

# Crane 2000LE and 3000LE

Overhead Motion Assist 360 drive

Overhead speed control

## Installation Manual

RL6001-005 – 05-2022

| EN |

 **Crane**  
dormakaba Group

**dormakaba** 

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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 6" canopy height  
Canopy mounted drive and speed control

No. of Wings	Motion Assist 360 drive controls	Canopy assembly	Reference Door Assembly
4	Canopy mounted		
4	Remote enclosure	Para. 5.4	Para. 5.2
3	Canopy mounted		
3	Remote enclosure		

### NOTICE

#### Wiring, Setup and Troubleshooting Manual RL6000-013.

Reference RL6000-013 for all 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
Wings	Bolted construction	
	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
Wings	Fully formed and welded	
	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.

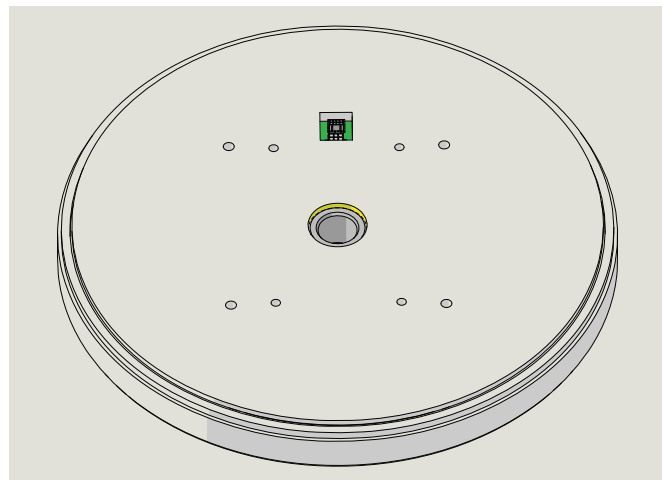
- Uses "S" Motion Assist function module.



#### 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: <b>GFCI</b> Circuit breaker	<b>15</b>	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

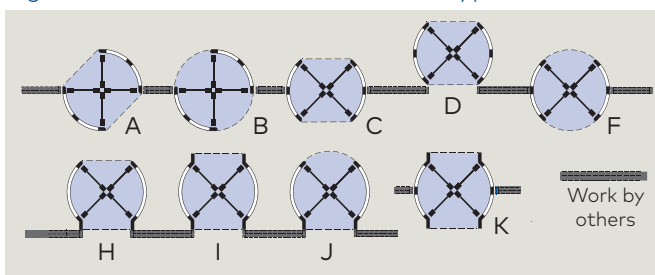
### 2.4.4 Drive

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"> <li>• 3 wings</li> <li>• 4 wings</li> </ul>		
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"> <li>• Clear anodized</li> <li>• Custom anodized</li> <li>• Dark bronze anodized</li> <li>• Painted</li> </ul>	<ul style="list-style-type: none"> <li>• #4 satin</li> <li>• Non-directional</li> <li>• #6 fine satin</li> <li>• Bead blast</li> <li>• #7 mirror</li> <li>• Custom</li> <li>• #8 mirror</li> </ul>	<ul style="list-style-type: none"> <li>• #4 satin</li> <li>• #8 mirror</li> <li>• Bead blast</li> <li>• Non-directional</li> <li>• #7 mirror</li> <li>• Custom</li> </ul>
Operation	<ul style="list-style-type: none"> <li>• Manual, mechanical speed adjuster to limit speed. To be adjusted to comply with ANSI/BHMA 156.27.</li> </ul>		
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"> <li>• Glass</li> <li>• Aluminum panels</li> </ul>	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Solid metal</li> </ul>	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Solid metal</li> </ul>
Enclosure glass	7/16" clear or tinted		
Canopy material	<ul style="list-style-type: none"> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Stainless steel</li> </ul>	<ul style="list-style-type: none"> <li>• Bronze</li> </ul>
Speed Control	<p>Manual speed control:</p> <ul style="list-style-type: none"> <li>• Uses 100:1 gear ratio.</li> <li>• Sealed unit is mounted in canopy.</li> <li>• Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code.</li> </ul>		

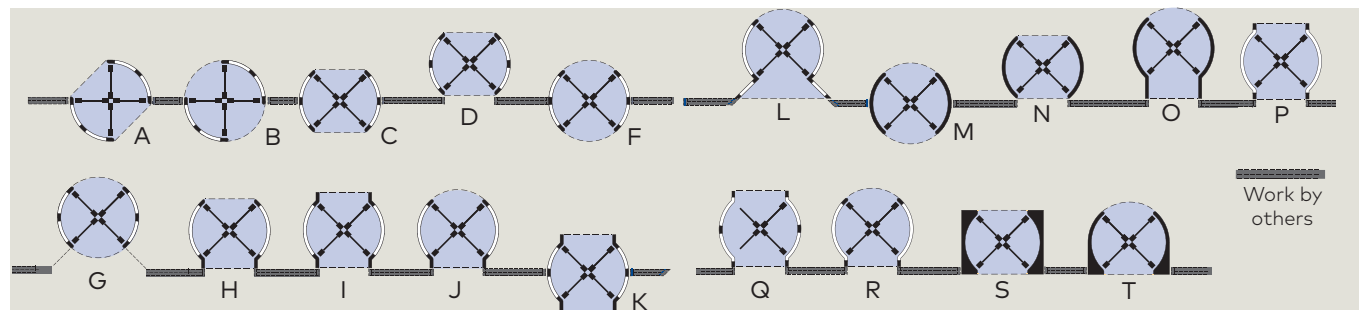
Fig. 2.5.1 Crane 2000LE attachment types



## 2.6 3000LE series

	AL3000	SS3000	BZ3000
Material	Aluminum	Aluminum / Stainless steel	Aluminum / Bronze
Wing configuration	<ul style="list-style-type: none"> <li>• 3 wings</li> <li>• 4 wings</li> </ul>		
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"> <li>• Clear anodized</li> <li>• Custom anodized</li> <li>• Dark bronze anodized</li> <li>• Painted</li> </ul>	<ul style="list-style-type: none"> <li>• #4 satin</li> <li>• Non-directional</li> <li>• #6 fine satin</li> <li>• Bead blast</li> <li>• #7 mirror</li> <li>• Custom</li> <li>• #8 mirror</li> </ul>	<ul style="list-style-type: none"> <li>• #4 satin</li> <li>• #8 mirror</li> <li>• Bead blast</li> <li>• Non-directional</li> <li>• #7 mirror</li> <li>• Custom</li> </ul>
Operation	<ul style="list-style-type: none"> <li>• Manual, mechanical speed adjuster to limit speed. To be adjusted to comply with ANSI/BHMA 156.27.</li> </ul>		
Attachment Types	All, custom. Reference Fig. 5.3.1		
Enclosure material	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Solid metal</li> </ul>	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Solid metal</li> </ul>	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Solid metal</li> </ul>
Enclosure glass	7/16" or 9/16"; clear or tinted		
Canopy material	<ul style="list-style-type: none"> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Stainless steel</li> </ul>	<ul style="list-style-type: none"> <li>• Bronze</li> </ul>
Speed Control	<p>Manual speed control:</p> <ul style="list-style-type: none"> <li>• Uses 100:1 gear ratio.</li> <li>• Sealed unit is mounted in canopy.</li> <li>• Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code.</li> </ul>		

Fig. 5.3.1 Crane 3000LE attachment types



## 2.7 Revolving door assembly components overview, 4 wing door example

Table 2.7.1 4 wing door with Motion Assist 360 drive and controls and in-ground speed control

#	Description	Part #
1	Canopy assembly, 4 wing	RS6049-001
2	Motion Assist 360 drive and controls with speed control	RS6047-001
3	Center post, AL	RE6007-0X0
4	Quarter post	RE6009-0X0
5	Enclosure bent glass	
6	Enclosure, base outer, 3", AL	RE6015-0X0
	Enclosure, base inner, 3", AL	RE6016-0X0
7	Wing assembly with lock, 4 wing door	
8	Steel shaft assembly, overhead speed control, 4 wing door	RS6041-001
9	Assembly, recessed floor pivot bearing	RS6076-010



### TIPS AND RECOMMENDATIONS

**Canopy assemblies.**  
Reference Para. 5.1

Fig. 2.7.1 Four wing revolving door, assembly example

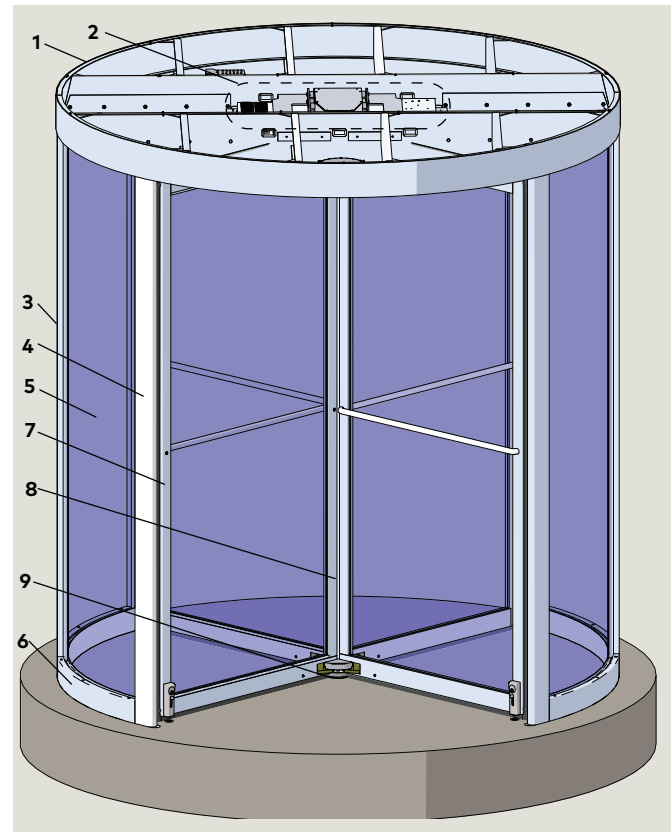


Fig. 2.7.2 Steel shaft assembly, 4 wing door

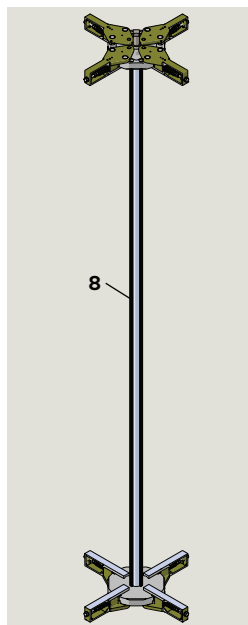


Fig. 2.7.3 Wing assembly, 3 wing door

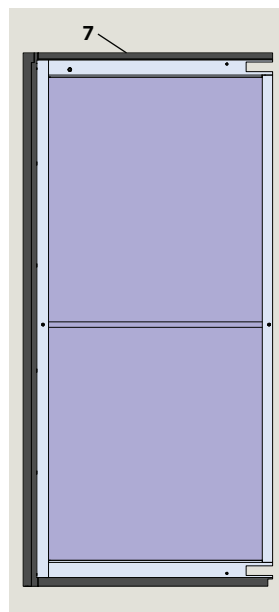


Fig. 2.7.4 Center post, quarter post

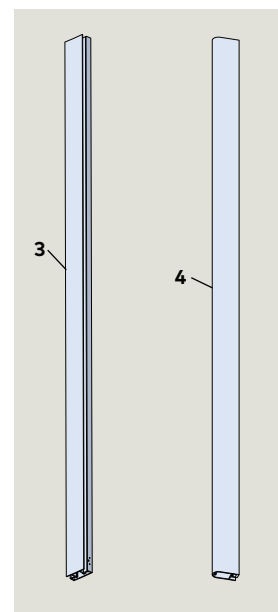


Fig. 2.7.5 Motion Assist 360 drive and control assembly with overhead speed control

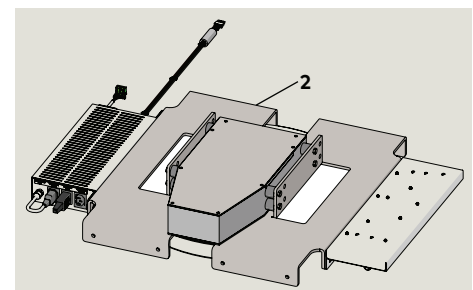


Fig. 2.7.6 Recessed floor pivot bearing assembly

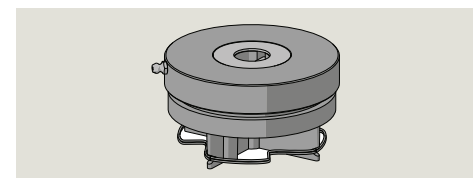
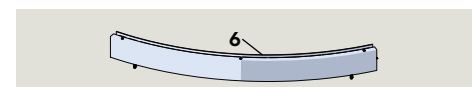


Fig. 2.7.7 Enclosure base and cover assembly



## 2.8 Motion Assist "S" function module

### 2.8.1 Motion Assist "S" function module.

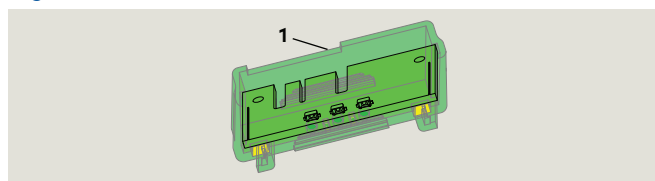
Motion Assist 360 is supplied with a "S" Motion Assist low energy function module.



#### TIPS AND RECOMMENDATIONS

Reference Para. 14.4 for Motion Assist 360 function module location.

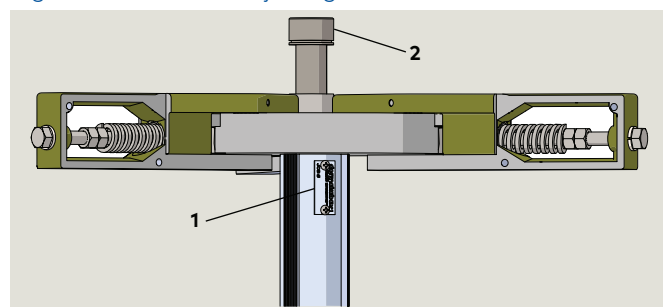
Fig. 2.8.1 "S" Motion Assist function module



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

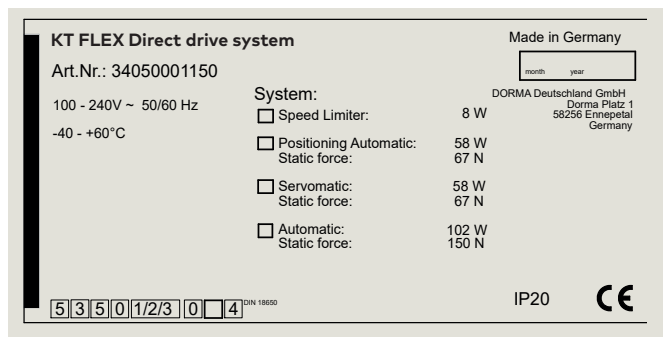
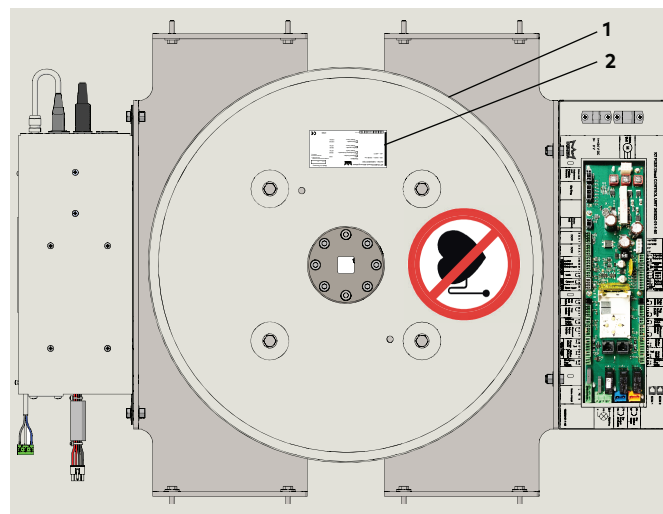


Fig. 2.9.3 Motion Assist 360 drive identification label



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!

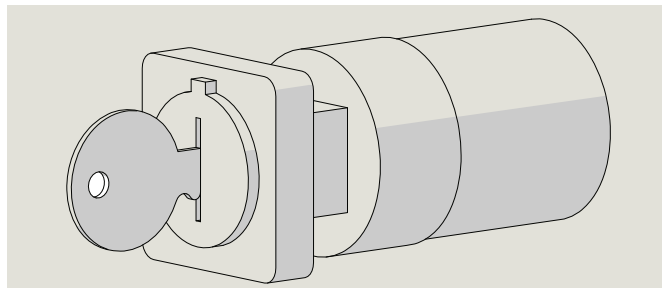
- 
- The customer can only operate the revolving door after door commissioning by dormakaba service technicians.
  - Intended use encompasses adherence to the information in this document as well as all additional applicable documentation.



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

## 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.

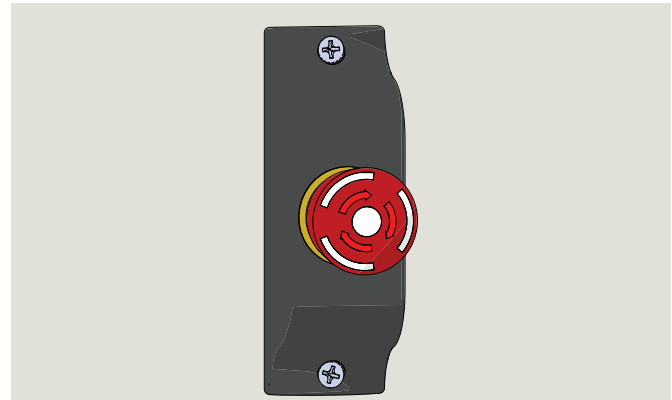
### 4.2.2 Actuation of Emergency Stop pushbutton.

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.

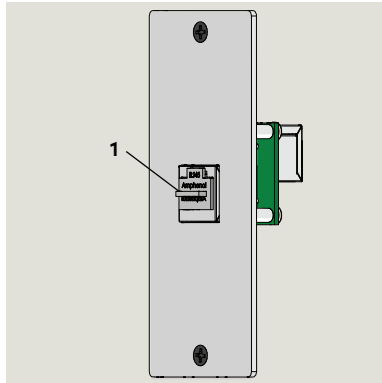
#### 4.2.2.1 Procedure after an Emergency stop.

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

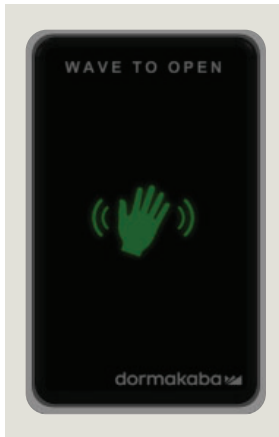
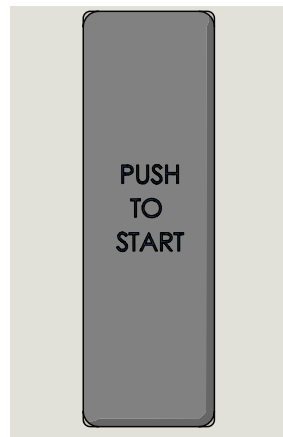


Fig. 4.4.2 Push to Start  
plate  
DX3339-040



### 4.4.1 Wave to Open or Push to Start plates.

Locations:

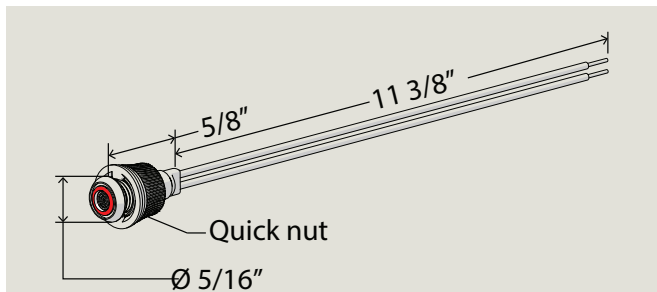
- Inside the building on the leading quarter post/end wall or attached separately within sight of the revolving door.
- Building exterior.

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

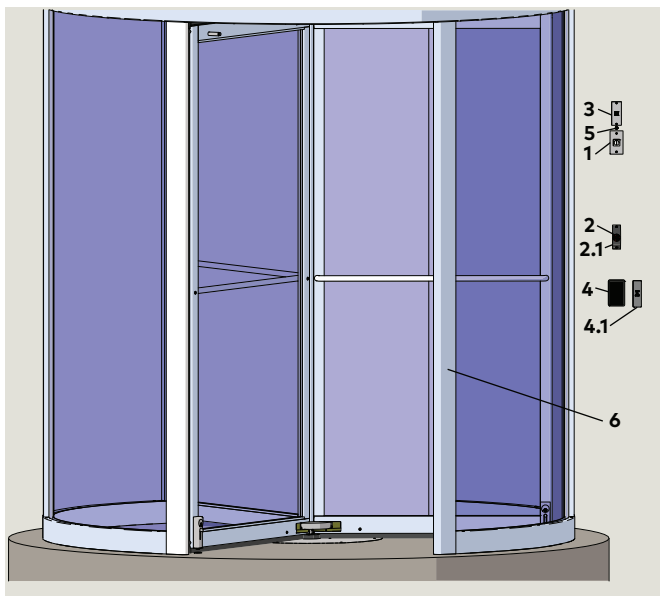


Table 4.6.1 Door operator components

#	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 Start plate (option)	DX3339-040
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 6" high canopy

### Canopy mounted Motion Assist 360 drive and speed control

#### 5.1.1 6" canopy door configurations.

Fig. 5.1.1 4 wing door

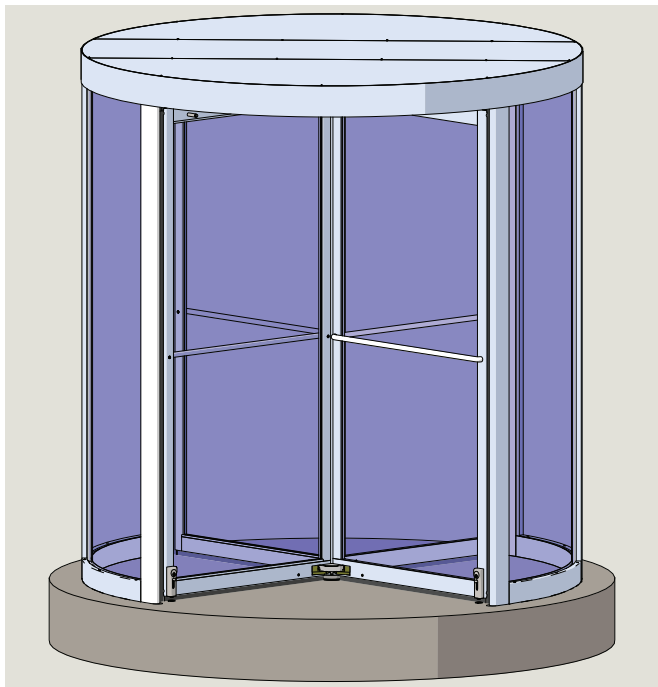
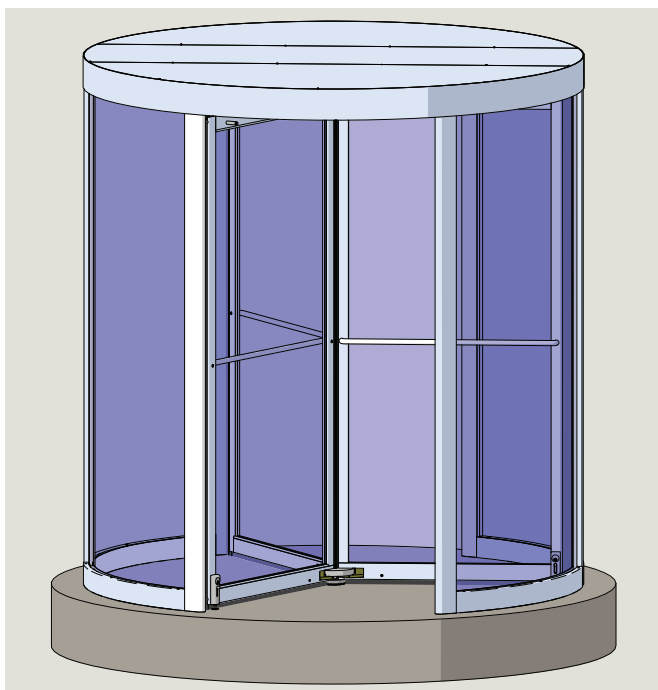


Fig. 5.1.2 3 wing door



#### NOTICE

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

#### 5.1.2 6" canopy configurations.

Table 5.1.1 6" inch canopy configurations

Canopy assembly	# wings	Figure	Item #	Motion Assist 360 drive controls
RS6049-001	4	5.1.3	3	Canopy mounted
RS6049-002	3			
RS6049-003	4	5.1.4	4	Remote enclosure
RS6049-004	3			

Fig. 5.1.3 With Motion Assist 360 drive controls

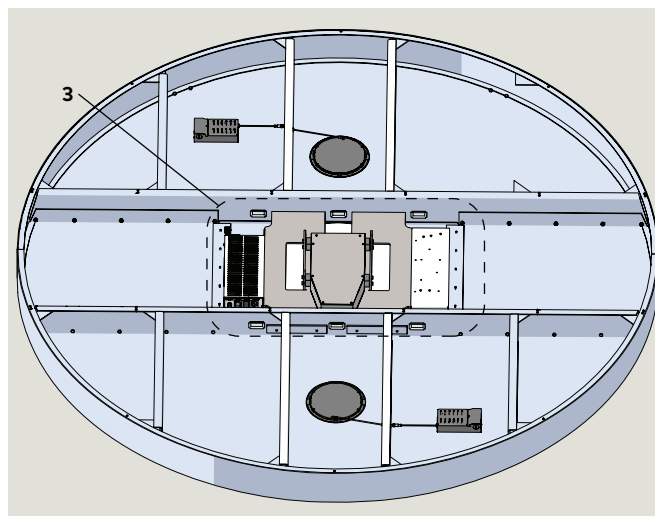
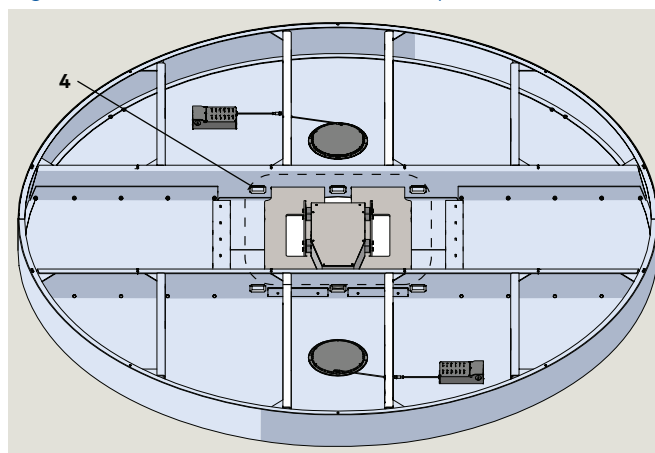


Fig. 5.1.4 Motion Assist 360 drive only



## 5.2 Canopy mounted drive bracket assembly with speed control

Table 5.2.1 Motion Assist 360 drive configurations, 6 inch canopy

Drive assembly	Figure	Motion Assist 360 drive controls	Speed control
RS6047-001	2.10.1	Canopy mounted	Canopy mounted
RS6047-002	2.10.2	Remote enclosure	Canopy mounted

Table 5.2.2 Motion Assist 360 drive hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6066-001 Mounting plate, OHSC, 24" spacing
5	RS6073-010 Overhead speed control assembly
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 Kit, remote enclosure

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

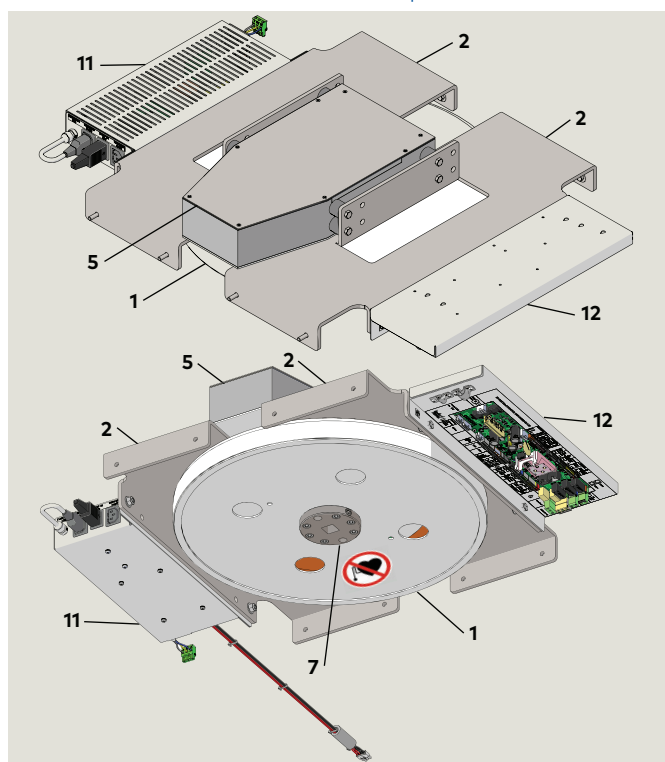


Fig. 5.2.2 Mounting plate with speed control mounting, 24" spacing

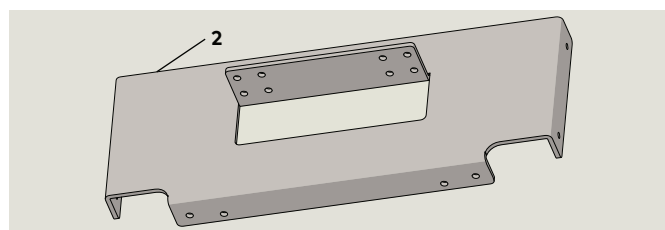


Fig. 5.2.3 Assembly, drive bracket. Motion Assist 360 drive with speed control

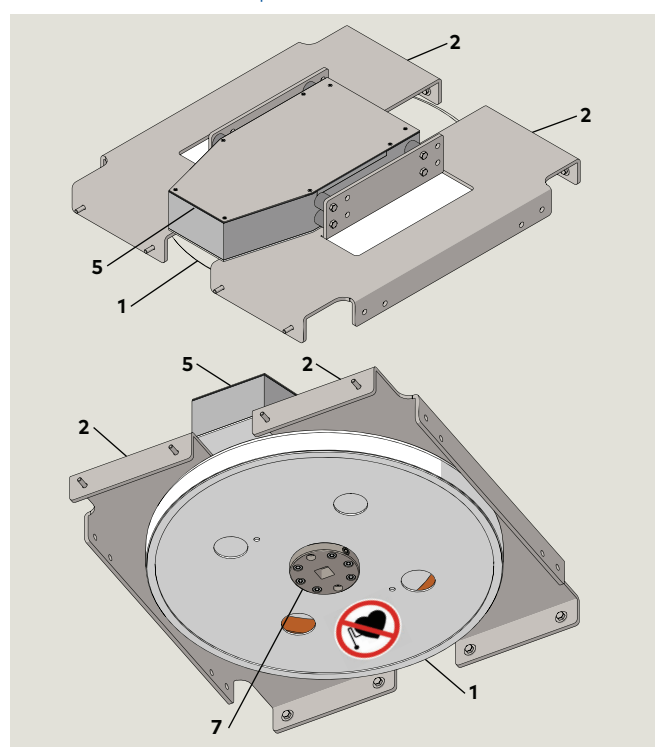
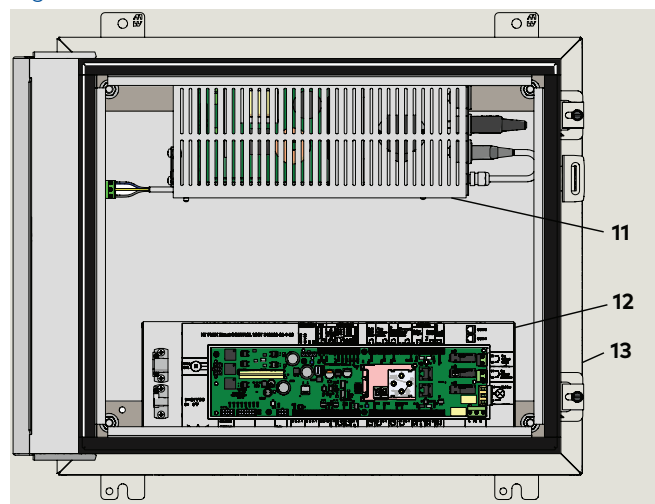


Fig. 5.2.4 Remote control enclosure



## 5.3 Motion Assist 360 drive hardware

Table 5.3.1 Motion Assist 360 drive hardware

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

Fig. 5.3.1 Motion Assist 360 drive

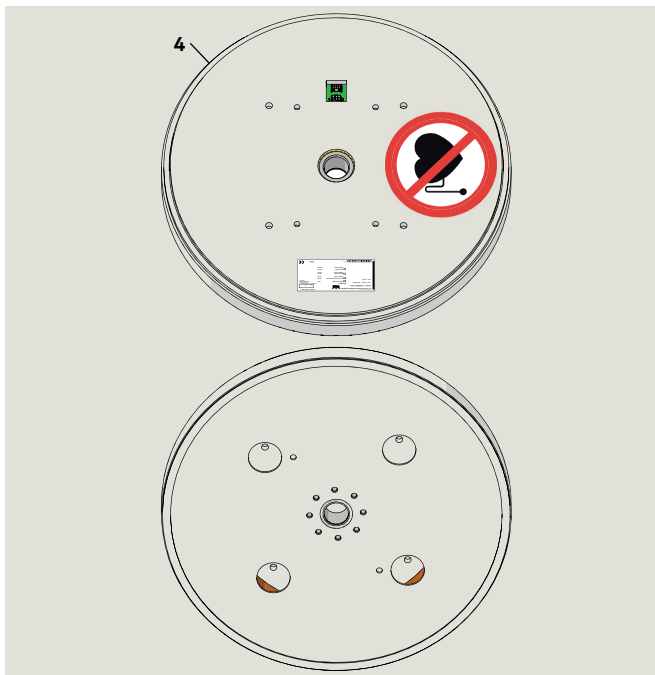


Fig. 5.3.2 Motion Assist 360 control unit

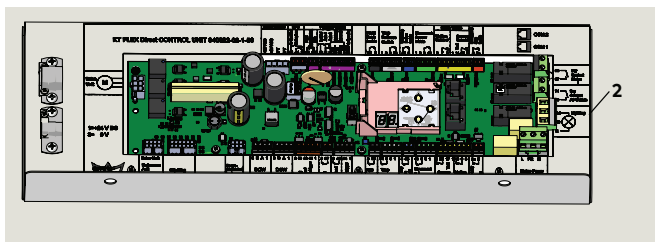


Fig. 5.3.3 Motion Assist 360 power supply and cables

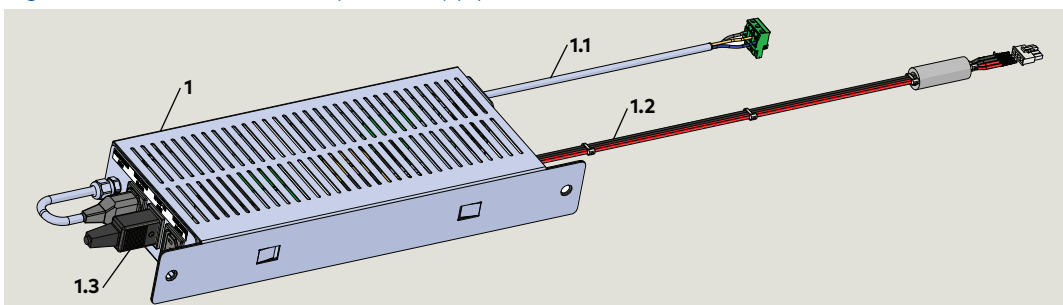


Table 5.3.2 Motion Assist 360 drive cables

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

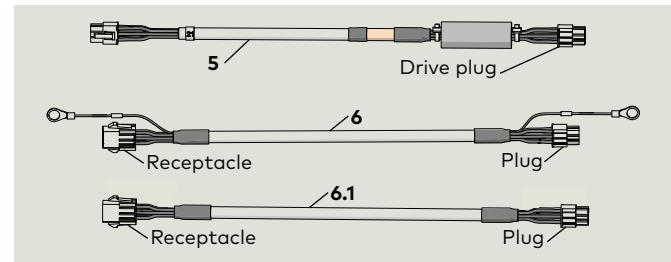


Fig. 5.3.5 Drive Hall sensor cables

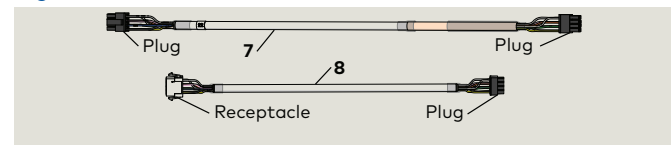
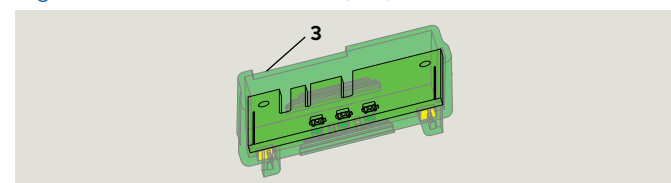


Fig. 5.3.6 "S" function module (Grn) Motion Assist



## 5.8 3 wing steel shaft assembly, overhead speed control RS6042

Fig. 5.8.1 Exploded view

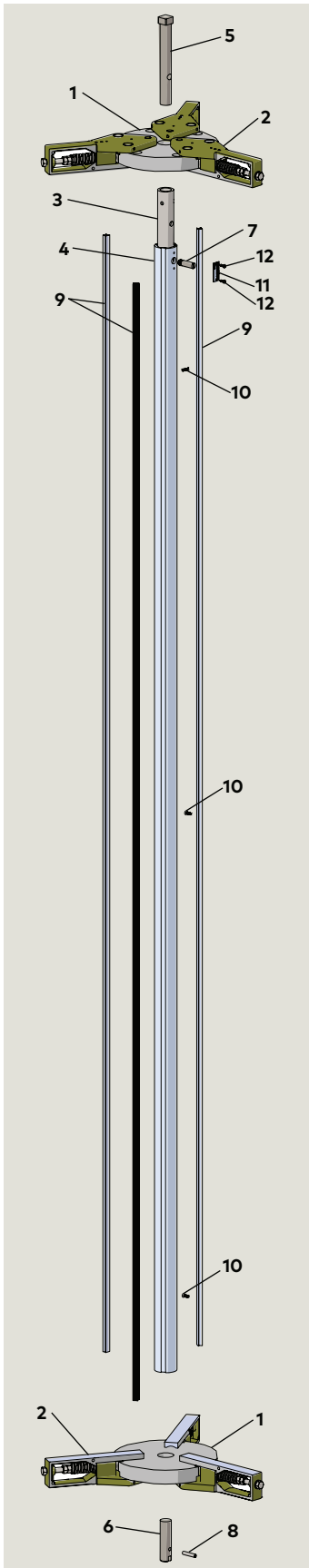


Fig. 5.8.2 3 wing steel shaft assembly

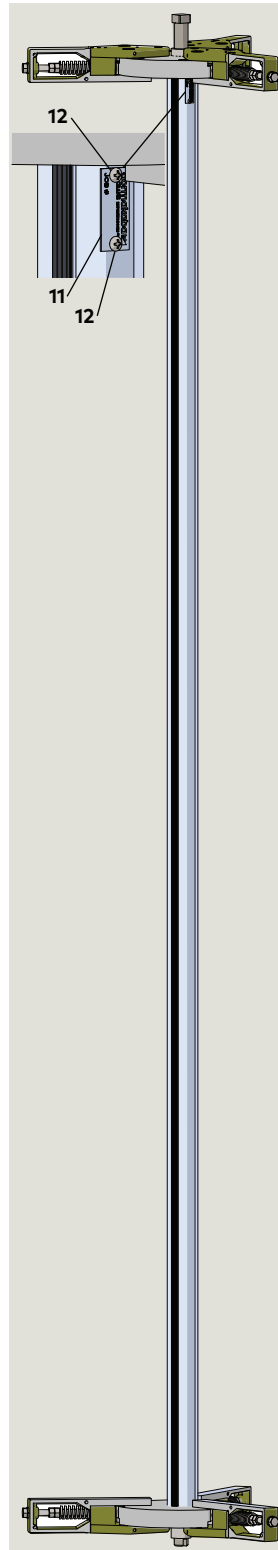


Table 5.8.1 RS6042 assemblies and parts

Part / Assembly	Description
1 RS6044-001	3 wing disc assembly
2 RS6045-020	Hanger assembly
3 RC6073-002	Steel center shaft, 3 wing, floor speed control
4 RC6075-001	Steel shaft cover 3 wing
5 RC6076-001	Top plug, steel shaft, Motion Assist 360 adapter interface
6 RC6077-001	Bottom plug, steel shaft, Floor pivot assembly
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



## 5.9 4 wing steel shaft assembly, overhead speed control RS6041-001

Fig. 5.9.1 Exploded view

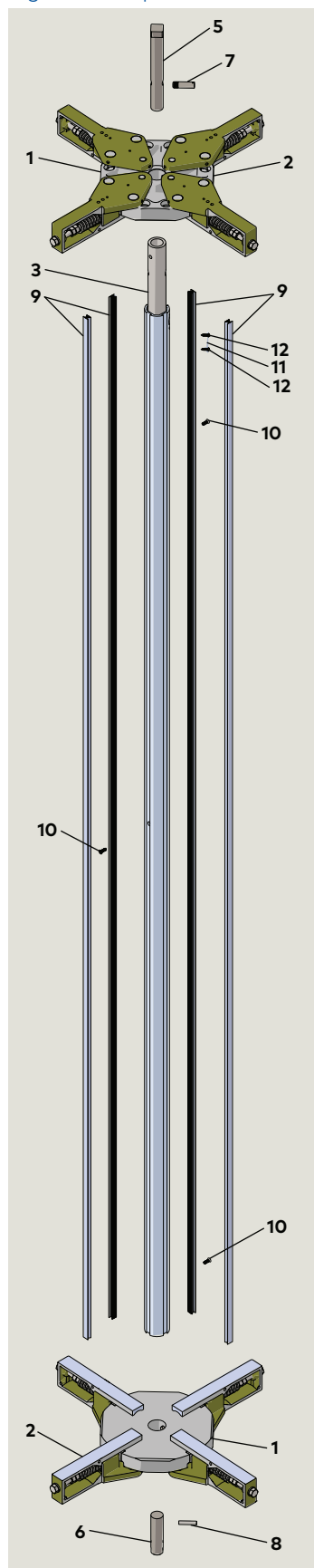


Fig. 5.9.2 4 wing steel shaft assembly

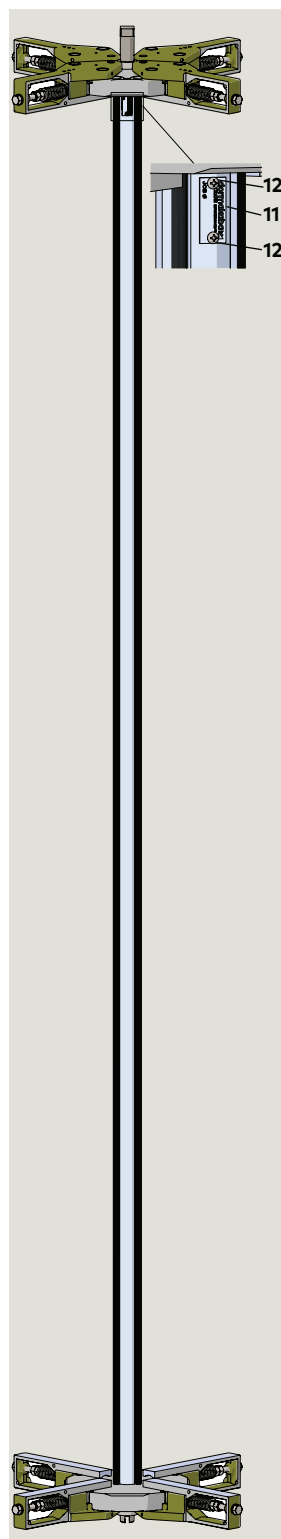


Table 5.9.1 RS6041-001 assemblies and parts

Part / Assembly	Description
1 RS6043-001	4 wing disc assembly
2 RS6045-020	Hanger assembly
3 RC6073-001	Steel center shaft, 4 wing, overhead speed control
4 RC6074-001	Steel shaft cover 4 wing
5 RC6076-001	Top plug, steel shaft, Motion Assist 360 interface
6 RC6077-001	Bottom plug, steel shaft, Floor pivot
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

## 5.6 Hanger assembly, steel shaft

Fig. 5.6.1 Hanger assembly, steel shaft RS6045-020

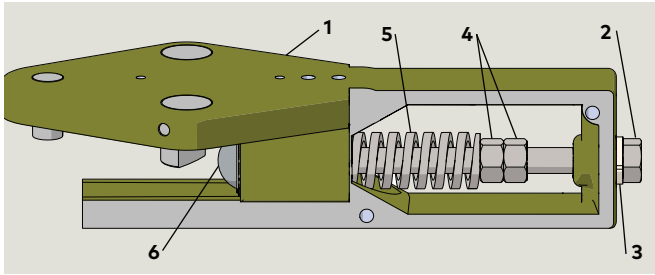
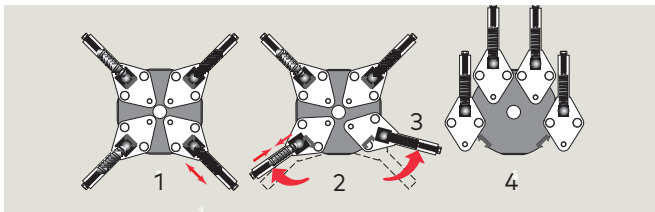


Table 5.6.1 RS6045 shaft hanger assemblies and parts

Part / Assembly	Description
1	RC6369-0X0 Hanger body
2	RC6156-01G Hex bolt, adjustment, 3/8-16 x 4"
3	Lock washer, 3/8" high collar, zinc
4	Hex nut, 0.375"-16
5	RC6153-01C Spring, hanger, black
6	RC6149-010 Steel ball, Ø7/8", chrome

## 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

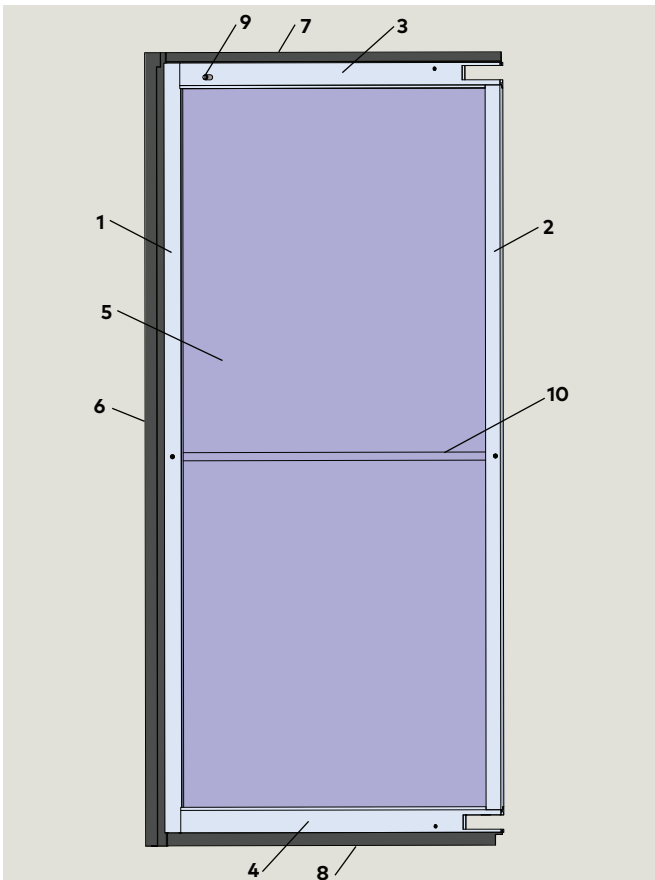


Table 5.8.1 Door wing assemblies and part examples

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	RC6287-020 Weatherstrip, T style, vertical
7	RC6287-030 Weatherstrip, T style, top
8	RC6287-010 Weatherstrip, T style, bottom
9	RS2961 Wing bumper assembly example
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

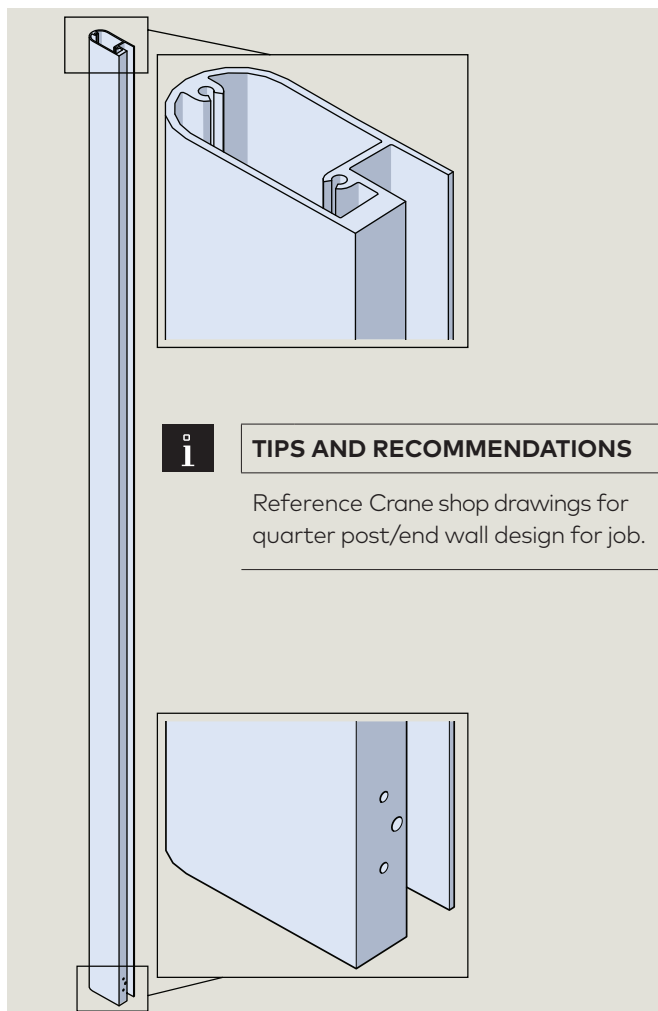


Fig. 5.9.2 Center post RE6007-0X0

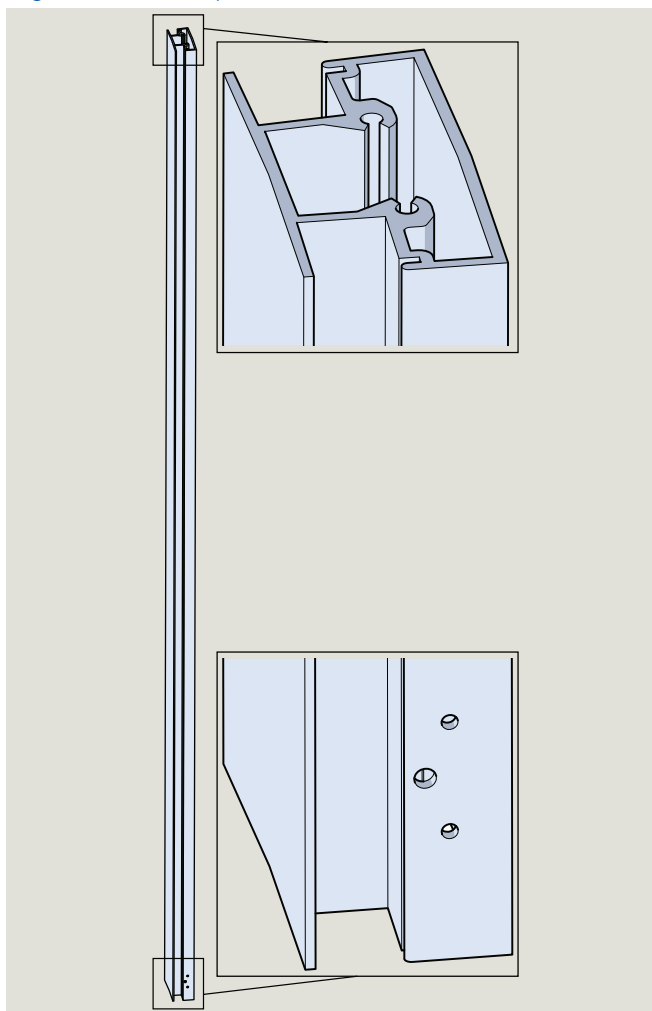


Fig. 5.9.3 Enclosure base assembly, AL

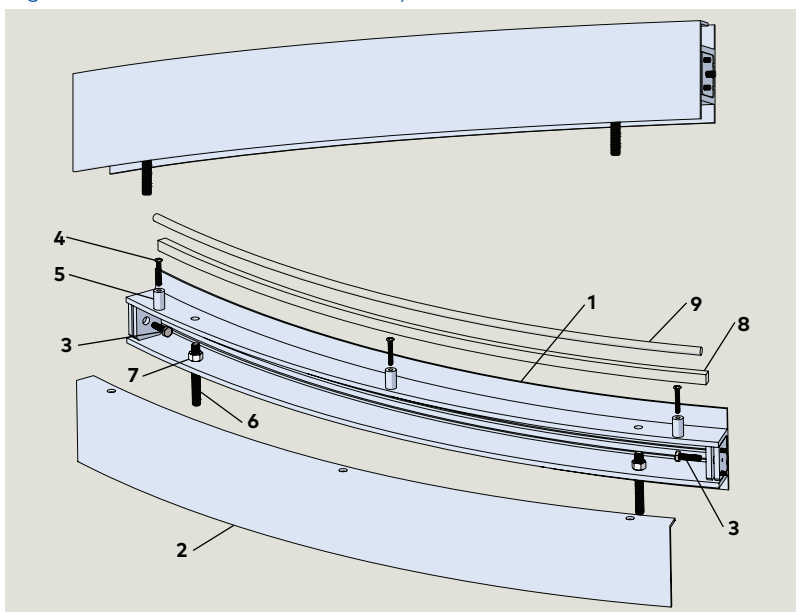


Table 5.9.1 Enclosure base parts

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 RF6118-01G	10-24 x 1.25" POHMS
5 RC6390-010	Cover support spacer, 1/2" OD x 1/16" wall x 7/8" long
6 DC2569-020	3/8 x 3" stud
7 DF0587-00G	3/8-16" hex nut
8	Glazing block (by others)
9	Backing rod (by others)

## 5.10 Overhead speed control

Fig. 5.10.1 Overhead control assembly RS6073-010

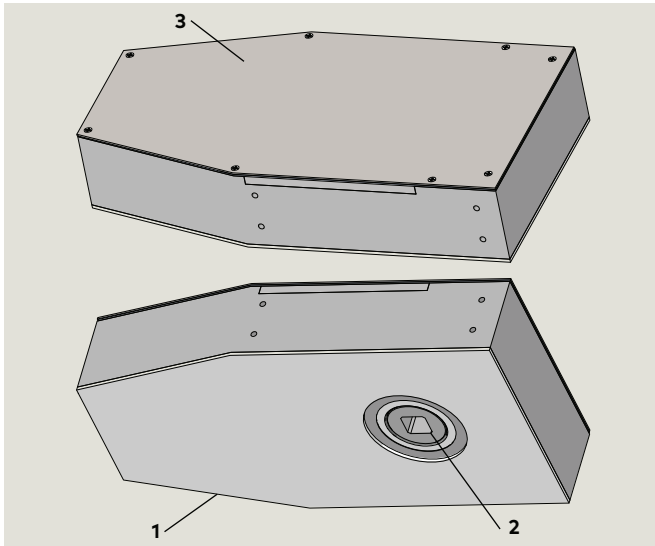


Table 5.10.1 Overhead speed control assemblies and parts

Part / Assembly	Description
1 RC6166-010	Casting, overhead speed control
2	Drive shaft, overhead speed control
3 RC6172-010	Cover, overhead speed control

## 5.11 Floor pivot bearing assemblies for center shaft

### NOTICE

Reference Crane Shop drawings for floor pivot bearing used for job.

Fig. 5.11.1 Recessed floor pivot bearing assembly RS6076-010

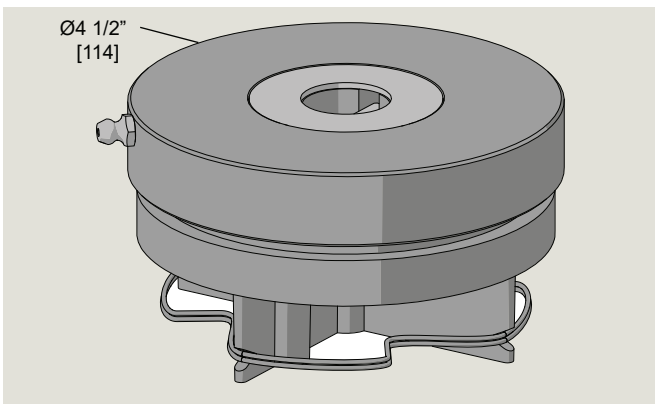
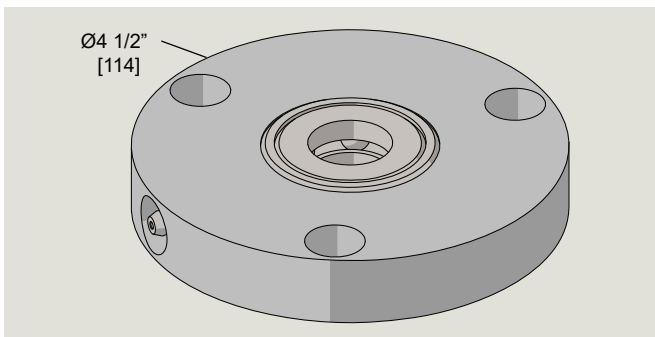


Fig. 5.11.2 Surface mounted floor pivot bearing assembly RS3423-010



## 5.12 Fastener hardware

Fig. 5.12.1 Canopy fastening hardware

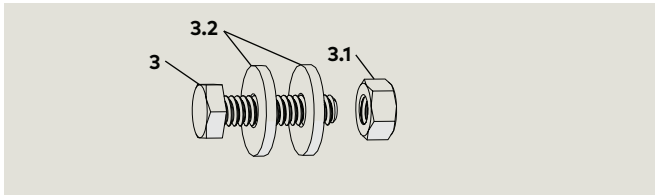


Fig. 5.12.2 Aluminum post to canopy fastening hardware

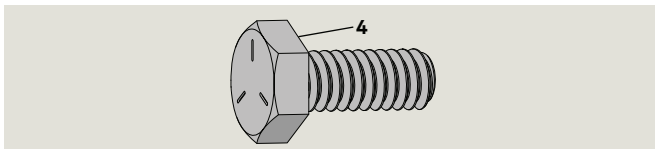


Fig. 5.12.3 Base assembly floor stud

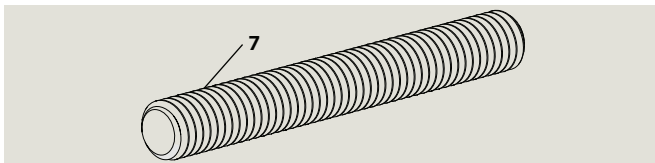


Fig. 5.12.4 Base to post fastening hardware

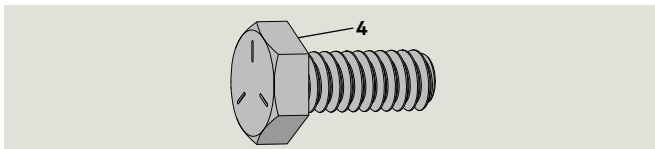


Fig. 5.12.5 Wing attachment hardware

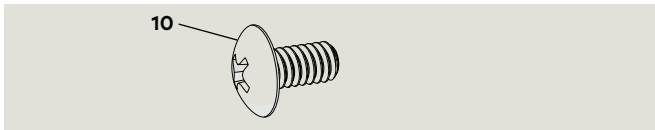


Fig. 5.12.6 Canopy attachment hardware

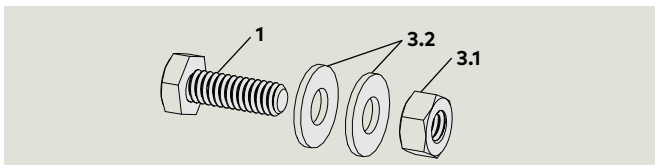


Table 5.12.1 IFastener hardware

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

#### 5.12.1 Canopy fastening hardware; canopy shipped in two sections.

- Fig. 5.12.6
- Reference Chapter 13.

#### 5.12.2 Aluminum post to canopy fastening hardware.

- Fig. 5.12.2
- Reference Chapter 14.

#### 5.12.3 Base assembly floor studs.

- Fig. 5.12.3
- Reference Chapter 15.

#### 5.12.4 Base to post fastening hardware.

- Fig. 5.12.4
- Reference Chapter 15.

#### 5.12.5 Wing to center shaft hanger fastening hardware.

- Fig. 5.12.5
- Reference Chapter 18.

#### 5.12.6 Canopy attachment hardware (split canopies).

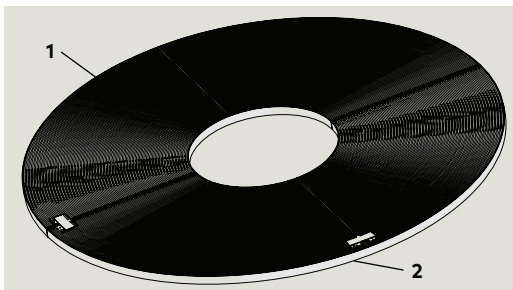
- Fig. 5.12.6
- Reference Chapter 13.

# 6 Optional assemblies

## 6.1 Floor grill and pan assembly

Fig. 6.1.1 Floor grill and pan assembly

- 1 Floor grill
- 2 Pan



## 6.2 Ceiling lights

Fig. 6.2.1 LED light fixture and junction box

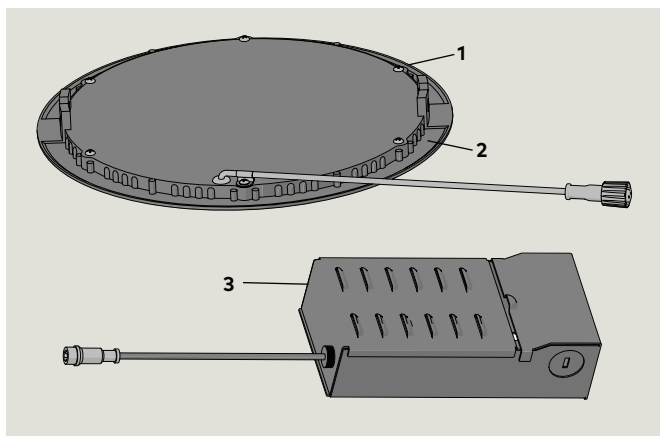


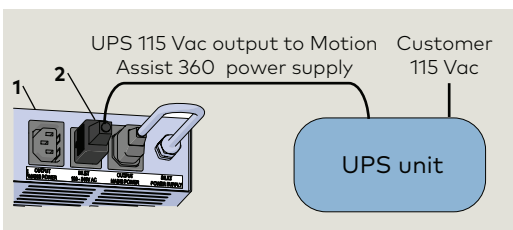
Table 6.2.1 Ceiling light and junction box

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
- 2 AC inlet plug, customer connection



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

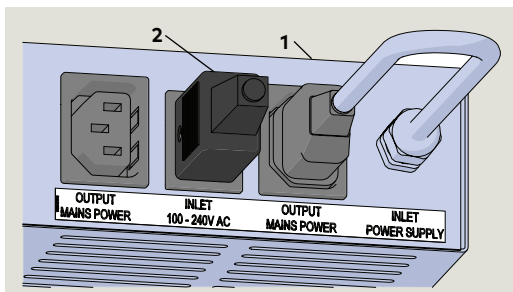
UPS 115 Vac output is wired to 100 - 240 Vac inlet plug on Motion Assist 360 power supply.

### 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
- 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 10).
  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.

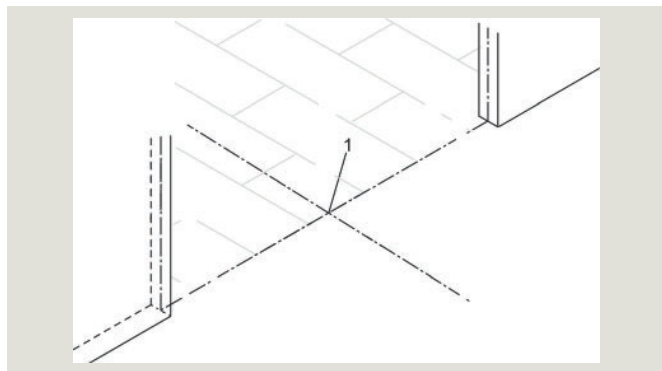
#### CAUTION

#### 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.

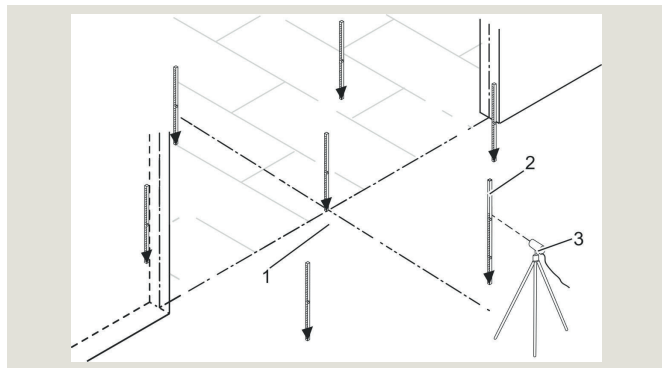
- Before leveling, ensure that the stand is securely positioned on the floor and cannot wobble or tilt.
- Before leveling, ensure that the laser leveling device is aligned horizontally on its stand.
- Always position the leveling staff vertically during leveling.
- After leveling, note the tolerance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

Fig. 9.2.2 Center of revolving door axis



1 Axis center

Fig. 9.2.3 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. 10.4.2 is a recommendation.

1. Position leveling device horizontally in front of assembly surface (Fig. 9.2.3).
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. 9.2.3 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.

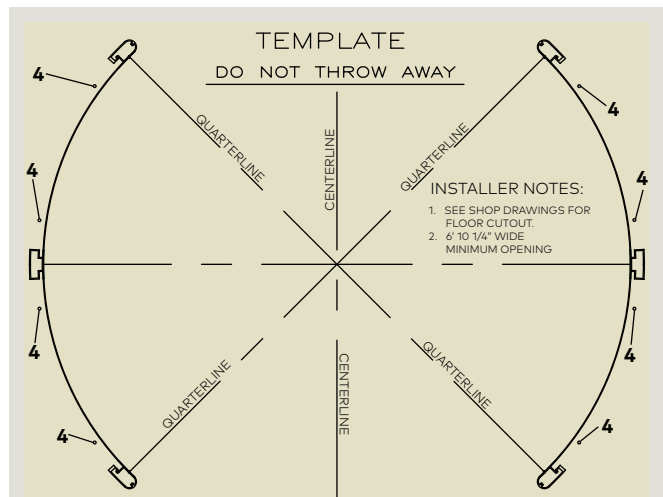
- Always accurately mark the axis center.
- Always use the supplied drilling template to mark hole locations.

1. Go to Chapter 10, Installation Template.

# 10 Installation template

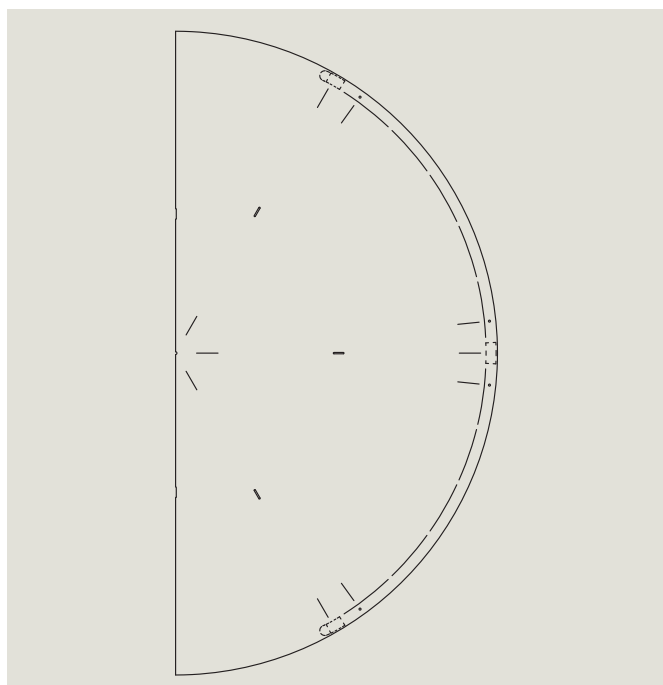
## 10.1 Installation template

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.

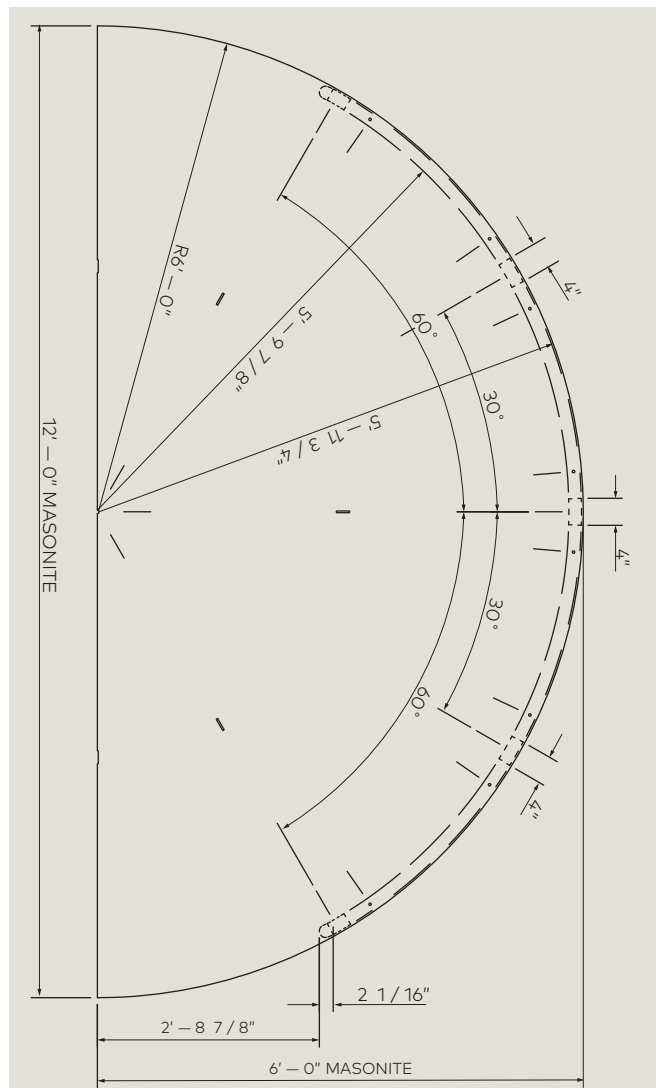


#### TIPS AND RECOMMENDATIONS

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 (Ref. Chapter 11).

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



# 11 Locate and drill holes for enclosure base studs

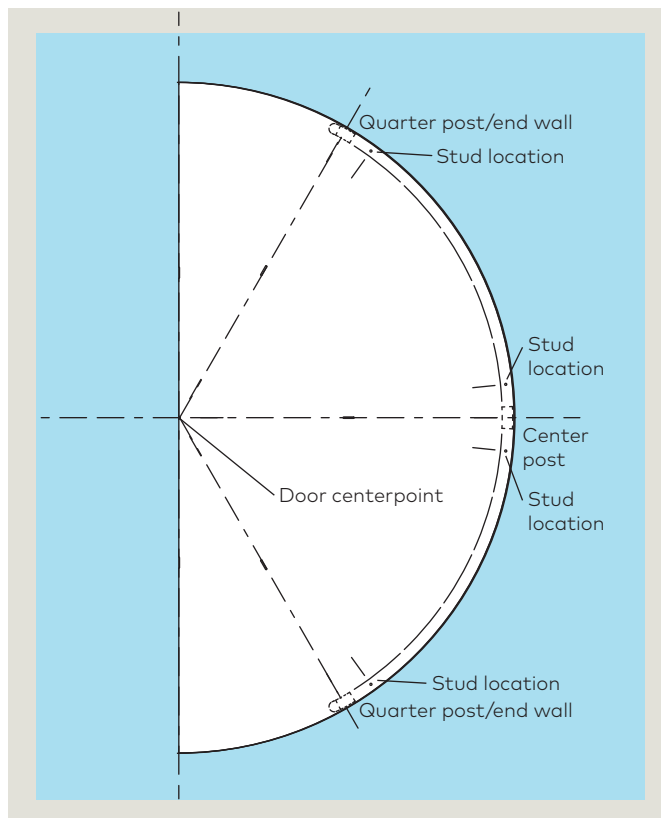
## NOTICE

Use Chapter 12 for door configurations using an in-ground speed control.

- Reference Chapter 5, Para. 5.1.

## 11.1 Mark door position on floor using template

Fig. 11.1.1 Template placed on floor



## 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!

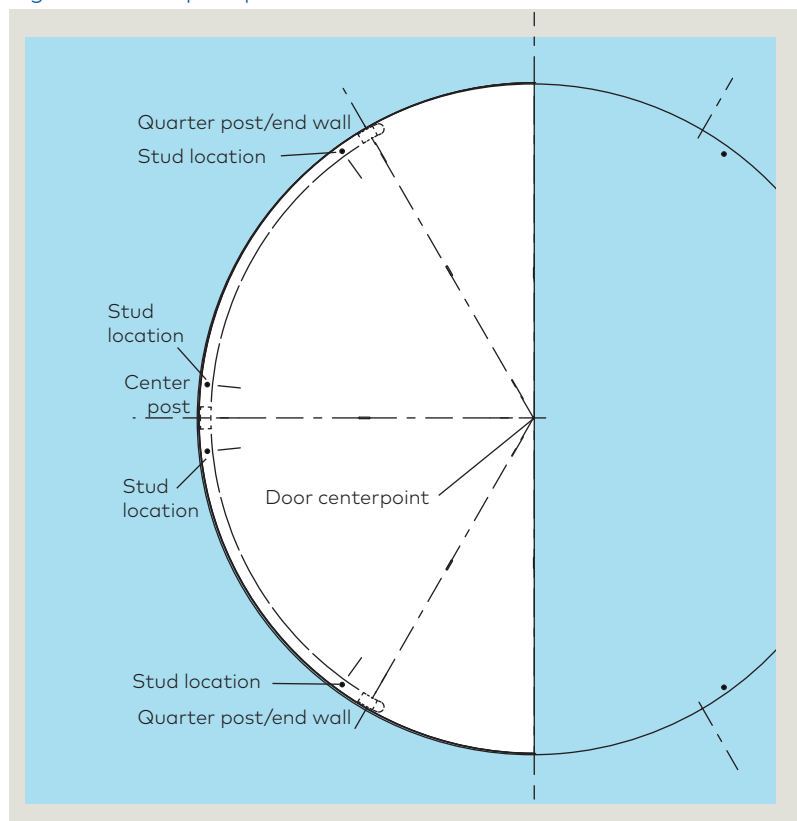
## NOTICE

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.

Fig. 11.1.3 Template position reversed on floor



**11.1.3 Reverse template position on floor.**

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

**11.1.4 Mark lines on floor.**

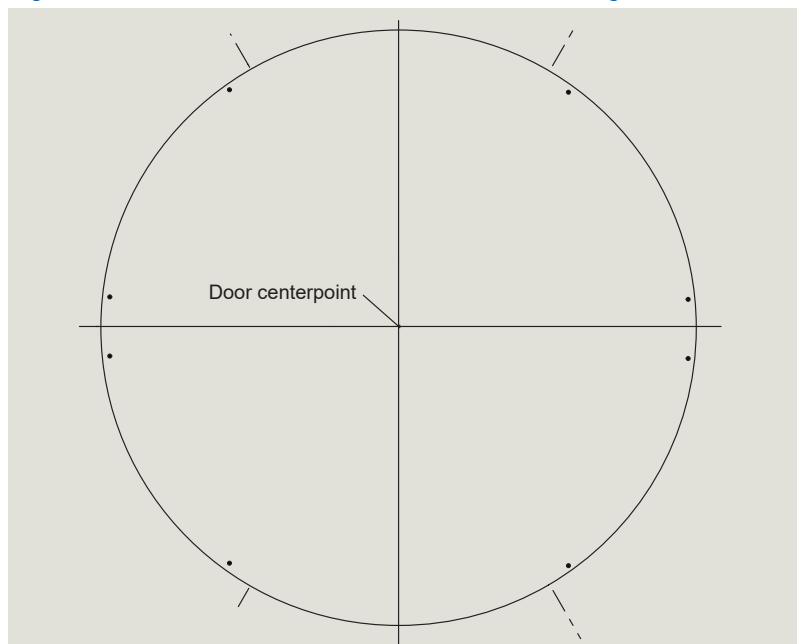
1. Draw door centerlines.
2. Mark quarter post and center post lines.
3. Mark mounting base stud locations.
4. Trace door outside radius.

**11.1.5 Remove template.**

1. Remove template.

## 11.2 Drill holes for mounting base studs

Fig. 12.2.1 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".

# 12 Install floor pivot bearing assembly

## 12.1 Recessed floor pivot bearing assembly.

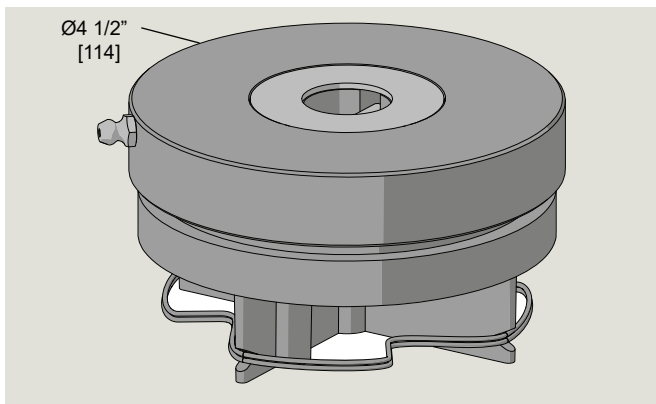
## 12.2 Surface mounted floor pivot bearing assembly.

### NOTICE

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

## 12.1 Install recessed floor pivot bearing assembly

Fig. 12.1.1 Floor pivot assembly RS6076-010



### 12.1.2 Install recessed floor pivot assembly.

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

### NOTICE

**Contractor note:** provide minimum  $\text{Ø}5\ 5/16"$  x  $2"$  deep cutout to accept floor pivot bearing.

2. Position pivot assembly in floor cutout:
3. Shim under plastic pivot bottom to obtain 1" height of floor pivot bearing above finished floor surface.



### TIPS AND RECOMMENDATIONS

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

### NOTICE

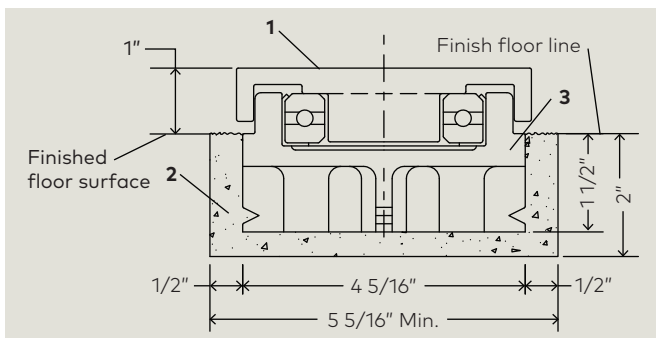
**Floor pivot assembly must be level and at door centerpoint**

4. Fill floor pivot assembly cutout to finish floor level with non-shrink grout (Fig. 12.1.2).

### CAUTION

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

Fig. 12.1.2 Floor pivot assembly installed in floor



- 1 Plastic pivot top
- 2 Non-shrink grout
- 3 Floor pivot assembly  
p/n RS6076-010

### 12.1.3 Grease floor pivot.

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

## 12.2 Install surface mounted floor pivot bearing assembly

Fig. 12.2.1 Surface mounted floor pivot bearing assembly  
RS3423-010

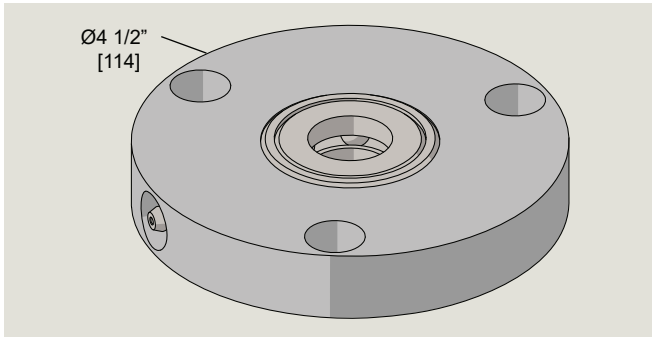
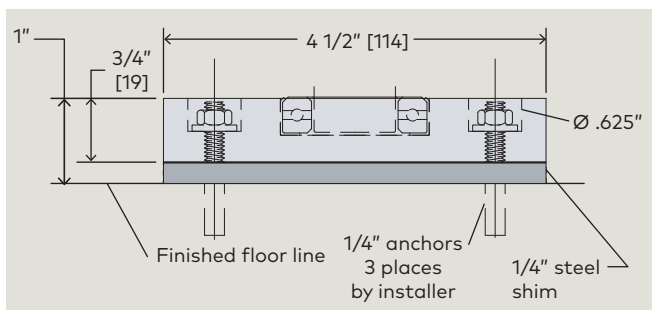


Fig. 12.2.2 Floor surface-mounted pivot bearing assembly  
installed on floor



### 12.2.1 Install floor surface-mounted pivot assembly.

#### NOTICE

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

1. Position pivot assembly at door centerpoint.
2. Mark 3 holes for 1/4" floor anchors (Fig. 12.2.2).
3. Check that pivot assembly is at door centerpoint.
4. Drill 3 holes for 1/4" floor anchors.
5. Install anchors.
6. Install 3 fasteners through bottom pivot assembly mounting holes and into floor anchors.
7. Install 1/4" steel shim (Fig.12.2.2) to obtain top of pivot height of 1" above finished floor.
8. Shim to make pivot surface flat and level, and 1" above finished floor surface.

#### NOTICE

**Floor pivot assembly must be level and at door centerpoint.**

### 12.2.2 Grease floor pivot.

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



# 13 Motion Assist 360 drive assembly – for 6" canopy

## 13.1 Motion Assist 360 drive bracket assembly installation into canopy

Table 13.1.1 Motion Assist 360 drive configurations, 6 inch canopy

Drive assembly	Figure	Motion Assist 360 drive controls	Speed control
RS6047-001	16.1.3	Canopy mounted	Canopy mounted
RS6047-002	16.1.1	Remote enclosure	Canopy mounted

Table 13.1.2 Motion Assist 360 drive hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6066-001 Mounting plate, overhead drive and speed control
6	RS6073-010 Assembly, overhead speed control
7	RC6065-001 Drive, shaft adapter, overhead speed control
11	RX6001-001 Motion Assist 360 power supply
12	RX6002-001 Motion Assist 360 control
13	RK6007-001 Remote enclosure kit assembly

Fig. 13.1.1 Assembly, drive bracket. Motion Assist 360 drive, floor mounted speed control

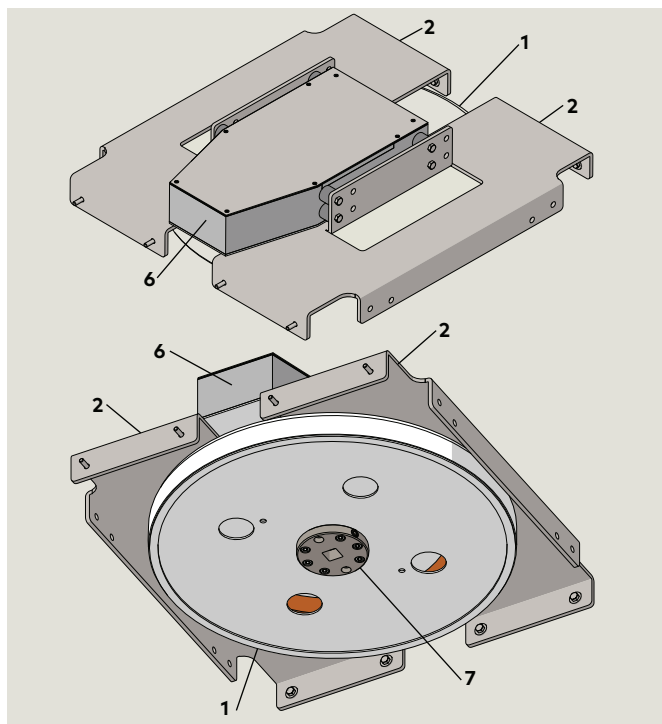


Fig. 13.1.3 Assembly, drive bracket. Motion Assist 360 drive and controls, canopy speed control

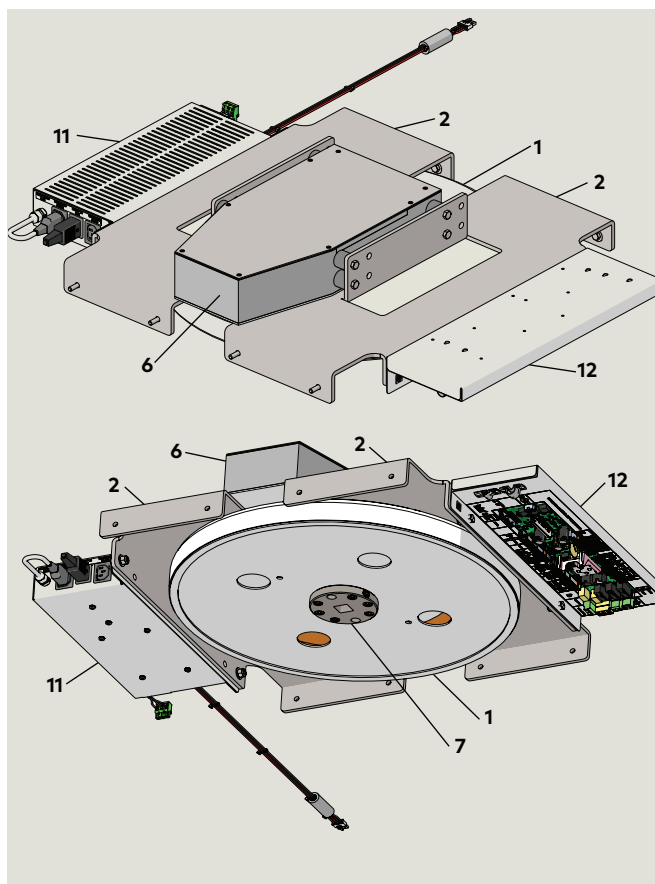
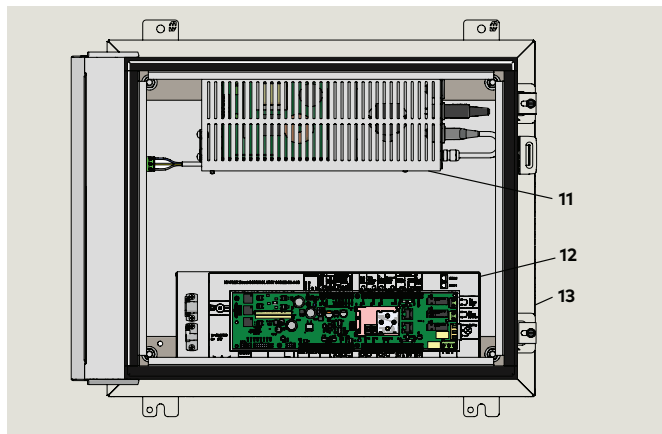


Fig. 13.1.2 Remote control enclosure



## 13.2 Unpack Motion Assist 360 drive and remove transport bolts

Fig. 13.2.1 Motion Assist 360 drive

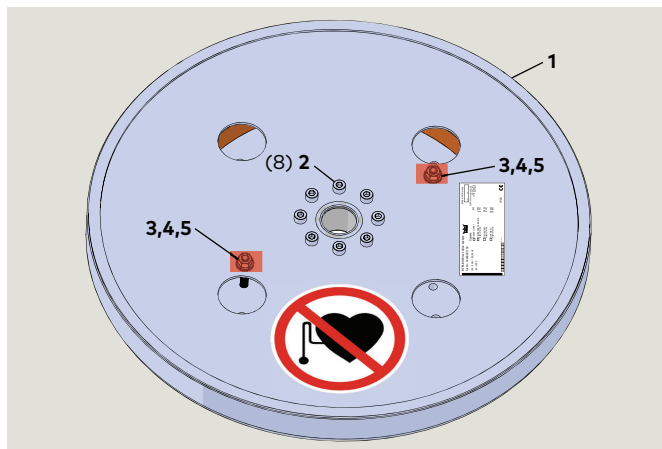


Fig. 13.2.2 Motion Assist 360 drive with transport bolts

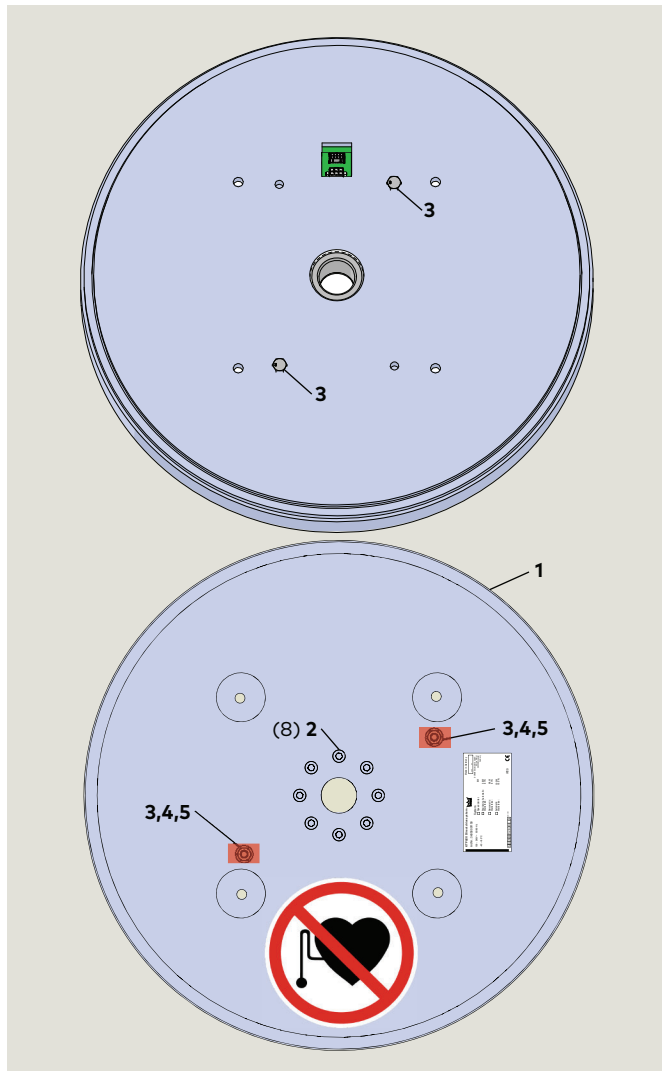


Table 13.2.1 Motion Assist 360 transport bolt hardware

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

### 13.2.1 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!

### 13.2.2 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!

## 13.3 Motion Assist 360 drive – drive adapter installation

Fig. 13.3.1 Motion Assist 360 drive with (8) M8 SHCS

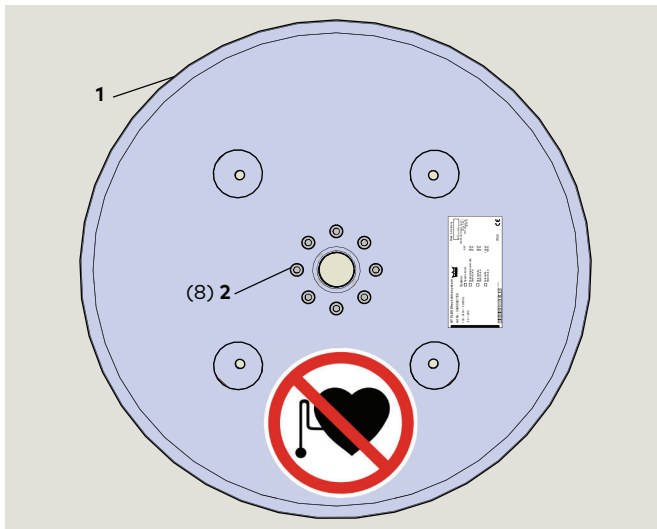


Fig. 13.3.2 M8 x 20 mm SHCS

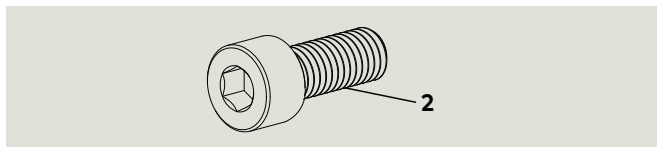


Fig. 13.3.3 Motion Assist 360 drive with (2) M8 SHCS

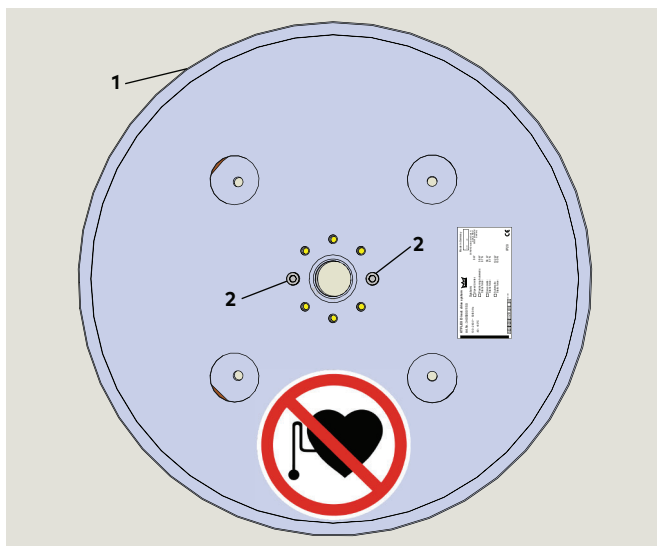


Table 13.3.1 Motion Assist 360 M8 SHCS

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RF6003-01C M8 x 20 mm socket head screw



**WARNING**

Use caution when lifting and positioning Motion Assist 360 drive!

### 13.3.1 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. 13.3.3).



#### TIPS AND RECOMMENDATIONS

The two remaining SHS (Fig. 13.3.3) are used for drive adapter (Fig. 13.3.4) alignment.



#### TIPS AND RECOMMENDATIONS

Use socket wrench with 6 mm hex key socket.

### 13.3.2 Check tightening torque on two M8 socket head screws.

1. Use torque wrench to check tightening torque on the two M8 SHS (Fig. 13.3.3).



#### 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.

### 13.3.3 Maximum screw tightening torque.

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

Fig. 13.3.4 Drive, adapter flange, overhead speed control

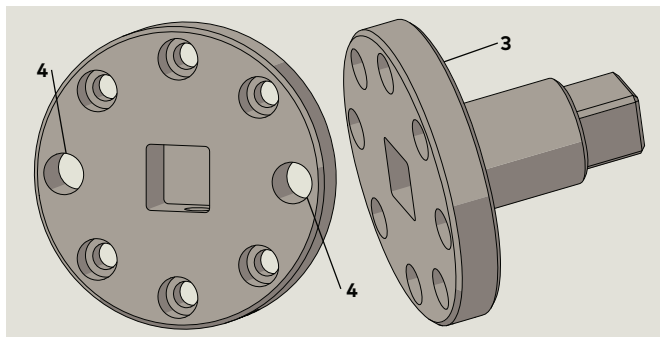


Fig. 13.3.5 Adaptor flange mounting to Motion Assist 360 drive

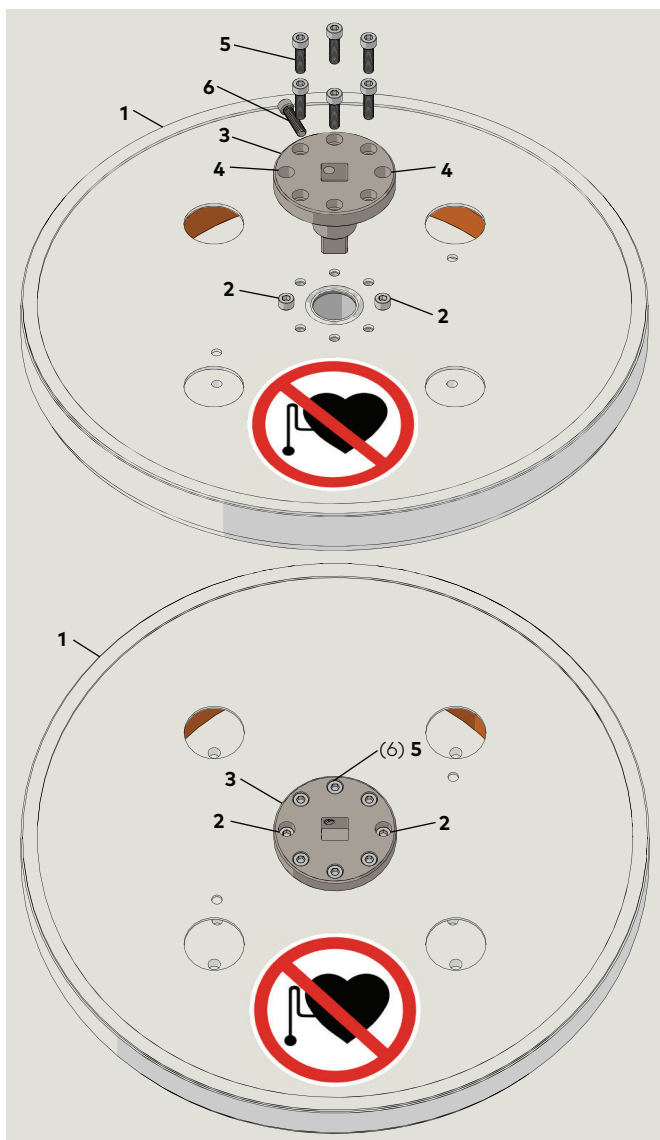


Table 13.3.2 Motion Assist 360 adaptor flange hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RF6003-01C M8 x 20 mm socket head screw
3	RC6068-001 Drive, shaft adaptor overhead speed control
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

### 13.3.4 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 35 mm socket head screws.



#### TIPS AND RECOMMENDATIONS

Use socket wrench with 6 mm hex key socket.

### 13.3.5 Check tightening torque on M8 socket head screws.

1. Use torque wrench to check tightening torque on the M8 socket head screws (Fig. 13.3.5).



**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.

### 13.3.6 Maximum screw tightening torque.

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

## 13.4 Motion Assist 360 drive – mounting plate installation

Fig. 13.4.1 Motion Assist 360 drive and mounting plates

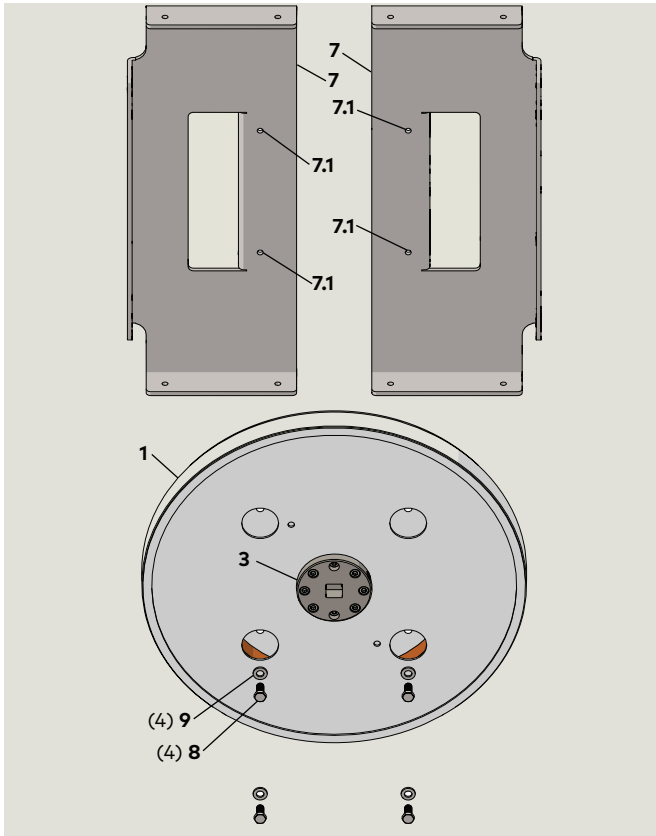


Fig. 13.4.2 Mounting plates and Motion Assist 360 drive

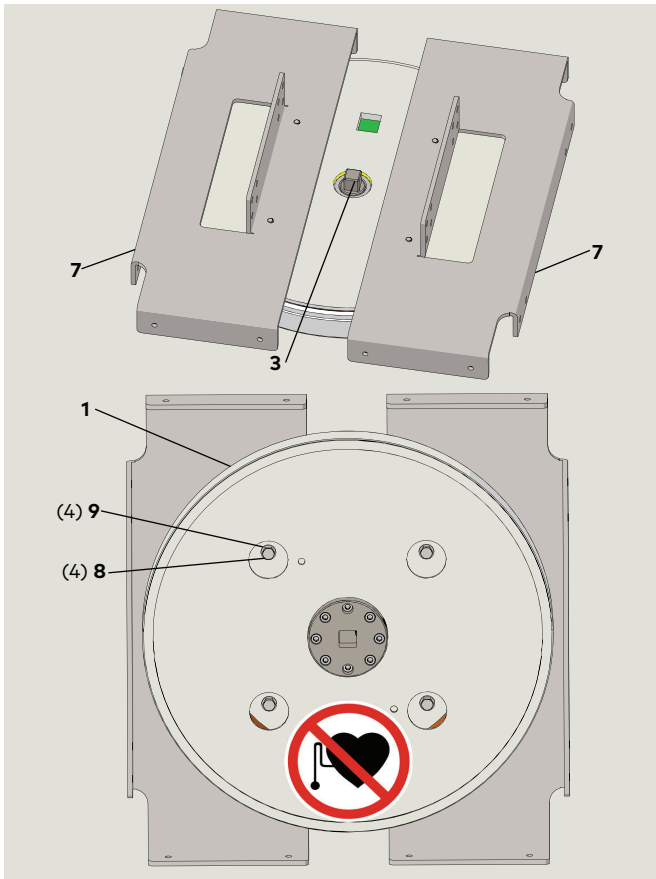


Table 13.4.1 Motion Assist 360 mounting plate installation

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive, overhead
3	RC6065-001 Drive shaft adaptor, overhead drive
7	RC6066-001 Plate, mounting, overhead drive and speed control
7.1	3/8-16" tapped hole
8	RF6057-02G 3/8-16 x 7/8" SS hex head screw
9	RF6058-01G SS washer

### 13.4.1 Install mounting plates on Motion Assist 360 drive.



**WARNING**

Use caution when lifting and positioning Motion Assist 360 drive!

1. Fasten each mounting plate (7) to the Motion Assist 360 drive using two 3/8-16 x 7/8" hex head screws and flat washers.
  - Thread screws into mounting plate 3/8-16" tapped holes. **Do not tighten screws.**

#### NOTICE

**3/8-16 x 7/8" hex head screws not tightened until after installation of overhead speed control (Para. 13.5).**

Fig. 13.4.3 Mounting plate hex head screw and washer

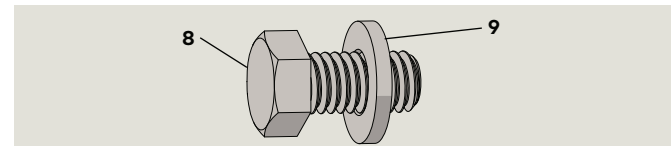
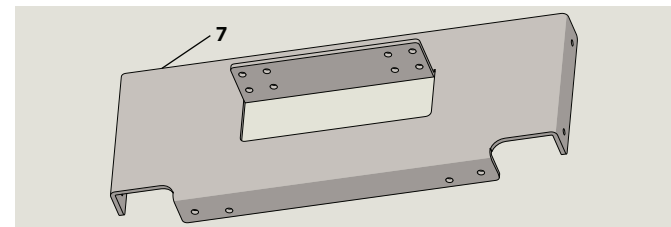


Fig. 13.4.4 Mounting plate



## 13.5 Motion Assist 360 drive – install overhead speed control

Fig. 13.5.1 Motion Assist 360 drive and mounting plates

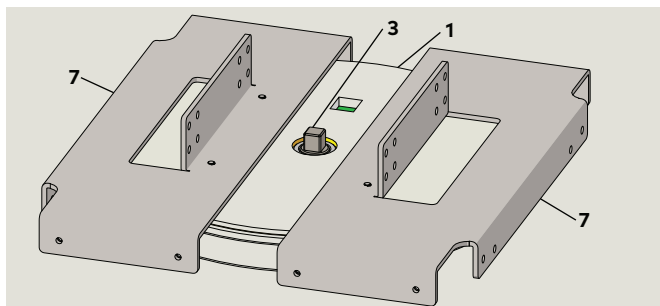


Fig. 13.5.2 Overhead speed control drive shaft

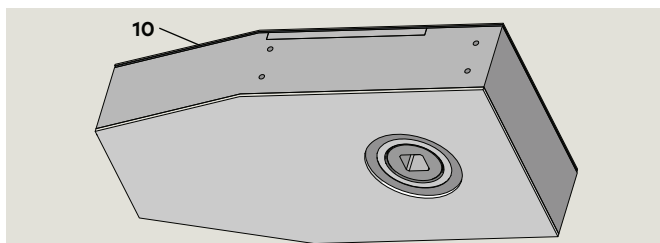


Fig. 13.5.3 Motion Assist 360 drive and speed control

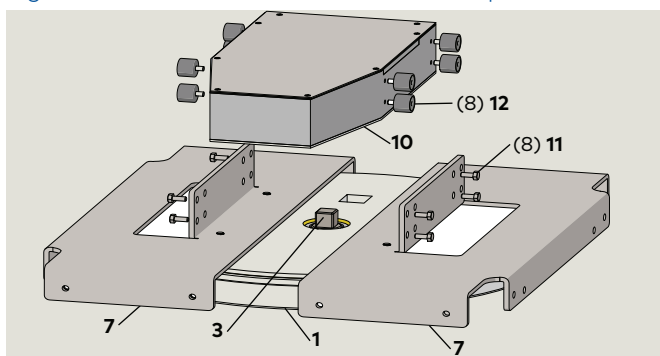


Fig. 13.5.4 Speed control fastened to mounting plates

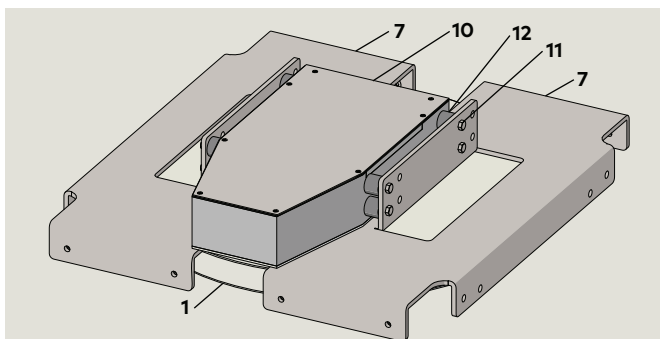


Fig. 13.5.5 Motion Assist 360 drive and mounting plates

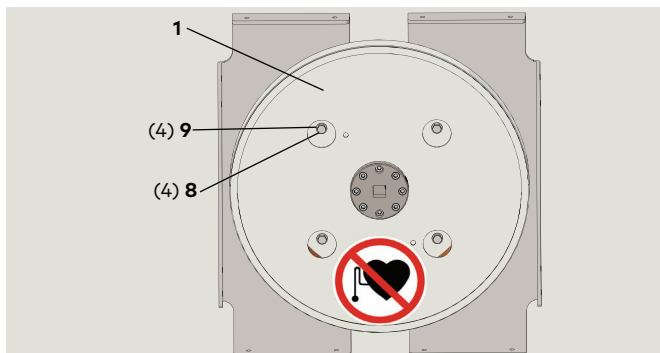


Table 13.5.1 Motion Assist 360 speed control installation

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive, overhead
3	RC6065-001 Drive shaft adaptor, overhead drive
7	RC6066-001 Plate, mounting, overhead drive
8	RF6057-02G 3/8-16 x 7/8" SS hex head screw
9	RF6058-01G SS washer
10	RS6073-010 Assembly, overhead speed control
11	RF6055-01G 1/4-20 x 5/8" SS hex screw
12	RC6080-001 Rubber grommet, 1/4-20 threaded stud and hole

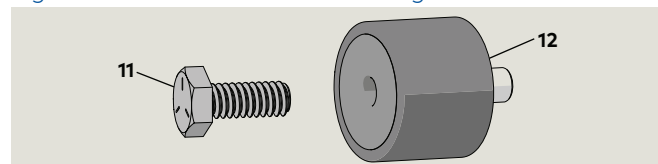
### 13.5.1 Install overhead speed control in Motion Assist 360 drive bracket assembly.



**WARNING**

Use caution when lifting and positioning Motion Assist 360 drive and speed control!

Fig. 13.5.6 Hex screw and rubber grommet



1. Thread each 1/4-20 rubber grommet stud into its speed control mounting hole; eight total.
2. Rotate speed control drive shaft to line up with Motion Assist 360 drive shaft.
3. Lower speed control onto Motion Assist 360 drive shaft. Lower until rubber grommet mounting holes line up with mounting holes in mounting plate brackets.
4. Thread eight 1/4-20 x 5/8" hex screws into their rubber grommet mounting holes.
5. Tighten all eight 1/4-20 x 5/8" hex screws.

### 13.5.2 Tighten four Motion Assist 360 drive 3/8-16 x 7/8" hex head screws.

1. Tighten the four 3/8-16 x 7/8" hex head screws to secure Motion Assist 360 drive to the two mounting plates. Reference Fig. 13.5.5.

### 13.5.3 3/8-16 x 7/8" hex screw torque requirements.

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



## 13.6 Install Motion Assist 360 control

Fig. 13.6.1 Motion Assist 360 drive assembly RS6047-002

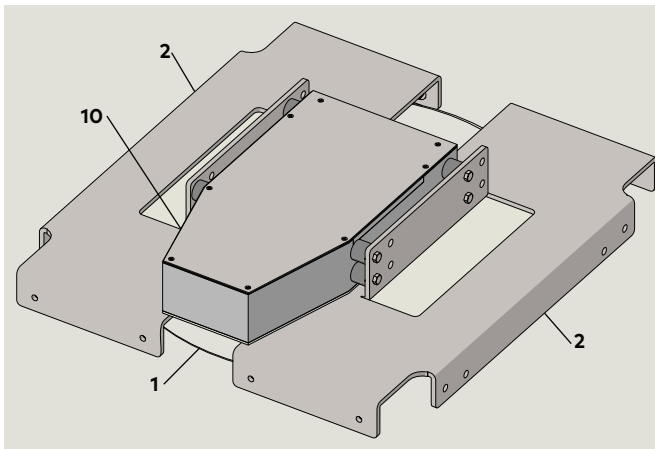


Fig. 13.6.2 Mounting hardware

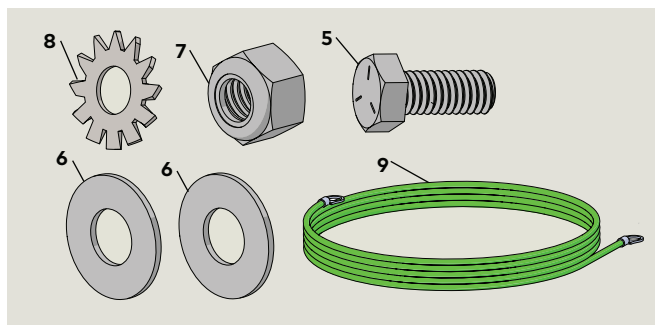
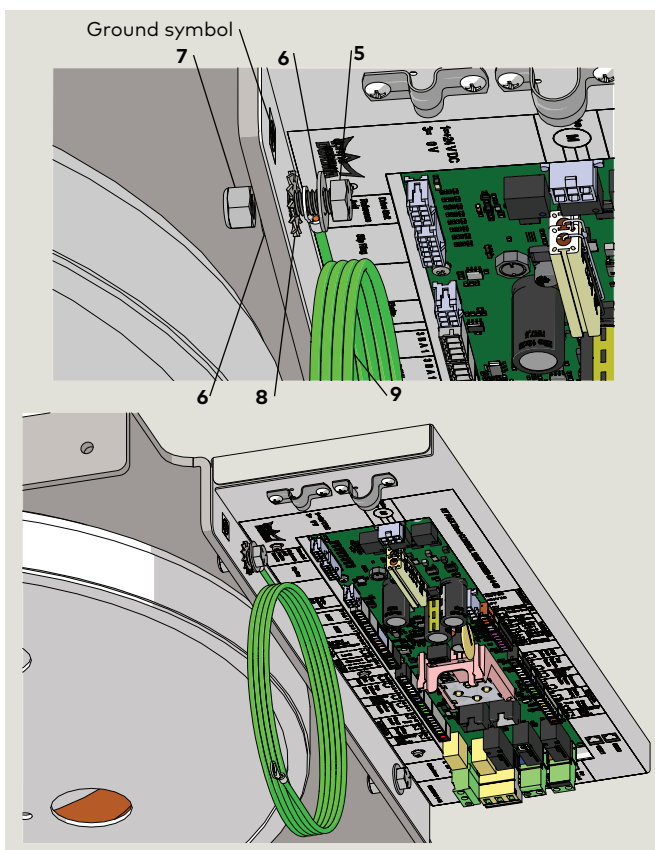


Fig. 13.6.3 Motion Assist 360 control mounting to top drive plate



### NOTICE

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

Table 13.6.1 Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6066-001 Mounting plate, overhead drive and 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 kit assembly ( 2 per package)
10	RS6073-010 Assembly, overhead speed control

### 13.6.1 Install Motion Assist 360 control onto mounting plate.



#### WARNING

Use caution when lifting and positioning mounting bracket assembly!

- Place following hardware in order on first 3/4" hex head screw:
  - 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. and through hole in mounting plate.
- 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 and through hole in mounting plate.
- Insert 3/4" OD flat washer on end of hex head screw.
- Thread locknut onto hex head screw and tighten.

## 13.7 Install Motion Assist 360 power supply

Fig. 13.7.1 Mounting hardware

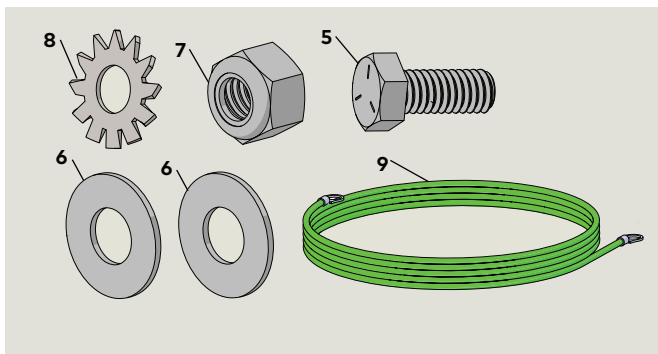


Fig. 13.7.2 Motion Assist 360 power supply mounting to top drive plate

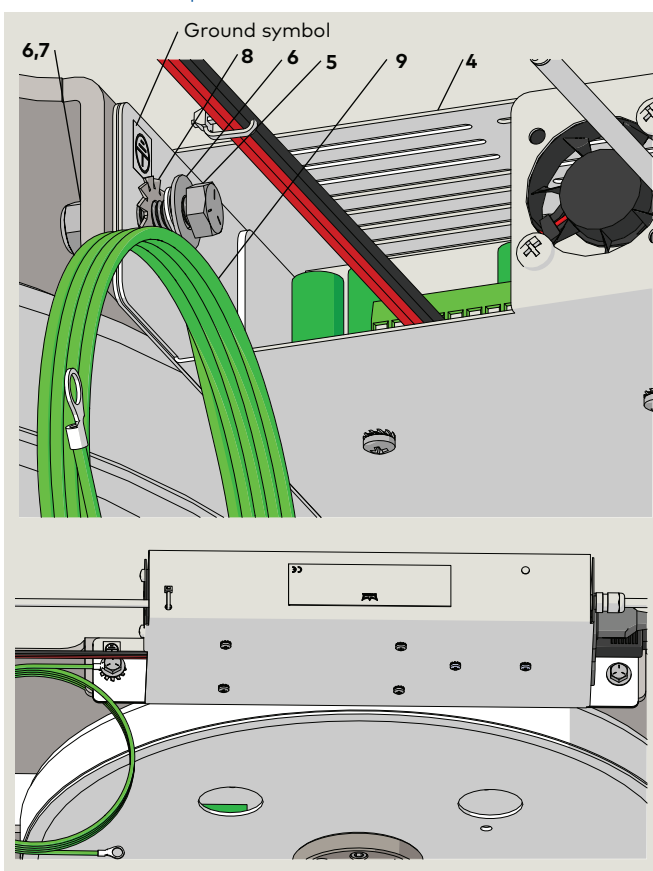


Table 13.7.1 Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6066-001 Mounting plate, overhead drive and 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 kit assembly ( 2 per package)

### 13.7.1 Install Motion Assist 360 control onto top drive plate.



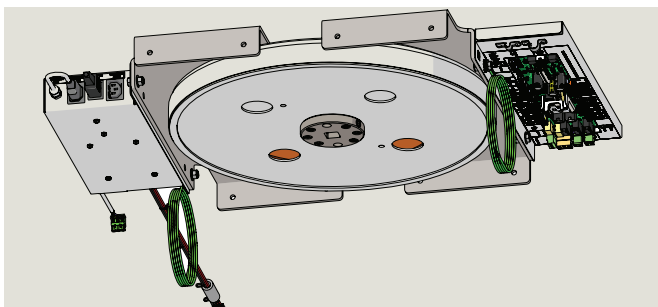
**WARNING**

Use caution when lifting and positioning mounting bracket assembly!

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

## 13.8 Motion Assist 360 drive assembly

Fig. 13.8.1 RS6047-001 Motion Assist 360 drive assembly





# 14 6" Canopy installation

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

Fig. 14.1.1 6" canopy assembly, cover view

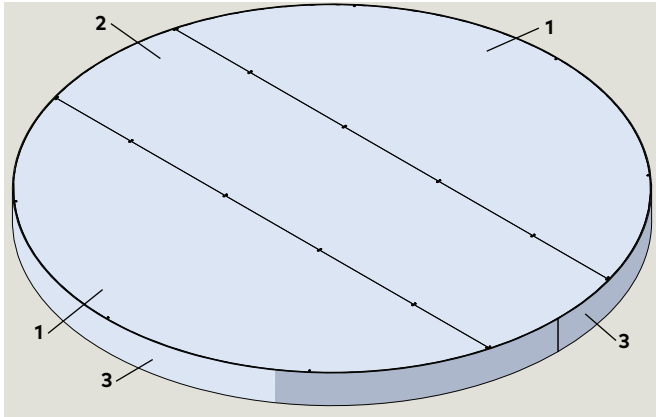


Fig. 14.1.2 6" canopy assembly, soffit view

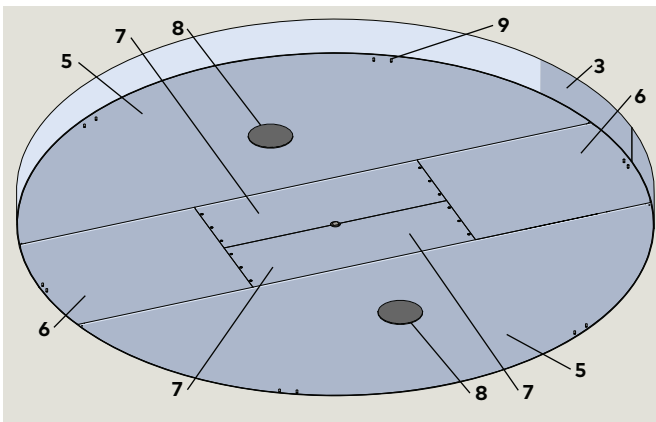


Fig. 14.1.3 Canopy with covers removed

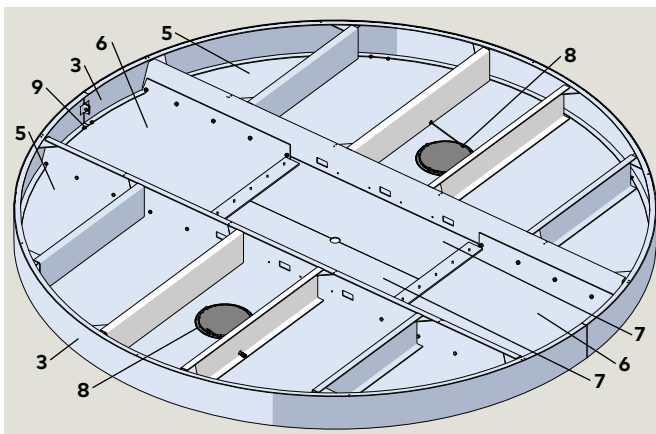


Fig. 14.1.4 Cover screw

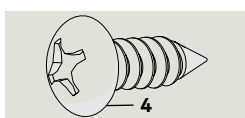


Fig. 14.1.5 Hex head screw

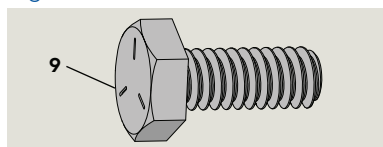


Table 14.1.1 6" 4 wing canopy parts DS6049-00X

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. 15.1.4)
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 screws, Post mounting (Fig. 15.1.5)

### 14.1.1 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.

### 14.1.2 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.

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

### 14.2.1 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.

Table 14.2.1 6" 4 wing canopy parts DS6049-001

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	LED light (option)
9	RF6055-01G 1/4-20 x 5/8" Hex head screw
10	RF6121-01G 1/4-20 hex nut

### 14.2.2 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.



#### TIPS AND RECOMMENDATIONS

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

Fig. 14.2.1 6" canopy assembly, split for shipment, cover view

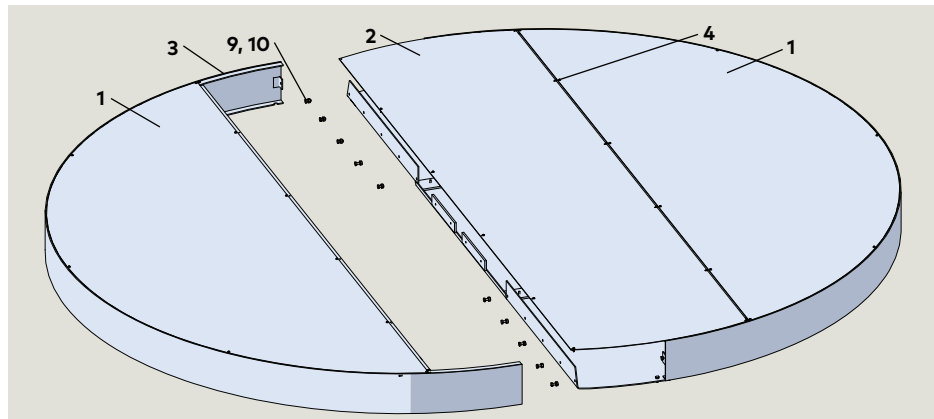


Fig. 14.2.3 Hex head screw

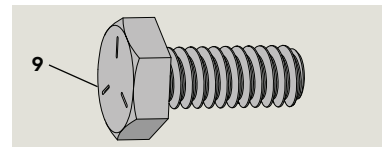


Fig. 14.2.4 Hex nut

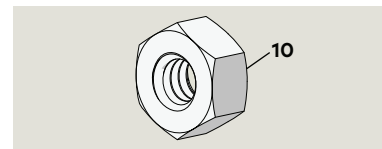


Fig. 14.2.5 Cover screw

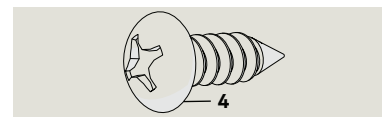
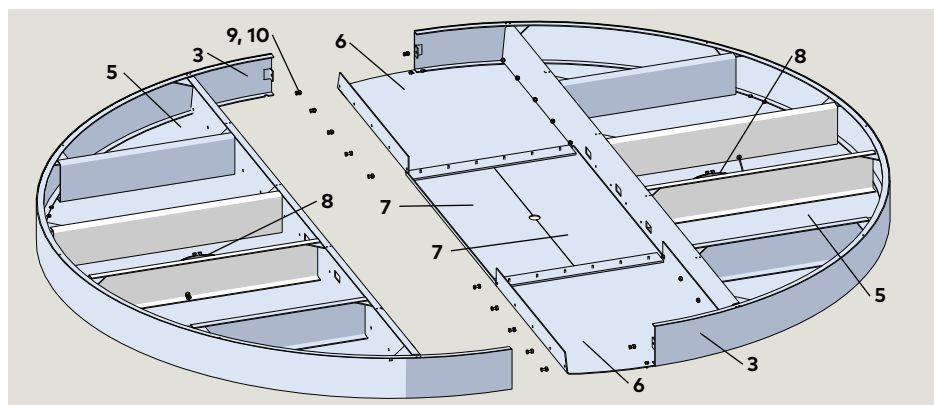


Fig. 14.2.2 6" canopy assembly, split for shipment, covers removed



### 14.2.3 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. 14.2.3 and 14.2.4).
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. 14.2.6 6" canopy sections fastened together

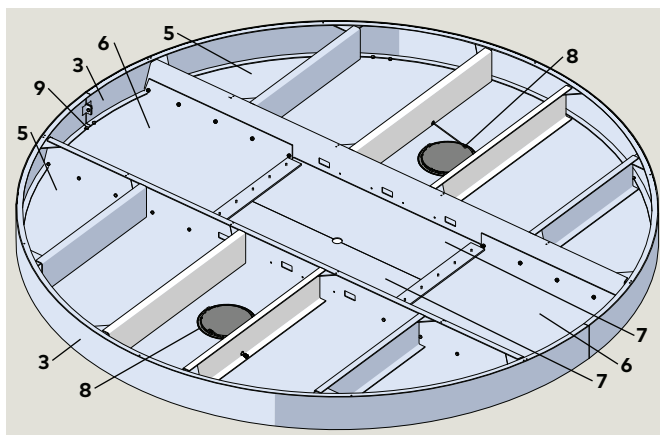


Table 14.2.2 6" 4 wing canopy parts DS6049-001

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

## 14.3 Prepare 6" canopy for Motion Assist 360 drive bracket assembly installation

### 14.3.1 Remove inner center soffits.

1. Position canopy for access to inner center soffit fasteners (Fig. 14.3.2).



#### 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 14.3.1 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" FHMS (Fig. 14.3.2)

Fig. 14.3.1 Canopy soffit view, inner center soffits installed

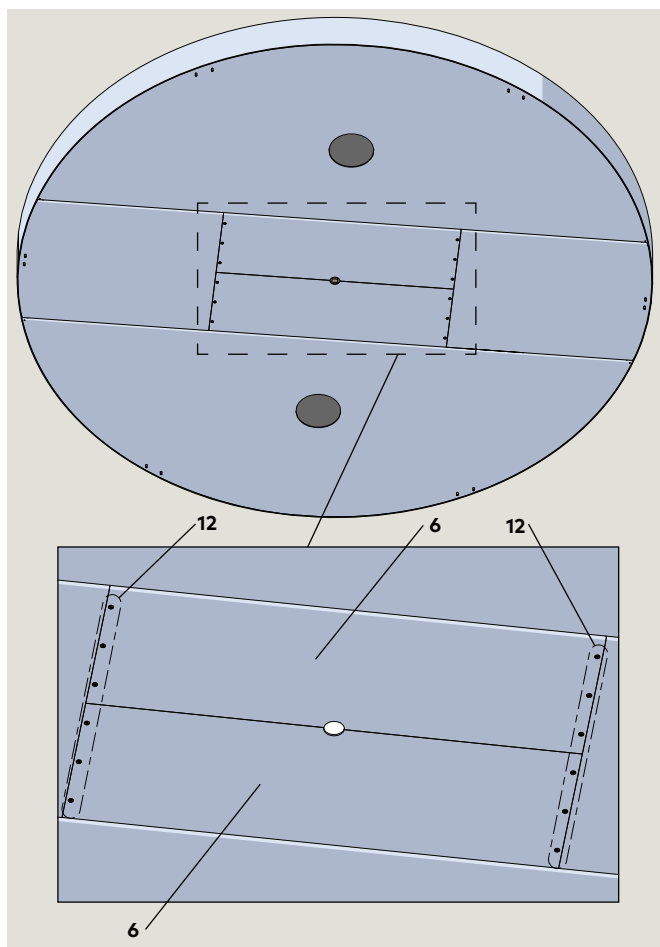


Fig. 14.3.3 Canopy soffit view, inner center soffits removed

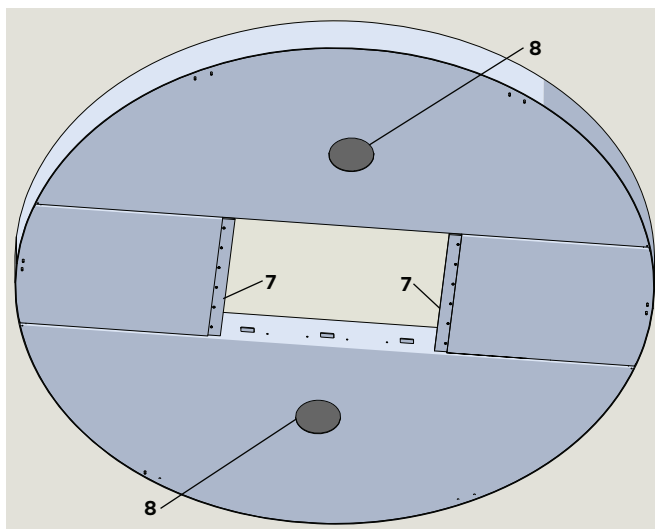
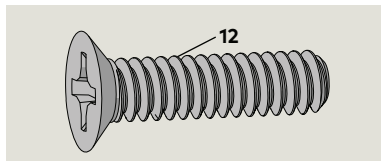


Fig. 14.3.2 Soffit screw



### 14.3.2 Install edge guards in canopy soffit slots.

1. Install edge guards in each of the six outer soffit slots shown in Fig. 14.3.5.

Fig. 14.3.4 Edge guard



Fig. 14.3.5 Cutouts in outer soffits for edge guards

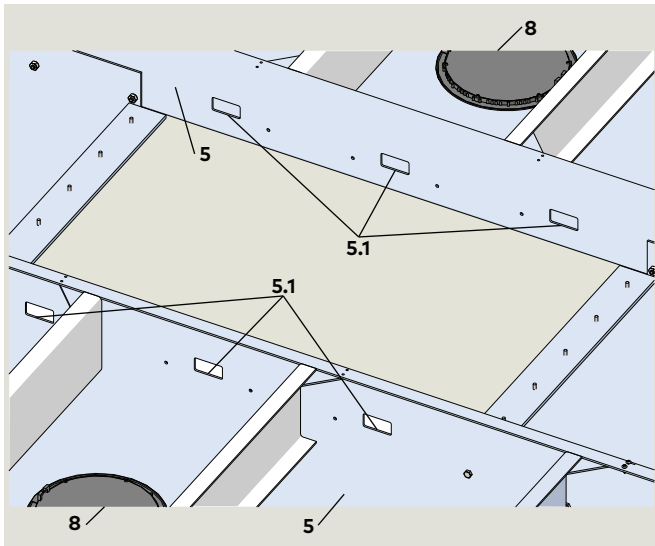
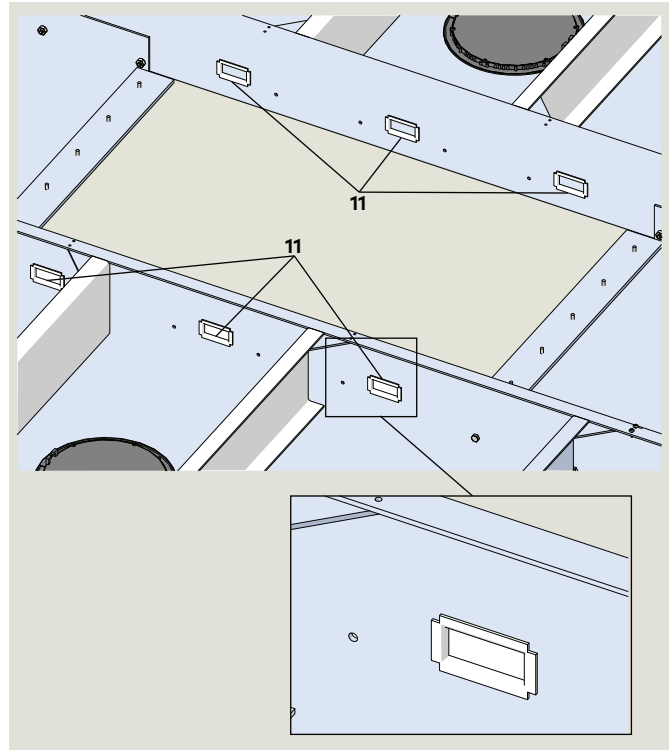


Table 14.3.2 Canopy soffits and edge guard hardware

Part / Assembly	Description
<b>5</b>	Outer soffit
<b>5.1</b>	Outer soffit cutouts for cables
<b>8</b> RC6320-010	LED light, 9" (optional)
<b>11</b> DC6067-001	Edge guard, Neoprene, 1/4 x 1/8"

Fig. 14.3.6 Edge guards installed



## 14.4 Motion Assist 360 drive bracket assembly installation into canopy

Fig. 14.4.1 RS6047-001 Motion Assist drive bracket assembly with power supply and control and with overhead speed control

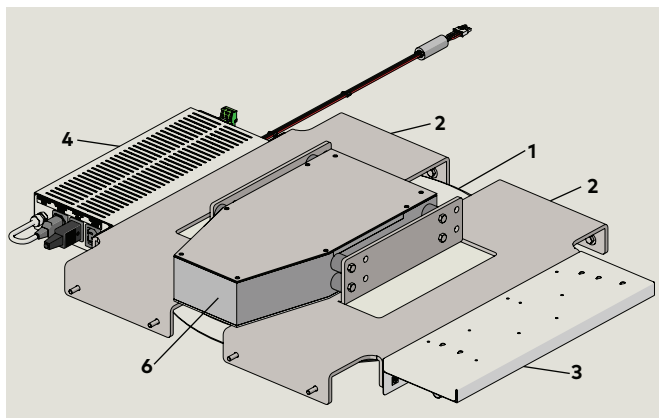


Fig. 14.4.2 RS6047-002 Motion Assist drive bracket assembly with overhead speed control

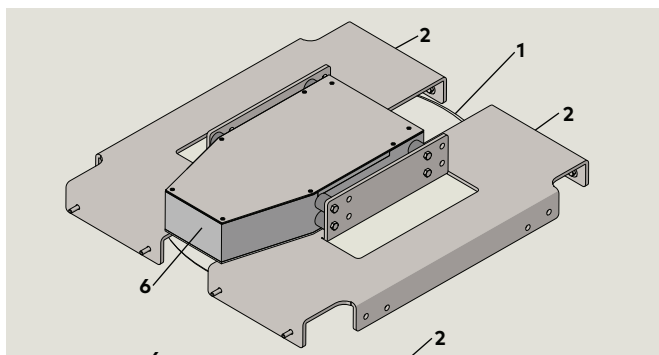


Fig. 14.4.3 Mounting plate with overhead speed control mounting, 24" spacing

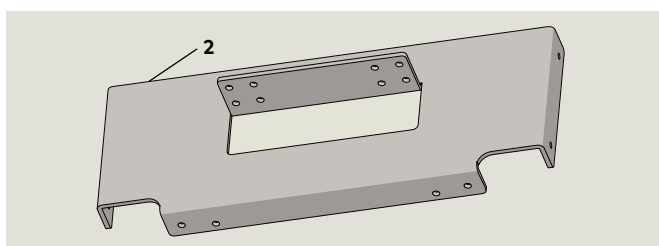


Table 14.4.1 Canopy and Motion Assist 360 drive and control hardware

Part / Assembly	Description
1 RX6010-001	Motion Assist 360 drive
2 RC6066-001	Mounting plate, overhead drive and speed control
3 RX6002-001	Motion Assist 360 control
4 RX6001-001	Motion Assist 360 power supply
6 RS6073-010	Overhead speed control assembly

### 14.4.1 Motion Assist 360 and overhead speed control canopy-mounted configurations.

1. RS6047-001: Motion Assist 360 drive bracket assembly with power supply, control and overhead speed control.
2. RS6047-002: Motion Assist 360 drive bracket assembly. with overhead speed control.
  - Power supply and control in Remote enclosure.

Fig. 14.4.4 Drive mounting support plate

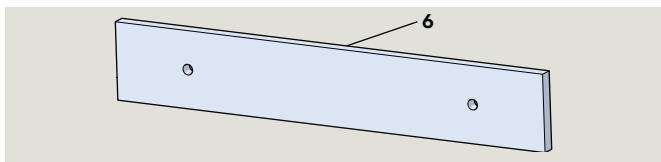


Fig. 14.4.5 1/4-20 hex screw and 3/4" O.D. flat washer

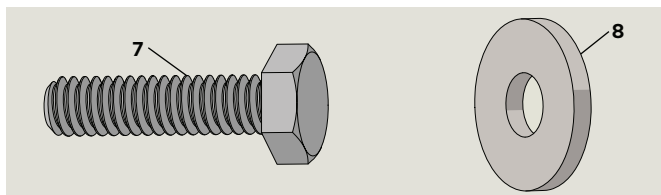


Fig. 14.4.6 RS6049-001 Motion Assist 360 drive bracket assembly with control and power supply

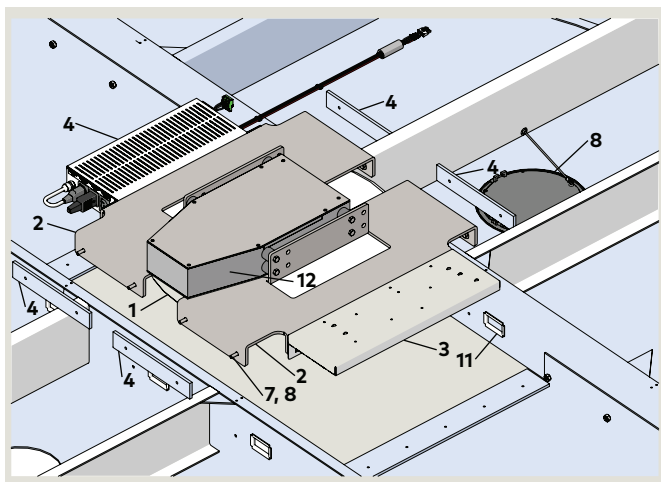


Table 14.42 Canopy and Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6066-001 Mounting plate, overhead drive and 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. 16.3.4)
12	RS6073-010 Overhead speed control

#### 14.4.2 Install Motion Assist 360 drive bracket assembly into canopy.

##### NOTICE

Installation procedure the same for both drive bracket configurations (Para. 14.4.1).



**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).

Fig. 14.4.7 RS6049-001 Motion Assist 360 drive bracket assembly with control and power supply

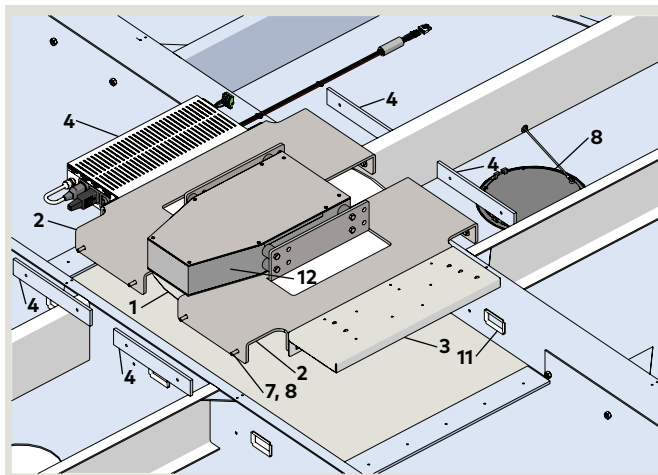


Fig. 14.4.8 RS6049-001 installation in canopy

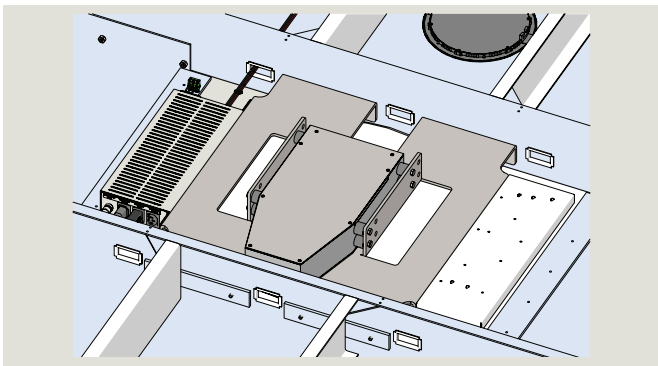


Fig. 14.4.9 RS6049-002 installation in canopy

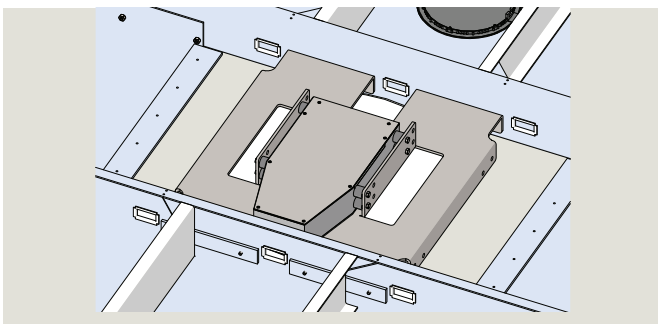


Fig. 14.4.10 Speed control cover

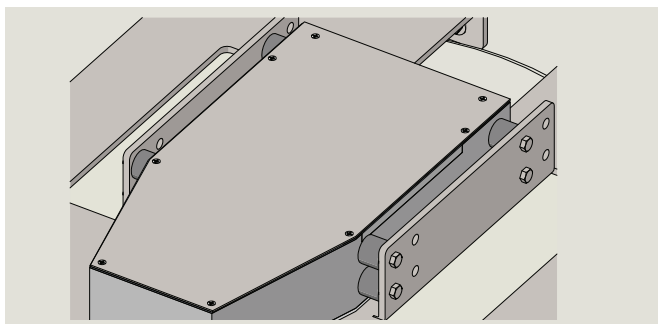


Table 14.42 Canopy and Motion Assist 360 drive and control hardware

Part / Assembly	Description
1	RX6010-001 Motion Assist 360 drive
2	RC6066-001 Mounting plate, overhead drive and 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. 16.3.4)
12	RC6079-001 Overhead speed control

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 step 3 until fasteners are installed at all eight top drive plate mounting hole locations.
5. Tighten all eight 1/4-20 x 1" hex screws.

#### 14.4.3 Add oil to speed control.

##### CAUTION

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

1. Remove 6-32 x 1/2" countersunk flat head screws that secure speed control cover to the case.
2. Remove cover.
3. Add entire bottle of multigrade oil to the speed control gearcase.
4. Replace cover.
  - Insure gasket is properly aligned with mounting holes.
5. Replace all 6-32 screws and tighten.



## 14.5 Raise canopy to installation height and position

### 14.5.1 Installation of Motion Assist 360 assembly.

#### NOTICE

**Motion Assist 360 assembly installation** (Para. 15.3) can be done either before, or after canopy is raised in position depending on canopy access.

### 14.5.2 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

### 14.5.3 Place canopy on lifts.

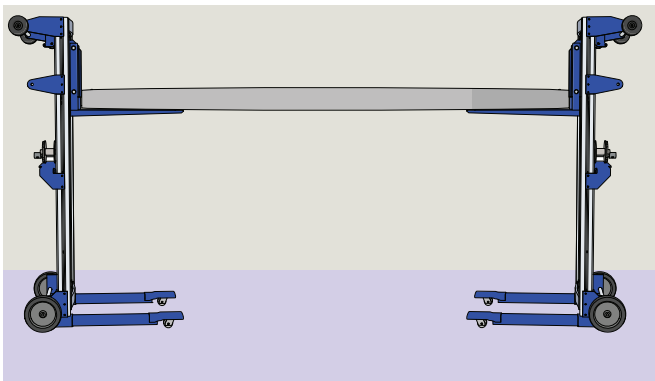
1. Place canopy on lifts.

#### 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.

Fig. 14.5.1 Canopy on lift equipment example



#### 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.

### 14.5.4 Move canopy to approximate door centerpoint.

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



#### WARNING

A minimum of two persons are required when handling canopy!



#### WARNING

Use caution when handling canopy!

### 14.5.5 Raise canopy to installation height and center at door centerpoint.

1. Raise canopy to height for post installation (Chapter 15) 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!

### 17.5.6 Customer 115 Vac and earth ground wiring.

#### CAUTION

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

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

Table 14.6.1 Canopy Motion Assist 360 drive and control hardware with cables

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

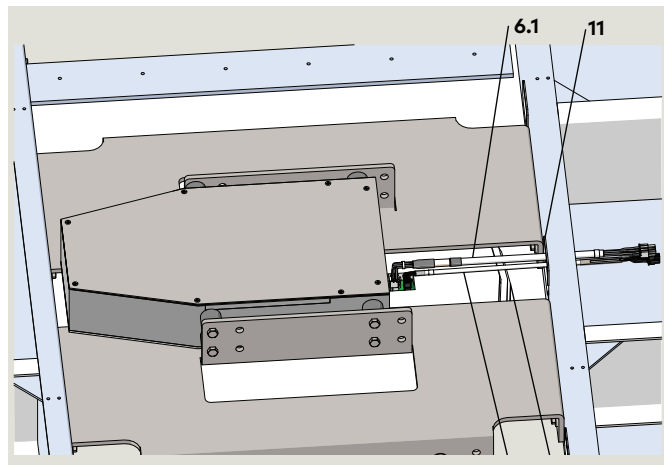
### CAUTION

Insure edge guard material (11) is installed around cable slots. Reference Para. 16.3.2.

### CAUTION

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

Fig. 14.6.1 Motion Assist 360 drive and power supply cables



#### 14.6.1 Connect cables to Motion Assist 360 drive.

1. Connect Motion Assist 360 motor cable (5) plug to receptacle on Motion Assist 360 drive (1).
2. Route motor cable through canopy slot with edge guard (11) (Fig. 14.6.1).
3. Connect Motion Assist 360 Hall sensor cable (7) plug to receptacle on Motion Assist 360 drive (1).
4. Route sensor cable through canopy slot with edge guard (11).

#### 14.6.2 Connect drive motor extension cable to Motion Assist 360 control unit.

1. Connect Motion Assist 360 motor cable (5) plug to receptacle on 1' extension cable (6.1).
2. Route extension cable through slot with edge guard adjacent to control unit.
3. Connect motor cable extension plug to receptacle on Motion Assist 360 control unit (Fig. 14.6.4).

#### 14.6.3 Connect Hall sensor extension cable to Motion Assist 360 control unit.

1. Connect Motion Assist 360 Hall sensor cable (7) plug to receptacle on 1' extension cable (8).
2. Route extension cable through slot with edge guard adjacent to control unit.
3. Connect Hall sensor cable extension plug to receptacle on Motion Assist 360 control unit (Fig. 14.6.4).

Fig. 14.6.2 Drive motor cables

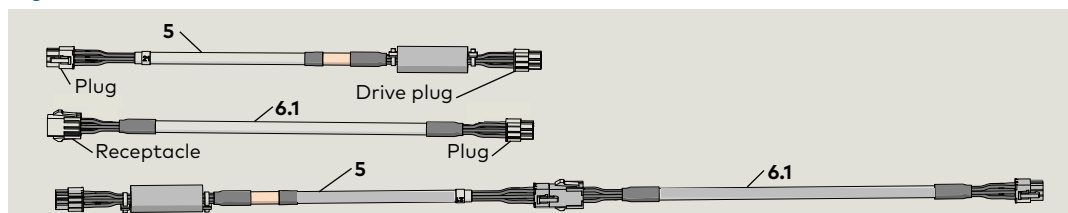


Fig. 14.6.3 Drive Hall sensor cables

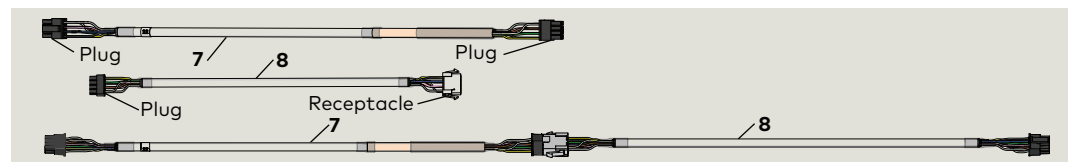


Table 14.6.2 Canopy Motion Assist 360 drive and control hardware with cables

Part / Assembly	Description
1 RX6010-001	Motion Assist 360 drive
3 RX6002-001	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

**CAUTION**

Insure edge guard material (11) is installed around cable slots. Reference Para. 16.3.2.

**CAUTION**

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

**14.6.4 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. 14.6.4).
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. 14.6.4).

Fig. 14.6.4 Motion Assist 360 control unit to drive cables

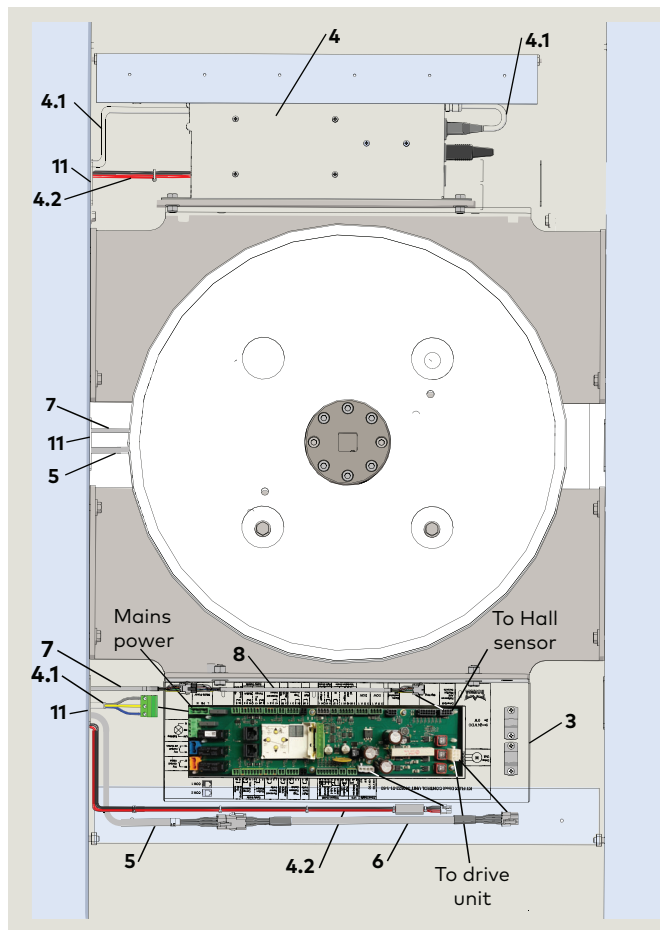
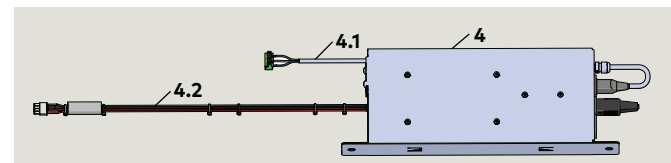


Fig. 14.6.5 Motion Assist 360 DC power supply cables



## 17.8 Canopy hex screw for Motion Assist 360 earth ground wires

Fig. 17.8.1 Earth grounding wire assembly and hardware

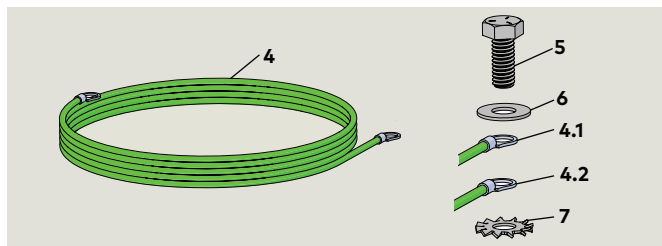


Fig. 17.8.2 Motion Assist 360 power supply and control unit with ground wires

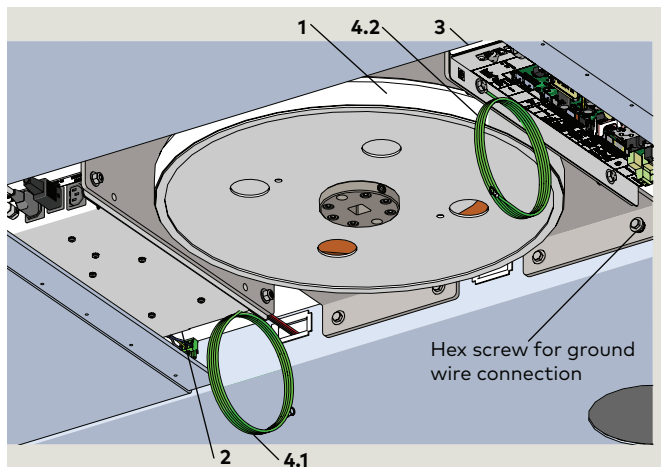


Fig. 17.8.3 Ground wire installation on hex screw

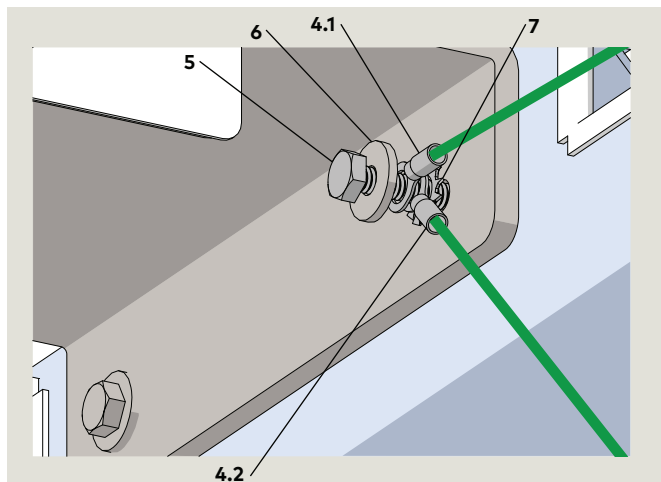


Fig. 17.8.4 Ground wires secured to hex screw

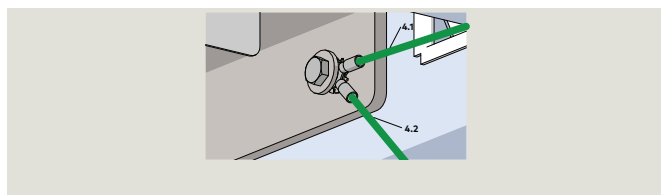


Table 17.8.1 Canopy earth ground hardware

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

### 17.8.1 Earth ground wire installation on top mounting bracket hex bolt.

1. Remove 1/4-20 x 1" hex bolt with flat washer (Fig. 16.6.3)
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 support plate (Para. 14.4.6) and tighten.

#### CAUTION

Loop and tie wrap excess earth ground wires.



#### TIPS AND RECOMMENDATIONS

Customer earth ground terminates at hex bolt.

# 15 Enclosure post installation

## 15.1 Enclosure posts

### 15.1.1 Crane shop drawings.

#### NOTICE

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

## 15.2 Open post shipping crate

Fig. 15.2.1 Post shipping crate

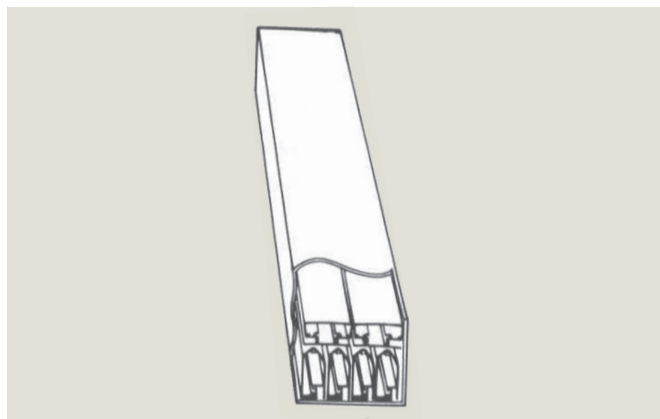


Fig. 15.2.2 Enclosure post numbering



### 15.2.1 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. 15.2.2) 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. 15.5 for enclosure post and base numbering examples.

## 15.3 Quarter post/end wall and center post assemblies

### 15.3.1 Quarter post/end wall and center post aluminum extrusions.

Table 15.3.1 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 DF3101-01B	1/4-20 x 3/8" FHMS, black oxide, -01Z, zinc plated

Fig. 15.3.2 DF3101-01B

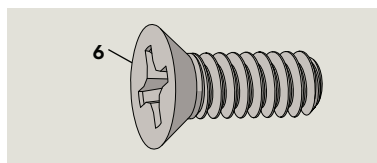


Fig. 15.3.1 Quarter post/end wall

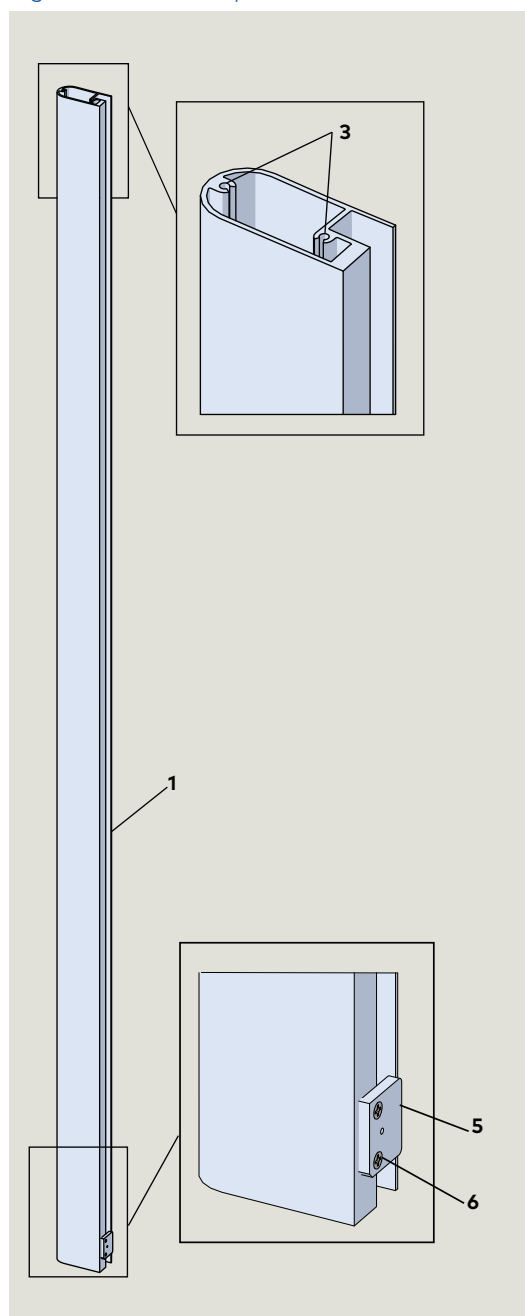
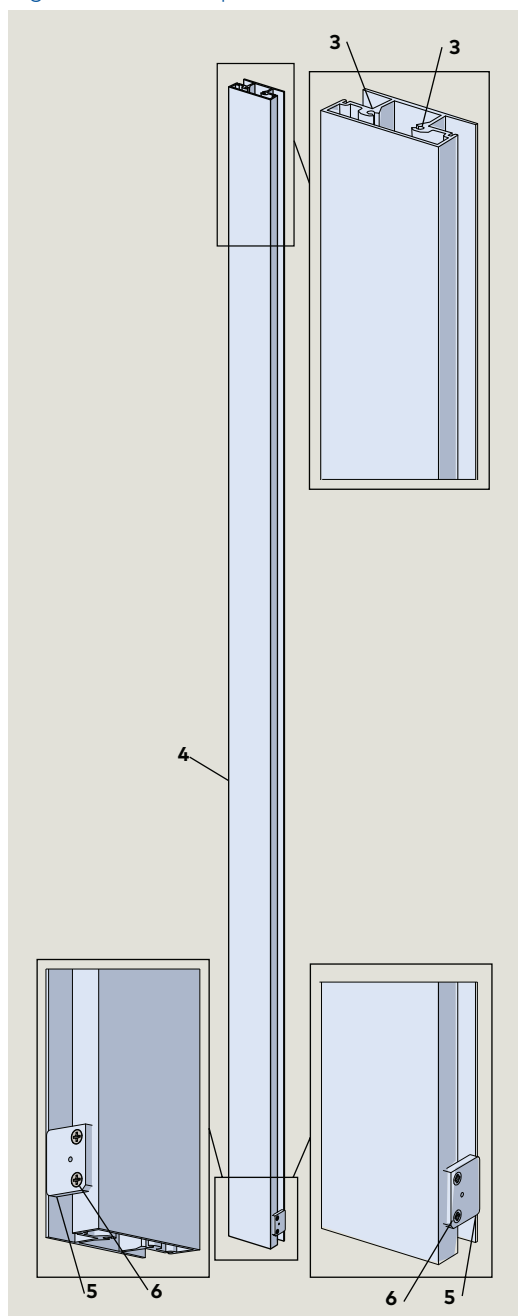


Fig. 15.3.3 Center post



## 15.4 Attach quarter posts and center posts to canopy

Fig. 15.4.1 Quarter post/end wall canopy fasteners

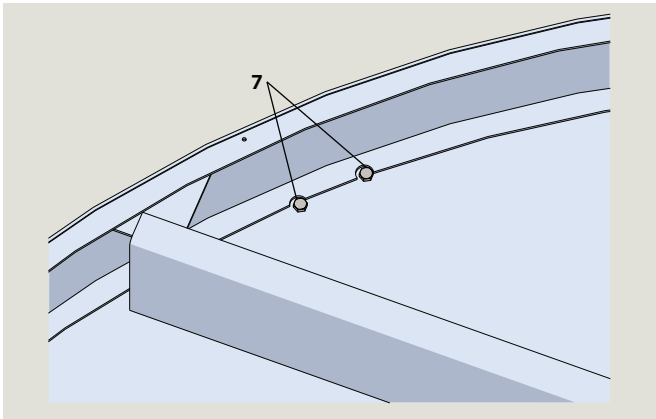


Fig. 15.4.2 Center post canopy fasteners

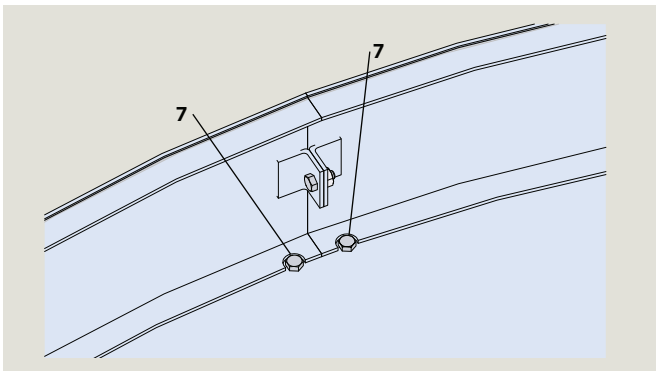


Fig. 15.4.3 Posts fastened to canopy example

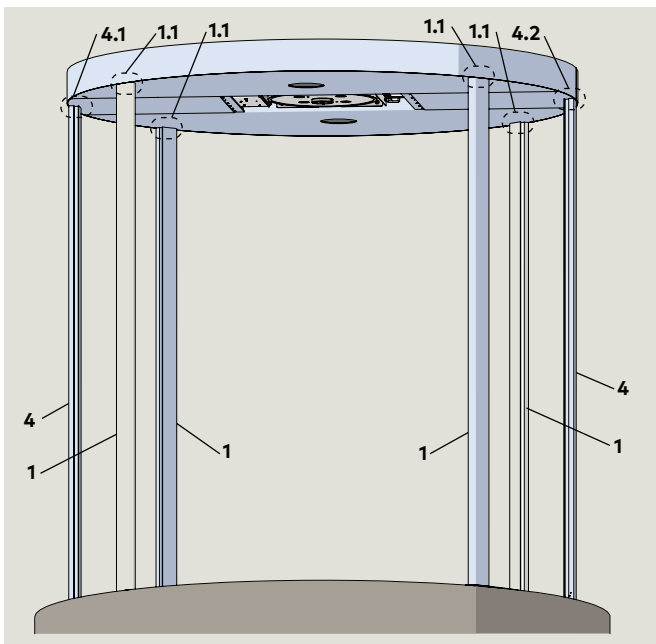


Fig. 15.4.4 RF6055-01G

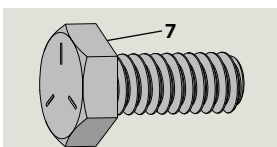


Table 15.4.1 Quarter post/end wall and center post

Part / Assembly	Description
<b>1</b> RE60XX-0X0	Quarter post/end wall
<b>1.1</b> RF6055-01G	Fig. 15.4.3 – Quarter post fasteners
<b>4</b> RE6006-0X0	Center post
<b>4.1</b> RF6055-01G	Fig. 16.4.2 –Center post fasteners
<b>5</b> RE6021-010	Rail to post attachment block
<b>7</b> RF6055-01G	1/4-20x5/8" FHMS

### 15.4.1 Install glazing tape in posts.

1. Install compressed 1/8" thick glazing tape in posts per Crane Shop drawings.  
Reference Para. 21.4, Fig. 21.4.3 for examples.

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



**WARNING**

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

2. Fasten posts to canopy using 1/4-20 x 5/8" hex screws (Fig. 15.4.4) through soffit holes into posts.

### CAUTION

#### Match post numbers to numbers in canopy.

Refer to Para. 15.5 for post numbering locations.

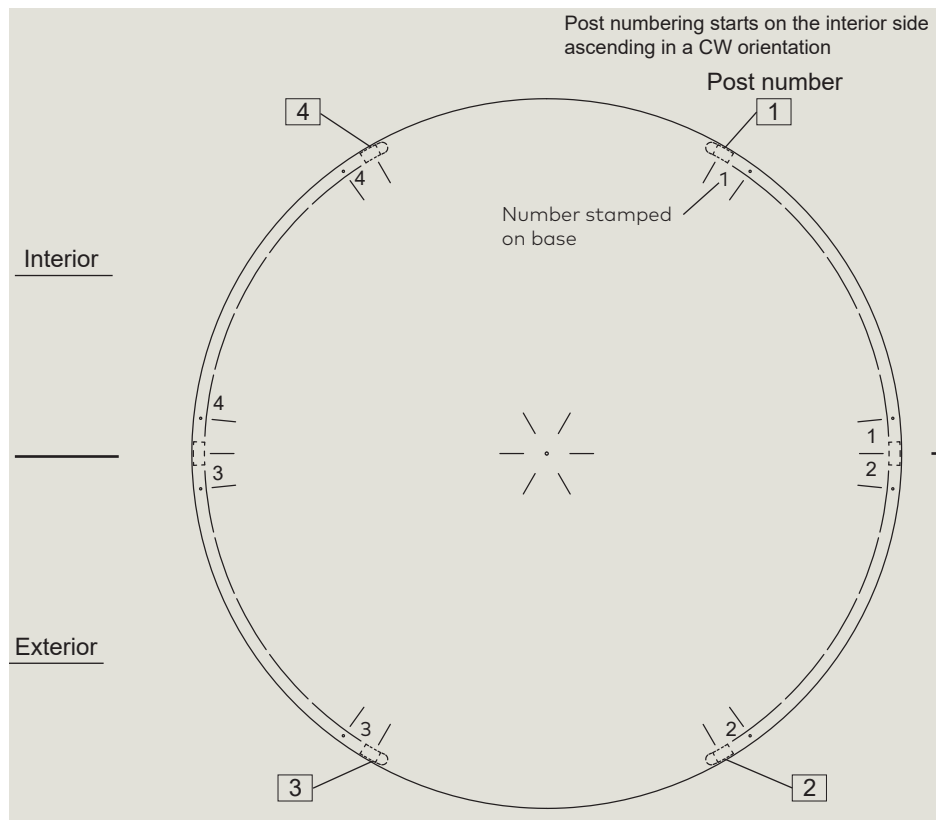


### TIPS AND RECOMMENDATIONS

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

## 15.5 Enclosure base and post numbering

Fig. 15.5.1 Standard post installation numbering

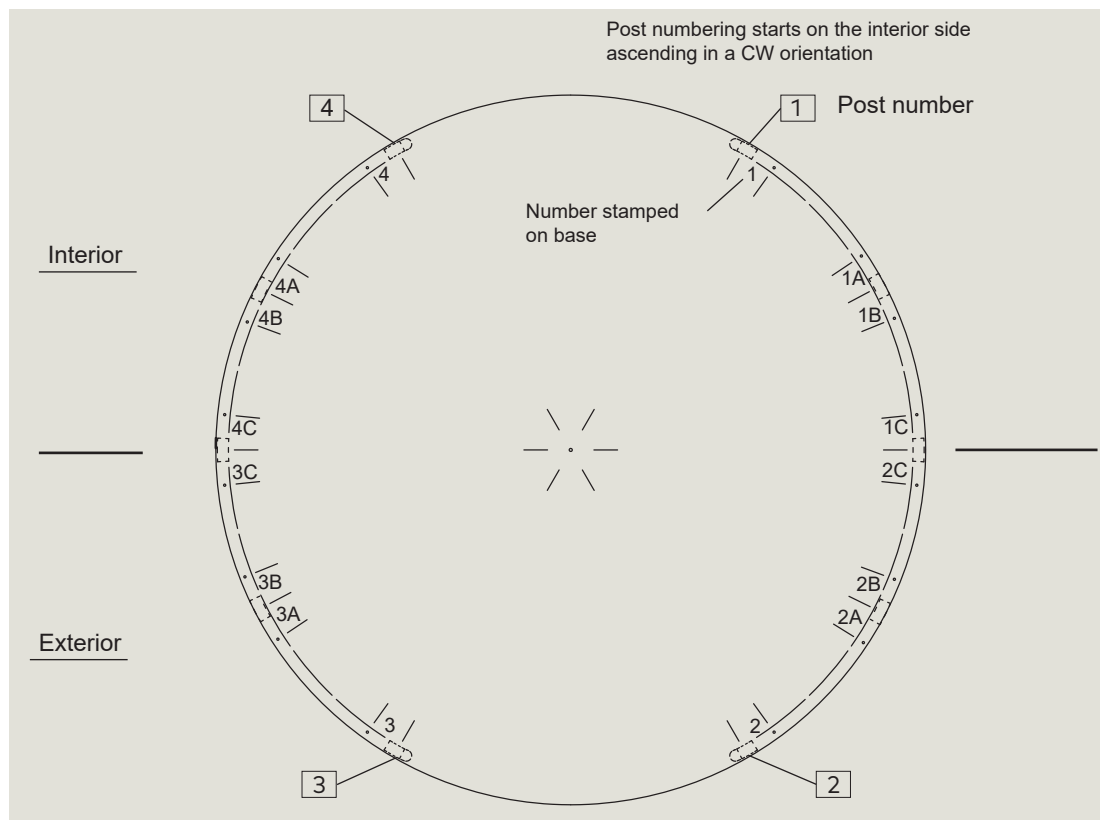


### 15.5.1 Post numbering, multiple revolving door installation.

Table 15.5.1 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. 15.5.2 Additional center post installation numbering





# 16 Enclosure base installation

## 16.1 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.

## 16.2 Open base enclosure shipping crate

Fig. 16.2.1 Base crate

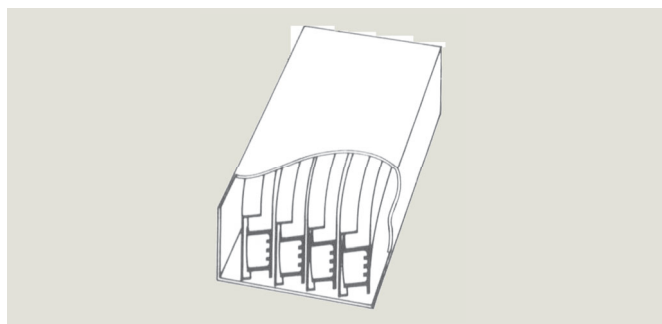
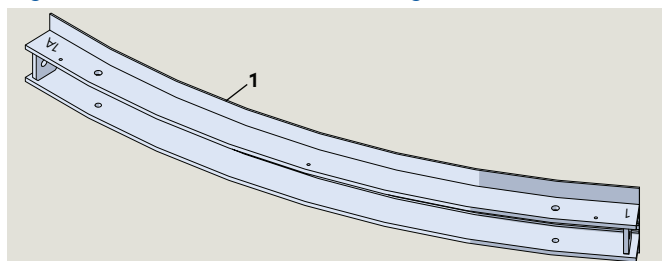


Fig. 16.2.2 Base shipping crate



Fig. 16.2.3 Enclosure base numbering



- 1 Enclosure base assembly with location numbers

### 16.2.1 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. 16.2.2).
  - The numbers are stamped on the base (Fig. 16.2.3).
  - Insure base numbers match those on wrapping material.

## 16.3 Base assembly installation

Table 18.3.1 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" stud
7 DF0587-00G	3/8" hex nut
8 RF6055-02G	1/4-20 x 1" SS hex screw

Fig. 16.3.1 Aluminum mounting base with 3" studs installed

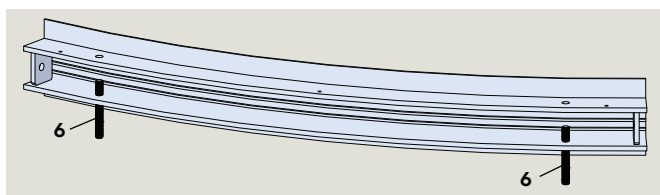


Fig. 16.3.2 S21 0334

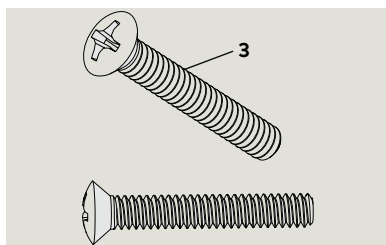


Fig. 16.3.3 Spacer

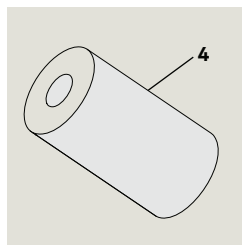


Fig. 16.3.4 HHMS

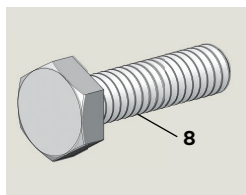


Fig. 16.3.5 3" stud

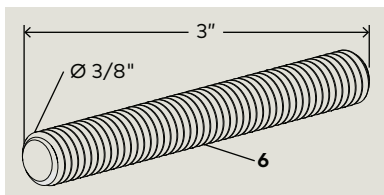
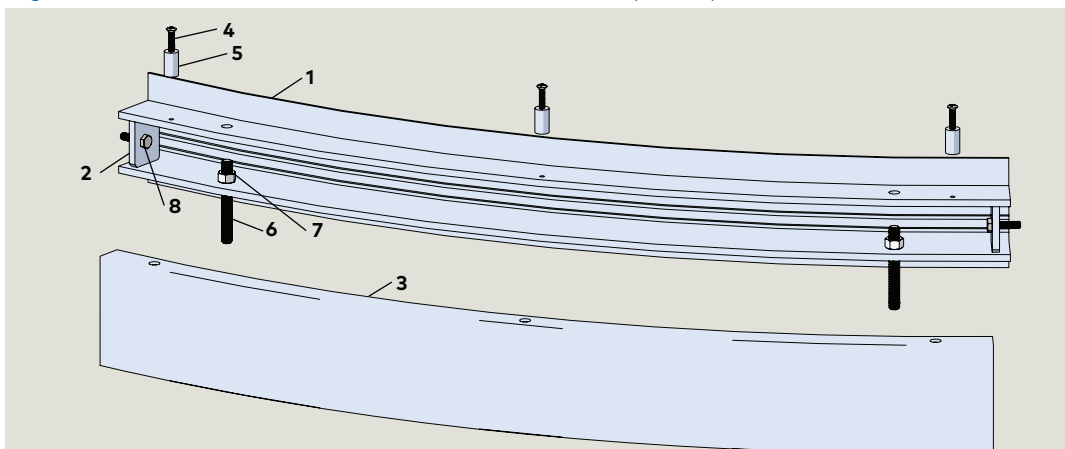


Fig. 16.3.6 Aluminum enclosure base and fascia assembly example



### 16.3.1 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.

### 16.3.2 Prepare stud anchor holes.

- Stud anchor holes drilled in Chapter 11.

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

### 18.3.3 Thread two 3" studs into each base assembly.

1. Thread two 3" studs into the mounting holes of each base (Fig. 16.3.1), leaving 3/4" above bottom base rail.

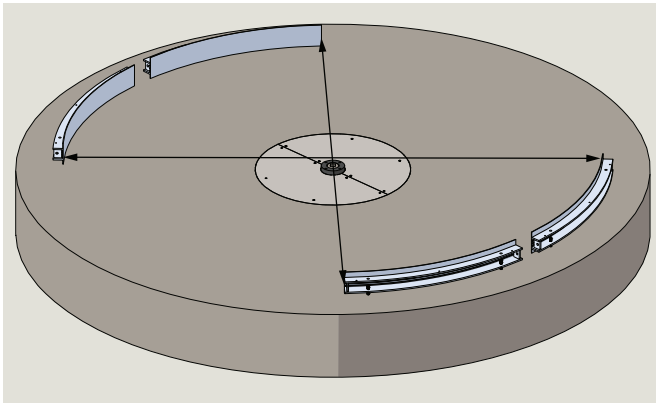
### 18.3.4 Dry fit each base assembly to the floor.

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

#### CAUTION

Enclosure base numbers must match adjacent post numbers.

Fig. 16.3.7 Bases installed on floor



**16.3.5 Verify door inside diameter.**

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

**16.3.6 Remove bases.**

1. Remove bases from floor.

**16.3.7 Partially fill anchor holes with anchoring epoxy.**

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

**16.3.8 Reinstall base assemblies**

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

**16.4 Lower canopy and post assembly; fasten posts to bases**

Table 16.4.1 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" stud
8 RF6055-02G	1/4-20 x 1" SS hex screw
9 RE6055-0X0	Center post
10 RE60XX-0X0	Quarter post/end wall

**16.4.1 Lower canopy and post assembly.**



**WARNING**

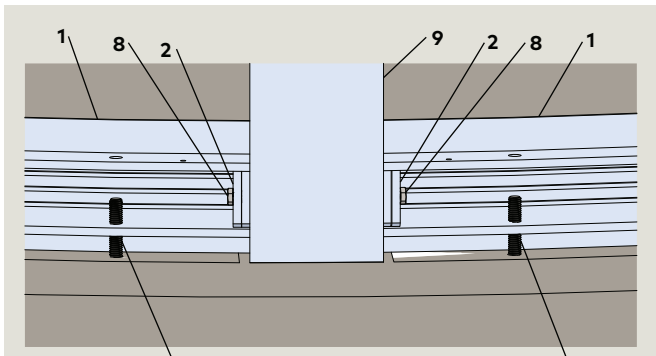
Use caution when lowering assembly!

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. 16.4.1 Bases attached to center post



**16.4.2 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.

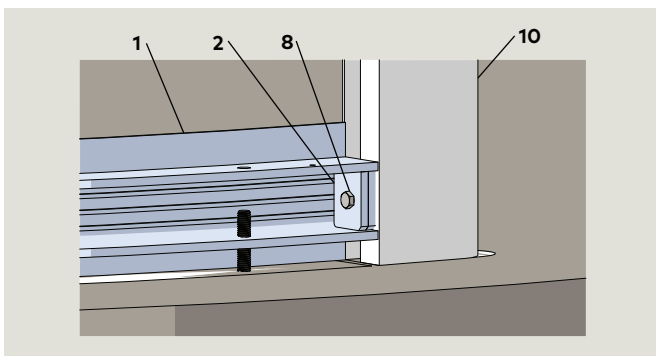
- Snug, do not tighten fasteners.

**16.4.3 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. 16.4.2 Base attached to quarter post

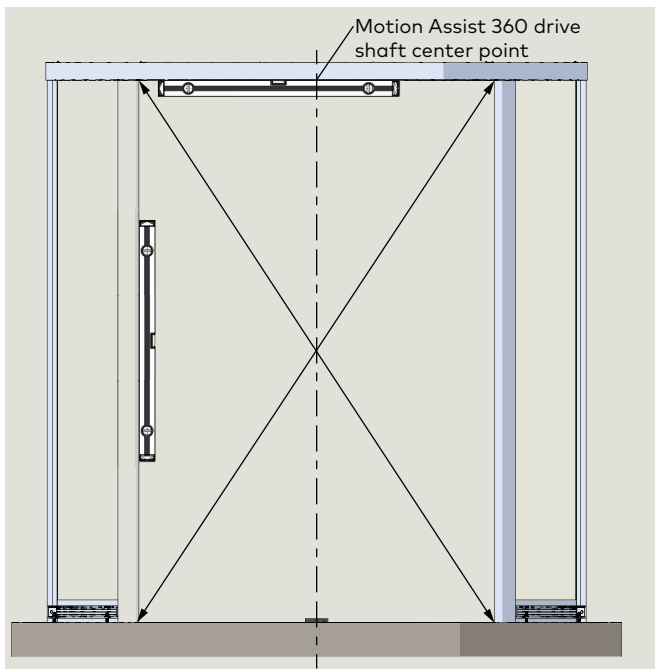


**TIPS AND RECOMMENDATIONS**

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

## 16.5 Set enclosure level, square and plumb

Fig. 16.5.1 Enclosure, check for level, square and plumb



### 16.5.1 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!



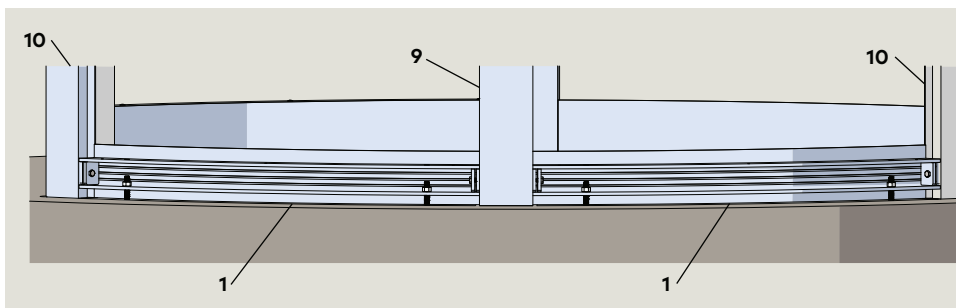
#### WARNING

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

### 16.5.2 Tighten posts to base assemblies.

1. Tighten all fasteners installed in Para. 16.4.2 and 16.4.3.

Fig. 16.5.2 Bases fastened to center post and quarter post/end walls



- 1 Enclosure base
- 9 Center post  
RE6055-010
- 10 Quarter post  
RE60XX-0X0

# 17 Center shaft installation – overhead speed control

## 17.1 Center shaft assembly

### NOTICE

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

## 17.2 Remove center shaft assembly from shipping crate

### 17.2.1 Unpack center shaft assembly from shipping crate.

- RS6041, 4 wing steel shaft assembly.
- RS6042, 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. 5.8 and Para. 5.9.

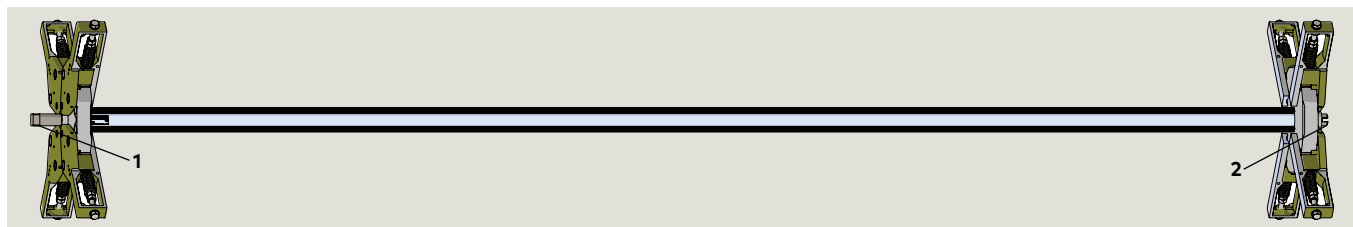


### WARNING

#### Risk of injury from heavy loads!

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

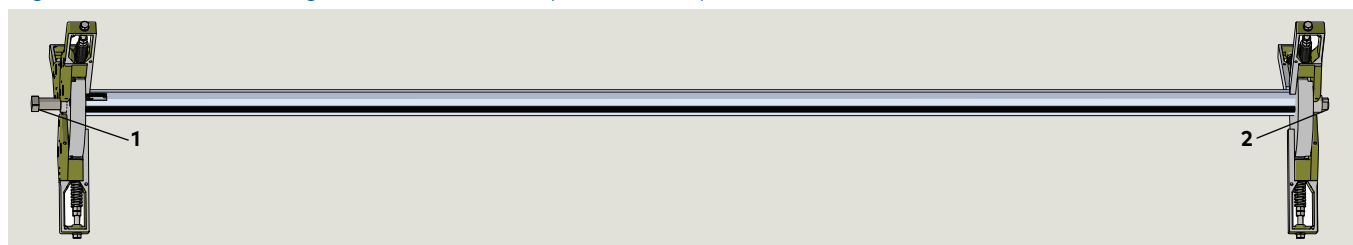
Fig. 17.2.1 RS6041, 4 wing steel shaft assembly, overhead speed control



1 Plug for Motion Assist drive 360 adapter

2 Plug for floor mounted pivot

Fig. 17.2.2 RS6042, 3 wing steel shaft assembly, overhead speed control



1 Plug for Motion Assist drive 360 adapter

2 Plug for floor mounted pivot

## 17.3 Lower center shaft top plug

Table 17.3.1 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. 17.3.1 Center shaft top plug and job tag

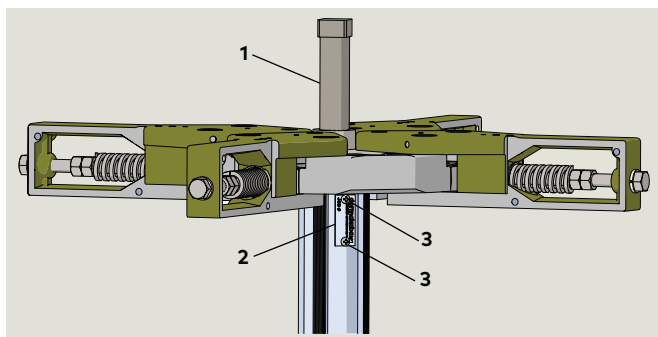


Fig. 17.3.2 Nameplate / job number tag removed

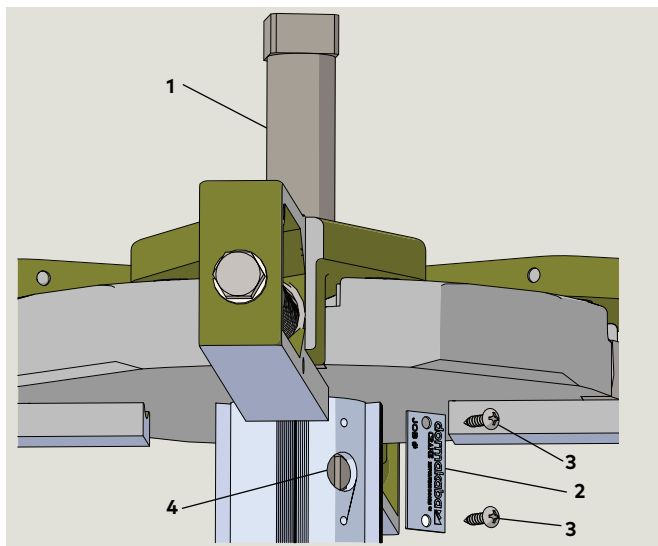
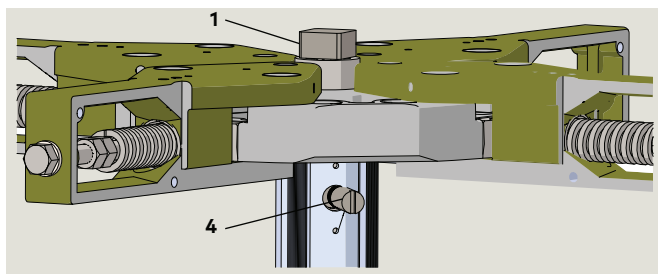


Fig. 17.3.3 Top plug lowered against steel center shaft



### 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.

#### 17.3.1 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. 17.5

#### 17.3.2 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. 17.3.3).
4. Snug cross pin against top plug.

## 17.4 Install center shaft bottom plug into floor pivot bearing

Table 17.4.1 Bottom plug and speed control

Part / Assembly	Description
4 RC6073-001	Steel center shaft, 4 wing, floor pivot
5 RC6074-001	Steel center shaft cover, 4 wing
6 RC6077-001	Bottom plug, steel shaft
14 RS6076-010	Floor pivot bearing
15 RF6053-01G	1/4" O.D. x 1 1/4" cross pin

Fig. 17.4.1 Floor pivot bearing with cross pin

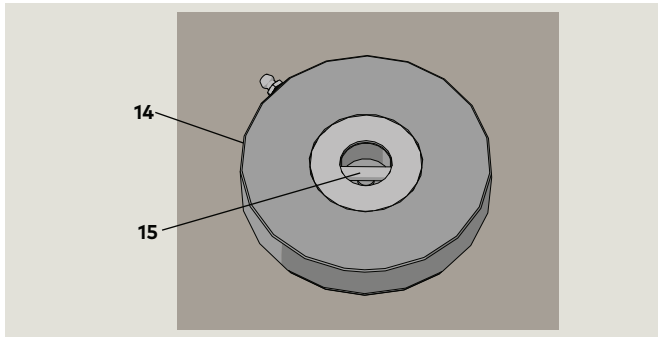


Fig. 17.4.2 Bottom plug above floor pivot bearing

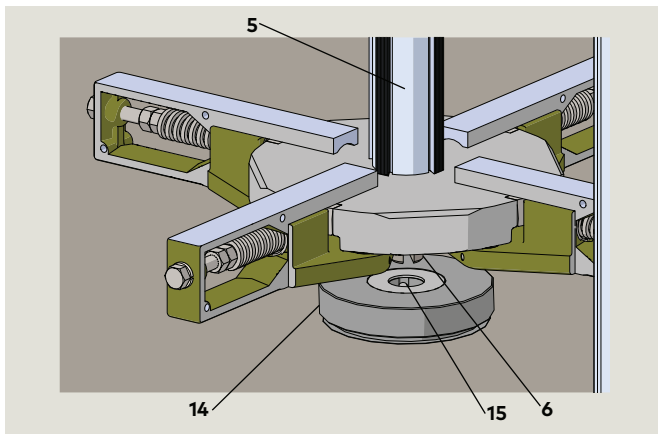
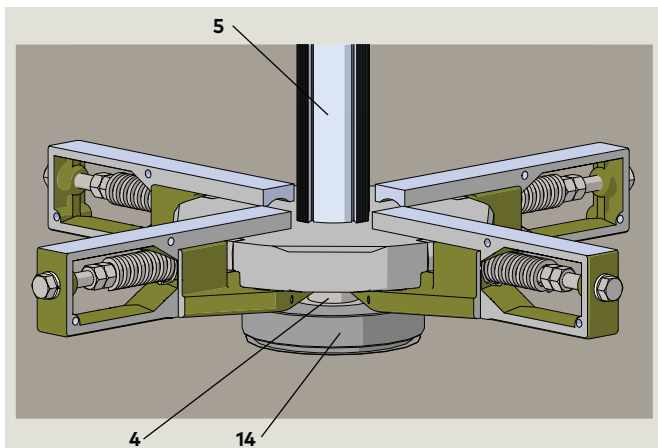


Fig. 17.4.3 Bottom plug inserted in floor pivot bearing



### 17.4.1 Raise center shaft to vertical position.

1. Raise center shaft assembly and position bottom plug over floor pivot bearing.



**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 20.3) to install center shaft assembly.



#### TIPS AND RECOMMENDATIONS

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

### 17.4.2 Lower bottom plug into floor pivot.



**WARNING**

#### Damage to the floor pivot 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 floor pivot bearing.

1. Rotate floor pivot bearing cross pin as required to align to slot in center shaft bottom plug.
2. Lower center shaft bottom plug into floor pivot bearing.

## 17.5 Raise top plug into Motion Assist 360 drive adapter and secure

Fig. 17.5.1 Top plug retracted, under drive adapter

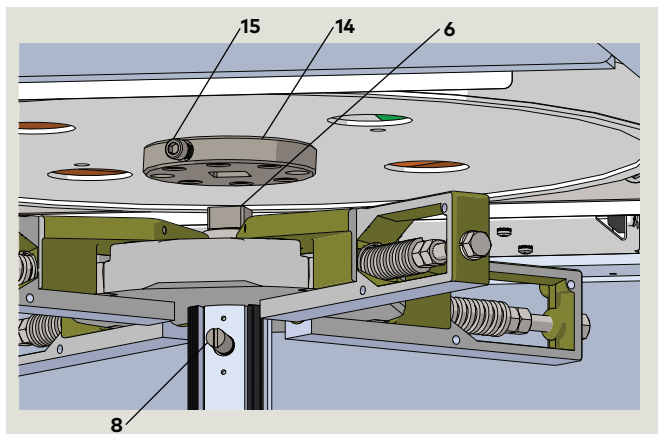


Fig. 17.5.2 Top plug extended into drive adapter, cross pin holes aligned

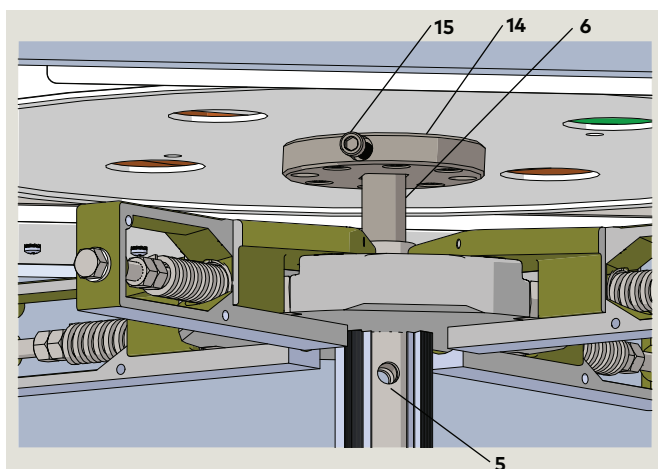


Fig. 17.5.3 Top plug secured

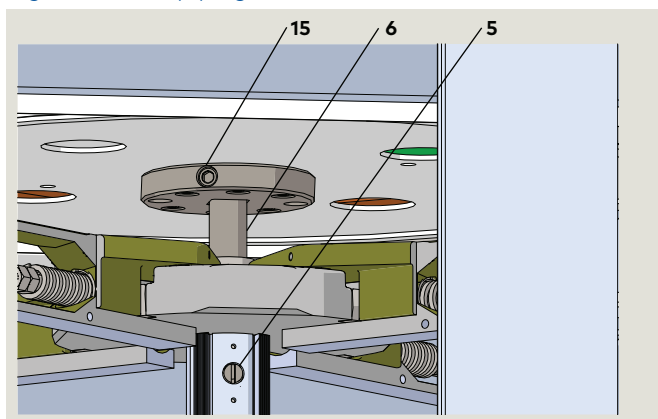


Table 17.5.1 Center shaft and drive shaft adapter

Part / Assembly	Description
2	RD6001-001 Job tag
3	RF6008-01G #6 x 1/2" SS Phillips pan head screw
4	RC6073-001 Steel center shaft, 4 wing, floor speed control
5	RC6074-001 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, overhead speed control
15	RF6059-02C 5/16 x 1 1/4" SHCS, black oxide

### 17.5.1 Loosen drive shaft adapter SHCS.

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

### 17.5.2 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.

### 17.5.3 Tighten drive shaft adapter SHCS.

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

### 17.5.4 Install nameplate/job number tag.

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

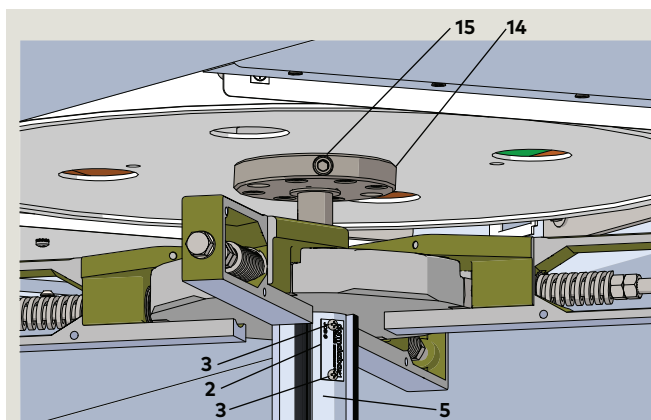
### 17.5.5 Rotate center shaft assembly.

#### CAUTION

#### Rotate center shaft assembly.

- Shaft should rotate freely.

Fig. 17.5.4 Job tag/nameplate installed

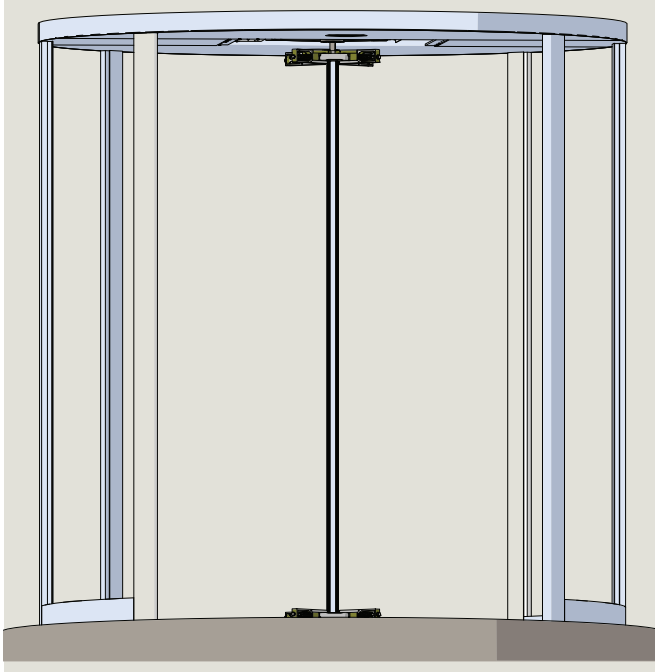




# 18 Set initial hanger breakout tension

## 18.1 Set hanger initial hanger breakout tension

Fig. 18.1.1 3 inch canopy with floor speed control and center shaft installed



### 18.1.1 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.

### 18.1.2 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

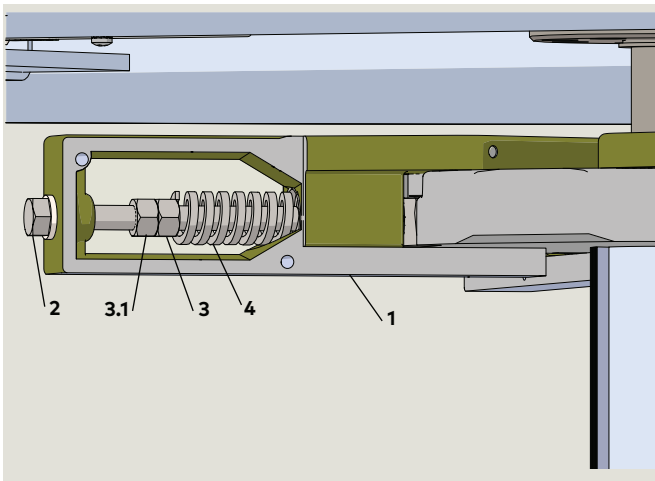
Reference Chapter 22 for breakout force check after wings are installed.

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

### 18.1.3 Remaining hangers.

1. Repeat hanger tension adjustment for remaining hangers.

Fig. 18.1.2 Hanger breakout tension adjustment



- |                                       |                     |
|---------------------------------------|---------------------|
| 1 Hanger assembly<br>RS6045-020       | 3 .375-16 hex nut   |
| 2 Hex bolt, .3/8-16x 4"<br>RC6156-01G | 3.1 .375-16 hex nut |
|                                       | 4 .Spring           |

# 19 Wing installation

## 19.1 Wing assemblies

### NOTICE

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

## 19.2 Unpack wing shipping crate

Fig. 19.2.1 Wing shipping crate

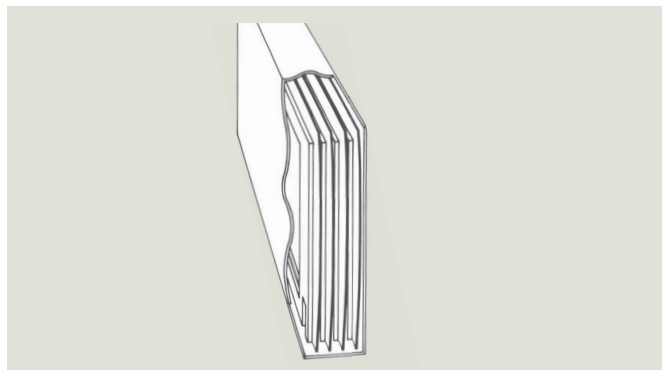
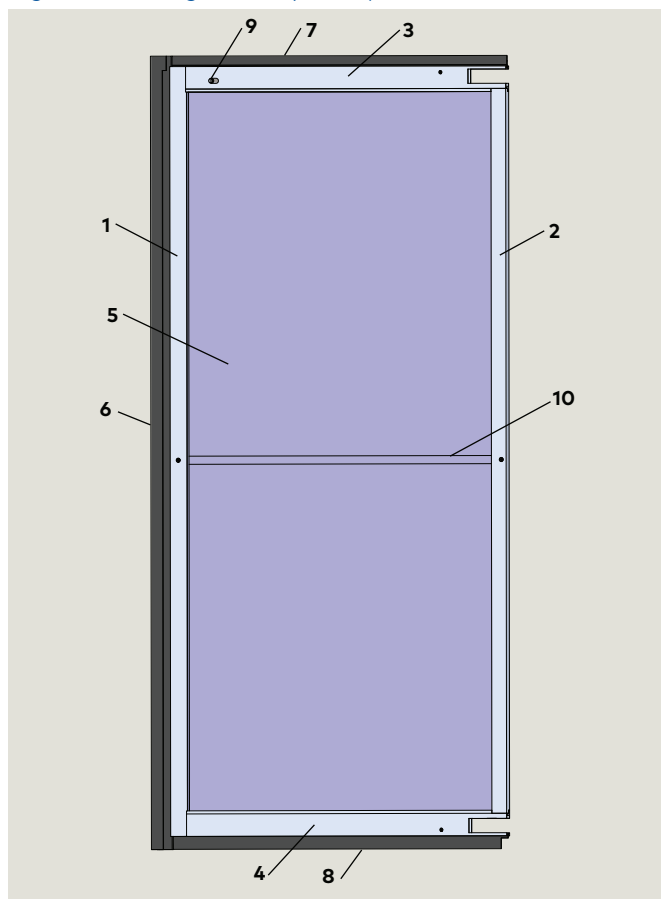


Fig. 19.2.2 Wing assembly example



### 19.2.2 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 19.2.1 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	RC6287-020 Weatherstrip, T style, vertical
7	RC6287-030 Weatherstrip, T style, top
8	RC6287-010 Weatherstrip, T style, bottom
9	RS2961 Wing bumper assembly example
10	Wing push bars ordered job specific for each order

## 19.3 Install wing locks on two interior door wings

Fig. 19.3.1 Wing lock and mounting hardware

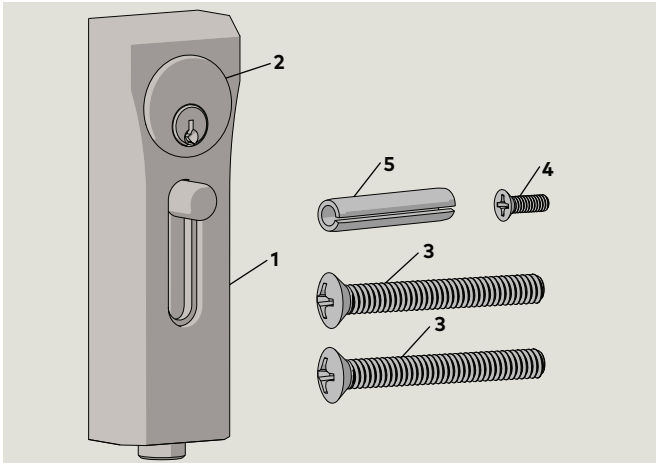


Table 19.3.1 Wing lock hardware

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	RF7021-01G 8-32 x 1/2" 18-8 flat head screw
5	RF6053-01G 1/4 x 1 1/4" spring pin

Fig. 19.3.2 Wing lock mounting holes

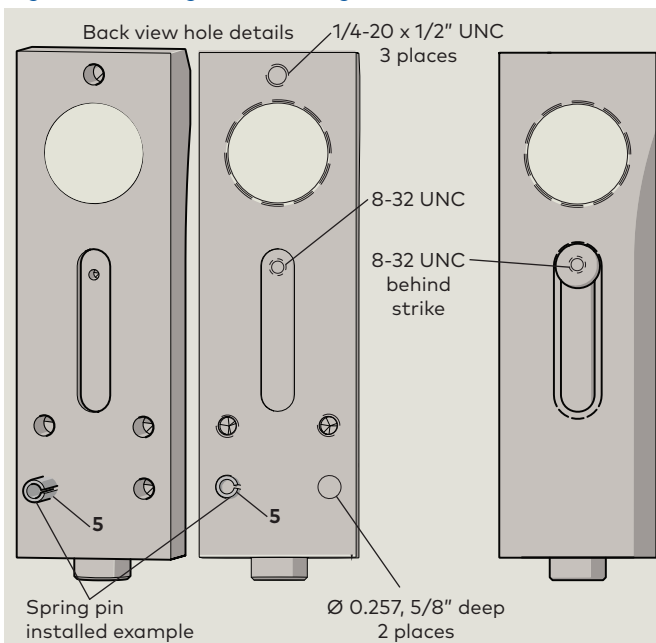
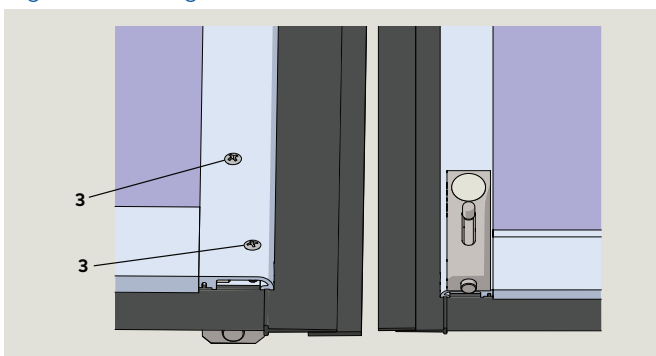
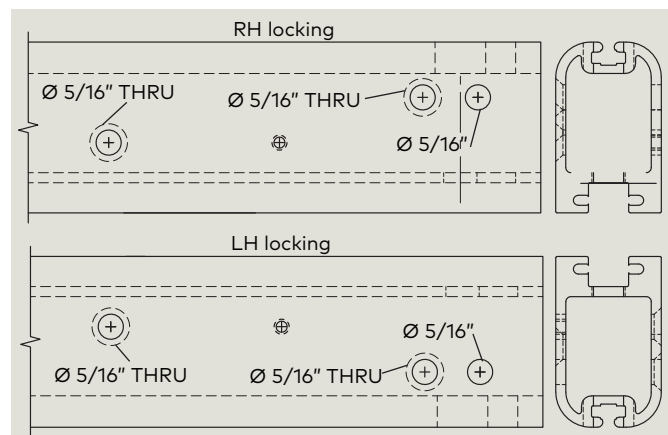


Fig. 19.3.3 Wing lock installed



### 19.3.1 Install wing locks.

Fig. 19.3.4 Wing RH and LH lock stiles



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

### 19.3.2 Lock cylinder (by others).

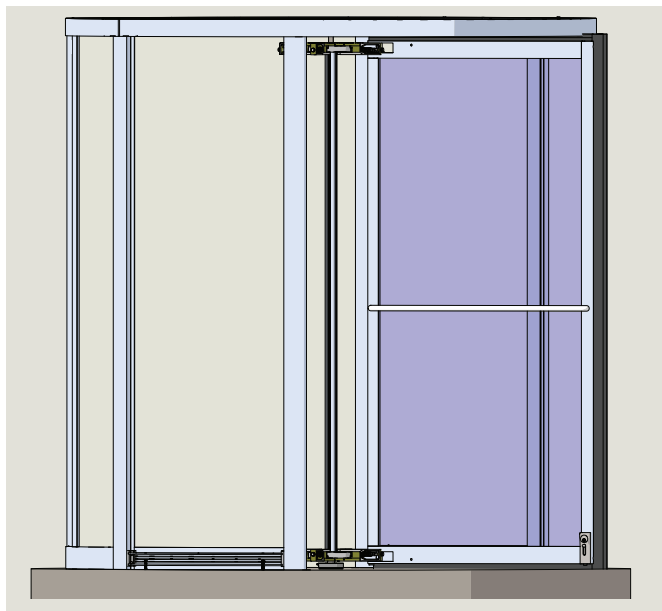
#### NOTICE

#### Crane shop drawings.

Reference Crane shop drawings for lock cylinder requirements for job!

## 19.4 Install wings onto center shaft hangers

Fig. 19.4.1 First wing installation



### 19.4.1 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!

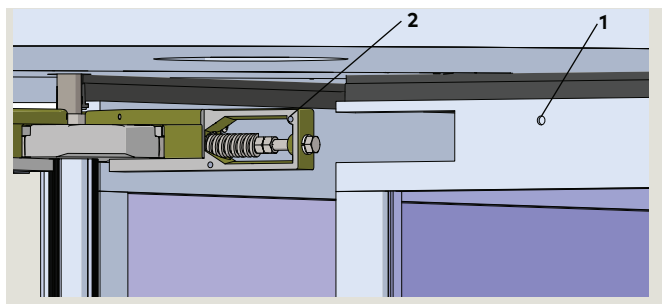


#### WARNING

#### Risk of injury due to improper handling of wing assemblies!

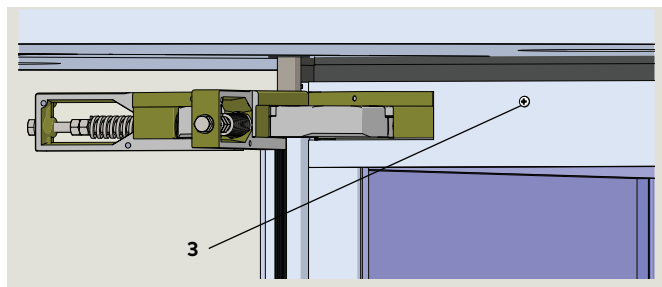
A minimum of two people are required to lift and transport wing assemblies.

Fig. 19.4.2 Wing and hanger mounting holes



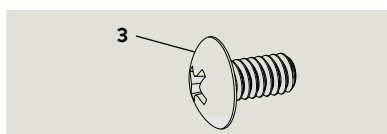
- 1 Wing hanger mounting hole, both sides
- 2 Hanger wing mounting hole, both sides

Fig. 19.4.3 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. 19.4.4 Truss head machine screw

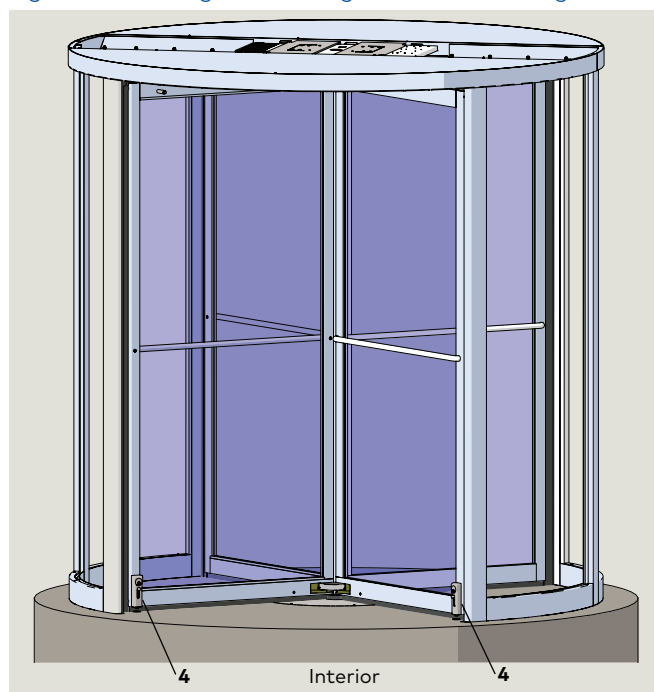


1. Slide wing over top and bottom hangers.
2. Secure wing to top hanger with two truss head machine screws.
3. Secure wing to bottom hanger with two truss head machine screws.

### 19.4.2 Install remaining wings on center shaft hangers.

1. Install remaining wings.

Fig. 19.4.5 4 wing door – wings installed on hangers



- 4 Wing lock body  
RC6259-0X0

## 20 Install floor strikes

### 20.1 Install floor strikes

Fig. 20.1.1 Floor strike RC6265-0X0

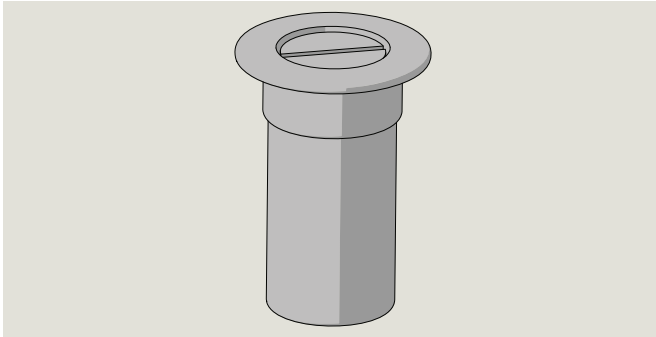


Fig. 20.1.3 Hole for floor strike

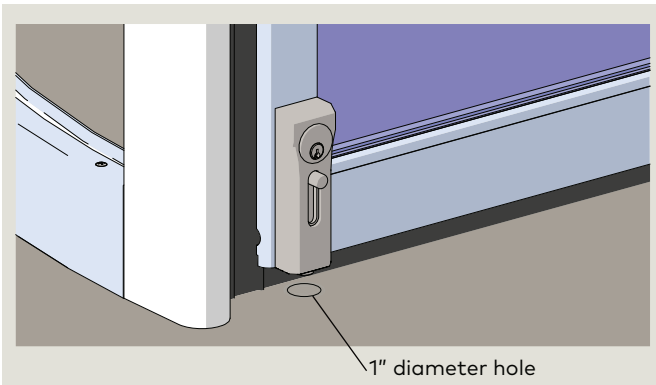
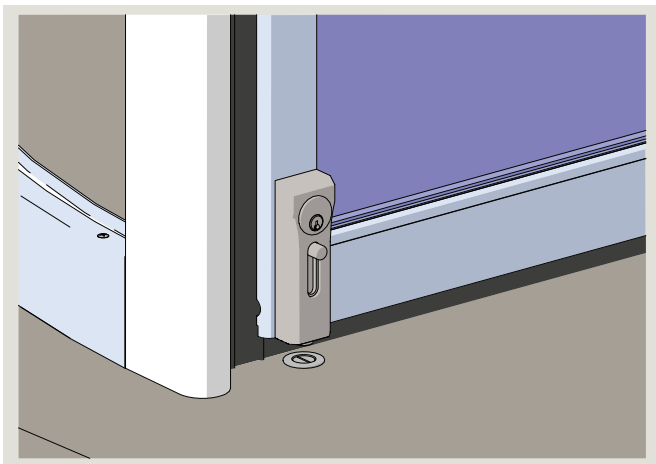


Fig. 20.1.4 Floor strike installed



#### 20.1.1 Home position.

1. Rotate wings to home position.

#### 20.1.2 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.

#### 20.1.3 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.

#### 20.1.4 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.

#### 20.1.5 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.



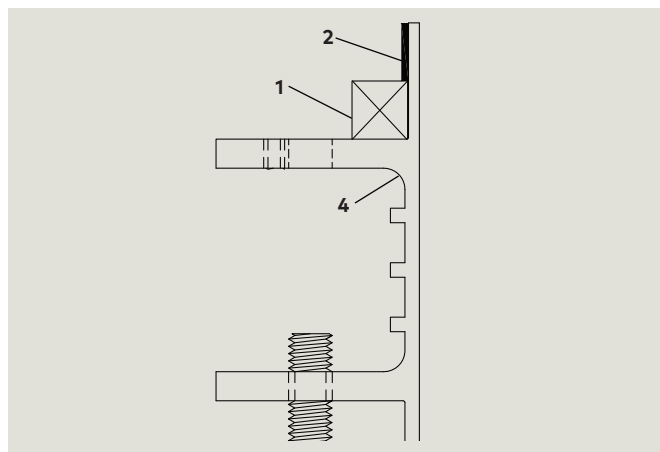
### WARNING

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 tape and 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.
  - Tape may have been installed during post installation, reference Chapter 15.

## 21.4 Install enclosure glass

Fig. 21.4.1 Glass set in base enclosure

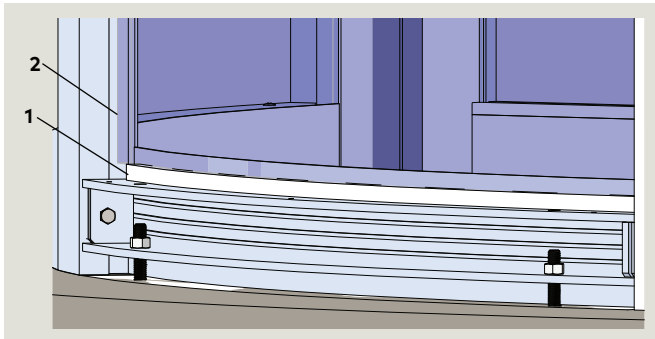


Fig. 21.4.2 Crane shop drawing example

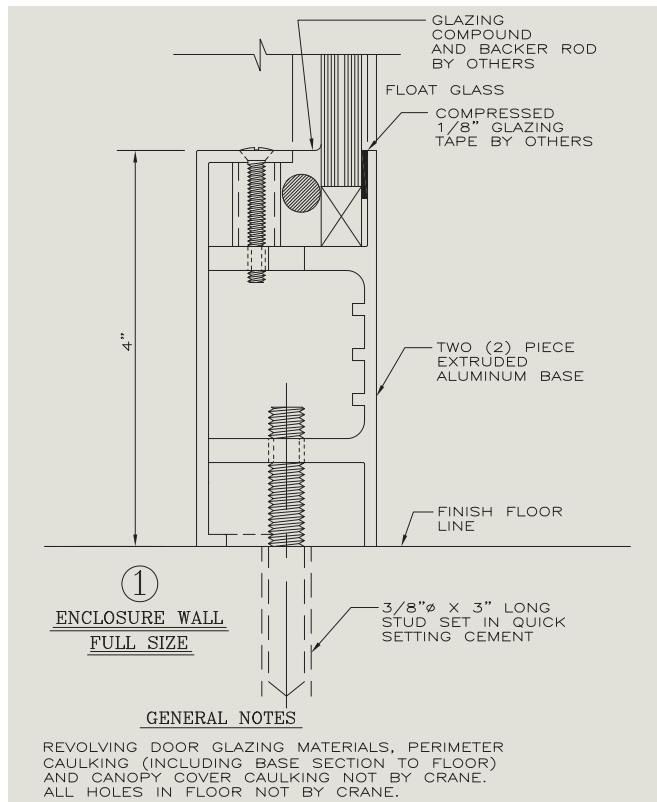


Table 21.4.1 Enclosure glass and base assembly

Part / Assembly	Description
1	Glazing block (by installer)
2	Enclosure glass, reference Crane shop drawings
3	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, 4 7/8" 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!

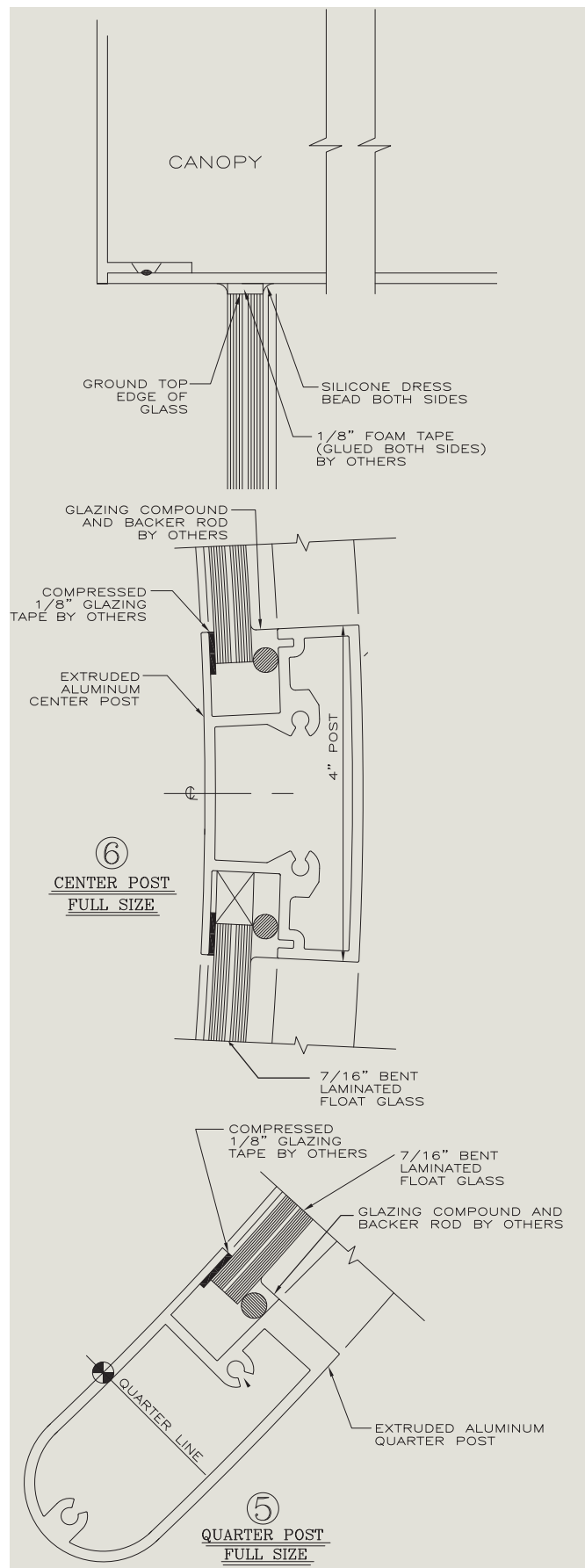
### 21.4.4 Install remaining enclosure glass.

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. 21.4.3 Crane shop drawing post backer rod and glazing installation examples



**NOTICE**

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



## 21.5 Install enclosure base covers

Fig. 21.5.1 Base cover hardware

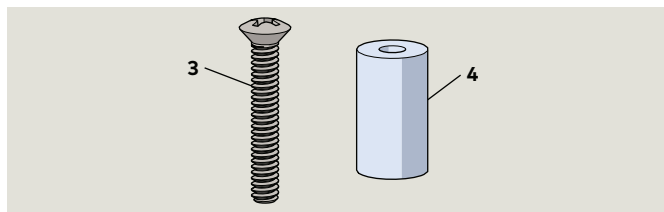


Fig. 21.5.2 Aluminum base and cover assembly

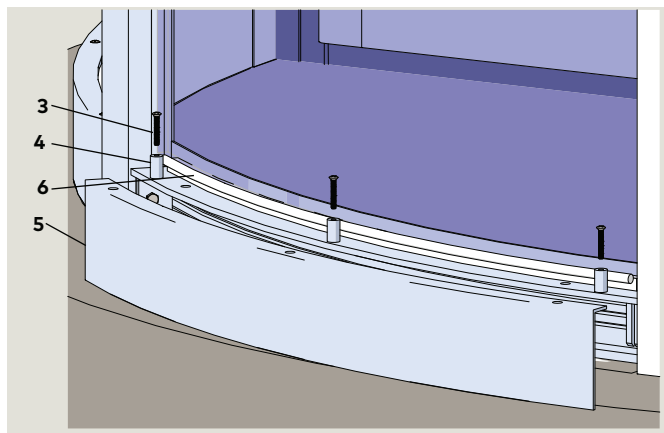


Fig. 21.5.3 Enclosure base cover installed

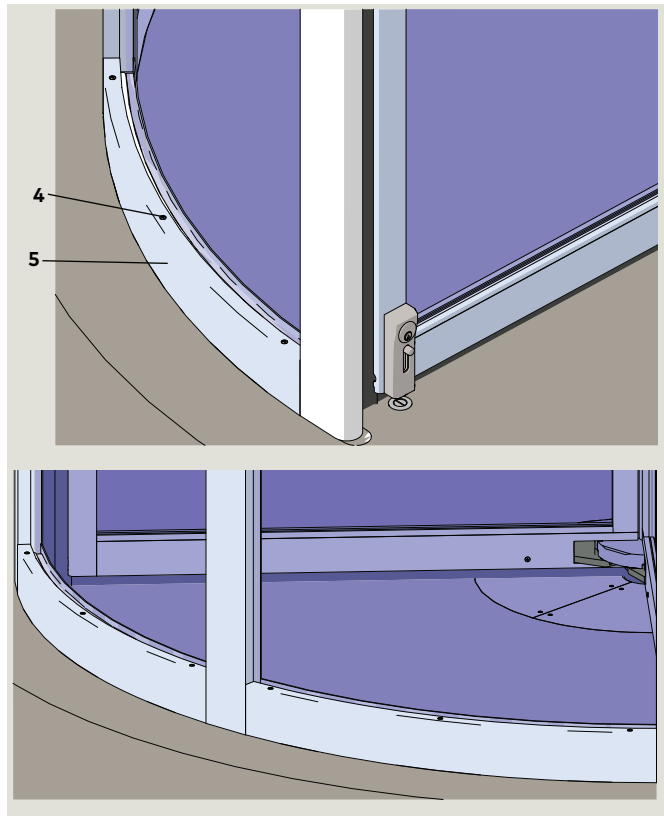


Table 21.5.1 Enclosure base assembly

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

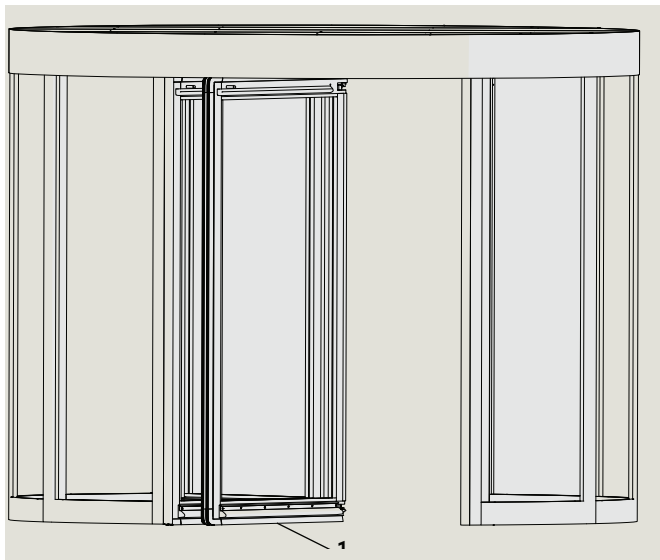
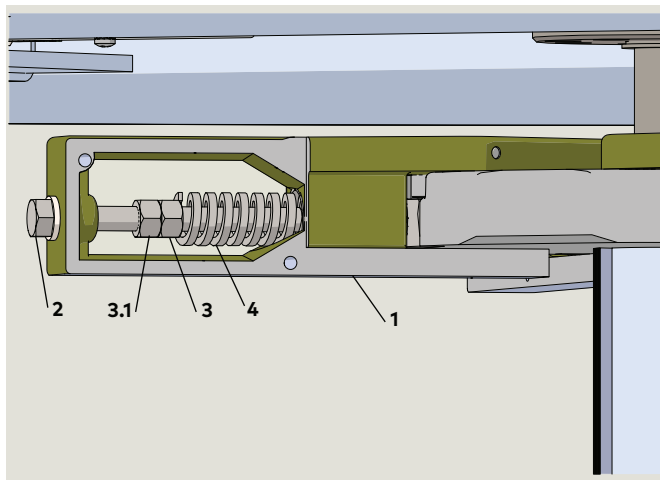


Fig. 22.1.2 Hanger breakout tension adjustment



- |   |                                  |     |                 |
|---|----------------------------------|-----|-----------------|
| 1 | Hangar assembly<br>RS6045        | 3   | .375-16 hex nut |
| 2 | Hex bolt, .375x 4"<br>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 18.
- Reference Para. 23.2 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.

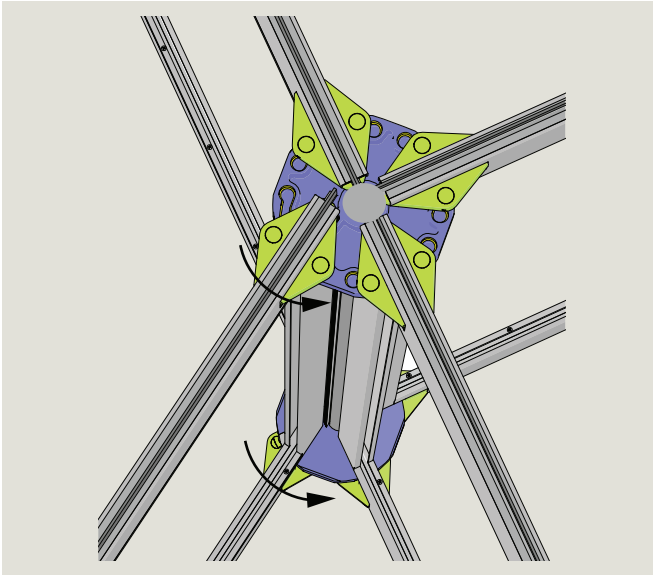
#### • Decrease hanger tension:

- 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. 22.1.1 are met.

Fig. 22.1.3 Door wing in breakout position

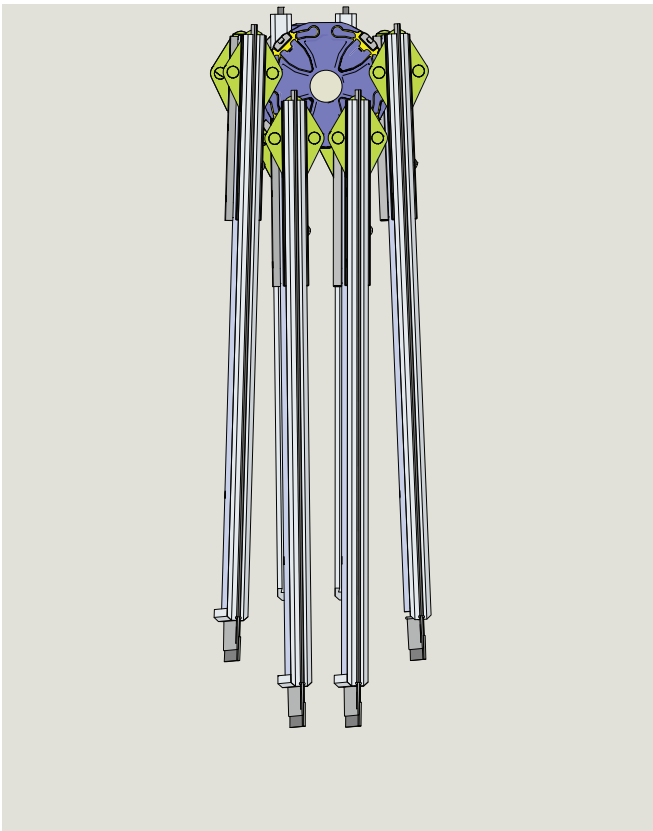


### 22.1.5 Breakout force, remaining wings.

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. 22.2.1 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

Fig. A.1 Remote control enclosure

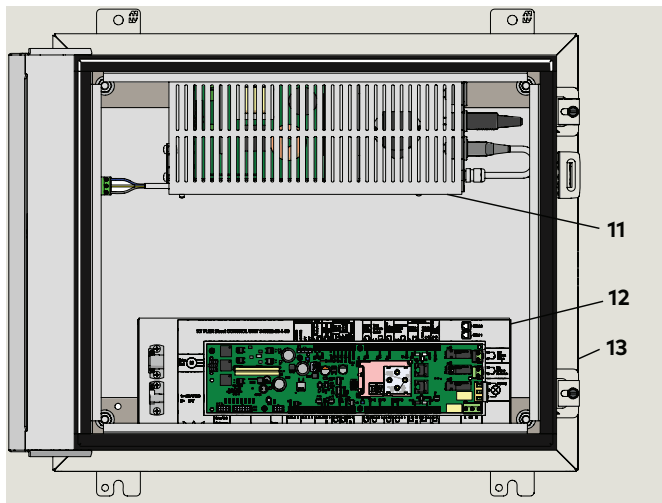


Table A.1 Motion Assist 360 drive hardware

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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