

ARCHITECTURAL SPECIFICATION

Tournex Automatic Revolving Door

DIVISION 8 – DOORS AND WINDOWS

SECTION 08470 – REVOLVING DOORS

PART I – GENERAL

1.01 SECTION INCLUDES

- A. This section covers the furnishing and installation of a complete Automatic Revolving Door System. Provide complete system that has been fabricated, and tested for proper operation at the factory. It includes curved sidewalls, canopy, ceiling, door wings, hardware, glass, drive system, sensor system 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 QUALITY ASSURANCE

- A. Manufacturer shall be a company specializing in the supply of wide-body automatic revolving doors with a minimum of 10 years experience.
- B. Installer shall supply a factory-trained supervisor during installation of the door.

1.04 SUBMITTALS

- A. Submit project specific shop drawings, finish samples.
- B. Indicate pertinent dimensions, general construction, component connections and locations, anchorage methods and locations, hardware, and installation details.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job site in manufacturer's packaging undamaged, complete with installation instructions.
- B. Store off ground, under cover, protected from weather and construction activities.

1.06 PROJECT/SITE CONDITIONS

- A. Revolving doors install on finished floor only. Floor must be dead level at any point within the footprint of the revolving door.

1.07 WARRANTY

Boon Edam warrants its products against defects in material and workmanship for a period of one (1) year from the date of substantial completion or one and one half (1 ½) years from date of shipment. This warranty excludes glass breakage, normal wear on finishes or damage that occurs due to abuse, misuse or acts of God.

PART II – PRODUCTS

2.01 MANUFACTURER

Tournex Automatic Revolving Door Model Star or Model Showcase as manufactured by:
Boon Edam, Inc., 4050 South 500 West, Salt Lake City, Utah 84123.
(801) 261-8980 Fax: (801) 261-1612 Homepage: www.boonedam.com

2.02 DOOR CONSTRUCTION

- A. Curved Side Walls and Canopy: Shall have a standard outside diameter of 12'-0", 14'-0", 16'-0", 18'-0" or 20'-0" and be manufactured from six (6) aluminum posts, three (3) 12" high one-piece extruded aluminum canopy and an extruded aluminum bottom rail.
- B. Door Wings: Three or four door wings as designed shall be 2" wide aluminum extrusions and reinforced in the corners with aluminum machined extrusions for strength. Door wings must utilize removable horsehair weather stripping on all four sides. Double-acting doors with hydraulic closers are held in position with non-jamming electromagnetic locks. Upon release by door controls, or building/fire/smoke alarm, door must be capable of folding forward or backward to allow for emergency egress.
- C. Showcase: Shall be fabricated from steel tubing, aluminum extrusions, aluminum sheet and glass in a configuration that provides a functional display case in the center of the door.
- D. Star (optional): Shall be fabricated from glass panels attached to a center shaft in place of the showcase.
- E. Ceiling: Shall be fabricated of formed aluminum sheet in a pie-shaped configuration. Each section must be secured in position and removed only by authorized personnel.

2.03 EQUIPMENT

- A. Drive System: Overhead drive system with one 1/2 HP AC motor attached to the internal structural framing. The door shall be powered by a 208-230 VAC, 1-phase service. The motor shall utilize an internal angle encoder for constant monitoring of door position and a Frequency Controller to provide for the following characteristics:
 - 1. Adjustment of rotation speed through a digital setting
 - 2. Constant regulation of rotation speed
 - 3. Independent adjustment of startup and run torque through a digital setting to minimize force required to stop door
 - 4. Adjustment of stopping distance through a digital setting
 - 5. Removable remote control programmer for security over Frequency Control settings
- B. Braking Assembly: Positive braking and stopping, shall be performed by DC dynamic braking incorporated within the drive system. Other auxiliary disc brakes are not considered to be equal.
- C. Controls: Microprocessor-based electronics utilizing a 2000-step Programmable Logic Controller (PLC) with the following characteristics:
 - 1. RAM & ROM memory
 - 2. Self-diagnostics for quick detection of problem source
 - 3. Visual display of problem source
- D. Pivot Bearing: Floor mounted pivot bearing under the center section to provide smooth rotation with 2800 lbs. of downward thrust.
- E. Storm Coupling: Three or four fail-safe electromagnetic lock devices connected to the top shaft of each door wing to hold the door wings firmly during normal operation. Upon signal from the building/fire/smoke alarm system, storm couplings retract allowing the door wings to be collapsed, or folded, allowing for emergency egress.
- F. Electric Locking: A fail-safe electromagnetic shaft lock in conjunction with the electromagnetic storm coupling door wing locks with a three (3) position post-mounted key switch to activate locking. When engaged, the electric locking will prevent rotation or collapsing of the door wings. Electric locking is disengaged by loss of power or signal from building/fire/smoke alarm.
- G. Two Point Recessed Locks (Optional): Provide (2) standard concealed two point recessed locks with removable, profile style keyed cylinders that lock into the ceiling and floor on the two interior door wings.
- H. Lights: Provide (3) or (4) 12V 20W Halogen lamps, 4 3/4" diameter lights to be recessed into rotating ceiling. (110V power service required from above by others.), (6) lights recessed into the non-rotating ceiling, and (3) or (4) lights recessed into the showcase ceiling.

2.04 SENSOR SYSTEM

- A. Motion Detectors: Minimum of 2 motion detectors mounted to the canopy on each side of the door that will start the rotation of the door upon actuation. Detection pattern can be adjustable directly.
- B. T.R.S. (Top Rail Sensors): Active infrared sensors mounted to the top rail of each door wing that can detect presence in front of the each door wing and stop the door immediately. Sensors can be adjusted for pattern size and distance from door wings.
- C. S.C.S. (Show Case Sensors): Active infrared sensor mounted in front of each door wings pivot point that can detect the presence of a person and stop the door immediately. Sensors can be adjusted for pattern size and distance from door wing.
- D. E.B.S. (Endwall Buffer Sensors): Two (2) active infrared sensors mounted vertically in front of each of the curved sidewalls that will detect presence and stop the door immediately. The EBS sensors should be capable of switching on as each door wing approaches the endpost of the sidewall and switches off as each door wing departs the endpost of each sidewall.
- C. S.R.B. (Sensor Rail Bentwall): A multi-directional, closed-contact pressure sensitive switch contained within a black rubber profile mounted to the edge of each inbound endpost that will immediately stop the door's rotation if compressed.
- D. S.R.D. (Sensor Rail Doorwing): A multi-directional, closed-contact pressure sensitive switch contained within a black rubber profile mounted to the bottom rail of each door wing that will immediately stop the door's rotation if compressed.
- E. Handicap Button: Two (2) Handicap "Push to Slow" Buttons mounted on the inbound that will reduce the rotating speed of the revolving door for approximately one revolution.
- F. Emergency Stop Button: Two (2) Emergency Stop Buttons mounted on the inbound endposts that will immediately stop the door when pressed.
- G. Key Switch: A key switch mounted on the interior endpost that will turn the door on/off or night lock.

2.05 HARDWARE/MATERIALS

- A. Tempered Glass: All flat glass in door wings shall be 1/4" clear tempered safety glass, all curved glass shall be 1/4" clear bent tempered safety glass. All glass shall meet ANSI standard Z 97.1.
- B. Laminated Glass (Optional): 7/16" clear curved laminated safety glass is available as an option. All glass shall meet ANSI standard Z 97.1.
- C. Aluminum Extrusions: All commercial grade extrusions shall be of aluminum alloy 6063-T6 per ASTM B-221.
- D. Aluminum Sheets: Shall meet ASTM B-209 and be of .063 minimum thickness.
- E. Weather Stripping: Genuine horsehair weather stripping on all required edges of door wings to provide a seal between door wings and drum that meets ASTM E-283.
- F. Glazing Seal: All glass to be sealed with push in glazing vinyl.
- G. Pivot Bearing: Floor mounted pivot bearing under the center shaft to provide smooth rotation. Bearing can be replaced without removal of the center section.

2.06 FINISH

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

- A. Anodized Coatings
 - 1. AAMA 611 Architectural Class 1 Clear anodized Type AA-M10C22 A41
 - 2. AAMA 611 Architectural Class 1 anodized Type AA-M10C22 A42: Light, Medium and Dark Bronze, Black and Champagne.
- B. Painted Coatings
 - 1. AAMA 2605 Superior Performing Organic Coatings (e.g.: Duranar, Fluorpon; 70% Kynar Fluropolymers).
 - 2. AAMA 2604 High Performance Organic Coatings (e.g.: Powder Coating).
- C. Stainless Steel Clad Type 304
 - 1. #4 Brushed Satin
 - 2. #6 Brushed Satin Fine-Lined
 - 3. #8 Highly Polished (mirror finish)
- D. Bronze Clad Alloy #280 (Muntz Metal)
 - 1. #4 Brushed Satin
 - 2. #8 Highly Polished (mirror finish)

PART III – EXECUTION

3.01 INSTALLATION

- E. 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:
 - 3. Floor must be dead level at any point within the footprint of the door
 - 4. Door must be installed on finished floor
 - 5. Power supply must be installedInstallation shall not begin until these unacceptable conditions are rectified.
- F. Erection: 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-trained installers.
- G. Adjustment: Installer shall adjust door, hardware and sensors for smooth operation and proper performance.
- H. Instruction: A factory-trained installer 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.
- I. Cleaning: Clean metal and glass surfaces carefully after installation to remove excess caulk, dirt and labels.

Boon Edam, Inc. reserves the right to change this specification at any time without notice.