

# FLUID POWER DATA

## EQUIVALENTS/ MISCELLANEOUS INFORMATION



### SHEARING FORCE

MATERIAL	SHEAR STRENGTH LBS/IN <sup>2</sup>
ALUMINUM	21,000
BRASS	37,000
COPPER, ROLLED	28,000
STEEL, MILD	50,000
STEEL, 50 CARBON	72,000
STEEL, COLD DRAWN	58,000
STAINLESS, 18-8	70,000
LEAD	4,000

GAUGE NO.	SHEET METAL THICKNESS	GAUGE NO.	SHEET METAL THICKNESS
3	.2391	21	.0329
4	.2242	22	.0299
5	.2092	23	.0269
6	.1943	24	.0239
7	.1793	25	.0209
8	.1644	26	.0179
9	.1495	27	.0164
10	.1345	28	.0149
11	.1196	29	.0135
12	.1046	30	.0120
13	.0897	31	.0105
14	.0747	32	.0097
15	.0673	33	.0090
16	.0598	34	.0082
17	.0538	35	.0075
18	.0478	36	.0067
19	.0418	37	.0064
20	.0359	38	.0060

F = C (T) SF = FORCE, LBS

C = CUT LENGTH OR CIRCUMFERENCE, IN

T = THICKNESS, INS

S = SHEAR STRENGTH, LBS/IN<sup>2</sup>

### EQUIVALENTS

#### FLUID POWER EQUIVALENTS

- 1 U.S. GALLON:
  - = 231 CUBIC INCHES
  - = 128 OUNCES (LIQUID)
  - = 133.37 OUNCES (WEIGHT)
  - = 8.3356 POUNDS
  - = 3.785 LITERS
- 1 BEER= 12 OUNCES = 21.65 CU-IN
- 1 IMPERIAL GALLON = 1.2 U.S. GAL.
- 1 LITER = 0.2642 U.S. GALLONS
- 1 CUBIC FOOT:
  - = 7.48 GALLONS
  - = 1728 CUBIC INCHES
  - = 62.4 POUNDS (WATER)
- 1 CU. FT. WATER WEIGHS 62.4 LBS
- 1 BAR AT SEA LEVEL:
  - = 14.504 PSI
  - = 0.98692 ATMOSPHERE
  - = 33.6 FOOT WATER COLUMN
  - = 41 FOOT OIL COLUMN

- 1 HORSEPOWER:
  - = 33,000 FT. LBS. PER MINUTE
  - = 550 FT. LBS. PER SECOND
  - = 42.4 BTU PER MINUTE
  - = 2545 BTU PER HOUR
  - = 746 WATTS OR 0.746 KW
- 1 PSI = 2.0416 "HG  
= 27.71 "WATER  
= 0.0689 BAR

- 1 ATMOSPHERE:
  - = 1.013 BARS
  - = 29.921 "HG
  - = 14.696 PSI
  - = 760 MM HG
- 1 FOOT WATER COLUMN = 0.432 PSI
- 1 FOOT OIL COLUMN = .0354 PSI
- 1 BARREL OIL = 42 GALLONS
- 1 MICRO-METER
  - = 1 MILLIONTH OF METER (MICRON)
  - = 0.001 METER
  - = 0.00004 INCH

25 MICRON-METERS = 0.001 INCH

5 FT/MIN = 1IN/SEC

APPROX. 1/2 PSI DECREASE PER 1000 FOOT OF ELEVATION

- 1 "HG = 0.490 PSI  
= 1.131 FT. WATER

### SCREEN SIZES

U.S. SIEVE NO.	OPENING IN INCHES	OPENING IN MICRONS
50	.0117	297
60	.009	238
70	.0083	210
100	.0059	149
140	.0041	105
200	.0029	74
270	.0021	53
325	.0017	44
PAPER	.00039	10
PAPER	.00019	5

### RELATIVE SIZES OF PARTICLES AND COMPARISON OF DIMENSIONAL UNITS

SUBSTANCE	MICRON	INCH
GRAIN OF TABLE SALT	100	0.004
HUMAN HAIR	70	0.0027
LOWER LIMIT OF VISIBILITY	40	0.22158
WHITE BLOOD CELLS	25	0.001
TALCUM POWDER	10	0.0004
RED BLOOD CELLS	8	0.0003
BACTERIA (AVERAGE)	2	0.00008

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