

## Theoretical Force Table

The following table gives the maximum theoretical force obtainable from a hydraulic cylinder based on its bore diameter, shaft diameter and operating pressure. Both in extension and retraction.

Bore (inches)	Shaft (inches)	Push / Extend (kN)				Pull / Retract (kN)			
		Pressure (bar)				Pressure (bar)			
		70	160	207	250	70	160	207	250
1	0.5	3.5	8.1	10.5	12.7	2.7	6.1	7.9	9.5
	0.625	3.5	8.1	10.5	12.7	2.2	4.9	6.4	7.7
1.25	0.625	5.5	12.7	16.4	19.8	4.2	9.5	12.3	14.8
	0.75	5.5	12.7	16.4	19.8	3.5	8.1	10.5	12.7
1.5	0.75	8.0	18.2	23.6	28.5	6.0	13.7	17.7	21.4
	1	8.0	18.2	23.6	28.5	4.4	10.1	13.1	15.8
2	1	14.2	32.4	41.9	50.6	10.6	24.3	31.5	38.0
	1.25	14.2	32.4	41.9	50.6	8.6	19.8	25.6	30.9
	1.5	14.2	32.4	41.9	50.6	6.2	14.2	18.3	22.2
2.5	1.25	22.2	50.6	65.5	79.1	16.6	38.0	49.1	59.3
	1.5	22.2	50.6	65.5	79.1	14.2	32.4	41.9	50.6
	1.75	22.2	50.6	65.5	79.1	11.3	25.8	33.4	40.4
3	1.5	31.9	72.9	94.4	114.0	23.9	54.7	70.8	85.5
	1.75	31.9	72.9	94.4	114.0	21.0	48.1	62.2	75.2
	2	31.9	72.9	94.4	114.0	17.7	40.5	52.4	63.3
3.25	1.75	37.4	85.6	110.7	133.7	26.6	60.8	78.6	95.0
	2	37.4	85.6	110.7	133.7	23.3	53.2	68.8	83.1
	2.25	37.4	85.6	110.7	133.7	19.5	44.6	57.7	69.6
3.5	1.75	43.4	99.3	128.4	155.1	32.6	74.4	96.3	116.3
	2	43.4	99.3	128.4	155.1	29.2	66.9	86.5	104.5
	2.25	43.4	99.3	128.4	155.1	25.5	58.2	75.4	91.0
4	2	56.7	129.7	167.7	202.6	42.5	97.2	125.8	151.9
	2.25	56.7	129.7	167.7	202.6	38.8	88.6	114.7	138.5
	2.5	56.7	129.7	167.7	202.6	34.6	79.0	102.2	123.4
	3	56.7	129.7	167.7	202.6	24.8	56.7	73.4	88.6
4.5	2	71.8	164.1	212.3	256.4	57.6	131.7	170.4	205.7
	2.25	71.8	164.1	212.3	256.4	53.8	123.1	159.2	192.3
	2.5	71.8	164.1	212.3	256.4	49.6	113.4	146.8	177.3
	3	71.8	164.1	212.3	256.4	39.9	91.2	117.9	142.4
5	2.5	88.6	202.6	262.1	316.5	66.5	151.9	196.6	237.4
	3	88.6	202.6	262.1	316.5	56.7	129.7	167.7	202.6
	3.5	88.6	202.6	262.1	316.5	45.2	103.3	133.7	161.4
6	3	127.6	291.7	377.4	455.8	95.7	218.8	283.1	341.9
	4	127.6	291.7	377.4	455.8	70.9	162.1	209.7	253.2
7	3.5	173.7	397.1	513.7	620.4	130.3	297.8	385.3	465.3
	4	173.7	397.1	513.7	620.4	117.0	267.4	346.0	417.8
8	4	226.9	518.6	670.9	810.3	170.2	389.0	503.2	607.7
	5	226.9	518.6	670.9	810.3	138.3	316.0	408.9	493.8