

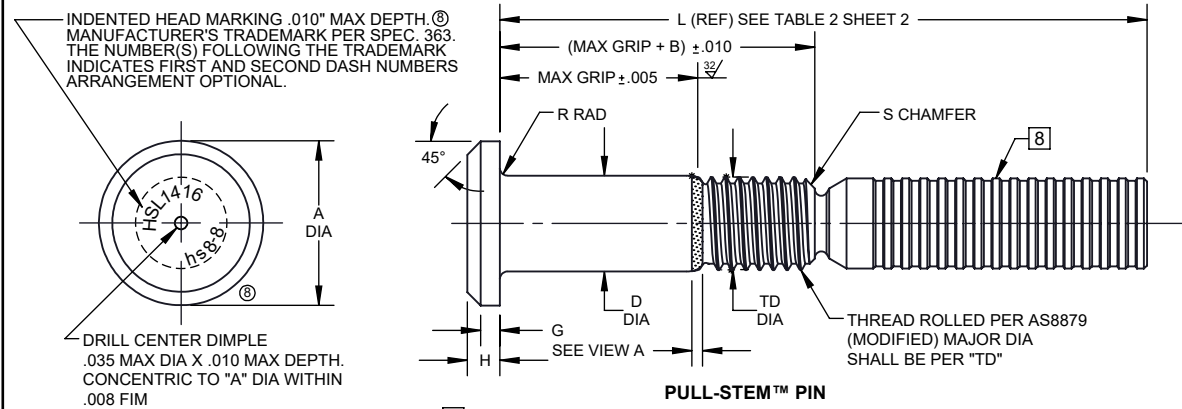


TABLE 1

| FIRST DASH NO. | PIN NOM DIA | A DIA        | B REF | D DIA          | TD DIA         | G REF | H            | R RAD        | S CHAMFER REF | THREAD MODIFIED     | DOUBLE SHEAR POUNDS MINIMUM | TENSION POUNDS MINIMUM | TENSION-TENSION FATIGUE LBS. MAX |
|----------------|-------------|--------------|-------|----------------|----------------|-------|--------------|--------------|---------------|---------------------|-----------------------------|------------------------|----------------------------------|
| 6              | 3/16        | .377<br>.357 | .290  | .1895<br>.1885 | .1840<br>.1810 | .035  | .074<br>.064 | .025<br>.015 | 1/32 x 37°    | .1900-32<br>UNJF-3A | 5,380                       | 3,180                  | 1,050                            |
| 7              | 7/32        | .410<br>.390 | .305  | .2182<br>.2172 | .2100<br>.2070 | .040  | .081<br>.071 | .025<br>.015 | 1/32 x 37°    | .2160-28<br>UNJF-3A | 7,194                       | 4,128                  | 1,360                            |
| 8              | 1/4         | .440<br>.415 | .320  | .2495<br>.2485 | .2440<br>.2410 | .045  | .090<br>.080 | .025<br>.015 | 1/32 x 37°    | .2500-28<br>UNJF-3A | 9,300                       | 5,820                  | 1,950                            |
| 10             | 5/16        | .505<br>.475 | .380  | .3120<br>.3110 | .3060<br>.3020 | .055  | .112<br>.102 | .030<br>.020 | 3/64 x 37°    | .3125-24<br>UNJF-3A | 14,600                      | 9,200                  | 3,140                            |
| 12             | 3/8         | .600<br>.565 | .420  | .3745<br>.3735 | .3680<br>.3640 | .075  | .140<br>.130 | .030<br>.020 | 3/64 x 37°    | .3750-24<br>UNJF-3A | 21,000                      | 14,000                 | 4,850                            |
| 14             | 7/16        | .676<br>.641 | .485  | .4370<br>.4360 | .4310<br>.4260 | .095  | .160<br>.150 | .030<br>.020 | 3/64 x 37°    | .4375-20<br>UNJF-3A | 28,600                      | 18,900                 | 6,540                            |
| 16             | 1/2         | .770<br>.735 | .525  | .4995<br>.4985 | .4930<br>.4880 | .095  | .188<br>.178 | .030<br>.020 | 3/64 x 37°    | .5000-20<br>UNJF-3A | 37,300                      | 25,600                 | 8,900                            |

**GENERAL NOTES:**

- Concentricity: "A" to "D" diameter within .010 FIM.
- Dimensions in inches and to be met after finish.
- Surface texture per ASME B46.1.
- Hole preparation per HSL/HPL-IS01: PULL-STEM™ /PULL-IN™ fastener installation specification for HSL/HPL pins.
- Deleted.
- Use HSL1426 for oversize replacement.
- "NKA" is duplicate code, use "NAP" for new design.
- Coating and lube not mandatory on pintail.
- Product in accordance with LISI AEROSPACE Product Specification N°415.
- For NKV finish only, D DIA MAX to be reduced by .0005, and D DIA to be met before finish.
- US patent 9447809; other foreign patents granted and pending property of LISI AEROSPACE. Specific License with LISI AEROSPACE is required to manufacture PULL-STEM™ pin with NKV finish.

HSL1416BJ( ) ( ) = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, and cetyl alcohol lube per Hi-Shear Spec. 305.

**CODE:** First dash number indicates nominal diameter in 1/32nds. Second dash number indicates maximum grip in 1/16ths. See "Finish" note for explanation of code letters.

**HOW TO ORDER EXAMPLE:**

Pin Part Number  
HSL1416NAP8-8

8/16 or 1/2 Maximum Grip Length  
8/32 or 1/4 Nominal Diameter Pin  
Finish Code  
Pin Basic Part Number

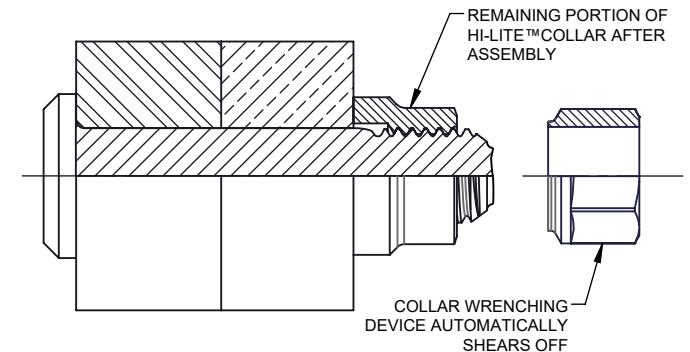
**MATERIAL:** Pin = Titanium alloy 6Al-4V per AMS4928 or AMS4967.

**HEAT TREAT:** Pin = 160,000 psi tensile minimum (95,000 psi shear minimum).

**FINISH:** HSL1416NAP( ) ( ) = HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294, and cetyl alcohol lube per Hi-Shear Spec. 305.

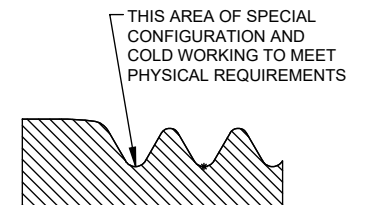
7 HSL1416NKA( ) ( ) = HI-KOTE™ 1 NC aluminum coating per Hi-Shear Spec. 294, and cetyl alcohol lube per Hi-Shear Spec. 305.

11 HSL1416NKV( ) ( ) = HI-KOTE™ 1 NC aluminum coating per Hi-Shear Spec. 294 on threads plus four longitudinal stripes on shank, and cetyl alcohol lube per Hi-Shear Spec. 305.



PULL-STEM™ PIN AND COLLAR AFTER ASSEMBLY

SEE COLLAR STANDARDS FOR COLLAR STRENGTHS. LOWER STRENGTH (PIN OR COLLAR) DETERMINES SYSTEM STRENGTH.



**VIEW A**

HI-LITE™ THREAD TRANSITION AREA  
SEE SPECIFICATION FOR INSPECTION

|                                                                                     |                    |                                                                                                                       |  |
|-------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------|--|
| "HI-KOTE", "HI-LITE", "PULL-STEM" AND "HSL", ARE TRADEMARKS OF HI-SHEAR CORPORATION |                    |                                                                                                                       |  |
| DRAWN BY<br>F.CARINGELLA                                                            | DATE<br>2013-06-06 | TITLE<br>PULL-STEM™ PIN<br>PROTRUDING TENSION HEAD<br>BREAK STEM, INTERFERENCE FIT<br>TITANIUM<br>1/16 GRIP VARIATION |  |
| APPROVED<br>D.GOLDING                                                               | DATE<br>2013-06-11 | DRAWING NUMBER<br><b>HSL1416</b>                                                                                      |  |
| REVISION<br>8                                                                       | DATE<br>2020-10-21 | 1 OF 2                                                                                                                |  |

TABLE 2

| SECOND<br>DASH<br>NUMBER | L REF      |            |            |             |             |             |             |
|--------------------------|------------|------------|------------|-------------|-------------|-------------|-------------|
|                          | -6<br>DIA. | -7<br>DIA. | -8<br>DIA. | -10<br>DIA. | -12<br>DIA. | -14<br>DIA. | -16<br>DIA. |
| 1                        | -          | -          | -          | -           | -           | -           | -           |
| 2                        | 1.000      | 1.000      | 1.000      | -           | -           | -           | -           |
| 3                        | 1.125      | 1.125      | 1.125      | 1.250       | -           | -           | -           |
| 4                        | 1.250      | 1.250      | 1.250      | 1.375       | 1.375       | -           | -           |
| 5                        | 1.375      | 1.375      | 1.375      | 1.500       | 1.500       | 1.625       | -           |
| 6                        | 1.500      | 1.500      | 1.500      | 1.625       | 1.625       | 1.750       | 1.750       |
| 7                        | 1.625      | 1.625      | 1.625      | 1.750       | 1.750       | 1.875       | 1.875       |
| 8                        | 1.750      | 1.750      | 1.750      | 1.875       | 1.875       | 2.000       | 2.000       |
| 9                        | 1.875      | 1.875      | 1.875      | 2.000       | 2.000       | 2.125       | 2.125       |
| 10                       | 2.000      | 2.000      | 2.000      | 2.125       | 2.125       | 2.250       | 2.250       |
| 11                       | 2.125      | 2.125      | 2.125      | 2.250       | 2.250       | 2.375       | 2.375       |
| 12                       | 2.250      | 2.250      | 2.250      | 2.375       | 2.375       | 2.500       | 2.500       |
| 13                       | 2.375      | 2.375      | 2.375      | 2.500       | 2.500       | 2.625       | 2.625       |
| 14                       | 2.500      | 2.500      | 2.500      | 2.625       | 2.625       | 2.750       | 2.750       |
| 15                       | 2.625      | 2.625      | 2.625      | 2.750       | 2.750       | 2.875       | 2.875       |
| 16                       | 2.750      | 2.750      | 2.750      | 2.875       | 2.875       | 3.000       | 3.000       |
| 17                       | 2.875      | 2.875      | 2.875      | 3.000       | 3.000       | 3.125       | 3.125       |
| 18                       | 3.000      | 3.000      | 3.000      | 3.125       | 3.125       | 3.250       | 3.250       |
| 19                       | 3.125      | 3.125      | 3.125      | 3.250       | 3.250       | 3.375       | 3.375       |
| 20                       | 3.250      | 3.250      | 3.250      | 3.375       | 3.375       | 3.500       | 3.500       |
| 21                       | 3.375      | 3.375      | 3.375      | 3.500       | 3.500       | 3.625       | 3.625       |
| 22                       | 3.500      | 3.500      | 3.500      | 3.625       | 3.625       | 3.750       | 3.750       |
| 23                       | 3.625      | 3.625      | 3.625      | 3.750       | 3.750       | 3.875       | 3.875       |
| 24                       | 3.750      | 3.750      | 3.750      | 3.875       | 3.875       | 4.000       | 4.000       |
| 25                       | -          | -          | -          | 4.000       | 4.000       | 4.125       | 4.125       |
| 26                       | -          | -          | -          | 4.125       | 4.125       | 4.250       | 4.250       |
| 27                       | -          | -          | -          | 4.250       | 4.250       | 4.375       | 4.375       |
| 28                       | -          | -          | -          | 4.375       | 4.375       | 4.500       | 4.500       |
| 29                       | -          | -          | -          | -           | 4.500       | 4.625       | 4.625       |
| 30                       | -          | -          | -          | -           | 4.625       | 4.750       | 4.750       |
| 31                       | -          | -          | -          | -           | 4.750       | 4.875       | 4.875       |
| 32                       | -          | -          | -          | -           | 4.875       | 5.000       | 5.000       |
| 33                       | -          | -          | -          | -           | 5.000       | 5.125       | 5.125       |
| 34                       | -          | -          | -          | -           | 5.125       | 5.250       | 5.250       |
| 35                       | -          | -          | -          | -           | 5.250       | 5.375       | 5.375       |
| 36                       | -          | -          | -          | -           | 5.375       | 5.500       | 5.500       |
| 37                       | -          | -          | -          | -           | 5.500       | 5.625       | 5.625       |
| 38                       | -          | -          | -          | -           | 5.625       | 5.750       | 5.750       |
| 39                       | -          | -          | -          | -           | 5.750       | 5.875       | 5.875       |
| 40                       | -          | -          | -          | -           | 5.875       | 6.000       | 6.000       |
| 41                       | -          | -          | -          | -           | 6.000       | 6.125       | 6.125       |
| 42                       | -          | -          | -          | -           | 6.125       | 6.250       | 6.250       |
| 43                       | -          | -          | -          | -           | 6.250       | 6.375       | 6.375       |
| 44                       | -          | -          | -          | -           | 6.375       | 6.500       | 6.500       |

HSL1416

DRAWING NUMBER

**HSL1416**

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