PROGRAM TO DESIGN A PAD EYE TYPE LIFTING LUG v.02

COMPANY: [   ]   **PROJECT:** [   ]

ITEM NUMBER: [   ]

[Crosby G2130x85 ▼]   Select a metric shackle from the lookup table based on the force on the lug or click the SHACKLE button to enter your own

Value	Unit	Description	Note
2.88	in	Shackle Inside Width at Pin	
2.00	in	Shackle Eye Diameter	
2.04	in	Shackle Pin Diameter	
2.20	in	Lug Pin Hole Diameter	Recommend hole be 0.13" or > than shackle pin dia.
3.50	in	Lug Radius	
1.60	in	Lug Plate Thickness	
7.50	in	Lug Plate Width at Base	Minimum value of 2*radius of lug
0.00	in	Lug Pad Thickness	Input zero if pads are not required
0.00	in	Lug Pad Radius	Input zero if pads are not required
2.00	in	Lug Eccentricity	
24.00	kips	Force on the Lug	
60.00	deg	Angle of the Force on the Lug	Measured from the horizontal
36.00	ksi	Yield Stress of the Lug Material	Fy
14.85	kips/in	Allowable Force on the Weld	Use 10.91 for LH60 or 14.85 for LH70
1.80		Impact factor, IF	Recommend that a minimum 1.8 impact factor be used

OUTPUT:

Checking combined stress of the lug plate

Value	Unit	Description
12.00	in^2	Area of Lug Plate at Base
15.00	in^3	Section modulus of the lug plate at the base
2.88	ksi	Bending stress of the lug plate fb, actual
3.12	ksi	Tension stress of the lug plate ft, actual
21.60	ksi	Allowable bending and tension stress, Fb & Ft
0.28		Combined stress of the lug plate. Must be less than 1.0

Checking the lug weld size, with the weld treated as a line

Value	Unit	Description
15.00	in	Area of the weld
18.75	in^2	Section modulus of the weld
5.01	kips/in	Resultant Force on the weld
0.34	in	Minimum weld size

Checking bearing at the pin hole

Value	Unit	Description
13.24	ksi	Bearing stress of the lug without pads
0.00	ksi	Bearing stress with pads attached
32.40	ksi	Allowable bearing stress
0.00	kips	Load per pad
0.00	in	Pad weld size, min.

Checking end area of the lug across the pin hole

| 2.67 | in^2 End area required across the pin hole |

| 3.45 | in   Maximum effective lug radius. Used to calculate the max. allowable end area |

| 5.63 | in^2 Maximum effective end area |

Checking end area of the lug past the pin hole

| 1.78 | in^2 Area required past the pin hole |

| 3.84 | in^2 Actual end area |

| 3.75 | in^2 Maximum allowable end area |

Calculated by www.maximumreach.com   11/11/2017