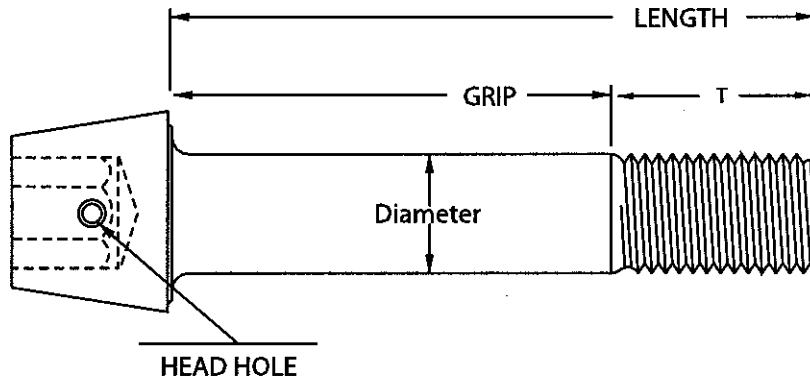


# Genuine Aircraft Hardware Co.

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## MS20004 thru MS20024

Diameter / Head Size / Thread Lengths



### HELP WITH THE SELECTION OF PART NUMBERS

The first three numbers after "MS" designates the Design of the bolt. Alloy Steel 160 Ksi. Tensile, 96 Ksi shear; CAD II Plated.  
The two numbers after MS200 designate the diameter of the bolt.

**ADD (-)** After the first five numbers for no safety wire holes in the head..

**ADD (H)** After the first five numbers for safety wire holes in the head.

**NOTE:** THIS SERIES BOLT IS NOT AVAILABLE WITH HOLES IN THE SHANK. Supersedes NAS144 thru 158.

The last numerals { } { } in the part # designate (GRIP) length in 1/16ths of an inch. ADD the "T" dimension to get (OVERALL) length.  
Grip length of bolts shall be measured from the underside of the head to the end of the full cylindrical portion of the shank.

#### Examples of part numbers:

MS20007-16 7/16 DIAMETER, 20 THREADS PER INCH, 1.00 INCHES GRIP LENGTH, 1.812 OVERALL, NO HOLES IN HEAD.  
MS20007H16 7/16 DIAMETER, 20 THREADS PER INCH, 1.00 INCHES GRIP LENGTH, 1.812 OVERALL, HOLES IN HEAD.

NOTE: all dimensions in inches

MS200{ } { }	THREAD DIA/PITCH	DIA. MAX	DIA. MIN	WRENCH SIZE	* T * DIMENSION	HEAD DIA. + 0R - .005	REC. WASHER UNDER HEAD	REC. WASHER UNDER NUT
04	1/4-28	.2492	.2477	3/16	0.437	0.433	MS20002C4	MS20002-4
05	5/16-24	.3117	.3102	7/32	0.537	0.526	MS20002C5	MS20002-5
06	3/8-24	.3742	.3727	5/16	0.662	0.645	MS20002C6	MS20002-6
07	7/16-20	.4367	.4347	5/16	0.787	0.730	MS20002C7	MS20002-7
08	1/2-20	.4991	.4971	3/8	0.787	0.823	MS20002C8	MS20002-8
09	9/16-18	.5616	.5596	7/16	0.850	0.933	MS20002C9	MS20002-9
10	5/8-18	.6240	.6220	1/2	0.912	1.045	MS20002C10	MS20002-10
12	3/4-16	.7488	.7468	9/16	1.037	1.225	MS20002C12	MS20002-12
14	7/8-14	.8737	.8707	5/8	1.162	1.443	MS20002C14	MS20002-14
16 *	1"-14	.9985	.9955	3/4	1.287	1.620	MS20002C16	MS20002-16
17	1"-12	.9985	.9955	3/4	1.287	1.620	MS20002C16	MS20002-16
18	1 1/8"-12	1.124	1.121	3/4	1.475	1.870	MS20002C18	MS20002-18
20	1 1/4"-12	1.249	1.246	1"	1.600	2.120	MS20002C20	MS20002-20
22	1 3/8"-12	1.374	1.370	1 1/8	1.725	2.308	MS20002C22	MS20002-22
24	1 1/2"-12	1.499	1.495	1 1/4	1.850	2.495	MS20002C24	MS20002-24

\* 1"-14 thread pitch inactive for new design.

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## Cross Reference Chart

### NAS144-148 TO MS20004-MS20008

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### ORDER BY MS2000(x) NUMBERS

SEE PREVIOUS PAGES FOR PART NUMBER BREAKDOWN

Measure this NAS series by O.A.L. Under the head					MS by Grip in 1/16"	
MS20004-(X)	MS20005-(X)	MS20006-(X)	MS20007-(X)	MS20008-(X)	Replace (x) for dia. in prefix, for grip suffix	
OLD NAS144 DASH NUMBER	OLD NAS145 DASH NUMBER	OLD NAS146 DASH NUMBER	OLD NAS147 DASH NUMBER	OLD NAS148 DASH NUMBER	NEW MS2000(x)-(x) Dash Number	DECIMAL GRIP LENGTH
NAS144-9	NAS145-10	NAS146-12	NAS147-14	NAS148-14	1	0.063
NAS144-10	NAS145-11	NAS146-13	NAS147-15	NAS148-15	2	0.125
NAS144-11	NAS145-12	NAS146-14	NAS147-16	NAS148-16	3	0.188
NAS144-12	NAS145-13	NAS146-15	NAS147-17	NAS148-17	4	0.250
NAS144-13	NAS145-14	NAS146-16	NAS147-18	NAS148-18	5	0.313
NAS144-14	NAS145-15	NAS146-17	NAS147-19	NAS148-19	6	0.375
NAS144-15	NAS145-16	NAS146-18	NAS147-20	NAS148-20	7	0.438
NAS144-16	NAS145-17	NAS146-19	NAS147-21	NAS148-21	8	0.500
NAS144-17	NAS145-18	NAS146-20	NAS147-22	NAS148-22	9	0.563
NAS144-18	NAS145-19	NAS146-21	NAS147-23	NAS148-23	10	0.625
NAS144-19	NAS145-20	NAS146-22	NAS147-24	NAS148-24	11	0.688
NAS144-20	NAS145-21	NAS146-23	NAS147-25	NAS148-25	12	0.750
NAS144-21	NAS145-22	NAS146-24	NAS147-26	NAS148-26	13	0.813
NAS144-22	NAS145-23	NAS146-25	NAS147-27	NAS148-27	14	0.875
NAS144-23	NAS145-24	NAS146-26	NAS147-28	NAS148-28	15	0.938
NAS144-24	NAS145-25	NAS146-27	NAS147-29	NAS148-29	16	1.000
NAS144-25	NAS145-26	NAS146-28	NAS147-30	NAS148-30	17	1.063
NAS144-26	NAS145-27	NAS146-29	NAS147-31	NAS148-31	18	1.125
NAS144-27	NAS145-28	NAS146-30	NAS147-32	NAS148-32	19	1.188
NAS144-28	NAS145-29	NAS146-31	NAS147-33	NAS148-33	20	1.250
NAS144-29	NAS145-30	NAS146-32	NAS147-34	NAS148-34	21	1.313
NAS144-30	NAS145-31	NAS146-33	NAS147-35	NAS148-35	22	1.375
NAS144-31	NAS145-32	NAS146-34	NAS147-36	NAS148-36	23	1.438
NAS144-32	NAS145-33	NAS146-35	NAS147-37	NAS148-37	24	1.500
NAS144-33	NAS145-34	NAS146-36	NAS147-38	NAS148-38	25	1.563
NAS144-34	NAS145-35	NAS146-37	NAS147-39	NAS148-39	26	1.625
NAS144-35	NAS145-36	NAS146-38	NAS147-40	NAS148-40	27	1.688
NAS144-36	NAS145-37	NAS146-39	NAS147-41	NAS148-41	28	1.750
NAS144-37	NAS145-38	NAS146-40	NAS147-42	NAS148-42	29	1.813
NAS144-38	NAS145-39	NAS146-41	NAS147-43	NAS148-43	30	1.875
NAS144-39	NAS145-40	NAS146-42	NAS147-44	NAS148-44	31	1.938
NAS144-40	NAS145-41	NAS146-43	NAS147-45	NAS148-45	32	2.000
NAS144-41	NAS145-42	NAS146-44	NAS147-46	NAS148-46	33	2.063
NAS144-42	NAS145-43	NAS146-45	NAS147-47	NAS148-47	34	2.125
NAS144-43	NAS145-44	NAS146-46	NAS147-48	NAS148-48	35	2.188
NAS144-44	NAS145-45	NAS146-47	NAS147-49	NAS148-49	36	2.250
NAS144-45	NAS145-46	NAS146-48	NAS147-50	NAS148-50	37	2.313
NAS144-46	NAS145-47	NAS146-49	NAS147-51	NAS148-51	38	2.375
NAS144-47	NAS145-48	NAS146-50	NAS147-52	NAS148-52	39	2.438
NAS144-48	NAS145-49	NAS146-51	NAS147-53	NAS148-53	40	2.500
NAS144-49	NAS145-50	NAS146-52	NAS147-54	NAS148-54	41	2.563
NAS144-50	NAS145-51	NAS146-53	NAS147-55	NAS148-55	42	2.625
NAS144-51	NAS145-52	NAS146-54	NAS147-56	NAS148-56	43	2.688
NAS144-52	NAS145-53	NAS146-55	NAS147-57	NAS148-57	44	2.750
NAS144-53	NAS145-54	NAS146-56	NAS147-58	NAS148-58	45	2.813
NAS144-54	NAS145-55	NAS146-57	NAS147-59	NAS148-59	46	2.875
NAS144-55	NAS145-56	NAS146-58	NAS147-60	NAS148-60	47	2.938
NAS144-56	NAS145-57	NAS146-59	NAS147-61	NAS148-61	48	3.000
NAS144-57	NAS145-58	NAS146-60	NAS147-62	NAS148-62	49	3.063
NAS144-58	NAS145-59	NAS146-61	NAS147-63	NAS148-63	50	3.125