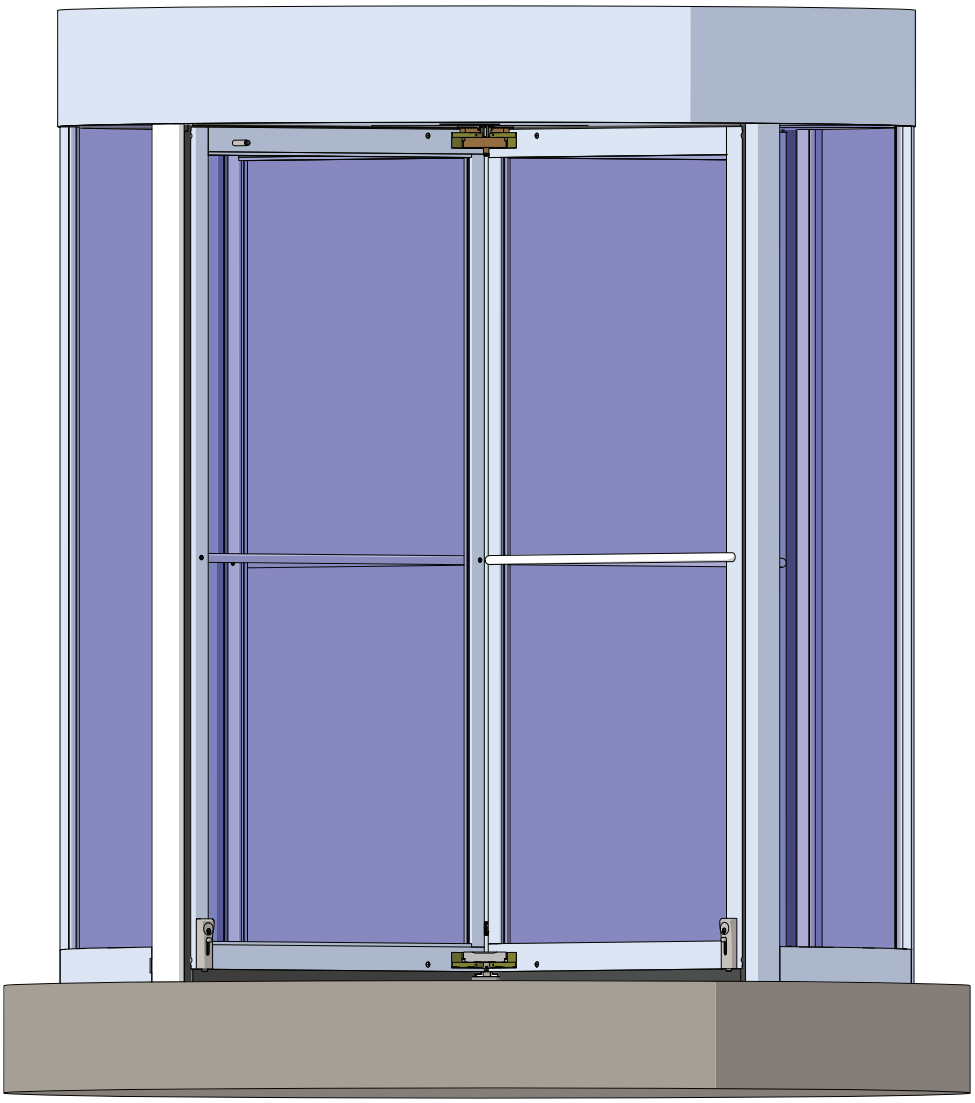


Crane S1 Security Revolving Door

with access control and remote locking

Installation Manual

RL6000-009 – 07-2022

| EN |

Crane
dormakaba Group

dormakaba

Table of contents

1 General information

1.1 Installation instructions

This document contains important instructions for installation and operation of Crane S1 security revolving doors.

Review these instructions thoroughly prior to installation, and follow them carefully during installation, commissioning, troubleshooting and maintenance.

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 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.

1.4 Dimensions

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

1.5 Environment

Crane S1 security revolving doors are designed to operate on an interior or exterior application..

NOTICE

Revolving door order custom requirements.

- Installation instructions may need to be modified or replaced.
- Installation illustrations may not reflect assembly or part customization.

Revolving door optional equipment.

- Installation instructions and illustrations may not reflect installed optional equipment.

NOTICE

Installation manual images.

- Images may not reflect actual hardware or assemblies for a specific installation.

2 Product description – S1 security door

2.1 2000-S1 series

2.1.1 Enclosure

- Welded construction.
- Aluminum; anodized finish, painted finish.
- Bronze
- Stainless steel

2.1.2 Door wings

- Bolted construction
- Aluminum; anodized finish, painted finish,or cladded.

2.2 3000-S1 series.

2.2.1 Enclosure

- Custom
- Fully formed and welded construction.
- Aluminum, stainless steel, bronze, and wood.

2.2.2 Door wings

- Custom
- Fully formed and welded construction.
- Aluminum, stainless steel, bronze and wood.

2.3 S1 security door

2.3.1 S1 security door.

- Manually operated door with remote locking (brake). and access control.
- Reference Para. 2.5, Manual door operation with remote lock.

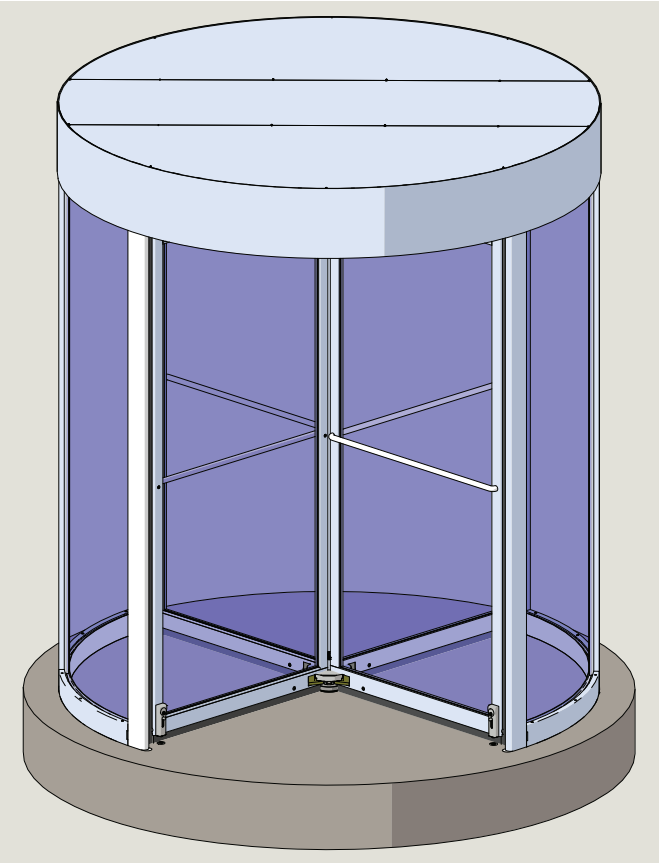
2.4 Available options

2.4.1 S1 security door available options.

Reference Chapter 9.

- Welded floor grills
- Custom push bars
- LED lights

Fig. 4.1 S1 4 wing revolving door

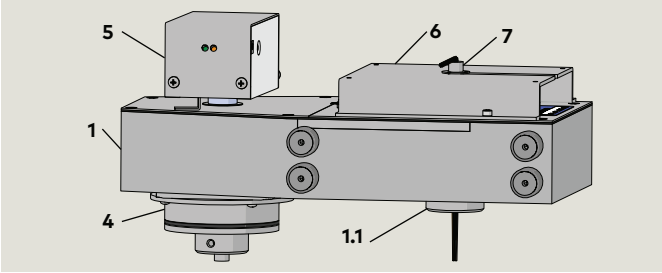


2.5 Manual door operation with remote lock

Fig. 2.5.1 Center shaft with bookfold lock
Overhead speed control with motor and lock

1 Overhead speed control assembly
2 Bookfold lock assembly
3 Center shaft assembly
4 Brake
5 Motor box assembly

Fig. 2.5.2 OHSC with brake and motor box.



1 Overhead speed control (OHSC) assembly
1.1 Drive shaft
4 Brake
5 Motor box assembly
6 Positioning wheel cover
7 Slip ring

2.5.1 S1 security door hardware.

- Overhead speed control with motor box and brake.
- Bookfold lock.
- S1 security control box (Para. 8.3).

2.5.2 Control interfaces (by others).

1. Activation (Remote lock).
   Activation signal will release the brake and allow manual operation of the door (Para. 2.5.3).

2. Lock Disable switch.
- Open the Lock Disable input to prevent the brake from engaging and for free egress/ingress manual operation of door.
- Close the Lock Disable input to lock the door and allow secure operation.

3. Fire alarm.
- An open fire alarm circuit will release the brake and the bookfold lock allowing manual operation of the door and the door wings to be bookfolded.

2.5.3 Manual door operation.

1. Remote lock circuit is closed.

2. Following manual door operation the door will rest at a random position for approximately ten seconds.

3. The motor will then slowly rotate the door at 1/2 RPM to the next Home (X) position and stop.
- If the Home position reference signal is not received by the control, the motor will stop after approximately 60 seconds.

2.5.4 Remote lock operation.

1. Remote lock circuit is open.

2. After approximately 10 seconds of an open "Remote lock" circuit while the door is at the Home position, the brake will engage preventing door rotation.

2.5.5 Building fire alarm.

1. As soon as the building "Fire Alarm" circuit to the control opens, the Bookfold lock will release and the wings can be bookfolded.

2.5.6 High security entrance.

Remote lock should not be used for a high security entrance.

3 Safety information

3.1 General safety information

3.1.1 Safety instructions

Observe safety warnings as they are presented in this manual.

3.1.2 Safety warning

⚠ WARNING

Damage to equipment or incorrect equipment operation may result from an incorrect installation.

⚠ WARNING

Hazard to mechanical processes by use of control settings, elements, or procedures not documented in this manual!

⚠ WARNING

Electric shock hazard!
By use of control elements, settings, or procedures not documented in this manual!

⚠ WARNING

Work on electrical equipment and 115 Vac wiring installation must be performed only by qualified personnel!

⚠ WARNING

Metallic doors must be grounded per national and local codes!

⚠ WARNING

Hand pinch point and crushing hazards!

⚠ WARNING

Crushing hazards!

3.1.3 Residual hazards

⚠ WARNING

After installation, hazards such as minor crushing, impact with limited force, and risk to unsupervised children may exist depending on structural design of door area, type of door, and any safeguards that have been implemented.

4 Overall door assembly examples

Table 4.1 S1 4 wing revolving door assembly example

1	Center shaft with bookfold lock assembly
3	Wing assembly
4	Enclosure center post
5	Enclosure quarter post/end wall
6	Enclosure base assembly
7	Canopy assembly
8	Wing glass
9	Enclosure glass
10	In-ground floor pivot

Fig. 4.1 S1 4 wing revolving door

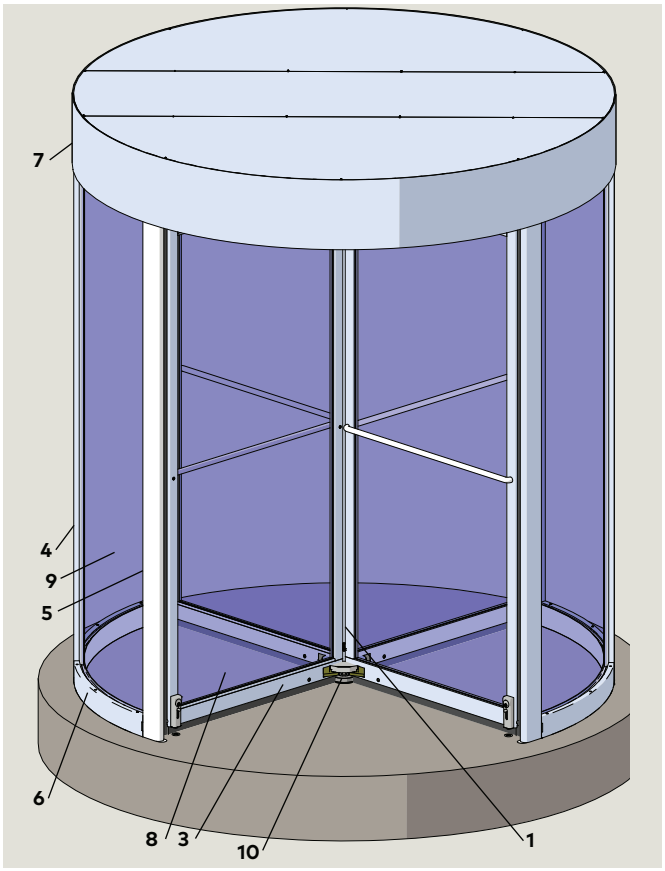
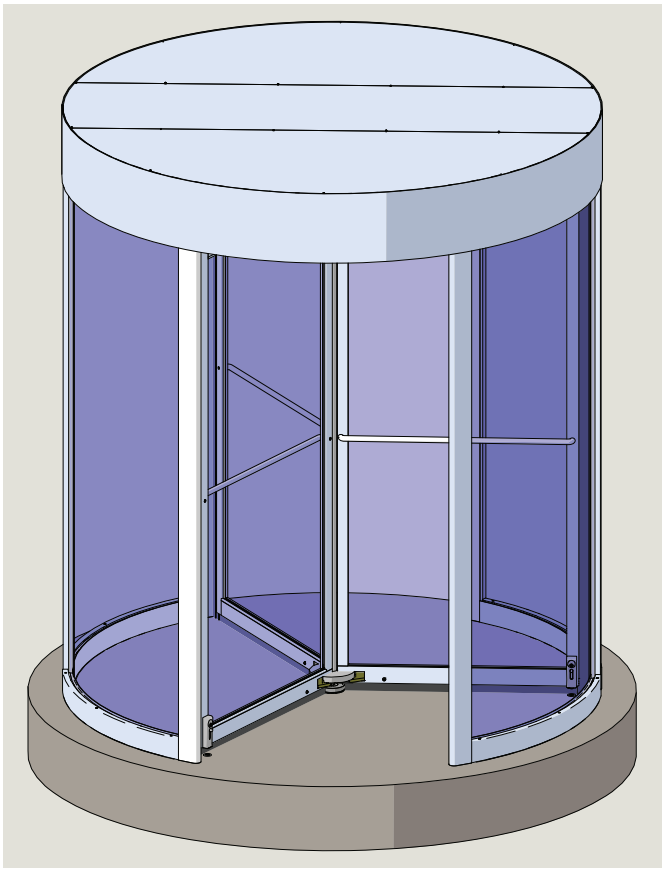


Fig. 4.2 S1 3 wing revolving door

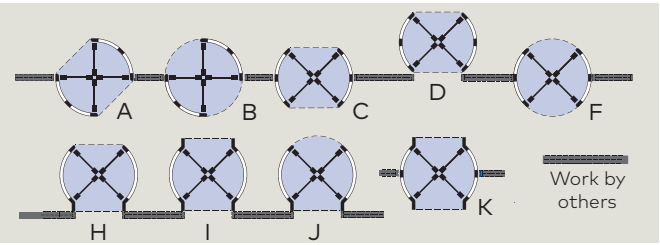


5 2000-S1 Series

5.1 2000-S1 series model comparison

	AL2000		SS2000		BZ2000
Material	Aluminum		Aluminum / Stainless steel		Aluminum / Bronze
Wing configuration	• 3 wings • 4 wings				
Enclosure diameter	3 wing		4 wing		
	Minimum OD: 8'	Maximum OD: 9'	Minimum OD: 6'10 1/4"	Maximum OD: 9'	ANSI/BHMA A156.27-2019: To limit door mass, the inside diameter added to the height shall not exceed 17ft [5182 mm].
Door opening height	Minimum 7'	Maximum: 9' 4 1/4"	Minimum: 7'	Maximum: 10'	
Maximum total wing assembly and center shaft assembly weight	750 pounds aluminum 850 pounds SS		Total weight may vary depending on application.		
Finish	• Clear anodized • Custom anodized • Dark bronze anodized • Painted		• #4 satin • #6 fine satin • Mirror • Non-directional "Jitterbug" • Custom		• Satin and lacquered • Satin no lacquer • Mirror and lacquered • Statuary and lacquered • Custom
Operation	• Manual, mechanical speed adjuster to limit speed. To be adjusted to comply with ANSI/BHMA 156.27.				
Attachment Types	A, B, C, D, F,H,I,J,K as indicated on the drawings. Reference Fig. 5.1.				
Enclosure material	• Glass • Aluminum panels		• Glass • Solid metal		• Glass • Solid metal
Enclosure glass	7/16" or 9/16" clear or tinted Full quadrant glass (Fig. 5.1: H, I J) requires 9/16" thickness.				
Canopy material	• Aluminum		• Stainless steel		• Bronze
Fascia height	a) 13" [330] minimum b) 24" [610] maximum				
Speed Control	**Manual speed control (Para. 8.2):** • Uses 100:1 gear ratio. • Sealed unit is mounted in canopy. • Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code.				

Fig. 5.1 Crane 2000-S1 attachment types

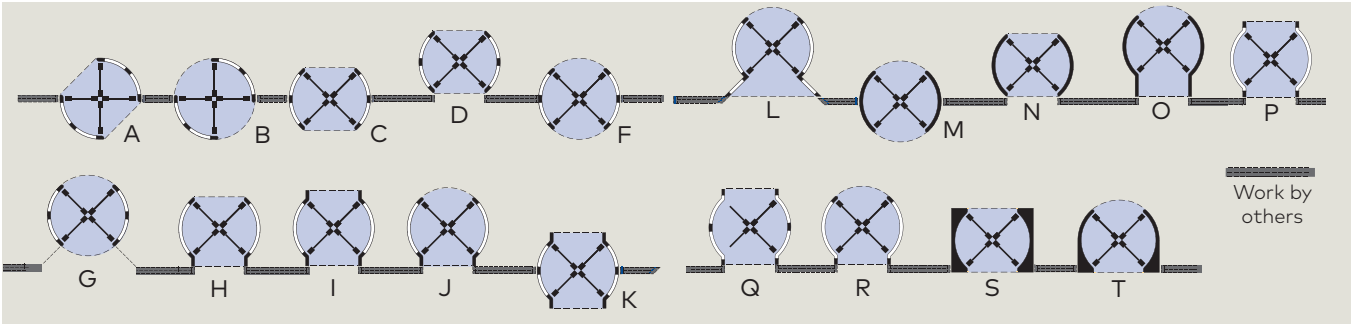


6 3000-S1 Series

6.1 3000-S1 series model comparison

	AL3000	SS3000	BZ3000
Material	Aluminum	Aluminum / Stainless steel	Aluminum / Bronze
Wing configuration	• 3 wings • 4 wings		
Enclosure diameter	3 wing: Minimum OD: 8' / Maximum OD: 9'	4 wing: Minimum OD: 6'10 1/4" / Maximum OD: 9'	ANSI/BHMA A156.27-2019: To limit door mass, the inside diameter added to the height shall not exceed 17ft [5182 mm].
Door opening height	Minimum 7' / Maximum: 9' 4 1/4"	Minimum: 7' / Maximum: 10'	
Maximum total wing assembly and center shaft assembly weight	750 pounds aluminum 850 pounds SS	Total weight may vary depending on application.	
Finish	• Clear anodized • Custom anodized • Dark bronze anodized • Painted	• #4 satin • #6 fine satin • Mirror • Non-directional "Jitterbug" • Custom	• Satin and lacquered • Satin no lacquer • Mirror and lacquered • Statuary and lacquered • Custom
Operation	• Manual, mechanical speed adjuster to limit speed. To be adjusted to comply with ANSI/BHMA 156.27.		
Attachment Types	All, custom. Reference Fig. 6.1.		
Enclosure material	• Glass • Solid metal	• Glass • Solid metal	• Glass • Solid metal
Enclosure glass	7/16" or 9/16"; clear or tinted. Full quadrant glass (Fig. 6.1: H, I J, P, R) requires 9/16" thickness.		
Canopy material	• Aluminum	• Stainless steel	• Bronze
Fascia height	a) 13" [330] minimum b) 24" [610] maximum		
Speed Control	Manual speed control (Para. 8.2): • Uses 100:1 gear ratio. • Sealed unit is mounted in canopy. • Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code.		

Fig. 6.1 Crane 3000-S1 attachment types



7 Reserved

8 Revolving door assemblies and hardware

8.1 S1 3 piece canopy, 3 wing or 4 wing, maximum OD 9'0"

NOTICE

Overhead speed control / motor box assembly shipped separately.

NOTICE

Canopy diameters 8' to 9':
Canopy shipped in 2 sections.

Fig. 8.1.1 S1 4 wing canopy assembly with overhead speed control/motor box and S1 security control box

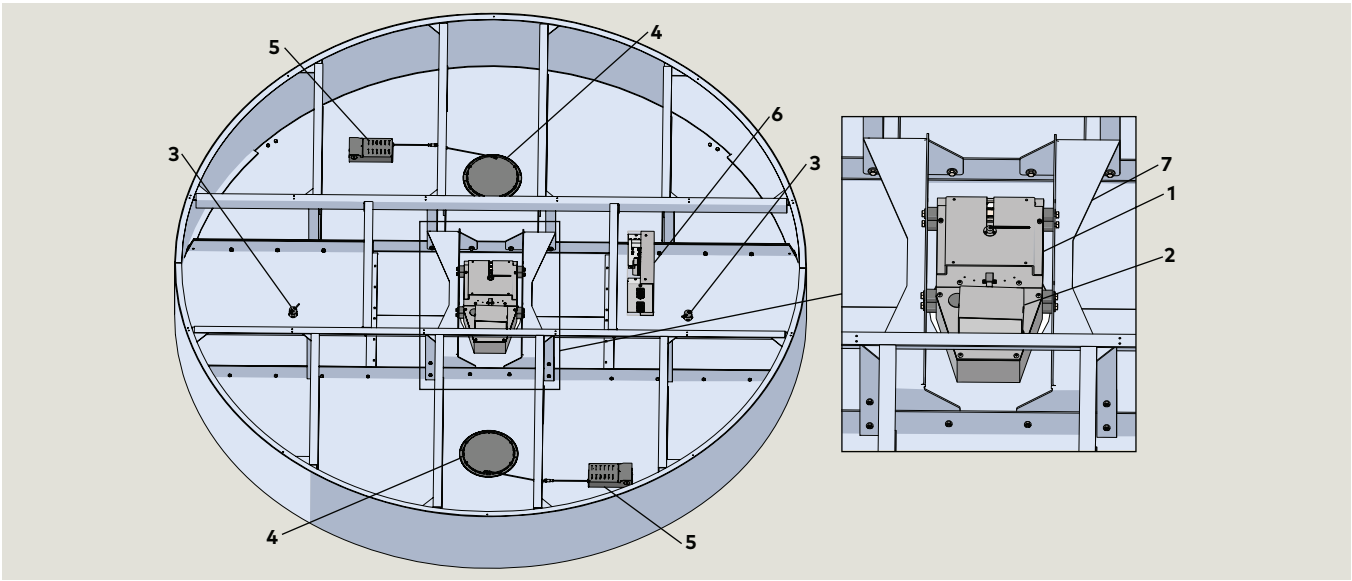


Fig. 8.1.2 S1 3 wing canopy assembly

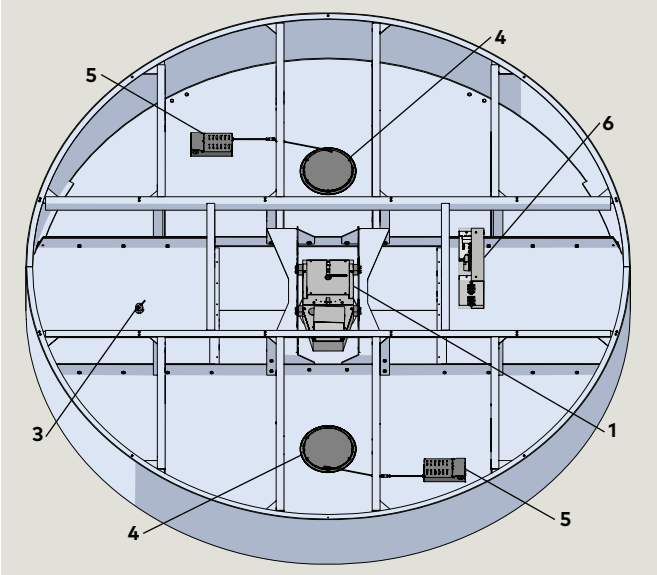


Table 8.1.1 S1 canopy hardware

1	RC6182-010	Overhead speed control assembly
2	RS7054-001	Motor box assembly
3	RC7005-001	Presence sensor, CEDES TOFspot
4	RC7030-001	Light, LED (option)
5	RC7032-001	Box, Junction with LED driver (option)
6	RS7001-001	S1 security control box assembly
7	RC6413-010	Plate, mounting, speed control assembly, S1 door

8.2 Overhead speed control with motor box and brake

Fig. 8.2.1 Overhead speed control with motor box and brake

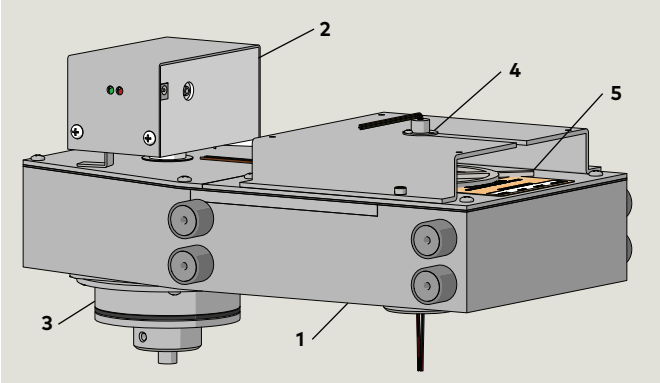
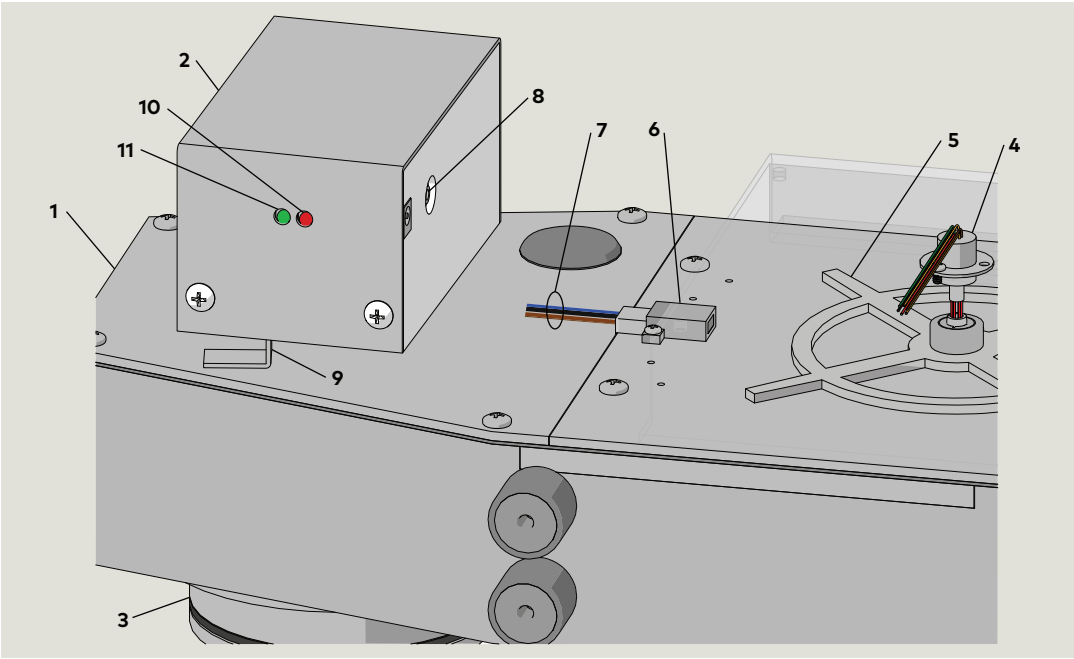


Table 8.2.1 Overhead speed control assembly

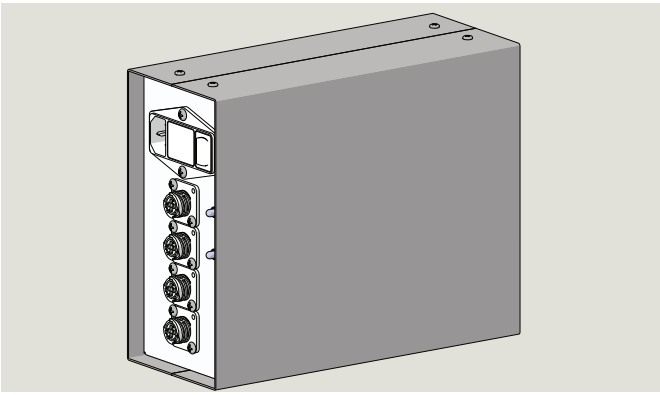
1	RC6182-010	Overhead speed control assembly
2	RS7054-001	Motor box assembly
3	RS3580-010	Brake, Electro 1/4HP
4	RX3373-010	Slip ring assembly
5	RC6307-010	Positioning wheel, 4 wing
6	RX3374-010	Sensor, Opto
7	DX3353-010	Connector and cable, Opto
8		Jack for positioning sensor cable from S1 security enclosure
9		Obstruction sensitivity adjustment tab
10		Power on light (red)
11		Door at home (X) position (green)

Fig. 8.2.2 Overhead speed control – control components



8.3 S1 security control box

Fig. 8.3.1 S1 security control box assembly RS7001-001



8.4 Center shaft and bookfold lock assembly

Fig. 8.4.1 4 wing center shaft assembly with bookfold lock

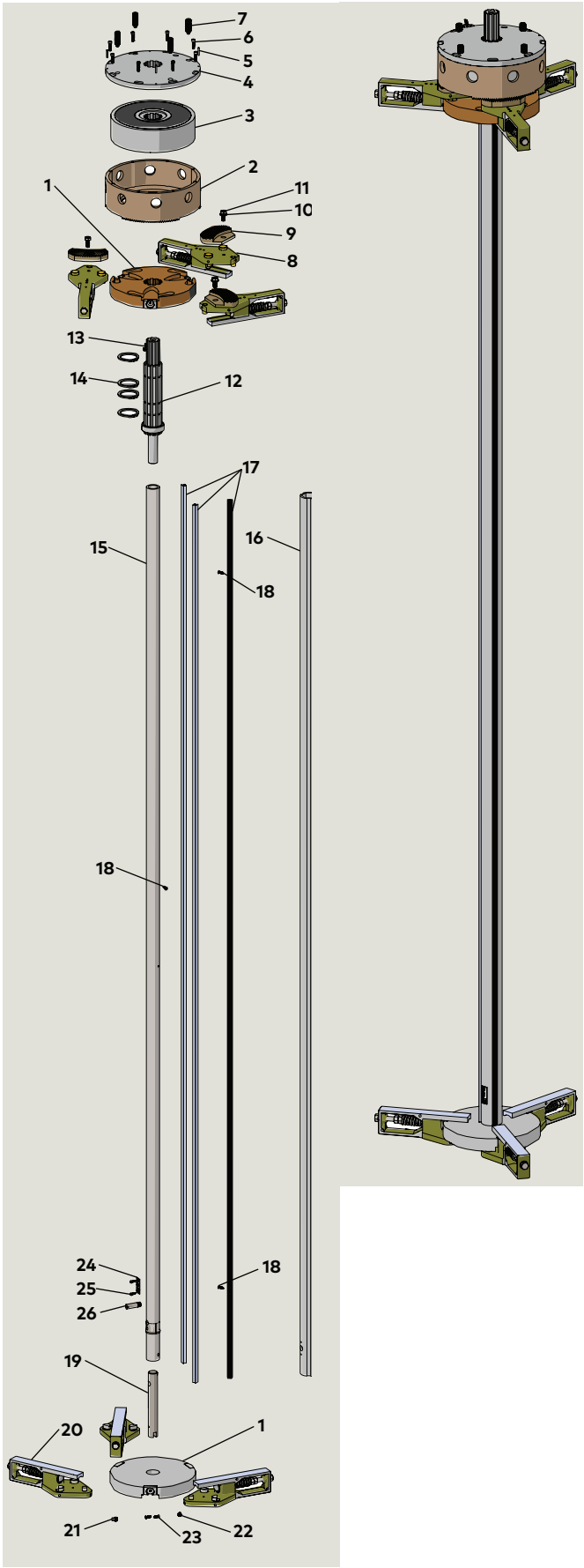
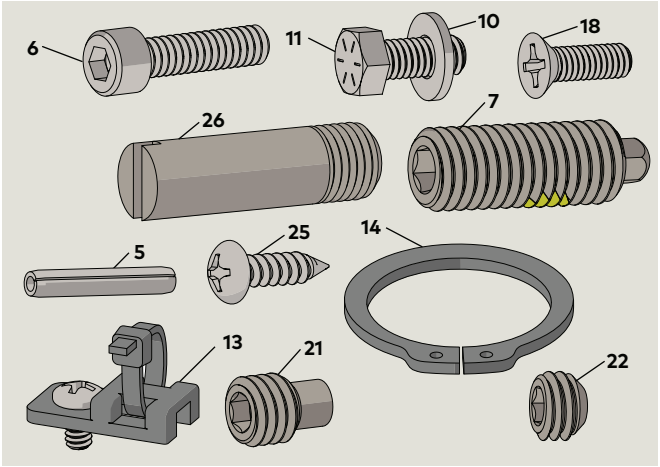


Table 8.4.1 Overhead speed control assembly

1		Disk, 3 wing
2	RC6340-010	Disc, Bookfold lock, 3 wing
3	RC6339-010	Bookfold lock coil
4		Bookfold lock top, spline center
5		3/16 x 3/4" Spring pin, slotted
6		1/4-20 x 1/2" socket head cap screw
7	RC6338-010	Bookfold spring plunger
8		Hanger, bookfold with lock, top
9	RC6337-010	Serrated plate, bookfold
10		5/16 x 5/8" OD flat washer, steel
11		5/16-18 x 3/4" steel cap screw
12		Splined shaft
13		Cable tie mount assembly, bookfold lock
14	RF6061-010	Ring, snap, bookfold lock
15		Center shaft, 3 wing, 8'
16		Center shaft cover, 3 wing, 8'
17	RC6311-0X0	Sweep, back shaft, plastic
18	RF6054-01G	8-32 x 1/2' Phillips FH machine screw
19	RC6178-010	Bottom plug
20		Hanger assembly
21	RF6113-01G	3/8-16 x 1/2" extended dog point set screw
22	RF6114-01G	3/8-16 x 1/4" cup point set screw
23		8-32 x ___ Phillips flat head machine screw
24	RD6001	Nameplate/job number tag
25	RF6008-01G	#6 x 1/2 SS Phillips pan head screw
26	RC6171-010	Pin, cross shaft, 7/16" x 1.5"

Fig. 8.4.2 Center shaft fasteners



8.5 Hanger assemblies

Fig. 8.5.1 Top bookfold lock hanger assembly

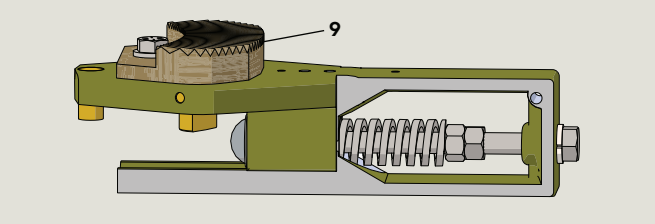


Fig. 8.5.2 Bottom hanger assembly

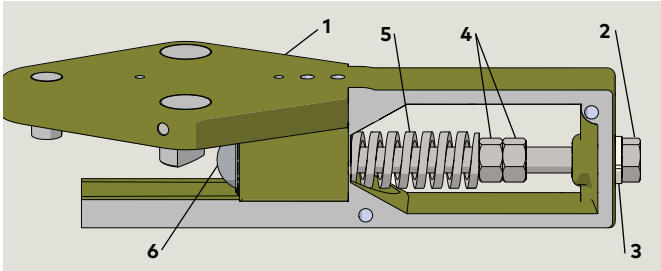


Table 8.5.1 Hanger assemblies and parts

Part / Assembly		Description
1	RC6369-0X0	Hanger body
2	RC6156-01G	Hex bolt, 0/375"- 16 x 4", machined
3		Lock washer, 3/8"
4	DF0587-00G	Hex nut, 3/8 -16
5	RC6154-010	Spring
6	RC6149-010	Ball, 7/8" diameter
9	RC6337-010	Serrated plate, bookfold

8.6 Floor pivot assemblies

Fig. 8.6.1 Floor pivot assembly RS6076-010

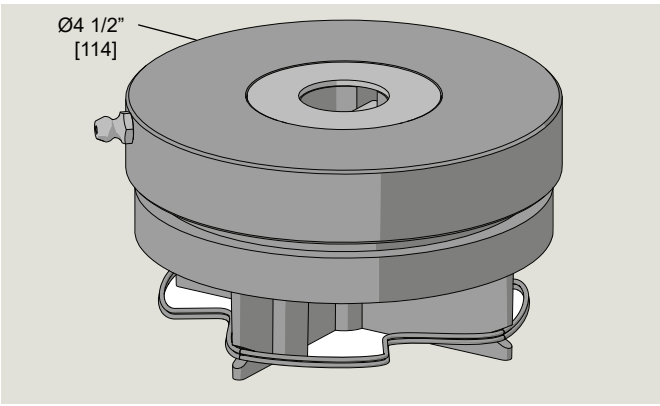
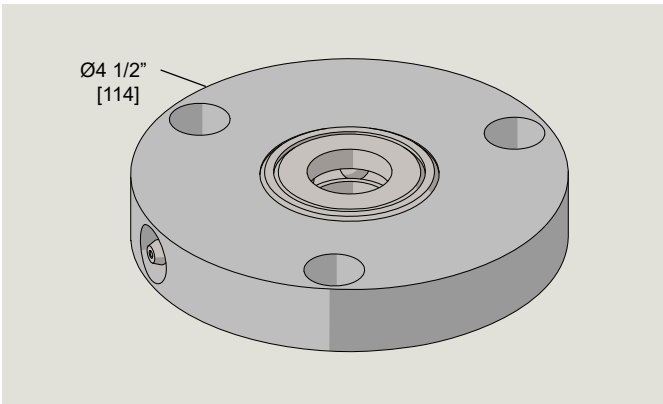
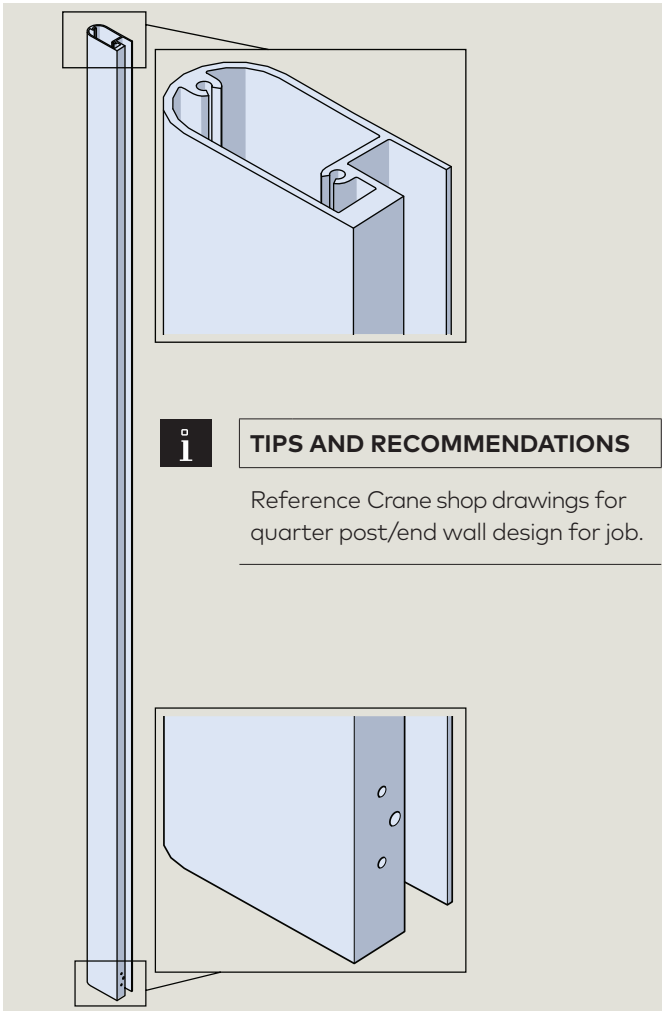


Fig. 8.6.2 Surface mounted floor pivot assembly RS3423-010



8.7 Posts and enclosure base

Fig. 8.7.1 Quarter post/end wall RE60XX-0X0



TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for quarter post/end wall design for job.

Fig. 8.7.2 Center post RE6007-0X0

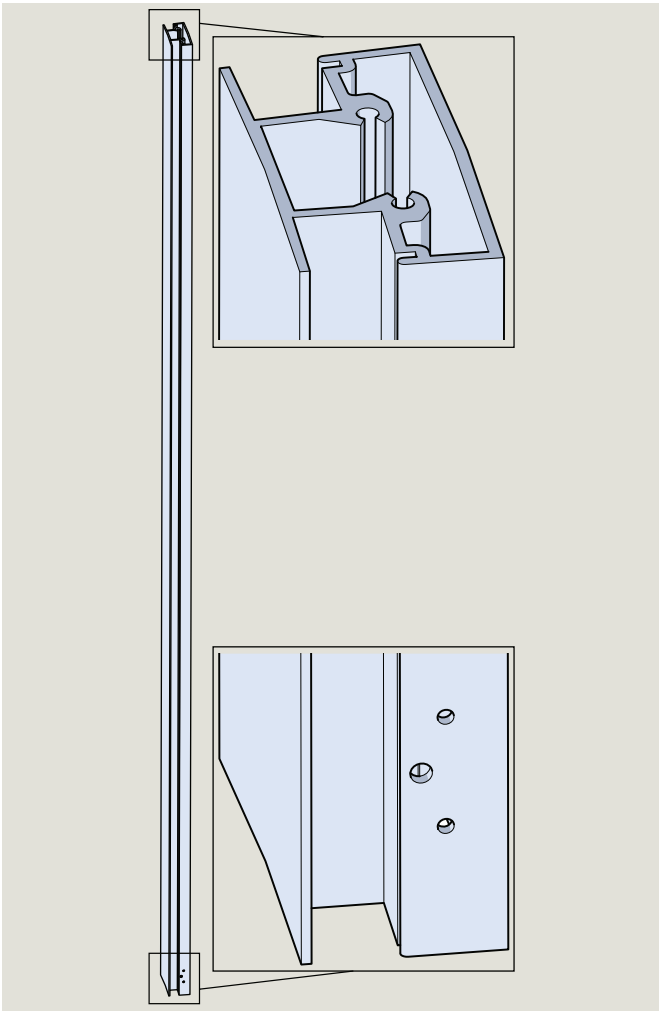


Fig. 8.7.3 Enclosure base assembly, AL

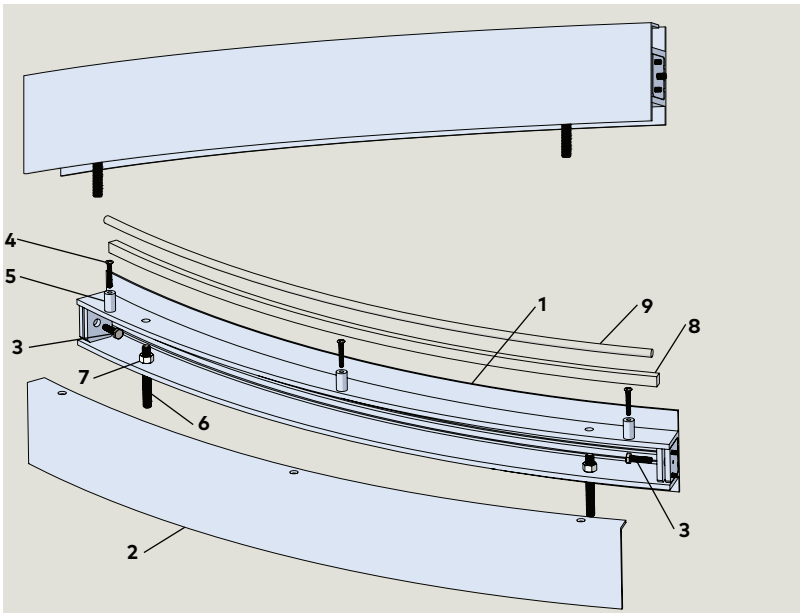


Table 8.7.1 Enclosure base parts

Part / Assembly		Description
1	RE6016-0X0	Enclosure base, inner 3", AL
2	RE6015-0XO	Enclosure base, outer 3" AL
3	RF6055-02G	1/4-20 x 1" HH cap screw
4	RF6118-01G	10-24 x 1.25" POHMS
5	RC6390-010	Cover support spacer Tube, 1/2" OD x 1/16" wall x 7/8" long, PL
6	DC2469-020	3/8 x 3" stud
7	DF0857-00G	3/8-16" hex nut
8		Glazing block (by others)
9		Backing rod (by others)

NOTICE

Refer to Crane Shop drawings for post and base detail for specific job.

8.8 Door wing assembly example

Fig. 8.8.1 Wing assembly, 4 wing door

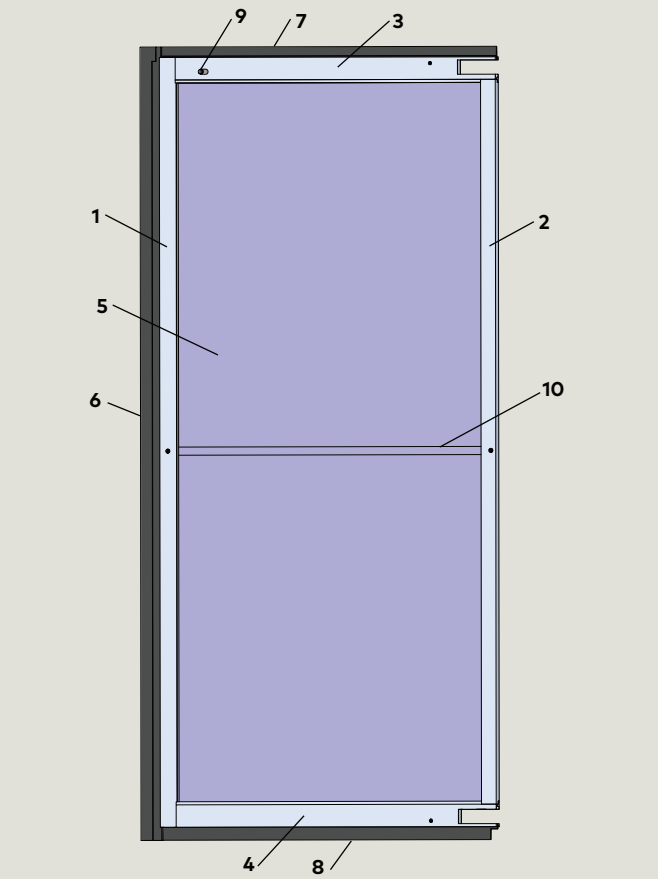


Table 8.8.1 Door wing assemblies and part examples

Part / Assembly		Description
1	RE6022-0X0	Front stile, AL
2	RE6031-0X0	Center stile, AL
3	RE6024-0X0	Rail end, Herc
4	RE6024-0X0	Rail end, Herc
5		Wing glass
6	RC6389	Sweep felt vertical
7		Sweep felt top
8		Sweep felt bottom
9	RF2961	Wing bumper assembly
10		Wing push bar Push bars ordered job specific for each order

NOTICE

Refer to Crane Shop drawings for wing detail for specific job!

8.9 Wing locks

Table 8.9.1 Wing locks and floor strike

Part / Assembly		Description
1	RE6022-0X0	Wing lock body
2	RE6031-0X0	Floor strike
3		Concealed lock

Fig. 8.9.1 Surface mounted lock

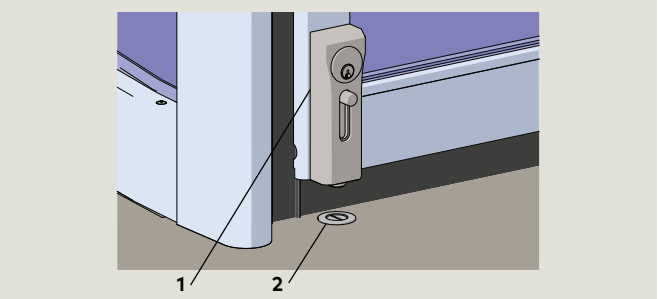
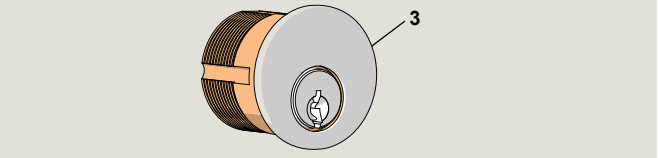


Fig. 8.9.2 Concealed lock



8.9.1 Type of wing locks.

1. Surface mounted lock body(Fig. 8.9.1). Lock by customer.
   - Narrow, medium, wide and patch fit herc wings.
2. Concealed locks, mounted in rail (Fig. 8.10.2).
   - Herc wings.

8.9.2 Factory installed.

- Locks are factory installed.

TIPS AND RECOMMENDATIONS

Rehab kits with surface mounted locks.
Locks are shipped loose. AL500, SS500 and BZ500.

8.9.3 Number of wing locks and location.

- Two wing locks are supplied, one located in adjacent wing bottom rails for interior locking into floor.
- Doors over 7' high, locks installed in bottom rails unless otherwise specified.

TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for wing lock installation for job.

8.10 Fastener hardware

1 .1/4-20 x 5/8" SS hex head cap screw RF6055-01G
2 .1/4-20 SS hex nut RF6121-01G

Fig. 8.10.1 Canopy fastening hardware

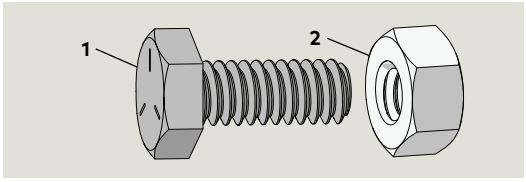


Fig. 8.10.2 Aluminum post to canopy fastening hardware

4 1/4-20 x 1" hex head cap screw RF6055-02G

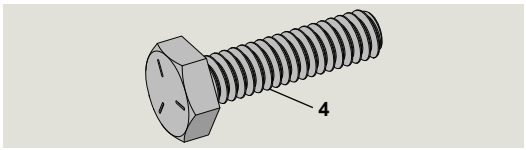


Fig. 8.10.3 Base assembly floor stud

7 3/8" x 3" plated stud DC2569-020

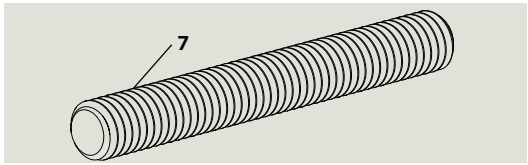


Fig. 8.10.4 Base to post fastening hardware

11 1/4-20 x 1" hex head cap screw RF6055-02G

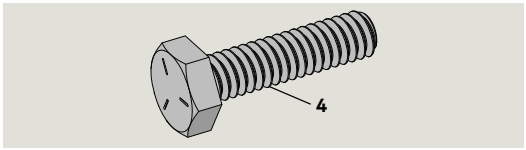
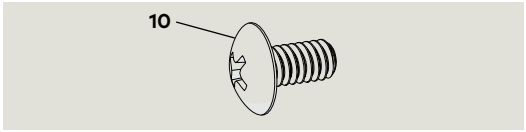


Fig. 8.10.5 Wing attachment hardware

10 .25-20 x 1/2" SS Truss head machine screw RF6119-01G



TIPS AND RECOMMENDATIONS

- Fastener hardware is contained in cardboard boxes.
- Boxes are packaged in the center shaft shipping crate.
- Each box is labeled with job number, job name and a description of its contents.

8.10.1 Canopy fastening hardware; canopy shipped in two sections.
- Fig. 8.10.1
- Reference Chapter 15.

8.10.3 Aluminum post to canopy fastening hardware.
- Fig. 8.10.2
- Reference Chapter 16.

8.10.4 Base assembly floor studs.
- Fig. 8.10.3
- Reference Chapter 17.

8.10.5 Base to post fastening hardware
- Fig. 8.10.4
- Reference Chapter 17.

8.10.6 Wing to center shaft hanger fastening hardware.
- Fig. 8.10.5
- Reference Chapter 23..

9 Optional assemblies

9.1 Floor grill and pan assembly (option)

Fig. 9.1.1 Floor grill and pan assembly

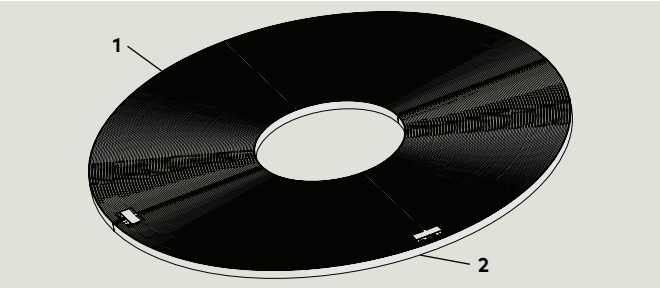


Table 9.1.1 Floor grill and pan

1		Floor grill
2		Floor pan

9.1.1 Welded floor grilles.

- Fabricated from concentrically rolled bars of 1/4" x 1" stainless steel.
- Integrated into revolving door design.
- Recessed grille pan welded from 12 ga. stainless steel, a drainage fitting can be added.

9.2 Ceiling lights (option)

Fig. 9.2.1 LED light fixture and junction box/LED driver

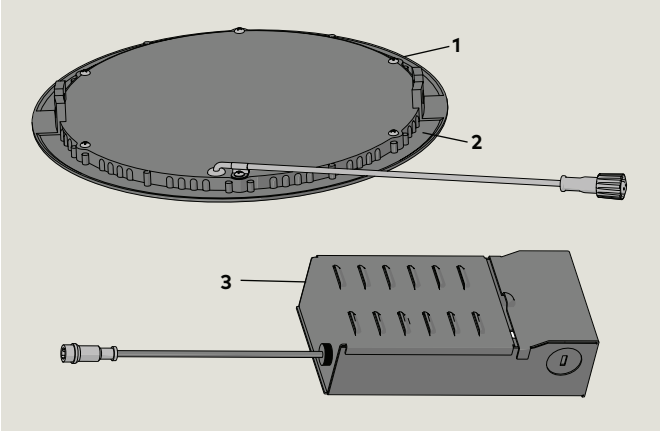


Table 9.2.1 Ceiling light and junction box/LED driver

1	RC7030-001	Light, LED
2	RC7031-001	2-sided tape for securing light to canopy
3	RC7032-001	Box, Junction with LED driver

9.2.1 LED lights and LED drivers.

- Reference Chapter 15, canopy installation, Para. 15.3.

10 Recommended Tools And Materials

10.1 Recommended tools

Fig. 10.1.1 Recommended tools

Table 10.1.1 Recommended tools

1	Plumb bob with string.
2	Tape measure
5	Screwdriver, flat blade
6	Screwdriver, Phillips #2, #3
7	Socket wrench and extensions
8	Open end wrench, 9/16"
9	Small insulated flat blade screwdriver
10	Spirit level, 72"
11	Rubber hammer
12	Needle nose pliers
13	Bent glass 9" suction cups (Wood's Pwr-Grip N5450 or equivalent) ASIN# B007IAB3TM
14	Hammer drill
15	Rotary hammer core bit, 5", Bosch or equivalent
16	Cordless drill with drill bit and socket set
17	Razor knife or box cutter
18	Angle grinder with 5" grinding wheel, ASIN# B00EMFOKSC
19	Masonry drill bits, 1 1/4" required for floor strike
20	Manual deburring tool
21	Digital multimeter
22	Force gauge for breakout, Chatillon DG-200, 0 - 200 lbf, or equivalent
23	Portable work lights
24	Wire strippers, 16 AWG to 22 AWG
25	Pin holding pin insertion tool, 1/4"

10.2 Recommended installation materials and installation hardware

Fig. 10.2.1 Recommended installation materials

Fig. 7.2.2 Recommended installation hardware

Table 7.2.1 Recommended installation Materials

	Description
1	Neoprene setting block assortment, 1/16" to 1/2", CRL, ASIN# B001G0UG1Q
2	Backer rod, 5/8" diameter, 100' roll, CRL
3	Silicone building sealant, 6 cartridges per door. Dow Corning 795 or equivalent. ASIN# B000NY76MI
4	Glazing tape. 1/8" x 3/8", black, single sided, CRL, ASIN# B000WRZCZE
5	Wedgit 5/16" glass centering springs, CRL W516, ASIN# B006JFMQUM
6	White lithium grease - for center shaft assembly, ASIN# B06XY6QK57
7	Posi-Twist Bundle kit, ASIN# B000JP3GB6
8	Rockite quick drying cement, ASIN# B000BO9JRK

Table 7.2.2 Recommended installation hardware

	Description
10	Metaltech wall hauler 2000 series drywall cart, ASIN# BMD2131YGR
11	Genie Hoist, GH-3.8 Portable lift, 300 pound capacity, lift height 12', ASIN# B004QTPJHU
12	Genie material lift, GL-8, 400 pound capacity, lift height 10', 5"
13	Extension ladder, 13'

*ASIN: Amazon numbers

11 Reserved

12 Entrance opening and floor preparation

12.1 Cordon off work area

⚠ WARNING

Cordon off installation area for the complete revolving door installation process.

12.2 Entrance opening

12.2.1 Entrance opening requirements.

1. Documentation:

- Crane shop drawing detailing revolving door attachment plan to building and required dimensions (elevation and plan views).

CAUTION

Refer to specific Crane Shop Drawing for job!

- Contractor or architect drawings detailing revolving door entrance opening.

2. Verify entrance opening dimensions and associated framing with documentation in Step 1.

12.2.2 Determine if floor is flat.

1. Use level to check floor flatness.

CAUTION

High spots cannot be above bottom edge of adjacent work that will abut the revolving door enclosure base.

CAUTION

Any floor flatness issues must be resolved before starting door installation.

12.2.3 Determine if floor is level.

1. Using level in Step 1, determine if floor is level (parallel to adjacent building work).

NOTICE

All Crane warranties are void if door is installed on a floor that is out of level, or if proper clearances are not maintained.

12.3 Revolving door floor surface

12.3.1 Floor surface.

1. Finished floor at revolving door site must be finished, level and flat.

NOTICE

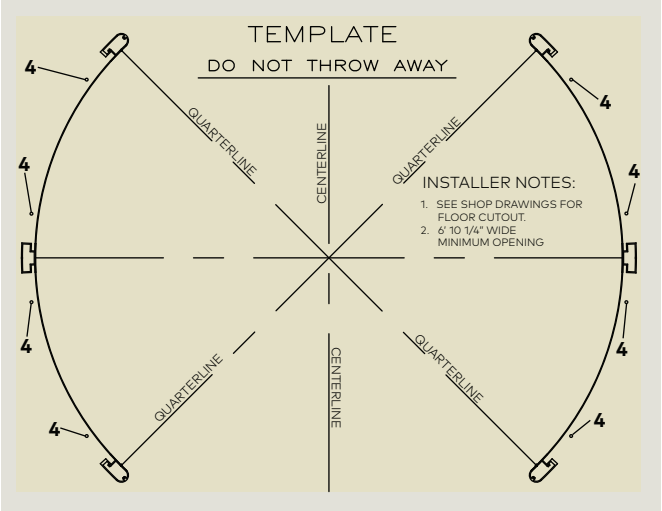
The operation and structural integrity of Crane revolving doors depend on their being mounted on a level floor.

Do not proceed if floor is not flat and level.

13 Installation template

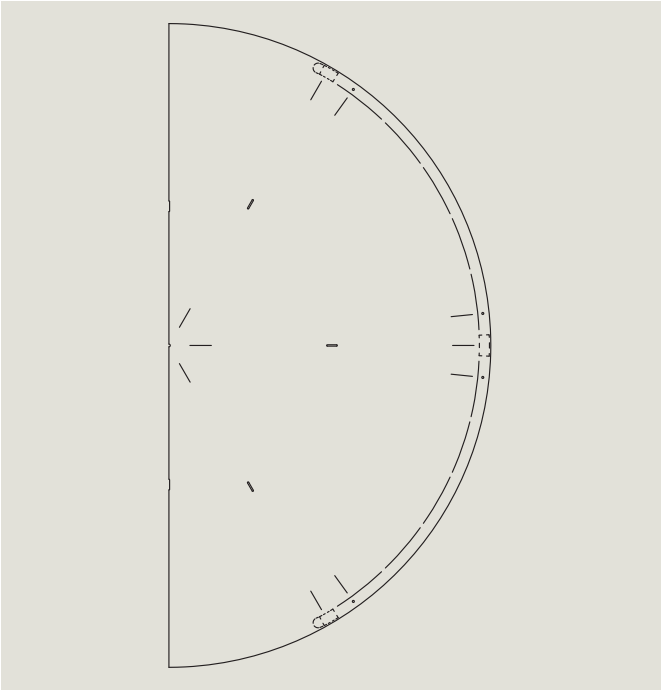
13.1 Installation template examples

Fig. 13.1.1 Full size cardboard installation template



4 Stud hole locations in enclosure base

Fig. 13.1.2 Full size Masonite installation template; 8' OD example



13.1.1 Locate full size installation template.

TIPS AND RECOMMENDATIONS

Templates for canopy diameters greater than 6'6" I.D. are custom made and cut out of Masonite material to match door conditions.

1. Locate full size template.

- Template shipped in canopy shipping crate.

NOTICE

Reference Crane shop drawing for template orientation at building attachment.

14 Locate door centerpoint, drill holes

14.1 Mark door position on floor using Masonite floor template

Fig. 14.1.1 Template placed on floor

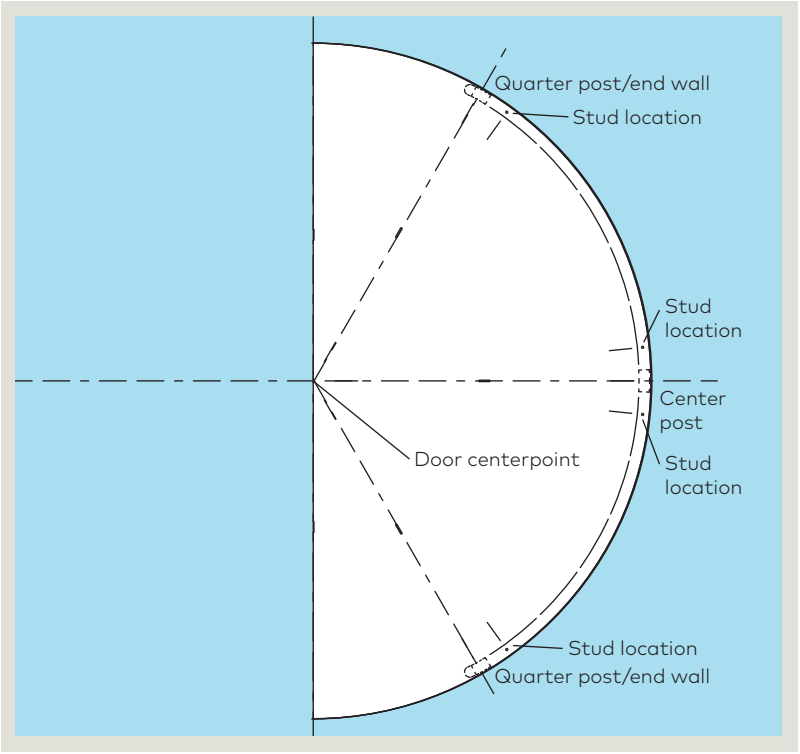
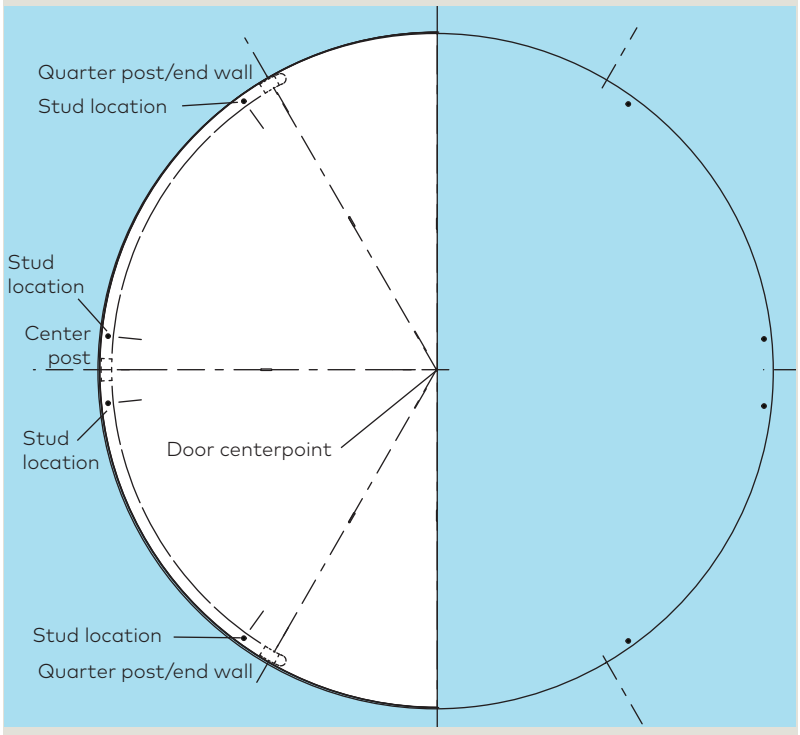


Fig. 14.1.2 Template position reversed on floor



14.1.1 Position floor template.

1. Position template at door centerpoint and orient template to building interface.

CAUTION

Use centerpoint dimensions as shown on Crane shop drawings.

WARNING

Orient floor template to building interface!
Refer to shop drawings for template to building interface position.

2. Secure template to floor.

CAUTION

Once template secured to floor, recheck alignment with door center point and centerlines and/or quarter lines to building interface!

NOTICE

It is good practice to verify template location with contractor or owner's representative.

14.1.2 Mark lines on floor.

1. Draw door centerlines.
2. Mark quarter post and center post centerlines.
3. Mark mounting base stud locations.
4. Trace door outside radius.

14.1.3 Reverse template position on floor.

1. Recheck that template is at door centerpoint.
2. Secure template to floor.

14.1.4 Mark lines on floor.

1. Draw door centerlines.
2. Mark quarter post and center post lines.
3. Mark mounting base stud locations.
4. Trace door outside radius.

14.1.5 Remove template.

1. Remove template.

14.2 Drill pilot and anchor holes for mounting base studs

14.2.1 Drill pilot holes in floor.

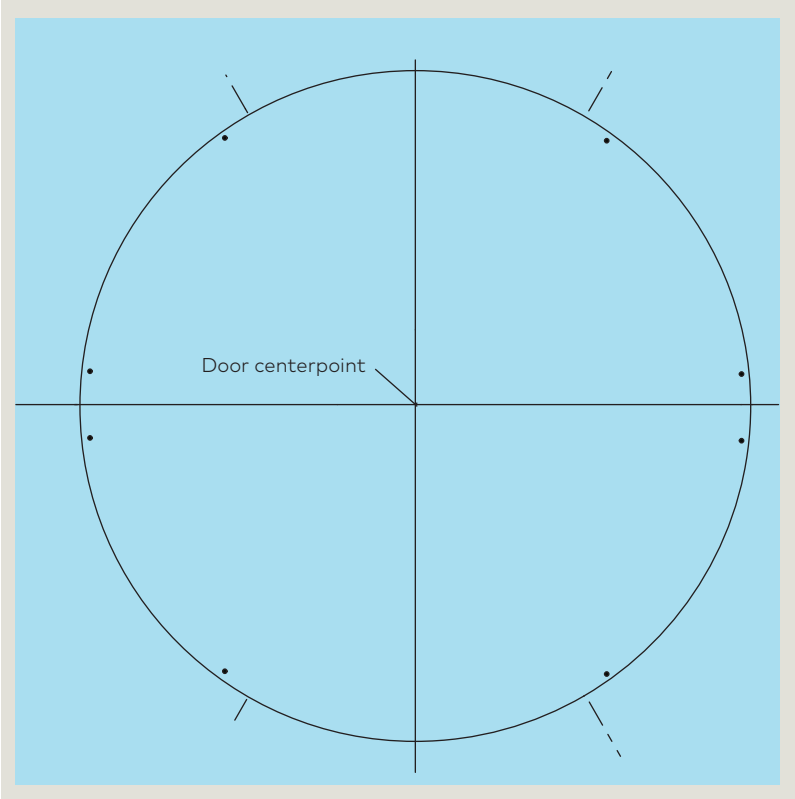
⚠ WARNING

Protective equipment required!
Risk of injury due to improper drilling.

14.2.2 Drill mounting base pilot holes.

1. Drill must be positioned vertically.
2. Drill pilot holes at each mounting base stud hole location.

Fig. 14.2.1 Floor marked with door location and mounting base holes



14.2.3 Drill anchor holes in floor.

1. Drill anchor holes at each pilot hole location.

TIPS AND RECOMMENDATIONS

Use 1/2" masonry drill bit with hammer drill.
Drill anchor holes to a depth of 2 1/2".

14.3 Drill pilot hole at door centerpoint

14.3.1 Drill pilot hole in floor at door centerpoint.

⚠ WARNING

Protective equipment required!
Risk of injury due to improper drilling.

1. Drill pilot hole at door centerpoint.

15 Canopy assembly and installation

15.1 Canopy assembly and speed control installation

Fig. 15.1.1 Canopy assembly, cover view, 4 wing door

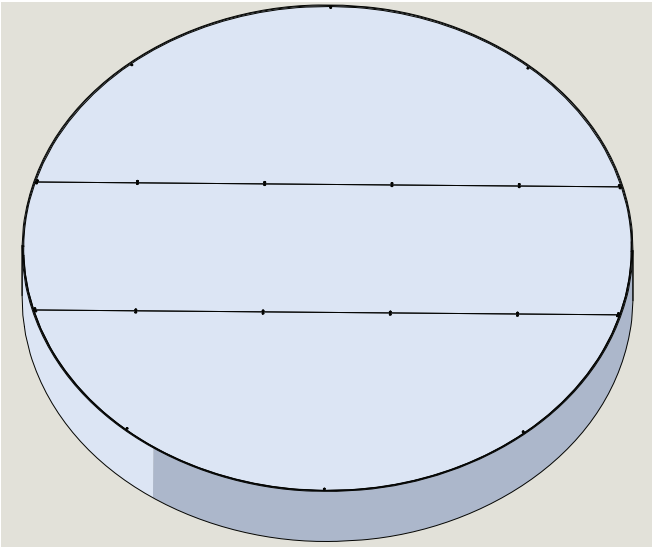


Fig. 15.1.2 #8 x 1/2" PPHMS

Fig. 15.1.3 Canopy covers removed, 4 wing door

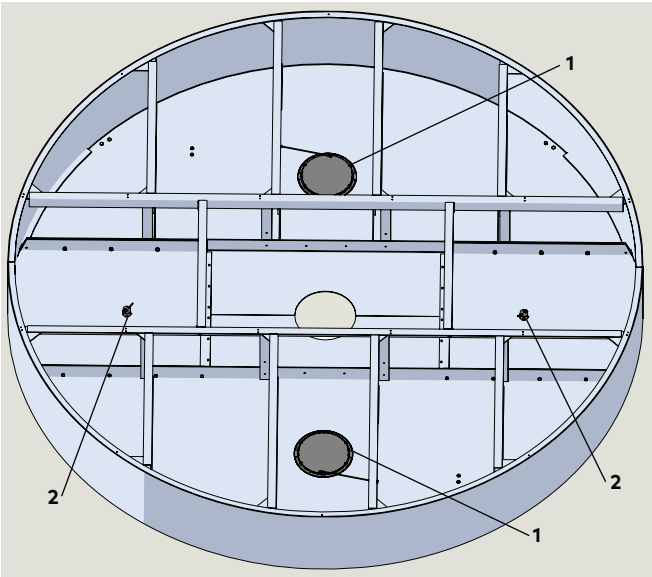


Table 15.1.1 Canopy assembly, covers removed

1	RC7030-001	Light, LED
2	RC7005-001	Presence sensor, CEDES TOFspot
8	RF3016-01Z	#8 x 1/2" Phillips pan head screw

NOTICE

Refer to Crane shop drawings for specific canopy assembly and installation detail for job!

NOTICE

Canopies shipped in two sections.
Canopies 8' 0" O.D. to 9' 0" O.D. are shipped in two sections. Refer to Crane shop drawings for fastening hardware.

15.1.1 Uncrate canopy shipping crate

1. Uncrate canopy shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

CAUTION

Place canopy assembly on elevated smooth surfaces.

- Prevents damage to optional lights.
- Prevents damage to soffit surfaces.
- Prevents damage to sensors.

15.1.2 Remove outer and center top covers.

1. Remove all #8 x 1/2" Phillips pan head sheet metal screws securing top covers to canopy
2. Remove two outer section and inner section covers and set aside.

TIPS AND RECOMMENDATIONS

Mark outer section covers with their location on canopy so that they can be reinstalled in their original positions.

15.2 Add oil to speed control gearcase

Fig. 15.2.1 Overhead speed control assembly with brake

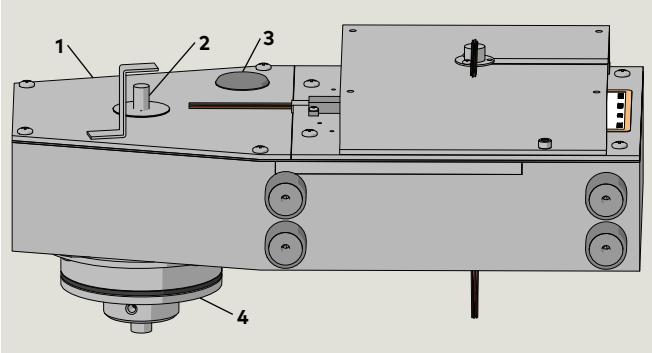


Table 15.2.1 Overhead speed control assembly

1	RC6182-010	Overhead speed control assembly
2	RC6356-010	Shaft, motor box and brake
3		Oil fill hole snap-in plug
4	RS3580-010	Brake assembly

15.2.1 Addition of oil to speed control.

CAUTION

Oil must be added to overhead speed control. 22 oz. bottle of multigrade synthetic oil is supplied. Part number RC6175-010.

- Remove snap-in plug (Fig. 15.1.4) and add entire contents of bottle to speed control case.
- Replace snap-in plug.

15.3 Install motor box assembly onto speed control shaft

Fig. 15.3.1 Motor box assembly

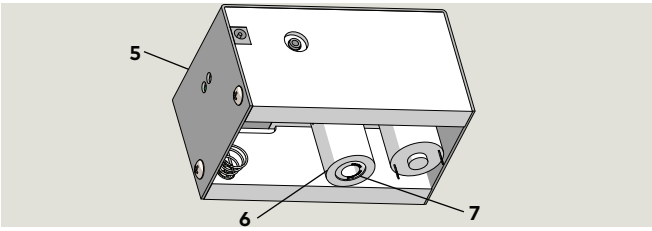


Fig. 15.3.2 Motor box and overhead speed control assemblies

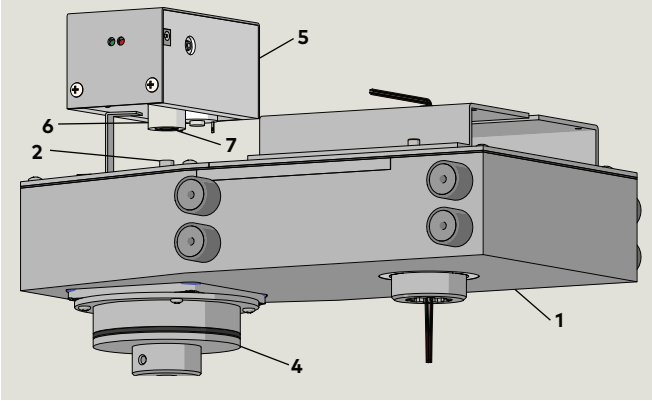


Fig. 15.3.3 Motor box assembly installed

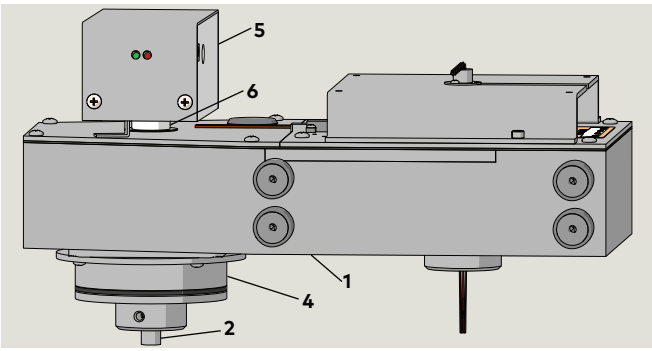


Table 15.3.1 Overhead speed control and motor box assemblies

1	RC6182-010	Overhead speed control assembly
2	RC6356-010	Shaft, motor box and brake
4	RS3580-010	Brake assembly P51 7211
5	RS7054-001	Motor box assembly, S1
6	RC7055-001	Coupler
7	RC7053-001	Roller clutch

15.3.1 Install motor box on overhead speed control

1. Lower motor box assembly coupling onto overhead speed control drive shaft (2).

15.4 Attach mounting brackets to overhead speed control

Fig. 15.4.1 Speed control mounting brackets and spacers

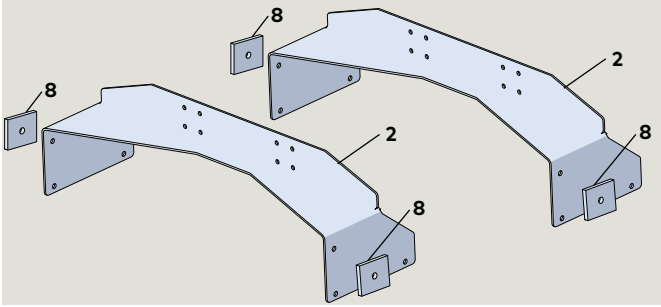


Fig. 15.4.2 Canopy speed control mounting spacer

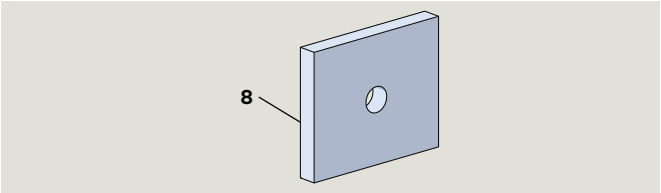


Fig. 15.4.3 Hardware, speed control mounting to mounting brackets

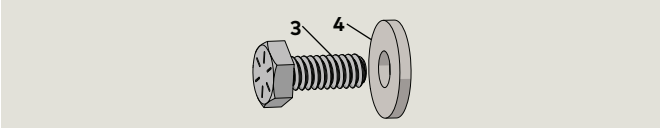


Fig. 15.4.4 Overhead speed control with motor box and brake

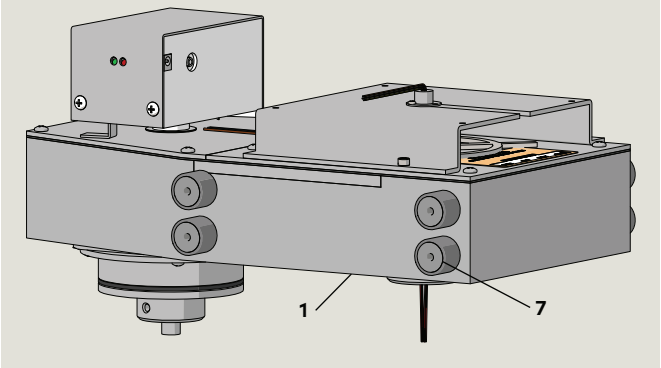


Fig. 15.4.5 Overhead speed control and mounting brackets

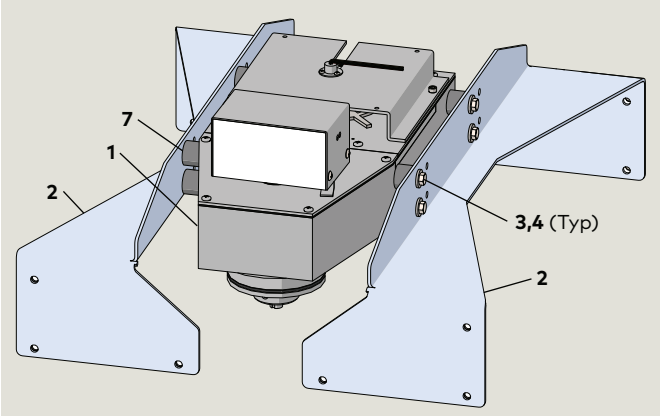


Table 15.4.1 Overhead speed control assembly and bracket mounting hardware

1	RC6182-010	Overhead speed control assembly
2	RC6413-010	Mounting bracket, speed control assembly
3	RF6055-01G	1/4-20 x 5/8" hex head screw
4	RF6056-01G	9/32" ID, 3/4" OD SS flat washer
7	RC6080-001	Grommet
8		Canopy speed control mounting spacer

15.4.1 Attach overhead speed control to mounting brackets.

1. Secure mounting brackets to overhead speed control grommets using fastener hardware in Fig. 15.4.3.

- (8) 1/4-20 x 5/8" hex head bolts
- (8) flat washers

15.5 Attach overhead speed control mounting brackets to canopy

Fig. 15.5.1 Mounting bracket installation in canopy

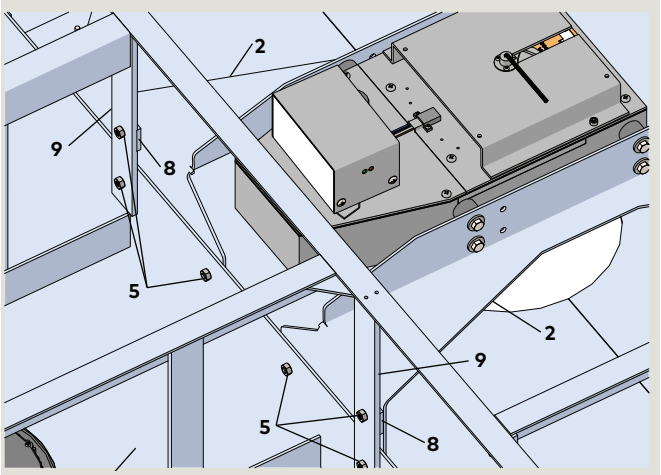


Fig. 15.5.2 Mounting bracket installation in canopy, hex head bolts

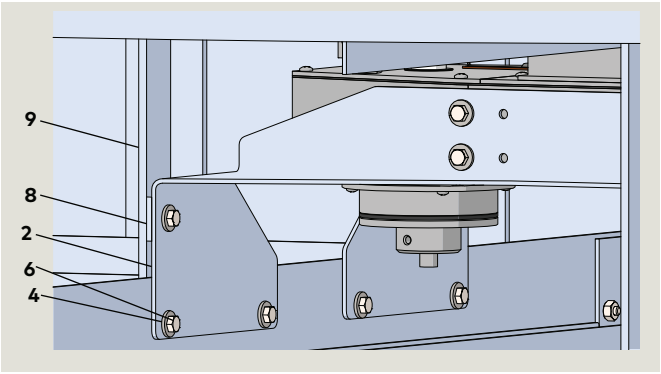


Fig. 15.5.3 Hardware, mounting brackets to canopy

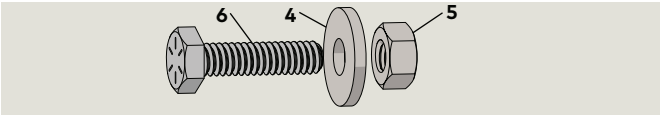


Fig. 15.5.4 4 wing canopy with overhead speed control/ motor box and S1 security contro box

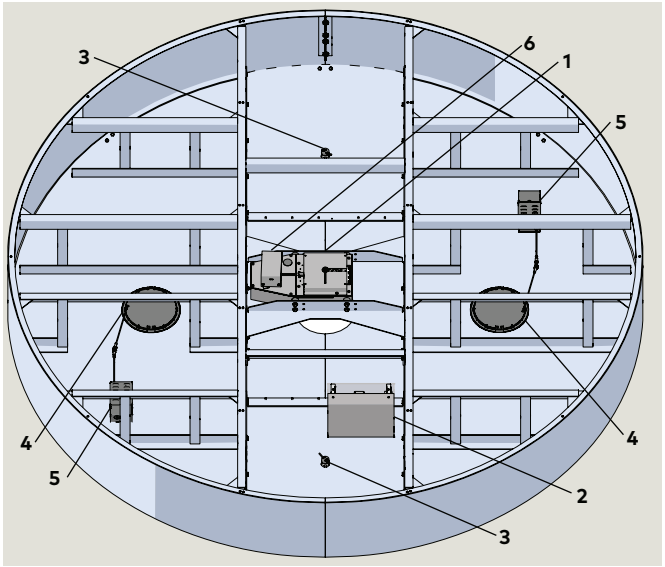


Table 15.5.1 Overhead speed control assembly and canopy mounting hardware

1	RC6182-010	Overhead speed control assembly
2	RC6413-010	Mounting bracket, speed control assembly
4	RF6056-01G	9/32" ID, 3/4" OD SS flat washer
5	RF6121-01G	1/4-20 nut SS
6	RF6055-02G	1/4-20 x 1" hex head screw
7	RC6080-001	Grommet
8		Canopy speed control mounting spacer
9		Canopy strapping
10		Canopy outer soffit

15.5.1 Install speed control mounting bracket assembly in canopy.

1. Attach mounting brackets to outer soffit and canopy strapping using fastener hardware in Fig. 15.5.3.
   Per bracket:
- (6) 1/4-20 x 1" hex head bolts
- (6) flat washers
- (6) 1/4-20 nuts

2. Speed control mounting spacer (8) (Fig. 15.4.2) required between mounting bracket and canopy strapping (Fig. 15.5.2).

15.5.2 Canopy light wiring.

1. Plan for canopy light wiring before canopy is installed. See Para. 15.4.

15.5.3 S1 security box installation.

1. S1 security box can be placed in canopy before canopy is raised in place or once canopy and door installation is complete.
- Box should be located close to overhead speed control assembly.

Table 15.5.2 4 wing canopy assembly

1	RC6182-010	Overhead speed control assembly
2	RS7001-001	S1 Security control box (location may vary)
3	RC7005-001	Presence sensor, CEDES TOFspot
4	RC7030-001	Light, LED (option)
5	RC7032-001	Junction box with LED driver (option)
6	RS7054-001	Motor box assembly

15.6 Assemble canopy shipped in 2 sections, door OD 8' and over

Fig. 15.6.1 Canopy assembly, split into 2 sections for shipment

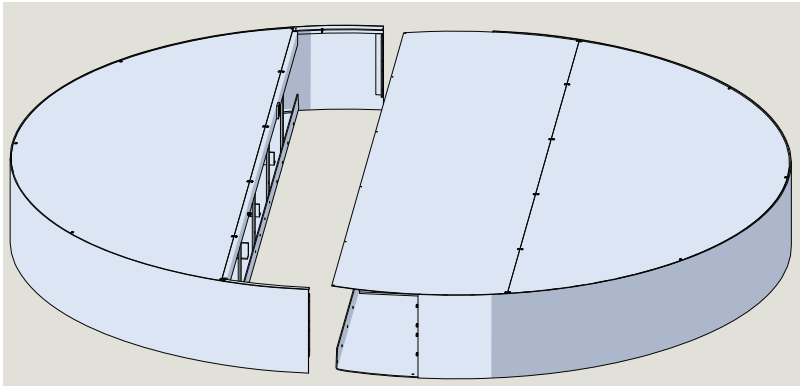


Fig. 15.6.2 Canopy assembly, split into 2 sections for shipment, covers removed

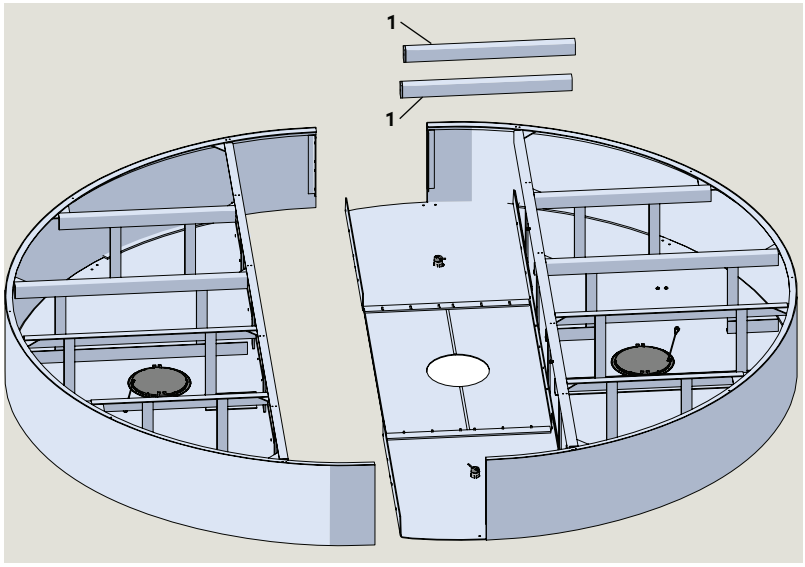


Fig. 15.6.3 #8 x 1/2" PPHMS

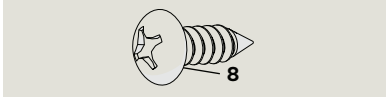


Table 15.6.1 Canopy assembly hardware

1		Angle iron assembly, center of canopy
8	RF3016-01Z	#8 x 1/2" Phillips pan head screw

15.6.1 Uncrate canopy shipping crate

1. Uncrate canopy shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

CAUTION

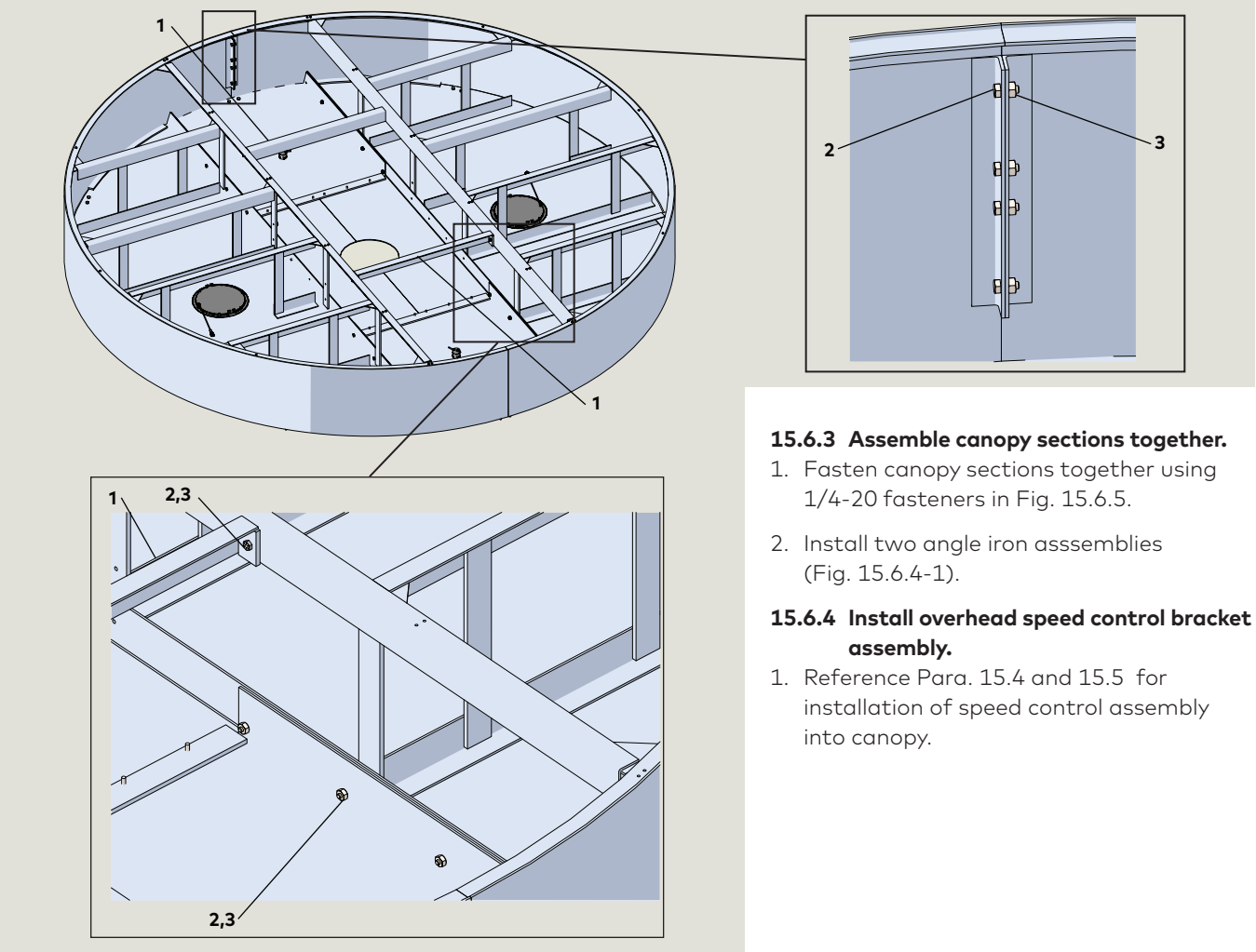
Place canopy assembly on elevated smooth surfaces.

- Prevents damage to optional lights.
- Prevents damage to soffit surfaces.
- Prevents damage to sensors.

15.6.2 Remove outer and center top covers.

1. Remove all #8 x 1/2" Phillips pan head sheet metal screws securing top covers to canopy
2. Remove two outer section and inner section covers and set aside.

Fig. 15.6.4 Canopy assembled



15.6.3 Assemble canopy sections together.

1. Fasten canopy sections together using 1/4-20 fasteners in Fig. 15.6.5.
2. Install two angle iron asssemblies (Fig. 15.6.4-1).

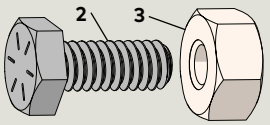
15.6.4 Install overhead speed control bracket assembly.

1. Reference Para. 15.4 and 15.5 for installation of speed control assembly into canopy.

Table 15.6.2 Canopy fasteners

2	RF6055-01G	1/4-20 x 5/8" hex head screw
5	RF6121-01G	1/4-20 nut SS

Fig. 15.6.5 Canopy fasteners



15.7 Raise canopy into place

NOTICE

Lifting equipment requirements will depend on canopy installation height and physical space around door installation location.

WARNING

Lift equipment requirements:
- Load capacity: 300 lb [136 kg]minimum.
- Lifting height: Based on canopy installation height.
- Wheel brakes

WARNING

Cordon off canopy installation area!

15.7.1 Move canopy to approximate door centerpoint.

1. Position canopy at door centerpoint, orienting canopy to building interface.

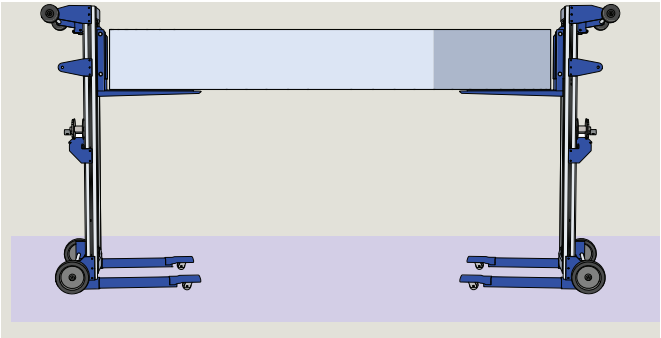
WARNING

A minimum of two persons are required when handling canopy!

WARNING

Use caution when handling canopy!

Fig. 15.7.1 Canopy on lift equipment example



15.7.2. Place canopy on lifts.

1. Place canopy on lifts.

CAUTION

3 wing revolving door canopy orientation.

Canopy must be orientated so that TOFspot sensor (3) is on the left.
- Sensor must be under the enclosed space with the door in the Home position.

CAUTION

Canopy installation orientation.
1. Identify canopy quarter post mounting hole locations from Crane shop drawings.
2. Orient canopy on lifts based on Crane shop drawing.

CAUTION

When placing canopy assembly on lifts
- Prevent damage to optional lights.
- Prevent damage to soffit surfaces.

CAUTION

Canopy post mounting holes.
Place lift equipment between canopy post mounting hole areas. Reference Chapter 16.

WARNING

Lock lift wheels once lifts are in place!

15.7.3 Raise canopy to installation height.

1. Raise canopy to height for post installation (Chapter 16).

WARNING

Use caution when raising canopy!

2. Orient canopy to building interface referencing Crane shop drawings..

15.8 Canopy LED fixture installation (option)

Fig. 15.8.1 LED light fixture

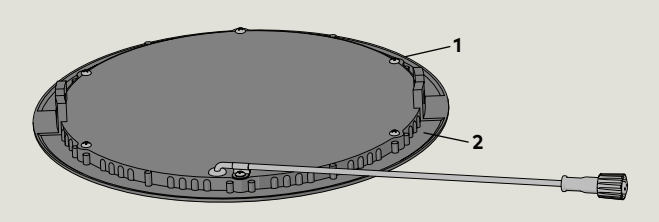


Fig. 15.8.2 Canopy with two LED lights

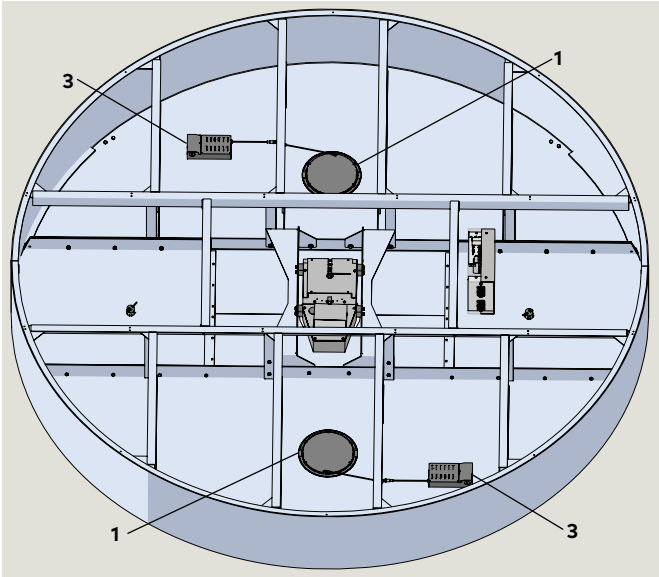


Fig. 15.8.3 Junction box/LED driver

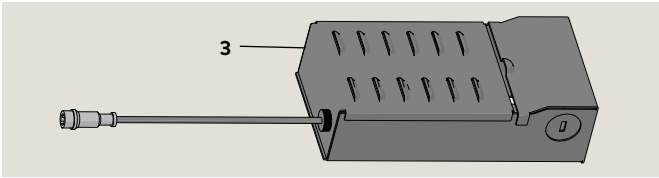


Fig. 15.8.4 115 Vac wiring to LED driver

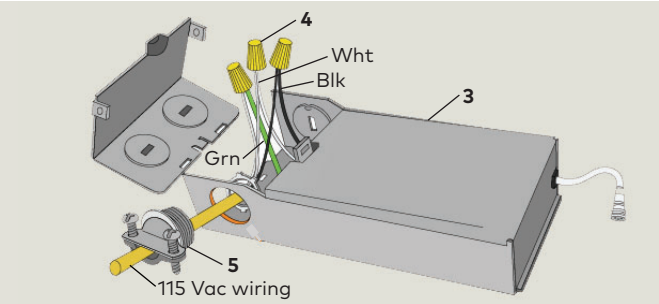


Table 15.8.1 Ceiling LED and junction box

1	RC7030-001	Light, LED
2	RC7031-001	2-sided tape for securing light to canopy
3	RC7032-001	Box, Junction with LED driver
4		Wire nut
5		NM cable connector or equivalent

15.8.1 LED light fixtures (option).

- Each light is supplied with a junction box/LED driver (Fig. 15.8.3).

15.8.2 LED light installation.

TIPS AND RECOMMENDATIONS

LED lights are factory installed.

15.8.3 LED junction box/driver installation.

NOTICE

Junction box/LED driver and 115 Vac wiring installation.
It is recommeded to install drivers and connect 115 Vac wiring once revolving door enclosure is fully asssembled.

Connect each LED driver extension cable, if required, to its LED light.

15.8.4 115 Vac wiring to each Junction box.

WARNING

Work on 115 Vac wiring must be performed only by qualified personnel!

1. Use 4 conductor 18 AWG cable (Blk, Red, Grn, Wht).
2. For each LED driver, spice cable wires to LED driver 115 Vac wiring inside driver junction box using three wire nuts supplied with driver.

15.8.5 Contractor-supplied junction box.

1. Contractor must supply:
- Appropriately sized junction box for all LED driver 115 Vac cables.
- All required wiring connectors for 115 Vac wiring into the junction box.
2. Junction box must be accessible for any future maintenance requirements.

15.8.6 115 Vac wiring to customer lighting circuit.

1. Customer must supply 115 Vac lighting power to junction box (Para. 15.8.4).

16 Enclosure post installation

16.1 Chapter 16 contents

NOTICE

Refer to Crane shop drawings for specific post and post installation detail for job!

NOTICE

Stainless steel posts.
Refer to Crane Shop drawings for stainless steel post detail.

16.2 Open post shipping crate

Fig. 16.2.1 Post shipping crate

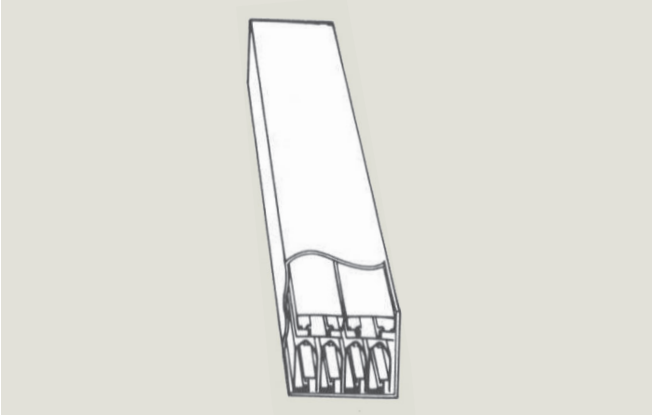


Fig. 16.2.2 Enclosure post numbering

16.2.1 Center posts and quarter posts.

1. Uncrate center posts and quarter posts/end walls from their shipping crate .

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

2. Center post and quarter post/end wall numbering.

- Each post's wrapping material is marked with numbers (Fig. 16.2.2) indicating where the center posts and quarter posts/end walls are to be located in the door installation.
- Insure post is marked with its location number on the top and bottom of the post. Reference Para. 16.3.

TIPS AND RECOMMENDATIONS

Refer to Para. 16.5 for enclosure post and base numbering examples.

16.3 Quarter post/end wall and center post assemblies

16.3.1 Quarter post/end wall and center post aluminum extrusions.

Table 16.3.1 Quarter post/end wall and center post

Part / Assembly		Description
1	RE60XX-0X0	Quarter post/end wall
3		1/4-20 tapped holes for hex screws
4	RE6006-0X0	Center post
5	RE6021-010	Attachment block, base/post
6	RF6116-01G	1/4-20 x 3/8" Phillips FHMS

Fig. 16.3.2 1/4-20 x 3/8" PFHMS

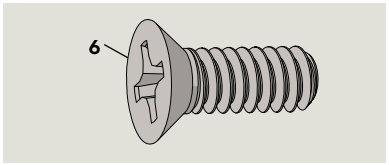


Fig. 16.3.1 Quarter post/end wall

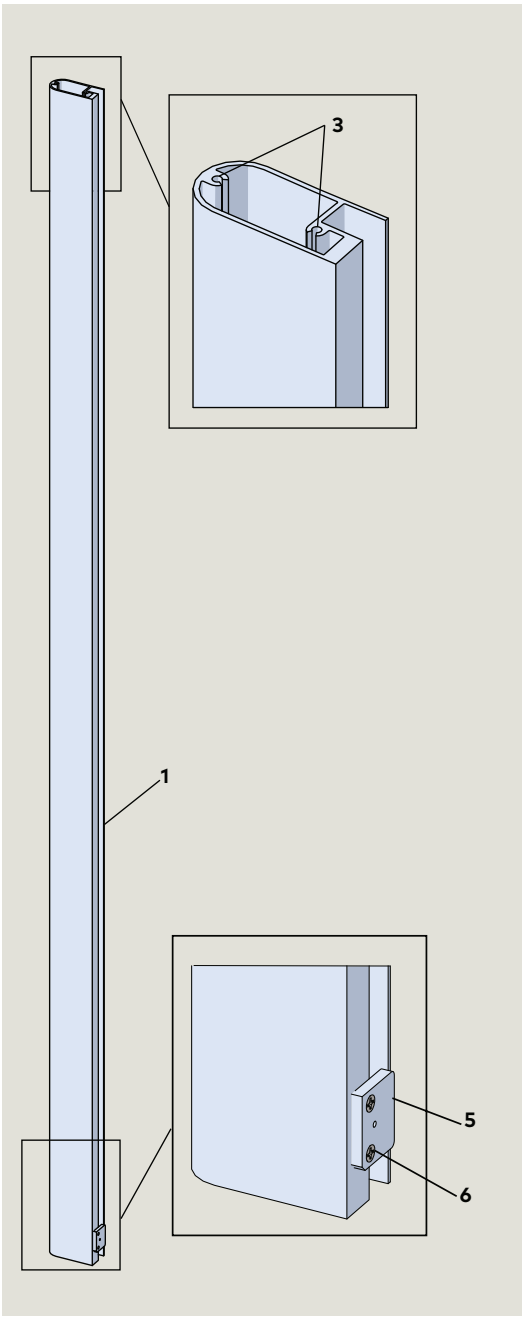
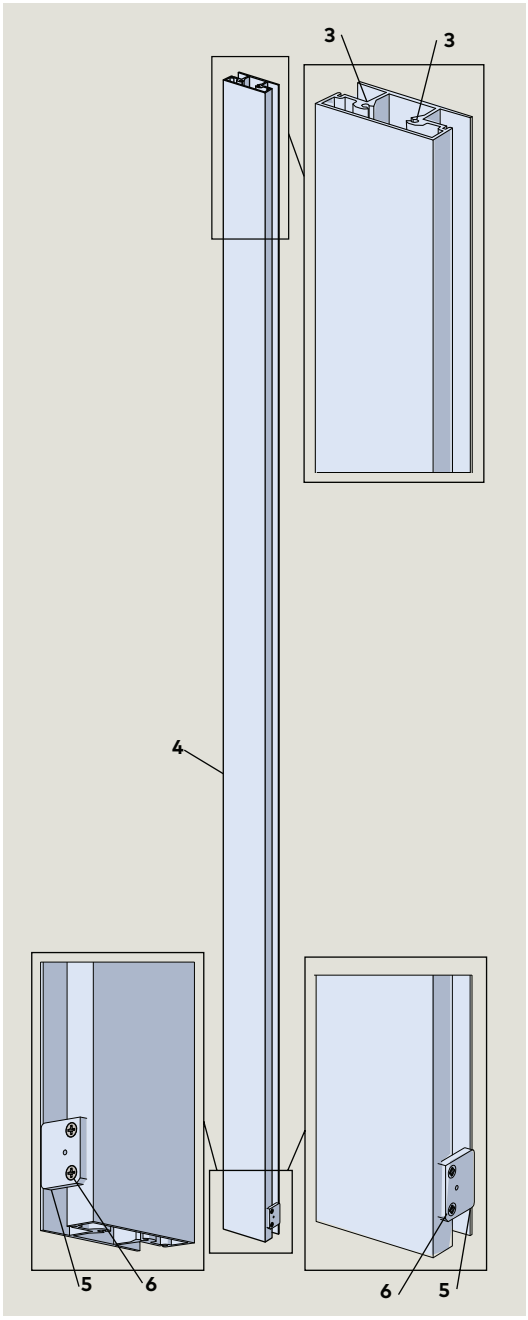


Fig. 16.3.3 Center post



16.4 Attach posts to canopy

Fig. 16.4.1 Center post canopy fasteners

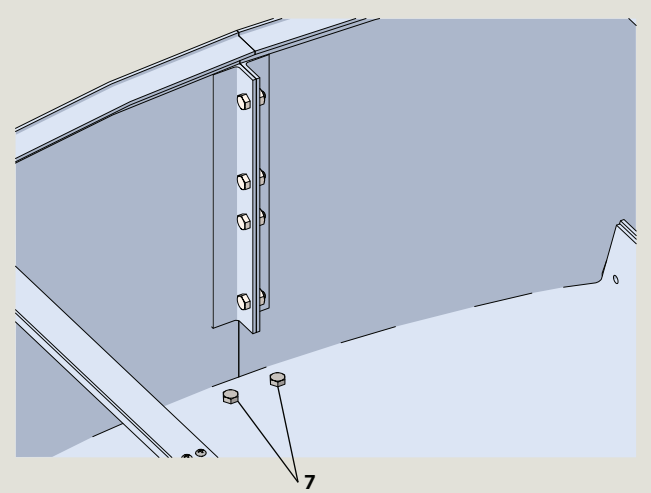


Fig. 16.4.2 Quarter post/end wall canopy fasteners

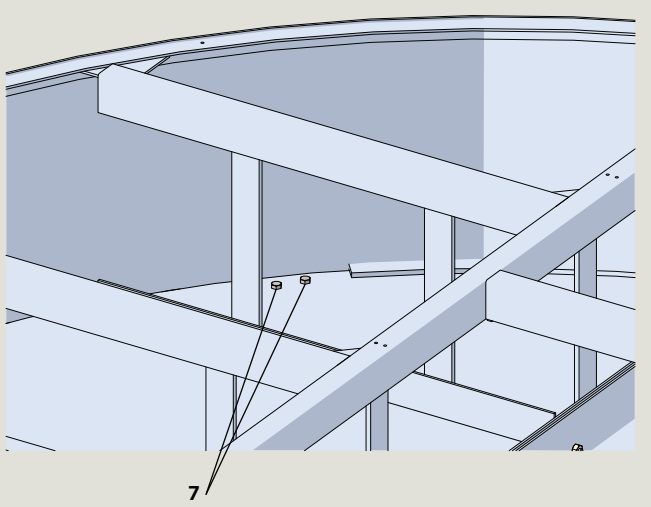


Fig. 16.4.3 1/4 -20 x 1" hex head cap screw

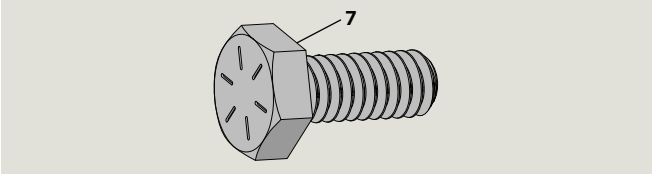


Table 16.4.1 Quarter post/end wall and center post

Part / Assembly		Description
1	RE60XX-0X0	Quarter post/end wall
1.1	RF6055-01G	Fig. 16.4.1 – Quarter post fasteners
4	RE6006-0X0	Center post
4.1	RF6055-01G	Fig. 16.4.2 –Center post fasteners
5	RE6021-010	Rail to post attachment block
7	RF6055-02G	1/4-20 x 1" Hex head cap screw

16.4.1 Fasten posts to canopy.

WARNING

Use caution while working with the posts in the canopy area!

1. Fasten posts to canopy using 1/4-20 x 1" hex head cap screws (Fig. 16.4.3) through soffit holes into posts.

CAUTION

Match post number to number in canopy.
Refer to Para. 16.5 for post numbering locations.

TIPS AND RECOMMENDATIONS

Use 7/16" socket or box end wrench for tightening of 1/4-20 x 1" hex head screws.

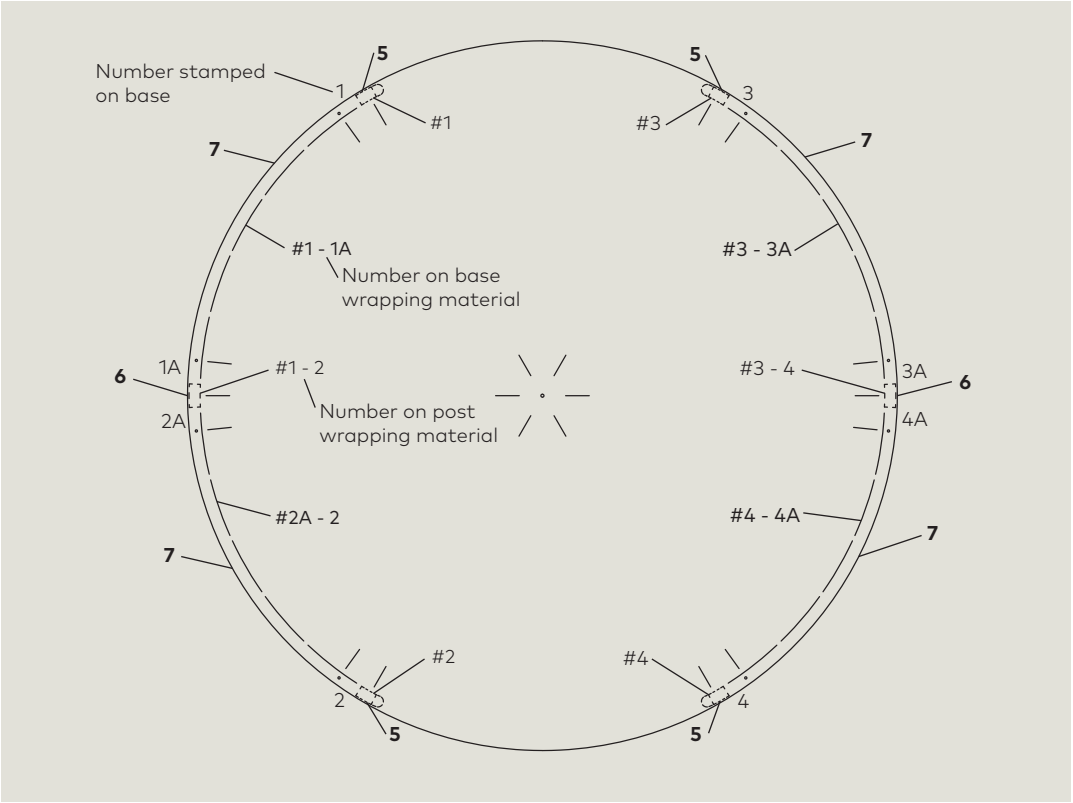
TIPS AND RECOMMENDATIONS

Hex head screws packaged in center shaft shipping crate
(See Chapter 11).

16.5 Enclosure base and post numbering examples

5 Quarter post/end wall with neoprene shell
6 Center post
7 Base assembly

Fig. 16.5.1 9' OD enclosure base and post installation numbering example



17 Enclosure base installation

17.1 Enclosure base

NOTICE

Refer to Crane shop drawings for specific base installation detail for job!

NOTICE

Stainless steel base installation.
Refer to Crane shop drawings for stainless steel base installation detail.

17.2 Open base enclosure shipping crate

Fig. 17.2.1 Base crate

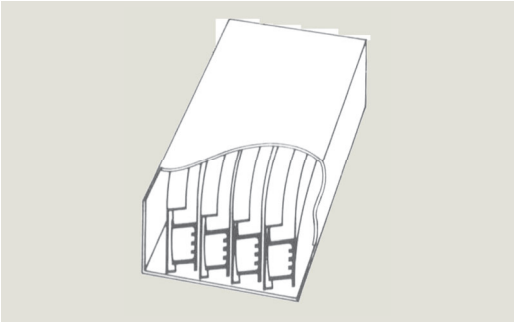
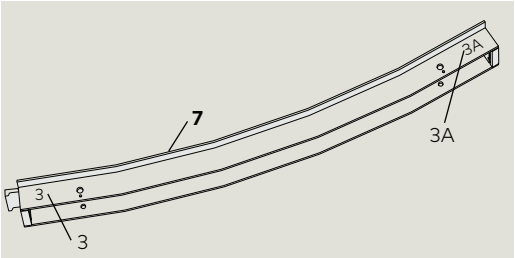


Fig. 17.2.2 Base shipping crate

Fig. 17.2.3 Enclosure base numbering

7 Enclosure base assembly with location numbers



17.2.1 Unpack enclosure base assemblies from shipping crate.

1. Uncrate enclosure base assemblies from their shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

2. Enclosure base numbering:
- Enclosure base wrapping material is marked with two numbers indicating where the base is to be located in the door installation (Fig. 17.2.2).
- The numbers are stamped on the base (Fig. 17.2.3).
- Insure base numbers match those on wrapping material.

17.3 Base assembly installation

Table 17.3.1 Quarter post/end wall and center post

Part / Assembly		Description
1	RE6016-010	Enclosure base inner
2	RE6021-010	Attachment block, post/base
3	RE6015-010	Enclosure base outer
4	RF6118-01G	10-24 x 1 1/4" Phillips oval head MS
5	RC6390-010	Cover support spacer Tube, 1/2" OD x 1/16" wall x 7/8" long, PL
6	DC2569-020	Rod, threaded, 3/8-16 x 3"
7	DF0857-00G	3/8" hex nut
8	RF6055-02G	1/4-20 x 1" SS hex head machine screw

Fig. 17.3.1 Aluminum mounting base with 3" studs installed

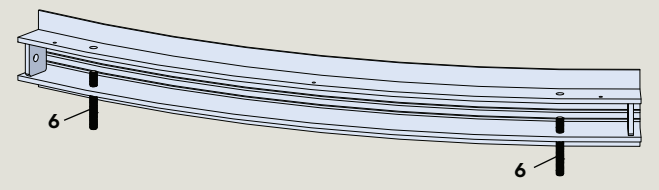


Fig. 17.3.2 PHOHMS

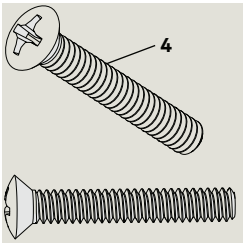


Fig. 17.3.3 Spacer

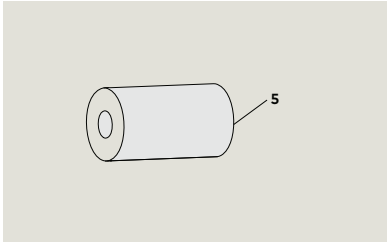


Fig. 17.3.4 HHMS

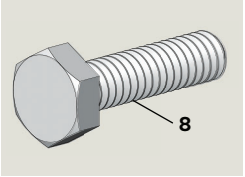


Fig. 17.3.5 3" threaded rod

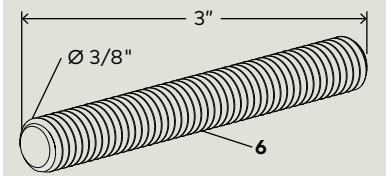
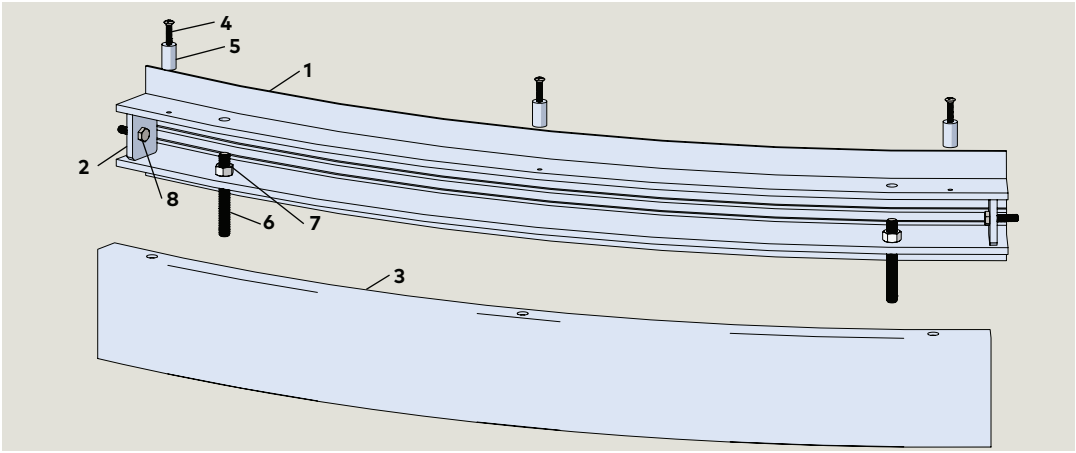


Fig. 17.3.6 Aluminum enclosure base and cover assembly example



17.3.1 Remove cover from each base enclosure assembly.

1. Remove Phillips oval head screws and spacers from each base enclosure.
2. Remove cover from each base enclosure.

TIPS AND RECOMMENDATIONS

Number cover and mounting base (matching set)

⚠ WARNING

Use caution working in door installation area.

17.3.2 Prepare stud anchor holes.

- Stud anchor holes drilled in Para. 11.3.

1. Use vacuum or blower to remove any dust or debris.

17.3.3 Thread two 3" threaded rods into each base assembly.

1. Thread two 3" threaded rods into the mounting holes of each base (Fig. 17.3.1), leaving 3/4" above bottom base rail.

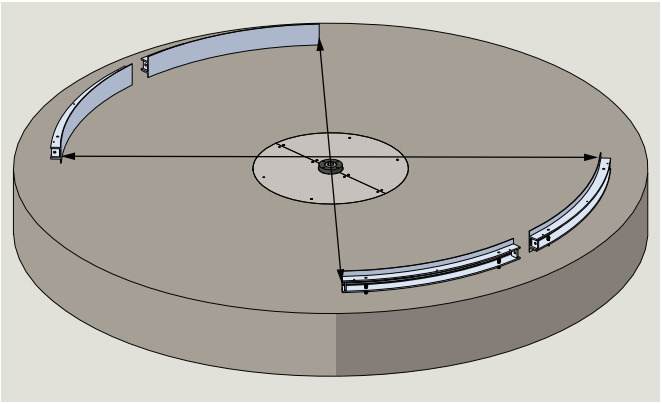
17.3.4 Dry fit each base assembly to the floor.

1. Place each base section on the floor, checking rod depths in the floor rod mounting holes.

CAUTION

Enclosure base numbers must match adjacent post numbers.

Fig. 17.3.7 Bases installed on floor



17.3.5 Verify door inside diameter.

1. Verify inside diameter at opposite quarter posts and at center posts.

17.3.6 Remove bases.

1. Remove bases from floor.

17.3.7 Partially fill anchor holes with anchoring epoxy.

1. Use an anchoring epoxy such as Quikrete high strength anchoring epoxy.

17.3.8 Reinstall base assemblies

1. Reinstall bases on floor, inserting base threaded rods into anchor holes.

17.4 Lower canopy and post assembly; fasten posts to bases

Table 17.4.1 Quarter post/end wall and center post

Part / Assembly		Description
1	RE6016-010	Enclosure base, inner
2	RE6021-010	Attachment block, post/base
6	DC2569-020	3/8" x 3"threaded rod
8	RF6055-02G	1/4-20 x 1" SS hex head machine screw
9	RE6055-0X0	Center post
10	RE60XX-0X0	Quarter post/end wall

Fig. 17.4.1 Bases attached to center post

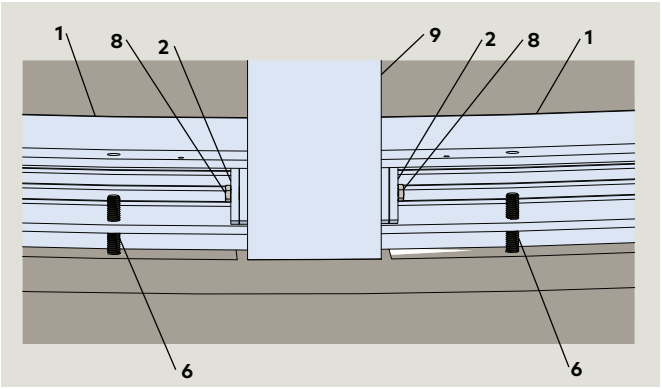
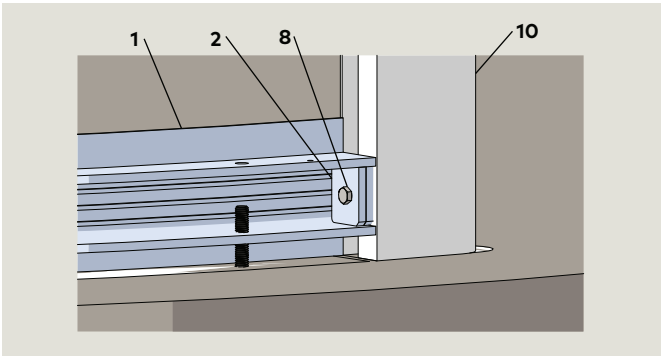


Fig. 17.4.2 Base attached to quarter post



17.4.1 Lower canopy and post assembly.

⚠ WARNING

Use caution when lowering assembly!

1. Carefully lower assembly until base mounting holes line up with mounting holes in posts.

CAUTION

Monitor post alignment with mounting bases as assembly is lowered.

17.4.2 Fasten the two center post to their adjoining base assemblies.

1. Fasten each center post to each of its adjacent bases using a 1/4 x 1" SS hex head machine screw.

- Snug, do not tighten fasteners.

17.4.3 Fasten the four quarter post to their adjoining base assemblies.

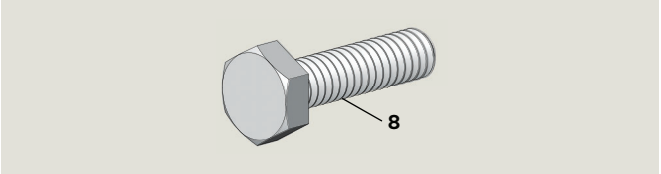
1. Fasten each quarter post to its base using a 1/4 x 1" SS hex head machine screw.

- Snug, do not tighten fasteners.

TIPS AND RECOMMENDATIONS

Use 7/16" socket or box end wrench for tightening of hex head machine screws.

Fig. 17.4.3 1/4-20 x 1" HHMS



17.5 Set enclosure level, square and plumb

Fig. 17.5.1 Checking enclosure posts for plumb and square

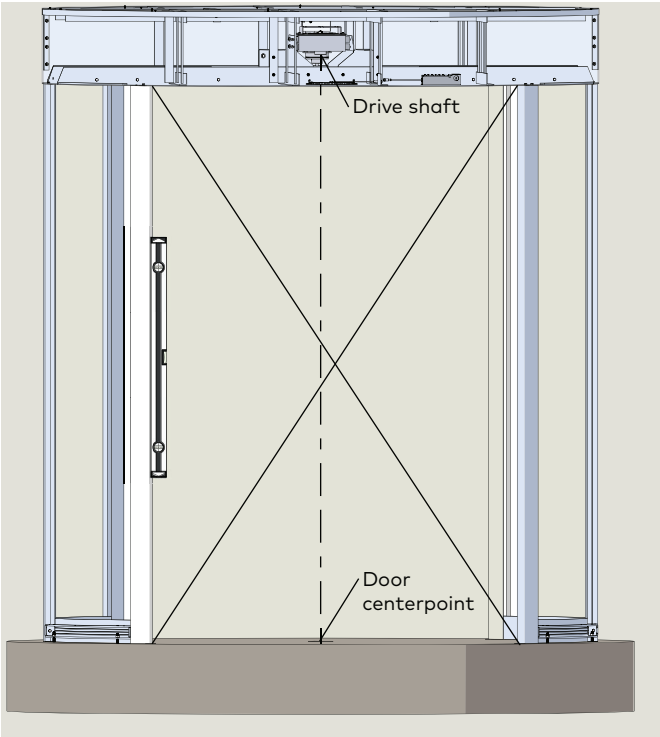


Fig. 17.5.2 Base assembly

17.5.1 Set enclosure level, square and plumb.

CAUTION

Shim each base assembly with horseshoe shims as required to obtain level, square and plumb door installation.

CAUTION

Check revolving door to building interface!

⚠ WARNING

Using plumb bob with string, verifyoverhead speed control drive shaft is plumb with door centerpoint.
Reference Chapter 13, installation template.

17.5.2 Tighten posts to base assemblies.

1. Tighten all fasteners installed in Para. 17.4.2 and 17.4.3.

18 Center shaft shipping crate

18.1 Unpack center shaft shipping crate

Fig. 18.1.1 4 wing and 3 wing center shaft assemblies

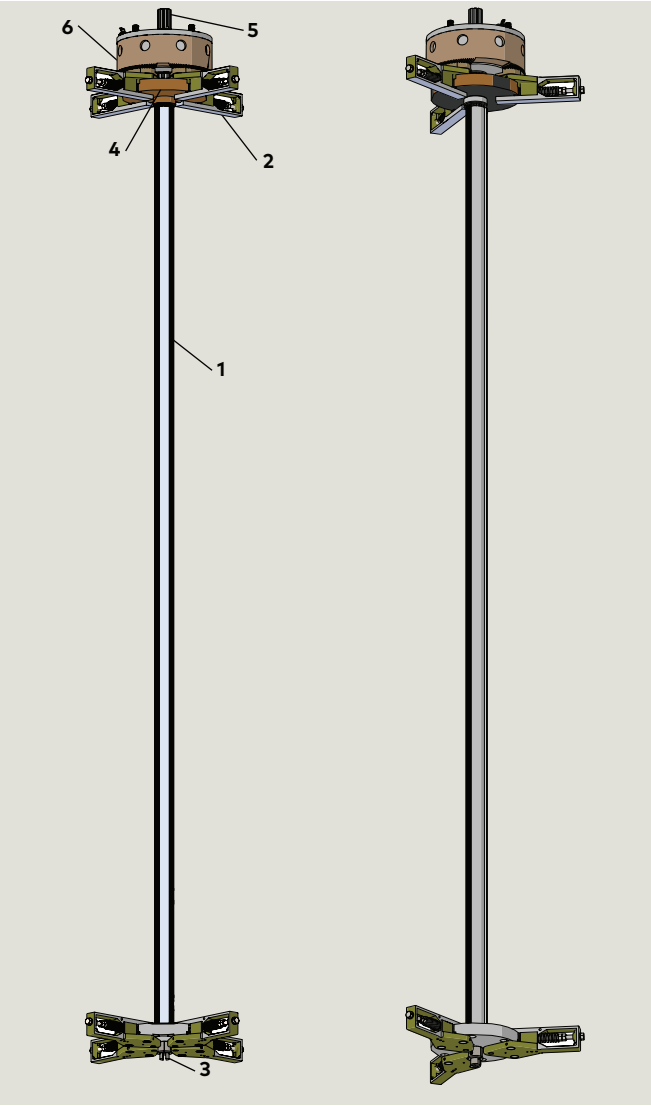


Table 18.1.1 RS6045 shaft hanger assemblies and parts

Part / Assembly		Description
1		Center shaft cover, 4 wing
2		Hanger assembly with bookfold lock
3	RS6178-010	Bottom plug
4		4 wing machine casting
5		Splined shaft
6		Bookfold lock assembly
7	RS2964	Bottom hanger assembly

18.1.1 Crane shop drawings.

NOTICE

Refer to Crane shop drawings for center shaft installation detail for job!

18.1.2 Uncrate center shaft assembly from shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure

18.1.3 Unpack center shaft assembly.

1. Uncrate 4 wing center shaft assembly.

18.1.4 Remove floor pivot assembly from its carton.

- Floor pivot assembly
- Surface mounted floor pivot assembly.

Fig. 18.1.2 Floor pivot assembly RS6076-010

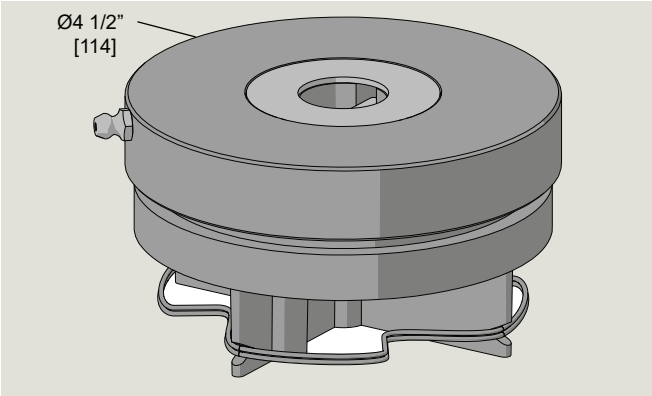
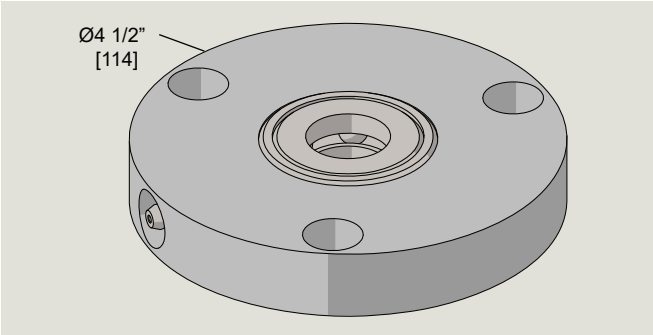


Fig. 18.1.3 Surface mounted floor pivot assembly RS3423-010



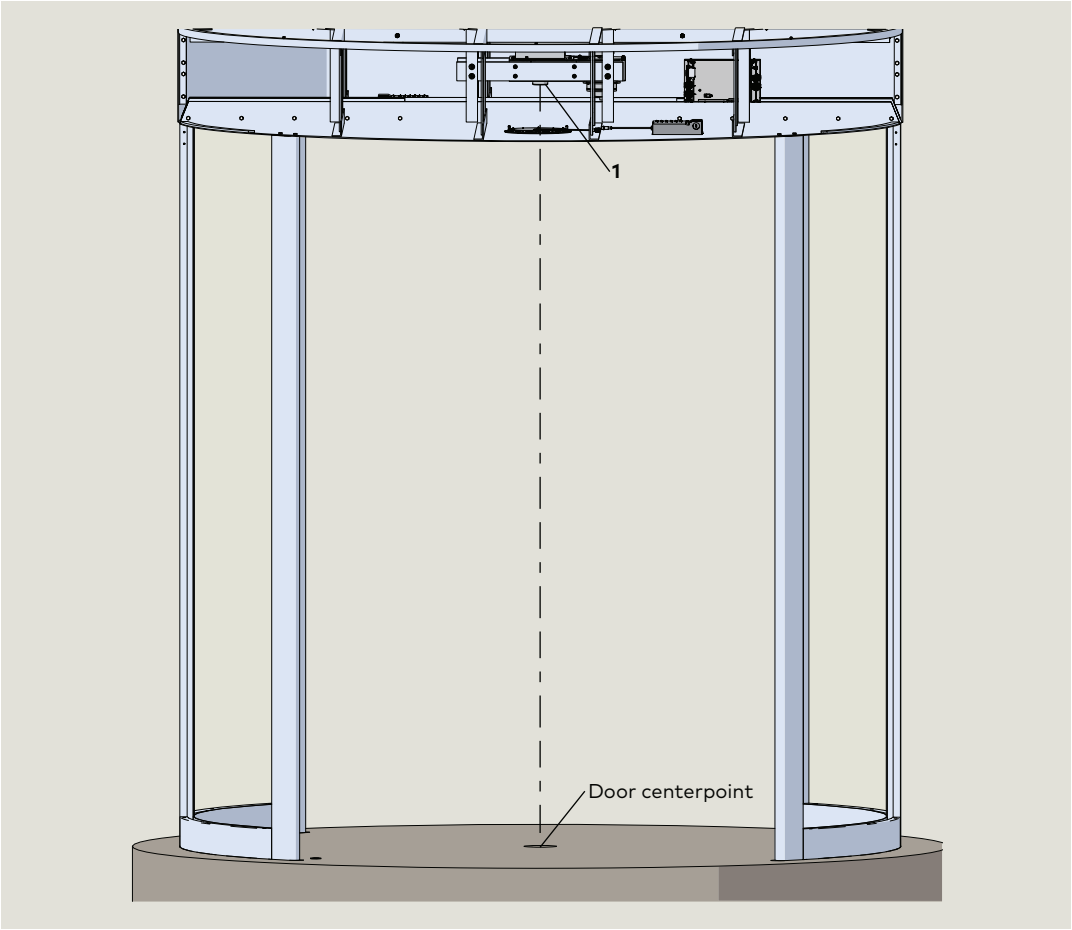
19 Install floor pivot assembly

19.1 Check canopy and door centerpoint

19.1.1 Check canopy and door centerpoint

1. Using plumb bob with string, check door centerpoint with centerpoint of overhead speed control drive shaft.

Fig. 19.1.1 Canopy speed control drive shaft centerpoint



1 Overhead speed control drive shaft

19.2 Install floor pivot assembly

Table 19.2.1 RS6045 shaft hanger assemblies and parts

Part / Assembly		Description
1	RC6235-010	Plastic pivot, top
2	RF6110-01G	Bearing, E-21 SS
3	RC6236-010	Plastic pivot, bottom
4	RF6111-01G	Grease fitting
5	RF6112-01G	Flat washer, 2" OD x .937 ID x . 1/16" thickness SS
6		1/4" OD x 1 1/4" cross pin
7		Non-shrink grout

Fig. 19.2.1 Floor pivot assembly

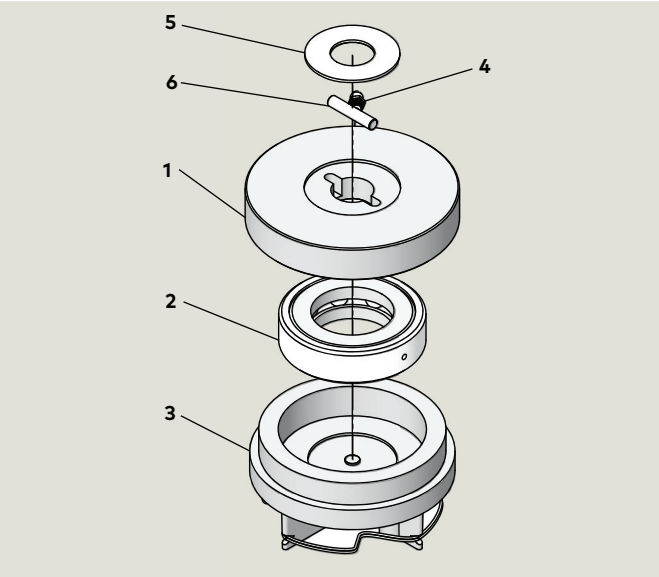
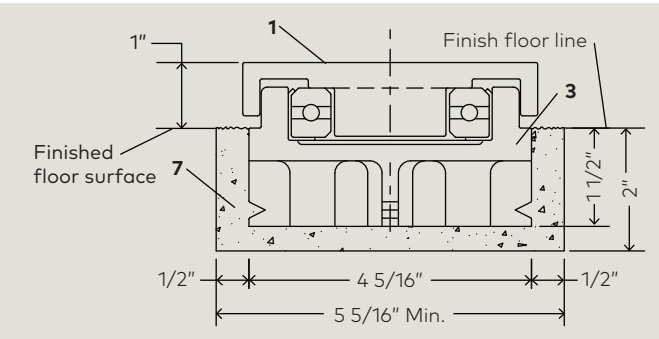


Fig. 19.2.2 Floor pivot assembly installed in floor



19.2.1 Crane shop drawings.

NOTICE

Refer to Crane shop drawings for specific floor pivot installation and center shaft installation detail for job!

19.2.2 Install floor pivot assembly.

1. Mark floor cutout for floor pivot assembly at door centerpoint.

NOTICE

Contractor note: provide minimum Ø5 5/16" x 2" deep cutout to accept floor pivot bearing.

2. Position pivot assembly in floor cutout:

- Using plumb bob with string, center floor pivot assembly under canopy overhead manual speed control drive shaft centerpoint.
- Shim under plastic pivot bottom to obtain 1" height of floor pivot bearing above finished floor surface.

TIPS AND RECOMMENDATIONS

Refer to Crane shop drawing for floor pivot assembly to canopy soffit height.

NOTICE

Floor pivot assembly must be level and at speed control drive shaft centerpoint..

3. Fill floor pivot assembly cutout to finish floor level with non-shrink grout (Fig. 19.2.2).

19.2.3 Grease floor pivot.

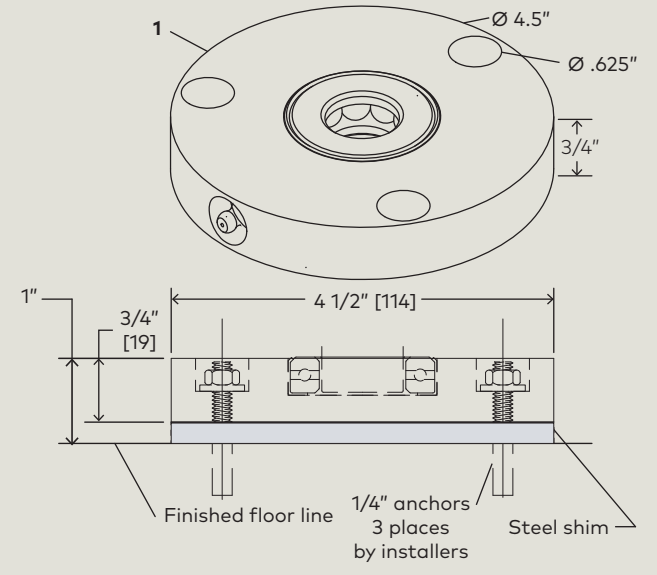
1. Grease floor pivot using grease gun with multipurpose grease.

CAUTION

Use non-shrink grout. Follow manufacturer's directions.

19.3 Install surface mounted floor bearing assembly

Fig. 19.3.1 Floor surface-mounted bottom pivot assembly



19.3.1 Install floor surface-mounted pivot assembly.

NOTICE

Refer to Crane shop drawings for specific floor pivot detail for job!

1. Position pivot assembly at door centerpoint.
2. Mark 3 holes for 1/4" floor anchors (Fig. 20.1.5).
   - Using plumb bob with string, check that pivot assembly is at speed control drive shaft centerpoint.
3. Drill 3 holes for 1/4" floor anchors.
4. Install anchors.
5. Install 3 fasteners through bottom pivot assembly mounting holes and into floor anchors.

NOTICE

Floor pivot assembly must be level and at speed control drive shaft centerpoint..

- Install 1/4" steel shim to obtain bottom pivot height of 1" above finished floor.
- Shim to make bottom pivot surface flat and level, and 1" above finished floor surface.

19.3.2 Grease floor pivot.

1. Grease floor pivot using grease gun with multipurpose grease.

20 Install center shaft

20.1 Retract center shaft bottom plug

Table 20.1.1 Center shaft assembly bottom plug

Part / Assembly		Description
1	RC6178=010	Bottom plug
2	RD6001-001	Nameplate/job number tag
3	RF6008-01G	6-32 x 1/2" Phillips PHMS
4		Collar, half, 1 inch
5		8-32 Phillips FHMS
6	RC6171-010	7/16 x 1 7/16" cross pin

Fig. 20.1.1 Nameplate, job number tag

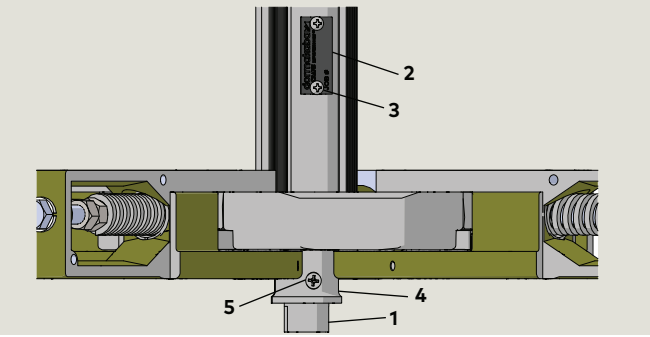


Fig. 20.1.2 Nameplate, half collars removed

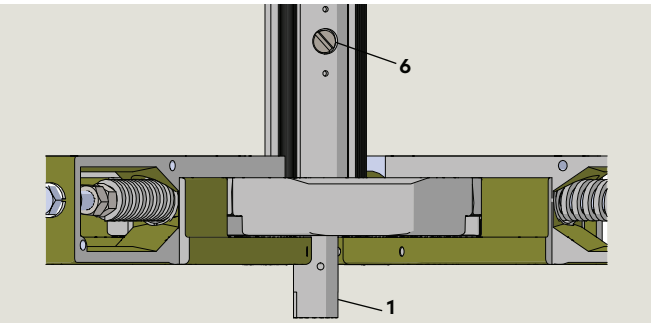
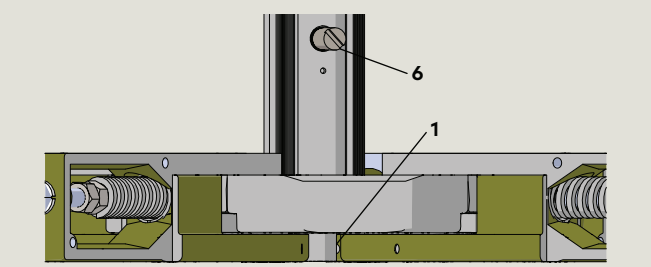


Fig. 20.1.3 Bottom plug retracted



WARNING

Use caution when lifting and positioning center shaft assembly!

WARNING

Risk of injury from heavy loads!
Improper lifting and transport operations may cause accidents with serious injuries and material damage.

- A minimum of two persons are always required to lift or move the center shaft assembly.

20.1.1 Remove collars from bottom plug.

1. Remove two 8-32 FHMS and two half collars from bottom plug,

20.1.2 Remove nameplate.

1. Remove two 6-32 x 1/2" Phillips machine screws securing nameplate/job number tag.
2. Remove tag and set aside screws and tag.

CAUTION

Nameplate/job number tag must be retained and reinstalled after installation of center shaft. Refer to Para. 20.3.

20.1.3 Retract bottom plug.

1. Loosen cross pin.
2. Move bottom plug until surface flush with hangers (Fig. 20.1.3).
3. Snug cross pin against bottom plug.

20.2 Install center shaft splined shaft into OHSC drive shaft

Table 20.2.1 Top spline shaft and bookfold lock

Part / Assembly	Description
1	Splined shaft
2	Overhead speed control drive shaft
3	Slip ring wires
4	Orange and brown slip ring wires
5	Hole in splined shaft for slip ring wires

Fig. 20.2.2 Center shaft positioned under overhead speed control drive shaft

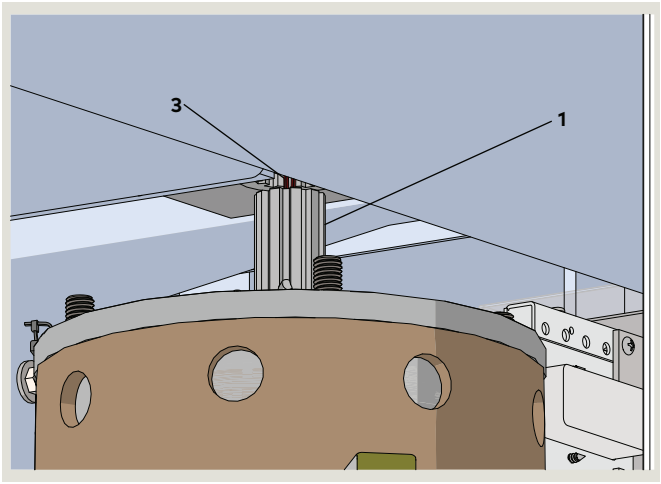
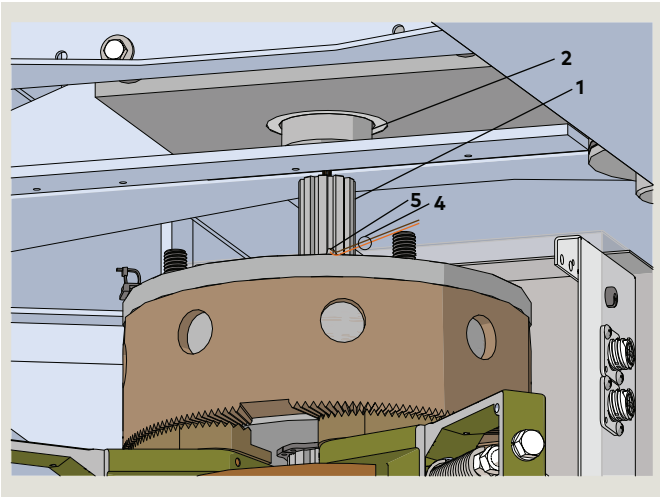


Fig. 20.2.3 Slip ring wires routed through splined shaft



NOTICE

Retract center shaft bottom plug.
Center shaft bottom plug must be retracted (Para. 20.1).

20.2.1 Remove canopy center soffits.

1. Remove the eight 0.19 -24 x 3/4" FHMS securing the canopy center soffits to the canopy.
2. Remove the canopy center soffits (Fig. 20.2.1)

20.2.2 Place cardboard or similar material over pivot bearing surface.

1. Place cardboard over pivot bearing and tape to floor.
- This will protect pivot bearing surface during center shaft installation.

20.2.3 Raise center shaft assembly under overhead speed control drive shaft.

WARNING

Use caution when lifting and positioning center shaft assembly!

WARNING

Risk of injury from heavy loads!
The center shaft is lifted and moved during assembly. Improper lifting and transport operations may cause accidents with serious injuries and material damage.
- A minimum of two persons are always required to lift or move the center shaft assembly.

1. Move center shaft assembly under canopy and position assembly vertically under overhead speed control drive shaft. Reference Para. 20.2.5 for slip ring wires.

CAUTION

Use caution that splined shaft does not contact canopy soffits!

20.2.4 Route slip ring wires through splined shaft.

1. Route slip ring orange and brown wires through hole in top of splined shaft. Wires exit in a hole at the side of the splined shaft (Fig. 20.2.3, 20.2.5).

20.2.5 Align center shaft splined shaft key with overhead speed control splined shaft.

1. Rotate center shaft to align center shaft splined shaft with OHSC splined shaft (Fig. 20.2.3).

Fig. 20.2.4 Center shaft splined shaft inserted in overhead speed control drive shaft

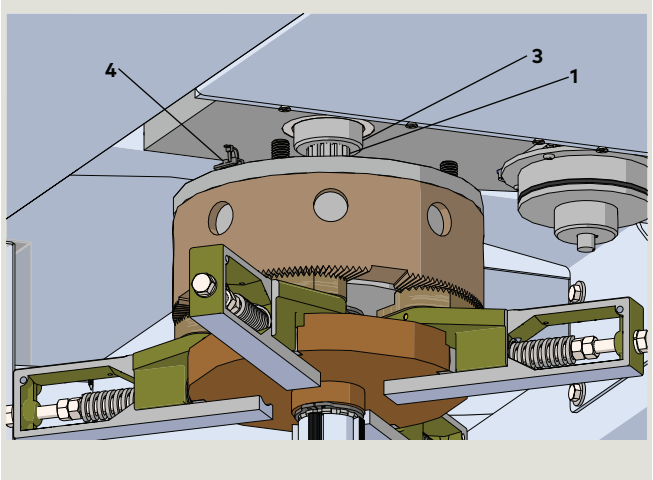


Fig. 20.2.5 Slip ring and bookfold lock coil wiring

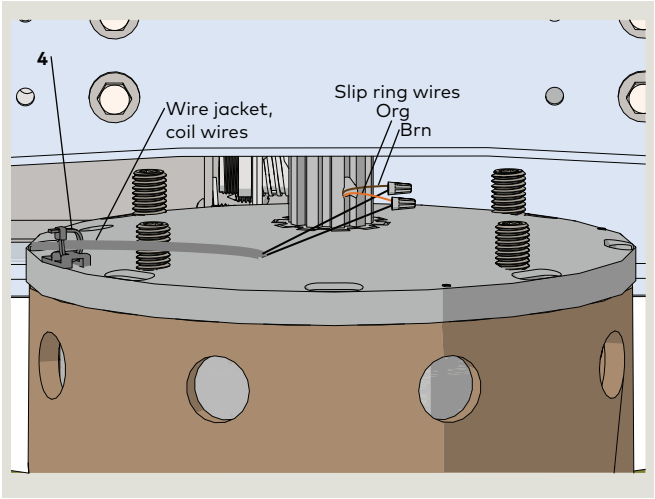


Fig. 20.2.6 Slip ring assembly, splined shaft wires

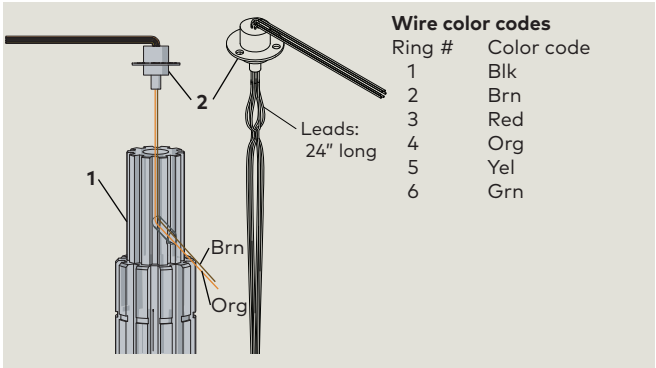


Table 20.2.2 Bookfold lock and slip ring wires

Part / Assembly		Description
1		Splined shaft
2	RX3373-010	Slip ring assembly
3		Speed control drive shaft
4		Cable tie mount assembly, bookfold lock

20.2.6 Move center shaft splined shaft into overhead speed control splined shaft

1. Raise center shaft assembly splined shaft into overhead speed control drive shaft (Fig. 20.2.4).
2. Pull slip ring orange and brown wires through hole in center shaft.

20.2.7 Connect wires from slip ring to bookfold coil wires.

1. Using wire nuts, connect the orange slip ring wire to one of the bookfold liock coil wires, and the brown slip ring wire to the other coil wire.

20.3 Install bottom plug into floor bearing

Fig. 20.3.1 Bottom plug retracted

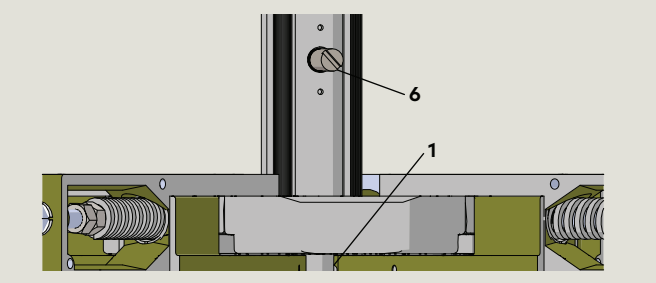


Fig. 20.3.2 Bottom plug inserted into floor bearing

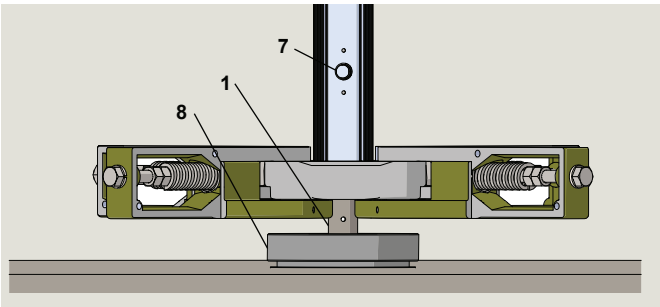


Fig. 20.3.3 Cross pin installed

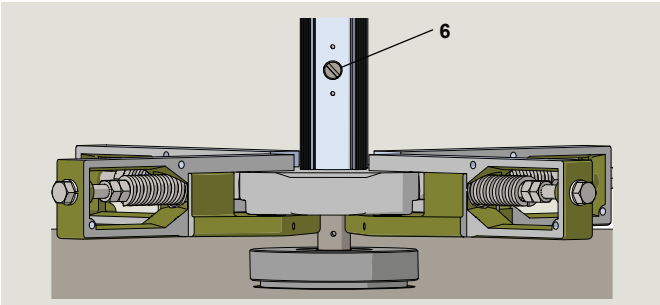


Fig. 20.3.4 Nameplate/job number tag installed

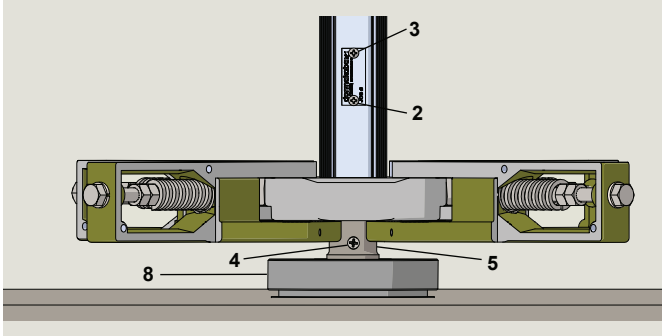


Table 20.3.1 Center shaft assembly bottom plug

Part / Assembly		Description
1	RC6178=010	Bottom plug
3	RF6008-01G	6-32 x 1/2" Phillips pan head screw
4		Collar, half, 1 inch
6	RC6171-010	Cross pin
7		Bottom plug and center shaft holes for cross pin
8		Floor pivot bearing

20.3.1 Remove cardboard from surface of pivot bearing.

1. Remove cardboard from bearing surface.

20.3.2 Lower bottom plug into floor pivot bearing.

TIPS AND RECOMMENDATIONS

Break out one or two hangers to gain better access to bottom plug and collar installation.

1. Remove bottom plug cross pin (Fig. 20.3.1).
2. Lower bottom plug into floor bearing until hole in bottom plug lines up with hole in center shaft (Fig. 20.3.2).

- If using in-ground floor pivot bearing, rotate center shaft until slot in bottom plug is aligned with cross pin in floor bearing.

3. Thread cross pin into bottom plug and tighten.

20.3.3 Install nameplate/job number tag.

1. Install nameplate/job number tag using two 6-32 x 1/2"SS Phillips pan head screws (Fig. 20.3.4).

20.3.4 Install collars.

1. Install two half collars onto bottom plug.
2. Fasten using two 8-32 x 1/2" Phillips flat head screws (Fig. 20.3.4).

21 Set initial hanger breakout tension

21.1 Set hanger initial hanger breakout tension

Fig. 21.1.1 Center shaft installed

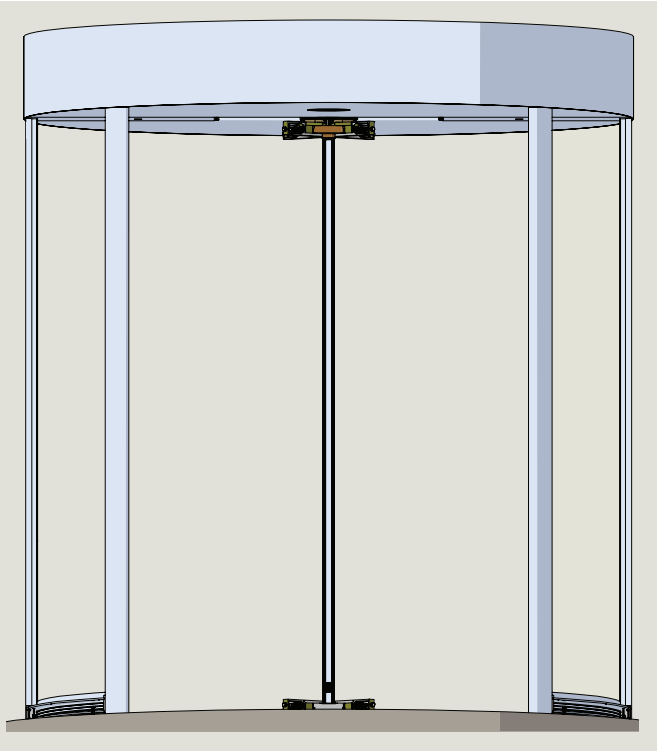


Fig. 21.1.2 Breakout tension adjustment

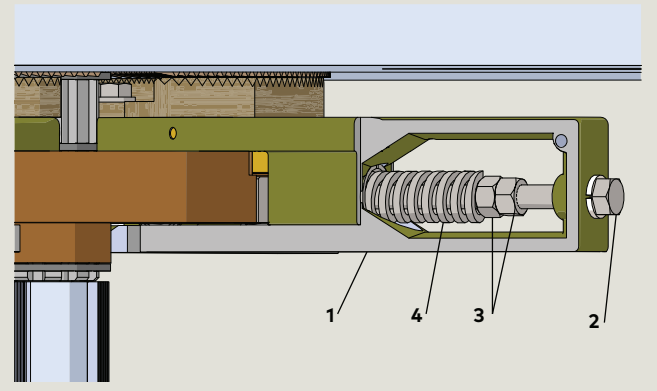


Table 21.1.1 Hanger assembly and parts

Part / Assembly		Description
1	RC6369-0X0	Hanger body
2	RC6156-01C	Hex bolt, 3/8-16 x 4"
3	DF0587-00G	Hex nut, 3/8 -16
4	RC6154-010	Spring

21.1.1 Breakout tension.

CAUTION

Breakout tension is not preset. Breakout tension:

- Must be checked by installers once wings are installed.
- Must be set to meet building conditions to conform to ANSI/BHMA A156.27 breakout force requirements.

Reference: Chapter 26.

21.1.2 Initial breakout hanger tension.

1. Loosen the two hex nuts (3) away from spring.
2. Turn hex nut next to spring so that it is finger tight against spring.
3. Using open end 9/16" box wrench, turn hex nut next to spring four turns CW to tension spring.
4. Turn other hex nut until it is against hex nut next to spring.
5. Use 9/16" wrenches to lock hex nuts in place.

NOTICE

Reference Chapter 26 for breakout force check after wings are installed.
Further adjustment of spring tension on all hangers may be required to achieve required wing breakout force.

21.1.3 Remaining hangers.

1. Repeat hanger tension adjustment for remaining seven hangers.

22 Reserved

23 Wing installation

23.1 Wing assemblies

NOTICE

Refer to Crane shop drawings for specific wing assembly detail for job!

23.2 Unpack wing shipping crate

Fig. 23.2.1 Wing shipping crate

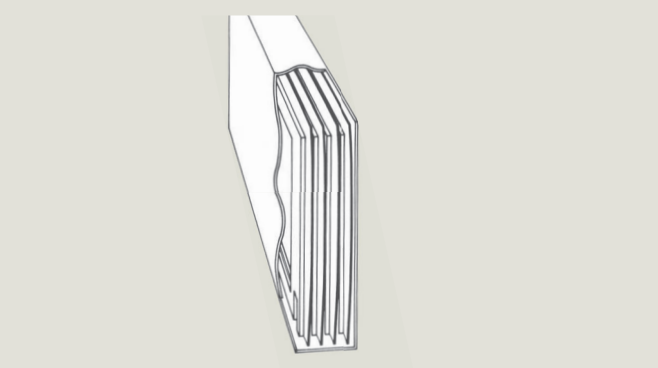
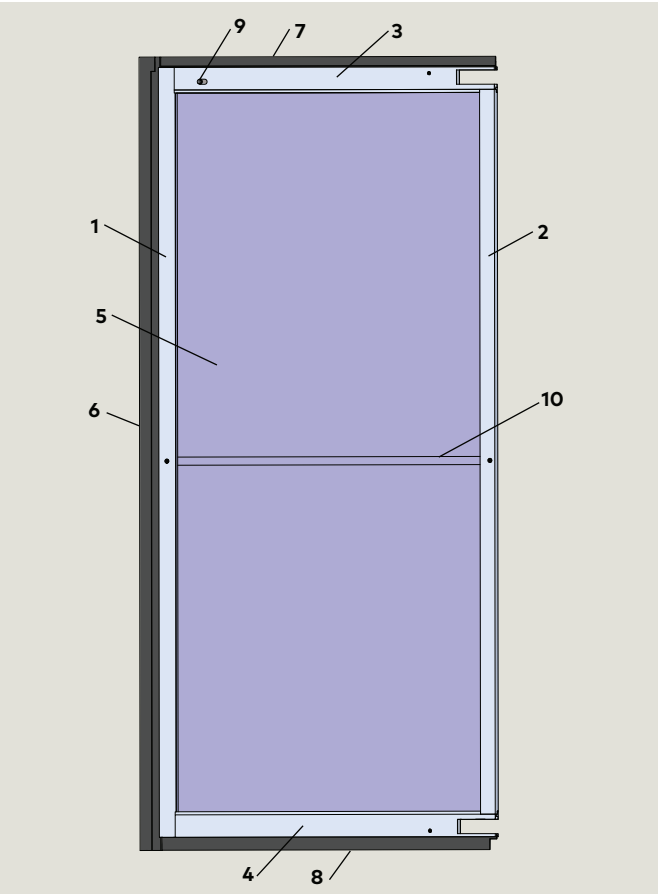


Fig. 23.2.2 Wing assembly example



23.2.1 Unpacking shipping crate.

1. Uncrate wing assemblies from shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

CAUTION

Use caution when handling wing assemblies to prevent scratching or damage to wing or glass surfaces.

WARNING

Use caution while working with wing assemblies!

WARNING

Risk of injury due to improper handling of wing assemblies!

- A minimum of 2 people are required to lift and transport wing assemblies!

Table 23.2.1 Door wing assemblies and part examples

Part / Assembly		Description
1	RE6022-0X0	Front stile, AL
2	RE6031-0X0	Center stile, AL
3	RE6024-0X0	Rail end, Herc
4	RE6024-0X0	Rail end, Herc
5		Wing glass
6	RC6389	Sweep felt vertical
7		Sweep felt top
8		Sweep felt bottom
9	RF2961	Wing bumper assembly
10		Wing push bars ordered job specific for each order

23.3 Install wing locks on two interior door wings

Fig. 23.3.1 Wing lock and mounting hardware

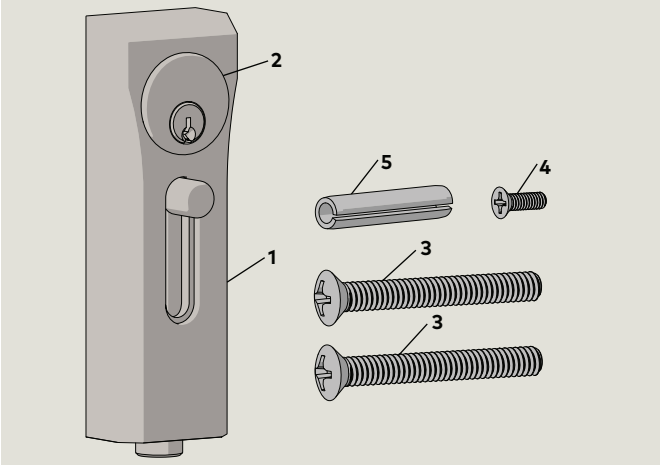


Fig. 23.3.2 Wing lock mounting holes

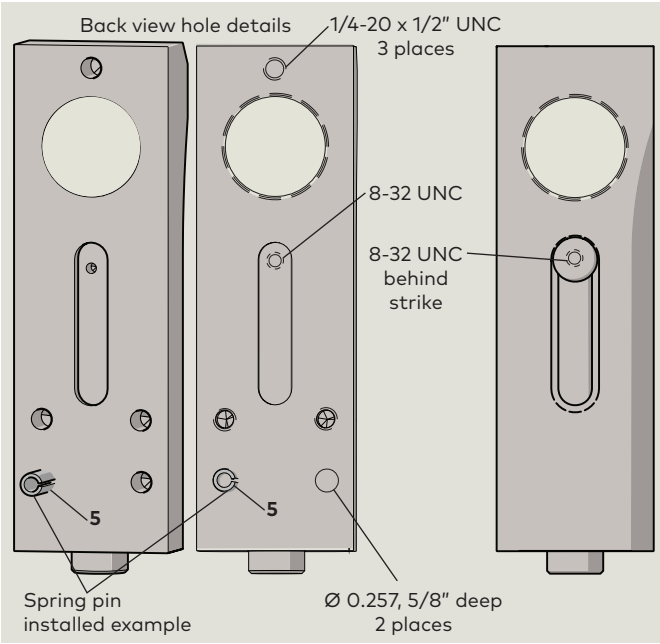


Fig. 23.3.3 Wing lock installed

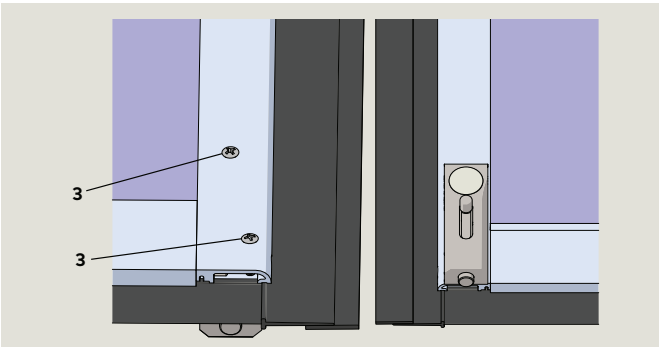


Table 23.3.1 Wing lock hardware

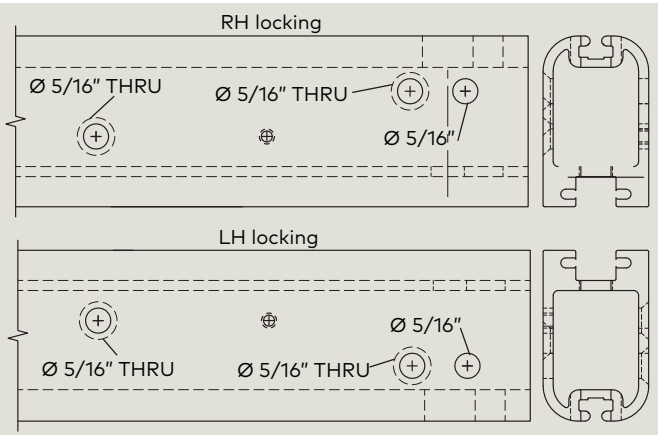
Part / Assembly		Description
1	RC6259-0X0	Lock body
2		Lock cylinder (by others)
3	RF6120-01G	1/4-20 x 2" 18-8 oval head screw
4	RF6054-01G	8-32 x 1/2" 18-8 flat head screw
5	RF6053-01G	1/4 x 1 1/4" spring pin

23.3.1 Install wing locks.

NOTICE

Install bottom 1/4-20 x 2" OHS and 1/4 x 1 1/4" spring pin based on installation into RH or LH lock stile.

Fig. 23.3.4 Wing RH and LH lock stiles



1. Using pin insertion tool, install spring pin into wing lock bottom .257 x 5/8" hole.
2. Install wing lock on lock stile, pressing spring pin into 5/16" hole in lock stile.
3. Slide strike down to access 8-32 tapped hole in wing lock.
4. Thread 8-32 x 1/2" flat head screw into wing lock and tighten into lock stile.
5. Slide two 1/4-20 x 2" oval head screws into back of lock stile, thread into wing lock 1/4-20 x 1/2" mounting holes and tighten.

23.3.2 Lock cylinder (by others).

NOTICE

Crane shop drawings.
Reference Crane shop drawings for lock cylinder requirements for job!

23.4 Install wings onto center shaft hangers

Table 23.4.1 Wing mounting hardware

Part / Assembly		Description
1		Wing hanger mounting hole, both sides
2		Hanger mounting hole, both sides
3	RF6119-01G	1/4-20 x 1/2" truss head machine screw
4	RC6259-0XX	Body, wing lock

Fig. 23.4.1 First wing installation

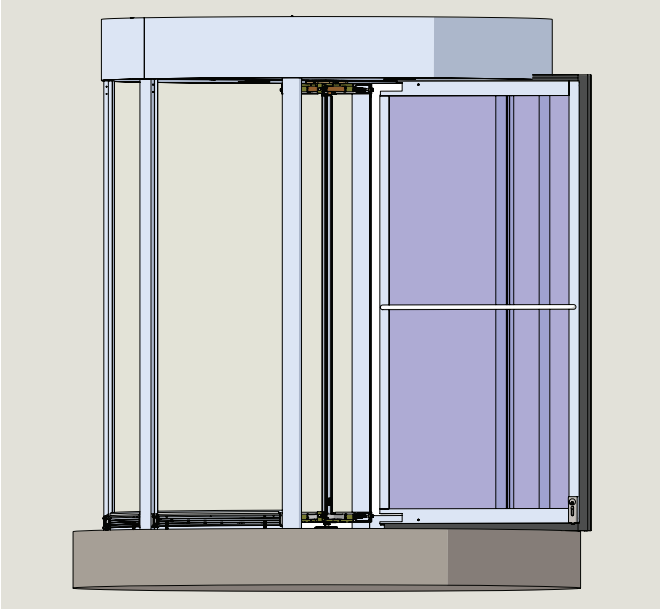


Fig. 23.4.2 Wing and hanger mounting holes

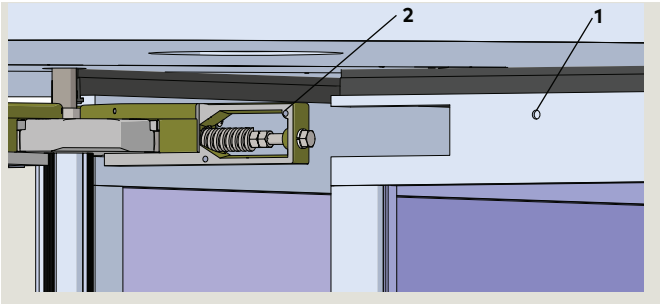


Fig. 23.4.3 Wing installation on hanger

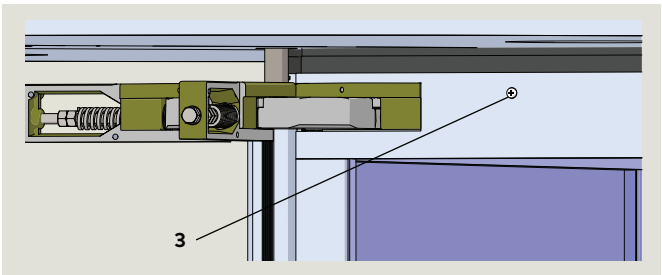
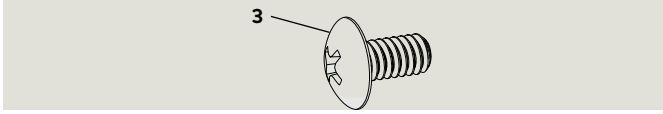


Fig. 23.4.4 Truss head machine screw



23.4.1 Install first wing on center shaft hangers.

- Wings with locks installed on interior side of door.

CAUTION

Use caution when handling wing assemblies to prevent scratching or damage to wing or glass surfaces.

WARNING

Use caution installing wing assemblies!

WARNING

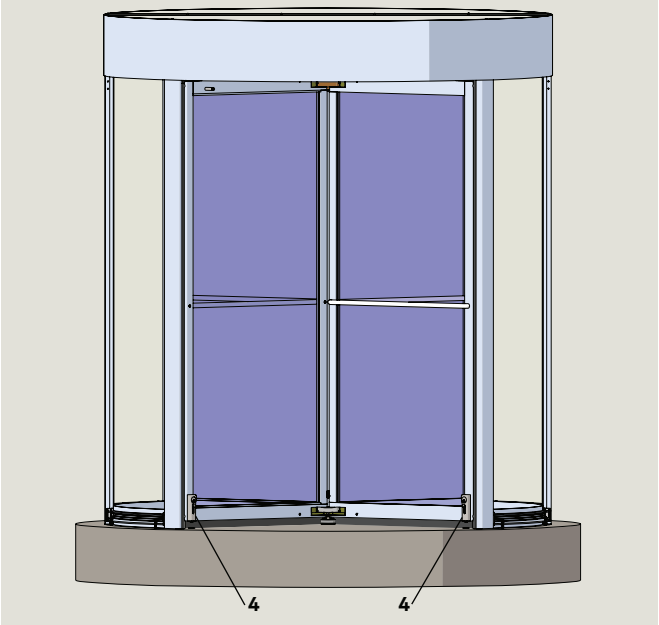
Risk of injury due to improper handling of wing assemblies!
A minimum of two people are required to lift and transport wing assemblies.

1. Slide wing over top and bottom hangers.
2. Secure wing to top hanger with two truss head machine screws.
3. Secure wing to bottom hanger with two truss head machine screws.

23.4.2 Install remaining wings on center shaft hangers.

1. Install remaining wings.

Fig. 23.4.5 4 wing door – wings installed on hangers



24 Install floor strikes

24.1 Install floor strikes

Fig. 24.1.1 Floor strike RC6265-0X0

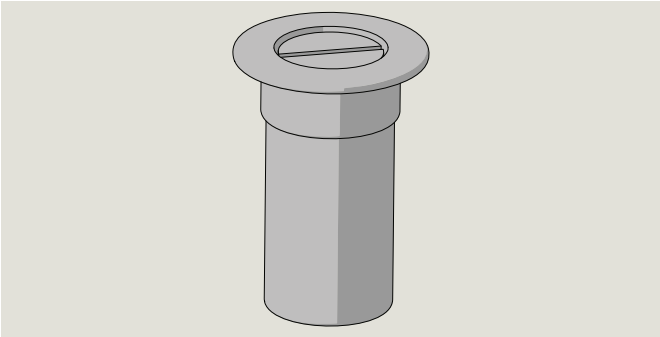


Fig. 24.1.2 Wing lock in home position

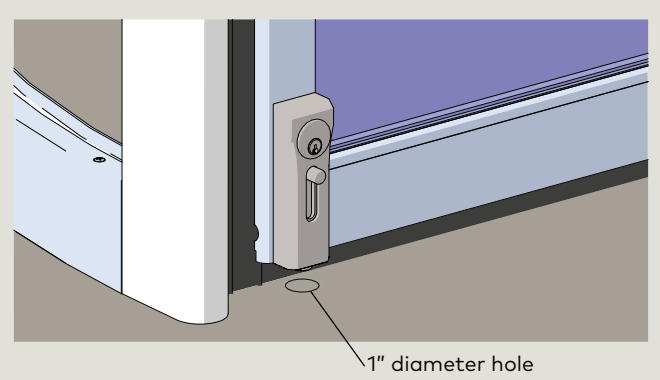
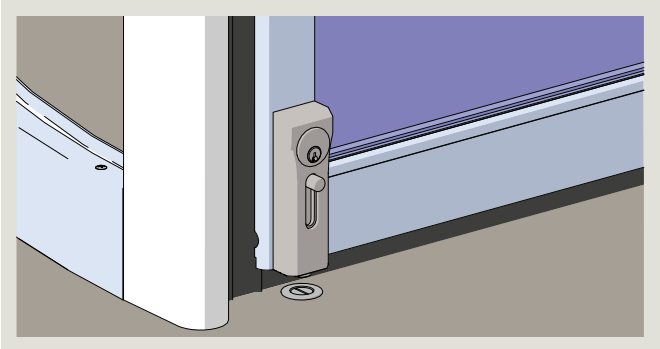


Fig. 24.1.3 Floor strike installed



24.1.1 Home position.

1. Rotate wings to home position.

24.1.2 Mark floor strike hole locations.

1. Move wing lock handle down until wing lock pin contacts floor surface.
2. Mark circumference of pin on floor.

- Wing lock pin diameter: 5/8"

3. Raise wing lock handle.
4. Mark centerpoint of wing lock pin on floor.
5. Repeat steps 1 through 4 for second wing lock.

24.1.3 Drill floor strike holes in floor.

1. For concrete floors, drill 1 inch diameter hole in floor to a depth of 2".

- Use hammer drill with masonry bit.

CAUTION

Drill must be perpendicular to floor.

2. Repeat step 1 for second floor strike.

24.1.4 Clean any dirt and debris from floor strike holes.

CAUTION

Insure floor strike holes are clear of dirt and debris.

1. Use a vacuum or blower to remove any debris inside each hole.
2. Check each hole; use a brush to dislodge any remaining debris.
3. Use vacuum or blower to remove any remaining debris.

24.1.5 Install floor strikes.

1. Fill hole with grout.

- Use a grout such as QUIKRETE® FastSet™ non-shrink grout.

2. Place floor strike in hole.
3. Tap floor strike into place using wood block or other material to prevent surface damage to strike.
4. Clean excess grout from floor area around strike.

CAUTION

Note manufacturer's cure time for grout before walking on strikes or using wing locks.

5. Repeat steps 1 through 4 for second floor strike.

25 Install enclosure glass, enclosure base covers

25.1 Enclosure glass

NOTICE

Refer to Crane shop drawings for specific enclosure glass detail for job!

25.2 Unpack enclosure glass shipping crate

25.2.1 Unpack shipping crate.

1. Uncrate enclosure glass from shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

CAUTION

Use caution when handling glass to prevent scratching or damage to glass surfaces.

CAUTION

Handle curved glass with care. Do no exert force on the glass pieces.

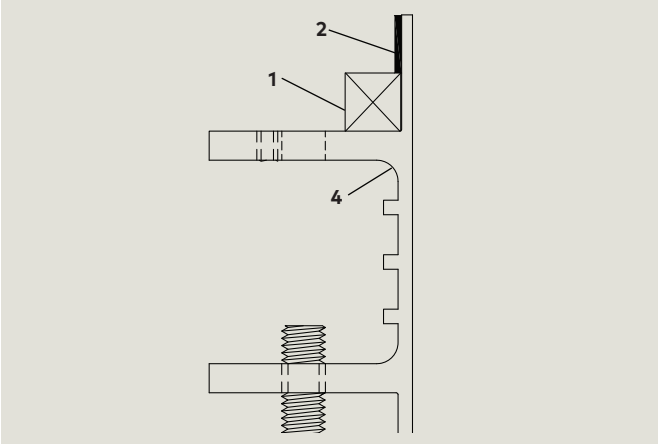
WARNING

Use caution while working with enclosure glass!

- Clean glass surfaces prior to transporting.
- Always lift and transport glass with aid of vacuum suction cup lifting tools.
- A minimum of two people are required to lift and transport glass.

25.3 Prepare enclosure posts and bases for enclosure glass

Fig. 25.3.1 Enclosure base glazing block and tape AL3000 example



1 Gazing block
2 Glazing tape
4 Enclosure base

25.3.1 Install glazing blocks in enclosure bases.

NOTICE

Refer to Crane shop drawings for specific enclosure glass and glass installation glazing details for job!

1. Install glazing block in each enclosure base.

TIPS AND RECOMMENDATIONS

Glazing block (glass thickness) and 1/8" thick glazing tape supplied by installer.

25.3.2 Install glazing tape in enclosure bases.

1. Install compressed 1/8" thick glazing tape on enclosure base wall above glazing block.

25.3.3 Install glazing tape in enclosure posts.

1. Install compressed 1/8" thick glazing tape in enclosure posts per Crane shop drawings.. Examples shown in Fig. 25.4.3.

25.4 Install enclosure glass

Fig. 25.4.1 Glass set in base enclosure

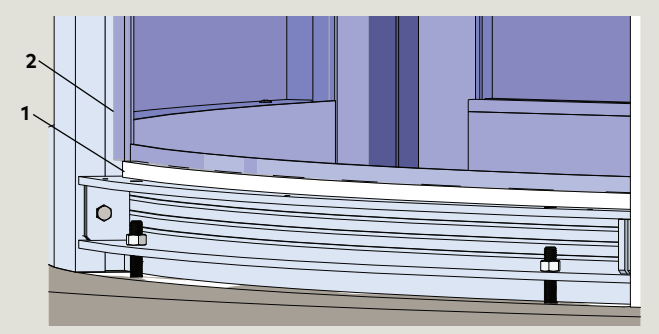


Fig. 25.4.2 Crane shop drawing, enclosure base example

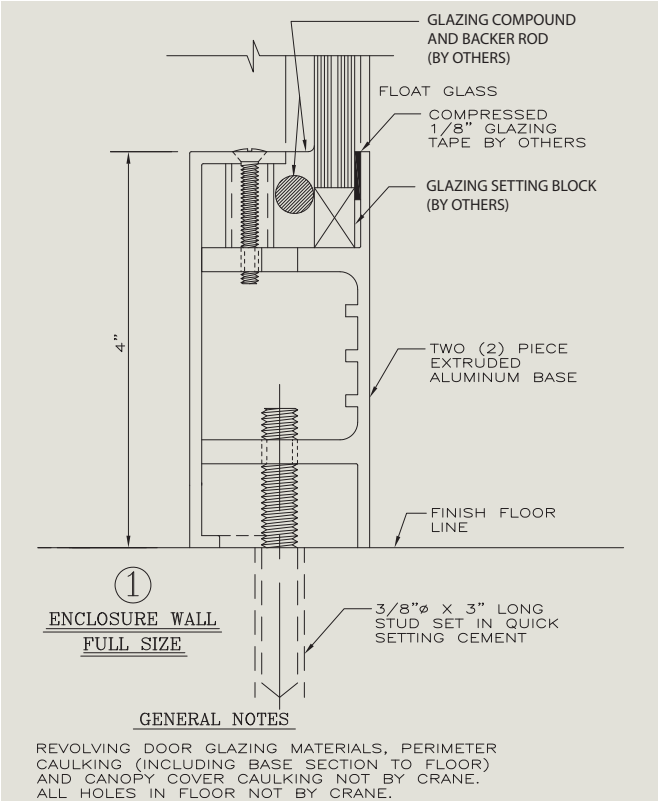


Table 25.4.1 Enclosure glass and base assembly

Part / Assembly		Description
1	RE6015-0X0	Enclosure, base outer, 3" AL
2		Enclosure glass, reference Crane shop drawings

25.4.1 Set first enclosure glass into place.

WARNING

Hand pinch point and crushing hazards!

1. Set enclosure glass into place, centering the glass between the vertical posts. Ground top edge of glass next to canopy.

25.4.2 Install backer rods in enclosure bases and posts.

1. Install backer rod into approximate position shown in Fig. 25.4.2.

25.4.3 Apply glazing compound in enclosure bases and posts.

1. Apply glazing compound as shown in Crane shop drawings. Examples shown in Crane shop drawings in Figure 25.4.2 and 25.4.3.

NOTICE

Refer to Crane shop drawings for specific enclosure glass and glass installation glazing details for job!

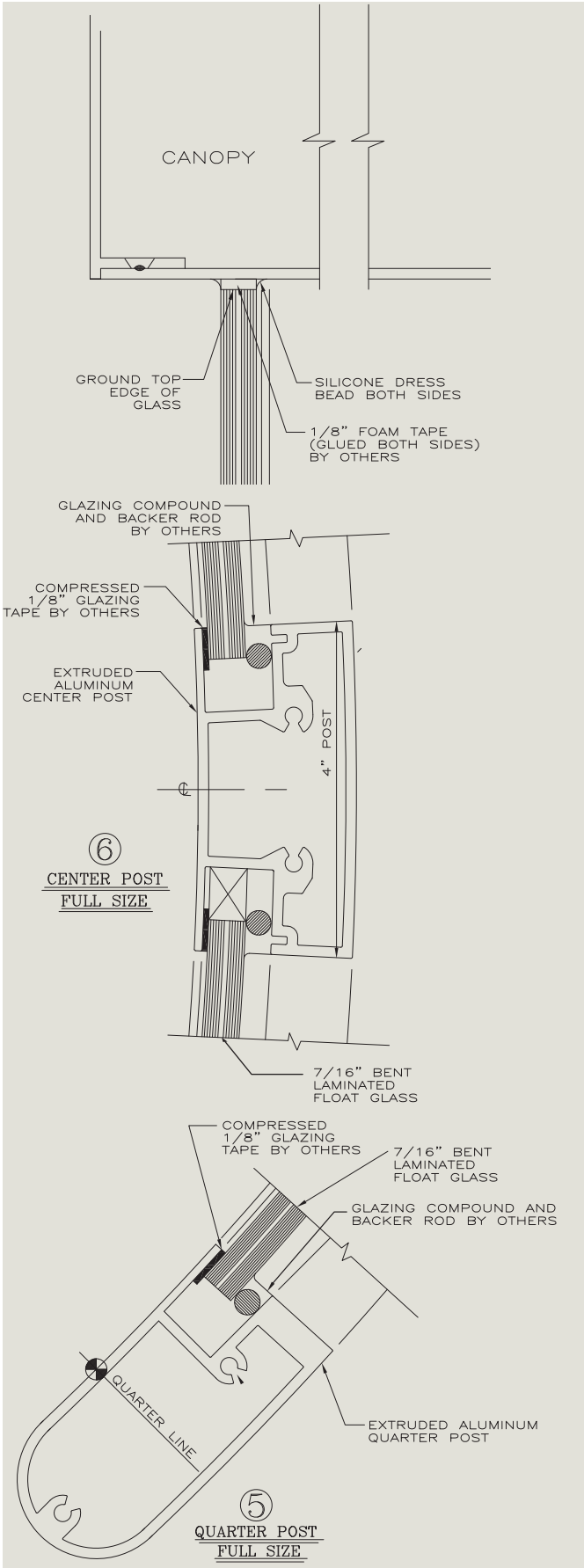
25.4.4 Install remaining enclosure glass.

1. Install remaining enclosure glass per paragraphs 25.4.1 through 25.4.2.

NOTICE

Refer to Crane shop drawings for specific enclosure glass and glass installation glazing details for job!

Fig. 25.4.3 Crane shop drawing post backer rod and glazing installation examples



NOTICE

Refer to Crane shop drawings for specific enclosure glass and glass installation glazing details for job!

25.5 Install enclosure base covers

Fig. 25.5.1 Base cover hardware

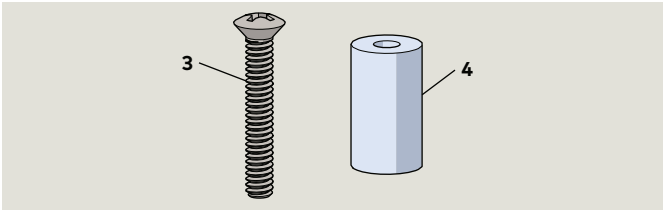


Fig. 25.5.2 Aluminum base and cover assembly

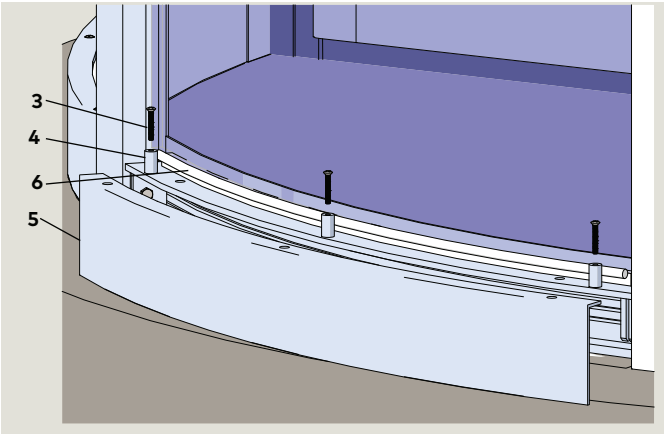


Fig. 25.5.3 Enclosure base cover installed

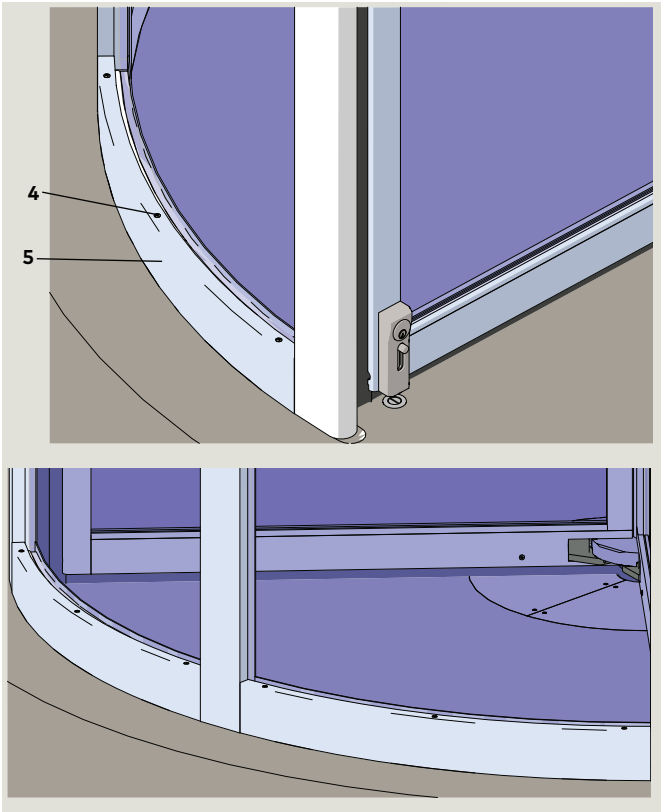


Table 25.5.1 Enclosure base assembly, AL

Part / Assembly		Description
3	RF6118-01G	10-24 x 1 1/4" Phillips oval head machine screw
4	RC6390-010	Base cover support spacer, 1/2" OD, 3/8" ID, 1" long
5	RE6015-0X0	Enclosure, base outer, 3", AL
6		Backer rod (by installer)

25.5.1 Install enclosure base covers.

1. Install enclosure base covers using hardware in Fig. 25.5.1

25.5.2 Complete glazing of enclosure glass at enclosure bases.

1. Finish glazing at each enclosure base.

NOTICE

Refer to Crane shop drawings for enclosure glass glazing details for job!

25.5.3 Stainless steel bases.

NOTICE

Refererence Crane shop drawings for stainless steel bases.

26 Check wing breakout force, bookfold operation

26.1 Check breakout force

Fig. 26.1.1 Wing in bookfold position

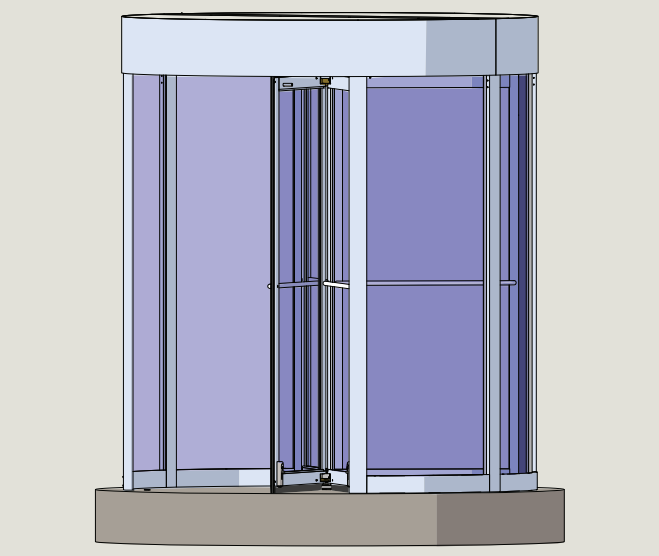


Fig. 26.1.2 Hanger tension adjustment, wing removed

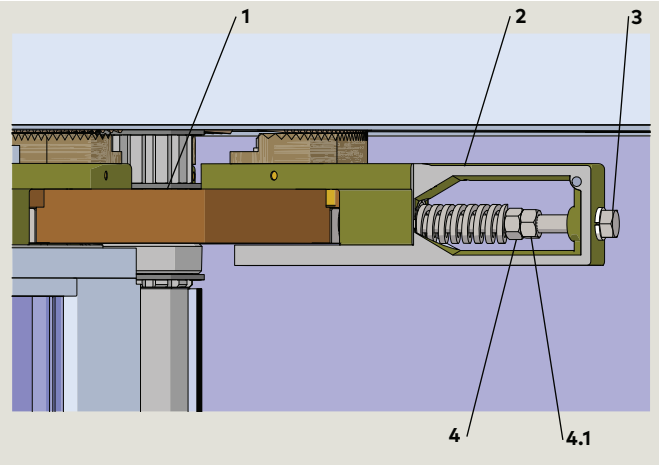


Table 26.1.1 Hanger assembly

Part / Assembly		Description
1		Disc assembly, 3 wing splined
2		Bookfold with lock hanger
3	RC6156-01G	Hex bolt, 0/375"- 16 x 4", machined
4	DF0587-00G	3/8-16 hex nut
4.1	DF0587-00G	3/8-16 hex nut

26.1.1 Breakout force.

NOTICE

ANSI/BHMA A156.27
Para. 10 Breakout force requirements.
Each revolving door wing shall be capable of breakout when a force of 130 lb. [570 N] is applied at a point 3 inches [76 mm] from the outer edge of the outer wing stile and 40 inches above the floor.

26.1.2 Initial breakout hanger tension.

- Initial hanger bookfold tension set in Chapter 21.
- Reference Para. 7.6 for bookfold operation overview.

26.1.3 Check breakout force on first wing..

1. Block one door wing. Push an adjacent wing with a force gauge until breakout occurs. Note breakout force.
2. If hanger breakout force adjustment is required, refer to Para. 26.1.4.

26.1.4 Hanger breakout force adjustment.

1. Remove wing from hangers.

CAUTION

Make the same tension adjustment to both upper and lower hangers .

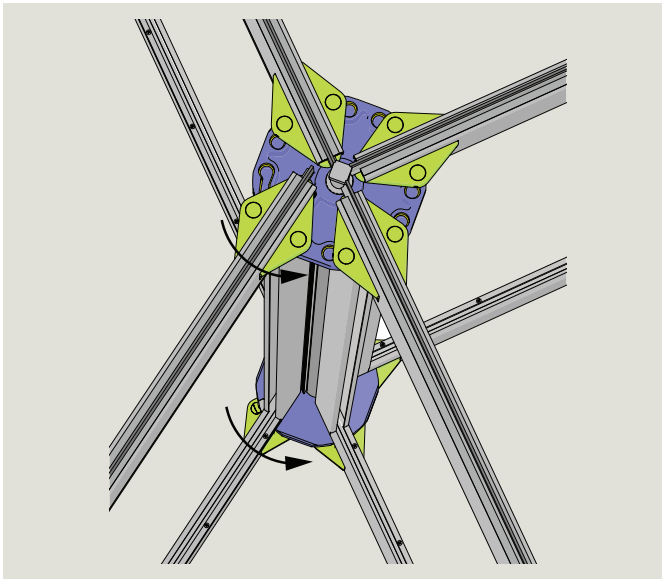
- Use open end 9/16" box wrench for tension adjustment.
- Monitor number of hex nut turn adjustments made so that the same number of adjustments can be made on the lower hanger.

- **Increase hanger tension:**
- Turn hex nut (4) CW to tension spring.
- Use two 9/16" wrenches to both lock hex nuts in place.
- Repeat same tension adjustment on lower hanger.

- **Decrease hanger tension:**
- Turn hex nut 4.1 CCW to allow reduced tension adjustment.
- Turn hex nut (4) CCW to reduce decrease tension on spring.
- Use two 9/16" wrenches to both lock hex nuts in place.
- Repeat same tension adjustment on lower hanger.

2. Reinstall wing and repeat breakout force test.
3. Repeat tension adjustment until breakout force requirements in Para. 26.1.1 are met.

Fig. 26.1.3 Door wing in breakout position

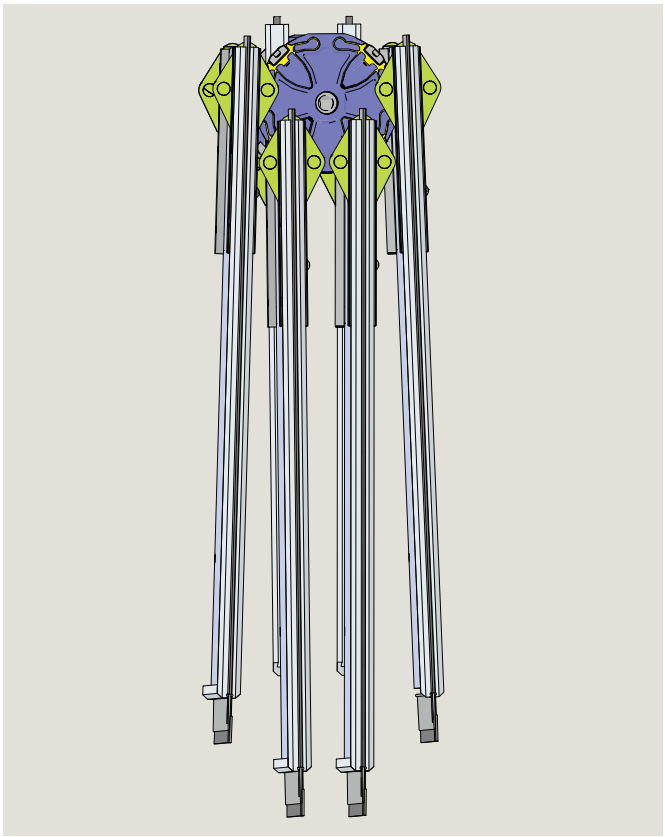


26.1.5 Remaining wings.

1. Check breakout force on each of the remaining wings.
2. Adjust breakout force as required on each wing to meet requirements in Para. 29.1.1.

26.2 Check bookfold operation

Fig. 26.2.1 Door wings in bookfold position



26.2.1 Check wing bookfold operation

1. Check bookfold operation on all wings.

27 Maintenance

27.1 Center shaft assembly floor pivot bearing

Fig. 27.1.1 Floor mounted pivot bearing

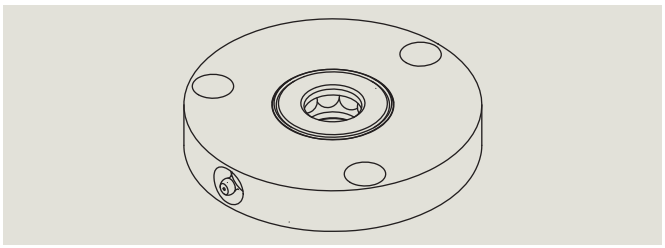
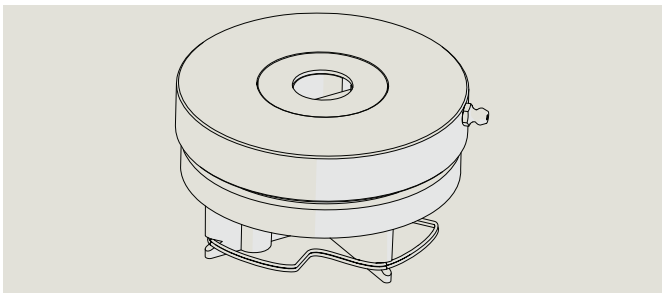


Fig. 27.1.2 In-ground pivot bearing



27.1.1 Pivot bearing lubrication.

1. Grease pivot bearing semiannually.

TIPS AND RECOMMENDATIONS

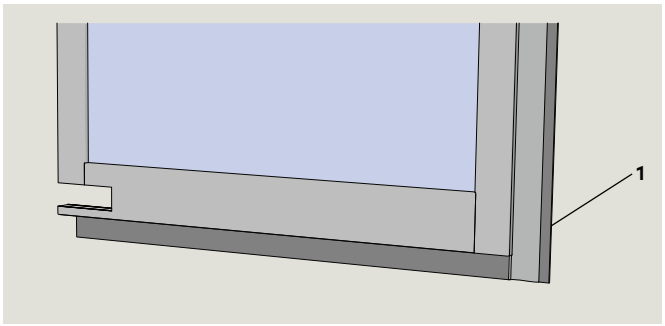
Use general multipurpose grease.

27.1.2 Cleaning pivot bearing/center shaft

1. Clean surface area at pivot bearing/center shaft of dirt and debris as required.

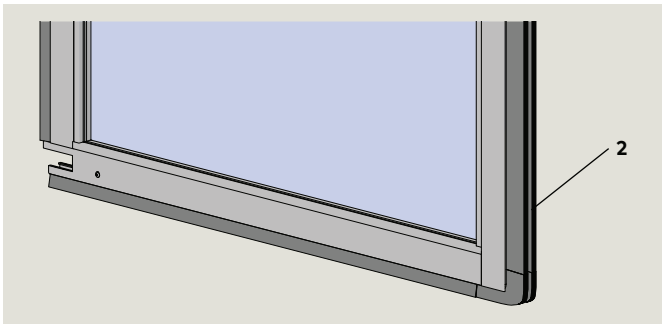
27.2 Weathersweeps

Fig. 27.2.1 T-style weathersweep



1 T-style weathersweep

Fig. 27.2.2 Horsehair weathersweep



2 Horsehair weathersweep

27.2.1 Weathersweep maintenance.

NOTICE

Reducing or trimming the size of the bottom sweep makes the sweep more rigid and voids all warranties.

1. Inspect condition of sweeps.

- Recondition horsehair sweeps if possible using conditioner.

2. Replace weathersweeps as required.

- Contact the Crane company for replacement weathersweeps.

27.3 Cleaning surfaces

27.3.1 Aluminum

1. Dust and grime can be removed by regular cleaning.
- Use a mild, non-abrasive soap or cleaning solution and water.
- After cleaning, surfaces should be wiped dry with a clean absorbent material.

2. Tar and built-up dirt can be removed with solvent cleaners such as turpentine if followed by a soap and water cleaning and fresh water rinse.

NOTICE

Avoid acid or alkali cleaners; they may attack the anodized finish.

- After cleaning, surfaces should be wiped dry with a clean absorbent material.

27.3.2 #4 stainless steel

1. For routine cleaning, use soap, ammonia, or detergent and water.
- Always working in the direction of the grain, rub with a sponge or rag.
- Rinse with water, wipe dry.

2. Stubborn dirt or grime can be removed with a quality commercial stainless steel cleaner.

27.3.3 Mirror finish stainless steel

NOTICE

Mirror finishes require very special care. Abrasive cleaners and cloths should never be used.

1. Use only mild soap and water or glass cleaner.
- After cleaning, surfaces should be wiped dry with a clean absorbent material.

27.3.4 Bronze

NOTICE

To insure proper maintenance, consult a professional bronze finisher and establish a regular metal cleaning program.

1. Bronze finishes are protected during shipping and installation by a shop coat of lacquer.

NOTICE

Lacquer can be damaged by ammonia in window cleaners, or by acids from masonry cleaners. Protect doors from these cleaners.

NOTICE

Doors must be inspected and worked after installation by a qualified bronze finisher.

27.3.5 Painted finishes

1. Any mild non-abrasive soap or mild solvent can be used for cleaning.

NOTICE

Strong solvents may dissolve paint. Test any solvent first.

2. Wax can be used to protect the finish.

27.4 Hanger maintenance

Fig. 27.4.1 4 wing door assembly example

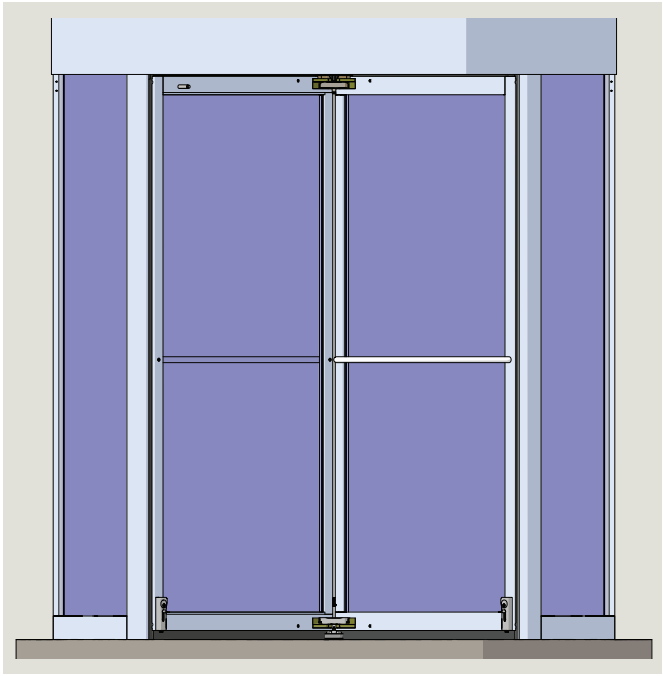
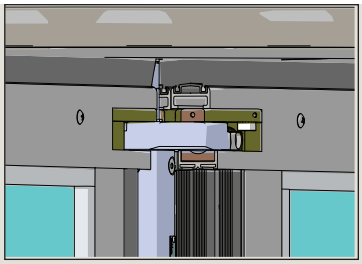


Fig. 27.4.2 4 wing door assembly wing bookfold example



27.4.1 Hanger / hanger disc maintenance.

TIPS AND RECOMMENDATIONS

Bookfold wings for the following procedures.

1. Check for dirt and debris and clean as required at.
- Hanger assemblies.
- Hanger disc assemblies.

2. Check for lubrication on hanger disc and at hangers.
- Lubricate as necessary.

Fig. 27.4.3 Upper and lower hanger assemblies

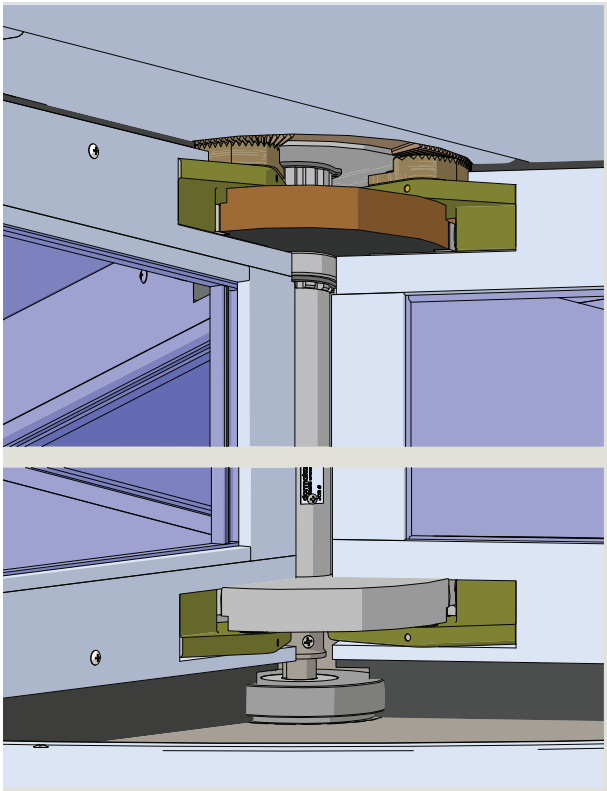
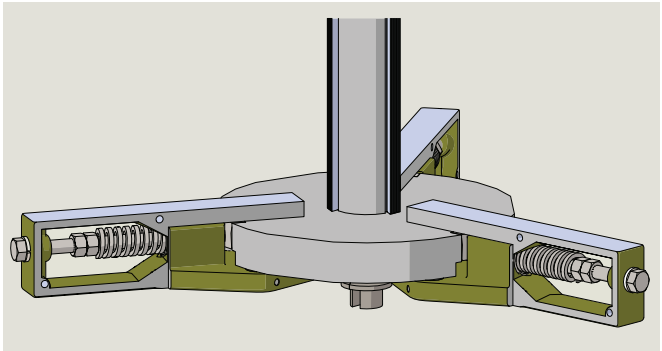


Fig. 27.4.4 3 wing center shaft hanger assembly



28 Speed control brake

28.1 Manual speed control

28.1.1 Maximum allowable door RPM.

Maximum inside diameter	6 ft, 6 in. [1980 mm]	7 ft [2135 mm]	7 ft, 6 in. [2285]	8 ft [2438 mm]	8 ft, 6 in. [2590 mm]	9 ft [2745 mm]
Manual speed control RPM	12	11	11	10	9	9
Time for one door revolution (s)	5	5.5	5.5	6	6.7	6.7

Fig. 28.1.1 Manual speed control, cover removed

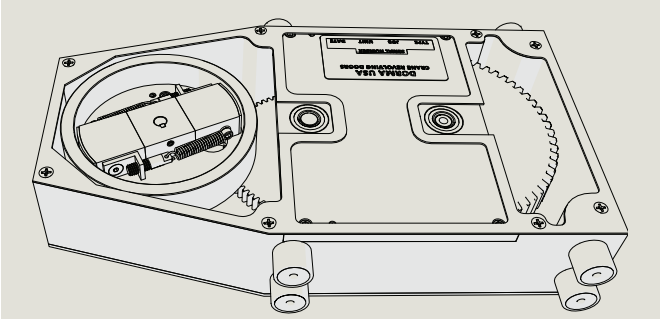
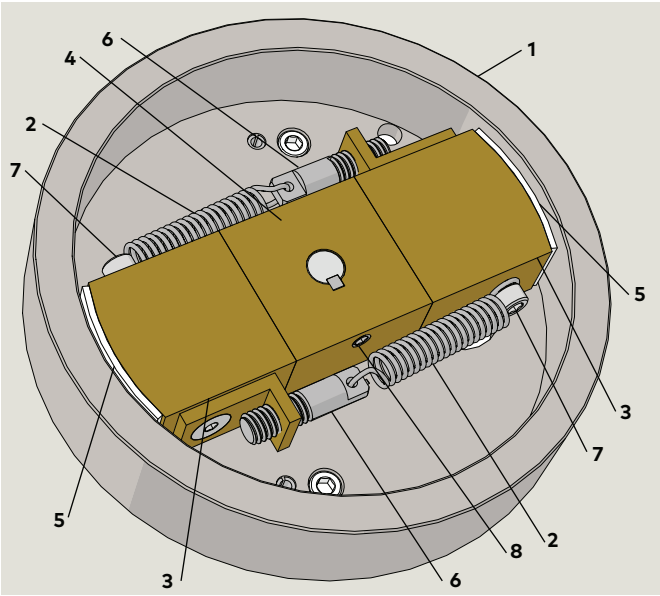


Fig. 28.1.2 Brake housing assembly



1 Brake housing assembly
2 Brake spring
3 Left-right brake shoe holder
4 Center brake block
5 Brake shoe
6 Brake screw
7 10-25 x 1/2" SHCS
8 .25-20 .50" cup point set screw

CAUTION

Manual speed control maintenance should only be done by trained Crane Door Company personnel.

28.1.2 Adjust brake engaging pressure.

1. Increase tension on brake springs:
   - Remove SHCS (**7**) securing brake spring to brake shoe holder.
   - Turn brake screw (**6**) CW to increase spring tension.
   - Reinstall SHCS.
   - Repeat for second brake spring.

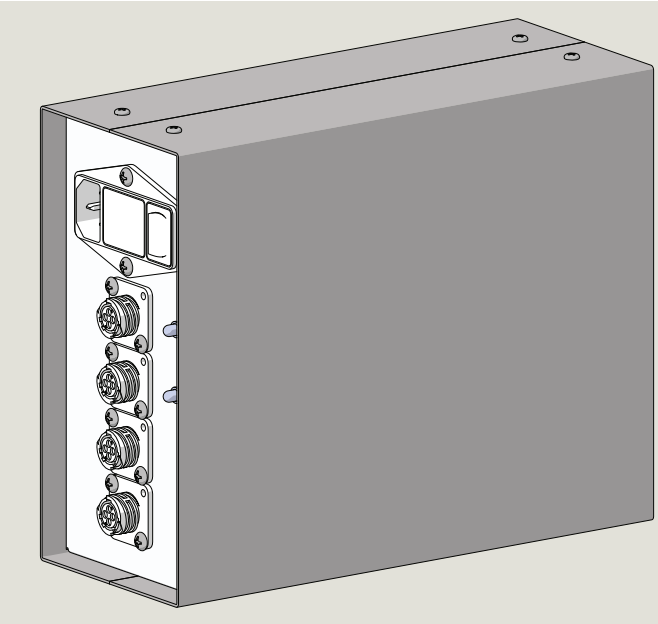
28.1.3 Replacement of brake shoes.

1. Remove center brake block/left-right brake shoe holder assembly to replace brake shoes.

29 S1 security control box

29.1 S1 security control box installation

Fig. 29.1.1 S1 security control box assembly RS7001-001



29.1.1 Install S1 security box in canopy .

1. Place S1 security box in canopy at a suitable location.

- There are two cables from the overhead speed control with 6 foot lengths.

Table 26.1.1 Hanger assembly

Part / Assembly		Description
1	RS7001-001	Assembly, S1 control box
2	RC6182-010	Overhead speed control assembly
3	RC7005-001	TOFspot sensor
4	RC7030-001	Light, LED (option)
5	RC7032-001	Box, Junction with LED driver (option)
6	RS6088-010	Motor box assembly

Fig. 29.1.2 S1 security control box installed in canopy, 4 wing door example

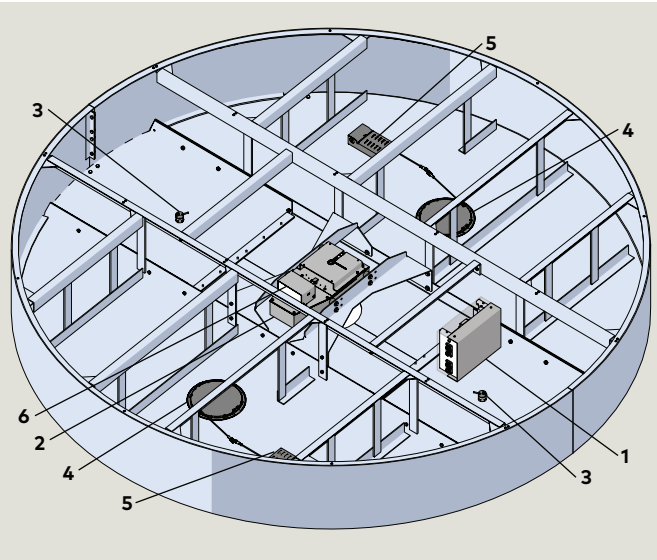
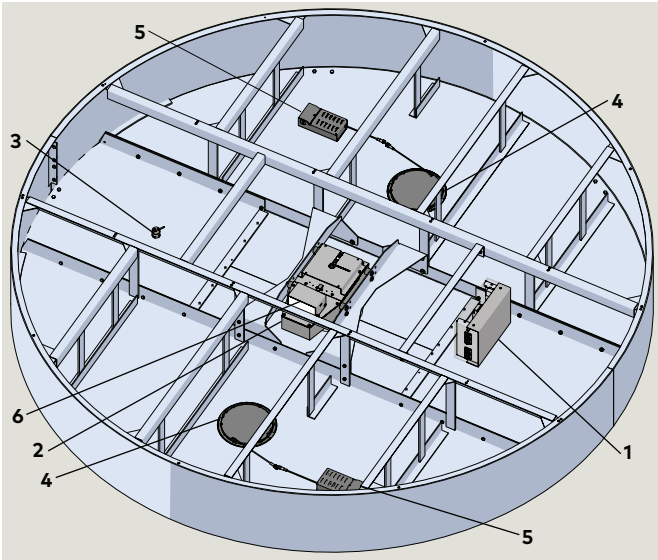


Fig. 29.1.3 S1 security control box installed in canopy, 3 wing door example



29.2 S1 security control box assembly

Fig. 29.2.1 S1 Security control box assembly

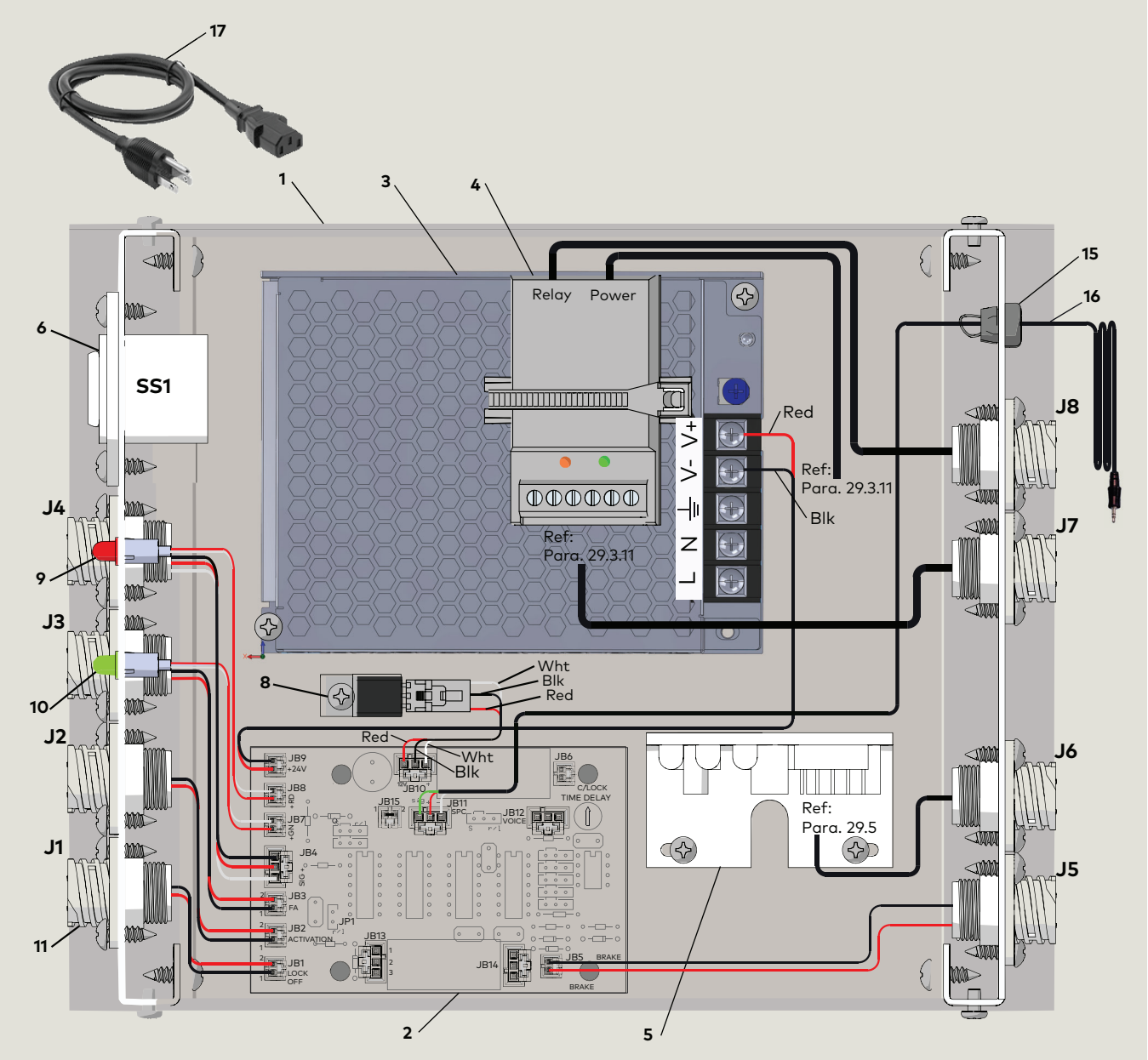


Table 29.2.1 S1 security control box assembly

Part / Assembly		Description
1	RS7001-001	**Assembly, S1 control box**
2	RX7033-001	Logic board
3	RX7003-001	Power supply, 24Vdc
4	RX3350-010	Relay module, CEDES
5	RX7034-001	Bookfold lock control
6	RX3365-010	Power entry connector
7	RX7007-001	Power supply cord
8	RX7032-001	Regulator, 12 Vdc
9	RX7030-001	Indicator, LED, Red, S1
10	RX7030-001	Indicator, LED, Green S1
11	RX7027-002	Connector, receptacle, 4 pin, 206430-1
15		Cable clamp
16	RX7031-001	Cable to OHSC motor position sensor jack, 5'
17	RX7007-001	115 Vac power cord

13 Connector, 2 pin, DX7022-003
14 Connector, 3 pin, DX7022-001

Fig. 29.2.2 Enclosure LH side

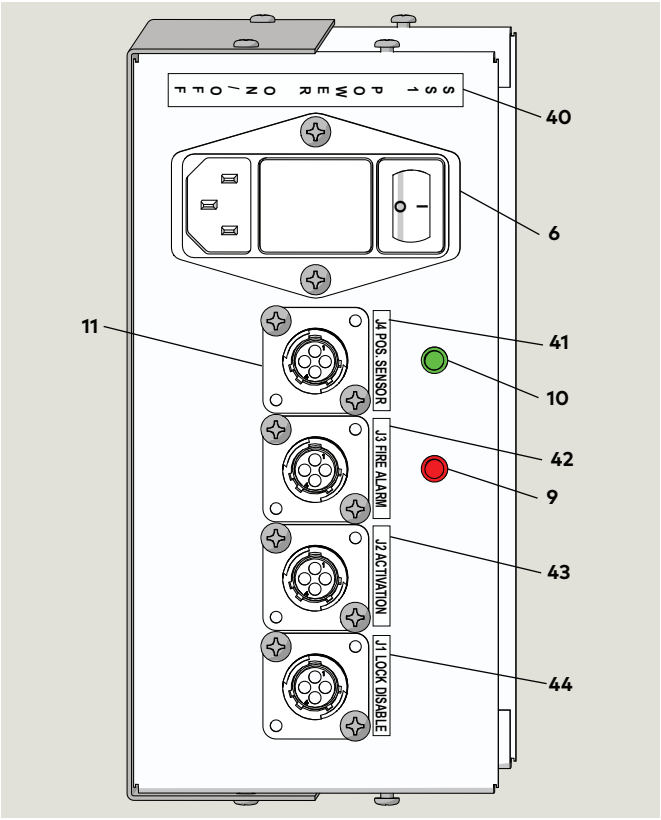


Fig. 29.2.3 Enclosure RH side

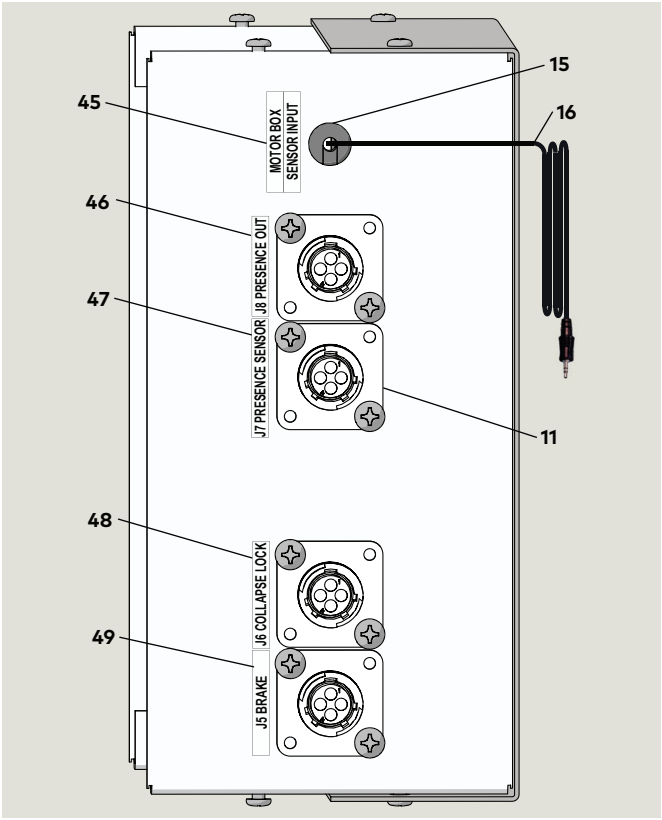


Table 29.2.2 S1 security control box assembly

Part / Assembly		Description
6	RX3365-010	Power entry connector
7	RX7007-001	Power supply cord
8	RX7032-001	Regulator, 12 Vdc
9	RX7030-001	Indicator, LED, Red, S1 Power On
10	RX7030-001	Indicator, LED, Green S1 Home position
11	RX7027-001	Connector, receptacle, 4 pin, 206430-1
15		Cable clamp
16	RX7031-001	Cable to OHSC motor position sensor jack, 5'

40	RD7000-001	Label, ON/OFF
41	RD7030-001	Label, Position Sensor
42	RD7029-001	Lablel, Fire Alarm
43	RD7028-001	Lable, Activation
44	RD7027-001	Lable, Lock Disable
45	RD7026-001	Lable, MTR Box Sensor S1
46	RD7034-001	Label, PRES Sensor OUT
47	RD7033-001	Label, PRES Sensor IN
48	RD7032-001	Label, Collapse Lock
49	RD7031-001	Label, Brake

29.3 S1 security control box components

Table 29.3.1 S1 security control box assembly

1	RC7002-001	Assembly, S1 control box
2	RX7033-001	Logic board, S!
3	RX7003-001	Power supply, 24 Vdc
4	RX3350-010	Relay module
5	RX7034-001	Boolfold lock control
5.1		Wire harness, Minarik 2010069
6	RX3365-010	Power entry connector
11	RX7027-002	Connector, receptacle, 4 pin, 206430-1
13	RX7022-003	Connector, 2 pin
	RX7022-001	Connector, 3 pin
20	RX7027-001	Plug, 4 pin, male contacts
21	RX7029-001	Cable clamp
22	RX7028-001	Pin, AMP, 66103-8
23		Socket, AMP, 66105-9

Fig. 29.3.1 Logic board, 3 13/16" x 2 1/2"

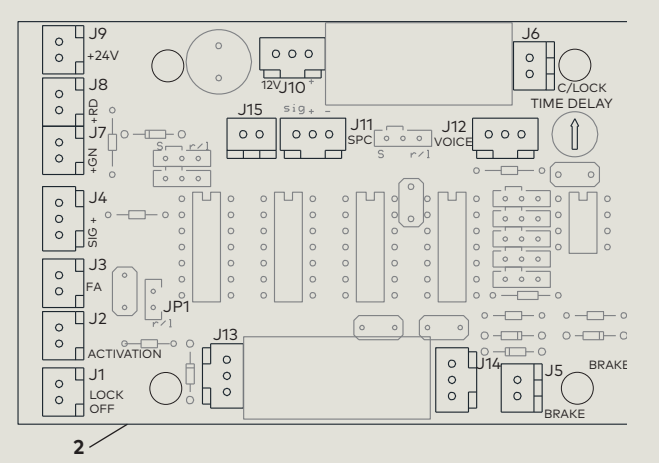


Fig. 29.3.2 Relay module with cable

Fig. 29.3.3 Logic board J1 through J15 connectors

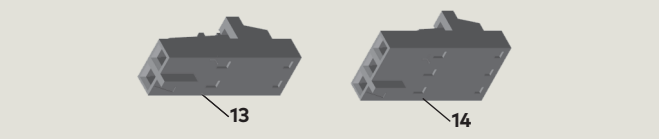


Fig. 29.3.4 S1 security control box metal enclosure 8" x 10" x 4"

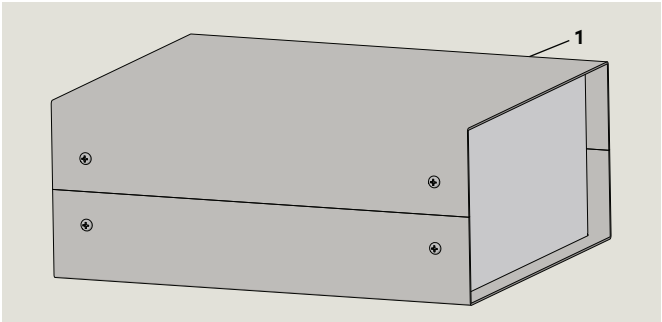


Fig. 29.3.5 24 Vdc power supply

Fig. 29.3.6 Bookfold lock control

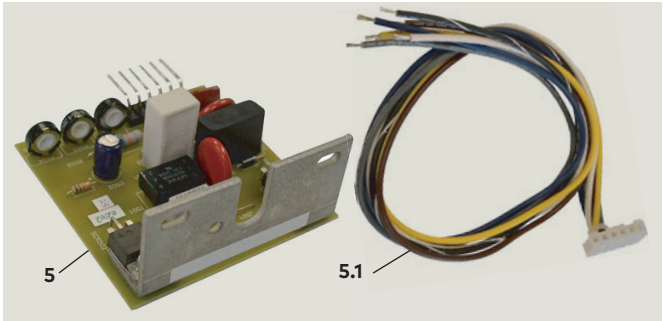


Fig. 29.3.7 Power entry connector

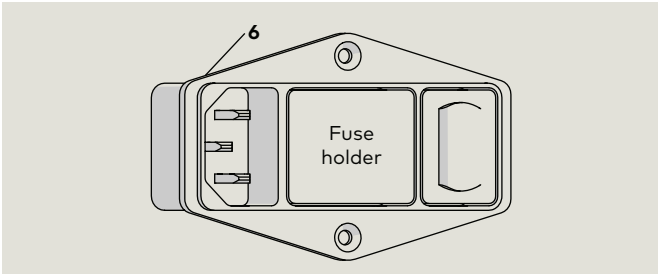
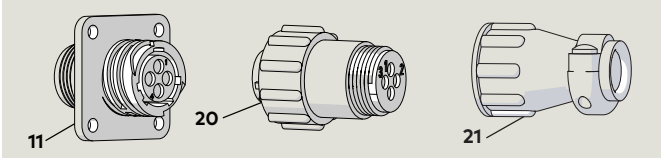


Fig. 29.3.8 Enclosure plug , receptacle and cable clamp



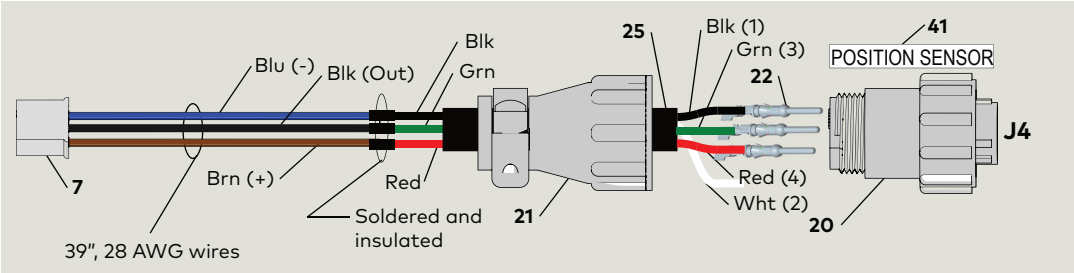
29.4 S1 security control box external plug assemblies

NOTICE

Factory assembled cables.
All cables assembled at factory.

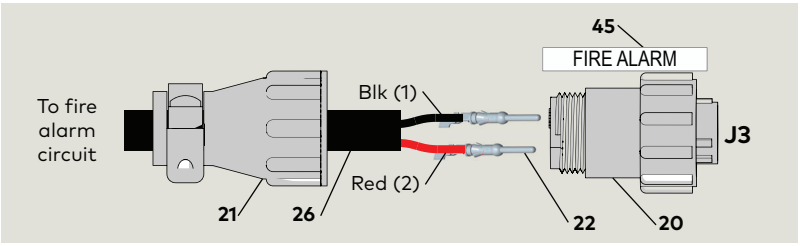
29.4.1 J4 position sensor cable assembly RS7045-001.

Fig. 29.4.1 J4 overhead speed control position sensor cable assembly



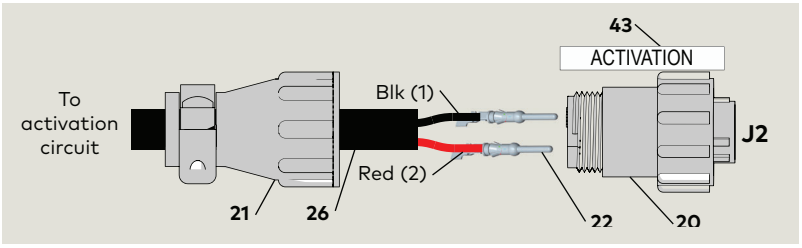
29.4.2 J3 fire alarm cable assembly RS7040-001 (optional).

Fig. 29.4.2 J3 fire alarm cable assembly



29.4.3 J2 activation (remote lock) cable assembly RS7041-001 (optional).

Fig. 29.4.3 J2 activation cable assembly



29.4.4 J1 lock disable cable assembly RS7039-001 (optional).

Fig. 29.4.4 J1 lock disable cable assembly

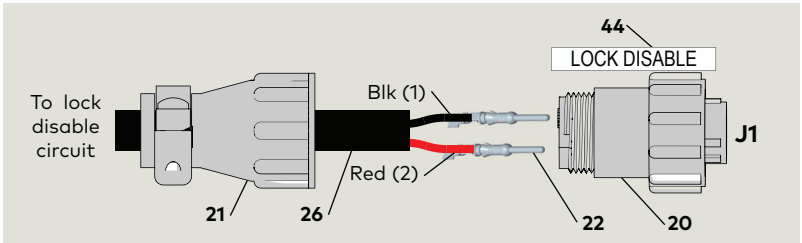
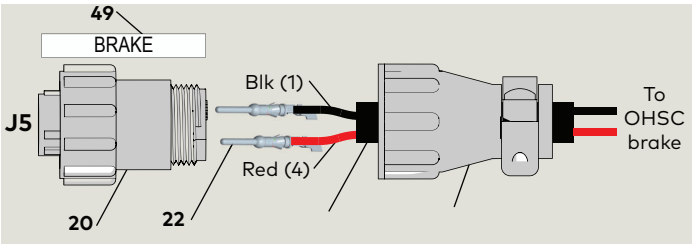


Table 29.4.1 S1 security control box assembly external plug assemblies

7	RX3353-010	Positioning wheel sensor cable
20	RX7027-001	Plug, 4 pin, male contacts
21	RX7029-001	Cable clamp
22	RX7028-001	Pin, AMP, 66103-8
25	RX7018-005	Cable, 4 conductor, 20 GA
26	RX7017-003	Cable, 2 conductor, Fire alarm
41	RD7038-001	Label, POS Sensor
43	RD7036-001	Label, Activation
44	RD7035-001	Label, Lock Disable
45	RD7037-001	Label, , Fire Alarm

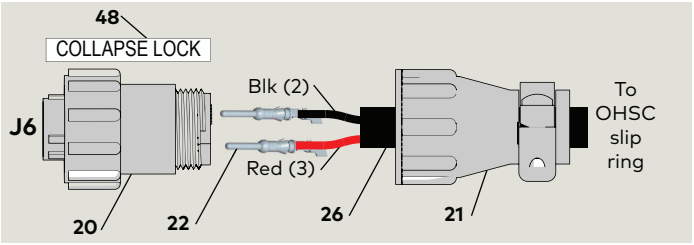
29.4.5 J5 brake cable assembly RS7046-001.

Fig. 29.4.5 J5 cable assembly



29.4.6 J6 collapse lock cable assembly RS7047-001.

Fig. 29.4.6 J6 cable assembly



29.4.7 Overhead speed control wiring.

Fig. 29.4.7 Overhead speed control assembly and wiring

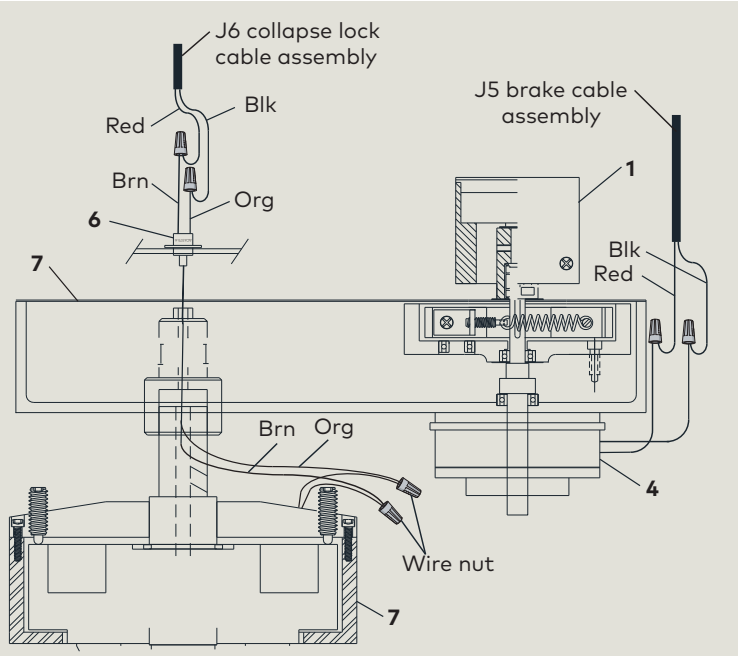


Table 29.4.2 S1 security control box assembly external plug assemblies

1		Overhead speed control assembly
2	RS6088-010	Motor box assembly
3	DK3373-010	Slip ring assembly
4		Brake
5		Bookfold lock assembly
7	RX3353-010	Positioning wheel sensor cable
20	RX7027-001	Plug, 4 pin, male contacts
21	RX7029-001	Cable clamp
22	RX7028-001	Pin, AMP, 66103-8
25	RX7018-005	Cable, 4 conductor, 20 GA
26	RX7017-003	Cable, 2 conductor, Fire alarm
41	RD7038-001	Label, POS Sensor
43	RD7036-001	Label, Activation
44	RD7035-001	Label, Lock Disable
45	RD7037-001	Label, , Fire Alarm
48	RD7032-001	Label, Collapse Lock
49	RD7031-001	Label, Brake

29.4.8 J8 presence output cable assembly RS7049-001.

Fig. 29.4.8 J8 cable assembly

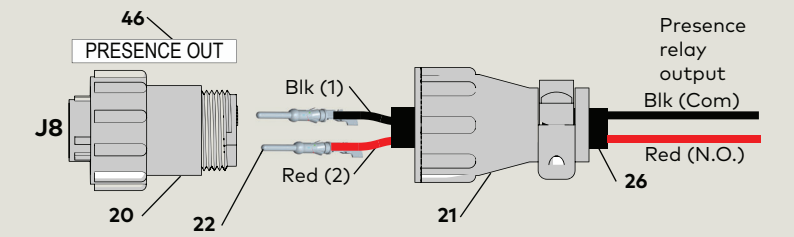
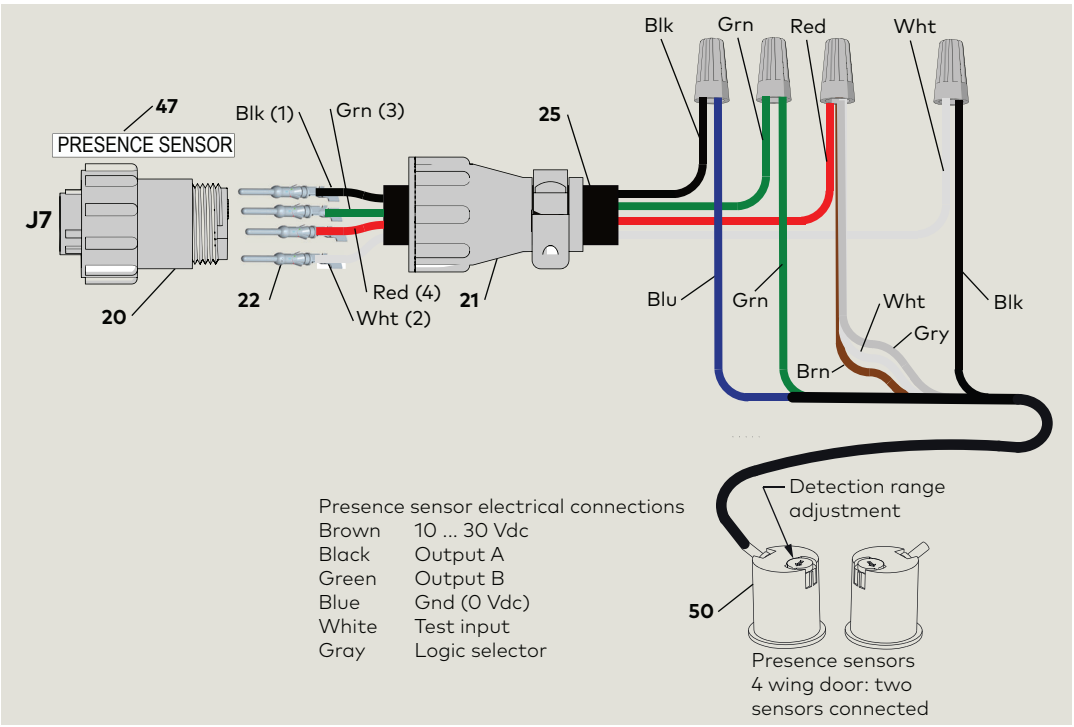


Table 29.4.3 S1 security control box assembly external plug assemblies

20	RX7027-001	Plug, 4 pin, male contacts
21	RX7029-001	Cable clamp
22	RX7028-001	Pin, AMP, 66103-8
46	RD7042-001	Label, Presence Sensor OUT
47	RD7041-001	Label, Presence Sensor IN
50	RC7005-001	Presence sensor, TOFspot

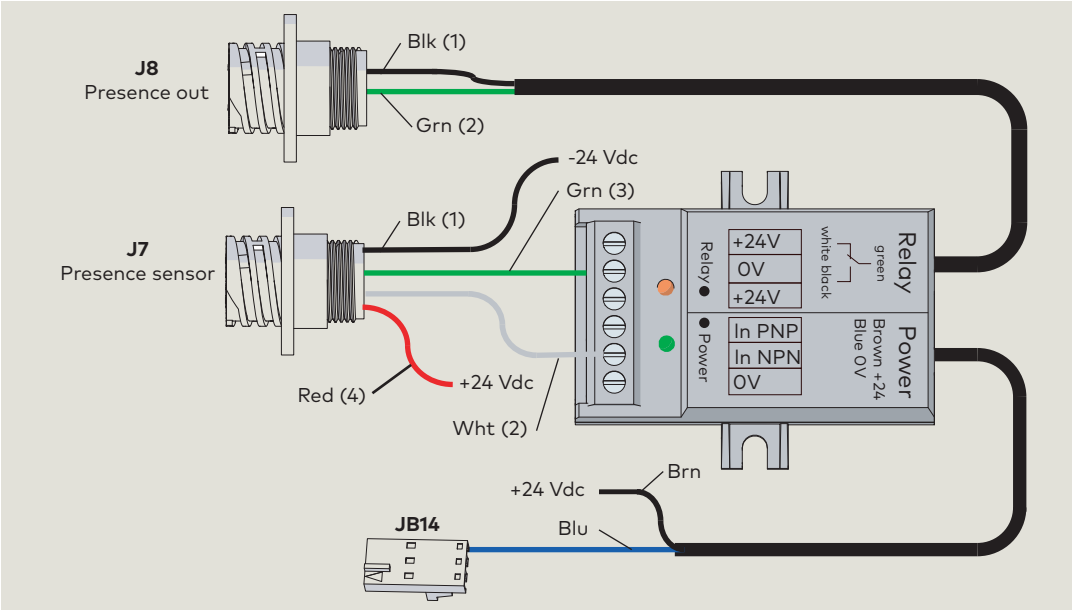
29.4.9 J7 presence sensor cable assembly RS7048-001

Fig. 29.3.9 J7cable assembly



29.4.10 Presence sensor relay, J7, J8

Fig. 29.4.10 Presence sensor relay wiring



29.4.11 Motor box position sensor input.

Fig. 29.4.11 Motor box position sensor input

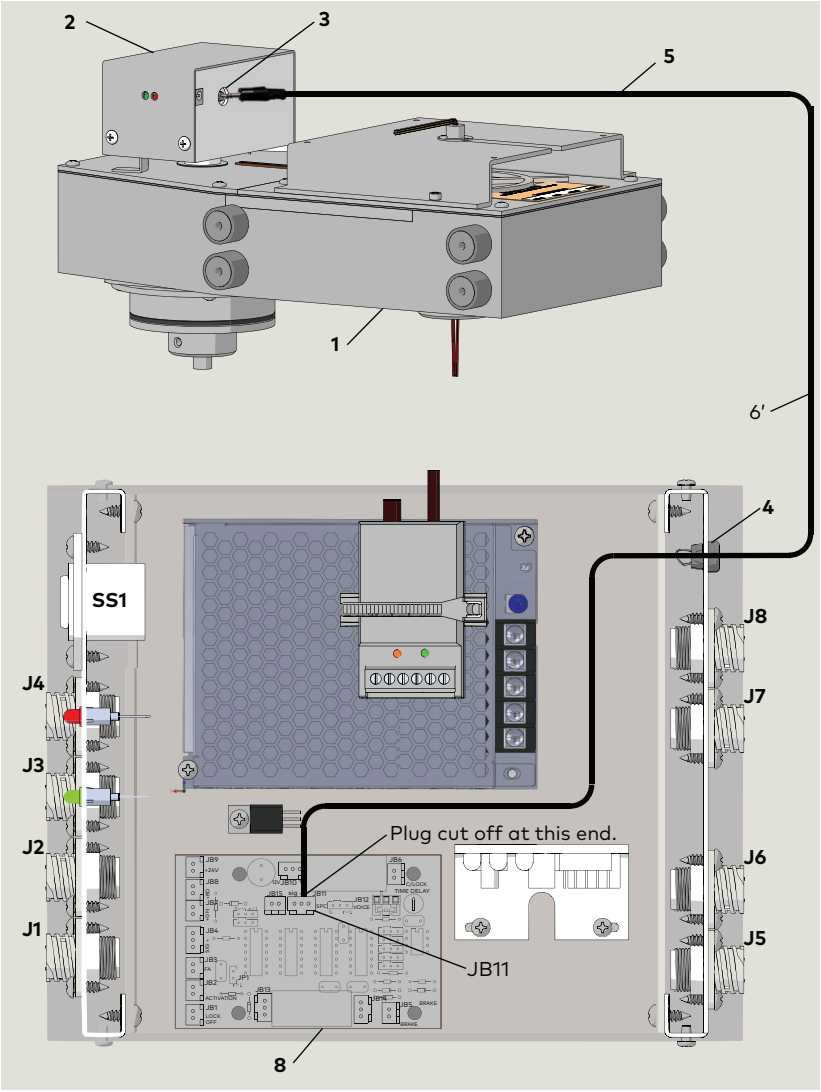
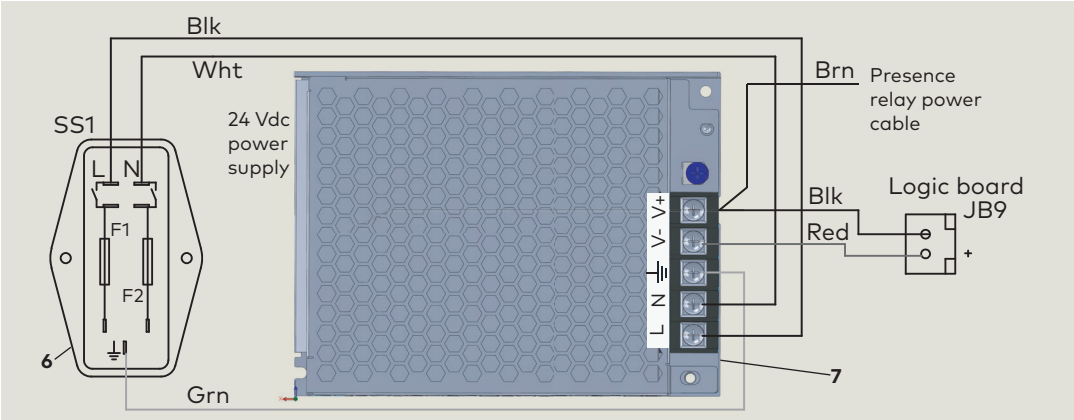


Table 29.4.4 S1 security control box assembly external plug assemblies

1	RC6182-010	Overhead speed control assembly
2	RS6088-010	Motor box assembly
3		Jack for positioning sensor cable from S1 securty enclosure
4		Cable clamp
5		Positioning sensor cable output
6	RX3365-010	Power entry connector
7	RX7003-001	Power supply, 24Vdc
8	RX7033-001	Logic board

29.4.12 SS1 wiring to 24 Vdc power supply

Fig. 29.4.12 SS1 and 24 Vdc power supply wiring



29.5 S1 drive board,lock control

29.5.1 Drive board, lock control.

WARNING

Electric shock hazard!
The drive is not isolated from earth ground. Circuit potentials are at 115 Vac above earth ground.

- Avoid direct contact with the printed circuit board or with circuit elements to prevent the risk of serious injury or fatality.
- Use a non-metallic screwdriver for adjusting the calibration trimpots (Fig. 29.5.1).

29.5.2 Drive board potentiometer settings.

1. IR Comp: at minimum (CCW).
2. Min Spd: at minimum (CCW).
3. Max Spd: at maximum (CW).

Fig. 29.5.1 Drive board, lock control

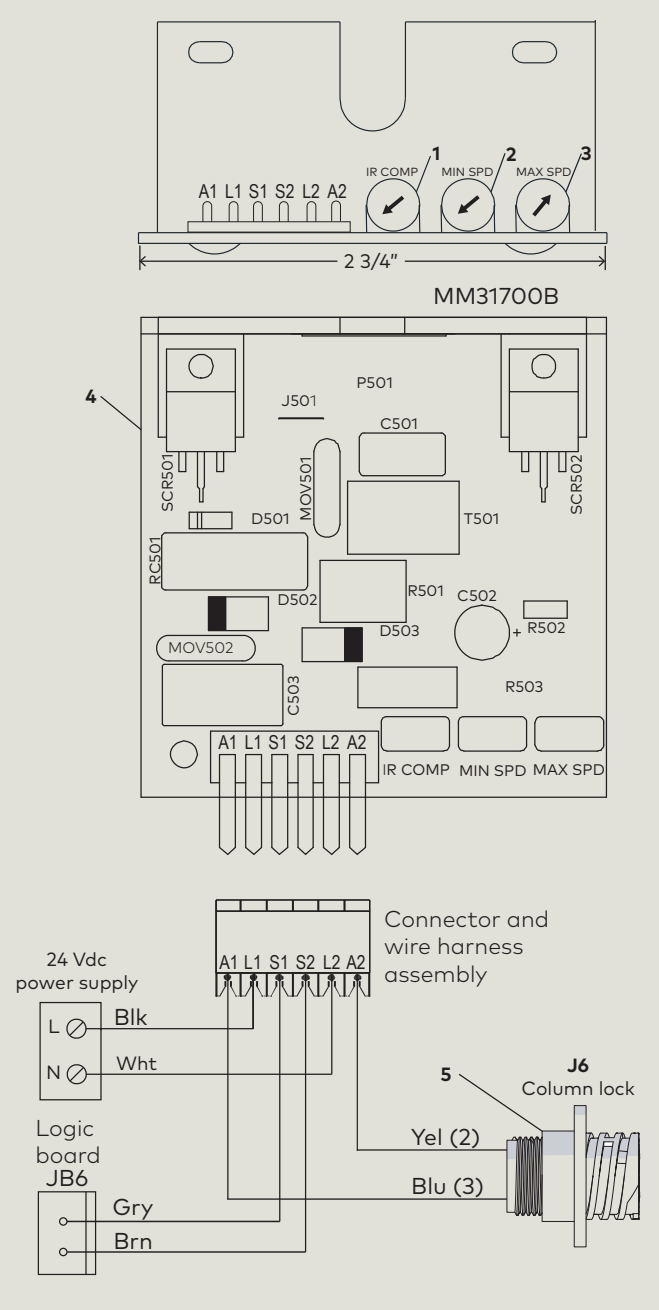


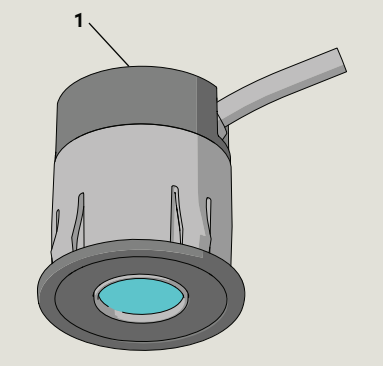
Table 29.5.1 Drive board, lock control adjustments

1		IR Comp potentiometer
2		Min Spd potentiometer
3		Max Spd potentiometer
4	RX7034-001	Drive board, lock control
5	RS7047-001	J6 collapse lock cable assembly

29.6 Presence sensor

1 CEDES TOF/Spot sensor RC7005-001

Fig. 29.6.1 Presence sensor



29.6.1 Presence sensor installation and startup.
Presence sensor located in canopy.
- 4 wing door: 2 sensors.
- 3 wing door: 1 sensor.

Reference Para. 30.3 and Para 30.4 for TOF spot sensor overview and setup.

29.7 Control box J-series connector hardware

Fig. 29.7.1 Panel mount circular housing, pin contacts, 4 position

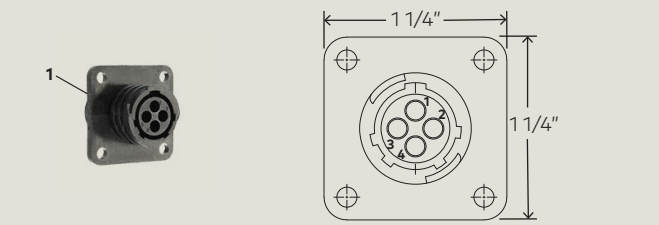


Table 29.7.1 Control box J-series connector hardware

1	RX7027-002	Connector, receptacle, 4 pin, 206430-1
2	RX7027-001	Plug, 4 pin, male contacts
5	RX7029-001	Cable clamp
3	RX7028-001	Pin, AMP, 66103-8
4	RX7028-002	Socket, AMP, 66360-2

Fig. 19.7.2 Pin assembly

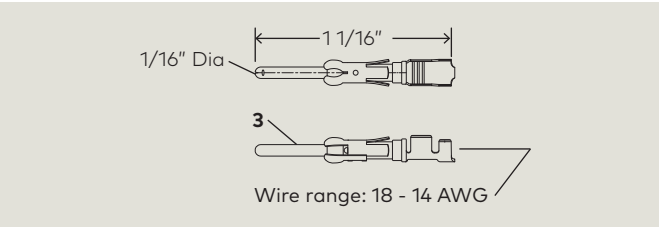


Fig. 29.7.5 Socket assembly

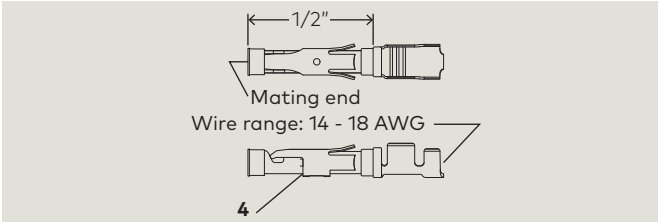


Fig. 29.7.3 Cable clamp

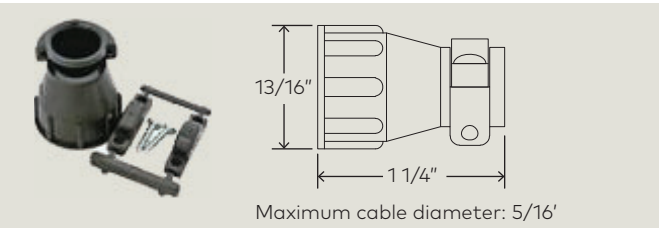
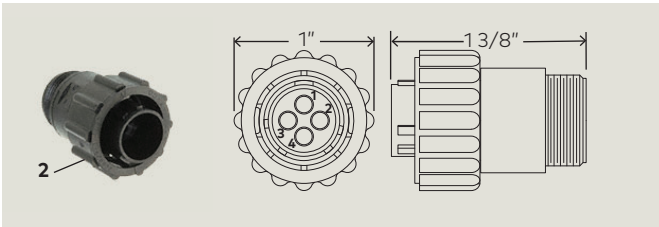


Fig. 29.7.4 Connector plug housing, socket contacts, 4 position



30 S1 security commissioning

30.1 S1 security box cable connections

Fig. 30.1.1 S1 control box, left side connections

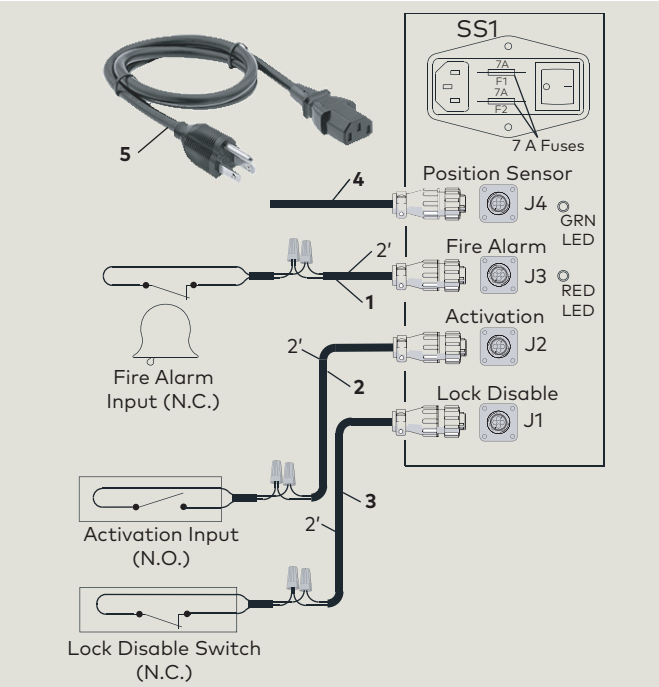


Table 30.1.1 S1 security box cable connections

1	RS7040-001	J3 Fire alarm cable
2	RS7041-001	J2 Activation cable
3	RS7039-001	J1 Lock disable cable
4	RS7045-001	J4 Position sensor cable
5	RX7007-001	Power supply 115 Vac cord

30.1.1 Cables connected to control devices (by others).

1. Insure the following cables have been connected to control device cables (Fig. 30.1.1):

- **J1** Lock disable: normally closed (N.C.) circuit.
- **J2** Activation (Remote lock): normally open (N.O.) circuit.
- **J3** Fire alarm: normally closed (N.C.) circuit. Circuit opens on a fire alarm.

30.1.2 Disconnect 115 Vac control box power.

⚠ WARNING

Disconnect power.
Insure power supply cord is disconnected from its receptacle

Table 30.1.2 S1 control box coble connections

1	RC6182-010	Overhead speed control assembly
2	RS7054-001	Motor box assembly
3		Motor box to S1 security enclosure cable
4	RS7001-001	S1 security enclosure assembly

30.1.3 Control box cable connections.

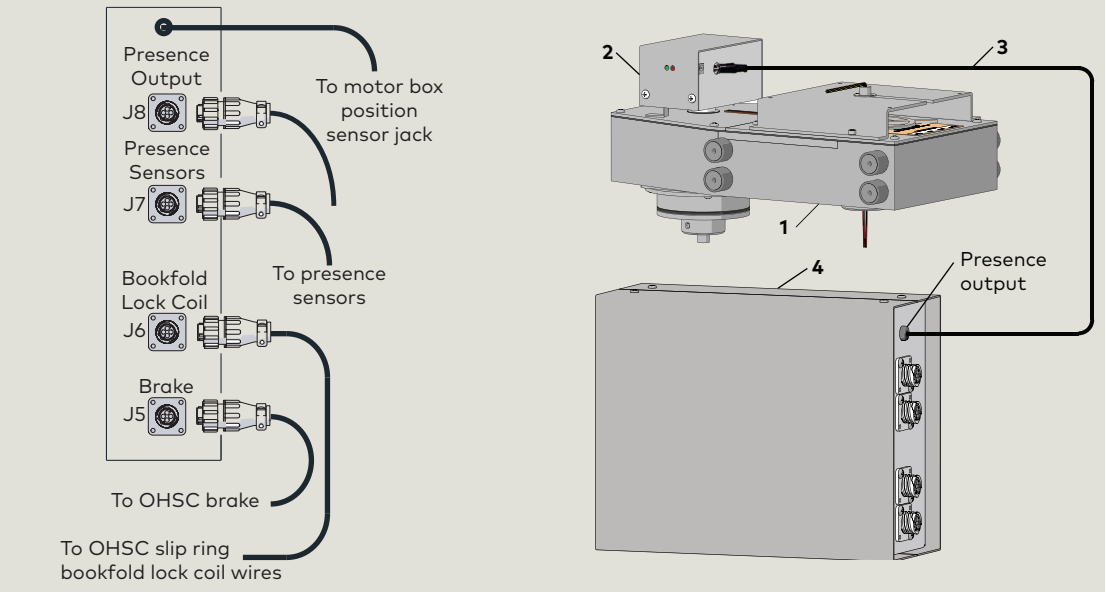
Connect the following cables to the control box

1. Motor box position sensor signal to OHSC motor box (Fig. 30.1.2)
2. **J4** Wing position sensor signal from OHSC.
3. **J5** Brake signal to OHSC brake.
3. **J3** Fire alarm.
4. **J2** activation (remote lock).

30.1.4 J6 bookfold lock cable.

1. Leave the J6 bookfold lock cable disconnected.

Fig. 30.1.2 S1 control box, right side connections and motor box connection



30.2 S1 security commissioning

Fig. 30.2.1 S1 control box, left side and power cord

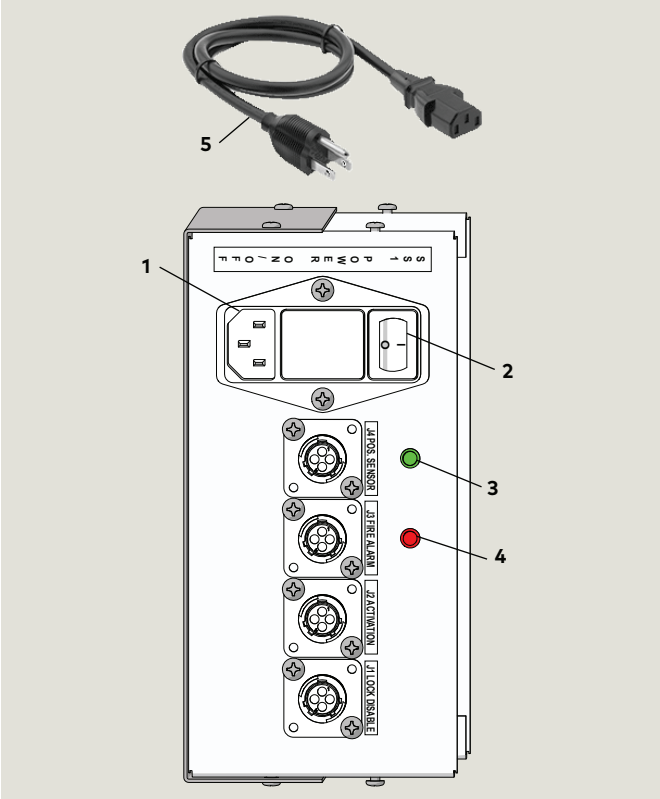


Fig. 30.2.2 OHSC with motor box

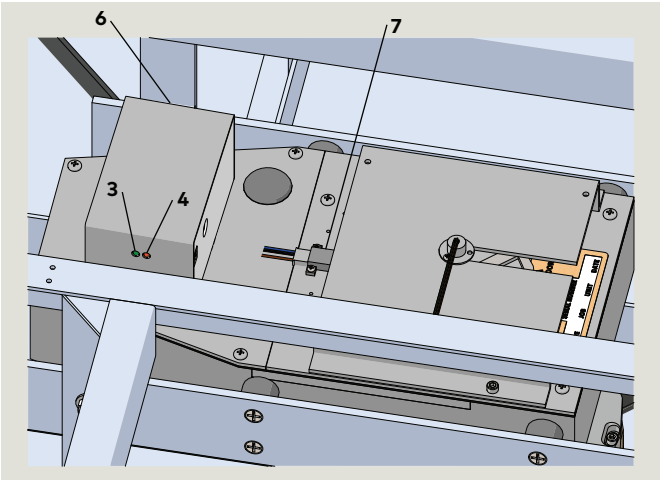


Table 30.2.1 S1 control box

1	RX3365-010	Power entry connector, SPC
2		Off/On switch
3	RX7030-002	Indicator, LED, green Home position
4	RX7030-001	Indicator, LED, red Power On
5	RX7007-001	Ppwer supply cord
6	RS7054-001	Motor box assembly
7	RX3374-010	Sensor, Opto

30.2.1 Secure power supply cord.

1. Secure the power supply cord to the side of the S1 Security box with a wire tie to prevent accidental disconnect of the cord from its receptacle in SS1.

30.2.2 Power ON.

1. Connect the power cord to SS1 115 Vac receptacle and to customer-installed 115 Vac receptacle.
2. Turn SS1 ON.

30.2.3 Close the fire alarm circuit.

1. Close the fire alarm circuit.

- Red LED on S1 control box (Fig. 30.1.2) and Red LED on motor box (Fig. 30.1.3) will turn ON.

30.2.4 Close the activation circuit.

1. Close the activation circuit (J2 connector on S1 Security box).

Table 30.2.2 S1 control box

3	RX7030-002	Indicator, LED, green
4	RX7030-001	Indicator, LED, red
6	RS7054-001	Motor box assembly
7	RX3374-010	Sensor, Opto
8	RC6349-010	Positioning wheel bracket
9	RC6347-010	Encoder disc, 4 wing
10	RF6126-01C	10-24 x 1/2" SHCS
11	DX3373-010	Slip ring assembly
12		4-40 x ___ Phillips pan head screw
13		Clamp-on shaft collar
14		Set screw

Fig. 30.2.3 OHSC with motor box

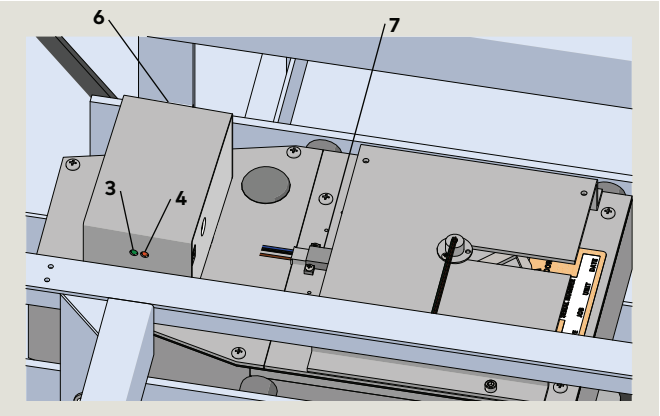


Fig. 30.2.4 OHSC slip ring and positioning wheel cover

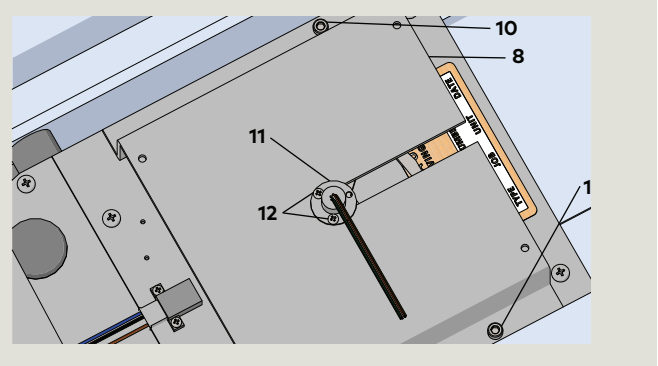
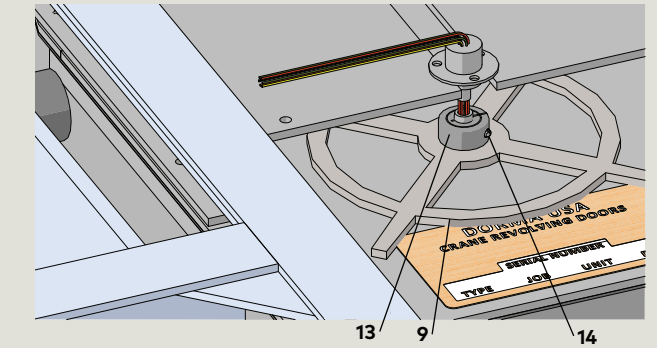


Fig. 30.2.5 OHSC positioning wheel adjustment



30.2.5 Check positioning sensor operation

1. Rotate the door manually one full turn..

- Confirm that the green LED on both the S1 Security box and the motor box will turn ON every time the positioning sensor (Fig. 30.2.3-4) is activated (Home position).

30.2.6 Check positioning door at Home position.

1. Stop the door away from Home position (no green LEDs).

- The motor box motor should start in approximately 10 seconds, slowly bringing the door to Home position.
- If the door stops away from the Home "X" position, adjust the positioning wheel (Fig. 30.2.5) orientation on top of the OHSC to set the correct Home position.

30.2.6.1 Positioning wheel adjustment.

⚠ WARNING

Make sure the door area is clear before making adjustments!

CAUTION

Use caution when working with positioning wheel adjustment.

1. Push the door.
2. Allow wings to rotate to quarter point position and stop.
3. Turn the positioning wheel clockwise or counterclockwise; wait and allow door movement to stop after each adjustment until door reaches correct quarter point (Home) position.

- Use Green LED as quarter point indicator.

Table 30.2.2 OHSC assembly, Bookfold lock

1	RS7054-001	Motor box assembly
2	RX7030-002	Indicator, LED, green Home position
3	RX7030-001	Indicator, LED, red Power On
4	RS3580-010	Brake assembly P51 7211
5		Bookfold lock assembly
6	DX3373-010	Slip ring assembly
7	RC6182-010	Overhead speed control assembly

Fig. 30.2.6 OHSC motor box and brake,; bookfold lock

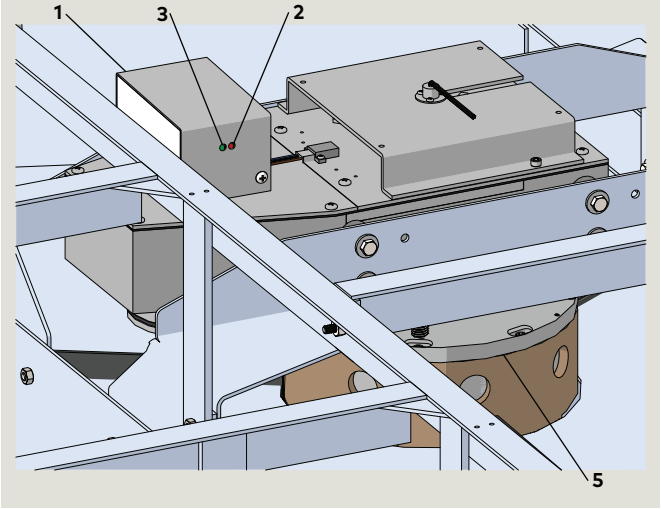


Fig. 30.2.7 J6 bookfold lock wiring and J5 brake cable wiring

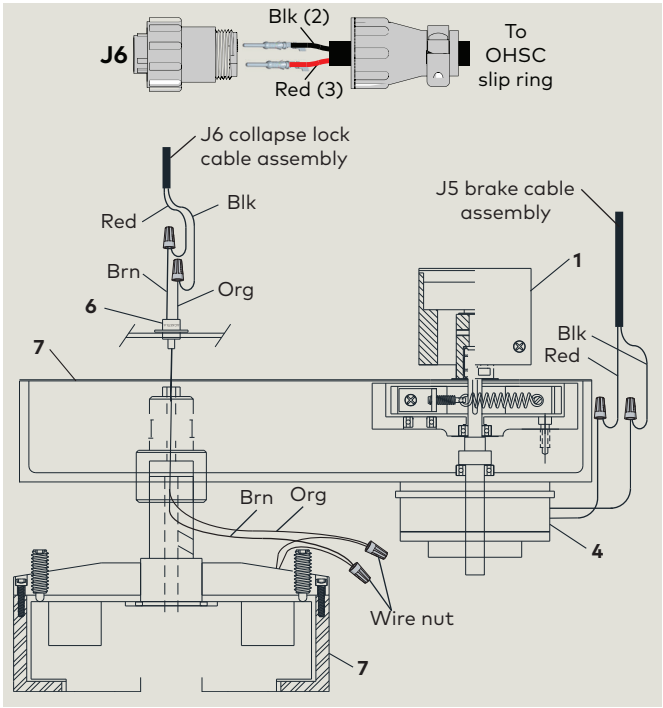
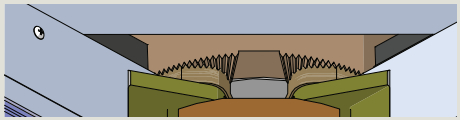


Fig. 30.2.8 Bookfold lock and hanger serrated surfaces



30.2.7 Close the Lock Disable switch.

1. Close the J1 lock disable circuit.

30.2.8 Check brake lock operation.

1. Open the J2 activation circuit
- The door is still at the Home position.
- Both Red (power on) and Green (Home position) LEDs are ON.

2. After approximately 5-6 seconds the brake (Fig. 30.2.6-4) will engage preventing door rotation.
- The Red LED on the motor box turns OFF.

30.2.9 Verify door is locked.

1. Verify that the door cannot be operated manually.

30.2.10 Turn power OFF.

1. Turn power switch on SS1 OFF.

30.2.11 Check J6 bookfold lock circuit.

1. Make sure there are no short circuits between the J6 plug wire leads and ground (Fig. 30.2.7).

2. The resistance measured through the bookfold lock coil should be approximately 50 Ohms.

30.2.12 Check bookfold lock operation.

1. Connect J6 bookfold lock plug to its socket (Fig. 30.1.2)

2. Turn power ON.

3. J3 fire alarm circuit closed:
- Red lights on the S1 security box and the motor box will turn ON.
- Verify the bookfold lock is engaged.

4. J3 fire alarm circuit open:
- Red lights on the S1 security box and the motor box will turn OFF.
- Verify the bookfold lock disengages.
- Wings may be bookfolded.

30.2.13 Bookfold lock adjustment.

1. The bookfold lock may have to be adjusted for best holding performance. Ref. Para. 8.3.
- The serrated body must engage fully with the serrated panels of all hangers (Fig. 30.2.8).

CAUTION

Bookfold lock adjustment must only be done by a qualified dormakaba technician.

30.2.14 Test self-positioning and locking functions.

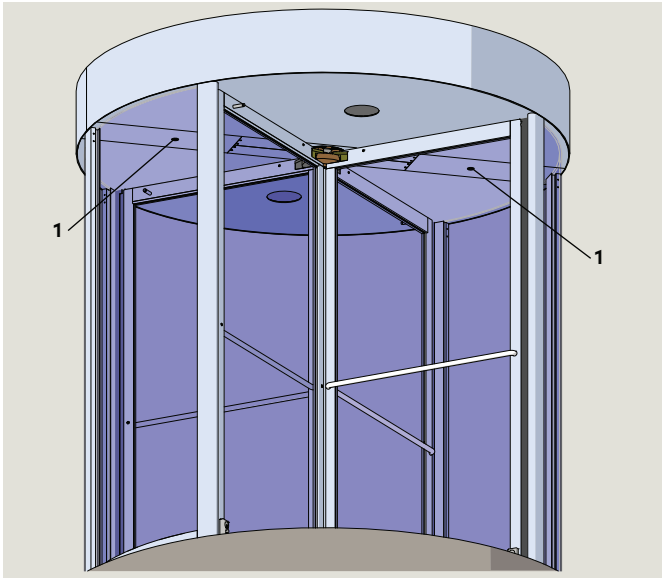
1. Test self-positioning and locking functions.
- Reference Para. 2.5.

30.2.15 Test TOF spot sensor operation.

1. Reference Para. 30.3 and 30.4.

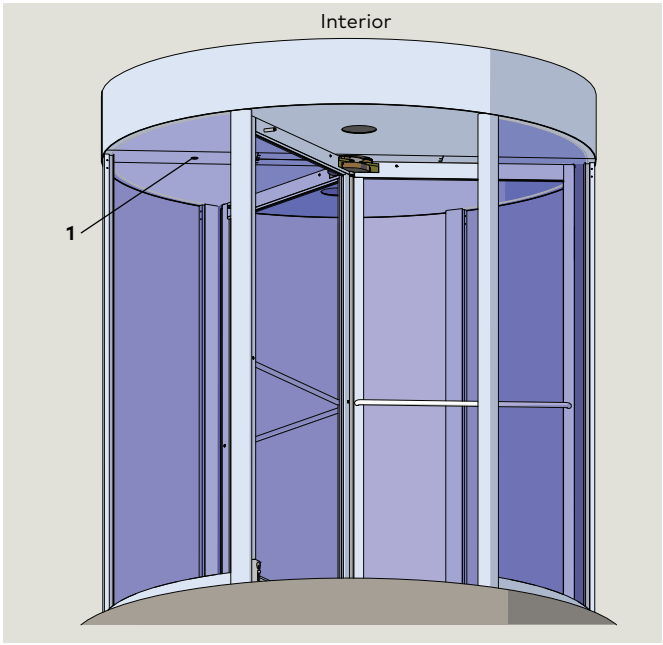
30.3 TOF spot sensor overview

Fig. 30.3.1 TOF spot sensors, 4 wing door



1 TOF spot sensor

Fig. 30.3.2 TOF spot sensor, 3 wing door



1 TOF spot sensor

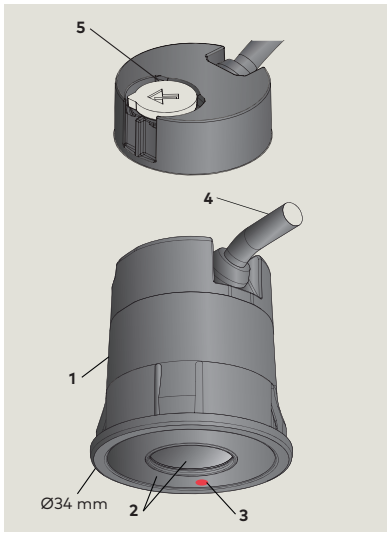
30.3.1 TOF spot presence sensor overview.

1. Presence sensors mounted over each of the normally closed sections of the revolving door.
   - 4 wing door: 2 sensors.
   - 3 wing door: 1 sensor.
2. Presence sensor relay output (Para. 29.4.10) will indicate presence of any object underneath the sensor only while the overhead speed control brake (Fig. 30.2.6) is engaged (door in the "X" Home position) to avoid false presence signals while the door is rotating.

30.3.2 TOF spot presence sensor.

1. TOF/Spot consists of an active infrared emitter and receiver combined in the same housing.
2. One size of spot like detection (Fig. 30..4.2).
3. One output signals the detection of an object within the detection area.

Fig. 30.3.3 TOF spot sensor body and lens view



1 TOF spot sensor RC7005-001
2 Optical window
3 Status LED
4 Connection cable with pigtail
5 Potentiometer, distance setting

30.4 TOF spot sensor setup

Fig. 30.4.1 TOF spot distance adjustment

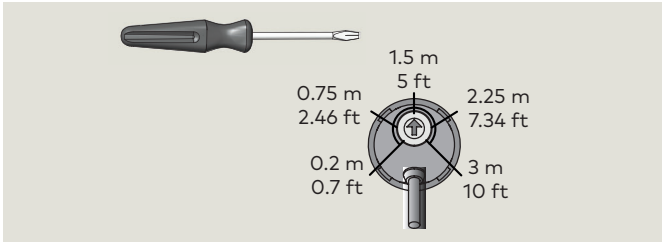


Fig. 30.4.2 TOF spot sensor detection area and maximum detection distance

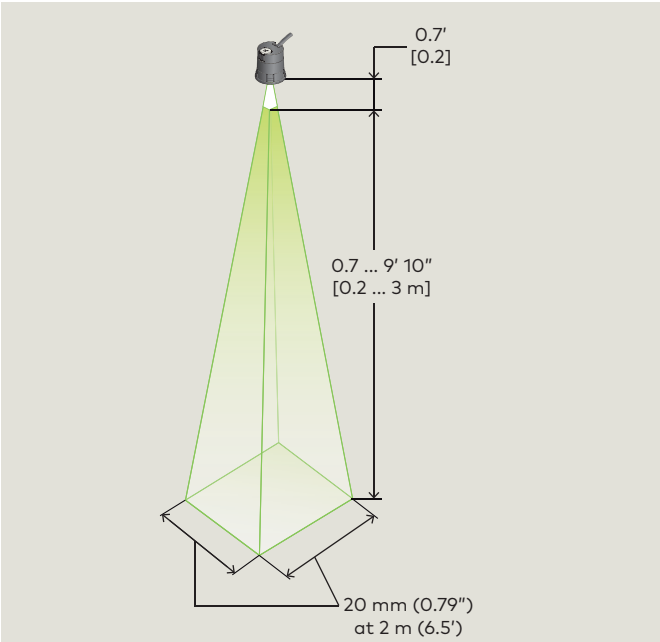
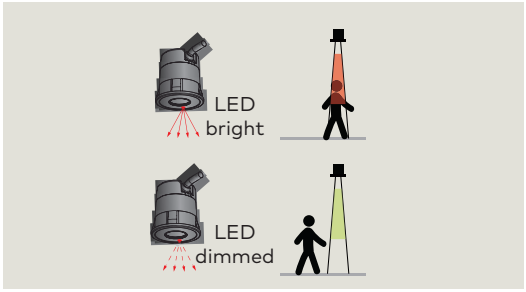


Fig. 30.4.3 TOF spot LED operation



30.4.1 TOF spot presence sensor detection range adjustment.

⚠ WARNING

Only authorized, trained personnel should commission the TOF/Spot sensors!

- Refer to CEDES TOF/Spot Installation and Operation Manual, N series.

1. Disconnect J2 activation plug (Fig. 30.1.1) from the S1 security enclosure before making adjustment

2. Sensor detection range: the detection range can be set to between 0.2 m and 3 m (0.7 ft and 10 ft) using potentiometer located at rear of sensor (access from top of canopy).

TIPS AND RECOMMENDATIONS

When setting distance with potentiometer, use Fig. 30.4.1 as the settings are not printed on the sensor.

3. Place an object under the sensor at the sensor maximum range for the door.

NOTICE

Sensor maximum range:
set to approximately 12" off the floor.

4. Turn the potentiometer clockwise, starting at left, until the LED shines bright (object detected).
5. Turn the potentiometer counterclockwise until the LED dims.
6. Limit is set at the correct distance.

30.4.2 Check TOF spot presence sensor operation.

1. Check reaction of sensor, including status LED by placing a hand into the detection area at different heights.

2. Reconnect J2 activation plug to its socket.

30.4.3 Presence sensor operation.

- Sensor dry contact output will indicate presence of any object or person underneath the sensor only while the brake is engaged to avoid false presence signals while the door is rotating.

30.3.4 J8 presence sensor output.

- J8 output (N.O. contact) (Fig. 30.1.2) can be used for monitoring the presence within the enclosed section of the locked door.
- Connecting it to the J2 activation input (Fig. 30.1.1) of the S1 control box will automatically release the brake and let the entrapped person through.

31 S1 security troubleshooting

31.1 Troubleshooting

31.1.1 Door doesn't quarter point.

1. Check power on (red light on).
2. Check all cable plug connections.
3. Check positioning sensor mounting and function.

- Positioning sensor red LED and green light on motor box must illuminate when activated by positioning wheel tab.

31.1.2 Motor starts, door does not turn.

1. Stall sensor activated.

- Check for door obstructions.
- Check that there is no direct light in the area of the motor box.

2. Check motor box mounting and connections.

31.1.3 Motor starts and then immediately stops.

1. Stall sensor activated.

- Check amount of force required to start door rotation (should be less than 30 pounds).
- Adjust distance between stall sensor and tab (5).
- Bend tab away from sensor for lower obstruction sensitivity.

31.1.4 Motor does not turn off when door is stalled.

- Adjust distance between stall sensor and tab (5).
- Bend tab toward sensor for higher obstruction sensitivity.

31.1.5 Door does not keep quarter point adjustment.

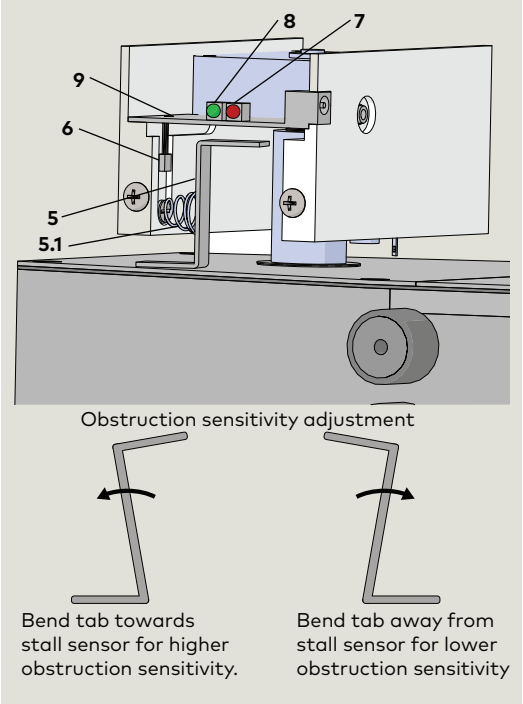
1. Positioning wheel must:

- Be mounted so that it does not contact the speed control cover.
- Activate the positioning sensor.

31.1.6 Door turns without being manually pushed.

1. If wind speed is strong enough to cause door movement, turn off power to self positioning closer until wind speed decreases.

Fig. 31.1.1 Sensitivity tab adjustment



5 Obstruction sensitivity adjustment tab
5.1 Spring
6 Stall sensor
7 Power on light (red)
8 Door at home (X) position (green)
9 Printed circuit board

Appendix A - Definitions

A.1 Revolving door definitions, from ANSI/BHMA A156.27 appendix

A1.1 **Active area** - An area where sensors detect the presence of motion

A1.2 **Automatic door operator** - A power operated door mechanism that is attached to a revolving door for the purpose of mechanically opening the door upon receipt of an activating signal (also called a power door operator).

A1.3 **Automatic home positioning** - Manual revolving doors with automatic home positioning are small 3 or 4 wing revolving doors that utilize a low energy operator or mechanism to return the doors to the home position once a person exits the door and the door stops rotating.

A1.4 **Automatic door speed** - The rate at which an automatic revolving door rotates measured in revolutions per minute (RPM). The three classifications are:

Standard speed- the maximum allowable RPM for a revolving door.

Slow speed- One half of standard speed.

Low energy speed- Door speed resulting in maximum of 2.5 lbf-ft of kinetic energy.

A1.5 **Bookfold position** - When each wing has been released from its fixed position permitting wings to pivot in the direction of egress

A1.6 **Bottom rail** - The lower horizontal member of the door wing.

A1.7 **Breakout** - A process whereby wings and/or door panels can be pushed open manually for emergency egress.

A1.8 **Canopy**- A he area above the wings and enclosure comprised of a ceiling (soffit), fascia (cladding), and roof (cover).

A1.9 **Center shaft** - The rotating center, 12 inches [305 mm] or less in diameter, of revolving doors to which the wings are attached.

A1.10 **Clearance** - The minimum gap around the wing to the ceiling, enclosure, and floor, not including the weather stripping, at any point in its rotation.

A1.11 **Control** - A unit containing electrical components for automatic control of door operation and overload protection.

A1.12 **Control mat** - A presence sensing device that detects pressure from people or objects to give an activating signal to the automatic revolving door.

A1.13 **Core** - The rotating central portion, greater than 12 inches [305 mm] in diameter of a large diameter revolving door to which the wings are attached.

A1.14 **Enclosure** - The walls in which the wings operate. Also known as Drum.

A1.15 **Entry point sensor** - A presence sensor designed to detect a person in the area between the outer leading edge of the enclosure wall and the approaching outer leading edge of the wing

A1.16 **Fascia** - The vertical surfaces of the canopy.

A1.17 **Home position** - The desired at-rest position for a revolving door.

- Home position "X" - the (4 wing) stops in the (X) position with all four wings in contact with the entrance wall posts.
- Home position "+" - the (4 wing) stops in the (+) position with two wings in contact with the center mullions and two wings in the middle of the throat opening.
- Home position "Y" - the (3 wing) stops in the (Y) position with two wings in contact with the entrance wall posts and one wing in contact with the wall center mullion.

A1.18 **Knowing act** - Consciously activating a switch with the knowledge of what will happen such as starting, slowing or stopping a revolving door. Switching devices may include wall or jamb-mounted contact switches such as push plates, fixed contact switches and controlled access devices such as keypads, card readers, and key switches.

A1.19 **Manual operation** - The capability of rotating the revolving door by a person applying a force to a door wing.

A1.20 **Manual speed control** - A device used to regulate manual revolving door speed by making it difficult to push the door beyond the maximum allowed RPM.

A1.21 **Motion sensor** - A sensor designed to detect the movement of a person or equivalent a the point of entry to the door that gives an activating signal to the power operated door.

A1.22 **Obstruction force** - The maximum static force the door is allowed to apply to a person or object measured at the outside edge of the rotating wing.

A1.23 **Power operated door** - A revolving door with a power operated mechanism that is attached to it for the purpose of mechanically opening the door upon receipt of an activating signal (also called Automatic Door).

A1.24 **Peripheral speed** - The rotating speed of a revolving door measured at the outer edge of the wing.

A1.25 **Presence sensor** - A sensor designed to detect the presence of a stationary person in the vicinity of the doorway and give a signal to the power operated door.

A1.26 **Push bar** - A bar attached to the wing upon which pressure is applied to set a manual revolving door in motion. A push bar is not required on automatic doors.

A1.27 **Push to slow device** - A knowing act switch used to create an activating signal to cause reduction of speed of the revolving door.

A1.28 **Safety glass** - Comprised of either fully tempered or laminated glass or other safety rated glazing to prevent injuries from breakage.

A1.29 **Sensor** - A device that detects motion or presence of a person or object.

A1.30 **Small vehicular** - Carts used to transport persons or objects.

A1.31 **Stile** - A vertical edge member of the door wing.

A1.32 **Throat opening** - The width between the enclosure side walls that creates the entry point.

A1.33 **Trained traffic** - People trained in the safe use and operation of a particular automatic door installation.

A1.34 **Weather stripping** - The material used to fill a clearance.

A1.35 **Wing** - A panel which rotates within and seals the enclosure. (Sometimes called a Leaf).

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