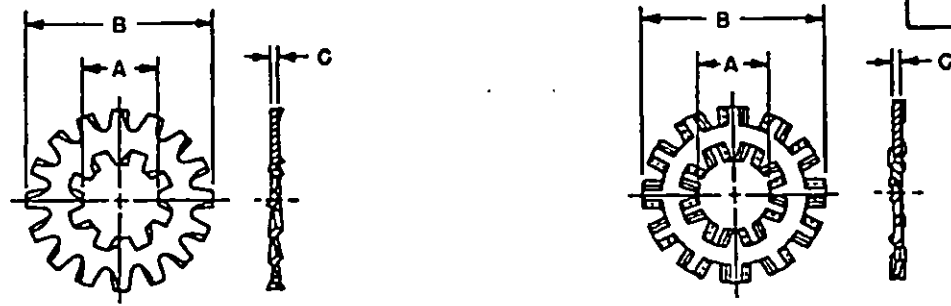


FED. SUP CLASS
5310



OPTIONAL DESIGNS

TABLE I

| DASH NO. * | NOM SIZE | A INSIDE DIA | | B OUTSIDE DIA | | C THICKNESS | | DASH NO. * | NOM SIZE | A INSIDE DIA | | B OUTSIDE DIA | | C THICKNESS | |
|--|-----------------|-----------------|-----------------|--|--|--|--|--|------------------|-----------------|-----------------|--|--|--|--|
| | | MAX | MIN | MAX | MIN | MAX | MIN | | | MAX | MIN | MAX | MIN | MAX | MIN |
| 51 52 53 | .112 | .123 | .115 | .475 .510 .610 | .460 .495 .560 | .021 .021 .021 | .016 .017 .017 | 72 73 74 75 | .3125 | .332 | .320 | .900 .985 1.070 1.155 | .865 .965 1.045 1.130 | .040 .045 .050 .052 | .032 .037 .042 .042 |
| 54 55 56 | .138 | .150 | .141 | .510 .630 .690 | .495 .580 .670 | .028 .028 .028 | .023 .023 .023 | 76 77 78 79 | .375 | .394 | .364 | .985 1.070 1.155 1.260 | .965 1.045 1.130 1.220 | .045 .050 .050 .050 | .037 .042 .042 .042 |
| 57 58 59 | .164 | .176 | .168 | .610 .690 .760 | .580 .670 .740 | .034 .034 .034 | .028 .028 .028 | 80 81 82 83 | .4375 | .464 | .440 | 1.070 1.155 1.260 1.335 | 1.045 1.130 1.220 1.290 | .050 .050 .055 .055 | .042 .042 .047 .047 |
| 60 61 62 63 | .190 | .204 | .195 | .610 .690 .760 .900 | .580 .670 .740 .880 | .034 .040 .040 .040 | .028 .032 .032 .032 | 84 85 86 87 | | | .512 | 1.260 1.335 1.410 1.620 | 1.220 1.290 1.380 1.590 | .055 .055 .060 .067 | .047 .047 .052 .059 |
| 64 65 66 67 | .216 | .231 | .221 | .690 .760 .900 .965 | .670 .725 .860 .945 | .040 .040 .040 .045 | .032 .032 .032 .037 | 88 89 90 91 | .500 | .530 | .512 | 1.335 1.430 1.620 1.830 | 1.290 1.380 1.590 1.797 | .055 .060 .067 .067 | .047 .052 .059 .059 |
| 68 69 70 71 | .250 | .257 | .256 | .760 .900 .985 | .725 .880 .963 | .040 .040 .045 | .032 .032 .037 | 92 93 94 95 | .625 | .661 | .640 | 1.410 1.620 1.830 1.975 | 1.380 1.590 1.797 1.935 | .060 .067 .067 .067 | .052 .059 .059 .059 |

NOTES:

- MATERIAL:** Carbon steel in accordance with Fed. Std. No. 66, AISI 1050 to 1064.
- PROTECTIVE COATING:** Cadmium plated in accordance with QQ-P-416, Type II, Class 3.
- DIMENSIONS:** All dimensions in Table I are in inches.
All dimensions in Table II are in millimetres.
- PART NUMBER:** The MS part number consists of the MS number, plus the dash number.
Example: MS45904-51.
- Referenced documents shall be of the issue in effect on date of invitations for bid.
- For design feature purposes, this standard takes precedence over procurement documents referenced herein.
- Dash numbers 1 through 45 are canceled after 26 June 1968 and superseded by dash numbers 51 through 95, respectively.
- Lined-out washers are inactive for new design.

(B)

(B) For changes see sheets 1 and 2.

REVIEWER: AV, IS, NU, NS
(SER: AS, AT, SH, VT, YD

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

| | | |
|---------------------------------------|---|-------------------------------|
| P.A. VC Other Code OS 82 | TITLE WASHER, LOCK, INTERNAL AND EXTERNAL TOOTH | MILITARY STANDARD MS 45904 |
| PROCUREMENT SPECIFICATION FF-W-100 | SUPERSEDES BEA8B | SHEET 1 OF 2 |

DD FORM 672-1

APPROVED 8 MAR 61 REVISED 4 26 JUN 68 6 FEB 1974

FED. SUP CLASS
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(B)
TABLE II
METRIC TRANSLATION OF TABLE I

| DASH NO. | NOM SIZE | A INSIDE DIA | | B OUTSIDE DIA | | C THICKNESS | | DASH NO. | NOM SIZE | A INSIDE DIA | | B OUTSIDE DIA | | C THICKNESS | |
|---------------|----------|--------------|------|------------------|------------------|-----------------|----------------|---------------|------------------|------------------|------------------|------------------|------------------|-----------------|-----------------|
| | | MAX | MIN | MAX | MIN | MAX | MIN | | | MAX | MIN | MAX | MIN | | |
| 51 | 2.84 | 3.12 | 2.92 | 12.06 | 11.68 | .53 | .41 | 72 | 7.94 | 8.43 | 8.13 | 22.86 | 21.97 | 1.02 | .81 |
| 52 | | | | 12.95 | 12.57 | .53 | .43 | 73 | | | | 25.02 | 24.51 | 1.14 | .94 |
| 53 | | | | 15.49 | 14.73 | .53 | .43 | 74 | | | | 27.18 | 26.54 | 1.27 | 1.07 |
| 54 | 3.51 | 3.81 | 3.58 | 12.95 | 12.57 | .71 | .58 | 75 | | | | 29.34 | 28.70 | 1.27 | 1.07 |
| 55 | | | | 15.49 | 14.73 | .71 | .58 | 76 | | | | 25.02 | 24.51 | 1.14 | .94 |
| 56 | | | | 17.53 | 17.02 | .71 | .58 | 77 | 27.18 | 26.54 | 1.27 | 1.07 | | | |
| 57 | 4.17 | 4.47 | 4.27 | 15.49 | 14.73 | .86 | .71 | 78 | 9.52 | 10.11 | 9.75 | 29.34 | 28.70 | 1.27 | 1.07 |
| 58 | | | | 17.53 | 17.02 | .86 | .71 | 79 | | | | 32.00 | 30.99 | 1.27 | 1.07 |
| 59 | | | | 19.30 | 18.80 | .86 | .71 | 60 | | | | 27.18 | 26.54 | 1.27 | 1.07 |
| 60 | 4.83 | 5.18 | 4.95 | 15.49 | 14.73 | .86 | .71 | 61 | 11.21 | 11.79 | 11.30 | 29.34 | 28.70 | 1.27 | 1.07 |
| 61 | | | | 17.53 | 17.02 | 1.02 | .81 | 62 | 32.00 | 30.99 | 1.40 | 1.19 | | | |
| 62 | | | | 19.30 | 18.80 | 1.02 | .81 | 63 | 33.48 | 32.77 | 1.40 | 1.19 | | | |
| 63 | | | | 22.86 | 22.35 | 1.02 | .81 | 84 | 32.00 | 30.99 | 1.40 | 1.19 | | | |
| 64 | 5.49 | 5.87 | 5.61 | 17.53 | 17.02 | 1.02 | .81 | 65 | 12.70 | 13.46 | 13.00 | 33.48 | 32.77 | 1.40 | 1.19 |
| 66 | | | | 19.30 | 18.42 | 1.02 | .81 | 86 | | | | 35.81 | 35.05 | 1.52 | 1.32 |
| 67 | | | | 22.86 | 22.35 | 1.02 | .81 | 87 | | | | 41.15 | 40.39 | 1.70 | 1.50 |
| 68 | | | | 25.02 | 24.51 | 1.14 | .94 | 69 | | | | 33.48 | 32.77 | 1.40 | 1.19 |
| 68 | 6.35 | 6.78 | 6.50 | 19.30 | 18.42 | 1.02 | .81 | 70 | 14.29 | 15.14 | 14.63 | 36.32 | 35.05 | 1.52 | 1.32 |
| 69 | | | | 22.86 | 22.35 | 1.02 | .81 | 71 | 41.15 | 40.39 | 1.70 | 1.50 | | | |
| 70 | | | | 25.02 | 24.51 | 1.14 | .94 | 72 | 46.48 | 45.64 | 1.70 | 1.50 | | | |
| 71 | | | | 27.18 | 26.54 | 1.14 | .94 | 92 | 35.81 | 35.05 | 1.52 | 1.32 | | | |
| | | | | | | | | | 15.88 | 16.84 | 16.26 | 41.15 | 40.39 | 1.70 | 1.50 |
| | | | | | | | | | | | | 46.48 | 45.64 | 1.70 | 1.50 |
| | | | | | | | | | | | | 50.16 | 49.15 | 1.70 | 1.50 |

NOTE:
Lined-out washers are inactive for new design.

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

REVIEWER: AV, IS, MU, NS
USER: AS, AT, MC, SH, WV, YD

APPROVED 8 MAR 1961 REVISED (A) 26 JUN 1968 (B) FOR CHANGES SEE SHEETS 1 AND 2.

| | | |
|---------------------------------------|--|-------------------------------|
| P.A. WC Other Cont. OS 82 | TITLE WASHER, LOCK - INTERNAL AND EXTERNAL TOOTH | MILITARY STANDARD MS 45904 |
| PROCUREMENT SPECIFICATION FF-V-100 | SUPERSEDED BY DEASB | SHEET 2 OF 2 |