



NOTES:

1. THE MIDDLE RING LENGTH OF THE FLEXIBLE COUPLING SHALL BE AS SPECIFIED.
2. THE CONTRACTOR SHALL DETERMINE THE LENGTH "J" (COUPLING BOLT LENGTH) FROM MANUFACTURER'S CATALOGS USING THE SPECIFIED MIDDLE RING LENGTH.
3. "G" = MANUFACTURER'S RECOMMENDED SPACE BETWEEN ENDS OF PIPE.
4. "C" = J+Z+1 INCH, (ROUND THIS VALUE UP TO NEXT EVEN INCH), MINIMUM. (FOR Z DIMENSIONS, SEE LUG SCHEDULE.)
5. TIE ROD LENGTH = 2L+2C+G.

NOTES:

1. THE MIDDLE RING LENGTH OF THE FLEXIBLE COUPLING SHALL BE AS SPECIFIED.
2. THE CONTRACTOR SHALL DETERMINE THE LENGTH "J" (COUPLING BOLT LENGTH) FROM MANUFACTURER'S CATALOGS USING THE SPECIFIED MIDDLE RING LENGTH.
3. G = MANUFACTURER'S RECOMMENDED SPACE BETWEEN ENDS OF PIPE.
4. C = J+Z+1 INCH, (ROUND THIS VALUE UP TO NEXT EVEN INCH), MINIMUM. (FOR Z DIMENSIONS, SEE LUG SCHEDULE.)
5. D = 2C+6 INCHES.
6. TIE ROD LENGTH = 2L+2C+2G+D.
7. SIMILAR, TO TYPICAL THRUST TIE DETAIL EXCEPT AS NOTED.

LUG SCHEDULE

ROD DIA	LUG TYPE	T	W	X	Y	Z	HB	E	HF	L
5/8	I	3/8	1-3/8	4-1/16	4-1/2	3-3/8	3-7/8	3	1-3/4	3
3/4	I	3/8	1-1/2	5	4-1/2	5	4-1/8	3-1/8	1-3/4	3
7/8	I	1/2	1-5/8	5-1/2	4-1/2	5-1/8	4-1/4	3-1/8	1-3/4	4
1	II	1/2	1-3/4	5-3/4	CONT	6	4-1/2	3-1/4	2	4
1-1/4	II	5/8	2	7-1/4	CONT	7-5/8	5	3-3/4	2	4
1-1/2	II	3/4	2-1/4	9	CONT	10-1/8	5-1/2	3-7/8	2	4
1-3/4	III	1	2-1/2	CONT	CONT	11-7/8	5-7/8	4	2-1/4	4
2	III	1	2-3/4	CONT	CONT	13-7/8	6-1/4	4-1/4	2-1/2	4

TIE ROD SCHEDULE

*SEE NOTES

PIPE DIA (IN.)	MIN PIPE WALL THKS (IN.)*	25 PSI TIE RODS		50 PSI TIE RODS		100 PSI TIE RODS		150 PSI TIE RODS		225 PSI TIE RODS		375 PSI TIE RODS	
		DIA (IN.)	NO. REQD	DIA (IN.)	NO. REQD	DIA (IN.)	NO. REQD	DIA (IN.)	NO. REQD	DIA (IN.)	NO. REQD	DIA (IN.)	NO. REQD
6	3/16	—	—	—	—	5/8	2	5/8	2	5/8	2	5/8	2
8	3/16	—	—	—	—	5/8	2	5/8	2	5/8	2	3/4	2
10	3/16	—	—	—	—	5/8	2	5/8	2	3/4	2	7/8	2
12	3/16	5/8	2	5/8	2	5/8	2	5/8	2	3/4	2	7/8	4
14	3/16	5/8	2	5/8	2	3/4	2	3/4	2	3/4	4	1	4
16	3/16	5/8	2	5/8	2	3/4	2	7/8	2	7/8	4	1	4
18	1/4	5/8	2	5/8	2	7/8	2	1	2	1	4	1-1/4	4
20	1/4	5/8	2	3/4	2	7/8	2	7/8	4	1	4	1-1/4	4
22	1/4	5/8	2	3/4	2	3/4	4	7/8	4	1	4	1-1/2	4
24	1/4	5/8	2	3/4	2	7/8	4	1	4	1	6	1-1/2	6
30	1/4	5/8	4	3/4	4	7/8	6	1	6	1	8	1-1/2	8
36	1/4	3/4	4	7/8	4	1	6	1	8	1-1/4	8	1-1/2	10
42	1/4	3/4	4	1	4	1	8	1-1/4	8	1-1/2	8	1-3/4	10
48	5/16	7/8	4	7/8	8	1	10	1-1/4	10	1-1/2	10	1-3/4	12
54	5/16	3/4	6	7/8	8	1	12	1-1/4	12	1-1/2	12	1-3/4	14
60	11/32	7/8	6	1	8	1-1/4	10	1-1/4	14	1-1/2	14	1-3/4	16
72	3/8	7/8	8	1	10	1-1/4	12	1-1/2	14	1-3/4	14	2	18
78	13/32	7/8	8	1	12	1-1/4	14	1-1/2	16	1-3/4	16	2	20
84	7/16	7/8	10	1-1/4	10	1-1/2	14	1-3/4	14	1-3/4	18	2	22
96	7/16	1	10	1-1/4	12	1-1/2	16	1-3/4	16	2	16	—	—
108	1/2	1	12	1-1/4	12	1-3/4	12	2	14	2	22	—	—
120	5/8	1-1/4	8	1-1/2	10	1-3/4	16	2	18	—	—	—	—
132	23/32	1-1/4	6	1-3/4	10	1-3/4	18	2	22	—	—	—	—

NOTES:

1. LUG SCHEDULE DIMENSIONS IN INCHES.
2. TIE RODS SHALL CONFORM TO ASTM A193 GRADE B7.
3. NUTS SHALL CONFORM TO ASTM A194 GRADE 2H.
4. PLATE SHALL CONFORM TO ASTM A283 GRADE D.
5. TIE ROD NUTS SHALL BE TIGHTENED GRADUALLY AND EQUALLY IN STAGES TO PREVENT UNEVEN ALIGNMENT AND TO ALLOW EQUAL STRESS ON ALL TIE RODS UNDER PRESSURE. TIGHTEN UNTIL SNUG. THREADS SHALL PROTRUDE FROM NUTS. PEEN THREADS AFTER TIGHTENING NUTS.
6. TIE ROD LUGS SHALL BE SPACED EQUALLY AROUND PIPE.
7. FILLET WELDS SHALL MEET THE MINIMUM REQUIREMENTS OF THE AISC SPECIFICATIONS EXCEPT AS FOLLOWS: FILLET WELDS SHALL BE 1/4-INCH MINIMUM EXCEPT WHEN WELDING 3/16-INCH PLATE WHERE THEY SHALL BE 3/16-INCH.
8. CATHODIC PROTECTION FOR FLEXIBLE COUPLINGS REQUIRED WHERE NOTED ON DWGS OR IN THE SPECIFICATIONS.
9. CONTRACTOR SHALL USE DATA FOR ONLY THOSE PIPE SIZES AND TEST PRESSURES SPECIFIED IN THIS CONTRACT.
10. LUG TYPE I IS AS SHOWN IN DETAIL. LUG TYPE II HAS CONTINUOUS FRONT AND BACK PLATES AROUND PIPE.
11. TIE RODS SHALL NOT BE ATTACHED TO A PIPE WHEN THE WALL THICKNESS IS LESS THAN THE MINIMUM SHOWN ON THE TIE ROD SCHEDULE.
12. THE MINIMUM PIPE WALL THICKNESSES SHOWN ARE TO ENSURE PROPER PERFORMANCE OF THE THRUST TIE LUG. PIPE WALL THICKNESSES GREATER THAN SHOWN IN THE TABLE MAY BE REQUIRED AND MAY BE SHOWN ELSEWHERE OR SPECIFIED ELSEWHERE TO RESIST INTERNAL PRESSURES.