

S2 SECURITY REVOLVING DOOR

With Anti-tailgating

Installation Manual

RL6003-001 – 06-2023

Table of contents

1	General Information	4	10	Entrance Opening and Floor Preparation	30
2	Product Description and Technical data	5	10.1	Cordon Off Work Area	30
2.1	2000-S Series	5	10.2	Entrance Opening	30
2.2	3000-S Series	5	10.3	Revolving door floor surface	30
2.3	S2 Security With Anti-tailgating Overview	5	11	Locate Door Centerpoint, Drill Holes	31
2.4	S2 Revolving Door Assembly Overview	6	11.1	Door Building Attachment Plans	31
3	Safety Information	7	11.2	Installation Template	31
3.1	General Safety Information	7	11.3	Mark Door Position On Floor Using Floor Templates	32
4	S2 Series Models	8	11.4	Drill Pilot And Anchor Holes For Bottom Rail Studs	33
4.1	S2 Series Model Comparison	8	11.5	Drill Pilot Hole At Door Centerpoint	33
5	User Interfaces	9	11.6	Install Floor Bearing Assembly	34
5.1	User Interfaces	9	12	Install Mounting Bracket On K9 Drive Unit Assembly	35
6	S2 Security Door Overview	10	12.1	Install Main Drive Adapter Coupling On K9 Drive	35
6.1	S2 Security Door Control Overview	10	12.2	Install Mounting Bracket on K9 Drive	36
7	Revolving Door Assemblies and Hardware	11	13	Canopy Assembly And Installation	37
7.1	S2 Canopy Assembly	11	13.1	3 Piece Canopy Shipped As Single Assembly, Remove Covers	37
7.3	Assembly, drive, K9 unit and mounting bracket	12	13.2	Assemble Canopy Shipped In 2 Sections, Door ID 8'	38
7.4	Assembly, drive, K9 unit	13	13.3	Remove Inner Soffits And Cover Plates	39
7.5	Kit, K9 Drive Mount Assembly, S2	14	13.4	Install two cross brace weldments and angle adjustment bracket in canopy	40
7.6	Electronic Assembly, SRD K9	15	14	K9 Drive Installation Objectives	41
7.7	Kit Accessories Electronics K9 – RK6017	16	14.1	K9 drive installation objectives – Installation In Canopy	41
7.8	Shaft Assembly, 4 Wing, S3/S2, K9 Drive	17	14.2	K9 Drive Installation Objectives – After Revolving Door Assembled, Squared and Leveled	42
7.9	Bookfold Lock Operation	18	15	Install K9 Drive Mounting Hardware And K9 Drive In Canopy, Raise Canopy To Installation Height	43
7.10	Top Hanger Assembly	19	15.1	Install Canopy Drive Mounting Brackets	43
7.11	Bottom Hanger Assembly	19	15.2	Install Canopy Side Mount Weldments	44
7.12	Bottom Rail Assembly, 4 Wing	20	15.3	Position K9 Drive And Mounting Bracket Assembly Below Canopy	45
7.13	Floor Bearing Assemblies	20	15.4	Fasten K9 Drive And Mounting Bracket Assembly In Canopy	46
7.14	Door Wing Assemblies, S2/S3	21	15.5	Raise Canopy Into Place	48
7.15	Door Wing Types	21			
7.16	Door Wing Assembly Hardware	22			
7.17	Center Post Assembly	23			
7.18	End wall / Bumper Sensor Assemblies	24			
7.19	Surface Lock	25			
7.20	Optional Assembly, Floor Grill And Pan Assembly	25			
7.21	Optional Assembly, Canopy Light With LED Driver	25			
7.22	Optional Standby UPS	26			
8	S2 Sensors	27			
8.1	S2 Canopy Sensor Overview	27			
8.2	Cedes TOFniva	27			
8.3	S2 End Wall Sensor / Bumper Assembly	28			
9	Recommended Tools And Materials	29			
9.1	Recommended Tools	29			
9.2	Recommended Installation Materials And Installation Hardware	29			

16	Enclosure Bottom Rail And Post Numbering	49	25	Install Enclosure Glass, Bottom Rail Covers	76
16.1	Enclosure Bottom Rail And End Wall Numbering	49	25.1	Enclosure Glass	76
17	Enclosure Center Post Installation	50	25.2	Unpack Enclosure Glass Shipping Crate	76
17.1	Open Post Shipping Crate	50	25.3	Prepare Enclosure Posts And Bottom Rails For Enclosure Glass	76
17.2	Center Post Assembly	51	25.4	Install Enclosure Glass	77
17.3	Attach Center Posts To Canopy	52	25.5	Install Bottom Rail Covers	79
18	Enclosure End Wall Installation	53	26	Check Wing Breakout Force, Bookfold Operation	80
18.1	Assembly, RH End Wall/bumper Assembly With Bumper Sensor	53	26.1	Check Breakout Force	80
18.2	Assembly LH End wall/bumper Assembly Without Bumper Sensor	54	26.2	Check Bookfold Operation	81
18.3	Attach End Walls To Canopy	55	27	Install TOFniva sensors	82
18.4	End Wall Wiring	56	27.1	TOFniva Sensor Installation On Outer Soffits	83
18.5	Emergency Pushbutton Wiring	56	27.2	TOFniva Sensor Installation On Cover Plates	84
18.6	K9 OPL Mode Switch Wiring	56	28	Canopy Hardware Installation	85
19	Enclosure Bottom Rail Installation	57	28.1	Install Canopy Speakers	85
19.1	Open Bottom Rail Shipping Crate	57	28.2	Install Optional UPS system (Para. 7.22).	85
19.2	Bottom Rail Assembly, 4 Wing	58	28.3	Canopy LED Fixture Installation (Option)	86
19.3	Lower Canopy/Post Assembly And Fasten Posts And End Walls To Bottom Rails.	59			
19.4	Set Enclosure Level, Square And Plumb	60			
20	Align K9 Drive Shaft With Floor Bearing And With End Wall	61			
20.1	Center K9 Drive Shaft Over Floor Bearing	61			
20.2	Install Surface Mounted Floor Pivot Assembly	62			
20.3	Fasten K9 Turnbuckle Assembly To Its Mounting Bracket	63			
20.4	Align K9 Drive Locking Disc With End Wall	64			
21	Shaft Assembly	65			
21.1	Unpack Shaft Assembly Shipping Crate	65			
21.2	Install Shaft Adapter On Shaft Splined Shaft	66			
22	Install Shaft Assembly	67			
22.1	Install Shaft Assembly Bottom Adapter Into Floor Bearing, Attach Shaft Adapter To K9 Drive	67			
23	Wing Installation	69			
23.1	Wing Assemblies	69			
23.2	Unpack Wing Shipping Crate	69			
23.3	Install Surface Locks On Interior Door Wings	70			
23.4	Install Wings Onto Shaft Hangers	71			
23.5	Align K9 Drive and Door Wings	72			
24	Install Floor Strikes	75			
24.1	Install Floor Strikes	75			

1 General Information

1.1 Installation Instructions

This document contains important instructions for installation of Alvarado S2 security revolving doors with anti-tailgating security.

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

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 Dimensions

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

1.4 Environment

Alvarado S2 security revolving doors are designed to operate on an interior or exterior building application.

1.5 Order Custom Requirements And Optional Equipment.

NOTICE

Revolving door order custom requirements.

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

1.6 Alvarado S2/S3 Security Revolving Door Manuals

	Function
RL6003-001	S2 Installation Manual, 4 wing, K9
RL6003-002	S3 Installation Manual, 4 wing, K9
RL6003-003	S2/S3 Wiring, Setup and Troubleshooting Manual, K9
RL6003-004	S2/S3 Owner's Manual, K9
RL6003-005	S2/S3 Maintenance Manual, K9
RL6003-006	S2/S3 Electrical Documentation, K9
RL6003-007	Sensor Intenta Service Manual
RL6003-008	PAVIS3 Software Manual, K9
RL6003-009	System Setup
RL6003-010	K9 Checklist for SRD Commissioning and Troubleshooting

1.7 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.

2 Product Description and Technical data

2.1 2000-S Series

Enclosure	Welded construction	
	Finish	Aluminum, anodized, painted, cladded bronze or stainless steel.
Wings	Bolted construction	
	Finish	Aluminum, anodized, painted, cladded bronze or stainless steel.

2.2 3000-S Series

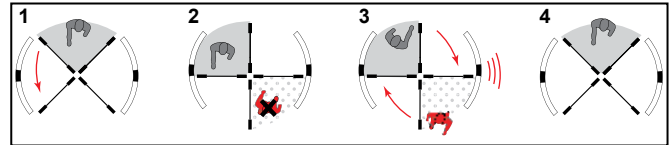
Enclosure	Fully formed and welded construction	
	Finish	Aluminum, anodized, painted, cladded bronze or stainless steel and wood
Wings	Fully formed and welded construction	
	Finish	Aluminum, anodized, painted, cladded bronze or stainless steel and wood

2.3 S2 Security With Anti-tailgating Overview

2.3.1 Unauthorized access in the opposite direction.

1. **Authorized person** enters compartment leaving secure area.
2. **Intruder** enters opposite compartment.
3. Sensors detect intruder's presence.
 - Door stops.
 - Intruder alert sounds.
 - Door reverses direction.
 - Occupants then exit where they entered from.
4. **Authorized person** re-enters door compartment, then exits.

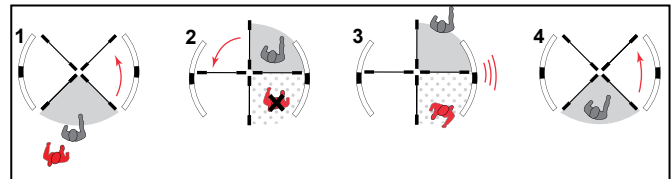
Fig. 2.3.1 S3 security – unauthorized access in opposite direction



2.3.2 Anti-tailgating.

1. **Authorized person** swipes card and enters door compartment.
2. **Intruder** enters next available compartment.
3. Sensors detect intruder's presence.
 - Door stops.
 - Intruder alert sounds.
 - Door reverses direction.
 - Intruder exits initial door entry point.
4. Authorized person re-enters secured area.

Fig. 2.3.2 S3 security – unauthorized access in next compartment (Anti-tailgating)



2.4 S2 Revolving Door Assembly Overview

Fig. 2.4.1 Four wing S2 revolving door assembly

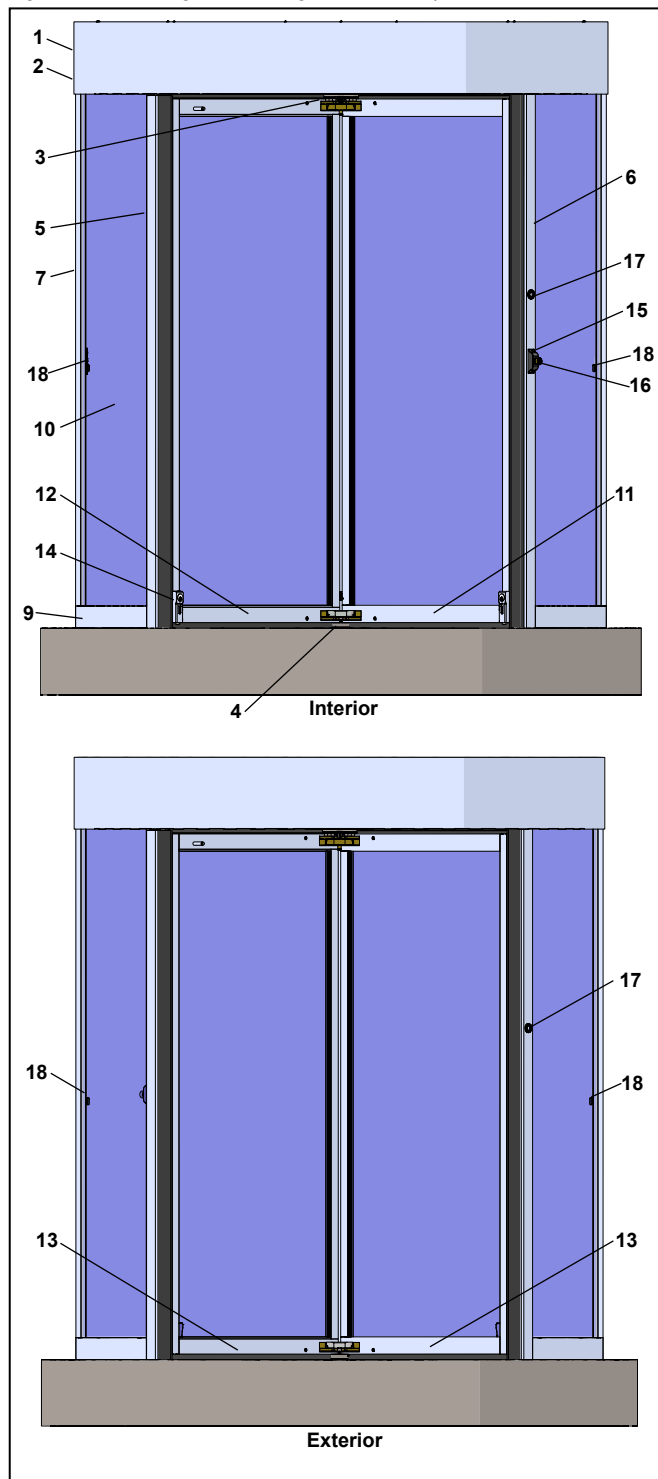


Table 2.4.1 S2 revolving door assemblies

1	RS6123-003	Canopy assembly, 13", 4 wing, 8' ID, S2
3	RS6102-001	Shaft assembly, 4 wing, S2/S3, K9 drive
4	RS6076-010	Floor pivot bearing assembly
5	RS6104-001	Assembly, end wall / bumper without end wall sensor
6	RS6104-002	Assembly, end wall with end wall sensor / bumper
7	RE6007-010	Center post extrusion
9	RS6110-040	Bottom rail assembly, 4 wing, 8' ID door
10	RC6420-010	4 wing outer glass, 7/16" thick, tempered, 8' high door
11	RS6111-050	Assembly, wing, right surface lock, S2, S3
12	RS6111-060	Assembly, wing, left surface lock, S2, S3
13	RS6111-040	Assembly, wing, S2, S3
14	RS6080-010	Surface lock and lock cylinder (by others)
15	RX3413-020	Emergency stop mounting housing
16	RX3413-010	Emergency stop pushbutton
17	RC7007-001	Indicator light
18	RS7060	Switch plate, Push to Reverse

3 Safety Information

3.1 General Safety Information

3.1.1 Safety instructions.

NOTICE

Observe safety warnings as they are presented in this manual.

3.1.2 Safety warnings.



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 110-240 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

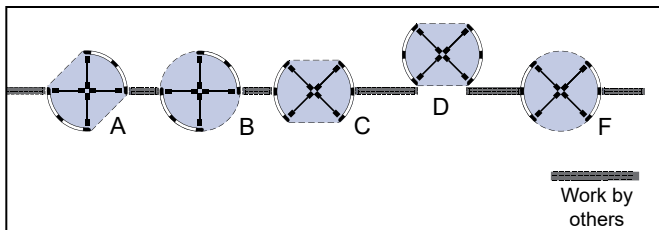
After installation, hazards such as minor crushing, impact with limited force, and risk to unsupervised children may exist depending on structural design of door area, type of door, and any safeguards that have been implemented.

4 S2 Series Models

4.1 S2 Series Model Comparison

	AL2000/AL3000	SS2000/SS3000	BZ2000/BZ3000
Material	Aluminum	Aluminum / Stainless steel	Aluminum / Bronze
Wing configuration	4 wings		
Enclosure diameter	Minimum ID: 6'-6"	Maximum ID: 8'-0"	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'-0"	Maximum 7'-6"	
Maximum total wing assembly and center shaft assembly weight	750 pounds aluminum 850 pounds stainless steel	Total weight may vary depending on application.	
Finish	<ul style="list-style-type: none"> • Clear anodized • Custom anodized • Dark bronze anodized • Painted 	<ul style="list-style-type: none"> • #4 satin • #6 fine satin • Mirror • Non-directional "Jitterbug" • Custom 	<ul style="list-style-type: none"> • Satin and lacquered • Satin no lacquer • Mirror and lacquered • Statuary and lacquered • Custom
Attachment Types	A, B, C, D, F as indicated on the shop drawings. Reference Fig. 4.1.1.		
Enclosure material	<ul style="list-style-type: none"> • Glass • Aluminum panels 	<ul style="list-style-type: none"> • Glass • Solid metal 	<ul style="list-style-type: none"> • Glass • Solid metal
Enclosure glass	7/16" or 9/16" clear or tinted		
Canopy material	<ul style="list-style-type: none"> • Aluminum 	<ul style="list-style-type: none"> • Stainless steel 	<ul style="list-style-type: none"> • Bronze
Fascia height	<ul style="list-style-type: none"> • 12" [305] minimum • 24" [610] maximum 		

Fig. 4.1.1 S3 security door attachment types



5 User Interfaces

5.1 User Interfaces

5.1.1 Door user interfaces, interior view.

Fig. 5.1.1 S2 door assembly user interfaces, interior view

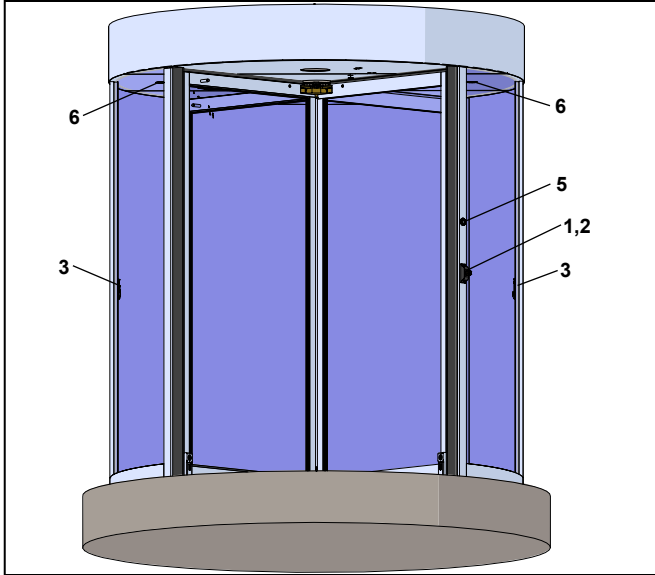


Fig. 5.1.2 Push to reverse jamb pushplate

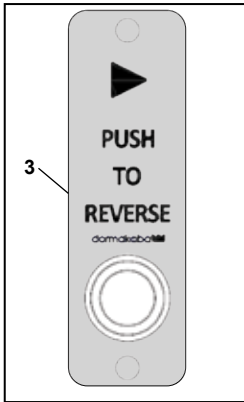


Fig. 5.1.3 Card reader example— by others



Fig. 5.1.4 Activation light

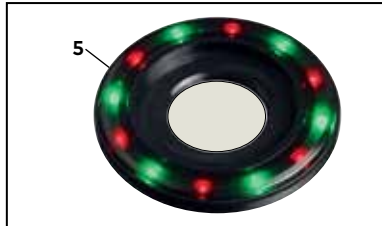


Fig. 5.1.5 Speaker, canopy mounted

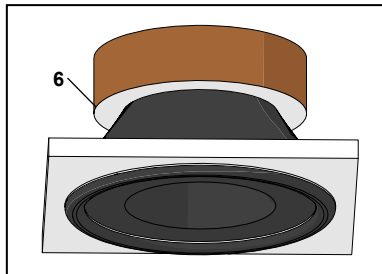


Fig. 5.1.6 K9 OPL05 switch

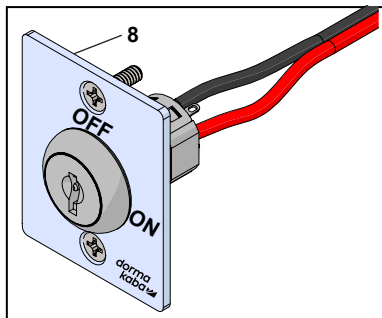


TABLE 5.1.1 Door user interfaces

ID#	Part no.	Function
1	RX3413-010	Switch, Emergency Stop
2	RX3413-020	Housing, Emergency Stop switch
3	RS7060-010	Switch plate, Push to Reverse
4	RX6043-001	Operating unit, OPL-05, K9 S2/S3 (Field installed: may be installed in a different location)
5	RC7007-001	Activation light
6	RX6027-001	Voice module speaker
7		Card reader, by others
8	RS6125-010	Assembly, key mode 2-position K9 S2/S3 (Field installed at OPL operating unit (4) location).

Fig. 5.1.7 Emergency stop pushbutton and housing

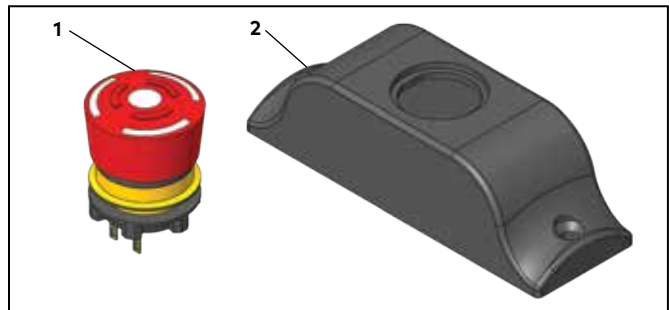
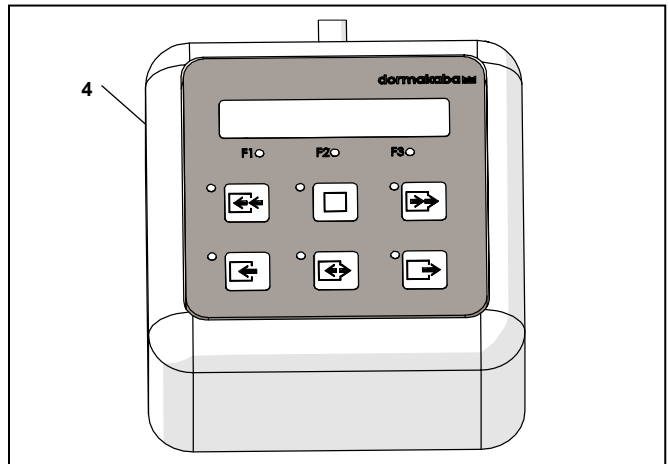


Fig. 5.1.8 K9 OPL05 operating unit



TIPS AND RECOMMENDATIONS

K9 OPL operating unit (4) and OPL switch (8) mounted and wired by installer at door installation.

6 S2 Security Door Overview

6.1 S2 Security Door Control Overview

6.1.1 Security door system.

The security door revolving door system is designed to provide limited access for pedestrian traffic between two separate areas.

NOTICE

Intended use.

Security doors are intended for use only by persons trained in their proper use.

TABLE 6.1.1 Door user interfaces

ID#	Part no.	Function
1	RS6104-002	Assembly, quarter post with end wall bumper sensor and resistor
2	RS6080-010	Surface lock and lock cylinder (lock cylinder by others)
3	RC7007-001	Activation light
4	RX3413-010	Switch, Emergency Stop

6.1.2 Controls

- Supply line power.
 - 120 Vac, single phase, circuit breaker protection.
- K9 drive
- Bookfold lock.
- Passage control.
 - Two independent inputs for activation devices, e.g. card readers (supplied by others) and an entry point and presence detection system.

6.1.3 Bookfold lock operation.

- The wings will be held in their respective positions under normal conditions by an electro-magnetic bookfold lock.
- Bookfold lock released when building fire alarm system signal, emergency stop signal or power failure occurs, allowing the wings to be manually pivoted in the direction of egress.

6.1.4 Manual wing locking.

- The two door wings that face the interior when at the Home position (Fig. 6.1.1) are each equipped with a surface lock that, when engaged, will lock the door. To prevent damage to the controls and motor, put the OPL05 to General Release or engage an ESTOP button.

6.1.5 Safety.

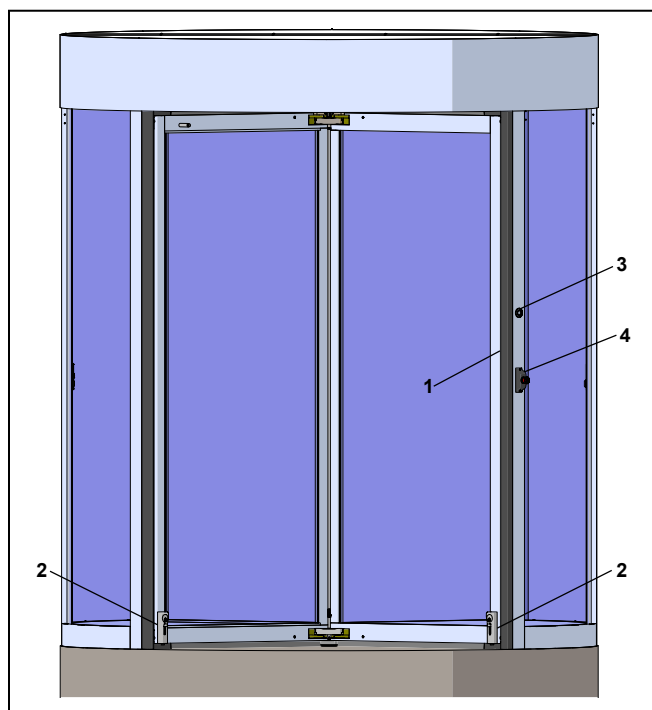
- Quarter post/end wall sensor will detect an obstruction between the rotating wings and the leading edge of the enclosure. Sensor shall be active within 2 inches [51 mm] of the floor and at least 60 inches [1520 mm] from the floor. Sensors will pause door operation with the door wing at any opening angle. Presence detection system will provide protection against entrapment.

6.1.6 Acceptable door speed.

NOTICE

K9 drive is set up to regulate door speed as specified in ANSI/BHMA A156.27, Section 8.2.

Fig. 6.1.1 S3 security door interior view



7 Revolving Door Assemblies and Hardware

7.1 S2 Canopy Assembly

Fig. 7.1.1 S2 security canopy top view, covers removed

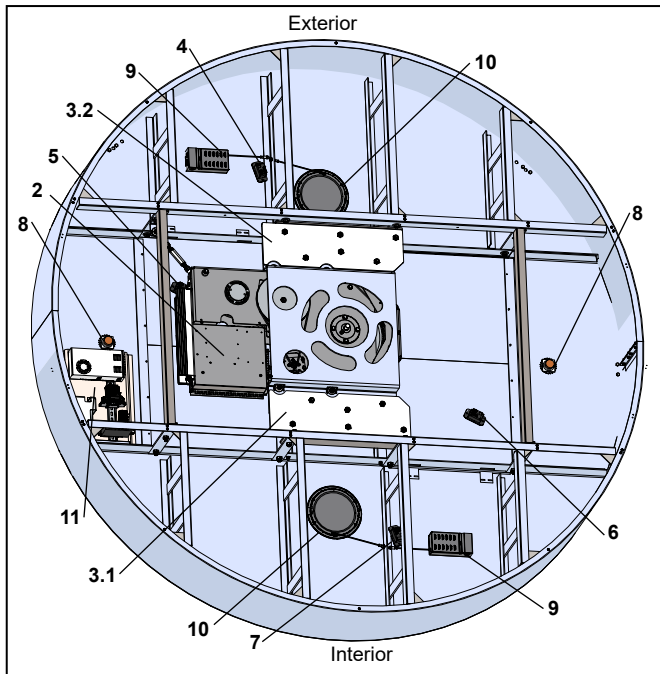
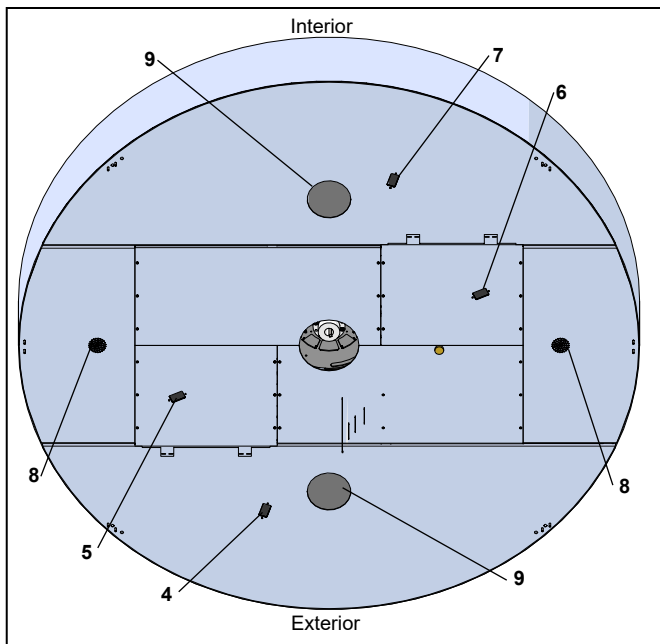


Table 7.1.1 S2 security canopy

1	RS6123-003	S2 Canopy assembly, 13" 4W 8' ID
2	RS6086-010	Assembly, drive, K9 unit
	RX6021-010	K9 drive, 90 degree SRZ
3.1	RS6083-010	Assembly, side mount weldment, RH
3.2	RS6083-020	Assembly, side mount weldment, LH
4	RK3500-010	Starting sensor, outside
5	RK3500-010	Presence sensor, outside
6	RK3500-010	Presence sensor, inside
7	RK3500-010	Starting sensor, inside
8	RX6027-001	Voice module speaker
9	RC6320-010	LED junction box/driver (option)
10		LED light (option)
11	RS6124-001	Electronic Assembly, SSR. SRD K9

Fig. 7.1.2 S2 security canopy soffit view



7.3 Assembly, drive, K9 unit and mounting bracket

Fig. 7.3.1 Assembly, drive, K9 unit top view

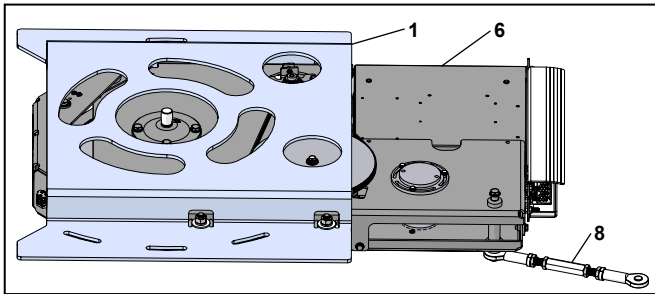


Fig. 7.3.2 Assembly, drive, K9 unit exploded view

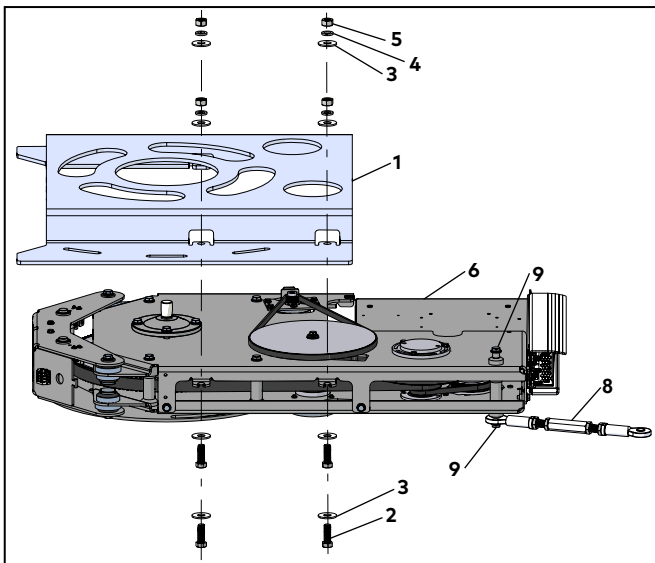
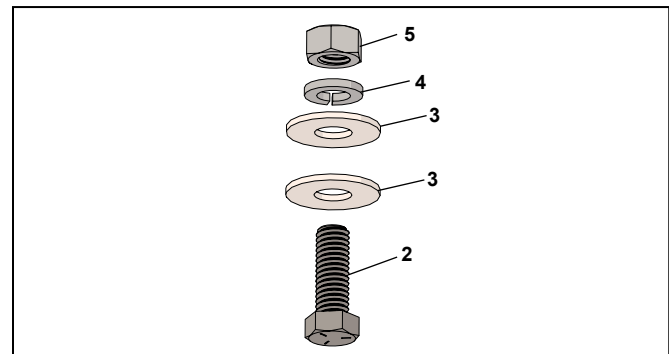


Table 7.3.3 Assembly, drive, K9 unit and mounting bracket RS6086

1	RC6373-010	Bracket, mount, K9 drive	1
2	RF6066-01Z	7/16-14 x 1 1/4" hex bolt, zinc plate	4
3	RF6067-01Z	7/16 x 1 1/4" OD washer, zinc plate	8
34	RF6068-01Z	7/16 lockwasher, zinc plate	4
3.2	RF6069-01Z	7/16-14 hex nut, zinc plate	4
6	RX6021-010	Assembly, drive, K9 unit	1

Fig. 7.3.3 Assembly, drive, K9 unit fasteners



7.4 Assembly, drive, K9 unit

Fig. 7.4.1 Assembly, K9 drive unit, 4 wing

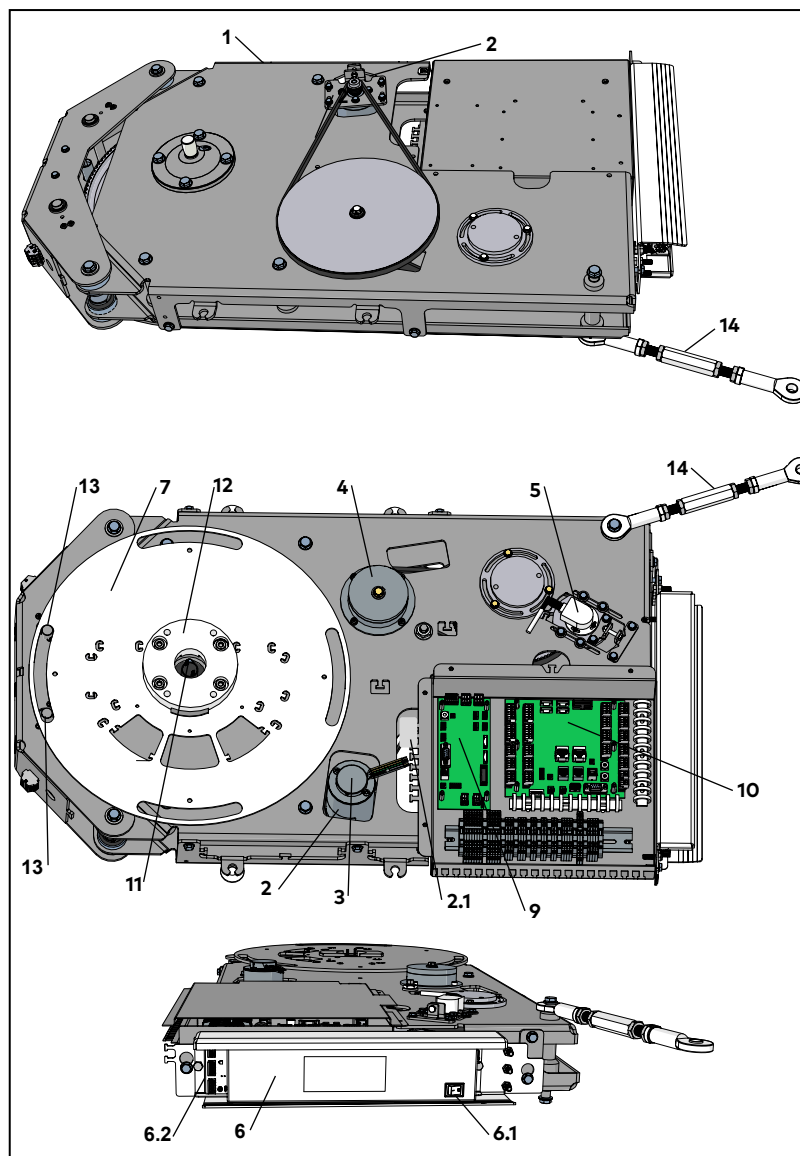


Table 7.4.1 Assembly, drive, K9 unit, 4 wing

ID#	Electrical diagram designation	Description
1	RX6021-010	K9 drive, 90 degree SRZ
2	-M1	Motor
2.1	-KM	Motor relay
3	-B2	Shaft encoder, speed
4	-Y3	Holding brake
5	-B1	Shaft encoder, position
6	-G1	Power supply
6.1	-G1	Main switch
6.2	-G1	24 VDC control voltage
7		Locking disc
8		Cover, control system boards
9	-A2.1	Control system, ETS22ac
10	-A2.0	Control system, ETS22sc
11	-X3	Slip ring
12		K9 main drive adapter coupling
13		Locking bolt
14		Turnbuckle

7.5 Kit, K9 Drive Mount Assembly, S2

Fig. 7.5.1 Kit, K9 drive assembly, S2

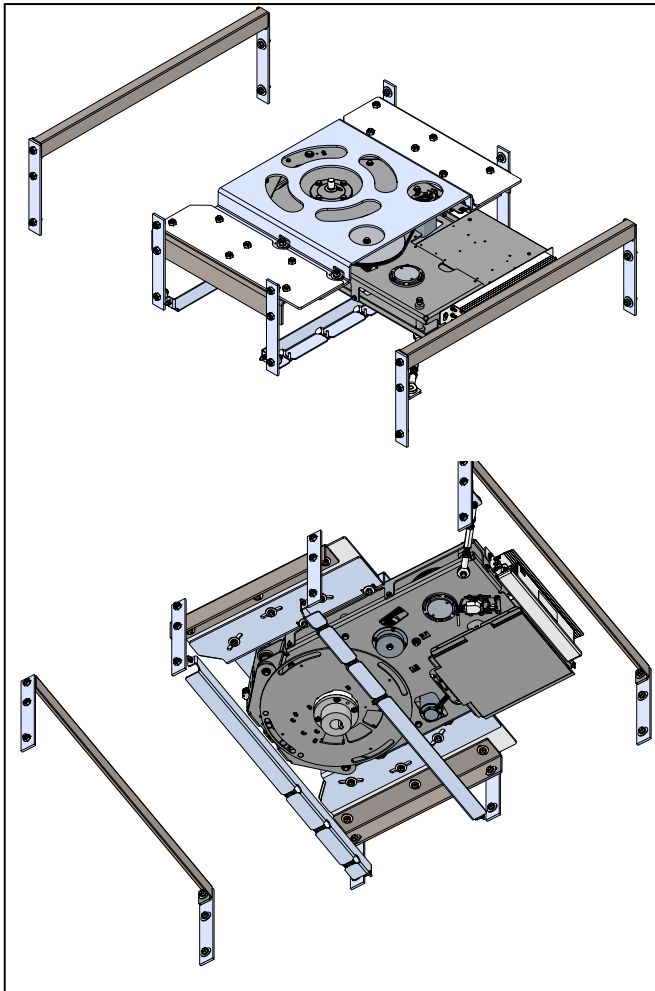


Table 7.5.1 Kit, K9 drive assembly, S2

	RK6014-003	Kit, drive mount assembly, K9, S2
1	RS6083-010	Assembly, side mount weldment, K9, RH
2	RS6083-020	Assembly, side mount weldment, K9, LH
3	RS6085-010	Weldment cross brace, K9 drive
4	RS6086-010	Assembly, drive unit, K9
5	RC6374-010	Bracket, canopy mount, K9
6	RC6434-010	Bracket, angle adjustment, K9
7	RC6376-010	Bracket, cover plate support
10	RS6115-010	Assembly, weldment strap K9 (3 hole)
11	RS6115-020	Assembly, weldment strap K9 (2 hole)
12	RF6067-01Z	7/16 x 1 1/4" OD washer, zinc plate
13	RF6068-01Z	7/16" lockwasher, zinc plate
14	RF6066-01Z	7/16-14 x 1 1/4" hex bolt, zinc plate
15	RF6115-02G	#10-24 x 3/4" FHMS 18-8 SS
16	RF6163-01C	Nut, clip-on, 10-24 black oxide
17	DF0939	1/4" lock washer, zinc
18	RF6055-02G	1/4-20 x 1" hex head bolt, SS
19	RF6162-01Z	1/4-20 hex nut, 18-8 zinc plate
20	RF6162-01Z	Washer, flat, 1/4" ovzsz .56 x .26" zinc plate
21	RK6013-001	Kit, shaft adapter assembly, K9, S3/S2

Fig. 7.5.2 Kit, K9 drive assembly, S2 exploded view

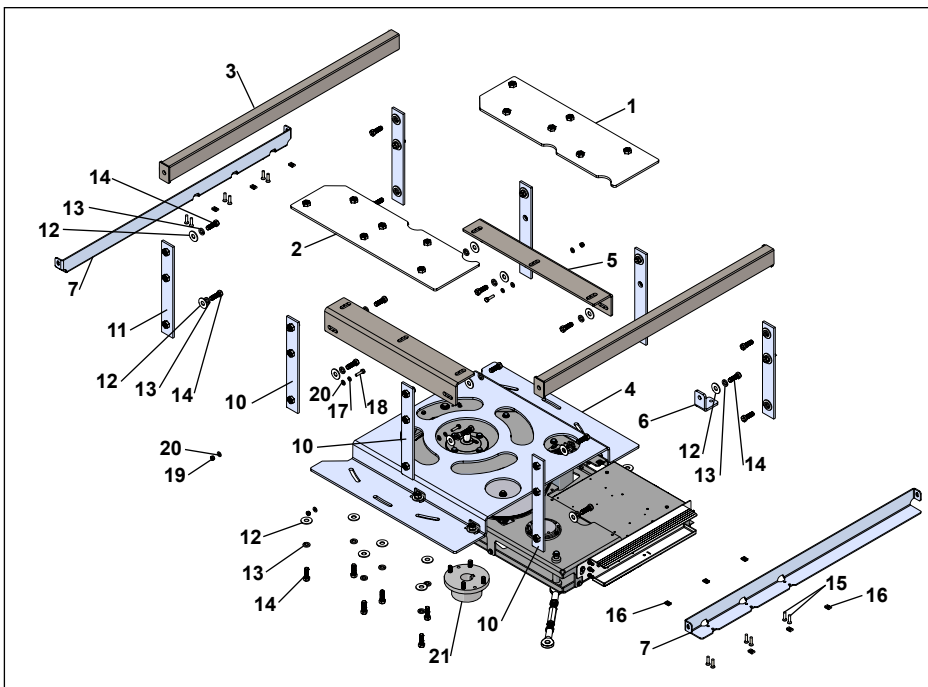
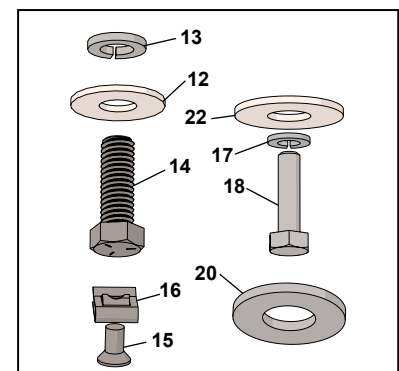


Fig. 7.5.4 K9 drive kit fasteners



7.6 Electronic Assembly, SRD K9

Fig. 7.6.1 Electronic Assembly RS6124-001

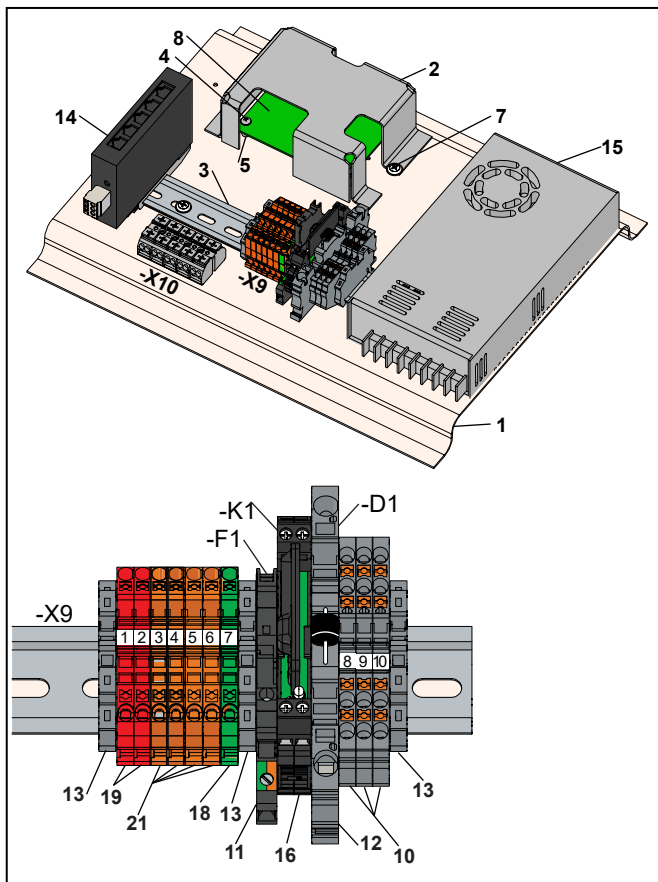


Table 7.6.1 Electronic Assembly, SSR, SRD K9 RS6124-001

1	RC6435-01G	Module, voice base, K9	1
2	RC6436-01G	Module, voice cover, K9	1
3	RC6488-010	Rail, DIN	1
4	RF6156-01Z	8-32 x 1/4" Phillips pan head screw, zinc	8
5	RF6157-01Z	Standoff, 8-32 x 1/2", zinc	4
6	RF6165-01Z	SHCS, M4-0.7 X 7mm, power supply mounting,	6
7	RF6166-010	#8 x 5/8" rounded head screw with washer for sheet metal	4
8	RX6026-001	Board, voice module	1
9	RX6028-001	5-terminal block, quick connect, 12-20ga wires	1
10	RX6029-001	Terminal block, bookfold feed-thru, K9	3
11	RX6030-001	Terminal block, bookfold fuse module, K9	1
12	RX6031-001	Terminal block with diode, bookfold	1
13	RX6032-001	Bracket, snap-on, bookfold end, K9	2
14	RX6033-001	Switch, Ethernet, SRD, K9	1
15	RX6034-001	Power supply, bookfold lock, K9	1
16	RX6035-001	Assembly, relay, DIN rail SSR, K9	1
18	RX6050-002	Block, terminal, feed-thru, K9, Grn	1
20	RX6050-004	Block, terminal, feed-thru, K9, Red	2
21	RX6050-005	Block, terminal, feed-thru, K9, Yel	4
22	RX7042-001	Wire, 22 AWG, Stranded, Red, 3'	4
23	RX7042-002	Wire, 22 AWG, Stranded, Grn, 3'	2
24	RX7042-003	Wire, 22 AWG, Stranded, Red, 10'	1
25	RX7042-004	Wire, 22 AWG, Stranded, Grn 10'	1
26	RX7042-005	Wire, 22 AWG, Stranded, Yel, 3'	1

7.7 Kit Accessories Electronics K9 – RK6017

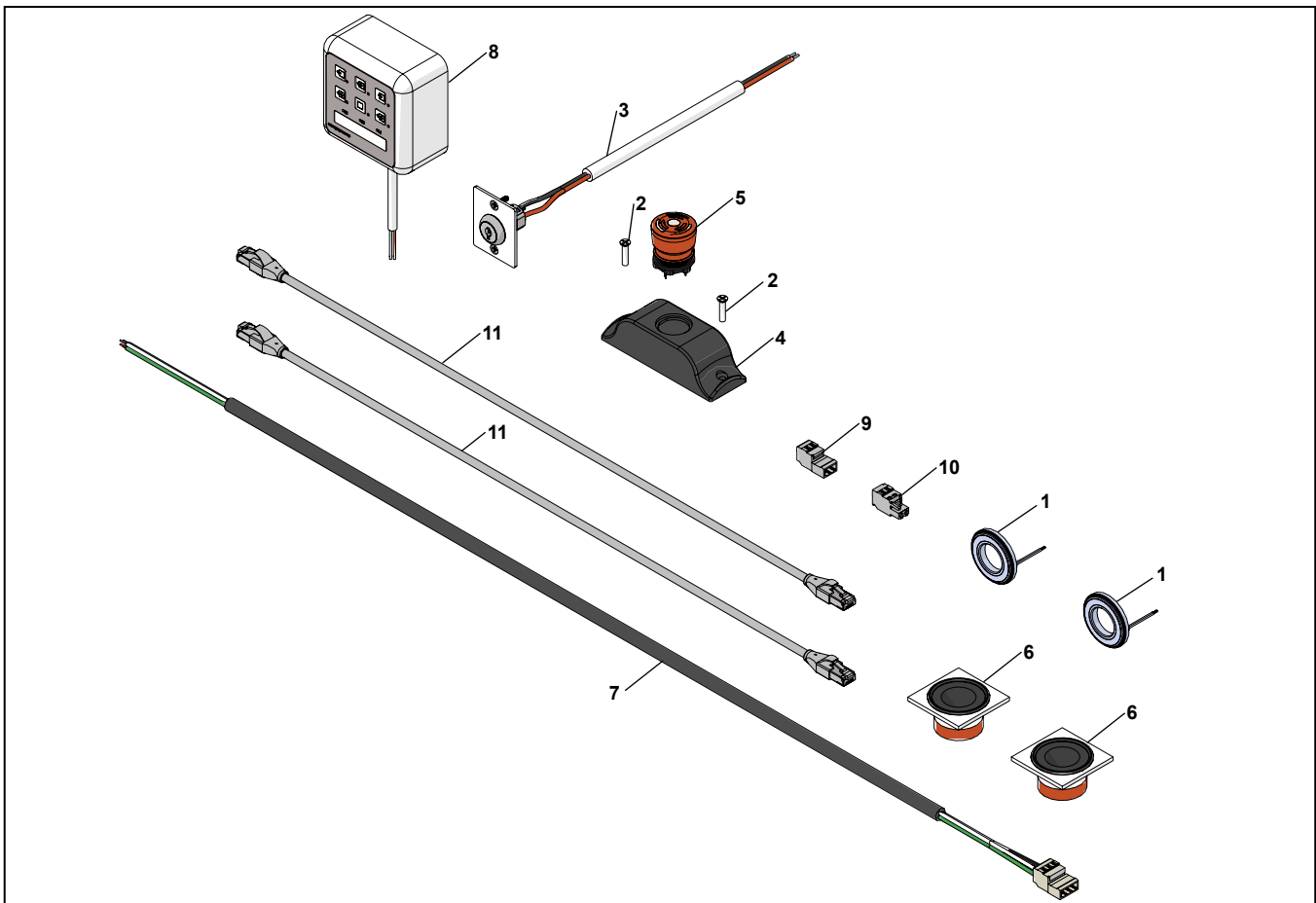
Table 7.7.1 Kit Accessories Electronics K9

ID	Part number	Description	-001	-002	-003
1	RC7007-001	LED Indicator ring	2	2	2
2	S21 0206	8-32 x 1/4 Philips FH undercut MS	2	2	2
3	RS6125-010	Assembly, key mode 2-position K9 S2/S3	1	1	1
4	RX3413-020	Mounting housing	1	1	1
5	RX3413-020	Switch, EStop SRD K9	1	1	1
6	RX6027-001	Speaker, voice module Veinland K9	2	2	2
7	RX6039-001	Assembly, power cable, bookfold lock SRD K9	1	1	1
8	RX6043-001	Operating unit, OPL-05, K9 S2/S3	1	1	1
9	RX6045-001	Connector, male, 2 pole, K9 bookfold lock	1	1	1
10	RX6046-001	Connector, female, 2 pole, K9 bookfold lock	1	1	1
11	RX6047-001	Cable, CAT-5 Ethernet K9 Intenta	-	1	2

Table 7.7.2 Part configuration table

RK6017-001	Kit accessories Elect S2 K9
RK6017-002	Kit accessories Elect S3 /1 Intenta K9
RK6017-003	Kit accessories Elect S3 /2 Intenta K9

Fig. 7.7.1 Kit Accessories Electronics K9



7.8 Shaft Assembly, 4 Wing, S3/S2, K9 Drive

Fig. 7.8.1 Shaft assembly, 4 wing, S3/S2, K9 drive

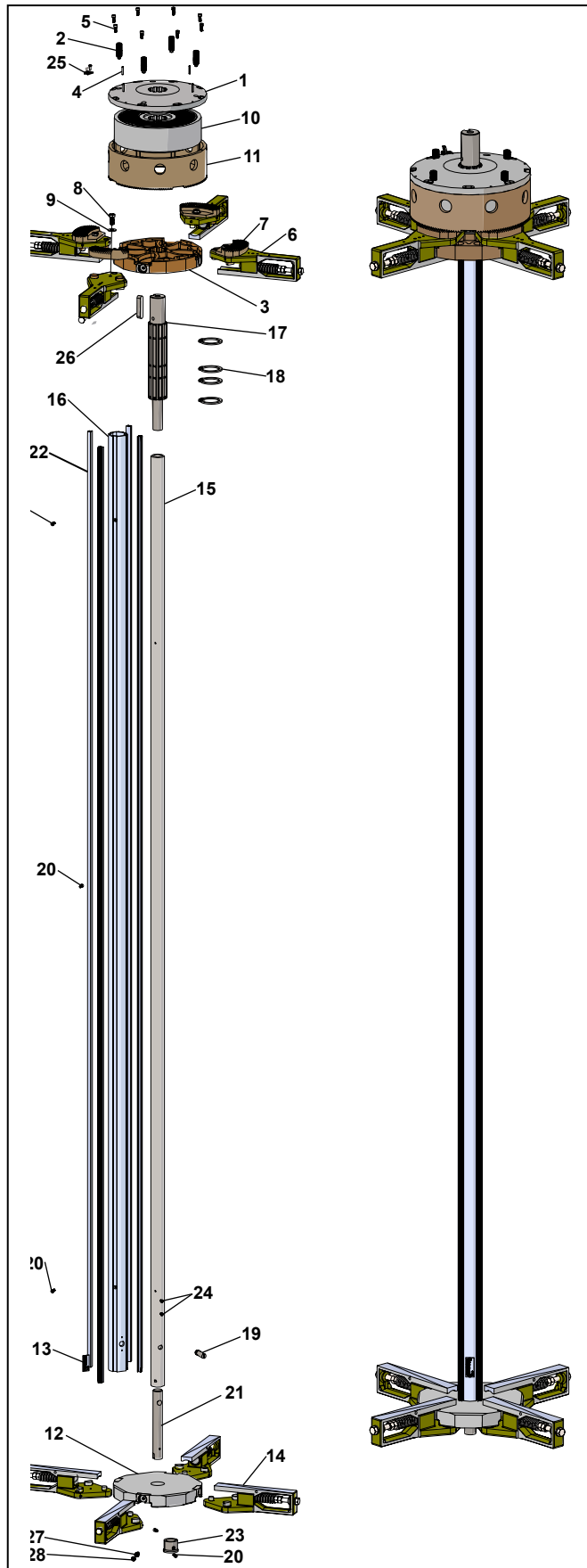
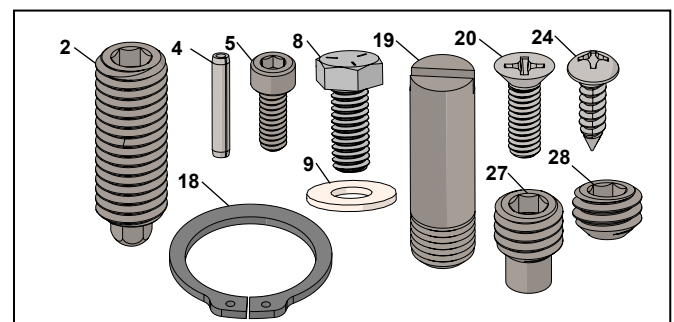


Table 7.8.1 Shaft assembly, 4 wing, S3/S2, K9 drive

Part Number	Description	Quantity
RS6102-001	Shaft assembly, 4 wing, S3/S2, K9 drive	
1	RC6332-010 Top - AL1000 bookfold cover plate	1
2	RC6338-010 Bookfold spring plunger	4
3	RS6082-010 Splined bookfold disc assembly, 4 wing	1
4	DF2708-01Z Ø11/8 x 3/4" slotted spring pin	4
5	RF7006-02C 10-24 x 1/2" long socket head cap screw	8
6	RS2964-03C Hanger, top bookfold lock	4
7	RC6337-010 Hanger serrated plate	4
8	RF6012-01G 5/16-18 x 3/4" hex bolt, SS	4
9	RF6019-01G 5/16 " flat washer 316, SS	4
10	RC6339-010 Bookfold lock coil	1
11	RC6331-010 Body, bookfold lock	1
12	RS6043-001 4 wing disc assembly	1
13	RD6001-001 Shaft ID tag	1
14	RS6045-001 Hanger assembly, bottom disc assembly	4
15	RM1200-003 SRD steel center shaft	1
16	RM1210-001 4 wing steel center shaft cover	1
17	RC6372-01G S2-S3 shaft, splined shaft	1
18	RF6061-010 Snap-ring, bookfold lock, 1 3/4" OD	1
19	RF6052-010 Steel shaft cross pin, 1 1/2" long	1
20	RF6054-01G 8-32 x 1/2" Phillips FHMS	5
21	RC6178-010 Bottom shaft adapter	1
22	RC6078-001 Steel shaft pile sweep	4
23	RC6417-001 Bottom shaft collar, half, SRD	2
24	RF6008-01G #6 Phillips pan head sheet metal screw, 1/2" long	2
25	RS6109-001 Bookfold lock cable tie assembly	1
26	RF6151-01G Key, 10 mm x 10 mm x 54 mm, SS, K9	1
27	RF6113-01G 3/8-16" dog point set screw	1
28	RF6114-01G 3/8-16" cup point set screw	1

Fig. 7.8.2 Shaft assembly fasteners



7.9 Bookfold Lock Operation

7.9.1 Building alarm or security interface.

1. Building alarm or security system provides signal (N.C. dry contact) to Interface board fire alarm J21 plug.

7.9.2 Bookfold lock operation.

- Bookfold lock is normally engaged (Fig. 7.9.3) increasing the amount of force required to fold the door wings. Power from the bookfold lock power supply energizes the bookfold coil.
 - Bookfold lock body serrations engage hanger serrated plates.
- When bookfold lock released, steel cover plate/bookfold body is moved away from hanger serrated plates by springs in each of the four spring plungers.

Fig. 7.9.1 Bookfold lock assembly

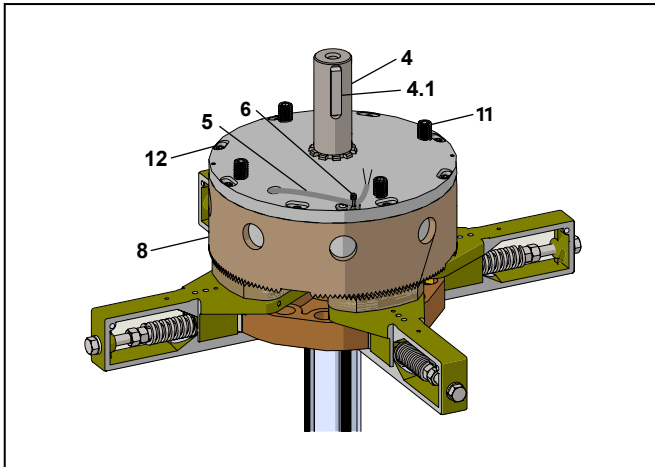


Fig. 7.9.2 Bookfold lock electromagnetic coil

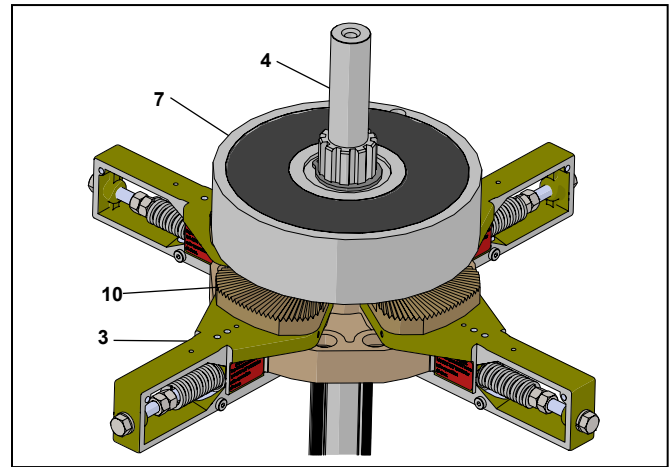
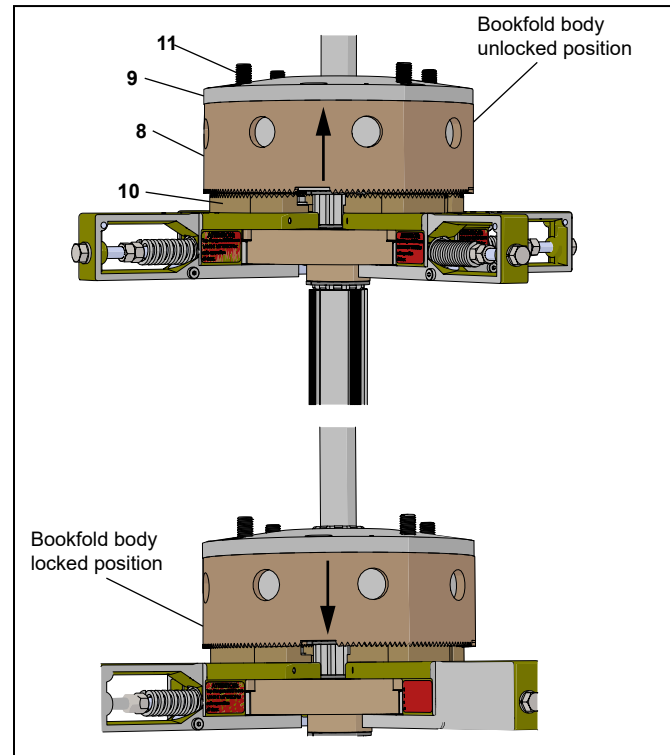


Table 7.9.1 Bookfold lock assembly

2		Bookfold lock assembly
3	RS2964-03C	Hanger, top bookfold lock
4	RC6372-01G	S2-S3 shaft, splined shaft
4.1	RF6151-01G	Key, 10 mm x 10 mm x 54 mm, SS, K9
5		Lock coil wire jacket
6	RS6109-001	Bookfold lock cable tie assembly
7	RC6339-010	Bookfold lock coil
8	RC6331-010	Body, bookfold lock
9	RC6332-010	Top - AL1000 bookfold cover plate
10	RC6337-010	Hanger serrated plate
11	RC6338-010	Bookfold spring plunger

Fig. 7.9.3 Bookfold lock body operation



7.10 Top Hanger Assembly

Fig. 7.10.1 Top hanger assembly and serrated plate

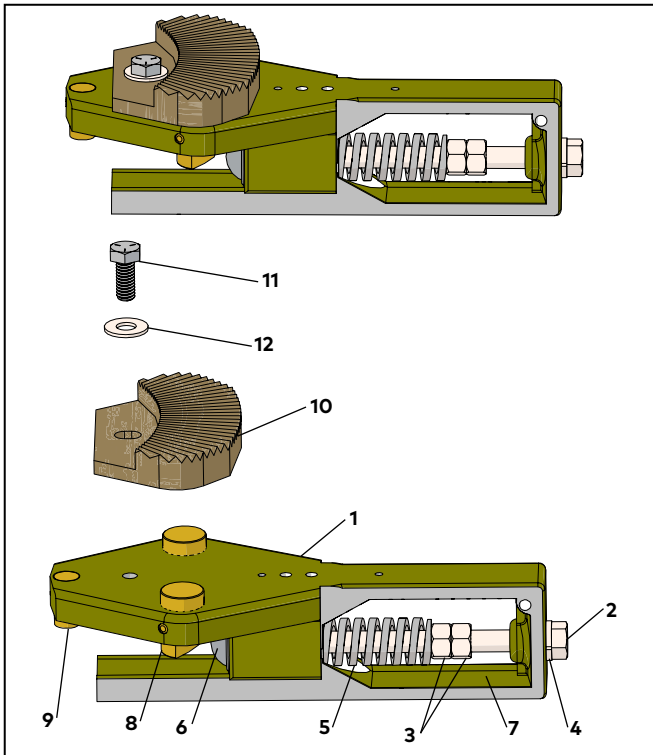


Table 7.10.1 Top hanger assembly

	RS2964-03C	Top hanger assembly, bookfold
1	RC6335-0x0	Top with collapse lock
2	RC6156-01G	3/8-16x4x4 CZ 4" hex bolt
3	DF0587-00G	3/8-16-D-NZ hex nut
4	RF6125-01Z	3/8" lock washer
5	RC6154-010	Hanger spring
6	RC6149-010	7/8" diameter steel ball
7	RC6335-010	Hanger body, top with collapse lock
8	RC6151-02X	Hanger guide pin
9	RC6150-0XX	Hanger center pin

Table 7.10.2 Serrated plate and hardware

10	RC6337-010	Serrated plate
11	RF6012-01G	5/16-18 hex head bolt
12	RF6019-01G	5/16" flat washer, SS

7.11 Bottom Hanger Assembly

Fig. 7.11.1 Bottom hanger assembly RS6045

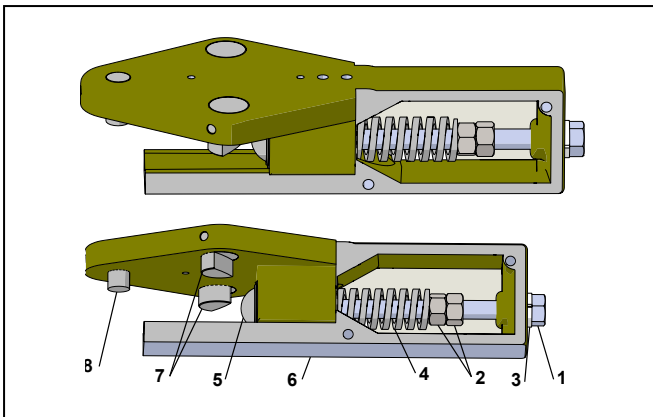


Table 7.11.1 Bottom hanger assembly

	RS6045	Bottom hanger assembly
1	RC6156-01G	3/8-16 x 4" hex Bolt
2	DF0587-00G	3/8-16" hex nut
3	RF6125-01Z	3/8" high collar lock washer
4	RC6154-010	Hanger spring
5	RC6149-010	7/8" diameter steel ball
6	RC3454-0X0	Hanger body
7	RC6151-02X	Hanger guide pin
8	RC6150-0XX	Hanger center pin

7.12 Bottom Rail Assembly, 4 Wing

Fig. 7.12.1 Bottom rail assembly, 4 wing

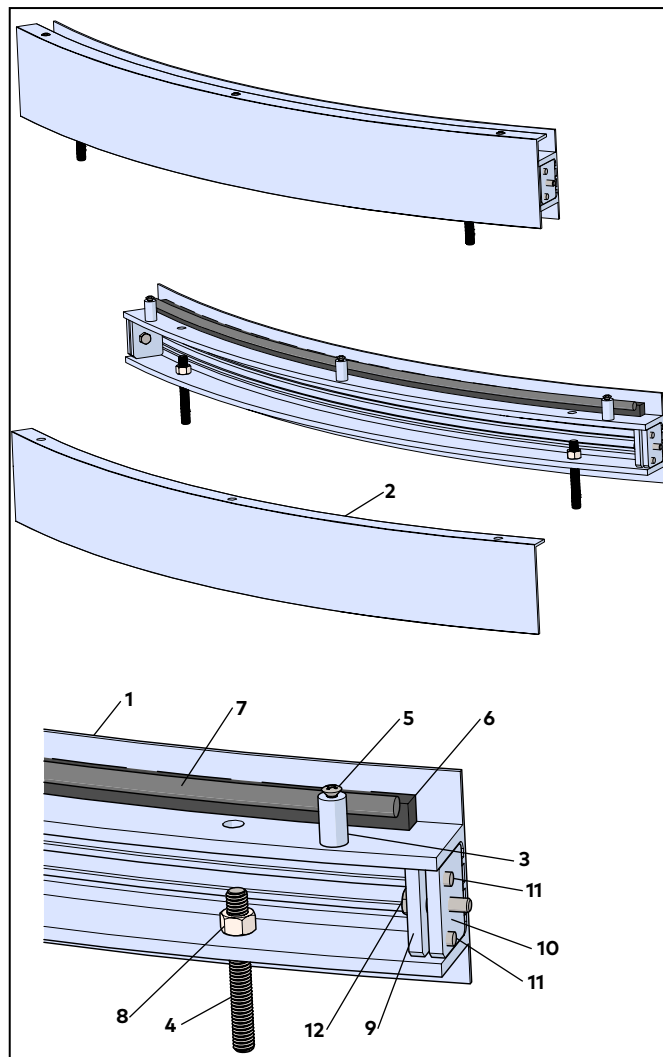


Table 7.12.1 Bottom rail assembly, 4 wing

	RS6110-040	Bottom rail assembly – 4 wing, 8' ID door
1	RE6016-010	4" inner rail extrusion, 4 wing A32 1012
2	RE6015-010	4" base rail outer cover, 4 wing
3	RC6390-010	Rail base cover support
4	DC2569-020	3/8"-16 x 3" threaded rod
5	RF6118-01G	10-24 x 1 1/4" SS Phillips oval head machine screw
6	RC6422-010	Glazing block, 1/8 x 3/8 x 2"
7	RC6423-010	Backing rod, 4 wing, 8' ID door
8	DF0587-00G	Hex nut, 3/8-16 D-NZ
9	RE6021-010	Rail attachment block A32 2005
10	RE6020-010	Rail/post attachment block A32 2000
11	RF6116-02G	1/4-20 x 3/8" flat head machine screw, SS
12	RF6055-02G	1/4-20 x 1" hex head bolt, SS

7.12.1 Bottom rail assembly notes.

1. Offset rail block from post block by 1/8"
2. Offset rail/post blocks from rail front by 1/8".
3. Rail assembly geometry, size, type, piece parts and materials may vary depending on job order requirements. Reference shop drawings for specific order.
4. Glazing tape is not shown. Tape is installed by field installer. Tape is supplied by dormakaba.
5. Glazing blocks and backing rods are for illustrative and BOM details only. Installed by field installer. Reference shop drawings for specific order for installation details.

7.13 Floor Bearing Assemblies

Fig. 7.13.1 Surface mounted floor bearing assembly RS3423-010

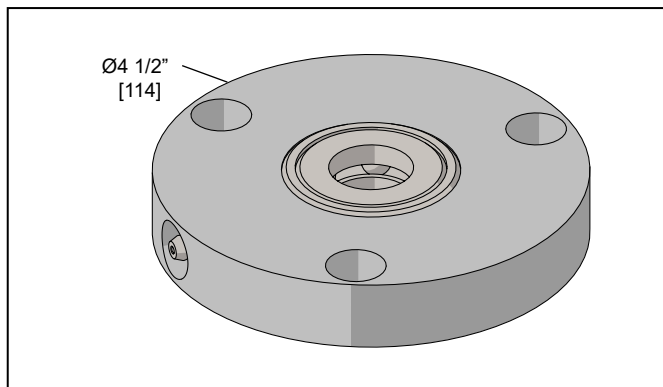
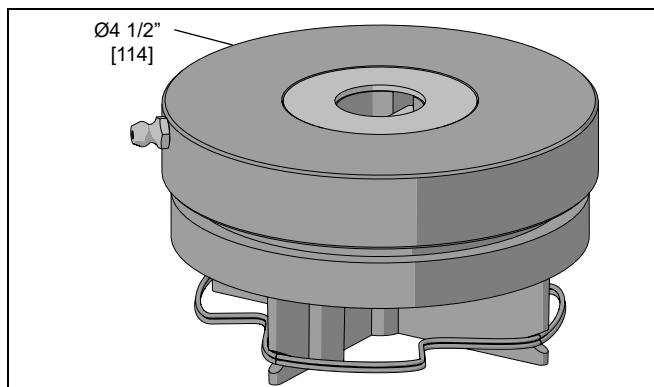


Fig. 7.13.2 Floor bearing assembly RS6076-010 (option)



7.14 Door Wing Assemblies, S2/S3

Table 7.14.1 Door wing assemblies, S2/S3

Part / Assembly	Description
1 RS6111-040	Assembly, wing, no lock, S2/S3
2 RS6111-050	Assembly, wing, right lock, S2/S3
3 RS6111-060	Assembly, wing, left lock, S2/S3

Fig. 7.14.1 Assembly, wing, no lock RS6111-040

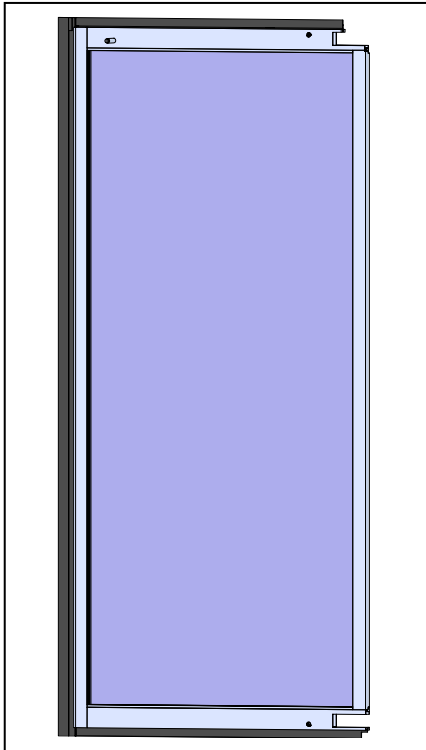


Fig. 7.14.2 Assembly, wing, right lock RS6111-050

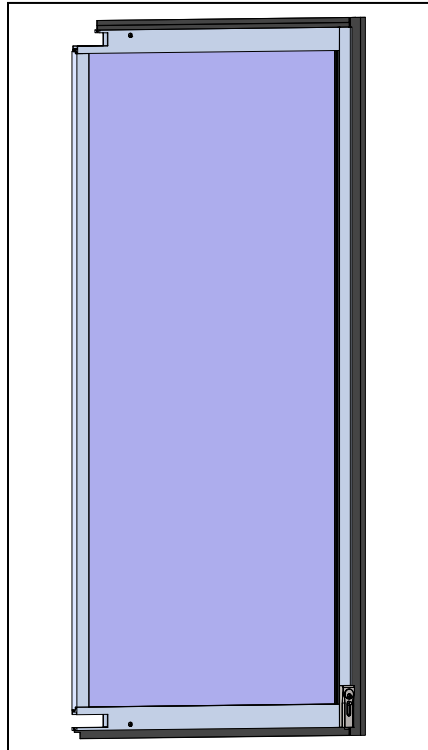
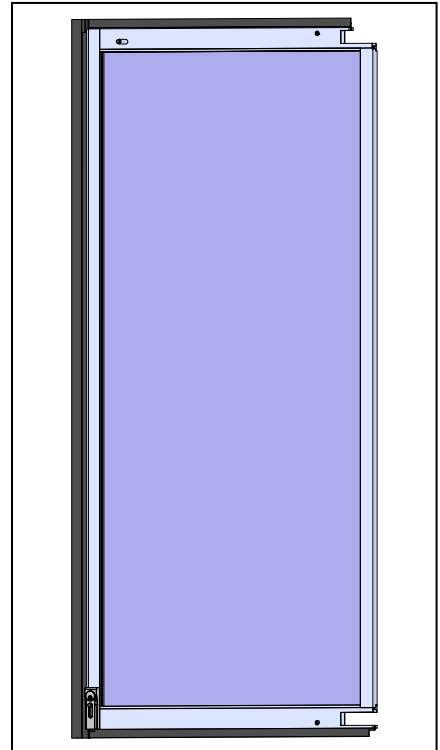
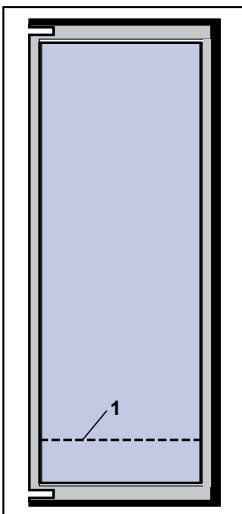


Fig. 7.14.3 Assembly, wing, left lock RS6111-060



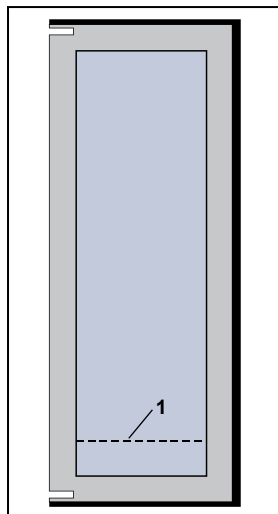
7.15 Door Wing Types

Fig. 7.15.1 Narrow stile



1 Optional tall bottom rail

Fig. 7.15.2 Medium & Wide stile



1 Optional tall bottom rail

Fig. 7.15.3 Patch fitting

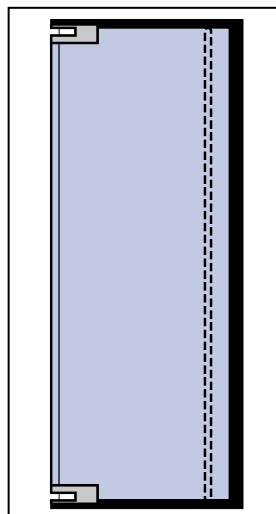
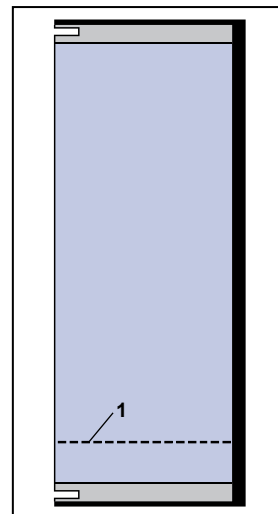


Fig. 7.15.4 Herculite



1 Optional tall bottom rail

7.16 Door Wing Assembly Hardware

Table 7.16.1 Assembly, wing, left lock RS6111-060

Part / Assembly	Description	
1 RE6031-010	Center wing extrusion	1
2 RE6024-010	Bottom wing extrusion	1
4 RE6024-010	Top wing extrusion	1
6 RF6119-01G	1/4-20 x 1/2" truss head machine screw	4
7 RE6022-010	Wing outer lock extrusion	1
10 RC6430-010	Wing glass, PA/MAN/SRD, 8' ID x 8' high	1
12 RS6108-222	Bumper assembly, 2 3/8" long	1
13 RS6080-010	Surface lock assembly, AL	1
15 RF6120-03G	1/4-20 x 1 3/4" Phillips oval head machine screw	3

16 RF6054-01G	8-32 x 1/2" Phillips flat head machine screw	1
18 RC6106-001	Top sweep assembly, T style, bookfold	1
20 RC6414-002	Bottom T style sweep, K9 drive doors	1
21 RS6117-102	Sweep assembly, vertical, T style, felt, K9, S2/S3	1

7.16.1 Wing assembly notes..

1. Wing assembly type, size, type, materials, finish will depend on job order requirements. Reference shop drawings for specific order.
2. Lock cylinder is shown for reference only. The lock cylinder and part number will be determined by the customer/order.

Fig. 7.16.1 Assembly, wing, left lock RS6111-060, lock-side parts

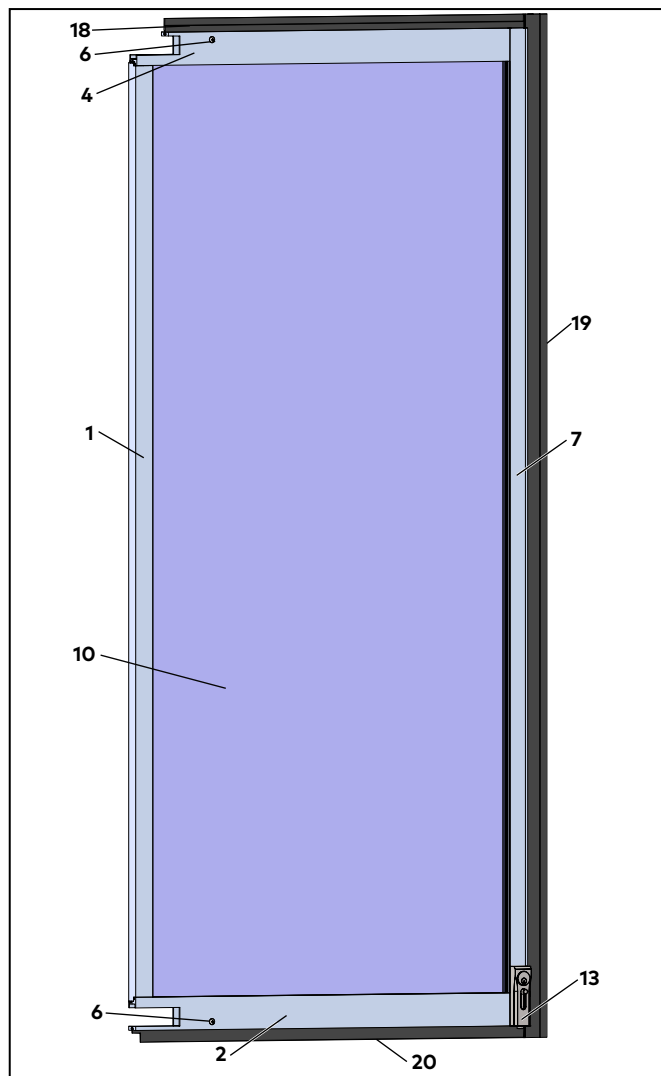
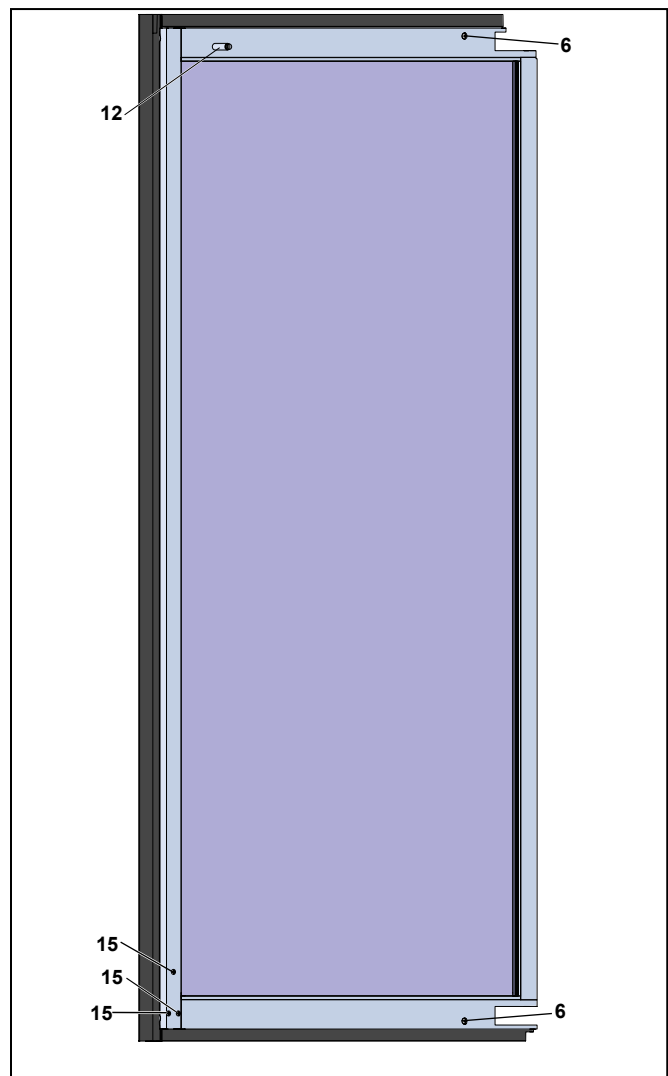


Fig. 7.16.2 Assembly, wing, left lock RS6111-060, bumper-side parts



7.17 Center Post Assembly

Fig. 7.17.1 Center post assembly

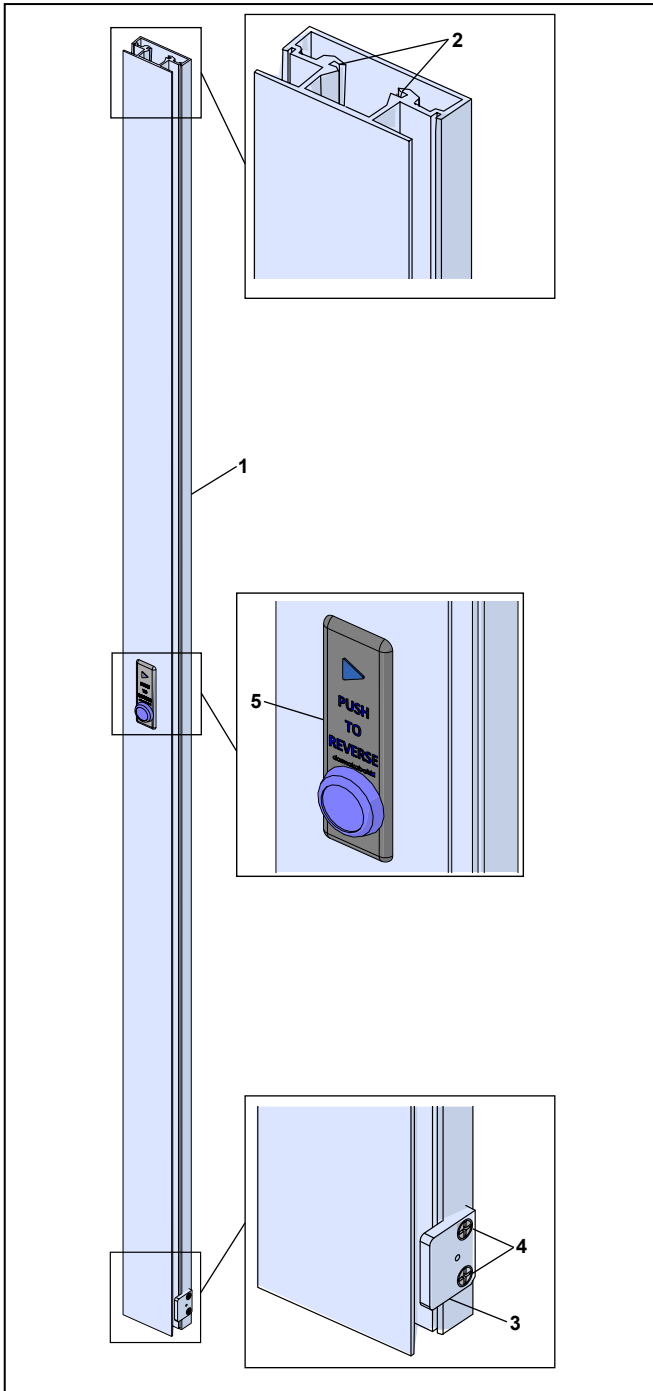


Table 7.17.1 Center post assembly

1	RE6007-010	Center post
2		Mounting holes for canopy-to-post fasteners
3	RE6020-010	Rail post attachment block Factory installed
4	RF6116-02G	1/4-20 x 3/8" Phillips flat head machine screw Factory installed
5	RS7060-010	Push to Reverse pushbutton plate assembly Installed and wired at installation site

7.18 End wall / Bumper Sensor Assemblies

Table 7.18.1 End wall / bumper assembly

1	RS6104-001	Assembly, left hand end wall without end wall sensor
2	RS6104-002	Assembly, right hand end wall with end wall sensor
3	RE6002-001	Extrusion, end wall, outer LH, S2/S3
4	RE6002-002	Extrusion, end wall, outer RH, for end wall sensor
5	RE6002-003	Extrusion, end wall, inner, for end wall sensor
6	RX6022-001	Bumper, LH without end wall sensor

7	RX6023-001	Bumper, RH with end wall sensor and resistor
8	RE6020-010	Rail end wall attachment block Factory installed
9	RF6116-02G	1/4-20 x 3/8" Phillips flat head ,machine screw Factory installed
10		Mounting holes for canopy-to-end wall fasteners
11		End wall bumper sensor wires (2), 6' long
12	RC7007-001	Activation light assembly -Installed at installation
13	RX3413-030	Emergency stop pushbutton, SRD K9 drive
	RX3413-020	E-Stop mounting housing

Fig. 7.18.1 End wall / bumper assembly LH without bumper sensor

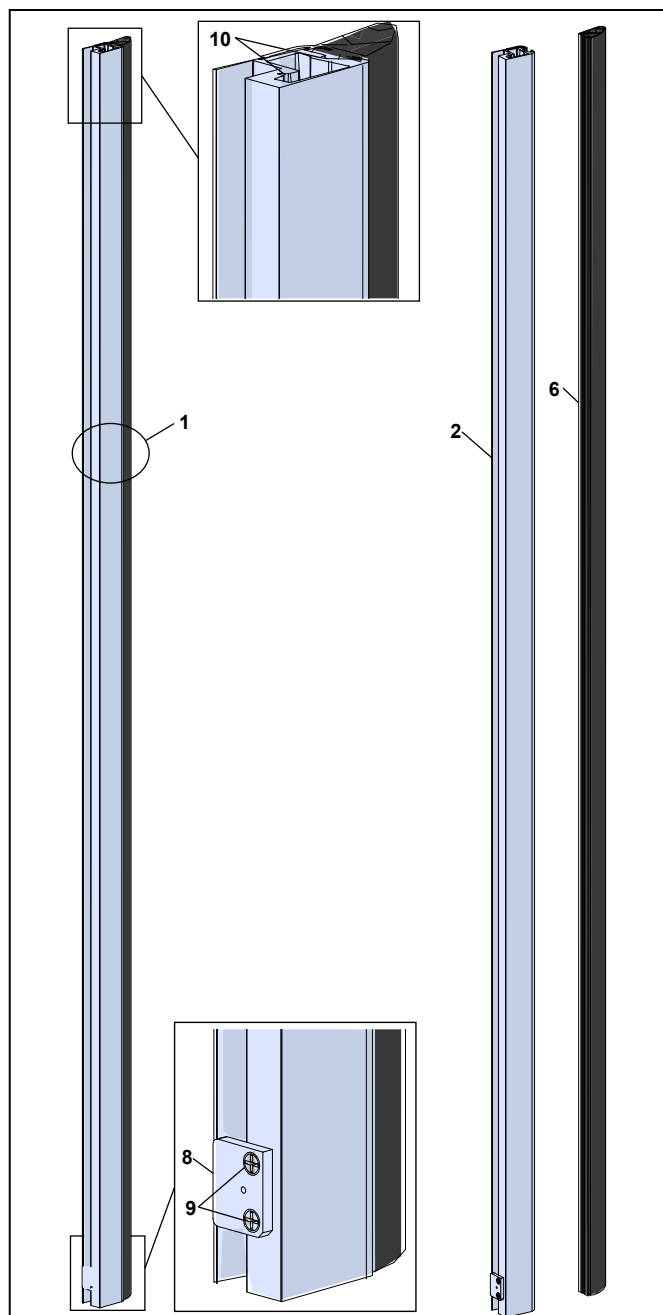
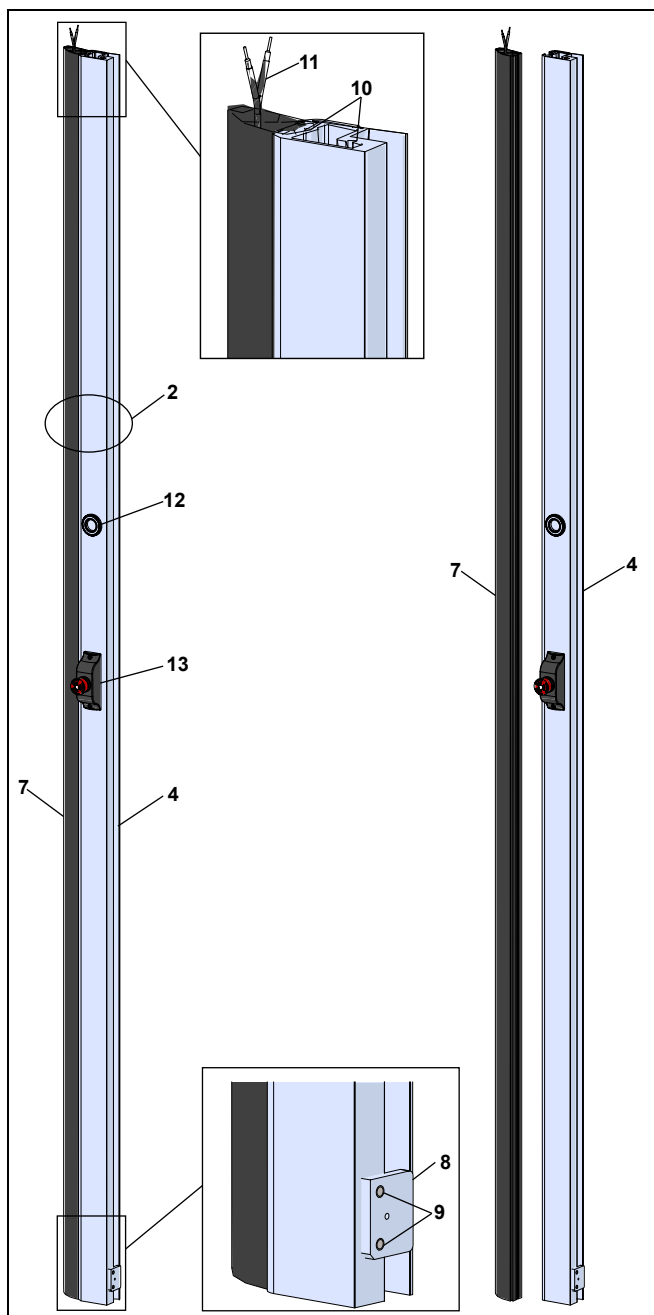


Fig. 7.18.2 End wall / bumper assembly RH with bumper sensor



7.19 Surface Lock

Fig. 7.19.1 Surface lock installation, door interior

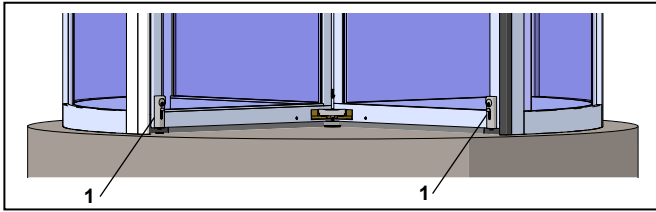


Fig. 7.19.2 Concealed lock assembly

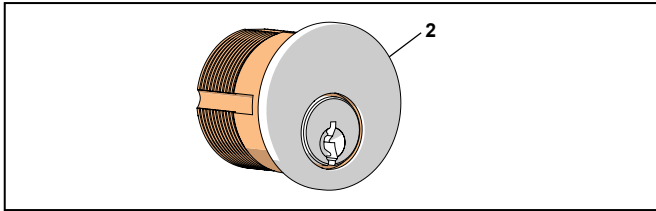


Table 7.19.1 Surface lock hardware

1	RS6080-010	Surface lock assembly
2	RC6261-0XX	Lock cylinder by others (example)

7.19.1 Surface locks.

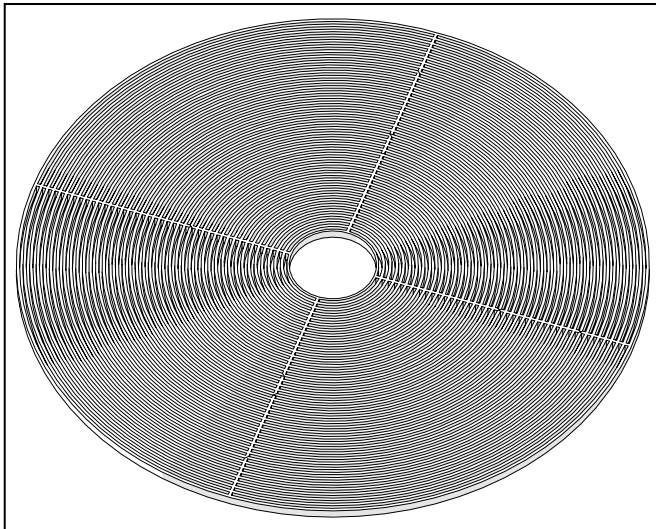
- Two surface locks are supplied, installed in adjacent wing outer lock extrusions for interior locking into floor. Lock cylinder by customer.
- Surface locks are factory assembled.
- Doors over 7' high, surface locks installed in wing bottom rails unless otherwise specified.

7.19.2 Concealed locks.

- Concealed locks (Fig. 7.19.2) are supplied on herculite type wings (Reference Para. 7.15).

7.20 Optional Assembly, Floor Grill And Pan Assembly

Fig. 7.20.1 Floor grill and pan assembly



- 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.

7.21 Optional Assembly, Canopy Light With LED Driver

Fig. 7.21.1 LED light fixture and LED driver/junction box

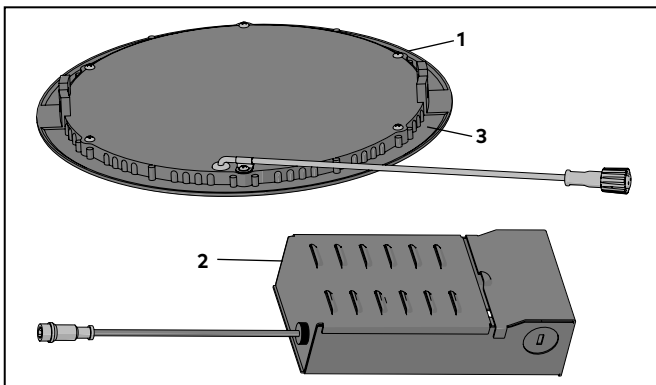


Table 7.21.1 LED light and LED driver/junction box

1	RC6320-010	Light, LED
2		Box, Junction with LED driver
3	RC7031-001	2-sided tape for securing light to canopy

7.21.1 Canopy LED and junction box with LED driver.

- Canopy light is installed in canopy at factory.
- Junction box/LED driver is installed in canopy at installation.

7.22 Optional Standby UPS

Fig. 7.22.1 UPS



Table 7.22.1 Optional standby UPS

1	RC7011-001	UPS, CyberPower, CP550SLG, 9.8" wide x 5.8" high x 3.3" deep
2		4 outlets, battery and surge protected
3		4 outlets, surge protected
4		Power off/on button
5		Power cord, 5 feet

8 S2 Sensors

8.1 S2 Canopy Sensor Overview

Fig. 8.1.1 S2 security canopy bottom view

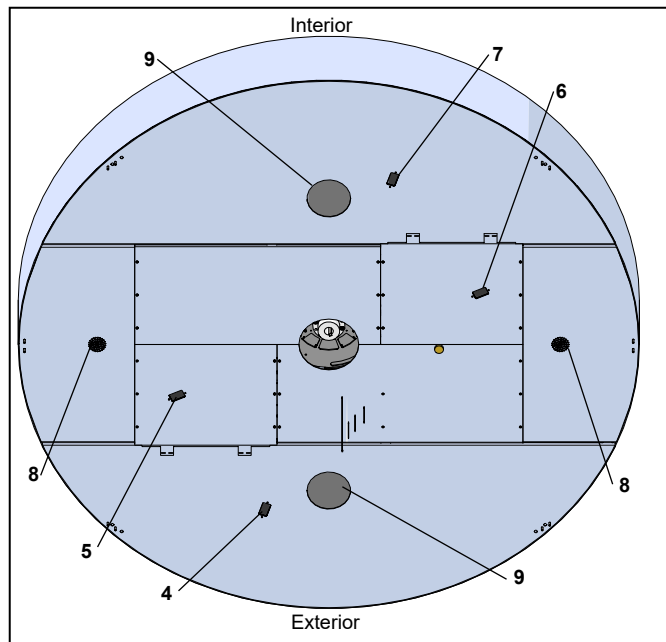
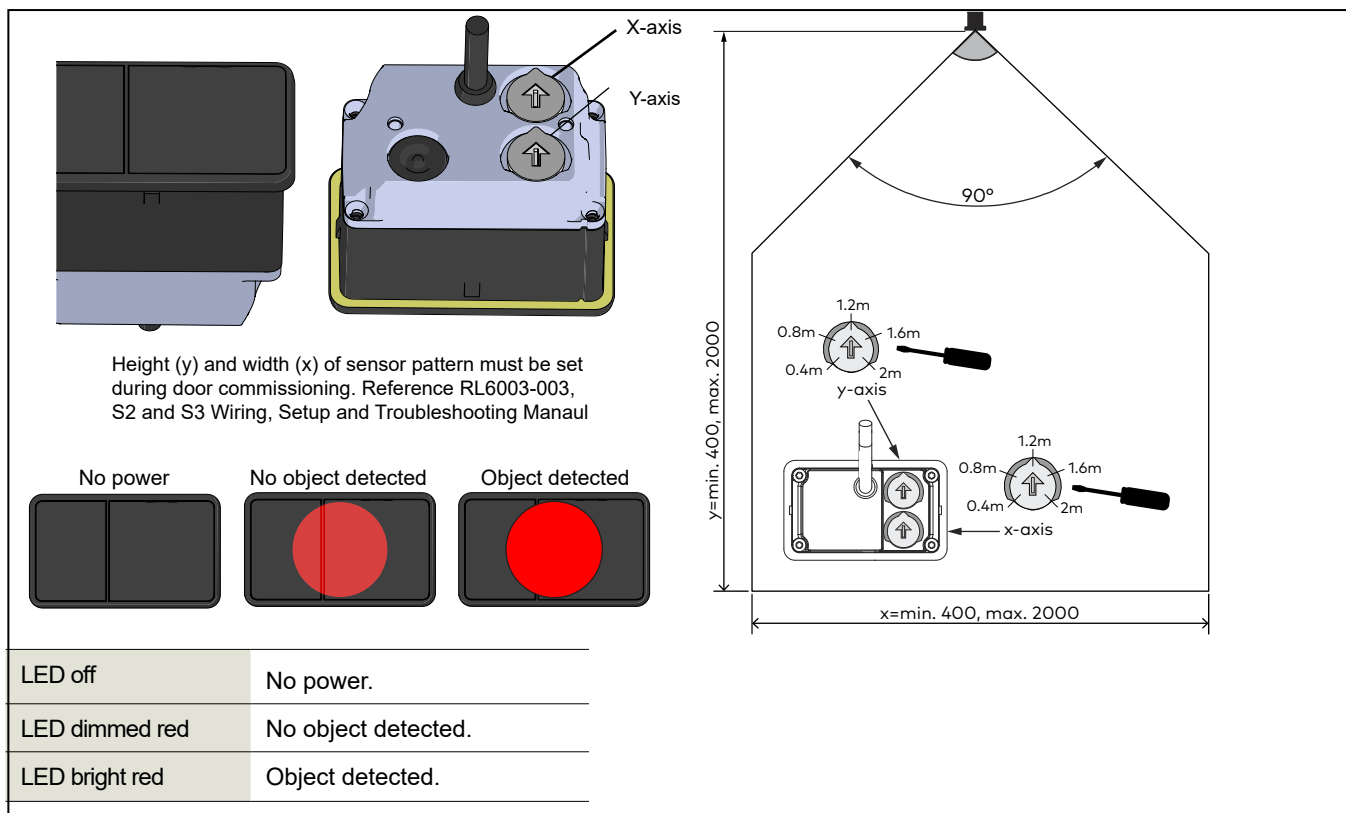


Table 8.1.1 S2 security canopy

4	RK3500-010	Starting sensor, outside CEDES TOFniva	1
5	RK3500-010	Presence sensor, outside CEDES TOFniva	1
6	RK3500-010	Presence sensor, inside CEDES TOFniva	1
7	RK3500-010	Starting sensor, inside CEDES TOFniva	1
8	RX6027-001	Voice module speaker	2
9	RC6320-010	LED light (option)	2

8.2 Cedes TOFniva

Fig. 8.2.1 Canopy entry point and presence sensor



8.3 S2 End Wall Sensor / Bumper Assembly

Fig. 8.3.1 Interior view- quarter post bumpers

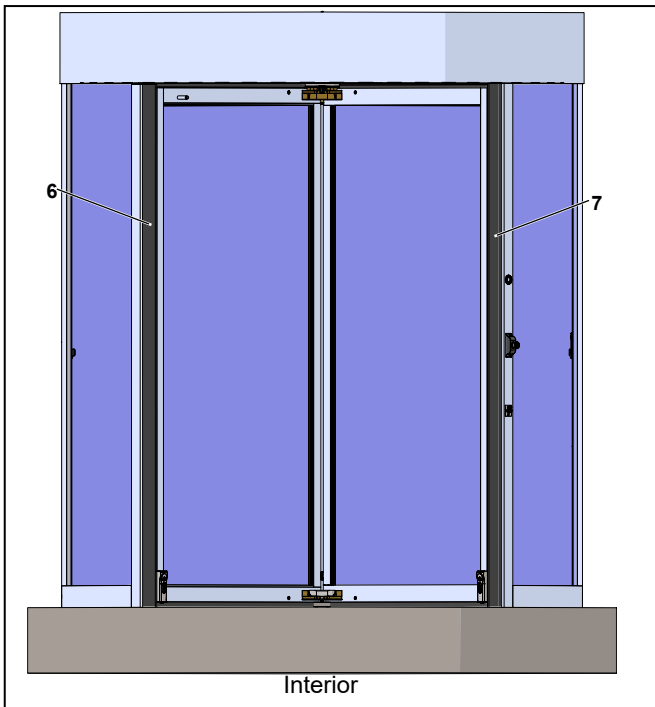
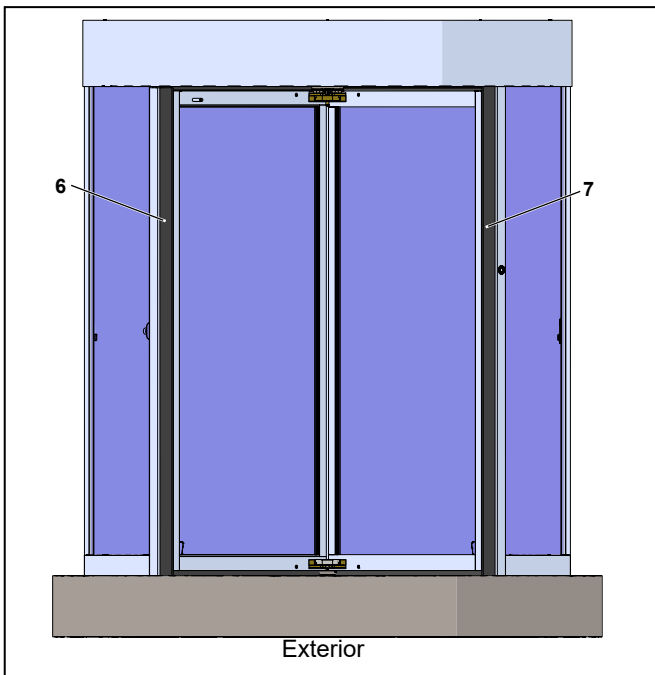


Table 8.3.1 End wall / bumper assembly

6	RX6022-001	Bumper, LH without end wall sensor
7	RX6023-001	Bumper, RH with end wall sensor and resistor
7.1		End wall sensor

Fig. 8.3.2 Exterior view- quarter post bumpers



9 Recommended Tools And Materials

9.1 Recommended Tools

Table 9.1.1 Recommended tools

1	Plumb bob with string.
2	Laser Level: Bosch GCL100-80C 100ft 12V Cross-Line Laser with Plumb Points, or equivalent
3	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	Wire strippers, 16 AWG to 22 AWG 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

9.2 Recommended Installation Materials And Installation Hardware

Table 9.2.1 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 9.2.2 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

10 Entrance Opening and Floor Preparation

10.1 Cordon Off Work Area



WARNING

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

10.2 Entrance Opening

10.2.1 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 (1).

10.2.2 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.



TIPS AND RECOMMENDATIONS

Laser Level

Use a Laser Level such as the Bosch GCL100-80C 100ft 12V Cross-Line Laser with Plumb Points, or equivalent.

10.2.3 Determine if floor is level.

1. Using level in 10.2.2, 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.

10.3 Revolving door floor surface

10.3.1 Floor surface.

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

NOTICE

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

Do not proceed if floor is not flat and level.

11 Locate Door Centerpoint, Drill Holes

11.1 Door Building Attachment Plans

11.1.1 Crane shop drawings.

NOTICE

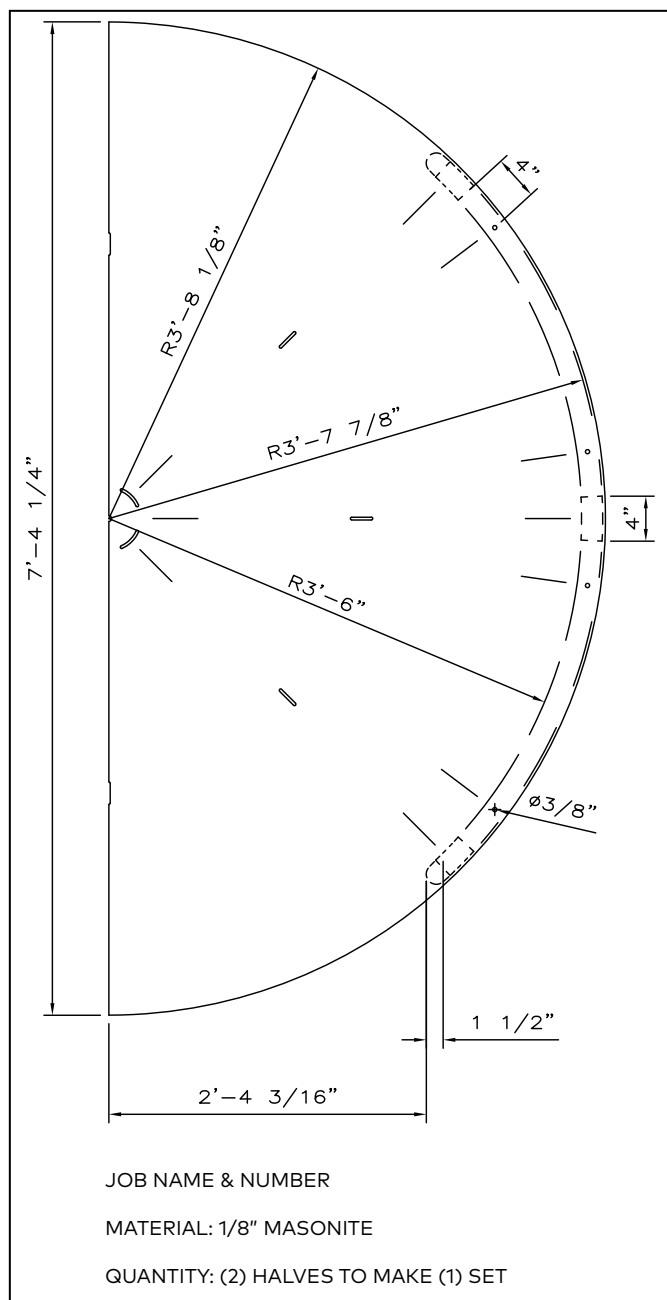
Refer to Crane shop drawings for specific attachment plan for job!

11.1.2 General contractor/architect drawings.

- General contractor or architect drawings detailing revolving door center point and building interface.

11.2 Installation Template

Fig. 11.2.1 Full size installation template example



11.2.1 Locate full size installation templates.

1. Locate full size aluminum templates.
- Templates shipped in canopy shipping crate.

NOTICE

Reference Crane shop drawing for template orientation at building attachment.

11.3 Mark Door Position On Floor Using Floor Templates

11.3.1 Position floor templates.

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

CAUTION

Use centerpoint dimensions as shown on Alvarado shop drawings and contractor documentation.



WARNING

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

2. Secure template to floor.

CAUTION

Once templates 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 general contractor or owner's representative.

11.3.2 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.

11.3.3 Remove templates.

1. Remove templates.

NOTICE

Do not discard templates!
Label placed on template. Reference Fig. 11.3.2

Fig. 11.3.1 Templates placed on floor, example

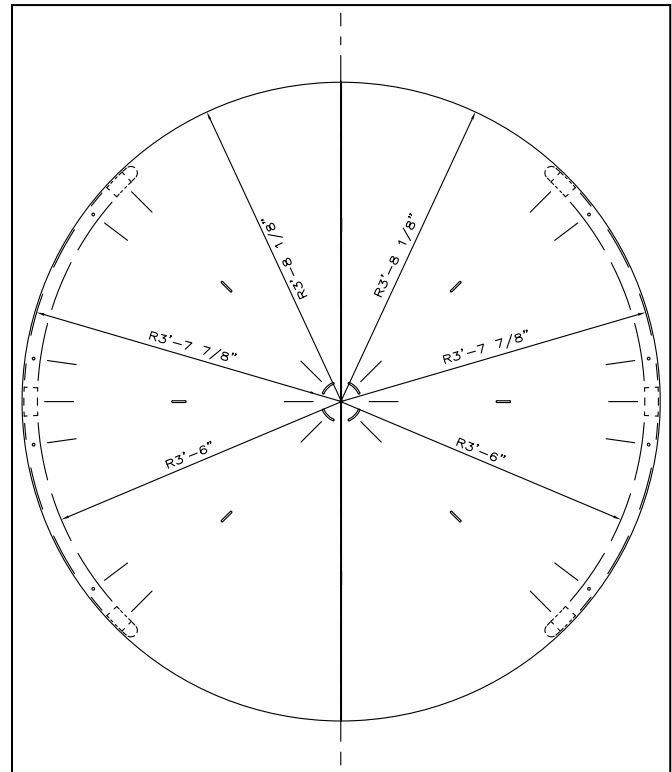
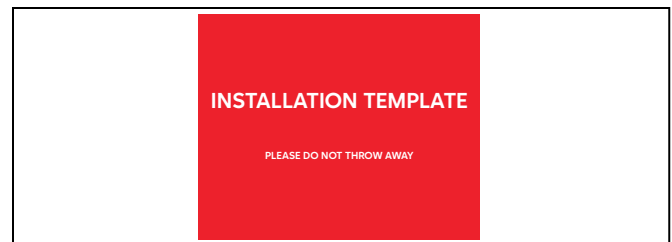


Fig. 11.3.2 Label, installation template RD7044-001



11.4 Drill Pilot And Anchor Holes For Bottom Rail Studs

11.4.1 Drill pilot holes in floor.



WARNING

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

11.4.2 Drill bottom rail stud pilot holes.

1. Drill pilot holes at each bottom rail stud hole location.

11.4.3 Drill anchor holes in floor.

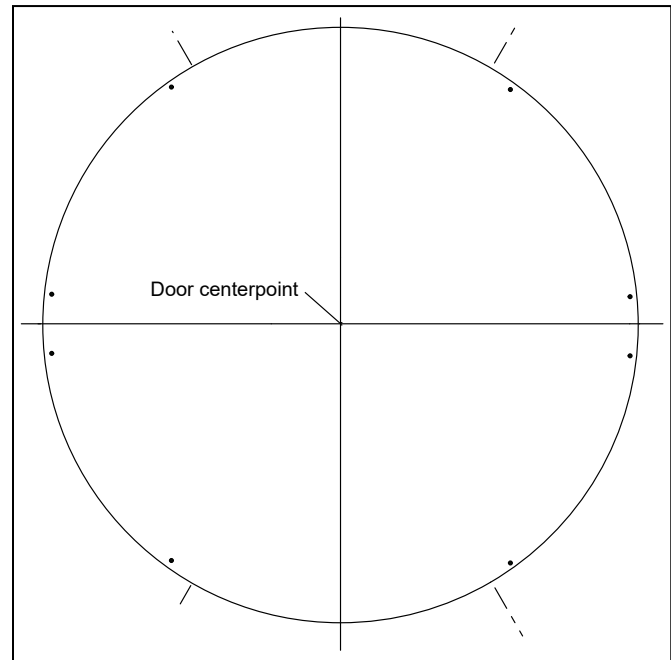
1. Drill anchor holes at each pilot hole location.



TIPS AND RECOMMENDATIONS

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

Fig. 11.4.1 Floor marked with door location and bottom rail holes



11.5 Drill Pilot Hole At Door Centerpoint

11.5.1 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.

11.6 Install Floor Bearing Assembly

Table 11.6.1 RS6076 floor bearing parts

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	RF6053-01G	1/4" OD x 1 1/4" cross pin
7		Non-shrink grout

Fig. 11.6.1 Floor bearing assembly parts

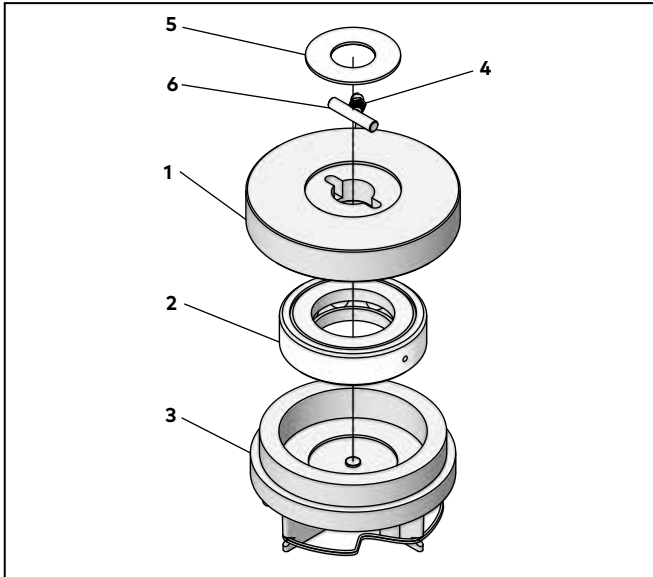
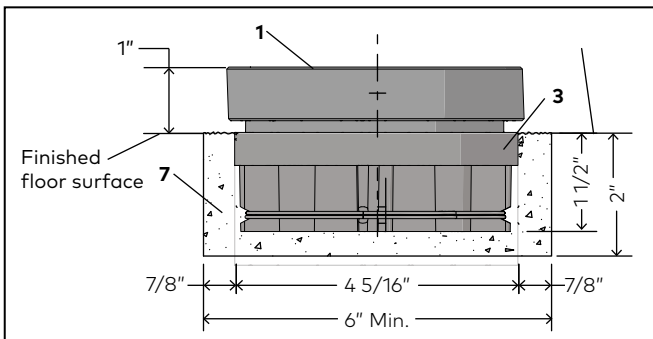


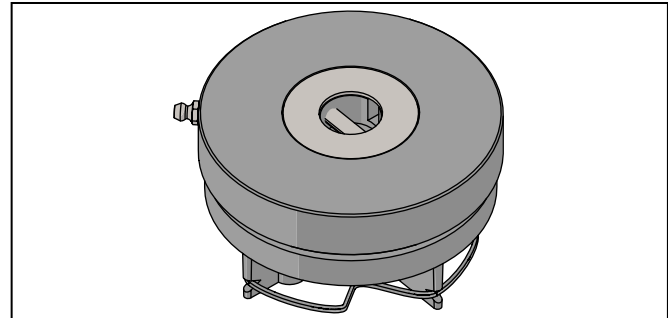
Fig. 11.6.2 Floor bearing assembly installed in floor



NOTICE

If surface mounted floor pivot bearing is being installed (standard), refer to Para. 20.2 for installation.

Fig. 11.6.3 Floor bearing assembly



11.6.1 Crane shop drawings.

NOTICE

Refer to Crane shop drawings for specific floor bearing installation and shaft assembly installation detail for job!

11.6.2 Install floor bearing assembly.

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

NOTICE

Contractor note: provide minimum Ø6" x 2" deep cutout to accept floor bearing.

2. Position floor bearing assembly in floor cutout:
 - Center floor bearing assembly at door centerpoint.
 - Shim under plastic pivot bottom to obtain 1" height of floor bearing above finished floor surface.

NOTICE

Floor bearing assembly must be level and at door centerpoint.

3. Fill floor bearing assembly cutout to finish floor level with non-shrink grout (Fig. 11.6.2).

CAUTION

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

11.6.3 Grease floor pivot.

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

12 Install Mounting Bracket On K9 Drive Unit Assembly

12.1 Install Main Drive Adapter Coupling On K9 Drive

Fig. 12.1.1 Main drive adapter coupling fastener

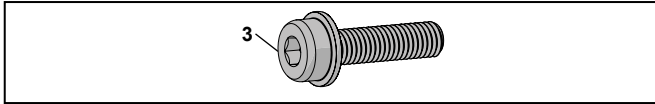


Fig. 12.1.2 K9 main drive adapter coupling

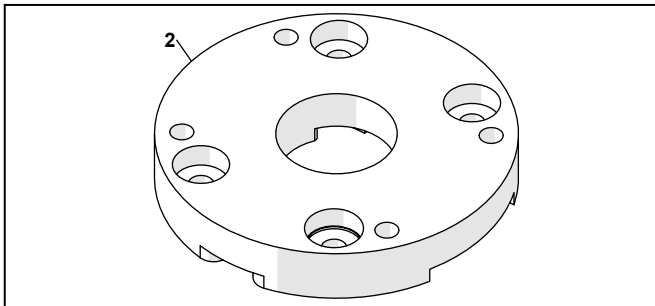


Fig. 12.1.3 K9 main drive adapter coupling and fasteners

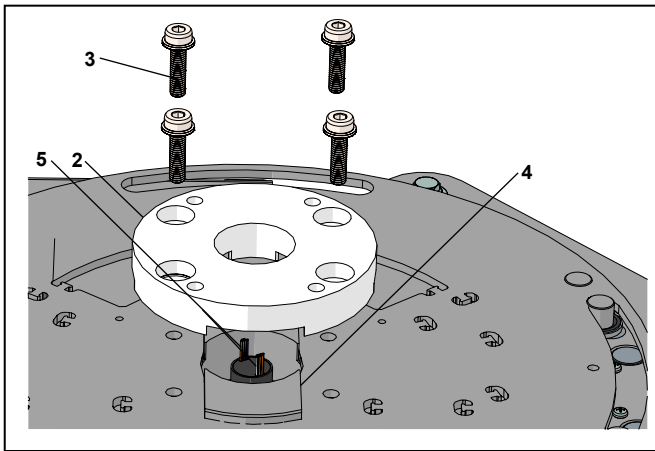
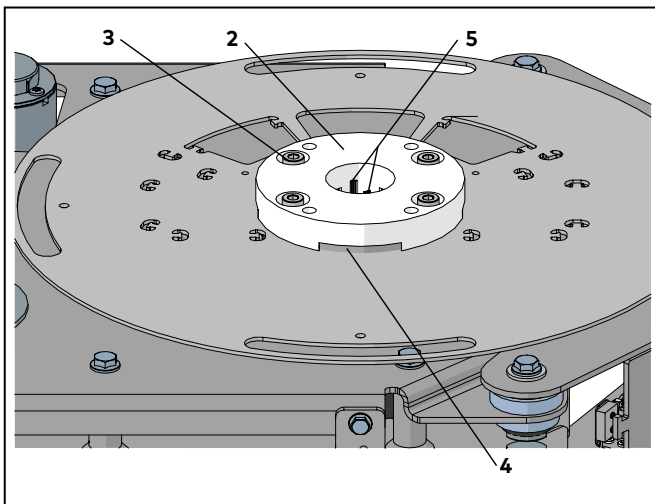


Fig. 12.1.4 K9 main drive adapter coupling installed



NOTICE

Main drive adapter coupling installation.
The main drive adapter is installed on the K9 drive from the factory.
The installation procedure and hardware are shown for reference.

Table 12.1.1 RX6021 K9 drive unit and main drive adapter coupling

1	RX6021-010	K9 drive unit assembly
2	RC6379-010	K9 Main drive adapter coupling
3	RF6180-01C	M8-1.25 x 30 mm Serrated flange SHCS
4		K9 drive shaft
5		K9 slip ring wires

12.1.1 Main drive adapter coupling installation.

1. Position coupling above K9 drive shaft, aligning slot in coupling with K9 main drive shaft flange.
2. Lower coupling onto drive shaft flange, routing slip ring wires out of slots in the coupling.
3. Secure coupling to K9 drive with four M8 x 25 mm SHCS.

12.1.2 Check M8 x 25 mm tightening torque.

1. Use torque wrench to check tightening torque on the four M8 x 25 mm SHCS.



WARNING

Danger from incorrect screw tightening torque.

- Never exceed the maximum specified tightening torque.
- Contact dormakaba for further information.

12.1.3 Maximum M8 x 25 mm tightening torque.

Screw diameter	Maximum permissible screw tightening torque
M8	12.5 Nm
	10 ft-lb

12.2 Install Mounting Bracket on K9 Drive

Fig. 12.2.1 K9 drive mounting bracket

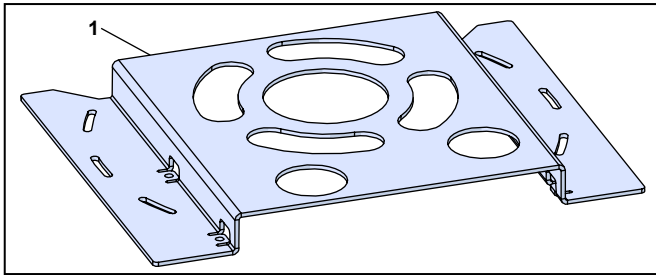


Fig. 12.2.2 Assembly, drive, K9 unit exploded view

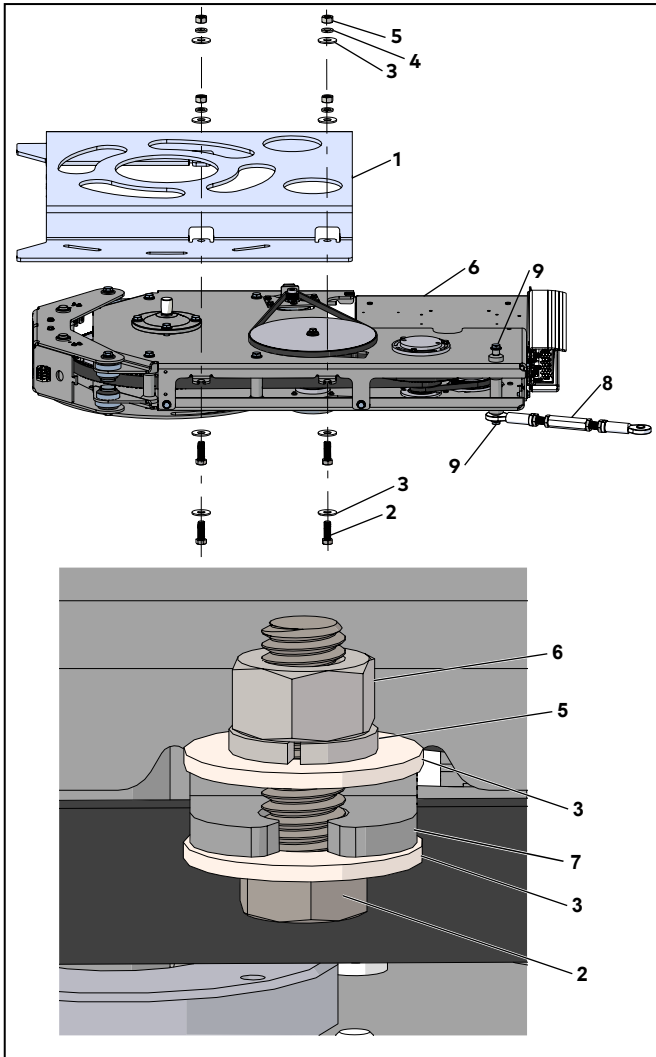


Table 12.2.1 Assembly, drive, K9 unit and mounting bracket

1	RC6373-010	Bracket, mount, K9 drive	1
2	RF6066-01Z	7/16-14 x 1 1/4" hex bolt, zinc plate	4
3	RF6067-01Z	7/16 x 1 1/4" OD washer, zinc plate	8
4	RF6068-01Z	7/16 lockwasher, zinc plate	4
5	RF6069-01Z	7/16-14 hex nut, zinc plate	4
6	RX6021-010	Assembly, drive, K9 unit	1
7		Bracket mounting tab	
8		Turnbuckle assembly	1
9		M8 flange hex head bolt	1

12.2.1 K9 drive turnbuckle (8) location.

1. Turnbuckle must be located on bottom of drive as shown in Fig. 12.2.2.
2. If turnbuckle is located on top of drive when received from factory, relocate turnbuckle to bottom of drive. Reinstall M8 fastener (9) in top of drive.

12.2.2 Install mounting bracket on K9 drive.

1. Orient drive and mounting bracket as shown in Fig. 12.2.2.
2. Install K9 mounting bracket on K9 drive using fastener hardware in Fig. 12.4.4.

Fig. 12.2.3 Assembly, drive, K9 unit fasteners

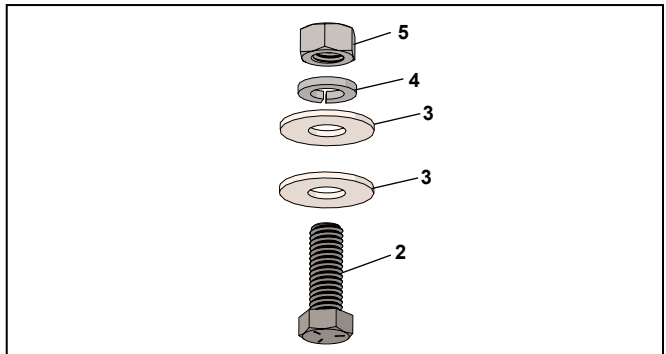
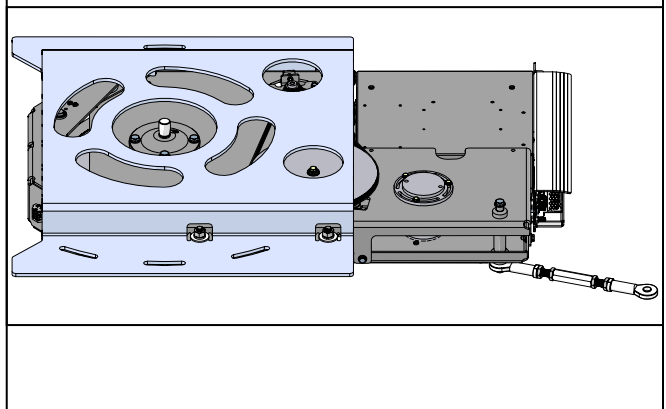


Fig. 12.2.4 Assembly, K9 drive and mounting bracket



13 Canopy Assembly And Installation

13.1 3 Piece Canopy Shipped As Single Assembly, Remove Covers

13.1.1 Crane shop drawings.

NOTICE

Refer to Crane shop drawings for canopy detail for job!

13.1.2 3 piece canopy shipped in 2 sections-8 ft ID door.

NOTICE

Reference Para. 13.15 for split canopy assembly.

Fig. 13.1.1 Canopy assembly, cover view

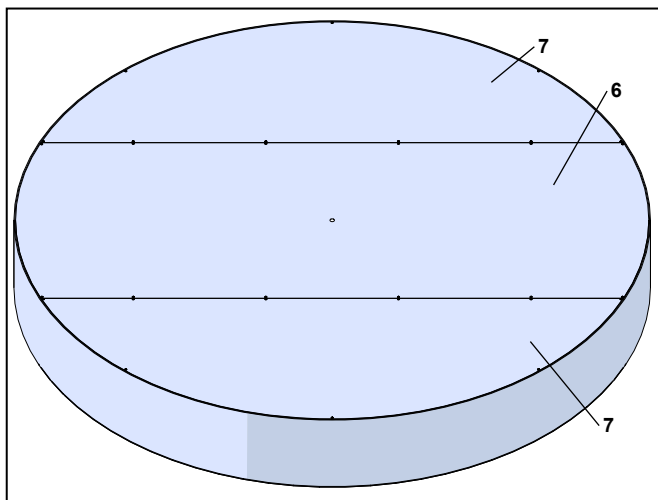


Table 13.1.1 Canopy assembly covers

6	RC6486-010	Canopy inner cover, 36" spacing, 8" door	1
7	RC6487-010	Canopy outer cover, 36" spacing, 8' door	2
8	RF7023-01G	8-15 X 1/2" Phillips self tapping screw	30

13.1.3 Remove covers from canopy assembly.

1. Remove all Phillips 8-15 x 1/2" self tapping screws that secure covers to canopy.
2. Remove covers.



TIPS AND RECOMMENDATIONS

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

Fig. 13.1.2 Canopy assembly, covers removed

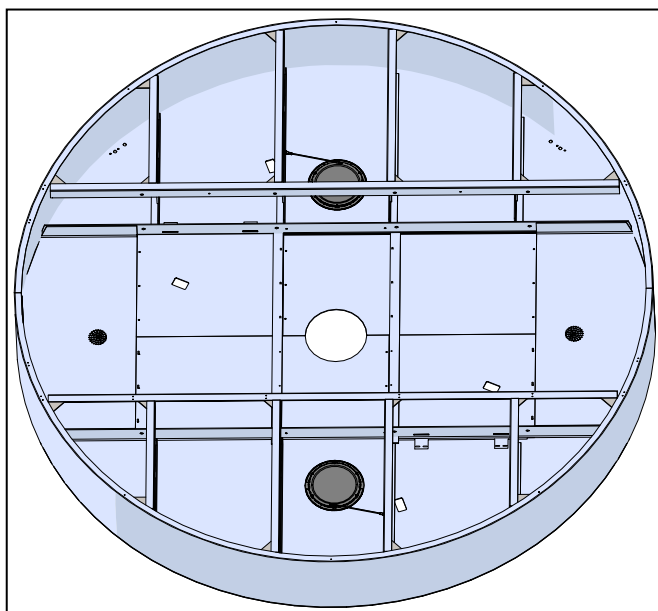
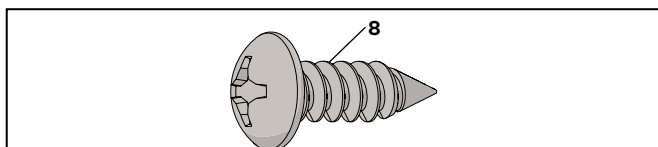


Fig. 13.1.3 Canopy cover screws



13.2 Assemble Canopy Shipped In 2 Sections, Door ID 8'

13.2.1 Crane shop drawings.

NOTICE

Refer to Crane shop drawings for canopy detail for job!

CAUTION

Place canopy assemblies on elevated smooth surfaces.

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

Fig. 13.2.1 Canopy split for shipment

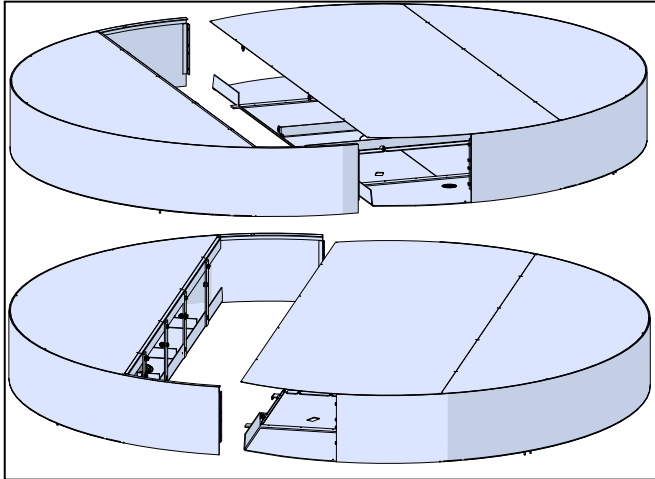


Fig. 13.2.2 Canopy center cover removed

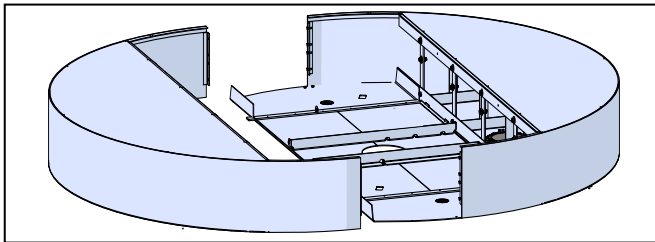
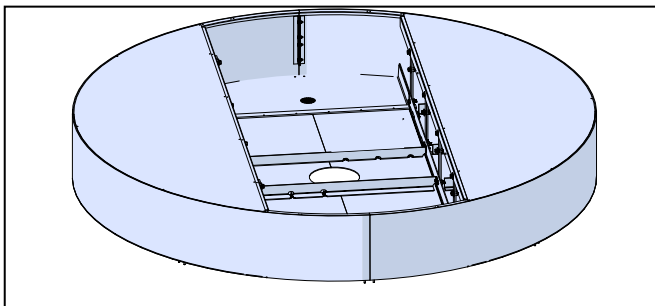


Fig. 13.2.3 Canopy assembled



13.2.2 Remove center cover from canopy assembly.

1. Remove all Phillips 8-15 x 1/2" self tapping screws that secure cover to canopy.
2. Remove cover.

13.2.3 Assemble canopy sections together.

1. Fasten fascia and soffit canopy sections together.

Table 13.1.2 Canopy assembly with fasteners

1	RE6064-040	Canopy fascia, 13", S2/S3/S1
2	RC6446-020	Canopy mounting angle side to side, 9.5"
3	RF6055-01G	1/4-20 x 5/8" hex head bolt, SS
4	RF6121-01G	1/4-20 18-8 hex nut, SS
5	RC6485	Canopy outer soffit, half 4 wing
6	RF6066	7/16-14 x 1 1/4" hex head bolt, zinc
7	RF6068	7/16" lock washer, zinc

Fig. 13.2.4 Canopy fascia fasteners

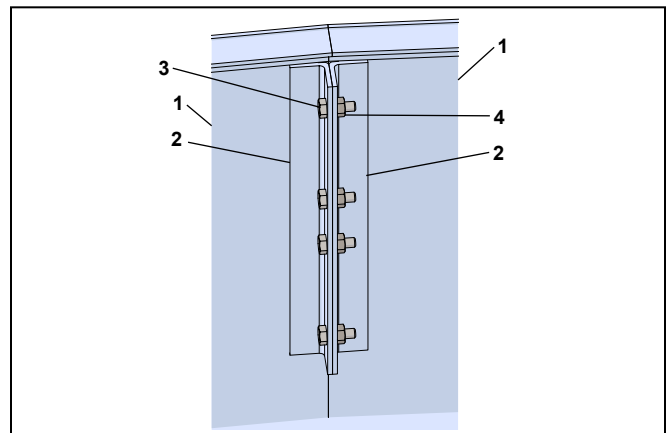
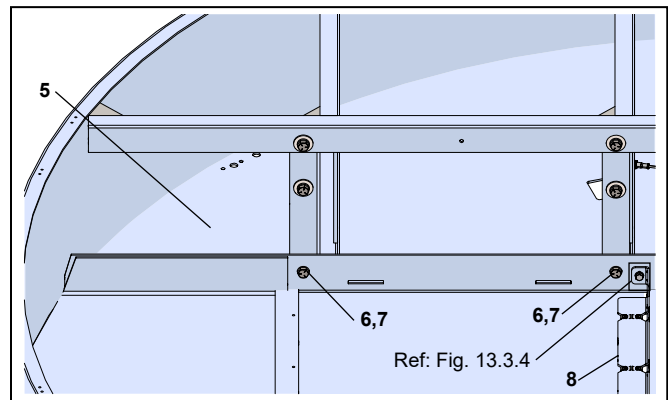


Fig. 13.2.5 Canopy soffit fasteners



13.3 Remove Inner Soffits And Cover Plates

Fig. 13.3.1 Canopy assembly, soffit view

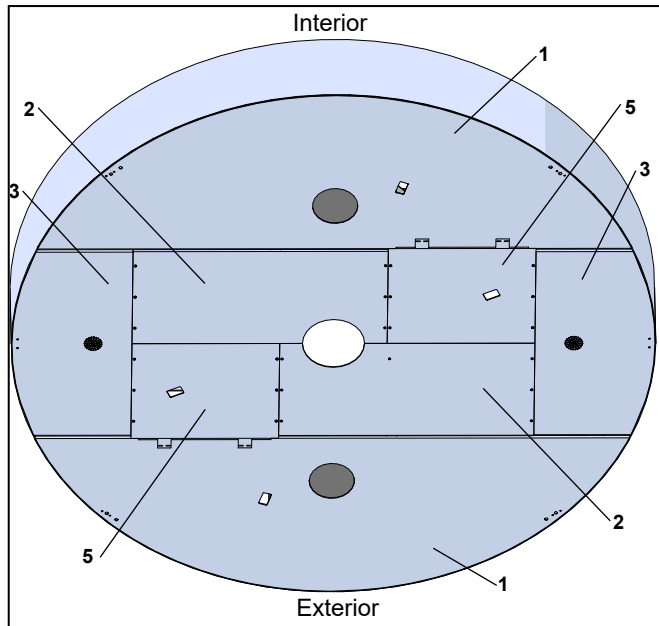


Table 13.3.1 Canopy soffit and cover plate assembly

1	RC6485-010	Canopy outer soffit, 4 wing, S2/S3	2
2	RC6484-010	Canopy inner soffit center	2
3	RC6483-010	Canopy inner soffit outer	2
4	RC6381-010	Plate, cover, K9, Intenta sensor	1
5	RC6381-030	Plate, cover, K9, TOFNiva sensor	1
6	RC6486-010	Canopy inner cover, 36" spacing, 8" door	1
7	RC6487-010	Canopy outer cover, 36" spacing, 8' door	2
8	RF7023-01G	8-15 X 1/2" Phillips self tapping screw	30
9	RF6115-02G	10-24 x 3/4" Phillips FHMS	
10	RC6376-010	Bracket, cover plate support	2
11	DF0939	1/4" lock washer, zinc	4
12	RF6162-01Z	1/4" flat washer, Ø 56" OD, zinc	4
13	RF6163--01C	Nut, clipon, 10-24	12

Fig. 13.3.2 Phillips flat head machine screw

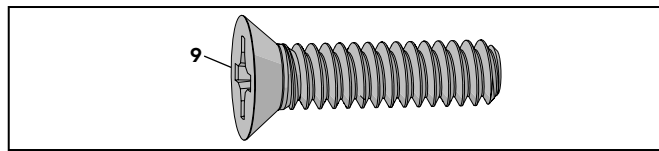


Fig. 13.3.3 Canopy assembly, inner soffits and cover plates removed

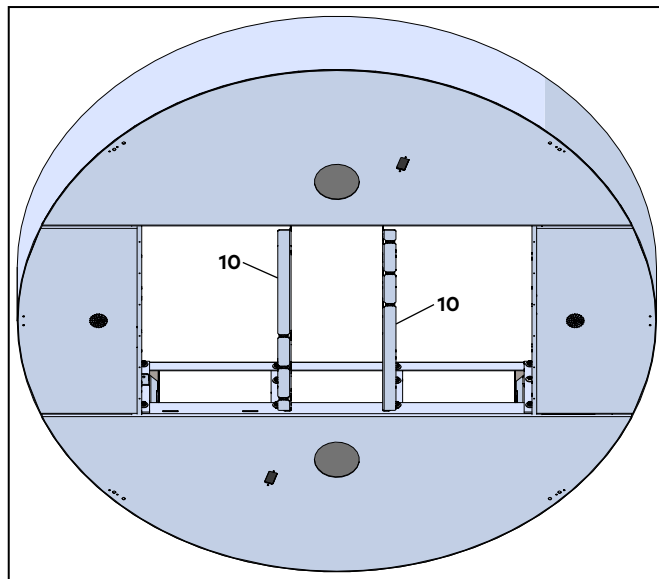
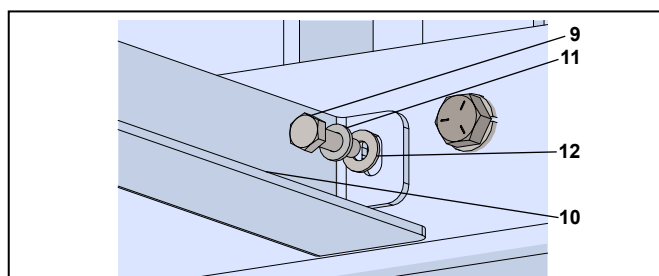


Fig. 13.3.4 Cover plate support bracket and fasteners



13.3.1 Remove canopy inner center soffits and cover plates.

1. Remove all flat head machine screws (9) securing each canopy inner center soffit to canopy and remove soffits.
2. Remove all flat head machine screws (9) securing each K9 cover plate to canopy and remove cover plates.

13.3.2 Remove cover plate support brackets.

3. Remove fasteners (9, 11, 12) securing two cover plate support brackets to canopy and remove support brackets.

Fig. 13.3.5 Canopy assembly, cover plate support brackets removed

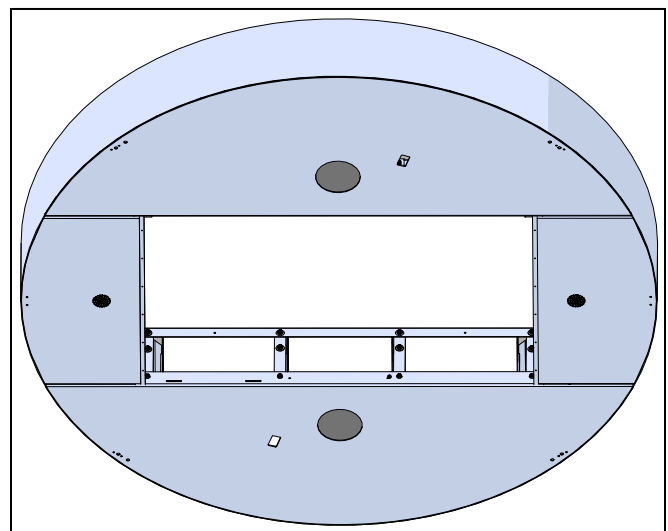
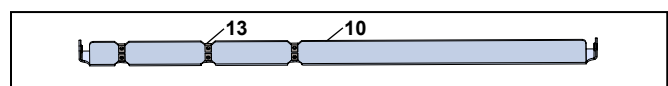


Fig. 13.3.6 Cover plate support bracket



13.4 Install two cross brace weldments and angle adjustment bracket in canopy

Fig. 13.4.1 Cross brace weldments

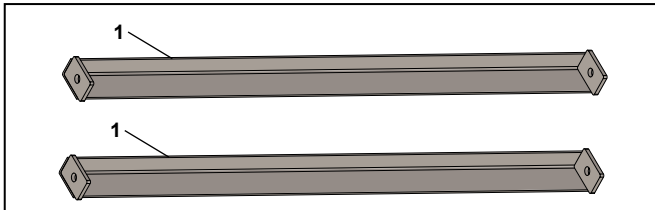


Fig. 13.4.2 Angle adjustment bracket

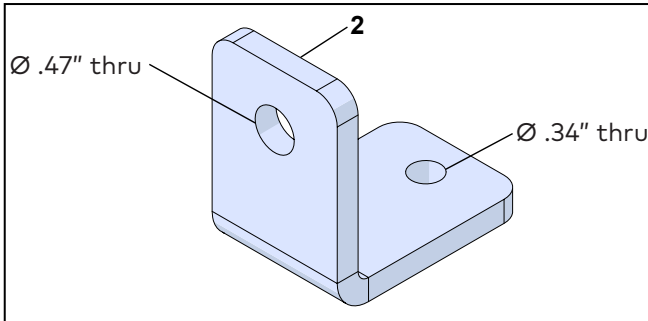


Fig. 13.4.3 Cross brace weldment and angle adjustment bracket fasteners

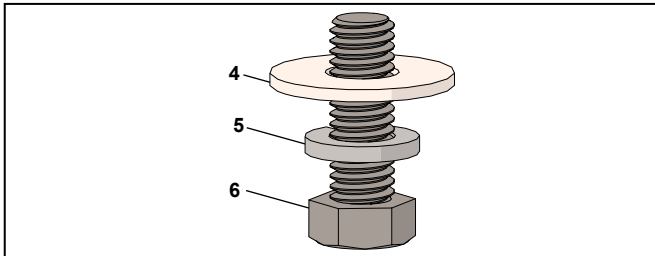


Fig. 13.4.4 Cross brace weldment and angle adjustment bracket installation

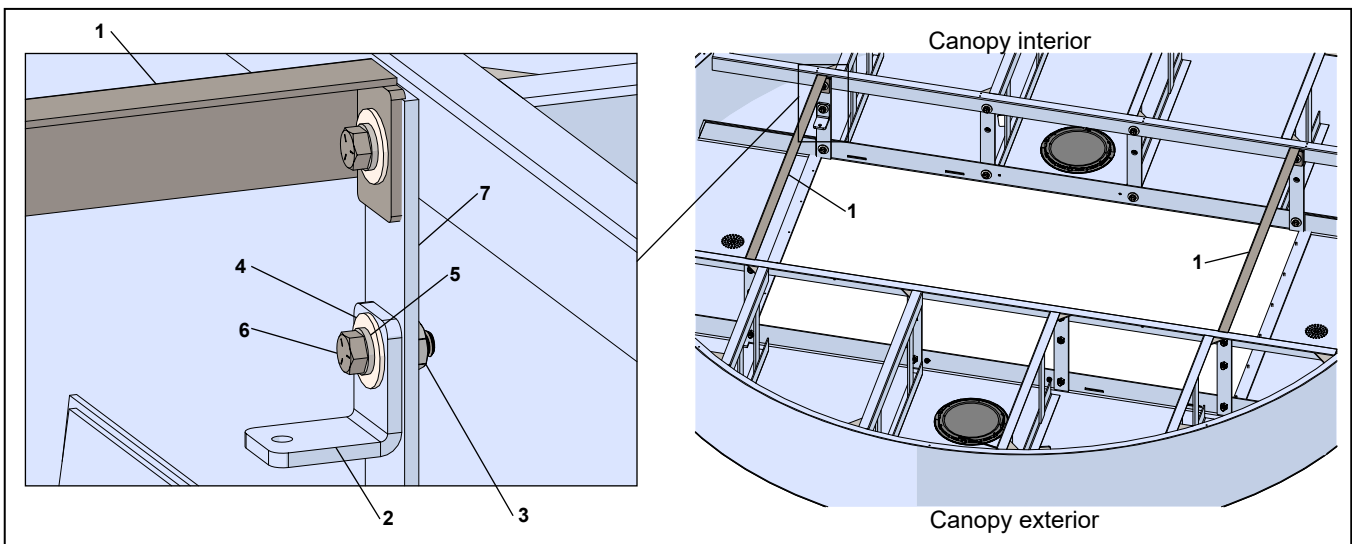


Table 13.4.1 Cross brace weldments, angle adjustment bracket

1	RS6085-010	Weldment, cross brace, K9	2
2	RC6434-010	Bracket, angle adjustment, K9	1
3	RF6065-010	7/16-14 Weld nut, surface mount	
4	RF6067-01Z	7/16" flat washer, Ø1 1/4" OD	5
5	RF6068-01Z	7/16" lock washer, Ø.78" OD	5
6	RF6066-01Z	7/16-14 x 1 1/4" hex head bolt	5
7	RS6115-010	Weldment strap assembly, K9	

13.4.1 Install cross brace weldments.

1. Install two canopy cross brace weldments (1) using fastener hardware in Fig. 13.4.3.

- 7/16" hex head bolts thread into weld nuts on weldment strap assembly (7).

13.4.2 Install angle adjustment bracket.

1. Install angle adjustment bracket (2) using fastener hardware in Fig. 13.4.3.

- Angle adjustment bracket installs on weldment strap assembly on canopy interior side. Reference Chapter 7, Para. 7.1 for additional canopy view with K9 installation.
- 7/16" hex head bolt thread into weld nut on weldment strap assembly (7).

14 K9 Drive Installation Objectives

14.1 K9 drive installation objectives – Installation In Canopy

14.1.1 Install drive mounting hardware.

1. Drive mounting hardware installed in canopy to support K9 drive installation.
2. For hardware installation procedures, reference Chapter 15.

Fig. 14.1.1 K9 drive canopy mounting hardware

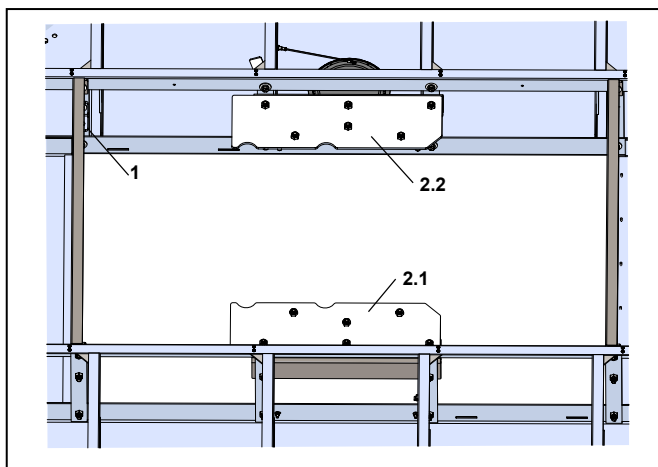


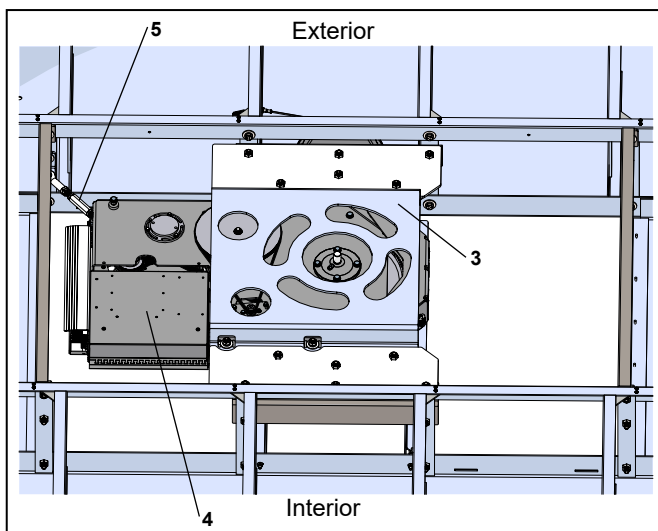
Table 14.1.1 Drive mounting hardware and K9 drive

1	RC6434-010	Bracket, angle adjustment, K9	1
2.1	RS6083-010	Assembly, side mount weldment, K9, RH	1
2.2	RS6083-020	Assembly, side mount weldment, K9, LH	1
3	RC6373-010	Mounting bracket, K9 drive, AL	1
4	RX6021-010	Drive, control unit, K9	1
5		Turnbuckle	1

14.1.2 Install K9 drive assembly in canopy.

1. Install K9 drive and mounting bracket assembly into canopy.
2. For installation procedure, reference Chapter 15.

Fig. 14.1.2 K9 drive installation in canopy.

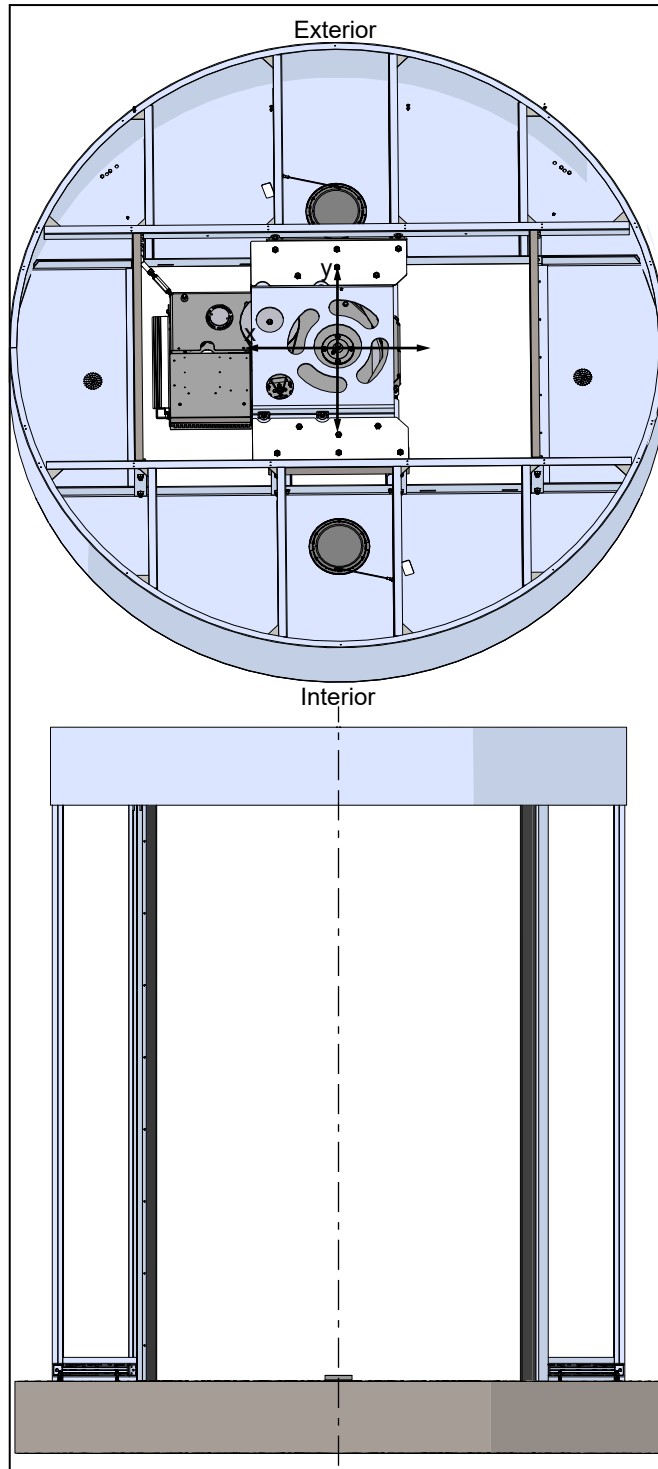


14.2 K9 Drive Installation Objectives – After Revolving Door Assembled, Squared and Leveled

14.2.1 Center K9 drive shaft over door centerpoint.

1. Adjust K9 drive assembly (x and y positions) until drive is over door centerpoint. Slots in angle adjustment brackets (Fig. 14.1.1) allow position adjustment.
2. For adjustment procedure, reference Chapter 20.

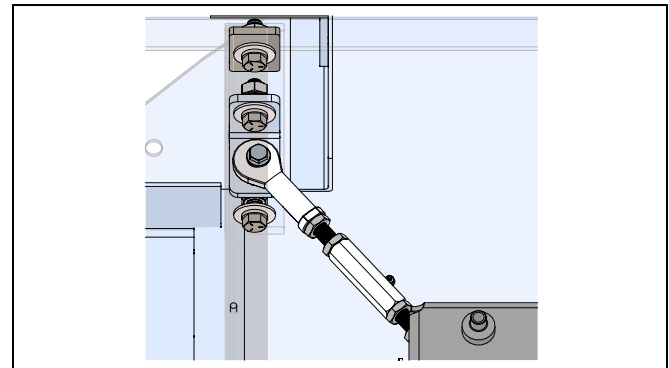
Fig. 14.2.1 K9 drive position adjustment



14.2.2 Attach K9 drive turnbuckle to its mounting bracket.

- Turnbuckle will be used for K9 drive rotation (Para. 14.2.3).
- For turnbuckle attachment, reference Chapter 20.

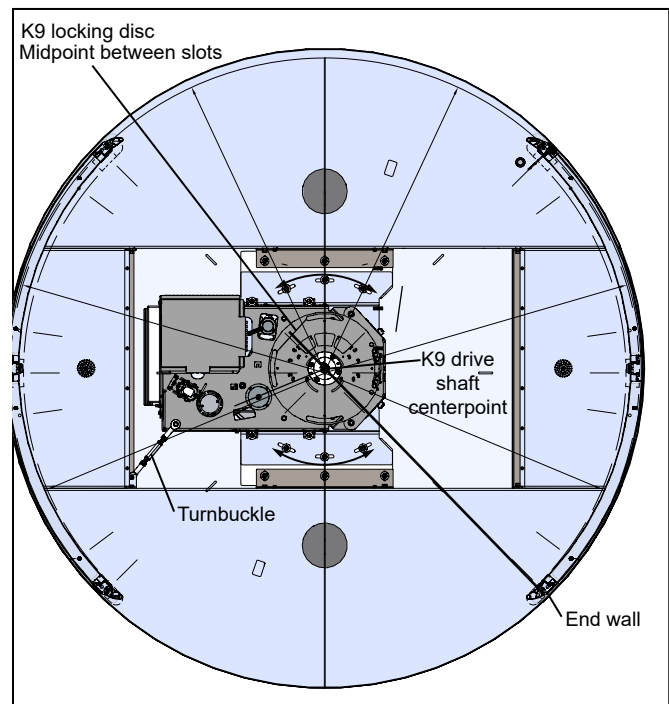
Fig. 14.2.2 K9 drive turnbuckle



14.2.3 Align K9 drive locking bolt disc with end wall.

- Adjustment slots in K9 drive weldment allow rotational adjustment of K9 drive, using turnbuckle, to align K9 drive locking disc with K9 drive shaft center, and end wall location.
- For procedure, reference Chapter 20.

Fig. 14.2.3 K9 drive position adjustment



15 Install K9 Drive Mounting Hardware And K9 Drive In Canopy, Raise Canopy To Installation Height

15.1 Install Canopy Drive Mounting Brackets

Fig. 15.1.1 Bracket, canopy mount, K9

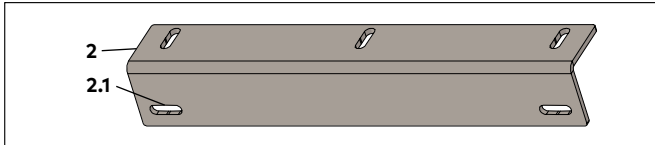


Fig. 15.1.2 Canopy mount bracket fasteners

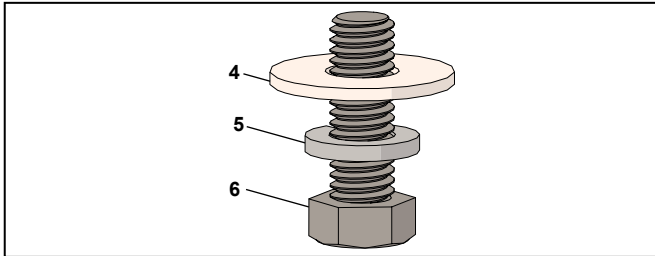


Fig. 15.1.3 Canopy mount bracket and fastener installation

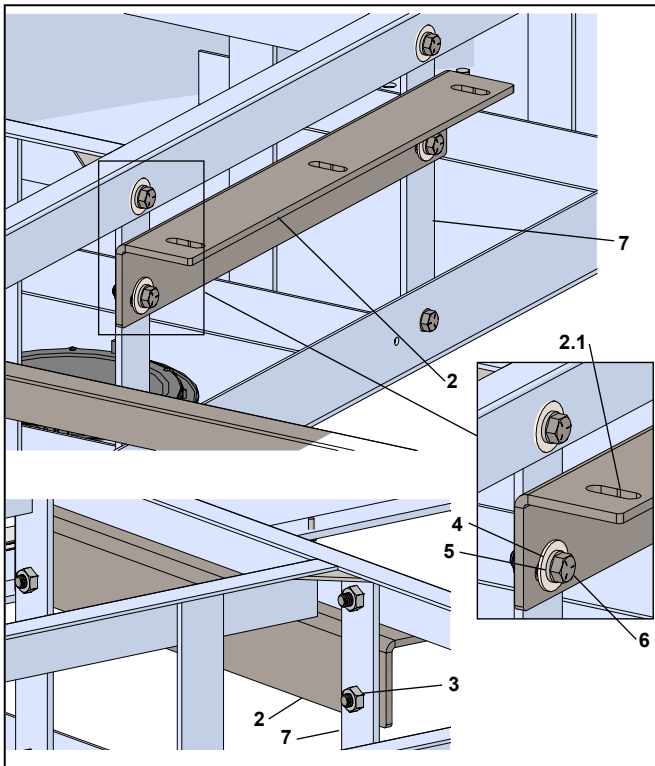


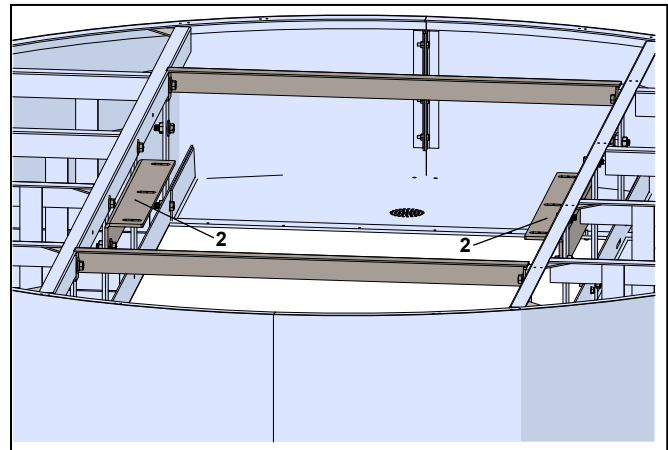
Table 15.1.1 Canopy K9 drive bracket hardware

2	RC6374-010	Bracket, canopy mount, K9	2
2.1		1" long slot	
3	RF6065-010	7/16-14 Weld nut, surface mount	
4	RF6067-01Z	7/16" flat washer, Ø1 1/4" OD	4
5	RF6068-01Z	7/16" lock washer, Ø.78" OD	4
6	RF6066-01Z	7/16-14 x 1 1/4" hex head bolt	4
7	RS6115-010	Weldment strap assembly, K9	

15.1.1 Install K9 canopy support brackets.

1. Install two canopy support brackets using fastener hardware in Fig. 15.1.2.
 - Hex head bolts thread into 7/16" weld nuts (3) on weldment strap assemblies (7).
2. Center brackets in slots (2.1).

Fig. 15.1.4 Canopy mount bracket installation



15.2 Install Canopy Side Mount Weldments

Fig. 15.2.1 Side mount weldment assembly, K9

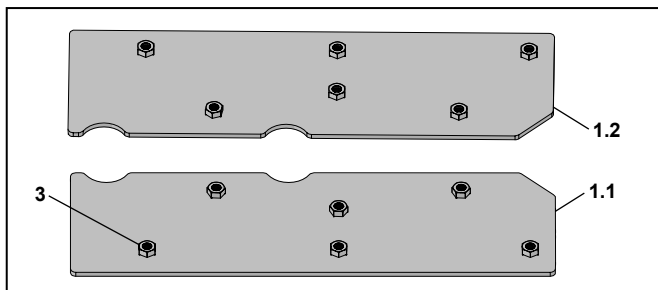


Fig. 15.2.2 Side mount weldment fasteners

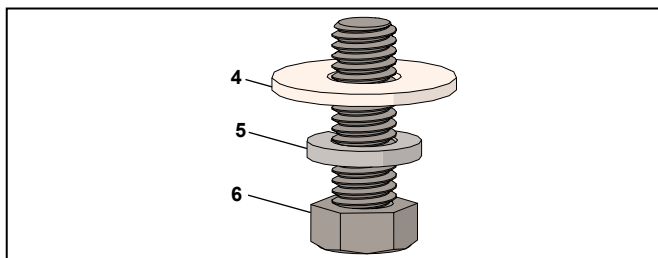


Fig. 15.2.3 Side mount weldment assembly RH and fastener installation

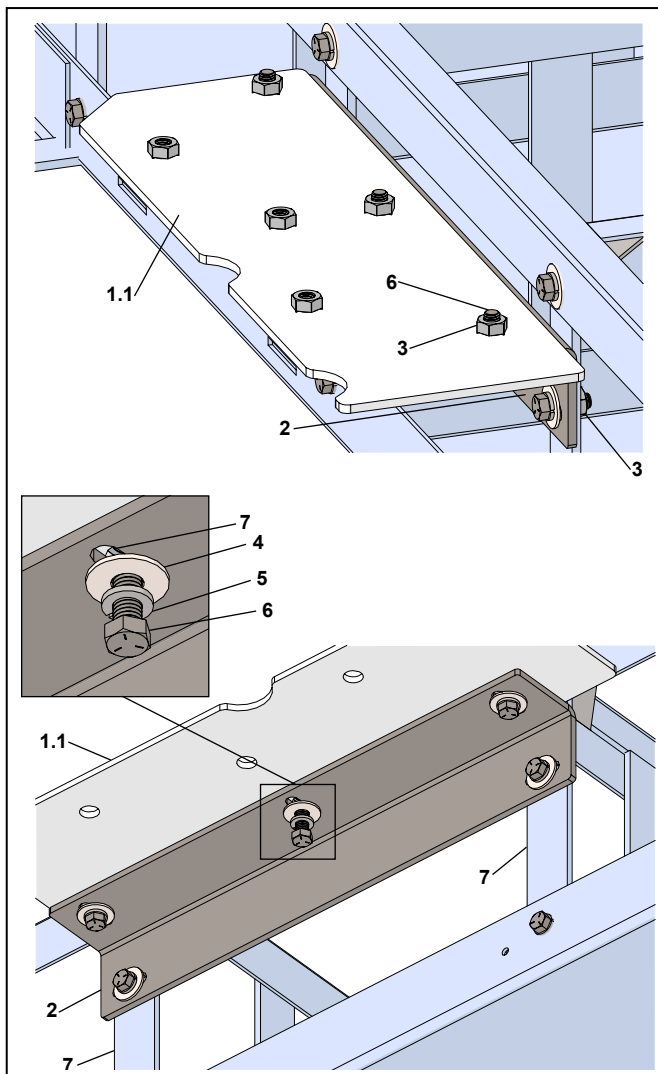


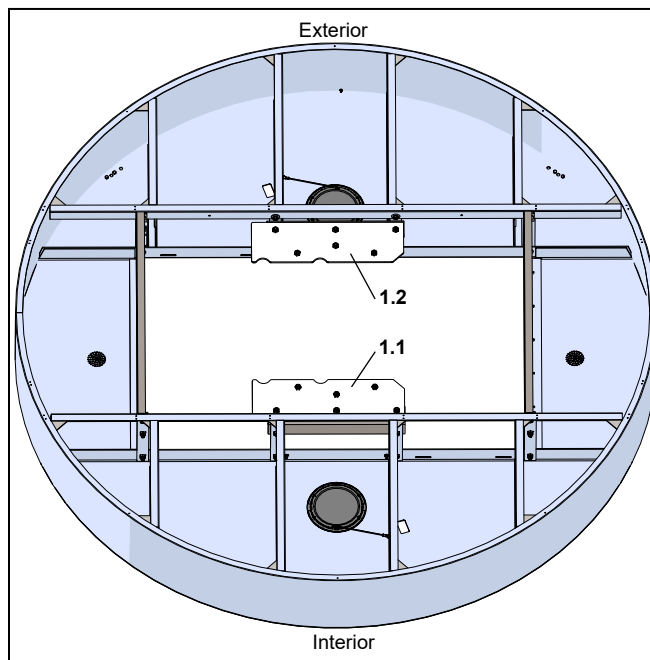
Table 15.2.1 Canopy K9 drive bracket and side mount weldment

1.1	RS6083-010	Assembly, side mount weldment, K9, RH	1
1.2	RS6083-020	Assembly, side mount weldment, K9, LH	1
2	RC6374-010	Bracket, canopy mount, K9	2
3	RF6065-010	7/16-14 Weld nut, surface mount	5
4	RF6067-01Z	7/16" flat washer, Ø1 1/4" OD	6
5	RF6068-01Z	7/16" lock washer, Ø.78" OD	6
6	RF6066-01Z	7/16-14 x 1 1/4" hex head bolt	6

15.2.1 Install side mount weldments.

1. Install RH and LH side mount weldments using fastener hardware in Fig. 15.2.2.
 - Reference Chapter 7, Para. 7.1 for additional canopy view of side mount weldment orientation with K9 installation.
 - Hex head bolts thread into 7/16" weld nuts (3) on weldment strap assemblies (7).
2. Center weldments in slots, do not fully tighten hex head bolts.

Fig. 15.2.4 Side mount weldment installation



15.3 Position K9 Drive And Mounting Bracket Assembly Below Canopy

Fig. 15.3.1 RS6086 K9 drive assembly

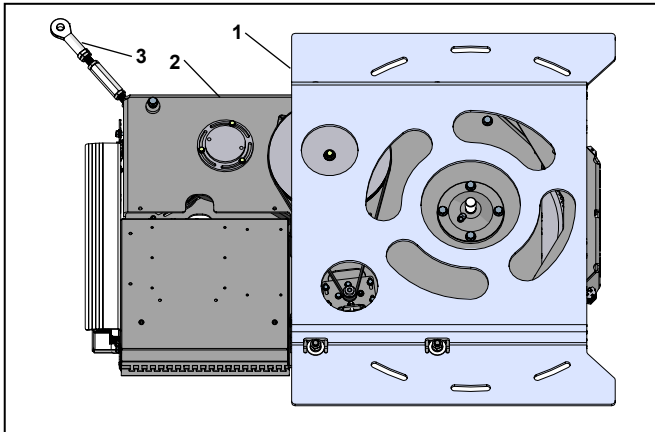


Fig. 15.3.2 RS6086 K9 drive assembly positioned under canopy.

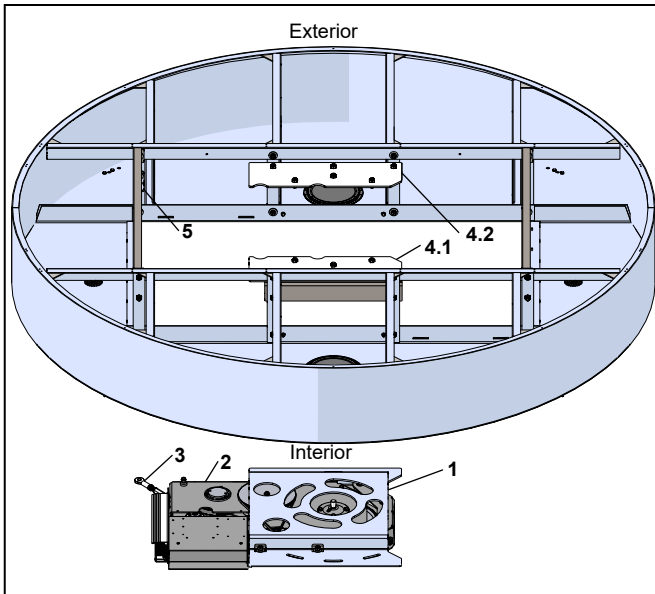


Table 15.3.1 Drive unit assembly, K9

1	RC6373-010	Mounting bracket, K9 drive, AL	1
2	RX6021-010	Drive, control unit, K9	1
3		Turnbuckle assembly, K9	1
4.1	RS6083-010	Assembly, side mount weldment, K9, RH	1
4.2	RS6083-020	Assembly, side mount weldment, K9, LH	1
5	RC6434-010	Bracket, angle adjustment, K9	1

15.3.1 K9 drive and mounting bracket assembly.

1. Reference Para. 12.3 for K9 drive and mounting bracket assembly.

CAUTION

Place canopy assembly on elevated smooth surface.

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



WARNING

Use caution when positioning K9 drive assembly! Drive weighs approximately 150 pounds

15.3.2 Position K9 drive assembly under canopy.

1. It is recommended to install the K9 drive assembly in the canopy before positioning the canopy into its installed location.
2. It is recommended to use Genie material lift to lift and position K9 drive assembly under canopy.
3. In Para. 15.4, K9 drive will be positioned in place under side mount weldments and secured to the weldments.

15.4 Fasten K9 Drive And Mounting Bracket Assembly In Canopy

Fig. 15.4.1 K9 drive assembly fasteners

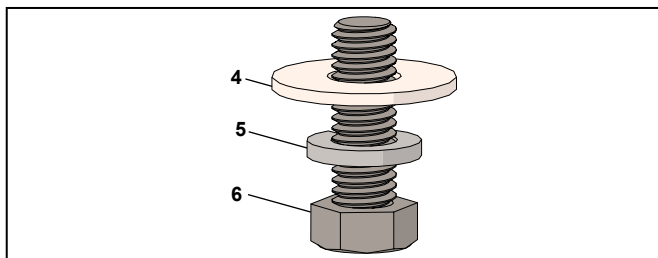


Fig. 15.4.2 K9 drive assembly below side mount weldments

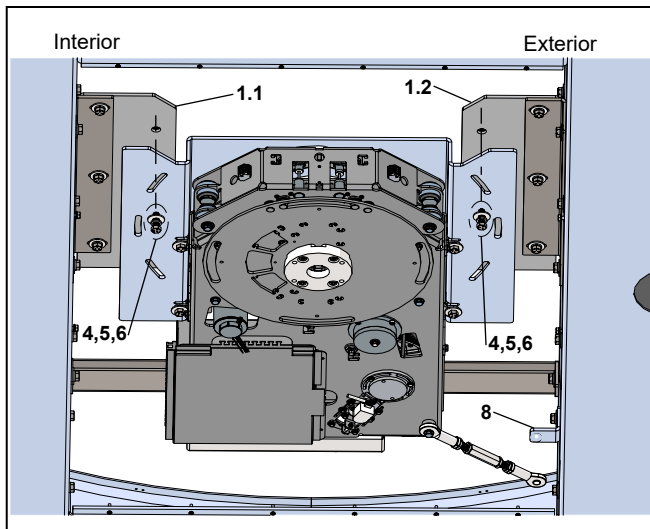


Table 15.4.1 Canopy K9 drive bracket and side mount weldment

1.1	RS6083-010	Assembly, side mount weldment, K9, RH	1
1.2	RS6083-020	Assembly, side mount weldment, K9, LH	1
2	RC6374-010	Bracket, canopy mount, K9	2
3	RF6065-010	7/16-14 Weld nut, surface mount	5
4	RF6067-01Z	7/16" flat washer, Ø1 1/4" OD	6
5	RF6068-01Z	7/16" lock washer, Ø.78" OD	6
6	RF6066-01Z	7/16-14 x 1 1/4" hex head bolt	6
7		Turnbuckle assembly, K9	
8	RC6373-010	Mounting bracket, K9 drive, AL	

15.4.1 Install K9 drive and bracket assembly to drive mount weldments.

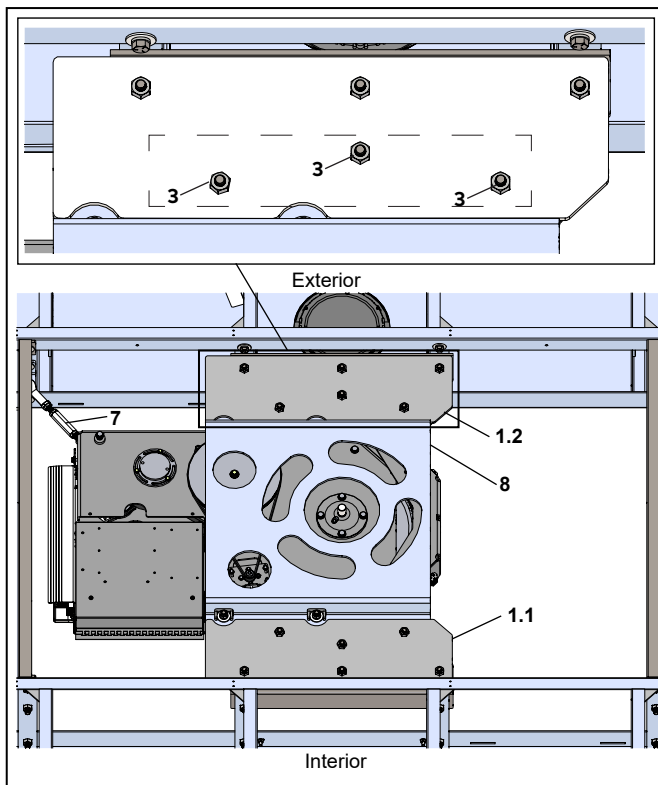


WARNING

Use caution when positioning K9 drive assembly! Drive weighs approximately 150 pounds

1. Position K9 drive and bracket assembly directly under canopy drive mount weldments
2. Raise and position drive assembly until K9 drive mounting bracket holes align with mounting holes in side mount weldments (Fig. 15.4.2).
3. Center K9 drive mounting bracket slots with drive mount weldment mounting holes (Fig. 15.4.4).

Fig. 15.4.3 K9 drive assembly mounting, top view



4. Install 7/16" fastener hardware (Fig. 15.4.1) in drive mounting bracket mounting holes (Fig. 15.4.3).
- Do not fully tighten 7/16" bolts as mounting bracket position may have to be adjusted.
 - 7/16" bolts thread into weld nuts on side mount weldments.

15.4.2 Check K9 drive is parallel to canopy rails.

NOTICE

Verify K9 drive assembly is parallel to canopy rails.
Adjust K9 drive position as required.

Fig. 15.4.4 K9 drive assembly mounting, bottom view

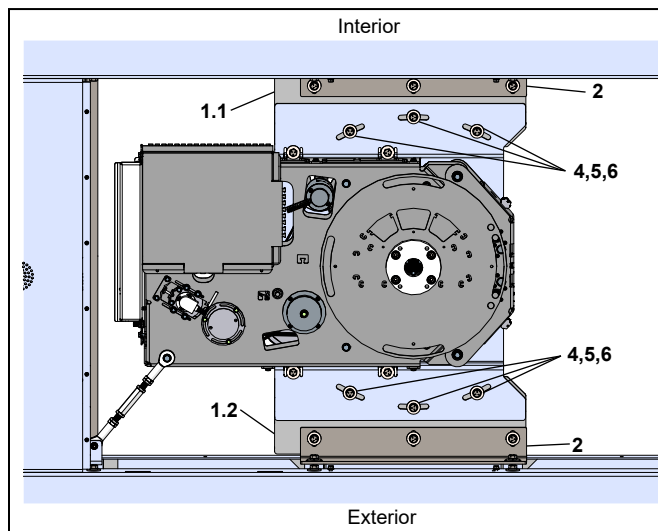
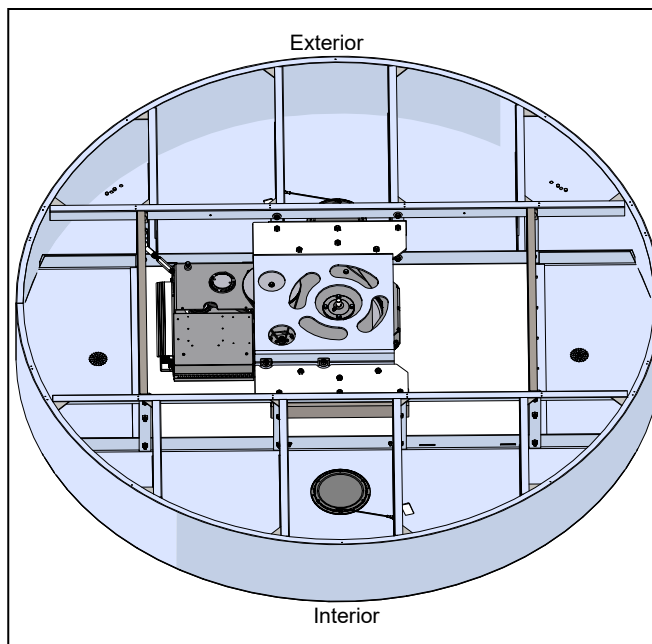


Fig. 15.4.5 K9 drive assembly installed in canopy



15.5 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!

15.5.1 Move canopy to approximate door centerpoint.

1. Position canopy at door centerpoint, orienting canopy to building interface (Para. 13.3).



WARNING

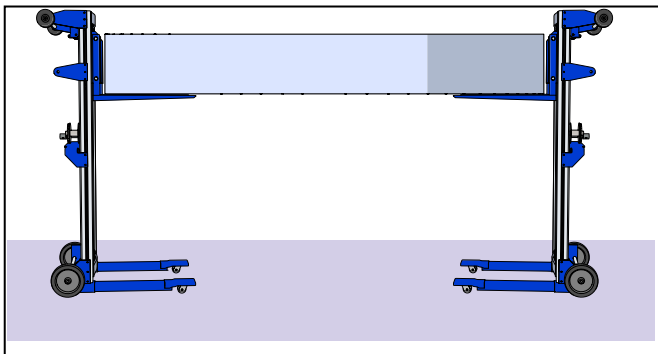
A minimum of two persons are required when handling canopy!



WARNING

Use caution when handling canopy!

Fig. 15.5.1 Canopy on lift equipment example



15.5.2 Place canopy on lifts.

1. Place canopy on lifts.

CAUTION

Canopy installation orientation.

1. Identify canopy end wall mounting hole locations from Crane shop drawings.
2. Orient canopy on lifts based on Alvarado shop drawing and architect/contractor drawings.

CAUTION

When placing canopy assembly on lifts prevent damage to:

- Sensor surfaces.
- Optional lights.
- Soffit surfaces.

CAUTION

Canopy end wall mounting holes.

Place lift equipment between canopy end wall mounting hole areas. Reference Chapter 16.



WARNING

Lock lift wheels once lifts are in place!

15.5.3 Raise canopy to installation height.

1. Raise canopy to height for post installation (Chapters 15 and 16).



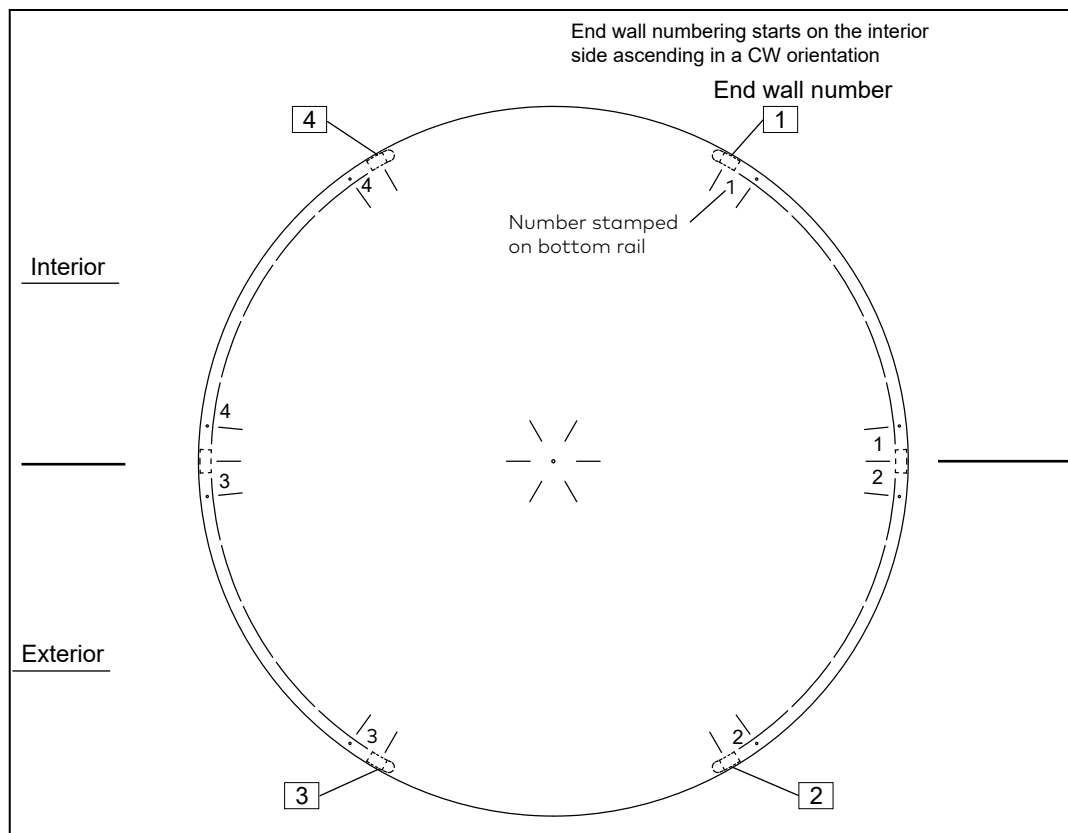
WARNING

Use caution when raising canopy!

16 Enclosure Bottom Rail And Post Numbering

16.1 Enclosure Bottom Rail And End Wall Numbering

Fig. 16.1.1 Standard end wall installation numbering



16.1.2 End wall numbering, multiple revolving door installation.

Table 16.1.1 Post numbering

Door 1	Post numbers
	1 2 3 4
Door 2	Post numbers
	5 6 7 8
Door 3	Post numbers
	9 10 11 12
Door 4	Post numbers
	13 14 15 16

17 Enclosure Center Post Installation

17.1 Open Post Shipping Crate

Fig. 17.1.1 Post shipping crate

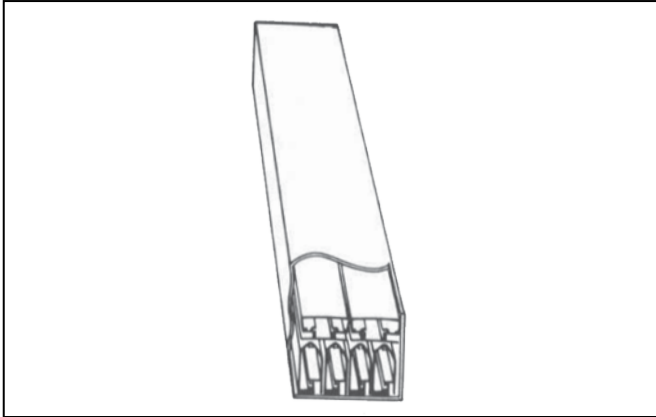


Fig. 17.1.2 Enclosure post numbering



NOTICE

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

17.1.1 Uncrate 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.

17.1.2 Post and end wall numbering.

1. Center post and end wall numbering.
 - Each post's and end wall wrapping material is marked with numbers (Fig. 15.1.2) indicating where the center posts and end walls are to be located in the door installation.
2. Post and end walls must be installed matching their number with number in canopy and bottom rail.

17.2 Center Post Assembly

17.2.1 Center post assembly

Fig. 17.2.1 Center post

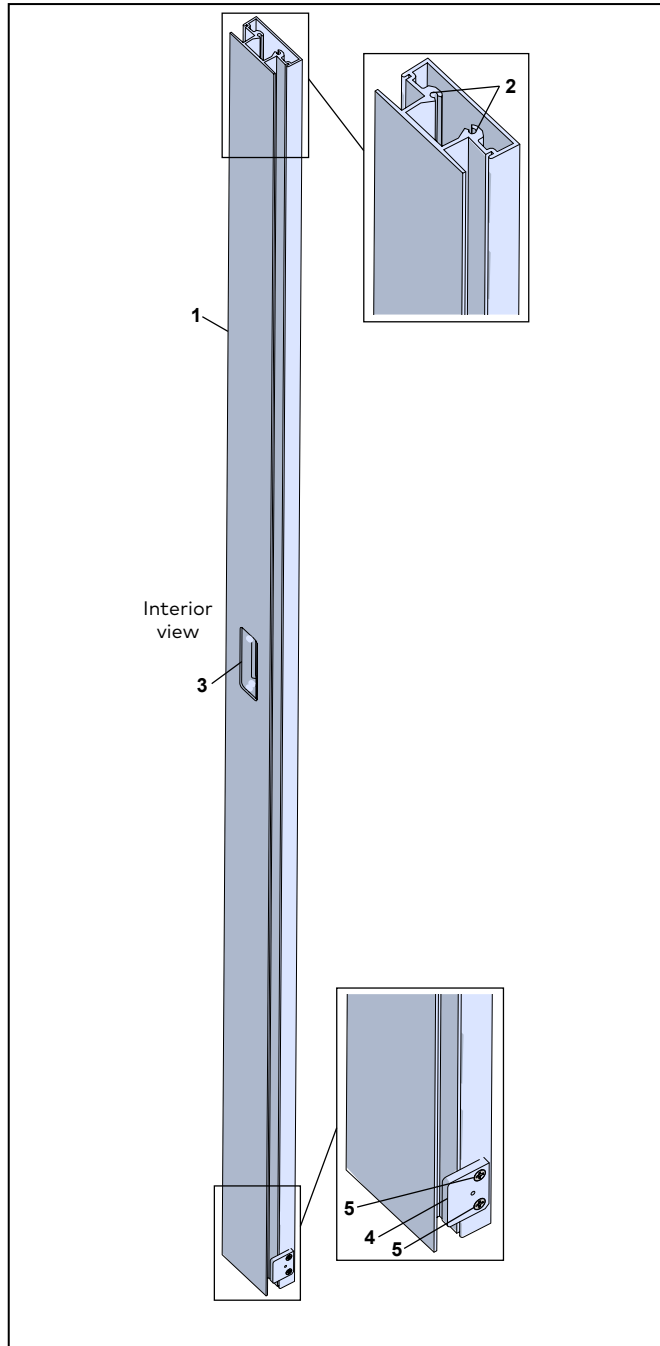


Table 17.21 Center post assembly

1	RE6007-010	Center post
2		Mounting holes for canopy-to-post fasteners
3		Cutout for Push to Reverse plate
4	RE6020-010	Rail post attachment block Factory installed
5	RF6116-02G	1/4-20 x 3/8" Phillips flat head ,machine screw Factory installed

17.3 Attach Center Posts To Canopy

Table 17.3.1 Center post and fasteners

Part / Assembly	Description
1 RE6006-0X0	Center post
2	1/4-20 tapped holes for fasteners
3	Cutout for Push to Reverse switch plate
4 RE6020-010	Rail post attachment block
5 RF6116-02G	1/4-20 x 5/8" FHMS
7 RF6055-02G	1/4-20 x 1" Hex head cap screw
8 RS7060-010	Push to Reverse plate/button assembly

Fig. 17.3.1 Center post canopy fasteners

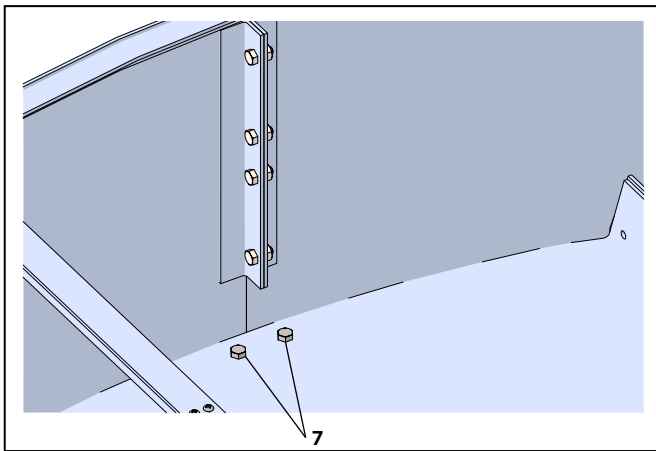


Fig. 17.3.2 1/4 -20 x 1" hex head cap screw

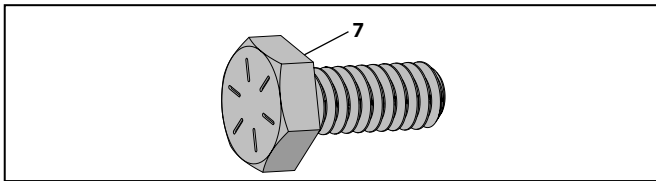
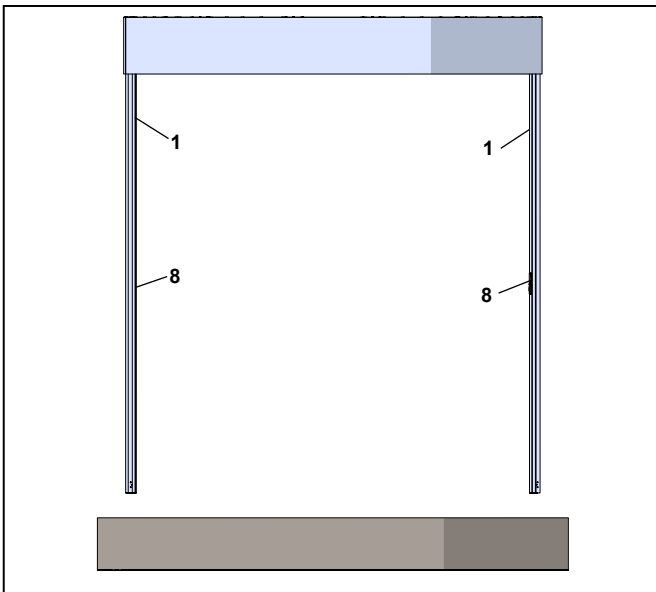


Fig. 17.3.3 Center posts connection to canopy



WARNING

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

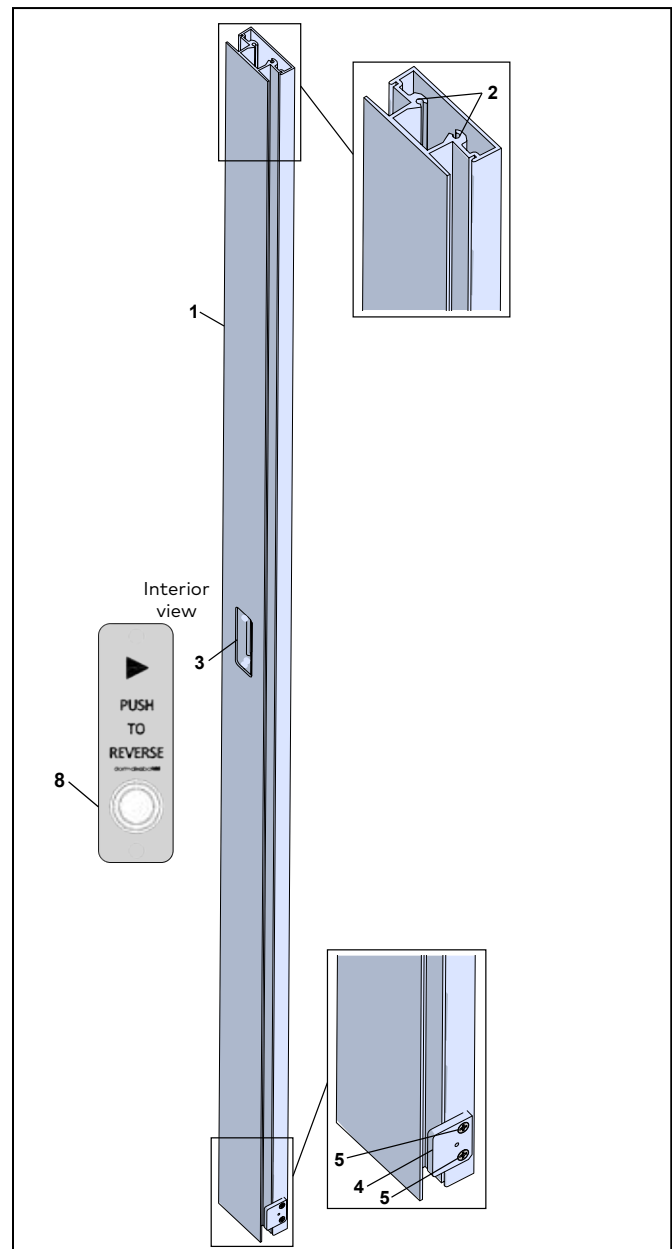
17.3.1 Fasten center posts to canopy.

1. Fasten center posts to canopy using 1/4-20 x 1" hex head screws (Fig. 17.3.2) through soffit holes into posts.
- Insure post number matches number in canopy.

NOTICE

Reference RL6003-003 Wiring Manual, Para. 3,2 for Push to Reverse pushbutton wiring.

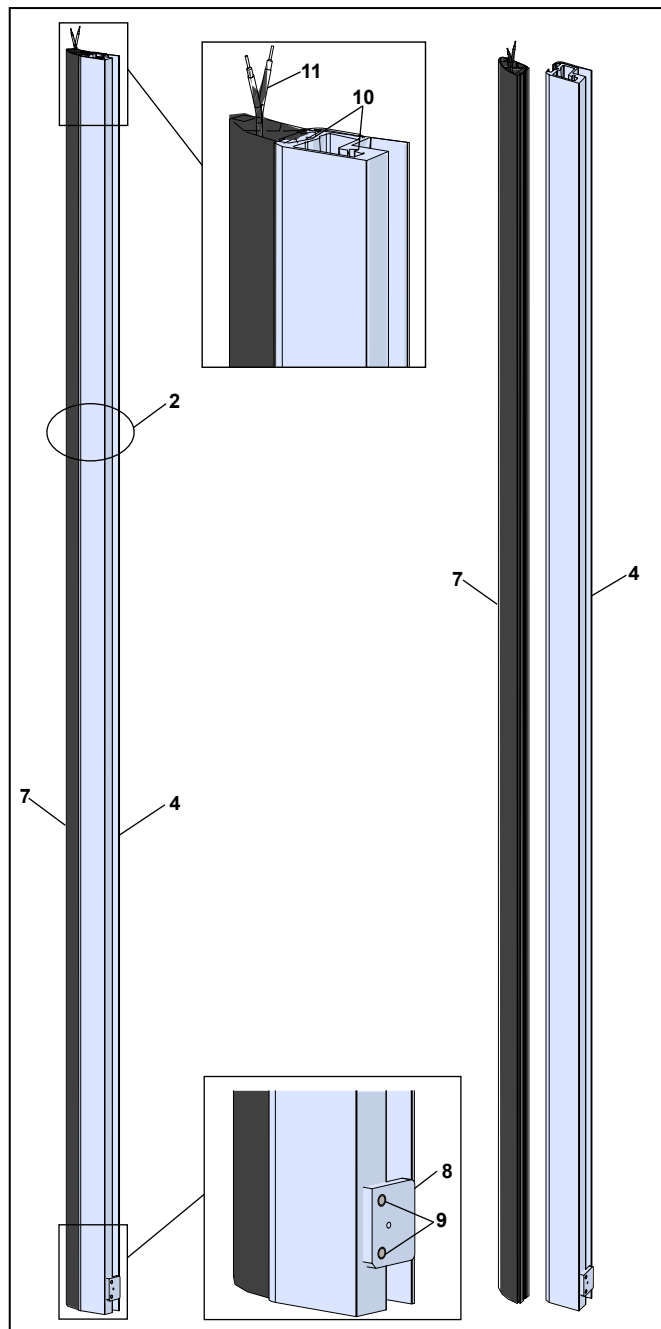
Fig. 17.3.4 Center post



18 Enclosure End Wall Installation

18.1 Assembly, RH End Wall/bumper Assembly With Bumper Sensor

Fig. 18.1.1 End wall /bumper assembly RH with end wall sensor



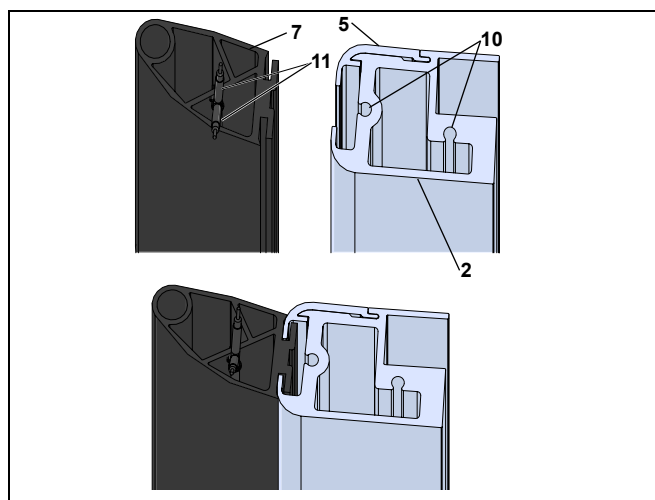
NOTICE

End wall / bumper assembly is factory assembled.

Table 18.1.1 End wall / bumper assembly with bumper sensor

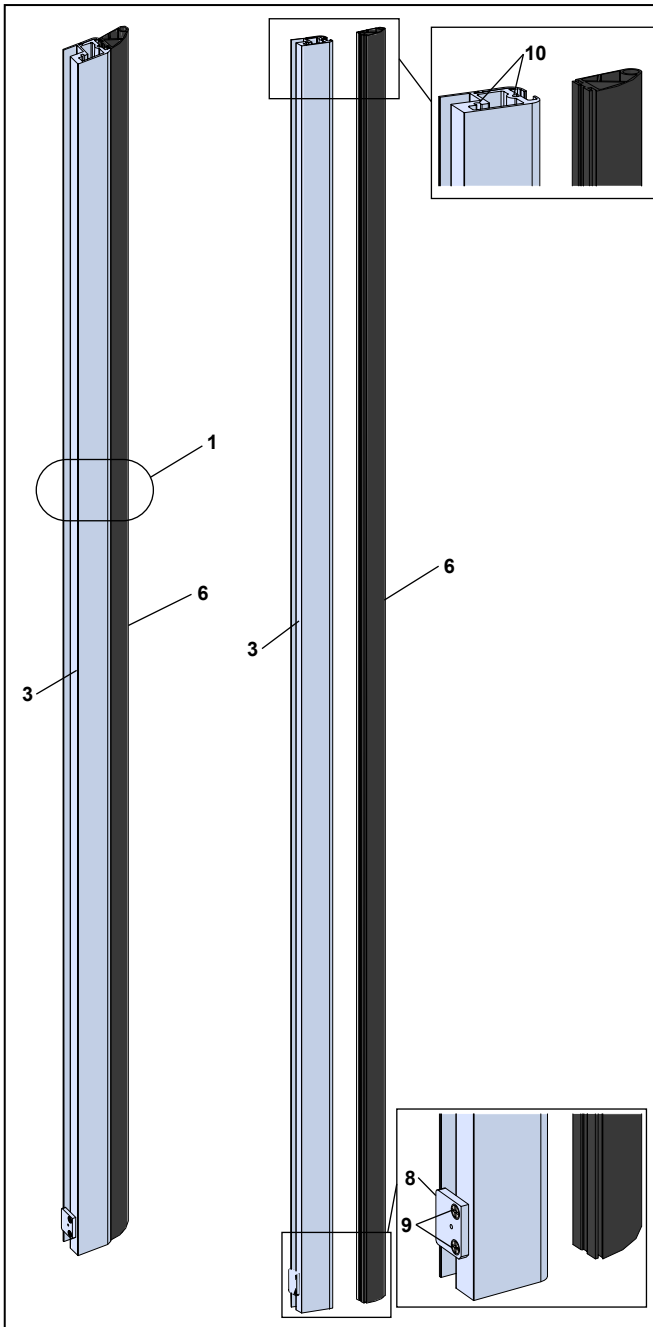
2	RS6104-002	Assembly, right hand end wall with end wall sensor
4	RE6002-002	Extrusion, end wall, outer RH
5	RE6002-003	Extrusion, end wall, inner
7	RX6023-001	Bumper, RH with end wall sensor and resistor
8	RE6020-010	Rail end wall attachment block Factory installed
9	RF6116-02G	1/4-20 x 3/8" Phillips flat head ,machine screw Factory installed
10		Mounting holes for canopy-to end wall fasteners
11		End wall/bumper sensor wires (2)

Fig. 18.1.2 End wall /bumper assembly RH with end wall bumper sensor



18.2 Assembly LH End wall/bumper Assembly Without Bumper Sensor

Fig. 18.2.1 End /bumper assembly LH without bumper sensor



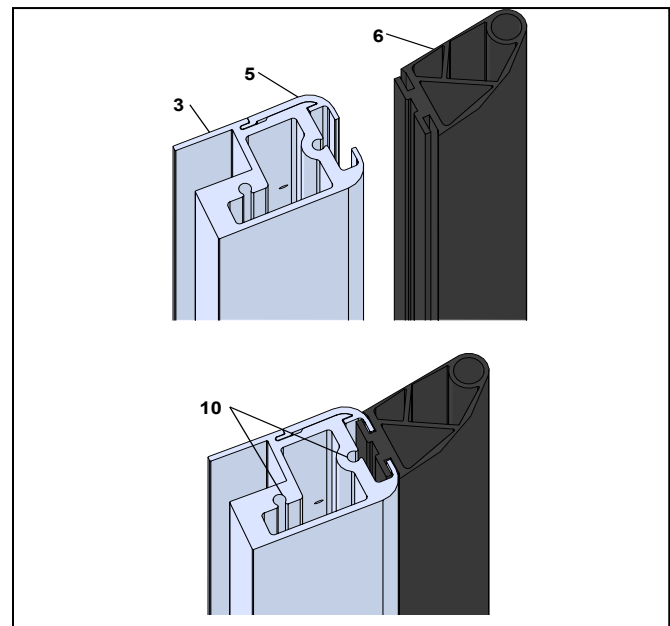
NOTICE

End wall / bumper assembly is factory assembled.

Table 18.2.1 End wall / bumper assembly without end wall/bumper sensor

1	RS6104-001	Assembly, left hand end wall without end wall sensor
3	RE6002-001	Extrusion, end wall, outer LH, S2/S3
5	RE6002-003	Extrusion, end wall, inner
6	RX6022-001	Bumper, LH without end wall sensor
8	RE6020-010	Rail end wall attachment block Factory installed
9	RF6116-02G	1/4-20 x 3/8" Phillips flat head ,machine screw Factory installed
10		Mounting holes for canopy-to-end wall fasteners

Fig. 18.2.2 End wall /bumper assembly LH without end wall sensor



18.3 Attach End Walls To Canopy

Fig. 18.3.1 End wall arrangement below canopy

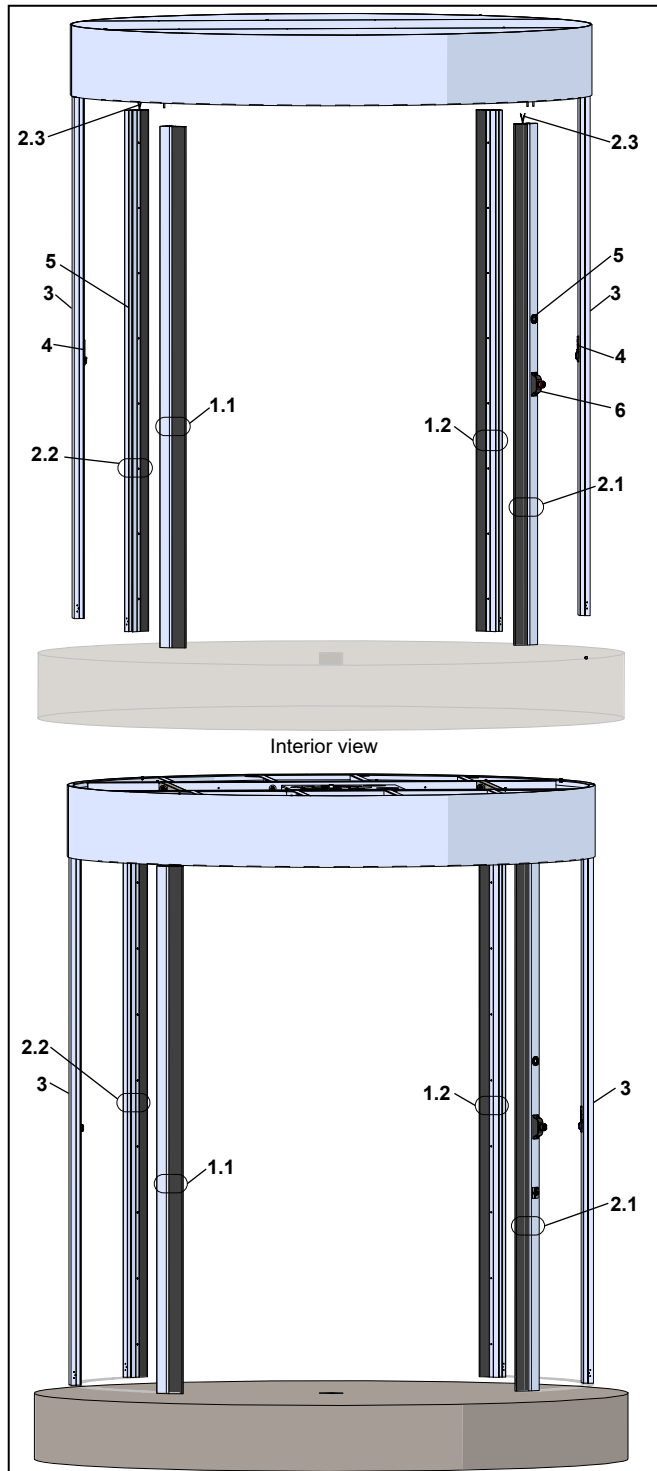


Fig. 18.3.2 End wall canopy fastener view

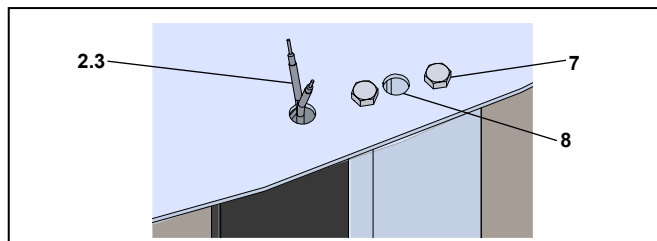


Table 18.3.1 End wall/ bumper assembly with HAAKE sensor

1.1	RS6104-001	Assembly, left hand end wall without end wall sensor, interior
1.2	RS6104-001	Assembly, left hand end wall without end wall sensor, exterior
2.1	RS6104-001	Assembly, right hand end wall with end wall sensor, interior
2.2	RS6104-001	Assembly, right hand end wall with end wall sensor, exterior
2.3		End wall sensor wires (2), 6' long
3	RE6006-0X0	Center post
4	RS7060-010	Assembly, switch plate, Push to Reverse
5	RC7007-001	Activation light assembly -Installed at installation
6		
7	RF6055-02G	1/4-20 x 1" Hex head cap screw
8		Hole for activation light, emergency stop wiring

18.3.1 End wall installation.

CAUTION

Match end wall number to number in canopy. Refer to Chapter 16 for end wall numbering locations.

1. Security end wall activation light and emergency stop pushbutton wiring.

NOTICE

Reference Para. 18.4 for end wall wiring.

2. Fasten end walls to canopy using 1/4-20 x 1" hex head screws (Fig. 18.3.3) through soffit holes into end walls.



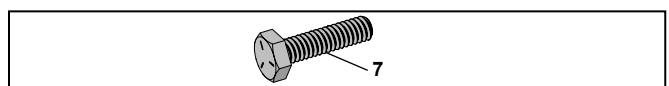
TIPS AND RECOMMENDATIONS

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

18.3.2 End wall sensor wiring.

- Reference Para. 18.4.
1. End wall with sensor: As end wall is raised in position under canopy, feed sensor wires through hole in canopy (Fig. 18.3.2).
 2. Pull wires through hole as end wall is raised into position.

Fig. 18.3.3 1/4-20 hex head cap screw



18.4 End Wall Wiring



WARNING

Work on electrical wiring should only be done by qualified personnel!

18.4.1 Activation light wiring

Reference Chapter 5 for Activation light view.

NOTICE

Reference RL6003-003 Wiring Manual, Para. 3.2 for end wall activation light wiring.

18.4.2 End wall bumper sensor wiring (Para. 18.1)

NOTICE

Reference RL6003-003 Wiring Manual, Para. 3.6 for end wall end wall/bumper sensor "Safety strip" wiring.

18.5 Emergency Pushbutton Wiring

18.5.1 Emergency stop pushbutton wiring.

Emergency stop pushbutton must be located on or near the exit point of the door at a location meeting ANSI/BHMA A156.27 Para. 20 standards. Coordinate location with customer.

NOTICE

Reference RL6003-003 Wiring Manual, Para. 3.1 for Emergency Stop pushbutton wiring.

18.6 K9 OPL Mode Switch Wiring

18.6.1 K9 OPL mode switch wiring.

Reference Chapter 5 for OPL-05 and Mode switch views.

Installed near OPL-05 installation location.

NOTICE

Reference RL6003-003 Wiring Manual, Para. 3.7 for K9 OPL mode switch wiring.

19 Enclosure Bottom Rail Installation

NOTICE

Refer to Crane shop drawings for specific bottom rail installation detail for job!

NOTICE

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

19.1 Open Bottom Rail Shipping Crate

Fig. 19.1.1 Bottom rail enclosure crates

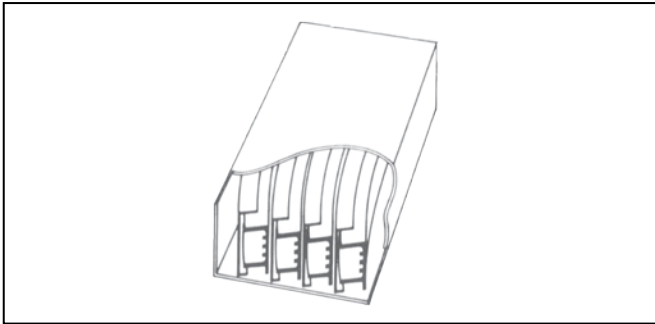
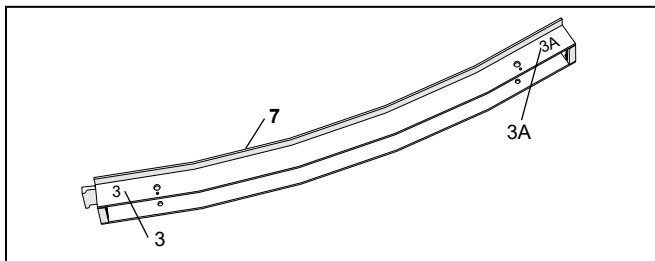


Fig. 19.1.2 Bottom rail shipping crate



Fig. 19.1.3 Bottom rail numbering



7 Bottom rail assembly
with location numbers

19.1.1 Unpack bottom rail assemblies from shipping crate.

1. Uncrate bottom rail assemblies from their shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

2. Bottom rail numbering:

- Bottom rail wrapping material is marked with two numbers indicating where the base is to be located in the door installation (Fig. 19.1.2).
- The numbers are stamped on the bottom rails (Fig. 19.1.3).
- Insure bottom rail numbers match those on wrapping material.

19.2 Bottom Rail Assembly, 4 Wing

Fig. 19.2.1 Bottom rail assembly, 4 wing

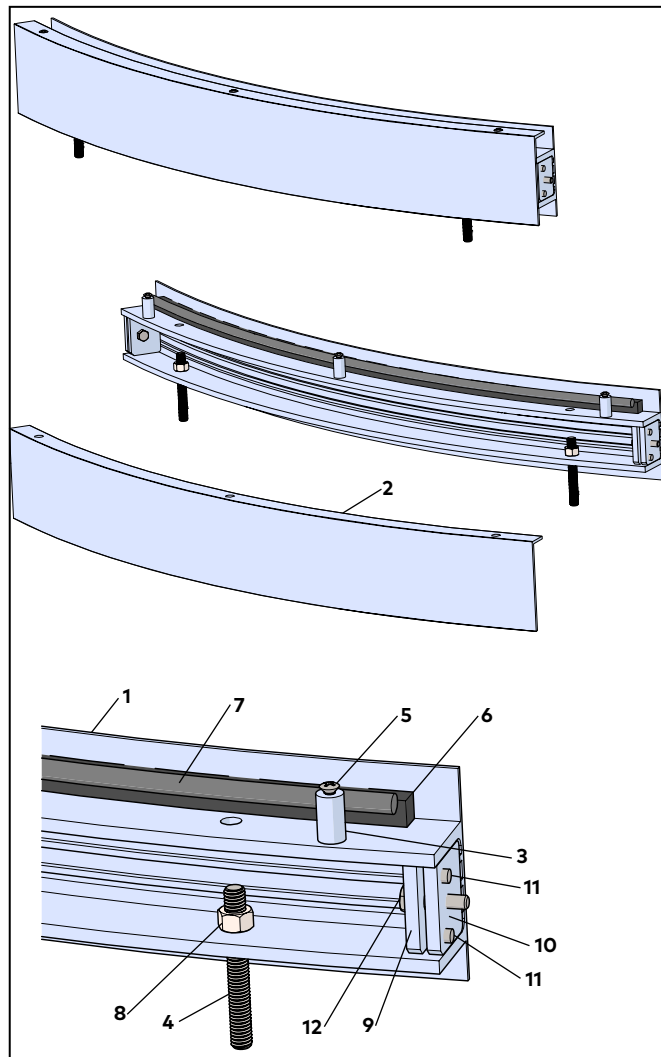


Table 19.2.1 Bottom rail assembly, 4 wing

	RS6110-040	Bottom rail assembly – 4 wing, 8' ID door
1	RE6016-010	4" inner rail extrusion, 4 wing A32 1012
2	RE6015-010	4" base rail outer cover, 4 wing
3	RC6390-010	Bottom rail cover support
4	DC2569-020	3/8"-16 x 3" threaded rod
5	RF6118-01G	10-24 x 1 1/4" SS Phillips oval head machine screw
6	RC6422-010	Glazing block, 1/8 x 3/8 x 2"
7	RC6423-010	Backing rod, 4 wing, 8' ID door
8	DF0587-00G	Hex nut, 3/8-16 D-NZ
9	RE6021-010	Rail attachment block A32 2005
10	RE6020-010	Rail/post attachment block A32 2000
11	RF6116-02G	1/4-20 x 3/8" flat head machine screw, SS
12	RF6055-02G	1/4-20 x 1" hex head bolt, SS

19.2.1 Remove cover from each bottom rail assembly.

1. Remove Phillips oval head screws from each bottom rail assembly.
2. Remove cover and bottom rail cover supports from each bottom rail assembly.



TIPS AND RECOMMENDATIONS

Number cover and bottom rail (matching set).



WARNING

Use caution working in door installation area.
Lift equipment in place under canopy.

Fig. 19.2.2 Cover fastener

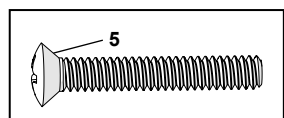


Fig. 19.2.3 Cover support

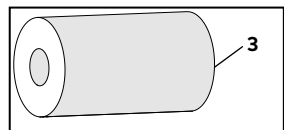


Fig. 1792.4 3" threaded rod

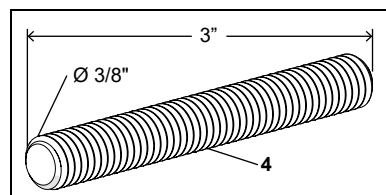
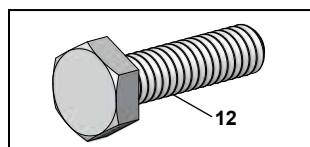


Fig. 19.2.5 Rail to post fastener



19.2.2 Prepare stud anchor holes.

- Stud anchor holes drilled in Para. 11.4.

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

19.2.3 Thread two 3" studs into each bottom rail.

1. Thread two 3" studs into mounting holes of each bottom rail, leaving 3/4" above bottom base rail (Fig. 19.2.1).

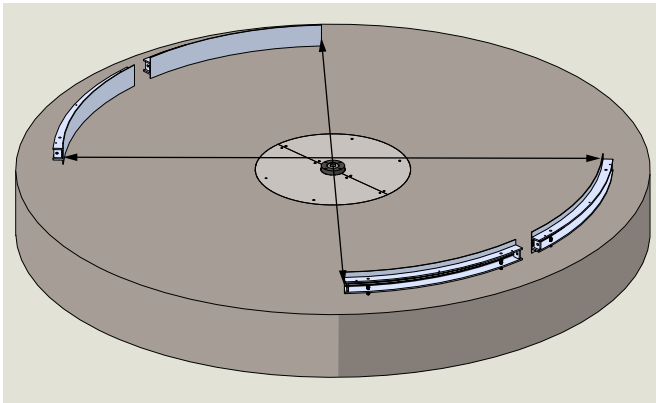
19.2.4 Dry fit each bottom rail assembly to the floor.

1. Place each bottom rail on floor, checking stud depths in the floor stud mounting holes.

CAUTION

Enclosure bottom rail numbers must match adjacent post and end wall numbers.

Fig. 19.2.6 Bottom rail assemblies installed on floor



19.2.5 Verify door inside diameter.

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

19.2.6 Remove bottom rail assemblies.

1. Remove bottom rail assemblies from floor.

19.2.7 Partially fill anchor holes with anchoring epoxy.

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

19.2.8 Reinstall bottom rail assemblies

1. Reinstall bottom rail assemblies on floor, inserting rail studs into anchor holes.

19.3 Lower Canopy/Post Assembly And Fasten Posts And End Walls To Bottom Rails.

Table 19.3.1 Enclosure bottom rail and installation hardware

1	RE6016-0X0	4" inner rail extrusion
2	RE6007-0X0	Center post
3	RE6021-010	Rail attachment block post to base
4	RF6055-02G	1/4-20 x 1" hex head machine screw
5	RE6002	Extrusion, end wall, outer

Fig. 19.3.1 Bottom rail attached to center post

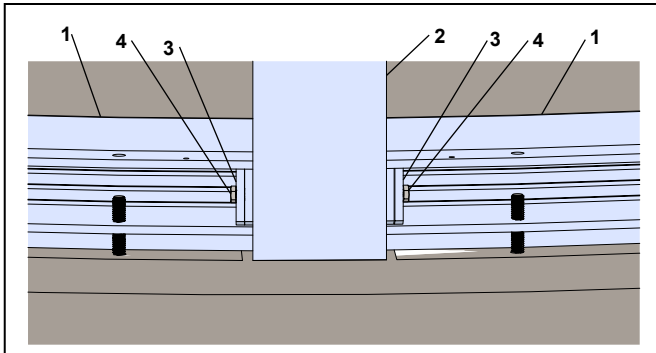
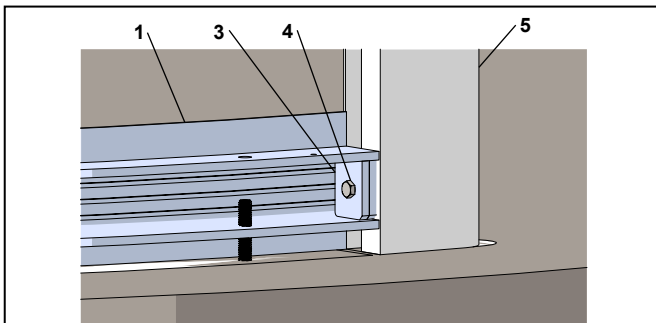


Fig. 19.3.2 Bottom rail attached to end walls



19.3.1 Lower canopy, post and end wall assembly.



WARNING

Use caution when lowering assembly!

1. Carefully lower assembly until bottom rail mounting holes line up with mounting holes in posts and end walls.

CAUTION

Monitor post and end wall alignment with bottom rails as assembly is lowered.

19.3.2 Fasten the two center posts to their adjoining bottom rail assemblies.

1. Fasten each center post to each of its adjacent bottom rail using a 1/4 x 1" SS hex head machine screw.
 - Snug, do not tighten fasteners.

19.3.3 Fasten the four end walls to their adjoining bottom rail assemblies.

1. Fasten each end wall to its bottom rail assembly 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.

19.4 Set Enclosure Level, Square And Plumb

Fig. 19.4.1 Checking enclosure posts for plumb and square

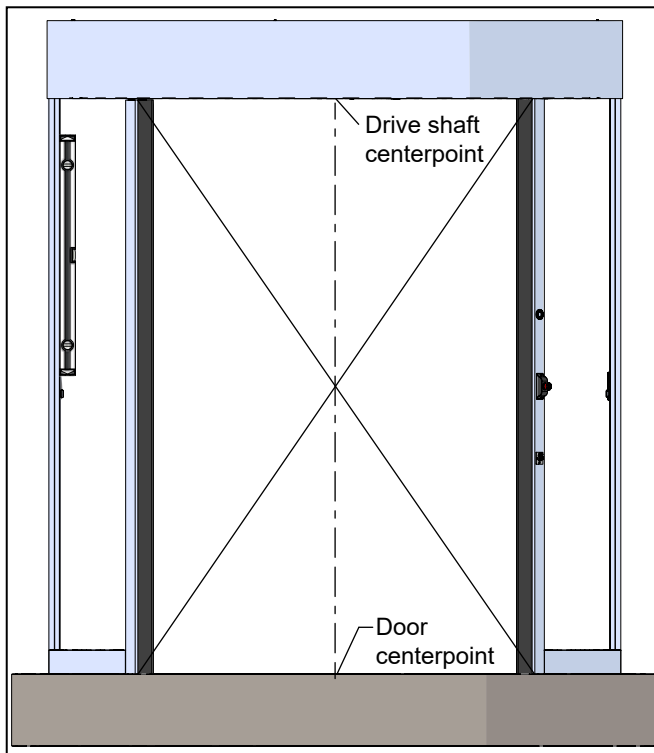
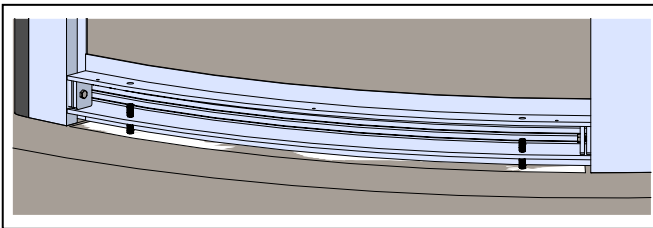


Fig. 17.4.2 Bottom rail assembly



19.4.1 Set enclosure level, square and plumb.

CAUTION

Shim each bottom rail 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, verify K9 drive shaft centerpoint is plumb with door centerpoint. Reference Chapter 13, installation template.

19.4.2 Tighten all bottom rail to post /end wall hex head bolts.

1. Tighten all 1/4-20 x 1" hex head bolts (RF6055-02G) securing bottom rails to posts and end walls.

20 Align K9 Drive Shaft With Floor Bearing And With End Wall

20.1 Center K9 Drive Shaft Over Floor Bearing

Fig. 20.1.1 Centering K9 drive shaft over floor pivot bearing

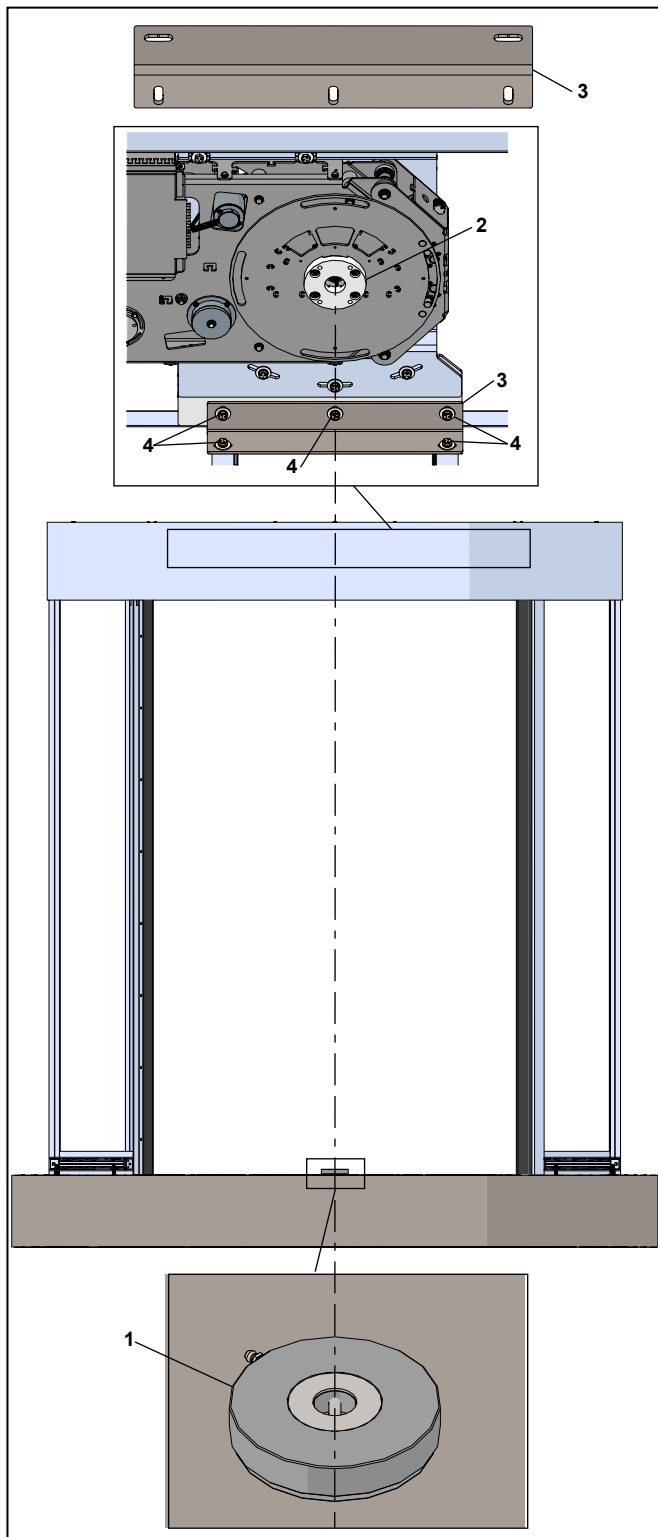


Table 20.1.1 Floor pivot bearing and K9 drive coupling

Part / Assembly	Description
1 RS6076-010	Floor bearing, in-ground (option)
1 RS3423-010	Surface mount bearing
2 RC6379-010	K9 Main drive adapter coupling
3 RC6374-010	Bracket, canopy mount, K9
4 RF6066-01Z	7/16-14 x 1 1/4" hex head bolt

20.1.1 Floor and surface mount bearing installation.

1. Floor bearing installed in Para. 11.2.
2. Surface mount bearing installed in Para. 20.2.

20.1.2 Center K9 drive shaft coupling over floor pivot.

1. Using plumb bob with string, align K9 drive adapter coupling (2) centerpoint with floor pivot bearing centerpoint.

NOTICE

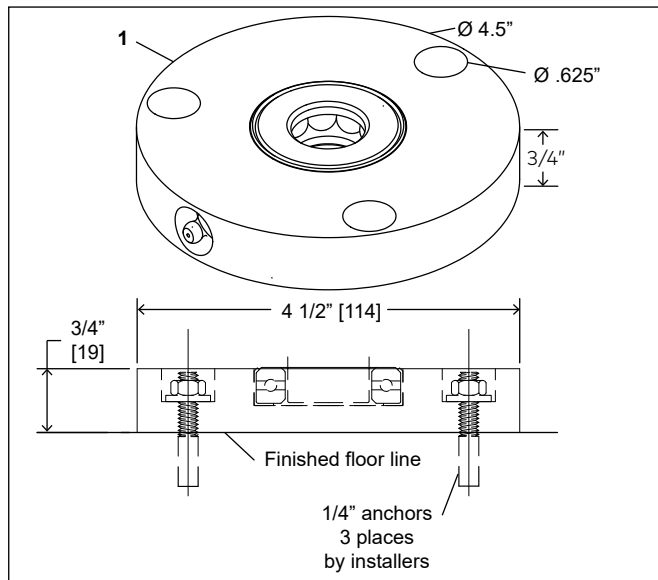
Canopy mount bracket mounting holes (Fig. 20.1.1) are slotted to allow position adjustment of K9 adapter coupling in both directions.

20.1.3 Tighten all canopy mount bracket 7/16" hex head bolts.

2. Securely tighten both canopy mount bracket's 7/16" hex head bolts (4).

20.2 Install Surface Mounted Floor Pivot Assembly

Fig. 20.2.1 Floor surface-mounted bottom pivot assembly



- 3 Surface mounted bearing assembly

20.2.1 Install floor surface-mounted pivot assembly.

NOTICE

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

1. Position bearing assembly at door centerpoint.
2. Mark 3 holes for 1/4" floor anchors (Fig. 20.1.5).
 - Check that bearing assembly is at door centerpoint.
3. Drill 3 holes for 1/4" floor anchors.
4. Install anchors.
5. Install 3 fasteners through bottom bearing assembly mounting holes and into floor anchors.

NOTICE

Floor bearing assembly must be level and at door centerpoint..

20.2.2 Grease floor bearing.

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

20.3 Fasten K9 Turnbuckle Assembly To Its Mounting Bracket

Fig. 20.3.1 K9 turnbuckle fastener hardware

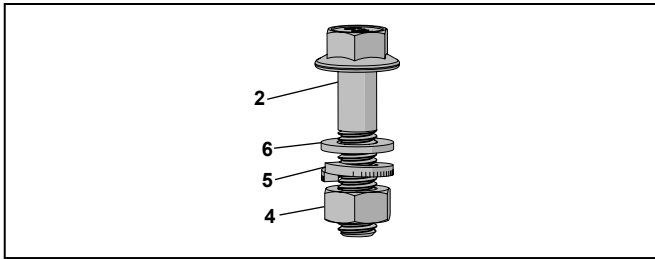


Fig. 20.3.2 K9 drive M8 x 35 flanged hex head screw and turnbuckle assembly

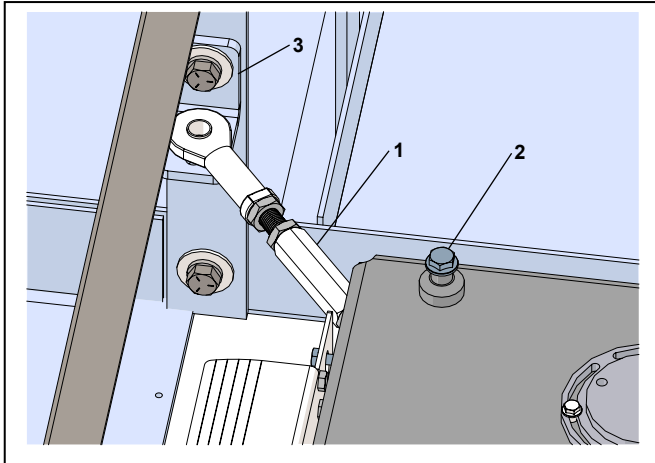


Fig. 20.3.3 K9 drive turnbuckle fastened to angle adjustment bracket

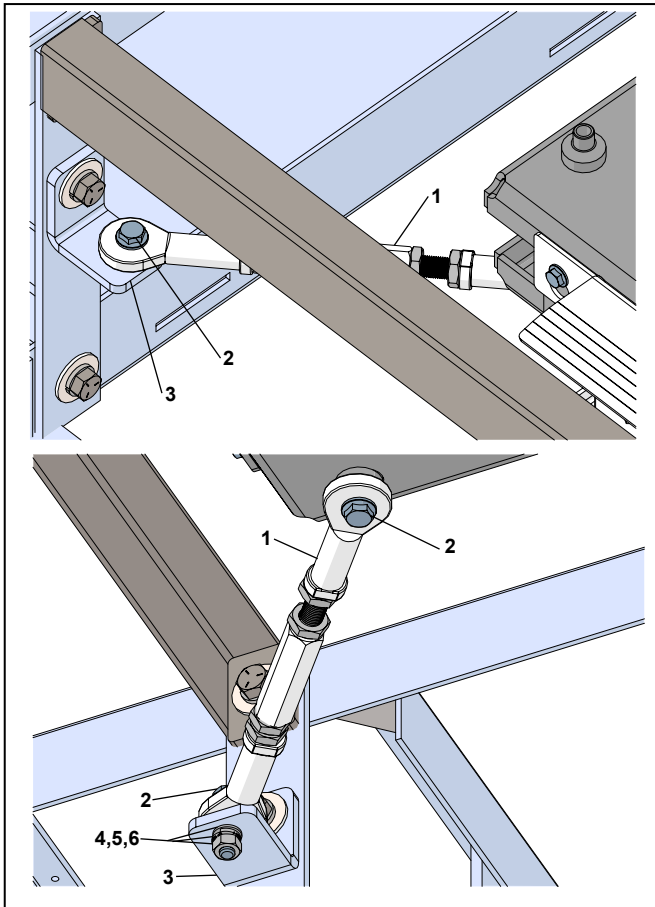


Table 20.3.1 K9 turnbuckle assembly mounting hardware

1		Turnbuckle assembly, K9	1
2	RF6167-01Z	M8-1.25 x 25 flanged hex head screw (from K9 drive)	1
3	RC6434-010	Bracket, angle adjustment, K9	1
4	RF6161-01Z	Hex nut, M8 x 1.25	1
5	RF6169-01Z	Lock washer, M8	1
6	RF6168-01Z	Flat washer, M8, 5/8" OD	1

20.3.1 Fasten K9 turnbuckle to its mounting bracket.

1. Remove top M8x 35 flanged hex head screw from K9 drive.
2. Untighten locknuts and rotate turnbuckle until turnbuckle mounting hole aligns with mounting hole in angle adjustment bracket.
3. Insert M8 x 25 flanged hex head screw through turnbuckle and angle adjustment bracket mounting hole.
4. Insert flat washer and lock washer onto hex head screw, thread M8 nut and tighten.

20.4 Align K9 Drive Locking Disc With End Wall

Table 20.4.1 K9 drive mounting hardware, turnbuckle and end wall

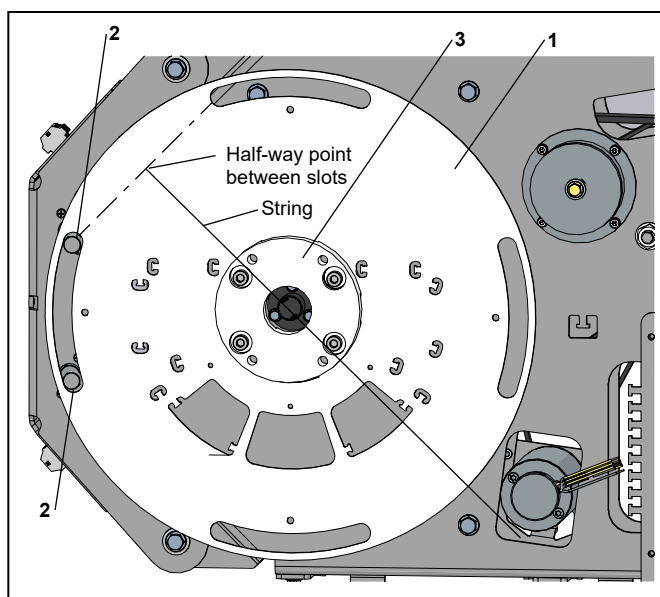
1		Locking disc
2		Locking bolt
3	RC6379-010	Coupling, main drive adapter K9
4	RC6373-010	Mounting bracket, K9
5	RF6066-01Z	7/16-14 x 1 1/4" hex head bolt
6		Turnbuckle
7		End wall

20.4.1 This procedure will align the K9 drive locking disc locking bolts with the end wall.

NOTICE

This is a "rough alignment" of the K9 with the door. Final alignment will be with wings installed. Reference Para. 23.5

Fig. 20.4.1 Locking disc alignment with K9 drive adapter

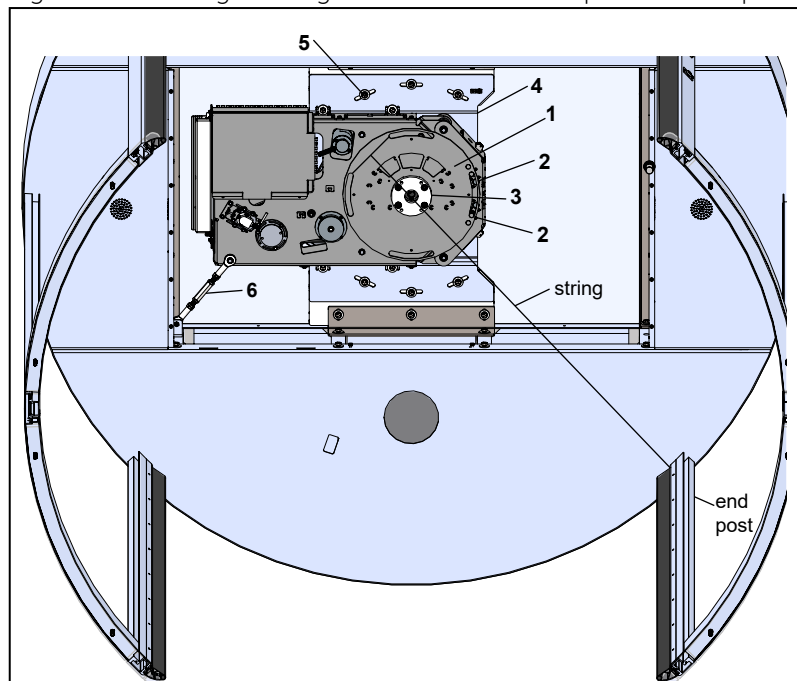


1. For the two locking disc slots, mark the half-way point between the two slots (Fig. 20.4.1).
2. Run a string from the half-way point of the slots across the main drive adapter coupling to the end wall.
3. 7/16" hex head bolts (5) must be untighten enough to allow mounting bracket adjustment (step 4).
4. Using the turnbuckle, rotate the K9 mounting bracket position until the locking disc slot half-way point is aligned with both the K9 main drive adapter coupling center point and the end wall.

20.4.2 Tighten all canopy K9 mounting bracket 7/16" hex head bolts.

1. After alignment is completed, tighten all mounting bracket 7/16" bolts (5).

Fig. 20.4.2 Locking disc alignment with drive adapter and end post



21 Shaft Assembly

21.1 Unpack Shaft Assembly Shipping Crate

Fig. 21.1.1 4 wing shaft assembly

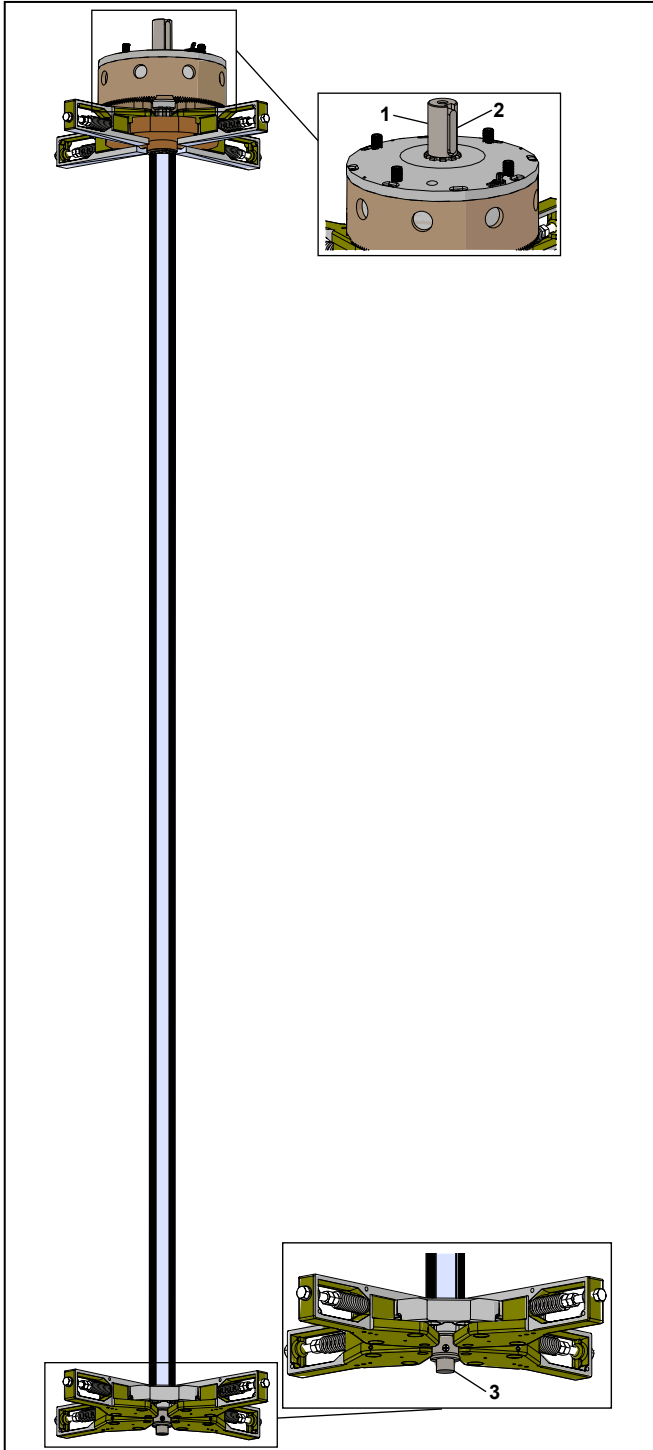


Table 21.1.1 RS6102-001 shaft assembly parts

Part / Assembly	Description
1 RC6372-01G	S2-S3 shaft, splined shaft
2 RF6151-01G	Key, 10 mm x 10 mm x 54 mm, SS, K9
3 RC6178-010	Bottom shaft adapter



TIPS AND RECOMMENDATIONS

Reference Para. 7.6 for detailed parts list.

21.1.1 Crane shop drawings.

NOTICE

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

21.1.2 Uncrate shaft assembly from shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

1. Uncrate 4 wing shaft assembly.

21.2 Install Shaft Adapter On Shaft Splined Shaft

Fig. 21.2.1 RK6013 collar assembly

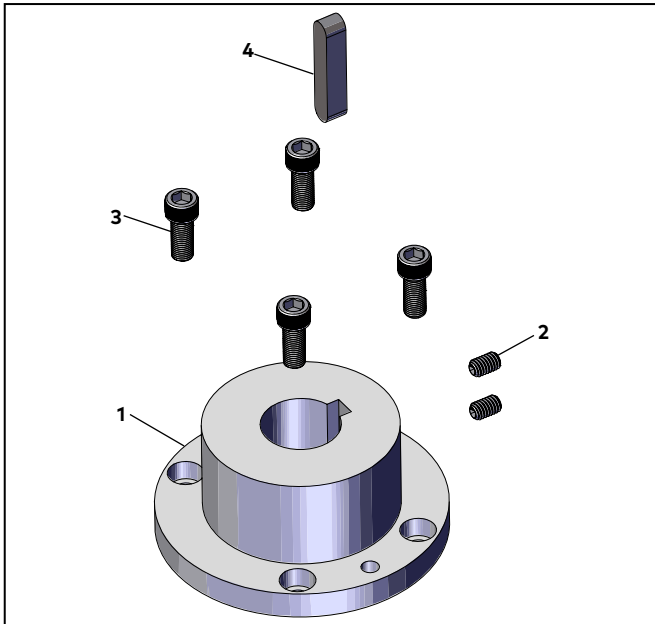


Table 21.1.1 Shaft adapter parts

Part / Assembly	Description
1	RC6378-010 Center shaft adapter
2	RF6072-01C 5/16-18 x 1/2" cup-point set screw
3	RF6062-01C 3/8-24 x 7/8" SHCS, black oxide
4	RF6151-01G Key, 10 mm x 10 mm x 54 mm, SS, K9
5	RC6372-01G S2-S3 shaft, splined shaft

21.2.1 Install shaft adapter.

1. Install shaft adapter on shaft assembly splined shaft.
2. Install two 5/16 x 1/2" cup point set screws, do not tighten.

Fig. 21.2.2 RK6013 collar assembly above splined shaft

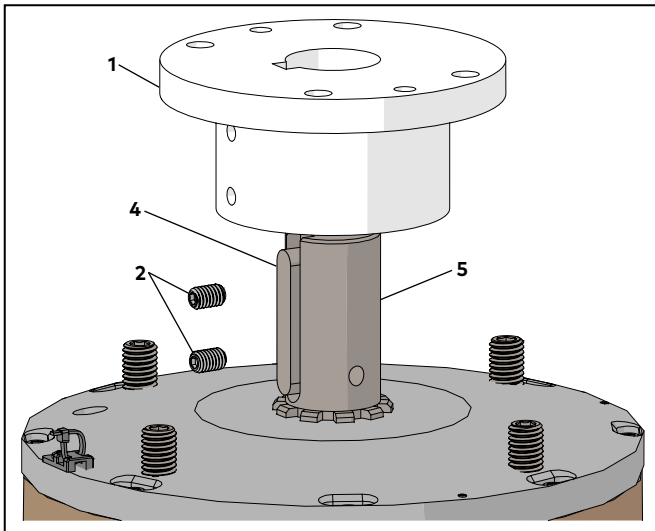
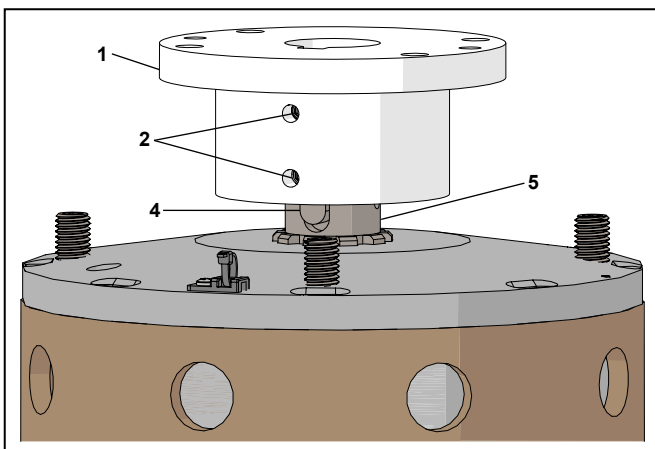


Fig. 21.2.3 RK6013 collar assembly installed on splined shaft



22 Install Shaft Assembly

22.1 Install Shaft Assembly Bottom Adapter Into Floor Bearing, Attach Shaft Adapter To K9 Drive

Table 22.1.1 K9 main drive adapter coupling and set screws

Part / Assembly	Description
1 RC6379-010	K9 Main drive adapter coupling
2 RC6378-010	Center shaft adapter
3 RF6072-01C	5/16-18 x 1/2" cup-point set screw

Fig. 22.1.1 Bottom shaft adapter inserted in floor bearing

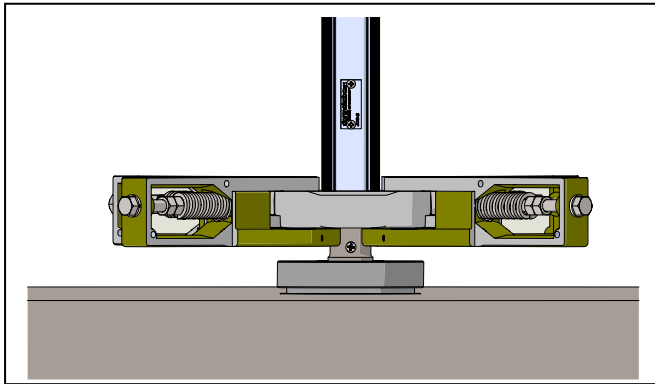


Fig. 22.1.2 K9 main drive adapter set screws loosened

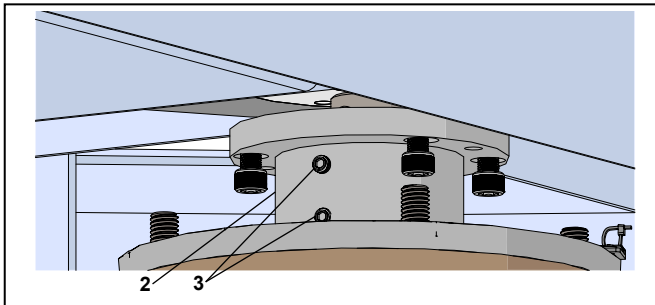
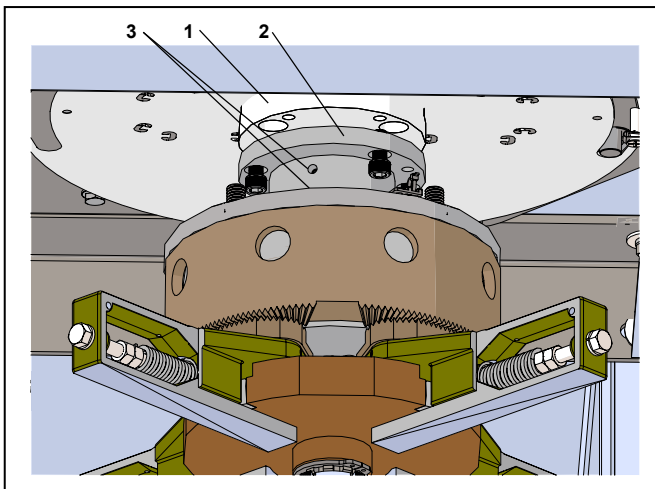


Fig. 22.1.3 Shaft positioned under K9 I drive adapter bearing.



22.1.1 Loosen main drive adapter set screws.

1. Loosen the two cup point set screws in main drive adapter (Fig. 20.2.1).

22.1.2 Raise center shaft assembly, lower shaft bottom adapter into floor bearing.



WARNING

Use caution when lifting and positioning shaft assembly!



WARNING

Risk of injury from heavy loads!

The shaft assembly 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 shaft assembly.

1. Move shaft assembly under canopy and position assembly vertically under K9 shaft. Reference Para. 22.2.5 for slip ring wires.

CAUTION

Use caution that splined shaft does not contact canopy soffits!

1. Lower bottom shaft adapter into floor bearing, aligning shaft adapter slot with floor pivot cross pin.

Fig. 22.1.4 Slip ring wires routed through splined shaft

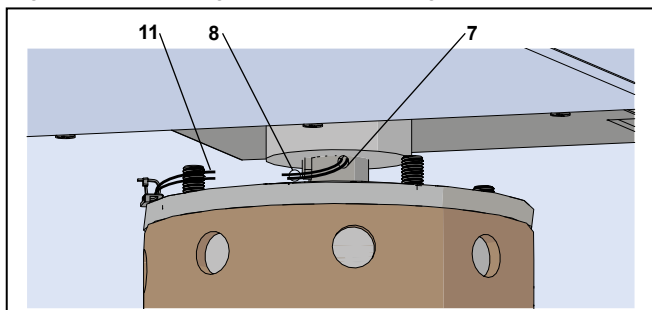


Fig. 22.1.5 Center shaft adapter secured to K9 main drive adapter

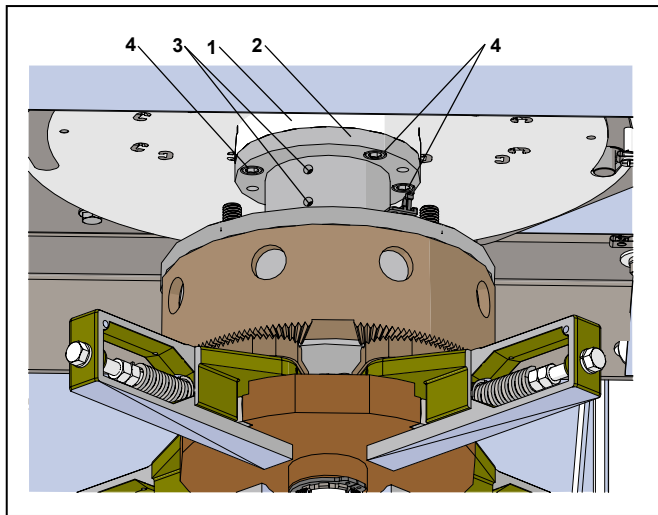


Fig. 22.1.6 Slip ring and bookfold lock coil wiring

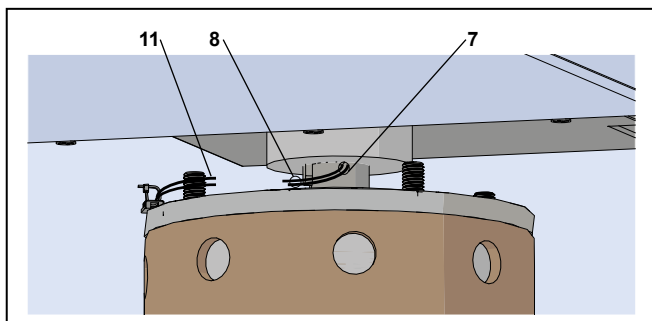


Fig. 22.1.7 Slip ring and bookfold lock coil wiring with connectors

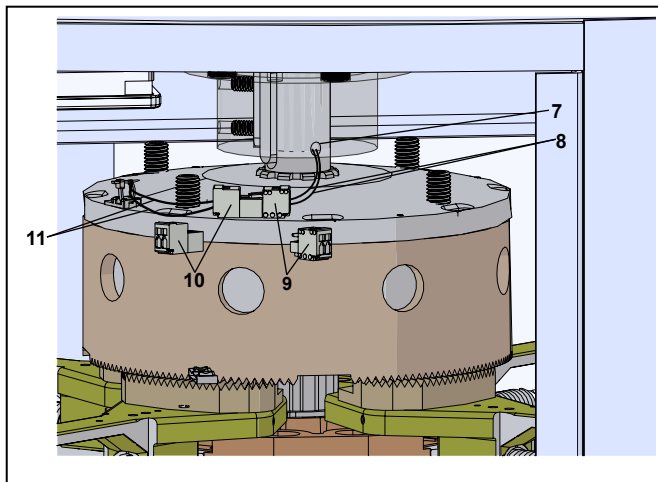


Table 22.1.2 Bookfold lock and slip ring wires

Part / Assembly	Description
1	RC6379-010 K9 Main drive adapter coupling
2	RC6378-010 Shaft adapter
3	RF6072-01C 5/16-18 x 1/2" cup-point set screw
4	RF6062-01C 3/8-24 x 7/8" SHCS, black oxide
6	RC6372-01G S2-S3 shaft, splined shaft
7	RC6372-01G Splined shaft, hole for bookfold coil wires
8	Bookfold coil wires from slip ring
9	RX6046-001 Female connector, 2 pole
10	RX6045-001 Male connector, 2 pole
11	Bookfold coil wires

22.1.3 Route slip ring wires through splined shaft.

1. Route slip ring wires through hole in top of splined shaft. Wires exit in a hole at the side of the splined shaft (Fig. 22.1.6).

22.1.4 Attach shaft adapter to K9 main drive coupling.

1. Pull slip ring wires through hole in center shaft.
2. Raise shaft adapter against K9 main drive adapter coupling (Fig. 22.1.5).
3. Fasten shaft adapter to K9 main drive adapter coupling using four 3/8 x 7/8" socket head cap screws (4).
4. Tighten the two cup point set screws (3).

22.1.5 Connect wires from slip ring to bookfold coil wires.

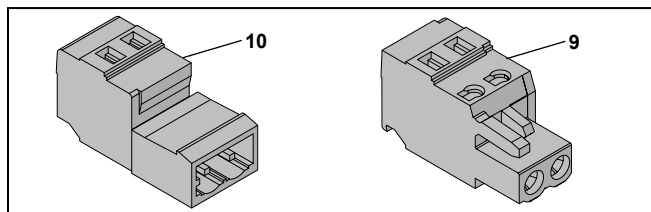
1. Connect the 2 slip ring wires to the female 2 pole connector (9).
2. Connect the 2 bookfold coil wires to the male 2 pole connector (10).
3. Plug the male connector into the female connector.

22.1.6 Check shaft assembly plumb.

NOTICE

Check that shaft is plumb!
If required, adjust K9 drive position until shaft assembly is plumb.

Fig. 22.1.8 Bookfold coil and slip ring 2 pole connectors



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

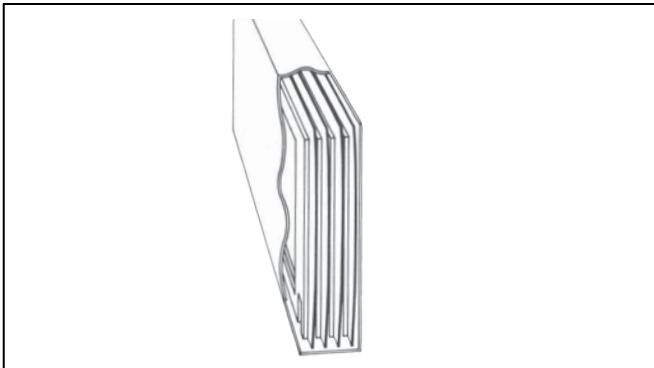
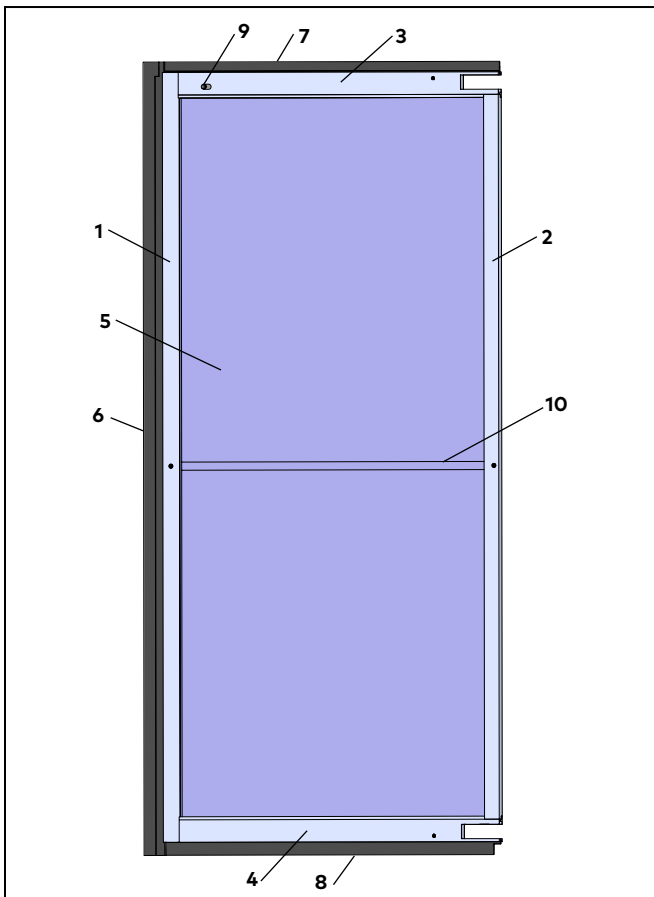


Fig. 23.2.2 Wing assembly example



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 RC6430-010	Wing glass
6 RS6107-102	Sweep assembly vertical, T style felt
7 RS6106-101	Sweep assembly topl, T style felt
8 RC6414-001	Bottom sweep, t style
9 RS6108-222	Wing bumper assembly, 2 3/8" long
10	Wing push bars ordered job specific for each order

23.3 Install Surface Locks On Interior Door Wings

23.3.1 Lock cylinder (supplied by others).

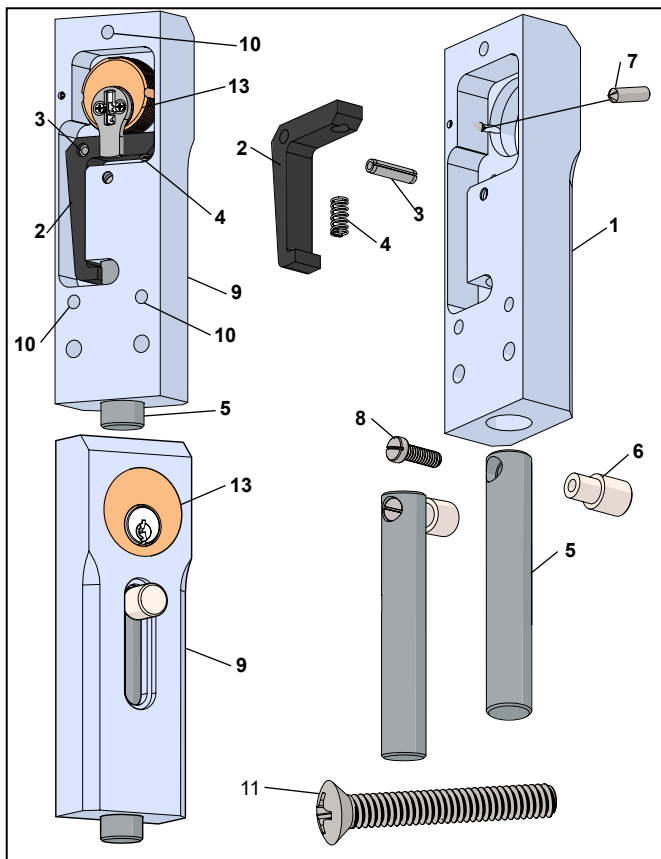
NOTICE

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

Table 23.3.1 Wing surface lock and mounting hardware

Part / Assembly	Description
1 RC6253-02X	Body, lock
2 RC6254-01C	Lock pawl
3 RC6255-010	Pin, lock pawl
4 RC6256-010	Spring, lock
5 RC6257-010	Bolt, lock
6 RC6260-01X	Knob, lock
7 RF3007-02C	#6-32 x 1/2" cone point set screw
8 RF6142-01G	12-24 x 5/8" fillister head slotted MS, SS
9 RS6080-01X	Surface lock assembly
10	Surface lock mounting hole
11 RF6120-03X	1/4-20 x 1 3/4" Phillips oval head machine screw
12 RE6022	Wing lock outer extrusion
13 RC6261-0XX	Lock cylinder by others (example)

Fig. 22.3.1 RS6080 surface lock assembly and mounting screw



23.3.2 Install wing surface locks.

NOTICE

RS6080 surface lock factory assembled.

1. Install lock cylinder (by others) in each surface lock.
2. Install a surface lock on each interior wing lock outer extrusion. Use three mounting screws (11) to secure each surface lock. Mounting holes in each wing lock outer extrusion located and drilled at factory.

Fig. 22.3.2 Surface locks installed-interior side of door

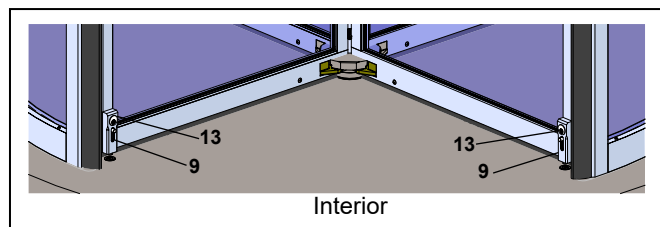


Fig. 22.3.3 Surface lock installation - left interior wing

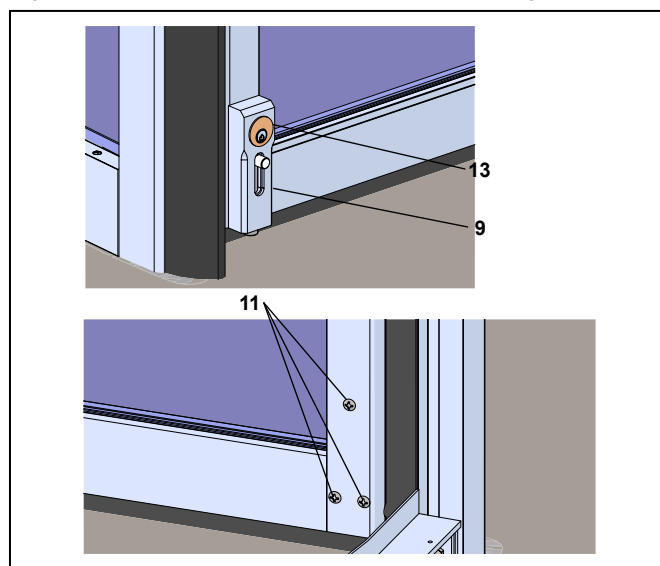
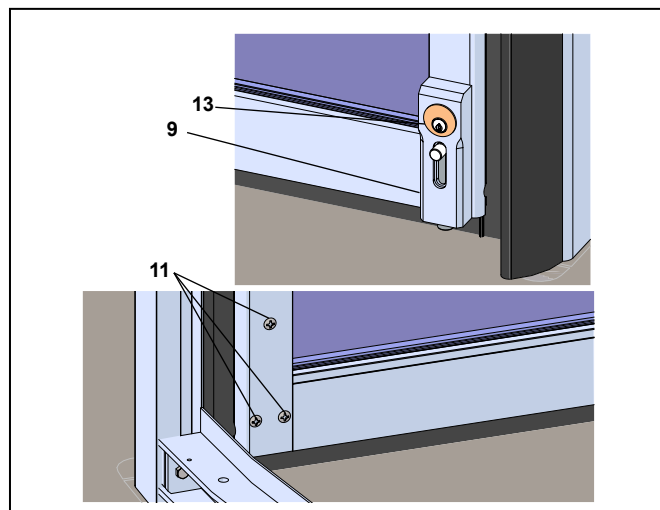


Fig. 22.3.4 Surface lock installation - right interior wing



23.4 Install Wings Onto 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 RS6080-010	Flush bolt assembly

Fig. 23.4.1 First wing installation

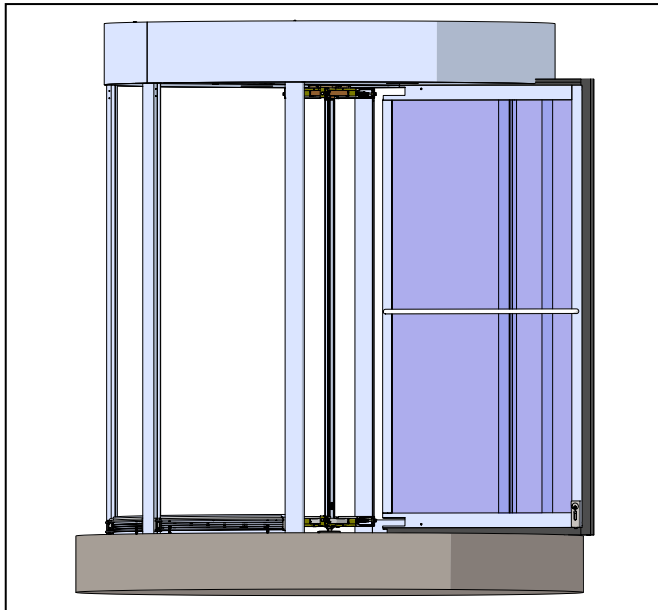


Fig. 23.4.2 Wing and hanger mounting holes

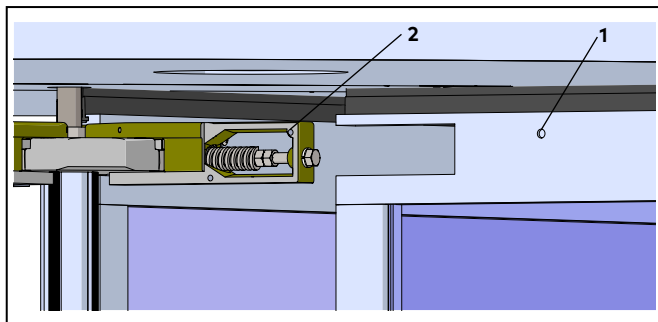


Fig. 23.4.3 Wing installation on hanger

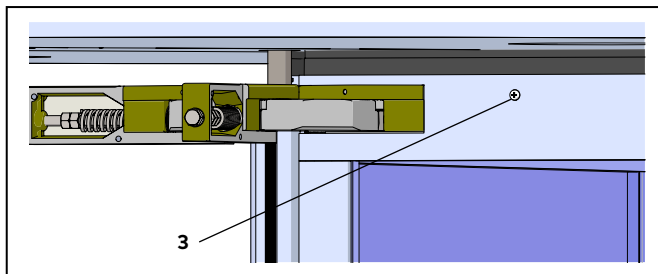
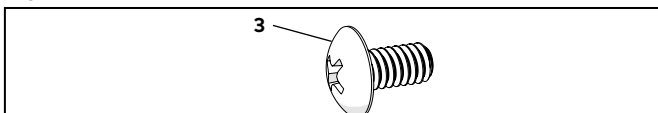


Fig. 23.4.4 Truss head machine screw



23.4.1 Install first wing on 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!

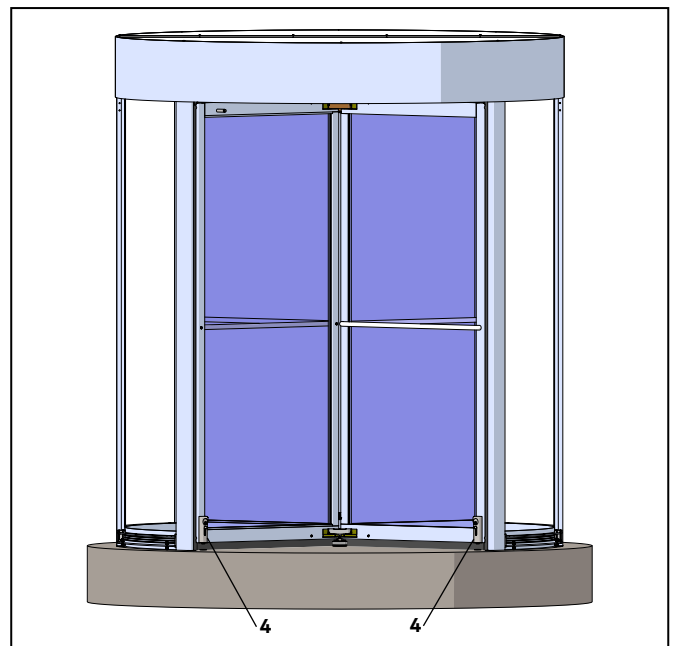
A minimum of two people are required to lift and transport wing assemblies.

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

23.4.2 Install remaining wings on shaft hangers.

- Install remaining wings.

Fig. 23.4.5 4 wing door – wings installed on hangers



23.5 Align K9 Drive and Door Wings

CAUTION

Risk of crushing due to misalignment of drive and door wings!

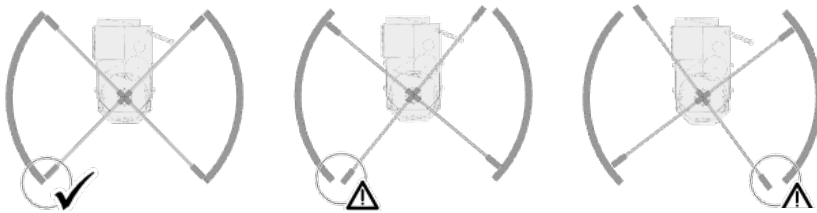
Without aligning the drive and door wings, the door wings may not close with the closing edges of the wings in the home position.

Persons may be injured.

The security features of the door system are no longer guaranteed.

- To ensure that the drive can always move to a safe position when stationary, the drive and the door wings must be aligned after door wing installation.

In the basic position, the door wings are at rest and the secondary closing edge of the end wall is aligned with one door wing.



23.5.1 Rotate door wings to home position.

1. Rotate the door wings until the home position is reached.



WARNING

Risk of injury in the area of the locking bars.

In the area of the locking bolts, injuries due to shearing or clamping are possible.

- Use a tool to push the locking latches upwards.

2. If the locking latches of the K9 drive engage and prevent the door from turning further:

In the K9 Drive, manually lift the locking latches and continue the turning movement.

23.5.2 K9 drive alignment with wings.

Insure wings are in the home position (Para. 23.5.1).

An adjustment bolt Ø6 mm is required to align the drive and door wings, e.g. a drill with a shaft diameter of 6 mm.

The adjustment holes of the actuator are located in the locking disc and in the housing plate of the actuator (Fig. 23.5.1)

1. Insert the 6 mm adjustment bolt into the adjustment hole of the locking disc and hold it in place.
 2. Carefully rotate the door wings until the two adjustment holes are on top of each other and the adjustment bolt fits into the K9 housing plate adjustment hole(1) (Fig. 23.5.3)
If necessary, fix the adjustment bolt in this position, e.g. with an adhesive tape.
- » If, in this position the secondary closing edge of the end wall is not aligned with the door wing (Example: Fig. 23.5.2), the K9 drive rotational position in the canopy must be adjusted (Para. 23.5.3).
4. Remove the adjustment bolt.

Table 23.5.1 K9 hardware, end wall and door wing

Part / Assembly	Description
1	Adjustment hole, K9 housing plate
2	Adjustment hole, K9 locking disc
3	K9 locking bolts
4	6 mm drill bit
5	K9 drive tumbuckle
6	End wall, secondary closing edge
7	Door wing

Fig. 23.5.1 K9 drive and wing alignment

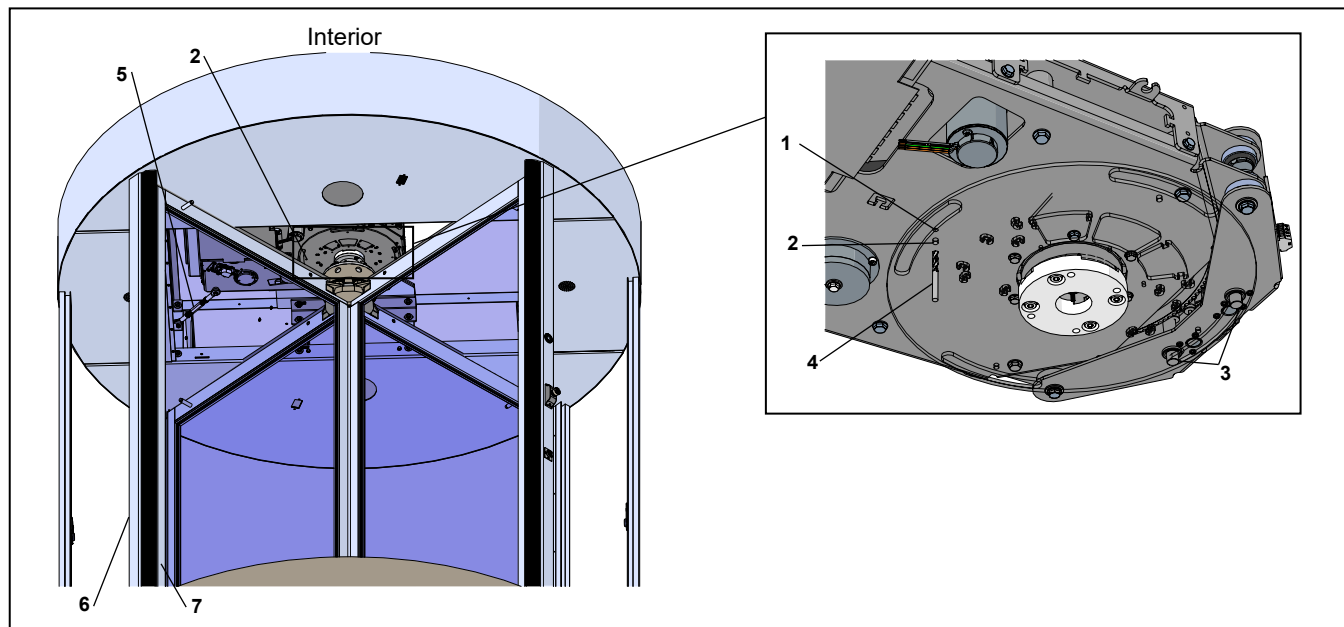


Fig. 23.5.2 Door wing not aligned with end wall

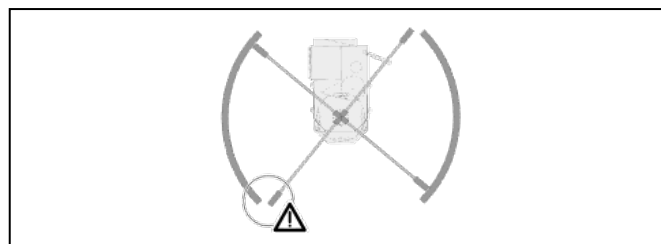
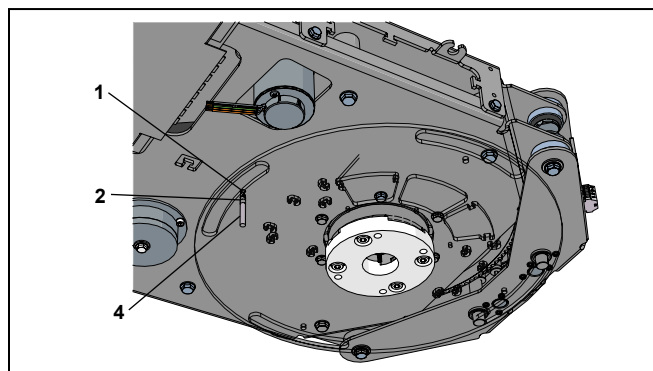


Fig. 23.5.3 Ø6 drill inserted in both K9 adjustment holes



23.5.3 Adjust door wing position adjacent to end wall.

After K9 drive alignment with door wings (Para. 23.5.2), door wing adjustment is required when the secondary closing edge of the end wall is not aligned with the door wing.

1. Slightly loosen the six K9 mounting bracket 7/16 x 1 1/4" hex head bolts (2).
2. Loosen the two M12 lock nuts (4) on both sides of the torque arm in the upper body.

Note: The torque arm has opposing threads on both sides. One of the lock nuts has a left-hand thread and is therefore loosened by turning it clockwise.

3. Turn the adjusting nut of the torque arm with an open-end wrench SW16 until the door wing is aligned with the end wall secondary closing edge (Fig. 23.5.5).
4. Re-tighten the two turnbuckle lock nuts (4).
5. Re-tighten the six K9 mounting bracket 7/16 x 1 1/4" hex nuts (2).

Table 23.5.2 K9 hardware

Part / Assembly	Description
1	RC6373-010 K9 mounting bracket
2	RF6066-01Z 7/16 x 1 1/4" hex nut
3	K9 turnbuckle assembly
4	Turnbuckle M12 locknut
5	End wall, secondary closing edge
6	Bottom rail assembly
7	T-style sweep assembly

Fig. 23.5.4 K9 drive, mounting bracket and turnbuckle (wing glass removed for clarity)

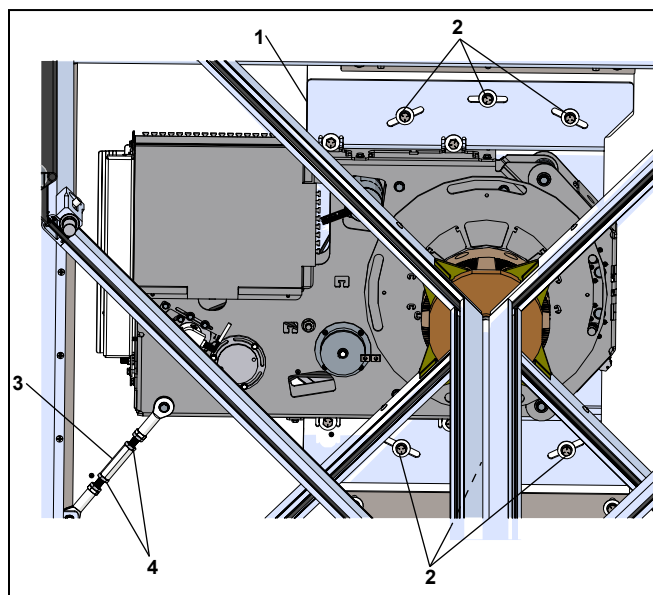
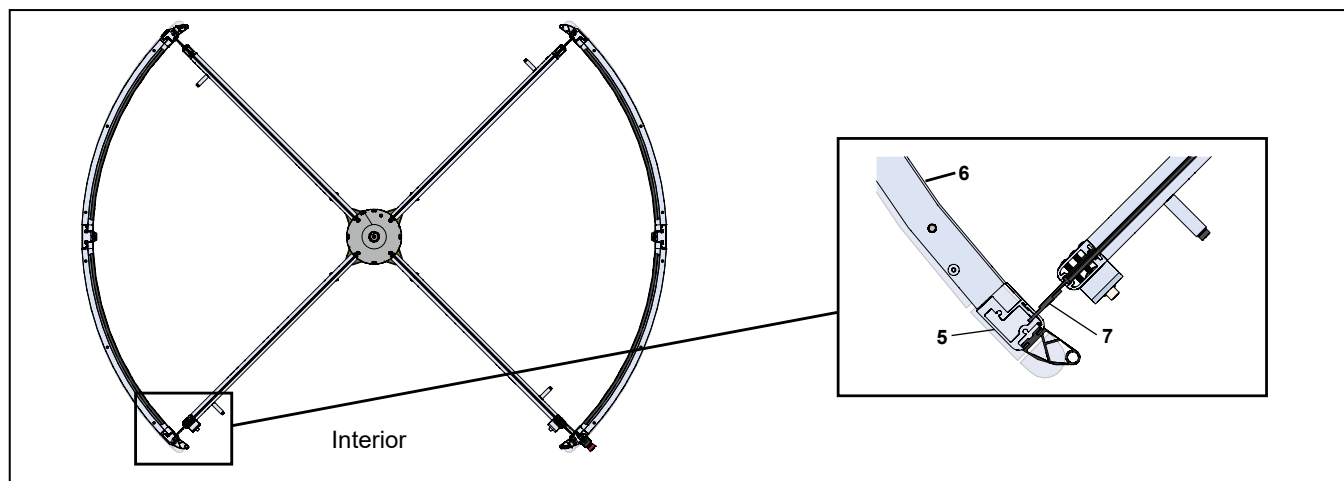


Fig. 23.5.5 Wing assembly overhead view: wing aligned with end wall secondary closing edge



24 Install Floor Strikes

24.1 Install Floor Strikes

Fig. 24.1.1 Floor strike locations, interior side of door

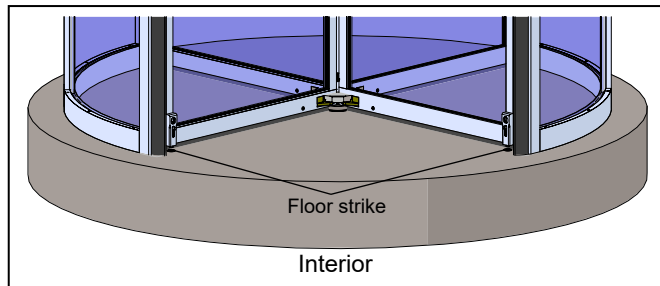


Fig. 24.1.2 Floor strike RC6265-0X0

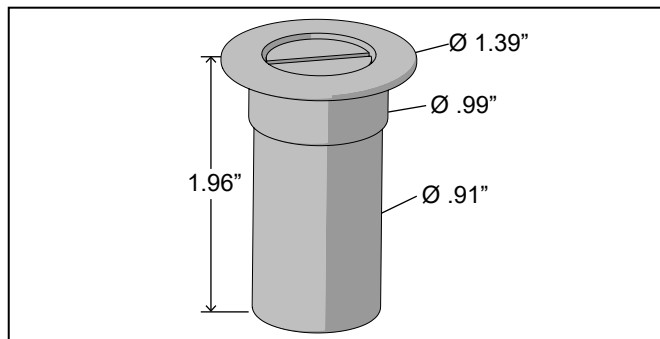


Fig. 24.1.3 Flush bolt in home position

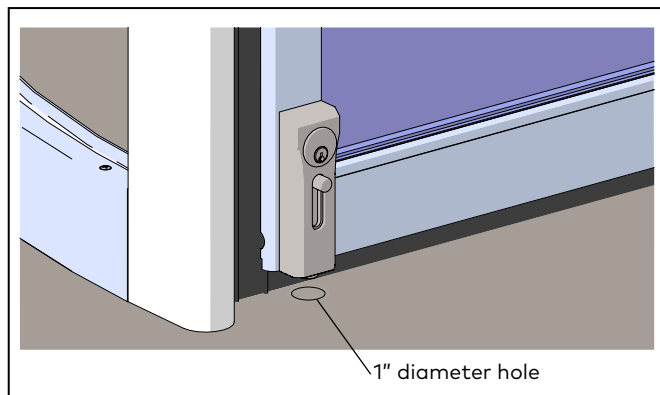
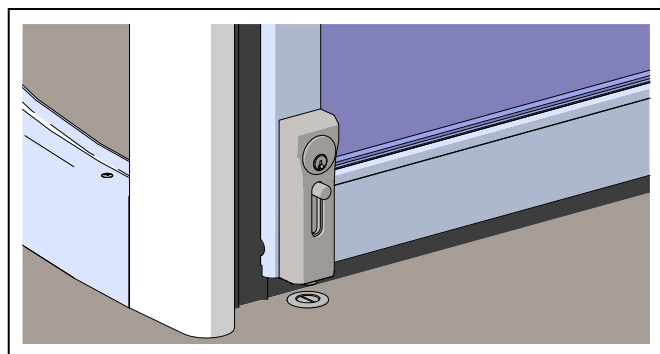


Fig. 24.1.4 Floor strike installed



24.1.1 Home position.

1. Rotate wings to home position.

24.1.2 Mark floor strike hole locations.

Floor strike holes are located and drilled on the interior side of the door at the wing flush bolt locations (Fig. 24.1.1).

1. Move surface lock knob down until lock bolt contacts floor surface.
2. Mark circumference of bolt on floor.
 - Lock bolt diameter: 5/8"
3. Raise surface lock knob.
4. Mark centerpoint of wing lock boly 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".
 - Floor strike diameter: 0.91".
 - 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, Bottom Rail 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 not exert force on the glass pieces.



WARNING

Use caution while working with enclosure glass!

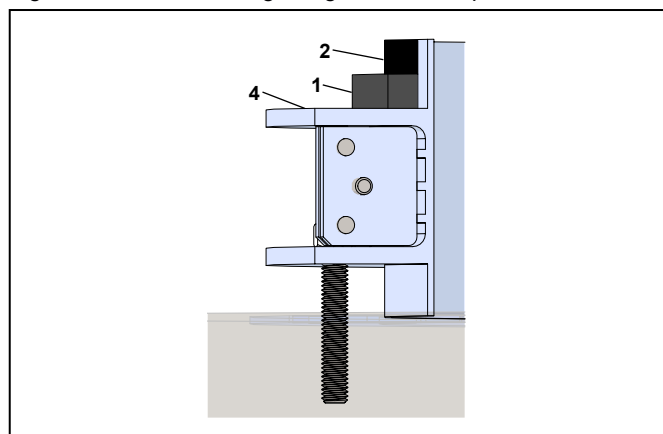
- Clean glass surfaces prior to transporting.
- Always lift and transport glass with aid of vacuum suction cup lifting tools.
- A minimum of two people are required to lift and transport glass.

25.3 Prepare Enclosure Posts And Bottom Rails For Enclosure Glass

Table 25.3.1 Bottom rail glazing block and tape

Part / Assembly	Description
1 RC6422-010	Glazing block, 1/8 x 3/8 x 2"
2	Glazing tape
4 RE6016	Bottom rail inner, 4 wing

Fig. 25.3.1 Bottom rail glazing block and tape



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 bottom rail..



TIPS AND RECOMMENDATIONS

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

25.3.2 Install glazing tape in bottom rails.

1. Install compressed 1/8" thick glazing tape on bottom rail above glazing block.

25.3.3 Install glazing tape in enclosure posts and end walls.

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

25.4 Install Enclosure Glass

Fig. 25.4.1 Glass set in bottom rail

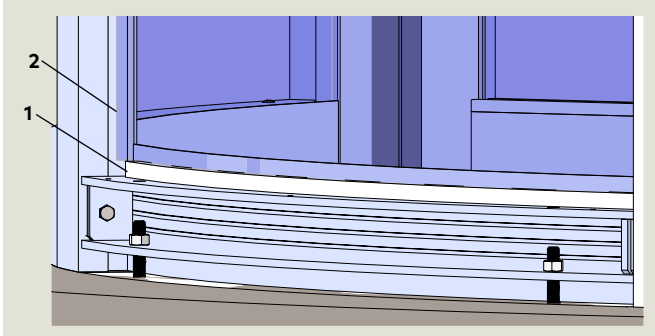


Fig. 25.4.2 Alvarado shop drawing, enclosure bottom rail example

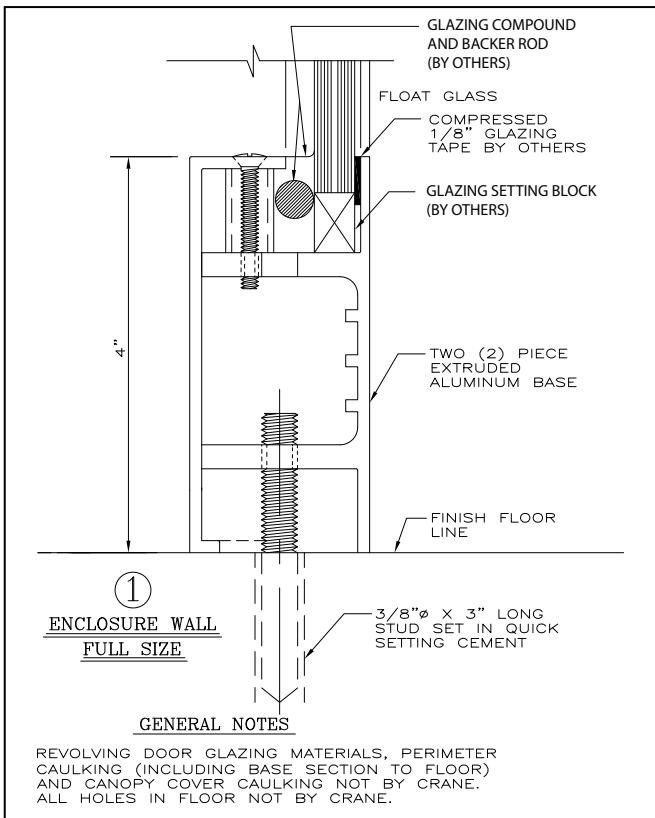


Table 24.4.1 Enclosure glass and bottom rail assembly

Part / Assembly	Description
1 RE6016-010	4" inner rail extrusion, 4 wing A32 1012
2	Enclosure glass, reference Alvarado 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 / end walls. Ground top edge of glass next to canopy.

25.4.2 Install backer rods in bottom rails and posts / end walls.

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

25.4.3 Apply glazing compound in bottom rails and posts / end walls.

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

NOTICE

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

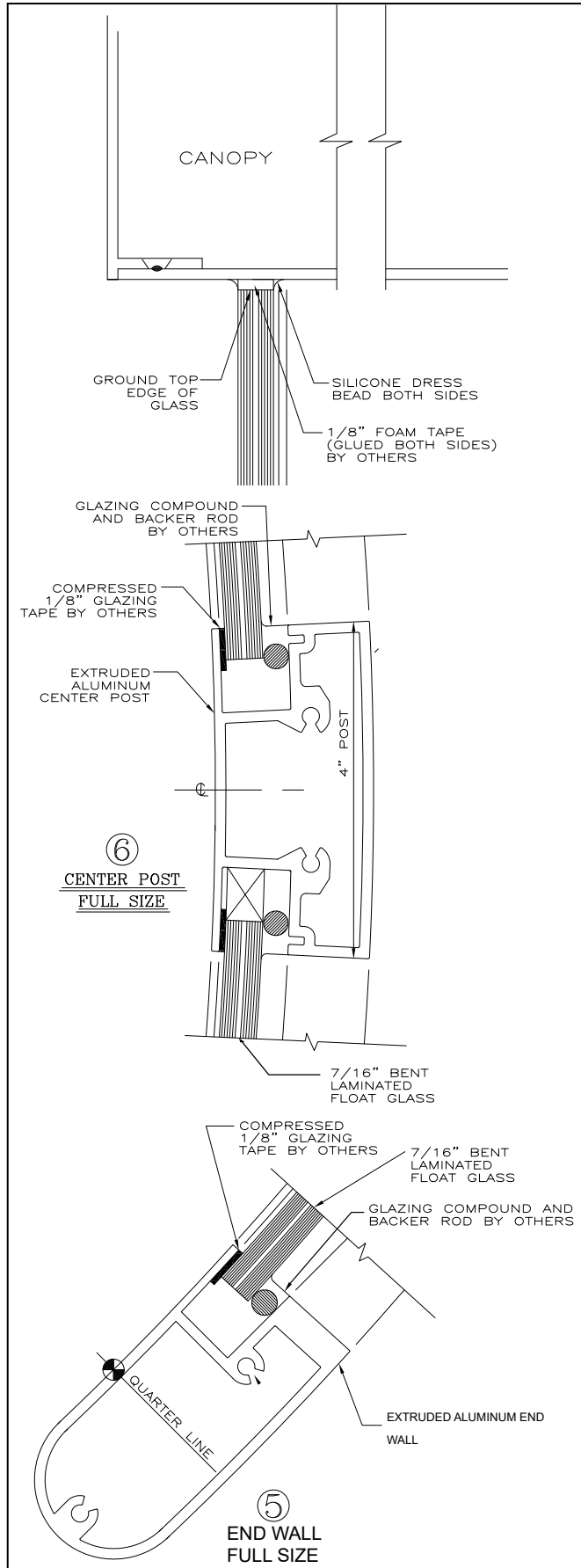
25.4.4 Install remaining enclosure glass.

1. Install remaining enclosure glass per paragraphs 25.4.1 through 25.4.3.

NOTICE

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

Fig. 25.4.3 Alvarado 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 Bottom Rail Covers

Fig. 25.5.1 Bottom rail cover hardware

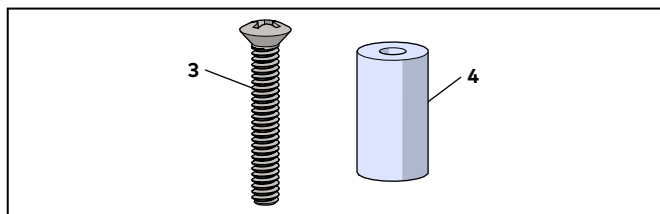


Fig. 25.5.2 Aluminum bottom rail and cover assembly

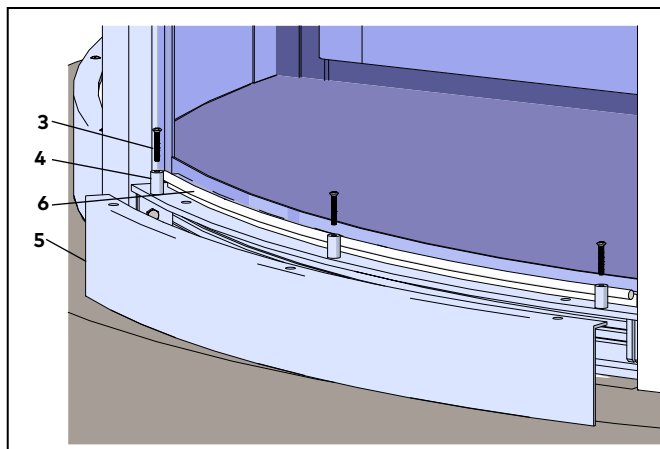


Fig. 25.5.3 Bottom rail cover installed

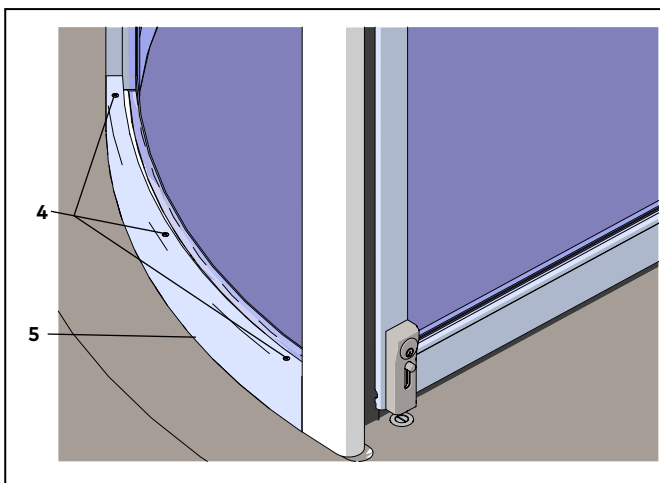


Table 25.5.1 Bottom rail assembly, AL

Part / Assembly	Description
3	RF6118-01G 10-24 x 1 1/4" SS Phillips oval head machine screw
4	RC6390-010 Rail cover support
5	RE6015-010 4" base rail outer cover, 4 wing
6	Backer rod (by installer)

25.5.1 Install bottom rail covers.

1. Install bottom rail covers using hardware in Fig. 24.5.1

25.5.2 Complete glazing of enclosure glass at enclosure bottom rails.

1. Finish glazing at each bottom rail.

NOTICE

Refer to Crane shop drawings for bottom rail glass glazing details for job!

26 Check Wing Breakout Force, Bookfold Operation

26.1 Check Breakout Force

Fig. 26.1.1 Wing in bookfold position

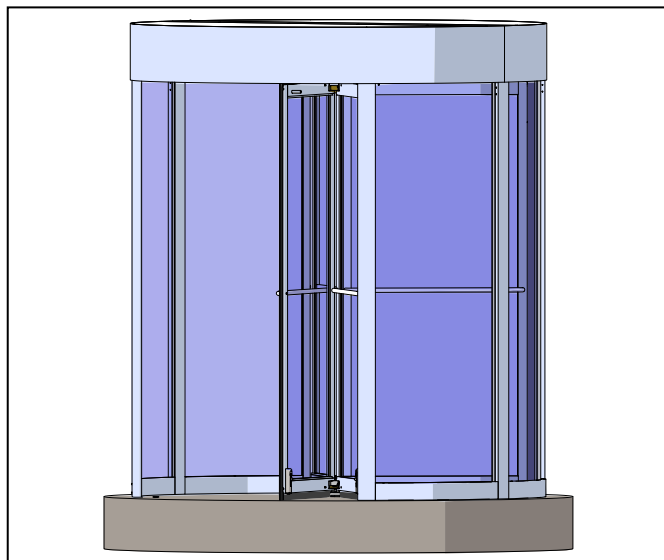


Fig. 26.1.2 Hanger tension adjustment, wing removed

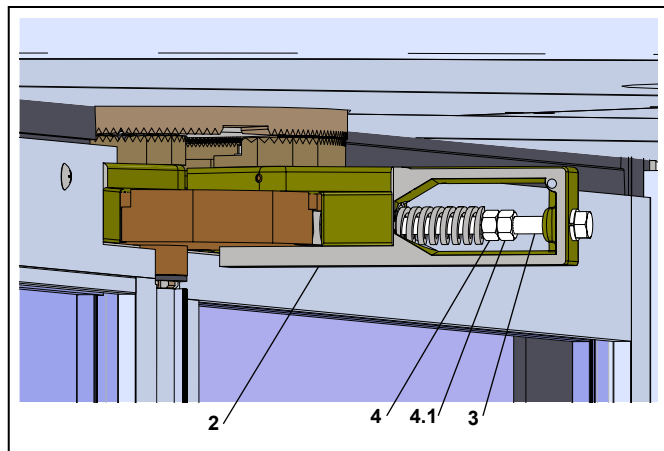


Table 26.1.1 Hanger assembly

Part / Assembly	Description
2	Bookfold with lock hanger
3 RC6156-01G	3/8-16 x 4" H bolt
4 DF0587-00G	3/8-16 hex nut
4.1 DF0587-00G	3/8-16 hex nut

26.1.1 Breakout force.

NOTICE

ANSI/BHMAA15.27
 Para. 10 Breakout force requirements.
 Each revolving door wing shall be capable of breakout when a force of no more than 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 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. 26.1.3.

26.1.3 Hanger breakout force adjustment.

1. Remove wing from hangers.

CAUTION

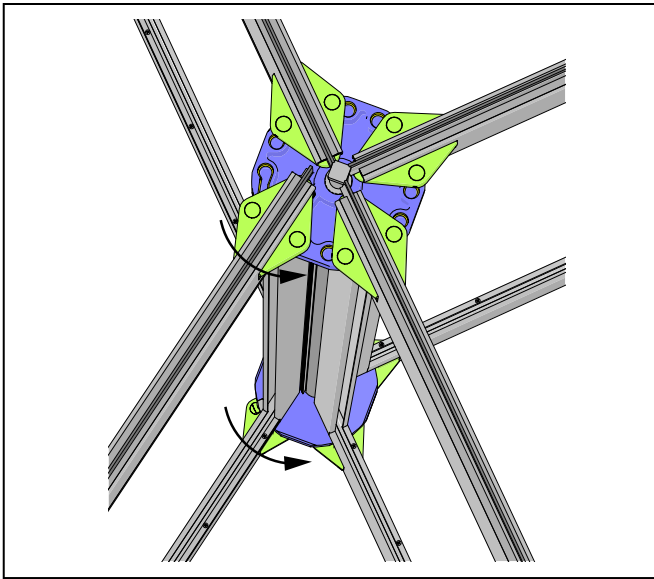
Make the same tension adjustment to both upper and lower hangers .

- 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 (6) 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 6.1 CCW to allow reduced tension adjustment.
 - Turn hex nut (6) 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. 25.1.1 are met.

26.1.5 Remaining wings.

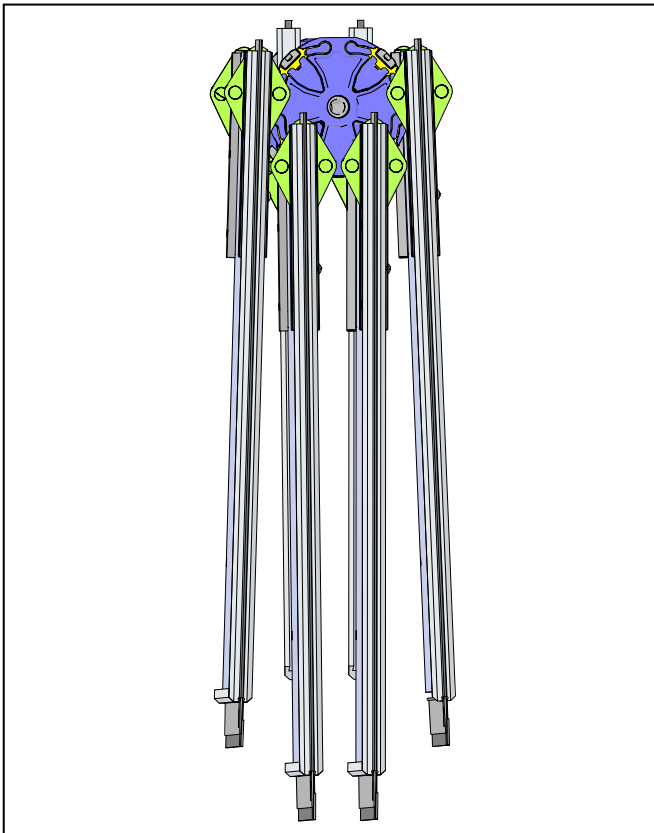
1. Check breakout force on each of the remaining wings.
2. Adjust breakout force as required on each wing to meet requirements in Para. 26.1.1.

Fig. 26.1.3 Door wing in breakout position



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 Install TOFniva sensors

Fig. 27.1 S2 revolving door canopy view

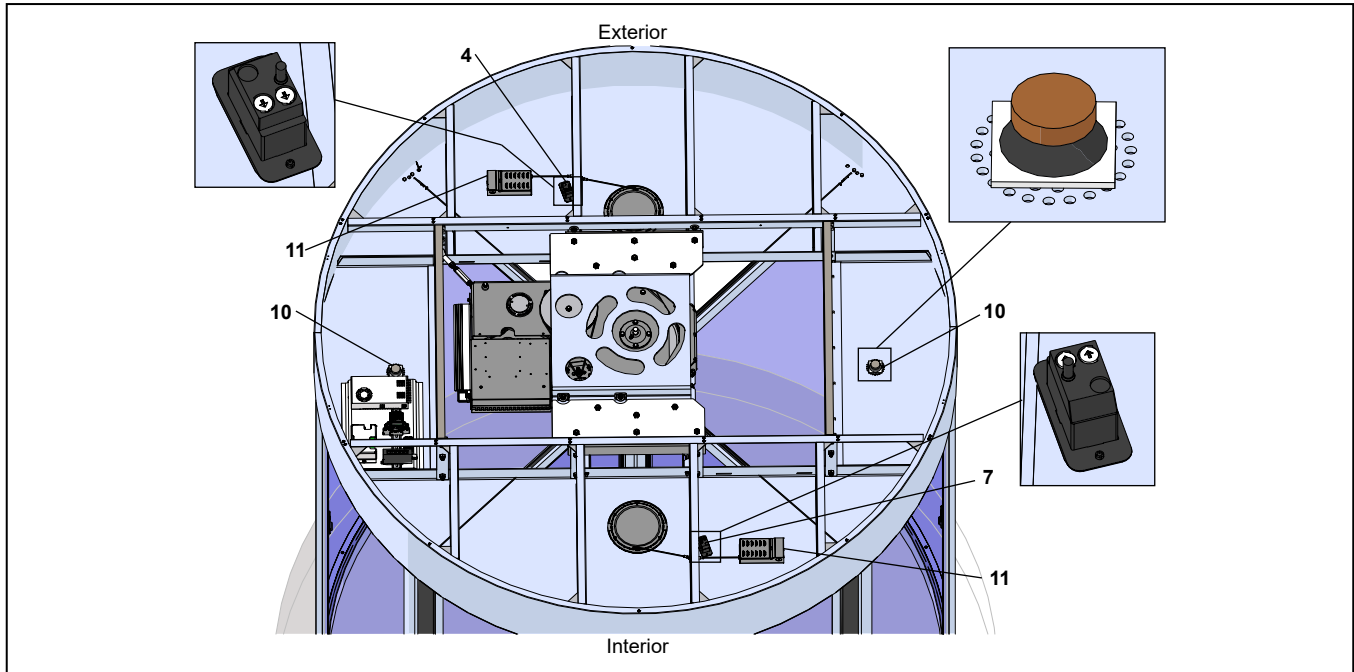


Table 27.1 Canopy hardware interior view

10	RX6027-001	Voice module speaker	2	7	RK3500-010	Starting sensor, inside, TOFniva	1
4	RK3500-010	Starting sensor, outside, TOFniva	1	11	RC6320-010	LED driver and junction box (option)	2

Fig. 27.2 S2 security canopy soffit view, TOFniva sensor installation

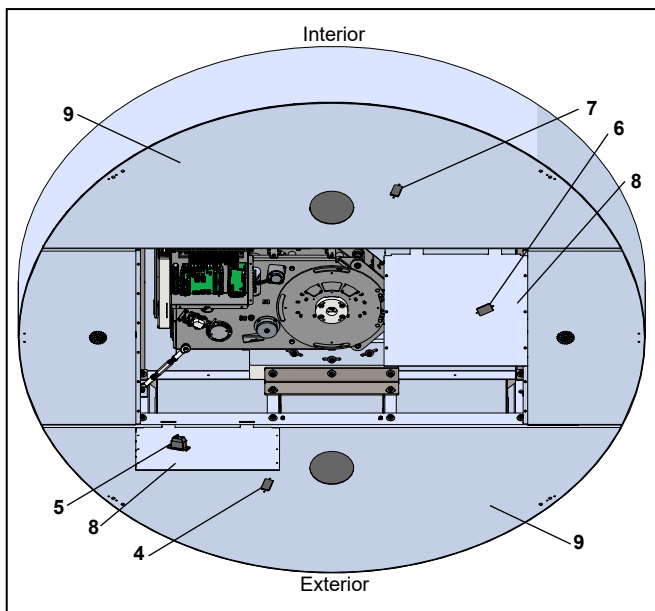


Table 27.2 S2 security canopy sensors

1	RS6123-003	S2 Canopy assembly, 13" 4W 8' ID
4	RK3500-010	Starting sensor, outside, TOFniva
5	RK3500-010	Presence sensor, outside, TOFniva
6	RK3500-010	Presence sensor, inside TOFniva
7	RK3500-010	Starting sensor, inside, TOFniva
8	RC6381-030	Cover plate, K9, TOFniva sensor cutout
9	RC6485-010	Canopy outer soffit half, 4 wing, S2/S3

27.1 TOFniva Sensor Installation On Outer Soffits

Fig. 29.2.1 Canopy bottom view

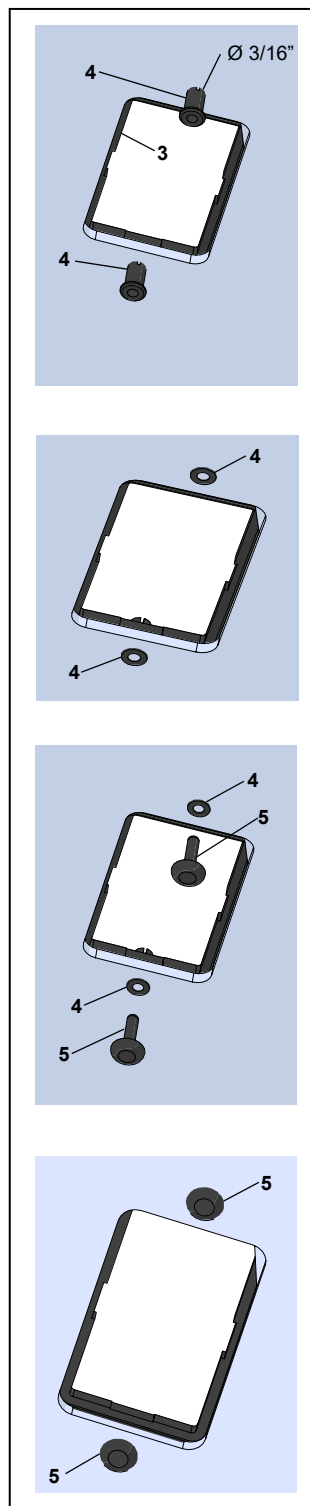


Fig. 29.2.2 Canopy top view

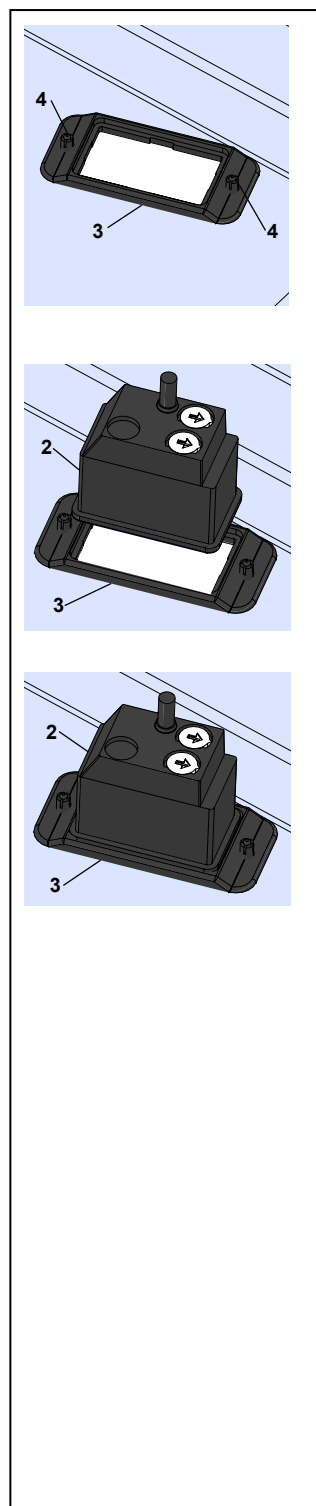
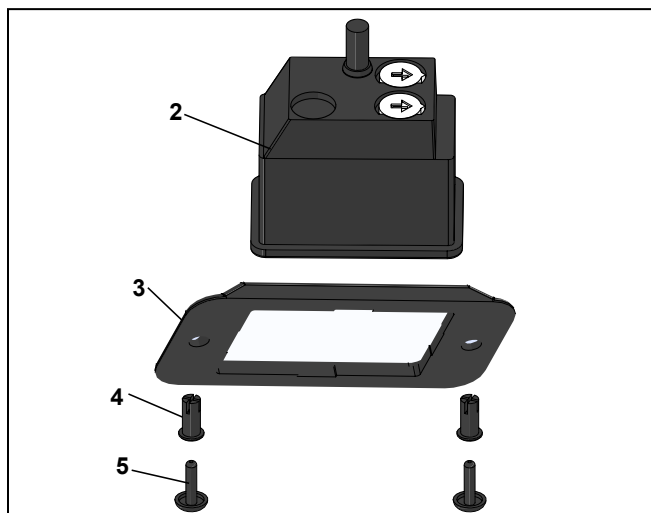


Table 27.1.1 TOFniva sensor and installation hardware

2	RK3500-010	Sensor, CEDES, TOFniva	2
Mounting kit hardware			
3		Sensor bracket	
4		Anchor	
5		Thumb pin	

Fig. 27.1.2 TOFniva sensor and mounting hardware



27.1.1 Install two canopy TOFniva sensors on canopy outer soffits (Fig. 27.1).

1. Place sensor bracket (3) on the canopy soffit over the cutout for the sensor.
2. Using mounting kit hardware (Table 27.1.1), secure the sensor bracket to the soffit.
3. Place the sensor in the sensor bracket.

27.2 TOFniva Sensor Installation On Cover Plates

Fig. 28.1.1 S2 security canopy soffit view, TOFniva sensor installation

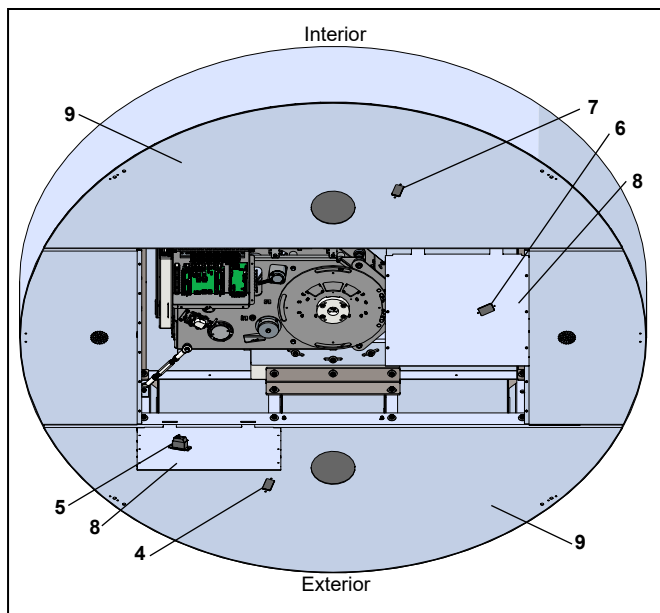


Fig. 28.1.2 RC6381-030 cover plate

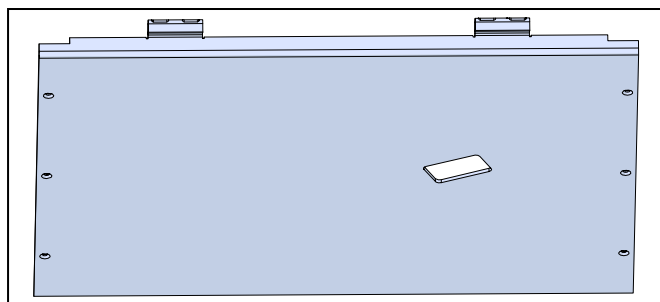


Fig. 28.1.3 TOFniva sensor installation

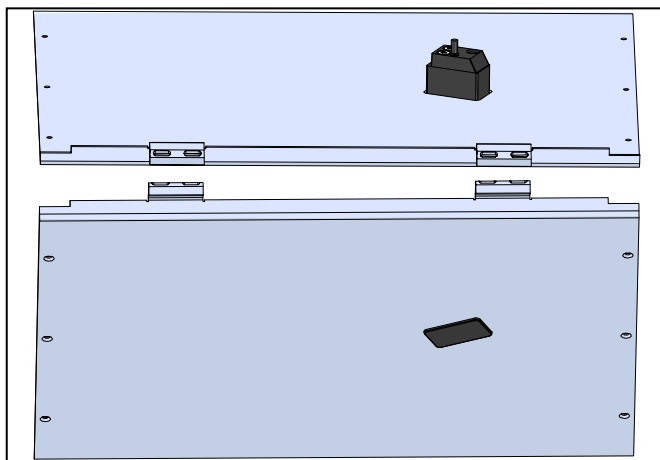


Table 28.1.1 S2 security canopy sensors

1	RS6123-003	S2 Canopy assembly, 13" 4W 8' ID
4	RK3500-010	Entry point sensor, exterior, TOFniva
5	RK3500-010	Ingress 1 presence sensor, TOFniva
6	RK3500-010	Egress 1 presence sensor, TOFniva
7	RK3500-010	Entry point sensor, interior, TOFniva
8	RC6381-030	Cover plate, K9, TOFniva sensor cutout
9	RC6485-010	Canopy outer soffit half, 4 wing, S2/S3

28.1.1 TOFniva sensor installation.

Note: remainder of door not shown for sensor installation views.

Reference Para. 27.1 for sensor (4,7) installation on outer soffits.

1. Install TOFniva sensor into each of the two cover plates (8).
Reference Para. 27.1 for sensor installation.

2. Install the two cover plates in the canopy. Insert cover plate tabs into slots in the outer soffits (Fig. 19.1.5).

28.1.2 TOFniva sensor wiring.

1. Connect 2 m extension cable to each of the four TOFniva sensors.
2. Route each cable to K9 drive terminal strip.
3. Sensor wiring.

NOTICE

For TOFniva sensor wiring, reference S2 S3 Wiring Manual RL6003-003.

Fig. 28.1.4 TOFniva sensor and extension cable

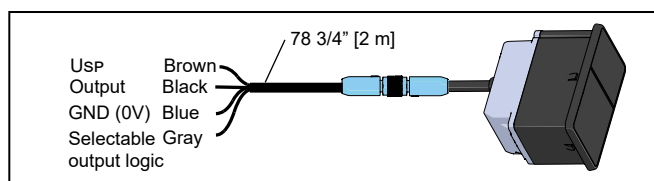
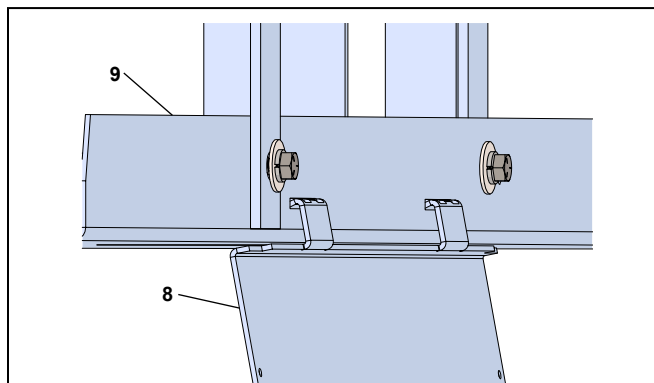


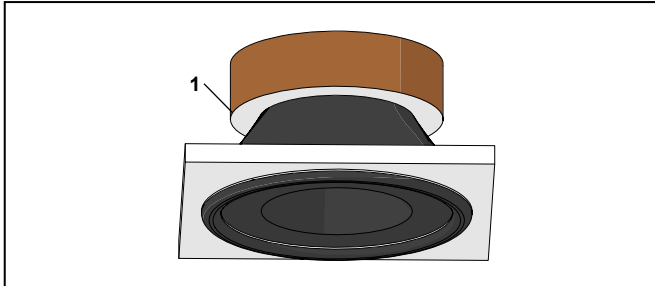
Fig. 28.1.5 Cover plate installation onto outer soffit



28 Canopy Hardware Installation

28.1 Install Canopy Speakers

Fig. 28.1.1 Speakers, canopy mounted



28.1.1 Install canopy speakers.

1. Place each speaker on its canopy soffit (Fig. 27.1), securing speaker with Velcro strips.

28.2 Install Optional UPS system (Para. 7.22).

Fig. 28.2.1 UPS



28.2.1 Optional UPS for K9 drive

1. If UPS is supplied, place in canopy near K9 drive unit power supply.

Note: K9 power supply provides 120Vac power to Bookfold electronic panel.

28.3 Canopy LED Fixture Installation (Option)

Fig. 28.3.1 LED light fixture and junction box / LED driver

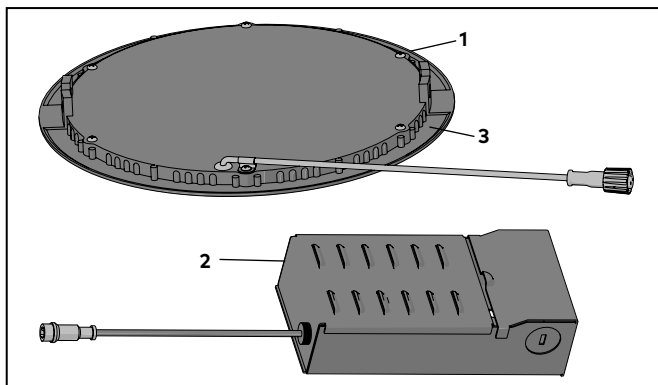


Table 28.3.1 Ceiling LED and junction box

1	RC6320-010	Light, LED
2		Box, Junction with LED driver
3	RC7031-001	2-sided tape for securing light to canopy
4		Wire nut
5		NM cable connector or equivalent

28.3.1 LED light fixtures (option).

- Each light is supplied with a junction box/LED driver (Fig. 28.3.2).

28.3.2 LED light installation.



TIPS AND RECOMMENDATIONS

LED lights are factory installed.

28.3.3 LED junction box/driver installation.

NOTICE

Junction box/LED driver and 115 Vac wiring installation.

It is recommended to install drivers and connect 115 Vac wiring once revolving door enclosure is fully assembled.

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

28.3.4 115 Vac wiring to each Junction box.



WARNING

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

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

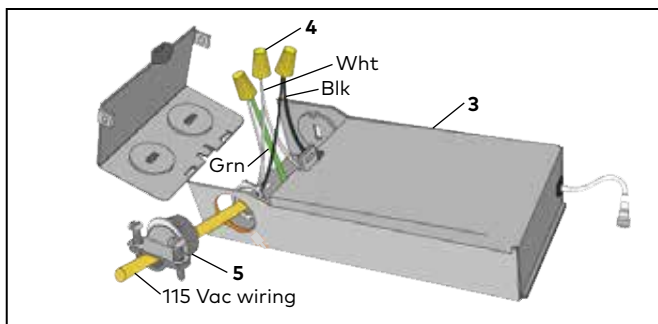
28.3.5 Contractor-supplied junction box.

- 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.
- Junction box must be accessible for any future maintenance requirements.

28.3.6 115 Vac wiring to customer lighting circuit.

- Customer must supply 115 Vac lighting power to junction box (Para. 28.3.5).

Fig. 28.3.2 115 Vac wiring to LED junction box/driver



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