 

ARCHITECTURAL SPECIFICATION TURNLOCK-200

SECURITY TURNSTILE

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# Security Optical Turnstile Section 11-14-00 Pedestrian Control Equipment (Gates/Turnstiles)

## Part I - General

### 1.01 Section Includes

1. This section covers the furnishing and installation of a complete Turnlock-200 Security Turnstile. Provides complete system that has been fabricated, assembled, and tested for proper operation at the factory.
2. It includes rotor assembly, shield assembly, barrier assembly, mechanism housing, and ceiling plate, as required for installation.

### 1.02 RELATED SECTIONS

1. Section 09600 - Flooring
2. Section 16123 - Electrical Supply and Termination
3. Section 11 14 – Pedestrian Control Equipment
4. Section 11-14.13.19 – Turnstiles
5. Section 11-14.53 – Pedestrian Security Equipment
6. Section 08400 – Entrances and Storefront

### 1.03 REFERENCES

1. ANSI Z97.1 - American National Standard for Safety Glazing Materials used in Buildings.
2. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
4. ASTM A 480/A 480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
5. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
6. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

### 1.04 QUALITY ASSURANCE

1. Manufacturer shall be a company specializing in the supply of the Turnlock-200 Security Turnstile with a minimum of 10 years’ experience.

### 1.05 SUBMITTALS

1. Submit project specific shop drawings, finish samples and Operating & Maintenance Manuals.
2. Indicate pertinent dimensions, general construction, component connections and locations, anchorage methods and locations, hardware, and installation details.

### 1.06 DELIVERY, STORAGE AND HANDLING

1. Deliver materials to job site in manufacturer’s packaging undamaged, complete with installation instructions.
2. Store off ground, under covered area, protected from weather and construction activities.
3. Approximate Weight of Crate: 1000lbs (2 x 1000 for Tandem unit)

### 1.07 PROJECT/SITE CONDITIONS

1. The Turnlock-200 Security Turnstile installs on finished floor only.

### 1.08 WARRANTY

Boon Edam warranties its products against defects in material and workmanship for a period of 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. twelve (12) months

## PART II – PRODUCTS

### 2.01 MANUFACTURER

Boon Edam, Inc., 402 McKinney Parkway, Lillington, NC 27546.

(910) 814-3800 Fax: (910) 814-3899 Homepage: [www.boonedam.us](http://www.boonedam.us)

### 2.02 PRODUCT

Turnlock-200 Full Height Security Turnstile, no substitutions. Features of this turnstile shall include a self- centering mechanism to maintain rotor at the stop position, a tamper proof ceiling, with no exposed fasteners, a round, stainless steel canopy and a UL listing (i.e., 294) for the turnstile.

The double (tandem) model features an IP56-rated, weather-tight top channel cover to house mechanical and electrical controls.

### 2.03 TURNSTILE CONSTRUCTION

1. All materials meet the ASTM standards as set forth by the materials industry.
2. The Turnlock-200 consists of one (1) rotor assembly, one (1) shield assembly, one (1) barrier section, mechanism housing, and top channel cover or round ceiling canopy.
3. The Turnlock-200 with the dual shield option shall be constructed of one (1) passageway shield assembly, one (1) barrier shield assembly, one (1) rotor assembly, one (1) controller mechanism enclosed in a rectangular cover, and two (2) ceiling plates.
4. Each row of the rotor assembly contains 10 polycarbonate arms, evenly spaced, attached via concealed fasteners.
5. The shield assembly uses a solid welded aluminum frame. The 3/8” curved clear shield panels are assembled into the frame.
6. The barrier section uses an aluminum post to hold 10 barrier arms permanently in place via concealed fasteners.
7. The operating mechanism is fabricated using extra heavy-duty components to accommodate the high rotor weight. Rotation speed is controlled by hydraulic shock absorber and gear system. All internal operating components are enclosed in a stainless steel top channel cover or the optional 60” diameter, round stainless steel, full ceiling canopy.

### 2.04 EQUIPMENT

1. **Shield Assembly**: The shield assembly uses a solid welded aluminum frame. The 3/8” curved clear shield panels are assembled into the frame. (Turnlock-200 with the dual shield option uses a second shield on the barrier side as well as the standard shield side).
2. **Mechanical Design**: One-way mechanical turnstiles use a steel ratchet assembly to direct traffic flow.
3. **Electric Design**: Electric turnstiles use a heavy-duty electro-mechanical ratchet and pawl operating mechanism to restrict traffic flow. All electrical controls are low voltage 24 VDC. (Step-down transformer is supplied as a standard item- please select either 110 VAC or 220 VAC input voltage).
4. **Centering Mechanism**: Standard self-centering feature automatically returns rotor assembly to the home position assuring the correct starting position of the rotor.
5. **Rotors**: Each row of the rotor assembly contains 10 polycarbonate arms, evenly spaced, attached via concealed fasteners.
6. **Bottom Bearing**: pre-greased thrust Axial Deep Groove Ball Bearing. The bearing is on a 9”x 1” clear anodized aluminum base plate. The base plate attaches to the floor with 3 anchor bolts, 3/8”x 4” long. It has a dynamic load capacity in excess of 14,300 lbs., a static load capacity of over 39,500 lbs. and maximum rated RPM of 1800.

### 2.05 Communication System.

* 1. Authorized entry method, the Turnlock-200 Full Height Security Turnstile shall signal the user when the unit receives the authorized access signal from the access control system.
	2. The Turnlock-200 Full Height Security Turnstile shall visually signal the authorized user to enter.
	3. In addition, a visual violation LED signal will be activated if unit is locked.
1. **Security Reporting:** The Turnlock-200 Full Height Security Turnstile must have the capability of providing security violation alerts to the access control system or an on-site remote panel (not supplied by Boon Edam).
2. **Inputs**: Two inputs are available.
3. **Outputs**: Three configurable outputs are available in a Normally Open state.
4. **Standard inputs include**: **Standard outputs include**:

Input 1: Access Granted Clockwise (CW)Output 1: Home Position

Input 2: Access Granted Counter-Clockwise (CCW) Output 2: Rotation Detection Switch CCW

 Output 3: Rotation Detection Switch CW

### 2.06 SECURITY EQUIPMENT

1. **Actuation**: Turnstile actuation by external card reader mounted on endpost or remotely. (Not supplied by Boon Edam)
2. **Actuation Device**: Although tied into the turnstile, actuation devices are provided by the Access Control Integrator.
3. **Inputs and Outputs**: The control module includes a series of inputs and outputs which can be selected for optimal use:
4. **Inputs**: two inputs are available. Specific inputs will be configured as listed in Section 2.05 D. Along with Fire Alarm Integration.
5. **Outputs**: Three outputs are available as Normally Open. Specific outputs are configured as listed in Section 2.05 D.  *– See Additional Options Section 2.11 for optional outputs.*
6. All fail-lock applications include a mechanical key release, which allow free passage in an emergency.

###  2.07 ACCESS CONTROL AND FIRE ALARM INTEGRATION

1. The Turnlock-200 Full Height Security Turnstile must be capable of integrating with the Access Control System (ACS) and Fire Alarm System via a series of dry contact potential free input signals. Control wiring from the ACS system are to be connected (integrated) to the turnstile via an I/O board, or terminal strip, supplied within the turnstile control system (ACS cabling supplied by others).
2. **Fire Alarm**: Each Turnlock-200 Full Height Security Turnstile must have its own dedicated fire alarm relay signal, normally closed contact (opens on active alarm), dry contact circuit. Depending on directional set up, the Turnstile will release lock for free egress when the fire alarm is activated.

### 2.08 SEQUENCE OF OPERATION

1. **Authorization, Pulse to Secure:** Authorization from the Access Control System (ACS) or remote panel button is required before the unit will open. After valid authorization, the Turnlock-200 Full Height Security Turnstile will release the lock in the direction of authorization. User manually rotates the rotors to gain passage. Activation is by a momentary, isolated normally open dry contact closure.
2. Immediately after authorized passage, the Turnlock-200 Full Height Security Turnstile returns to its home position where it securely locks.
3. **Authorization, Pulse to Non-Secure**: Identical to the “Authorize In” sequence of operation above.
4. **Fire/Life Safety**: Fire/Life Safety: All authorized life-safety and emergency alarm contacts must drop signal to automatically release Turnstile locks for free egress. Life Safety overrides all other functions unless mechanically locked per customer specification.
5. **Power Loss:** Dependent on the specified configuration the unit will act accordingly upon power loss. (Fail Safe / Fail Safe – Fail Safe Exit / Fail Lock Entry – Fail Safe Entry / Fail Lock Exit – Fail Lock / Fail Lock)

### 2.09 PERFORMANCE/THROUGHPUT

* Throughput is defined as the number of people per minute which can pass through a Turnstile in *one direction only*. The average throughput of the Turnlock-200 Full Height Security Turnstile is approximately 15 - 20 people per minute. Tandem units will be 2 x 15-20 people per minute.

### 2.10 FINISHEs

1. Clear anodized.
2. Optional Colors – Black, Dark Bronze, Champagne

### 2.11 ADDITIONAL OPTIONS

The following are additional features and options available with the Turnlock Security Turnstile.

* Remote release pushbutton
* Solenoid Activation Switch
* Card reader mounting weather resistant box
* Heel protectors
* Electric key override switches
* Second side dual shield
* Tandem unit (Two rotors within one framework – 96” model standard)
* Battery back-up

### 2.12 Standard Features

* Round Stainless Steel Canopy (single model only)
* IP56-rated top channel cover (tandem model only)
* Fail-lock or fail-safe for electrical configurations
* Free or locked exit for mechanical configurations
* Pulse relay
* Time-out Relay
* Rotation Detection Switch
* Home Position Switch
* Field configurable mechanism
* Mechanical key overrides
* Red/green indicator lights
* Hydraulic Speed Control

## PART III – EXECUTION

### 3.01 INSTALLATION

1. **Inspection:** Installer must examine the location and advise the Contractor of any site conditions unacceptable for proper installation of product. The minimum conditions necessary to initiate installation are:
	1. Floor must be dead level at any point within the footprint of the door.
	2. Finished floor must be installed.
	3. Floor must be complete with conduit supplied to meet manufacturer’s specified drawings.
	4. Power supply (110-240VAC) must be installed. Power and communication come from the floor to the secure side of the cabinet as per approved specified drawings.
2. **Erection:** Install turnstile 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.
3. **Adjustment:** Installer shall adjust turnstile for smooth operation and proper performance.
4. **Maintenance**: Follow maintenance procedures as outlined in the Instruction or Operation Maintenance Manual.
5. **Cleaning:** Clean metal 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.**