



## TRIO TURNSTILE



## OPERATING AND TECHNICAL MANUAL



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## WARNINGS

### ATTENTION PLEASE !..

- ✓ Before operating your equipment, read all the information in the operating manual.
- ✓ Save your operating manual for future references.
- ✓ Do not place your equipment on unstable/moving surfaces.
- ✓ Do not allow any object to touch the power cable of the equipment.
- ✓ Do not place power cable where people might walk on.
- ✓ Do not conduct maintenance or repair work by yourself. When needed, contact authorized technical service unit.



## TECHNICAL SPECIFICATIONS

<b>POWER</b>	200-240 V AC
<b>POWER CONSUMPTION</b>	60 W
<b>TRUNK</b>	1.25 mm 304-quality stainless steel or electro-statically painted iron sheet
<b>OPERATING TEMPERATURE</b>	(-20), (+50) C
<b>ARM LENGTH</b>	45 cm

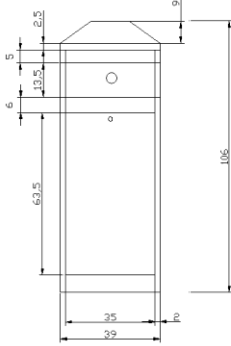
## DIMENSIONS

<b>Product Code</b>	<b>Product Name</b>
<b>6372100</b>	TRIO Turnstile (Stainless Steel) - (Two Legged & Detachable)
<b>6372200</b>	TRIO Turnstile (Stainless Steel) – (Two Legged, Reader installable & Detachable)
<b>6372300</b>	TRIO Turnstile (Stainless Steel) - (Single Legged with Rear Maintenance Door)
<b>6372400</b>	TRIO Turnstile (Stainless Steel) - (Single Legged with FrontMaintenance Door)
<b>6372500</b>	TRIO Turnstile (Stainless Steel) - ( Vehicle Model)
<b>6372600</b>	TRIO Turnstile (Stainless Steel) - (Single Legged – Child Model)
<b>6372700</b>	TRIO Turnstile (Stainless Steel) - (Single Legged Column Model)
<b>6372000</b>	TRIO Turnstile (Stainless Steel) - (Standard Model without the base)

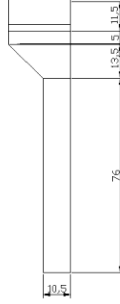
<b>Product Code</b>	<b>Width</b>	<b>Length</b>	<b>Height</b>
<b>6372100</b>	235	855	980
<b>6372200</b>	210	950	960
<b>6372300</b>	240	390	1080
<b>6372400</b>	240	390	1080
<b>6372500</b>	240	390	185
<b>6372600</b>	240	390	700
<b>6372700</b>	240	390	1080
<b>6372000</b>	230	790	980



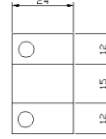
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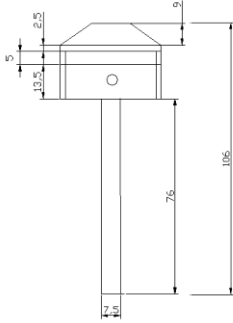


ÜST



TSH TEKNİK SERVİS HİZMETLERİ A.Ş.					
Müşteri					
Yan Hizmet					
Proje Adı					
Proje No					
Tarih					
Durum					
01	01	01	01	01	01

ÖN



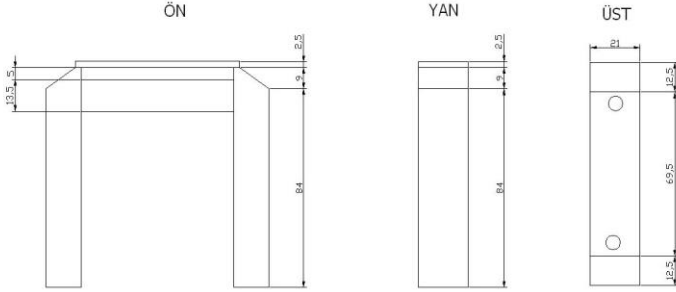
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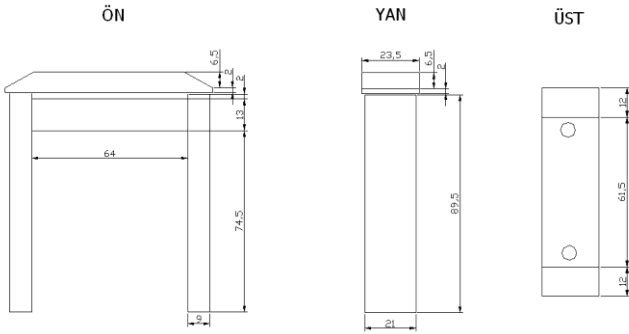
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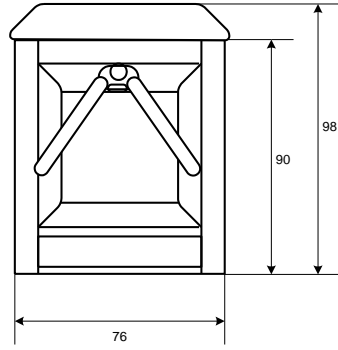
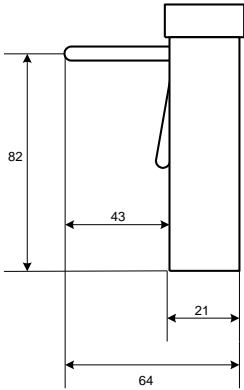
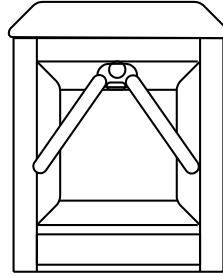
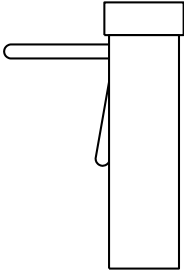
TSH TEKNİK SERVİS HİZMETLERİ A.Ş.					
Müşteri					
Yan Hizmet					
Proje Adı					
Proje No					
Tarih					
Durum					
01	01	01	01	01	01



TSH TEKNİK SERVİS HİZMETLERİ A.Ş.				
Müşteri	Ni Ayrılık Turizm (Tic.)			
Yan Kodu				
Parça Kodu				
Parça Adı	Mobil	Yük.	Boy.	Yanım.
12	14102005	00	50	1.000.00



TSH TEKNİK SERVİS HİZMETLERİ A.Ş.				
Müşteri	Ni Ayrılık Turizm (Tic.)			
Yan Kodu				
Parça Kodu				
Parça Adı	Mobil	Yük.	Boy.	Yanım.
12	14102005	00	50	1.000.00





## INSTALLATION

Before installing the turnstiles, for assured strong grip of the anchors; make sure thickness of the hard surface is minimum of 8-15 cm.

***Turnstile includes 6 pieces of steel anchor, 6 pieces of screw & nut set***

1. Place the turnstile where you plan to install and mark the screw holes.
2. Using a drill with **15 mm** bit, drill 8 cm-deep holes on previously marked points. While drilling screw holes, make sure the drill is in upright position.
3. Embed six steel anchors in the drilled holes with the help of a hammer.
4. Make sure that power cable can be passed securely through the center of the turnstile base before placing the turnstile base on the surface.
5. After final control, drive all six screws in without leaving any space in between the base and the surface.
6. Connect power cable to 220 VAC with a 6A fuse.

## HOW IT WORKS? HOW IT IS USED?

### Control

Dry contact button or any one of the card reader's relay contact ends can be used as access triggering mechanism.

### Emergency Mode

Control option via connection to safety systems (e.g. in emergency situations such as fire alert an automated activation of free access mode) is available.

### Display Panels

Illuminated three-level display provides access control for the system. If turnstile is ready for access, a green arrow flashes.

When access is granted, the green arrow permanently lights up. At the moment of access, a red "X" sign appears for the reverse direction as an indication of blocked access.

### Time Control

Following turnstile activation, if no entrance proceeds, system will automatically deactivate according to preset deactivation timer (2-30 seconds).

### Light and Sound Warning Signals

Option for integration of audio or light warning signals to the system is also available.

### Arm Movement Control

Forward thrust movement of the turnstile arm is controlled by a special mechanism. Therefore, even if the arm fails to complete a full rotation during fast or slow entries, rotational movement of the arm is always completed in the center.



## **MAINTENANCE- REPAIR**

Maintenance of turnstiles is performed by the authorized technical service unit according to the maintenance procedures. Standard quarterly (once in every 3 months) periodic control and maintenance will extend functional life of the turnstile as well as increase its efficiency. Maintenance periods and frequencies may differ in reference to climate and operating conditions.

In case of breakdown, immediately contact authorized technical service unit.

***UNAUTHORIZED PERSONS MUST NEVER BE ALLOWED TO PERFORM ANY MAINTENANCE OR REPAIR WORK ON TURNSTILES.***

## **TRANSPORTATION AND STORAGE**

When transporting, the products must be in their original packaging. Warnings and instructions on packaging must be strictly followed during loading, transporting and stacking. No more than 3 turnstiles must be stacked together.

## **IMPORTANT NOTIFICATIONS**

- Make sure that the clearance between the turnstile arm and the guiding panel or the adjoining turnstile must be maximum of 7 cm.
- Allow minimum of 1 meter safety clearance between the loading doors and the turnstile.
- Do not permit pets to play under the turnstile arm.
- Protect your equipment with a proper electrical grounding.
- Do not allow unauthorized persons to perform maintenance and repair work on the equipment.
- For connection of external peripheral units, seek assistance of authorized technical service.
- Do not extend or truncate the turnstile arm without consulting with the authorized technical service unit.
- Do not try to pass thru the turnstile before access approval is granted.
- Do not try to jump over or pass by the turnstile arm.
- Do not apply water (or other liquid) directly on the turnstile by using hose or similar tools.
- When access approval is granted, keep in mind that failure to enter before the preset execution time expires will cause system to cancel access permission.
- Comply with the operating manual, as well as warnings and instructions on the equipment.





## PHYSICAL SPECIFICATIONS

### Electrical Specifications

Standard electrical requirement of TRIO Turnstile is 200-240 VAC. Sudden power surge drawn from the system by the turnstile is approximately 60 W. Standard dry contact outlets are available for access approval. Emergency dry contact outlet is also available for allowing unrestricted two-way access during emergency situations.

### Dimensions

Tripod arm length of TRIO turnstile is 43 cm. Refer to technical drawing and diagram pages for more detailed information about the outer dimensions of the turnstile.

### System Specifications

TRIO Turnstile is designed to operate with a microprocessor control. Works two-ways. Allows only one access per permission. Standard TTL data output is provided in the direction of access. Digital entry-log output can be displayed on the display screen or sent directly to the PC of a PC-controlled system. In case of power outage, system automatically switches to the two-way free access mode. LED displays available on both directions clearly indicate access status and whether the turnstile is ready for access or not. Flashing "green arrow" in the direction of entry means turnstile is ready for entry. When access permission (via card reading, operator authorization etc) is granted, the "green arrow" permanently lights up. Entry must be completed within the limits of preset access execution time. Accompanying audio warning signal denotes that access permission is granted. Upon completion of entry, turnstile returns to "ready" mode. If turnstile is programmed for two-way access capability, red "X" sign indicating blocked access is displayed in the opposite direction of entry. Upon completion of entry, flashing "green arrow" appears once again as indication of readiness for access. If turnstile is specifically designed for one-way entry, then the opposite direction continuously displays red "X" sign.

## MECHANICAL PARTS

TRIO Turnstile mainly consists of top panel and the trunk. Mechanical unit which controls the arms, center focusing mechanism, pneumatic motion damper, electromagnetic brake and solenoids are located within the trunk.

### Top Panel

Top panel of the turnstile can be manufactured by using matching material to the trunk; it may also be made of marble, granite, Plexiglas or various composite materials. Choice of material usually depends on the environment where the turnstile will be installed. If the turnstile is to be installed in wooden surroundings, a matching wooden material can be ordered for the top panel of the turnstile.

### Trunk

Trunk of the turnstile is made of 1.25 mm 304-quality stainless steel or DKP sheet iron. If trunk is made of DKP sheet iron, then it can be electro-statically painted according to the customer's choice of color.

### Base and Arms of Tripod

A tripod base and 43 cm-long cylindrical stainless steel or aluminum arms are skillfully engineered for achieving high precision access control and entry permission. Base and arms



of the tripod are specifically designed to provide easy access while only allowing single entry per authorization. Base of the tripod is mounted on the main shaft in order to revolve it with the tripod arms.

### **Motion Control Cogwheel / Center Focusing Mechanism**

The motion control mechanism and locking cogwheel are located on the main shaft where the arms are also attached. The motion control mechanism and the locking cogwheel are controlled in both directions (clockwise and anticlockwise) by a ratchet. Ratchet blocks potential reverse rotation of the arm during forward revolving motion is in progress. As a result, safe and uninterrupted passage is achieved. The system which insures fluent and full rotation of the arms is called Center Focusing Mechanism. The Center Focusing Mechanism assures arms of the tripod stay always focused in the center even during slow/soft or fast/hard passages.

### **Solenoid Control**

Locking and unlocking motions in both directions are provided by the solenoids. Guided by the electronic board, the solenoids manage ratchets by triggering lock and unlock motions before and after each entry.

## **ELECTRONIC CONTROL**

### **Main Control Card**

Main control board is controlled by a microprocessor which manages all decision and control processes. Control of right and left ratchet solenoids is achieved by the main control card. Proximity sensors are used for detection of the end point of the rotational arm motion. Proximity sensors are also guided by the main control card. Incoming external dry contact information in both directions is also collected by the main control card for processing. Upon entry, two separate "access info" output is produced for each direction with relay output. Feedback for access control displays and regulation in both directions are also realized via main control card. Access authorizations are initiated thru external dry contact.

### **Access Displays**

Access displays are installed under protective plexiglass on both sides of the turnstile cover. Colored and transparent LEDs mounted on the electronic board makes up the displays. The preference of LEDs in displays is to provide easy detection of signs under all possible conditions. Illuminated three-level display governs access control and order of the system. If the turnstile is ready for entry, a green arrow flashes. Upon permission of entry, green arrow lights up permanently. While entry is in progress in one direction, red "X" sign indicating blocked entry appears on the opposite direction.

### **Time Setting**

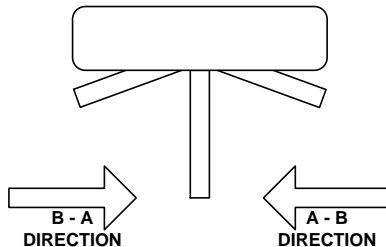
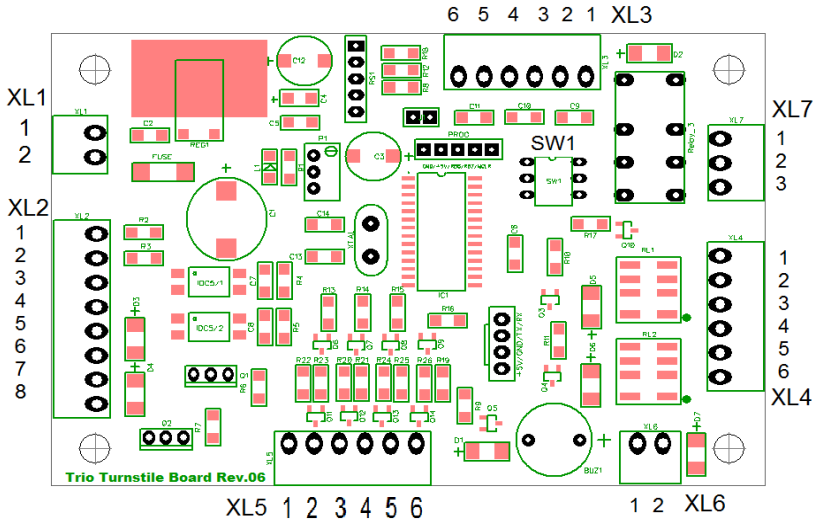
Once the turnstile is activated, entry must be completed before the preset access execution time expires. If preset time expires before entry, the turnstile will automatically lock itself and block access. Entry timer can be reset by adjusting the VR1 trimpot on the main card. By turning VR1 unit to the right with the help of a screwdriver will allow entry time to be compressed, to the left it will be prolonged. Adjustable entry timer can be set between 2 and 30 seconds. Standard entry execution time for TRIO Turnstiles is 10 seconds which is set during production.



### Setting The Turnstile Passing Direction (SW1)

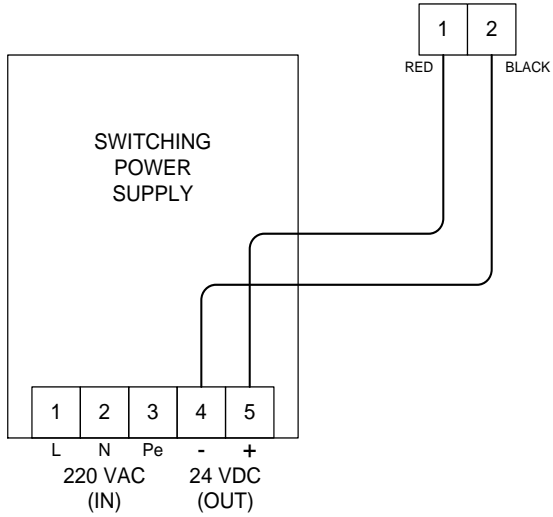
1	2	
Off	Off	Turnstile arm are in "locked position" in both directions. If the XL3/5 and XL3/6 have a short circuit, passing will be available for A-B or B-A directions.
Off	On	Turnstile arm is in "locked position" in A-B direction and in free position in B-A direction. If the XL3/5 and XL3/6 have a short circuit, passing will be available for A-B direction.
On	Off	Turnstile arm is in "locked position" in B-A direction and in free position in A-B direction. If the XL3/3 and XL3/4 have a short circuit, passing will be available for B-A direction.
On	On	Turnstile arm are in "locked position" in both directions. If the XL3/3 and XL3/4 have a short circuit, passing will be available for B-A direction. If the XL3/5 and XL3/6 have a short circuit, passing will be available for A-B direction

### MAIN CONTROL CARD (SMD BOARD)

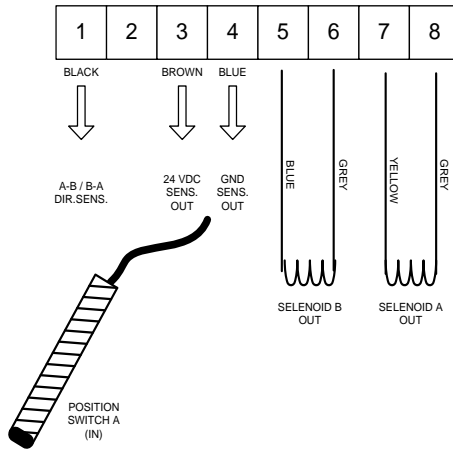




**XL 1 – POWER CONNECTION**

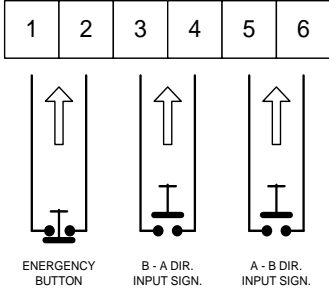


**XL 2 – SWITCH & SELENOID CONNECTION**



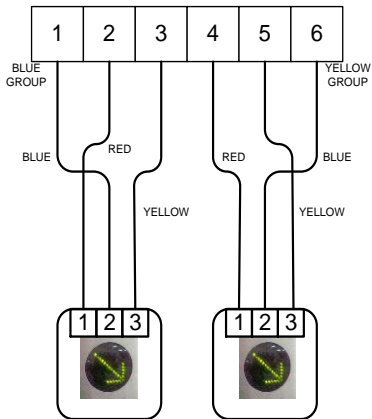


**XL 3 – INPUT CONNECTION**

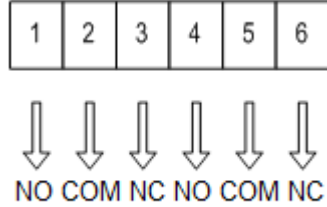


! IF IT WON'T BE  
 USED, PIN1 AND PIN2  
 SHOULD BE  
 SHORTCUT

**XL 5 – LEDBAR CONNECTION**



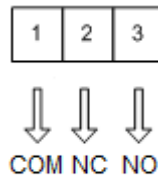
**XL 4 – SPECIAL APPLICATION CONNECTION**



**XL 6 – EMERGENCY SOLENOID**



**XL 7 – BREAK**





**İstanbul 05.01.2004**

**CE COMPLIANCE DECLARATION**

Seyrantepe Mah. Çalışkan Sk. No:9

Seyrantepe - İSTANBUL

Phone : ( 0 212 ) 279 00 06

Fax : ( 0 212 ) 280 38 04

We solemnly declare that name, type, model of product/products with serial numbers listed below is manufactured in full accordance with the required standards and stipulations of Low Voltage Directive **(73/23/EEC; 93/68/EEC)**.

Name and Model of the Product:

**ÇH-TECH Trio Turnstile**

Applicable Standards:

**prEN 12453, EN 50133-1**



## **TSH TEKNİK SERVİS HİZMETLERİ SAN. TİC. A.Ş.**

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### **Regional Service Unit:**

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