

# Aerospace Bolt Interchange

The following charts detail material specifications, strength & temperature ratings, nominal thread lengths, & updates/interchanges of the most commonly used aerospace bolt series.

## Hex Head

125,000 psi tensile / 75,000 psi shear

AN3: alloy steel, 450°F

AN3C: stainless steel, 450°F

160,000 psi tensile/ 95,000 psi shear

NAS1103: alloy steel, 450°F

NAS6203: alloy steel, 450°F

NAS1303: alloy steel, 450°F

NAS6603: alloy steel, 450°F

NAS6303: A286 stainless, 1200°F

NAS6703: A286 stainless, 1200°F

NAS653: titanium alloy, 500°F

NAS673: titanium alloy, 500°F

NAS6403: titanium alloy, 500°F

NAS6803: titanium alloy, 500°F

### Supersedence

NAS1103 to NAS6203

NAS1303 to NAS6603

### Commonly Accepted Interchanges

NAS1103, NAS6203

NAS1303, NAS6603

## Internal Wrenching Head / 12 Point Head

160,000 psi tensile / 96,000 psi shear

NAS144: alloy steel, 450°F (internal wrenching)

MS20004: alloy steel, 450°F (internal wrenching)

### Supersedence

NAS144 to MS20004

180,000 psi tensile / 108,000 psi shear

NAS624: alloy steel, 450°F (12 point)

MS21250: alloy steel, 450°F (12 point)

### Commonly Accepted Interchanges

NAS624 and MS21250

NAS144 and MS20004

## Thread Sizes & Nominal Thread Lengths Chart

Note: "x" or "xx" represents diameter number; all dimensions are in inches

Dia. #	Thread Size	Alloy Steel				A286 Stainless		6AL4V Titanium Alloy				Alloy Steel			
		11xx	62xx	13xx	66xx	63xx	67xx	65x	67x	64xx	68xx	ANx	MS2000x	MS21250	NAS62x
3	.190-32	.276	.323	.338	.345	.323	.345	.276	.338	.323	.345	.406	N/A	.420	N/A
4	.250-28	.316	.370	.425	.425	.370	.425	.316	.425	.370	.425	.469	.475	.492	.485
5	.3125-24	.375	.438	.469	.469	.438	.469	.375	.469	.438	.469	.531	.537	.579	.572
6	.375-24	.391	.454	.578	.578	.454	.578	.391	.578	.454	.578	.641	.662	.625	.619
7	.4375-20	.453	.528	.594	.694	.528	.694	.453	.594	.528	.694	.656	.787	.721	.694
8	.500-20	.453	.528	.735	.735	.528	.735	.453	.735	.528	.735	.781	.787	.768	.741
9	.563-18	.511	.594	.840	.840	.594	.840	-	-	.594	.840	.906	.850	.852	.826
10	.625-18	.543	.626	.902	.902	.626	.902	-	-	.626	.902	.953	.912	.899	.873
12	.750-16	.572	.666	1.041	1.041	.666	1.041	-	-	.666	1.041	1.093	1.037	1.036	.993