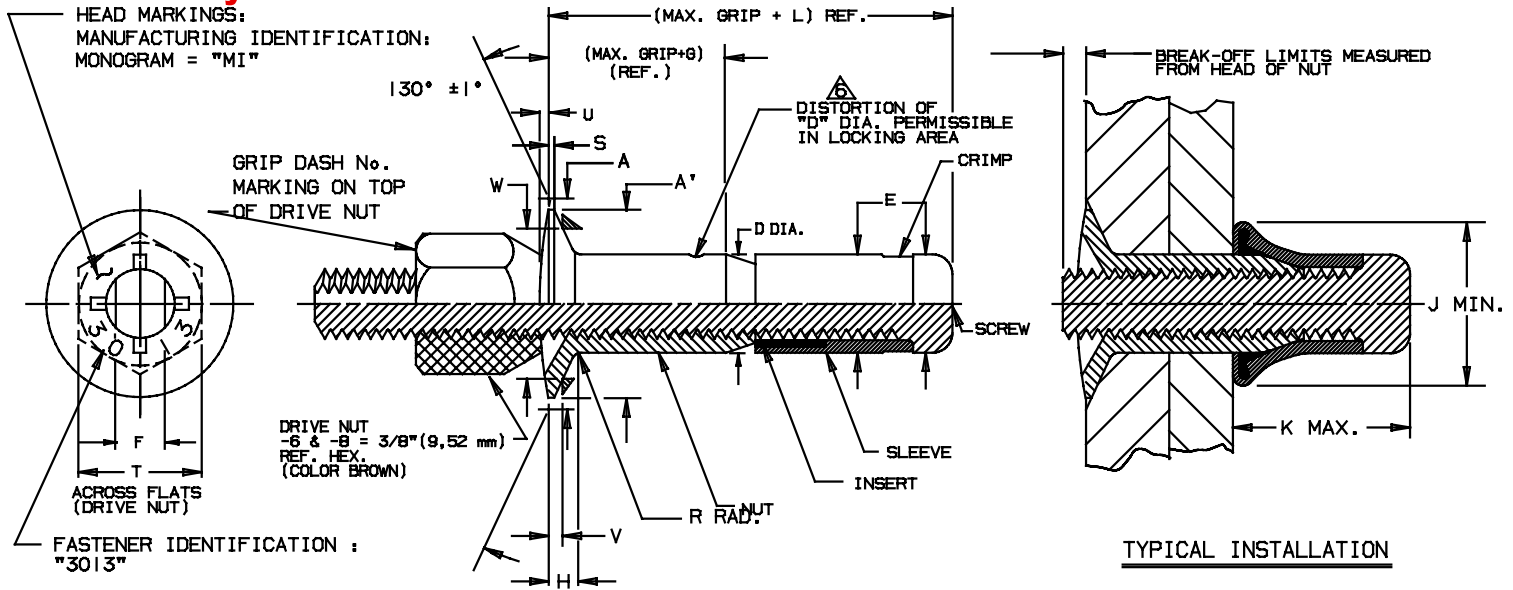


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MONOGRAM AEROSPACE FASTENERS  
3423 SOUTH GARFIELD AVENUE  
LOS ANGELES, CALIFORNIA 90040



HEAD MARKINGS DEPRESSED .010 INCH ( 0,254 mm MAX.) (POSITION OPTIONAL)  
DRIVE-NUT NOT SHOWN FOR CLARITY OF HEAD MARKINGS.

TABLE I

PART NUMBER	A		A' MIN.		D DIA.		E DIA. MAX.		F WRENCH FLATS		G REF.		H REF.		L REF.		R RAD. MAX.		S MAX.		U	
	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MBF3013-6-()	.385 .378	9,78 9,60	.342	8,69	.1965 .1965	5,042 4,991	.1965	5,042	.113 .108	2,87 2,74	.058	1,47	.043	1,09	.675	17,145	.030	0,76	.011	0,279	.023 .017	0,584 0,432
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MBF3013-8-()	.507 .499	12,68 12,67	.463	11,76	.2595 .2575	6,591 6,541	.2595	6,591	.135 .130	3,43 3,30	.058	1,47	.057	1,45	.900	22,860	.030	0,76	.011	0,279	.023 .017	0,584 0,432

TABLE I (CONT)

PART NUMBER	MINIMUM AVAILABLE GRIP DASH NO.	INSTALLED DIMENSIONS								MECHANICAL PROPERTIES						HEAD GAGING			
		RECOMMENDED HOLE SIZE		J DIA. MIN.		K MAX.		BREAK-OFF LIMITS		TENSILE STRUCTURAL FAILURE (MIN.)		DOUBLE SHEAR MIN.		LOCKING TORQUE MIN.		V GAGE PROT.		W GAGE DIA.	
		INCH	mm	INCH	mm	INCH	mm	INCH	mm	LBS.	N	LBS.	N	IN-LBS	Nm	INCH	mm	INCH	mm
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MBF3013-6-()	-150	.202 .199	5,13 5,05	.300	7,62	.420	10,67	+.103 -0,00	+2,62 -0,00	1400	6230	4600	20460	1.5	0,170	.0140 .0114	0,356 0,290	.3272 .3270	8,311 8,306
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MBF3013-8-()	-150	.263 .260	6,68 6,60	.400	10,16	.510	12,95	+.103 -0,00	+2,62 -0,00	2100	9340	7900	35140	2.5	0,282	.0180 .0151	0,457 0,391	.4320 .4318	10,973 10,968

U.S. PATENT NO. 4747202, 4772167 AND 4967463  
EUROPEAN PATENT NO. 0152531 & 0244783

MONOGRAM  
CODE IDENT. NO.  
98524

APPROVED DATE  
ECN #6263  
03-13-90

REV. LETTER & DATE  
ECN # 1167  
"F" 11-14-01

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TITLE  
BLIND FASTENER 130° FLUSH CROWN SHEAR HEAD  
FOR ADVANCED COMPOSITE MATERIAL  
TITANIUM

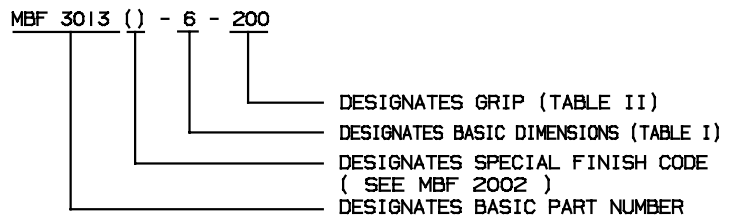
STANDARD  
MBF 3013  
SHEET 1 OF 2

PROCUREMENT SPECIFICATION: MBF 2008.  
 INSTALLATION & INSPECTION SPECIFICATION : MBF 2009.  
 MATERIAL AND HEAT TREAT: NUT: 6AL-4V TITANIUM PER MIL-T-9047,  
 STA OR AMS 4928 OR AMS 4967  
 HEAT TREATED PER MIL-H-81200 TO  
 95 KSI SHEAR STRENGTH MINIMUM,  
 MAXIMUM HYDROGEN 125 PPM.  
 SCREW: A-286 PER AMS 5731, AMS 5732 OR  
 AMS 5737 HEAT TREATED TO 175 KSI  
 TENSILE MINIMUM.  
 SLEEVE: 304 STAINLESS STEEL PER AMS 5639  
 FULLY ANNEALED.  
 INSERT: ACETAL PER ASTM D4181.  
 DRIVE NUT: MILD STEEL.  
 FINISH: (-) NUT: KAL-GARD ANN-RO #1012 CONVERSION COATING,  
 or PHOSPHATE FLOURIDE PER MONOGRAM  
 SPECIFICATION PS 741, MAY BE USED AT  
 MANUFACTURER'S OPTION.  
 SLEEVE & SCREW: PASSIVATE PER QQ-P-35, KAL GARD ANN-RO  
 #1013 CONVERSION COATING OPTIONAL.  
 INSERT: NONE.  
 DRIVE NUT: COLOR BROWN.  
 LUBRICANT: DRY FILM LUBE PER THE CHEMICAL REQUIREMENTS OF MIL-L-46010  
 TYPE I, PARAFFIN WAX, AND/OR CETYL ALCOHOL PER  
 MIL-L-87132 USED AS REQUIRED FOR PERFORMANCE.

Reference Only

GENERAL NOTES:

1.) EXAMPLE OF PART NUMBER:



- 2.) LOCKING FEATURE CONSISTS OF THREE (3) INDENTATIONS LOCATED 120° APART ON THE PERIPHERY OF THE NUT COMPONENT AND APPROXIMATELY .040 ABOVE THE INTERSECTION OF THE NUT NOSE ANGLE AND O.D.  
 3.) SEE MBF 2009 FOR INSTALLATION AND REMOVAL INFORMATION.  
 4.) COMPOSI-LOK FASTENERS WITH SELECTED COMBINATIONS OF THE ABOVE LUBRICANTS AND FINISHES ARE SPECIALLY CODED AND MAY BE SUBSTITUTED FOR EQUIVALENT NON-CODED PARTS AT MANUFACTURER'S OPTION. SEE INTERCHANGEABILITY SPECIFICATION MBF 2007.  
 5.) THESE PARTS ARE SIMILAR TO MBF 2113 EXCEPT AS FOLLOWS:  
 A.) IMPROVED OUT-OF-GRIP FLAGGING CAPABILITY (SCREW B/O).  
 B.) INCREASED BLIND SIDE PROTRUSION BEFORE AND AFTER UPSET.  
 C.) INCREASED INSTALLED WEIGHT.  
 ⚠️ DISTORTION SHALL NOT PREVENT INSERTION OF THE FASTENER INTO A RING GAUGE OF LENGTH EQUAL TO ONE DIAMETER AND DIAMETER EQUAL TO MINIMUM RECOMMENDED HOLE SIZE. FORCE FOR INSERTION SHALL NOT EXCEED 5.0 POUNDS.

TABLE II

2ND DASH NO. (GRIP)	GRIP RANGE			
	MIN. GRIP		MAX. GRIP	
	INCH	mm	INCH	mm
150	.100	2,54	.150	3,81
200	.150	3,81	.200	5,08
250	.200	5,08	.250	6,35
300	.250	6,35	.300	7,62
350	.300	7,62	.350	8,89
400	.350	8,89	.400	10,16
450	.400	10,16	.450	11,43
500	.450	11,43	.500	12,70
550	.500	12,70	.550	13,97
600	.550	13,97	.600	15,24
650	.600	15,24	.650	16,51
700	.650	16,51	.700	17,78
750	.700	17,78	.750	19,05
800	.750	19,05	.800	20,32
850	.800	20,32	.850	21,59
900	.850	21,59	.900	22,86
950	.900	22,86	.950	24,13
1000	.950	24,13	1.000	25,40
1050	1.000	25,40	1.050	26,67
1100	1.050	26,67	1.100	27,94
1150	1.100	27,94	1.150	29,21

U.S. PATENT NO. 4747202, 4772167 AND 4967463  
 EUROPEAN PATENT NO. 0152531 & 0244783

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APPROVED DATE ECN #6263 03-13-90	NOTICE: THIS DRAWING IS PART OF THE PROPRIETARY ARTICLE HEREIN DISCLOSED. OWNED BY MONOGRAM AEROSPACE FASTENERS, ANY PARTY BY ACCEPTING THIS DOCUMENT ASSUMES CUSTODY THEREOF AND AGREES: A. THE INFORMATION SET FORTH HEREIN IS GIVEN IN CONFIDENCE AND THIS DOCUMENT WILL NOT BE COPIED OR REPRODUCED IN WHOLE OR IN PART, NOR ITS CONTENTS REVEALED IN ANY MANNER TO ANY PERSON EXCEPT TO MEET THE PURPOSE FOR WHICH IT WAS DELIVERED. B. WITHOUT THE WRITTEN CONSENT OF MONOGRAM AEROSPACE FASTENERS, THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN UNDER NO CIRCUMSTANCES WILL BE USED IN THE MANUFACTURE OR REPRODUCTION OF THE ARTICLE DISCLOSED, AND DELIVERY OF THIS DOCUMENT SHALL NOT CONSTITUTE ANY RIGHT OR LICENSE TO DO SO.	TITLE BLIND FASTENER 130° FLUSH CROWN SHEAR HEAD FOR ADVANCED COMPOSITE MATERIAL TITANIUM	STANDARD MBF 3013 SHEET 2 OF 2
REV. LETTER & DATE ECN # 1167 "F" 11-14-01			