

**ARCHITECTURAL SPECIFICATION****FMST-3 Full Height Manual Turnstile – Four-Arm Model****AVAILABLE FINISHES****FMST-3SS – Stainless Steel****FMST-3PF – Powder Coat****FMST-3GL – Galvanized****SECTION 08 71 00 – Door Hardware****PART I – GENERAL****1.01 SECTION INCLUDES**

- A. This section covers the furnishing and installation of a manual (no electric lock control) full height security turnstile.
- B. For further information, call the factory at +1 909.591.8431 and ask for the technical support department; or email [information@alvaradomfg.com](mailto:information@alvaradomfg.com).

**1.02 RELATED SECTIONS**

- A. Section 11 14 00 – Pedestrian Control Equipment

**1.03 QUALITY ASSURANCE**

- A. Manufacturer shall be a company specializing in the supply of security turnstiles with a minimum of 10 years' experience.
- B. Installer shall have a minimum of one year experience installing similar equipment, or shall supply a factory representative during installation of the turnstile.

**1.04 SUBMITTALS**

- A. Submit manufacturer's descriptive literature for specified equipment, including options.
- B. Provide dimensional layout, installation instructions, and anchoring instructions.
- C. Provide shop drawings, if required.

**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, construction activities and debris.
- C. Use forklift and pallet jack equipment as required for moving.

**1.06 PROJECT/SITE CONDITIONS**

Install the FMST on a level concrete pad.

**1.07 WARRANTY**

Alvarado warrants its products against defects in material and workmanship for a period of one (1) year from the date of invoicing. The warranty covers defects in materials and workmanship and does not cover freight, labor or incidental costs. Obtain full warranty terms from Alvarado.

**PART II – PRODUCTS****2.01 MANUFACTURER**

Alvarado Mfg. Co., Inc. 12660 Colony Street, Chino, CA 91710.

**2.02 PRODUCT**

FMST-3 Full Height Turnstile, no substitutions. Features of the turnstile shall include: horizontal opening inspection cover; key lock control to allow field configurable rotation; self-adjusting speed control with self-

centering. Note: A roto that self-centers through spinning and settling is not acceptable. The turnstile shall rotate only once and shall self-center when the roto is spun with up to 250lbs of force.

## **2.03 CONSTRUCTION**

### **A. Top Channel:**

1. The top channel frame shall be a 7" wide, 4-gauge, steel U-channel powder coated in a zinc-rich powder coat.
2. The top channel cover system shall slide apart horizontally, providing access to the interior of the top channel without having to lift the cover vertically when removing. The top channel cover shall be fabricated from 16-gauge, #304 stainless steel.

### **B. Yoke (Curved Section):**

1. The yoke is a fully welded single assembly consisting of 16 vertical tubes notched and welded to two upper and lower horizontal tubes. Two 3/16" x 1" steel straps are welded to the vertical tubes for support. Vertical and horizontal tubes are fabricated from 1.75" OD x 16-gauge steel (or #304 stainless steel) tubing. No external fasteners are used in the construction of the yoke.

### **C. Roto (Rotating Section):**

1. The roto (rotating section) shall be an all welded single assembly, not multiple assemblies bolted together. It shall consist of four vertical groupings of arms, with each arm notched and welded vertically to a vertical 3" x 3/16" wall tube. Each grouping of arms shall be positioned 90 degrees apart from one another and shall consist of 13 arms (52 total arms per roto). Each arm shall be 14-gauge; 1 3/4" OD steel tubing. Arms shall have either welded metal caps (powder coated or stainless steel models) or ribbed, force-fit plastic caps (galvanized models). No external fasteners shall be used in the fabrication of the roto section.

### **D. Bottom Bearing Assembly:**

1. The bottom bearing assembly shall consist of a sealed inter-ring, bearing a bearing shaft which fits into the underside of the roto, and bottom bearing housing and cover.

### **E. OV (Barrier):**

1. The OV (barrier section) shall be an all welded single assembly. It shall consist of 13 arms notched and then welded to a 3"OD x 3/16" wall steel vertical tube. The arms shall be constructed from 1 3/4" OD x 14-gauge steel tubing. Arms shall have either welded metal caps (powder coated or stainless steel models) or ribbed, force-fit plastic caps (galvanized models). No external fasteners shall be used in the fabrication of the OV section.

### **F. Yoke Guard Plate:**

1. The yoke guard plate is a single piece of 16-gauge steel that bolts to the underside of the top channel assembly and the top of the yoke.

## **2.04 EQUIPMENT**

A. General: The turnstile shall have key lock control to allow field configurable rotation. The turnstile shall have the ability to provide free passage in both directions; free passage in one direction and no passage in the opposite direction; or no passage in both directions.

### **B. Mechanical Operation:**

1. Roto / Top Channel Connection: The connection between the roto and the top channel shall be accomplished through the use of a multiple grooved splined shaft and coupling.
2. Top Bearings: The top bearings shall be fully concealed from view by a cover fabricated from #304 stainless steel.
3. Self-Adjusting Speed Control / Self-Centering: The turnstile shall have self-adjusting speed control which automatically increases or decreases resistance depending on the pushing force of the user. The turnstile shall also self-center, automatically returning to the "home" position after rotation. Self-centering shall be controlled. When the lock arms are disengaged, the turnstile shall rotate only once when the roto is spun with up to 250lbs of force. A roto that self-centers through spinning and settling is not acceptable.

## **2.05 FACTORY TESTING**

- A. Product shall be fully tested at the factory prior to shipment.
- B. Check all mechanical connections.
- C. Inspect product finish. Touch up prior to shipment.

## **2.06 FINISHES**

- A. Stainless Steel: All exterior components, including top and bottom bearing covers are to be fabricated from #304 stainless steel, polished to a satin (#4) finish.  
OR
- B. Hot-Dip Galvanized: All exterior components, except the top channel cover and top and bottom bearing covers (which are to be #304 stainless steel) are to be hot-dip galvanized to ASTM Standard A 123/A 123M-02.  
OR
- C. Powder Coat: All exterior components, including top and bottom bearing covers are to be painted in a powder coat color specified by the project requirements.

## **2.07 OTHER AVAILABLE OPTIONS**

- A. Padded Heel/Arm Guards: Snug-fitting padded arm guards for arms at pushing level or for lower arms at heel level.
- B. Full Guard Plate: The standard guard plate is replaced with a guard plate that covers a larger area at the top of the turnstile.
- C. Out of Service Lock Bracket: Enables the turnstile to be secured with a padlock.
- D. Top Channel Stabilizer: Increases the rigidity between the OV and top channel assemblies.
- E. Computerized Counting: Each turnstile rotation outputs a count to GateWatch, Alvarado's Windows-based facility counting software program.

## **PART III – EXECUTION**

### **3.01 SITE EXAMINATION**

- A. Inspection: Installer must examine the installation location and advise the Contractor of any site conditions inconsistent with proper installation of the product. These conditions include but are not limited to the following:
  - 1. Turnstile must be installed on a level concrete pad.Installation shall not begin until unacceptable conditions are rectified.
- B. Installation: Install turnstiles in accordance with manufacturer's instructions.
- C. Adjustment: Installer shall adjust turnstiles for proper performance after installation.
- D. Instruction: A factory trained installer shall demonstrate to the owner's maintenance crew the proper operation and the necessary service requirements of the equipment, including exterior maintenance.
- E. Cleaning: Clean turnstile and area carefully after installation to remove excess caulk, dirt and labels.

**Note: this specification includes recommended options. Alvarado Mfg. Co., Inc. reserves the right to change this specification at any time without notice.**