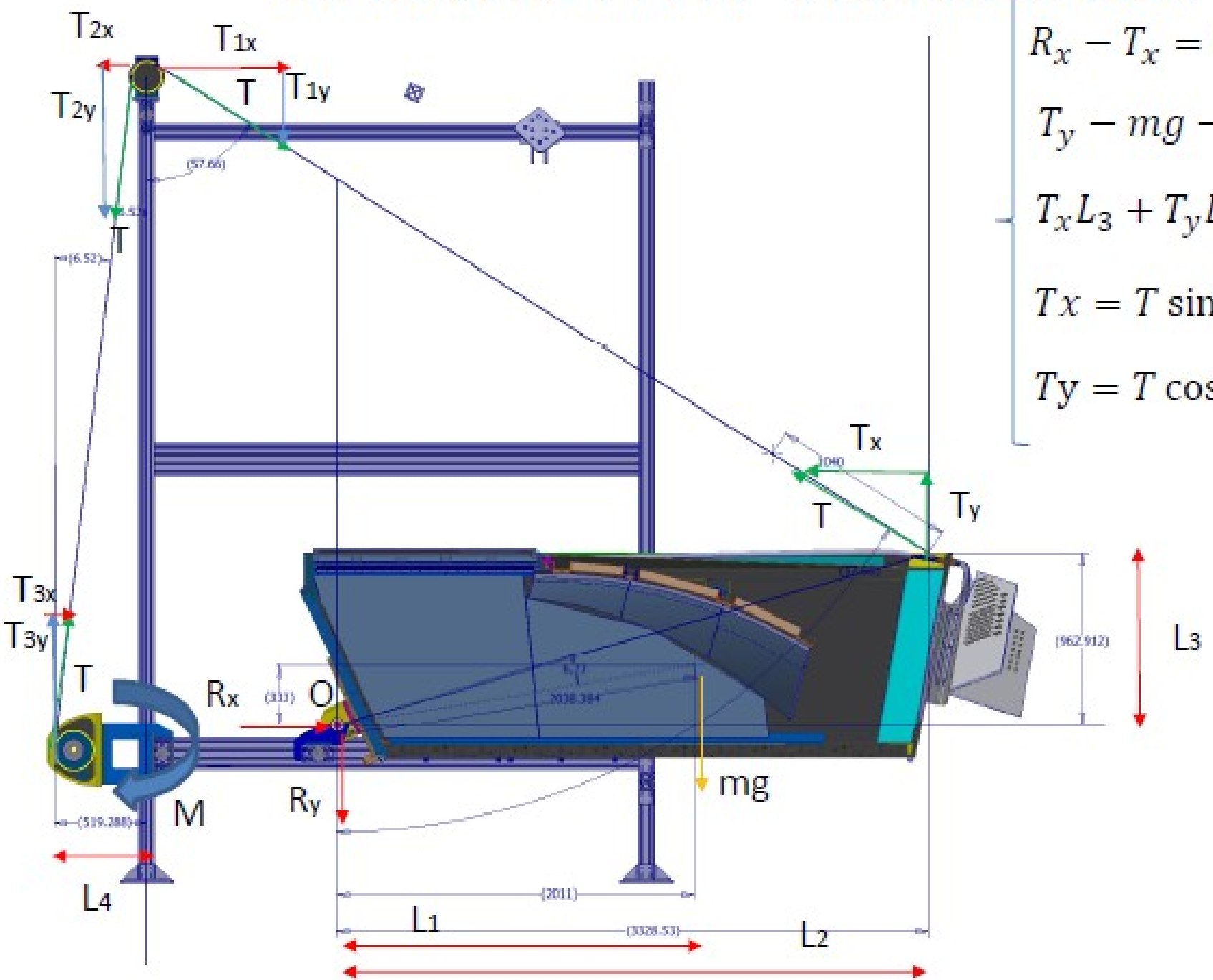
GEOMETRY: horizontal



$$R_x - T_x = 0$$

$$T_y - mg - R_y = 0$$

$$T_x L_3 + T_y L_2 - mgL_1 =$$

$$Tx = T \sin\theta$$

$$Ty = T \cos\theta$$

Force and Torque Equilibrium: **RICH assembly completed + stiffening frame**

$$\begin{cases} R_x - T_x = 0 \\ T_y - mg - R_y = 0 \\ T_x L_3 + T_y L_2 - mg L_1 = 0 \\ Tx = T\sin\theta \\ Ty = T\cos\theta \end{cases} \qquad \begin{cases} R_x = T_x \\ R_y = T_y - mg \\ T\sin\theta\, L_3 + T\cos\theta\, L_2 - mg L_1 = 0 \end{cases}$$

$$\begin{cases} R_x = T_x \\ R_y = T_y - mg \\ T = \dfrac{mgL_1}{L_3\sin\theta + L_2\cos\theta} \\ Tx = T\sin\theta \\ Ty = T\cos\theta \end{cases} \qquad \begin{cases} R_x = 6549\ \text{N} \\ R_y = 4146 - 10000 = -5854\ \text{N} \\ T = \dfrac{1000*10*2011}{963\sin 57.66 + 3329\cos 57.66} = \mathbf{7751}\ \text{N} \\ Tx = 7751\sin 57.66 = 6549\ N \\ Ty = 7751\cos 57.66 = 4146\ N \end{cases}$$