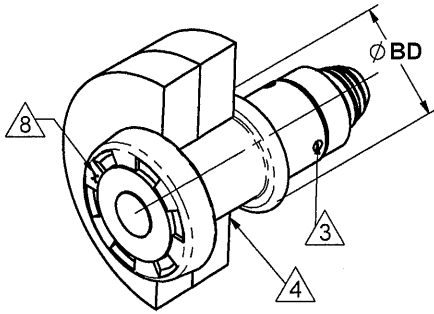




Howmet Fastening Systems
Tucson Operations
3724 East Columbia Street
Tucson, Arizona 85714 USA
Phone (520) 519-7400
Fax (520) 519-7454

Ergo-Tech
BLIND BOLT
ENGINEERING
STANDARD



INSTALLED FASTENER

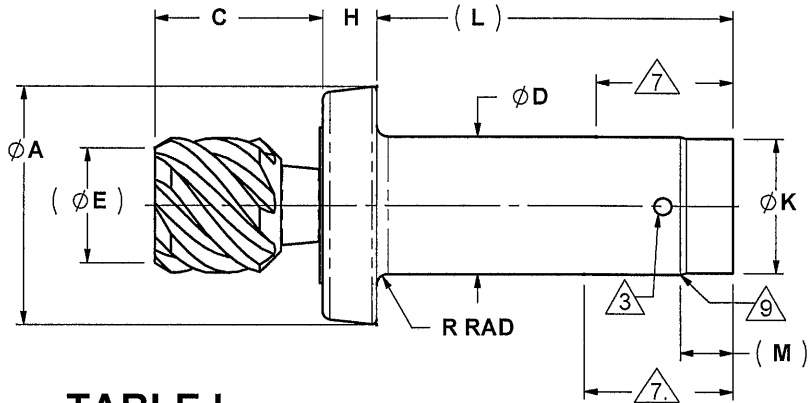


TABLE I

PART/DIA. DASH NO.	Ø A	(C) DRIVER LENGTH REF	Ø D SHANK	(Ø E) SPLINE REF	H	R RAD. MAX	SINGLE SHEAR LBS (MIN)	TENSILE LBS (MIN)	Ø K LEAD-IN	(M) REF	Ø BD MIN ⁵	
											EXTENDED GRIP	DESIGN GRIP
ER212-05	.322 .306	.250	.1635 .1625	.180	.075 .065	.025	2005	1400	.1565 .1539	.060	.205	.213
ER212-06	.377 .357	.250	.1895 .1885	.180	.084 .074	.025	2690	1600	.1830 .1804	.065	.238	.247
ER212-08	.440 .420	.300	.2495 .2485	.235	.105 .095	.025	4650	3000	.2430 .2404	.085	.313	.325
ER212-10	.540 .520	.350	.3120 .3110	.275	.122 .112	.025	7300	5000	.3055 .3029	.230	.391	.406
ER212-12	.660 .630	.400	.3745 .3735	.320	.165 .150	.030	10500	7000	.3680 .3654	.305	.469	.488

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.
8. IDENTIFICATION: -05 AND -06: NO IDENTIFICATION MARKINGS. -08, -10 AND -12: MANUFACTURER'S ID. MARKING INDENTED .010 MAXIMUM, LOCATION AND ORIENTATION OPTIONAL.
9. TRANSITION, OPTIONAL RADIUS OR CHAMFER.

DIMENSIONS IN INCHES

T	ECN 14647 ADDED TAB -10 & -11 GRIPS PAGE 2	Current Design Activity CAGE Code OHDW7	PROCUREMENT SPEC T0108	DRAWN BY J. SCHLOCHM	SIGNATURE ON FILE
	ISSUED 5/29/2009	BLIND BOLT FASTENER, HIGH STRENGTH, FRICTION THREAD LOCK, THREADED, PROTRUDING HEAD, CLOSE TOLERANCE SHANK, TITANIUM/A-286 (95 KSI SHEAR)	ER212		
REVISID 8/24/2020				SK12848	
PAGE 1 OF 3					

This drawing/documentation is controlled by either the Department of State, International Traffic In Arms Regulations or the Department of Commerce, Export Administration Regulations and may Require an export license/license exception prior to being transferred to a foreign national, inside or outside of the United States. EAR/ECCN EAR99. These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law prohibited.

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



Howmet Fastening Systems
 Tucson Operations
 3724 East Columbia Street
 Tucson, Arizona 85714 USA
 Phone (520) 519-7400
 Fax (520) 519-7454

Ergo-Tech®
BLIND BOLT
ENGINEERING
STANDARD

TABLE I I

GRIP NUMBER TABULATION △₁₀								
GRIP DASH NO.	DESIGN GRIP RANGE		OVERLAP MAX GRIP △₆	-05 DIA	-06 DIA	-08 DIA	-10 DIA	-12 DIA
	MIN.	MAX.		(L)	(L)	(L)	(L)	(L)
-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

△₁₀ CONSULT AFSR FOR LONGER GRIP LENGTH AVAILABILITY.

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

T		ECN 14647 ADDED TAB -10 & -11 GRIPS PAGE 2		Current Design Activity CAGE Code OHDW7		DIMENSIONS IN INCHES	
ISSUED	5/29/2009	BLIND BOLT FASTENER, HIGH STRENGTH, FRICTION THREAD LOCK, THREADED, PROTRUDING HEAD, CLOSE TOLERANCE SHANK, TITANIUM/A-286 (95 KSI SHEAR)				PROCUREMENT SPEC T0108	DRAWN BY J. SCHLOBHM
REVISED	8/24/2020					CHECKED BY	SIGNATURE ON FILE
PAGE	2 OF 3					ER212	
						SK12848	

This drawing/documentation is controlled by either the Department of State, International Traffic In Arms Regulations or the Department of Commerce, Export Administration Regulations and may Require an export license/license exception prior to being transferred to a foreign national, inside or outside of the United States. EAR/ECCN EAR99. These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law prohibited.



Howmet Fastening Systems
 Tucson Operations
 3724 East Columbia Street
 Tucson, Arizona 85714 USA
 Phone (520) 519-7400
 Fax (520) 519-7454

Ergo-Tech
BLIND BOLT
ENGINEERING
STANDARD

TABLE III

INSTALLATION TOOLS			RECOMMENDED INSTALLATION HOLE SIZES
DIAMETER	COMPLETE INSTALLATION TOOL	INSTALLATION NOSE ONLY	
05	ETT2000-05	ETT2000-05N	.167
			.164
06	ETT2000-06	ETT2000-06N	.193
			.190
08	ETT2000-08	ETT2000-08N	.253
			.250
10	ETT2026-10	ETT2000-10N	.316
			.313
12	ETT2100-12	ETT2100-12N	.378
			.375

TABLE IV

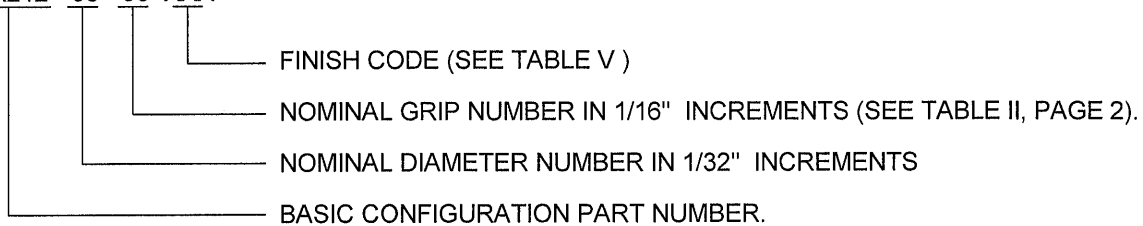
INSTALLED WEIGHT (LBS/1000)			
DIAMETER	GRIP	WEIGHT	ADDER
-05 (.164)	-02	2.94	.259
-06 (.190)	-02	4.37	.350
-08 (.250)	-02	8.38	.598
-10 (.313)	-02	14.80	.938
-12 (.375)	-02	26.12	1.355

TABLE V

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	6AI-4V TITANIUM PER AMS 4967 OR 4928	PASSIVATE PER AMS2700 TYPE 2 OR TYPE 8		T0108
D			IVD ALUMINUM COAT PER MIL-DTL-83488, TYPE II, CLASS 3 AND EN6118		
AC			ALUMINUM COAT PER NAS4006 AND EN4473 WITH HI-KOTE 1 OR EQUIV.		
ACN			ALUMINUM COAT PER NAS4006 AND EN4473 WITH HI-KOTE 1 NC (NON-CHROMATE)		
ACP			ALUMINUM COAT PER NAS4006 AND EN4473 WITH INCOTECH WCA-9P (PINK) (NON-CHROMATE)		
			INCOTEC TEC-LUBE DRY FILM LUBE PER AS5272 OR EQUIVALENT		

NOTE: CETYL ALCOHOL LUBE PER AS87132 MAY BE APPLIED TO COMPONENTS (AT MFR'S OPTION)

PART NUMBER
 ER212 - 08 - 06 XXX



DIMENSIONS IN INCHES

T	ECN 14647 ADDED TAB -10 & -11 GRIPS PAGE 2	Current Design Activity CAGE Code OHDW7	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	
	REVISED 8/24/2020		ER212	
PAGE 3 OF 3	SK12848			

This drawing/documentation is controlled by either the Department of State, International Traffic in Arms Regulations or the Department of Commerce, Export Administration Regulations and may require an export license/license exception prior to being transferred to a foreign national, inside or outside of the United States. EAR/ECCN EAR99. These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law prohibited.

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