

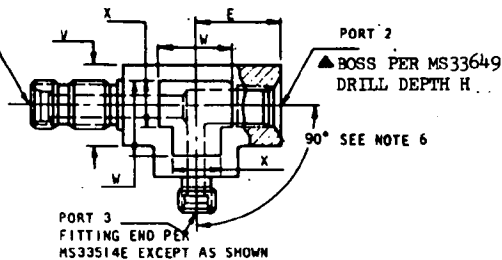
MAY '92

FEDERAL SUPPLY CLASS

4730

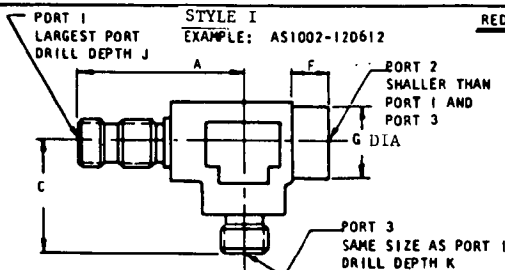
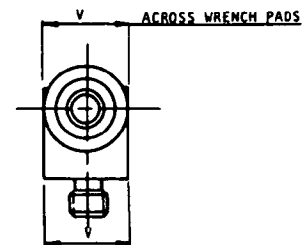
AS 1002

PORT 1
FITTING END PER
MS33515S EXCEPT
AS SHOWN

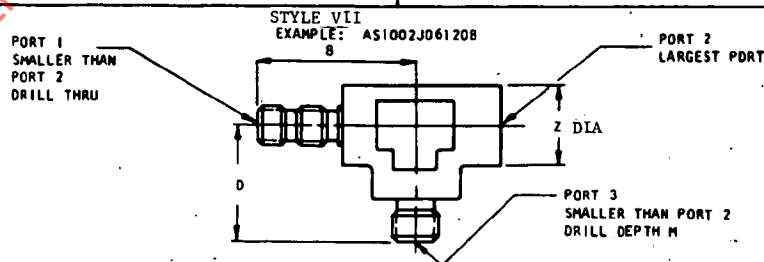
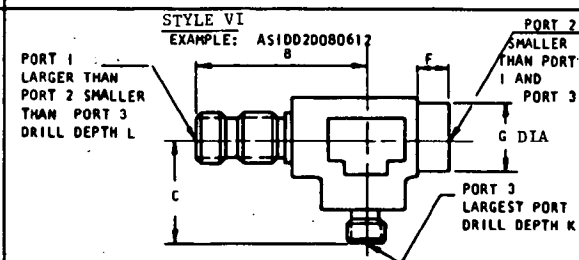
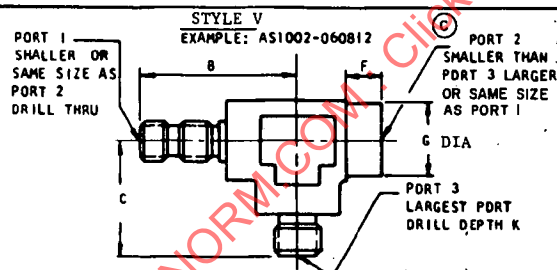
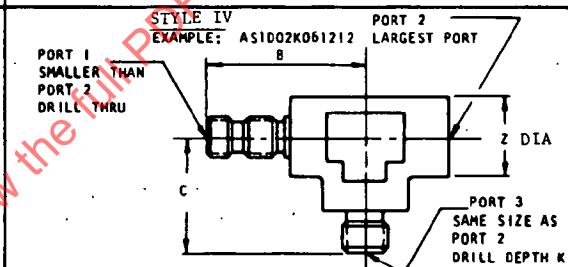
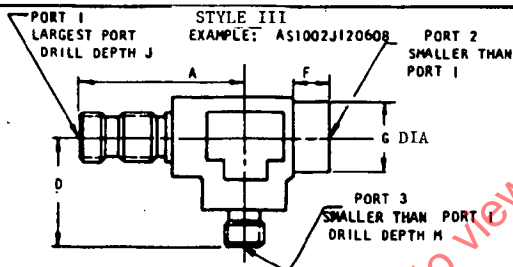
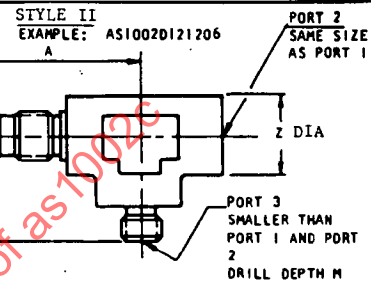


PORT 2
BOSS PER MS33649
DRILL DEPTH H

PORT 3
FITTING END PER
MS33514E EXCEPT AS SHOWN



REDUCER COMBINATIONS



SHEET	I	2
REV	C	C

CUSTODIAN: SAE G-3 / G-3B

PROCUREMENT: MIL-F-18280

SAE The Engineering Society
For Advancing Mobility
Land Sea Air and Space

400 Commonwealth Drive
Warrendale, PA 15096

AEROSPACE STANDARD

TEE, REDUCER, BULKHEAD AND
INTERNAL PORT ON RUN, FLARELESS TUBE

AS 1002

SHEET I OF 2

REVISED 3-15-66

ISSUED 3-15-66

2-2-87

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FORGING SIZE	A	C	E	F	V	W	X	K	Z
	±.016	±.016	±.016	±.016	±.016	MIN	MIN	±.016	±.016
3	1.477	.930	.711	-	.562	.500	.312	.969	.625
4	1.695	1.117	.723	.375	.750	.688	.438	1.156	.750
5	1.695	1.117	.723	.375	.750	.688	.438	1.156	.750
6	1.914	1.180	.836	.375	.875	.781	.438	1.219	.875
8	2.055	1.367	1.023	.469	1.062	.906	.500	1.406	1.062
10	2.273	1.523	1.180	.625	1.062	.906	.500	1.562	1.125
12	2.461	1.664	1.367	.688	1.312	.094	.625	1.703	1.312
16	2.680	1.867	1.555	.719	1.625	.312	.750	1.906	1.625
20	2.820	2.008	1.742	.781	1.875	.500	.875	2.047	1.875

FORGING SIZE	3	4	5	6	8	10	12	16	20
PORT #1 SIZE	.883	1.039	1.039	1.086	1.180	1.273	1.351	1.554	1.695
PORT #3 SIZE	1.086	1.086	1.133	1.227	1.320	1.398	1.601	1.742	1.742
PORT #2 SIZE	1.117	1.164	1.258	1.351	1.429	1.632	1.773	1.773	1.773
PORT #4 SIZE	1.164	1.258	1.351	1.429	1.632	1.773	1.773	1.773	1.773
PORT #5 SIZE	1.274	1.367	1.445	1.648	1.789	1.789	1.789	1.789	1.789
PORT #6 SIZE	1.460	1.538	1.741	1.882	1.882	1.882	1.882	1.882	1.882
PORT #7 SIZE	1.601	1.804	1.945	1.945	1.945	1.945	1.945	1.945	1.945
PORT #8 SIZE	1.867	2.008	2.008	2.008	2.008	2.008	2.008	2.008	2.008
PORT #9 SIZE	2.008	2.008	2.008	2.008	2.008	2.008	2.008	2.008	2.008

FORGING SIZE	3	4	5	6	8	10	12	16	20
PORT #1 SIZE	.797	.859	.859	.922	1.109	1.265	1.453	1.641	1.828
PORT #3 SIZE	.812	.875	.875	.938	1.125	1.281	1.469	1.656	1.844
PORT #5 SIZE	.906	.906	.969	1.156	1.312	1.500	1.688	1.875	1.875
PORT #7 SIZE	.922	.984	1.172	1.328	1.516	1.703	1.891	1.891	1.891
PORT #9 SIZE	1.016	1.202	1.375	1.547	1.734	1.922	1.922	1.922	1.922
PORT #11 SIZE	1.266	1.422	1.609	1.797	1.984	1.984	1.984	1.984	1.984
PORT #13 SIZE	1.469	1.656	1.844	2.031	2.031	2.031	2.031	2.031	2.031
PORT #15 SIZE	1.734	1.922	2.109	2.109	2.109	2.109	2.109	2.109	2.109
PORT #17 SIZE	2.031	2.219	2.219	2.219	2.219	2.219	2.219	2.219	2.219
PORT #19 SIZE	2.328	2.328	2.328	2.328	2.328	2.328	2.328	2.328	2.328

FORGING SIZE	16	12	10	8	6	5	4	3
PORT #1 SIZE	3.406	3.406	3.297	3.156	2.984	2.938	2.938	2.875
PORT #3 SIZE	3.156	3.047	2.906	2.734	2.688	2.688	2.625	2.625
PORT #5 SIZE	2.719	2.578	2.406	2.359	2.359	2.297	2.297	2.297
PORT #7 SIZE	2.422	2.250	2.203	2.203	2.141	2.141	2.141	2.141
PORT #9 SIZE	2.125	2.094	2.094	2.016	2.016	2.016	2.016	2.016
PORT #11 SIZE	2.062	2.062	1.984	1.984	1.984	1.984	1.984	1.984
PORT #13 SIZE	1.844	1.781	1.781	1.781	1.781	1.781	1.781	1.781
PORT #15 SIZE	1.766	1.766	1.766	1.766	1.766	1.766	1.766	1.766

NOTES:

- MATERIAL, FINISH, MANUFACTURE, AND PERFORMANCE REQUIREMENTS SHALL BE IN ACCORDANCE WITH MIL-F-18280, LATEST REVISION, UNLESS OTHERWISE SPECIFIED ON PURCHASE ORDER BY PURCHASER.
- SPECIFY END SIZES IN THIS ORDER: BULKHEAD FIRST; INTERNAL PORT SECOND; SIDE END THIRD.
- LARGEST END SHALL DETERMINE THE FORGING SIZE, EXCEPT THAT FOR STYLES 1, 3, 5 AND 6. FOR STYLES 1, 3, 5 AND 6 AN OPTIONAL FORGING SIZE OF ONE SIZE SMALLER THAN THE LARGEST EXTERNALLY THREADED PORT MAY BE USED TO FABRICATE THE FITTING. "G" DIAMETERS AND LEG LENGTHS WILL CONFORM TO THE DIMENSIONS OF FITTINGS MADE FROM THE ORIGINAL (NOT THE OPTIONAL) FORGING SIZE.
- MATERIAL CODE: IN PLACE OF FIRST DASH, ADD CODE LETTERS AS FOLLOWS:
NO LETTER INDICATES 4130 STEEL (USE DASH " - ").
LETTER "D" INDICATES TYPE 2014T6 ALUMINUM ALLOY.
LETTER "J" INDICATES CORROSION RESISTANT STEEL, CLASS 304.
LETTER "S" INDICATES CORROSION RESISTANT STEEL, CLASS 347.
LETTER "K" INDICATES CORROSION RESISTANT STEEL, CLASS 316.
LETTER "W" INDICATES TYPE 7075-T73 ALUMINUM ALLOY.
LETTER "T" INDICATES TYPE 6AL-4V TITANIUM ALLOY.
- EXAMPLE OF PART NUMBER: AS1002 D 10 16 08.
BASIC PART NUMBER
ALUMINUM ALLOY TYPE 2014T6
PORT 1: BULKHEAD PER MS33515S10
LEG LENGTH PER DIMENSION B, 2.571
DRILL DEPTH THRU
PORT 2: INTERNAL PORT PER MS33649-16
LEG LENGTH PER DIMENSION E, 1.555
DRILL DEPTH PER DIMENSION H, 1.797
PORT 3: SHORT END ON SIDE PER MS33514E8
LEG LENGTH PER DIMENSION D, 1.741
DRILL DEPTH PER DIMENSION M, 1.781
- TOLERANCE ON 90° ANGLE: ± 1/2° FOR TUBE SIZE 6 AND SMALLER, ± 1 1/2° FOR TUBE SIZE 8 AND LARGER.
- REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
- IDENTIFY PER MIL-F-18280 EXCEPT SUBSTITUTE BASIC PART NUMBERS AS/AS1002 MARKINGS IN LIEU OF MS/MSXXXXX AS APPLICABLE. 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.

FORGING SIZE	3	4	5	6	8	10	12	16	20
PORT #1 SIZE	1.430	1.585	1.585	1.758	1.727	1.804	1.883	2.102	2.242
PORT #3 SIZE	1.632	1.632	1.805	1.774	1.851	1.930	2.149	2.289	2.289
PORT #5 SIZE	1.695	1.868	1.837	1.914	1.993	2.212	2.352	2.352	2.352
PORT #7 SIZE	1.868	1.837	1.914	1.993	2.212	2.352	2.352	2.352	2.352
PORT #9 SIZE	1.883	1.960	2.039	2.258	2.398	2.398	2.398	2.398	2.398
PORT #11 SIZE	2.132	2.211	2.430	2.570	2.570	2.570	2.570	2.570	2.570
PORT #13 SIZE	2.352	2.571	2.711	2.711	2.711	2.711	2.711	2.711	2.711
PORT #15 SIZE	2.571	2.711	2.711	2.711	2.711	2.711	2.711	2.711	2.711
PORT #17 SIZE	2.711	2.711	2.711	2.711	2.711	2.711	2.711	2.711	2.711
PORT #19 SIZE	2.820	2.820	2.820	2.820	2.820	2.820	2.820	2.820	2.820
PORT #21 SIZE	2.820	2.820	2.820	2.820	2.820	2.820	2.820	2.820	2.820

FORGING SIZE	3	4	5	6	8	10	12	16	20
PORT #1 SIZE	.594	.594	.594	.594	.594	.594	.594	.594	.594
PORT #3 SIZE	.656	.656	.656	.656	.656	.656	.656	.656	.656
PORT #5 SIZE	.719	.719	.719	.719	.719	.719	.719	.719	.719
PORT #7 SIZE	.781	.781	.781	.781	.781	.781	.781	.781	.781
PORT #9 SIZE	.844	.844	.844	.844	.844	.844	.844	.844	.844
PORT #11 SIZE	1.062	1.062	1.062	1.062	1.062	1.062	1.062	1.062	1.062
PORT #13 SIZE	1.188	1.188	1.188	1.188	1.188	1.188	1.188	1.188	1.188
PORT #15 SIZE	1.438	1.438	1.438	1.438	1.438	1.438	1.438	1.438	1.438
PORT #17 SIZE	1.688	1.688	1.688	1.688	1.688	1.688	1.688	1.688	1.688

FORGING SIZE	3	4	5	6	8	10	12	16	20
PORT #1 SIZE	1.562	1.781	1.781	2.000	2.141	2.359	2.438	2.766	2.906
PORT #3 SIZE	1.578	1.797	1.797	2.016	2.156	2.375	2.562	2.781	2.922
PORT #5 SIZE	1.828	1.828	2.047	2.188	2.406	2.593	2.812	2.953	2.953
PORT #7 SIZE	1.844	2.062	2.203	2.422	2.609	2.828	2.969	2.969	2.969
PORT #9 SIZE	2.094	2.234	2.453	2.641	2.875	3.000	3.000	3.000	3.000
PORT #11 SIZE	2.297	2.516	2.703	2.922	3.062	3.062	3.062	3.062	3.062
PORT #13 SIZE	2.562	2.750	2.969	3.109	3.109	3.109	3.109	3.109	3.109
PORT #15 SIZE	2.828	3.047	3.188	3.188	3.188	3.188	3.188	3.188	3.188
PORT #17 SIZE	3.156	3.297	3.297	3.297	3.297	3.297	3.297	3.297	3.297
PORT #19 SIZE	3.406	3.406	3.406	3.406	3.406	3.406	3.406	3.406	3.406

FORGING SIZE	3	4	5	6	8	10	12	16	20
PORT #1 SIZE	.922	1.078	1.078	1.125	1.219	1.312	1.391	1.594	1.734
PORT #3 SIZE	1.125	1.125	1.188	1.265	1.359	1.438	1.641	1.781	1.781
PORT #5 SIZE	1.203	1.203	1.297	1.391	1.469	1.672	1.812	1.812	1.812
PORT #7 SIZE	1.203	1.297	1.391	1.469	1.672	1.812	1.812	1.812	1.812
PORT #9 SIZE	1.312	1.406	1.484	1.688	1.828	1.828	1.828	1.828	1.828
PORT #11 SIZE	1.500	1.578	1.781	1.922	1.922	1.922	1.922	1.922	1.922
PORT #13 SIZE	1.640	1.844	1.984	1.984	1.984	1.984	1.984	1.984	1.984
PORT #15 SIZE	1.906	2.047	2.047	2.047	2.047	2.047	2.047	2.047	2.047
PORT #17 SIZE	2.047	2.047	2.047	2.047	2.047	2.047	2.047	2.047	2.047

AEROSPACE STANDARD

TEE, REDUCER, BULKHEAD AND
INTERNAL PORT ON RUN, FLARELESS TUBE

AS 1002

SHEET 2 OF 2