Hydrax
Solutions by Elevation

"The UK's premier supplier to the lift industry"

DISPLACEMENT CYLINDERS - DIRECT ACTING

<table>
<tr><th rowspan="2">PUMP LPM</th><th colspan="8">CYLINDER TYPE</th><th rowspan="2"></th><th colspan="14">LOADED STATIC PRESSURE</th><th rowspan="2"></th></tr>
<tr><th>30</th><th>40</th><th>50</th><th>57</th><th>63</th><th>70</th><th>80</th><th>90</th><th>27</th><th>29</th><th>31</th><th>33</th><th>35</th><th>37</th><th>39</th><th>41</th><th>43</th><th>45</th><th>47</th><th>49</th><th>51</th><th>53</th></tr>
<tr><td>8</td><td>0.16</td><td>0.1</td><td>0.07</td><td>0.05</td><td></td><td></td><td></td><td></td><td rowspan="19">-- SPEED OBTAINED (ms^{-1}) --</td><td colspan="14">2kW</td><td rowspan="19">-- MOTOR POWER REQUIRED --</td></tr>
<tr><td>15</td><td>0.32</td><td>0.2</td><td>0.12</td><td>0.1</td><td>0.08</td><td>0.07</td><td></td><td></td><td colspan="14">2kW</td></tr>
<tr><td>23</td><td>0.45</td><td>0.3</td><td>0.19</td><td>0.15</td><td>0.12</td><td>0.1</td><td>0.07</td><td></td><td colspan="5">2kW</td><td colspan="9">3kW</td></tr>
<tr><td>35</td><td>0.7</td><td>0.45</td><td>0.28</td><td>0.22</td><td>0.18</td><td>0.15</td><td>0.11</td><td>0.09</td><td colspan="6">3kW</td><td colspan="8">4.4kW</td></tr>
<tr><td>50</td><td>1</td><td>0.65</td><td>0.4</td><td>0.31</td><td>0.25</td><td>0.21</td><td>0.16</td><td>0.12</td><td colspan="6">4.4kW</td><td colspan="8">6kW</td></tr>
<tr><td>75</td><td></td><td>0.98</td><td>0.6</td><td>0.48</td><td>0.38</td><td>0.32</td><td>0.24</td><td>0.19</td><td colspan="4">6kW</td><td colspan="6">7.7kW</td><td colspan="4">9.5kW</td></tr>
<tr><td>100</td><td></td><td></td><td>0.8</td><td>0.64</td><td>0.51</td><td>0.42</td><td>0.32</td><td>0.25</td><td colspan="3">7.7kW</td><td colspan="5">9.5kW</td><td colspan="6">12kW</td></tr>
<tr><td>125</td><td></td><td></td><td>1</td><td>0.8</td><td>0.64</td><td>0.53</td><td>0.4</td><td>0.32</td><td colspan="3">9.5kW</td><td colspan="5">12kW</td><td colspan="6">16kW</td></tr>
<tr><td>150</td><td></td><td></td><td></td><td>0.96</td><td>0.78</td><td>0.64</td><td>0.49</td><td>0.38</td><td colspan="4">12kW</td><td colspan="7">16kW</td><td colspan="3">20kW</td></tr>
<tr><td>180</td><td></td><td></td><td></td><td>1.15</td><td>0.93</td><td>0.76</td><td>0.59</td><td>0.46</td><td>12kW</td><td colspan="6">16kW</td><td colspan="5">20kW</td><td colspan="2">24kW</td></tr>
<tr><td>210</td><td></td><td></td><td></td><td></td><td>1.09</td><td>0.9</td><td>0.68</td><td>0.54</td><td colspan="3">16kW</td><td colspan="5">20kW</td><td colspan="5">24kW</td><td>28kW</td></tr>
<tr><td>250</td><td></td><td></td><td></td><td></td><td></td><td>1.07</td><td>0.82</td><td>0.64</td><td colspan="4">20kW</td><td colspan="4">24kW</td><td colspan="5">28kW</td><td>33kW</td></tr>
<tr><td>300</td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.98</td><td>0.77</td><td>20kW</td><td colspan="3">24kW</td><td colspan="3">28kW</td><td colspan="5">33kW</td><td colspan="2">40kW</td></tr>
<tr><td>320</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.05</td><td>0.83</td><td colspan="3">24kW</td><td colspan="3">28kW</td><td colspan="4">33kW</td><td colspan="4">40kW</td></tr>
<tr><td>380</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.99</td><td colspan="3">28kW</td><td colspan="3">33kW</td><td colspan="5">40kW</td><td colspan="3">47kW</td></tr>
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<tr><td>650</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">47kW</td><td colspan="6">60kW</td><td colspan="6">77kW</td></tr>
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</table>

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 **50** and the loaded static pressure is **47 bar**.

I want the lift to move at approximarely **0.63 m/s**.

(1) Locate the **cylinder type** first - **50.** ***(2)*** Move vertically down the column to the nearest speed shown to what is required, I want 0.63 m/s so the nearest available would be **0.6 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 **- 47 bar,** which gives a **motor** size of **9.5kW.**

LIFT CERT

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<tr><th>100</th><th>110</th><th>125</th><th>140</th><th>160</th><th>180</th><th>200</th><th>220</th><th>27</th><th>29</th><th>31</th><th>33</th><th>35</th><th>37</th><th>39</th><th>41</th><th>43</th><th>45</th><th>47</th><th>49</th><th>51</th><th>53</th></tr>
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<tr><td>500</td><td>1.05</td><td>0.87</td><td>0.67</td><td>0.53</td><td>0.41</td><td>0.32</td><td>0.26</td><td>0.22</td><td colspan="4">40kW</td><td colspan="4">47kW</td><td colspan="6">60kW</td></tr>
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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 **160** and the loaded static pressure is **51 bar**.

I want the lift to move at approximately **0.12 m/s**.

(1) Locate the **cylinder type** first - **160.** ***(2)*** Move vertically down the column to the nearest speed shown to what is required, I want 0.12 m/s so the nearest available would be **0.12 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 **- 51 bar,** which gives a **motor** size of **20kW.**

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