

# TURNSTAR



RELIABLE ★ DURABLE ★ GUARANTEED

## Technical Training Manual MAN-TRAP CUBICLE (SECURITY BOOTH)



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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 ensure 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 Man-Trap is a medium to high security full height cubicle. It is available in both single and double configuration and in a number of different sizes.

Applications: Entrances to banks, retails stores, colleges, office blocks and commercial buildings.



The Man-Trap is designed for bi-directional (entry and exit) operation and can be supplied with a number of different electronic configurations depending on customer requirements.

It can also be referred to by some customers as a security booth / man-trap booth.

### **3. KEY DESIGN FEATURES**

- The man-trap is manufactured with a mild steel frame structure and door. Mild steel provides an extremely robust frame and strong door. An aluminium profile with EPDM rubber insert is used for the glass fixing. 6.38mm PVB laminate glass is used for all the glazing.

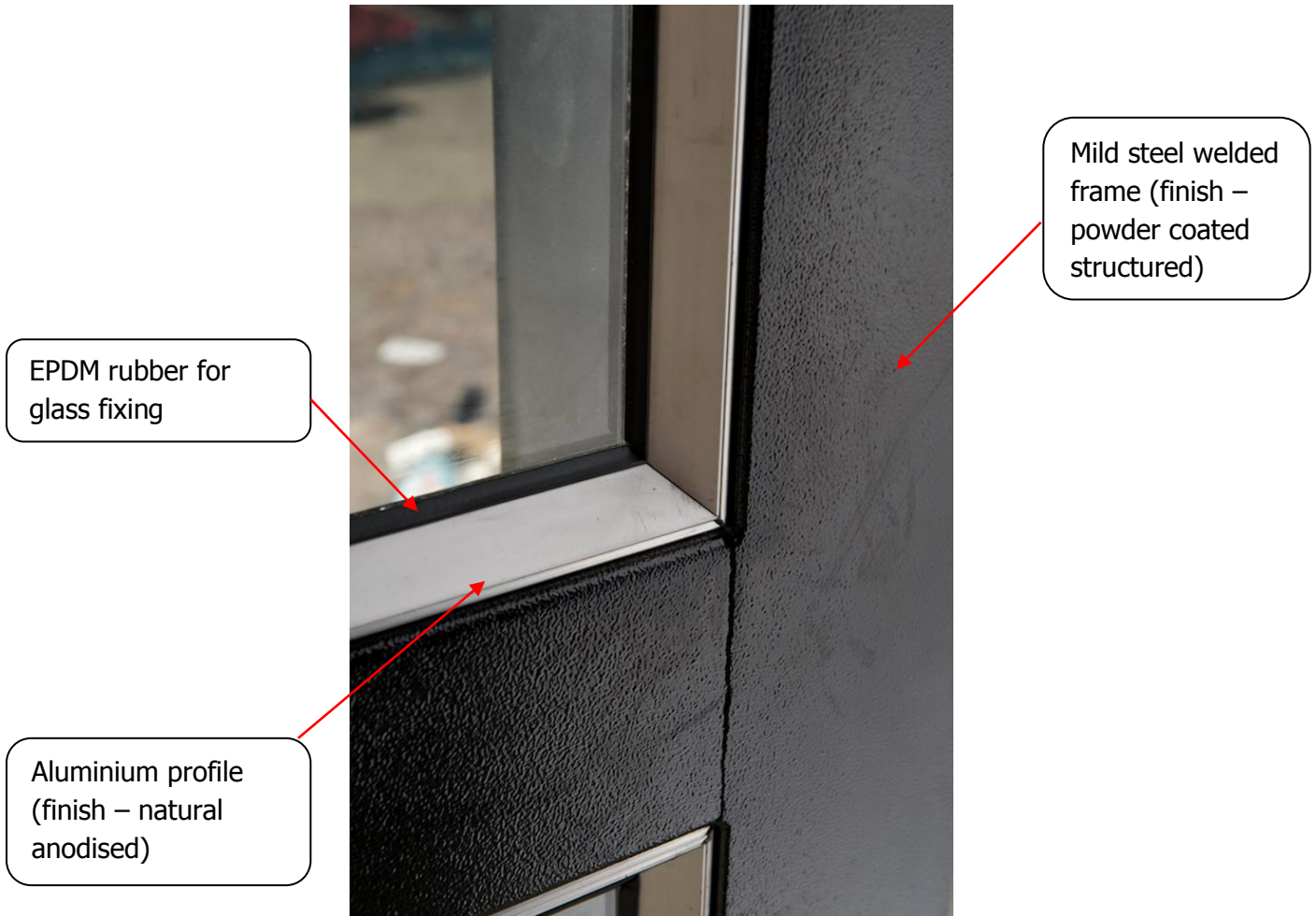


Figure a: Frame detail

- The steel base plate is manufactured from 4.5mm thick 3Cr12 stainless steel which is a utility stainless steel and offers acceptable levels of corrosion resistance. The base plate has a number of bolt-down holes which accept a countersunk bolt. The base plate ensures that the cubicle will always be installed correctly and minimises the amount of site work required for the installation. All that is required by the installer is to ensure that the floor surface is level and if not, to add floor spacers underneath the base plate. The man-trap is also self-

supporting and is not reliant on any shopfront or wall fixing beside it for support. With aluminium man-traps, a lot of time is spent on site ensuring that all four corners are level and the frame requires additional support from an adjacent shopfront or wall.

The door pivot pin and m16 studs are welded directly onto the base plate. The m16 studs are used for the fixing of the cubicle's side panels.

The baseplate is rubberised in order to make it "non-slip".



Base plate (before rubberising)

Figure b: Photograph of base plate

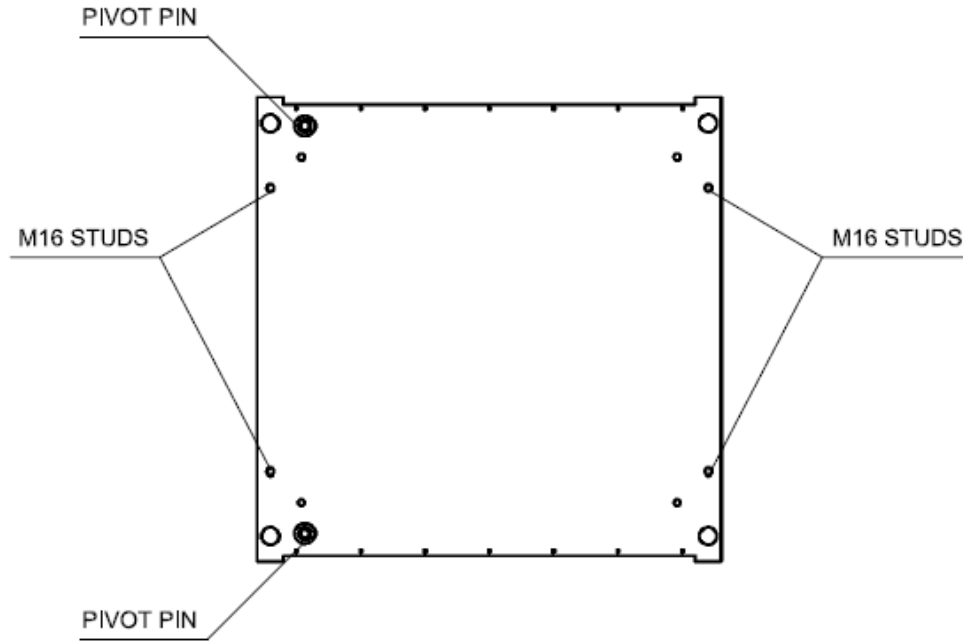


Figure c: Base plate detail

- The steel door removes a common problem with aluminium man-traps (made by other manufacturers). Over time the aluminium doors tend to bend and warp like a banana and constant maintenance is required to readjust the door, magnetic door status sensors (see below) and magnetic lock every few months. A steel door will never bend or warp.

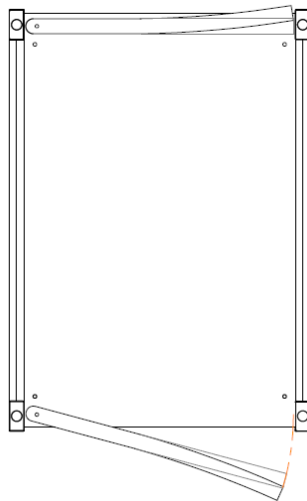


Figure d: Warped doors of an aluminium man-trap

- The doors are not fitted with any hinges. The direct pivot design ensures door alignment and removes the need for clumsy, noisy hinges – which need constant maintenance. The doors are connected directly to the door closer in the top bulkhead and pivot on a stainless steel pin and ball bearing at the base.

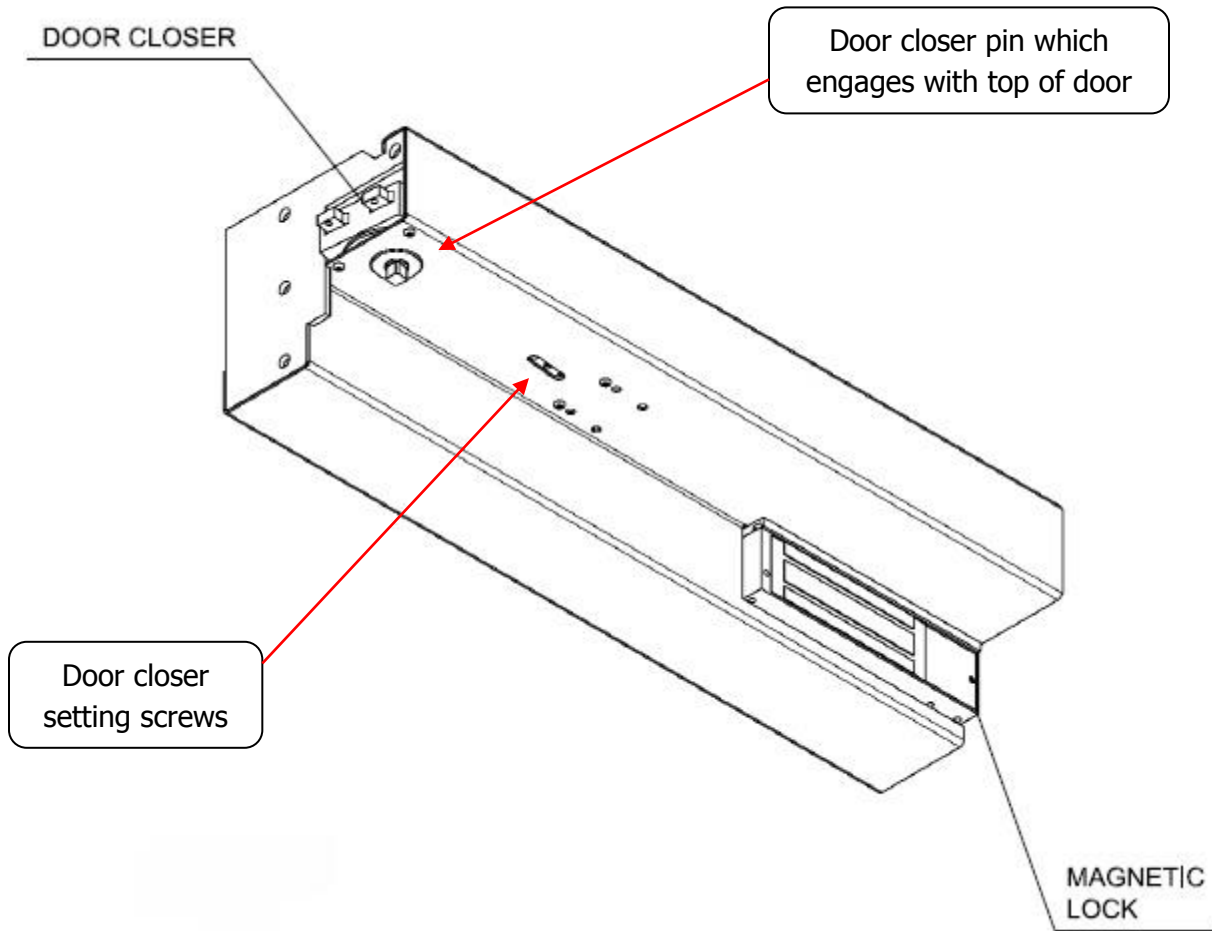


Figure e: Top bulkhead section containing door closer and magnetic lock





Figure f: Photograph of top bulkhead assembled

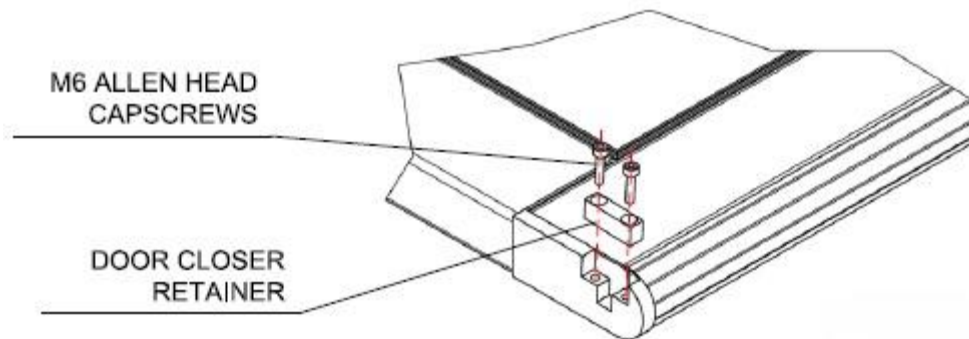


Figure g: Door closer to door connection (top of door)

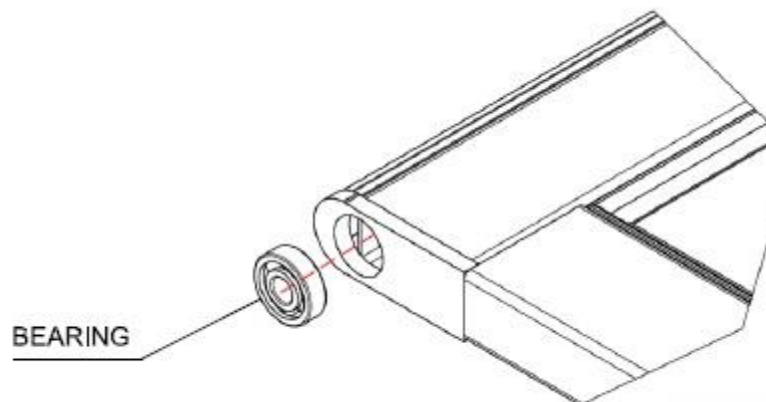


Figure h: Bottom of door bearing insert

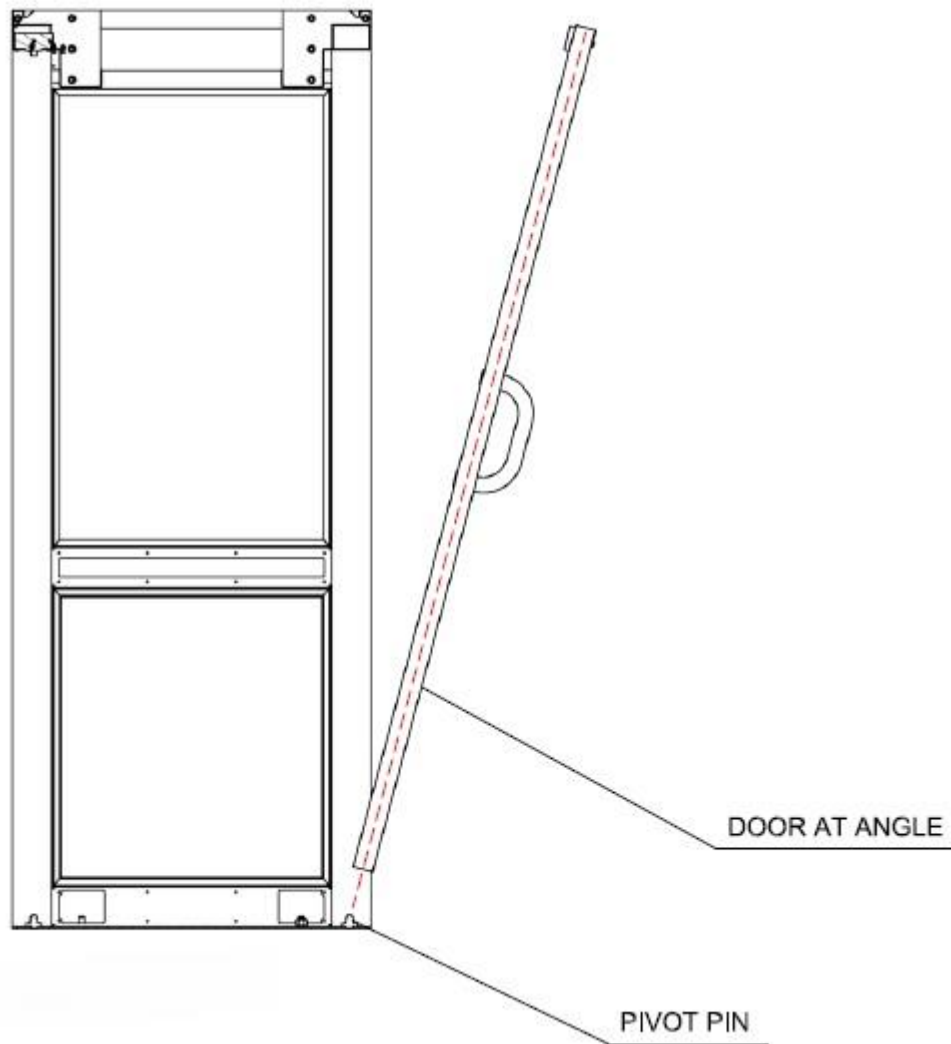


Figure i: Door insertion process

- An overhead transom hydraulic door closer is fitted inside the man-trap bulkhead and is connected directly to the door. No unsightly lever arms are visible.



Figure k: Unsightly lever arm door closer

- A non-hold open door closer is supplied as standard. The two speed/force setting screws of the door closer can be easily accessed through the underside of the bulkhead. One screw sets the speed/force for the first 80° degrees of motion, the other screw sets the speed/force for the last 10° degrees of motion, thereby preventing any unnecessary banging during closing.

A hold open door closer can be supplied, however, if the door is opened fully (90°), then the door will remain in the open position and will have to be pulled back slightly in order for the door closer to allow the door to close and the transaction to continue. This would cause a time delay and will cause the pedestrian a lot of aggravation. We are able to offer a hold open door closer if required due to fire safety requirements.

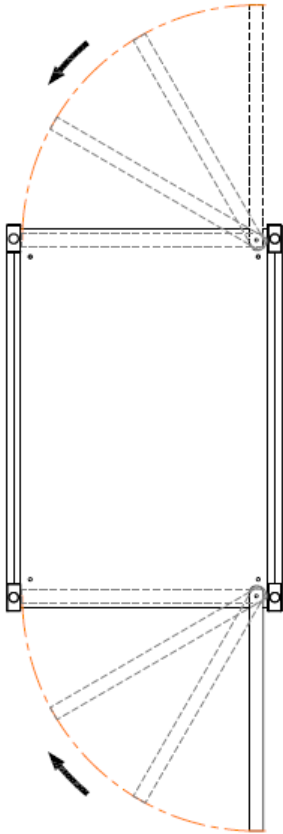


Figure l: Non-hold open configuration

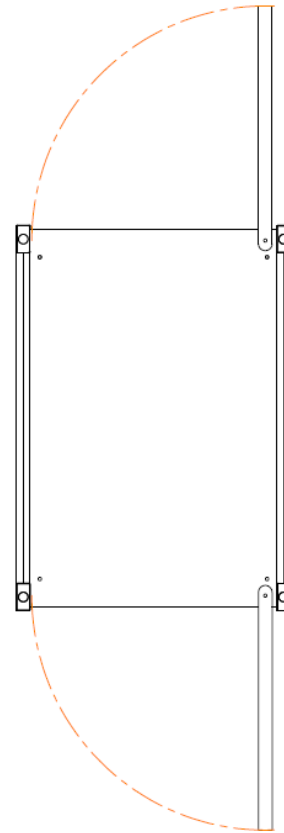


Figure m: Hold open configuration  
(doors will remain in this position)

- 500kg **monitored** magnetic locks are aesthetically recessed inside the man-trap bulkhead. “monitored” means that we are able to verify door status (open/closed) by means of the magnetic lock itself, no additional magnetic door status sensors are required.

### **General rule on how the man-trap operates with the magnetic lock**

When triggered to unlock, the magnetic lock remains disabled for 3 seconds allowing the door to be opened for entry. Once the magnetic lock has been re-enabled, the door will lock as soon as it is closed. The exit door will remain locked, until the entry door is closed and locked, regardless of time expired.



LED indicator light  
When 'red' – magnetic lock is energised and door status is 'open'  
When 'green'- magnetic lock is energised and door status is 'closed'

Figure n: 500kg monitored magnetic lock



Figure o: Different types of door status sensors (only ever used as part of a CBL07 controller)

- A standard mortice lock is supplied in each door for night locking (all keys are different and are handed over to the customer)

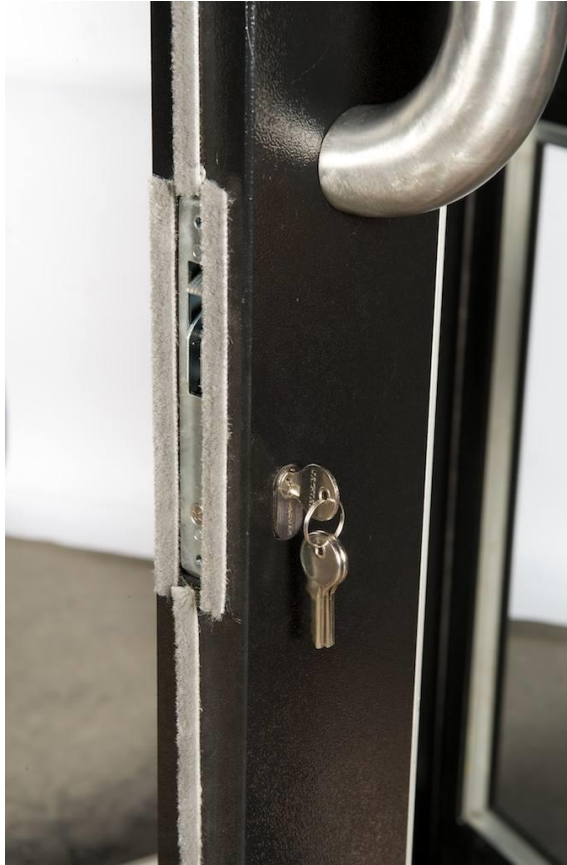


Figure p: Mortice lock

- A stainless steel ceiling is supplied. The finish is either brushed or bright annealed (which is a mirror finish). A low voltage downlight with holder is fitted in the centre of the ceiling.



Low voltage  
downlight

Figure q: Low voltage light fitted in stainless steel ceiling

- A heavy duty 38mm diameter welded stainless steel (brushed 304 grade) handle is fitted on all the outer doors of the man-trap. The handle is bolted through the door frame and will never come loose.



Figure r: Stainless steel handle

- LED indicator lights are fitted on the entrance uprights and inside the bulkhead. The lights show the status of each door, locked (red) or unlocked (green).



Figure s: Red LED (optional blue ring pushbutton shown)



Figure t: Green LED (optional blue ring pushbutton shown)

- The base plate is rubberised and the mantrap is supplied with two stainless steel end strips in order to prevent a person from tripping when entering the cubicle.





Figure u: Rubberised floor

- The glass is fixed inside the steel frame by means of two aluminium profiles with EPDM rubber making contact with the glass on both sides. Once fitted, it is impossible to remove the glass when standing outside the cubicle.
- The standard glass fitted in all man-trap cubicles is 6.38mm PVB laminate. The 6.38mm glass comprises of two pieces of 3mm thick glass which then sandwich a layer of PVB film. The film holds the two pieces of glass together. If the glass is broken, the shards of glass remain stuck to the film. With regular glass, the falling shards of glass could cause serious injury.

6mm toughened glass as well as various other thicknesses for bullet resistance are available. Bullet resistant glass can make the doors very heavy and we often recommend that an automatic man-trap be used.

## **4. CONDUIT POSITIONS AND INSTALLATION NOTES**

### **Location**

The man-trap is suitable for internal installations or external covered installations only.

### **Spacing**

When installing a man-trap into an aluminium shopfront, ensure that there is a 5mm gap on either side and above. The gap is to be filled by the shop fitter with silicone.

When installing a man-trap next to a wall or two man-traps next to each other, try to ensure that a gap of at least 100mm is provided as the door handle(s) can collide with the wall or with each other.

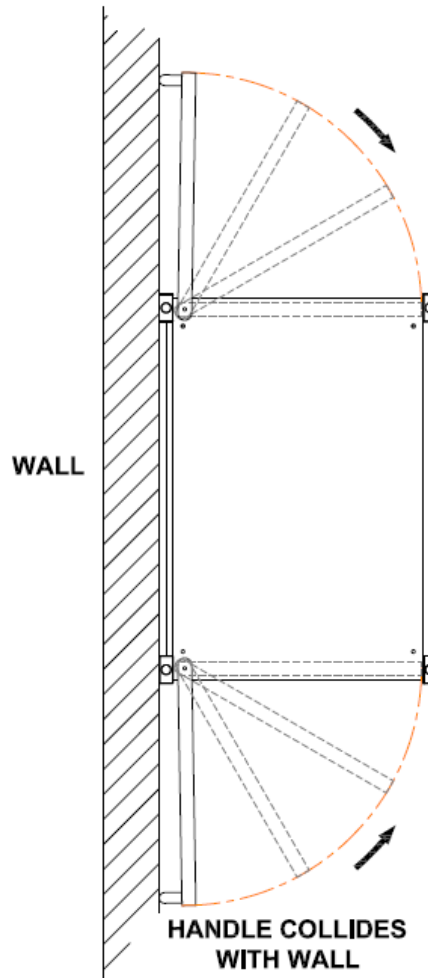


Figure v: Handle collisions (cubicle next to a wall)

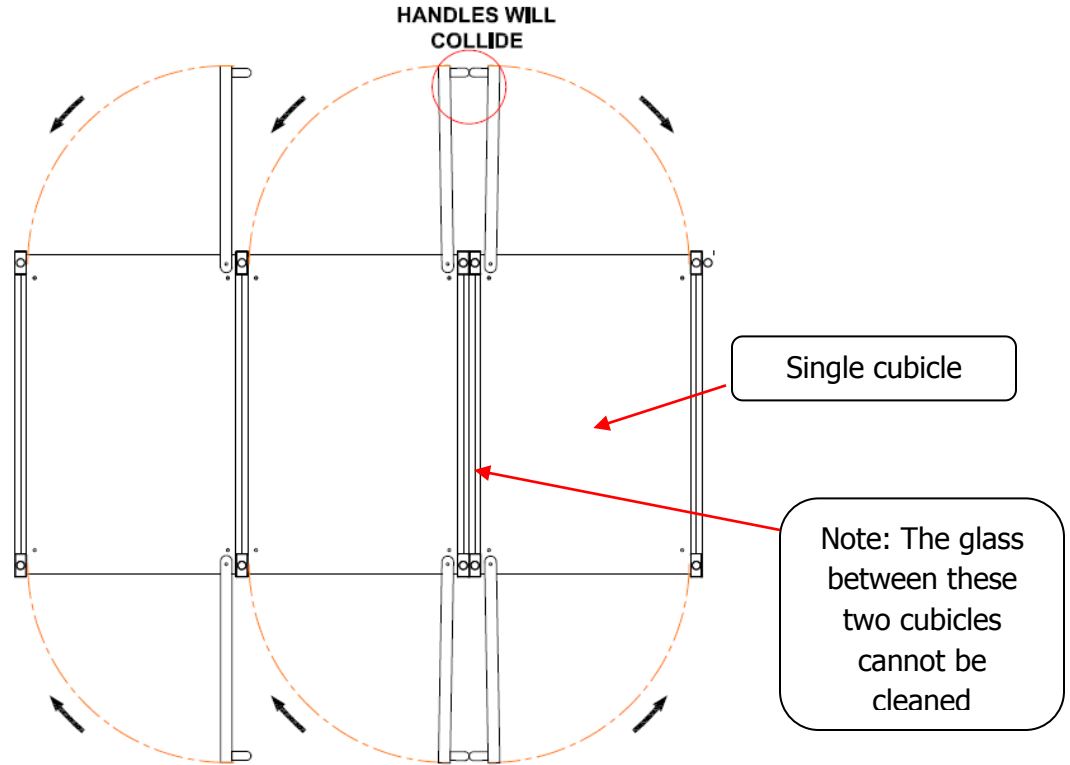


Figure w: Handle collisions (shown here: single cubicle next to a double cubicle)

If an external reader mounting bracket is to be fitted, keep in mind that the cubicle should not be installed next to a wall or against another cubicle. Also, the shopfront around the man-trap should not encroach on the reader mounting position.

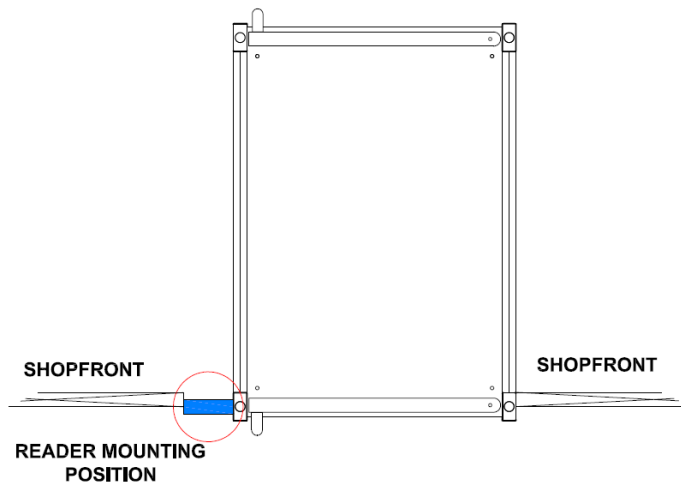


Figure x: Shopfront colliding with reader mounting bracket

When fitting reader brackets to a double man-trap, be aware that two of the readers will be installed on the pivot side of the door.

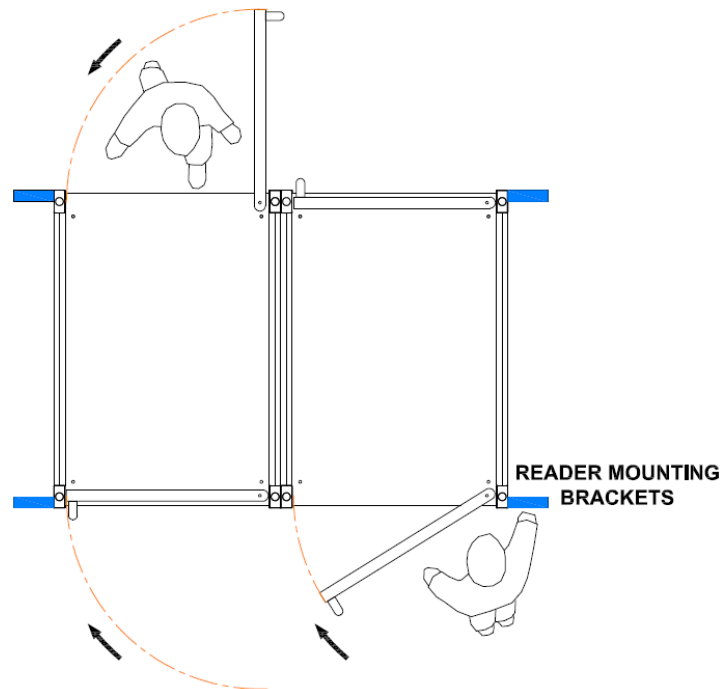
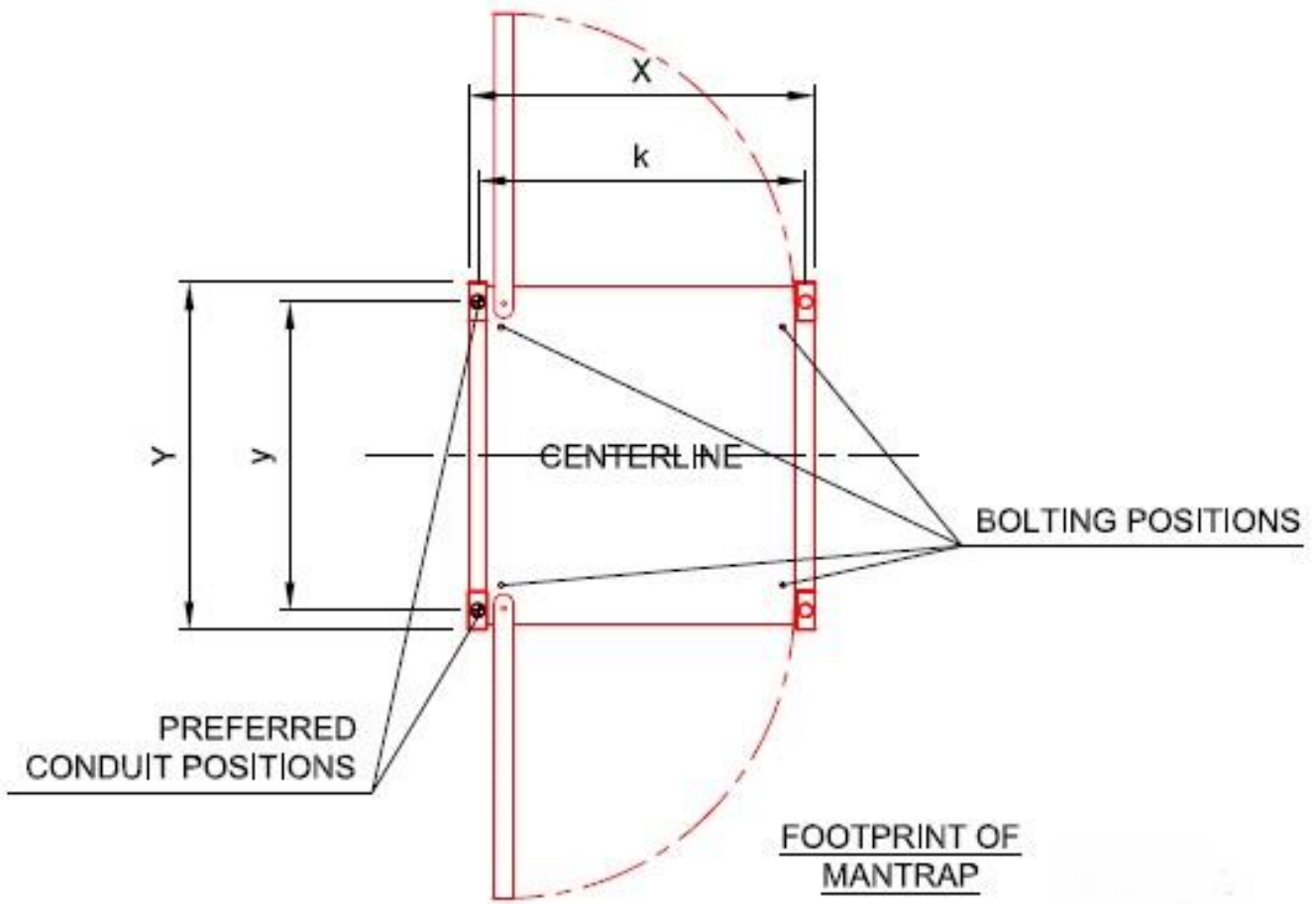


Figure y: Reader mounting bracket positions

### Wiring entry points

There are **four** wiring entry points into a single man-trap cubicle and **six** wiring entry points into a double man-trap cubicle.

Alternatively, there are wiring entry points at high level (into the bulkhead) on either side of the cubicle and through the roof of the cubicle.



	$X$	$Y$	$k$	$j$
NARROW	800	700	750	600
STANDARD	900	900	850	800
WIDE (SPECIAL NEEDS ACCESS)	1000	1400	950	1300

Figure z: Single cubicle

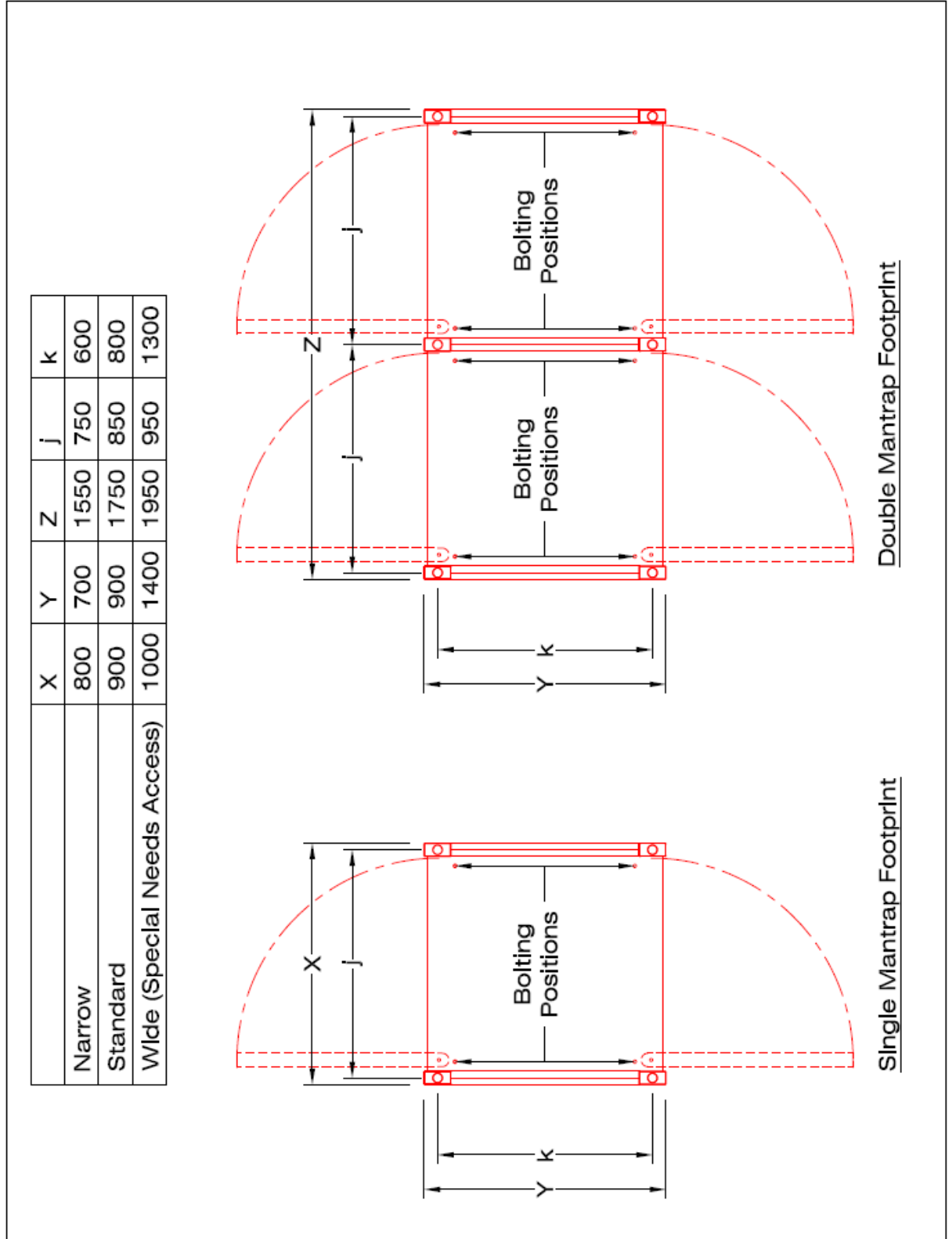


Figure aa: Double cubicle

## 5. STANDARD OPERATION

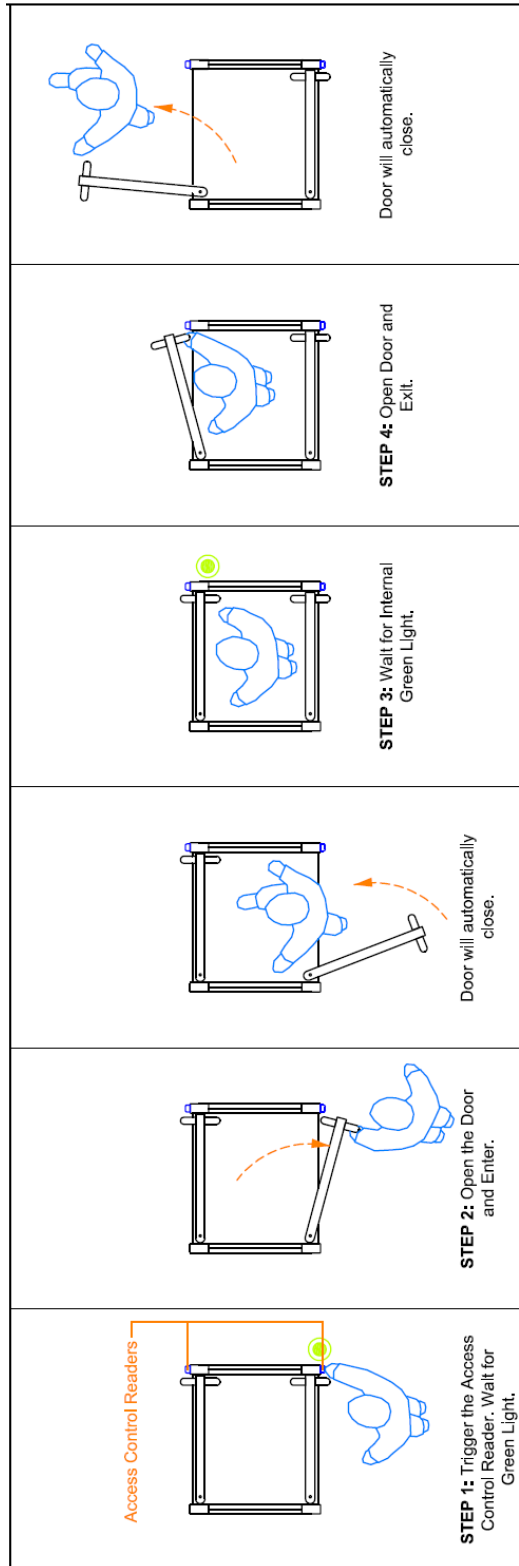


Figure ab: Standard operation (access control reader / pushbuttons can be used)

## **6. CONTROLLER OPTIONS**

### **6.2.1. Security and presence / occupancy sensors**

In terms of creating a physical barrier, the man-trap is highly effective and offers the customer a great solution. However, the multiple occupancy presence sensor system is not fool proof and works according to certain factory set assumptions. There are a few ways in which the system can be fooled.

Firstly, a savvy criminal can duck below or be carried above the waist height position of the presence sensors, in which case the additional person in the cubicle will not be detected.

Secondly, the sequence of broken beams that will indicate multiple occupancy is based on certain assumptions and is not foolproof.

In designing this system, we have chosen to rather err on the side of convenience as opposed to total security. Also, sites often have an access control system which ensures that only an authorised person is allowed to open the first entrance door.

The presence sensors are spaced between 195mm and 170mm apart (depending on the size of the cubicle) in the stainless steel cover plates on each internal side of the man-trap. The presence sensors serve two purposes:

1. To determine occupancy – used during a valid transaction and during an illegal transaction (i.e. entry whilst door 2 was open).
2. To determine multiple occupancy - this would invalidate a transaction and cause the pedestrian to be ejected.

#### **A note on the accuracy of beams**

We suspect that internal reflection of beams may contribute to occasional problems as well as the wearing of reflective clothing by pedestrians.



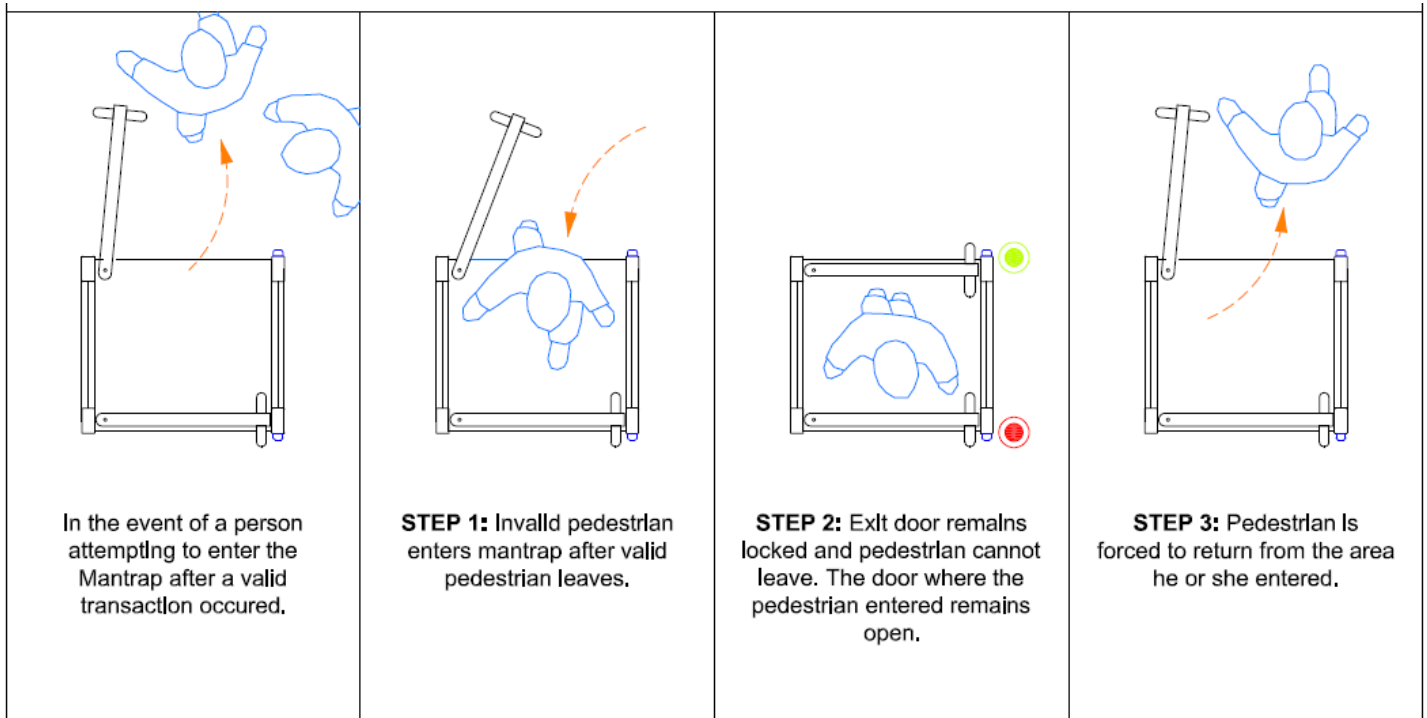


Figure ac: Determination of illegal occupancy

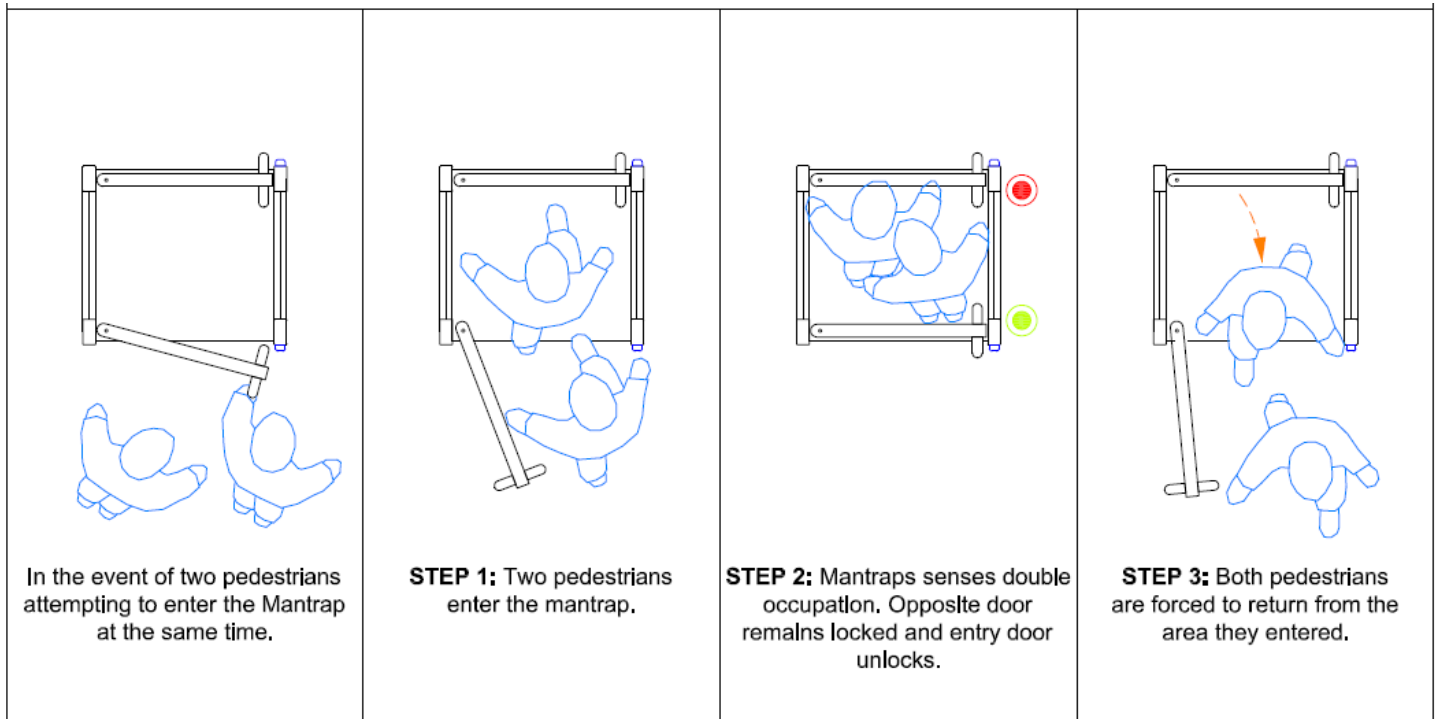


Figure ad: Determination of multiple occupancy

The sensors interrogate the cubicle only when both doors are locked. The interrogation time is under 1 second. The controller then makes a decision as to occupancy (single occupancy, multiple occupancy or no occupancy).

### Multiple occupancy sensors

- 800 x 700 (small man-trap) - fitted with 3 optical sensors.

Cubicle decision making rule:

Beam 1 and 3 broken – multiple occupancy is assumed.

If beam 1, 2 and 3 are broken – single occupancy is assumed. Because of the small size of the cubicle, too many false multiple occupancy conditions occur.

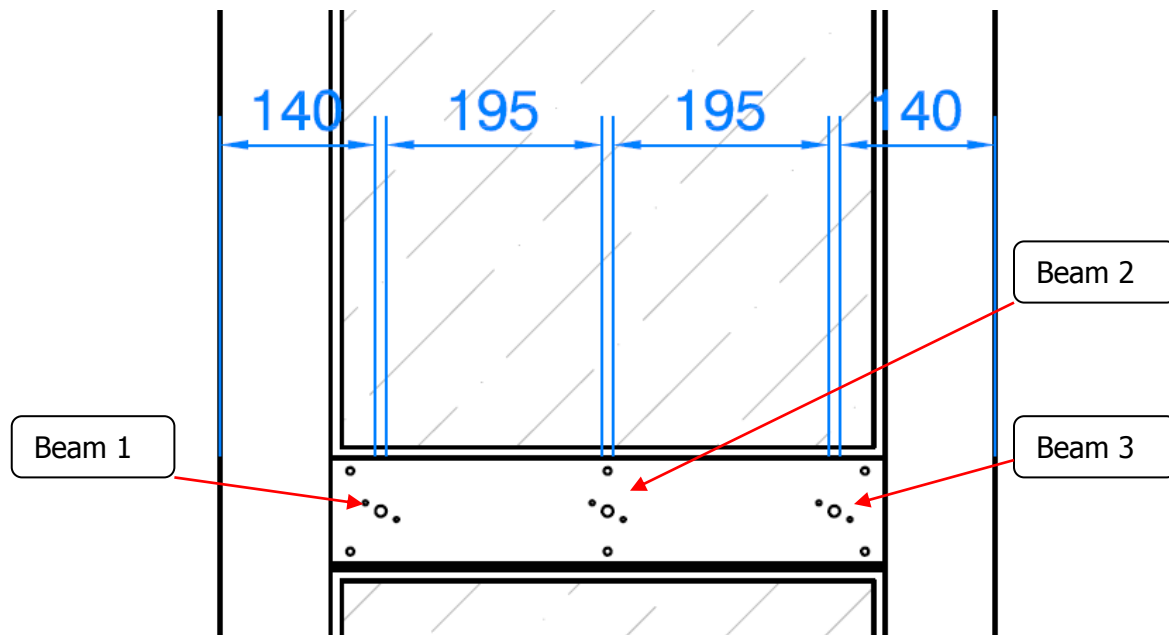


Figure ae: Beam numbering and spacing (small cubicle)

- 900 x 900 (small man-trap) - fitted with 4 optical sensors

Cubicle decision making principles:

If all 4 sensors are broken – then multiple occupancy is assumed.

If more than one sensor is broken, but there is a sensor between the broken sensors which is not broken (e.g. sensor 1 and 3 are broken or sensor 2 and 4 are broken) – then multiple occupancy is assumed.

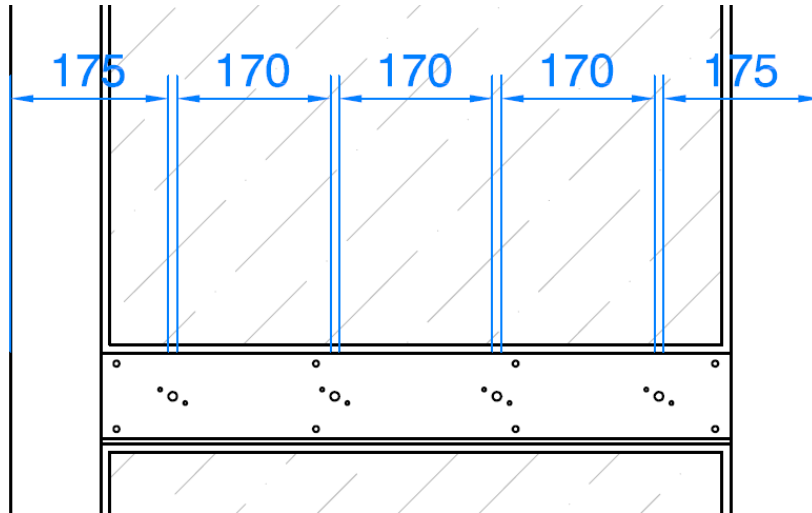


Figure af: Beam numbering and spacing (medium cubicle)

- 1 000 x 1 400 (small man-trap) - fitted with 5 optical sensors

Cubicle decision making principles:

If all 5 sensors are broken – then multiple occupancy is assumed.

If more than one sensor is broken, but there is a sensor between the broken sensors which is not broken (e.g. sensor 1 and 3 are broken or sensors 2, 3 and 5 are broken) – then multiple occupancy is assumed.

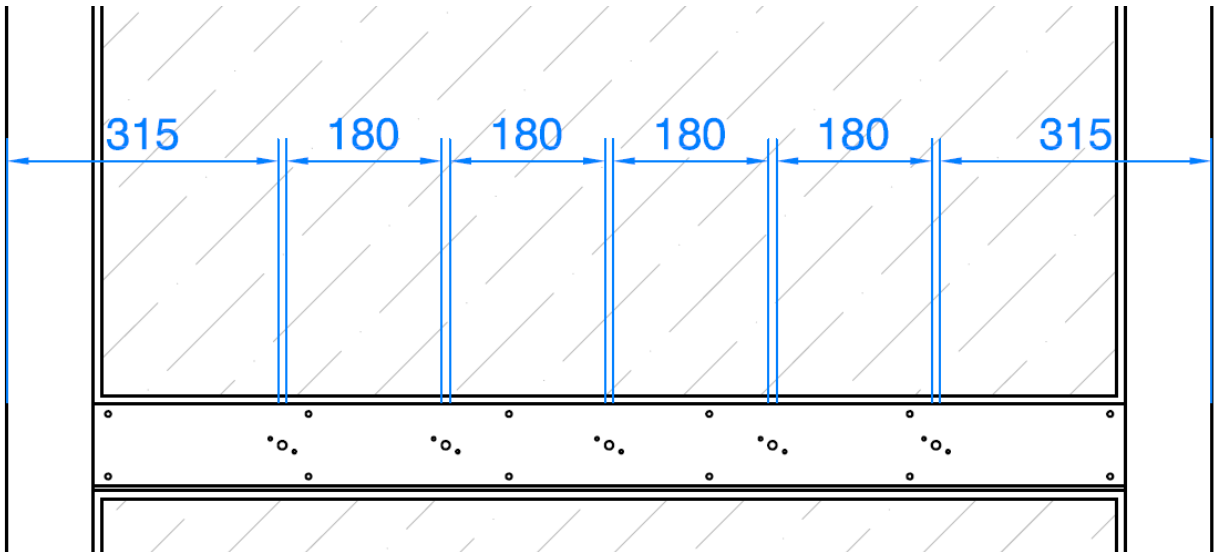


Figure ag: Beam numbering and spacing (large cubicle)

## **6.2.2 Controller options**

**NOTE: We only sell our CBL range of controllers to customers buying or using the Turnstar man-trap cubicle. We do not offer the CBL controller to customers who will be fitting the controller to an existing man-trap cubicle manufactured by others. Customers looking for such a controller can contact CherryTech on the following:**

Tel: [012] 654-7437

Cell: [072] 592-8259 [when out of office]

Email: [cherrytech@iafrica.com](mailto:cherrytech@iafrica.com)

Web: [www.cherrytech.co.za](http://www.cherrytech.co.za)

### **6.2.2.1 CBL01 to CBL05**

The control panel for the CBL01, 02, 03, 04 and 05 is the same. All that is required to change program is to change the position of the dip switches. The control panel consists of the following:

- Chassis mounting plate
- Isolator
- Transformer
- Battery backup printed circuit board (if requested)
- 2 x 7aH 12V batteries (if requested)
- Turnstar midi controller printed circuit board (with a cubicle chip fitted)
- Turnstar beam sensor printed circuit board (if requested)

An important note regarding DIP switch selection is that the power to the board must be switched off and switch on again after a few seconds in order for the dip switch setting to become active.

Note:

- There is a fire alarm terminal on the board which allows for both magnetic locks to de-energised when activated.
- The two test buttons on the board are deactivated (they are used in the Tribune).
- There is no transaction complete signal after a person has gone through the mantrap.

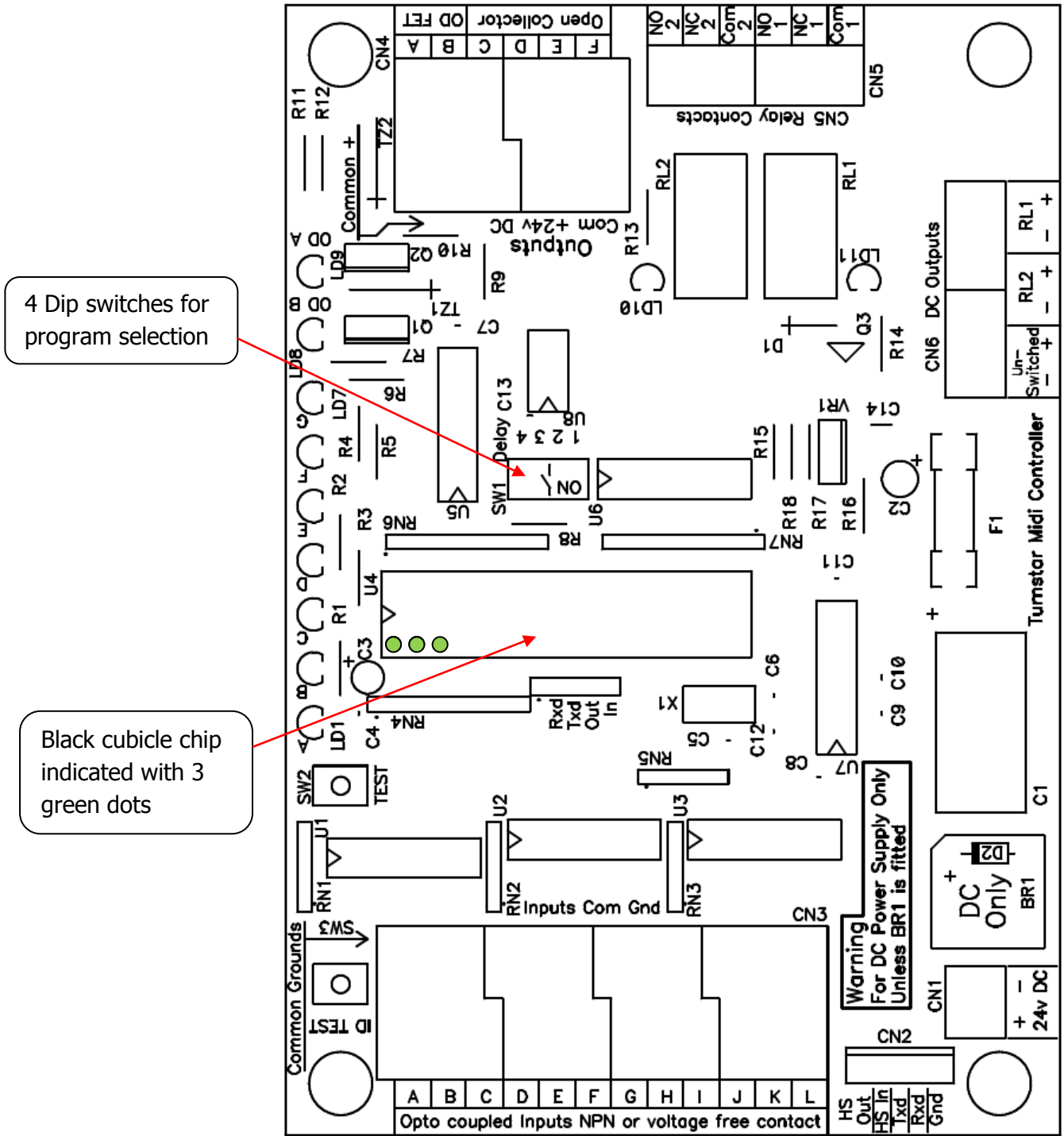


Figure ah: Turnstar Midi Controller Printed Circuit Board

CBL01 Bi-directional **two reader locking** controller

Complete with	Internal emergency pushbutton
Excluding	Presence sensors

**Dipswitch 1 – on**

**Dipswitch 2, 3 and 4 - off**

Both doors of the man-trap remain locked at all times. An entry transaction can be initiated by either a pushbutton/access control reader mounted on the outside of the man-trap. The door unlocks and allows entry. If during the closing of the second door (at the end of a valid transaction), an unauthorised person enters the man-trap, the man-trap does not know that there is anyone inside and both doors will remain locked. The pedestrian must then activate the internal emergency pushbutton which will unlock the door which was last opened.

**Please note:** As we are not able to establish cubicle occupancy, it is possible that whilst the unauthorised pedestrian is trapped inside the cubicle, a second pedestrian can activate and unlock the door of the cubicle from the outside – thereby allowing unauthorised access.

CBL02 Bi-directional **two reader locking** controller

Complete with	Presence sensors
Excluding	Internal emergency pushbutton

**Dipswitch 1, 2, 3 and 4 - off**

Both doors of the man-trap remain locked at all times. An entry transaction can be initiated by either a pushbutton/access control reader mounted on the outside of the man-trap. The door unlocks and allows entry. If during the closing of the second door (at the end of a valid transaction), an unauthorised person enters the man-trap, the presence sensors will detect unauthorised occupancy and the door which was last opened will unlock automatically to allow exit.

**A note on CBL01 and CBL02**

If the access control reader is activated by a pedestrian whilst another pedestrian is in mid-cycle (i.e. trapped inside the cubicle or one of the doors is currently open), the man-trap will ignore the trigger and will not consider the access to be valid. A new trigger will be required when the man-trap is in the idle standby state.

CBL03 Bi-directional **single reader locking** controller

Complete with	Two external cycle start pushbuttons Internal emergency pushbutton
Excluding	Presence sensors

**Dipswitch 2 – on**

**Dipswitch 1, 3 and 4 - off**

Both doors of the man-trap remain locked at all times. An entry transaction can be initiated by a pushbutton (or access control reader if used instead of the standard pushbutton) mounted on the outside of the man-trap. The door unlocks and allows entry. Once trapped, the pedestrian will have an opportunity to activate the internally mounted access control reader. The internal emergency pushbutton can be used to unlock the door which was last opened.

CBL04 Bi-directional **single reader locking** controller

Complete with	Two external cycle start pushbuttons Presence sensors
Excluding	Internal emergency pushbutton

**Dipswitch 1 and 2 – on**

**Dipswitch 3 and 4 - off**

Both doors of the man-trap remain locked at all times. An entry transaction can be initiated by a pushbutton (or access control reader if used instead of the standard pushbutton) mounted on the outside of the man-trap. The door unlocks and allows entry. Once both doors are locked, the occupancy sensors will now be activated and will inspect the cubicle (the inspection takes approximately 1.2 seconds). If single occupancy can be assumed, then the pedestrian will have an opportunity to activate the internally mounted access control reader. An internal clock provides a timeout (approximately 20 seconds) if no read takes place and ejects the pedestrian from the man-trap.

**A note on reader integration for the CBL03 and CBL04**

In order to benefit from all the features of the man-trap, the reader must be correctly integrated with the cubicle. The biometric/fingerprint reader is to be configured to remain inactive/off until the person is in the trapped position. If the reader is active during entry (whilst the entry door is open), then a person can activate the reader and

then exit the cubicle, thereby tricking the system. Additional door contacts can be supplied for this purpose as it is not built into the current pc board controller.

CBL05 Uni-directional bank locking controller

Complete with        One externally mounted exit pushbutton  
                                 Presence sensors

### **Dipswitch 3 - on**

### **Dipswitch 1, 2 and 4 – off**

Only the exit door of the man-trap will remain locked at all times. The entry door will remain unlocked. A door sensor is fitted to the exit door which indicates whether the door is open or closed – the feedback from the door sensor begins the exit cycle.

**The CBL05 is being phased out of production and it is recommended that the customer use a controller which keeps both doors locked at all times.**

### **6.2.2.2 CBL07**

CBL07 High security bank locking controller

Complete with        Mimic desk mount control panel and 20m of cable  
                                 Presence sensors  
                                 Door status detectors (drilled into the door and the bulkhead)  
                                 Last exit button on the Mimic control panel  
                                 First entry keyswitch on exterior frame of mantrap

The CBL07 is capable of controlling one to three cubicles at once. The price list refers:

CBL07S – single cubicle

CBL07D – double cubicle

CBL07T – triple cubicle

The CBL07 uses the **CherryTech** control panel together with the **Mimic desktop panel** (supplied without a housing and designed to be fitted inside the security desk).

Note: The CherryTech control panel runs on 12V and is supplied with a battery charger board as standard. The only thing excluded are the batteries.



The most common configuration will be the CBL07D for a double cubicle. One side will be for entry only, the other side will be for exit only.

Features of the Mimic desktop panel:

- Regular mode for staff first entry (in the morning) – activated by a keyswitch on the frame of the mantrap.
- Regular mode for staff last exit (in the evening) – activated by a pushbutton on the Mimic panel.
- 3-position keyswitch to put cubicle in bank-closed, bank-open or evacuate mode
- Keyswitch to put cubicle in single or multiple person mode (in which case multiple occupancy of the cubicle is ignored)
- Last-exit pushbutton to set the exit cubicle to lock both doors after the last person leaves
- Staff-entry pushbutton to allow staff to enter the bank while it is in bank-closed mode (one person at a time)
- Panic pushbutton to lock all doors in the event of a robbery
- Reset pushbutton to cancel panic mode and resume normal operation
- LED to indicate mains power failure
- LED to indicate the locked/unlocked status of all doors

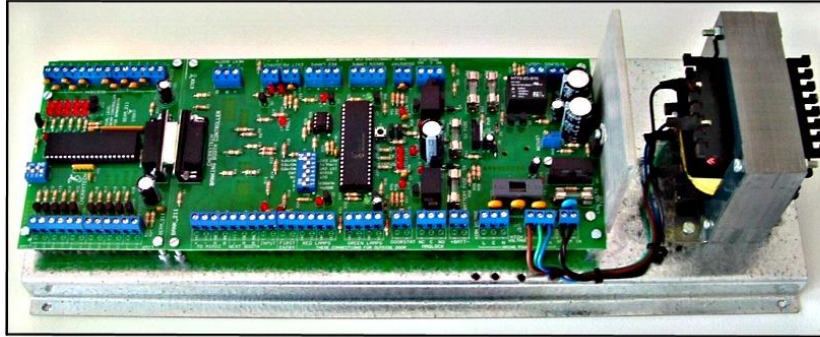
Note: If the bank has been in bank-open mode, the inner door of the exit-booth will be unlocked. When the key is turned to bank-closed position, the entry-booth will lock both doors, but the exit booth continues to automatically allow customers and staff to exit. Only when the last person presses the last-exit pushbutton and departs will the exit booth lock its inner door.

Note: Only one cable is required to connect a set of man-traps to the Mimic desktop panel. Connections are looped from one control panel to the other.

# CHERRYTECH BANK BOOTH CONTROLLER



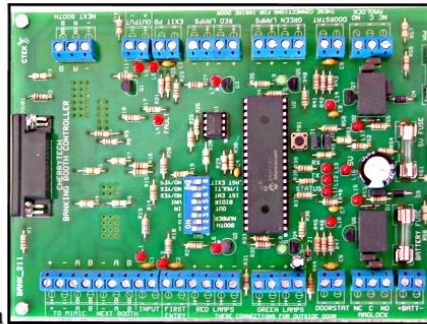
Cherrytech is proud to announce its new bank booth controller, which will replace the IO2002 controller. The purpose of this redesign is to offer the installer a much simpler unit to install, with a great reduction in installation time, plus significantly less wiring between the Mimic panel as well as any adjacent bank booths.



The power supply/charger circuit is now integrated on the controller. There are now additional fuses for lock power and lamp power. If the lamps are deliberately damaged, the fuse will blow, but the locked doors will remain locked. All wire connections are clearly marked by function, rather than by input/output numbers. Settings are done with the dipswitches on the board. A pushbutton and jumpers are included to allow user setting of the door unlock timers.

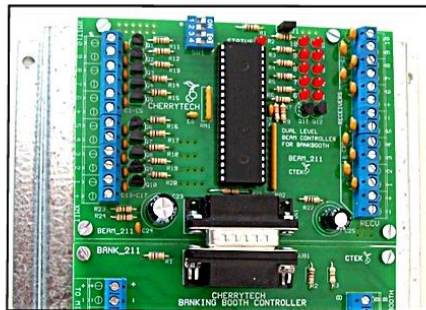
The mimic is connected to the controller by a single 2-pair cable. Only one booth is connected to the mimic. Additional booth controllers are interconnected using 3 wires.

A new infrared beam controller has been designed to partner this booth controller. It plugs directly onto the end of the booth controller. It has been upgraded to cope with a maximum of 10 infrared beams. These can be arranged as a single row of beams or as a double row of 5 beams [1 row at waist height & 1 row lower down]. Dipswitches are used to set the number of beams being controlled. Beams, that are interrupted, are shown on the beam status leds on the controller. The relevant led/s will be turned on for each



beam that is interrupted  
The booth controller can be set to run a uni-directional or bi-directional booth, by dipswitch selection

Other dipswitches set the booth to entry or exit operation, whether single mode is applied and operations relating to staff entry and last-exit.



For further details, please contact us by one of the methods given below.

CHERRYTECH:- TEL: [012] 654-7437, FAX: [012] 654-7440, E-MAIL: ctek@iafrica.com

Figure ai: CherryTech CBL07 bank booth controller

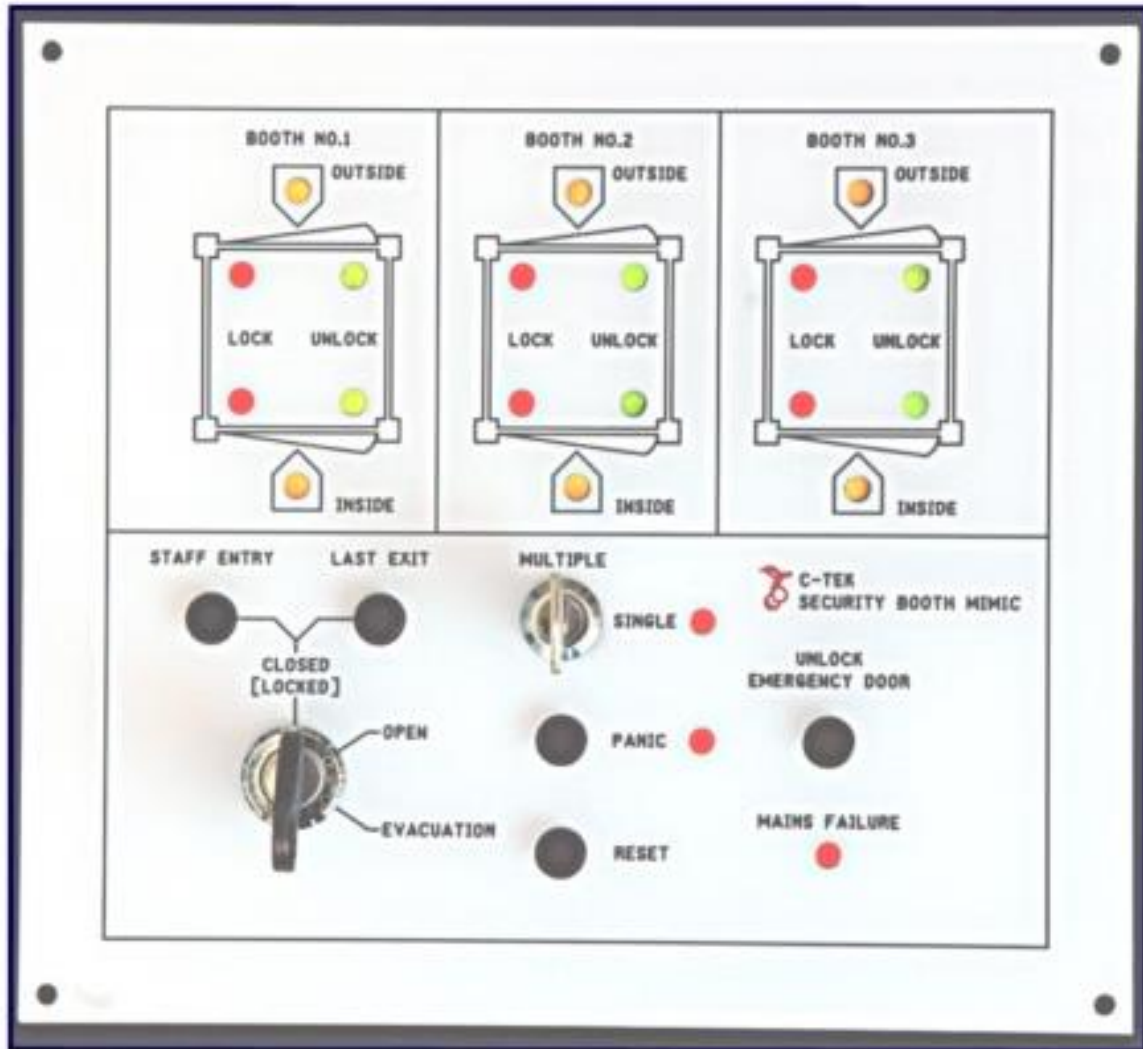


Figure aj CherryTech CBL07 mimic control panel to be installed in the security desk

## **7. ADDITIONAL OPTIONS**

Special sizes are available with modification to the width, depth and/or height of the cubicle – a 20% surcharge applies for special sizes

Bullet resistant glass up to 24mm thick. Bullet resistant glass can be inserted in the doors and the side panels of the cubicle depending on the customer's requirements. As the glass will make the door very heavy, we recommend providing an automatic man-trap cubicle. In order to minimise on weight,

steel doors with a small bullet resistant glass window can be manufactured (depending on the customer's aesthetic and security requirements)

Steel sheet metal can be used to replace the glass, where visibility is not required or not wanted. 6.38mm PVB laminated white translucent glass can be used as well.

Two 500kg magnetic locks / larger magnetic locks per door can be fitted for higher security installations.

Push plates can be installed on the internal side of both doors.

90° degree left and right hand design double cubicle are also available on request. A special design surcharge of 20% applies.

Emergency break glass can be fitted inside the cubicle and connected to the control panel. When activated, both doors will unlock and will remain unlocked.

### **Special designs which are not available**

- Draft-proof doors.
- Waterproof doors.

## **8. ACCESSORIES**

### **Accessories depending on the selected method of operation**

- **Pushbutton with blue LED light ring**
- **External reader mounting bracket**
- **Internal reader mounting bracket** – for single reader operation
- **Random search device** – The random search device will be activated when a person attempts to enter the cubicle. If the person is to be searched, the cubicle will remain locked and no entry will be allowed until the reset keyswitch of the device has been used.
- **A buzzer can be supplied to offer an audio notification for blind users.** The buzzer will be activated whenever a door is unlocked and must be opened. The buzzer must be connected in series with the internal green LED.

### **Breathalyser integration**

A breathalyser can also be fitted inside the man-trap cubicle. However, a specially programmed chip for the printed circuit board will have to be provided.

## **9. TECHNICAL DETAILS**

### **Man-trap flow rate**

When asked by a customer, we generally work on an average flow rate of **1 person every 7-8 seconds**. However, the flow rate is dependent on two external factors, namely:

- Speed at which the access control reader processes the transaction (if applicable).
- Speed at which the person interacts, enters and walks through the cubicle.

### **Can the man-trap cubicle be used as the main fire escape of the entrance?**

The answer is **no**. We recommend that a door be installed beside the man-trap installation for emergency access. The man-trap is not suitable as an emergency exit for two reasons:

1. The standard door closers are of the non-hold open type, which means that the doors always return to the closed position. Hold open door closers are available on request.
2. Both doors of the man-trap open outwards, meaning that the door on the inside of the building (to be used first during an exit) opens inwards towards the building. A fire escape door is supposed to open to the outside of the building.

Note: There are manufacturers that offer a man-trap cubicle with doors that open in the same direction. We cannot offer that feature.

### **Emergency operation**

The cubicle can be connected to a break glass unit or a building management system. The connection (input H) is a **normally open connection** and once closed, the cubicle will unlock both doors and allow free entry.

### **Power failure operation**

The cubicle can be supplied with a battery backup board printed circuit board and two 7Ah batteries. The battery backup will provide 30 minutes of power failure operation.

Once power is cut to the cubicle, the doors will unlock automatically and can then only be locked using the mortice lock.

## **A note on double cubicles**

A double man-trap cubicle is effectively two single cubicles installed side-by-side. Both cubicles in a double configuration are controlled separately by their own controller. It is also possible that the customer may choose to designate one side for entry only and the other side for exit only. This may be a preferred configuration as it enables higher speed throughput.

## **10. FINISH**

### **Frame and door**

- Powder coated mild steel (standard colour – structured black/RN Silver)
- Powder coated 304 grade stainless steel (standard colour – structured black/RN Silver) \*
- 304 grade brushed stainless steel
- 316 grade brushed stainless steel \*

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

**Note:** When supplying a powder coated mild steel unit, we are only able to supply it with a structured powder coated finish.

### **Aluminium glass fixing**

- Natural anodised aluminium
- Powder coated aluminium (smooth finish)

The EPDM rubber gasket and insert which are used to hold the glass in place within the aluminium profile is black in colour and cannot be changed.

## **11. DISCLAIMERS AND NOTES**

### **Usage**

- The pedestrian should be instructed to face forward when walking through the cubicle.
- There have been instances on the rare occasion that a very thin person has 'slipped' in between the beam sensors and has become 'trapped' inside the cubicle. We have since modified the position of the sensors and this should no longer occur.
- Pedestrians carrying large bags should be instructed to hold the bags below waist height. We have had instances where the bag is a contributing factor in the reason for an ejection due to multiple occupancy.

### **Disclaimer with regard to the noise from door locking**

When the magnetic lock is de-energised, no door status monitoring is possible as power to the magnetic lock has been cut. Therefore, the magnetic lock is set to switch on after occupancy has been detected or after a certain timeout period (depending on the controller being used) – door status monitoring will then be activated. As the magnetic lock is already energised when the door closes, the door is effectively “pulled into” the magnetic lock and can make a thumping sound. The customer should be alerted to this issue, especially if the unit is going to be installed at the entrance to an office environment / library.

### **Disclaimer with regard to wheelchair access and large trolleys**

The large man-trap is designed to accommodate wheelchairs and trolleys. However, the customer must be informed that the unit is designed for assisted wheelchair entry/exit but unassisted thoroughfare. An explanation follows below.

1. The doors are too heavy to open whilst seated in a wheelchair and the doors open awkwardly into the wheelchair.
2. The person in the wheelchair must enter the man-trap **alone** as if the person in the wheelchair and the assistant are in the cubicle at the same time, then it is possible that the optical sensors will reject the transaction as multiple occupancy.

There are **two** possible solutions which can be offered to the customer:

1. An assistant can open the first door and allow the wheelchair entry into the cubicle. A second assistant on the inside of the building can then open the second door allowing the wheelchair entry into the building.
2. A motorised man-trap cubicle can be supplied which has automatic opening doors. Please note that the access control readers/pushbuttons should be installed about 1m before the door so that the door does not open and hit the waiting pedestrian/wheelchair.

## **12. KEY SELLING FEATURES**

- Double door security
- Direct pivot design (no hinges)
- 12 month guarantee
- Bi-directional
- Integrates fully with any type of access control system
- Heavy duty transom overhead door closers

- 500kg recessed magnetic locks
- Available with motorised door and bullet resistant glass

### **13. NOTE ON OPPOSITION CUBICLES**

Certain manufacturers will offer an aluminium man-trap combined with metal detector. A metal detector cannot be fitted inside a Turnstar steel man-trap as the two moving steel doors would interfere with the detection loop (magnetic field). In any case we do not recommend combining the two products together. A metal detector is most effective when installed a few metres before the cubicle. That way, if a threat is detected at the metal detector, the man-trap can be automatically deactivated and set to remain locked.

We are considering developing an aluminium man-trap cubicle which will have a metal detector incorporated inside.

### **14. AUTOMATIC MOTORISED CUBICLE**

We are able to offer a motorised automatic cubicle. The product has all the same features as a regular mantrap, but does not have a transom hydraulic door closer or a magnetic lock. The door is operated by means of a motor drive system which has built-in safety. The door will not crush a pedestrian. If a pedestrian is encountered, the door reopens/closes and then tries again after a second or two. The doors are fitted with a magnetic bolt lock in the bulkhead. The lock is available in either fail-safe or fail-secure. The average transaction time through an automatic mantrap is 8 seconds. In the event of a power failure, the doors will operate like normal hydraulic door closers, the locks and beam systems can be powered by battery.



DFA automatic door operator





Magnetic bolt lock