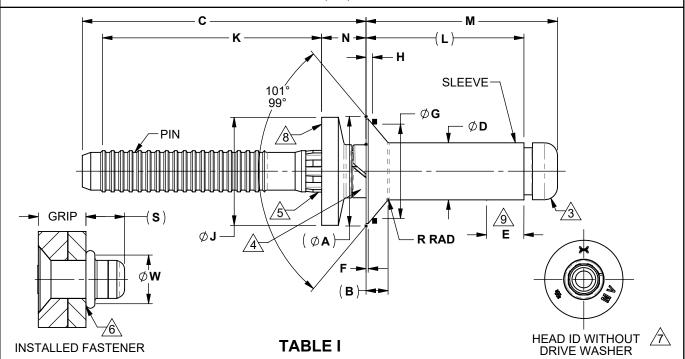


HOWMET FASTENING SYSTEMS TUCSON OPERATIONS 3724 EAST COLUMBIA STREET TUCSON, ARIZONA 85714 PHONE (520) 519-7400 FAX (520) 519-7454

TI-MATIC®

ENGINEERING STANDARD



NOM. DIA.	(Ø A) HEAD THEO. INTER REF	(B) HEAD HEIGHT REF	C MIN	Ø D ±.001	E MAX	F MAX	Ø G GAGE ±.0001	H GAGE HEGHT	Ø J ±.005	K ±.030	N ±.060	R RAD MAX	(S) Design Ref Only	Ø W MIN	SINGLE SHEAR	
-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.
- $\stackrel{\textstyle \sqrt{5}.}{}$ KNURLED TO RETAIN FASTENER ASSEMBLY. NOT PART OF INSTALLED FASTENER.
- 6. BLIND SIDE HEAD MAY BE INSTALLED ON 7° MAX SLOPE.
- $\overline{\prime 7.}$ 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

		01, ADDED "ACN" COATING OPTION, DEDITED SPEC CALLOUTS ON TABLE IV	Current Design Activity	PROC. SPEC.	DRAWN BY	J. SCHLOBOHM
1.4	INOTE 14, AINL	DEDITED SPEC CALLOUTS ON TABLE IV	CAGE Code 0HDW7	T0106	CHECKED BY	SIGNATURE ON FILE
ISSUED	12/31/2001	UNIMATIC ® BLIND BOLT FASTENER, HIGH STREN	IGTH, PULL-TYPE	,	IJΔF	3100-MV
REVISED	12/24/21	POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, L				
PAGE	1 OF 3	TITANIUM/TITANIUM (95 KSI SHEAR), SINGLE ACTION	ON INSTALLATION	1	SI	< 12772



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

TABLE II



					G	RIP N	UMBER	TABULA	TION						
GRIP DASH	OVERLAP GRIP		N GRIP NGE	OVERLAP GRIP	0	05		OVERLAP GRIP	DESIGN GRIP RANGE		OVERLAP GRIP	0	6	08	
NO.	MIN	MIN.	MAX.	MAX		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	-	-	-	-	-	-	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	-	-	-	-	-	-	19	1.140	1.156	1.220	1.236	-	-	1.479	1.645
20	-	1	-	-	1	-	20	1.203	1.219	1.282	1.298	1	-	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

N			Current Design Activity CAGE Code 0HDW7	I SPEC.	DRAWN BY	J. SCHLOBOHM SIGNATURE ON FILE			
	,	10100	CHECKED BY	SIGNATURE ON FILE					
ISSUED	12/31/2001	UNIMATIC ® BLIND BOLT FASTENER, HIGH STRENG	GTH, PULL-TYPE,		ΠΔ	B100-MV			
REVISED	12/24/21								
PAGE	2 OF 3	TITANIUM/TITANIUM (95 KSI SHEAR), SINGLE ACTIO	N INSTALLATION		S	K12772			



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DESIGN DISCLOSED THEREIN AND THE TECHNICAL

THE STRUCTURAL

THIS DRAWING,

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

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TABLE I V

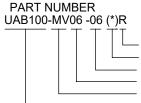
FINISH		MATERIAL			LUBE			
CODE	SLEEVE PIN		LOCK COLLAR	SLEEVE	PIN	LOCK COLLAR	LODE	
NONE	CP TITANIUM 38-6-44 TITANIUM PER ASTM-B348 PER AMS 4957		A-286 CRES PER AMS 5737	NONE	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	12	
DF	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	NONE	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	13	
AC14.	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	ALUMINUM PIGMENTED COATING PER NAS4006 AND BMS 10-85	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	12	
AT	CP TITANIUM PER ASTM-B348 PER AMS 4957		A-286 CRES PER AMS 5737	BLUE ANODIZE PER ISO 8080	NONE	PASSIVATE PER AMS QQ-P-35 AND AMS2700	12	
ACN	CP TITANIUM PER ASTM-B348	38-6-44 TITANIUM PER AMS 4957	A-286 CRES PER AMS 5737	NON-CHROMATE ALUMINUM PIGMENTED COATING PER NAS4006 AND EN4473	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.

13 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)

COMPLETE COVERAGE OF SLEEVE INTERNAL FEATURES IS NOT REQUIRED. OVER SPRAY ONTO THE INTERNAL FEATURES IS ACCEPTABLE



- DENOTES REDUCED DRIVE ANVIL DIAMETER ON -05 DIA SIZE ONLY FINISH CODE - SEE TABLE V GRIP NUMBER IN 1/16" INCREMENTS. NOMINAL SHANK DIAMETER IN 32nd INCHES. MATERIAL DESIGNATOR - TITANIUM/TITANIUM. UNIMATIC ® BLIND BOLT FASTENER, HIGH STRENGTH PULL-TYPE, POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, EXPANDED BULB, LARGE FOOTPRINT, DRIVE WASHER INCLUDED

> **DIMENSIONS IN INCHES**

PROC

N			Current Design Activity CAGE Code 0HDW7			SIGNATURE ON FILE				
ISSUED	12/31/2001	UNIMATIC ® BLIND BOLT FASTENER, HIGH STREN	GTH, PULL-TYPE		ПΛ	B100-MV				
REVISED	12/24/21	POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, L.	POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, LARGE FOOTPRINT,							
PAGE	3 OF 3	TITANIUM/TITANIUM (95 KSI SHEAR), SINGLE ACTIO	ON INSTALLATION	1	S	K12772				