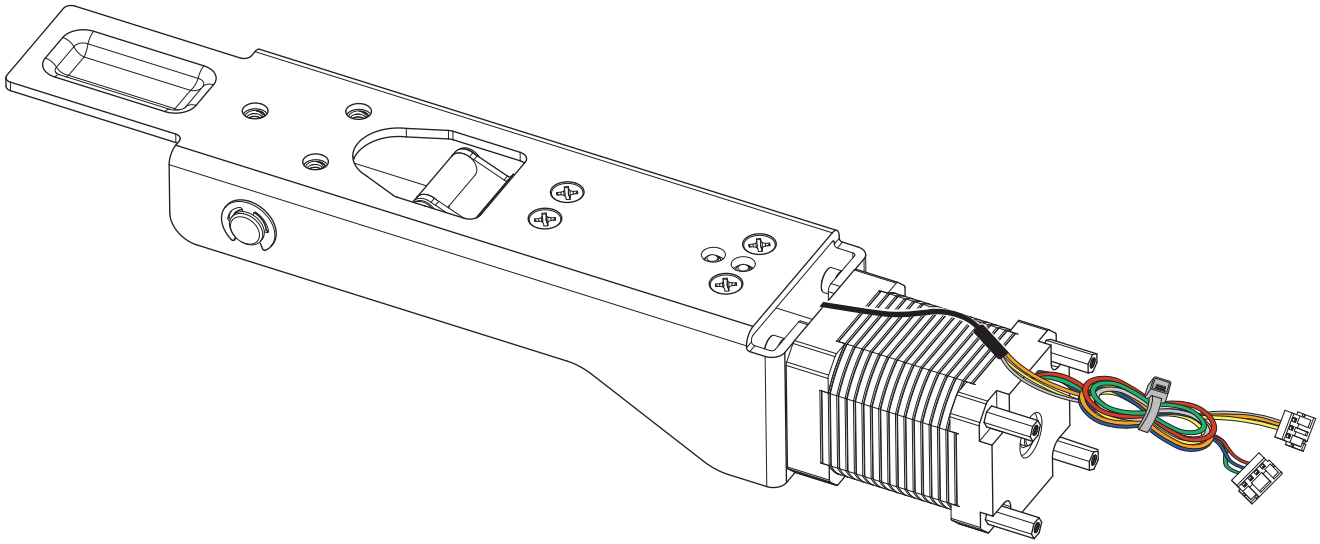
dormakaba

9000 series

Motorized latch retraction kit

Installation Instructions



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1 Important safety information

1.1 Safety warnings

1.1.1 Safety instructions: To reduce risk of injury or damage, carefully read and follow safety warnings, cautions and notices provided.

1.1.2 Safety warnings

⚠ WARNING

- Danger of death from contact with voltage or electrical short circuits! Reference RPSMLR2/RPSMLR2BB panic device power controller installation manual 93762.
- Electric shock hazard!
- Unit is to be serviced by authorized personnel and de-energized prior to opening.
- Metallic doors must be grounded per national and local codes.

1.1.3 Safety cautions

⚠ CAUTION

- Hand pinch point and sharp edge hazards during install. When handling sharp or pointed components, wear protective gloves.
- To avoid risk of shock, disconnect AC power from power supply before proceeding with this conversion. If using RPSMLR2BB battery backup option, unplug all wires from battery terminals.
- Installation should be serviced by trained installers. Installer should be familiar with applicable local and national building code requirements of current ANSI/BHMA standards.
- Work on electrical equipment must be performed by qualified personnel.

1.1.4 Property damage

NOTICE

- Mechanical dogging is not permitted on fire rated openings. Doing so will void fire rating.
- Install according to instructions or device will not function and panic or fire label will be void.
- Damage to equipment or incorrect equipment operation may result from an incorrect installation.
- Hazard to mechanical processes by use of control settings, elements, or procedures not documented in this set of instructions.
- When adding a MLR kit to an existing motorized latch retraction exit device, previous motor should be removed.
- MLR wiring must be attached to fire alarm system if installed on fire exit hardware.

2 Technical specifications

2.1 Tools recommended

Table 1

Phillips head screwdriver	Flathead screwdriver	Wire cutter	Gloves
Retaining clip applicator	Alcohol cleaning solution	Dust cloth	

2.2 Electrical input and wiring requirements

Table 2

Filtered and regulated power supply: dormakaba RPSMLR2 or RPSMLR2BB	
Voltage	24 VDC
Current	1.5 Amp MAX inrush
	250mA MAX holding
Non-polarized leads	

NOTE: MLR initial inrush power requirement is 1.5 Amp. @ 24VDC. Other factors must be taken into consideration when selecting a power source, i.e., wire run, wire gauge, other electrical loads, etc.

NOTE: dormakaba power supplies are not required, RPSMLR2 and RPSMLR2BB power supplies are available. For additional details, please consult installation manual (93762) for Panic device power controller RPSMLR2/RPSMLR2BB.

NOTE: For additional product details, please consult 9000 Series technical brochure (KAA1431).

NOTE: Provides simultaneous electric latch retraction and dogging (depressed touch bar).

2.3 Allowable cutoff from device length

Table 3

Size A	Fits 48" door opening without cutting. May be cut to fit a 34" minimum door opening.
Size B	Fits 36" door opening without cutting. May be cut to fit a 28" minimum door opening.
Size C	Fits 36" door opening without cutting. Using a shorter touch pad than standard "B" size allows, cut to 25" door opening.
Size AA	Fits 48" door opening without cutting. May be cut to fit a 32-1/2" minimum door opening.
Size BB	Fits 36" door opening without cutting. May be cut to fit a 27" minimum door opening.
Size CC	Fits 36" door opening without cutting. Using a shorter touch pad than standard "B" size allows, cut to 23-1/2" door opening.

2.4 Minimum wire gauge chart (AWG) for 24V AC/DC

Table 4

Distance in feet for 2 conductors from power source to locking device								
AMPS	**25'**	**50'**	**75'**	**100'**	**150'**	**200'**	**250'**	**300'**
.25	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG
.50	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG
.75	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG
1.00	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	14 AWG
1.50	18 AWG	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG		
2.00	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG			
2.50	18 AWG	18 AWG	16 AWG	14 AWG				
3.00	18 AWG	16 AWG	14 AWG	14 AWG				

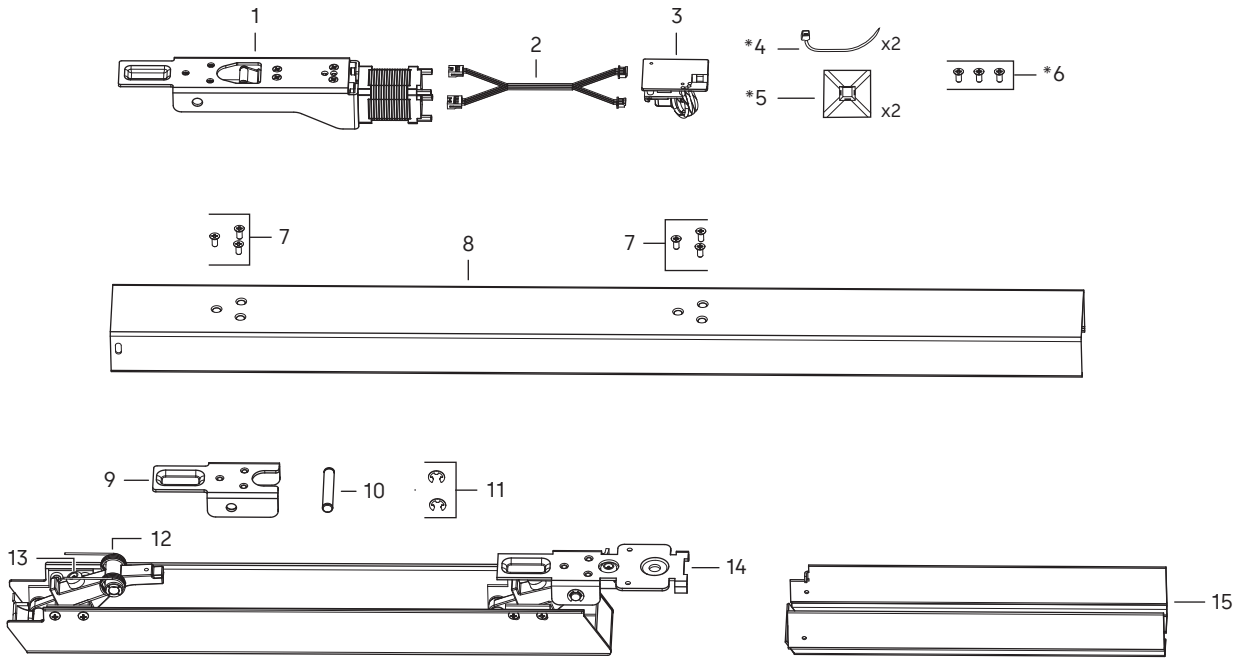
NOTE: Additional options available (MS, CD, LM, BPA, etc.) Minimum cut lengths for additional options may differ from table.

2.5 Overview and parts list

Fig. 1

This kit converts all 9000 series mechanical exit device types to a motorized latch retraction – MLR product.

NOTE: This kit can also be used for motor replacement on existing MLR devices.



Parts list (MLR kit components)

1. MLR sub-assembly
2. Wire harness
3. Control module
4. * Cable tie (x2)
5. * Secure tab (x2)
6. * 8-32 X 3/8 flathead undercut screws (x3)

Parts list (existing components)

7. 8-32 X 3/8 flathead undercut screws (x6)
8. Channel
9. Front arm plate
10. Clevis pin
11. E-clip (x2)
12. Spring
13. Bumper
14. Rear arm assembly
15. Filler

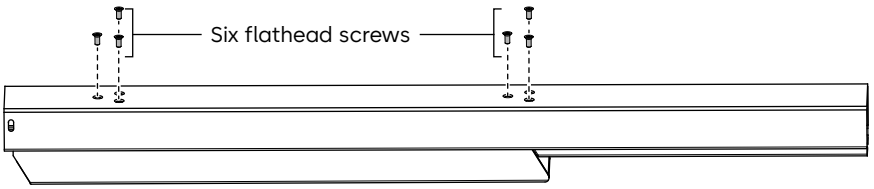
*Included in screw pack

3 Installation instructions

3.1 Removing channel from touch bar assembly

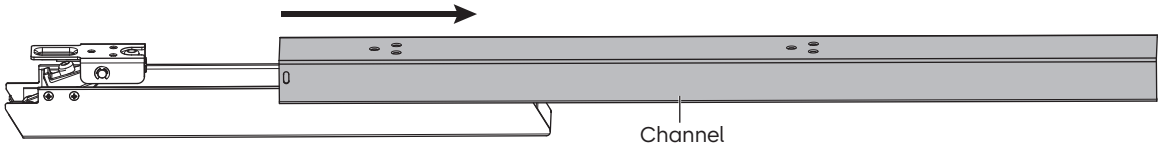
Fig. 2

3.1.1 Remove six flathead screws from channel. Set aside for use in step 3.6.3.



3.1.2 Slide channel to detach it from touch bar assembly.

⚠ **CAUTION: Lip of channel may be sharp.**



3.2 Removing front arm assembly

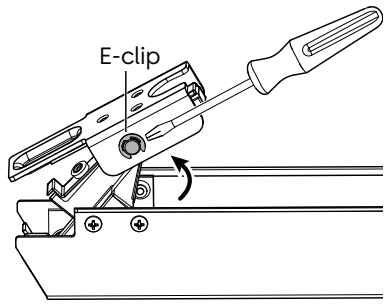
Fig. 3

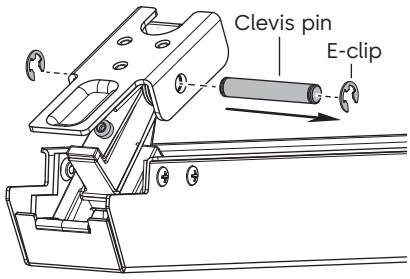
3.2.1 Lift front arm assembly by pulling upward on front arm plate.

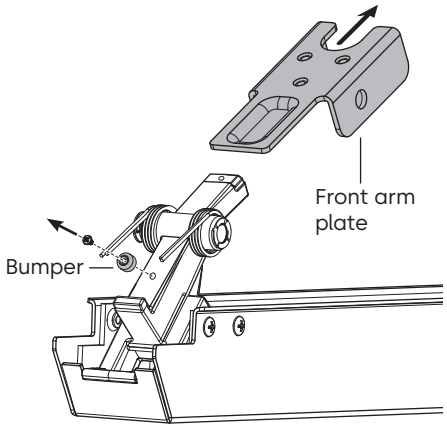
3.2.2 Use a flathead screwdriver to remove E-clips and clevis pin. Set aside for use in step 3.3.5.

3.2.3 Remove bumper using a Phillips head screwdriver.

3.2.4 Remove front arm plate and discard.







3.3 Installing MLR sub-assembly

Fig. 4

3.3.1 Lift front arm assembly and press spring down firmly to compress.

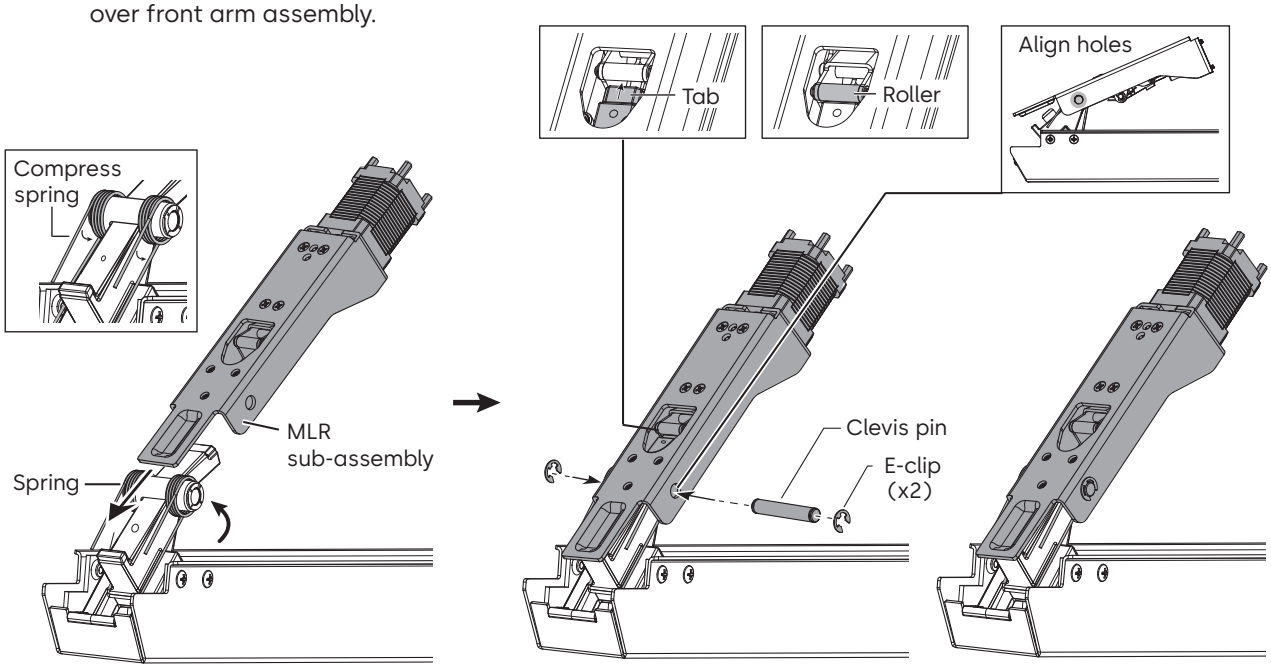
⚠ **CAUTION: Spring is sharp.**

3.3.2 Position MLR sub-assembly over front arm assembly.

3.3.3 Insert tab of front arm assembly under roller.

3.3.4 Align side holes of MLR plate and front arm assembly.

3.3.5 Locate E-clips and clevis pin from 3.2.2. Slide clevis pin in place and secure both sides with E-clips.



3.4 Connecting wire harness

Fig. 5

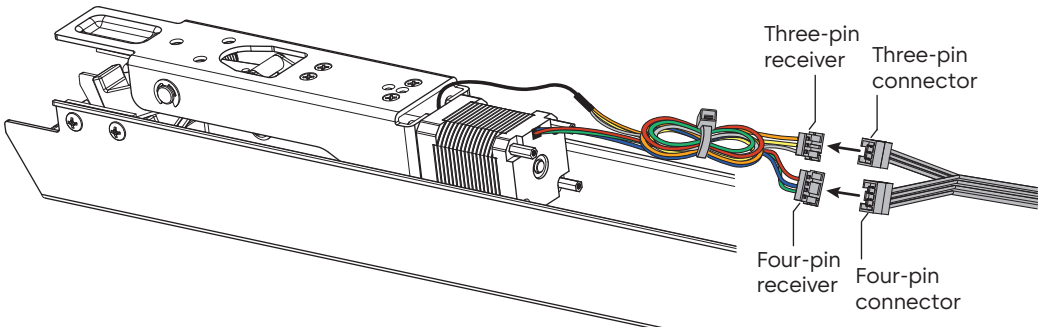
3.4.1 Connect MLR sub-assembly to wire harness by securing three-pin receiver to three-pin connector and four-pin receiver to four-pin connector.

⚠ **CAUTION: Lip of touch bar may be sharp.**

NOTE: Do not pinch wires or ribbon cable.

NOTE: Ensure connectors are firmly mated.

NOTE: Proper connection requires that pins and receivers be aligned in a singular, specific orientation.



3.5 Attaching wire harness to inside touch bar assembly

Fig. 6

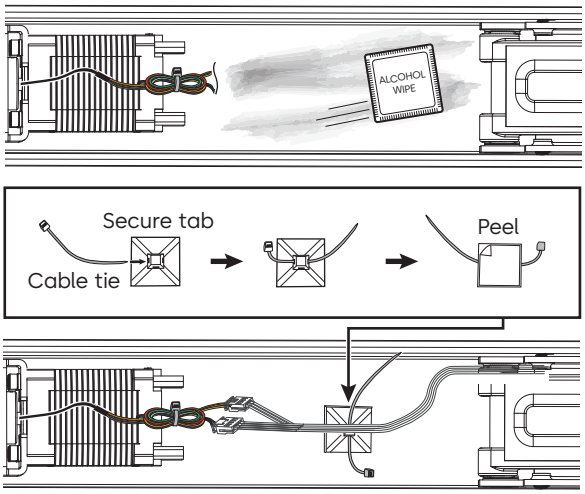
3.5.1 Clean interior touch bar with alcohol solution and cloth.

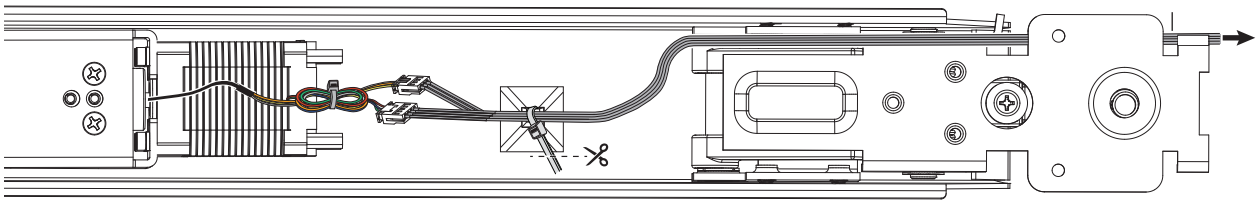
⚠ **CAUTION: Lip of touch bar may be sharp.**

3.5.2 Insert cable tie through secure tab (supplied).

3.5.3 Peel protective film from secure tab and position secure tab off-center between MLR sub-assembly and rear arm assembly.

3.5.4 Press down on secure tab to adhere to touch bar.





3.5.5 Tighten cable tie around ribbon cable and trim excess.

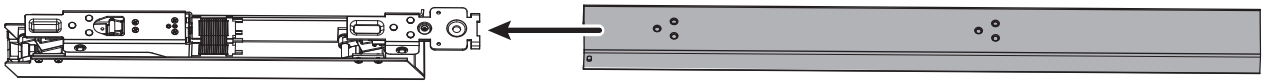
NOTE: Do not pinch wires or ribbon cable.

3.5.6 Position wire harness along side of touch bar and rear arm assembly.

NOTE: Excess wire harness should extend beyond channel.

3.6 Installing channel onto touch bar assembly

Fig. 7



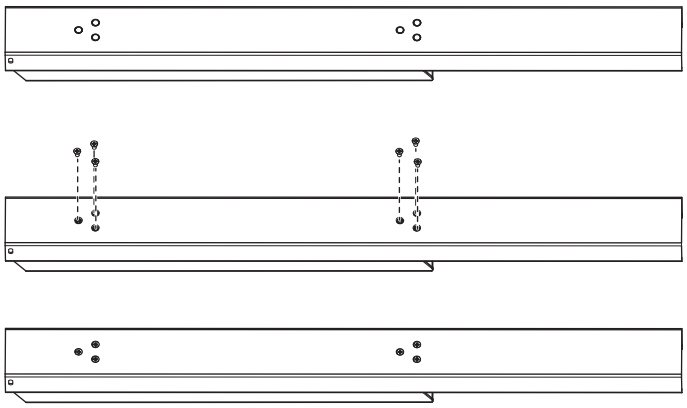
3.6.1 Beginning at rear arm assembly, position channel below lip of touch bar assembly.

⚠ **CAUTION: Lip of touch bar may be sharp.**

3.6.2 Slide channel toward MLR sub-assembly until screw holes align.

3.6.3 Secure channel to touch bar using six flathead screws from step 3.1.1.

NOTE: Secure one flathead screw on each end before installing remaining four flathead screws.

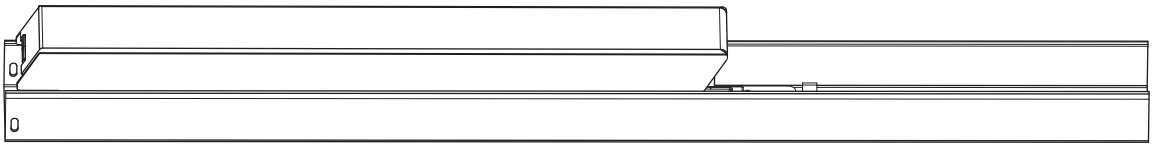


3.7 Attaching wire harness to inside channel

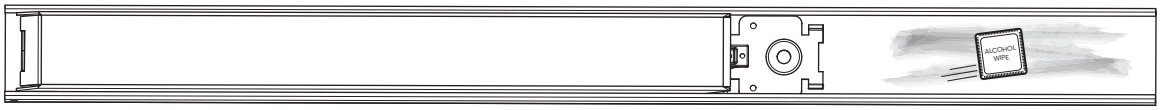
Fig. 8

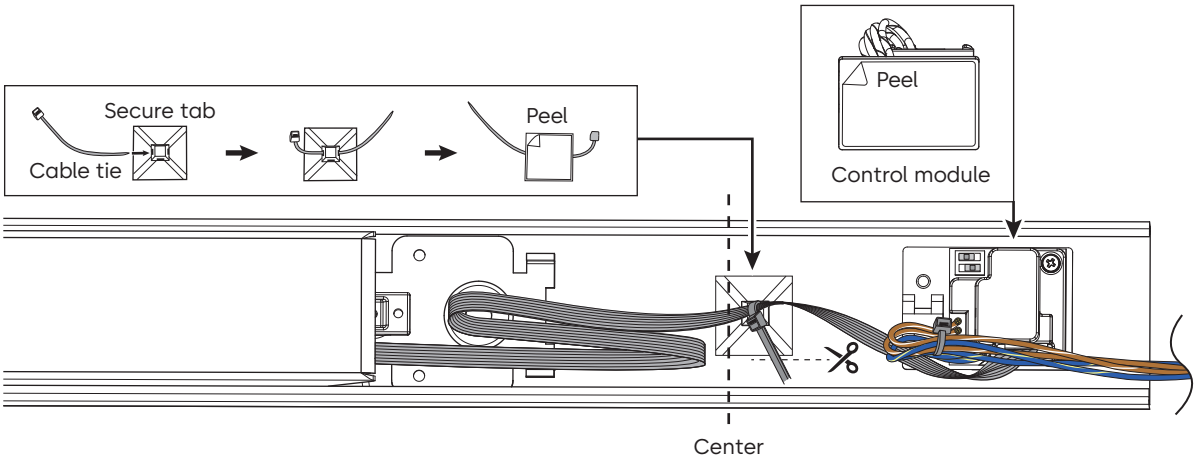
3.7.1 Turn device over with open side of channel facing up.

⚠ **CAUTION: Lip of touch bar may be sharp.**



3.7.2 Clean interior channel with alcohol solution and cloth.





3.7.3 Peel protective film from control module.

3.7.4 Position control module approximately 3.5" from end of channel and gently press down to adhere.

3.7.5 Insert cable tie through secure tab (supplied).

3.7.6 Peel protective film from secure tab and position off-center between rear arm-assembly and control module.

3.7.7 Tighten cable tie around ribbon cable and trim excess.

NOTE: Excess wires from control module should extend beyond channel.

NOTE: Do not pinch wires or ribbon cable.

NOTE: Excess ribbon should be neatly coiled and positioned on top of tab before securing ribbon.

3.8 Connecting MLR to power source

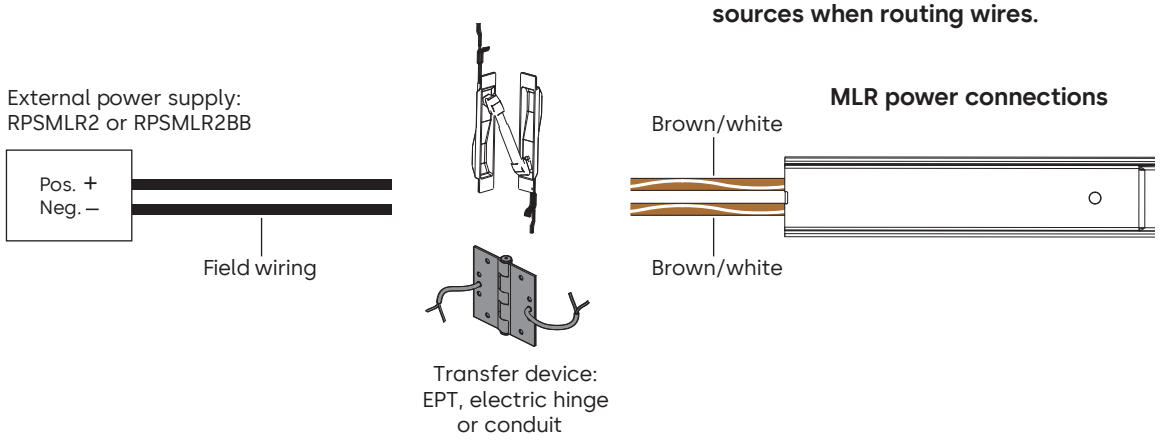
Fig. 9

Instructions for MLR power connections:

Utilize 24VDC, regulated, and filtered power connections with dormakaba RPSMLR2 or RPSMLR2BB.

NOTE: Ensure wire run is kept as short as possible.

NOTE: Avoid major electrical noise sources when routing wires.



3.9 Connecting MLR to latch bolt feedback

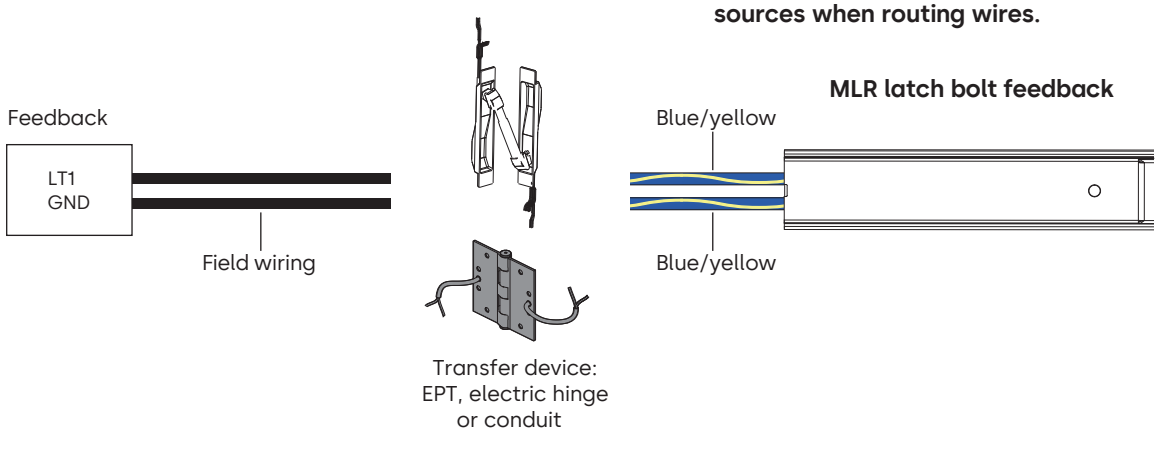
Fig. 10

Instructions for MLR latch bolt feedback:

Connect optional blue/yellow wires into RPSMLR2 or RPSMLR2BB power source.

NOTE: Ensure wire run is kept as short as possible.

NOTE: Avoid major electrical noise sources when routing wires.

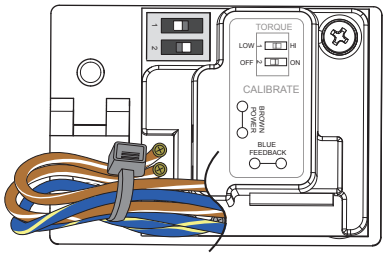


3.10 Testing motor and completing calibration sequence

Fig. 11

NOTE: Dip switch 1 is set to "LOW" (left) and dip switch 2 is set to "ON" (right) by default when control module is shipped.

Factory setting



Default position:
Dip switch 1 = LOW (left)
Dip switch 2 = ON (right)

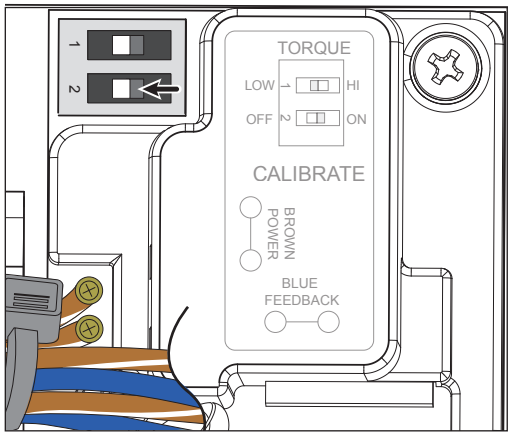
Dip switch 1:
Left = LOW
Right = HI

Dip switch 2:
Left = OFF
Right = ON

3.10.1 Connect control module to power source.

3.10.2 Press touch bar to desired setting — this can be fully or partially depressed.

Switch positions after calibrating



3.10.3 Depress touch bar and apply power, or present a credential to reader.

3.10.4 Keep touch bar depressed until device beeps six times and release.

NOTE: If calibration is unsuccessful set dip switch 1 to "HI" (right) and repeat calibration.

3.10.5 Set dip switch 2 to "OFF" (left).

4 Troubleshooting and diagnostics

Table 5

Number of beeps	Explanation	Possible solution
2	Over voltage	Check voltage and adjust to 24V.
3	Under voltage	Check voltage and adjust to 24V.
4	Failed sensor	Call service.
5	Forced release	Device will automatically re-engage within five seconds.
6	Touch bar is depressed. Device is readjusting.	Check to make sure touch bar is not stuck or catching. Turn off calibration switch.
7	Over travel or mechanical obstruction	If mechanical obstruction, remove it and push in touch bar until beeping stops to reset. If no obstruction, touch bar may have been pushed too far during calibration. Recalibrate with touch bar slightly out. If problem persists, verify magnet is within 1/4" of sensor at end of travel.

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for assistance or warranty information.