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

MF®
MONOGRAM
AEROSPACE
FASTENERS

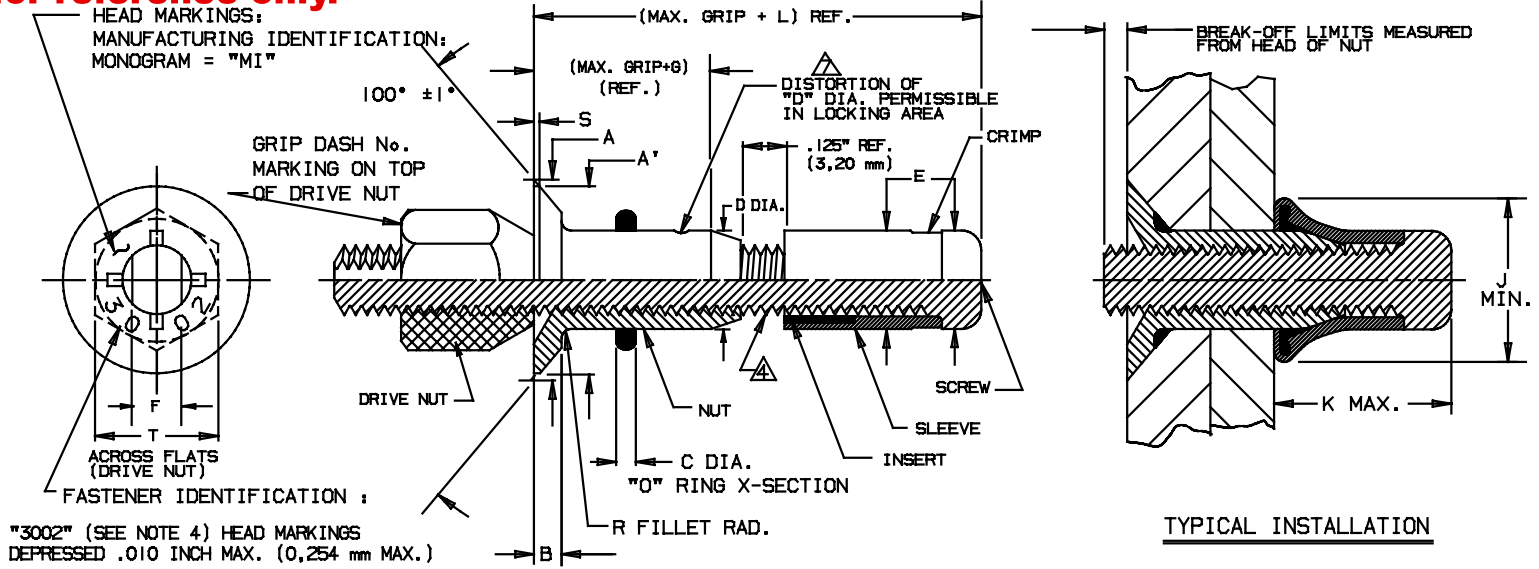


TABLE I

PART NUMBER	A DIA. THEO.		A' DIA. MIN.		B		C "O" RING X-SECTION		D DIA.		E DIA. MAX.		F WRENCH FLATS		G REF.		L REF.		M ACROSS RECESS		R RAD. MAX.	
	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm
MBF3002-6-()	.385 .378	9,78 9,60	.342	8,69	.0420 .0410	1,07 1,04	.027 .023	0,69 0,58	.1965 .1965	5,042 4,991	.1965 .1965	5,042 4,991	.113 .108	2,87 2,74	.027	0,68	.558	14,17	.265 .250	6,73 6,35	.030	0,76
MBF3002-8-()	.507 .499	12,88 12,67	.463	11,76	.0695 .0685	1,77 1,74	.027 .023	0,69 0,58	.2595 .2575	6,591 6,541	.2595 .2595	6,591 6,541	.135 .130	3,43 3,30	.055	1,40	.692	17,58	.336 .321	8,53 8,15	.030	0,76
MBF3002-10-()	.635 .628	16,13 15,95	.577	14,66	.0898 .0878	2,28 2,23	.037 .033	0,94 0,84	.3115 .3095	7,912 7,861	.3110 .3110	7,899 7,899	.152 .147	3,86 3,73	.070	1,78	.892	22,66	.437 .419	11,10 10,64	.040	1,02
MBF3002-12-()	.762 .752	19,35 19,10	.696	17,68	.1167 .1147	2,96 2,91	.037 .033	0,94 0,84	.3745 .3725	9,512 9,462	.3740 .3740	9,500 9,500	.185 .180	4,70 4,57	.080	2,03	1.090	27,69	.524 .504	13,31 12,80	.040	1,02

TABLE I (CONT)

PART NUMBER	MINIMUM AVAILABLE GRIP DASH NO.	INSTALLED DIMENSIONS												MECHANICAL PROPERTIES					
		S MAX.		T ACROSS HEX. REF.		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	INCH	mm	INCH	mm	LBS.	N	LBS.	N	IN-LBS	Nm
MBF3002-6-()	-150	.019	0,48	.375	9,52	.202 .199	5,13 5,05	.290	7,37	.350	8,89	+.103 -.015	+2,62 -0,38	1400	6230	4600	20460	1.5	0,170
MBF3002-8-()	-200	.020	0,51	.375	9,52	.263 .260	6,68 6,60	.385	9,78	.450	11,43	+.103 -.015	+2,62 -0,38	2100	9340	7900	35140	2.5	0,282
MBF3002-10-()	-250	.026	0,66	.500	12,70	.315 .312	8,00 7,92	.455	11,56	.550	13,97	+.103 -.015	+2,62 -0,38	3600	16010	11350	50480	3.5	0,400
MBF3002-12-()	-250	.029	0,74	.500	12,70	.378 .375	9,60 9,52	.550	13,97	.625	15,87	+.103 -.015	+2,62 -0,38	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 #43343
11-20-85

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

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TITLE

BLIND FASTENER 100° FLUSH SEALING HEAD
FOR ADVANCED COMPOSITE MATERIAL
FUEL SEALING, TITANIUM

STANDARD

MBF 3002
SHEET 1 OF 2

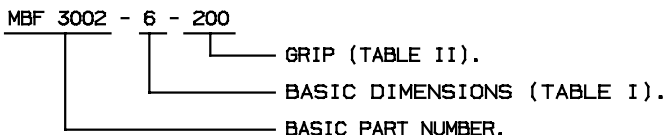
APPLICABLE SPECIFICATIONS:

PROCUREMENT SPECIFICATION: MBF 2000 (SEE NOTE 5).
SPECIAL LUBE AND FINISH CODES: MBF 2002.
INSTALLATION & INSPECTION SPECIFICATION: MBF 2003.
PART NUMBER ASSIGNMENT: MBF 2005.

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.
"O" RING: BUNA-N PER MIL-R-6855, GRADE 60, CLASSES I & II.
FINISH: NUT: KAL-GARD ANN-RO #1012 CONVERSION COATING, OR PHOSPHATE FLUORIDE PER MONOGRAM SPECIFICATION PS 741, MAY BE USED AT MANUFACTURER'S OPTION.
SCREW & SLEEVE: PASSIVATE PER QQ-P-35, KAL GARD ANN-RO #1013 CONVERSION COATING OPTIONAL.
INSERT: NONE.
DRIVE NUT: CORROSION RESISTANT COATING, COLOR GRAY.
"O" RING: NONE.
LUBRICANTS: SCREW & SLEEVE: TIO-LUBE 460 OR KAL-GARD FA (MIL-L-8937) USED AS REQUIRED FOR PERFORMANCE.
NUT: BARE (NUT NOSE ONLY MAY HAVE DRY FILM LUBRICANT IF REQUIRED FOR PERFORMANCE).
"O" RING: NONE.

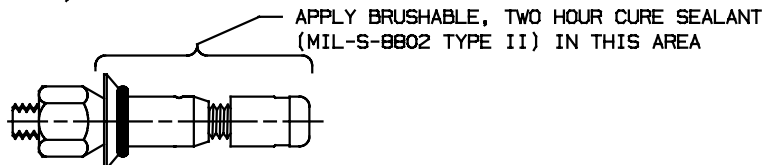
GENERAL NOTES:

1.) EXAMPLE OF PART NUMBER:



2.) LOCKING FEATURE CONSISTS OF THREE (3) INDENTATIONS LOCATED 120° APART ON THE PERIPHERY OF THE NUT COMPONENT.
3.) SEE MBF 2003 FOR INSTALLATION AND REMOVAL INFORMATION.

4.) THESE FASTENERS ARE INTENDED FOR INSTALLATION IN FUEL SEALING AREAS. IMMEDIATELY PRIOR TO INSTALLATION BRUSH OR SWAB SEALANT PER MIL-S-8802 TYPE II (BMS 5-26) TO THE EXPOSED SCREW THREADS BETWEEN THE NUT BODY AND THE SLEEVE. ALSO APPLY SEALANT TO THE EXTERIOR SURFACES OF THE NUT BODY, THE SLEEVE AND THE SCREW HEAD.



5.) THESE FASTENERS ARE NOT SUBJECT TO THE TENSION FATIGUE REQUIREMENTS OF MBF 2000.

6.) "O" RING PART NUMBER: 20113-(DIA).

7.) 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. FORCE FOR INSERTION SHALL NOT EXCEED 5.0 POUNDS (22,23 NEWTONS).

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

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