



TABLE I

| NOMINAL SIZE | D DIAMETER | | D POINT DIAMETER | | C CROWN HEIGHT AND RADIUS | | DOUBLE SHEAR STRENGTH LBS - MIN | |
|--------------|------------|--------|------------------|------|---------------------------|------|---------------------------------|---------|
| | MAX | MIN | MAX | MIN | MAX | MIN | CARBON OR ALLOY STEEL | CRCS |
| .0625 | .0636 | .0634 | .050 | .042 | .020 | .008 | 800 | 610 |
| *.0781 | .0792 | .0790 | .074 | .058 | .025 | .010 | 1,240 | 700 |
| .0938 | .0949 | .0947 | .090 | .074 | .031 | .012 | 1,800 | 1,000 |
| .125 | .1261 | .1259 | .121 | .105 | .041 | .016 | 3,200 | 1,800 |
| *.1562 | .1573 | .1571 | .152 | .136 | .052 | .020 | 5,000 | 2,800 |
| .1875 | .1886 | .1884 | .183 | .167 | .062 | .023 | 7,200 | 4,000 |
| .250 | .2511 | .2509 | .246 | .230 | .083 | .031 | 12,800 | 7,200 |
| .3125 | .3136 | .3134 | .309 | .293 | .104 | .039 | 20,000 | 11,000 |
| .375 | .3761 | .3759 | .371 | .355 | .125 | .047 | 28,000 | 16,000 |
| .4375 | .4386 | .4384 | .433 | .417 | .146 | .055 | 38,000 | 22,000 |
| .500 | .5011 | .5009 | .496 | .480 | .167 | .063 | 50,000 | 29,000 |
| .625 | .6261 | .6259 | .621 | .605 | .208 | .078 | 78,000 | 45,000 |
| .750 | .7511 | .7509 | .746 | .730 | .250 | .094 | 114,000 | 65,000 |
| .875 | .8761 | .8759 | .871 | .855 | .293 | .109 | 156,000 | 88,000 |
| 1.000 | 1.0011 | 1.0009 | .996 | .980 | .333 | .125 | 204,000 | 110,000 |

* INACTIVE - See sheets 2 and 3.

NOTES:

- MATERIAL:** Carbon or alloy steel in accordance with Fed. Std. No. 66, except that the maximum sulfur and phosphorus content shall be 0.05 and 0.04 percent, respectively. Corrosion-resisting steel in accordance with Fed. Std. No. 66, Type 410 or 416.
- HARDNESS:** Carbon or alloy steel pins shall have a core hardness of Rockwell C47-58 and a case hardness of Rockwell C60 minimum. The minimum case depth shall be 0.010 inch for nominal sizes .1562 and smaller, and 0.015 inch for larger sizes. The core hardness shall not at any time exceed the case hardness. Corrosion-resisting pins shall have a hardness of Rockwell C36-42.
- PROTECTIVE COATING:** Carbon or alloy steel - Plain (May be furnished with black oxide coating in accordance with MIL-C-13924, Class 1.)
 - Phosphate coated in accordance with MIL-P-16232, Type 2, Class 2.
 - Cadmium plated in accordance with Type II, Class 3 of QQ-P-416 or MIL-C-81562.
- SURFACE ROUGHNESS:** Corrosion-resisting Steel - Passivated in accordance with QQ-P-35. Prior to coating, surface roughness shall be 16 for "S" length and 125 for all other surfaces in accordance with ANSI-B46.1.
- DIMENSIONS:** All dimensions are in inches, unless otherwise specified.
- PART NUMBER:** The MS part number consists of the MS number, plus the dash number.
 Example: MS16556-1
- 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.
- Effective length "S" shall be a minimum of 75% of total pin length "L".

(B) FOR CHANGES SEE SHEETS 1, 2, AND 3

This 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, when applicable.

| | | |
|--|--|-------------------------------|
| P.A. VC Other Case 05 99 (B) | TITLE (D) PIN, STRAIGHT, HEADLESS (DOWEL) (.001 OVER NOMINAL SIZE) | MILITARY STANDARD MS 16556 |
| PROCUREMENT SPECIFICATION MIL-P-21143 | SUPSEDES | SHEET 1 OF 3 |

APPROVED 27 DEC 1957 REVISED (A) 6 APR 1975 (B) 8 SEP 1978

TABLE II

| L | CARBON OR ALLOY STEEL - PLAIN | | | | | | | | | | | | | | |
|-----------------|-------------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | NOMINAL SIZE | | | | | | | | | | | | | | |
| | .0625 | .0781 | .0938 | .125 | .1562 | .1875 | .250 | .3125 | .375 | .4375 | .500 | .625 | .750 | .875 | 1.000 |
| LENGTH ±.010 | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. |
| .188 | 1 | | | | | | | | | | | | | | |
| .250 | 2 | 9 | | | | | | | | | | | | | |
| .312 | 3 | 10 | 17 | | | | | | | | | | | | |
| .375 | 4 | 11 | 18 | 25 | | | | | | | | | | | |
| .438 | 5 | 12 | 19 | 26 | | | | | | | | | | | |
| .500 | 6 | 13 | 20 | 27 | 34 | | | | | | | | | | |
| .625 | 7 | 14 | 21 | 28 | 35 | 40 | | | | | | | | | |
| .750 | 8 | 15 | 22 | 29 | 36 | 41 | 46 | | | | | | | | |
| .875 | | 16 | 23 | 30 | 37 | 42 | 47 | | | | | | | | |
| 1.000 | | | 24 | 31 | 38 | 43 | 48 | 53 | | | | | | | |
| 1.250 | | | | 32 | 39 | 44 | 49 | 54 | 60 | | | | | | |
| 1.500 | | | | 33 | | 45 | 50 | 55 | 61 | 68 | | | | | |
| 1.750 | | | | | | | 51 | 56 | 62 | 69 | 77 | | | | |
| 2.000 | | | | | | | 52 | 57 | 63 | 70 | 78 | 88 | | | |
| 2.250 | | | | | | | | 58 | 64 | 71 | 79 | 89 | 101 | | |
| 2.500 | | | | | | | | 59 | 65 | 72 | 81 | 90 | 102 | | |
| 2.750 | | | | | | | | | 66 | 73 | 82 | 91 | 103 | 117 | |
| 3.000 | | | | | | | | | 67 | 74 | 83 | 92 | 104 | 118 | 132 |
| 3.250 | | | | | | | | | | | 84 | 93 | 105 | 119 | 133 |
| 3.500 | | | | | | | | | | | 85 | 94 | 106 | 120 | 134 |
| 3.750 | | | | | | | | | | | 86 | 95 | 107 | 121 | 135 |
| 4.000 | | | | | | | | | | | 87 | 96 | 108 | 122 | 136 |
| 4.500 | | | | | | | | | | | | 98 | 110 | 124 | 138 |
| 5.000 | | | | | | | | | | | | 100 | 112 | 126 | 140 |
| 6.000 | | | | | | | | | | | | | 116 | 130 | 144 |

* INACTIVE FOR NEW DESIGN AFTER 8 APR 1975.

TABLE III

| L | CARBON OR ALLOY STEEL - PHOSPHATE COATED | | | | | | | | | | | | | | |
|-----------------|--|--------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | NOMINAL SIZE | | | | | | | | | | | | | | |
| | .0625 | .0781 | .0938 | .125 | .1562 | .1875 | .250 | .3125 | .375 | .4375 | .500 | .625 | .750 | .875 | 1.000 |
| LENGTH ±.010 | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. |
| .188 | 301 | | | | | | | | | | | | | | |
| .250 | 302 | 309 | | | | | | | | | | | | | |
| .312 | 303 | 310 | 317 | | | | | | | | | | | | |
| .375 | 304 | 311 | 318 | 325 | | | | | | | | | | | |
| .438 | 305 | 312 | 319 | 326 | | | | | | | | | | | |
| .500 | 306 | 313 | 320 | 327 | 334 | | | | | | | | | | |
| .625 | 307 | 314 | 321 | 328 | 335 | 340 | | | | | | | | | |
| .750 | 308 | 315 | 322 | 329 | 336 | 341 | 346 | | | | | | | | |
| .875 | | 316 | 323 | 330 | 337 | 342 | 347 | | | | | | | | |
| 1.000 | | | 324 | 331 | 338 | 343 | 348 | 353 | | | | | | | |
| 1.250 | | | | 332 | 339 | 344 | 349 | 354 | 360 | | | | | | |
| 1.500 | | | | 333 | | 345 | 350 | 355 | 361 | 368 | 377 | | | | |
| 1.750 | | | | | | | 351 | 356 | 362 | 369 | 378 | | | | |
| 2.000 | | | | | | | 352 | 357 | 363 | 370 | 379 | 388 | | | |
| 2.250 | | | | | | | | 358 | 364 | 371 | 380 | 389 | 401 | | |
| 2.500 | | | | | | | | 359 | 365 | 372 | 381 | 390 | 402 | | |
| 2.750 | | | | | | | | | 366 | 373 | 382 | 391 | 403 | 417 | |
| 3.000 | | | | | | | | | 367 | 374 | 383 | 392 | 404 | 418 | 432 |
| 3.250 | | | | | | | | | | | 384 | 393 | 405 | 419 | 433 |
| 3.500 | | | | | | | | | | | 385 | 394 | 406 | 420 | 434 |
| 3.750 | | | | | | | | | | | 386 | 395 | 407 | 421 | 435 |
| 4.000 | | | | | | | | | | | 387 | 396 | 408 | 422 | 436 |
| 4.500 | | | | | | | | | | | | 398 | 410 | 424 | 438 |
| 5.000 | | | | | | | | | | | | 400 | 412 | 426 | 440 |
| 6.000 | | | | | | | | | | | | | 416 | 430 | 444 |

* INACTIVE FOR NEW DESIGN AFTER 8 APR 1975.

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|---------------------------------------|--|-------------------|
| P.A. WC | TITLE (B) PIN, STRAIGHT, HEADLESS (DOWEL) (.001 OVER NOMINAL SIZE) | MILITARY STANDARD |
| Other Cust 05 99 (B) | | MS 16556 |
| PROCUREMENT SPECIFICATION MIL-P-21143 | SUPERSEDES: | SHEET 2 OF 3 |

APPROVED 27 DEC 1957 REVISED (B) FOR CHANGES SEE SHEETS 1 AND 3

| CORROSION RESISTING STEEL | | | | | | | | | | | | | FED. SUP CLASS 5315 | | |
|---------------------------|--------------|-----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|------------------------|----------|----------|
| L LENGTH | NOMINAL SIZE | | | | | | | | | | | | | | |
| | .0625 | .0781 | .0938 | .125 | .1562 | .1875 | .250 | .3125 | .375 | .4375 | .500 | .625 | .750 | .875 | 1.000 |
| | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. |
| .188 | 601 | | | | | | | | | | | | | | |
| .250 | 602 | 609 | | | | | | | | | | | | | |
| .312 | 603 | 610 | 617 | | | | | | | | | | | | |
| .375 | 604 | 611 | 618 | 625 | | | | | | | | | | | |
| .438 | 605 | 612 | 619 | 626 | | | | | | | | | | | |
| .500 | 606 | 613 | 620 | 627 | 634 | | | | | | | | | | |
| .625 | 607 | 614 | 621 | 628 | 635 | 640 | | | | | | | | | |
| .750 | 608 | 615 | 622 | 629 | 636 | 641 | 646 | | | | | | | | |
| .875 | | 616 | 623 | 630 | 637 | 642 | 647 | | | | | | | | |
| 1.000 | | | 624 | 631 | 638 | 643 | 648 | 653 | | | | | | | |
| 1.250 | | | | 632 | 639 | 644 | 649 | 654 | 660 | | | | | | |
| 1.500 | | | | 633 | | 645 | 650 | 655 | 661 | 668 | 677 | | | | |
| 1.750 | | | | | | | 651 | 656 | 662 | 669 | 678 | | | | |
| 2.000 | | | | | | | 652 | 657 | 663 | 670 | 679 | 688 | | | |
| 2.250 | | | | | | | | 658 | 664 | 671 | 680 | 689 | 701 | | |
| 2.500 | | | | | | | | 659 | 665 | 672 | 681 | 690 | 702 | | |
| 2.750 | | | | | | | | | 666 | 673 | 682 | 691 | 703 | 717 | |
| 3.000 | | | | | | | | | 667 | 674 | 683 | 692 | 704 | 718 | 732 |
| 3.250 | | | | | | | | | | | 684 | 693 | 705 | 719 | 733 |
| 3.500 | | | | | | | | | | | 685 | 694 | 706 | 720 | 734 |
| 3.750 | | | | | | | | | | | | 695 | 707 | 721 | 735 |
| 4.000 | | | | | | | | | | | | 696 | 708 | 722 | 736 |
| 4.500 | | | | | | | | | | | | 698 | 710 | 724 | 738 |
| 5.000 | | | | | | | | | | | | 700 | 712 | 726 | 740 |
| 6.000 | | | | | | | | | | | | | 716 | 730 | 744 |

REVIEWER: AT, AV, EA, IS
USER: AS, CL, ME, MU, NS, PA, VT, YD

* INACTIVE FOR NEW DESIGN AFTER 8 APR 1975.

| CARBON OR ALLOY STEEL - CADMIUM PLATED | | | | | | | | | | | | | | | |
|--|--------------|-----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| L LENGTH | NOMINAL SIZE | | | | | | | | | | | | | | |
| | .0625 | .0781 | .0938 | .125 | .1562 | .1875 | .250 | .3125 | .375 | .4375 | .500 | .625 | .750 | .875 | 1.000 |
| | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO.* | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. | DASH NO. |
| .188 | 801 | | | | | | | | | | | | | | |
| .250 | 802 | 809 | | | | | | | | | | | | | |
| .312 | 803 | 810 | 817 | | | | | | | | | | | | |
| .375 | 804 | 811 | 818 | 825 | | | | | | | | | | | |
| .438 | 805 | 812 | 819 | 826 | | | | | | | | | | | |
| .500 | 806 | 813 | 820 | 827 | 834 | | | | | | | | | | |
| .625 | 807 | 814 | 821 | 828 | 835 | 840 | | | | | | | | | |
| .750 | 808 | 815 | 822 | 829 | 836 | 841 | 846 | | | | | | | | |
| .875 | | 816 | 823 | 830 | 837 | 842 | 847 | | | | | | | | |
| 1.000 | | | 824 | 831 | 838 | 843 | 848 | 853 | | | | | | | |
| 1.250 | | | | 832 | 839 | 844 | 849 | 854 | 860 | | | | | | |
| 1.500 | | | | 833 | | 845 | 850 | 855 | 861 | 868 | 877 | | | | |
| 1.750 | | | | | | | 851 | 856 | 862 | 869 | 878 | | | | |
| 2.000 | | | | | | | 852 | 857 | 863 | 870 | 879 | 888 | | | |
| 2.250 | | | | | | | | 858 | 864 | 871 | 880 | 889 | 901 | | |
| 2.500 | | | | | | | | 859 | 865 | 872 | 881 | 890 | 902 | | |
| 2.750 | | | | | | | | | 866 | 873 | 882 | 891 | 903 | 917 | |
| 3.000 | | | | | | | | | 867 | 874 | 883 | 892 | 904 | 918 | 932 |
| 3.250 | | | | | | | | | | | 884 | 893 | 905 | 919 | 933 |
| 3.500 | | | | | | | | | | | 885 | 894 | 906 | 920 | 934 |
| 3.750 | | | | | | | | | | | | 895 | 907 | 921 | 935 |
| 4.000 | | | | | | | | | | | | 896 | 908 | 922 | 936 |
| 4.500 | | | | | | | | | | | | 898 | 910 | 924 | 938 |
| 5.000 | | | | | | | | | | | | 900 | 912 | 926 | 940 |
| 6.000 | | | | | | | | | | | | | 916 | 930 | 944 |

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|---------------------------------------|-----------------------------------|-------------------|
| P.A. VC | TITLE | MILITARY STANDARD |
| Other Cost 05 | ① PIN, STRAIGHT, HEADLESS (DOWEL) | MS 16556 |
| 99 ② | (.001 OVER NOMINAL SIZE) | |
| PROCUREMENT SPECIFICATION MIL-P-21143 | SUPERSEDES | SHEET 3 OF 3 |

APPROVED 27 DEC 1957 REVISED ② FOR CHANGES SEE SHEETS 1, 2, AND 3