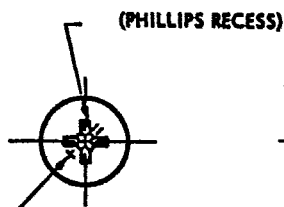


NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W., WASHINGTON 6, D. C.



ENLARGED VIEW OF HEAD

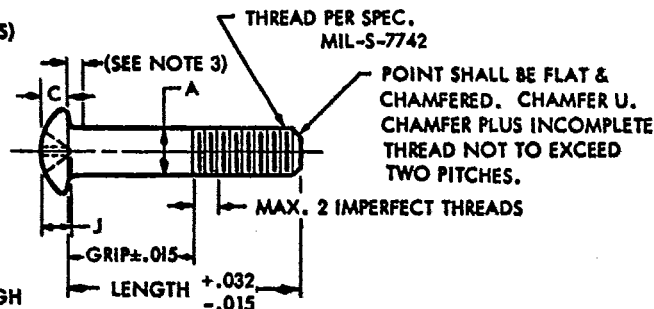


HEAD MARKINGS
NONE - ALUM. ALLOY

"X AND 2 DASHES" = HIGH
STRENGTH BRONZE

"X" = ALLOY STEEL

"-" = CORROSION RESISTANT STEEL



BASIC PART NO.	THREAD	A DIA.	B DIA.	C	H MIN. DIA. OF FLAT	J	M PHILLIPS RECESS NO.	R (REF.)	U	MAX. ECCENTRICITY	
										HEAD TO SHANK T.I.R.	RECESS TO SHANK T.I.R.
NAS 220	8-32NC-3A	.1640 .1610	.331 .309	.102 .088	.289	.111 .101	#2	.230	.032	.020	.016
NAS 221	10-32NF-3A	.1890 .1860	.385 .361	.118 .103	.331	.125 .115	#2	.264	.032	.024	.020
NAS 222	1/4-28UNF-3A	.2490 .2460	.493 .464	.150 .133	.424	.164 .154	#3	.320	.032	.030	.024
NAS 223	5/16-24-UNF-3A	.3115 .3085	.601 .568	.183 .162	.518	.215 .205	#4	.390	.047	.036	.030
NAS 224	3/8-24UNF-3A	.3740 .3710	.709 .671	.215 .191	.611	.245 .235	#4	.460	.047	.042	.030
NAS 225	7/16-20UNF-3A	.4365 .4325	.817 .774	.248 .221	.706	.272 .262	#4	.530	.047	.048	.030
NAS 226	1/2-20UNF-3A	.4990 .4950	.924 .877	.280 .250	.801	.298 .288	#4	.600	.047	.056	.030
NAS 227	9/16-18UNF-3A	.5615 .5575	1.032 .980	.312 .279	.894	.333 .323	#4	.669	.047	.062	.030

NOTES:

1. DIMENSIONS TO BE MET AFTER PLATING.
2. ROLLED OR CUT THREAD OPTIONAL.
3. SHANK DIAMETER MAY BE .001 OVERSIZE FOR A MAXIMUM DISTANCE OF 1/32 ADJACENT TO THE HEAD.
4. CORNERS TO BE BROKEN. SCREWS SHALL BE FREE FROM BURRS AND SHARP EDGES.

MATERIAL CODE:

FOR ALUMINUM ALLOY SUFFIX THE LETTERS "DD" TO BASIC PART NUMBER.
FOR HIGH STRENGTH BRONZE SUFFIX THE LETTERS "BZ" TO BASIC PART NUMBER.
NO LETTER INDICATES ALLOY STEEL.

FOR CORROSION RESISTANT STEEL SUFFIX THE LETTER "C" TO BASIC PART NUMBER.

LENGTH CODE:

LENGTHS IN ADDITION TO THOSE TABULATED ON SHEET 3 MAY BE SPECIFIED IN INCREMENTS OF .062 BY APPLICATION OF THE APPROPRIATE DASH NUMBER.

EXAMPLE OF CALLOUT:

NAS220BD-7 = SCREW 15/32 LONG, ALUMINUM ALLOY.
NAS220-7 = SCREW 15/32 LONG, ALLOY STEEL.
NAS220BZ-7 = SCREW 15/32 LONG, MANGANESE BRONZE.
NAS220BZP-7 = SCREW 15/32 LONG, MANGANESE BRONZE, CADMIUM PLATED
NAS220C-7 = SCREW 15/32 LONG, CORROSION RESISTANT STEEL

LIST OF ACTIVE SHEETS	
SHEET NO.	REVISION NO.
1	6
2	6
3	6

⑥ INACTIVE FOR DESIGN - SEE MS27039

CUSTODIAN: NATIONAL AEROSPACE STANDARDS COMMITTEE

PROCUREMENT
SPECIFICATION

MIL-S-7839

TITLE

SCREWS, BRAZIER HEAD, PHILLIPS RECESS

CLASSIFICATION
STANDARD PART

NAS 220 THRU 227
SHEET 1 OF 3

NATIONAL AEROSPACE STANDARD

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MATERIAL: ALUMINUM ALLOY - SEE PROCUREMENT SPECIFICATION
MANGANESE BRONZE PER QQ-M-80, CLASS B
ALLOY STEEL - SEE PROCUREMENT SPECIFICATION
CORROSION AND HEAT RESISTANT STEEL PER AMS 5735 (A-286)

MAGNETIC INSPECTION: IN ACCORDANCE WITH MIL-S-7839.

FINISH: ALUMINUM ALLOY - ANODIZE, SPEC. MIL-A-8625.
MANGANESE BRONZE - CADMIUM PLATE PER QQ-P-416, TYPE I, CLASS C.
DESIGNATED BY "P" FOLLOWING "BZ".
NO CODING INDICATES PLAIN SCREW.
ALLOY STEEL - CADMIUM PLATE PER QQ-P-416, TYPE I, CLASS 3.
CORROSION RESISTANT STEEL - CLEAN AND PASSIVATE IN
ACCORDANCE WITH MIL-S-5002

TENSILE STRENGTH: ALUMINUM ALLOY - ULTIMATE ALLOWABLE TENSILE STRESS (F_{TU}) = 62,000 P.S.I.
MANGANESE BRONZE - ULTIMATE ALLOWABLE TENSILE STRESS (F_{TU}) = 85,000 P.S.I. MIN.
ALLOY STEEL - ULTIMATE ALLOWABLE TENSILE STRESS (F_{TU}) = 125,000 TO 145,000 P.S.I.
CORROSION RESISTANT STEEL - ULTIMATE ALLOWABLE TENSILE STRESS (F_{TU}) = 125,000 P.S.I. MIN.

MINIMUM STRENGTH IN POUNDS

PART NO.	MATERIAL	MINIMUM TENSILE STRENGTH AT AVERAGE OF MEAN PITCH AND MINOR DIAMETER	MINIMUM SINGLE SHEAR STRENGTH AT FULL DIAMETER
NAS 220	ALUMINUM ALLOY	860	740
	MANGANESE BRONZE	1180	954
	ALLOY STEEL	1740	1600
	CORROSION RESISTANT STEEL	1740	1600
NAS 221	ALUMINUM ALLOY	1230	990
	MANGANESE BRONZE	1690	1280
	ALLOY STEEL	2490	2125
	CORROSION RESISTANT STEEL	2490	2125
NAS 222	ALUMINUM ALLOY	2240	1715
	MANGANESE BRONZE	3080	2212
	ALLOY STEEL	4520	3680
	CORROSION RESISTANT STEEL	4520	3680
NAS 223	ALUMINUM ALLOY	3590	2685
	MANGANESE BRONZE	4920	3463
	ALLOY STEEL	7240	5750
	CORROSION RESISTANT STEEL	7240	5750
NAS 224	ALUMINUM ALLOY	5430	3870
	MANGANESE BRONZE	7450	4980
	ALLOY STEEL	10950	8280
	CORROSION RESISTANT STEEL	10950	8280
NAS 225	ALUMINUM ALLOY	7350	5250
	MANGANESE BRONZE	10070	6780
	ALLOY STEEL	14800	11250
	CORROSION RESISTANT STEEL	14800	11250
NAS 226	ALUMINUM ALLOY	9900	6850
	MANGANESE BRONZE	13570	8850
	ALLOY STEEL	19950	14700
	CORROSION RESISTANT STEEL	19950	14700
NAS 227	ALUMINUM ALLOY	12560	8700
	MANGANESE BRONZE	17200	11190
	ALLOY STEEL	25300	18700
	CORROSION RESISTANT STEEL	25300	18700

CUSTODIAN: NATIONAL AEROSPACE STANDARDS COMMITTEE

PROCUREMENT
SPECIFICATION

MIL-S-7839

TITLE

SCREWS, BRAZIER HEAD, PHILLIPS RECESS

CLASSIFICATION
STANDARD PART

Documents
 NAS 220 THRU 227
 SHEET 2

AIA AND ITS COMMITTEES WILL NOT INVESTIGATE THE APPLICABILITY OF PATENTS TO THE SUBJECT MATTER OF NAS STANDARDS AND IN RESPECT THEREOF DO NOT ASSUME ANY LIABILITY TO PATENT OWNERS OR TO PROSPECTIVE USERS

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST DATE OF APPROVAL SHOWN HEREON

APPROVAL DATE DECEMBER 1942 REVISION (4) 31 Mar. 1958 (5) 28 April 1961 (6) 15 Nov. 1964