



# Internal Flush Drillpipe Capacities & Displacement Drill Collar Capacities & Displacement

## INTERNAL FLUSH DRILLPIPE CAPACITIES & DISPLACEMENT

O. D. (in.)	Weight (lbs./ft.)	I. D. (in.)	Capacity (Gal./ft.)	Displacement (Gal./ft.)
1.900	3.75	1.500	.09	.05
2.375	4.80	2.000	.16	.07
	4.85	1.995	.16	.07
	6.65	1.815	.13	.12
2.875	6.45	2.469	.25	.09
	6.85	2.441	.24	.09
	8.35	2.323	.22	.12
	10.40	2.151	.19	.17
3.500	8.50	3.063	.38	.12
	9.50	2.992	.37	.13
	11.20	2.900	.34	.16
	13.30	2.764	.31	.21
	15.30	2.602	.28	.24
3.875	14.50	3.181	.41	.20
4.000	11.00	3.500	.50	.15
	11.85	3.476	.49	.16
	14.00	3.340	.45	.24
	15.30	3.244	.43	.29
4.500	12.75	4.000	.65	.18
	13.75	3.958	.63	.19
	16.60	3.826	.60	.23
	18.15	3.754	.58	.25
	20.00	3.640	.54	.32
4.750	19.08	4.000	.65	.27
5.000	14.20	4.500	.83	.19
	15.00	4.408	.79	.23
	19.50	4.276	.75	.27
	20.50	4.214	.73	.29
6.625	22.20	6.065	1.49	.29
	25.20	5.9635	1.47	.32
	31.90	5.761	1.35	.44
7.625	28.75	6.965	1.98	.39
	29.25	6.969	1.98	.39
8.625	40.00	7.825	2.49	.54
	46.50	7.625	2.37	.66

## DRILL COLLAR CAPACITIES & DISPLACEMENT

O. D. (in.)	I. D. (in.)	Capacity (Gal./ft.)	Displacement (Gal./ft.)
3.500	1.500	.09	.41
4.125	2.000	.16	.53
4.750	2.000	.16	.76
5.000	2.250	.21	.81
6.000	2.250	.21	1.27
	2.813	.32	1.75
6.250	2.250	.21	1.39
	2.813	.32	1.27
6.500	2.250	.21	1.52
	2.813	.32	1.40
6.750	2.250	.21	1.65
7.000	2.250	.21	1.80
	2.813	.32	1.68
7.250	2.813	.32	1.82
7.750	2.813	.32	2.13
8.000	2.813	.32	2.29
8.250	2.813	.32	2.45
9.000	2.813	.32	2.30
9.500	3.000	.37	3.32
9.750	3.000	.37	3.51
10.00	3.000	.37	3.71

### CAPACITY/DISPLACEMENT OF HOLE AND PIPE EQUATIONS

**Capacity or Displacement in Gals./ft. =**

$$(\text{Diameter in inches})^2 + 24.5$$

**Displacement of Open Pipe =**

(use consistent units)

$$\text{Displacement of Closed Pipe} - \text{Capacity of Pipe}$$

**Annular capacity per unit length=**

(use consistent units)

$$\text{Capacity of hole} - \text{displacement of pipe}$$

**Annular Volume (use consistent units) =**

$$\text{Annular capacity} \times \text{length}$$

**Surface to bit time in minutes =**

(use consistent units)

$$\text{Capacity of drill string} + \text{pump output (units/minute)}$$

**Surface to bit strokes (use consistent units) =**

$$\text{Capacity of drill string} + \text{pump output (units/stroke)}$$

### PRESSURE GRADIENT CALCULATIONS

**Hydrostatic pressure (psi) =**

$$\text{Fluid weight (ppg)} \times \text{depth (ft)} \times 0.052$$

**Gradient (PSI/FT) =**

$$\text{Fluid weight (ppg)} \times 0.052$$