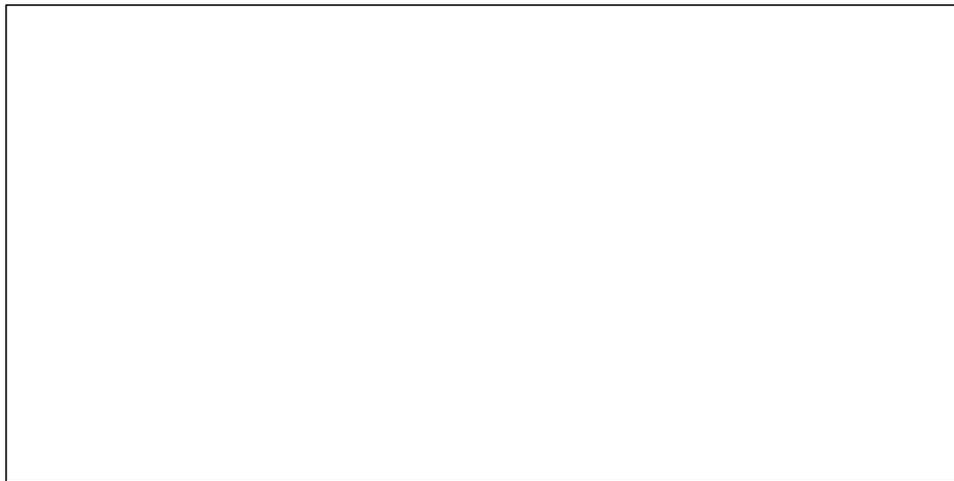
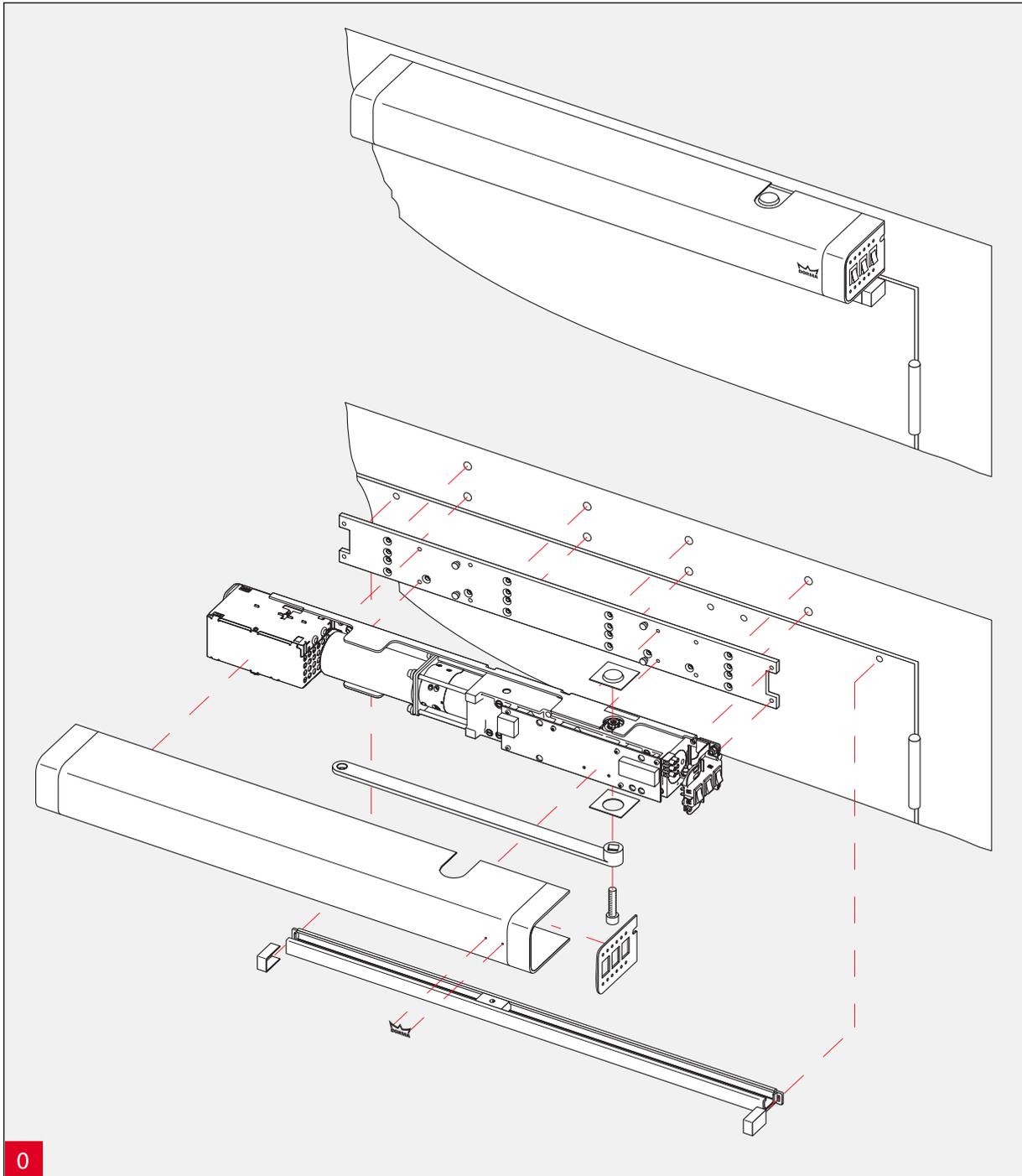


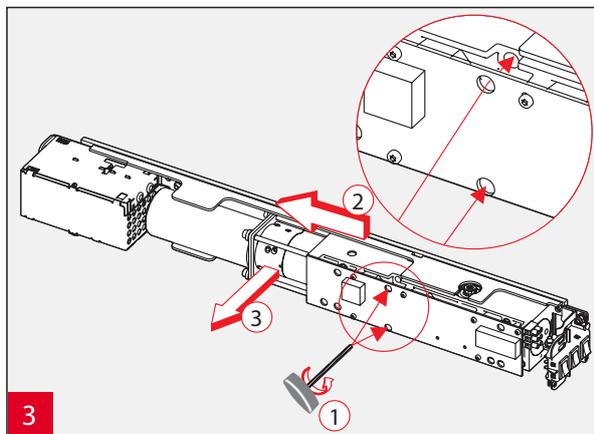
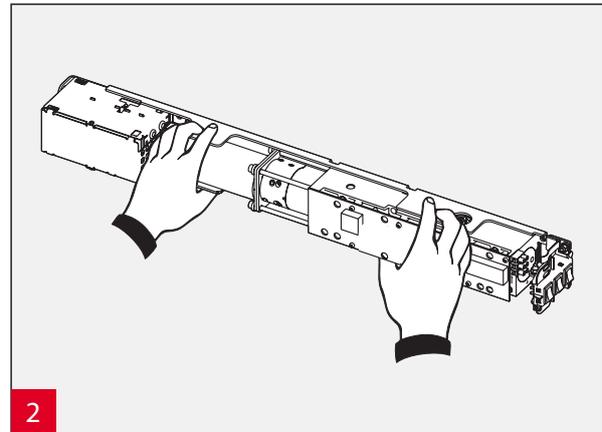
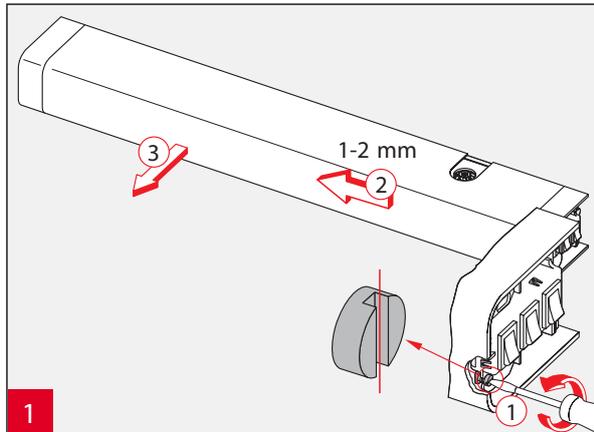
CD 80 SWING DOOR OPERATOR INSTALLATION INSTRUCTIONS

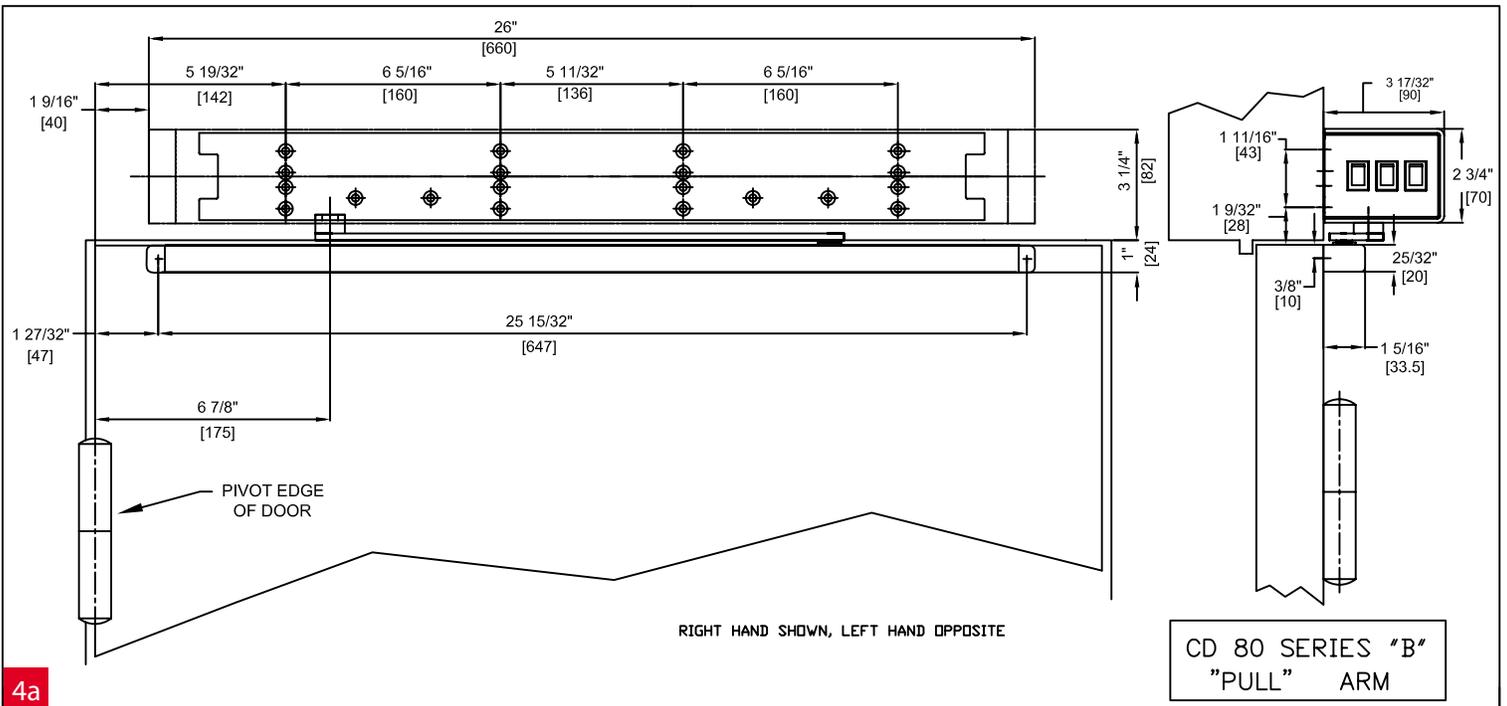
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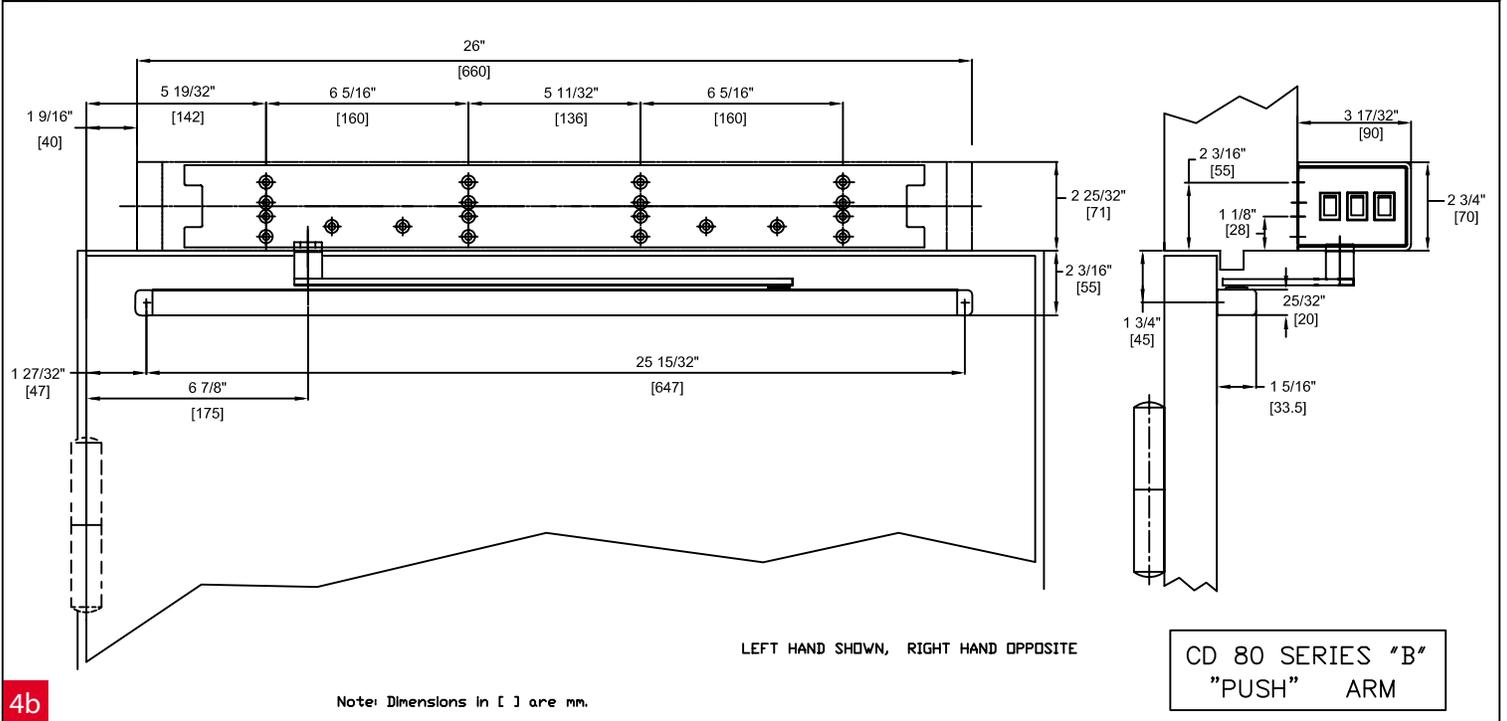


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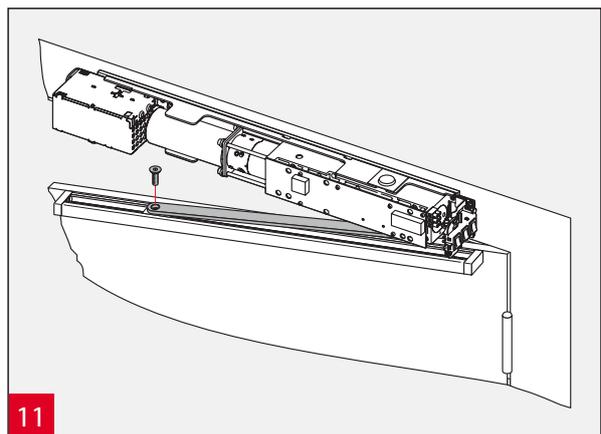
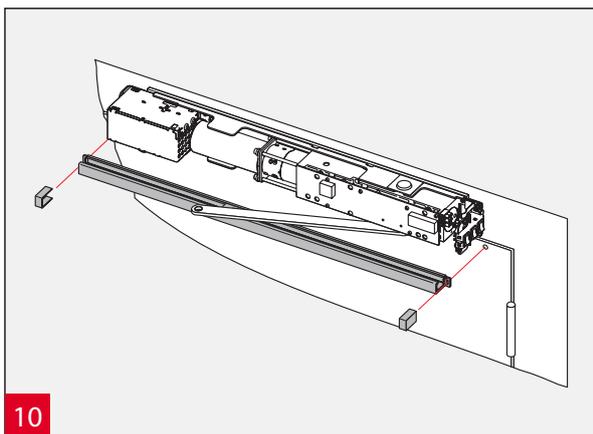
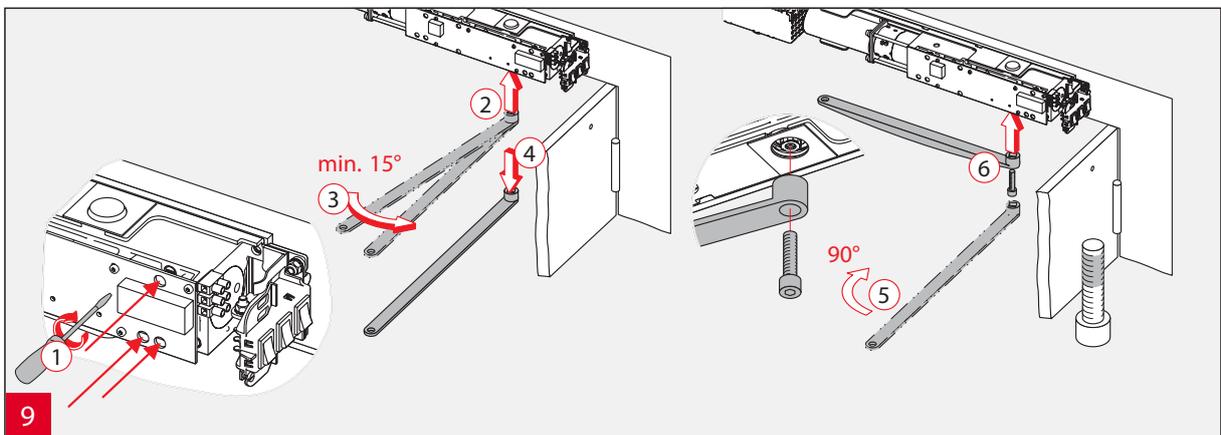
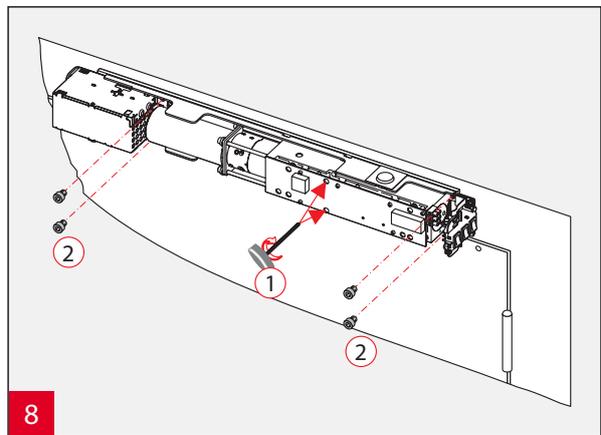
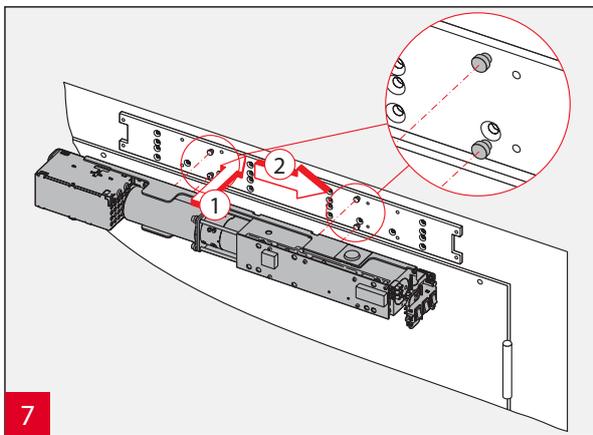
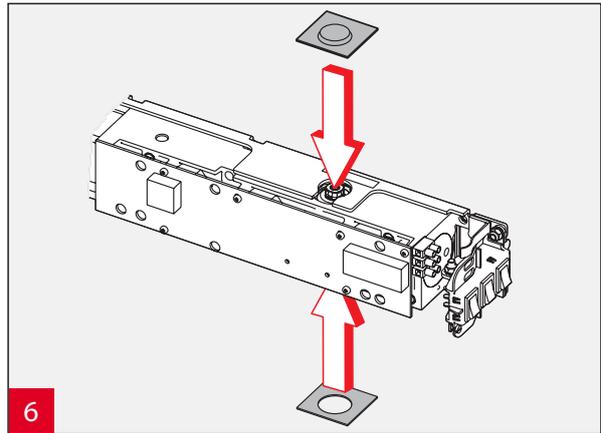
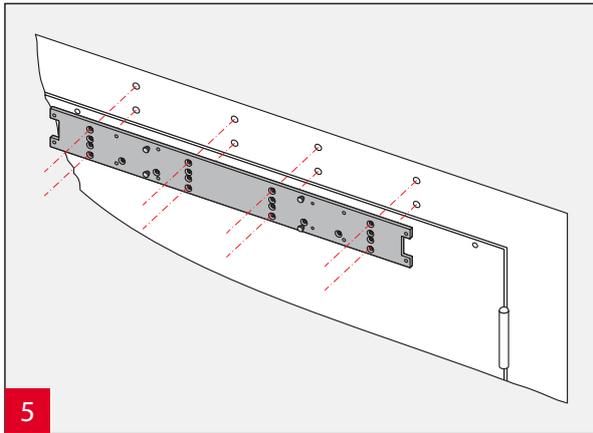


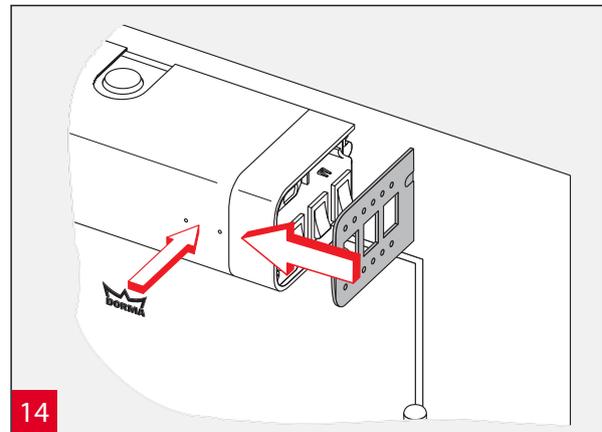
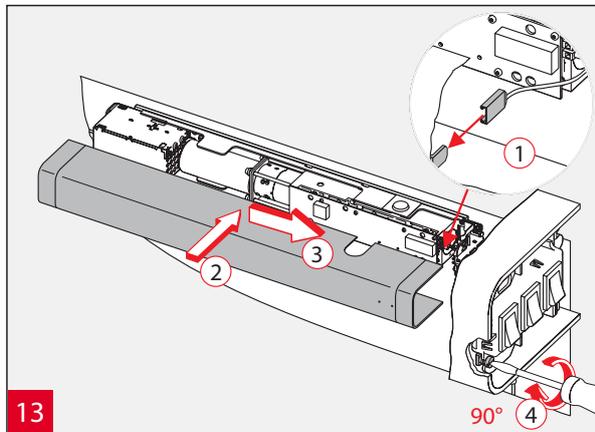
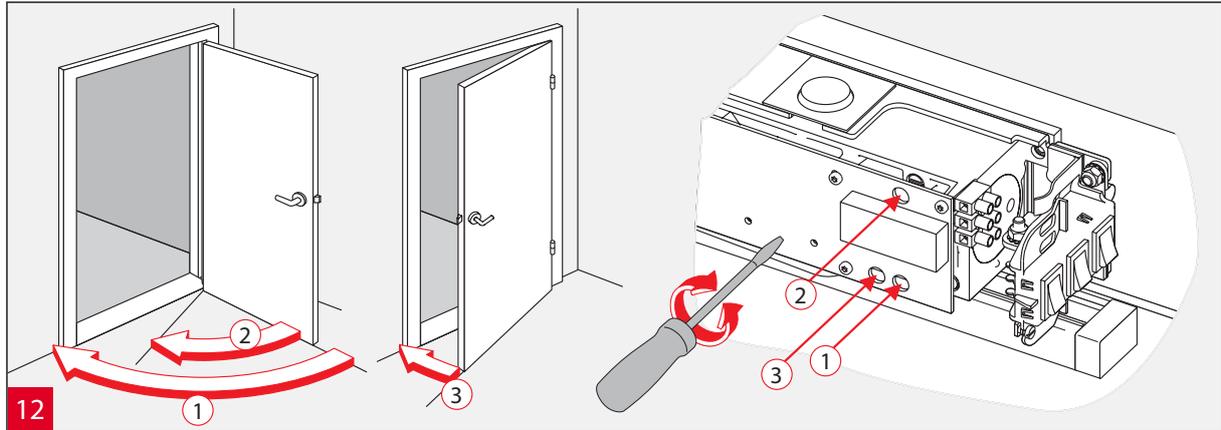


4a



4b





1. Technical data

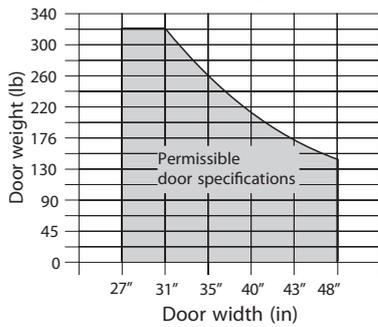
Applications for single-leaf standard doors

Door leaf width	27" [700 mm] - 48" [1200 mm] (depending on door weight; see diagram)
Door leaf weight, max.	Up to 330 lbs (depending on door width; see diagram)
Fixing positions	Top jamb fixing on the hinge (pull) side
	Top jamb fixing on the opposite hinge (push) side
Frame reveal depth	With slide channel (all fixing options) -30 mm to 30 mm

* The standard arm is only provided for top jamb fixing on the opposite hinge (push) side. Application of the standard arm increases the forces of the door so that manual operation is still possible, but not very comfortable. Where a standard arm is to be installed, DORMA recommends use of an appropriate activator rather than the Push&Go function.

Within the door opening angle of 0°-15°, static powers may exceed 150 N. Where the door is protected via force limitation, dynamic powers according to DIN 18650 must be complied with and an additional contactless protection must be installed if required.

Permissible door widths and weights



Technical data of the drive unit

Closing force	Within BHMA/ANSI Standards	
Door closing force	Within BHMA/ANSI Standards	
Dimensions	H	2 3/4" [70 mm]
	L	26" [660 mm]
	D	3 1/2" [90 mm]
Weight incl. mounting plate	19 lbs [8.5 kg]	
Opening angle	0° to 110°	
Temperature range	0° to 40°	
Relative humidity	up to 93%	
Power supply data	115 V, 50/60 Hz	
Power supply for external accessories	24 V DC 600 mA	
Class of protection	IP 20	
UL 325 type-approved	●	
Compliant with Low Voltage and EMC Directives	●	
Manufactured to ISO 9000:2000	●	

Adjustable parameters of the travel path

Opening time adjustable	3 s to 6 s
Closing time adjustable	3 s to 10 s similar to door closer
Hold open time adjustable	0 s to 30 s
Latching speed adjustable	●
Wall blanking adjustable	●
Opening angle adjustable	●
Angle for extended hold-open function adjustable	●
Delayed opening for locking mechanism adjustable	●

Standard function programs and special functions

Functions via programs switch	OFF	●
	Automatic	●
	Permanent Open	●
Special functions included as standard	Push & Go	
	Power Assist Mode	●
	Extended Hold-Open function	●
	Airlock function	○
Optional special functions (additional accessories required)	Timed airlock function	○
	Flip-flop-function	○
Door closer function under cut-out conditions	Night-bank function	○
		●

Prepared for connection of the following accessories

Softline slide channel
Door locking devices
Electric strikes (fail-safe/fail-secure principle)
Access control system
Activators (push button, radar motion detector, DORMA AutoSwitch...)
Radio remote control
External program switch

● standard ○ optional

2. General

General information

 Working on electrical equipment must only be performed by trained and properly qualified electricians.

Electrical installation:

- The electrical supply installation (115 V AC \pm 10%, 50/60 Hz) is to be provided by others.
- The operator is supplied from the factory with a two-pole-and-earth plug.
- If the operator is to be fixed to a metallic door leaf, the door leaf must be properly grounded/earthed.
- This should supply a two-pole-and-earth socket protected by a 10 A fuse.

Maintenance and care:

The door set should be inspected by an engineer prior to the first start-up and then checked and maintained in accordance with requirements, with a minimum inspection rhythm of once a year.

Ensure that the unit is properly disconnected from the power source when carrying out cleaning and maintenance work.

3. Installation instructions

Fixing procedure

0 Overview and exploded drawing

1 Remove cover

 The cover is grounded (earthed) with a ground (earth) cable.

The cover is latched and held by a screw fastener remove the screw fastener

Move the cover approx. 1/8" [2 mm] away from the switch side to unlatch and remove. Disconnect the ground cable.

2 Only Grip the operator at the positions indicated in the illustration.

3 Unscrew the drive unit from the mounting plate.

4 Structural conditions
The following accessories are available to accommodate special structural conditions:



Fixing the mounting plate

If the frame comprises steel profiles, drill a pilot hole for a 10-32 screw and then tap to the required thread size.

In the case of timber frames, use wood screws (included in standard supply)

Slide channel operator for:

- A** - Top jamb fixing on the pull side - Operator type G
- B** - Top jamb fixing on the push side - Operator type B

Fixing dimensions



Please note the different weights governing the fixing modes.

5

Mark the holes (8) for installing the mounting plate in accordance with the dimensional data, then drill and tap threads as necessary. Mark the holes (2) for fixing the slide channel or the standard arm in accordance with the dimensional data. Drill holes and tap threads as necessary. Fix mounting plate.

6

Fitting the spindle cover

Secure the spindle cover in position so that the hole is centrally located over the spindle to which the arm is fitted.

7

Mounting the operator (drive unit)

Place the drive unit on the mounting pins and push in the direction of the switch unit! latched in position. Secure the drive unit using the captive screws and the four additional screws (1/4-20 x 3/8")

8

For slide channel arm, proceed as per

figs. **9** **10** **11**

9

Mounting the slide channel arm

Close all valves (3) by turning clockwise.

Secure the slide channel arm with the self-locking screw to the operator spindle

If necessary, turn the closer spindle using the slide channel arm in order to enable it to be installed with the correct preload.



The self-locking screw must only be used once! If the screw has to be undone for repair or maintenance work, it must be replaced by a new self-locking screw (see spare parts list).

10

Mounting the slide channel

Fix the slide channel to the door and fit the slide channel end covers.

11

Open the door slightly and fit the slide channel arm to the slide block in the slide channel.

12

Adjusting the hydraulic settings

The CD 80 exhibits different operating characteristics when used as a door closer (without electronic control) or as an AUTOMATIC operator.

3. Installation instructions (continue)

 When used as an automatic operator, it requires longer closing times. This must be taken into account when adjusting the settings.

1. Closing speed for the sweep range from 110° to 0°
Open the door manually to its fully opening angle (90° - 110°) and then release.
Slowly open valve 1 (110° - 0°) until the closing cycle of the door takes place at the required speed.

This setting can be used for the full closing range from 110° to 0°.

If the door closing cycle needs to begin at a higher speed, see 2.

2. Closing speed for the sweep range from 110° to 25°
Open the door manually to its fully opening angle (90° - 110°) and then release.

Slowly open valve 2 until the closing cycle of the door takes place at the required speed over the sweep range of 110° to 25°.

 Valve 2 must be used for system-dependent reasons always also for the speed attitude.

3. Adjusting the closing speed from 7° to 0° (latching action)

 Only set/adjust this closing range once the learning cycle has been completed.

Connect the electrical wiring in accordance with the terminal connection plan. (Simple installation)

The switch holder is retained by detachable locking discs. To make the wiring connections, remove the locking discs, if necessary. Then detach the switch holder and connect the wires. Re-fit the switch holder and locking discs.

 Start up the operator as detailed in 4. Commissioning/5. Adjustment/6. Functional testing.

- 12** Adjusting the closing speed from 7° to 0° (latching action)

The latching action may need to be adjusted to ensure that the door engages properly in the lock. Only adjust if the door does not engage properly in the lock.

Open the door manually to half the opening angle and then release.

Slowly open valve 3 until the closing cycle of the door takes place at the required speed for the closing range from 7° to 0°.

To achieve optimum adjustment of the closing range from 7° to 0°, it may be necessary to adjust sweep ranges 1 and 3 simultaneously.

 Do not open valve 3 too wide as otherwise the door will not open properly.

 After a few automatic door cycles, re-check the hydraulic functions and adjust as necessary.

- 13** Fit ground/earth cable.

Mount cover and push in direction of switch until latched in position. Tighten screw fastener (turn 90°).

- 14** Fit switch trim.
Clip DORMA logo in place.

4. Commissioning

4. Commissioning

 Work on the electrical equipment must only be performed by trained and properly qualified electricians.

Basic requisites

- The operator is fully assembled and installed.
- All cabling and wiring has been completed.
- The door operates smoothly.
- Optional accessories have been installed and hooked up in accordance with the wiring diagram.

4.1 Implementing the factory settings (initialisation - this sets the operator to the factory defaults).

- Set the program switch to OFF.

On the control board:

Depress pushbutton T1 while simultaneously switching on the mains supply.

After approx. 10 seconds, the green LED 1 will flash two times.

- Release pushbutton T1.

LED 1 (green) should immediately switch to continuous glow, indicating that the factory defaults have been implemented.

The control unit of the CD 80 is now set to the values indicated in the table.

Default values

Opening position	90° for top-jamb fixing
Opening time	4 s
Hold-open time	5 s
Wall blanking	80°
Push&Go	0 not active
Power Assist Mode	0 not active
Delayed opening for locking mechanism	0,3 s
Backcheck	15°
Sensortest-level	deactiv
Sensortest-sensor	BS (pull side)

4.2 Starting the learning cycle.

 During the learning cycle, the latching action adjustment valve must be closed.

- Check the latching action valve and close if still open.

- Set program switch to OFF.

- Depress pushbutton T1 for approx. 3 s.

- Release pushbutton T1.

- LED 1 (green) flashes.

The operator is now ready for programming the opening angle.

4.3 Setting the extended hold-open function.

- Open the door manually until the required opening angle for the extended hold-open function has been reached and then hold the door in this position.
- Briefly press pushbutton T1.

The opening angle for the extended hold-open function (e.g. for room ventilation) is stored by the control unit.

4.4 Adjusting the full opening angle

4. Commissioning/5. Adjustment

4. Commissioning (continue)

- Open the door manually to the required full opening angle and hold the door in this position.
- Briefly press pushbutton T1.

The opening angle is stored by the control unit as the full opening angle.

- The door closes.

4.5 The door automatically performs two opening cycles, during which it determines the door weight and spring compensation value.

4.6 LED 1 (green) glows continuously.
The learning cycle has been completed.

The operator is on standby ready for activation.

5. Adjustments

5.1 The following parameters can be adjusted in the parameterisation mode:

Opening time parameter
adjustable in 7 increments from 3.0 to 6.0 seconds.

Hold-open time parameter
adjustable in 10 increments from 0 to 30 seconds.

Wall blanking parameter
adjustable in 5 increments from 70° to 90°.

Push&Go parameter
can be toggled ON or OFF.

Power Assist parameter
can be toggled ON or OFF.

Delayed opening for locking mechanism parameter
adjustable in 4 increments from 0 to 0.8 Sekunden.

Backcheck parameter
adjustable in 5 increments from 15° to 35°.

Sensortest-level parameter (testlevel activ)
adjustable in deactiv, low activ, high activ.

Sensortest-sensor Parameter (zu testende Sensoren)
adjustable in hinge side (BS), opposite hinge side (BGS), hinge side and opposite hinge side.

5.2. Activating the parameterisation mode
On the control board you will find pushbuttons T1 and T2. The parameterisation mode is activated by pressing these two pushbuttons simultaneously.
If the mode is already active, use pushbutton T1 to select the parameter and T2 to change the parameter settings. Operation of the pushbuttons is extremely simple in that they can only be used to select the next parameter or the next highest setting. Once the last parameter or the highest setting has been reached, the count returns to the first parameter or the lowest setting.

LED 1 (green) shows which parameter has been activated by the number of flashes per sequence.

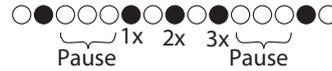
LED 2 (red) indicates the currently set value by the number of flashes per sequence.

Example:

- LED 1 (green) flashes once
- the opening time parameter is activated



- LED 2 (rot) flashes three times
- the value for the opening time is 4.0 s.



The following table shows the factory defaults for the parameters in emboldened print.

Parameter, LED flashing rhythms and settings

Parameter	LED 1 flashes	Parameter settings	LED 2 flashes
Opening time	1	3,0 s	1
		3,5 s	2
		4,0 s	3
		4,5 s	4
		5,0 s	5
		5,5 s	6
		6,0 s	7
Hold-open time	2	0 s	1
		1 s	2
		2 s	3
		3 s	4
		5 s	5
		8 s	6
		10 s	7
		12 s	8
		15 s	9
		30 s	10
Wall blanking	3	70°	1
		75°	2
		80°	3
		85°	4
		90°	5
Push&Go	4	Off	1
		On	2
Power Assist Mode	5	Off	1
		On	2
Delayed opening for locking mechanism	6	0 s	1
		0,3 s	2
		0,5 s	3
		0,8 s	4
		1,5 s	5
		2,0 s	6
Backcheck	7	15°	1
		20°	2
		25°	3
		30°	4
		35°	5
Internal service function	8		

5. Adjustment

Sensortest-Pegel	9	deacticff	1
		low activ	2
		high activ	3
Sensortest-Sensor	10	BS	1
		BGS	2
		BS + BGS	3

5.3 Activating the parameterisation mode and adjusting the settings

Simultaneously press pushbuttons T1 and T2 on the control board.

- The parameterisation mode is activated.
- The open time parameter has been selected and can be modified.

Example:

The current opening time is 5.0 s.

The open time needs to be changed to 4.0 s.

1. Simultaneously press pushbuttons T1 and T2.

- LED 1 (green) flashes once-
Parameter 1 (Opening time) is activated.
- LED 2 (red) flashes five times.

From the table we see that the current opening time is 5.0 s.

2. Press pushbutton T2 five times.

The opening time increases with each press of the pushbutton to the next value up.

(This applies to all parameters and their values).

Once the maximum value has been reached (in this case 6 seconds), the flash number returns to 1, indicating the lowest value (in this case 3.0 seconds).

3. Exiting the parameterisation mode

Simultaneously press pushbuttons T1 and T2, or leave the pushbuttons unused for longer than one minute. Both activities serve to deactivate the parameterisation mode.

6. Functional testing

Check the functions of the operating and control elements while consulting the "8. Operating instruction manual"

LED 2 error codes (red)

If a fault or error has occurred, this is indicated by a flashing code from LED 2 (red) correlating to the cause or location of the problem.

See "7. Troubleshooting".

Familiarisation

Once the adjustments, commissioning and functional checks have been carried out on the door

7. Troubleshooting

When consulting this section, always have the 4. Commissioning/5. Adjustments/6. Functional testing section also to hand.

Faults	Possible causes	Remedy
The door does not respond.	No mains power. Plug connections not properly inserted. Defective cabling. Emergency pushbutton activated. Program switch in wrong position. Door obstructed by obstacles. Door leaf moves only very sluggishly. Fuse blown. Radar detector obstructed or lens dirty. Valve 3 (Latching action) open too wide. Bridge (emergency pushbutton) not positioned.	Switch on main power switch. Insert plugs firmly. Replace cable. Release emergency pushbutton . Set program switch to correct position. Remove obstructions. Determine reason and rectify. Replace fuse . Clear or clean radar detector. Slowly close valve 3 until the required operating behaviour is achieved. Connect bridge or sensors.
The door is not operating in the required mode.	Program switch set to the wrong position.	Set program switch to correct position.
The door is very slow to move.	Valve 3 (Latching action) open too wide.	Slowly close valve 3 until the required operating behaviour is achieved.
The door stops before reaching the preset opening angle, and then returns to its closed position.	Wall blanking function incorrectly set.	Set the angle for the wall blanking function (must always be smaller than the opening angle). Adjust safety sensors to optimum position.

Flash codes for fault indication

LED 1 (green) - If the system is operating error-free, LED 1 (green) glows continuously.

LED 2 (red) for fault indication by flashing code

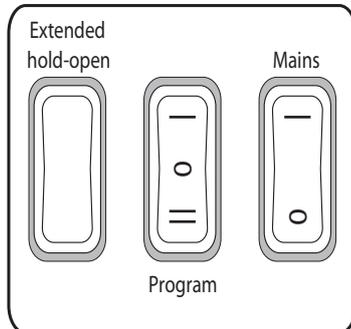
An error is indicated by a certain flashing sequence (rhythm) performed by LED 2 (red); see following table

LED 1 (green) Number off flashes per sequence	Meaning	Reset
Continuous glow	Everything OK. Operator is on standby, ready for activation.	-
1	Learning cycle has been activated.	-
2	Factory default values are being loaded.	-

LED 2 (red) Number off flashes per sequence	Meaning	Reset
Continuous glow	Emergency pushbutton	Release emergency pushbutton
1	Program switch fault	Automatic after fault rectification
2	Incremental encoder fault	Via program/main switch Main switch
4	Output module fault/Short circuit	
6	EEPROM fault	Via program/main switch Main switch
7	Sensortest fault	
9	ROM fault, RAM fault, CPU fault	Main switch
10	Motor current fault/Motor	Automatic after 30 s
11	Door runtime error	
13	Learning cycle error	Restart learning cycle
16	Circuit test fault, current measurement	Main switch
18	Watchdog test fault	Main switch

8. Operating instructions

8.1 Operator control elements



8.2 Main switch

- I = ON
- 0 = Off

8.3 Program switch

The CD 80 can be equipped either with an internal or an external program switch. Where an external program switch is installed, the internal program switch is inoperative.

Both program switches come with the same functions.

8.3.1 Programm switch functions

- I = AUTOMATIC
- 0 = OFF
- II = PERMANENT OPEN

8.3.2 Program switch at OFF:

- If the program switch is in the OFF position:
- the electrical functions of the operator have been shut down;
 - all the signal inputs have been disabled.
 - the door is locked;
 - the operator unit is inoperative.

The door can, however, be manually operated, either with a lever handle or with a key.

Push&Go function is still in operation.

8.3.3 Program switch at AUTOMATIC:

With the program switch in the AUTOMATIC position, the opening and closing operations are controlled by the installed activators.

If an opening signal is emitted, the door opens and then closes automatically on expiry of the preset hold-open time.

If a further opening signal is triggered during the hold-open time (with the door in the open position), the hold-open time is reset to its original value.

8.3.4 Program switch at PERMANENT OPEN:

Set the program switch to the PERMANENT OPEN position. The door will open and then remain in that position.

In the PERMANENT OPEN mode, the position of the door is actively monitored. This may result in a slight movement (self-adjustment) of the door over a small angular range.

8.3.5 Deactivating the PERMANENT OPEN mode:

Set the program switch from PERMANENT OPEN to another function (switch position).

The door will close and then continue operating in the selected mode.

8.4 Extended hold-open function pushbutton

General information on the extended hold-open function:

The door may be held at an opening angle of the extended hold-open function e.g. for the purpose of room ventilation.

For either 5 or 10 minutes.

The door can continue to be used in the extended hold-open mode in the same way as in the AUTOMATIC mode.

When an activator signal is emitted, the door opens to its full width and closes on expiry of the preset hold-open time to the extended hold-open position.

In the extended hold-open function, the position of the door is actively monitored. This can lead to a slight movement (self-adjustment) of the door within a small angle range

Extended hold-open function with the program switch set to AUTOMATIC.

- Press the extended hold-open pushbutton once:
 - The door travels to the preset partial opening position where it remains for 5 minutes.
- Press the extended hold-open pushbutton twice:
 - The door travels to the preset extended hold-open position and remains there for 10 minutes.

Deactivating the extended opening function with the program switch set to AUTOMATIC

Press the pushbutton for the extended hold-open function once.

Or, set the program switch from AUTOMATIC to another mode:

- The door closes and continues operating in the selected mode.

Extended hold-open with the program switch set to PERMANENT OPEN.

- Set the program switch to the PERMANENT OPEN position.
- Press Extended hold-open pushbutton once:
 - The door opens to the preset extended hold-open position and remains there until another mode is selected.

8. Operating instructions

Deactivating the extended hold-open function in the PERMANENT OPEN mode.

- Press the pushbutton for the extended hold-open function once.
- Or, change the program switch from the PERMANENT OPEN mode to another mode:
 - The door closes and then continues to operate in the selected mode.

8.5 Push&Go (assisted opening)

In the parameterisation mode, toggle the Push&Go function to ON.

From its closed position, move the door manually to a few degrees open. This should cause the opening signal to be triggered:

- The door will then travel to the preset open position and automatically close on expiry of the hold-open time.
- If another opening signal is emitted during the closing cycle (due to the door being pushed slightly open again against its closing sweep), the door will once again return to the preset open position and close automatically on expiry of the hold-open time.

If the Push&Go function has been activated, the Power Assist mode cannot be implemented. The Push&Go function has priority.

8.6 Power Assist mode

In the parameterisation mode, toggle the Power Assist function to ON.

This reduces the door closer force.

This reduction in the closer strength means that the door can be opened manually with greater ease.

The Power Assist mode is subject to speed limitations. The system is designed in the AUTOMATIC mode for opening times > 4s.

With the closer forces reduced, the door opens and closes more slowly in the Power Assist mode alone (i.e. without manual intervention).

The hold-open time in the Power Assist mode is generally set at 10 seconds.

8.7 Delayed opening for locking mechanism

The delayed opening for locking mechanism time is the time lag between the unlocking and the start of the door opening cycle.

The unlocking time can be set to four different values: 0, 0.3, 0.5 and 0.8 seconds.

8.8 Backcheck

This function serves to dampen the door opening cycle. The angle at which the backcheck function cuts in can be adjusted in 5 degree increments from 15° to 35°.

The opening cycle up to the full opening width is then continued at a reduced opening speed.

The damping of the opening cycle commences at the

preset backcheck angle.

8.9 Emergency pushbutton

Press the emergency offpushbutton:

- The electrical functions of the operator are deactivated.
- The operator continues to function as a door closer.

Release the emergency pushbutton:

- The operator returns to normal operation.

8.10 Option: Lock

When closed, the door is always locked.

Each time an activator is operated, the door is unlocked and opens.

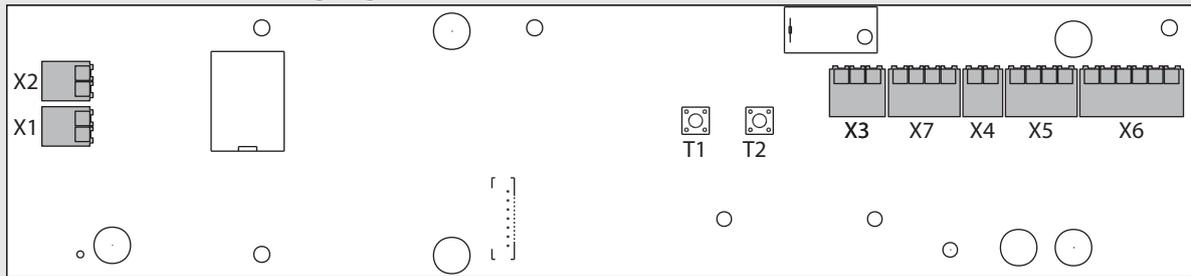
8.11 Maintenance and care



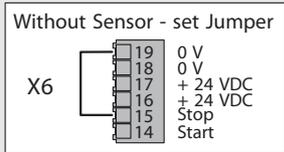
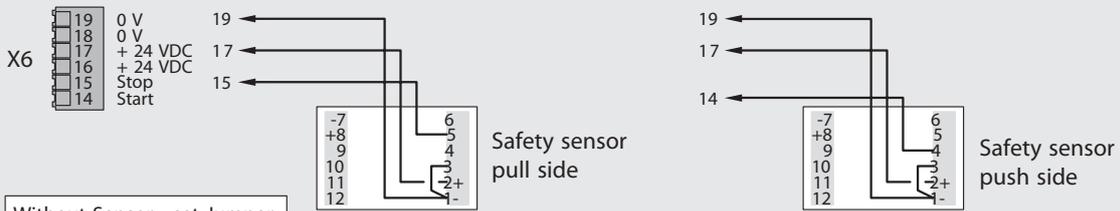
Ensure that the unit is properly disconnected from the power source when carrying out cleaning and maintenance work.

(Guidelines for powered doors, windows and gates, UL 325)

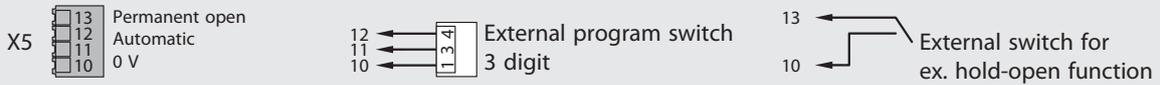
CD 80 mit Sensor AIR 16 wiring (Reglomat)



Sensor



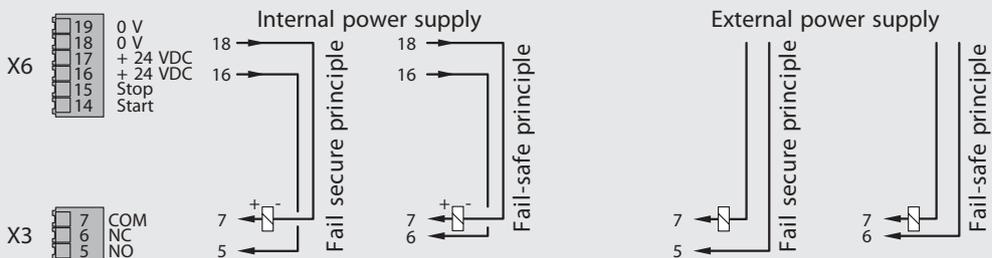
Program switch



Emergency pushbutton



Electric strike



Motor, Power supply

