

TURNSTAR 
RELIABLE ★ DURABLE ★ GUARANTEED

Technical Training Manual
TRIDENT AND STREAMLINE WAIST
HEIGHT TURNSTILE



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1. COPYRIGHT & LIABILITY

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In the event of any breach of abovementioned copyright, the rights of the copyright holder will be strictly enforced.

This product may need to undergo a yearly service to assure optimum performance. This service may only be carried out by Turnstar Systems or an approved agent.

Any guarantee on this product will expire should an unapproved person attempt to carry out a service.

2. INTRODUCTION

The TRIDENT and STREAMLINE turnstiles are both waist height turnstiles. This type of product can also be referred to as a tripod turnstile.

The TRIDENT is available in both single and double configuration.

The STREAMLINE is available only in single configuration.

Applications: Office reception areas, health clubs, colleges, libraries, leisure parks and stadiums and any application requiring a medium level of security and high volume access.

3. DESIGN

3.1 WIRING ENTRY POINTS AND BOLTING POSITIONS

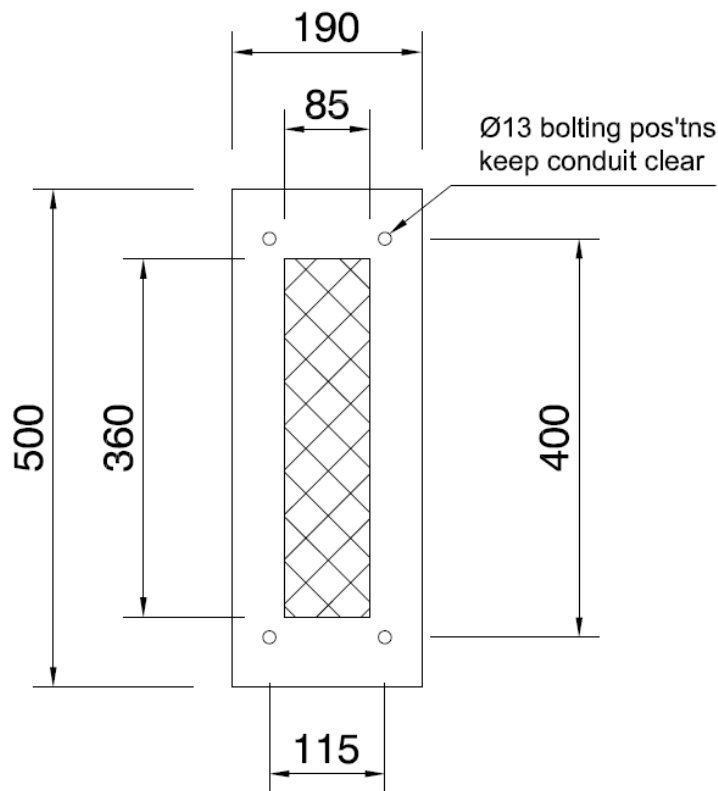


Figure a: TRIDENT single and double footprint

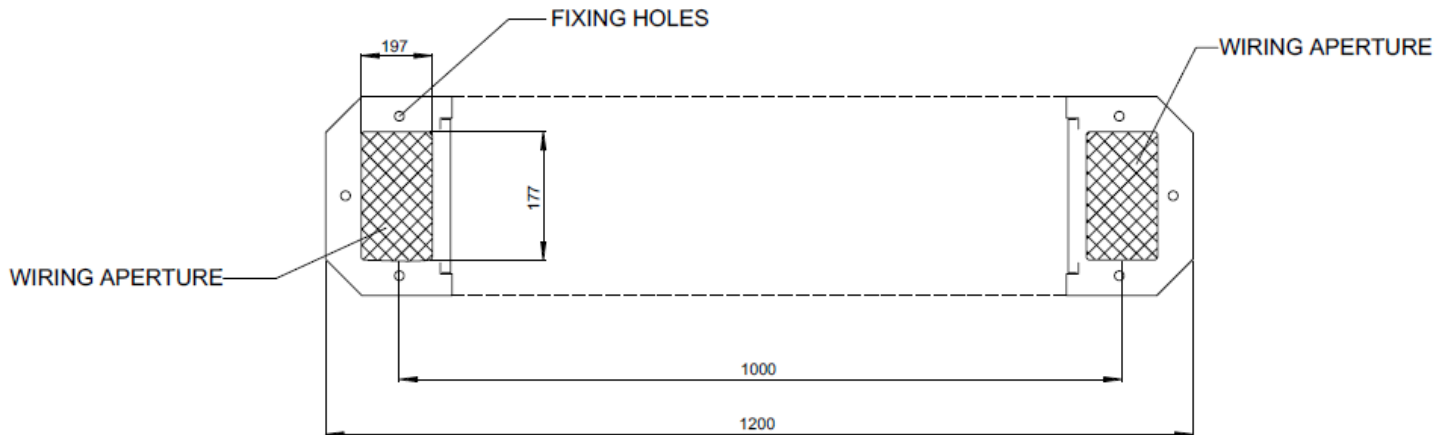


Figure b: STREAMLINE footprint

Provision for the power and data cabling for the waist height turnstile range must be in place prior to installation. The turnstile is designed to be bolted directly onto the finished floor surface, e.g. tiles.

In exceptional cases, wiring to the turnstile can be provided from the ceiling. A stainless steel wiring tube can be bolted to the floor and a wiring hole can be drilled into the side of the turnstile cabinet. Also, power and data can be fed to the turnstile through any barriers if necessary. These on site issues should be notified to the factory prior to manufacture so that modifications to the turnstile / barriers can be done.

The turnstile is bolted to the floor using m10x75 coach bolts with a nylon plug. If the turnstile is to be installed on a suspended floor/computer flooring, then a special steel base/feet must be manufactured. The base will then be installed directly on the concrete floor and will extend to the underside of the floor. The turnstile will then be bolted onto the base.

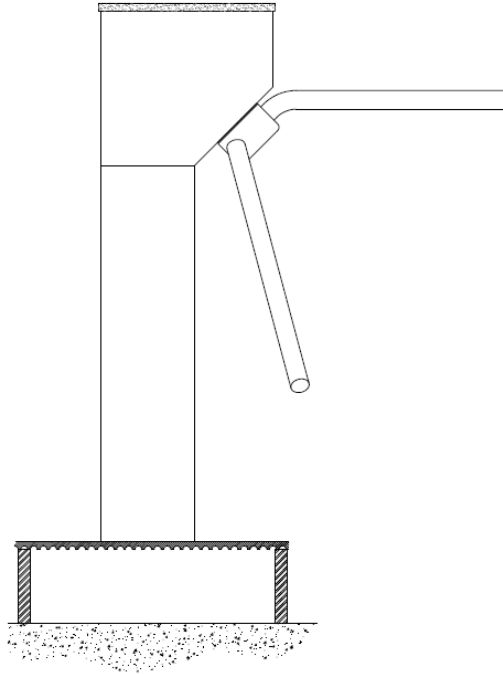


Figure c: Suspended floor / computer flooring

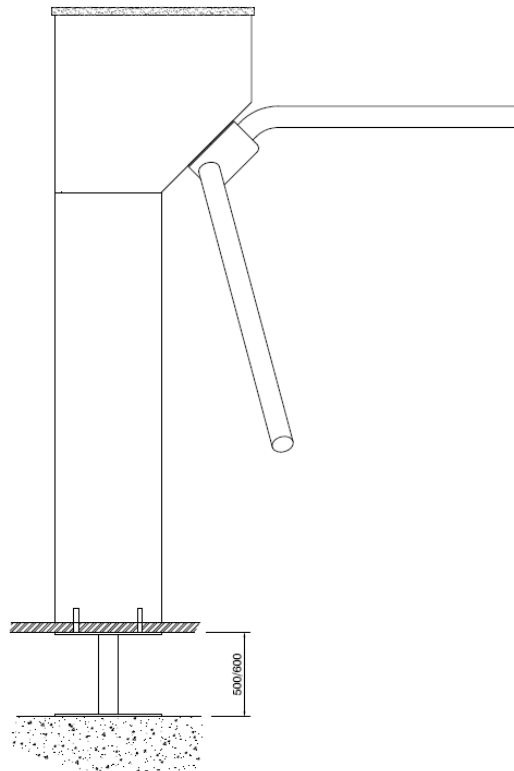


Figure d: Feet for raised floor

4. CABINET

Finishes

The TRIDENT and STREAMLINE are designed for interior installations and exterior installations which are covered by a roof.

Cabinet

The following finishes are available:

- Powder coated mild steel (standard colour – charcoal blue hammertone)
- 304 grade brushed stainless steel
- 316 grade brushed stainless steel *
- Powder coated 304/316 grade stainless steel (standard colour – charcoal blue hammertone) *

(*) Suitable for exterior coastal installations (within 50km from the coast)

Notes: Other powder coated colours are available on request. A surcharge applies should we have to order a special colour which is not in our standard pallet of colours.

Tripod arms

Standard

- 304 grade brushed stainless steel (316 grade brushed stainless steel available on request)

Top cover

Standard

- Rustenburg granite
- 304 grade brushed stainless steel
- 316 grade brushed stainless steel *
- Powder coated 304/316 grade stainless steel (standard colour – charcoal blue hammertone) *

(*) Suitable for exterior coastal installations (within 50km from the coast)

Weatherproof

Only the TRIDENT is available with a weatherproof steel top cover. For this design, the top cabinet of the turnstile is also modified.

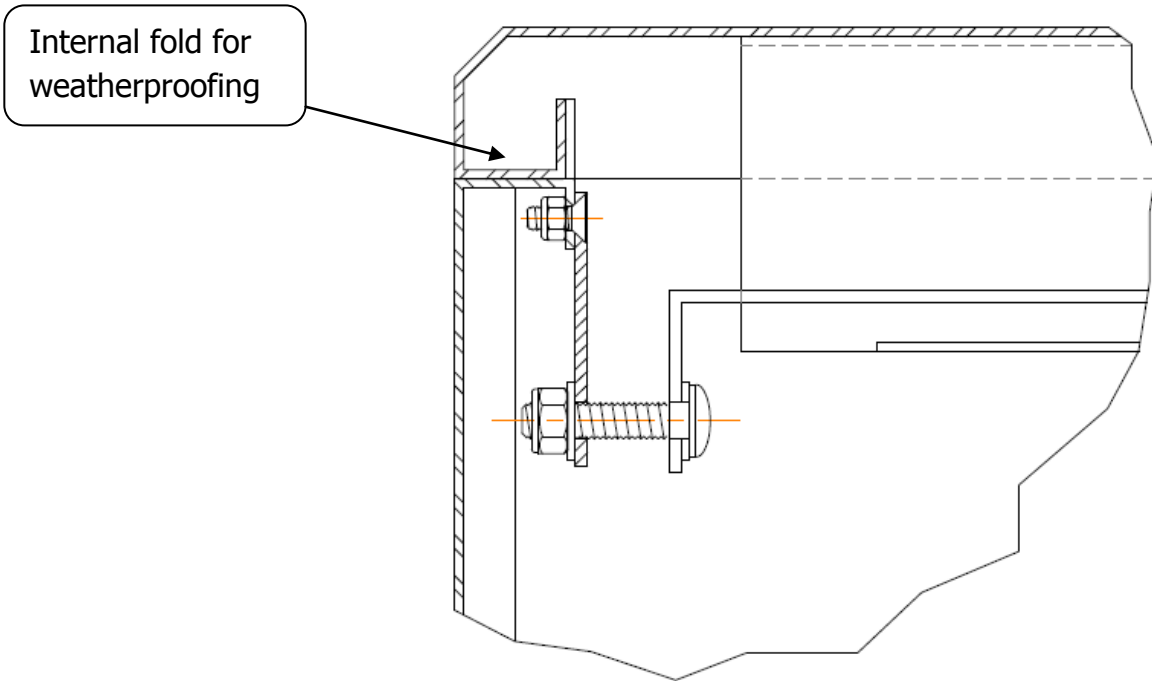


Figure e: Weatherproof top cover

The cabinet of the turnstile is not waterproof or IP rated. However, the weatherproof top cover will provide good protection.

- Powder coated mild steel (standard colour – charcoal blue hammertone)
- 304 grade brushed stainless steel
- 316 grade brushed stainless steel *
- Powder coated 304/316 grade stainless steel (standard colour – charcoal blue hammertone) *

Notes:

For corrosive environments (especially in areas close to the sea where sea water and sand will be driven by the wind into the turnstiles), we recommend informing the customer of the following:

- Turnstiles with a brushed stainless steel finish should be cleaned once every two weeks as per the stainless steel maintenance manual.

- The turnstiles should be kept covered when not in use. Turnstar can supply a PVC cover for the turnstile which has an internal strap to prevent the cover from being blown away by the wind.
- The turnstile can be supplied as fail-safe, which means that the solenoids will be continuously energised and creating heat. The heat will minimise a build up of condensation on the solenoids.

The turnstile can never be made fully waterproof or even weatherproof. In other words, moisture cannot be prevented from entering the cabinet. Moisture can even enter the cabinet through the concrete base as concrete is porous.

4. TURNSTILE FLOW RATE

Refer to 'Turnstile flow rate' in the TRIUMPH/TITAN technical training manual.

When asked by a customer, we generally work on an average flow rate of **1 person every 6 seconds**.

5. ROTALOK TURNSTILE MECHANISM

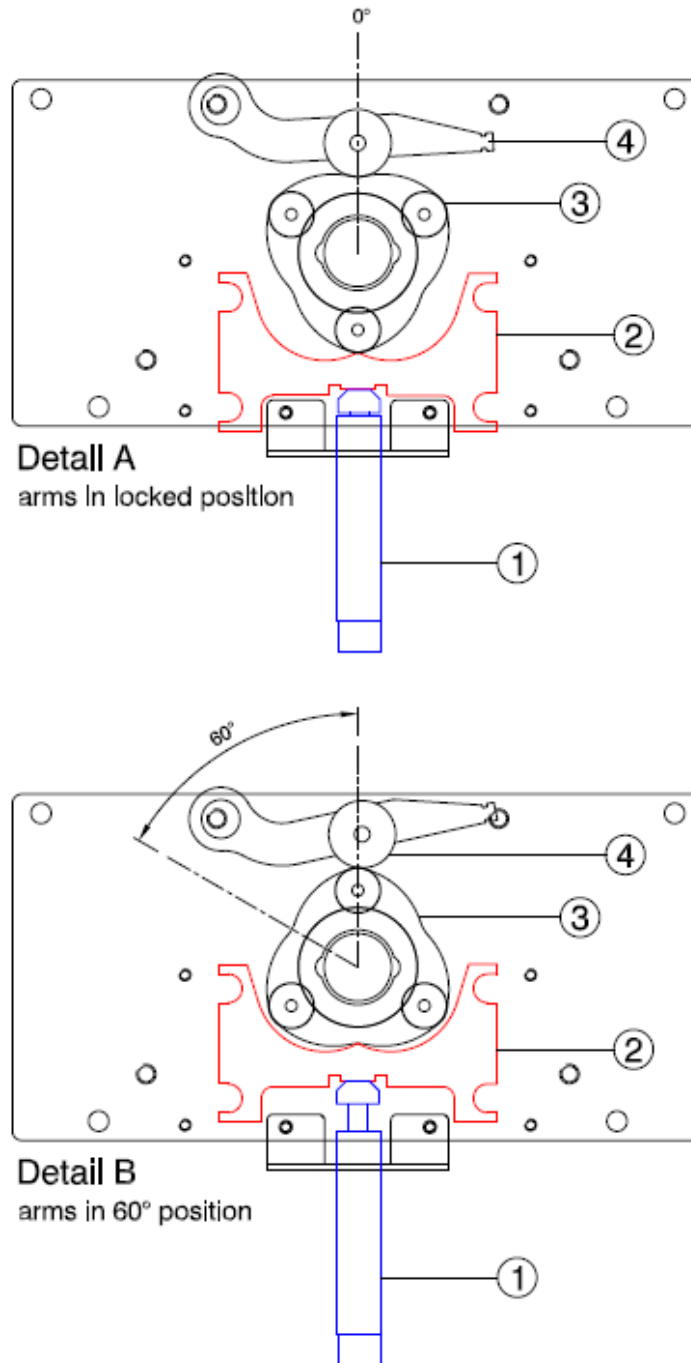
The ROTALOK rotation locking mechanism is fitted to the waist height turnstile. However, there are certain differences between the full height turnstile mechanism and the waist height turnstile mechanism.

1. A different indexing lever arm.
2. A different shaft with boss connector for the mounting of the turnstile arms.
3. Hydraulic damper for quiet operation.



Figure f: Hydraulic damper for waist height turnstile

Functioning of the hydraulic damper



The hydraulic damper is labelled (1) in both detail A and B. A force is required to compress the hydraulic damper which offers linear resistance. The turnstile mechanism is assembled in such a way that the damper provides resistance during the final 60° of rotation and causes the arms of the turnstile to slow down as they approach the locking position. Without the damper, the relocking of the turnstile would be very noisy.

Note: In detail A (arms in locked position), the gap between the head of the damper and the damper cylinder should be 1mm.

The turnstile is available in both fail-secure (factory standard) and fail-safe configurations. It can also be set for free rotation when triggered by a fire alarm. Battery backup is also available.

6. ACCESSORIES AND MODIFICATIONS

LED indicator lights can be mounted inside the cabinet of the turnstile.

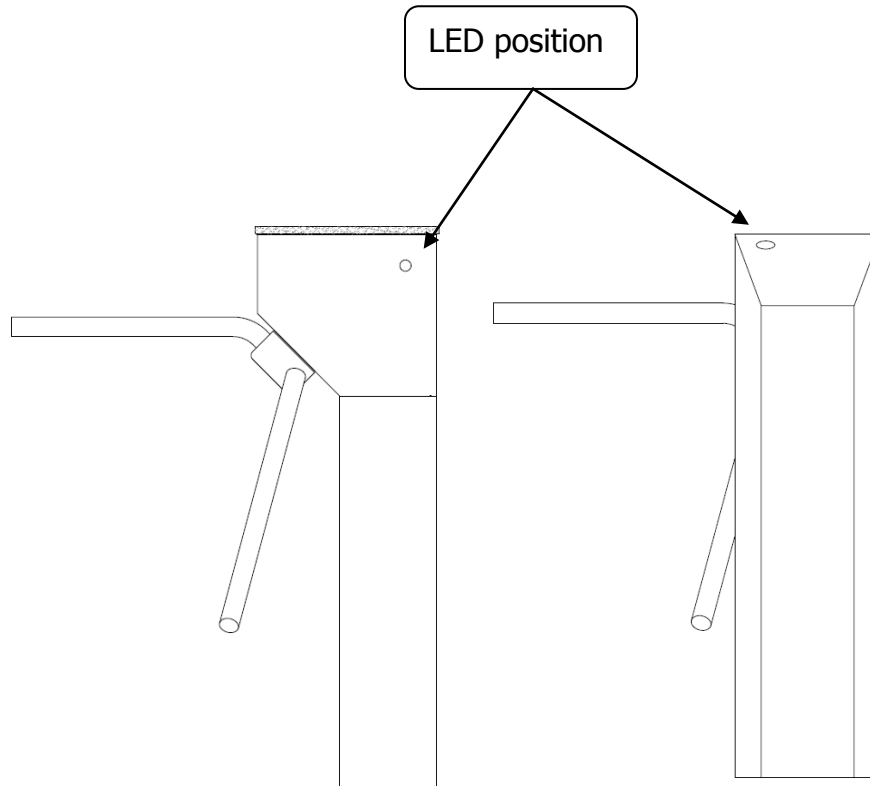


Figure g: LED indicator light mounting position

The standard arm length of the turnstile is **?????**. We are able to increase the length of the arm of the TRIDENT and STREAMLINE models by **????**.

Turnstile screen

A turnstile screen is a 600mm long barrier which is installed perpendicular to the arm of the turnstile. The screen serves two purposes:

1. Ensures that a full rotation of the arms occurs and that the pedestrian is forced to go through the turnstile once past the point of no return.

- Prevents the arms being held at half way (60°) which would allow uninhibited illegal pedestrian access.

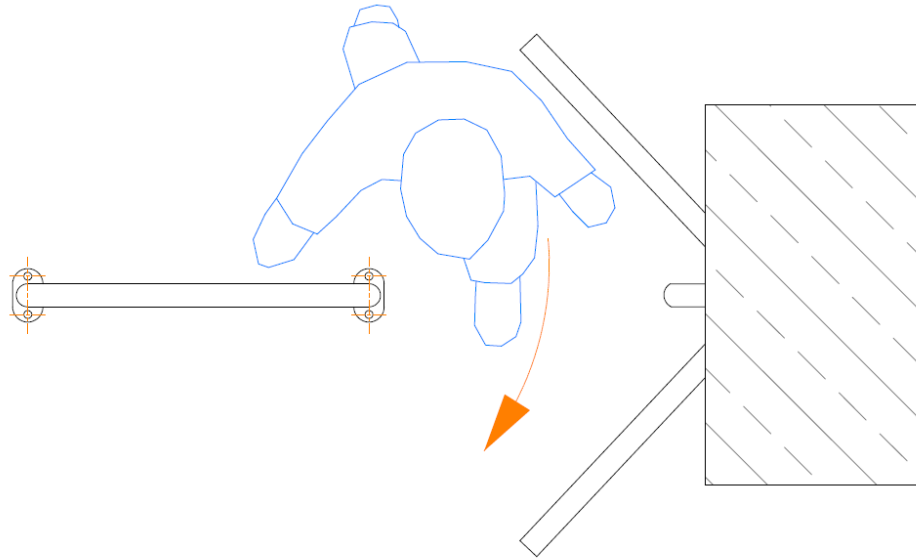


Figure g: Waist height turnstile without a screen

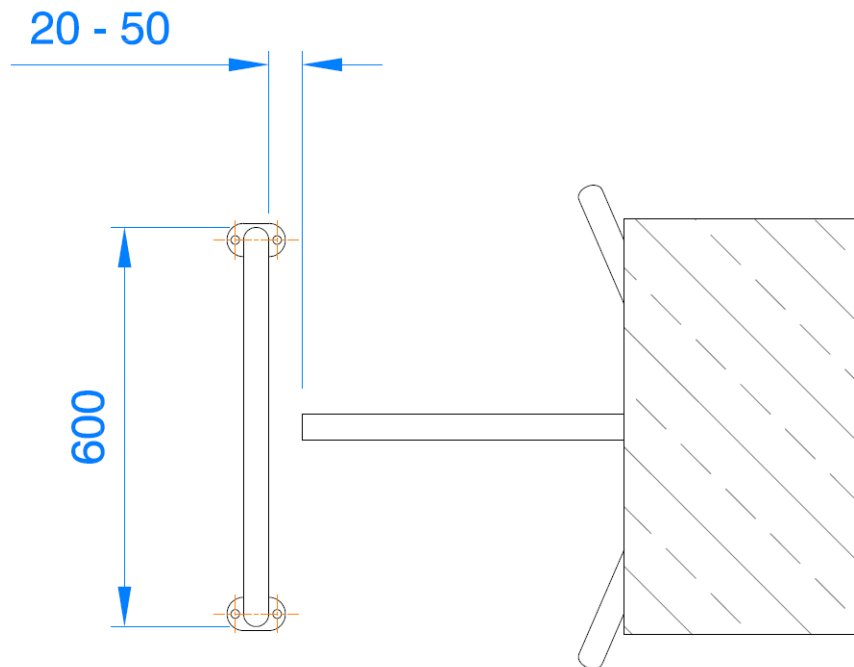


Figure h: Waist height turnstile with a screen

Gates and barriers

Often the customer requires more than just a turnstile in order to secure the entrance. We are able to manufacture barriers. The barriers can be manufactured from powder coated mild steel, 304 grade brushed stainless steel or even 316 grade brushed stainless steel. Often a glass infill is offered to the customer. Different barrier designs are available if requested by the customer. 1 500mm is the longest length available.



Figure i: Typical installation with barriers and screen

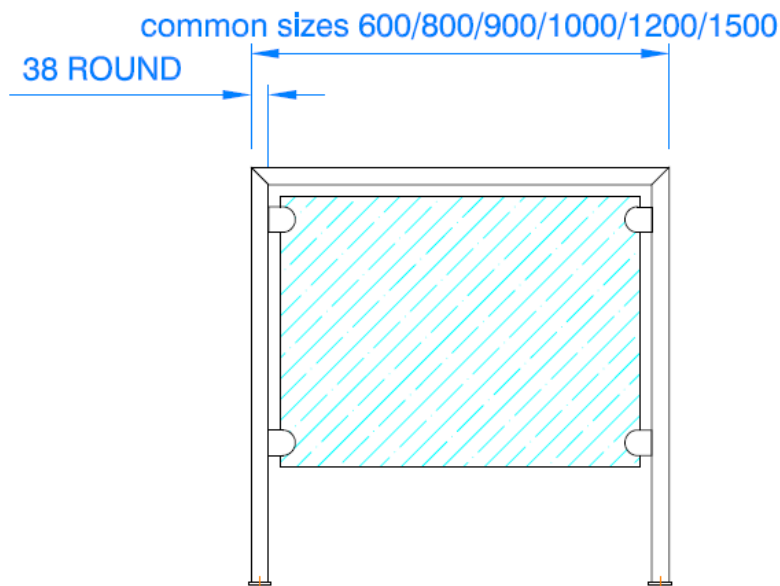


Figure j: Standard barrier design. 304 grade stainless steel with glass infill

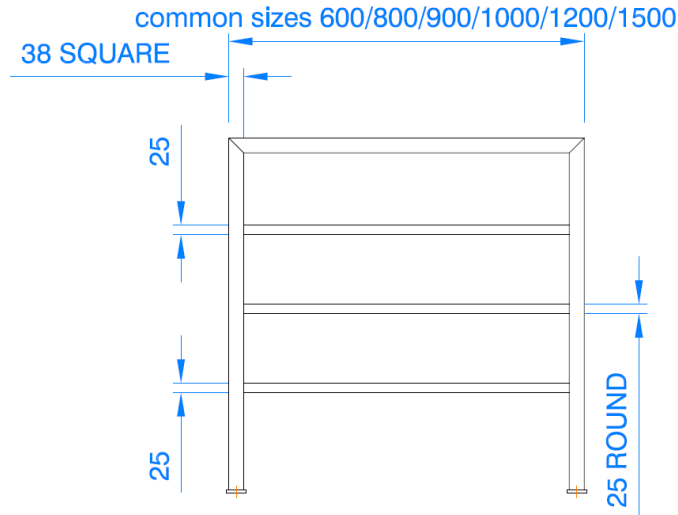


Figure k: Alternative barrier design

In order to accommodate wheelchair access, access for delivery trolleys and access for furniture & equipment, we recommend supply a Special Needs Gate. There are three types of special needs gates available:

1. Manual gate with a mortice lock (supplied in matching finish to the turnstile/barriers)
2. Semi-automatic gate with a floor spring door closer (supplied in stainless steel and with glass)
3. Fully automatic (supplied in stainless steel)

The semi-automatic gate is connected to a control panel which is often installed inside the turnstile cabinet or at the reception desk (whichever is more convenient). A new design gate is being launched from July 2013 which will house the control panel inside the gate itself.

The following are examples of various installations. A gap of 50mm should be allowed on either end of an installation in case there is floor skirting. A gap of a between 20mm and 50mm should be kept between each product.

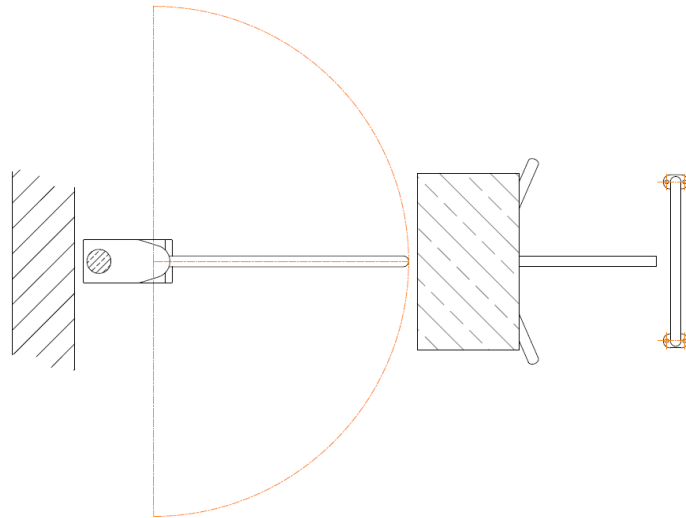


Figure l: Typical installation (with a TRIDENT, screen and semi-automatic gate)

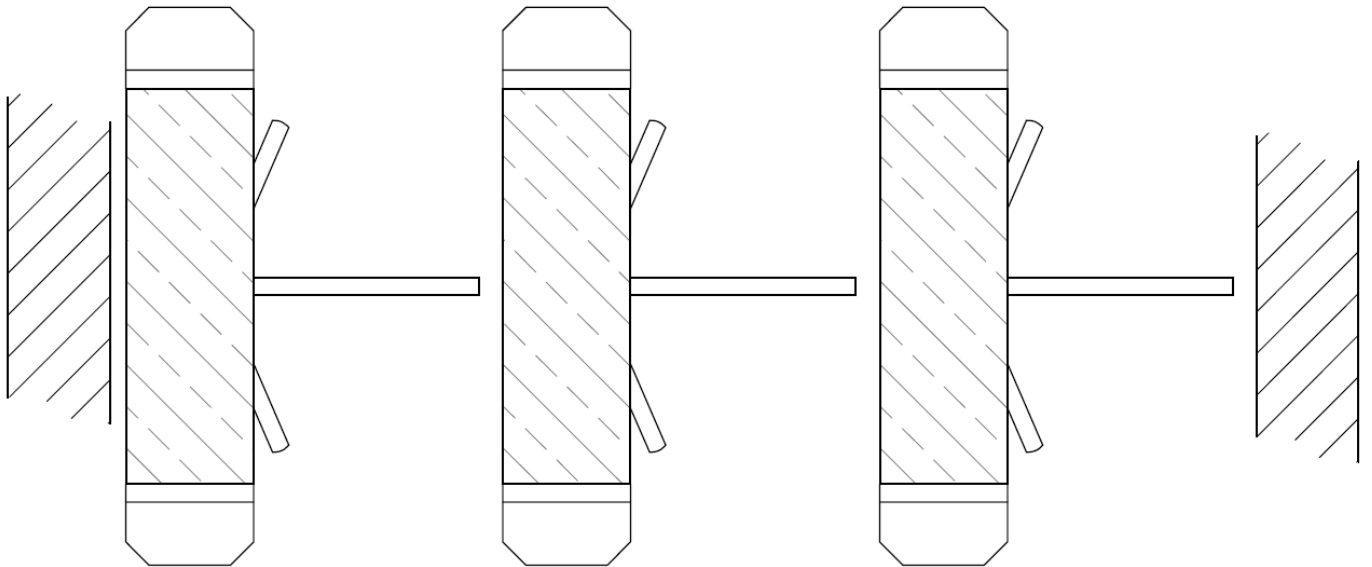


Figure m: Typical installation (with 3 STREAMLINES, each turnstile acts as a screen for the next turnstile, the wall on the right also acts as a screen)

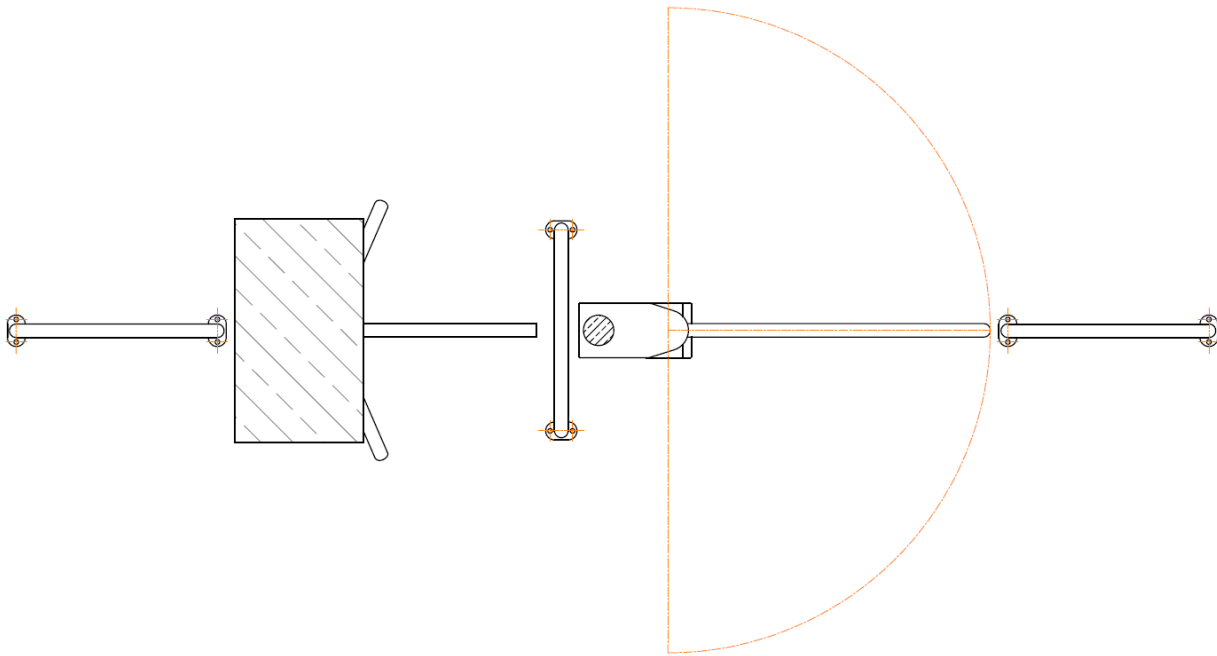


Figure n: Typical installation (with a TRIDENT, screen, two barriers and a semi-automatic special needs gate)

Recommendation for a customer

It should be recommended to the customer that the entrance should be supervised by either a security guard or receptionist. For unsupervised entrances, a full height turnstile is recommended.

7. ADDITIONAL KEY SELLING FEATURES

1. The STREAMLINE cannot be manufactured in double configuration as the cabinet is too narrow to accommodate a mechanism on both sides.
2. The turnstile can be programmed to unlock with one trigger from one access control reader/pushbutton for both directions simultaneously. A special reader mounting bracket may be required for the convenient positioning of the reader in the middle of the turnstile.
3. We do not offer a drop arm version of the waist height turnstile, which means that in the event of a power failure/emergency, the arm of the turnstile lowers automatically. However, a design is currently on the cards.
4. We also do not offer a motorised waist height turnstile. However, a design is currently on the cards.



Figure o: Turnstile with the emergency drop arm feature

8. ADDITIONAL KEY SELLING FEATURES

- ROTALOK® turnstile mechanism is CE approved
- 5 year guarantee on mechanism and base bearing
- 1 year guarantee on electronic control panel
- Bi-directional electrical locking
- Integrates fully with any type of access control system

9. WEIGHT AND DIMENSIONS

Weight

TRIDENT single turnstile - 68kg (without packing materials such as crating)

TRIDENT double turnstile - 114kg (without packing materials such as crating)

STREAMLINE single turnstile - 82kg (without packing materials such as crating)