

TEKNOFEST ROCKET COMPETITION LAUNCH RAIL

All rockets that reach the launch round of the Teknofest Rocket Competition will be launched using the Teknofest Launch Rail. The definition of the Launch Rail in the contract is given below:

“LAUNCH RAIL: *The launch mast from which the rocket will be launched is inclined at a set angle to the ground, in accordance with the competition arrangements.”*

Since Teknofest 2021, a launch rail that enables automatic lifting and lowering has been used in the competition. **Figure1** and **Figure 2** show the launch rail in its horizontal and vertical positions, together with dimensions.

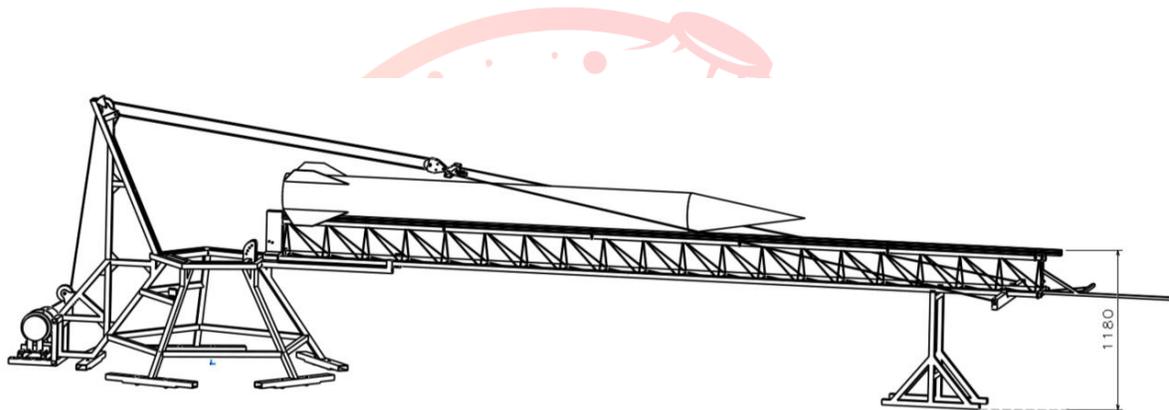
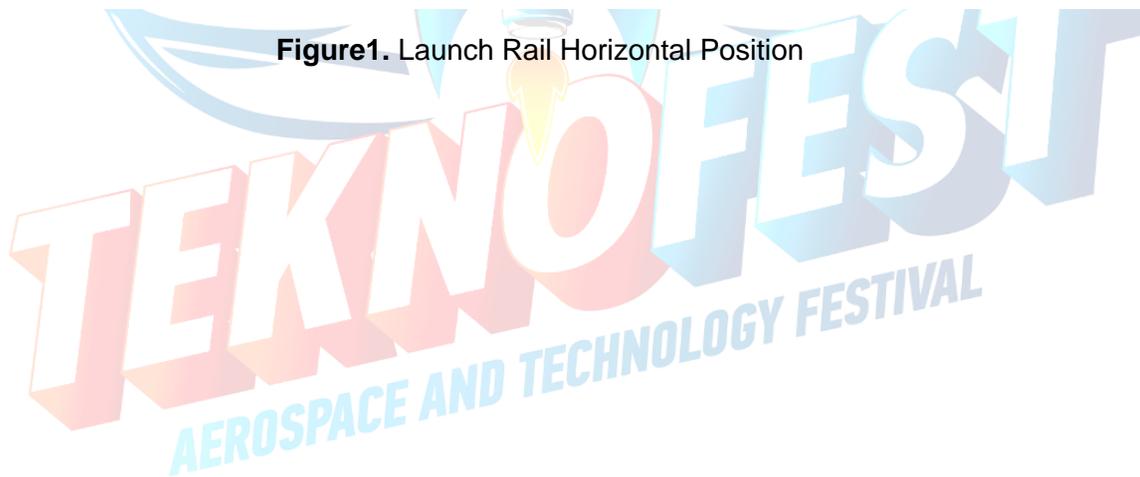


Figure1. Launch Rail Horizontal Position



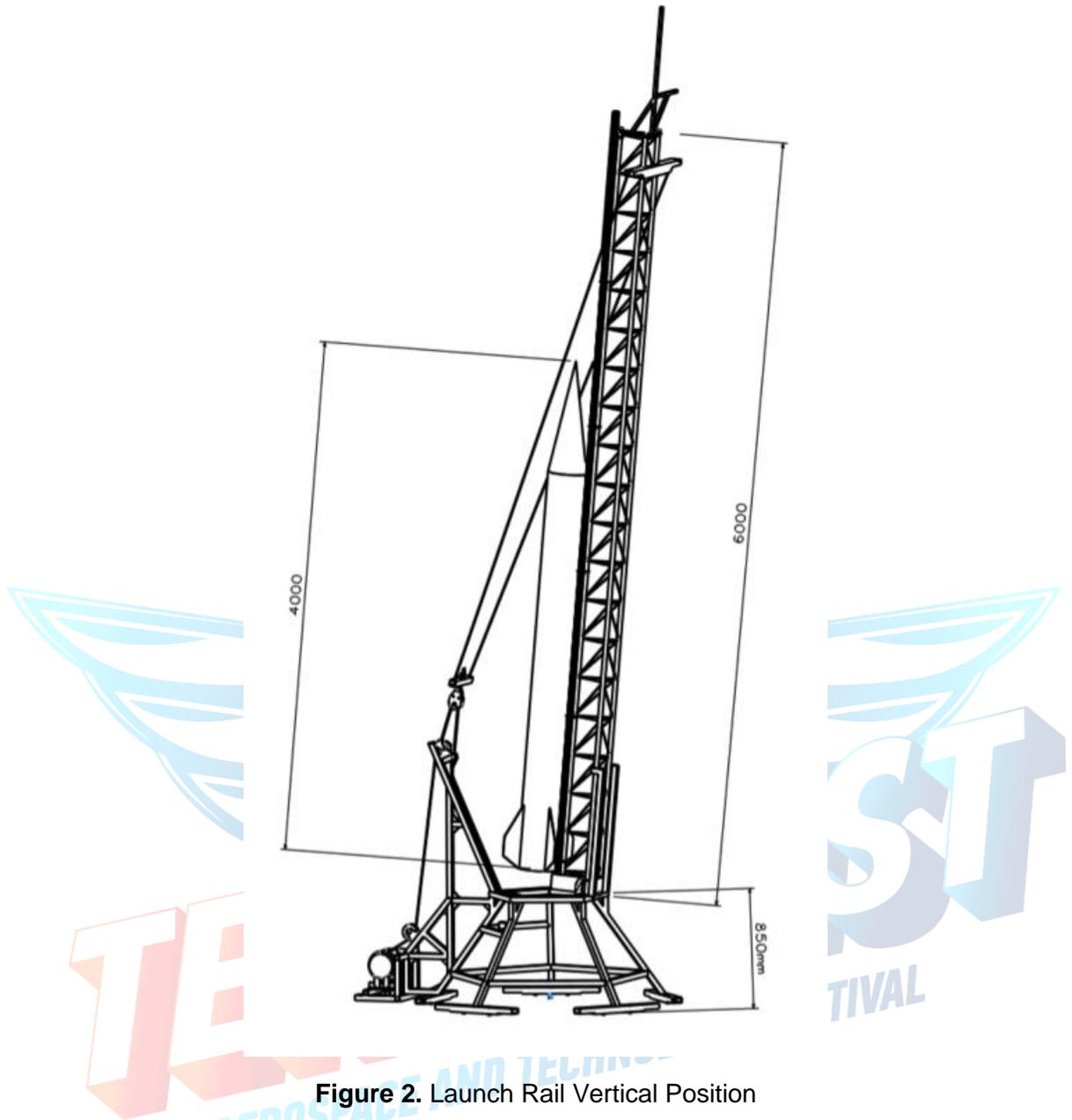


Figure 2. Launch Rail Vertical Position

Competitors will set their rockets on the ramp using the Rail Button. The definition of the Rail Button, as stated in the contract, is given below:

“RAIL BUTTON: A manual component that is mechanically attached to the rocket’s frame and that ensures the rocket is positioned linearly on the launch rail. The rocket frame is mounted with two rail buttons on a single line. The teams are responsible for the integration of the rail buttons onto the rocket frame. The placement of the rail buttons will be checked by the competition referees.”

Competitors are not allowed to manufacture their own Rail Buttons. The Rail Buttons will be delivered to the competitors by the competition committee on the Installation Day of the competition with a letter of commitment. The Rail Buttons have been designed to be fixed using an **“M4 Countersunk Bolt”**.

M4 Countersunk Bolts are not provided by the Competition Committee. The teams must procure such bolts before the integration/installation activities (before arriving at the Aksaray Shooting Range). An isometric view of the Rail Button is presented in **Figure 3**, with a cross-sectional view and dimensions detailed in **Figure 4**.

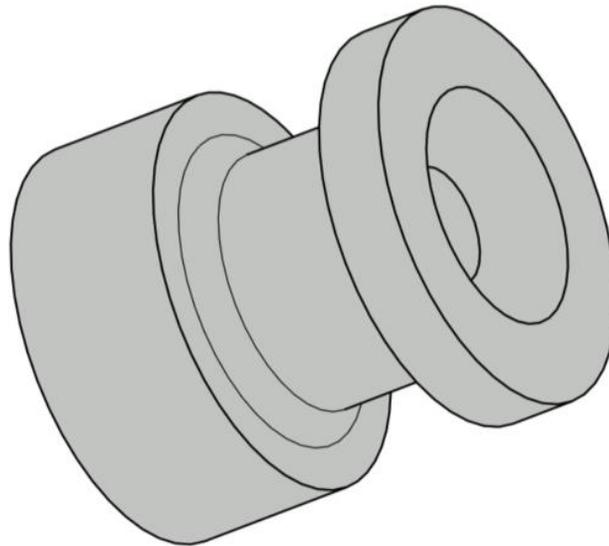


Figure 3. Rail Button Isometric View

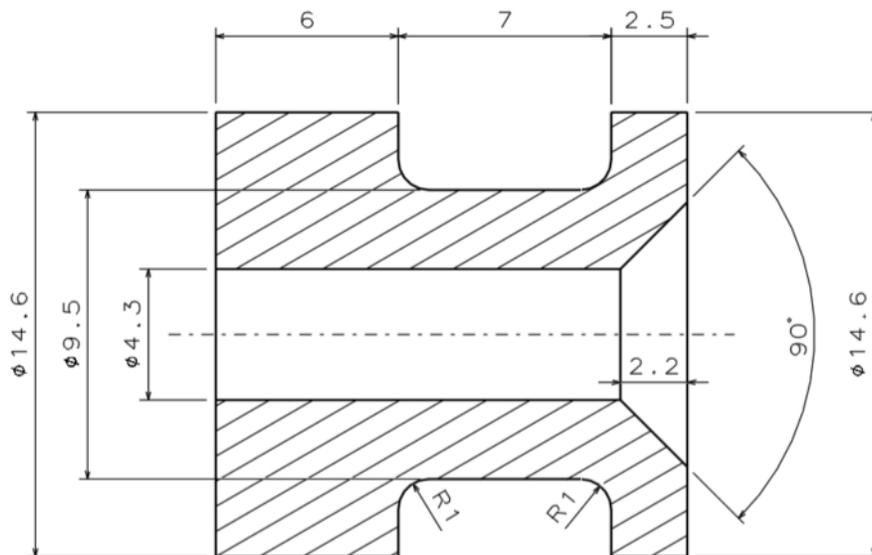


Figure 4. Rail Button Cross-Sectional View

The mounting of the Rail Button onto the rocket using an M4 Countersunk Bolt is depicted in **Figure 5**. The mounting point of the Rail Button shall not be in line with any projections, such as fins, antenna, etc. along the longitudinal axis of the rocket. All teams are expected to consider

these issues carefully, and to ensure that their rocket is properly mounted on the ramp, taking into account all requirements of the competition contract.

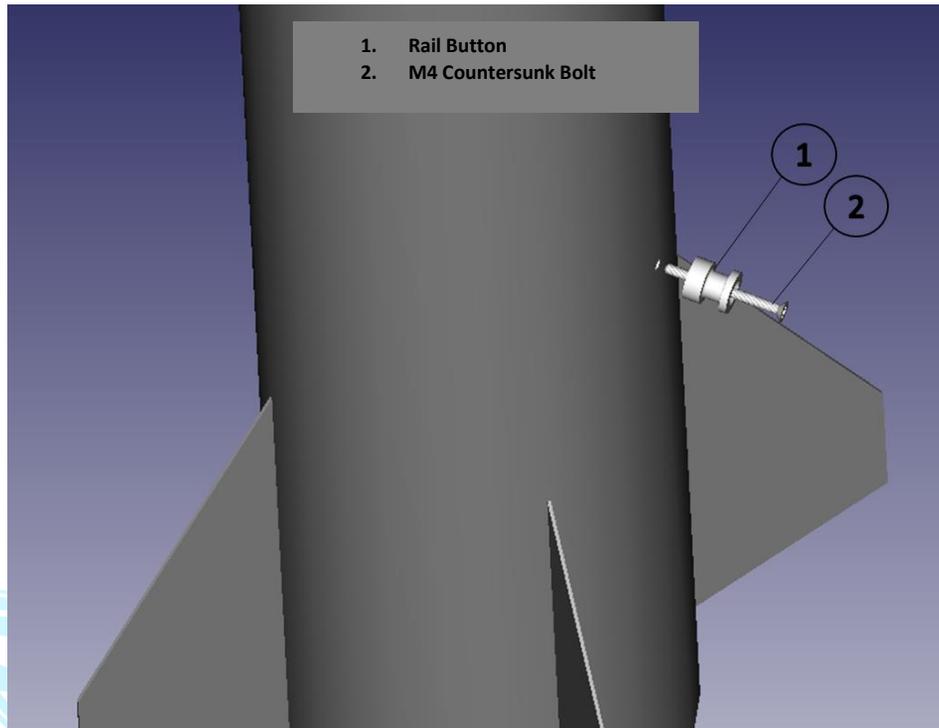


Figure 5. Mounting of the Rail Button on the Rocket

The position of the rail button should permit the easy mounting of the rocket on the ramp. The mounting of the rocket on the ramp is entirely the responsibility of the competitors. A model of the ramp that will be used for the launch can be found in the integration/installation area, on which the competitors can test the suitability of their rockets.

The position of the rocket on the launch rail and the rail button are shown in **Figure6** as an example.

AEROSPACE AND TECHNOLOGY FESTIVAL

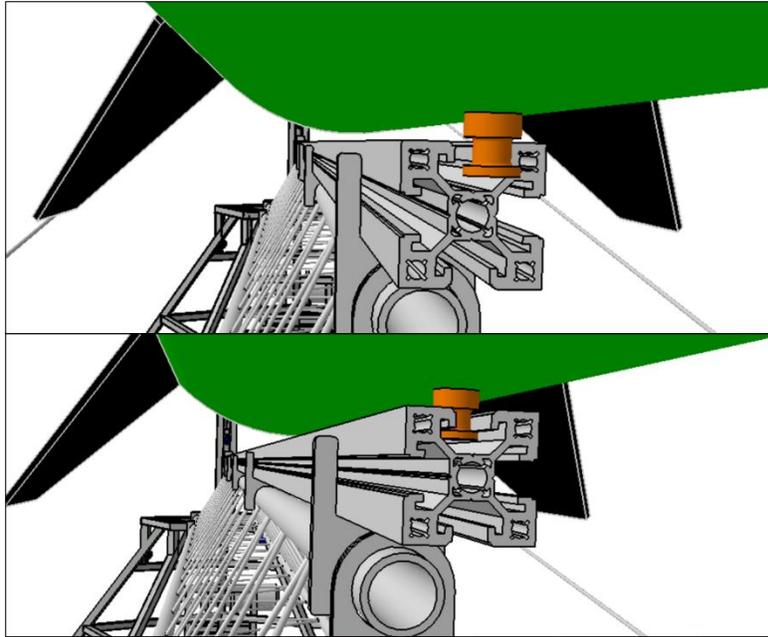


Figure6. Position of a Rocket Equipped with a Rail Button on a Launch Rail

When mounted on the ramp, the rocket shall be as shown in **Figure 7**. In the related image, the Rail Buttons are indicated with a red circle.

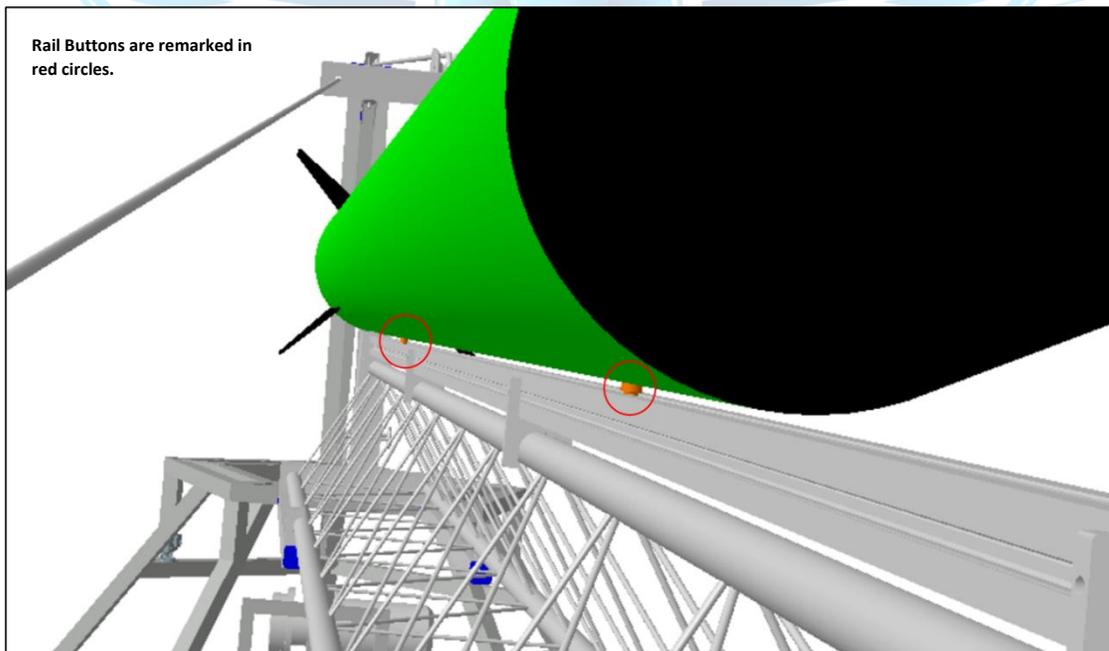


Figure 7. Image of Rocket Ready for Launch (Bottom View)