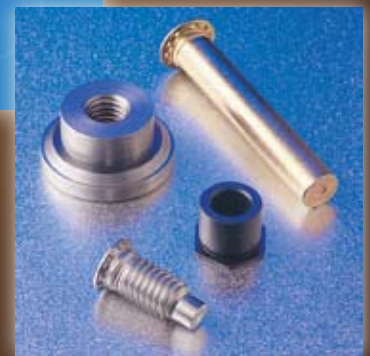




***PRECISION
AEROSPACE FASTENERS***



a **PEM[®]** Company



Established in 1982, 3V Fasteners is a world class manufacturer of fasteners for aircraft and aerospace applications. A manufacturer of Boeing, AN, AS, MS and NAS certified fasteners, 3V Fasteners supplies most of the world's leading aircraft companies.

Processes and capabilities:

- Cold Heading
- Threading/Tapping
- Grinding
- Broaching
- Nut Forming
- Drilling
- Lab Testing
- Heat Treating
- Prototyping
- Screw Machining

Materials:

- Titanium
- A286 Stainless
- PWA Alloy
- 13-8 MO Stainless
- Brass
- Inconel 718
- 431 Stainless
- PWA 17-22
- 17-4 PH Stainless
- Aluminum
- 303 Stainless
- 416 Stainless
- Alloy Steel

Bolt/Screw Head Styles:

- 12 Point
- Hex
- Flush
- Flat Fillister
- Pan
- Socket Head Cap

Thread Sizes and Lengths:

- Diameters - #2 to 1/2"
- Lengths - 3/16" to 4"

Quality:

- ISO 9001:2000
- AS9100
- QSLM Approved





BOEING PARTS

| |
|----------|
| BACS12CA |
| BACS12CK |
| BACS12GX |
| BACS12H |
| BACS12HK |
| BACS12HL |
| BACS12HM |
| BACS12HN |
| BACS12HP |
| BACB30AB |
| BACB30BF |
| BACB30BH |

AN PARTS

| |
|-----------------|
| AN173C - AN176C |
| AN3C - AN6C |

AS PARTS

| |
|-----------------|
| AS3099 - AS3100 |
| AS3102 |
| AS3236 - AS3238 |
| AS3244 - AS3245 |
| AS3250 - AS3251 |
| AS3414 - AS3416 |
| AS3418 - AS3420 |
| AS3530 - AS3531 |
| AS3580 |

MS PARTS

| |
|-------------------------|
| MS21250-02 - MS21250-06 |
| MS21277 - MS21282 |
| MS21286 - MS21291 |
| MS9033 - MS9036 |
| MS9060 - MS9063 |
| MS9088 - MS9091 |
| MS9110 - MS9113 |
| MS9146 - MS9149 |
| MS9157 - MS9160 |
| MS9169 - MS9172 |
| MS9177 - MS9178 |
| MS9206 - MS9211 |
| MS9215 - MS9220 |
| MS9488 - MS9494 |
| MS9500 - MS9505 |
| MS9554 - MS9559 |
| MS9563 - MS9568 |
| MS9572 - MS9577 |
| MS9912 - MS9917 |
| MS9921 - MS9926 |
| MS9930 - MS9935 |
| MS9939 - MS9944 |

NAS PARTS

| | |
|-------------------|---------------------|
| NAS1003 - NAS1008 | NAS2832 - NAS2838 |
| NAS1096 | NAS2842 - NAS2848 |
| NAS1100 - NAS1102 | NAS428 |
| NAS1103 - NAS1108 | NAS464 |
| NAS1121 - NAS1128 | NAS560 |
| NAS1131 - NAS1138 | NAS5310 - NAS5321 |
| NAS1141 - NAS1148 | NAS653 - NAS655 |
| NAS1151 - NAS1158 | NAS563 - NAS568 |
| NAS1161 - NAS1168 | NAS673 - NAS675 |
| NAS1171 - NAS1178 | NAS6203 - NAS6208 |
| NAS1181 - NAS1188 | NAS624 - NAS626 |
| NAS1189 - NAS1191 | NAS6303 - NAS6308 |
| NAS1218 | NAS6403 - NAS6405 |
| NAS1221 | NAS6603 - NAS6608 |
| NAS1223 - NAS1228 | NAS6703 - NAS6708 |
| NAS1303 - NAS1308 | NAS6803 - NAS6805 |
| NAS1578 | NAS7103 - NAS7108 |
| NAS1580 | NAS7203 - NAS7208 |
| NAS1581 | NAS7303 - NAS7305 |
| NAS1620 - NAS1628 | NAS7400 - NAS7408 |
| NAS1630 - NAS1634 | NAS7500 - NAS7508 |
| NAS1741 | NAS7600 - NAS7605 |
| NAS1742 | NAS7700 - NAS7706 |
| NAS1743 | NAS7800 - NAS7806 |
| NAS1790 | NAS7900 - NAS7905 |
| NAS1801 | NAS8000 - NAS8006 |
| NAS1802 | NAS8100 - NAS8106 |
| NAS1953 - NAS1958 | NAS8200 - NAS8206 |
| NAS1972 - NAS1978 | NAS8302 - NAS8304 |
| NAS1992 - NAS1998 | NAS8402 - NAS8404 |
| NAS2803 - NAS2808 | NAS8602 - NAS8608 |
| NAS2813 - NAS2818 | NAS8702U - NAS8708U |

GE PARTS

| |
|---------------|
| R1057 |
| R1062 |
| R1440 - R1445 |
| R1451 - R1456 |
| R1460 - R1468 |
| R1470 - R1474 |
| R191 |
| R448 |
| R541 - R548 |

BOMBARDIER PARTS

| |
|-------|
| S8435 |
|-------|

WOODWARD GOVENOR

| |
|------|
| 1106 |
|------|

EMBRAER PARTS

| |
|---------|
| PE21086 |
| PE21094 |
| PE21101 |
| PE21114 |
| PE21116 |

BELL HELICOPTER PARTS

| |
|---------|
| 120-220 |
| 120-225 |
| 120-276 |
| 120-278 |

LOCKHEED PARTS

| |
|--------|
| JSFB44 |
| JSFB45 |





CONVERSION CHARTS



Sheet Metal Gage Conversion Chart

| Gage # | Steel | Stainless | Aluminum | Gage # | Steel | Stainless | Aluminum |
|--------|-------|-----------|----------|--------|-------|-----------|----------|
| 7 | 0.179 | — | 0.144 | 19 | 0.042 | 0.044 | 0.036 |
| 8 | 0.164 | 0.172 | 0.129 | 20 | 0.036 | 0.038 | 0.032 |
| 9 | 0.150 | 0.156 | 0.114 | 21 | 0.033 | 0.034 | 0.028 |
| 10 | 0.135 | 0.141 | 0.102 | 22 | 0.030 | 0.031 | 0.025 |
| 11 | 0.120 | 0.125 | 0.091 | 23 | 0.027 | 0.028 | 0.023 |
| 12 | 0.105 | 0.109 | 0.081 | 24 | 0.024 | 0.025 | 0.020 |
| 13 | 0.090 | 0.094 | 0.072 | 25 | 0.021 | 0.022 | 0.018 |
| 14 | 0.075 | 0.078 | 0.064 | 26 | 0.018 | 0.019 | 0.016 |
| 15 | 0.067 | 0.070 | 0.057 | 27 | 0.016 | 0.017 | 0.014 |
| 16 | 0.060 | 0.063 | 0.051 | 28 | 0.015 | 0.016 | 0.013 |
| 17 | 0.054 | 0.056 | 0.045 | 29 | 0.014 | 0.014 | 0.011 |
| 18 | 0.048 | 0.050 | 0.040 | 30 | 0.012 | 0.013 | 0.010 |
| | | | | 31 | — | 0.011 | 0.009 |

Unified/Metric Conversion Chart

| mm | Fraction | Inches | mm | Fraction | Inches | mm | Fraction | Inches |
|-------|----------|--------|--------|----------|--------|--------|----------|--------|
| .397 | 1/64 | .0156 | 8.731 | 11/32 | .3438 | 17.066 | 43/64 | .6719 |
| .794 | 1/32 | .0313 | 9.128 | 23/64 | .3594 | 17.462 | 11/16 | .6875 |
| 1.191 | 3/64 | .0469 | 9.525 | 3/8 | .3750 | 17.859 | 45/64 | .7031 |
| 1.588 | 1/16 | .0625 | 9.922 | 25/64 | .3906 | 18.256 | 23/32 | .7188 |
| 1.984 | 5/64 | .0781 | 10.319 | 13/32 | .4063 | 18.653 | 47/64 | .7344 |
| 2.381 | 3/32 | .0938 | 10.716 | 27/64 | .4219 | 19.050 | 3/4 | .7500 |
| 2.788 | 7/64 | .1094 | 11.112 | 7/16 | .4375 | 19.447 | 49/64 | .7656 |
| 3.175 | 1/8 | .1250 | 11.509 | 29/64 | .4531 | 19.844 | 25/32 | .7813 |
| 3.572 | 9/64 | .1406 | 11.906 | 15/32 | .4688 | 20.241 | 51/64 | .7969 |
| 3.969 | 5/32 | .1563 | 12.303 | 31/64 | .4844 | 20.638 | 13/16 | .8125 |
| 4.366 | 11/64 | .1719 | 12.700 | 1/2 | .5000 | 21.034 | 53/64 | .8281 |
| 4.762 | 3/16 | .1875 | 13.097 | 33/64 | .5156 | 21.431 | 27/32 | .8438 |
| 5.159 | 13/64 | .2031 | 13.494 | 17/32 | .5313 | 21.828 | 55/64 | .8594 |
| 5.556 | 7/32 | .2188 | 13.891 | 35/64 | .5469 | 22.225 | 7/8 | .8750 |
| 5.953 | 15/64 | .2344 | 14.288 | 9/16 | .5625 | 22.622 | 57/64 | .8906 |
| 6.350 | 1/4 | .2500 | 14.684 | 37/64 | .5731 | 23.019 | 29/32 | .9063 |
| 6.747 | 17/64 | .2656 | 15.081 | 19/32 | .5938 | 23.416 | 59/64 | .9219 |
| 7.144 | 9/32 | .2813 | 15.478 | 39/64 | .6094 | 23.812 | 15/16 | .9375 |
| 7.541 | 19/64 | .2969 | 15.875 | 5/8 | .6250 | 24.209 | 61/64 | .9531 |
| 7.938 | 5/16 | .3125 | 16.275 | 41/64 | .6406 | 24.606 | 31/32 | .9688 |
| 8.334 | 21/64 | .3281 | 16.669 | 21/32 | .6563 | 25.003 | 63/64 | .9844 |
| | | | | | | 25.400 | 1 | 1.000 |

Unified/Metric Conversion Formulas

| Property | English to Metric | | | Metric to English | | |
|-------------------|-------------------|---------|---------------------|---------------------|--------------------------|------------------|
| | Multiply | By | Result | Multiply | By | Result |
| Length | in. | 25.4 | mm | mm | .03937 | in. |
| Plating Thickness | in. | 25400 | µm | µm | 3.937 x 10 ⁻⁵ | in. |
| Area | in. ² | 645.16 | mm ² | mm ² | .00155 | in. ² |
| Force | lbs. | 4.448 | Newtons (N) | Newtons (N) | .2248 | lbs. |
| Force | lbs. | .0044 | Kilonewtons (kN) | Kilonewtons (kN) | 224.8 | lbs. |
| Torque | in.-lbs. | 0.113 | Newton Meters (N•m) | Newton Meters (N•m) | 8.851 | in.-lbs. |
| Stress | PSI | .006895 | MPa | MPa | 145.04 | PSI |
| Stress | KSI | 6.895 | MPa | MPa | .14504 | KSI |



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