

**Pressure**

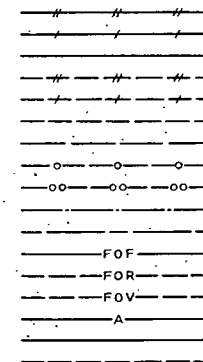
|                                  |   |                                                                                                                                                                                                                                                                    |
|----------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 lb per square inch             | = | $\left\{ \begin{array}{l} 144 \text{ lb per square foot} \\ 2.0360 \text{ in. mercury at } 32 \text{ F} \\ 2.0422 \text{ in. mercury at } 62 \text{ F} \\ 2.309 \text{ ft water at } 62 \text{ F} \\ 27.71 \text{ in. water at } 62 \text{ F} \end{array} \right.$ |
| 1 oz per square inch             | = | $\left\{ \begin{array}{l} 0.1276 \text{ in. mercury at } 62 \text{ F} \\ 1.732 \text{ in. water at } 62 \text{ F} \end{array} \right.$                                                                                                                             |
| 1 atmosphere                     | = | $\left\{ \begin{array}{l} 14.696 \text{ lb per square inch} \\ 2116 \text{ lb per square foot} \\ 33.94 \text{ ft water at } 62 \text{ F} \\ 30.01 \text{ in. mercury at } 62 \text{ F} \\ 29.921 \text{ in. mercury at } 32 \text{ F} \end{array} \right.$        |
| 1 in. water at 62 F (in vacuo)   | = | $\left\{ \begin{array}{l} 0.03609 \text{ lb per square inch} \\ 0.5774 \text{ oz per square inch} \\ 5.197 \text{ lb per square foot} \end{array} \right.$                                                                                                         |
| 1 ft water at 62 F (in vacuo)    | = | $\left\{ \begin{array}{l} 0.4330 \text{ lb per square inch} \\ 62.37 \text{ lb per square foot} \end{array} \right.$                                                                                                                                               |
| 1 in. mercury at 62 F (in vacuo) | = | $\left\{ \begin{array}{l} 0.4897 \text{ lb per square inch} \\ 7.335 \text{ oz per square inch} \\ 1.131 \text{ ft water at } 62 \text{ F} \\ 13.57 \text{ in. water at } 62 \text{ F} \end{array} \right.$                                                        |
| 1 in. mercury at 32 F (in vacuo) | = | 0.49115 lb per square inch                                                                                                                                                                                                                                         |

**Metric Units**

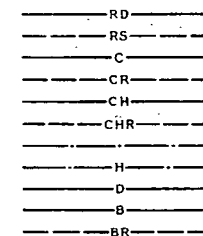
|                                                                                                       |   |                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 cm                                                                                                  | = | 0.3937 in. = 0.0328 ft                                                                                                                                                            |
| 1 in.                                                                                                 | = | 2.540 cm                                                                                                                                                                          |
| 1 m                                                                                                   | = | 3.281 ft                                                                                                                                                                          |
| 1 ft                                                                                                  | = | 0.3048 m                                                                                                                                                                          |
| 1 sq cm                                                                                               | = | 0.1550 sq in.                                                                                                                                                                     |
| 1 sq in.                                                                                              | = | 6.452 sq cm                                                                                                                                                                       |
| 1 sq m                                                                                                | = | 10.76 sq ft                                                                                                                                                                       |
| 1 sq ft                                                                                               | = | 0.09290 sq m                                                                                                                                                                      |
| 1 cu cm                                                                                               | = | 0.06102 cu in.                                                                                                                                                                    |
| 1 cu in.                                                                                              | = | 16.39 cu cm                                                                                                                                                                       |
| 1 cu m                                                                                                | = | 35.31 cu ft                                                                                                                                                                       |
| 1 cu ft                                                                                               | = | 0.02832 cu m                                                                                                                                                                      |
| 1 liter                                                                                               | = | 1000 cu cm = 0.2642 gal                                                                                                                                                           |
| 1 kg                                                                                                  | = | 2.205 lb (avdp)                                                                                                                                                                   |
| 1 lb                                                                                                  | = | 0.4536 kg                                                                                                                                                                         |
| 1 metric ton                                                                                          | = | 2205 lb (avdp)                                                                                                                                                                    |
| 1 gram                                                                                                | = | 0.002205 lb (avdp)                                                                                                                                                                |
| 1 kilometer per hour                                                                                  | = | 0.6214 mph                                                                                                                                                                        |
| 1 gram per square centimeter                                                                          | = | $\left\{ \begin{array}{l} 0.02905 \text{ in. mercury at } 62 \text{ F} \\ 0.3942 \text{ in. water at } 62 \text{ F} \end{array} \right.$                                          |
| 1 kg per sq cm (metric atmosphere)                                                                    | = | 14.22 lb per square inch                                                                                                                                                          |
| 1 gram per cubic centimeter                                                                           | = | $\left\{ \begin{array}{l} 0.03613 \text{ lb per cubic inch} \\ 62.43 \text{ lb per cubic foot} \end{array} \right.$                                                               |
| 1 dyne                                                                                                | = | 0.00007233 pounds                                                                                                                                                                 |
| 1 absolute joule                                                                                      | = | $\left\{ \begin{array}{l} 10,000,000 \text{ ergs} \\ 0.7376 \text{ ft-lb} \end{array} \right.$                                                                                    |
| 1 Int. joule                                                                                          | = | 0.7378 ft-lb                                                                                                                                                                      |
| 1 metric horsepower                                                                                   | = | $\left\{ \begin{array}{l} 75 \text{ kg-m per second} \\ 0.986 \text{ hp (U. S.)} \end{array} \right.$                                                                             |
| 1 I. T. kilocalorie per kilogram                                                                      | = | 1.8 Btu per pound                                                                                                                                                                 |
| 1 I.T. calorie per square centimeter                                                                  | = | 3.687 Btu per square foot                                                                                                                                                         |
| 1 I.T. calorie per (second) (square centimeter) for a temperature gradient of 1 C. deg per centimeter | = | $\left\{ \begin{array}{l} 2903 \text{ Btu per (hour) (square foot)} \\ \text{for a temperature gradient of } 1 \text{ F} \\ \text{deg per inch of thickness} \end{array} \right.$ |

**GRAPHICAL SYMBOLS FOR DRAWINGS\*****GRAPHICAL SYMBOLS FOR DRAWINGS****HEATING**

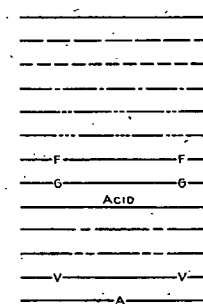
1. High Pressure Steam
2. Medium Pressure Steam
3. Low Pressure Steam
4. High Pressure Return
5. Medium Pressure Return
6. Low Pressure Return
7. Boiler Blow Off
8. Condensate or Vacuum Pump Discharge
9. Feedwater Pump Discharge
10. Make Up Water
11. Air Relief Line
12. Fuel Oil Flow
13. Fuel Oil Return
14. Fuel Oil Tank Vent
15. Compressed Air
16. Hot Water Heating Supply
17. Hot Water Heating Return

**Piping****AIR CONDITIONING**

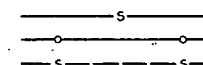
18. Refrigerant Discharge
19. Refrigerant Suction
20. Condenser Water Flow
21. Condenser Water Return
22. Circulating Chilled or Hot Water Flow
23. Circulating Chilled or Hot Water Return
24. Make Up Water
25. Humidification Line
26. Drain
27. Brine Supply
28. Brine Return

**PLUMBING**

29. Soil, Waste or Leader (Above Grade)
30. Soil, Waste or Leader (Below Grade)
31. Vent
32. Cold Water
33. Hot Water
34. Hot Water Return
35. Fire Line
36. Gas
37. Acid Waste
38. Drinking Water Flow
39. Drinking Water Return
40. Vacuum Cleaning
41. Compressed Air

**SPRINKLERS**

42. Main Supplies
43. Branch and Head
44. Drain



\*Graphical Symbols for Use on Drawings in Mechanical Engineering, Z32.2-1941 (American Standards Association).