

Working the Zero Gravity

Also known as the TECHNO JUMP the ZERO GRAVITY is an amusement ride made by SARTORI based in the ITALY. It comprises 14 ARMS each with 3 seats & the standard SARTORI triple-lock harnesses which includes a redundancy safety belt!



General Information



Manual for equipment of amusement parks Type of attraction: **ZERO GRAVITY - 14 MAXI**

9. DESCRIPTION

9.1. GENERAL

ZERO GRAVITY - 14 MAXI is a rotating ride equipped with n. 14 arms. The arms can move up and down during the stroke while the central column can rotate, clockwise and anti-clockwise, the direction is selected by the operator.

The activation of the rotation is managed electrically through an AC electric motor. The up and down movement of the arms are pneumatically operated through cylinders installed on each arm. N°3 air tanks and n°2 of compressors power the system.

At the end of each arm, there are the passenger units. Each passenger unit has n°3 singol seats with a safety shoulders lapbar.

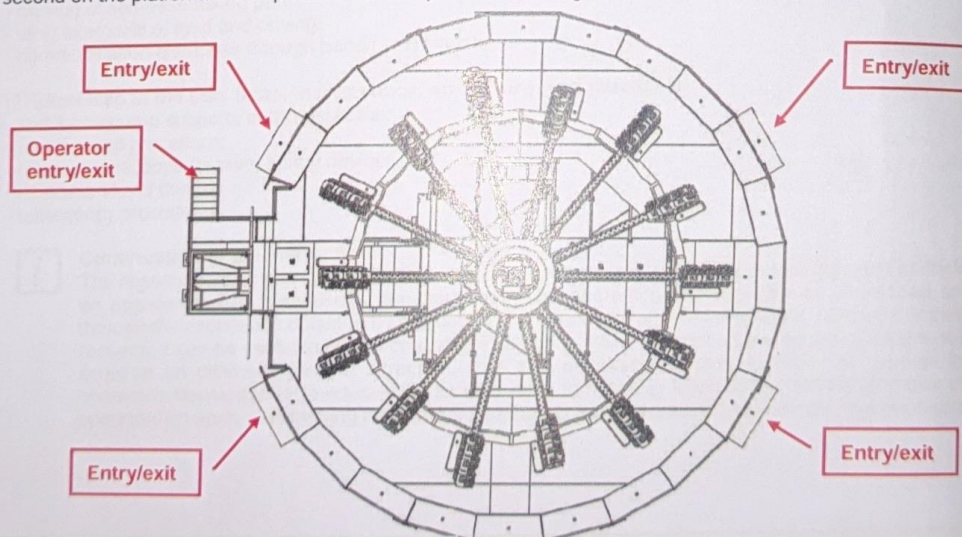
The ride is equipped with fences around the working platform to be installed on site whenever the ride needs to be put into service. N°4 sensorized openings are present in the safety fences, each is equipped with gates. The owner of the ride can select the function and use of each of these (entrance or exit).

All electrical equipment is controlled by the main electrical panel present in a fixed position on the semitrailer, inside the tickets box. The electrical panel also has terminals and protection devices for connection to the electrical supply network. The electrical panel provides electricity for all the ride's equipment. It also contains the motor control and drive logic units.

All cables and piping are permanently installed in the ride structure.

The structure of the ride is installed on a semitrailer so that the attraction is mobile. The hydraulic system installed on the semitrailer activates the up and down movement of the stabilizers, of the cylinders for moving the arms during installation of the rode and the cylinders for lowering the side platforms. Remote controller is present to control the hydraulic movements.

The ride can rotate at the maximum speed of 9 rpm, selected by the operator through the control console commands. A minimum of two operators are required to manage the carousel: the first at the control console, the second on the platform. Both operators must supervise for safety reasons. First at the control panel, the second on the platform. Both operators must supervise for safety reasons.



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Passenger Units & Restraints System



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9.2. PASSENGER UNITS AND RESTRAINT SYSTEM

Below is a description of the main parts of the ride.

9.2.1. PASSENGER UNITS AND RESTRAINT SYSTEMS

A car with n°3 single seats constitutes the passenger unit. There is a single shoulder safety lapbar automatically locked in the operating position and with the closing position controlled by an internal logic system.

The safety handle is covered with soft padding to prevent injuries to passengers due to bumps and/or impacts during the ride.



Figure 9-1: Passenger unit

To close the shoulders safety lapbar, a hydraulic cylinder is provided. The cylinder is electrically actuated by commands of the control panel, so the operator can automatically close the restraint directly from its workstation.

The locking system is a mobile mechanical pin that engages after the restraint has been closed. Two proximity switches verify the pin is engaged and the cylinder closed, continuously.

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Platform & Security Fences



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9.2.2. PLATFORM AND SECURITY FENCES

The ride is equipped with fixed gates and a transit platform.

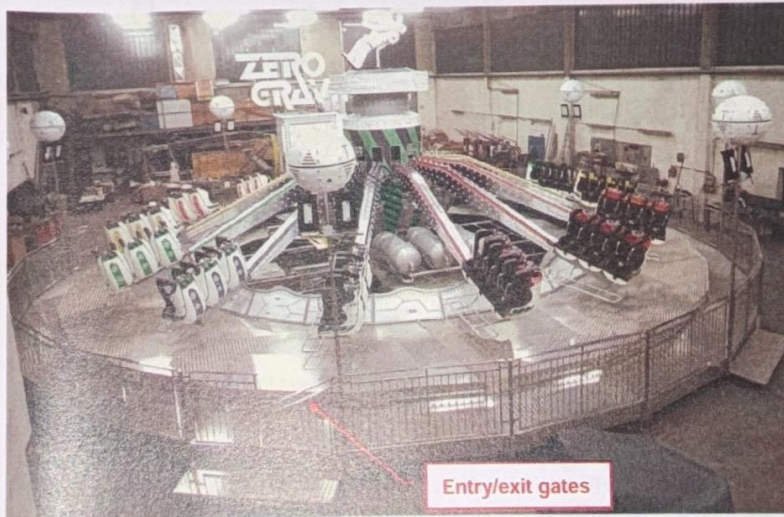
The gates prevent access to the platform by unauthorized persons, avoiding injuries due to the impact with the movement of the arms and passenger units. To get on the platform there are 4 entrances with doors that can be opened manually and controlled by sensors, with the door open the attraction is not enabled to operate.

The entire gate system is supplied with the ride. It is not possible to operate the ride if the gates are not installed and controlled.



Safety fences

Entry/exit gates



Entry/exit gates

Figure 9-4: Fencing system and platform

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Opening of Passenger Access & Exit Points

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The platform and gates delimit the working area of the ride. During the operation of the ride, no one can remain in this area due to the presence of the moving arms. The surface of the platform is anti-slip to avoid injury to people due to the smooth surface.

9.2.3. OPENING OF PASSENGER ACCESS AND EXIT POINTS

To access (or exit) the ride's passenger units, the fence is equipped with n°4 opening points (see figure 9-5 below). To avoid the risk of people entering the platform during the ride's movement, each opening is equipped with sensorized gates. The operator must ensure that all gates are closed before the ride is put into operation.

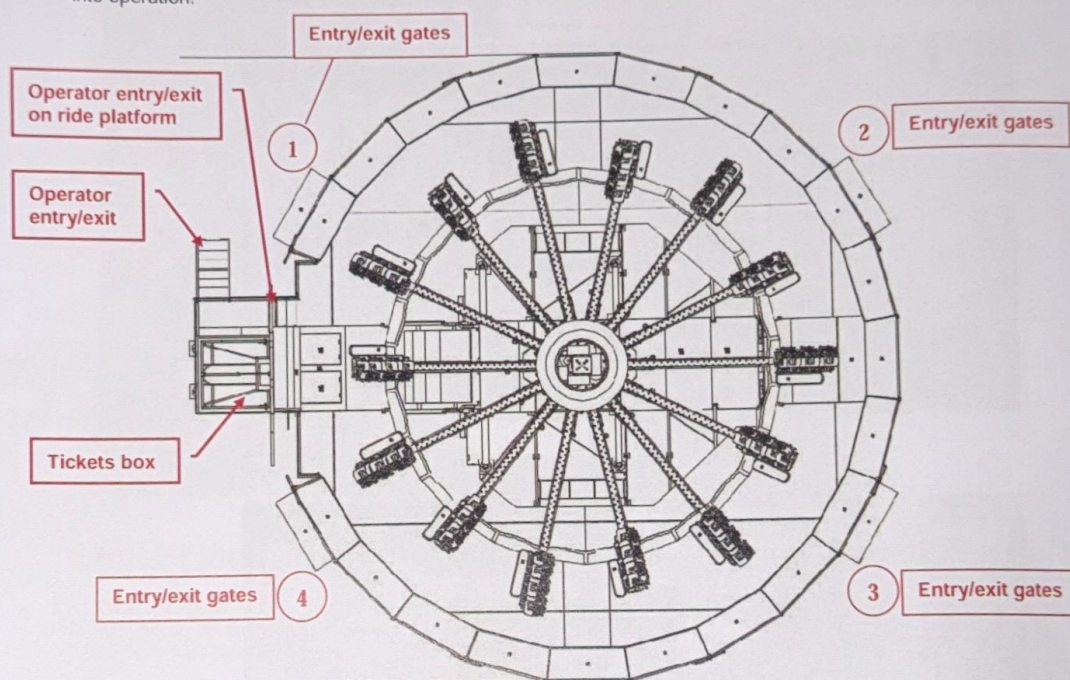


Figure 9-5: Gate opening points

All entry/exit gates are equipped with manual closing and sensorized:

- Inhibits the ride from starting if the gates have not been closed;
- Puts the ride into emergency mode (all movements are stopped) in the event that a gate is opened during the ride.



ATTENTION! DURING THE RUN DO NOT LOCK THE GATES WITH FIXED MEANS AS CHAINS AND PADLOCKS. THEY CAN MAKE THE INTENDED EVACUATION PROCEDURE INEFFECTIVE IN CASE OF EMERGENCY.

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Employee Responsibilities

Prior to beginning your shift, when you first arrive and enter your area of responsibility, you can check the race areas for tripping hazards and that fences are assembled correctly and securely. Once inside the ride fences, you should do a visual check of the deck to make sure it is free from anything that should not be there. Check all seats, harnesses and seat belts for any wear or damage. Please inform the operator of anything that looks unusual.

As a deck attendant, you have the responsibility for the safe and efficient operation of loading and unloading of the patrons. You must begin by always checking all patrons meet the minimum height requirement of 120cm with a responsible adult and 130cm to ride unattended. You must plan to load the ride evenly according to the number of patrons waiting to ride. You should load the cars in the opposite sides of the ride so that the weight is evenly distributed. You can in quiet times load from one entry gate and in busy times with the help of additional attendants, load from two gates on each side of the ride.

Once you open the entry gate and collect the tickets you can direct the groups of 2 or 3 patrons to the colour and number of their assigned car. Once you have allowed entry for the maximum patrons for that ride you can close the entry gates and signal to the operator that the gates are closed. You can now begin to close the harnesses for the ride. If there are 2 attendants, then you can close the cars 1-7 and the second attendant can close the cars 8-14.

You must ensure that all seat belts are fitted and locked into the slot. The operator will communicate to deck staff if any cars are showing as (NOT LOCKED) and let you know which number car to check and lock. Once operator signals locked then you can go outside the gate and lock it ready for the ride to operate.

You must always face the ride and be in clear view of the operator so you can signal to him if needed to raise alarm. The use of earpieces, mobile phones, smart watches are all strictly prohibited while you are working as a deck attendant. You must not eat or drink while on your shift, you can have a water bottle with you outside the gate. You must not be distracted by visiting friends or engage with passers-by as this can distract your attention from the ride operation.

As the ride attendant you have direct contact with the patrons. You must be aware not to let the patrons ride with the following hazards as per the fun and safety guide:

- No eating or drinking
 - No bags or any items
 - No phones
 - No long or bulky clothing including scarves
 - Physically disabled
 - Mentally disabled
 - Patrons under the influence of drugs or alcohol
 - People with heart conditions
 - Pregnant women
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