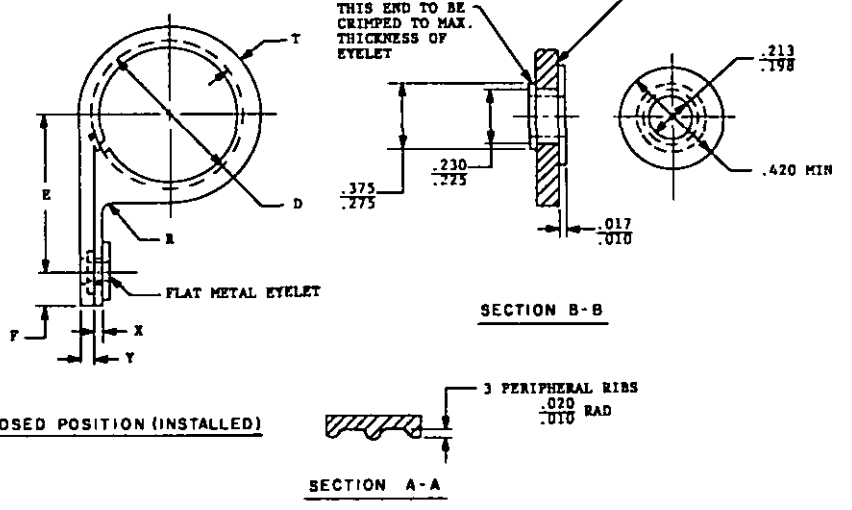
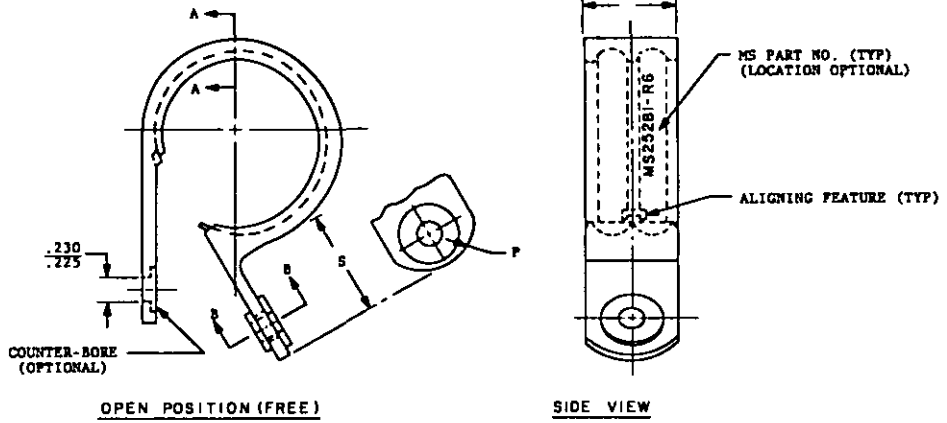


USER SYMBOLS:
NAVY - HC, SH, OS
ARMY - AL

REVIEWER SYMBOLS:
NAVY - EC
ARMY - AV
DLA - IS

"Review/revise information is current as of the date of this statement.
For future consideration of changes to this statement, draft, circulation
should be based on the information in the current 900133."

This military standard is approved for use by all Departments
of the Department of Defense. Solicitation for all new
engineering and design applications and for revising the right
is made from this document.



STYLE R-RIBBED INNER DIAMETER

(K) ENTIRE DRAWING REVISED & REDRAWN

| | | |
|---|---|-------------------|
| P.A. NAVY - AS Other Code USAF - 99 ARMY - AR | TITLE CLAMP, LOOP, PLASTIC, WIRE SUPPORT | MILITARY STANDARD |
| | | MS2528I |
| PROCUREMENT SPECIFICATION MIL-S-23190 | SUPERSEDES MS39014 | SHEET 1 OF 5 |

APPROVED 1 AUG 1958 REVISED (K) 29 DEC. 1978

TABLE I. FOR STYLE R-RIBBED INNER DIAMETER CLAMPS ONLY

| DASH NO. | APPROX. CABLE BUNDLE DIA ± .064 | D** ± .020 | E ± .025 | F | P MIN RADIUS | R ± .005 RADIUS | S ± .010 | T | | W | | X | | Y | |
|----------|---------------------------------|------------|----------|------|--------------|-----------------|----------|------|------|------|-----|------|-----|------|------|
| | | | | | | | | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| -2 | 1/8 | .125 | .440 | | | | | | | | | | | | |
| -3 | 3/16 | .188 | .485 | | | | | .038 | .075 | | | | | .060 | |
| -4 | 1/4 | .250 | .510 | .260 | | | | | | | | | | | |
| -5 | 5/16 | .312 | .546 | .240 | .250 | | .540 | | | .510 | | | | | .100 |
| -6 | 3/8 | .375 | .578 | | | .062 | | | | | | | | | |
| -7 | 7/16 | .438 | .608 | | | | | | | | | .080 | | | |
| -8 | 1/2 | .500 | .639 | | | | | | | | | .060 | | | |
| -9 | 9/16 | .562 | .675 | | | | | | | | | | | | |
| -10 | 5/8 | .625 | .708 | | | | | | | | | | | | |
| -11 | 11/16 | .688 | .785 | | | | | | | | | | | .085 | |
| -12 | 3/4 | .750 | .816 | | | | | .050 | .085 | | | | | | |
| -13 | 13/16 | .812 | .827 | | | | | | | | | | | | |
| -14 | 7/8 | .875 | .878 | | | | | | | | | | | | |
| -15 | 15/16 | .938 | .910 | | | | | | | .495 | | | | | |
| -16 | 1.000 | 1.000 | .941 | | | | | | | | | | | | |
| -17 | 1-1/16 | 1.063 | .972 | | | | | | | | | | | | |
| -18 | 1-1/8 | 1.125 | .983 | | | | | | | | | | | | |
| -19* | 1-3/16 | 1.188 | 1.024 | .330 | .300 | | .605 | | | .610 | | | | .130 | |
| -20 | 1-1/4 | 1.250 | 1.066 | .240 | | | | | | | | | | | |
| -21* | 1-5/16 | 1.312 | 1.070 | | | .100 | | | | | | | | | |
| -22 | 1-3/8 | 1.375 | 1.110 | | | | | | | | | .130 | | | |
| -23* | 1-7/16 | 1.438 | 1.140 | | | | | | | | | | | | |
| -24 | 1-1/2 | 1.500 | 1.170 | | | | | | | | | | | | |
| -25* | 1-9/16 | 1.562 | 1.200 | | | | | .080 | .160 | | | .085 | | .120 | |
| -26 | 1-5/8 | 1.625 | 1.250 | | | | | | | | | | | | |
| -27* | 1-11/16 | 1.688 | 1.270 | | | | | | | | | | | | |
| -28 | 1-3/4 | 1.750 | 1.300 | | | | | | | | | | | | |
| -29* | 1-13/16 | 1.812 | 1.330 | | | | | | | | | | | | |
| -30 | 1-7/8 | 1.875 | 1.355 | | | | | | | | | | | | |
| -31* | 1-15/16 | 1.938 | 1.390 | | | | | | | | | | | | |
| -32 | 2.000 | 2.000 | 1.420 | | | | | | | | | | | | |

*SEE NOTE 8.
**"D" DIMENSION TO BE MEASURED MINUS THE RIBS.

USER SYMBOLS:
NAVY - MC, SH, OS
ARMY - AL

REVIEWER SYMBOLS:
NAVY - EC
ARMY - AV
DLA - IS

*Revision/revision information is carried on at the date of this document.
For future coordination of changes in this document, check all information should be based on the information in the current 90015.

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

P.A.
NAVY - AS
Other Cust

USAF - D9
ARMY - AR

PROCUREMENT SPECIFICATION
MIL-S-23190

TITLE

CLAMP, LOOP, PLASTIC, WIRE SUPPORT

SUPERSEDES
MS39014

MILITARY STANDARD

MS25281

SHEET 2 OF 5

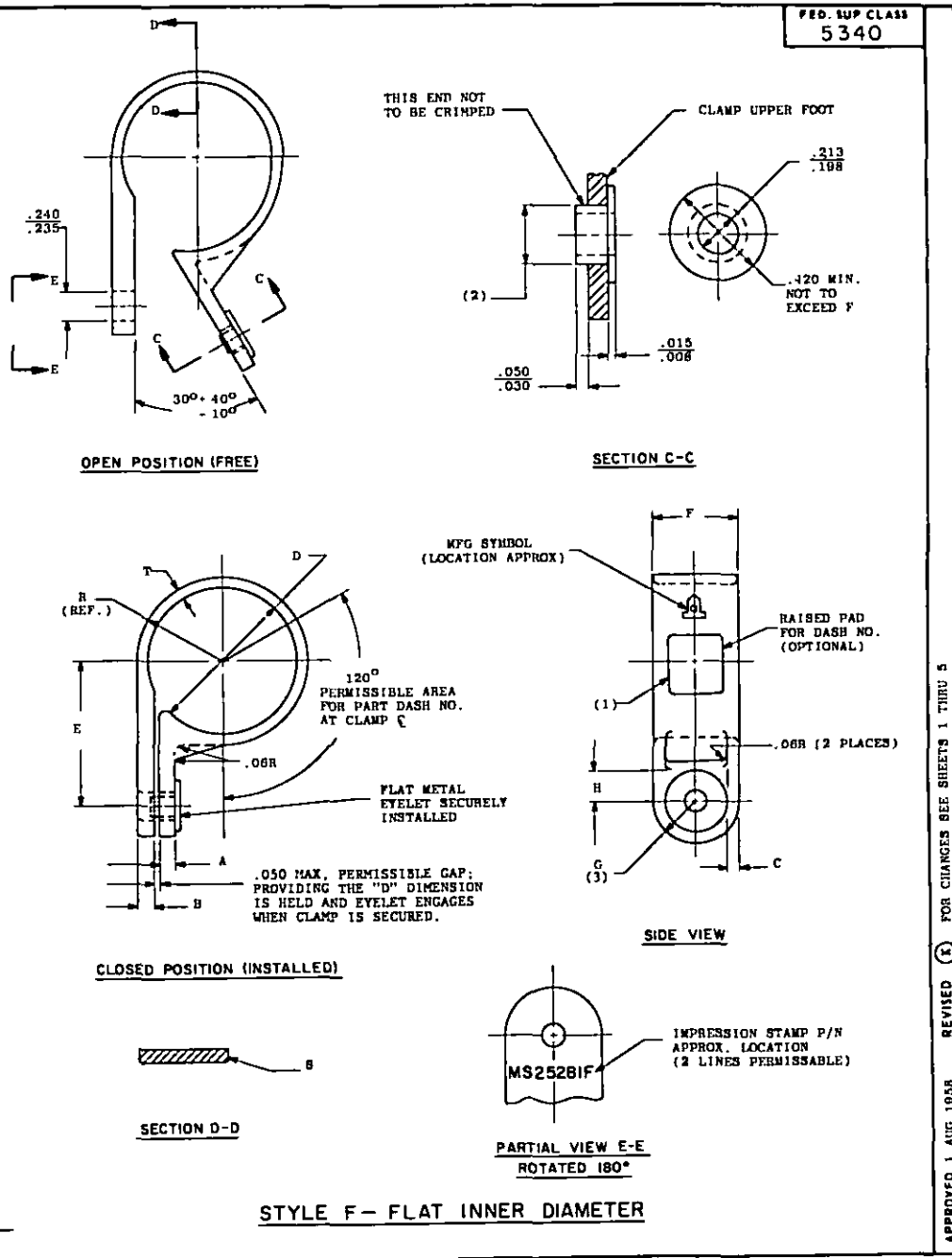
APPROVED 1 AUG 56 REVISED 1 MAR 58 FOR CHANGES SEE SHEETS 1 THRU 5

REVIEWER SYMBOLS:
NAVY - EC
ARMY - AV
DLA - 15

USER SYMBOLS:
NAVY - RC, SH, OS
ARMY - AL

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For future coordination of changes to this document, draft circulation
should be based on the information in the current DDISB."

This military standard is approved for use by all Departments
& Agencies in the Department of Defense. Solicitation for all new
engineering and design applications and for repetitive use that
are made from this document.



APPROVED 1 AUG 1958 REVISED 1 FOR CHANGES SEE SHEETS 1 THRU 5

| | | |
|---|------------------------------------|-------------------|
| P.A. NAVY - AS Other Cust USAF - 99 ARMY - AR | TITLE | MILITARY STANDARD |
| | CLAMP, LOOP, PLASTIC, WIRE SUPPORT | MS25281 |
| PROCUREMENT SPECIFICATION MIL-S-25100 | SUPSEDES MS39014 | SHEET 3 OF 5 |

TABLE II. FOR STYLE F - FLAT INNER DIAMETER ONLY

| DASH NO. | APPROX. CABLE BUNDLE DIA $\pm 1/64$ | A $+ .010$ $- .005$ | B $+ .010$ $- .005$ | C $+ .010$ $- .005$ | D $\pm .020$ | E $\pm .025$ | F $\pm .015$ | G RADIUS | H $\pm .015$ | R REF | S $\pm .010$ | T $+ .010$ $- .005$ |
|----------|-------------------------------------|---------------------------|---------------------------|---------------------------|-----------------|-----------------|-----------------|-------------|-----------------|----------|-----------------|---------------------------|
| 2 | 1/8 | | | | .125 | .457 | | | | | .102 | |
| 3 | 3/16 | | .065 | | .187 | .498 | | | | | .133 | .020R |
| 4 | 1/4 | | | | .250 | .529 | | | | | .165 | |
| 5 | 5/16 | .065 | | .060 | .312 | .560 | .500 | .250 | .240 | | .206 | .050 |
| 6 | 3/8 | | | | .375 | .592 | | | | | .250 | |
| 7 | 7/16 | | .095 | | .437 | .623 | | | | | .281 | .062 |
| 8 | 1/2 | | | | .500 | .654 | | | | | .312 | |
| 9 | 9/16 | | | | .562 | .752 | | | | | .343 | |
| 10 | 5/8 | | | | .625 | .783 | | | | | .385 | |
| 11 | 11/16 | | | | .687 | .814 | | | | | .415 | |
| 12 | 3/4 | .075 | | | .750 | .845 | | | | | .447 | .030R |
| 13 | 13/16 | | | | .812 | .877 | | | | | .478 | .073 |
| 14 | 7/8 | | .125 | .090 | .875 | .908 | .600 | .300 | .220 | | .509 | |
| 15 | 15/16 | .090 | | | .937 | .939 | | | | | .540 | |
| 16 | 1.000 | | | | 1.000 | .970 | | | | | .572 | |
| 17 | 1-1/16 | | | | 1.062 | 1.002 | | | | | .603 | |
| 18 | 1-1/8 | .125 | | | 1.125 | 1.062 | | | | | .643 | .082 |
| 19 | 1-3/16 | | | | 1.187 | 1.093 | | | | | .685 | |
| 20 | 1-1/4 | | | | 1.250 | 1.124 | | | | | .697 | .073 |

- (1) DASH NO. SIZES: 12PT THRU -4; 24 PT FOR SIZES -5 THRU -20, RAISED NUMERALS.
- (2) MFG. OPTION OF SIZE TO ASSURE SNUG-FIT TO EYELET.
- (3) "G" RADIUS TO BE TANGENT TO "F".

| INCH | mm | INCH | mm | INCH | mm | INCH | mm | INCH | mm |
|-------|------|-------|-------|-------|-------|--------|-------|--------|-------|
| .005 | 0.13 | .1875 | 4.76 | .509 | 12.93 | .785 | 19.94 | 1.125 | 28.58 |
| .008 | 0.20 | .188 | 4.78 | .510 | 12.95 | .812 | 20.62 | 1.140 | 28.96 |
| .010 | 0.25 | .198 | 5.03 | .529 | 13.44 | .8125 | 20.64 | 1.170 | 29.72 |
| .015 | 0.38 | .206 | 5.23 | .540 | 13.72 | .814 | 20.68 | 1.187 | 30.15 |
| .0156 | 0.40 | .213 | 5.41 | .546 | 13.87 | .816 | 20.73 | 1.1875 | 30.16 |
| .020 | 0.51 | .220 | 5.59 | .560 | 14.22 | .827 | 21.01 | 1.188 | 30.18 |
| .025 | 0.64 | .235 | 5.97 | .562 | 14.27 | .845 | 21.46 | 1.200 | 30.48 |
| .030 | 0.76 | .240 | 6.10 | .5625 | 14.29 | .875 | 22.23 | 1.250 | 31.75 |
| .038 | 0.97 | .250 | 6.35 | .572 | 14.53 | .877 | 22.28 | 1.270 | 32.26 |
| .040 | 1.02 | .260 | 6.60 | .578 | 14.68 | .878 | 22.30 | 1.300 | 33.02 |
| .050 | 1.27 | .281 | 7.14 | .592 | 15.04 | .908 | 23.06 | 1.312 | 33.32 |
| .060 | 1.52 | .300 | 7.62 | .600 | 15.24 | .910 | 23.11 | 1.3125 | 33.34 |
| .062 | 1.57 | .312 | 7.92 | .603 | 15.32 | .937 | 23.80 | 1.330 | 33.78 |
| .065 | 1.65 | .3125 | 7.94 | .605 | 15.37 | .9375 | 23.81 | 1.355 | 34.41 |
| .073 | 1.85 | .330 | 8.38 | .608 | 15.44 | .938 | 23.83 | 1.375 | 34.93 |
| .075 | 1.91 | .343 | 8.71 | .610 | 15.49 | .939 | 23.85 | 1.390 | 35.31 |
| .080 | 2.03 | .375 | 9.53 | .623 | 15.82 | .941 | 23.90 | 1.420 | 36.07 |
| .082 | 2.08 | .385 | 9.78 | .625 | 15.88 | .970 | 24.64 | 1.4375 | 36.51 |
| .085 | 2.16 | .415 | 10.54 | .639 | 16.23 | .972 | 24.69 | 1.438 | 36.53 |
| .090 | 2.29 | .420 | 10.67 | .643 | 16.33 | .983 | 24.97 | 1.500 | 38.10 |
| .095 | 2.41 | .437 | 11.10 | .654 | 16.61 | 1.000 | 25.40 | 1.562 | 39.67 |
| .100 | 2.54 | .4375 | 11.11 | .665 | 16.89 | 1.002 | 25.45 | 1.625 | 41.28 |
| .102 | 2.59 | .438 | 11.12 | .675 | 17.15 | 1.024 | 26.01 | 1.6875 | 42.86 |
| .109 | 2.77 | .440 | 11.18 | .687 | 17.45 | 1.062 | 26.97 | 1.688 | 42.88 |
| .120 | 3.05 | .447 | 11.35 | .6875 | 17.46 | 1.0625 | 26.99 | 1.750 | 44.45 |
| .125 | 3.18 | .457 | 11.61 | .688 | 17.48 | 1.063 | 27.00 | 1.812 | 46.02 |
| .130 | 3.30 | .478 | 12.14 | .697 | 17.70 | 1.066 | 27.08 | 1.8125 | 46.04 |
| .133 | 3.38 | .485 | 12.32 | .706 | 17.73 | 1.070 | 27.18 | 1.875 | 47.63 |
| .160 | 4.06 | .495 | 12.57 | .750 | 19.05 | 1.043 | 27.76 | 1.9375 | 49.21 |
| .165 | 4.19 | .498 | 12.65 | .752 | 19.10 | 1.110 | 28.19 | 1.938 | 49.22 |
| .187 | 4.75 | .500 | 12.70 | .783 | 19.89 | 1.124 | 28.55 | 2.000 | 50.80 |

USER SYMBOLS:
 NAVY - MC, SH, OS
 ARMY - AL

 REVIEWER SYMBOLS:
 NAVY - EC
 ARMY - AV
 DLA - IS

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 For latest coordination of changes in this document, call originating
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 This military standard is approved for use by all Departments
 of the Department of Defense. Selection for all new
 engineering and design substitutions and for reissues and shall
 be made from this document.

| | | |
|--|------------------------------------|-------------------|
| P.A. NAVY - AB Other Cont | TITLE | MILITARY STANDARD |
| USAF - 99 ARMY - AR | CLAMP, LOOP, PLASTIC, WIRE SUPPORT | MS2528I |
| PROCUREMENT SPECIFICATION MIL-S-23190 | SUPERSEDES MS39014 | SHEET 4 OF 5 |

APPROVED 1 AUG 1958 REVISED K FOR CHANGES SEE SHEETS 1 THRU 5

USER SYMBOLS:
NAVY - MC, SH, OS
ARMY - AL

REVIEWER SYMBOLS:
NAVY - EC
ARMY - AV
DLA - IS

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should be based on the information in the current 80D155."

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& Agencies of the Department of Defense. Solicitation for all new
organizing and design publications and for replacement use shall
be made from this document.

ADDITIONAL REQUIREMENTS

MATERIAL:

- 1. NYLON: HEAT STABILIZED COMPOSITION, MIL-M-20693, COMPOSITION A, TYPE 1.
- COLOR: NATURAL
- METAL EYELET: ALUMINUM, ANODIZED IN ACCORDANCE WITH MIL-A-8625.

NOTES:

- 1. DIMENSIONS ARE IN INCHES. DIMENSION "D" IS APPLICABLE IN CLOSED POSITION.
- 2. REMOVE ALL BURRS AND SHARP EDGES: BREAK ALL SHARP CORNERS, MOLD MARKS AND NORMAL VENT FLASH ARE PERMISSIBLE.
- 3. METRIC EQUIVALENTS (TO THE NEAREST .01 mm) ARE GIVEN FOR GENERAL INFORMATION ONLY AND ARE BASED UPON 1 INCH = 25.4 mm.
- 4. SIDE GATE CUT-OFF PERMISSIBLE PROVIDING "D" DIAMETER AND INNER EDGE RADIUS ARE NOT DISTURBED.
- 5. CONFIGURATION MAY VARY FROM THAT SHOWN, PROVIDED DIMENSIONS ARE NOT EXCEEDED.
- 6. TENSILE STRENGTH: TENSILE STRENGTH FOR DASH NUMBERS 2 THROUGH 10 SHALL BE 100 POUNDS MINIMUM AND FOR DASH NUMBERS 11 THROUGH 32 SHALL BE 225 POUNDS MINIMUM.
- 7. MOUNTING HOLES MAY BE SLIGHTLY ELONGATED OR DISKED FOR EASY REMOVAL FROM MOLD.
- 8. ODD DASH NUMBERS 19 THROUGH 31 FOR STYLE H ARE NOT CURRENTLY AVAILABLE.
- 9. EXAMPLE OF PART NUMBERS:

THE LETTER "F" or "R" SHALL PRECEDE THE DASH NUMBER SIZE TO INDICATE WHETHER THE CLAMP HAS A FLAT OR RIBBED INNER DIAMETER. MS25281-F6 CLAMP LOOP PLASTIC, WIRE SUPPORT, FLAT INNER DIAMETER 3/8 INCH BUNDLE DIAMETER. MS25281-R8 CLAMP, LOOP, PLASTIC, WIRE SUPPORT, RIBBED INNER DIAMETER, 3/8 INCH BUNDLE DIAMETER.

- 10. FOR DESIGN FEATURE PURPOSES THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
- 11. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS, OR REQUEST FOR PROPOSAL EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.

APPROVED 1 AUG 1958 REVISED 6 FOR CHANGES SEE SHEETS 1 THRU 5

| | | |
|---------------------------------|--|-----------------------|
| P.A. NAVY - AS Other Code | TITLE | MILITARY STANDARD |
| | CLAMP, LOOP, PLASTIC, WIRE SUPPORT | MS25281 |
| USAF - DD ARMY - AR | PROCUREMENT SPECIFICATION MIL-S-23290 | SUPERSEDES MS38014 |
| | | SHEET 5 OF 5 |