



## Cylinder Force Output Chart

(working pressure in BAR)

Cylinder Bore	Rod Size	2 BAR Extend	2 BAR Retract	3 BAR Extend	3 BAR Retract	4 BAR Extend	4 BAR Retract	5 BAR Extend	5BAR Retract	6 BAR Extend	6 BAR Retract	7 BAR Extend	7 BAR Retract	8 BAR Extend	8 BAR Retract	9 BAR Extend	9 BAR Retract	10 BAR Extend	10 BAR Retract
8 mm	3 mm	1.0	0.9	1.5	1.3	2.0	1.7	2.5	2.2	3.0	2.6	3.5	3.0	4.0	3.5	4.5	3.9	5.0	4.3
10 mm	4 mm	1.6	1.3	2.4	2.0	3.1	2.6	3.9	3.3	4.7	4.0	5.5	4.6	6.3	5.3	7.1	5.9	7.9	6.6
12 mm	6 mm	2.3	1.7	3.4	2.5	4.5	3.4	5.7	4.2	6.8	5.1	7.9	5.9	9.0	6.8	10.2	7.6	11.3	8.5
16 mm	6 mm	4.0	3.5	6.0	5.2	8.0	6.9	10.1	8.6	12.1	10.4	14.1	12.1	16.1	13.8	18.1	15.6	20.1	17.3
20 mm	8 mm	6.3	5.3	9.4	7.9	12.6	10.6	15.7	13.2	18.8	15.8	22.0	18.5	25.1	21.1	28.3	23.8	31.4	26.4
25 mm	10 mm	9.8	8.2	14.7	12.4	19.6	16.5	24.5	20.6	29.5	24.7	34.4	28.9	39.3	33.0	44.2	37.1	49.1	41.2
32 mm	12 mm	16.1	13.8	24.1	20.7	32.2	27.6	40.2	34.6	48.3	41.5	56.3	48.4	64.3	55.3	72.4	62.2	80.4	69.1
40 mm	16 mm	25.1	21.1	37.7	31.7	50.3	42.2	62.8	52.8	75.4	63.3	88.0	73.9	100.5	84.4	113.1	95.0	125.7	105.6
50 mm	20 mm	39.3	33.0	58.9	49.5	78.5	66.0	98.2	82.5	117.8	99.0	137.4	115.5	157.1	131.9	176.7	148.4	196.4	164.9
63 mm	20 mm	62.3	56.1	93.5	84.1	124.7	112.1	155.9	140.2	187.0	168.2	218.2	196.2	249.4	224.2	280.6	252.3	311.7	280.3
80 mm	25 mm	100.5	90.7	150.8	136.1	201.1	181.4	251.3	226.8	301.6	272.1	351.9	317.5	402.1	362.9	452.4	408.2	502.7	453.6
100 mm	25 mm	157.1	147.3	235.6	220.9	314.2	294.5	392.7	368.2	471.2	441.8	549.8	515.4	628.3	589.1	706.9	662.7	785.4	736.3
125 mm	32 mm	245.4	229.4	368.2	344.0	490.9	458.7	613.6	573.4	736.3	688.1	859.0	802.7	981.8	917.4	1104.5	1032.1	1227.2	1146.8
160 mm	40 mm	402.1	377.0	603.2	565.5	804.2	754.0	1005.3	942.5	1206.4	1131.0	1407.4	1319.5	1608.5	1508.0	1809.6	1696.5	2010.6	1885.0
200 mm	40 mm	628.3	603.2	942.5	904.8	1256.6	1206.4	1570.8	1508.0	1885.0	1809.6	2199.1	2111.2	2513.3	2412.7	2827.4	2714.3	3141.6	3015.9
250 mm	50 mm	981.8	942.5	1472.6	1413.7	1963.5	1885.0	2454.4	2356.2	2945.3	2827.4	3436.1	3298.7	3927.0	3769.9	4417.9	4241.2	4908.8	4712.4

### Theoretical force output in daN

(decca Newtons - tens of Newtons - approximates Kilograms Force)

1 daN = approx 2.25 lbs force

Actual cylinder efficiency varies with each application.

60% to 80% efficiency can generally be assumed (with no side loading)

(1 BAR approximates 100 kPa)



## Cylinder Force Output Chart (working pressure in psi)

Cylinder Bore	Rod Size	30 psi Extend	30 psi Retract	50 psi Extend	50 psi Retract	70 psi Extend	70 psi Retract	80 psi Extend	80 psi Retract	90 psi Extend	90 psi Retract	100 psi Extend	100 psi Retract	110 psi Extend	110 psi Retract	120 psi Extend	120 psi Retract
8 mm	3 mm	1.0	0.9	1.7	1.5	2.4	2.1	2.8	2.4	3.1	2.7	3.5	3.0	3.8	3.3	4.2	3.6
10 mm	4 mm	1.6	1.4	2.7	2.3	3.8	3.2	4.3	3.6	4.9	4.1	5.4	4.5	6.0	5.0	6.5	5.5
12 mm	6 mm	2.3	1.8	3.9	2.9	5.5	4.1	6.2	4.7	7.0	5.3	7.8	5.8	8.6	6.4	9.4	7.0
16 mm	6 mm	4.2	3.6	6.9	6.0	9.7	8.3	11.1	9.5	12.5	10.7	13.9	11.9	15.2	13.1	16.6	14.3
20 mm	8 mm	6.5	5.5	10.8	9.1	15.2	12.7	17.3	14.6	19.5	16.4	21.7	18.2	23.8	20.0	26.0	21.8
25 mm	10 mm	10.2	8.5	16.9	14.2	23.7	19.9	27.1	22.7	30.5	25.6	33.8	28.4	37.2	31.3	40.6	34.1
32 mm	12 mm	16.6	14.3	27.7	23.8	38.8	33.4	44.4	38.1	49.9	42.9	55.5	47.7	61.0	52.4	66.5	57.2
40 mm	16 mm	26.0	21.8	43.3	36.4	60.6	50.9	69.3	58.2	78.0	65.5	86.6	72.8	95.3	80.1	104.0	87.3
50 mm	20 mm	40.6	34.1	67.7	56.9	94.8	79.6	108.3	91.0	121.8	102.3	135.4	113.7	148.9	125.1	162.5	136.5
63 mm	20 mm	64.5	58.0	107.5	96.6	150.4	135.3	171.9	154.6	193.4	173.9	214.9	193.3	236.4	212.6	257.9	231.9
80 mm	25 mm	104.0	93.8	173.3	156.4	242.6	218.9	277.3	250.2	311.9	281.5	346.6	312.7	381.2	344.0	415.9	375.3
100 mm	25 mm	162.5	152.3	270.8	253.8	379.1	355.4	433.2	406.1	487.4	456.9	541.5	507.7	595.7	558.4	649.8	609.2
125 mm	32 mm	253.8	237.2	423.1	395.3	592.3	553.5	676.9	632.5	761.5	711.6	846.1	790.7	930.7	869.7	1015.3	948.8
160 mm	40 mm	415.9	389.9	693.1	649.8	970.4	909.7	1109.0	1039.7	1247.6	1169.7	1386.3	1299.6	1524.9	1429.6	1663.5	1559.6
200 mm	40 mm	649.8	623.8	1083.0	1039.7	1516.2	1455.6	1732.8	1663.5	1949.5	1871.5	2166.1	2079.4	2382.7	2287.4	2599.3	2495.3
250 mm	50 mm	1015.3	974.7	1692.2	1624.5	2369.1	2274.4	2707.6	2599.3	3046.0	2924.2	3384.5	3249.1	3722.9	3574.0	4061.4	3898.9

### Theoretical force output in daN

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