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400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

# AEROSPACE STANDARD

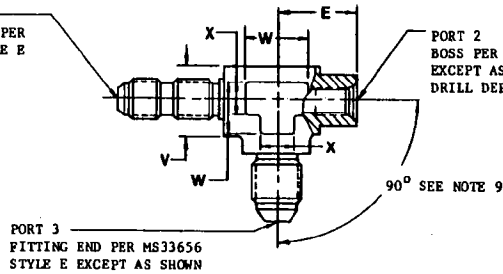
## AS 1032B

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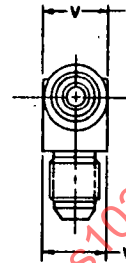
### TEE, REDUCER - BULKHEAD & INTERNALLY THREADED PORT ON RUN, FLARED TUBE

PORT 1  
FITTING END PER  
MS33657 STYLE E



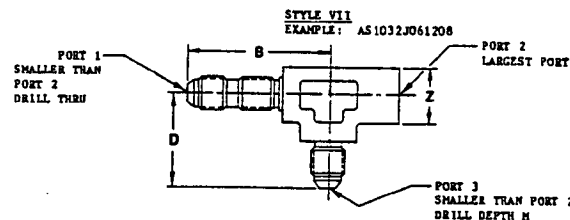
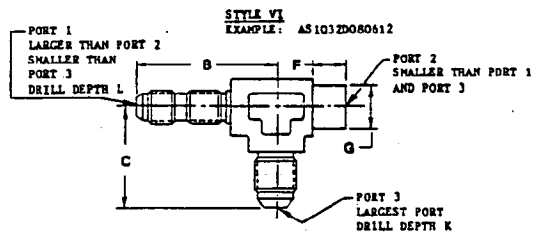
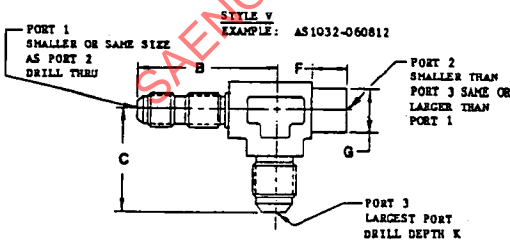
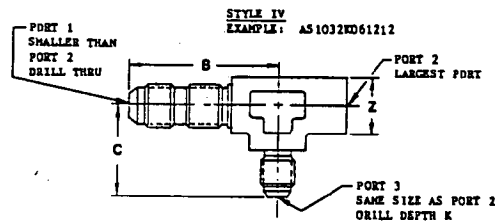
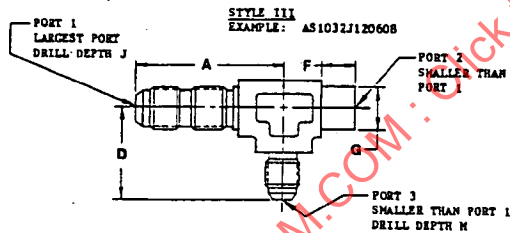
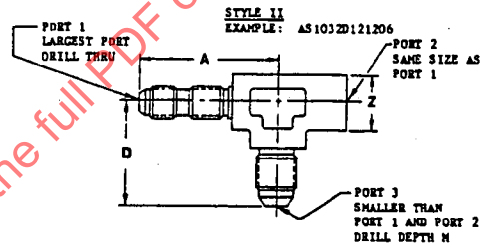
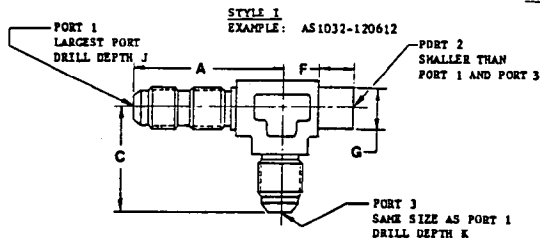
PORT 2  
BOSS PER MS33649  
EXCEPT AS SHOWN  
DRILL DEPTH H

ACROSS WRENCH PADS



PORT 3  
FITTING END PER MS33656  
STYLE E EXCEPT AS SHOWN

#### REDUCER COMBINATIONS



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# AS 1032B

-2-

| FORGING SIZE | A     | C     | E     | F     | H     | V     | W      | X      | Z     |
|--------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|
|              | ±.016 | ±.016 | ±.016 | ±.016 | ±.016 | ±.016 | APPROX | APPROX | ±.016 |
| 3            | 1.523 | .992  | .711  | -     | .750  | .562  | .500   | .312   | .625  |
| 4            | 1.773 | 1.211 | .773  | .375  | .812  | .750  | .688   | .438   | .750  |
| 5            | 1.773 | 1.211 | .773  | .375  | .812  | .750  | .688   | .438   | .750  |
| 6            | 2.023 | 1.273 | .836  | .375  | .875  | .875  | .781   | .438   | .875  |
| 8            | 2.179 | 1.461 | 1.023 | .469  | 1.063 | 1.063 | .906   | .500   | 1.063 |
| 10           | 2.398 | 1.648 | 1.180 | .625  | 1.219 | 1.063 | .906   | .500   | 1.188 |
| 12           | 2.648 | 1.836 | 1.367 | .688  | 1.406 | 1.312 | 1.094  | .625   | 1.438 |
| 16           | 2.867 | 2.086 | 1.555 | .719  | 1.594 | 1.625 | 1.312  | .750   | 1.688 |
| 20           | 3.054 | 2.273 | 1.742 | .781  | 1.781 | 1.875 | 1.500  | .875   | 2.000 |

| LEG LENGTH B ±.016 |       |       |       |       |       |       |       |       |    |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| FORGING SIZE       |       |       |       |       |       |       |       |       |    |
| 3                  | 4     | 5     | 6     | 8     | 10    | 12    | 16    | 20    |    |
| 1.523              | 1.679 | 1.679 | 1.851 | 1.851 | 1.929 | 2.008 | 2.227 | 2.367 | 2  |
|                    | 1.679 | 1.679 | 1.851 | 1.851 | 1.929 | 2.008 | 2.227 | 2.367 | 3  |
|                    |       | 1.773 | 1.945 | 1.945 | 2.023 | 2.102 | 2.321 | 2.461 | 4  |
|                    |       |       | 1.945 | 1.945 | 2.023 | 2.102 | 2.321 | 2.461 | 5  |
|                    |       |       |       | 2.023 | 2.101 | 2.180 | 2.399 | 2.539 | 6  |
|                    |       |       |       |       | 2.257 | 2.336 | 2.555 | 2.695 | 8  |
|                    |       |       |       |       |       | 2.477 | 2.696 | 2.836 | 10 |
|                    |       |       |       |       |       |       | 2.867 | 3.007 | 12 |
|                    |       |       |       |       |       |       |       | 3.007 | 16 |

SIZE OF PORT #1

| LEG LENGTH D ±.016 |       |       |       |       |       |       |       |       |    |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| FORGING SIZE       |       |       |       |       |       |       |       |       |    |
| 3                  | 4     | 5     | 6     | 8     | 10    | 12    | 16    | 20    |    |
| .961               | 1.109 | 1.109 | 1.165 | 1.232 | 1.338 | 1.420 | 1.623 | 1.763 | 2  |
|                    | 1.140 | 1.140 | 1.196 | 1.283 | 1.369 | 1.451 | 1.654 | 1.794 | 3  |
|                    |       | 1.211 | 1.267 | 1.354 | 1.440 | 1.522 | 1.725 | 1.865 | 4  |
|                    |       |       | 1.267 | 1.354 | 1.440 | 1.522 | 1.725 | 1.865 | 5  |
|                    |       |       |       | 1.360 | 1.446 | 1.528 | 1.731 | 1.871 | 6  |
|                    |       |       |       |       | 1.547 | 1.629 | 1.832 | 1.972 | 8  |
|                    |       |       |       |       |       | 1.730 | 1.933 | 2.073 | 10 |
|                    |       |       |       |       |       |       | 2.039 | 2.179 | 12 |
|                    |       |       |       |       |       |       |       | 2.226 | 16 |

SIZE OF PORT #2

| TURNED DIA C ±.016 |      |      |      |      |       |       |       |       |    |
|--------------------|------|------|------|------|-------|-------|-------|-------|----|
| FORGING SIZE       |      |      |      |      |       |       |       |       |    |
| 3                  | 4    | 5    | 6    | 8    | 10    | 12    | 16    | 20    |    |
| -                  | .594 | .594 | .594 | .594 | .594  | .594  | .594  | .594  | 2  |
|                    | .656 | .656 | .656 | .656 | .656  | .656  | .656  | .656  | 3  |
|                    |      | .719 | .719 | .719 | .719  | .719  | .719  | .719  | 4  |
|                    |      |      | .781 | .781 | .781  | .781  | .781  | .781  | 5  |
|                    |      |      |      | .844 | .844  | .844  | .844  | .844  | 6  |
|                    |      |      |      |      | 1.062 | 1.062 | 1.062 | 1.062 | 8  |
|                    |      |      |      |      |       | 1.288 | 1.288 | 1.288 | 10 |
|                    |      |      |      |      |       |       | 1.438 | 1.438 | 12 |
|                    |      |      |      |      |       |       |       | 1.688 | 16 |

SIZE OF PORT #2

| DRILL DEPTH K ±.016 |      |      |       |       |       |       |       |       |    |
|---------------------|------|------|-------|-------|-------|-------|-------|-------|----|
| FORGING SIZE        |      |      |       |       |       |       |       |       |    |
| 3                   | 4    | 5    | 6     | 8     | 10    | 12    | 16    | 20    |    |
| .781                | .843 | .843 | .906  | 1.094 | 1.250 | 1.438 | 1.625 | 1.812 | 2  |
| .812                | .875 | .875 | .938  | 1.125 | 1.281 | 1.469 | 1.656 | 1.844 | 3  |
|                     | .891 | .891 | .953  | 1.141 | 1.297 | 1.484 | 1.672 | 1.859 | 4  |
|                     |      | .922 | .984  | 1.172 | 1.328 | 1.516 | 1.703 | 1.891 | 5  |
|                     |      |      | 1.016 | 1.203 | 1.375 | 1.547 | 1.750 | 1.922 | 6  |
|                     |      |      |       | 1.250 | 1.422 | 1.594 | 1.797 | 1.969 | 8  |
|                     |      |      |       |       | 1.453 | 1.641 | 1.828 | 2.016 | 10 |
|                     |      |      |       |       |       | 1.703 | 1.891 | 2.078 | 12 |
|                     |      |      |       |       |       |       | 2.016 | 2.203 | 16 |
|                     |      |      |       |       |       |       |       | 2.312 | 20 |

SIZE OF PORT #3

| DRILL DEPTH J ±.016 |       |       |       |       |       |       |       |       |    |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| FORGING SIZE        |       |       |       |       |       |       |       |       |    |
| 3                   | 4     | 5     | 6     | 8     | 10    | 12    | 16    | 20    |    |
| 1.594               | 1.844 | 1.844 | 2.094 | 2.250 | 2.469 | 2.719 | 2.938 | 3.125 | 2  |
| 1.625               | 1.875 | 1.875 | 2.125 | 2.281 | 2.500 | 2.750 | 2.968 | 3.156 | 3  |
|                     | 1.891 | 1.891 | 2.141 | 2.297 | 2.516 | 2.766 | 2.984 | 3.172 | 4  |
|                     |       | 1.922 | 2.172 | 2.328 | 2.547 | 2.797 | 3.016 | 3.203 | 5  |
|                     |       |       | 2.203 | 2.359 | 2.578 | 2.828 | 3.047 | 3.234 | 6  |
|                     |       |       |       | 2.406 | 2.625 | 2.875 | 3.094 | 3.281 | 8  |
|                     |       |       |       |       | 2.672 | 2.922 | 3.141 | 3.328 | 10 |
|                     |       |       |       |       |       | 2.984 | 3.203 | 3.391 | 12 |
|                     |       |       |       |       |       |       | 3.328 | 3.516 | 16 |
|                     |       |       |       |       |       |       |       | 3.625 | 20 |

SIZE OF PORT #3

| DRILL DEPTH L ±.016 |       |       |       |       |       |       |       |    |  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|----|--|
| FORGING SIZE        |       |       |       |       |       |       |       |    |  |
| 16                  | 12    | 10    | 8     | 6     | 5     | 4     | 3     |    |  |
| 3.578               | 3.578 | 3.406 | 3.266 | 3.109 | 3.031 | 3.031 | 2.938 | 20 |  |
|                     | 3.328 | 3.156 | 3.016 | 2.859 | 2.781 | 2.781 | 2.688 | 16 |  |
|                     |       | 2.828 | 2.672 | 2.516 | 2.438 | 2.438 | 2.344 | 12 |  |
|                     |       |       | 2.531 | 2.375 | 2.297 | 2.297 | 2.203 | 10 |  |
|                     |       |       |       | 2.250 | 2.172 | 2.172 | 2.078 | 8  |  |
|                     |       |       |       |       | 2.125 | 2.125 | 2.031 | 6  |  |
|                     |       |       |       |       |       | 1.922 | 1.828 | 5  |  |
|                     |       |       |       |       |       |       | 1.797 | 4  |  |

SIZE OF PORT #3

| DRILL DEPTH M ±.016 |       |       |       |       |       |       |       |       |    |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| FORGING SIZE        |       |       |       |       |       |       |       |       |    |
| 3                   | 4     | 5     | 6     | 8     | 10    | 12    | 16    | 20    |    |
| 1.000               | 1.141 | 1.141 | 1.203 | 1.266 | 1.375 | 1.453 | 1.656 | 1.797 | 2  |
|                     | 1.172 | 1.172 | 1.234 | 1.328 | 1.406 | 1.484 | 1.688 | 1.828 | 3  |
|                     |       | 1.250 | 1.312 | 1.391 | 1.484 | 1.562 | 1.766 | 1.906 | 4  |
|                     |       |       | 1.312 | 1.391 | 1.484 | 1.562 | 1.766 | 1.906 | 5  |
|                     |       |       |       | 1.391 | 1.484 | 1.562 | 1.766 | 1.906 | 6  |
|                     |       |       |       |       | 1.578 | 1.672 | 1.875 | 2.016 | 8  |
|                     |       |       |       |       |       | 1.766 | 1.969 | 2.109 | 10 |
|                     |       |       |       |       |       |       | 2.078 | 2.219 | 12 |
|                     |       |       |       |       |       |       |       | 2.266 | 16 |

SIZE OF PORT #3

- SPECIFY END SIZES IN THE FOLLOWING ORDER: (1) BULKHEAD END; (2) INTERNALLY THREADED END ON RUN; (3) SIDE END.
- LARGEST TUBE SIZE DETERMINES FORGING SIZES.
- MATERIAL CODING:
  - STEEL 1137 OR 1141 PER QQ-S-637 (OPTIONAL: 4130/MIL-S-6758). FINISH CADMIUM PLATE PER QQ-P-416. TYPE II, CLASS 2. COLOR BLACK.
  - S CRES TYPE 347. CRES PER QQ-S-763 SURFACE TREAT PER MIL-S-5002.
  - J CRES TYPE 304. CRES PER QQ-S-763 SURFACE TREAT PER MIL-S-5002.
  - K CRES TYPE 316. CRES PER QQ-S-763 SURFACE TREAT PER MIL-S-5002.
  - D ALUMINUM ALLOY 2014-T6 PER QQ-A-367 (OR 2024-T851). ANODIZE PER MIL-A-8625 TYPE II, CLASS 2. DYE BLUE.
  - W ALUMINUM ALLOY 7075-T73 PER QQ-A-225/9 (OPTIONAL: QQ-A-367). ANODIZE PER MIL-A-8625, TYPE II, CLASS 2. DYE BROWN.
  - T TITANIUM ALLOY (6AL-4V) PER AMS 4928. FLUORIDE PHOSPHATE COAT PER AMS 2486.
- PART NUMBER EXAMPLE:

|                                   |    |    |    |       |       |      |       |             |  |
|-----------------------------------|----|----|----|-------|-------|------|-------|-------------|--|
| ALUMINUM ALLOY 1.625 WRENCH FLATS |    |    |    |       |       |      |       |             |  |
| AS 1032 D                         | 16 | 10 | 08 |       |       |      |       |             |  |
| MS33649-10                        |    |    |    |       |       |      |       |             |  |
| MS33657-16                        |    |    |    |       |       |      |       |             |  |
| MS33656-8                         |    |    |    |       |       |      |       |             |  |
|                                   | A  | B  | C  | D     | E     | F    | G     | DRILL DEPTH |  |
|                                   |    |    |    | 1.832 |       |      |       | 1.875       |  |
|                                   |    |    |    |       | 1.555 | .719 | 1.188 | THRU        |  |
|                                   |    |    |    |       |       |      |       | 3.094       |  |

- PROC. SPEC. MIL-F-5509, LATEST REVISION, UNLESS OTHERWISE SPECIFIED ON PURCHASE ORDER BY PURCHASER.
- REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
- THIS STANDARD TAKES PRECEDENCE OVER REFERENCED DOCUMENTS HEREIN.
- MANUFACTURER'S TRADEMARK AND BASIC PART NUMBER (EXCLUSIVE OF SIZE) TO APPEAR PERMANENTLY ON FINISHED PARTS. BASIC PART NUMBER MAY BE REDUCED TO "AS" ON FORGINGS SIZE 6 AND SMALLER. PARTS PREVIOUSLY IMPRESSION STAMPED WITH AN, MS OR PROPRIETARY IDENTIFICATION SHALL BE ACCEPTABLE PROVIDED SUCH IDENTIFICATION IS OBLITERATED BY IMPRESSION STAMPING WITHOUT DAMAGING THE PART.
- TOLERANCE ON 90° ANGLE: ±2-1/2° FOR TUBE SIZE 6 AND SMALLER, ±1-1/2° FOR TUBE SIZE 8 AND LARGER.
- WHEN FITTING IS MADE FROM BAR, THE CONTOUR OF THE BODY SECTION SHALL BE PER AS 1376 FOR FORGING SIZES DASH 3 THROUGH DASH 8, AND AS 1376 CODE H FOR SIZES DASH 10 AND LARGER.

PREPARED BY SUBCOMMITTEE G-3B, AEROSPACE FITTINGS OF  
SAE COMMITTEE G-3, AEROSPACE FITTINGS & HOSE ASSEMBLIES