

# RotaTech FH / HH

Operations & Maintenance Manual



**ALLTECH**  
by **GUNNEBO**



## Document History

Rev.	Date	Author	Description	Page	Section
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## Section 1

### Introduction

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#### General

Please read this manual carefully, it contains information that will assist you with all aspects of installation and Maintenance including unpacking. Correct installation & Maintenance will ensure smooth functionality and increase the life-span of components.

Gunnebo Entrance Control Ltd makes every effort to ensure that this manual is reviewed whenever significant changes are made to the design. However, our policy of continuous improvement may result in some small differences between the unit supplied and the description in this document.

Enquiries in this respect should, in the first instance, be directed to our Technical Department.  
 Telephone +44 (0) 1825 746105, Fax +44 (0) 1825 763835,  
 E-mail [Turnsupport.entrancecontrol@gunnebo.com](mailto:Turnsupport.entrancecontrol@gunnebo.com)

#### Electrical Warnings

The electrical power used in this equipment is at a voltage high enough to endanger life. Before carrying out maintenance or repair, you must ensure that the equipment is isolated from the electrical supply and tests made to verify that the isolation is complete.

When the supply cannot be disconnected, functional testing, maintenance and repair of the electrical units is to be undertaken only by persons fully aware of the danger involved and who have taken adequate precautions and training.

#### Errors

Reports on errors, comments and suggestions concerning this manual are requested and encouraged. They should be submitted to:

Technical Department,  
 Gunnebo Entrance Control Ltd,  
 Bellbrook Business Park,  
 Uckfield, East Sussex,  
 TN22 1QQ, UK.  
 Telephone +44 (0) 1825 761022, Fax +44 (0) 1825 763835,  
 E-mail [Turnsupport.entrancecontrol@gunnebo.com](mailto:Turnsupport.entrancecontrol@gunnebo.com)

#### Proprietary Notices

All data appearing here in is of a proprietary nature, with exclusive title to it held by Gunnebo Entrance Control Ltd. The possession of this Manual and the use of the information are therefore restricted only to those persons duly authorised by Gunnebo Entrance Control Ltd.

Do not reproduce, transcribe, store in a retrieval system or translate into any human or computer language, any part of this Manual without prior permission of Gunnebo Entrance Control Ltd.

## Hardware Changes

No hardware changes may be made without authority from Gunnebo Entrance Control Ltd who will be responsible for ensuring that the proposed change is acceptable in all safety aspects. Personnel authorised by Gunnebo Entrance Control Ltd may only make hardware changes.

Any Maintenance or modification of Emergency Stop and Guarding Circuitry must be followed by safety checks on the whole hard wired Emergency Stop and Guarding Circuitry.

Prior to a hardware change, records must be made of the change, one of which **MUST** be sent to the Technical Department at Gunnebo Entrance Control Ltd.

## Rotating Machinery

Rotating industrial machinery may possess huge amounts of stored energy. On no account must you commence Maintenance if you do not fully understand what you are doing and/or have not taken all the safety precautions normally associated with industrial electronic control systems and machines.

Before starting to work on the equipment, please make yourself familiar with all the associated blocks in the system, including control loops, mechanics, drives, transducers and electronics. Please read all the Manuals of the equipment you are unfamiliar with first.

## Warnings, Cautions and Notes

Where necessary within the technical manual, Warnings, Cautions and Notes may be given.

### Warnings

Are for conditions that might endanger people. The instructions given in Warnings must be followed precisely. They are given to avoid injury or death.

### Cautions

Are for conditions that may cause damage to equipment, or may spoil work. The instructions given in Cautions must be followed to avoid spoilt work or damage to equipment.

### Notes

Alert the user to pertinent facts and conditions.

## Static Sensitive Devices

Some of the PCBs in the equipment covered by this Technical Manual contain Static Sensitive Devices. It is recommended that Maintenance and service engineers are fully aware of the Local Industry Regulations and procedures when handling such devices.

## Good Practices

Equipment being installed must not be left unattended unless all potential mechanical and electrical hazards have been made safe. A competent person must be left in charge when the equipment potentially unsafe.

- The following points indicate good practice that will contribute to safety and avoid equipment damage.
- Ensure that all electrical power supplies are turned OFF and disconnected before working on any of the equipment.
- Never leave the equipment in a potentially dangerous state.
- Use only the correct tools for the task in hand.



When working on the equipment, remove any personal jewellery that may be conductive, or clothing that may become entangled with mechanical parts.

## Equipment Safety Systems

Safety systems and controls, such as interlocks, covers and guards, must not be overridden or by passed by personnel other than authorised staff who are qualified to carry out prescribed actions within specified warnings.

## CE - Marking

The RotaTech is CE marked, developed and manufactured according to the EU's Machinery, Low-Voltage and EMC-Directives.

## Risk Assessment

Risk assessment is graded into categories of safety, rated 1 to 8 (where 8 is the highest risk level). The following activities are covered.

Rating	Activity
1	Cleaning
2	General Installation
3	Servicing
4	Servicing General Maintenance Using Chemical Fixers
5	Commissioning
8	Floor Drilling Glass Panel Installation

Rating 1:	Cleaning.
Who is at Risk	Engineers or Site Personnel
Hazard	Miss-use of Cleaning Fluids
Current Controls	Compliance with COSHH regulations

Rating 2:	General Installation
Who is at Risk	Site Personnel
Hazard	Objects/Tools in Installation area
Current Controls	Trained Installation Engineers

Rating 4:	General Maintenance
Who is at Risk	Site Personnel
Hazard	Electric Shock
Current Controls	Isolation of Power/Trained Service Personnel

Using Chemical Fixer	
Who is at Risk	Site Personnel within Vicinity of the Work Area

	Hazard Current Controls	Fume Inhalation Compliance with COSHH regulations
Rating 5:	Commissioning	
	Who is at Risk Hazard Current Controls	Site Engineer Power Supply/Moving Parts Isolate Power
Rating 8:	Floor Drilling	
	Who is at Risk Hazard Current Controls	Installation Engineer Flying Debris and Noise Protective Equipment must be worn

## IMPORTANT NOTICE

**THE ROTATECH IS A SECURITY PRODUCT; ANY CHILDREN OR MINORS USING THE ROTATECH MUST BE SUPERVISED AND ACCOMPANIED BY A RESPONSIBLE ADULT. GUNNEBO ENTRANCE CONTROL LTD DOES NOT ACCEPT ANY LIABILITY IF THIS RULE IS NOT ENFORCED.**

## Section 2

### Product Description

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The RotaTech turnstile ranges are designed for use in external entrances to Administrative Centers, Industrial Complexes and Military Establishments where high quality, combined with high security full height barriers are required.

A fully welded steel rotor with straight or curved arms runs in a sealed bearing at the top end and supported by a ball and nylon bush at the base.

Entry and Exit can be made by Card reader, Pushbutton or any other type of control device specified by the client at the time of order.

All controls are housed within the unit, therefore NO separate switches or control boxes are required.

Control of the rotor is managed by an electro-mechanical mechanism mounted within the top section of the Turnstile and accessible via service panels. Purely mechanical control is also possible.

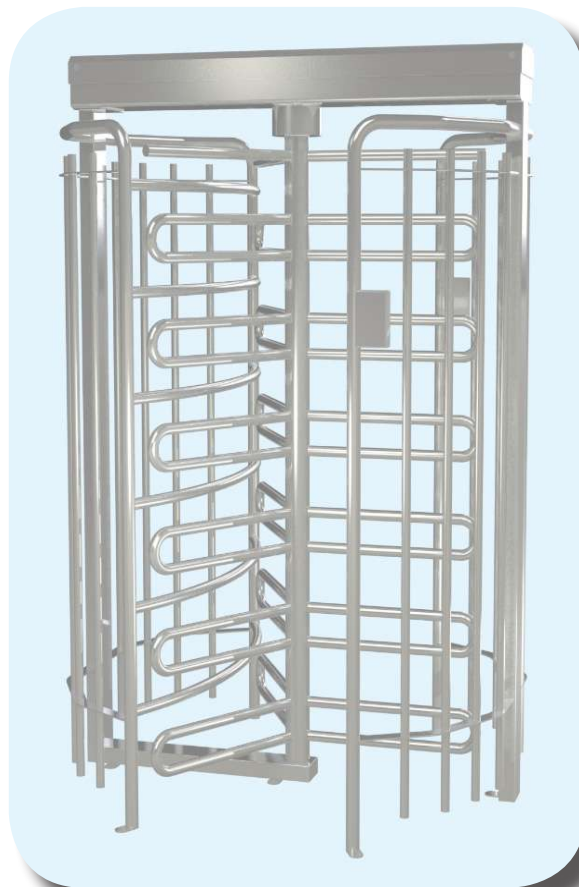
The following variations can be supplied by Gunnebo Entrance Control Ltd; however this Technical Manual provides sufficient information to cover all models.

MODEL	UNIT-TYPE
RotaTech-HH	4-Arm Half Height Single Turnstile
RotaTech-FH 120G	4-Arm Full Height Single Turnstile Galvanised
RotaTech-FH 120S	4-Arm Full Height Single Turnstile Stainless Steel
RotaTech-FH 90G	3-Arm Full Height Single Turnstile Galvanised
RotaTech-FH 90S	3-Arm Full Height Single Turnstile Stainless Steel

**Typical Units**  
**4 Arm Half Height**



**RotaTech Full Height 120S**



**RotaTech Full Height 90S**



**RotaTech Full Height 120S with Optional Canopy**



## Technical Details

A fully welded steel rotor with straight or curved arms runs in a sealed bearing at the top end and supported by a ball and nylon bush at the base.

Entry and Exit can be made by Card reader, Pushbutton or any other type of control device specified by the client at the time of order.

All controls are housed within the unit, therefore NO separate switches or control boxes are required.

Control of the rotor is managed by an electro-mechanism mounted within the top section of the Turnstile and accessible by removing the Head Cover. Purely mechanical control is also possible.

- 1- A positive action lock which prevents two passages at one time.
- 2- A self-centering mechanism to ensure complete rotation of the head to the reset position.
- 3- A rubber damper mechanism to ensure smooth operation
- 4- An anti-backup device prevents reverse rotation when the head has moved 32° from the rest position.

## Technical Specification

<b>Orientation:</b>	Pass left or Pass Right	
<b>Rotor Arms:</b>	3 on the RotaTech 3 4 on the RotaTech 4	
<b>Drive:</b>	Manually Operated	
<b>Materials:</b>		
<b>Casework:</b>	Square and circular hollow section stainless steel or mild steel, hot dip galvanized after Manufacture.	
<b>Rotor Column:</b>	Stainless steel or mild steel(galvanized) construction.	
<b>Function:</b>	Passage in both directions, electronically controlled	
<b>Mechanism:</b>	Control of the Turnstile operation is achieved by an electro-mechanical head mechanism.	
<b>Security:</b>	Passage through the “dead area” is prevented by stator bars.	
<b>Rating:</b>	Single Phase 230 / 110 VAC 50Hz	
<b>Power Rating:</b>	<b>Standby-</b>	50VA
	<b>In Operation-</b>	50VA
	<b>Amps-</b>	0.2 Watts 35
	<b>Watts-</b>	35

<b>Power Failure:</b>	In the event of an emergency or isolation of the power supply the Turnstile can be configured to Fail-Safe i.e. rotates freely or Fail-Lock i.e. locks in the HOME position. Either option is available in both or one directions. (As standard, both directions of the turnstile are configured as bi-directional "Fail Safe" unless requested otherwise).
<b>Fire Alarm:</b>	Normally closed dry (0V) contact input available for FACP (supplied by others to effect fail state dependent on model).
<b>TL403-</b>	Interface available
<b>Interface:</b>	The mechanism is controlled by means of a TL403 PLC with the following features:
1-	One input for Unlocking/Locking the mechanism in both directions
2-	One input for entry over-ride
3-	One input for exit over-ride
4-	Two protected outputs to control the Unlocking/locking solenoids
5-	Two dry contact (0v) Outputs for "Rotation Conformation" in both directions
<b>Operating Temperature:</b>	0 to 55°C
<b>Transportation and Storage:</b>	-25 to +55° C
<b>Relative Humidity:</b>	95% Maximum

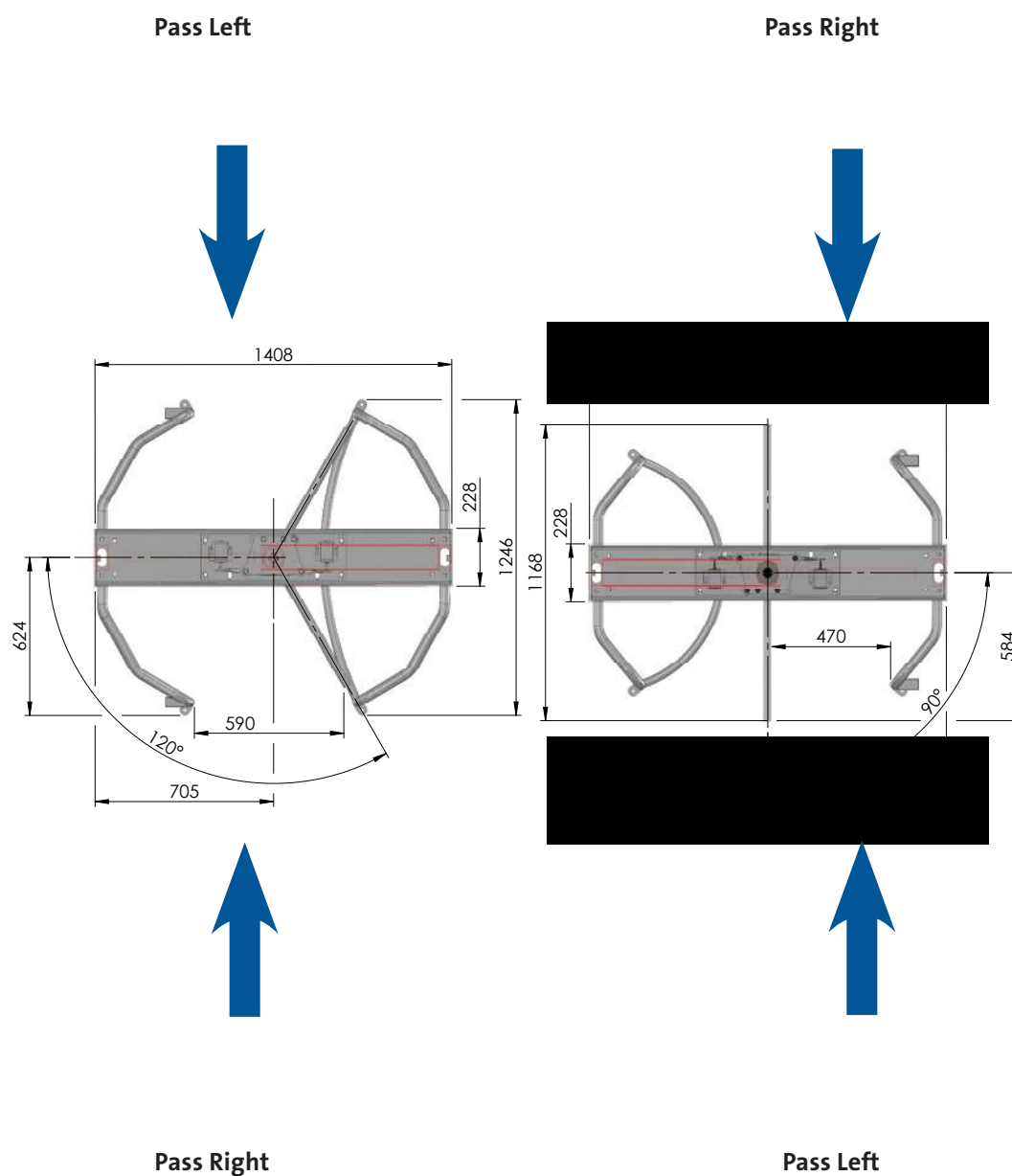
## Section 3

### Instructions for Use

The information contained in this section should be used as a basis for the instruction of personnel in the correct use of the doors.

#### Operating Sequence

The operating procedure is shown below and given the sequence of passage through the RotaTech in either direction.





- 1- The rotor will normally be locked, unless a free entry/exit option has been specified.
- 2- Operate the Access Control device if fitted
- 3- On the acceptance of a signal from the Access Control Device the rotor will unlock and be free to rotate
- 4- Pass through the Turnstile, using your hand to push the rotor
- 5- The rotor will automatically lock in its new position

**NOTE- GUNNEBO ENTRANCE CONTROL LTD RECOMMENDS THE FITTING OF A PUSH BUTTON IF FREE EXIT IS REQUIRED.**

Important notices/points to observe

- 1- Only one person at a time should pass through the turnstile
- 2- Large packages should be carried in front of you.
- 3- Should any item become caught in the rotor, STOP IMMEDIATELY! DO NOT keep forcing through in the same direction.

## Fail State

The Turnstile can be set to fail lock or fail safe in either direction via alteration of the solenoids,

The fail state is the same as that when a fire alarm signal is received.

## Access Control Devices

Gunnebo Entrance Control Ltd can supply the mounting for an Access Control Device, which is specified at the initial order to meet customer requirements.

Mechanical Free Entry/Free Exit can be achieved in either direction by setting the channel mounted key-switch accordingly.

## Section 4

### Technical Information

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#### Standard Features(Half Height and Full Height)

- The RotaTech Turnstile has the following features as STANDARD
- 2100mm Walkway
- Servicing access from above the unit
- Electro-Mechanical head mechanism
- Rotor restoring mechanism
- Universal control logic (PLC)
- Mechanical “Fail-safe” or “Fail-lock” in the event of power failure
- A combination of mechanical “Fail-lock” and “Fail-safe” in the event of power failure

#### Optional Features

Gunnebo Entrance Control Ltd can supply the following features on request for Turnstiles.

- Pushbuttons
- Card-reader mounting on bracket
- Canopy roof (Full height only)
- Hand Rail (Half Height only)

Fig-4.1 Typical Layout Details RotaTech Half Height

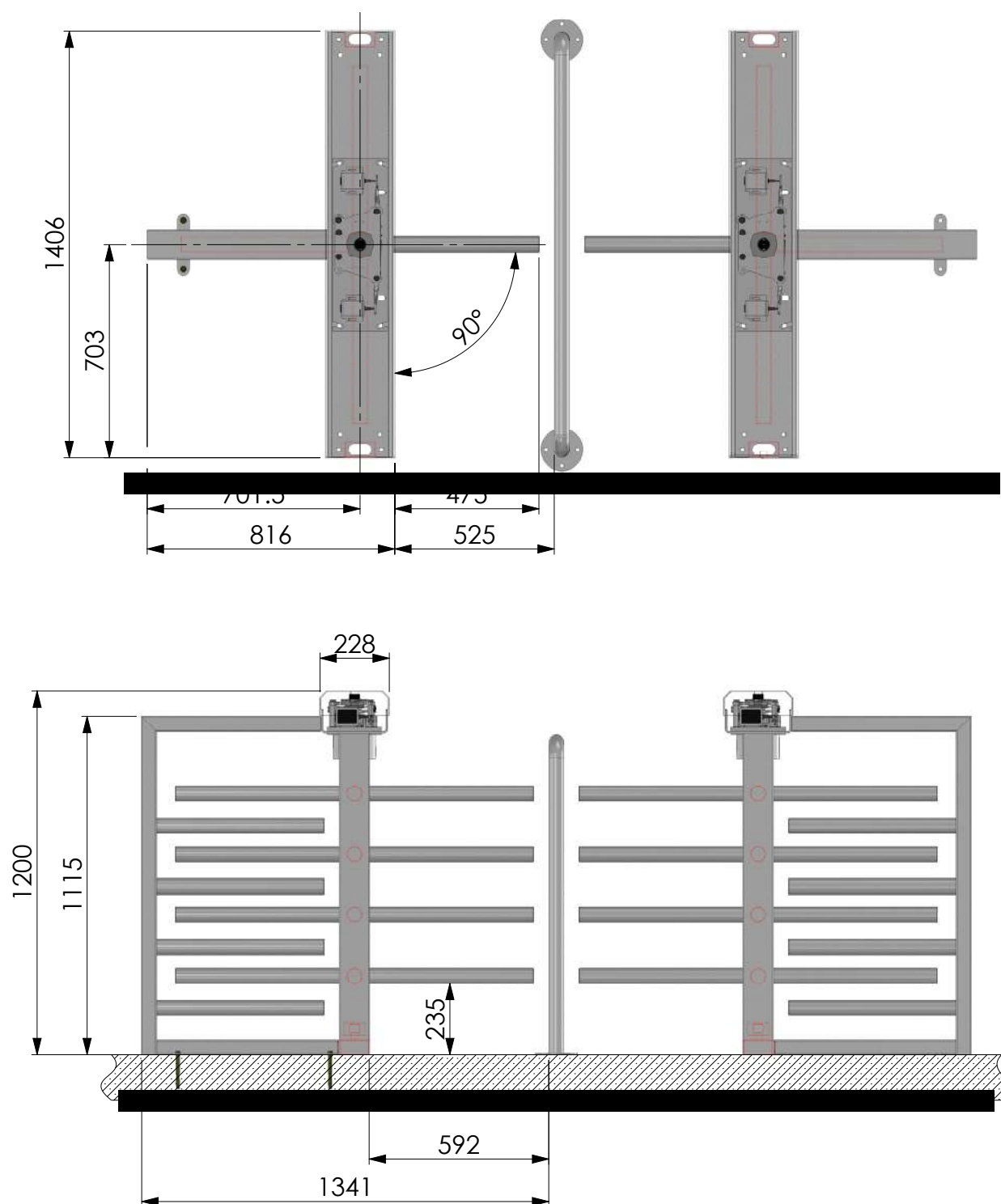
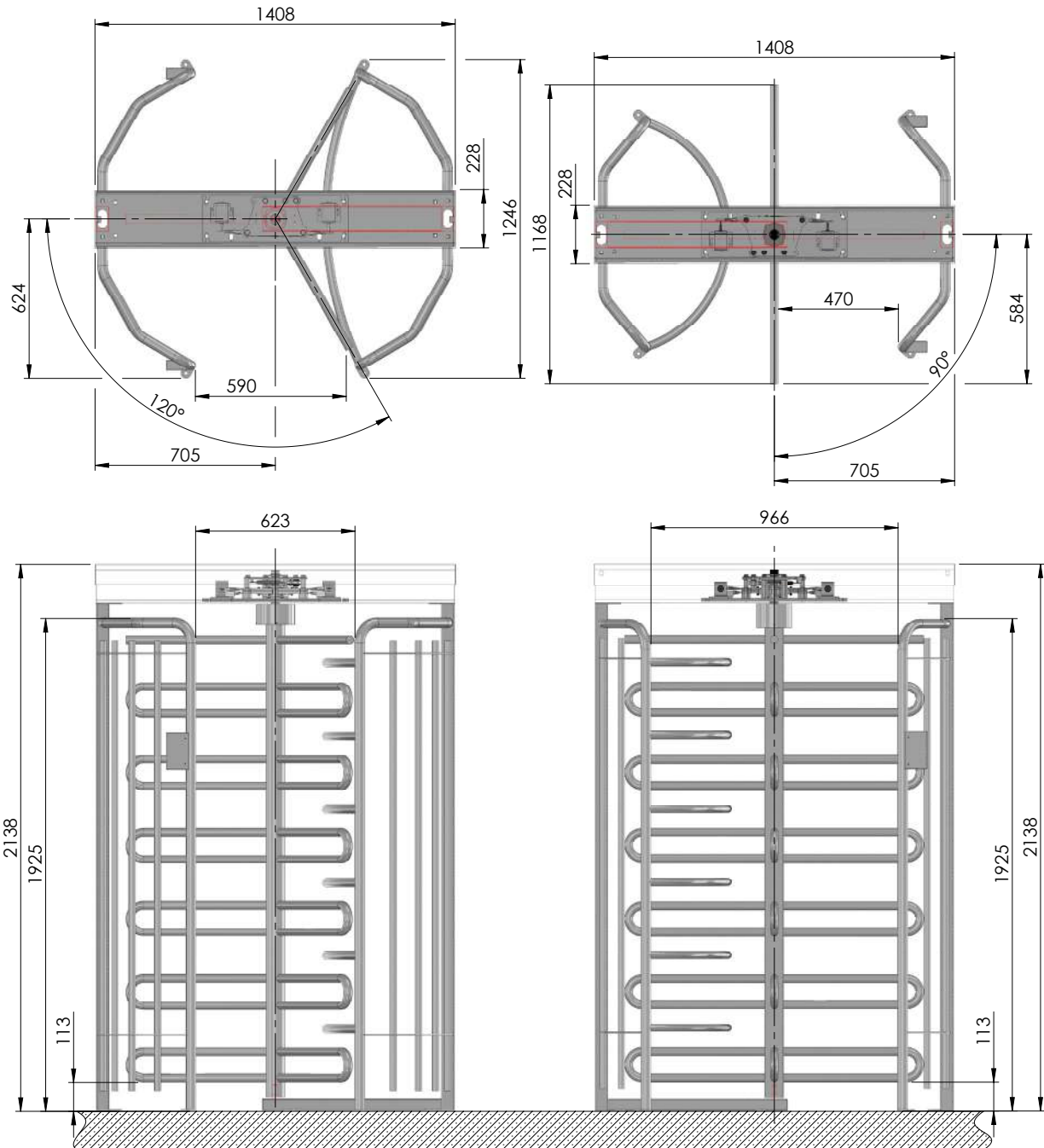


Fig-4.2 Typical Layout Details RotaTech Full Height 90/120



## Drives & Controls

The head is mounted by means of 4 x M12 bolts through slotted holes in the head channel. The head must be mounted & aligned correctly to ensure perfect operation.

Fine adjustment of the rotor home position in relation to the turnstile framework can be achieved by slackening the 4 x M12 mounting bolts in the slotted holes and adjusting the complete head assembly to the desired rotor position and re-tightening.

Connection of the turnstile rotor to the head is by means of a rounded spigot at the top of the rotor with 4 x threaded studs. The studs engage into holes located in the bottom of the shaft mounted in the head ratchet block. 4 X Rubber Dampers are fitted over the top of the studs & secured in location using 4 x M12 penny washers with M12 Nyloc nuts.

## Restoring Force Mechanism

The Rotor restores to its home position during operation by means of a restoring spring. The force exerted by the restoring spring cannot be adjusted in any way.

## Electrical Connections

The locking solenoids are connected to 24VDC relays by means of insulated screw terminal blocks & insulated 0.50 mm SQ/20 AWG wire. Polarity of the connection to the solenoids is important.

It is recommended that the head unit & roof section is connected to Earth/GND.

Details for connecting the Earth/GND strap for the head mechanism can be found later in this manual.

An M5 threaded stud mounted to the underside of the roof section at both ends is also provided for this purpose.

## Solenoid Operation & Adjustment

The TL403 Programmable Logic Controller (PLC) operates with a DC supply from the 24Volt Bridge rectifier mounted on the electrical plate. Upon receipt of a Dry (0V) closure from the access control system (supplied by others), the PLC executes the command to the 24VDC relay to activate the locking solenoid in that given passage direction.

## Fails Safe Head Option

When the signal from the PLC is given, the solenoid is de-energized, the plunger is extended by action of the spring & the locking pawl is held clear of the baffle plate outside diameter allowing rotation in that direction to occur.

Once the rotation is 50% complete or the rotor bar has turned half way, the micro switch mounted to the top of the head mechanism is activated by a timing disc. This then signals the PLC to re-energize the solenoid & the locking pawl will engage the recess in the ratchet block once full rotation has been completed.

The solenoids are mounted to the head mechanism plate by means of 2 x M6 bolts. Adjustment is achieved by loosening the 2 x M6 bolts & physically moving the solenoid toward or away from the mechanism & then re securing.

## Start-up function

Upon introduction of mains power, the TL403 Programmable Logic Controller (PLC) executed the program currently stored within & activates the solenoids to their set configurations.

## Voltage Free Outputs

Two dry (0v) Contact Outputs for “Rotation Conformation” are available in both directions; Connection details for these functions can be found later on in this manual.

## Toroidal Transformer

The Toroidal transformer steps down the incoming mains power supply to +24VAC. This then provides the +24VAC power to the bridge rectifier. The bridge rectifier then rectifies the voltage to +24VDC supplying the electronic and electromechanical devices with the power they need to operate.

The Toroidal transformer is NOT equipped with an ON/OFF switch and Isolation of the system power must be achieved by disengaging the mains circuit breaker within the turnstile.

The following instruction is for the installation & site preparation in order to install the Alltech by Gunnebo Full height turnstile. The turnstile within the illustration is equipped with the roof canopy section in which is a finish option within the turnstile range.

## Section 5

### Installation

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#### Unpacking

On receipt of equipment on site, check all items are complete and undamaged. If for any reason transit damage has occurred, ensure the extent of any damage is recorded and if considered necessary report the incident to Gunnebo.

RotaTech models are delivered as partly assembled kit of parts, which may require lifting equipment with working capacity of at least 600Kgs for off-loading and installation.

Where possible, retain all major component packaging for re-use in the event that items may need to be returned for servicing during their life.

#### Tools Required

- 2 x Step Ladder
- Diamond Drill bits for 12mm bolts
- One Metre Long (minimum) Spirit/Water Level
- Tungsten Drill bits for 12mm bolts
- Tape Measure
- Extension Lead
- Set of Metric Allen Keys
- Generator (if power is not available)
- Set of Metric Spanners
- Chalk Plum Line
- Hammer Drill
- Shims
- Chisel Attachment
- Tool Kit - General
- Safety Gloves
- Safety Glasses
- Special Key Spanner (for access panel)

**PLEASE READ ALL SECTIONS CAREFULLY BEFORE COMMENCING INSTALLATION**

#### Site Preparation

Ensure the site base area has been completed in accordance with the approved site installation drawings.

**NOTE-A CONCRETE BASE SUITABLE FOR EXTERNAL OR INTERNAL USE IS REQUIRED. ALTERNATIVE TYPES OF BASE MAY BE ACCEPTABLE SUBJECT TO DISCUSSION WITH GUNNEBO TECHNICAL PERSONNEL.**

**CONCRETE BASE TO BS 5328:1997 SPECIFICATION. BASE TO BE FLAT AND LEVEL TO +/- 5MM OVER THE FOOTPRINT AREA; DIMENSIONS TO BE > 1800 x 1800 x 150 DEEP MINIMUM;**

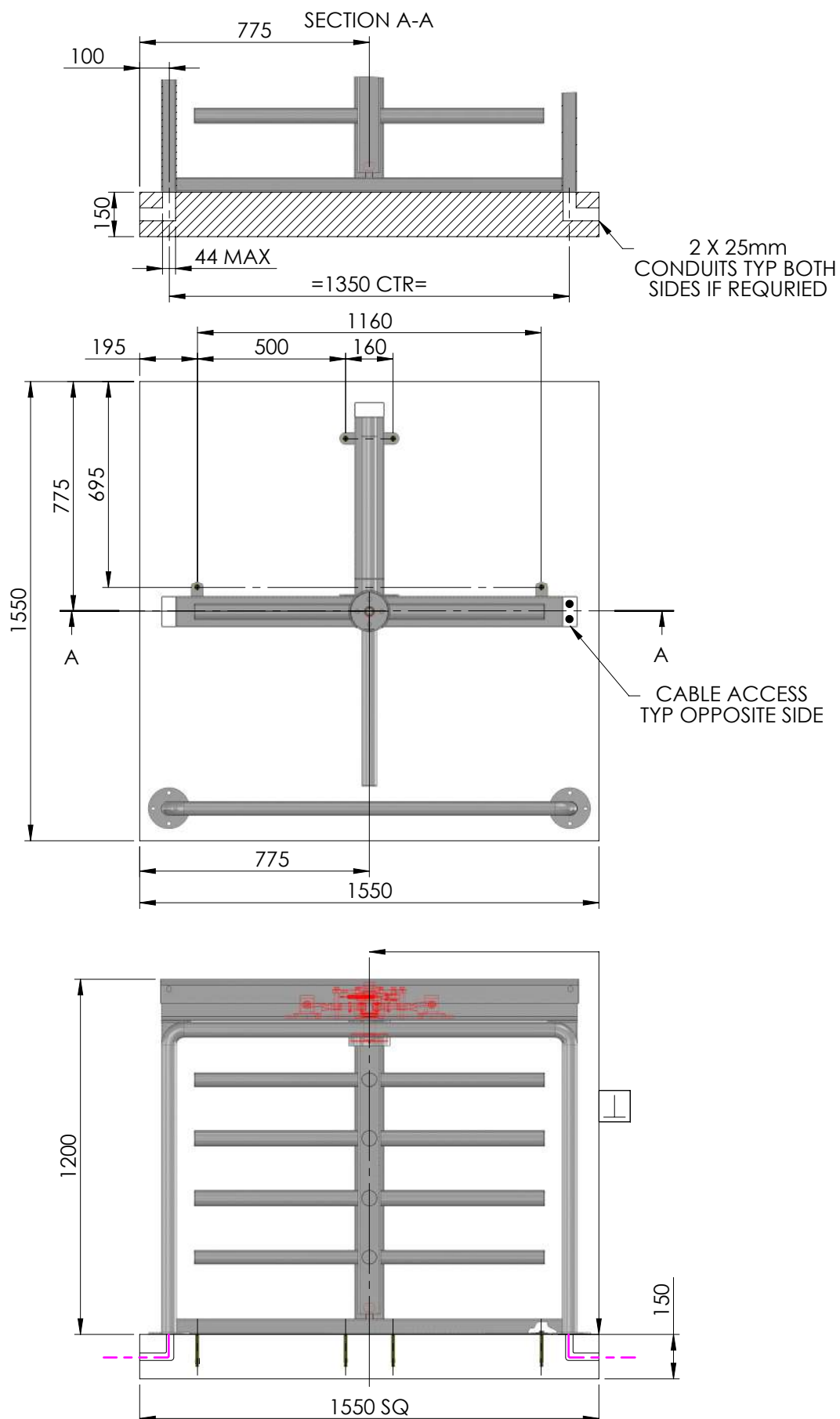
**FLOOR ANCHORS ARE TO BE DRILLED DURING INSTALLATION, 12MM DIAMETER X 100MM DEEP.**

1. Fixing centres; it is not necessary to pre-drill the installation footprint/base to receive the RotoTech, drilling is carried out when the equipment is erected.
2. Ensure conduit entry positions are prepared to suit the installation type.
3. Should the base include a steel reinforcing mesh or be of hollow -pot or planked construction which will be encountered at less than 100mm below the finished floor level (FFL), Gunnebo Technical personnel must be consulted to agree a suitable method of securing the RotoTech.

**NOTE- ITEMS 1 AND 3 ARE THE RESPONSIBILITY OF THE CLIENT. NEVER POSITION THE ROTATECH TO SPAN AN EXPANSION JOINT IN THE BASE.**



**Fig-5.1 RotaTech Half Height Site Preparation**



**NOTE-HOLES FOR CONDUITS ARE ALSO PROVIDE AT THE TOP OF THE CHANNEL. 25MM CONDUITS FOR POWER AND FOR DATA OR PUSHBUTTON. CONCRETE PLINTH@25MPa. HALF HEIGHT TO BE PLACED IN THE CENTRE OF THE PLINTH.**

**Fig-5.2 RotaTech Full Height 120 Site Preperation**

SECTION A-A

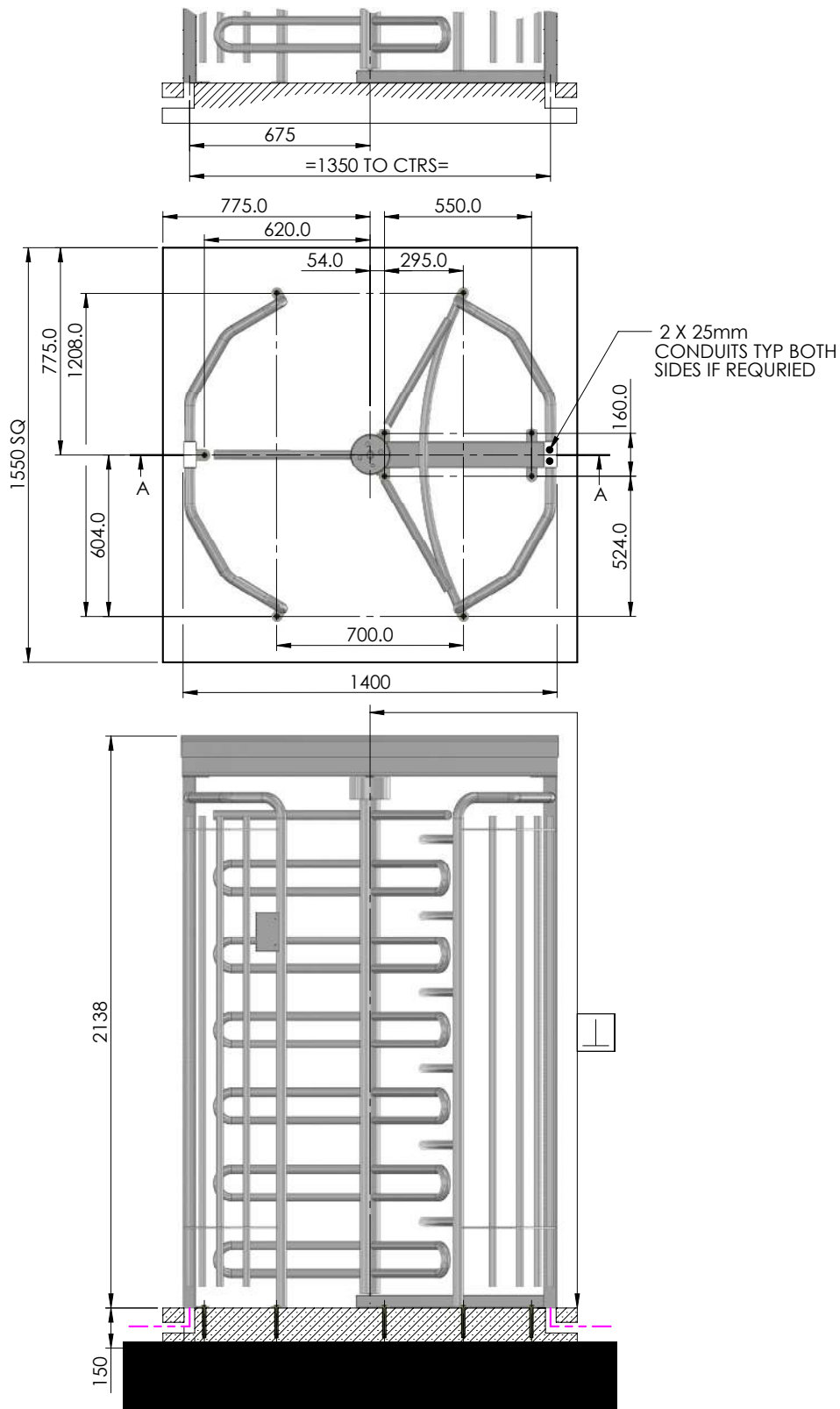
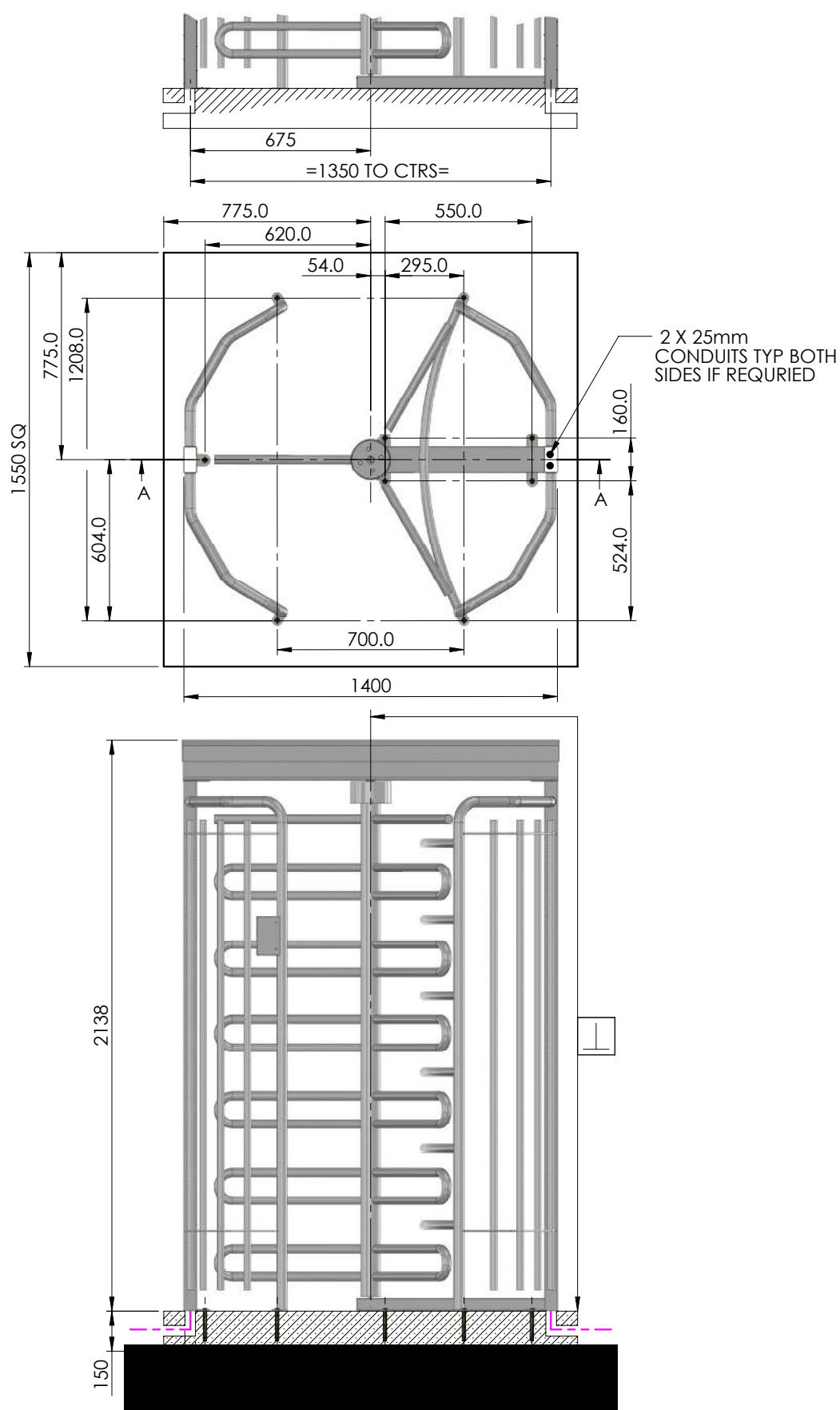


Fig-5.3 RotaTech Full Height 90 Site Preparation

SECTION A-A



## Installation Exploded views

Fig-5.4 RotaTech Half Height 90S

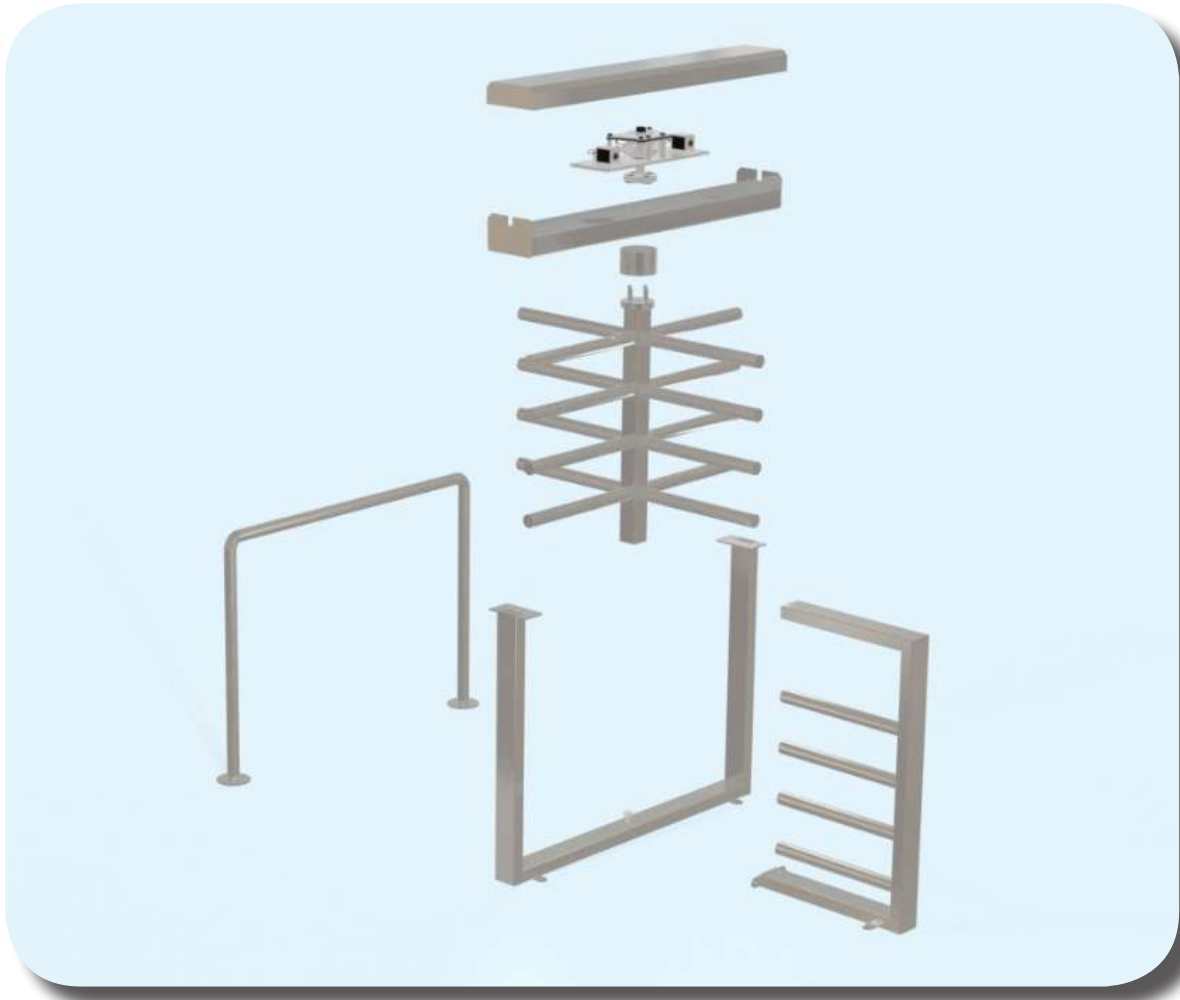


Fig-5.5 RotaTech Full Height 90S

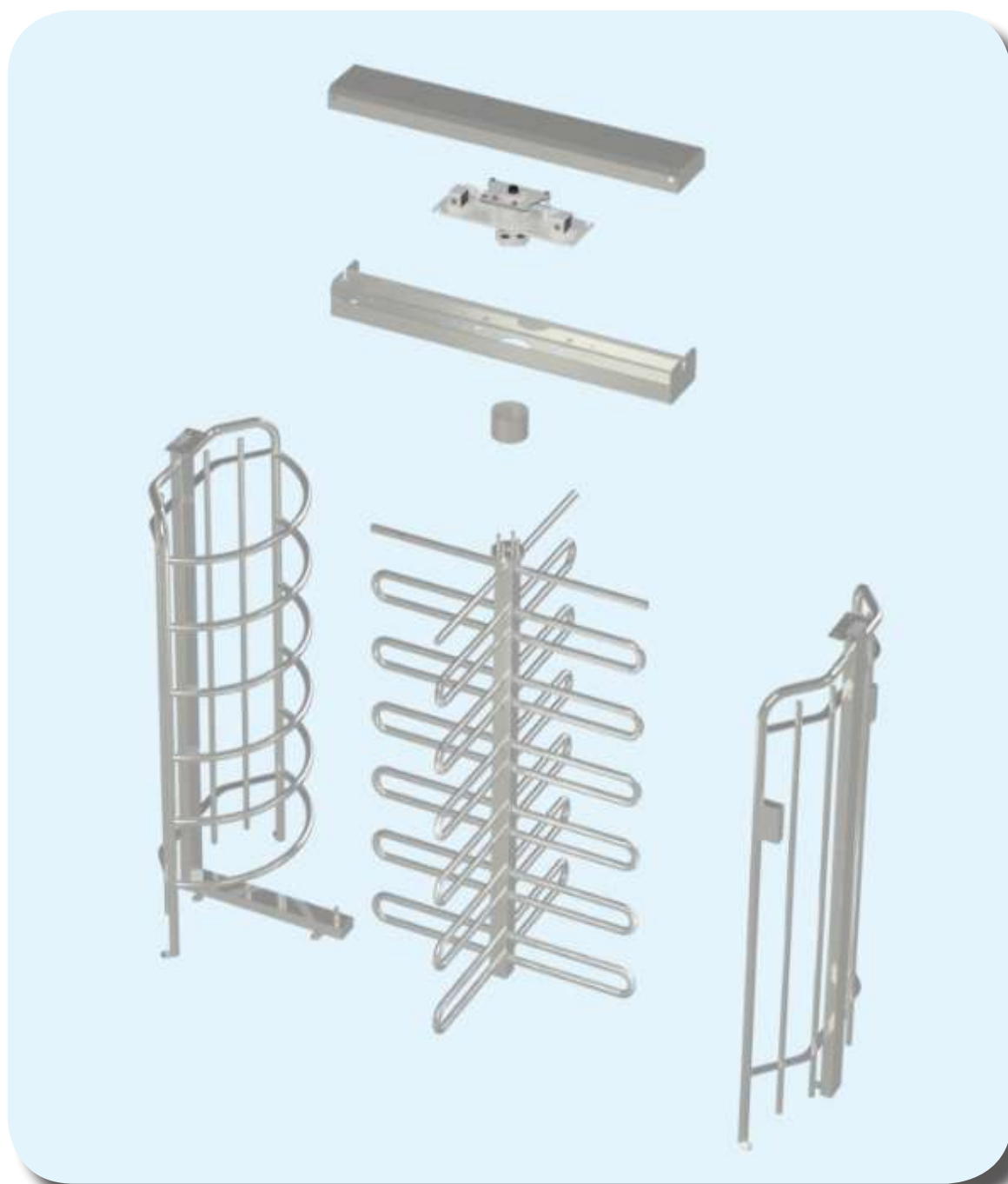
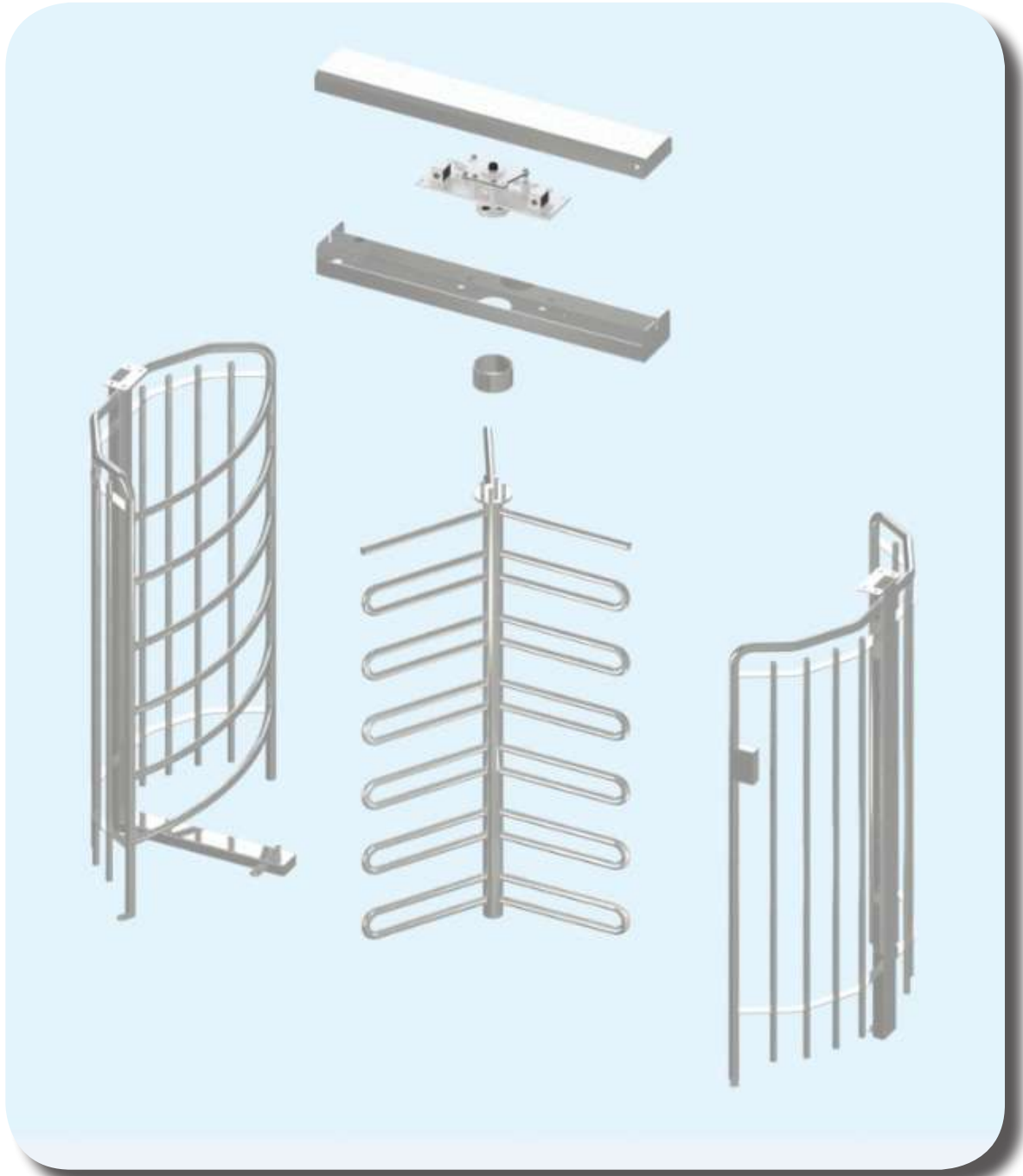


Fig- 5.6 RotaTech Full Height 120S



## General Details

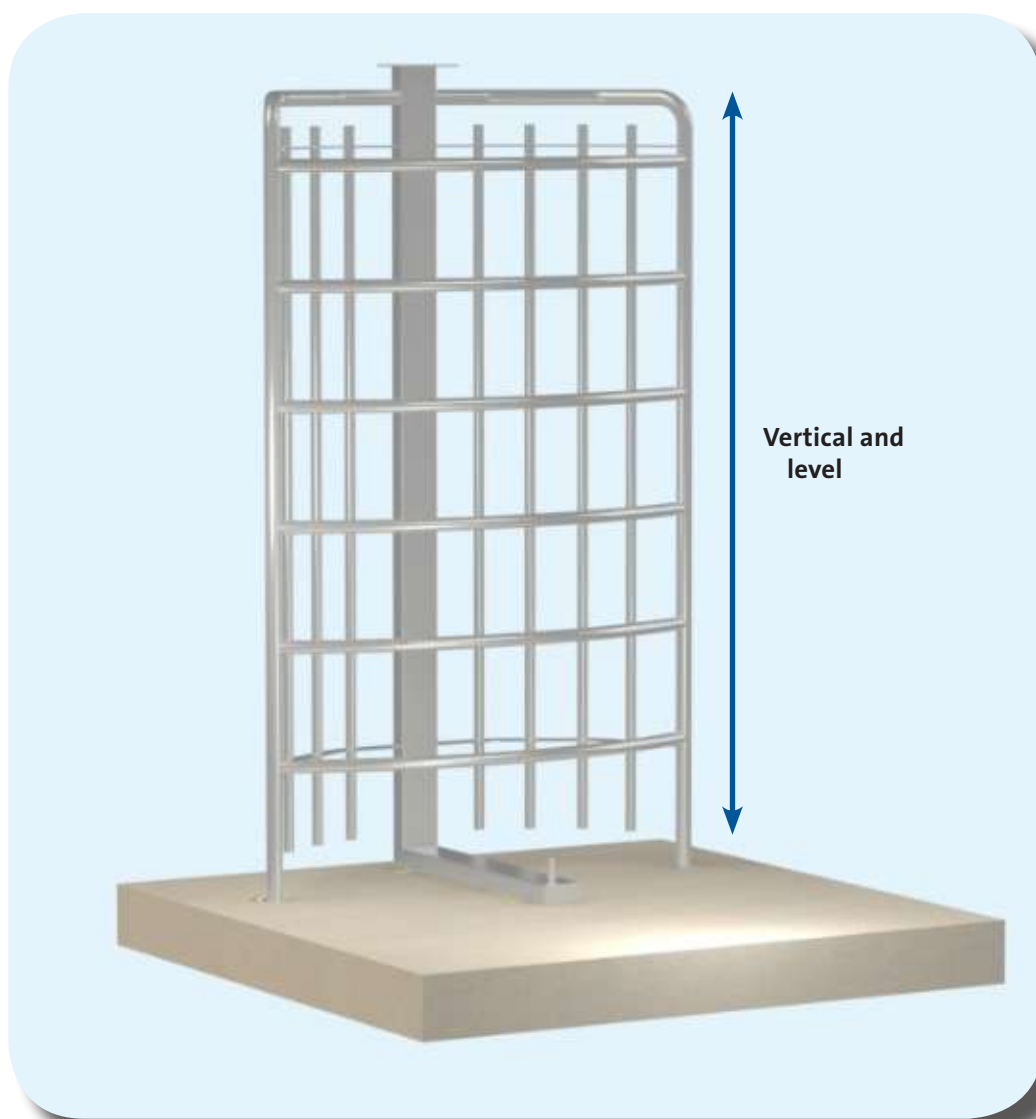
Before setting to work check the base is level to an acceptable standard, check the head room, corridor width, base and all critical dimensions.

Refere to the installation figures and dimensions.

## Installation Guide (Full Height 120)

- Erect the side upright with the stator bars, once this has been located correctly as required in the site approved installation/acknowledgment drawings, check it is square and level using a 1 meter water/spirit level.

**Fig-5.7 Positioning the Stator frame**



- Use a marker pen to mark the fixing holes, then drill according to the floor type, as shown in fig-5.8

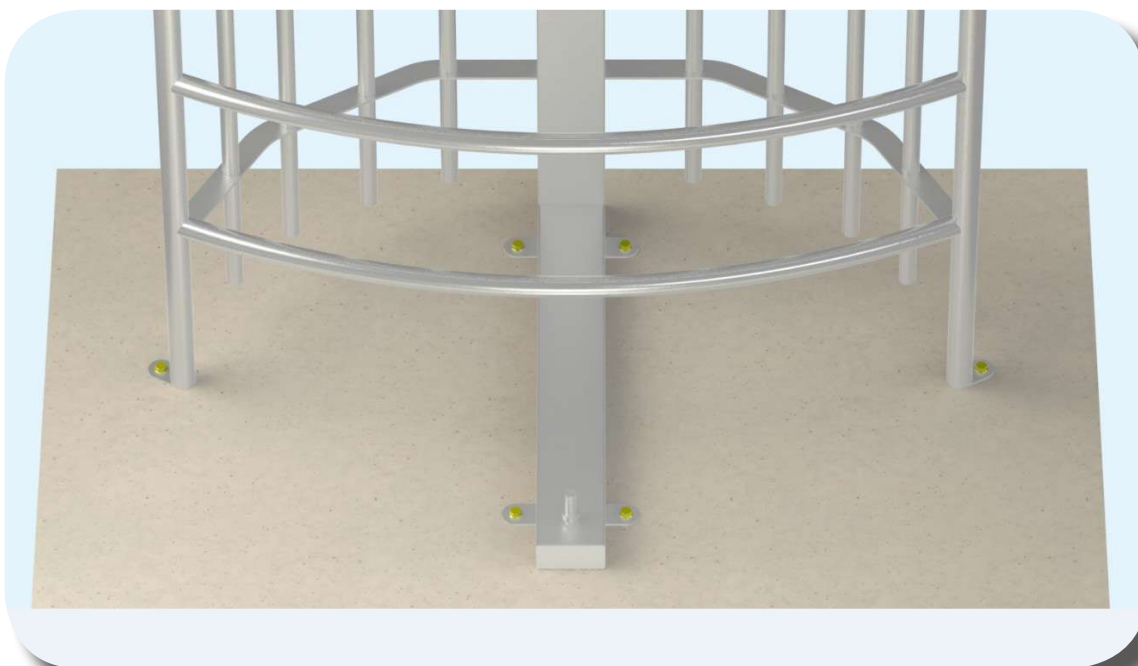
**Fig-5.8 Marking out**





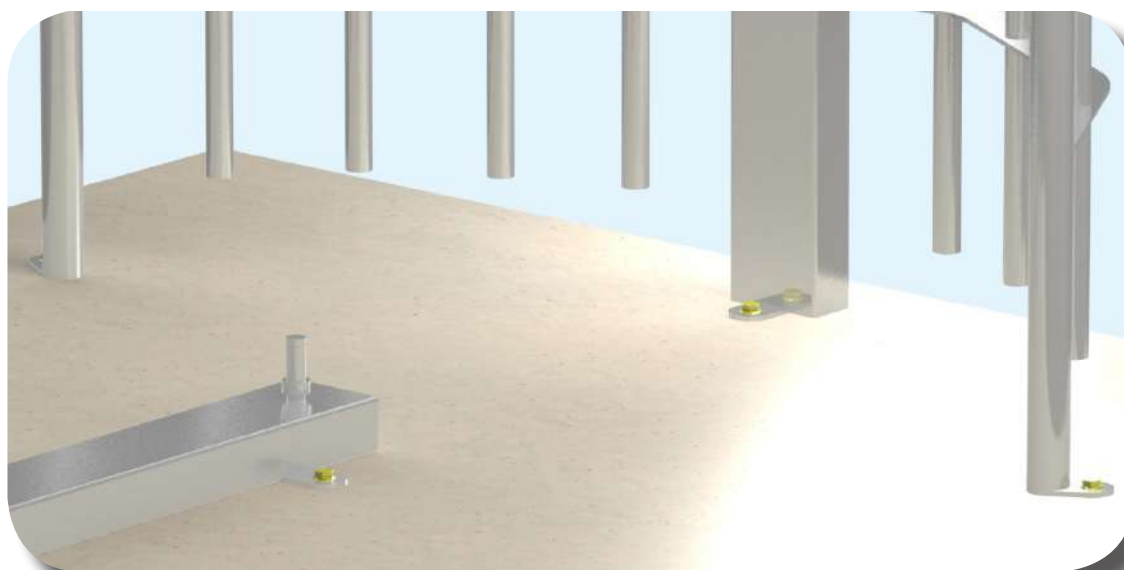
- Fix the stator frame into place using the correct floor fixings for the floor surface. Always ensure all fixing and mounting locations have been utilised. This will ensure secure anchoring to the FFL.

**Fig-5.9 Fixing Stator Frame**



- Before progressing further with the installation, this is a good point to run any Access Control cables through the frame work if required.
- Next position the main side frame opposite the mounted stator frame. Align the centre of each component up so they are opposite other and approximately 600mm apart from each other. (see Fig-5.10)

**Fig-5.10 Lining up the side frame**



- The next step is to locate the head channel and rotor onto the frame work.
- At least three people will be required to perform the physical lifting and supporting tasks involved in mounting the head channel.
- For ease of installation have prepared the 8 x M12 fixings to secure the head mounting channel to the stator and side frame.
- The rotor will also need to be installed and supported from falling prior to the head channel being lifted into place.
- Ensure the bottom bearing ball is present and the cir-clip installed, add a small amount of General Purpose grease to ensure a smooth and silent rotation.

**Fig-5.11 Bottom Bearing Ball**



- Once the bearing checks have been made , lift the rotor onto the bearing as shown in Fig-5.12.

Fig-5.12

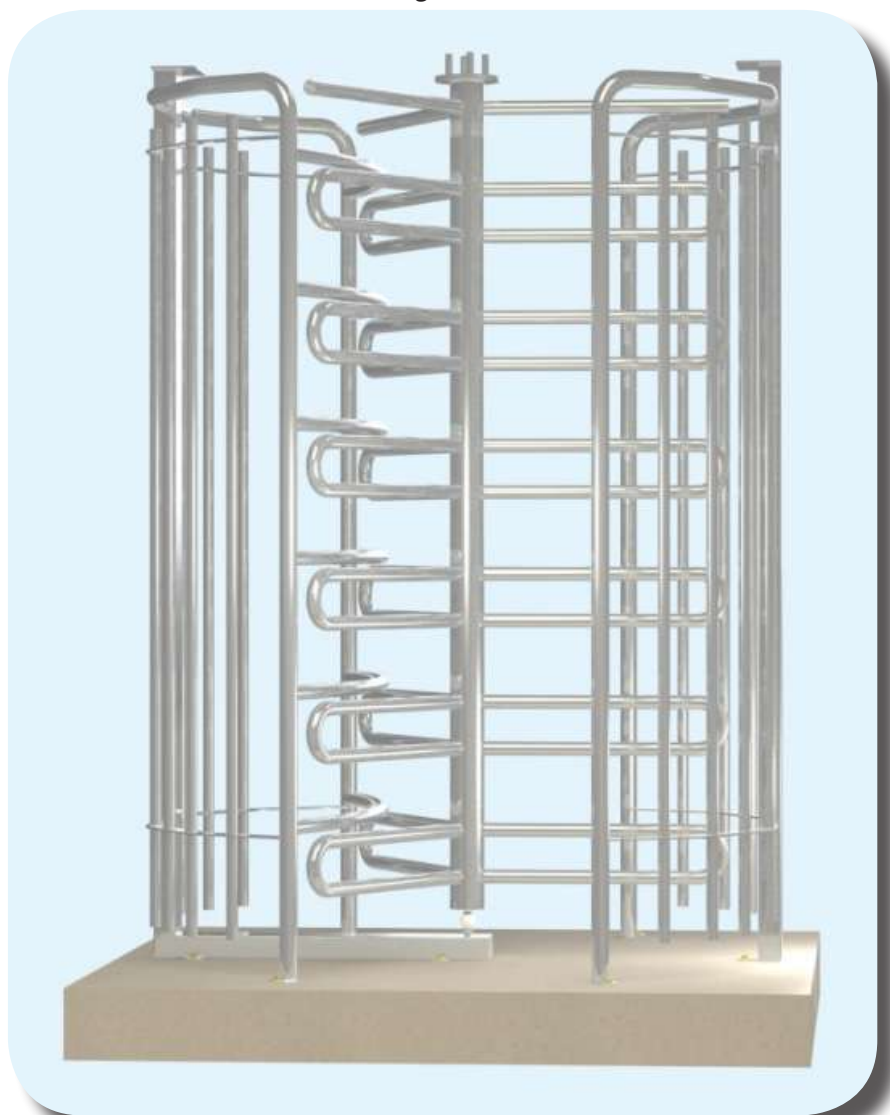
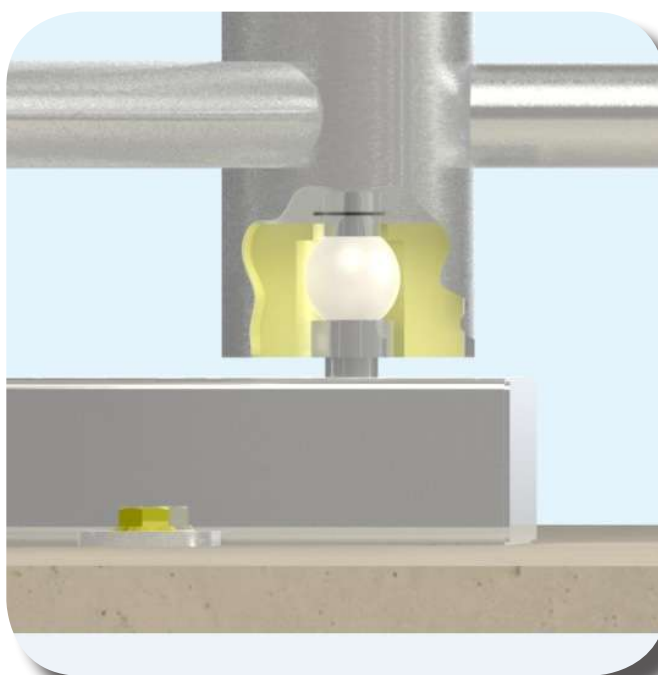
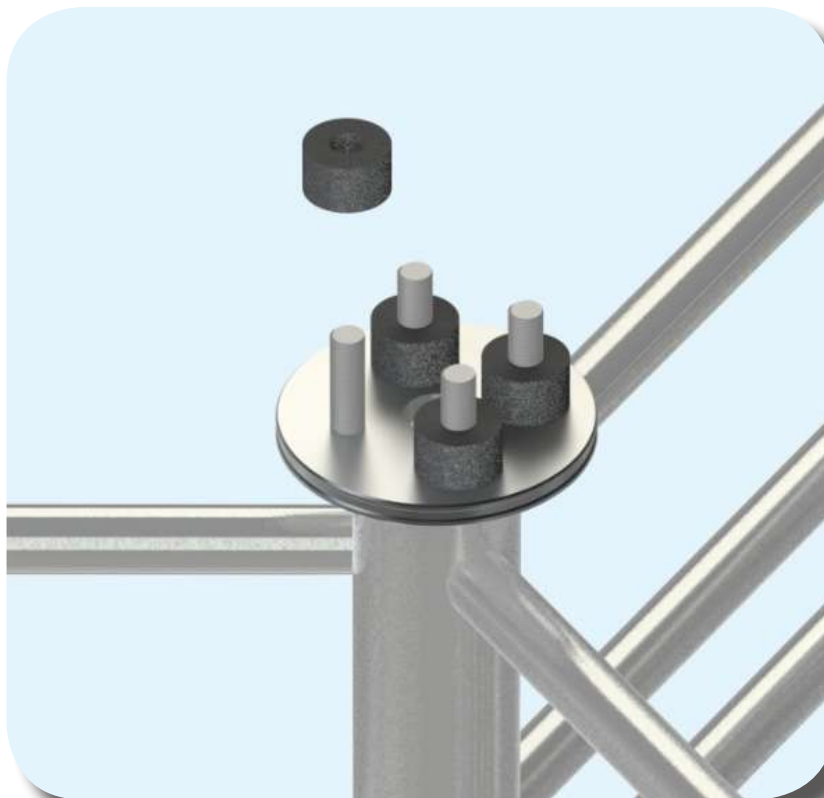


Fig-5.13 rotor and bearing detail



- the next step is to prepare the rubber damper blocks and ready the fixings for the installation, once the head channel has been lifted into place.
- Place the rubber damper blocks over the 4 studded points on the top of the rotor. To ease the install at a later point, add a small bead of General Purpose grease to each damper.

**Fig-5.14 fixing rubber dampers**

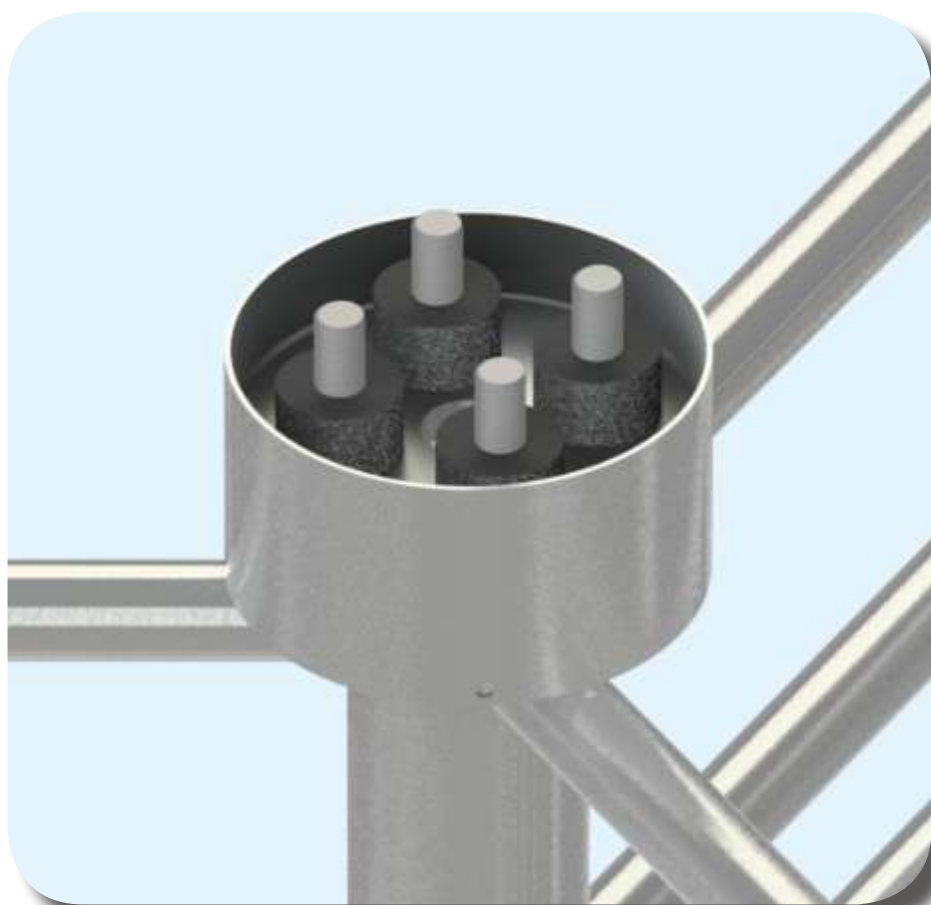


- Next install the rotor ring over the rubber damper blocks as shown in Fig-5.15-5.16

**Fig-5.15**

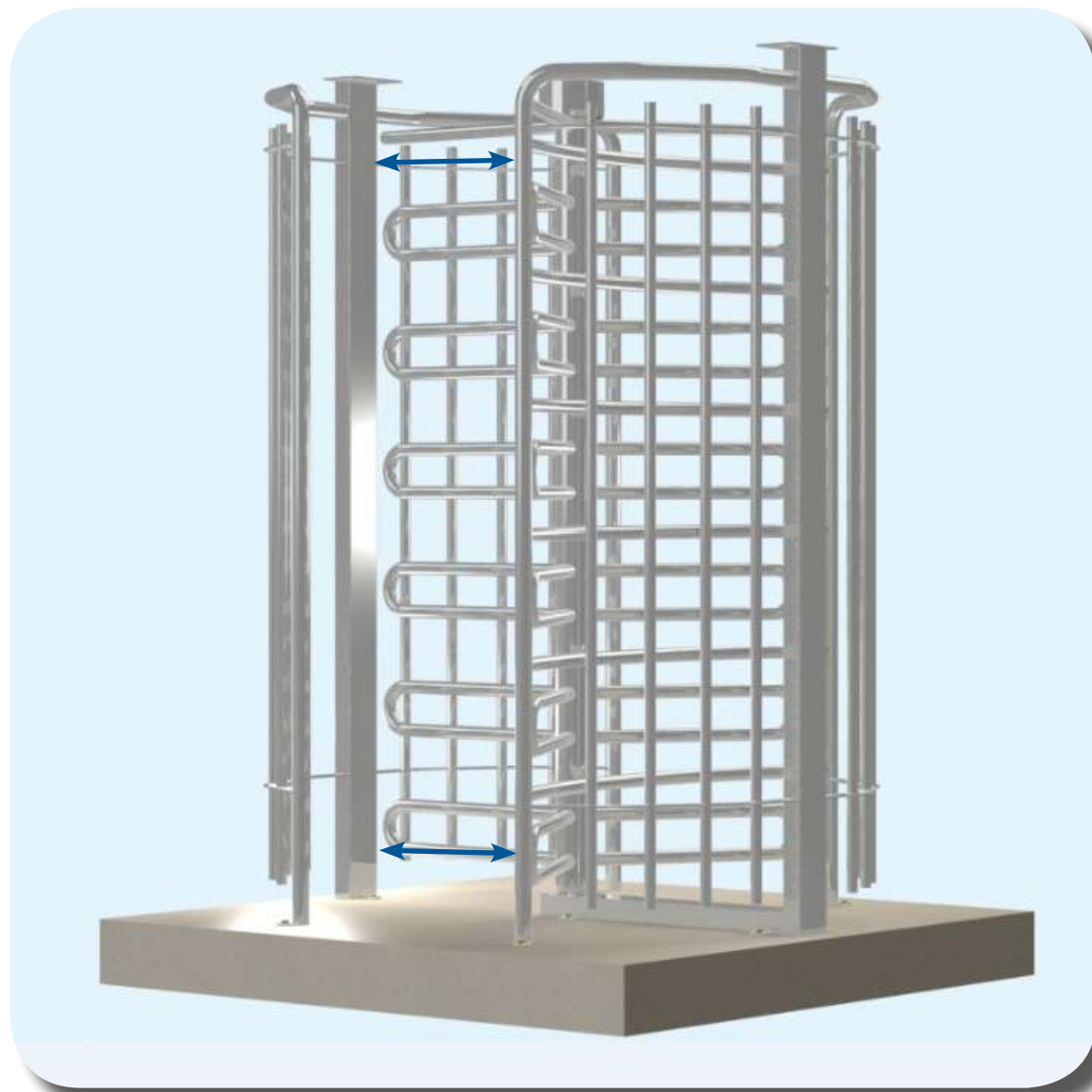


Fig-5.16



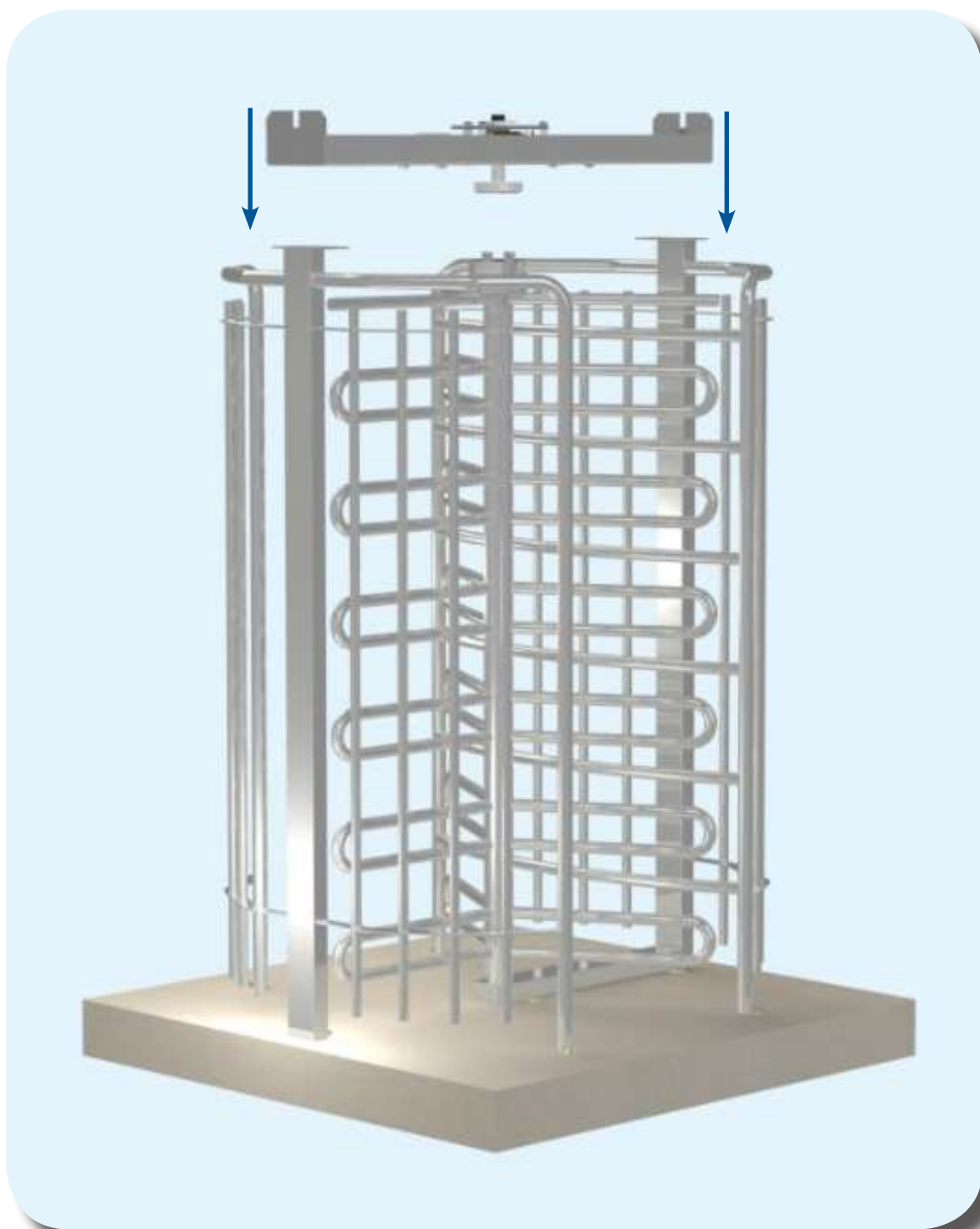
- Before lifting the roof section on it is necessary to position the rotor into the correct position for operation. Ensure that the rotor is positioned as shown in Fig-5.17.

**Fig-5.17 Correct Rotor Position**



- Next carefully lift the head channel up and into place on the stator and side frame ( Fig-5.18 ).
- Ensure that once the head channel is in place that the rubber damper blocks align and locate into the head mechanism correctly (Fig-5.21 ).
- The rubber dampers must be seated all the way down into the head mechanism.

Fig-5.18





- Once the head channel is mounted secure each end of the channel using the 8 x M12 fixings and bolts prepared earlier.(Fig-5.19 )
- Always ensure the fixings are installed correctly using all of the washers provided , complete this task at both ends of the channel. (Fig-5.20 )

**Fig-5.19 Head Channel to Frame fixing points**

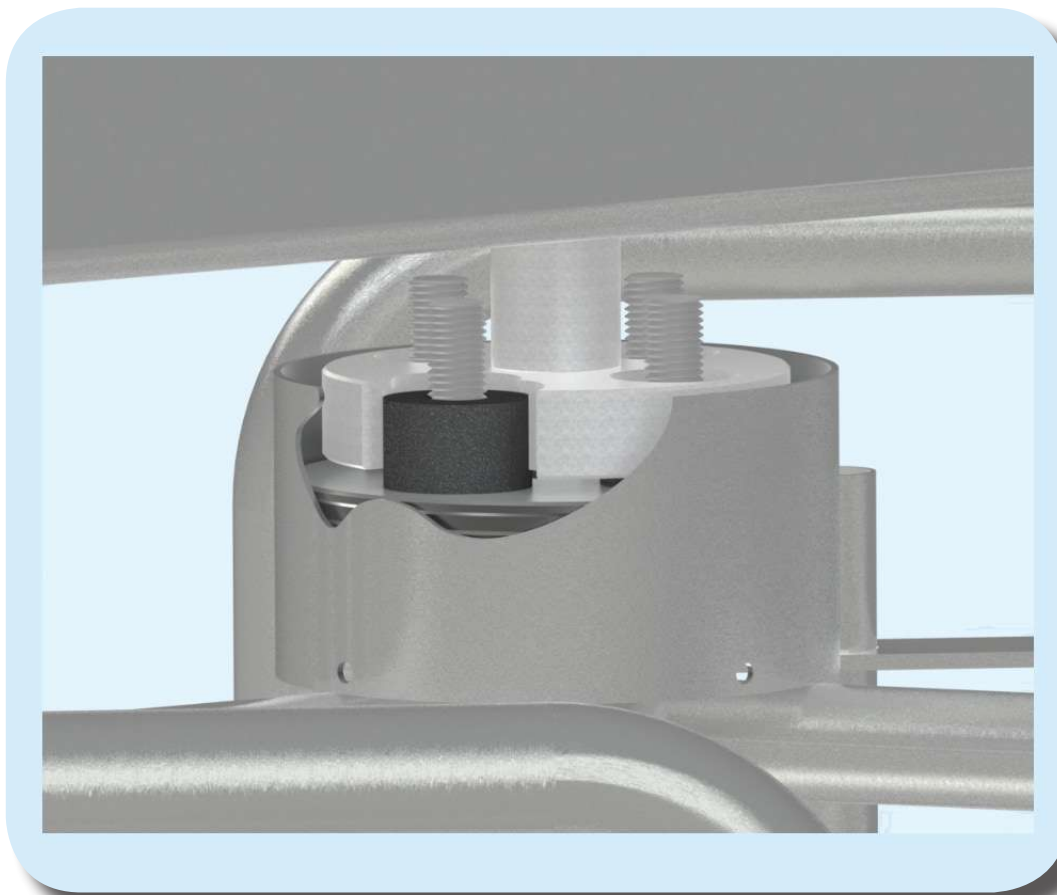


**Fig-5.20 Correctly Fitting Channel to Frame Fixings**



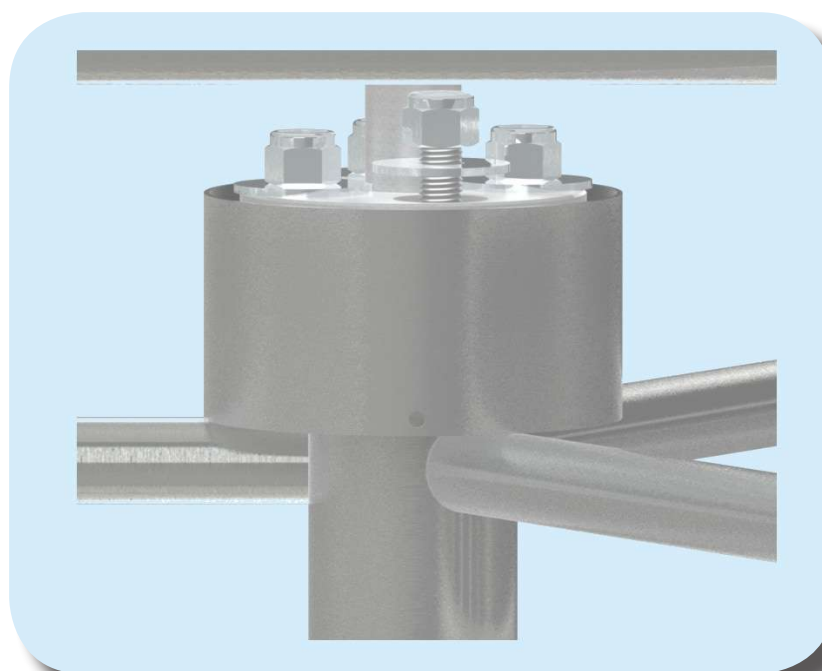


**Fig-5.21 Correct Fitting of Damper Blocks to Head**



- Once the head channel has been secured, the next step is to secure the top of the rotor.
- The rubber dampers must be seated all the way down into the head mechanism.
- Place the washers over the four studs and secure using the Nyloc nuts provided, ensure the nuts are screwed down as tight as possible.

**Fig-5.22**



- The next step is to align and check that the Main Side Frame is level and upright, perform this task using a 1 metre water/spirit level.
- Ensure all 3 sides of the Main Side Frame are checked and confirmed as upright, level and square.(Fig-5.23)
- Before marking the positions of the Main Side Frame and drilling the floor check if any spacers or shims are required, install these to prevent any twisting and misalignment during the anchoring process and ensure a secure fixing to the floor.
- Finally secure the collar at the top of the rotor using a metric sized Allen key, check that all 4 screws are secured around the collar.

**Fig-5.23 Main Side Frame Alignment**

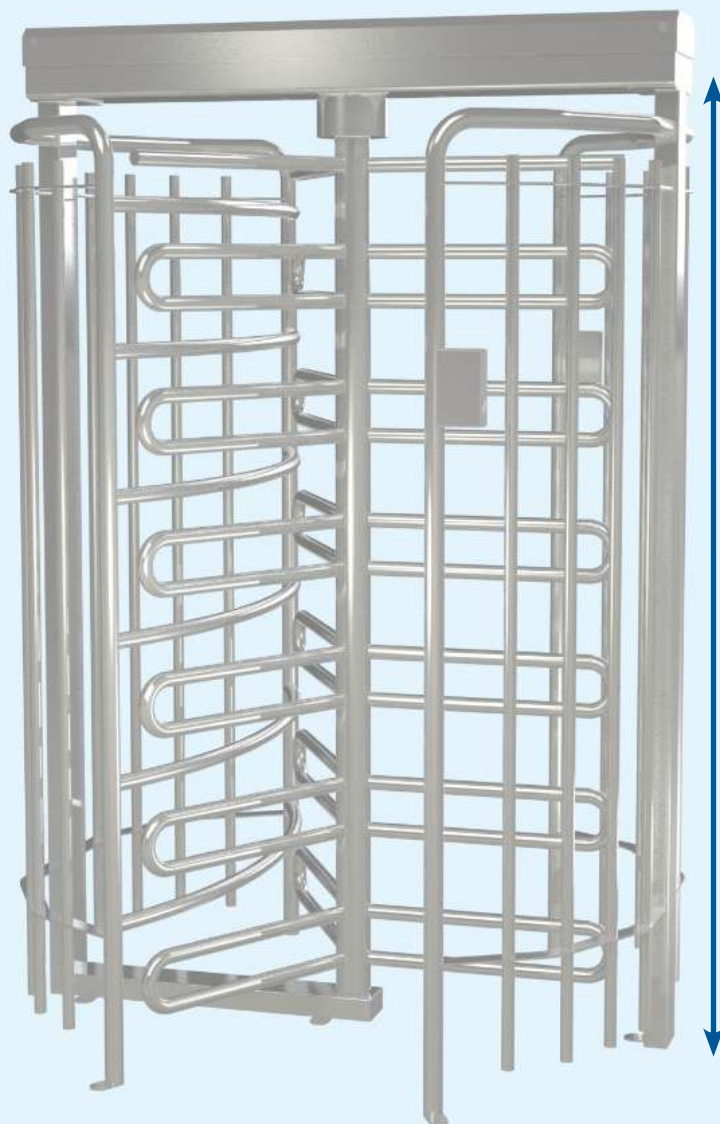
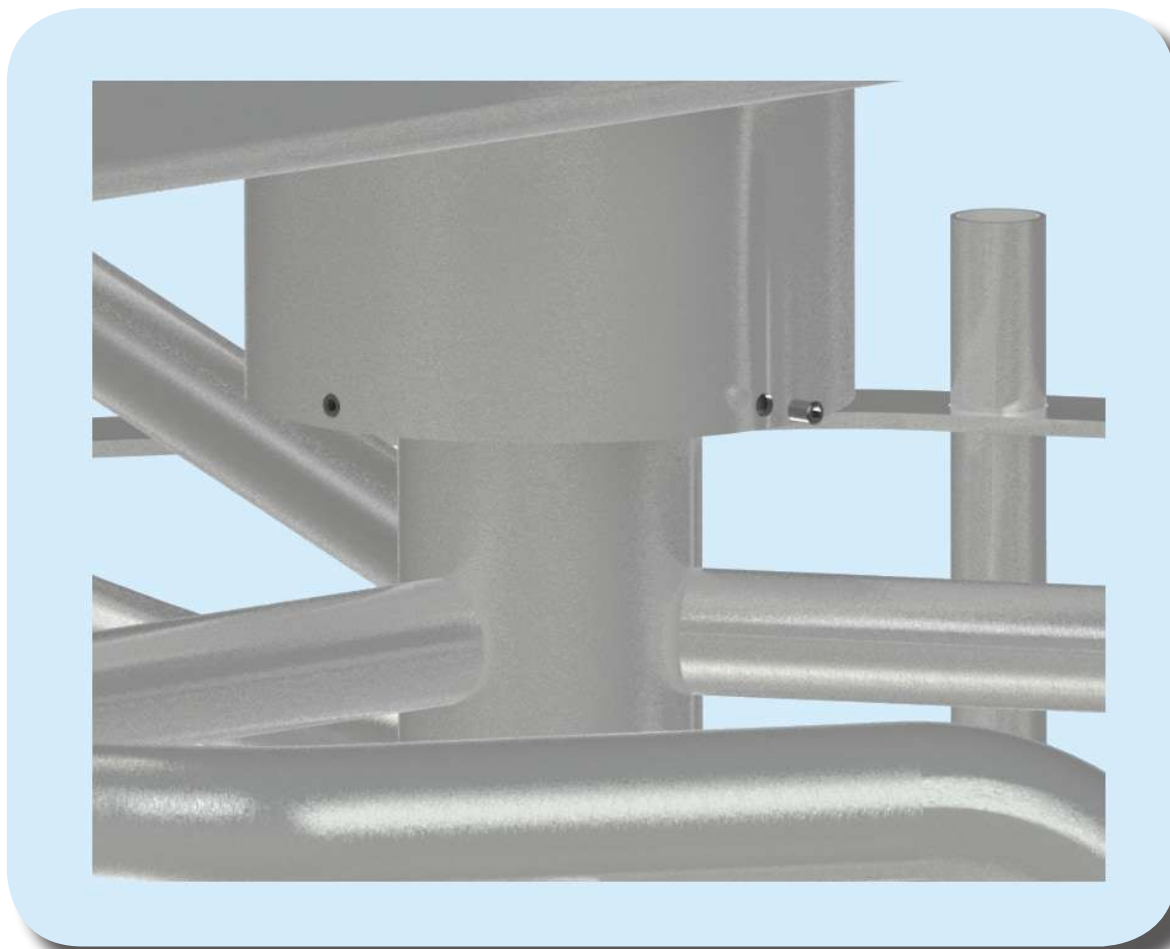
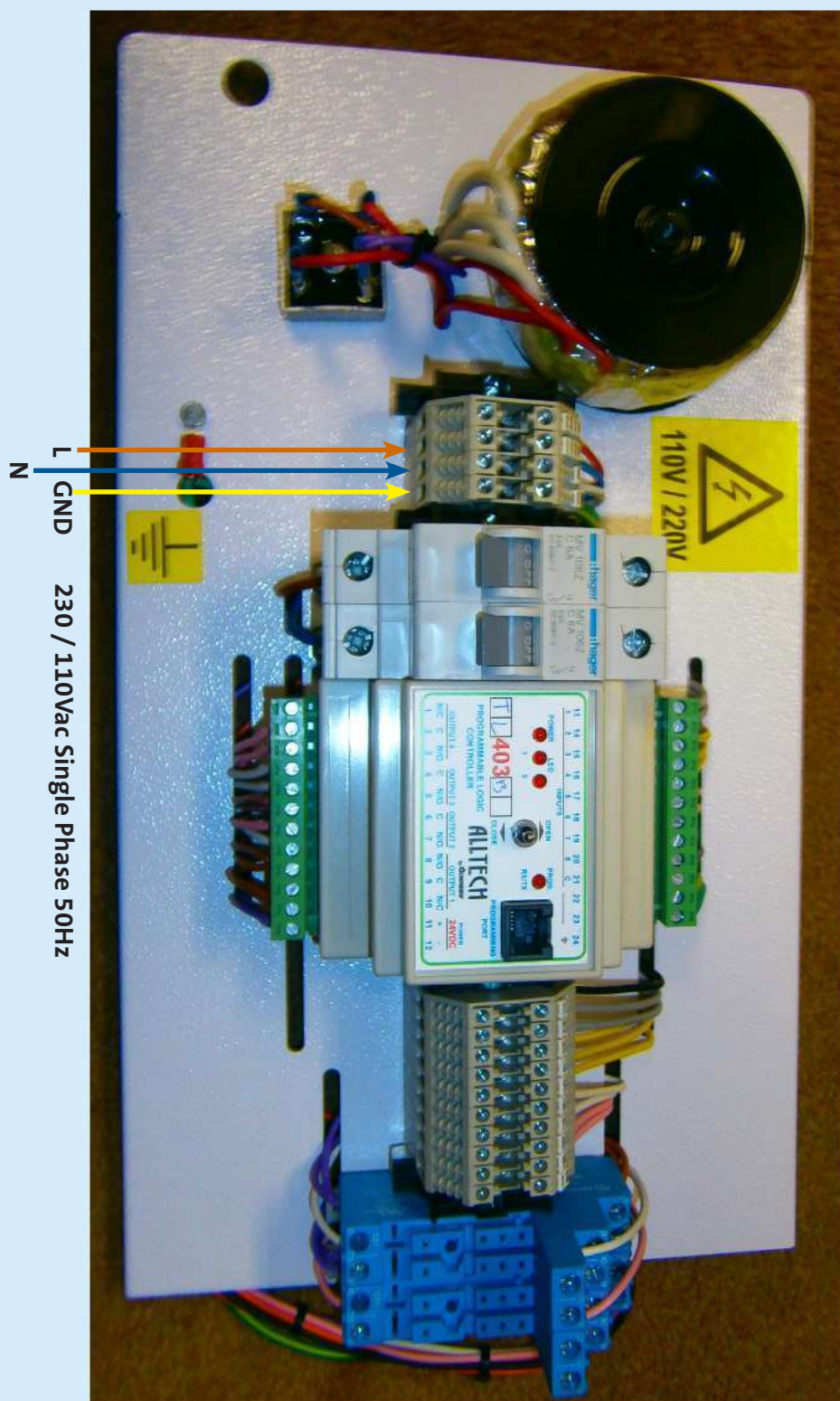


Fig-5.24 Collar fitting



## Mains power connection

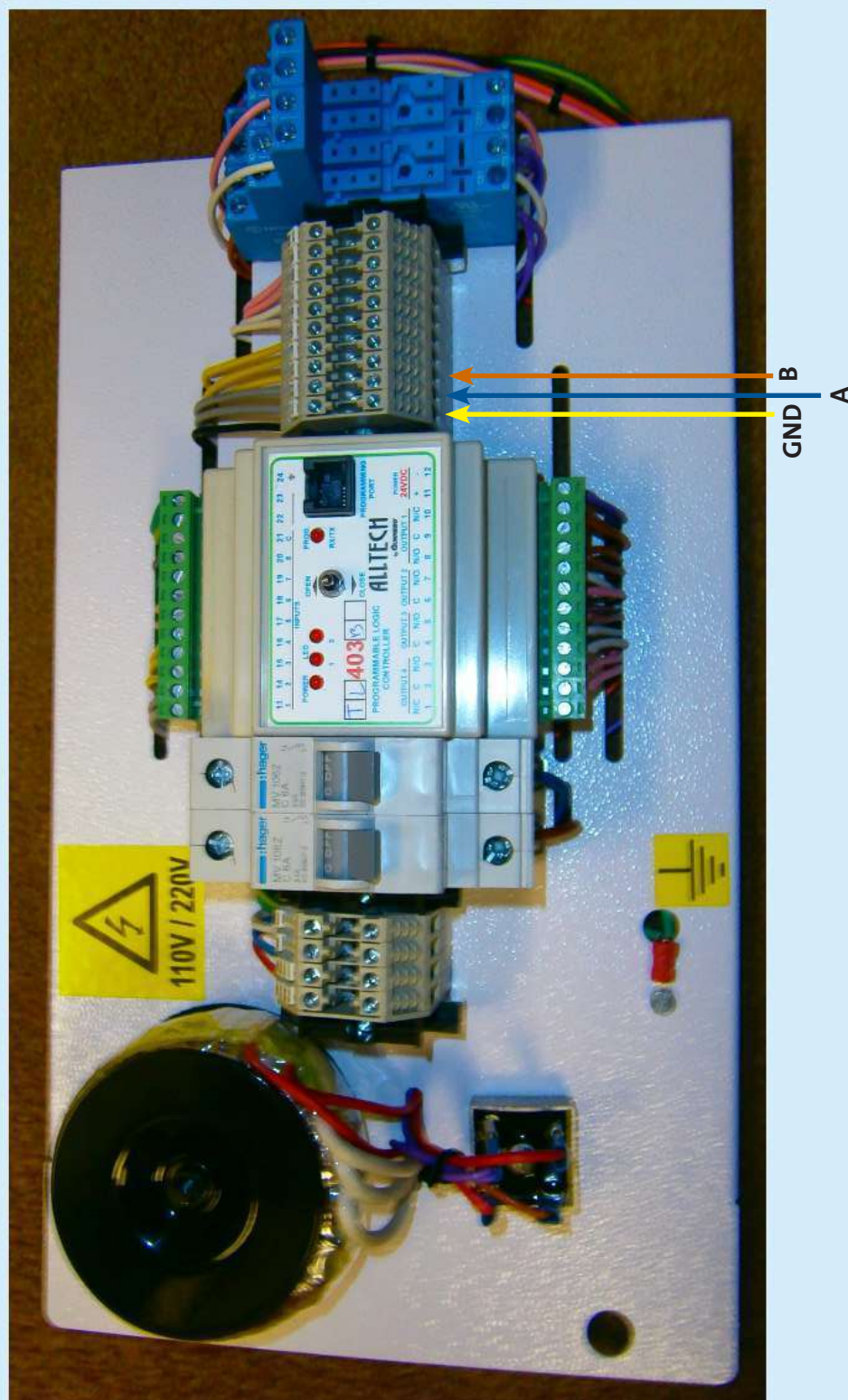
Prior to installation of roof section, terminations for mains power and access control can be made.





## Card Reader Connections

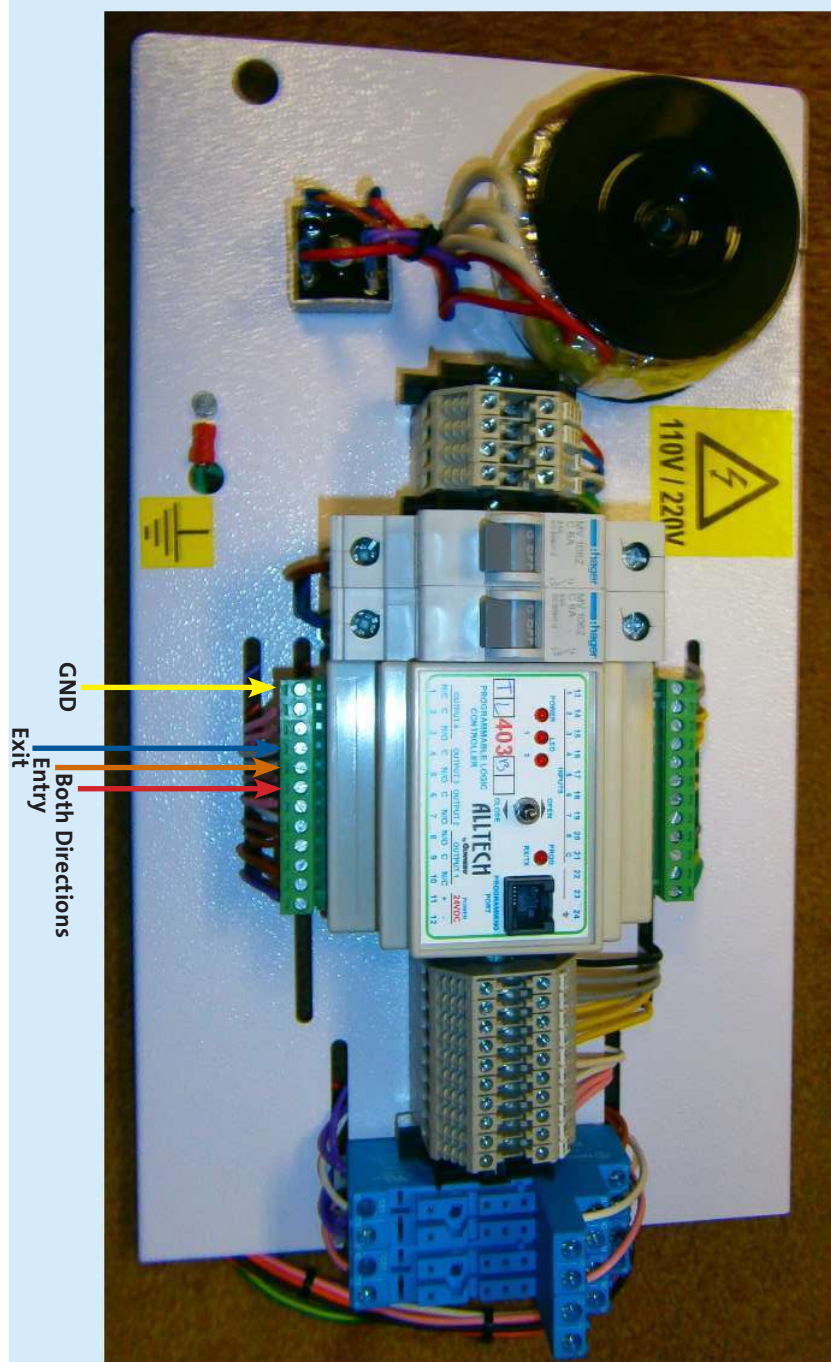
Closure required-Dry (0V), Normally open Going Closed for a length of 0.5-1 second.



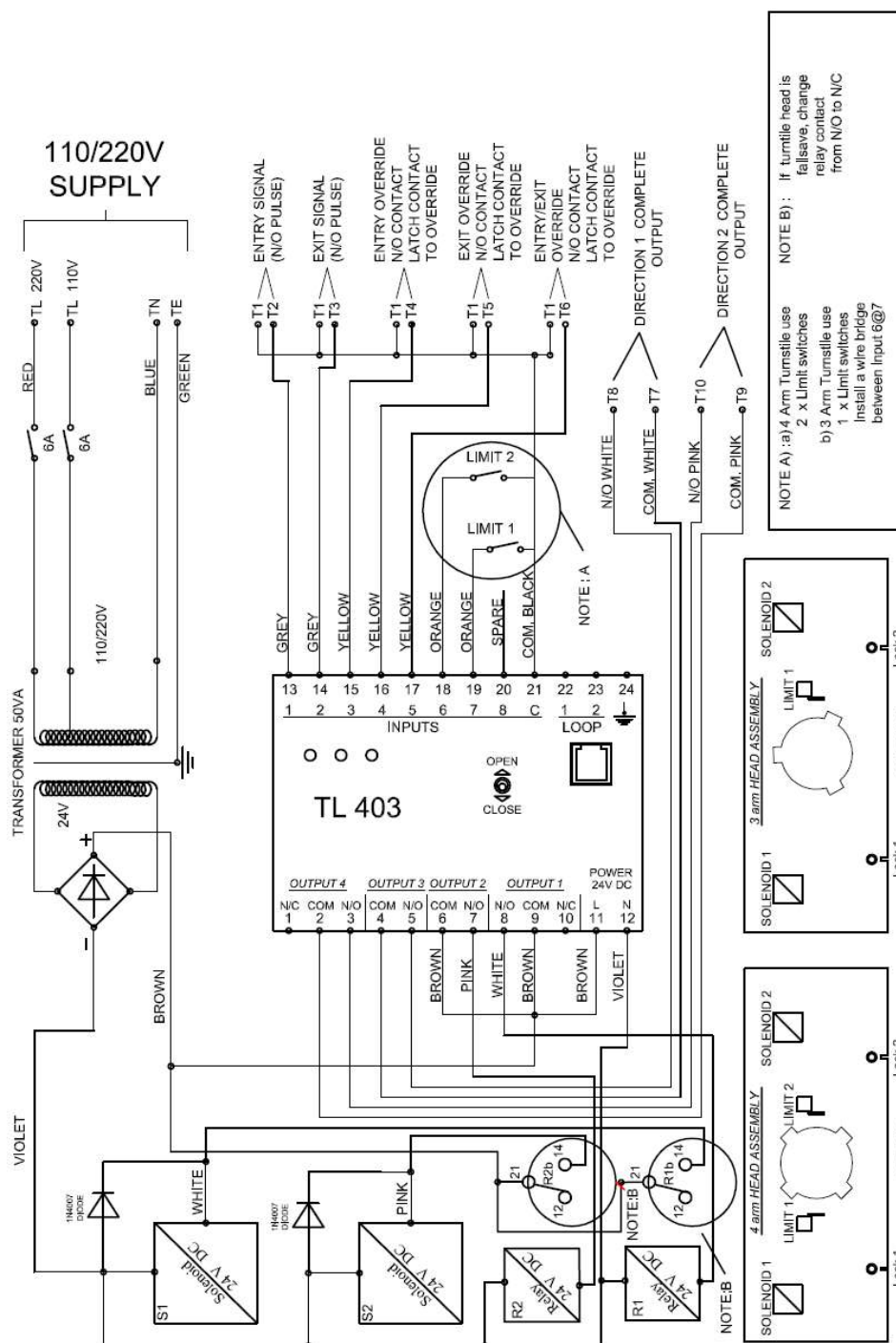
## Emergency/Fire Connections

The Emergency connections are Normally open going Normally Closed, 0V (dry). These connections are to be made on the numbered terminal block:

- Pin 1- GND
- Pin 4- Emergency Entry only (TL403 LED 2 illuminates)
- Pin 5- Emergency Exit only (TL403 LED 3 illuminates)
- Pin 6- Emergency Both directions (TL403 LED 2 and 3 illuminates)



## RotaTech 90/120-Internal Wiring Diagram



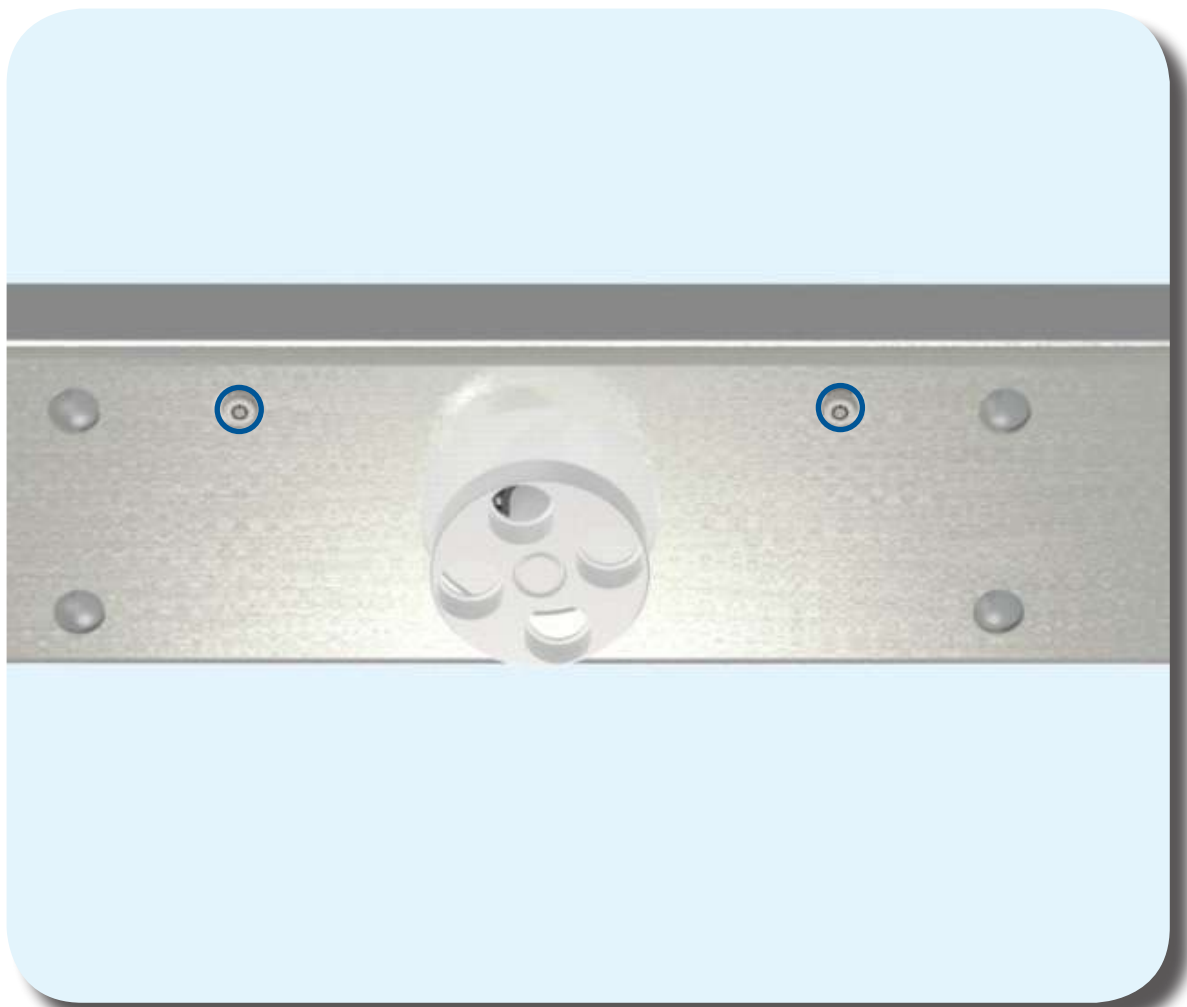
## Installation of the Roof and Earth Wires

- The final steps are to install the earth wires , please note the yellow earth stickers to clarify the connection points.
- Always use the fixings provided to secure the earth connections, as follows M6 shake proof washer and nut.

## Selecting the passage type using the Mechanical Key Switch

- Selection of either controlled (Access Control Device/Pushbutton) or Free Entry/Exit can be achieved by using the key switch on the underneath of the head channel.
- Turning the key in either direction will enable or disable the mechanical function of the solenoid.
- 2 key switches are mounted , one for Pass Left and one for Pass Right.

Fig-5.25 Key Switch Positions





## Testing after Installation

On completion of the installation it is recommended that the following checks and tests be carried out:

- Power-Ensure all connections are correct and secure. Switch the mains power on followed by the MCB inside the unit
- Mechanism-Rotate the rotor and check the home position, also monitor the smoothness of the rotor as it turns.

## Optional Canopy Installation

If the canopy option is to be installed follow the following at the beginning of the installation.

- Remove the 4 x M12 mechanism bolts that secure the mechanism to the head channel.

**Fig-5.26 Remove the highlighted bolts**

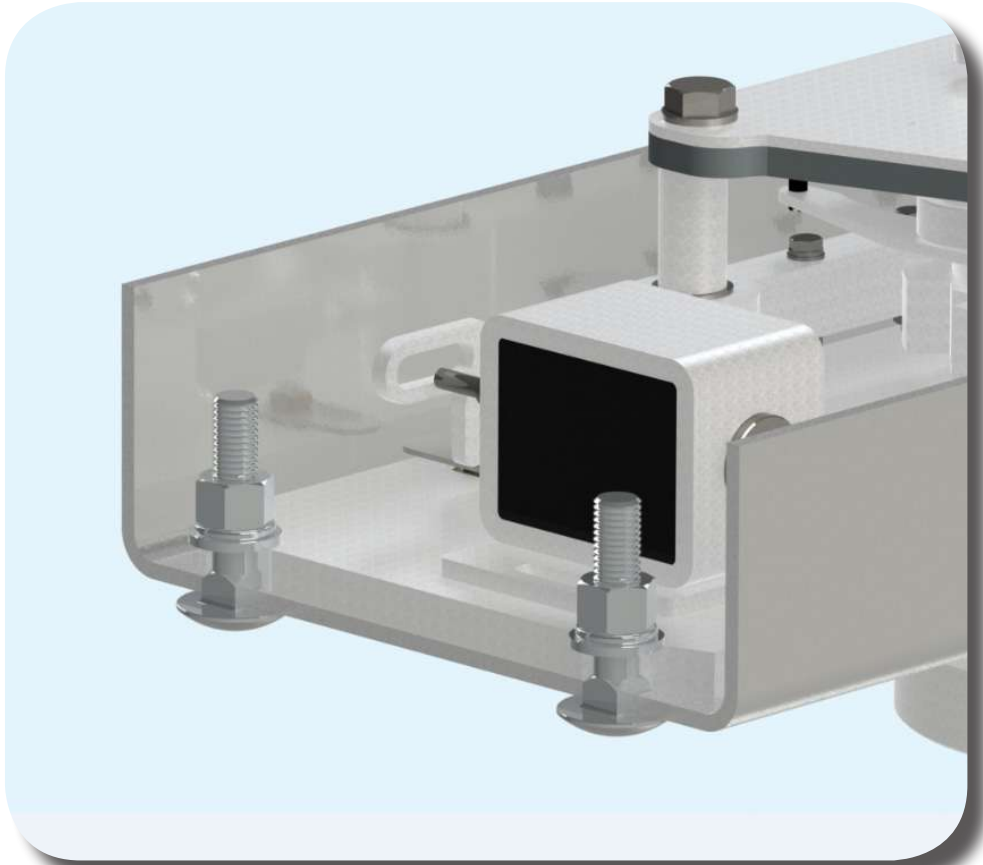


- Locate the head channel onto the canopy and re fit the 4 x M12 bolts, also ensure the key locks also line up with their respective holes.

**Fig-5.27**



Fig-5.28 Bolt detail



## Section 6

### Maintenance

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#### General Care

The RotaTech Rotating Door should be cleaned and greased at regular intervals, using the following approved materials.

#### Routine Cleaning, all finishes

Cleaning agent: Soap or mild detergent water.

Action: Sponge rinse with clean water, wipe dry as necessary

#### Fingerprints

Cleaning agent: Soap or warm water or organic solvent (acetone, alcohol, genclene)

Action: Rinse with clean water and wipe if necessary

#### Stubborn Stains and Discoloration, all Finishes

Cleaning agent: Mild cleaning solutions or domestic service cleaners.

Action: Rinse well with clean water and wipe dry.

#### Oil, Grease Marks, all Finishes

Cleaning agent: Organic solvents (acetone, alcohol genclene, trichlorethane).

Action: Clean after with soap and water, rinse well with clean water and wipe dry.

#### Rust and other Corrosion products, Stainless Finishes

Cleaning agent: Oxalic acid. The cleaning solution should be applied with a swab and allowed to stand for 15 to 20 minutes before being washed away with water. May continue using a domestic surface cleaner to give final clean.

Action: Rinse well with clean water (precautions for acid cleaners should be observed).  
Minor Scratches on Painted Surfaces

Cleaning agent: Lightly rub with cutting paste. Rinse area with water and dry.  
Apply touch-up paint in fine layers.

Action: Allow 2 weeks to harden. Blend into surrounding paintwork, using a fine cutting paste.

#### Deep Scratches on Painted Finishes Causing Rust

Cleaning agent: Remove rust with a small sharp knife. Apply rust inhibiting paint (red oxide). Fill scratch with fine body filler to just under finished surface. Follow procedure for minor scratches

#### Greasing

Engineers need to carry out this action during service visits.

## Annual Checks

Operations to be carried out with the power supply disconnected.

- Check that the wire connectors are firmly attached.
- Check that the terminals are fully tightened.
- Check that the insulation of the wires is in good condition and that no conductors are exposed.
- Check that mechanism fixings, screws and encoder grub screws are tight.
- Carry out general testing as previously advised.

## Electrical circuits

No general maintenance is required apart from replacement fuses in the event of a failure.

## General Component Maintenance

Ensure all areas of the assembly are kept clean.

## Replacing the TL403

Operations to be carried out with the power supply disconnected

**NOTE- BEFORE REMOVING THE PLC; ENSURE TO RECORD THE POSITION OF THE CONNECTORS. WHEN REPLACING THE CONNECTORS, ENSURE THEY ARE RE TERMINATED IN THEIR CORRECT LOCATIONS & THAT THE CORRECT PLC TYPE IS FITTED.**

- Disconnect the power supply.
- Remove all connectors from the PLC.
- Replace the PLC.
- Reconnect the power supply.
- Switch ON the Unit and return it to normal operation.

## Replacing the Micro Switch

- Disconnect the power supplies.
- Remove the micro switch from the mounting plate.
- Remove all cables from the micro switch, taking note of their location.
- Reconnect the cables
- Replace the micro switch onto the mounting plate.
- Reconnect the power supply.
- Switch ON the Unit and return it to normal operation.

## Fault finding

Symptom	Check	Action
Rotor will not park	Restoring and Damping mechanisms	Adjust restoring mechanism
		Adjust damping mechanism if on maximum
Rotor over spins	Solenoids & Locking Pawls	Adjust solenoids
		Adjust locking pawls, if faulty replace.
		Adjust damping mechanism
Unit locks up and will not accept signals	Power Supply Access Control Connections	Check all electrical wiring for security of connectors.
		Check supply circuit breaker if switched on.
		Check Mains input supply is correct
Turnstile fails to operate	Power supply problems PLC Function FACP Connection	Check all electrical wiring for security of connectors.
		Check supply circuit breaker if switched on.
		Check Mains input supply is correct
Mechanism is noisy	Check mechanical components	Check all mechanism components including rubber dampers on rotor

## Section 7

### Recommended Spare parts

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#### Recommended Spares.

Quantities listed are per RotaTech HH or FH over a 24 month period.


Part Number	Description	Quantity
L60-LB403B1	Electrical Plate PLC	1
L64-D07V02	24v Locking Solenoids	2
L50-MS1704	Limit Switch	1
L55-S10014	Restoring Spring	1
L55-B6007R	Top Bearing	1
L55-B6300R	Bottom Bearing	1
L50-HT400	120 head Assembly	1
L50-HT300	90 Head Assembly	1

## Section 8

### Declaration of Conformity

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#### Declaration of Conformity

<div><div><div><b>ALLTECH</b> by <b>GUNNEBO</b></div><div><b>DECLARATION OF CONFORMITY</b></div><div>Manufacturing Plant of the Gunnebo Group located c/o Alltech (Pty) Ltd, Wadeville SA; declares under his own responsibility that the products:</div><div><div>RotaTech FH120G</div><div>Rota Tech FH120S</div><div>RotaTech FH90G</div><div>RotaTech FH90S</div><div>RotaTech HH</div></div><div>to which this declaration refers, comply with the provisions of the following directives:</div><div><div>2004/108/EC EMC Directive</div><div>2006/95/EC Low Voltage Directive</div></div><div>And moreover declares that the following harmonized norms have been applied:</div><div><div>EN 61000-6-3 (2007) + A1:2001: Electromagnetic compatibility – generic standard, emission</div><div>EN 61000-6-1 (2007) : Electromagnetic compatibility – generic standard, immunity</div><div>EN 60204-1 (2006)+ AMD 1:2009 : Safety of information technology equipment</div></div><div><div>3rd of April 2012</div><div></div><div><i>Andre Vermeulen</i> Legal Representative for Alltech and Gunnebo SA</div></div></div></div>
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## Notes



## Notes



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*Gunnebo security group supplies integrated security solutions for banking, retail and other sectors requiring high-security protection. Our experience and presence make your world safer.*

**ALLTECH**  
by **GUNNEBO**

# RotaTech - FH

## Full Height Manual Security Turnstile

### Drive

Hand-operated, Bidirectional

### Materials

Casework:

- Mild steel (Hot dipped galvanised)
- 304 Stainless steel (Brushed finish)

Rotor Wings:

- Mild steel (Hot dipped galvanised)
- 304 Stainless steel (Brushed finish)

Rotor Spindle

- 304 Stainless steel (Brushed finish or Powder coated)

### Mechanism

- Turnstiles are locked into position by solenoids rated for continuous operation.  
The arms are released for one rotation of 90 or 120 degrees (movement to allow one pedestrian entry/exit) by activation signal from a number of sources, e.g. code cards, push buttons, coins, key, computer etc.
- The turnstile arm spacing is designed to ensure a single entry/exit per legitimate activation signal.
- Internal mechanisms return the rotor to the locked position after each rotation.

### Power Failure / Fire Alarm

In the event of an emergency or isolation of power supply, unit may be configured to fail-safe i.e. rotor freely rotates or fail-lock i.e. rotor locks. Either option is available in both or one direction. Choice must be denoted at time of order placement.

**Note** - Head mechanism fail state will be the same as power failure choice. If not specified, RotaTech FH will be delivered fail safe exit and fail lock entry.

### Interface

TL400 PLC:

- One (OV) input provided for Access Control Device interface for Entry direction control
- One (OV) input provided for Access Control Device interface for Exit direction control
- One (OV) latching input for Access Control Device interface controlling simultaneous Entry & Exit direction override; (FACP)
- Two (OV) latching inputs for Access Control Device interface controlling individual Entry & Exit direction override
- Two (OV) Outputs for counting Rotation Confirmation in both Entry & Exit Directions
- Mechanical Key-switch override for Opening/Locking each individual direction



### PRODUCT DESCRIPTION

Full Height Turnstiles are designed for high traffic volume areas. They are ideal for controlling movement and establishing a line of defence inside or outside a building.

### APPLICATIONS

- Recreational areas
- Industrial sites
- Construction Sites
- Military installations
- Stadia
- Secured Residential Compounds
- Mining industry....

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# RotaTech FH

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## TECHNICAL DATA

Dimensions	See detail on next page
Power Supply	230 Vac 50 Hz AC or 110V 50 Hz
Power Rating	50 Hz 35 Watts
Logic Voltage:	24 Volts DC
Operating Temperature	0 to +45 °C (RH 95% not condensing)
IP Rating	IP34
Flow Rates (approx)	
Reader Device	Number per minute
Insertion type	12
Insertion type with PIN code keypad	7.5
Swipe type	15
Swipe type with PIN code keypad	8.5
Proximity "Hands Free"	17

## MODELS AVAILABLE

- 3 Arm Single Turnstile
- 4 Arm Single Turnstile
- (304) Stainless Steel
- Galvanised

## OPTIONS

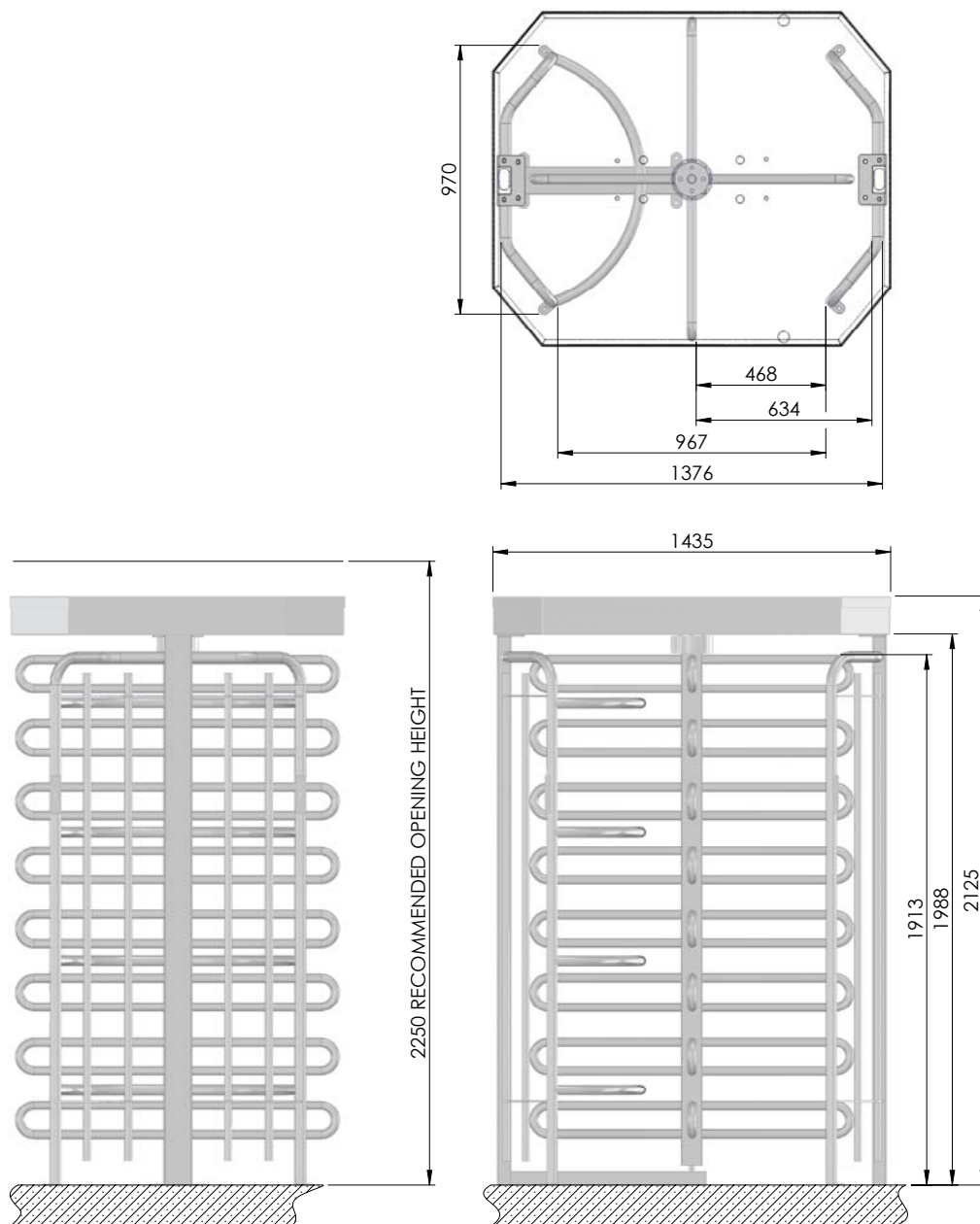
- Surface mounted card reader drillings
- Roof Canopy

# RotaTech - FH

## SITE PREPARATION

Product delivered as sub-assemblies and may require lifting equipment  
 Approx. weight: 188kg / 42kg (Canopy)  
 (For installation details, please refer to the installation manual)

## Full Height Single Product Dimensions



Concrete Base to specification at least fck (cube) 300N/mm<sup>2</sup> of resistance.  
 Base to be flat and level to +/- 5mm over footprint area. Dimensions to be  
 > 1443 x 1343 x 150 deep min (units in mm)

# RotaTech- FH

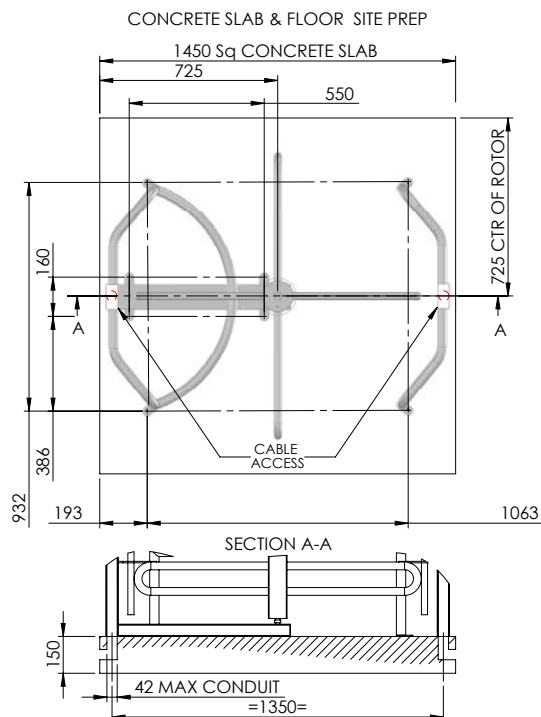
## IMPORTANT

Any horizontal pipe or conduit running below the "TURNSTILE" must be at least 140mm below FFL

The dimensions given in this Product Data Sheet are for information only. In order to prepare the installation site, please refer to the installation manual or ask confirmation

Metal conduit for cables should be raised at least 50mm from foundation

It is the customer's responsibility to ensure the structural integrity and strength of the installation location



For further information, please contact:

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[www.gunnebo.com/alltech](http://www.gunnebo.com/alltech)

Note: In pursuit of its policy of continuous refinement and improvement, Business Area Entrance Control reserves the right to modify design and details at any time and without notice.