

CAD-011545

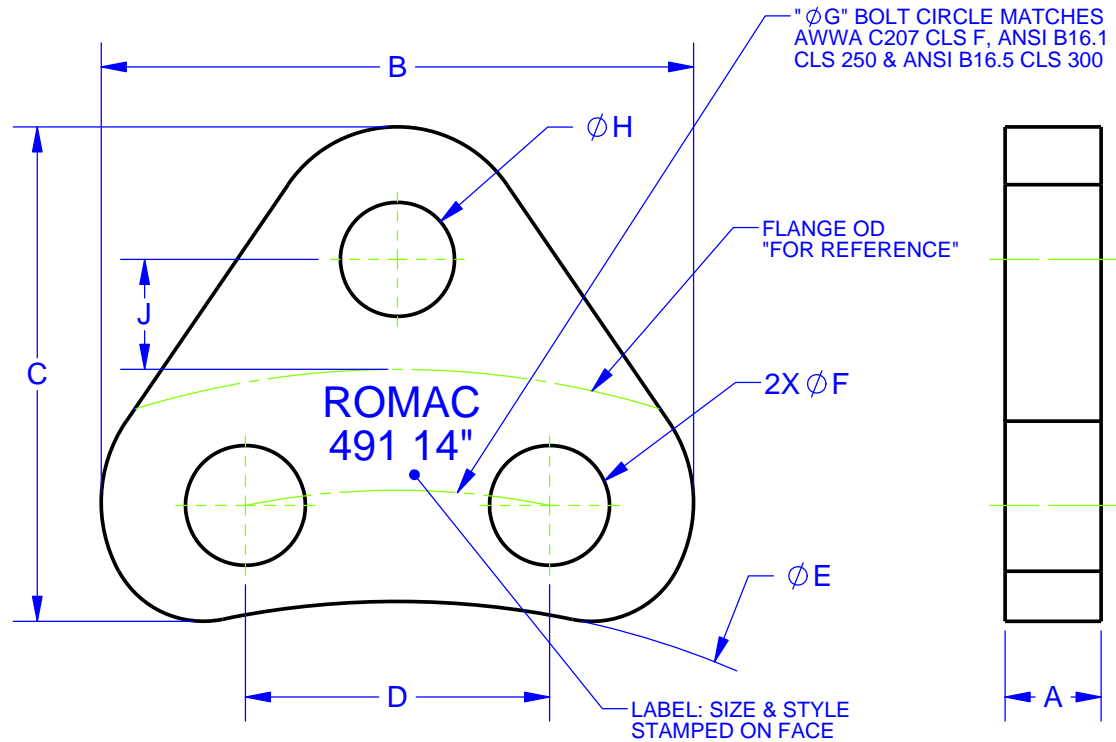
LUG SIZE	TIE ROD QUANTITY 300 PSI	TIE ROD SIZE	LUG THICKNESS	LUG WIDTH	LUG HEIGHT	FLANGE HOLE CHORD LENGTH	LUG ID	FLANGE BOLT HOLE	BOLT CIRCLE	TIE ROD BOLT HOLE	FLANGE OD TO TIE ROD BC	WGT. EA (LBS)
			A	B	C	D	E	ØF	ØG	ØH	J	
14	4	1	1	6.17	5.15	3.17	18.00	1.25	20.25	1.19	1.07	5.3
16	4	1	1	7.02	5.40	3.52	20.13	1.38	22.50	1.19	1.07	6.3
18	6	1	1 1/4	6.73	5.47	3.23	22.38	1.38	24.75	1.19	1.07	7.7
20	7	1	1 1/4	7.02	5.60	3.52	24.63	1.38	27.00	1.19	1.07	8.2
24	6	1 1/4	1 3/4	8.18	6.82	4.18	28.88	1.63	32.00	1.44	1.25	16.5
30	9	1 1/4	1 3/4	8.89	6.82	4.39	35.88	1.88	39.25	1.44	1.25	17.7
36	9	1 1/2	2	9.51	7.79	4.51	41.88	2.13	46.00	1.69	1.50	24.7
42	12	1 1/2	2	9.60	7.90	4.60	48.75	2.13	52.75	1.69	1.56	25.3
48	12	1 3/4	2	9.77	8.38	4.77	56.80	2.13	60.75	1.94	1.84	27.4

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE IN PDM, UPDATED TO MATCH FAB DRAWING, ADDED NOTE 11.	4/28/14	PNN
1	UPDATED NOTES TO CLARIFY ADDITIONAL LUG QUANTITIES ABOVE 300 PSI.	1/25/2016	N THOGERSEN

FOR CUSTOMER USE

NOTES:

- LUG DESIGN ALLOWS MAXIMUM CLEARANCE BETWEEN PIPE OR FLANGE HUB OD AND LUG. CUSTOMER TO VERIFY LUG CLEARANCE OVER FLANGE HUB FOR THREADED DI FLANGES. SEE DIAMETER "E".
- DIMENSION "J" IS FROM OD OF FLANGE TO TIE ROD BOLT CIRCLE.
- EACH TIE ROD REQUIRES 2 LUGS, ONE LOCATED ON THE OUTSIDE OF EACH FLANGED CONNECTION.
- COATING: BARE, SHOPCOAT PAINT, OR NSF 61 FUSION BONDED EPOXY, BLACK
- MIN. TIE ROD MATERIAL = ASTM A193 B7, (ALLOY STEEL), B8 (304 SS), OR B8M (316 SS)
- PIPE THRUST (LBS) = 0.7854 X PRESSURE X [PIPE OD]<sup>2</sup>
- TIE ROD QUANTITIES LISTED IN TABLE WILL ACCOMMODATE 300 PSI MAX.
- HIGHER PRESSURES WILL REQUIRE ADDITIONAL TIE RODS.  
QUANTITY = PIPE THRUST / ALLOWABLE LUG THRUST
  - 1" THK LUG: 15000 LBS PIPE THRUST.
  - 1-1/4" THK LUG: 23,500 LBS PIPE THRUST.
  - 1-3/4" THK LUG: 35500 LBS PIPE THRUST.
  - 2" THK LUG: 47100 LBS PIPE THRUST
- LUG MATERIAL: STEEL A36, STAINLESS A240 TYPE 304 OR 316
- SPECIFY TIE ROD LENGTH WHEN ORDERING. NUTS REQUIRED PER TIE ROD, (DOUBLE NUT CONFIGURATION.) TIE RODS SOLD SEPERATELY, SPECIFY LENGTH WHEN ORDERING.
- FLANGE BOLTS SHALL BE GRADE 8 OR BETTER.



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		<p>DRAWN</p> <p>Peter Nielsen</p> <p>04/28/2014</p>		<p>APPROVED</p> <p>Niels Thogersen</p> <p>5/6/2014</p>		<p>DWG. NO.</p> <p>CAD-011545</p>		<p>SIZE</p> <p>A</p>	<p>REV. NO.</p> <p>1</p>	<p>SCALE</p> <p>1:2</p>	<p>SHEET</p> <p>1 OF 1</p>

MODEL NAME: HARNESS LUG - 14 THRU 48 - ANSI CLS 250 AND 300 - STYLE 491

MODEL CAD #: CAD-007115

LEGACY DRAWING #: B3019-A

AUTHOR: Peter Nielsen

CONFIGURATION NAME:14"

DRAWING FILE NAME:  
HARNESS LUG - 14 THRU 48 - ANSI CLS 250 & 300 - AWWA CLS F - STYLE 491 - CUSTOMER DRAWING