Phoenix Security Revolving Door

Division 8 – Door and Windows

Section 08 42 33 – Revolving Doors

PART I – General

1.01 SECTION INCLUDES

A. This section covers the furnishing and installation of a complete Manual Revolving Door System. Provide complete system that has been fabricated and tested for proper operation. It includes curved sidewalls, canopy, ceiling, door wings, hardware, glass, speed control and emergency collapsing mechanism as required for installation.

1.02 RELATED SECTIONS

A. Section 07915 - Sealants, Caulking and Seals
B. Section 08400 - Entrances and Storefronts
C. Section 08710 - Door Hardware
D. Section 08810 - Glass and Glazing
E. Section 09600 - Flooring
F. Section 16123 - Electrical Supply and Termination

1.03 REFERENCES

A. ANSI/BHMA A156.27 – American National Standard for Power and Manual Operated Revolving Pedestrian Doors
B. ANSI Z97.1 - American National Standard for Safety Glazing Materials used in Buildings
C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum
D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
E. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
F. ASTM A 480/A 480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
G. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
H. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
I. ASTM A 36 / A36 Standard Specification for Carbon Structural Steel
J. ASTM A 240 / A 240M Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

1.04 COORDINATION

A. Recesses: Manufacturer shall coordinate size and location of recesses in floor construction for revolving door entrance components including anchorages for frames and supports.

B. Anchorages: Manufacturer shall furnish drawings and directions for installing anchorages that are to be embedded into concrete.

C. Layout Template (Optional): Manufacturer shall provide precision cut floor layout template.

1.05 QUALITY ASSURANCE

A. Manufacturer shall be a company specializing in the supply of manual revolving doors with a minimum of ten (10) years of experience.

B. Installer shall supply a factory-trained supervisor during installation of the door.

C. All Revolving Doors must be pre-erected and tested in factory prior to shipment.

1.05 SUBMITTALS

A. Manufacturer shall submit project specific shop drawings and finish samples as required.

B. Manufacturer shall indicate pertinent dimensions, general construction, component connections and locations, and anchorage methods and locations.

C. Manufacturer shall provide sample of unexecuted manufacturer warranty.

D. Manufacturer shall provide test reports proving that they have tested and met the requirements of "ASHRAE" air infiltration requirements "90A" and "90.1" per the "ASTM E-283" testing parameters.

1.06 CLOSEOUT SUBMITTALS

A. Manufacturer shall submit appropriate operation and maintenance manual.

B. Manufacturer shall submit copy of the revolving door “As-Built” shop drawings.

C. Manufacturer shall submit copy of the executed revolving door warranties.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Manufacturer shall deliver materials to job site in manufacturer’s packaging undamaged, complete with installation and operating manuals.

B. Manufacturer shall store materials off ground, under cover, protected from weather and construction activities.

1.08 WARRANTY

A. International Revolving Door warrants its doors against defects in material and workmanship for a period of twelve (12) months from the date of shipment of the product. This warranty excludes glass breakage, normal wear on finishes or damage that occurs due to abuse, misuse, or acts of God.

B. International Revolving Door warrants its electronic components for a period of twelve (12) months. This warranty excludes damage that occurs due to abuse, misuse, water damage, or acts of God. This warranty is void if work is performed on electronic components by a non-factory authorized technician.

C. Finish Warranty Period: Anodized finishes: Five (5) years, painted finishes: Five (5) years **(Ten (10) and Twenty (20) year finish warranties available).**

PART 2 – Materials and Products

2.01 MANUFACTURER

A. Phoenix High-Security Revolving Door
Manufactured By: International Revolving Door
2138 N. Sixth Ave, Evansville, IN 47710.
(812) 425-3311 Homepage: http://www.internationalrevolvingdoor.com/

B. Limitations: Obtain revolving door entrance components through one source from a single manufacturer.

2.02 PERFORMANCE REQUIREMENTS

A. Performance Standard: Comply with ANSI A156.27

B. Opening Force, Maximum Turning Speed, Emergency Breakout, and Entrapment-Prevention Force: Comply with cited BHMA standard and requirements by authorities having jurisdiction

C. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201

D. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of 1.25 cfm/sq. ft. (6.4 L/s x sq. m) of fixed entrance-system area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa).

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70 under UL 325

2.03 DOOR CONSTRUCTION

A. Basis of Design: International Revolving Door Phoenix High-Security Revolving Door

B. Aluminum Curved Enclosure Walls: Shall have a standard inside diameter of 6’-6” or 7’-0” and be manufactured from four (4) extruded aluminum posts, two (2) 4” or 5” extruded aluminum center mullions, and two (2) 4” extruded aluminum bottom rails.

1. Enclosure walls shall be fastened and fit with tight hair line butt-joints.
2. Enclosure wall shall be 1-5/8” thick.
3. Enclosure walls shall have a 4” bottom sightline.

C. Formed Aluminum Bronze and Stainless Steel Curved Enclosure Walls: Shall have a standard inside diameter of 6’-6” or 7’-0”. The finish metal shall be cut, formed and reinforced over stainless steel sub-frame. Welds on exposed surfaces to be dressed and finished after welding. Bottom rail of walls to have removable glass stop for field glazing.

1. Enclosure substructure to be made and reinforced with stainless steel for corrosion resistance
2. Bronze and stainless steel enclosure walls to be a fully welded assembly.
3. Aluminum enclosure walls shall be fastened and fit with tight hair line butt-joints.
4. Revolving door individual assemblies shall be fabricated using reinforced and face welded surface joinery where applicable, with all welds dressed flush and finish blended to match adjacent surfaces, per American Welding Society standards.
5. Where bends in steel forming are required, all stretch lines and die marks shall be refinished to blend with adjacent surfaces.

6. Custom Sightline (Optional)
7. Enclosure walls shall be 1-3/4” thick.

D. Free-standing Design: Free Standing Design doors have a 1-1/2" structural steel square bar running from the sub-floor to the canopy in each wall post and mullion (Optional).

E. Canopy: The canopy and ceiling shall consist of one (1) structural piece, and shall have a formed and welded steel substructure. Available with a standard 12” custom size cornice.

1. Canopy shall have a formed steel joist with a minimum thickness of .105”.
2. Cornice sheet minimum thickness shall be .090”.

F. Saturn Door Wings: Three (3) or four (4) door wings as designed and manufactured with a stainless steel tube welded substructure. Door wings must utilize removable rubber and felt weatherstripping on two sides and rubber on one side. The inside stile shall be removable and have a custom width no less than 1-3/4”, the outside stile shall be a custom width no less than 2-1/2”, and the bottom and top rail shall be a custom height no less than 3”. Door wings must be capable of folding forward or backward allowing for emergency egress. Door wings are available in aluminum, bronze or stainless steel.

1. Manufacturer shall fabricate revolving door individual assemblies using reinforced and face welded surface joinery for bronze and stainless-steel door wings, with all welds dressed flush and finish blended to match adjacent surfaces (Per American Welding Society standards).
2. Aluminum wings to have fitted hair-line butt joints.
3. Where bends in steel forming are required, all stretch lines and die marks shall be refinished to blend with adjacent surfaces.
4. Custom 4” minimum sightline (Optional)
5. Wing glass shall be 1/4” tempered glass.
6. Bullet-resistant glass available (Optional).

G. Saturn S (Narrow Stile) Door Wings (Optional): Three (3) or four (4) door wings as designed and manufactured of narrow stile aluminum extrusions and reinforced with internal aluminum door corners for strength. Door wings must utilize removable rubber and felt weather stripping on two sides and rubber on one side. The inside stile shall be 1-3/4” x 1-3/4”, the outside stile shall be 1-3/4” x 2-1/2”, and the bottom and top rail shall be 1-3/4” x 3”. Door wings must be capable of folding forward or backward allowing for emergency egress. Door wings are available in clad bronze or stainless steel.

1. Where bends in steel forming are required, all stretch lines and die marks shall be refinished to blend with adjacent surfaces.
2. Door wings shall have a 4” sightline.
3. Wing glass shall be 1/4" tempered glass (Optional).
4. Bullet-resistant glass available (Optional).

H. Fasteners: No visible fasteners shall be used except those necessary for the application of manufacturer's hardware, and glass molding. Fasteners shall be corrosion-resistant, non-staining, non-bleeding, and compatible with adjacent materials.

2.04 EQUIPMENT

A. Communication System: The communication system shall use visual signals and voice annunciation used in the event of authorized or unauthorized entry. The door must have the capability of communicating a security violation to either an access control system or an on-site remote panel.

1. The door shall signal the user when the door receives the authorized access signal from the access control system's card, biometric system, or any other controlled access method.
2. The door will signal through voice annunciation and visual signal that access has been granted and to proceed through the door.
3. The visual signal shall be mounted on the door carrier arm system.
4. The door shall have two (2) speakers recessed into the canopy.
5. The door shall be equipped with the IRD Link System for remote diagnostics and troubleshooting.

B. Door Drive System: The overhead drive system shall include 1/3 HP DC motor attached to the doors center structural framing. The door shall operate on 110-120 VAC power service, required from above by others. The drive system shall utilize a digital encoder for constant door position sensing.

C. Door Brake Assembly: The braking assembly shall be automatic when stopping is required without additional hardware. The door's braking system shall provide the following characteristics:

1. The revolving door shall remain locked at all times until unlocked by a signal from an access control system or emergency system.
2. The revolving door shall lock immediately after pedestrian passage from IR system or incorporated system is confirmed.

D. Door Controller: The revolving door shall include a Microprocessor-based Programmable Logic Controller (PLC) with the following characteristics:

1. Door controller shall be mounted in door canopy.
2. Door controller shall be within 50 feet of the door unit. Plug-N-Play connections shall be provided (Optional).
3. Door controller shall have EPROM memory, Non-Volatile memory, and no need for Lithium battery back-up. The revolving door shall automatically reset if power is momentarily turned off and then restored. Upon power restoration, the revolving door shall make a revolution and position at start point, ready for use.
4. The revolving door shall include self-diagnostic software for quick problem detection of problem source.
5. The revolving door system shall include visual display of problem source.

E. Door Contacts: The revolving door shall have door contacts for each door wing for security applications (Normally open SPST, .5 ma at 30 VDC).

F. Emergency Collapsing Mechanism: Precision-engineered door hangers and disks that allow the door wings to be collapsed or folded, and stored in a book-fold position. Collapsing mechanism shall permit the wings to fold to emergency exit position allowing a minimum aggregate width of 36 inches. Pressure setting shall be capable of being adjusted from 60 pounds to a maximum setting of 220 pounds. The adjusting device shall be accessible without removal of wings, center shaft or discs. Pressure setting shall be preset and tested in the factory and shall only be adjusted in the field to meet the specific needs of the building.

1. Wings are held in radial positions by means of self-lubricating plungers, engaging in the top and bottom disc of each wing. Excess pressure shall rotate plunger from disc "V-groove"
2. The hangers shall have two (2) replaceable bronze guide pins

G. Manual-Security (Optional): Allows the door to operate in (4) modes including an Auto, Lock, Maint, and Test feature. These features are toggled on a key switch, mounted on the interior side of the wall post. Equipped with IRD standard manual speed regulator with braking system, wing lock, shaft lock, and one-way or two-way controlled access with microwave sensor.

1. Auto (*Access Control Mode*) Will accept request signals from both the interior and exterior side. LED rings will glow red in this mode until a valid access request is received. When a valid access request is received, LED rings will glow green.
2. Lock (*Lockdown Access Mode*) Door ignores all access request signals and remains in a fully locked state. LED rings will glow red in this mode.
3. Maint (*Freespin Mode*) Door freely spins allowing access from exterior and interior sides. LED rings glow green in this mode.
4. Test (*Test/Reset Mode*) Door de-energizes all locks and resets any faults. If fault is present overhead LEDs will flash in a sequence of red and green.
5. Fire Alarm (*Emergency Egress Override Mode*) During a fire alarm, the door will de-energize all locks to allow for egress and emergency wing break away. This mode overrides all other modes.

H. Lights (Optional): Provide (up to 4) LED lights to be recessed into ceiling (110-120 VAC power service required from above by others).

2.05. HARDWARE

A. Adjusting Screw: Bronze screw used to adjust the pressure required to book-fold rotating wings.

B. Bumpers: Rigid, architectural bronze and rubber-tipped bumpers are located on the top door rail of each door wing to prevent door wings from contacting one another when in the book fold position; one (1) per wing. Bumpers are available in the following finishes:

1. #4 Satin Brushed Bronze or Chrome
2. #8 Polished Mirrored Bronze or Chrome
3. #4 Statuary Bronze (Optional)
4. Painted to Match (Optional)

C. Carrier Arm: Carrier arm shall be precision machined, and clad to match revolving door. The carrier arm shall be equipped with electromagnetic wing locking mechanism.

D. Center Shaft: Steel center shaft shall connect the speed control and pivot using the stainless-steel pivot pin.

E. Center shaft Housing: Extruded center shaft housing shall be of aluminum alloy 6061-T6 per ASTM B-221 and shall cover the steel center shaft. Center shaft housing shall have felt pile providing positive air lock at cent of door.

F. Discs: Precision machined disc from bronze casting shall be mounted on center shaft that receives the hanger breakaway mechanism; two (2) per center shaft. The disc face shall be 1-1/2" thick and comes in the following finishes:

1. #4 Satin Brushed Bronze or Chrome
2. #8 Highly Polished (mirror finish) Bronze or Chrome
3. #4 Statuary Bronze
4. Painted to Match (Optional)

G. Guide Pin: Bronze pin that connects the hanger to the disc on the center shaft; two (2) per hanger.

H. Hanger: Precision machined hanger from bronze casting that mounts the rotating wing to the disc on the center shaft; two (2) per rotating wing. The hangers shall be of 1/8" minimum thickness; hangers are available in the following finishes:

1. #4 Satin Brushed Bronze or Chrome
2. #8 Highly Polished (mirror finish) Bronze or Chrome
3. #4 Statuary Bronze
4. Painted to Match

I. Pivot: Floor mounted under center shaft to provide smooth rotation. Must be of teflon filled acetyl or similar material, resilient, self-lubricating, and have a replaceable snap-in bushing. Overhead pivot is available with an in-floor speed control.

J. Push Bars (Optional): Provide 3/8" x 2"aluminum, architectural bronze, or stainless steel flat push bar; one (1) per door wing. 1" diameter round aluminum, stainless steel, or architectural bronze push bars are available as an option. Push bars are available in the following finishes:

1. #4 Satin Brushed Bronze or Stainless Steel
2. #8 Highly Polished (mirror finish) Bronze or Stainless Steel #4 Statuary Bronze
3. Anodized to Match
4. Painted to Match

K. Roof Sheet/Dust Cover: Made of aluminum, bronze, or stainless-steel sheet metal, the roof sheets sit on top of the canopy and is fastened in caulked in place. Roof sheets are available in the following finishes:

1. Mill Finish
2. Finished to Match (Optional)

2.06 SECURITY SYSTEM

A. Door Activation: The revolving doors shall allow for simultaneous, authorized, entry and exit. Upon sensing the presence of an unauthorized person in the revolving door, the door shall slowly stop and then reverse to the secure position, allowing unauthorized users to exit. After the unauthorized user has exited the door, the door shall reset and return to normal operation. The system, upon the attempted unauthorized entry, shall provide an unauthorized Entry Signal to the access control system.

B. Scanning System: Infra-Red Sensor detection system (IRS): Ceiling mounted array of infrared sensors capable of performing the following functions:

1. The door scanning system shall detect the presence of a person after a valid authorization signal from the access control system has been received and initiate the door rotation of 180 degrees per valid authorization signal, or other ID reading means per person. After a valid card read signal, if no entry is made the door will travel 180 degrees stop, and a signal is sent to the access

control system that person failed to enter. Door will remain parked until next valid authorization signal has been received.

2. Scanning system shall detect the presence of a person within the door during an invalid or unauthorized entry or exit and shall result in the door stopping and signals will be seen, and voice messages heard that door is reversing. Door shall reverse until the wings reach midpoint of the opening between wall post allowing unauthorized users to exit door. The door shall remain in this position until the unauthorized person in the indicated quadrant exits.
3. Ride along IR sensors also shall provide constant monitoring per quadrant as door is in motion. Scanning system shall not turn off to ignore passing of door wings.
4. Scanning system shall detect the presence of a person entering an unauthorized compartment (Quadrant) during a valid authorization method. Security breaches that shall be detected and rejected shall stop immediately and sound an alarm.

    a. Tailgating (1) – An attempted breach of security by following a person with a valid card read in a trailing quadrant without badge presentation.

    b. Tailgating (2) (Optional) - An attempted breach of security by an unauthorized user attempting to gain access from the opposite side of the door where card read takes place.
    c. Piggybacking (Optional) - An attempted breach of security where two people attempt to gain access to the opposite side by passing through the same quadrant at the same time.

C. Direction Sensing: The door shall automatically determine direction of operation. Manually pushing the door in the reverse direction shall not be possible to allow breach in security.

D. Anti-Passback System (Optional): The revolving door control box shall provide a signal to the access control system indicating that the authorized user has successfully passed through the door. Connection to access control system is by others.

2.07 SAFETY SYSTEM

E. Backstop Safety Sensor: Revolving doors shall incorporate state-of-the-art IR backstop safety sensors on the wings to eliminate possible injury from touching the revolving door while in operation.

F. Wall Post Sensor: Revolving doors shall incorporate state-of-the-art wall post safety sensors to eliminate injury from pressure between the door wing and sidewall frame. Upon the wall post clearing, the door checks to see if the person entered the door and continues on its normal cycle. If the door does not sens the person entering the door then it continues to the secure position and is ready for normal operation {An optional Fail to Enter report can be sent to the access control system).

G. Torque Limiting: Revolving doors shall include a physical setting in the control box that sets the driving force of the door to a minimum allowing the user to stall or stop the doors rotation manually with minimal pressure by applying pressure against the rotation.

H. Emergency Breakaway: The emergency breakaway feature shall include electromagnetic locks as the main source of security. When the electric locks on the wings are activated, the door wings shall not be collapsible.

1. The electromagnetic locks shall be automatically released by signal from smoke or fire alarm system to allow for emergency egress.

2. The wing electric locks shall be capable of being released by other security, controlled means such as a manually operated switch (Optional, and by others).
3. The door wings shall be capable of folding in the direction of egress and allow unobstructed egress in case of emergency (This requires the release of the electric lock prior to egress via the access control system, emergency release remote signal, or other emergency controlling system).

2.08 POWER REQUIREMENTS

A. 110-120 volts, single phase 60 HZ

2.09 MATERIALS/FINISH

The following materials and finishes are available for the enclosure walls, rotating door wings and ceiling.

A. Tempered Glass: All flat glass in Saturn or Saturn S wings shall be 1/4" clear tempered safety glass. All glass shall meet ANSI standard Z 97.1.

1. Glass etching/printing per Architect
2. Tint color per Architect from Manufacturer's full line
3. Ultra-clear low-iron glass (optional)

B. Bullet-Resistant Glass (Optional): All flat glass in Saturn or Saturn S wings shall be up to level 3 bullet-resistant glass. All glass shall meet ANSI standard Z 97.1.

1. Glass etching/printing per Architect

2. Tint color per Architect from Manufacturer's full line

C. Laminated Glass: All curved glass in door wall shall be 7/16" clear curved laminated safety glass; 9/16" clear curved laminated safety glass or up to level 3 bullet-resistant glass is available as an option. All glass shall meet ANSI standard Z 97.1.

1. Glass etching/printing per Architect
2. Tint Color per Architect from Manufacturer's full line
3. Ultra-clear low-iron glass (optional)

D. Weatherstripping: Weatherstrips shall be made of dual durometer extruded Santoprene and woven felt. Weatherstrip to be installed in top rails, stiles and bottom rails; designed to properly engage the curved enclosure walls, revolving door ceiling and floor. Special adjustment feature will allow for three-eighths inch adjustment.

E. Glazing Sealants: Wall glazing sealant shall be silicone, single component – Spectrem 1 (Tremco) or silicone, single component – 791 (Dow Corning).

F. Metal Finishes: Shall Comply with NAAMMs "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

G. Aluminum Extrusions: All commercial grade extrusions shall be of aluminum alloy 6063-T6 per ASTM B-221 and be of .125" minimum thickness. Finishes available:

1. AAMA 611 Architectural Class 1 Clear Anodized Type AA-M10C22 A41
2. AAMA 611 Architectural Class 1 Anodized Type AA-M10C22 A44: Light, Medium and Dark Bronze, Black and Champagne

3. Custom Anodized Finish by Architect
4. AAMA 2605 Superior Performing Organic Coatings (e.g.: Duranar, Fluropon; 70% Kynar Fluoropolymers)
5. AAMA 2604 High Performance Organic Coatings (e.g.: Powder Coating)

H. Aluminum Sheet: All aluminum sheet metal shall meet ASTM B-209, be of H15 or H34 temper 5005 alloy and shall be of .063" minimum thicknesses. Finishes available:

1. AAMA 611 Architectural Class 1 Clear Anodized Type AA-M10C22 A41
2. AAMA 611 Architectural Class 1 Anodized Type AA-M10C22 A44: Light, Medium and Dark Bronze, Black and Champagne
3. AAMA 2605 Superior Performing Organic Coatings (e.g.: Duranar, Fluropon; 70% Kynar Fluoropolymers)
4. AAMA 2604 High Performance Organic Coatings (e.g.: Powder Coating)

I. Stainless Steel Sheet: All stainless-steel sheets shall meet ASTM 240/A 240M, shall be Type 304 and shall be of .060" minimum thickness; Type 316 is available as an option. Finishes available:

1. #4 Brushed Satin
2. #6 Brushed Satin
3. #7 Highly Polished (mirror finish)
4. #8 Highly Polished Non-Directional (mirror finish)

J. Steel Sections: ASTM A 36; shapes to suit mullion sections.

K. Steel Sheet: ASTM A 653/A 653M; 0.105" inch (2.6 mm) minimum thickness.

L. Bronze Sheet: All bronze sheets shall be alloy #280 (Muntz) and be of .062" minimum thickness; #220 (Commercial) and Nickel Silver are available as options. Finishes available:

1. #4 Brushed Satin; Lacquered
2. #4 Statuary Bronze; Lacquered
3. #6 Brushed Satin; Lacquered
4. #8 Highly Polished (mirror finish); Lacquered

PART III – EXECUTION

3.01 EXAMINATION

A. Inspection: Installer must examine the location and advise the Contractor of any site conditions unacceptable for proper installation of product. These conditions include but are not limited to the following:

1. Door must be installed on finished floor.
2. Finished floor must be completely level at any point within the footprint of the door.
3. Electrical power and control connections must be properly located and of correct characteristics.
4. Recessed and supplemental framing must comply with requirements on approval shop drawings.

B. Installer shall proceed with installation once conditions affecting installation and performance of revolving door entrance meet manufacturer's requirements.

3.02 REVOLVING DOOR INSTALLATION

A. General: Comply with revolving door entrance manufacturer's written installation instruction and approved shop drawings.

B. Construction: Install revolving doors in accordance with manufacturer's printed instructions. Set units level, plumb, and with uniform hairline joints. Anchor securely into place. Use only factory-authorized installers. Revolving door to be installed after other finishing operations have been completed.

C. Structural Connection: Secure revolving door entrance components to building structure and supports as indicated on approved shop drawings, utilizing approved fasteners and spacing (for doors without the free-standing option).

D. Glass Installation: Install glass and enclosure panels in accordance with Section 088000 "Glazing".

E. Electrical Power: Complete connections to electrical power, lighting and controls in accordance with requirements of respective Division 26 and Division 28 Sections.

F. Lubrication: Lubricate breakaway mechanism disc "V-groove", hanger guide pins, and floor pivot lithium grease.

3.03 REVOLVING DOOR ADJUSTMENT

A. Hardware and Operating Components: Adjust to produce smoother operation, and tight, uniform fit

B. Door Rotations per Minute: Adjust door speed to required timing and force

C. Door Locks: Adjust and align carrier arm electromagnetic locks with door wings

D. IRD Security System: Test and adjust components sensors for smooth operations and functionality

E. Door Alignment: Test and adjust door encoder for door wing alignment and proper weather seal

3.04 REVOLVING DOOR MAINTENANCE

A. Off-Site Instruction: A factory-trained technician shall demonstrate to the owner's maintenance crew the proper operation of the door and the necessary service requirements such as lubrication, cleaning, and inspection of components upon completion of installation.

B. On- Site Instruction (Optional): A factory-trained technician shall demonstrate to the owner's maintenance crew the proper operation of the door and the necessary service requirements such as lubrication, cleaning, and inspection of components upon completion of installation.

C. Cleaning: Installer shall clean metal and glass surfaces carefully after installation to remove excess caulk, dirt and labels.

D. Routine Maintenance: Every three months, manufacturer shall fold wings and check operation. Use a clean, dry paintbrush to remove any accumulation of dirt from areas around the hold plunger and V-recess. Wipe off guide pins and pilot pin on hangers and wipe out grooves in disc with a slightly oiled cloth to ensure trouble free operation.

E. Technical Support: Manufacturer shall provide twelve (12) months of over the phone technical support

IRD Group, Inc. dba: International Revolving Door reserves the right to change this specification at any time without notice.