

Grease Volume

Grease volume is often expressed in cubic inches and cubic centimeters. Grease weights (usually expressed in grams) can be converted to cubic centimeters (volume) by dividing the weight by the specific gravity of the grease. **EXAMPLE:** The volume of one gram (weight) of grease with a specific gravity of .88 is 1.14 cubic centimeters ($1 / .88 = 1.136 \text{ cc}$)

The Following Charts Show Grease Volumes Of Paraboloids and Spheres

VOLUME BASED ON PARABOLOID HEIGHT & DIAMETER

Paraboloid Volume = V; d = diameter; h = height
 $V = .3927d^2 h$

The photo on the right shows the results of a typical grease extrusion onto a flat surface from an open orifice type nozzle. The shape is similar to a paraboloid. The volumes shown are based on the height and diameter being equal.



Volume in cubic inches and (cubic centimeters)	Height in inches and (mm)	Diameter in inches and (mm)
.001 (.016)	.137 (3.48)	.137 (3.48)
.002 (.033)	.172 (4.37)	.172 (4.37)
.003 (.049)	.197 (5.00)	.197 (5.00)
.004 (.066)	.217 (5.51)	.217 (5.51)
.005 (.082)	.234 (5.94)	.234 (5.94)
.006 (.098)	.248 (6.30)	.248 (6.30)
.007 (.115)	.261 (6.63)	.261 (6.63)
.008 (.131)	.273 (6.93)	.273 (6.93)
.009 (.147)	.284 (7.21)	.284 (7.21)
.010 (.164)	.294 (7.47)	.294 (7.47)
.011 (.180)	.304 (7.72)	.304 (7.72)
.012 (.197)	.313 (7.95)	.313 (7.95)

VOLUME BASED ON SPHERE DIAMETER

Sphere Volume = V; r = radius
 $V = 4\pi r^3 / 3$

The sphere is not a natural grease dispense shape, but is included because it is familiar. **EXAMPLE:** The .177 caliber (4.5 mm) diameter of a BB (of Daisy Red Rider fame) is easily visualized. A 1/4" diameter ball bearing is also easily visualized by many.



Volume in cubic inches and (cubic centimeters)	Diameter in inches and (mm)	Volume in cubic inches and (cubic centimeters)	Diameter in inches and (mm)
.0006 (.010)	.105 (2.67)	.009 (.147)	.26 (6.6)
.001 (.016)	.1241 (3.15)	.014 (.24)	.30 (7.62)
.002 (.033)	.1563 (3.97)	.06 (.98)	.50 (12.7)
.003 (.049)	.1790 (4.55)	.07 (1.14)	.54 (13.7)
.004 (.066)	.1970 (5.00)	.113 (1.85)	.60 (15.7)
.005 (.082)	.2122 (5.39)	.25 (4.10)	.78 (19.8)
.006 (.098)	.2254 (5.73)	.5 (8.19)	.98 (24.9)

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