

STARLITE™ NUT
Lightweight, 6AL-4V Titanium
Hexagonal, self-locking, up to 2nd pin
shank oversize (for use with HI-LITE™
pins)

STR20

Patent Pending

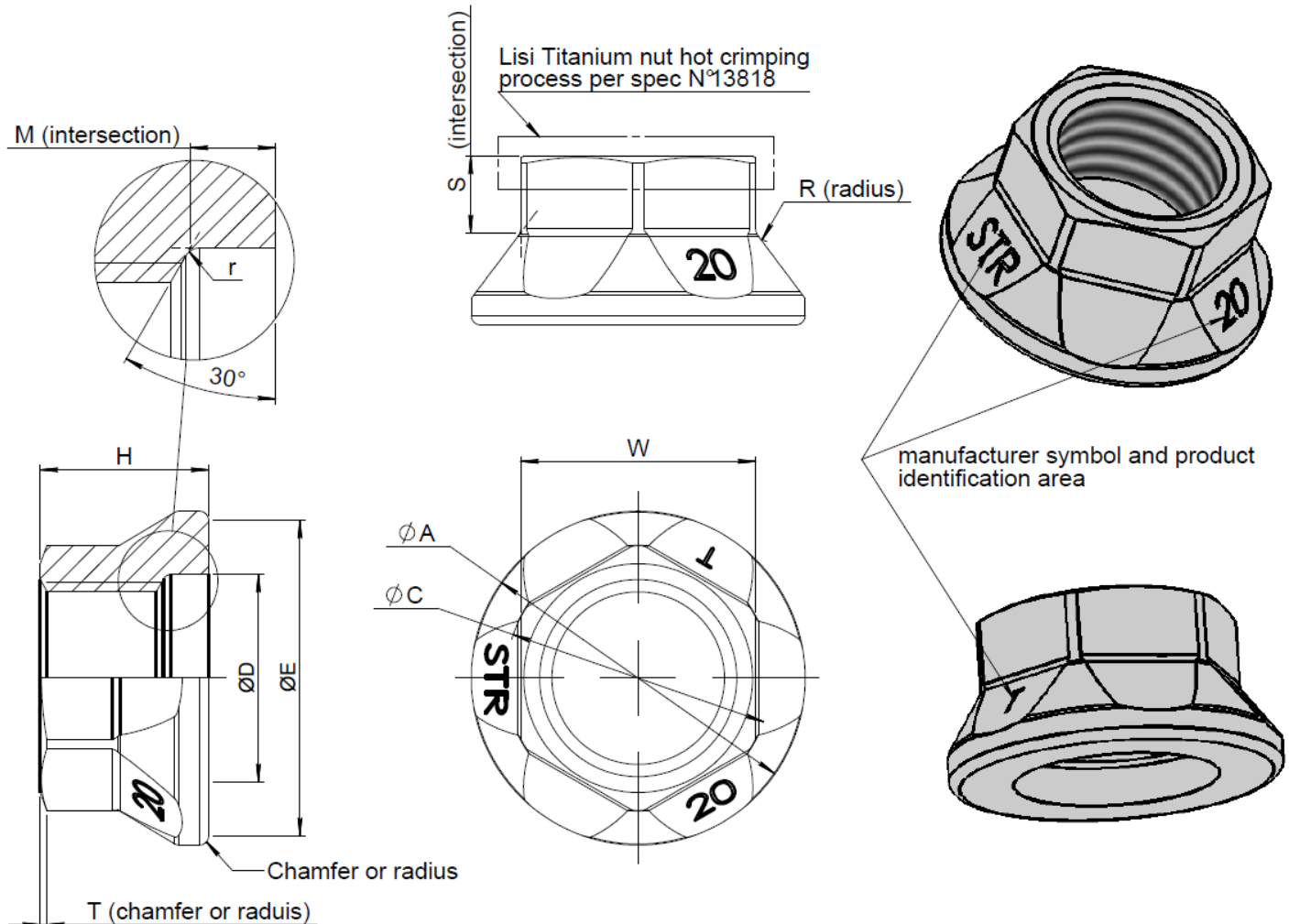


FIGURE 1: CONFIGURATION

NOTES:

UNLESS OTHERWISE SPECIFIED

- I. **Units** Dimensions and tolerances are in millimeters (inches).
Reference unit for dimensions and tolerances is millimeter (Inches values are for information).
Reference unit for loads is Newton (Lbf values are for information).
Dimensions apply after finish.
- II. **Surface texture** As per ASME B- before coating.
- $R_a \text{ max.} = 3,2\mu\text{m} \left(\frac{125}{\sqrt{}} \right)$.
- Tool mark or distortion permissible in the locking area.
- III. **Tread** UNJF-3B as per SAE AS8879, except diameter code 5 (UNJC-3B)

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PAGE 1/6	INNOVATEAM		J. GOYER		2015-03-19	G

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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 STR20 nut of STARLITE™ product line is designed to fit HI-LITE™ pins (with short threads and cylindrical shank), nominal diameter, first and second oversizes.
Third oversize is covered by STR320 nut.

2. REQUIREMENTS

Table 1: Material, finish and identification

FINISH CODE	MATERIAL	FINISH
K	Titanium alloy 6AL-4V as per chemistry of AMS4928, AMS4965 or AMS4967, solution heat treated and aged. Min. shear strength : Rc min = 655 MPa (95 KSI) Min. tensile strength : Rm min = 1103 Mpa (160 KSI)	Non-chromated aluminum based coating: HI-KOTE™ 4NC As per EN4473 type IV

 CENTRAL SEINE 46 – 50 Quai de la Rapée 75583 PARIS CEDEX 12 Phone 33 (0)1 40 19 82 00 Fax 33 (0)1 40 19 82 01	STARLITE™ NUT Lightweight, 6AL-4V Titanium Hexagonal, self-locking, up to 2nd pin shank oversize (for use with HI-LITE™ pins) Patent Pending	STR20
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Table 2 : Dimensions and tolerances

Dia. Code	THREAD UNJF-3B	Ø A Max	Ø C ref	Ø D		Ø E min	H Max	M min	r ref	R Max	S min	T Max	W ⁽²⁾ ±0,05 (±.002)
				min	max								
5	.1640-32 ⁽¹⁾	7,23 (.284)	6,30 (.248)	4,41 (.174)	4,57 (.180)	6,31 (.248)	5,82 (.229)	2,30 (.091)	0,51 (.020)	0,77 (.030)	1,90 (.075)	0,25 (.010)	5,51 (.217)
6	.1900-32	8,65 (.340)	7,17 (.282)	5,81 (.229)	5,91 (.233)	7,89 (.311)	6,17 (.243)	2,19 (.086)	0,51 (.020)	0,77 (.030)	2,05 (.081)	0,27 (.010)	6,27 (.247)
7	.2160-28	9,72 (.382)	8,06 (.317)	6,20 (.244)	6,35 (.250)	8,80 (.346)	6,55 (.258)	2,35 (.092)	0,51 (.020)	0,77 (.030)	2,13 (.084)	0,26 (.010)	7,07 (.278)
8	.2500-28	11,53 (.454)	8,94 (.352)	7,40 (.291)	7,55 (.297)	10,61 (.418)	6,93 (.273)	2,25 (.088)	0,51 (.020)	0,77 (.030)	2,46 (.097)	0,30 (.012)	7,85 (.309)
10	.3125-24	14,12 (.556)	10,77 (.424)	9,00 (.354)	9,15 (.360)	13,21 (.520)	8,04 (.316)	2,36 (.093)	0,51 (.020)	0,77 (.030)	3,17 (.125)	0,35 (.014)	9,45 (.372)
12	.3750-24	16,94 (.667)	14,38 (.566)	10,60 (.417)	10,75 (.423)	16,02 (.631)	9,06 (.357)	2,35 (.093)	0,51 (.020)	1,02 (.040)	4,01 (.158)	0,42 (.017)	12,62 (.497)
14	.4375-20	19,63 (.773)	16,16 (.636)	12,20 (.480)	12,35 (.486)	18,20 (.717)	10,41 (.410)	2,51 (.099)	0,51 (.020)	1,02 (.040)	4,81 (.189)	0,48 (.019)	14,20 (.559)
16	.5000-20	22,46 (.884)	17,96 (.707)	13,79 (.543)	13,94 (.549)	21,03 (.828)	11,42 (.450)	2,51 (.099)	0,51 (.020)	1,02 (.040)	4,95 (.195)	0,50 (.020)	15,72 (.619)
18	.5625-18	25,09 (.988)	19,79 (.779)	15,38 (.606)	15,53 (.612)	23,66 (.932)	12,95 (.510)	2,60 (.102)	0,51 (.020)	1,02 (.040)	6,24 (.246)	0,56 (.022)	17,32 (.682)
20	.6250-18	26,54 (1,045)	22,43 (.883)	16,96 (.668)	17,11 (.674)	25,11 (.989)	12,85 (.506)	2,60 (.102)	0,51 (.020)	1,02 (.040)	6,32 (.249)	0,57 (.022)	19,63 (.773)
24	.7500-16	31,64 (1,245)	26,98 (1,062)	20,16 (.794)	20,31 (.800)	30,21 (1,189)	14,96 (.589)	2,73 (.107)	0,51 (.020)	1,02 (.040)	7,80 (.307)	0,67 (.026)	23,62 (.930)
28	.8750-14	36,22 (1,426)	30,56 (1,203)	23,35 (.919)	23,50 (.925)	34,79 (1,370)	16,85 (.663)	2,90 (.114)	0,51 (.020)	1,02 (.040)	8,35 (.329)	0,72 (.028)	26,77 (1,054)
32	1.0000-12	41,16 (1,620)	34,22 (1,347)	26,55 (1,045)	26,71 (1,051)	39,74 (1,564)	19,47 (.766)	3,11 (.122)	0,51 (.020)	1,02 (.040)	9,50 (.374)	0,79 (.031)	29,97 (1,180)
36	1.1250-12	46,19 (1,819)	37,70 (1,484)	29,75 (1,171)	29,90 (1,177)	44,77 (1,763)	22,39 (.881)	3,11 (.122)	0,51 (.020)	1,02 (.040)	10,91 (.430)	0,87 (.034)	33,02 (1,300)

- (1) Dia. code 5: UNJC-3B thread as per SAE AS8879
(2) Dimensions apply before application of locking feature

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Table 3: Tensile strength, mass and wrench size

Dia. Code	Thread UNJF-3B	Min. Axial Tensile Strength⁽²⁾ N (Lbf)	Mass Kg/1000 parts (Lb/1000parts)	Wrench Size (inch)
5	.1640-32 ⁽¹⁾	10 240 (2,302)	0,487 (1.073)	7/32
6	.1900-32	12 400 (2,788)	0,654 (1.443)	1/4
7	.2160-28	17 000 (3,822)	0,912 (2.011)	9/32
8	.2500-28	23 500 (5,283)	1,229 (2.709)	5/16
10	.3125-24	36 930 (8,302)	1,989 (4.384)	3/8
12	.3750-24	58 000 (13,039)	3,831 (8.445)	1/2
14	.4375-20	84 550 (19,008)	5,573 (12.286)	9/16
16	.5000-20	113 470 (25,509)	7,736 (17.055)	5/8
18	.5625-18	129 050 (29,012)	10,186 (22.455)	11/16
20	.6250-18	142 400 (32,013)	11,859 (26.145)	25/32
24	.7500-16	208 650 (46,906)	19,596 (43.201)	15/16
28	.8750-14	281 230 (63,223)	27,640 (60.936)	1-1/16
32	1.0000-12	381 010 (85,654)	39,638 (87.387)	1-3/16
36	1.1250-12	513 763 (115,499)	54,252 (119.604)	1-5/16

(1) Dia. code 5: UNJC-3B thread as per SAE AS8879

(2) Mechanical properties apply at room temperature.

Tensile value is valid for nut only.

See pin standards for pin strengths.

Lower strength (pin or nut) determines system strength.

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DESIGNATION

STR20 K ()

Dia. code number in 1/32nds inch

Finish code (table 1)

Basic part number

Example:

STR20K16: STR20 nut for HI-LITE™ pins fastener systems, Titanium alloy 6AL-4V coated with non-chromated coating HI-KOTE™ 4NC, dia. code ½ inch.

3. MARKING

Manufacturer symbol and basic part number “STR20” on the flange area (expect Ø5/32”: manufacturer symbol only).

Marking shall be positioned as indicated on Figure 1.

4. QUALIFICATION AND ACCEPTANCE

The STR20 nuts shall meet all the inspection requirements of LISI AEROSPACE Qualification and Acceptance Specification STR-QA-03.

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Issue	Date	Modifications	Justification
E	24 th September 2012	Document update	First release for serial production
F	2015-02-10	- decrease of M for all Ø - increase ØD and ØE for Ø6/32" - mass update	Reduction of counterbore depth margin Fitting of second pin oversize diameter for Ø6/32"
G	2015-03-19	Update of marking for Ø5/32": manufacturer symbol only	Not enough space on the flange area for marking the product standard