

ARCHITECTURAL SPECIFICATION

Duotour 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, assembled, and tested for proper operation at the factory. It includes curved side walls, tracks, canopy, ceiling, door wings, display cases, hardware, glass, drive systems, sensor systems 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 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 and 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

Duotour Automatic Revolving Door Model DT (12'-0"), (14'-0") or (16'-0") 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 be manufactured from six (6) aluminum posts, three (3) 12" high one-piece extruded aluminum canopy/track and an extruded aluminum bottom rail.
- B. Center Double-Acting Door Wings: Two doors shall be 1 3/4" wide aluminum extrusions and reinforced in the corners with solid aluminum machined bar stock for strength. Door wings must utilize removable horsehair weather stripping on all four sides. Double-acting doors 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. Center Sliding Door Wings (Optional): A pair of bi-parting automatic sliding doors constructed as in Section 2.03.D.
- D. Ceiling: Shall be fabricated of formed aluminum sheet in a pie-shaped configuration. Each section must be secured in position and removable only by authorized personnel.

2.03 EQUIPMENT

- A. Drive System: Perimeter-mounted drive system consisting of two (2) 1/4 HP asynchronous AC motors attached to 6" wheels mounted to the internal rotating ring. The door shall be powered by a 208-230 VAC, 1-phase service. The motor shall be connected to a Frequency Controller to provide for the following characteristics:
 - 1. Adjustment of rotation speed through a digital setting
 - 2. Adjustment of slow rotation speed through a digital setting
 - 3. Constant monitoring and regulation of rotation speed
 - 4. Independent adjustment of startup and run torque through digital settings
 - 5. Adjustment of stopping distance through a digital setting to minimize force required to stop door
 - 6. Removable control programmer for security over Frequency Control settingsA UPS battery backup system is included to provide rotation to an egress position upon power failure. The drive system shall allow for manual rotation in case of power failure
- 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. Automatic Sliding Doors (Optional): A pair of non collapsing bi-parting automatic sliding doors in lieu of the two manual swing doors. Sliding doors are to be driven by an independent belt drive DC motor attached to a structural header recessed in the revolving door ceiling. Upon turning a post-mounted key switch from revolving mode to sliding mode the revolving door will stop in it's rest position and the sliding doors will open upon actuation of the two motion detectors. Upon loss of power or signal from the building/fire/smoke alarm system the sliding doors will automatically open and remain open.
- E. Lights: Provide (8) 12V 20W Halogen lamps, 4 3/4" diameter lights to be recessed into the rotating ceiling. (110V power service required from above by others.)
- F. Electric Locking: A fail-safe electromagnetic locking device incorporated within the two drive system motors to prevent rotation of the door when the a three (3) position post-mounted key switch is set to the locked position. Electric locking is disengaged by loss of power or signal from building/fire/smoke alarm.

2.04 SENSOR/SWITCH/BUTTON SYSTEMS

- A. Motion Detectors: Two (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 must be adjustable directly or by remote control.
- B. V.R.S. (Vertical Rail Sensors): Active infrared sensors mounted vertically on the inside leading edge of the rotating display cases that will detect presence in front of the door wings and display cases and stop the rotation of the door immediately. Not available on sliding door package.
- C. H.B.S (Horizontal Boon Sensor): Two (2) active infrared sensors mounted on the front of the sliding doors. The door slows down when the higher beam is activated. The door will stop immediately when a person or object activates the lower beam. Only available on the sliding door package.
- D. E.B.S. (Endwall Buffer Sensors): Two (2) active infrared sensors mounted in front of the fixed curved sidewalls that will detect presence in front of the curved sidewalls and stop the rotation of the door immediately. The EBS sensors should be capable of switching on as each door wing approaches the endpost of the sidewall and off as each door wing departs the endpost of each sidewall.
- E. Rotating E.B.S. (Endwall Buffer Sensors): Two (2) active infrared sensors mounted in front of the curved rotating sidewalls that will detect presence and stop the rotation of the door immediately.
- F. S.R.B. (Safety Rail Bentwall): Two (2) multi-directional, closed-contact pressure sensitive switches contained within a black rubber profile mounted to the edge of each inbound endpost that will immediately stop the door's rotation immediately if compressed.
- G. Rotating S.R.T. (Safety Rail Turningwall): Two (2) multi-directional, closed-contact pressure sensitive switches contained within a black rubber profile mounted to the lead edge of each rotating wall that will immediately stop the door's rotation if compressed.
- H. S.R.D. (Safety Rail Doorwing): Two (2) multi-directional, closed-contact pressure sensitive switches contained within a black rubber profile mounted to the bottom rail of each display case that will immediately stop the door's rotation if compressed.
- I. S.B.S. (Showcase Boon Sensor): Two (2) Active infra red sensors mounted under the rotating S.R.B.s that will detect presence and stop the rotation of the door immediately.
- J. Hold open presence sensor: Two (2) Active infra red sensors mounted under the ceiling disc that will detect presence and prevent the sliding doors from closing. Only available on the sliding door package.
- K. Handicap Button: Two (2) Handicap "Push to Slow" Buttons mounted on the inbound endposts that will reduce the rotating speed of the revolving door for approximately one revolution.
- L. Emergency Stop Button: Two (2) Emergency Stop Buttons mounted on the inbound endposts that will immediately stop the door when pressed.
- M. Key-Switch: Provide a post-mounted key switch that will allow for the following options:
 - 1. On/Off
 - 2. Lock the door in winter position
 - 3. Start the door from summer - or winter position
 - 4. Turn the revolving door off and the sliding doors on (Requires the optional sliding door package)

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 to provide a seal that meets ASTM E-283.
- F. Glazing Seal: All glass to be sealed with push in glazing vinyl.

2.04 FINISH

The following finishes are available for the enclosure walls, rotating center section, 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)

* Note: Ceiling cannot be constructed of Stainless Steel or Bronze.

PART III – EXECUTION

3.01 INSTALLATION

- 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. Floor must be dead level at any point within the footprint of the door
 - 2. Door must be installed on finished floor
 - 3. Power supply must be installedInstallation shall not begin until these unacceptable conditions are rectified.
- B. 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.
- C. Adjustment: Installer shall adjust door, hardware and sensors for smooth operation and proper performance.
- D. 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.
- E. 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.