DITEC™

ENTREMATIC

CE

DOD

IP1733EN - rev. 2011-05-27

EN

Installation and maintenance manual for industrial sectional door automations.

(Original instructions)

ICIM
ISO 9001
Cert. n° 0957

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1. GENERAL SAFETY PRECAUTIONS

This installation manual is intended for professionally competent personnel only.
Before installing the product, carefully read the instructions.
Bad installation could be hazardous.
The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as these are a potential source of hazard.
Before installing the product, make sure it is in perfect condition.
Do not install the product in an explosive environment and atmosphere: gas or inflammable fumes are a serious hazard risk.
Before installing the motors, make all structural changes relating to safety clearances and protection or segregation of all areas where there is risk of being crushed, cut or dragged, and danger areas in general.
Make sure the existing structure is up to standard in terms of strength and stability.
The motor manufacturer is not responsible for failure to use Good Working Methods in building the frames to be motorised or for any deformation occurring during use.
The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account: applicable laws and directives, Good Working Methods, installation premises, system operating logic and the forces developed by the motorised door.
Apply hazard area notices required by applicable regulations.
Each installation must clearly show the identification details of the motorised door.

2. DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

(Directive 2006/42/EC, Annex II-B)
The manufacturer DITEC S.p.A. with headquarters in Via Mons. Banfi, 3 - 21042 Caronno Pertusella (VA) - ITALY

Declares that the automation for industrial sectional type DOD

- Has been constructed to be installed on a manual door to construct a machine pursuant to the directive 2006/42/EC. The manufacturer of the motorised door shall declare conformity pursuant to the directive 2006/42/EC (annex II-A), prior to the machine being put into service.
- Conforms to applicable essential safety requirements indicated in annex I, chapter 1 of the directive 2006/42/EC.
- Conforms to the Low Voltage Directive 2006/95/EC.
- Conforms to the Electromagnetic Compatibility Directive 2004/108/EC.
- Technical documentation conforms to annex VII-B to the directive 2006/42/EC.
- The technical file is managed by Renato Calza with offices in Via Mons. Banfi, 3 - 21042 Caronno Pertusella (VA) - ITALY.
- A copy of technical documentation will be provided to national competent authorities, following a suitably justified request.

Caronno Pertusella, 29-12-2009

Silvano Angaroni
(Managing Director)

2.1 Machinery Directive

Pursuant to Machinery Directive (2006/42/CE) the installer who motorises 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 motorised door);
- draft the EC declaration of conformity in accordance with Annex II-A of the Machinery Directive and deliver it to the customer;
- affix the CE marking on the power operated door in accordance with point 1.7.3 of Annex I of the Machinery Directive.

3. TECHNICAL DATA

	DOD12	DOD14	DOD15	DOD14PS
Power supply	230 V~ / 50 Hz	230 V~ / 50 Hz	400 V~ / 50 Hz	230 V~ / 50 Hz
Absorption	3 A	3 A	1,2 A	3 A
Motor power	350 W	350 W	450 W	350 W
Torque	45 Nm	60 Nm	65 Nm	60 Nm
Revolution transmission shaft	32 RPM	22 RPM	32 RPM	22 RPM
Capacitor	25 µF	22 µF	-	22 µF
Service class	4 - INTENSIVE	4 - INTENSIVE	4 - INTENSIVE	-
Min. number consecutive cycles	50	50	50	-
Intermittence	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	-
Degree of protection	IP54	IP54	IP54	IP54
Weight	15 Kg	15 kg	15 kg	15 kg
Temperature	-20°C / +55°C -35°C / +55°C with NIO enabled	-20°C / +55°C -35°C / +55°C with NIO enabled	-20°C / +55°C	-20°C / +55°C
Control panel	E1A	E1A	E1T	-

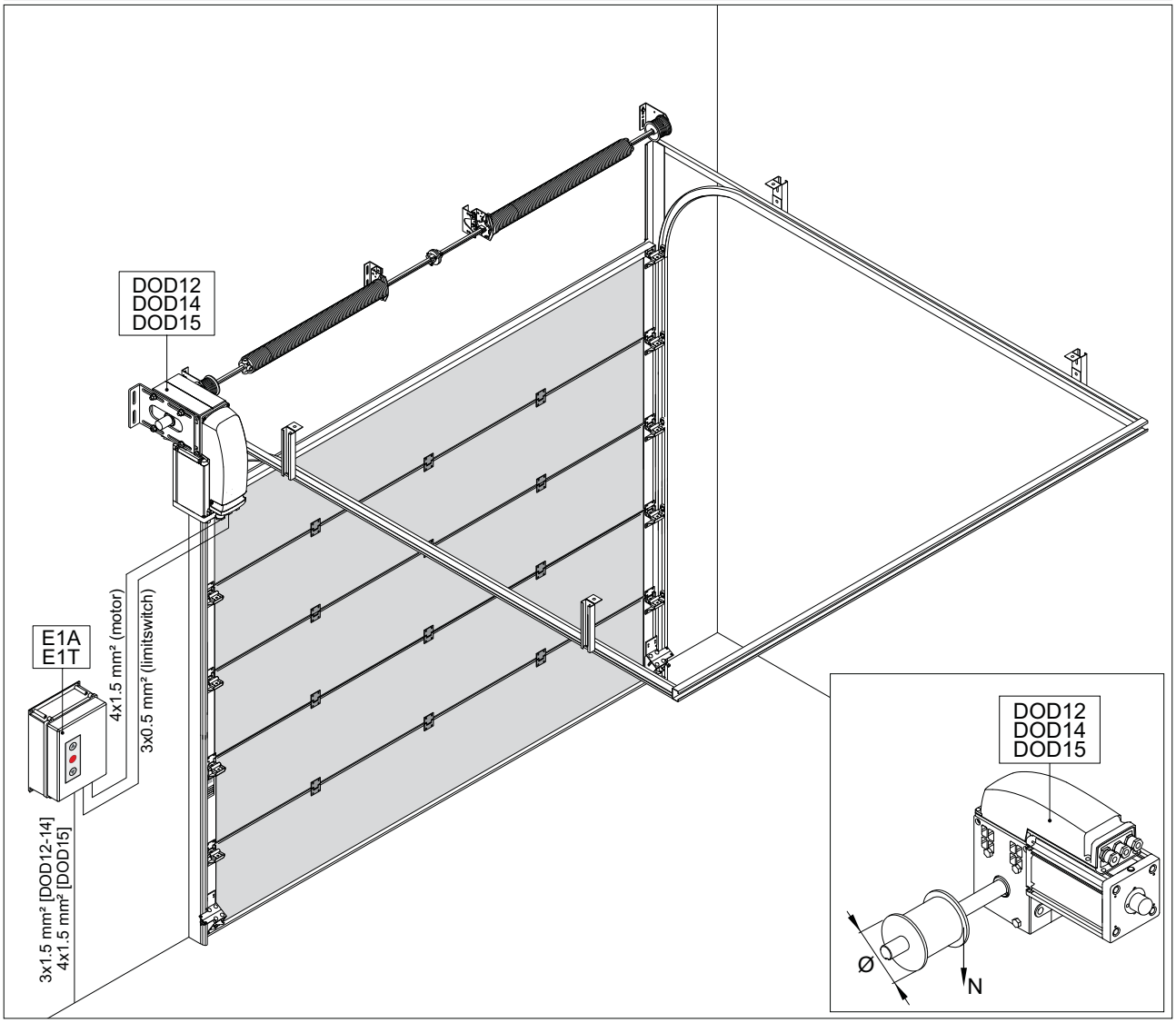
3.1 Application

Service class: 4 (minimum 100 cycles a day for 10 years or 200 cycles a day for 5 years)
Use: INTENSIVE (For pedestrian accesses with intensive use).

- The operating performance specifications refer to the recommended weight (about 2/3 of maximum allowed weight). Use with maximum allowed weight could reduce the above performance specifications in tecnhical data.
- The service class, operating times and number of consecutive cycles are merely approximate. These have been statistically determined in average conditions of use and are not certain for each single case.
- Each automatic entrance features variable factors such as: friction, balancing and environmental conditions that can substantially change both the duration and operating quality of the automatic entrance or part of its components (including automatic system). It is up to the installer to adopt adequate safety coefficients for each single installation.

ATTENTION: DOD12, DOD14 and DOD15 geared motors may be used for operating sectional doors only if correctly balanced.
The sectional doors can only be manually moved by means of a handle (installing the DODSBV release device) or a chain (installing the DODSBC release device).

4. DOD12-14-15 axle installation

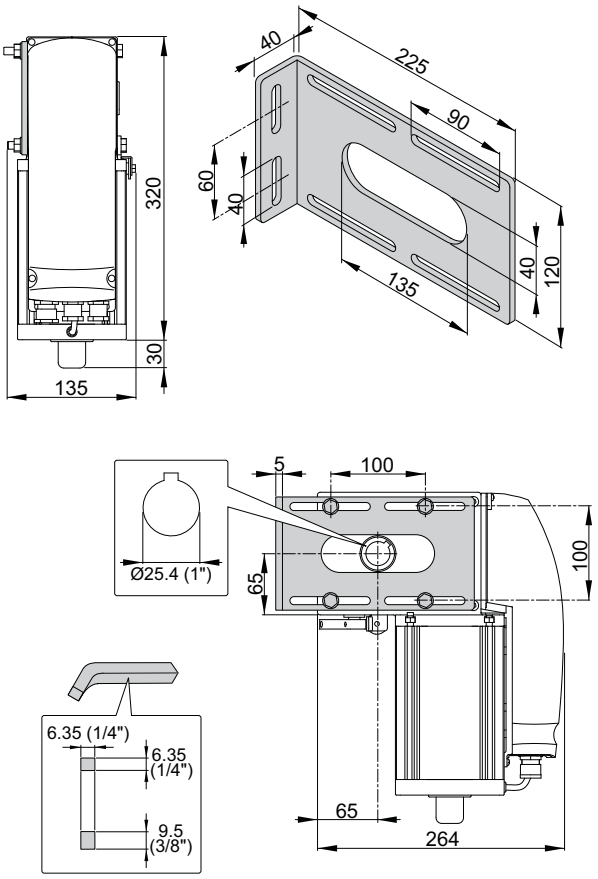


WARNING: For correct operation we advise to move the door at a speed lower than 0.2 m/s.

Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door cable pulley [Ø mm]	Door speed [m/s]	Max Run [m]	Max force [N]
DOD12	-	-	1:1	45	32	102 124 158 226 Ø	0,17 0,21 0,26 0,38 =Ø:597	8,7 10,6 13,6 19,4 =Ø:11,66	706 581 456 319 =72000:Ø
DOD14	-	-	1:1	60	22	102 124 158 226 Ø	0,12 0,14 0,18 0,26 =Ø:868	8,7 10,6 13,6 19,4 =Ø:11,66	941 774 608 425 =96000:Ø
DOD15	-	-	1:1	65	32	102 124 158 226 Ø	0,17 0,21 0,26 0,38 =Ø:597	8,7 10,6 13,6 19,4 =Ø:11,66	1020 839 658 460 =104000:Ø

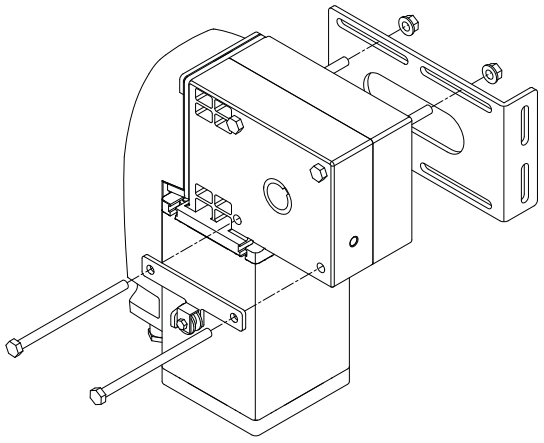
4.1 Overall dimensions

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



4.2. Motor assembling

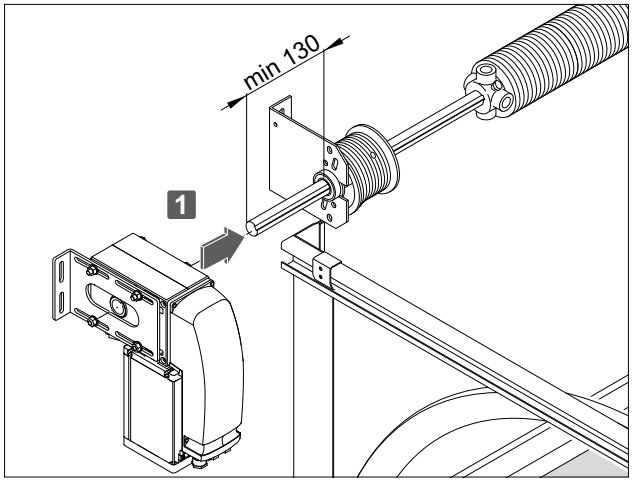
Mount the DOD12-14-15 motor onto the wall bracket and release idle bracket as shown in figure.

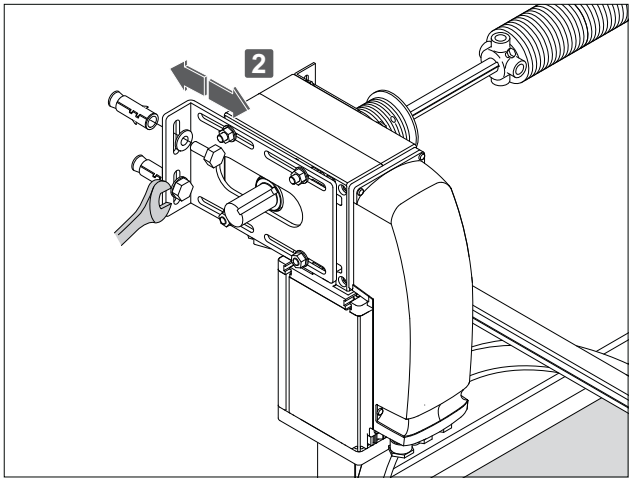


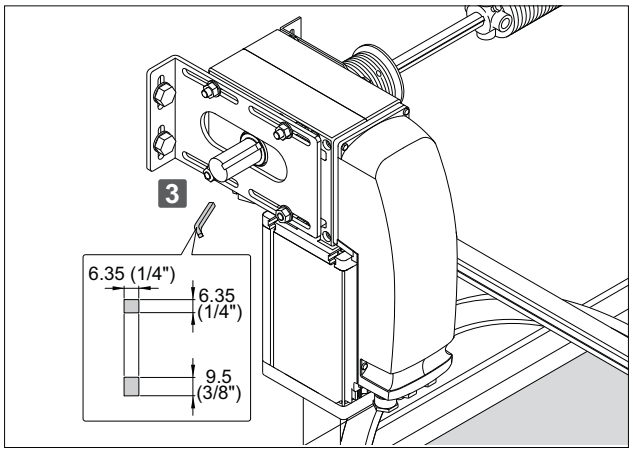
4.3 Installation

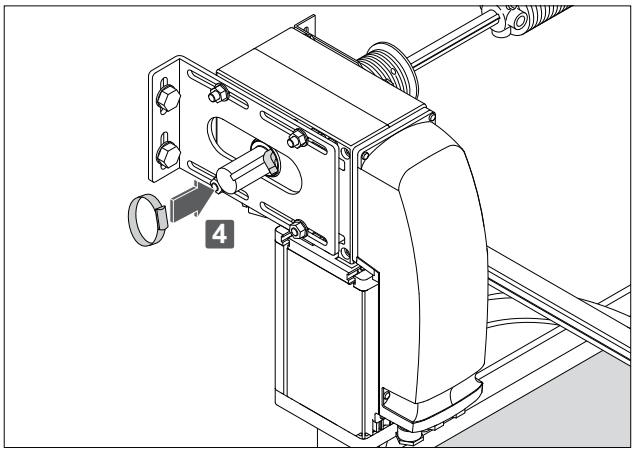
- Fit the DOD12-14-15 motor onto the drive shaft.
- After having determined the position of the wall bracket, drill the holes and secure the bracket in place with dowels (not supplied).
- Insert the appropriate cotter according to shaft cavity length.
- Secure the metal clamp so as to prevent the risk of the cotter coming out of the shaft.

ATTENTION: firmly tighten down all fastening screws.



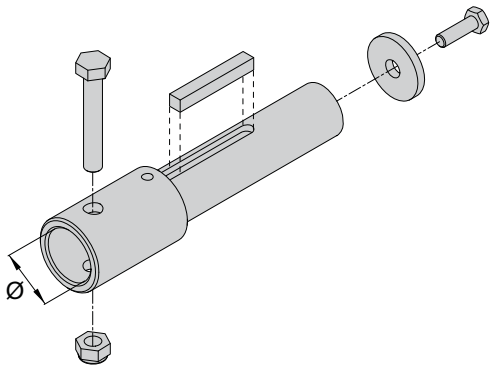


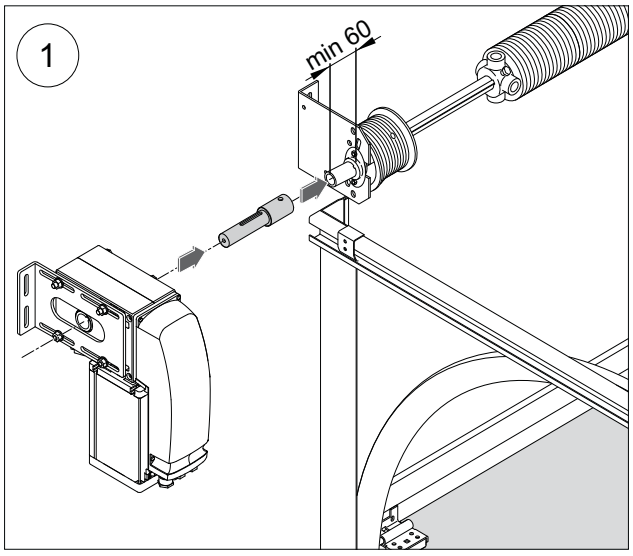


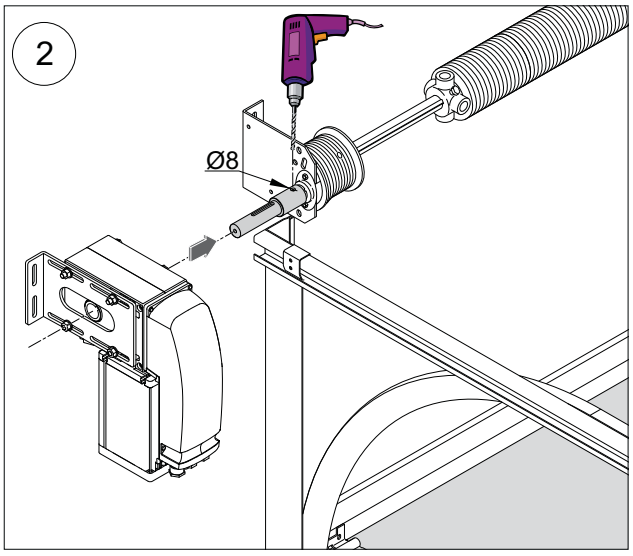


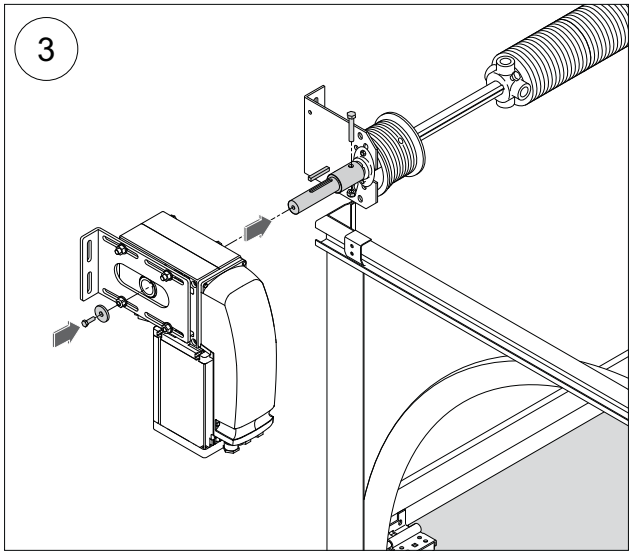
4.4 DODMA

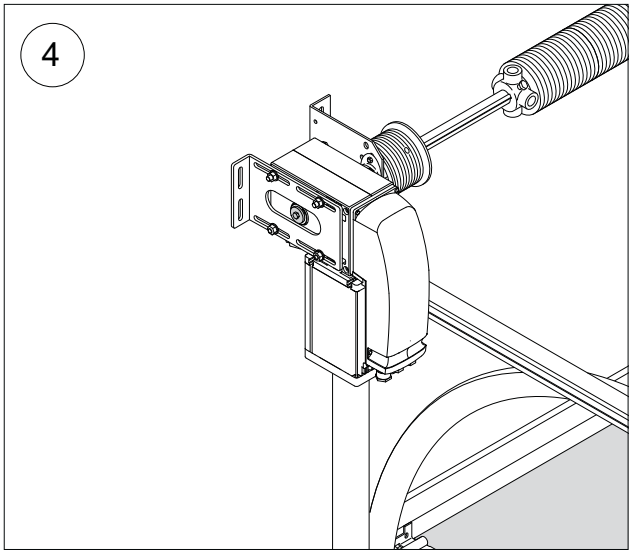
[DODMA1] : Ø=25,6 mm
[DODMA2] : Ø=34 mm



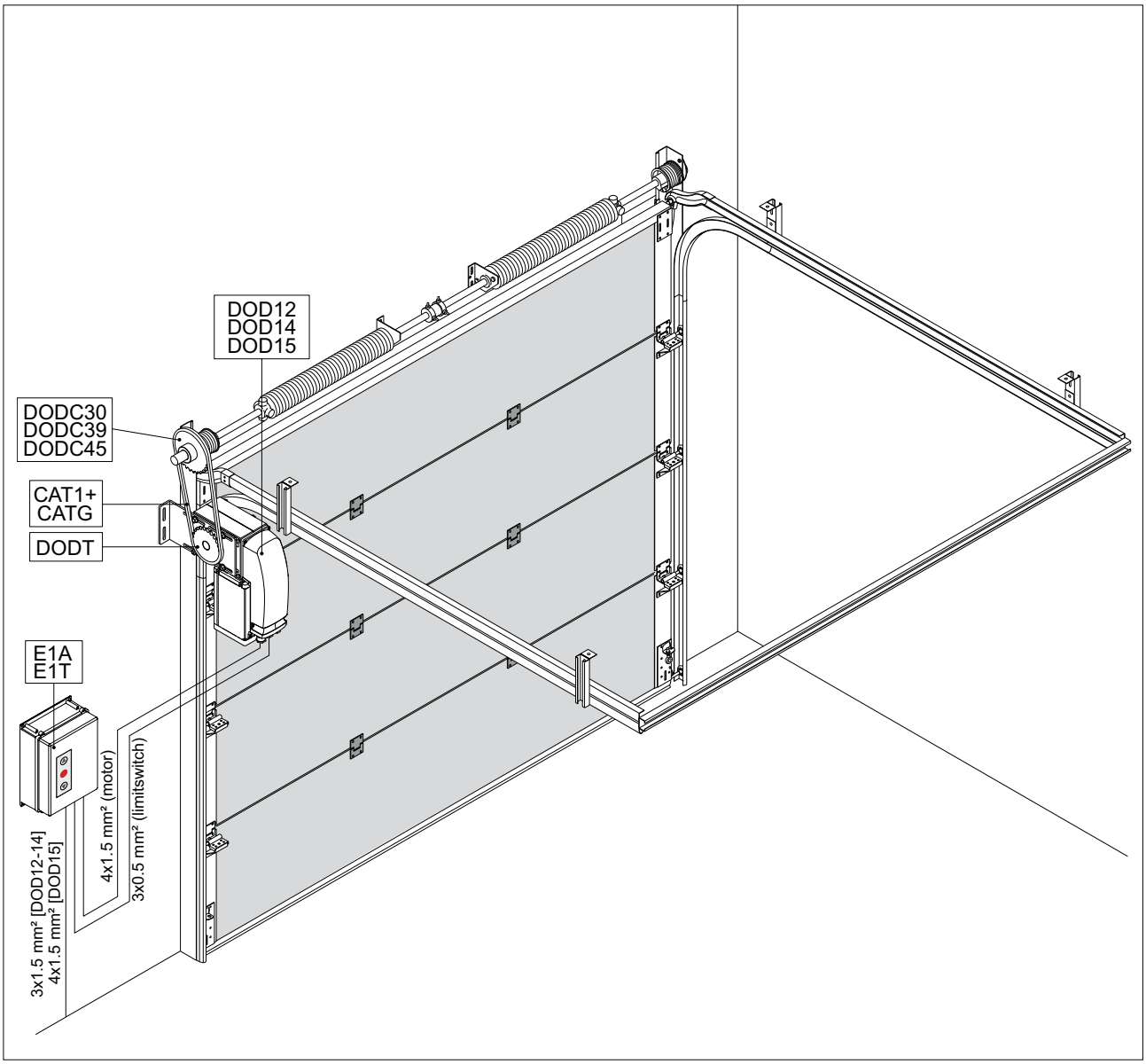




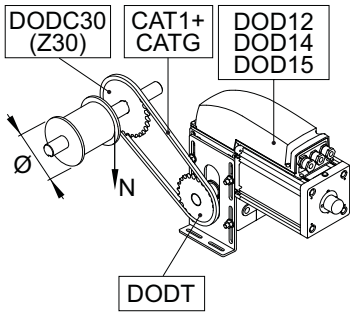




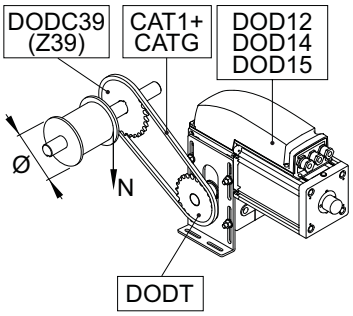
5. DOD12-14-15 chain link-up installation



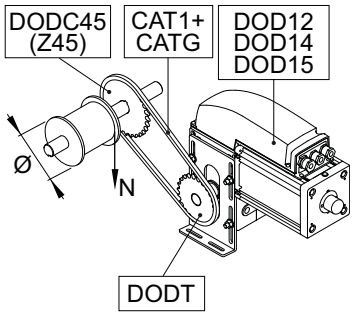
WARNING: For correct operation we advise to move the door at a speed lower than 0.2 m/s.



Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door cable pulley [Ø mm]	Door speed [m/s]	Max Run [m]	Max force [N]
DOD12	DODT (Z24)	DO-DC30 (Z30)	1:1,25	56	25,6	102 124 158 226 Ø	0,14 0,17 0,21 0,30 = Ø : 746	7,0 8,5 10,8 15,5 = Ø : 14,57	882 726 570 398 = 90000 : Ø
DOD14	DODT (Z24)	DO-DC30 (Z30)	1:1,25	75	17,6	102 124 158 226 Ø	0,09 0,11 0,15 0,21 = Ø : 1085	7,0 8,5 10,8 15,5 = Ø : 14,57	1176 968 759 531 = 120000 : Ø
DOD15	DODT (Z24)	DO-DC30 (Z30)	1:1,25	81	25,6	102 124 158 226 Ø	0,14 0,17 0,21 0,30 = Ø : 746	7,0 8,5 10,8 15,5 = Ø : 14,57	1275 1048 823 575 = 130000 : Ø



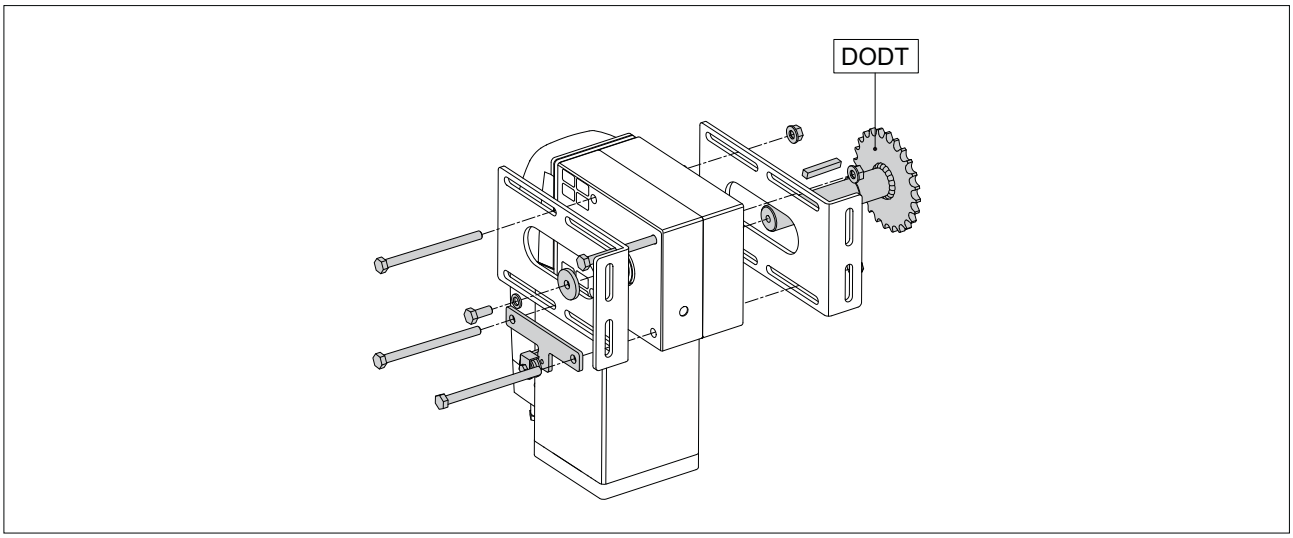
Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door cable pulley [Ø mm]	Door speed [m/s]	Max Run [m]	Max force [N]
DOD12	DODT (Z24)	DO-DC39 (Z39)	1:1,625	73	19,7	102 124 158 226 Ø	0,11 0,13 0,16 0,23 = Ø : 970	5,4 6,5 8,3 11,9 = Ø : 18,95	1147 944 741 518 =117000:Ø
DOD14	DODT (Z24)	DO-DC39 (Z39)	1:1,625	98	13,5	102 124 158 226 Ø	0,07 0,09 0,11 0,16 = Ø : 1415	5,4 6,5 8,3 11,9 = Ø : 18,95	1529 1258 987 690 =156000:Ø
DOD15	DODT (Z24)	DO-DC39 (Z39)	1:1,625	106	19,7	102 124 158 226 Ø	0,11 0,13 0,16 0,23 = Ø : 970	5,4 6,5 8,3 11,9 = Ø : 18,95	1667 1371 1076 752 =170000:Ø



Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door cable pulley [Ø mm]	Door speed [m/s]	Max Run [m]	Max force [N]
DOD12	DODT (Z24)	DO-DC45 (Z45)	1:1,875	84	17,1	102 124 158 226 Ø	0,09 0,11 0,14 0,20 = Ø : 1119	4,7 5,7 7,2 10,3 =Ø:21,86	1324 1089 854 597 =135000:Ø
DOD14	DODT (Z24)	DO-DC45 (Z45)	1:1,875	113	11,7	102 124 158 226 Ø	0,06 0,08 0,10 0,14 = Ø : 1632	4,7 5,7 7,2 10,3 =Ø:21,86	1756 1452 1139 796 =180000:Ø
DOD15	DODT (Z24)	DO-DC45 (Z45)	1:1,875	122	17,1	102 124 158 226 Ø	0,09 0,11 0,14 0,20 = Ø : 1119	4,7 5,7 7,2 10,3 =Ø:21,86	1912 1573 1234 863 =195000:Ø

5.1 Motor-chain link-up

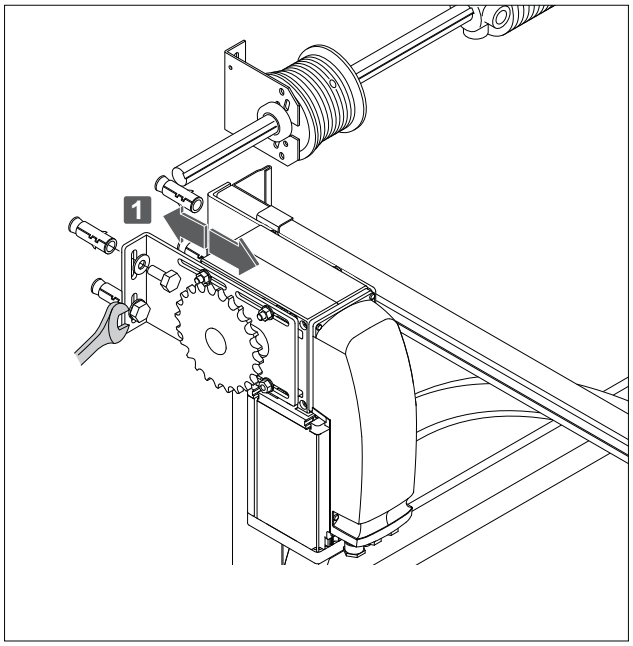
Fasten the wall and release idle brackets to the DOD12-14-15 motor and then fit on the pinion pin (DODT) in the traction position (i.e. on either one of the two sides of the motor).

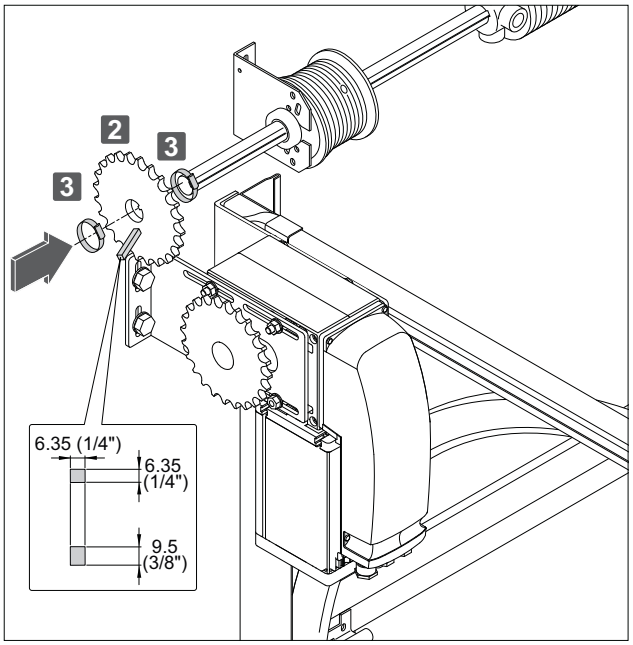


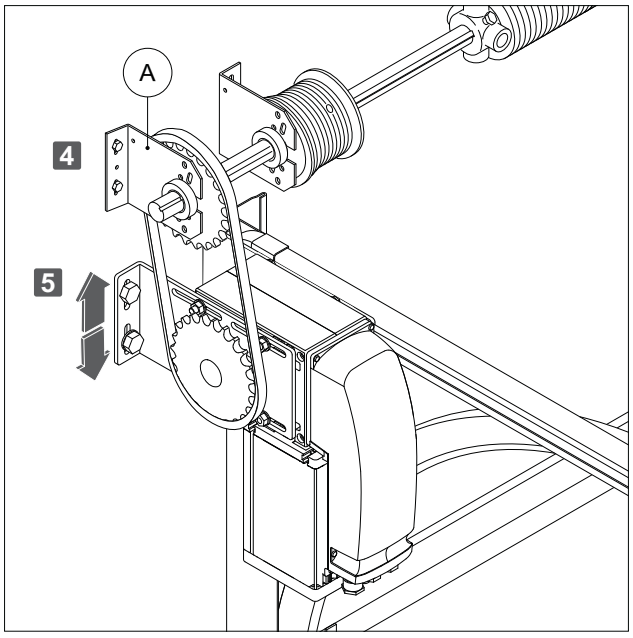
5.2. Installation

- After having determined the position of the wall bracket, drill the holes and secure the bracket in place with dowels (not included).
- Fit the crown wheel onto the sectional door shaft and insert the appropriate cotter depending on shaft cavity length. Fasten the metal clamps so as to prevent the risk of the cotter coming out of the shaft.
- Link up crown and pinion by means of the chain. Properly tauten the chain by acting on the wall anchoring brackets. Fix the bracket [A] to avoid that the shaft of the sectional bends and to guarantee the correct tensioning of the chain.

ATTENTION: firmly tighten down all fastening screws.



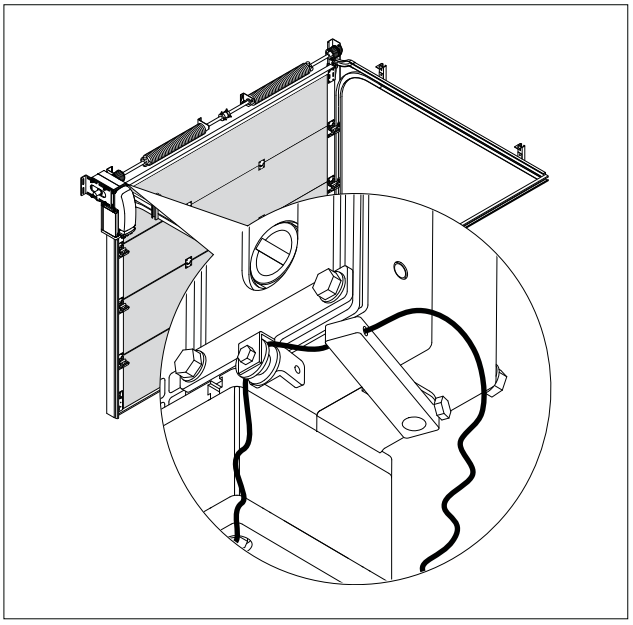


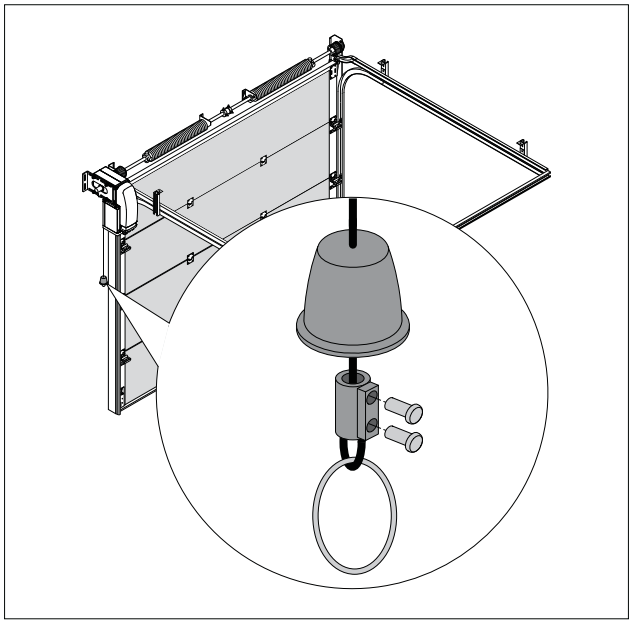


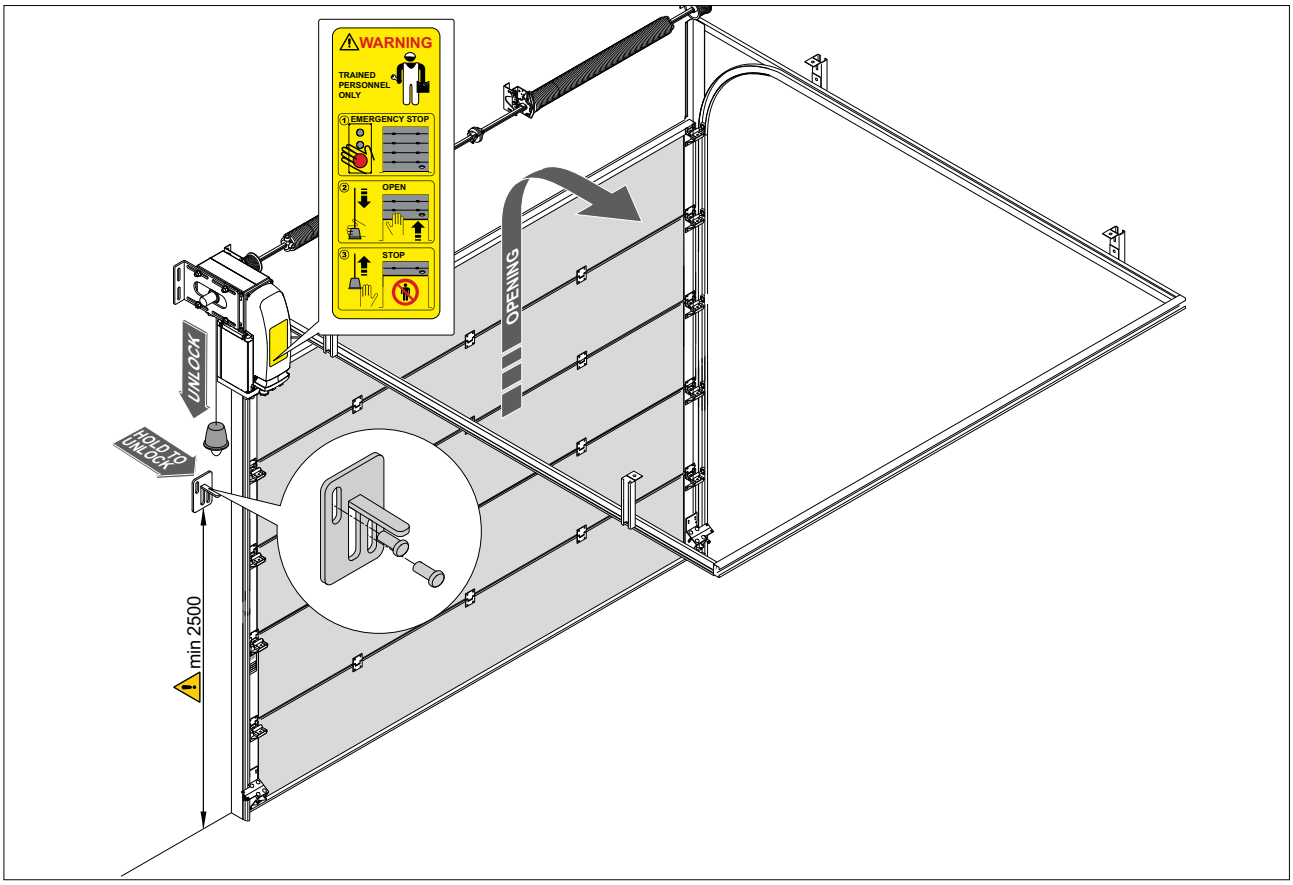
6. CORD RELEASE INSTALLATION

The cord release on the sectional doors should only be used by skilled personnel, for adjusting the door balancing springs during the installation and maintenance phases.

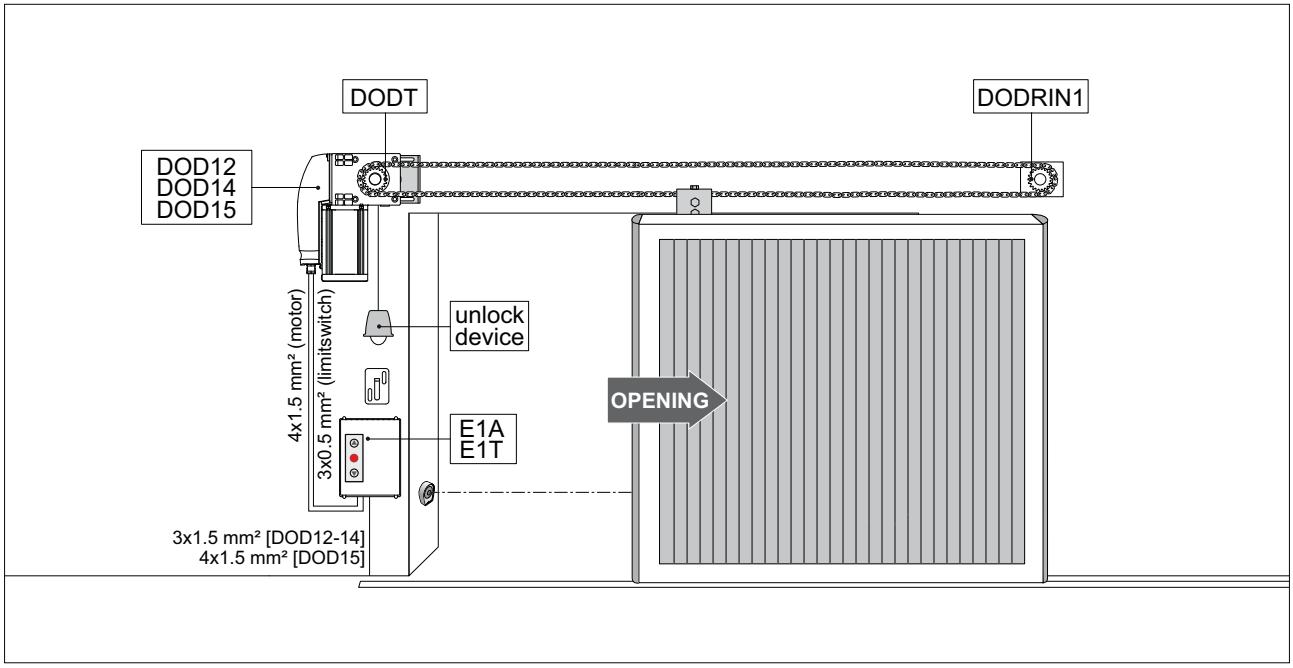
- Fasten the brackets to the gearmotor, then pass the release cord.
- Connect the ring and the handle to the release cord.
- Fasten the cord connection bracket at a height of at least 2.5m from the ground, to avoid any improper use by unauthorised persons. Attach the WARNING label to the motor.





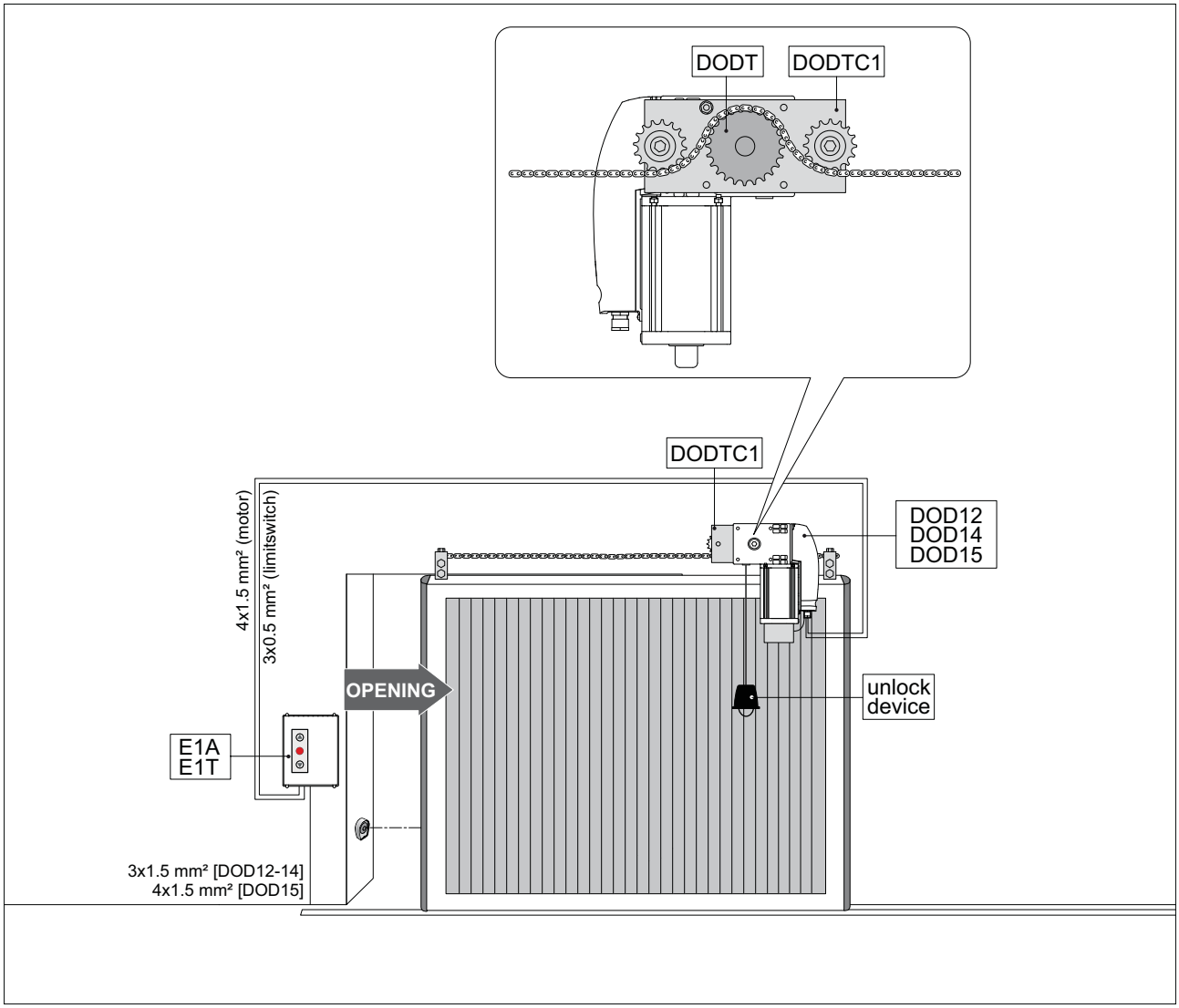


7. DOD12-14-15 installed on sliding door



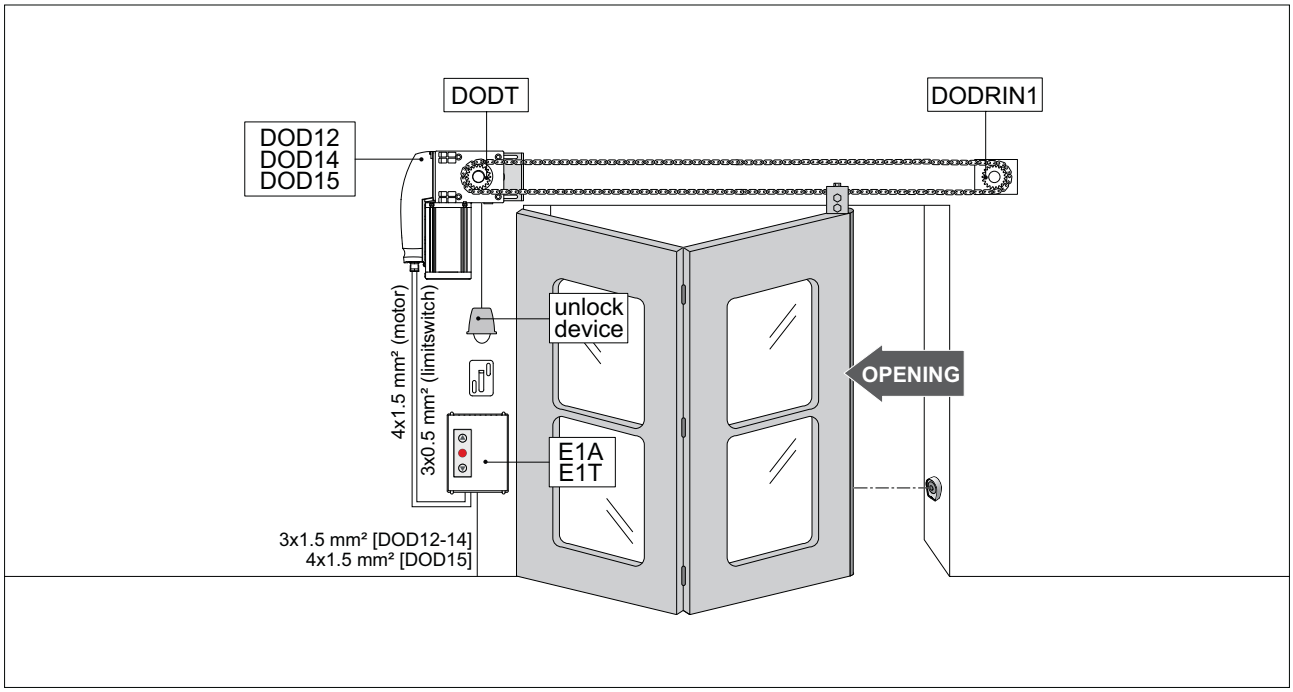
Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door speed [m/s]	Max Run [m]	Max Force [N]
DOD12	DODT (Z24)	DODRIN1 (Z24)	1:1	45	32	0,16	8,35	900
DOD14	DODT (Z24)	DODRIN1 (Z24)	1:1	60	22	0,11	8,35	1200
DOD15	DODT (Z24)	DODRIN1 (Z24)	1:1	65	32	0,16	8,35	1300

8. DOD12-14-15 with DODTC1 installed on sliding door



Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door speed [m/s]	Max Run [m]	Max Force [N]
DOD12	DODT (Z24)	DODTC1 (Z24)	1:1	45	32	0,16	8,35	900
DOD14	DODT (Z24)	DODTC1 (Z24)	1:1	60	22	0,11	8,35	1200
DOD15	DODT (Z24)	DODTC1 (Z24)	1:1	65	32	0,16	8,35	1300

9. DOD12-14-15 installed on folding doors

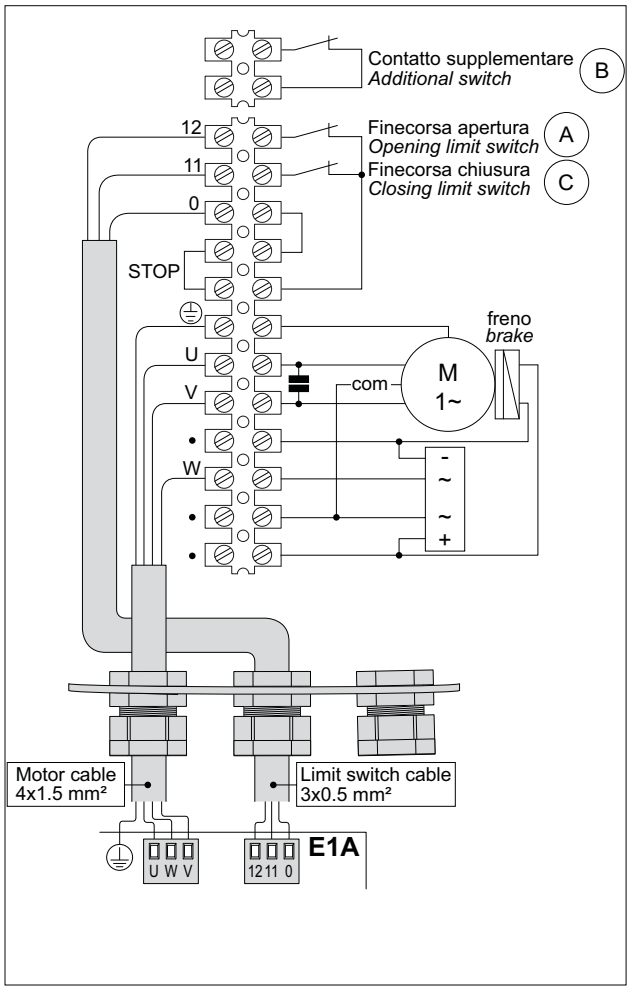


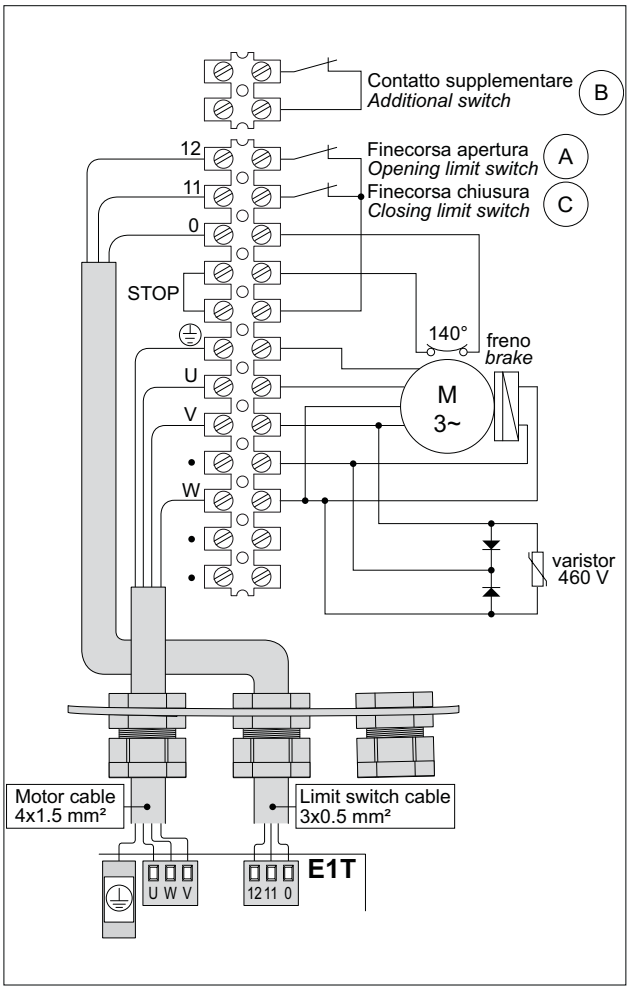
Type	Pinion	Crown	Reduction ratio	Torque [Nm]	Rotating speed [RPM]	Door speed [m/s]	Max Run [m]	Max Force [N]
DOD12	DODT (Z24)	DODRIN1 (Z24)	1:1	45	32	0,16	8,35	900
DOD14	DODT (Z24)	DODRIN1 (Z24)	1:1	60	22	0,11	8,35	1200
DOD15	DODT (Z24)	DODRIN1 (Z24)	1:1	65	32	0,16	8,35	1300

NOTE: for proper operation the door shall be equipped with a derailment device and the chain fastening bracket on the wing must be rotating.

10. DOD12-14-15 ELECTRICAL CONNECTIONS

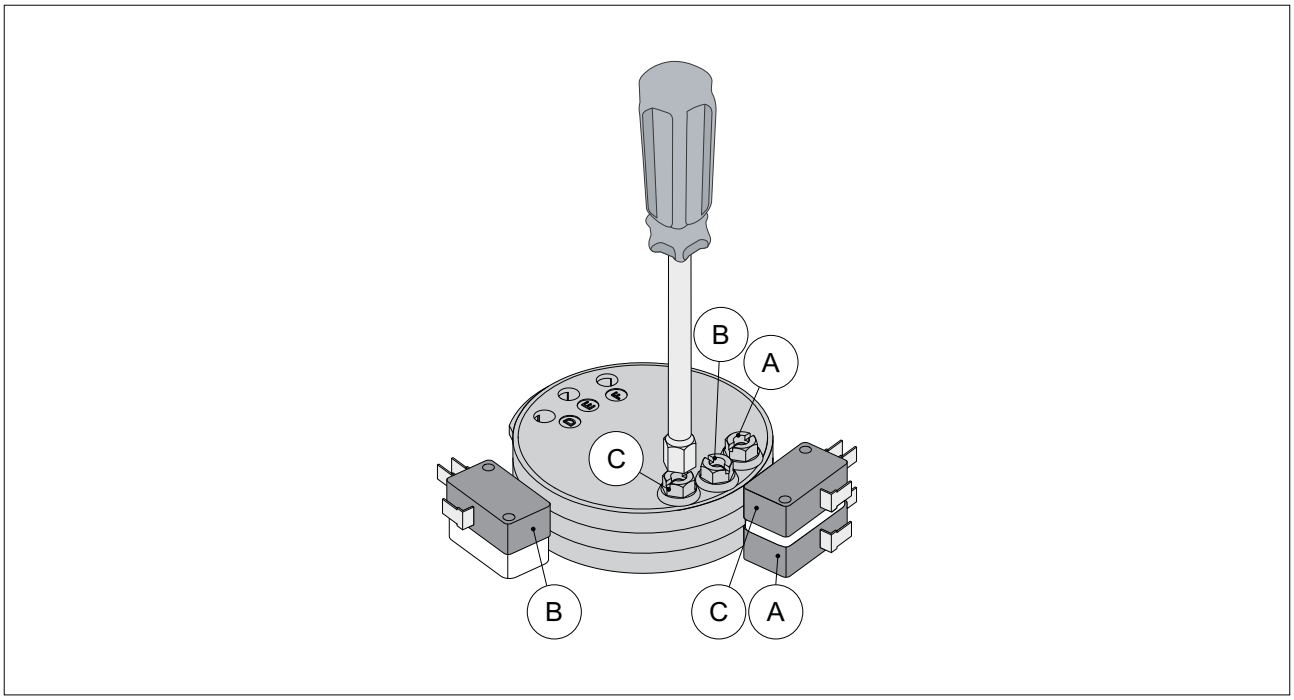
Before connecting the power supply, make sure the plate data correspond to that of the mains power supply.
An omnipolar disconnection switch with minimum contact gaps of 3 mm must be included in the mains supply.
Check that upstream of the electrical installation there is an adequate residual current circuit breaker and a suitable overcurrent cutout.
Wire up the motor to the appropriate electric board terminals.
ATTENTION: make sure to connect the motor ground to the ground point.
Wire up the limit switches to the appropriate electric board terminals.
ATTENTION: (only DOD12-14) set DIP2=OFF on E1A control panel.
Secure the cable using a special cable clamp.
Make sure there are no sharp edges that may damage the power supply cable.
Connection to the mains power supply, in the section outside the automation, is made with independent channels and separated from the connections to the control and safety devices.



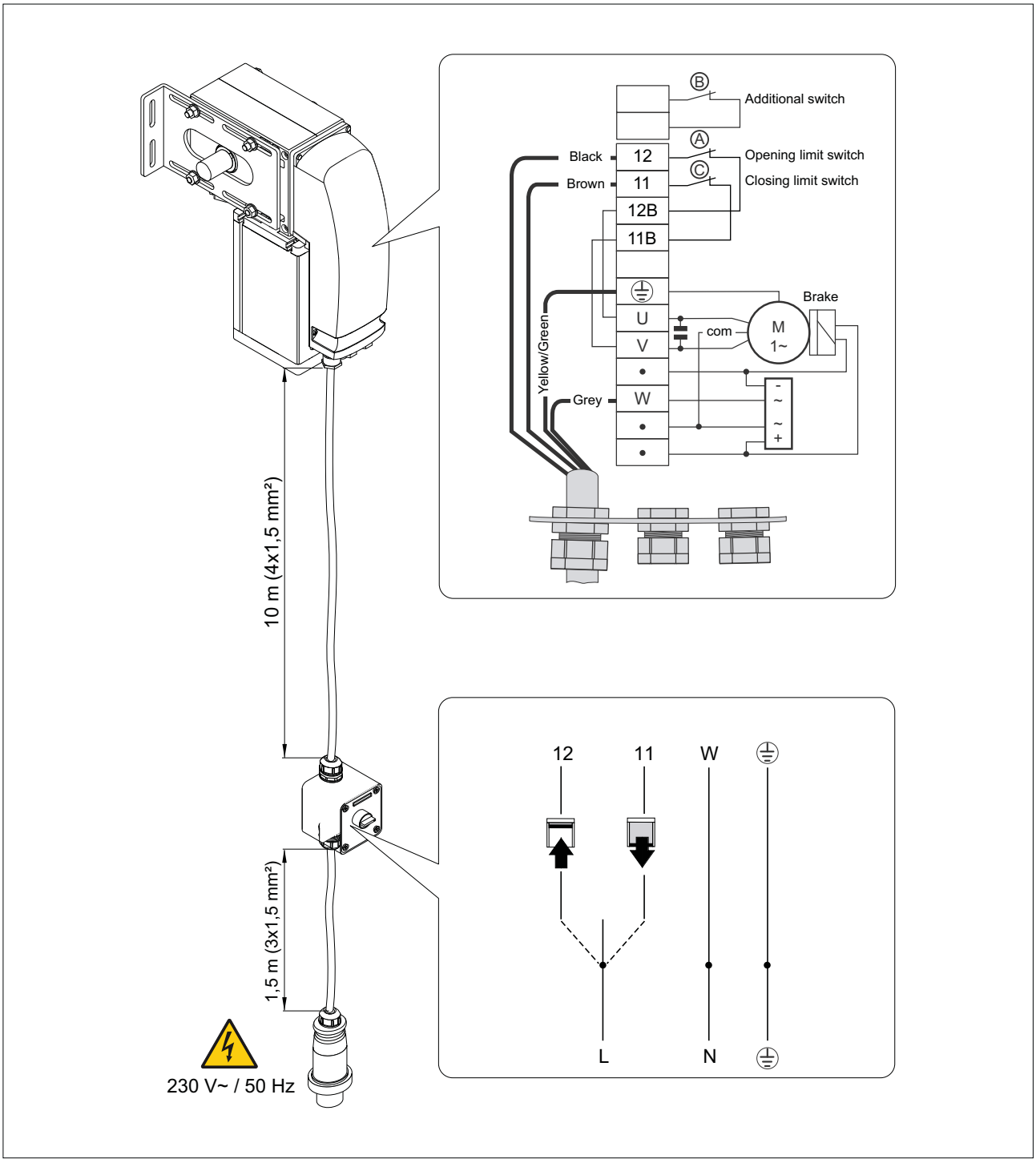


10.1 Limit switch adjustment

With door open, adjust screw [A] so as to cause the associated cam to trigger the opening limit switch.
With door closed, adjust screw [C] so as to cause the associated cam to trigger the closing limit switch.
You can decide to adjust the nut [B] so that the relative cam triggers the supplementary contact.
WARNING: the supplementary contact can be used for different purposes (i.e. as a safety in order not to exceed maximum stroke in closing and opening, as an exclusion of the sensitive edge after the closing limit switch has been triggered, or for possible acoustic signals or traffic lights).
(Only DOD15) make sure that once triggered the opening and closing limit switches actually cause the door to come to a stop. If door continues moving, switch over the L1 and L2 power wiring in the control panel.



10.2 DOD14PS electrical connections



NOTE: With the provided push button the control panel isn't necessary, the automation works as "hold to run" function.

11. ROUTINE MAINTENANCE PLAN

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

Disconnect the power supply, 230 V~ or 400 V~:

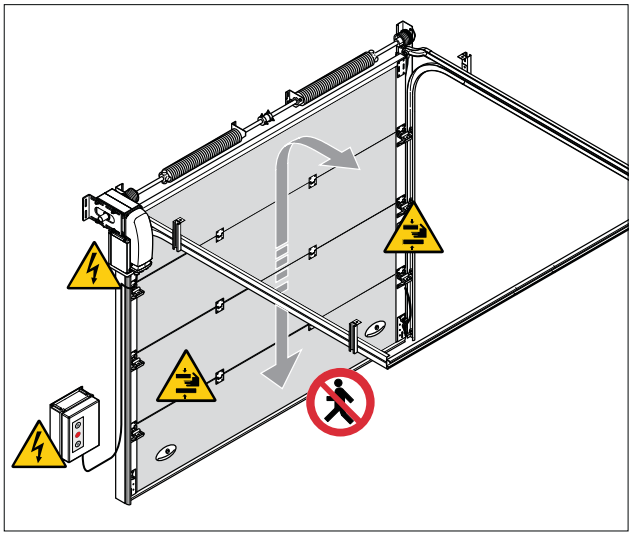
- Lubrication of mechanical parts must be performed with door down.
- Make sure that cable and spring breakage device is in perfect working order.
- Check lift-cable wear.
- Make sure that the cables run smoothly in the drums.
- Periodically grease the hinges, ball-bearings, wheel pins, and torsional springs.
- Check for any obstacles that may hinder the wheels from properly running in the guides.
- To check the correct balancing of the sectional automation.
- Make sure that the overhead sliding structure is firmly fastened to the ceiling and perfectly free from any defects, bending or buckling.
- Make sure that there are no loose bolts or screws.
- Absolutely avoid making any changes to the hoisting and/or sliding system.

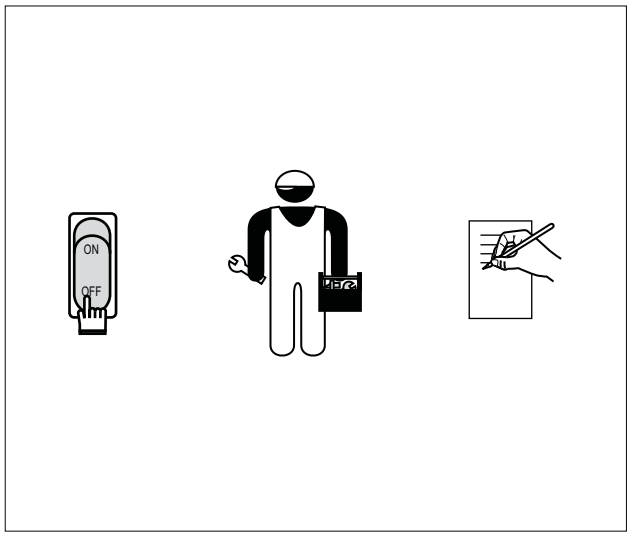
Connect the power supply (230 V~ or 400 V~) and check that:

- Limit switches are working properly;
- All control and safety functions are in good working order.

ATTENTION: For spare parts see the spare parts list.

12. OPERATING INSTRUCTIONS





12.1 General safety precautions

The following precautions are an integral and essential part of the product and must be supplied to the user.
Read them carefully since they contain important information on safe installation, use and maintenance.
These instructions must be kept and forwarded to all possible future users of the system.
This product must only be used for the specific purpose for which it was designed.
Any other use is to be considered improper and therefore dangerous.
The manufacturer cannot be held responsible for any damage caused by improper, incorrect or unreasonable use.
Avoid operating in the proximity of the hinges or moving mechanical parts.
Do not enter within the operating range of the motorized door while it is moving.
Do not block the movement of the motorized door since this may be dangerous.
Do not allow children to play or stay within the operating range of the motorized door.
Keep remote controls and/or any other control devices out of the reach of children in order to avoid possible involuntary activation of the motorized door.
In the event of fault or malfunctioning of the product, turn off the power supply switch, do not attempt to repair or intervene directly and contact only professionally competent personnel.
Failure to comply with the above may cause a dangerous situation.
All cleaning, maintenance or repair work must be carried out by professionally competent personnel.
To ensure that the system works efficiently and correctly, the manufacturer's indications must be complied with and routine maintenance of the motorized door must be performed by professionally competent personnel.
In particular, regular checks are recommended in order to verify that the safety devices are operating correctly.
All installation, maintenance and repair work must be documented and made available to the user.
For the correct disposal of electric and electronic equipment, waste batteries and accumulators, the user must take such products to the designated municipal collection facilities.

DETACH AND DELIVER TO THE CUSTOMER

12.2 Manual release instructions

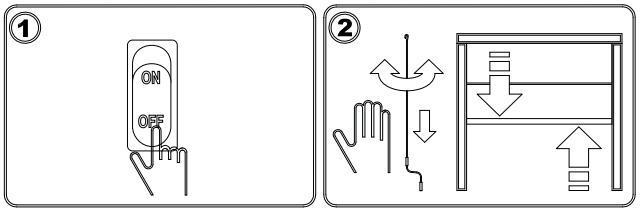
WARNING: the sectional door may not be correctly balanced. The release operations and manual movement of the door should be carried out using the DODSBV handle release devices, or the DODSBC chain release devices.

In the event of a power supply failure or fault, to manually move the sectional, sliding or folding door you must:

- disconnect the power supply and stop the door;

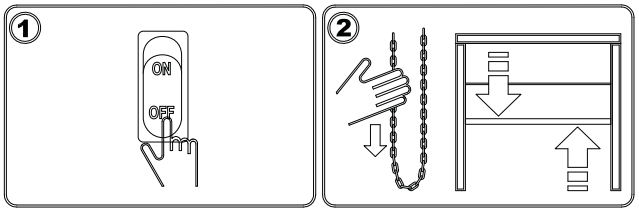
HANDLE RELEASE

- raise / lower the sectional door using the handle;



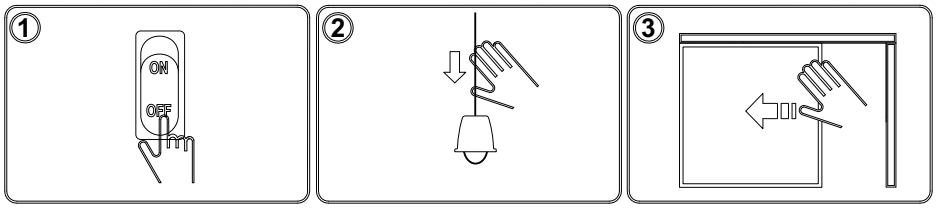
CHAIN RELEASE

- raise / lower the sectional door using the chain;



CORD RELEASE

- push the door wing of the sliding or folding door using the cord release.



WARNING: the door wing block and release operations must be performed with the motor idle.

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Installer:

DETACH AND DELIVER TO THE CUSTOMER

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