

## Portable Hollow-Piston CFRP Cylinders



Portable from 40 t to 400 t – Unsurpassable ratio of performance to weight

## Portable Hollow-Piston CFRP Cylinders

Carbon Fiber Reinforced Hollow Piston (CFRP) Cylinders are light-weight and offer an optimum alternative to conventional hollow piston cylinders made of aluminum and steel with weight savings of 60% and more.

Portable Hollow Piston CFRP Cylinders guarantee an easy, quick and efficient positioning and handling. In most cases, lifting tools are unnecessary for transportation and assembly.

CFRP Hollow Piston Cylinders are mainly used in bridge construction, reinforced concrete construction and foundation engineering. By default, cylinders are available with capacities ranging from 40t to 400t.

400t CFRP cylinders are used in bridge construction for tensioning external post-tensioning tendons in hollow box girders. Tensioning can be readily undertaken by two workers without the need for lifting tools. Particularly in geotechnical applications, Portable CFRP Cylinders offer a very significant advantage. The equipment mainly used for these application only weighs 25kg and has a 120t capacity.

External jack cylinders and tensioning chairs for post-tensioning anchors and soil nails can be attached to CFRP Cylinders.

With a minimum of effort, CFRP Hollow Piston Cylinders are used for the quick tensioning and testing of bar and strand anchors.

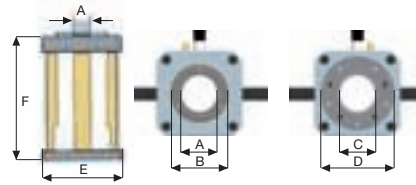


### The main advantages

- Easy to operate and universally applicable
- Considerable reduction of physical strain for employees
- Hydraulic return for quick retraction of the cylinder
- Integrated overflow and pressure control valve to avoid damage in case of overpressure
- High-quality wiper rings at the rod protect from dirt
- Impact protection by aramide cover
- Corrosion-resistance by high-quality material and high-tech coating
- 700 bar operating pressure
- Available in standard and custom sizes

## Portable Hollow-Piston CFRP Cylinders

Portable Hollow-Piston Cylinders Series L-HK-DZ  
Compressive Force: 40-400t, Working Pressure: 700 bar



	Stroke	Passage	Mass	Piston Area	Compressive Force	[E] x [F]	A	B	C	D	Type
	[mm]	[mm]	[kg]	[cm <sup>2</sup> ]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	
40 t	50	<b>38</b>	<b>8,9</b>	58,9	412	140 x 216	38	70	38	108	L-HK-DZ-040-050-038-HP
	150	<b>38</b>	<b>11,3</b>	58,9	412	140 x 316	38	70	38	108	L-HK-DZ-040-150-038-HP
80 t	100	<b>60</b>	<b>13,6</b>	114,9	804	165 x 282	60	105	60	145	L-HK-DZ-080-100-060-HP
	100	<b>80</b>	<b>16,9</b>	118,8	832	190 x 282	80	128	80	165	L-HK-DZ-080-100-080-HP
	150	<b>80</b>	<b>18,8</b>	118,8	832	190 x 332	80	128	80	165	L-HK-DZ-080-150-080-HP
	200	<b>80</b>	<b>20,7</b>	118,8	832	190 x 382	80	128	80	165	L-HK-DZ-080-200-080-HP
	250	<b>80</b>	<b>22,6</b>	118,8	832	190 x 432	80	128	80	165	L-HK-DZ-080-250-080-HP
100 t	100	<b>52</b>	<b>15</b>	134	938	165 x 282	52	97	52	145	L-HK-DZ-100-100-052-HP
	100	<b>83</b>	<b>18,8</b>	141,4	990	190 x 282	83	122	83	165	L-HK-DZ-100-100-083-HP
	150	<b>83</b>	<b>21</b>	141,4	990	190 x 332	83	122	83	165	L-HK-DZ-100-150-083-HP
	<b>*200</b>	<b>83</b>	<b>23,2</b>	<b>141,4</b>	<b>990</b>	<b>190 x 382</b>	<b>83</b>	<b>122</b>	<b>83</b>	<b>165</b>	<b>L-HK-DZ-100-200-083-HP</b>
	250	<b>83</b>	<b>25,3</b>	141,4	990	190 x 432	83	122	83	165	L-HK-DZ-100-250-083-HP
120 t	100	<b>90</b>	<b>21,6</b>	167,8	1175	215 x 282	90	143	90	186	L-HK-DZ-120-100-090-HP
	100	<b>100</b>	<b>23,5</b>	167,8	1175	215 x 283	100	147	100	186	L-HK-DZ-120-100-100-HP
	<b>*180</b>	<b>90</b>	<b>25,3</b>	<b>167,8</b>	<b>1175</b>	<b>215 x 362</b>	<b>90</b>	<b>143</b>	<b>90</b>	<b>186</b>	<b>L-HK-DZ-120-180-090-HP</b>
	180	<b>100</b>	<b>28,2</b>	167,8	1175	215 x 363	100	147	100	186	L-HK-DZ-120-180-100-HP
	250	<b>90</b>	<b>28,6</b>	167,8	1175	215 x 432	90	143	90	186	L-HK-DZ-120-250-090-HP
	250	<b>100</b>	<b>32,3</b>	167,8	1175	215 x 433	100	147	100	186	L-HK-DZ-120-250-100-HP
	300	<b>90</b>	<b>30,9</b>	167,8	1175	215 x 482	90	143	90	186	L-HK-DZ-120-300-090-HP
300	<b>100</b>	<b>35,2</b>	167,8	1175	215 x 483	100	147	100	186	L-HK-DZ-120-300-100-HP	
140 t	180	<b>84</b>	<b>26,9</b>	199,3	1395	215 x 363	84	129	84	186	L-HK-DZ-140-180-084-HP
	180	<b>105</b>	<b>31,7</b>	197,9	1385	235 x 363	105	149	105	199	L-HK-DZ-140-180-105-HP
	250	<b>84</b>	<b>30,3</b>	199,3	1395	215 x 433	84	129	84	186	L-HK-DZ-140-250-084-HP
	<b>*250</b>	<b>105</b>	<b>36</b>	<b>197,9</b>	<b>1385</b>	<b>235 x 433</b>	<b>105</b>	<b>149</b>	<b>105</b>	<b>199</b>	<b>L-HK-DZ-140-250-105-HP</b>
	300	<b>84</b>	<b>32,8</b>	199,3	1395	215 x 483	84	129	84	186	L-HK-DZ-140-300-084-HP
	300	<b>105</b>	<b>39,2</b>	197,9	1385	235 x 483	105	149	105	199	L-HK-DZ-140-300-105-HP
170 t	180	<b>84</b>	<b>34,3</b>	240,1	1681	235 x 377	84	139	84	199	L-HK-DZ-170-180-084-HP
	180	<b>110</b>	<b>45,6</b>	254,5	1781	260 x 377	110	168	110	225	L-HK-DZ-170-180-110-HP
	250	<b>84</b>	<b>38,6</b>	240,1	1681	235 x 447	84	139	84	199	L-HK-DZ-170-250-084-HP
	<b>*250</b>	<b>110</b>	<b>52,1</b>	<b>254,5</b>	<b>1781</b>	<b>260 x 447</b>	<b>110</b>	<b>168</b>	<b>110</b>	<b>225</b>	<b>L-HK-DZ-170-250-110-HP</b>
	300	<b>84</b>	<b>41,7</b>	240,1	1681	235 x 497	84	139	84	199	L-HK-DZ-170-300-084-HP
	300	<b>110</b>	<b>56,7</b>	254,5	1781	260 x 497	110	168	110	225	L-HK-DZ-170-300-110-HP
200 t	180	<b>150</b>	<b>57,8</b>	274,5	1922	324 x 379	150	228	150	270	L-HK-DZ-200-180-150-HP
	250	<b>150</b>	<b>66</b>	274,5	1922	324 x 449	150	228	150	270	L-HK-DZ-200-250-150-HP
	300	<b>150</b>	<b>71,8</b>	274,5	1922	324 x 499	150	228	150	270	L-HK-DZ-200-300-150-HP
270 t	180	<b>130</b>	<b>61,6</b>	396,5	2775	324 x 380	130	200	130	270	L-HK-DZ-270-180-130-HP
	250	<b>130</b>	<b>69,3</b>	396,5	2775	324 x 450	130	200	130	270	L-HK-DZ-270-250-130-HP
	300	<b>130</b>	<b>74,9</b>	396,5	2775	324 x 500	130	200	130	270	L-HK-DZ-270-300-130-HP
320 t	180	<b>100</b>	<b>67,5</b>	450,5	3153	324 x 380	100	182	100	270	L-HK-DZ-320-180-100-HP
	250	<b>100</b>	<b>76,3</b>	450,5	3153	324 x 450	100	182	100	270	L-HK-DZ-320-250-100-HP
	300	<b>100</b>	<b>82,6</b>	450,5	3153	324 x 500	100	182	100	270	L-HK-DZ-320-300-100-HP
400 t	250	<b>100</b>	<b>ca. 93</b>	584,1	4089	354 x 481	100	200	100	300	L-HK-DZ-400-250-100-HP

If above mentioned data does not meet your requirements, please contact us.

Due to continuous further development specifications are subject to change

\*Standard cylinders with 50 bar return pressure available on stock; also available with 100 bar pressure return

**For optimal operation of the CFRP Cylinder  
we offer the whole variety of accessories**

**Portable Complete  
Tensioning System**



**Stressing Heads**  
for tensioning  
and testing  
strands



**Centering Plates**  
for Tensioning  
and testing  
GEWI® bars.



**Tensioning Chairs**



**Hydraulic Wedge  
Setting Device**



**Gauge**  
Gauge with tripod

**Power Units**



**Power Unit**

- 700bar
- 10l or 25l tank
- Analog or digital manometer
- 230V or 400V



**Power Unit**

- 700bar
- With 3 connectors to use CFRP Cylinder with hydraulic wedge setting device
- 15l tank



**Hand Pump**

**Anchor Load Measuring Devices**



**Anchor load measuring  
devices**

- With analog manometer
- Electrical with handheld monitor

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