Smarter Security

Pre-Specification Guide for New Turnstiles

Achieve harmony between security and style

Turnstiles have rapidly improved in recent years in security, convenience, and usability. These important advancements provide a compelling argument for upgrading, even if your current equipment was best-in-class when you bought it. This guide highlights important design, safety, and technology considerations for replacing your current turnstiles or installing new ones for the first time.

Looking to replace your turnstiles? Consider this.

Replacement of Existing Turnstiles: 4 Key Considerations

1. Power and Access Control Conduits

Can the conduits be relocated to align with the replacement units?

- If not, this will require coring of the floor and repairs to the floor where previous conduits were located.

- If coring is not possible, the design will have to consider the use of raised floor-protection panels, sometimes called floor protectors, which allow the wires from existing conduit exit points to be run across the floor to the new pedestals. This can be done safely only if the power to the new turnstiles is low voltage.

2. Removal of High-Voltage Wiring

Is the power to the new turnstiles low voltage?

- Most modern turnstiles don't require high-voltage (110 VAC) wiring, and removing it will free up conduit space for the low-voltage power runs for the new turnstiles. It will also free up breakers in the power panels for alternate uses in the facility.

3. Removal of Emergency Exit Doors

Does your design consider the removal of emergency exit doors?

- Current building and fire codes require that emergency exit through turnstiles must be possible, even without a fire alarm. As a result, emergency exit or manual doors adjacent to the exiting turnstiles are to longer required.

- Manual doors next to turnstiles may still be required for the delivery of large package shipments, but they are no longer necessary as emergency exit points.
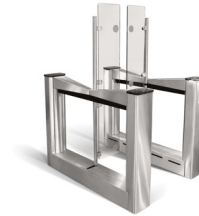
4. Environmentally Responsible Disposal of Old Turnstiles

Whenever possible, specifications should include this requirement and request disposal confirmation receipts.

New Turnstile Design Requirements

1. Determine Level of Needed Security

Level	Standard Security	Moderate Security	High Security
Examples of Facilities	Corporate HQ, government buildings, financial institutions.	Technology centers, at-risk public facilities.	Public safety organizations, utilities, data centers.
Primary Turnstile Use	Most common facility security level. Turnstiles are intended to enforce badging in and to detect tailgaters or forced entry.	Designed to detect all and delay most unauthorized access attempts.	Designed to detect and stop unauthorized access attempts.
Turnstile Security Requirements	Barriers are required from waist height up to a maximum of 5 ft (1,200 mm). Friction brakes are normally sufficient, but locking brakes are an option, too. Consider pressure sensors for the top plates of the pedestals, to detect persons trying to climb over. Card-in and free-exit operation is common.	Barriers are required with a minimum height of 5 ft (1,200 mm) up to a maximum of 6 ft (1,800 mm), and locking brakes for the barriers must be included. Consider pressure sensors for the top plates of the pedestals to detect persons trying to climb over. Card-in and free-exit operation during the work day; card-out after-hours.	Barriers are required with a minimum height of 5.5 ft (1,700 mm), and 300N locking brakes for the barriers must be included. Pressure sensors for the top plates of the pedestals must also be included, with a glass transom above the barriers. Card-in and card-out operation is standard, with biometric identity authentication recommended.

3. Safety Considerations

Swinging glass barriers must swing away from users when they enter the lane; be made of tempered (preferably tempered and laminated) glass; and be a minimum of 10 mm thick.

At least one lane at each entry point should be the wheelchair compliant width of 36 in. (914 mm).

Use low voltage. There should not be any high voltage present in the turnstile pedestals to avoid any possibility of electrocution.
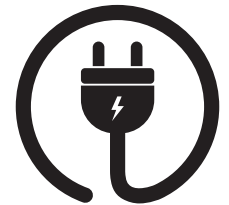
Ensure that proposed waist-height turnstiles are UL Listed

- International Safety Standards: UL 2593 corresponds directly to CSA C22.2 No. 247 and was published in 2013 as a new safety and security standard for motor-driven turnstile operators and systems. The standard is currently limited to turnstiles with barriers less than 6 kg (13 lb). Only turnstiles with waist-height barriers are currently covered.

2. Measure Throughput Volume

How many users are expected to pass through the entrance in both directions during the busiest 15-minute period of the day?

- For example, if 1,200 people exit for lunch between 12:00 and 12:15, the average is 80 people per minute. This would require at least two collocated lanes of 60 persons per minute turnstiles, or at least four collocated lanes of 25 persons per minute turnstiles.

4. Emergency Exit Requirements

In the event of a fire alarm, barriers must open in the exit direction and stay open until alarm clears.

In the event of a power failure, brakes must release so the barriers are free to open at a touch.

- UPS and/or battery backup possible where building and fire codes allow.

In the event of nonfire emergencies, where there is still power but no fire alarm has sounded, people must be able to exit from the secure side without badging.

- For free-exit configurations, the barriers will open when users step into the lane.

- For card-out configurations, locking brakes must release when a user steps into the lane, and the barriers must be able to be pushed open with minimal force of less than 60N.

5. Expected Power Consumption

While many modern turnstiles are low voltage, some draw in excess of 300 watts, while others draw less than 80 watts for the same levels of service.

6. Warranty and Total Cost of Ownership

Most turnstiles made today quote Mean Cycles Between Failure (MCBF) of up to 5 million, which equates to 10–15 years of usage in an average office tower. A parts warranty of at least 3 years is recommended, since it would cover the free replacement of all turnstile parts that fail under normal use during the warranty period.

Additional Turnstile Options

Security

Toothed locking brakes	Prevents barriers from being forced open on entry, and allows them to release for emergency exit.
IP connectivity	Allows for remote emergency lockdown, and reconfiguration after-hours (e.g., change free exit to card exit, or no entry/no exit, after 6:00 p.m.).
UPS or battery backup	Ensures that turnstiles continue to function during power outage.

Convenience

Visitor badge readers	Reads barcodes, QR codes, etc. Visitor passes can be emailed to guests.
Floor protector bases	Provides wheelchair compatible 1:12 slope; also eliminates the need for floor coring.
Remote controllers	Offers remote access for visitor groups or VIPs.
Remote access and control from mobile devices	Allows guards on the floor to deal with situations immediately.

Customization

Logo	Available for glass barriers.
Color and finish	Select your preferred finish and shape of pedestals, plus a variety of Rimex metals available to choose from.

Ready to replace or upgrade your turnstiles?

The team at Smarter Security is here to help.

Our optical turnstiles are the market leader for a reason.

- **Up-to-the-minute technology.** We've incorporated advancements in card and biometric readers, as well as elevator dispatch integrations; and we can factory-install the latest technology for a seamless look, to avoid mismatched or clunky after-market add-ons.

- **Longevity.** Our quality standards are the highest in the industry, which means that the latest generation of Smarter Security turnstiles will last as long, or longer, than our competitors' models.

- **A perfect aesthetic match.** We offer custom looks, finishes, and colors to go with your new build or upcoming lobby renovation.

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