



STANDARDS COMMITTEE FOR HI-LOK PRODUCTS

2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA 90509

HI-SHEAR CORPORATION (Patent Holder) - Federal Code Ident. No. 73197
 VOI-SHAN DIV., VSI CORP. (License) - Federal Code Ident. No. 92215
 STANDARD PRESSED STEEL CO. (Licensee) - Federal Code Ident. No. 56878

HI-LOK PIN IDENTIFICATION CHART

Issued: 3-20-68
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HI-LOK PIN PART NO.	PIN HEAD STYLE APPLICATION	MATERIAL	HEAT TREAT	SHANK DIA. TOL.	SUGGESTED MAXIMUM TEMP. FOR USE	GRIP VARIATION	RECOMMENDED COMPANION HI-LOK COLLARS	NEXT OVERSIZE	CHARACTERISTICS
HL10	Protruding Shear	6A1-4V Titanium	95,000 psi Shear Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL70 HL94 HL79 HL97 HL82 HL379	HL110	Used when weight conservation is essential and where pin shank and hole tolerances are critical. Anti-galling finish available for use with all types of Hi-Lok collar materials.
HL11	100° Flush Shear	6A1-4V Titanium	95,000 psi Shear Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL70 HL94 HL79 HL97 HL82 HL379	HL111	Used when weight conservation is essential and where pin shank and hole tolerances are critical. Anti-galling finish available for use with all types of Hi-Lok collar materials.
HL12	Protruding Tension	6A1-4V Titanium	160,000 psi Tensile Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL75 HL198 HL86 HL280	HL112	Used when weight conservation is essential and where pin shank and hole tolerances are critical. Anti-galling finish available for use with all types of Hi-Lok collar materials.
HL13	100° Flush MS24694 Tension	6A1-4V Titanium	160,000 psi Tensile Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL75 HL198 HL86 HL280	HL113	Used when weight conservation is essential and where pin shank and hole tolerances are critical. Anti-galling finish available for use with all types of Hi-Lok collar materials.
HL14	Protruding Shear	H-11 Steel Alloy	156,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL288 HL574	HL214	Used in high temperature applications where pin shank and hole close tolerances are required.
HL15	100° Flush Shear	H-11 Steel Alloy	156,000 psi Shear Minimum	.001	900° F or Sub. to Finish	1/16"	HL288 HL574	HL215	Used in high temperature applications where pin shank and hole close tolerances are required.
HL16	Protruding Tension	H-11 Steel Alloy	260,000 - 280,000 psi Tensile	.001	900° F or Sub. to Finish	1/16"	HL89 HL273	HL216	Used in high temperature applications where pin shank and hole close tolerances are required.
HL17	100° Flush MS24694 Tension	H-11 Steel Alloy	260,000 - 280,000 psi Tensile	.001	900° F or Sub. to Finish	1/16"	HL89 HL273	HL217	Used in high temperature applications where pin shank and hole close tolerances are required.
HL18	Protruding Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL94 HL79 HL97 HL82 HL175	HL62	Used where pin shank and hole close tolerances are required.
HL19	100° Flush Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL94 HL79 HL97 HL82 HL175	HL63	Used where pin shank and hole close tolerances are required.
HL20	Protruding Tension	Alloy Steel	160,000 - 180,000 psi Tensile	.001	450°F	1/16"	HL75 HL86 HL87	HL64	Used where pin shank and hole close tolerances are required.
HL21	100° Flush MS24694 Tension	Alloy Steel	160,000 - 180,000 psi Tensile	.001	450° F	1/16"	HL75 HL86 HL87	HL65	Used where pin shank and hole close tolerances are required.
HL22	Protruding Shear	7075-T6 Aluminum Alloy	Spec. MIL-H-6088	.001	250° F	1/16"	HL77 HL182 HL277	HL122	Has higher shear and tension allowables than DD rivets. Interchangeable with MS20470 rivets.
HL23	100° Flush MS20426 Shear	7075-T6 Aluminum Alloy	Spec. MIL-H-6088	.001	250°F	1/16"	HL77 HL182 HL277	HL123	Has higher shear and tension allowables than DD rivets. Interchangeable with MS20426 rivets.
HL24	100° Flush Sealing	6A1-4V Titanium	95,000 psi Shear Minimum	.0005	Subject to O-ring Limits	1/16"	HL70 HL79 HL82	HL124	Sealing Hi-Lok with silicone or synthetic rubber O-ring. Used when weight conservation is critical and pin shank and hole tolerances are critical.
HL25	100° Flush Sealing	431 Stainless Steel	125,000 psi Shear Minimum	.0005	Subject to O-ring Limits	1/16"	HL70 HL79 HL86	HL125	Sealing Hi-Lok with general purpose Aromatic Fuel Resistant O-ring. Used in high strength applications where shank and hole tolerances are critical.
HL30	Protruding Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL70 HL94 HL79 HL97 HL82 HL175	HL66	Used in high strength applications where shank and hole tolerances are critical.
HL31	100° Flush Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL70 HL94 HL79 HL97 HL82 HL175	HL67	Used in high strength applications where shank and hole tolerances are critical
HL32	Protruding Tension	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL73 HL87 HL75 HL89 HL86 HL273	HL36	Used in high strength applications where shank and hole tolerances are critical.
HL33	100° Flush MS24694 Tension	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL73 HL87 HL75 HL89 HL86 HL273	HL37	Used in high strength applications where shank and hole tolerances are critical.
HL34	100° Flush Stud Pm Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0003	400°F	1/16"	HL76 HL86	—	Stud fastener. Fastens primary structure and provides means of attaching removable elements. Used in high strength applications where shank and hole tolerances are critical.
HL35	100° Flush Stud Pm Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL79 HL82	—	Stud fastener. Fastens primary structure and provides means of attaching removable elements.
HL40	Protruding Shear	A-286 Hi-Temp. Alloy	95,000 psi Shear Minimum at 70° F	.0005 or .0010	1200°F or Sub. to Finish	1/16"	HL70 HL94 HL79 HL97 HL82 HL297	HL140	Used in high temperature shear applications where shank and hole close tolerances are required.
HL41	100° Flush Shear	A-286 Hi Temp. Alloy	95,000 psi Shear Minimum at 70°F	.0005 or .0010	1200°F or Sub. to Finish	1/16"	HL70 HL94 HL79 HL97 HL82 HL297	HL141	Used in high temperature shear applications where shank and hole close tolerances are required.

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HI-LOK PIN IDENTIFICATION CHART

HI-LOK PIN PART NO.	PIN HEAD STYLE APPLICATION	MATERIAL	HEAT TREAT	SHANK DIA. TOL.	SUGGESTED MAXIMUM TEMP. FOR USE	GRIP VARIATION	RECOMMENDED COMPANION HI-LOK COLLARS	NEXT OVERSIZE	CHARACTERISTICS	
HL44	Protruding Shear	René 41	95,000 psi Shear Minimum	.0005	1400°F	1/16"	HL88	—	Used in high temperature shear applications where pin shank and hole close tolerances are required.	
HL45	100° Flush Shear	René 41	95,000 psi Shear Minimum	.0005	1400°F	1/16"	HL88	—	Used in high temperature shear applications where pin shank and hole close tolerances are required.	
HL48	Protruding Tension	A-286 Hi-Temp. Alloy	160,000 psi Tensile Minimum at 70°F	.0005 or .0010	1200°F or Sub. to Finish	1/16"	HL75 HL78 HL86	HL248	Used in high temperature tension applications where shank and hole close tolerances are required.	
HL49	100° Flush MS24694 Tension	A-286 Hi-Temp. Alloy	160,000 psi Tensile Minimum at 70°F	.0005 or .0010	1200°F or Sub. to Finish	1/16"	HL75 HL78 HL86	HL249	Used in high temperature tension applications where shank and hole close tolerances are required.	
HL50	Protruding Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	3/32"	HL83 HL90 HL490	HL579 HL594 HL683	HL56	Used in shear applications where pin shank and hole close tolerances are required.
HL51	100° Flush Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	3/32"	HL83 HL90 HL490	HL579 HL594 HL683	HL57	Used in shear applications where pin shank and hole close tolerances are required.
HL52	Protruding Shear	431 Stainless Steel	125,000 psi Shear Minimum	.001	400°F	1/16"	HL79 HL82 HL94	HL175 HL197	HL458	1/64" oversize for HL54.
HL53	100° Flush Shear	431 Stainless Steel	125,000 psi Shear Minimum	.001	400°F	1/16"	HL79 HL82 HL94	HL175 HL197	HL459	1/64" oversize for HL61.
HL54	Protruding Shear	431 Stainless Steel	125,000 psi Shear Minimum	.001	400°F	1/16"	HL70 HL79 HL82	HL94 HL97 HL175	HL52	Used in shear applications where pin shank and hole close tolerances are required. Same as HL30 except cadmium plated.
HL56	Protruding Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	3/32"	HL83 HL91 HL579	HL594 HL683 HL694	HL68	1/64" oversize for HL50.
HL57	100° Flush Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	3/32"	HL83 HL81 HL579	HL594 HL683 HL694	HL69	1/64" oversize for HL51.
HL58	Protruding Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL84 HL197	HL294 HL382	—	1/32" oversize for HL66.
HL59	100° Flush Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL84 HL197	HL294 HL382	—	1/32" oversize for HL67.
HL60	Protruding Tension	Alloy Steel	160,000-180,000 psi Tensile	.001	450°F	1/16"	HL72 HL75 HL86	—	—	Threaded stud pin.
HL61	100° Flush Shear	431 Stainless Steel	125,000 psi Shear Minimum	.001	400°F	1/16"	HL70 HL79 HL82	HL94 HL97 HL175	HL53	Used in shear applications where pin shank and hole close tolerances are required. Same as HL31 except cadmium plated.
HL62	Protruding Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL79 HL82 HL94	HL175 HL197	HL218	1/64" oversize for HL18 or HL418.
HL63	100° Flush Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL79 HL82 HL94	HL175 HL197	HL219	1/64" oversize for HL19 or HL419.
HL64	Protruding Tension	Alloy Steel	160,000-180,000 psi Tensile	.001	450°F	1/16"	HL75 HL87	—	HL220	1/64" oversize for HL20 or HL420.
HL65	100° Flush MS24694 Tension	Alloy Steel	160,000-180,000 psi Tensile	.001	450°F	1/16"	HL75 HL87	—	HL221	1/64" oversize for HL21 or HL421.
HL66	Protruding Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL79 HL82 HL94	HL175 HL197 HL297	HL58	1/64" oversize for HL30.
HL67	100° Flush Shear	431 Stainless Steel	125,000 psi Shear Minimum	.0005 or .0010	400°F	1/16"	HL79 HL82 HL94	HL175 HL197 HL297	HL59	1/64" oversize for HL31.
HL68	Protruding Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	3/32"	HL92 HL492 HL783	—	—	1/32" oversize for HL56.
HL69	100° Flush Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	3/32"	HL92 HL492 HL783	—	—	1/32" oversize for HL57.
HL110	Protruding Shear	6 Al-4V Titanium Alloy	95,000 psi Shear Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL79 HL82 HL94	HL276 HL379	HL410	1/64" oversize for HL10.

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HL111	100° Flush Shear	6A1-4V Titanium Alloy	95,000 psi Shear Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL79 HL82 HL94 HL276 HL379	HL411	1/64" oversize for HL11.
HL112	Protruding Tension	6A1-4V Titanium Alloy	160,000 psi Tensile Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL75 HL87 HL198 HL280	—	1/64" oversize for HL12.
HL113	100° Flush MS24694 Tension	6A1-4V Titanium	160,000 psi Tensile Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL75 HL87 HL198 HL280	—	1/64" oversize for HL13.
HL114	Protruding Shear	H-11 Steel Alloy	132,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL288 HL574	HL314	Same as HL14 except heat treat.
HL115	100° Flush Shear	H-11 Steel Alloy	132,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL288 HL574	HL315	Same as HL15 except heat treat.
HL116	Protruding Tension	H-11 Steel Alloy	220,000 psi Tensile Minimum	.001	900°F or Sub. to Finish	1/16"	HL89 HL273	HL316	Same as HL16 except heat treat.
HL117	100° Flush MS24694 Tension	H-11 Steel Alloy	220,000 psi Tensile Minimum	.001	900°F or Sub. to Finish	1/16"	HL89 HL273	HL317	Same as HL17 except heat treat.
HL122	Protruding Shear	7075-T6 Aluminum Alloy	Spec. MIL-H-6088	.001	250°F	1/16"	HL182 HL377	HL238	1/64" oversize for HL22.
HL123	100° Flush MS20426 Shear	7075-T6 Aluminum Alloy	Spec. MIL-H-6088	.001	250°F	1/16"	HL182 HL37	HL259	1/64" oversize for HL23.
HL124	100° Flush Sealing	6A1-4V Titanium Alloy	95,000 psi Shear Minimum	.0005	Subject to O-Ring Limits	1/16"	HL79 HL82	—	1/64" oversize for HL24.
HL125	100° Flush Sealing	431 Stainless Steel	125,000 psi Shear Minimum	.0005	Subject to O-Ring Limits	1/16"	HL79 HL87 HL272	—	1/64" oversize for HL25.
HL214	Protruding Shear	H-11 Steel Alloy	156,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL288 HL574	HL714	1/64" oversize for HL14.
HL215	100° Flush Shear	H-11 Steel Alloy	156,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL288 HL574	HL715	1/64" oversize for HL15.
HL216	Protruding Tension	H-11 Steel Alloy	260,000-280,000 psi Tensile	.001	900°F or Sub. to Finish	1/16"	HL89 HL273	HL516	1/64" oversize for HL16.
HL217	100° Flush MS24694 Tension	H-11 Steel Alloy	260,000-280,000 psi Tensile	.001	900°F or Sub. to Finish	1/16"	HL89 HL273	HL517	1/64" oversize for HL17.
HL218	Protruding Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL84 HL197 HL294	HL202	1/32" oversize for HL62.
HL219	100° Flush Shear	Alloy Steel	95,000 psi Shear Minimum	.001	450°F	1/16"	HL84 HL197 HL294	HL203	1/32" oversize for HL63.
HL220	Protruding Tension	Alloy Steel	160,000-180,000 psi Tensile	.001	450°F	1/16"	HL93 HL293 HL393	HL204	1/32" oversize for HL64.
HL221	100° Flush MS24694 Tension	Alloy Steel	160,000-180,000 psi Tensile	.001	450°F	1/16"	HL93 HL293 HL393	HL205	1/32" oversize for HL65.
HL510	Protruding Shear	6A1-4V Titanium Alloy	95,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL79 HL82 HL94 HL97 HL379	—	Same as HL10 except finish.
HL511	100° Flush Shear	6A1-4V Titanium Alloy	95,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL79 HL82 HL94 HL97 HL379	—	Same as HL11 except finish.
HL512	Protruding Tension	6A1-4V Titanium Alloy	160,000 psi Tensile Minimum	.001	450°F	1/16"	HL75 HL86 HL198 HL280	—	Same as HL12 except finish.
HL513	100° Flush MS24694 Tension	6A1-4V Titanium Alloy	160,000 psi Tensile Minimum	.001	450°F	1/16"	HL75 HL86 HL198 HL280	—	Same as HL13 except finish.
HL714	Protruding Shear	H-11 Steel Alloy	156,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL674	—	1/32" oversize for HL214.

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HL715	100° Flush Shear	H-11 Steel Alloy	156,000 psi Shear Minimum	.001	900°F or Sub. to Finish	1/16"	HL674	—	1/32" oversize for HL215.	
HL718	Protruding Shear	Alloy Steel	108,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL79 HL82	HL94 HL97 HL175	HL762	Same as HL18 except heat treat.
HL719	100° Flush Shear	Alloy Steel	108,000 psi Shear Minimum	.001	450°F	1/16"	HL70 HL79 HL82	HL94 HL97 HL175	HL763	Same as HL19 except heat treat.
HL720	Protruding Tension	Alloy Steel	180,000- 200,000 psi Tensile	.001	450°F	1/16"	HL73 HL75 HL86	HL87 HL89 HL273	HL764	Same as HL20 except heat treat.
HL721	100° Flush MS24694 Tension	Alloy Steel	180,000- 200,000 psi Tensile	.001	450°F	1/16"	HL73 HL75 HL86	HL87 HL89 HL273	HL765	Same as HL21 except heat treat.
HL910	Protruding Shear	6A1-6V-2Sn Titanium Alloy	108,000 psi Shear Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL70 HL79 HL82	HL97 HL94 HL379	HL950	Same as HL10 except material and heat treat.
HL911	100° Flush Shear	6A1-6V-2Sn Titanium Alloy	108,000 psi Shear Minimum	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL70 HL79 HL82	HL97 HL94 HL379	HL951	Same as HL11 except material and heat treat.
HL912	Protruding Tension	6A1-6V-2Sn Titanium Alloy	180,000- 200,000 psi Tension	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL75 HL86	HL198 HL280	HL952	Same as HL12 except material and heat treat.
HL913	100° Flush MS24694 Tension	6A1-6V-2Sn Titanium Alloy	180,000- 200,000 psi Tension	.0005 or .0010	750°F or Sub. to Finish	1/16"	HL75 HL86	HL198 HL280	HL953	Same as HL13 except material and heat treat.