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STARLITE® STR®
SLEEVE SYSTEM NUT
Lightweight, 6AL-4V Titanium
Hexagonal, self-aligning, self-locking
Patent Pending

STR80

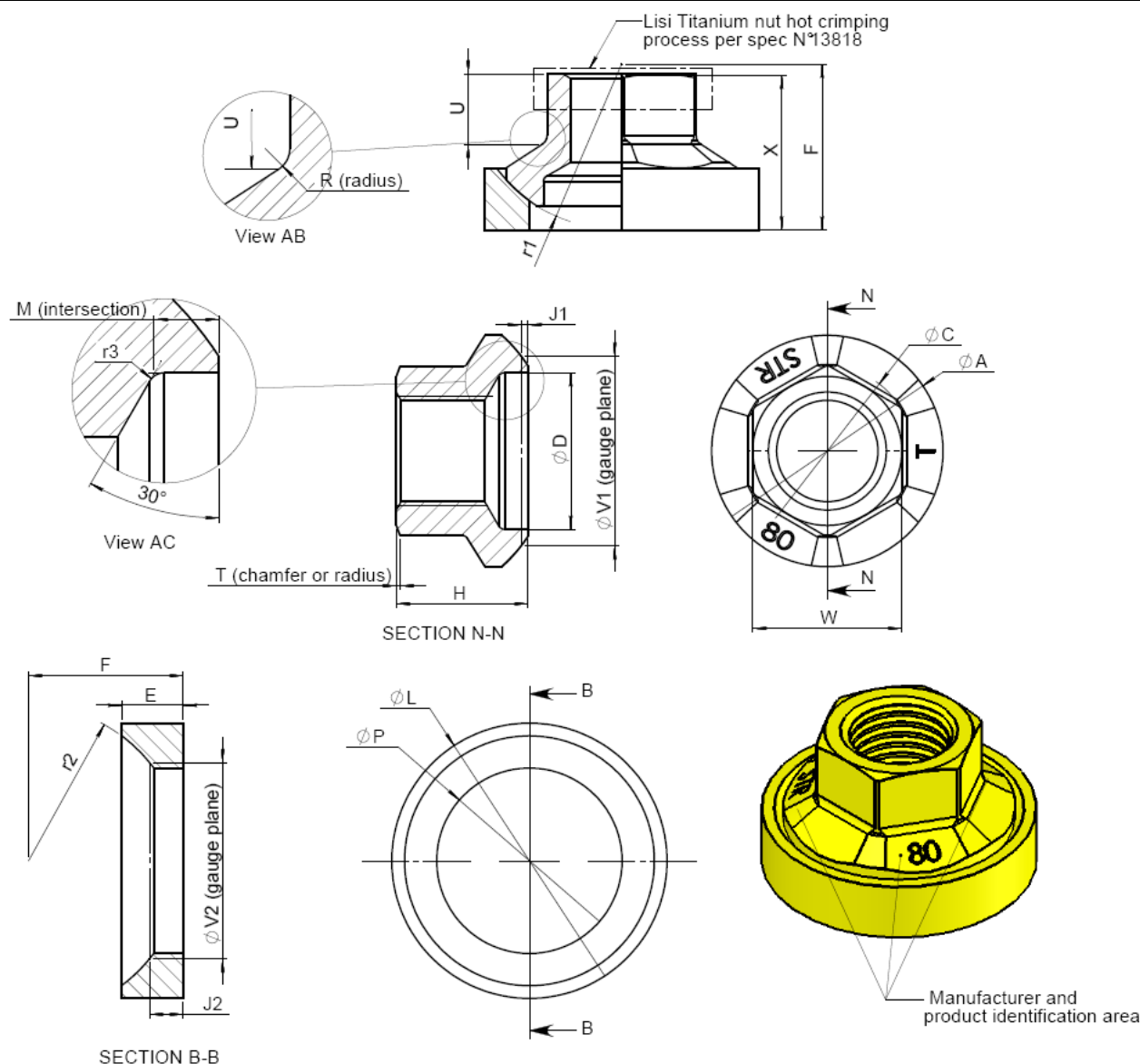


FIGURE 1: CONFIGURATION

NOTES:

UNLESS OTHERWISE SPECIFIED

I. Units

Dimensions and tolerances are in millimeters (inch).
Dimensions apply after finish.

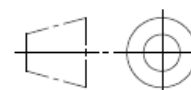
II. Surface Texture

As per ASME B46-1 before coating.

- $R_a \text{ max.} = 3,2\mu\text{m} \left(\sqrt[125]{} \right)$.
- Tool mark or distortion permissible in the locking area.

III. Threads

UNJF-3B as per SAE AS8879.



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1. APPLICATION

This product standard specifies the dimensions, tolerances and properties of a titanium nut for use in aerospace application at a maximum operating temperature of 235°C (455°F).

The STARLITE® STR80 nut is designed to fit Sleeved Taper Hi-Lite® pins, nominal diameter and oversizes for use on sloped surfaces up to 5° maximum.

2. REQUIREMENTS

Table 1: Material and finish

FINISH CODE	COMPONENT ⁽¹⁾	MATERIAL	FINISH
K	Nut	Titanium alloy 6AL-4V as per chemistry of AMS4928, AMS4965 or AMS4967, Solution heat treated and aged.	Non-chromated aluminum based coating: Hi-Kote® 4NC As per EN4473 type IV
	Washer	Min. shear strength : Rc min = 650 MPa (95 KSI) Min. tensile strength : Rm min = 1100 MPa (160 KSI)	

(1) Washer and nut elements shall not be shipped, stored or used separately.

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Table 2 : Dimensions and tolerances (continued)

Dia. Code	THREAD UNJF-3B	Ø A min.	Ø C ref.	Ø D min.	E ±0,127 (±.005)	F ref.	H ±0,1 (±.004)	Ø L ±0,127 (±.005)	M min.	Ø P ±0,1 (±.004)
6	.1900-32	10,88 (.428)	7,17 (.282)	7,17 (.282)	2,83 (.111)	8,38 (.330)	7,40 (.292)	13,32 (.524)	2,56 (.101)	8,92 (.351)
7	.2160-28	12,40 (.488)	8,06 (.317)	8,36 (.329)	3,30 (.130)	9,18 (.361)	7,85 (.309)	15,03 (.592)	2,44 (.096)	10,25 (.404)
8	.2500-28	13,93 (.549)	8,94 (.352)	9,56 (.376)	3,78 (.149)	9,97 (.393)	8,50 (.335)	16,64 (.655)	2,32 (.091)	11,60 (.457)
10	.3125-24	16,43 (.647)	10,77 (.424)	11,16 (.439)	4,44 (.175)	11,64 (.458)	9,81 (.386)	19,76 (.778)	2,27 (.089)	13,49 (.531)
12	.3750-24	19,51 (.768)	14,38 (.566)	13,16 (.518)	5,23 (.206)	13,13 (.517)	11,18 (.440)	23,33 (.918)	2,25 (.088)	15,76 (.621)
14	.4375-20	22,81 (.898)	16,16 (.636)	15,14 (.596)	6,15 (.242)	14,60 (.575)	12,72 (.501)	27,04 (1.065)	2,21 (.087)	18,01 (.709)
16	.5000-20	25,21 (.993)	17,96 (.707)	16,74 (.659)	6,73 (.265)	16,30 (.642)	13,87 (.546)	30,48 (1.200)	2,17 (.086)	19,91 (.784)
18	.5625-18	27,72 (1.091)	19,79 (.779)	18,34 (.722)	7,37 (.290)	17,99 (.708)	15,34 (.604)	33,38 (1.314)	2,04 (.080)	21,81 (.859)
20	.6250-18	29,83 (1.174)	22,43 (.883)	19,95 (.785)	7,76 (.305)	19,66 (.774)	16,69 (.657)	36,34 (1.431)	1,94 (.076)	23,72 (.934)
24	.7500-16	34,92 (1.375)	26,98 (1.062)	23,54 (.927)	8,94 (.352)	22,90 (.901)	19,42 (.765)	42,19 (1.661)	1,67 (.066)	27,89 (1.098)
28	.8750-14	40,01 (1.575)	30,56 (1.203)	27,14 (1.069)	9,86 (.388)	25,87 (1.018)	22,38 (.881)	51,72 (2.036)	1,82 (.072)	32,02 (1.261)
32	1.0000-12	44,50 (1.752)	34,22 (1.347)	30,33 (1.194)	10,59 (.417)	29,00 (1.142)	25,14 (.990)	59,09 (2.327)	1,85 (.073)	35,77 (1.408)
36	1.1250-12	48,84 (1.923)	37,70 (1.484)	33,54 (1.320)	11,26 (.443)	32,16 (1.266)	28,73 (1.131)	65,94 (2.596)	1,84 (.072)	39,55 (1.557)

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Table 2 : Dimensions and tolerances (continued)

Dia. Code	THREAD UNJF-3B	R max.	Nut Spherical Radius r1 0 -0,127 0 (-.005)	Washer Spherical Radius r2 +0,127 0 +.005 0	r3 ref.	T ref.	U min.	W ref.	X max. ⁽¹⁾
6	.1900-32	0,8 (.031)	8,08 (.318)	8,08 (.318)	0,6 (.024)	0,16 (.006)	2,78 (.109)	6,28 (.247)	9,70 (.382)
7	.2160-28	0,8 (.031)	8,93 (.352)	8,93 (.352)	0,6 (.024)	0,18 (.007)	3,20 (.126)	7,07 (.278)	10,32 (.406)
8	.2500-28	0,8 (.031)	9,79 (.385)	9,79 (.385)	0,6 (.024)	0,20 (.008)	3,62 (.143)	7,85 (.309)	11,14 (.439)
10	.3125-24	0,8 (.031)	11,50 (.453)	11,50 (.453)	0,6 (.024)	0,24 (.009)	4,45 (.175)	9,45 (.372)	12,59 (.496)
12	.3750-24	1,0 (.039)	13,20 (.520)	13,20 (.520)	0,6 (.024)	0,32 (.013)	5,52 (.217)	12,63 (.497)	14,06 (.554)
14	.4375-20	1,0 (.039)	14,91 (.587)	14,91 (.587)	0,6 (.024)	0,36 (.014)	6,11 (.241)	14,20 (.559)	15,72 (.619)
16	.5000-20	1,0 (.039)	16,62 (.654)	16,62 (.654)	0,6 (.024)	0,41 (.016)	6,94 (.273)	15,73 (.619)	17,04 (.671)
18	.5625-18	1,0 (.039)	18,33 (.722)	18,33 (.722)	0,6 (.024)	0,45 (.018)	7,77 (.306)	17,33 (.682)	18,72 (.737)
20	.6250-18	1,0 (.039)	20,04 (.789)	20,04 (.789)	0,6 (.024)	0,51 (.020)	8,60 (.339)	19,64 (.773)	20,23 (.797)
24	.7500-16	1,0 (.039)	23,45 (.923)	23,45 (.923)	0,6 (.024)	0,61 (.024)	10,27 (.404)	23,63 (.930)	23,38 (.920)
28	.8750-14	1,0 (.039)	26,87 (1.058)	26,87 (1.058)	0,6 (.024)	0,69 (.027)	11,96 (.471)	26,78 (1.054)	26,40 (1.040)
32	1.0000-12	1,0 (.039)	30,28 (1.192)	30,28 (1.192)	0,6 (.024)	0,77 (.030)	13,59 (.535)	29,98 (1.180)	29,26 (1.152)
36	1.1250-12	1,0 (.039)	33,70 (1.327)	33,70 (1.327)	0,6 (.024)	0,85 (.033)	15,26 (.601)	33,02 (1.300)	32,99 (1.299)

(1) Xmax. is only given to know the product overall height. X calculation stems from J1, J2 and H dimensions.

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Table 3 : Gauge plane dimensions and tolerances

Dia. Code	THREAD UNJF-3B	Ø V1 ±0,01 (±.0004)	J1		Ø V2 ±0,01 (±.0004)	J2	
			min	max		min	max
6	.1900-32	9,641 (.3796)	0,421 (.0166)	0,571 (.0225)	9,641 (.3796)	1,740 (.0685)	1,889 (.0744)
7	.2160-28	11,082 (.4363)	0,525 (.0207)	0,679 (.0267)	11,082 (.4363)	2,011 (.0792)	2,163 (.0852)
8	.2500-28	12,533 (.4934)	0,637 (.0251)	0,794 (.0313)	12,533 (.4934)	2,295 (.0904)	2,450 (.0965)
10	.3125-24	14,583 (.5741)	0,792 (.0312)	0,948 (.0373)	14,583 (.5741)	2,592 (.1020)	2,747 (.1081)
12	.3750-24	17,032 (.6706)	0,975 (.0384)	1,132 (.0446)	17,032 (.6706)	2,875 (.1132)	3,031 (.1193)
14	.4375-20	19,457 (.7660)	1,122 (.0442)	1,280 (.0504)	19,457 (.7660)	3,135 (.1234)	3,293 (.1296)
16	.5000-20	21,512 (.8469)	1,276 (.0502)	1,433 (.0564)	21,512 (.8469)	3,466 (.1365)	3,622 (.1426)
18	.5625-18	23,566 (.9278)	1,394 (.0549)	1,551 (.0611)	23,566 (.9278)	3,786 (.1491)	3,942 (.1552)
20	.6250-18	25,629 (1.0090)	1,545 (.0608)	1,701 (.0670)	25,629 (1.0090)	4,100 (.1614)	4,256 (.1676)
24	.7500-16	30,131 (1.1863)	1,791 (.0705)	1,947 (.0767)	30,131 (1.1863)	4,762 (.1875)	4,918 (.1936)
28	.8750-14	34,596 (1.3620)	2,109 (.0830)	2,266 (.0892)	34,596 (1.3620)	5,146 (.2026)	5,303 (.2088)
32	1.0000-12	38,646 (1.5215)	2,386 (.0939)	2,542 (.1001)	38,646 (1.5215)	5,518 (.2172)	5,673 (.2233)
36	1.1250-12	42,723 (1.6820)	2,660 (.1047)	2,815 (.1108)	42,723 (1.6820)	5,933 (.2336)	6,087 (.2396)

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Table 4: Tensile strength, mass and wrench size

Dia. Code	Thread UNJF-3B	Min. Axial Tensile Strength ⁽¹⁾ N (Lbf)	Mass kg/1000 parts (lb/1000 parts) For information only	Wrench Size (inch)
6	.1900-32	15770 (3,545)	2,005 (4.426)	1/4
7	.2160-28	20340 (4,573)	2,658 (5.868)	9/32
8	.2500-28	28689 (6,449)	3,449 (7.614)	5/16
10	.3125-24	45797 (10,296)	5,562 (12.278)	3/8
12	.3750-24	69271 (15,573)	9,639 (21.278)	1/2
14	.4375-20	91143 (20,490)	14,840 (32.759)	9/16
16	.5000-20	122803 (27,607)	20,108 (44.389)	5/8
18	.5625-18	155836 (35,033)	26,461 (58.413)	11/16
20	.6250-18	196509 (44,177)	34,169 (75.428)	25/32
24	.7500-16	279840 (62,911)	53,537 (118.183)	15/16
28	.8750-14	411220 (92,446)	88,580 (195.541)	1-1/16
32	1.0000-12	535050 (120,284)	124,479 (274.788)	1-3/16
36	1.1250-12	694784 (156,194)	167,127 (368.934)	1-5/16

(1) Mechanical properties apply at room temperature.

3. DESIGNATION

STR80 K ()

Ø code number in 1/32nds inch

Finish code (table 1)

Basic part number

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Example:

STR80K16: Titanium alloy 6AL-4V self-aligning STARLITE® nut for Sleeved Taper Hi-Lite® pins, dia. size ½ inch, coated with Hi-Kote® 4NC.

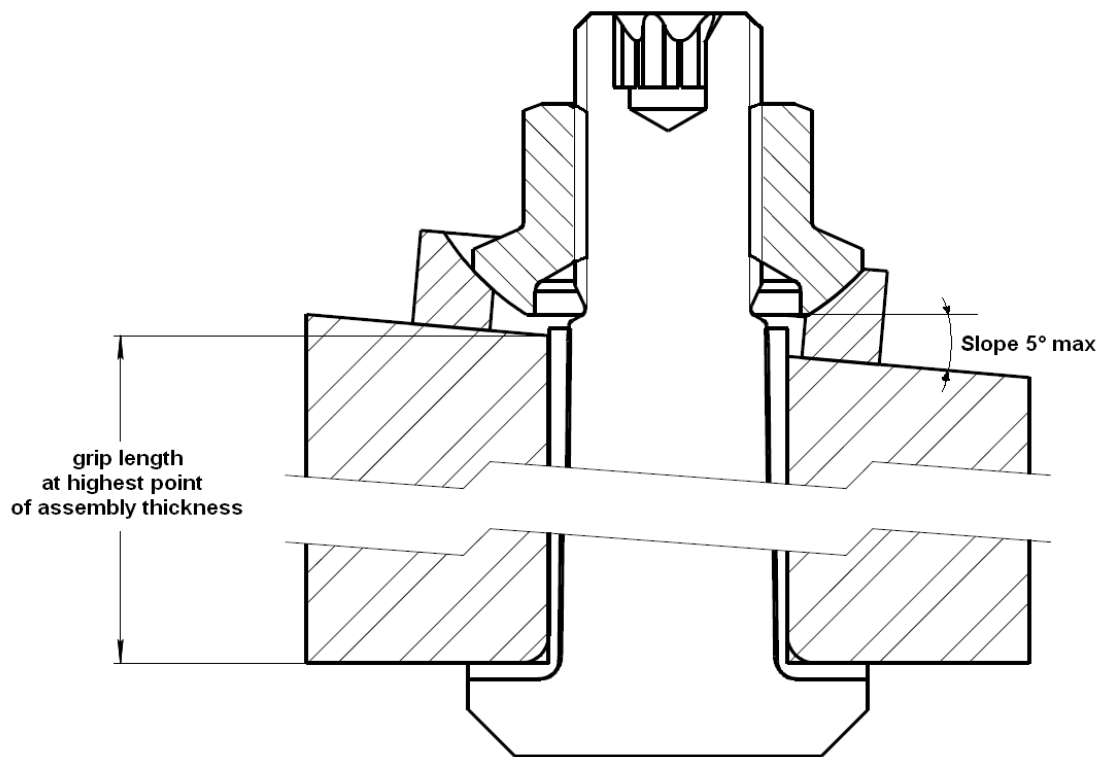
4. MARKING (see figure 1)

Basic part number "STR80" and manufacturer symbol identification on flange petals (see figure 1).

5. INSTALLATION REQUIREMENT

On a sloped surface, the grip length of the pin shall be measured on the highest point of the assembly.

Figure 2: Nut installation on a sloped surface



6. PROCUREMENT SPECIFICATION

The STR80 nuts must meet all the inspection requirements of LISI AEROSPACE Product Specification STR-QA02.

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Revision	Date	Modifications	Justification
A	January 17, 2011	New standard	-
B	February 07, 2011	- Integration of tolerance range for $\varnothing P$ and $\varnothing L$ (Table 2) - Correction of tolerance range of $\varnothing V1$ and $\varnothing V2$ in inches (Table3)	-
C	2015-03-30	§6: Product specification STR-TS02 replaced by STR-QA02	-

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