



TABLE I

| PART NUMBER    | Ø A          |              | Ø A' MIN |      | Ø D            |                | Ø E MAX |       | F WRENCH FLATS |              | (G)  |      | (H)  |      | (L)  |        | R RAD MAX |      | S MAX |       | (T HEX ACROSS FLATS) |      |
|----------------|--------------|--------------|----------|------|----------------|----------------|---------|-------|----------------|--------------|------|------|------|------|------|--------|-----------|------|-------|-------|----------------------|------|
|                | INCH         | mm           | INCH     | mm   | INCH           | mm             | INCH    | mm    | INCH           | mm           | INCH | mm   | INCH | mm   | INCH | mm     | INCH      | mm   | INCH  | mm    | INCH                 | mm   |
| MBF2315-05-( ) | .332<br>.325 | 8.43<br>8.25 | .296     | 7.52 | .1645<br>.1625 | 4.178<br>4.128 | .1640   | 4.166 | .086<br>.081   | 2.18<br>2.06 | .058 | 1.47 | .039 | 0.99 | .625 | 15.875 | .030      | 0.76 | .009  | 0.229 | .375                 | 9.52 |
| MBF2315-06-( ) | .385<br>.378 | 9.78<br>9.60 | .342     | 8.69 | .1985<br>.1965 | 5.042<br>4.991 | .1985   | 5.042 | .104<br>.099   | 2.64<br>2.52 | .058 | 1.47 | .043 | 1.09 | .675 | 17.145 | .030      | 0.76 | .011  | 0.279 | .375                 | 9.52 |

TABLE I (CONTINUED)

| PART NUMBER    | MIN AVAILABLE GRIP LENGTH | MAX AVAILABLE GRIP LENGTH | INSTALLED DIMENSIONS |              |         |      |       |       |                  |                  | MECHANICAL PROPERTIES          |      |                  |       |                    |       | V (GAGE PROTRUSION) |                | Ø W (GAGE)     |                |
|----------------|---------------------------|---------------------------|----------------------|--------------|---------|------|-------|-------|------------------|------------------|--------------------------------|------|------------------|-------|--------------------|-------|---------------------|----------------|----------------|----------------|
|                |                           |                           | RECOM. HOLE SIZE     |              | Ø J 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   | LBS              | N     | LBS                | N     | IN-LBS              | N-m            | INCH           | mm             |
| MBF2315-05-( ) | -100                      | -1000                     | .168<br>.165         | 4.27<br>4.19 | .250    | 6.35 | .370  | 9.40  | +0.00<br>-0.30   | +0.000<br>-0.762 | 900                            | 4000 | 3150             | 14010 | 1.0                | 0.113 | .0115<br>.0095      | 0.292<br>0.241 | .2832<br>.2830 | 7.193<br>7.188 |
| MBF2315-06-( ) | -150                      | -1150                     | .202<br>.199         | 5.13<br>5.05 | .300    | 7.62 | .420  | 10.67 | +0.00<br>-0.30   | +0.000<br>-0.762 | 1400                           | 6230 | 4600             | 20460 | 1.5                | 0.170 | .0140<br>.0114      | 0.356<br>0.289 | .3272<br>.3270 | 8.311<br>8.306 |

**MONOGRAM AEROSPACE FASTENERS**  
a TriMas company  
3423 SOUTH GARFIELD AVENUE  
COMMERCE, CALIFORNIA 90040  
(323) 722-4760 FAX (323) 727-1029

TITLE:  
**COMPOSIT-LOK® 3 BLIND FASTENER FLUSH BREAK  
130° FLUSH SHEAR HEAD, REDUCED RECESS  
FOR ADVANCED COMPOSITE MATERIAL &  
METALLIC STRUCTURES, TITANIUM**

DRAWING NO:  
**MBF2315(-)(-)(-)**

DRAWN BY:  
**M. DOMINGUEZ**

DRAWN DATE:  
**08/14/13**

APPROVED BY:  
*J. [Signature]*

CHECKED DATE:  
**11/26/17**

MONOGRAM CAGE CODE:  
**98524**

ECN NO:  
**17-0231**

ECN DATE:  
**09/08/17**

REV:  
**F**

SHEET 1 OF 2

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APPLICABLE SPECIFICATIONS:  
 PROCUREMENT SPECIFICATION: MBF2300  
 INSTALLATION AND INSPECTION SPECIFICATION: MBF2301  
 SPECIAL LUBE AND FINISH: MBF2002

**MATERIAL AND HEAT TREAT:**

NUT: 6Al-4V TITANIUM ALLOY PER AMS-T-9047 STA OR AMS4928 OR AMS4967 HEAT TREATED PER AMS-H-81200 TO 95 KSI SHEAR STRENGTH MINIMUM. MAXIMUM HYDROGEN CONTENT 125 PPM.  
 SCREW: A286 CRES PER AMS5731, AMS5732 OR AMS5737 HEAT TREATED TO 175 KSI TENSILE MINIMUM.  
 SLEEVE: 304 STAINLESS STEEL PER AMS5639, FULLY ANNEALED.  
 INSERT: ACETAL PER ASTM-D6778  
 DRIVE NUT: MILD STEEL

**FINISH:**

(-) NUT: CONVERSION COATING OR PHOSPHATE FLOURIDE PER MONOGRAM SPECIFICATION PS741, MAY BE USED AT MANUFACTURER'S OPTION  
 SLEEVE AND SCREW: PASSIVATE PER AMS2700, CONVERSION COATING OPTIONAL.  
 INSERT: NONE  
 DRIVE NUT: COLOR GRAY

**LUBRICANT:**

DRY FILM LUBE PER THE REQUIREMENTS OF AS5272 TYPE I OR EVERLUBE # 812 PER MIL-PRF-81329, PARAFFIN WAX, OR CETYL ALCOHOL PER AS87132 AS REQUIRED FOR PERFORMANCE.

**GENERAL NOTES:**

- EXAMPLE OF PART NUMBER:  
 MBF2315 ( ) - 06 - 100 ( )  
 "A" DESIGNATES DUAL DRIVE NUT SYSTEM FOR ROBOTIC INSTALLATION  
 DESIGNATES GRIP (TABLE III)  
 DESIGNATES BASIC DIMENSIONS (TABLE I)  
 DESIGNATES SPECIAL FINISH CODE (SEE MBF2002)  
 DESIGNATES BASIC PART NUMBER
- LOCKING FEATURE CONSISTS OF THREE (3) INDENTATIONS LOCATED 120° APART ON THE PERIPHERY OF THE NUT COMPONENT AND APPROXIMATELY .040" ABOVE INTERSECTION OF THE NUT NOSE ANGLE AND O.D.
- HEAD MARKINGS: MANUFACTURER'S IDENTIFICATION: MONOGRAM = "M"  
 FASTENER IDENTIFICATION = "2113"  
 POSITION OPTIONAL  
 ALTERNATE HEAD MARKING: "M" AND "2013".
- DISTORTION SHALL NOT PREVENT INSERTION OF THE FASTENER INTO A RING GAUGE OF LENGTH EQUAL TO ONE DIAMETER AND HOLE DIAMETER EQUAL TO A MINIMUM RECOMMENDED HOLE. FORCE FOR INSERTION SHALL NOT EXCEED 5.0 POUNDS.
- INSTALLATION AND REMOVAL INFORMATION T.B.A.

| 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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|  |                                  |
|--|----------------------------------|
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| DRAWN BY:<br><b>M. DOMINGUEZ</b>       | DRAWN DATE:<br><b>08/14/13</b>   |
| APPROVED BY:<br><i>J. Brown</i>        | CHECKED DATE:<br><b>11/22/17</b> |
| MONOGRAM CAGE CODE:<br><b>98524</b>    | ECN NO.:<br><b>17-0231</b>       |
|  | ECN DATE:<br><b>09/08/17</b>     |
|  | REV.:<br><b>F</b>                |
|  | SHEET 2 OF 2                     |

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