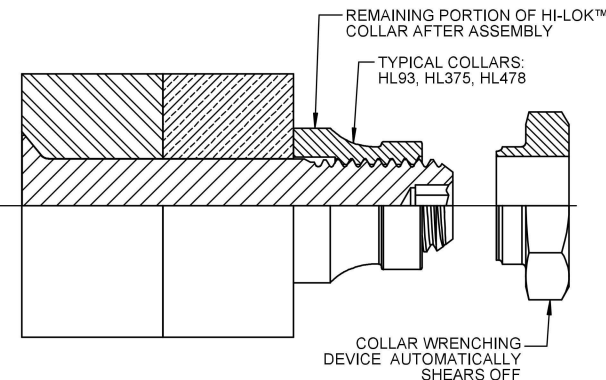
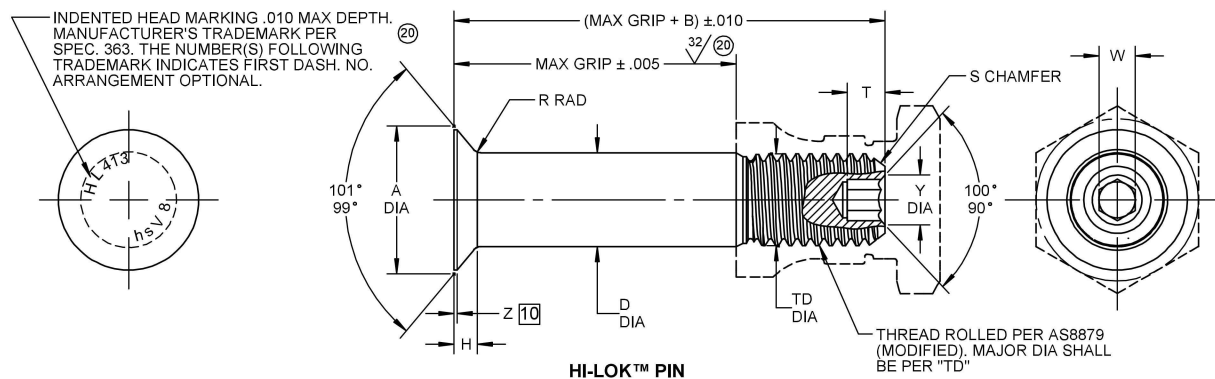


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HI-LOK™ PIN AND COLLAR AFTER ASSEMBLY

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

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	TENSION POUNDS MINIMUM
				WITHOUT COATING OR SOLID FILM	AFTER COATING OR SOLID FILM								W HEX	T DEPTH	Y DIA		
5							NOTE: USE HL113V()6-()										
6	7/32	.3813 .3765	.325	.2182 .2177	.2182 .2172	.1840 .1810	.005	.0684 .0664	.030 .020	.015	1/32 x 37°	.1900-32 UNJF-3A	.0806 .0791	.135 .115	.119 .104	7,100	3,180
8	9/32	.5066 .5018	.395	.2807 .2802	.2807 .2797	.2440 .2410	.006	.0948 .0928	.030 .020	.015	1/32 x 37°	.2500-28 UNJF-3A	.0967 .0947	.150 .130	.142 .122	11,800	5,820
10	11/32	.6335 .6287	.500	.3432 .3427	.3432 .3422	.3060 .3020	.007	.1218 .1198	.040 .030	.015	3/64 x 37°	.3125-24 UNJF-3A	.1295 .1270	.170 .150	.180 .160	17,600	9,200
12	13/32	.7604 .7556	.545	.4057 .4052	.4057 .4047	.3680 .3640	.008	.1488 .1468	.040 .030	.015	3/64 x 37°	.3750-24 UNJF-3A	.1617 .1582	.200 .180	.217 .197	24,600	14,000
14	15/32	.8884 .8812	.635	.4682 .4677	.4682 .4672	.4310 .4260	.009	.1763 .1733	.040 .030	.022	3/64 x 37°	.4375-20 UNJF-3A	.1930 .1895	.230 .210	.253 .233	32,700	18,900
16	17/32	1.0139 1.0068	.685	.5307 .5302	.5307 .5297	.4930 .4880	.010	.2027 .1997	.050 .040	.022	3/64 x 37°	.5000-20 UNJF-3A	.2242 .2207	.260 .240	.289 .269	42,000	25,600
18	19/32	1.1408 1.1337	.770	.5927 .5922	.5927 .5917	.5550 .5500	.010	.2300 .2270	.050 .040	.025	1/16 x 37°	.5625-18 UNJF-3A	.2555 .2520	.290 .270	.326 .306	52,400	32,400
20	21/32	1.2723 1.2651	.825	.6552 .6547	.6552 .6542	.6180 .6120	.010	.2589 .2559	.050 .040	.025	1/16 x 37°	.6250-18 UNJF-3A	.2555 .2520	.330 .305	.326 .306	64,100	41,000
24	25/32	1.5308 1.5236	1.050	.7802 .7797	.7802 .7792	.7430 .7370	.012	.3149 .3119	.050 .040	.025	1/16 x 37°	.7500-16 UNJF-3A	.3185 .3150	.330 .300	.398 .378	90,900	59,500

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

DRAWN BY J.S.OBISPO	DATE 2014-07-31	TITLE HI-LOK™ PIN 100° FLUSH MS24694 TENSION HEAD TITANIUM 1/16 GRIP VARIATION, 1/32 OVERSIZE
BRIEJ	1968-06-11	
APPROVED J.M.	DATE 1968-06-11	DRAWING NUMBER HL413
REVISION (20)	DATE K. PHAM 2022-04-04	

- 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 Non-lubed pins must be used with lubed collars or wet sealant.
 - 10 Curved or flat edge manufacturer's option.
 - 11 Oversize replacement for HL13 and HL113.
 - 12 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.
- (20) 20

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

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

- FINISH:**
- HL413V(-)(-) = Cetyl alcohol lube per Hi-Shear Spec. 305.
- (20) 12 HL413VAP(-)(-) = 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.
- (20) 12 HL413VAT(-)(-) = HI-KOTE™ 1 or HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294.
- (20) 12 HL413VAZ(-)(-) = 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.
- HL413VBJ(-)(-) = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, and cetyl alcohol lube per Hi-Shear Spec. 305.
- 9 HL413VBV(-)(-) = I.V.D. aluminum coating per MIL-DTL-83488, Type II, Class 3, with color blue on thread end.
- 8 HL413VVK(-)(-) = Solid film lube per "KalGard™" FA. "KALGARD" is a trademark of Metal Improvement Company.
- (20) HL413VVF(-)(-) = Anodize per Hi-Shear Spec. 306, Type I, color blue, and cetyl alcohol lube per Hi-Shear Spec. 305.
- (20) 12 HL413VHA(-)(-) = HI-KOTE™ 1 or HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294, with color black on thread end, and apply Precoat No. PR1436G sealant (.002-.005 thick), and cetyl alcohol lube per Hi-Shear Spec. 305.
- (20) HL413VLJ(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per AS5272.
- (20) HL413VLV(-)(-) = Phosphate fluoride treat and Esna-Lube No. 382 (Everlube Corp).
- (20) HL413VVR(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and solid film lube per "Electrofilm" 4396.
- (20) HL413VRA(-)(-) = Phosphate fluoride treat with color red on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.
- (20) HL413VSY(-)(-) = Phosphate fluoride treat, solid film lube per AS5272, Type I, and color red on thread end.
- (20) HL413VVT(-)(-) = Anodize per Hi-Shear Spec. 306, Type I, color pink, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL413VTA(-)(-) = 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.
- HL413VTB(-)(-) = HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL413VTF(-)(-) = HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292.
- 9 HL413VU(-)(-) = Bare, no lubricant.
- (20) HL413VUE(-)(-) = Anodize per Hi-Shear Spec. 306, Type II, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL413VV(-)(-) = Solid film lube per "Lubeco" 2123, Type II.
- HL413VYS(-)(-) = HI-KOTE™ 2 solid film lube per Hi-Shear Spec. 292 on threads only.
- HL413VNKJ(-)(-) = 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.
- HL413VNKK(-)(-) = 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.
- HL413VNKL(-)(-) = 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.
- HL413VHK(-)(-) = 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 HL413 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
 HL413VAP8-8
 8/16 or 1/2 Maximum Grip Length
 Replaces 8/32 or 1/4 Nominal Diameter Pin
 Finish Code
 Pin Basic Part Number

HL413

DRAWING NUMBER

HL413

2 OF 2