

▼ Shown from left to right: CLL-5010, CLL-502, CLL-1006




- Safety Lock Nut for mechanical load holding
- Special synthetic coating for improved corrosion resistance and lower friction for smoother operation
- Overflow port functions as a stroke limiter
- Interchangeable, hardened grooved saddles are standard
- CR-400 coupler and dust cap included on all models
- Single-acting load return

▼ For this curved bridge, CLL-cylinders were used to support the concrete beams to level the pierhead and to place 4000 ton slide bearings between pier and pierhead.




## To Secure Loads Mechanically




**Saddles**  
All CLL cylinders are equipped with bolt-on removable grooved saddles. For information on optional tilt saddles, see the selection chart.

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**Gauges**  
Minimize the risk of overloading and ensure long, dependable service from your equipment. Refer to the System Components Section for a full range of gauges.

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**Low Height - High Tonnage**  
When low height with high force is required, Pancake Cylinders with locknut offer the solution to lift the first few centimeters.

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▼ CLL cylinder, mechanically locked, after positioning the curved bridge.

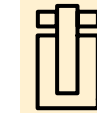


### ▼ QUICK SELECTION CHART

For complete technical information see next page.

| Cylinder Capacity (tons)<br>Nominal [maximum] | Stroke (in) | Model Number | Cylinder Effective Area (in <sup>2</sup> ) | Oil Capacity (in <sup>3</sup> ) | Collapsed Height (in) | Weight (lbs) |
|---|-------------|--------------|--|---------------------------------|-----------------------|--------------|
| 50 [55]                                       | 1.97        | CLL-502      | 10.99                                      | 21.63                           | 6.46                  | 35           |
|   | 3.94        | CLL-504      | 10.99                                      | 43.25                           | 8.43                  | 46           |
|   | 5.91        | CLL-506      | 10.99                                      | 64.88                           | 10.39                 | 57           |
|   | 7.87        | CLL-508      | 10.99                                      | 86.51                           | 12.36                 | 68           |
|   | 9.84        | CLL-5010     | 10.99                                      | 108.14                          | 14.33                 | 79           |
| 100 [103]                                     | 1.97        | CLL-1002     | 20.57                                      | 40.50                           | 7.36                  | 68           |
|   | 3.94        | CLL-1004     | 20.57                                      | 81.00                           | 9.33                  | 87           |
|   | 5.91        | CLL-1006     | 20.57                                      | 121.50                          | 11.30                 | 106          |
|   | 7.87        | CLL-1008     | 20.57                                      | 162.00                          | 13.27                 | 125          |
|   | 9.84        | CLL-10010    | 20.57                                      | 202.50                          | 15.24                 | 143          |
| 150 [154]                                     | 1.97        | CLL-1502     | 30.78                                      | 60.58                           | 8.23                  | 117          |
|   | 3.94        | CLL-1504     | 30.78                                      | 121.17                          | 10.20                 | 146          |
|   | 5.91        | CLL-1506     | 30.78                                      | 181.75                          | 12.17                 | 174          |
|   | 7.87        | CLL-1508     | 30.78                                      | 242.33                          | 14.13                 | 203          |
|   | 9.84        | CLL-15010    | 30.78                                      | 302.92                          | 16.10                 | 231          |
| 200 [206]                                     | 1.97        | CLL-2002     | 41.17                                      | 81.04                           | 9.57                  | 183          |
|   | 5.91        | CLL-2006     | 41.17                                      | 243.13                          | 13.50                 | 260          |
|   | 11.81       | CLL-20012    | 41.17                                      | 486.27                          | 19.41                 | 376          |
| 250 [284]                                     | 1.97        | CLL-2502     | 56.75                                      | 111.70                          | 9.80                  | 256          |
|   | 5.91        | CLL-2506     | 56.75                                      | 335.11                          | 13.74                 | 359          |
|   | 11.81       | CLL-25012    | 56.75                                      | 670.22                          | 19.65                 | 515          |
| 300 [354]                                     | 1.97        | CLL-3002     | 70.71                                      | 139.19                          | 11.61                 | 382          |
|   | 5.91        | CLL-3006     | 70.71                                      | 417.56                          | 15.55                 | 514          |
|   | 11.81       | CLL-30012    | 70.71                                      | 835.11                          | 21.46                 | 712          |
| 400 [434]                                     | 1.97        | CLL-4002     | 86.79                                      | 170.84                          | 13.19                 | 553          |
|   | 5.91        | CLL-4006     | 86.79                                      | 512.51                          | 17.13                 | 721          |
|   | 11.81       | CLL-40012    | 86.79                                      | 1025.02                         | 23.03                 | 972          |
| 500 [566]                                     | 1.97        | CLL-5002     | 113.25                                     | 222.99                          | 14.76                 | 809          |
|   | 5.91        | CLL-5006     | 113.25                                     | 668.77                          | 18.70                 | 1029         |
|   | 11.81       | CLL-50012    | 113.25                                     | 1337.55                         | 24.61                 | 1360         |
| 600 [663]                                     | 1.97        | CLL-6002     | 132.57                                     | 260.97                          | 15.55                 | 985          |
|   | 5.91        | CLL-6006     | 132.57                                     | 782.90                          | 19.49                 | 1241         |
|   | 11.81       | CLL-60012    | 132.57                                     | 1565.81                         | 25.39                 | 1625         |
| 800 [912]                                     | 1.97        | CLL-8002     | 182.42                                     | 359.09                          | 17.91                 | 1565         |
|   | 5.91        | CLL-8006     | 182.42                                     | 1077.27                         | 21.85                 | 1918         |
|   | 11.81       | CLL-80012    | 182.42                                     | 2154.55                         | 27.76                 | 2446         |
| 1000 [1136]                                   | 1.97        | CLL-10002    | 227.30                                     | 447.43                          | 19.49                 | 2094         |
|   | 5.91        | CLL-10006    | 227.30                                     | 1342.30                         | 23.43                 | 2517         |
|   | 11.81       | CLL-100012   | 227.30                                     | 2684.59                         | 29.33                 | 3151         |


## CLL Series




Capacity:  
**50-1,000 tons**

Stroke:  
**1.97-11.81 inch**

Maximum Operating Pressure:  
**10,000 psi**



**Additional Stroke Lengths**  
Models above 150 tons are also available with standard stroke lengths of 4, 8 and 10 inches. Please contact Enerpac for ordering information and dimensional details.



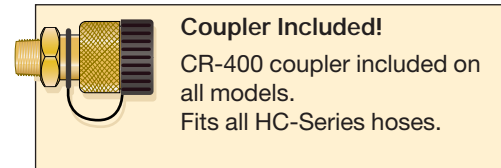
**Optional features**  
To add optional spring return to your cylinders, add the following suffix to the end of the model number.

Spring return E001

- Example:**
- For standard CLL-5006 cylinder, order: CLL-5006
  - For CLL-5006 cylinder with spring return, order: CLL-5006 E001

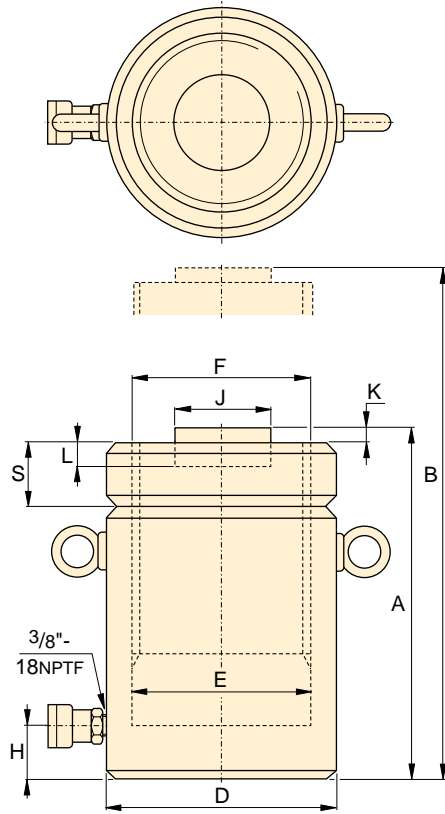
Technical specifications for this feature are available from Enerpac.

# CLL-Series, Lock Nut Cylinders

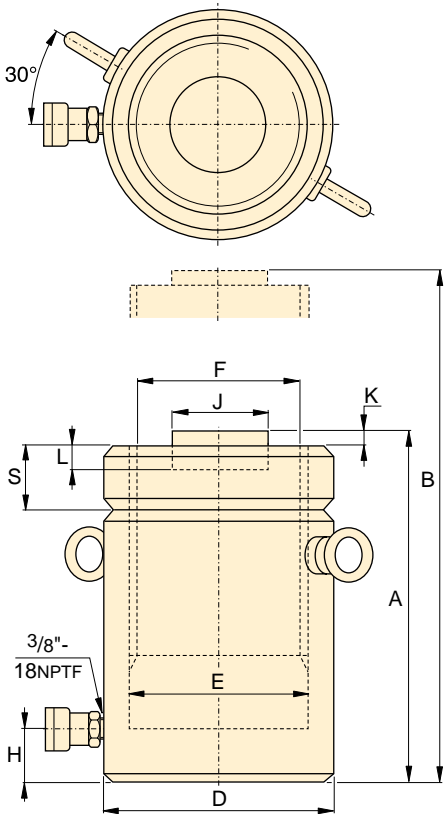


**Coupler Included!**  
CR-400 coupler included on all models.  
Fits all HC-Series hoses.

◀ For full features see page 42.



CLL-50 to CLL-250 models

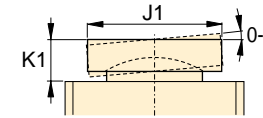


CLL-300 to CLL-1000 models

| Cylinder Capacity (tons)<br>Nominal [maximum] | Stroke (in) | Model Number | Cylinder Effective Area (in <sup>2</sup> ) | Oil Capacity (in <sup>3</sup> ) |
|---|-------------|--------------|--|---------------------------------|
| 50 [55]                                       | 1.97        | CLL-502      | 10.99                                      | 21.63                           |
|   | 3.94        | CLL-504      | 10.99                                      | 43.25                           |
|   | 5.91        | CLL-506      | 10.99                                      | 64.88                           |
|   | 7.87        | CLL-508      | 10.99                                      | 86.51                           |
|   | 9.84        | CLL-5010     | 10.99                                      | 108.14                          |
|   | 11.81       | CLL-5012     | 10.99                                      | 129.76                          |
| 100 [103]                                     | 1.97        | CLL-1002     | 20.57                                      | 40.50                           |
|   | 3.94        | CLL-1004     | 20.57                                      | 81.00                           |
|   | 5.91        | CLL-1006     | 20.57                                      | 121.50                          |
|   | 7.87        | CLL-1008     | 20.57                                      | 162.00                          |
|   | 9.84        | CLL-10010    | 20.57                                      | 202.50                          |
|   | 11.81       | CLL-10012    | 20.57                                      | 242.99                          |
| 150 [154]                                     | 1.97        | CLL-1502     | 30.78                                      | 60.58                           |
|   | 3.94        | CLL-1504     | 30.78                                      | 121.17                          |
|   | 5.91        | CLL-1506     | 30.78                                      | 181.75                          |
|   | 7.87        | CLL-1508     | 30.78                                      | 242.33                          |
|   | 9.84        | CLL-15010    | 30.78                                      | 302.92                          |
|   | 11.81       | CLL-15012    | 30.78                                      | 363.50                          |
| 200 [206]                                     | 1.97        | CLL-2002     | 41.17                                      | 81.04                           |
|   | 5.91        | CLL-2006     | 41.17                                      | 243.13                          |
|   | 11.81       | CLL-20012    | 41.17                                      | 486.27                          |
| 250 [284]                                     | 1.97        | CLL-2502     | 56.75                                      | 111.70                          |
|   | 5.91        | CLL-2506     | 56.75                                      | 335.11                          |
|   | 11.81       | CLL-25012    | 56.75                                      | 670.22                          |
| 300 [354]                                     | 1.97        | CLL-3002     | 70.71                                      | 139.19                          |
|   | 5.91        | CLL-3006     | 70.71                                      | 417.56                          |
|   | 11.81       | CLL-30012    | 70.71                                      | 835.11                          |
| 400 [434]                                     | 1.97        | CLL-4002     | 86.79                                      | 170.84                          |
|   | 5.91        | CLL-4006     | 86.79                                      | 512.51                          |
|   | 11.81       | CLL-40012    | 86.79                                      | 1025.02                         |
| 500 [566]                                     | 1.97        | CLL-5002     | 113.25                                     | 222.99                          |
|   | 5.91        | CLL-5006     | 113.25                                     | 668.77                          |
|   | 11.81       | CLL-50012    | 113.25                                     | 1337.55                         |
| 600 [663]                                     | 1.97        | CLL-6002     | 132.57                                     | 260.97                          |
|   | 5.91        | CLL-6006     | 132.57                                     | 782.90                          |
|   | 11.81       | CLL-60012    | 132.57                                     | 1565.81                         |
| 800 [912]                                     | 1.97        | CLL-8002     | 182.42                                     | 359.09                          |
|   | 5.91        | CLL-8006     | 182.42                                     | 1077.27                         |
|   | 11.81       | CLL-80012    | 182.42                                     | 2154.55                         |
| 1000 [1136]                                   | 1.97        | CLL-10002    | 227.30                                     | 447.43                          |
|   | 5.91        | CLL-10006    | 227.30                                     | 1342.30                         |
|   | 11.81       | CLL-100012   | 227.30                                     | 2684.59                         |

# Single-Acting, Lock Nut Cylinders

\*Optional Tilt Saddle



Capacity:  
**50-1,000 tons**

Stroke:  
**1.97-11.81 inch**

Maximum Operating Pressure:  
**10,000 psi**



| Coll. Height A (in) | Ext. Height B (in) | Outs. Dia. D (in) | Cyl. Bore Dia. E (in) | Plunger Dia. (threaded) F (mm) | Base to Adv. Port H (in) | Standard Saddle Dia. J (in) | Saddle Protr. from Plgr. K (in) | Depth of Plunger Hole L (in) | Lock-nut Height S (in) | Weight (lbs) | Model Number | * Optional Tilt Saddle |                |              |
|---------------------|--------------------|-------------------|-----------------------|--------------------------------|--------------------------|-----------------------------|---------------------------------|------------------------------|------------------------|--------------|--------------|------------------------|----------------|--------------|
|                     |                    |                   |                       |                                |                          |                             |                                 |                              |                        |              |              | Dia. J1 (in)           | Height K1 (in) | Model Number |
| 6.46                | 8.43               | 4.92              | 3.74                  | Tr 95 x 4                      | 1.18                     | 2.80                        | .08                             | .51                          | 1.42                   | 35           | CLL-502      | 2.80                   | .94            | CAT-100      |
|                     | 8.43               | 12.36             | 4.92                  | 3.74                           | Tr 95 x 4                | 1.18                        | 2.80                            | .08                          | .51                    | 46           | CLL-504      | 2.80                   | .94            | CAT-100      |
|                     | 10.39              | 16.30             | 4.92                  | 3.74                           | Tr 95 x 4                | 1.18                        | 2.80                            | .08                          | .51                    | 57           | CLL-506      | 2.80                   | .94            | CAT-100      |
|                     | 12.36              | 20.24             | 4.92                  | 3.74                           | Tr 95 x 4                | 1.18                        | 2.80                            | .08                          | .51                    | 68           | CLL-508      | 2.80                   | .94            | CAT-100      |
|                     | 14.33              | 24.17             | 4.92                  | 3.74                           | Tr 95 x 4                | 1.18                        | 2.80                            | .08                          | .51                    | 79           | CLL-5010     | 2.80                   | .94            | CAT-100      |
|                     | 16.30              | 28.11             | 4.92                  | 3.74                           | Tr 95 x 4                | 1.18                        | 2.80                            | .08                          | .51                    | 90           | CLL-5012     | 2.80                   | .94            | CAT-100      |
| 7.36                | 9.33               | 6.50              | 5.12                  | Tr 130 x 6                     | 1.18                     | 2.80                        | .08                             | .51                          | 1.73                   | 68           | CLL-1002     | 2.80                   | .94            | CAT-100      |
|                     | 9.33               | 13.27             | 6.50                  | 5.12                           | Tr 130 x 6               | 1.18                        | 2.80                            | .08                          | .51                    | 87           | CLL-1004     | 2.80                   | .94            | CAT-100      |
|                     | 11.30              | 17.20             | 6.50                  | 5.12                           | Tr 130 x 6               | 1.18                        | 2.80                            | .08                          | .51                    | 106          | CLL-1006     | 2.80                   | .94            | CAT-100      |
|                     | 13.27              | 21.14             | 6.50                  | 5.12                           | Tr 130 x 6               | 1.18                        | 2.80                            | .08                          | .51                    | 125          | CLL-1008     | 2.80                   | .94            | CAT-100      |
|                     | 15.24              | 25.08             | 6.50                  | 5.12                           | Tr 130 x 6               | 1.18                        | 2.80                            | .08                          | .51                    | 143          | CLL-10010    | 2.80                   | .94            | CAT-100      |
|                     | 17.20              | 29.02             | 6.50                  | 5.12                           | Tr 130 x 6               | 1.18                        | 2.80                            | .08                          | .51                    | 162          | CLL-10012    | 2.80                   | .94            | CAT-100      |
| 8.23                | 10.20              | 8.07              | 6.26                  | Tr 159 x 6                     | 1.54                     | 5.12                        | .08                             | .98                          | 1.73                   | 117          | CLL-1502     | 5.12                   | .79            | CAT-200      |
|                     | 10.20              | 14.13             | 8.07                  | 6.26                           | Tr 159 x 6               | 1.54                        | 5.12                            | .08                          | .98                    | 146          | CLL-1504     | 5.12                   | .79            | CAT-200      |
|                     | 12.17              | 18.07             | 8.07                  | 6.26                           | Tr 159 x 6               | 1.54                        | 5.12                            | .08                          | .98                    | 174          | CLL-1506     | 5.12                   | .79            | CAT-200      |
|                     | 14.13              | 22.01             | 8.07                  | 6.26                           | Tr 159 x 6               | 1.54                        | 5.12                            | .08                          | .98                    | 203          | CLL-1508     | 5.12                   | .79            | CAT-200      |
|                     | 16.10              | 25.94             | 8.07                  | 6.26                           | Tr 159 x 6               | 1.54                        | 5.12                            | .08                          | .98                    | 231          | CLL-15010    | 5.12                   | .79            | CAT-200      |
|                     | 18.07              | 29.88             | 8.07                  | 6.26                           | Tr 159 x 6               | 1.54                        | 5.12                            | .08                          | .98                    | 260          | CLL-15012    | 5.12                   | .79            | CAT-200      |
| 9.57                | 11.54              | 9.25              | 7.24                  | Tr 184 x 6                     | 1.97                     | 5.12                        | .08                             | .98                          | 1.97                   | 183          | CLL-2002     | 5.12                   | .79            | CAT-200      |
|                     | 13.50              | 19.41             | 9.25                  | 7.24                           | Tr 184 x 6               | 1.97                        | 5.12                            | .08                          | .98                    | 260          | CLL-2006     | 5.12                   | .79            | CAT-200      |
|                     | 19.41              | 31.22             | 9.25                  | 7.24                           | Tr 184 x 6               | 1.97                        | 5.12                            | .08                          | .98                    | 376          | CLL-20012    | 5.12                   | .79            | CAT-200      |
| 9.80                | 11.77              | 10.24             | 8.50                  | Tr 216 x 6                     | 1.97                     | 5.91                        | .08                             | .98                          | 2.20                   | 256          | CLL-2502     | 5.91                   | .83            | CAT-250      |
|                     | 13.74              | 19.65             | 10.24                 | 8.50                           | Tr 216 x 6               | 1.97                        | 5.91                            | .08                          | .98                    | 359          | CLL-2506     | 5.91                   | .83            | CAT-250      |
|                     | 19.65              | 31.46             | 10.24                 | 8.50                           | Tr 216 x 6               | 1.97                        | 5.91                            | .08                          | .98                    | 515          | CLL-25012    | 5.91                   | .83            | CAT-250      |
| 11.61               | 13.58              | 12.20             | 9.49                  | Tr 241 x 6                     | 2.32                     | 5.47                        | .20                             | .98                          | 2.36                   | 382          | CLL-3002     | 7.68                   | 2.95           | CAT-300      |
|                     | 15.55              | 21.46             | 12.20                 | 9.49                           | Tr 241 x 6               | 2.32                        | 5.47                            | .20                          | .98                    | 514          | CLL-3006     | 7.68                   | 2.95           | CAT-300      |
|                     | 21.46              | 33.27             | 12.20                 | 9.49                           | Tr 241 x 6               | 2.32                        | 5.47                            | .20                          | .98                    | 712          | CLL-30012    | 7.68                   | 2.95           | CAT-300      |
| 13.19               | 15.16              | 13.78             | 10.51                 | Tr 266 x 6                     | 2.76                     | 6.26                        | .20                             | .98                          | 2.76                   | 553          | CLL-4002     | 8.86                   | 3.35           | CAT-400      |
|                     | 17.13              | 23.03             | 13.78                 | 10.51                          | Tr 266 x 6               | 2.76                        | 6.26                            | .20                          | .98                    | 721          | CLL-4006     | 8.86                   | 3.35           | CAT-400      |
|                     | 23.03              | 34.84             | 13.78                 | 10.51                          | Tr 266 x 6               | 2.76                        | 6.26                            | .20                          | .98                    | 972          | CLL-40012    | 8.86                   | 3.35           | CAT-400      |
| 14.76               | 16.73              | 15.75             | 12.01                 | Tr 305 x 6                     | 3.15                     | 7.05                        | .20                             | .98                          | 3.15                   | 809          | CLL-5002     | 9.84                   | 3.58           | CAT-500      |
|                     | 18.70              | 24.61             | 15.75                 | 12.01                          | Tr 305 x 6               | 3.15                        | 7.05                            | .20                          | .98                    | 1029         | CLL-5006     | 9.84                   | 3.58           | CAT-500      |
|                     | 24.61              | 36.42             | 15.75                 | 12.01                          | Tr 305 x 6               | 3.15                        | 7.05                            | .20                          | .98                    | 1360         | CLL-50012    | 9.84                   | 3.58           | CAT-500      |
| 15.55               | 17.52              | 16.93             | 12.99                 | Tr 330 x 6                     | 3.35                     | 7.64                        | .20                             | .98                          | 3.35                   | 985          | CLL-6002     | 10.83                  | 3.78           | CAT-600      |
|                     | 19.49              | 25.39             | 16.93                 | 12.99                          | Tr 330 x 6               | 3.35                        | 7.64                            | .20                          | .98                    | 1241         | CLL-6006     | 10.83                  | 3.78           | CAT-600      |
|                     | 25.39              | 37.20             | 16.93                 | 12.99                          | Tr 330 x 6               | 3.35                        | 7.64                            | .20                          | .98                    | 1625         | CLL-60012    | 10.83                  | 3.78           | CAT-600      |
| 17.91               | 19.88              | 19.88             | 15.24                 | Tr 387 x 6                     | 3.94                     | 8.82                        | .20                             | .98                          | 3.94                   | 1565         | CLL-8002     | 12.60                  | 4.84           | CAT-800      |
|                     | 21.85              | 27.76             | 19.88                 | 15.24                          | Tr 387 x 6               | 3.94                        | 8.82                            | .20                          | .98                    | 1918         | CLL-8006     | 12.60                  | 4.84           | CAT-800      |
|                     | 27.76              | 39.57             | 19.88                 | 15.24                          | Tr 387 x 6               | 3.94                        | 8.82                            | .20                          | .98                    | 2446         | CLL-80012    | 12.60                  | 4.84           | CAT-800      |
| 19.49               | 21.46              | 22.05             | 17.01                 | Tr 432 x 6                     | 4.33                     | 9.80                        | .20                             | .98                          | 4.33                   | 2094         | CLL-10002    | 14.17                  | 5.35           | CAT-1000     |
|                     | 23.43              | 29.33             | 22.05                 | 17.01                          | Tr 432 x 6               | 4.33                        | 9.80                            | .20                          | .98                    | 2517         | CLL-10006    | 14.17                  | 5.35           | CAT-1000     |
|                     | 29.33              | 41.14             | 22.05                 | 17.01                          | Tr 432 x 6               | 4.33                        | 9.80                            | .20                          | .98                    | 3151         | CLL-100012   | 14.17                  | 5.35           | CAT-1000     |