DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ASSEMBLY AND FABRICATION PROCEDURES FOR ACCESSORIES REQUIRED TO ADAPT A 55-GALLON DRUM TO A FUEL SUPPLY TANK USED WITH HEATER, SPACE, RADIANT TYPE, PORTABLE (LIQUID FUEL)

Headquarters, Department of the Army, Washington, D.C.

30 March 1971

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CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 9 NOVEMBER 1992

Technical Bulletin

ASSEMBLY AND FABRICATION PROCEDURES FOR ACCESSORIES REQUIRED TO ADAPT A 55-GALLON DRUM TO A FUEL SUPPLY TANK USED WITH HEATER, SPACE, RADIANT TYPE, PORTABLE, (LIQUID FUEL)

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TB 10-4500-200-13, 30 March 1971 is changed as follows:

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Remove pages	Insert pages
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By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
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02882

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SECTION I
GENERAL

1. Purpose and Scope. This bulletin -

a. Designates the supply assembly procedures for fittings that are assembled and become a fill and vent assembly for a military standard 55-gallon drum when adapted to a fuel supply tank for the liquid fuel portable space heater.

b. Designates the supply assembly procedures for fittings that are assembled and become a fuel manifold assembly for a military standard 55-gallon drum when adapted to a fuel supply tank for liquid fuel portable space heater.

c. Furnishes the necessary technical data required to fabricate and assemble three styles of drum stands that hold a military standard 55-gallon drum in the horizontal position for the purpose of dispensing fuel.

2. Recommendations for Publications Improvements.

a. Reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Report should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding General, U. S. Army Troop Support Command, ATTN: AMSTR-MMTS, 4300 Goodfellow Boulevard, St. Louis, MO 63120.

b. Responsibility for the proper execution of forms, records, and reports rests upon the commanding officers of all units using this equipment; for forms, records, and reports required, see DA PAM 738-750.

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SECTION II
MATERIAL REQUIREMENTS

3. General
Material will be secured locally. Authorization for fabrication and assembly will be by local commander.

4. Specific
a. Fill and Vent Assembly. Refer to table 1.

Table 1. Material Required for Fill and Vent Assembly

Item	Fig.	Qty	Description
1	1	1	Elbow, Street, 90° 2" NPT, Galv Steel
2	1	1	Nipple, 2" NPT x 3" LG, Galv Steel
3	1	1	Cap. Fill, 2" NPT, Galv Steel, Simplex or equiv.

b. Manifold Assembly. Refer to table 2.

Table 2. Material Required for Manifold Assembly

Item	Fig.	Qty	Description
1	2	1	Nipple, 3/4" NPT x 2 1/2" Lg, Galv Steel
2	2	1	Tee, 1/2" x 1/2" x 3/4", Galv Steel
3	2	2	Valve, 1/2" NPT x 1/4" NPT, Morse-Smith No. 5025F, or equiv.
4	2	2	Coupling., Female, 1/4" tube OD x 1/4" NPT, Brass Imperial No. 664-F or equiv.

c. *Drum Stand, 55-Gallon, Style A*. Refer to table 3.

Table 3. Material Required for Style A. 55-Gallon Drum *Stand*

Item	Fig.	Qty	Description
1	5	4	Leg, L, 1 3/4" x 1 3/4" x 1/8" x 30-1/8" Lg, Steel
2	5	2	Brace, Cross, L, 1 1/4" x 1 1/4" x 1/8" x 20" Lg, Steel.
3	5	4	Foot, 12 ga Steel 5" x 5".
4	5	6	Washer, Flat, Rd, .375 ID x .875 OD x .083 thk, MS27183-13.
5	5	4	Pin, Cotter, 1/8" DIA x 'h" Lg, MS24665-349
6	5	8	Rivet, Solid, 1/4" DIA x 9/16" Ls. Steel
7	5	2	Rivet, Solid, 1/4" DIA x 5/8" Lg. Steel
8	5	4	Pin, Solid, 5/16" DIA x 7/8" Lg. Steel

d. Drum Stand, 55-Gallon, Style B. Refer to table 4.

Table 4. Material Required for Style B, 55-Gallon Drum Stand

Item	Fig.	Qty	Description
1	6	1	Brace, Lifting, 1/4" x 2 1/2" x 18 1/2", Steel
2	6	1	Brace, Front. L, 1 1/4" x 1 1/4" x 1/8" x 18 1/2" Steel.
3	6	2	Brace, Top, 1/4" x 1 1/4" x 24", Steel
4	6	1	Brace, Rear, 1/4" x 2 1/2" x 22 1/2", Steel
5	6	1	Cradle, LH, L, 1/8" x 1 1/4" x 1 1/4" x 102", Steel
6	6	1	Cradle, RH, L, 1/8" x 1 1/4" x 1 1/4" x 102". Steel.

e. Drum Stand, 55-Gallon, Style C. Refer to table 5.

Table 5. Material Required for Style C, 55-Gallon Drum Stand

Item	Fig.	Qty	Description
1	7	1	Cradle, LH, L, 1 1/4" x 1 1/4" x 3/16" x 102" Steel
2	7	1	Cradle, RH, L, 1 1/4" x 1 1/4" x 3/16" x 102", Steel.
3	7	1	Brace, End, 7 Ga Steel, 1 1/4" x 58"
4	7	1	Brace, Top, 11 Ga Steel, 2" x 18 1/2"
5	7	1	Brace, Front, 7 Ga Steel, 1 1/4" x 18"
6	7	1	Brace, Lifting, 7 Ga Steel, 3" x 18"
7	7	14	Screw, Cap, Hex Hd. 1/4" -20 UNC-2A x 3/4", MS90725-6.
8	7	14	Nut, Hex, 1/4-20 UNC-2B, Cad P1, MS51967
9	7	14	Washer, Lock, Split, Med, 1/4", Cad P1, MS35338-44

SECTION III
DESCRIPTION

5. Fill and Vent Assembly

The fill and vent assembly consists of parts listed in table 1 and shown in figure 1. The fill-vent cap requires no tools for opening when refueling is required, and when closed provides weather protection and a vent opening for air displacement.

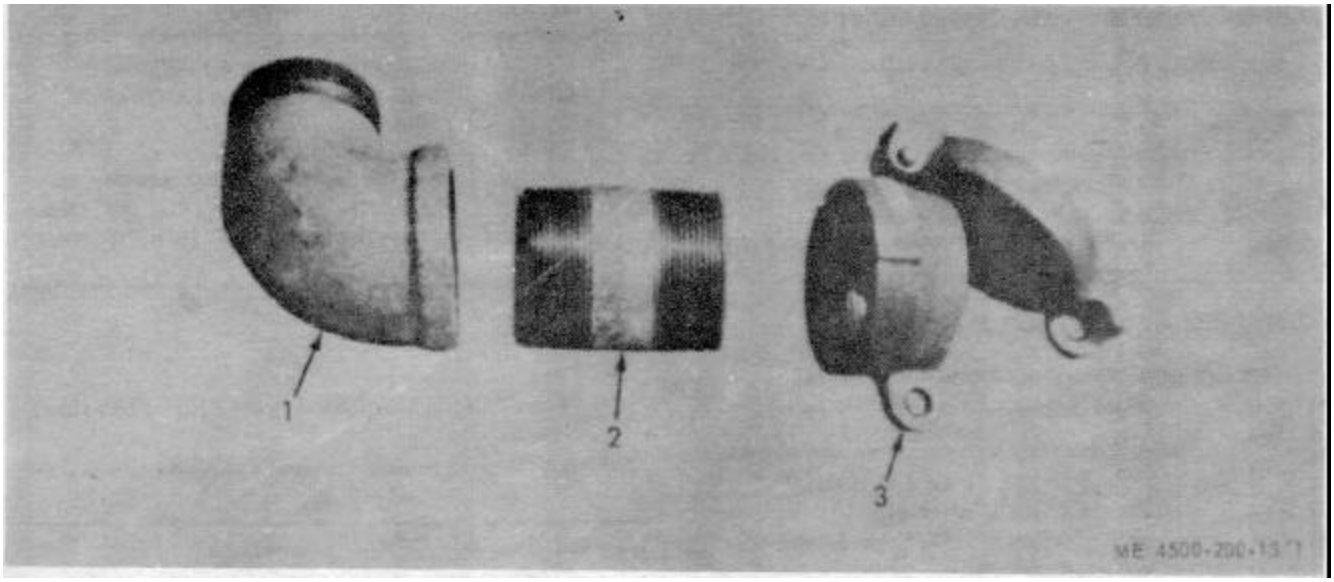


Figure 1. Fill and vent assembly, exploded view.

6. Manifold Assembly

The fuel manifold assembly consists of parts listed in table 2 and shown in figure 2. Either one or both of the outlets can be used by attaching the fuel inlet hose, furnished with type II, model 1941 space heater to the manifolds female coupling. The valves can be operated manually by turning the valve wheel clockwise, and provides an added safety feature by closing automatically when the valve surface reaches a temperature of 200° F.

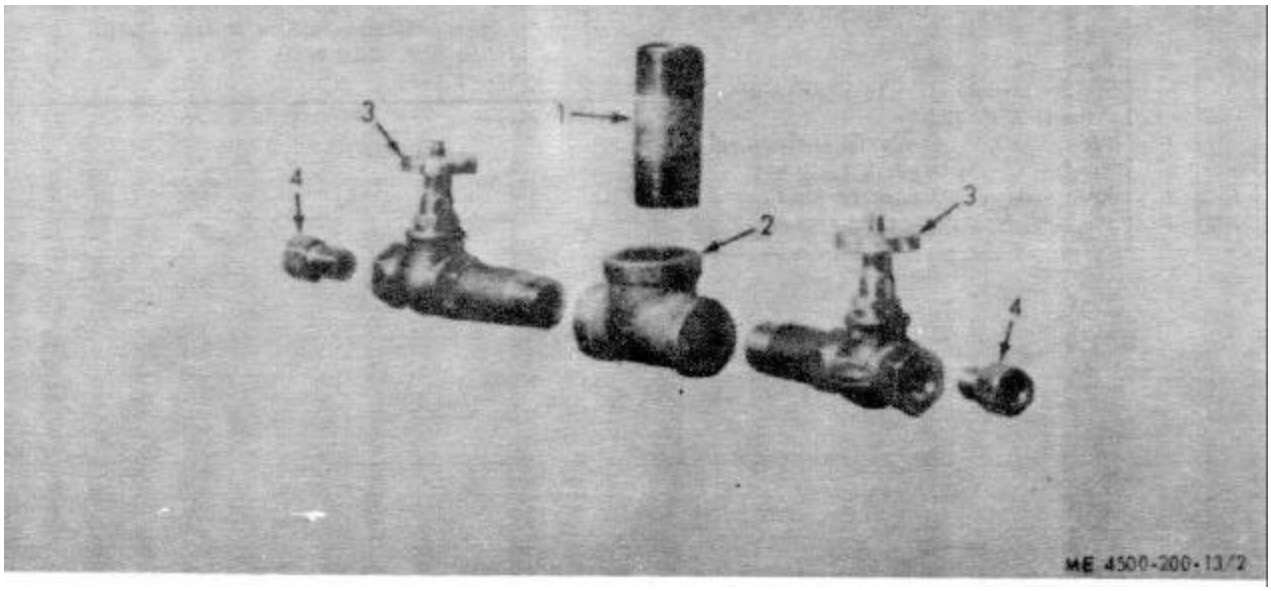


Figure 2. Manifold assembly, exploded view.

7. Drum Stand, 55-Gallon, Style A

Style A stand shown in figure 3 is constructed of commercial standard steel as stated in table 3. It will collapse into a 15- x 30- x 4-inch package by pushing the left and right legs together. Each leg is provided with pads of approximately 5 square inches to increase the bearing surface. The pad is constructed so that it will adjust itself to uneven surfaces and can be attached for a permanent installation or removed if desired.

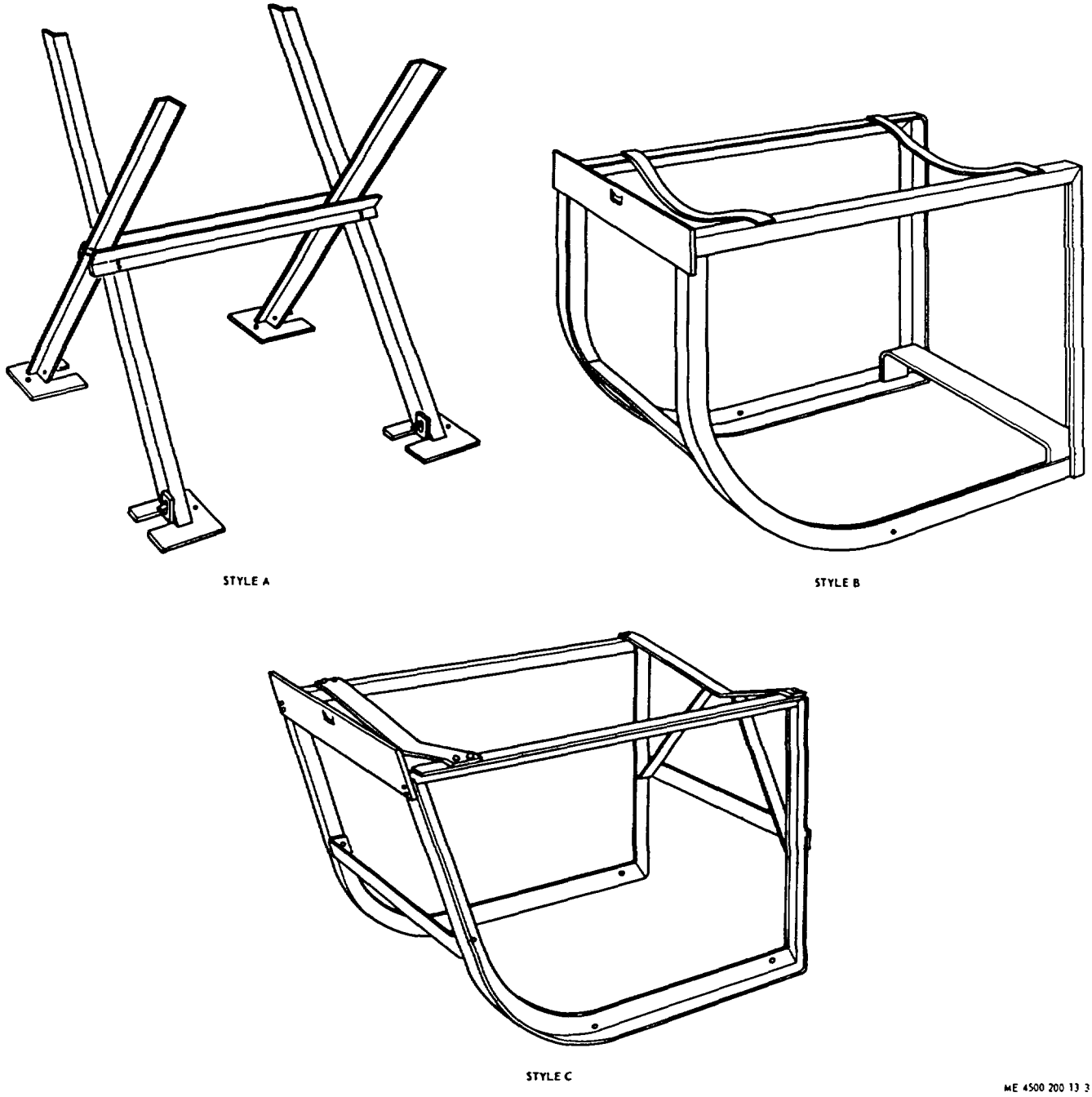


Figure 3. 55-Gallon drum stand, styles A, B, and C.

8. Drum Stand, 55-Gallon, Style B

Style B shown in figure 3 is constructed of commercial standard steel as stated in table 4. It is all welded and two 5/8-inch holes are provided in the base member for the insertion of wheels. This stand provides a means for one man to move a fully loaded 55-gallon drum from the upright position to a horizontal dispensing position. The dimensions are approximately 18 inches wide, 36 1/2 inches long and 20 1/2 inches high.

9. Drum Stand, 55-Gallon, Style C

Style C shown in figure 3 is constructed of commercial standard steel as stated in table 5. This style may be shipped disassembled. Six structural members and fourteen nuts, washers, and capscrews, make up the package whose size is 20 inches x 32 inches x 2 inches. About 15 minutes is required to assemble the stand. This stand also provides a means for one man to move a fully loaded 55-gallon drum from the upright position to a horizontal dispensing position.

SECTION IV
ASSEMBLY, FABRICATION, AND INSTALLATION INSTRUCTIONS

10. Fill and Vent Assembly

a. Refer to table 1 for the required parts.

b. Assemble and install parts as shown in figure 4.

11. Manifold Assembly

a. Refer to table 2 for the required parts.

b. Assemble and install parts as shown in figure 4.

12. Drum Stand, 55-Gallon, Style A

a. Refer to table 3 for the required material.

b. Fabricate and assemble material as shown in figure 5.

13. Drum Stand, 55-Gallon, Style B

a. Refer to table 4 for the required material.

b. Fabricate and assemble material as shown in figure 6.

14. Drum Stand, 55-Gallon, Style C

a. Refer to table 5 for the required material.

b. Fabricate and assemble material as shown in figure 7.

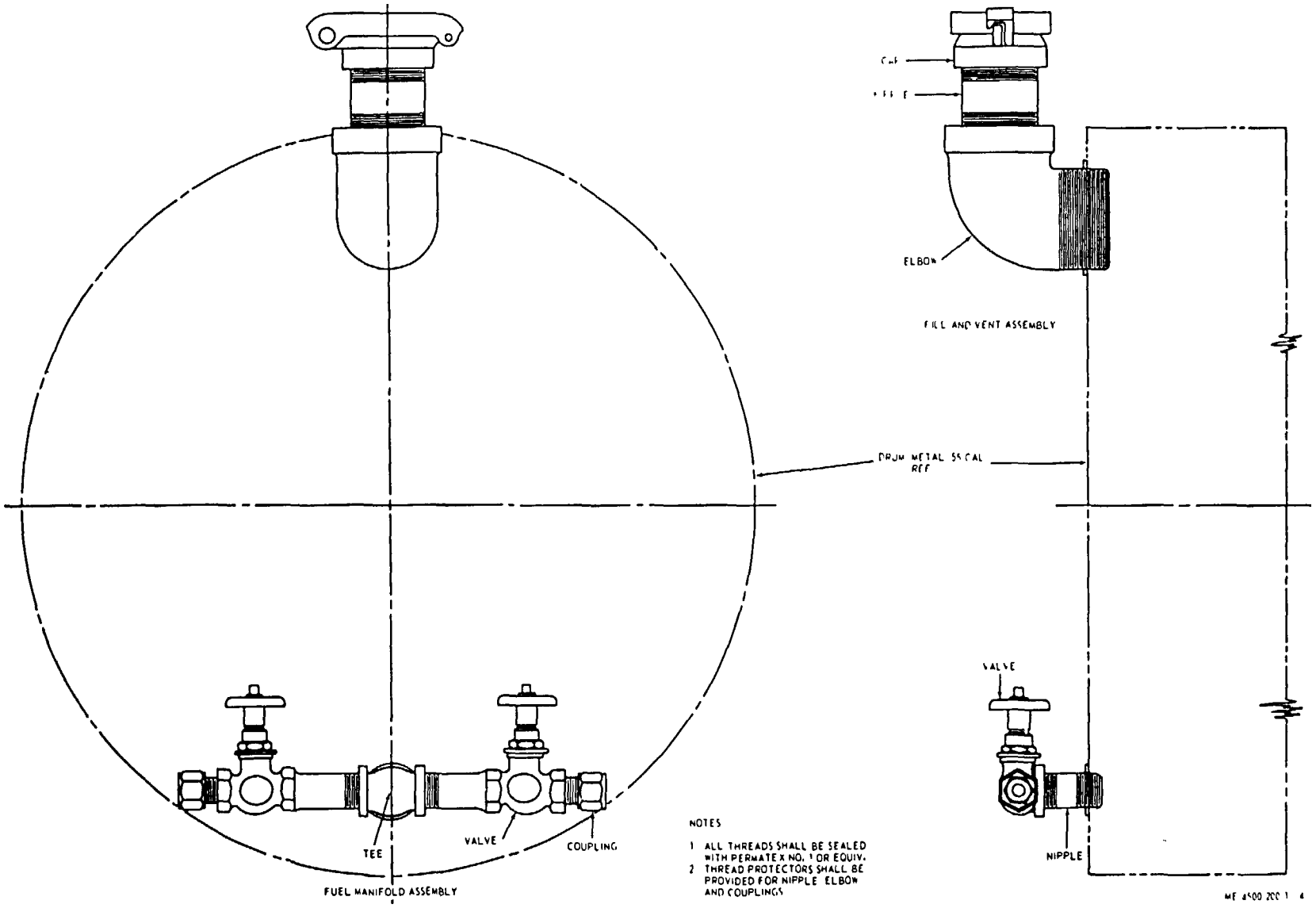


Figure 4. Fill and vent assembly and manifold assembly, assembled and installed

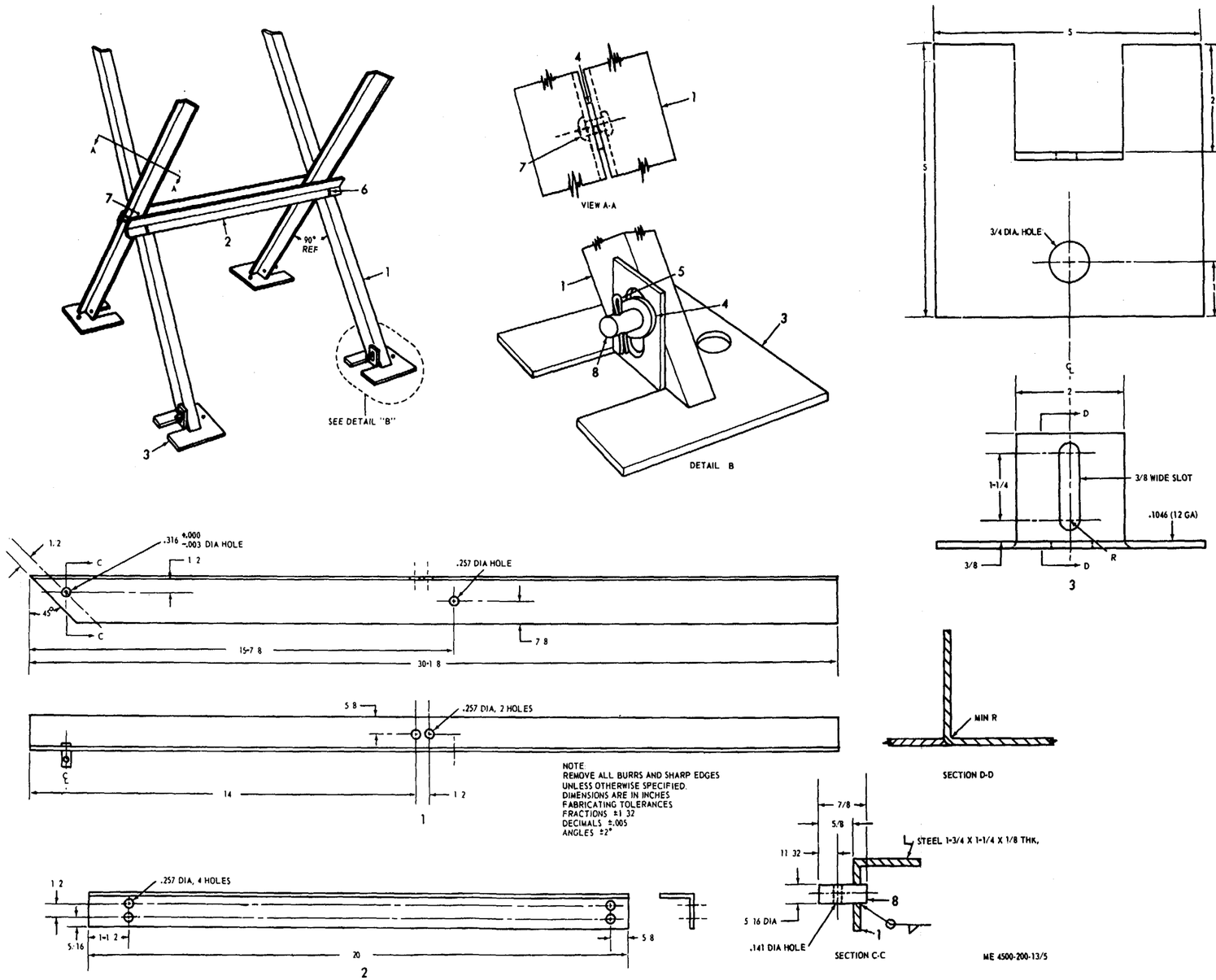
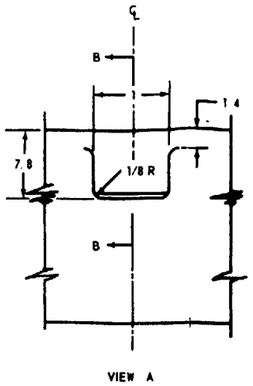
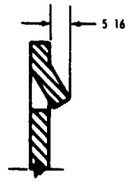


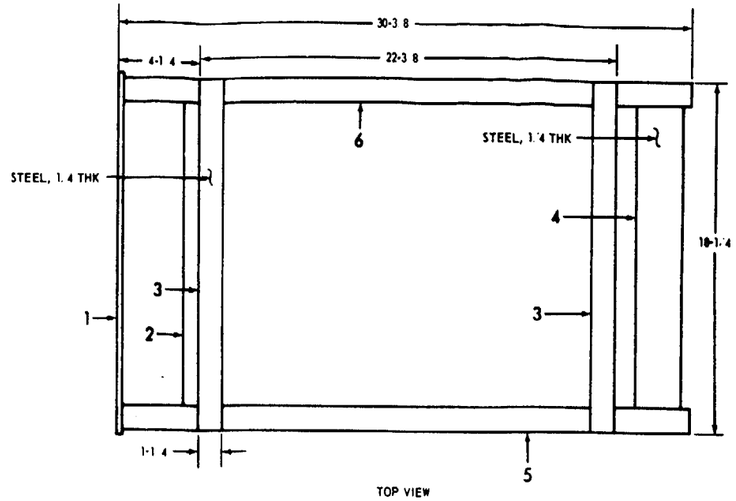
Figure 5. Fabrication and assembly of 55-gallon drum stand, style A.



VIEW A

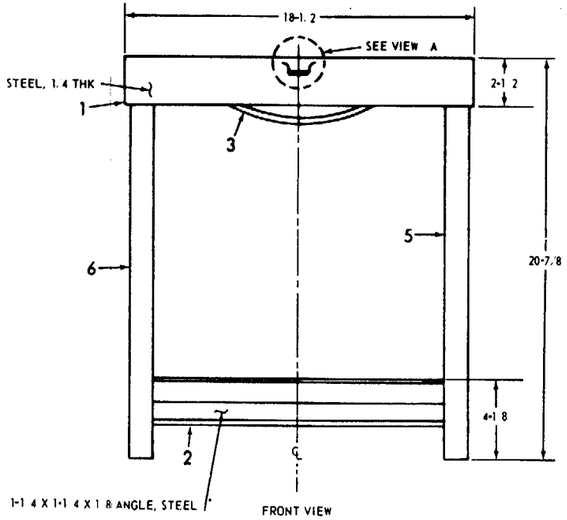


SECTION B-B

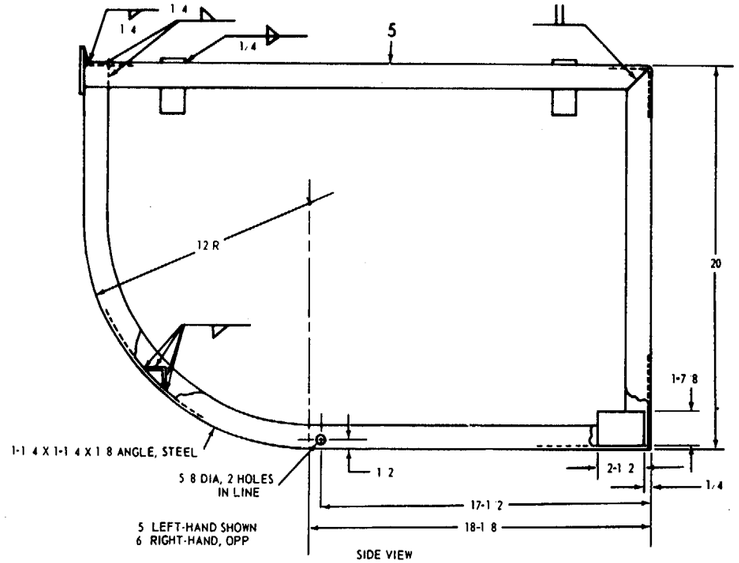


TOP VIEW

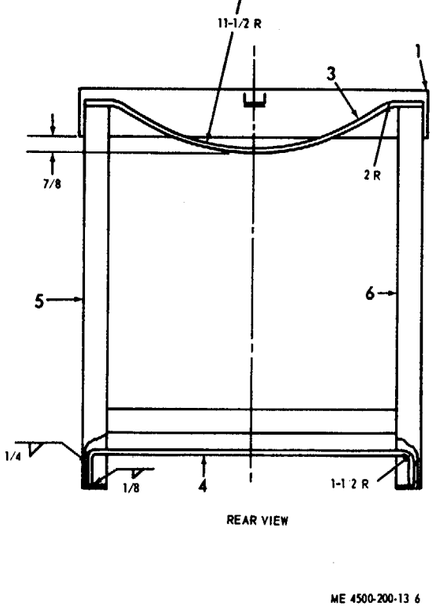
NOTE:
REMOVE ALL BURRS AND SHARP EDGES
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES
FABRICATING TOLERANCES IN FRACTIONS ±1/16



FRONT VIEW



SIDE VIEW



REAR VIEW

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Figure 6. Fabrication and assembly of 55-gallon drum stand, style B.

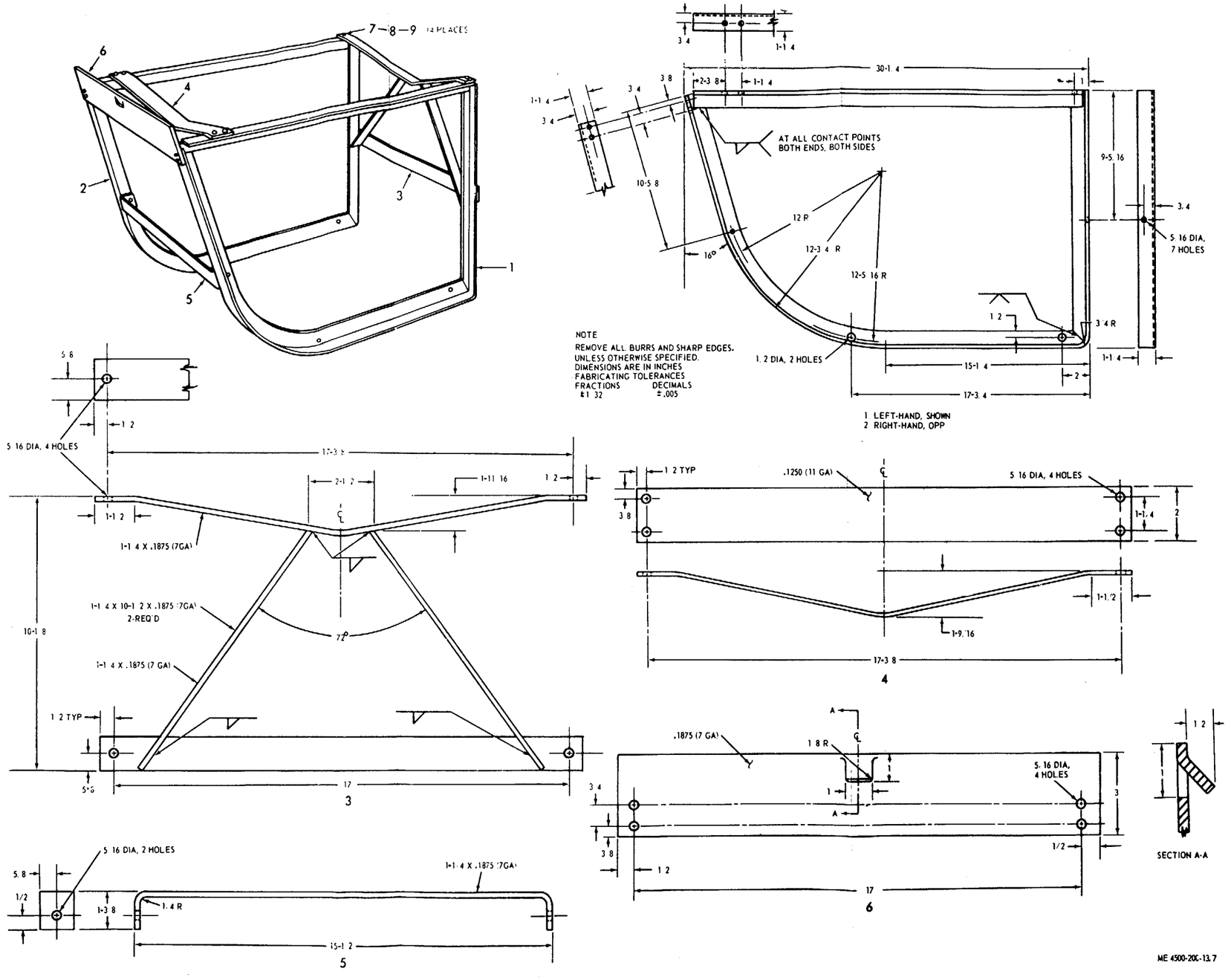

Figure 7. Fabrication and assembly of 55-gallon drum stand, style C.

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General United States Army,
The Adjutant General

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

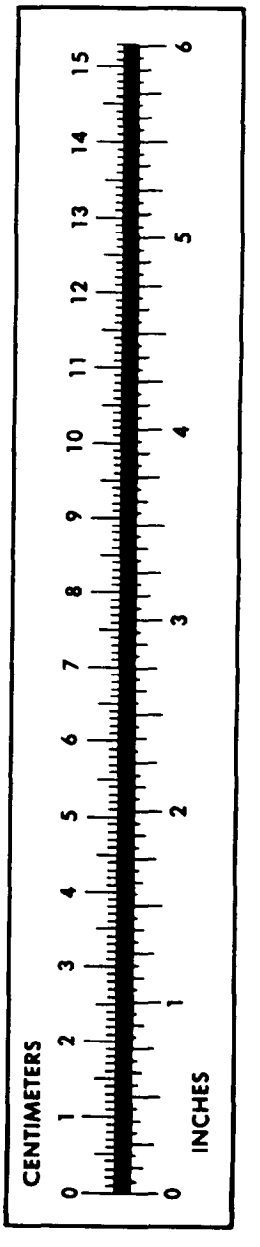
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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