

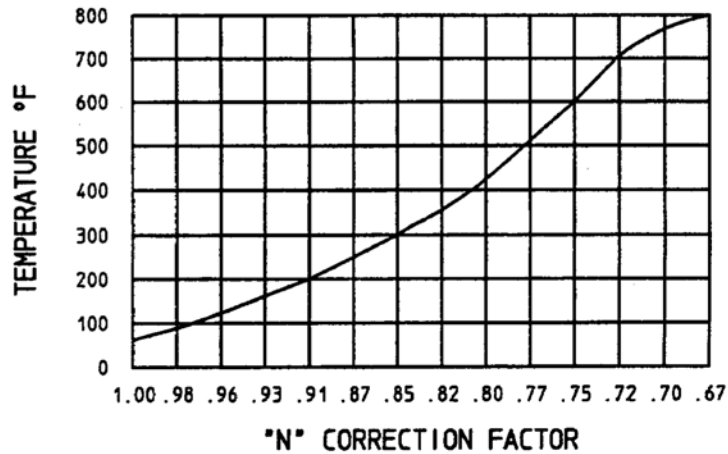


FIGURE 3 - TEMPERATURE CORRECTION FOR
300 SERIES STAINLESS STEEL /19/

TABLE 1

PART NUMBER	TUBE OD	NOMINAL DIA	WEIGHT (LBS)	7/8" NUT TORQUE ±5 IN. - LBS.	L ± 12	R MAX
AS1960/1 - 200	2.000	2.636	.26	35	2.75	3.26
AS1960/1 - 225	2.250	2.886	.27			3.32
AS1960/1 - 250	2.500	3.136	.29			3.36
AS1960/1 - 275	2.750	3.386	.30			3.42
AS1960/1 - 300	3.000	3.636	.31	40		3.50
AS1960/1 - 350	3.500	4.136	.35			3.39
AS1960/1 - 400	4.000	4.636	.38			3.57
AS1960/1 - 450	4.500	5.136	.40			3.77
AS1960/1 - 500	5.000	5.636	.44	45	3.00	4.00
AS1960/1 - 550	5.500	6.136	.47			4.32
AS1960/1 - 600	6.000	6.636	.50			4.52
AS1960/1 - 650	6.500	7.136	.52			4.73
AS1960/1 - 700	7.000	7.636	.55	50		4.95
AS1960/1 - 750	7.500	8.136	.58			5.16
AS1960/1 - 800	8.000	8.636	.61			5.40
AS1960/1 - 850	8.500	9.136	.63			5.62
AS1960/1 - 900	9.000	9.636	.67			5.84

TABLE 2

TUBE OD	D DIA	"N" LBS/INCH (LIMIT AT ROOM TEMPERATURE /17/ TO -65 °F
2.00	2.582	355
2.25	2.832	326
2.50	3.082	303
2.75	3.332	283
3.00	3.582	267
3.50	4.082	241
4.00	4.582	221
4.50	5.082	206
5.00	5.582	193
5.50	6.082	183
6.00	6.582	175
6.50	7.082	167
7.00	7.582	161
7.50	8.082	155
8.00	8.582	150

NOTES:

- /1/ RETAINER GAP TO BE ROTATED TO CENTERLINE OF LATCH FOR TUBE OD 3.00 AND UNDER.
- /2/ T-BOLT SHALL BE CURVED FOR TUBE OD 3.00 AND UNDER.
3. TOLERANCES: .XX ± .03, .XXX ± .010 OR AS NOTED.
- /4/ T-BOLT FACE TO BE MARKED AS SHOWN IN VIEW B-B OR EQUIVALENT TYPE MARKING.
5. MATERIAL: STRAP - MIL-S-5059 COMP 301 1/2H (STAINLESS STEEL)
 RETAINER - MIL-S-5059 COMP 301 1/4H (STAINLESS STEEL)
 TRUNNION - MIL-S-5059 COMP 301/302 ANNEALED OR EQUIVALENT (STAINLESS STEEL)
 T-BOLT - A-286 PER AMS 5732 OR AMS 5737 (STAINLESS STEEL)
 NUT-Z1200J048 (ELASTIC STOP NUT CORP FED SUPPLY CODE 72962) STAINLESS STEEL SILVER
 PLATED OR EQUIVALENT.
6. THREADS: T-BOLT AND NUT THREAD SHALL CONFORM TO MIL-S-8879.
 T-BOLT: .2500-28 UNJF-3A
 NUT: .2500-28 UNJF-3B
- /7/ IDENTIFICATION: THE COUPLING SHALL BE MARKED WITH THE FOLLOWING MINIMUM INFORMATION:
 AS PART NO. AS1960/1-XXX
 MANUFACTURER'S NAME AND/OR TRADEMARK
 DATE OF MANUFACTURE
- /8/ TORQUE MARKING SHALL BE PERMANENTLY MARKED IN 1/8" MINIMUM HIGH LETTERS LOCATED AS SHOWN:
 "CAUTION TORQUE TO (XX ±5) INCH LBS."
- /9/ SPOTWELD PER MIL-W-6858, CLASS B.
- /10/ LATCH COMPONENTS (RETAINERS, STRAPS, TRUNNION, ETC.) SHALL NOT BIND OR INTERFERE WITH OPERATION OF T-BOLT.
- /11/ BAND AND RETAINER LOCATION AND FORMING SHALL BE SYMMETRICAL ABOUT CENTERLINE WITHIN .020 TIR.

NOTES (CONTINUED):

12. MAXIMUM OPERATING TEMPERATURE: FLUID (INTERNAL) 800 °F (427 °C)
AMBIENT (EXTERNAL) 500 °F (260 °C)
13. DO NOT USE THIS COUPLING OR FLANGES 15 IN A COMPRESSION TYPE DUCT SYSTEM.
14. DRAWING CALLOUT SHALL INCLUDE THE APPROVED CALLOUT AND NOTE: "NUT TORQUE AS SPECIFIED ON COUPLING".
- /15/ THIS COUPLING SHALL BE USED WITH FLANGES CONFORMING TO AS1960/3 OR ONE AS1960/3 AND FLANGE END PER AS1960/4.
16. THIS COUPLING MEETS THE REQUIREMENTS OF AS1960.
- /17/ PRESSURE LIMITATION IS DEPENDENT ON DESIGN LOADS. "N" LOAD PER TABLE 2 IS THE MAXIMUM TOTAL LOAD PER INCH OF CIRCUMFERENCE AT WHICH THE LEAKAGE 18 WILL NOT BE EXCEEDED. THIS VALUE, "N", IS NOT THE STRUCTURAL YIELD POINT OF THE COUPLING.
- /18/ MAXIMUM JOINT LEAKAGE RATE AT DESIGN TEMPERATURE AND PROOF PRESSURE IS .01 STANDARD CUBIC FEET PER MINUTE PER INCH OF TUBE DIAMETER.
- /19/ FIGURE 3 CORRECTS THE "N" VALUE FOR ELEVATED TEMPERATURES. SEE EXAMPLE.
20. DETERMINE JOINT LOADING USING THESE VALUES:

$$(a) \quad N_a = \frac{E}{\pi D}; N_p = \frac{PD}{4}; N_b = \frac{4M}{\pi D^2}; N_t = N_a + N_p + N_b$$

(b) WHERE:

$$N = /17/ /19/$$

NA = LOAD (POUNDS) PER INCH OF CIRCUMFERENCE AT FLANGE TO RETAINER POINT DUE TO AXIAL LOADING. (LIMIT)

NP = LOAD PER INCH OF CIRCUMFERENCE AT FLANGE TO RETAINER POINT DUE TO PROOF PRESSURE.

NB = LOAD PER INCH OF CIRCUMFERENCE AT FLANGE TO RETAINER POINT DUE TO BENDING. (LIMIT)

Nt = TOTAL LOAD PER INCH OF CIRCUMFERENCE AT FLANGE TO RETAINER POINT.

P = DESIGN PROOF PRESSURE (PSIG).

D = FLANGE OUTSIDE DIA IN INCHES.

E = AXIAL TENSION LOAD IN POUNDS (NOT DUE TO BENDING OR PRESSURE). (LIMIT)

M = BENDING MOMENT IN INCH POUNDS (NOT DUE TO PRESSURE OR AXIAL LOAD). (LIMIT)

EXAMPLE: 2.00 DIA JOINT; 200 PSIG PROOF PRESSURE, 400 °F MAX TEMPERATURE

100 INCH LB BENDING MOMENT NO AXIAL LOAD

FROM TABLE 2 D = 2.582 INCHES, N = 355 LBS/IN.

FROM FIGURE 3 CORRECTION FACTOR AT 400 °F = .81

N CORRECTED = 355 X .81 = 287 LBS/IN. (JOINT CAPABILITY)

$$N_p = \frac{PD}{4} = \frac{200 \times 2.582}{4} = 129 \text{ lb / in. } N_b = \frac{4M}{\pi D^2} = \frac{4 \times 100}{\pi \times (2.582)^2} = 19 \text{ lb / in.}$$

Nt = Np + Nb + Na = 129 + 19 + 0 = 148 lb/in. DESIGN LOAD

148 LB/IN. IS LESS THAN 287 LB/IN. THEREFORE THIS IS A SATISFACTORY APPLICATION.

 <i>An SAE International Group</i>	AEROSPACE STANDARD		SAE AS1960/1 SHEET 4 OF 5	REV. A
	COUPLING, SHEET METAL, 40° V-BAND, STANDARD LATCH			