DISPLACEMENT CYLINDERS - TWIN DIRECT ACTING

PUMP	CYLINDER TYPE								-- SPEED OBTAINED (ms^{-1}) --	LOADED STATIC PRESSURE														-- MOTOR POWER REQUIRED --
LPM	30	40	50	57	63	70	80	90		27	29	31	33	35	37	39	41	43	45	47	49	51	53	
8	0.08															2kW								
15	0.16	0.1														2kW								
23	0.22	0.15	0.09	0.08								2kW							3kW					
35	0.35	0.22	0.14	0.11	0.09							3kW							4.4kW					
50	0.5	0.32	0.2	0.15	0.12	0.1	0.08					4.4kW							6kW					
75	0.76	0.49	0.3	0.24	0.19	0.16	0.12	0.09			6kW					7.7kW					9.5kW			
100	1.01	0.65	0.4	0.32	0.25	0.21	0.16	0.12			7.7kW			9.5kW					12kW					
125		0.81	0.5	0.4	0.32	0.27	0.2	0.16			9.5kW			12kW					16kW					
150		0.98	0.6	0.48	0.39	0.32	0.25	0.19			12kW					16kW					20kW			
180			0.73	0.57	0.47	0.38	0.3	0.23		12kW			16kW						20kW			24kW		
210			0.85	0.67	0.54	0.45	0.34	0.27			16kW			20kW						24kW			28kW	
250			1.01	0.8	0.65	0.54	0.41	0.32			20kW				24kW					28kW			33kW	
300				0.96	0.78	0.64	0.49	0.38		20kW		24kW			28kW				33kW				40kW	
320				1.02	0.83	0.68	0.52	0.41			24kW			28kW			33kW				40kW			
380					0.99	0.81	0.62	0.5			28kW			33kW			40kW					47kW		
440						0.94	0.72	0.57			33kW				40kW				47kW				60kW	
500						1.07	0.82	0.65			40kW					47kW				60kW				
650							1.06	0.84		47kW				60kW						77kW				
800								1.04			60kW					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 **63** and the loaded static pressure is **37 bar**.

I want the lift to move at approximarely **0.2 m/s**.

(1) Locate the **cylinder type** first - **63.** ***(2)*** Move vertically down the column to the nearest speed shown to what is required, I want 0.2 m/s so the nearest available would be **0.19 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 **75 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 **- 37 bar,** which gives a **motor** size of **7.7kW.**

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DISPLACEMENT CYLINDERS - TWIN DIRECT ACTING

PUMP	CYLINDER TYPE								-- SPEED OBTAINED (ms^{-1}) --	LOADED STATIC PRESSURE														-- MOTOR POWER REQUIRED --
LPM	100	110	125	140	160	180	200	220		27	29	31	33	35	37	39	41	43	45	47	49	51	53	
8																2kW								
15																2kW								
23												2kW							3kW					
35												3kW							4.4kW					
50												4.4kW							6kW					
75	0.07										6kW						7.7kW					9.5kW		
100	0.1	0.09									7.7kW				9.5kW					12kW				
125	0.13	0.11									9.5kW				12kW					16kW				
150	0.16	0.13	0.1								12kW						16kW					20kW		
180	0.19	0.16	0.12	0.09						12kW			16kW						20kW				24kW	
210	0.22	0.18	0.14	0.11							16kW				20kW					24kW				28kW
250	0.26	0.22	0.17	0.14	0.1						20kW				24kW					28kW				33kW
300	0.32	0.26	0.2	0.16	0.12	0.09				20kW		24kW			28kW				33kW				40kW	
320	0.34	0.28	0.22	0.17	0.13	0.1					24kW			28kW			33kW				40kW			
380	0.4	0.33	0.26	0.2	0.16	0.13	0.1				28kW			33kW			40kW					47kW		
440	0.46	0.37	0.3	0.24	0.18	0.15	0.11	0.09			33kW			40kW				47kW				60kW		
500	0.53	0.44	0.34	0.27	0.2	0.16	0.13	0.11			40kW				47kW					60kW				
650	0.68	0.56	0.44	0.35	0.27	0.21	0.17	0.14		47kW				60kW						77kW				
800	0.84	0.69	0.54	0.43	0.33	0.26	0.21	0.18			60kW				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 **125** and the loaded static pressure is **49 bar**.

I want the lift to move at approximarely **0.45 m/s**.

(1) Locate the **cylinder type** first - **125.** ***(2)*** Move vertically down the column to the nearest speed shown to what is required, I want 0.45 m/s so the nearest available would be **0.44 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 **650 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 **- 49 bar,** which gives a **motor** size of **77kW.**

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