



Howmet Fastening Systems
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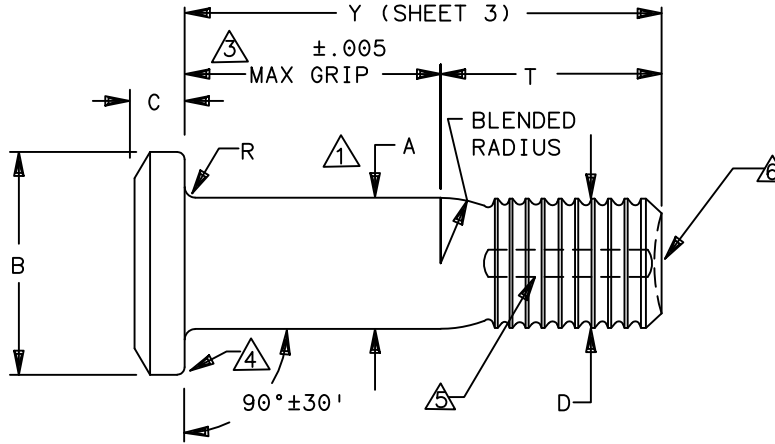
Howmet Fastening Systems
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GP™

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.



GP FAMILY NUMBER	NOM SIZE	A SHANK DIA COATED ±.0005	B HEAD DIA		C HEAD HEIGHT ±.005	D DIA MAX	R RAD ±.005	S Δ	T REF
			MAX	MIN					
GPS8TP-DT05-()	.164	.1630	.322	.306	.060	.156	.020	.0045	.288
GPS8TP-DT06-()	.190	.1890	.377	.357	.069	.184	.020	.0045	.333
GPS8TP-DT08-()	.250	.2490	.440	.415	.085	.244	.020	.0045	.417
GPS8TP-DT10-()	.312	.3115	.505	.475	.107	.306	.025	.0045	.534
GPS8TP-DT12-()	.375	.3740	.600	.565	.135	.370	.025	.0060	.600

- Δ CONCENTRICITY: CONICAL SURFACE OF PROTRUDING HEAD TO "A" DIAMETER TO BE WITHIN 5% OF "A" DIAMETER TIR.
- Δ SHANK STRAIGHTNESS: WITHIN "S" VALUES TIR PER INCH OF SHANK LENGTH.
- Δ GRIP LENGTH IS MEASURED FROM THE UNDERSIDE OF THE HEAD TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK.
- Δ PERMISSIBLE NATURAL FLOW OF MATERIAL, MUST BE FREE FROM SHARP CORNERS.
- Δ END MAY BE FLAT OR CUPPED. IF CUPPED, CHECK "Y" LENGTH TO FLAT AREA OF CUP.

MATERIAL: 8740 ALLOY STEEL.
 MINIMUM SHEAR STRENGTH: 95 KSI.
 SURFACE TEXTURE: Ra MAX PER ANSI-B46.1 BEFORE COATING. BEARING SURFACE OF HEAD, HEAD TO SHANK FILLET RADIUS, SHANK AND TRANSITION RADIUS, -32, OTHER SURFACES -125.

PROCUREMENT SPECIFICATION: NAS1413
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DIMENSIONS IN INCHES

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

B3

B3	REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION.(REF. ECR2779)		
ISSUED	09/19/78	STUMP, GROOVE PROPORTIONED GP™ SWAGE LOCKING - TENSION PROTRUDING HEAD 8740 ALLOY STEEL. (95 KSI SHEAR)	GPS8TP-DT()-()
REVISED	08/10/21		
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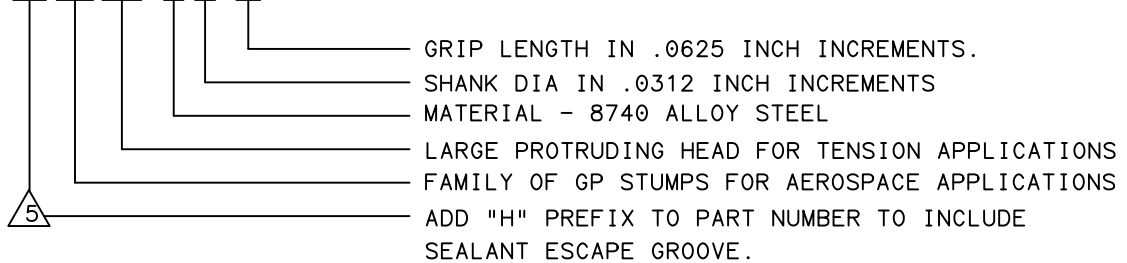
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FINISH: NO LETTER = CADMIUM PLATE PER QQ-P-416 TYPE II CLASS 2,
 PLUS CHLORINE FREE CETYL ALCOHOL

HEAD MARKING: HEADS SHALL BE MARKED WITH THE MANUFACTURER'S SYMBOL, BASIC NUMBER (GP8), DEPRESSED .010 MAX, ARRANGEMENT OPTIONAL. FOR STUMPS REQUIRING A SEALANT ESCAPE GROOVE, A DOT (.) MARK WILL ALSO BE INCLUDED ON THE HEAD IDENTIFICATION.

CODING: THE FIRST SET OF LETTERS DESIGNATE THE FAMILY OF GROOVE PROPORTIONED STUMPS FOR AEROSPACE APPLICATIONS (GPS).
 THE SECOND SET OF LETTERS & NUMBER 8TP DESIGNATE HEAD SIZE, STYLE, AND LOAD APPLICATION.
 THE NEXT LETTER "DT", IS THE MATERIAL DESIGNATOR FOR 8740 ALLOY STEEL
 MIN SHEAR STRENGTH: 95 KSI.
 THE NUMBERS FOLLOWING THE MATERIAL DESIGNATE THE NOMINAL PIN SHANK DIAMETER IN .0312 INCH INCREMENTS.
 THE FINAL NUMBER(S) DESIGNATES THE GRIP LENGTH NUMBER OR THE NOMINAL PIN SHANK LENGTH IN .0625 INCH INCREMENTS.

EXAMPLE: (H)GPS8TP-DT08-06



MECHANICAL PROPERTIES					
GP STUMP PART NUMBER	NOM SIZE	MINIMUM DOUBLE SHEAR POUNDS	COLLAR PART NUMBER	MIN ULTIMATE TENSILE LBS WITH LISTED COLLARS	PIN POSITION SWAGE GAGE
GPS8TP-DT05-()	.164	4010	2TCC-C05 2TC-C05	2180	HG109-05
GPS8TP-DT06-()	.190	5380	2TCC-C06 2TC-C06	2750	HG109-06
GPS8TP-DT08-()	.250	9300	2TCC-C08 2TC-C08	5000	HG109-08
GPS8TP-DT10-()	.312	14600	2TCC-C10 2TC-C10	8300	HG109-10
GPS8TP-DT12-()	.375	21000	2TCC-C12 2TC-C12	12700	HG109-12

DIMENSIONS IN INCHES

B₃

REVISED COMPANY LOGO & UPDATED TRADEMARK INFORMATION. (REF. ECR2779)

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STUMP, GROOVE PROPORTIONED GP™
 SWAGE LOCKING - TENSION PROTRUDING HEAD
 8740 ALLOY STEEL. (95 KSI SHEAR)

GPS8TP-DT()-()

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GRIP NUMBER TABULATION									
GRIP DASH NO.	MINIMUM PERMIS- SIBLE GRIP OVERLAP	DESIGN GRIP RANGE		MAXIMUM PERMIS- SIBLE GRIP OVERLAP	05	06	08	10	12
		MIN.	MAX.		Y	Y	Y	Y	Y
					±.010	±.010	±.010	±.010	±.010
02	.047	.063	.125	.141	.413	.458			
03	.109	.126	.188	.203	.476	.521	.605	.722	
04	.172	.189	.250	.266	.538	.583	.667	.784	.850
05	.234	.251	.312	.328	.600	.645	.729	.846	.912
06	.297	.313	.375	.391	.663	.708	.792	.909	.975
07	.359	.376	.438	.453	.726	.771	.855	.972	1.038
08	.422	.439	.500	.516	.788	.833	.917	1.034	1.100
09	.484	.501	.562	.578	.850	.895	.979	1.096	1.162
10	.547	.563	.625	.641	.913	.958	1.042	1.159	1.225
11	.609	.626	.688	.703	.976	1.021	1.105	1.222	1.288
12	.672	.689	.750	.766	1.038	1.083	1.167	1.284	1.350
13	.734	.751	.812	.828	1.100	1.145	1.229	1.346	1.412
14	.797	.813	.875	.891	1.163	1.208	1.292	1.409	1.475
15	.859	.876	.938	.953	1.226	1.271	1.355	1.472	1.538
16	.922	.939	1.000	1.016	1.288	1.333	1.417	1.534	1.600
17	.984	1.001	1.062	1.078	1.350	1.395	1.479	1.596	1.662
18	1.047	1.063	1.125	1.141	1.413	1.458	1.542	1.659	1.725
19	1.109	1.126	1.188	1.203	1.476	1.521	1.605	1.722	1.788
20	1.172	1.189	1.250	1.266	1.538	1.583	1.667	1.784	1.850
21	1.234	1.251	1.312	1.328	1.600	1.645	1.729	1.846	1.912
22	1.297	1.313	1.375	1.391	1.663	1.708	1.792	1.909	1.975
23	1.359	1.376	1.438	1.453	1.726	1.771	1.855	1.972	2.038
24	1.422	1.439	1.500	1.516	1.788	1.833	1.917	2.034	2.100
25	1.484	1.501	1.562	1.578	1.850	1.895	1.979	2.096	2.162
26	1.547	1.563	1.625	1.641	1.913	1.958	2.042	2.159	2.225
27	1.609	1.626	1.688	1.703	1.976	2.021	2.105	2.222	2.288
28	1.672	1.689	1.750	1.766	2.038	2.083	2.167	2.284	2.350
29	1.734	1.751	1.812	1.828	2.100	2.145	2.229	2.346	2.412
30	1.797	1.813	1.875	1.891	2.163	2.208	2.292	2.409	2.475
31	1.859	1.876	1.938	1.953	2.226	2.271	2.355	2.472	2.538
32	1.922	1.939	2.000	2.016	2.288	2.333	2.417	2.534	2.600

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