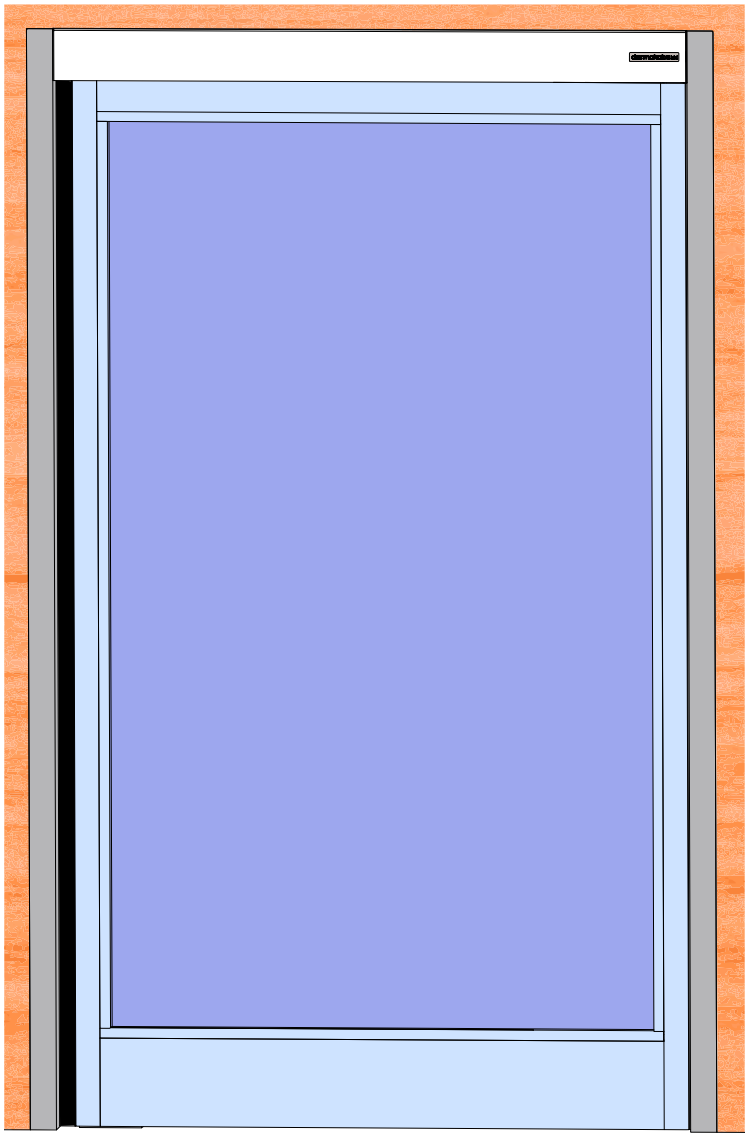


ED50/ED100/ED250

Overhead concealed header

Installation Instructions

DL4616-010 – 06-2023

| EN |

dormakaba

Table of contents

1 General information

1.1 Installation instructions.

This manual provides installation instructions for ED50/ED100/ED250 operators in overhead concealed (OHC) header, door jambs and doors used in single door and pair door installations.

1.2 Manual storage.

This document must be kept in a secure place, and accessible for reference as required.
If the door system should be transferred to another facility, insure that this document is transferred as well.

1.3 dormakaba.us website.

Manuals are available for review, download, and printing on the dormakaba.us website.

NOTICE

ED50/ED100/ED250 OHC Setup and Troubleshooting.
Reference ED50/ED100/ED250 OHC Setup and Troubleshooting Manual DL4617-003.

1.4 Symbols used in these instructions.

WARNING

This symbol warns of hazards which could result in personal injury or threat to health.

NOTICE

Draws attention to important information presented in this document.

CAUTION

This symbol warns of a potentially unsafe procedure or situation.

TIPS AND RECOMMENDATIONS

Clarifies instructions or other information presented in this document.

1.5 Dimensions

Unless otherwise specified, all dimensions are given in inches (").

1.6 Building codes and standards.

ED50/ED100/ED250 overhead concealed installation; observe applicable:

- National and local building codes.
- ANSI/BHMA standards.

2 ED50/100/250 OHC product overview

2.1 Maximum door weights and exterior door installation

Table 2.1.1 ED50 low energy door panel

Exterior and Interior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	220	[100]

Table 2.1.2 ED100 low energy door panel

Exterior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	220	[100]
Interior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	600	[272]

Table 2.1.3 ED100 full energy door panel

Exterior and interior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	220	[100]

Table 2.1.4 ED250 low energy door panel

Exterior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	600	[272]
Interior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	800	[317]

Table 2.1.5 ED250 full energy door panel

Exterior and interior applications Prevailing conditions at opening must be considered		
Maximum door width	Pounds	kg
48" [1219]	320	[272]

2.1.1 ED50/ED100/ED250 overhead concealed exterior door installation.

NOTICE

Exterior door use.
To insure proper suitability for exterior door use, the following topics must be addressed in the context of the door application setting.

- For site-specific use factors such as high wind conditions and/or building pressure consult the factory.
- Door width, height, weight, and usage patterns.
- Observable prevailing conditions at the opening under which the operator is expected to perform. In some instances, this may require increased force settings to counteract these conditions.
- Door mounted presence sensors.
  When attempting to overcome these forces, it is strongly suggested that door mounted presence sensors be employed to enhance pedestrian safety through the opening.

2.2 Hardware overview

2.2.1 Intended use.
ED50/ED100/ED250 are electromechanical operators used exclusively for opening and closing swing doors.

2.2.2 ED50/ED100/ED250 packaging.
The ED50/ED100/ED250 operators are packaged in a overhead concealed (OHC) header.
For double swing doors, two operators are packaged in a single header.

2.2.3 ED50 low energy operator.
ED50 is supplied only as a low energy operator (ANSI/BHMA A156.19). The operator is supplied with a reduced power motor and a brake. The brake is used during door hold open time.

2.2.4 ED100/ED250 operator.
ED100/ED250 operators are supplied configured as low energy operators (ANSI/BHMA A156.19).
- ED100/ED250 operators can be configured for full energy (ANSI/BHMA A156.10) using parameter adjustment.

2.2.5 ANSI/BHMA 156.19 Standard for Power Assist and Low Energy Power Operated Swinging Doors: Low energy power operated door definition.
A manual door with a power mechanism that opens the door upon receipt of a knowing act activating signal, does not generate more kinetic energy than specified in this Standard, and is closed by a power mechanism or by other means.

2.2.5 ED50/ED100/ED250 separate modules (Fig. 2.2.4).

1. Single door header; modules supplied:
- Low voltage wiring connection module.
- Main power module.

2. Double door header; modules supplied:
- Two low voltage wiring connection modules.
- Two main power modules.

3. Installation hardware packages.
Reference Chapters 6 and 7 for OHC header single and double door installation hardware.

Fig. 2.2.1 OHC header with overhead arm

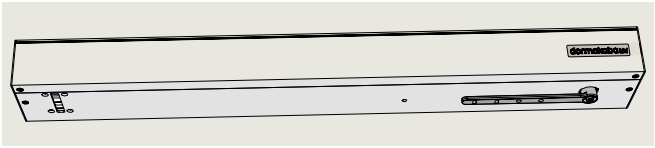


Fig. 2.2.2 ED50 OHC operator

Fig. 2.2.3 ED100/ED250 OHC operator

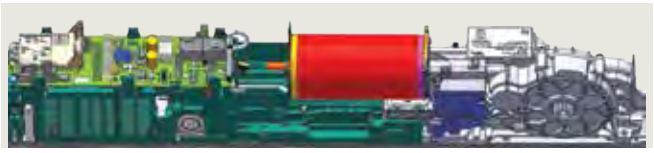


Fig. 2.2.4 Wiring module Main power module

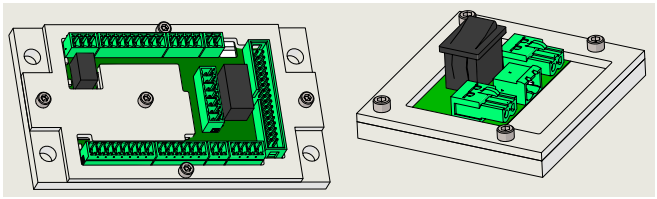
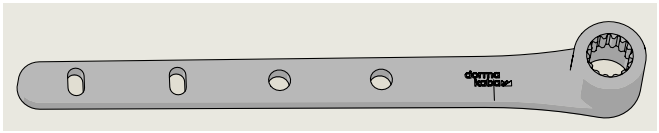


Fig. 2.2.5 Overhead arm



3 OHC door configurations

3.1 OHC single door configurations

Fig. 3.1.1 LH inswing RH inswing

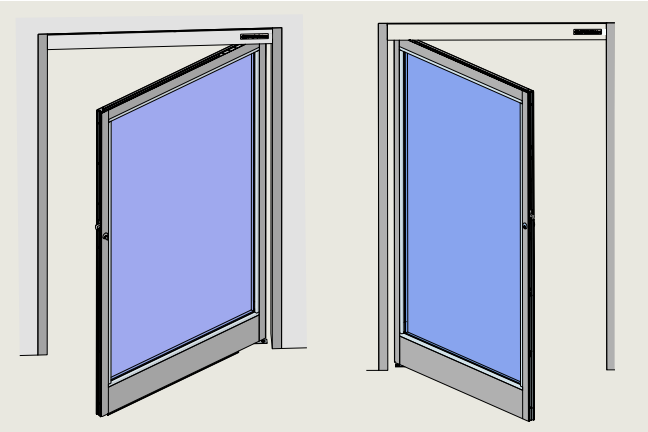
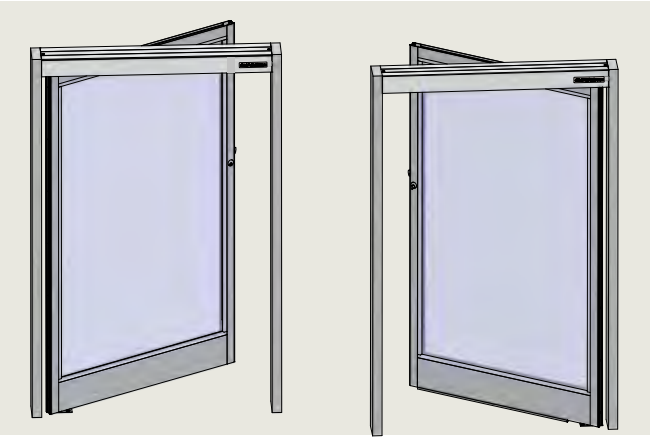


Fig. 3.1.2 LH outswing RH outswing



3.2 OHC pair door and double egress door configurations

Fig. 3.2.1 Outswing

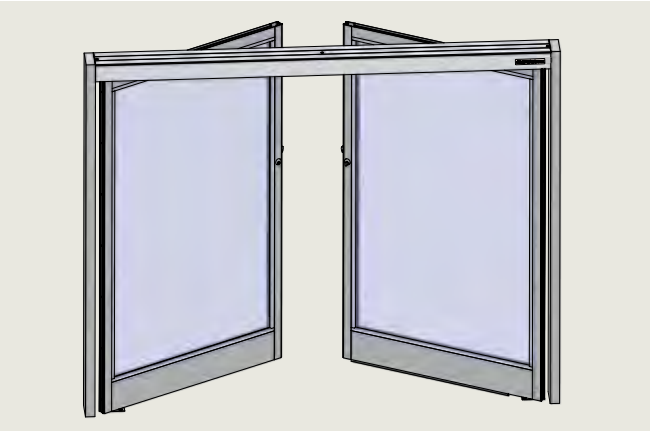


Fig. 3.2.3 Inswing

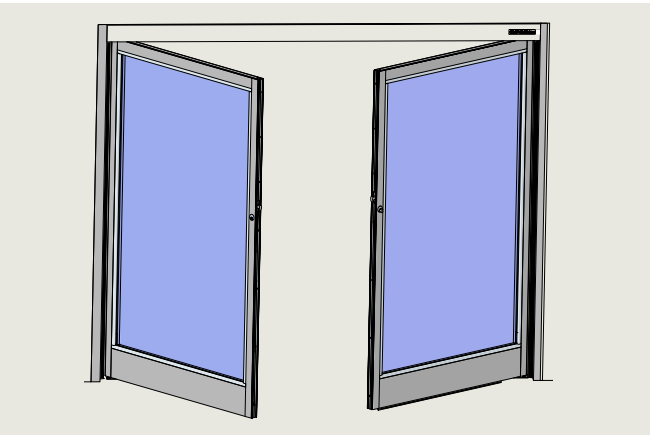


Fig. 3.2.2 LH double egress

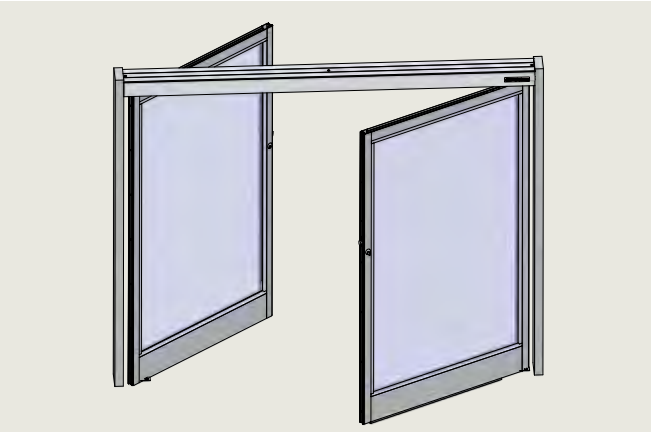
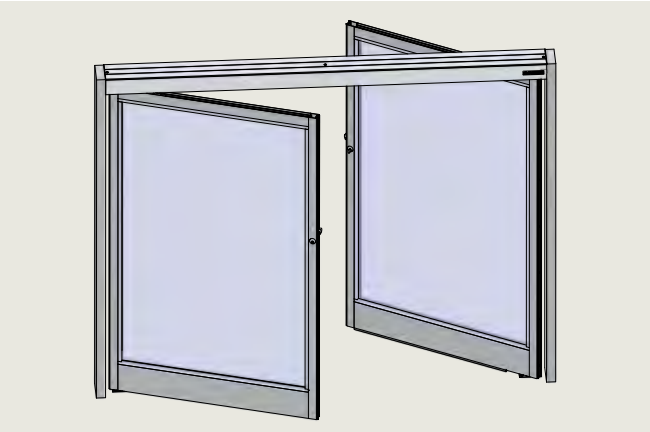


Fig. 3.2.4 RH double egress



4 ED50 and ED100/ED250 OHC operators

4.1 ED50 low energy OHC operator

1 OHC operator
1.1 Motor
1.2 Brake
2 OHC mounting plate
3 Control board
3.1 Upgrade card slot
3.2 User interface
3.3 Braking plug socket
3.4 Power fail closing speed potentiometer
3.5 Handheld connector Comm port
3.6 Double door communication cable Comm port
4 Spring tension adjustment
5 Drive axle

Fig. 4.1.1 OHC ED50 operator - header orientation for RH outswing or LH inswing

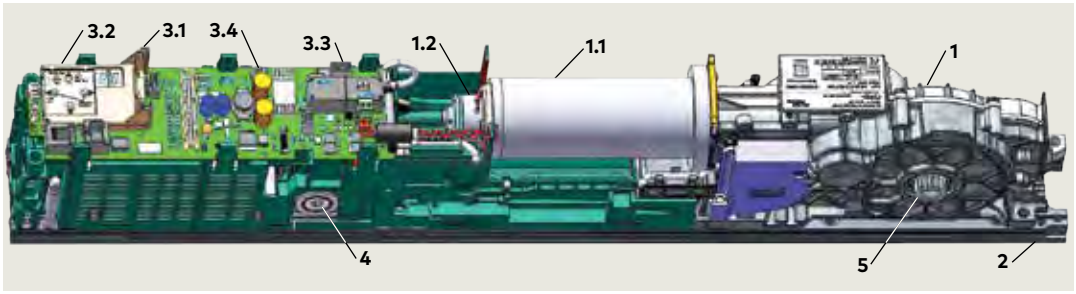
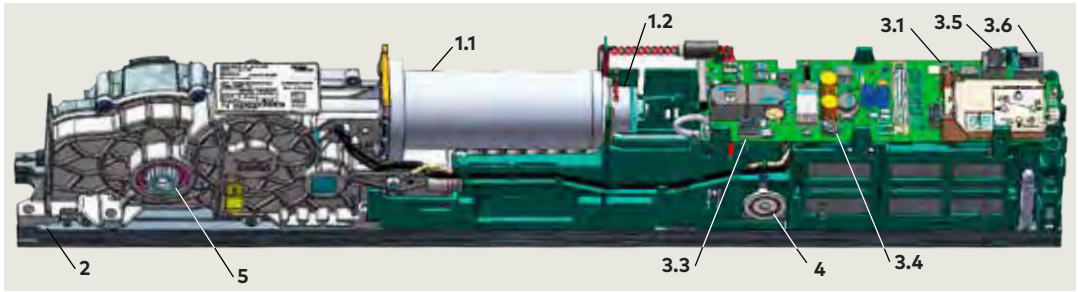


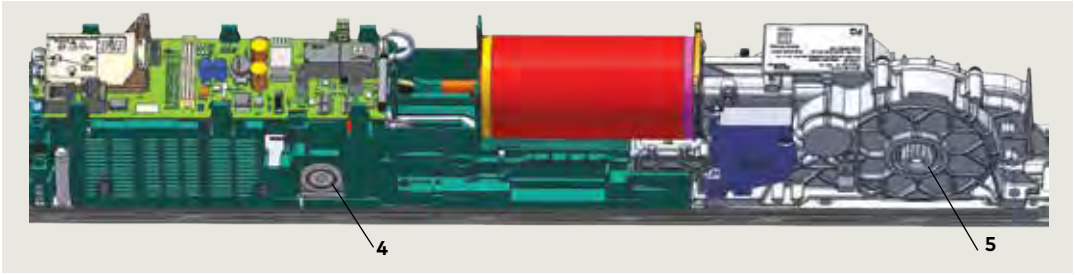
Fig. 4.1.2 OHC ED50 operator - header orientation for LH outswing or RH inswing



4.2 ED100/ED250 OHC operator

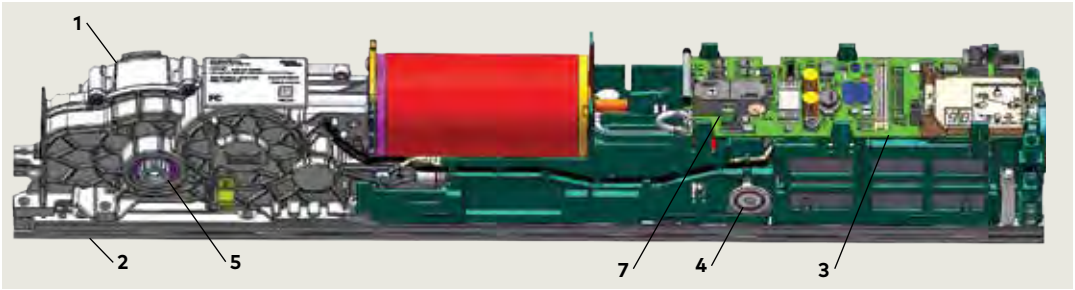
1 OHC operator
2 OHC mounting plate
3 Control board
4 Spring tension adjustment
5 Drive axle
7 Braking circuit plug

Fig. 4.2.1 OHC ED100/ED250 operator - header orientation for RH outswing or LH inswing



1 OHC operator
2 OHC mounting plate
3 Control board
4 Spring tension adjustment
5 Drive axle
7 Braking circuit plug

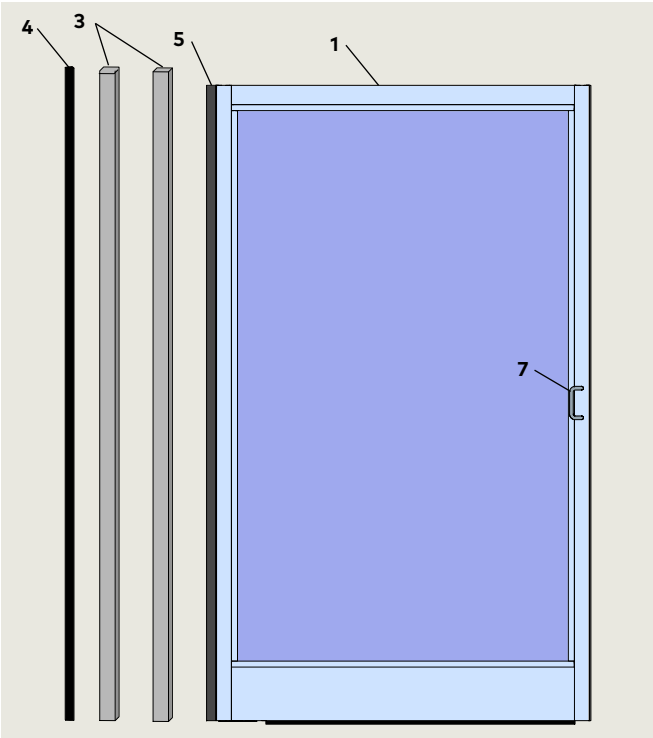
Fig. 4.2.2 OHC ED100/ED250 operator - header orientation for LH outswing or RH inswing



5 OHC product overview

5.1 Single door hardware

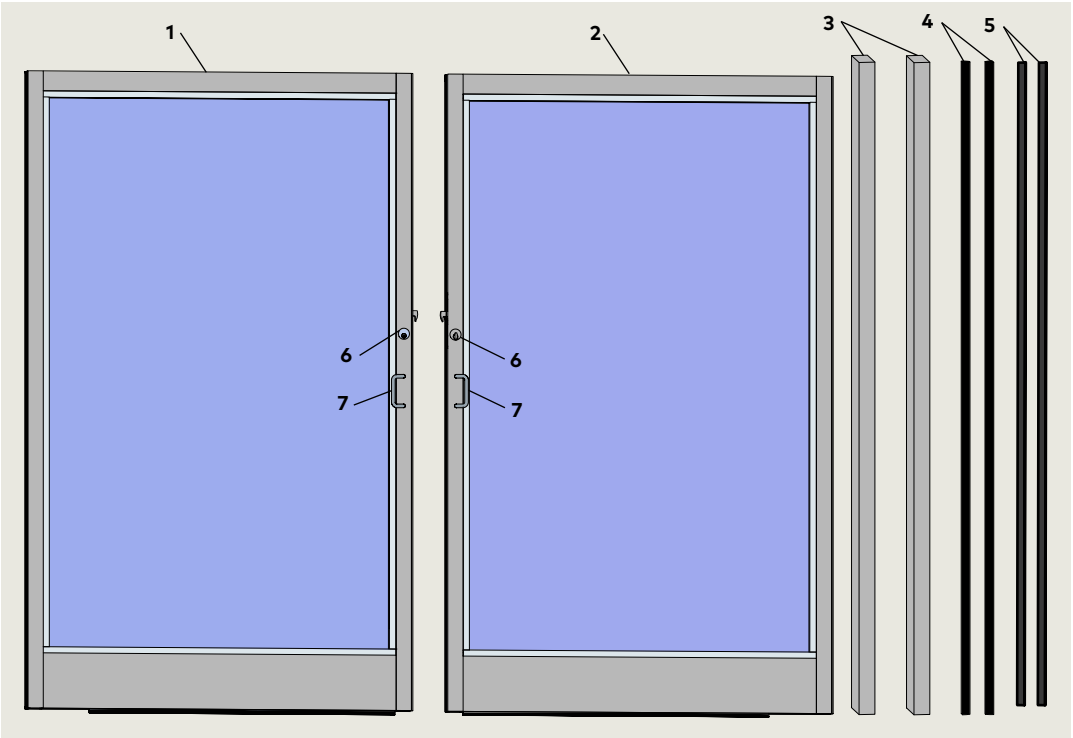
Fig. 5.1.1 Single door, jambs and finger guards example



1 "S" panel, DS2517
3 Jambs DC0200
4 Finger guard DC0760
5 1" weather strip extrusion DE2849
7 Pull handle (option) DC3189-01G

5.2 Double door hardware

Fig. 5.2.1 Double doors, jambs and finger guards example



1 "S" panel, LH DS2517
2 "S" panel, RH DS2517
3 Jambs DC0200
4 Finger guards DC0760
5 1" weather strip extrusion DE2849
6 Lock (optional)
7 Pull handle (option) DC3189-01G

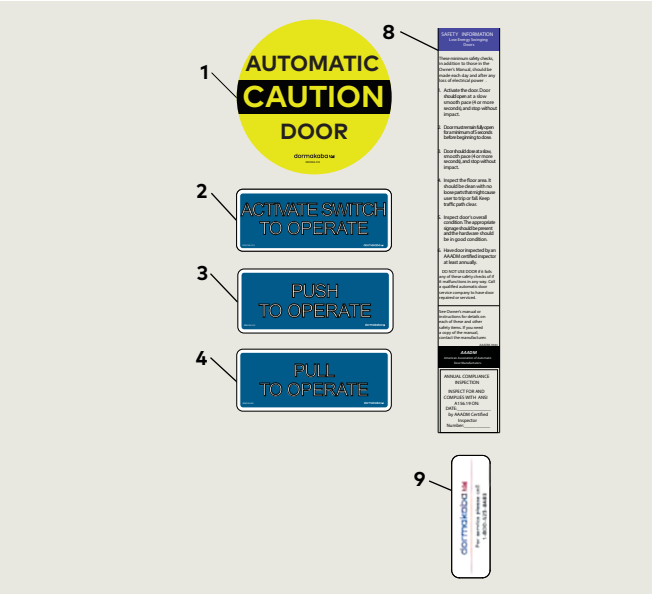
5.3 Kits, ED decals

9 Label, Service call DD3425-010
8 Safety Information label, low energy DD1269-040
4 DD0762-020 Decal, Pull to Operate
3 DD0762-010 Decal, Push to Operate
2 DD0758-010 Decal, Activate Switch to Operate
1 DD0586-010 Decal, Automatic Caution Door

Assembly #	Item #	Quantity
DK3137-010 Single door low energy (LE) decal kit	9	1
	8	1
	4	1
	3	1
	2	1
	1	2

Assembly #	Item #	Quantity
DK3137-030 Pair door low energy (LE) decal kit	9	1
	8	1
	4	2
	3	2
	2	4
	1	4

Fig. 5.3.1 Kit, ED Operator Label LE, DK3137-0X0

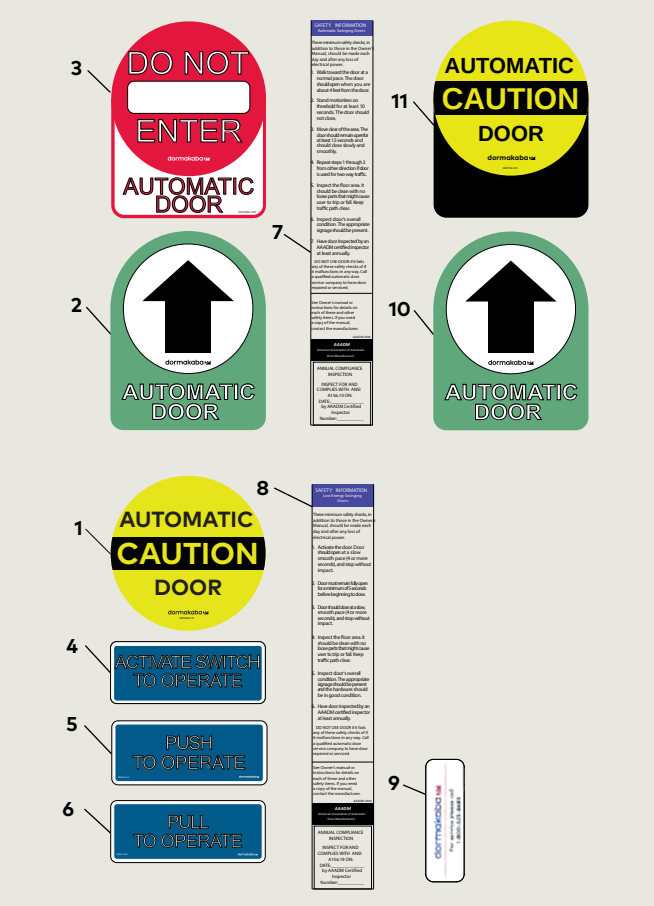


11 DD0756-010 Decal, Automatic Caution Door
10 DD0756-020 Decal, Automatic Door, Up Arrow
9 Decal, Service Call DD3425-010
8 Decal, AAADM Safety DD1269-020
7 Safety Information label, low energy DD1269-040
6 DD0762-020 Decal, Pull to Operate
5 DD0762-010 Decal, Push to Operate
4 DD0758-010 Decal, Activate Switch to Operate
3 DD0739-020 Decal, Do Not Enter
2 DD0739-010 Decal, Do Not Enter, Up Arrow
1 DD0586-010 Decal, Automatic Caution Door

Assembly #	Item #	Quantity
DK3137-110 Single door full energy (FE) decal kit	9	1
	8	1
	7	1
	6	1
	5	1
	4	2
	3	1
	2	1
	1	2

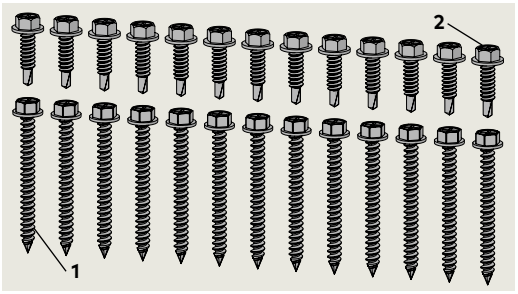
Assembly #	Item #	Quantity
DK3137-130 Pair door full energy (FE) decal kit	11	2
	10	2
	9	1
	8	1
	7	1
	6	2
	5	2
	4	4
	3	2
	2	2
	1	4

Fig. 5.3.2 Kit, ED Operator Label FE, DK3137-1X0



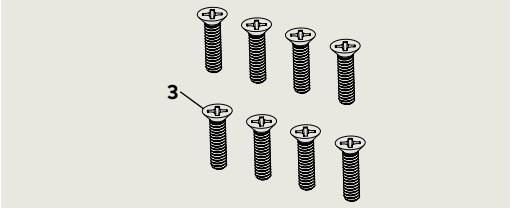
5.4 ED50/ED100/ED250 OHC screw packs

Fig. 5.4.1 Screw pack, header mounting, DK4654-010



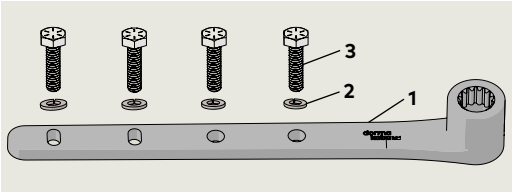
1 #14-10 x 2 1/2" Phillips flanged hex head, zinc
2 1/4-14 x 1" Phillips flanged hex head, drilling screw, zinc
3 1/4-20 x 1" PFHMS (Phillips flat head machine screw)

Fig. 5.4.2 Screw pack, operator mounting DK4617-010



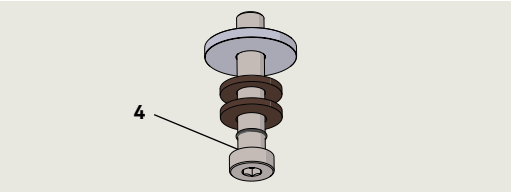
5.5 OHC arm kit and bolt axle extension

Fig. 5.5.1 Overhead arm kit DK4651-001



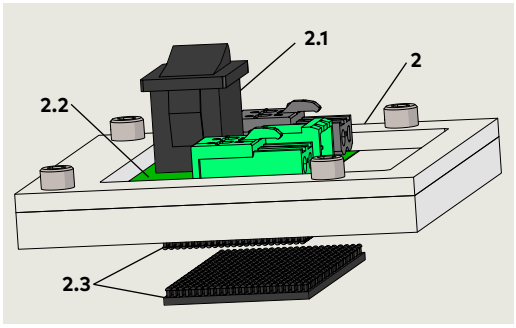
1 Arm, OH center hung DC4689-001
2 Lock washer, 1/4" DF0858-00Z
3 Hex bolt,1/4-20 x 1" DF3465-020
4 Hex bolt,axle extension [20mm] DF3465-020

Fig. 5.5.2 Bolt axle extension, 20 mm



5.6 ED50/ED100/ED250 OHC modules

Fig. 5.6.1 115 Vac power module



2 PCB holder assembly DC4630-010
2.1 Power off/on switch
2.2 115 Vac connection circuit board
2.3 Velcro
5 PCB holder assembly DC4630-010
5.1 Connection point circuit board

Fig. 5.6.3 Low voltage wiring module

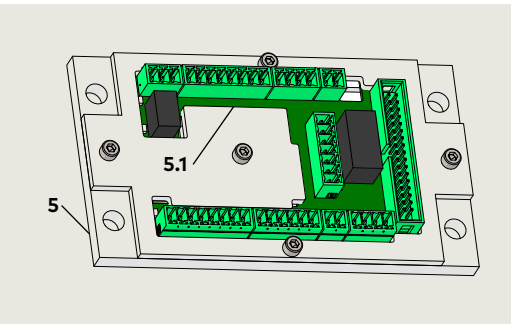
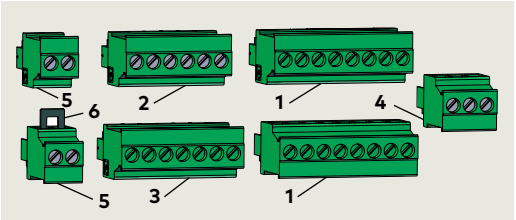


Fig. 5.6.2 Connectors for low voltage wiring module, shipped with operator



1 Connector, 8 pole
2 Connector, 6 pole
3 Connector, 7 pole
4 Connector, 3 pole
5 Connector, 2 pole
6 Jumper, 2 pole

5.7 ED50/ED100/ED250 OHC cables, grounding kit

3 Main power connector DX3672
4 Main power extension cable DX4647-010

Fig. 5.7.1 Main power connector

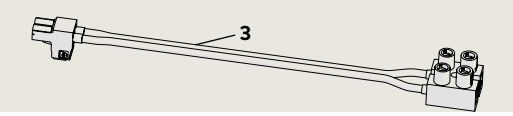
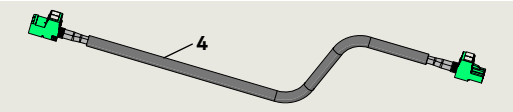


Fig. 5.7.2 115 Vac power extension cable



6 Ribbon cable
7 Ground kit DK3673

Fig. 5.7.3 Ribbon cable

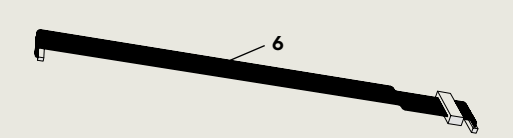
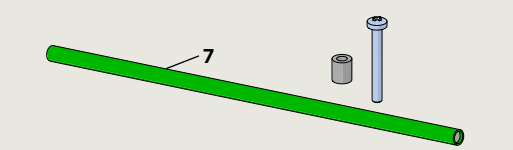
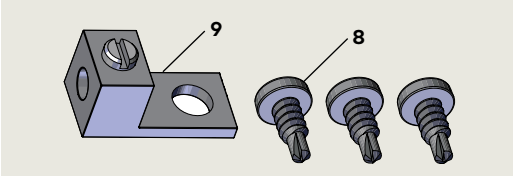


Fig. 5.7.4 Main power connector ground kit



8 #10 x 1/2" PRH self drilling screw
9 Set screw lug

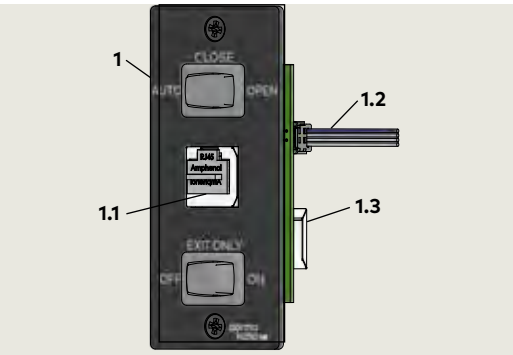
Fig. 5.7.5 Grounding kit DK4656-010



5.8 Mode, key switch panels

1 Mode switch panel DX4604-04C
1.1 Comm port for dormakaba service
1.2 4 strand ribbon cable, 10'
1.3 RJ45 port

Fig. 5.8.1 Mode switch panel



DX4604-0XC	Kit, Mode switch RJ45		
Kit number	Switch Assy, Mode RJ45	Cable Mode Switch Ribbon	
DX4604-04C	DX4659-02C	DX4660-001	3'
DX4604-05C	DX4659-02C	DX4660-002	10'
DX4604-06C	DX4659-02C	DX4660-003	20'
DX4604-09C	DX4659-02C	DX4660-100	6'

2 Key switch panel, RJ45, DX4604-21C
6 RJ45 communication cable DX4662
-001, 3' [914]
-002, 10' [3050]
-003, 20' [6096]

Fig. 5.8.2 Key switch panels - Options

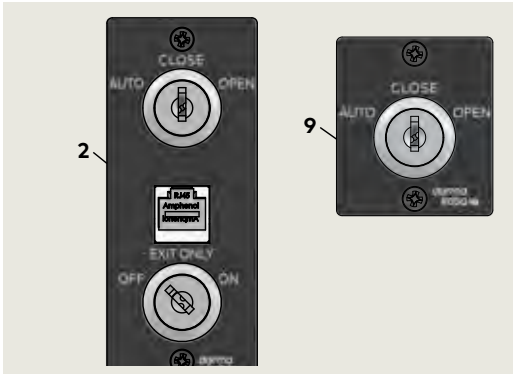


Fig. 5.8.3 RJ45 communication cable

5.9 Fixed stops, breakout switch, bottom pivot assembly

1 Fixed stop DC4643-01_
1.1 Backing plate, DC4644-010
2 Breakout switch DK4638
2.1 Mounting plate
2.2 1/4-20 x 1/2" Phillips flat head undercut
2.3 #8 x 5/8" Phillips flat head thread forming
2.4 Wire harness

Fig. 5.9.1 Fixed stop DK4646; outswing door

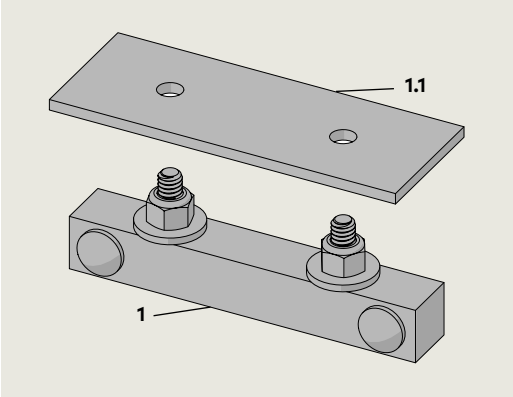
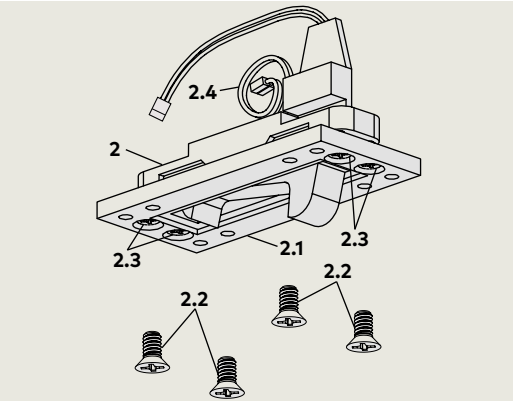


Fig. 5.9.2 Breakout switch DK4638-010; inswing door

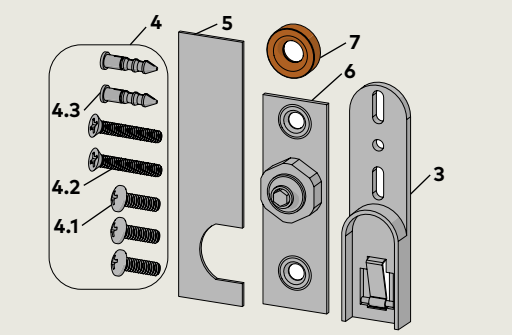


3 Fixed stop, outswing door DK4638-020

Fig. 5.9.3 Fixed stop outswing door

3 Door pivot
4 Screw pack
4.1 PHMS, 1/4-20 x 3/4"
4.2 FHMS, #14 x 1 1/2"
4.3 Anchor
5 Wrench, height adj.
6 Floor pivot
7 Bearing

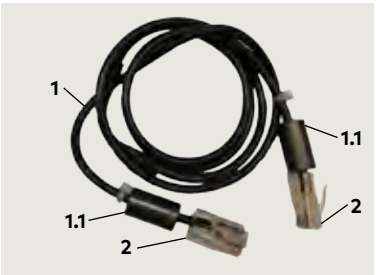
Fig. 5.9.4 Bottom pivot assembly DC0735-020



5.10 ED50/ED100/ED250 OHC pair door cable hardware

1 Sync cable DX3485
-010, 9 7/8" [250]
-020, 40 1/2" [1030]
-030, 80" [2030]
1.1 Ferrite bead
2 RJ45 plug

Fig. 5.10.1 Sync cable



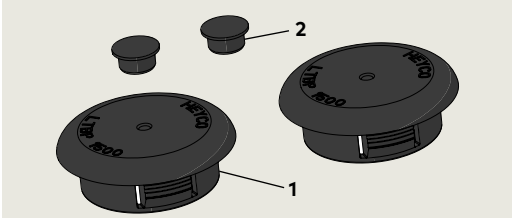
3 115 Vac power connect cable DX3484-010 [1750 mm] 69"
3.1 Ground ring lug

Fig. 5.10.2 115 Vac power connect cable

5.11 OHC header plug pack

1 Plug, 1 1/2"
2 Plug, 10 mm

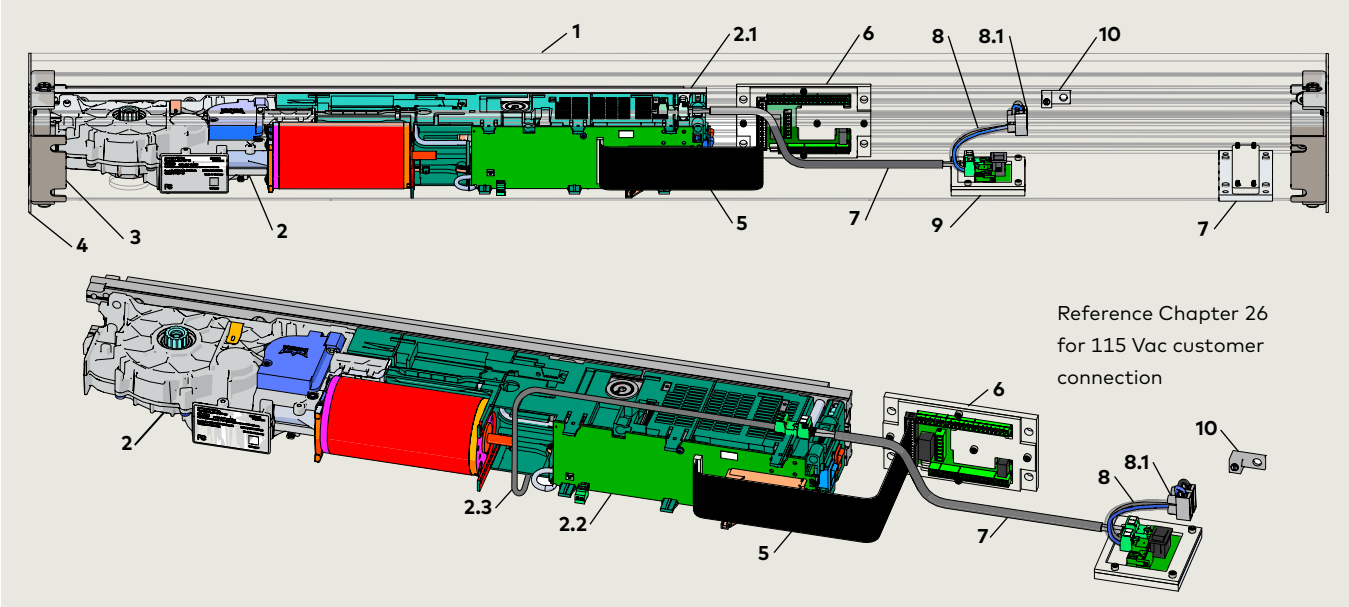
Fig. 5.11.1 Header plug pack, DK4620



6 ED100/ED250 OHC header assembly

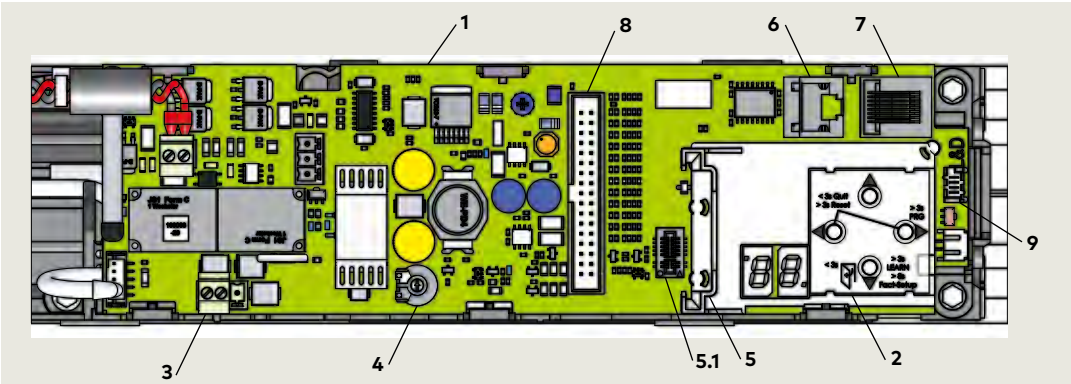
6.1 ED100/ED250 OHC single door header example

Fig. 6.1.1 ED100/ED250 OHC header and operator assembly



1 OHC header
2 ED100/ED250 OHC operator
2.1 Mounting plate
2.2 Control board
2.3 115 Vac cable
3 Jamb bracket
4 End cap
5 Ribbon cable
6 Low voltage wiring connection PCB module
7 115 Vac power extension cable
8 Main power connector
8.1 115 Vac terminal
9 115 Vac power connection PCB module
10 Ground lug

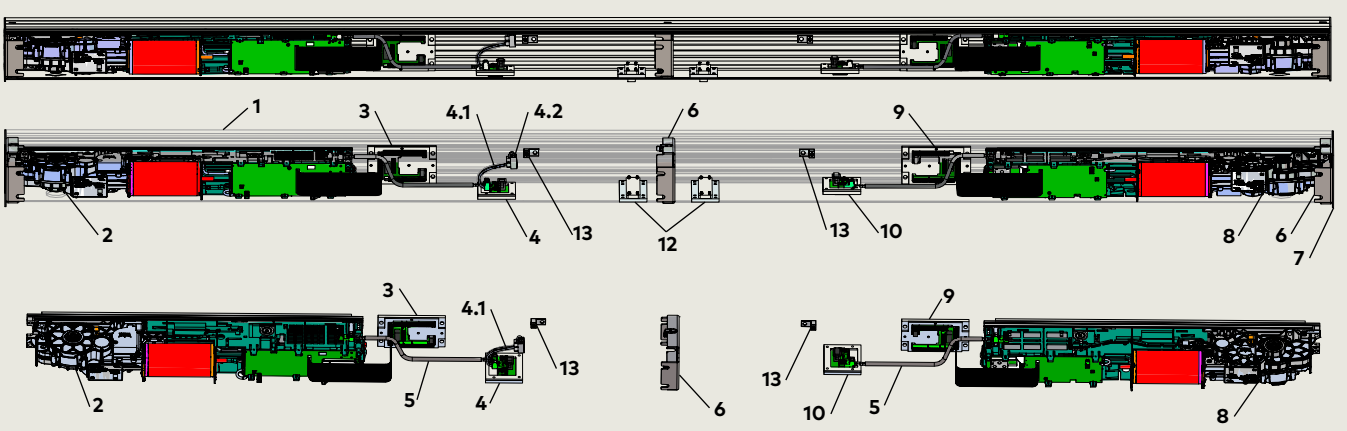
Fig. 6.1.2 ED100/ED250 operator control board



1 Control board
2 Keypad and 2 digit display
3 Braking circuit plug
4 Power fail closing speed potentiometer
5 Upgrade card slot
5.1 Upgrade card socket
6 dormakaba handheld communication port
7 Pair door operator to operator communication port
8 Ribbon cable socket
9 Program switch panel socket

6.2 ED100/ED250 OHC pair doors header example

Fig. 6.2.1 ED100/ED250 OHC header and operator assembly; outswing



1 OHC pair header, outswing
2 ED100/ED250 OHC operator, LH door
3 Low voltage wiring connection PCB module, LH door
4 115 Vac power connection PCB module, LH door
4.1 Main power connector
4.2 115 Vac terminal block
5 115 Vac power extension cable
6 Jamb bracket
7 End cap
8 ED100/ED250 OHC operator, RH door
9 Low voltage wiring connection PCB module, RH door
10 115 Vac power connection PCB module, RH door
11 115 Vac power cable
12 Fixed stop; outswing
13 Ground lug

Fig. 6.2.2 115 Vac power connect cable between operators

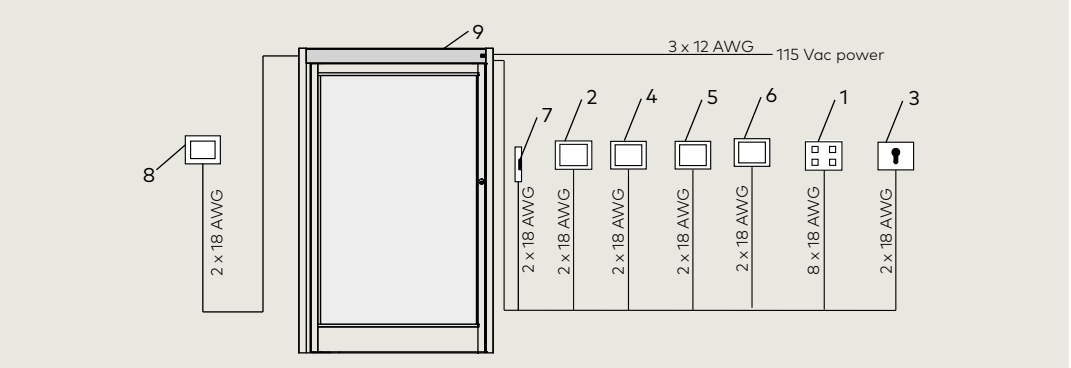
1 115 Vac power connect cable DX3484-010 [1750 mm] 69"
1.1 Ground ring lug
2 Sync cable DX3485-010 [250 MM] 9 7/8" DX3485-020 [1030 MM] 40 1/2""

Fig. 6.2.3 Sync cable between operators

7 System accessories

7.1 System accessory electrical connections, overhead concealed header

Fig. 7.1.1 Electrical connections, single door



1 External mode switch, mechanical
2 External mode switch, electronic
3 Key switch
4 Pushbutton, night / bank
5 Pushbutton, interior
6 Pushbutton, exterior
7 Door locking device
8 Manual release switch
9 OHC header

7.2 System accessories

7.2.1 Overview

ED50/ED100/ED250 operators are normally used with system accessories available from dormakaba USA, Inc. or other manufacturers.

7.2.2 Accessory electrical installation.

Electrical interfaces from system accessories used with ED operators must be planned for. This includes routing of wiring from accessories to overhead concealed header.

7.2.3 System accessories, other manufacturers.

dormakaba USA Inc. cannot guarantee compatibility for other manufacturer's accessories. If any of these accessories are used despite this caution, the operator's full range of functions may be unavailable or the devices may not work properly.

WARNING

Damage to operator or to connected device is also possible!

7.2.4 Power for accessories, ED50.

External power supply required.

7.2.5 Power for accessories, ED100/ED250.

24 Vdc, 1.5 A (36 watts) is available from the operator for external devices and accessories. This supply has overcurrent protection. If additional power is required an external power supply must be used.

7.2.6 Miscellaneous accessories.

Door status display, red, green.

7.2.7 Activators

Typical activators:

1. Pushbuttons, key switches
2. Radio systems
3. Smoke detectors
4. Access control systems
5. Telephone systems
6. Intercoms

7.2.8 Locking devices.

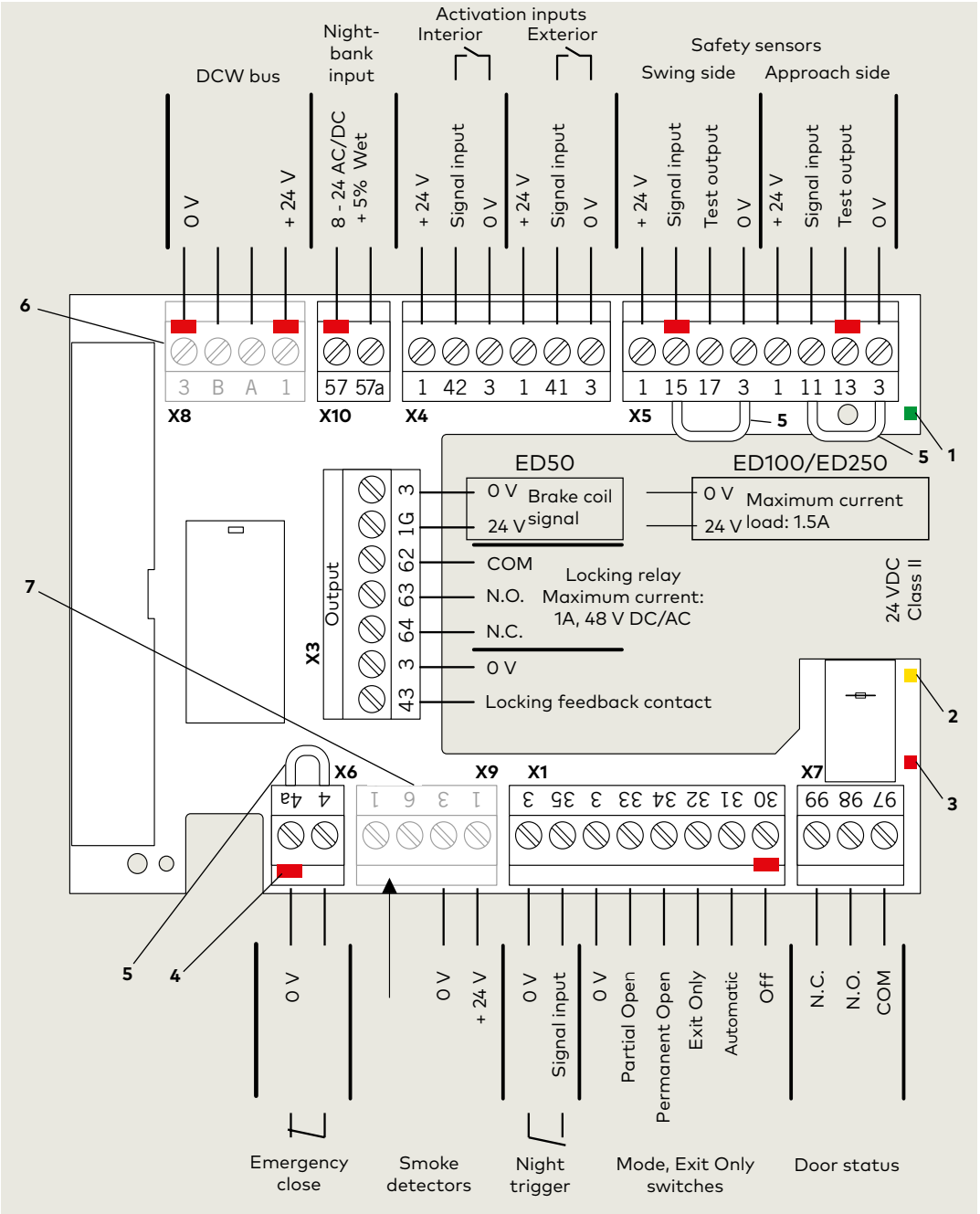
Typical locking devices:

1. Electric strike plates
2. Electromagnetic locks
3. Electric locks

To insure that operator and locking device work safely when connected together, locking device must comply with following:

1. Operating voltage, power supply from operator, 24 Vdc, ±5 %.
2. Operating voltage, external power supply, 48 V DC/AC maximum.
3. Locking device relay contact, maximum load, 1 A.
4. Electric strike plate duty factor, 30% minimum.
5. Motor lock duty factor, 100%.

Fig. 7.2.1 ED50/ED100/ED250 terminal board electrical connections



1. Green LED
2. Yellow LED
3. Red LED
4. Key (red insert) location in socket. Assigned plug has tab in same location broken off.
5. Jumpers, factory installed at following terminals:
   - 4 and 4a
   - 15 and 3*
   - 11 and 3*
6. DCW upgrade card plug
7. Fire protection upgrade card plug

TIPS AND RECOMMENDATIONS

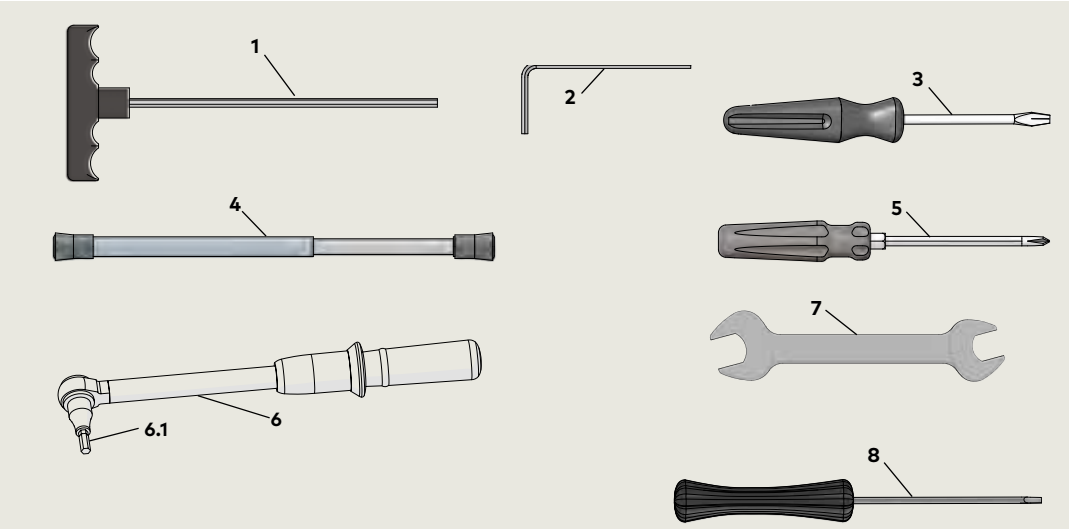
- Use documentation provided with each device for electrical installation.
- It is recommended not to connect system accessories to board until after operator has been setup and learning cycle performed.

Note 1: ED100/ED250: Terminals 3 and 43 are also used for swing side overhead sensor input when parameter ST is set to 7 or 8. Reference Appendix A, Parameters.

8 Recommended tools and torque chart

8.1 Recommended tools

Fig. 8.1.1 Recommended tools



1 T-handle hex key, 5 mm
2 Hex keys, 2.5 mm, 3 mm, 5 mm
3 Screwdriver, flat blade
4 Door pressure gauge, 0 to 35 ft - lbf
5 Screwdriver, Phillips, #2, #3
6 Torque wrench, 3 to 50 ft lb min.
6.1 Metric hex key sockets
7 Open end wrench, 13 mm
8 Screwdriver, flat blade, M2 (1/16 to 3/32")

8.2 Standard tightening torque

8.2.1 Standard tightening torque.

Fastener size	ft lb
M5	3.7
M6	7
M8	17
M10	34
M12	58

8.3 Drill bits

8.3.1 Drill bit sizes for fasteners.

Fastener	Drill bit size	
#10 wood screw	Hardwood 9/64"	Softwood 1/8"
#12 wood screw	Hardwood 5/32"	Softwood 9/64"
#14 wood screw	Hardwood 11/64"	Softwood 5/32"
1/4 -20 metal self tapping screw	7/32"	
10-24 barrel nut	5/32"	

Fig. 8.3.1 Drill bit

9 OHC installation template

9.1 Header installation

Fig. 9.1.1 Single door LH outswing header; ED50 example

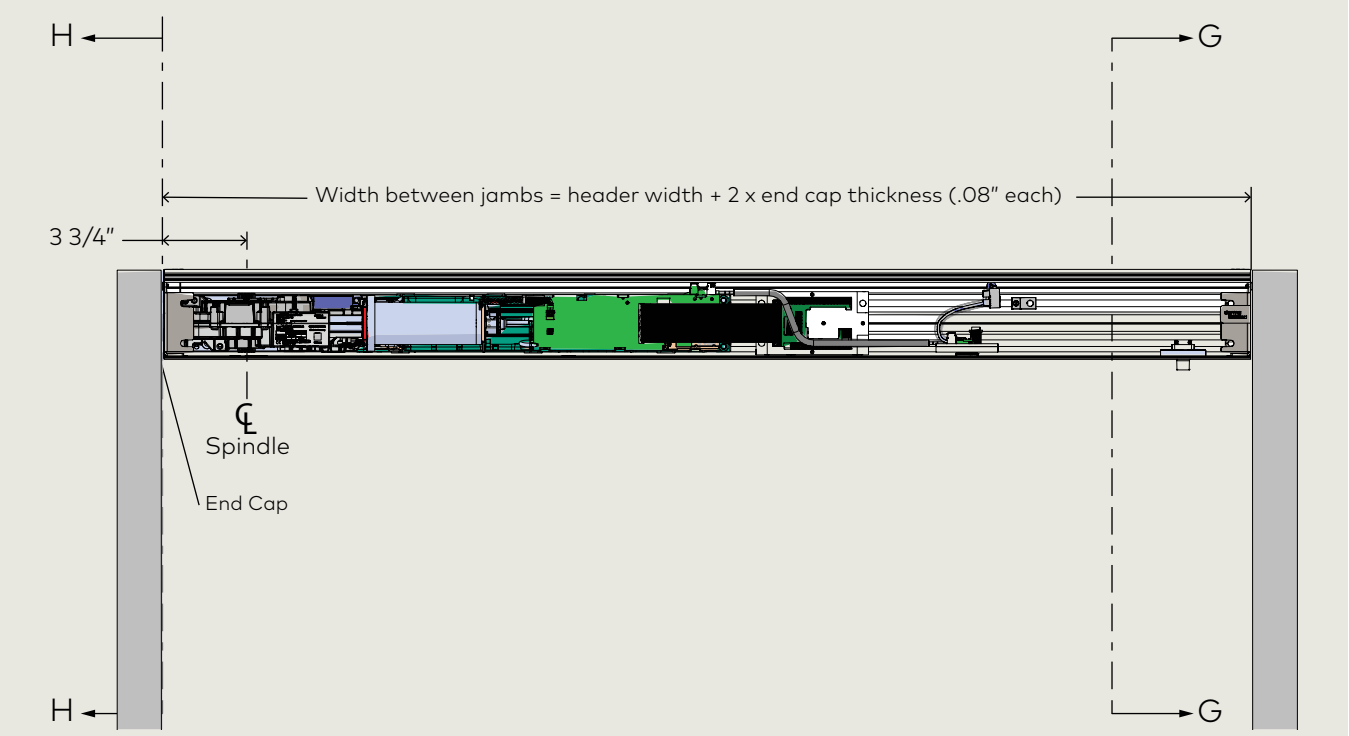
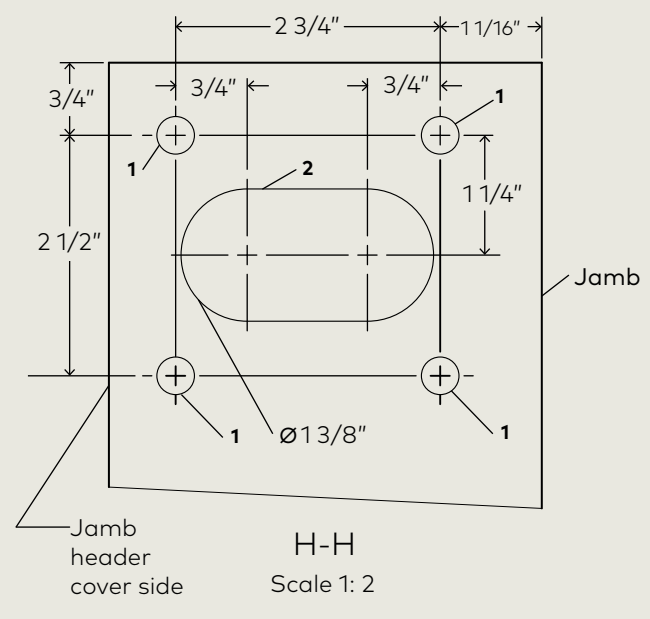


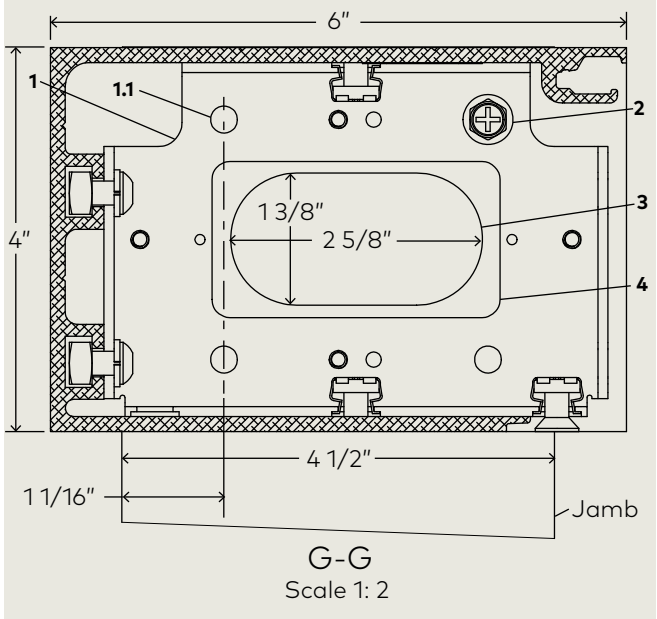
Fig. 9.1.2 Section view H-H



1 Jamb bracket mounting holes, 9/32" dia. For 1/4-20 fastener.

2 Jamb cutout for wiring

Fig. 9.1.3 Section view G-G



1 Jamb bracket

1.1 Jamb bracket mounting holes, 9/32" dia.

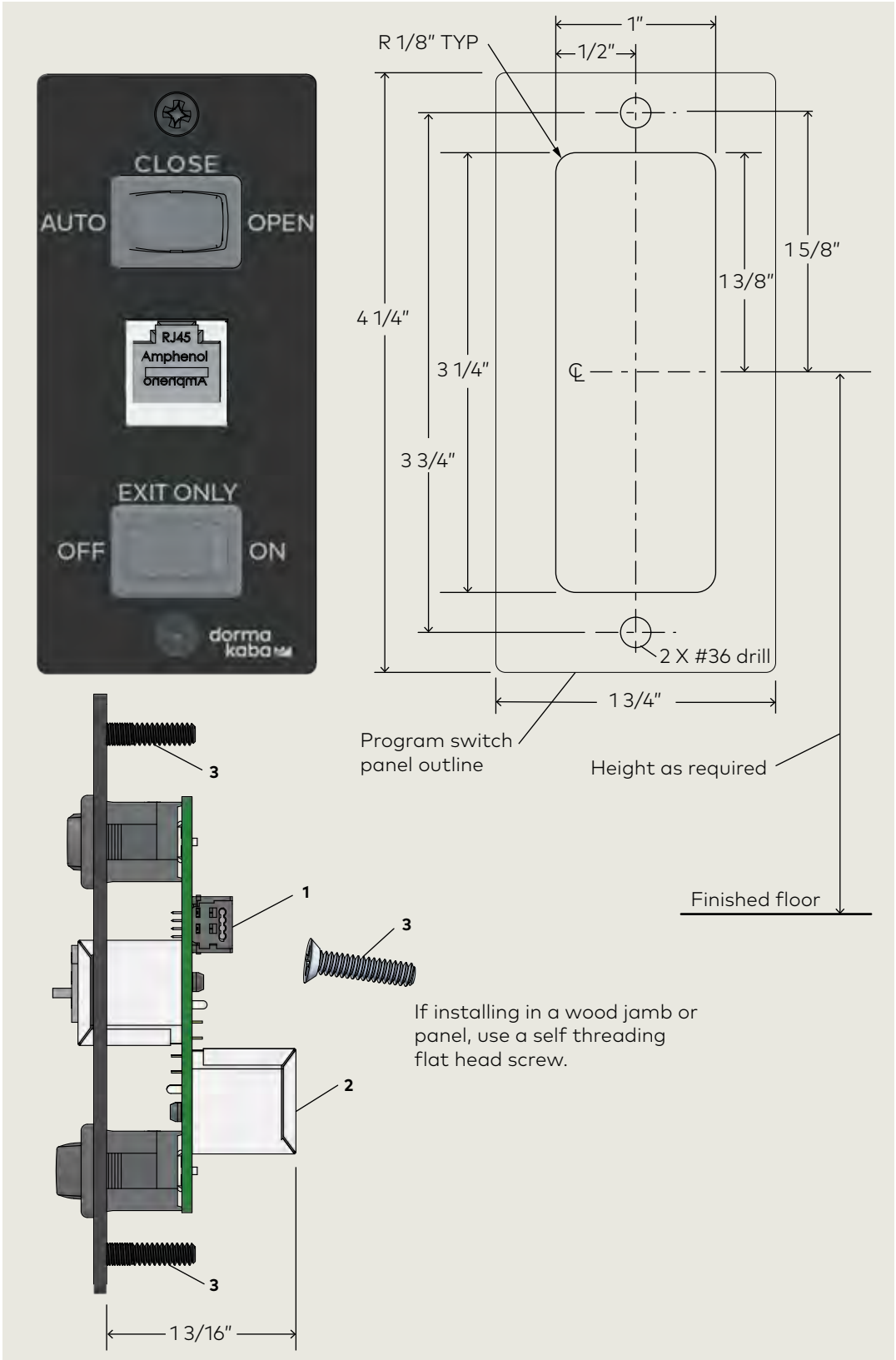
2 Header fastener

3 Jamb cutout for wiring

4 Jamb bracket cutout for wiring

9.2 Mode panel jamb cutout

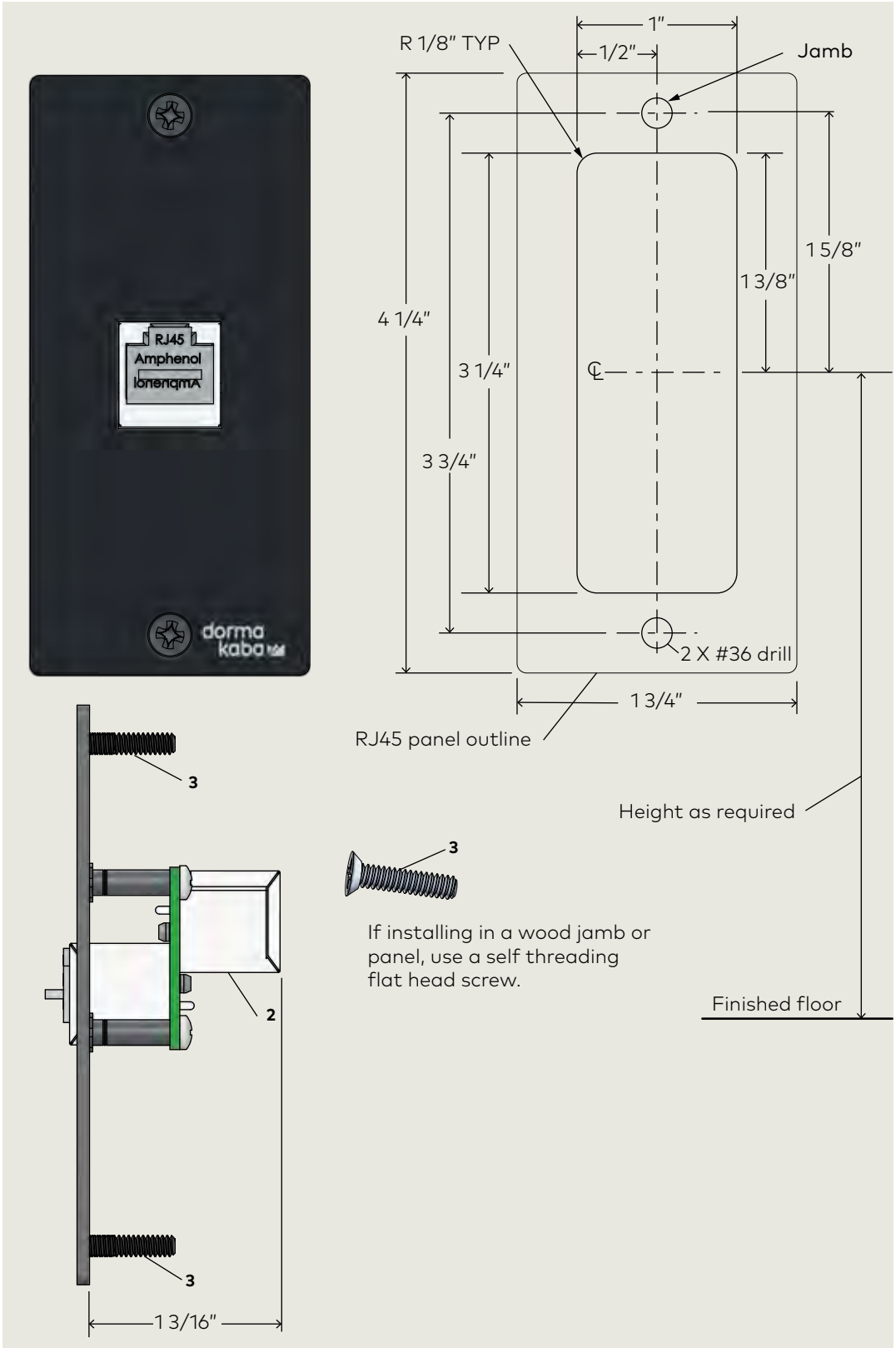
Fig. 9.2.1 Mode switch panel jamb cutout



1 Mode panel cable socket
2 RJ45 connector
3 #6-32 x 5/8" UCUT FH MS

9.3 RJ45 panel jamb cutout, double doors

Fig. 9.3.1 RJ45 panel for dormakaba handheld



2 RJ45 connector
3 #6-32 x 5/8" UncutFH MS

10 Install door jambs when applicable

10.1 Check jamb installation dimensions

Fig. 10.1.1 Door opening, jambs installed

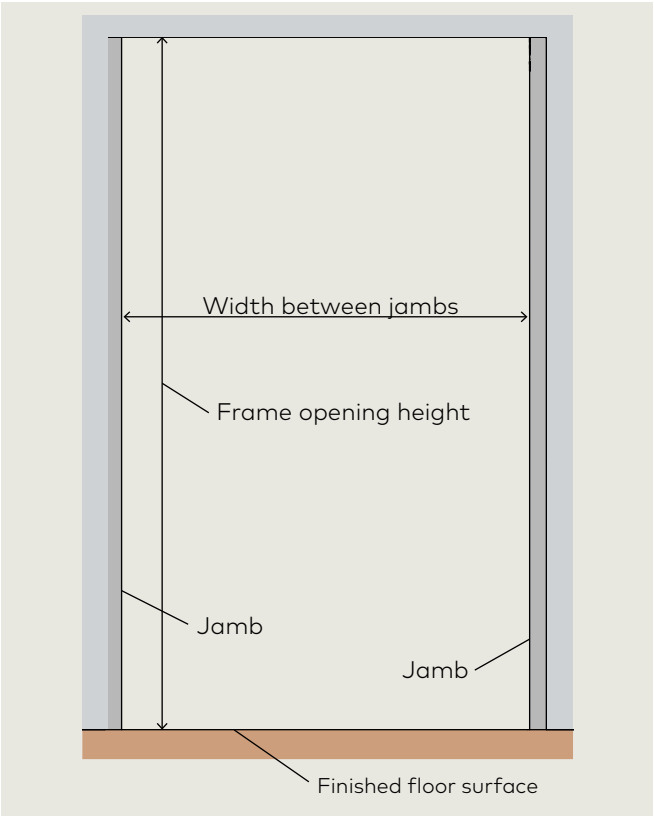
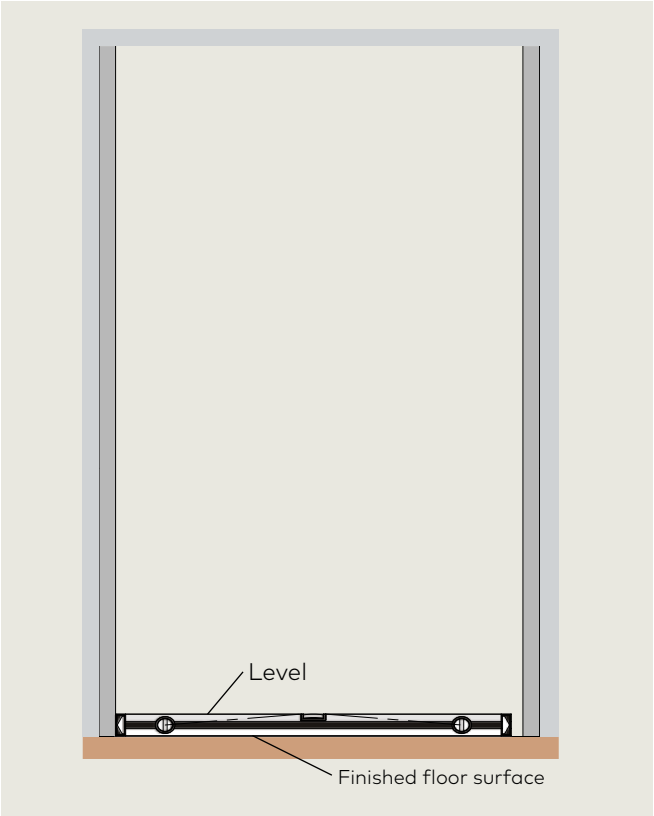


Fig. 10.1.2 Checking floor high point



CAUTION

Customer interface:
- Review jamb and door installation with customer contact.
- Obtain any shop drawings.
- Are there any local code requirements?

Technician should be experienced in:
- Verifying jamb height and width between jamb dimensions with shop or architect drawings and with dormakaba installation template.
- Insuring jambs are plumb, level, and square.

TIPS AND RECOMMENDATIONS

Reference Para. 9.2 and 9.3 for Mode witch panel and RJ45 panel cutout requirements.

10.1.1 Measure width between jambs.

1. Measure width between jambs at several points vertically along jambs.

- Refer to Para. 14.1 for width between jambs dimension.
- Measurement tolerance:
  Width between jambs +1/8", -0"

10.1.2 Measure frame opening height.

1. Measure frame opening height along door opening.

- Minimum opening height:
  Door height + header height + required door clearance.

10.1.3 Check jamb level and floor flatness.

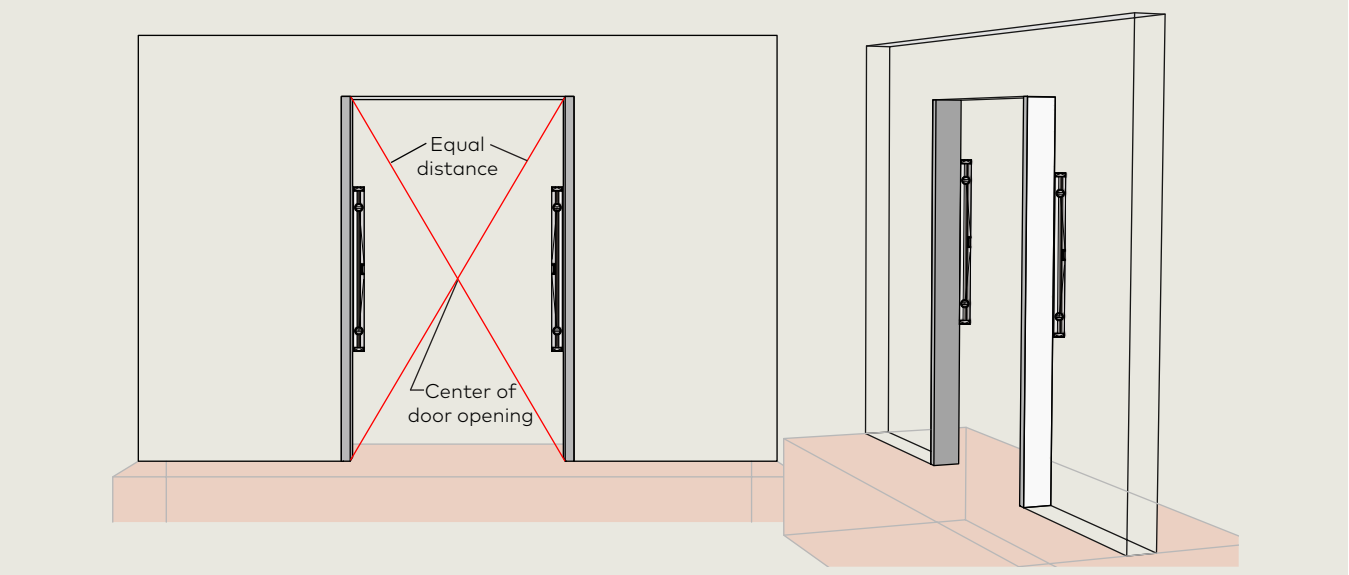
1. Verify level between bottom of jambs
2. Check for floor high spots above jamb level.

CAUTION

Any issues with floor high spots must be resolved prior to installing header and door.

10.2 Check jambs for plumb, level, and square

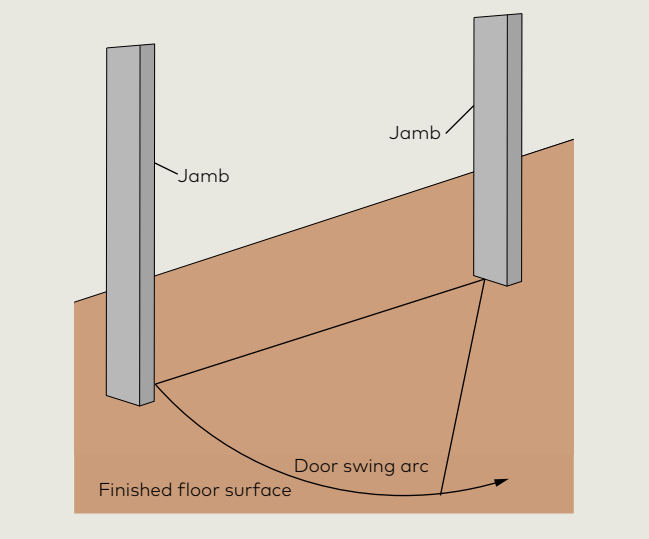
Fig. 10.2.1 Single door frame



CAUTION

Any issues with door jamb level, plumb and square must be resolved prior to installing header and door.

Fig. 10.2.2 Checking floor high spots in door swing arc



10.2.1 Check door frame for plumb, level and square.

1. Use level to check jambs for level and plumb.
2. Measure jambs for square.

10.2.2 Determine floor high spot in door swing arc.

1. Place level on floor at bottom surface of jamb at door pivot side.
2. Monitor level for any floor high spots (above bottom of jambs) in floor as level is moved through door swing arc.

CAUTION

If level indicates floor high spots in door swing arc above bottom of jamb:
Contact customer or contractor to resolve issue.

10.3 Drill holes in jambs for header mounting and for wiring into header

TIPS AND RECOMMENDATIONS

Reference Chapter 9, OHC Installation Template.

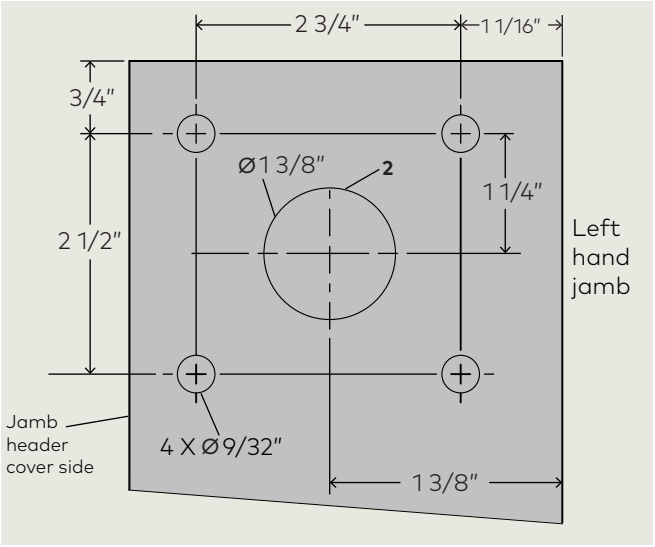
10.3.1 Mark holes in jambs for header.

1. Using template dimensions, mark four jamb bracket mounting hole locations (1) in each jamb.
2. Mark hole location (2) for wiring.

10.3.2 Drill holes in jambs.

1. Drill holes (**1**) in jamb at jamb mounting hole locations.
2. Use clearance hole drill size for fastener being used.
3. Drill hole (**2**) in jamb for wiring entering the header.

Fig. 10.3.1 LH jamb* bracket mounting holes



*Viewed from interior side of jamb.

Fig. 10.3.2 Interior view of door opening

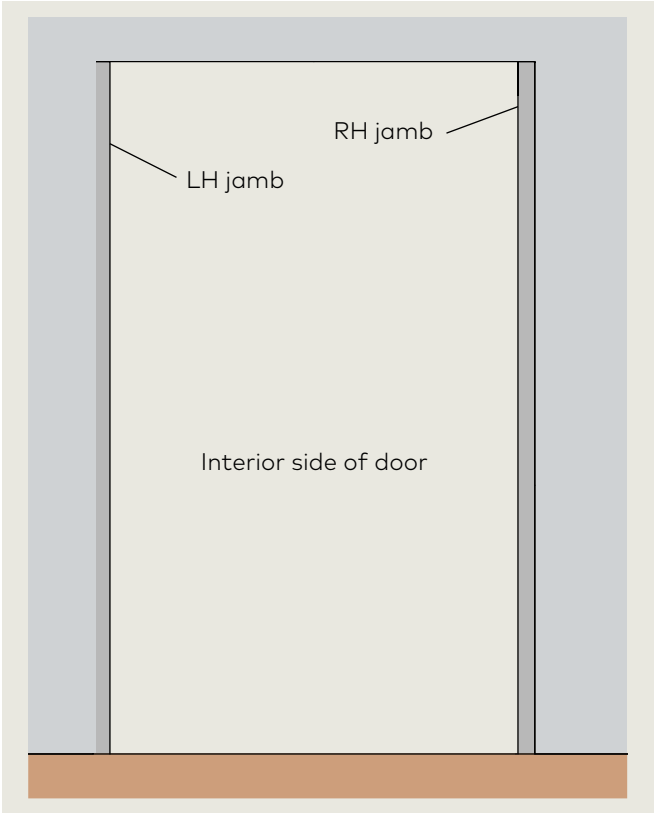
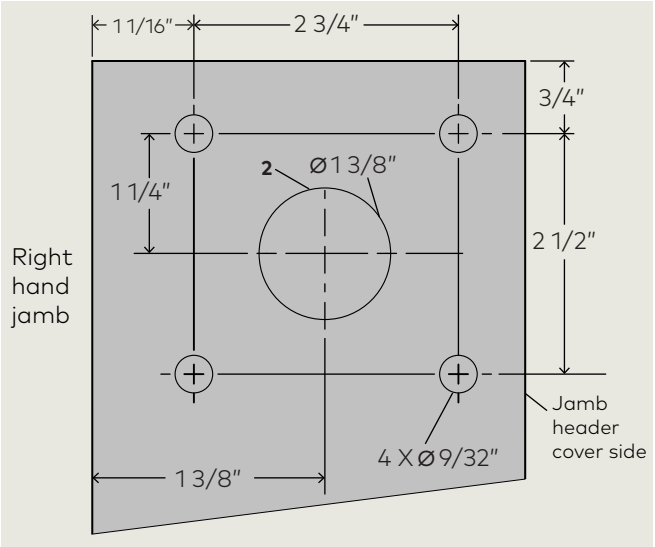


Fig. 10.3.3 RH jamb bracket mounting holes



*Viewed from interior side of jamb..

TIPS AND RECOMMENDATIONS

Header to jamb fasteners:
Refer to Chapter 5 OHC hardware, DK4654 header mounting screw pack.

10.4 Mode switch panel jamb cutout

CAUTION

Mounting holes for Mode switch panel flat head screws depend on jamb material.
Metal jambs: tap drill for 18-8 screw supplied with panel.
Wood jambs: Select fastener.

10.4.1 Mode switch panel cutout and mounting holes.

1. Cutout jamb, drill mounting holes for program switch panel.
   Reference Para. 9.2 for cutout detail.

10.5 RJ45 panel jamb cutout, pair doors

CAUTION

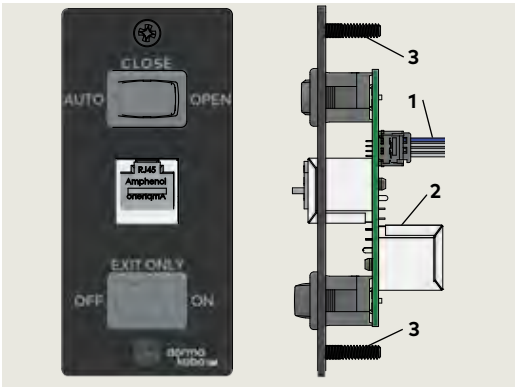
Mounting holes for RJ45 panel flat head screws depend on jamb material.
Metal jambs: tap drill for 18-8 screw supplied with panel.
Wood jambs: Select fastener.

10.5.1 RJ45 panel cutout and mounting holes, pair door installations.

1. Cutout jamb, drill mounting holes for RJ45 panel.
   Reference Para. 9.3 for cutout detail.

10.6 Mode switch panel and RJ45 panel installation

Fig. 10.6.1 Mode switch panel



1 Mode switch panel cable
2 RJ45 connector
3 18-8 x 5/8" SS FH undercut machine screw

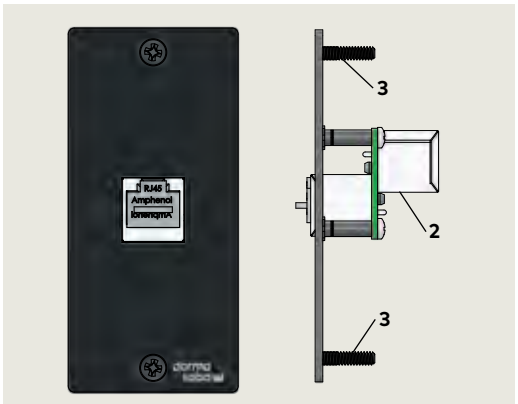
10.6.1 Mode switch panel installation.

1. Install Mode switch panel in lock side jamb cutout. Reference Para. 9.3 for cutout details.
2. Insert RJ45 communication cable plug into socket on panel.
3. Route Mode switch panel cable and RJ45 cable to top of jamb.

NOTICE

Double doors: Mode switch panel installed on active door side jamb.

Fig. 10.6.2 RJ45 panel



2 RJ45 connector
3 18-8 x 5/8" SS FH undercut machine screw
6 RJ45 communication cable, DX4662-00x

10.6.2 RJ45 panel installation, pair doors.

1. Install RJ45 panel in jamb cutout opposite Mode switch panel jamb. Reference Para. 14.4 for cutout details.
2. Insert RJ45 communication cable plug into socket on panel.
3. Route RJ45 cable to top of jamb.

Fig. 10.6.3 RJ45 communication cable

11 Header preparation

11.1 Remove operator from mounting plate – ED50 example

11.1.1 Remove OHC operator from mounting plate.

1. Use 5 mm T handle hex key to loosen eight M6 SHCS securing operator to mounting plate. SHCS must be free of mounting plate.
2. Lift operator from mounting plate and set aside.

11.1.2 Pair door header.

1. Remove mounting plate from each OHC operator.

TIPS AND RECOMMENDATIONS

Guide pin resistance may require screwdriver to start operator removal from end of mounting plate (Fig. 11.1.3).

Fig. 11.1.1 ED50 operator fastened to mounting plate

1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Mounting plate
4 Guide pin
5 5 mm T handle hex key

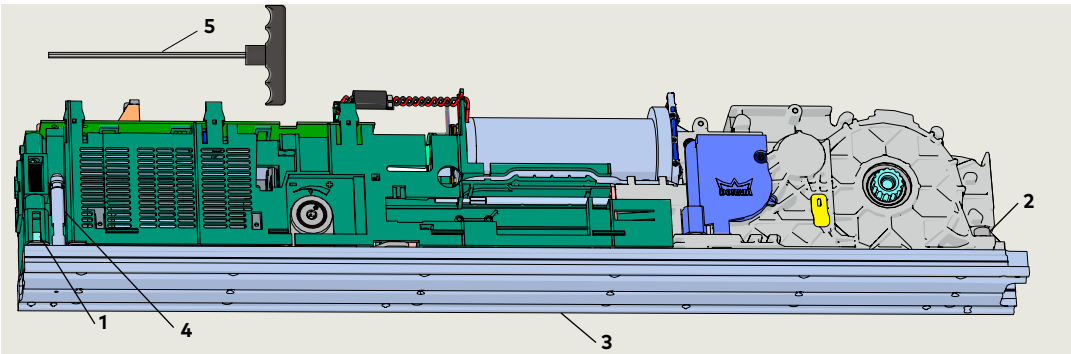


Fig. 11.1.2 ED50 operator separated from mounting plate

1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Mounting plate
4 Guide pin

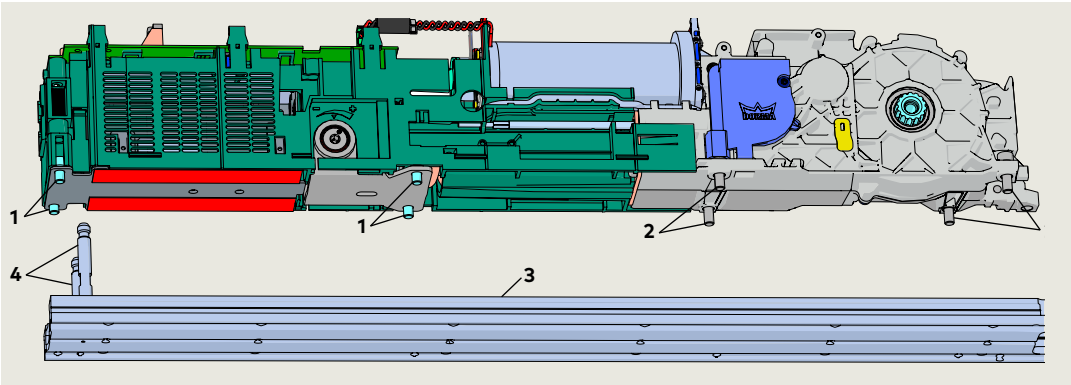
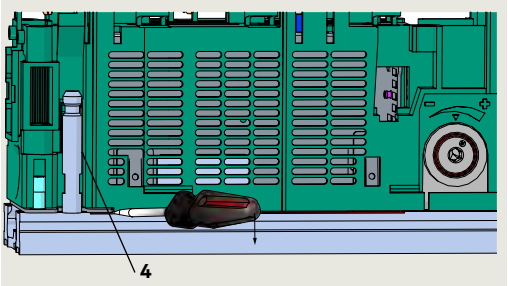


Fig. 11.1.3 ED50 mounting plate removal

4 Guide pin



11.2 Install ED50/ED100/ED250 OHC mounting plate in header

11.2.1 Slide 4 square nuts into header slots.

1. Remove one of the jamb brackets (1.1).
2. Slide 4 square nuts (Fig. 11.3.1 (4)) into header slots at locations indicated in figure.
3. Reinstall jamb bracket.

11.2.2 Install ED50/ED100/ED250 OHC mounting plate in header.

1. Position mounting plate and header tracks in right or left hand side of header based on door installation (Chapter 3).

1. Fasten mounting plate to the two header tracks using eight 1/4-20 x 1" PFHMS from screw pack DK4617.

CAUTION

Before tightening screws, locate mounting plate from inside surface of jamb bracket to dimension shown in Fig. 11.2.3.

Fig. 11.2.1 OHC header, ED50 / ED100 operator mounting on left side example

1 ED50 OHC header
1.1 Jamb bracket
2 Header track, 1/2" x 23 1/2" DC4605-010
3 (6) 1/4-20 UNC through holes for mounting plate 1/4-20 x 1" FHMS
4 1/4" Square nut, 1/4-20 x 1/2" SBHCS, 4 sets
5 OHC mounting plate
6 1/4-20 x 1" PFHMS

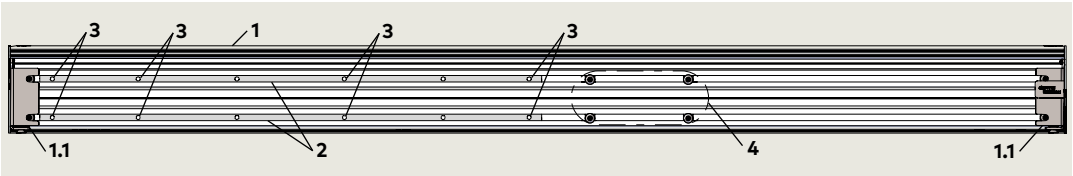


Fig. 11.2.2 ED50/ED100/ED250 mounting plate FHMS locations

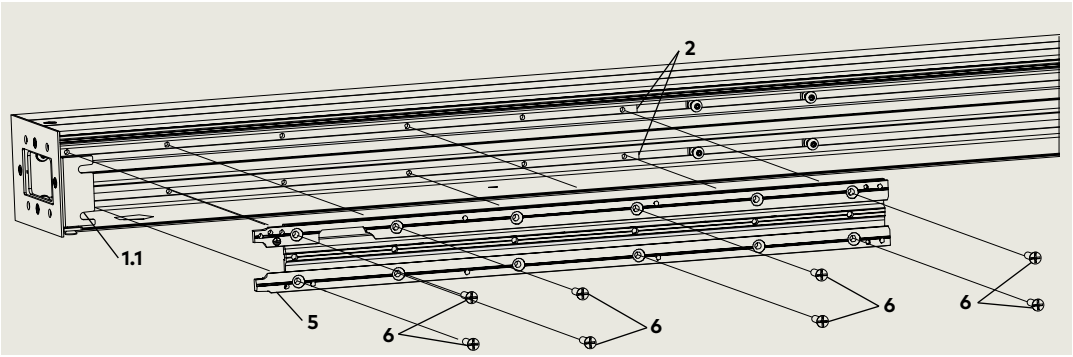
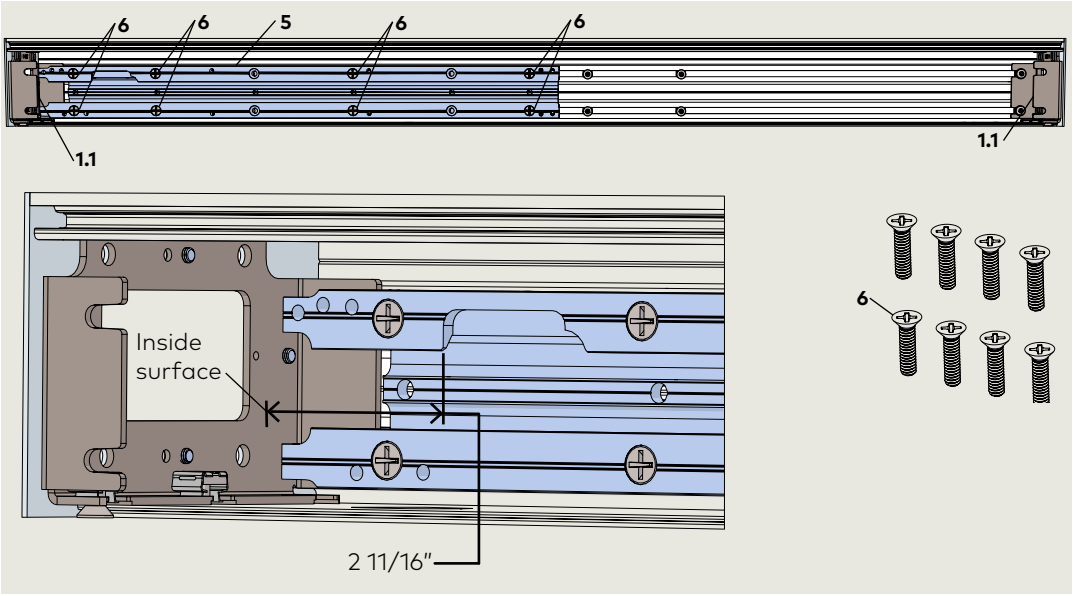


Fig. 11.2.3 ED50/ED100/ED250 mounting plate location in left side of header example

1.1 Jamb bracket
5 OHC mounting plate
6 1/4-20 x 1" PFHMS

6 1/4-20 x 1" PFHMS, screw pack DK4617



11.3 Install low voltage terminal PC board module

11.3.1 Install Terminal PC board module.

TIPS AND RECOMMENDATIONS

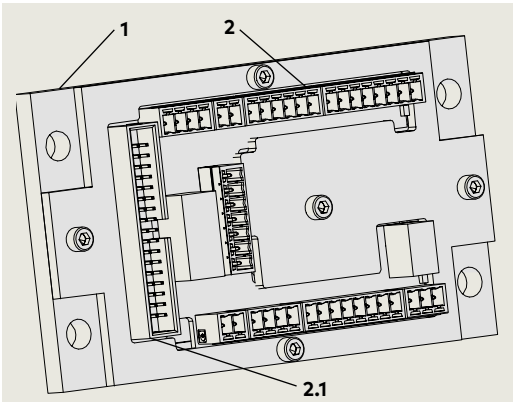
Refer to Figures 11.3.2 through 11.3.5 for module installation for ED50/ED100/ED250 OHC operator located on right or left side of header.

1. Install module in header using fasteners (3,4) installed in header tracks. Do not over-tighten SBHCS's.
2. Position module in header track as shown in Fig. 11.3.3 or 11.3.5.

TIPS AND RECOMMENDATIONS

Ribbon cable from ED50/ED100/ED250 OHC operator connects to connector on Terminal PC board (Fig. 11.3.1).

Fig. 11.3.1 Terminal PC board module



1 PCB holder assembly, Terminal PCB DC4630
2 Low voltage terminal PCB
2.1 Ribbon cable connector
3 1/4-20 x 1/2" SBHCS
4 1/4" square nut, installed in header track

Fig. 11.3.6 Terminal PC board module fasteners

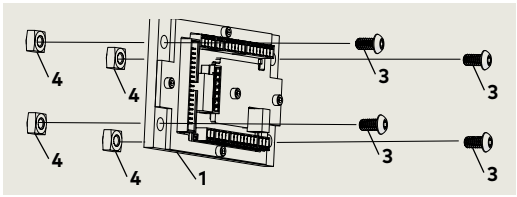
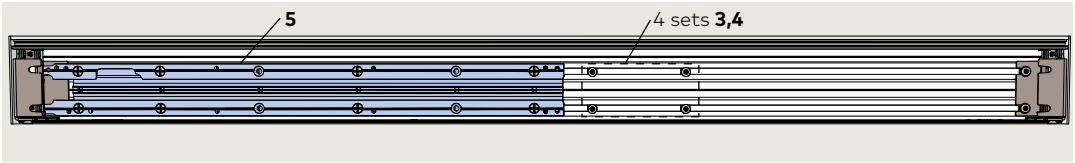


Fig. 11.3.2 Fasteners for Terminal PC board module; ED operator on left



1 PCB holder assembly, Terminal PCB DC4630
2 Low voltage terminal PCB
3 1/4-20 x 1/2" SBHCS
4 1/4" square nut, installed in header track
5 OHC mounting plate installed on left

Fig. 11.3.3 Terminal PC board module installed in header; ED operator on left

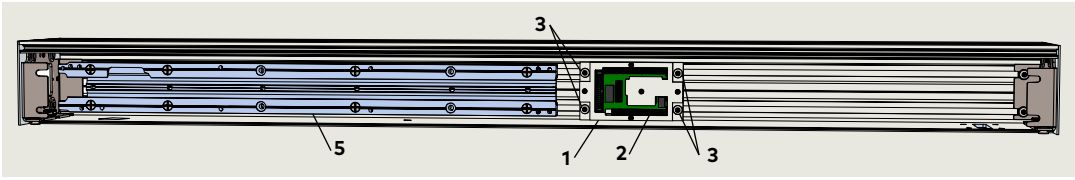
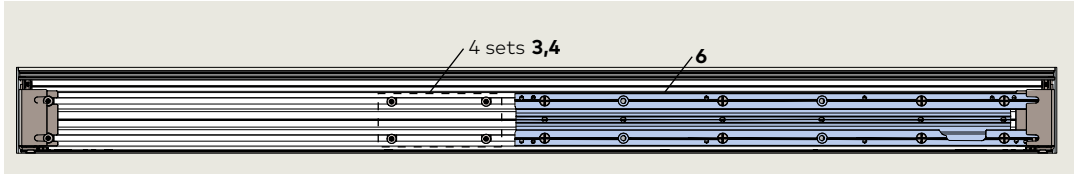
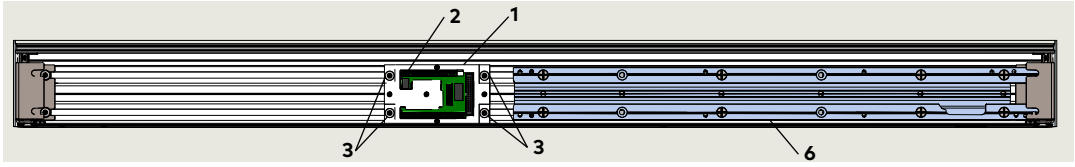


Fig. 11.3.4 Fasteners for Terminal PC board module; ED operator on right



1 PCB holder assembly, Terminal PCB DC4630
2 Low voltage terminal PCB
3 1/4-20 x 1/2" SBHCS
4 1/4" square nut, installed in header track
6 OHC mounting plate installed on right

Fig. 11.3.5 Terminal PC board module installed in header; ED operator on right



11.4 Pair door header: Install ED OHC mounting plates and Terminal PC boards

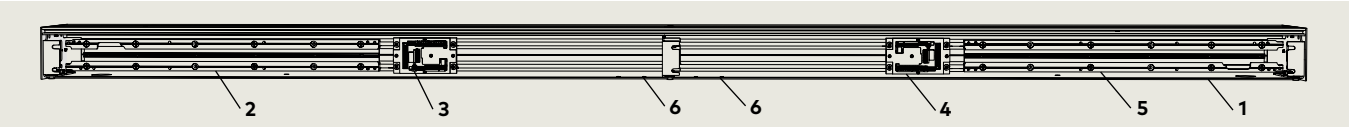
11.4.1 Install ED50/ED100/ED250 OHC mounting plate and terminal PC board, left side of header.

Refer to Para. 11.2 and 11.3 for mounting plate installation instructions.

11.4.2 Install ED50/ED100/ED250 OHC mounting plate and terminal PC board, right side of header.

Refer to Para. 11.2 and 11.3 for mounting plate installation instructions.

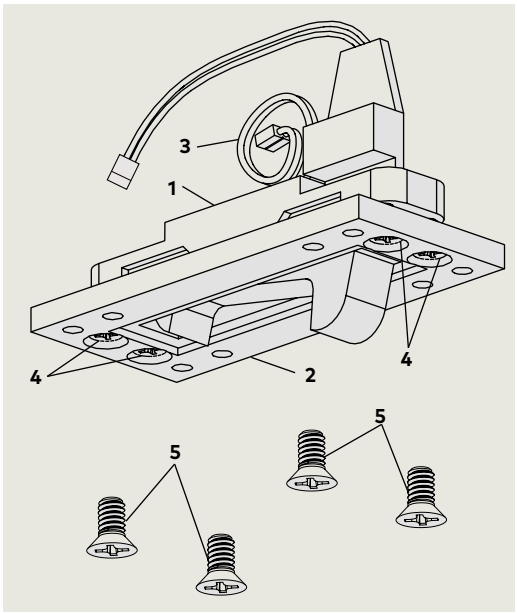
Fig. 11.4.1 OHC pair door header, ED50/ED100/ED250 OHC operator mounting plates and Terminal PC boards



1 OHC double header, outswing shown
2 Mounting plate, LH ED50/ED100/ED250 OHC operator
3 Terminal PC board module, LH ED50 operator
4 Terminal PC board module, RH ED50/ED100/ED250 operator
5 Mounting plate, RH

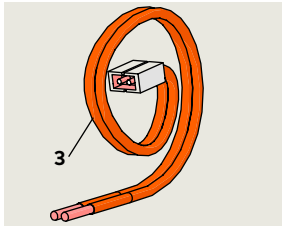
11.5 Install panic breakout, inswing doors

Fig. 11.5.1 Panic breakout switch kit DK4638



1 Panic breakout switch
2 Breakout mounting plate
3 Wire harness, 24" long
4 #8 x 5/8" FH thread forming screw
5 1/4-20 x 1/2" Phillips flat head (undercut)

Fig. 11.5.2 Wire harness, 24" long



3 Wire harness, 24" long

11.5.1 Install panic breakout assembly in header.

1. Install panic breakout switch assembly in header.

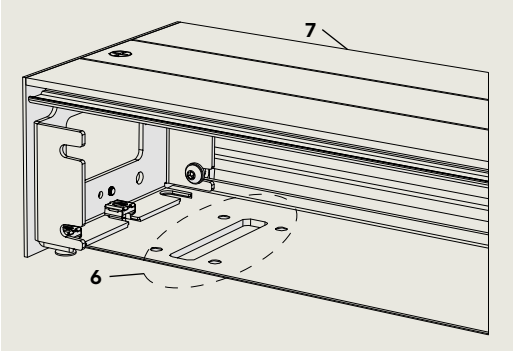
TIPS AND RECOMMENDATIONS

Wire harness (3) connects breakout switch to ED50 / ED100/ED250 terminal board.

TIPS AND RECOMMENDATIONS

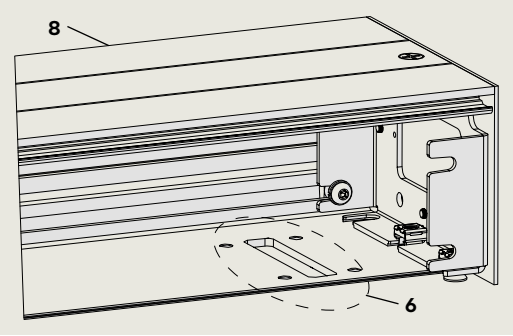
Header is shipped with cutout and mounting holes for panic breakout switch. Reference Figures 11.5.3 and 11.5.4.

Fig. 11.5.3 Header breakout switch cutout and mounting holes, LH inswing



1 Panic breakout switch
2 Breakout mounting plate
5 1/4-20 x 1/2" Phillips flat head (undercut)
6 Cutout and mounting holes
7 Header, LH inswing

Fig. 11.5.4 Header breakout switch cutout and mounting holes, RH inswing



1 Panic breakout switch
2 Breakout mounting plate
5 1/4-20 x 1/2" Phillips flat head (undercut)
6 Cutout and mounting holes
8 Header, RH inswing

Fig. 11.5.5 Header breakout switch installed, LH inswing

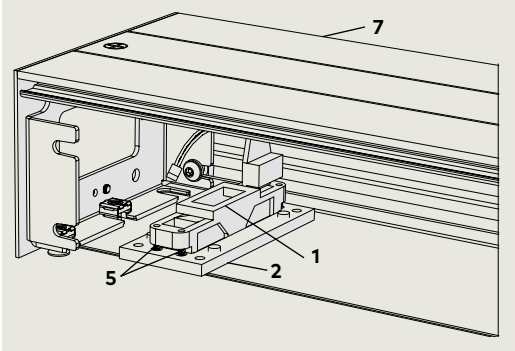
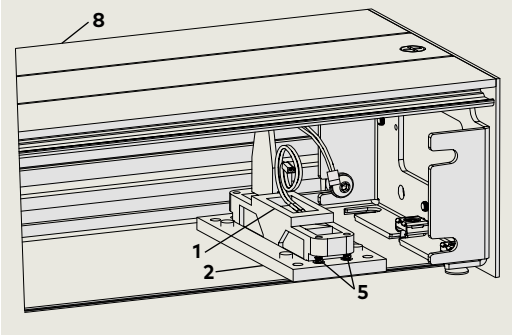
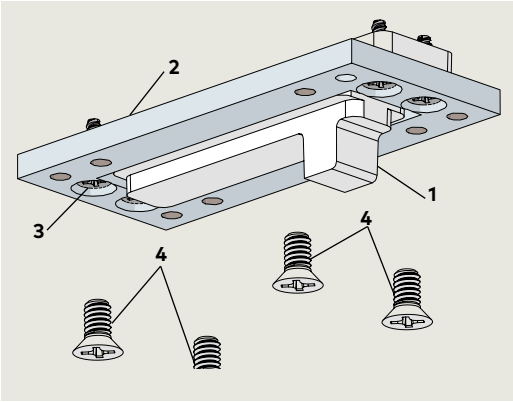


Fig. 11.5.6 Header breakout switch installed, RH inswing



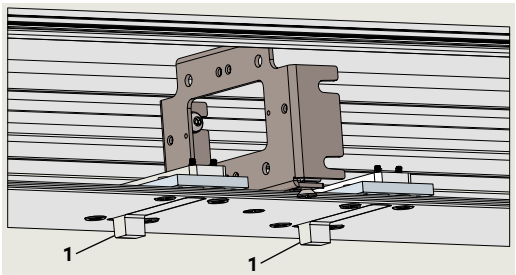
11.6 Install fixed stop, outswing doors

Fig. 11.6.1 Fixed stop DK4638-020



1 Fixed stop
2 Mounting plate
3 #8 x 5/8" FH thread forming screw
4 1/4-20 x 1/2" Phillips flat head (undercut)

Fig. 11.6.2 Fixed stop installation, pair door out configuration example.



11.6.1 Install fixed stop, outswing doors.

1. Install fixed stop assembly in header.

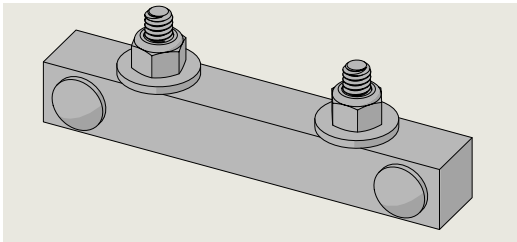
TIPS AND RECOMMENDATIONS

Header is shipped with cutout and mounting holes for fixed stop (Figures 11.5.3 and 11.5.4).

TIPS AND RECOMMENDATIONS

Fixed stop alternative:
Fixed stop assembly DC4643-01A.
Reference Appendix B for installation.

Fig. 11.6.3 Fixed stop DC4643-01A



12 Install OHC header - single door

12.1 Header installation

Fig. 12.1.1 Jambs installed in door opening

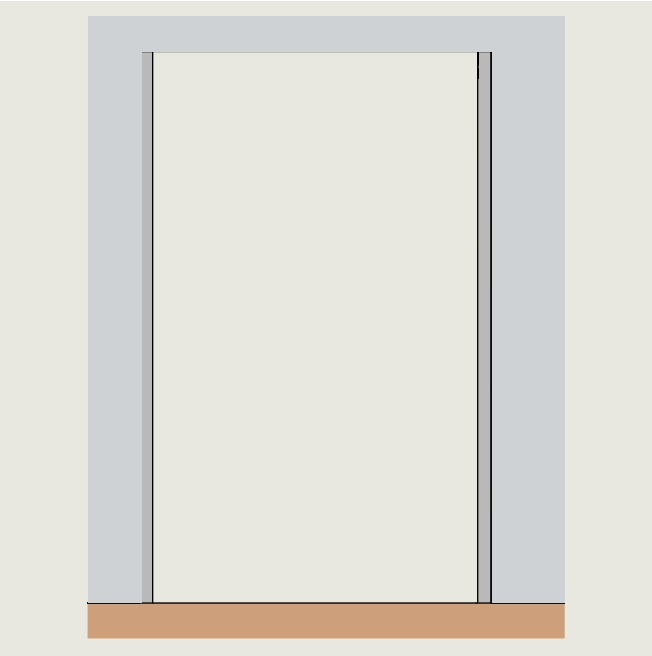
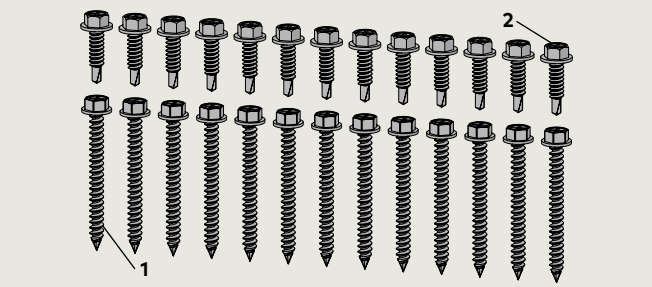


Fig. 12.1.2 Screw pack, header mounting, DK4654-010



1 #14-10 x 2 1/2" Phillips flanged hex head, zinc

2 1/4-14 x 1" Phillips flanged hex head, drilling screw, zinc

12.1.1 Review prior to installing header.

1. Jamb installation and floor level and flatness verified.
   - Reference Chapter 10, Customer Installed Jambs.
2. Header prepared.
   - Reference Chapter 11, Header Preparation.

12.1.2 Header mounting hardware.

1. Hardware mounting kit DK4654-010 contains fasteners for metal or wood jambs.

12.1.3 Install OHC header.

Reference Para. 12.2 and 12.3.

WARNING

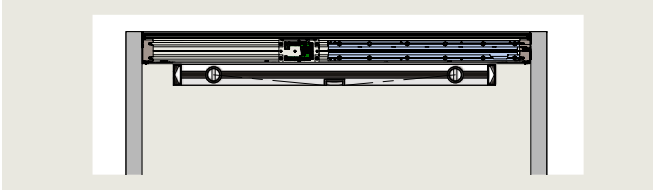
Hand pinch point and crushing hazards during header installation!

WARNING

Crushing hazards during header installation!

1. Place header between jambs, feeding wiring from jambs through jamb mounting brackets into header.
2. Align left side header jamb bracket with jamb mounting holes.
3. Install one flanged hex head screw through jamb mounting bracket into jamb material.
- Use socket wrench to thread flanged hex head screws into jamb material. Do not fully tighten.
4. Repeat step 3 for right side header jamb bracket.
5. Check jamb level.
6. Install remaining three flanged hex screws in left side jamb, do not fully tighten.
7. Repeat step 6 for right side header jamb bracket.
8. Check jamb level.
9. Tighten all flanged hex head screws.

Fig. 12.1.3 OHC header;, checking level



12.2 Header installation – ED operator on RH side of header

Fig. 12.2.1 Header mounting hardware, LH side of header internal view

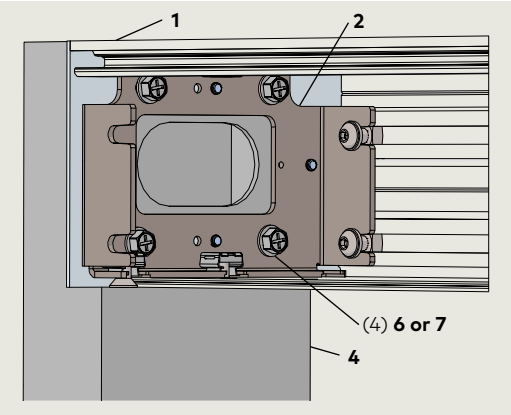
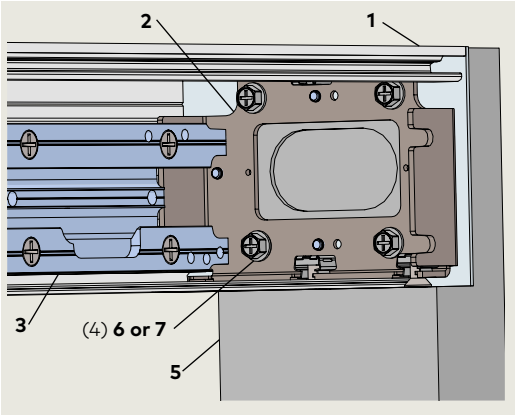


Fig. 12.2.2 Header mounting hardware, RH side of header internal view



1 Header
2 Jamb mounting bracket
3 ED50/ED100/ED250 OHC mounting plate
4 LH jamb
5 RH jamb
6 #14-10 x 2 1/2" Phillips flanged hex head, zinc
7 1/4-14 x 1" Phillips flanged hex head, drilling screw, zinc

12.3 Header installation – ED operator on LH side of header

Fig. 12.3.1 Header mounting hardware, LH side of header internal view

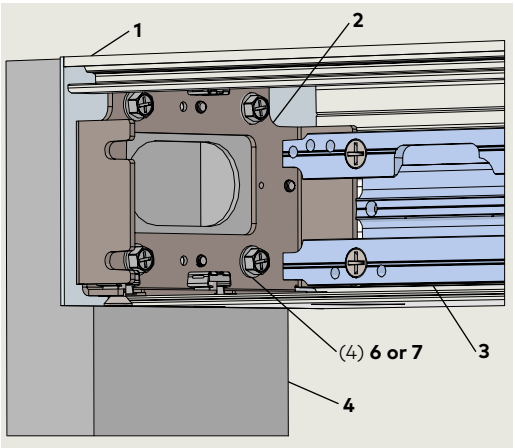
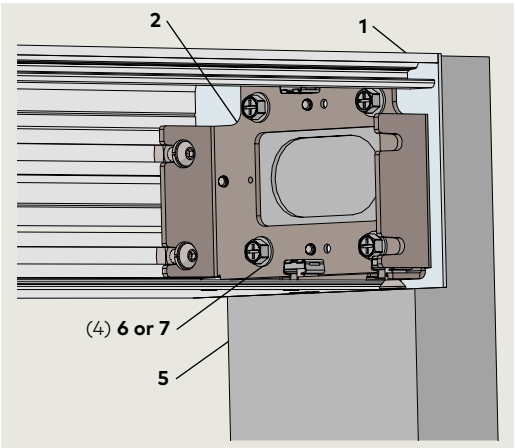


Fig. 12.3.2 Header mounting hardware, RH side of header internal view



1 Header
2 Jamb mounting bracket
3 ED50/ED100/ED250 OHC mounting plate
4 LH jamb
5 RH jamb
6 #14-10 x 2 1/2" Phillips flanged hex head, zinc
7 1/4-14 x 1" Phillips flanged hex head, drilling screw, zinc

13 Install OHC header - pair doors

13.1 Header installation preparation

13.1.1 Review prior to installing header.

1. Jamb installation and floor level and flatness verified.
   - Reference Chapter 10, customer installed door jambs.
2. Header prepared.
   - Reference Para. 11.5, pair door header preparation

WARNING

Hand pinch point and crushing hazards during header installation!

WARNING

Crushing hazards during header installation!

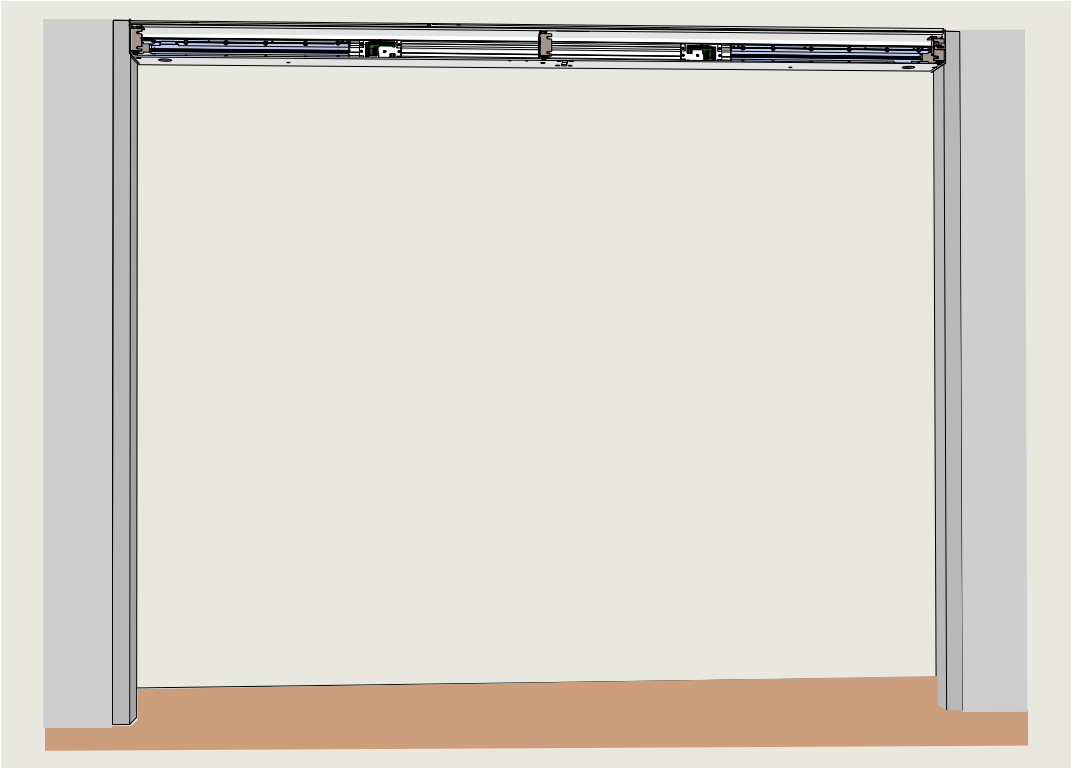
13.2 Header installation

13.2.1 Reference installation chapter.

Refer to Chapter 12 Install OHC Header - single door.

1. Instructions are contained for header mounting with:
   - ED50/ED100/ED250 OHC operator on header right side.
   - ED50/ED100/ED250 OHC operator on header left side.
2. Fasteners for securing header to jambs are referenced.

Fig. 13.2.1 Header installed in pair door opening, double egress header example



14 Remove protective film strips

14.1 Remove protective film strips from ED50 or ED100/ED250 operator

14.1.1 Remove protective film strips.

1. Remove two protective film strips from operator switching power supply heat transfer pads.

CAUTION

Heat transfer pads must remain clean once protective film strips have been removed!

Fig. 14.1.1 ED50 operator heat transfer pads

1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Heat transfer pad

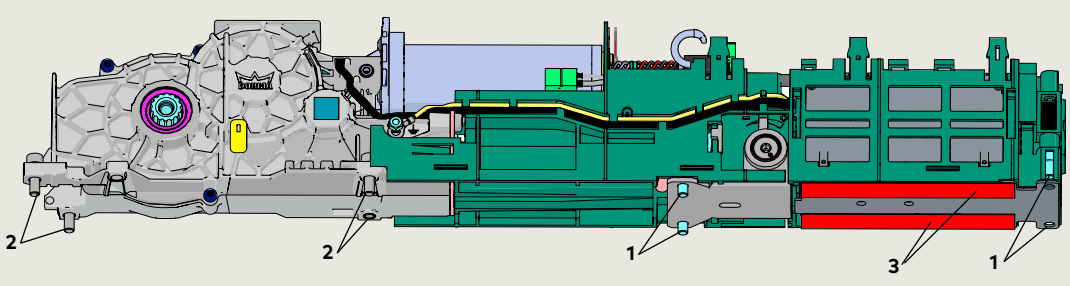


Fig. 14.1.2 ED100/ED250 operator heat transfer pads

1 Heat transfer pad

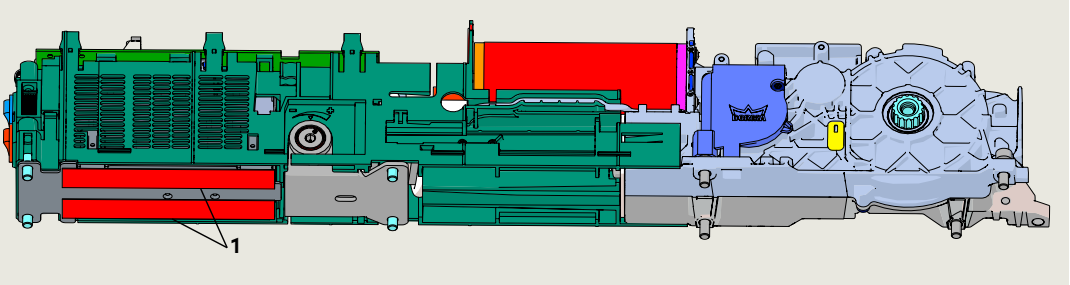


Fig. 14.1.3 Operator protective film strip

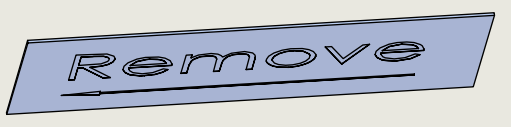
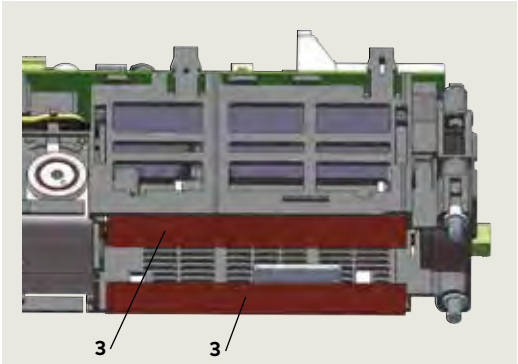


Fig. 14.1.4 Operator heat transfer pads

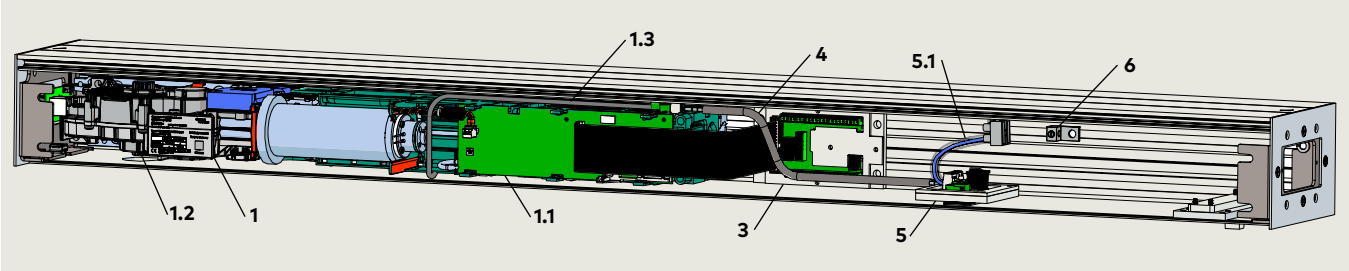
3 Heat transfer pad



15 Install ED OHC operator and hardware into single door header

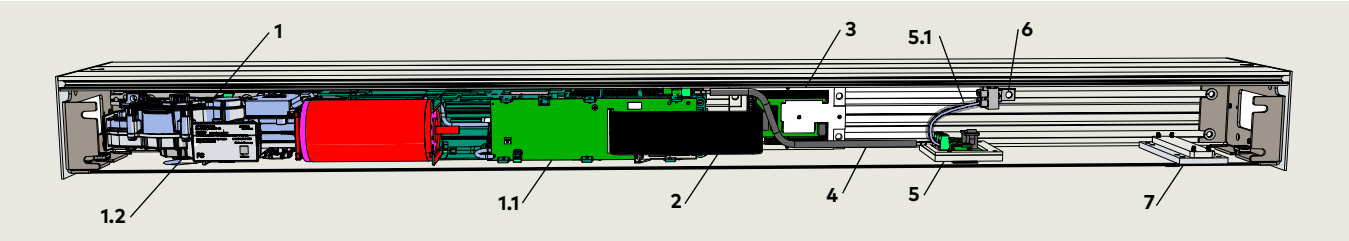
15.1 OHC single door header installation examples

Fig.15.1.1 Header with ED50 OHC operator and hardware installed



1 ED50 OHC operator
1.1 Control board
1.2 Spindle
1.3 ED50 OHC operator 115 VAC cable
2 Ribbon cable
3 Low voltage terminal board module
4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
6 Ground lug kit DK4656-010

Fig.15.1.2 Header with ED100/ED250 OHC operator and hardware installed



1 ED100 /ED250OHC operator
1.1 Control board
1.2 Output shaft
1.3 ED100 OHC operator 115 VAC cable
2 Ribbon cable
3 Low voltage terminal board module
4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power cable DK3772-010
6 Ground lug kit DK4656-010
7 Breakout switch

15.2 Install ED50/ED100/ED250 OHC operator onto mounting plate

TIPS AND RECOMMENDATIONS

- Reference Chapter 11, Para. 11.1 for detail on operator to mounting plate fastening.

15.2.1 Install ED OHC operator on mounting plate.

1. Operator protective film strips must be removed! Reference Chapter 14.
2. Install ED OHC operator onto mounting plate, orienting operator spindle to hinge side of door.
3. Use 5 mm T handle hex key to thread eight M6 SHCS into their mounting plate holes.
4. Tighten all eight M6 SHCS.

Fig.15.2.1 ED OHC mounting plate and low voltage terminal PC board module installation on LH side of header

1 ED OHC mounting plate, left side of header orientation
2 Mounting holes for operator
3 Low voltage terminal module

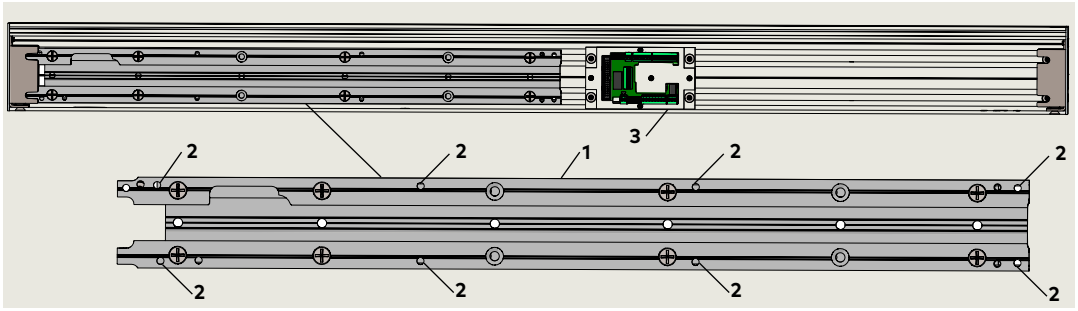


Fig.15.2.2 ED OHC mounting plate and low voltage terminal PC board module installation on RH side of header

1 ED50 OHC mounting plate, right side of header orientation
2 Mounting holes for ED operator
3 Low voltage terminal module

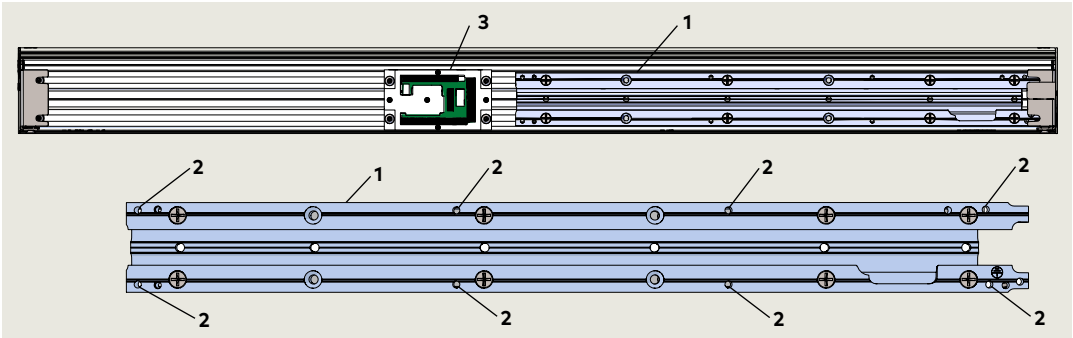


Fig. 15.2.3 ED50 operator fastener locations

1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Spindle

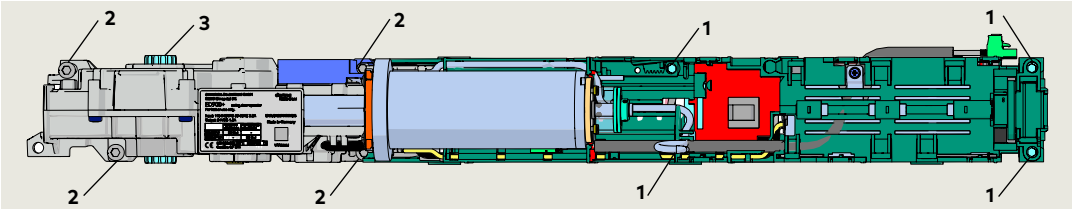
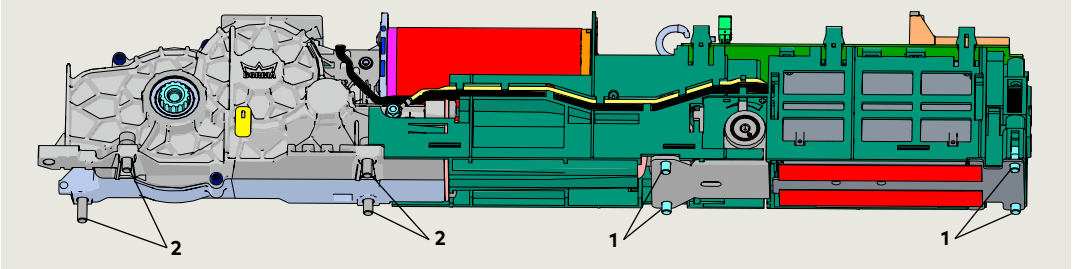


Fig. 15.2.4 ED100/ED250 operator fastener locations

1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Mounting plate



15.3 Install OHC operator power module

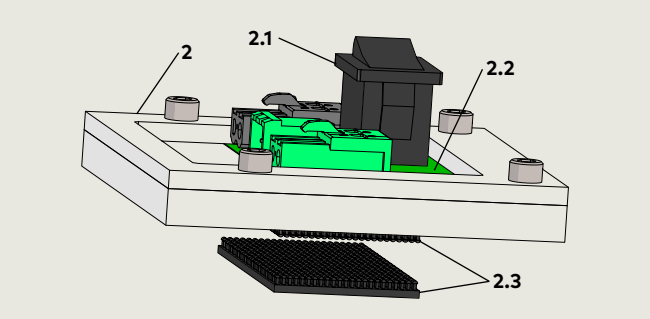
15.3.1 Install 115 Vac Power Module.

1. Locate module in header between Low Voltage Terminal Module and jamb mounting bracket as shown in Fig. 15.3.2.
   Note: Main Power Extension Cable (Fig. 15.4.1) is 12" inches long.
2. Install Velcro pad on bottom header surface.
3. Install module onto Velcro pad.

CAUTION

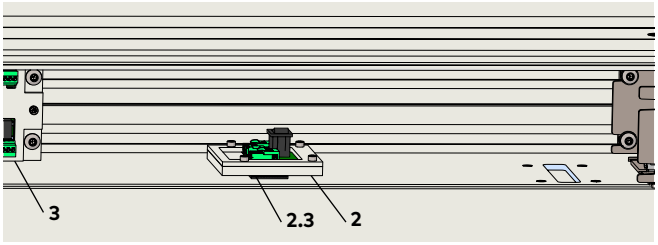
Insure header mounting surface has been cleaned prior to placing 115 Vac Power Module Velcro pad on header surface.

Fig. 15.3.1 115 Vac power module



2 PCB holder assembly DC4630
2.1 Power off/on switch
2.2 115 Vac connection circuit board
2.3 Velcro

Fig. 15.3.2 115 Vac power module installed (LH mounting plate installation shown)



2 PCB holder assembly DC4630
2.3 Velcro
3 Low voltage terminal PC board module

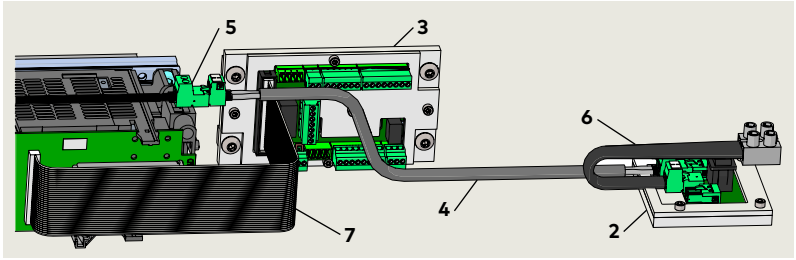
15.4 Install cables

15.4.1 Install main power extension cable.

1. Install Main Power Extension cable (4); one end into socket in 115 Vac power module (2), the other end into socket on ED OHC operator power cable (5).
2. Install ribbon cable (7) into sockets in ED OHC operator control board and in Low Voltage Terminal module (3).

2 PCB holder assembly DC4630
3 Low voltage terminal module
4 Main power extension cable DX4647, 12" long
5 ED50 OHC operator power cable
6 Main power connector DX3672-010
7 Ribbon cable
8 Control board

Fig. 15.4.1 Cable connections

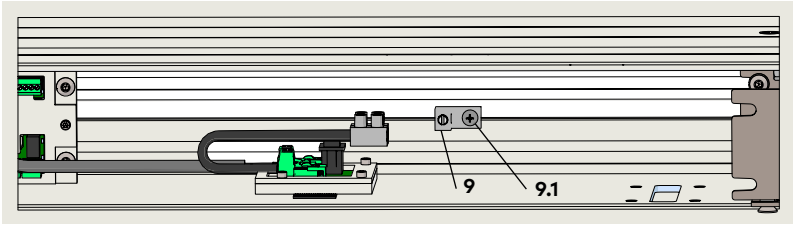


15.5 Install ground lug kit

15.5.1 Install ground lug kit.

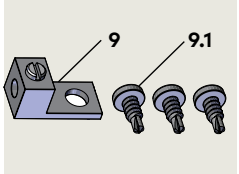
1. Insert self tapping screw through aluminum set screw lug (9), thread into header slot and tighten.

Fig. 15.5.1 Ground lug kit installation (LH mounting plate installation shown)



9 Aluminum set screw lug 14-4 wire gauge
9.1 #10 x 1/2" Philips round head self tapping screw

Fig. 15.5.2 Ground lug kit DK4656



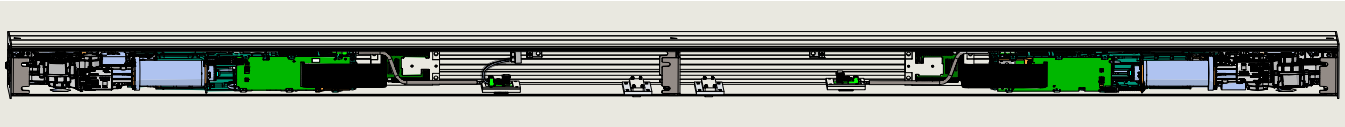
16 Install OHC operators and hardware into pair door header

16.1 Install ED50/ED100/ED250 OHC operators onto mounting plate

16.1.1 Install OHC operators on mounting plate.

1. Operator protective film strips must be removed! Reference Chapter 14.
2. Install two ED OHC operators onto onto their mounting plates.
   - Reference Para. 15.2.
3. Use 5 mm T handle hex key to thread eight M6 SHCS into their mounting plate holes for each operator.
4. Tighten all eight M6 SHCS on each operator.

Fig.16.1.1 Header with ED50 OHC operators and hardware installed example



1 ED50 OHC operator
1.1 Control board
1.2 Spindle
1.3 ED50 OHC operator 115 VAC cable
2 Ribbon cable
3 Low voltage terminal board module
4 115 Vac power extension cable
5 115 Vac power module
5.1 Main power connector DX3672-010
6 Ground lug kit DK4656-010
7 115 Vac power cable DX3484-010
8 Mounting holes and cutout, breakaway switch
9 Fixed stop

1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Spindle

Fig.16.1.2 Header RH door with ED50 OHC operator and hardware installed

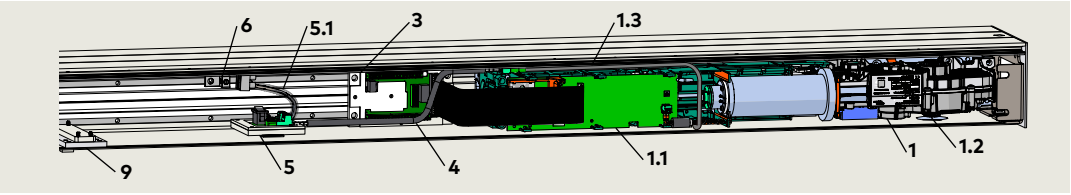


Fig.16.1.3 Header LH door with ED50 OHC operator and hardware installed

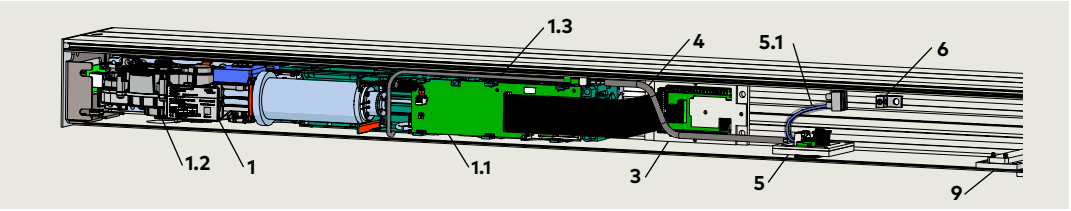


Fig. 16.1.4 ED50 OHC operator fastener locations example

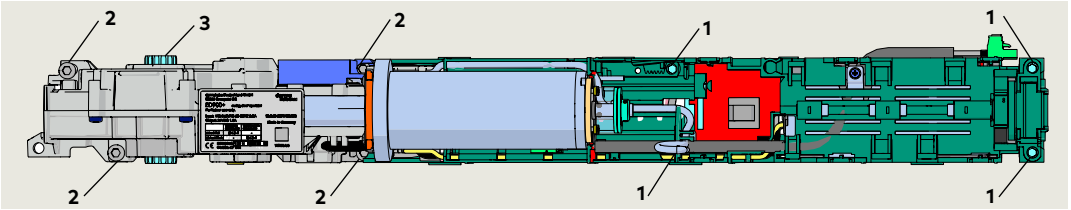


Fig.16.1.5 Header with ED100/ED250 OHC operators and hardware installed example

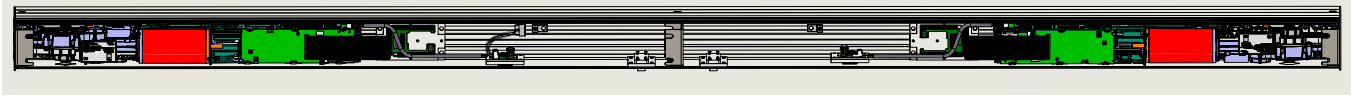
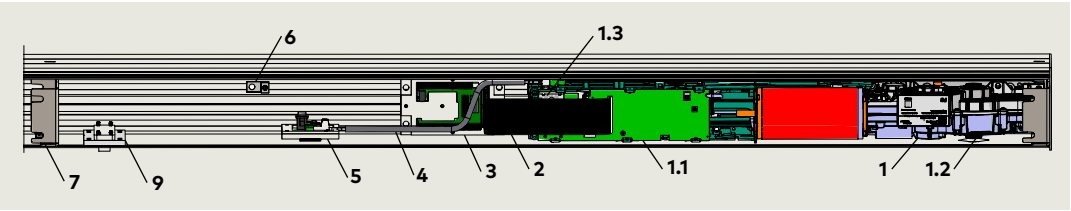


Fig.16.1.6 Header RH door with ED100/ED250 OHC operator and hardware installed



1 ED100/ED250 OHC operator
1.1 Control board
1.2 Spindle
1.3 User interface
2 Ribbon cable
3 Low voltage terminal board module
4 115 Vac power extension cable
5 115 Vac power module
5.1 Main power connector DX3672-010
6 Ground lug kit DK4656-010
7 Jamb bracket
8 Breakaway switch
9 Fixed stop

Fig.16.1.7 Header LH door with ED100/ED250 OHC operator and hardware installed

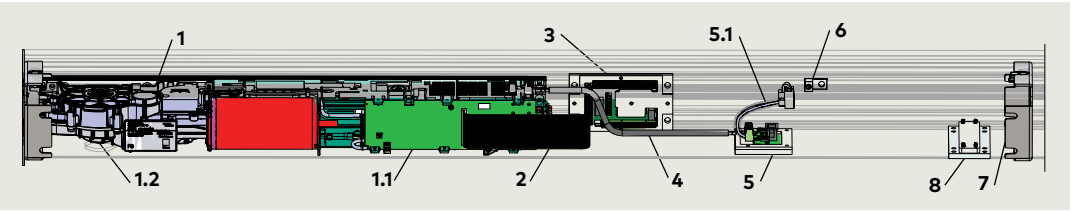
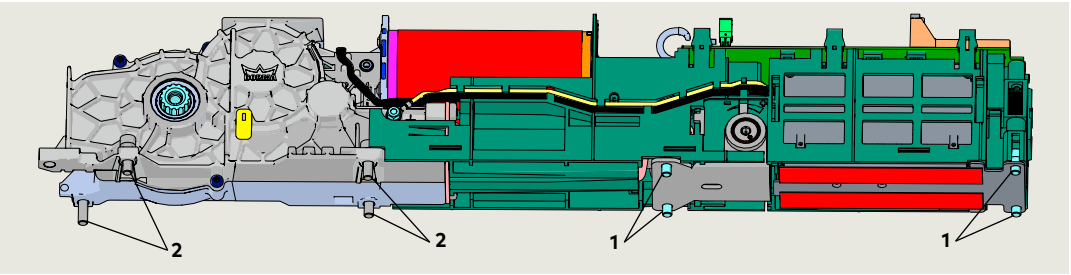


Fig. 16.1.8 ED100/ED250 OHC operator fastener locations



1 M6 x 10 SHCS
2 M6 x 20 SHCS
3 Mounting plate

16.2 Install 115 Vac power modules

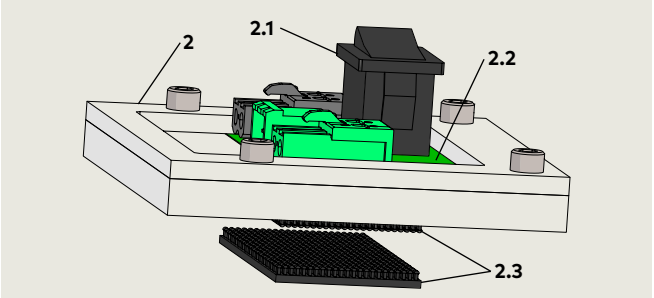
16.2.1 Install two 115 Vac Power Module in header.

1. Locate each power module (5) in header between Low Voltage Terminal Module (3) and jamb mounting bracket as shown in Fig. 23.1.7.
   Note: 115Vac Power Extension Cable (4) (Fig. 16.1.7) is 12" inches long.
2. Install Velcro pad on bottom header surface.
3. Install module onto Velcro pad.

CAUTION

Insure header mounting surface has been cleaned prior to placing 115 Vac Power Module Velcro pad on header surface.

Fig. 16.2.1 115 Vac power module



2 PCB holder assembly DC4630
2.1 Power off/on switch
2 PCB holder assembly DC4630
2.2 115 Vac connection circuit board
2.3 Velcro

16.3 Install power connect cable between OHC operators

16.3.1 Install 115 Vac power connect cable DX3484.

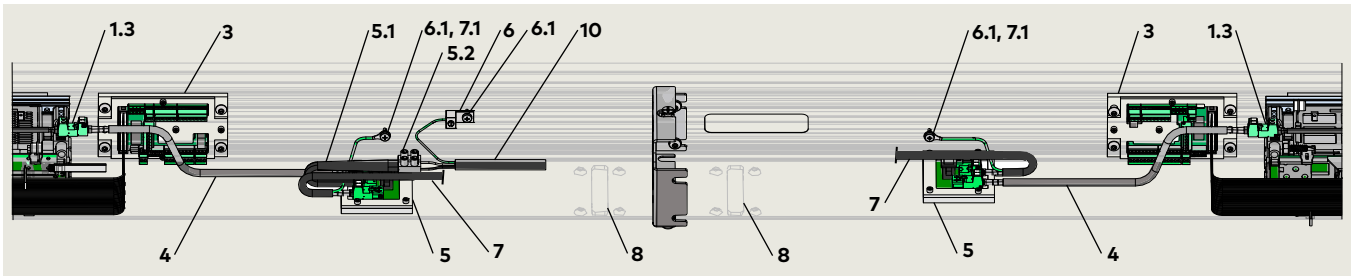
Reference Para. 15.3 for power module views.

1. Install 115 Vac power connect cable (7) between the two 115 Vac power modules (5).

- Insert plug at each end of cable into socket in power module.

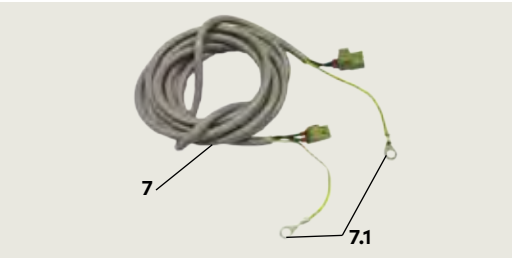
2. Coil up remaining length of cable and secure to header.

Fig.16.3.1 115 Vac power connect cable installation



1.3 OHC operator 115 VAC cable
3 Low voltage terminal board module
4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
5.2 115 Vac terminal block
6 Aluminum set screw lug 14-4 wire gauge
6.1 Self tapping screw
7 115 Vac power connect cable between operators DX3484-010
7.1 Ground wire ring lug
8 Mounting holes and cutout, breakaway switch or fixed stop
10 Customer 115 Vac

Fig. 16.3.2 115 Vac power connect cable



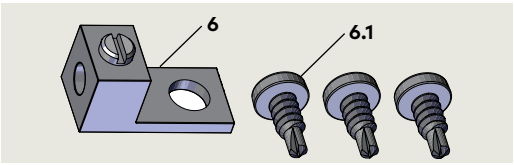
7 115 Vac power cable between operators DX3484-010
7.1 Ground wire ring lug

16.4 Install ground lug kit and connect ground wires

16.4.1 Connect ground wires, install ground lug.

1. LH operator: insert cable ground wire ring lug (Fig. 16.3.2) into self tapping screw (6.1)
2. RH operator: insert cable ground wire ring lug into self tapping screw (6.1).
3. Thread screw into header slot (Fig.16.3.1).
4. Coil up remaining length of cable and secure to header.

Fig. 16.4.1 Ground lug kit DK4656-010



6 Aluminum set screw lug 14-4 wire gauge
6.1 #10 x 1/2" Philips round head self tapping screw

NOTICE

Installation of ground lug kit is not required on RH side of header.

17 Install floor pivot

17.1 Install floor pivot

1 Plug, 1 1/2"
2 Plug, 10 mm
3 Door pivot
4 Screw pack
4.1 PHMS, 1/4-20 x 3/4"
4.2 FHMS, #14 x 1 1/2"
4.3 Anchor (not used)
5 Wrench, pivot height adjustment
6 Floor pivot
6.1 Countersunk hole for #14 FH machine screw
7 Bearing

Fig. 17.1.1 Bottom pivot assembly DC0735-020

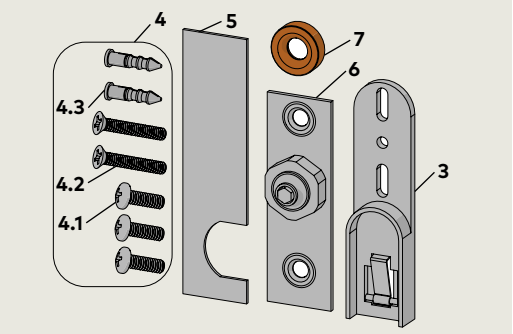


Fig. 17.1.2 Floor pivot

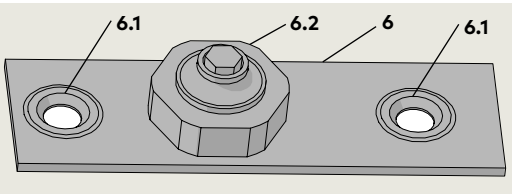


Fig. 17.1.3 FHMS, 1/4-20 x 1 1/2"

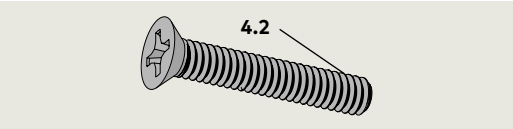


Fig. 17.1.4 Floor pivot installation, RH jamb

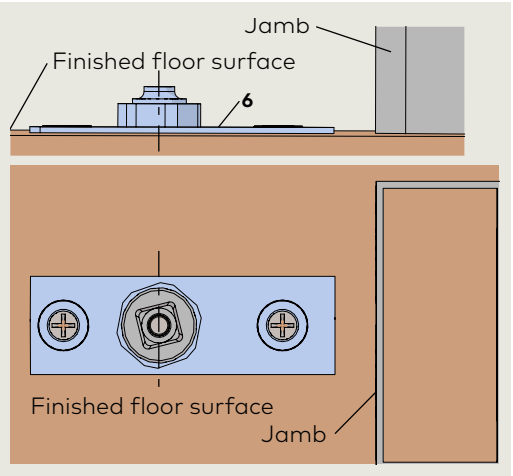
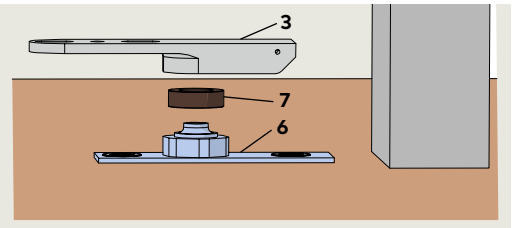


Fig. 17.1.5 Floor and door pivot with bearing



NOTICE

Pair doors:
Install floor pivots at both jambs using steps in Para. 17.1.1 through 17.1.3

17.1.1 Determine fastener type for floor pivot.

Material	Fastener type
Wood	Phillips #14 FH wood screw
Metal	Phillips #14 FH sheet metal screw
Concrete / brick and mortar	1/4" concrete anchor for #14 screw or Tapcon® screws

1. Select fasteners plated on:
- Type of finished floor surface.
- Floor material under finished floor surface, if applicable.

2. Concrete anchor: Ref. Fig. 17.1.8.
- Insure that floor material can accommodate required anchor depth.
- Anchor must be flush with floor surface.

17.1.2 Locate and install floor pivot on floor.

CAUTION

Jambs must be installed and floor level and flatness checked; reference:
- Chapter 10; customer installed jambs.

3. Locate floor pivot on floor using template dimensions.
Reference Para. 17.2.

4. Secure floor pivot into place for plumb check (Para. 17.1.3).

NOTICE

Pair doors:
Install floor pivots at both jambs using steps in Para. 17.1.1 through 17.1.3

Fig. 17.1.6 M8 SHCS used for plumb check

1 ED50 spindle
2 M8 SHCS, custom

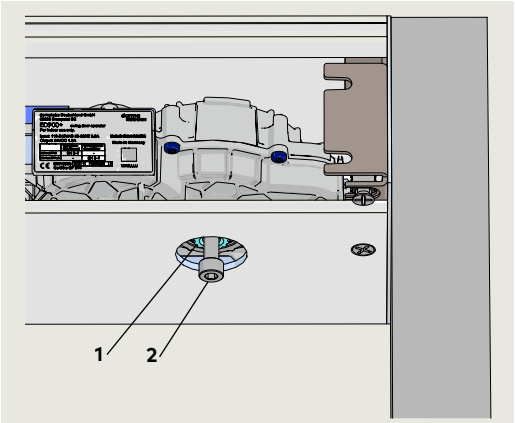


Fig. 17.1.7 Axle to floor pivot plumb check

2 M8 SHCS
3 Floor pivot

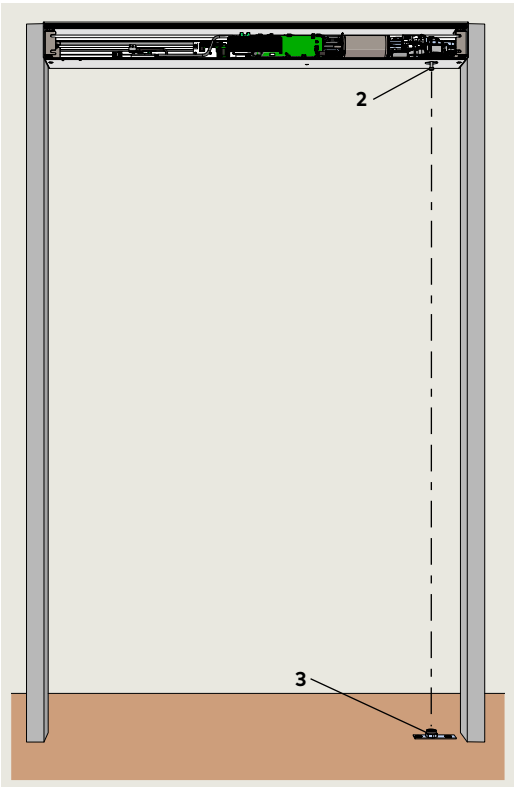
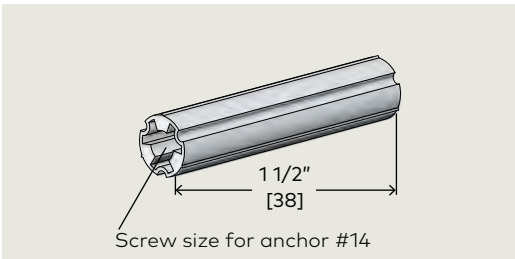


Fig. 17.1.8 Plug anchor



Plug anchor for concrete
- Actual dimensions of anchor selected may differ from Fig. 17.1.8.

17.1.3 Check floor pivot plumb.

1. Thread M8 SHCS into spindle using 5 mm hex key.
2. Check plumb of ED50/ED100/ED250 axle to floor pivot.

CAUTION

Plumb must be checked to insure floor pivot is in alignment with ED50/ED100/ED250 drive axle. Reference Chapter 9, Installation Template, for OHC drive axle dimensions from jamb.
- Any issues with axle to floor pivot plumb must be resolved before proceeding.

3. Remove M8 SHCS from drive spindle.

17.1.4 Install floor pivot.

1. Mark floor with floor pivot hole locations for the two selected fasteners.
2. Drill holes for fasteners.
3. Secure floor pivot to floor with fasteners.

17.2 Bottom pivot, floor installation dimensions

Fig. 17.2.1 Section view D-D and E-E

1 Pivot, floor mounted

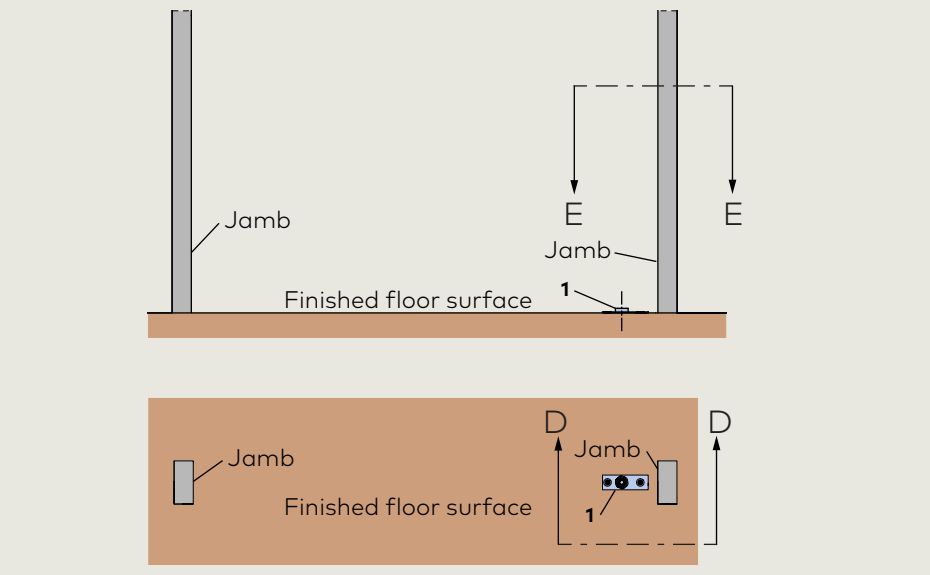
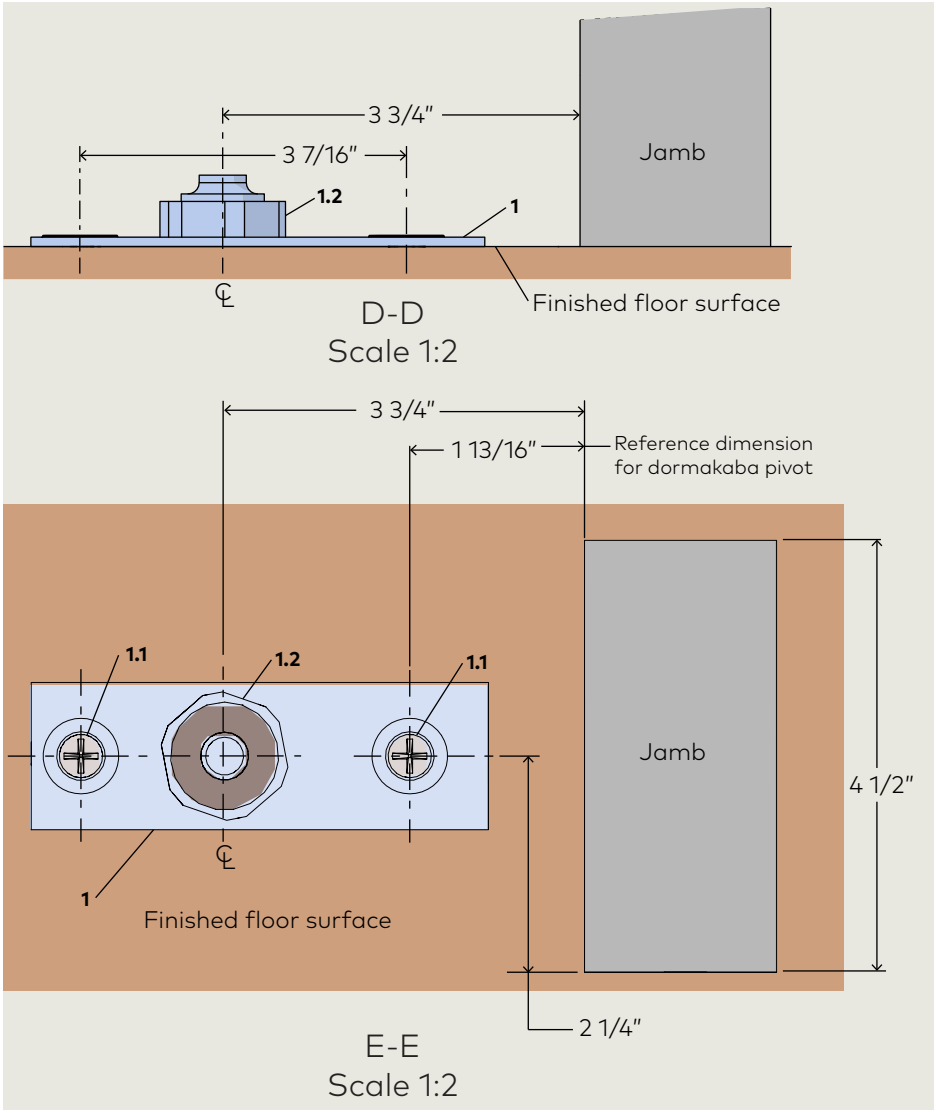


Fig. 17.2.2 Section view D-D and E-E

1 Pivot, floor mounted
1.1 Fastener: Reference Chapter 25, Install Floor Pivot
1.2 Pivot



1 Pivot, floor mounted
1.1 Fastener: Reference Chapter 25, Install Floor Pivot
1.2 Pivot

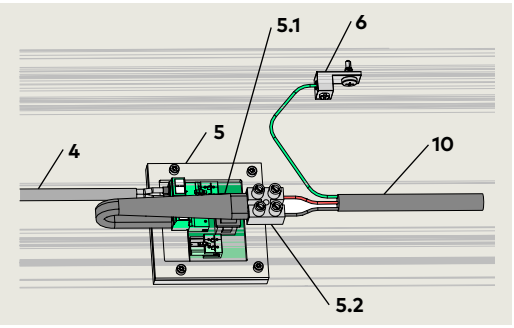
18 Customer 115 Vac connection

18.1 Customer 115 Vac connection

Fig. 18.1.1 115 Vac terminal torque and wire label

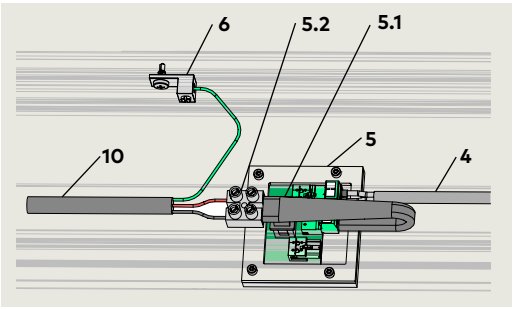
TIGHTEN MAINS TERMINAL TO 5-7 in-lb
Use Copper Conductors ONLY

Fig. 18.1.2 115 Vac connection; ED operator left side of header



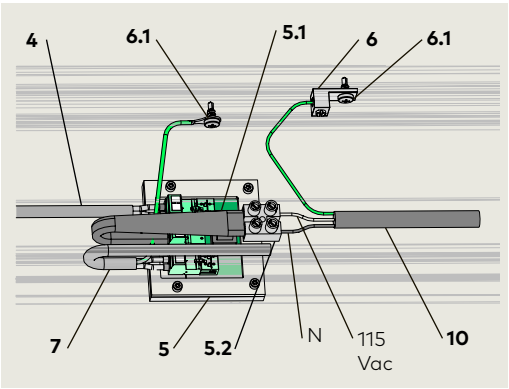
4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010
10 Customer 115 Vac

Fig. 18.1.3 115 Vac connection; ED operator right side of header



4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010
10 Customer 115 Vac

Fig. 18.1.4 Customer 115 Vac connection, double door header



4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010
6.1 Self tapping screw
7 115 Vac power cable DX3484-030
10 Customer 115 Vac

18.1.1 Connect 115 Vac wiring.

WARNING

Routing and connection of 115 Vac wiring to ED50/ED100/ED250 OHC operator must be performed by a qualified person!

WARNING

115 VAC branch circuit disconnect or circuit breaker must be OFF!

1. Route wiring into header, use appropriate fittings to secure wiring, and route wiring to 115 Vac terminal block.

CAUTION

Use copper conductors only!

2. Terminate 115 Vac wiring at power cable terminal block.

TIPS AND RECOMMENDATIONS

- Maximum wire strip length, 1/4".
- Tighten terminal screws to torque referenced in Fig. 18.1.1.
- Leave service loop in wiring at terminal block for maintenance.

3. Terminate ground wire at ground lug.

TIPS AND RECOMMENDATIONS

Install label in header with panelboard and circuit breaker number supplying 115 Vac to header.

4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010

Fig. 18.1.5 115 Vac terminal block; ED50 OHC operator on LH side of header

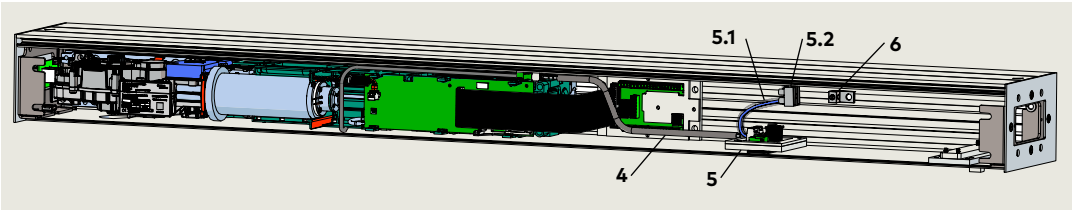


Fig. 18.1.6 115 Vac terminal block; ED50 OHC operator on RH side of header

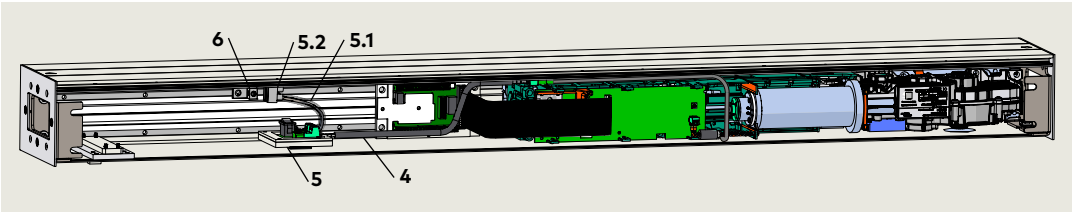
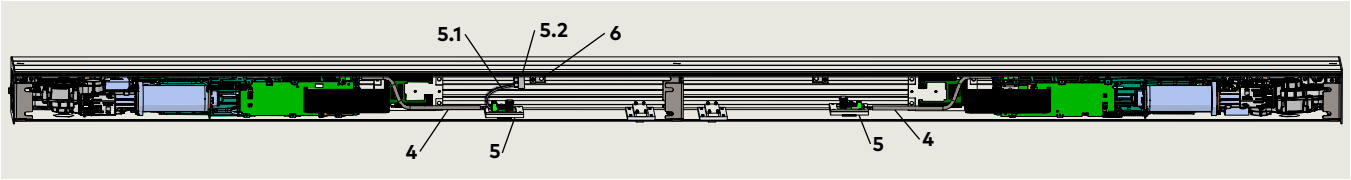


Fig. 18.1.7 115 Vac terminal block; ED50 OHC pair door header



4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power connector DX3672-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010

Fig. 18.1.8 115 Vac terminal block; ED100/ED250 OHC operator on LH side of header

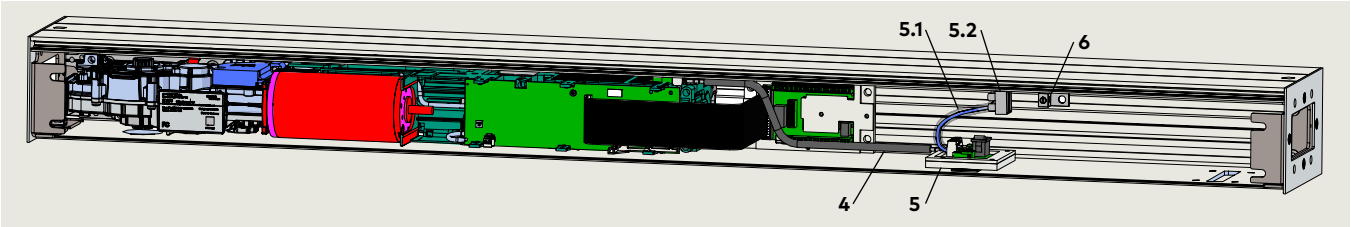
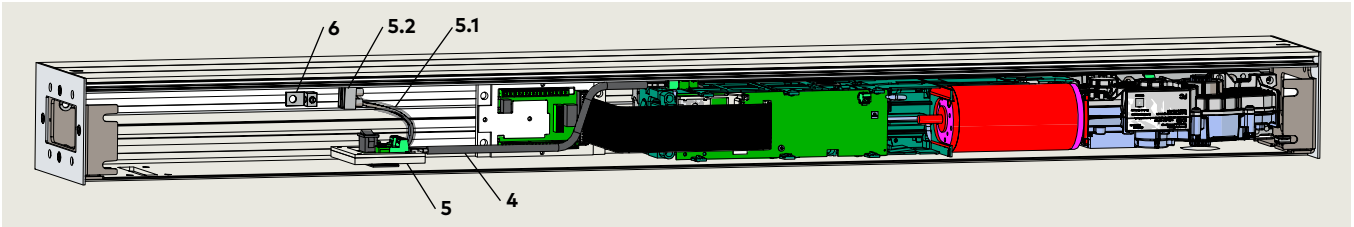
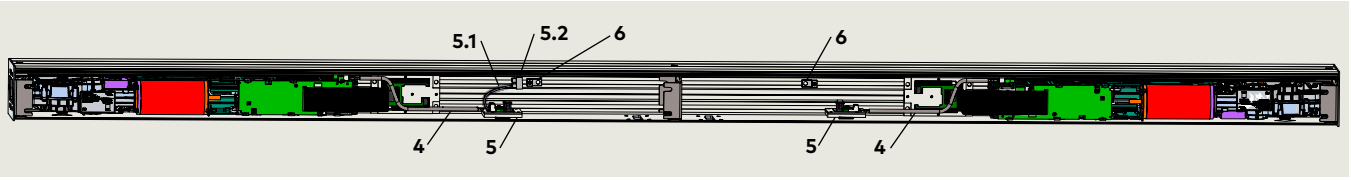


Fig. 18.1.9 115 Vac terminal block; ED100/ED250 OHC operator on RH side of header



4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power cable DK3772-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010

Fig. 18.1.10 115 Vac terminal block; ED100/ED250 OHC pair door header



4 115 Vac power extension cable DX4647
5 115 Vac power module
5.1 Main power cable DK3772-010
5.2 115 Vac terminal block
6 Ground lug kit DK4656-010

19 Install Mode switch and RJ45 panel cables

19.1 Install Mode switch panel cables

19.1.1 Install Mode switch panel cable.

1. Route cable from Mode switch panel location through jamb and into header.
2. Carefully insert cable plug into socket on operator control board.

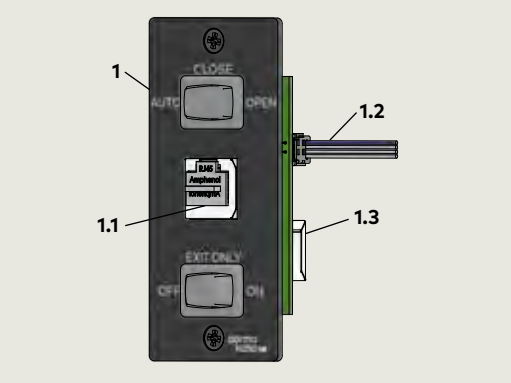
CAUTION

Cable plug inserts vertically into operator socket.

NOTICE

Pair door installations.
Mode switch cable connects to active door operator.

Fig. 19.1.1 Mode switch Panel front view



1 Mode switch panel DX4604-02C
1.1 Comm port for dormakaba service
1.2 4 strand ribbon cable, 10'
1.3 RJ45 port

Fig. 19.1.2 Mode switch Panel back view

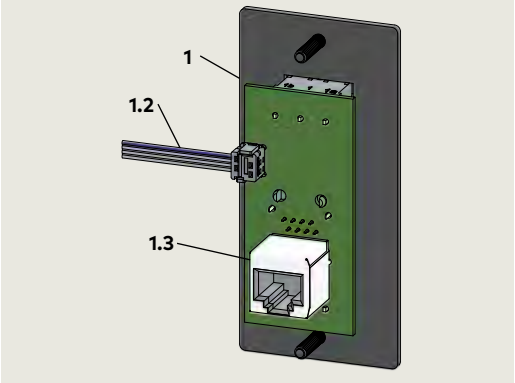
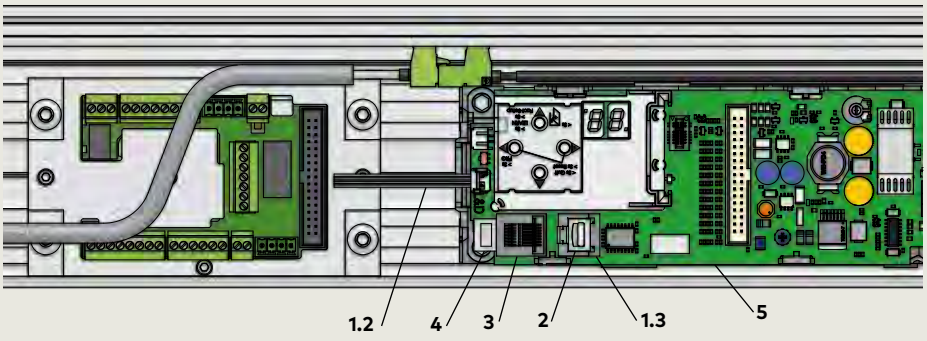
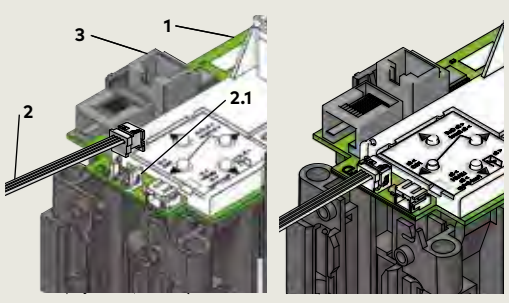


Fig. 19.1.3 ED OHC operator with Mode switch cables installed



1.2 4 strand ribbon cable, 10'
1.3 Vertical RJ45 connector, dormakaba handheld
2 RJ45 communication cable, 10' DX4607-020
3 Horizontal RJ45 connector for **(4)**
4 Sync cable, DX3485 double door synchronization
5 Control board
6 RJ45 communication cable DX4662-00x

Fig. 19.1.4 Mode switch cable plug and socket



1 Control panel PCB
2 4 strand ribbon cable, 10'
2.1 Ribbon cable socket on control board
3 RJ45 port, dormakaba handheld

Fig. 19.1.5 RJ45 communication cable for dormakaba handheld

19.2 Install RJ45 panel cable - pair doors only

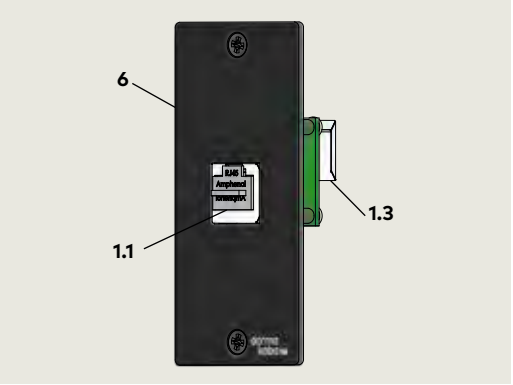
19.2.1 Install RJ45 communication cable.

1. Route cable from RJ45 panel location through jamb and into header.
2. Cable terminates at RJ45 port on inactive operator OHC operator control board.

NOTICE

Double door installations only. RJ45 cable connects to inactive door operator.

Fig. 19.2.1 RJ45 Panel front view



1.1 Comm port for dormakaba handheld
1.3 RJ45 port
6 RJ45 panel DX4604-031

Fig. 19.2.4 RJ45 Panel back view

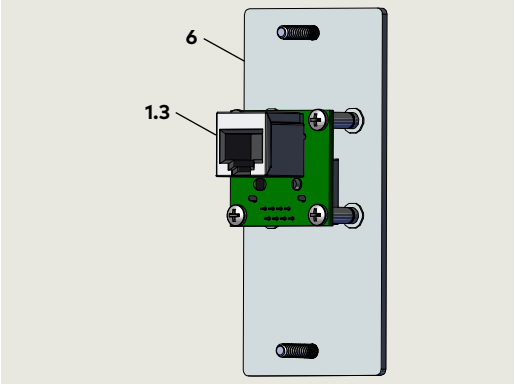
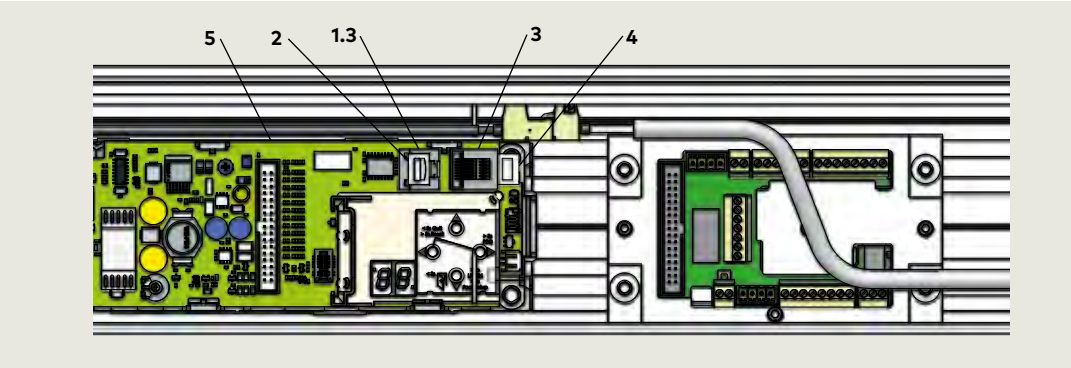


Fig. 19.2.2 ED OHC inactive operator with RJ45 cable installed



1.3 RJ45 port, dormakaba handheld
2 RJ45 communication cable, 10' DX4662
3 RJ 45 connector
4 Comm cable, DX3485 double door synchronization
5 Control board

Fig. 19.2.3 RJ45 communication cable for dormakaba handheld

6 RJ45 communication cable DX4662-00x

19.3 Optional key switch panel wiring

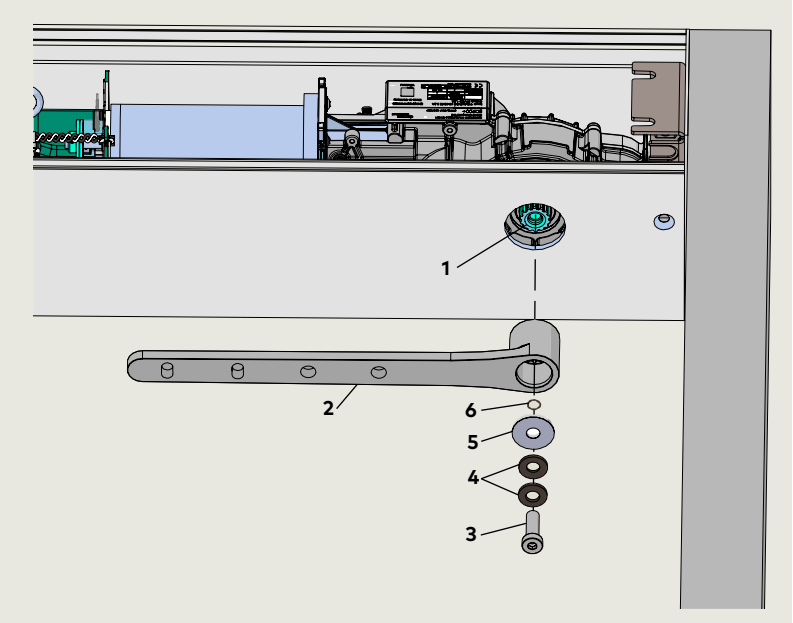
19.3.1 Key switch panel wiring.

Reference Appendix A for key switch wiring interface to ED50/ED100/ED250 operator.

20 Install bolt axle extension and overhead arm

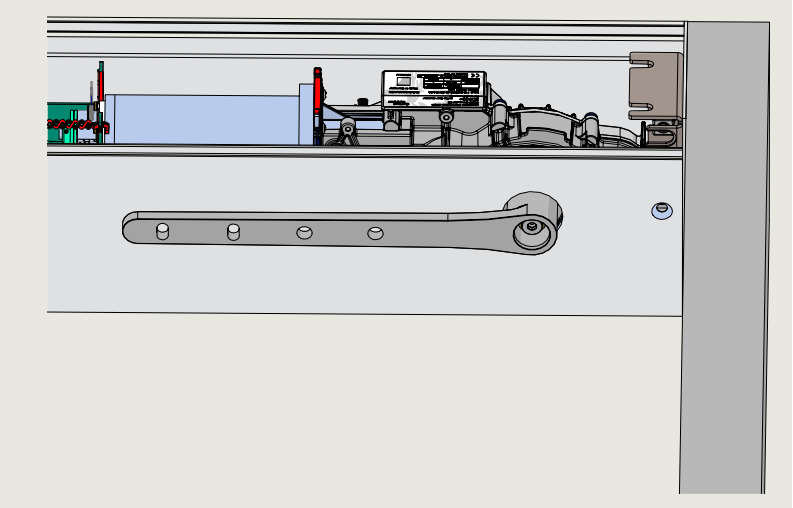
20.1 Install overhead arm, ED50 operator example

Fig. 20.1.1 ED50 OHC arm installation hardware



1 ED50 spindle
2 Arm, overhead center hung
3 M8 SHCS
4 Conical spring
5 Flat washer
6 O Ring

Fig. 20.1.2 Overhead arm installation



NOTICE

Pair doors:
Install arms at both OHC operators using steps in Para. 20.1.1 and Para. 20.1.2.

20.1.1 Operator axle zero position.

CAUTION

In order to mount the drive arm in the correct position, the axle must be brought to the zero position.

1. Set spring preload to approximately ten clockwise rotations.

- Axle rotates to the zero position.

TIPS AND RECOMMENDATIONS

Setting operator spring tension.
Reference Setup and Troubleshooting Manual.

20.1.2 Assemble bolt axle extension hardware.

1. Insert conical springs, flat washer and O ring onto M8 SHCS.

20.1.3 Install OHC center hung arm.

1. Install OHC arm into ED50 spindle parallel to header as shown in Fig. 20.1.1 and 20.1.2.
2. Using 5 mm T handle hex key, thread M8 SHCS into ED operator spindle and tighten screw.

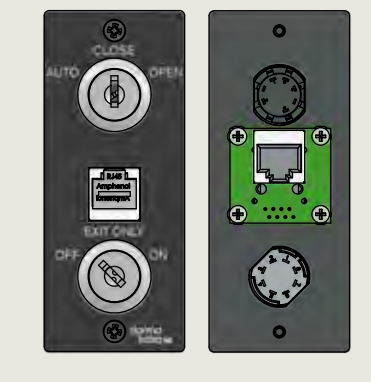
CAUTION

Use Torque wrench with 5 mm hex key socket to tighten M8 screw to 26 ft-lb [35.3 Nm].

Appendix A - Wiring diagrams

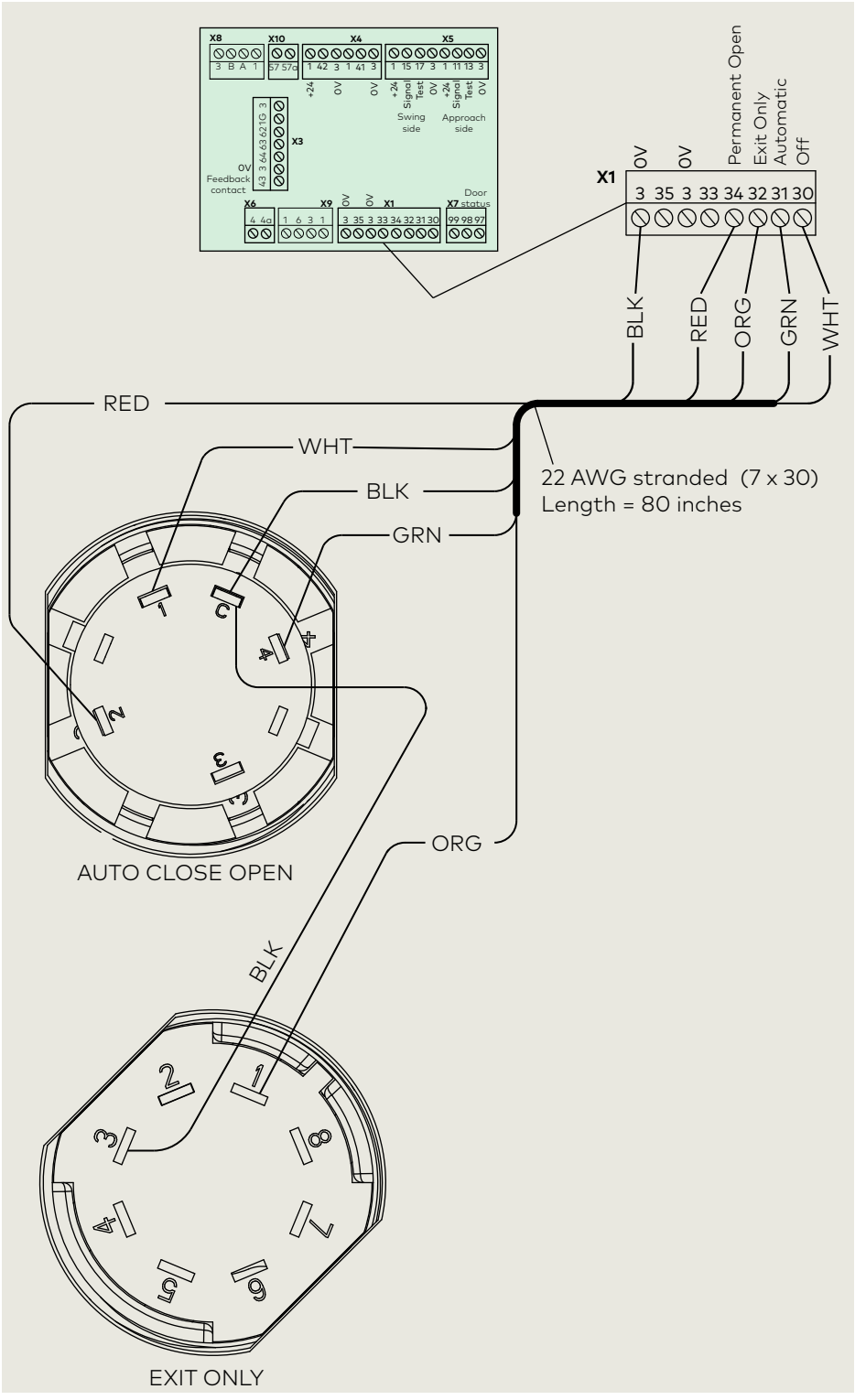
A1.1 DX4604-21C Key Switch Panel with RJ45 connector

Fig. A1.1 Key switch panel DX4604-21C



Reference Chapter 27 for RJ45 cable connection.

Fig. A1.2 Key switch panel wiring diagram



A2.1 DX4604-11C Key Switch Panel

Fig. A2.1 Key switch panel DX4604-11C

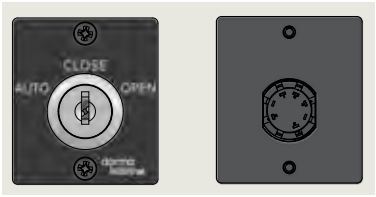
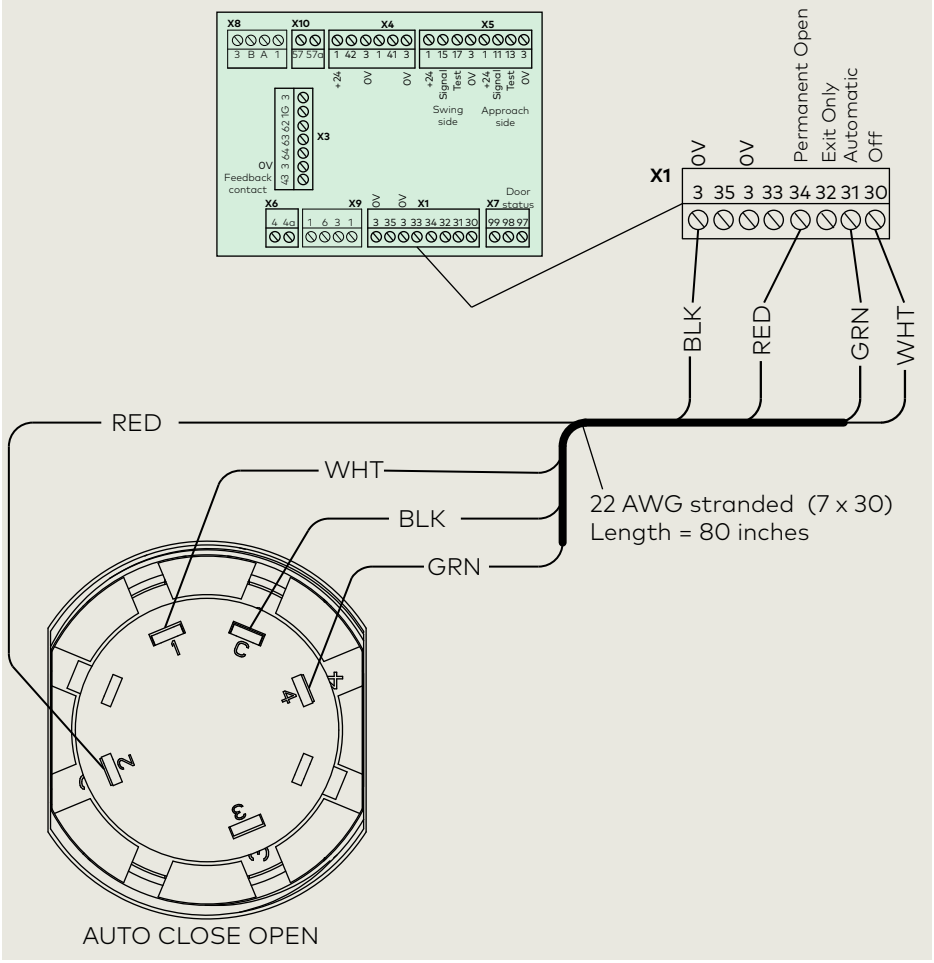


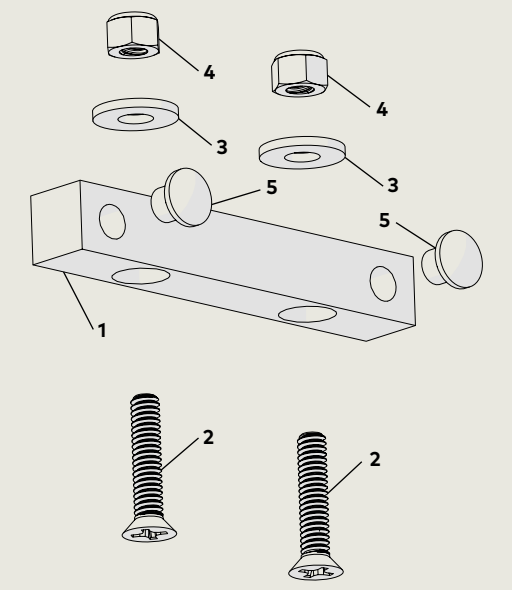
Fig. A2.2 Key switch panel wiring diagram



Appendix B - Install fixed stop, outswing doors

B.1.1 Install fixed stop, outswing doors

Fig. B.1.1.1 Fixed stop assembly DC4643-01_



1. Fixed stop
2. 1/4-20 x 1 1/4" FHMS
3. 3/4" flat washer
4. 1/4-20 nut
5. Bumper

Fig. B.1.1.2 Backing plate, fixed stop DC4644

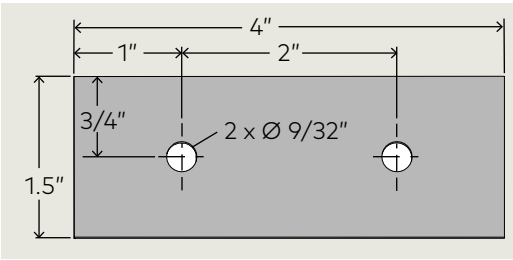
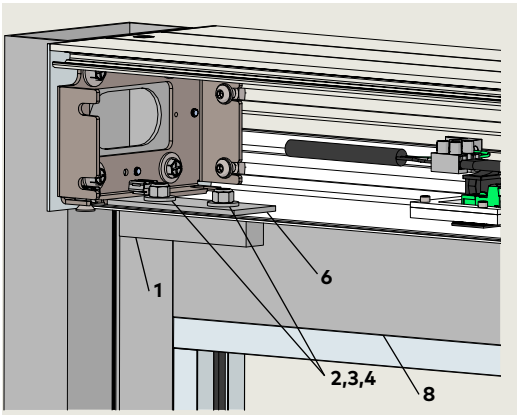


Fig. B.1.1.3 Fixed stop header mounting location, operator on RH side



1. Fixed stop
2. 1/4-20 x 1 1/4" FHMS
3. 3/4" flat washer
4. 1/4-20 nut
5. Bumpers
6. Backing plate
7. LH jamb
8. Door top rail

TIPS AND RECOMMENDATIONS

Install on outswing door if Fixed Stop is not installed.

B.1.1 Locate and drill mounting holes in header for fixed stop.

1. Door must be in closed position.
2. Insert bumpers into fixed stop.
   - Reference Fig. B.1.2 through Fig. B.1.8.
3. With bumpers facing door, place fixed stop against door, mark hole locations.

CAUTION

Insure fixed stop is square with header!

4. Locate and drill two 9/32" mounting holes; reference Fig. B.1.2.

CAUTION

Clean any metal shavings from header. Do not let metal shavings fall into the door area.

B.1.2 Install fixed stop assembly in header.

TIPS AND RECOMMENDATIONS

DK4646: kit part number for entire fixed stop assembly, including backing plate.

1. Align backing plate mounting holes with holes drilled in step 4.
2. Install fixed stop assembly in header, with fixed stop bumpers facing door.

Fig. B.1.1.4 Fixed stop bumpers

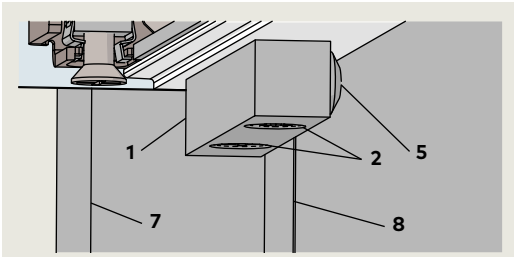
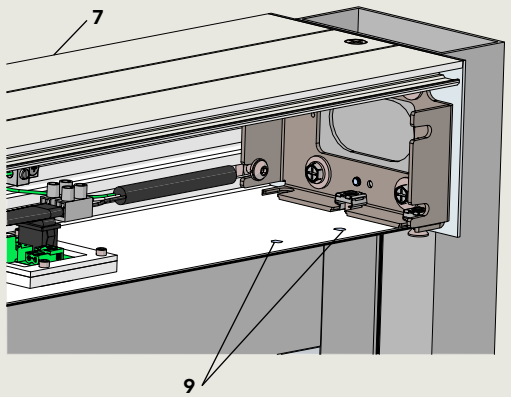
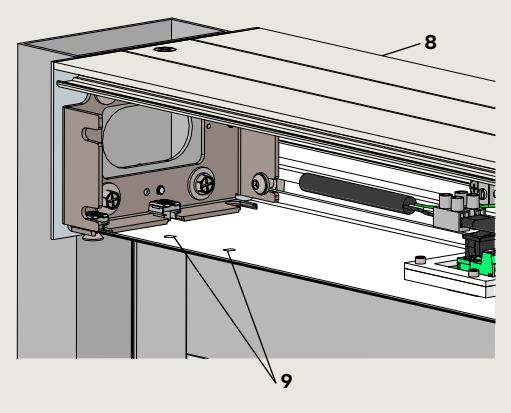


Fig. B.1.1.5 Fixed stop mounting holes, LH outswing



1 Fixed stop
2 1/4-20 x 1 1/4" FHMS
3 3/4" flat washer
4 1/4-20 nut
6 Backing plate, fixed stop DC4644
7 Header, LH outswing
9 Fixed stop mounting holes, 9/32" dia.

Fig. B.1.1.6 Fixed stop mounting holes, RH outswing



1 Fixed stop
2 1/4-20 x 1 1/4" FHMS
3 3/4" flat washer
4 1/4-20 nut
6 Backing plate, fixed stop DC4644
8 Header, RH outswing
9 Fixed stop mounting holes, 9/32" dia.

Fig. B.1.1.7 Fixed stop installation, LH outswing

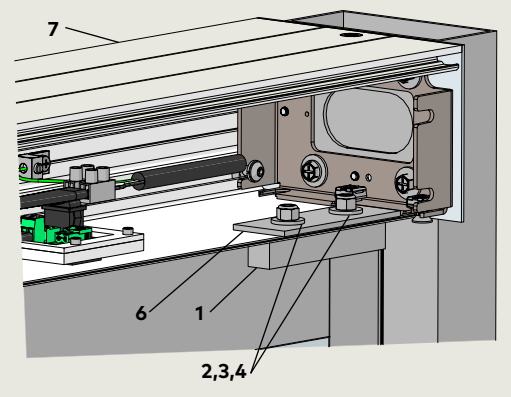
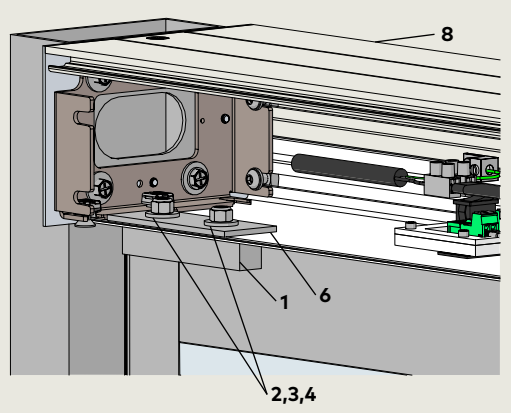


Fig. B.1.1.8 Fixed stop installation, RH outswing



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