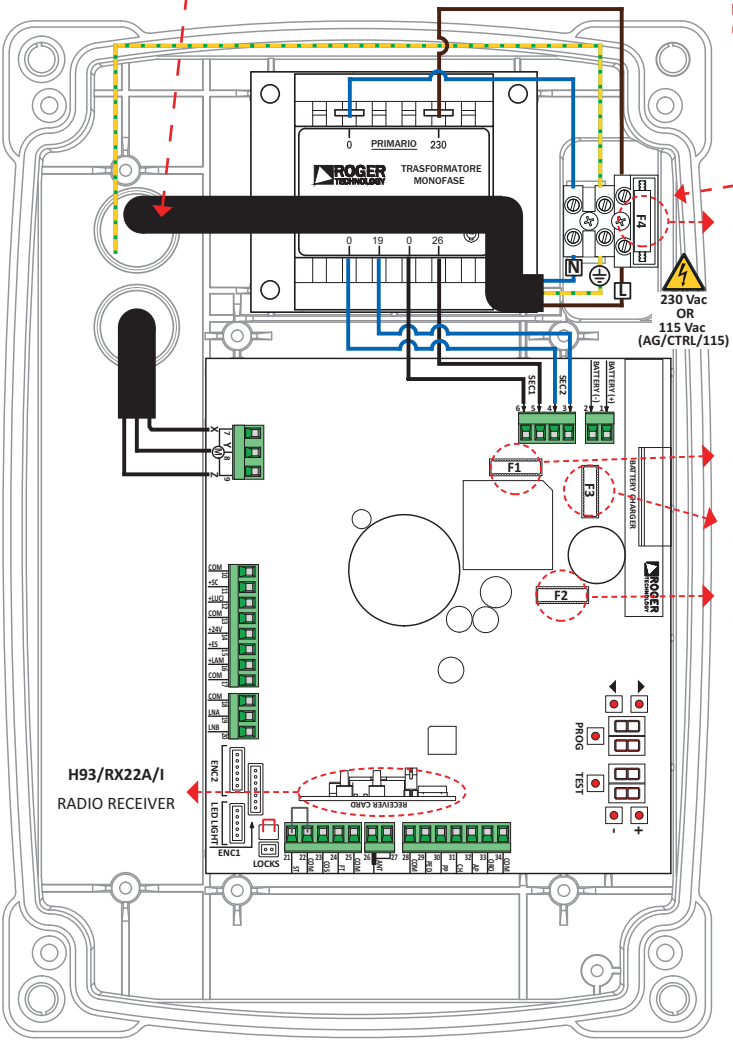
0
PRIMARIO
230
ROGER TECHNOLOGY
TRASFORMATORE MONOFASE
0 19 0 26
F4
N
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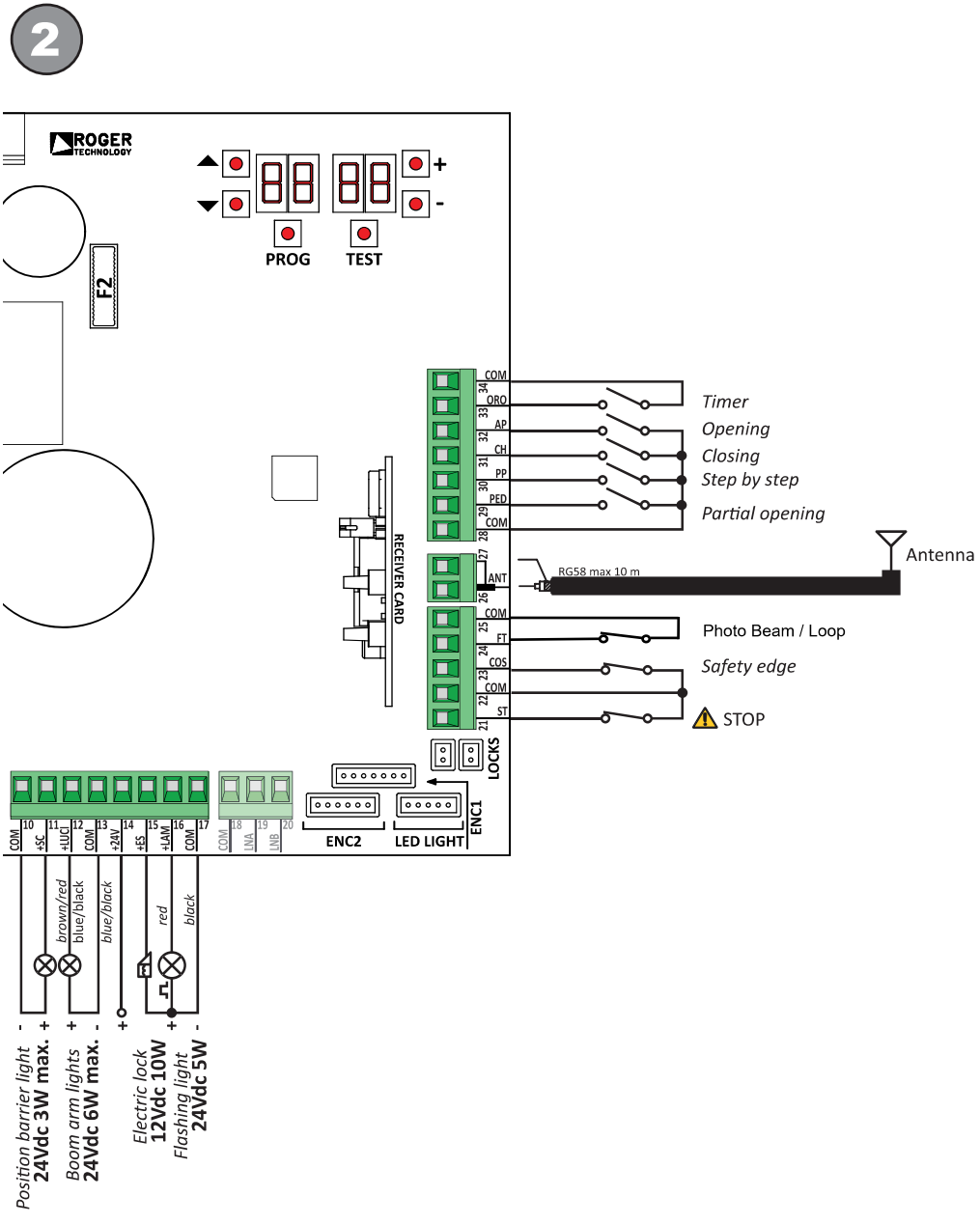
F4
FUSE
T1A
230 Vac
OR
115 Vac
(AG/CTRL/115)
SEC1
SEC2
BATTERY (-)
BATTERY (+)
F1
F3
F2
F1
FUSE
10A
F3
FUSE
3A
F2
FUSE
4A
BATTERY CHANGER
ROGER TECHNOLOGY
COM
+5C
+UC
+24V
+ES
+LAN
LNA
LNB
ENC2
ENC1
LCD LIGHT
LOCKS
RECEIVER CARD
PROG
TEST
H93/RX22A/I
RADIO RECEIVER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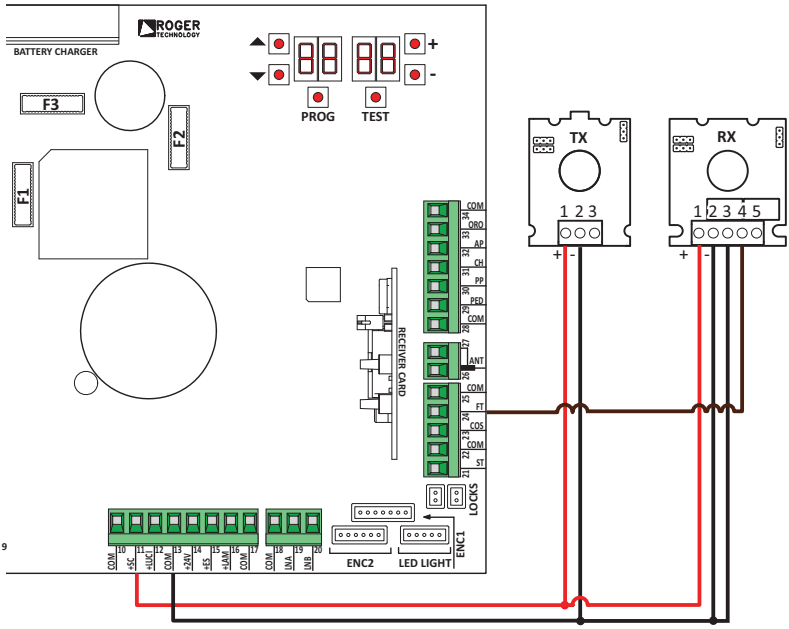
ROGER TECHNOLOGY
PROG
TEST
F2
RECEIVER CARD
COM 34
ORO 33
AP 32
CH 31
PP 30
PED 29
COM 28
ANT 27
26
COM 25
FT 24
COS 23
COM 22
ST 21
Timer
Opening
Closing
Step by step
Partial opening
RG58 max 10 m
Antenna
Photo Beam / Loop
Safety edge
STOP
LOCKS
ENC1
ENC2
LED LIGHT
COM 10
+SC 11
+UCI 12
COM 13
+24V 14
+ES 15
+LAM 16
COM 17
COM 18
-INA 19
-IN0 20
brown/red
blue/black
blue/black
red
black
Position barrier light
24Vdc 3W max.
Boom arm lights
24Vdc 6W max.
Electric lock
12Vdc 10W
Flashing light
24Vdc 5W

6

BATTERY SAVING (impostare / set *AB 03*)

BATTERY SAVING + / PHOTOCELLS TEST
(impostare / set *AB 04*)



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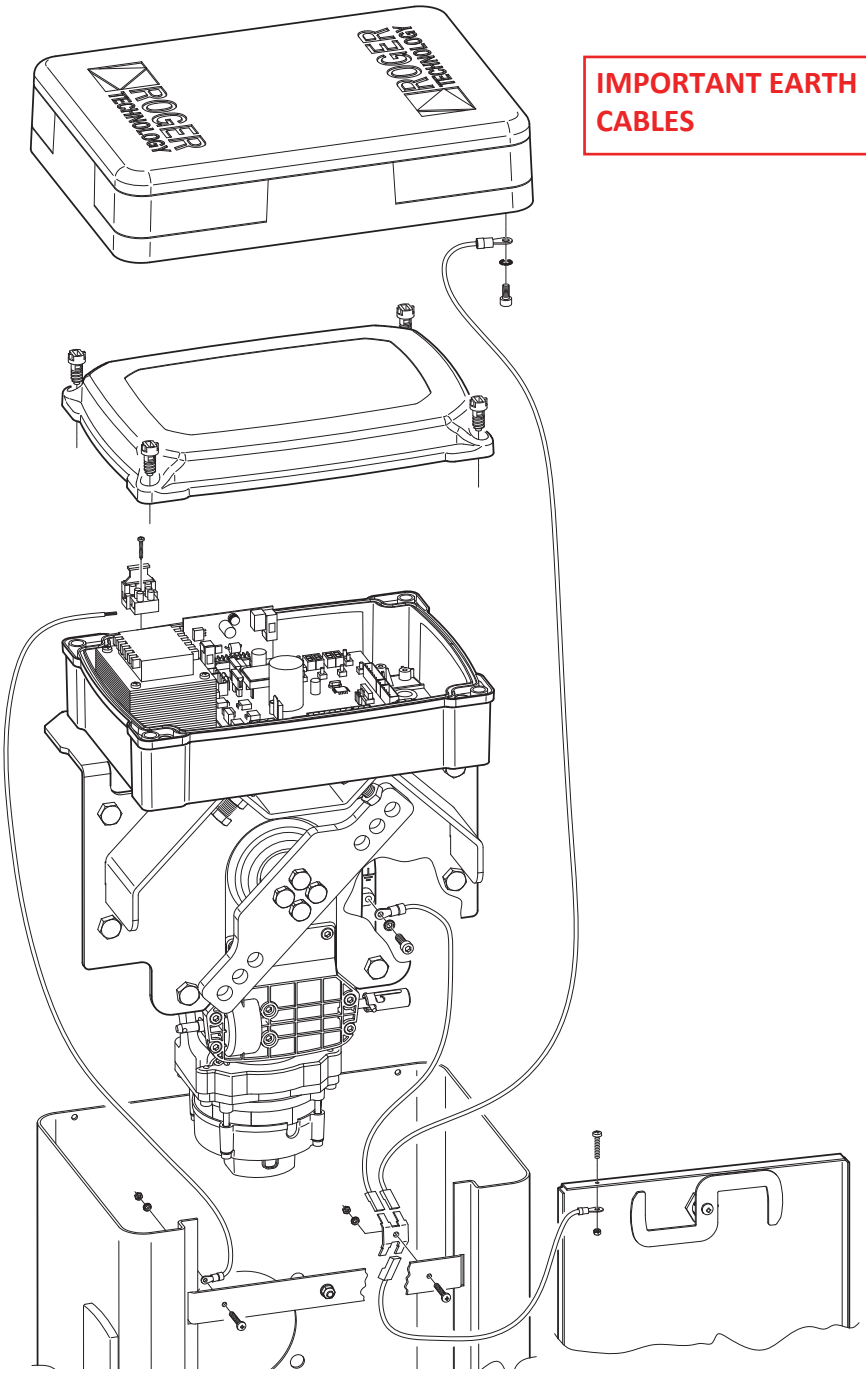


IMPORTANT EARTH CABLES

11 Commands and Accessories

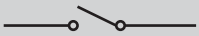
If not installed, safety devices with NC contacts must be jumpered at the COM terminals, or disabled by modifying the parameters 50, 51 and 73.
For installations with two opposed barriers, connections for command signals and accessories must be made on the MASTER controller. The sensing edge and, if used, the STOP command signal must be connected to the SLAVE controller.

KEY:

N.A. (Normally Open) .
N.C. (Normally Closed).

CONTACT	DESCRIPTION
11(+SC) 10(COM)	Barrier open/closed indicator lamp, 24 V DC 3 W. The function of the indicator lamp is determined by parameter A8.
11(+SC) 13(COM)	Photocell test function and/r battery saving mode connection (fig. 6-7). The power feed for the photocell transmitters (TX) may be connected to terminal **11(SC)**. Set the parameter A8 02 to enable the test function. Each time a command is received, the controller unit switches the photocells off and on to check that the contact changes state correctly. Power feeds for all external devices (excluding the external radio receiver) may be connected to reduce battery consumption (if batteries are used). Set A8 03 or A8 04. In the case of installations with two opposed barriers, the functions are not available for the SLAVE barrier. **WARNING!** If contact **11(SC)** is used for the photocell test function or battery saving function, a barrier open indicator lamp cannot be connected.
12(+LIGHTS) 13(COM)	Input for connecting AG/ALED series signal lights on boom (optional). 24 V DC 12W max.
14(+24V) 13(COM)	Power feed for external devices, max. 10W. See technical specifications.
15(+ES) 17(COM)	Input for connecting electric block. See technical specifications.
16(+LAM) 17(COM)	Connection for flashing light (24 V DC - max. 5 W). The settings for the pre-manoeuvre flashing warning signal may be selected with parameter A5 , while the flashing mode is set with parameter 78.
18(COM)-19(LNA)-20(LNB) 	RS485 serial communication cable connection (3x0.5 mm² - max. length 20 m) for installation of two MASTER / SLAVE opposing barriers (from firmware version o6 13 or later). **Connections.** Connect the **COM-LNA-LNB** terminals of the MASTER barrier to the relative terminals of the SLAVE barrier. The MASTER barrier is the barrier which opens (completely) when the partial open command (PED) is received. Set parameter A0 11 for the MASTER barrier and parameter A0 10 for the SLAVE barrier. All command signals, the photocells and the main STOP command must be connected to the MASTER barrier. Sensing edges must be connected to the respective barriers. An auxiliary STOP command signal may also be connected to the SLAVE barrier. If not used, jumper terminals **21(ST)-22(COM)** on the SLAVE controller. All parameters except for A0 and 73 must be set on the MASTER controller. The travel acquisition procedure must be performed for both barriers, after setting the parameters as required and in accordance with the type of installation. Alarm messages are viewable on the displays of the respective controllers.

CONTACT	DESCRIPTION
18(COM)-19(LNA)-20(LNB) 	**Function.** Serial communication enables synchronised operation of the two barriers. The obstacle detection system immediately reverses the direction of the boom which detected the obstacle, while the other boom reverses after a fixed delay. If the MASTER barrier is completely open or completely closed and the SLAVE barrier is in an intermediate position, the MASTER barrier sends a re-alignment command to the SLAVE barrier, with a 5 second pre-manoeuvre flashing warning signal. Conversely, if the MASTER barrier is an intermediate position, after 5 seconds of inactivity, it re-aligns with the SLAVE barrier. The alignment function is disabled if the "operator present" function A7 01 is enabled.
21(ST) 22(COM)	STOP command input (NC). The current manoeuvre is arrested if the safety contact opens. **N.B.:** the controller is supplied with this contact already jumpered by ROGER TECHNOLOGY. In the case of installations with two opposed barriers, if the STOP command signal is given for the MASTER barrier, both barriers stop. If the STOP command signal is given for the SLAVE barrier, only the SLAVE barrier stops.
23(COS) 22(COM)	Input (NC or 8.2 kOhm) for connecting sensing edge **COS**. Movement is reversed (open) if the sensing edge is activated during closure. If the sensing edge is not installed, jumper the terminals **23(COS)-22(COM)** or set parameter 7300. In the case of installations with two opposed barriers, the sensing edge (if installed) must be connected to and configured for both the MASTER barrier and the SLAVE barrier.
24(FT) 13(COM)	Input (NC) for connecting photocell **FT** (fig. 4-5). The photocells are configured by default with the following settings: – 5000 . Photocell triggers only during barrier closure. Photocell is ignored during barrier opening manoeuvre. – 5102 . Movement is reversed if the photocell is triggered during barrier closure. – 5201 . The barrier opens when an open command is received if the photocell **FT** is obstructed. If the photocells are not installed, jumper the terminals **24(FT)** - **25(COM)** or set the parameters 5000 and 5100. **WARNING**! Use **G90/F4ES** or **T90/F4S** photocells. In the case of installations with two opposed barriers, the photocells must be connected to and configured for the MASTER barrier only. In the case of installations with parking mode, the input **FT** may be used to receive a closing command from a magnetic loop (NC) (see chapter 12).
27 26(ANT) 	Antenna connector for slot-in radio receiver board. Use RG58 if an external antenna is used - maximum recommended length: 10 m. **N.B.**: do not make joints in cable.
29(PED) 28(COM)	Partial open command input (NO). The barrier is always opened completely when the contact is closed. In the case of installations with two opposed barriers, the command PED only opens the MASTER barrier when both barriers are completely closed. In the case of installations with "Directional" parking mode (parameter 8302 or 8303), the input PED may be used to receive a closing command from a magnetic loop (NC) (see chapter 12).
30(PP) 28(COM)	Step mode command input (NO). The function of this command is determined by parameter A4.
31(CH) 28(COM)	Close command input (NO).
32(AP) 28(COM)	Open command input (NO).

CONTACT	DESCRIPTION
33(ORO) 34(COM) 	Clock timer contact input (N.O.). When the clock function is active, the barrier opens and remains open. At the end of the programmed time set with the external device (clock) the barrier closes.
ENC1	7-way connector for connecting to encoder installed on motor (see fig. 9-10). **WARNING!** Always disconnect from electrical power before disconnecting or connecting the encoder cable.
ENC2	6-way connector for connecting to encoder installed on one side of motor (see fig. 9-10). **WARNING!** Always disconnect from electrical power before disconnecting or connecting the encoder cable.
LED LIGHT	Connector for the (OPTIONAL) AG/EXP signal device connection and flashing lights installed on the top cover (see fig. 11).
LOCKS	Connectors for connecting lock device microswitch and safety stop microswitch on barrier inspection hatch (see fig. 8). Jumper the other connector if only one connector is connected.
RECEIVER CARD	Connector for slot-in radio receiver board. The controller has two radio remote control functions by default: – **PR1** - step mode command (modifiable with parameter 76). – **PR2** - close command (modifiable with parameter 77).
B71/BCHP **BI/BCHP** **BATTERY CHARGER** **AG/BAT/KIT** **BI/BAT/KIT** **BATTERY KIT** 2x12 Vdc 4.5 Ah (AGM type ONLY)	Connector for slot-in battery charger board. In the event of a mains power loss, the controller unit is powered by the batteries. When battery power is used, the message bAtt is shown on the display and the flashing light flashes briefly at intervals until mains power is restored or until the battery voltage drops below the minimum permissible limit. In this case, btLO (Battery Low) is shown on the display and the controller unit accepts no commands. If mains power is lost while the boom is moving, the boom stops and then automatically resumes the interrupted manoeuvre after 2 seconds. Setting a value for parameter 85 other than 00 enables automatic opening when the battery voltage drops below the safety limit. Once the boom reaches the completely open position, the boom remains open and the controller accepts no further commands until mains voltage is restored. In the case of installations with two opposed barriers, the battery charger must be connected to both barriers. Parameter 85 is not available for SLAVE automation systems. **WARNING!** the batteries must always be connected to the electronic controller unit in order to charge. Periodically (at least every 6 months), check that the batteries are in good working order. For more information, refer to the installation manual for the **B71/BCHP** or **BI/BCHP** battery charger.