

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

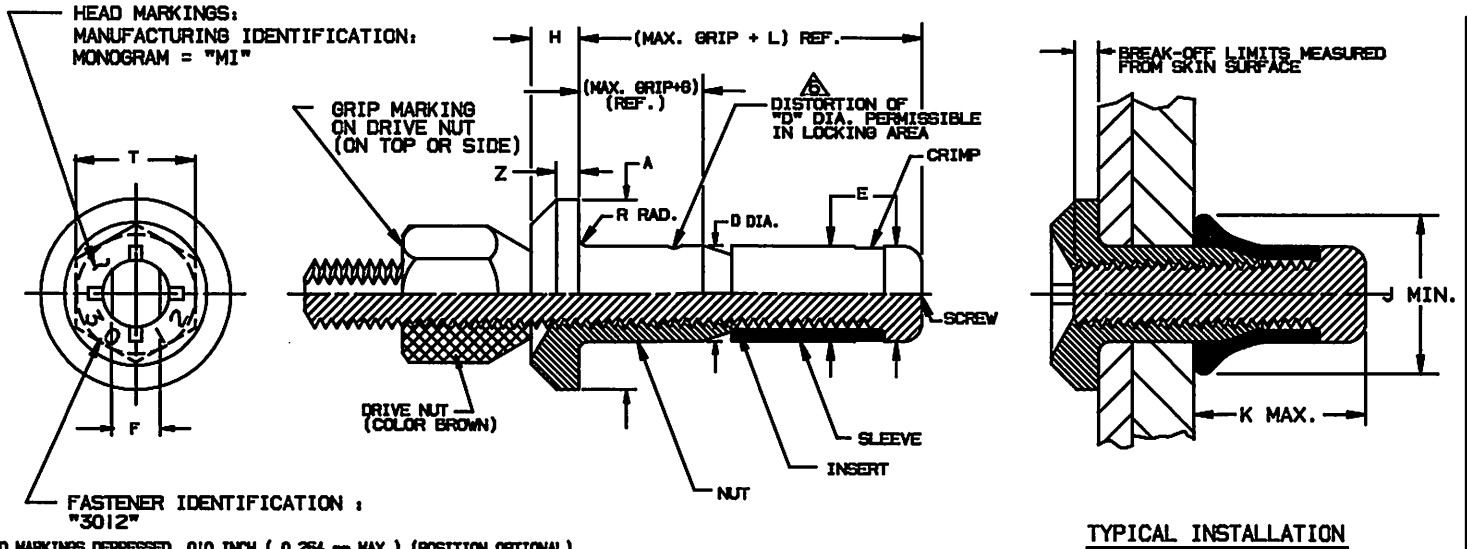


TABLE I

PART NUMBER	A DIA.		D DIA.		E DIA. MAX.		F WRENCH FLATS		G REF.		H		L REF.		R RAD. MAX.		T ACROSS HEX. REF.		Z MAX.	
	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm
MBF3012-5-()	.354 .334	8,99 8,48	.1800 .1780	4,574 4,523	.1796	4,561	.085 .080	2,16 2,03	.058 1,47	.060 .053	1,524 1,346	.625	15,875	.030	0,76	.375	9,52	.030	0,762	
MBF3012-6-()	.416 .396	10,57 10,06	.2140 .2120	5,436 5,387	.2141	5,438	.108 .113	2,87 2,74	.058 1,47	.070 .063	1,778 1,600	.675	17,145	.030	0,76	.375	9,52	.030	0,762	
MBF3012-7-()	.416 .396	10,57 10,06	.2430 .2410	6,174 6,123	.2431	6,174	.121 .116	3,07 2,95	.058 1,47	.070 .063	1,778 1,600	.862	21,894	.030	0,76	.375	9,52	.030	0,762	
MBF3012-8-()	.541 .521	13,74 13,23	.2750 .2730	6,985 6,936	.2751	6,987	.135 .130	3,43 3,30	.058 1,47	.085 .078	2,159 1,981	.900	22,860	.030	0,76	.375	9,52	.040	1,016	
MBF3012-9-()	.541 .521	13,74 13,23	.3050 .3030	7,747 7,698	.3051	7,749	.152 .147	3,86 3,73	.068 1,73	.085 .078	2,159 1,981	.930	23,622	.030	0,76	.500	12,70	.040	1,016	
MBF3012-10-()	.635 .615	16,13 15,62	.3270 .3250	8,308 8,259	.3266	8,295	.152 .147	3,86 3,73	.073 1,85	.105 .098	2,667 2,489	.912	23,164	.040	1,02	.500	12,70	.045	1,143	
MBF3012-11-()	.635 .615	16,13 15,62	.3590 .3570	9,121 9,070	.3589	9,116	.185 .180	4,70 4,57	.078 1,98	.105 .098	2,667 2,489	1.000	25,400	.040	1,02	.500	12,70	.045	1,143	
MBF3012-12-()	.760 .740	19,30 18,80	.3900 .3880	9,908 9,857	.3886	9,895	.185 .180	4,70 4,57	.083 2,11	.125 .118	3,175 2,997	1.100	27,940	.040	1,02	.500	12,70	.045	1,143	

TABLE I (CONT)

PART NUMBER	MINIMUM AVAILABLE GRIP GRIP NO.	INSTALLED DIMENSIONS						MECHANICAL PROPERTIES							
		RECOMMENDED HOLE SIZE		J DIA. MIN.		K MAX.		BREAK-OFF LIMITS		TENSILE STRUCTURAL FAILURE (MIN.)		DOUBLE SHEAR MIN.		LOCKING TORQUE MIN.	
		INCH	mm	INCH	mm	INCH	mm	INCH	mm	LBS.	N	LBS.	N	IN-LBS	Nm
MBF3012-5-()	-100	.183 .180	4,65 4,57	.250	6,35	.370	9,40	+.103 -.000	+2,62 -0,00	900	4000	3150	14010	1.0	0,113
MBF3012-6-()	-100	.217 .214	5,51 5,44	.300	7,62	.420	10,67			1400	6230	4600	20460	1.5	0,170
MBF3012-7-()	-100	.246 .243	6,25 6,17	.350	8,89	.490	12,45			1600	7120	6050	26910	2.0	0,226
MBF3012-8-()	-150	.278 .275	7,08 6,98	.400	10,16	.510	12,95			2100	9340	7900	35140	2.5	0,262
MBF3012-9-()	-150	.308 .305	7,82 7,75	.450	11,43	.535	13,59			2600	11565	9800	43590	3.0	0,339
MBF3012-10-()	-150	.330 .327	8,38 8,31	.475	12,06	.540	13,72			3600	16010	11350	50480	3.5	0,400
MBF3012-11-()	-150	.362 .359	9,19 9,12	.525	13,33	.670	17,02			4400	19570	13850	61600	4.0	0,452
MBF3012-12-()	-150	.393 .390	9,99 9,91	.565	14,35	.675	17,15			5000	22240	16450	73170	4.0	0,452

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

MONOGRAM
CODE IDENT. NO.
98524

APPROVED DATE
ECN #842
10-04-93

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

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TITLE

BLIND FASTENER LOW PROFILE PROTRUDING HEAD
FOR ADVANCED COMPOSITE MATERIAL
TITANIUM (1/64 OVERSIZE)

STANDARD

MBF 3012
SHEET 1 OF 2

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

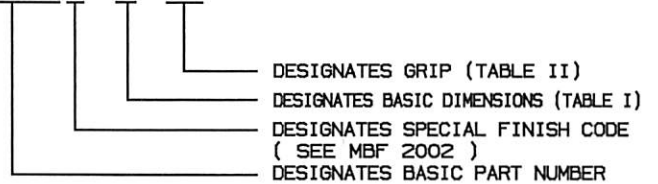


PROCUREMENT SPECIFICATION: MBF 2008.
 INSTALLATION & INSPECTION SPECIFICATION : MBF 2009.
 MATERIAL AND HEAT TREAT: NUT: 6AL-4V TITANIUM PER MIL-T-9047,
 STA OR AMS 492B OR AMS 4967
 HEAT TREATED PER MIL-H-81200 TO
 95 KSI SHEAR STRENGTH MINIMUM,
 MAXIMUM HYDROGEN 125 PPM.
 SCREW: A-286 PER AMS 5731, 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.

GENERAL NOTES:

1.) EXAMPLE OF PART NUMBER:

MBF 3012 () - 6 - 200



- 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 2110 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.

6. 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
100	.050	1,27	.100	2,54
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

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 EUROPEAN PATENT NO. 0152531 & 0244783

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 SHEET 2 OF 2