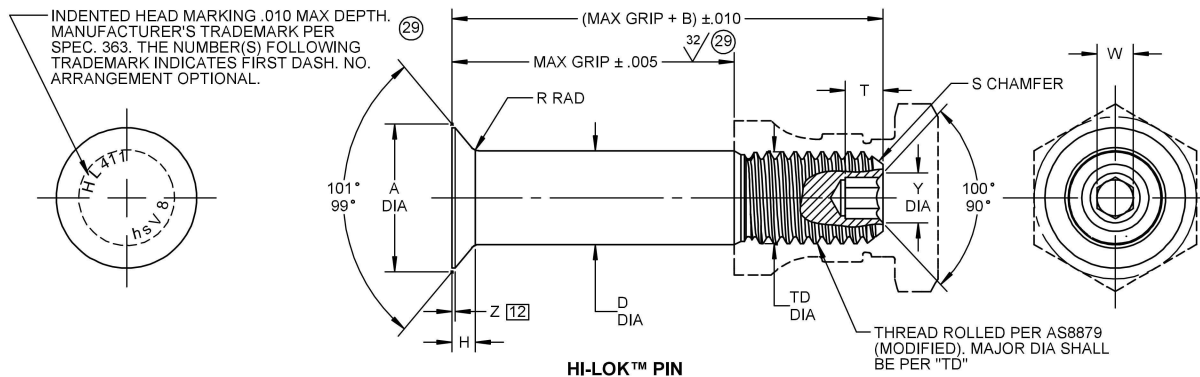
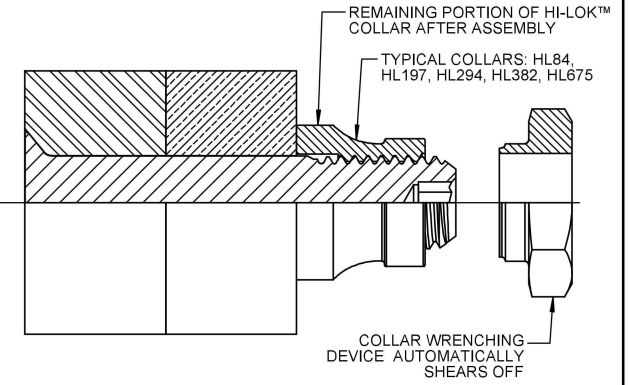




HI-LOK™ PIN



HI-LOK™ PIN AND COLLAR AFTER ASSEMBLY

FIRST DASH NO.	PIN NOM DIA	A DIA	B REF	D DIA		TD DIA	F REF	H	R RAD	Z MAX	S CHAMFER REF	THREAD MODIFIED	SOCKET			DOUBLE SHEAR POUNDS MINIMUM	TENSIO N POUN D MINU M
				WITHOUT COATING OR SOLID FILM	AFTER COATING OR SOLID FILM								W HEX	T DEPTH	Y DIA		
5							NOTE: USE HL111V()6-()										
6	7/32	.3303 .3253	.325	.2182 .2177	.2182 .2172	.1840 .1810	.005	.0470 .0450	.030 .020	.015	1/32 x 37°	.1900-32 UNJF-3A	.0806 .0791	.135 .115	.119 .104	7,100	2,000
7	1/4	.3810 .3738	.355	.2495 .2490	.2495 .2485	.2100 .2070	.006	.0553 .0523	.030 .020	.015	1/32 x 37°	.2160-28 UNJF-3A	.0806 .0791	.100 .080	.119 .104	9,300	2,750
8	9/32	.4260 .4210	.395	.2807 .2802	.2807 .2797	.2440 .2410	.006	.0610 .0590	.030 .020	.015	1/32 x 37°	.2500-28 UNJF-3A	.0967 .0947	.150 .130	.142 .122	11,800	3,700
10	11/32	.5051 .5001	.500	.3432 .3427	.3432 .3422	.3060 .3020	.007	.0680 .0660	.040 .030	.015	3/64 x 37°	.3125-24 UNJF-3A	.1295 .1270	.170 .150	.180 .160	17,600	5,500
12	13/32	.5916 .5866	.545	.4057 .4052	.4057 .4047	.3680 .3640	.008	.0780 .0760	.040 .030	.015	3/64 x 37°	.3750-24 UNJF-3A	.1617 .1582	.200 .180	.217 .197	24,600	7,200
14	15/32	.6992 .6932	.635	.4682 .4677	.4682 .4672	.4310 .4260	.009	.0970 .0945	.050 .040	.022	3/64 x 37°	.4375-20 UNJF-3A	.1930 .1895	.230 .210	.253 .233	32,700	10,000
16	17/32	.7852 .7792	.685	.5307 .5302	.5307 .5297	.4930 .4880	.010	.1070 .1045	.050 .040	.022	3/64 x 37°	.5000-20 UNJF-3A	.2242 .2207	.260 .240	.289 .269	42,000	13,500
18	19/32	.8692 .8622	.770	.5927 .5922	.5927 .5917	.5550 .5500	.010	.1160 .1130	.050 .040	.022	1/16 x 37°	.5625-18 UNJF-3A	.2555 .2520	.290 .270	.326 .306	52,400	17,000
20	21/32	.9562 .9492	.825	.6552 .6547	.6552 .6542	.6180 .6120	.010	.1260 .1230	.050 .040	.022	1/16 x 37°	.6250-18 UNJF-3A	.2555 .2520	.330 .305	.326 .306	64,100	21,000
24	25/32	1.1282 1.1162	1.050	.7802 .7797	.7802 .7792	.7430 .7370	.012	.1460 .1410	.050 .040	.022	1/16 x 37°	.7500-16 UNJF-3A	.3185 .3150	.395 .365	.398 .378	90,900	30,700
28	29/32	1.3509 1.3342	1.210	.9052 .9047	.9052 .9042	.8680 .8610	.014	.1870 .1800	.050 .040	.022	5/64 x 37°	.8750-14 UNJF-3A	.3820 .3780	.455 .425	.471 .451	122,000	42,000
32	1-1/32	1.5498 1.5307	1.390	1.0302 1.0297	1.0302 1.0292	.9930 .9860	.014	.2180 .2100	.050 .040	.022	5/64 x 37°	1.0000-12 UNJF-3A	.5100 .5040	.580 .550	.618 .598	158,000	55,000

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

(29)

"HI-LOK", "HL", AND "HI-KOTE",
 ARE TRADEMARKS OF HI-SHEAR CORPORATION

DRAWN BY
 J.F.OBISPO
 BRIEJ

DATE
 2014-07-22
 1966-04-07

APPROVED
 MILLER

DATE
 1966-04-07

REVISION
 (29)

DATE
 K. PHAM
 2022-03-31

TITLE
 HI-LOK™ PIN
 100° FLUSH SHEAR HEAD
 TITANIUM
 1/16 GRIP VARIATION, 1/32 OVERSIZE

DRAWING NUMBER
HL411

1 OF 2

- GENERAL NOTES:**
- 1] Head edge out of roundness shall not exceed "F".
 2. Concentricity: Conical surface of head to "D" diameter within .003 FIM.
 3. Dimensions are in inches and to be met after finish.
 4. Surface texture per ASME B46.1.
 5. Hole preparation per NAS618.
 6. "H" is dimensioned from maximum "D" diameter.
 - 7] Maximum "D" diameter may be increased by .0002 to allow for solid film or aluminum coating application.
 - 8] Broach petals removed.
 - 9] Dimensions to be met before finish for "VY" code only.
 10. Oversize replacement for HL11 and HL111.
 - 11] Non-lubed pins must be used with lubed collars or wet sealant.
 - 12] Curved or flat edge manufacturer's option.
 - 29] 13] After February, 21st of 2015, HI-KOTE™ 1 aluminum pigmented coating will be replaced by REACH compliant HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294 on fasteners coated in UK and European Union.

MATERIAL: 6AL-4V titanium alloy per AMS4928 or AMS4967.

HEAT TREAT: 160,000 psi tensile minimum (95,000 psi shear minimum for sizes up to 3/4; 90,000 psi shear minimum for 7/8 and larger).

- FINISH:** HL411V(-)(-) = Cetyl alcohol lube per Hi-Shear Spec. 305.
- 29] 13] HL411VAP(-)(-) = HI-KOTE™ 1 or HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 29] 13] HL411VAZ(-)(-) = HI-KOTE™ 1 or HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294, with color black on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VBJ(-)(-) = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VBR(-)(-) = Color code white on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 11] HL411VBU(-)(-) = I.V.D. aluminum coating per MIL-DTL-83488, Type I, Class 3, with color yellow on thread end.
- 11] HL411VBV(-)(-) = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, with color blue on thread end.
- HL411VCB(-)(-) = I.V.D. aluminum coating per MIL-DTL-83488, Type I, Class 3, with color black on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 8] HL411VDK(-)(-) = Solid film lube per "KalGard™" FA. "KALGARD" is a trademark of Metal Improvement Company.
- 29] HL411VVF(-)(-) = Anodize per Hi-Shear Spec. 306, Type I, color blue, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 8] HL411VK(-)(-) = Solid film lube per Lubeco 905.
- 29] HL411VLJ(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per AS5272.
- HL411VLV(-)(-) = Phosphate fluoride treat and Esna-Lube No. 382 (Everlube Corp).
- 29] HL411VR(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per "Electrofilm" 4396.
- HL411VRA(-)(-) = Phosphate fluoride treat with color red on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.
- 29] HL411VSY(-)(-) = Phosphate fluoride treat, solid film lube per AS5272, Type I, and color red on thread end.
- HL411VT(-)(-) = Anodize per Hi-Shear Spec. 306, Type I, color pink, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VTA(-)(-) = Anodize Ti-Shield III and HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VTB(-)(-) = HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292.
- HL411VTL(-)(-) = Anodize Ti-Shield III, solid film lube per DAG-258, and cetyl alcohol lube per Hi-Shear Spec. 305; or anodize per Tiodize Type II, solid film lube per TI-O-LUBE TAL-58, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VTT(-)(-) = Translube.
- 29] HL411VUE(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 29] HL411VUU(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per "Lubeco" 2123, Type II.
- HL411VV(-)(-) = Solid film lube per "Lubeco" 2123, Type II.
- 29] 9] HL411VY(-)(-) = Anodize per Hi-Shear Spec. 306, Type I, color blue, and solid film lubricant per M88. (British Aircraft Corporation Spec. MP-1071).
- HL411VNKJ(-)(-) = HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294, with color silver on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VNKK(-)(-) = Sulfuric acid anodizing per ISO8080 and HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294 on threads only, with color silver on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VNKL(-)(-) = HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294 on threads only, with color silver on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL411VHK(-)(-) = HI-KOTE™ 4 NC aluminum coating per Hi-Shear Spec. 397.

SPECIFICATION: HI-LOK™ Product Specification 342.

CODE: First dash number indicates nominal diameter in 1/32nds of the pin which HL411 oversize pin replaces.
 Second dash number indicates maximum grip in 1/16ths.
 See Finish note for explanation of code letters.

**HOW TO ORDER
 EXAMPLE:**

Pin Part Number
 HL411VAP8-8
 8/16 or 1/2 Maximum Grip Length
 8/32 or 1/4 Nominal Diameter Pin
 Finish Code
 Pin Basic Part Number

HL411

DRAWING NUMBER

HL411

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