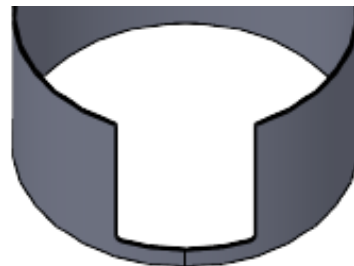


Skirt Data:

	SA-36	Material
36,000	F_y [psi]	- yield stress at design temperature
29,000,000	E [psi]	- elasticity at design temperature
30.00	D_o [in]	- skirt outside diameter
0.1875	t [in]	- skirt thickness
14.00	L [in]	- skirt length
12.00	W [in]	- width of large opening

Misc. Data:

4,727.56	W_t [lbs]	- vessel weight
0.3124	r [in]	- radius of gyration
0.204	I_x [in ⁴]	- moment of inertia



ISOMETRIC VIEW

Leg Calculations: AISC manual ninth edition

1	D [in] = $D_o - (2 \cdot t)$	<i>skirt inside diameter</i>	$30 - (2 \cdot 0.188) =$	29.6250
2	R [in] = $D/2$	<i>inside radius</i>	$29.625/2 =$	14.8125
3	Θ [Rad] = $2 \cdot (\text{ASIN}((W/2)/(D/2)))$	<i>opening angle</i>	$2 \cdot (\text{ASIN}((12/2)/(29.625/2))) =$	0.8341
4	dΘ [in] = $(D/2) \cdot (\text{RAD}(90) - \Theta)$	<i>arc length of support</i>	$(29.625/2) \cdot (\text{RADIANS}(90) - 0.834) =$	10.9124
5	A [in ²] = $t \cdot d\Theta$	<i>area of support</i>	$0.188 \cdot 10.912 =$	2.0461
6	I [in] = $L - 1.50$		$14 - 1.5 =$	12.5000
7	P₁ [lbf] = $W_t / (4 + 48 \cdot 0 / (4 \cdot D))$	<i>axial end load</i>	$4727.56 / (4 + 48 \cdot 0 / (4 \cdot 29.625)) =$	1,181.8900
8	a [in] = $d\Theta/2$	<i>arc length</i>	$10.912/2 =$	5.4562
9	C_y [in] = $2 \cdot R \cdot \text{SIN}(a/(2 \cdot R))$	<i>neutral axis distance Y-Y</i>	$2 \cdot 14.813 \cdot \text{SIN}(5.456/(2 \cdot 14.813)) =$	5.4254
10	C_x [in] = $((2 \cdot R - \text{SQRT}((4 \cdot R^2) - C_y^2))/2) + t$	<i>neutral axis distance X-X</i>		
11			$((2 \cdot 14.813 - \text{SQRT}((4 \cdot 14.813^2) - 5.425^2))/2) + 0.188 =$	0.4380
12	Ecc [in] = C_x		$0.438 =$	0.4380