



Lightraulics® Heavy Duty Cylinders

For working pressures up to 700 bar



ENGINEERING YOUR SUCCESS.

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For working pressures up to 700 bar

A Revolution in Lifting

Ultra-lightweight Heavy Duty Cylinders from Parker Hannifin use Lightraulics® materials technology to transform the way in which loads are managed on-site.

In place of traditional steel lifting cylinders, which are heavy, cannot be moved without assistance and are difficult to locate accurately, Lightraulics® Heavy Duty Cylinders are built from corrosion-resistant lightweight alloys and carbon fibre composite materials. Weighing typically between 1/3 and 1/4 of a comparable steel cylinder, they can be positioned quickly and accurately – often by a single operator.

The result: Higher productivity, a saving in time and manpower, and a reduced risk of injury.

Parker's ultra-light Composite Heavy Duty Tool Cylinders cut



time on site, boost productivity, reduce the need for mechanical handling and enhance operator safety –

a win-win lifting solution.

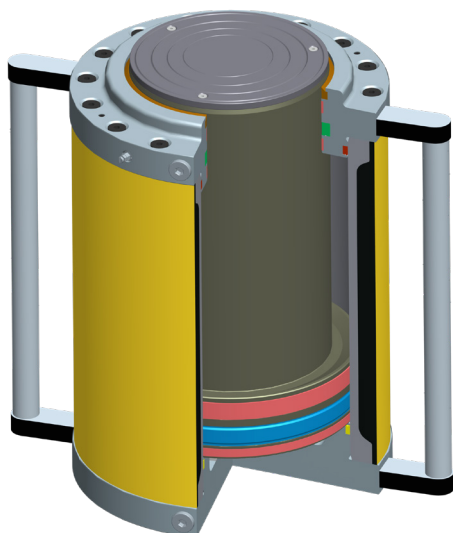
Lightraulics® Heavy Duty Tool Cylinders for easy on-site load

management are available in Roundline and Tie Rod design.

To find the cylinder which fits your applications requirements, please see the table on page 25 and choose from a wide range of capacities on the following pages.

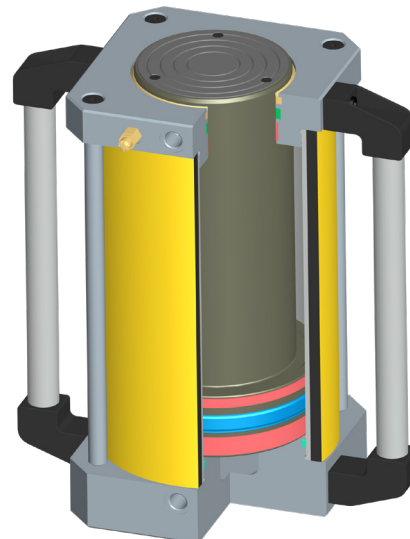
Typical Masses of Comparable Cylinders

Load tons	Stroke mm	Steel Cylinder kg	Aluminium Cylinder kg	Lightraulics® Cylinder kg
50	200	27	19	10
80	200	42	27	16
120	200	58	36	22
150	200	78	45	25
190	300	150	not available	36
220	300	180	not available	44
280	300	300	not available	57
405	300	420	not available	92



◀ **Lightraulics® Heavy Duty Roundline Cylinder**
with 150 bar retraction pressure
Available capacities: 150t - 535t

Lightraulics® Heavy Duty Tie Rod Cylinder ▶
with 50 bar retraction pressure
Available capacities: 50t - 410t



How to choose the best design for your application

Properties	Heavy Duty Roundline Cylinder ▶ p. 26	Heavy Duty Tie Rod Cylinder ▶ p. 30
Tonnage	150t - 535t	50t - 410t
Stroke Length	150 - 300 mm	50 - 300 mm
Retraction Pressure	150 bar	50 bar
Retraction Speed	***	*
Weight saving	***	**
Outer dimensions	 1.2 - 1.3 x bore Ø	 1.1 - 1.2 x bore Ø

Technical

Product Specifications

Working pressure	700 bar (10,152 psi)
Retraction pressure	150 bar (2,175 psi)
Test pressure	770 bar (11,167 psi)
Stroke length	up to 300 mm
Maximum piston speed	0.3 m/s
Barrel material	thinwalled metal with composite reinforcement and abrasion protective aramid overwrap
Tie rod material	anodized aluminium
Port size	both ports M 18x1,5
Sealing system	
– piston seal	thermoplastic polyester elastomer
– rod seal	polyurethane
– wiper seal	polyester-based
– O-rings	polyurethane
Temperature range	-10 °C to +65 °C
Fluid medium	mineral hydraulic oil

Product example Heavy Duty ▶ Roundline Cylinder

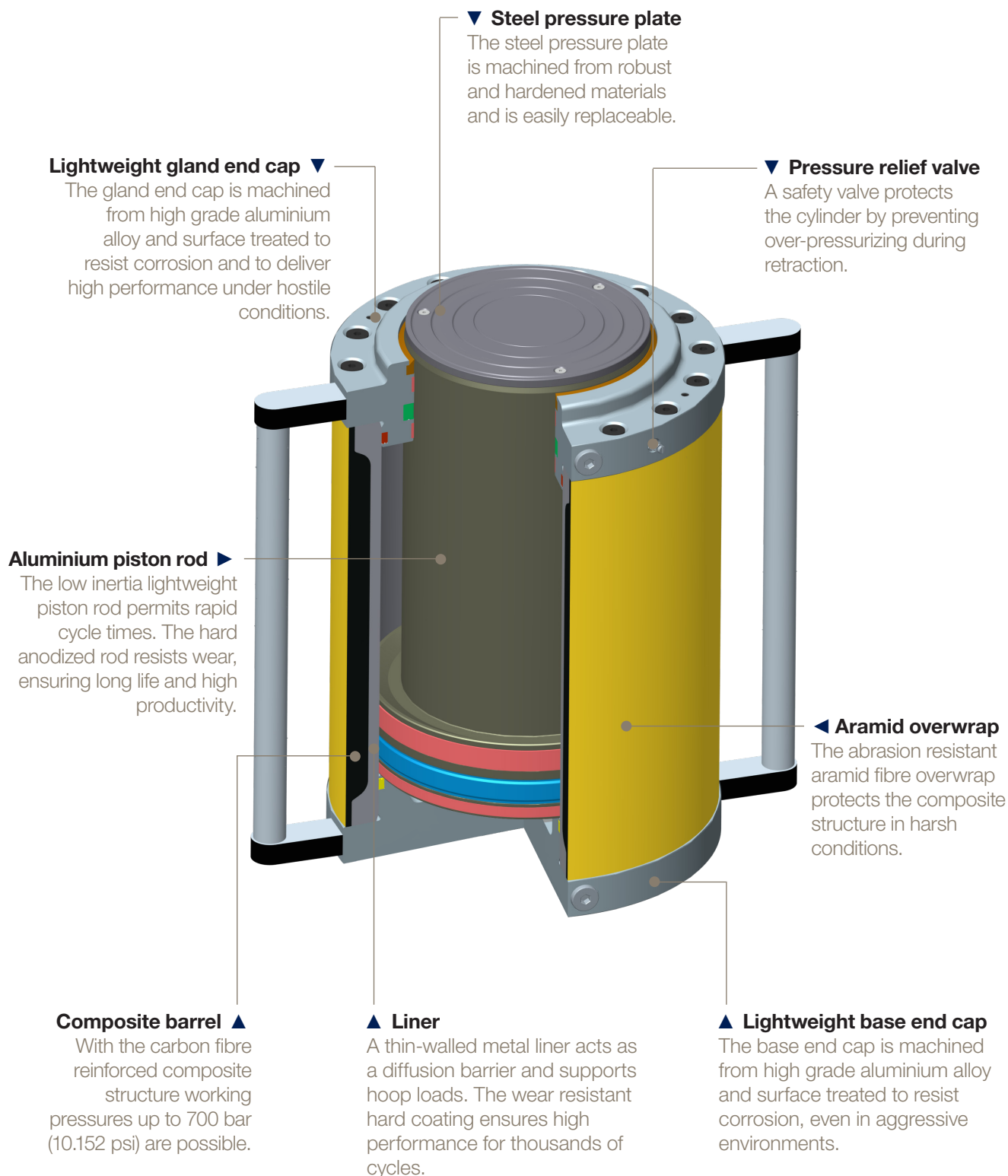
Working pressure	700 bar (10,152 psi)
Retraction pressure	150 bar (2,175 psi)
Tonnage	150 t
Stroke	150 mm
Force	1496 kN
Weight	23 kg



◀ Product example Heavy Duty Tie Rod Cylinder

Working pressure	700 bar (10,152 psi)
Retraction pressure	50 bar (725 psi)
Tonnage	80 t
Stroke	200 mm
Force	792 kN
Weight	12.1 kg

Features



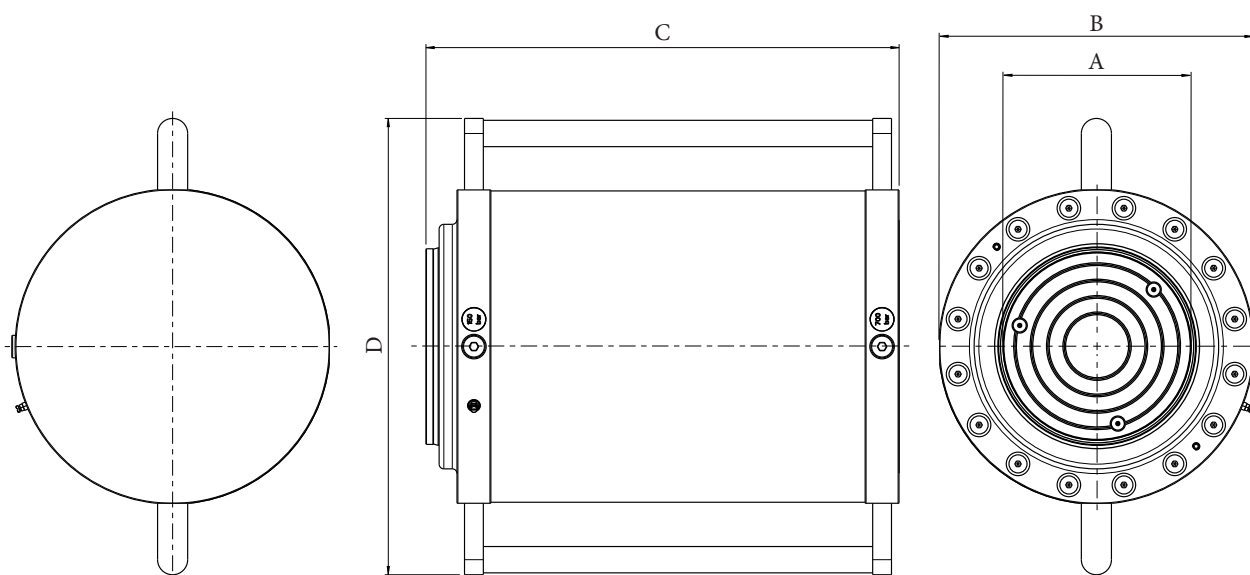
Lightraulics® Heavy Duty Roundline Cylinders - 150 bar Retraction

Performance

Tonnage	Stroke	Piston Area (cm ²)	Force (kN)	Mass (kg)
150t	150	213.8	1496	23
	200	213.8	1496	24.5
200t	150	283.5	1984	29.5
	180	283.5	1984	31
	250	283.5	1984	34.5
220t	150	314.1	2199	32
	250	314.1	2199	37
280t	150	397.6	2783	41.5
	250	397.6	2783	48
405t	150	572.5	4007	63.5
	250	572.5	4007	73.5
	300	572.5	4007	78.5
535t	150	754.7	5283	85
	250	754.7	5283	98.5

Dimensions

Tonnage	Stroke	A	B	C	D
150t	150	119	208	368	360
	200	119	208	418	360
200t	150	139	237	368	389
	180	139	237	398	389
	250	139	237	468	389
220t	150	144	247	372	399
	250	144	247	472	399
280t	150	164	280	382	432
	250	164	280	482	432
405t	150	204	335	398	487
	250	204	335	498	487
	300	204	335	548	487
535t	150	234	385	398	537
	250	234	385	498	537



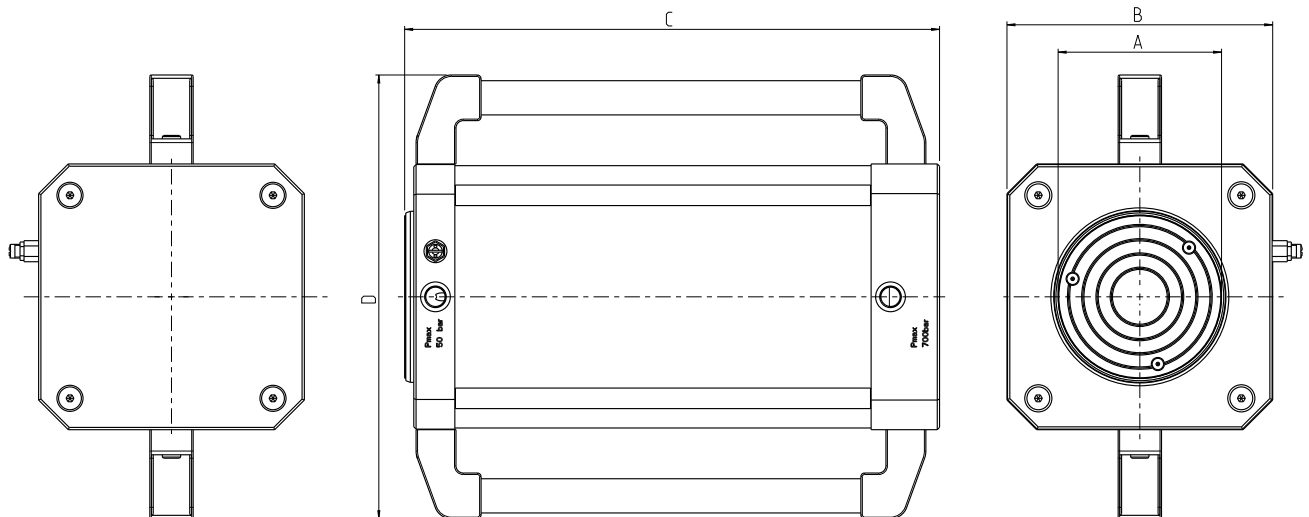
All dimensions are in millimetres unless otherwise stated. In line with our policy of continuous product improvement, specifications in this catalogue are subject to change without notice. Please enquire for exact dimensions when placing order.

Lightraulics® Heavy Duty Cylinders - 50 bar Retraction

Performance & Dimensions

Tonnage	Stroke	Piston Area (cm ²)	Force (kN)	Mass (kg)	A	B	C	D
50t	50	70.9	496	7.5	55	115	221	115 ¹⁾
	100	70.9	496	8.5	55	115	271	115 ¹⁾
	150	70.9	496	9	55	115	321	115 ¹⁾
	200	70.9	496	10	55	115	371	115 ¹⁾
	250	70.9	496	10.5	55	115	421	115 ¹⁾
	300	70.9	496	11	55	115	471	115 ¹⁾
80t	50	113.1	792	12	75	140	234	140 ¹⁾
	100	113.1	792	13	75	140	284	140 ¹⁾
	150	113.1	792	14	75	140	334	140 ¹⁾
	200	113.1	792	15.5	75	140	384	140 ¹⁾
	250	113.1	792	16.5	75	140	434	140 ¹⁾
	300	113.1	792	17.5	75	140	484	140 ¹⁾
120t	50	165.1	1156	17.5	99	165	244	165 ¹⁾
	100	165.1	1156	19	99	165	294	165 ¹⁾
	150	165.1	1156	21	99	165	344	165 ¹⁾
	200	165.1	1156	22	99	165	394	165 ¹⁾
	250	165.1	1156	23	99	165	444	165 ¹⁾
	300	165.1	1156	25	99	165	494	165 ¹⁾
150t	50	213.8	1497	19.5	108	190	249	346
	100	213.8	1497	21	108	190	299	346
	150	213.8	1497	24	108	190	349	346
	200	213.8	1497	25	108	190	399	346
	250	213.8	1497	27	108	190	449	346
	300	213.8	1497	29	108	190	499	346
190t	50	268.8	1882	25.5	133	215	269	371
	100	268.8	1882	27.5	133	215	319	371
	180	268.8	1882	31	133	215	399	371
	200	268.8	1882	31.5	133	215	419	371
	250	268.8	1882	34	133	215	469	371
	300	268.8	1882	36	133	215	519	371
220t	50	311	2177	29.5	143	232	269	389
	100	311	2177	33	143	232	319	389
	150	311	2177	35	143	232	369	389
	200	311	2177	38.5	143	232	419	389
	250	311	2177	41.5	143	232	469	389
	300	311	2177	44	143	232	519	389
280t	50	397.6	2783	38	163	260	279	416
	100	397.6	2783	42	163	260	329	416
	180	397.6	2783	47.5	163	260	409	416
	200	397.6	2783	49	163	260	429	416
	250	397.6	2783	53	163	260	479	416
	300	397.6	2783	56.5	163	260	529	416
405t	50	572.6	4008	49	192	324	284	480
	100	572.6	4008	54.5	192	324	334	480
	150	572.6	4008	70	192	324	384	480
	200	572.6	4008	77.5	192	324	434	480
	250	572.6	4008	83.5	192	324	484	480
	300	572.6	4008	91.5	192	324	534	480

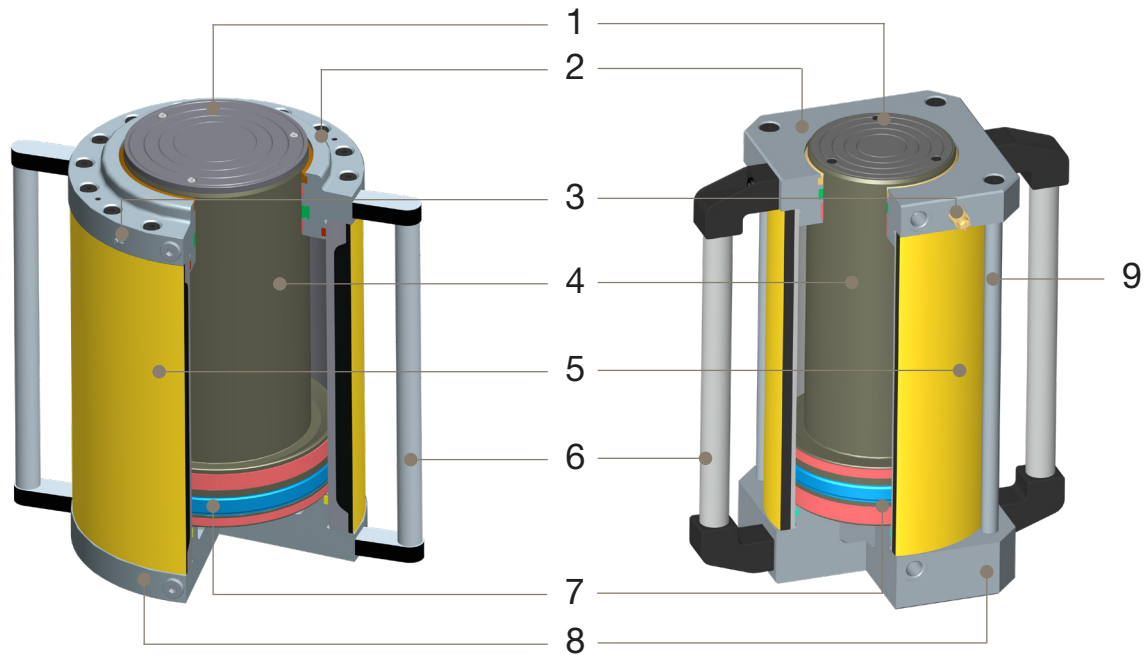
1) Cylinder is not equipped with handle bars.



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Spare Parts

For all Lightraulics® cylinders, spare parts are available. To keep the warranty in effect, we recommend to send your cylinder to our factory for any maintenance work. If you like to enquire for a spare part for your Lightraulics® Heavy Duty Cylinder, please provide your cylinder serial number together with the type of spare part referring to the list below.



Product Type

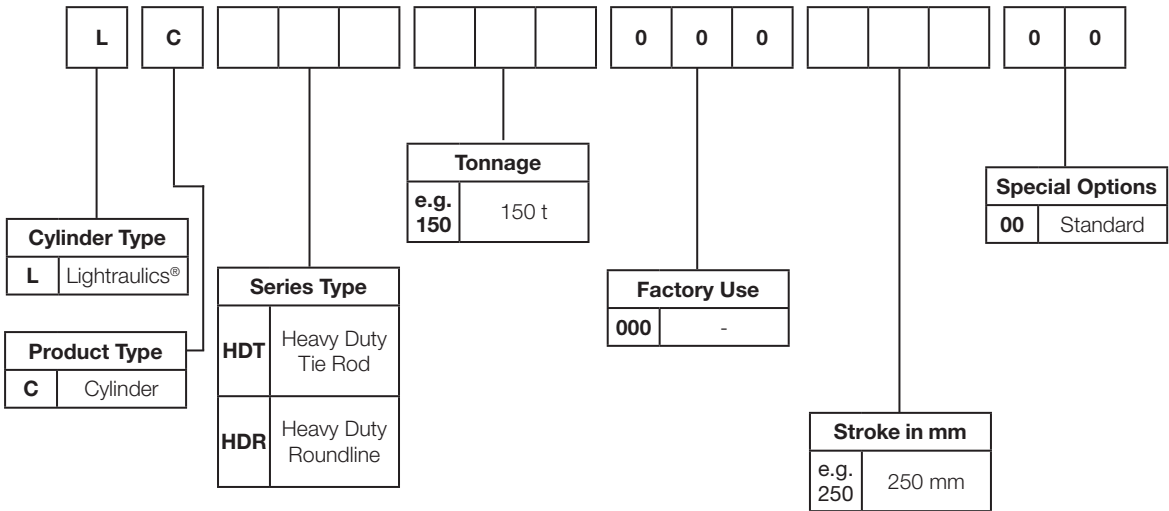
- | | |
|-------------------------------|------------------|
| 1 - Pressure Plate | 6 - Handle |
| 2 - Guiding End Cap | 7 - Seal Kit |
| 3 - Pressure Relief Valve | 8 - Base End Cap |
| 4 - Piston Rod | 9 - Tie Rod |
| 5 - Composite Cylinder Barrel | |

Accessories

For further accessories like quick couplings, hoses, etc. please contact your local authorized Parker distributor.

Order Code Lightraulics® Heavy Duty Cylinders

Please use the following order code to enquire for your Lightraulics® Heavy Duty Cylinder.



Overhaul Service

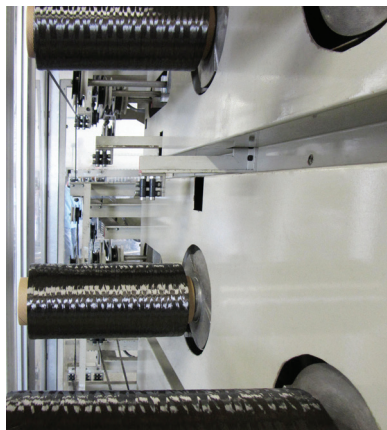
Maintaining peak performance



Parker's unique composite cylinder technology delivers continuous high performance over thousands of cycles.

To maintain the performance and to protect your investment, we offer a maintenance and overhaul service in our factory, to the same

exacting standards as the original manufacturing process. Factory refurbished cylinders are covered by the same warranty terms as the original product.



More information

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Ed. 2016-04-04



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US Product Information Centre

Toll-free number: 1-800-27 27 537

www.parker.com

Your local authorized Parker distributor