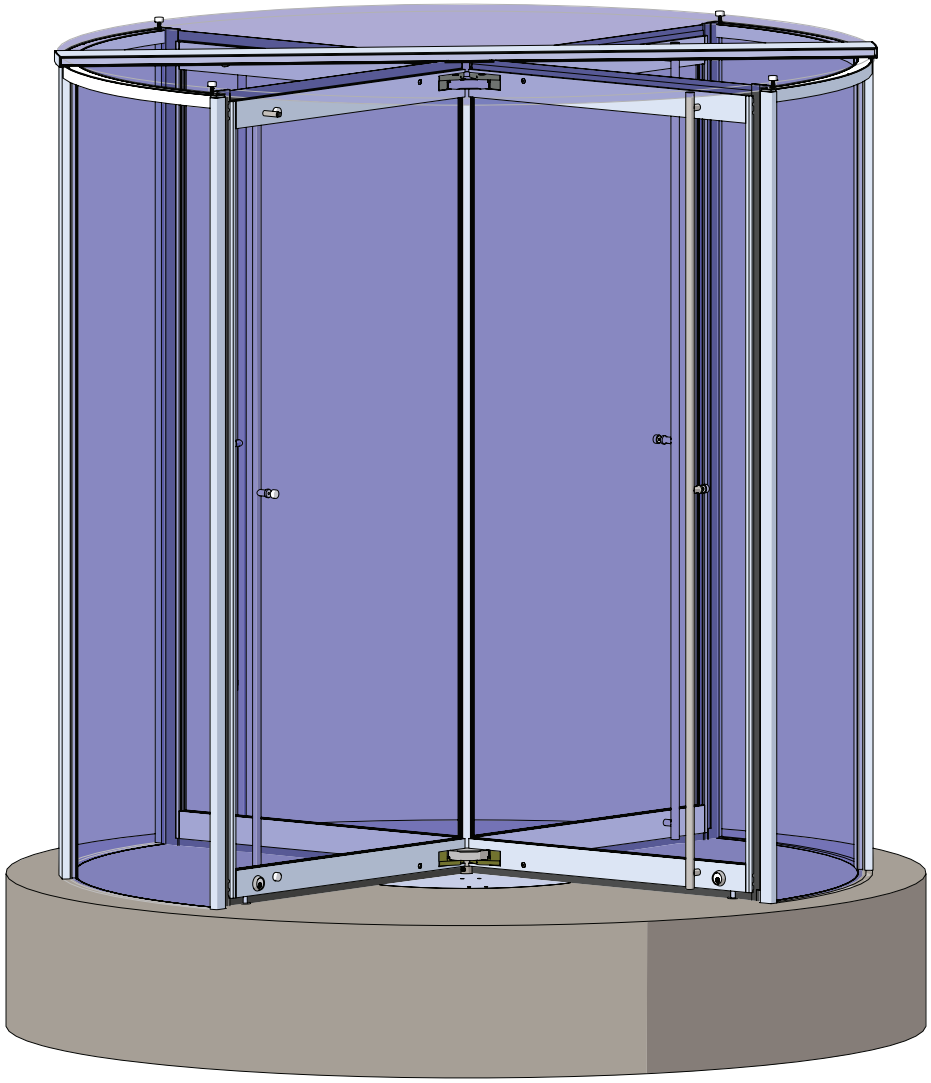


Crane 4000LE

In-ground Motion Assist 360 drive and speed control
Remote control enclosure

Installation Manual

RL6002-001 – 07-2022

| EN |

Crane
dormakaba Group

dormakaba

Table of contents

1 General information

1.1 Installation instructions.

This document contains important instructions for installation of Crane 4000LE series manual revolving doors with:

- In-ground Motion Assist 360.
- Remote control enclosure.
- In-ground speed control.

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

1.2 Remote enclosure, wiring, setup, troubleshooting and maintenance instructions.

Refer to Manual RL6002-003.

1.3 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.

1.4 dormakaba.us website.

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

1.5 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.

1.6 Dimensions

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

1.7 Environment

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

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 4000LE series

2.1.1 Curved enclosure walls.

1. Extruded aluminum, formed stainless steel, formed bronze.
2. Post and base connection: recessed below finished floor connected with steel mounting clips set in floor of finished concrete.
3. Curved enclosure glass panels:

- 9/16" laminated glass.
- 7/16" laminated glass (AL4000 with center post).

2.1.2 Door wings.

1. Herculite, formed stainless steel, formed bronze.
2. Patch fitting extruded aluminum cladded in formed stainless steel, formed bronze formed aluminum custom cladded in factory.
3. Cladded herculite, aluminum, formed stainless steel, formed bronze custom cladded and finished in factory.

2.1.3 Canopy

1. All glass.

- 13/16" laminated float glass.
- PVB interlayer depending on application.

2.1.4 In-ground low profile container.

- Motion Assist 360 drive.
  - Gearless electromagnetic direct drive system.
  - Low energy application.
- In-ground speed control.

2.2 Available options

2.2.1 4000LE available options.

Reference Chapter 7.

- Welded floor grills.
- Custom push bars.

Fig. 2.1.1 4 wing 4000LE 4 wing revolving door

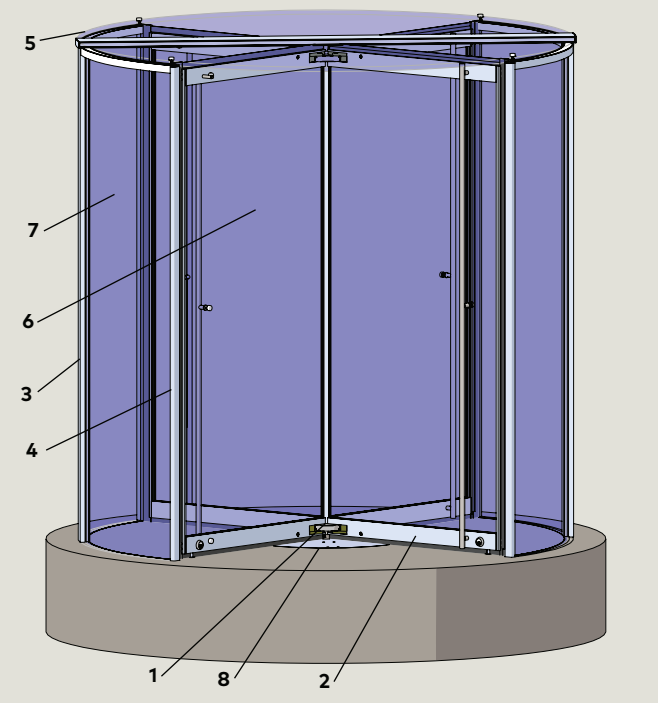


Table 2.1.1 Crane 4000LE assemblies and parts

#	Description
1	Center shaft assembly
2	Wing assembly
3	Center post
4	Quarter post/end wall
5	Glass canopy assembly
6	Wing glass
7	Enclosure glass
8	In-ground low profile container

2.4 Motion Assist 360 technical information

2.4.1 Environment

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

2.4.2 Power supply

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

2.4.3 Power consumption

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

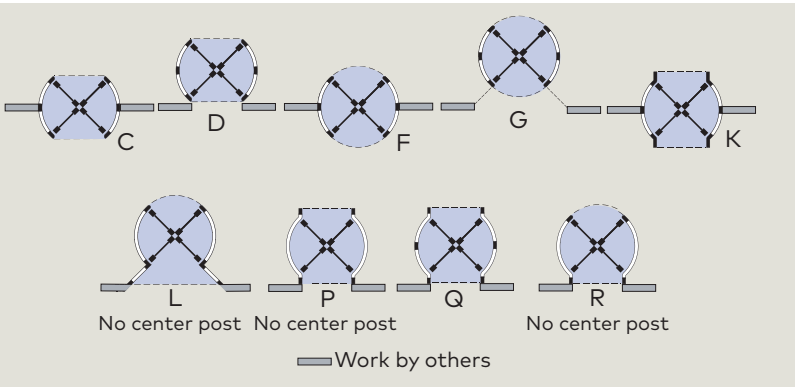
2.4.4 Drive

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 4000LE series model comparison

	AL4000	SS4000	BZ4000
Header	Two piece aluminum	Formed stainless steel	Formed bronze
Recessed base	Formed stainless steel		
Wing configuration	3 wing	4 wing	
Enclosure diameter	Minimum ID: 7' 7 3/4" Maximum OD: 8'	Minimum ID: 6' 6" Maximum OD: 8'	ANSI/BHMA A156.27-2019: To limit door mass, the inside diameter added to the height shall not exceed 17ft [5182 mm].
Door opening height	Minimum 7' Maximum: 10'	Minimum: 7' Maximum: 10'	
Maximum total wing assembly and center shaft assembly weight	1075 pounds aluminum 1200 pounds SS	Total weight may vary depending on application.	
Finish	• Clear anodized • Custom anodized • Dark bronze anodized • Painted	• #4 satin • #6 fine satin • Mirror • Non-directional "Jitterbug" • Custom	• Satin and lacquered • Satin no lacquer • Mirror and lacquered • Statuary and lacquered • Custom
Operation	Manual with Motion Assist 360 drive.		
Attachment Types	C, D, F, G, K, L, P, Q, R as indicated on the drawings. Reference Chapter 5.		
Enclosure material	• Glass • Aluminum panels	• Glass • SS panel	• Glass • Bronze panel
Enclosure glass	• 9/16" bent laminated float glass. • 7/16" bent laminated float glass (AL4000 with center post).		
Wing glass	• 9/16" tempered laminated float glass. • 1/2" tempered if patch fit.		
Canopy glass	13/16" laminated float glass.		
In-ground low profile container	Motion Assist 360 drive In-ground manual speed control (Para. 6.10). • Uses 100:1 gear ratio • Centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code.		

Fig. 2.5.1 Crane 4000LE attachment types



TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for door attachment detail.

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:
  - Control unit
  - Power supply unit
  - Drive unit support system

⚠ 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. 2.9) 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 operator!

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.
- Wing breakout. The revolving door wings can be pushed open manually for emergency egress.

⚠ 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!

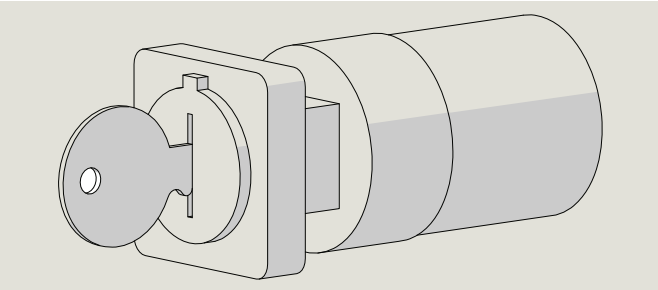
- The customer can only operate the revolving door after door commissioning by dormakaba service technicians.

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.

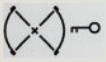
4.1.2 Low energy speed definition - ANSI/BHMA A156.27.

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	• Revolving door will stay in the home position. • After a set period of time, any internal lighting is switched off.
	**1**	AUTOMATIC 1	• A knowing act (Para. 4.1.3) switch starts rotary movement of the door wings at low energy speed (Para. 4.1.2). Acceleration to walking speed is done manually. • Manually pushing the door starts rotary movement of the door wings at low energy speed. Acceleration to walking speed is done manually. • Revolving door automatically stops in the next starting position as soon as it is no longer manually operated.
	**2**	AUTOMATIC 2	• Door rotates continuously at a low energy speed. Acceleration to walking speed is done manually. • After door passage, the door slows down to low energy speed and continues to rotate at low energy speed.
	**3**	Summer	• Revolving door stops at its starting position and the drive is unlocked. • Door wings can be rotated manually. • Bookfold: wings can be folded to the side.

4.2 Emergency Stop pushbutton

4.2.1 Emergency Stop pushbutton locations.

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

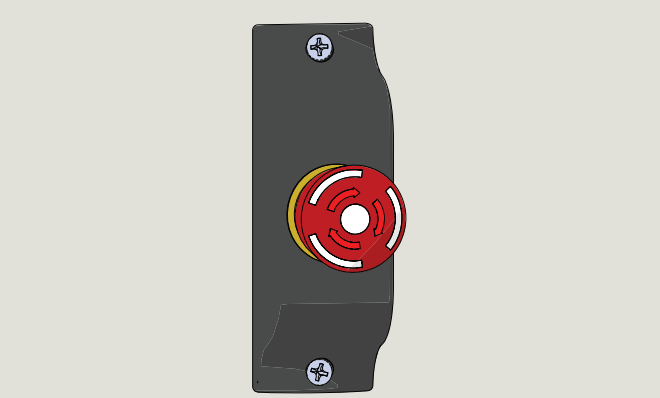
4.2.2 Actuation of Emergency Stop pushbutton.

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

4.2.3 Emergency Stop pushbutton reset.

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

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



4.2.1 Triggering an Emergency Stop

⚠ WARNING

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

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

4.2.2 Start up after an Emergency Stop

⚠ WARNING

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

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

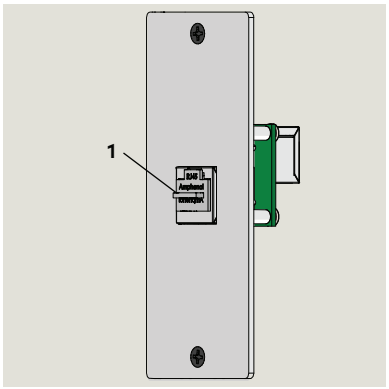
4.2.2.1 Procedure after an Emergency stop.

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

4.3 Service panel (option)

Fig. 4.3.1 Service panel DX4604-08C

1 RJ45 cover



4.3.1 Service panel for handheld.

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

4.4 Wave to Open, Push to Start plates (option)

Fig. 4.4.1 Wave to Open plate DX3331-001

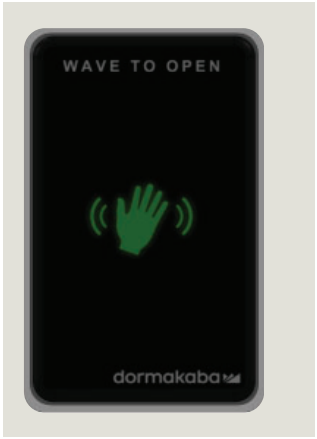
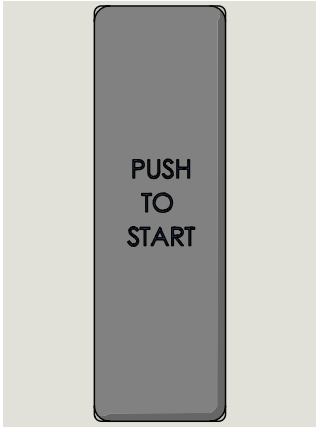


Fig. 4.4.2 Push to Start plate, 1.5 x 4.75", DX3339-040



4.4.1 Wave to Open or Push to Start plates.

Locations:

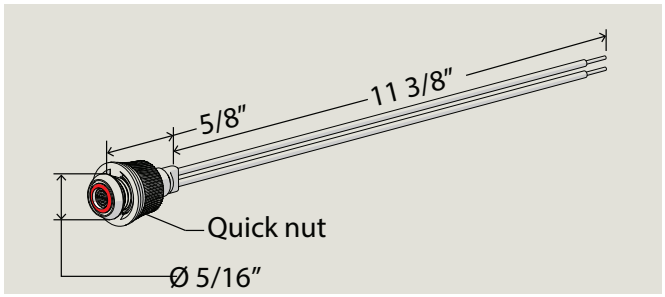
- Inside the building on the leading quarter post/end wall or attached separately within sight of the revolving door.
- Building exterior.

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 RL6001-003 for fault codes.

5 Revolving door assemblies

5.1 Door configurations
In-ground Motion Assist 360 drive and speed control

5.1.2 4000LE door configurations.

Fig. 5.1.1 4 wing door

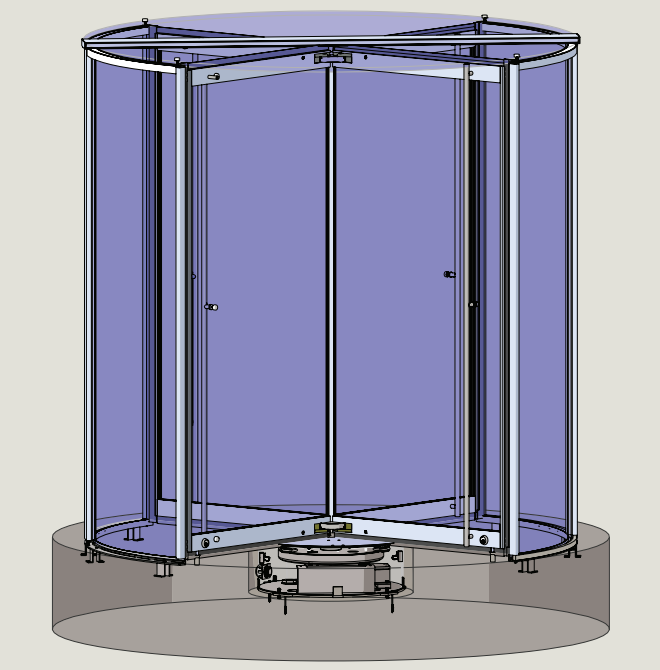
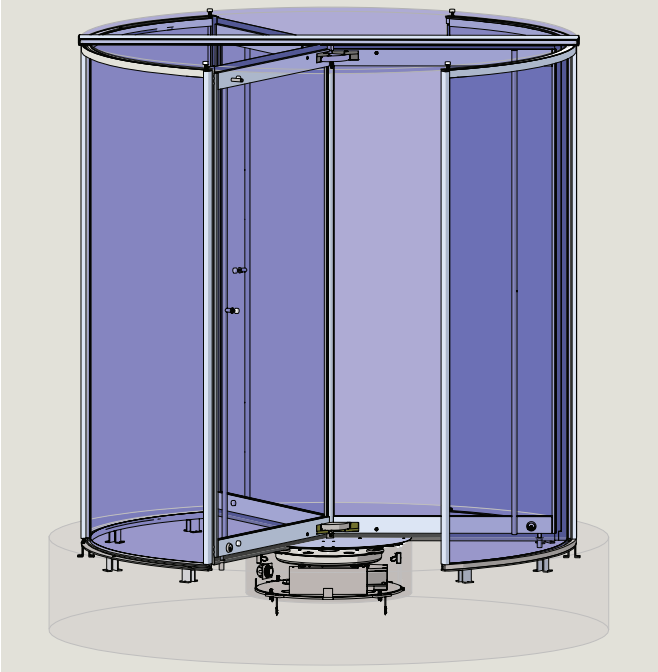


Fig. 5.1.2 3 wing door



NOTICE

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

5.2 Glass canopy with muntin assembly

TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for canopy design for specific job.

Fig. 5.2.1 Canopy glass with muntin, top view

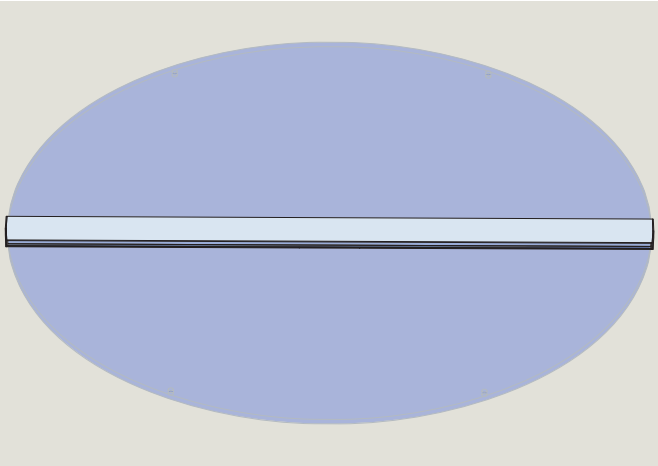
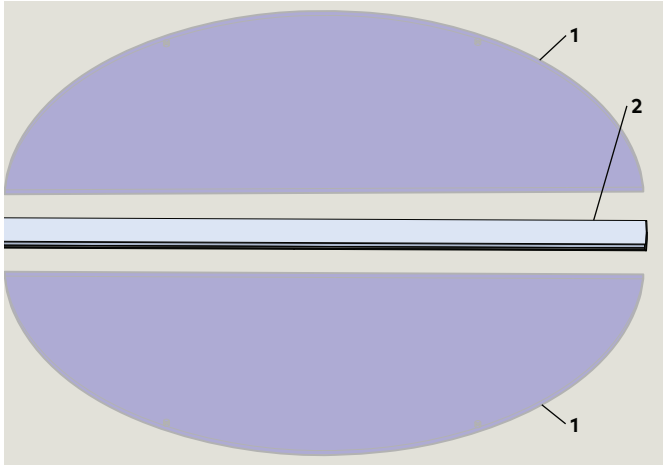


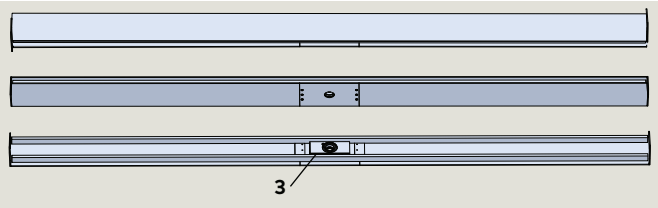
Fig. 5.2.2 Canopy glass with muntin, top view



1 Canopy glass
2 Muntin

5.3 Muntin and bearing assembly

Fig. 5.3.1 Muntin top, bottom and cover removed views



3 Bearing assembly

Fig. 5.3.2 Bearing assembly RS6064

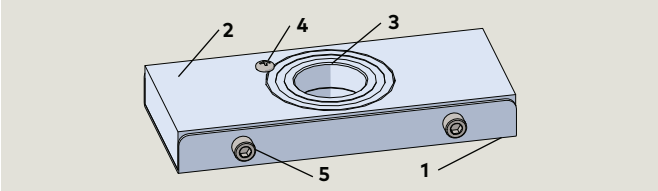


Table 5.3.1 RS6064 Bearing assembly

Part / Assembly		Description
1	RC6244-0X0	Bearing mounting bracket
2	RC6234-010	Bearing block
3	RF6109-01G	Ball bearing
4	RF7021-01G	8-32 x 1/2" Phillips pan head screw
5	DF1152-01C	1/4-20 x 5/8" SHMS

5.4 Glass canopy with bearing assembly

Fig. 5.4.1 Canopy glass with bearing assembly, top view

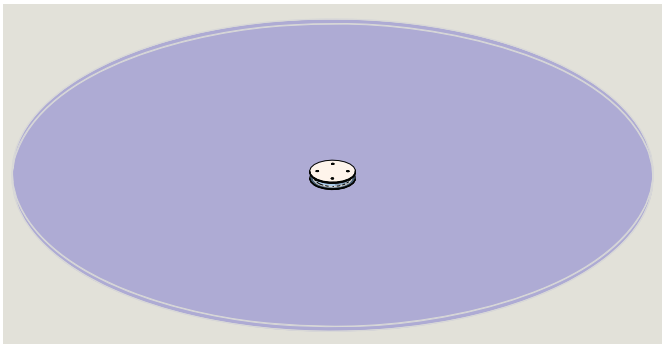
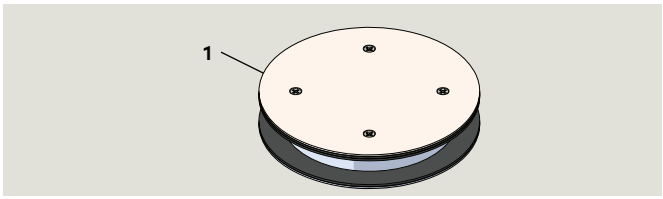


Fig. 5.4.2 Bearing assembly



1 Bearing assembly

TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for canopy design for specific job.

5.5 4 wing steel shaft assembly, floor drive/speed control RS6060-001

Fig. 5.5.1 Exploded view

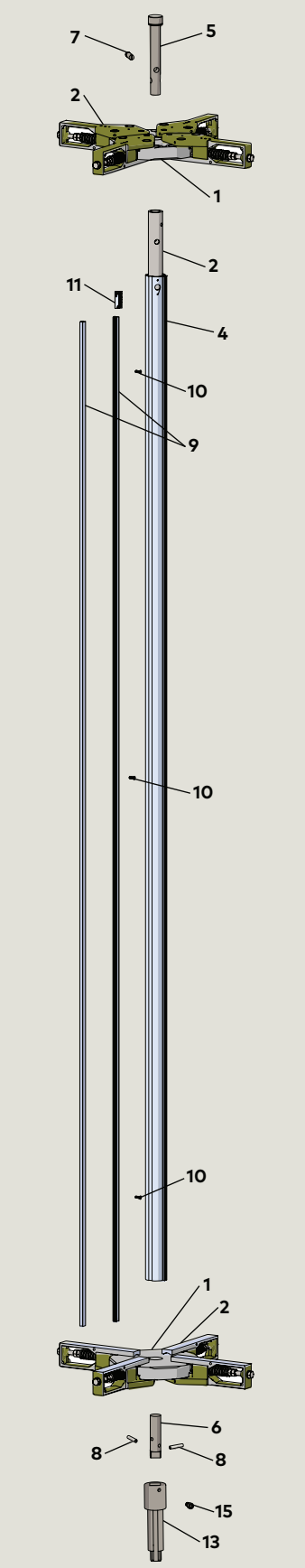


Fig. 5.5.2 4 wing steel shaft assembly

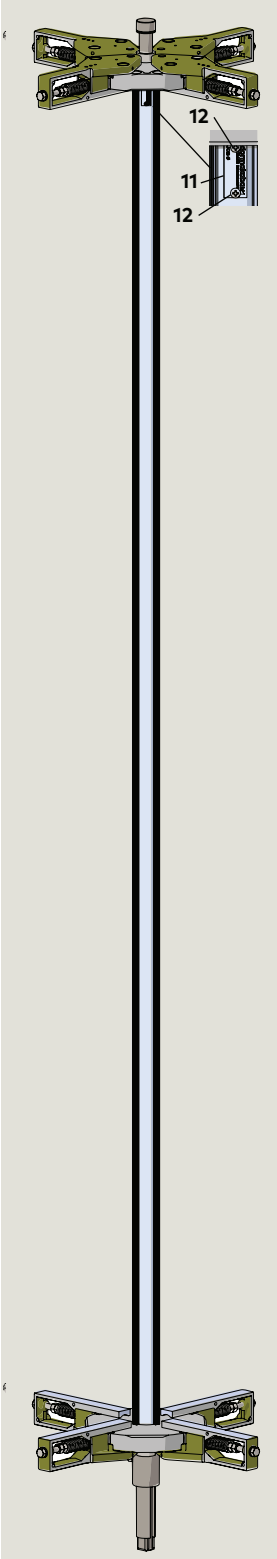
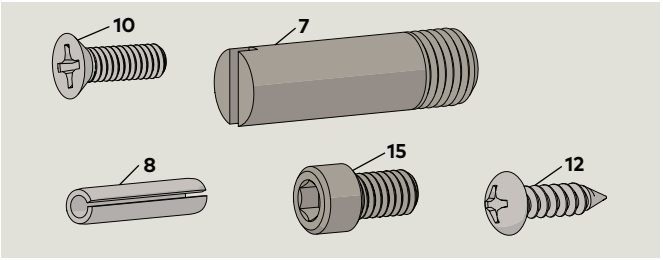


Table 5.5.1 RS6060-001 assemblies and parts

Part / Assembly		Description
1	RS6043-001	4 wing disc assembly
2	RS6045-001	Hanger assembly
3	RC6083-001	Steel center shaft, 4 wing, floor speed control
4	RC6084-001	Steel shaft cover 4 wing, floor speed control
5	RC6081-001	Top plug, steel shaft, ground speed control, 7" length
6	RC6082-001	Bottom plug, steel shaft, floor speed control,
7	RF6052-010	Steel shaft cross pin, 1 1/2" long
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
13	RC6069	Bottom plug adapter, ground drive/speed control LP
15	RF6059-01C	5/16-18 x 1/2" SHCS, black oxide

Fig. 5.5.3 Center shaft fasteners



5.6 3 wing steel shaft assembly, floor drive/speed control RS6061-001

Fig. 5.6.1 Exploded view

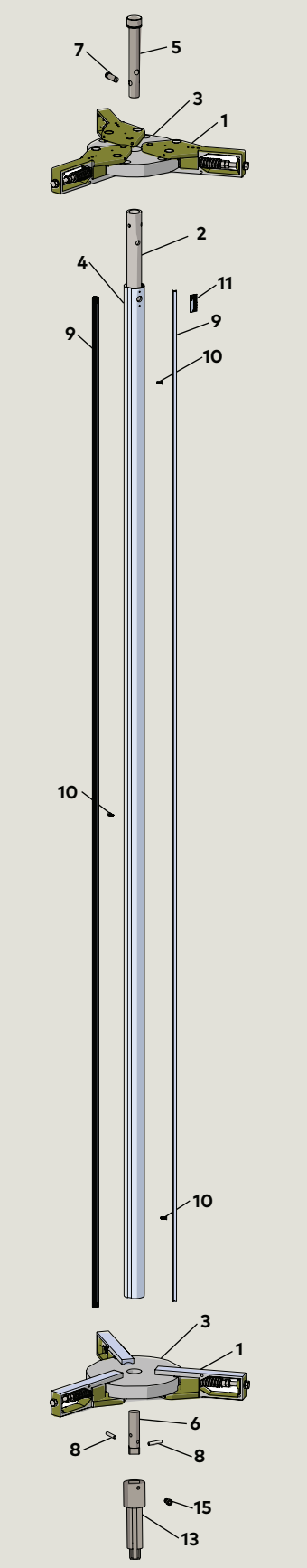


Fig. 5.6.2 3 wing steel shaft assembly

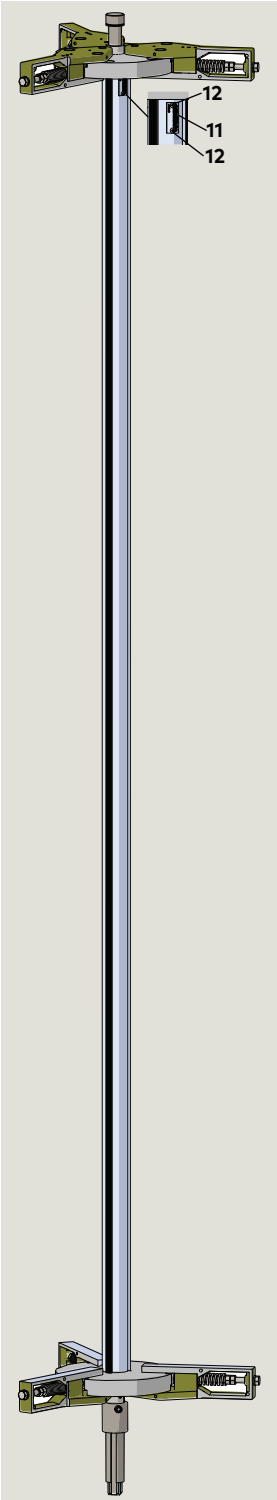
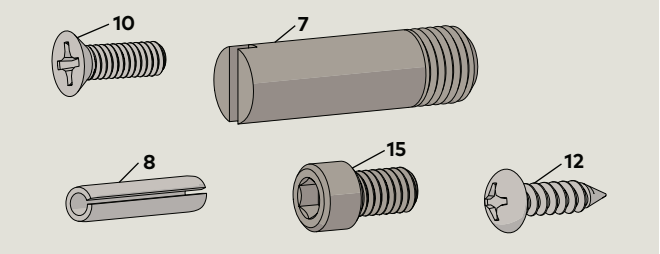


Table 5.6.1 RS6061-001 assemblies and parts

Part / Assembly		Description
1	RS6045-001	Hanger assembly
2	RC6083-002	Steel center shaft, 3 wing, floor speed control
3	RS6044-001	3 wing disc assembly
4	RC6085-001	Steel shaft cover 3 wing, floor speed control
5	RC6081-001	Top plug, steel shaft, ground speed control, 7" length
6	RC6082-001	Bottom plug, steel shaft, floor speed control,
7	RF6052-010	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
13	RC6069	Bottom plug adapter, ground drive/speed control LP
15	RF6059-01C	5/16-18 x 1/2" SHCS, black oxide

Fig. 5.6.3 Center shaft fasteners



5.7 Hanger assembly, steel shaft RS6045-0X0

Fig. 5.7.1 Shaft hanger assembly

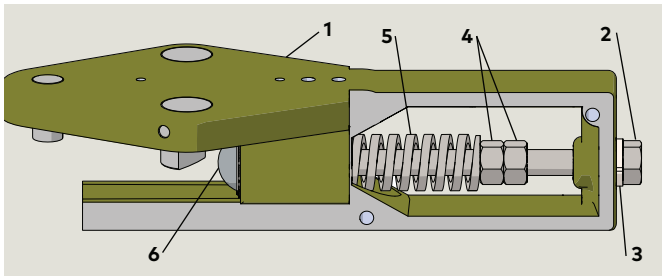
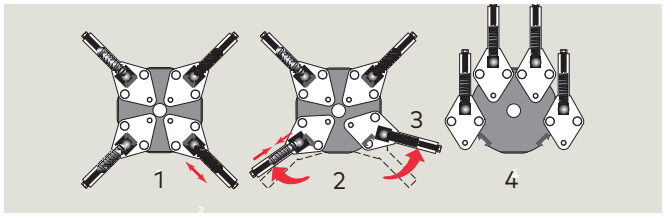


Table 5.7.1 RS6045 shaft hanger assemblies and parts

Part / Assembly		Description
1	RC6369-0X0	Hanger body
2	RC6156-01G	Hex bolt, 0/375"- 16 x 4"
3		Lock washer, 3/8"
4		Hex nut, 0.375"-16
5		Spring
6		Ball, 7/8" diameter

5.8 Bookfold mechanism

Fig. 5.8.1 Bookfold mechanism



5.8.1 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.

5.9 Enclosure posts

Fig. 5.9.1 Quarter post/end wall RE6019-010

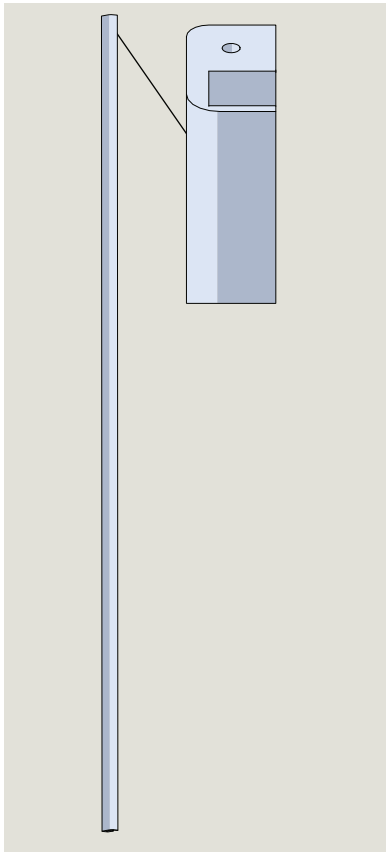
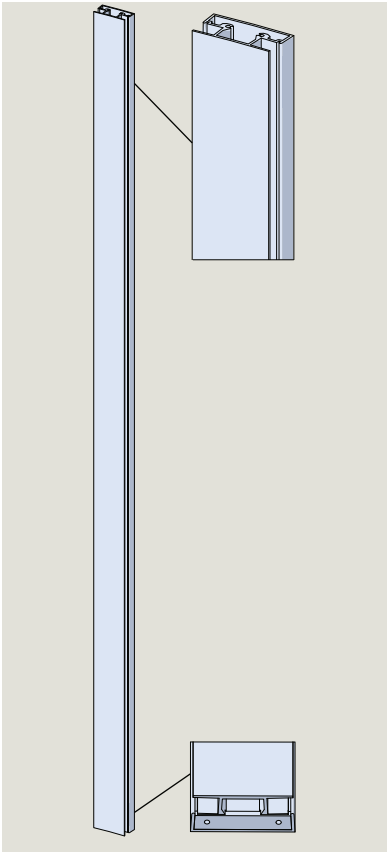


Fig. 5.9.2 Center post RE6007-0X0



TIPS AND RECOMMENDATIONS

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

5.10 4000LE door wing assembly example

Fig. 5.10.1 Wing assembly, 4 wing door

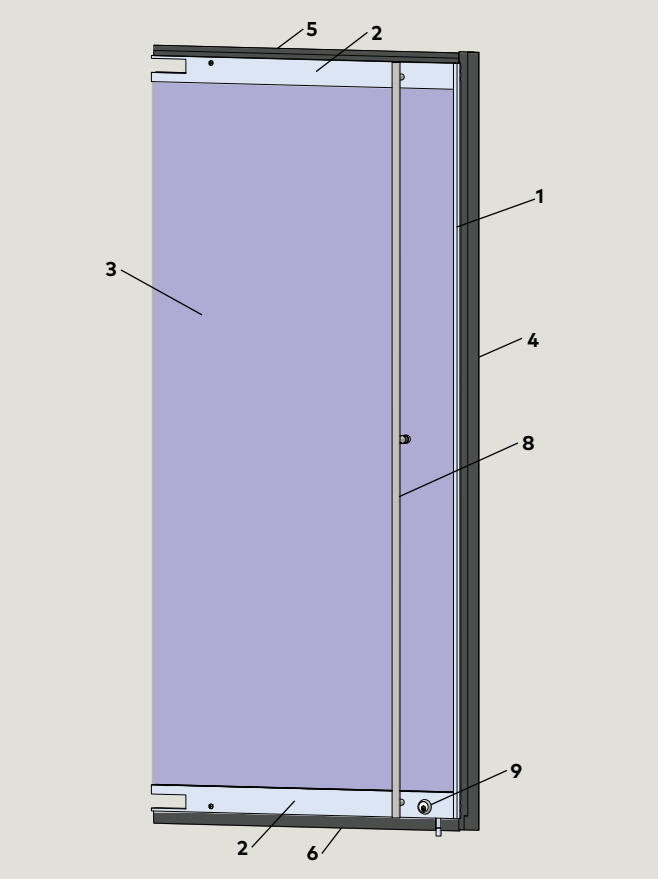


Table 5.10.1 Door wing assembly and part examples

Part / Assembly		Description
1	RE6038-0X0	Front stile, Herc, AL Blk
2	RE6026-0X0	Rail end, Herc
3		Wing glass
4	RC6389	Sweep felt vertical
5		Sweep felt top
6		Sweep felt bottom
7	RF2961	Wing bumper assembly (not shown)
8		Wing push bar Push bars ordered job specific for each order
9	76019184	Cylinder assembly

NOTICE

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

5.11 Door wing types

Fig. 5.11.1 Patch fitting type wing

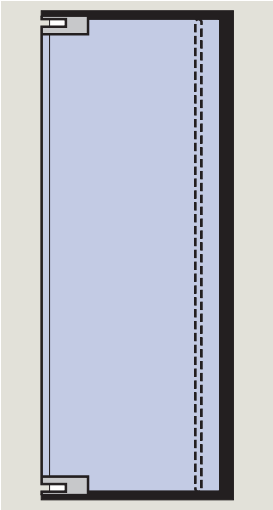
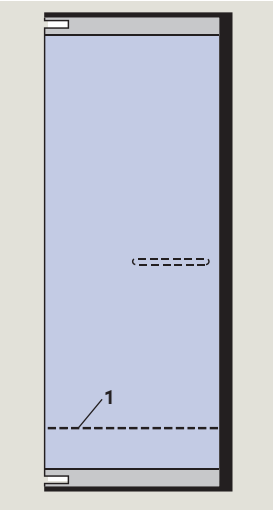


Fig. 5.11.2 Herculite type wing



1 Optional tall bottom rail

5.12 Header bar assembly

TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for header bar design for specific job.

Fig. 5.12.1 Header bar assembly

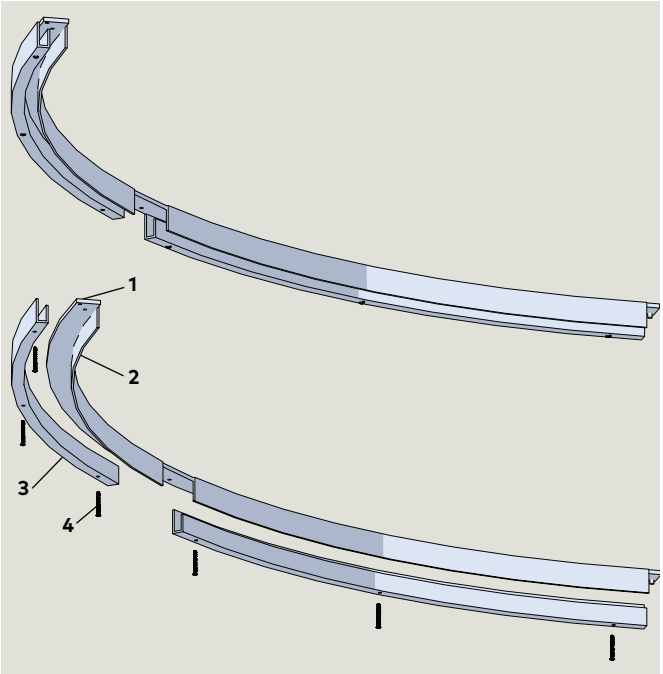
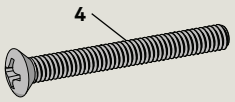


Table 5.12.1 Header bar assembly

Part / Assembly		Description
1		Header bar
2		Header bar inner plate
3		Header bar outer angle
4	RF6123-01G	8-32 x 1 1/2" Phillips oval head MS

Fig. 5.12.2 P OVHMS



5.13 Floor bar assembly and base clips

TIPS AND RECOMMENDATIONS

Reference Crane shop drawings for floor bar design for specific job.

Fig. 5.13.1 Floor bar assembly and floor base clips

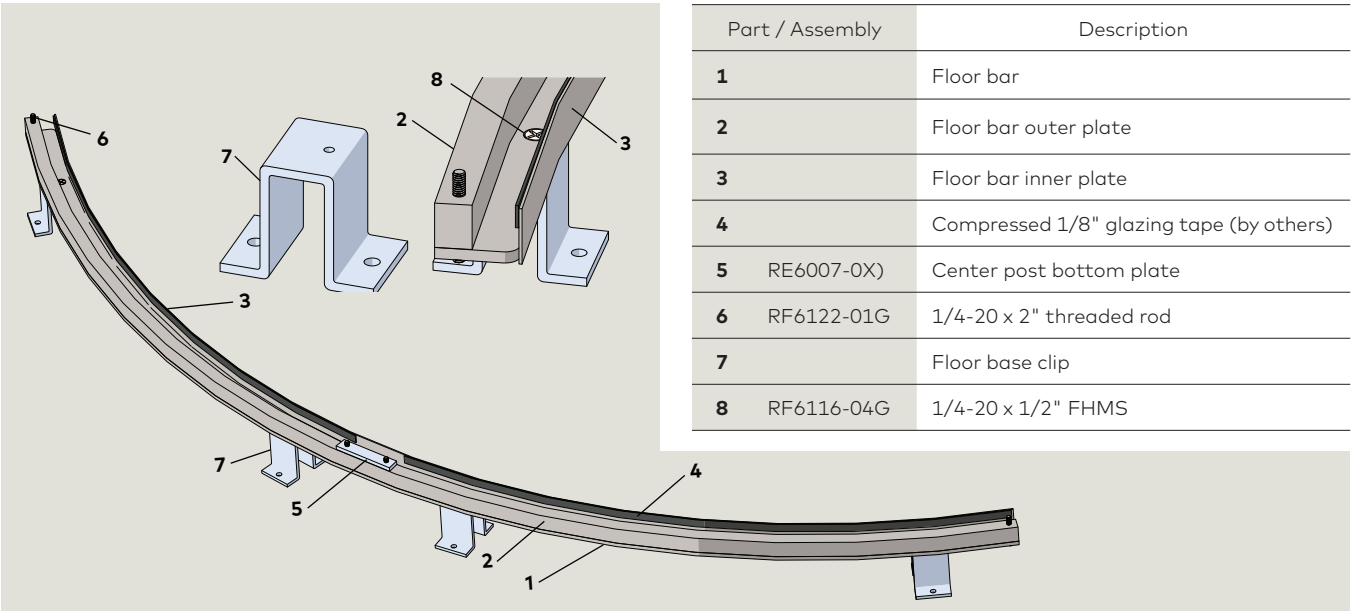


Table 5.12.1 Floor bar assembly

Part / Assembly		Description
1		Floor bar
2		Floor bar outer plate
3		Floor bar inner plate
4		Compressed 1/8" glazing tape (by others)
5	RE6007-0X)	Center post bottom plate
6	RF6122-01G	1/4-20 x 2" threaded rod
7		Floor base clip
8	RF6116-04G	1/4-20 x 1/2" FHMS

5.14 Motion Assist 360 in-ground drive assembly RS6058

Fig. 5.14.1 In-ground drive assembly exploded view

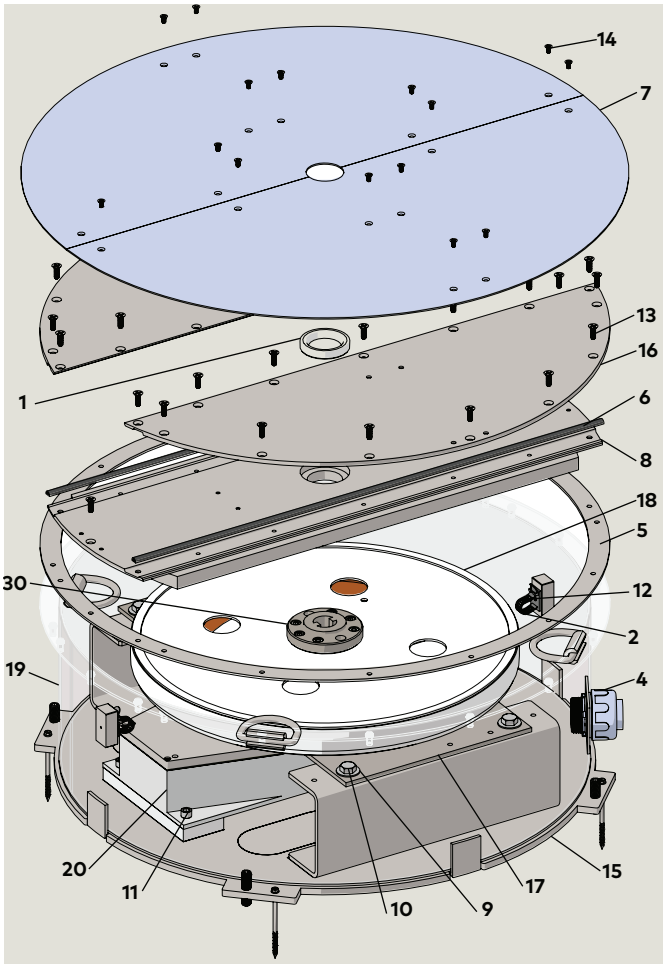


Fig. 5.14.2 In-ground speed control and drive assembly RS6058

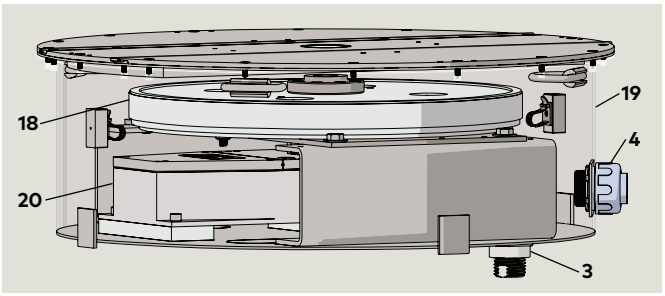
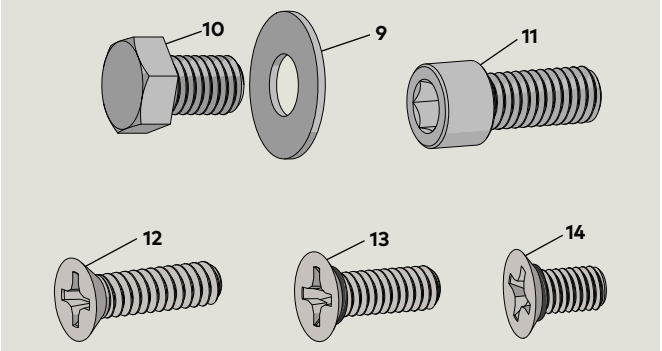


Table 5.14.1 In-ground drive assembly RS6058

Part / Assembly		Description
1	RC6041	Spring-loaded rotary shaft seal
2	RC6042	Cable tie
3	RC6043	Drain fitting
4	RC6045-001	Conduit adapter, 1 1/2", low voltage wiring
5	RC6046	Flange gasket
6	RC6047	Foam rubber seal
7	RC6048	Floor cover plate
8	RC6049	Container lid, center section
9	RF6010-01G	1/2" flat washer, 0.531 ID, 1.25" OD
10	RF6021-01G	1/2-13 x 3/4" Hex head bolt, SS
11	RF6022	3/8-16 x 7/8" socket head cap screw with thread lock
12	RF6024	3/8-16 x 1/2" Phillips flat head screw
13	RF6025-01G	1/4-20 x 3/4" sealing FH countersunk screw
14	RF6026-01G	10-32 x 3/8" sealing FH countersunk screw
15	RS6014	Leveling plate assembly
16	RS6033	Outer cover assembly
17	RC6060	Motion Assist 360 drive mounting bracket
18	RX6010	Motion Assist 360 drive
19	RS6024	Container assembly weldment
20	RS6074-010	In ground speed control assembly
30	RC6025	Drive flange

Fig. 5.14.3 In-ground drive assembly fasteners



5.15 In-ground speed control assembly

Fig. 5.15.1 In-ground speed control assembly RS6074-010

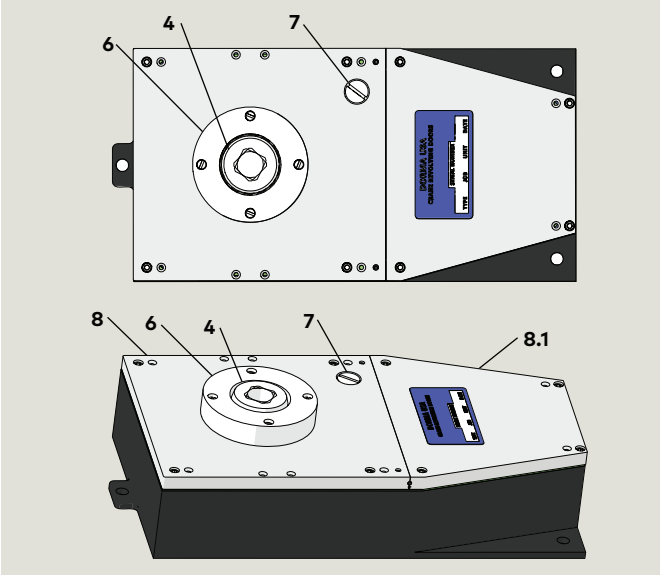


Table 5.15.1 In-ground speed control assembly RS6074-010

Part / Assembly	Description
4	Drive shaft
6	Collar
7	1/2 x 3/4" long SFHMS
8	1/2" Thick subplate
8.1	1/2" thick subplate

5.16 Motion Assist 360 drive bracket assembly

5.16.1 Drive bracket assembly RS6037.

Fig. 5.16.1 Drive bracket assembly exploded view

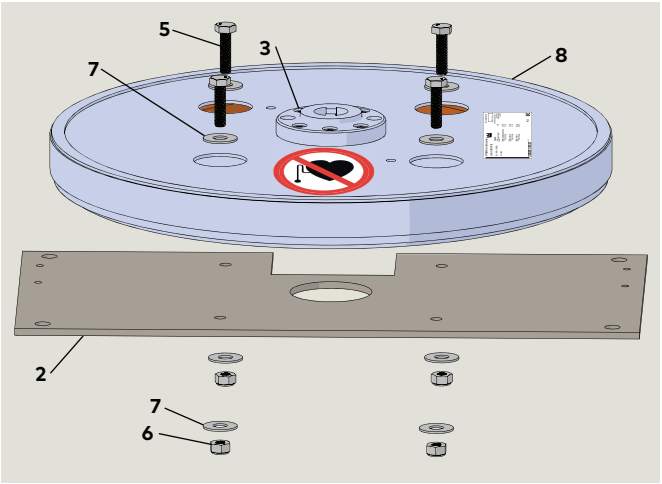
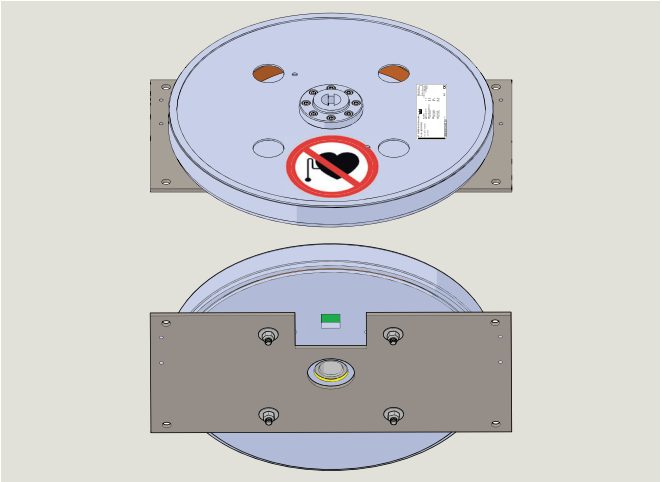


Table 5.16.1 Motion Assist 360 drive bracket assembly

Part / Assembly		Description
2	RC6060	Motion Assist 360 drive mounting bracket
3	RC6025	Drive flange
5	RF6004-01Z	M10 x 40 mm SHCS, class 12.9
6	RF6005-01G	M10-1.5 18-8 SS nylon locknut
7	RF6010-01G	1/2" flat washer
8	RX6010	Motion Assist 360 drive

Fig. 5.16.2 Drive bracket assembly



5.17 Remote enclosure – Motion Assist 360 power supply and control unit

5.17.1 Motion Assist 360 Remote enclosure.

Fig. 5.17.1 Motion Assist 360 remote enclosure

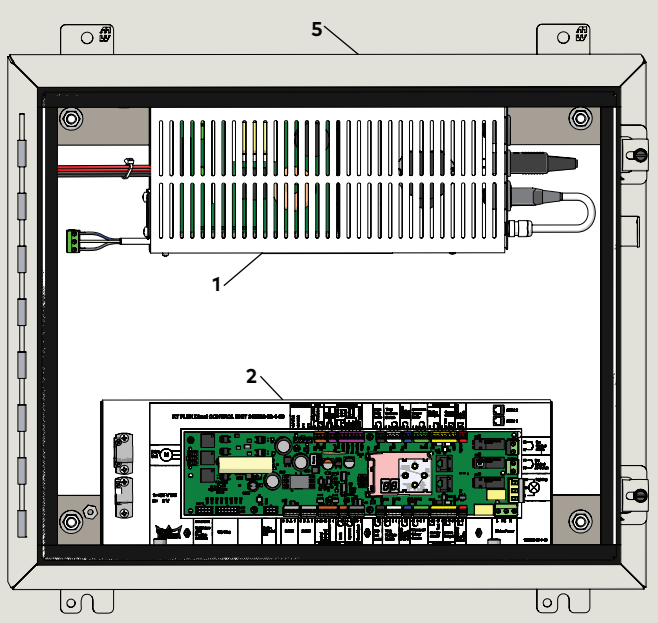


Table 5.17.1 Remote enclosure hardware

Part / Assembly		Description
1	RX6001-001	Motion Assist 360 power supply
1.1		115 Vac cable to control unit (2)
1.2		DC cable to control unit (2)
1.3		Plug for customer 115Vac power cord
2	RX6002-001	Motion Assist 360 control unit
3	RX6003-002	Motion Assist 360 "S" module (Grn)
5	RK6007	Remote enclosure assembly, 24 x 20 x 7 3/16"

5.17.2 Motion Assist 360 power supply and control unit.

Fig. 5.17.2 Motion Assist 360 control unit

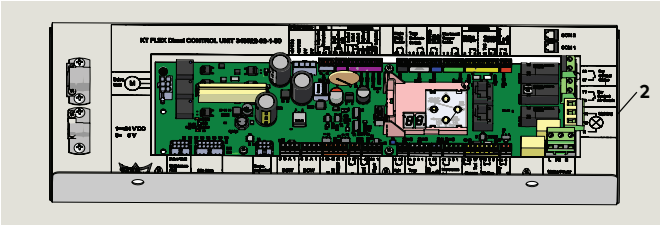


Fig. 5.17.3 "S" function module (Grn) Motion Assist

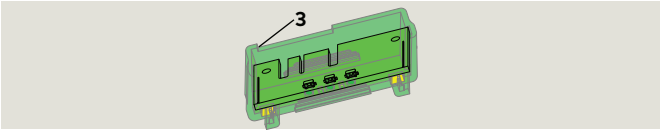
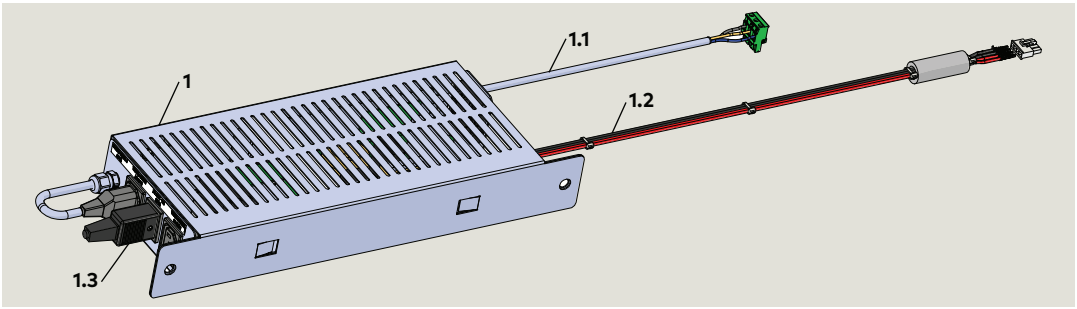


Fig. 5.17.4 Motion Assist 360 power supply and cables



5.18 Floor grill and pan assembly (option)

Fig. 5.18.1 Floor grill and pan assembly

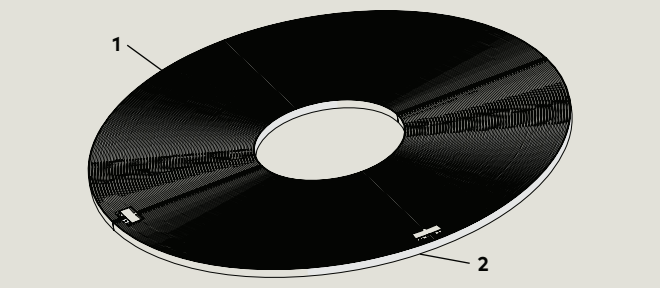


Table 5.18.1 Floor grill and pan

1		Floor grill
2		Floor pan

5.19 Uninterruptible Power Supply (UPS) (option)

Fig. 5.19.1 UPS 115 Vac to Motion Assist 360 power supply

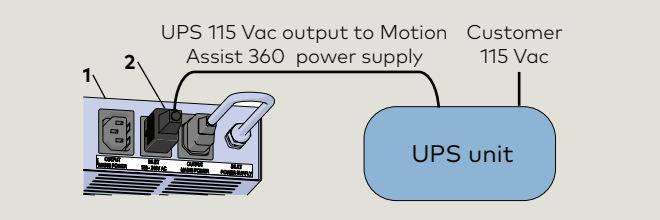


Fig. 5.19.2 Motion Assist 360 power supply

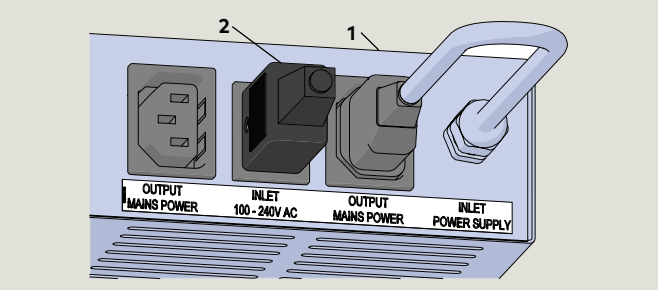


Table 5.19.1 Motion Assist 360 power supply

1	RX6001-001	Motion Assist 360 power supply
2	RF6003-01C	AC ionlet plug customer connection

5.19.1 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.

5.19.2 UPS power supply units (option).

Table 5.14.2 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

6 In-ground container hardware

6.1 In-ground container assembly

Fig. 6.1.1 In-ground drive assembly with speed control and bottom plug installed

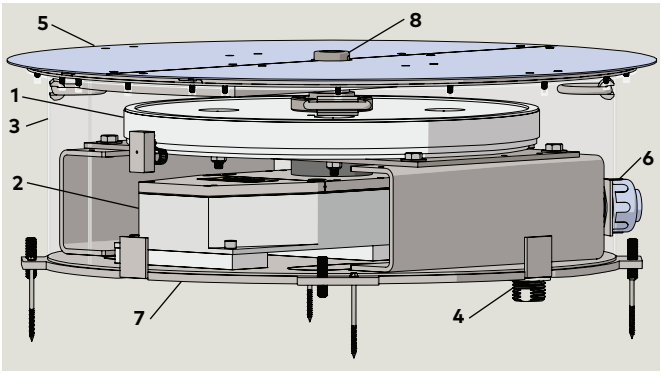


Table 6.1.1 Motion Assist 360 drive hardware

Part / Assembly		Description
1	RX6010	Motion Assist 360 drive
2	RS6074-010	In-ground speed control
3	RS6038	Container assembly weldment
4	RC6043	Drain plug
5	RC6048	Floor cover plate
6	RC6005-001	DC conduit adapter, 1 1/2"
7	RS6014	Leveling plate assembly

Fig. 6.1.2 Motion Assist 360 drive

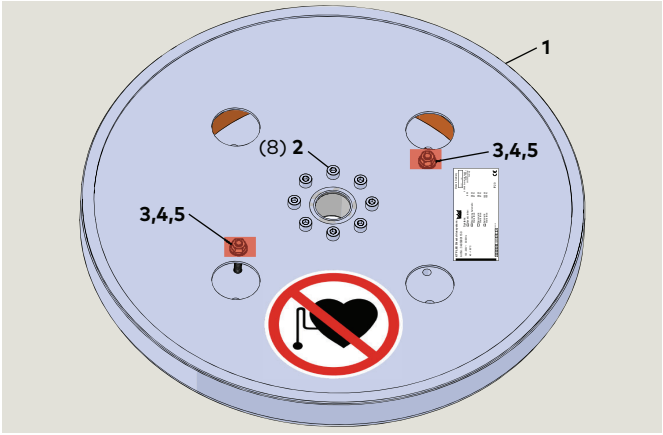


Table 6.1.2 Motion Assist 360 drive

1	RX6010	Motion Assist 360 drive
2	RF6003-01C	M8 x 20 mm hex bolt
		Transport bolts
3		5/16 x 2 1/4" hex bolt
4		5/16" hex nut
5		5/16" steel flat washer

Fig. 6.1.3 In-ground speed control

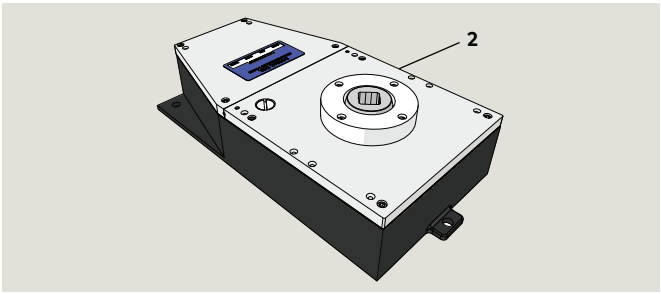


Fig. 6.1.4 Drive motor cable

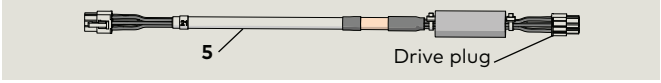
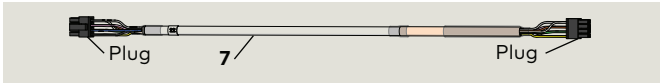


Table 6.1.3 Motion Assist 360 drive cables

5	RX6005-001	Motor cable (21), 14 1/16"
7	RX6006-001	Motion Assist 360 Hall sensor cable (22), 13 3/4"

Fig. 6.1.5 Drive Hall sensor cable



6.2 Motion Assist 360 extension cables to remote enclosure

6.2.1 Motion Assist 360 extension cables.

Extension cables connect Motion Assist 360 drive cables (Para. 6.1) to Motion Assist 360 control unit in Remote enclosure (Para. 5.17).

6.2.2 Remote enclosure.

NOTICE

Reference RL6002-003 Wiring and Setup Manual for Remote enclosure and extension cable detail.

Table 6.2.1 Motion Assist 360 drive extension cables

1	RX6016-001	Motor extension cable, 25' (standard)
		Optional motor extension cables
	RX6016-002	Motor extension cable, 50'
	RX6016-003	Motor extension cable, 100'
2	RX6015-001	Hall sensor extension cable, 25' (standard)
		Optional Hall sensor extension cables
	RX6015-002	Hall sensor extension cable, 50'
	RX6015-003	Hall sensor extension cable, 100'

Fig. 6.2.1 Motor extension cable

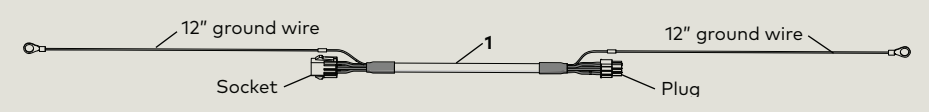
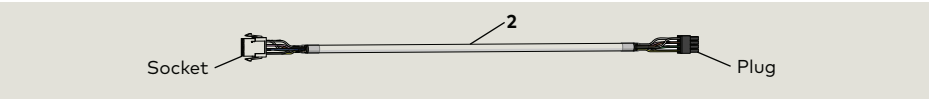
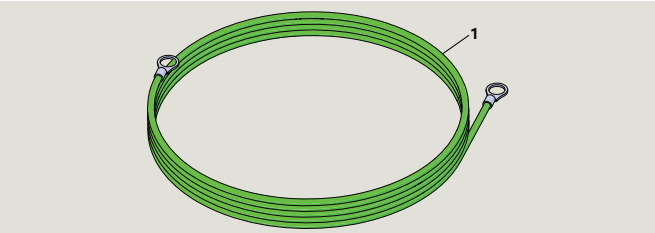


Fig. 6.2.2 Hall sensor extension cable



6.3 Motion Assist 360 earth grounding cable

Fig. 6.3.1 Earth grounding cable



6.3.1 Earth grounding cable.

NOTICE

Reference RL6002-003 Wiring and Setup Manual for connection of earth grounding cable from Remote enclosure to In-ground container.

Table 6.3.1 Earth ground cable

ID	Part #	Description
1	RX6009	Earth ground cable

6.4 Service panel communication cable

6.4.1 RJ45 communication cable for service panel.

- Reference Para. 4.3; Service panel (option).

Fig. 6.4.1 RJ45 Service panel communication cable

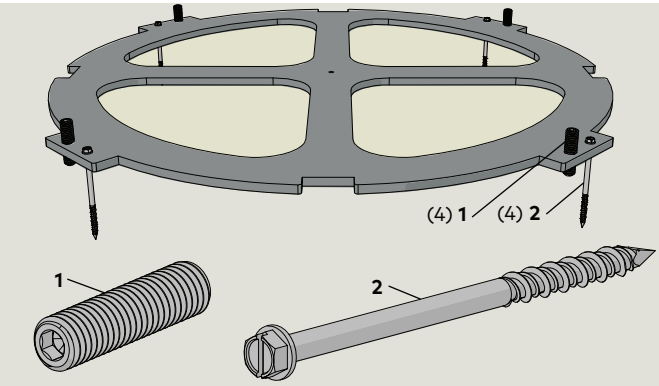
1 Communication cable RX4662

Table 6.4.1 Service panel communication cables

ID	Part #	Description
1	DX4462-001	Communication cable, 90 deg., 3' (standard)
		Optional communication cables
1	DX4662-002	Communication cable, 90 deg., 10'
1	DX4662-003	Communication cable, 90 deg., 20'

6.3 In-ground container assemblies with fastener hardware

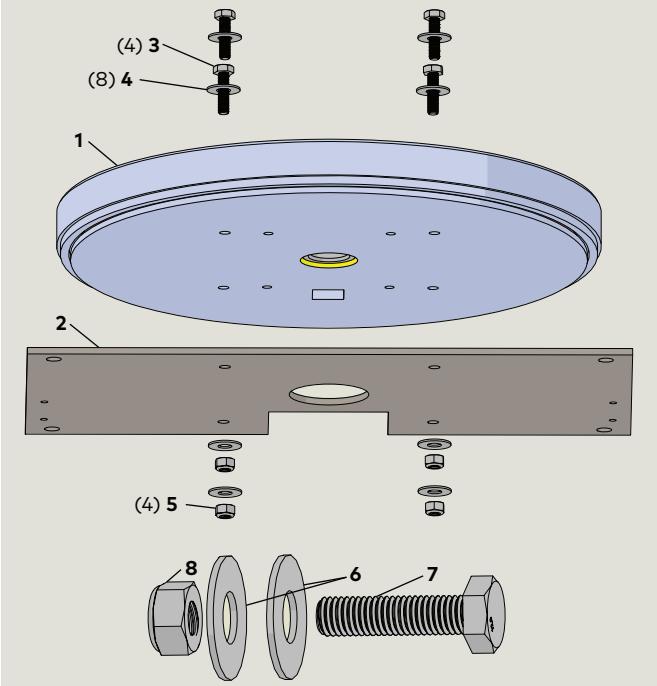
Fig. 6.3.1 Container leveling plate assembly hardware



6.3.1 Container leveling plate hardware.

ID	Part #	Description	Qty
	Container leveling plate assembly RS6014 hardware		
1	RF6028-01G	1/2-13 x 2" Cup-point set screw, SS	4
2	RF6017-01Z	1/4 x 4" Hex-washer head screw for concrete, blue-coated steel	4

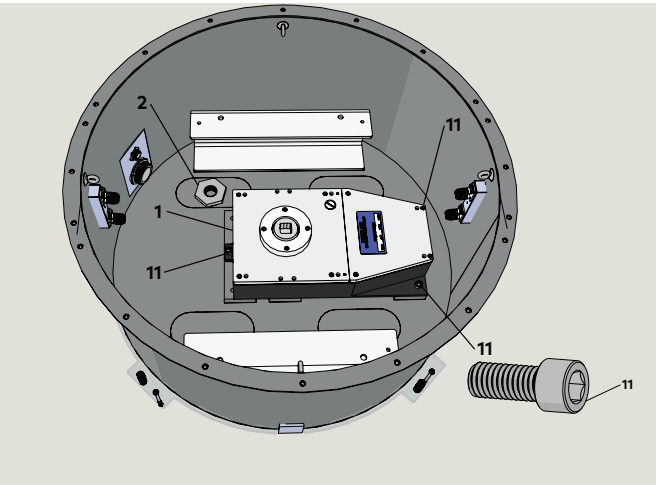
Fig. 6.3.2 Drive bracket assembly RS6037



6.3.2 Motion Assist 360 drive to mounting plate with fasteners.

ID	Part #	Description	Qty
1	RX6010	Motion Assist 360 drive	1
2	RC6060	Motion Assist 360 drive mounting plate	1
6	RF6010-01G	Washer, flat, 1 1/4" OD, 0.531" ID, for 1/2" screw, SS	4
7	RF6004-01Z	Hex head cap screw, M10 x 40 mm, class 12.9 zinc, extreme strength	4
8	RF6005-01G	Nylon insert locknut, M10, SS	4

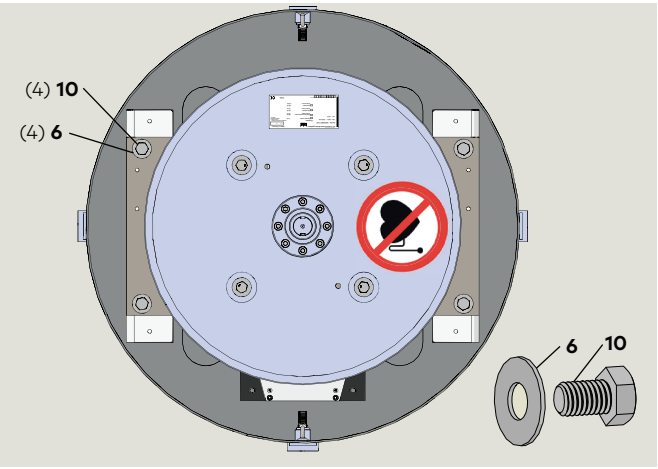
Fig. 6.3.4 Fasteners; In-ground speed control to container assembly



6.3.4 In-ground speed control to container assembly fasteners.

ID	Part #	Description	Qty
1	RS6074-010	In-ground speed control	1
2	RC6043	Container drain May be in a different location	1
11	RF6022-01C	3/8 x 7/8" SHCS with thread lock, black oxide	3

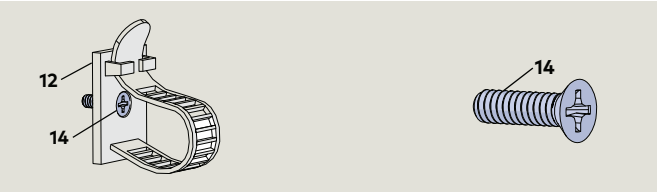
Fig. 6.3.5 Fasteners; Motion Assist 360 drive mounting plate to U-channels



6.3.5 Fasteners for Motion Assist 360 drive mounting plate to U-channels.

ID	Part #	Description	Qty
10	RF6021-01G	Hex head bolt, 1/2 x 3/4", SS, fully threaded	4
6	RF6010-01G	Washer, flat, 1 1/4" OD, 0.531" ID, for 1/2" screw, SS	4

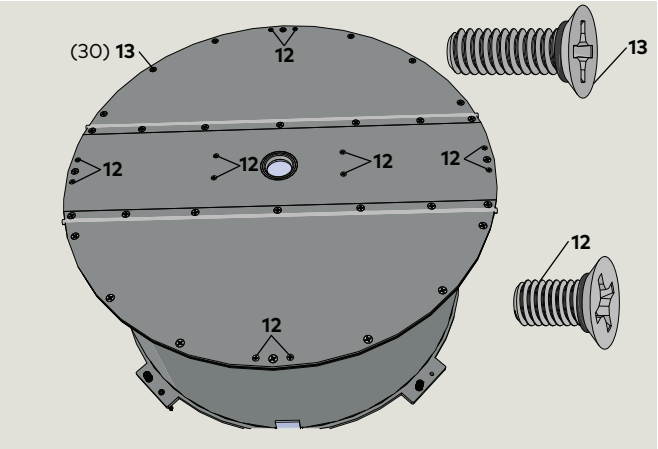
Fig. 6.3.6 Cable tie fastener



6.3.6 Cable tie fastener.

ID	Part #	Description	Qty
12	RC6042	Wire tie fastener	
14	RF6024-01G	#6 x 1/2" Phillips FHS, SS	8

Fig. 6.3.7 Fasteners; container lids



6.3.7 Fasteners for container lids and floor cover plates.

ID	Part #	Description	Qty
	Floor cover plate fasteners		
12	RF6026-01G	10-32 x 3/8" sealing flat head screw, SS	16
	Container lid fasteners		
13	RF6025-01G	1/4-20 x 3/4" sealing flat head screw	30

6.4 Container lids and cover assemblies

Fig. 6.4.1 Container lid, center section

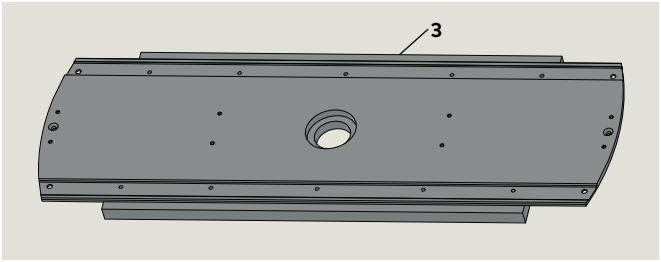


Fig. 6.4.2 Outer cover assembly, top and bottom views

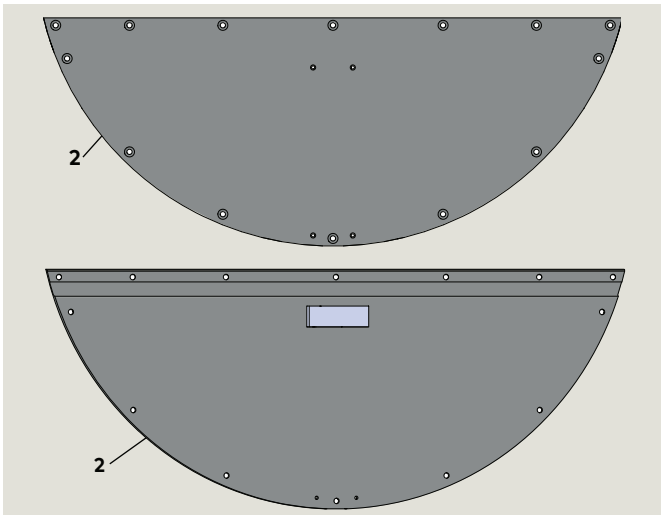


Fig. 6.4.3 Flange gasket

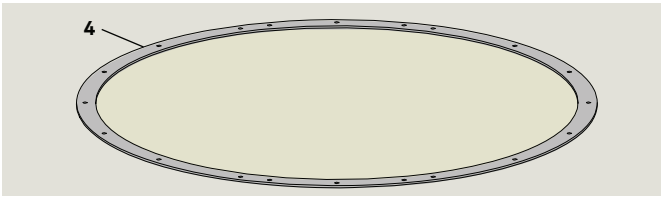
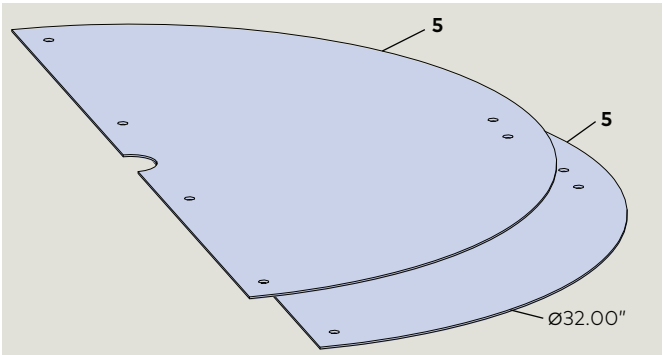


Fig. 6.4.4 Floor cover plates



6.4.1 Cover assemblies.

ID	Part #	Description
2	RS6033	Outer cover assembly
3	RC6049	Container lid, center section
4	RC6046	Flange gasket
5	RC6048	Floor cover plate

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 Assembly safety

8.1.1 Incorrect 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 Electrical cables.

WARNING

Life-threatening danger due to electricity!
Operator, controller and power supply are energized. Touching the components poses an immediate risk of death from electric shock.

- When laying cables, ensure that the insulation is not damaged.
- Immediately Replace components or cables with damaged insulation.
- Do not place or set down loads on cables.

8.2 Cordon off work area

WARNING

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

8.1.3 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.

8.1.4 Adequate lighting.

WARNING

Risk of injury due to inadequate lighting during assembly!
Inadequate or nonexistent lighting at the assembly location can lead to personal injury.

- Always insure there is adequate lighting at the assembly location.
- Never carry out assembly with defective or missing lighting at the installation location.

8.1.5 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.

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.

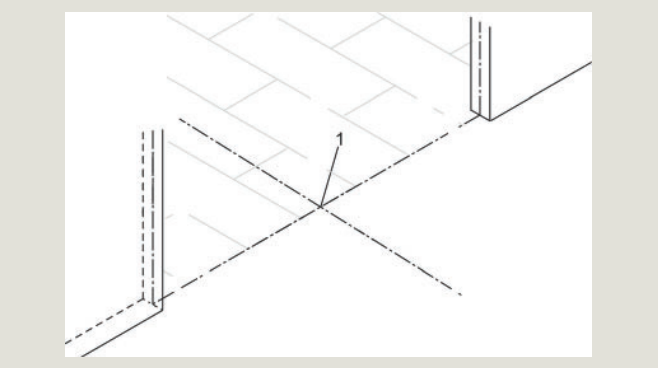
⚠ WARNING

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

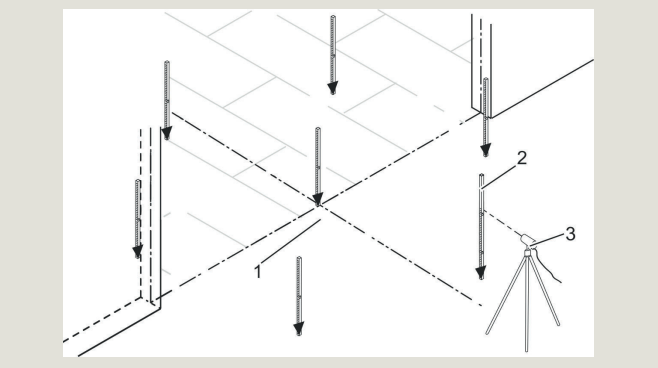
Material damage due to improper leveling!
Laser leveling device with stand:
Improper positioning of the stand or leveling staff may lead to measurement errors when leveling. Measurement errors can lead to incorrect assembly of the revolving door. This will result in material damage.
- Before leveling, 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 ± 2 mm (1/16") for the individual measured value to the reference value.

Fig. 9.2.1 Center of revolving door axis



1 Axis center

Fig. 9.2.2 Laser level measuring points



1 Axis center
2 Leveling staff
3 Laser leveling device

9.2.2 Check level of finished floor.

TIPS AND RECOMMENDATIONS

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

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

TIPS AND RECOMMENDATIONS

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

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

CAUTION

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

9.2.3 Mark center of revolving door axis.

CAUTION

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

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

1. Go to Chapter 10, Floor template.

10 Floor template

10.1 Locate full size floor template.

TIPS AND RECOMMENDATIONS

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

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

Fig. 10.1 Full size floor template; AL4000 3 wing (full round) door example

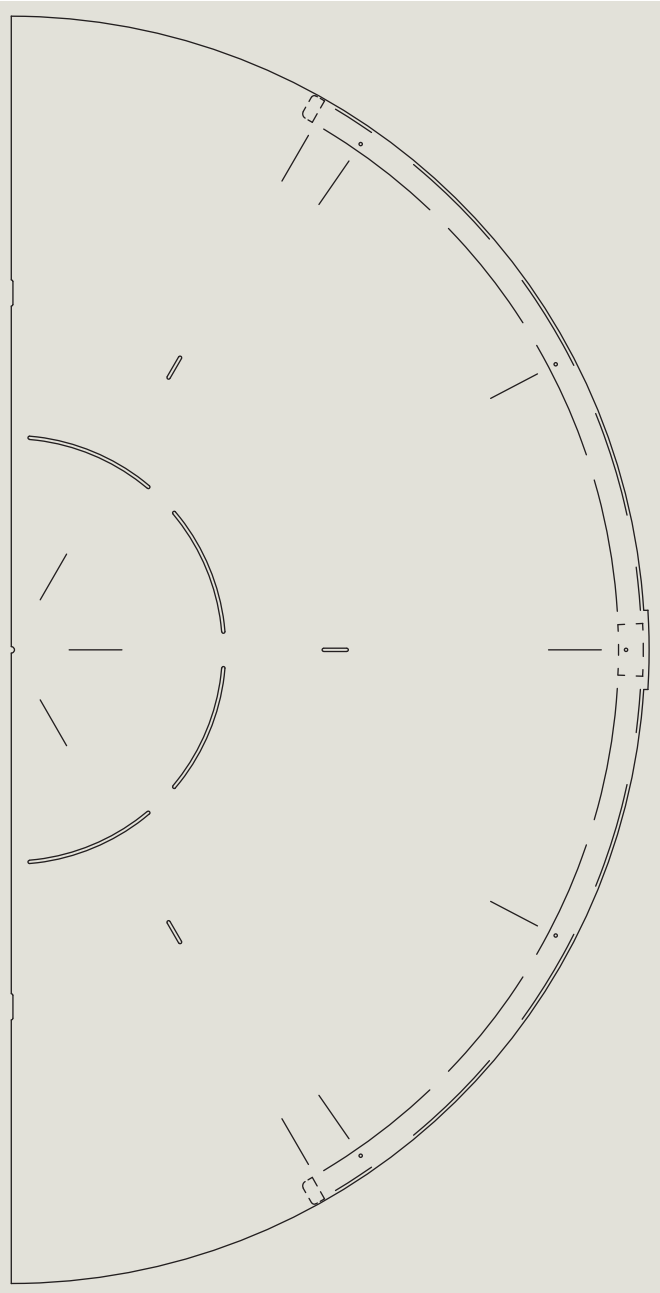
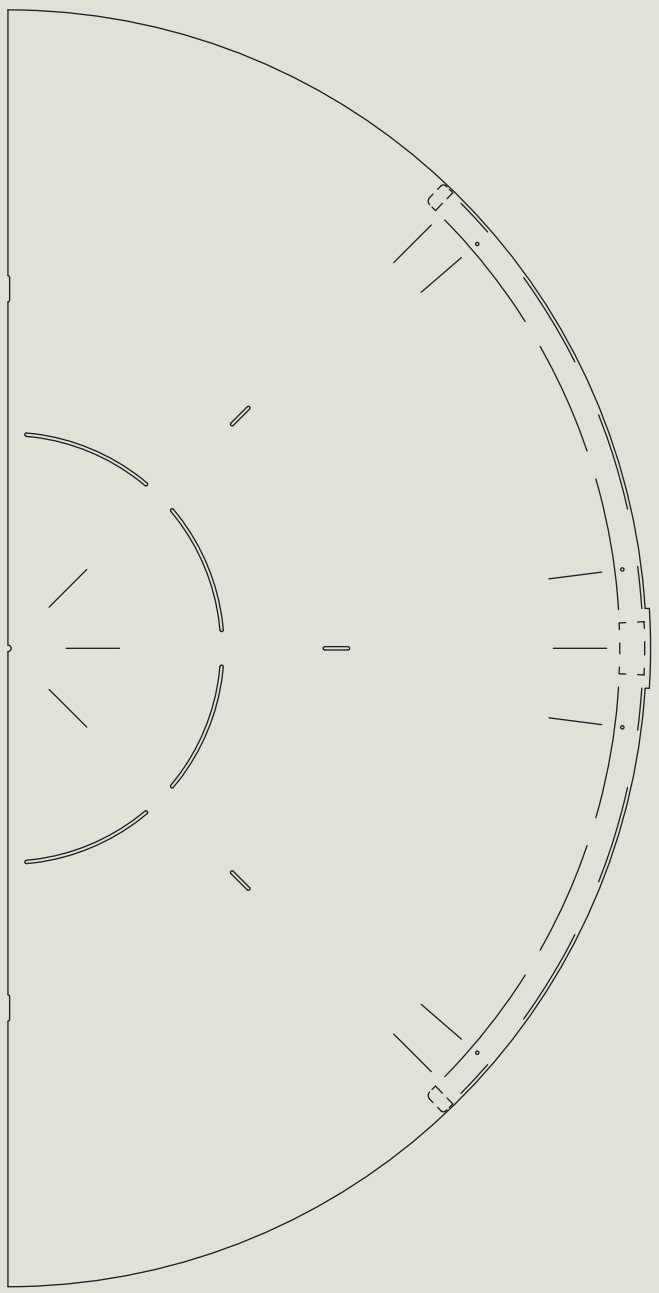


Fig. 10.2 Full size floor template; AL4000 4 wing (full round) door example



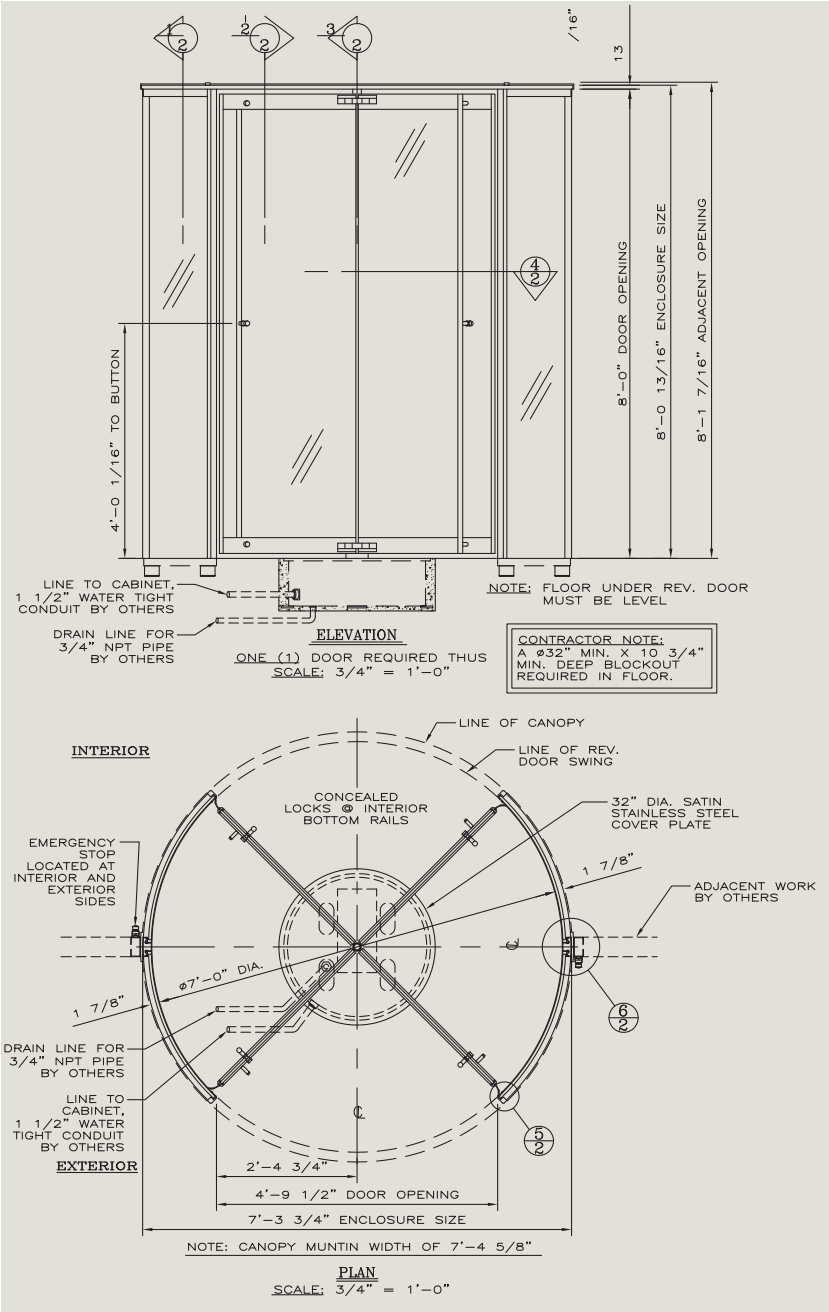
11 Mark revolving door location on sub floor, install base rail assemblies

11.1 Mark door centerpoint

11.1.1 Locate and mark door centerpoint.

1. Use floor template (Chapter 10) and contractor/ architect drawings to determine door centerpoint.
2. Use plumb bob with string or a laser plumb bob to mark door centerpoint location on subfloor.

Fig. 11.1.1 Crane AL4000LE shop drawing Plan and Elevation view example



11.2 Mark door base rail locations, install base rail assemblies

11.2.1 Floor template.

1. Use template to mark the following from the door centerpoint:

NOTICE

Building interface.
Reference Crane shop drawings.
Insure door centerpoint has been marked in relation to the building interface.

Base rail locations are marked in relation to the door centerpoint and building interface.

- Enclosure radius from door centerpoint.
- Base rail outer radius.
- Base rail inner radius.
- Base rail ends.

11.2.2 Place base rail and floor clip assemblies on subfloor.

CAUTION

Place base rail based on post numbering.
Refer to Para. 12.9 for post numbering locations.

1. Locate base rail assemblies (Fig. 11.3.1) on subfloor.

- Check that base rails are square and are aligned to door centerpoint.
- Check base rail outer diameter as shown on shop drawing.

11.2.3 Shim floor clips and fasten to subfloor.

1. Floor base clip installation hardware.

NOTICE

Reference Para. 11.3 and 11.4 for base floor clip hardware and installation.

2. Shim base rails to obtain top of base rail height flush with top of finished floor.

NOTICE

Base rail top surface must be level with finished floor top surface.

11.2.4 Anchor base rails to subfloor.

1. Anchor base clips to floor using concrete anchors (by installer).

Fig. 11.2.1 Floor template dimensions

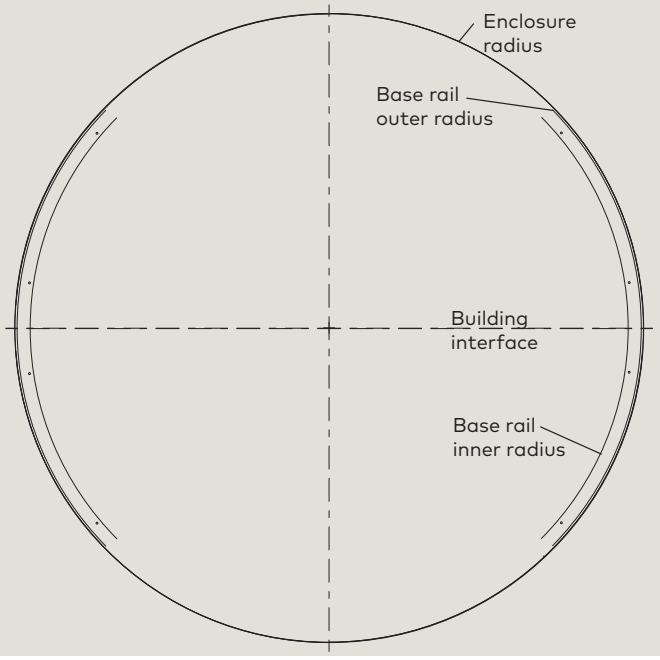
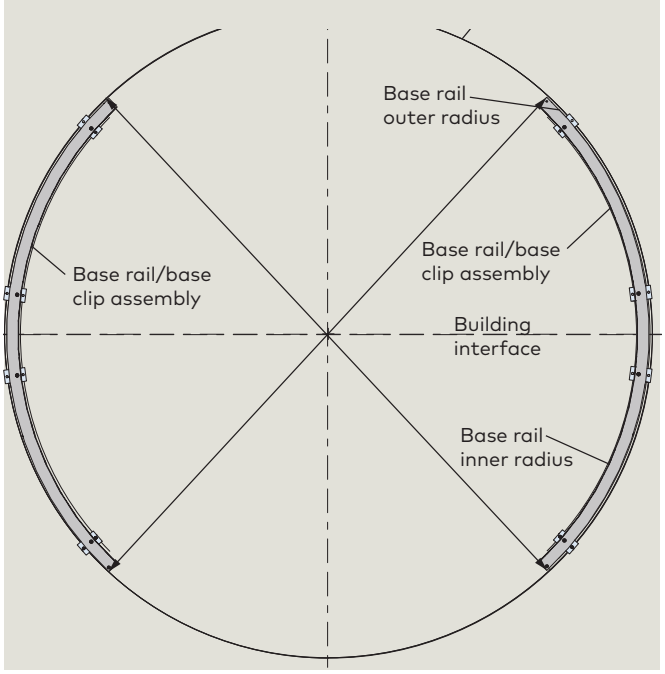


Fig. 11.2.2 Base rail assemblies placed on subfloor



11.3 Floor base clips and rail assembly – mounting to sub floor

11.3.1 Floor base clips and base rails.
Floor base clips and base rail assembly (Fig. 10.3.1) mounted to sub floor / structural slab.

11.3.2 Floor surface, sub floor or structural slab.

NOTICE

Sub floor or structural slab depth.
Must be a minimum of 4" below finished floor surface at revolving door.
Reference Crane Shop Drawings.

NOTICE

Sub floor or structural slab flat and level.
Sub floor / slab should be flat and level.

11.3.3 Base rail floor clip shims.
Reference Para. 11.4 for floor clip shimming for various slab depths.

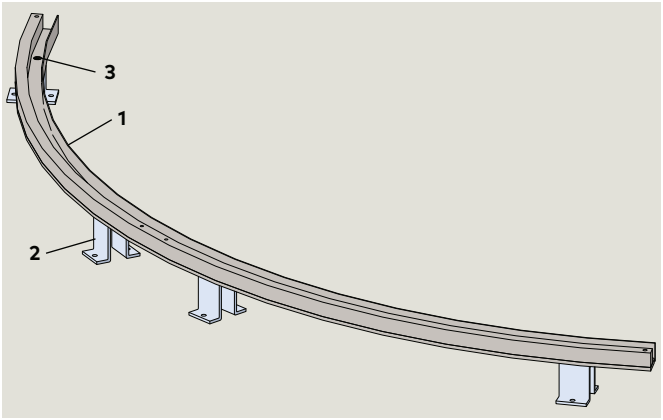
NOTICE

Base rail flush with finished floor surface.
Floor base clips must be shimmed so that base rail top surface is flush with finished floor surface

Table 11.3.1 Floor base clips and base rail assembly

1		Base rail assembly
2		Floor base clip
3	RF6116-04G	1/4-20 x 1/2" FHMS

Fig. 11.3.1 Floor base clips and base rail assembly



11.4 Floor clip shimming

11.4.1 3 3/4" to 4" slab depth to finished floor (Fig. 11.4.1)**.**

NOTICE

0 to 1/4" allowable shimming below floor clip.

- 1/4"-20 x 1/2" FHMS by Crane.
- Installer must select appropriate length floor clip concrete fastener.

11.4.2 3 3/4" to 5" slab depth to finished floor (Fig. 11.4.2)**.**

NOTICE

- **0 to 1" allowable shimming above floor clip.**
- **0 to 1/4" allowable shimming below floor clip.**
- 1/4"-20 x 1 1/2" FHMS by installer.
- Installer must select appropriate length floor clip concrete fastener.

11.4.3 4" to 6" slab depth to finished floor (Fig. 11.4.3)**.**

NOTICE

- **0 to 1" allowable shimming above floor clip.**
- **0 to 1" allowable shimming below floor clip.**
- 1/4"-20 x 1 1/2" FHMS by installer.
- Installer must select appropriate length 1/4-20 concrete fastener.
- 5"x 5" x 1/4" steel plate by installer.

11.4.4 Additional plates welded to floor clips (Fig. 11.4.3)**.**

NOTICE

Additional plates.
- Plates increase floor clip overall footprint and mounting hole spacing.
- Additional plates may be provided by the installer and welded to bottom of floor clips.

Fig. 11.4.1 3 3/4" to 4" slab depth to finished floor

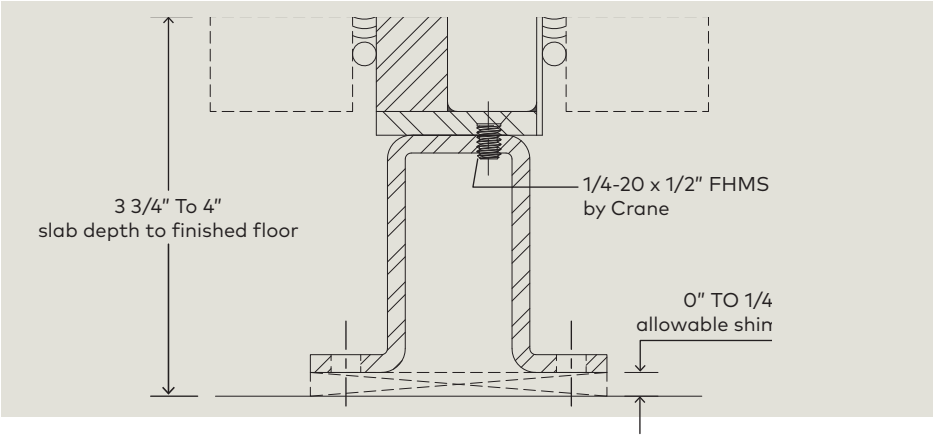


Fig. 11.4.2 3 3/4" to 5" slab depth to finished floor

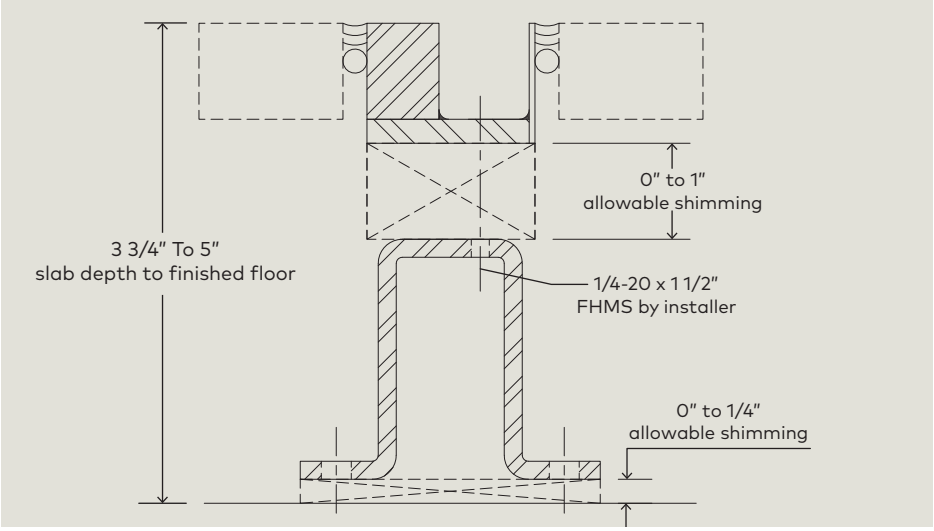
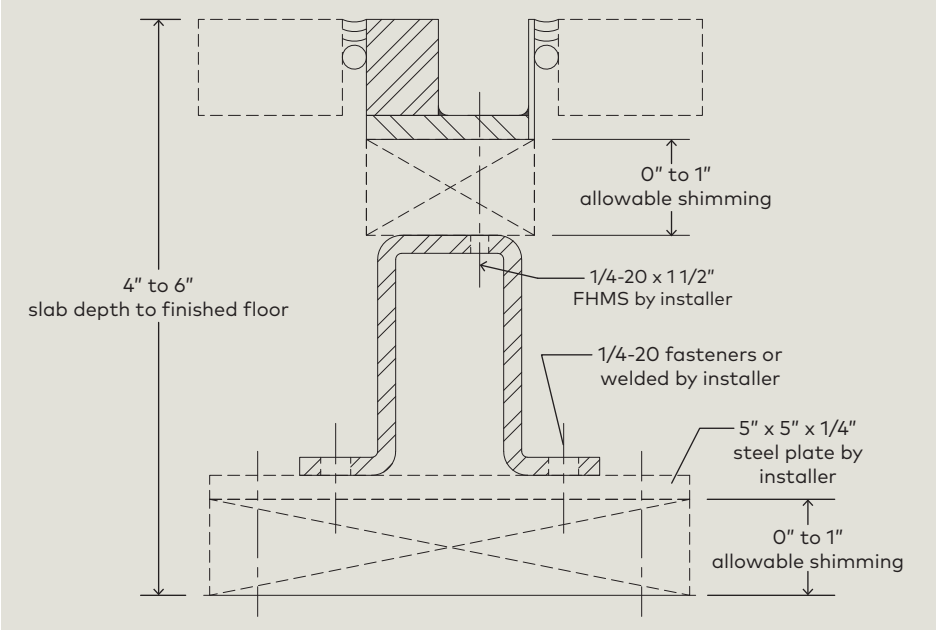


Fig. 11.4.3 4" to 6" slab depth to finished floor



12 Install leveling plate in pit, install container in pit

12.1 Pit location and dimensions

TIPS AND RECOMMENDATIONS

Refer to Crane shop drawings for in-ground drive assembly floor installation detail. Reference Para.12.2 for example.

12.1.1 Verify door centerpoint in pit.

1. Using shop drawings, verify pit is centered at door centerpoint.

12.1.2 Verify pit dimensions for in-ground drive assembly.

1. Verify minimum pit dimensions.

NOTICE

Pit centerpoint and/or pit dimension issues.
Resolve any pit door centerpoint location or pit dimension issues with building contractor before proceeding.

Fig. 12.1.1 Minimum pit dimensions

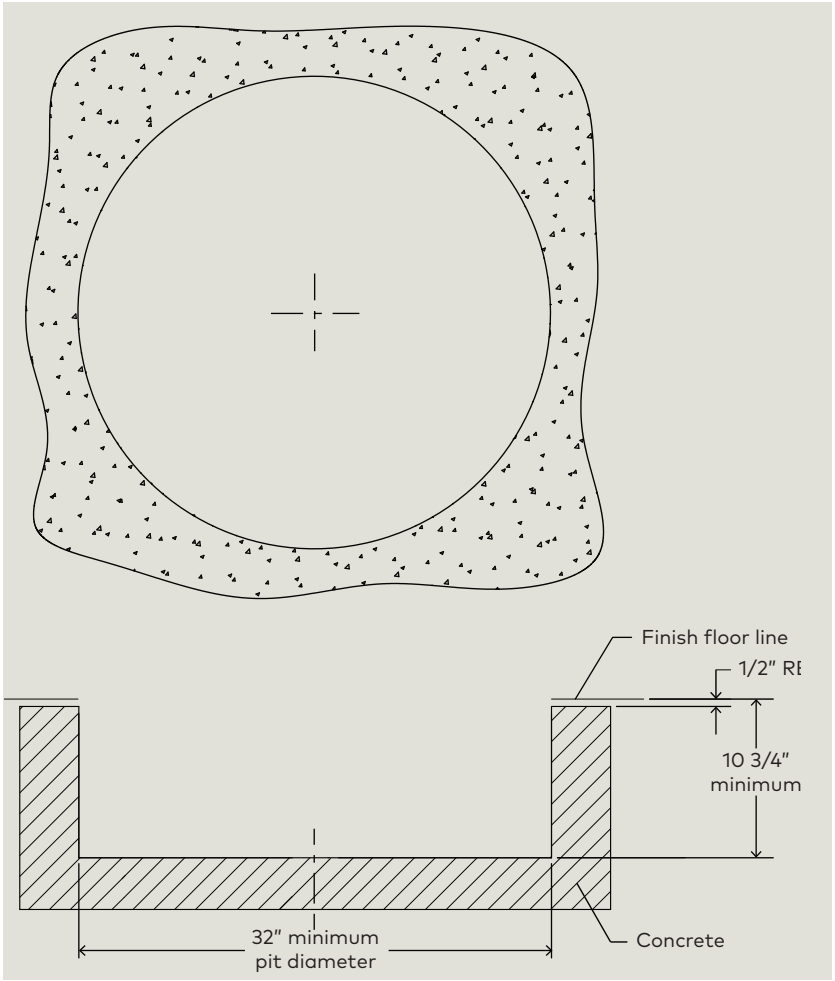
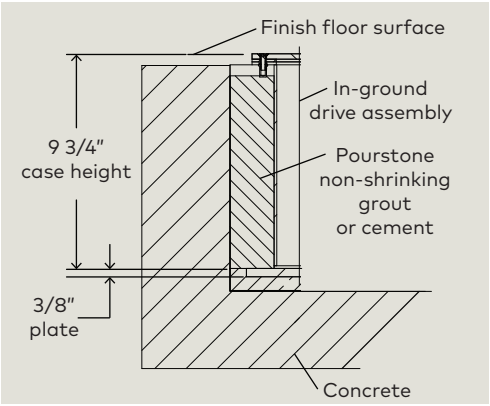
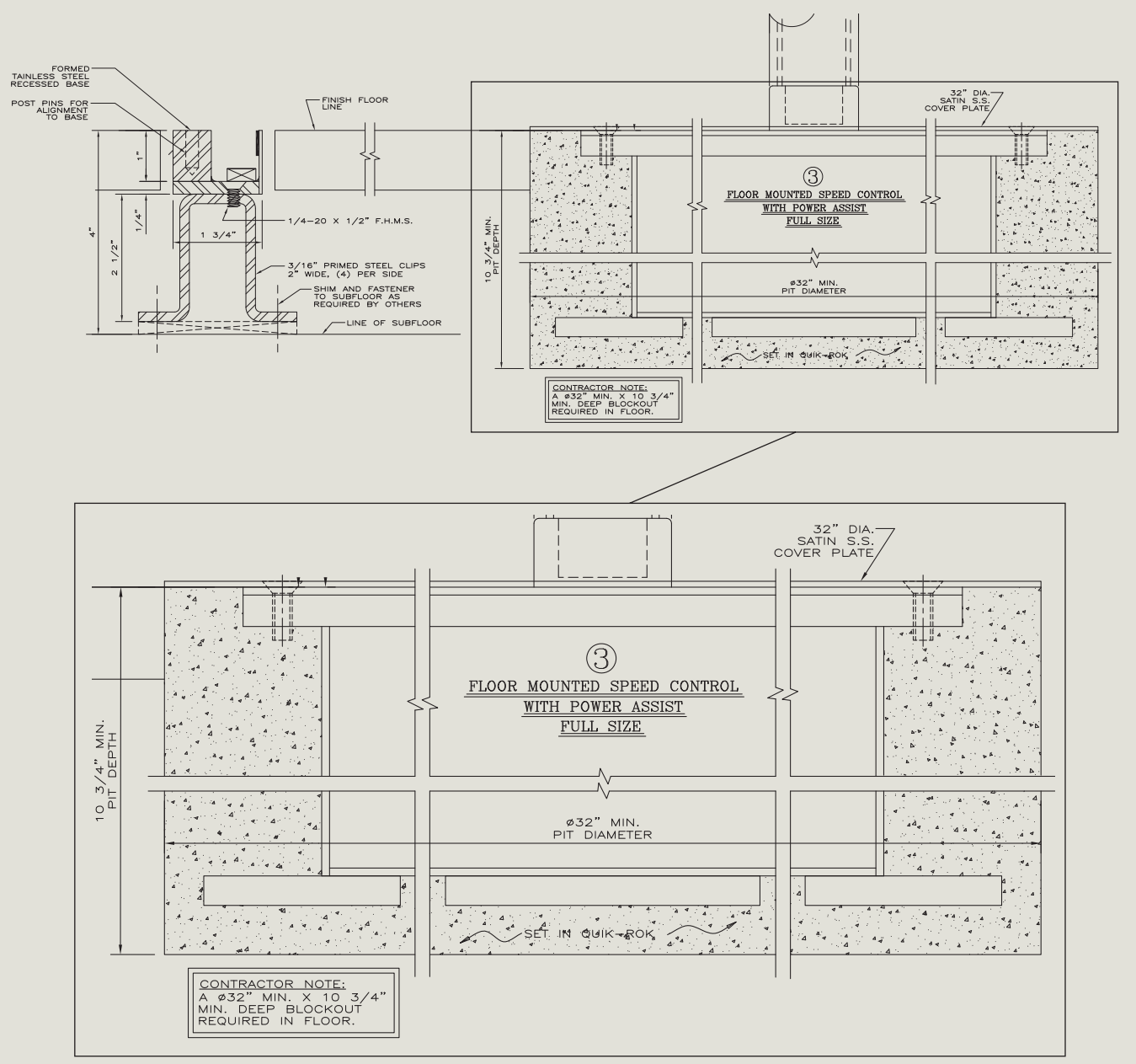


Fig. 12.1.2 Reference: In-ground drive assembly in pit



12.2 Crane Shop drawing, pit dimensions for in-ground container

Fig. 12.1.1 Minimum pit dimensions



12.3 Install leveling plate in pit

Fig. 12.3.1 Leveling plate RC6022

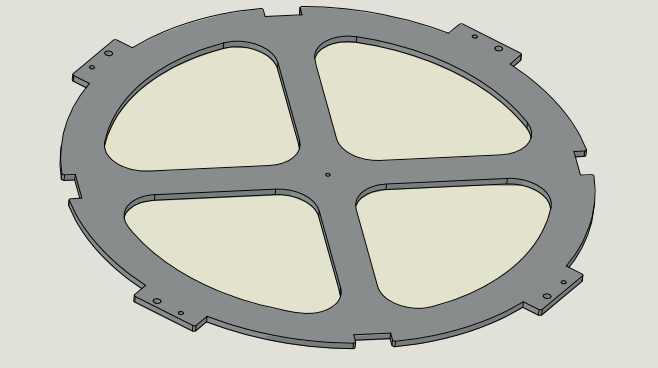


Fig. 12.3.2 Leveling plate with set screws installed

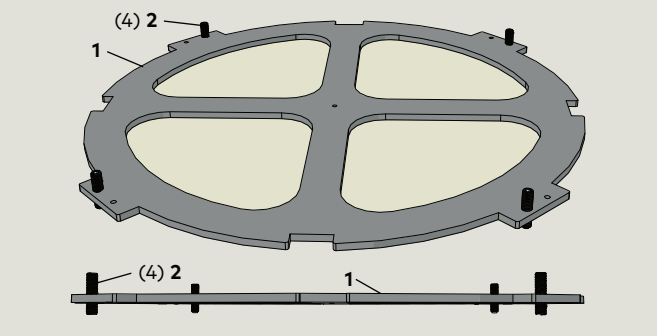


Fig. 12.3.3 Set screw RF6028-01G

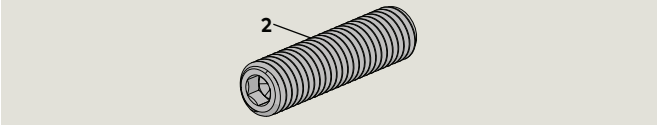


Fig. 12.3.4 Set screw depth

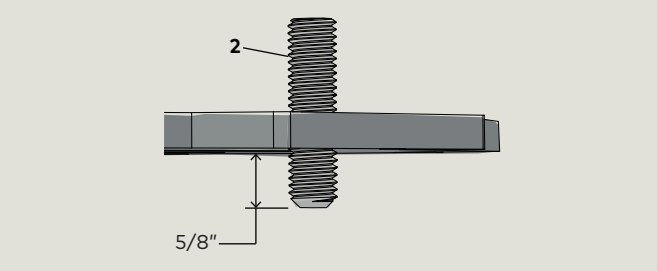


Table 12.3.1 Leveling plate and hardware

1	RC6022	Leveling plate
2	RF6028-01G	1/2-13 x 2" cup point set screw

12.3.1 Install set screws in leveling plate.

1. Install four set screws RF6028 in leveling plate.

- Install set screws to an equal depth of 5/8" below leveling plate (Fig. 12.3.4).

Fig. 12.3.5 Leveling plate installation

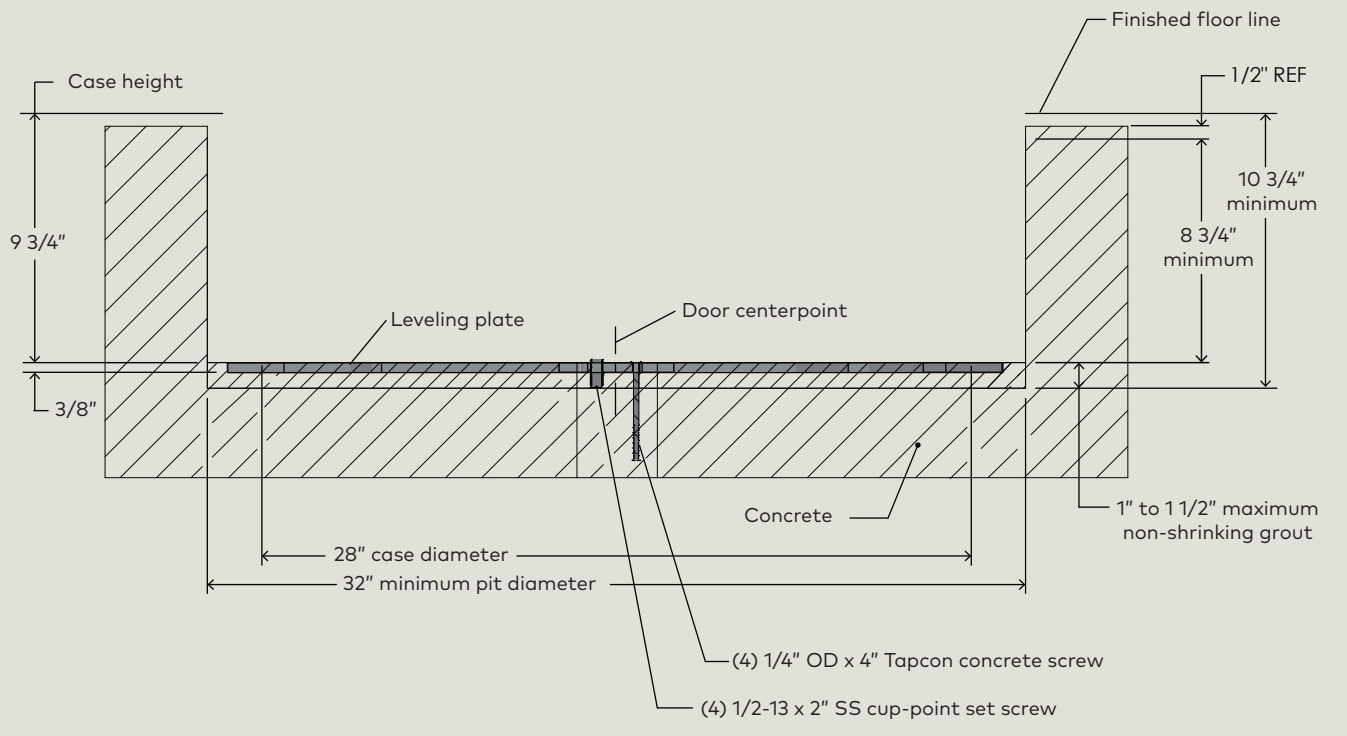


Fig. 12.3.6 Leveling plate in pit example

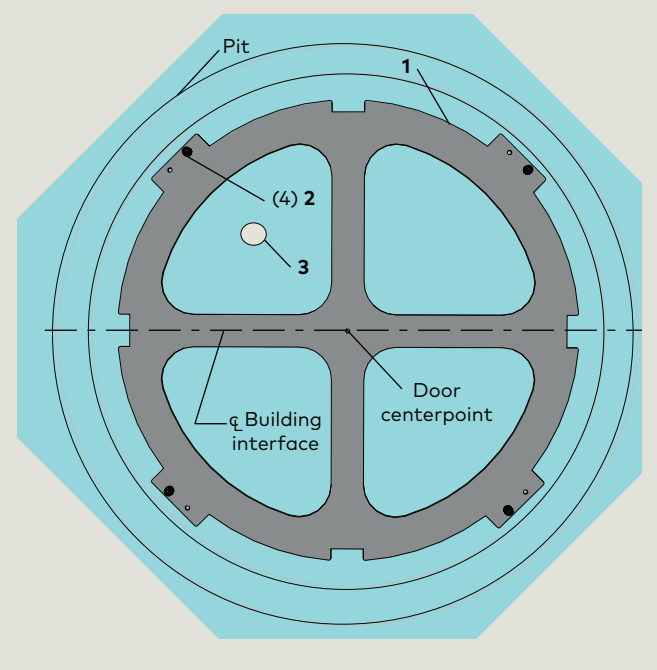


Table 12.3.2 Leveling plate and hardware

1	RC6022	Levelling plate
2	RF6028-01G	1/2-13 x 2" cup point set screw
3		Pit drain pipe or tube location example

12.3.2 Check pit dimensions, clean dirt and debris from pit.

NOTICE

- Pit must be free of all dirt and debris.
- Minimum pit dimensions are shown in Fig. 12.3.5.

12.3.3 Place leveling plate in pit, locate at door centerpoint.

NOTICE

- Orient leveling plate parallel to building interface as shown in Fig. 12.3.6.
- Orientation in pit may be different than that shown in Fig. 12.3.6.

Leveling plate centerpoint must be positioned at door centerpoint.

12.3.4 Level and adjust height of leveling plate.

NOTICE

- Adjust four set screws (**2**) to obtain a leveling plate height (top surface) of 13 3/4" to finish floor line (Fig. 12.3.5).
- Check leveling plate for level.

Recheck that leveling plate is at door centerpoint and is parallel to building interface (Fig. 12.3.6).

Table 12.3.3 Leveling plate and hardware

1	RC6022	Leveling plate
2	RF6028-01G	1/2-13 x 2" cup point set screw
3		Spacer block (By installer)
4		Pit drain pipe or tube location example

Fig. 12.3.7 Spacer block installed on leveling plate

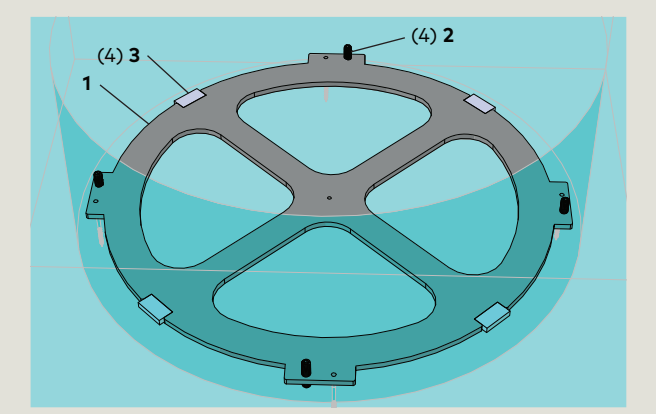


Fig. 12.3.8 Spacer block reference dimensions

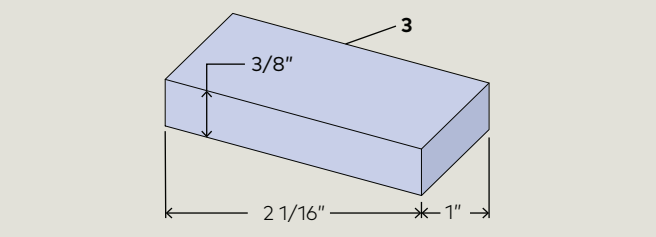
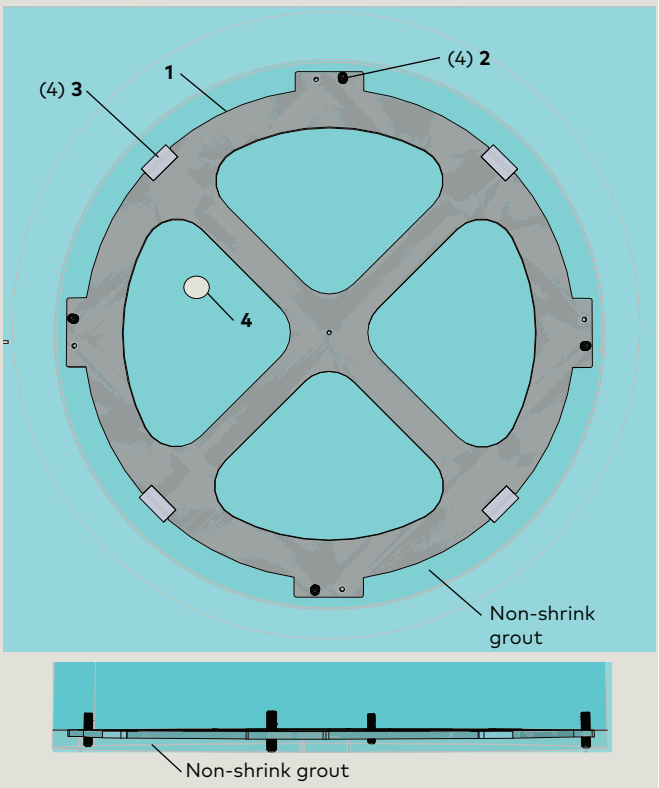


Fig. 12.3.9 3/8" thick spacer blocks installed



12.3.5 Install spacer blocks in leveling plate.

1. Install four spacer blocks (Fig. 12.3.8) in leveling plate cutouts (Fig. 12.3.9).
- It is recommended to use foam backing strips.
- Leveling plate cutout width: 2".

Leveling plate cutouts are for container anti-rotate tabs.

12.3.6 Pour non-shrink grout around leveling plate.

1. Pour non-shrink grout until grout is flush or slightly below top surface of leveling plate.

NOTICE

Pit drain.
- If pit drain tube or pipe is present, block off pit drain area from grout.

NOTICE

Non-shrink grout installation.
- Use non-shrink grout.
- Insure leveling plate is not moved during the grout pouring process.
- Top surface of leveling plate must be free of grout.
- **Recheck plate level during and after grout pouring process.**

2. Let grout cure per manufacturer's instructions.

12.3.7 Remove spacer blocks from leveling plate.

1. Once grout has cured, remove spacer blocks from leveling plate cutouts.

NOTICE

Leveling plate cutouts.
- Insure cutouts are completely free of grout.

Fig. 12.3.10 3/8" spacer blocks removed from leveling plate

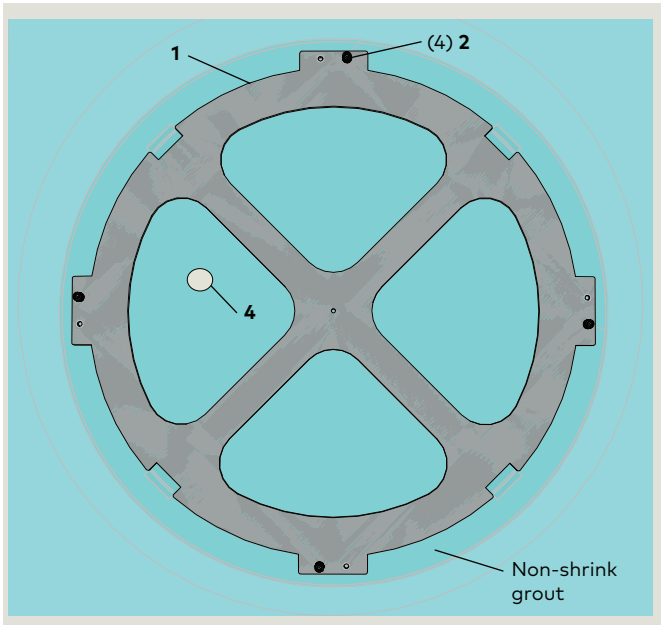


Fig. 12.3.11 Holes for mounting plate anchor screws

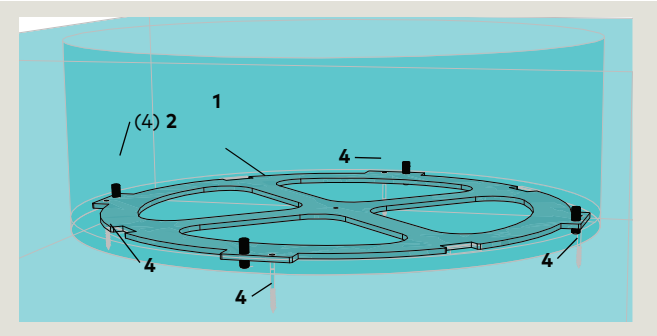


Fig. 12.3.12 Mounting plate anchor screws installed

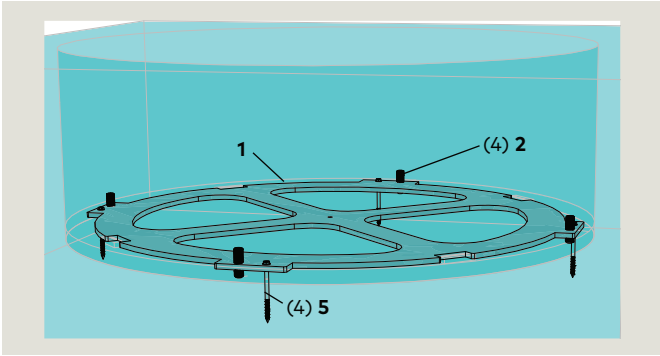


Fig. 12.3.13 Anchor screw

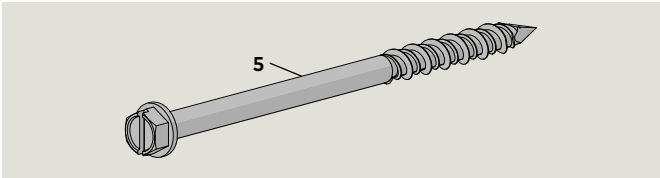


Table 12.3.4 Leveling plate and hardware

1	RC6022	Leveling plate
2	RF6028-01G	1/2-13 x 2" cup point set screw
5	RF6017	1/4 x 4" Tapcon anchor screw

12.3.8 Drill holes in pit for Tapcon anchor screws.

1. Drill hole in pit at each of the four leveling plate anchor screw locations.
- Use drill bit 3/16" x 5 1/2" long.

12.3.9 Install Tapcon anchor screws.

1. Install Tapcon anchor screws through mounting plate holes into anchor screw holes.

NOTICE

Recheck level and door centerpoint.
Recheck leveling plate level and door centerpoint during and after anchor screw installation.

12.4 Orientation of in-ground container in pit – building interface

Fig. 12.4.1 Container lids parallel to building interface

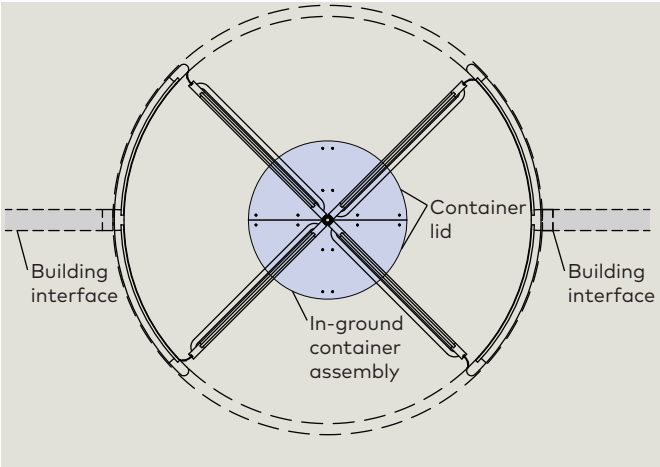
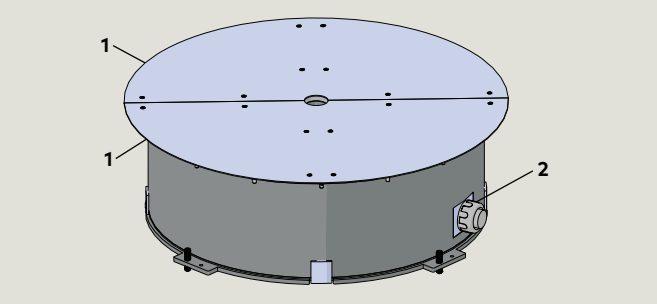


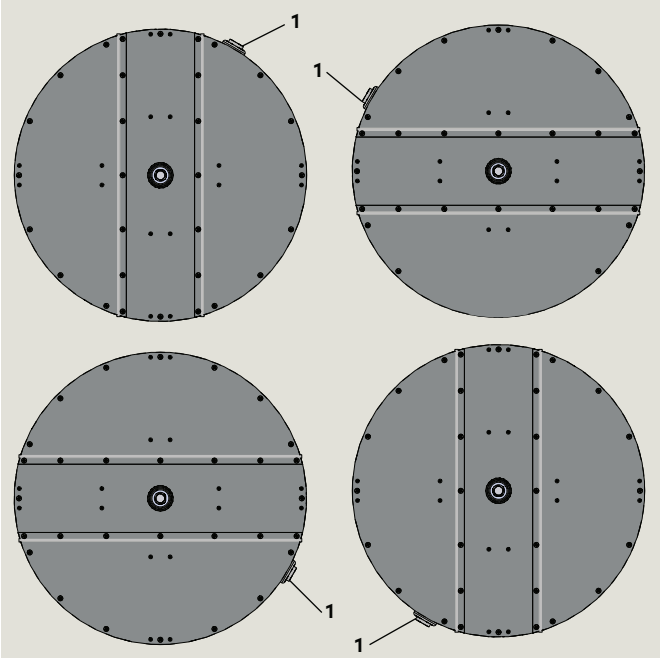
Fig. 12.4.2 In-ground container orientation example



1 Container lid

2 1 1/2" conduit adapter, DC wiring

Fig. 12.4.3 Container conduit adapter orientations in pit



1 DC conduit adapter

12.4.1 In-ground container orientation in pit.

NOTICE

Joint between container lids must be parallel with building interface.

12.4.2 Building conduit to container conduit adapter positioning.

To meet Para. 12.4.1 requirement, container can be placed in one of four positions in pit for interfacing container conduit adapter to building conduit. (Fig. 12.4.3).

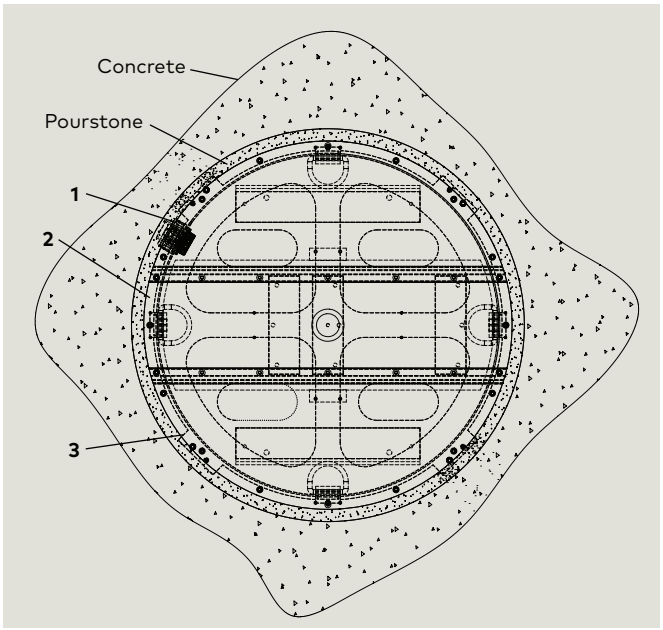
12.4.3 Determining container orientation - container conduit adapter entrance location.

- Reference Para. 12.6 to determine container orientation for building conduit interface to 1 1/2" DC conduit adapter.

TIPS AND RECOMMENDATIONS

Orientation of container DC conduit adapter in pit must be determined before locating position of through-wall pipe fitting for container drain (Reference Para. 12.6).

Fig. 12.4.4 Container conduit adapter - orientation in pit example



1 DC conduit adapter

2 Container lid

3 Leveling plate

12.5 Conduit in pit for building wiring – overview

Fig. 12.5.1 Conduit adapter location on in ground drive assembly

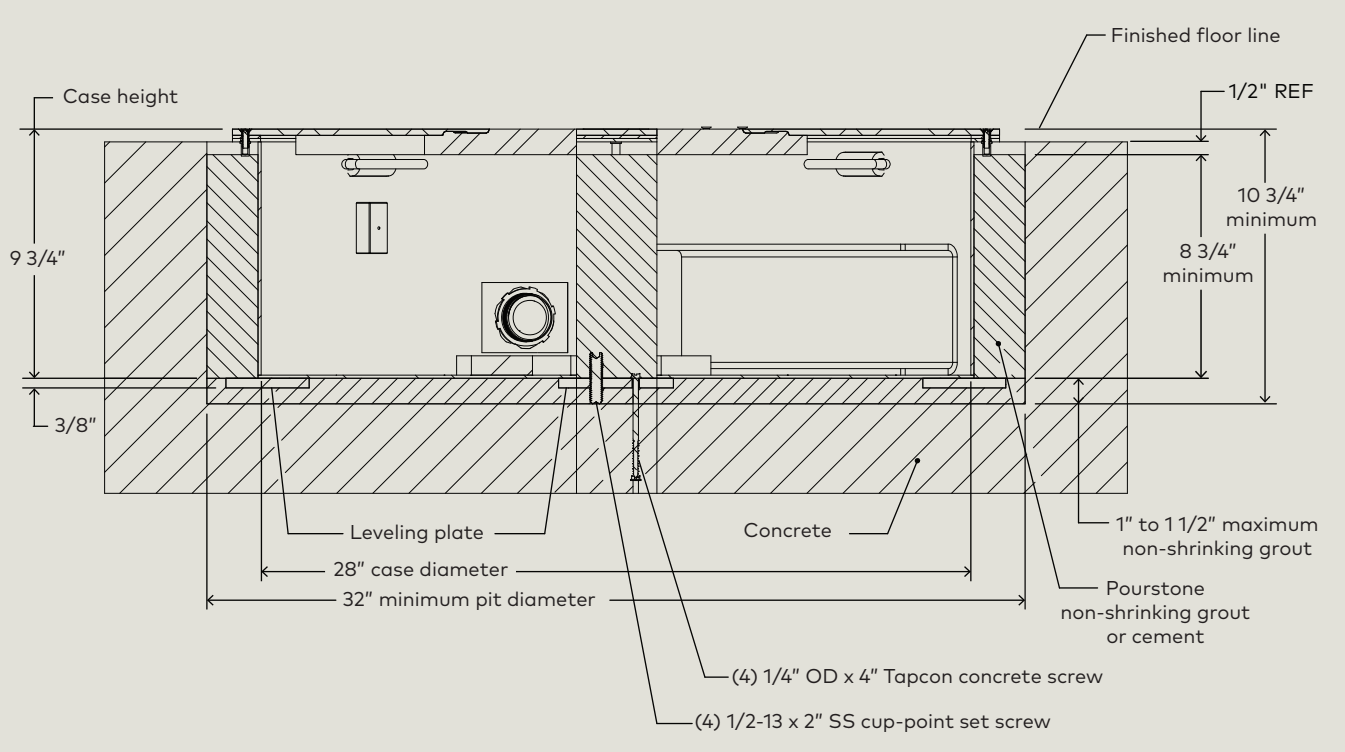


Fig. 12.5.2 In-ground drive assembly flexible conduit adapter

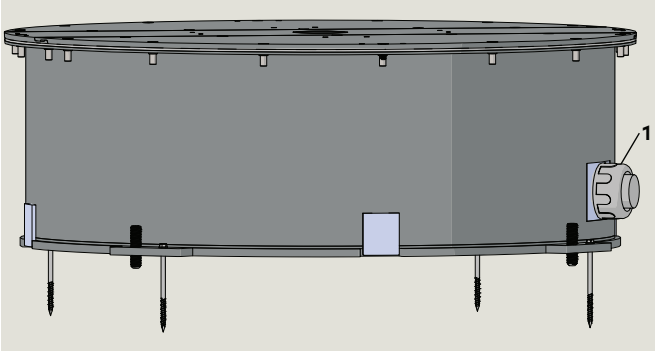
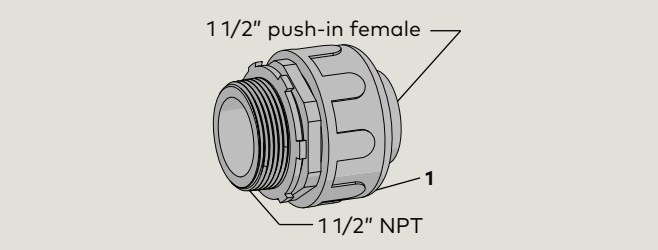


Fig. 12.5.3 Liquid-tight DC conduit adapter



1 1 1/2" liquidtight conduit adapter RC6045-001

12.5.1 Building conduit for wiring into in-ground container.

NOTICE

Orientation of in-ground container for building conduit determined in Para. 12.6.

NOTICE

Building conduit for DC wiring to container must be installed in floor to the pit prior installation of in-ground drive assembly into pit.

12.5.2 Container provisions for building conduit.

1. DC wiring: 1 1/2" liquid-tight conduit adapter is supplied for interfacing to building liquid-tight flexible conduit.

NOTICE

Building contractor responsibilities:

- Plan routing of building liquid tight flexible conduit in pit to container conduit adapter locations.
- Terminate conduit into liquid-tight conduit adapter. Reference Para. 12.11.

12.6 Determine in-ground container conduit adapter position in pit

Table 12.6.1 Container lid center section

1	RC6045-001	1 1/2" conduit adapter, DC wiring
2	RC6049	Container lid, center section

Fig. 12.6.1 Container orientation example 1

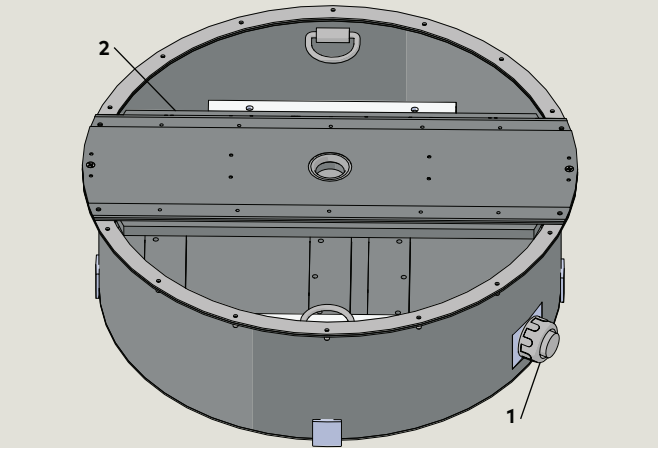
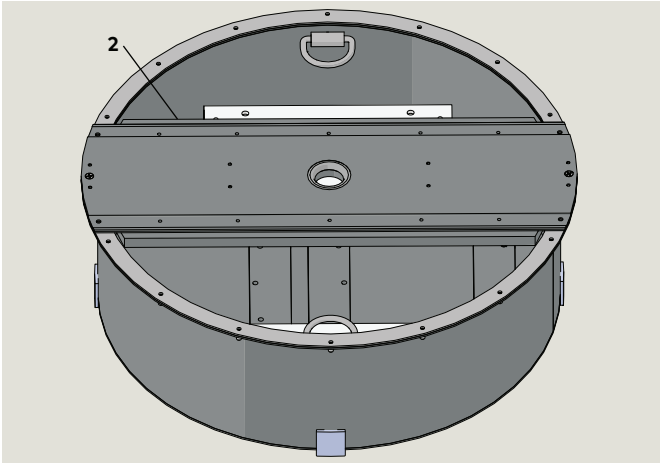


Fig. 11.6.2 Container orientation example 2



12.6.1 In-ground container conduit adapter orientation for building conduit.

NOTICE

Joint between container lids must be parallel with building interface.
Reference Para. 12.4.

12.6.2 Building contractor responsibilities.

TIPS AND RECOMMENDATIONS

Wiring interfaces to in-ground container. Reference Wiring, Setup and Troubleshooting Manual RL6002-003

NOTICE

Building conduit.

- Review orientation of container in pit with dormakaba technician (Para. 12.4).
- Plan routing of building liquid tight flexible conduit to container conduit adapter entrance location.
- Building conduit for container 1 1/2" conduit adapter must be installed into pit prior to installation of container assembly.
- Terminate conduit into liquid-tight conduit adapter (Para.).

12.6.3 Container provision for building conduit.

- DC wiring: 1 1/2" liquid-tight conduit adapter is supplied for interface to building liquid-tight flexible conduit.

12.7 Container drain: locate and drill hole for through-wall pipe fitting

Table 12.7.1 Container drain hole location and fitting

1	RC6043	Throug-wall pipe fitting
2		Locations for throug-wall pipe fitting

Fig. 12.7.1 Container drain pipe fitting locations

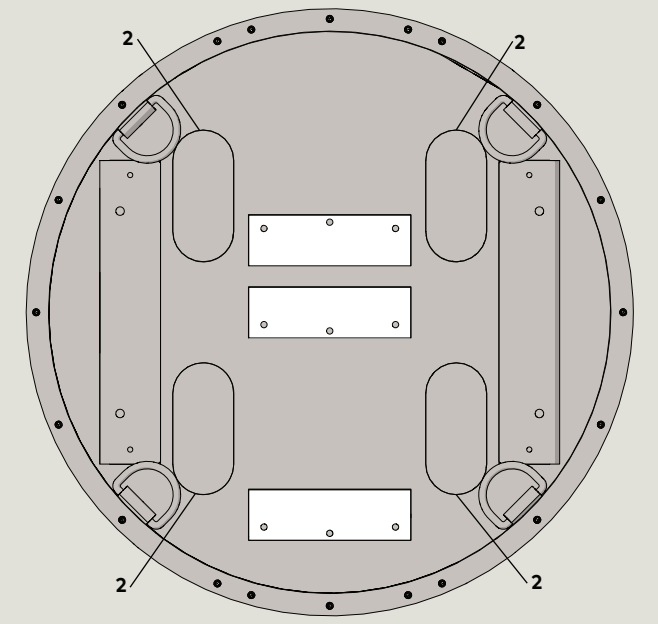


Fig. 12.7.2 Through-wall pipe fitting

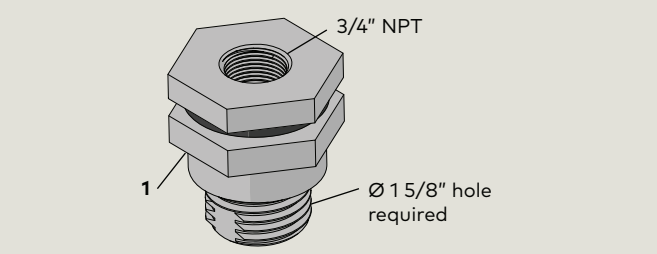
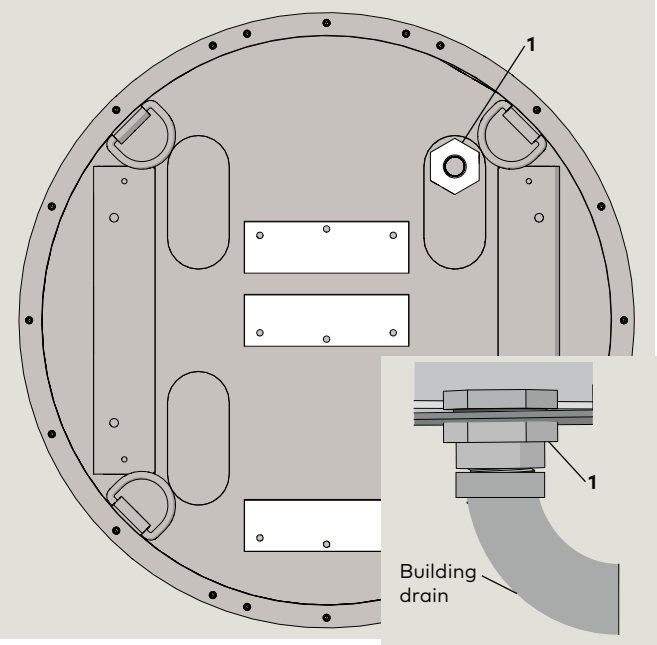


Fig. 12.7.3 Container pipe fitting location example



NOTICE

Container drain hole location.
Reference Para. 12.8 for drain hole location dimensions from in-ground container / leveling plate centerpoint.

NOTICE

Container position for conduit adapter entrance in pit must be determined prior to locating through-wall pipe fitting for container drain.
Reference: Para. 12.6.

NOTICE

Customer drain pipe or hose.
Customer must provide a drain pipe or hose for connection to the supplied container through-wall pipe fitting (Fig. 12.7.2).

CAUTION

Building drain piping to container must be installed in pit prior to installation of in-ground container into pit.

12.7.1 Container provisions for drain.

1. Four areas are provided in container for through-wall pipe fitting (Fig. 12.7.1).

NOTICE

Review with building contractor:
1) Container orientation in pit (Para. 12.4).
2) Drain area locations in container.
3) Required container orientation for conduit entry (Para. 12.6).
3) Through-wall pipe fitting.

12.7.2 Determine location of pipe fitting.

1. Determine location of through-wall pipe fitting in bottom of container.

NOTICE

Drain piping connection to container through-wall pipe fitting.
Building contractor must route building drain piping to the selected container drain area and provide interface to the through-wall pipe fitting.

12.7.3 Drill hole for through-wall pipe fitting.

1. Drill 1 5/8" diameter hole at container floor location selected for in-ground through-wall pipe fitting.

12.8 Container drain hole location dimensions using leveling plate

Fig. 12.81 In-ground container drain hole locations template

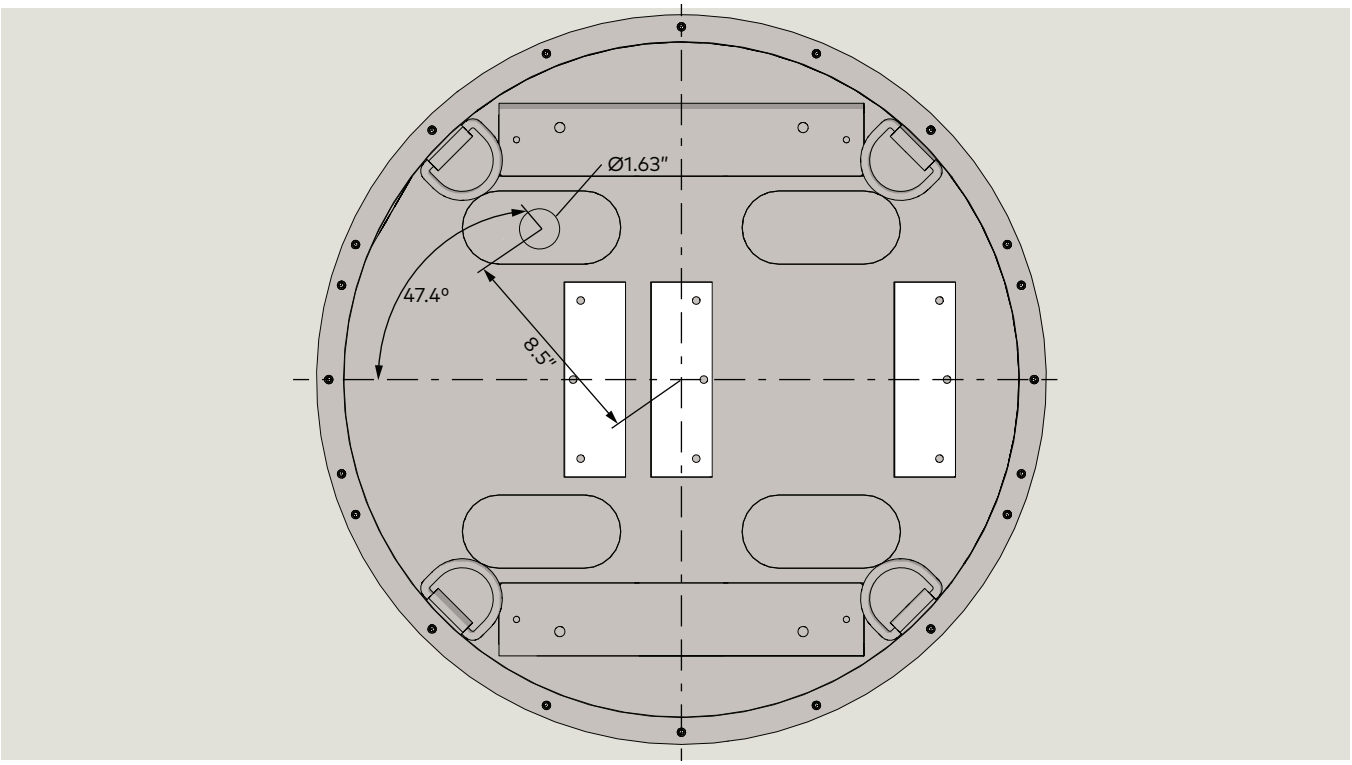
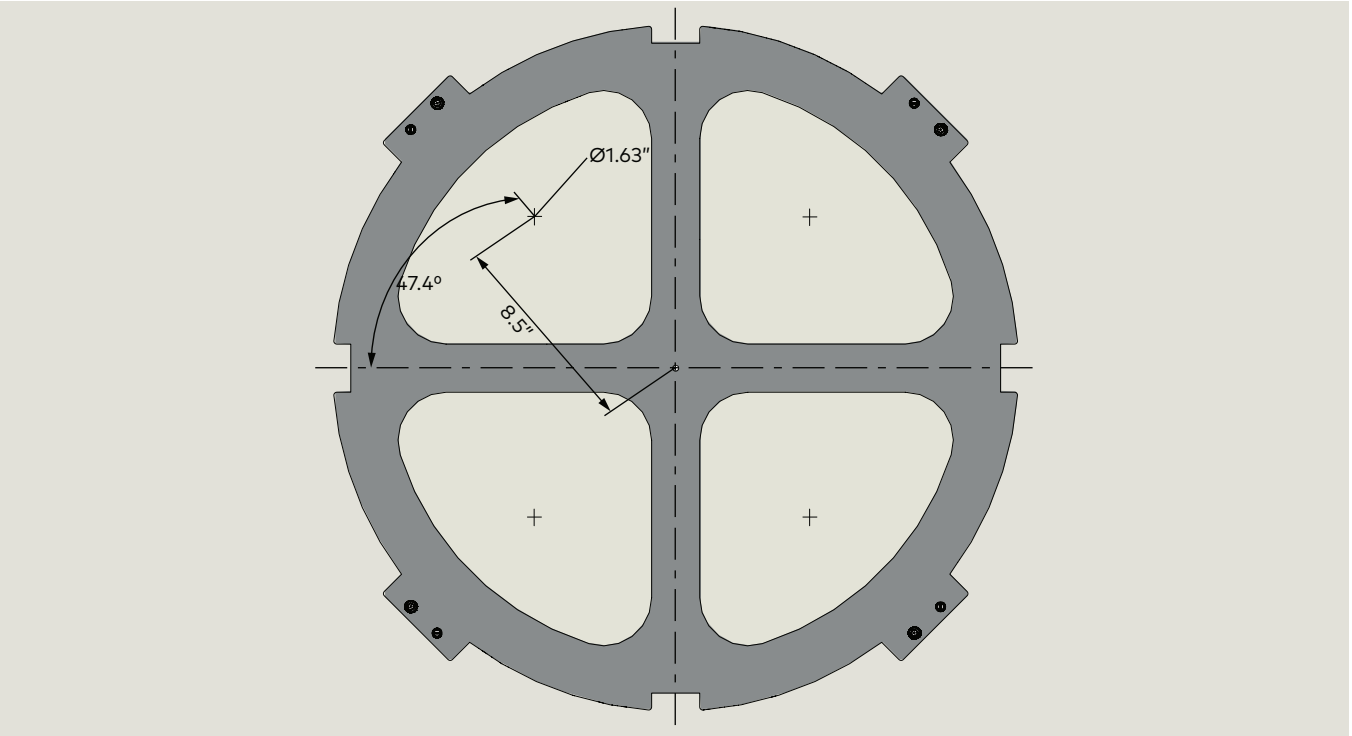


Fig. 12.8.2 Leveling plate drain hole locations template



12.9 Check hole alignment of container covers on container flange

Fig. 12.9.1 RF6025-01G

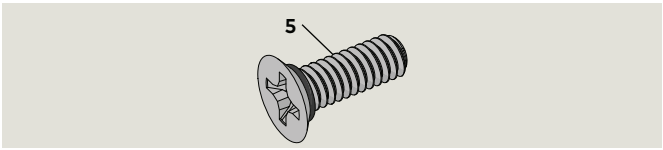


Fig. 12.9.2 In ground container

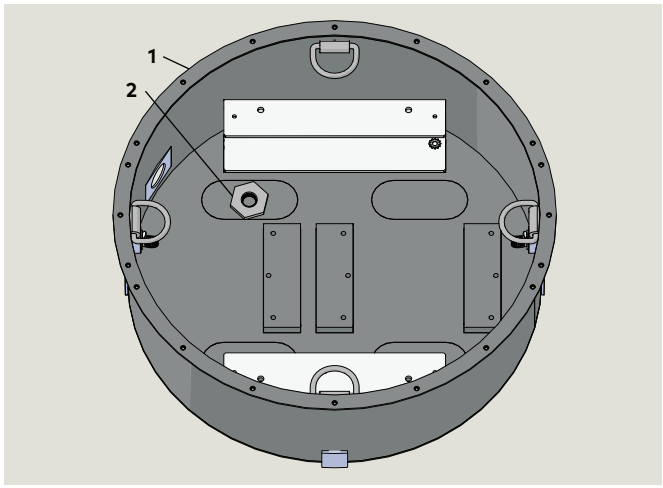


Fig. 12.9.3 Center section container lid

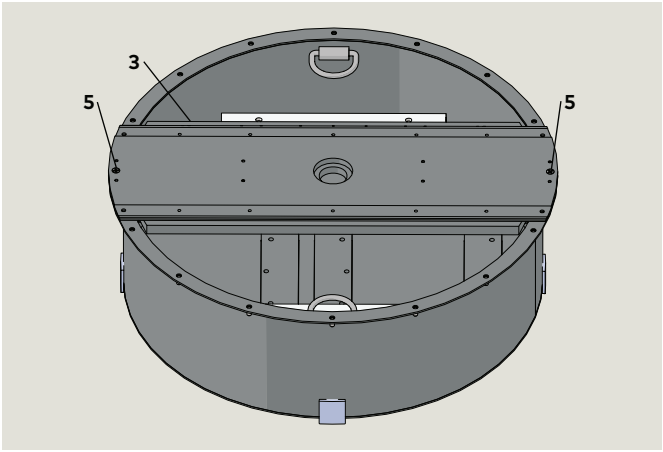


Fig. 12.9.4 Outer cover assemblies

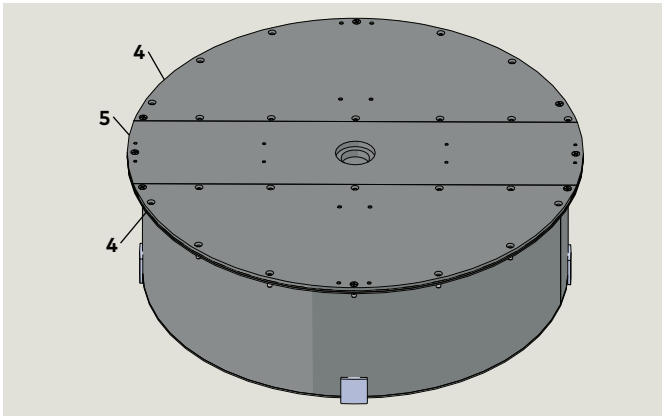


Table 12.9.1 Container covers and fasteners

1	RS6038	In-ground container (LP)
2	RC6043	Through-wall pipe fitting. Fitting may be in a different location
3	RC6049	Center section container lid
4	RX6033	Outer cover assembly
5	RF6025-01G	1/4-20 x 3/4" sealing FHMS

TIPS AND RECOMMENDATIONS

It is recommended that steps outlined in Para. 12.9 be done prior to proceeding with container installation and assembly.

12.9.1 Check fit of center section container lid.

1. Place center section container lid on container flange.
2. Check center section container lid hole alignment with container flange holes.
3. Install two flat head screws (Fig. 12.9.3) to validate alignment of all center section container lid holes.

12.9.2 Check fit of outer cover assemblies.

1. Place first outer cover assembly on container flange.
2. Check outer cover assembly hole alignment with center section container flange holes.
3. Install three flat head screws (Fig. 12.9.4) to validate alignment of all outer cover assembly holes.
4. Repeat steps 1 through 3 for second outer cover assembly.

12.9.3 Remove all flat head screws and covers.

1. Remove all flat head screws from the two outer covers and the center section container lid.
2. Remove covers and center section container lid.

NOTICE

If there are any cover hole alignment issues with the container flange, contact the Crane company to resolve these issues before proceeding with container assembly.

12.10 Install cable ties

Fig. 12.10.1 (4) cable ties

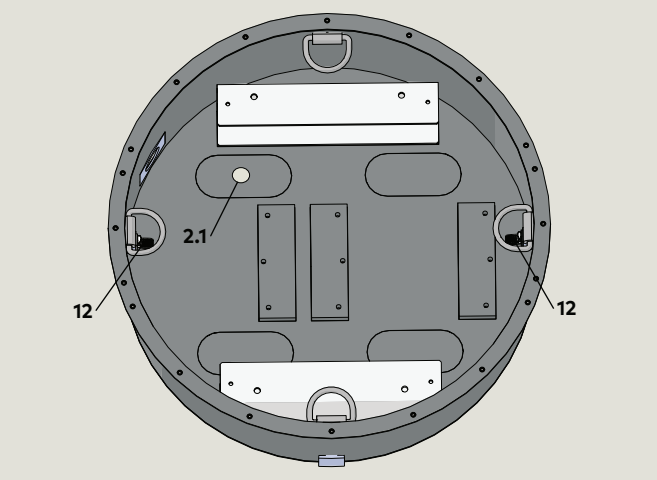


Fig. 12.10.2 Cable tie and fastener

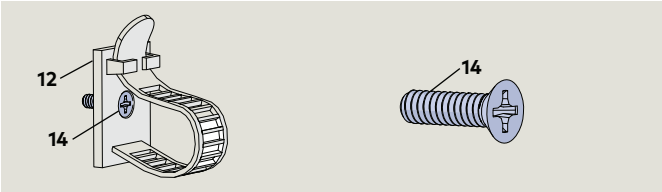


Table 12.10.1 Cable ties and fastener

2.1		Hole for through-wall pipe fitting **May be in a different location**
12	RC6042	Cable tie
14	RF6024-01G	#6 x 1/2" Phillips FHS

12.10.1 Install two cable ties in container.

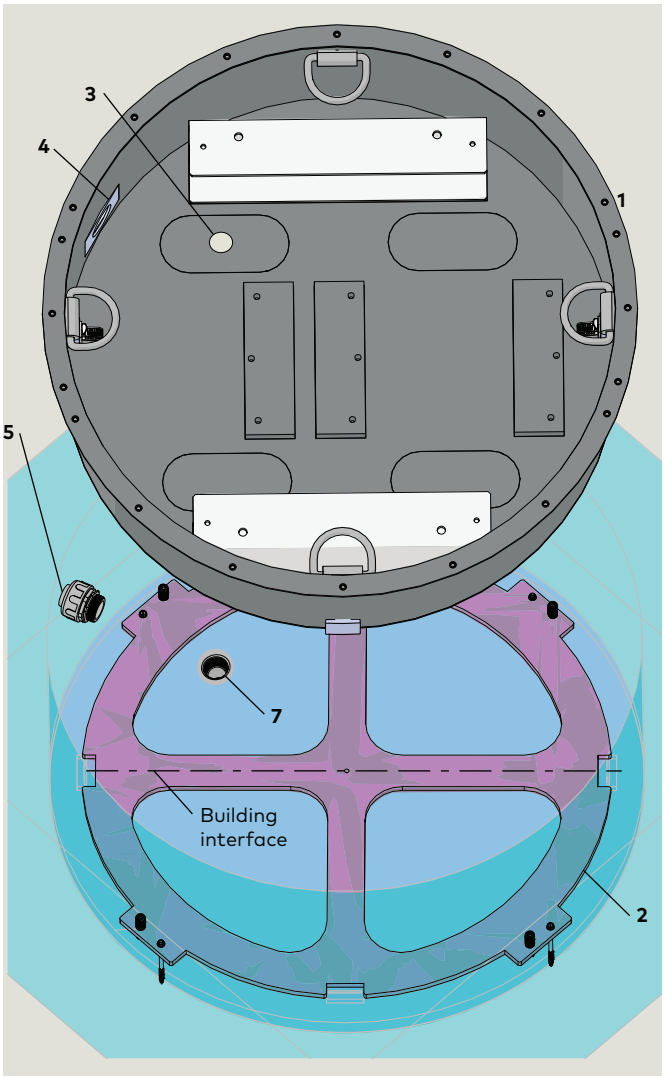
1. Install two cable ties in container using #6 x 1/2" Phillips FHS.

12.11 Install in-ground container in pit

Table 12.11.1 Container and leveling plate

2	RC6012	Leveling plate
3		Hole for through-wall pip fitting
4		Conduit adapter mounting plate
5	RC6045-001	1 1/2" conduit adapter, DC wiring
7		Customer drain tube or pipe

Fig. 12.11.1 In-ground container above pit example



12.11.1 Pit preparation.

1. Pit must be prepared for in-ground container installation as outlined in Chapter 12; Install leveling plate in pit.

12.11.2 Leveling plate.

CAUTION

- Leveling plate must be installed as outlined in Para. 12.3; Install leveling plate in pit.

1) Verify leveling plate is level.
2) Verify leveling plate is at door centerpoint.
3) Verify leveling plate is parallel to building interface (Para. 12.4).

- Insure leveling plate top surface is clean.
- Insure the four leveling plate slots are free of grout.

12.11.3 In-ground container orientation in pit.

NOTICE

Container orientation requirements in pit:

- Building conduit interface (Para. 12.6).
- Pit drain interface(Para. 12.7).
- Container lids parallel with building interface (Para. 12.4).

12.11.4 Install container assembly in pit.

WARNING

Use caution when working with container assembly.

- Container has four eyebolts that can be used with lifting equipment.

1. Align container with pit interfaces.
2. Insert DC conduit adapter (flexible conduit installed in adapter by customer) into container adapter plate. Tighten conduit adapter locknut.
3. Insert through-wall pipe fitting through hole in bottom of container and thread into customer drain fitting and tighten.
4. Align anti-rotate tabs with slots in leveling plate (Fig. 12.11.1) and lower container into pit.
5. Finish lowering container into pit.

NOTICE

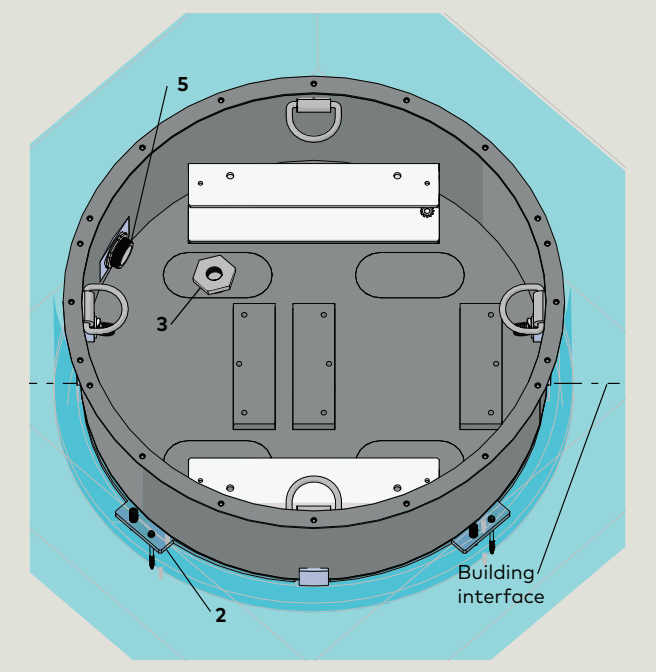
Anti-rotate tabs.

- Container anti-rotate tabs must be completely lowered into leveling plate slots (Fig. 12.11.2).

Table 12.11.2 Container and leveling plate

2	RC6012	Leveling plate
3	RC6043	Through-wall pip fitting
5	RC6045-001	1 1/2" conduit adapter, DC wiring

Fig. 12.11.2 Container in pit orientation example



12.11.5 Verify container is level.

NOTICE

Once container lowered onto leveling plate, verify container is level.

13 Assemble in ground container in pit

13.1 Install speed control in in-ground container

Fig. 13.1.1 Speed control oil fill hole

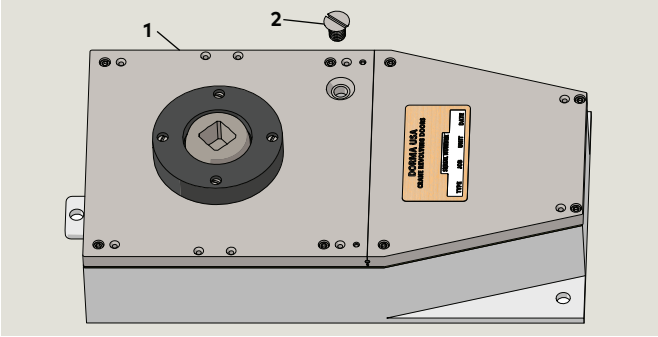


Fig. 13.1.2 Speed control mounting holes

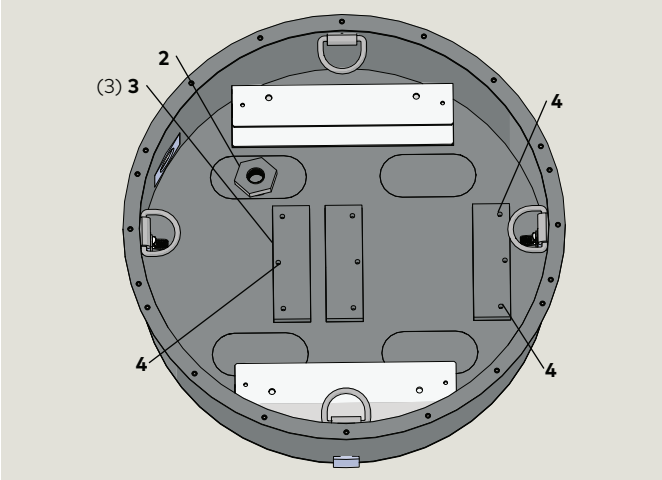


Fig. 13.1.3 In-ground speed control

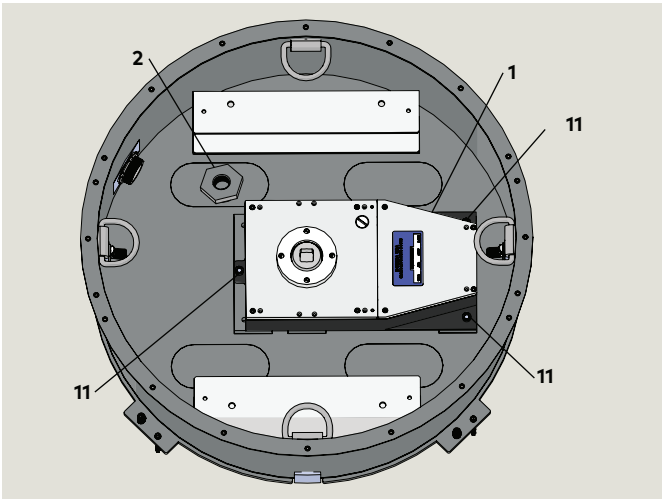


Fig. 13.1.4 3/8 x 7/8" SHCS

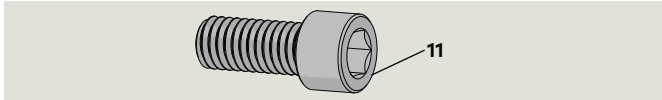


Table 13.1.1 Floor speed control and hardware

1	RS6074-010	Floor speed control assembly
2		.500-13 x .750" undercut SFHMS
2	RC6043	Through-wall pipe fitting. **May be in a different location.**
3	RC6033	Speed control shim
4		3/8-16 UNC Thru
11	RF6022-01C	3/8 x 7/8" SHCS with thread lock

13.1.1 Add oil to speed control gearcase.

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

CAUTION

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

13.1.2 Install speed control in container.

1. Fasten in-ground speed control to container speed control shims using three 3/8 x 7/8" SHCS.

- **Snug but do not tighten the socket head cap screws.**

13.2 Check bottom plug adapter and container lid alignment

Fig. 13.2.1 Bottom plug adapter

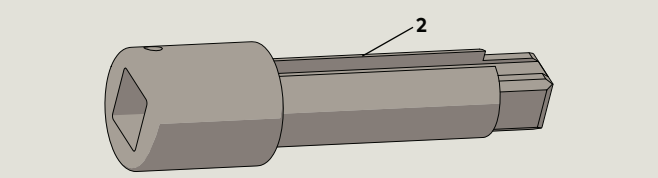


Fig. 13.2.2 Bottom plug adapter installed in speed control drive shaft

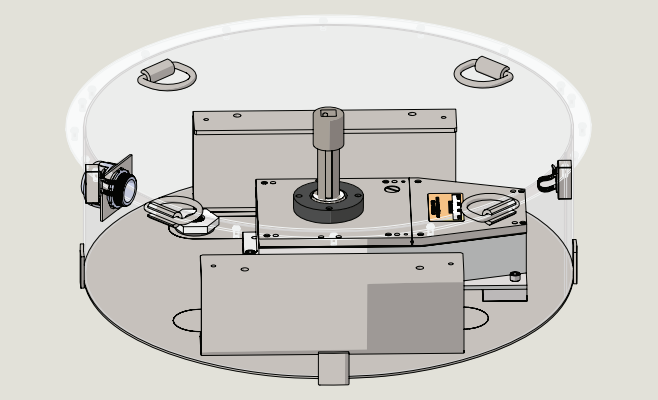


Fig. 13.2.3 Center section container lid installed on container

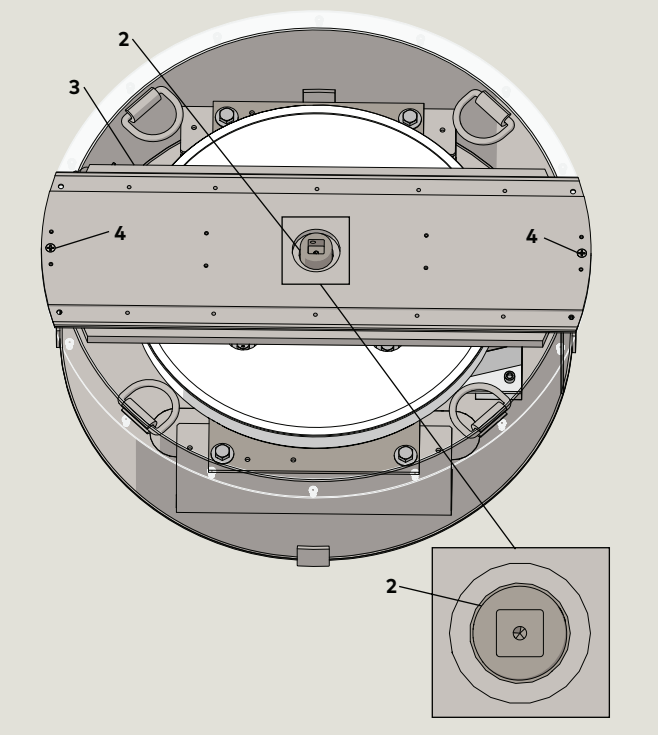


Fig. 13.2.4 RF6025-01G

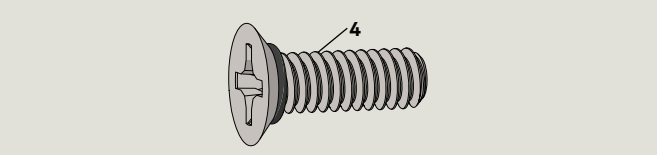


Table 13.2.1 In-ground container with bottom plug adapter and container lid

1	RS6074-010	Floor speed control assembly
2	RC6069	Center shaft bottom plug adapter
3	RC6049	Center section container lid
4	RF6025-01G	1/4-20 x 3/4" flat head countersunk seal screw

13.2.1 Check bottom plug adapter alignment.

NOTICE

If bottom plug adapter cannot be centered in the center section container lid hole, contact Crane to resolve this issue before proceeding with further container assembly.

1. Insert bottom plug adapter into speed control drive shaft.
2. Install center section container lid and fasten with two flat head screws RF6025-01G.
3. Check bottom plug adapter alignment in center section container lid hole.

NOTICE

Bottom plug adapter checks.

- Bottom plug adapter must be centered in center section container lid hole (Fig. 13.2.3).
- Bottom plug adapter must be plumb.

- Speed control mounting hole diameter is 7/16" so slight adjustment is possible.

4. Once bottom plug adapter centered in hole, tighten the speed control 3/8 x 7/8" SHCS (Fig. 13.1.3).

NOTICE

Insure that the three 3/8 x 7/8" SHCS are securely tightened.

13.3 Verify floor cover plates are flush with finished floor

Fig. 12.3.1 Flange gasket

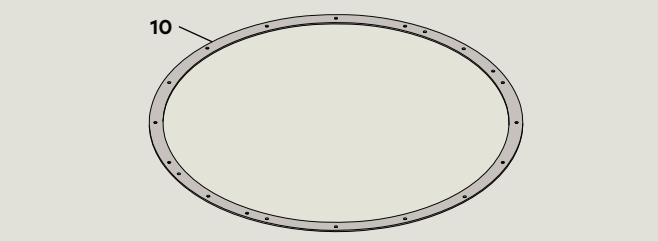


Fig. 13.3.2 Container lids placed on container

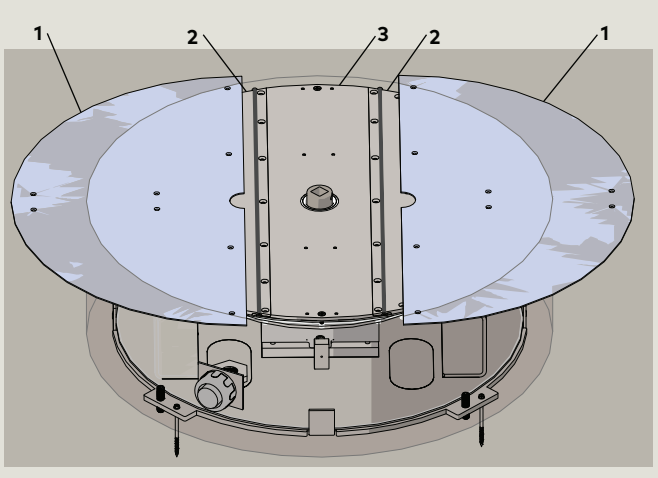


Fig. 13.3.3 Floor cover plates placed on container

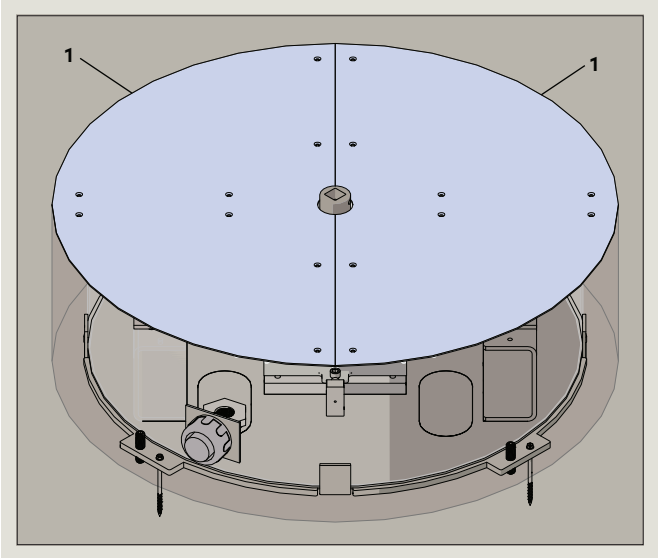


Fig. 13.3.4 RF6025-01G

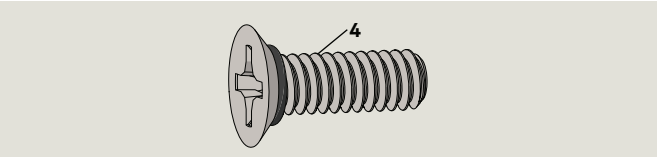


Table 13.3.1 Container lids and floor cover plates hardware

1	RC6048	Floor cover plate, Ø32", .075" REF thick
2	RS6033	Container lid, outer section
3	RC6049	Container lid, center section
4	RF6025	1/4-20 x 3/4" flat head countersunk seal screw
10	RC6046	Flange gasket, Ø30", 1/8" thick

13.3.1 Verify floor cover plates are flush with finished floor.

1. Place flange gasket on container lid.
1. Place center section container lid on container and secure with two 1/4-20 x 3/4" sealing FHS.
2. Place two outer cover assemblies on container.
3. Place two floor cover plates over container lids.

TIPS AND RECOMMENDATIONS

Do not fasten outer cover assemblies or floor cover plates to container flange.

4. Verify floor cover plates are flush with finished floor.

NOTICE

Do not pour pour-stone around case until any issues with floor cover plates and finished floor flush are resolved.

13.3.2 Remove the two floor cover plates.

13.4 Pour Pour-stone around container in pit

13.4.1 Pour pour-stone in pit around container case.

NOTICE

Reference Crane shop drawings for job!

1. Fill pour-stone around container to 1/2" below container flange (Fig. 13.4.1).

TIPS AND RECOMMENDATIONS

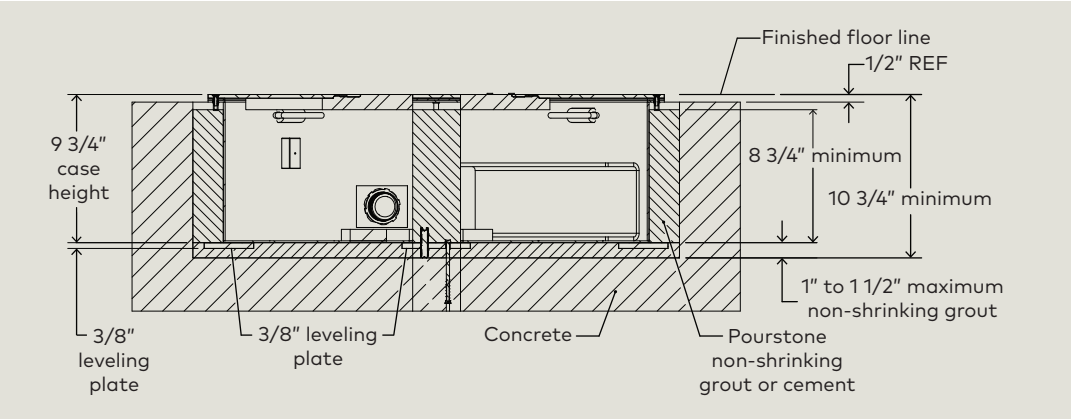
Cover container lids with cardboard during pour-stone fill process.

NOTICE

- Follow manufacturer's directions for mixing, application and curing.
- Follow directions regarding eliminating air pockets.

13.4.2 Remove the three container lids.

Fig. 13.4.1 Pour-stone around container



13.5 Remove transport bolts from Motion Assist 360 drive

Fig. 13.5.1 Drive transport bolts, nuts and washers, top view

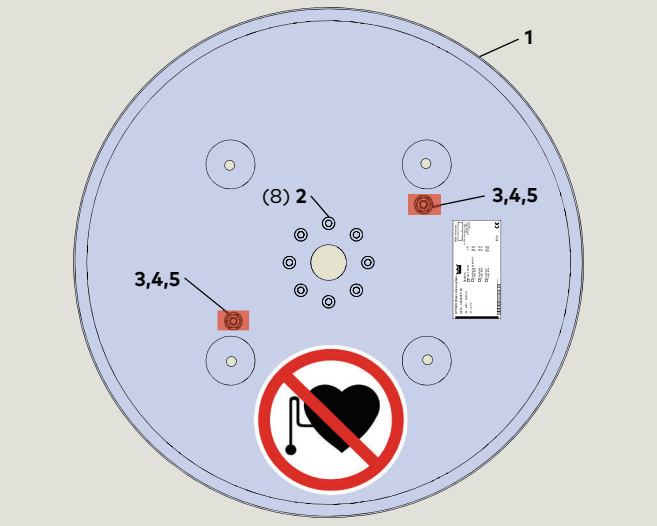


Fig. 13.5.2 Drive bottom view, transport bolts

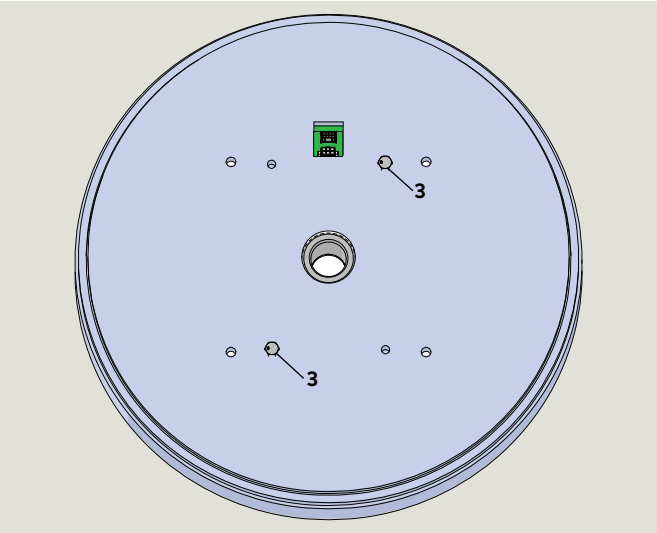


Table 13.5.1 Motion Assist 360 drive transport bolt hardware

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

13.5.1 Remove transport bolts.

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!

WARNING

Transport bolts must be removed from operator prior to installation!

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

13.6 Assemble Motion Assist 360 drive to mounting plate

Fig. 13.6.1 Drive with (8) M8 x 20 mm SHCS

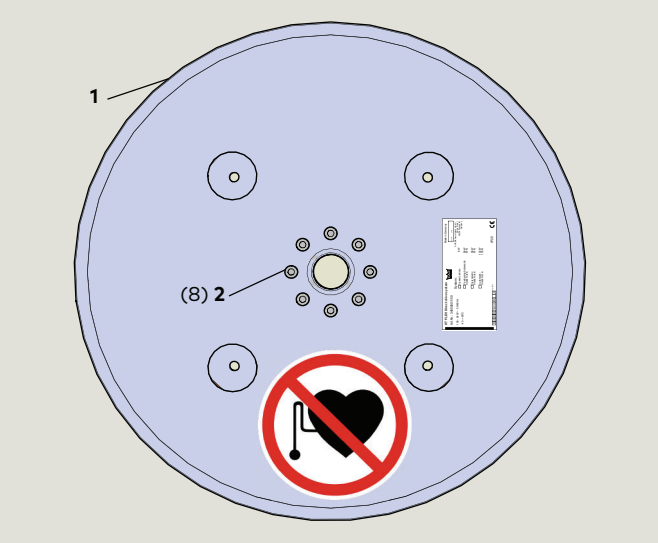


Fig. 13.6.3 Drive with (2) M8 x 20 mm SHCS

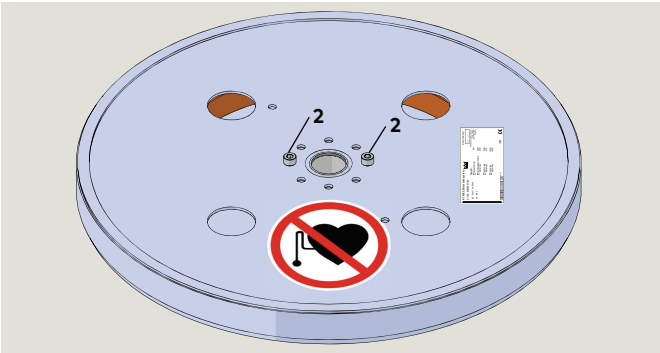


Fig. 13.6.4 Drive flange

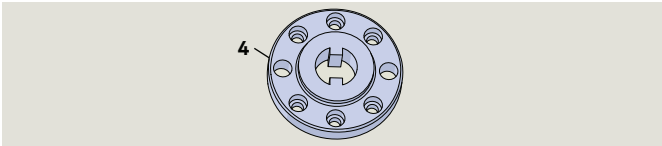


Fig. 13.6.5 Drive flange installed

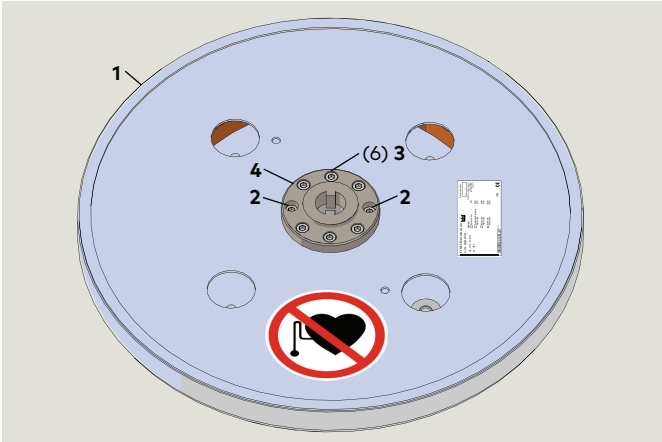


Table 13.6.1 Motion Assist 360 drive and drive flange hardware

1	RX6010-001	Motion Assist 360 drive
2	RF6003-01C	M8 x 20 mm hex bolt
3	RF6003-02C	M8 x 30 mm SHCS black oxide
4	RC6025	Drive flange, 4" OD

Fig. 13.6.2 M8 x 20 mm and M8 x 30 mm SHCS

WARNING

Use caution when lifting and positioning Motion Assist 360 drive!

13.6.1 Remove six M8 SHCS.

Drive is shipped from factory with eight M8 x 20 mm SHCS installed.

1. Remove six of the eight M8 x 20 SHCS leaving two M8 x 20 SHCS at 180 degrees to each other (Fig. 12.6.3).

TIPS AND RECOMMENDATIONS

Use socket wrench with 6 mm hex key socket.

13.6.2 Install drive flange.

1. Install drive flange on drive using six M8 x 30 mm SHCS.

13.6.3 Check tightening torque on M8 SHCS.

1. Use torque wrench to check tightening torque on the eight M8 SHCS.

WARNING

Danger from incorrect screw tightening torque!
If drive flange 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.

13.6.4 Maximum screw tightening torque.

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

Fig. 13.6.6 Motion Assist 360 drive mounting plate

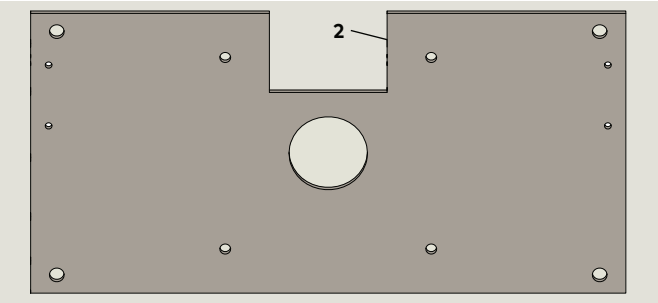


Fig. 13.6.7 Drive to drive mounting plate hardware

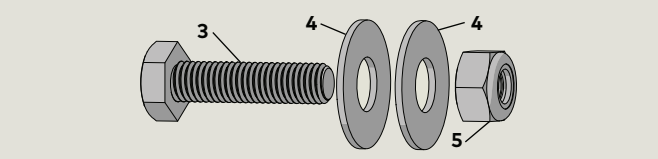


Fig. 13.6.8 Drive secured to drive mounting plate

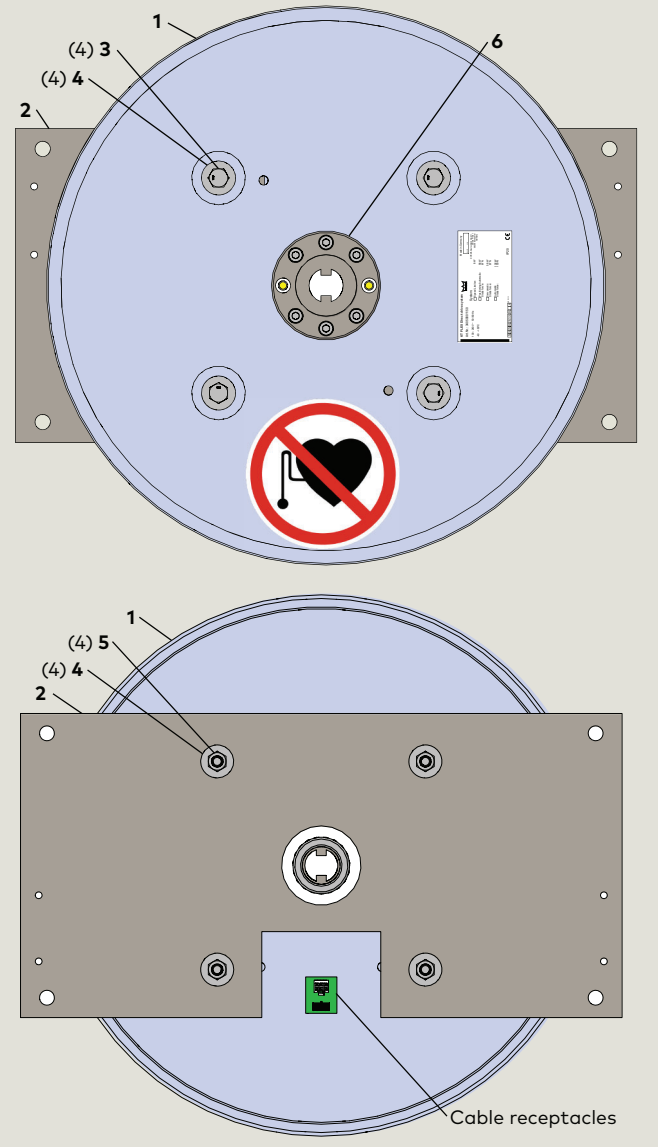


Table 13.6.2 Motion Assist 360 drive and drive flange hardware

1	RX6010-001	Motion Assist 360 drive
2	RC6060	Motion Assist 360 drive mounting plate
3	RF6004	M10-1.5 x 30 mm hex head bolt
4	RF6010-01G	Flat washer, 0.531 ID x 1.25" OD
5	RF6005-01G	M10-1.5 Nylon lock nut
6	RC6025	Drive flange, 4" OD

WARNING

Use caution when lifting and positioning Motion Assist 360 drive!

WARNING

Use caution when handling drive!
Drive is free to turn!

13.6.5 Attach Motion Assist 360 drive to mounting plate.

NOTICE

Drive must be positioned on mounting plate with cable receptacles located as shown in Fig. 13.6.8.

1. Attach drive to mounting plate using hardware in Table Fig. 13.6.2.
2. Insert bolts from drive flange side of drive.

TIPS AND RECOMMENDATIONS

Use socket wrench with 16 mm socket.

13.6.6 Torque requirements for M10 hex head bolt.

Screw diameter	Maximum permissible screw tightening torque
M10	25 Nm
	18.5 ft-lb

13.7 Install Motion Assist drive cables

Fig. 13.7.1 Motion Assist 360 drive cables

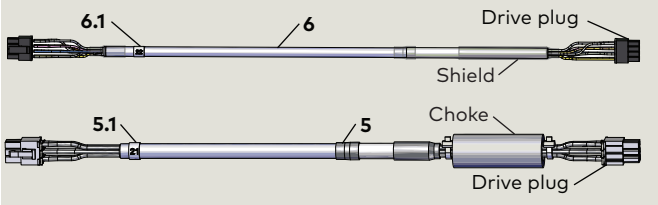


Fig. 13.7.2 Motion Assist 360 drive cables installed

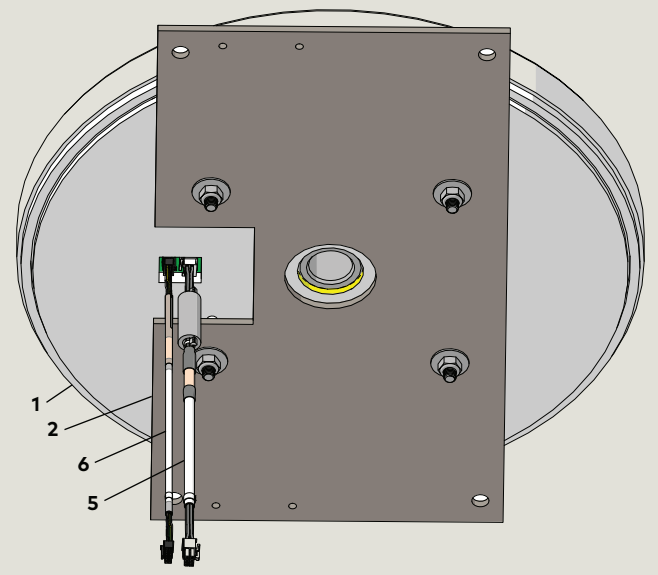


Table 13.7.1 Motion Assist 360 drive and cables

1	RX6010-001	Motion Assist 360 drive
2	RC6060	Motion Assist 360 drive mounting plate
5	RX6005-001	Motion Assist 360 motor cable, 14" long
5.1		Motor cable number tag (21)
6	RX6006-001	Motion Assist 360 drive Hall sensor cable, 13 3/4" long
6.1		Hall sensor cable number tag (22)

13.7.1 Install Motion Assist 360 drive cables.

TIPS AND RECOMMENDATIONS

Connect cables (Fig. 13.7.1) to their Motion Assist 360 drive sockets prior to installation of drive into in-ground container assembly.

- Restricted access to operator sockets once operator assembly is installed in container.

1. Install power cable plug into Motion Assist 360 drive power cable socket.

NOTICE

- Install plug at choke end of cable into operator socket (Fig. 13.7.2).
- Insure cable plug is fully inserted in operator socket and locked in place.

2. Install Hall sensor cable plug at shield end of cable (Fig. 13.7.2) into Motion Assist 360 drive Hall sensor socket.

NOTICE

- Install sensor cable orientated as shown in Fig. 13.7.2.
- Insure cable plug is fully inserted in operator socket and locked in place.

13.8 Install Motion Assist 360 drive mounting bracket assembly

Table 13.8.1 Motion Assist 360 drive mounting bracket

1	RX6010	Motion Assist 360 drive
2	RC6060	Motion Assist 360 drive mounting plate
4	RC6034	U-channel
5	RS6074-010	In-ground speed control
6	RC6043	Drain pipe fitting
9	RC6042	Cable tie
10	RX6005	Power cable (21)
11	RX6006	Hall sensor cable
12	RC6061	Conduit adapter mounting plate
13	RF6010	Washer, flat, 1 1/4" OD, 0.531" ID
14	RF6021	1/2 x 3/4" hex head bolt

Fig. 13.8.1 Mounting bracket assembly orientation

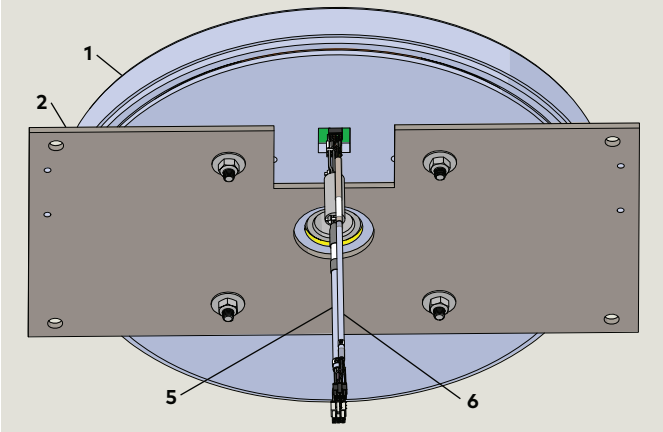


Fig. 13.8.2 Mounting plate fasteners

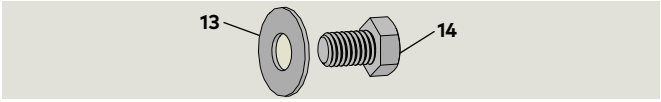
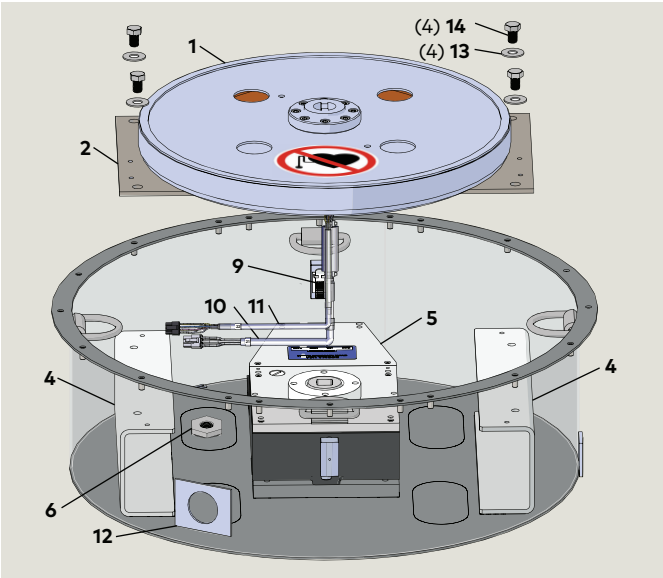


Fig. 13.8.3 Container and mounting bracket assembly



13.8.1 Remove bottom plug from speed control.

1. Remove bottom plug from speed control, (Ref. Para. 13.2) to facilitate installation of Motion Assist 360 mounting bracket assembly.

12.8.2 Install Motion Assist 360 mounting bracket assembly onto container U-channels.

WARNING

- Use caution when lifting and positioning Motion Assist drive assembly!
- Use caution when handling drive! Drive is free to turn!

1. Lower operator mounting bracket assembly onto container U-channels.

TIPS AND RECOMMENDATIONS

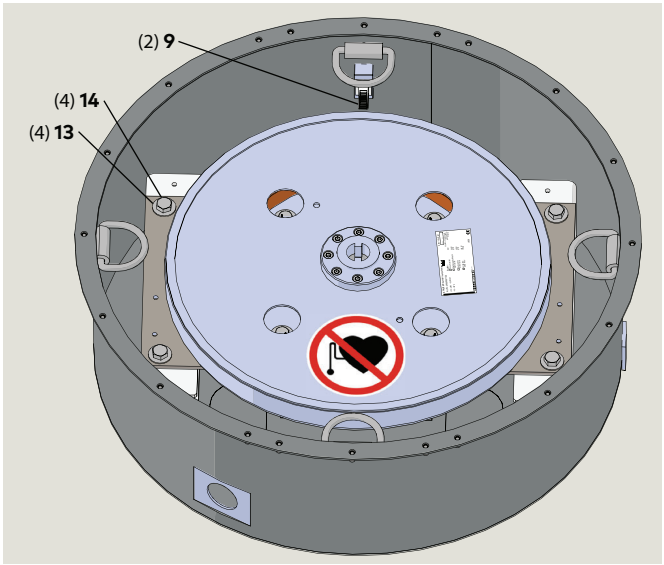
Position mounting bracket assembly for installation into container with mounting bracket orientated as in Fig. 13.8.1 and speed control orientated as shown in Fig. 13.8.3.

CAUTION

Prevent damage to cables; keep cables at side of container as assembly is lowered.

2. With 1 1/4" OD flat washer on each hex head bolt, thread four 1/2" x 3/4" hex head bolts through mounting plate slots into U-channel mounting holes
3. Snug bolts, do not tighten.
4. Secure cables to cable ties (**9**).

Fig. 13.8.4 Container and mounting bracket assembly



13.9 Install bottom plug adapter, install tape on Motion Assist 360 drive

Fig. 13.9.1 Drive flange and in-ground speed control drive shaft

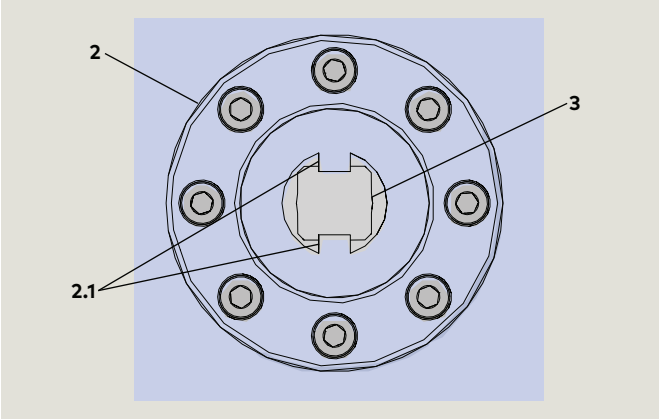


Fig. 13.9.2 Bottom plug adapter installation

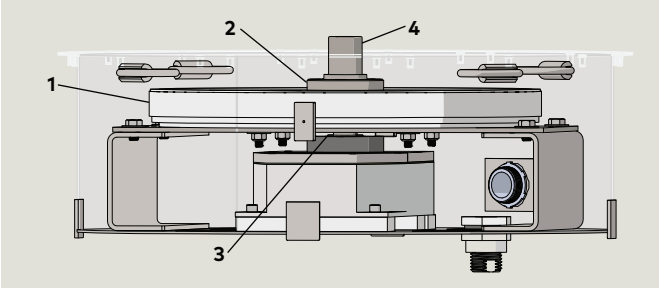


Fig. 12.9.3 Bottom plug adapter

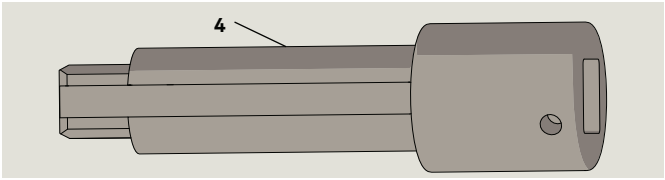


Fig. 13.9.4 Tape installation

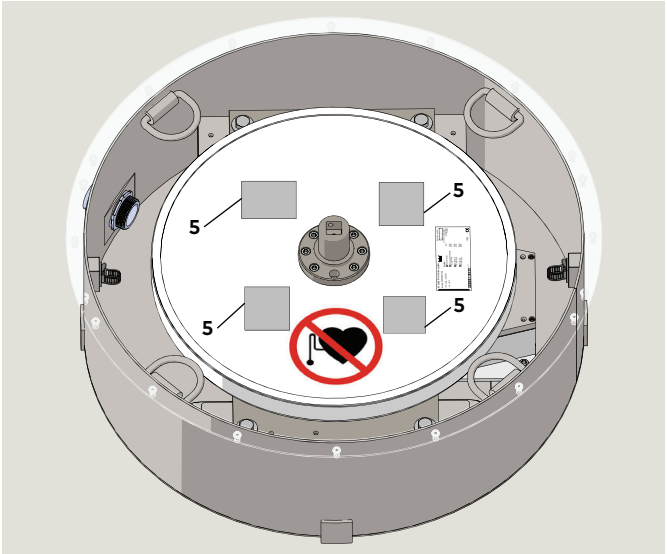


Table 13.9.1 Motion Assist 360 drive bottom plug adapter

1	RX6010-001	Motion Assist 360 drive
2	RC6025	Drive flange, 4" OD
2.1		Drive flange keys
3		Floor speed control drive shaft
4	RC6059	Center shaft bottom plug adapter
5		Foil tape

13.9.1 Align drive flange and speed control drive shafts.

1. Rotate drive to so that drive flange keys are aligned with in-ground speed control drive shaft (Fig. 13.9.1).

12.9.2 Install bottom plug adapter.

1. Adjust speed control mounting plate position and drive rotary position as required to install bottom plug adapter (Fig. 13.9.3).
2. Install bottom plug adapter through drive shaft hole and into in-ground speed control drive shaft.

TIPS AND RECOMMENDATIONS

Bottom plug lubrication.
Lubricate bottom plug with grease to facilitate plug installation through Motion Assist 360 drive and into in-ground speed control drive shaft.

NOTICE

Once installed, check bottom plug for plumb.

13.9.3 Tighten hex bolts

1. Tighten the four 1/2" x 3/4" hex bolts.

13.9.4 Install foil tape over drive mounting holes.

1. Install tape over Motion Assist 360 drive mounting holes (Fig. 13.9.4).

- Use foil tape; must have minimum temperature range of -35 to +175º F.

TIPS AND RECOMMENDATIONS

Tape installation to prevent moisture from entering Motion Assist 360 drive.

14 Enclosure post and header bar installation

14.1 Enclosure posts

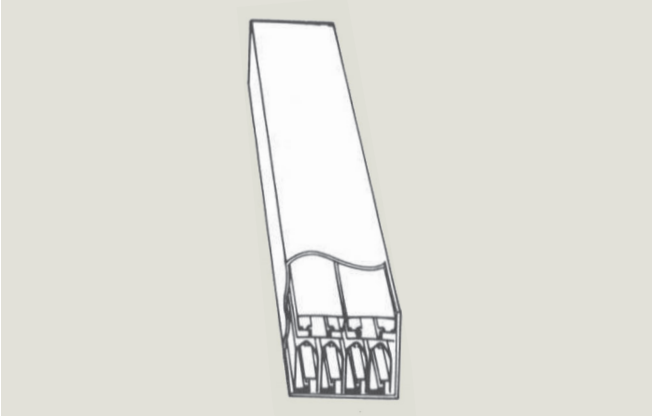
14.1.1 Crane shop drawings.

NOTICE

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

14.2 Open post shipping crate

Fig. 14.2.1 Post shipping crate



14.2.1 Center posts and quarter posts.

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

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

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

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

TIPS AND RECOMMENDATIONS

Refer to Para. 14.9 for enclosure post and base numbering example.

14.3 Quarter post/end wall and center post assemblies

14.3.1 Quarter post/end wall and center post aluminum extrusion

1 Quarter post/end wall RE6019-010
5 Center post RE6007-0X0
6 Center post bottom plate RF6007-010

Fig. 14.3.1 Quarter post/end wall

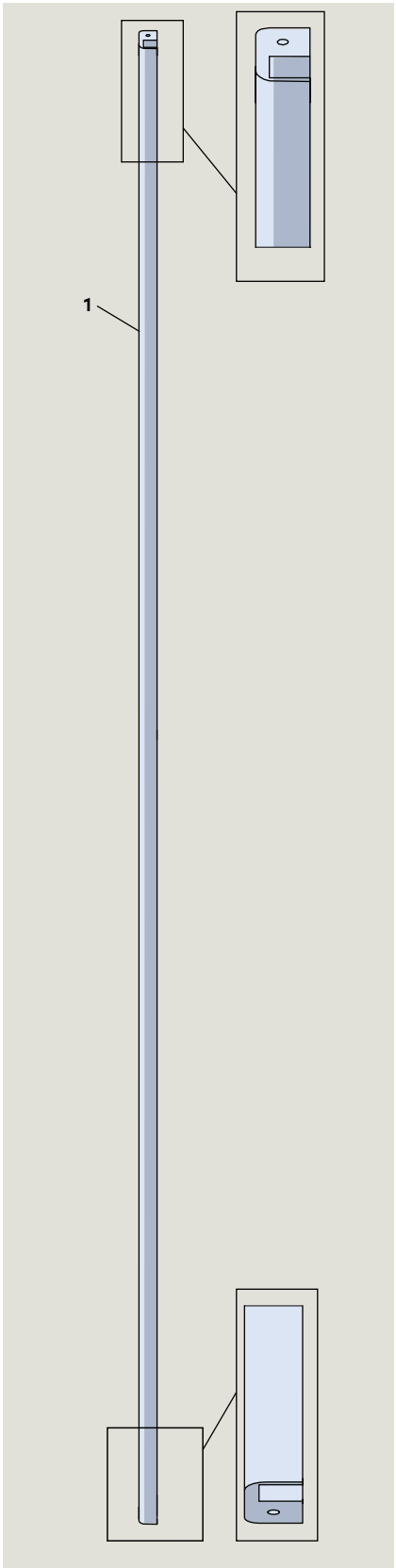
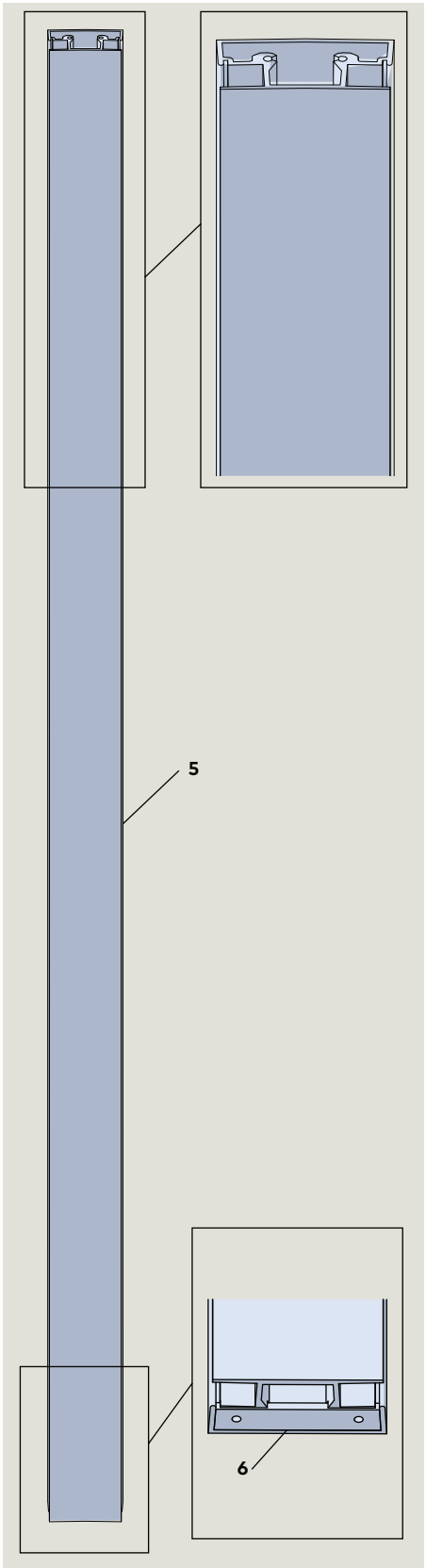


Fig. 14.3.2 Center post



14.4 Place center posts on base rails

14.4.1 Center post placement on base rails.

NOTICE

Refer to Crane shop drawings for center post placement.

CAUTION

Place center post based on post numbering.
Refer to Para. 12.9 for post numbering locations.

WARNING

Use caution while working with the posts !

Table 14.4.1 Center post and hardware

1	RF6122-01G	1/4-20 x 2" threaded rod
2	RF6007-010	Center post bottom plate
3	RE6007-0X0	Center post

Fig. 14.4.1 Threaded rod

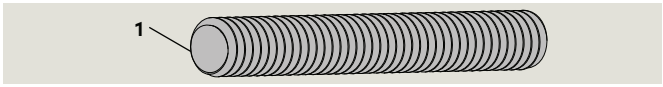


Fig. 14.4.2 Center post threaded rods installed

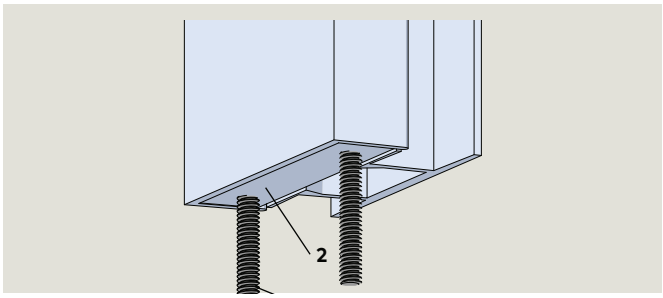
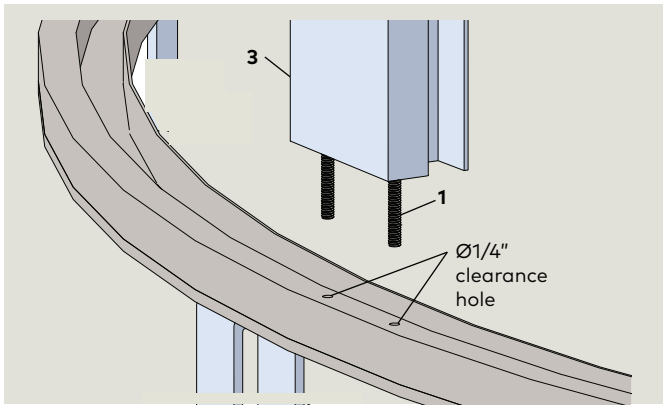


Fig. 14.4.3 Center post positioned above bottom plate



14.4.2 Shop preparation, center post installation.

1. Center post bottom plate welded into place in bottom of center post.
2. Center post bottom plate is drilled and tapped for 1/4-20 threaded rod.
3. Holes on he 1/4" floor bar and 1 x 3/4" outer bar opened to allow clearance for the 1/4-20 threaded rod.

14.4.3 Install threaded rods into center post bottom plate.

1. Thread rods into 1/4-20 tapped holes in center post bottom plate.

14.4.4 Install center post onto floor bar.

1. Raise center post vertically then lower center post onto floor bar (Fig. 14.4.3, 14.4.4).

14.4.5 Install second center post.

1. Install second center post.

Fig. 14.4.4 Center post placed on floor bar assembly

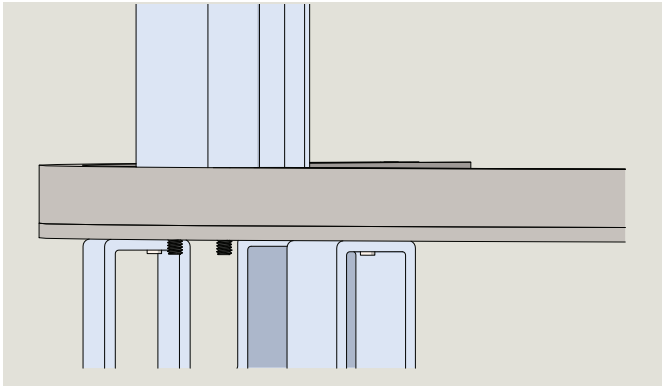
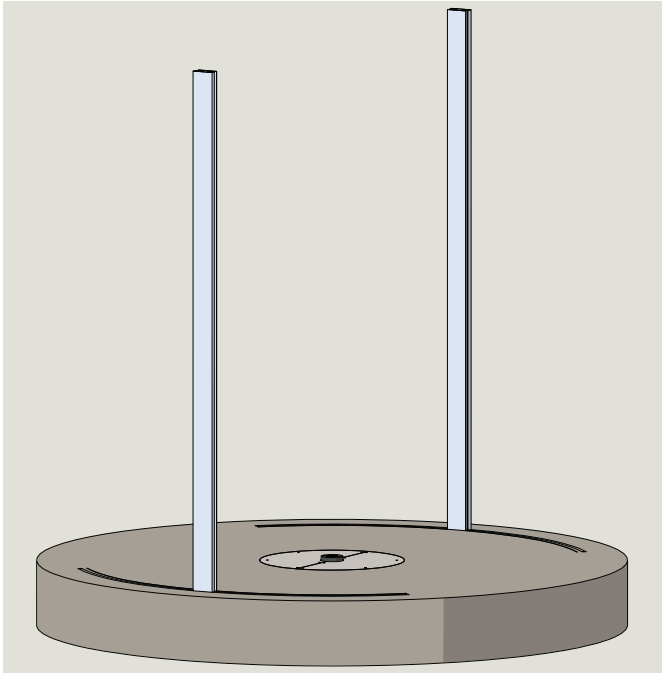


Fig. 14.4.5 Center posts on floor bars



14.5 Place quarter post/end wall on base rails

14.5.1 Quarter post placement on base rails.

NOTICE

Refer to Crane shop drawings for quarter post placement.

CAUTION

Place post based on post numbering.
Refer to Para. 12.9 for post numbering locations.

WARNING

Use caution while working with the posts !

Table 14.5.1 Center post and hardware

1	RF6122-01G	1/4-20 x 2" threaded rod
2	RE6019-010	Quarter post
3		1" x 3/4" floor bar

Fig. 14.5.1 Threaded rod

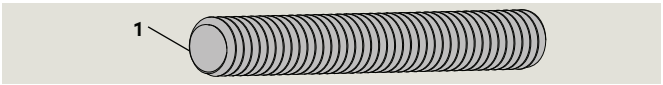


Fig. 14.5.2 Quarter post with threaded rod

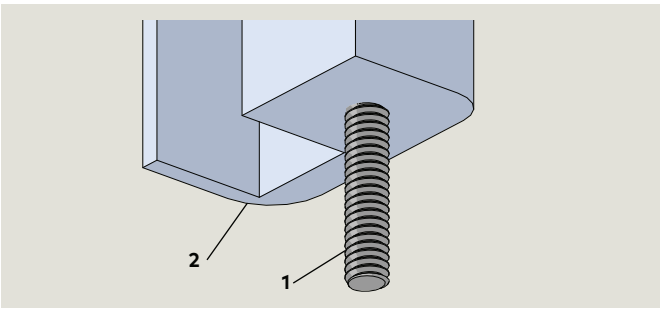
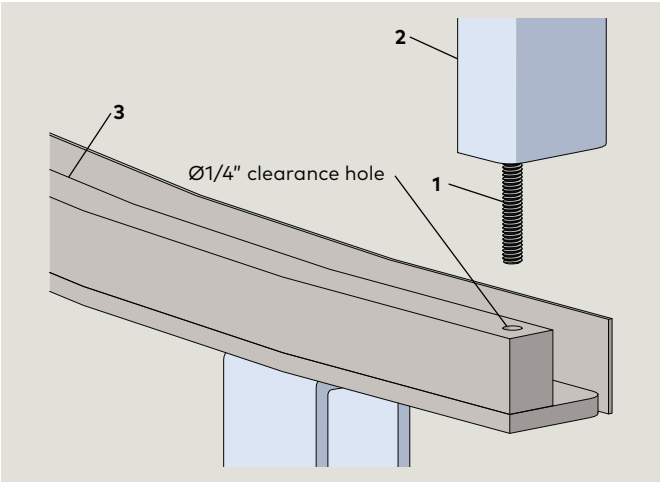


Fig. 12.5.3 Quarter post above floor bar assembly



14.5.2 Install threaded rod into quarter post.

1. 1/4-20 x 2" threaded rod serves to align quarter post with base.
2. Thread 1/4-20 by 2" threaded rod into bottom hole in quarter post.

14.5.3 Place quarter post on base rails.

1. Raise quarter post vertically, place threaded rod into floor bar and lower assembly onto floor bar.

Fig. 14.5.4 Quarter post placed on floor bar assembly

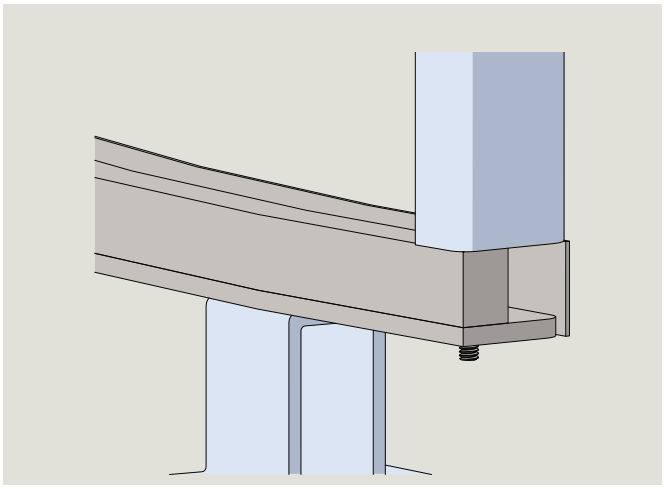
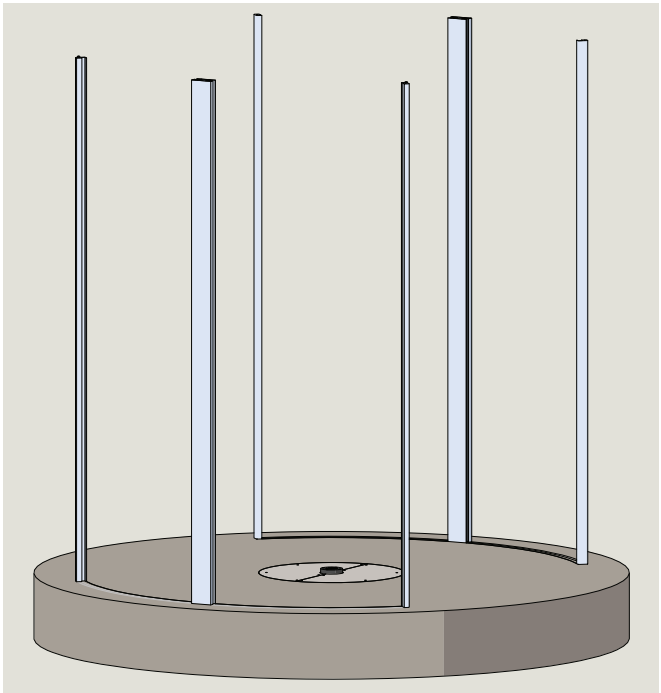


Fig. 14.5.5 Center posts and quarter posts on floor bars



14.6 Attach header bars to quarter posts

Table 14.6.1 Header bar and hardware

1	RE6019-010	Quarter post
2		Header bar assembly
5	RF6116-03G	1/4-20 x 1" Phillips FHMS

Fig. 14.6.1 1/4-20 x 1" FHMS

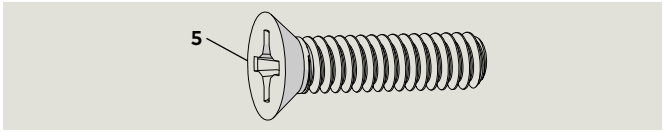
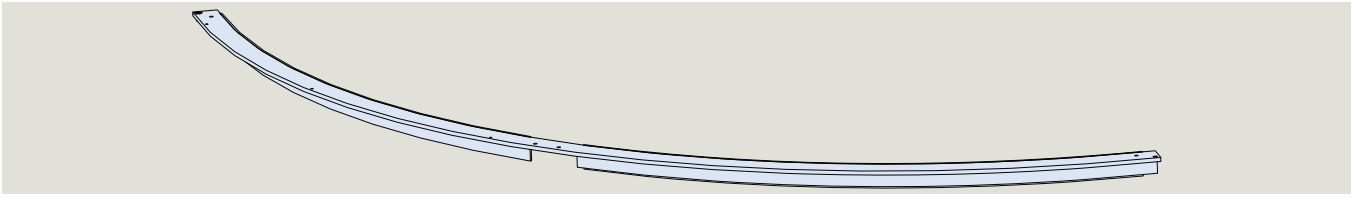


Fig. 14.6.2 Header bar assembly



NOTICE

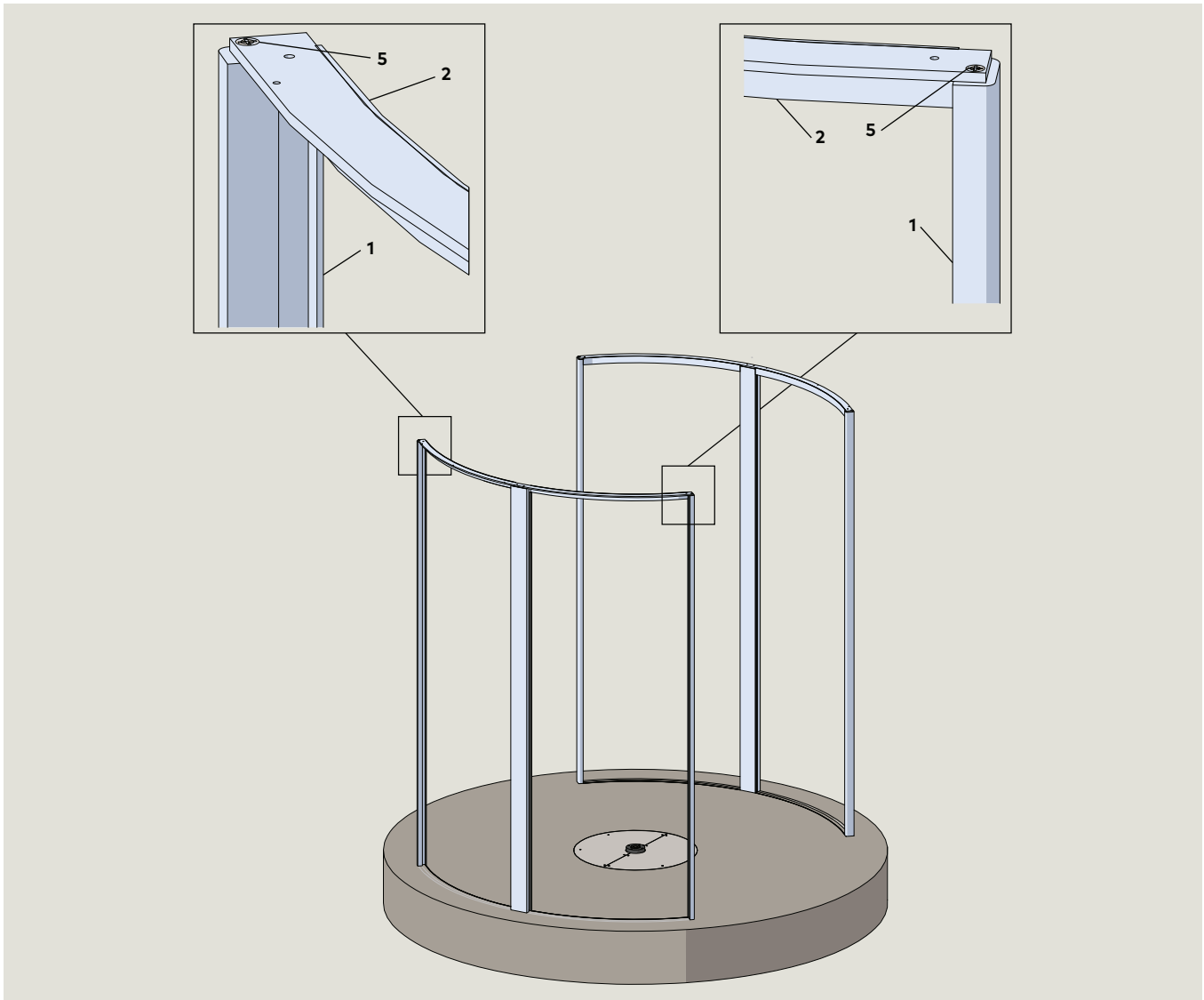
Refer to Crane shop drawings for quarter post attachment.

14.6.1 Place header bar on first set of quarter posts and center post.

1. Place header bar on first set of posts.
2. Secure header bar to each quarter post using a 1/4-20 x 1" FHMS.

14.6.2 Repeat steps 1 and 2 in Para. 14.6.1 for second header bar and quarter posts.

Fig. 14.6.3 Quarter post attachment to header bar assembly



14.7 Attach center posts to header bars

Table 14.7.1 Header bar and hardware

1	RE6019-010	Quarter post
2		Header bar assembly
4	RE6007-0X0	Center post
5	RF6116-03G	1/4-20 x 1" Phillips FHMS

Fig. 14.7.1 1/4-20 x 1" FHMS

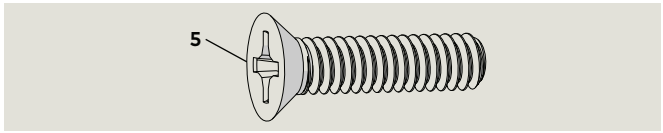
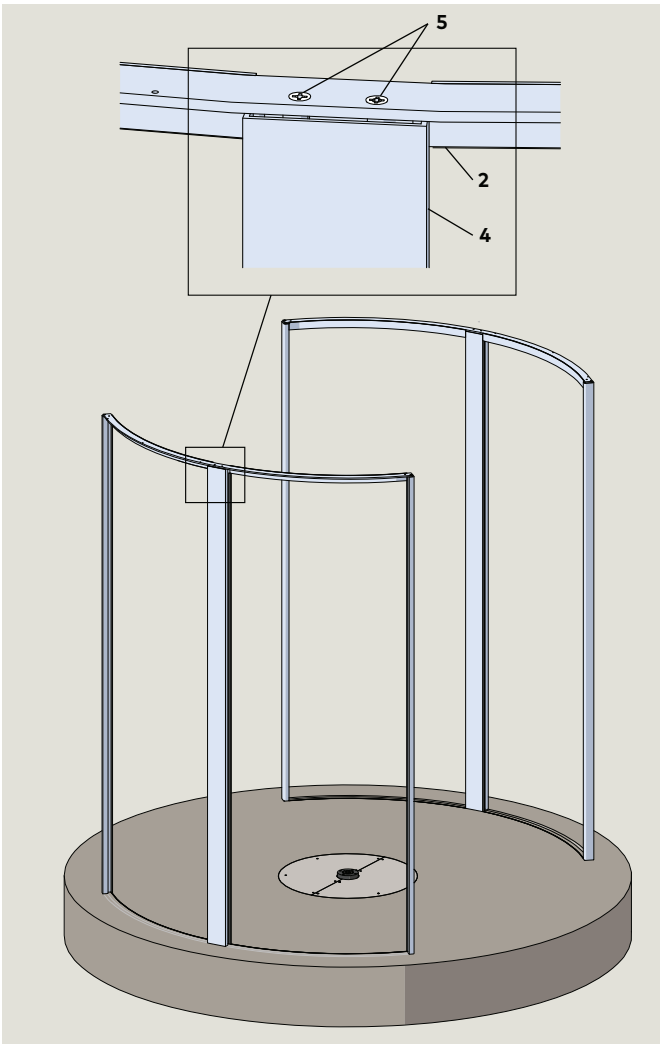


Fig. 14.7.2 Center post attachment to header bar assembly



NOTICE

Refer to Crane shop drawings for center post attachment.

14.7.1 Attach center post to header bar.

1. Attach center post to header bar using two 1/4-20 x 1" FHMS.

14.7.2 Repeat Para. 14.7.1 for second header bar and center post.

14.8 Attach Muntin assembly to header bars

Fig. 14.8.1 Muntin top, bottom and cover views

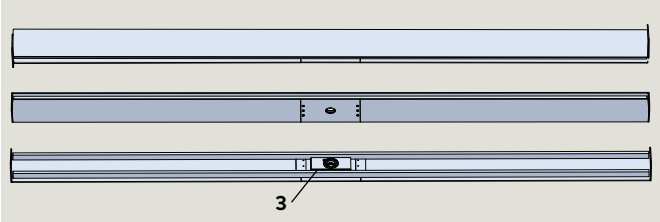


Fig. 14.8.2 Bearing assembly

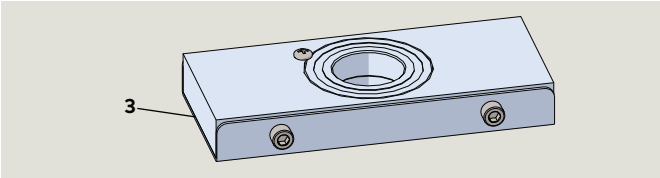
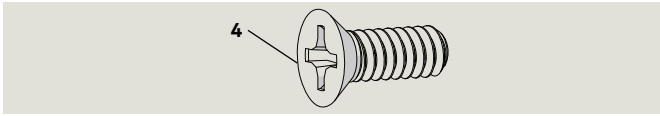


Fig. 14.8.3 10-24 x 1/2: FHMS



NOTICE

Refer to Crane shop drawings for muntin attachment to header bars.

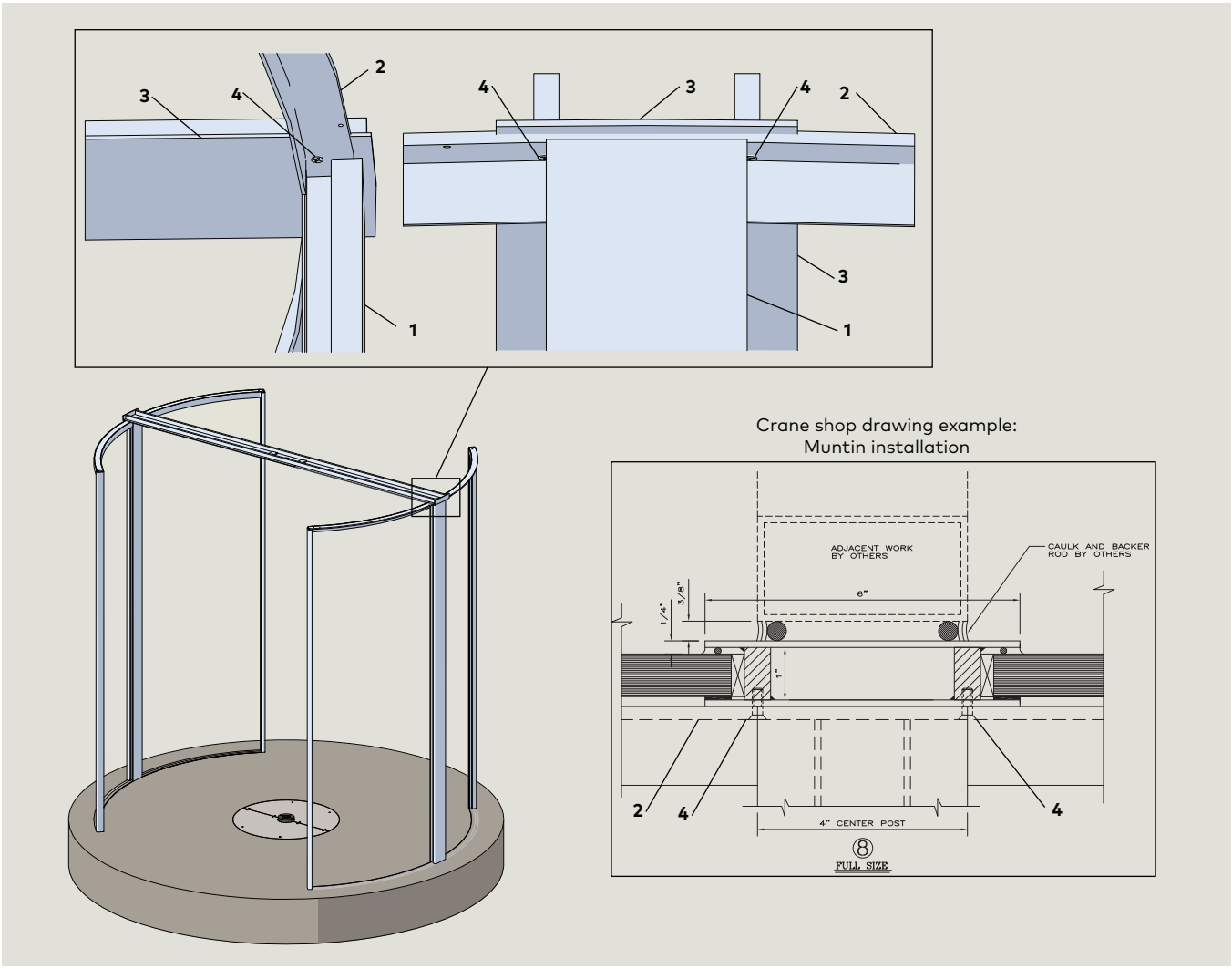
14.8.1 Attach muntin assembly to header bars.

1. Attach muntin to header bars using two 10-24 x 1/2" FHMS on each header bar (Fig. 14.8.4).

Table 14.7.1 Muntin assembly and hardware

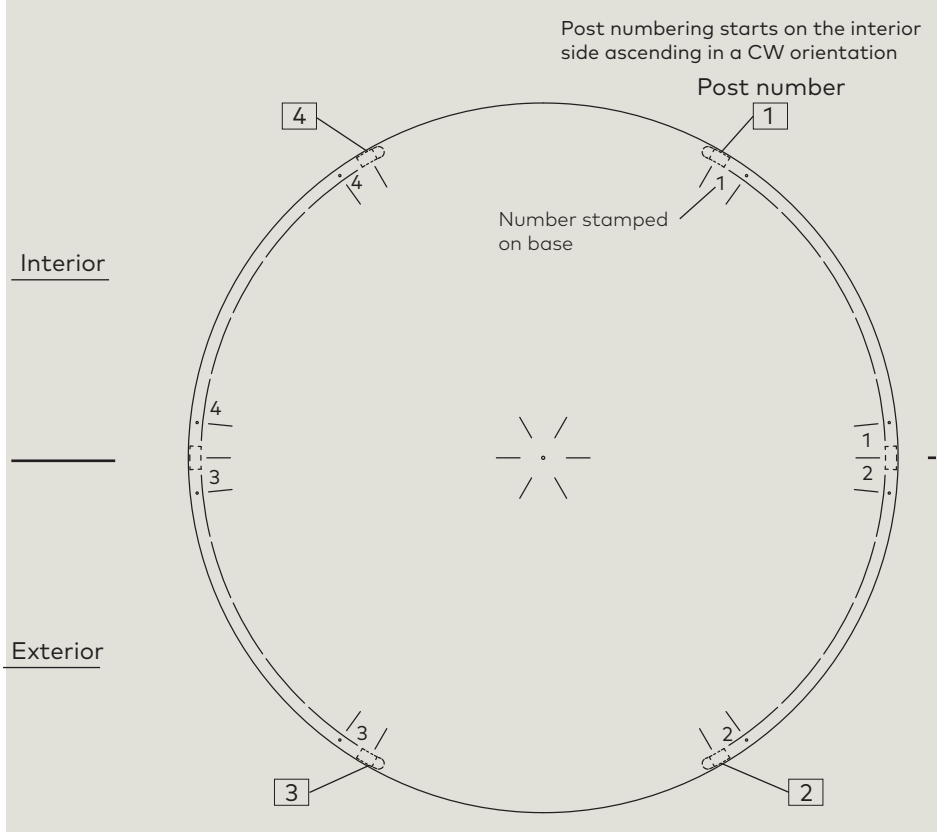
2		Muntin
3	RS6064-001	Bearing assembly
4	RF6115-03G	10-24 x 1/2" Phillips FHMS, SS

Fig. 14.8.4 Muntin attachment to header bar assembly



14.9 Enclosure base and post numbering

Fig. 14.9.1 Standard post installation numbering



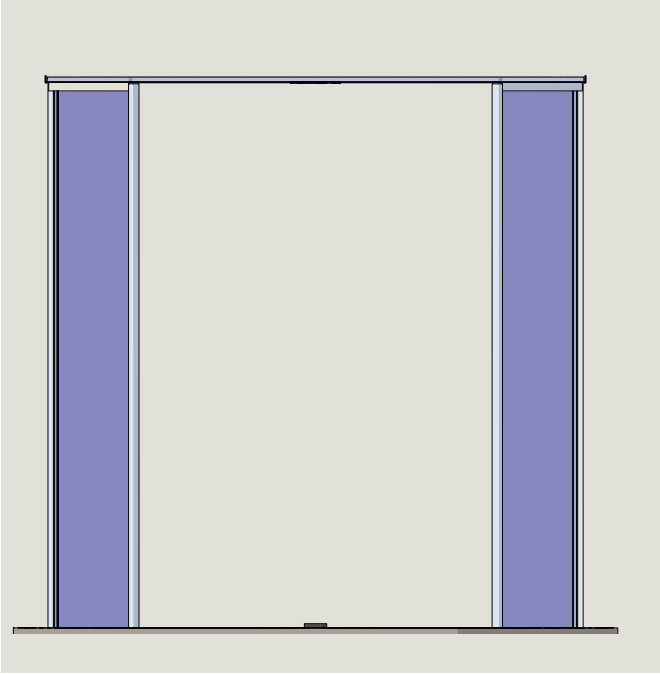
14.9.1 Post numbering, multiple revolving door installation.

Table 14.9.1 Post numbering

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

14.10 Set enclosure level, square and plumb

Fig. 14.10.1 Enclosure, check for level, square and plumb



14.10.1 Check enclosure level, square and plumb.

CAUTION

Enclosure must be level, square and plumb

CAUTION

Check revolving door to building interface!

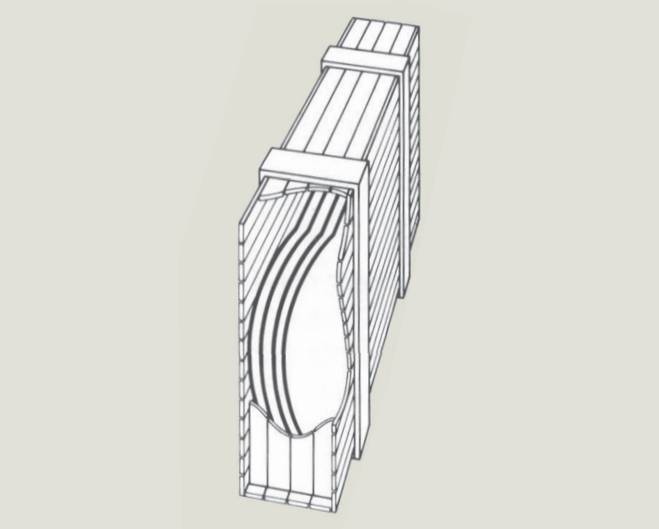
⚠ WARNING

Using plumb bob with string, verify canopy bearing centerpoint is plumb with in-ground Motion Assist 360 drive shaft centerpoint.

15 Install enclosure glass

15.1 Unpack enclosure glass shipping crate

Fig. 15.1.1 Enclosure glass shipping crate



15.1.1 Crane shop drawings.

NOTICE

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

15.1.2 Unpack shipping crate.

1. Uncrate enclosure glass from shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

CAUTION

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

CAUTION

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

WARNING

Use caution while working with enclosure glass!

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

15.2 Install glazing tape for enclosure glass

Table 15.2.1 Glazing block and glazing tape

1	Glazing block
2	Glazing tape, enclosure base
3	Glazing tape, center post
4	Glazing tape, quarter post
5	Glazing tape, header bar

Fig. 15.2.1 Enclosure base glazing block and glazing tape, center post glazing tape

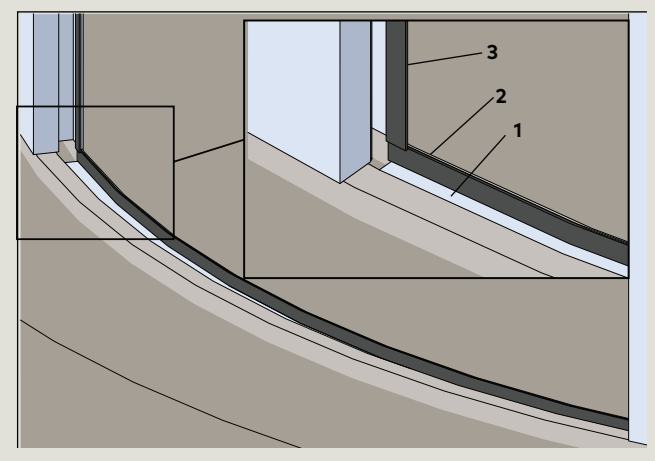


Fig. 15.2.2 Enclosure base and quarter post glazing tape

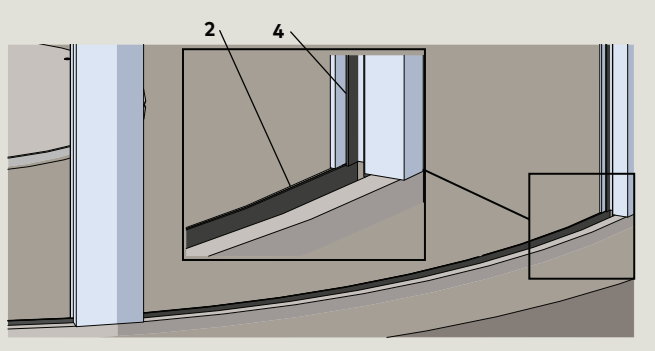
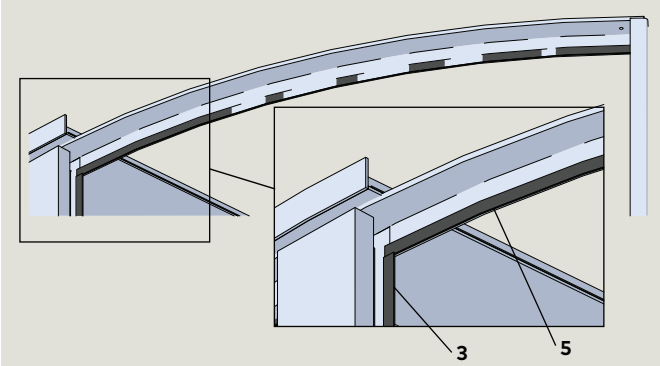


Fig. 15.2.3 Header bar glazing tape



NOTICE

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

TIPS AND RECOMMENDATIONS

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

15.2.1 Install glazing tape and glazing blocks in enclosure bases.

1. Install glazing block.
2. Install compressed 1/8" glazing tape.

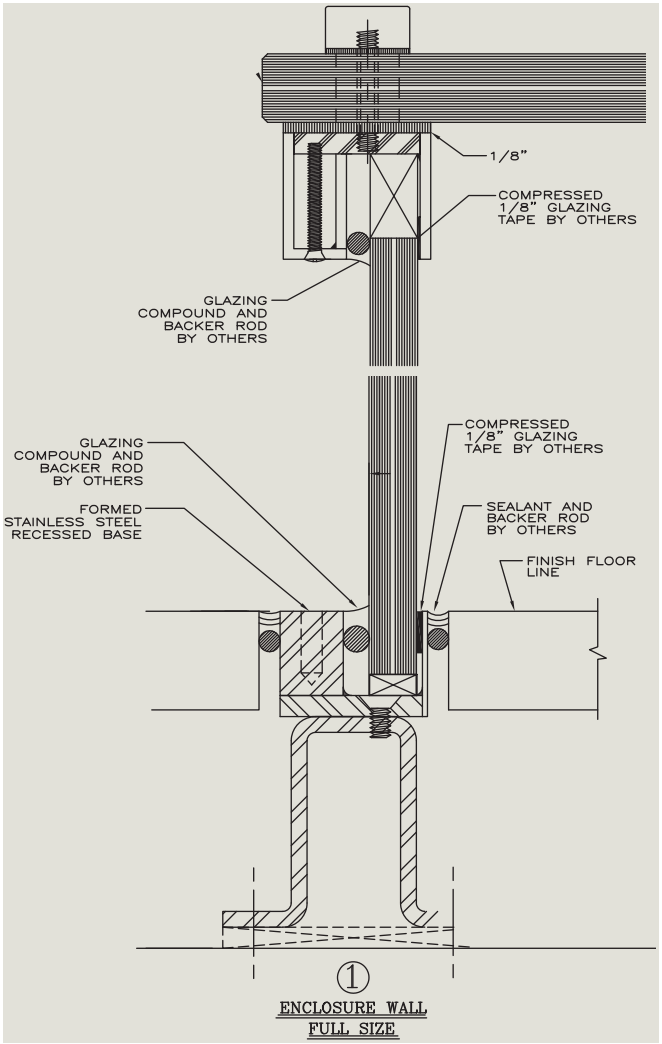
15.2.2 Install glazing tape in enclosure posts.

1. Install compressed 1/8" glazing tape in center post (Fig. 15.2.1) and quarter post (Fig. 15.2.2).

15.2.3 Install glazing tape in header bars.

1. Install compressed 1/8" glazing tape in header bars (Fig. 15.2.3)

Fig. 15.2.4 Crane shop drawing glazing tape example



15.3 Install enclosure glass

Fig. 15.3.1 Enclosure glass installation

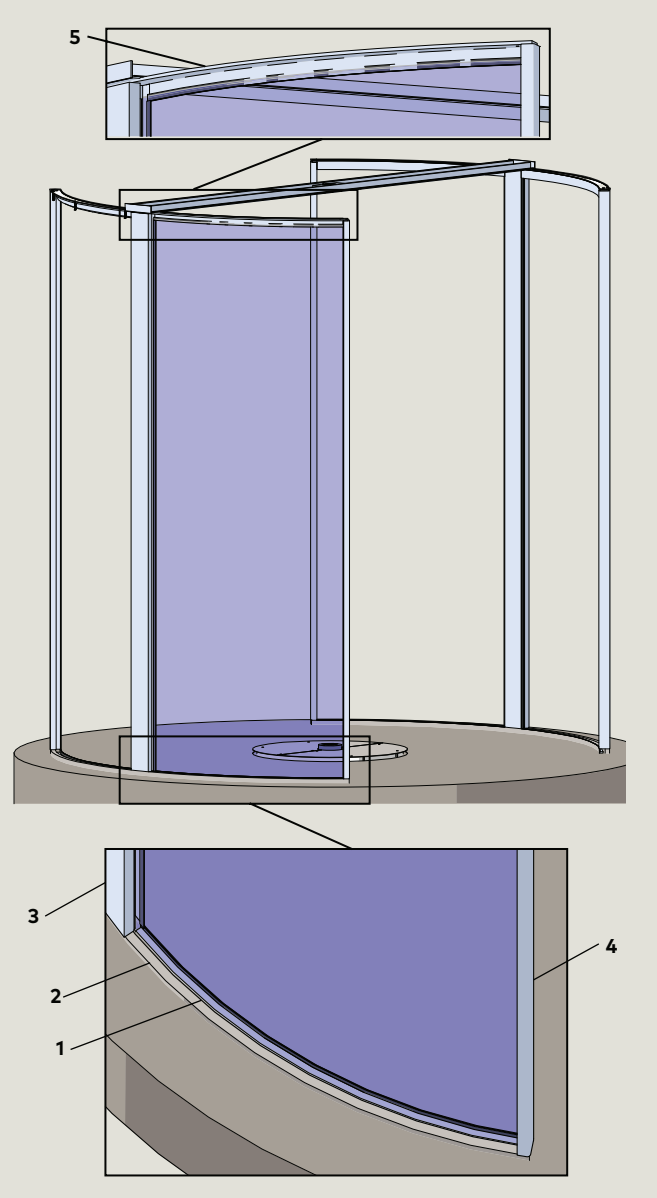


Fig. 15.3.2 Header bar glazing block

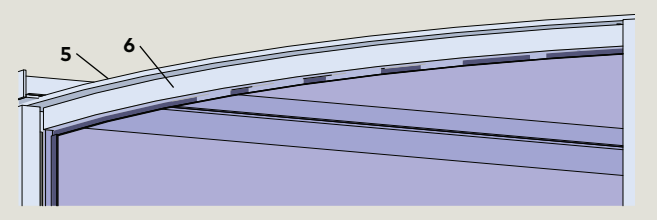


Table 15.3.1 Glazing block and posts

1	Glazing block
2	Enclosure recessed base rail
3	Center post
4	Quarter post
5	Header bar
6	1" glazing block

TIPS AND RECOMMENDATIONS

Glazing block (glass thickness) and backer rods supplied by installer.

NOTICE

Refer to Crane shop drawings for specific glazing block, backer rod and enclosure glass glazing details for job!

WARNING

Use caution while working with the glass !

15.3.1 Install glazing block in base rail.

1. Install glazing block in base rail (Fig. 15.2.4).

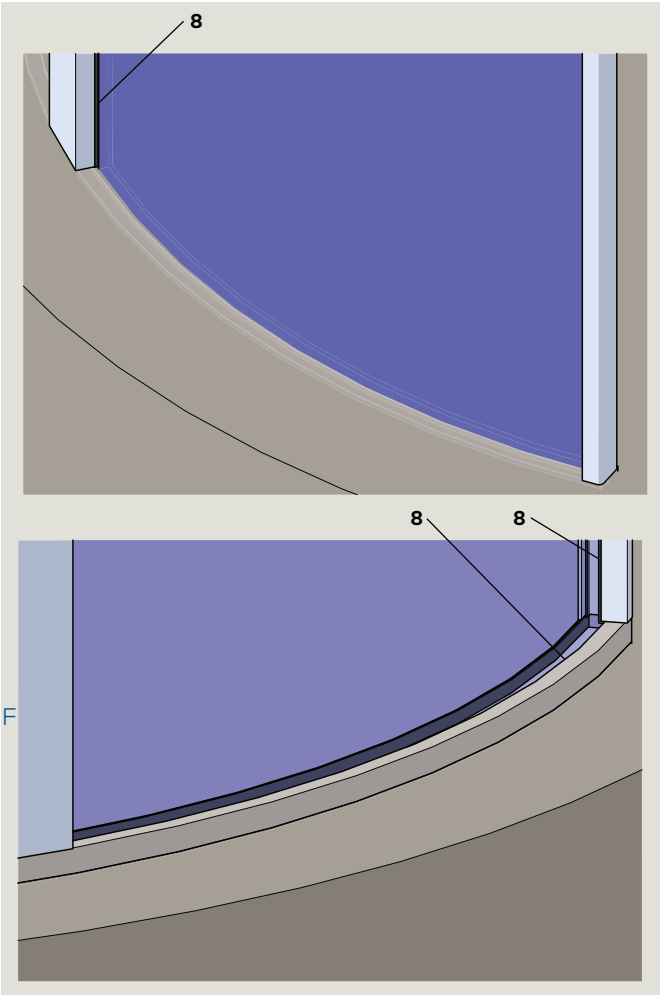
15.3.2 Set first enclosure bent glass into place.

1. Set enclosure glass into place, centering the glass between the vertical posts.

15.3.3 Install glazing block in header bar.

1. Install 1" glazing block between header bar and glass.

Fig. 15.3.3 Post and base backer rod installation



F

Fig. 15.3.4 Header cover installation

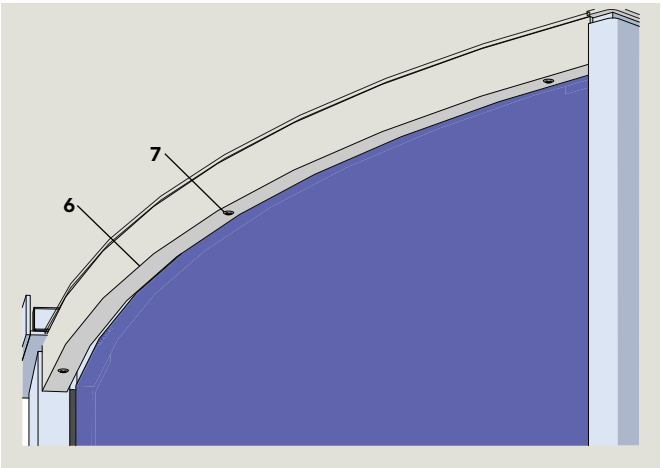


Fig. 15.3.5 Phillips OVHMS

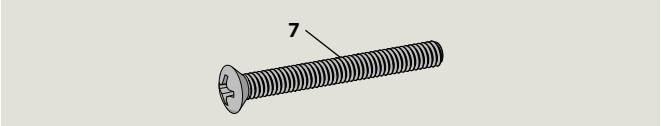


Table 15.3.2 Backer rods and header bar

6		Header bar outer angle
7	RF6123-01G	8-32 x 1 1/2" Phillips oval head machine screw
8		Backer rod (by installer)

15.3.4 Install backer rods in posts and base.

1. Install backer rods in posts and enclosure base.

- Insure posts are vertical before inserting backer rods.

15.3.5 Install header cover.

1. Install header cover using three 8-32 x 1 1/2" oval machine screws.

15.3.6 Install header backer rod.

1. Install backer rod between header cover and glass.

15.3.7 Install remaining enclosure glass.

1. Install remaining enclosure glass per paragraphs 13.3.1 through 13.3.6

15.3.8 Complete glazing of enclosure glass.

1. Finish enclosure glazing.

- Enclosure glazing per Crane shop drawings.

16 Glass canopy installation with muntin

16.1 Glass canopy and hardware

Fig. 16.1.1 Glass canopy assembly top view

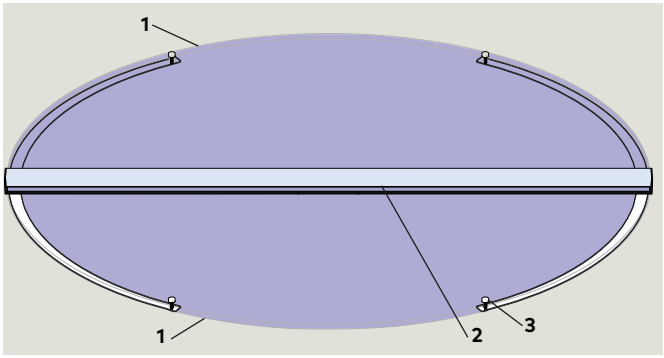


Fig. 16.1.2 Glass canopy assembly bottom view

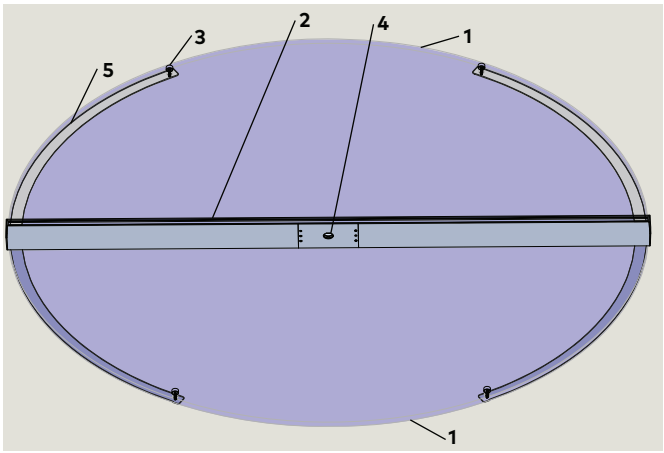


Fig. 16.1.3 Header gasket

Fig. 16.1.4 Button with rod and gasket

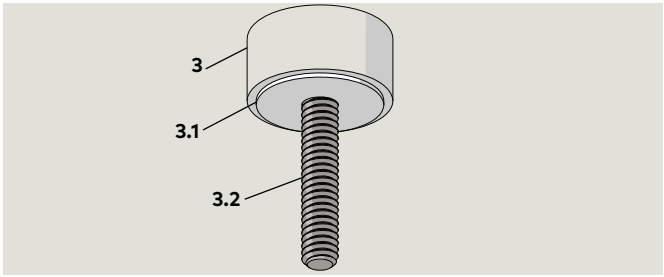
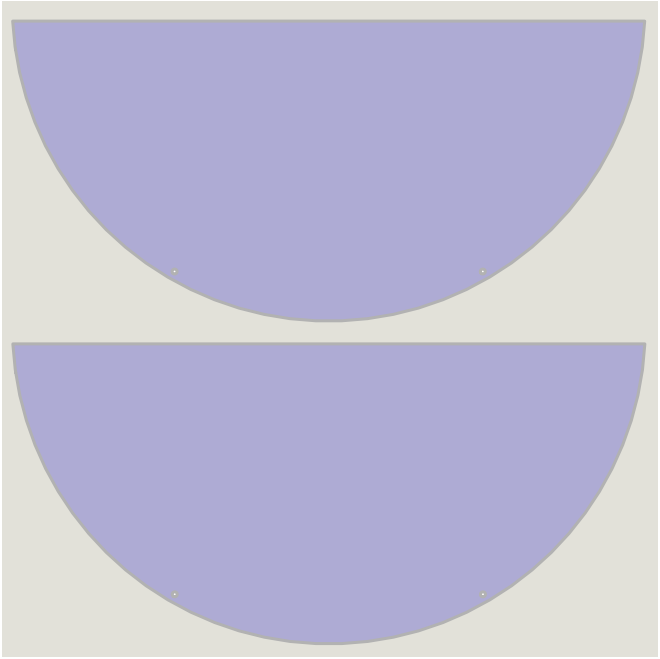


Table 16.1.1 Glass canopy and hardware

1		13/16" polyurethane laminted float glass
2		Canopy muntin assembly
3		1" diameter attachment button
3.1		Gasket
3.2		1/4-20 x 1 5/8" threaded rod
4	RS6064-001	Bearing assembly
5		Header gasket

Fig. 16.1.5 Glass canopy sections

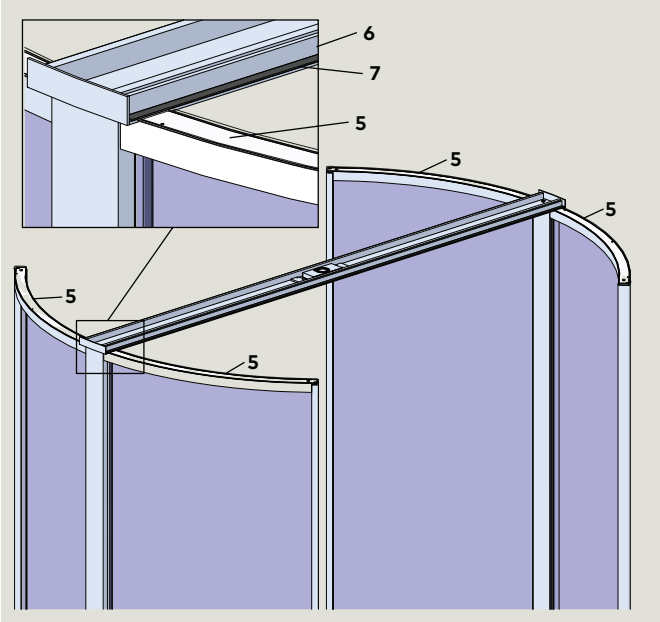


16.2 Install header gaskets, muntin glazing tape and backer rods

Table 16.2.1 Muntin backer rod, glazing tape

5	Header gasket
6	Muntin backer rod
7	Muntin glazing tape

Fig. 16.2.1 Muntin backer rod and glazing tape; header bar gasket



16.2.1 Crane shop drawings.

NOTICE

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

16.2.2 Uncrate canopy shipping crate.

1. Uncrate canopy shipping crate.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

CAUTION

Place glass canopy sections on elevated smooth surfaces.

- Prevents damage to glass surfaces.

16.2.3 Install header gaskets.

1. Install four header gaskets; two on each header bar.

TIPS AND RECOMMENDATIONS

Muntin installation.
Refer to Para. 14.8 for muntin installation.

16.2.4 Install muntin backer rods.

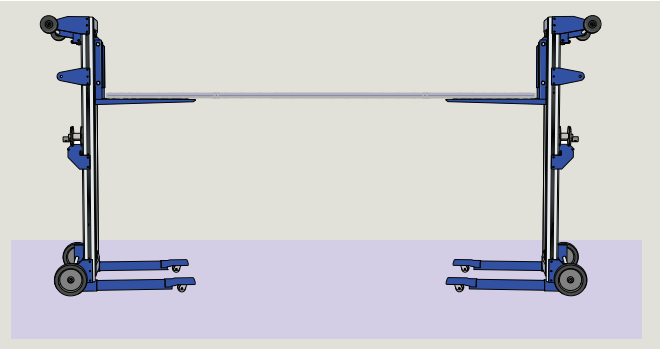
1. Install backer rod (by installer) on each side of muntin.

16.2.5 Install muntin glazing tape

1. Install glazing tape (by installer) on each side of muntin.

16.3 Canopy glass lift requirements

Fig. 16.3.1 Canopy glass on lift equipment example



WARNING

Lift equipment requirements:

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

WARNING

A minimum of two persons are required when handling canopy glass!

WARNING

Use caution when handling canopy glass!

16.4 Install canopy glass

Fig. 16.4.1 Canopy glass installation

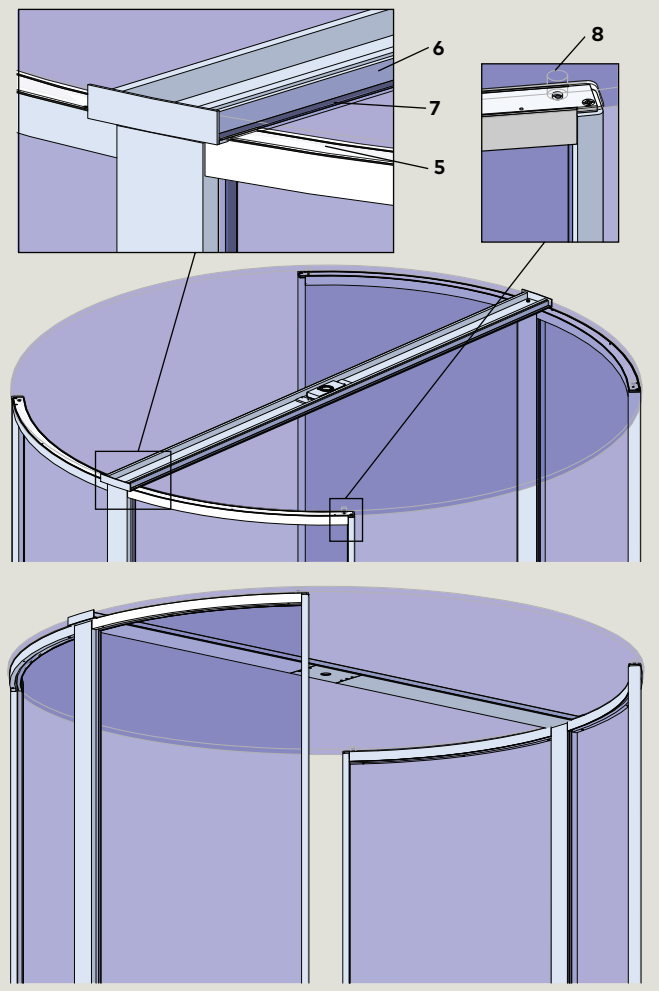


Fig. 16.4.2 Button head screws and muntin backer rods

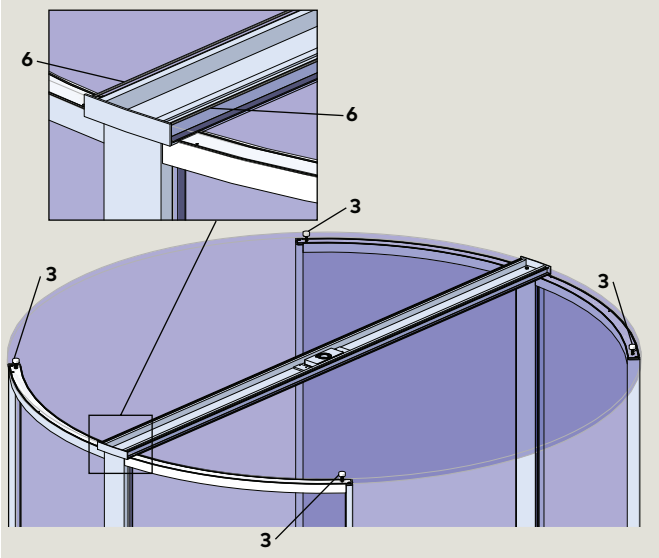


Table 16.4.1 Muntin backer rod, glazing tape

3	Button head screw
5	Header gasket
6	Muntin backer rod
7	Muntin glazing tape
8	Glass, mounting hole for button head screw

16.4.1 Install canopy glass.

NOTICE

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

NOTICE

Installer note:
Ceiling glass must be installed with thicker glass layer on bottom.

1. Raise first canopy glass section to installation height.
2. Position canopy glass over header bar gaskets and muntin glazing tape.
3. Lower canopy glass onto header bar gaskets and muntin glazing tape.
   - Glass must be against muntin backer rod.
   - Glass mounting holes for button head screws must be lined up with header bar mounting holes.
4. Repeat steps 1 through 4 for second canopy glass section.
5. Install button head screws; twp per glass section.
6. Install muntin backer rods (Fig. 16.4.2).

NOTICE

Refer to Crane shop drawings for glazing requirements at muntin.

17 Operator control hardware installation

17.1 Operator control hardware installation

Fig. 17.5.1 Operator control hardware, interior

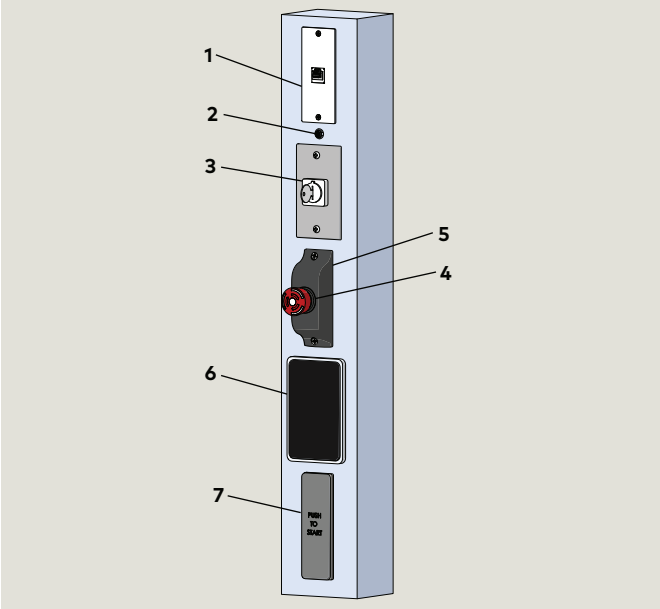


Table 17.5.1 Operator control hardware

Part / Assembly		Description
1	DX4604-08C	RH45 service panel (option)
2	RX6013	Fault LED
3	RX6008	Mode switch
4	RX3413-010	Emergency stop switch
5	RX3413-020	Emergency stop switch housing
6	DX3331-001	Wave to Open plate (option)
7	DX3339-040	Push to Start plate (option)

17.5.1 Operator control hardware.

1. Figures 14.5.1 details operator control hardware that may be installed on or adjacent to the door.

NOTICE

Locations of operator control hardware must be reviewed with site contractor or owner.

17.5.2 Remote control enclosure, wiring, setup, troubleshooting and maintenance instructions.

Refer to Manual RL6002-003 for wiring interfaces to Remote control enclosure.

18 Center shaft installation – in-ground drive and speed control

18.1 Center shaft assembly

NOTICE

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

18.2 Remove center shaft assembly from shipping crate

18.2.1 Unpack center shaft assembly from shipping crate.

- RS6060-001, 4 wing steel shaft assembly.
- RS6061-001, 3 wing steel shaft assembly.

CAUTION

Refer to warning tag on shipping crate regarding unpacking procedure.

WARNING

Use caution when lifting and positioning center shaft assembly!

TIPS AND RECOMMENDATIONS

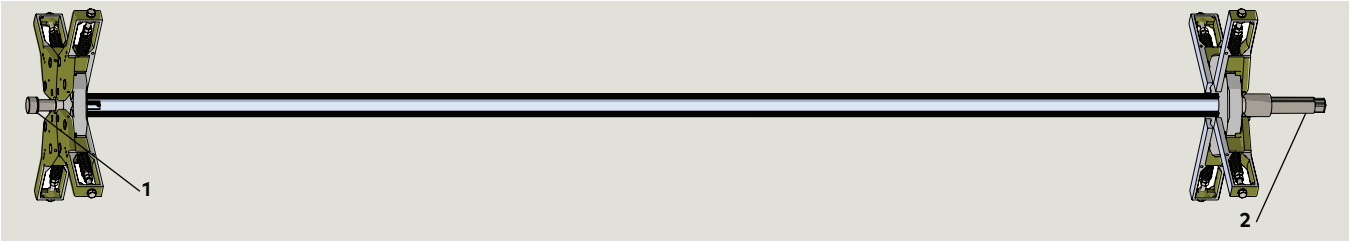
For center shaft assembly and parts detail, reference Para. 5.5 and Para. 5.8.

WARNING

Risk of injury from heavy loads!

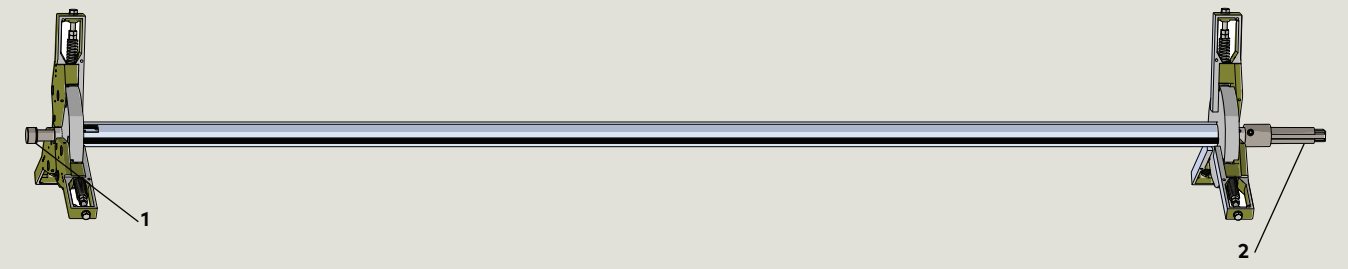
- Two persons are always required to lift or move the center shaft assembly.

Fig. 18.2.1 RS6060-001, 4 wing steel shaft assembly



1 Plug for overhead bearing
2 Bottom plug adapter

Fig. 18.2.2 RS6061-001, 3 wing steel shaft assembly



1 Plug for overhead bearing
2 Bottom plug adapter

18.3 Lower center shaft top plug

Table 18.3.1 Center shaft top plug and job tag hardware

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

Fig. 18.3.1 Center shaft top plug and job tag

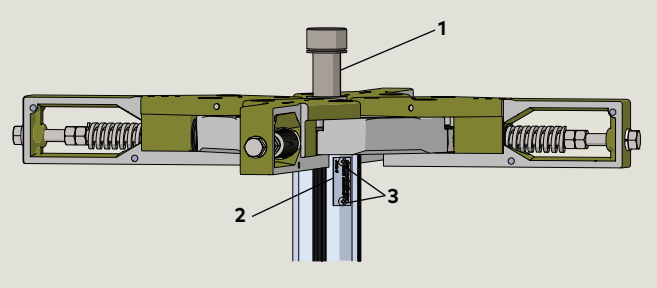


Fig. 18.3.2 Nameplate / job number tag removed

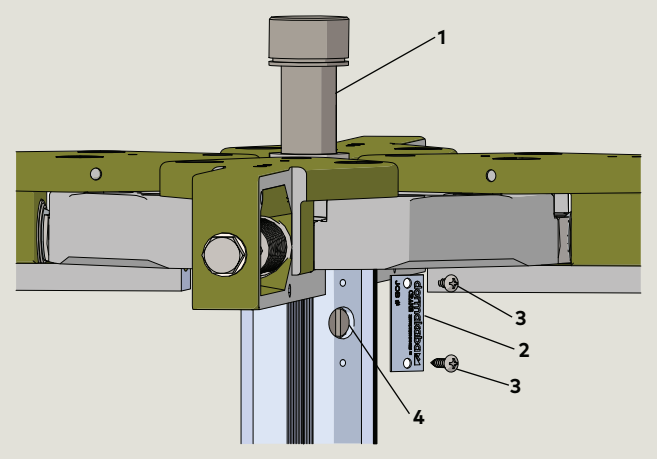
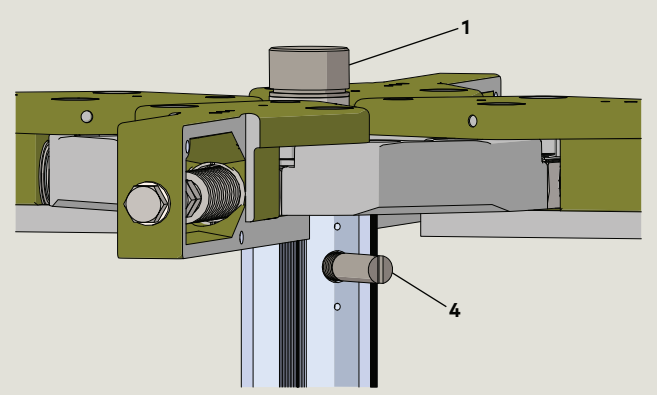


Fig. 18.3.3 Top plug lowered against steel center shaft



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.

18.3.1 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. 18.5.

16.3.2 Lower top plug.

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

TIPS AND RECOMMENDATIONS

Apply anti-seize lubricant to top plug shaft.

3. Insert top plug in shaft and lower until square portion of plug is against steel center shaft (Fig. 18.3.3).
4. Snug cross pin against top plug.

18.4 Install center shaft bottom plug into bottom plug adapter

Table 18.4.1 Bottom plug and speed control

Part / Assembly		Description
1	RS6060-001	Steel center shaft, 4 wing, floor speed control
2	RC6069	Bottom plug adapter, in-ground Motion Assist 360 drive and speed control
3	RC6082-001	Center shaft bottom plug
4	RS6074-010	Floor speed control assembly
5	RX6010	Motion Assist 360 drive
6	RF6059-01C	5/16-18 x 1/2" SHCS, black oxide

Fig. 18.4.1 Bottom plug above bottom plug adapter

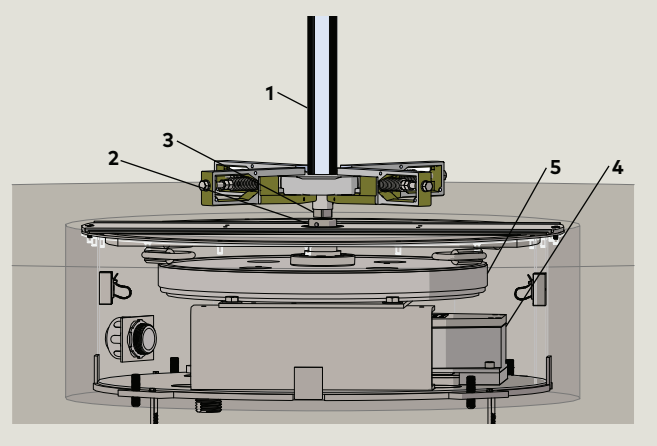


Fig. 18.4.2 Bottom plug inserted in bottom plug adapter

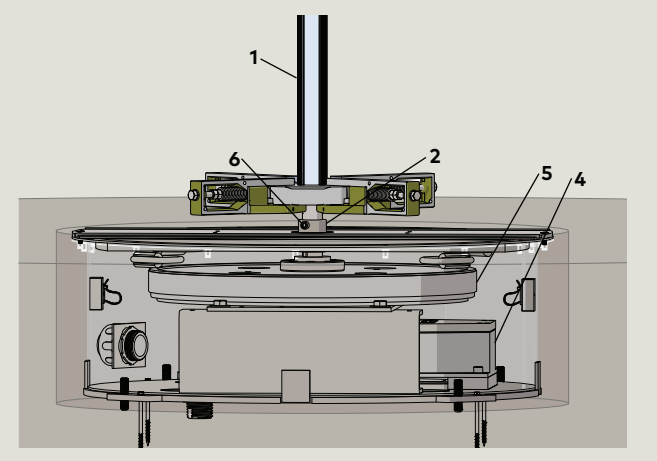
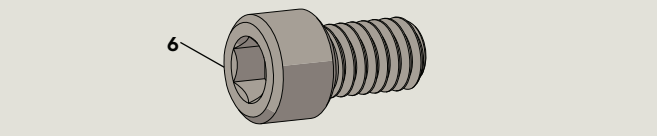


Fig. 18.4.3 5/16 x 1/2" socket head cap screw



18.4.1 Raise center shaft to vertical position.

1. Raise center shaft assembly and position bottom plug over bottom plug adapter.

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 18.3) to install center shaft assembly.

TIPS AND RECOMMENDATIONS

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

TIPS AND RECOMMENDATIONS

Grout not shown in cement box.

18.4.2 Lower center shaft bottom plug into bottom plug adapter.

1. Rotate center shaft assembly as required to orient bottom plug to bottom plug adapter.
2. Lower center shaft bottom plug into bottom plug adapter.
3. Thread 5/16 x 1/2" SHCS into bottom plug adapter and tighten.

18.5 Install center shaft top plug into canopy bearing assembly

Fig. 18.5.1 Align center shaft with top bearing

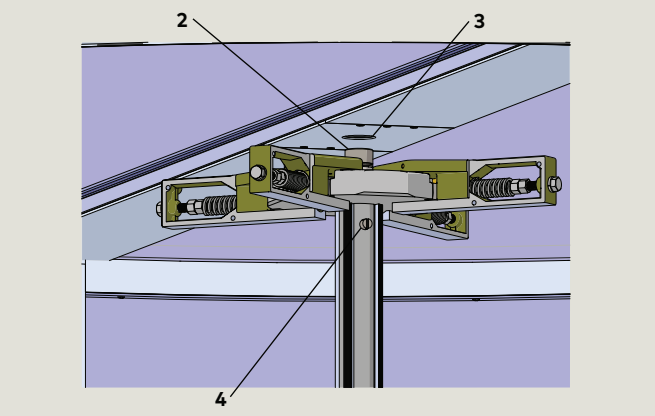


Fig. 18.5.2 Top plug inserted into bearing assembly

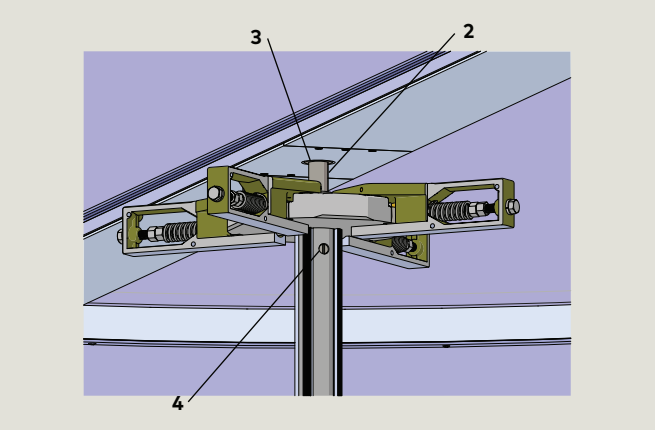


Fig. 18.5.3 Nameplate installed

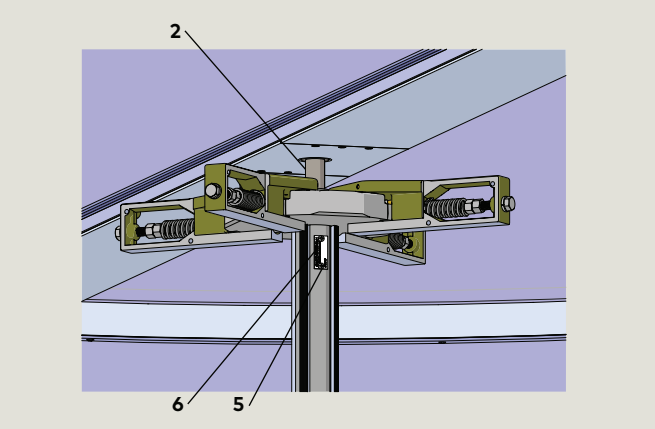


Fig. 18.5.4 6-32 x 1/2" Phillips pan head screw

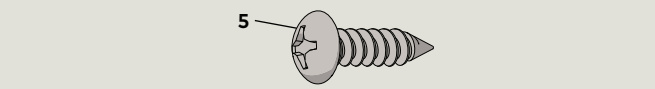


Table 18.5.1 Center shaft top plug and job tag hardware

Part / Assembly		Description
2	RC6076-001	Top plug, steel shaft
3	RD6001-001	Bearing assembly
4	RF6052-010	Steel shaft cross pin
5	RF6008-01G	#6 x1/2" SS Phillips pan head screw
6	RD6001-001	Nameplate.job tag

18.5.1 Install center shaft assembly top plug into bearing.

1. Align center shaft top plug with top bearing assembly ball bearing.
2. Loosen set screw and extend top plug into top bearing.
3. Tighten set screw.

- If set screw was removed, align set screw mounting holes to install set screw.

18.5.2 Install nameplate, job number tag.

1. Place nameplate, job number tag over set screw and secure with two 6-32x1/4" Phillips pan head screws.

CAUTION

Nameplate and job number tag must be reinstalled. Tag job number is important reference number for any future service work.

18.5.3 Set hanger initial bookfold tension.

Go to Chapter 19, Set hanger initial bookfold tension.

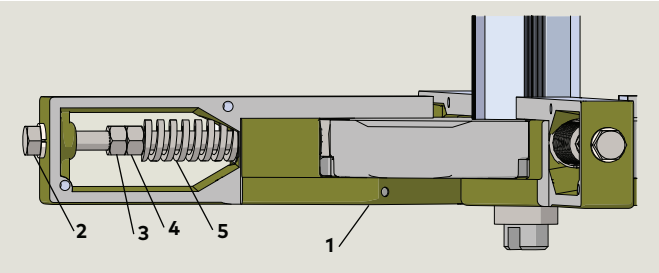
19 Set initial hanger breakout tension

19.1 Set hanger initial hanger breakout tension

Table 19.1.1 Hanger assembly

Part / Assembly		Description
1	RS6045-020	Hanger assembly
2	RC6156-01G	H bolt, 3/8 x 4"
3		3/8-16 hex nut
4		3/8-16 hex nut
5		Spring

Fig. 19.1.1 Hanger breakout tension adjustment



19.1.1 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.

19.1.2 Initial breakout hanger tension.

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

19.1.3 Remaining hangers.

1. Repeat hanger tension adjustment for remaining seven hangers.

20 Wing installation

20.1 Unpack wing shipping crate

Fig. 20.1.1 Wing shipping crate

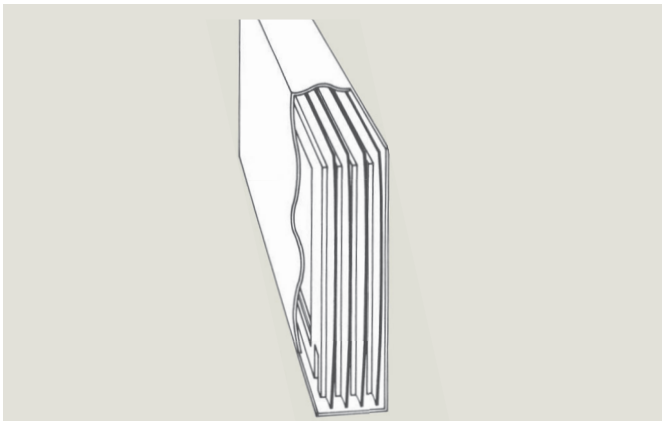


Fig. 20.1.2 Wing assembly example

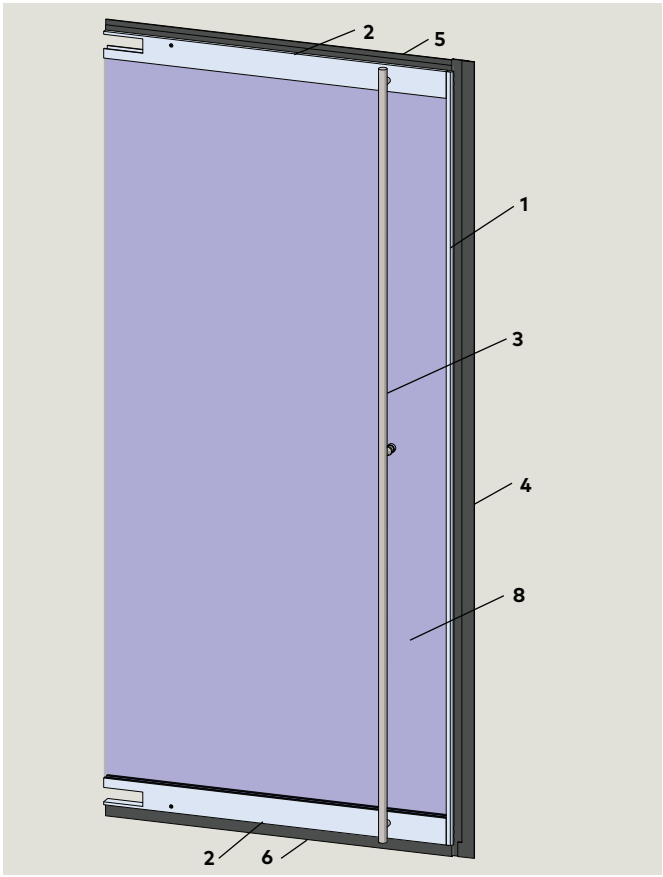


Table 20.1.1 Door wing assembly and part examples

Part / Assembly		Description
1	RE6038-0X0	Front stile, Herc, AL Blk
2	RE6026-0X0	Rail end, Herc
3		Wing glass
4		Sweep felt vertical
5		Sweep felt top
6		Sweep felt bottom
7	RF2961	Wing bumper assembly (not shown)
8		Wing push bar Push bars ordered job specific for each order
9	76019184	Cylinder assembly

20.1.1 Crane shop drawings.

NOTICE

Refer to Crane shop drawings for specific wing and wing installation details for job!

20.1.2 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!

20.2 Install wings onto center shaft hangers

Fig.20.2.1 First wing installation

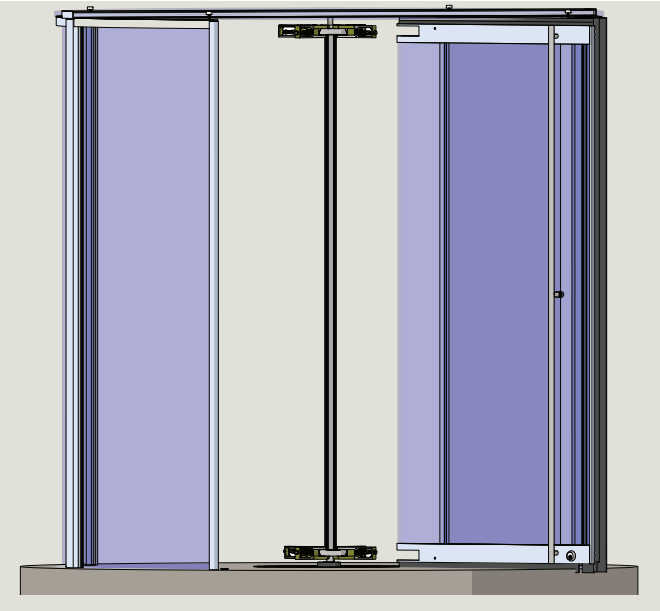


Fig. 20.2.2 Wing and hanger mounting holes

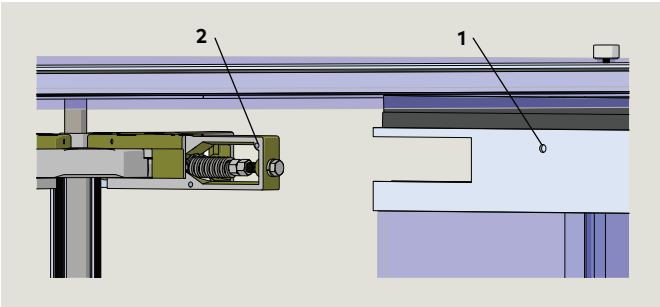


Fig. 20.2.3 Wing installation on hanger

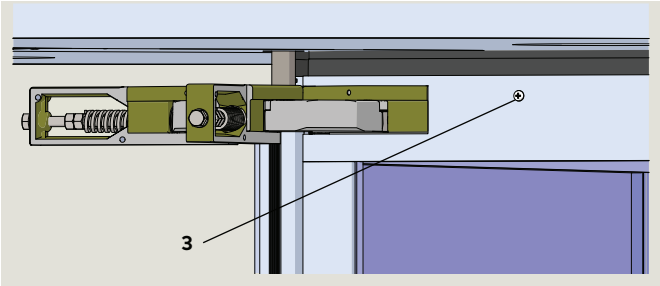


Fig. 20.2.4 Truss head machine screw

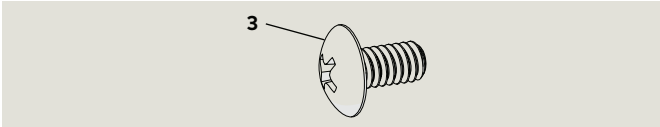


Table 20.2.1 Wing mounting holes and hardware

Part / Assembly	Description
1	Wing mounting hole, both sides
2	Hanger mounting hole, both sides
3 RF6119-01G	1/4-20 x 1/2" Truss head machine screw

20.2.1 Install first wing on center shaft hangers.

CAUTION

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

WARNING

Use caution installing wing assemblies!

WARNING

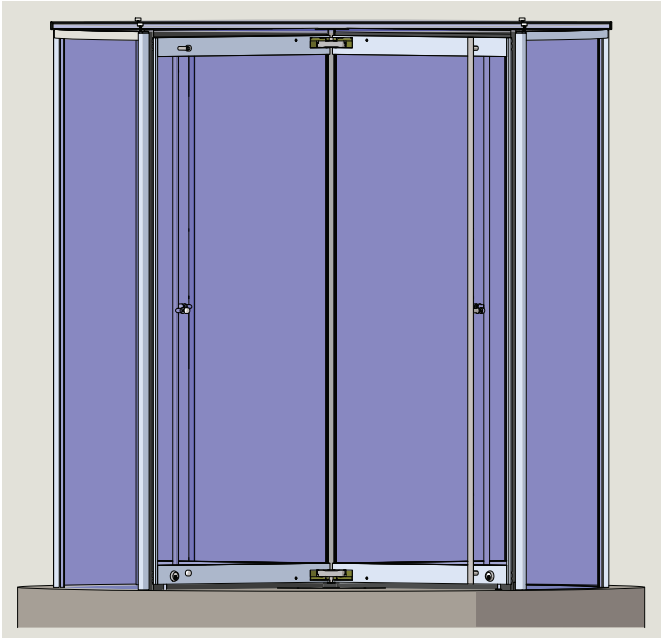
Risk of injury due to improper handling of wing assemblies!
A minimum of two people are required to lift and transport wing assemblies.

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

20.2.2 Install remaining wings on center shaft hangers.

1. Install remaining wings.

Fig. 20.2.5 4 wing door –wings installed on hangers



21 Install floor strikes

21.1 Install floor strikes

Table 21.1.1 Wing locks and floor strikes

Part / Assembly		Description
1		Wing lock
2	RC6265-0X0	Floor strike

Fig. 21.1.1 Floor strike RC6265-0X0

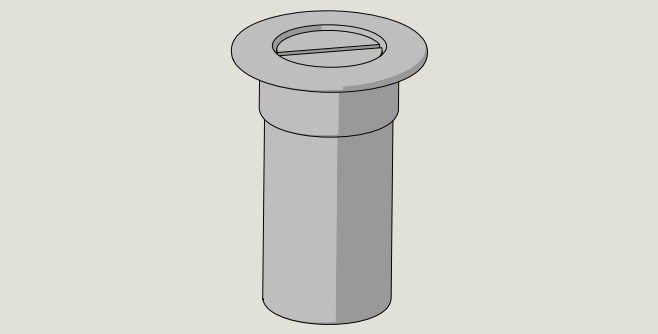


Fig. 21.1.2 4 wing door, wing locks

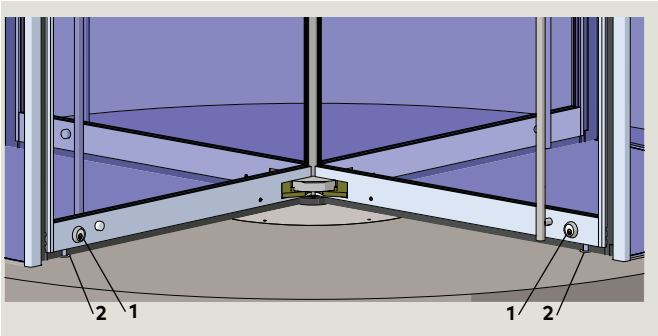
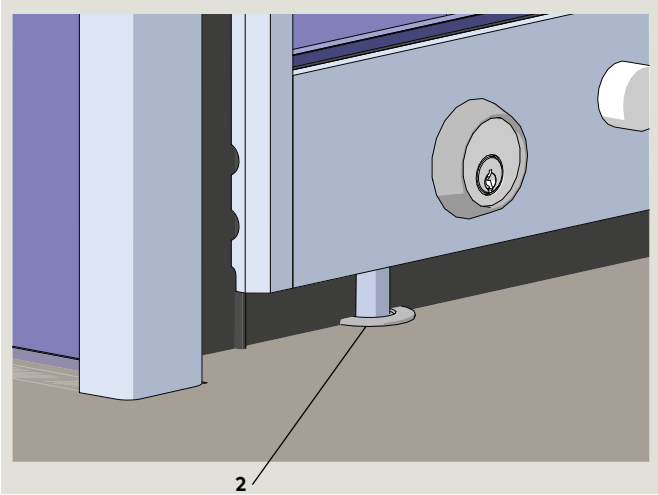


Fig. 21.1.3 Floor strike installed



21.1.1 Home position.

1. Rotate wings to home position.

21.1.2 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.

21.1.3 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.

21.1.4 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.

21.1.5 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.

22 Check wing breakout force, bookfold operation

22.1 Check breakout force

Table 22.1.1 Hanger assembly

Part / Assembly		Description
1	RS6045-020	Hanger assembly
2	RC6156-01G	H bolt, 3/8 x 4"
3		3/8-16 hex nut
3.1		3/8-16 hex nut
4		Spring

Fig. 22.1.1 Wing in bookfold position

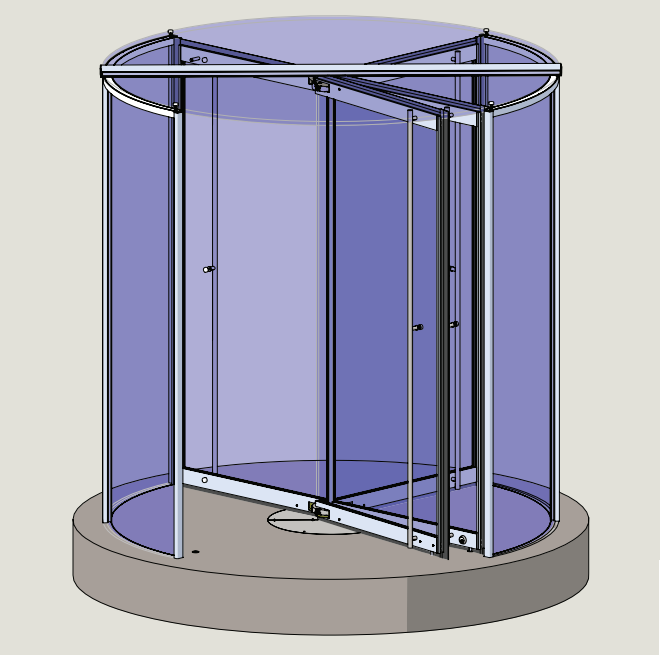
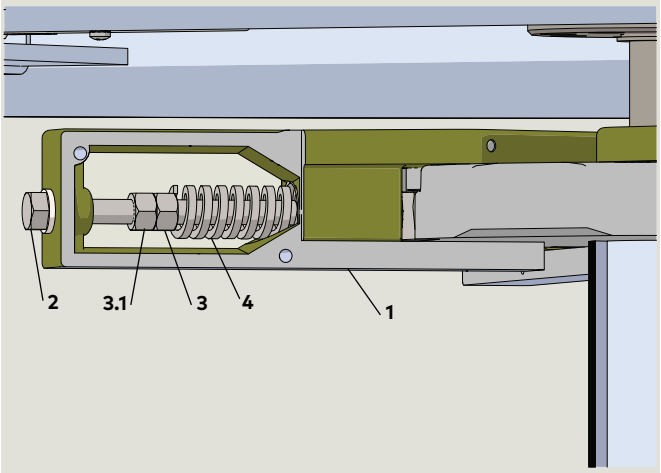


Fig. 22.2.2 Hanger tension adjustment



22.1.1 Breakout force.

NOTICE

ANSI/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 19.

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 .

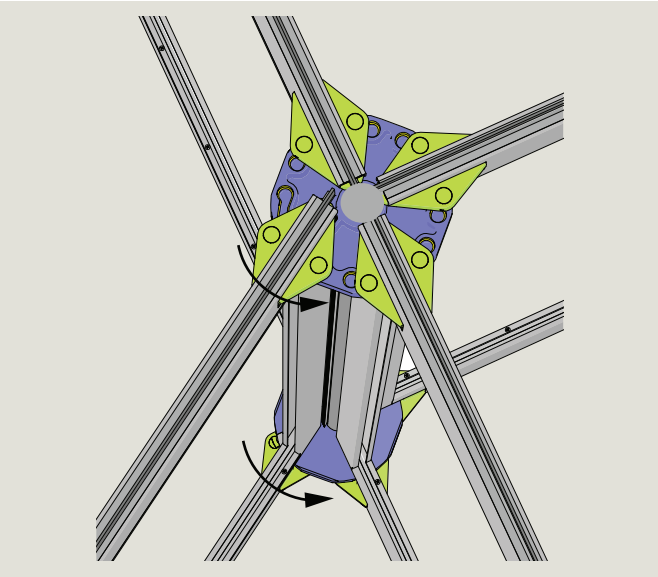
- Use open end 9/16" box wrench for tension adjustment.
- Monitor number of hex nut turn adjustments made so that the same number of adjustments can be made on the lower hanger.

- **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. 22.2.3 Door wing in breakout position

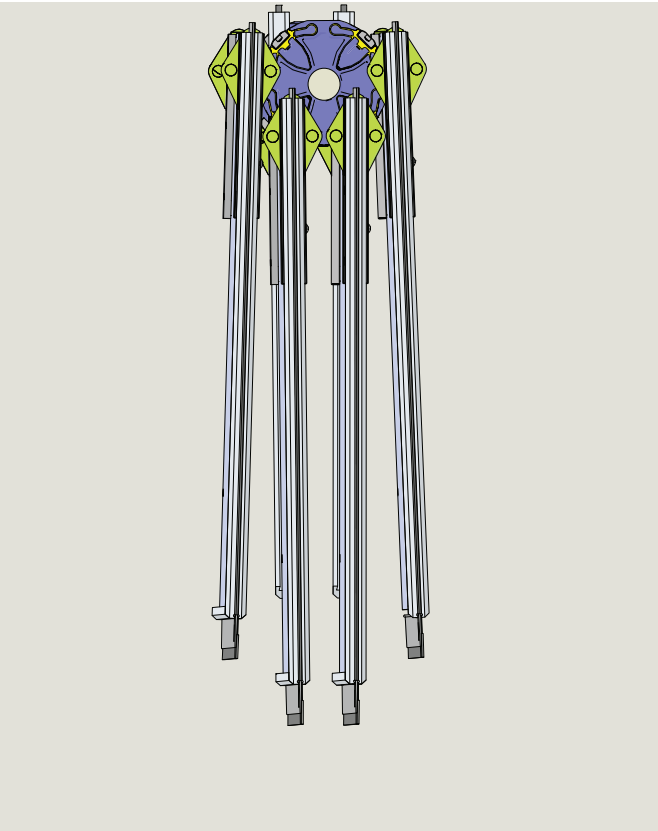


22.1.5 Breakout force, remaining wings.

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. 21.1.1.

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.

This page left intentionally blank.

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