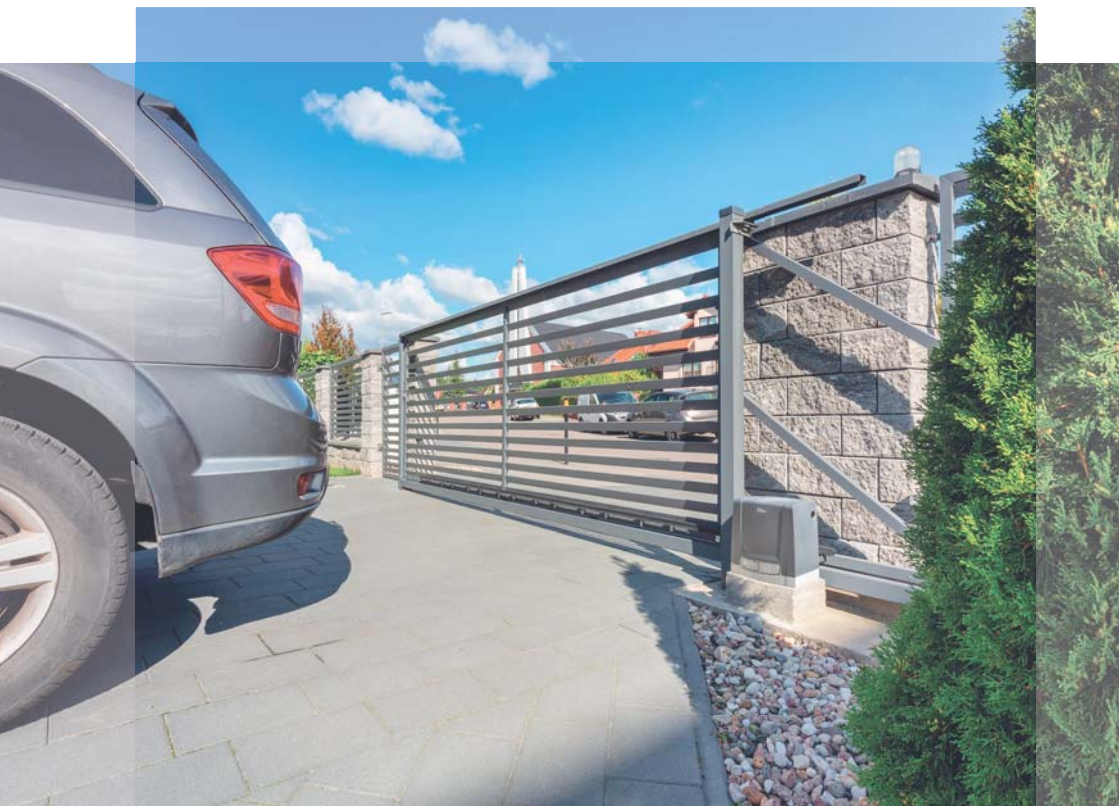




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Ditec



Ditec NeoS / NeoS+

Technical Manual

Sliding Gates

(Translation of the original instructions)

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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.

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 NES400EH, NES600EH, NES1000EHSF Automation for sliding gates (CS12E)

Ditec NES400EHP, NES600EHP, NES1000EHP Automation for sliding gates (CS12M)

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)

2014/53/EU RED Directive;

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 61000-6-2:2019

EN 55014-1:2006 + A1:2009 + A2:2011 EN 55014-2:2015

EN 60335-1:2012 + A11:2014 + A13:2017 + A14:2019 + A15:2021

EN 60335-2-103:2015

EN ISO 13849-1:2015 EN 62233:2008

ETSI EN 300 220-2 V3.2.1 ETSI EN 300 220-1 V3.1.1

ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-3 V2.1.1

Other standards or technical specifications which have been applied:

EN 12453:2017

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

Responsible for the technical documentation:

Matteo Fino
Ditec S.p.A.
Largo U. Boccioni, 1
21040 Origgio (VA)
Italy

Signed on behalf of ASSA ABLOY Entrance Systems AB by:

Place
Origgio

Date
2023-06-07

Signature
Matteo Fino


Position
CEO Ditec

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 NES400EH, NES600EH, NES1000EHSF Automation for sliding gates (CS12E)
Ditec NES400EHP, NES600EHP, NES1000EHP Automation for sliding gates (CS12M)

complies with the following directives and their amendments:

- Supply of Machinery (Safety) Regulations 2016
- Electromagnetic Compatibility Regulations 2016
- Radio Equipment Regulations 2017
- 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 61000-6-2:2019
EN 55014-1:2006 + A1:2009 + A2:2011	EN 55014-2:2015
EN 60335-1:2012 + A11:2014 + A13:2017 + A14:2019 + A15:2021	
EN 60335-2-103:2015	
EN ISO 13849-1:2015	EN 62233:2008
ETSI EN 300 220-2 V3.2.1	ETSI EN 300 220-1 V3.1.1
ETSI EN 301 489-1 V2.2.3	ETSI EN 301 489-3 V2.1.1

Other standards or technical specifications that have been applied:

EN 12453:20175

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

Responsible for technical file:

Matteo Fino
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	2023-06-07	Matteo Fino 	CEO Ditec

1. Technical specifications

	Ditec NES400EH	Ditec NES400EHP	Ditec NES400EHJ
Power supply	230 V~ 50/60Hz	230 V~ 50/60Hz	120 V~ 50/60Hz
Absorption	1,2 A	1,2 A	2,4 A
Fuse	F2A	F2A	F4A
Thrust	400 N	400 N	400 N
Wing speed	0,1±0,25 m/s	0,1±0,25 m/s	0,1±0,25 m/s
Max stroke	12 m	12 m	12 m
Max wing weight	400 kg	400 kg	400 kg
Service class	4 - INTENSE	4 - INTENSE	4 - INTENSE
Intermittence	S2 = 30 min - S3 = 50%	S2 = 30 min - S3 = 50%	S2 = 30 min - S3 = 50%
Operating temperature	-20° C +55° C	-20° C +55° C	-20° C +55° C
	-35° C +55° C with active NIO	-35° C +55° C with active NIO	-35° C +55° C with active NIO
Degree of protection	IP24	IP24	IP24
Control panel	CS12E	CS12M	CS12E

	Ditec NES600EH	Ditec NES600EHP	Ditec NES600EHSF	Ditec NES600EHJ	Ditec NES600EHSFJ
Power supply	230 V~ 50/60Hz	230 V~ 50/60Hz	230 V~ 50/60Hz	120 V~ 50/60Hz	120 V~ 50/60Hz
Absorption	1,5 A	1,5 A	1,5 A	3 A	3 A
Fuse	F2A	F2A	F2A	F4A	F4A
Thrust	600 N	600 N	300 N nominal 500 N start-up	600 N	300 N nominal 500 N start-up
Wing speed	0,1±0,24 m/s	0,1±0,24 m/s	0,1±0,4 m/s	0,1±0,24 m/s	0,1±0,4 m/s
Max stroke	20 m	20 m	20 m	20 m	20 m
Max wing weight	600 kg	600 kg	600 kg	600 kg	600 kg
Service class	4 - INTENSE	4 - INTENSE	4 - INTENSE	4 - INTENSE	4 - INTENSE
Intermittence	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%
Operating temperature	-20° C +55° C	-20° C +55° C	-20° C +55° C	-20° C +55° C	-20° C +55° C
	-35° C +55° C with active NIO	-35° C +55° C with active NIO	-35° C +55° C with active NIO	-35° C +55° C with active NIO	-35° C +55° C with active NIO
Degree of protection	IP24	IP24	IP24	IP24	IP24
Control panel	CS12E	CS12M	CS12E	CS12E	CS12E

IP2160EN

	Ditec NES1000EHP	Ditec NES1000EHPJ
Power supply	230 V- 50/60Hz	120 V- 50/60Hz
Absorption	2 A	4 A
Fuse	F2,5 A	F6,3A
Thrust	1000 N	1000 N
Wing speed	0,1±0,19 m/s	0,1±0,19 m/s
Max stroke	20 m	20 m
Max wing weight	1000 kg	1000 kg
Service class	4 - INTENSE	4 - INTENSE
Intermittence	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%
Operating temperature	 -20° C  +55° C	 -20° C  +55° C
	 -35° C  +55° C with active NIO	 -35° C  +55° C with active NIO
Degree of protection	IP24	IP24
Control panel	CS12M	CS12M

1.1 Operating instructions

Applications: INTENSE (for apartment block, industrial and commercial entrances and car parks with vehicle access or access for intense pedestrian use).

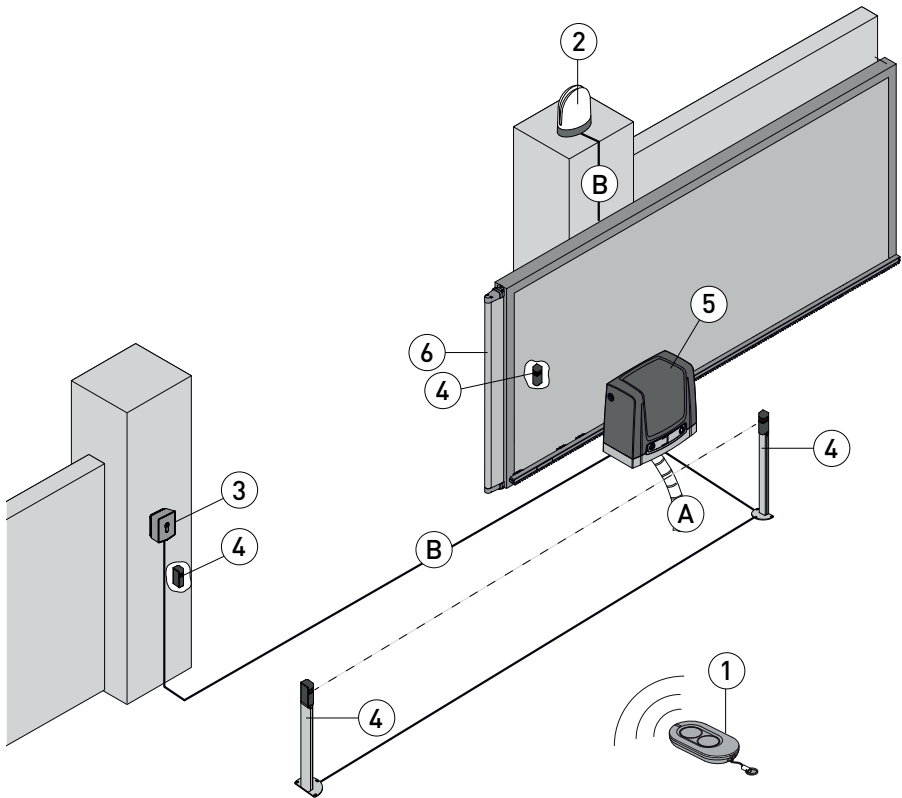
- Performance characteristics are to be understood as referring to the recommended weight (approx. 2/3 of maximum permissible weight). When used with the maximum permissible weight a reduction in the above mentioned performance can be expected.
- Service class, running times, and the number of consecutive cycles are to be taken as merely indicative, having been statistically determined under average operating conditions, and are therefore not necessarily applicable to specific 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 motorises a door or gate has the same obligations as the manufacturer of machinery and as such must:

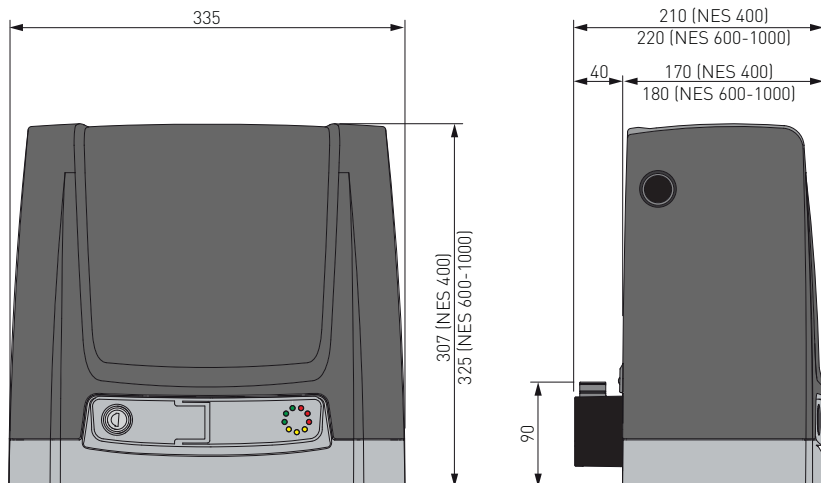
- prepare the technical data sheet which must contain the documents indicated in Annex V of the Machinery Directive; (The technical data sheet must be kept and placed at the disposal of competent national authorities for at least ten years from the date of manufacture of the motorised door);
- draw up 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 motorised door or gate, in accordance with point 1.7.3 of Annex I of the Machinery Directive;
- ensure compliance of the motorised door or gate with safety regulations, by installing the necessary safety devices;
- carry out the safety test **S4**, modifying parameters **D6** and **D8** (if used) from the **AP** menu;
- refer to the installation manual of the CS12E - CS12M control panel for the operating force adjustments, in compliance with EN12453 and EN12445.

2. Standard installation

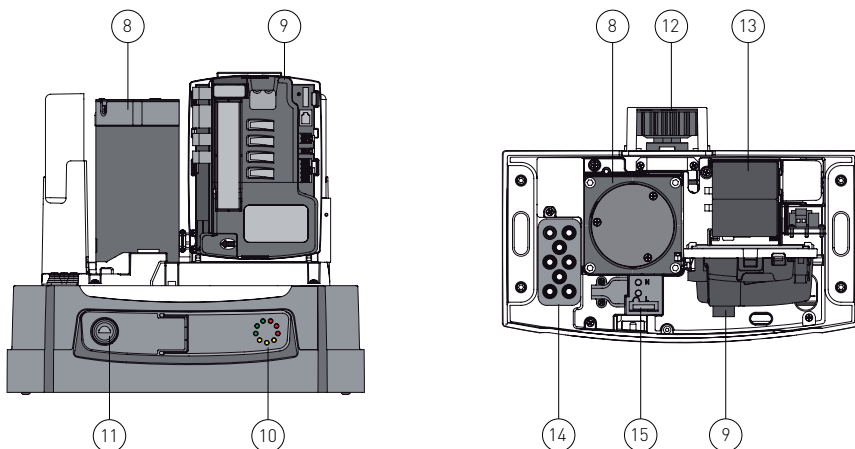


Rif.	Description	Cable
1	Remote control	/
2	Flashing light Antenna (integrated into the flashing light)	2 x 1 mm ² coaxial 58 Ω
3	Key selector switch Digital combination wireless keypad	4 x 0,5mm ² /
4	Photocells	4 x 0,5 mm ²
5	Actuator NEOS with control panel	3G x 1,5 mm ²
6	Safety edge	2 x 0,5 mm ²
A	Connect the power supply to a type-approved omnipolar switch, with a contact opening distance of at least 3mm (not supplied). The connection to the mains must follow an independent path, separate from the connections to the control and safety devices.	

3. Dimensions



4. Main components



Ref.	Description
8	Motor
9	Control panel
10	Diagnostic circuit
11	Key release
12	Pinion
13	Battery kit
14	Cable inlet
15	Power supply terminal

5. Installation

The given operating and performance features can only be guaranteed with the use of DITEC accessories and safety devices.

Unless otherwise specified, all measurements are expressed in mm.

5.1 Preliminary checks

Check the stability of the wing (derailing and lateral falls) and the sliding wheels and that the upper guides do not cause any friction.

The sliding guide must be securely fixed to the ground for the full length within doorway and must have no irregularities that could hinder the movement of the wing.

The opening and closing stops must be fitted.

If the gate has slits, make sure they are covered to prevent shearing points or install active safety edges on the columns.

Safety device should be installed at the end of the wing to reduce the collision force.

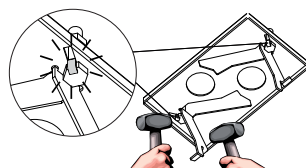
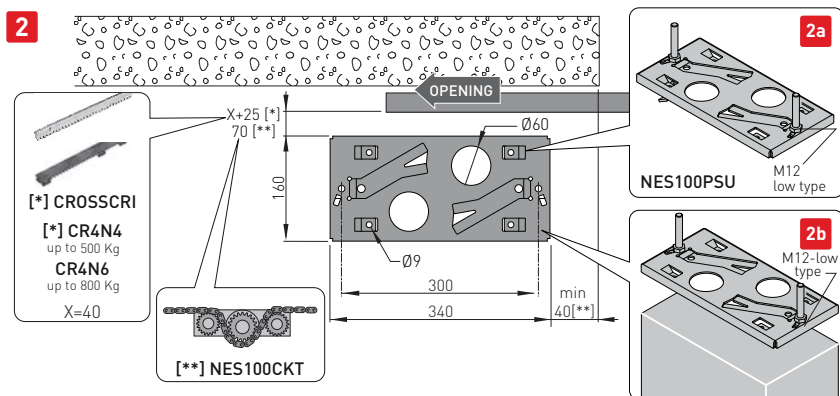
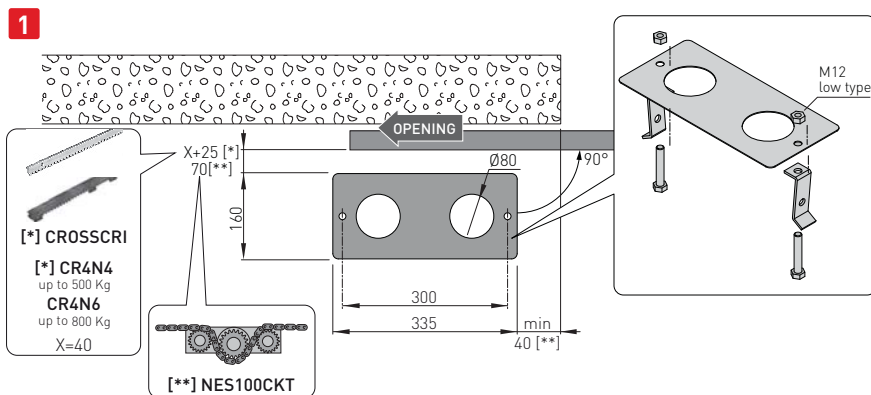


NOTE: make sure that the gate can not exit the sliding guides and fall.

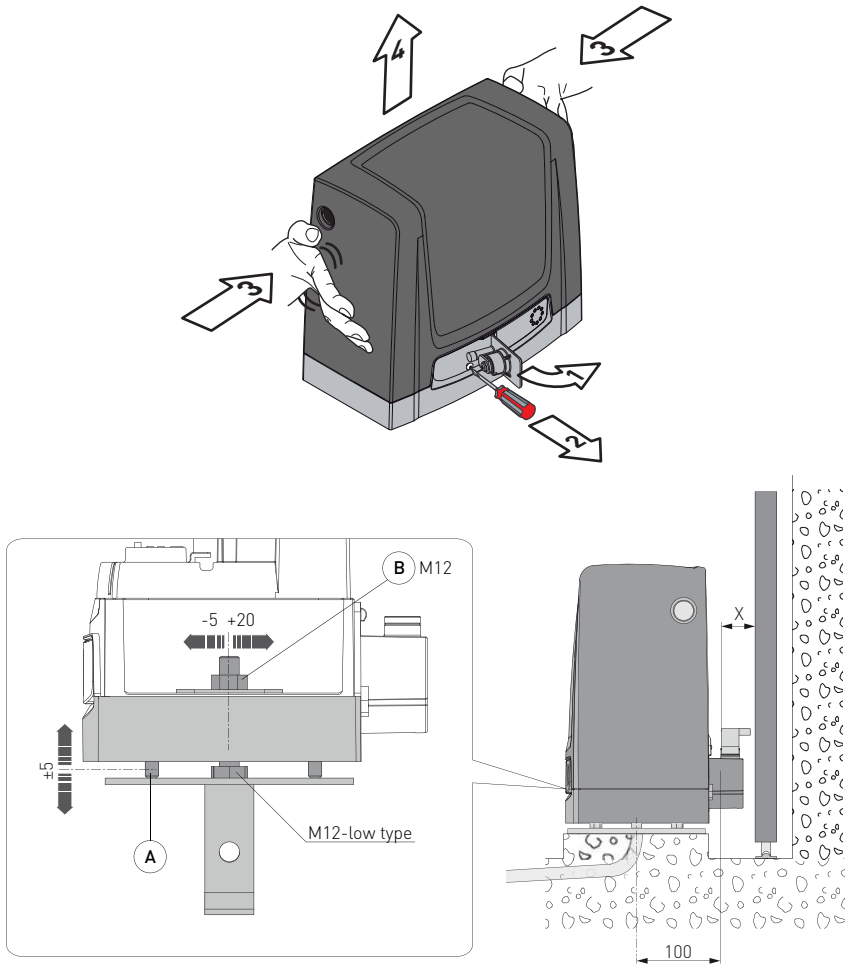
5.2 Base plate position

- [1] Insert the anchor ties into the base plate and fix them with the supplied nuts.
 - [2] Insert the screws in the base plate, secure them with the nuts and then bend the metal tab to prevent the screw from coming out.
- Extract the preformed ties with a downwards movement using a hammer to ensure correct anchorage to the concrete.
- Make a concrete base with the anchor ties and base plate embedded, which must be level and clean and of the size indicated in the figure.

i **NOTE:** if the concrete base has already been made, base plate [2] can be fixed using M8 plugs (not supplied).



5.3 Gearmotor installation

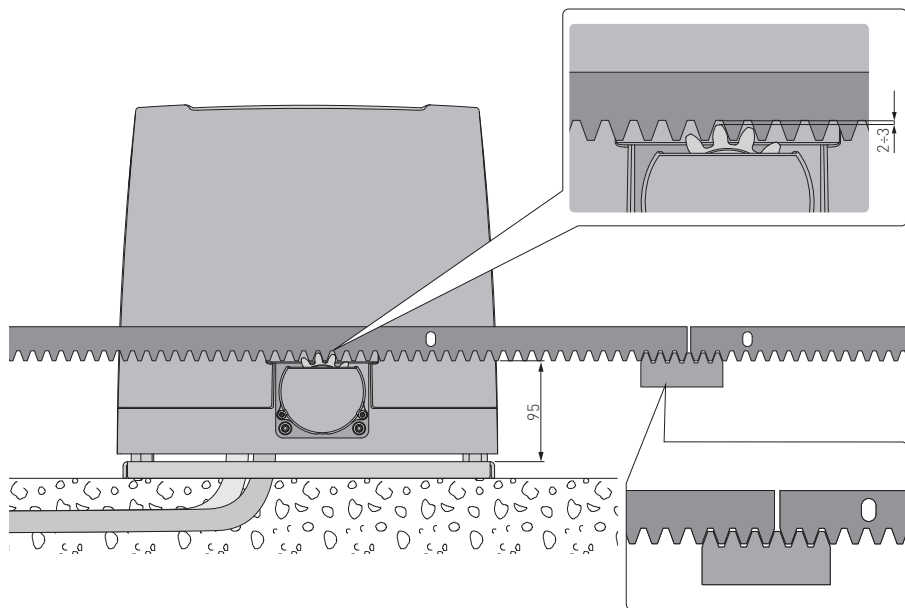


- Release the gearmotor [1] (see OPERATING INSTRUCTIONS). Loosen the front screw [2] and remove the casing by pressing on its sides [3-4].
- Place the gearmotor on the base plate.
- Adjust the gearmotor horizontally by sliding it along the slots of the gearmotor base and vertically with four levelling screws [A].
NOTE: during the vertical adjustment, keep the gearmotor slightly raised from the base plate so that the rack can be fixed and subsequent adjustments are possible.
- After adjusting, fix the gearmotor using screws [B].



WARNING: The gearmotor must be suitably raised from the ground to avoid flooding.

5.4 Rack installation



- Release the gearmotor (see OPERATING INSTRUCTIONS) and open the gate.
- Place the rack against the pinion and sliding the gate manually fix it along its whole length.
NOTE: To make it easier to align the rods correctly, use a scrap piece of rack and rest it underneath the junction point, as shown in the figure detail.
- Once fixed, vertically adjust the gearmotor to give a play of about 2 to 3 mm between the pinion and the rack.
- Secure the gearmotor.
- Slightly lubricate the rack and pinion after assembly.
Manually check that the gate slides evenly and without friction.

5.5 Operation with virtual encoder

NEOS gearmotors do not require limit switches because they have a virtual encoder.

Mechanical opening and closing end stops must be installed.

The gate automatically slows when approaching the end stops.

WARNING: when the gate reaches the opening or closing limit stop, it reverses briefly to facilitate manual release of the gearmotor.

5.6 Magnetic limit switch installation and adjustment

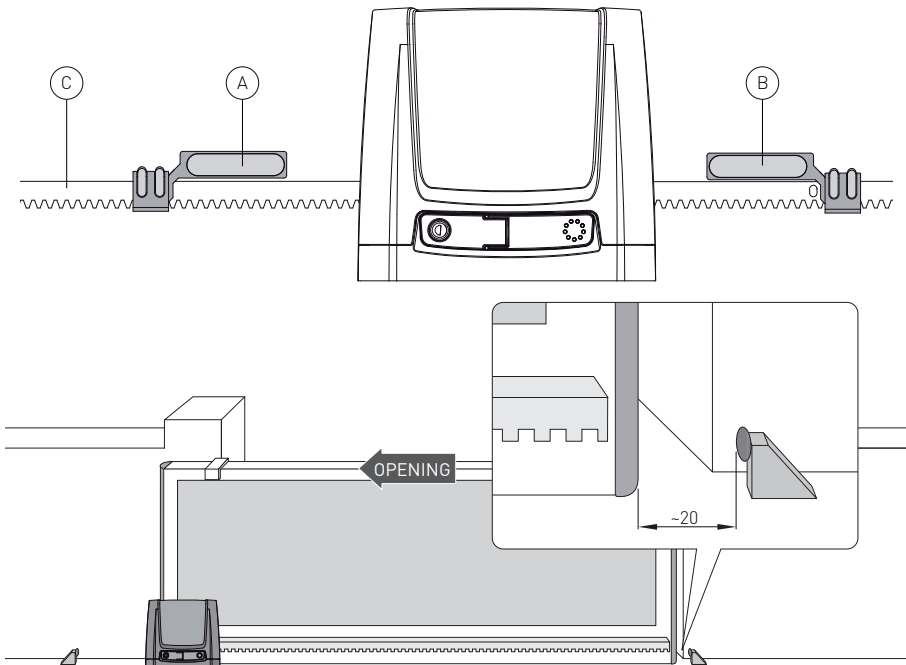
For the installation of the limit switch kit, refer to the NES100FCM manual.

- Manually place the wing in the open position and fix limit switch brackets [A] and [B] on rack [C]. Repeat this operation with the wing in the closed position.
- After a few manoeuvres, adjust the position of limit switch brackets [A] and [B] so that the gate stops about 20 mm before reaching the opening and closing mechanical stops.

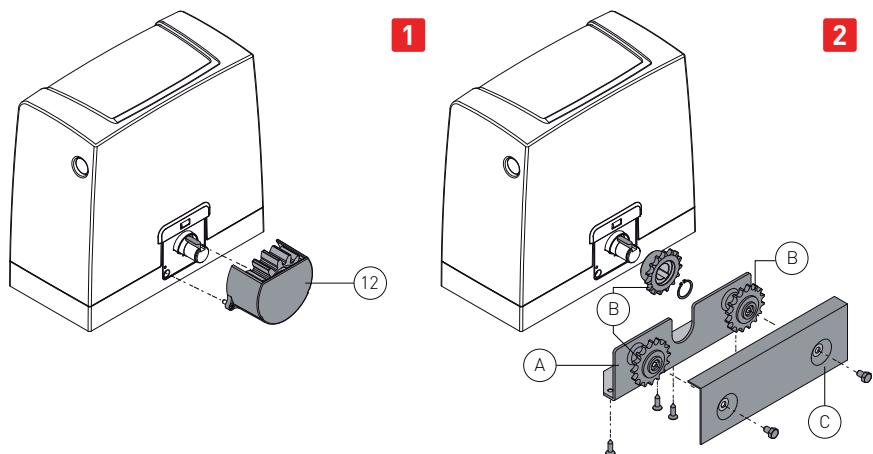


The limit switch kit is optional and is used to stop the gate before it reaches the opening and closing mechanical stops.

With a limit switch installed, slowdown is carried out at regulated power to overcome possible friction.

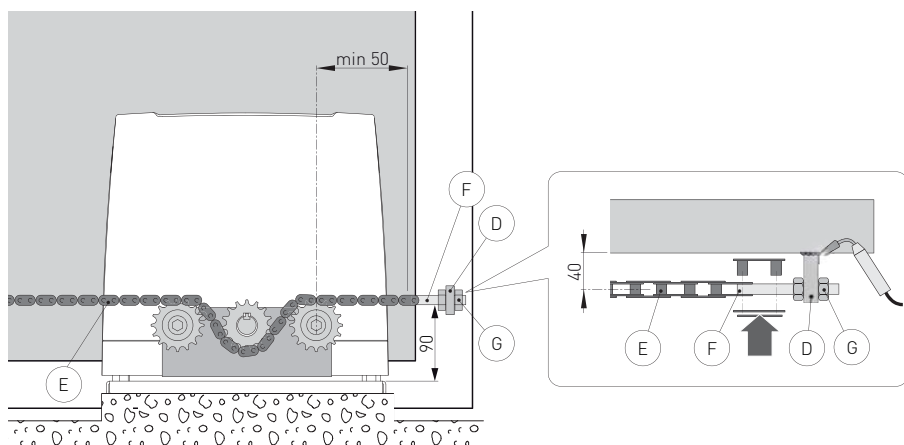


5.7 Chain drive kit installation



NOTE: Install the chain drive kit before securing the gearmotor to the base plate.

- Release the gearmotor (see OPERATING INSTRUCTIONS).
- [1] Remove pinion [12].
- [2] Fix pinion supporting plate [A] to the gearmotor.
- Insert pinions [B] as illustrated in the diagram.
- [3] Pass the chain between the pinions by hand.
- Fix cover plate [C].



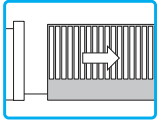
- Move the wing into the open position by hand and fix brackets [D] on the wing as illustrated in the diagram.
- Connect chain [E], which was previously assembled on the gearmotor, to tie rod [F] and fix it to bracket [D].
- Fix bracket [D] on the opposite side of the gate. Connect chain [E] to tie rod [F] and fix it to bracket [D] (cut the excess chain).

NOTE: Make sure that the distance between the pinion centre and tie rod [F] is correct when the gate is fully open and closed.

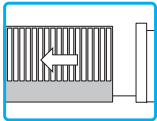
- Secure the chain with nuts [G].
- Tighten the chain [E] with the tie rods [F].
- Slightly lubricate the chain [E] and the pinions after assembly.



WARNING: when the chain traction kit is fitted, the gearmotor drive direction is inverted.



LF Right-hand opening

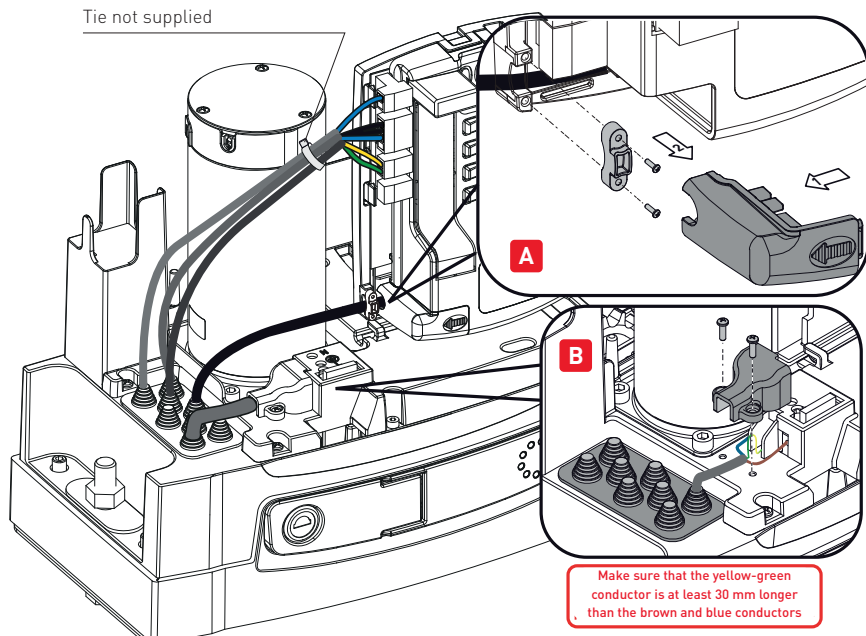


RT Left-hand opening

6. Electrical connections



NOTE: the electrical wiring and start-up of the gearmotors is shown in the CS12E and CS12M control panel installation manuals.



Before connecting the power supply, make sure the plate data correspond to that of the mains power supply.

An omnipolar disconnection switch with a contact opening distance of at least 3mm must be fitted on the mains supply.

Check there is an adequate residual current circuit breaker and overcurrent cutout upstream of the electrical system.

For the power supply, use a H05RN-F 3G1.5 type electric cable. Connect it to terminals L (brown), N (blue), \perp (yellow/green) inside the automation.

NOTE: the maximum permissible section of the wire is AWG14 (2 mm²).

Unsheathe the power supply cable in line with the terminal, and use a cable fastener to hold it in place (see ref. B).

In order to comply with essential requirements of standards in force, reclose the cover once the wires have been connected to the terminal.

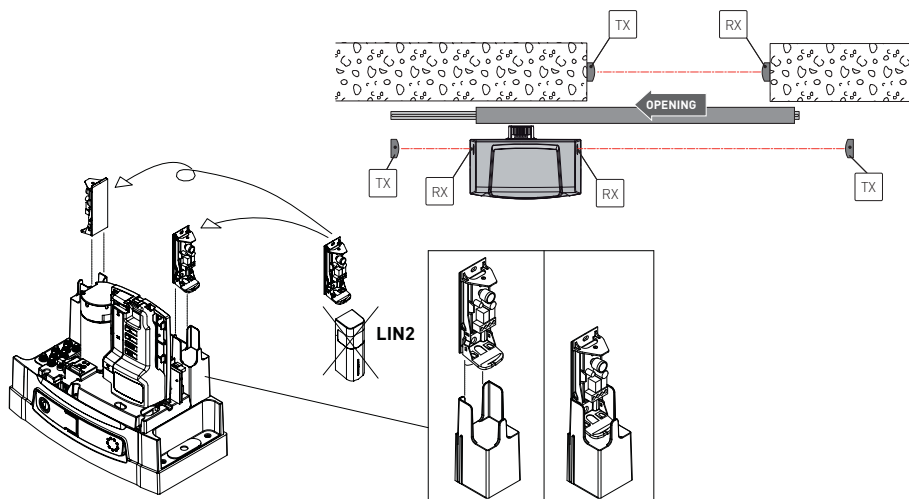
In the external automation section, the connections to the mains power supply and any other low voltage wires (230V) must be made on an independent channel separated from the connections to the command and safety devices (SELV = Safety Extra Low Voltage).

The channel must penetrate the automation through the holes on the base plate by a few centimetres.

Make sure there are no sharp edges that may damage the power supply cable.

Make sure the mains power wires (230V) and the accessory wires (24V) are separated. The cables must be double insulated. Unsheathe them in line with the relative connection terminals, and use cable fasteners (see ref. A) or straps (not supplied by us) to hold them in place.

6.1 Installation of internal photocell



Additional photocells can be installed inside the gearmotor casing of Ditec NEOS, to protect both opening and closing movements by using the LIN2 photocell.

Fit a receiver (RX) or a transmitter (TX) as shown in the figure.

Installation of the photocells must comply with standards EN12453 and EN12445.

WARNING: the photocell receiver (RX) and transmitter (TX) may also be installed at two different heights, the maximum permissible difference in height being 300 mm.

Connect the N.C. contact to the safety or stop contacts of the control panel.



For further informations, refer to the photocell installation manual.

7. Routine maintenance plan

Perform the following operations and checks every 6 months, according to the intensity of use of the automation.

Disconnect the 230 V~ power supply and batteries (if fitted) and release the gearmotor:

- Visually check that the gate, the fixing brackets and existing structure have suitable mechanical strength and are in good condition.
- Check the gate-gearmotor alignment, the distance (2-3 mm) between the groove of the pinion and the crest of the rack.
- Clean the wheel's sliding guide, the rack and pinion of the gearmotor and slightly lubricate the rack and pinion. Manually check that the gate slides evenly and without friction.

Connect the 230 V~ power supply and batteries (if fitted) and lock the gearmotor:

- Make sure the limit switches are working correctly.
- Check the power adjustment.
- Check that all control and safety functions are working correctly.




NOTE: For spare parts, see the spares price list.

8. Troubleshooting / alarms

Problem	Possible cause
The gate doesn't open or close	No power. Contact Technical Service.
	Short-circuited accessories. Contact Technical Service.
	Blown line fuse. Contact Technical Service.
	Release door microswitch open Check the position of the key. Close the release door if it's open. Contact Technical Service.
	Mechanical fault. Contact Technical Service.
	Faulty motor. Contact Technical Service.
	Faulty control panel. Contact Technical Service.
The gate opens/closes a short way, and then stops	Friction is present. Contact Technical Service.
The remote control has limited range and doesn't work while the gate is moving	The batteries are running down. Replace them.
The flashing light is not working	The lamp has blown. Replace it.
	The wires are damaged or detached, or have short-circuited. Contact Technical Service.
The «gate open» indicator light doesn't work	The lamp has blown. Replace it.
	The wires are damaged or detached, or have short-circuited. Contact Technical Service.

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 The crossed-out wheellie 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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