Last version of this manual

IP1725EN • 2023-01-23

Ditec ARC

Technical Manual

Swing gates

(translation of the original instructions)

Index

Legend

This symbol indicates instructions or notes relating to safety which require special attention.

This symbol indicates useful information for the correct operation of the product.

IP1725EN

General safety precautions

ATTENTION! Important safety instructions.Please follow these instructions carefully.
Failure to observe the information given in this manual may lead to severe personal injury or damage to the equipment.Keep these instructions for future reference.
This manual and those for any accessories can be downloaded from www.ditecautomations.com

This installation manual is intended for qualified personnel only • Installation, electrical connections and adjustments must be performed by qualified personnel, in accordance with Good Working Methods and in compliance with the current regulations • Read the instructions carefully before installing the product. Wrong installation could be dangerous • Before installing the product, make sure it is in perfect condition.

The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as they are a potential source of danger • Do not install the product in explosive areas and atmospheres: the presence of inflammable gas or fumes represents a serious safety hazard • Make sure that the temperature range indicated in the technical specifications is compatible with the installation site • Before installing the motorization device, make sure that the existing structure, as well as all the support and guide elements, are up to standards in terms of strength and stability. Verify the stability and smooth mobility of the guided part, and make sure that no risks of fall or derailment subsist. Make all the necessary structural modifications to create safety clearance and to guard or isolate all the crushing, shearing, trapping and general hazardous areas • The motorization device manufacturer is not responsible for failure to observe Good Working Methods when building the frames to be motorized, or for any deformation during use • The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account the applicable laws and directives, Good Working Methods, installation premises, system operating logic and the forces developed by the motorized door or gate • The safety devices must protect against crushing, cutting, trapping and general danger areas of the motorized door or gate. Display the signs required by law to identify hazardous areas • Each installation must bear a visible indication of the data identifying the motorized door or gate • Before connecting the power supply, make sure the plate data correspond to those of the mains power supply. An omnipolar disconnection switch with a contact opening distance of at least 3 mm must be fitted on the mains supply. Check that there is an adequate residual current circuit breaker and a suitable overcurrent cutout upstream of the electrical installation in accordance with Good Working Methods and with the laws in force • When requested, connect the motorized door or gate to an effective earthing system that complies with the current safety standards • Before commissioning the installation to the end user, make sure that the automation is adequately adjusted in order to satisfy all the functional and safety requirements, and that all the command, safety, and manual release devices operate correctly.

During maintenance and repair operations, cut off the power supply before opening the cover to access the electrical parts • The protection cover of the operator must be removed by qualified personnel only.

The electronic parts must be handled using earthed antistatic conductive arms. The manufacturer of the motorization declines all responsibility if component parts not compatible with safe and correct operation are fitted • Only use original spare parts for repairing or replacing products • The installer must supply all information concerning the automatic, manual and emergency operation of the motorized door or gate, and must provide the user with the operation and safety instructions

Declaration of incorporation of partly completed machinery
(Directive 2006/42/EC, Annex II-B)

We,
ASSA ABLOY Entrance Systems AB
Lodjursgatan 10
SE-261 44 Landskrona
Sweden,

declare, under our sole responsibility, that the type of equipment with the name:

Ditec ARC BH	Irreversible automation for swing gates up to 2.5 m
Ditec ARC 1BH	Irreversible automation for swing gates up to 5 m

complies with the following directives and their amendments:

2006/42/EC Machinery Directive (MD), regarding the following essential health and safety requirements:
1.1.2, 1.1.3, 1.2.1, 1.2.2, 1.2.3, 1.2.4.2, 1.2.6, 1.3.9, 1.4.3, 1.7.2, 1.7.3, 1.7.4, 1.7.4.1, 1.7.4.2.
2014/30/EU Electromagnetic Compatibility Directive (EMCD)
2011/65/EU Restriction of Hazardous Substances (RoHS 2)
2015/863/EU Restriction of Hazardous Substances (RoHS Amendment 2)

Harmonised European standards which have been applied:

EN 61000-6-3:2007 + A1:2011 + AC:2012
EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019

Other standards or technical specifications which have been applied:

IEC 60335-1:2010 + C1:2010 + C2:2011 + A2:2013 + C1:2014 + A2:2016 + C1:2016
EN 12453:2017

The manufacturing process guarantees that the equipment complies with the technical documentation.

Responsible for the technical documentation:

Matteo Fino
BSP Ind channel & Gate Automation
Ditec S.p.A.
Largo U. Boccioni, 1
21040 Origgio (VA)
Italy

Signed on behalf of ASSA ABLOY Entrance Systems AB by:

Place	Date	Signature	Position
Origgio	2023-01-23	Matteo Fino	Head of Ind channel & Gate Automation

UK Declaration of Conformity

We:
ASSA ABLOY Entrance Systems AB
Lodjursgatan 10
SE-261 44 Landskrona
Sweden

Declare under our sole responsibility that the types of equipment with names:

Ditec ARC BH	Non-reversible automation for swing gates up to 2.5 m
Ditec ARC 1BH	Non-reversible automation for swing gates up to 5 m

complies with the following directives and their amendments:

- Supply of Machinery (Safety) Regulations 2016
- Electromagnetic Compatibility Regulations 2016
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS)

Harmonized European standards that have been applied:

EN 61000-6-3:2007 + A1:2011 + AC:2012

EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019

Other standards or technical specifications that have been applied:

IEC 60335-1:2010 + C1:2010 + C2:2011 + A2:2013 + C1:2014 + A2:2016 + C1:2016
EN 12453:2017

The manufacturing process ensures the compliance of the equipment with the technical file.

Responsible for technical file:

Matteo Fino
BSP Ind channel & Gate Automation
Ditec S.p.A.
Largo U. Boccioni, 1
21040 Origgio (VA)
Italy

Signed for and on behalf of ASSA ABLOY Entrance Systems AB by:

Place	Date	Signature	Position
Origgio	2023-01-23	Matteo Fino	Head of Ind channel & Gate Automation

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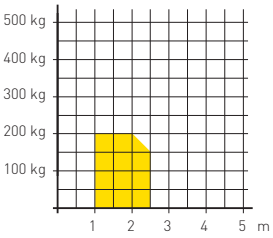
1. Technical data

	ARCBH	ARC1BH
Type	Irreversible wings up to 2.5 m	Irreversible wings up to 5 m
Stroke control (limit switch)	Rotary limit switch (optional)	
Power supply	24 V ⎓	24 V ⎓
Absorption	3 A	12 A
Power absorbed	75 W nom.	290 W nom.
Torque	150 Nm	300 Nm
Maximum stroke	120°	120°
Cycles / hour	12÷100 s / 90°	9÷50 s / 90°
Gate maximum weight	200 Kg	500 Kg
Service class	4 - INTENSE (tested up to 300,000 cycles)	4 - INTENSE (tested up to 300,000 cycles)
Intermittent operation	S2 = 30 min (T= 25°C) S3 = 50 % (T= 25°C)	S2 = 30 min (T= 25°C) S3 = 50 % (T= 25°C)
Temperature (T)	-20°C +55°C (-35°C +55°C with **NIO active**)	
Protection rating	IP54	IP54
Poids	14 Kg	15 Kg
Applications m = leaf width kg = leaf weight		

WARNING: to prevent forced entry, the use of an electric lock is recommended with gate wings measuring more than 2.3 m in length.

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1.1 Operating instructions

Use: INTENSIVE (For vehicle or pedestrian accesses to large condominiums, industrial or commercial complexes and parking lots with very frequent use).

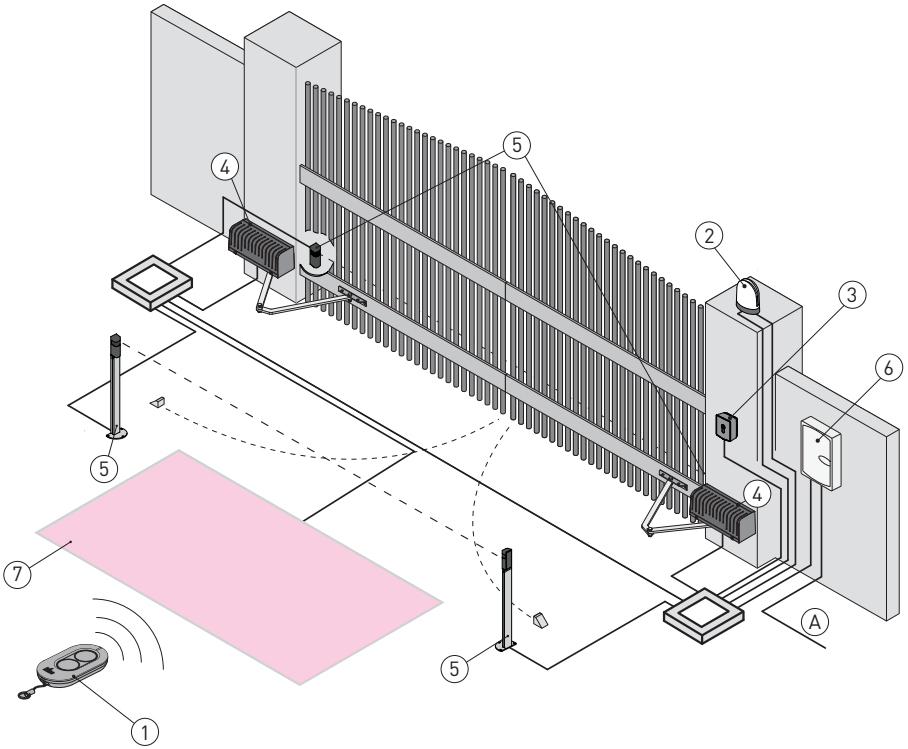
- Performance characteristics are to be understood as referring to the recommended weight (approx. 2/3 of maximum permissible weight) and at an ambient temperature of 25°C. When used with the maximum permissible weight a reduction in the above mentioned performance can be expected.
- Service class, running times, and the number of consecutive cycles are to be taken as merely indicative Having been statistically determined under average operating conditions, and are therefore not necessarily applicable to specifi c conditions of use.
- Each automatic entrance has variable elements such as: friction, balancing and environmental factors, all of which may substantially alter the performance characteristics of the automatic entrance or curtail its working life or parts thereof (including the automatic devices themselves). The installer should adopt suitable safety conditions for each particular installation.

1.2 Machinery Directive

Pursuant to Machinery Directive (2006/42/EC) the installer who motorizes a door or gate has the same obligations as the manufacturer of machinery and as such must:

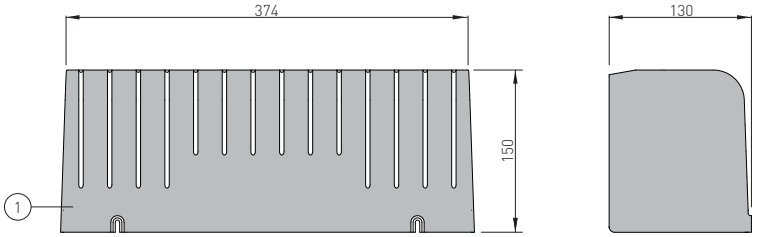
- prepare the technical file which must contain the documents indicated in Annex V of the Machinery Directive;
  (The technical file must be kept and placed at the disposal of competent national authorities for at least ten years from the date of manufacture of the motorized door);
- draw up the EC Declaration of Conformity in accordance with Annex II-A of the Machinery Directive and deliver it to the customer;
- affix the EC marking on the motorized door in accordance with point 1.7.3 of Annex I of the Machinery Directive.

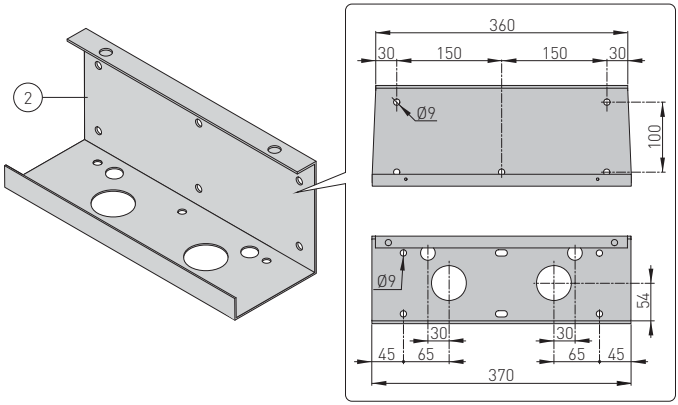
2. Standard installation

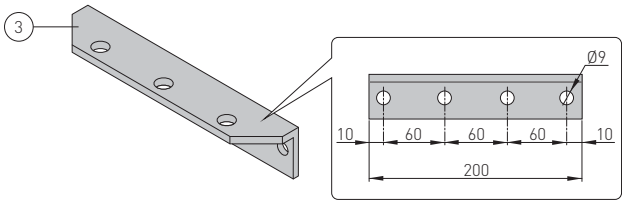


Ref.	Code	Description	Cable
1	**ZEN**	Transmitter	/
2	**FLM**	Flashing light	2 x 1 mm²
	FL24	Antenna (integrated in the flashing light)	coax cable RG-58 (50 Ω)
3	**AXK4**	Digital combination wireless keypad	/
	AXK5M **AXR5I** **AXK5NM** **AXK5NI**	Wall-mounted key-operated selector switch with European cylinder Semi-recessed key-operated selector switch with European cylinder Wall-mounted key-operated selector switch without cylinder Semi-recessed key-operated selector switch without cylinder	4 x 0.5 mm²
	AXR7	RFID reader unit	5 x 0.5 mm²
4	**Ditec ARCBH** **Ditec ARC1BH**	Actuator for door wing of up to 2.5 m Actuator for door wing of up to 5 m	2 x 1.5 mm²
A		Connect the power supply to an approved omnipolar switch with an opening distance of the contacts of at least 3 mm (not supplied). The connection to the mains must be made via an independent channel, separated from the connections to command and safety devices.	
5	**LIN2** **LIN2B** **AXP2** **LAB4**	Photocells	4 x 0.5 mm²
6	**LCU30H-HJ** **LCU40H-HJ**	Control panel	3G x 1.5 mm²
7	**LAB9**	Magnetic loop	2 x 1.5 mm²

3. Dimensions and components







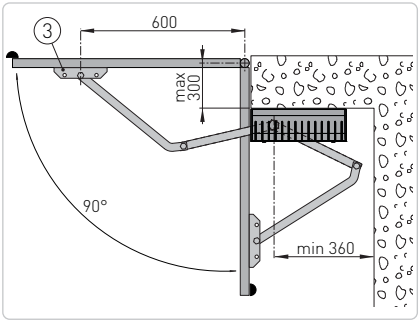
Ref.	Description
1	Lid
2	Fastening plate
3	Gate mounting bracket

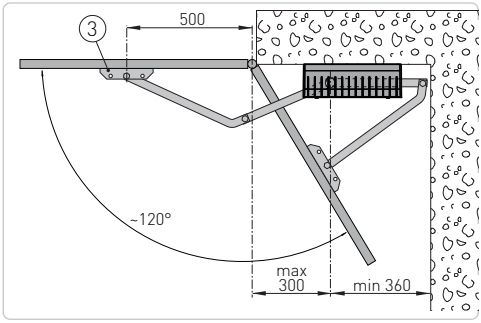
4. Installation

Unless otherwise specified, all measurements are expressed in millimetres (mm).

4.1 Preliminary checks

Check that the structure is sufficiently rugged and that the hinge pivots are properly lubricated. Provide an opening and closing stop.



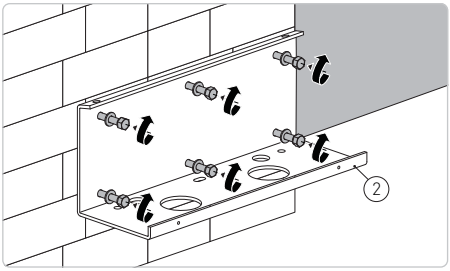


4.2 Gearmotor installation

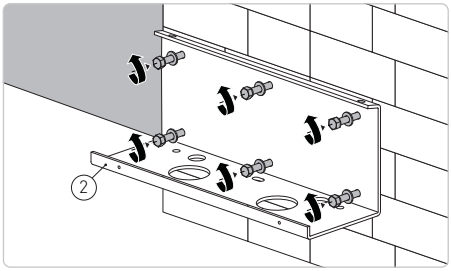
- Remove the gearmotor from the fastening plate [2].
- Fasten the fastening plate [2] to the gate pillar and the gate fastening bracket [3] to the gate wing, according to the type of installation, as shown in the figures.

PAY ATTENTION to the type of installation

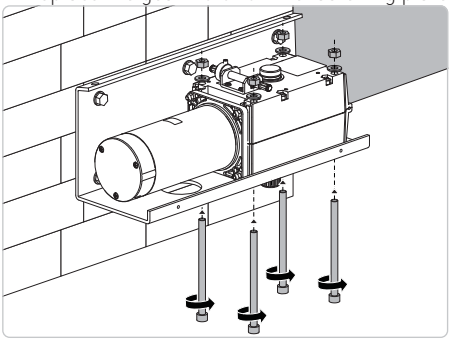
LEFT-HAND INSTALLATION

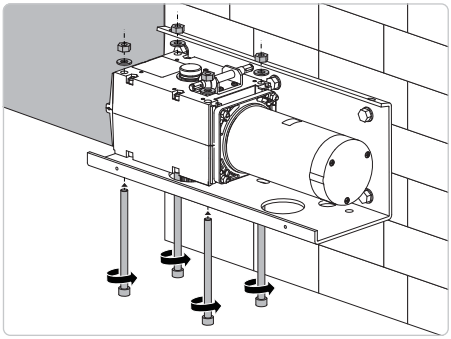


RIGHT-HAND INSTALLATION



- Replace the gearmotor on the fastening plate [2].





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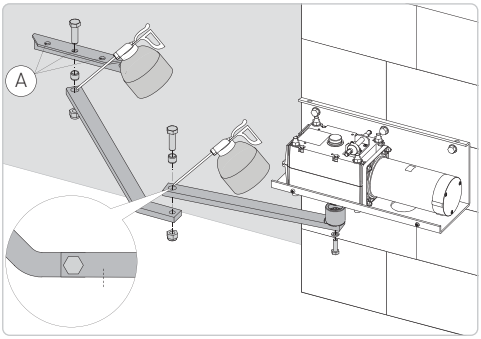
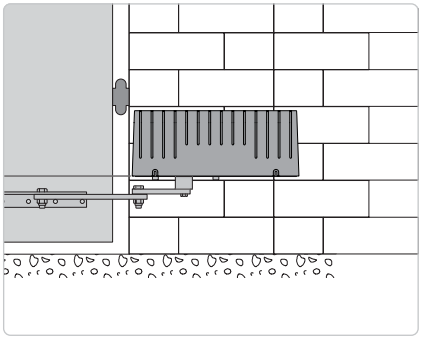
- Fasten the articulated arms as shown in the figure.

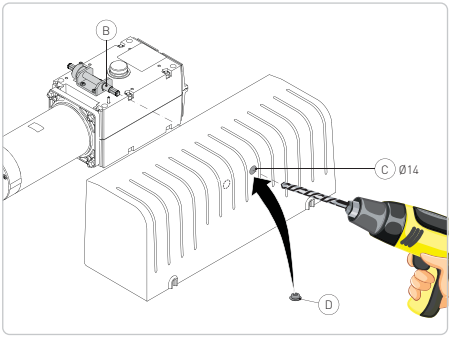
WARNING: move the wing to the fully closed position and align the arms to the holes [A].

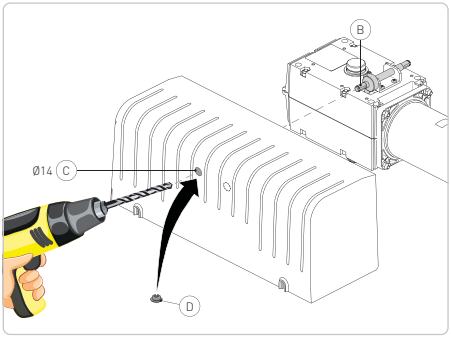
- The arm articulations must be lubricated and the screws tightened so that they do not impede the movement of the arms.





- Drill a Ø14 hole in the lid near the release shaft [B] (there are two boring templates [C] on the inside of the lid).
- Insert the rubber cap [D] supplied and fasten the lid to the gearmotor.





5. Electrical connections

NOTE: the electrical wiring and the start-up of the gearmotors are shown in the control panel installation manuals.

	Ditec ARCBH	Ditec ARC1BH
Electronic panel	LCU30H-HJ - LCU40H-HJ	LCU40H-HJ

Before connecting the power supply, make sure that the data on the plate correspond to the electricity distribution network data. Provide an omnipolar switch/disconnector on the power network with a contact opening distance of 3 mm or more. Check that there is a suitable residual-current device and surge protector upstream of the electrical system. Use an H05RN-F 3G1.5 electrical cable and connect it to terminals L (brown) and N (blue) inside the automation system. Connect the earth cable ⏚ (yellow/green) to the earth terminal.

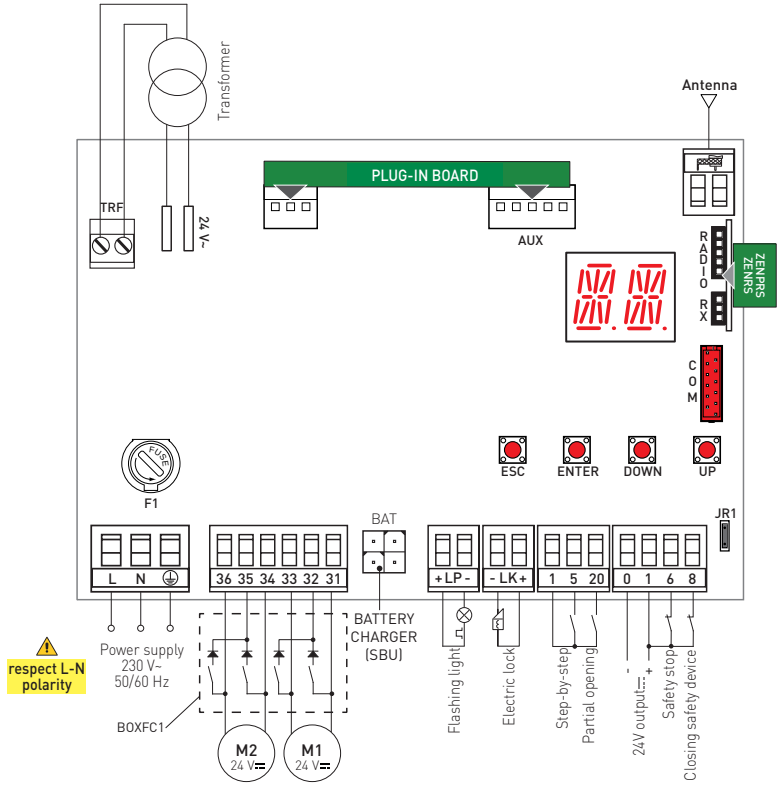
ATTENTION: always observe L-N polarity when connecting to the mains.

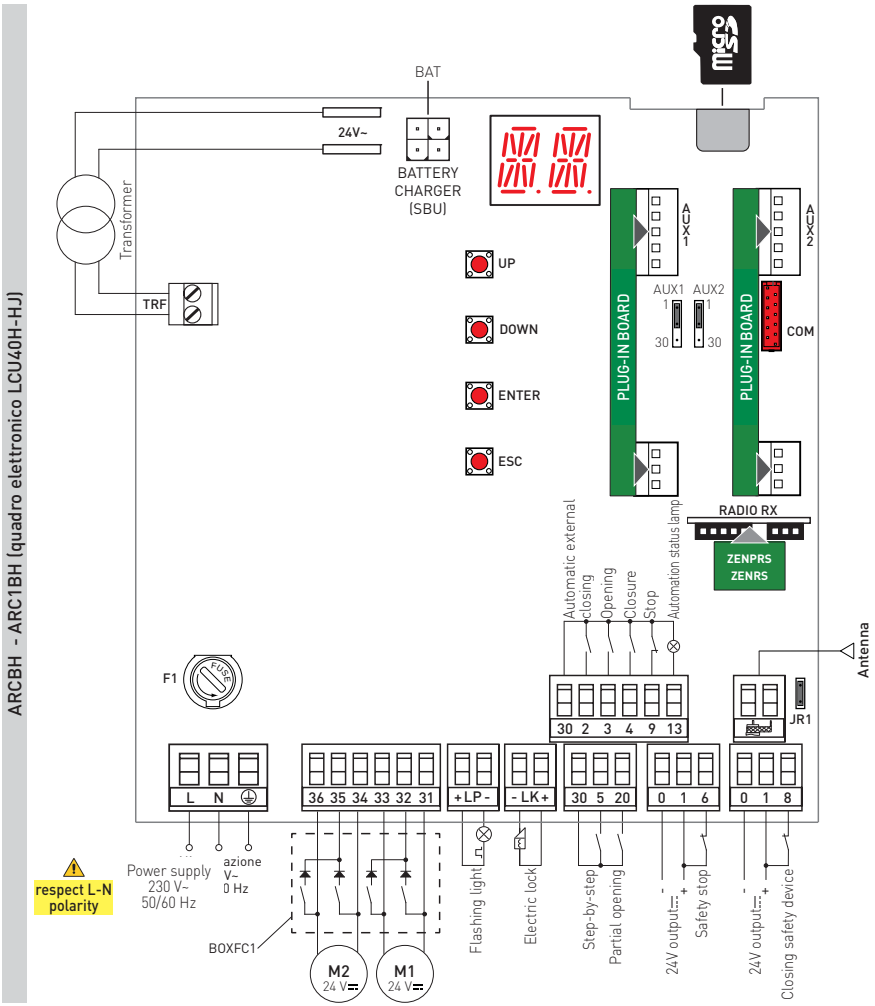
Secure the cable by means of the cable clamp and only unsheathe it at the terminal.
Connections to the electrical distribution network and any other low-voltage conductors (230 V), in the section outside the automation system, must be made with corrugated pipes that are independent and separate from the path of connections to the control and safety devices (SELV = Safety Extra Low Voltage). Make sure there are no sharp edges that could damage the power cord.

Ensure that the mains connection cables, any other low-voltage cables (230 V), and safety extra-low voltage safety accessory connection cables in the portion located inside the product are kept well separated from the gear motor body.

To reverse the rotation direction exchange the motor phases.

ARCBH (electronic panel LCU30H-HJ)





For complete control panel instructions see manual LCU30H-HJ - IP2251:

https://www.ditecautomations.com/global/market-documents/QR/Multilanguages/LCU30H/DitecLCU30H.pdf

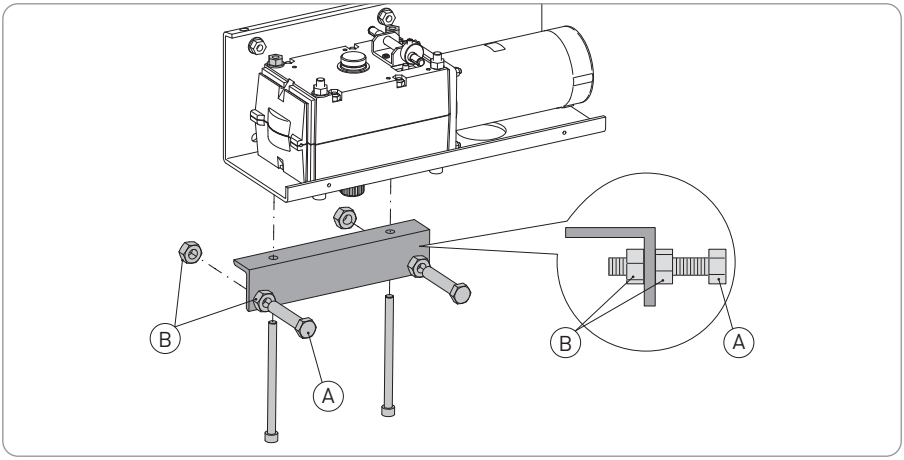
For complete control panel instructions see manual LCU40H-HJ - IP2246:

https://www.ditecautomations.com/global/market-documents/QR/Multilanguages/LCU40H/DitecLCU40H.pdf

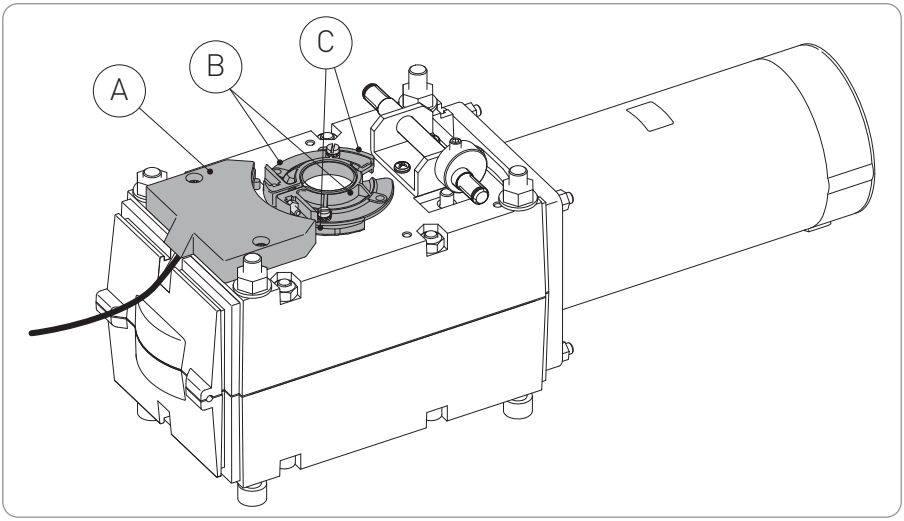
6. Installing the accessories

6.1 Mechanical end stops (ARCFB)

Install the end stops as shown in the figure below.
Adjust the stops using the screws [A] and the nuts [B].

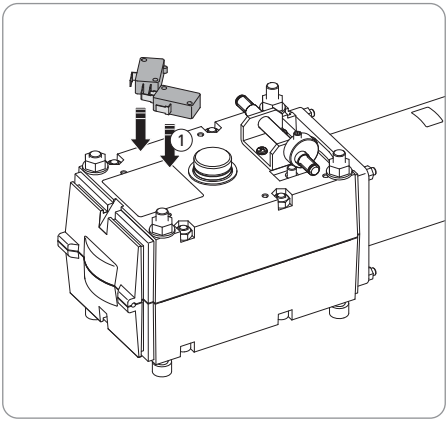


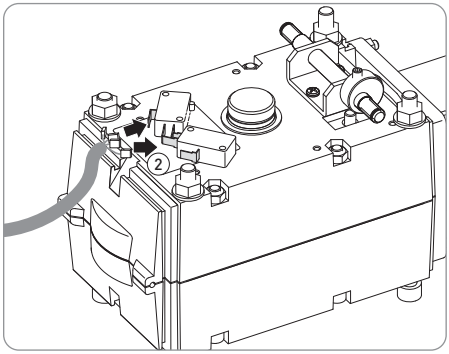
6.2 Rotary limit switch unit (BOXFC1)



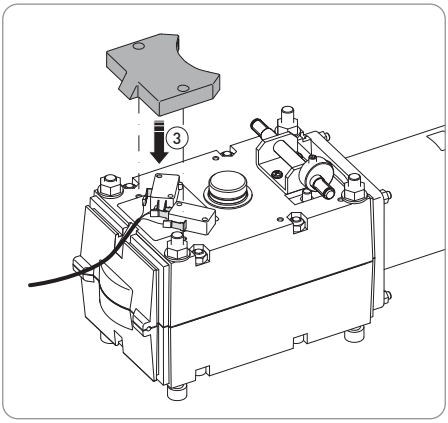
Ref.	Description
A	Microswitches
B	Flange
C	Cams

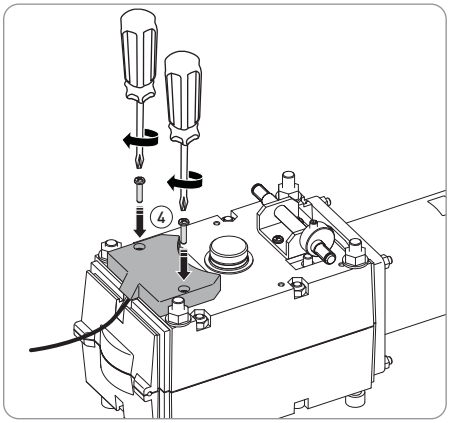
- Installing the rotary limit switch

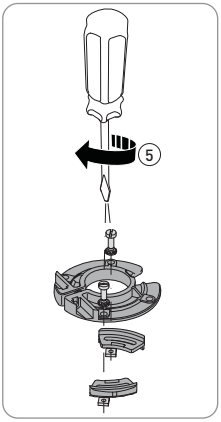


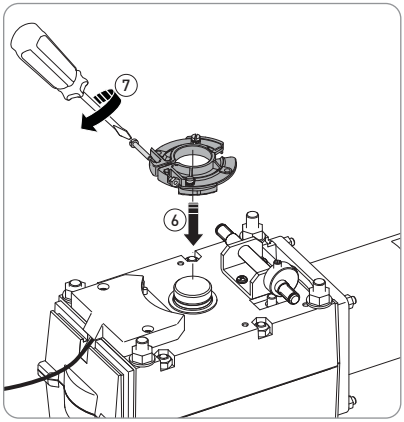


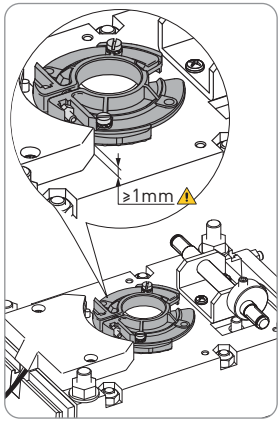
NOTE: for the connections, see point 7 "Rotary limit switch adjustment".











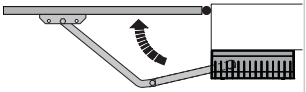
Leave the screws loose for adjustment, see next paragraph

WARNING: check that between the gearmotor and the limit switch cams there is a distance of at least 1 mm.

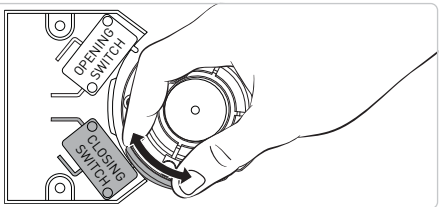
Rotary limit switch adjustment for right-hand automation

Completely close the wing (1) and move the cam to activate the closing microswitch (2).
Tighten the screw (3).

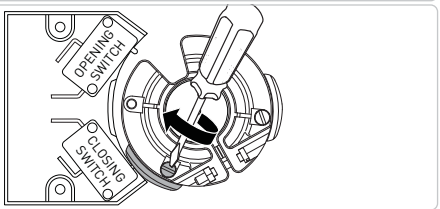
1



2

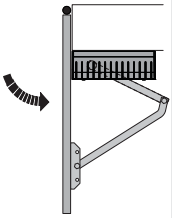


3



Completely open the wing (4) and move the cam to activate the opening microswitch (5).
Tighten the screw (6).

4



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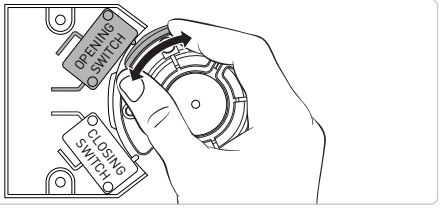
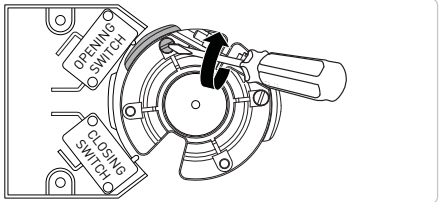
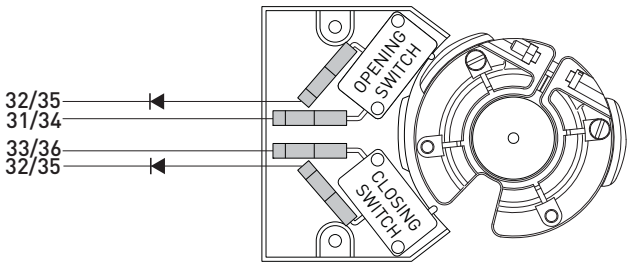


6



Connect the fastons on the limit switch cables to the microswitches as shown in the figure (7). For more details on the functions or adjustments, refer to chapter 5 and/or the technical manual of the control panel.

7



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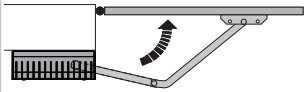
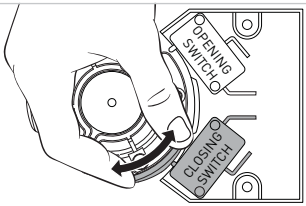
Rotary limit switch adjustment for left-hand automation

Completely close the wing (1) and move the cam to activate the closing microswitch (2).
Tighten the screw (3).

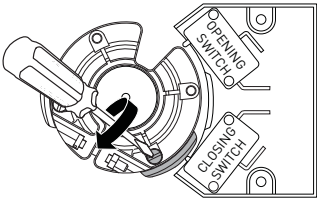
1



2

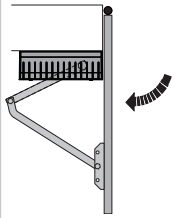


3

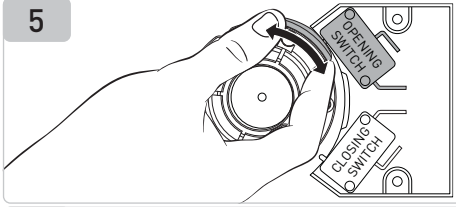


Completely open the wing (4) and move the cam to activate the opening microswitch (5).
Tighten the screw (6).

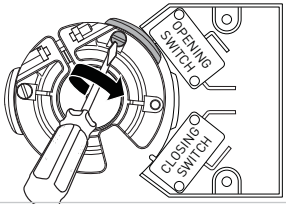
4



5

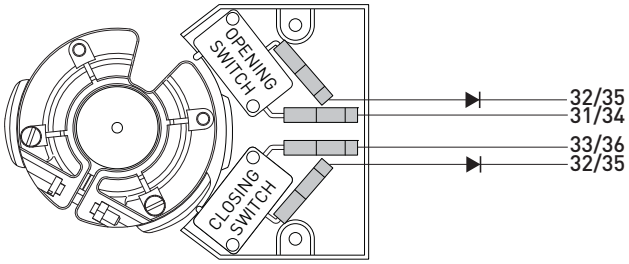


6



Connect the fastons on the limit switch cables to the microswitches as shown in the figure (7). For more details on the functions or adjustments, refer to chapter 5 and/or the technical manual of the control panel.

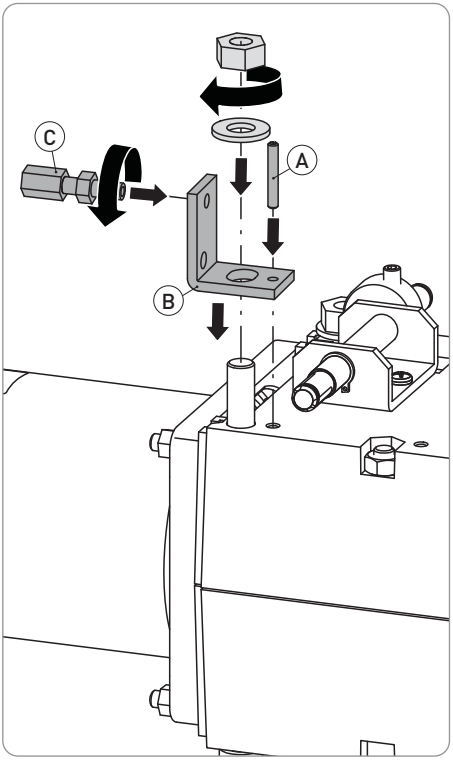
7

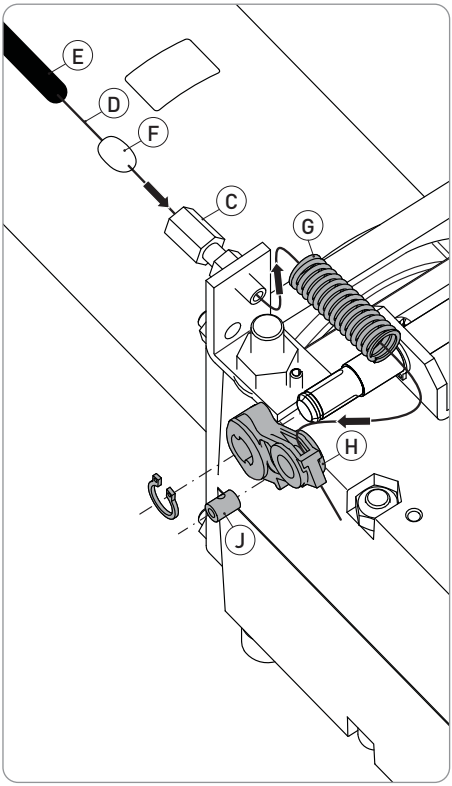


6.3 Installing the key-operated handle with DEB04 release cord

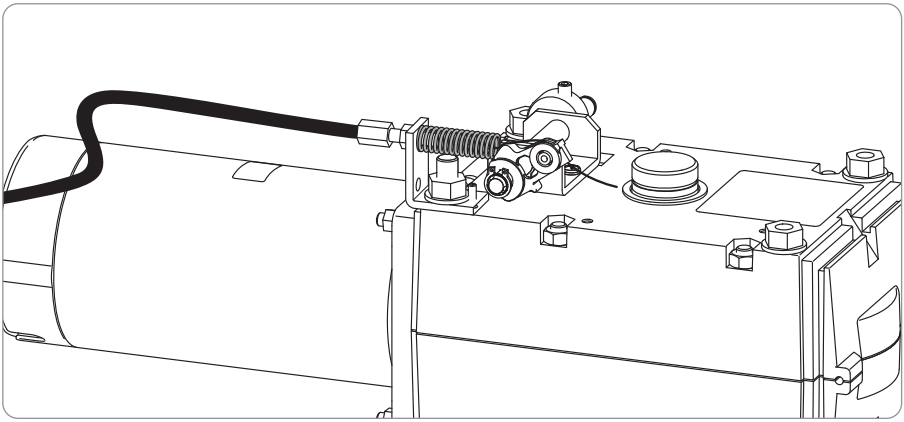
To correctly install the DEB04 release handle follow the procedure described below:

- Insert the plug [A] in the sheath fastening plate [B], screw the adjuster [C] onto the plate [B] and fasten to the gearmotor with a nut and washer.





- Insert the release cord [D] and the sheath [E] (from DEB04) in the lid [F], in the adjuster [C], in the spring [G] and in the release lever [H] and fasten the cord to the clamp [J] inside the lever [H].



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7. Routine maintenance plan

Carry out the following operations and checks every 6 months or 36,000 cycles, or according to the intensity of use of the automation.
Disconnect the 230V~ power supply and batteries (if present):

- Lubricate the gearmotor levers.
- Lubricate the wing rotation pin.
- Lubricate the gate hinges.
- Check the electrical wiring is in good condition.
- Check that the gearmotor fastening screws are tight.

Reconnect the 230V~ power supply and batteries (if present):

- Check the power adjustment.
- Check that all commands and safety functions are operating correctly (photocells).
- Check the release system is working correctly.
- If batteries are fitted, check they are working properly (in continuity) by disconnecting the power supply and performing a series of consecutive operations. At the end, reconnect the 230V~ power supply.

NOTE: for spare parts, please see the spare parts list.

8. Troubleshooting

Problem	Possible cause	Operation
The gate doesn't open or close.	No power supply.	Make sure the mains supply is active.
	Gearmotor released.	See the release instructions.
	Photocells occupied.	Check the photocells are clean and operating correctly.
	Permanent STOP command.	Check the STOP command or the control panel.
	Faulty selector.	Check the selector or control panel.
	Faulty remote control	Check the condition of the batteries.
	Electric lock not working	Check the lock is positioned and working correctly.
The gate opens, but it doesn't close.	Photocells occupied.	Check the photocells are clean and operating correctly.

The crossed-out wheelie bin symbol indicates that the product should be disposed of separately from normal household waste. The product should be recycled in accordance with local environmental regulations for waste disposal. By separating a product marked with this symbol from household waste, you will help reduce the volume of waste sent to incinerators or land-fill and minimise any potential negative impact on human health and the environment.

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