

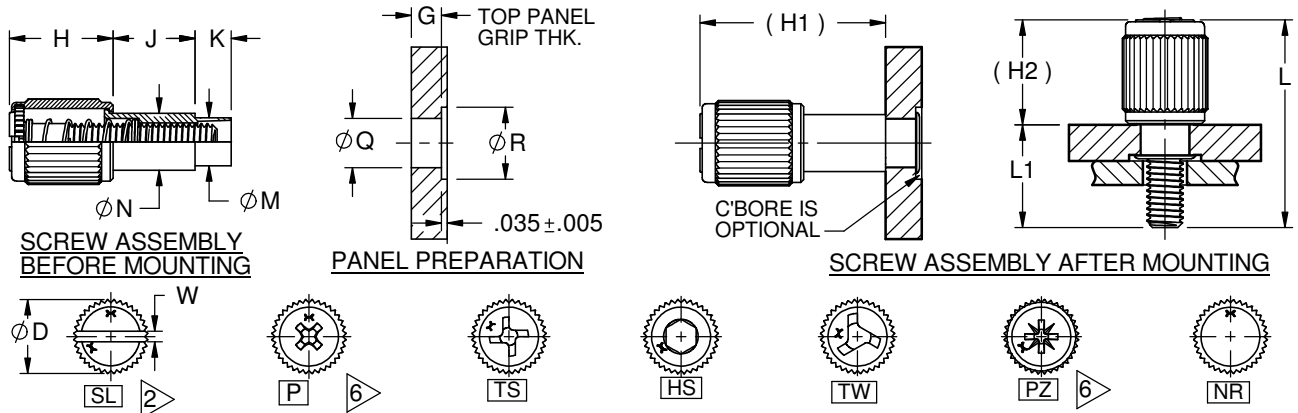
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Alcoa Fastening Systems & Rings



CURRENT DESIGN ACTIVITY
 CAGE CODE 0HWD7
 AFSR TUCSON OPERATIONS
 3724 EAST COLUMBIA STREET
 TUCSON, ARIZONA 85714
 PHONE (520) 519-7400
 FAX (520) 519-7454

TURN-LOC® ENGINEERING STANDARD



| THREAD SIZE CODE | Ø D | H | | (H1) | | | (H2) | | J | Ø M ±.005 | Ø N ±.005 | Ø Q +.004 -0.01 | Ø R | W | RECESS SIZE | | | |
|------------------|------|------|-----------------------|-------|-----------------------|------|-----------------------|-------|------|-----------|-----------|-----------------|------|----|-------------|----|------|--|
| | | HS | P, PZ, SL, TS, TW, NR | HS | P, PZ, SL, TS, TW, NR | HS | P, PZ, SL, TS, TW, NR | P, PZ | | | | | | | TW | TS | HS | |
| 4, 4F, M3 | .325 | .454 | .384 | .721 | .651 | .456 | .386 | .265 | .177 | .206 | .187 | .281 | .040 | 4 | 2 | 2 | 3/32 | |
| 6, 6F, M3.5 | .356 | .459 | .389 | .739 | .669 | .469 | .399 | .280 | .202 | .241 | .209 | .312 | .044 | 4 | 3 | 4 | 7/64 | |
| 8, 8F, M4 | .420 | .569 | .499 | .961 | .891 | .581 | .511 | .385 | .215 | .258 | .223 | .343 | .049 | 6 | 4 | 6 | 9/64 | |
| 10, 10C, 10F, M5 | .451 | .609 | .539 | 1.036 | .966 | .616 | .546 | .427 | .250 | .297 | .257 | .375 | .055 | 8 | 5 | 8 | 5/32 | |
| 12, 12C, 12F, M6 | .531 | .614 | .544 | 1.041 | .971 | .616 | .546 | .428 | .313 | .371 | .323 | .437 | .062 | 10 | 6 | 10 | 3/16 | |

PART NUMBER CALLOUT

DRB () 7500 () - () - () - ()

MODEL

SERIES

| LENGTH CODE | 4, 4F, M3 | | 6, 6F, M3.5 | | 8, 8F, M4 | | 10, 10C, 10F, M5 | | 12, 12C, 12F, M6 | |
|-------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|------------------|----------------|
| | L +.025 -0.015 | L ₁ | L +.025 -0.015 | L ₁ | L +.025 -0.015 | L ₁ | L +.025 -0.015 | L ₁ | L +.025 -0.015 | L ₁ |
| 1 | .639 | .253 | .650 | .251 | .685 | .174 | .832 | .286 | .745 | .199 |
| 1.5 | .702 | .316 | .713 | .314 | .748 | .237 | .895 | .349 | .808 | .262 |
| 2 | .764 | .378 | .775 | .376 | .810 | .299 | .957 | .411 | .870 | .324 |
| 3 | .889 | .503 | .900 | .501 | .935 | .424 | 1.082 | .536 | .995 | .449 |
| 4 | 1.014 | .628 | 1.025 | .626 | 1.060 | .549 | 1.207 | .661 | 1.120 | .574 |
| 5 | 1.139 | .753 | 1.150 | .751 | 1.185 | .674 | 1.332 | .786 | 1.245 | .699 |
| 6 | 1.264 | .878 | 1.275 | .876 | 1.310 | .799 | 1.457 | .911 | 1.370 | .824 |
| 7 | 1.389 | 1.003 | 1.400 | 1.001 | 1.435 | .924 | 1.582 | 1.036 | 1.495 | .949 |

| THREAD SIZE CODE | THREAD SIZE | LEAD | THREAD SIZE CODE | THREAD SIZE | LEAD |
|------------------|----------------|-----------------|------------------|-----------------|--------|
| 4 | .112-40 UNC-3A | SINGLE | 8F | .164-32 UNC-3A | QUAD |
| 6 | .138-32 UNC-3A | | 10F | .190-32 UNF-3A | |
| 8 | .164-32 UNC-3A | | 12F | .250-28 UNF-3A | |
| 10 | .190-32 UNF-3A | | M3 | M3 x 0.5-4h6h | |
| 12 | .250-28 UNF-3A | SINGLE (COARSE) | M3.5 | M3.5 x 0.6-4h6h | METRIC |
| 10C | .190-24 UNC-3A | | M4 | M4 x 0.7-4h6h | |
| 12C | .250-20 UNC-3A | | M5 | M5 x 0.8-4h6h | |
| 4F | .112-40 UNC-3A | DOUBLE | M6 | M6 x 1.0-4h6h | |
| 6F | .138-32 UNC-3A | | | | |

| GRIP CODE | G (TOP PANEL GRIP THICKNESS) | K ±.005 |
|-----------|------------------------------|---------|
| AA | .030-.055 | .100 |
| A | .031-.062 | .125 |
| B | .063-.125 | .187 |
| C | .125-.187 | .250 |
| D | .188-.250 | .312 |
| E | .251-.312 | .375 |
| F | .313-.375 | .437 |

| RECESS CODE | DRIVING RECESS AND SPECIFICATION | RECESS CODE | DRIVING RECESS AND SPECIFICATION |
|-------------|----------------------------------|-------------|----------------------------------|
| | SLOT RECESS PER ANSI B18.6.3 | PZ | RECESS PER TYPE 1A ANSI B18.6.3 |
| HS | HEX SOCKET RECESS PER ANSI B18.3 | TS | RECESS PER NASM 33781 |
| NR | NO RECESS | TW | RECESS PER NAS 4000 |
| P | CROSS RECESS PER NASM 9006 | | |

| CODE | FINISH |
|------|--------|
| NONE | CLEAR |
| B | BLACK |

AC

PER DCN 12953, CHANGED FROM Alcoa Fastening Systems AND AFS TO Alcoa Fastening Systems & Rings AND AFSR

TOLERANCE UNLESS OTHERWISE NOTED:
 .X = ±.05
 .XX = ±.02
 .XXX = ±.015
 ANGLES ±0.5°

DRAWN BY: J. SCHLOBOHM
 CHECKED BY: SIGNATURE ON FILE

ISSUED 9/10/2004
 REVISED 3/31/2015
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TURN-LOC®, HIGH PROFILE,
 OPTIONAL RECESS

DIMENSIONS IN INCHES

DRB7500
S-0436

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TURN-LOC® ENGINEERING STANDARD

| AVAILABILITY TABLE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|-----------|---|---|---|---|---|---|-------------|---|---|---|---|---|---|-----------|---|---|---|---|---|---|------------------|---|---|---|---|---|---|------------------|---|---|---|---|---|---|
| GRIP CODE | 4, 4F, M3 | | | | | | | 6, 6F, M3.5 | | | | | | | 8, 8F, M4 | | | | | | | 10, 10C, 10F, M5 | | | | | | | 12, 12C, 12F, M6 | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| AA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- ASSEMBLIES NOT AVAILABLE
- FULLY RETRACTABLE ASSEMBLIES
- ASSEMBLIES NOT FULLY RETRACTABLE (STUD WILL PROTRUDE BELOW MINIMUM TOP PANEL THICKNESS)

MATERIAL

STUD: HS, NR, P, PZ, & SLOT RECESSES
 ALL SIZES - 302 CRES PER ASTM-A-493 OR AMS 5636

STUD: TS & TW RECESSES
 ALL SIZES - A-286 CRES PER AMS 5732 OR AMS 5737, HEAT TREAT TO 160 KSI MIN.
 ULTIMATE TENSILE STRENGTH

KNOB & SLEEVE: 6061 ALUMINUM ALLOY PER AMS QQ-A-225/8, OR AMS 4117, OR EQUIVALENT

SPRING: 302 CRES PER ASTM-A-313 OR AMS 5688

FINISH

NONE: STUD & SPRING: PASSIVATE PER AMS2700

KNOB & SLEEVE: ANODIZE PER MIL-A-8625, TYPE II, CLASS I

B: STUD: BLACK OXIDE PER MIL-DTL-13924, CLASS 4 (300 SERIES)
 BLACK OXIDE PER MIL-DTL-13924, CLASS 3 (A-286)

KNOB: BLACK ANODIZE PER MIL-A-8625, TYPE II, CLASS 2

SLEEVE: ANODIZE PER MIL-A-8625, TYPE II, CLASS I (CLEAR)

SPRING: PASSIVATE PER AMS2700

NOTES UNLESS SPECIFIED OTHERWISE:

- 1 LETTERS AT THE END OF PART NUMBER DESIGNATE SPECIAL ASSEMBLIES:
 DL - ASSEMBLIES WITH DRI LUBE THREADS PER AS5272
 PL - ASSEMBLIES WITH PATCH LOCK PER MIL-DTL-18240
- 2 NO CODE REQUIRED FOR SLOTTED HEADS
- 3 WHEN USING THE HEX SOCKET CONFIGURATION, ADD .070 TO "L" LENGTH.
- 4 FOR LONGER LENGTHS, ADD .125 INCREMENTS PER LENGTH CODE
- 5 -3A THREADS PER ASME B1.1. "M" THREADS PER ASME B1.13M.
- 6 RECESS IS ONE SIZE SMALLER THAN NOMINAL SIZE REQUIRED FOR 100° FLAT HEAD.
- 7 COMPONENTS ARE FINISHED PRIOR TO THE ASSEMBLY PROCESS. DISCOLORATION OF THE BLACK ANODIZE MAY OCCUR ON THE CRIMPED PORTION OF THE KNOB DURING ASSEMBLY. A HIGH-ADHESION BLACK PAINT IS PERMITTED FOR TOUCH-UP AFTER ASSEMBLY.
- 8 MAY BE USED WITH .020 DEEP C'BORE.

INSTALLATION TOOLS: () INDICATES THREAD SIZE CODE

ARBOR PRESS TOOL HW7600-(), REMOVAL ADAPTER TOOL FNR7505-(), NOSE PIECE HN7513-(),
 PULLER HP7523-(), HANDLE ASSEMBLY TA7533:
 COMPLETE HAND TOOL ASSY: H8603-() (INCLUDES NOSE PIECE, PULLER & HANDLE)

| | | | | | |
|-----------|---|---|--|----------------|-------------------|
| AC | PER DCN 12953, CHANGED FROM Alcoa Fastening Systems AND AFS TO Alcoa Fastening Systems & Rings AND AFSR | | TOLERANCE UNLESS OTHERWISE NOTED: .X = ±.05 .XX = ±.02 .XXX = ±.015 ANGLES ±0.5° | DRAWN BY | J. SCHLOBOHM |
| | ISSUED | 9/10/2004 | | CHECKED BY | SIGNATURE ON FILE |
| REVISED | 3/31/2015 | TURN-LOC®, HIGH PROFILE, OPTIONAL RECESS | | DRB7500 | |
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| | | | DIMENSIONS IN INCHES | | |