

## DISPLACEMENT CYLINDERS - INDIRECT ACTING

PUMP LPM	CYLINDER TYPE								LOADED STATIC PRESSURE												-- MOTOR POWER REQUIRED --				
	30	40	50	57	63	70	80	90	27	29	31	33	35	37	39	41	43	45	47	49	51	53			
8	0.32	0.2	0.14	0.1	0.09	0.07																		2kW	
15	0.64	0.4	0.24	0.2	0.16	0.14	0.1	0.08																2kW	
23	0.9	0.6	0.38	0.3	0.24	0.2	0.14	0.12																3kW	
35		0.9	0.56	0.44	0.36	0.3	0.22	0.18																4.4kW	
50			0.8	0.62	0.5	0.42	0.32	0.24																6kW	
75				1.2	0.96	0.76	0.64	0.48	0.38															9.5kW	
100					1.28	1.02	0.84	0.64	0.5															12kW	
125						1.06	0.8	0.64																16kW	
150							0.98	0.76																20kW	
180							1.18	0.92																24kW	
210								1.08																	28kW
250																									33kW
300																									40kW
320																									40kW
380																									47kW
440																									60kW
500																									60kW
650																									77kW
800																									77kW

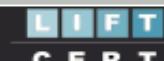
Use the buckling graph to determine a suitable **cylinder type** to lift the car/sling & load. This graph will also dictate the **loaded static pressure**.

**For Example:**

The buckling graphs indicate that the most suitable cylinder is a **80** and the loaded static pressure is **43 bar**.

I want the lift to move at approximately **0.8 m/s**.

**(1)** Locate the **cylinder type** first - **80**. **(2)** Move vertically down the column to the nearest speed shown to what is required, I want 0.8 m/s so the nearest available would be **0.8 m/s**. **(3)** The **pump** size is determined by moving horizontally left across the row to the far left column, which gives a **pump** size of **125 lpm**. **(4)** The motor size is determined by moving horizontally right across the row until you are vertically below the **loaded static pressure** of the lift - **43 bar**, which gives a **motor** size of **16kW**.



## DISPLACEMENT CYLINDERS - INDIRECT ACTING

PUMP LPM	CYLINDER TYPE								LOADED STATIC PRESSURE												-- MOTOR POWER REQUIRED --			
	100	110	125	140	160	180	200	220	27	29	31	33	35	37	39	41	43	45	47	49	51	53		
<b>8</b>																								
<b>15</b>																								
<b>23</b>	0.09	0.08																						
<b>35</b>	0.14	0.12	0.09																					
<b>50</b>	0.2	0.16	0.13	0.1	0.08																			
<b>75</b>	0.3	0.26	0.2	0.16	0.12	0.1																		
<b>100</b>	0.42	0.34	0.26	0.22	0.16	0.13	0.1																	
<b>125</b>	0.52	0.42	0.34	0.26	0.2	0.16	0.13	0.11																
<b>150</b>	0.62	0.52	0.4	0.32	0.24	0.2	0.16	0.13																
<b>180</b>	0.74	0.62	0.48	0.38	0.3	0.24	0.18	0.15																
<b>210</b>	0.88	0.72	0.56	0.44	0.34	0.28	0.22	0.18																
<b>250</b>	1.04	0.86	0.66	0.54	0.4	0.32	0.26	0.22																
<b>300</b>		1.04	0.8	0.64	0.48	0.38	0.32	0.26																
<b>320</b>			0.86	0.68	0.52	0.42	0.34	0.28																
<b>380</b>				1.02	0.8	0.62	0.5	0.4																
<b>440</b>					0.94	0.72	0.58	0.46	0.38															
<b>500</b>						1.06	0.82	0.64	0.52	0.44														
<b>650</b>							1.06	0.84	0.68	0.56														
<b>800</b>								1.04	0.84	0.7														

Use the buckling graph to determine a suitable **cylinder type** to lift the car/sling & load. This graph will also dictate the **loaded static pressure**.

**For Example:**

The buckling graphs indicate that the most suitable cylinder is a **110** and the loaded static pressure is **39 bar**.

I want the lift to move at approximately **0.5 m/s**.

**(1)** Locate the **cylinder type** first - **110**. **(2)** Move vertically down the column to the nearest speed shown to what is required, I want 0.5 m/s so the nearest available would be **0.52 m/s**. **(3)** The **pump** size is determined by moving horizontally left across the row to the far left column, which gives a **pump** size of **150 lpm**. **(4)** The motor size is determined by moving horizontally right across the row until you are vertically below the **loaded static pressure** of the lift - **39 bar**, which gives a **motor** size of **16kW**.

