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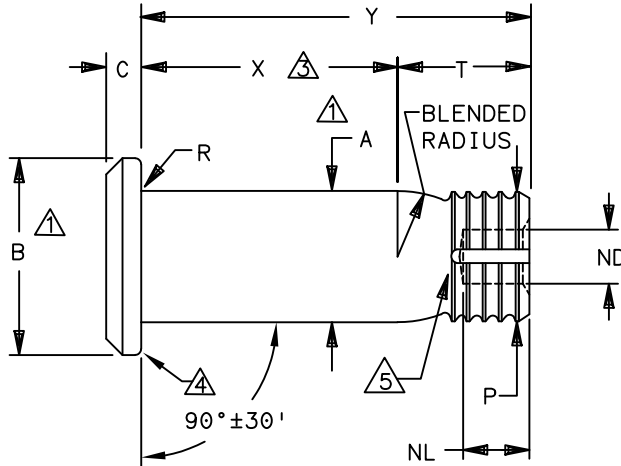
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ENGINEERING  
 STANDARD

THIS DRAWING, THE STRUCTURAL DESIGN DISCLOSED THEREIN AND THE TECHNICAL DATA AND ENGINEERING SERVICE REPRESENTED THEREBY ARE THE EXCLUSIVE PROPERTY OF HUCK INTERNATIONAL INCORPORATED.



LGP STUMP FAMILY NUMBER	NOM SIZE	A SHANK DIA +.0005 -.0000	A SHANK DIA COATED ±.0005	B HEAD DIA ±.010	C HEAD HEIGHT		ND DIA MAX	NL DEPTH MAX	P DIA MAX	R RAD ±.005	S △	T REF
					MAX	MIN						
(H)LGPS4SP-V05-(( ))	.1640	.1630	.1630	.312	.056	.046	.065	.110	.156	.020	.0045	.162
(H)LGPS4SP-V06-(( ))	.1900	.1890	.1890	.367	.067	.057	.086	.118	.184	.020	.0045	.171
(H)LGPS4SP-V07-(( ))	.2187	.2177	.2177	.400	.074	.064	.086	.118	.213	.020	.0045	.231
(H)LGPS4SP-V08-(( ))	.2500	.2490	.2490	.425	.085	.075	.109	.162	.244	.020	.0045	.231
(H)LGPS4SP-V10-(( ))	.3125	.3115	.3115	.483	.102	.092	.141	.216	.306	.025	.0045	.296
(H)LGPS4SP-V12-(( ))	.3750	.3740	.3740	.553	.117	.107	.171	.243	.370	.025	.0060	.345
(H)LGPS4SP-V14-(( ))	.4375	.4365	.4365	.634	.129	.119	.199	.260	.431	.025	.0060	.392
(H)LGPS4SP-V16-(( ))	.5000	.4990	.4990	.689	.143	.133	.230	.275	.492	.025	.0060	.444

- △ CONCENTRICITY: CONICAL SURFACE OF PROTRUDING HEAD TO "A" DIAMETER TO BE WITHIN .008 TIR
- △ SHANK STRAIGHTNESS: WITHIN "S" VALUES TIR PER INCH OF SHANK LENGTH
- △ GRIP LENGTH IS MEASURED FROM THE UNDERSIDE OF THE HEAD TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK.
- △ PERMISSIBLE NATURAL FLOW OF MATERIAL. MUST BE FREE FROM SHARP CORNERS.
- △ SEALANT ESCAPE GROOVE.

PROCUREMENT SPECIFICATION: C2010  
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DIMENSIONS IN INCHES

DRAWN BY	DH	FSCM (Cage Code) 17446 - Carson FSCM (Cage Code) F6167 - France
CHECKED BY	MM	

E<sub>12</sub>

E <sub>12</sub> REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION. CHANGED "KALGARD" TO "KAL-GARD" ON PAGE 2. (REF. ECR2779)		STUMP, LIGHTWEIGHT GROOVE PROPORTIONED INTERMEDIATE PROTRUDING HEAD, SHEAR TYPE, SWAGE LOCKING, 6AL-4V TITANIUM. (95 KSI SHEAR)	(H)LGPS4SP-V(( ))-(( ))
ISSUED	10/15/81		
REVISD	08/12/21		
PAGE	1 OF 4	LGP108	



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**MATERIAL:** 6AL-4V TITANIUM ALLOY PER AMS4967.

**SHEAR STRENGTH:** 95 KSI MINIMUM

**SURFACE TEXTURE:** Ra MAX PER ANSI/ASME B46.1 BEFORE COATING. BEARING SURFACE OF HEAD, HEAD TO SHANK FILLET RADIUS, SHANK AND TRANSITION RADIUS, -32, OTHER SURFACES -125.

**FINISH:** NO LETTER = UNCOATED PIN PLUS CETYL ALCOHOL LUBE PER AS87132.

AC = ALUMINUM COATING KAL-GARD 2240C (EU ONLY) / HI-KOTE™ 1 PER NAS4006 OR KAL-GARD 2242 / HI-KOTE™ 1 NC PER NAS4006NC. PLUS CETYL ALCOHOL LUBE PER AS87132.

ACN = ALUMINUM COATING HI-KOTE™ 1 NC PER EN4473 TYPE II. PLUS CETYL ALCOHOL LUBE PER AS87132.

AD = ALUMINUM COATING KAL-GARD 2245 / HI-KOTE™ 1 PER EN4473 TYPE I OR HI-KOTE™ 1 NC PER EN4473 TYPE II. OPTIONAL TO COLOR STUMP END WHITE. PLUS CETYL ALCOHOL LUBE PER AS87132.

AS = SULPHURIC ACID ANODIZE (BLUE) PER ISO 8080. PLUS CETYL ALCOHOL LUBE PER AS87132.

D = ION VAPOR DEPOSITED ALUMINUM COATING PER MIL-DTL-83488 TYPE II, CLASS 3, EXCEPT THICKNESS .0002/.0005. OPTIONAL TO COLOR STUMP END BLACK. PLUS CETYL ALCOHOL LUBE PER AS87132.

**HEAD MARKING:** HEADS SHALL BE MARKED WITH THE MANUFACTURER'S SYMBOL, THE BASIC PART NUMBER (LGP4), AND (V), DEPRESSED .006 MAX. DEPTH ARRANGEMENT OPTIONAL. FOR PINS REQUIRING A SEALANT ESCAPE GROOVE, AN "H" WILL BE INCLUDED ON THE HEAD IDENTIFICATION CALLOUT.

**CODING:** THE FIRST SET OF LETTERS DESIGNATE THE FAMILY OF LIGHTWEIGHT LGP STUMPS FOR SHEAR APPLICATIONS (LGPS).

THE SECOND SET OF LETTERS & NUMBER (4SP) DESIGNATE HEAD SIZE, STYLE, AND LOAD APPLICATION.

THE NEXT LETTER (V), IS THE MATERIAL DESIGNATOR FOR 6AL-4V TITANIUM ALLOY, MIN SHEAR STRENGTH: 95 KSI.

THE NUMBERS FOLLOWING THE MATERIAL DESIGNATE THE NOMINAL PIN SHANK DIAMETER IN .03125 INCH INCREMENTS.

THE FINAL NUMBERS DESIGNATE THE GRIP LENGTH NUMBER OR THE NOMINAL PIN SHANK LENGTH IN .0625 INCH INCREMENTS.

SEE FINISH CODE FOR SUFFIX INFORMATION.

EXAMPLE: (H)LGPS4SP-V08-06()



FINISH SUFFIX (SEE FINISH CODE).  
 GRIP LENGTH IN .0625 INCH INCREMENTS.  
 SHANK DIA IN .03125 INCH INCREMENTS  
 6AL-4V TITANIUM.  
 PROTRUDING HEAD FOR SHEAR APPLICATIONS.  
 FAMILY OF LGP LIGHTWEIGHT STUMPS FOR  
 AEROSPACE APPLICATIONS.  
 ADD "H" PREFIX TO PART NUMBER TO INCLUDE  
 SEALANT ESCAPE GROOVE.

DIMENSIONS IN INCHES

E 12	REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION. CHANGED "KALGARD" TO "KAL-GARD" ON PAGE 2. (REF. ECR2779)		
	ISSUED	10/15/81	STUMP, LIGHTWEIGHT GROOVE PROPORTIONED INTERMEDIATE PROTRUDING HEAD, SHEAR TYPE, SWAGE LOCKING, 6AL-4V TITANIUM. (95 KSI SHEAR)
REVISED	08/12/21	(H)LGPS4SP-V()-()-()	
PAGE	2 OF 4		LGP108

E<sub>12</sub>



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MECHANICAL PROPERTIES								
LGP STUMP PART NUMBER	STUMP NOM SIZE	MINIMUM DOUBLE SHEAR POUNDS	COLLAR PART NUMBER	MIN ULTIMATE TENSILE LBS WITH LISTED COLLAR	SQUEEZE LOAD		PIN POSITION SWAGE GAGE	
					MAX	MIN		
(H)LGPS4SP-V05-( ) ( )	.1640	4,010	3SLC-C05	1,400	3,100	2,500	HG113-05	
			SLC-MV05				TBD	
			SLC-M05	1,500				
			SLC-EU05	1,850				
(H)LGPS4SP-V06-( ) ( )	.1900	5,380	3SLC-C06	1,600	4,000	3,250	HG113-06	
			SLC-MV06				TBD	
			SLC-M06	2,000				
			SLC-EU06	2,250				
(H)LGPS4SP-V07-( ) ( )	.2187	7,200	3SLC-C07	2,250	4,500	3,600	HG113-07	
			SLC-M07					TBD
(H)LGPS4SP-V08-( ) ( )	.2500	9,300	3SLC-C08	3,000	6,550	5,500	HG113-08	
			SLC-MV08				TBD	
			SLC-M08	3,600				
			SLC-EU08	3,850				
(H)LGPS4SP-V10-( ) ( )	.3125	14,600	3SLC-C10	5,000	10,000	8,800	HG113-10	
			SLC-MV10					TBD
			SLC-M10					
			SLC-EU10				5,550	
(H)LGPS4SP-V12-( ) ( )	.3750	21,000	3SLC-C12	7,000	11,950	10,600	HG113-12	
			SLC-MV12					TBD
			SLC-M12					
			SLC-EU12				8,340	
(H)LGPS4SP-V14-( ) ( )	.4375	28,600	3SLC-C14	9,500	12,500	11,000	HG113-14	
(H)LGPS4SP-V16-( ) ( )	.5000	37,300	3SLC-C16	12,500	13,550	11,900	HG113-16	

DIMENSIONS IN INCHES

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	ISSUED	10/15/81	(H)LGPS4SP-V( )-( ) ( )
	REVISED	08/12/21	
PAGE	3 OF 4	STUMP, LIGHTWEIGHT GROOVE PROPORTIONED INTERMEDIATE PROTRUDING HEAD, SHEAR TYPE, SWAGE LOCKING, 6AL-4V TITANIUM. (95 KSI SHEAR)	LGP108



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GRIP NUMBER TABULATION													
GRIP DASH NO.	MINIMUM PERMISSIBLE GRIP OVERLAP	DESIGN GRIP RANGE		MAXIMUM PERMISSIBLE GRIP OVERLAP	X ±.005	05	06	07	08	10	12	14	16
		MIN	MAX			Y	Y	Y	Y	Y	Y	Y	Y
						±.010	±.010	±.010	±.010	±.010	±.010	±.010	±.010
02	.047	.063	.125	.141	.125	.287	.296	.356	—	—	—	—	—
03	.109	.126	.188	.203	.188	.350	.359	.419	.419	.484	—	—	—
04	.172	.189	.250	.266	.250	.412	.421	.481	.481	.546	.595	.642	.694
05	.234	.251	.312	.328	.312	.474	.483	.543	.543	.608	.657	.704	.756
06	.297	.313	.375	.391	.375	.537	.546	.606	.606	.671	.720	.767	.819
07	.359	.376	.438	.453	.438	.600	.609	.669	.669	.734	.783	.830	.882
08	.422	.439	.500	.516	.500	.662	.671	.731	.731	.796	.845	.892	.944
09	.484	.501	.562	.578	.562	.724	.733	.793	.793	.858	.907	.954	1.006
10	.547	.563	.625	.641	.625	.787	.796	.856	.856	.921	.970	1.017	1.069
11	.609	.626	.688	.703	.688	.850	.859	.919	.919	.984	1.033	1.080	1.132
12	.672	.689	.750	.766	.750	.912	.921	.981	.981	1.046	1.095	1.142	1.194
13	.734	.751	.812	.828	.812	.974	.983	1.043	1.043	1.108	1.157	1.204	1.256
14	.797	.813	.875	.891	.875	1.037	1.046	1.106	1.106	1.171	1.220	1.267	1.319
15	.859	.876	.938	.953	.938	1.100	1.109	1.169	1.169	1.234	1.283	1.330	1.382
16	.922	.939	1.000	1.016	1.000	1.162	1.171	1.231	1.231	1.296	1.345	1.392	1.444
17	.984	1.001	1.062	1.078	1.062	1.224	1.233	1.293	1.293	1.358	1.407	1.454	1.506
18	1.047	1.063	1.125	1.141	1.125	1.287	1.296	1.356	1.356	1.421	1.470	1.517	1.569
19	1.109	1.126	1.188	1.203	1.188	1.350	1.359	1.419	1.419	1.484	1.533	1.580	1.632
20	1.172	1.189	1.250	1.266	1.250	1.412	1.421	1.481	1.481	1.546	1.595	1.642	1.694
21	1.234	1.251	1.312	1.328	1.312	1.474	1.483	1.543	1.543	1.608	1.657	1.704	1.756
22	1.297	1.313	1.375	1.391	1.375	1.537	1.546	1.606	1.606	1.671	1.720	1.767	1.819
23	1.359	1.376	1.438	1.453	1.438	1.600	1.609	1.669	1.669	1.734	1.783	1.830	1.882
24	1.422	1.439	1.500	1.516	1.500	1.662	1.671	1.731	1.731	1.796	1.845	1.892	1.944
25	1.484	1.501	1.562	1.578	1.562	1.724	1.733	1.793	1.793	1.858	1.907	1.954	2.006
26	1.547	1.563	1.625	1.641	1.625	1.787	1.796	1.856	1.856	1.921	1.970	2.017	2.069
27	1.609	1.626	1.688	1.703	1.688	1.850	1.859	1.919	1.919	1.984	2.033	2.080	2.132
28	1.672	1.689	1.750	1.766	1.750	1.912	1.921	1.981	1.981	2.046	2.095	2.142	2.194
29	1.734	1.751	1.812	1.828	1.812	1.974	1.983	2.043	2.043	2.108	2.157	2.204	2.256
30	1.797	1.813	1.875	1.891	1.875	2.037	2.046	2.106	2.106	2.171	2.220	2.267	2.319
31	1.859	1.876	1.938	1.953	1.938	2.100	2.109	2.169	2.169	2.234	2.283	2.330	2.382
32	1.922	1.939	2.000	2.016	2.000	2.162	2.171	2.231	2.231	2.296	2.345	2.392	2.444

DIMENSIONS IN INCHES

E 12

REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION.  
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ISSUED	10/15/81
REVISED	08/12/21
PAGE	4 OF 4

STUMP, LIGHTWEIGHT GROOVE PROPORTIONED INTERMEDIATE  
 PROTRUDING HEAD, SHEAR TYPE, SWAGE LOCKING,  
 6AL-4V TITANIUM. (95 KSI SHEAR)

(H)LGPS4SP-V()-()-()  
 LGP108