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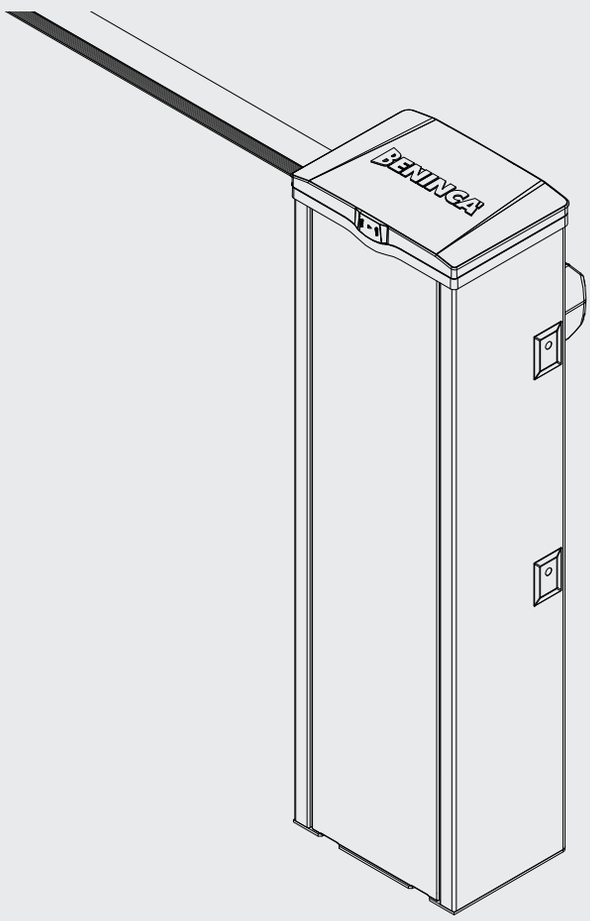
02/2022 rev 2

IT
EN
DE
FR
ES
PL

DIVA.3

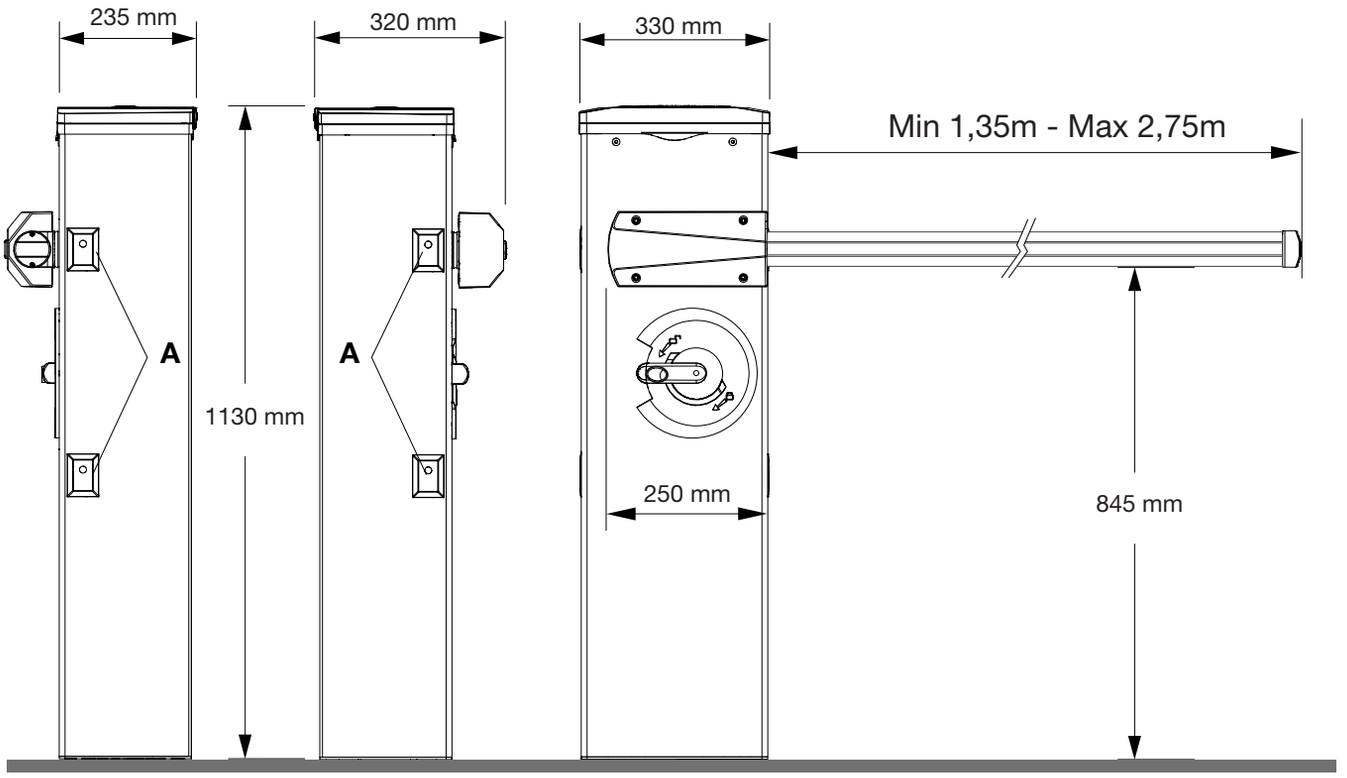


BENINCA'®
TECHNOLOGY TO OPEN

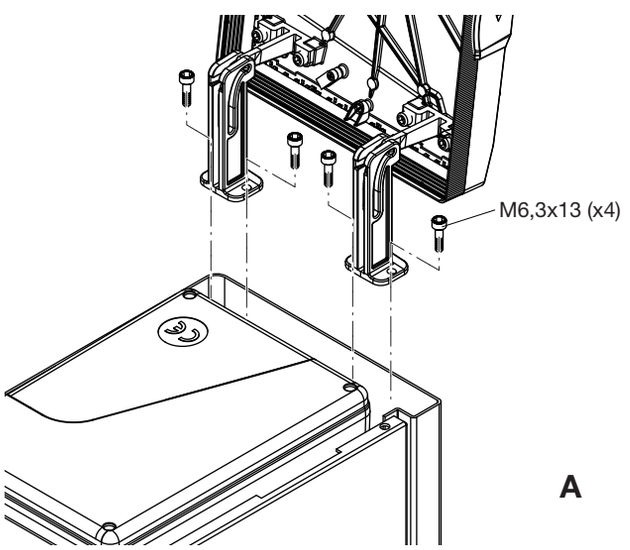
CE

UNIONE NAZIONALE COSTRUTTORI
AUTOMATISMI PER CANCELLI, PORTE
SERRANDE ED AFFINI
UNAC

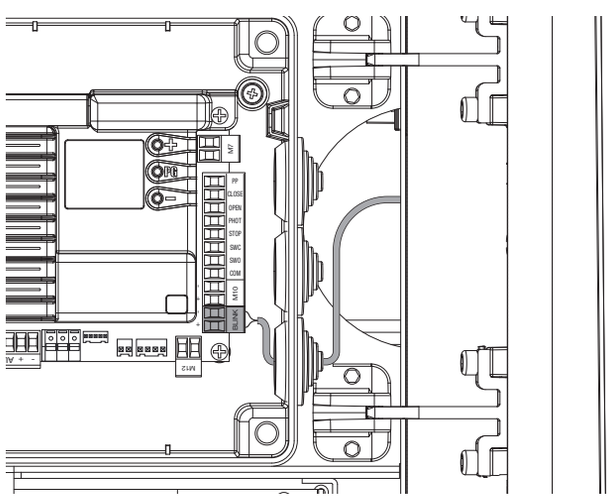
1


235 mm
320 mm
330 mm
Min 1,35m - Max 2,75m
A
A
1130 mm
250 mm
845 mm

2


M6,3x13 (x4)

A



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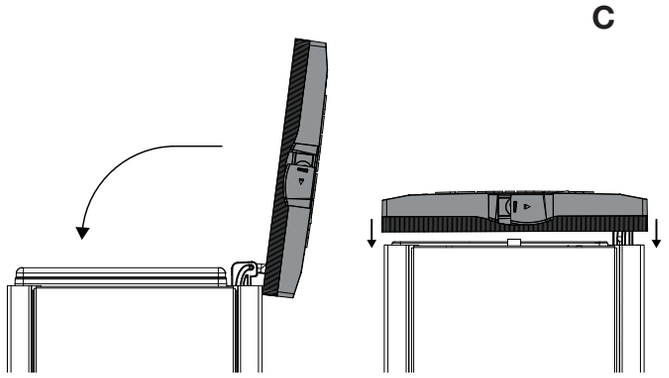
C



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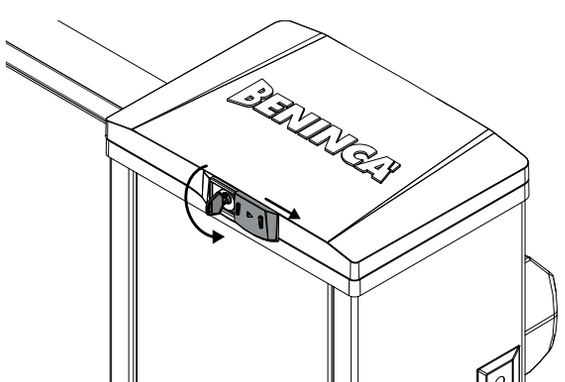
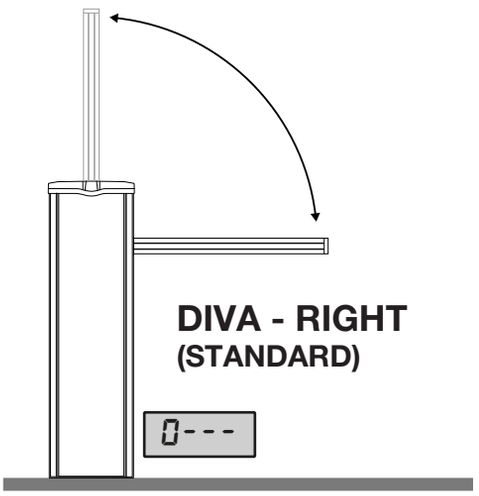
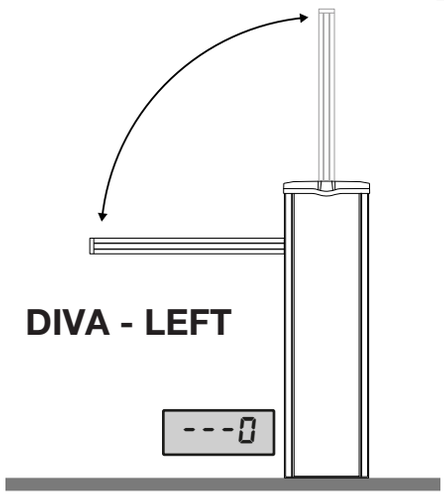

BENINCA'

3

B



DIVA - RIGHT
(STANDARD)

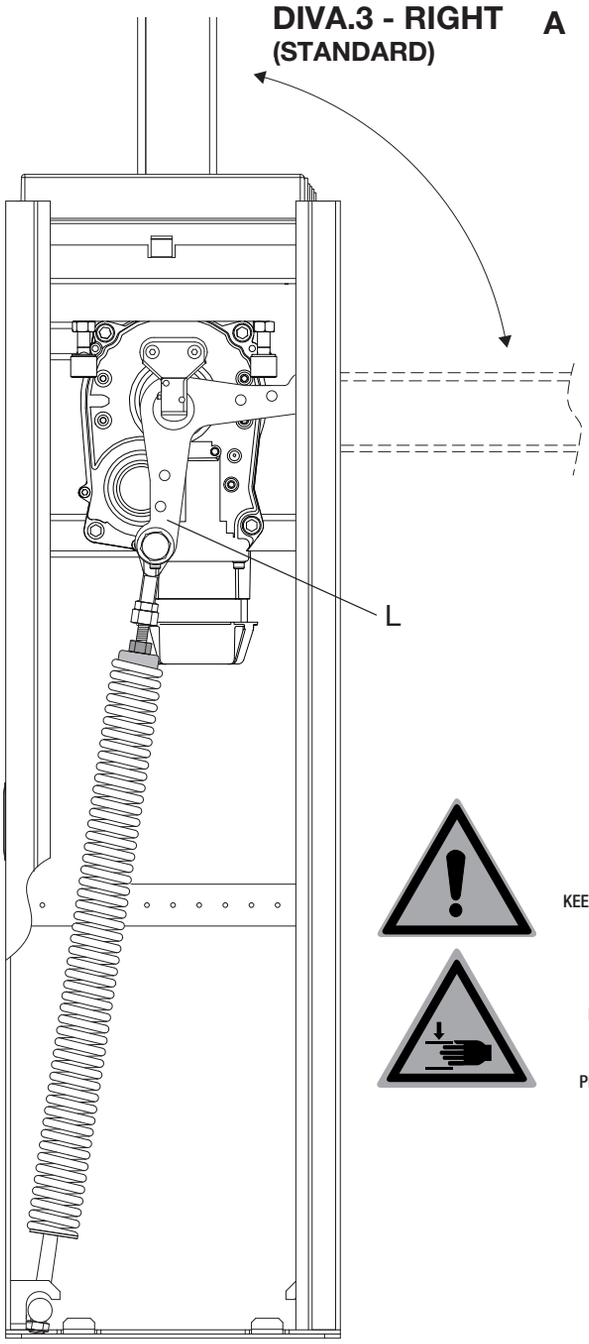


DIVA - LEFT

4

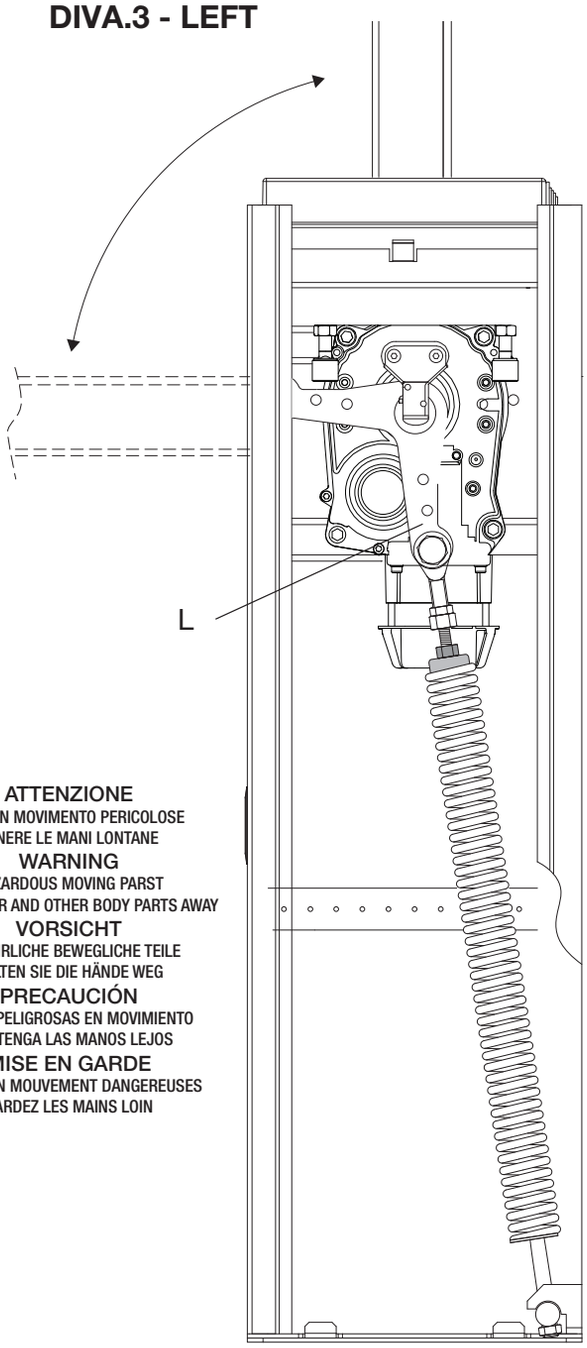
DIVA.3 - RIGHT
(STANDARD)

A



DIVA.3 - LEFT

B



ATTENZIONE
PARTI IN MOVIMENTO PERICOLOSE
TENERE LE MANI LONTANE

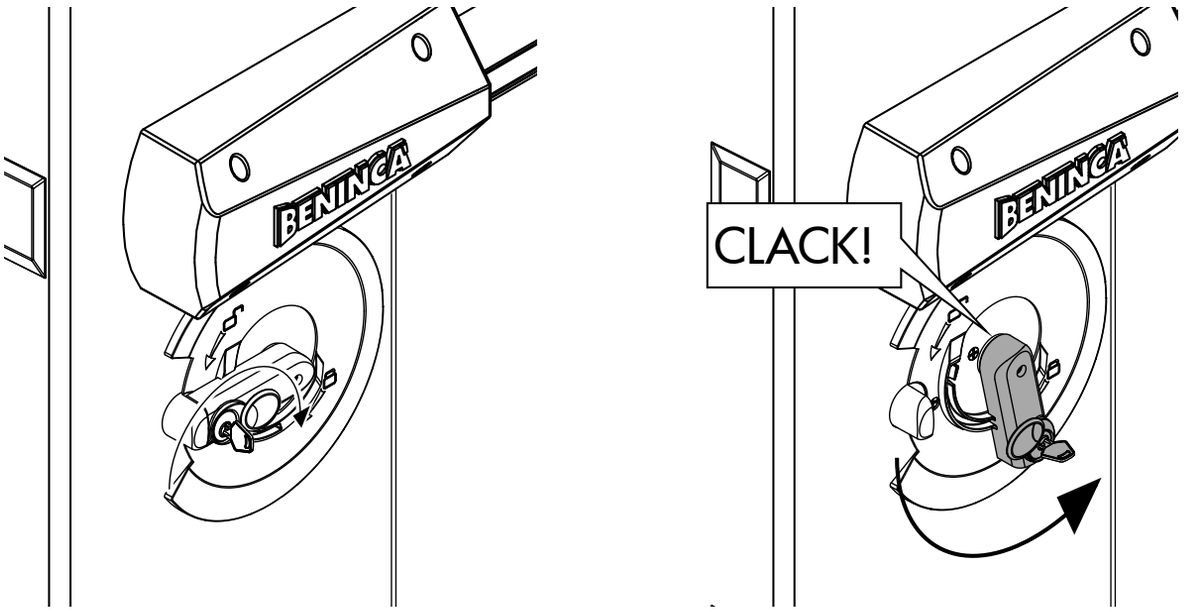
WARNING
HAZARDOUS MOVING PARST
KEEP FINGER AND OTHER BODY PARTS AWAY

VORSICHT
GEFÄHRLICHE BEWEGLICHE TEILE
HALTEN SIE DIE HÄNDE WEG

PRECAUCIÓN
PIEZAS PELIGROSAS EN MOVIMIENTO
MANTENGA LAS MANOS LEJOS

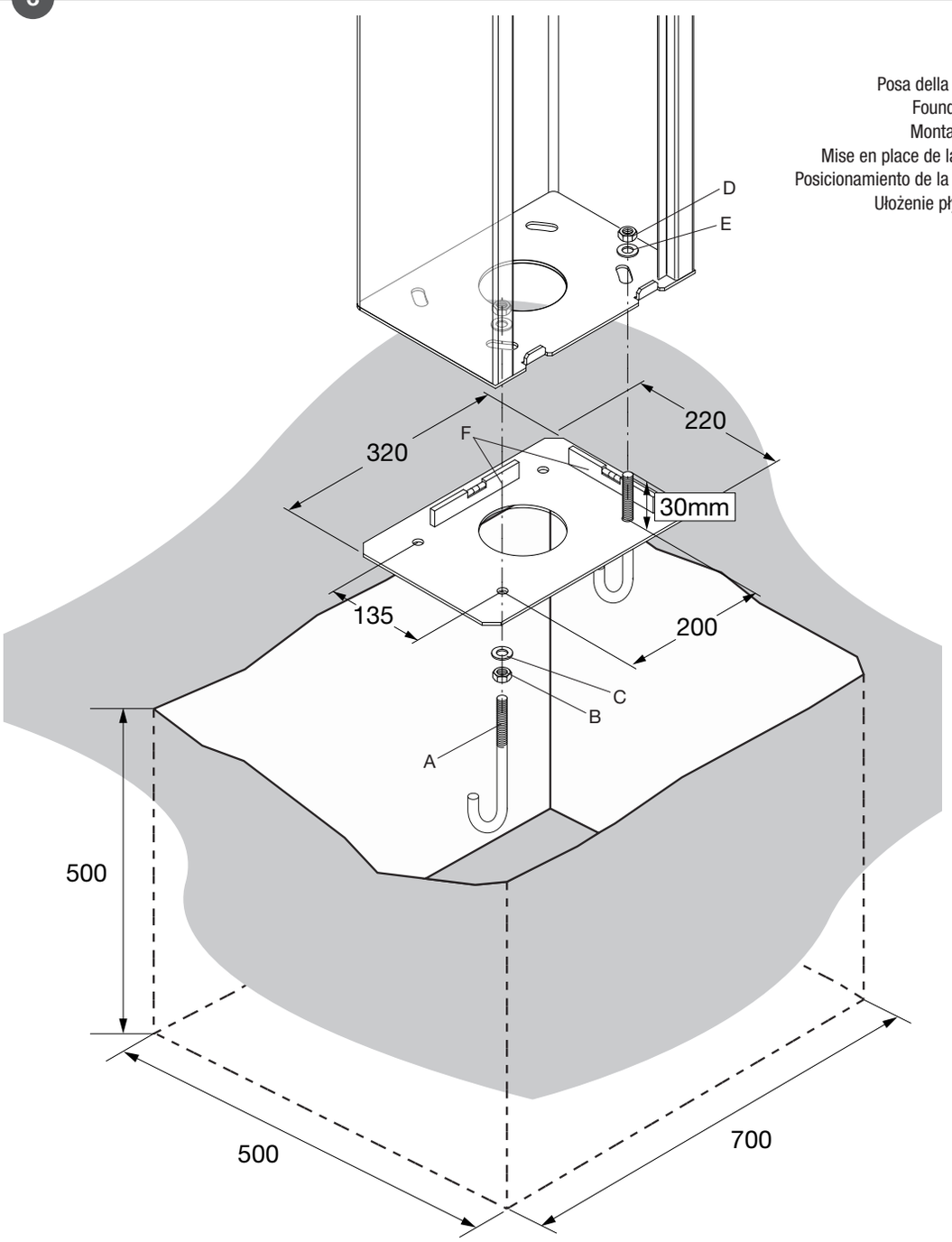
MISE EN GARDE
PIÈCES EN MOUVEMENT DANGEREUSES
GARDEZ LES MAINS LOIN

5



6

Posa della piastra di fondazione VE.PS (opzionale)
Foundation plate positioning VE.PS (optional)
Montage der Fundamentplatte VE.PS (option)
Mise en place de la plaque de fondation VE.PS (optionnel)
Posicionamiento de la placa de alimentación VE.PS (opcional)
Ułożenie płyty fundamentowej VE.PS (opcjonalma)



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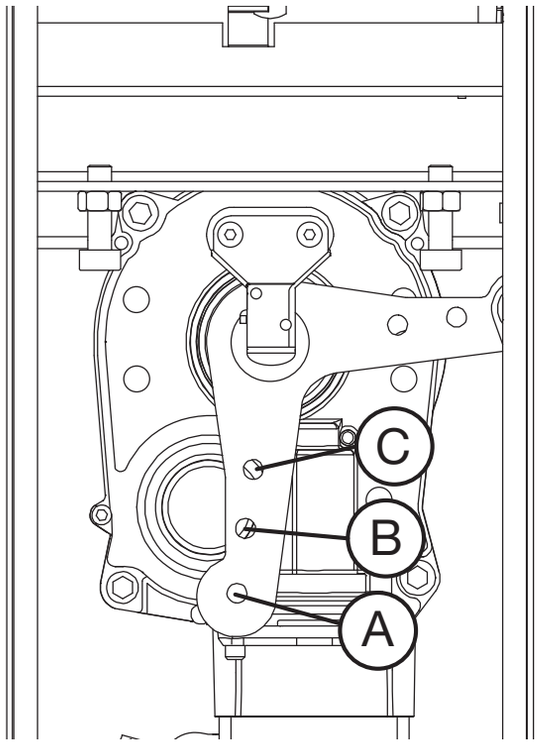

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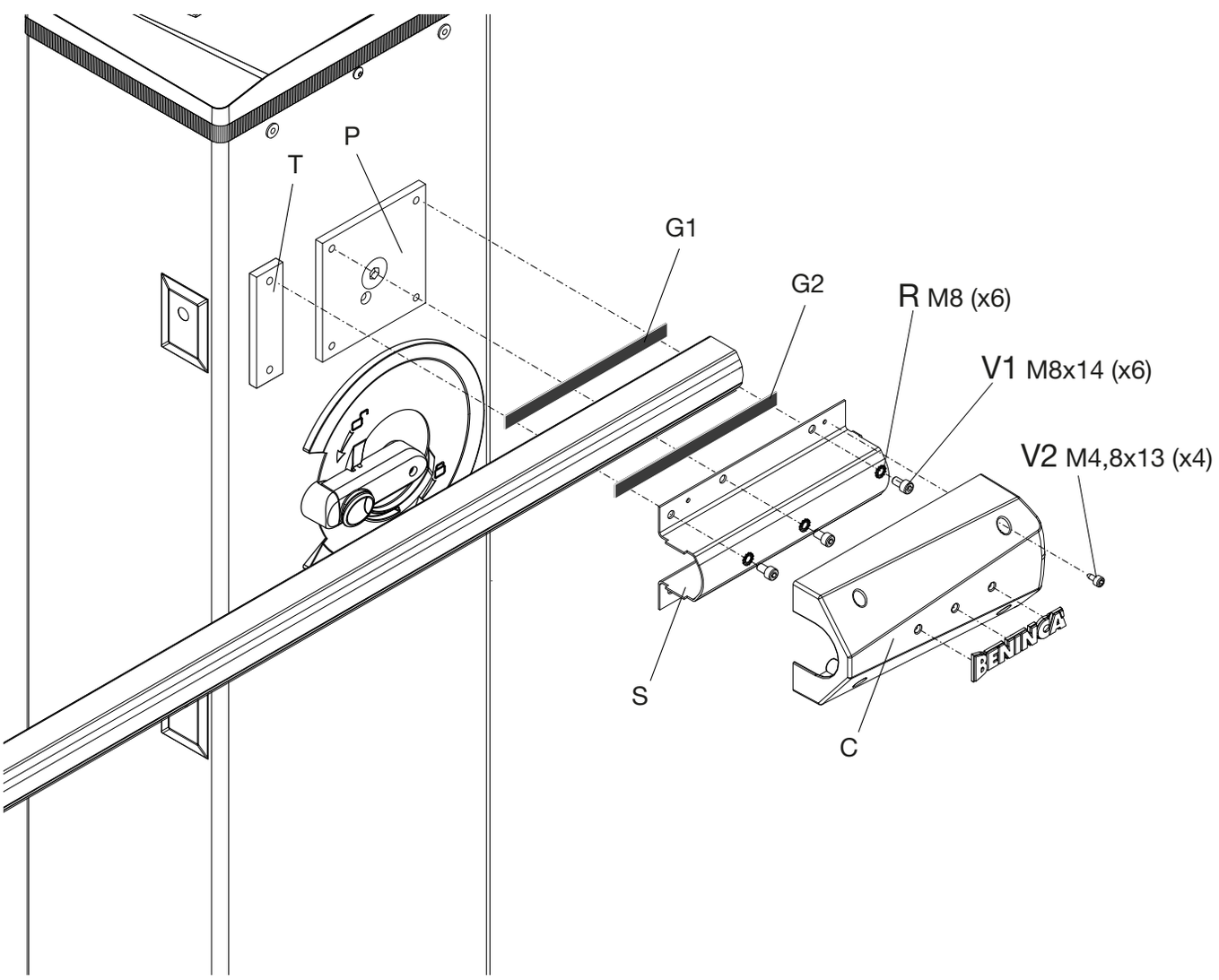

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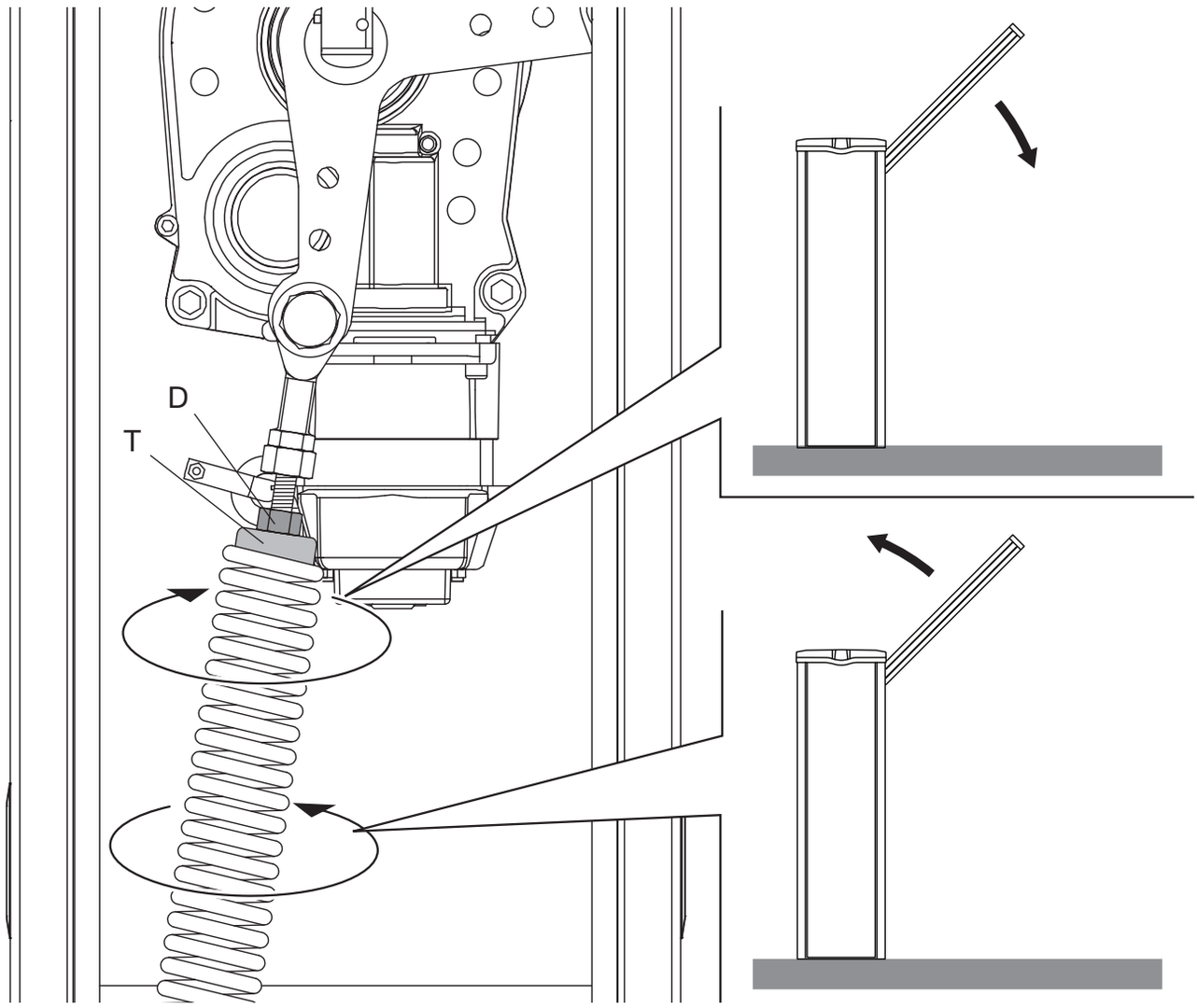
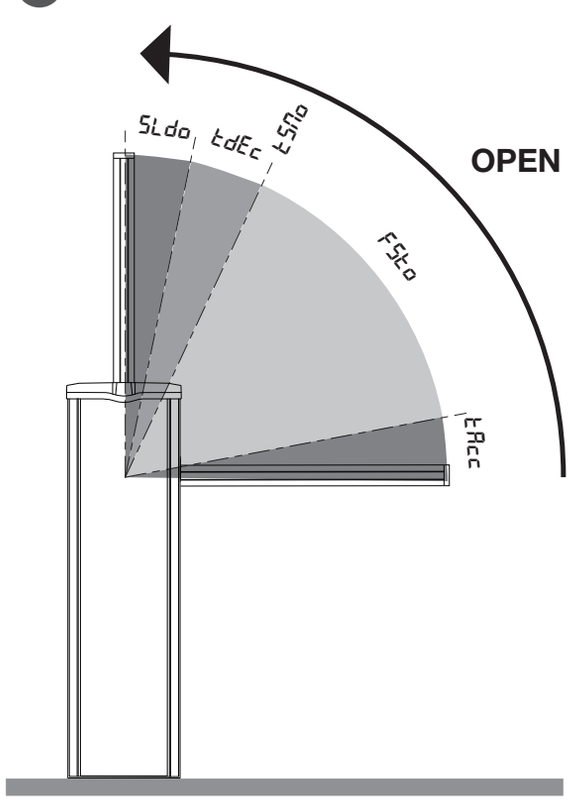
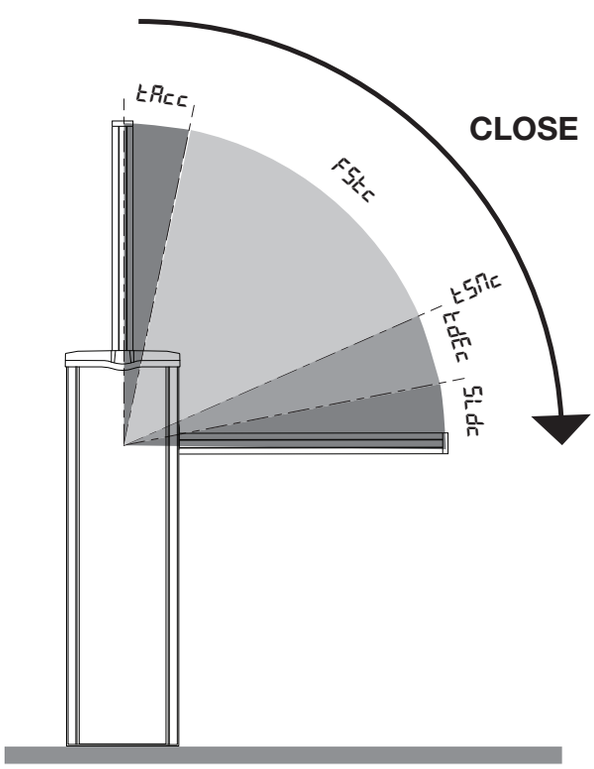

D
T

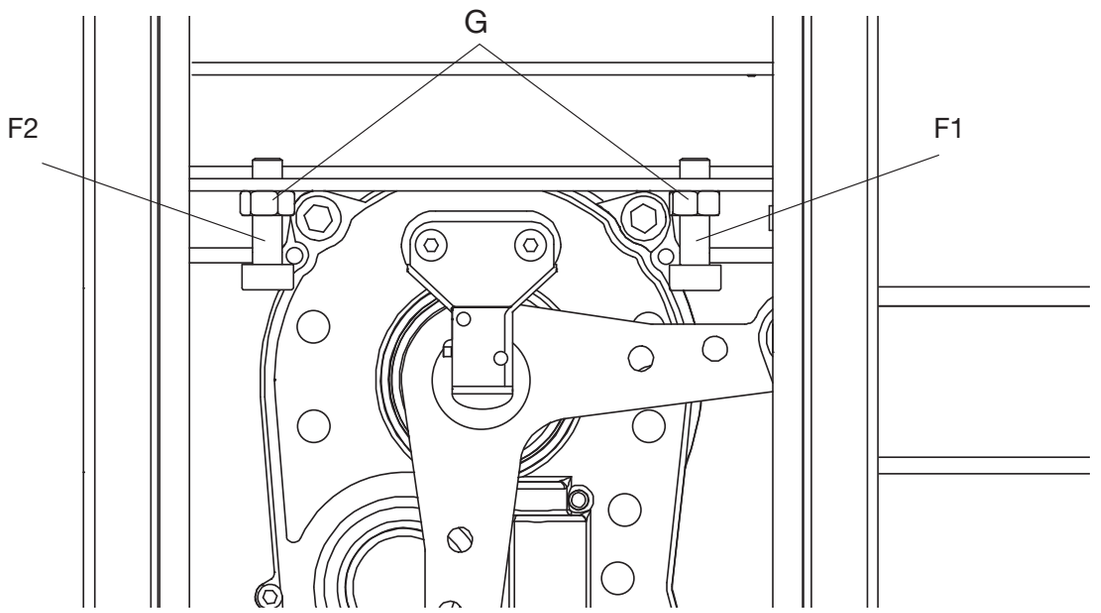
10


SLdo
tdEc
tSMo
FSto
tAcc
OPEN

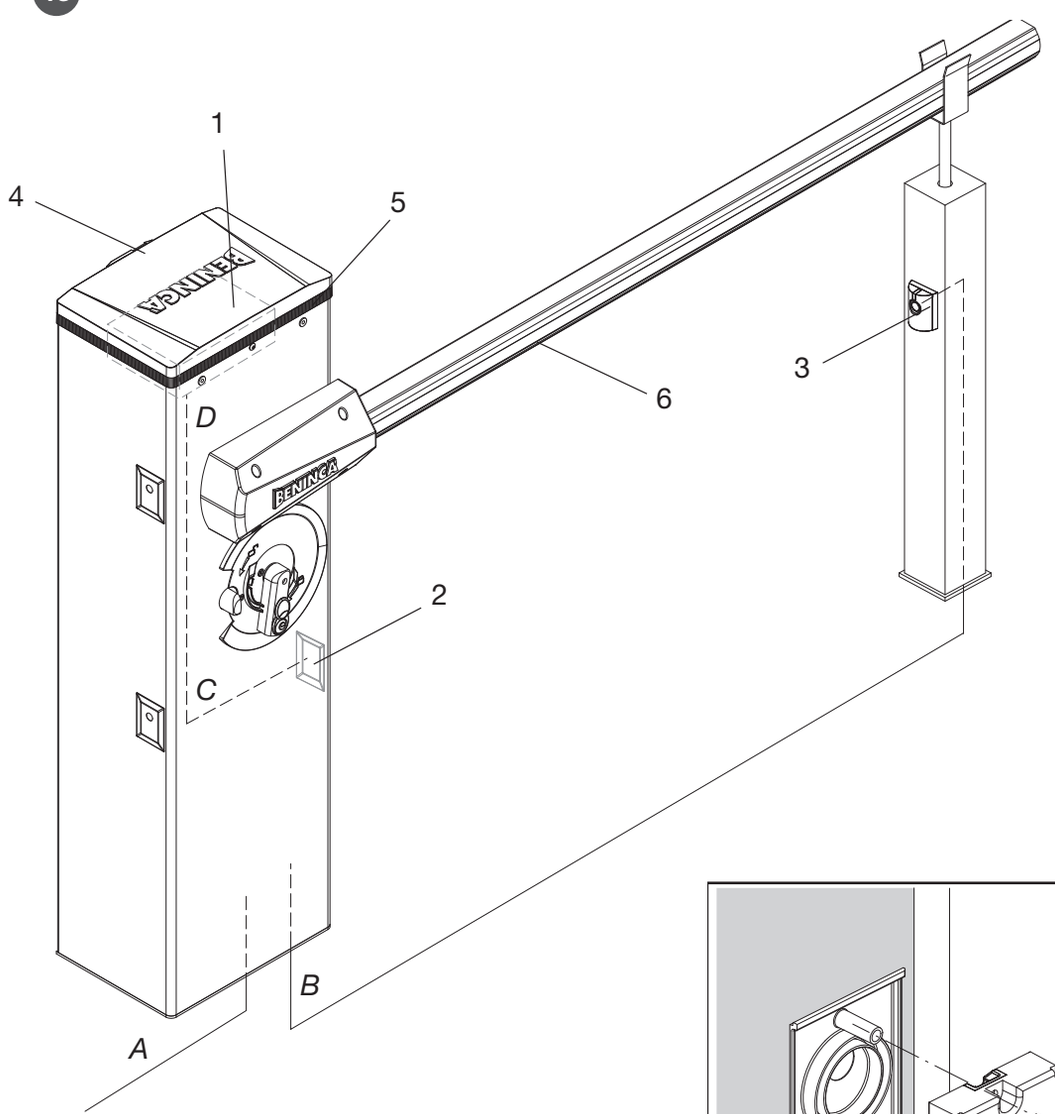
11


tAcc
FStc
tSMc
tdEc
SLdc
CLOSE

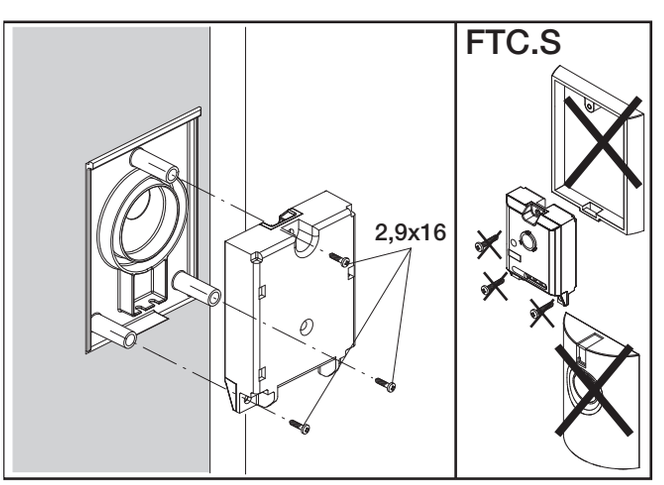
12

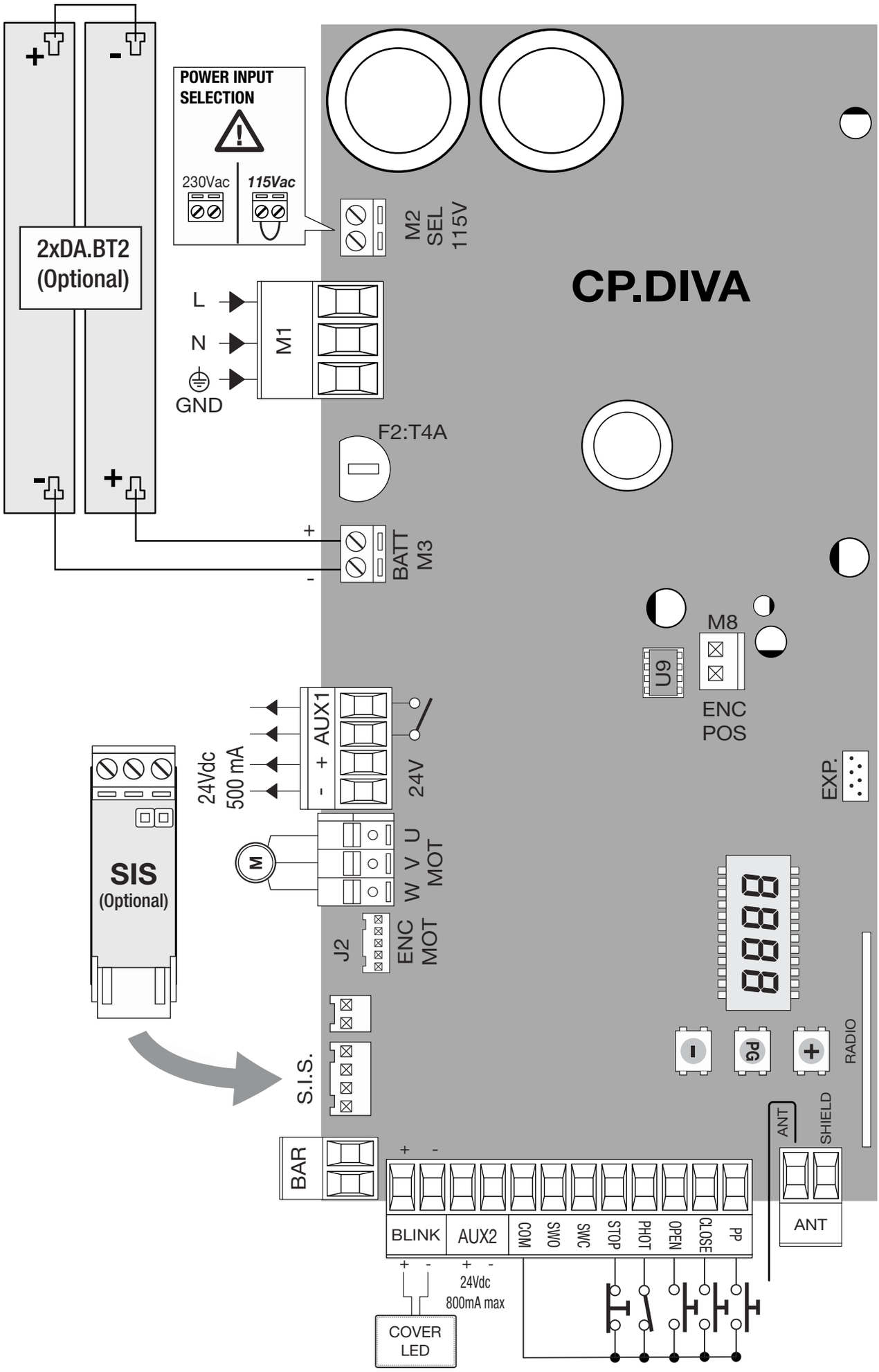


13



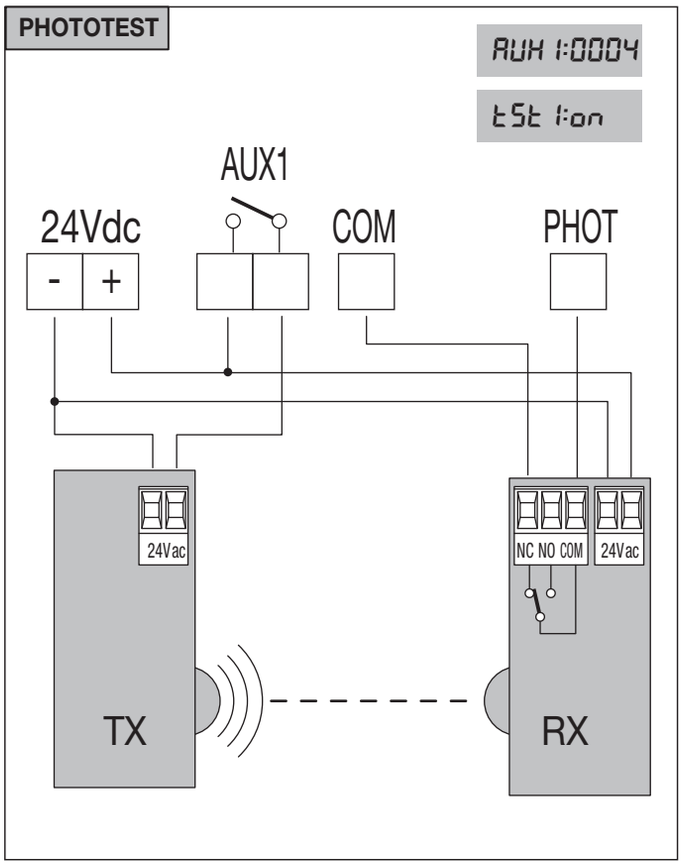
A	Line	3x1,5mm
B	Photo TX	2x0,5mm
C	Photo RX	4x0,5mm



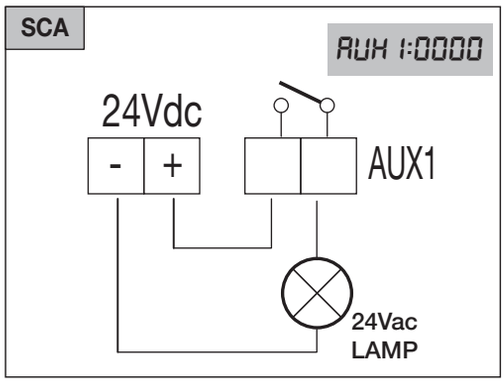

2xDA.BT2
(Optional)
POWER INPUT
SELECTION
230Vac
115Vac
M2
SEL
115V
CP.DIVA
L
N
GND
M1
F2:T4A
BATT
M3
M8
U9
ENC
POS
EXP.
24Vdc
500 mA
AUX1
24V
SIS
(Optional)
M
W V U
MOT
J2
ENC
MOT
S.I.S.
BAR
RADIO
ANT
SHIELD
ANT
BLINK
AUX2
COM
SWO
SWC
STOP
PHOT
OPEN
CLOSE
PP
24Vdc
800mA max
COVER
LED

15

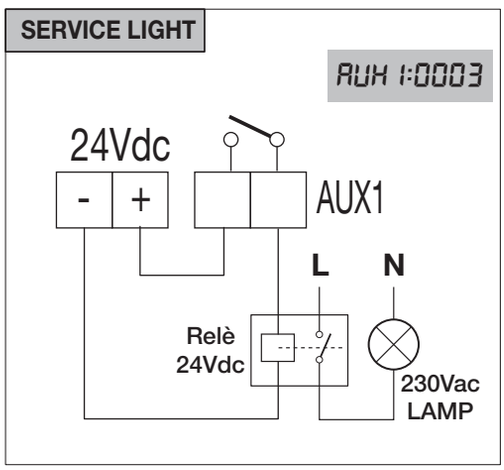
PHOTOTEST



SCA



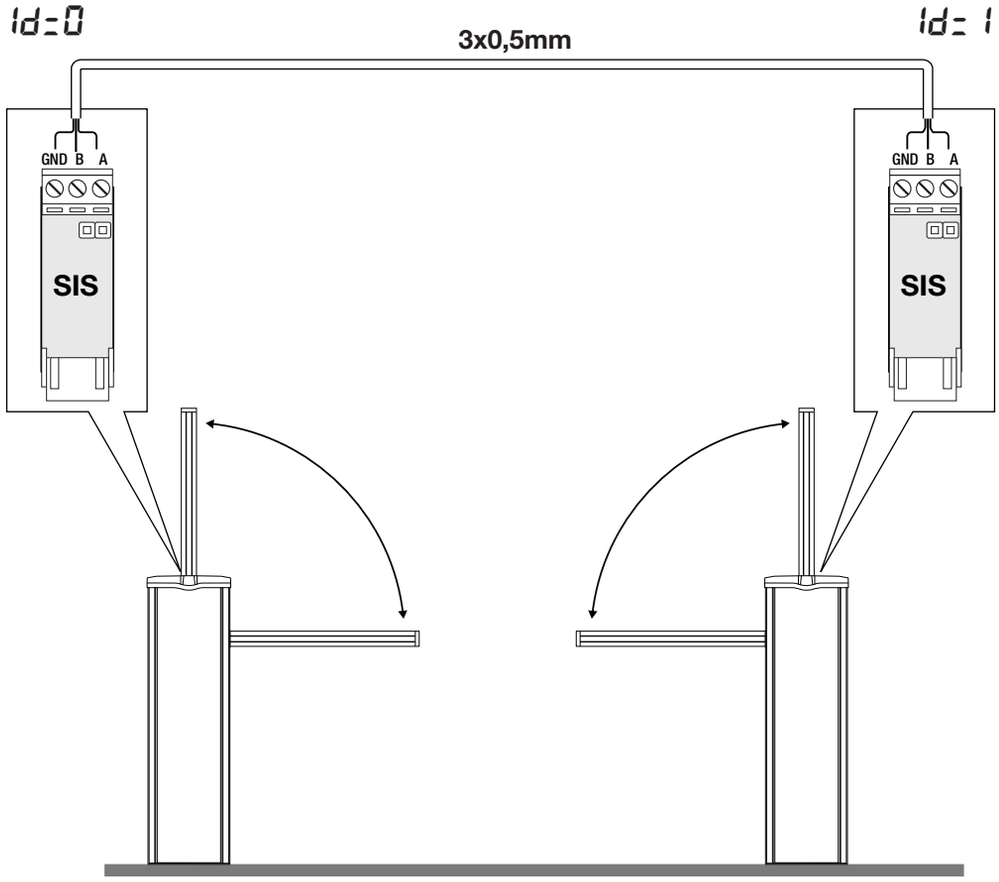
SERVICE LIGHT



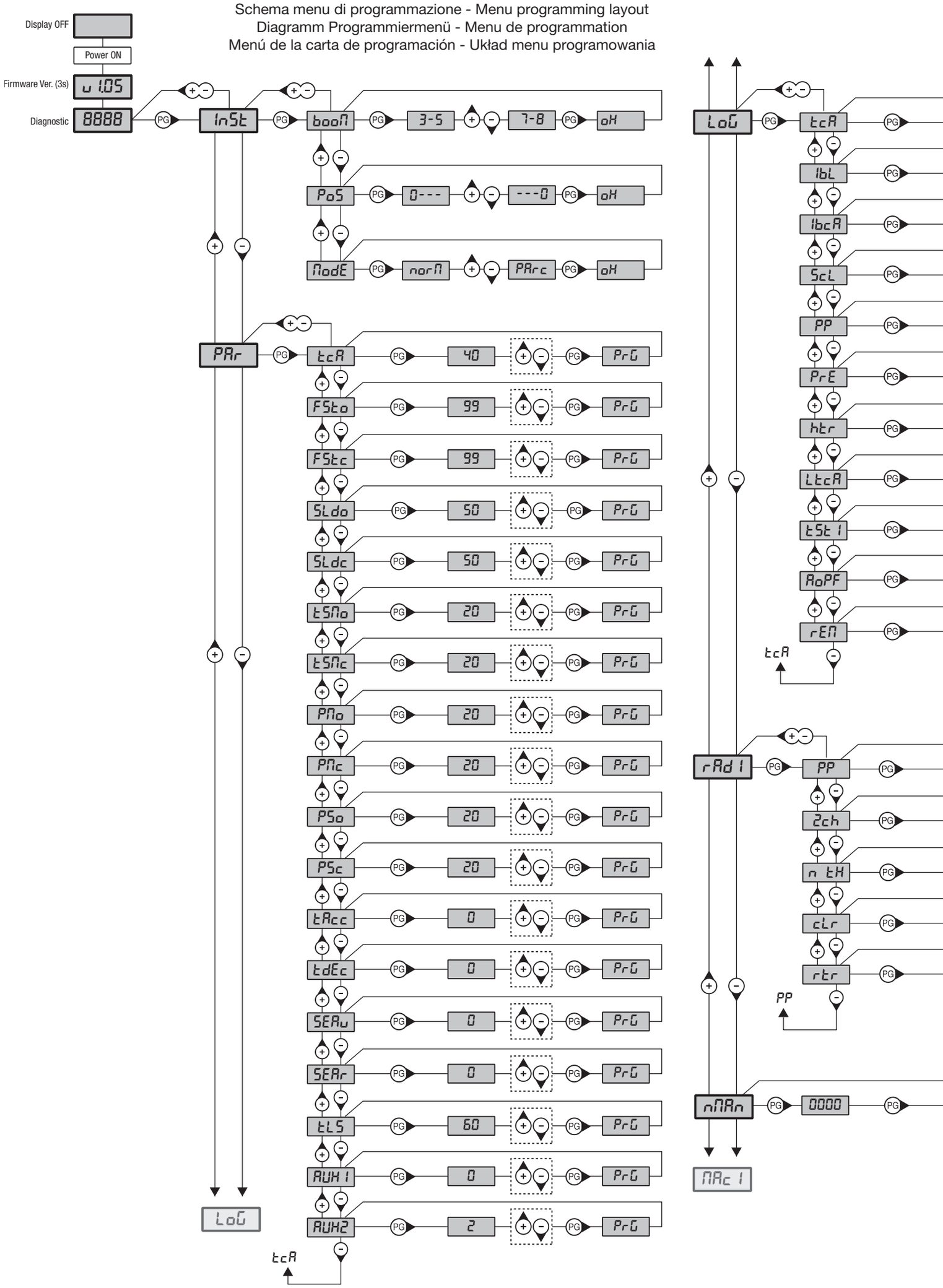
16

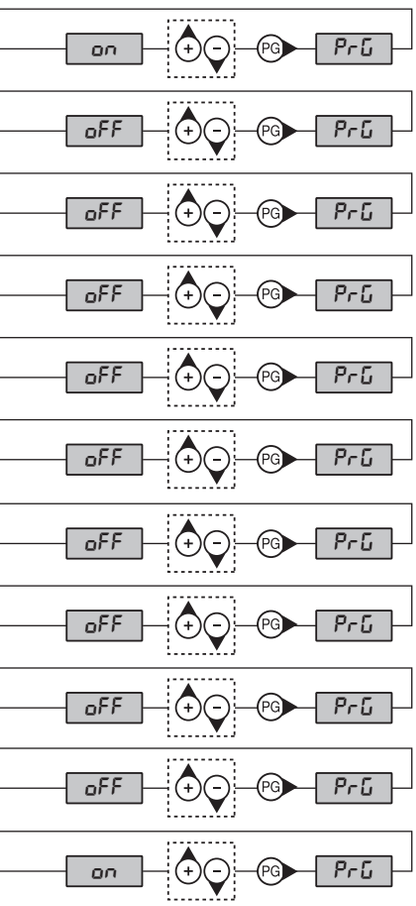
MASTER
Menu bUS
Id=0

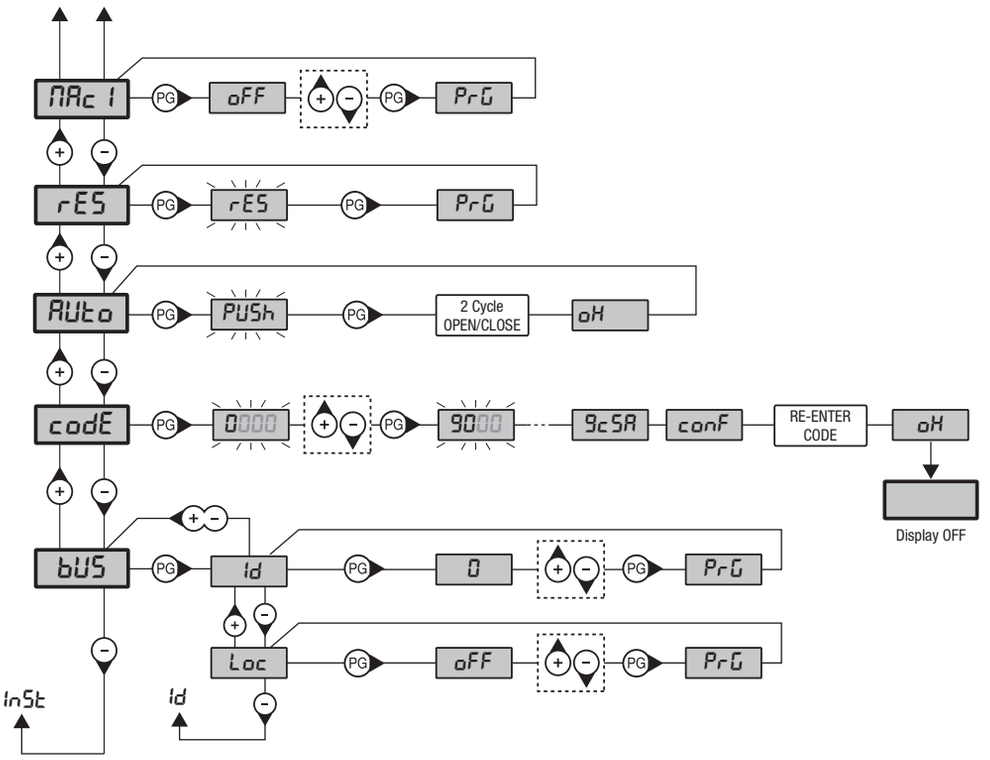
SLAVE
Menu bUS
Id= 1

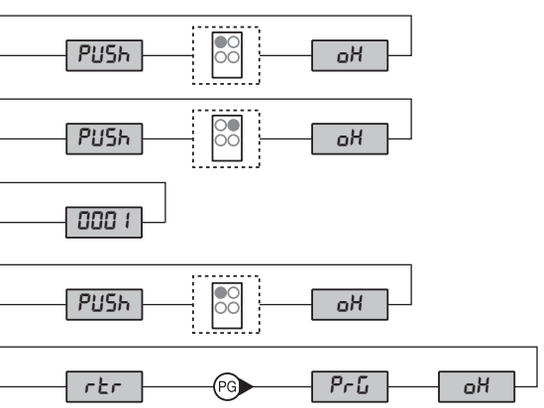


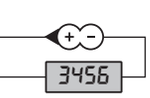
Schema menu di programmazione - Menu programming layout
Diagramm Programmiermenü - Menu de programmation
Menú de la carta de programación - Układ menu programowania

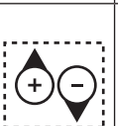
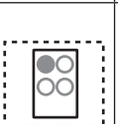










Legenda	
	Premere il tasto (-) / Press key (-) / Die Taste (-) drücken Appuyez sur la touche (-) / Presionar la tecla (-) / Wcisnąć przycisk (-)
	Premere il tasto (+) / Press key (+) / Die Taste (+) drücken Appuyez sur la touche (+) / Presionar la tecla (+) / Wcisnąć przycisk (+)
	Premere il tasto (PG) / Press key (PG) / Die Taste (PG) drücken Appuyez sur la touche (PG) / Presionar la tecla (PG)/ Wcisnąć przycisk (PG)
	Premere simultaneamente (+) e (-) / Press simultaneously keys (+) and (-) Gleichzeitig (+) und (-) drücken / Presser simultanément (+) et (-) Presionar simultáneamente (+) y (-) / Naciskać jednocześnie (+) i (-)
	Selezionare il valore desiderato con i pulsanti (+) e (-) Increase/decrease the value with keys (+) and (-) Mit den Tasten (+) und (-) kann man eingerichtete Werte ändern Régler la valeur désirée avec les touches (+) et (-) Establecer con las teclas (+) y (-) el valor deseado Nastawia przyciskami (+) i (-) obraną wartoś
	Selezionare il pulsante del trasmettitore da associare alla funzione Press the transmitter key, which is to be assigned to function Taste des Sendegeräts drücken, dem diese Funktion zugeteilt werden soll. Appuyer sur la touche du transmetteur qu'e l'on désire affecter à cette fonction. Presionar la tecla del transmisor que se desea asignar a esta función. Wcisnąć przycisk nadajnika, który zamierza się skojarzyć z tą funkcją.

INDEX

ENG

WARNING

GENERAL INFORMATIONS

The product shall not be used for purposes or in ways other than those for which the product is intended for and as described in this manual. Incorrect uses can damage the product and cause injuries and damages.
The company shall not be deemed responsible for the non-compliance with a good manufacture technique of gates as well as for any deformation, which might occur during use. Keep this manual for further use.

INSTALLER GUIDE

This manual has been especially written to be use by qualified fitters. Installation must be carried out by qualified personnel (professional installer, according to EN 12635), in compliance with Good Practice and current code.
Make sure that the structure of the gate is suitable for automation.
The installer must supply all information on the automatic, manual and emergency operation of the automatic system and supply the end user with instructions for use.

GENERAL WARNINGS

Packaging must be kept out of reach of children, as it can be hazardous.
For disposal, packaging must be divided the various types of waste (e.g. carton board, polystyrene) in compliance with regulations in force.
Do not allow children to play with the fixed control devices of the product.
Keep the remote controls out of reach of children.
This product is not to be used by persons (including children) with reduced physical, sensory or mental capacity, or who are unfamiliar with such equipment, unless under the supervision of or following training by persons responsible for their safety.
Apply all safety devices (photocells, safety edges, etc.) required to keep the area free of impact, crushing, dragging and shearing hazard.
Bear in mind the standards and directives in force, Good Practice criteria, intended use, the installation environment, the operating logic of the system and forces generated by the automated system.
Installation must be carried out using safety devices and controls that meet standards EN 12978 and EN 12453.
Only use original accessories and spare parts, use of non-original spare parts will cause the warranty planned to cover the products to become null and void.
All the mechanical and electrical parts composing automation must meet the requirements of the standards in force and outlined by CE marking.

ELECTRICAL SAFETY

An omnipolar switch/section switch with remote contact opening equal to, or higher than 3mm must be provided on the power supply mains.
Make sure that before wiring an adequate* differential switch and an overcurrent protection is provided.
Pursuant to safety regulations in force, some types of installation require that the gate connection be earthed. During installation, maintenance and repair, cut off power supply before accessing to live parts.
Also disconnect buffer batteries, if any are connected.
The electrical installation and the operating logic must comply with the regulations in force. The leads fed with different voltages must be physically separate, or they must be suitably insulated with additional insulation of at least 1 mm.
The leads must be secured with an additional fixture near the terminals.
During installation, maintenance and repair, interrupt the power supply before opening the lid to access the electrical parts
Check all the connections again before switching on the power. The unused N.C. inputs must be bridged.
* 16A Circuit braker

WASTE DISPOSAL

As indicated by the symbol shown, it is forbidden to dispose this product as normal urban waste as some parts might be harmful for environment and human health, if they are disposed of incorrectly.
Therefore, the device should be disposed in special collection platforms or given back to the reseller if a new and similar device is purchased.
An incorrect disposal of the device will result in fines applied to the user, as provided for by regulations in force.

Descriptions and figures in this manual are not binding. While leaving the essential characteristics of the product unchanged, the manufacturer reserves the right to modify the same under the technical, design or commercial point of view without necessarily update this manual.

RAPID INSTALLATION

1. Press the <PG> button, the display will go to the first “INST” Installation menu.

2. Enter the INST menu.

3. Check the BOOM parameter is correct: 3 for DIVA.3.

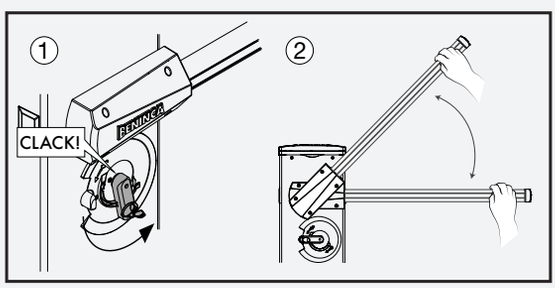
4. Set the position of the barrier in the POS menu, by default it is set as the RIGHT barrier.

If you want to invert the barriers, consult the “RIGHT/LEFT BARRIER ARRANGEMENT paragraph

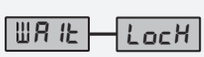
Once the position is configured of the barrier on the POS menu, the control unit automatically enters the AUTOSET menu [6].

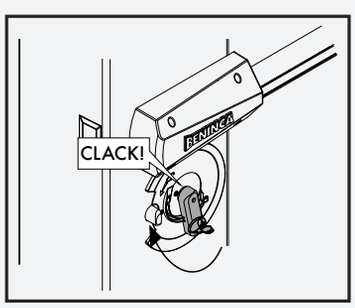
5. Enter the AUTO menu, confirm with PG.

6. The message UNLK is displayed, release the barrier and manually move the shaft to bring it to the opening position, the display shows WAIT.



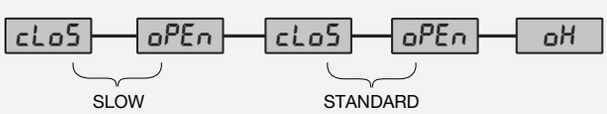
7. After a few seconds, the LOCK message is displayed to relock the barrier.





8. The control unit slowly brings the shaft to the closure position.

9. Two complete manoeuvres are automatically carried out of opening and closure, at reduced and normal speed, at the end of which the autoset procedure has terminated.



10. In the PAR and LOG menus, select the operating parameters and logic required based on the type of installation.

IMPORTANT: *After each variation in the FSTS, FSTC, SLDO, SLDC, TSMO, TSMC parameters, the barrier executes a complete opening and closure manoeuvre to acquire the new current and torque values, the display will show the “PRG” message*.

Repeat the autoset procedure after each maintenance intervention.

1) DESCRIPTION

Road barrier for passageways up to 3 m with an incorporated CP.DIVA control unit and rapid external lock for manual movement.
It is equipped with a 24V brushless motor that guarantees the best performance in terms of torque and opening speed and a longer life of the motor, compared to the barriers with traditional motor.
It is possible the synchronization of 2 motors for controlling 2 opposed barriers, to do this it is necessary to use the synchronization control unit SIS (optional). Wire each other the two control units as shown in figure 16 and configure them as described in the paragraph “Synchronization of two opposed barriers”.
In addition to this it is possible the connection of two backup batteries by 12V 2,1Ah (DA.BT2), as shown in figure 14.
The barrier can work also in absolute absence of power supply by means of the accessory KSUN (sun system composed by solar panel, backup batteries and control unit).
Every utilization different from the one described in this instruction manual is not allowed and voids the manufacturer warranty.
We would like to remind you that if you register on the site www.beninca.com you will have access to the technical documentation updated for all the Beninca products and accessories and the guide for compiling the technical file and documents required under Annex V of the Machinery Directive, mandatory under the regulations in force.
IMPORTANT: whether the barrier is used even for pedestrian passage it is compulsory to carry out the force test as indicated by the European standard EN12445 (see the limitations as per the standard EN12453).
In case the passage is for vehicular use only, it is necessary to foresee appropriate signs of pedestrian prohibition.

2) DIMENSIONS

In figure 1 are shown the main dimensions of the DIVA.3 barrier.
Overall dimensions are expressed in mm. The road barrier length ranges from 1,6m minimum to 3,0m maximum.
As about 25cm are required to fix a road barrier, a useful opening of passage, ranging from 1,35m to 2.75, will be available, as shown in Fig.1
Optional accessories can be fitted onto be barrier (photocells, selector, etc.). For assembly, apply the special covers supplied (Rif. A).

TECHNICAL DATA	DIVA.3	Notes
Power supply	**115 or 230 Vac 50/60Hz**	* *Due to the particular characteristics of the BRUSHLESS motors, the torque values indicated cannot be compared to those of standard motors*
Motor power supply	**24Vdc BRUSHLESS 3PH**	** *The speed is indicated of the not slowed phase, the speed of the slowed phase and therefore the total speed of the manoeuvre depends on the configuration of the control unit parameters.*
Maximum absorption from mains	**1.5 A (230Vac) - 3A (115Vac)**	*** *The MCBF values should exclusively be considered for a barrier correctly installed and subject to the maintenance plan indicated by the manufacturer.*
Absorption in stand-by	**40 mA (230Vac) - 50 mA (115 Vac)**	
Torque	**110 Nm***	
Opening time	**0,9s****	
Work intermittence	**Continuous Use at 40°C**	
Level of protection	**IP 44 (control unit IP54)**	
Working temp.	**-20°C / +50°C**	
Noise	**<70 dB**	
Lubrication	**OIL**	
Weight	**55kg**	
MCBF	**5,000,000 cycles*****	

3) ARC TRANSMITTERS

IMPORTANT, PLEASE READ CAREFULLY:

The radio receiver in this product is exclusively compatible with ARC (Advanced Rolling Code) transmitters which, thanks to the 128-bit coding, guarantee higher anti-copying security.

4) INSTALLATION AND CONNECTION OF THE LED COVER

Due to transport needs, the LED cover is inserted inside the barrier column.
To install the cover, proceed as follows:
1 Remove the locking strap that secures the front door, then remove the LED cover
2 Position the two fastening guides in the specific compartment, as highlighted in Fig. 2 -A and fasten the 4 self-threading screws provided.
3 Connect the BLACK-RED wires to the BLINK terminal (BLACK+/ RED -) as indicated in Fig.. 2-B, using the cable gland sheath planned on the control unit. The colour can be changed of the LED light by connecting the BLUE or GREEN wire instead of the RED one.
5 Close the cover (Fig.2-C), the lock for the customised key is protected by a specific sliding closure (Fig.2-D).

5) LEFT-RIGHT BARRIER (FIG. 3/4)

The DIVA.3 normally is provided as right barrier (Fig. 3 A : DIVA.3 RIGHT)
Conventionally it is considered right a barrier which seen from the side of the cabinet door, closes the passage by lowering the boom towards right.
However it is possible to reverse the barrier movement and turn a right barrier into a left one by means of few easy operations (Fig. 3 B : DIVA.3 LEFT).
If the opening direction reversion is required, proceed as follows. If it is not necessary, go to the next section:
- entirely unload the spring by loosening it and unhooking it from the “L” anchoring lever (fig. 4)
- unlock the geared motor (see “Manual Operation”) insofar as to render the L hooking lever idle.
- according to the length of the road barrier arm and accessories used, choose the correct hooking position, as indicated in paragraph “Positioning of the spring and accessories”.
- hook the spring in the new position. Fig. 4 shows the differences between a right-hand road barrier and a left-hand one.

ATTENTION: AN INVERSION OF THE OPENING DIRECTION IMPLIES THE MODIFICATION OF THE POS MENU, AS DESCRIBED IN THE PARAGRAPH “PROGRAMMING OF THE CONTROL UNIT”.

6) EMERGENCY MANUAL OPERATION

Should a power failure occur or in the event of faults in the system, the beam can be released and moved by hand (Fig.5):
- Introduce the customized key in the release lever and turn it clockwise.
- Turn the release lever anti-clockwise until the beam is released and it can be opened and closed by hand.
- To reset the automatic operation, turn the lever clockwise until the beam is released. Reset the initial position.

7) INSTALLATION OF THE OPTIONAL FOUNDATION PLATE VE.PS

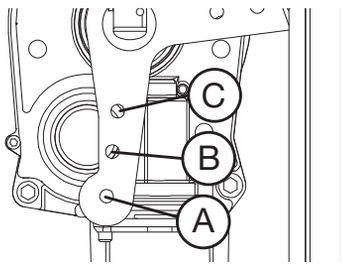
After preparing the cable laying (mains power supply, accessories, etc.), place the foundation plate keeping to dimensions indicated in Fig.6.
Brackets to be cemented are supplied with the system (ref. A). The brackets must be fitted to the foundation plate by means of nuts (B) and corresponding washers C.
Check that the foundation plate is perfectly flat (ref. F), then fix the road barrier by means of nuts D and corresponding washers E.

Notes: the special shape of the slots on the bottom of the barrier cabinet, allow to adjust finely the position of the barrier.
It is suggested to leave 30 mm of threaded bar out from the foundation plate, a bigger length could generate an interference with the spring, a smaller length does not ensure the proper fixing of the barrier.

8) SPRING POSITIONING

Based on the length of the shaft, before proceeding with spring tensioning, the correct coupling point must be chosen of the spring on the lever.
The correct coupling point, (“A”, “B” and “C”), must be chosen in table 1 based on the length of the shaft.
The presence of a passive edge or the light diffuser does not influence the coupling point.

TAB.1	DIVA.3		
Shaft length	from 1,6m to 2,0m	from 2,0m to 2,5m	from 2,5m to 3,0m
Coupling point	**C**	**B**	**A**



9) SHAFT FASTENING

Possible accessories for the shaft should be installed before fastening the shaft, consult the specific instructions.
Then, fasten the shaft to plate P using the shaft S and the 6 screws V1 with relevant washers R, also using the small plate T (Fig.8).
Apply the two gaskets G1 and G2
Apply the plastic cover casing C, using the 4 V2 screws.

10) BALANCING

For a good functioning of the barrier it is necessary that the boom is balanced by means of the balancing spring.
To check the correct balancing, proceed as follows (see Fig.9).

- Check that the spring is correctly hooked to the lever (see table 1).
- Mechanically release the road barrier through the release key.
- The road beam, correctly balanced, should remain still in any position:
  - if it tends to open, reduce the spring tension
  - if it tends to close, increase the spring tension
  The spring tension can be adjusted by tightening (anti-clockwise rotation) or loosening (clockwise rotation) the spring by hand. Once the spring tension is adjusted, lock it by moving the nut “D” in contact with cap T.

11) CONFIGURATION PARAMETERS OF SHAFT MOVEMENT

The CP.DIVA control unit allows complete control of shaft movement.
During the opening phase (Fig.10):
On start-up of the opening manoeuvre, the shaft is brought to the standard manoeuvre speed, set by the parameter FSTO. The acceleration time is adjusted by the TACC parameter.
The barrier opens at the standard speed when the point set in the TSMO parameter is met, therefore the deceleration phase begins as set in the TDEC parameter that brings the shaft to execute the slowing phase set by the SLDO parameter. At the end of the SLDO phase, the barrier slows in opening.
During the closure phase (Fig.11):
On start-up of the closure manoeuvre, the shaft is brought to the standard manoeuvre speed, set by the parameter FSTC. The acceleration time is adjusted by the TACC parameter.
The barrier closes at the standard speed when the point set in the TSMC parameter is met, therefore the deceleration phase begins as set in the TDEC parameter that brings the shaft to execute the slowing phase set by the SLDC parameter. At the end of the SLDC phase, the barrier slows in closure.

Note: for graphic representation needs, the TACC and TDEC phases have an important role in the manoeuvre, especially with low values, the TACC and TDEC phases are not noticeable.

12) HOW TO ADJUST THE MECHANICAL STOPPERS

After the motor stop, the inertial movement of the beam is blocked thanks to adjustable mechanical stoppers. See Fig.12 as a reference:

- Release the barrier so that the boom can be operated manually
- Loosen the lock nut G
- Tighten/loosen the mechanical stop until the desired activation position is reached
- Tighten the lock nut.

13) WIRE DIAGRAM

This figure 13 shows an installation example of road barrier with its main accessories.
KEY
1 Control unit CP.DIVA
2 Receiver photocell FTC.S
3 Transmitter photocell FTC.S
4 Emergency batteries that can be installed inside the container of the control unit DA.BT2
5 LED LIGHT on cover
6 LED LIGHT on rod

To install and connect the various accessories, see related instructions.

14) CP.DIVA CONTROL UNIT

14.1) WIRE DIAGRAM

The following table shows the electrical connections in Fig. 14:

Terminals	Function	Description
115/230Vac	Power Supply Selection	Terminal for mains power supply selection. Bridge for 115Vac power supply Do not bridge for 230Vac power supply
L/N/GND	Mains power supply	Mains power supply input, before powering check terminal board M2
BATT +/-	Emergency battery	Input for emergency battery 24V. Use two batteries DA.BT2.
AUX 1	AUX 1 auxiliary output	Output with N.O. output (clean contact free of voltage) configurable with AUX 1 operating logic
24V	24 Vdc	Power supply output accessories 24Vdc/500 mA max.
U-V-W	Motor 24V	Connection to 24V Brushless motor
J2	Motor Encoder	Quick coupling Motor Encoder connection.
S.I.S.	Synchronism	Quick coupling for SIS card for opposing barrier synchronisation
BAR	Not Used	Not Used
BLINK	LED LIGHTS	24Vdc output to connect to the LED light of the LED Cover (Black+/Red-). Configurable via MBLK logic
AUX 2	AUX 2 auxiliary output	Output with N.O. output (24Vdc 800mA max) configurable by AUX2 operating logic
COM	Common Inputs	Common for the limit switch and all the control inputs.
SWO	Not Used	Not Used
SWC	Not Used	Not Used
STOP	STOP	STOP button input (N.C. contact)
PHOT	Photocell	Photocell input enabled in opening and closure (contact N.C.).
OPEN	Opens	Open button input (N.O. contact), you can connect a timer for time slot openings.
CLOSE	Closes	Close button input (N.O. contact). .
P.P.	Step-by-Step	Step-by-Step button input (N.O. contact) .
ANT-SHIELD	Antenna	Integrated radio receiver card antenna connection (ANT-signal/SHIELD-screen). If the external receiver antenna is used, remove the pre-wired cable in the ANT terminal board.
M8	Position Encoder	Position Encoder Connection.
EXP	Expansion Connector	Quick coupling for connection of the following accessories: DIVA.LED, control card of the LED lights of the cover and the shaft. X.BE, connection board to the KNX network PRO.UP: connection board

14.2) PROGRAMMING

The programming of the various functions of the control unit is carried out using the LCD display on the control unit and setting the desired values in the programming menus described below.
The parameters menu allows you to assign a numerical value to a function, in the same way as a regulating trimmer.
The logic menu allows you to activate or deactivate a function, in the same way as setting a dip-switch.

14.2.1) TO ACCESS PROGRAMMING

1 -Press the <PG> button to enter the first Installation menu “INST”.
2 -Choose with <+> or <-> button the menu you want to select (see menu at page 10-11)
3 - Press the button <PG>, the display shows the first function available on the menu.
4 - With the <+> or <-> button, select the function you want.
5 - Press the button <PG>, the display shows the value currently set for the function selected.
6 - With the <+> or <-> button, select the value you intend to assign to the function.
7 - Press the button <PG>, the display shows the signal “PRG” which indicates that programming has been completed.

14.2.2) PROGRAMMING NOTES

Simultaneously pressing <+> and <-> from inside a function menu allows you to return to the previous menu without making any changes. Hold down the <+> key or the <-> key to accelerate the increase/decrease of the values.
Hold down the <+> key or the <-> key to accelerate the increase/decrease of the values.After waiting 120s the control unit quits programming mode and switches off the display. When the board is switched on, the software version is displayed for around 5 sec
The pre-set logic functions and parameters are made taking account of a typical installation.

14.3) PARAMETERS, LOGICS AND SPECIAL FUNCTIONS

The following tables describe the functions available on the control unit

EN

14.3.1) INSTALLATION (InSt)			
MENU	**FUNCTION**	**MIN-MAX-(Default)**	**MEMO**
boon	Select the length of the boom installed on the barrier. Value expressed in meter from 3m (DIVA.3) or from 5m (DIVA.5) According to the selected boom length, the optimal value of parameters: FST0/FTSC/SLDO/SLDC/TSMO/TSMC//TACC/TDEC will be set.	3 -5 (3)	
PoS	Set the closing direction of the barrier (see fig. 3) The symbol 0--- indicates right barrier (R/RIGHT) DEFAULT The symbol ---0 indicates left barrier (L/LEFT) **Verify the opening direction of the boom and in case reverse it. Every change of this function automatically implies the starting of a new AUTOSET procedure.**	0--- = RIGHT ---0 = LEFT (RIGHT)	
nodE	Select the use mode of the barrier. norn: Standard operating mode, for barriers used in a residential/industrial environment and with normal traffic. PArc: Park operating mode, for barriers used in parking systems. In this mode, to promote transit of a high number of vehicles, the control unit automatically sets a specific configuration which includes: 1) Rapid closure enabled (SCL:ON) with time reduced from 3 to 0 seconds. 2) Automatic closure enabled (TCA:ON) which with rapid closure enabled causes, during the opening phase, immediate closure of the barrier as soon as the PHOT input is free. 3) During the closure phase, PHOT entrance activation stops the barrier, as soon as the PHOT input is free again, the barrier starts the closure manoeuvre.	Norm - Parc (Norm)	

14.3.2) PARAMETERS (PAr)			
MENU	**FUNCTION**	**MIN-MAX-(Default)**	**MEMO**
tcA	Automatic closing time. Enabled only with logic “TCA”=ON. At the end of the set time, the control unit commands a closing manoeuvre .	1-240-(20s)	
FSt0	It adjusts the barrier opening speed (standard speed, before the slowing phase).	30-99-(99)	
FStc	It adjusts the barrier closure speed (standard speed, before the slowing phase).	30-99-(99)	
SLdo	Adjusts the slowdown speed of the barrier during the opening phase* (Fig.10) .	10-30-(15)	
SLdc	Adjusts the slowdown speed of the barrier during the closing phase* (Fig.11)	10-30-(15)	
tSMo	Sets the starting point of the slowdown during the opening phase (Fig.10). The value is expressed in percentage on the entire stroke.	20-99-(25)	
tSMc	Sets the starting point of the slowdown during the closing phase (Fig.11). The value is expressed in percentage on the entire stroke.	20-99-(25)	
PMo	Adjusts the motor torque applied to the barrier during the opening phase (Fig.10 - FSTO).*	1-99-(10)	
PMc	Adjusts the motor torque applied to the barrier during the closing phase (Fig.11 - FSTC).*	1-99-(10)	
PSo	Adjusts the motor torque applied to the barrier during the slowdown in opening phase* (Fig.10 - SLDO).	1-99-(10)	
PSc	Adjusts the motor torque applied to the barrier during the slowdown in closing phase* (Fig.11 - SLDC). .	1-99-(10)	
tAcc	It adjusts the time the barrier takes to go from stop status (in opening or closure) to the speed set by the FSTC/FSTO parameters. Value expressed in tenths of a second.	3-50 (3)	
tdEc	It adjusts the time the barrier takes to go from the speed set by the FSTC/FSTO parameters (in opening or closure) to the speed of the slowing phase SLDO/SLDC. Value expressed in tenths of a second.	3-30 (3)	
SEAU	Adjusts the intervention threshold of the anti crushing device (Encoder) during the normal speed*. 0:Off -1: minimum sensitivity - 99: maximum sensitivity	0-99-(0%)	
SEAr	Adjusts the intervention threshold of the anti crushing device (Encoder) during the slowdown speed*. 0:Off -1: minimum sensitivity - 99: maximum sensitivity	0-99-(0%)	
tLS	Activation time of the courtesy light contact. Value expressed in seconds. At the beginning of each manoeuvre the contact latches for the set time. See the description of AUX1 parameter.	1-240 (60)	

LbAr	It selects the flashing mode of the barrier lights (output 24Vdc AUX2 or N.O. contact of the output AUX 1 configured with logic 2) . 0: ROD CLOSED: 1sec. ON / 1se.c OFF; ROD IN OPENING PHASE: 0,5sec. ON / 0,5sec. OFF; ROD OPEN: 1 sec. ON / 1 sec. OFF; ROD IN CLOSING PHASE: 0,5 sec. ON / 0,5 sec. OFF 1: ROD CLOSED: OFF; ROD IN OPENING PHASE: ON; ROD OPEN: ON; ROD IN CLOSING PHASE: ON 2: ROD CLOSED: ON; ROD IN OPENING PHASE: 0,5sec. ON / 0,5sec OFF; ROD OPEN: 1 sec. ON / 1 sec. OFF; ROD IN CLOSING PHASE: 0,5 sec. ON / 0,5 sec. OFF 3: ROD CLOSED: ON; ROD IN OPENING PHASE: 0,5sec. ON / 0,5sec. OFF; ROD OPEN: ON; ROD IN CLOSING PHASE: 0,5 sec. ON / 0,5 sec. OFF	0-3-(0)	
AUX 1	Selects the functioning mode of the auxiliary output 1 (N.O. clean contact) 0: Open barrier light, close contact when the barrier is open, open contact when the barrier is close, intermittent during the maneuver (fig. 15, SCA) 1: Second radio cannel of the built in receiver 2: Boom light, for controlling the LED light installed on the BOOM (DIVA3.AL), see also the parameter LBAR. 3: Courtesy light, the contact remains close according to the parameter TLS (fig.15 SERVICE LIGHT) 4: Photocells test, see wiring diagram in Fig.15 (PHOTOTEST) 5: Close contact with open barrier 6: Close contact with close barrier 7: Maintenance warning light. The contact closes when the number of manoeuvres set in the Maintenance Cycle menu is reached (MACI).	0-6-(0)	
AUX2	Selects the functioning mode of the auxiliary output 1 (24Vdc 800 mA max.) 0: Open barrier light, close contact when the barrier is open, open contact when the barrier is close, intermittent during the maneuver (fig. 15, SCA) 1: Second radio cannel of the built in receiver 2: Boom light, for controlling the LED light installed on the BOOM (DIVA3.AL), see also the parameter LBAR. 3: Courtesy light, the contact remains close according to the parameter TLS (fig.15 SERVICE LIGHT) 4: Photocells test, see wiring diagram in Fig.15 (PHOTOTEST) 5: Close contact with open barrier 6: Close contact with close barrier 7: Maintenance warning light. The contact closes when the number of manoeuvres set in the Maintenance Cycle menu is reached (MACI).	0-6-(2)	

*** ATTENTION: A WRONG SETTING OF THESE PARAMETERS CAN BE DANGEROUS.**
RESPECT THE REGULATION IN FORCE!

14.3.3) LOGICS (LoG)

MENU	FUNCTION	ON-OFF-(Default)	MEMO
tcA	Enables or disables automatic closing On: automatic closing enabled Off: automatic closing disabled	(ON)	
ibL	Enables or disables condominium function. On: condominium function enabled. The step-by-step impulse or transmitter impulse has no effect during the opening phase. Off: condominium function disabled.	(OFF)	
ibcA	The multi-flat function is enabled or disabled during the TCA counting. On: the bloc of flat function is enabled. The Step-by-Step signal or the transmitter signal has no effect during the TCA counting. Off: the bloc of flat function is disabled.	(OFF)	
ScL	Enables or disables rapid closing On: rapid closure is enabled. With open bar, or in the opening phase, the activation of the photocell causes the automatic closure 3sec after the total opening of the gate. It is activated only with TCA:ON Off: rapid closing disabled.	(OFF)	
PP	Selects the operating mode of the ”Step by step button” and of the transmitter. On: Operation: OPEN > CLOSE > OPEN > Off: Operation: OPEN > STOP > CLOSE > STOP >	(OFF)	
PrE	Enables or disables pre-blinking. On: Pre-blinking enabled. Blinking is activated 3s before the motor starts. Off: Pre-blinking disabled.	(OFF)	
htr	Enabled or disables HOLD-TO-RUN function On: HOLD-TO-RUN function. The pressure of the OPENS/CLOSES button must be maintained throughout the entire manoeuvre. The opening of the STOP input stops the motor. All the safety inputs are deactivated. Off: Automatic/semiautomatic function	(OFF)	
LtcA	Selects the operating mode of the blinking light during the time TCA On: Blinking light on during TCA Off: Blinking light off during TCA	(OFF)	

nbLH	It sets the BLINK flashing output operating mode. On: The output provides intermittent voltage during the manoeuvre phase (2 flashes per second), to use with the LED lights of the cover. Off: The output provides continuous voltage during the manoeuvre phase (to use with an external flashing light)	(ON)	
oPcL	It sets selection of the operating mode of the P.P. contact On: With S.S. contact closed, the barrier opens and remains open, as soon as the S.S. contact reopens, the barrier immediately closes again. Off: Normal operation of the S.S. contact	(OFF)	
tSt I	It enables or disables the photocells check on the PHOTO input, enabled both in closure and in opening. On: Check enabled. If the check has a negative outcome, no manoeuvre is commanded. See Fig.15 - “PHOTO TEST”. Off: Check the photocells on each disabled manoeuvre.	(OFF)	
AoPF	It enables or disables the “Forced opening function without mains) function (can only be enabled with the emergency batteries connected and working). On: Function enabled. In the event of no power supply, the barrier continues to work until the voltage value of the batteries goes under 23V. Having reached this value, the control unit forces an opening manoeuvre and remains open until the mains voltage is reset. Off: Function not enabled.	(OFF)	
cuAr	It enables or disables reception of the transmitters duplicated by the “AK” series. On: AK transmitters reception enabled Off: AK transmitters reception disabled.	(OFF)	
rEn	It enables or disables remote learning of the radio transmitters, as indicated in the “Transmitters remote learning” paragraph. On: Remote learning enabled. Off: Remote learning disabled.	(ON)	

14.3.4) RADIO (rAd I)

MENU	FUNZIONE
PP	By selecting this function, the receiver goes in waiting (PUSh) for a transmitter code to assign to the step-step function. Press the key of the transmitter to assign to this function. If the code is valid, it is memorised and the message oK is displayed If the code is not valid, the message Err is displayed
2ch	By selecting this function, the receiver goes into waiting (PUSh) for a transmitter code to assign to the second radio channel. Press the key of the transmitter to assign to this function. If the code is valid, it is memorised ad the oK message is displayed If the code is not valid, the message Err is displayed.
ntX	By selecting this function the LCD screen shows the number of transmitters memorized into the receiver.
cLr	By selecting this function, the receiver goes into waiting (PUSh) for a transmitter code to erase from the memory. If the code is valid, it is erased and the message oK is displayed If the code is not valid or not present in memory, the message Err is displayed
rtr	Completely erases memory of the receiver. Confirmation of the operation is requested. By selecting this function the receiver goes into waiting (PUSh) for a new PGM pressure to confirm the operation. At end of erasing the oK message is displayed

14.3.5) CYCLES NUMBER (nMAn)

Displays the number of complete cycles (open+close) carried out by the automation.
When the <PG> button is pressed for the first time, it displays the first 4 figures, the second time it shows the last 4. Example <PG> 00 12 >>> <PG> 3456: made 123.456 cycles.

14.3.6) MAINTENANCE CYCLES (MAn I)

This function enables to activate the maintenance request notice after a number of manoeuvres determined by the installer.
To activate and select the number of manoeuvres, proceed as follows:
Press button <PG>, the display will show OFF, which indicated that the function is disabled (default value).
With the buttons <+> and <-> select one of the numeric values proposed (from OFF to 100). The values are intended as hundreds of cycles of manoeuvres (for example: the value 50 indicates 5000 manoeuvres).
Press the OK button to activate the function. The display will show the message ProG.
The maintenance request is indicated to the user by keeping the indicator lamp lit up for other 10 sec after the conclusion of the opening or closing operation.

14.3.7) RESET (rES)

RESET of the control unit. ATTENTION!: Returns the control unit to the default values.
Pressing the <PG> button for the first time causes blinking of the letters rES, pressing the <PG> button again resets the control unit. Note: The transmitters are not erased from the receiver nor is the access password.
All the logics and all the parameters are brought back to default values, it is therefore necessary to repeat the autoset procedure.

14.3.8) AUTOSET (AUto)

This function allows you to set the optimal automation operating values and, at the end of the procedure, the optimal TORQUE values are set (PMO/PMC and PSO/PSC). To autoset, proceed as follows:
Ensure that there are no obstacles in the operating area, if necessary, cordon off the area to prevent access to people, animals, cars, etc.
During the autoset phase, the anti-crush function is not active.
b) Select the AUTO function and press PG.
c) The message UNLK is displayed, release the barrier and manually move the shaft to bring it to the opening position, the display shows WAIT
d) After a few seconds, the LOCK message is displayed to relock the barrier
e) The control unit slowly brings the shaft to the closure position
f) Two complete manoeuvres are automatically carried out of opening and closure, at reduced and normal speed, at the end of which the autoset procedure has terminated.
If the operation does not have a positive outcome, the ERR message is displayed. Repeat the operation after checking the wiring and the presence of obstacles
IMPORTANT: After each variation in the FSTS, FSTC, SLDO, SLDC, TSMO, TSMC parameters, the barrier executes a complete opening and closure manoeuvre to acquire the new current and torque values, the display will show the “PRG” message.
Repeat the autoset procedure after each maintenance intervention.

14.3.9) PASSWORD (codE)

It allows to type in an access protection code to the programming of the control unit.
A four-character alphanumeric code can be typed in by using the numbers from 0 to 9 and the letters A-B-C-D-E-F.
The default value is 0000 (four zeros) and shows the absence of a protection code.
While typing in the code, this operation can be cancelled at any moment by pressing keys + and – simultaneously. Once the password is typed in, it is possible to act on the control unit by entering and exiting the programming mode for around 10 minutes in order to allow adjustments and tests on functions.
By replacing the 0000 code with any other code, the protection of the control unit is enabled, thus preventing the access to any other menu. If a protection code is to be typed in, proceed as follows:
- select the Code menu and press OK.
- the code 0000 is shown, also in the case a protection code has been previously typed in.
- the value of the flashing character can be changed with keys + and -.
- press OK to confirm the flashing character, then confirm the following one.
- after typing in the 4 characters, a confirmation message “CONF” appears.
- after a few seconds, the code 0000 appears again
- the previously stored protection code must be reconfirmed in order to avoid any accidental typing in.

If the code corresponds to the previous one, a confirmation message “oK” appears.
The control unit automatically exits the programming phase. To gain access to the Menus again, the stored protection code must be typed in.
IMPORTANT: TAKE NOTE of the protection code and KEEP IT IN A SAFE PLACE for future maintenance operations.
To remove a code from a protected control unit it is necessary to enter into programming with the password and bring the code back to the 0000 default value.
IF YOU LOOSE THE CODE, PLEASE CONTACT THE AUTHORISED SERVICE CENTER FOR THE TOTAL RESET OF THE CONTROL UNIT.

14.3.10) SYNCHRONIZATION (bUS)

MENU	FUNZIONE
Id	Sets the synchronizing number. It is possible to set a numeric value from 0 to 16. If the ID parameter is to 0 the control unit is set as MASTER, all the other values set the barrier as SLAVE.
Loc	Allows a barrier set as SLAVE to receive local commands.

14.4) SYNCHRONIZATION OF TWO OPPOSED BARRIERS

It is possible to manage a system composed of two barriers by using for each CP.DIVA the specific optional control unit SIS, which must be plugged into the appropriate connector as shown in Fig. 14.
Each SIS unit must be connected to the other one by means of 3 wires by 0,5 sq.mm each, as shown in Fig.16.
One of the control unit must be set as MASTER (ID=0) and the other one as SLAVE (ID>0).
All the commands (commands given by transmitters, push buttons or safety devices) received by the MASTER barrier are sent to the SLAVE barrier, which will replicate instantaneously the behavior of the MASTER.
The logic LOC can be set in two ways:
ON: the SLAVE barrier can accept a local command and execute an opening/closing maneuver with no effect on the MASTER barrier.
OFF: the SLAVE barrier do not accept any local command and so it will replicate exclusively the behavior of the MASTER barrier.
A SLAVE barrier with LOC set to ON can be useful in case it is occasionally necessary the partial opening of a passage which is usually managed by two synchronized barriers, since that a step by step command (or OPEN/CLOSE) given to the SLAVE will have effect only on this last one, while all the other commands given to the MASTER will be replicated by the SLAVE.
The connection of the safety devices (photocells, safety edges, etc.) can be done indifferently to the MASTER unit or to the SLAVE.

14.5) TRANSMITTERS REMOTE LEARNING

If an already memorised transmitter is available in the receiver it is possible to carry out remote radio learning (without needing to access the control unit).
IMPORTANT: the procedure must be carried out with barrier open.The logic REM must be ON.
Proceed as follows:
1 Press the hidden key of the transmitter which is already memorised.
2 Press, within 5s, the key of the corresponding transmitter which is already memorised to associate to the new transmitter. The flashing light will turn on.
3 Press within 10s the hidden key of the new transmitter.
4 Press, within 5s, the key of the new transmitter to associate to the channel chosen at point 2. The flashing light will turn off.
5 The receiver memorised the new transmitter and immediately exits from programming.

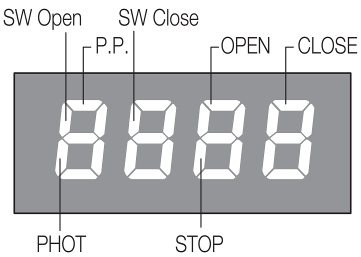
14.6) FUSES

F3 CP.DIVA : T4A - Safety fuse for accessories power supply

14.7) BACK UP BATTERIES

The control unit CP.DIVA avails of a specific output (BATT) prepared for connection of the two batteries 12V 2,1Ah DA.BT2 (optional) which enable operation of the automation also in the event of temporary absence of the mains power supply.
During normal operation of the mains, the control unit recharges the batteries (Fig. 14).
The maximum load current is 1A, the average loading current is 300mA.

13.8) DIAGNOSTICS



LED 1 : Presence of mains voltage
LED 2 : Control unit CP.DIVA correctly powered
To each input is associated a line of the LCD screen which in case of activation it turns on according to the following diagram.
The N.C. inputs are represented by vertical lines.
The N.O. inputs are represented by horizontal lines.
The flashing mode of the lines SW Open (when the barrier is open) and SW Close (when the barrier is close) indicates the type of limit switch used.
1 flash and pause: Absolute encoder version (standard)

EN

14.9) ERROR MESSAGES

Some messages that are displayed in case of function anomalies are listed as follows:

Err	Generic error	Error inserting password or memorizing transmitter..
Err 1	Motor error	Verify the motor wirings, faulty motor or not connected, problem on the control unit.
Err2	Photocells error	Verify connections, photocells alignment and presence of obstacles.
Err3	Absolute encoder error	Verify encoder connections, verify the good functioning of the Encoder.
AMP	Amperometric sensor intervention	Verify the presence of obstacles or friction points.
thrM	Thermal sensor intervention	Overheating due to a too intensive use, wait the restoring.
ouLd	Overload	Exceeding of the maximum power. Verify the motor and presence of friction points..
Enc	Encoder	Encoder threshold intervention.

15) MAINTENANCE

The following table is used to record maintenance operations, improvement or repair works carried out by the expert engineer.

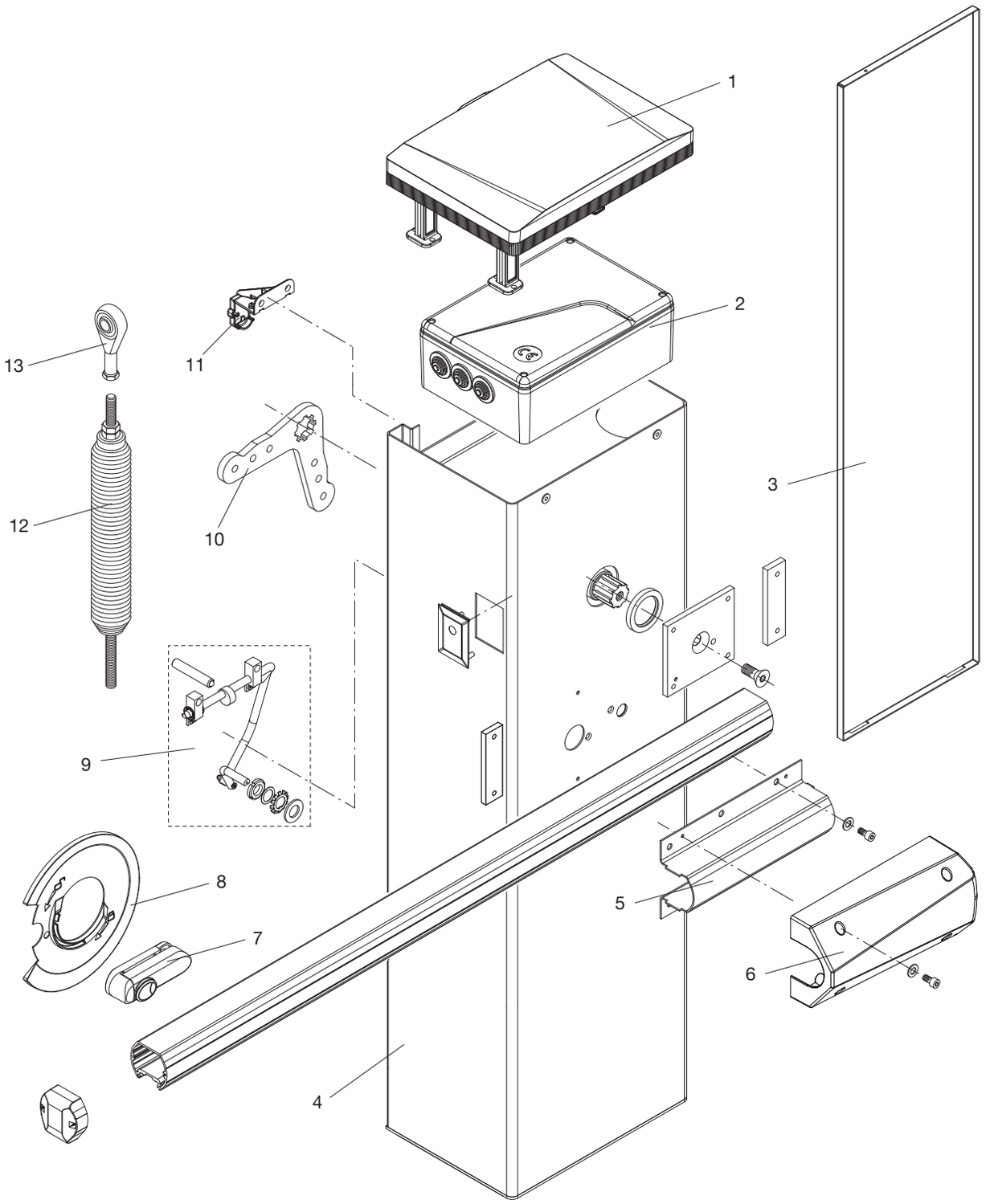
Date ________________	Engineer's Signature ________________	Stamp
Description of operation ________________ ________________		

Date ________________	Engineer's Signature ________________	Stamp
Description of operation ________________ ________________		

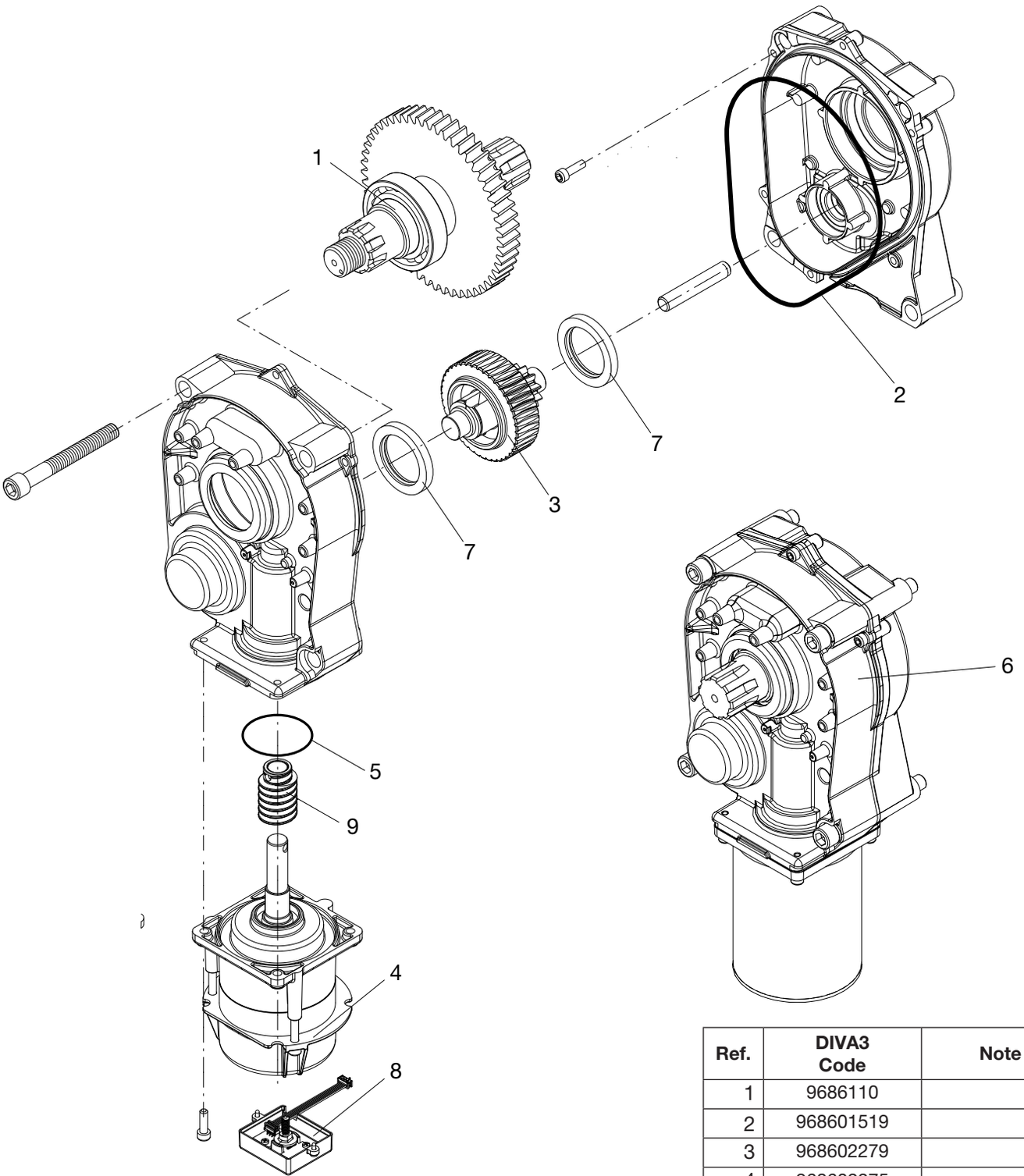
Date ________________	Engineer's Signature ________________	Stamp
Description of operation ________________ ________________		

Date ________________	Engineer's Signature ________________	Stamp
Description of operation ________________ ________________		

Date ________________	Engineer's Signature ________________	Stamp
Description of operation ________________ ________________		



Ref.	DIVA.3 Code	Note
1	968602270	
2	968602271	
3	968602272	
4	968600914	
5	968602273	
6	968602274	
7	9688204	
8	9688205	
9	9688206	
10	9686248	
11	968601527	ENCODER
12	9686183	
13	9686666	



Ref.	DIVA3 Code	Note
1	9686110	
2	968601519	
3	968602279	
4	968602275	
5	968602280	
6	968602276	
7	9686555	
8	968602277	ENCODER
9	968602278	

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