



**HOWMET
AEROSPACE**

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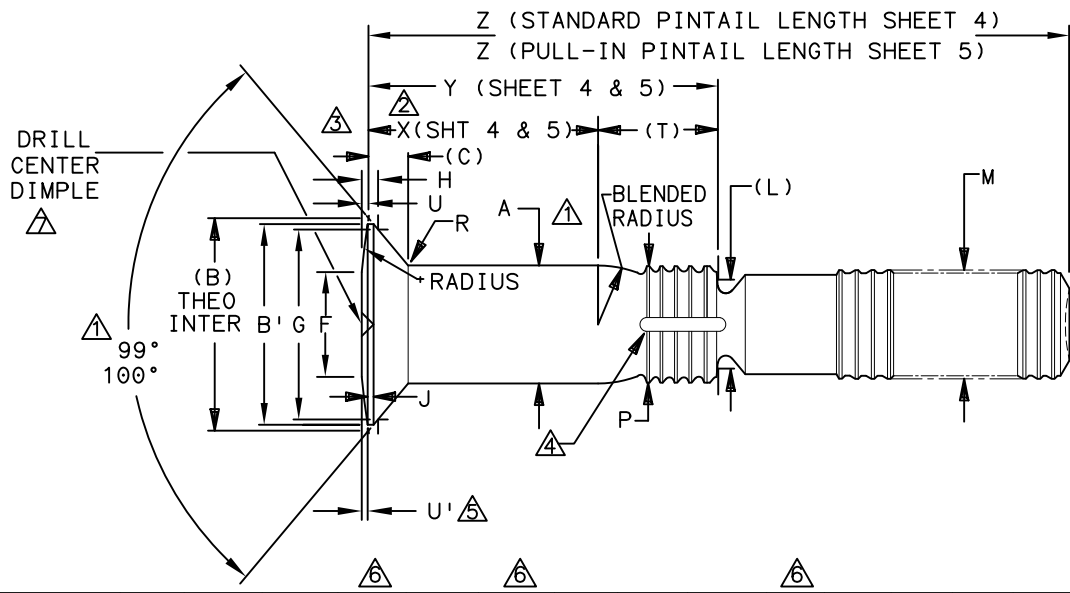
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**ENGINEERING
STANDARD**

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 PIN FAMILY NUMBER	NOM SIZE	A SHANK DIA +.0005 - .0000	A SHANK DIA COATED ±.0005	(B) THEO DIA NOM	B' HEAD DIA ±.0025	(C) HEAD HEIGHT NOM	F FLAT DIA ±.005	G GAGE DIA ±.0001	H GAGE HEIGHT MAX	J	(L) REF	M DIA MAX	P DIA MAX	R RAD ±.005	(T) REF	U ±.0010	U' REF
(H)LGPL18SCV05(*)()	.1640	.1630	.1630	.2569	.2435	.0394	.125	.2027	.0286 .0256		.126	.156	.156	.020	.150	.0043	.0035
(H)LGPL18SCV06(*)()	.1900	.1890	.1890	.2974	.2840	.0455	.156	.2440	.0282 .0252	.010 MAX	.150	.184	.184	.025	.152	.0043	.0035
(H)LGPL18SCV08(*)()	.2500	.2490	.2490	.3908	.3770	.0595	.190	.3314	.0316 .0286		.187	.244	.244	.025	.210	.0052	.0045
(H)LGPL18SCV10(*)()	.3125	.3115	.3115	.4695	.4525	.0663	.250	.4046	.0346 .0316	.012 MAX	.244	.306	.306	.035	.269	.0059	.0050
(H)LGPL18SCV12(*)()	.3750	.3740	.3740	.5556	.5390	.0762	.312	.4853	.0385 .0355		.298	.370	.370	.035	.321	.0075	.0065
(H)LGPL18SCV14(*)()	.4375	.4365	.4365	.6616	.6390	.0944	.375	.5697	.0495 .0465	.015 MAX	.312	.431	.431	.045	.376	.0094	.0080
(H)LGPL18SCV16(*)()	.5000	.4990	.4990	.7474	.7245	.1042	.438	.6499	.0529 .0499		.375	.492	.492	.045	.432	.0105	.0090

* INSERT A DASH (-) FOR STANDARD PINTAIL LENGTHS (SEE PAGE 4)
INSERT THE LETTER (L) FOR PINS REQUIRING LONG PINTAILS FOR PULL-IN TYPE APPLICATIONS - AVAILABLE IN 05 THRU 16 DIAMETERS (SEE PAGE 5)

- ① CONCENTRICITY: CONICAL SURFACE OF COUNTERSUNK HEAD TO "A" DIAMETER TO BE WITHIN .003 TIR.
- ② GRIP LENGTH IS MEASURED FROM THE THEORETICAL INTERSECTION OF THE CROWN RADIUS AND HEAD ANGLE TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK.
- ③ DIMENSIONS (B), (C), U, Y AND Z ARE MEASURED FROM THE THEORETICAL INTERSECTION OF THE CROWN RADIUS AND HEAD ANGLE.
- ④ SEALANT ESCAPE GROOVE (SEE SHEET 4 & 5).
- ⑤ DIMENSION U' IS MEASURED AT TOP OF "J" LAND.
- ⑥ DIMENSIONS (B), (C) AND U' ARE FOR ENGINEERING REFERENCE ONLY AND ARE NOT TO BE USED FOR INSPECTION PURPOSES.
- ⑦ DRILL CENTER DIMPLE IN TOP OF HEAD .035 MAX DIA, .010 MAX DEPTH AND CONCENTRIC TO "A" WITHIN .008.

DIMENSIONS IN INCHES

PROCUREMENT SPECIFICATION: C2010

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

C15 REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION.
CHANGED "KALGARD" TO "KAL-GARD" ON PAGE 2. (REF. ECR2779)

ISSUED	09/08/92	PIN, LIGHTWEIGHT GROOVE PROPORTIONED 100° CLOSE TOLERANCE CROWN COUNTERSUNK HEAD, SHEAR TYPE, STANDARD AND PULL-IN PINTAILS, SWAGE LOCKING, 6AL-4V TITANIUM (95 KSI SHEAR)	(H)LGPL18SCV()()()()
REVISED	08/12/21		
PAGE	1 OF 5		LGP109

C15



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

MINIMUM SHEAR STRENGTH: 95 KSI.

SURFACE TEXTURE: Ra MAX PER ANSI-B46.1 BEFORE COATING. CONICAL 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 MIL-L-87132.

SUFFIX "ACG" = ALUMINUM COAT (KAL-GARD 2242 OR HI-KOTE I) IDENTIFIED BY GREEN COLOR ON PINTAIL END PLUS CETYL ALCOHOL LUBE PER MIL-L-8712. (APPLICABLE TO "H" TYPE SEALANT ESCAPE GROOVE FASTENERS FOR BOEING ONLY).

SUFFIX "ACY" = ALUMINUM COAT (KAL-GARD 2242 OR HI-KOTE I) PER IDENTIFIED IDENTIFIED BY YELLOW COLOR ON THE PINTAIL END PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.

SUFFIX "APY" = ALUMINUM COAT (KAL-GARD 2242 OR HI-KOTE I) PER BMS 10-85 IDENTIFIED BY YELLOW COLOR ON PINTAIL END PLUS APPLY SEALANT UNDER HEAD PER BMS-5-95 AND CETYL ALCOHOL LUBE PER MIL-L-87132.

SUFFIX "AS" = SULFURIC ACID ANODIZE (BLUE) PER ISO 8080 PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.

SUFFIX "B" = UNCOATED PIN AND NO LUBRICATION.

SUFFIX "D" = ION VAPOR DEPOSITED ALUMINUM COATING PER MIL-DTL-83488 TYPE II CLASS 3 OPTIONAL TO COLOR PINTAIL END BLACK, PLUS CETYL ALOCHOL LUBE PER MIL-L-87132.

SUFFIX "EPR" = PHOSPHATE FLUORIDE PER BAC5861. IDENTIFIED BY RED COLOR ON THE TYPE II CLASS 3 PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.

SUFFIX "PB" = POWDERED BLAST TOP SURFACE OF HEAD PLUS CETYL ALCOHOL LUBE PER MIL-L-87132 (Ra 50/80 SURFACE ROUGHNESS).

HEAD MARKING: HEADS SHALL BE MARKED WITH THE MANUFACTURER'S SYMBOL, THE BASIC NUMBER (LGP18) 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 PINS FOR SHEAR APPLICATIONS (LGPL).

THE SECOND SET OF LETTERS & NUMBER 18SC 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 PINS WITH STANDARD PINTAIL LENGTHS INSERT A DASH (-), SEE PAGE 4 FOR PINS WITH LONG PULL-IN PINTAIL LENGTHS INSERT THE LETTER (L) SEE PAGE 5.

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

SEE FINISH CODE FOR SUFFIX INFORMATION.

DIMENSIONS IN INCHES

ISSUED	09/08/92	PIN, LIGHTWEIGHT GROOVE PROPORTIONED 100° CLOSE TOLERANCE CROWN COUNTERSUNK HEAD, SHEAR TYPE, STANDARD AND PULL-IN PINTAILS, SWAGE LOCKING, 6AL-4V TITANIUM (95 KSI SHEAR)	(H)LGPL18SCV()()()()
	08/12/21		
	2 OF 5		
C ₁₅ REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION. CHANGED "KALGARD" TO "KAL-GARD" ON PAGE 2. (REF. ECR2779)			
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MECHANICAL PROPERTIES

LGP PIN PART NUMBER	PIN NOM SIZE	MINIMUM DOUBLE SHEAR POUNDS	COLLAR PART NUMBER	MIN ULTIMATE TENSILE LBS WITH LISTED COLLAR	PIN POSITION SWAGE GAGE	
					EXCEPT "ACG" SUFFIX	"ACG" SUFFIX BOEING ONLY
(H)LGPL18SCV05()()()	.1640	4010	3SLC-C05	1290	HG110-05	HG160-05
			SLC-MV05		TBD	
			SLC-M05		HG137-05	
			SLC-EU05			
(H)LGPL18SCV06()()()	.1900	5380	3SLC-C06	1600 2000 2250	HG110-06	HG160-06
			SLC-MV06		TBD	
			SLC-M06		HG137-06	
(H)LGPL18SCV08()()()	.2500	9300	3SLC-C08	3000 3600 3850	HG110-08	HG160-08
			SLC-MV08		TBD	
			SLC-M08		HG137-08	
			SLC-EU08			
(H)LGPL18SCV10()()()	.3125	14600	3SLC-C10	5000 5550	HG110-10	HG160-10
			SLC-MV10		TBD	
			SLC-M10		HG137-10	
(H)LGPL18SCV12()()()	.3750	21000	3SLC-C12	7000 8340	HG110-12	HG160-12
			SLC-MV12		TBD	
			SLC-M12		HG137-12	
			SLC-EU12			
(H)LGPL18SCV14()()()	.4375	28600	3SLC-C14	9500	HG110-14	
(H)LGPL18SCV16()()()	.5000	37300	3SLC-C16	12500	HG110-16	

DIMENSIONS IN INCHES

C15

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ISSUED	09/08/92
REVISED	08/12/21
PAGE	3 OF 5

PIN, LIGHTWEIGHT GROOVE PROPORTIONED
 100° CLOSE TOLERANCE CROWN COUNTERSUNK HEAD
 SHEAR TYPE, STANDARD AND PULL-IN PINTAILS,
 SWAGE LOCKING, 6AL-4V TITANIUM. (95 KSI SHEAR)

(H)LGPL18SCV()()()()
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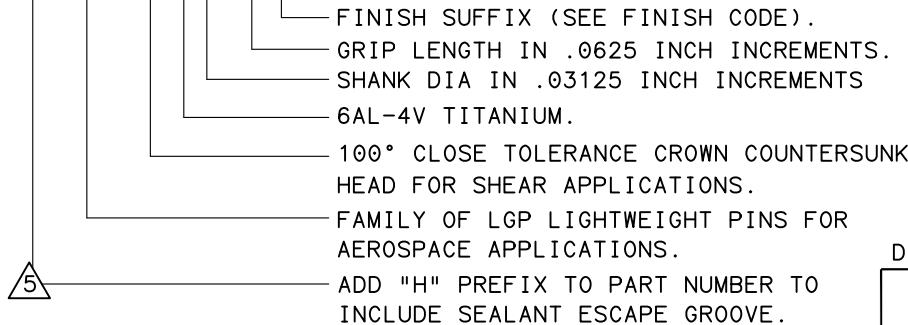
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STANDARD PINTAIL LENGTH

Table with columns: GRIP DASH NO., MINIMUM PERMISSIBLE GRIP OVERLAP, DESIGN GRIP RANGE (MIN, MAX), MAXIMUM PERMISSIBLE GRIP OVERLAP, X (±.005), and GRIP NUMBER TABULATION (05, 06, 08, 10, 12, 14, 16) with sub-columns Y and Z.

PART NO (H)LGPL18SCV08-06()

EXAMPLE:



DIMENSIONS IN INCHES

C15 REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION. CHANGED "KALGARD" TO "KAL-GARD" ON PAGE 2. (REF. ECR2779)

Table with columns: ISSUED (09/08/92), REVISED (08/12/21), PAGE (4 OF 5), PIN, LIGHTWEIGHT GROOVE PROPORTIONED 100° CLOSE TOLERANCE CROWN COUNTERSUNK HEAD SHEAR TYPE, STANDARD AND PULL-IN PINTAILS, SWAGE LOCKING, 6AL-4V TITANIUM (95 KSI SHEAR), and (H)LGPL18SCV()()()() and LGP109.

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LONG PULL-IN PINTAIL LENGTH

Table with columns: GRIP DASH NO., MINIMUM PERMISSIBLE GRIP OVERLAP, DESIGN GRIP RANGE (MIN, MAX), MAXIMUM PERMISSIBLE GRIP OVERLAP, X, and GRIP NUMBER TABULATION (05, 06, 08, 10, 12, 14, 16) with sub-columns Y and Z.

PART NO.

EXAMPLE: (H)LGPL18SC-V08L06()

- FINISH SUFFIX (SEE FINISH CODE PAGE 2).
GRIP LENGTH IN .0625 INCH INCREMENTS.
DENOTES LONG PINTAIL LENGTH FOR PULL-IN APPLICATIONS.
SHANK DIA IN .03125 INCH INCREMENTS
6AL-4V TITANIUM.
100° CLOSE TOLERANCE CROWN COUNTERSUNK HEAD FOR SHEAR APPLICATIONS.
FAMILY OF LGP LIGHTWEIGHT PINS FOR AEROSPACE APPLICATIONS.
ADD "H" PREFIX TO PART NUMBER TO INCLUDE SEALANT ESCAPE GROOVE.

DIMENSIONS IN INCHES

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