RBI ENCORE RB0600 INDOOR DUAL FUEL UNIT - SEISMIC ANCHORAGE (ASCE 7-16/IBC 2000)
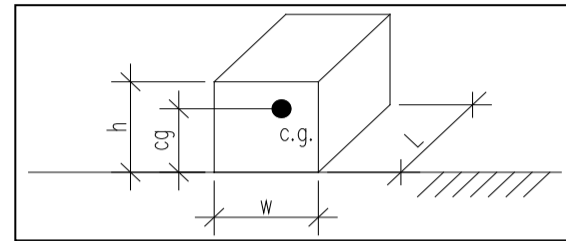### Slab on Grade Applications Only

Equipment Parameters:

weight, W_p = **551.25** LBS.
w = **26.97** in.
L = **39.38** in.
h = **66.09** in.
cg = **31.03** in.

Seismic Parameters:

S_S = **1.800** ASCE 7-16 Figure 22-1 using 84th percentile value

Site Class = D

a_p = **1.000** (ASCE 7-16 Table 13.6-1)

I_p = **1.500** (ASCE 7-16 Table 13.1.3)

Seismic Use Group = IV

R_p = **1.500** (Default value for Anchorage per ASCE 7-16 13.6-1)
F_a = **1.032** (ASCE 7-16 Table 11.4-1)
$S_{MS} = F_a*S_s$ = **1.858** (ASCE 7-16 Eqn. 11.4-1)
$S_{DS} = 2/3*S_{MS}$ = **1.239** (ASCE 7-16 Eqn. 11.4-3)

Seismic Design Category = **D**

Seismic Force:

$F_p = (0.4*a_p*S_{DS}*W_p)/(R_p/I_p)$ = **273.2** LBS. (ASCE 7-16 Eqn. 13.3-1)
Upper Limit: $F_{pMAX} = 1.6*S_{DS}*I_p*W_p$ = **1639.1** LBS. (ASCE 7-16 Eqn. 13.3-2)
Lower Bound: $F_{pMIN} = 0.3*S_{DS}*I_p*W_p$ = **307.3** LBS. (ASCE 7-16 Eqn. 13.3-3)
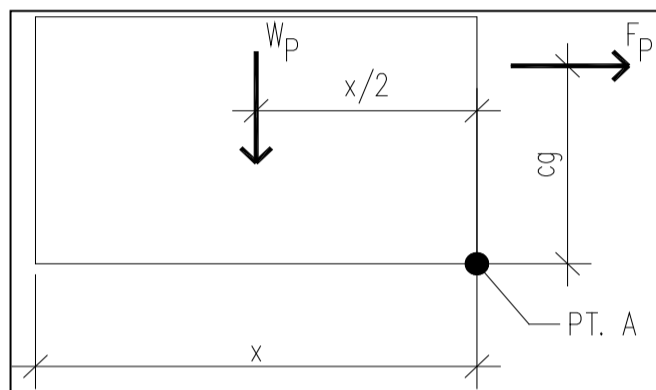
$F_{p, DESIGN}$ = **307.3** LBS.

RBI ENCORE RB0600 INDOOR DUAL FUEL UNIT - SEISMIC ANCHORAGE (ASCE 7-16/IBC 2000)

Design Anchorage Force:

Horizontal Shear Force Per Anchor:

$$R_H = F_p/4 = \boxed{76.8} \text{ LBS.}$$

Overturning Resistance About Point A:

$$x = \boxed{39.38} \text{ in.}$$
$$x = \text{lesser of L or h}$$

$$M_{OT} = F_p*cg = \boxed{9536.6} \text{ LBS.-FT.}$$

$$M_{RES} = W_p*x/2 = \boxed{10854.1} \text{ LBS.-FT.} \quad \textbf{OK, No Uplift}$$

Vertical Acceleration:
assume $\rho = 1.0$

$$Ev = \rho*Fp + 0.2*S_{DS}*W = \boxed{213.4} \text{ LBS. (IBC Eqn. 1617.1.1)}$$

$$R_{VNETUP} = (M_{OT}/(2*x))-(W_p/4)+(Ev/4) = \boxed{36.6} \text{ LBS.} \quad \textbf{No Uplift}$$

Force Summary Per Corner:
Component Anchorage:

$$R_{HNET} = \boxed{76.8} \text{ LBS.}$$
$$R_{VNETUP} = \boxed{36.6} \text{ LBS.}$$

Anchors Embedded in Concrete or CMU:

$$1.3*R_p*R_{HNET} = \boxed{149.8} \text{ LBS. (IBC 1617.1.7 \#2)}$$
$$1.3*R_p*R_{VNETUP} = \boxed{71.4} \text{ LBS. (IBC 1617.1.7 \#2)}$$