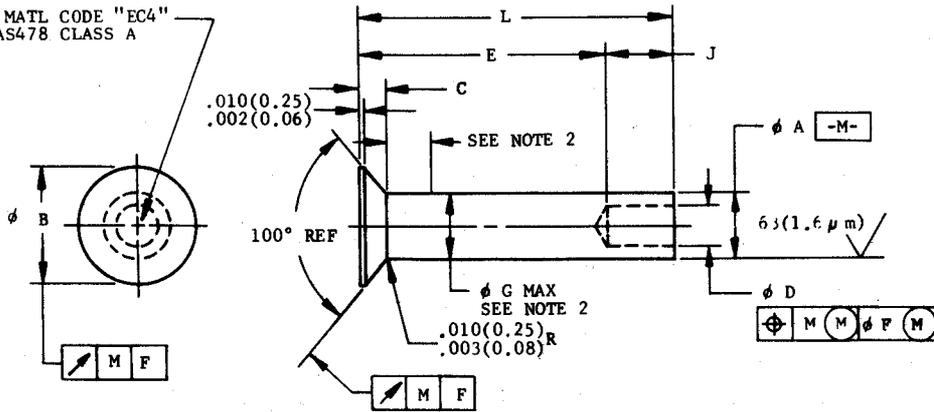


AS3228

SHEET 1 OF 4

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PER AS478 CLASS A

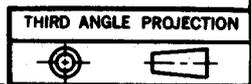


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| NOMINAL DIAMETER | | A | | B | | C | | D | |
|------------------|------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|
| IN. | (mm) | IN. | (mm) | IN. | (mm) | IN. | (mm) | IN. | (mm) |
| .062 | 1.57 | .061-.063 | 1.55-1.60 | .099-.107 | 2.52- 2.71 | .019-.023 | 0.49-0.58 | .021-.026 | 0.54-0.66 |
| .094 | 2.39 | .093-.095 | 2.37-2.41 | .164-.172 | 4.17- 4.36 | .033-.037 | 0.84-0.93 | .045-.050 | 1.15-1.27 |
| .125 | 3.18 | .123-.126 | 3.13-3.20 | .210-.218 | 5.34- 5.53 | .039-.043 | 1.00-1.09 | .060-.065 | 1.53-1.65 |
| .156 | 3.96 | .154-.157 | 3.92-3.98 | .272-.280 | 6.91- 7.11 | .052-.056 | 1.33-1.42 | .092-.097 | 2.34-2.46 |
| .188 | 4.78 | .186-.189 | 4.73-4.80 | .337-.347 | 8.56- 8.81 | .067-.071 | 1.71-1.80 | .107-.112 | 2.72-2.84 |
| .250 | 6.35 | .248-.252 | 6.30-6.40 | .460-.470 | 11.69-11.93 | .092-.096 | 2.34-2.43 | .154-.159 | 3.92-4.03 |

| NOMINAL DIAMETER | | F | | G MAX | | J (REF) | |
|------------------|------|------|------|-------|------|---------|------|
| IN. | (mm) | IN. | (mm) | IN. | (mm) | IN. | (mm) |
| .062 | 1.57 | .010 | 0.25 | .064 | 1.62 | .090 | 2.29 |
| .094 | 2.39 | .010 | 0.25 | .096 | 2.43 | .105 | 2.67 |
| .125 | 3.18 | .010 | 0.25 | .128 | 3.25 | .130 | 3.30 |
| .156 | 3.96 | .015 | 0.38 | .158 | 4.01 | .155 | 3.94 |
| .188 | 4.78 | .015 | 0.38 | .191 | 4.85 | .180 | 4.57 |
| .250 | 6.35 | .020 | 0.50 | .254 | 6.45 | .230 | 5.84 |

1. MATERIAL: CRES AMS 7228
2. ϕ G FOR DISTANCE OF .060(1.52) FOR LENGTHS .188(4.78) AND SHORTER AND .100(2.54) FOR LENGTHS LONGER THAN .188(4.78).
3. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36-1978; REQUIREMENTS PER ANSI B46.1-1978. UNLESS OTHERWISE SPECIFIED, SURFACES TO BE 250 MICROINCHES (6.3 MICROMETRES).
4. DIMENSIONS AND TOLERANCES: ANSI Y14.5-1973.
5. DIMENSIONS IN INCHES (MILLIMETRES), METRIC CONVERSIONS IN PARENTHESES ARE IN INTERNATIONAL SYSTEMS UNITS (SI).
6. BREAK SHARP EDGES .003-.015(0.08-0.38) UNLESS OTHERWISE SPECIFIED.
7. DO NOT USE UNASSIGNED PART NUMBERS.



PREPARED BY SAE COMMITTEE E-25, ENGINE AND PROPELLER STANDARD UTILITY PARTS

Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

AEROSPACE STANDARD

RIVET - TUBULAR, COUNTERSUNK, AMS 7228

AS3228

SHEET 1 OF 4

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REAFFIRMED

11/91 5/95

Issued June 1979 Revised

| L | | A = .062 (1.57) | | | | A = .094 (2.39) | | | |
|-------------|-------------|-----------------|-----------|-------------|------------|-----------------|-------------|-------------|--------|
| IN. | (mm) | PART NO. | E | | PART NO. | E | | APPROX MASS | |
| | | | IN. | (mm) | | IN. | (mm) | LB/100 | kg/100 |
| .146-.166 | 3.71- 4.21 | AS3228-001 | .051-.081 | 1.30- 2.05 | AS3228-051 | .036-.066 | 0.92- 1.67 | .031 | .014 |
| .178-.198 | 4.53- 5.02 | AS3228-002 | .083-.103 | 2.11- 3.30 | AS3228-052 | .068-.098 | 1.73- 2.48 | .037 | .017 |
| .209-.229 | 5.31- 5.81 | AS3228-003 | .114-.144 | 2.90- 3.65 | AS3228-053 | .099-.129 | 2.52- 3.27 | .043 | .020 |
| .240-.260 | 6.10- 6.60 | AS3228-004 | .145-.175 | 3.69- 4.44 | AS3228-054 | .130-.160 | 3.31- 4.06 | .049 | .022 |
| .271-.291 | 6.89- 7.39 | AS3228-005 | .176-.206 | 4.48- 5.23 | AS3228-055 | .161-.191 | 4.09- 4.85 | .055 | .025 |
| .302-.322 | 7.68- 8.17 | AS3228-006 | .207-.237 | 5.26- 6.01 | AS3228-056 | .192-.222 | 4.88- 5.63 | .062 | .028 |
| .334-.354 | 8.49- 8.99 | AS3228-007 | .239-.269 | 6.08- 6.83 | AS3228-057 | .224-.254 | 5.69- 6.45 | .068 | .031 |
| .365-.385 | 9.28- 9.77 | AS3228-008 | .270-.300 | 6.86- 7.62 | AS3228-058 | .255-.285 | 6.48- 7.23 | .074 | .034 |
| .396-.416 | 10.06-10.56 | AS3228-009 | .301-.331 | 7.65- 8.40 | AS3228-059 | .286-.316 | 7.27- 8.02 | .084 | .036 |
| .428-.448 | 10.88-11.37 | AS3228-010 | .333-.363 | 8.46- 9.22 | AS3228-060 | .318-.348 | 8.08- 8.84 | .086 | .039 |
| .459-.479 | 11.66-12.16 | AS3228-011 | .364-.394 | 9.25-10.00 | AS3228-061 | .349-.379 | 8.87- 9.62 | .093 | .042 |
| .490-.510 | 12.45-12.95 | AS3228-012 | .395-.425 | 10.04-10.79 | AS3228-062 | .380-.410 | 9.66-10.41 | .099 | .045 |
| .521-.541 | 13.24-13.74 | AS3228-013 | .426-.456 | 10.83-11.58 | AS3228-063 | .411-.441 | 10.44-11.20 | .105 | .048 |
| .552-.572 | 14.03-14.52 | AS3228-014 | .457-.487 | 11.61-12.36 | AS3228-064 | .442-.472 | 11.23-11.98 | .110 | .050 |
| .584-.604 | 14.84-15.34 | AS3228-015 | .489-.519 | 12.43-13.18 | AS3228-065 | .474-.504 | 12.04-12.80 | .117 | .053 |
| .615-.635 | 15.63-16.12 | | | | AS3228-066 | .505-.535 | 12.83-13.58 | .123 | .056 |
| .645-.665 | 16.39-16.88 | | | | AS3228-067 | .536-.566 | 13.62-14.37 | .129 | .059 |
| .678-.698 | 17.23-17.72 | | | | AS3228-068 | .568-.598 | 14.43-15.18 | .136 | .062 |
| .709-.729 | 18.01-18.51 | | | | AS3228-069 | .599-.629 | 15.22-15.97 | .142 | .064 |
| .740-.760 | 18.80-19.30 | | | | AS3228-070 | .630-.660 | 16.01-16.76 | .148 | .067 |
| .771-.791 | 19.59-20.09 | | | | AS3228-071 | .661-.691 | 16.79-17.55 | .154 | .070 |
| .802-.822 | 20.38-20.87 | | | | AS3228-072 | .692-.722 | 17.58-18.33 | .160 | .073 |
| .834-.854 | 21.19-21.69 | | | | AS3228-073 | .724-.754 | 18.39-19.15 | .167 | .076 |
| .865-.885 | 21.98-22.47 | | | | AS3228-074 | .755-.785 | 19.18-19.93 | .173 | .078 |
| .896-.916 | 22.76-23.26 | | | | AS3228-075 | .786-.816 | 19.97-20.72 | .179 | .081 |
| .928-.948 | 23.58-24.07 | | | | AS3228-076 | .818-.848 | 20.78-21.53 | .185 | .084 |
| .959-.979 | 24.36-24.86 | | | | AS3228-077 | .849-.879 | 21.57-22.32 | .191 | .087 |
| .990-1.010 | 25.15-25.65 | | | | AS3228-078 | .880-.910 | 22.36-23.11 | .197 | .089 |
| 1.052-1.072 | 26.73-27.22 | | | | AS3228-079 | .942-.972 | 23.93-24.68 | .210 | .095 |
| 1.115-1.135 | 28.33-28.82 | | | | AS3228-080 | 1.005-1.035 | 25.53-26.28 | .222 | .101 |
| 1.178-1.198 | 29.93-30.42 | | | | AS3228-081 | 1.068-1.098 | 27.13-27.88 | .234 | .106 |
| 1.240-1.260 | 31.50-32.00 | | | | AS3228-082 | 1.130-1.160 | 28.71-29.46 | .247 | .112 |
| 1.302-1.322 | 33.08-33.57 | | | | AS3228-083 | 1.192-1.222 | 30.28-31.03 | .259 | .117 |
| 1.365-1.385 | 34.68-35.17 | | | | AS3228-084 | 1.255-1.285 | 31.88-32.63 | .271 | .124 |
| 1.428-1.448 | 36.28-36.77 | | | | AS3228-085 | 1.318-1.348 | 33.48-34.23 | .284 | .129 |
| 1.490-1.510 | 37.85-38.35 | | | | AS3228-086 | 1.380-1.410 | 35.06-35.81 | .296 | .134 |

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AEROSPACE STANDARD
RIVET - TUBULAR, COUNTERSUNK, AMS 7228

AS3228

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Issued Revised

AS3228

SHEET 3 OF 4

| L | | A ⁿ .125 (3.18) | | | A ⁿ .156 (3.96) | | |
|-------------|-------------|----------------------------|-------------|-------------|----------------------------|-------------|-------------|
| IN. | (mm) | PART NO. | E | | PART NO. | E | |
| | | | IN. | (mm) | | IN. | (mm) |
| | | APPROX MASS | | APPROX MASS | | APPROX MASS | |
| | | LB/100 | kg/100 | LB/100 | kg/100 | LB/100 | kg/100 |
| .178-.198 | 4.53-5.02 | AS3228-102 | .043-.073 | 1.10-1.85 | AS3228-154 | .080-.110 | 2.04-2.79 |
| .209-.229 | 5.31-5.81 | AS3228-103 | .074-.104 | 1.88-2.64 | AS3228-155 | .111-.141 | 2.82-3.58 |
| .240-.260 | 6.10-6.60 | AS3228-104 | .105-.135 | 2.67-3.42 | AS3228-156 | .142-.172 | 3.61-4.36 |
| .271-.291 | 6.89-7.39 | AS3228-105 | .136-.166 | 3.46-4.21 | AS3228-157 | .174-.204 | 4.42-5.18 |
| .302-.322 | 7.68-8.17 | AS3228-106 | .167-.197 | 4.25-5.00 | AS3228-158 | .205-.235 | 5.21-5.96 |
| .334-.354 | 8.49-8.99 | AS3228-107 | .199-.229 | 5.06-5.81 | AS3228-159 | .236-.266 | 6.00-6.75 |
| .365-.385 | 9.28-9.77 | AS3228-108 | .230-.260 | 5.85-6.60 | AS3228-160 | .268-.298 | 6.81-7.56 |
| .396-.416 | 10.06-10.56 | AS3228-109 | .261-.291 | 6.63-7.39 | AS3228-161 | .299-.329 | 7.60-8.35 |
| .428-.448 | 10.88-11.37 | AS3228-110 | .293-.323 | 7.45-8.20 | AS3228-162 | .330-.360 | 8.39-9.14 |
| .459-.479 | 11.66-12.16 | AS3228-111 | .324-.354 | 8.23-8.99 | AS3228-163 | .361-.391 | 9.17-9.93 |
| .490-.510 | 12.45-12.95 | AS3228-112 | .355-.385 | 9.02-9.77 | AS3228-164 | .392-.422 | 9.96-10.71 |
| .521-.541 | 13.24-13.74 | AS3228-113 | .386-.416 | 9.81-10.56 | AS3228-165 | .424-.454 | 10.77-11.53 |
| .552-.572 | 14.03-14.52 | AS3228-114 | .417-.447 | 10.47-11.22 | AS3228-166 | .455-.485 | 11.56-12.31 |
| .584-.604 | 14.84-15.34 | AS3228-115 | .449-.479 | 11.41-12.16 | AS3228-167 | .486-.516 | 12.35-13.10 |
| .615-.635 | 15.63-16.12 | AS3228-116 | .480-.510 | 12.20-12.95 | AS3228-168 | .518-.548 | 13.16-13.91 |
| .645-.665 | 16.39-16.89 | AS3228-117 | .511-.541 | 12.98-13.74 | AS3228-169 | .549-.579 | 13.95-14.70 |
| .678-.698 | 17.23-17.72 | AS3228-118 | .543-.573 | 13.29-14.04 | AS3228-170 | .580-.610 | 14.74-15.49 |
| .709-.729 | 18.01-18.51 | AS3228-119 | .574-.604 | 14.58-15.34 | AS3228-171 | .611-.641 | 15.52-16.28 |
| .740-.760 | 18.80-19.30 | AS3228-120 | .605-.635 | 15.37-16.12 | AS3228-172 | .642-.672 | 16.31-17.06 |
| .771-.791 | 19.59-20.09 | AS3228-121 | .636-.666 | 16.16-16.91 | AS3228-173 | .674-.704 | 17.12-17.88 |
| .802-.822 | 20.38-20.87 | AS3228-122 | .667-.697 | 16.95-17.70 | AS3228-174 | .705-.735 | 17.91-18.66 |
| .834-.854 | 21.19-21.69 | AS3228-123 | .699-.729 | 17.76-18.51 | AS3228-175 | .736-.766 | 18.70-19.45 |
| .865-.885 | 21.98-22.47 | AS3228-124 | .730-.760 | 18.55-19.30 | AS3228-176 | .768-.798 | 19.51-20.26 |
| .896-.916 | 22.76-23.26 | AS3228-125 | .761-.791 | 19.33-20.09 | AS3228-177 | .799-.829 | 20.30-21.05 |
| .928-.948 | 23.58-24.07 | AS3228-126 | .793-.823 | 20.15-20.90 | AS3228-178 | .830-.860 | 21.09-21.84 |
| .959-.979 | 24.36-24.86 | AS3228-127 | .824-.854 | 20.93-21.69 | AS3228-179 | .862-.892 | 22.66-23.41 |
| .990-1.010 | 25.15-25.65 | AS3228-128 | .855-.885 | 21.72-22.47 | AS3228-180 | .893-.923 | 24.26-25.01 |
| 1.052-1.072 | 26.73-27.22 | AS3228-129 | .917-.947 | 23.30-24.05 | AS3228-181 | .924-.954 | 25.86-26.61 |
| 1.115-1.135 | 28.33-28.82 | AS3228-130 | .980-1.010 | 24.90-25.65 | AS3228-182 | .955-.985 | 27.44-28.19 |
| 1.178-1.198 | 29.93-30.42 | AS3228-131 | 1.043-1.073 | 26.50-27.25 | AS3228-183 | 1.018-1.048 | 29.01-29.76 |
| 1.240-1.260 | 31.50-32.00 | AS3228-132 | 1.105-1.135 | 28.07-28.82 | AS3228-184 | 1.080-1.110 | 30.61-31.36 |
| 1.302-1.322 | 33.08-33.57 | AS3228-133 | 1.167-1.197 | 29.65-30.40 | AS3228-185 | 1.142-1.172 | 32.21-32.96 |
| 1.365-1.385 | 34.68-35.17 | AS3228-134 | 1.230-1.260 | 31.25-32.00 | AS3228-186 | 1.205-1.235 | 33.79-34.54 |
| 1.428-1.448 | 36.28-36.77 | AS3228-135 | 1.293-1.323 | 32.85-33.60 | AS3228-187 | 1.268-1.298 | 35.36-36.11 |
| 1.490-1.510 | 37.85-38.35 | AS3228-136 | 1.355-1.385 | 34.42-35.17 | AS3228-188 | 1.330-1.360 | 36.96-37.71 |
| 1.552-1.572 | 39.43-39.92 | AS3228-137 | 1.417-1.447 | 36.00-36.75 | AS3228-189 | 1.392-1.422 | 38.56-39.31 |
| 1.615-1.635 | 41.03-41.52 | AS3228-138 | 1.480-1.510 | 37.60-38.35 | AS3228-190 | 1.455-1.485 | 40.14-40.89 |
| 1.678-1.698 | 42.63-43.12 | AS3228-139 | 1.543-1.573 | 39.20-39.95 | AS3228-191 | 1.518-1.548 | 41.71-42.46 |
| 1.740-1.760 | 44.20-44.70 | AS3228-140 | 1.605-1.635 | 40.77-41.52 | AS3228-192 | 1.580-1.610 | 43.31-44.06 |
| 1.802-1.822 | 45.78-46.27 | | | | AS3228-193 | 1.642-1.672 | 44.91-45.66 |
| 1.865-1.885 | 47.38-47.87 | | | | AS3228-194 | 1.705-1.735 | 46.49-47.24 |
| 1.928-1.948 | 48.98-49.47 | | | | | | |
| 1.990-2.010 | 50.55-51.05 | | | | | | |

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