

Crane 2000LE and 3000LE

Overhead Motion Assist 360 drive

Floor speed control

Installation Manual

RL6000-004 – 05-2022

| EN |

 **Crane**
dormakaba Group

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1 General information

1.1 Installation instructions

This document contains important instructions for installation of Crane 2000LE and 3000LE Motion Assist 360 drive manual revolving doors with configurations as listed in Table 1.1.

Table 1.1 3 1/8" canopy height, floor speed control

No. of Wings	Motion Assist 360 drive controls	Canopy assembly	Reference Door Assembly
4	Canopy mounted		
4	Remote enclosure		
3	Canopy mounted	Para. 5.1	Para.5.1
3	Remote enclosure		

NOTICE

Wiring, Setup and Troubleshooting Manual RL6000-013.

Reference RL6000-013 for wiring, setup and troubleshooting information.

1.2 Manual storage

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

1.3 dormakaba.us website

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

1.4 Symbols used in these instructions.



WARNING

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

NOTICE

Draws attention to important information presented in this document.

CAUTION

Warns of a potentially unsafe procedure or situation.



TIPS AND RECOMMENDATIONS

Clarifies instructions or other information presented in this document.

1.5 Dimensions

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

1.6 Environment

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

1.7 Custom order 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.

Revolving door optional equipment.

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

2 Product description and technical information

2.1 Crane 2000LE series

Table 1.1 2000LE series doors

Enclosure	Welded construction	
	Finish	Aluminum
		Anodized
		Cladded bronze
		Stainless steel
Bolted construction		
Wings	Finish	Aluminum
		Anodized finish
		Cladded bronze
		Stainless steel

2.2 Crane 3000LE series

Table 2.1 3000LE series doors

Enclosure	Custom Fully formed and welded	
	Finish	Aluminum
		Anodized finish
		Cladded bronze
		Stainless steel
		Wood
Fully formed and welded		
Wings	Finish	Aluminum
		Anodized
		Cladded bronze
		Stainless steel
		Wood

2.3 Motion Assist 360

2.3.1 Motion Assist 360 drive.

- Gearless electromagnetic direct drive system.

2.3.2 Low energy application.

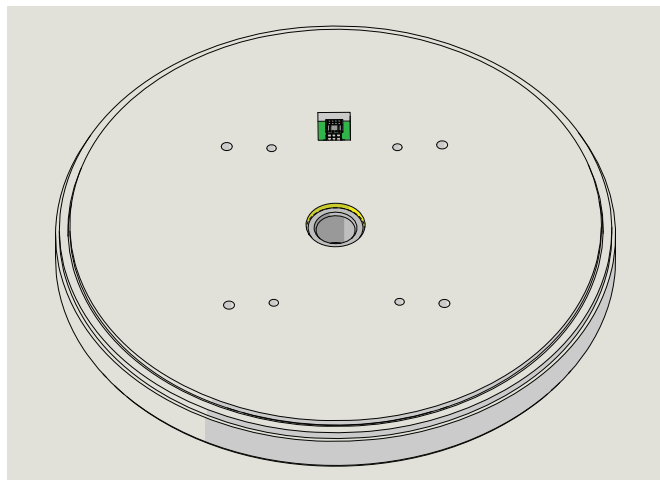
- Uses "S" Motion Assist function module.



TIPS AND RECOMMENDATIONS

Reference Para. 2.8 for function module overview.

Fig. 2.3.1 Motion Assist 360 drive



2.4 Motion Assist 360 technical information

2.4.1 Environment

Measurement	Value	Unit
Temperature range	-40 — +60	°C
	-40 — +140	°F
Relative humidity (non-condensing)	<90	%

2.4.2 Power supply

Measurement	Value	Unit
Power supply	100 - 240 ± 10%	Vac
Power frequency	50 / 60	Hz
Customer branch circuit: GFCI Circuit breaker	15	A
Power supply control voltage	24 ± 10%	Vdc
Maximum supply current for external connections	3	Adc

2.4.3 Power consumption (without lighting)

Measurement	Value	Unit
Positioning speed	58	W
Automatic mode	102	W
Speed limiter	8	W
Servomatic	58	W

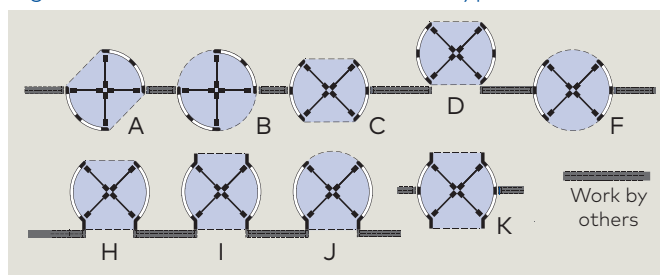
2.4.4 Drive

Measurement	Value	Unit
Type	Synchronous motor with continuous magnet rotor	
Nominal voltage	24	Vdc
Nominal output	0.58	KW
Nominal torque	40	Nm
	29.5	ft-lb
Nominal current	4	A
Starting current	Maximum 18	A
Torque	Maximum 185	Nm
	Maximum 136.5	ft-lb
Rotations per minute	Maximum 18	RPM
Protection class	IP20	
	NEMA 1	
Insulation class	B	
Gear ratio	1	
Operating noise LAeq	<50	dB(A)

2.5 2000LE series

	AL2000	SS2000	BZ2000
Material	Aluminum	Aluminum / Stainless steel	Aluminum / Bronze
Wing configuration	<ul style="list-style-type: none"> • 3 wings • 4 wings 		
Enclosure diameter	7' to 12' OD	ANSI/BHMA A156.27-2019, Para. 4.1: To limit door mass, the inside diameter added to the height shall not exceed 17 ft [5182 mm].	
Door opening height	7' up to 9'		
Maximum total wing assembly and center shaft assembly weight	750 pounds aluminum 850 pounds SS	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 • Non-directional • #6 fine satin • Bead blast • #7 mirror • Custom • #8 mirror 	<ul style="list-style-type: none"> • #4 satin • #8 mirror • Bead blast • Non-directional • #7 mirror • Custom
Operation	<ul style="list-style-type: none"> • Manual, mechanical speed adjuster to limit speed. To be adjusted to comply with ANSI/BHMA 156.27. 		
Attachment Types	A, B, C, D, F,H,I,J,K as indicated on the drawings. Reference Fig. 2.5.1.		
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" 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
Speed Control	Manual speed control: <ul style="list-style-type: none"> • Uses 100:1 gear ratio. • Sealed unit is mounted in the floor. • Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code. 		

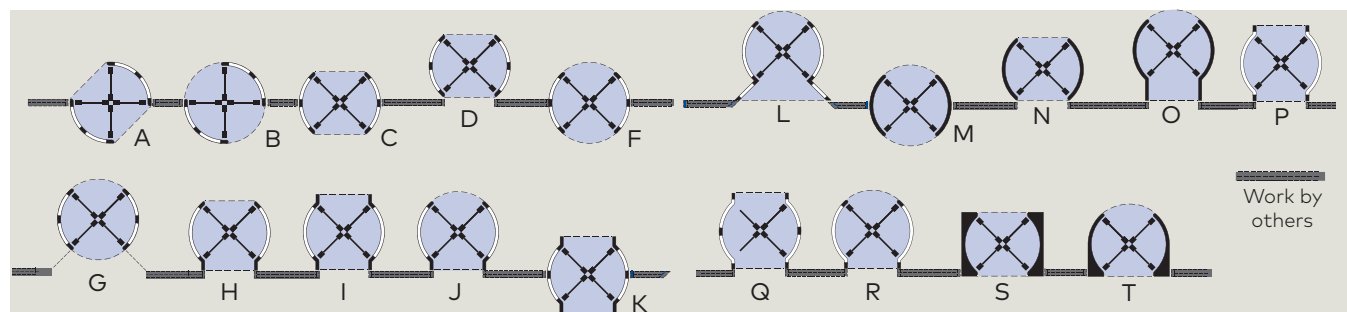
Fig. 2.5.1 Crane 2000LE attachment types



2.6 3000LE series

	AL3000	SS3000	BZ3000
Material	Aluminum	Aluminum / Stainless steel	Aluminum / Bronze
Wing configuration	<ul style="list-style-type: none"> • 3 wings • 4 wings 		
Enclosure diameter	7' to 12' OD.	ANSI/BHMA A156.27-2019, Para. 4.1: To limit door mass, the inside diameter added to the height shall not exceed 17 ft [5182 mm].	
Door opening height	7' up to 10'; custom		
Maximum total wing assembly and center shaft assembly weight	750 pounds aluminum 850 pounds SS	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 • Non-directional • #6 fine satin • Bead blast • #7 mirror • Custom • #8 mirror 	<ul style="list-style-type: none"> • #4 satin • #8 mirror • Bead blast • Non-directional • #7 mirror • Custom
Operation	<ul style="list-style-type: none"> • Manual, mechanical speed adjuster to limit speed. To be adjusted to comply with ANSI/BHMA 156.27. 		
Attachment Types	All, custom. Reference Fig. 2.6.1		
Enclosure material	<ul style="list-style-type: none"> • Glass • Solid metal 	<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
Speed Control	<p>Manual speed control:</p> <ul style="list-style-type: none"> • Uses 100:1 gear ratio. • Sealed unit is mounted in the floor. • Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code. 		

Fig. 2.6.1 Crane 3000LE attachment types



2.7 Revolving door assembly components overview, 3 wing door example

Table 2.7.1 3 wing door with Motion Assist 360 drive and controls and in-ground speed control

#	Description	Part #
1	Canopy assembly	RS6051-002
2	Motion Assist 360 drive and controls	RS6048-001
3	Center post, AL	RE6007-030
4	Quarter post	RE6009-010
5	Enclosure bent glass	
6	Enclosure, base outer, 3", AL	RE6015-010
	Enclosure, base inner, 3"	RE6016-010
7	Wing assembly with lock, 3 wing door	
8	Steel shaft assembly, floor speed control, 3 wing door	RS6054-001
	Assembly, floor speed control	RS6074-010



TIPS AND RECOMMENDATIONS

Canopy assemblies.
 Reference Para. 5.1.

Fig. 2.7.1 Three wing revolving door, assembly example

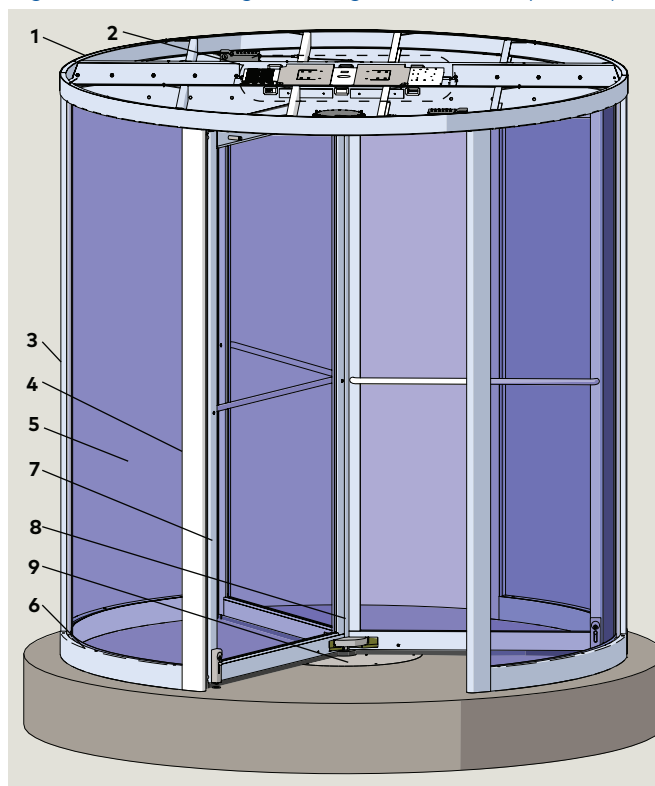


Fig. 2.7.2 Steel shaft assembly, 3 wing door

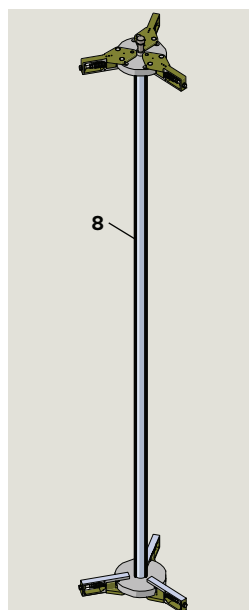


Fig. 2.7.3 Wing assembly, 3 wing door

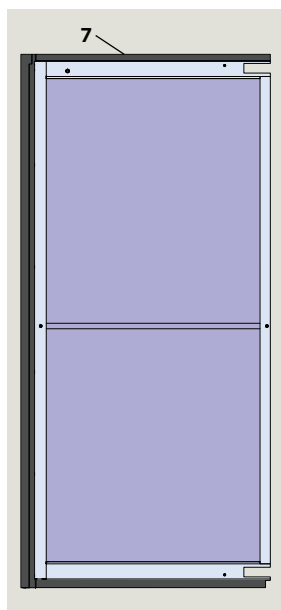


Fig. 2.7.4 Center post, quarter post

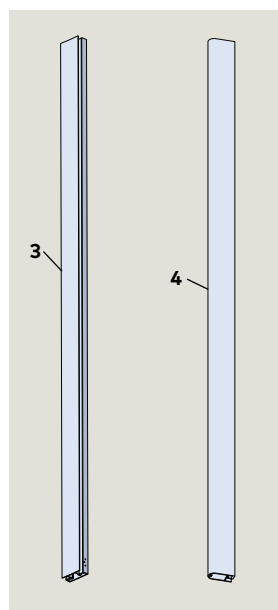


Fig. 2.7.5 Motion Assist 360 drive and control assembly

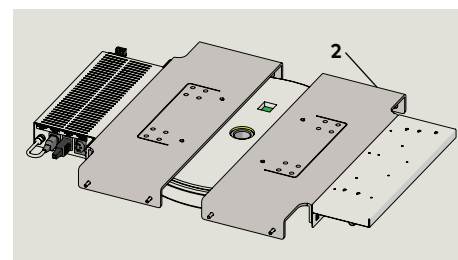


Fig. 2.7.6 Floor speed control assembly

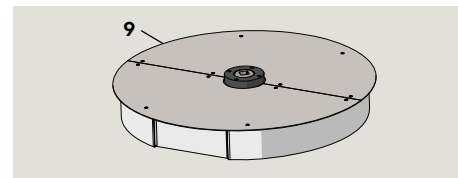
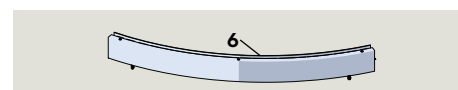


Fig. 2.7.7 Base and cover assembly



2.8 Motion Assist "S" function module

2.8.1 Motion Assist "S" function module.

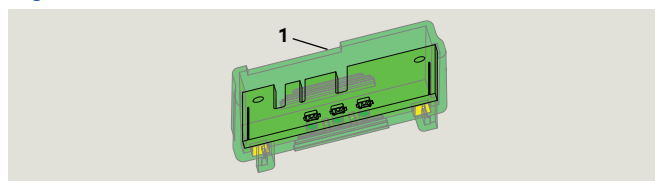
Motion Assist 360 is supplied with a "S" Motion Assist low energy function module.



TIPS AND RECOMMENDATIONS

Reference Para. 5.3 for Motion Assist 360 function module location.

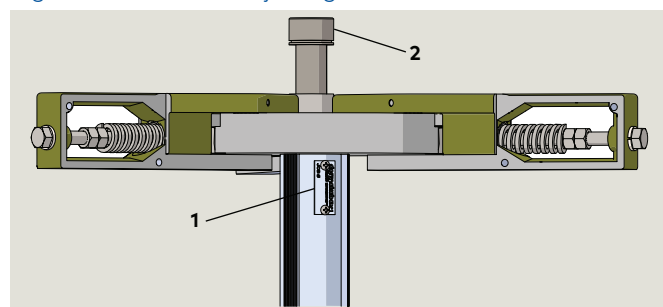
Fig. 2.8.1 "S" Motion Assist function module



1 "S" module (GRN)
RX6003-002

2.9 Identification labels

Fig. 2.9.1 Steel shaft job tag location



1 Job tag RD6001
2 Top plug RC6081

2.9.1 Revolving door job tag.

- Located on center shaft.

Fig. 2.9.1 Job tag



1 Job tag RD6001

Fig. 2.9.2 Identification label, Motion Assist 360 drive

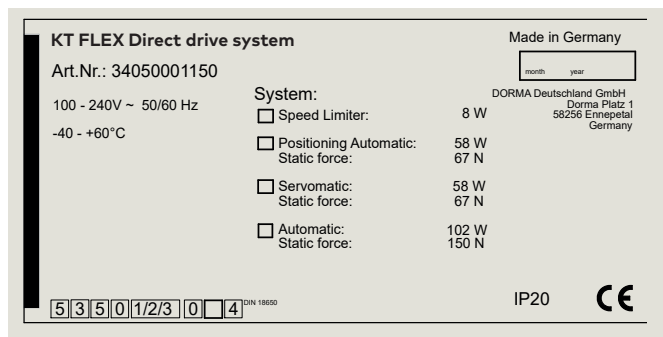
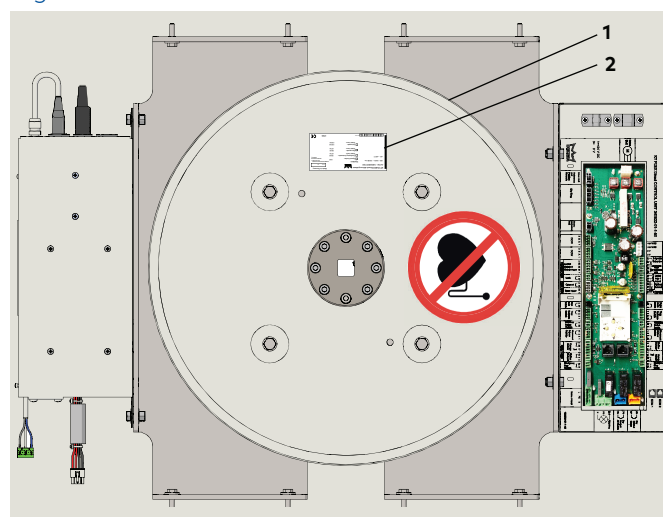


Fig. 2.9.3 Motion Assist 360 drive identification label



1 Motion Assist 360 drive
2 Identification label

2.9.2 Drive system identification label.

Identification label for Motion Assist drive and contains the following information:

- Name and address of manufacturer.
- Drive system model
- Year of manufacture
- Electrical connection values
- Performance data
- Environmental conditions
- IP protection class
- Designation

3 Safety information

3.1 Safety Warnings

3.1.1 Safety instructions.

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 115 Vac wiring installation must be performed only by qualified personnel!



WARNING

Danger of death from contact with voltage or electrical short circuits!

As a result of missing or defective electrical grounding of the drive system, contact with voltages or electrical short circuits is possible.

- Never put the revolving door into operation without an earth ground connected to the drive grounding terminal.
- Prior to drive commissioning, drive components must be connected to the grounding terminal:
 - Controller
 - Power supply unit
 - Drive unit support system

Reference Wiring, Setup and Troubleshooting Manual RL6000-013



WARNING

Metallic doors must be grounded per national and local codes!



WARNING

Hand pinch point and crushing hazards!



WARNING

Crushing hazards!

3.1.3 Pacemakers and other medical implants warning.



WARNING



This sign is located on the Motion Assist 360 drive (Para. 2.7) and warns of the hazards for people with pacemakers and other active medical implants.

Strong electromagnetic or magnet fields may be present in the vicinity of this sign. These fields may disrupt pacemakers or other medical implants or cause them to malfunction. People wearing pacemakers and other active medical implants should not approach components with this safety warning.



People with pacemakers and other active medical implants should not come within 20 inches [51 cm] of the drive!

3.1.4 Intended use and door misuse.

- The 2000LE and 3000LE revolving doors are designed as 3 or 4 wing revolving doors for use as a doorway for people to pass through at entrances and in the interior of buildings.
- When wings are bookfolded, the revolving door is suitable for use as an emergency exit.



WARNING

In case of emergency, revolving door can be used as an exit, but it is not the primary path of egress.

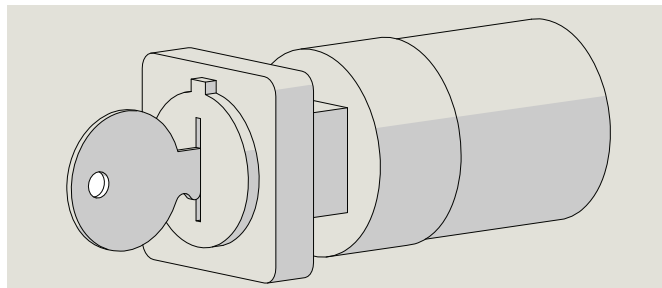
The side door(s) should be used!

-
- The customer can only operate the revolving door after door commissioning by dormakaba service technicians.
 - Intended use encompasses adherence to the information in this document as well as all additional applicable documentation.

4 Operator components

4.1 Mode switch

Fig. 4.1.1 Mode switch with key lock RX6008-001



4.1.1 Mode switch

- The Mode switch is located inside the building on the leading quarter post or attached separately within sight of the revolving door.
- A key or code secures the program switch against unauthorized access.





4.1.2 Low energy speed definition - ANSI/BHMA A156.27.

Door speed resulting in a maximum of 2.5 lbf-ft [3.4 Nm] of kinetic energy.

4.1.3 Knowing act

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

4.1.4 Mode switch (low-energy) functions.

Mode switch position	Function	S - (Green module) - Motion Assist
 0	Off	<ul style="list-style-type: none"> • Revolving door will stay in the home position. • After a set period of time, any internal lighting is switched off.
 1	AUTOMATIC 1	<ul style="list-style-type: none"> • A knowing act switch starts rotary movement of the door wings at low energy speed. Acceleration to walking speed is done manually. • Manually pushing the door starts rotary movement of the door wings at low energy speed. Acceleration to walking speed is done manually. • Revolving door automatically stops in the next starting position as soon as it is no longer manually operated.
 2	AUTOMATIC 2	<ul style="list-style-type: none"> • Door rotates continuously at a low energy speed. Acceleration to walking speed is done manually. • After passage, the door slows down to low energy speed and continues to rotate at low energy speed.
 3	Summer	<ul style="list-style-type: none"> • Revolving door stops at its starting position and the drive is unlocked. • Door wings can be rotated manually. • Bookfold: wings can be folded to the side.

4.2 Emergency Stop pushbutton

4.2.1 Emergency Stop pushbutton locations.

- Building interior on the leading door quarter post.
- Second Emergency stop pushbutton may be located on the building exterior.

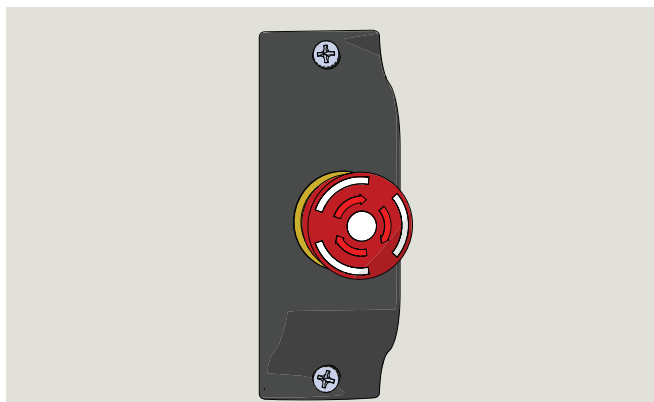
4.2.2 Actuation of Emergency Stop pushbutton.

1. A time delay disconnection of the Motion Assist 360 drive output stage is performed (approximately two seconds).
2. During this time delay the drive performs a fast braking of the door to a standstill.
3. After the time delay the drive output stage is switched off and door can then be turned manually.

4.2.3 Emergency Stop pushbutton reset.

- Emergency Stop pushbutton is reset by pulling or turning the button.

Fig. 4.2.1 Emergency Stop housing RX3413-020 and pushbutton RX3413--010



4.2.1 Triggering an Emergency Stop



WARNING

Risk of injury due to deactivated safety equipment!
After the emergency stop is activated, the drive is unlocked. Safety devices are no longer in operation. This can cause serious injuries if attempts are made to turn the door manually.

- Before turning door manually, check to make sure no one could be injured.
- If people have been locked into the revolving door, carefully turn the door until the people are able to exit the door.
- When turning the door manually, make sure there are no limbs between the closing edges.

4.2.2 Start up after an Emergency Stop



WARNING

Risk of injury due to automatic startup of revolving door!
The revolving door can set itself in motion automatically. If there are people in the door, they may be at risk of injury.

- Release the Emergency Stop button only when there are no longer any people in the revolving door.

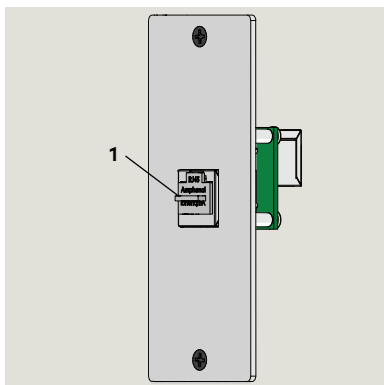
4.2.2.1 Procedure after an Emergency stop.

1. Cause for the emergency stop has been removed.
2. Reset the Emergency stop pushbutton by turning or pulling the pushbutton.
3. Door will move to the home position.
4. The revolving door will continue with the current program settings.

4.3 Service panel (option)

Fig. 4.3.1 Service panel
DX4604-08C

1 RJ45 cover



4.3.1 Service panel for handheld.

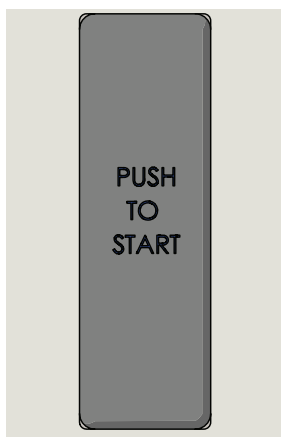
- Typically located on side of leading quarter post.
- For use by dormakaba service personnel.

4.4 Wave to Open, Push to Open plates (options)

Fig. 4.4.1 Wave to Open
plate
DX3331-001



Fig. 4.4.2 Push to Start
plate



4.4.1 Wave to Open or Push to Start plates.

Locations:

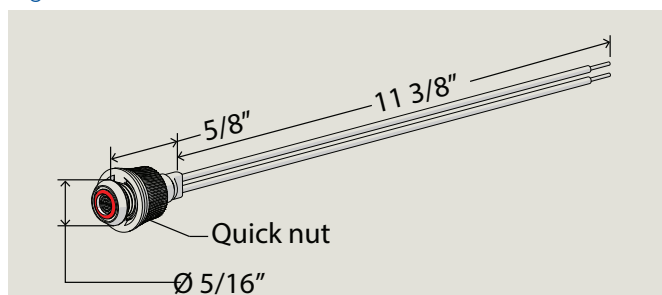
- Inside the building on the leading quarter post/end wall or attached separately within sight of the revolving door.
- Building exterior.

Plates must be located per ANSI BHMA A156.27, Power and Manually Operated Revolving Pedestrian Doors.

Plate starts rotary movement of the door wings at low energy speed (Para. 4.1.2).

4.5 Fault LED

Fig. 4.5.1 Indicator, LED, RX6013-001



4.5.1 Fault LED.

- Fault LED provides Error number indication.
- Frequency and rate of LED flashes indicates Error number.

4.5.2 Fault LED location

- Field installed above or below Mode switch.

4.5.3 Error number and LED blinking codes.

- First digit of Error number: slowly flashing LED (approximately 1 Hz).
- Second digit of Error number: rapidly flashing LED (approximately 2 Hz).
- Error LED fault code example:
1 x slow and 4 x fast = Error no. 14
(braking distance at safety stop too long).



TIPS AND RECOMMENDATIONS

Reference Wiring, Setup and Troubleshooting manual RL6000-013 for fault codes.

4.6 Operator component locations

Fig. 4.6.1 4 wing door, interior view

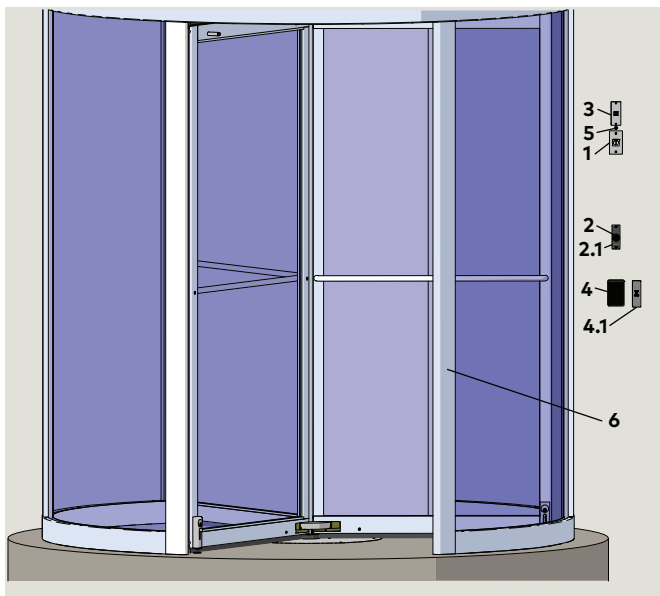


Table 4.6.1 Door operator components

#	Description	Part #
1	Mode switch with key lock	RX6008-001
2	Emergency stop pushbutton	RX3413-010
2.1	Housing	RX3413-020
3	Service panel (option)	DX4604-08C
4	Wave to Open plate (option)	DX3331-001
4.1	Push to Open plate (option)	
5	Fault LED	RX6013-001
6	Quarter post	



TIPS AND RECOMMENDATIONS

Mode switch, Wave to Open plate and Service panel located on the leading quarter post or attached separately within sight of the revolving door.

5 Revolving door assemblies

5.1 Door and canopy configurations with 3 1/8" high canopy Canopy mounted Motion Assist 360 drive, floor speed control

5.1.1 3 1/8" canopy door configurations.

Fig. 5.1.1 4 wing door

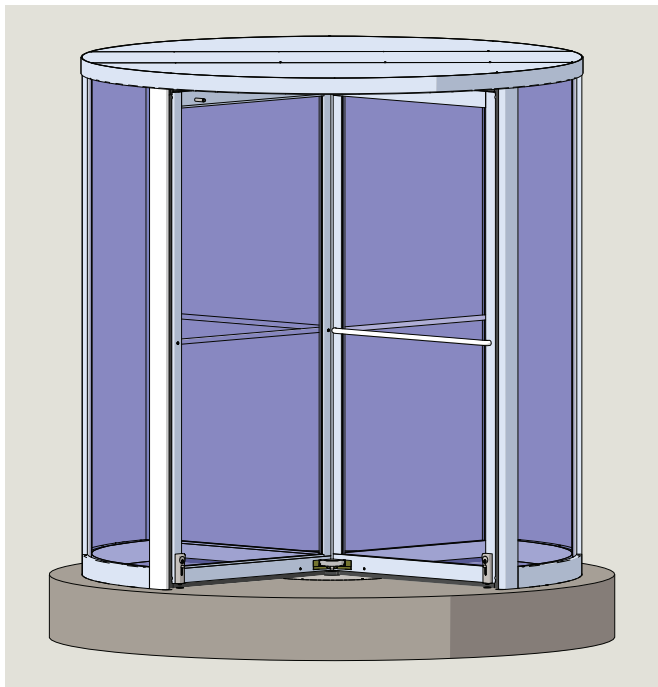
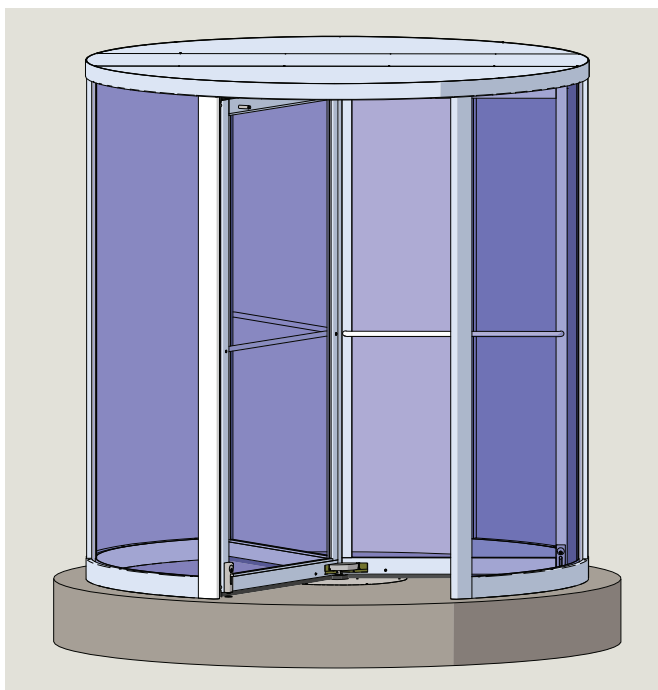


Fig. 5.1.2 3 wing door



NOTICE

Refer to Crane Shop drawings for door and canopy assembly detail for specific job!

5.1.2 3 1/8" canopy configurations.

Table 5.1.1 3 1/8" inch canopy configurations

Canopy assembly	# wings	Figure	Item #	Motion Assist 360 drive controls
RS6051-001	4	5.1.3	1	Canopy mounted
RS6051-002	3			
RS6051-003	4	5.1.4	2	Remote enclosure (option)
RS6051-004	3			

Fig. 5.1.3 With Motion Assist 360 drive controls

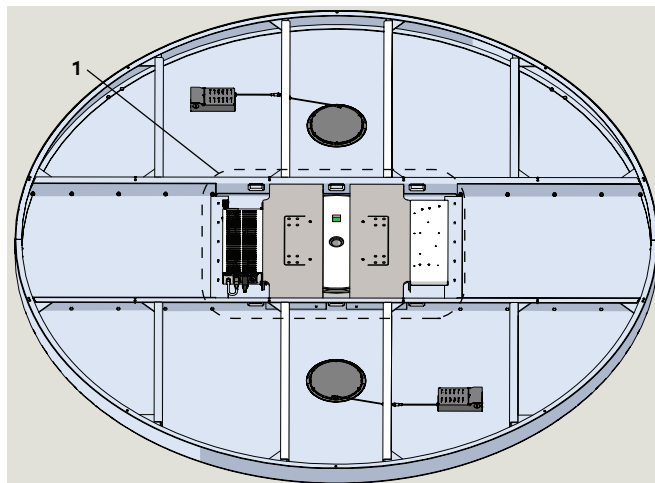
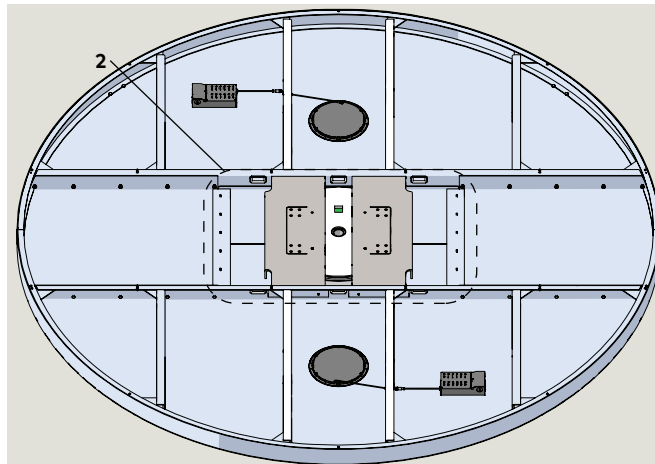


Fig. 5.1.4 Remote Motion Assist 360 drive controls



5.2 Canopy mounted drive bracket assembly, floor speed control

Table 5.2.1 Motion Assist 360 drive configurations, 3 inch canopy

Drive assembly	Figure	Motion Assist 360 drive controls	Speed control
RS6048-001	5.2.1	Canopy mounted	Floor mounted
RS6048-002	5.2.3	Remote enclosure	Floor mounted

Table 5.2.2 Motion Assist 360 drive hardware

Part / Assembly	Description
1 RX6010-001	Motion Assist 360 drive
2 RC6072-001	Mounting plate, 24" spacing
7 RC6068-001	Drive, shaft adaptor
11 RX6001-001	Motion Assist 360 power supply
12 RX6002-001	Motion Assist 360 control unit
13 RK6007-001	Remote enclosure kit assembly

Fig. 5.2.1 Assembly, drive bracket. Motion Assist 360 drive and controls, floor mounted speed control

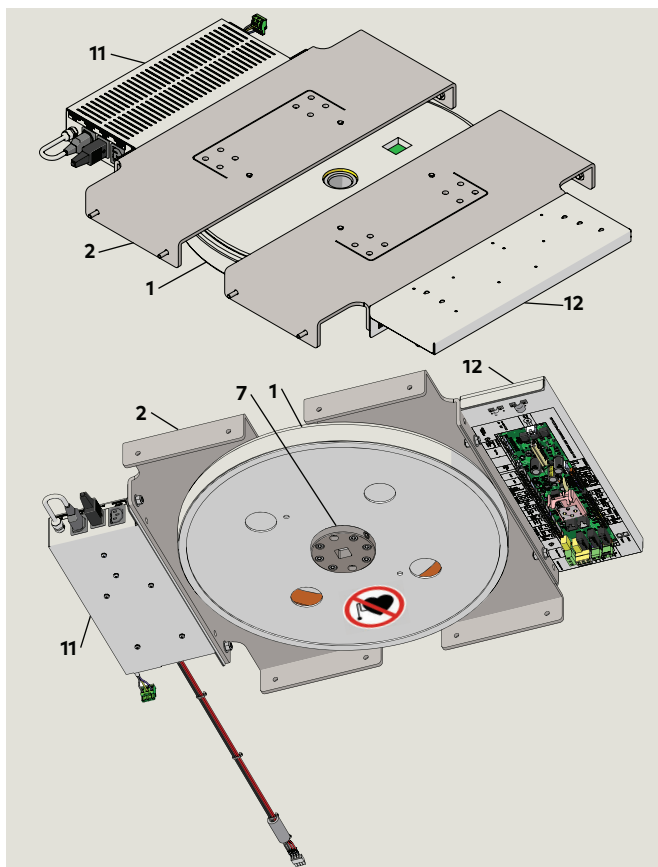


Fig. 5.2.2 Mounting plate, 24" spacing

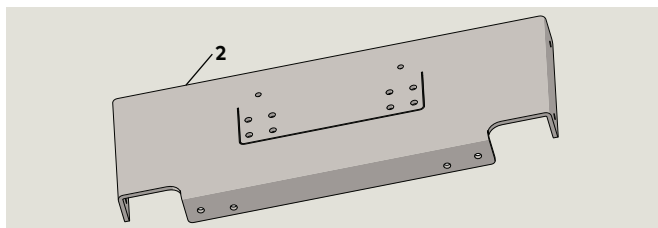


Fig. 5.2.3 Assembly, drive bracket, Motion Assist 360 drive, floor mounted speed control

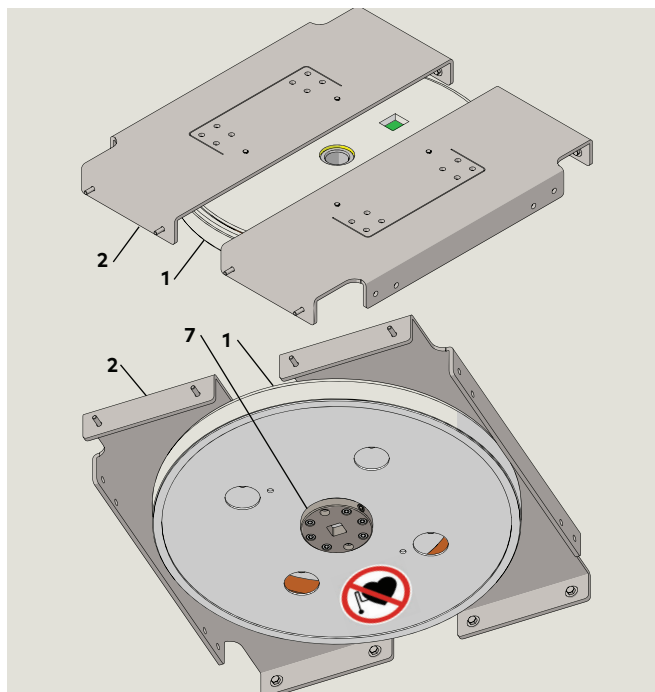
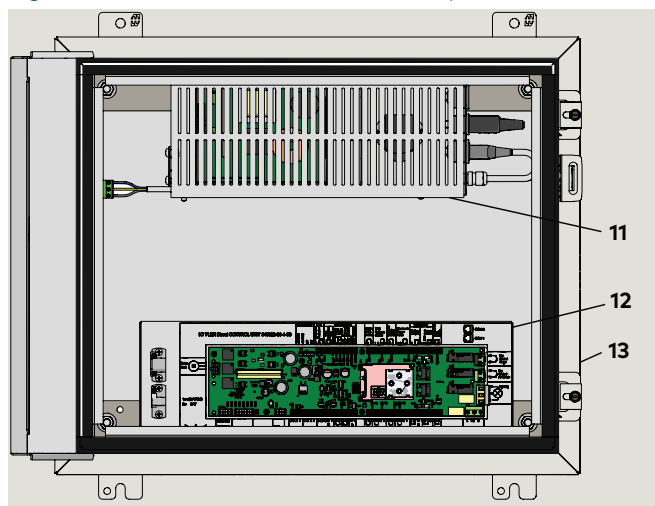


Fig. 5.2.4 Remote control enclosure (option)



5.3 Motion Assist 360 drive hardware

Table 5.3.1 Motion Assist 360 drive hardware

Part / Assembly	Description
1	Motion Assist 360 power supply
1.1	115 Vac cable to control unit (2)
1.2	DC cable to control unit (2)
1.3	Plug for customer 115Vac power cord
2 RX6002-001	Motion Assist 360 control unit
3 RX6003-002	Motion Assist 360 "S" module (Grn)
4 RX6010-001	Motion Assist 360 drive

Fig. 5.3.1 Motion Assist 360 drive

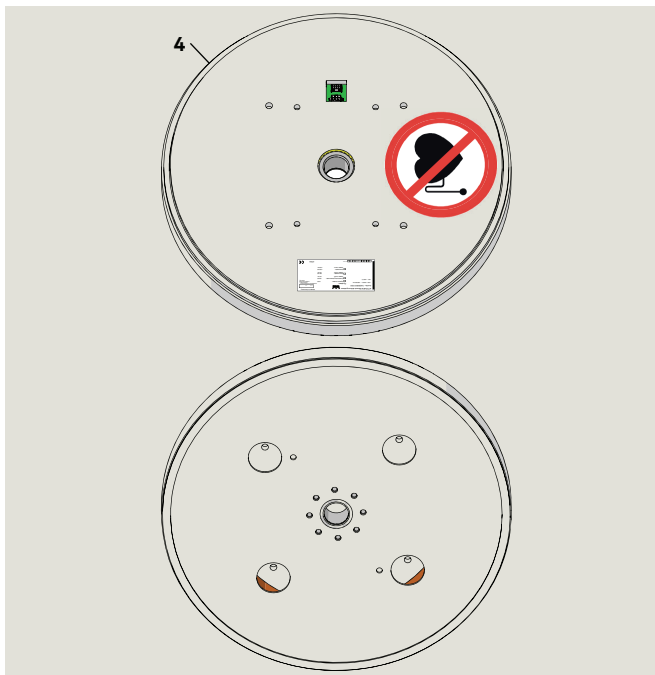


Fig. 5.3.2 Motion Assist 360 control unit

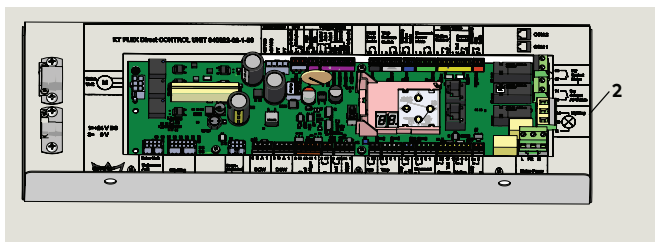


Fig. 5.3.3 Motion Assist 360 power supply and cables

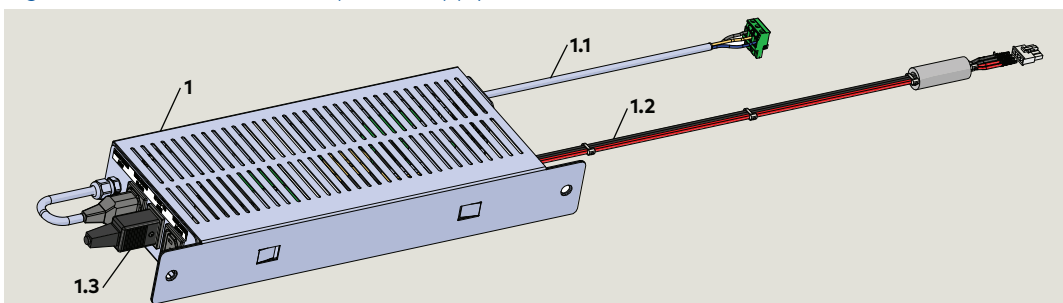


Table 5.3.2 Motion Assist 360 drive cables

5	RX6005-001	Motor cable (21), 14 1/16"
	RX6016-001	Motor extension cable, 25'
6	RX6016-002	Motor extension cable, 50'
	RX6016-003	Motor extension cable, 100'
6.1	RX6016-004	Motor extension cable, 1'
7	RX6006-001	Motion Assist 360 Hall sensor cable (22), 13 3/4"
	RX6015-001	Hall sensor extension cable, 25'
8	RX6015-002	Hall sensor extension cable, 50'
	RX6015-003	Hall sensor extension cable, 100'
	RX6015-004	Hall sensor extension cable, 1'

Fig. 5.3.4 Drive motor cables

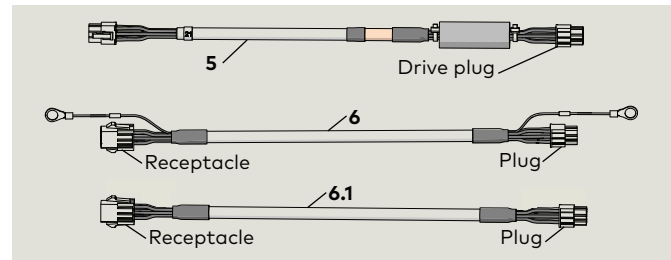


Fig. 5.3.5 Drive Hall sensor cables

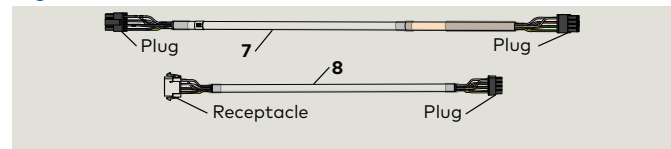
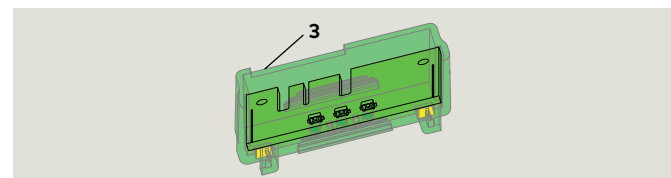


Fig. 5.3.6 "S" function module (Grn) Motion Assist



5.4 3 wing steel shaft assembly, floor speed control RS6054-002

Fig. 5.4.1 Exploded view

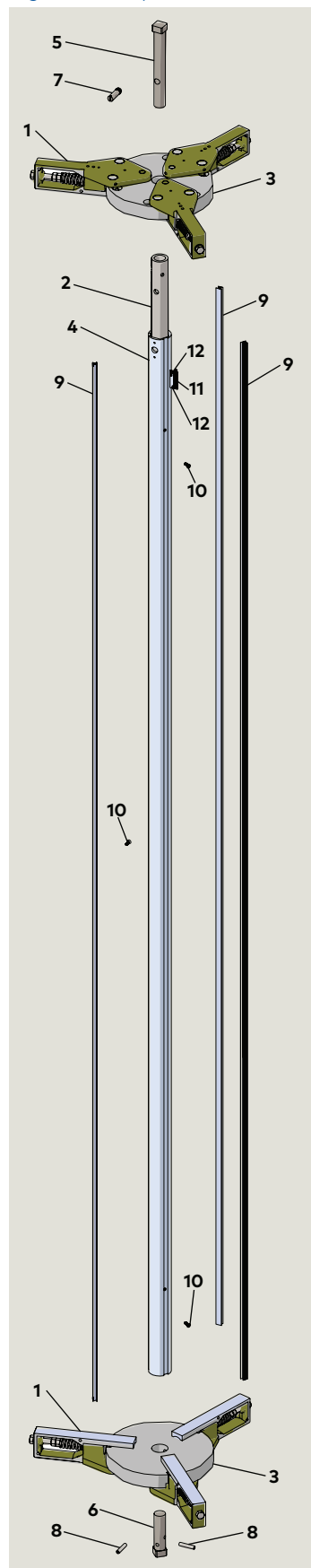


Fig. 5.4.2 3 wing steel shaft assembly

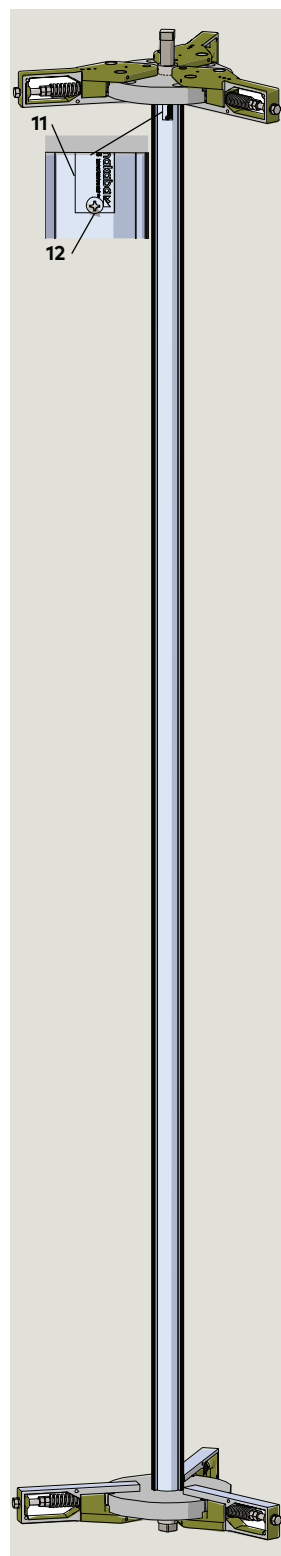
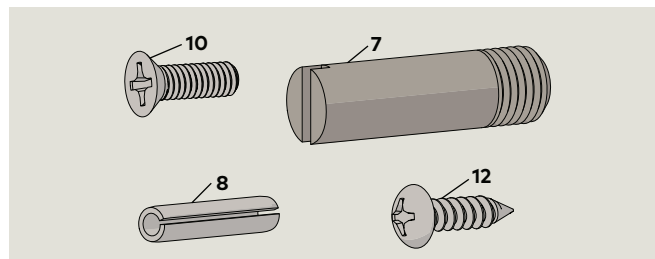


Table 5.4.1 RS6054-001 assemblies and parts

Part / Assembly	Description
1 RS6045-020	Hanger assembly
2 RC6083-002	Steel center shaft, 3 wing, floor speed control
3 RS6044-001	3 wing disc assembly
4 RC6085-001	Steel shaft cover 3 wing, floor speed control
5 RC6076-001	Top plug, steel shaft, Motion Assist 360 interface
6 RC6082-001	Bottom plug, steel shaft, floor speed control
7 RC6052-010	Steel shaft cross pin
8 RF6053-01G	.25 OD x1/2" spring pin slotted
9 RC6078-001	Weatherstrip, steel shaft
10 RF6054-01G	8-32 x 1/2" Phillips FH machine screw
11 RD6001-001	Shaft ID tag
12 RF6008-01G	#6 x 1/2 SS Phillips pan head screw

Fig. 5.4.3 Center shaft fasteners



5.5 4 wing steel shaft assembly, floor speed control RS6053-002

Fig. 5.5.1 Exploded view

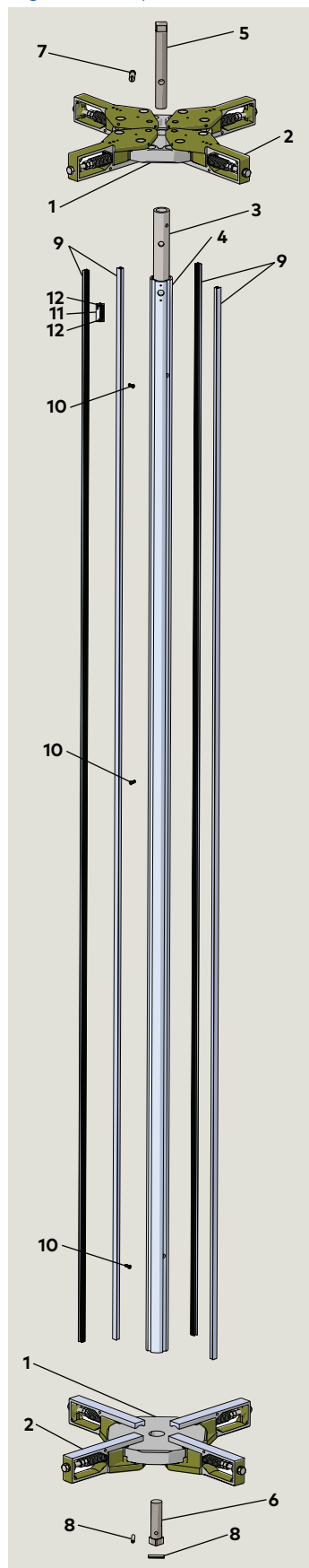


Fig. 5.5.2 4 wing steel shaft assembly

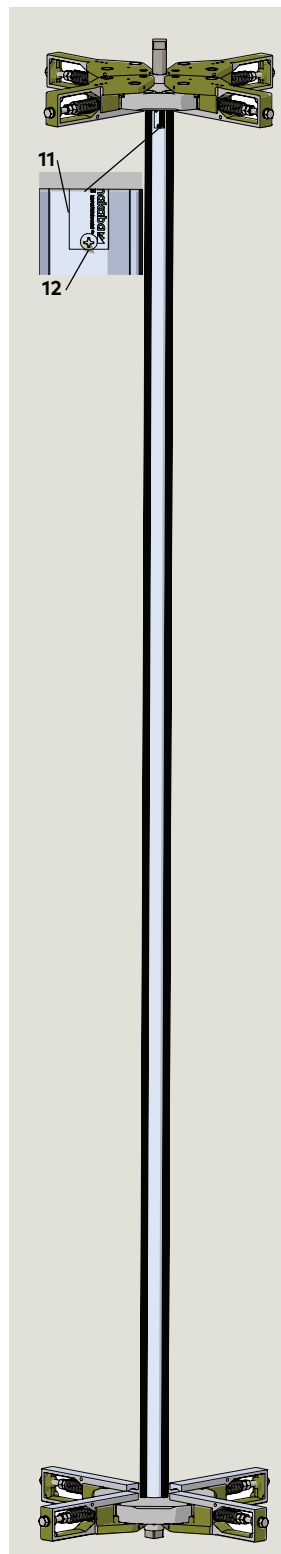
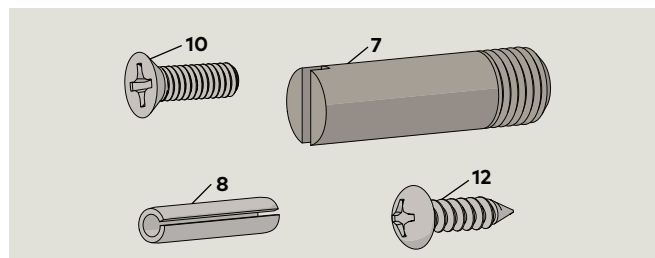


Table 5.4.1 RS6053-002 assemblies and parts

Part / Assembly	Description
1 RS6043-020	4 wing disc assembly
1 RS6045-001	Hanger assembly
2 RC6083-001	Steel center shaft, 4 wing, floor speed control
4 RC6084-001	Steel shaft cover 4 wing, floor speed control
5 RC6076-001	Top plug, steel shaft, Motion Assist 360 adapter interface
6 RC6082-001	Bottom plug, steel shaft, floor speed control
7 RC6052-010	Steel shaft cross pin
8 RF6053-01G	.25 OD x 1/2" spring pin slotted
9 RC6078-001	Weatherstrip, steel shaft
10 RF6054-01G	8-32 x 1/2' Phillips FH machine screw
11 RD6001-001	Shaft ID tag
12 RF6008-01G	#6 x 1/2 SS Phillips pan head screw

Fig. 5.5.3 Center shaft fasteners



5.6 Hanger assembly, steel shaft RS6045-0X0

Fig. 5.6.1 Shaft hanger assembly

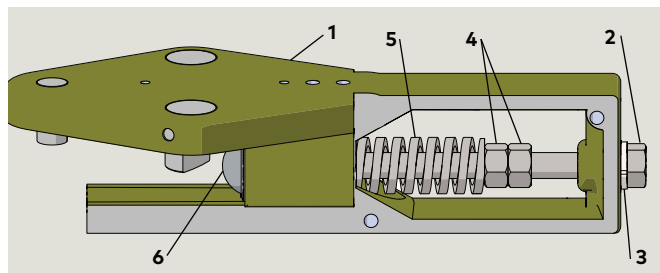
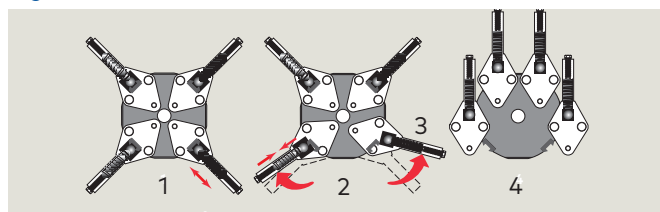


Table 5.6.1 RS6045 shaft hanger assemblies and parts

Part / Assembly	Description
1	RC6369-0X0 Hanger body
2	RC6156-01G Hex bolt, 0,375" - 16 x 4"
3	Lock washer, 3/8"
4	Hex nut, 0,375"-16
5	Spring
6	Ball, 7/8" diameter

5.7 Bookfold mechanism

Fig. 5.7.1 Bookfold mechanism



5.7.1 Bookfold mechanism operation.

1. During normal operation, hanger spring tension holds wings in radial position by means of steel balls in hangers engaging in detent blocks in center shaft top and bottom discs.
2. Excess pressure on wing compresses spring (to breakout force), ball is rotated from detent block in disc.
4. Minimal pressure is then required to continue bookfolding. Wings bookfold either way, providing a clear passage on both sides.

5.8 Door wing assembly example

Fig. 5.8.1 Wing assembly, 4 wing door

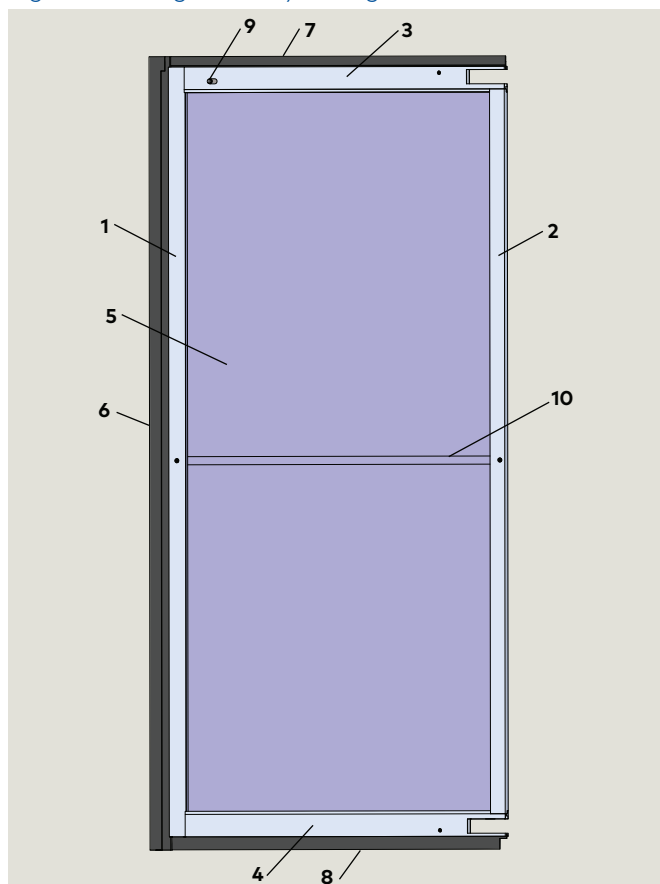


Table 5.8.1 Door wing assemblies and part examples

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

5.9 Posts and enclosure base

Fig. 5.9.1 Quarter post/end wall RE60XX-0X0

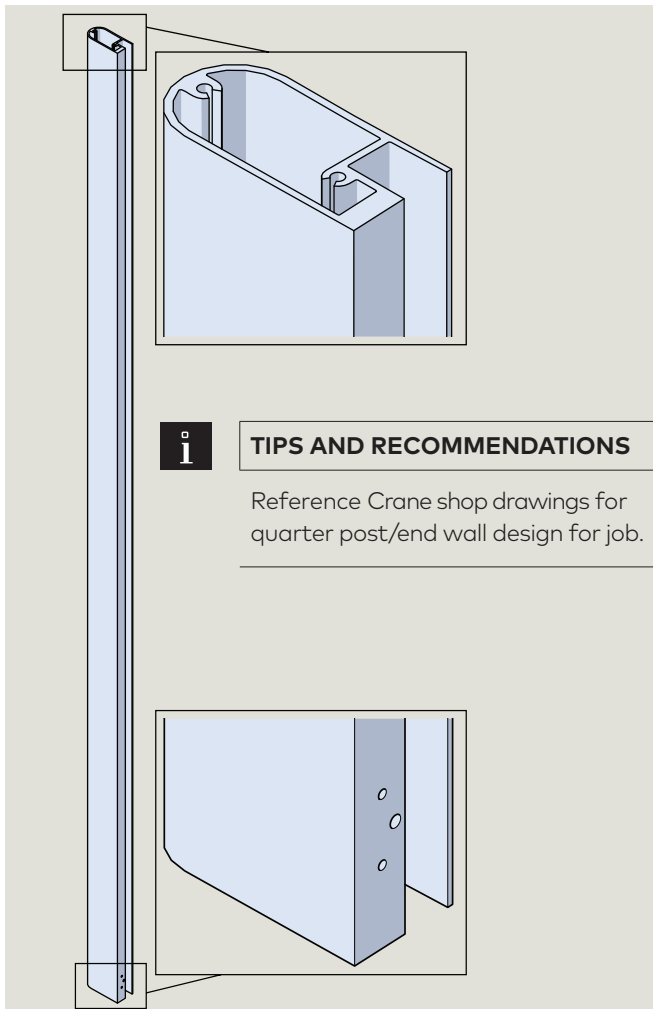


Fig. 5.9.2 Center post RE6007-0X0

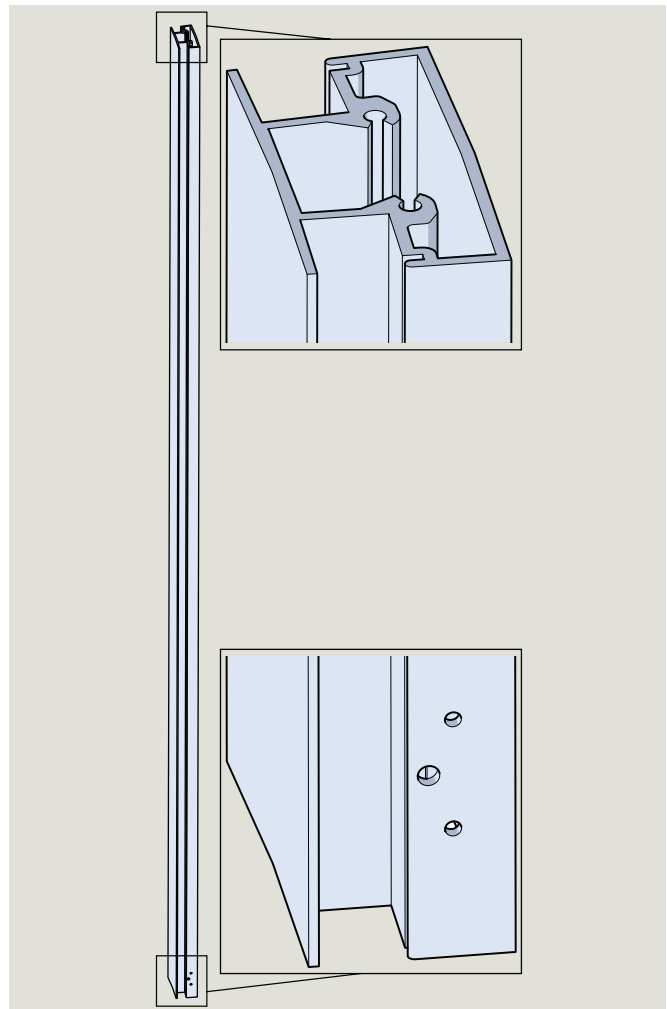


Fig. 5.9.3 Enclosure base assembly, AL

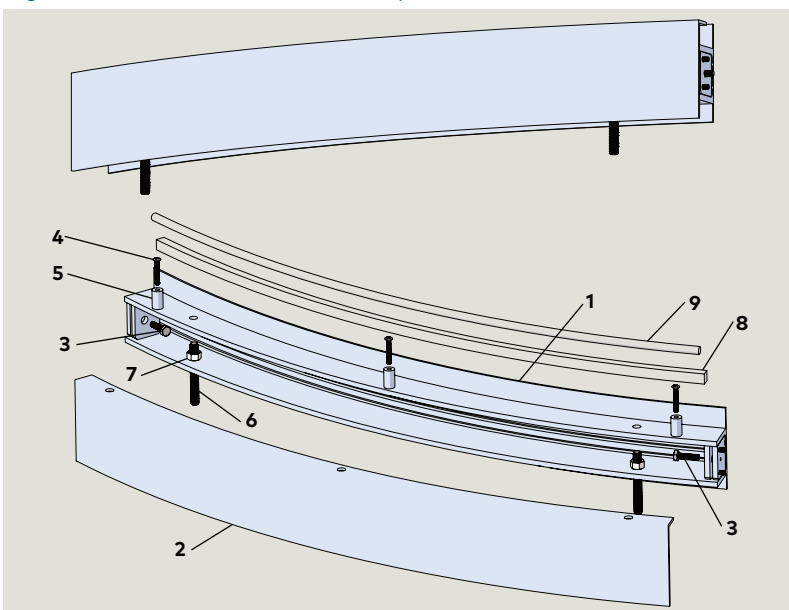


Table 5.9.1 Enclosure base parts

Part / Assembly	Description
1 RE6016-0X0	Enclosure base, inner 3", AL
2 RE6015-0X0	Enclosure base, outer 3" AL
3 RF6055-02G	1/4-20 x 1" HH cap screw
4 S21 0334	10-24 x 1.25" POHMS
5 RC6390-010	Cover support spacer, 1/2" OD x 1/16" wall
6 DC2569-020	3/8 x 3" threaded rod
7 DF0587-00G	3/8-16" hex nut
8	Glazing block (by others)
9	Backing rod (by others)

5.10 Floor speed control

Fig. 5.10.1 Floor speed control assembly RS6074-010

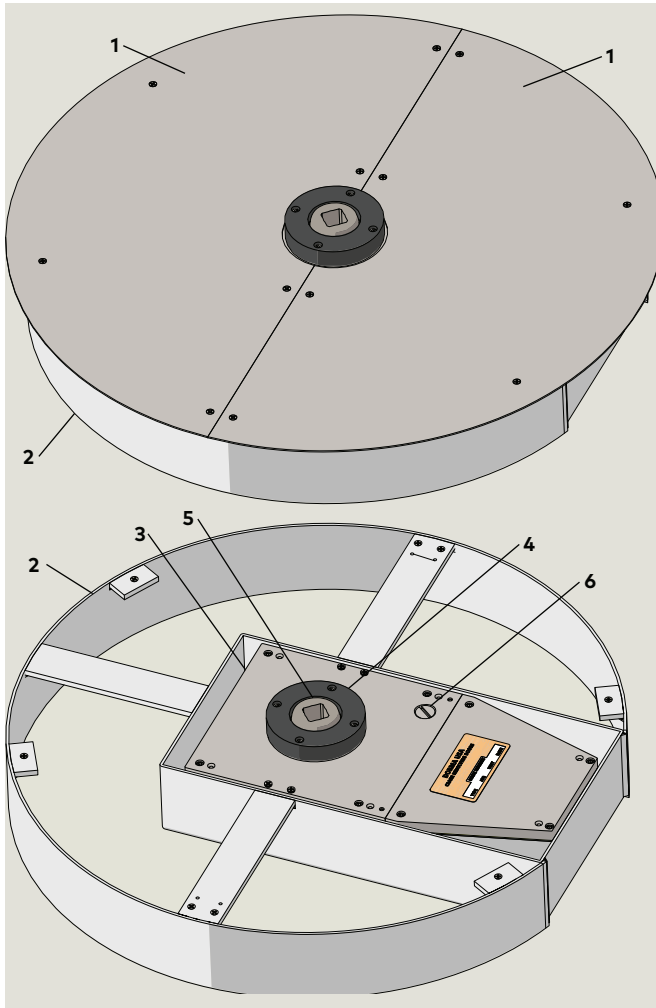


Table 5.10.1 In-ground speed control assemblies and parts

Part / Assembly	Description
1 RC6056-01G	Cover plate, 28 1/2" diameter SS
2 RC6186-010	Box, floor speed control, cement circular
3 RS6074-010	Assembly, floor speed control
4 RC6188-010	Collar, floor speed control, 1" standard
5	Drive shaft
6	0.500-16 x 3/4" undercut SFHMS

5.11 Fastener hardware

Fig. 5.11.1 Canopy fastening hardware

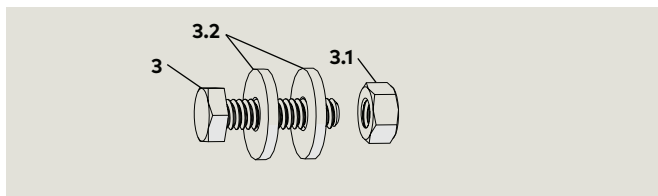


Fig. 5.11.2 Aluminum post to canopy fastening hardware

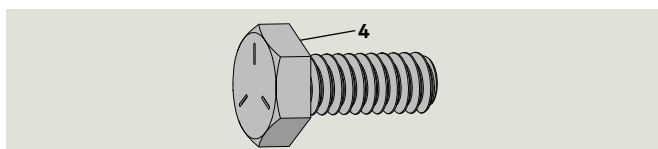


Fig. 5.11.3 Base assembly floor stud

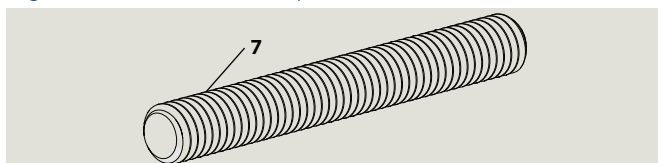


Fig. 5.11.4 Base to post fastening hardware

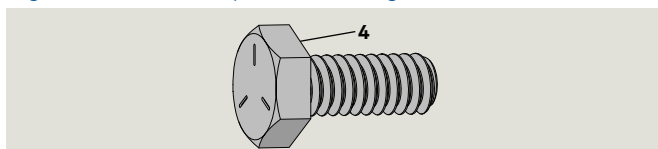


Fig. 5.11.5 Wing attachment hardware

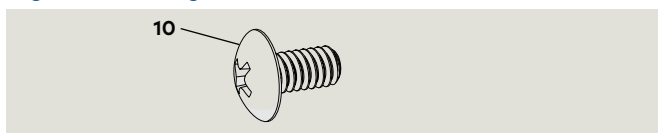


Fig. 5.11.6 Canopy attachment hardware

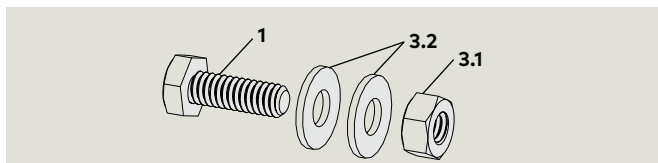


Table 5.11.1 IFastener hardware

Part / Assembly	Description
1 RF6055-01G	1/4-20 x 5/8" hex head bolt, SS
3 RF6055-02G	1/4-20 x 1" hex head bolt, SS
3.1 RF6121-01G	1/4-20 hex nut
3.2 RF6056-01G	3/4" OD flat washer, for 1/4-20 screw
4 RF6055-01G	1/4-20 x 5/8" hex head cap screw, SS
7 DC2569-020	3/8 x 3" threaded rod
10 RF6119-01G	1/4-20 x 1/2" truss head machine screw



TIPS AND RECOMMENDATIONS

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

5.11.1 Canopy fastening hardware; canopy shipped in two sections.

- Fig. 5.11.6
- Reference Chapter 13.

5.11.2 Aluminum post to canopy fastening hardware.

- Fig. 5.11.2
- Reference Chapter 14.

5.11.3 Base assembly floor studs.

- Fig. 5.11.3
- Reference Chapter 15.

5.11.4 Base to post fastening hardware.

- Fig. 5.11.4
- Reference Chapter 15.

5.11.5 Wing to center shaft hanger fastening hardware.

- Fig. 5.11.5
- Reference Chapter 18.

5.11.6 Canopy attachment hardware (split canopies).

- Fig. 5.11.6
- Reference Chapter 13.

6 Optional assemblies

6.1 Floor grill and pan assembly

Fig. 6.1.1 Floor grill and pan assembly

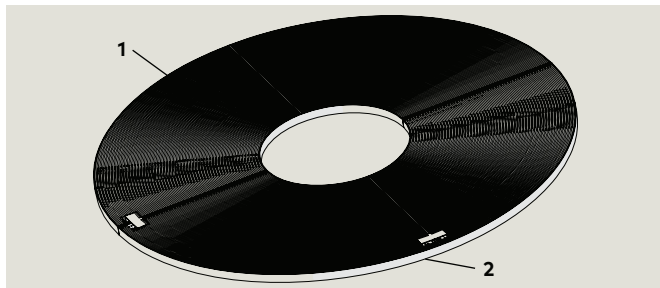


Table 6.1.1 Floor grill and pan

1	Floor grill
2	Floor pan

6.2 Ceiling lights

Fig. 6.2.1 LED light fixture and junction box

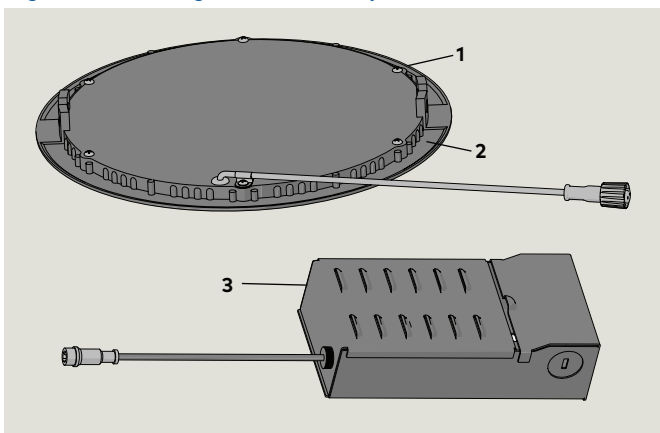


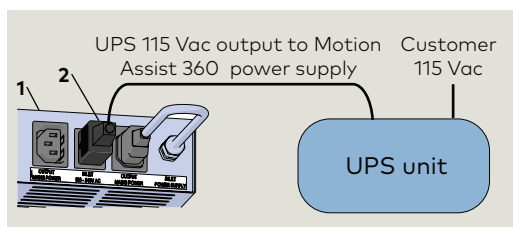
Table 6.2.1 Ceiling light and junction box

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

6.3 Uninterruptible Power Supply (UPS)

Fig. 6.3.1 UPS 115 Vac to Motion Assist 360 power supply

- 1 Motion Assist 360 power supply RX6001-001
- 2 AC inlet plug, customer connection



6.3.1 UPS AC output connection to Motion Assist 360 power supply.

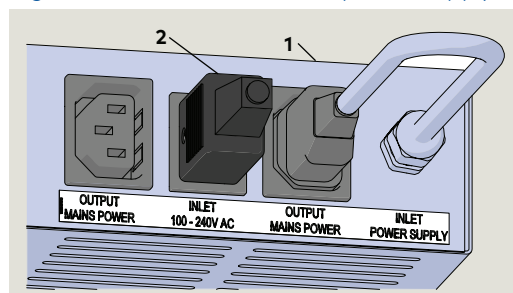
UPS 115 Vac output is wired to 100 - 240 Vac inlet plug on Motion Assist 360 power supply.

6.3.2 UPS power supply units.

UPS Part #	Rating		Maximum time
	VA	Watts	
12 foot diameter door			
RX6011-001	1500	900	3 hours
RX6012-001	500	300	1 hour
7 foot diameter door			
RX6011-001	1500	900	4 hours
RX6012-001	500	300	1.5 hours

Fig. 6.3.2 Motion Assist 360 power supply

- 1 Motion Assist 360 power supply RX6001-001
- 2 AC inlet plug, customer connection



7 Recommended Tools And Materials

7.1 Recommended tools

Fig. 7.1.1 Recommended tools



Table 7.1.1 Recommended tools

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

7.2 Recommended installation materials and installation hardware

Fig. 7.2.1 Recommended installation materials

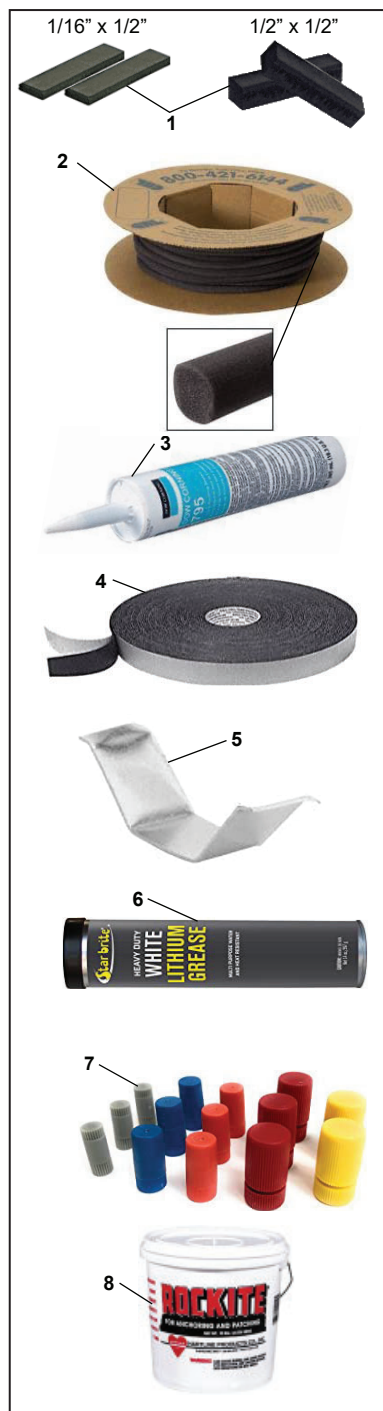


Fig. 7.2.2 Recommended installation hardware



Table 7.2.1 Recommended installation Materials

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

Table 7.2.2 Recommended installation hardware

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

*ASIN: Amazon numbers

8 Assembly safety

8.1 Safety during assembly

8.1.1 Assembly



WARNING

Incorrect assembly can put lives at risk!

If assembly does not take place in an approved area or if supplied materials and components are used for purposes other than to assemble the revolving door, this can lead to serious injury and significant material damage.

- Assemble revolving door in approved area only.
- Use only materials and components supplied for assembly of the revolving door.
- Never construct or configure the revolving door other than as described in this document.
- Never use equipment for assembly other than that described in this document.
- Do not install the revolving door over soft flooring (e.g. carpeting).
- Never affix additional objects to the revolving door or suspend objects from it.
- Never use replacement parts not approved by the manufacturer.

8.1.2 Heavy loads.



WARNING

Risk of injury from heavy loads!

Manual lifting of heavy components can lead to injury.

- Use appropriate equipment such as lift trucks and other lifting devices.
- Never lift alone.

8.1.3 Sharp edges and pointed corners.



WARNING

Risk of injury on sharp edges and pointed corners!

Sharp edges and pointed corners on components can cause abrasions and cuts.

- When handling sharp or pointed components, wear protective gloves and safety shoes.
- Handle components carefully and properly.
- When transporting components, take into account the component weight.

8.2 Cordon off work area



WARNING

Cordon off revolving door assembly location for the complete revolving door installation process.

9 Prepare finished floor

9.1 Assembly location

9.1.1 Assembly location documentation.

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 assembly location.
- 2. Crane Installation template (Ref. Chapter 11).
- 3. Verify assembly location and associated framing with Crane Shop documentation.

9.2 Preparing finished floor for revolving door assembly

9.2.1 Preparing finished floor.

NOTICE

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

Do not proceed if floor is not flat and level.

- Floor surface should be smooth without cracks or crevasses.

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.



WARNING

Risk of injury due to improper leveling!

If finished floor is not leveled before assembly, faults can occur during subsequent operation of the revolving door. This can lead to dangers that can cause serious injury and significant material damage.

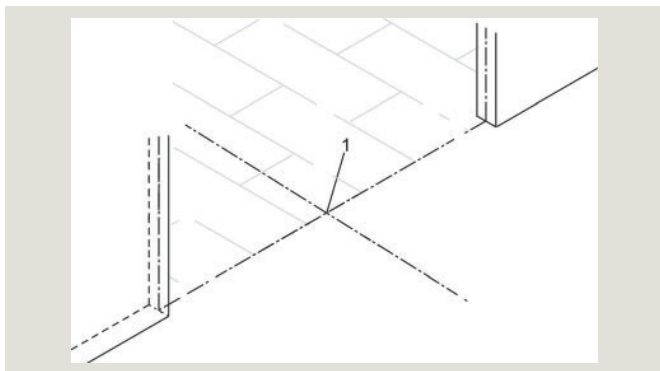
CAUTION

Material damage due to improper leveling!

Laser leveling device with stand:
Improper positioning of the stand or leveling staff may lead to measurement errors when leveling. Measurement errors can lead to incorrect assembly of the revolving door. This will result in material damage.

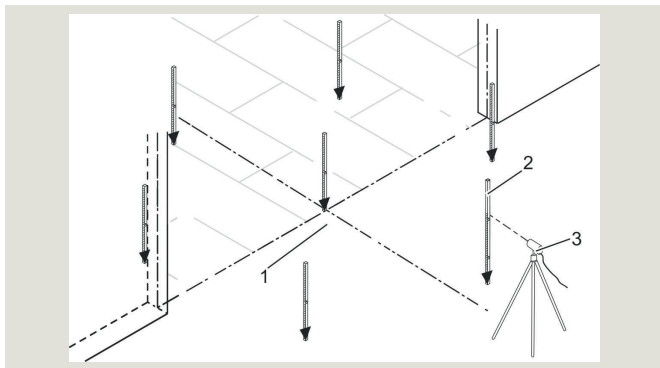
- Before leveling, ensure that the stand is securely positioned on the floor and cannot wobble or tilt.
- Before leveling, ensure that the laser leveling device is aligned horizontally on its stand.
- Always position the leveling staff vertically during leveling.
- After leveling, note the tolerance of ± 2 mm (1/16") for the individual measured value to the reference value.

Fig. 9.2.1 Center of revolving door axis



1 Axis center

Fig. 9.2.2 Laser level measuring points



1 Axis center

3 Laser leveling device

2 Leveling staff

9.2.2 Check level of finished floor.



TIPS AND RECOMMENDATIONS

Check floor level procedure in Para. 9.2.2 is a recommendation.

1. Position leveling device horizontally in front of assembly surface (Fig. 9.2.2).
2. Position leveling staff vertically at any point on assembly floor surface to select a reference point.



TIPS AND RECOMMENDATIONS

The reference point (step 2) is used for the following measurements.

3. Measure reference point and note reading.
4. Take measurements at a minimum of 6 different points, as shown in Fig. 10.4.2 and note readings.
5. Compare measurement points with reference value. The deviation tolerance is 1/16" [2 mm].

CAUTION

If measurements are outside of the deviation tolerance, the finished floor must be reworked or re-prepared by the building contractor.

9.2.3 Mark center of revolving door axis.

CAUTION

Material damage due to incorrect marking of revolving door axis center!

Inaccurate marking of the center of the axis of the revolving door on the assembly surface can lead to subsequent discrepancies during assembly. This can result in faults and material damage.

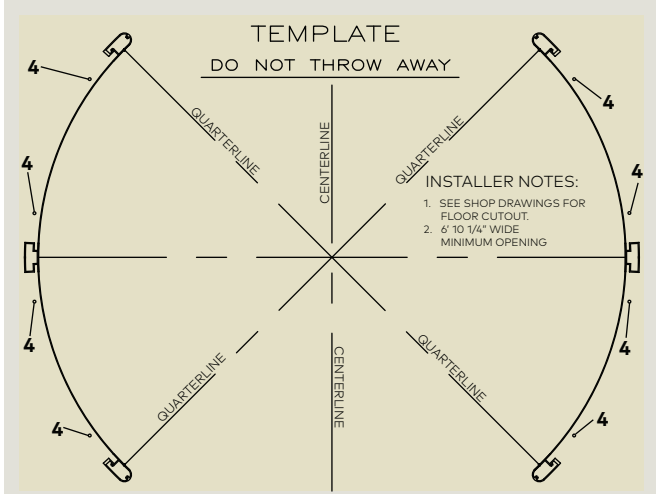
- Always accurately mark the axis center.
- Always use the supplied drilling template to mark hole locations.

1. Go to Chapter 10, Installation Template.

10 Installation template

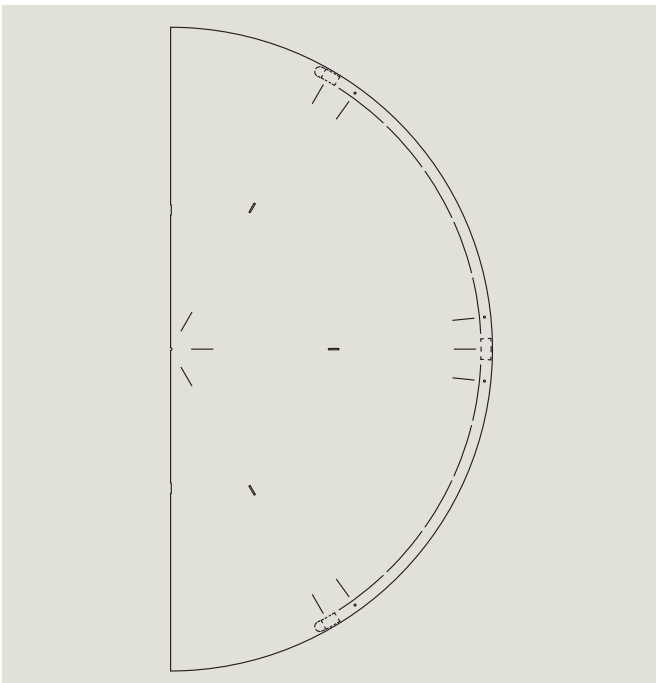
10.1 Installation template

Fig. 10.1.1 Full size cardboard installation template



4 Stud hole locations in enclosure base

Fig. 10.1.2 Full size Masonite installation template; 8' OD, 3 wing door example



10.1.1 Locate full size installation template.

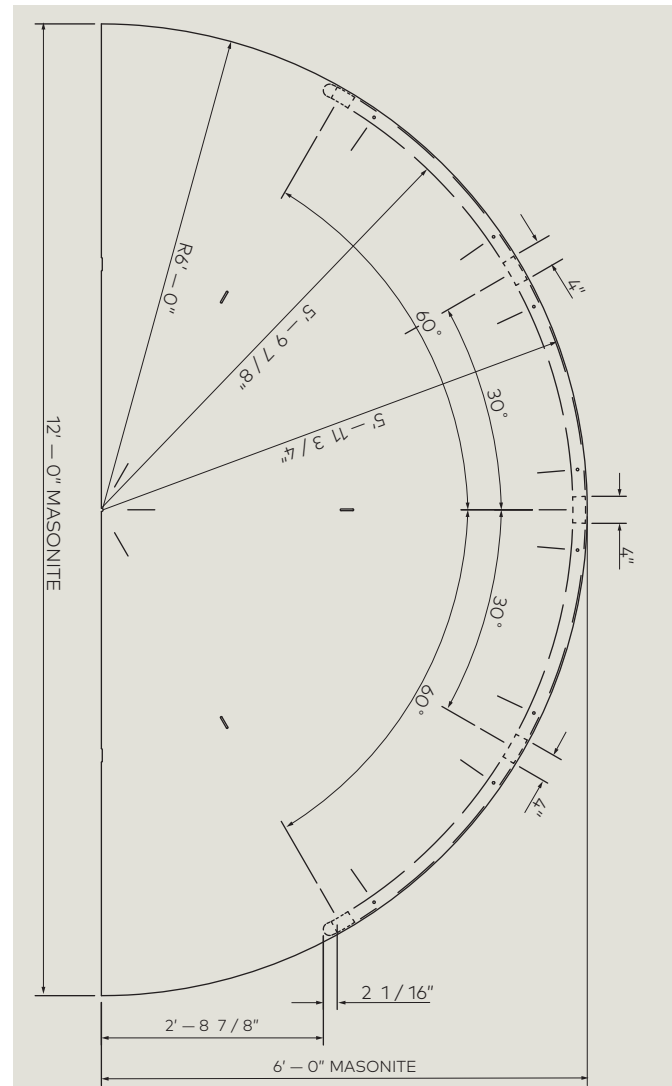


TIPS AND RECOMMENDATIONS

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

1. Locate full size template.
 - Template shipped in canopy shipping crate.
2. Reference Crane shop drawing for template orientation at building attachment.

Fig. 10.1.3 Full size Masonite installation template; 12' OD, 3 wing door example



11 Install floor speed control

11.1 Mark door position on floor using template

Fig. 11.1.1 Template placed on floor

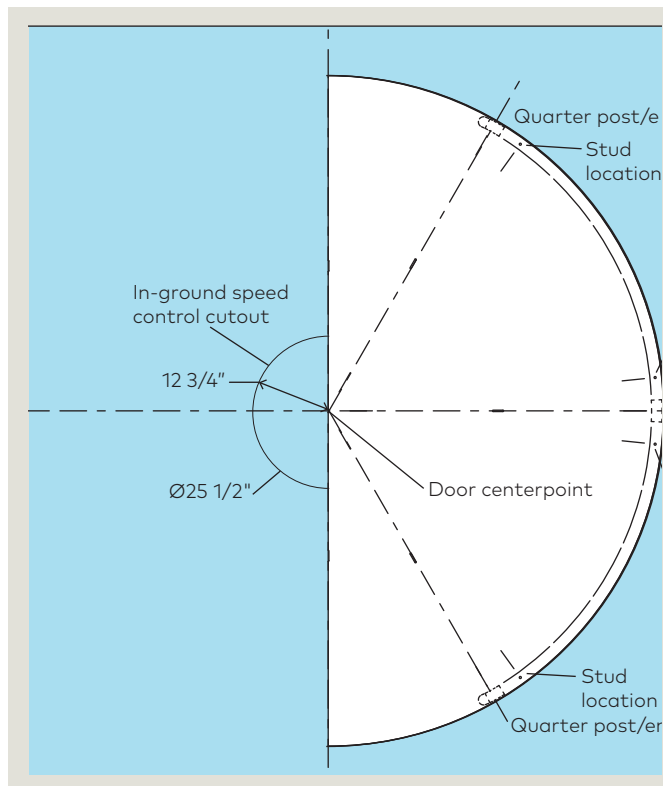
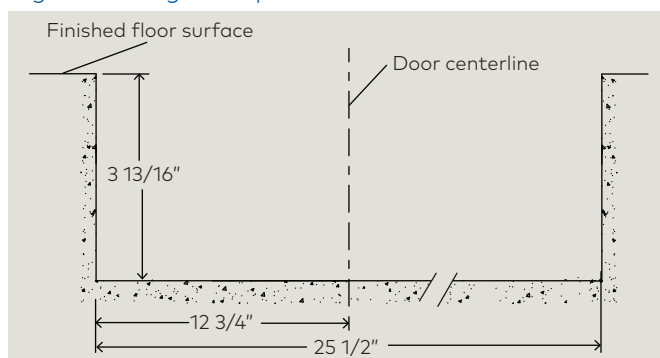


Fig. 11.1.2 In ground speed control floor cutout



TIPS AND RECOMMENDATIONS

Refer to shop drawing for floor speed control installation detail.

11.1.1 Position floor template.

1. Position template at door centerpoint.
2. Orient template to building interface.
3. Verify floor cutout diameter of 25 1/2".
4. Secure template to floor.

NOTICE

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

NOTICE

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

11.1.2 Mark lines on floor.

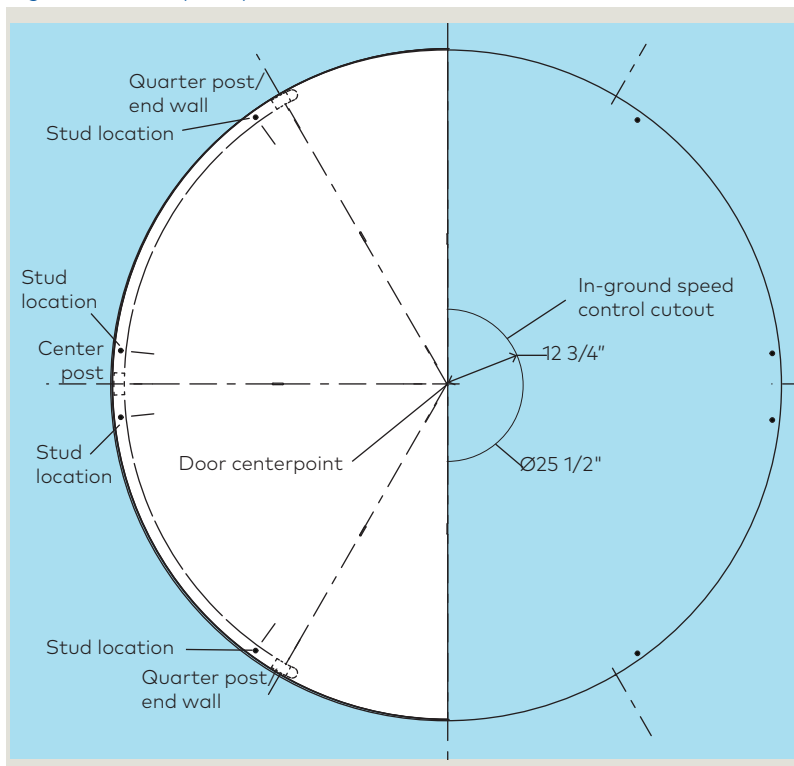
1. Draw door centerlines.
2. Mark quarter post and center post centerlines.
3. Mark mounting base stud locations.
4. Trace door outside radius.

11.1.3 Mark perimeter of speed control cutout on floor.

NOTICE

- If floor cutout is not present, mark perimeter of circular cutout as shown in Fig. 11.1.2 and 11.1.3.
- Contractor note: provide $\text{Ø}25\ 1/2'' \times 3\ 13/16''$ deep circular cutout to accept floor mounted speed control.

Fig. 11.1.3 Template position reversed on floor



11.1.4 Reverse template position on floor.

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

11.1.5 Mark lines on floor.

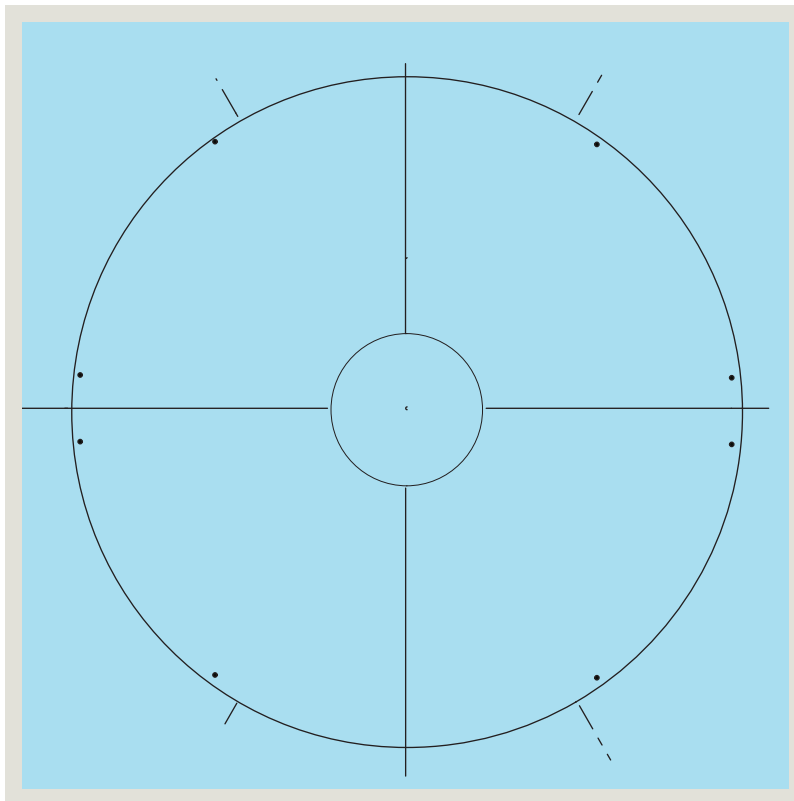
1. Draw door centerlines.
2. Mark quarter post and center post lines.
3. Mark mounting base stud locations.
4. Trace door outside radius.

11.1.6 Remove template.

1. Remove template.

11.2 Drill holes for mounting base studs

Fig. 11.2.1 Floor marked with door location and mounting base holes



11.2.1 Drill pilot holes in floor.



WARNING

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

11.2.2 Drill mounting base pilot holes.

1. Drill pilot holes at each mounting base stud hole location.

11.2.3 Drill anchor holes in floor.

1. Drill anchor holes at each pilot hole location.



TIPS AND RECOMMENDATIONS

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

11.3 Install in-ground speed control in floor cutout

- 1 Collar
- 2 Drive shaft

Fig. 11.3.1 In-ground speed control

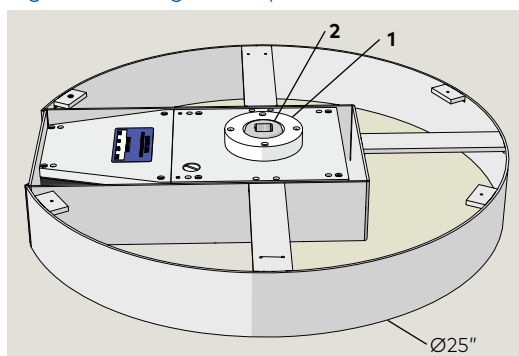


Fig. 11.3.2 In-ground speed control in floor cutout

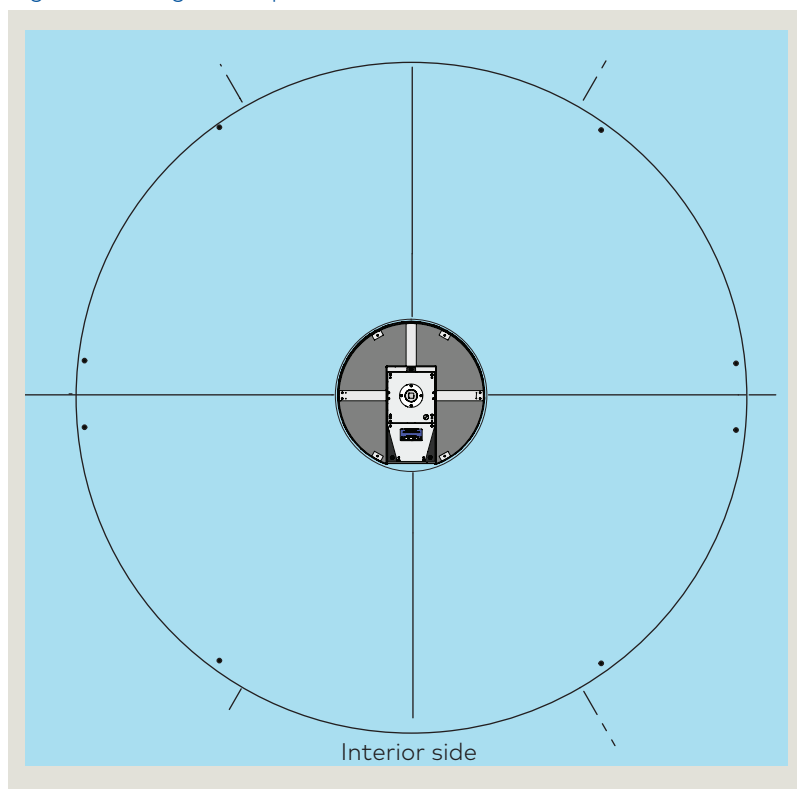
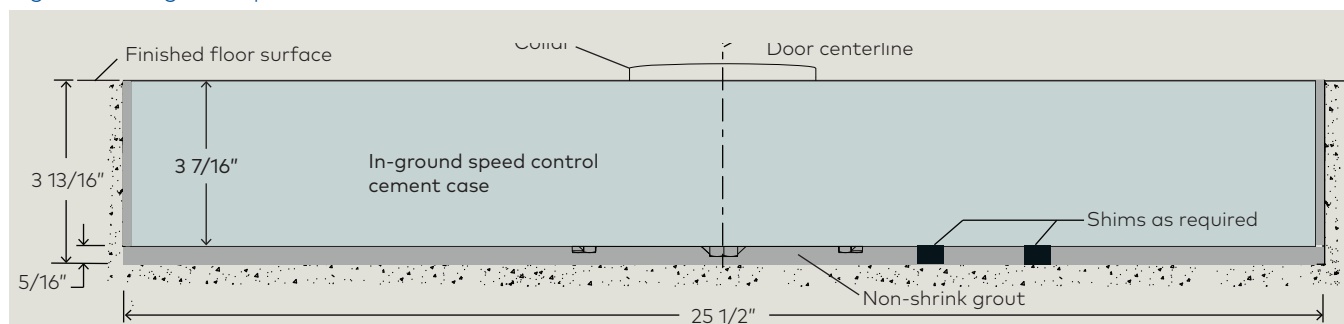


Fig. 11.3.3 In ground speed control installed in floor cutout



11.3.1 Verify floor cutout location and dimensions.

1. Verify floor cutout location (Para. 11.1) and cutout dimensions (Fig. 11.3.3).

11.3.2 Set cement case height, center speed control drive shaft at door centerpoint, align case with covers at building interface.

1. Shim cement case in floor cutout until top of case is flush with finished floor surface
2. Position in-ground speed control collar at door centerpoint location (Figs. 11.3.4 and 11.3.5).
3. Align cement case with covers at building interface.

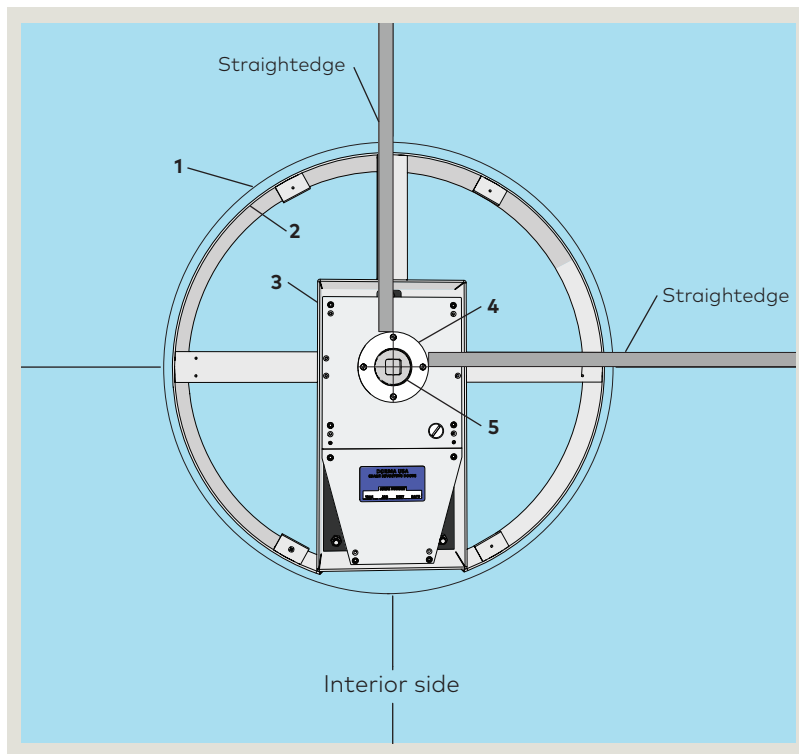
NOTICE

- Cement case must be level, plumb and flush with finished floor surface.
- Cement case covers must be aligned with building interface.
- Speed control drive shaft centerpoint must be positioned at door centerpoint.

11.3.3 Fill floor cutout with non-shrink grout.

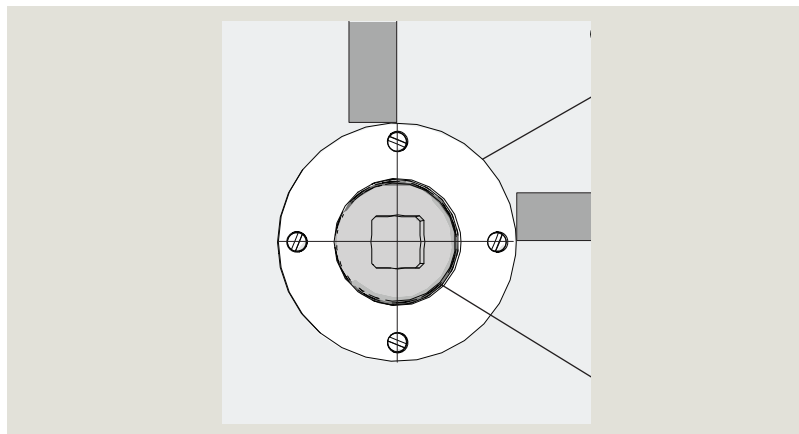
1. Fill floor cutout with non-shrink grout to finished floor surface.
2. Recheck speed control collar is at door centerpoint.
3. Allow grout to set before proceeding.

Fig. 11.3.4 In-ground speed control detail



- | | | |
|----------------|----------------------|---------------|
| 1 Floor cutout | 3 Speed control | 5 Drive shaft |
| 2 Cement case | 4 Drive shaft collar | |

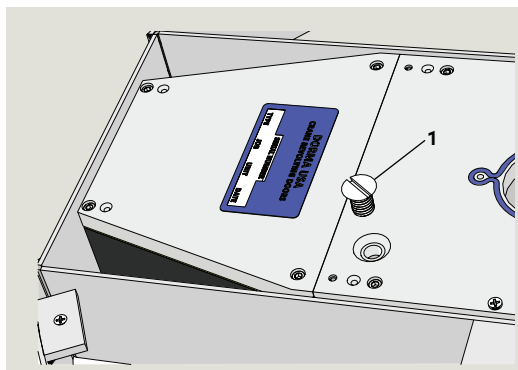
Fig. 11.3.5 Speed control collar, drive shaft



11.4 Add oil to speed control gearcase

- 1/2" slotted flat head machine screw - undercut

Fig. 11.4.1 Oil fill hole



11.4.1 Add oil to speed control gearcase.

1. Oil fill hole: remove 1/2" slotted flat head machine screw (4) from sub plate.
2. Pour entire contents of bottle into oil fill hole.
3. Replace machine screw.

CAUTION

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

12 Motion Assist 360 drive assembly – 3 1/8" canopy

12.1 Canopy mounted drive bracket assembly, floor speed control

Table 12.1.1 Motion Assist 360 drive configurations, 3 inch canopy

Drive assembly	Figure	Motion Assist 360 drive controls	Speed control
RS6048-001	12.1.3	Canopy mounted	Floor
RS6048-002	12.1.1	Remote enclosure	

Fig. 12.1.1 Assembly, drive bracket
 Motion Assist 360 drive, floor mounted speed control

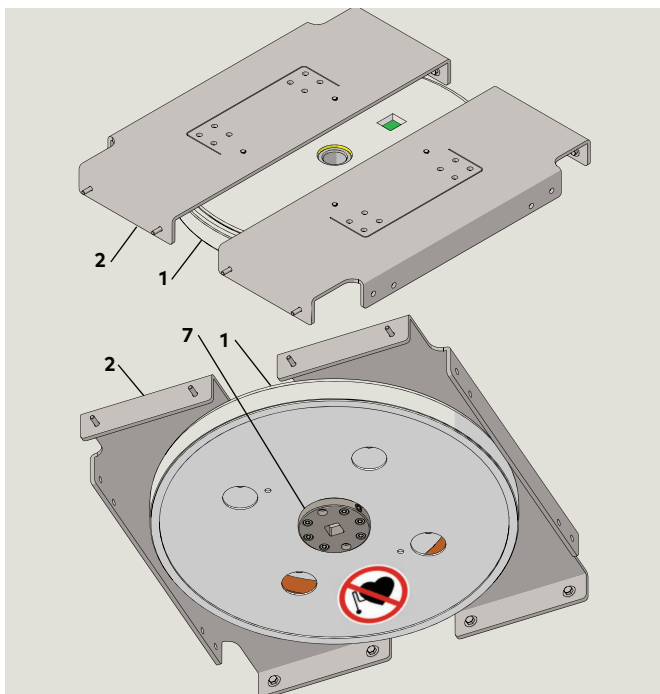


Fig. 12.1.2 Remote control enclosure

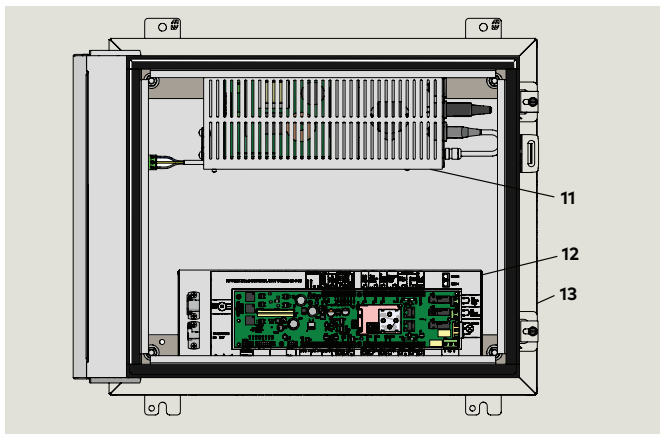
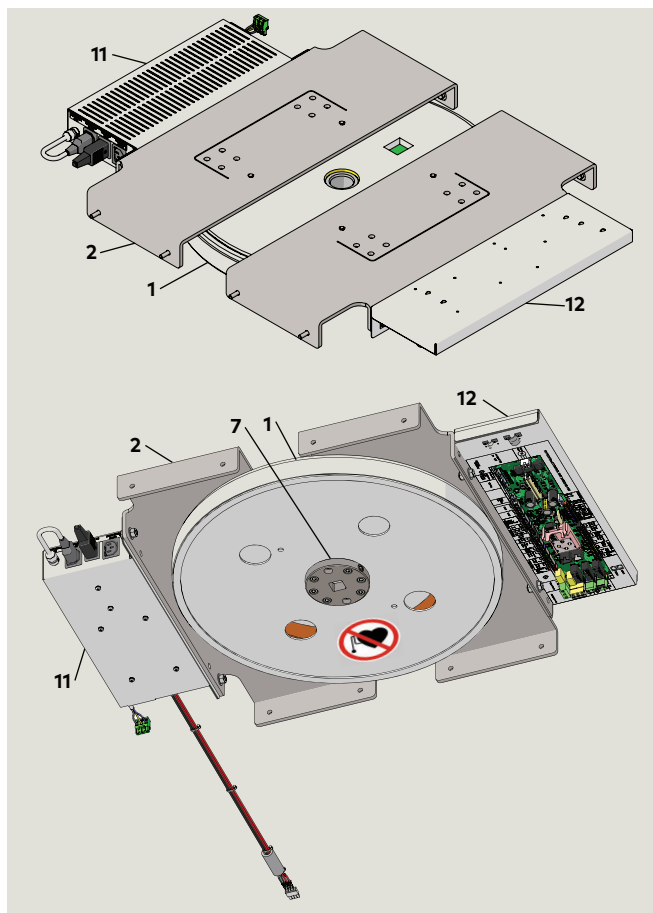


Table 12.1.2 Motion Assist 360 drive hardware

Part / Assembly	Description
1 RX6010-001	Motion Assist 360 drive
2 RC6072-001	Mounting plate, 24" spacing
7 RC6068-001	Drive, shaft adaptor
11 RX6001-001	Motion Assist 360 power supply
12 RX6002-001	Motion Assist 360 control
13 RK6007-001	Remote enclosure kit assembly

Fig. 12.1.3 Assembly, drive bracket
 Motion Assist 360 drive and controls, floor mounted speed control



12.2 Unpack Motion Assist 360 drive and remove transport bolts

Fig. 12.2.1 Motion Assist 360 drive

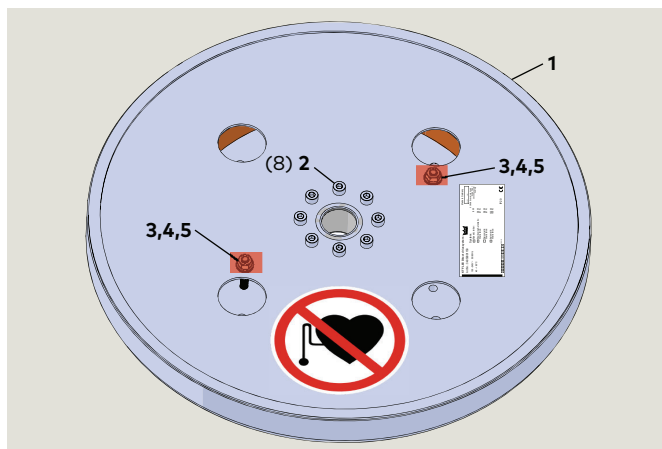


Fig. 12.2.2 Motion Assist 360 drive with transport bolts

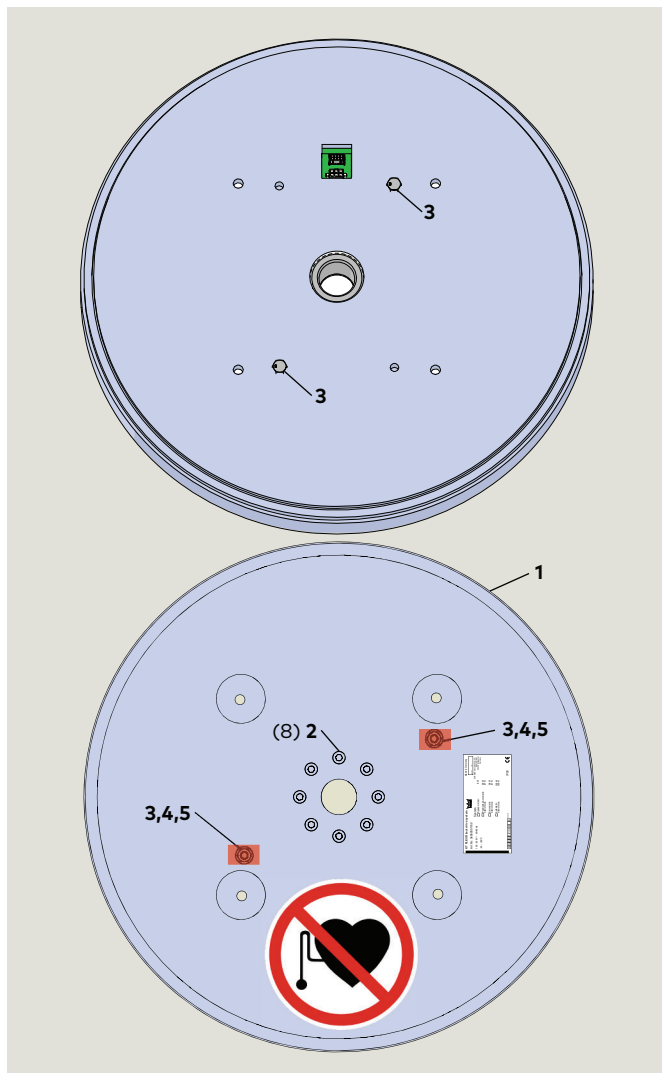


Table 12.2.1 Motion Assist 360 transport bolt hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RF6003-01C (8) M8 x 20 mm hex bolt
Transport bolt hardware	
3	5/16 x 2 1/4" hex bolt
4	5/16" hex nut
5	5/16" steel flat washer

12.2.1 Unpack Motion Assist 360 drive.

1. Unpack drive from its shipping container.



WARNING

Use caution when unpacking and lifting Motion Assist 360 drive from its shipping container!

CAUTION

Refer to any warning tags on shipping container!

12.2.2 Remove transport bolts.



WARNING

Transport bolts must be removed from operator prior to installation!

- Transport bolts are used to prevent operator rotation during shipment.
- Use caution when handling drive once bolts have been removed! Drive is free to turn!

1. Remove two transport bolts from Motion Assist 360 drive.
 - Transport bolts are secured on operator drive side with (2) hex nuts.



WARNING

Use caution when lifting and positioning Motion Assist 360 drive!

12.3 Motion Assist 360 drive – adaptor flange installation

Fig. 12.3.1 Motion Assist 360 drive with (8) M8 SHCS

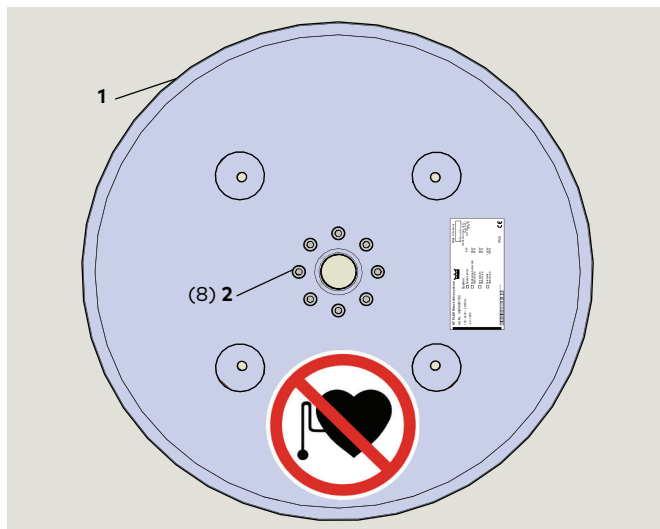


Fig. 12.3.2 M8 x 20 mm SHCS

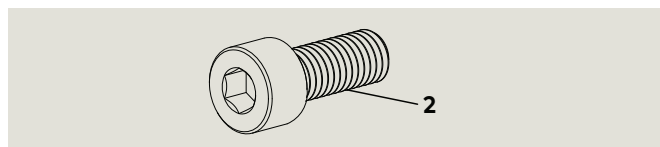


Fig. 12.3.3 Motion Assist 360 drive with (2) M8 SHCS

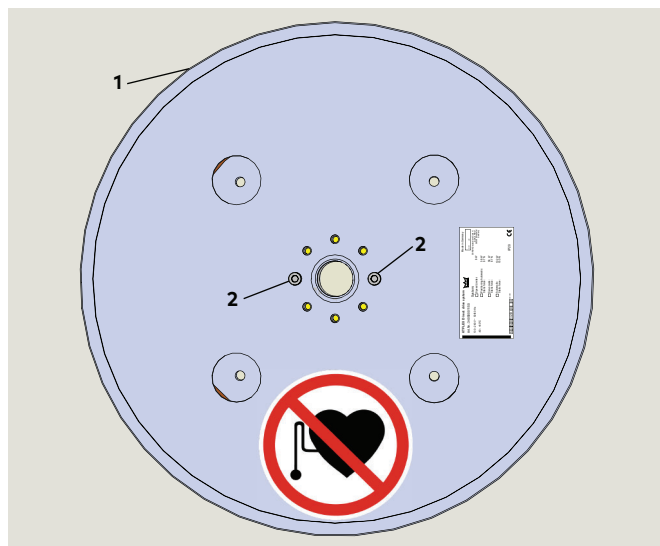


Table 12.3.1 Motion Assist 360 M8 SHCS

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RF6003-01C M8 x 20 mm socket head screw
3	RC6068-001 Drive, shaft adaptor
4	Adaptor flange alignment holes



WARNING

Use caution when lifting and positioning Motion Assist 360 drive!

12.3.1 Remove (6) M8 x 20 mm socket head screws.

Drive is shipped from factory with eight M8 x 20 mm socket head screws installed.

1. Remove six of the eight M8 x 20 socket head screws, leaving two screws on opposite sides (Fig. 14.3.3).



TIPS AND RECOMMENDATIONS

The two remaining SHS (Fig. 12.3.3) are used for shaft adaptor (Fig. 12.3.4) alignment.



TIPS AND RECOMMENDATIONS

Use socket wrench with 6 mm hex key socket.

12.3.2 Check tightening torque on two M8 socket head screws.

1. Use torque wrench to check tightening torque on the two M8 SHS (Fig. 12.3.3).



WARNING

Danger from incorrect screw tightening torque!

If operator drive shaft adapter mounting screws are tightened with an incorrect tightening torque, components may detach causing injuries and material damage.

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

14.3.3 Maximum screw tightening torque.

Screw diameter	Maximum permissible screw tightening torque.
M8	15.5 Nm
	10 ft-lb

Fig. 12.3.4 Drive, shaft adaptor

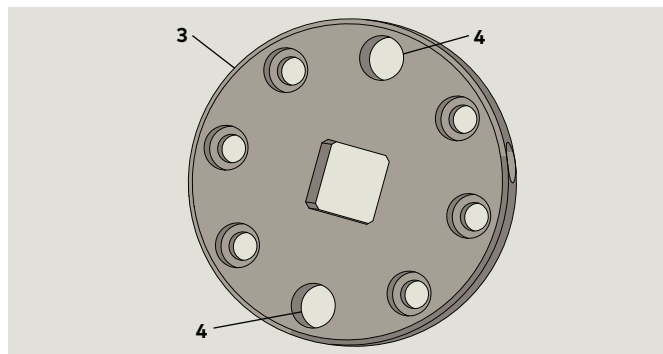


Fig. 12.3.5 Shaft adaptor mounting to Motion Assist 360 drive

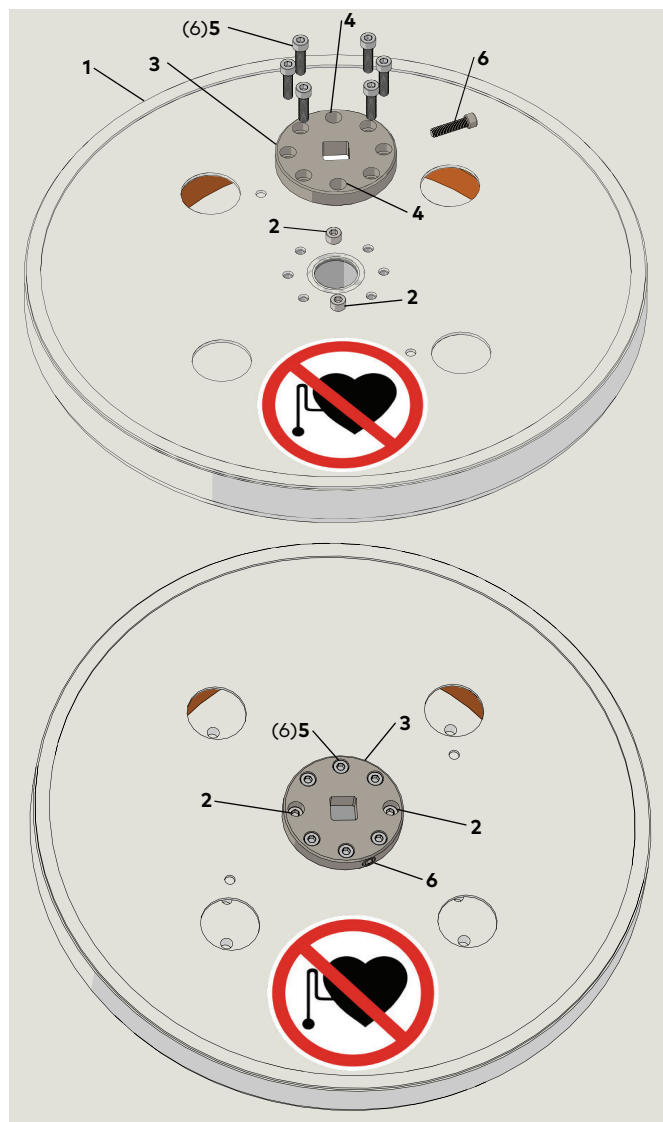


Table 12.3.2 Motion Assist 360 adaptor flange hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RF6003-01C M8 x 20 mm socket head screw
3	Drive, shaft adaptor
4	Shaft adaptor alignment holes
5	RF6003-02C (6) M8 x 30 mm socket head screw
6	RF6059-02C 5/16-18 x 1 1/4" SHCS, black

12.3.4 Install adapter flange on Motion Assist 360 drive.



WARNING

Use caution when lifting and positioning Motion Assist 360 drive!

1. Place adaptor flange on drive, with two alignment holes inserted over the M8 x 20 mm socket head screws.
2. Secure adaptor flange to drive using six M8 x 30 mm socket head screws.



TIPS AND RECOMMENDATIONS

Use socket wrench with 6 mm hex key socket.

12.3.5 Check tightening torque on M8 socket head screws.

1. Use torque wrench to check tightening torque on the M8 socket head screws (Fig. 12.3.5).



WARNING

Danger from incorrect screw tightening torque!

If operator drive shaft adaptor mounting screws are tightened with an incorrect tightening torque, components may detach causing injuries and material damage.

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

12.3.6 Maximum screw tightening torque.

Screw diameter	Maximum permissible screw tightening torque.
M8	15.5 Nm 10 ft-lb

12.4 Motion Assist 360 drive – mounting plate installation

Fig. 12.4.1 Motion Assist 360 drive and mounting plates

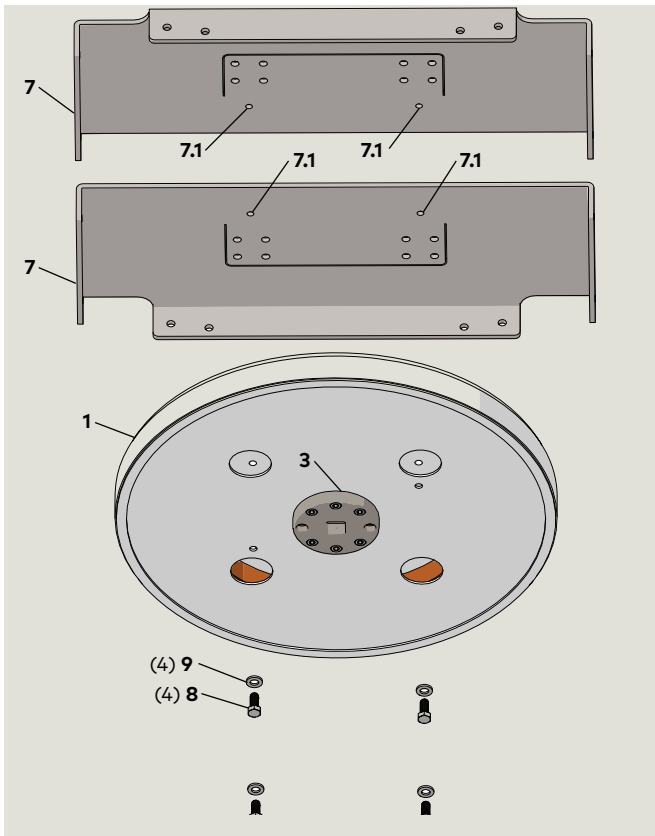


Fig. 12.4.2 Top drive plates installed

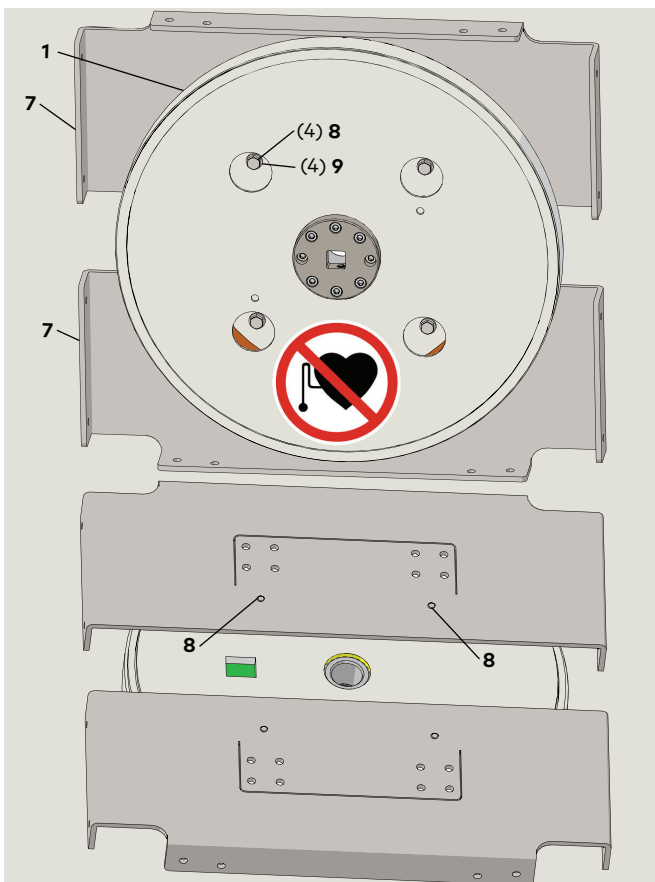


Table 12.4.1 Motion Assist 360 top drive plate installation

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
3	RC6058-001 Drive, adaptor flange
7	RC6072-001 Mounting plate, overhead drive, floor speed control
7.1	3/8-16" tapped hole
8	RF6057-01G 3/8-16 x 3/4" SS hex head screw
9	RF6058-01G SS washer

12.4.1 Install top drive plates on Motion Assist 360 drive.



WARNING

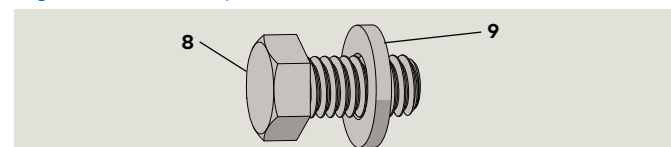
Use caution when lifting and positioning Motion Assist 360 drive!

- Secure each top drive plate to the Motion Assist 360 drive using two 3/8-15 x 3/4" hex head screws and flat washers.
 - Thread screws into 3/8-16" tapped holes in adaptor flanges and tighten.

12.4.2 3/8" hex head screw torque requirements.

Screw diameter	Maximum permissible screw tightening torque.
3/8"	25 Nm
	18.5 ft-lb

Fig. 12.4.3 Drive plate hex head screw and washer



12.5 Install Motion Assist 360 control

Fig. 12.5.1 Motion Assist 360 drive assembly RS6048-002

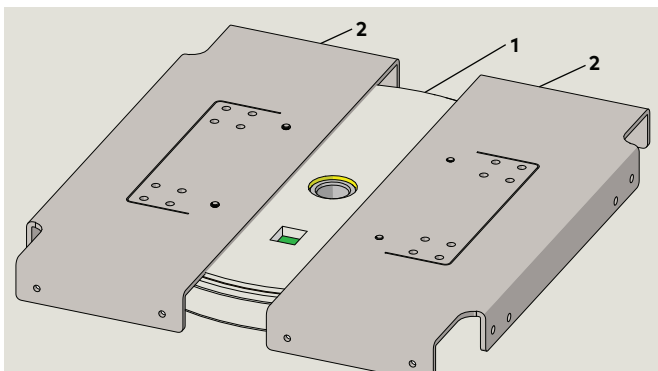


Fig. 12.5.2 Mounting hardware

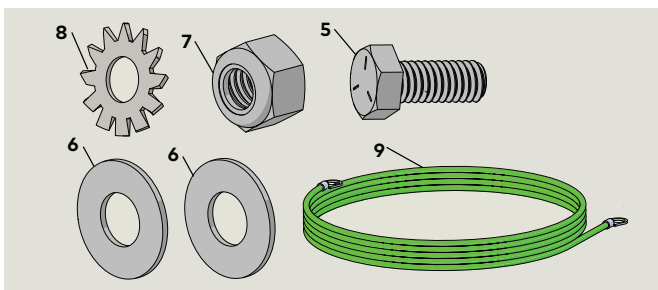
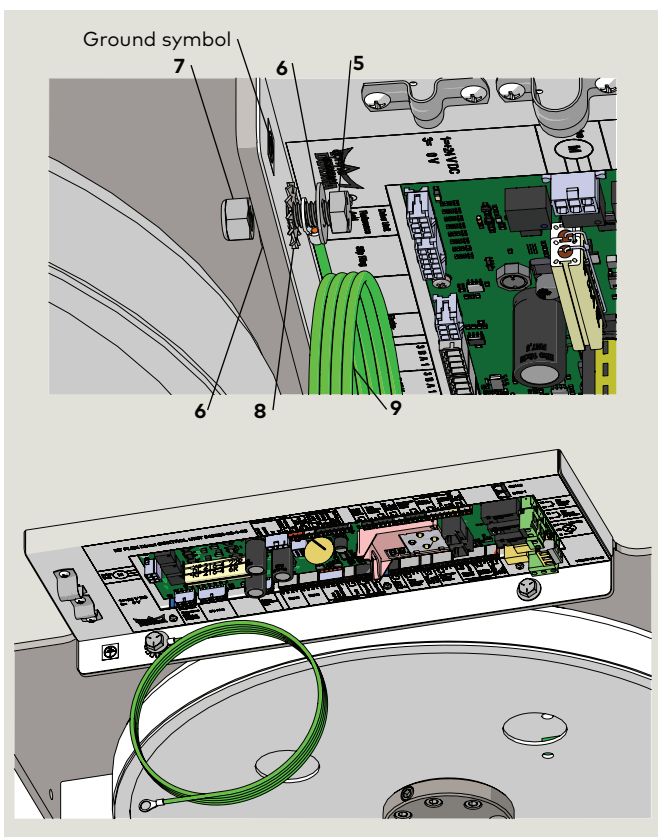


Fig. 12.5.3 Motion Assist 360 control mounting to top drive plate



NOTICE

If Motion Assist 360 control and power supply mounted in remote enclosure, proceed to Para.

Table 12.5.1 Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6072-001 Mounting plate, overhead drive, ground speed control
3	RX6002-001 Motion Assist 360 control
4	RX6001-001 Motion Assist 360 power supply
5	RF6012-01G 5/16-18 x 3/4" hex head screw
6	RF6017-01G SS flat washer for 5/16" screw, 0.344 ID, 0.75" OD
7	RF6013-01G Steel nylon-insert locknut, 5/16 - 18
8	RF6016-01G 5/16" external tooth lock washer
9	RX6009-001 Ground wire kit (2 per package)

12.5.1 Install Motion Assist 360 control onto drive mounting plate.



WARNING

Use caution when lifting and positioning mounting bracket assembly!

- Place following hardware in order on 3/4" hex head screw by ground symbol.
 - 3/4" OD flat washer
 - ground wire ring lug
 - 5/16" external tooth lock washer
- Insert 3/4" hex head screw in control bracket mounting hole next to ground symbol.
- Place 3/4" OD flat washer on end of hex head screw.
- Thread locknut onto hex head screw and tighten.
- Place following hardware in order on second 3/4" hex head screw:
 - 3/4" OD flat washer
- Insert 3/4" hex head screw in second control bracket mounting hole
- Place 3/4" OD flat washer on end of hex head screw.
- Thread locknut onto hex head screw and tighten.

12.6 Install Motion Assist 360 power supply

Fig. 12.6.1 Mounting hardware

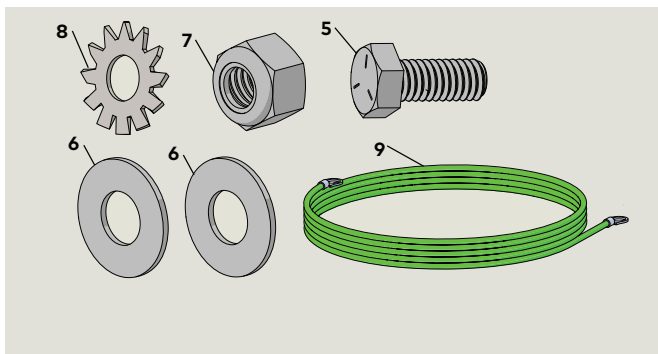


Fig. 12.6.2 Motion Assist 360 power supply mounting to top drive plate

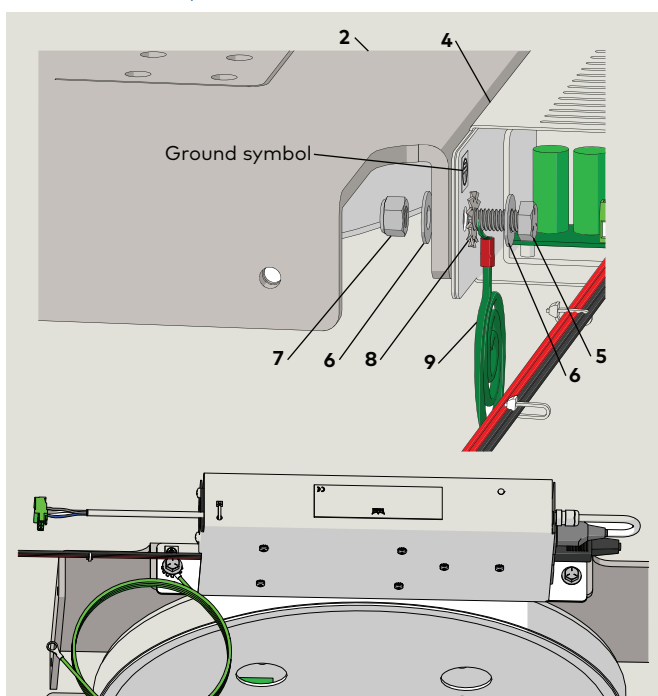


Table 12.6.1 Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6072-001 Mounting plate, overhead drive, floor speed control
3	RX6002-001 Motion Assist 360 control
4	RX6001-001 Motion Assist 360 power supply
5	RF6012-01G 5/16-18 x 3/4" hex head screw
6	RF6017-01G SS flat washer for 5/16" screw, 0.344 ID, 0.75" OD
7	RF6013-01G Steel nylon-insert locknut, 5/16 - 18
8	RF6016-01G 5/16" external tooth lock washer
9	RX6009-001 Ground wire kit (2 per package)

12.6.1 Install Motion Assist 360 control onto top drive plate.



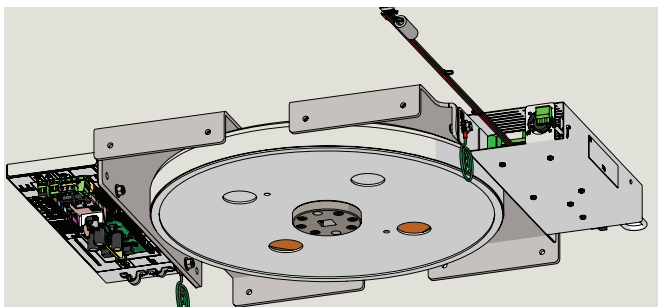
WARNING

Use caution when lifting and positioning mounting bracket assembly!

- Place following hardware in order on 3/4" hex head screw by ground symbol.
 - 3/4" OD flat washer
 - ground wire ring lug
 - 5/16" external tooth lock washer
- Insert 3/4" hex head screw in control power supply bracket mounting hole next to ground symbol.
- Place 3/4" OD flat washer on end of hex head screw.
- Thread locknut onto hex head screw and tighten.
- Place following hardware in order on second 3/4" hex head screw:
 - 3/4" OD flat washer
- Insert 3/4" hex head screw in second power supply bracket mounting hole
- Place 3/4" OD flat washer on end of hex head screw.
- Thread locknut onto hex head screw and tighten.

12.7 Motion Assist 360 drive assembly

Fig. 12.7.1 RS6048-001 Motion Assist 360 drive assembly



13 3 1/8" Canopy installation

13.1 Canopy shipped as single assembly – less than 8 feet outside diameter

Fig. 13.1.1 3 1/8" canopy assembly, cover view

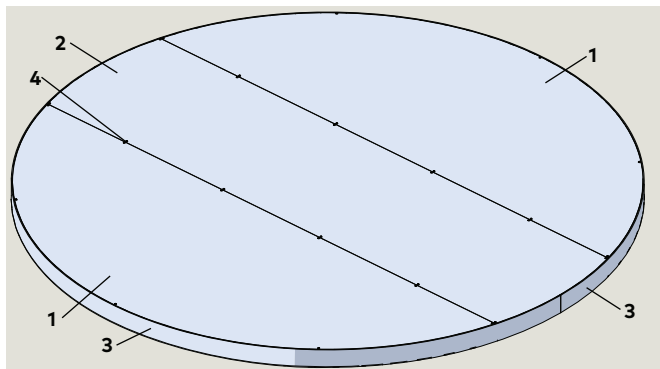


Fig. 13.1.2 3 1/8" canopy assembly, soffit view

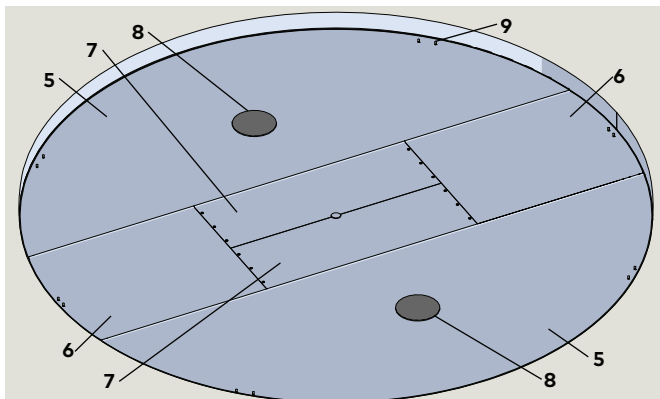


Fig. 13.1.3 Canopy with covers removed

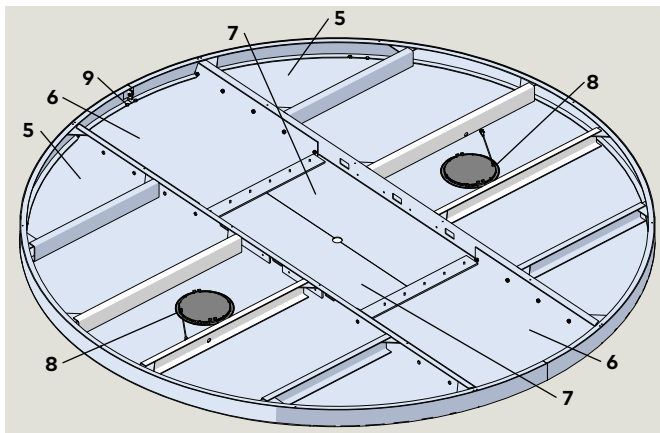


Fig. 13.1.4 Cover screw

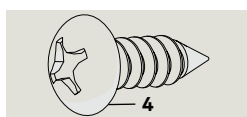


Fig. 13.1.5 Hex head screw

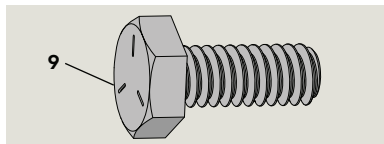


Table 13.1.1 3 1/8" 4 wing canopy parts DS6051-001

Part / Assembly	Description
1	Outer canopy cover
2	Inner canopy cover
3	Canopy fascia
4	RF3016-01Z #8 x 1/2" Phillips round head sheet metal screw, canopy covers
5	Outer soffit
6	Outer center soffit
7	Inner center soffit
8	RC6320-010 LED light, 9" (option)
9	RF6055-01G 1/4-20 x 5/8" Hex head screws, Post mounting (Fig. 15.1.5)

13.1.1 Uncrate canopy shipping crate.

1. Uncrate canopy shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.



WARNING

Use caution when lifting and positioning canopy assembly!

CAUTION

Place canopy assembly on elevated smooth surface.

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

13.1.2 Remove outer and center top covers.

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



TIPS AND RECOMMENDATIONS

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

13.2 Canopy shipped in two sections – 8 feet and over outside diameters

13.2.1 Uncrate canopy shipping crates.

1. Uncrate canopy shipping crates.

CAUTION

Refer to warning tag on shipping crates regarding unpacking procedure.



WARNING

Use caution when lifting and positioning canopy assemblies!

CAUTION

Place canopy assemblies on elevated smooth surface.

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

13.2.2 Remove outer and center top covers.

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

Table 13.2.1 3 1/8" 4 wing canopy parts DS6051-001

Part / Assembly	Description
1	Outer canopy cover
2	Inner canopy cover
3	Canopy fascia
4	RF3016-01Z 8-15 x 1/2" Phillips round head sheet metal screw, canopy covers (Fig. 15.1.3)
5	Outer soffit
6	Outer center soffit
7	Inner center soffit
8	RC6320-010 LED light (option)
9	RF6055-01G 1/4-20 x 5/8" Hex head screw
10	RF6121--01G 1/4-20 hex nut



TIPS AND RECOMMENDATIONS

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

Fig. 13.2.1 3 1/8" canopy assembly, split for shipment, cover view

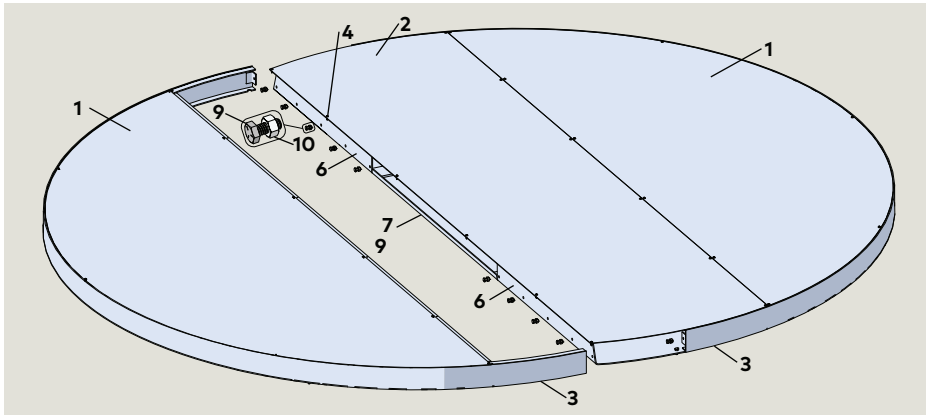


Fig. 13.2.3 Hex head screw

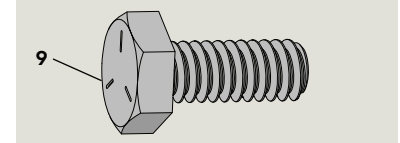


Fig. 13.2.4 Hex nut

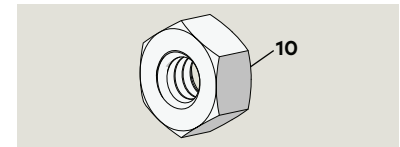


Fig. 13.2.2 3 1/8" canopy assembly, split for shipment, covers removed

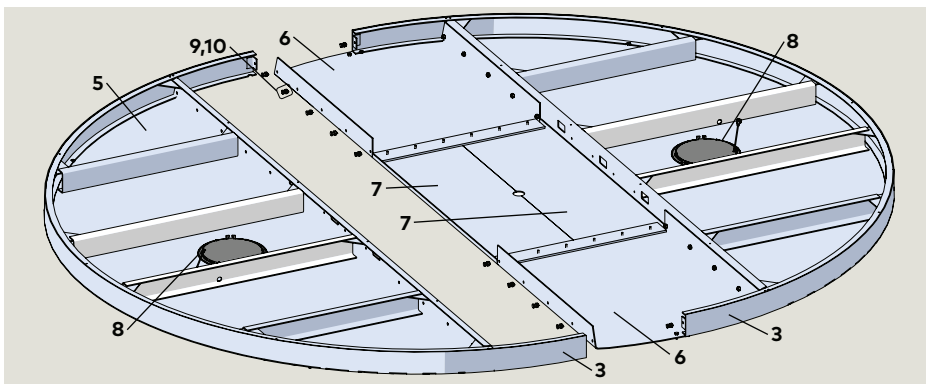
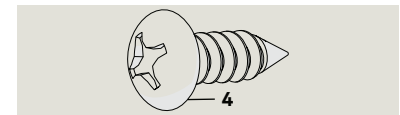


Fig. 13.2.5 Cover screw



13.2.3 Fasten canopy sections together.

1. Place canopy soffit sections together.
2. Fasten inner center soffit and outer soffit sections together using 1/4-20 x 5/8" hex screws and 1/4-20 hex nuts (Fig. 13.2.3 and 13.2.4).
3. Fasten canopy fascia section brackets together using one 1/4-20 x 5/8" hex screw and 1/4-20 hex nut at each bracket.

Fig. 13.2.6 3 1/8" canopy sections fastened together

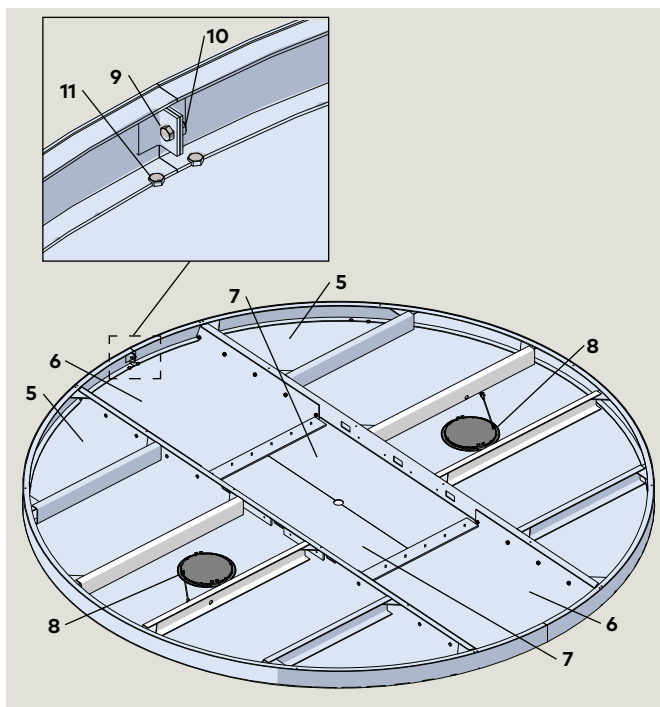


Table 13.2.2 3 1/8" 4 wing canopy parts DS6051-001

Part / Assembly	Description
1	Outer canopy cover
2	Inner canopy cover
3	Canopy fascia
4 RF3016-01Z	8-15 x 1/2" Phillips round head sheet metal screw, canopy covers (Fig. 15.1.3)
5	Outer soffit
6	Outer center soffit
7	Inner center soffit
8 RC6320-010	LED light (option)
9 RF6055-01G	1/4-20 x 5/8" Hex head screw
10 RF6121-01G	1/4-20 hex nut
11 RF6055-01G	1/4-20 x 5/8" Hex head screw for post fastening

13.3 Prepare canopy for Motion Assist 360 drive bracket assembly installation

13.3.1 Remove inner center soffits.

1. Position canopy for access to inner center soffit fasteners (Fig. 13.3.2).



WARNING

Use caution when lifting and positioning canopy assembly!

2. Remove inner center soffits.
 - Remove 0.19-24 x 3/4" FHMS securing inner center soffits to canopy inner bottom brace plates.
 - Remove soffits and set aside.

Table 13.3.1 Canopy soffits and hardware

Part / Assembly	Description
6	Inner center soffit
7	Inner bottom brace plate
8	RC6320-010 LED light (optional)
12	RF6115-02G 10-24 x 3/4" Phillips FHMS

Fig. 13.3.1 Canopy soffit view, inner center soffits installed

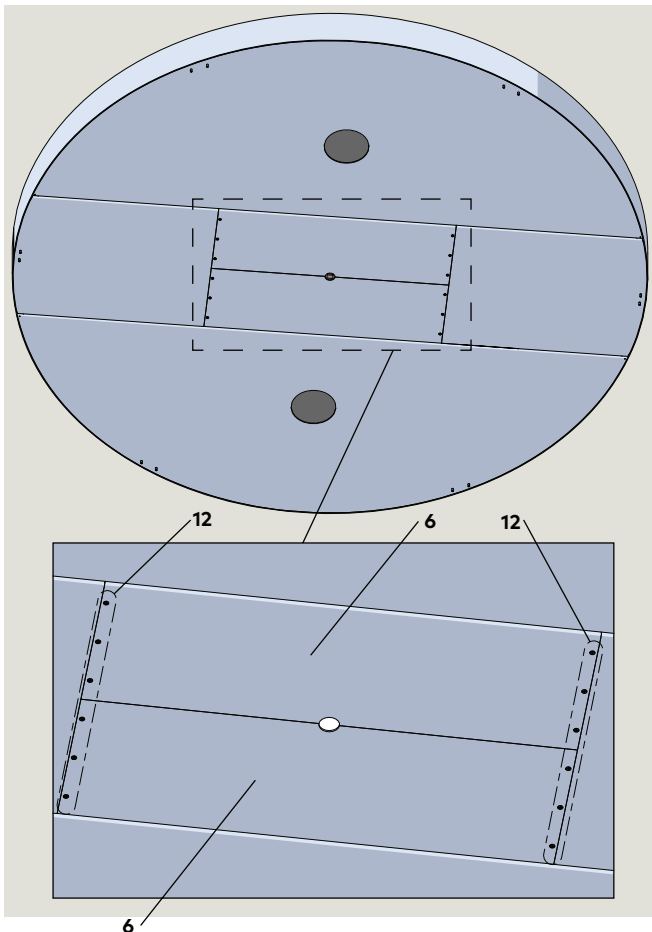


Fig. 13.3.3 Canopy soffit view, inner center soffits removed

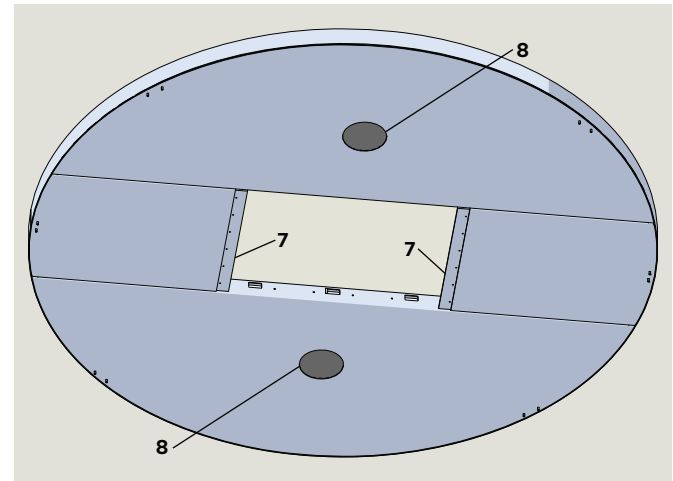
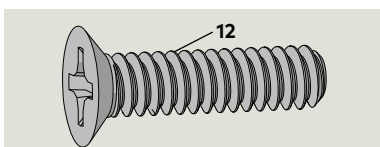


Fig. 13.3.2 Soffit screw



13.3.2 Install edge guards in canopy soffit slots.

1. Install edge guards in each of the six outer soffit slots shown in Fig. 13.3.4.

Fig. 13.3.4 Edge guard



Fig. 13.3.5 Cutouts in outer soffits for edge guards

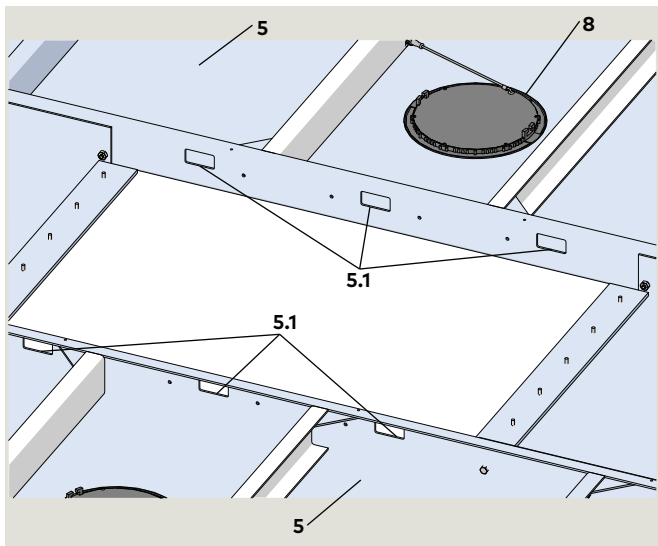
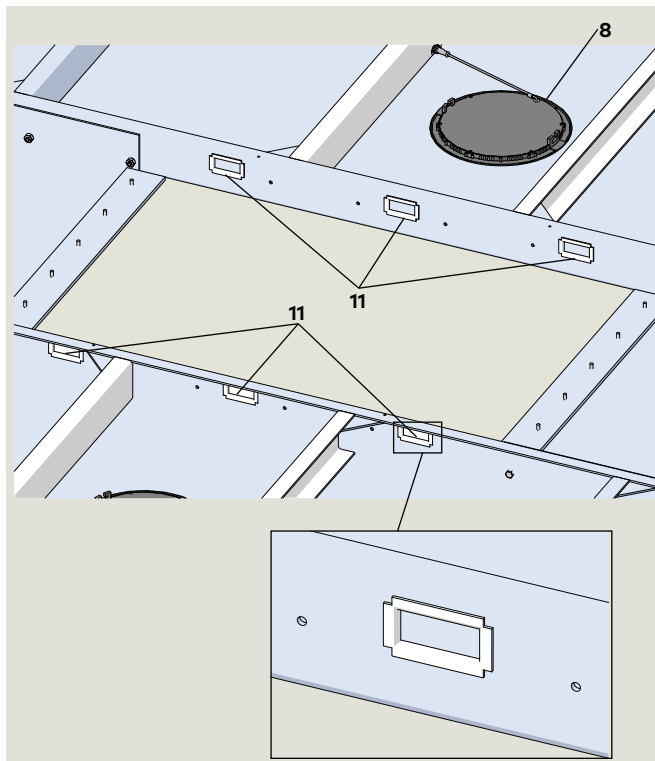


Table 13.3.2 Canopy soffits and edge guard hardware

Part / Assembly	Description
5	Outer soffit
5.1	Outer soffit cutouts for cables
8	RC6320-010 LED light (optional)
11	RC6067-001 Edge guard, Neoprene

Fig. 13.3.6 Edge guards installed



13.4 Motion Assist 360 drive bracket assembly installation into canopy

Fig. 13.4.1 RS6048-001 Motion Assist drive bracket assembly with power supply and control

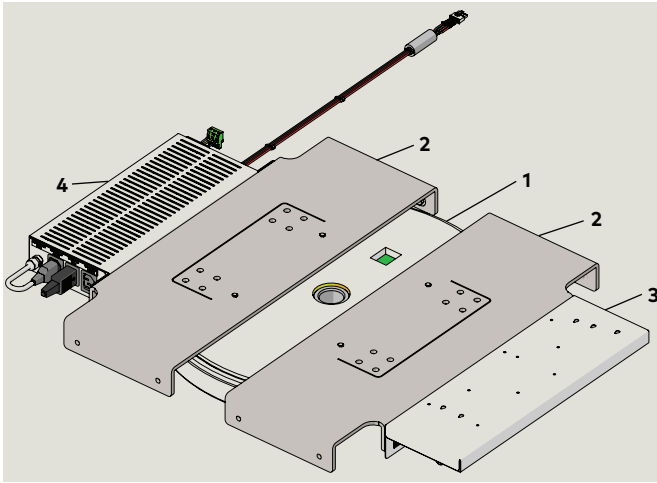


Fig. 13.4.2 RS6048-002 Motion Assist drive bracket assembly

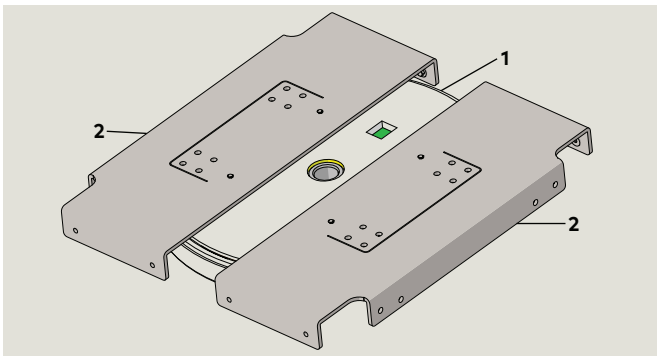
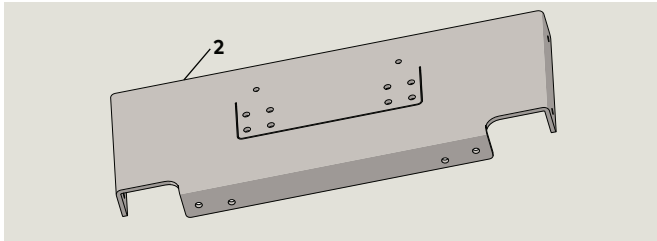


Fig. 13.4.3 Mounting plate, 24" spacing



13.4.1 Motion Assist 360 canopy-mounted configurations.

1. RS6048-001: Motion Assist 360 drive bracket assembly with power supply and control.
2. RS6048-002: Motion Assist 360 drive bracket assembly.
 - Power supply and control in Remote enclosure.

Table 13.4.1 Canopy and Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6072-001 Mounting plate, overhead drive, floor speed control
3	RX6002-001 Motion Assist 360 control
4	RX6001-001 Motion Assist 360 power supply

13.4.2 Install Motion Assist 360 drive bracket assembly into canopy.

NOTICE

Installation procedure the same for both drive bracket configurations (Para. 13.4.1).



WARNING

Use caution when lifting and positioning Motion Assist 360 drive bracket assembly!

1. Motion Assist 360 drive bracket assembly is secured to outer soffits using:
 - Support plate (6) (two per top drive plate).
 - 1/4-20 x 1" SS hex screws and 3/4" flat washers (7,8).
2. Position assembly so that top drive plates line up with mounting holes in outer soffits.
3. Place 3/4" O.D. flat washer onto 1/4-20 x 1" hex screw.
 - Slide hex screw through top drive plate and outer soffit holes.
 - Thread hex screw into drive mounting support plate threaded hole, Do not fully tighten.
4. Repeat steps 3 and 4 until fasteners are installed at all eight top drive plate mounting hole locations.
5. Tighten all eight 1/4-20 x 1" hex screws.

Fig. 13.4.4 RS6048-001 installation in canopy

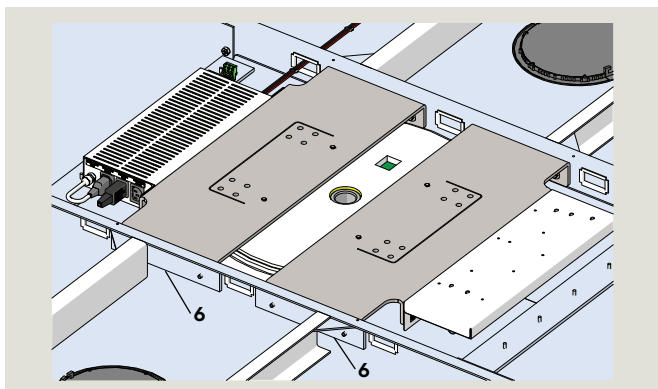


Fig. 13.4.5 RS6048-002 installation in canopy

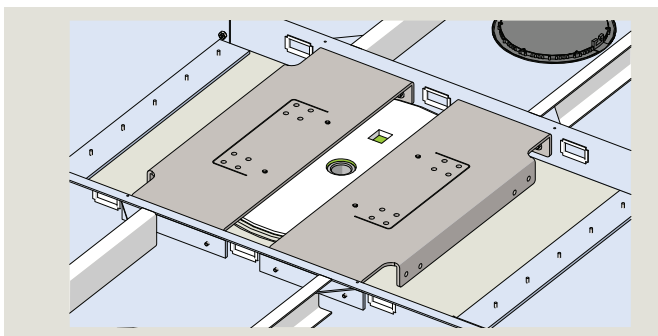
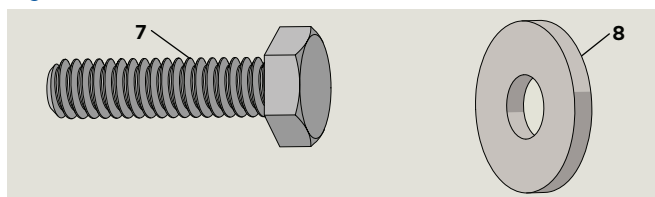


Table 13.42 Canopy and Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6072-001 Mounting plate, overhead drive, floor speed control
3	RX6002-001 Motion Assist 360 control
4	RX6001-001 Motion Assist 360 power supply
6	Drive mounting support plate
7	RF6055-02G 1/4-20 x 1" SS hex screw
8	RF6056-01G Flat washer for 1/4-20 screw, 3/4" O.D.
8	RC6320-010 LED light (optional)
11	RC6067-001 Edge guard, 1/8" x 1/4" (Fig. 15.1.6)

Fig. 13.4.5 1/4-20 hex screw and 3/4" O.D. flat washer



13.5 Raise canopy to installation height and position

13.5.1 Installation of Motion Assist 360 assembly.

NOTICE

Motion Assist 360 assembly installation
(Para. 13.4) can be done either before, or after canopy is raised in position depending on canopy access.

13.5.2 Lifting equipment.

NOTICE

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



WARNING

Cordon off canopy installation area!



WARNING

Lift equipment requirements:

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

13.5.3 Place canopy on lifts.

1. Place canopy on lifts.

CAUTION

Canopy installation orientation and location.

1. Identify canopy quarter post/end wall mounting hole locations from Crane shop drawings.
2. Orient canopy to building interface based on Crane shop drawing.
3. Center canopy at door centerpoint.

CAUTION

When placing canopy assembly on lifts:

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

CAUTION

Canopy post mounting holes.

Place lift equipment between canopy post mounting hole areas.

13.5.4 Move canopy to approximate door centerpoint.

1. Position canopy at door centerpoint, orienting canopy to building interface (Fig. 13.4.3).



WARNING

A minimum of two persons are required when handling canopy!



WARNING

Use caution when handling canopy!

13.5.5 Raise canopy to installation height and center at door centerpoint.

1. Raise canopy to height for post installation (Chapter 17) and center canopy at door centerpoint.
2. Lock lift equipment in place.



WARNING

Use caution when raising canopy!



WARNING

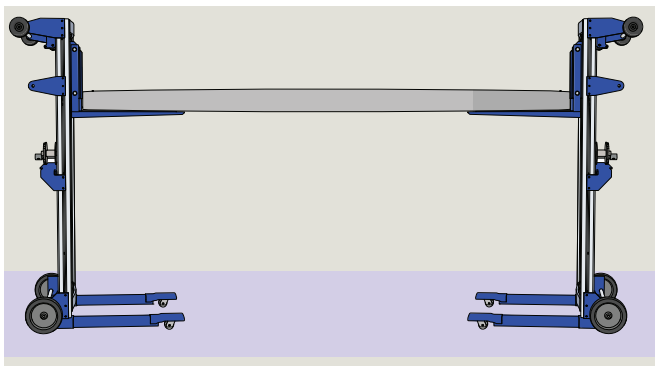
Lock lift wheels once lifts are in place!

13.5.6 Customer 115 Vac and earth ground wiring.

CAUTION

Customer 115 Vac and earth ground wire must be routed into canopy.

Fig. 13.5.1 Canopy on lift equipment example



13.6 Install cables from Motion Assist 360 drive and power supply to control unit

Table 13.6.1 Canopy Motion Assist 360 drive and control hardware with cables

Part / Assembly	Description
1 RX6010-001	Motion Assist 360 drive
4	Motion Assist 360 power supply
4.1 RX6001-001	Mains power cable
4.2	DC power supply cable
5 RX6005-001	Motion Assist 360 motor cable, 14"
6.1 RX6016-004	Motion Assist 360 motor extension cable, 1'
7 RX6006-001	Motion Assist 360 Hall sensor cable, 13 3/4"
8 RX6015-004	Motion Assist 360 Hall sensor extension cable, 1'
11 DC6067-001	Edge guard, Neoprene

Fig. 13.6.1 Motion Assist 360 drive and power supply cables

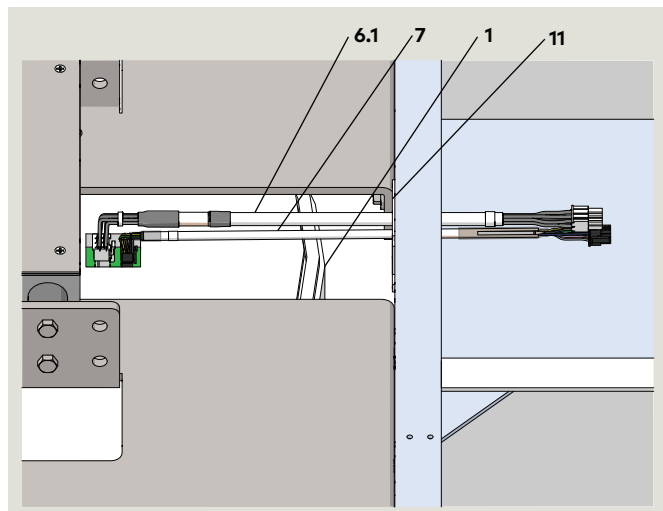


Fig. 13.6.2 Drive motor cables

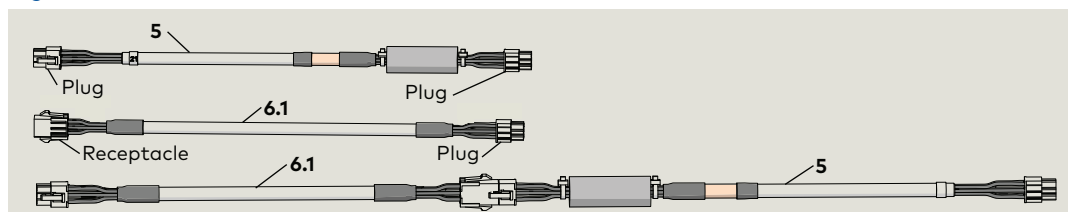
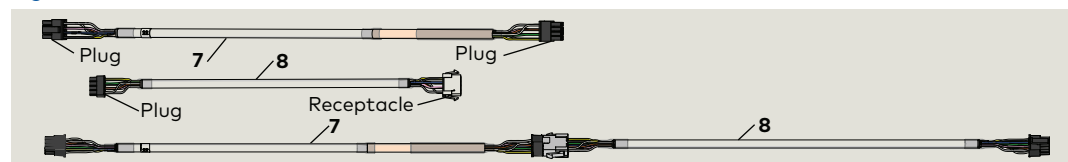


Fig. 13.6.3 Drive Hall sensor cables



CAUTION

Insure edge guard material (11) is installed around cable slots. Reference Para. 13.3.2.

CAUTION

Route cables away from drive; loop and tie wrap excess cable.

13.6.1 Connect cables to Motion Assist 360 drive.

1. Connect Motion Assist 360 motor extension cable (6.1) plug to receptacle on Motion Assist 360 drive (1).
2. Route motor extension cable through canopy slot with edge guard (11) (Fig. 13.6.1).
3. Connect Motion Assist 360 Hall sensor extension cable (8) plug to receptacle on Motion Assist 360 drive (1).
4. Route sensor extension cable through canopy slot with edge guard (11).

13.6.2 Connect drive motor cable to motor extension cable.

1. Connect Motion Assist 360 motor cable (5) plug to receptacle on 1' extension cable (6.1).
2. Route motor cable through slot with edge guard adjacent to control unit.

13.6.3 Connect Hall sensor cable to Hall extension cable.

1. Connect Motion Assist 360 Hall sensor cable (7) plug to receptacle on 1' extension cable (8).
2. Route Hall sensor cable through slot with edge guard adjacent to control unit.

Table 13.6.2 Canopy Motion Assist 360 drive and control hardware with cables

Part / Assembly	Description
1 RX6010-001	Motion Assist 360 drive
3 RX6002-002	Motion Assist 360 control
4	Motion Assist 360 power supply
4.1 RX6001-001	Mains power cable
4.2	DC power supply cable
5 RX6005-001	Motion Assist 360 motor cable, 14"
6 RX6016-004	Motion Assist 360 motor extension cable, 1'
7 RX6006-001	Motion Assist 360 Hall sensor cable, 13 3/4"
8 RX6015-004	Motion Assist 360 Hall sensor extension cable, 1'
11 DC6067-001	Edge guard, Neoprene

Fig. 13.6.4 Motion Assist 360 DC power supply cables

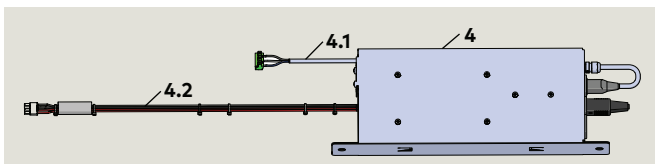
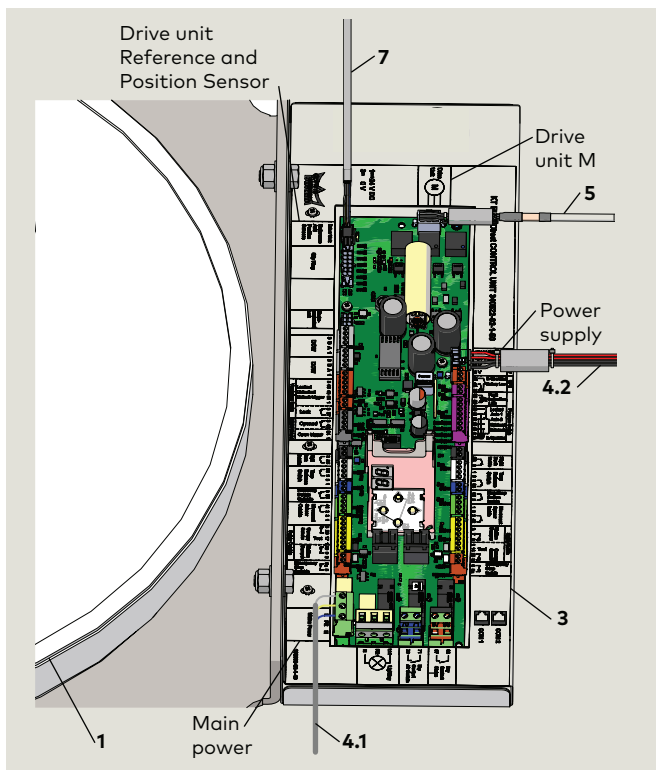


Fig. 13.6.5 Motion Assist 360 control unit to drive and power supply cables



CAUTION

Insure edge guard material (11) is installed around cable slots. Reference Para. 13.3.2.

CAUTION

Route cables away from drive; loop and tie wrap excess cable.

13.6.4 Connect Motion Assist 360 motor cable to Motion Assist 360 control unit.

1. Connect motor cable plug to receptacle on Motion Assist 360 control unit (Fig. 13.6.5).

13.6.5 Connect Motion Assist 360 Hall sensor cable to Motion Assist 360 control unit.

1. Connect Hall sensor cable plug to receptacle on Motion Assist 360 control unit (Fig. 13.6.5).

13.6.6 Route and connect Power Supply (4) cables to Motion Assist 360 control unit.

1. Route Mains power cable (4.1) from power supply through slots with edge guard (11) to control unit.
2. Connect Mains power cable (4.1) to Mains Power receptacle on control unit (Fig. 13.6.5).
3. Route DC power supply cable (4.2) from power supply through slots with edge guard (11) to control unit.
4. Connect DC power supply cable (4.2) to Power Supply receptacle on control unit (Fig. 13.6.5).

13.7 Canopy hex screw for Motion Assist 360 earth ground wires

Fig. 13.7.1 Earth grounding wire assembly and hardware

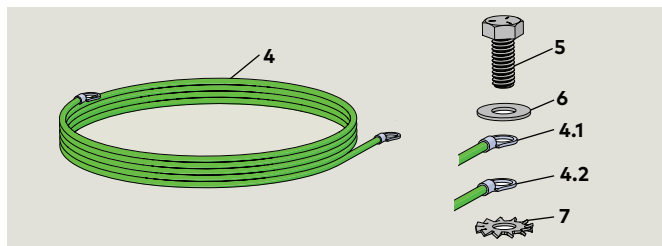


Fig. 13.7.2 Motion Assist 360 power supply and control unit with ground wires

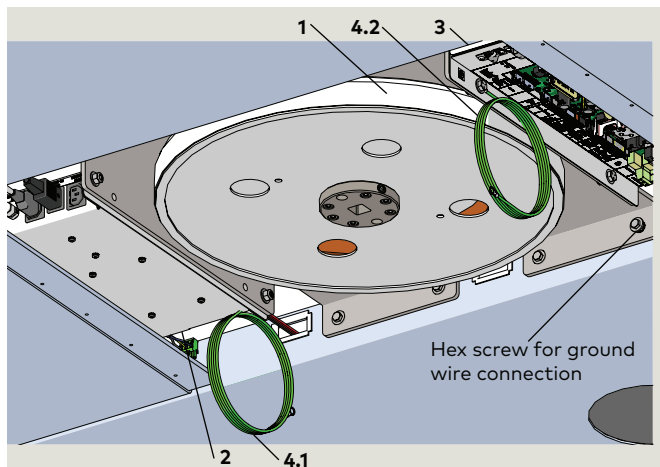


Fig. 13.7.3 Ground wire installation on hex screw

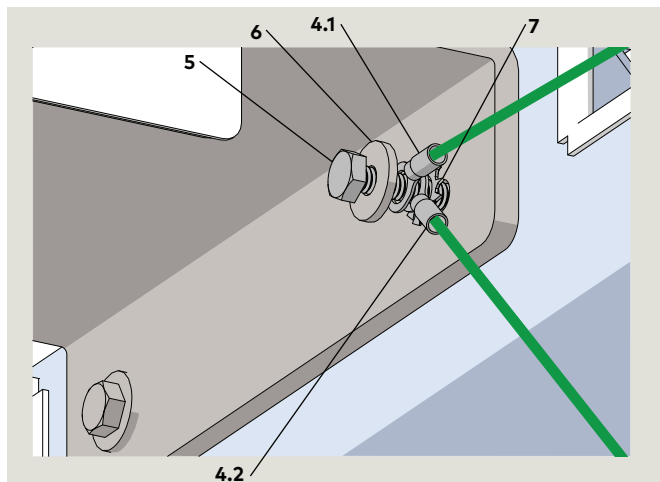


Fig. 13.7.4 Ground wires secured to hex screw

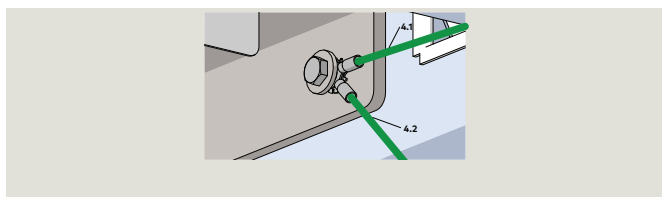


Table 13.7.1 Canopy earth ground hardware

1	RX6010-001	Motion Assist 360 drive
2	RX6001-001	Motion Assist 360 power supply
3	RX6002-001	Motion Assist 360 control
4		Ground kit assembly
4.1	RX6009-001	Ground kit assembly, power supply
4.2		Ground kit assembly, control unit
5	RF6055-02G	1/4-20 x 1" hex screw
6	RF6056-01G	.281" ID flat washer
7	RF6016-01Z	5/16" external tooth lock washer

13.7.1 Earth ground wire installation on top mounting bracket hex bolt

1. Remove 1/4-20 x 1" hex bolt with flat washer (Fig. 13.7.3)
2. insert power supply ground wire ring lug (4.1) onto hex bolt.
3. insert control unit ground wire ring lug (4.2) onto hex bolt.
4. Insert external tooth lockwasher onto hex bolt.
5. Thread hex bolt into drive mounting plate (Para. 13.7.3) and tighten.

CAUTION

Loop and tie wrap excess earth ground wires.



TIPS AND RECOMMENDATIONS

Customer earth ground terminates at hex bolt.

14 Enclosure post installation

14.1 Enclosure posts

14.1.1 Crane shop drawings.

NOTICE

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

14.2 Open post shipping crate

Fig. 14.2.1 Post shipping crate

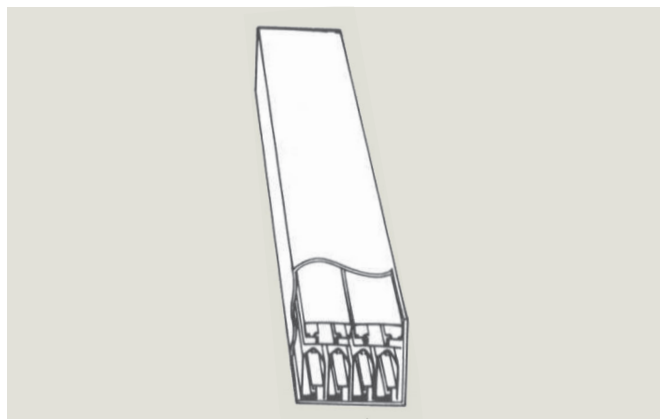


Fig. 14.2.2 Enclosure post numbering



14.2.1 Center posts and quarter posts/end walls.

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

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

2. Center post and quarter post/end wall numbering.
 - Each post's wrapping material is marked with numbers (Fig. 14.2.2) indicating where the center posts and quarter posts/end walls are to be located in the door installation.
 - Insure post is marked with its location number on the top and bottom of the post.



TIPS AND RECOMMENDATIONS

Refer to Para. 14.5 for enclosure post and base numbering examples.

14.3 Quarter post/end wall and center post assemblies

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

Table 14.3.1 Quarter post/end wall and center post

Part / Assembly	Description
1 RE60XX-0X0	Quarter post/end wall
3	1/4-20 tapped holes for hex screws
4 RE6006-0X0	Center post
5 RE6021-010	Attachment block, base/post
6 S21 0326	1/4-20 x 3/8" FHMS

Fig. 14.3.2 S21 0326

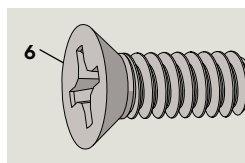


Fig. 14.3.1 Quarter post/end wall

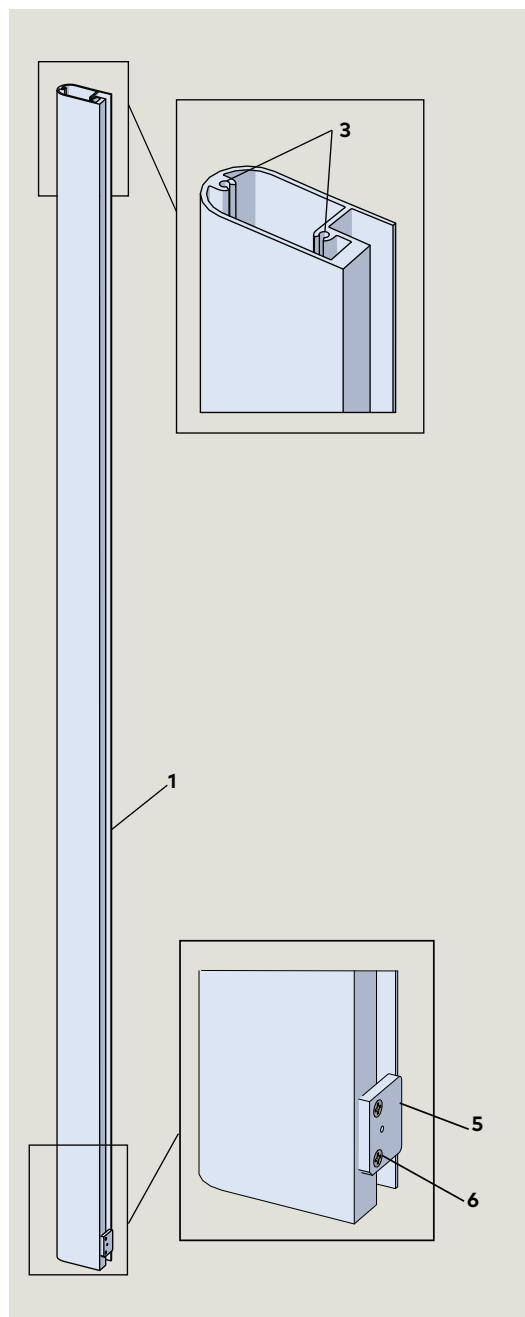
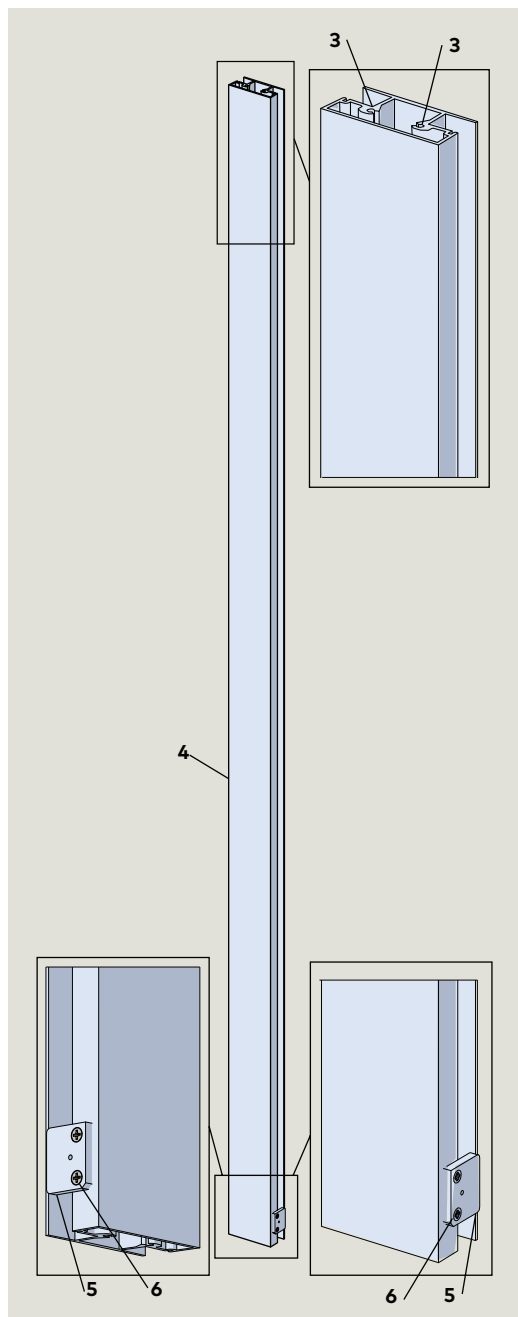


Fig. 14.3.3 Center post



14.4 Attach center posts to canopy

Fig. 14.4.1 Quarter post/end wall canopy fasteners

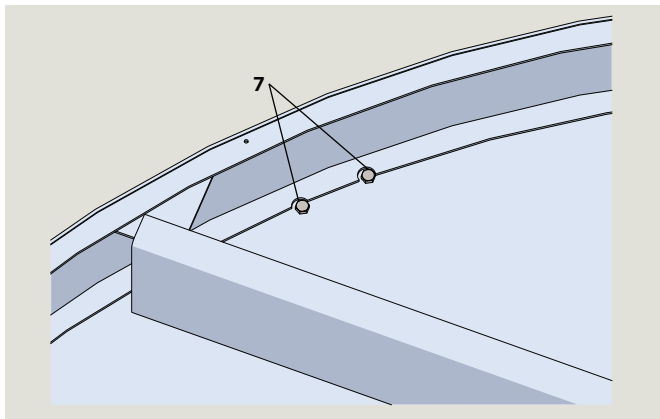


Fig. 14.4.2 Center post canopy fasteners

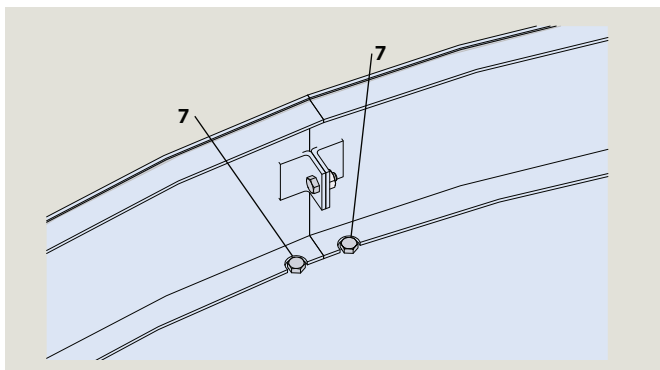


Fig. 14.4.3 Posts fastened to canopy example

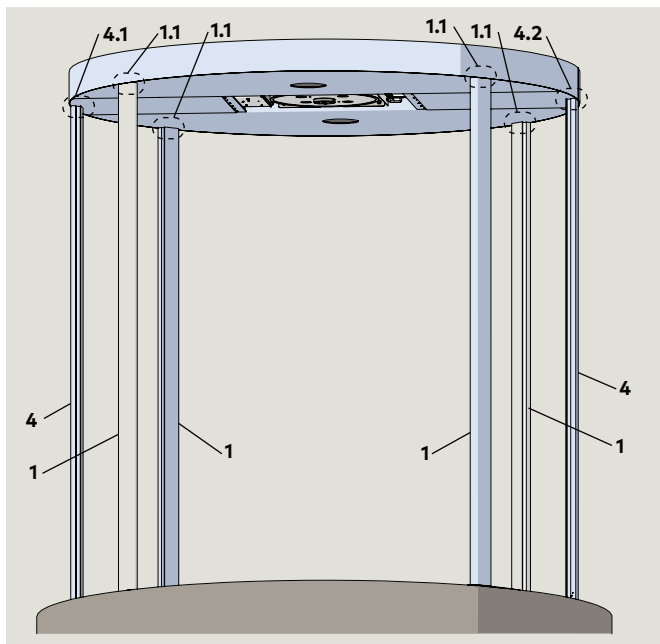


Fig. 14.4.4 RF6055-01G

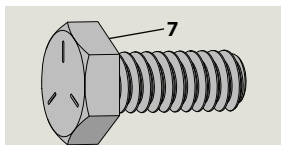


Table 14.4.1 Quarter post/end wall and center post

Part / Assembly	Description
1 RE60XX-0X0	Quarter post/end wall
1.1 RF6055-01G	Fig. 16.4.1 – Quarter post fasteners
4 RE6006-0X0	Center post
4.1 RF6055-01G	Fig. 16.4.2 –Center post fasteners
5 RE6021-010	Rail to post attachment block
7 RF6055-01G	1/4-20x 5/8" FHMS

14.4.1 Fasten quarter post/end walls and center posts to canopy.



WARNING

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

1. Fasten posts to canopy using 1/4-20 x 5/8" hex screws (Fig. 14.4.2) through soffit holes into posts.

CAUTION

Match post numbers to numbers in canopy.

Refer to Para. 14.5 for post numbering locations.

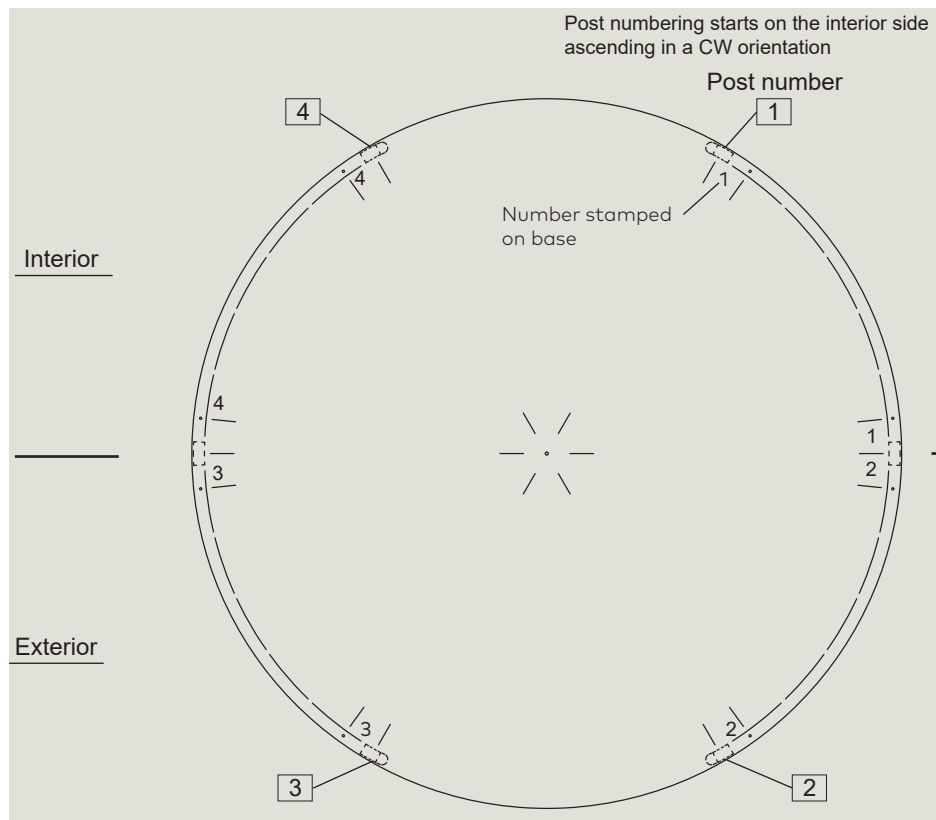


TIPS AND RECOMMENDATIONS

Use 7/16" socket or box end wrench for tightening of 1/4-20 x 5/8" hex head screws.

14.5 Enclosure base and post numbering

Fig. 14.5.1 Standard post installation numbering

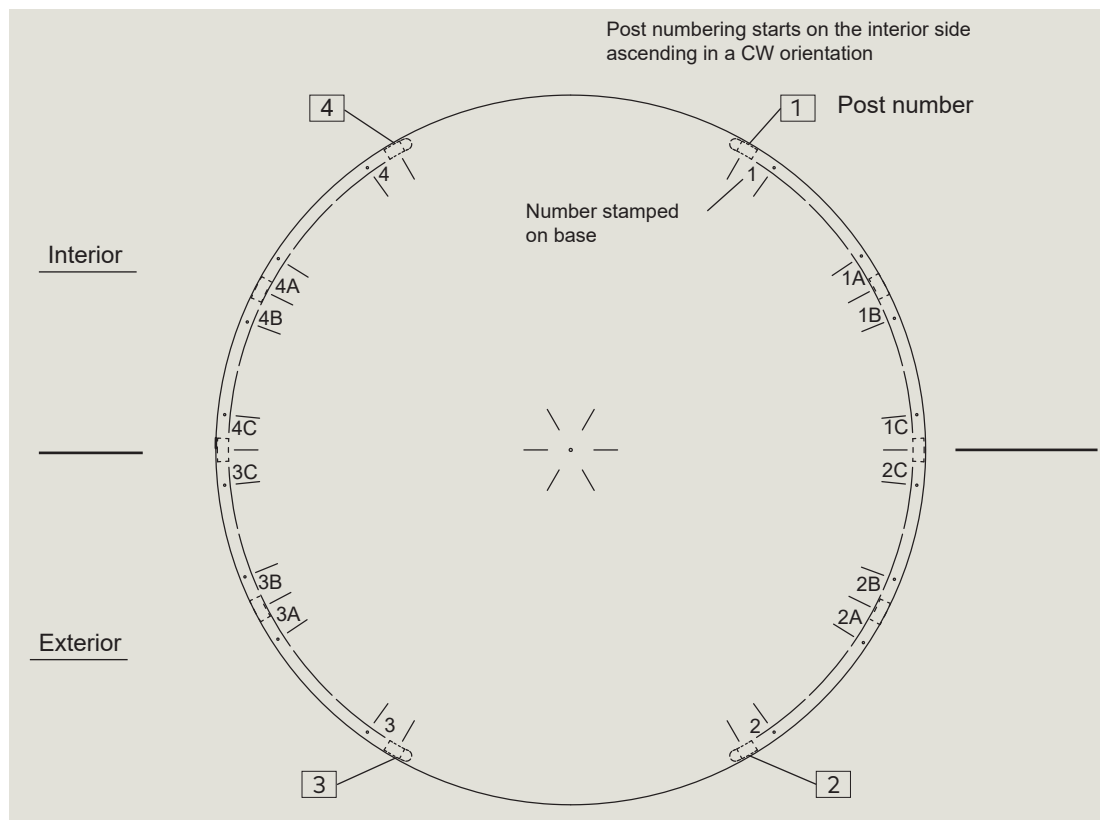


14.5.1 Post numbering, multiple revolving door installation.

Table 14.5.1 Post numbering

	Post numbers			
Door 1	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

Fig. 14.5.2 Additional center post installation numbering



15 Enclosure base installation

15.1 Enclosure base

NOTICE

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

NOTICE

Stainless steel base installation.

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

15.2 Open base enclosure shipping crate

Fig. 15.2.1 Base crate

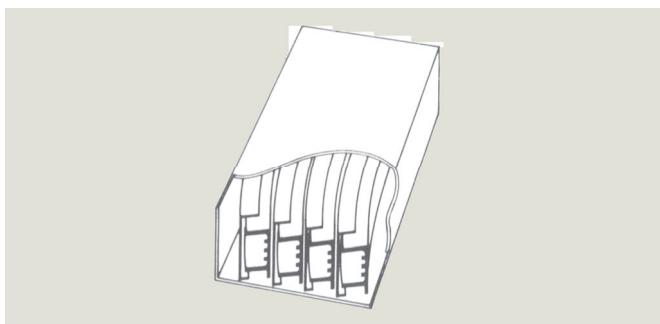
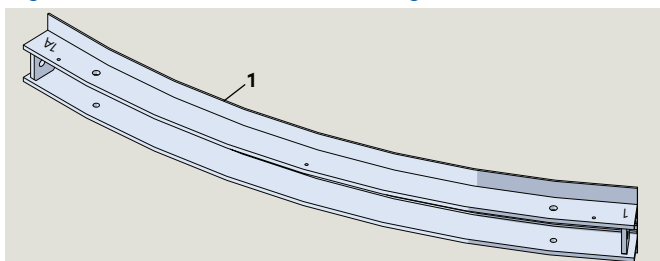


Fig. 15.2.2 Base shipping crate



Fig. 15.2.3 Enclosure base numbering



- 1 Enclosure base assembly with location numbers

15.2.1 Unpack enclosure base assemblies from shipping crate.

1. Uncrate enclosure base assemblies from their shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

2. Enclosure base numbering:
 - Enclosure base wrapping material is marked with two numbers indicating where the base is to be located in the door installation (Fig. 15.2.2).
 - The numbers are stamped on the base (Fig. 15.2.3).
 - Insure base numbers match those on wrapping material.

15.3 Base assembly installation

Table 15.3.1 Quarter post/end wall and center post

Part / Assembly	Description
1 RE6016-010	Enclosure base inner
2 RE6021-010	Attachment block, post/base
3 RE6015-010	Enclosure base outer
4 RF6118-01G	10-24 x 1 1/4" Phillips oval head MS
5 RC6390	Base support spacer, 1/2" dia., 7/8" long
6 DC2569-020	3/8" x 3" threaded rod
7 DF0587-00G	3/8" hex nut
8 RF6055-02G	1/4-20 x 1" SS hex screw

Fig. 15.3.1 Aluminum mounting base with 3" studs installed

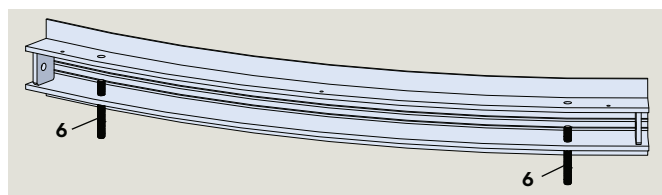


Fig. 15.3.2 S21 0334

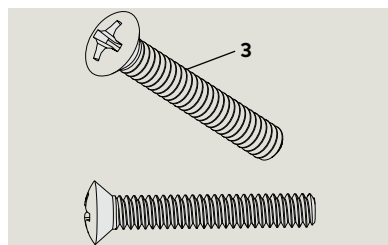


Fig. 15.3.3 Spacer

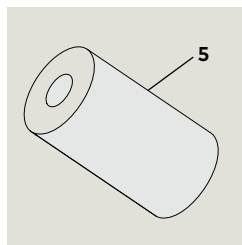


Fig. 15.3.4 HHMS

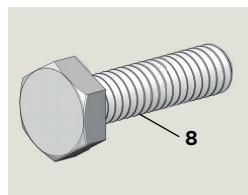


Fig. 15.3.5 3" stud

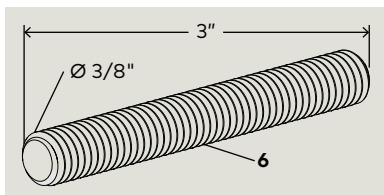
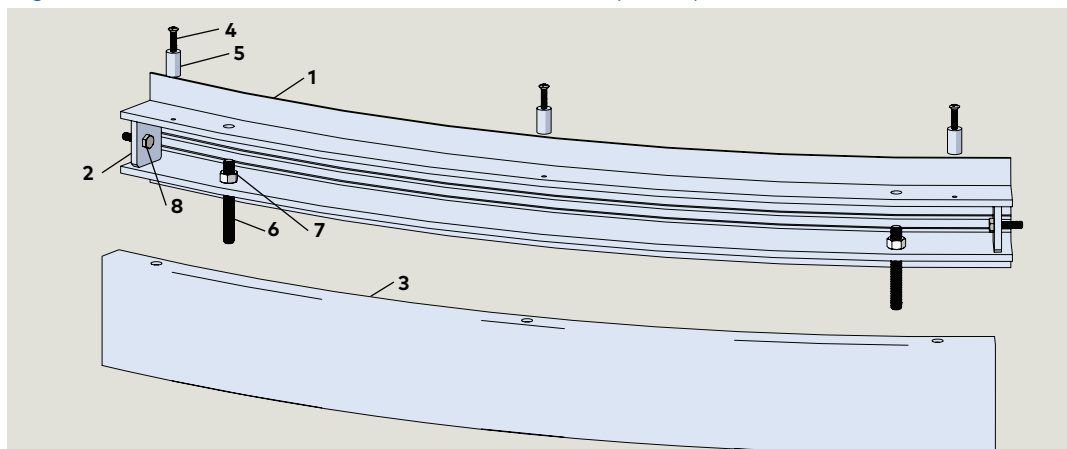


Fig. 15.3.6 Aluminum enclosure base and cover assembly example



15.3.1 Remove cover from each base enclosure assembly.

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



TIPS AND RECOMMENDATIONS

Number cover and mounting base (matching set)



WARNING

Use caution working in door installation area.

15.3.2 Prepare threaded rod anchor holes.

- Threaded rod anchor holes drilled in Para. 11.2.

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

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

1. Thread two 3" threaded rods into the mounting holes of each base (Fig. 15.3.6), leaving 3/4" above bottom base rail.

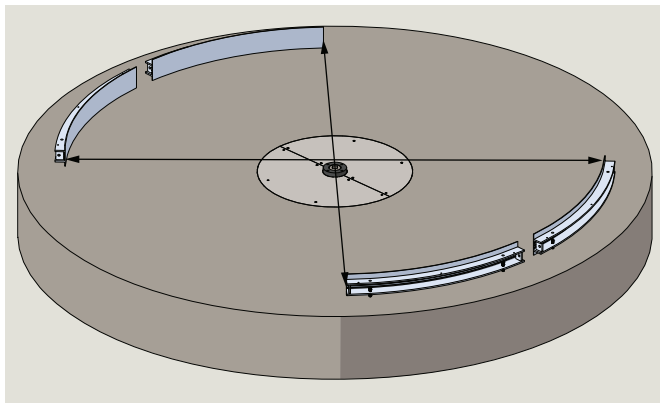
15.3.4 Dry fit each base assembly to the floor.

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

CAUTION

Enclosure base numbers must match adjacent post numbers.

Fig. 15.3.7 Bases installed on floor



15.3.5 Verify door inside diameter.

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

15.3.6 Remove bases.

1. Remove bases from floor.

15.3.7 Partially fill anchor holes with anchoring epoxy.

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

15.3.8 Reinstall base assemblies

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

15.4 Lower canopy and post assembly; fasten posts to bases

Table 15.4.1 Quarter post/end wall and center post

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

15.4.1 Lower canopy and post assembly.



WARNING

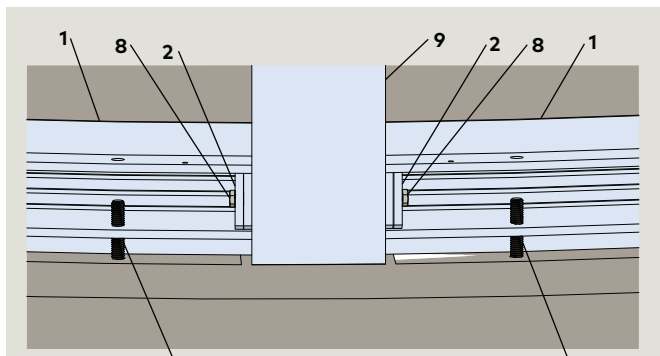
Use caution when lowering assembly!

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

CAUTION

Monitor post alignment with mounting bases as assembly is lowered.

Fig. 15.4.1 Bases attached to center post



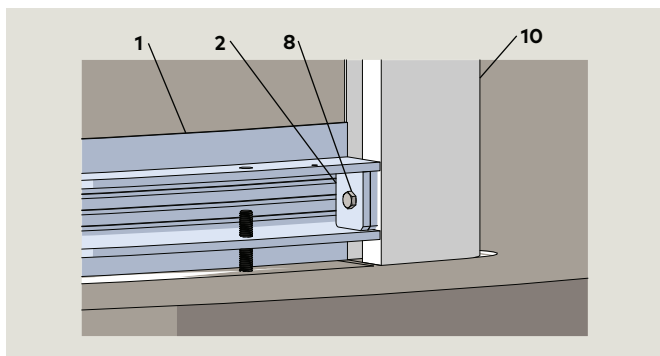
15.4.2 Fasten the two center post to their adjoining base assemblies.

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

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

1. Fasten each quarter post to its base using a 1/4 x 1" SS hex head machine screw.
 - Snug, do not tighten fasteners.

Fig. 15.4.2 Base attached to quarter post

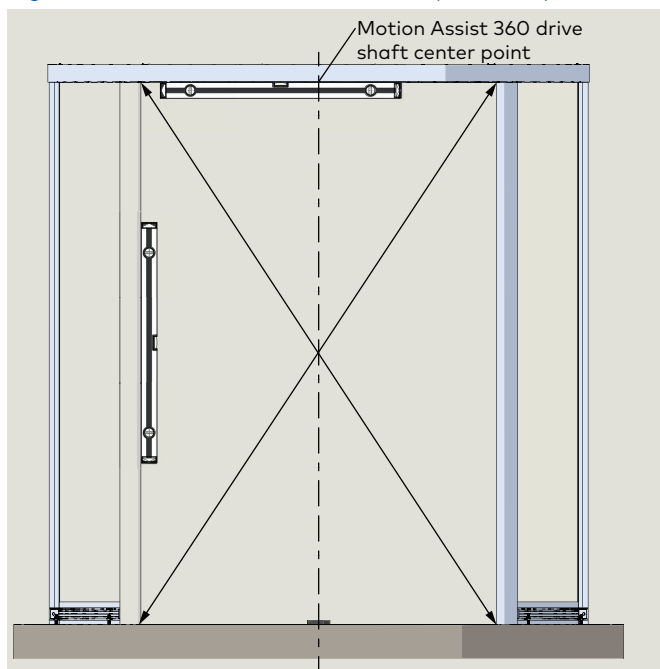


TIPS AND RECOMMENDATIONS

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

15.5 Set enclosure level, square and plumb

Fig. 15.5.1 Enclosure, check for level, square and plumb



15.5.1 Set enclosure level, square and plumb.

CAUTION

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

CAUTION

Check revolving door to building interface!



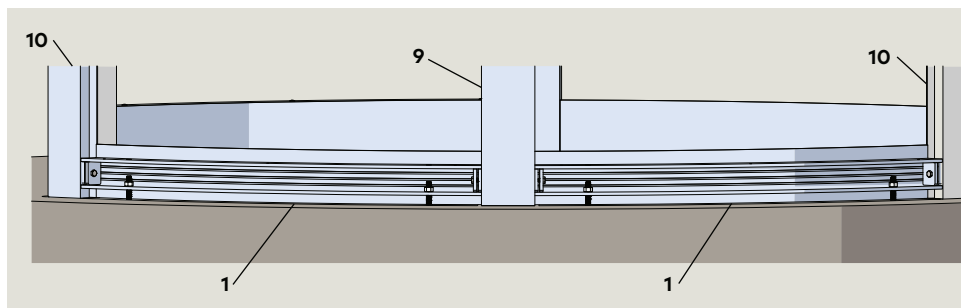
WARNING

Using plumb bob with string, verify canopy Motion Assist 360 drive shaft centerpoint is plumb with floor door centerpoint.

15.5.2 Tighten posts to base assemblies.

1. Tighten all fasteners installed in Para. 15.4.2 and 15.4.3.

Fig. 15.5.2 Bases fastened to center post and quarter post/end walls



- 1 Enclosure base
- 9 Center post
RE6055-0X0
- 10 Quarter post
RE60XX-0X0

16 Center shaft installation – floor speed control

16.1 Center shaft assembly

NOTICE

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

16.2 Remove center shaft assembly from shipping crate

16.2.1 Unpack center shaft assembly from shipping crate.

- RS6053-001, 4 wing steel shaft assembly.
- RS6054-001, 3 wing steel shaft assembly.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.



WARNING

Use caution when lifting and positioning center shaft assembly!



TIPS AND RECOMMENDATIONS

For center shaft assembly and parts detail, reference Para. 5.4 and Para. 5.5.

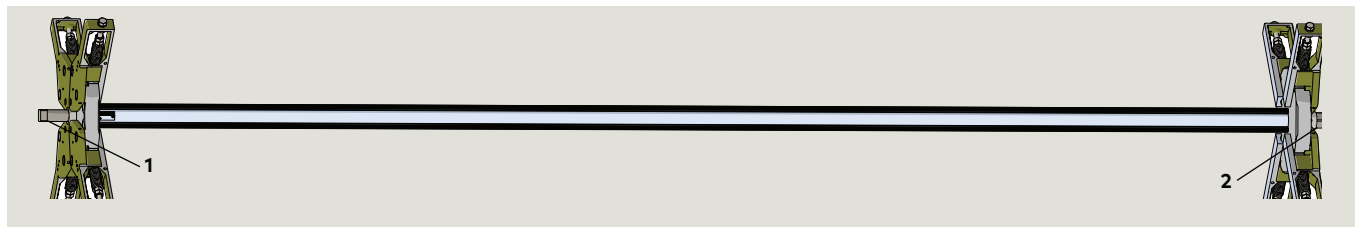


WARNING

Risk of injury from heavy loads!

- Two persons are always required to lift or move the center shaft assembly.

Fig. 16.2.1 RS6053-001, 4 wing steel shaft assembly



1 Plug for Motion Assist drive 360 adapter

2 Plug for in-ground speed control drive shaft

Fig. 16.2.2 RS6054-001, 3 wing steel shaft assembly



1 Plug for Motion Assist drive 360 adapter

2 Plug for in-ground speed control drive shaft

16.3 Lower center shaft top plug

Table 16.3.1 Center shaft top plug and job tag hardware

Part / Assembly	Description
1 RC6076-001	Top plug, steel shaft
2 RD6001-001	Job tag
3 RF6008-01G	#6 x1/2" SS Phillips pan head screw
8 RF6052-010	Steel shaft cross pin

Fig. 16.3.1 Center shaft top plug and job tag

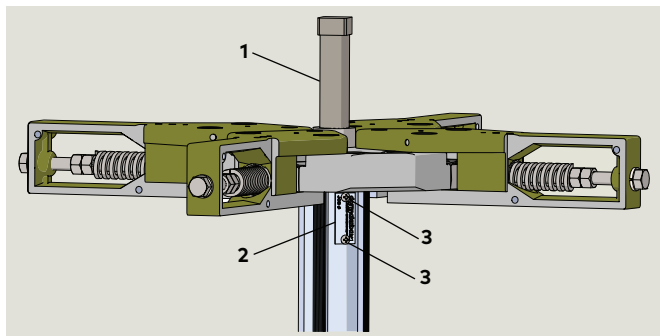


Fig. 16.3.2 Nameplate / job number tag removed

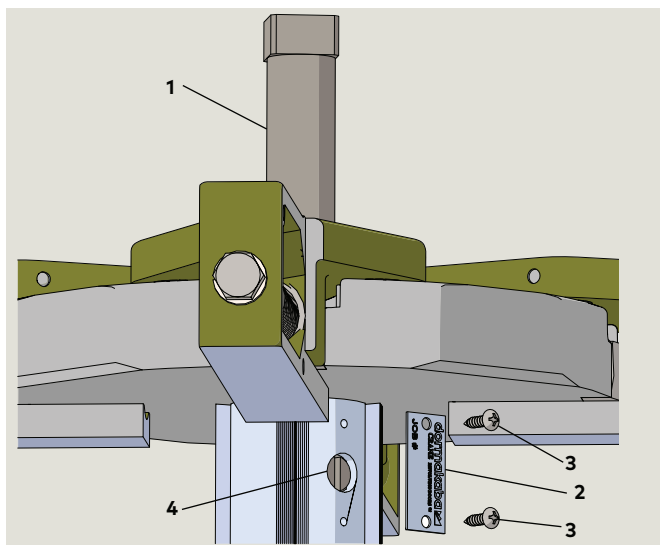
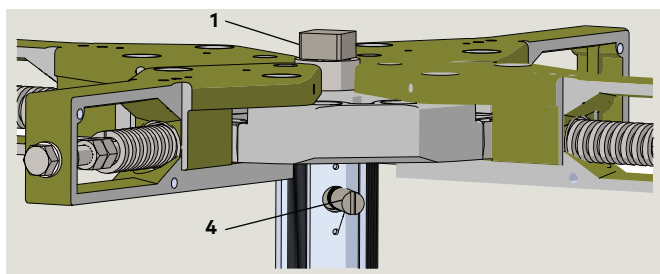


Fig. 16.3.3 Top plug lowered against steel center shaft



WARNING

Use caution when lifting and positioning center shaft assembly!



WARNING

Risk of injury from heavy loads!

The center shaft is lifted and moved during assembly. Improper lifting and transport operations may cause accidents with serious injuries and material damage.

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

16.3.1 Remove nameplate/job number tag.

1. Remove two Phillips pan head screws securing nameplate to center shaft and set aside.
2. Remove nameplate/job tag and set aside.



TIPS AND RECOMMENDATIONS

Nameplate tag must be retained and reinstalled after installation of center shaft. Refer to Para. 19.5.

16.3.2 Lower top plug.

1. Remove steel shaft cross pin.
2. Remove top plug.



TIPS AND RECOMMENDATIONS

Apply anti-seize lubricant to top plug shaft.

3. Insert top plug in shaft and lower until square portion of plug is against steel center shaft (Fig. 16.3.3).
4. Snug cross pin against top plug.

16.4 Install center shaft bottom plug into speed control drive shaft

Table 16.4.1 Bottom plug and speed control

Part / Assembly	Description
4 RC6083-001	Steel center shaft, 4 wing, floor speed control
6 RC6082-001	Bottom plug, steel shaft, floor speed control
13	Speed control drive shaft
14 RS6074-010	Floor speed control assembly

Fig. 16.4.1 Bottom plug above floor speed control

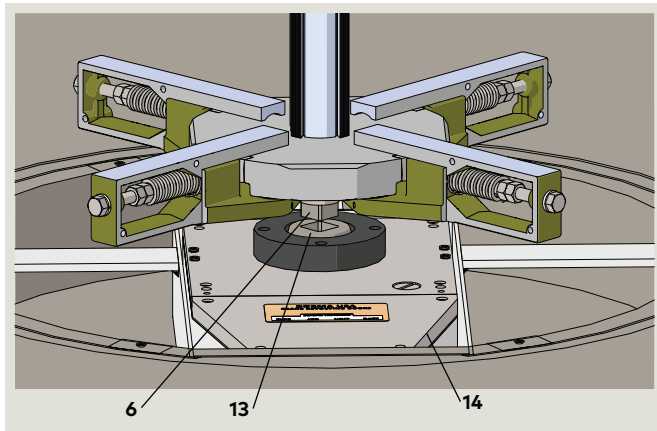
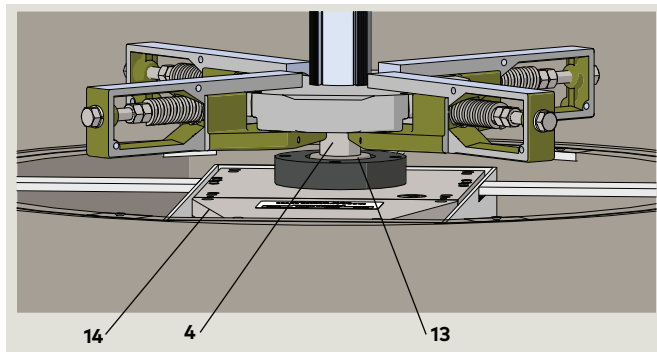


Fig. 16.4.2 Bottom plug inserted in speed control drive shaft



16.4.1 Raise center shaft to vertical position.

1. Raise center shaft assembly and position bottom plug over floor speed control drive shaft.



WARNING

Use caution when lifting and positioning center shaft assembly!



WARNING

Risk of injury from heavy loads!

- Two persons are always required to lift or move the center shaft assembly.

CAUTION

Top plug must be retracted (Para 19.3) to install center shaft assembly.



TIPS AND RECOMMENDATIONS

Prior to installation, lubricate center shaft bottom plug with a multipurpose grease.



TIPS AND RECOMMENDATIONS

Grout not shown in cement box.

16.4.2 Lower bottom plug into speed control drive shaft.



WARNING

Damage to the floor bearing due to incorrect insertion of the center shaft bottom plug!

Incorrect insertion of center shaft bottom plug can damage speed control floor bearing.

- Always insert bottom plug vertically into drive shaft.

1. Rotate center shaft assembly as required to orient bottom plug to floor speed control drive shaft.
2. Lower center shaft bottom plug into floor speed control drive shaft.

16.5 Raise top plug into Motion Assist 360 drive adapter and secure

Fig. 16.5.1 Top plug retracted, under drive adapter

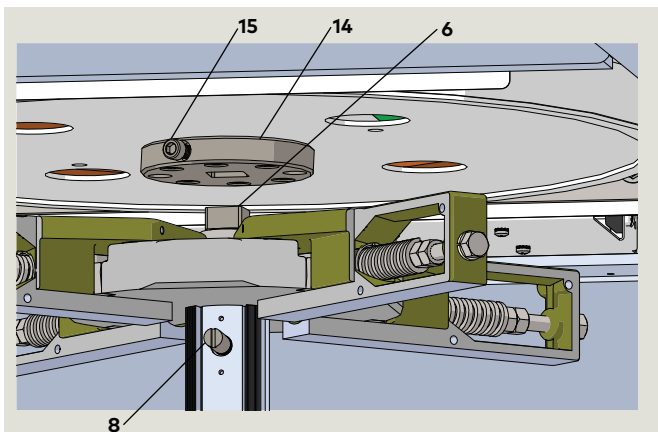


Fig. 16.5.2 Top plug extended into drive adapter, cross pin holes aligned

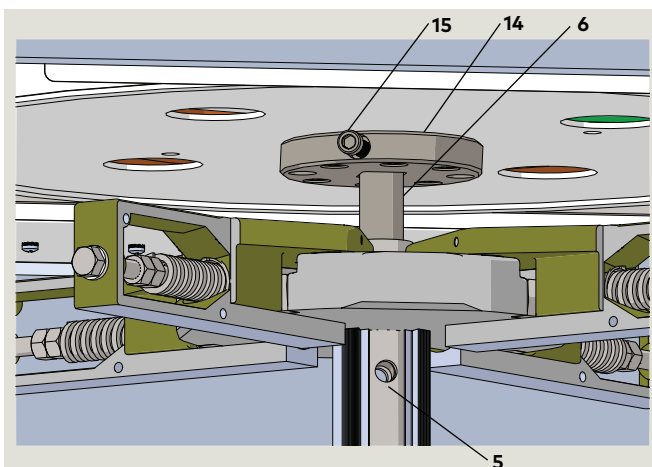


Fig. 16.5.3 Top plug secured

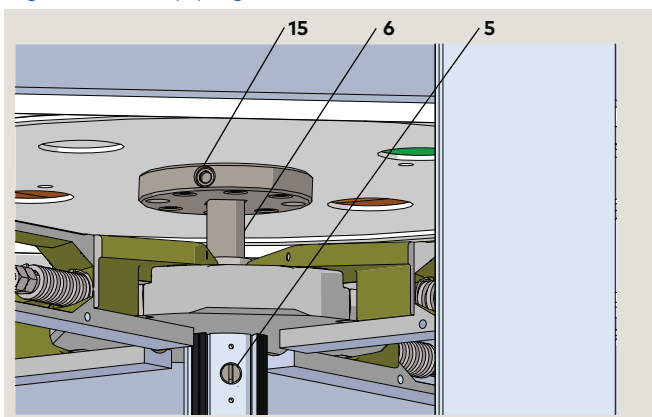


Table 16.5.1 Center shaft and drive shaft adapter

Part / Assembly	Description
2	RD6001-001 Job tag
3	RF6008-01G #6 x 1/2" SS Phillips pan head screw
4	RC6083-001 Steel center shaft, 4 wing, floor speed control
5	RC6084-001 Steel shaft cover, 4 wing
6	RC6076-001 Top plug, Motion Assist 360 drive adapter
8	RF6052-010 Steel shaft cross pin
14	RC6068-001 Drive, shaft adapter,
15	RF6059-02C 5/16 x 1 1/4" SHCS, black oxide

16.5.1 Loosen drive shaft adapter SHCS.

1. Loosen 5/16 x 1 1/4" SHCS (15) in drive shaft adapter.

16.5.2 Raise top plug into drive shaft adapter.

1. Align center shaft top plug with Motion Assist 360 drive adapter.
2. Raise top plug into adapter until cross pin hole in top plug is aligned with holes in steel shaft and steel shaft cover.
3. Thread steel shaft cross pin (8) into top plug and tighten.

16.5.3 Tighten drive shaft adapter SHCS.

1. Tighten 5/16 x 1 1/4" SHCS (15) in drive shaft adapter (Fig. 16.5.3).

16.5.4 Install nameplate/job number tag.

1. Attach nameplate to steel shaft cover using two Phillips pan head screws (3).

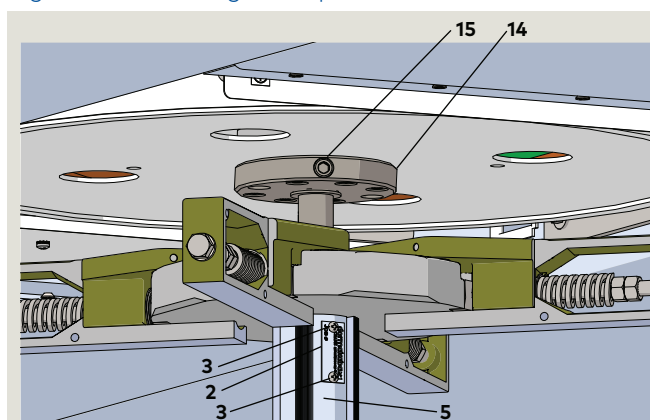
16.5.5 Rotate center shaft assembly.

CAUTION

Rotate center shaft assembly.

- Shaft should rotate freely.

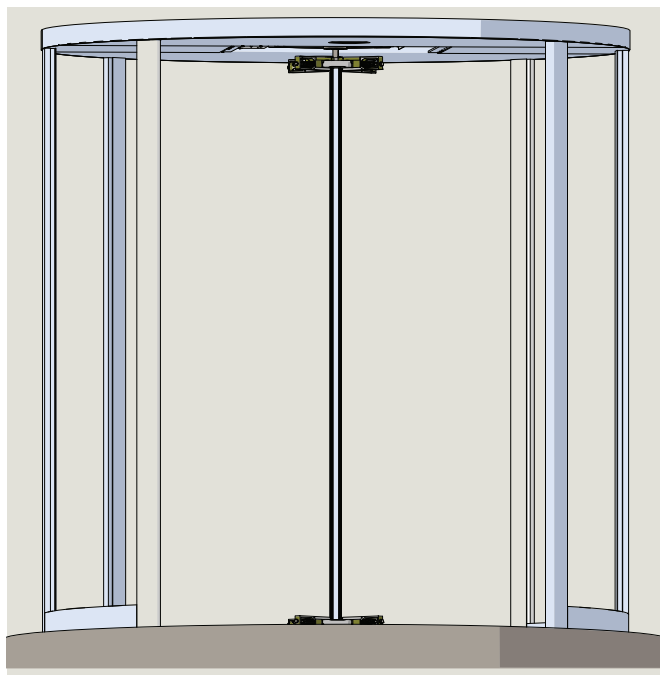
Fig. 16.5.4 Job tag/nameplate installed



17 Set initial hanger breakout tension

17.1 Set hanger initial hanger breakout tension

Fig. 17.1.1 3 inch canopy with floor speed control and center shaft installed



17.1.1 Breakout tension.

CAUTION

Breakout tension is not preset. Breakout tension:

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

Reference: Chapter 22.

17.1.2 Initial breakout hanger tension.

1. Loosen hex nuts (3, 3.1) away from spring.
2. Turn hex nut (3) so that it is finger tight against spring.
3. Using open end 9/16" box wrench, turn hex nut (3) four turns CW to tension spring.
4. Turn hex nut (3.1) until it is against hex nut (3).
5. Use 9/16" wrenches to lock hex nuts in place.

NOTICE

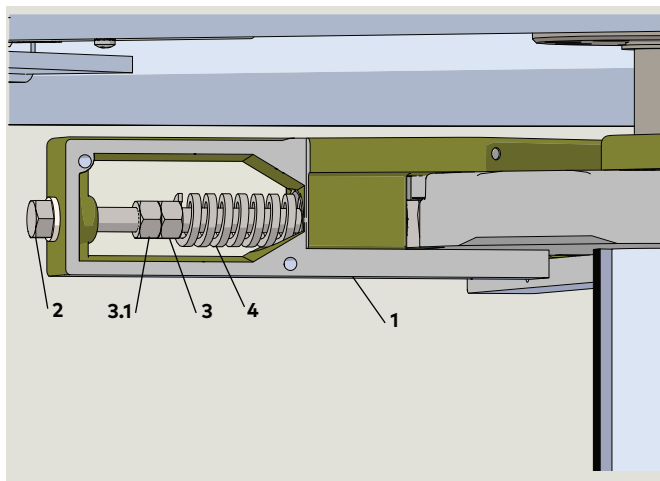
Reference Chapter 22 for breakout force check after wings are installed.

Further adjustment of spring tension on all hangers may be required to achieve required wing breakout force.

17.1.3 Remaining hangers.

1. Repeat hanger tension adjustment for remaining hangers.

Fig. 17.1.2 Hanger breakout tension adjustment



- | | |
|------------------------------------|--------------------|
| 1 Hanger assembly
RS6045-020 | 3 .375-16 hex nut |
| 2 Hex bolt, .375x 4"
RC6156-01G | 3.1 375-16 hex nut |
| | 4 .Spring |

18 Wing installation

18.1 Wing assemblies

NOTICE

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

18.2 Unpack wing shipping crate

Fig. 18.2.1 Wing shipping crate

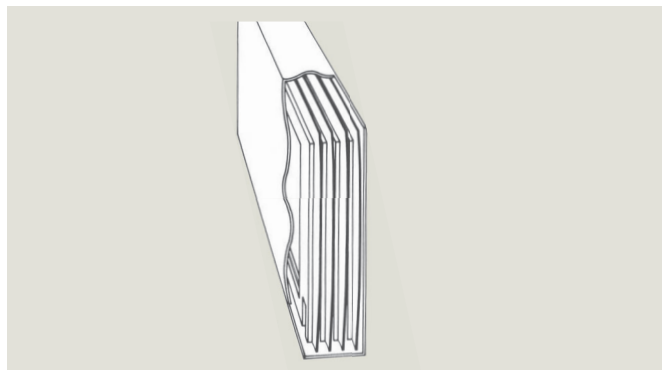
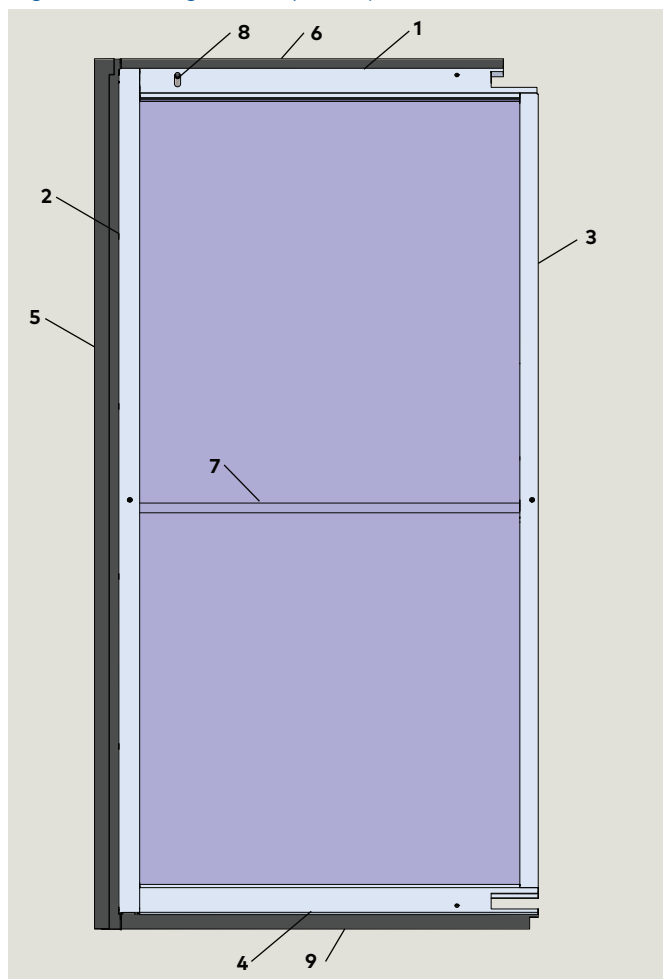


Fig. 18.2.2 Wing assembly example



18.2.2 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 18.2.1 Wing assembly hardware example

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

18.3 Install wing locks on two interior door wings

Fig. 18.3.1 Wing lock and mounting hardware

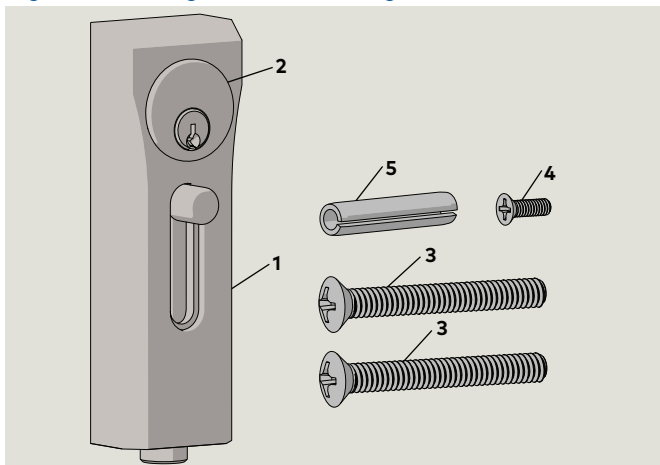


Table 18.3.1 Wing lock hardware

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

18.3.1 Install wing locks.

NOTICE

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

Fig. 18.3.2 Wing lock mounting holes

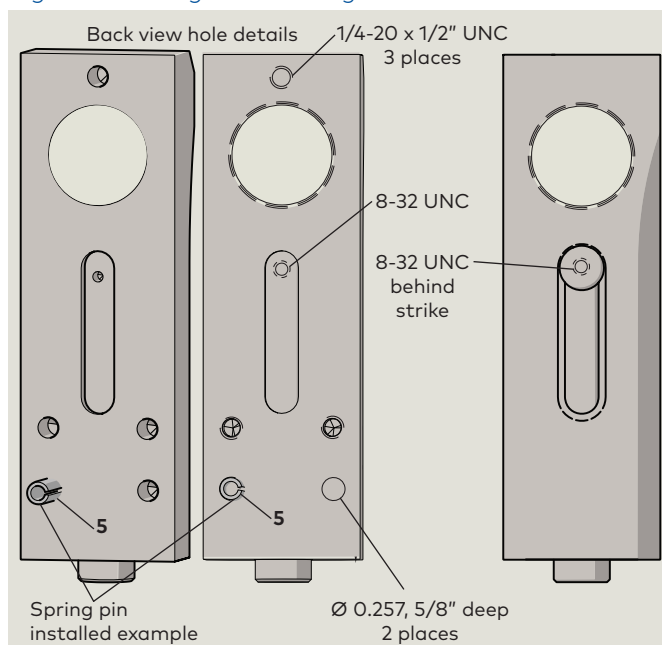


Fig. 18.3.4 Wing RH and LH lock stiles

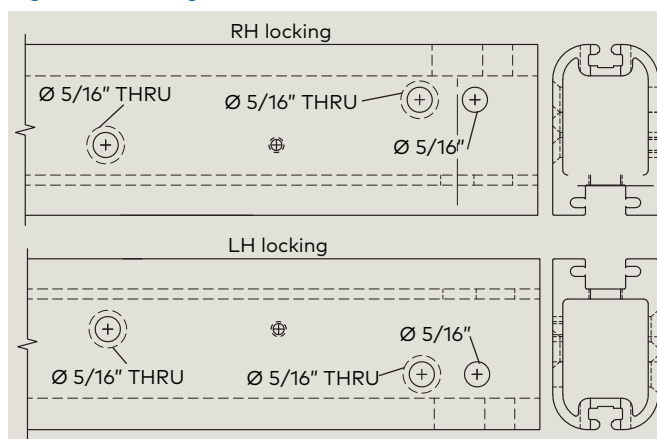
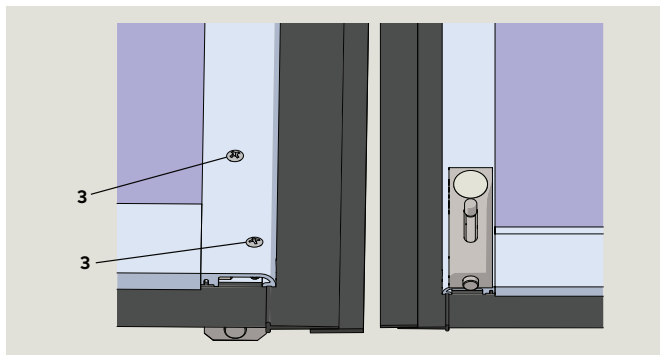


Fig. 18.3.3 Wing lock installed



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

18.3.2 Lock cylinder (by others).

NOTICE

Crane shop drawings.

Reference Crane shop drawings for lock cylinder requirements for job!

18.4 Install wings onto center shaft hangers

Fig. 18.4.1 First wing installation

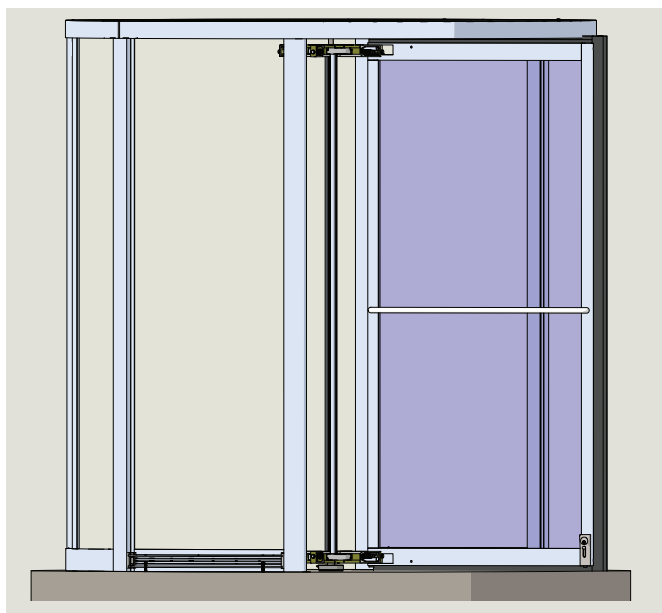
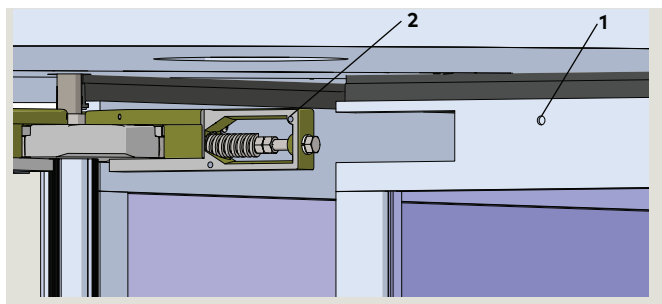
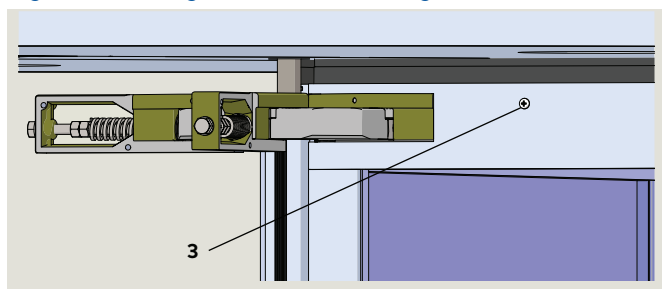


Fig. 18.4.2 Wing and hanger mounting holes



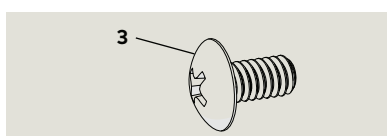
- 1 Wing hanger mounting hole, both sides
- 2 Hanger wing mounting hole, both sides

Fig. 18.4.3 Wing installation on hanger



- 3 .25-20 x 1/2" Truss head machine screw RF6119-01G
- 3 .25-20 x 1/2" SS Truss head machine screw RF6119-01G

Fig. 18.4.4 Truss head machine screw



18.4.1 Install first wing on center shaft hangers.

- Wings with locks installed on interior side of door.

CAUTION

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



WARNING

Use caution installing wing assemblies!



WARNING

Risk of injury due to improper handling of wing assemblies!

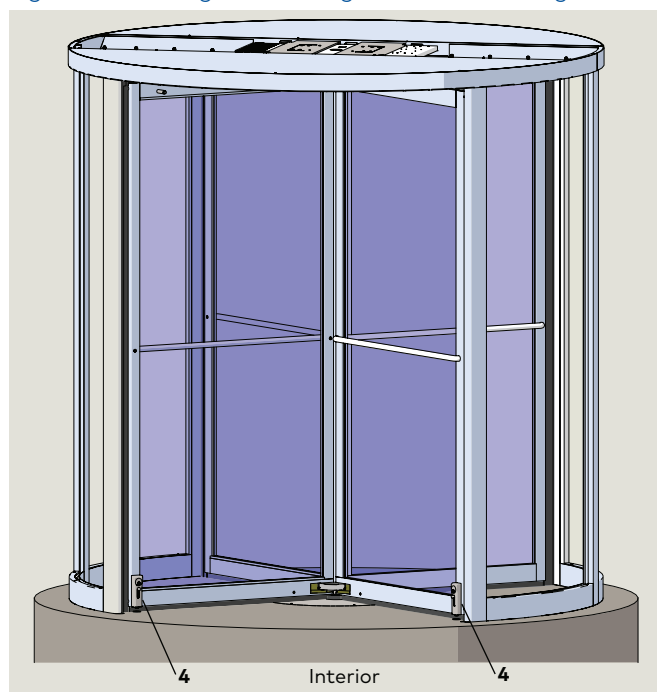
A minimum of two people are required to lift and transport wing assemblies.

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

18.4.2 Install remaining wings on center shaft hangers.

1. Install remaining wings.

Fig. 18.4.5 4 wing door – wings installed on hangers



- 4 Wing lock RC6259-0X0

19 Install floor strikes

19.1 Install floor strikes

Fig. 19.1.1 Floor strike RC6265-0X0

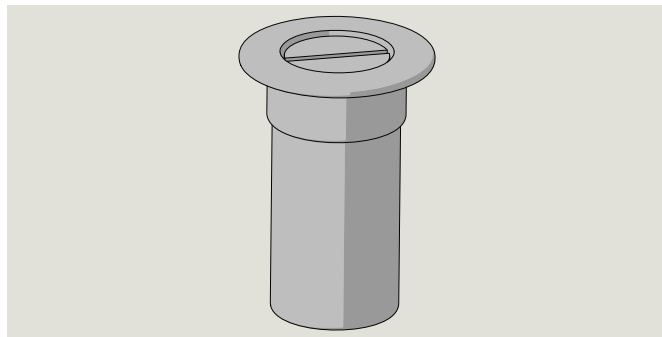


Fig. 19.1.3 Hole for floor strike

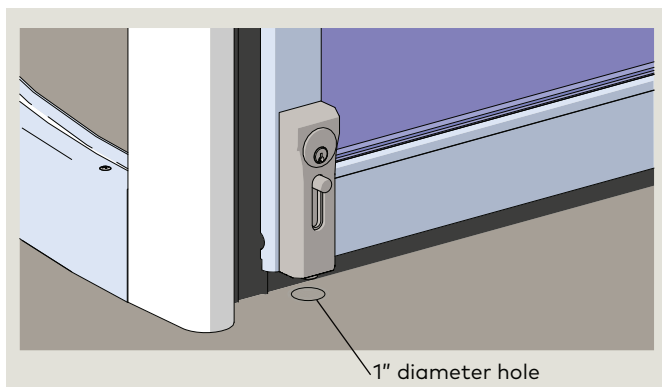
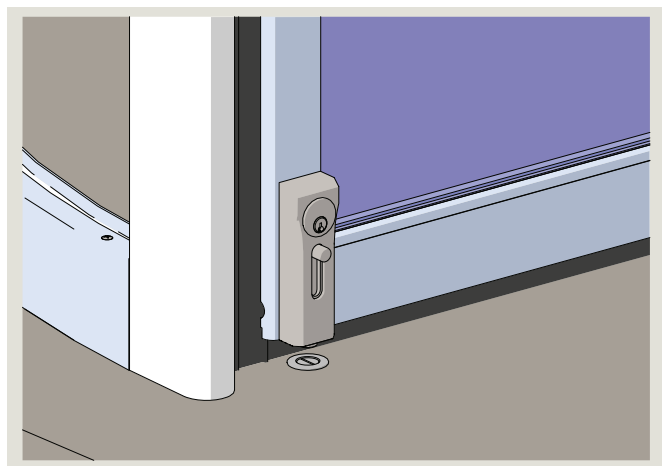


Fig. 19.1.4 Floor strike installed



19.1.1 Home position.

1. Rotate wings to home position.

19.1.2 Mark floor strike hole locations.

1. Move wing lock handle down until wing lock pin contacts floor surface.
2. Mark circumference of pin on floor.
 - Wing lock pin diameter: 5/8"
3. Raise wing lock handle.
4. Mark centerpoint of wing lock pin on floor.
5. Repeat steps 1 through 4 for second wing lock.

19.1.3 Drill floor strike holes in floor.

1. For concrete floors, drill 1 inch diameter hole in floor to a depth of 2".
 - Use hammer drill with masonry bit.

CAUTION

Drill must be perpendicular to floor.

2. Repeat step 1 for second floor strike.

19.1.4 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.

19.1.5 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.

21 Install enclosure glass, enclosure base covers

21.1 Enclosure glass

NOTICE

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

21.2 Unpack enclosure glass shipping crate

21.2.1 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.



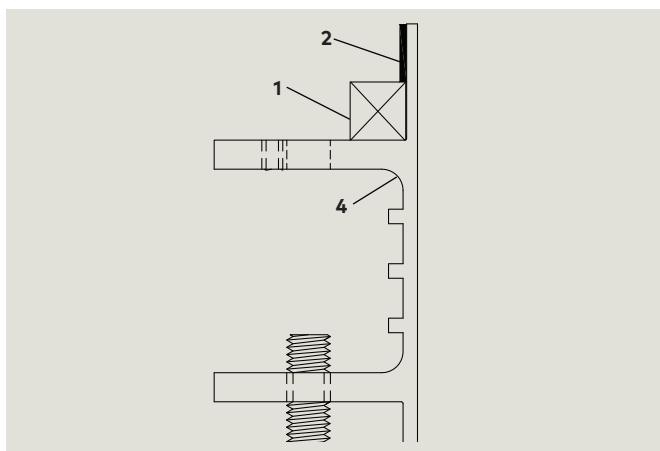
WARNING

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.

21.3 Prepare enclosure posts and bases for enclosure glass

Fig. 21.3.1 Enclosure base glazing block and tape AL3000 example



- 1 Glazing block
- 2 Glazing tape
- 4 Enclosure base

21.3.1 Install glazing blocks in enclosure bases.

NOTICE

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

1. Install glazing block in each enclosure base.



TIPS AND RECOMMENDATIONS

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

21.3.2 Install glazing tape in enclosure bases.

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

21.3.3 Install glazing tape in enclosure posts.

1. Install compressed 1/8" thick glazing tape in enclosure posts per Crane shop drawings.. Examples shown in Fig. 21.4.3.

21.4 Install enclosure glass

Fig. 21.4.1 Glass set in base enclosure

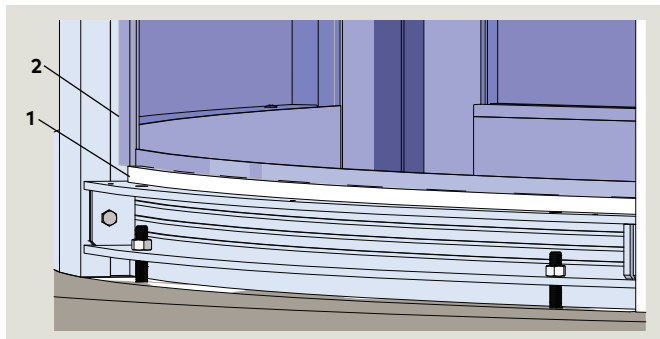


Fig. 21.4.2 Crane shop drawing, enclosure base example

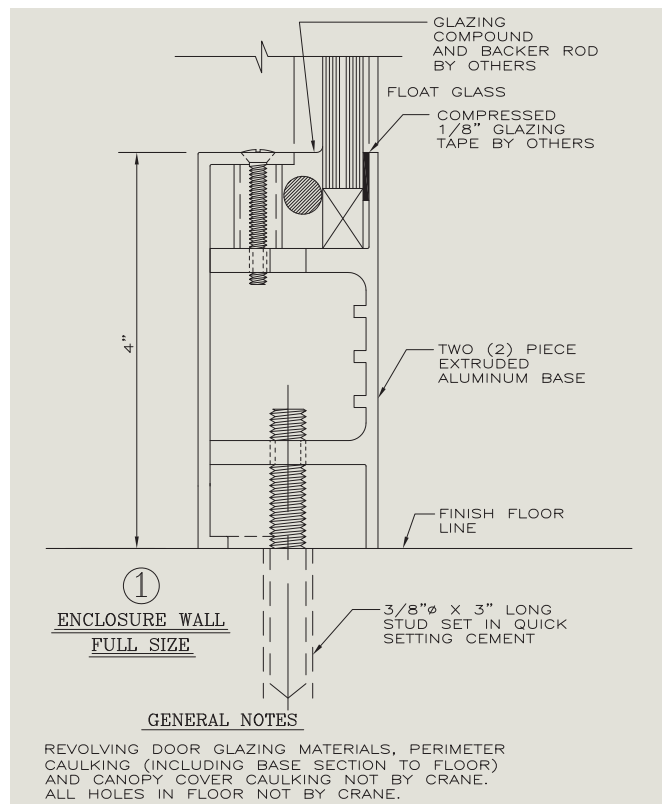


Table 21.4.1 Enclosure glass and base assembly

Part / Assembly	Description
1	Glazing block (by installer)
2	Enclosure glass, reference Crane shop drawings
3 S21 0334	10-24 x 1 1/4" Phillips oval head machine screw
4	Base cover support spacer, 1/2" OD, 3/8" ID, 4 1" long
5 RE6015-0X0	Enclosure, base outer, 3" AL
6	Backer rod (by installer)

21.4.1 Set first enclosure glass into place.



WARNING

Hand pinch point and crushing hazards!

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

21.4.2 Install backer rods in enclosure bases and posts.

1. Install backer rod into approximate position shown in Fig. 21.4.2.

21.4.3 Apply glazing compound in enclosure bases and posts.

1. Apply glazing compound as shown in Crane shop drawings. Examples shown in Crane shop drawings in Figure 21.4.2 and 21.4.3.

NOTICE

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

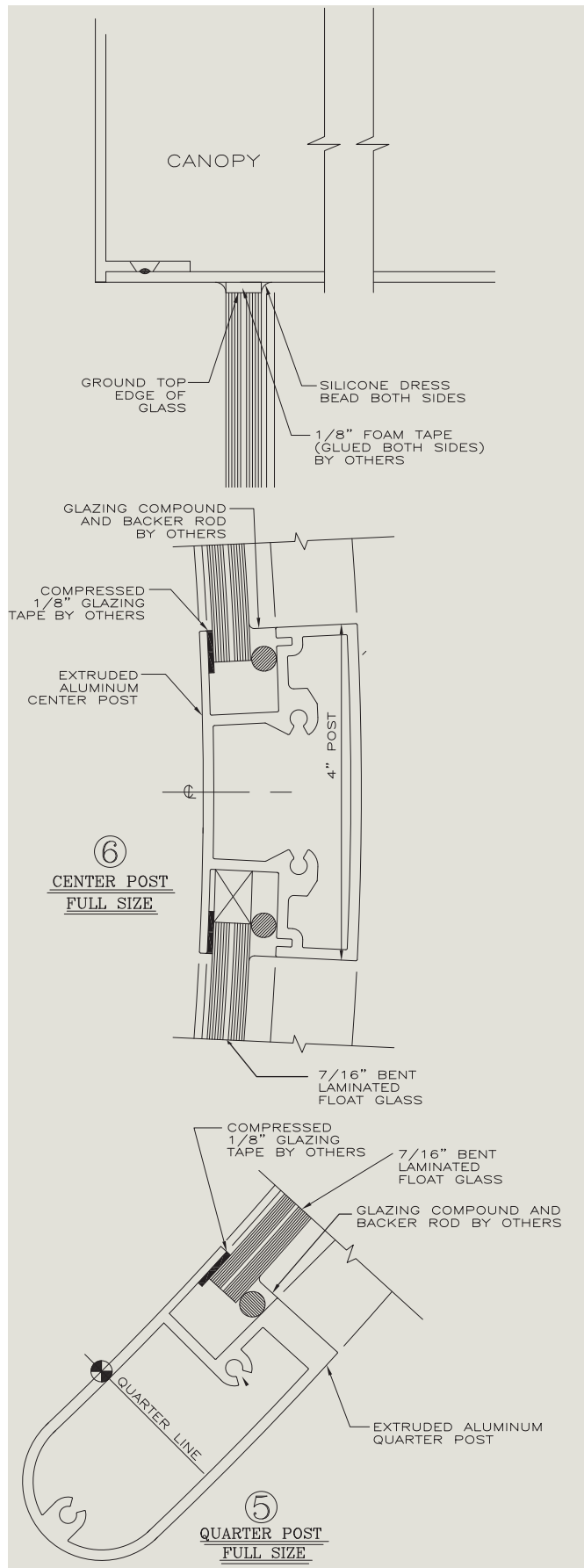
21.4.4 Install remaining enclosure glass.

1. Install remaining enclosure glass per paragraphs 21.4.1 through 21.4.2.

NOTICE

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

Fig. 24.1.3 Crane shop drawing post backer rod and glazing installation examples



NOTICE

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

21.5 Install enclosure base covers

Fig. 21.5.1 Base cover hardware

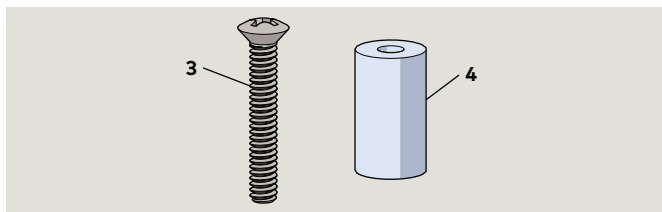


Fig. 21.5.2 Aluminum base and cover assembly

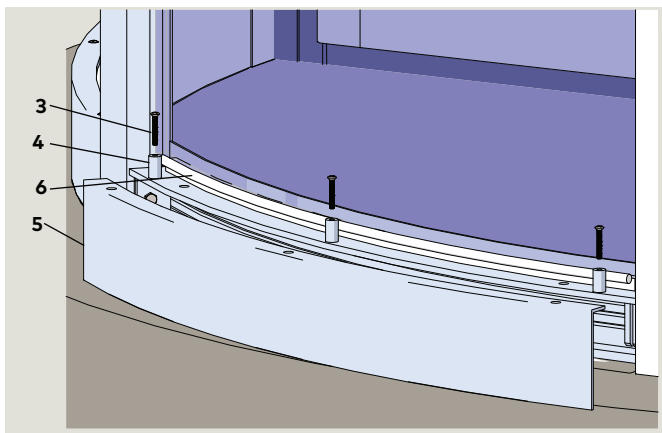


Fig. 21.5.3 Enclosure base cover installed

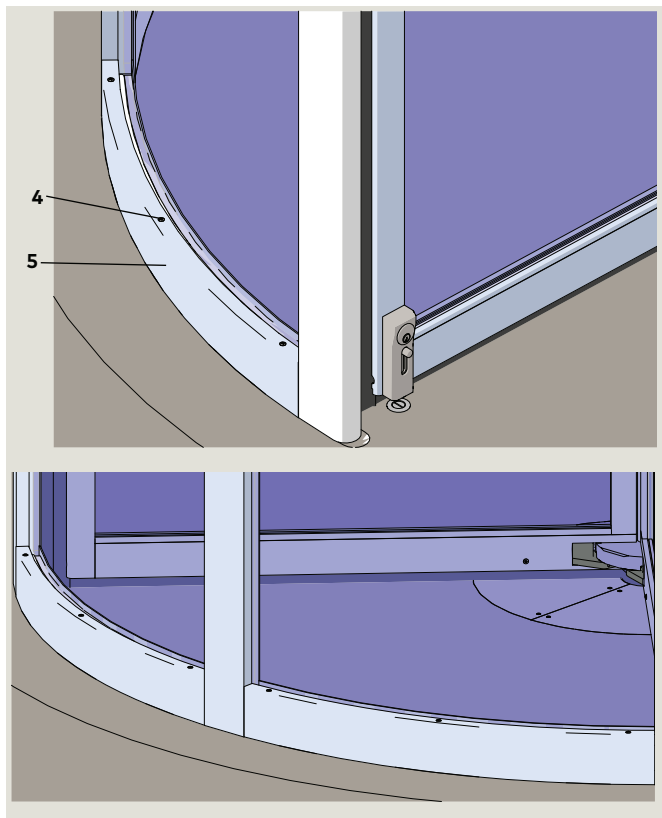


Table 21.5.1 Enclosure base assembly

Part / Assembly	Description
3 RF6118-01G	10-24 x 1 1/4" Phillips oval head machine screw
4 RC6390	Base cover support spacer, 1/2" OD, 3/8" ID, 7/8" long
5 RE6015-0X0	Enclosure, base outer, 3", AL
6	Backer rod (by installer)

21.5.1 Install enclosure base covers.

1. Install enclosure base covers using hardware in Fig. 21.5.1

21.5.2 Complete glazing of enclosure glass at enclosure bases.

1. Finish glazing at each enclosure base.

22 Check wing breakout force, bookfold operation

22.1 Check breakout force

Fig. 22.1.1 Wing in bookfold position

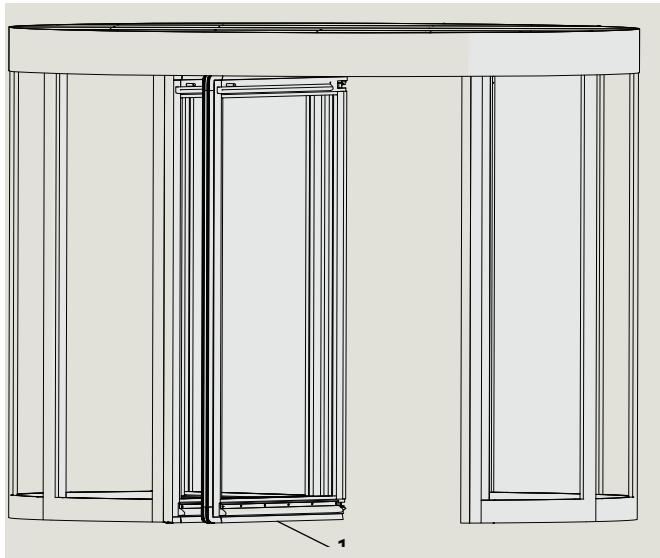
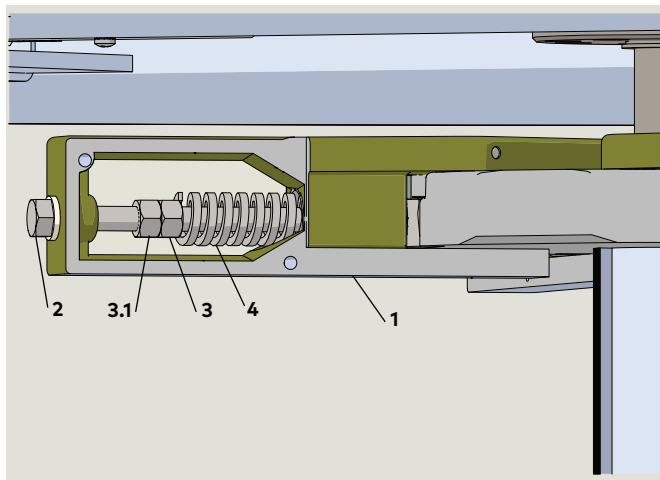


Fig. 22.1.2 Hanger breakout tension adjustment



- | | |
|----------------------------------|--------------------|
| 1 Hanger assembly
RS6045 | 3 .375-16 hex nut |
| 2 H bolt, .375x 4"
RC6156-01G | 3.1 375-16 hex nut |
| | 4 .Spring |

22.1.1 Breakout force.

NOTICE

BHMA A15.27
Para. 10 Breakout force requirements.
Each revolving door wing shall be capable of breakout when a force of 130 lb. [570 N] is applied at a point 3 inches [76 mm] from the outer edge of the outer wing stile and 40 inches above the floor.

22.1.2 Initial breakout hanger tension.

- Initial hanger bookfold tension set in Chapter 21.
- Reference Para. 22.2 for bookfold operation overview.

22.1.3 Check breakout force on first wing.

1. Block one door wing. Push an adjacent wing with a force gauge until breakout occurs. Note breakout force.

2. If hanger breakout force adjustment is required, refer to Para. 22..1.4.

22.1.4 Hanger breakout force adjustment.

1. Remove wing from hangers.

CAUTION

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

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

• Increase hanger tension:

- Turn hex nut (6) CW to tension spring.
- Use two 9/16" wrenches to both lock hex nuts in place.
- Repeat same tension adjustment on lower hanger.

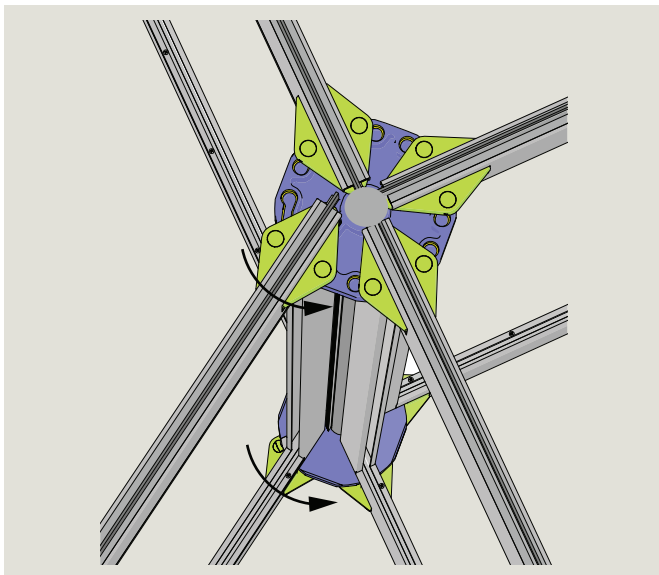
• Decrease hanger tension:

- 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. 21.1.1 are met.

Fig. 22.1.3 Door wing in breakout position

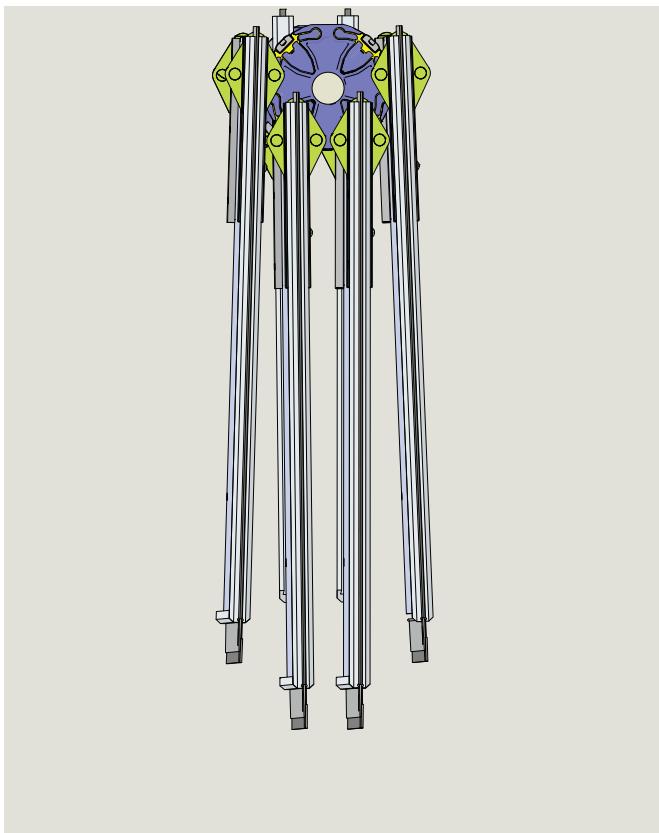


22.1.5 Breakout force, remaining wings.

1. Check breakout force on each of the remaining wings.
2. Adjust breakout force as required on hangers for each wing to meet requirements in Para. 22.1.1.

22.2 Check bookfold operation

Fig. 22.1.4 Door wings in bookfold position



22.2.1 Check wing bookfold operation

1. Check bookfold operation on all wings.

Appendix A Motion Assist 360 remote control enclosure option

Fig. A.1 Remote control enclosure

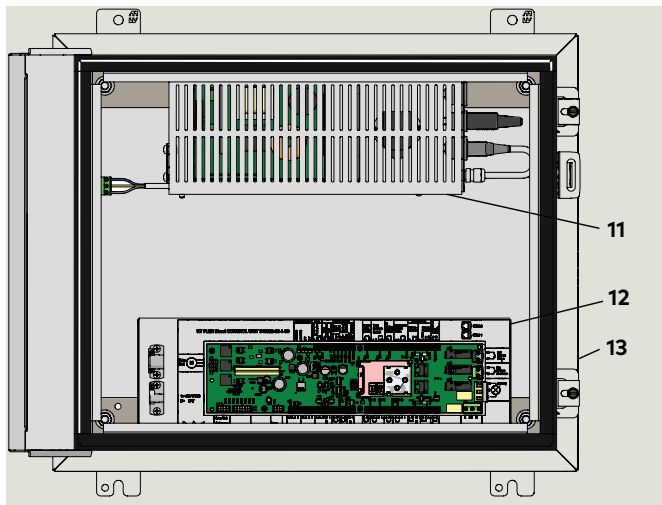


Table A.1 Motion Assist 360 drive hardware

Part / Assembly	Description
11 RX6001-001	Motion Assist 360 power supply
12 RX6002-001	Motion Assist 360 control unit
13 RK6007-001	Remote enclosure kit assembly

A.1 Remote control enclosure installation and wiring.
Reference Wiring, Setup and Troubleshooting Manual
RL6000-013, Chapter 19, Remote control enclosure.

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www.dormakaba.us

dormakaba
DORMA USA, Inc.
1 Dorma Drive, Drawer AC
Reamstown, PA 17567
USA
T: 717-336-3881
F: 717-336-2106