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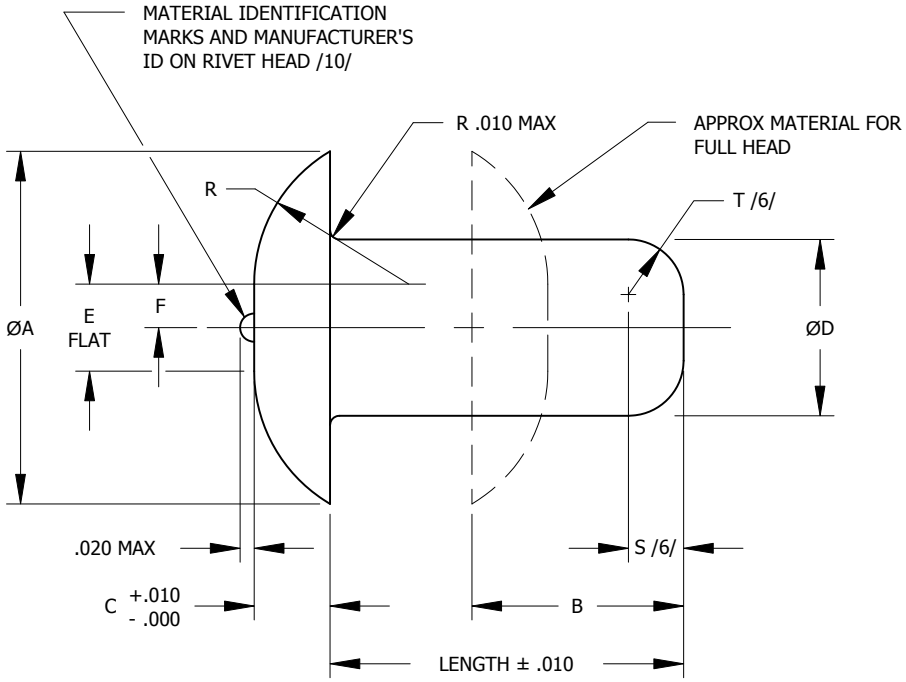
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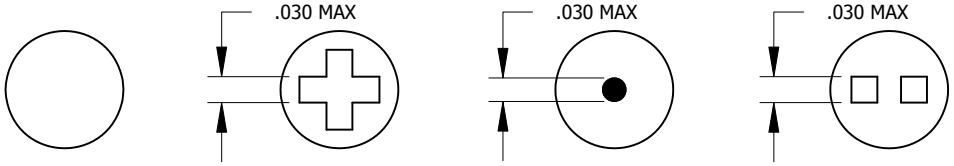
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FED SUPPLY CLASS
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MATERIAL IDENTIFICATION MARKS

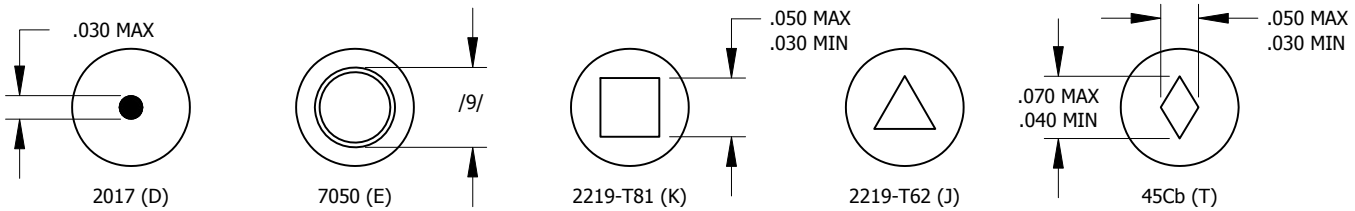


1100 (A)
PLAIN

5056 (B)
RAISED CROSS

2117 (AD)
DIMPLED .020 MAX

2024 (DD)
RAISED DOUBLE DASH
(INACTIVE)



2017 (D)
RAISED TEAT
(INACTIVE)
/11/

7050 (E)
INDENTED RING
/9/

2219-T81 (K)
INDENTED SQUARE
(INACTIVE)

2219-T62 (J)
INDENTED TRIANGLE

45Cb (T)
INDENTED DIAMOND

(2) COMPLETELY REVISED

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MS20470, REVISION H, PART NUMBERS REMAIN MS20470

THIRD ANGLE PROJECTION	CUSTODIAN	REVISION
	NATIONAL AEROSPACE STANDARDS COMMITTEE	2
PROCUREMENT SPECIFICATION	TITLE	CLASSIFICATION PART STANDARD
NASM5674	**RIVET, SOLID, UNIVERSAL HEAD, ALUMINUM ALLOY AND TITANIUM COLUMBIUM ALLOY**	**NASM20470**

FORM 09-01

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TABLE I – RIVET DIMENSIONS

NOM DIA	ØD		ØA	B	C	E	F	R	S	T RAD
1/16	.062		.125 ± .006	.094	.027	.031	.015	.054	.016	.019
3/32	.094		.187 ± .009	.141	.040	.046	.023	.082	.023	.029
1/8	.125		.250 ± .012	.188	.054	.062	.031	.108	.031	.039
5/32	.156	+.003	.312 ± .016	.234	.067	.078	.039	.135	.039	.049
3/16	.187	−.001	.375 ± .019	.281	.080	.093	.046	.164	.047	.059
7/32	.219	/15/	.437 ± .022	.328	.093	.109	.054	.193	.054	.069
1/4	.250		.500 ± .025	.375	.107	.125	.062	.217	.062	.078
5/16	.312		.625 ± .031	.469	.133	.156	.078	.272	.078	.098
3/8	.375		.750 ± .037	.562	.161	.187	.093	.328	.094	.117

MATERIAL:

ALUMINUM 1100-F (UNS A91100) AND ALUMINUM ALLOYS 2017-T4 (UNS A92017), 2024-T4 (UNS A92024), 2117-T4 (UNS A92117), 2219-T81 (UNS A92119), 2219-T62 (UNS A92119), 5056-H32 (UNS A95056), 7050-T73 (UNS A97050) PER QQ-A-430.
TITANIUM COLUMBIUM ALLOY 45Cb (UNS R58450) PER AMS4982.

FINISH:

FOR 2024 AL: ANODIZE PER MIL-A-8625, TYPE II, CLASS 1, DICHROMATE SEAL OR CLEAR OR CLASS 2 WITH SPECIFIED COLOR (A, D, OR N CODE).
FOR 1100 AL: CHEMICAL SURFACE TREATMENT PER MIL-DTL-5541, CLASS 1A, GOLD/YELLOW.
FOR 2017, 2117, 2219, 5056 AND 7050 AL: CHEMICAL FINISH SURFACE TREATMENT PER MIL-DTL-5541, CLASS 1A, CLEAR OR GOLD/YELLOW (CLEAR FILM SHALL BE USED ONLY WHEN AUTHORIZED) OR ANODIZE PER MIL-A-8625, TYPE II, CLASS 1 (CLEAR OR DICHROMATE SEAL) OR CLASS 2.
FOR TITANIUM COLUMBIUM, NO FINISH REQUIRED.

CODE:

MATERIAL:
"A" INDICATES 1100-F ALUMINUM
"AD" INDICATES 2117-T4 ALUMINUM ALLOY
"B" INDICATES 5056-H32 ALUMINUM ALLOY
"D" INDICATES 2017-T4 ALUMINUM ALLOY – INACTIVE FOR NEW DESIGN
"DD" INDICATES 2024-T4 ALUMINUM ALLOY – INACTIVE FOR NEW DESIGN
"E" INDICATES 7050-T73 ALUMINUM ALLOY
"J" INDICATES 2219-T62 ALUMINUM ALLOY
"K" INDICATES 2219-T81 ALUMINUM ALLOY – INACTIVE FOR NEW DESIGN
"T" INDICATES TITANIUM COLUMBIUM ALLOY 45Cb

FINISH:
"NO CODE" INDICATES CHEMICAL SURFACE TREATMENT PER MIL-DTL-5541, CLASS 1A, GOLD/YELLOW
"A" INDICATES ANODIZE PER MIL-A-8625, TYPE II, CLASS 1, CLEAR
"D" INDICATES ANODIZE PER MIL-A-8625, TYPE II, CLASS 1, DICHROMATE SEAL
"F" INDICATES OPTION OF ANY FINISH EXCEPT AS NOTED BELOW
"N" INDICATES ANODIZE PER MIL-A-8625, TYPE II, CLASS 2
"S" INDICATES CHEMICAL SURFACE TREATMENT PER MIL-DTL-5541, CLASS 1A, CLEAR

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EXAMPLE OF PART NUMBER:

MS20470 AD 4-12 A -5 = ALUMINUM ALLOY 2117-T4 RIVET, Ø1/8 (3/4 + 1/32) LONG, ANODIZE CLEAR

- -5 — INDICATES ADDITIONAL 1/32 INCH INCREMENT IN LENGTH
- A — FINISH CODE
- 12 — INDICATES LENGTH IN 1/16 OF AN INCH
- 4 — INDICATES DIAMETER IN 1/32 OF AN INCH
- AD — MATERIAL CODE
- MS20470 — BASIC MS NUMBER

NOTES:

(1) DIMENSIONS ARE IN INCHES AND APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.

(2) INTERCHANGEABILITY RELATION WITH AN470 RIVETS: MS20470 RIVETS OF LIKE DASH NUMBERS ARE UNIVERSALLY, FUNCTIONALLY, AND DIMENSIONALLY INTERCHANGEABLE.

(3) THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.

(4) UNLESS OTHERWISE SPECIFIED HEREIN, REFERENCED DOCUMENTS SHALL BE THE ISSUE IN EFFECT ON DATE OF MANUFACTURE. HOWEVER, EXISTING MATERIAL INVENTORY CERTIFIED TO A PREVIOUS REVISION OF THE APPLICABLE MATERIAL SPECIFICATION(S) IS ACCEPTABLE FOR USE UNTIL DEPLETION.

(5) TOLERANCES UNLESS OTHERWISE SPECIFIED: DECIMALS: ± .010.

/6/ RIVETS MAY BE FURNISHED WITH PLAIN ENDS, OR ENDS CHAMFERED UP TO 20° TO THE "S" DIMENSION, OR MAY HAVE A RADIUS TO THE "T" DIMENSION.

(7) FOR PART NUMBERS OF RIVET LENGTH NOT LISTED, SHOW 1/16 INCREMENT REQUIRED.

(8) ADDITIONAL 1/32 LENGTH INCREMENTS MAY BE OBTAINED BY ADDING -5 AFTER THE LAST DIGIT OR LETTER IN PART NUMBER.

/9/ OUTER DIAMETER OF INDENTED RING (7050 RIVETS) SHALL BE A MAXIMUM OF 75% OF RIVET SHANK DIAMETER. THE MAXIMUM DEPTH OF THE RING SHALL BE .010 INCH. INDENTED RING IS REQUIRED ON 7050 RIVETS MANUFACTURED AFTER 2 JULY 1990.

/10/ MANUFACTURER'S IDENTIFICATION IS REQUIRED TO BE DEPRESSED ON RIVET HEADS WITH A SHANK DIAMETER .125 INCH AND LARGER MANUFACTURED AFTER 2 JULY 1990.

/11/ ALUMINUM ALLOY 2017-T4 RIVETS WITH 33 KSI MINIMUM UNDRIVEN SHEAR STRENGTHS ARE ACCEPTABLE UNTIL 2 JULY 1990.

(12) REMOVE ALL BURRS AND SHARP EDGES.

(13) DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1982.

(2) COMPLETELY REVISED

REVISION
2
NASM20470
SHEET 3

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