

# Crane 2000LE and 3000LE

In-ground Motion Assist 360 drive  
and speed control

## Owner's Manual

DL6000-008 – 05-2021

| EN |

 **Crane**  
dormakaba Group

**dormakaba** 

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# 1 General information

<b>1.1 Owner's Manual</b>	<b>2</b>
This Owner's manual applies to Crane 2000LE and 3000LE revolving doors with an in-ground Motion Assist 360 drive and speed control.	
<b>1.2 Manual storage.</b>	<b>4</b>
This document must be kept in a secure place, and accessible for reference as required.	
<b>1.3 dormakaba.us website.</b>	<b>5</b>
Manuals are available for review, download, and printing on dormakaba.us website.	
<b>1.4 Dimensions</b>	<b>7</b>
Unless otherwise specified, all dimensions are given in inches (").	
<b>1.5 Symbols used in this manual.</b>	<b>8</b>



## **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) 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 DL6000-008.
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 center shaft assembly.
  - Reference Chapter 6, Fig. 6.1.1 and Fig. 6.1.2.
5. Location of 115 Vac circuit breaker for Motion Assist 360 power supply.
  - Reference Paragraph 6.2, in-ground container and optional remote control enclosure.
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.

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# 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.
- Wing breakout. The revolving door wings can be pushed open manually for emergency egress. Ref. Chapter 7: Bookfold



#### WARNING

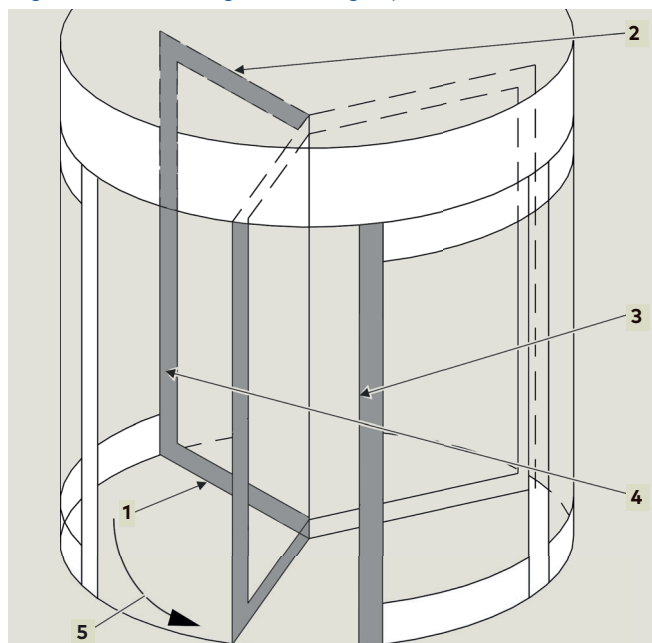
In case of emergency, revolving door can be used as an exit, but it is not the primary path of egress. The side door(s) should be used!

- **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.
- Do not walk on the ceiling of the revolving door.

# 5 Operator components

Fig. 5.1 Operator components, door interior side

- 1 Emergency stop pushbutton
- 2 Mode switch
- 3 Optional service panel

**Operator components may be in different locations than those shown in Fig. 5.1.**

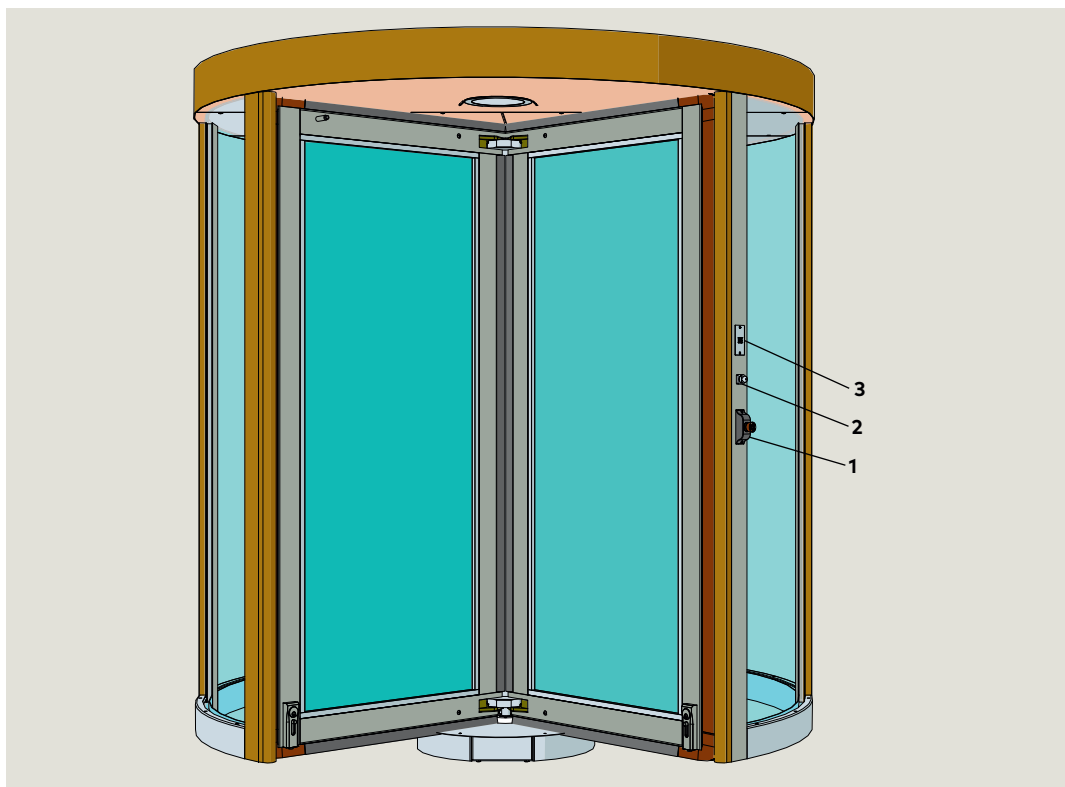
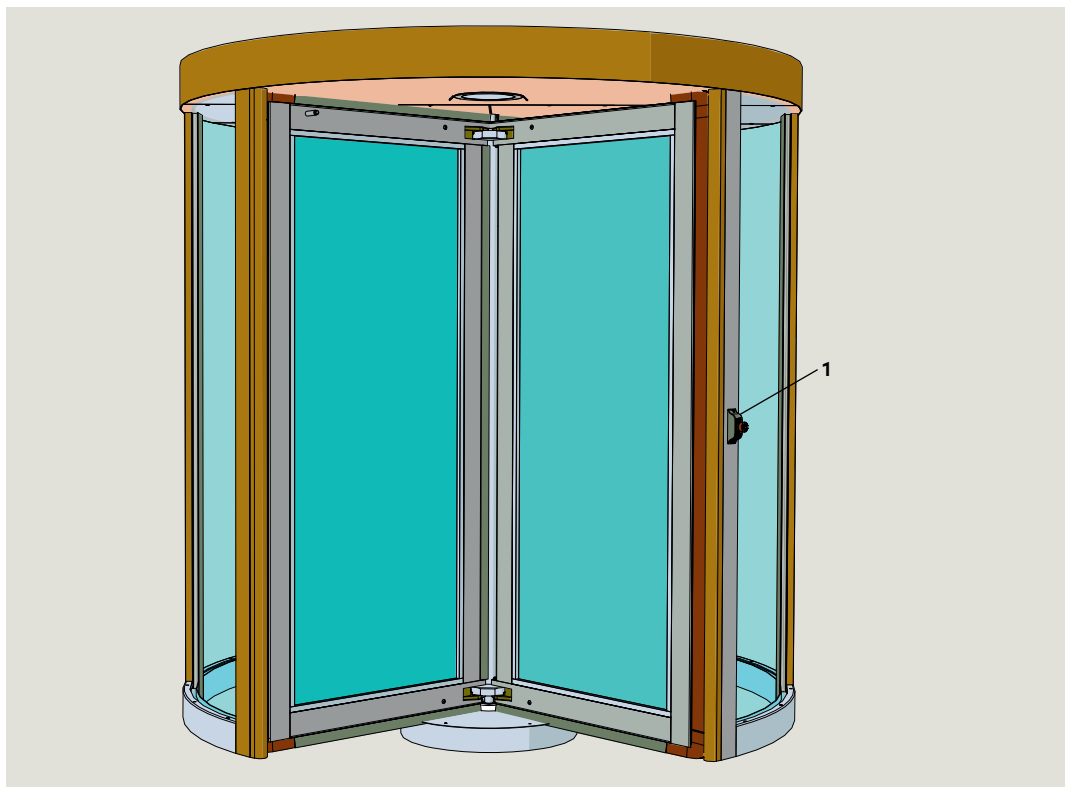


Fig. 5.2 Operator components, door exterior side

- 1 Emergency stop pushbutton

**Emergency stop pushbutton may be in a different location than shown in Fig. 5.2.**



## 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.

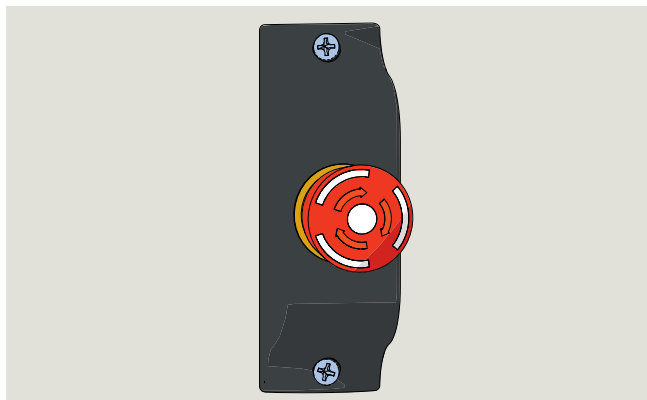
### 5.1.2 Actuation of Emergency Stop pushbutton.

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.

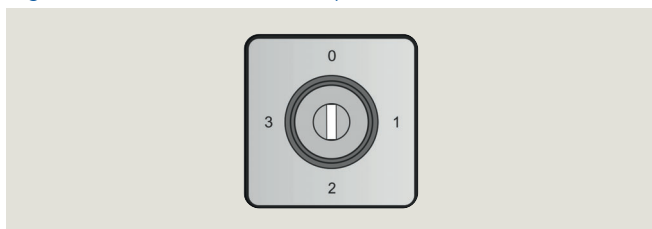
- Release the Emergency Stop button only when there are no longer any people in the revolving door.

#### 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





Fig. 5.2.1 Mode switch with key lock



### 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.

### 5.2.2 Mode switch functions.

Mode switch position	Function	S - (Green module) - Motion Assist
 <b>0</b>	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>
 <b>1</b>	AUTOMATIC 1	<ul style="list-style-type: none"> <li>• A knowing act (Para. 5.2.4) switch starts rotary movement of the door wings at low energy speed (Para. 5.2.3).</li> <li>• Manually pushing the door starts rotary movement of the door wings at low energy speed.</li> <li>• Revolving door automatically stops in the next starting position as soon as it is no longer manually operated.</li> </ul>
 <b>2</b>	AUTOMATIC 2	<ul style="list-style-type: none"> <li>• Door rotates continuously at a low energy speed.</li> <li>• Door can be manually accelerated to low energy speed.</li> </ul>
 <b>3</b>	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 (Chapter 7): wings can be folded to the side.</li> </ul>

### 5.2.3 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.

### 5.2.4 Knowing act.

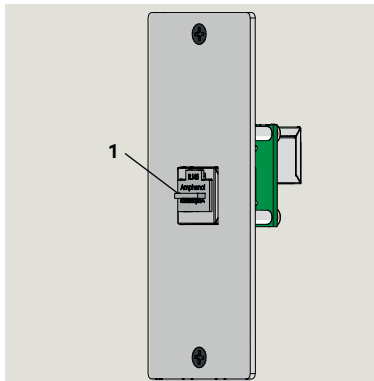
Consciously activating a switch with the knowledge of what will happen such as starting, slowing or stopping a revolving door.

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.

## 5.3 Service panel (option)

Fig. 5.3.1 Service panel  
DX4604-08C

1 RJ45 cover



### 4.4.1 Service panel.

- Service panel typically located on side of leading quarter post.
- Offers service personnel the option to connect to the Motion Assist 360 control unit without the need to remove in-ground container covers for drive access.

## 5.4 Wave to Open plate (option)

Fig. 5.4.1 Wave to Open  
plate  
DX3339-189

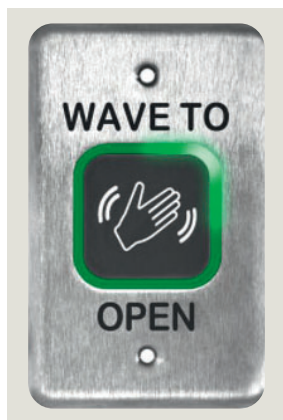


Fig. 5.4.2 Wave to Start  
plate  
DX3331-001



### 4.5.1 Wave to Open plate.

Locations:

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

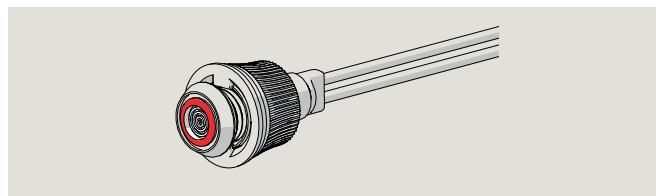
Plate starts rotary movement of the door wings at low energy speed (Para. 5.2.3).

#### CAUTION

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

## 5.5 Fault LED

Fig. 5.5.1 Fault LED



### 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 Revolving door assembly example

Fig. 6.1.1 Four wing revolving door, interior view assembly example

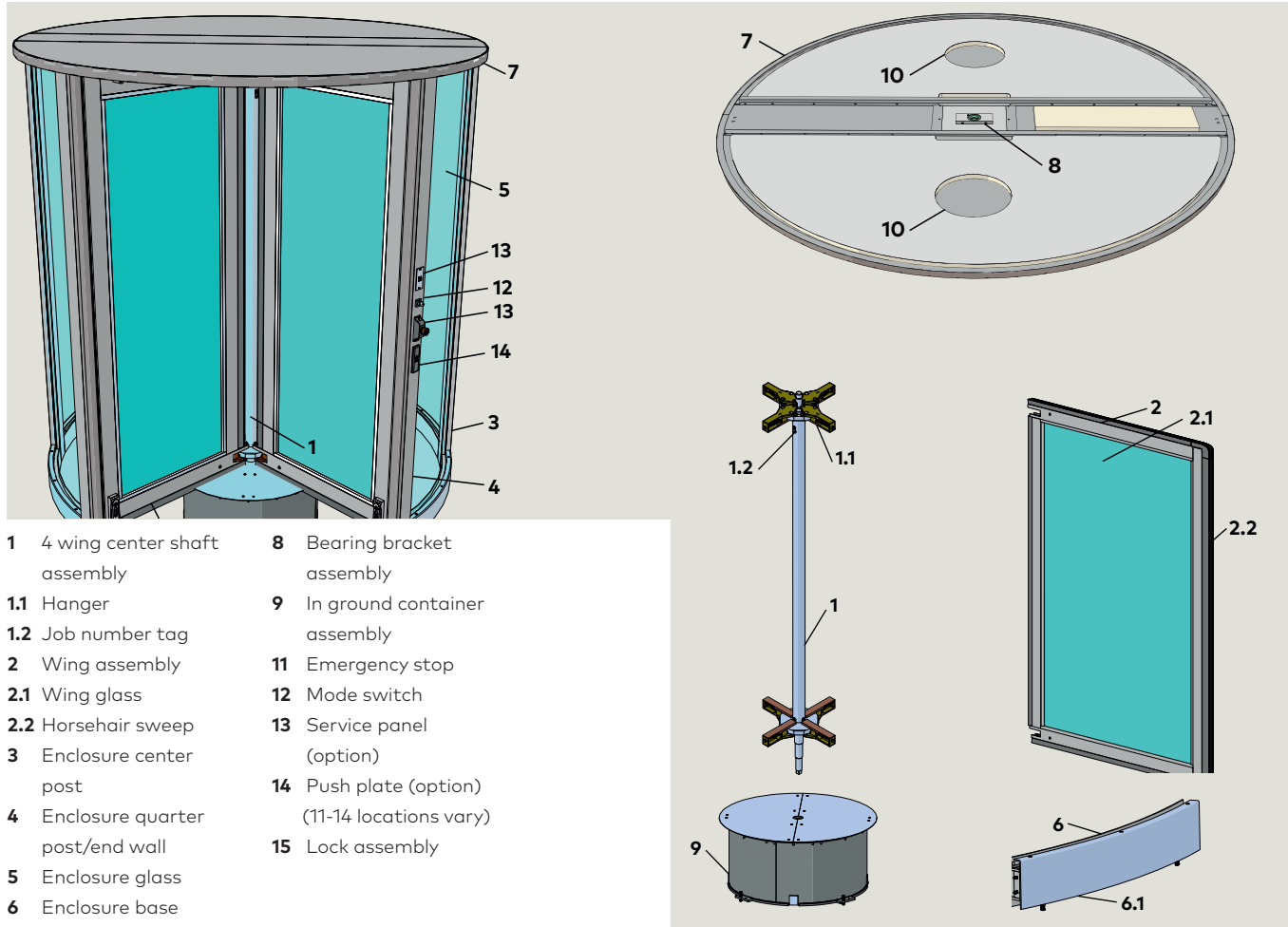
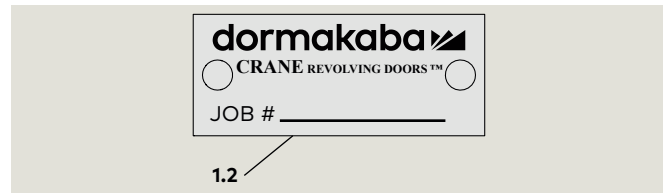


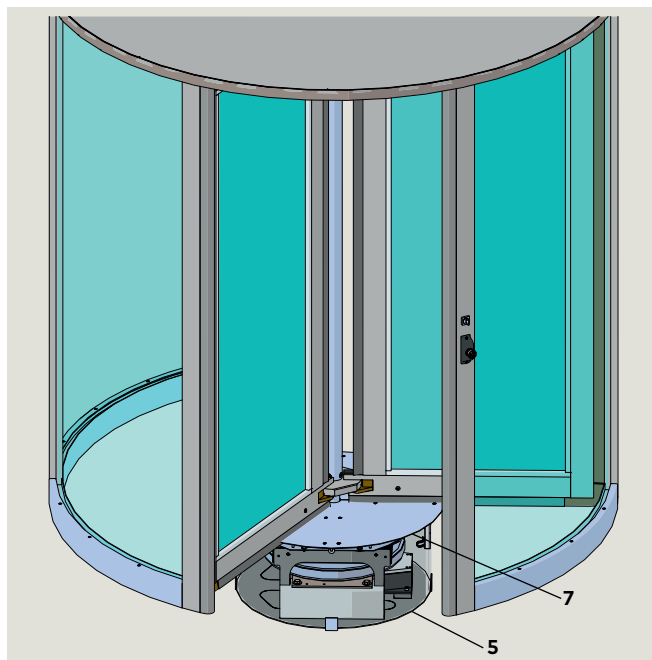
Fig. 6.1.2 Job number tag



1.2 Job number tag

## 6.2 In-ground container and Remote control enclosure (option)

Fig. 6.2.1 Four wing revolving door with in-ground container assembly



- 5 In ground container assembly
- 7 Floor cover plates

### 6.2.1 In-ground container.

In ground container includes the following assemblies:  
 Ref. Fig. 6.2.2.

1. Speed control (Ref. Chapter 8).
2. Motion Assist 360 drive.
3. Motion Assist 360 power supply.
4. Motion Assist 360 control unit.
6. In-ground container through wall drain fitting.

### 6.2.1 Remote control enclosure (option).

Remote enclosure contains the following:  
 Ref. Fig. 6.2.4.

1. Motion Assist 360 power supply.
2. Motion Assist 360 control unit.

In ground container includes the following:  
 Ref. Fig. 6.2.3.

1. Speed control (Ref. Chapter 8).
2. Motion Assist 360 drive.
6. In-ground container through wall drain fitting.

Fig. 6.2.2 In-ground container with Motion Assist 360 power supply and control unit

- 1 Speed control
- 2 Motion Assist 360 drive
- 3 Motion Assist 360 power supply
- 4 Motion Assist 360 control unit
- 5 In ground container assembly
- 6 Container drain fitting
- 6.1 Customer drain tube or pipe

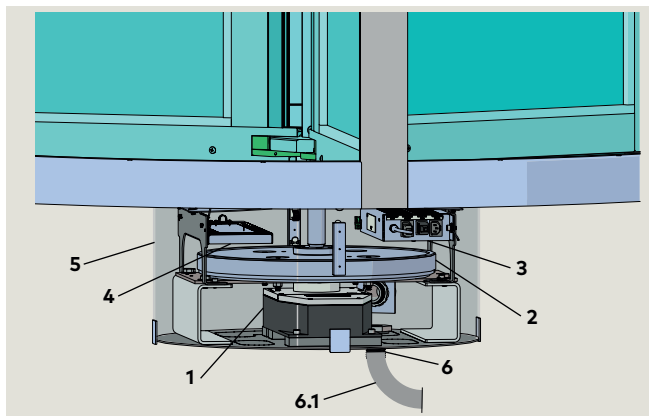


Fig. 6.2.3 In-ground container without Motion Assist 360 power supply and control unit

- 1 Speed control
- 2 Motion Assist 360 drive
- 3 Motion Assist 360 power supply
- 4 Motion Assist 360 control unit
- 5 In ground container assembly
- 6 Container drain fitting
- 6.1 Customer drain tube or pipe

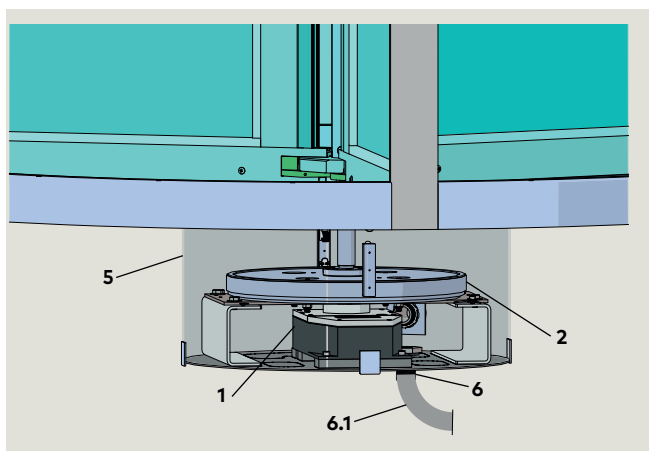
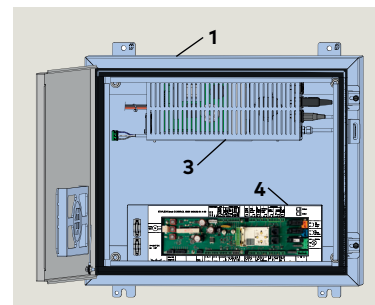


Fig. 6.2.4 Remote control enclosure assembly



- 1 Remote control enclosure
- 3 Motion Assist 360 power supply
- 4 Motion Assist 360 control unit

## 7 Bookfold

### 7.1 Bookfold mechanism.

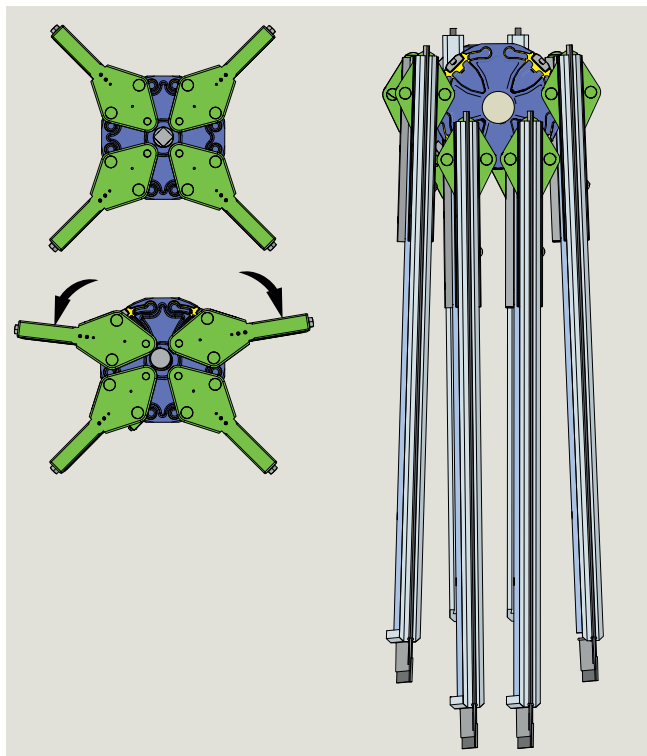
- This hardware complies with all state and federal requirements for providing emergency egress.
- The pressure required to engage the bookfold mechanism is adjustable to meet ANSI/BHMA A156.27, Power and Manual Operated Revolving Pedestrian Doors.



#### 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 Speed control

### 8.1 Speed control.

The unit is mounted in the in-ground container.

- 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. 8.2 Manual speed control

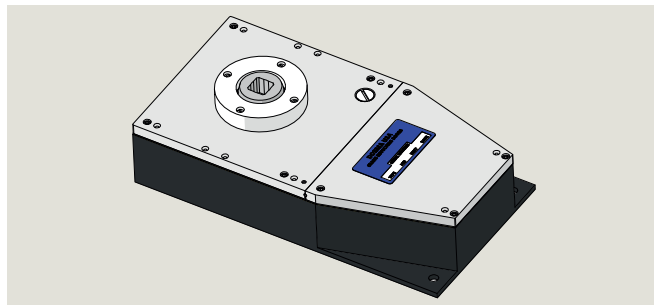
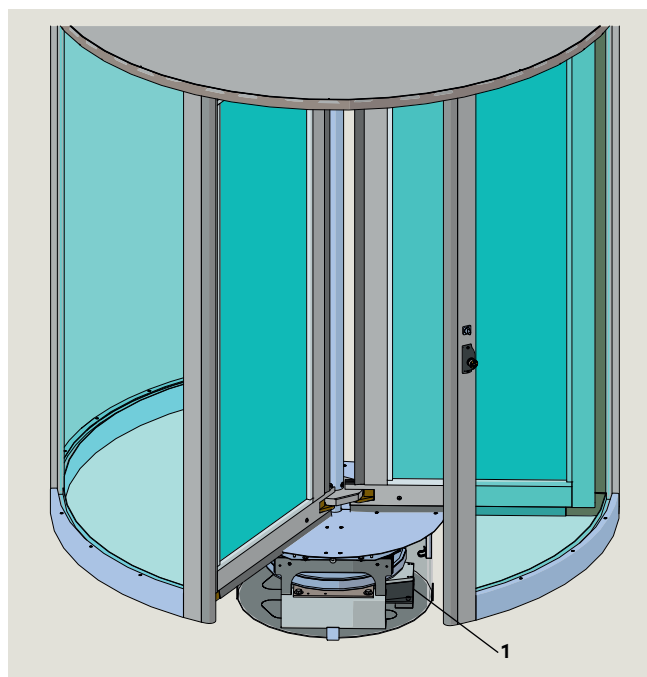


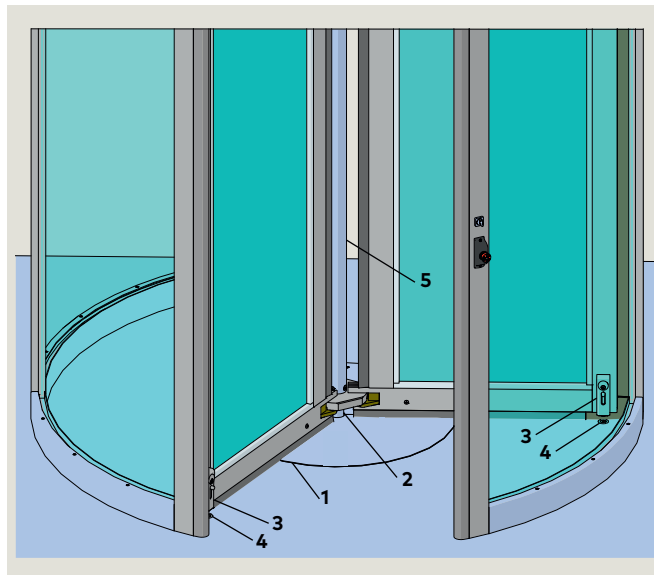
Fig. 8.1 Revolving door with in-ground Motion Assist 360 drive and speed control



# 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 plug | 5 Center shaft |
| 3 Mechanical wing lock     |                |

### 9.1.1 Floor maintenance.

1. Keep floor surface clean and free of dirt and debris.

### 9.1.2 In-ground container.

1. Keep floor cover plates free of dirt and debris.
2. Check that in-ground container floor cover plates are secure.
  - Do not use a screw gun to check fasteners for tightness.
  - If required, use only a Phillips screwdriver to check that fasteners are snugged down.
3. Clean any debris present at the center shaft bottom plug hole in cover plates.

### 9.1.3 Mechanical wing lock and floor strikes.

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

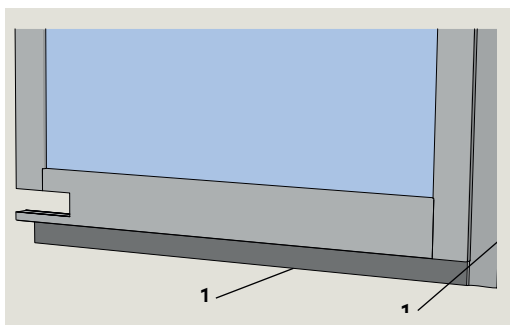
### 9.1.4 Door glass maintenance.

1. Clean all glass surfaces with commercially available glass cleaners.

## 9.2 Weathersweeps

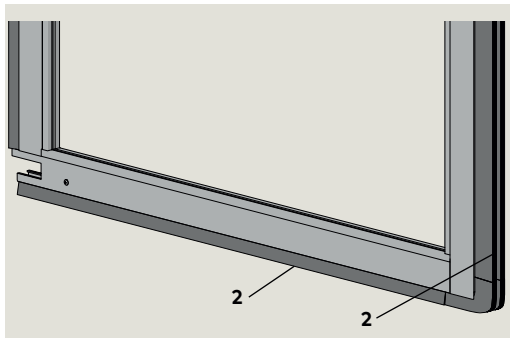
- 1 T-style weathersweep

Fig. 9.2.1 T-style weathersweep



- 2 Horsehair weathersweep

Fig. 9.2.2 Horsehair weathersweep



### 9.2.1 Weathersweep maintenance.

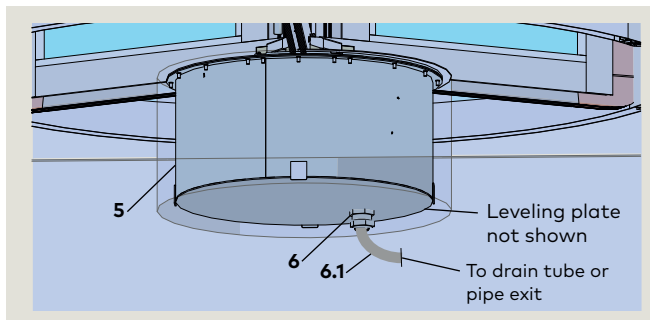
#### NOTICE

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 In-ground container drain

Fig. 9.3.1 In-ground container drain and customer drain tube or pipe



- |   |  |     |                              |
|---|--|-----|------------------------------|
| 5 | In-ground container                            | 6.1 | Customer supplied and        |
| 6 | In-ground container through wall drain fitting |     | installed drain tube or pipe |

### 9.3.1 In-ground container drain maintenance.

1. In-ground container drain fitting (**6**) is connected to customer-supplied and installed drain tube or pipe (**6.1**).
2. This tube or pipe must be connected to building drain system.
3. Insure drain tube or pipe exit is free of dirt and debris.

## 9.4 Cleaning surfaces

### 9.4.1 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.

### 9.4.2 #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.

### 9.4.3 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.

### 9.4.4 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.

### 9.4.5 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.

## 9.5 Motion Assist 360 drive warning sign



**WARNING**



### For dormakaba installation and service personnel.

This sign is located on the Motion Assist 360 drive (Fig. 9.5.1) 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.

### 9.5.1 Motion Assist 360 drive.

- The Motion Assist 360 drive is installed in the revolving door in-ground container (Fig. 4.3.2).

Fig. 9.5.1 Motion Assist 360 drive

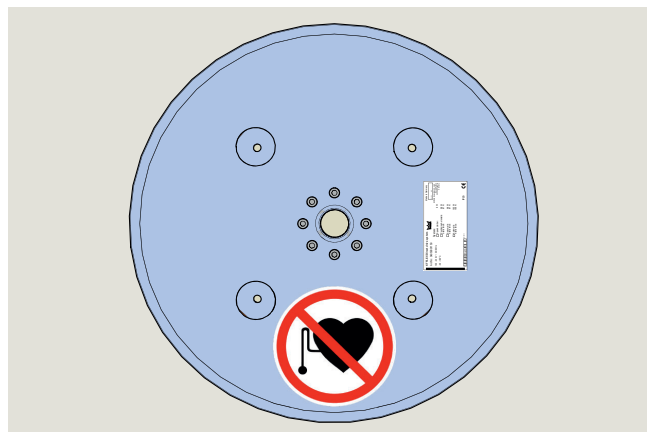
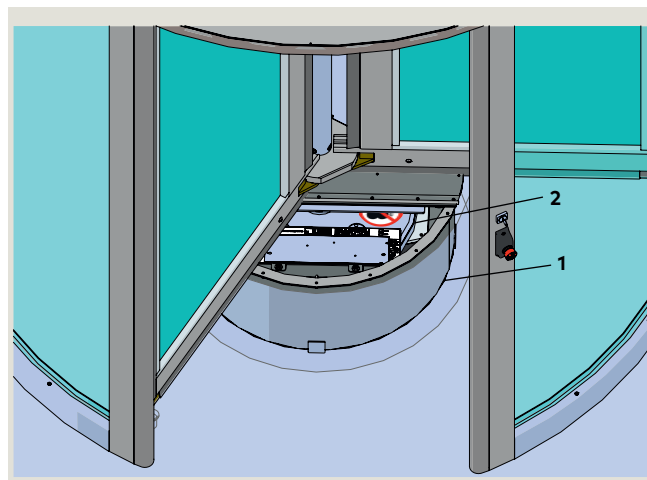


Fig. 9.5.2 In-ground container with Motion Assist 360 drive



- 1 In-ground container
- 2 Motion Assist 360 drive

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