



Howmet Fastening Systems
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Ergo-Tech®
BLIND BOLT
ENGINEERING
STANDARD

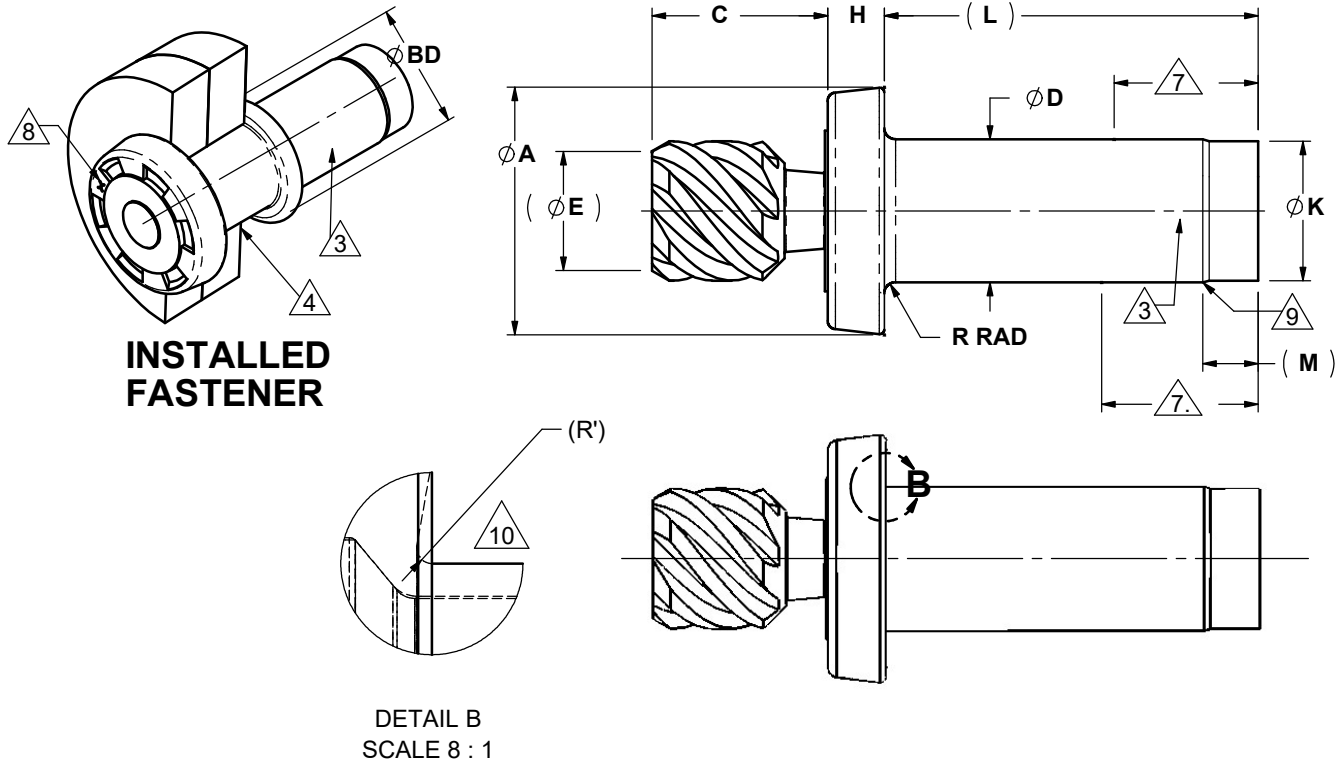


TABLE I

PART/DIA. DASH NO.	Ø A	(C) DRIVER LENGTH REF	Ø D SHANK	(Ø E) SPLINE REF	H	(R' RAD. MAX)	R RAD. MAX	SINGLE SHEAR LBS (MIN)	TENSILE LBS (MIN)	Ø K LEAD-IN	(M) REF	Ø BD MIN	RECOMMENDED INSTALLATION HOLE SIZES
												△5 EXT. GRIP △6	
ER212-05	.322 .306	.250	.1635 .1625	.180	.075 .065	.010	.025	2005	1400	.1565 .1539	.060	.205	.167 .164
ER212-06	.377 .357	.250	.1895 .1885	.180	.084 .074	.015	.025	2690	1600	.1830 .1804	.065	.238	.193 .190
ER212-08	.440 .420	.300	.2495 .2485	.235	.105 .095	.018	.025	4650	3000	.2430 .2404	.085	.313	.253 .250
ER212-10	.540 .520	.350	.3120 .3110	.275	.122 .112	.021	.025	7300	5000	.3055 .3029	.230	.391	.316 .313
ER212-12	.660 .630	.400	.3745 .3735	.320	.165 .150	.025	.030	10500	7000	.3680 .3654	.305	.469	.378 .375

DIMENSIONS IN INCHES

AA	ECN 15556 MINOR EDITS		Current Design Activity CAGE Code 0HDW7		PROCUREMENT SPEC T0108	DRAWN BY J. SCHLOBOHM
	ISSUED 5/29/2009	BLIND BOLT FASTENER, HIGH STRENGTH, FRICTION THREAD LOCK, THREADED, PROTRUDING HEAD, CLOSE TOLERANCE SHANK, TITANIUM/A-286 (95 KSI SHEAR)			CHECKED BY	SIGNATURE ON FILE
REVISID 12/23/2023						ER212
PAGE 1 OF 4						SK12848

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TABLE II

GRIP DASH NO.	DESIGN GRIP RANGE		OVERLAP MAX GRIP \triangle ₆	-05 DIA	-06 DIA	-08 DIA	-10 DIA	-12 DIA
	MIN.	MAX.		(L)	(L)	(L)	(L)	(L)
				\triangle ₁₀				
-02	.063	.125	.133	.451	.482	.586	.666	.760
-03	.126	.187	.195	.513	.544	.649	.729	.823
-04	.188	.250	.258	.576	.607	.711	.792	.885
-05	.251	.312	.320	.638	.669	.774	.854	.948
-06	.313	.375	.383	.701	.732	.836	.917	1.010
-07	.376	.437	.445	.763	.794	.899	.979	1.073
-08	.438	.500	.508	.826	.857	.961	1.042	1.135
-09	.501	.562	.570	.889	.919	1.024	1.104	1.198
-10	.563	.625	.633	.951	.982	1.086	1.166	1.260
-11	.626	.687	.695	1.013	1.044	1.149	1.229	1.323
-12	.688	.750	.758	-	1.107	1.211	1.291	1.385
-13	.751	.812	.820	-	1.169	1.274	1.354	1.448
-14	.813	.875	.883	-	1.232	1.336	1.416	1.510
-15	.876	.937	.945	-	-	1.399	1.479	1.573
-16	.938	1.000	1.008	-	-	-	1.541	1.635
-17	1.001	1.062	1.070	-	-	-	1.604	1.698
-18	1.063	1.125	1.133	-	-	-	1.666	1.760
-19	1.126	1.187	1.195	-	-	-	1.729	1.823
-20	1.188	1.250	1.258	-	-	-	1.791	1.885

1. SINGLE SHEAR TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NASM 1312-20 AND APPLIES TO GRIPS 05-05 MIN, 06-06 MIN, 08-07 MIN, 10-09 MIN AND 12-10 MIN AND LONGER. TENSILE STRENGTH TESTING SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF NASM 1312-8 AND APPLIES TO GRIPS 05-06 MAX, 06-07 MAX, 08-08 MAX, 10-10 MAX AND 12-12 MAX AND LONGER.
2. DIMENSIONS ARE IN INCHES AND ARE TO BE MET AFTER FINISH.
3. 3 INDENTATIONS 120° APART TO PROVIDE THREAD LOCK.
4. BLIND SIDE HEAD MAY BE INSTALLED ON 5° MAXIMUM SLOPE.
5. THE AVERAGE SMALLEST AND LARGEST OBSERVED VALUES ON THE SAME SPECIMEN SHALL BE EQUAL TO OR GREATER THAN THE STATED MINIMUM.
6. EXTENDED GRIP "BD MIN" VALUE APPLIES TO A PART DRIVEN .008" ± .002" OVER THE DESIGN MAXIMUM GRIP. SEE GRIP TABLE II ON PAGE 2.
7. SLEEVE DIA. MAY BE UP TO .0003" OVERSIZE IN BAND ANNEAL ZONE. ZONE EXTENDS FROM APPROXIMATELY BLIND END - .470" FOR THE -05 DIA., - .525" FOR THE -06 DIA., - .635" FOR THE -08 DIA., - .700" FOR THE -10 DIA., AND - .750" FOR THE -12 DIA.

DIMENSIONS IN INCHES

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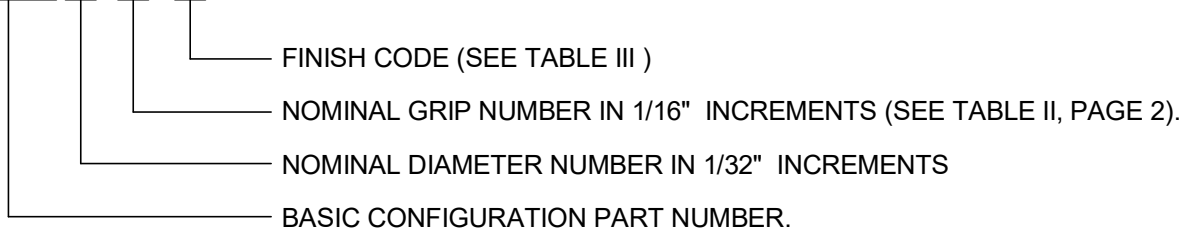
TABLE III



FINISH CODE	MATERIAL		FINISH		PROCUREMENT SPECIFICATION
	NUT BODY	CORE BOLT	NUT BODY	CORE BOLT	
NONE	A286 CRES PER CHEMICAL COMPOSITION AMS 5737 OR AMS 5732	6Al-4V TITANIUM PER AMS 4967 OR 4928	PASSIVATE PER AMS2700 TYPE 2 OR TYPE 8	INCOTEC TEC-LUBE DRY FILM LUBE PER AS5272 OR EQUIVALENT	T0108
D 			IVD ALUMINUM COAT PER MIL-DTL-83488, TYPE II, CLASS 3 AND EN6118		
AC 			CHROMATED ALUMINUM PIGMENTED COATING PER NAS4006 AND EN4473		
ACN 			NON-CHROMATED ALUMINUM PIGMENTED COATING PER NAS4006 AND EN4473		
ACP 			CHROMATED ALUMINUM PIGMENTED COATING PER NAS4006 AND EN4473 WITH INCOTECH WCA-9P (PINK)		

NUMBER KEY

ER212 - XX - XX XXX



- IDENTIFICATION: -05 AND -06: MANUFACTURER'S ID. -08, -10 AND -12: MANUFACTURER'S ID. MARKING INDENTED .010 MAXIMUM, LOCATION AND ORIENTATION OPTIONAL.
- TRANSITION, OPTIONAL RADIUS OR CHAMFER.
- OPTIONAL RECESS ON THE BEARING SURFACE. SEE TABLE I
- CONSULT HFS FOR LONGER GRIP LENGTH AVAILABILITY.
- THIS FINISH IS INACTIVE FOR NEW DESIGN AND PROCUREMENT. NO SUPERSESSIONS AVAILABLE.
- THIS FINISH IS INACTIVE FOR NEW DESIGN AND PROCUREMENT AFTER 03/01/2022.
- ACN FINISH IS SUPERSESSON FOR THE AC FINISH CODE
- CETYL ALCOHOL LUBE PER AS87132 MAY BE APPLIED TO COMPONENTS (AT MFR'S OPTION)
- COMPLETE COVERAGE OF SLEEVE INTERNAL FEATURES IS NOT REQUIRED. OVERSPRAY ONTO THE INTERNAL FEATURES IS ACCEPTED.

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TABLE I V

INSTALLED WEIGHT (LBS/1000)			
DIAMETER	GRIP	WEIGHT	ADDER
-06 (.190)	-02	4.99	.390
-08 (.250)	-02	9.52	.690
-10 (.313)	-02	17.48	1.050
-12 (.375)	-02	30.59	1.450

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