

# Crane 2000LE and 3000LE

Overhead Motion Assist 360 drive

Floor speed control

## Owner's Manual

RL6000-007 – 05-2022

| EN |

 **Crane**  
dormakaba Group

**dormakaba** 

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# 1 General information

## 1.1 Owner's Manual

This Owner's manual applies to Crane 2000LE and 3000LE manual revolving doors with:

- Overhead Motion Assist 360 drive
- In-ground speed control.

## 1.2 Manual storage.

This document must be kept in a secure place, and accessible for reference as required.

## 1.3 dormakaba.us website.

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

## 1.4 Dimensions

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

## 1.5 Symbols used in this manual.



### 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.

# 2 To our customers

We are pleased that a Crane 2000LE or 3000LE (low energy) manual revolving door has been selected for this installation. Crane designed, tested and built the system to provide many years of service.

The purpose of this manual is to provide you information regarding your Crane 2000LE or 3000LE revolving door. This includes safety and maintenance information.

It is essential that you recognize the importance of maintaining your door.

**It is your responsibility** as owner and caretaker of the equipment, to inspect the operation of your door system to insure that it is safe for use by your customers and employees.

Call your local dormakaba distributor for repair. The distributor is trained to service the revolving door using the applicable dormakaba USA, Inc. Installation Manual.

## 2.1 Service availability.

dormakaba USA, Inc. has a nationwide network of authorized distributors for sales, installation and service of its products.

# 3 What you should know

## 3.1 Distributor information

### 3.1.1 dormakaba USA, Inc. distributor information.

Be sure that the dormakaba USA, Inc. distributor has provided the following information for this revolving door installation:

1. Crane Owner's Manual RL6000-007
2. Discussion of problems that could result from door operation after a malfunction observed.
3. Number to call for service or questions about your revolving door if you are uncertain of any condition or situation.
4. Location of job number tag on door steel center shaft assembly.
  - Reference Chapter 6.3.

5. Location of 115 Vac circuit breaker for Motion Assist 360 power supply.
  - Reference Paragraph 6.2, in-ground container.
6. Exit location of in-ground container drain tube or pipe.
  - Reference Chapter 9, Maintenance information.



### WARNING

If there are any problems, discontinue door operation immediately and secure the door in a safe manner.  
Call your local dormakaba USA, Inc. distributor for repair.

# 4 Safety

## 4.1 Intended use

### 4.1.1 Intended use.

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



#### WARNING

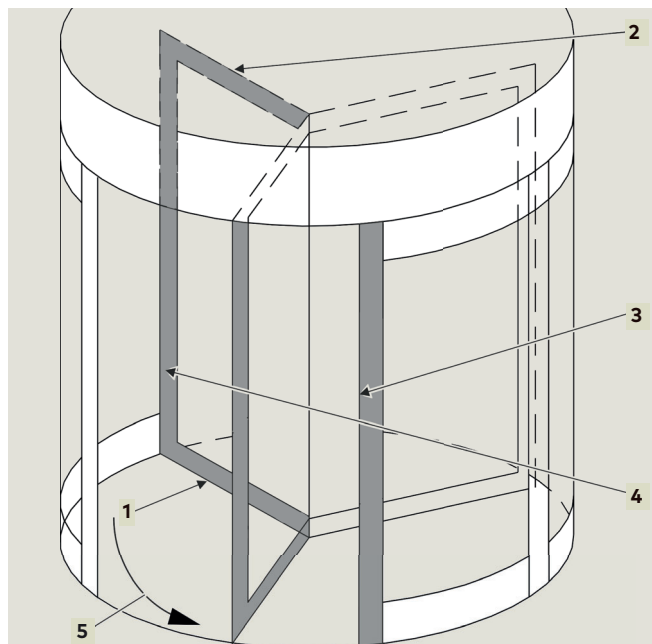
In case of emergency, revolving door can be used as an exit, but it is not the primary path of egress. The side door(s) should be used!

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

## 4.2 Danger points of the revolving door

When passing through the revolving door, people may be at risk for injury at the following locations:

Fig. 4.2.1 Revolving door danger points



- |                                  |  |
|----------------------------------|--|
| 1 Secondary closing edge floor   | 4 Main closing edge inner wall                   |
| 2 Secondary closing edge ceiling | 5 Wings rotating in a counterclockwise direction |
| 3 Opposing closing edge          |  |



#### WARNING

Danger of misuse!  
Misuse of the revolving door can cause dangerous situations.

- Children should never be allowed to enter the revolving door without adult supervision/ accompaniment.
- Children should never be allowed to play in front of the entrance and exit of the revolving door or inside of the revolving door itself.
- Do not install the revolving door over soft flooring (e.g., carpet).
- Never mount or hang objects on the revolving door.
- Never stop or block the revolving door with an object.
- Customer - Do not operate the revolving door until "record of delivery" has been received.
- Do not walk through the revolving door with bulky objects.
- Do not walk against the wing rotation direction of the revolving door.
- Do not operate the revolving door if there is insufficient lighting.
- Do not operate the revolving door if it is damaged (e.g., broken glass).
- Never use replacement parts that are not approved by dormakaba.
- People cannot be allowed to stay in the revolving door for longer than it takes to pass through the door.

# 5 Operator components

## 5.1 Emergency Stop pushbutton

### 5.1.1 Emergency Stop pushbutton locations.

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

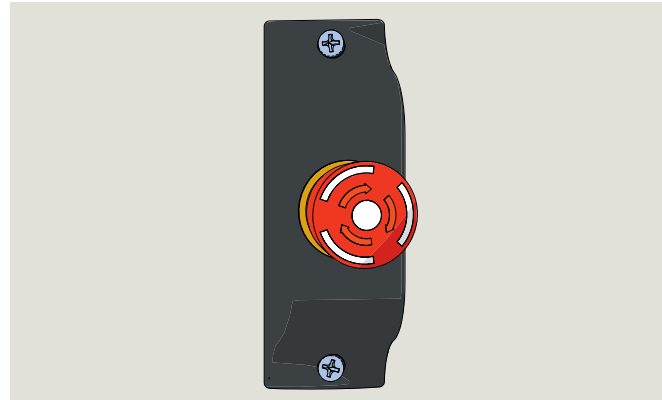
### 5.1.2 Actuation of Emergency Stop pushbutton.

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.

### 5.1.3 Emergency Stop pushbutton reset.

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

Fig. 5.1.1 Emergency Stop pushbutton



### 5.1.1 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.

### 5.1.2 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.

#### 5.1.2.1 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.

## 5.2 Mode switch

### 5.2.1 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 Mode switch against unauthorized access.

### 5.2. 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.

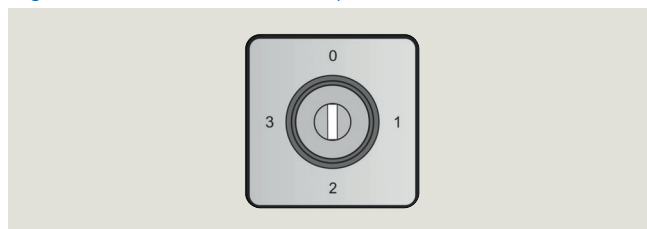
### 5.2.3 Knowing act.

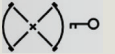



Consciously activating a switch with the knowledge of what will happen such as starting, slowing or stopping a revolving door.

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.

### 5.2.4 Mode switch (low-energy) functions.

Fig. 5.2.1 Mode switch with key lock

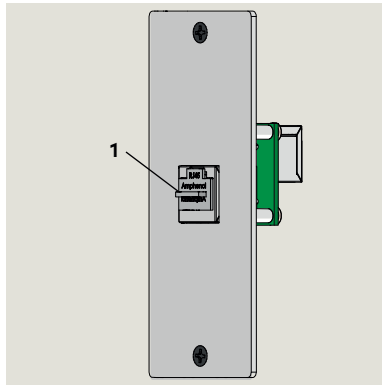


| Mode switch position  | Function    | S - (Green module) - Motion Assist  |
|---|-------------|---|
|  0  | Off         | <ul style="list-style-type: none"> <li>• Revolving door will stay in the home position.</li> <li>• After a set period of time, any internal lighting is switched off.</li> </ul>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

## 5.3 Service panel (option)

Fig. 5.3.1 Service panel  
DX4604-08C

1 RJ45 cover



### 5.3.1 Service panel.

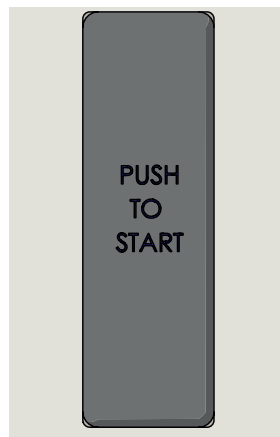
- Typically located on side of leading quarter post.
- For use by dormakaba service personnel.

## 5.4 Wave to Open, Push to Start plates (options)

Fig. 5.4.1 Wave to Open  
plate  
DX3331-001



Fig. 5.4.2 Push to Start  
plate  
DX3339-040



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

Locations:

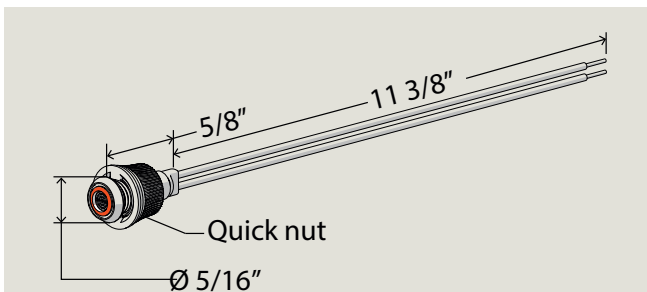
- Inside the building on the leading quarter post/end wall or attached separately within sight of the revolving door.
- Building exterior.

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 (5.2.2).

## 5.5 Fault LED

Fig. 5.5.1 Indicator, LED, RX6013-001



### NOTICE

Refer to dormakaba Setup and Troubleshooting Manual RL6000-013 for fault codes.

### 5.5.1 Fault LED.

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

### 5.5.2 Fault LED location

- Field installed above or below Mode switch.

### 5.5.3 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).

## 6 Revolving door assemblies

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

#### 6.1.1 3 1/8" canopy door configurations.

Fig. 6.1.1 4 wing door

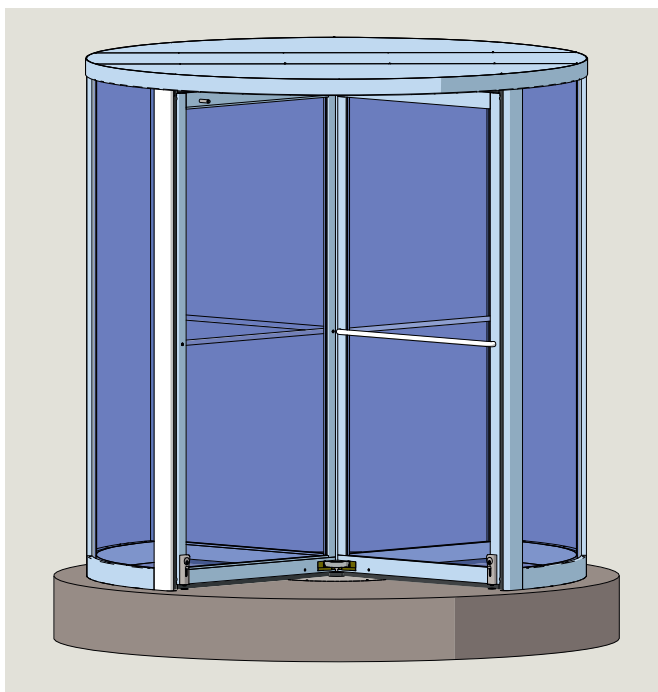
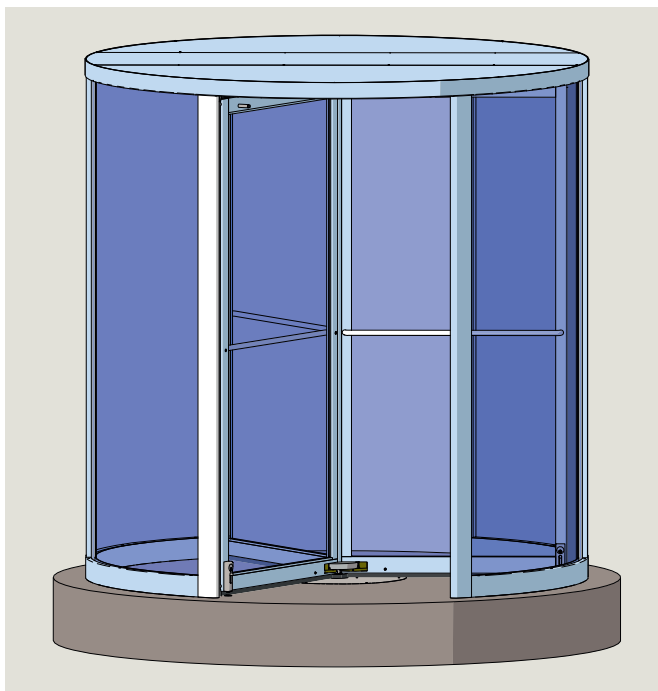
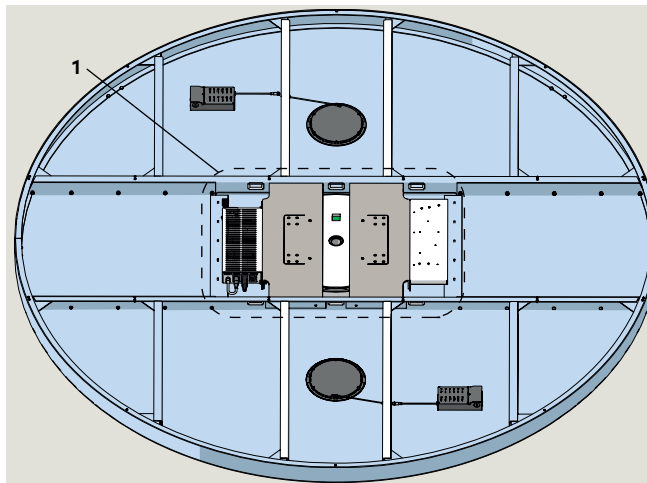


Fig. 6.1.2 3 wing door



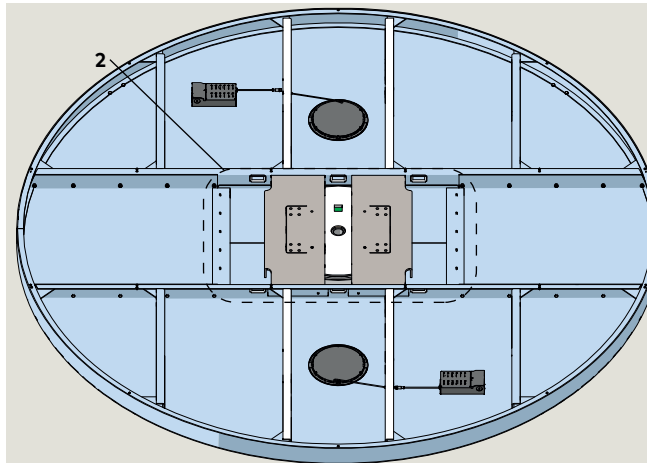
#### 6.1.2 3 1/8" canopy configurations.

Fig. 6.1.3 With Motion Assist 360 drive controls



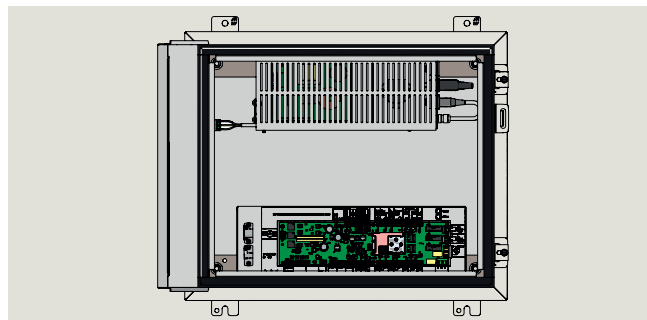
1 Motion Assist 360 drive With power supply and control

Fig. 6.1.4 Remote Motion Assist 360 drive controls



1 Motion Assist 360 drive 1 Remote power supply and control

Fig. 6.1.5 Remote control enclosure (option)



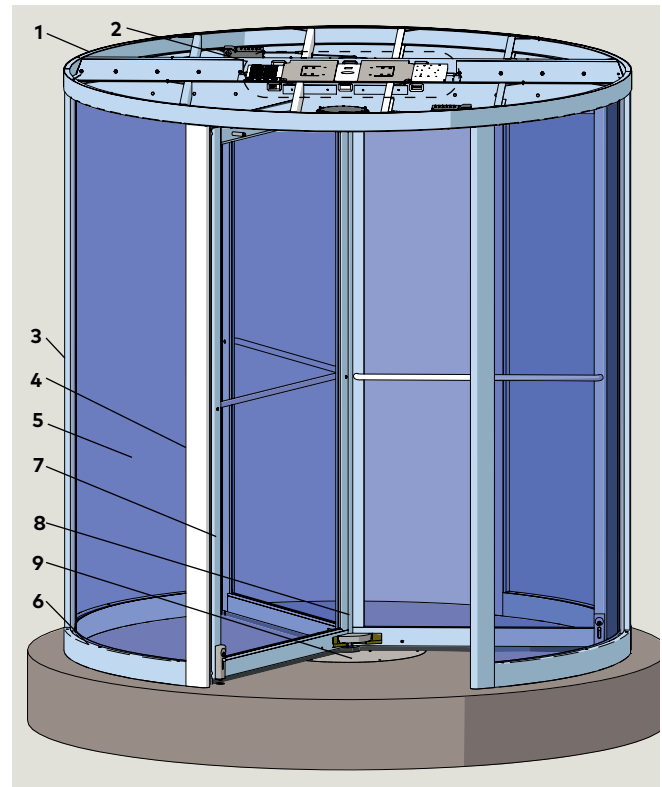


## 6.2 Revolving door assembly components overview, 3 wing door example

Table 6.2.1 3 wing door with Motion Assist 360 drive and controls and in-ground speed control

| # | Description  | Part #     |
|---|--|------------|
| 1 | 3" canopy assembly                                     | RS6051-002 |
| 2 | Motion Assist 360 drive and controls                   | RS6048-001 |
| 3 | Center post, AL  | RE6007-030 |
| 4 | Quarter post   | RE6009-010 |
| 5 | Enclosure bent glass                                   |            |
| 6 | Enclosure, base outer, 3", AL                          | RE6015-010 |
|   | Enclosure, base inner, 3"                              | RE6016-010 |
| 7 | Wing assembly with lock, 3 wing door                   |            |
| 8 | Steel shaft assembly, floor speed control, 3 wing door | RS6054-001 |
| 9 | Assembly, floor speed control                          | RS6074-010 |

Fig. 6.2.1 Three wing revolving door, assembly example



### TIPS AND RECOMMENDATIONS

**Canopy assemblies.**  
Reference Para. 6.1.

Fig. 6.2.2 Steel shaft assembly, 3 wing door

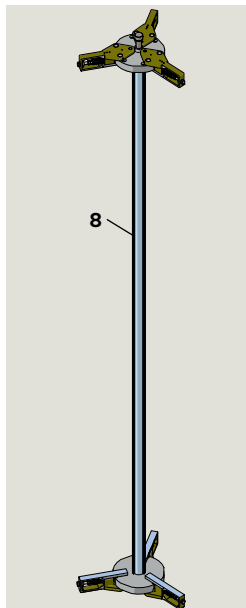


Fig. 6.2.3 Wing assembly, 3 wing door

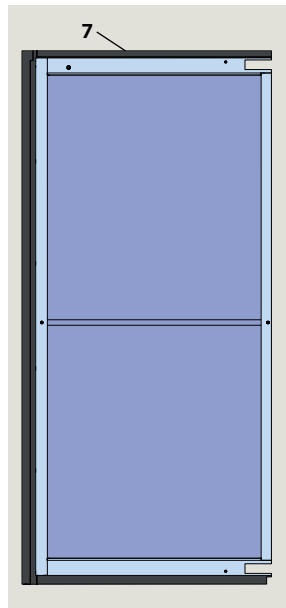


Fig. 6.2.4 Center post, quarter post

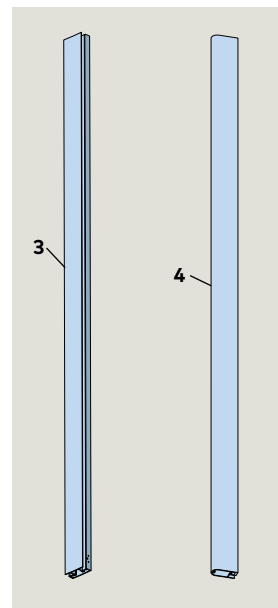


Fig. 6.2.5 Motion Assist 360 drive and control assembly

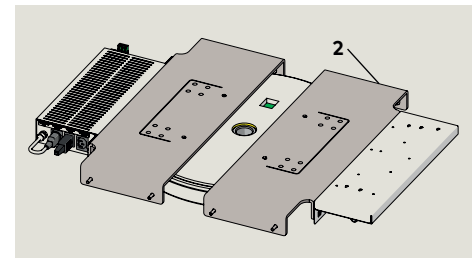


Fig. 6.2.6 Floor speed control assembly

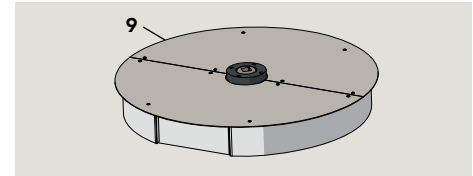
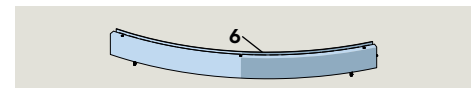


Fig. 6.2.7 Base and cover assembly



## 6.3 Steel center shaft job number tag location

Fig. 6.3.1 Job number tag location

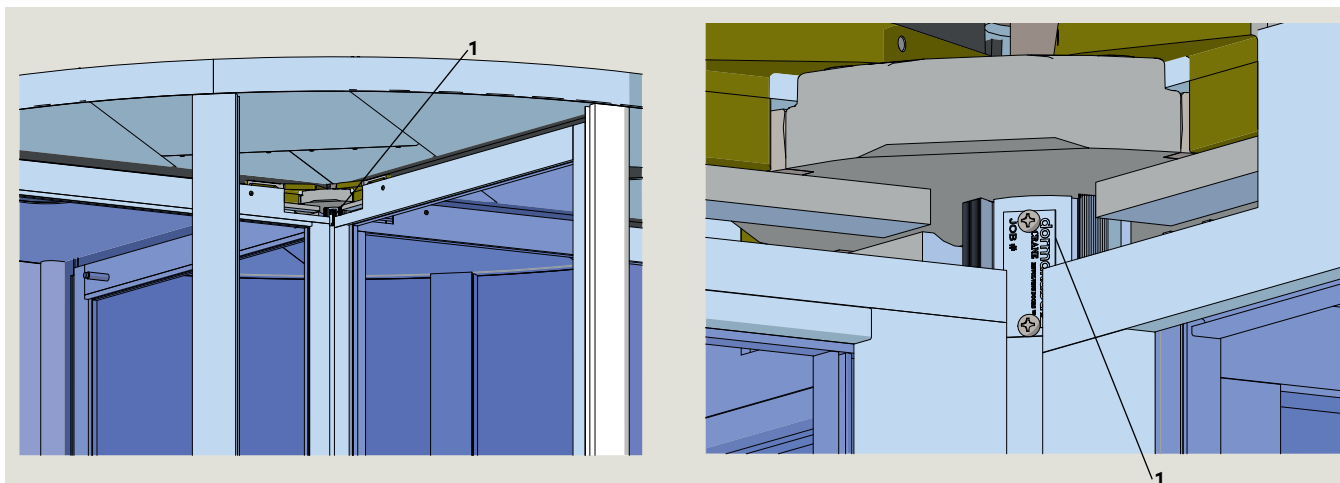
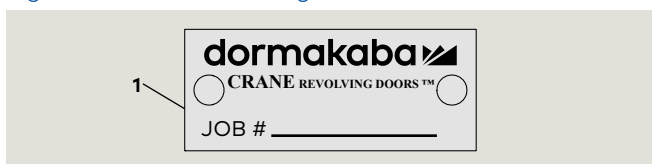


Fig. 6.3.2 Job number tag



# 7 Bookfold

## 7.1 Bookfold mechanism.

The Crane bookfold mechanism is constructed from a high grade chilled bronze casting.

- This hardware complies with all state and federal requirements for providing emergency egress.
- The pressure required to engage the bookfold mechanism is adjustable to meet ANSI/BHMA A156.27, Power and Manual Operated Revolving Pedestrian Doors.

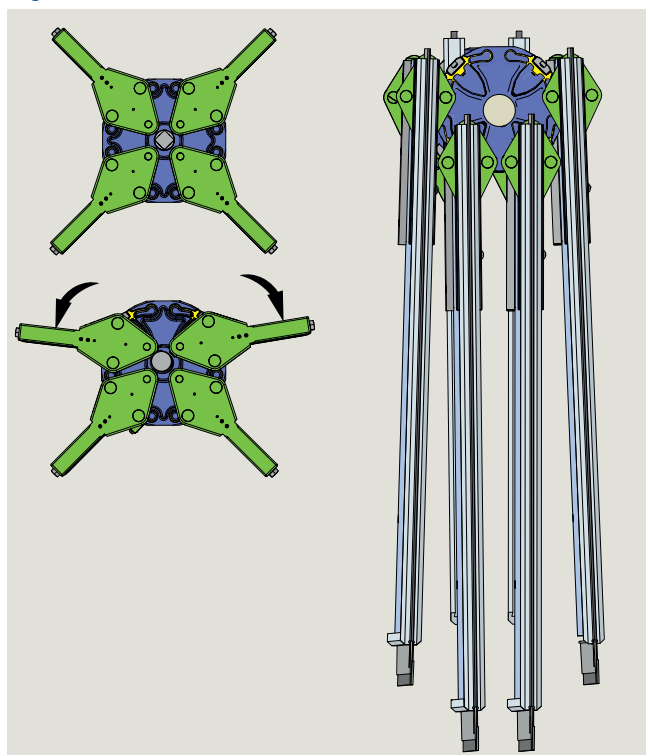


### WARNING

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!

Fig. 7.1 Bookfold mechanism



# 8 Floor speed control

## 8.1 Speed control.

All Crane revolving doors use the same 100:1 gear ratio speed control; a steel cast, precision machined, sealed unit.

Speed control is mounted in a round cement box.

- A centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by ANSI/BHMA A156.27, Standard for Power and Manual Operated Revolving Pedestrian Doors.



**WARNING**

Speed control maintenance or service must only be done by dormakaba technicians!

Fig. 8.1 Revolving door with in-ground speed control

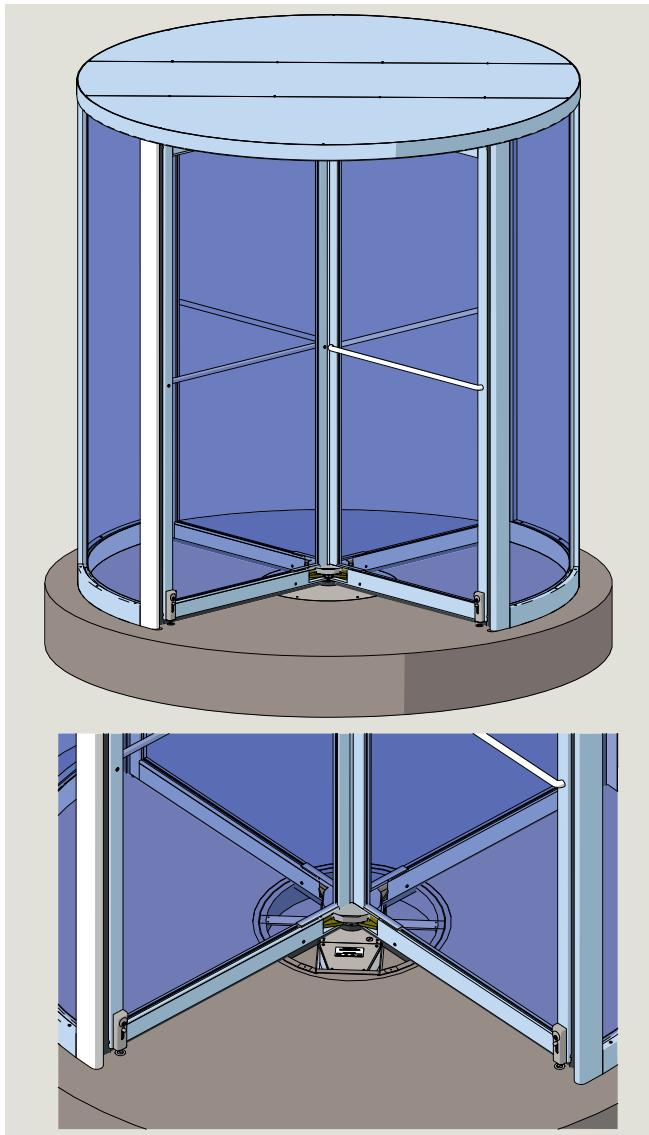


Fig. 8.2 Speed control

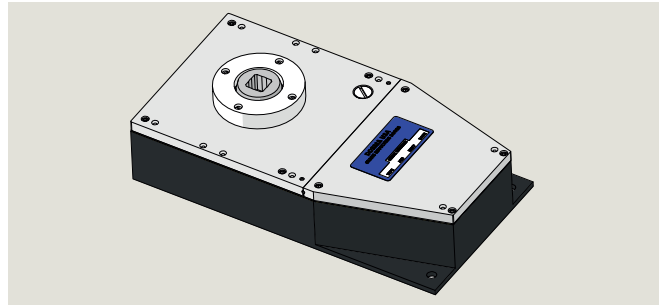
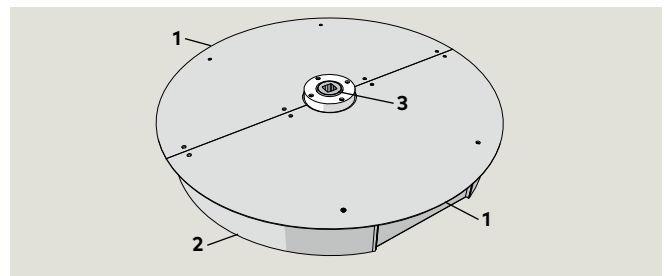
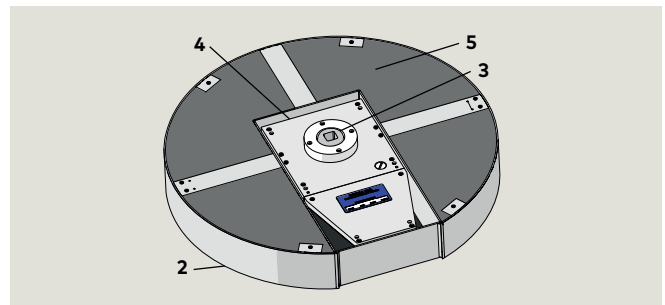


Fig. 8.3 In-ground speed control



- 1 Cover plate
- 2 Round cement box
- 3 Drive shaft
- 4 Speed control assembly

Fig. 8.4 In-ground speed control, cover plates removed

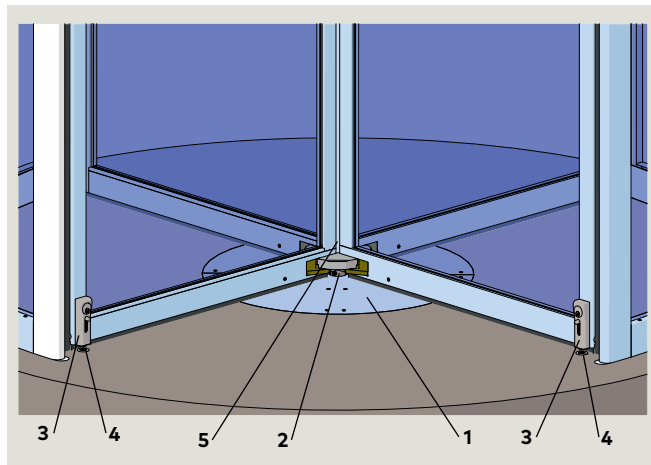


- 2 Round cement box
- 3 Drive shaft
- 4 Speed control assembly
- 5 Non-shrink grout

## 9 Maintenance

### 9.1 Door and floor maintenance

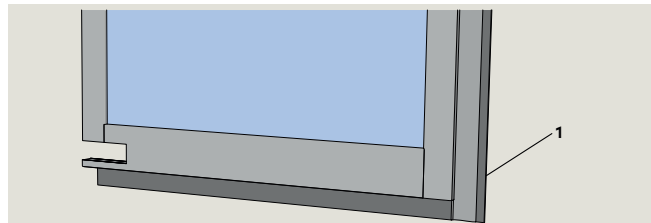
Fig. 9.1.1 3 wing revolving door



- |                        |                     |
|------------------------|---------------------|
| 1 Floor cover plate    | 4 Floor strike      |
| 2 Center shaft bottom  | 5 Center shaft plug |
| 3 Mechanical wing lock |                     |

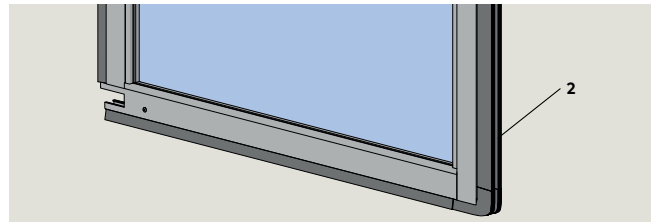
### 9.2 Weathersweeps

Fig. 9.2.1 T-style weathersweep



- 1 T-style weathersweep

Fig. 9.2.2 Horsehair weathersweep



- 2 Horsehair weathersweep

#### 9.1.1 Floor maintenance.

1. Keep floor surface clean and free of dirt and debris.
2. Keep area around in-ground speed control drive shaft clean and free of dirt and debris.

#### 9.1.2 Wing locks and floor strikes.

1. Keep wing locks and floor strikes free of dirt and debris.

#### 9.1.3 Door glass maintenance.

1. Keep all glass surfaces clean.
2. Clean glass surfaces with commercially available glass cleaners.

#### 9.2.1 Weathersweep maintenance.

##### NOTICE

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

1. Inspect condition of sweeps.
  - Recondition horsehair sweeps if possible using conditioner.
2. Replace weathersweeps as required.
  - Contact dormakaba distributor for replacement weathersweeps.

## 9.3 Cleaning surfaces

### 9.3.1 Aluminum

1. Dust and grime can be removed by regular cleaning.
  - Use a mild, non-abrasive soap or cleaning solution and water.
  - After cleaning, surfaces should be wiped dry with a clean absorbent material.
2. Tar and built-up dirt can be removed with solvent cleaners such as turpentine if followed by a soap and water cleaning and fresh water rinse.

#### NOTICE

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

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

### 9.3.2 #4 stainless steel

1. For routine cleaning, use soap, ammonia, or detergent and water.
  - Always working in the direction of the grain, rub with a sponge or rag.
  - Rinse with water, wipe dry.
2. Stubborn dirt or grime can be removed with a quality commercial stainless steel cleaner.

### 9.3.3 Mirror finish stainless steel

#### NOTICE

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

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

### 9.3.4 Bronze

#### NOTICE

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

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

#### NOTICE

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

#### NOTICE

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

### 9.3.5 Painted finishes

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

#### NOTICE

Strong solvents may dissolve paint. Test any solvent first.

2. Wax can be used to protect the finish.

## 9.4 Motion Assist 360 drive warning sign



**WARNING**



### For dormakaba installation and service personnel.

This sign is located on the Motion Assist 360 drive (Fig. 9.4.1) 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 Motion Assist 360 drive.

### 9.4.1 Motion Assist 360 drive.

- The Motion Assist 360 drive is installed in the revolving door canopy and is covered by soffits (Fig. 9.4.3).
- Insure that maintenance personnel, or other personnel working in close proximity to the canopy ceiling are aware of the drive warning sign.

Fig. 9.4.1 Motion Assist 360 drive

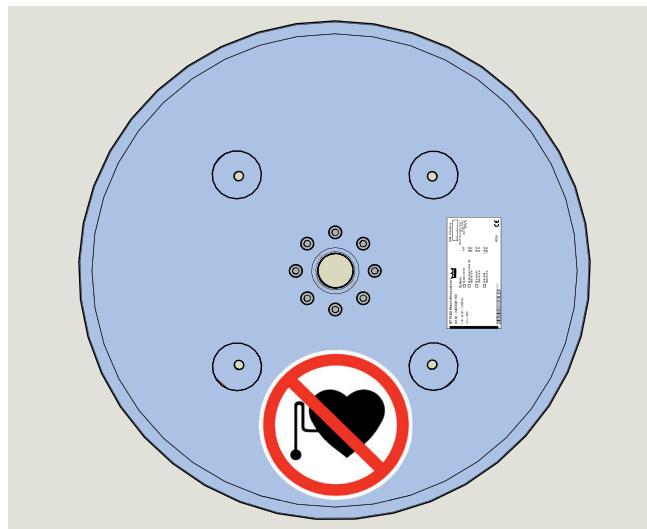


Fig. 9.4.2 Canopy inner center soffits installed

- 1 Canopy soffit, outer center
- 2 Canopy soffit, inner center
- 3 Motion Assist 360 drive
- 4 LED light (option)

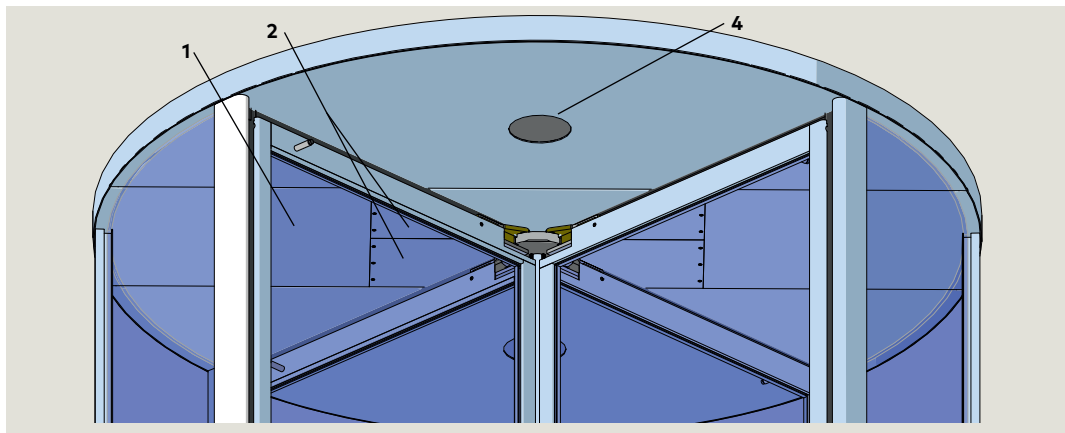
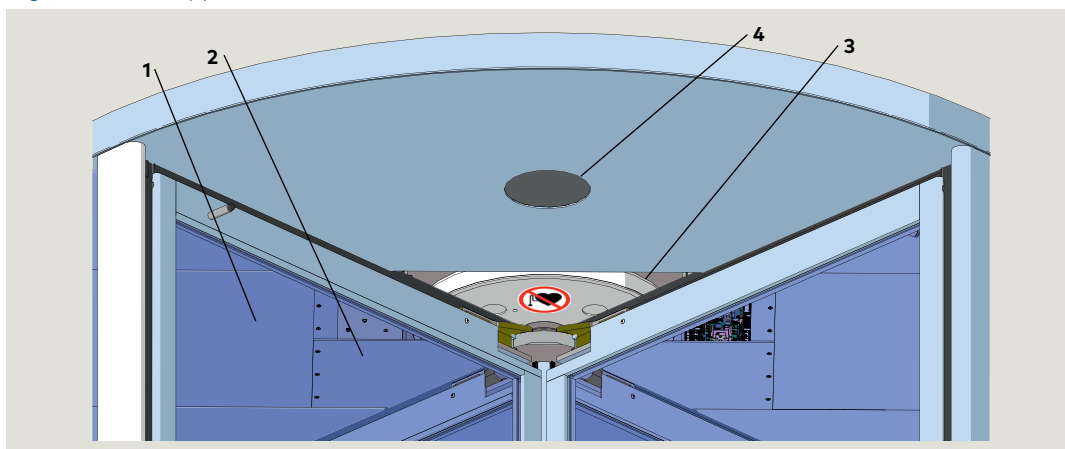


Fig. 9.4.3 Canopy inner center soffit removed



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