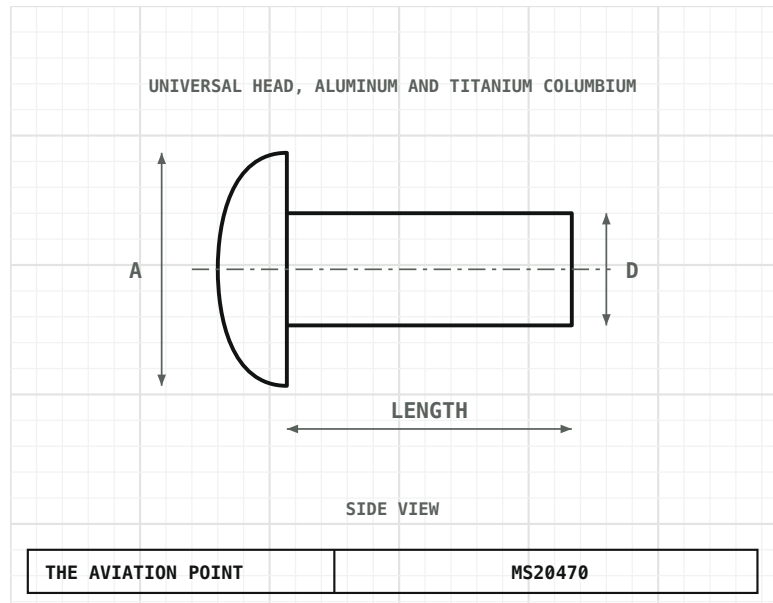
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MS20470 rivet — universal head, aluminum and titanium columbium

Rivet, Solid, Universal Head, Aluminum Alloy and Titanium Columbium Alloy, from MS20470 Rev. H.



MS20470



Engineering drawing · dimensions in inches

Specification

Item	Value
Type	Solid rivet, universal head
Material	Aluminum 1100-F (A91100) and aluminum alloys 2017-T4, 2024-T4, 2117-T4, 2219-T81, 2219-T62, 5056-H32 and 7050-T73 per QQ-A-430; titanium columbium alloy 45Cb (R58450) per AMS 4982
Finish	Default by alloy code; finish code after the length. No code: chemical surface treatment per MIL-C-5541 Class 1A, gold/yellow. A: anodize per MIL-A-8625 Type II Class 1, clear. D: anodize Type II Class 1, dichromate seal. F: option of any finish except as noted in the standard. S: MIL-C-5541 Class 1A, clear. N: anodize Type II Class 2. Titanium columbium: no finish required
Procurement	MIL-R-5674
Status	Rev. H, 14 Sep 1993. Confirm the current issue (NASM20470) before design use. AD is the general-purpose alloy; D, DD and K are inactive for new design.

Dimensions by size

Dimension, in	1/16	3/32	1/8	5/32	3/16	7/32	1/4	5/16	3/8
D — Shank diameter (+.003 / -.001; applies to rivets manufactured after 2 July 1990)	.062	.094	.125	.156	.187	.219	.250	.312	.375
A — Head diameter	.125	.187	.250	.312	.375	.437	.500	.625	.750
A tolerance	± .006	± .009	± .012	± .016	± .019	± .022	± .025	± .031	± .037
B — Approx. material for full shop head	.094	.141	.188	.234	.281	.328	.375	.469	.562
C — Head height (+.010 / -.000)	.027	.040	.054	.067	.080	.093	.107	.133	.161
E — E (see drawing)	.031	.046	.062	.078	.093	.109	.125	.156	.187
F — Flat F (see drawing)	.015	.023	.031	.039	.046	.054	.062	.078	.093
R — Head radius	.054	.082	.108	.135	.164	.193	.217	.272	.328
S — End chamfer	.016	.023	.031	.039	.047	.054	.062	.078	.094
T — End radius	.019	.029	.039	.049	.059	.069	.078	.098	.117

Maximum - minimum as tabulated in MS20470 Rev. H; letters as on the standard's drawing.

Part numbers

1/16 13 part numbers

Part no.	Length, in	Alloy codes
MS20470AD2-3	.188	All
MS20470AD2-4	.250	All
MS20470AD2-5	.312	All
MS20470AD2-6	.375	All
MS20470AD2-7	.438	All
MS20470AD2-8	.500	All
MS20470AD2-9	.562	All
MS20470AD2-10	.625	All
MS20470AD2-12	.750	All
MS20470AD2-14	.875	All
MS20470AD2-16	1.000	All
MS20470AD2-18	1.125	All
MS20470AD2-20	1.250	All

3/32 14 part numbers

Part no.	Length, in	Alloy codes
MS20470AD3-3	.188	All
MS20470AD3-4	.250	All
MS20470AD3-5	.312	All
MS20470AD3-6	.375	All
MS20470AD3-7	.438	All
MS20470AD3-8	.500	All
MS20470AD3-9	.562	All
MS20470AD3-10	.625	All
MS20470AD3-12	.750	All
MS20470AD3-14	.875	All
MS20470AD3-16	1.000	All
MS20470AD3-18	1.125	All
MS20470AD3-20	1.250	All
MS20470AD3-22	1.375	All

1/8 18 part numbers

Part no.	Length, in	Alloy codes
MS20470AD4-3	.188	All
MS20470AD4-3-5	.218	AD, B, K, T, J
MS20470AD4-4	.250	All
MS20470AD4-4-5	.281	AD, B, K, T, J
MS20470AD4-5	.312	All
MS20470AD4-6	.375	All
MS20470AD4-7	.438	All
MS20470AD4-8	.500	All
MS20470AD4-9	.562	All
MS20470AD4-10	.625	All
MS20470AD4-11	.687	AD, B, K, T, J
MS20470AD4-12	.750	All
MS20470AD4-14	.875	All
MS20470AD4-16	1.000	All
MS20470AD4-18	1.125	All
MS20470AD4-20	1.250	All
MS20470AD4-22	1.375	All
MS20470AD4-24	1.500	All

5/32 18 part numbers

Part no.	Length, in	Alloy codes
MS20470AD5-4	.250	All
MS20470AD5-5	.312	All
MS20470AD5-6	.375	All
MS20470AD5-7	.438	All
MS20470AD5-8	.500	All
MS20470AD5-9	.562	All
MS20470AD5-10	.625	All
MS20470AD5-11	.687	AD, K, J
MS20470AD5-12	.750	All
MS20470AD5-14	.875	All
MS20470AD5-16	1.000	All
MS20470AD5-17	1.062	AD, K
MS20470AD5-18	1.125	All
MS20470AD5-19	1.187	AD, K, J
MS20470AD5-20	1.250	All
MS20470AD5-22	1.375	All
MS20470AD5-24	1.500	All
MS20470AD5-28	1.750	All

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.

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3/16 22 part numbers

Part no.	Length, in	Alloy codes
MS20470AD6-3	.187	AD
MS20470AD6-4	.250	All
MS20470AD6-5	.312	All
MS20470AD6-6	.375	All
MS20470AD6-7	.438	All
MS20470AD6-8	.500	All
MS20470AD6-9	.562	All
MS20470AD6-10	.625	All
MS20470AD6-11	.687	AD, E
MS20470AD6-12	.750	All
MS20470AD6-13	.812	AD
MS20470AD6-14	.875	All
MS20470AD6-16	1.000	All
MS20470AD6-18	1.125	All
MS20470AD6-20	1.250	All
MS20470AD6-22	1.375	All
MS20470AD6-24	1.500	All
MS20470AD6-28	1.750	All
MS20470AD6-32	2.000	All
MS20470AD6-36	2.250	AD
MS20470AD6-40	2.500	All
MS20470AD6-48	3.000	All

7/32 17 part numbers

Part no.	Length, in	Alloy codes
MS20470AD7-6	.375	All
MS20470AD7-7	.438	All
MS20470AD7-8	.500	All
MS20470AD7-9	.562	All
MS20470AD7-10	.625	All
MS20470AD7-12	.750	All
MS20470AD7-14	.875	All
MS20470AD7-16	1.000	All
MS20470AD7-18	1.125	All
MS20470AD7-20	1.250	All
MS20470AD7-22	1.375	All
MS20470AD7-24	1.500	All
MS20470AD7-28	1.750	All
MS20470AD7-32	2.000	All
MS20470AD7-40	2.500	All
MS20470AD7-48	3.000	All
MS20470AD7-56	3.500	All

1/4 17 part numbers

Part no.	Length, in	Alloy codes
MS20470AD8-6	.375	All
MS20470AD8-7	.438	All
MS20470AD8-8	.500	All
MS20470AD8-9	.562	All
MS20470AD8-10	.625	All
MS20470AD8-12	.750	All
MS20470AD8-14	.875	All
MS20470AD8-16	1.000	All
MS20470AD8-18	1.125	All
MS20470AD8-20	1.250	All
MS20470AD8-22	1.375	All
MS20470AD8-24	1.500	All
MS20470AD8-28	1.750	All
MS20470AD8-32	2.000	All
MS20470AD8-40	2.500	All
MS20470AD8-48	3.000	All
MS20470AD8-56	3.500	All

5/16 16 part numbers

Part no.	Length, in	Alloy codes
MS20470AD10-8	.500	All
MS20470AD10-9	.562	All
MS20470AD10-10	.625	All
MS20470AD10-12	.750	All
MS20470AD10-14	.875	All
MS20470AD10-16	1.000	All
MS20470AD10-18	1.125	All
MS20470AD10-20	1.250	All
MS20470AD10-22	1.375	All
MS20470AD10-24	1.500	All
MS20470AD10-28	1.750	All
MS20470AD10-32	2.000	All
MS20470AD10-40	2.500	All
MS20470AD10-48	3.000	All
MS20470AD10-56	3.500	All
MS20470AD10-64	4.000	All

3/8 14 part numbers

Part no.	Length, in	Alloy codes
MS20470AD12-10	.625	All
MS20470AD12-12	.750	All
MS20470AD12-14	.875	All
MS20470AD12-16	1.000	All
MS20470AD12-18	1.125	All
MS20470AD12-20	1.250	All
MS20470AD12-22	1.375	All
MS20470AD12-24	1.500	All
MS20470AD12-28	1.750	All
MS20470AD12-32	2.000	All
MS20470AD12-40	2.500	All
MS20470AD12-48	3.000	All
MS20470AD12-56	3.500	All
MS20470AD12-64	4.000	All

How to read the part number

Part	Meaning
Format	MS20470<material><dash>
A	Material: 1100-F aluminum (head plain)
AD	Material: 2117-T4 aluminum alloy (dimpled head)
B	Material: 5056-H32 aluminum alloy (raised cross)
D	Material: 2017-T4 aluminum alloy, inactive for new design (raised teat)
DD	Material: 2024-T4 aluminum alloy, inactive for new design (raised double dash)
K	Material: 2219-T81 aluminum alloy, inactive for new design (indented square)
E	Material: 7050-T73 aluminum alloy (indented ring)
T	Material: Titanium columbium alloy 45Cb (indented diamond)
J	Material: 2219-T62 aluminum alloy (indented triangle)
Example	MS20470AD4-5 — 2117-T4 aluminum alloy, 1/8 in diameter, 5/16 in long

Notes

- Dimensions are in inches. Tolerances unless otherwise specified: decimals ± .010.
- For part numbers of rivet length not listed, show the 1/16 increment required.
- Additional 1/32 length increments are obtained by adding -5 after the last digit or letter of the part number: MS20470AD4-12A-5 is 2117-T4, 1/8 diameter, 3/4 + 1/32 long, anodize clear.
- Diameter is in 1/32 in and length in 1/16 in. In the alloy column, All means A, AD, B, D, DD, E, K, T and J are all tabulated for that dash; otherwise only the listed codes are.
- Ring on 7050 rivets: outer diameter at most 75% of shank diameter, depth at most .010. Required on 7050 rivets manufactured after 2 July 1990.
- Manufacturer's identification is required to be depressed on rivet heads with a shank diameter of .125 and larger manufactured after 2 July 1990.
- Aluminum alloy 2017-T4 rivets with 33 ksi minimum undriven shear strength were acceptable until 2 July 1990.
- Rivets may be furnished with plain ends, or with chamfered or radiused ends to the S and T dimensions.
- Interchangeability with AN470: MS20470 rivets of like dash numbers are universally, functionally and dimensionally interchangeable.

SOURCES · MS20470 Rev. H, 14 Sep 1993 — Rivet, Solid, Universal Head, Aluminum Alloy and Titanium Columbium Alloy

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/solid-rivets/ms20470/

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.

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