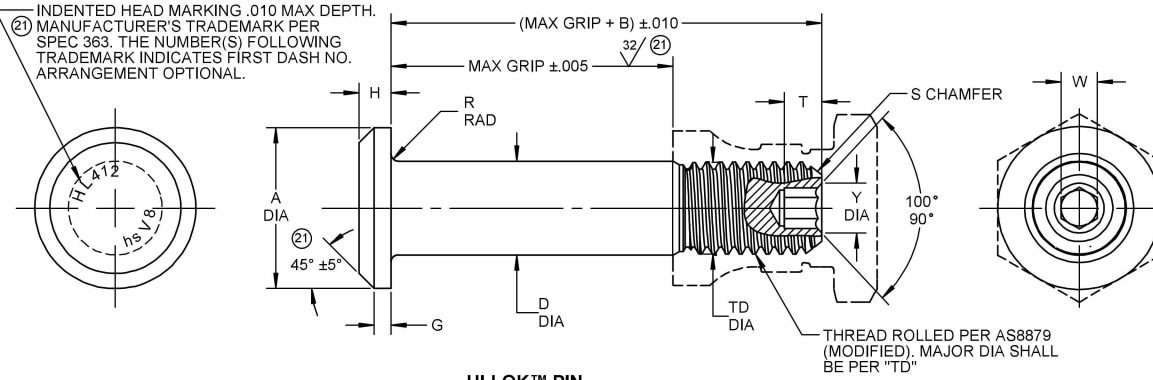
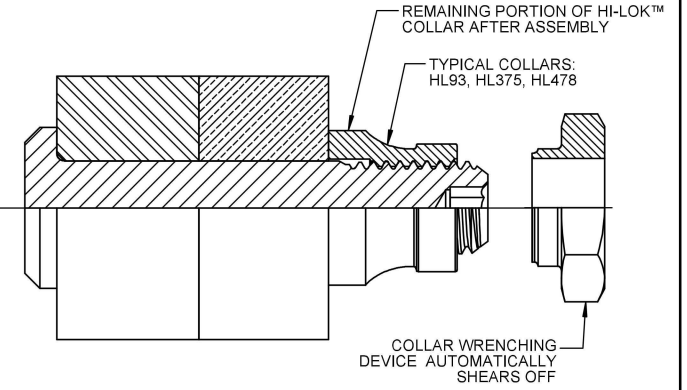




HI-LOK™ PIN



HI-LOK™ PIN AND COLLAR AFTER ASSEMBLY

5																
FIRST DASH NO.	PIN NOM DIA	A DIA	B REF	D DIA		TD DIA	G REF	H	R RAD	S CHAMFER REF	THREAD MODIFIED	SOCKET			DOUBLE SHEAR POUNDS MINIMUM	TENSION POUNDS MINIMUM
				WITHOUT COATING OR SOLID FILM	AFTER COATING OR SOLID FILM							W HEX	T DEPTH	Y DIA		
5							NOTE: USE HL112V()6-()									
6	7/32	.390 .370	.325	.2182 .2177	.2182 .2172	.1840 .1810	.035	.074 .064	.025 .015	1/32 x 37°	.1900-32 UNJF-3A	.0806 .0791	.135 .115	.119 .104	7,100	3,180
8	9/32	.460 .435	.395	.2807 .2802	.2807 .2797	.2440 .2410	.045	.090 .080	.025 .015	1/32 x 37°	.2500-28 UNJF-3A	.0967 .0947	.150 .130	.142 .122	11,800	5,820
10	11/32	.520 .490	.500	.3432 .3427	.3432 .3422	.3060 .3020	.055	.112 .102	.030 .020	3/64 x 37°	.3125-24 UNJF-3A	.1295 .1270	.170 .150	.180 .160	17,600	9,200
12	13/32	.620 .550	.545	.4057 .4052	.4057 .4047	.3680 .3640	.075	.140 .130	.030 .020	3/64 x 37°	.3750-24 UNJF-3A	.1617 .1582	.200 .180	.217 .197	24,600	14,000
14	15/32	.695 .615	.635	.4682 .4677	.4682 .4672	.4310 .4260	.095	.160 .150	.030 .020	3/64 x 37°	.4375-20 UNJF-3A	.1930 .1895	.230 .210	.253 .233	32,700	18,900
16	17/32	.790 .740	.685	.5307 .5302	.5307 .5297	.4930 .4880	.095	.188 .178	.030 .020	3/64 x 37°	.5000-20 UNJF-3A	.2242 .2207	.260 .240	.289 .269	42,000	25,600
18	19/32	.905 .870	.770	.5927 .5922	.5927 .5917	.5550 .5500	.125	.210 .200	.040 .025	1/16 x 37°	.5625-18 UNJF-3A	.2555 .2520	.290 .270	.326 .306	52,400	32,400
20	21/32	.975 .940	.825	.6552 .6547	.6552 .6542	.6180 .6120	.140	.238 .228	.040 .025	1/16 x 37°	.6250-18 UNJF-3A	.2555 .2520	.330 .305	.326 .306	64,100	41,000
24	25/32	1.185 1.145	1.050	.7802 .7797	.7802 .7792	.7430 .7370	.200	.335 .320	.045 .030	1/16 x 37°	.7500-16 UNJF-3A	.3185 .3150	.330 .300	.398 .378	90,900	59,500

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

HL412

"HI-LOK", "HL", AND "HI-KOTE", ARE TRADEMARKS OF HI-SHEAR CORPORATION			
DRAWN BY VAN	DATE 1968-06-11	TITLE HI-LOK™ PIN PROTRUDING TENSION HEAD TITANIUM 1/16 GRIP VARIATION, 1/32 OVERSIZE	
J.F.OBISPO	2014-07-30		
APPROVED J.M.	DATE 1968-06-11	DRAWING NUMBER HL412	
REVISION (21)	DATE 2022-04-04		

- GENERAL NOTES:**
1. Concentricity: "A" to "D" diameter within .010 FIM.
 2. Dimensions are in inches and to be met after finish.
 3. Surface texture per ASME B46.1.
 4. Hole preparation per NAS618.
 5. Maximum "D" diameter may be increased by .0002 to allow for solid film or aluminum coating application.
 6. Broach petals removed.
 7. Dimensions to be met before finish for "VY" code only.
 8. Oversize replacement for HL12 and HL112.
 9. Non-lubed pins must be used with lubed collars or wet sealant.
 10. 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.

CODE: First dash number indicates nominal diameter in 1/32nds of the pin which HL412 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
 HL412VAP8-8
 └─ 8/16 or 1/2 Maximum Grip Length
 └─ Replaces 8/32 or 1/4 Nominal Diameter Pin
 └─ Finish Code
 └─ Pin Basic Part Number

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

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

- FINISH:** HL412V()-() = Cetyl alcohol lube per Hi-Shear Spec. 305.
- 21 10 HL412VAP()-() = 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.
- 21 10 HL412VAZ()-() = 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.
- HL412VBJ()-() = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 9 HL412VBV()-() = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, with color blue on thread end.
- 6 HL412VVDK()-() = Solid film lube per "KalGard™" FA. "KALGARD" is a trademark of Metal Improvement Company.
- 21 HL412VF()-() = Anodize per Hi-Shear Spec. 306, Type I, color blue, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 21 HL412VLJ()-() = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per AS5272.
- HL412VLV()-() = Phosphate fluoride treat and Esna-Lube No. 382 (Everlube Corp).
- 6 HL412VMA()-() = Solid film lube per "KalGard™" RA. "KALGARD" is a trademark of Metal Improvement Company
- 21 HL412VR()-() = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per "Electrofilm" 4396.
- HL412VRA()-() = Phosphate fluoride treat with color red on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL412VSS()-() = Grit blast top of head with color light blue on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL412VSY()-() = Phosphate fluoride treat, solid film lube per AS5272, Type I, and color red on thread end.
- 21 HL412VT()-() = Anodize per Hi-Shear Spec. 306, Type I, color pink, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL412VTA()-() = 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.
- HL412VTB()-() = HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL412VTF()-() = HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292.
- HL412VTL()-() = 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.
- HL412VTT()-() = Translube.
- 9 HL412VU()-() = Bare, no lubricant.
- 21 HL412VUE()-() = Anodize per Hi-Shear Spec. 306, Type II, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 21 HL412VUU()-() = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per "Lubeco" 2123, Type II.
- HL412VV()-() = Solid film lube per "Lubeco" 2123, Type II.
- 21 7 HL412VY()-() = Anodize per Hi-Shear Spec. 306, Type I, color blue, and solid film lubricant per M88. (British Aircraft Corporation Spec. MP-1071).
- HL412VNKJ()-() = 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.
- HL412VNKK()-() = 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.
- HL412VNKL()-() = 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.
- HL412VHK()-() = HI-KOTE™ 4 NC aluminum coating per Hi-Shear Spec. 397.

SPECIFICATION: HI-LOK™ Product Specification 342.

DRAWING NUMBER

HL412

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