

Crane S1 Security Revolving Door

with access control and remote locking

Owner's Manual

RL6000-015 – 07-2022

| EN |

 **Crane**
dormakaba Group

dormakaba 

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1 General information

1.1 Owner's Manual

This Owner's manual applies to Crane S1 security revolving doors.

1.2 Manual storage.

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

1.3 Dimensions

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

1.4 Symbols used in this manual.



WARNING

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

CAUTION

Warns of a potentially unsafe procedure or situation.

2 To our customers

We are pleased that an Crane S1 security revolving door has been selected for this installation.

The purpose of this manual is to provide you information regarding your Crane S1 security 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 Installation Manual.

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 each door installation:

1. Crane Owner's Manual RL6000-015.
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 5, Fig. 5.1.3.)



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 S1 security 3 wing or 4 wing revolving door is designed to provide limited access for pedestrian traffic between two separate areas.
- **Security doors are intended for use only by personnel educated in their proper use.**
- When a bookfold turnstile is used, the revolving door can be used as an emergency exit.



WARNING

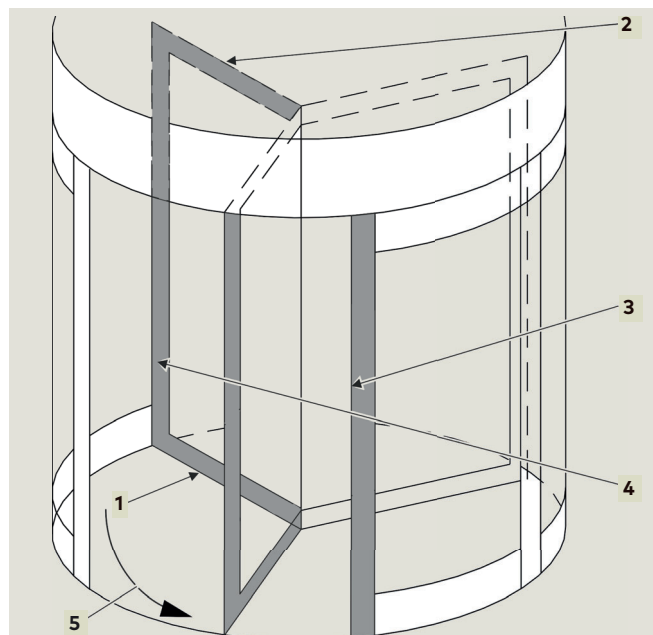
In case of emergency, revolving door can be used as an exit, but it is not the primary path of egress. The side door(s) should be used!

- **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 S1 security revolving door assembly

5.1 S1 security revolving door assembly example

- 1 Canopy
- 2 Wing
- 3 Center shaft
- 3.1 Bookfold lock
- 3.2 Job number tag
- 4 Enclosure base
- 5 Enclosure glass
- 6 Quarter post
- 7 Center post
- 8 Deadbolt lock

Fig. 5.1.1 S1 security 4 wing revolving door

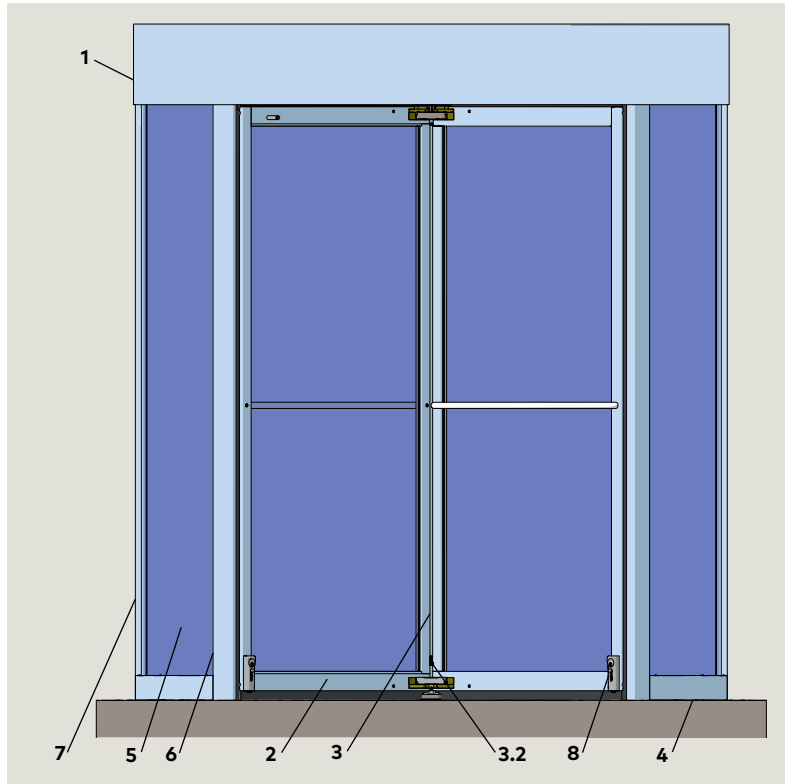


Fig. 5.1.2 Center shaft

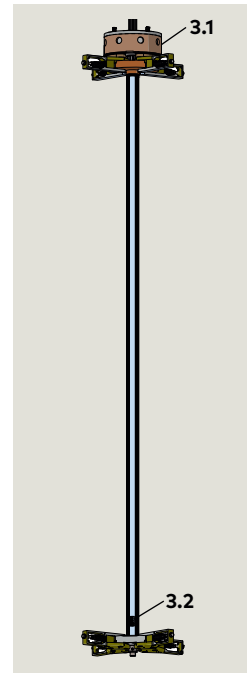
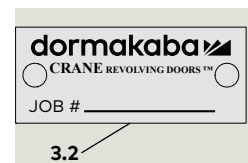


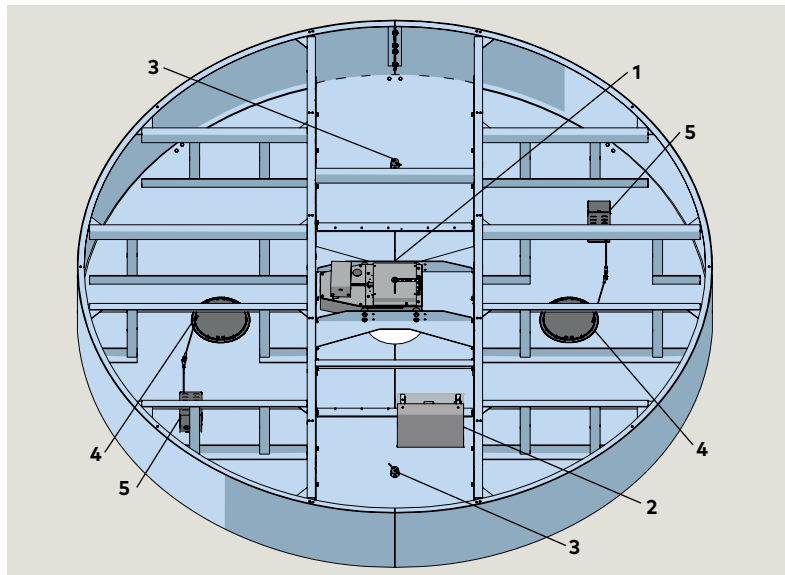
Fig. 5.1.3 Job number tag



5.2 Canopy assembly

- 1 Overhead speed control with motor box
- 2 S1 security control box
- 3 TOFspot presence sensor
- 4 LED light fixture (option)
- 5 LED light driver (option)

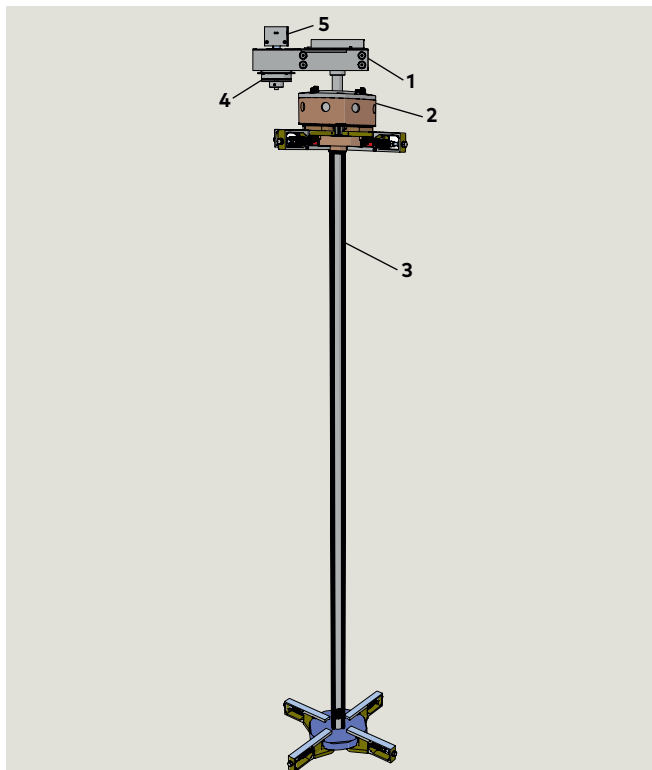
Fig. 5.2.1 Canopy assembly, 4 wing door



6 S1 security operation

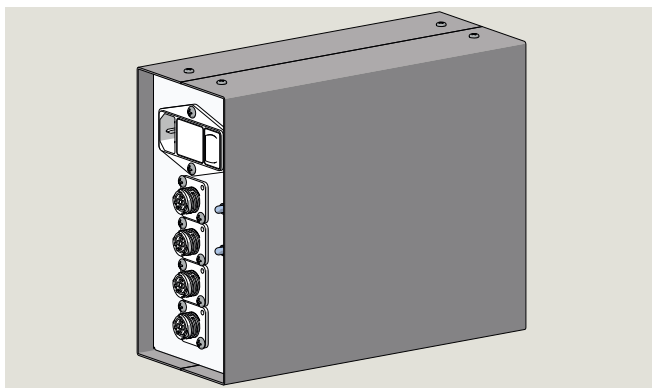
6.1 Manual door operation with remote lock

Fig. 6.1.1 Center shaft with bookfold lock, overhead speed control with motor box and brake



- | | |
|-----------------------------------|-------------------------|
| 1 Overhead speed control assembly | 3 Center shaft assembly |
| 2 Bookfold lock assembly | 4 Brake |
| | 5 Motor box |

Fig. 6.1.2 S1 security control box



6.1.1 S1 security door hardware.

- Overhead speed control with motor box and brake.
- Bookfold lock.
- S1 security control box (Fig. 6.1.2).

6.1.2 Control interfaces (by others).

1. Activation (Remote lock).
Activation signal will release the brake and allow manual operation of the door (Para. 6.1.3).
2. Lock Disable switch.
 - Open the Lock Disable input to prevent the brake from engaging and for free egress/ingress manual operation of door.
 - Close the Lock Disable input to lock the door and allow secure operation.
3. Fire alarm.
 - An open fire alarm circuit will release the brake and the bookfold lock allowing manual operation of the door and the door wings to be bookfolded.

6.1.3 Manual door operation.

1. Remote lock circuit is closed.
2. Following manual door operation the door will rest at a random position for approximately ten seconds.
3. The motor will then slowly rotate the door at 1/2 RPM to the next Home (X) position and stop.
 - If the Home position reference signal is not received by the control, the motor will stop after approximately 60 seconds.

6.1.4 Remote lock operation.

1. Remote lock circuit is open.
2. After approximately 10 seconds of an open "Remote lock" circuit while the door is at the Home position, the brake will engage preventing door rotation.

6.1.5 Building fire alarm.

1. As soon as the "Fire Alarm" circuit to the control opens, the Bookfold lock will release and the wings can be bookfolded.

6.1.6 High security entrance.

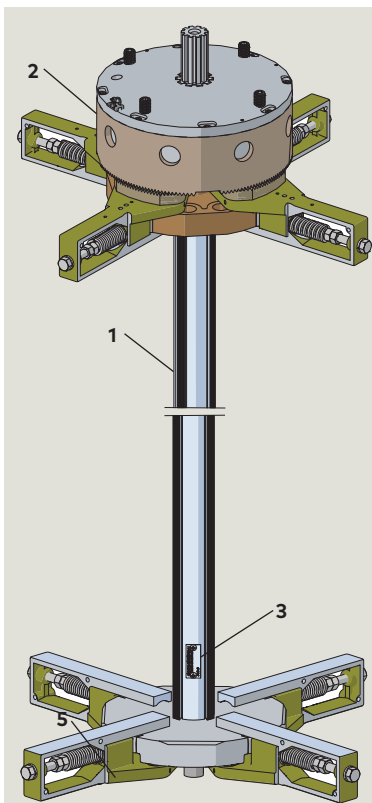
Remote lock should not be used for a high security entrance.

7 Bookfold lock

7.1 Bookfold lock operation

Fig. 7.1.1 Center shaft assembly with bookfold lock

- 1 Center shaft assembly
- 2 Bookfold lock assembly
- 3 Nameplate/job number tag



7.1.1 Bookfold lock operation.

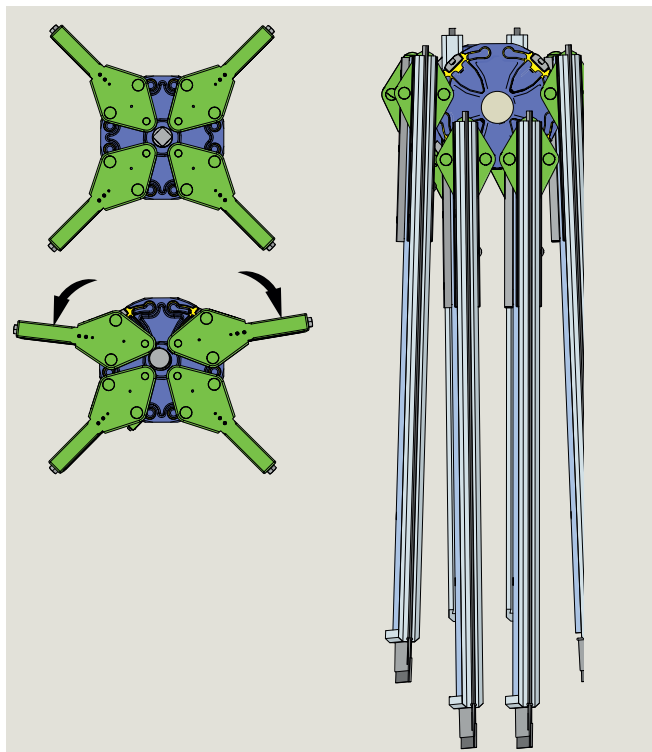
- Bookfold lock is normally engaged preventing wing bookfolding.
- As soon as the Fire Alarm circuit opens, bookfold lock will release allowing door panel breakaway.



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!

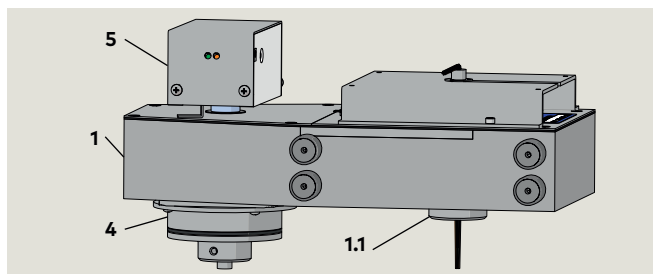
Fig. 7.1.2 Bookfold mechanism



8 Speed control with motor box and remote lock

8.1 Overhead speed control, motor and brake operation

Fig. 8.1.1 Overhead speed control with brake and motor box



- 1 Overhead speed control assembly
- 1.1 Drive shaft
- 4 Brake
- 5 Motor box assembly

8.1.1 Speed control function.

All manual revolving doors use the same 100:1 gear ratio manual speed control; a steel cast, precision machined, sealed unit. Unit is mounted in the canopy (overhead speed control).

- 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!

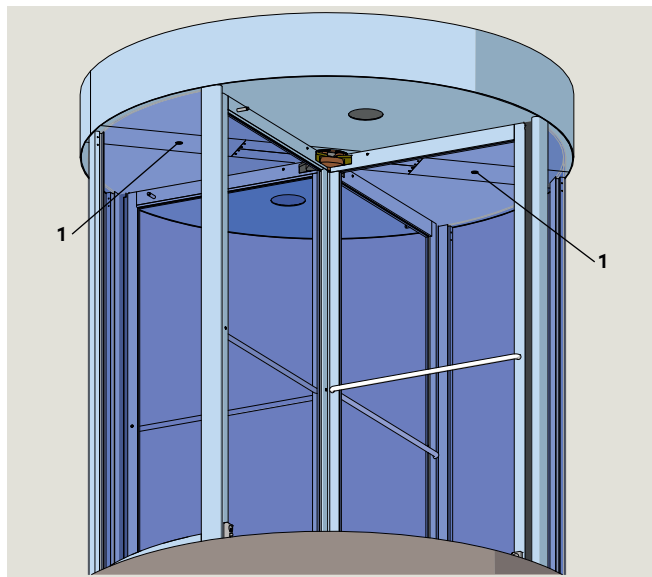
8.1.2 Motor box operation (Fig. 8.1.1).

1. Remote lock circuit is closed.
 - If following manual door operation the door stops short of the next Home position, after a delay the motor will slowly rotate the door counterclockwise at 1/2 RPM to the next Home position and stop.
 - If for any reason the Home position reference signal is not received by the control, the motor will stop after approximately 60 seconds.
 - Excessive torque (an obstacle) will shut the motor down.
 - The motor is compliant with ANSI/BHMA A156.27.
 - Works independently from the manual speed control assuring the revolving door's safe and compliant operation at all times even if the motor is turned off or removed.

9 Presence sensors

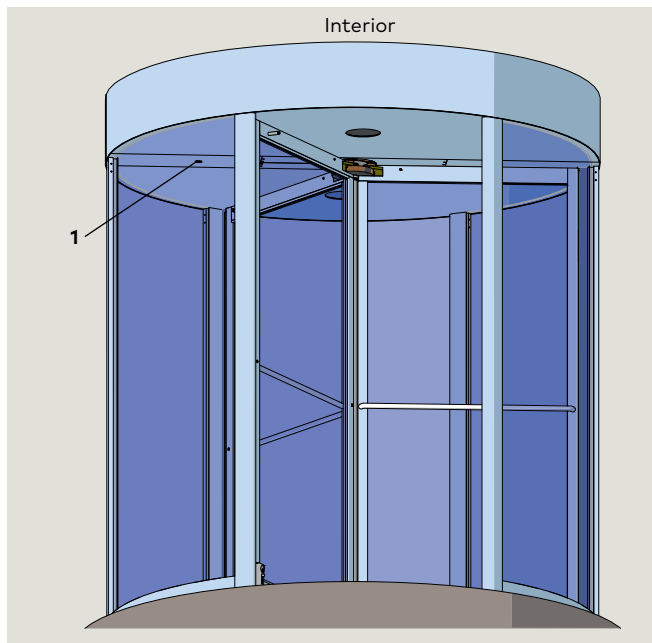
9.1 Presence sensor operation

Fig. 9.1.1 Presence sensors, 4 wing door



1 TOF spot sensor

Fig. 9.1.2 Presence sensor, 3 wing door



1 TOF spot sensor

9.1.1 Presence sensor mounting.

- Mounted in the canopy over each of the normally enclosed sections of the door, aiming straight down.

9.1.2 Presence sensor operation.

- Sensor dry contact output will indicate presence of any object or person underneath the sensor only while the brake (Fig. 8.1.1) is engaged to avoid false presence signals while the door is rotating.

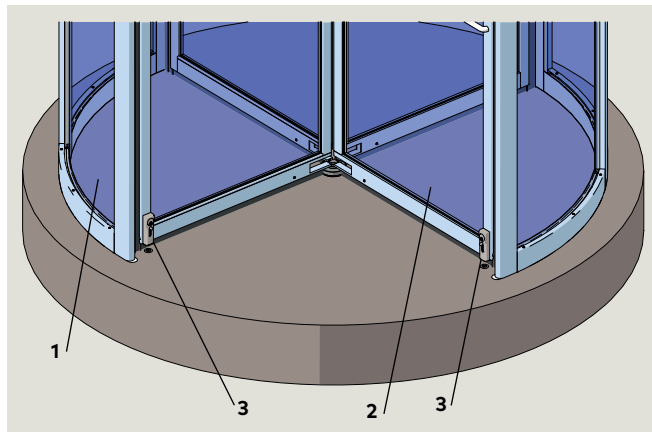
9.1.3 Presence sensor output.

- Output can be used for monitoring the presence within the enclosed section of the locked door.
- Connecting it to the Activation input of the S1 control box will automatically release the brake and let the entrapped person through.

10 Maintenance

10.1 Door and floor maintenance

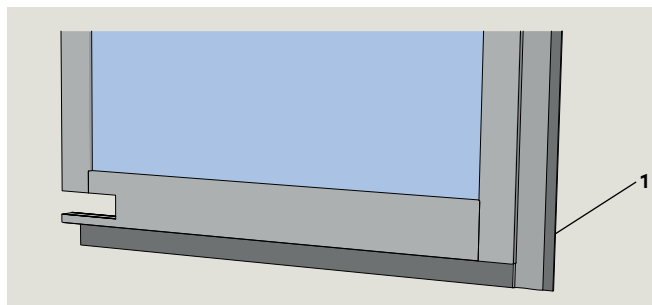
Fig. 10.1.1 4 wing revolving door



- 1 Enclosure glass
- 2 Wing glass
- 3 Mechanical wing lock and floor strike

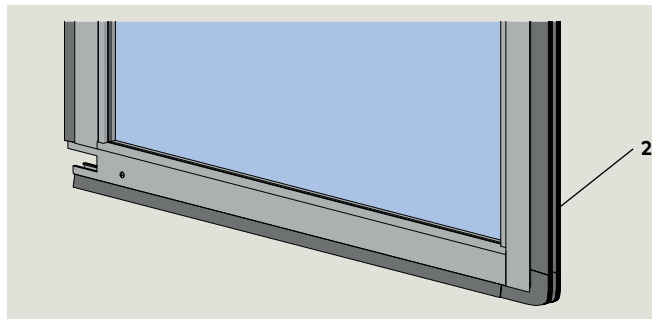
10.2 Weathersweeps

Fig. 10.2.1 T-style weathersweep



- 1 T-style weathersweep

Fig. 10.2.2 Horsehair weathersweep



- 2 Horsehair weathersweep

10.1.1 Floor maintenance.

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

10.1.2 Mechanical wing lock and floor strikes.

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

10.1.3 Door glass maintenance.

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

10.2.1 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.

10.3 Cleaning surfaces

10.3.1 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.

10.3.2 #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.

10.3.3 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.

10.3.4 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.

10.3.5 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.

