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**REVISED SHEET**

| AID: 12 | DIA: 12 |

**REVISION HISTORY**

1. Initial revision.

**APPROVED 3/1/71**

**REVISED 11/12/71**
1. MATERIALS:
   BAND - ALUMINUM ALLOY
   LOW CARBON STEEL
   CUSHION - ETHYLENE PROPYLENE
   NITRILE
   CHLOROPRENE
   SILICONE
   FLUOROSILICONE

SEE PROCUREMENT SPECIFICATION

2. FINISH:
   CHEMICAL CONVERSION
   PASSIVATED
   CADMIUM PLATED

SEE PROCUREMENT SPECIFICATION

3. MATERIAL CODES:
   LETTER(S) INDICATES BAND AND CUSHION MATERIALS. DO NOT SPECIFY BAND/CUSHION COMBINATIONS
   NOT LISTED. MAXIMUM RECOMMENDED TEMPERATURE IS INDICATED IN PARENTHESIS.

   DE = ALUMINUM BAND WITH ETHYLENE PROPYLENE CUSHION (212°F)
   DF = ALUMINUM BAND WITH NITRILE CUSHION (212°F)
   DG = ALUMINUM BAND WITH CHLOROPRENE CUSHION (212°F)
   CE = CRES BAND WITH ETHYLENE PROPYLENE CUSHION (275°F)
   CF = CRES BAND WITH NITRILE CUSHION (212°F)
   CH = CRES BAND WITH SILICONE CUSHION (400°F)
   CG = CRES BAND WITH CHLOROPRENE CUSHION (212°F)
   CJ = CRES BAND WITH FLUOROSILICONE CUSHION (450°F)
   F = LOW CARBON STEEL BAND WITH NITRILE CUSHION (212°F)
   G = LOW CARBON STEEL BAND WITH CHLOROPRENE CUSHION (212°F)
   H = LOW CARBON STEEL BAND WITH SILICONE CUSHION (400°F)

4. CUSHION APPLICATION AND COLOR INFORMATION

   ETHYLENE PROPYLENE - FOR USE IN AREAS CONTAMINATED WITH PHOSPHATE ESTER HYDRAULIC
   FLUID AND OTHER SYNTHETIC FLUIDS. EXCELLENT OZONE RESISTANCE. NOT RESISTANT TO
   PETROLEUM BASED FLUIDS. COLOR SHALL BE SOLID PURPLE.

   NITRILE - FOR USE PRIMARILY IN FUEL IMMERSION AND FUEL VAPORS. GOOD OZONE
   RESISTANCE. NOT RESISTANT TO PHOSPHATE ESTER BASED FLUIDS. NOT FOR USE ON
   TITANIUM TUBING. COLOR SHALL BE SOLID YELLOW.

   CHLOROPRENE - FOR GENERAL PURPOSE USE IN AREAS CONTAMINATED WITH PETROLEUM BASED
   HYDRAULIC FLUIDS AND OCCASIONAL FUEL SPLASH. EXCELLENT OZONE RESISTANCE. NOT
   RESISTANT TO PHOSPHATE ESTER BASED FLUIDS. NOT FOR USE ON TITANIUM TUBING.
   COLOR SHALL BE BLACK WITH A BLUE IDENTIFIER PER THE PROCUREMENT SPECIFICATION.

   SILICONE - FOR ELEVATED TEMPERATURE USAGE IN PHOSPHATE ESTER BASED FLUID AND
   OTHER SYNTHETIC FLUID CONTAMINATED AREAS. UNAFFECTED BY OZONE. NOT RESISTANT TO
   PETROLEUM BASED FLUIDS. COLOR SHALL BE NATURAL WHITE.

   FLUOROSILICONE - FOR ELEVATED TEMPERATURE USAGE IN PETROLEUM BASED FLUID
   CONTAMINATED AREAS. UNAFFECTED BY OZONE. NOT RESISTANT TO PHOSPHATE ESTER
   BASED FLUIDS. COLOR SHALL BE SOLID BLUE.
NOTES:

\( \Delta \) LETTER "W" INDICATES WEDGE TYPE CUSHION. WEDGE (W) IS MANDATORY FOR -2 THRU -48 SIZE CLAMPS.
\( \Delta \) WEDGE IS PROHIBITED ON -1 AND -50 THRU -66 SIZE CLAMPS.
\( \Delta \) WEDGE SHALL BE INTEGRALLY MOLDED TO CUSHION OR Vulcanized USING PRESSURE AND HEAT TO ACCOMPLISH A BOND BETWEEN CUSHION AND WEDGE.
\( \Delta \) WEDGE SHALL OVERLAP AND TOUCH OPPOSITE END OF CUSHION WHEN CLAMP MOUNTING HOLES ARE ALIGNED AND DIMENSION C IS 0.00 (CLAMP COMPLETELY CLOSED).

5. THE CLAMP BAND SHALL BE FINISHED DURING MANUFACTURE SUCH AS TO REMOVE ALL TOOL AND DIE MARKS, SHARP EDGES AND BURRS.
\( \Delta \) CLAMPS WITH LOW CARBON STEEL BANDS ARE INACTIVE FOR NEW AIRCRAFT DESIGN AS OF 1 OCTOBER 1982.
\( \Delta \) CANCELLED P/N LISTED IN INTERCHANGEABILITY TABLE, ARE CANCELLED AFTER 1 OCTOBER 1982.
\( \Delta \) REPLACEMENT P/N CAN REPLACE CANCELLED P/N UNIVERSALLY BUT CANCELLED P/N CANNOT REPLACE REPLACEMENT P/N UNIVERSALLY.

8. DIMENSIONS ARE IN INCHES.

9. INTENDED USE: THESE CLAMPS ARE INTENDED FOR GENERAL PURPOSE CLAMPING APPLICATIONS INCLUDING ELECTRICAL WIRE BUNDLE CLAMPING, FOR HIGH PERFORMANCE LOOP STYLE CLAMPS FOR USE IN MIL-H-4440 HYDRAULIC SYSTEMS SEE MIL-C-85022.

10. EXAMPLE PART NUMBERS:
FOR -2 THRU -48 SIZE CLAMPS (WEDGE MANDATORY)

\( \Delta \) MS21919W08
CLAMP, 1/2 TUBE O.D. (D = 0.500 DIA)
ALUMINUM BAND WITH CHLORETHANE CUSHION
WEDGE
BASIC PART NUMBER

FOR -50 THRU -66 SIZE CLAMPS (WEDGE PROHIBITED)

\( \Delta \) MS21919C150
CLAMP, 3-1/8 TUBE O.D. (D = 3.125 DIA)
CRES BAND WITH FLUOROSILICONE CUSHION

11. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID OR REQUEST FOR PROPOSAL, EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.

12. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PREDOMINANCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.

INTERCHANGEABILITY TABLE

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NOTE: INSERT APPROPRIATE SIZE (DASH NO.) IN PARENTHESES AT END OF PART NUMBER.

MILITARY STANDARD

MS21919

PROCUREMENT SPECIFICATION

MIL-H-6603

SHEET 4 OF 4