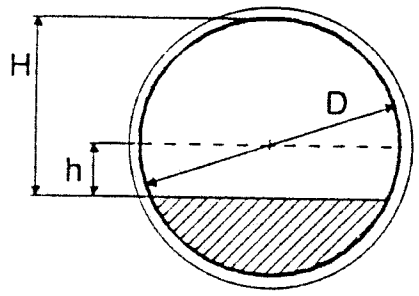
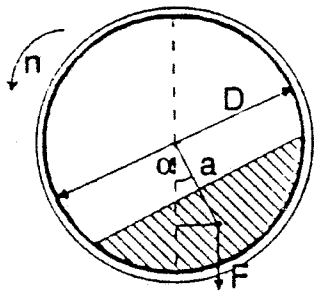


D:	Effective diameter of compartment	[m]
L:	Effective length of compartment	[m]
V:	Volume of compartment $V = \pi / 4 \cdot D^2 \cdot L$	[m³]
h:	Centre distance (h/D used in page A.4) $h = H - D/2$ $h/D = H/D - ½$	[m] [-]
H:	Free height $H = (h/D + ½) \cdot D$	[m]
q:	Specific charge (from page A.4)	[%]
w:	Bulk weight (from page A.5)	[t/m³]
F:	Charge $F = q/100 \cdot w \cdot V$	[t]



Compartment power consumption:

a:	Arm of gravity in relation to mill diameter	[-]
n:	Rotational speed of the mill	[rpm]
g:	Acceleration of gravity	[m/s²]
α:	Angle of displacement	[°]

N: Power consumption by compartment at mill shell

$$N = F \cdot g \cdot D \cdot a \cdot \sin\alpha \cdot \pi \cdot n/60 \qquad \textit{[kW(net)]}$$

sinα is the torque factor μ. Standard values from page A.4.

$$N = 0.514 \cdot F \cdot n \cdot \mu \cdot D \cdot a \qquad \textit{[kW(net)]}$$

Where the constant 0.514 is $(g \cdot \pi / 60)$

Critical speed:

The critical speed n_c is the speed, where the centrifugal force at the mill lining is equal to the gravitational force:

$$n_c = \frac{42.3}{\sqrt{D}} \qquad \text{[rpm]}$$

Normal mill speeds are 70 – 80% of the critical speed.

h/D	a	q	h/D	a	q
0.000	0.425	50.0	0.200	0.647	25.2
0.005	0.430	49.4	0.205	0.653	24.6
0.010	0.435	48.7	0.210	0.659	24.1
0.015	0.441	48.1	0.215	0.665	23.5
0.020	0.446	47.5	0.220	0.670	22.9
0.025	0.452	46.8	0.225	0.676	22.4
0.030	0.457	46.2	0.230	0.682	21.8
0.035	0.462	45.6	0.235	0.688	21.2
0.040	0.468	44.9	0.240	0.693	20.7
0.045	0.473	44.3	0.245	0.699	20.1
0.050	0.479	43.6	0.250	0.705	19.6
0.055	0.484	43.0	0.255	0.711	19.0
0.060	0.490	42.4	0.260	0.717	18.5
0.065	0.495	41.8	0.265	0.722	17.9
0.070	0.501	41.1	0.270	0.728	17.4
0.075	0.507	40.5	0.275	0.734	16.8
0.080	0.512	39.9	0.280	0.740	16.3
0.085	0.518	39.2	0.285	0.746	15.8
0.090	0.523	38.6	0.290	0.751	15.3
0.095	0.529	38.0	0.295	0.757	14.8
0.100	0.534	37.4	0.300	0.763	14.2
0.105	0.540	36.7	0.305	0.769	13.7
0.110	0.546	36.1	0.310	0.775	13.2
0.115	0.551	35.5	0.315	0.781	12.7
0.120	0.557	34.9	0.320	0.786	12.2
0.125	0.562	34.3	0.325	0.792	11.8
0.130	0.568	33.6	0.330	0.798	11.3
0.135	0.574	33.0	0.335	0.804	10.8
0.140	0.579	32.4	0.340	0.810	10.3
0.145	0.585	31.8	0.345	0.816	9.87
0.150	0.591	31.2	0.350	0.822	9.41
0.155	0.596	30.6	0.355	0.828	8.95
0.160	0.602	30.0	0.360	0.833	8.51
0.165	0.608	29.4	0.365	0.839	8.07
0.170	0.613	28.8	0.370	0.845	7.64
0.175	0.619	28.2	0.375	0.851	7.22
0.180	0.625	27.6	0.380	0.857	6.80
0.185	0.630	27.0	0.385	0.863	6.39
0.190	0.636	26.4	0.390	0.869	5.99
0.195	0.642	25.8	0.395	0.875	5.59

a can also be calculated as:

$$a = 0.009 \cdot (96.7 - q) \qquad [-]$$

Material	Grinding	Lining	Internal fittings	Media Type	Media w [t/m³]	Torque μ
Cement and raw meal (dry)	Coarse and medium	Steel	None	Balls	4.3	0.73
			None	Rods	6.0	0.55
			Danula	Balls	4.3	0.75
			Sonex	Balls	4.3	0.66
	Fine	Steel	None	Balls	4.5	0.69
			None	Cylpebs	4.7	0.73
			None	Minipebs	4.7	0.64
			Danula	Balls	4.5	0.71
			Danula	Cylpebs	4.7	0.75
			Danula	Minipebs	4.7	0.66
	All	Steel	None	Ceramic	1.9	0.75
		Silex	None	Stone	1.5	0.75
Slurry (wet)	Coarse and medium	Steel	None	Balls	4.3	0.66
			None	Rods	6.0	0.50
			Danula	Balls	4.3	0.67
			Sonex	Balls	4.3	0.59
	Fine	Steel	None	Balls	4.5	0.66
			None	Cylpebs	4.7	0.66
			Danula	Balls	4.5	0.67
			Danula	Cylpebs	4.7	0.67
	All	Steel	None	Ceramic	1.9	0.85
			None	Stone	1.5	0.85
Wash drum		Silex	Lifters	Stone	1.5	0.85
Coal	Coarse	Steel	None	Balls	4.3	0.69
	Medium		None	Balls	4.5	0.69
	Medium		None	Cylpebs	4.7	0.69
	Medium		Danula	Cylpebs	4.7	0.71