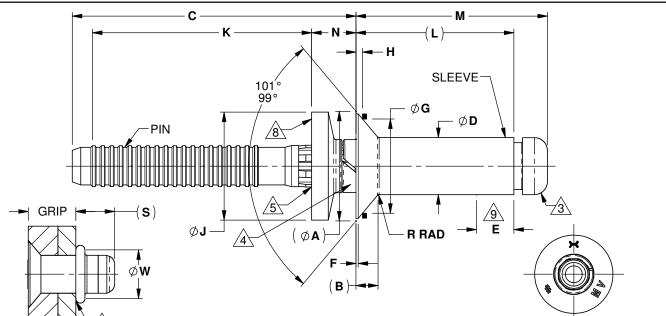


HOWMET FASTENING SYSTEMS TUCSON OPERATIONS 3724 EAST COLUMBIA STREET TUCSON, ARIZONA 85714 PHONE (520) 519-7400 FAX (520) 519-7454

TI-MATIC®

ENGINEERING STANDARD



INSTALLED	FASTENER
INSTALLED	IASILINLI

DATA AND ENGINEERING SERVICE REPRESENTED THEREBY ARE THE EXCLUSIVE PROPERTY OF HUCK INTERNATIONAL,

TABLE I

HEAD ID WITHOUT DRIVE WASHER

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NOM. DIA.	(ØA) HEAD THEO. INTER REF	(B) HEAD HEIGHT REF	C MIN	Ø D ±.001	E MAX	F MAX	Ø G GAGE ±.0001	H GAGE HEIGHT	Ø J ±.005	K ±.030	N ±.060	R RAD MAX	(S) Design Ref Only	Ø W MIN	SINGLE SHEAR	TENSILE STRENGTH
-05	.333	.072	.844	.163	.300	.011	.2831	.0206 .0171		.800	.140	.010	.232	.228	1980	900
-06	.386	.080	.875	.198	.320	.013	.3271	.0243 .0205	.375	.830	.160	.015	.292	.277	2925	1400
-08	.507	.105	1.000	.259	.370	.017	.4319	.0310 .0270		.975	.190	.020	.361	.363	5000	2100

- 1. -05 DIA SIZE ALSO AVAILABLE WITH REDUCED O.D. DRIVE ANVIL OF .312±.005. (SEE SHEET 3)
- APPLIES TO GRIPS 05-04 MAX, 06-05 MAX, 08-06 MAX AND GREATER. IN SHORTER GRIPS, A TRUE COMPOSITE SHEAR TEST CANNOT BE PERFORMED.
- 3. TRIM FLASH NOT TO EXCEED .005" MAXIMUM LENGTH ABOVE HEAD OF PIN.
- 4.\ SOLID OR SPLIT LOCK COLLAR AT MANUFACTURER'S OPTION. SPLIT NOT TO EXCEED .020 WIDTH.
- $\stackrel{\frown}{5}$ KNURLED TO RETAIN FASTENER ASSEMBLY. NOT PART OF INSTALLED FASTENER.
- $\stackrel{\frown}{6}$. BLIND SIDE HEAD MAY BE INSTALLED ON 7° MAX SLOPE.
- $\stackrel{\frown}{\nearrow}$ IDENTIFICATION: HUCK SYMBOL , MV (FOR CP TITANIUM SLEEVE MATERIAL) AND GRIP DASH NUMBER.
- $\stackrel{\frown}{8}$ OPTIONAL DRIVE WASHER FOR INSTALLATION WITH BLUNT TOOL. NOT PART OF INSTALLED FASTENER.
- 9. SLEEVE DIAMETER "D" MAY BE .002" UNDERSIZED IN THIS AREA.

DIMENSIONS IN INCHES

M	PER ECN	1445() (:HAN(3E1) AR(:()NI(: 1 ()(3() 1 () H())MME 1 1 ()(3())Out of a Doog (Market) SPEC. [J. SCHLOBOHM SIGNATURE ON FILE
		5/GE 5000 01/5W/ 10106	OI ILONED DI	SIGNATURE ON TIEL
ISSUED	12/31/2001	UNIMATIC ® BLIND BOLT FASTENER, HIGH STRENGTH, PULL-TYPE,	ΠΔΕ	3100-MV
REVISED	4/1/2020	POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, LARGE FOOTPRINT,	UAL	3100 WW
TILVIOLD	4/1/2020		01	/40770
PAGE	1 OF 3	TITANIUM/TITANIUM (95 KSI SHEAR), SINGLE ACTION INSTALLATION	SI	<12772

DISCLOSED THEREIN AND THE TECHNICAL



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10 OVERLAP MINIMUM GRIP FOR -06 DIAMETER IS .140, FOR -08 DIAMETER IS NONE.

TABLE II



	GRIP NUMBER TABULATION														
GRIP DASH	OVERLAP GRIP		N GRIP NGE	OVERLAP GRIP	0	5	GRIP DASH	OVERLAP GRIP	DESIGI RAI	N GRIP NGE	OVERLAP GRIP	0	6	08	
NO.	MIN	MIN.	MAX.	MAX	(L)	M MAX	NO.	MIN	MIN.	MAX.	MAX	(L)	M MAX	(L)	M MAX
02	NONE	.094	.157	.173	.336	.476	02	NONE	.120	.157	.173	.355	.521	-	-
03	.146	.156	.220	.236	.398	.539	03	NOTE 10	.156	.220	.236	.417	.583	.479	.645
04	.209	.219	.282	.298	.460	.602	04	.203	.219	.282	.298	.480	.646	.541	.707
05	.271	.281	.345	.361	.523	.664	05	.265	.281	.345	.361	.542	.708	.604	.770
06	.334	.344	.407	.423	.585	.727	06	.328	.344	.407	.423	.605	.771	.666	.832
07	.396	.406	.470	.486	.648	.789	07	.390	.406	.470	.486	.667	.833	.729	.895
80	.459	.469	.532	.548	.710	.852	08	.453	.469	.532	.548	.730	.896	.791	.957
09	.521	.531	.595	.611	.773	.914	09	.515	.531	.595	.611	.792	.958	.854	1.020
10	.584	.594	.657	.673	.835	.977	10	.578	.594	.657	.673	.855	1.021	.916	1.082
11	.646	.656	.720	.735	.898	1.039	11	.640	.656	.720	.736	.917	1.083	.979	1.145
12	.709	.719	.782	.798	.960	1.102	12	.703	.719	.782	.798	.980	1.146	1.041	1.207
13	.771	.781	.845	.860	1.023	1.164	13	.765	.781	.845	.861	1.042	1.208	1.104	1.270
14	.834	.844	.907	.923	1.085	1.227	14	.828	.844	.907	.923	1.105	1.271	1.166	1.332
15	.896	.906	.970	.985	1.148	1.289	15	.890	.906	.970	.986	1.167	1.333	1.229	1.395
16	.959	.969	1.032	1.048	1.210	1.352	16	.953	.969	1.032	1.048	1.230	1.396	1.291	1.457
17	-	1	-	-	-	-	17	1.015	1.031	1.095	1.111	-	-	1.354	1.520
18	-	-	-	-	-	-	18	1.078	1.094	1.157	1.173	-	-	1.416	1.582
19	-	1	-	-	-	-	19	1.140	1.156	1.220	1.236	-	-	1.479	1.645
20	-	-	-	-	-	-	20	1.203	1.219	1.282	1.298	-	-	1.541	1.707

TABLE III

	UAB100-MV INSTALLED WEIGHT IN LBS (1000 pcs.)										
GRIP	5 DIA	6 DIA	8 DIA	GRIP	5 DIA	6 DIA	8 DIA	GRIP	5 DIA	6 DIA	8 DIA
-02	1.53	2.48		-09	3.04	4.64	8.73	-15	4.36	6.62	12.04
-03	1.72	2.67	5.43	-10	3.26	4.97	9.28	-16	4.58	6.95	12.59
-04	1.94	2.99	5.97	-11	3.48	5.30	9.83	-17	-	-	13.15
-05	2.16	3.32	6.52	-12	3.70	5.63	10.38	-18	-	-	13.70
-06	2.38	3.65	7.07	-13	3.92	5.96	10.94	-19	-	-	14.25
-07	2.60	3.98	7.62	-14	4.14	6.29	11.49	-20	-	-	14.80
-08	2.82	4.31	8.18								

DIMENSIONS IN INCHES

M	DEBECN		Current Design Activity CAGE Code 0HDW7	PROC.	DRAWN BY	J. SCHLOBOHM
IVI	LITLO		SIGNATURE ON FILE			
ISSUED	12/31/2001	UNIMATIC ® BLIND BOLT FASTENER, HIGH STRENG	TH, PULL-TYPE,		ΠΔ	B100-MV
REVISED	4/1/2020	POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, LA	07	D 1 OO IVI V		
PAGE	2 OF 3	TITANIUM/TITANIUM (95 KSI ŚHEAR), SINGLE ACTIOI			S	K12772



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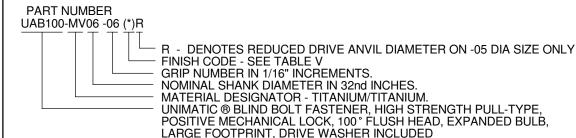
TABLE I V

FINISH		MATERIAL			FINISI	1	LUBE
CODE	SLEEVE	PIN	LOCK COLLAR	SLEEVE	PIN	LOCK COLLAR	LOBE
NONE	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	NONE	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	12
DF	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	NONE	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	13
AC	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	HI-KOTE 1 ALUMINUM COAT PER NAS4006 AND BMS 10-85	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	12
AT	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	BLUE ANODIZE PER ISO 8080	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	12

LUBE AND LOCK COLLAR MATERIAL AT MANUFACTURER'S OPTION.

LUBRICATION: SERRATED PIN: NONE OR CETYL ALCOHOL (CHLORINE FREE) PER AS87132 TYPE 1
OR DRY FILM LUBE PER AS5272 AT MANUFACTURE'S OPTION.
MECHANICAL LOCK: NONE OR LOX COMPATIBLE DRY FILM LUBE AT MANUFACTURER'S OPTION.
SLEEVE: NO SUFFIX AND AC SUFFIX: NONE OR CETYL ALCOHOL (CHLORINE FREE) PER AS87132
TYPE 1 OR DRY FILM LUBE PER AS5272 AT MANUFACTURER'S OPTION.

DF SUFFIX PARTS WHEN LUBED SHALL USE AS5272 ON ANY OF THE FASTENER COMPONENTS EXCEPT MECHANICAL LOCK MAY USE LOX COMPATIBLE DRY FILM LUBE (MFG'S OPTION)



DIMENSIONS IN INCHES

М	DED EC	N 14450 CHANGED ARCONIC LOGO TO HOWMET LOGO	Current Design Activity	PROC. SPEC.	DRAWN BY	J. SCHLOBOHM
IVI	FEREG	1 14430 CHANGED ANCOING LOGO TO HOWINET LOGO	CAGE Code 0HDW7	T0106	CHECKED BY	SIGNATURE ON FILE
ISSUED	12/31/2001	UNIMATIC ® BLIND BOLT FASTENER, HIGH STREN			114	B100-MV
REVISED	4/1/2020	POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, L	UA	D I UU-IVI V		
PAGE	3 OF 3	TITANIUM/TITANIUM (95 KSI SHEAR), SINGLE ACTIO	ON INSTALLATION	1	S	K12772