

Series 4900 ASR Automatic Security Revolving Door



Installation & Maintenance Manual

TABLE OF CONTENTS

INSTALLATION	3
General Contractor Notes	3
Layout	3
Ceiling Installation.....	5
Bottom Bearing Plate Installation	7
Upper & Lower Arm Assembly Installation	9
Shaft Assembly.....	9
Curved Glass Installation.....	11
Final Wiring Connections	12
Ceiling Panels Installation	14
Door Wings Installation.....	14
Motor and Control	15
Infrared Sensors – On exit only	16
Optex OV-301 TOF Sensor	17
Door Start Up and Shutdown Procedures.....	19
Door Ready Light.....	21
Door Function and Safety Checks	22
SERVICE	25
Replacement of Ceiling Lights	25
Replacement of Weather Sweeps.....	26
MAINTENANCE	27
Cleaning Instructions	27
Care and Maintenance of Stainless Steel in Architectural Applications	28
Care and Cleaning of Anodized Aluminum	31
PRODUCT DEVELOPMENT	33

INSTALLATION

General Contractor Notes

Requirements for installation of revolving door the general contractor provides:

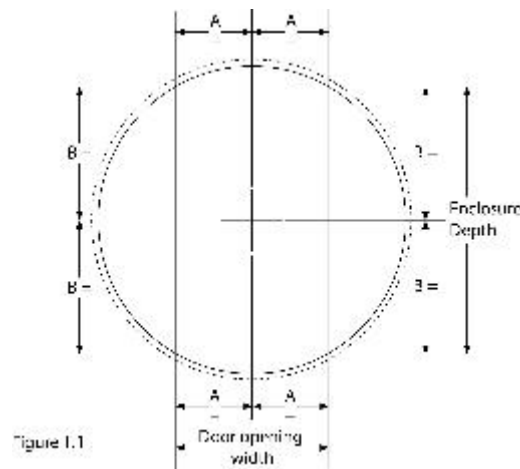
- 1) All electrical wiring and connections to the control panel and to the ceiling light transformer, if lights are required. (Rough-in wiring must be in prior to the time of installing).
- 2) Location for revolving door anchorage must be free from electrical conduits and wiring to a depth of 2".
- 3) Floor must be true and level at the interior screen of the revolving door
- 4) Finished floor must be completed before installation of revolving door.
- 5) 120V/20A feed to junction box located in canopy (subject to approval by local electrical code). This is for the motor and controls. Additionally, a separate 120VAC/15A circuit could be provided for the connection to the lights for the Rough in wiring to the canopy of revolving door.
- 6) All security connection, access devices and wiring by security provider.
- 7) Ensure clear access to the revolving door location of at least the diameter at the exterior of the door.

Layout

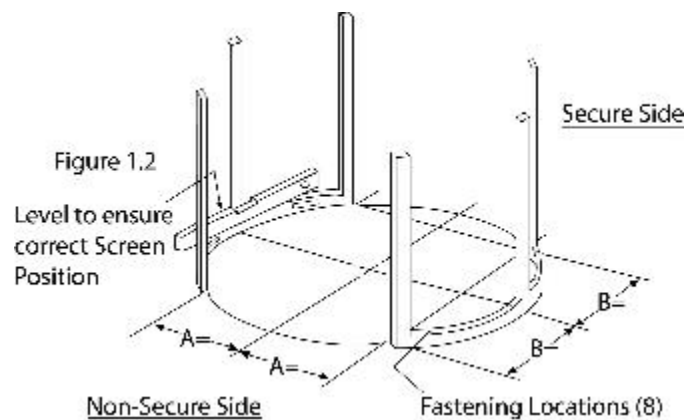
- 1) Before beginning layout - ensure finished floor is level & flat. See your installation drawing for confirmation of all dimensions.
- 2) Lay out the centre line of the revolver in accordance with the location specified on the installation drawing supplied.
- 3) After determining the centre point of the revolver, scribe a circle to mark the inside radius. Refer to installation drawings for dimensions.
- 4) Mark the location of the corner posts in accordance with the installation drawings.

Screen Installation

- 1) Double check lay out against shop/installation drawings supplied, paying particular attention to the dimensions marked (=) on Figure 1.1.



- 2) Position the screens with the inside face of the base resting on the scribed circle and the corner posts positioned in accordance with the lay out (Figure 1.2).



Note: Check corner post orientation so that the key switch is on the interior or secure side and the card reader or other access control unit is on the exterior unsecure side. If locks are included, ensure orientation of slots (located at the bottom curve rail) matches shop drawings.

- 3) While ensuring the screens remain in their correct positions, mark the fastening points on the finished floor. (Figure 1.2)
- 4) Move the screens aside, drill floor to accept shields provided and insert shields (x8) in finished floor. Reposition screens and fasten in place.
- 5) Check that bases have remained level with finished floor. Shim under bases if required and recheck for level (Figure 1.2).

Ceiling Installation

Note: Ensure screens are positioned correctly and fastened securely to the floor before carrying out the ceiling installation. Given the weight of the assembled ceiling, it is suggested a genie lift or other suitable lifting device is used to support the ceiling during assembly.

- 1) Remove roof sheets (x2) and set fasteners and sheets aside.
- 2) Position the ceiling horizontally on a suitable lifting device taking care not to damage the ceiling soffit in the process.
- 3) Ensure that the fascia marked INT is facing the interior or secure area. (If the fascia markings have been removed, it will be necessary to remove the access panel and ensure that the PLC control panels are oriented on the secure side).
- 4) Raise the ceiling into position over revolver screens and carefully lower the ceiling onto the screen.
- 5) Fish wires through pre-drilled ceiling holes in the ceiling and carefully lower the screen. Include with this any security access device wiring should be routed as well.

NOTE: No load to be applied to individual ceiling soffit panels.





- 6) Securely fasten with 5/16" socket cap screws provided as shown in Figures 3.2 and 3.3 (If centre post is provided).

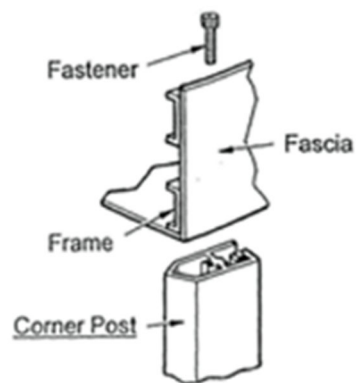


Figure 3.2

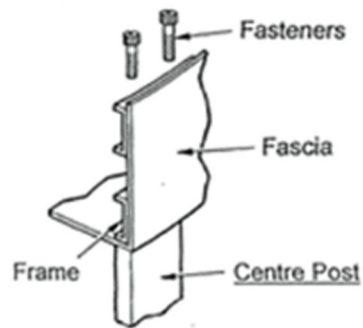
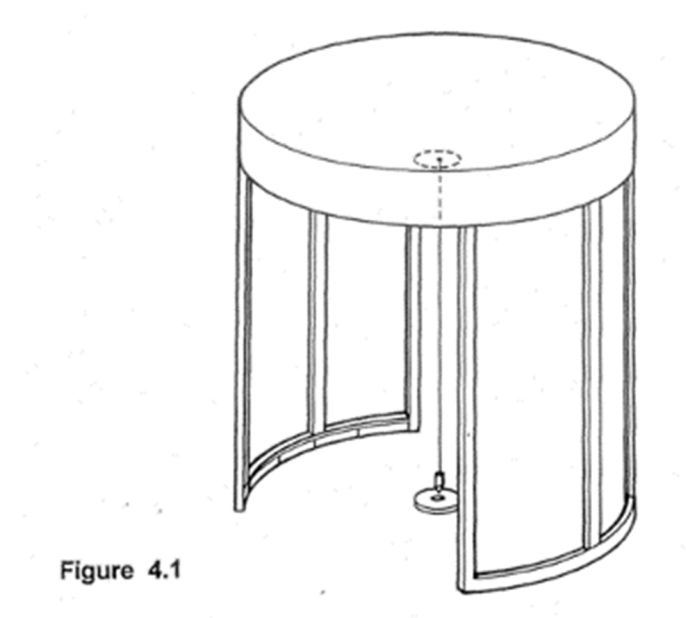


Figure 3.3

Bottom Bearing Plate Installation

- 1) Ensure the screens and ceiling is securely fastened before proceeding.
- 2) Using a plumb-bob or laser plumb, plumb from the centre of the upper collapsing mechanism down to the centre point of layout on finished floor (Figure 4.1). Watch for any draft, it may be necessary to erect a piece of plywood or any kind of a screen to ensure the plumb hangs straight. (Not necessary if using laser plumb line).



- 3) Position the bottom casing at the centre point and mark the fastening hole



- 4) Drill holes, as marked; insert shields provided and anchor casing to the finished floor. Shim, if required.

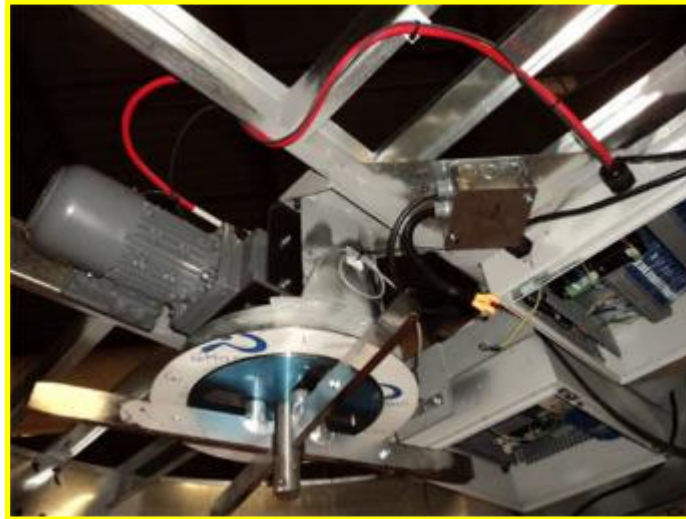


- 5) After fastening, check bottom casing for level before proceeding to suit. If everything checks out, install lower collapsing unit into bottom casing.



Upper & Lower Arm Assembly Installation

Upper Assembly is preinstalled in ceiling assembly.



Shaft Assembly

Step 1: Insert shaft into lower assembly.



Push up and drop lower shaft into lower collapsing mechanism.



Step 2: Slide it into slot in the upper assembly, aligning marks. (Figure 2 and Figure 2C).



Figure 2

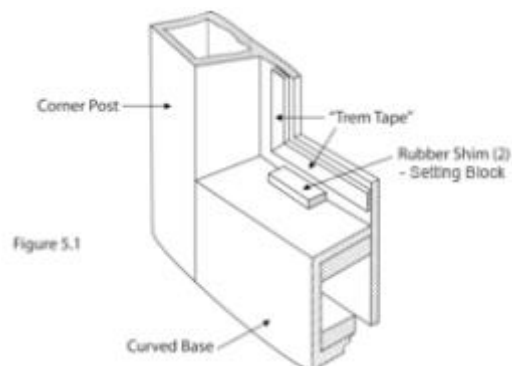


Figure 2c

Step 3: Insert ¼ cap screws into part of shaft. Break out bottom door hanger arms on each side and install shaft covers and return break out arms into lock position.

Curved Glass Installation

- 1) Suitable suction cups should be used to support glass during installation.
- 2) Before installing the curved glass the revolver screens must be prepared by cleaning then applying the foam glazing tape provided to the inside edge of the corner post, curved base and curved top stop (Figure 5.1). Remove the protective paper from the Tape.



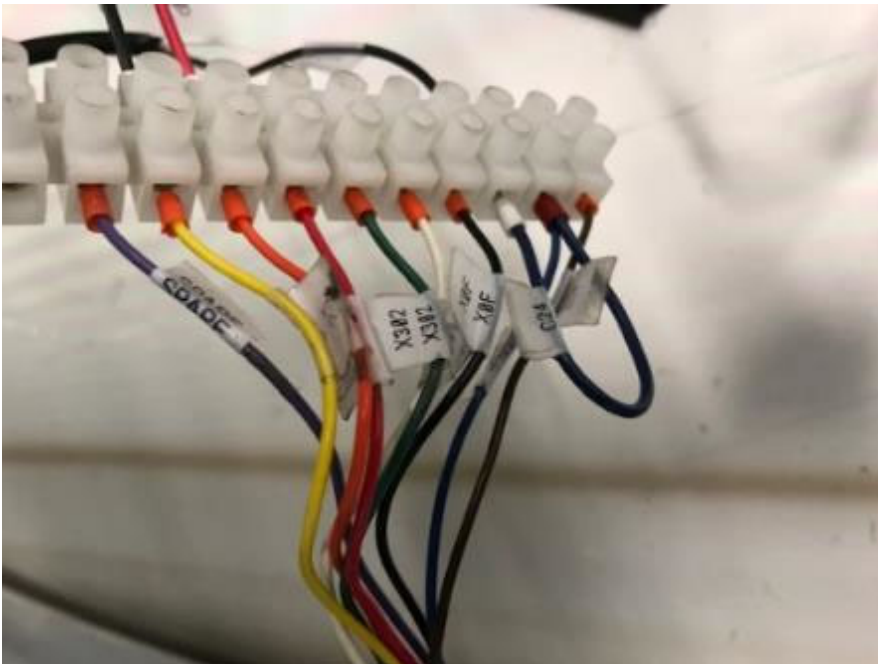
- 3) Place the glazing setting blocks provided (at least two per screen) on the curved base as shown (Figure 5.1). The curved glass will rest on these shims when glass is installed.
- 4) Prepare the curved glass by cleaning with alcohol or glass cleaner. Pay attention to the surfaces that

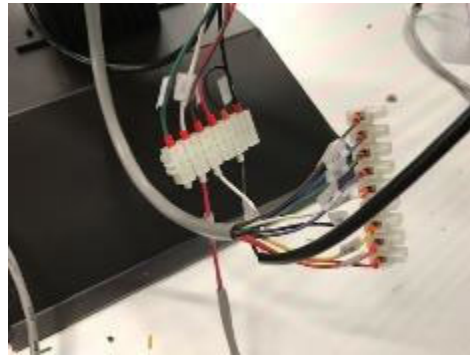
will come in contact with the foam tape.

- 5) Set the curved glass on a suitable surface to prevent damage to the glass edges and affix the suction cup to the outside radius of the curved glass.
- 6) Place curved glass in position taking care NOT to disturb the rubber shims or foam tape
- 7) With glass centered and resting on the rubber shims, gently push forward and force the glass to come in contact with the tape.
- 8) Hold in position and have assistant install top and bottom snap-in glass stops.
- 9) Silicone or install gasket as required (See installation drawing for detail). Ensure revolver has remained plumb after installation of glass.

Final Wiring Connections

- 1) Locate the terminal strips located near corner post locations. Attach wires from key switch and door ready light to corresponding numbered wires on terminal strip (See wiring diagram).





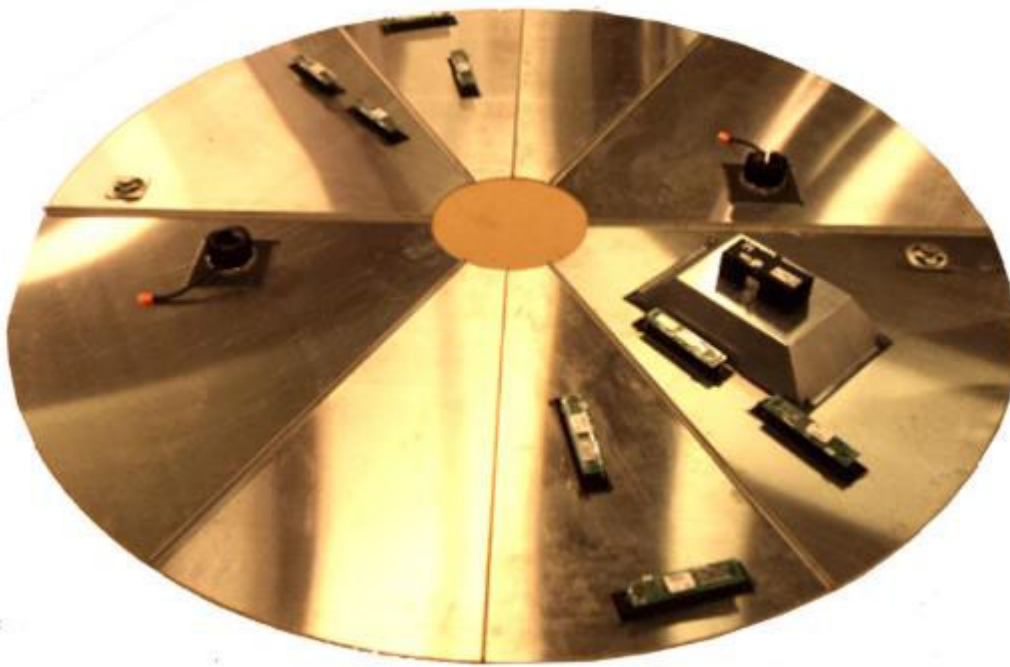
- 2) Plug into the 110V AC outlet in the canopy (supplied by others). Insert plugs into electrical receptacle. Note: All electrical connections should be completed by a licensed electrician.



* DO NOT PLUG IN CORD FOR LED LIGHT TRANSFORMER UNTIL ALL LIGHTS ARE CONNECTED. FAILURE TO DO THIS MANY CAUSE THE LIGHT FIXTURE TO BURN OUT.

Ceiling Panels Installation

Install ceiling panels and make appropriate connections to wiring harness as segment is installed.



Door Wings Installation

- 1) Install rubber boots on top and bottom of door wings (see Figure 6.1).
- 2) Install door wings with screws as shown.
- 3) Slide door wings onto upper and lower arm assembly and fasten in place with screws provided as shown in Figure 6.1.

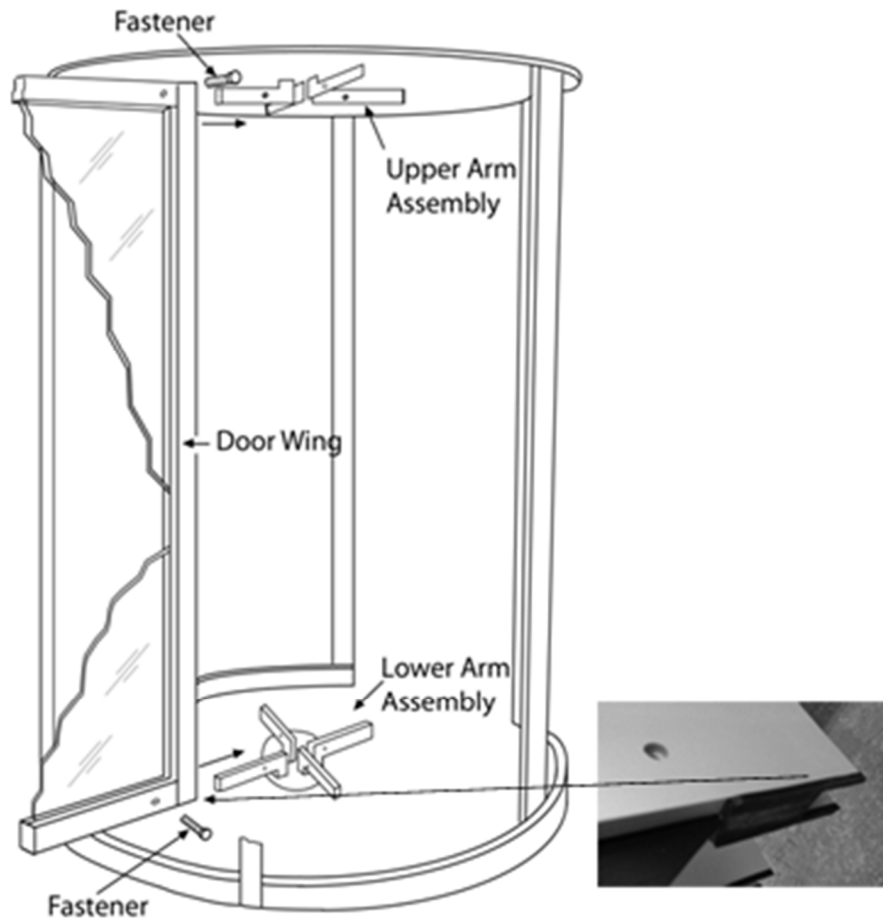


Figure 6.1

Motor and Control

- 1) Motor – Lenze .166 HP motor with integral brake assembly. (Note: Refer to the Lenze Operating Instructions on SMVector Frequency Inverter. To view or download a PDF copy of the manual, visit their website at www.lenzeamericas.com).



- 2) Controls - A Panasonic PLC based programmable controller integrates with all access systems as well as with the OV-301 controller to provide secure access system. Factory preset programming allows safe, reliable door operation. Important: Door controls can only be serviced by an authorized service representative.



Infrared Sensors – On exit only

- 3) The Series 4900 ASR doors have ceiling mounted infrared sensors for anti-tailgating detection. Anti-tailgating prevents unwanted intruders from entering the secured facility by following in the next section of the revolving door, or by attempting to enter when a person is leaving from the secure side. (Note: Refer to the BEA Focus 2 User Guide. To view or download a PDF copy of the manual, visit their website at www.bea-pedestrian.be/uploads/docs/manuals/FOCUS-EN-42.0564.01.UG/pdf)

On entry to the door from the unsecure side, the IR sensors are used as presence sensors to activate the door.

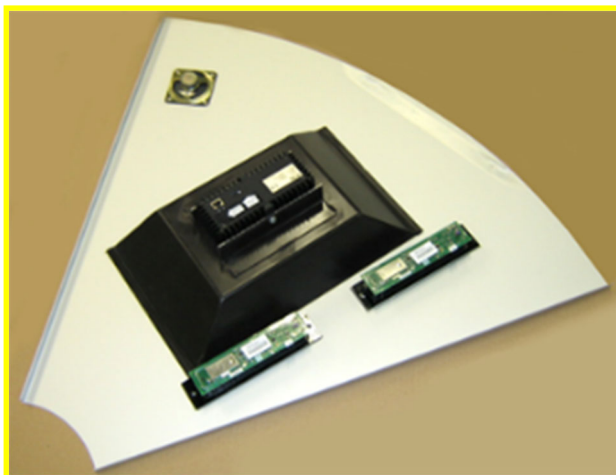


Optex OV-301 TOF Sensor

The Optex OV-301 sensing system's proven Time-of-Flight (TOF) technology provides both anti-piggybacking and anti-tailgating detection. Separate infrared sensors are not required for tailgating detection as this security violation is also detected by the OV-301 sensor. This is achieved through the self-contained infrared light sources and camera capturing the timed reflected light. An internal processor in the OV-301 measures the time of reflected light and creates a depth image to analyze the objects within the revolving door. This allows the built-in processor to determine if one or two persons

have entered the security revolving door. The processor compares the image with images stored in memory to detect security violations.

(Note: Refer to the Optex Operating Manual – Anti-Piggyback Sensor Model No. OV-301. Please contact the factory at 1-888-301-5407 to request for a PDF copy of the manual.)



Door Start Up and Shutdown Procedures

I. Startup

- 1) Unlock the two-bottom rail slide bolt locks on the secure side of the door.



- 2) Ensure both keys on the right-hand corner post on the secure side are in the horizontal position. The indicator lights will most likely be off as the power from the UPS may be drained during transit. The battery backup life is approximately 24 hours.



- 3) Insert power cord into an 110VAC, 60 Hz, 20 Amp power supply.
- 4) The door will begin to rotate, and the voice module will announce "Door is moving to home position, please exit the door."

- 5) After door reaches the home position wait about a minute while the OV-301 computer starts up and activates the TOF sensor. During this process if you observe the TOF sensor mounted in the ceiling, you will see a series of flashing blue and red lights. At some point, the lights will go out completely and then a steady green light will be seen.

Note: Do not enter or press any buttons or activate any other access devices during this process

- 6) When the TOF sensor and computer are ready, the voice module will announce "Door is ready, please enter."

II. Shutdown

- 1) Rotate wings so that two mechanical slide bolt locks align with the corner posts on the secure side.
 - a) To manually rotate the doors, turn the bottom key on the corner post located at your right hand on the secure side. This releases the brake and allows freewheeling of the door. This is useful in the event of door maintenance or if someone becomes trapped in the door.
 - b) When the wings are in the desired position and the mechanical locks are engaged, return the key switch position to the horizontal to engage the motor brake.
- 2) Disconnect main power. The green indicator light will remain on. This is connected to the UPS and draws a very small amount of power. This will eventually drain the battery backup pack.

Door Ready Light

A “Door Ready” light, pre-installed on the exterior post (and one on the interior corner post, for 2-way security), will glow green when a successful card read takes place and indicates to the user that it is safe to pass through.



Door Function and Safety Checks

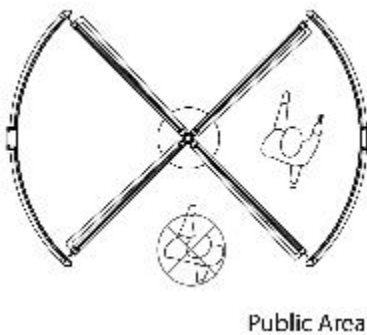
1) Check operation of motion sensors

- Present security ID at door entry.
- Enter revolving door quadrant. Door should start rotating automatically. This indicates door motion sensors are functioning.
- Check exiting motion sensors as well, if applicable.

2) Check anti-tailgating function

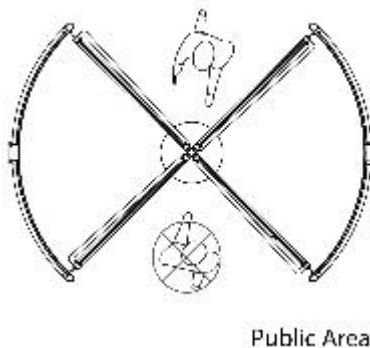
Anti-tailgating prevents unwanted intruders from entering the secured facility by following in the next section of the revolving door, or by attempting to enter when a person is leaving from the secure side.

Secure Area



- Activate door on the non-secure side using a single authorization.
- Let authorized user enter the door and have 2nd, unauthorized user attempt to enter by using the next quadrant.
- Door should stop its rotation and the voice enunciator will request door entry to be cleared.
- Once cleared, the door will resume its rotation.

Secure Area

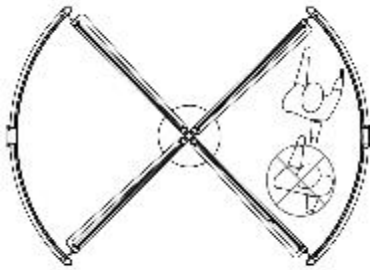


- For one-way security, i.e. authorization to leave premises is not required, let 1st user enter the door from the secure side.
- Let 2nd user enter the door, at the same time, from the non-secure side without valid authorization.
- Door should stop its rotation and the voice enunciator will request door entry to be cleared.
- Once cleared, the door will resume its rotation.

3) Check anti-piggybacking function

Anti-piggybacking tailgating prevents unwanted intruders from entering the secured facility by using the same quadrant on a single authorization.

Secure Area



Public Area

- Activate door on the non-secure side using a single authorization.
- Let authorized user enter the door and have 2nd, unauthorized user attempt to enter by using the same quadrant.
- Door should stop its rotation and the voice enunciator will request door entry to be cleared.
- Once cleared, the door will resume its rotation.

4) Check corner post Bumpers

- Activate door
- Once door starts rotating, compress the corner post sensor
- Door should stop rotating



Corner post
Bumpers

5) Entrapment reverse button

There are two buttons located on the interior center mullion. In the rare event someone becomes trapped, these will allow the door to function and allow the trapped person to exit.

To Activate:

In the event someone becomes trapped:

1. Door will stop and the person would be caught in the middle quadrant.
2. Wait approximately 5 seconds
3. Push and hold red button until door begins to move. Approximately 2 seconds.
4. Door will reverse and return the person to the side they entered.

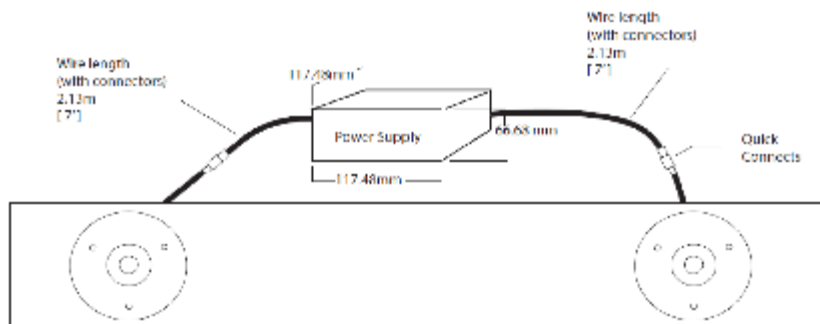


Note: If any of these components fail, please contact the factory at 1-888-301-5407.

SERVICE

Replacement of Ceiling Lights

Assembly as shown below.



- 1) Turn off lock out main power supply
- 2) Remove three screws from lens cover and remove lens and lens holder.
- 3) Remove screws holding LED lamp
- 4) Unclip from power feed lines.
- 5) Clip new LED lamp onto power feed.
- 6) Screw new lamp into position.
- 7) Replace lens, cover and screws.
- 8) Restore main power back to the unit and test that lamp is operational.

Replacement of Weather Sweeps

- 1) Remove door wings.
- 2) Remove old sweeps (slide out).
- 3) Install new sweeps and join corners.
- 4) Re-install door wing.



MAINTENANCE

Cleaning Instructions

- 1) Clean glass with water or regular glass cleaner. Avoid having cleaner come in contact with cement on all glass door wings as this will cause cement to deteriorate.
- 2) Clean aluminum or stainless steel with mild detergent and rinse well with clean water. Dry with soft cloth. Do not use abrasive cleaners.
- 3) During winter months, avoid using excessive ice-melting chemicals; also wash frequently to remove accumulated salt and slush.
- 4) Cleaning painted and stainless steel finishes

THE CARE AND CLEANING OF PAINTED MATERIAL: Today's factory applied heat cured painted finishes are durable and very colorfast. The Kynar® and Hylar® PVDF resin-based products that meet the AAMA 2605 specification with trade names such as Duranar® by PPG, Fluropon® by Valspar, Shernar® by Sherwin Williams or Trinar® by Akzo-Nobel are warranted to retain their color and gloss level for many years. However, to assure that they retain their original beauty, even these highly durable finishes should be cleaned occasionally. When selecting a cleaning solution use mild soap solutions that are safe for use with your bare hands such as those products that one would use to wash a car. Avoid the use of strong acid or alkali cleaners as they may damage the finish.

Solvents no stronger than mineral spirits or denatured alcohol may be used to remove grease, sealants or other materials. Never mix cleaners or cleaners and solvents as the resultant mixture can cause harmful or even dangerous results. Do not use abrasive cleaners or materials such as steel wool or abrasive brushes, which can also harm the surface.

Once heavy soil, grease or sealant is removed the mild soap solution should be applied with a soft cloth, sponge or soft brush. Rinse the surface thoroughly with clean water and dry with a soft cloth.

In coastal areas where the finish is exposed to salt spray or in areas containing heavy industrial pollutants the cleaning should take place on a regular basis. For example cleaning the painted finish can be scheduled as a part of the regular maintenance program for glass cleaning.

Care and Maintenance of Stainless Steel in Architectural Applications

Architectural applications for stainless generally specify the use of T304 stainless steels. This grade is an austenitic stainless steel.

It is specified in the following common architectural finishes:

- | | |
|------------------------|---|
| Imperial Finish | - a matte gray textured finish similar to a shot blasted pattern |
| Ezeform Finish | - a rolled pattern finish available in both a bright and dull lustre |
| #8 Mirror | - a highly polished reflective finish (mirror type finish) |
| #4 Satin | - a general purpose finish produced by abrasive belt polishing of cold rolled sheet |
| XL Blend S | - a finish similar to #4 but finer in texture, handling marks, scratches, and minor surface damage are readily masked by localized re-grinding on this finish |

All stainless architectural materials are supplied in the passivated or corrosion resistant condition. They do require periodic cleaning just as other materials do when in service. Exterior components for example are subjected to road salt spray at ground level and deposits from polluted urban air at higher levels, Finger marks, deposits from tobacco smoke, and other stains can detract from the original, attractive appearance of interior stainless applications.

One of the outstanding features of stainless steels is the ease with which its fine appearance can be maintained. There are some important considerations that should be understood by those charged with the responsibility to care and maintain these architectural products.

General Precautions:

- 1) Wash all stainless areas regularly with warm water and mild soap or detergent using a clean cloth or soft brushes.
- 2) The frequency of regular maintenance cleaning will depend on the degree of contamination and the aesthetic needs of the individual user, in the case of exterior panels, once a year is the minimum recommended practice. Interior areas may need frequent attention at ground level due to finger marks etc. with higher levels receiving yearly or twice yearly attention.
- 3) Do not allow dirt to accumulate. Remove any stubborn grime using recommended cleansers and methods, do not use ordinary steel wool or other metal scrapers to remove stubborn dirt as these will contaminate the stainless and mar the architectural finishes. Do not use harsh, abrasive untested cleaners in stubborn areas.

- 4) Do not allow the cleaning agent come in contact with cement on all glass door wings as this will cause cement to deteriorate
- 5) As tapes, resins and finishes react differently to certain cleaning agents, it is recommended to test the cleaning agent on a low visibility area to check for surface discoloration before proceeding. It is advisable to work on reasonably small sections at a time, e.g. 4' x 4'.
- 6) Always clean in the direction of original polish or grit lines.
- 7) Always rinse after cleaning and blow dry or wipe dry.

Routine Cleaning:

- 1) Rinse with water to remove as much soil as possible.
- 2) For normal stains, air born dirt, etc., apply a soap or liquid detergent product or 5% ammonia solution in water (preferably warm) to the panels.
- 3) Rinse well with water.
- 4) Remove excess water ensuring that all strokes are in the same direction (following the polish lines) preferably top to bottom and overlapping and let dry. The use of a "squeegee" is helpful in facilitating this drying process.

SPV Adhesive Tape Residue:

Surface protective materials when peeled off the stainless can leave minor amounts of tape residue on the surface which can facilitate the adherence of airborne dirt particles. Proper removal is desirable to maintain good overall appearance.

- 1) Rinse with water to remove superficial dirt.
- 2) Apply a stainless cleaner and polisher or organic solvents (e.g. methyl hydrate or rubbing alcohol) or paint or lacquer thinners with a rag, sponge or fiber brush with a soft nylon or natural bristle using long, light strokes.
- 3) Rinse well with water.
- 4) If necessary, repeat the above steps until all tape residue is removed.
- 5) Remove excess water ensuring that all strokes are in the same direction (following the polish lines) preferably top to bottom and overlapping and let dry. The use of a "squeegee" is helpful in facilitating this drying process.

Oil or Grease Marks:

- 1) Rinse with water to remove as much deposits as possible.
- 2) Where grime contains significant amounts of oil or grease, apply an organic solvent such as acetone, ether, alcohol, toluol, xylol, benzol, benzine, naptha or a 5 to 15% caustic soda solution (hot or cold) with a sponge or rag.
- 3) Rinse well with water.
- 4) Remove excess water ensuring that all strokes are in the same direction (following the polish lines) preferably top to bottom and overlapping and let dry. The use of a “squeegee” is helpful in facilitating this drying process.

Rust Discoloration:

- 1) Rinse with water to remove superficial dirt.
- 2) To remove rust spots from carbon steel contamination or high temperature discoloration marks, apply a nitric acid solution (one part of nitric acid to nine parts of warm water) and let it stand for 30 to 60 minutes before rinsing. Wear rubber gloves and always follow manufacturer’s dilution instructions. It is recommended that the minimum concentration and resident time to accomplish the job be employed.
- 3) Rinse well with water.
- 4) Remove excess water ensuring that all strokes are in the same direction (following the polish lines) preferably top to bottom and overlapping and let dry. The use of a “squeegee” is helpful in facilitating this drying process.

Finger Marks:

- 1) Rinse with water to remove superficial dirt.
- 2) To remove finger marks and smears, and suppress their appearance in heavy traffic areas, apply a soap or liquid detergent product or organic solvent (e.g. acetone, alcohol, methylated spirits) to the panels.
- 3) Rinse well with water. Remove excess water ensuring that all strokes are in the same direction (following the polish lines) preferably top to bottom and overlapping and let dry. The use of a “squeegee” is helpful in facilitating this drying process.

Special Precautions on Polished Finishes:

- 1) **#8 Mirror** - because of the highly reflective nature of this finish, it is necessary to take extra precautions to minimize scratching and marring of this finish. In some cases it may be necessary to remove the contaminant and re-buff the surface to restore to the original lustre.
- 2) **#4 Satin and XL Blend S** - because these finishes have a grit line pattern always rub following the polish lines using sufficient pressure to remove adherent dirt particles and stains. For stubborn cases, abrasive cleaners may be used. Household cleaning powders such as Ajax, Comet, Dutch Cleanser*** may be applied using a damp cloth following the polishing lines.

Note: Experimentation in a low visibility area to check for surface discoloration is advised, in some cases, it may be necessary to remove the contaminant and re-polish the surface to restore to the original appearance. This re-polishing is easily done with Scotchbrite*** pads or grinders in the case of XL Blend S.

*** Proprietary cleansers listed are not an endorsement of a specific product and is only intended to serve as examples of the type of cleaning agents that are commercially available. All products should be tested prior to usage and always follow the manufacturer's instructions and directions of use.

Care and Cleaning of Anodized Aluminum

Cleaning Procedures

Cleaning procedures for aluminum should be initiated as soon as practical after completion of installation to remove construction soils and accumulated environmental soils and discolorations.

Cleaning work should start at the top of the building and proceed to the ground level in a continuous drop. Using a forceful water spray, an area the width of the stage or scaffolding should be rinsed as cleaning proceeds from the top down.

Because surface soils may be light or heavy, several progressively stronger cleaning procedures may be employed depending of the severity and tenacity of the soil. Only trial and simplest procedure to remove the soil is the one that should be used.

For light soils, the simplest procedure is to flush the surface with water using moderate pressure. If soil is still present after air-drying the surface, scrubbing with a brush or sponge and concurrent spraying with water should be tried. If soils still adhere, than a mild detergent cleaner should be used with brushing or sponging. Washing should be done with uniform pressure, first horizontally then vertically. Following the washing the surfaces must be thoroughly rinsed by spraying with clean water.

If it is necessary to remove oil, wax, polish, or other similar materials, MEK or an equivalent solvent is

recommended for clean up. Extreme care must be exercised when solvents of this type are used since they may damage organic sealants, gaskets and finishes. These solvents should never be used on anodic finishes protected by clear organic coatings unless the organic coating has deteriorated and should be removed.

Removing heavy surface soils may require the use of an abrasive cleaning pad. In this procedure the pad is thoroughly soaked with clean water or a mild detergent cleaner and the metal surface is hand scrubbed with uniform pressure. Scrubbing action should be in the direction of the metal grain. Scrubbing with a nylon-cleaning pad impregnated with a surface protectant material is also recommended for removing stubborn soils and stains. After scrubbing, the surface should be rinsed thoroughly with clean water to remove all residue.

In some circumstances it may be desirable to wipe the surface with a solvent. The surface is then permitted to air dry or is wiped dry with a chamois, squeegee or lint-free cloth.

Using power-cleaning tools may be necessary to remove unusually heavy soils from large areas including panels and column covers. When using such tools, the surface must be continually flushed with clean water or a mild detergent cleaning solution to provide lubrication and a medium for carrying away the dirt. After an area has been machine scrubbed, it must be rinsed with clean water and thoroughly scrubbed with a fairly stiff bristle brush. The surface may then be air dried or wiped dry.

Inspection & Cleaning Precautions

Care must be taken to see that metal seams, crevices, sills and other areas that can trap water, cleaner or dirt are carefully cleaned and dried. A final inspection, by a qualified representative is recommended, to ensure that no discoloration or stains remain on the surface.

Certain precautions must be taken when cleaning anodized aluminum surfaces. Aluminum finishes must first be identified to select the appropriate cleaning method.

- Aggressive alkaline or acid cleaners must never be used.
- Cleaning hot, sun-heated surfaces should be avoided since possible chemical reactions will be highly accelerated and cleaning non-uniformity could occur.
- Strong organic solvents, while not affecting anodized aluminum, may extract stain-producing chemicals from sealants and may affect the function of the sealants.
- Strong cleaners should not be used on window glass and other components where it is possible for the cleaner to come in contact with the aluminum.

Excessive abrasive rubbing should not be used since it could damage the finish.

PRODUCT DEVELOPMENT

A continuing research and development program ensures a high standard of quality in design, workmanship, and service performance. This Installation and Maintenance Manual may differ slightly from current production models as a result of this continuing R&D program.



C J Rush Entrance Systems Ltd.

65 Riviera Drive, Markham Ontario L3R5J6

T: 905 944 8005 Toll Free: 1-888-301 5407

Email: sales@cjrush.com

Website: www.cjrush.com