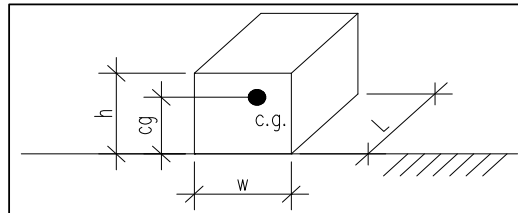## DOMINATOR 1500 BOILER SEISMIC ANCHORAGE (ASCE 7-05)
Slab on Grade Applications Only

Equipment Parameters:

weight, W_p = **862.00** LBS.
w = **77.875** in.
L = **29.313** in.
h = **37.875** in.
cg = **17.140** in.

Seismic Parameters:

S_S = **1.798** ASCE 7-05 Figure 22-1)   Site Class = B

a_p = **1.000** (ASCE 7-05 Table 13.6-1)

Ip = **1.000** (ASCE Table 11.5-1)   Seismic Use Group = II

R_p = **2.500** (Default value for Anchorage per ASCE 7-05 Table 13.6-1)

F_a = **1.000** (ASCE 7-05 Table 11.4-1)

$S_{MS} = F_a*S_s$ = **1.798** (ASCE 7-05 Eqn. 11.4-1)

$S_{DS} = 2/3*S_{MS}$ = **1.199** (ASCE 7-05 Eqn. 11.4-3)

Seismic Design Category = **D**

Seismic Force:

$F_p = (0.4*a_p*S_{DS}*W_p)/(R_p/I_p)$ = **165.3** LBS. (ASCE 7-05 Eqn. 13.3-1)

Upper Limit: $F_{pMAX} = 1.6*S_{DS}*I_p*W_p$ = **1653.2** LBS. (ASCE 7-05 Eqn. 13.3-2)

Lower Bound: $F_{pMIN} = 0.3*S_{DS}*I_p*W_p$ = **310.0** LBS. (ASCE 7-05 Eqn. 13.3-3)
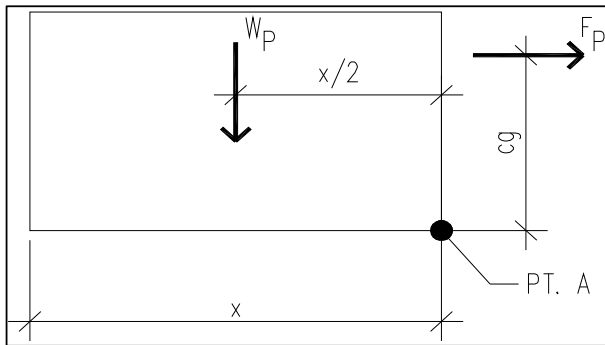
$F_{p, DESIGN}$ = **310.0** LBS.

DOMINATOR 1500 BOILER SEISMIC ANCHORAGE (ASCE 7-05)

Design Anchorage Force:

Horizontal Shear Force Per Anchor:

$$R_H = F_p/4 = \boxed{77.5} \text{ LBS.}$$

Overturning Resistance About Point A:

$$x = \boxed{29.31} \text{ in.}$$
x = lesser of L or W

$$M_{OT} = F_p * cg = \boxed{442.7} \text{ LBS.-FT.}$$

$$M_{RES} = W_p * x/2 = \boxed{1052.8} \text{ LBS.-FT.} \quad \textbf{OK, No Uplift}$$

Vertical Acceleration: assume $\rho = 1.0$
$$E_v = \rho * F_p + 0.2 * S_{DS} * W = \boxed{284.1} \text{ LBS. (ASCE Section 13.3.1)}$$

$$R_{VNETUP} = (M_{OT}/(2*x)) - (W_p/4) + (E_v/4) = \boxed{0.0} \text{ LBS.} \quad \textbf{No Uplfit}$$

Force Summary Per Corner:
     Component Anchorage:

$$R_{HNET} = \boxed{77.5} \text{ LBS.}$$
$$R_{VNETUP} = \boxed{0.0} \text{ LBS.}$$

     Anchors Embedded in Concrete or CMU:

$$1.3 * R_p * R_{HNET} = \boxed{251.9} \text{ LBS.}$$
$$1.3 * R_p * R_{VNETUP} = \boxed{0.0} \text{ LBS.}$$