

Cylinders

Lifting Products

Pumps

Control Valves

System Components

Presses

Pullers

Specialty Tools

Cutters

Bolting Tools

Flange Maintenance

Heavy Lifting Technology

On-site Machining



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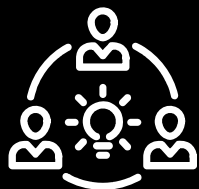
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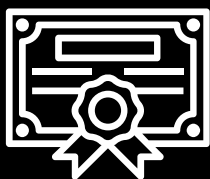
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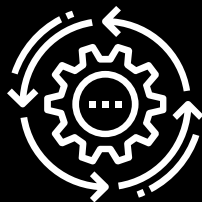
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Enerpac hydraulic cylinders are available in hundreds of different configurations. Whatever the industrial application... lifting, pushing, pulling, bending, holding... whatever the force capacity, stroke length, or size restrictions... single- or double-acting, solid or hollow plunger, you can be sure that Enerpac has the cylinder to suit your high force application. Enerpac jacking cylinders fully comply to ASME B30.1 (except BRD-Series).



With the 3rd Generation comes a trio of key features

The next evolution of the legendary Enerpac RC-Series hydraulic cylinder. The driving force of the Enerpac cylinder range, the new **RC-TRIO** is as **versatile** as ever. Featuring a new Trio Bearing System for **enhanced durability** and a hybrid spring-return system for **faster retraction** and even **greater productivity**.

NEW RC-TRIO SERIES CYLINDERS

New TRIO Bearing System

- Includes up to 4 high-performance wear bands that offer increased resistance to damage, reducing bearing load and increasing cylinder lifespan.
- Hardened composite material wear bands increase bearing surface area for greater sideload resistance - Significantly improving cylinder life.
- New high-performance Polyethylene seals last longer than ever, improving lifespan and keep you working for longer.

New TRIO Stop Ring

- Part of the Trio Bearing System, the Trio Stop Ring includes an additional wear band or high-strength bronze to absorb greater side load
- Capable of taking full cylinder extension force
- Features durable wiper to help prevent contamination from entering the cylinder during retract cycles.

New TRIO Spring System

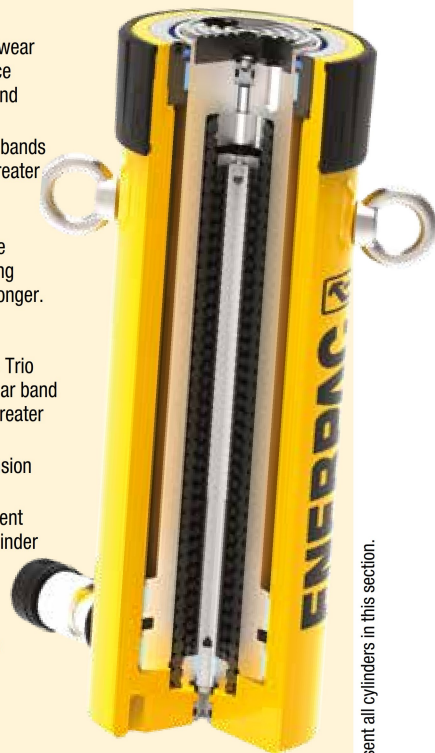
- Hybrid pre-tensioned return springs for up to 3x faster retraction and increased productivity.
- High-strength steel wire improves spring life
- Spring retention design improves serviceability while allowing higher pre-load during assembly
- Spring is easily removed without special tools.

Durable Piston Rod

- High-strength steel plunger for improved life and sideload resistance
- Nickel-plated plunger coating improves corrosion protection
- Internal plunger threads for easy tool fixturing.

Enhanced Ergonomics

- Standard carry handles on cylinders from 15 up to 25 kg. Sizes above include certified lifting eyes or optional handles.
- Collar threads, plunger threads and base mounting holes enable easy fixturing (on most models).



Improved Saddle Retention

- Hardened plunger saddle protects plunger end during all lifting operations
- Easily removable for access to plunger mounting threads
- Tilt and smooth saddles available as accessories (compatible with new range of CATS-Series Tilt Saddles).

Enduring Compatibility

- For full compatibility and peace of mind, the new RC-Series model numbers, external dimensions and threads remain unchanged from prior RC-Series cylinders. Ensuring compatibility with historical versions and systems.



Note: The cut-away drawing is representative of typical cylinder construction, and may not represent all cylinders in this section.

Hydraulic Cylinders and Lifting Products Section Overview

Capacity ¹⁾ ton (kN)	Stroke Range (mm)	Cylinder Type and Functions	Series	Page
5 - 95 (45 - 933)	16 - 362	General Purpose Cylinders, Single-Acting Accessories: Saddles, Base Plates, Mounting Blocks, Clevis Eyes 	RC A, CATS JBI, RE 	6 ▶ 10 ▶
10 - 150 (63 - 1589)	50 - 250	Aluminium Cylinders, Single-Acting, Lock Nut, Hollow Plunger  	RAC RACL RACH 	12 ▶ 14 ▶ 16 ▶
20 - 150 (229 - 1589)	50 - 250	Aluminium Cylinders, Double-Acting Hollow Plunger & Solid Plunger  	RARH RAR 	18 ▶ 20 ▶
10 - 1000 (97 - 10.165)	6 - 17	Ultra-Flat Cylinders, Single-Acting, Load Return, with Stop Ring or Tilting Function 	CULP CUSP 	22 ▶ 23 ▶
60 - 500 (606 - 5114)	45 - 50	Low-Height Lock Nut Cylinders Single-Acting, Load Return 	LPL 	24 ▶
5 - 150 (45 - 1386)	6 - 62	Low-Height Cylinders, Single-Acting or spring-return  	RSM RCS 	26 ▶
4 - 74 (43 - 727)	17 - 600	Low-Height Telescopic Cylinders Multi-Stage Telescopic Cylinders 	RLT RT 	28 ▶ 30 ▶
2,5 - 50 (24 - 506)	127 - 154	Pull Cylinders, Single-Acting, Spring Return 	BRC BRP 	32 ▶
12 - 145 (125 - 1429)	8 - 258	Hollow Plunger Cylinders, Single- and Double-Acting  	RCH RRH 	34 ▶ 36 ▶
4 - 23 (35 - 222)	28 - 260	Precision Production Cylinders, Double-Acting (including Mounting Attachments) 	BRD 	38 ▶
10 - 520 (101 - 5108)	16 - 1219	Long Stroke Cylinders, Double-Acting 	RR 	40 ▶
50 - 1000 (550 - 10.644)	50 - 300	High Tonnage Cylinders, Single- and Double-Acting  	HCG HCR 	48 ▶ 52 ▶
50 - 1000 (550 - 10.644)	50 - 300	High Tonnage Lock Nut Cylinders, Single- and Double-Acting  	HCL HCRL 	56 ▶ 60 ▶
1 - 95 (8,9 - 933)	11 - 362	Cylinder - Pump Sets, Single-Acting Extreme Environment Products Power Box – Portable Tool Sets 	SC RC, P, V SL, SR, SW 	62 ▶ 64 ▶ 65 ▶
2 - 100 (20 - 980)	62 - 460	Aluminium and Steel Jacks Industrial Steel Bottle Jacks 	JH, JHA GBJ 	66 ▶ 67 ▶
54 - 181 (533 - 1778)	356 - 686	POW'R-RISER® Mobile Lifting Jacks POW'R-LOCK™ Mobile Lift System  	PR PL 	68 ▶ 70 ▶

¹⁾ All ton values specified in this catalog are metric ton and are approximate for cylinder class identification only.
Please refer to the kN data for calculations.

▼ From left to right: RC2510, RC53, RC1002, RC108, RC5010, RC156



- Trio Bearing system with hardened composite wear bands for optimal side load resistance
- Strengthened Trio Stop Ring improves durability and side load resistance
- Trio Hybrid pre-tensioned spring system provides faster retraction
- High-grade polyethylene seals for low wear and long service life
- Plunger wiper reduces contamination, extending cylinder life.
- Collar and plunger threads and base mounting holes enable easy fixturing (on most models)
- Standard certified lifting eyes on cylinder models above 25 kg weight. Interchangeable with optional CHM6 carrying handle
- Designed for use in all positions
- Baked enamel finish for increased corrosion resistance
- Includes CR400 coupler, dust cap and collar thread protector
- RC-Series model numbers, external dimensions and threads remain unchanged from prior RC-Series cylinders

▼ Foundation repair: to re-stabilize the foundation, the 308 ton silo needed to be lifted, levelled and structurally supported. 25 ton RC-Series hydraulic jacks were attached to a bracket on the top of each steel pier. Powered by a Z-Class pump, the hydraulic jacks applied 20 ton of force at each placement to lift the silo 5,1 cm.



The Industry Standard General Purpose Cylinder



Saddles

All RC cylinders (except RC50 and RC101) have a hardened removable grooved saddle. For tilt and flat saddles, see the RC-Series accessory page. All CATS-Series Tilt Saddles use a nitrocarburization surface treatment for improved corrosion protection.

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Base Plates

To ensure the stability of cylinders for lifting applications, base plates are available for 10, 25 and 50 ton RC cylinders.

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Specialty Attachments

For solving all kinds of application problems, specialty attachments are available for 5, 10 and 25 ton RC cylinders.

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▼ Synchronous lifting set-up for 200 ton petrochemical process module using twelve RC2510 cylinders. To ensure the stability of the cylinders JBI25 base plates are installed.



Single-Acting, General Purpose Cylinders



Optional Carrying Handle CHM6

Standard certified lifting eyes on cylinder models above 25 kg weight (RC5010 and heavier models). Interchangeable with optional carrying handle. Order model number **CHM6**.

▼ **QUICK SELECTION CHART** For complete technical information see next page.

Cylinder Capacity ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height (mm)		(kg)
5 (45)	16	RC50	6,4	10	41		1,0
	25	RC51	6,4	16	110		1,0
	79	RC53	6,4	50	165		1,5
	127	RC55 *	6,4	83	216		1,9
	177	RC57	6,4	115	273		2,4
	232	RC59	6,4	151	324		2,8
10 (101)	26	RC101	14,4	38	90		1,8
	54	RC102 *	14,4	78	121		2,3
	105	RC104	14,4	152	171		3,3
	156	RC106 *	14,4	226	248		4,4
	203	RC108	14,4	294	298		5,4
	257	RC1010 *	14,4	373	349		6,4
	304	RC1012	14,4	441	400		6,8
	356	RC1014	14,4	516	451		8,2
15 (142)	25	RC151	20,3	51	124		3,3
	51	RC152	20,3	104	149		4,1
	101	RC154 *	20,3	205	200		5,0
	152	RC156 *	20,3	308	271		6,8
	203	RC158	20,3	411	322		8,2
	254	RC1510	20,3	516	373		9,5
	305	RC1512	20,3	619	424		10,9
	356	RC1514	20,3	723	475		11,8
25 (232)	26	RC251	33,3	86	140		5,9
	50	RC252 *	33,3	166	165		6,4
	102	RC254 *	33,3	339	216		8,2
	158	RC256 *	33,3	525	273		10,0
	210	RC258	33,3	697	324		12,2
	261	RC2510	33,3	867	375		14,1
	311	RC2512	33,3	1033	425		16,3
	362	RC2514 *	33,3	1202	476		17,7
30 (295)	209	RC308	42,9	880	387		18,1
50 (498)	51	RC502	71,3	362	176		15,0
	101	RC504	71,3	719	227		19,1
	159	RC506 *	71,3	1131	283		23,1
	260	RC5010	71,3	1855	384		31,8
	337	RC5013	71,3	2399	460		37,6
75 (718)	156	RC756	102,6	1601	286		29,5
	333	RC7513	102,6	3417	492		59,0
95 (933)	50	RC1002	133,1	676	219		36,7
	168	RC1006	133,1	2239	357		59,0
	260	RC10010	133,1	3466	449		72,6

* Available as set, see note on this page.

RC-Trio Series



Capacity:

5 - 95 ton

Stroke:

16 - 362 mm

Maximum Operating Pressure:

700 bar



Think Safety

Manufacturer's rating of load and stroke are maximum safe limits. Good practice encourages using only 80% of these ratings.

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Lightweight Aluminium Cylinders

If you need a higher cylinder capacity-to-weight-ratio the **RAC-Series** are the perfect choice.

Page: **13**

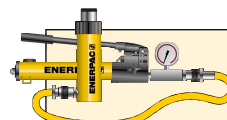


Gauges

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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Cylinder-Pump Sets

All cylinders marked with an * are available as **sets** (cylinder, gauge, couplers, hose and pump) for your ordering convenience.

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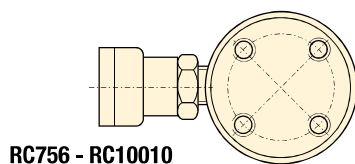
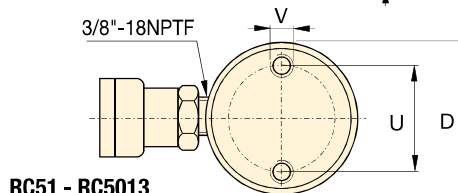
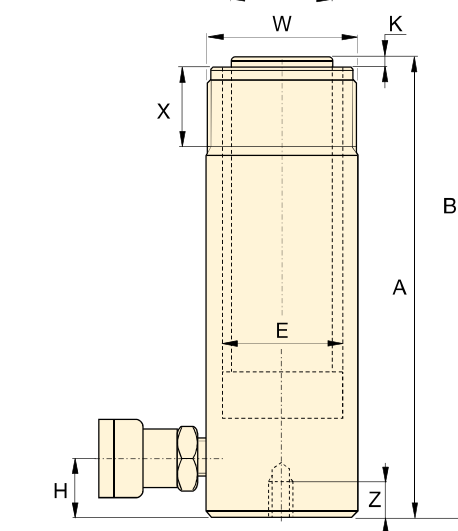
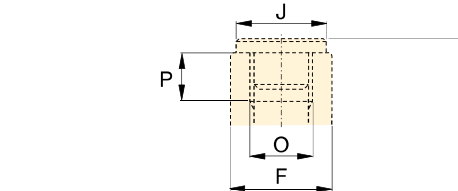
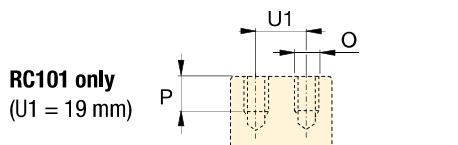
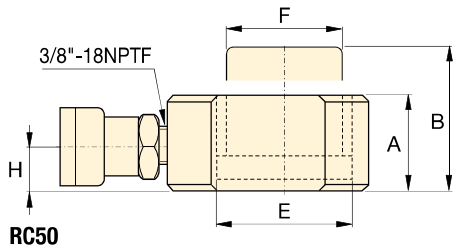
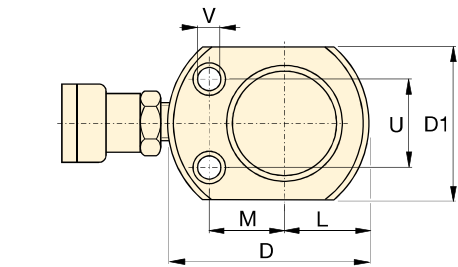


Speed Chart and Pump Selection Tool

See the Enerpac Cylinder Speed Chart in our 'Yellow Pages' to determine your approximate cylinder speed. See Pump Selection Tool on website for help to choose the most suitable pump for your application.

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◀ For full features see previous page.



Cylinder Capacity ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)	Extended Height B (mm)	Outside Dia. D (mm)
5 (45)	16	RC50 ²⁾	6,4	10	41	57	58 ³⁾
	25	RC51	6,4	16	110	135	38
	79	RC53	6,4	50	165	244	38
	127	RC55 ¹⁾	6,4	83	216	343	38
	177	RC57	6,4	115	273	450	38
	232	RC59	6,4	151	324	556	38
10 (101)	26	RC101 ⁴⁾	14,4	38	90	116	57
	54	RC102 ¹⁾	14,4	78	121	175	57
	105	RC104	14,4	152	171	276	57
	156	RC106 ¹⁾	14,4	226	248	404	57
	203	RC108	14,4	294	298	501	57
	257	RC1010 ¹⁾	14,4	373	349	606	57
	304	RC1012	14,4	441	400	704	57
	356	RC1014	14,4	516	451	807	57
15 (142)	25	RC151	20,3	51	124	149	70
	51	RC152	20,3	104	149	200	70
	101	RC154 ¹⁾	20,3	205	200	301	70
	152	RC156 ¹⁾	20,3	308	271	423	70
	203	RC158	20,3	411	322	525	70
	254	RC1510	20,3	516	373	627	70
	305	RC1512	20,3	619	424	729	70
	356	RC1514	20,3	723	475	831	70
25 (232)	26	RC251	33,3	86	140	166	86
	50	RC252 ¹⁾	33,3	166	165	215	86
	102	RC254 ¹⁾	33,3	339	216	318	86
	158	RC256 ¹⁾	33,3	525	273	431	86
	210	RC258	33,3	697	324	534	86
	261	RC2510	33,3	867	375	636	86
	311	RC2512	33,3	1033	425	736	86
	362	RC2514 ¹⁾	33,3	1202	476	838	86
30 (295)	209	RC308	42,9	880	387	596	102
50 (498)	51	RC502	71,3	362	176	227	127
	101	RC504	71,3	719	227	328	127
	159	RC506 ¹⁾	71,3	1131	283	442	127
	260	RC5010	71,3	1855	384	644	127
	337	RC5013	71,3	2399	460	797	127
75 (718)	156	RC756	102,6	1601	286	442	146
	333	RC7513	102,6	3417	492	825	146
95 (933)	51	RC1002	133,1	676	219	270	178
	168	RC1006	133,1	2239	357	525	178
	260	RC10010	133,1	3466	449	709	178

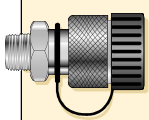
¹⁾ Available as set, see note on page 7.

²⁾ RC50 cylinder has a non removable grooved saddle and no collar thread.

³⁾ RC50: D1 = 41 mm, L = 20 mm, M = 25 mm.

⁴⁾ RC101 has plunger with two thread holes and non-removable saddle.

Single-Acting, General Purpose Cylinders



Couplers Included!
CR-400 couplers included on all models. Fits all HC-Series hoses.

Capacity:

5 - 95 ton

Stroke:

16 - 362 mm

Maximum Operating Pressure:

700 bar

RC-Trio Series



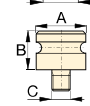
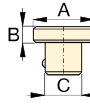
Cylinder Bore Dia. E (mm)	Plunger Dia. F (mm)	Base to Adv. Port H (mm)	Saddle Dia. J (mm)	Saddle Protr. from Plgr. K (mm)	Plunger Internal Thread O	Plunger Thread Length P (mm)	Base Mounting Holes			Collar Thread W	Collar Thread Length X (mm)	 (kg)	Model Number
							Bolt Circle U (mm)	Thread V	Thd. Depth Z (mm)				
28,6	25,4	19	2)	2)	2)	2)	29	5,6 mm	—	—	—	1,0	RC50 ²⁾
28,6	25,4	19	25	6	3/4" - 16 UN	14	25	1/4" - 20 UNC	14	1 1/2" - 16 UN	28	1,0	RC51
28,6	25,4	19	25	6	3/4" - 16 UN	14	25	1/4" - 20 UNC	14	1 1/2" - 16 UN	28	1,5	RC53
28,6	25,4	19	25	6	3/4" - 16 UN	14	25	1/4" - 20 UNC	14	1 1/2" - 16 UN	28	1,9	RC55 ¹⁾
28,6	25,4	19	25	6	3/4" - 16 UN	16	25	1/4" - 20 UNC	14	1 1/2" - 16 UN	28	2,4	RC57
28,6	25,4	19	25	6	3/4" - 16 UN	16	25	1/4" - 20 UNC	14	1 1/2" - 16 UN	28	2,8	RC59
42,8	38,1	19	—	—	#10 - 24 UN	6	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	1,8	RC101 ⁴⁾
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	2,3	RC102 ¹⁾
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	3,3	RC104
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	4,4	RC106 ¹⁾
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	5,4	RC108
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	6,4	RC1010 ¹⁾
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	6,8	RC1012
42,8	38,1	19	35	6	1" - 8 UN	19	40	5/16" - 18 UNC	12	2 1/4" - 14 UN	27	8,2	RC1014
50,8	41,3	19	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	3,3	RC151
50,8	41,3	19	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	4,1	RC152
50,8	41,3	19	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	5,0	RC154 ¹⁾
50,8	41,3	25	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	6,8	RC156 ¹⁾
50,8	41,3	25	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	8,2	RC158
50,8	41,3	25	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	9,5	RC1510
50,8	41,3	25	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	10,9	RC1512
50,8	41,3	25	38	9	1" - 8 UN	25	48	3/8" - 16 UNC	12	2 3/4" - 16 UN	30	11,8	RC1514
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	5,9	RC251
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	6,4	RC252 ¹⁾
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	8,2	RC254 ¹⁾
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	10,0	RC256 ¹⁾
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	12,2	RC258
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	14,1	RC2510
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	16,3	RC2512
65,1	57,2	25	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	19	3 5/16" - 12 UN	49	17,7	RC2514 ¹⁾
73,0	57,2	29	51	10	1 1/2" - 16 UN	25	59	1/2" - 13 UNC	16	3 5/16" - 12 UN	49	18,1	RC308
95,2	79,4	33	71	2	—	—	95	1/2" - 13 UNC	19	5" - 12 UN	55	15,0	RC502
95,2	79,4	33	71	2	—	—	95	1/2" - 13 UNC	19	5" - 12 UN	55	19,1	RC504
95,2	79,4	35	71	2	—	—	95	1/2" - 13 UNC	19	5" - 12 UN	55	23,1	RC506 ¹⁾
95,2	79,4	35	71	2	—	—	95	1/2" - 13 UNC	19	5" - 12 UN	55	31,8	RC5010
95,2	79,4	35	71	2	—	—	95	1/2" - 13 UNC	19	5" - 12 UN	55	37,6	RC5013
114,3	95,3	30	71	2	—	—	114	5/8" - 13 UNC	16	5 3/4" - 12 UN	44	29,5	RC756
114,3	95,3	30	71	2	—	—	114	5/8" - 13 UNC	16	5 3/4" - 12 UN	44	59,0	RC7513
130,2	104,8	41	71	2	—	—	140	3/4" - 10 UNC	25	6 7/8" - 12 UN	44	36,7	RC1002
130,2	104,8	41	71	2	—	—	140	3/4" - 10 UNC	25	6 7/8" - 12 UN	44	59,0	RC1006
130,2	104,8	41	71	2	—	—	140	3/4" - 10 UNC	25	6 7/8" - 12 UN	44	72,6	RC10010

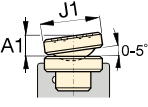
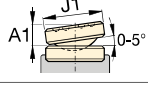
▼ SELECTION CHART

For use with Cylinder Capacity ton (kN)	Saddles			Base Plate	Mounting Block	Clevis Eyes	
	Flat	Grooved ¹⁾	Tilt			Base ⁴⁾	Plunger
							
5 (45)	A53F ²⁾	A53G ²⁾	–	–	RB5 ²⁾, AW51²⁾, AW53²⁾	REB5 ²⁾	REP5 ²⁾
10 (101)	A12³⁾, A102F³⁾	A102G ³⁾	CATS12 ³⁾	JB10 ³⁾	RB10, AW102	REB10	REP10 ³⁾
15 (142)	–	A152G	CATS12	–	RB15	REB15	REP10
25 (232)	A29 ⁵⁾	A252G	CATS52	JB125	RB25	REB25	REP25
30 (295)	A29 ⁵⁾	A252G	CATS52	–	RB25	–	REP25
50 (498)	–	–	CATS100	JB150	–	–	–
75 (718)	–	–	CATS100	–	–	–	–
95 (933)	–	–	CATS100	–	–	–	–

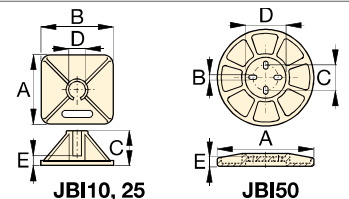
¹⁾ Standard on 5-30 ton RC-cylinders ²⁾ Except RC50 ³⁾ Except RC101 ⁴⁾ Mounting screws are included. ⁵⁾ Used with Bender Sets.

▼ DIMENSION CHARTS

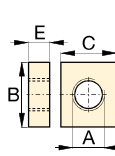
Model Number	Saddle Dimensions (mm)			A53F, A102F	
	A	B	C		
	Flat				
A53F	25	6	17	A12, A29	
A102F	35	6	22		
A12	51	48	1"-8 UNC		
A29	51	48	1½"-16 UNC		
	Grooved				
A53G	25	6	17		
A102G	35	6	22		
A152G	38	9	22		
A252G	50	9	35		

For Cylinder Capacity ton (kN)	Tilt Saddle Model Number	Addition to Collapsed Height A1 (mm)	Saddle Diameter J1 (mm)	
10 (101)	CATS12	14	35	
15 (142)	CATS12	11	35	
25 (232)	CATS52	15	50	
30 (295)	CATS52	15	50	
50 (498)	CATS100	15	71	
75 (718)	CATS100	15	71	
95 (933)	CATS100	15	71	

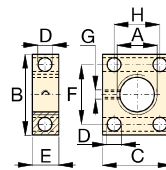
Model Number	Base Plate Dimensions (mm)				
	A	B	C	D	E
JB10	228	228	135	58	20
JB125	279	279	140	86	26
JB150	304	15	95	131	31



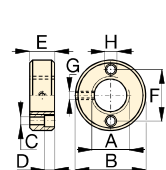
Model Number	Mounting Block Dimensions (mm)							
	A	B	C	D	E	F	G	H
RB5	1½"-16UN	88	76	–	25	–	–	–
AW51	1½"-16UN	70	59	10	24	54	¼"-16 UN	41
AW53	1½"-16UN	72	7	7	19	57	¼"-20 UN	10
RB10	2¼"-14UN	114	88	–	25	–	–	–
AW102	2¼"-14UN	100	82	16	30	76	7/16"-20 UN	58
RB15	2¾"-16UN	101	114	–	38	–	–	–
RB25	3½"-12UN	127	165	–	50	–	–	–



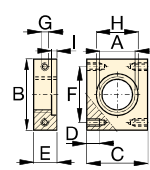
**RB5, -10
RB15, -25**



AW51

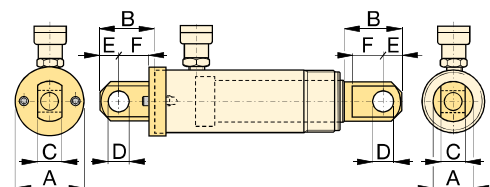


AW53



AW102 (l=4, 8)

Type	Model Number	Clevis Eye Dimensions (mm)						Pin-to-Pin * (mm)
		A	B	C	D	E	F	
Base ⁴⁾	REB5	44	47	14	16	16	25	60,2
	REB10	63	66	25	22	25	35	78,0
	REB15	76	66	25	22	25	35	78,0
	REB25	95	79	38	31	31	41	87,6
Plunger	REP5	28	45	14	16	16	19	–
	REP10	42	61	25	22	25	28	–
	REP25	57	71	38	31	31	35	–



REB

REP

⁴⁾ Mounting screws are included.

* Pin to Pin – REB and REP Clevises fitted. Add cylinder collapsed height.

The Enerpac Lightweight Aluminium Cylinders

▼ From left to right: RAC, RACL, RACH, RAR



- Lightweight, easy to carry and position to allow a higher cylinder capacity-to-weight-ratio
- Non-corrosive by design, aluminium has always been a good material for use in many caustic environments
- Composite Bearings on all moving surfaces guarantee no metal-to-metal contact, to resist side loads and increase cylinder life.



RA Series

Capacity:

10 - 150 ton

Stroke:

50 - 250 mm

Maximum Operating Pressure:

700 bar



Think Safety

Manufacturer's rating of load and stroke are maximum safe limits.

Good practice encourages using only 80% of these ratings.

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Aluminium versus Steel

Aluminium cylinders, while offering the most lightweight solution, also have some unique limitations due to material properties. It differs from steel in that it has a lower finite fatigue life. Aluminium cylinders should NOT be used in high-cycle applications such as production.

The Enerpac line of aluminium cylinders are designed to provide 5000 cycles at their recommended pressure. **This limit should not be exceeded.** In normal lifting and many maintenance applications, this should provide a lifetime of use.



Steel Base Plate

The steel base plate protects the cylinder from damage, it should not be removed.

The base holes in these aluminium cylinders are designed for securing the steel base plate. They will not withstand the capacity of the cylinder.

Do not use the base holes in these aluminium cylinders to attach any device to the cylinder.

▼ Shown from left to right: RAC5010, RAC15010, RAC304, RAC208



Lightweight for Maximum Portability



Saddles

All RAC-cylinders are equipped with bolt-on removable hardened steel saddles. For Tilt Saddles see next page.

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Lightweight Hand Pumps

The Enerpac composite lightweight hand pumps **P392** or **P802** make the optimal lightweight set.

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- Composite bearings prevent metal-to-metal contact, increasing cylinder life and resistance to side-loads of up to 10%
- Hard-Coat finish on all surfaces resists damage and extends cylinder life
- Handles included on all 30 - 150 ton models
- For protection against load-induced damage a saddle is standard on all models
- Steel base plate is standard on RAC 20 ton models and above. The steel base plate is optional only on RAC10 and 15 ton models
- Integral stop ring prevents plunger over-travel and is capable of withstanding the full cylinder capacity
- High strength return spring for rapid cylinder retraction
- CR400 coupler and dustcap included on all models
- All cylinders meet ASME B-30.1 standard.

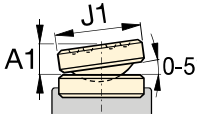
Cylinder Capacity at 700 bar ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)
10 (88)	50	RAC102	12,6
	100	RAC104	12,6
	150	RAC106	12,6
15 (137)	50	RAC152	19,6
	100	RAC154	19,6
	150	RAC156	19,6
20 (218)	50	RAC202	31,2
	100	RAC204	31,2
	150	RAC206	31,2
	200	RAC208	31,2
	250	RAC2010	31,2
30 (309)	50	RAC302	44,2
	100	RAC304	44,2
	150	RAC306	44,2
	200	RAC308	44,2
	250	RAC3010	44,2
50 (496)	50	RAC502	70,9
	100	RAC504	70,9
	150	RAC506	70,9
	200	RAC508	70,9
	250	RAC5010	70,9
100 (1002)	50	RAC1002	143,1
	100	RAC1004	143,1
	150	RAC1006	143,1
	200	RAC1008	143,1
	250	RAC10010	143,1
150 (1589)	50	RAC1502	227,0
	100	RAC1504	227,0
	150	RAC1506	227,0
	200	RAC1508	227,0
	250	RAC15010	227,0



◀ The unique Enerpac RA-Series cylinders – lightweight and made of aluminium alloy – these RAC506 cylinders are ideal for the positioning of tunnel elements under the river (High Speed Train Line, The Netherlands).

Single-Acting, Aluminium Cylinders

Optional Bolt-on Tilt Saddle Dimensions (mm)

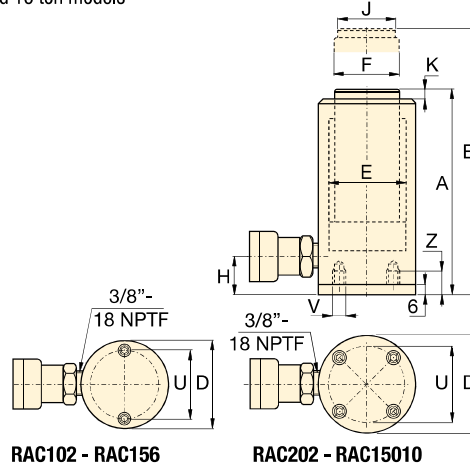
For Cylinder Model / Capacity ton	Tilt Saddle * Model Number	Tilt Saddle Diameter J1	Addition to Collapsed Height A1	
RAC20, 30	CATS30	55	11	
RAC50	CATS50	71	14	
RAC100	CATS150	97	19	
RAC150	CATS200	126	18	

* Tilt saddles not available for 10 and 15 ton models

Optional Steel Base Plate

For Cylinder Model / Capacity ton	Base Plate ²⁾ Model Number
RAC10	JBA10
RAC15	JBA15

²⁾ Base plate height of 6mm included on all 20-150 ton models. Base Plate is optional on 10-15 ton cylinders.



RAC102 - RAC156

RAC202 - RAC15010

RAC Series



Capacity:

10 - 150 ton

Stroke:

50 - 250 mm

Maximum Operating Pressure:

700 bar



Steel Base Plate

The steel base plate protects the cylinder from damage, it should not be removed. See warning on page 11.

Oil Capacity	Collapsed Height	Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter	Bottom to Advance Port	Saddle Diameter	Saddle Protrusion from Plunger	Bolt Circle	Thread	Thread Depth		Model Number
(cm ³)	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (mm)	K (mm)	U (mm)	V (mm)	Z (mm)	(kg)	
60	154	201	58	40	32	23	24	3	39	M6	12	1,3	RAC102
130	204	304	58	40	32	23	24	3	39	M6	12	1,7	RAC104
190	254	404	58	40	32	23	24	3	39	M6	12	2,0	RAC106
100	161	211	70	50	40	23	29	3	48	M6	12	1,9	RAC152
200	211	311	70	50	40	23	29	3	48	M6	12	2,4	RAC154
290	261	411	70	50	40	23	29	3	48	M6	12	2,9	RAC156
156	174	224	85	63	50	27	40	3	70	M6	12	3,6	RAC202
312	224	324	85	63	50	27	40	3	70	M6	12	4,1	RAC204
468	274	424	85	63	50	27	40	3	70	M6	12	4,6	RAC206
624	324	524	85	63	50	27	40	3	70	M6	12	5,1	RAC208
780	374	624	85	63	50	27	40	3	70	M6	12	5,6	RAC2010
221	181	231	100	75	60	32	40	3	80	M6	12	4,5	RAC302
442	231	331	100	75	60	32	40	3	80	M6	12	5,2	RAC304
663	281	431	100	75	60	32	40	3	80	M6	12	5,9	RAC306
884	331	531	100	75	60	32	40	3	80	M6	12	6,6	RAC308
1105	381	631	100	75	60	32	40	3	80	M6	12	7,3	RAC3010
354	186	236	130	95	80	30	50	3	110	M6	12	8,5	RAC502
709	236	336	130	95	80	30	50	3	110	M6	12	9,8	RAC504
1063	286	436	130	95	80	30	50	3	110	M6	12	11,1	RAC506
1417	336	536	130	95	80	30	50	3	110	M6	12	12,4	RAC508
1771	386	636	130	95	80	30	50	3	110	M6	12	13,7	RAC5010
715	221	271	180	135	110	46	94	3	150	M10	12	17,3	RAC1002
1431	271	371	180	135	110	46	94	3	150	M10	12	19,6	RAC1004
2147	321	471	180	135	110	46	94	3	150	M10	12	21,9	RAC1006
2863	371	571	180	135	110	46	94	3	150	M10	12	24,2	RAC1008
3578	421	671	180	135	110	46	94	3	150	M10	12	26,5	RAC10010
1135	243	293	230	170	140	51	113	3	200	M10	12	25,3	RAC1502
2270	293	393	230	170	140	51	113	3	200	M10	12	29,3	RAC1504
3405	343	493	230	170	140	51	113	3	200	M10	12	33,3	RAC1506
4540	393	593	230	170	140	51	113	3	200	M10	12	37,3	RAC1508
5675	443	693	230	170	140	51	113	3	200	M10	12	41,3	RAC15010

▼ Shown from left to right: RACL1006, RACL504, RACL5010



- Aluminium Lock Nut provides mechanical load holding for extended periods
- Hardened steel stop ring increasing cylinder life and resistance to side-loads of up to 5%
- Hard-Coat finish on all surfaces resists damage and extends cylinder life
- Composite bearings increase cylinder life and side load resistance
- Handles included on all models
- Steel base plate and saddle for protection against load-induced damage
- Integral stop ring prevents plunger over-travel and is capable of withstanding the full cylinder capacity
- High strength return spring for rapid cylinder retraction
- CR400 coupler and dustcap included on all models
- All cylinders meet ASME B-30.1 standards.



◀ The portable lock nut cylinder RACL1506 used for extended load supports during epoxy injection for bridge reinforcement.



Saddles

All RACL-cylinders are equipped with bolt-on removable hardened steel saddles. For Tilt Saddles see next page.

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Hoses

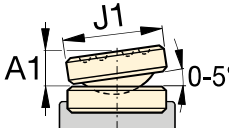
Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac hydraulic hoses.

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Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)
20 (218)	50	RACL202	31,2
	100	RACL204	31,2
	150	RACL206	31,2
	200	RACL208	31,2
	250	RACL2010	31,2
30 (309)	50	RACL302	44,2
	100	RACL304	44,2
	150	RACL306	44,2
	200	RACL308	44,2
	250	RACL3010	44,2
50 (496)	50	RACL502	70,9
	100	RACL504	70,9
	150	RACL506	70,9
	200	RACL508	70,9
	250	RACL5010	70,9
100 (1002)	50	RACL1002	143,1
	100	RACL1004	143,1
	150	RACL1006	143,1
	200	RACL1008	143,1
	250	RACL10010	143,1
150 (1589)	50	RACL1502	227,0
	100	RACL1504	227,0
	150	RACL1506	227,0
	200	RACL1508	227,0
	250	RACL15010	227,0

Single-Acting, Aluminium Lock Nut Cylinders

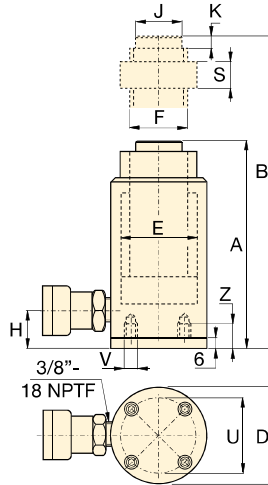
Optional Bolt-on Tilt Saddle Dimensions (mm)

For Cylinder Model / Capacity ton	Tilt Saddle Model Number	Tilt Saddle Diameter	Addition to Collapsed Height A1	
RACL20, 30	CATS30	55	11	
RACL50	CATS50	71	14	
RACL100	CATS150	97	19	
RACL150	CATS200	126	18	

Steel Base Plate Mounting Holes

Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth ¹⁾ Z (mm)
RACL20	70	M6	12
RACL30	80	M6	12
RACL50	110	M6	12
RACL100	150	M10	12
RACL150	200	M10	12

¹⁾ Including Base Plate Height of 6 mm and four (4) base plate bolts M6.



RACL Series



Capacity:

20 - 150 ton

Stroke:

50 - 250 mm

Maximum Operating Pressure:

700 bar

	Oil Capacity (cm ³)	Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter (Threaded) F (mm)	Bottom to Advance Port H (mm)	Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)	Lock Nut Height S (mm)	 (kg)	Model Number
	156	224	274	85	63	Tr 55 x 4	27	40	3	50	4,0	RACL202
	312	274	374	85	63	Tr 55 x 4	27	40	3	50	4,6	RACL204
	468	324	474	85	63	Tr 55 x 4	27	40	3	50	5,2	RACL206
	624	374	574	85	63	Tr 55 x 4	27	40	3	50	5,8	RACL208
	780	424	674	85	63	Tr 55 x 4	27	40	3	50	6,4	RACL2010
	221	231	281	100	75	Tr 60 x 4	33	40	3	50	5,4	RACL302
	442	281	381	100	75	Tr 60 x 4	33	40	3	50	6,1	RACL304
	663	331	481	100	75	Tr 60 x 4	33	40	3	50	6,8	RACL306
	883	381	581	100	75	Tr 60 x 4	33	40	3	50	7,5	RACL308
	1105	431	681	100	75	Tr 60 x 4	33	40	3	50	8,2	RACL3010
	354	236	286	130	95	Tr 80 x 4	30	50	3	50	9,3	RACL502
	709	286	386	130	95	Tr 80 x 4	30	50	3	50	10,6	RACL504
	1063	336	486	130	95	Tr 80 x 4	30	50	3	50	12,6	RACL506
	1417	386	586	130	95	Tr 80 x 4	30	50	3	50	13,2	RACL508
	1771	436	686	130	95	Tr 80 x 4	30	50	3	50	14,5	RACL5010
	716	296	346	180	135	Tr 110 x 6	46	94	3	75	21,9	RACL1002
	1431	346	446	180	135	Tr 110 x 6	46	94	3	75	24,2	RACL1004
	2147	396	546	180	135	Tr 110 x 6	46	94	3	75	26,5	RACL1006
	2863	446	646	180	135	Tr 110 x 6	46	94	3	75	28,8	RACL1008
	3578	496	746	180	135	Tr 110 x 6	46	94	3	75	31,1	RACL10010
	1135	323	373	230	170	Tr 140 x 6	51	113	3	80	32,2	RACL1502
	2270	373	473	230	170	Tr 140 x 6	51	113	3	80	36,2	RACL1504
	3405	423	573	230	170	Tr 140 x 6	51	113	3	80	40,2	RACL1506
	4540	473	673	230	170	Tr 140 x 6	51	113	3	80	44,2	RACL1508
	5675	523	773	230	170	Tr 140 x 6	51	113	3	80	48,2	RACL15010

▼ Shown from left to right: RACH1504, RACH15010, RACH206, RACH306



The Lightweight Solution for Tensioning and Testing



Saddles

All RACH-cylinders are equipped with bolt-on hollow removable saddles of hardened steel.



Lightweight Hand Pumps

The Enerpac composite lightweight hand pumps **P392** or **P802** make the optimal lightweight set.

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- Hollow plunger design allows for both pull and push forces
- Composite bearings increase cylinder life and sideload resistance
- Hard-Coat finish on all surfaces resists damage and extends cylinder life
- Floating center tube increases seal and product life
- Handles standard on all models
- Steel base plate and saddle for protection against load-induced damage
- Integral stop ring prevents plunger over-travel and is capable of withstanding the full cylinder capacity
- High strength return spring for rapid cylinder retraction
- CR400 coupler and dustcap included on all models
- All cylinders meet ASME B-30.1 standards.



◀ An RACH306 powered by a P392 hand pump used to extract corroded carriage pins of refuse collection vehicles.

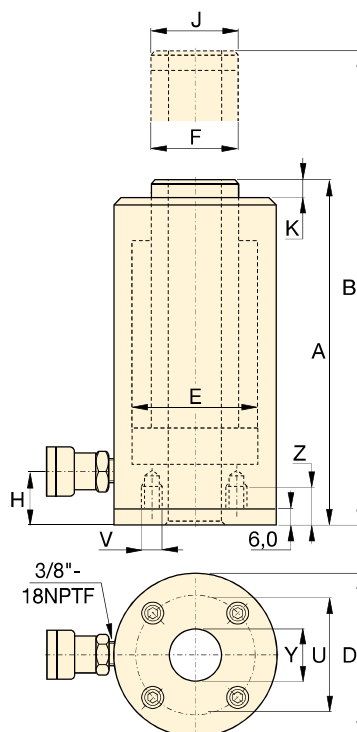
Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)
20 (229)	50	RACH202	32,7
	100	RACH204	32,7
	150	RACH206	32,7
	200	RACH208	32,7
	250	RACH2010	32,7
30 (358)	50	RACH302	51,1
	100	RACH304	51,1
	150	RACH306	51,1
	200	RACH308	51,1
	250	RACH3010	51,1
60 (596)	50	RACH602	84,7
	100	RACH604	84,7
	150	RACH606	84,7
	200	RACH608	84,7
	250	RACH6010	84,7
100 (1157)	50	RACH1002	164,6
	100	RACH1004	164,6
	150	RACH1006	164,6
	200	RACH1008	164,6
	250	RACH10010	164,6
150 (1588)	50	RACH1502	225,8
	100	RACH1504	225,8
	150	RACH1506	225,8
	200	RACH1508	225,8
	250	RACH15010	225,8

Single-Acting, Aluminium Hollow Plunger Cylinders

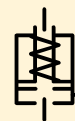
Steel Base Plate Mounting Holes

Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth ¹⁾ Z (mm)
RACH20	80	M6	12
RACH30	110	M6	12
RACH60	160	M6	12
RACH100	220	M10	12
RACH150	245	M10	12

¹⁾ Including Base Plate Height of 6 mm and four (4) base plate bolts M6.



RACH Series



Capacity:

20 - 150 ton

Stroke:

50 - 250 mm

Center Hole Diameter:

27 - 79 mm

Maximum Operating Pressure:

700 bar

	Oil Capacity (cm ³)	Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter F (mm)	Bottom to Advance Port H (mm)	Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)	Center Hole Diameter Y (mm)	 (kg)	Model Number
	164	188	238	100	75	55	29	55	10	27	5,2	RACH202
	327	251	351	100	75	55	29	55	10	27	6,1	RACH204
	491	315	465	100	75	55	29	55	10	27	7,1	RACH206
	654	378	578	100	75	55	29	55	10	27	8,0	RACH208
	818	442	692	100	75	55	29	55	10	27	9,0	RACH2010
	256	208	258	130	95	70	29	70	10	34	8,0	RACH302
	511	267	367	130	95	70	29	70	10	34	9,5	RACH304
	766	333	483	130	95	70	29	70	10	34	11,2	RACH306
	1022	395	595	130	95	70	29	70	10	34	12,9	RACH308
	1277	458	708	130	95	70	29	70	10	34	14,5	RACH3010
	423	251	301	180	130	100	61	100	12	54	16,2	RACH602
	847	315	415	180	130	100	61	100	12	54	19,5	RACH604
	1270	380	530	180	130	100	61	100	12	54	25,6	RACH606
	1694	445	645	180	130	100	61	100	12	54	26,0	RACH608
	2117	510	760	180	130	100	61	100	12	54	29,6	RACH6010
	823	258	308	250	185	145	61	145	14	79	33,8	RACH1002
	1646	325	425	250	185	145	61	145	14	79	39,8	RACH1004
	2487	391	541	250	185	145	61	145	14	79	46,2	RACH1006
	3291	459	659	250	185	145	61	145	14	79	52,2	RACH1008
	4114	527	777	250	185	145	61	145	14	79	58,8	RACH10010
	1129	280	330	275	205	150	61	145	14	79	48,9	RACH1502
	2258	360	460	275	205	150	61	145	14	79	55,7	RACH1504
	3387	430	580	275	205	150	61	145	14	79	63,0	RACH1506
	4517	500	700	275	205	150	61	145	14	79	70,1	RACH1508
	5646	570	820	275	205	150	61	145	14	79	77,2	RACH15010

▼ Shown from left to right: RARH6010 and RARH306



- Lighter and shorter collapsed height than equivalent RACH models
- Double-acting for rapid retraction, regardless of hose lengths or system losses
- Built-in safety valve prevents accidental over-pressurization
- Hollow plunger design allows for both pull and push forces
- Hard coat finish on all surfaces resists damage and extends cylinder life
- Handles and CR400 couplers with dust caps included on all models
- Floating center tube increases seal life
- Steel baseplate and saddle for protection against load-induced damage
- Integral stop ring prevents plunger over-travel and is capable of withstanding the full cylinder capacity
- All cylinders meet ASME B-30.1 standards.

The Lightweight Solution for Double-Acting Applications



Hoses

Enerpac offers a complete line of high-quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac

hydraulic hoses.

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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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4-Way Control Valve

The P84 and P464 hand pumps feature a manual 4-way control valve, designed for use with one double-acting or two single-acting

cylinders. For system set-up information:

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Cylinder Capacity ton (kN)	Stroke * (mm)	Model Number	Maximum Cylinder Capacity at 700 bar (kN)		Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)	
			Advance	Retract	Advance	Retract	Advance	Retract
30 (359)	50	RARH302	359	187	51,2	26,7	256	134
	150	RARH306	359	187	51,2	26,7	769	401
	250	RARH3010	359	187	51,2	26,7	1281	668
60 (595)	50	RARH602	595	264	84,9	37,7	425	189
	150	RARH606	595	264	84,9	37,7	1274	566
	250	RARH6010	595	264	84,9	37,7	2124	943
100 (1001)	50	RARH1002	1001	568	142,9	81,1	715	405
	150	RARH1006	1001	568	142,9	81,1	2144	1216
	250	RARH10010	1001	568	142,9	81,1	3574	2027
150 (1489)	50	RARH1502	1489	748	212,6	106,8	1063	534
	150	RARH1506	1489	748	212,6	106,8	3190	1602
	250	RARH15010	1489	748	212,6	106,8	5316	2670

* Intermediate strokes and other tonnages available upon request.

Aluminium Double-Acting Hollow Plunger Cylinders



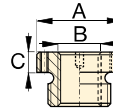
Steel Base Plate

The steel base plate protects the cylinder base from damage, it should not be removed. The base holes in these aluminum cylinders are designed for securing the steel base plate.

They will not withstand the capacity of the cylinder. Do not use the base holes in these aluminum cylinders to attach any device to the cylinder.

Optional Threaded Hollow Saddles

Saddle Type	Cylinder Model Number	Saddle Model Number	Saddle Dimensions (mm)		
			A	B	C
Threaded Hollow	RARH302, 306, 3010	HP3015	63	1¼"-7 UN	9
	RARH602, 606, 6010	HP5016	91	1⅝"-5½ UN	12
	RARH1002, 1006, 10010	HP10016	126	2½"-8 UN	13

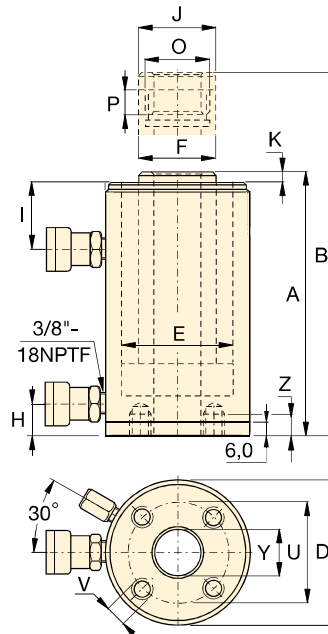


Smooth hollow saddles are standard on all RARH-models.

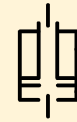
Steel Base Plate Mounting Holes (mm)

Cylinder Model / Capacity (ton)	Bolt Circle U	Thread V	Thread Depth ¹⁾ Z
RARH30	110	M6	12
RARH60	160	M6	12
RARH100	200	M10	12
RARH150	250	M10	12

¹⁾ Including Base Plate Height of 6 mm and four (4) base plate bolts.



RARH Series



Capacity:

30 - 150 ton

Stroke:

50 - 250 mm

Center Hole Diameter:

34 - 79 mm

Maximum Operating Pressure:

700 bar



RACH-Series, Single-Acting, Spring Return

To be used when a single-acting pump is available and retraction time is not critical.

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Pump Selection

A double-acting cylinder must be powered by a pump with a 4-way valve.

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Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter F (mm)	Cyl. Base to Advance Port H (mm)	Cyl. Top to Return Port I (mm)	Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)	Plunger Internal Thread O (inch)	Plunger Thread Length P (mm)	Center Hole Diameter Y (mm)	(kg)	Model Number
209	259	135	95	75	22	64	63	10	1⅜"-16 UN	23	34	8,9	RARH302
309	459	135	95	75	22	64	63	10	1⅜"-16 UN	23	34	11,9	RARH306
409	659	135	95	75	22	64	63	10	1⅜"-16 UN	23	34	14,9	RARH3010
246	296	180	130	110	48	83	92	13	2¼"-16 UN	20	54	16,8	RARH602
346	496	180	130	110	48	83	92	13	2¼"-16 UN	20	54	22,2	RARH606
446	696	180	130	110	48	83	92	13	2¼"-16 UN	20	54	27,6	RARH6010
254	304	235	165	130	61	78	126	13,5	4"-16 UN	27	79	28,9	RARH1002
354	504	235	165	130	61	78	126	13,5	4"-16 UN	27	79	38,3	RARH1006
454	704	235	165	130	61	78	126	13,5	4"-16 UN	27	79	47,7	RARH10010
264	314	280	190	150	61	83	127	18,8	4¼"-12 UN	40	79	42,4	RARH1502
364	514	280	190	150	61	83	127	18,8	4¼"-12 UN	40	79	56,2	RARH1506
464	714	280	190	150	61	83	127	18,8	4¼"-12 UN	40	79	70,0	RARH15010

▼ Shown from left to right: RAR5010, RAR308, RAR204



Saddles

All RAR-cylinders are equipped with bolt-on removable hardened steel saddles. For Tilt Saddles see next page.

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Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac

hydraulic hoses.

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- Double-acting for rapid retraction, regardless of hose lengths or system losses
- Composite bearings increase cylinder life and sideload resistance
- Hard-Coat finish on all surfaces resists damage and extends cylinder life
- Handles and CR400 couplers included on all models
- Steel base plate and saddle for protection against load-induced damage
- Integral stop ring prevents plunger over-travel and is capable of withstanding the full cylinder capacity
- Built-in safety valve prevents accidental over-pressurization.

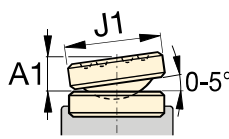
▼ An RAR506 was easy to position under a bulldozer for repair of frame member.



Cylinder Capacity @ 700 bar ton	Stroke (mm)	Model Number	Max. Cylinder Capacity (kN) Push	Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)	
				Push	Pull	Push	Pull
20	50	RAR202	218	31,2	18,6	156	93
	100	RAR204	218	31,2	18,6	312	186
	150	RAR206	218	31,2	18,6	468	279
	200	RAR208	218	31,2	18,6	624	372
	250	RAR2010	218	31,2	18,6	780	465
30	50	RAR302	309	44,2	24,5	221	123
	100	RAR304	309	44,2	24,5	442	245
	150	RAR306	309	44,2	24,5	663	368
	200	RAR308	309	44,2	24,5	884	490
	250	RAR3010	309	44,2	24,5	1105	613
50	50	RAR502	496	70,9	26,7	354	134
	100	RAR504	496	70,9	26,7	709	267
	150	RAR506	496	70,9	26,7	1063	401
	200	RAR508	496	70,9	26,7	1417	534
	250	RAR5010	496	70,9	26,7	1771	668
100	50	RAR1002	1002	143,1	79,5	715	398
	100	RAR1004	1002	143,1	79,5	1431	795
	150	RAR1006	1002	143,1	79,5	2147	1193
	200	RAR1008	1002	143,1	79,5	2863	1590
	250	RAR10010	1002	143,1	79,5	3578	1988
150	50	RAR1502	1589	227,0	132,0	1135	660
	100	RAR1504	1589	227,0	132,0	2270	1320
	150	RAR1506	1589	227,0	132,0	3405	1980
	200	RAR1508	1589	227,0	132,0	4540	2640
	250	RAR15010	1589	227,0	132,0	5675	3300

Double-Acting Aluminium Cylinders

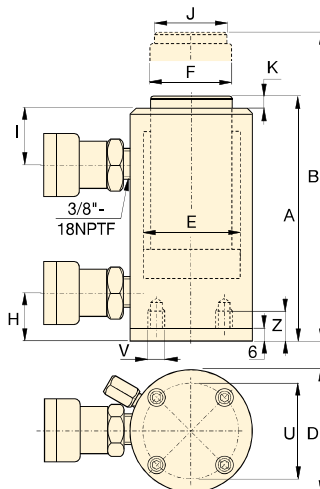
Optional Bolt-on Tilt Saddle Dimensions (mm)

For Cylinder Model / Capacity ton	Tilt Saddle Model Number	Tilt Saddle Diameter	Addition to Collapsed Height A1	
RAR20	CATS20	42	10	
RAR30	CATS30	55	11	
RAR50	CATS50	71	14	
RAR100	CATS101	71	10	
RAR150	CATS150	97	19	

Steel Base Plate Mounting Holes

Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth ¹⁾ Z (mm)
RAR20	93	M6	12
RAR30	105	M6	12
RAR50	110	M6	12
RAR100	165	M6	12
RAR150	200	M6	12

¹⁾ Including Base Plate Height of 6 mm and four (4) base plate bolts M6.



RAR Series



Capacity:

20 - 150 ton

Stroke:

50 - 250 mm

Maximum Operating Pressure:

700 bar

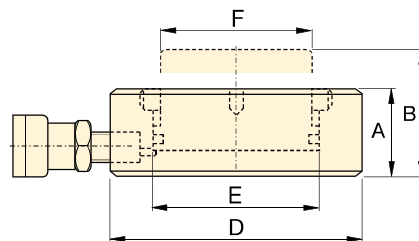
	Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter F (mm)	Bottom to Advance Port H (mm)	Top to Retract Port I (mm)	Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)	 (kg)	Model Number
	189	239	113	63	40	30	50	30	3	7,4	RAR202
	239	339	113	63	40	30	50	30	3	8,0	RAR204
	289	439	113	63	40	30	50	30	3	8,6	RAR206
	339	539	113	63	40	30	50	30	3	9,2	RAR208
	389	639	113	63	40	30	50	30	3	9,8	RAR2010
	201	251	125	75	50	30	55	40	3	8,6	RAR302
	251	351	125	75	50	30	55	40	3	9,5	RAR304
	301	451	125	75	50	30	55	40	3	10,4	RAR306
	351	551	125	75	50	30	55	40	3	11,3	RAR308
	401	651	125	75	50	30	55	40	3	12,2	RAR3010
	201	251	145	95	75	30	56	50	3	11,1	RAR502
	251	351	145	95	75	30	56	50	3	12,7	RAR504
	301	451	145	95	75	30	56	50	3	14,3	RAR506
	351	551	145	95	75	30	56	50	3	15,9	RAR508
	401	651	145	95	75	30	56	50	3	17,5	RAR5010
	251	301	185	135	90	43	80	75	3	16,4	RAR1002
	301	401	185	135	90	43	80	75	3	19,3	RAR1004
	351	501	185	135	90	43	80	75	3	22,2	RAR1006
	401	601	185	135	90	43	80	75	3	25,1	RAR1008
	451	701	185	135	90	43	80	75	3	28,0	RAR10010
	248	298	230	170	110	38	75	94	3	24,2	RAR1502
	298	398	230	170	110	38	75	94	3	28,9	RAR1504
	348	498	230	170	110	38	75	94	3	33,2	RAR1506
	398	598	230	170	110	38	75	94	3	37,9	RAR1508
	448	698	230	170	110	38	75	94	3	42,6	RAR15010

▼ CULP50 Ultra-Flat Cylinder, with Stop Ring



- Up to 4% side load of maximum capacity
- Stop ring for maximum stroke limitation
- Extremely low collapsed height
- Nitrocarburized surface treatment for harsh conditions.

▼ The Ultra-Flat cylinders are designed for applications where high lifting forces are required in confined spaces starting at 2,8 cm.



CULP Series



Capacity:

10 - 100 ton

Stroke:

6 mm

Maximum Operating Pressure:

700 bar

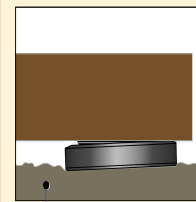


IMPORTANT!

All Ultra-Flat Cylinders require a solid lifting surface for correct support. The use of these flat cylinders on surfaces such as sand, mud or dirt, may result in cylinder damage.



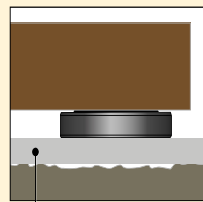
INCORRECT!



Rough soil



CORRECT!



Flat lifting surface

For more safety instructions see our 'Yellow Pages'.

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Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac

hydraulic hoses.

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Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter F (mm)	 (kg)
10 (97)	6	CULP10 ¹⁾	13,9	8,3	27,5	33,5	72	42	38	1,0
20 (198)	6	CULP20 ¹⁾	28,3	17,0	32,0	38,0	90	60	55	1,7
30 (310)	6	CULP30 ¹⁾	44,2	26,5	35,0	41,0	105	75	67	2,5
50 (550)	6	CULP50 ¹⁾	78,5	47,1	44,5	50,5	140	100	90	5,4
100 (1078)	6	CULP100 ²⁾	153,9	92,5	65,0	71,0	195	140	125	11,5

¹⁾ Coupler AR630 including dustcap: use HB7206 hose including AH630 coupler to connect to your pump.

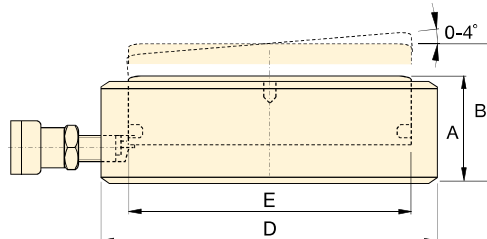
²⁾ Coupler CR400 including dustcap: use HC-Series hose including CH604 coupler to connect to your pump.

High Tonnage, Ultra-Flat Cylinders

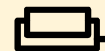
▼ CUSP-Series, Ultra-Flat High Tonnage Cylinders, integrated tilting function.



- Up to 4% side load of maximum capacity
- Extremely low collapsed height
- Integrated tilting function up to 4 degrees to evenly distribute the load
- Nitrocarburized surface treatment for harsh conditions
- “Red Line” for visual maximum stroke indication.



CUSP Series



Capacity:

10 - 1000 ton

Stroke Straight / Tilted Stroke:

7 - 17 mm / 6 - 10 mm

Integrated:

Tilting Function

Maximum Operating Pressure:

700 bar



IMPORTANT!

CUSP-Cylinders DO NOT have a Stop Ring for stroke limitation!



IMPORTANT!

All Ultra-Flat Cylinders require a solid lifting surface for correct support. The use of these flat cylinders on surfaces such as sand, mud or dirt, may result in cylinder damage.

See instructions on page 22 or more safety instructions in our Yellow Pages.

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Cylinder Capacity @ 700 bar ton (kN)	Tilted Stroke (mm)	Straight Stroke (mm)	Model Number	Tilting +/- (degree)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)	Extended Height B (mm)	Cylinder Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	 (kg)
10 (97)	6	6,7	CUSP10 ¹⁾	2	13,9	9,3	35,5	41,5	72	42	1,2
20 (198)	6	7,0	CUSP20 ¹⁾	2	28,3	19,8	40,5	46,5	90	60	1,9
30 (310)	6	7,3	CUSP30 ¹⁾	2	44,2	32,1	42,5	48,5	105	75	2,7
50 (550)	10	13,3	CUSP50 ¹⁾	4	78,5	104	57,0	67,0	130	100	5,6
75 (792)	10	14,0	CUSP75 ¹⁾	4	113,1	158	60,5	70,5	150	120	8,0
100 (1078)	10	14,7	CUSP100 ²⁾	4	153,9	226	63,5	73,5	170	140	10,8
150 (1589)	10	14,3	CUSP150 ²⁾	3	227,0	324	65,0	75,0	200	170	15,3
200 (2090)	10	14,9	CUSP200 ²⁾	3	298,6	446	69,0	79,0	229	195	21,5
250 (2542)	10	15,5	CUSP250 ²⁾	3	363,1	569	72,5	82,5	252	215	27,3
300 (3167)	10	14,1	CUSP300 ²⁾	2	452,4	637	72,5	82,5	282	240	34,4
400 (4008)	10	14,6	CUSP400 ²⁾	2	572,6	837	77,5	87,5	316	270	46,2
500 (5115)	10	15,2	CUSP500 ²⁾	2	730,6	1111	82,5	92,5	356	305	62,7
600 (5987)	10	15,6	CUSP600 ²⁾	2	855,3	1334	87,5	97,5	386	330	78,4
750 (7527)	10	16,3	CUSP750 ²⁾	2	1075,2	1757	93,5	103,5	432	370	105,2
1000 (10.165)	10	17,4	CUSP1000 ²⁾	2	1452,2	2531	103,0	113,0	502	430	157,0

¹⁾ Coupler AR630 including dustcap: Use HB7206 hose including AH630 coupler to connect to your pump.

²⁾ Coupler CR400 including dustcap: Use HC-Series hose including CH604 coupler to connect to your pump.

▼ LPL-Series, Low-Height Lock Nut Cylinders



- Lock nut provides mechanical load holding for a safe work environment
- Integrated tilt saddle allows for up to 5 degrees of misalignment
- Extreme low height for use in confined areas
- Side-load resistance 5-10% of maximum capacity
- Overflow port as stroke limiter to prevent plunger blow-out
- Single-acting, gravity-return.

▼ Only the extreme low-height LPL-cylinder fits in this confined area to lift the construction. The lock nut provides positive and safe mechanical load holding over a long period of time.



Integrated Tilt Saddles

All LPL-Series cylinders include integral tilt saddles with maximum tilt angles up to 5°.



The Summit Edition

Innovation is at the heart of the new Summit Edition of cylinders, delivering the high quality construction that you expect from Enerpac. The durability ensures your job gets done safely and reliably.

- Replaceable plunger support bearing adds support for eccentric loads *
- Nitrocarburization surface treatment for improved load and wear resistance and corrosion protection
- Low wear, high pressure seals provide longer service life.

* Eccentric load (or "side-load") is inevitable in heavy lifting. Our unique Summit Edition features provide the ultimate protection against side load. Increased bearing surface maintains stability and nitrocarburization treatment prevents scoring on the inside of the cylinder. Side-load poses a real problem..... our new cylinder features are the solution!

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Cylinder Capacity	Stroke	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Side-load Resistance of Maximum Capacity	Cylinder Effective Area
ton	(mm)				(cm ²)
60	50	LPL602	62 (606)	10%	86,6
100	50	LPL1002	102 (1002)	10%	143,1
150	45	LPL1602	162 (1589)	8%	227,0
200	45	LPL2002	202 (1985)	8%	283,5
250	45	LPL2502	259 (2541)	5%	363,1
400	45	LPL4002	409 (4008)	5%	572,6
500	45	LPL5002	522 (5114)	5%	730,6

Single-Acting, Low-Height Lock Nut Cylinders

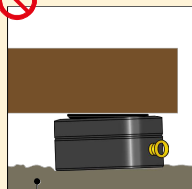


IMPORTANT!

All LPL-Series cylinders require a solid lifting surface for correct support. The use of these cylinders on surfaces such as sand, mud or dirt, may result in cylinder damage.



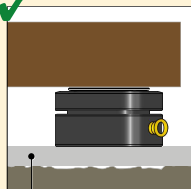
INCORRECT!



Rough soil

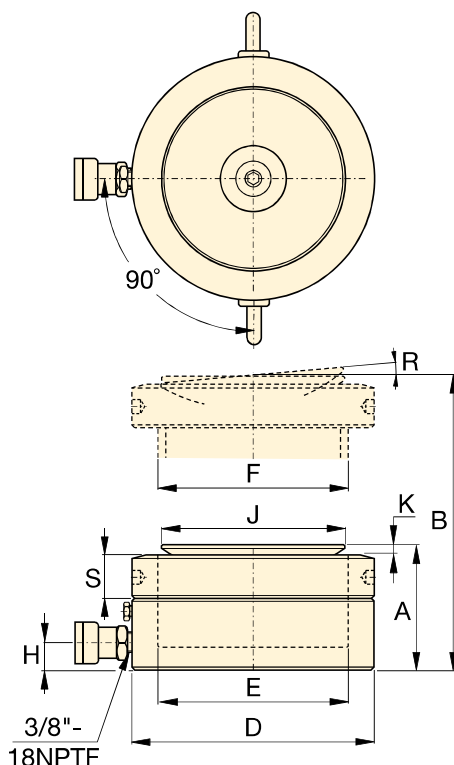


CORRECT!



Flat lifting surface

For more safety instructions see our 'Learning Center' on www.enerpac.com



LPL Series



Capacity:

60 - 500 ton

Stroke:

45 - 50 mm

Maximum Operating Pressure:

700 bar



Longer Stroke Lock Nut Cylinders

For longer stroke applications **HCL and HCRL-Series** lock nut cylinders are the perfect choice.

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SFP-Series, Split-Flow Pumps

SFP-Series Pumps with multiple outlets with equal oil flow. For lifting and lowering applications on multiple points

these pumps are a far better alternative than using separately operated pumps.

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Synchronous Lifting Systems

EVO-Series pumps the multi-functional lifting system and multiple lift point capabilities.

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Oil Capacity	Collapsed Height	Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter	Base to Advance Port	Saddle Diameter	Saddle Protrusion from Plgr.	Saddle Max. Tilt Angle	Lock Nut Height		Model Number
(cm ³)	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (mm)	K (mm)	R	S (mm)	(kg)	
433,0	126	176	140	105	Tr 105 x 4	19	96	7	5°	28	15	LPL602
715,7	137	187	173	135	Tr 135 x 6	21	126	8	5°	31	25	LPL1002
1021,4	148	193	220	170	Tr 170 x 6	27	160	9	5°	40	43	LPL1602
1275,9	155	200	245	190	Tr 190 x 6	30	180	10	5°	43	55	LPL2002
1633,7	159	204	275	215	Tr 215 x 6	32	200	12	5°	43	70	LPL2502
2576,5	178	223	350	270	Tr 270 x 6	40	250	12	4°	55	129	LPL4002
3287,8	192	237	400	305	Tr 305 x 6	49	290	10	3°	61,5	183	LPL5002

▼ Shown from left to right: RSM1000, RSM300, RSM50, RCS1002, RCS302



RSM-series, Low-Height Cylinders

- Compact, flat design for use where most other cylinders will not fit
- Single-acting, spring return
- RSM750, 1000 and 1500 have handles for easy carrying
- Mounting holes permit easy fixturing
- Baked enamel finish for increased corrosion resistance
- CR400 coupler and dust cap included on all models¹⁾
- Hard chrome plated high quality steel plungers
- Grooved plunger ends require no saddle.

RCS-series, Low-Height Cylinders

- Lightweight, low profile design for use in confined spaces
- Single-acting, spring return
- Baked enamel finish for increased corrosion resistance
- Plunger wiper reduces contamination, extending cylinder life
- CR400 coupler and dust cap included on all models
- Grooved plunger end with threaded holes for mounting tilt saddles
- Integral handle on RCS1002 for easy carrying
- Plated steel plungers.

Maximum Power-to-Height Ratio



Saddles

All RCS-Series cylinders have plunger mounting holes for installation of tilt saddles. See table for selection and dimensional information.

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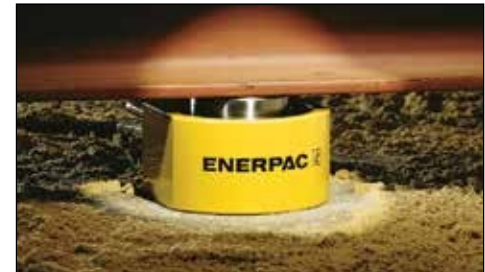


Low Clearance Lifting

The LW-Series Lifting Wedges and SOH-Series Machine Lifts are the perfect choice for lifting the first few millimeters.

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▼ Only a couple of centimeters will do for an RSM-cylinder to lift a large construction.

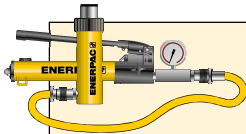


Cyl. Capacity	Stroke	Model Number	Cylinder Effective Area	Oil Capacity	
ton (kN)	(mm)		(cm ²)	(cm ³)	
5 (45)	6	RSM50 ¹⁾	6,5	4	
10 (101)	11	RSM100 *	14,5	18	
20 (201)	11	RSM200 *	28,7	32	
30 (295)	13	RSM300 *	42,1	55	
45 (435)	16	RSM500 *	62,1	99	
75 (718)	16	RSM750	102,6	164	
90 (887)	16	RSM1000	126,7	203	
150 (1386)	16	RSM1500	198,1	317	
10 (101)	38	RCS101 *	14,5	55	
20 (201)	45	RCS201 *	28,7	129	
30 (295)	62	RCS302 *	42,1	261	
45 (435)	60	RCS502 *	62,1	373	
90 (887)	57	RCS1002 *	126,7	722	

¹⁾ RSM50 is fitted with an AR400 coupler.

* Available as set, see note on next page.

Single-Acting, Low-Height Cylinders



Cylinder-Pump Sets

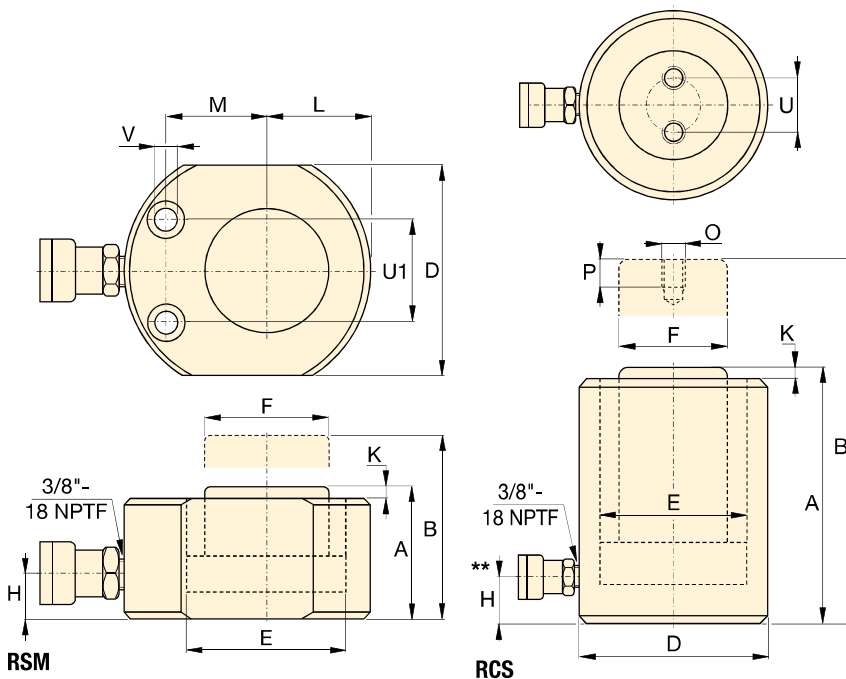
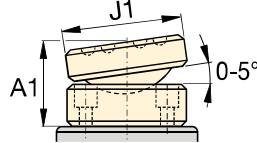
All cylinders marked with an * are available as **sets** (cylinder, gauge, couplers, hose and pump) for your ordering convenience.

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Optional Bolt On Tilt Saddle Dimensions (mm)

For Cylinder Model:	Model Number	J1	A1 *
RCS101	CATS13	35	20
RCS201, 302, 502	CATS53	50	26
RCS1002	CATS103	71	35

* A1 = Addition to Collapsed Height.



RSM, RCS Series



Capacity:

5 - 150 ton

Stroke:

6 - 62 mm

Maximum Operating Pressure:

700 bar



Power Box

Tool box with hand pump, gauge adaptor assembly, hose and RSM or RCS-cylinders.

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RSM Cylinder Mounting Hole Dimensions (mm)

Model Number	Bolt Circle U1	Hole Dia. V	Counter Bore Dia.	Counter Bore Depth
RSM50	28,5	5,5	9,1	4,3
RSM100	36,6	7,1	10,7	7,9
RSM200	49,3	10,0	15,1	9,9
RSM300	52,3	10,0	15,9	11,2
RSM500	66,5	11,0	19,0	12,7
RSM750	76,2	13,5	20,6	14,2
RSM1000	76,2	13,5	20,6	14,2
RSM1500	117,3	13,5	20,6	14,2

Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Dia. E (mm)	Plunger Dia. F (mm)	Base to Advance Port H (mm)	Plunger Protrusion from Base K (mm)	Plunger to Base L (mm)	Plunger to Mtg. Hole M (mm)	Thread O (mm)	Thread Depth P (mm)	Bolt Circle U (mm)	Model Number
32	38	58 x 41	28,7	25,4	16	1	20	22	—	—	—	RSM50 ¹⁾
43	54	82 x 55	42,9	38,1	19	1	27	34	—	—	—	RSM100 *
51	62	101 x 76	60,5	50,8	19	1	39	39	—	—	—	RSM200 *
58	71	117 x 95	73,2	63,4	19	2	47	44	—	—	—	RSM300 *
66	82	140 x 114	88,9	69,8	19	2	57	53	—	—	—	RSM500 *
79	95	165 x 139	114,3	82,6	19	2	69	66	—	—	—	RSM750
85	101	178 x 153	127,0	92,2	19	2	76	74	—	—	—	RSM1000
100	116	215 x 190	158,8	114,3	23	2	95	82	—	—	—	RSM1500
88	126	69	42,9	38,1	17	5	—	—	M4	8	26	RCS101 *
98	143	92	60,5	50,8	17	3	—	—	M5	8	40	RCS201 *
117	179	101	73,2	66,5	19	3	—	—	M5	8	40	RCS302 *
122	182	124	88,9	69,8	23	2	—	—	M5	8	40	RCS502 *
141	198	165	127,0	92,2	31	1	—	—	M8	10	55	RCS1002 *

** 5° angle position of coupler on RCS101, 201, 302.

▼ RLT-Series, Low-Height Telescopic Cylinder



- Single-acting, load-return
- Nitrocarburized surface treatment inside and out provides corrosion protection
- For use in confined spaces: machinery positioning, tool fastening
- Mounting bolt holes for easy fixing
- Up to 3% side-load of maximum capacity
- Design safety factor complies with ASME B30.1 & EN1494
- CR400 coupler for compatibility with standard product
- High-Alloy steel for maximum strength.

For longer cylinder strokes in confined spaces



RLT-Series, Low-Height Telescopic Cylinders

Enerpac compact, low-height telescopic cylinders are available with two or three pistons, and can lift loads up to 40 mm in a single movement.

Nitrocarburization surface treatment for improved wear resistance and corrosion protection for increased safety and longer service life in harsh conditions.. The longer stroke length of telescopic cylinders will save you time and simplify projects by moving a load a greater distance and eliminating the use of temporary cribbing.



Multi-Stage Cylinders

1st Stage: maximum load capacity at lower stroke.

2nd Stage: extended stroke with lower capacity than the 1st stage.

Final Stage: maximum stroke extension with lowest capacity.



Cylinder Capacity at Maximum Stroke ton (kN)	Maximum Stroke (mm)	Model Number	Collapsed Height A (mm)	Extended Height B (mm)	Oil Capacity (cm³)
4,4 (43)	17	RLT40	45,0	62,0	21
4,4 (43)	23	RLT41	54,0	77,0	51
11,4 (111)	18	RLT110	54,5	72,5	48
11,4 (111)	40	RLT111	89,0	129,0	241
23,7 (232)	27	RLT230	75,0	102,0	150
23,7 (232)	32	RLT231	96,0	128,0	303
31,5 (309)	29	RLT311	89,0	118,0	224
50,6 (496)	26	RLT501	96,0	122,0	283
74,1 (727)	26	RLT741	114,0	140,0	426

Low-Height Telescopic Cylinders, Single-Acting



Assisted-return Pumps with Venturi Valve Technology

To improve productivity and plunger retraction,

Enerpac offers valve configurations designed to accelerate your cylinder retraction speeds, ZU4 and ZE-Series pumps feature **Venturi Valve Technology** to facilitate the faster return of single-acting load and spring-return cylinders. See enerpac.com for details.

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4-way Manifold assembly complete with gauges

Offering ease of portability and convenience with an ergonomic robust design,

ready for use. Enerpac's CR400 female couplers on all ports allow the manifold to be quickly connected to up to 4 cylinders. Glycerine filled, 700 bar gauges allow operators to work safely. All protected by the robust protection frame.

Manifold Type (Used for cylinders)	Model Number
4x Single-acting	AMGC41
4x Double-acting	AMGC42

RLT Series



Capacity:

4,4 - 74,1 ton

Stroke:

17 - 40 mm

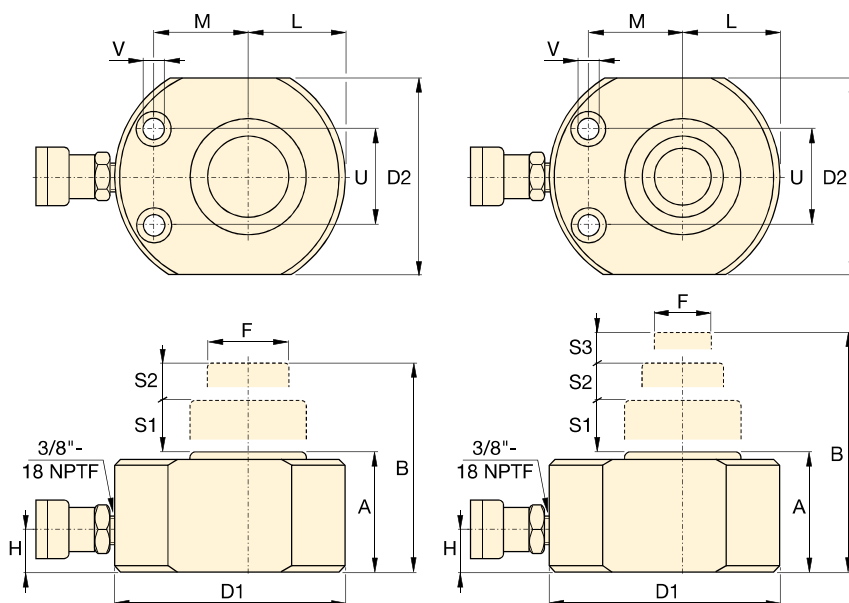
Maximum Operating Pressure:

700 bar



WARNING:

If several telescopic cylinders need to be controlled simultaneously Enerpac recommend the use of EVO-Series Synchronous Lifting Pumps. Enerpac advise not to use SFP-Series Split-Flow pumps to operate several telescopic cylinders at a time due to the volume difference on the different stages.



RLT-Cylinders Mounting Hole Dimensions (mm)

Model Number	Bolt Distance U	Hole Diameter V	Counter Bore Diameter	Counter Bore Depth
RLT40	37	6,5	11	7
RLT41	50	9,0	14	9
RLT110	50	9,0	14	9
RLT111	76	13,0	20	13
RLT230	67	13,0	20	13
RLT231	76	6,5	11	7
RLT311	76	13,0	20	13
RLT501	76	6,5	11	7
RLT741	117	9,0	14	9

1st Stage		2nd Stage		3rd Stage		Outside Diameter	Plunger Diameter	Bottom to Advance Port H (mm)	Plunger to Base L (mm)	Plunger to Mounting Hole M (mm)	(kg)	Model Number
Capacity ton (kN)	Stroke S1 (mm)	Capacity ton (kN)	Stroke S2 (mm)	Capacity ton (kN)	Stroke S3 (mm)	D1 x D2 (mm)	F (mm)					
11,4 (111)	11	4,4 (43)	6	-	-	83 x 56	25	20	29,0	33	1,8	RLT40
23,7 (232)	11	11,4 (111)	7	4,4 (43)	5	102 x 80	25	20	41,0	39	3,1	RLT41
23,7 (232)	11	11,4 (111)	7	-	-	102 x 80	38	20	41,0	39	3,0	RLT110
74,1 (727)	16	31,5 (309)	13	11,4 (111)	11	165 x 140	38	25	70,5	66	13,1	RLT111
50,6 (496)	16	23,7 (232)	11	-	-	140 x 114	57	20	58,0	56	7,6	RLT230
94,7 (929)	16	50,6 (496)	10	23,7 (232)	6	178 x 162	57	29	89,0	70	17,3	RLT231
74,1 (727)	16	31,5 (309)	13	-	-	165 x 140	60	25	70,5	66	13,0	RLT311
94,7 (929)	16	50,6 (496)	10	-	-	178 x 162	78	29	89,0	70	17,3	RLT501
143,5 (1407)	16	74,1 (727)	10	-	-	216 x 196	95	35	108,0	78	30,4	RLT741

▼ RT3311 Telescopic Cylinder (shown with plunger extended and retracted)



- Nitrocarburized surface treatment inside and out provides corrosion protection
- 3% side-load of full capacity
- Double or triple wear bearings support lifting stages
- Tilting saddles with 5 degrees of maximum tilt standard on all models
- Design Safety factor complies with ASME B30.1 & EN1494
- Certified lifting eyes for safe handling and positioning
- CR400 coupler for compatibility with standard product
- Steel cylinder base for maximum strength.

Moving a load a greater distance



RT-Series, Multi-Stage Cylinders

Enerpac compact, multi-stage telescopic cylinders are available with two or three pistons, and can lift loads up to 600 mm in a single movement.

Nitrocarburized surface treatment inside and out provides unparalleled sideload resistance and corrosion protection for safe use in the harshest conditions. The longer stroke length of telescopic cylinders will save you time and simplify projects by moving a load a greater distance and eliminating the use of temporary cribbing.

Multi-Stage Cylinders

1st Stage: maximum load capacity at lowest maximum stroke

2nd Stage: extended stroke but at lower maximum capacity than the 1st stage

Final Stage: maximum stroke extension but lowest maximum capacity.

WARNING: If several telescopic cylinders need to be controlled simultaneously Enerpac recommend the use of EVO or EVOB-Series Synchronous Lifting Pumps. Enerpac advise not to use SFP-Series Split-Flow pumps to operate several telescopic cylinders at a time due to the volume difference on the different stages.



Tilt Saddles

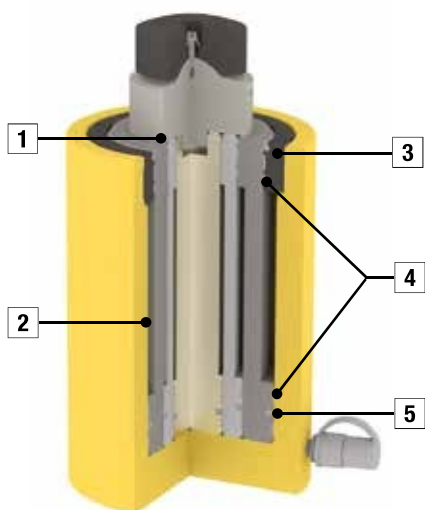
All RT-Series cylinders include integral tilt saddles with maximum tilt angles up to 5 degree.



◀ The longer stroke length of telescopic cylinders will save you time and simplify projects by moving a load a greater distance and eliminating the use of temporary cribbing.

Cylinder Capacity at Maximum Stroke ton (kN)	Maximum Stroke (mm)	Model Number	Collapsed Height A (mm)	Extended Height B (mm)
14,0 (137)	270	RT1510	283	553
17,0 (166)	435	RT1817	345	780
20,2 (198)	300	RT2111	317	617
	500	RT2119	395	895
31,5 (309)	300	RT3311	352	652
	600	RT3323	476	1076

Multi-Stage Telescopic Cylinders, Single-Acting, Load Return



- 1 **Wiper Ring** on each stage to minimize contamination.
- 2 **Nitrocarburized Coating** for maximum corrosion protection and surface hardness. Exterior in nitrided and Enerpac yellow epoxy.
- 3 **Stop Ring** full load capable to prevent plunger overstroke.
- 4 **Wear Bearings.** Double or triple wear bearings for maximum sideload capability and wear resistance.
- 5 **Seals** for maximum compliance and high wear resistance.

RT Series



Capacity:

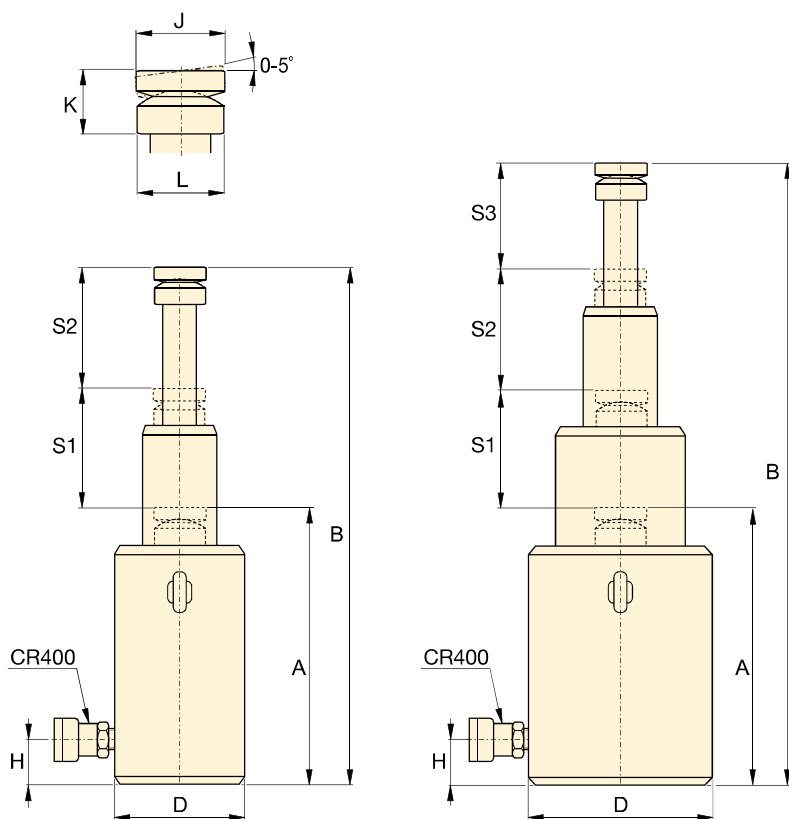
14 - 31,5 ton

Stroke:

270 - 600 mm

Maximum Operating Pressure:

700 bar



Assisted-return Pumps with Venturi Valve Technology

To improve productivity and plunger retraction, Enerpac offers valve configurations designed to accelerate your cylinder retraction speeds, ZU4 and ZE-Series pumps feature **Venturi Valve Technology** to facilitate the faster return of single-acting load and spring-return cylinders. See enerpac.com for details.

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Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac hydraulic hoses.

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Oil Capacity (cm³)	1st Stage		2nd Stage		3rd Stage		Outside Diameter D (mm)	Bottom to Advance Port H (mm)	Saddle Diameter J (mm)	Saddle Protrusion from Plgr. K (mm)	Saddle Support Diameter L (mm)	Model Number
	Capacity ton (kN)	Stroke S1 (mm)	Capacity ton (kN)	Stroke S2 (mm)	Capacity ton (kN)	Stroke S3 (mm)						
944	36 (352)	135	14 (137)	135	—	—	110	20	60	49	60	15,1 RT1510
3092	95 (929)	145	41 (397)	145	17,0 (166)	145	170	27	80	73	85	40,3 RT1817
1487	51 (496)	150	20 (198)	150	—	—	125	23	60	53	66	21,8 RT2111
4661	126 (1237)	170	51 (496)	170	20,2 (198)	160	200	34	90	83	100	67,3 RT2119
2359	81 (792)	150	32 (309)	150	—	—	160	25	80	66	89	39,9 RT3311
8816	202 (1985)	200	81 (792)	200	31,5 (309)	200	250	44	110	111	123	124,0 RT3323

▼ Shown from left to right: **BRC25, BRC46, BRP306, BRP606, BRP106C**



- High strength alloy steel construction
- Hard chrome-plated plunger for long life
- Replaceable links on BRP-models
- Baked enamel finish for increased corrosion resistance
- CR400 coupler and dust cap included on all models
- Plunger wiper reduces contamination, extending cylinder life
- Single-acting, spring return.

The Ultimate in Pulling Power



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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Attachments and Accessories

BRC25 and BRC46 units have base, collar and plunger threads to affix a range of optional attachments and accessories, such as chains, saddles and extension tubes.

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▼ *Lifting mining conveyor belt using pull cylinders for bearing maintenance.*

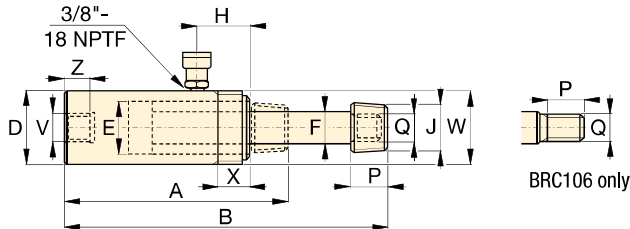


▼ *To lift a load bearing mast into place, BRP-Series cylinders were used to tension the supporting cables.*



Single-Acting, Pull Cylinders

BRC Cylinder Mounting Dimensions (mm)				
Model Number	Base Mounting Hole V	Collar Thread W	Collar Thd. Lgth. X	Mtg. Thd. Lgth. Z
BRC-25	3/4"-14 NPT	1 1/2" - 16 UN	24	17
BRC-46	1 1/4"-11 1/2 NPT	2 1/4" - 14 UN	26	24
BRC-106	M30 x 2	M85 x 2	25	24



BRC25, 46, 106

**BRC,
BRP
Series**



Capacity:

2,5 - 50 ton

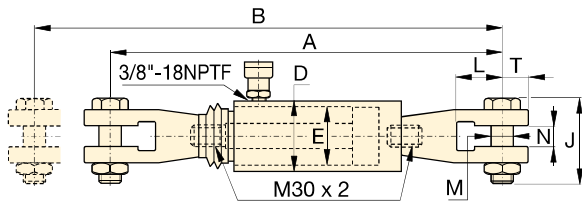
Stroke:

127 - 154 mm

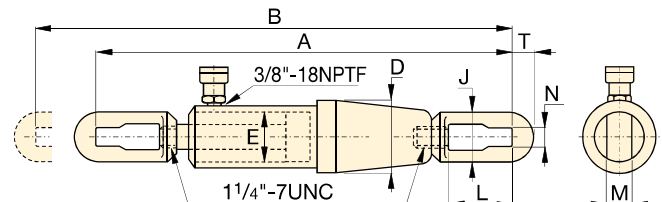
Maximum Operating Pressure:

700 bar

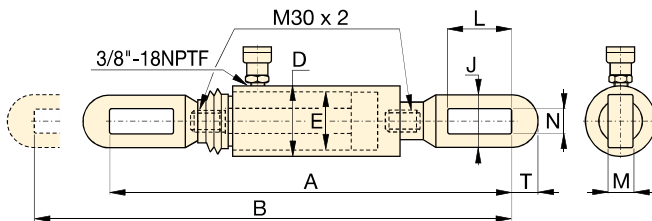
Cylinder Capacity	Stroke	Model Number	Cylinder Effective Area	Oil Capacity	Coll. Height	Ext. Height	Outside Dia.	Cylinder Bore Dia.	Plunger Dia.	Top to Inlet Port H	Saddle Diameter J	Plunger Thread Length P	Plunger Outside Thread Q	
ton (kN)	(mm)		(cm ²)	(cm ³)	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (NPT)	P (mm)	Q	(kg)
2,5 (24)	127	BRC25	3,5	45	264	391	48	28,4	19,0	45	3/4" - 14	28	1 1/16" - 24	1,8
5 (51)	140	BRC46	7,3	101	301	441	57	42,9	30,2	42	1 1/4" - 11 1/2	32	1 3/16" - 16	4,5
10 (105)	151	BRC106	15,0	228	289	440	85	54,1	31,8	39	-	25	M30x2	9,5



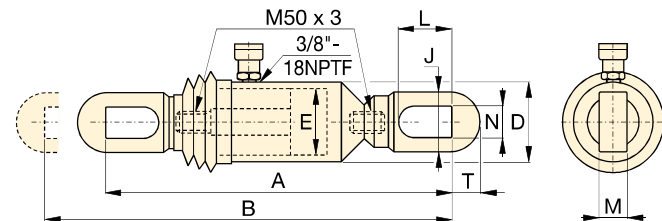
BRP106C



BRP306



BRP106L



BRP606

Cylinder Capacity	Stroke	Model Number	Cylinder Effective Area	Oil Capacity	Coll. Height	Ext. Height	Outside Dia.	Cyl. Bore Dia.	Link Height	Link Opening L	Link Thickness M	Link Width N	Slot to Link End T	
ton (kN)	(mm)		(cm ²)	(cm ³)	A (mm)	B (mm)	D (mm)	E (mm)	J (mm)	L (mm)	M (mm)	N (mm)	T (mm)	(kg)
10 (110)	150	BRP106C	15,8	238	601	751	85	54,1	105	87	30	35	32	15,3
	150	BRP106L	15,8	238	573	723	85	54,1	64	119	22	30	32	13,3
30 (325)	154	BRP306	46,4	715	1110	1264	137	88,9	114	155	35	40	55	63,1
50 (506)	153	BRP606	72,1	1096	718	871	140	110,1	130	151	40	48	65	58,3

▼ Shown from left to right: RCH306, RCH120, RCH1003

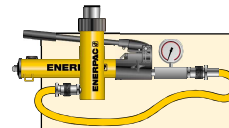


- Hollow plunger design allows for both, pull and push forces
- Single-acting, spring return
- Nickel-plated, floating center tube on models over 20 ton increases product life
- Baked enamel finish for increased corrosion resistance
- Collar threads for easy fixturing
- RCH120 includes AR630 coupler and has 1/4" NPTF port
- RCH121 and RCH1211 have FZ1630 reducer and AR630 coupler, all other models feature CR400 coupler.

▼ Hollow plunger cylinder RCH1003 used in an application for intermediate boom suspension on a dragline.



Versatility in Testing, Maintenance and Tensioning Applications



Cylinder-Pump Sets

All cylinders marked with an * are available as **sets** (cylinder, gauge, couplers, hose and pump) for your ordering convenience.

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Ultra-Lightweight Aluminium Cylinders

If you need a higher cylinder capacity-to-weight-ratio the lightweight **RACH-Series** are the perfect choice.

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Saddles

Most RCH-Series cylinders are equipped with smooth saddles. See table at next page for optional threaded saddles and all dimensional information.

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Cylinder Capacity	Stroke	Model Number	Cylinder Effective Area	Oil Capacity	
ton (kN)	(mm)		(cm ²)	(cm ³)	
12 (125)	8	RCH120	17,9	14	
	42	RCH121 *	17,9	75	
	42	RCH1211	17,9	75	
	76	RCH123	17,9	136	
20 (215)	49	RCH202 *	30,7	150	
	155	RCH206	30,7	476	
30 (326)	64	RCH302 *	46,6	298	
	155	RCH306	46,6	722	
60 (576)	76	RCH603 *	82,3	626	
	153	RCH606	82,3	1259	
95 (931)	76	RCH1003 *	133,0	1011	

* Available as set, see note on this page.

Single-Acting, Hollow Plunger Cylinders



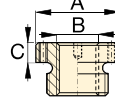
Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac hydraulic hoses.

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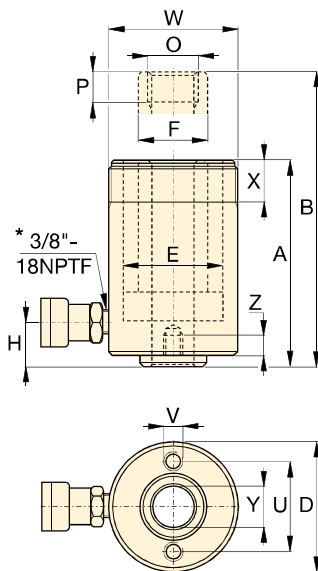
Optional Threaded Hollow Saddles

Saddle Type	Cylinder Model Number	Saddle Model Nr.	Saddle Dimensions (mm)		
			A	B	C
Threaded Hollow	RCH202, 206	HP2015	53	1" - 8	9
	RCH302, 306	HP3015	63	1 1/4" - 7	9
	RCH603, 606	HP5016	91	1 5/8" - 5 1/2	12
	RCH1003	HP10016	126	2 1/2" - 8	13



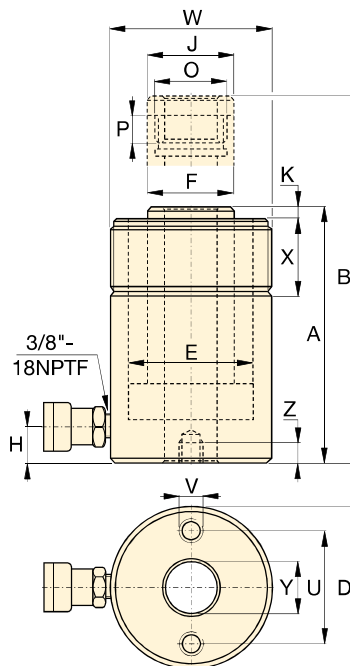
Smooth hollow saddles are standard on all RCH-models (except RCH120, RCH1211).

RCH121 and RCH1211 have a 47 mm dia. boss that protrudes 6 mm from base.



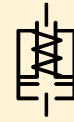
RCH120 to RCH123 models

* 1/4" NPTF for RCH120 only



RCH202 to RCH1003 models

RCH Series



Capacity:

12 - 95 ton

Stroke:

8 - 155 mm

Center Hole Diameter:

19,5 - 79,0 mm

Maximum Operating Pressure:

700 bar

Base Mounting Hole Dimensions (mm)

Model Number	Bolt Circle U	Thread V	Thread Depth Z
RCH120	50,8	5/16" - 18 UNC	9,0
RCH121	-	-	-
RCH1211	-	-	-
RCH123	50,8	5/16" - 18 UNC	12,7
RCH202	82,6	3/8" - 16 UNC	9,4
RCH206	82,6	3/8" - 16 UNC	9,4
RCH302	92,2	3/8" - 16 UNC	14,0
RCH306	92,2	3/8" - 16 UNC	14,0
RCH603	130,3	1/2" - 13 UNC	14,0
RCH606	130,3	1/2" - 13 UNC	14,0
RCH1003	177,8	5/8" - 11 UNC	19,0

	Coll. Height A (mm)	Ext. Height B (mm)	Outside Dia. D (mm)	Cyl. Bore Dia. E (mm)	Plgr. Dia. F (mm)	Cyl. Base to Advance Port H (mm)	Saddle Dia. J (mm)	Saddle Protrusion from Plgr. K (mm)	Plunger Internal Thread O	Plunger Thread Length P (mm)	Collar Thread W	Collar Thread Length X (mm)	Center Hole Dia. Y (mm)	(kg)	Model Number
	55	63	69	54,1	35,1	9	-	-	3/4" - 16 UN	16	2 3/4" - 16	30	19,5	1,5	RCH120
	120	162	69	54,1	35,1	25	-	-	-	-	2 3/4" - 16	30	19,5	2,8	RCH121 *
	120	162	69	54,1	35,1	25	-	-	3/4" - 16 UN	16	2 3/4" - 16	30	19,5	2,8	RCH1211
	184	260	69	54,1	35,1	25	-	-	-	-	2 3/4" - 16	30	19,5	4,4	RCH123
	162	211	98	73,1	54,1	19	54	9,7	1 9/16" - 16 UN	19	3 7/8" - 12	38	26,9	7,7	RCH202 *
	306	461	98	73,1	54,1	25	54	9,7	1 9/16" - 16 UN	19	3 7/8" - 12	38	26,9	14,1	RCH206
	178	242	114	88,9	63,5	21	63	9,0	1 13/16" - 16 UN	22	4 1/2" - 12	42	33,3	10,9	RCH302 *
	330	485	114	88,9	63,5	25	63	9,0	1 13/16" - 16 UN	22	4 1/2" - 12	42	33,3	21,8	RCH306
	247	323	159	123,9	91,9	31	91	12,0	2 3/4" - 16 UN	19	6 1/4" - 12	48	53,8	28,1	RCH603 *
	323	476	159	123,9	91,9	31	91	12,0	2 3/4" - 16 UN	19	6 1/4" - 12	48	53,8	35,4	RCH606
	254	330	212	165,1	127,0	38	126	12,0	4" - 16 UN	25	8 3/8" - 12	60	79,0	63,0	RCH1003*

▼ Shown from left to right: RRH3010, RRH1001, RRH6010



- Relief valves prevent damage in case of over-pressurisation
- Baked enamel finish for increased corrosion resistance
- Collar threads enable easy fixturing (except RRH1001 and RRH1508)
- Double-acting version for fast retraction
- Nickel-plated, floating center tube increases product life
- Hollow plunger allows for both pull and push forces
- CR400 coupler and dust cap included on all models
- Plunger wiper reduces contamination, extending cylinder life.

Versatility in Testing, Maintenance and Tensioning Applications



Ultra-Lightweight Aluminium Cylinders

If you need a higher cylinder capacity-to-weight-ratio the lightweight **RRH-Series** are the perfect choice.

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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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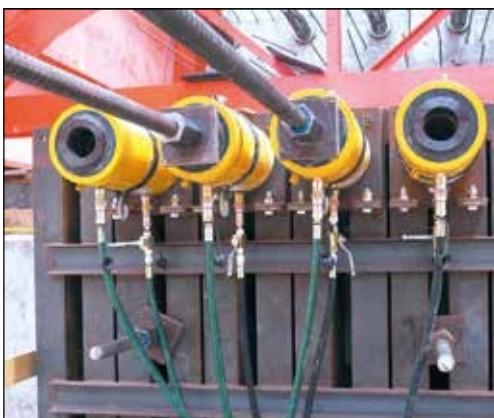


Saddles

All RRH-Series cylinders are equipped with smooth saddles. See table at next page for optional threaded saddles and all dimensional information.

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▼ Double-acting hollow plunger cylinders are applied for bridge launching systems.



Cylinder Capacity	Stroke	Model Number	Max. Cylinder Capacity (kN)		Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)	
			Advance	Retract	Advance	Retract	Advance	Retract
30	178	RRH307	326	213	46,6	30,4	829	541
	258	RRH3010	326	213	46,6	30,4	1202	784
60	89	RRH603	576	380	82,3	54,2	733	482
	166	RRH606	576	380	82,3	54,2	1366	900
	257	RRH6010	576	380	82,3	54,2	2115	1393
95	38	RRH1001	931	612	133,0	87,4	505	333
	76	RRH1003	931	612	133,0	87,4	1011	666
	153	RRH1006	931	612	133,0	87,4	2035	1337
	257	RRH10010	931	612	133,0	87,4	3420	2246
145	203	RRH1508	1429	718	204,1	102,6	4144	2083

Double-Acting, Hollow Plunger Cylinders



Hoses

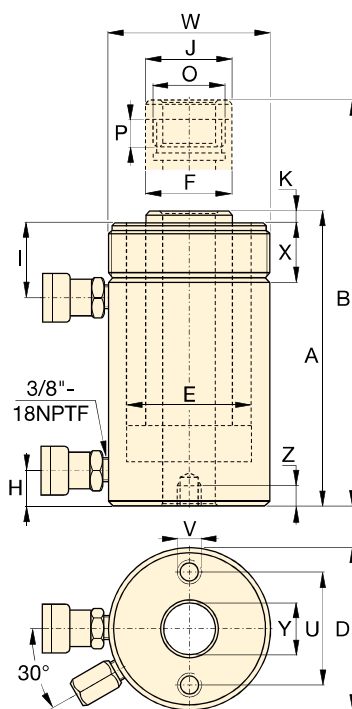
Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only Enerpac hydraulic hoses.

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Optional Threaded Hollow Saddles

Saddle Type	Cylinder Model Number	Saddle Model Nr.	Saddle Dimensions (mm)			
			A	B	C	
Threaded Hollow	RRH307, 3010	HP3015	63	1 1/4" - 7	9	
	RRH603, 606, 6010	HP5016	91	1 5/8" - 5 1/2	12	
	RRH1001, 1003, RRH1006, 10010	HP10016	126	2 1/2" - 8	13	

Smooth hollow saddles are standard on all RRH-models.



RRH Series



Capacity:

30 - 145 ton

Stroke:

38 - 258 mm

Center Hole Diameter:

33,3 - 79,2 mm

Maximum Operating Pressure:

700 bar



Pump Selection

A double-acting cylinder must be powered by a pump with a 4-way valve.

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Base Mounting Hole Dimensions (mm)

Model Number	Bolt Circle U	Thread V	Thread Depth Z
RRH307	92,2	3/8" - 16	15,7
RRH3010	92,2	3/8" - 16	15,7
RRH603	130,0	1/2" - 13	14,0
RRH606	130,0	1/2" - 13	14,0
RRH6010	130,0	1/2" - 13	14,0
RRH1001	177,8	5/8" - 11	19,0
RRH1003	177,8	5/8" - 11	19,0
RRH1006	177,8	5/8" - 11	19,0
RRH10010	177,8	5/8" - 11	19,0
RRH1508	-	-	-

	Coll. Height A (mm)	Ext. Height B (mm)	Out. Dia. D (mm)	Cyl. Bore Dia. E (mm)	Plgr. Dia. F (mm)	Cyl. Base to Adv. Port H (mm)	Cyl. Top to Return Port I (mm)	Saddle Dia. J (mm)	Saddle Protr. fr. Plgr. K (mm)	Thread O	Plunger Thread Length P (mm)	Collar Thread W	Collar Thread Length X (mm)	Center Hole Dia. Y (mm)	(kg)	Model Number
	330	508	114	88,9	63,5	25	60	63	9	1 13/16" - 16	22	4 1/2" - 12	42	33,3	21	RRH307
	431	689	114	88,9	63,5	25	60	63	9	1 13/16" - 16	22	4 1/2" - 12	42	33,3	27	RRH3010
	247	336	159	123,9	91,9	31	66	91	12	2 3/4" - 16	19	6 1/4" - 12	48	53,8	28	RRH603
	323	489	159	123,9	91,9	31	66	91	12	2 3/4" - 16	19	6 1/4" - 12	48	53,8	35	RRH606
	438	695	159	123,9	91,9	31	66	91	12	2 3/4" - 16	19	6 1/4" - 12	48	53,8	45	RRH6010
	165	203	212	165,1	127,0	38	44	126	12	4" - 16	25	-	-	79,2	33	RRH1001
	254	330	212	165,1	127,0	38	85	126	12	4" - 16	25	8 3/8" - 12	60	79,2	61	RRH1003
	342	495	212	165,1	127,0	38	85	126	12	4" - 16	25	8 3/8" - 12	60	79,2	79	RRH1006
	460	717	212	165,1	127,0	38	85	126	12	4" - 16	25	8 3/8" - 12	60	79,2	106	RRH10010
	349	552	247	190,5	152,4	38	60	127	4	4 1/4" - 12	25	-	-	79,2	111	RRH1508

▼ Shown from left to right: BRD2510, BRD96, BRD256, BRD41, BRD166



High Precision and High Cycle Performance



Speed Chart

See the Enerpac Cylinder Speed Chart in our 'Yellow Pages' to determine your approximate cylinder speed.

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- Designed for long life, the best choice for production applications
- Unique mounting configurations simplify fixturing
- Baked enamel finish for increased corrosion resistance
- Double-acting operation develops force in both directions, providing maximum versatility
- Plunger wiper reduces contamination, extending cylinder life
- Imperial models (RD-series) available on request.

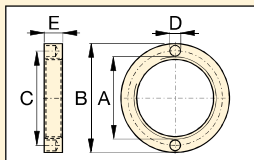
▼ Clamping application using Enerpac BRD cylinders (with clevis eye attachments on both ends) for their high pressure capability and mounting flexibility.



Cylinder Capacity (ton)	Stroke (mm)	Model Number	Max. Cylinder Capacity (kN)		Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)		Coll. Height	Extended Height	Body Length	Outside Dia.	Cylinder Bore Dia.	Plunger Dia.
			Advance	Retract	Advance	Retract	Advance	Retract	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
4	28	BRD41	35	16	5,1	2,2	14	6	186	214	162	50	25,4	19,0
	79	BRD43	35	16	5,1	2,2	40	17	237	316	213	50	25,4	19,0
	155	BRD46	35	16	5,1	2,2	79	34	313	468	289	50	25,4	19,0
8	28	BRD91	80	44	11,4	6,3	32	18	223	251	198	63,5	38,1	25,4
	79	BRD93	80	44	11,4	6,3	90	50	274	353	249	63,5	38,1	25,4
	155	BRD96	80	44	11,4	6,3	177	98	350	505	325	63,5	38,1	25,4
	257	BRD910	80	44	11,4	6,3	293	162	452	709	427	63,5	38,1	25,4
15	159	BRD166	142	77	20,3	10,6	323	169	389	548	359	80	50,8	35,0
	260	BRD1610	142	77	20,3	10,6	528	276	491	751	461	80	50,8	35,0
23	159	BRD256	222	98	31,7	13,7	504	218	424	583	397	92	63,5	47,8
	260	BRD2510	222	98	31,7	13,7	824	356	526	786	499	92	63,5	47,8

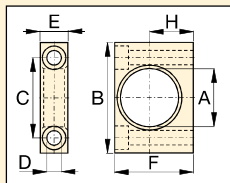
Double-Acting, Precision Production Cylinders

▼ BRD CYLINDER ATTACHMENTS



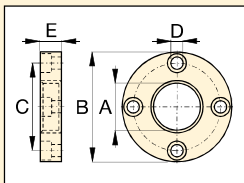
Retainer Nut

For locking foot or flange mountings. Tightens onto cylinder collar threads (Included with foot and flange mounting kits).



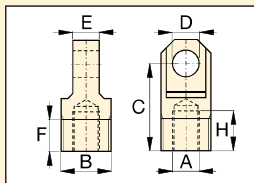
Foot Mounting

Mounts onto cylinder collar.



Flange Mounting

Mounts onto cylinder collar.



Clevis Eye

Threads onto plunger or into cylinder base.

Model Number	BRD-Cyl. (ton)	Dimensions (mm)						
		A	B	C	D	E	F	H
Foot Mounting with Retainer Nut								
BAD141	4	42,1	80	58,0	10,5	20,0	57,0	31,8
BAD171	8	56,1	105	78,0	13,5	25,0	82,5	44,5
BAD181	15	70,1	127	95,2	20,0	35,0	100,0	52,4
BAD191	23	85,1	159	117,5	26,5	45,0	125,0	63,5
Flange Mounting with Retainer Nut								
BAD142	4	42,1	98,4	78,6	11,0	19,0	–	–
BAD172	8	56,1	121	98,4	11,0	25,4	–	–
BAD182	15	70,1	143	115,9	14,0	35,0	–	–
BAD192	23	85,1	165	135,7	17,0	44,5	–	–
Retainer Nut								
BAD143	4	M42 x 1,5	57	49,5	6,3	9,5	–	–
BAD173	8	M56 x 2	75	65,5	6,7	12,7	–	–
BAD183	15	M70 x 2	92	81,0	6,7	19,0	–	–
BAD193	23	M85 x 2	108	96,5	6,7	25,4	–	–
Clevis Eye (See chart below for mounting dimensions L, L1 and M)								
BAD150	4	M16 x 1,5	M30 x 1,5	52,4	16,0	15,9	19,1	23,8
BAD151	8	M22 x 1,5	M42 x 1,5	57,1	20,0	25,4	25,4	23,8
BAD152	15	M30 x 1,5	M56 x 2	77,8	25,0	31,8	25,4	30,2
BAD153	23	M42 x 1,5	M70 x 2	77,8	32,0	38,2	25,4	27,0

BRD Series



Capacity:

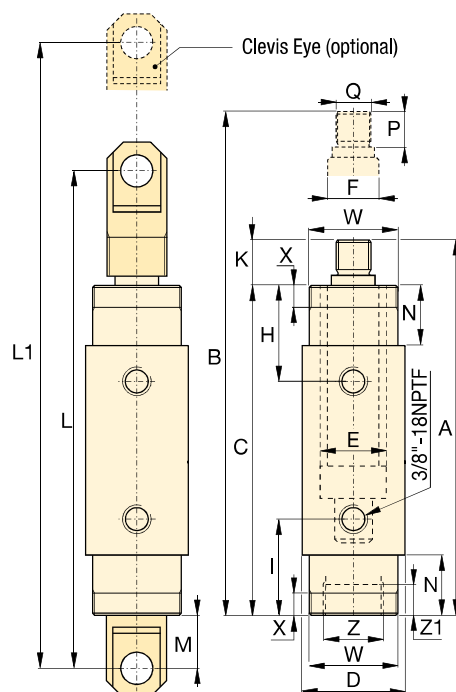
4 - 23 ton

Stroke:

28 - 260 mm

Maximum Operating Pressure:

700 bar



	Top to Retract Port H (mm)	Bottom to Advance Port I (mm)	Plunger Protrusion K (mm)	Clevis Eye Mounting Dimensions			Neck Length N (mm)	Plunger Thread Length P (mm)	Plunger External Thread Q (mm)	Cylinder Mounting Dimensions (mm)				(kg)	Model Number
				L (mm)	L1 (mm)	M (mm)				Collar Thread W	Collar Thread Length X	Internal Base Thread Z	Int. Base Thread Length Z1		
	47	47	24	258	286	41	29	22	M16 x 1,5	M42 x 1,5	11	M30 x 1,5	9	2,0	BRD41
	47	47	24	308	387	41	29	22	M16 x 1,5	M42 x 1,5	11	M30 x 1,5	9	2,6	BRD43
	47	47	24	385	540	41	29	22	M16 x 1,5	M42 x 1,5	11	M30 x 1,5	9	3,6	BRD46
	57	57	25	295	323	38	38	22	M22 x 1,5	M56 x 2	14	M42 x 1,5	14	3,0	BRD91
	57	57	25	346	425	38	38	22	M22 x 1,5	M56 x 2	14	M42 x 1,5	14	4,2	BRD93
	57	57	25	422	577	38	38	22	M22 x 1,5	M56 x 2	14	M42 x 1,5	14	5,6	BRD96
	57	57	25	524	781	38	38	22	M22 x 1,5	M56 x 2	14	M42 x 1,5	14	7,3	BRD910
	73	73	30	492	651	52	54	28	M30 x 1,5	M70 x 2	22	M56 x 2	24	10,2	BRD166
	73	73	30	593	853	52	54	28	M30 x 1,5	M70 x 2	22	M56 x 2	24	14,5	BRD1610
	89	89	27	524	683	53	70	25	M42 x 1,5	M85 x 2	29	M70 x 2	26	16,0	BRD256
	89	89	27	626	886	53	70	25	M42 x 1,5	M85 x 2	29	M70 x 2	26	20,3	BRD2510

▼ Shown from left to right: RR10013, RR1502, RR20013, RR1010, RR7513



- Collar threads, plunger threads and base mounting holes for easy fixturing (on most models)
- Baked enamel finish for increased corrosion resistance
- Removable hardened saddles protect plunger during lifting and pressing
- Built-in safety valve prevents accidental over-pressurization
- CR400 couplers and dust caps included on all models
- Plunger wiper reduces contamination, extending cylinder life.



Most Versatile Performers

Rugged enough for the toughest job site uses and precision designed for high-cycle industrial uses.



Optional Snap-in Saddles

Optional snap-in saddles for RR-Series double-acting cylinders up to 75 ton.

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Optimum Performance

Enerpac's range of Z-Class electric pumps, fitted with manual or solenoid operated 4-way valves, offer optimum combinations with RR-Series cylinders.

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▼ A lateral bridge slide method was utilized to slide the new bridge into position. Two RR-Series double acting hydraulic cylinders with ZU4-Series electric pumps were used to push the bridge into position over PTFE sliding elements.



▼ RR-cylinders provide power and precision in a special hydraulic press.



Double-Acting Long Stroke Cylinders



Pump Selection

A double-acting cylinder must be powered by a pump with a 4-way valve.

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▼ QUICK SELECTION CHART

For complete technical information see next page.

Cylinder Capacity ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)		Coll. Height (mm)
			Push	Pull	Push	Pull	
10 (101)	254	RR1010	14,5	4,8	368	122	409
	305	RR1012	14,5	4,8	442	147	457
30 (295)	209	RR308	42,1	19,1	879	400	394
	368	RR3014	42,1	19,1	1549	703	549
50 (498)	156	RR506	71,2	21,5	1111	335	331
	334	RR5013	71,2	21,5	2378	718	509
	511	RR5020	71,2	21,5	3638	1099	733
75 (718)	156	RR756	102,6	31,4	1601	490	347
	333	RR7513	102,6	31,4	3417	1046	525
95 (933)	168	RR1006	133,3	62,2	2238	1045	357
	333	RR10013	133,3	62,2	4439	2071	524
	460	RR10018	133,3	62,2	6132	2861	687
140 (1386)	57	RR1502	198,1	95,4	1129	544	183
	156	RR1506	198,1	95,4	3090	1488	385
	333	RR15013	198,1	95,4	6597	3177	582
	815	RR15032	198,1	95,4	16.145	7775	1116
200 (1995)	152	RR2006	285,0	145,3	4332	2209	430
	330	RR20013	285,0	145,3	9405	4795	608
	457	RR20018	285,0	145,3	13.025	6640	765
	610	RR20024	285,0	145,3	17.385	8863	917
	914	RR20036	285,0	145,3	26.049	13.280	1222
	1219	RR20048	285,0	145,3	34.741	17.712	1527
325 (3201)	153	RR3006	457,3	243,2	6997	3721	485
	305	RR30012	457,3	243,2	13.947	7418	638
	457	RR30018	457,3	243,2	20.889	11.114	790
	609	RR30024	457,3	243,2	27.850	14.811	943
	915	RR30036	457,3	243,2	41.843	22.253	1247
	1219	RR30048	457,3	243,2	55.745	29.646	1552
440 (4292)	152	RR4006	613,1	328,1	9319	4987	538
	305	RR40012	613,1	328,1	18.700	10.007	690
	457	RR40018	613,1	328,1	28.018	14.995	843
	610	RR40024	613,1	328,1	37.400	20.014	995
	914	RR40036	613,1	328,1	56.037	29.988	1300
	1219	RR40048	613,1	328,1	74.737	39.996	1605
520 (5108)	153	RR5006	729,7	405,4	11.164	6203	577
	305	RR50012	729,7	405,4	22.256	12.365	730
	457	RR50018	729,7	405,4	33.347	18.526	882
	609	RR50024	729,7	405,4	44.440	24.689	1035
	915	RR50036	729,7	405,4	66.768	36.973	1339
	1219	RR50048	729,7	405,4	88.951	49.418	1644

RR Series



Capacity:

10 - 520 ton

Stroke:

57 - 1219 mm

Maximum Operating Pressure:

700 bar



Enerpac HCR-Series

If your application does not require high cycle, Enerpac **HCR-Series** cylinders may be the right alternative.

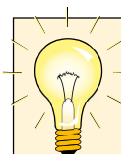
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Speed Chart

See the Enerpac Cylinder Speed Chart in our 'Yellow Pages' to determine your approximate cylinder speed.

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Optional Snap-in Saddles

Optional snap-in saddles for RR-Series double-acting cylinders:

Saddle Type	Cylinder Model	Saddle Model Number
Flat	RR10	A102F
	RR10	CATS12
Tilt	RR30	CATS52
	RR50	CATS100
	RR75	CATS100
	RR75	CATS100

Standard Saddles:

Grooved	RR10	A102G
	RR30	A252G

For additional information on saddles:

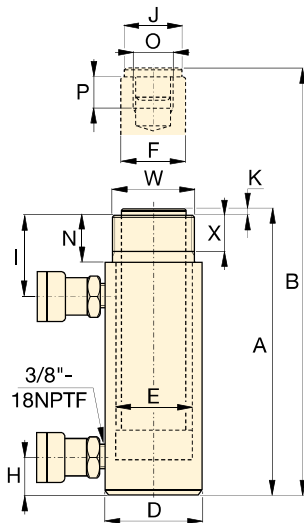
Page: 10



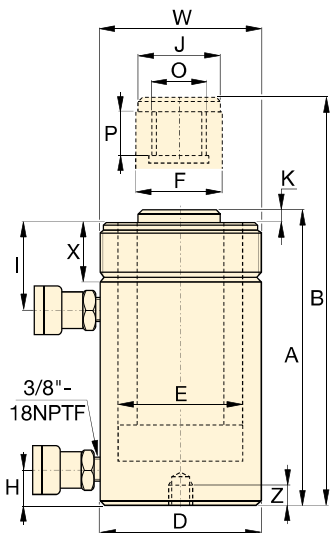
Cylinder retract capacity for certain RR cylinders may be less than theoretical values, as a result of reduced relief valve pressure settings:

RR308/3014: 275 bar
 RR506/5013/5020: 480 bar
 RR756/7513: 495 bar

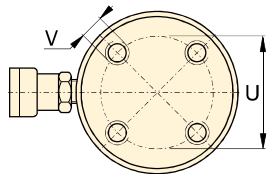
◀ For full features see previous page.



RR1010 - RR3014

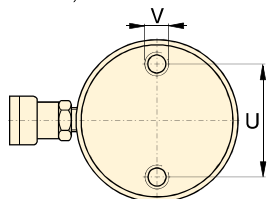


RR506 - RR50048



RR1006 - RR30048

No mounting holes on:
 RR506, 5013
 RR756, 7513
 RR1502, 15032



RR4006 - RR50048

Base mounting hole location is for reference only, as it is affected by assembly.

Cylinder Capacity ton	Stroke (mm)	Model Number	Max. Cylinder Capacity (kN)		Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)		Coll. Height	Ext. Height	Outside Dia.
			Push	Pull	Push	Pull	Push	Pull	A (mm)	B (mm)	D (mm)
10	254	RR1010 *	101	33	14,5	4,8	368	122	409	663	73
	305	RR1012 *	101	33	14,5	4,8	442	147	457	762	73
30	209	RR308 *	295	53	42,1	19,1	879	400	394	603	101
	368	RR3014 *	295	53	42,1	19,1	1549	703	549	917	101
50	156	RR506	498	103	71,2	21,5	1111	335	331	487	127
	334	RR5013	498	103	71,2	21,5	2378	718	509	843	127
	511	RR5020	498	103	71,2	21,5	3638	1099	733	1244	127
75	156	RR756	718	156	102,6	31,4	1601	490	347	503	146
	333	RR7513	718	156	102,6	31,4	3417	1046	525	858	146
95	168	RR1006	933	435	133,3	62,2	2238	1045	357	525	177
	333	RR10013	933	435	133,3	62,2	4439	2071	524	857	177
	460	RR10018	933	435	133,3	62,2	6132	2861	687	1147	177
140	57	RR1502	1386	668	198,1	95,4	1129	544	183	240	203
	156	RR1506	1386	668	198,1	95,4	3090	1488	385	541	203
	333	RR15013	1386	668	198,1	95,4	6597	3177	582	915	203
	815	RR15032	1386	668	198,1	95,4	16.145	7775	1116	1931	203
200	152	RR2006	1995	1017	285,0	145,3	4332	2209	430	582	247
	330	RR20013	1995	1017	285,0	145,3	9405	4795	608	938	247
	457	RR20018	1995	1017	285,0	145,3	13.025	6640	765	1222	247
	610	RR20024	1995	1017	285,0	145,3	17.385	8863	917	1527	247
	914	RR20036	1995	1017	285,0	145,3	26.049	13.280	1222	2136	247
	1219	RR20048	1995	1017	285,0	145,3	34.741	17.712	1527	2746	247
325	153	RR3006	3201	1703	457,3	243,2	6997	3721	485	638	311
	305	RR30012	3201	1703	457,3	243,2	13.947	7418	638	943	311
	457	RR30018	3201	1703	457,3	243,2	20.889	11.114	790	1247	311
	609	RR30024	3201	1703	457,3	243,2	27.850	14.811	943	1552	311
	915	RR30036	3201	1703	457,3	243,2	41.843	22.253	1247	2162	311
	1219	RR30048	3201	1703	457,3	243,2	55.745	29.646	1552	2771	311
440	152	RR4006	4292	2297	613,1	328,1	9319	4987	538	690	358
	305	RR40012	4292	2297	613,1	328,1	18.700	10.007	690	995	358
	457	RR40018	4292	2297	613,1	328,1	28.018	14.995	843	1300	358
	610	RR40024	4292	2297	613,1	328,1	37.400	20.014	995	1605	358
	914	RR40036	4292	2297	613,1	328,1	56.037	29.988	1300	2214	358
	1219	RR40048	4292	2297	613,1	328,1	74.737	39.996	1605	2824	358
520	153	RR5006	5108	2838	729,7	405,4	11.164	6203	577	730	397
	305	RR50012	5108	2838	729,7	405,4	22.256	12.365	730	1035	397
	457	RR50018	5108	2838	729,7	405,4	33.347	18.526	882	1339	397
	609	RR50024	5108	2838	729,7	405,4	44.440	24.689	1035	1644	397
	915	RR50036	5108	2838	729,7	405,4	66.768	36.973	1339	2254	397
	1219	RR50048	5108	2838	729,7	405,4	88.951	49.418	1644	2863	397

* For RR1010 and RR1012: N = 32 mm; for RR308 and RR3014: N = 55 mm.

Double-Acting Long Stroke Cylinders

Capacity:

10 - 520 ton

Stroke:

57 - 1219 mm

Maximum Operating Pressure:

700 bar

**RR
Series**



	Cyl. Bore Dia. E (mm)	Plgr. Dia. F (mm)	Base to Adv. Port H (mm)	Top to Ret. Port I (mm)	Saddle Dia. J (mm)	Saddle Protr. fr. Plgr. K (mm)	Plunger Internal Thread O	Plunger Thread Length P (mm)	Base Mounting Holes			Collar Thread W	Collar Thread Length X (mm)	 (kg)	Model Number
									Bolt Circle U (mm)	Thread V	Thread Depth Z (mm)				
	42,9	34,9	36	57	35	6	1" - 8	25	-	-	-	2 1/4" - 14	26	12	RR1010*
	42,9	34,9	36	57	35	6	1" - 8	25	-	-	-	2 1/4" - 14	26	14	RR1012*
	73,2	54,1	39	81	50	10	1 1/2" - 16	25	-	-	-	3 5/16" - 12	49	18	RR308*
	73,2	54,1	39	81	50	10	1 1/2" - 16	25	-	-	-	3 5/16" - 12	49	29	RR3014*
	95,2	79,5	28	76	71	2	1" - 12	25	-	-	-	5" - 12	44	30	RR506
	95,2	79,5	28	76	71	2	1" - 12	25	-	-	-	5" - 12	44	52	RR5013
	95,2	79,5	57	76	71	2	1" - 12	25	76	1/2" - 13	25	5" - 12	44	68	RR5020
	114,3	95,2	30	76	71	6	1" - 12	28	-	-	-	5 3/4" - 12	50	41	RR756
	114,3	95,2	30	81	71	6	1" - 12	28	-	-	-	5 3/4" - 12	50	68	RR7513
	130,3	95,2	38	71	76	3	1 3/4" - 12	35	139	3/4" - 10	25	6 7/8" - 12	50	61	RR1006
	130,3	95,2	38	71	76	3	1 3/4" - 12	35	139	3/4" - 10	25	6 7/8" - 12	50	93	RR10013
	130,3	95,2	41	92	76	3	1 3/4" - 12	35	139	3/4" - 10	25	6 7/8" - 12	50	117	RR10018
	158,8	114,3	22	66	95	19	-	-	-	-	-	-	-	49	RR1502
	158,8	114,3	49	84	114	19	3 3/8" - 16	35	158	3/4" - 16	28	8" - 12	55	93	RR1506
	158,8	114,3	49	84	114	19	3 3/8" - 16	35	158	3/4" - 16	28	8" - 12	55	124	RR15013
	158,8	114,3	76	88	114	19	3 3/8" - 16	35	-	-	-	8" - 12	55	238	RR15032
	190,5	133,4	57	96	133	22	-	-	127	1" - 8	25	-	-	147	RR2006
	190,5	133,4	57	96	133	22	2 1/2" - 12	63	127	1" - 8	25	9 3/4" - 12	54	199	RR20013
	190,5	133,4	85	101	133	22	2 1/2" - 12	63	127	1" - 8	25	9 3/4" - 12	54	204	RR20018
	190,5	133,4	85	101	133	22	2 1/2" - 12	63	127	1" - 8	25	9 3/4" - 12	54	279	RR20024
	190,5	133,4	85	101	133	22	2 1/2" - 12	63	127	1" - 8	25	9 3/4" - 12	54	383	RR20036
	190,5	133,4	85	101	133	22	2 1/2" - 12	63	127	1" - 8	25	9 3/4" - 12	54	483	RR20048
	241,3	165,1	88	114	165	28	2 1/2" - 12	82	158	1 1/4" - 7	44	12 1/4" - 12	58	200	RR3006
	241,3	165,1	88	114	165	28	2 1/2" - 12	82	158	1 1/4" - 7	44	12 1/4" - 12	58	312	RR30012
	241,3	165,1	88	114	165	28	2 1/2" - 12	82	158	1 1/4" - 7	44	12 1/4" - 12	58	385	RR30018
	241,3	165,1	88	114	165	28	2 1/2" - 12	82	158	1 1/4" - 7	44	12 1/4" - 12	58	469	RR30024
	241,3	165,1	88	114	165	28	2 1/2" - 12	82	158	1 1/4" - 7	44	12 1/4" - 12	58	628	RR30036
	241,3	165,1	88	114	165	28	2 1/2" - 12	82	158	1 1/4" - 7	44	12 1/4" - 12	58	780	RR30048
	279,4	190,5	108	133	190	28	3" - 12	95	203	1 1/2" - 6	50	14 1/8" - 8	65	303	RR4006
	279,4	190,5	108	133	190	28	3" - 12	95	203	1 1/2" - 6	50	14 1/8" - 8	65	399	RR40012
	279,4	190,5	108	133	190	28	3" - 12	95	203	1 1/2" - 6	50	14 1/8" - 8	65	453	RR40018
	279,4	190,5	108	133	190	28	3" - 12	95	203	1 1/2" - 6	50	14 1/8" - 8	65	597	RR40024
	279,4	190,5	108	133	190	28	3" - 12	95	203	1 1/2" - 6	50	14 1/8" - 8	65	792	RR40036
	279,4	190,5	108	133	190	28	3" - 12	95	203	1 1/2" - 6	50	14 1/8" - 8	65	980	RR40048
	304,8	203,2	120	152	203	28	3 1/4" - 12	108	203	1 3/4" - 5	57	15 5/8" - 8	79	432	RR5006
	304,8	203,2	120	152	203	28	3 1/4" - 12	108	203	1 3/4" - 5	57	15 5/8" - 8	79	589	RR50012
	304,8	203,2	120	152	203	28	3 1/4" - 12	108	203	1 3/4" - 5	57	15 5/8" - 8	79	680	RR50018
	304,8	203,2	120	152	203	28	3 1/4" - 12	108	203	1 3/4" - 5	57	15 5/8" - 8	79	816	RR50024
	304,8	203,2	120	152	203	28	3 1/4" - 12	108	203	1 3/4" - 5	57	15 5/8" - 8	79	1002	RR50036
	304,8	203,2	120	152	203	28	3 1/4" - 12	108	203	1 3/4" - 5	57	15 5/8" - 8	79	1224	RR50048

▼ HCL2006, HCG2002, HCR2006



Reaching the Summit Edition:

- Nitrocarburized hardened surfaces offers improved protection against side-load scoring and cyclic wear
- Weather protected, inside and out
- Low-friction locking rings spin easy, save time and effort ¹⁾
- State of the art bearing materials reduce wear and avoid bore damage even in high side-load conditions

Low wear, high pressure seals

- Improved seal design and material selection increases seal performance even in harsh conditions
- Low friction for faster retraction, longer life

Versatile

- Over 220 models in 5 configurations ¹⁾
- Certified lifting eyes, base mounting holes and collar threads are included for secure handling and cylinder mounting ¹⁾

¹⁾ See specific models technical data for more information.

Highest Level of Durability



The Summit Edition

Innovation is at the heart of the new Summit Edition cylinders, delivering the high quality construction you expect from Enerpac. The design and durability add safety and reliability to your job.

- Plunger support bearing adds support for eccentric loads ²⁾
- Nitrocarburization surface treatment for improved wear resistance and corrosion protection
- Low wear, high pressure seals provide longer service life.

²⁾ Eccentric load (or “side-load”) is inevitable in heavy lifting. Our unique Summit Edition features provide the ultimate protection against side-load. Increased bearing surface maintains stability and nitrocarburization treatment prevents scoring on the inside of the cylinder. Side-load poses a real problem.... our new cylinder features are the solution!

▼ Bridge lifting and launching system. The load is balanced on groups of lock nut cylinders. The hydraulic movements are synchronised using the Enerpac PLC-controlled synchronous lift system.





High Tonnage Cylinders

The Enerpac High Tonnage Cylinders are particularly suitable for (multipoint) lifting applications.

HCG, HCR, HCL-Series Cylinders

- 50 - 1000 ton lifting capacity
- 50 - 300 mm stroke

HCG-Series - single-acting

- gravity return
- stop ring to prevent plunger blow-out
- designed to withstand up to 10% side-load of maximum capacity.

HCR-Series - double-acting

- hydraulic advance and retract for controlled movement
- designed to withstand up to 10% side-load of maximum capacity.

HCL-Series - lock nut, single-acting

- gravity return
- lock nut for mechanical load holding
- overflow port to prevent plunger blow out
- designed to withstand 10% side-load up to 90% of maximum stroke.

HCRL-Series - lock nut, double-acting

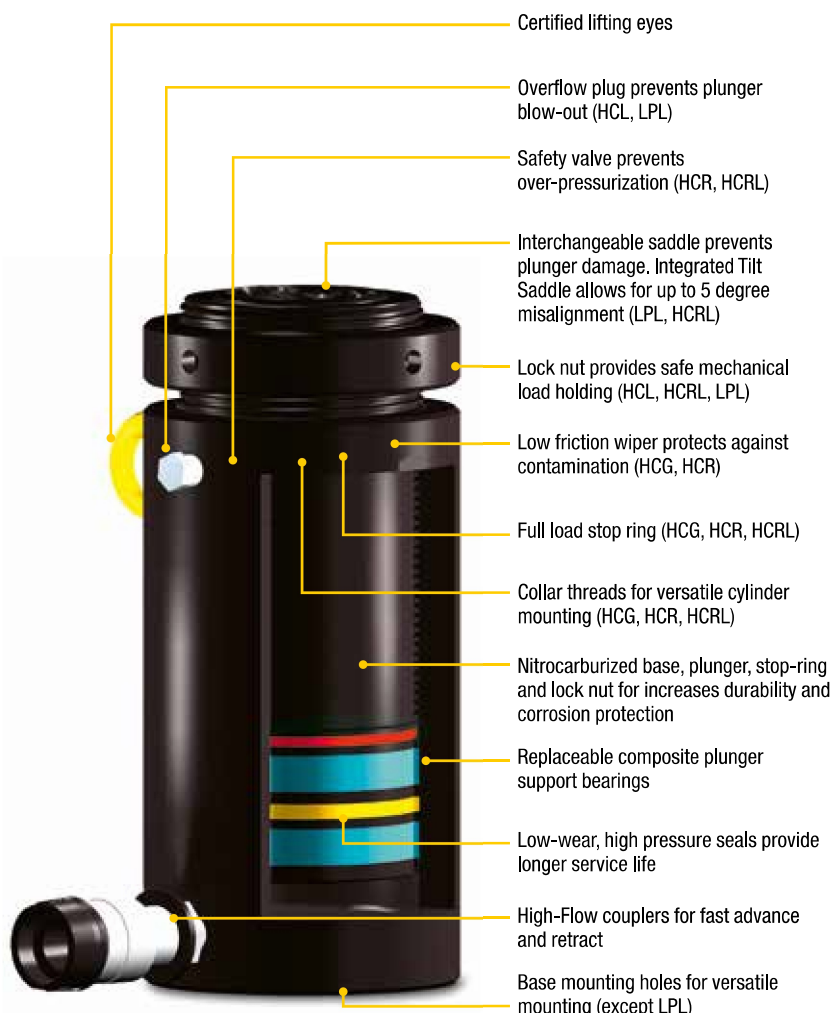
- hydraulic advance and retract
- designed to withstand up to 10% side-load of maximum capacity
- integrated tilt saddle
- lock nut for mechanical load holding
- 50 - 300 ton lifting capacity
- 150 - 300 mm stroke

LPL-Series - lock nut, low height, single-acting (see page 24)

- 60 - 500 ton lifting capacity;
- 45 - 50 mm lifting stroke
- integrated tilt saddle
- gravity return
- lock nut for mechanical load holding
- 5-10% side-load of maximum capacity.

In combination with our state of the art power packs, you will have a world class hydraulic system to perform the most challenging lifting jobs in a safe and professional manner. See **page 75** for more information on our pump offering.

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HCG HCR HCL HCRL Series



Capacity:

50 - 1000 ton

Stroke:

50 - 300 mm

Maximum Operating Pressure:

700 bar



Assisted Return Pumps

Enerpac HCG, HCL and LPL-Series cylinders are hydraulic advance and gravity return. To improve productivity and plunger retraction Enerpac offers assisted return on ZU4 and ZE-Series pumps featuring Enerpac **Venturi Valve technology**, specifically to facilitate the faster return of single-acting, spring and gravity return cylinders. See enerpac.com for details.

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Split-Flow Pumps

SFP-Series pumps with multiple outlets with equal oil flow. For lifting and lowering applications on multiple points these pumps are a far better alternative than using separately operated pumps.

Page: 336



Synchronous Lifting Systems

EVO-Series pumps the multi-functional lifting system and multiple lift point capabilities.

Page: 340


QUICK SELECTION

Cylinder Capacity ton	Stroke (mm)	Maximum Cylinder Capacity at 700 bar ton (kN)	HCG-Series		HCR-Series		HCL-Series		HCRL-Series *	
			Model Number Single-Acting <i>Page: 48</i>	Collapsed Height (mm)	Model Number Double-Acting <i>Page: 52</i>	Collapsed Height (mm)	Model Number Single-Acting With Lock Nut <i>Page: 56</i>	Collapsed Height (mm)	Model Number Double-Acting With Lock Nut <i>Page: 60</i>	Collapsed Height (mm)
50	50	56 (550)	HCG502	183	HCR502	183	HCL502	164	—	—
	100		HCG504	233	HCR504	233	HCL504	214	—	—
	150		HCG506	283	HCR506	283	HCL506	264	HCRL506	310
	200		HCG508	346	HCR508	346	HCL508	314	HCRL508	377
	250		HCG5010	396	HCR5010	396	HCL5010	364	HCRL5010	427
	300		HCG5012	446	HCR5012	446	HCL5012	414	HCRL5012	477
100	50	102 (1002)	HCG1002	202	HCR1002	202	HCL1002	187	—	—
	100		HCG1004	252	HCR1004	252	HCL1004	237	—	—
	150		HCG1006	302	HCR1006	302	HCL1006	287	HCRL1006	346
	200		HCG1008	379	HCR1008	379	HCL1008	337	HCRL1008	421
	250		HCG10010	429	HCR10010	429	HCL10010	387	HCRL10010	471
	300		HCG10012	479	HCR10012	479	HCL10012	437	HCRL10012	521
150	50	153 (1497)	HCG1502	220	HCR1502	220	HCL1502	209	—	—
	100		HCG1504	270	HCR1504	270	HCL1504	259	—	—
	150		HCG1506	320	HCR1506	320	HCL1506	309	HCRL1506	359
	200		HCG1508	397	HCR1508	397	HCL1508	359	HCRL1508	434
	250		HCG15010	447	HCR15010	447	HCL15010	409	HCRL15010	484
	300		HCG15012	497	HCR15012	497	HCL15012	459	HCRL15012	534
200	50	202 (1985)	HCG2002	231	HCR2002	231	HCL2002	238	—	—
	100		HCG2004	281	HCR2004	281	HCL2004	288	—	—
	150		HCG2006	331	HCR2006	331	HCL2006	338	HCRL2006	399
	200		HCG2008	408	HCR2008	408	HCL2008	388	HCRL2008	469
	250		HCG20010	458	HCR20010	458	HCL20010	438	HCRL20010	519
	300		HCG20012	508	HCR20012	508	HCL20012	488	HCRL20012	569
250	50	259 (2541)	HCG2502	241	HCR2502	241	HCL2502	249	—	—
	100		HCG2504	291	HCR2504	291	HCL2504	299	—	—
	150		HCG2506	341	HCR2506	341	HCL2506	349	HCRL2506	416
	200		HCG2508	431	HCR2508	431	HCL2508	399	HCRL2508	491
	250		HCG25010	481	HCR25010	481	HCL25010	449	HCRL25010	541
	300		HCG25012	531	HCR25012	531	HCL25012	499	HCRL25012	591
300	50	310 (3036)	HCG3002	296	HCR3002	296	HCL3002	278	—	—
	100		HCG3004	346	HCR3004	346	HCL3004	328	—	—
	150		HCG3006	396	HCR3006	396	HCL3006	378	HCRL3006	421
	200		HCG3008	446	HCR3008	446	HCL3008	428	HCRL3008	496
	250		HCG30010	496	HCR30010	496	HCL30010	478	HCRL30010	546
	300		HCG30012	546	HCR30012	546	HCL30012	528	HCRL30012	596

* See page 60 for HCRL-cylinder maximum capacity.

Enerpac High Tonnage Cylinders

Capacity:
50 - 1000 ton

Stroke:
50 - 300 mm

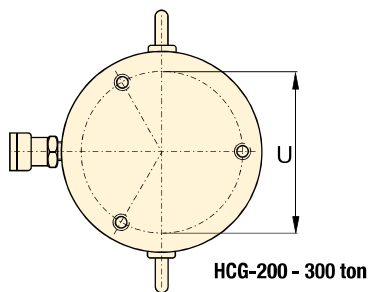
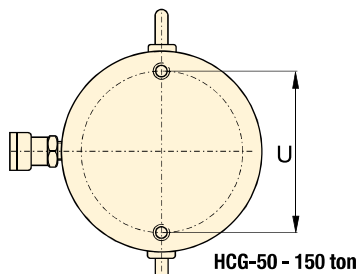
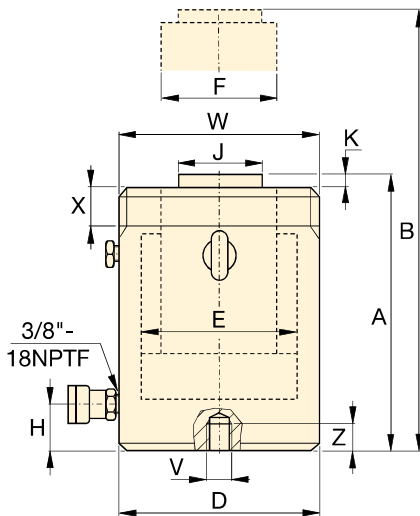
Maximum Operating Pressure:
700 bar

**HCG
HCR
HCL
HCRL
Series**



QUICK SELECTION

Cylinder Capacity ton	Stroke (mm)	Maximum Cylinder Capacity at 700 bar ton (kN)	HCG-Series		HCR-Series		HCL-Series	
			Model Number Single-Acting <i>Page: 50</i>	Collapsed Height (mm)	Model Number Double-Acting <i>Page: 54</i>	Collapsed Height (mm)	Model Number Single-Acting With Lock Nut <i>Page: 58</i>	Collapsed Height (mm)
400	50	409 (4008)	HCG4002	321	HCR4002	321	HCL4002	317
	100		HCG4004	371	HCR4004	371	HCL4004	367
	150		HCG4006	421	HCR4006	421	HCL4006	417
	200		HCG4008	471	HCR4008	471	HCL4008	467
	250		HCG40010	521	HCR40010	521	HCL40010	517
	300		HCG40012	571	HCR40012	571	HCL40012	567
500	50	522 (5114)	HCG5002	344	HCR5002	344	HCL5002	357
	100		HCG5004	394	HCR5004	394	HCL5004	407
	150		HCG5006	444	HCR5006	444	HCL5006	457
	200		HCG5008	494	HCR5008	494	HCL5008	507
	250		HCG50010	544	HCR50010	544	HCL50010	557
	300		HCG50012	594	HCR50012	594	HCL50012	607
600	50	611 (5987)	HCG6002	352	HCR6002	352	HCL6002	380
	100		HCG6004	402	HCR6004	402	HCL6004	430
	150		HCG6006	452	HCR6006	452	HCL6006	480
	200		HCG6008	502	HCR6008	502	HCL6008	530
	250		HCG60010	552	HCR60010	552	HCL60010	580
	300		HCG60012	602	HCR60012	602	HCL60012	630
800	50	831 (8149)	HCG8002	404	HCR8002	404	HCL8002	430
	100		HCG8004	454	HCR8004	454	HCL8004	480
	150		HCG8006	504	HCR8006	504	HCL8006	530
	200		HCG8008	554	HCR8008	554	HCL8008	580
	250		HCG80010	604	HCR80010	604	HCL80010	630
	300		HCG80012	654	HCR80012	654	HCL80012	680
1000	50	1085 (10.644)	HCG10002	442	HCR10002	442	HCL10002	484
	100		HCG10004	492	HCR10004	492	HCL10004	534
	150		HCG10006	542	HCR10006	542	HCL10006	584
	200		HCG10008	592	HCR10008	592	HCL10008	634
	250		HCG100010	642	HCR100010	642	HCL100010	684
	300		HCG100012	692	HCR100012	692	HCL100012	734



Collar Thread *(mm)

Model / Capacity ton	Thread Size W	Thread Length X
HCG50	M130 x 2	30
HCG100	M175 x 3	46
HCG150	M215 x 3	55
HCG200	M250 x 3	63
HCG250	M280 x 3	64
HCG300*	M305 x 3	73

* Standard collar thread up to 250 ton models. Collar thread is optional on 300 ton models and higher. For collar thread on cylinder add suffix "E002" to model number. **Example: HCG3006E002**
The collar thread length is designed for the full rated cylinder capacity.

Base Mounting Holes (mm)

Model / Capacity ton	Bolt Circle U	Thread Size V	Minimum Thread Depth Z	Number of Holes	Angle from Coupler
HCG50	105	M12 x 1,75	22	2	90°
HCG100	150	M12 x 1,75	22	2	90°
HCG150	185	M12 x 1,75	22	2	90°
HCG200	215	M12 x 1,75	22	3	60°
HCG250	245	M12 x 1,75	22	3	60°
HCG300	260	M16 x 2	25	3	60°

HCG-Series, Single-Acting, Gravity Return Cylinders

- Hardened surface resists side-loading and cyclic wear
- Designed to withstand 10% side-load of maximum capacity ¹⁾
- Stop ring to prevent plunger blow-out
- Weather protected, inside and out
- Upper and lower replaceable bearings enclose the cylinder plunger for support throughout the stroke
- Certified lifting eyes, base mounting holes and collar threads.
- Standard collar thread up to 250 ton models. Collar thread is optional on 300 ton models and higher.

SELECTION CHART 50 - 300 TON HCG-MODELS

For 400 - 1000 ton models, see pages 50-51.

For full product features see pages 44-45.

Cylinder Capacity ton	Stroke (mm)	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)
50	50	HCG502	56 (550)	78,5	393	183
	100	HCG504			785	233
	150	HCG506 ¹⁾			1178	283
	200	HCG508			1571	346
	250	HCG5010			1963	396
	300	HCG5012 ¹⁾			2356	446
100	50	HCG1002	102 (1002)	143,1	716	202
	100	HCG1004			1431	252
	150	HCG1006			2147	302
	200	HCG1008			2863	379
	250	HCG10010			3578	429
	300	HCG10012			4294	479
150	50	HCG1502	153 (1497)	213,8	1069	220
	100	HCG1504			2138	270
	150	HCG1506			3207	320
	200	HCG1508			4276	397
	250	HCG15010			5346	447
	300	HCG15012			6415	497
200	50	HCG2002	202 (1985)	283,5	1418	231
	100	HCG2004			2835	281
	150	HCG2006			4253	331
	200	HCG2008			5671	408
	250	HCG20010			7088	458
	300	HCG20012			8506	508
250	50	HCG2502	259 (2541)	363,1	1815	241
	100	HCG2504			3631	291
	150	HCG2506			5446	341
	200	HCG2508			7261	431
	250	HCG25010			9076	481
	300	HCG25012			10.892	531
300	50	HCG3002	310 (3036)	433,7	2169	296
	100	HCG3004			4337	346
	150	HCG3006			6506	396
	200	HCG3008			8675	446
	250	HCG30010			10.843	496
	300	HCG30012			13.012	546

¹⁾ HCG506 and HCG5012: 7% side-load of maximum capacity.

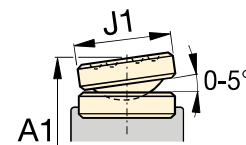
Single-Acting, High Tonnage Cylinders

Capacity:
50 - 300 ton

Stroke:
50 - 300 mm

Maximum Operating Pressure:
700 bar

HCG Series



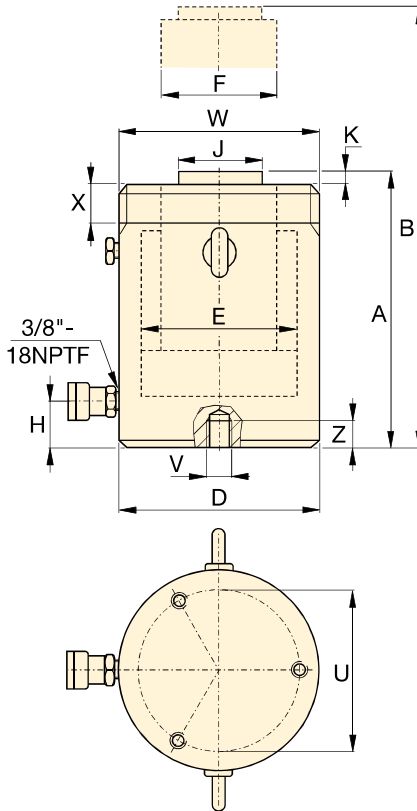
CATS-Series Tilt Saddle

	Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter	Base to Advance Port	Standard Saddle Diameter	Saddle Protrusion from Plunger		Model Number	Optional Tilt Saddle		
	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (mm)	K (mm)			Saddle Diameter J1 (mm)	Collapsed Height A1 (mm)	Saddle Model Number
	233	130	100	70	38	50	3	17	HCG502	71	197	CATS50
	333							20	HCG504		247	
	433							24	HCG506 ¹⁾		297	
	546							29	HCG508		360	
	646							32	HCG5010		410	
	746							36	HCG5012 ¹⁾		460	
	252	175	135	95	38	75	3	33	HCG1002	71	212	CATS101
	352							40	HCG1004		262	
	452							46	HCG1006		312	
	579							58	HCG1008		389	
	679							65	HCG10010		439	
	779							71	HCG10012		489	
	270	215	165	120	41	94	3	56	HCG1502	97	239	CATS150
	370							66	HCG1504		289	
	470							76	HCG1506		339	
	597							94	HCG1508		416	
	697							104	HCG15010		466	
	797							115	HCG15012		516	
	281	250	190	140	47	113	3	81	HCG2002	126	249	CATS200
	381							95	HCG2004		299	
	481							109	HCG2006		349	
	608							136	HCG2008		426	
	708							150	HCG20010		476	
	808							164	HCG20012		526	
	291	280	215	170	53	140	4	107	HCG2502	175	280	CATS300
	391							125	HCG2504		330	
	491							144	HCG2506		380	
	631							182	HCG2508		470	
	731							201	HCG25010		520	
	831							219	HCG25012		570	
	346	305	235	200	58	140	4	158	HCG3002	175	335	CATS300
	446							182	HCG3004		385	
	546							206	HCG3006		435	
	646							230	HCG3008		485	
	746							254	HCG30010		535	
	846							278	HCG30012		585	

²⁾ A1 = Collapsed height including CATS-Series tilt saddle.

HCG-Series, Single-Acting, Gravity Return Cylinders

- Hardened surface resists side-loading and cyclic wear
- Designed to withstand 10% side-load of maximum capacity
- Stop ring to prevent plunger blow-out
- Weather protected, inside and out
- Upper and lower replaceable bearings enclose the cylinder plunger for support throughout the stroke
- Certified lifting eyes, base mounting holes
- Optional collar threads on 300 ton models and higher capacities.



Optional Collar Thread (mm)

Model / Capacity ton	Thread Size	Thread Length
	W	X
HCG400	M350 x 3	83
HCG500	M400 x 4	90
HCG600	M430 x 4	100
HCG800	M505 x 5	122
HCG1000	M570 x 5	137

Collar thread is optional on 300 ton models and higher. For collar thread on cylinder add suffix "E002" to model number. Example: **HCG4006E002**

The collar thread length is designed for the full rated cylinder capacity.

Base Mounting Holes (mm)

Model / Capacity ton	Bolt Circle	Thread Size	Minimum Thread Depth	Number of Holes	Angle from Coupler
	U	V	Z		
HCG400	300	M16 x 2	25	3	60°
HCG500	340	M24 x 3	36	3	60°
HCG600	370	M24 x 3	36	3	60°
HCG800	440	M24 x 3	36	3	60°
HCG1000	500	M24 x 3	36	3	60°

SELECTION CHART 400 - 1000 TON HCG-MODELS

For 50 - 300 ton models, see pages 48-49.

For full product features see pages 44-45.

Cylinder Capacity ton	Stroke (mm)	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)
400	50	HCG4002	409 (4008)	572,6	2863	321
	100	HCG4004			5726	371
	150	HCG4006			8588	421
	200	HCG4008			11.451	471
	250	HCG40010			14.314	521
	300	HCG40012			17.177	571
500	50	HCG5002	522 (5114)	730,6	3653	344
	100	HCG5004			7306	394
	150	HCG5006			10.959	444
	200	HCG5008			14.612	494
	250	HCG50010			18.265	544
	300	HCG50012			21.918	594
600	50	HCG6002	611 (5987)	855,3	4276	352
	100	HCG6004			8553	402
	150	HCG6006			12.829	452
	200	HCG6008			17.106	502
	250	HCG60010			21.382	552
	300	HCG60012			25.659	602
800	50	HCG8002	831 (8149)	1164,2	5821	404
	100	HCG8004			11.642	454
	150	HCG8006			17.462	504
	200	HCG8008			23.283	554
	250	HCG80010			29.104	604
	300	HCG80012			34.925	654
1000	50	HCG10002	1085 (10.644)	1520,5	7603	442
	100	HCG10004			15.205	492
	150	HCG10006			22.808	542
	200	HCG10008			30.411	592
	250	HCG100010			38.013	642
	300	HCG100012			45.616	692

Single-Acting, High Tonnage Cylinders



▲ Offshore wind turbines levelling: Enerpac's synchronous lifting system was the solution for levelling support cross pieces on 80 wind turbines.

HCG Series



Capacity:

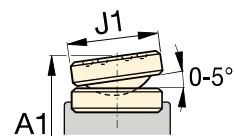
400 - 1000 ton

Stroke:

50 - 300 mm

Maximum Operating Pressure:

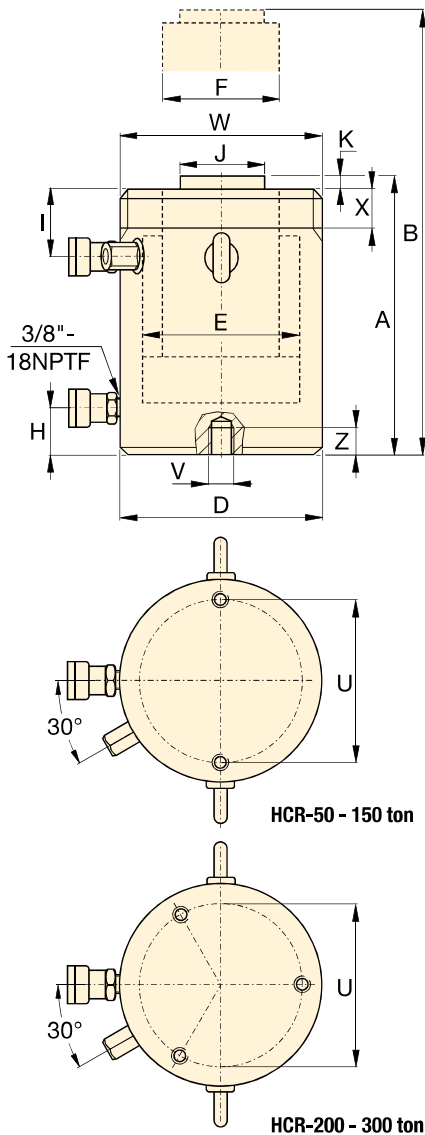
700 bar



CATS-Series Tilt Saddle

	Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter	Base to Advance Port	Standard Saddle Diameter	Saddle Protrusion from Plunger		Model Number	Optional Tilt Saddle		
	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (mm)	K (mm)		(kg)	Saddle Diameter J1 (mm)	Collapsed Height * A1 (mm)	Saddle Model Number
	371	350	270	220	74	159	4		227	210	369	CATS400
	471								257		419	
	571								287		469	
	671								317		519	
	771								347		569	
	871								378		619	
	394	400	305	250	79	179	4		319	230	392	CATS500
	494								359		442	
	594								399		492	
	694								439		542	
	794								479		592	
	894								519		642	
	402	430	330	270	85	194	4		378	250	405	CATS600
	502								424		455	
	602								470		505	
	702								516		555	
	802								562		605	
	902								608		655	
	454	505	385	320	100	224	4		606	275	461	CATS800
	554								671		511	
	654								735		561	
	754								800		611	
	854								864		661	
	954								929		711	
	492	570	440	340	114	249	4		840	300	519	CATS1000
	592								916		569	
	692								992		619	
	792								1068		669	
	892								1145		719	
	992								1221		769	

* A1 = Collapsed height including CATS-Series tilt saddle.



HCR-Series, Double-Acting Cylinders

- Fast advance and retract
- Designed to withstand 10% side-load of maximum capacity¹⁾
- Hardened surface resists side-loading and cyclic wear
- Weather protected, inside and out
- Upper and lower replaceable bearings enclose the cylinder plunger for support throughout the stroke
- Certified lifting eyes, base mounting holes and collar threads
- Standard collar thread up to 250 ton models. Collar thread is optional on 300 ton models and higher.

SELECTION CHART & DETAILS OF 50 - 300 TON HCR-MODELS

For 400 - 1000 ton models, see pages 54-55.

For full product features see pages 44-45.

Cylinder Capacity ton	Stroke (mm)	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)		Collapsed Height A (mm)
					Advance	Retract	
50	50	HCR502	56 (550)	78,5	393	200	183
	100	HCR504			785	401	233
	150	HCR506 ¹⁾			1178	601	283
	200	HCR508			1571	801	346
	250	HCR5010			1963	1001	396
	300	HCR5012 ¹⁾			2356	1202	446
100	50	HCR1002	102 (1002)	143,1	716	361	202
	100	HCR1004			1431	723	252
	150	HCR1006			2147	1084	302
	200	HCR1008			2863	1445	379
	250	HCR10010			3578	1806	429
	300	HCR10012			4294	2168	479
150	50	HCR1502	153 (1497)	213,8	1069	504	220
	100	HCR1504			2138	1007	270
	150	HCR1506			3207	1511	320
	200	HCR1508			4276	2015	397
	250	HCR15010			5346	2518	447
	300	HCR15012			6415	3022	497
200	50	HCR2002	202 (1985)	283,5	1418	648	231
	100	HCR2004			2835	1296	281
	150	HCR2006			4253	1944	331
	200	HCR2008			5671	2592	408
	250	HCR20010			7088	3240	458
	300	HCR20012			8506	3888	508
250	50	HCR2502	259 (2541)	363,1	1815	680	241
	100	HCR2504			3631	1361	291
	150	HCR2506			5446	2041	341
	200	HCR2508			7261	2721	431
	250	HCR25010			9076	3402	481
	300	HCR25012			10.892	4082	531
300	50	HCR3002	310 (3036)	433,7	2169	598	296
	100	HCR3004			4337	1196	346
	150	HCR3006			6506	1794	396
	200	HCR3008			8675	2392	446
	250	HCR30010			10.843	2989	496
	300	HCR30012			13.012	3587	546

¹⁾ HCR506 and HCR5012: 7% side-load of maximum capacity.

Collar Thread * (mm)		
Model / Capacity ton	Thread Size W	Thread Length X
HCR50	M130 x 2	30
HCR100	M175 x 3	46
HCR150	M215 x 3	55
HCR200	M250 x 3	63
HCR250	M280 x 3	64
HCR300*	M305 x 3	73

* Standard collar thread up to 250 ton models. Collar thread is optional on 300 ton models and higher. For collar thread on cylinder add suffix "E002" to model number. Example: HCR3006E002
The collar thread length is designed for the full rated cylinder capacity.

Base Mounting Holes (mm)					
Model / Capacity ton	Bolt Circle U	Thread Size V	Minimum Thread Depth Z	Number of Holes	Angle from Coupler
HCR50	105	M12 x 1,75	22	2	90°
HCR100	150	M12 x 1,75	22	2	90°
HCR150	185	M12 x 1,75	22	2	90°
HCR200	215	M12 x 1,75	22	3	60°
HCR250	245	M12 x 1,75	22	3	60°
HCR300	260	M16 x 2	25	3	60°

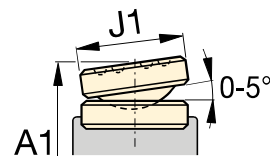
Double-Acting, High Tonnage Cylinders

Capacity:
50 - 300 ton

Stroke:
50 - 300 mm

Maximum Operating Pressure:
700 bar

**HCR
Series**



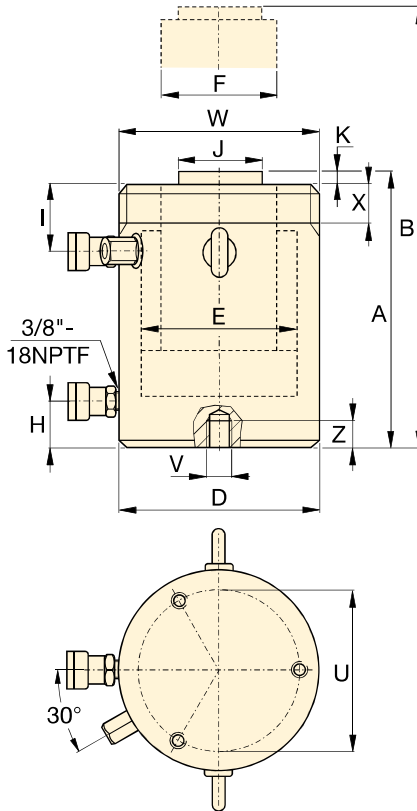
CATS-Series Tilt Saddle

	Extended Height	Outside Diameter	Cylinder Bore Diameter E (mm)	Plunger Diameter	Base to Advance Port H (mm)	Top to Retract Port I (mm)	Standard Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)		Model Number	Optional Tilt Saddle				
	B (mm)	D (mm)		F (mm)					(kg)		Saddle Diameter J1 (mm)	Collapsed Height ²⁾ A1 (mm)	Saddle Model Number		
	233	130	100	70	38	45	50	3	17	HCR502	71	197	CATS50		
	333								21	HCR504				247	
	433								25	HCR506 ¹⁾					297
	546					55			31	HCR508					
	646								34	HCR5010				410	
	746								38	HCR5012 ¹⁾					460
						252			175	135					
352		41	HCR1004	262											
452		48	HCR1006		312										
579		80	59			HCR1008	389								
679			66	HCR10010		439									
779			73	HCR10012	489										
		270	215	165			120	41			70	94	3	56	HCR1502
	370	67				HCR1504			289						
	470	78			HCR1506	339									
	597	90			95					HCR1508	416				
	697				106				HCR15010	466					
	797				116	HCR15012			516						
		281			250	190					140			47	79
381		96	HCR2004	299											
481		111	HCR2006				349								
608		97	139					HCR2008	426						
708			153	HCR20010				476							
808			168	HCR20012			526								
		291	280	215					170	53		79	140		4
	391	127			HCR2504	330									
	491	146			HCR2506		380								
	631	104			184			HCR2508			470				
	731				207	HCR25010		520							
	831				227	HCR25012	570								
		346			305	235					200	58		101	
446		183	HCR3004	385											
546		208	HCR3006				435								
646		232	HCR3008					485							
746		257	HCR30010	535											
846		281	HCR30012				585								

²⁾ A1 = Collapsed height including CATS-Series tilt saddle.

HCR-Series, Double-Acting Cylinders

- Fast advance and retract
- Designed to withstand 10% side-load of maximum capacity
- Hardened surface resists side-loading and cyclic wear
- Weather protected, inside and out
- Upper and lower replaceable bearings enclose the cylinder plunger for support throughout the stroke
- Certified lifting eyes, base mounting holes and optional collar threads
- Optional collar threads on 300 ton models and higher capacities.



SELECTION CHART & DETAILS OF 400 - 1000 TON HCR-MODELS

For 50 - 300 ton models, see pages 52-53.

For full product features see pages 44-45.

Cylinder Capacity ton	Stroke (mm)	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)		Collapsed Height A (mm)
					Advance	Retract	
400	50	HCR4002	409 (4008)	572,6	2863	962	321
	100	HCR4004			5726	1924	371
	150	HCR4006			8588	2886	421
	200	HCR4008			11.451	3848	471
	250	HCR40010			14.314	4811	521
	300	HCR40012			17.177	5773	571
500	50	HCR5002	522 (5114)	730,6	3653	1199	344
	100	HCR5004			7306	2397	394
	150	HCR5006			10.959	3596	444
	200	HCR5008			14.612	4795	494
	250	HCR50010			18.265	5994	544
	300	HCR50012			21.918	7192	594
600	50	HCR6002	611 (5987)	855,3	4276	1414	352
	100	HCR6004			8553	2827	402
	150	HCR6006			12.829	4241	452
	200	HCR6008			17.106	5655	502
	250	HCR60010			21.382	7069	552
	300	HCR60012			25.659	8482	602
800	50	HCR8002	831 (8149)	1164,2	5821	1800	404
	100	HCR8004			11.642	3599	454
	150	HCR8006			17.462	5399	504
	200	HCR8008			23.283	7198	554
	250	HCR80010			29.104	8998	604
	300	HCR80012			34.925	10.797	654
1000	50	HCR10002	1085 (10.644)	1520,5	7603	3063	442
	100	HCR10004			15.205	6126	492
	150	HCR10006			22.808	9189	542
	200	HCR10008			30.411	12.252	592
	250	HCR100010			38.013	15.315	642
	300	HCR100012			45.616	18.378	692

Optional Collar Thread (mm)

Model / Capacity ton	Thread Size	Thread Length
	W	X
HCR400	M350 x 3	83
HCR500	M400 x 4	90
HCR600	M430 x 4	100
HCR800	M505 x 5	122
HCR1000	M570 x 5	137

Collar thread is optional on 300 ton models and higher. For collar thread on cylinder add suffix "E002" to model number. Example: **HCR4006E002**

The collar thread length is designed for the full rated cylinder capacity.

Base Mounting Holes (mm)

Model / Capacity ton	Bolt Circle	Thread Size	Minimum Thread Depth	Number of Holes	Angle from Coupler
	U	V	Z		
HCR400	300	M16 x 2	25	3	60°
HCR500	340	M24 x 3	36	3	60°
HCR600	370	M24 x 3	36	3	60°
HCR800	440	M24 x 3	36	3	60°
HCR1000	500	M24 x 3	36	3	60°

Double-Acting, High Tonnage Cylinders



▲ The superlifting and launch of a 43,000-ton floating oil production system in Malaysia for the Gumusut-Kakap offshore field has set high benchmarks for safety through its use of sophisticated EVO-Series synchronous hydraulics to lift, balance, weigh and smoothly launch massive resource structures.

HCR Series



Capacity:

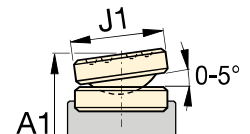
400 - 1000 ton

Stroke:

50 - 300 mm

Maximum Operating Pressure:

700 bar



CATS-Series Tilt Saddle

	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter F (mm)	Base to Advance Port H (mm)	Top to Retract Port I (mm)	Standard Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)	 (kg)	Model Number
	371	350	270	220	74	111	159	4	227	HCR4002
	471								258	HCR4004
	571								289	HCR4006
	671								321	HCR4008
	771								352	HCR40010
	871								383	HCR40012
	394	400	305	250	79	121	179	4	320	HCR5002
	494								361	HCR5004
	594								402	HCR5006
	694								443	HCR5008
	794								484	HCR50010
	894								525	HCR50012
	402	430	330	270	85	121	194	4	379	HCR6002
	502								427	HCR6004
	602								474	HCR6006
	702								521	HCR6008
	802								568	HCR60010
	902								615	HCR60012
	454	505	385	320	100	143	224	4	608	HCR8002
	554								674	HCR8004
	654								740	HCR8006
	754								806	HCR8008
	854								872	HCR80010
	954								938	HCR80012
	492	570	440	340	114	153	249	4	843	HCR10002
	592								921	HCR10004
	692								1000	HCR10006
	792								1079	HCR10008
	892								1158	HCR100010
	992								1236	HCR100012

Optional Tilt Saddle		
Saddle Diameter J1 (mm)	Collapsed Height * A1 (mm)	Saddle Model Number
210	369	CATS400
	419	
	469	
	519	
	569	
	619	
230	392	CATS500
	442	
	492	
	542	
	592	
	642	
250	405	CATS600
	455	
	505	
	555	
	605	
	655	
275	461	CATS800
	511	
	561	
	611	
	661	
	711	
300	519	CATS1000
	569	
	619	
	669	
	719	
	769	

* A1 = Collapsed height including CATS-Series tilt saddle.

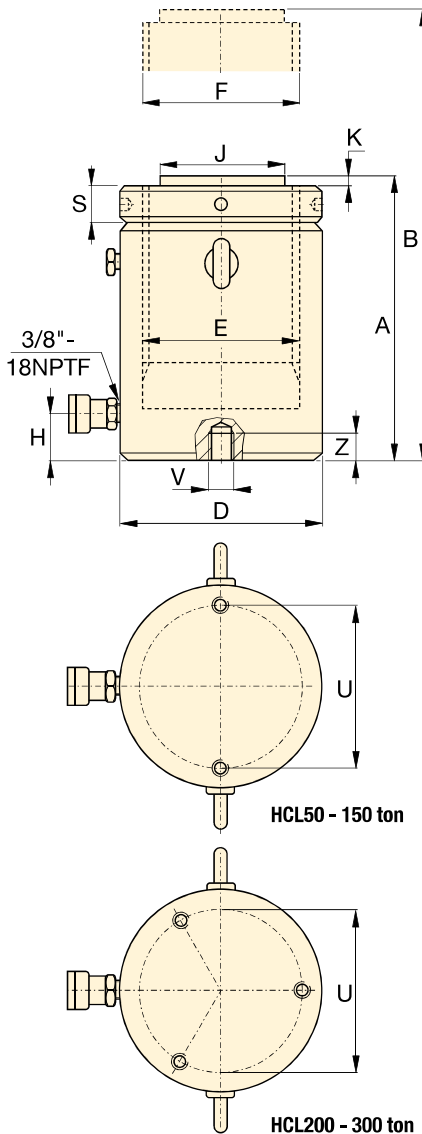
HCL-Series, Single-Acting, Gravity Return Cylinders

- Lock nut provides positive and safe mechanical load holding
- Low-friction locking rings spin easy, save time and effort
- Designed to withstand 10% side-load up to 90% of maximum stroke
- Hardened surface resists side-loading and cyclic wear
- Overflow port as stroke limiter to prevent plunger blow-out
- Weather protected, inside and out
- Replaceable bearings enclose the plunger for support throughout the stroke
- Certified lifting eyes and base mounting holes.

SELECTION CHART 50 - 300 TON HCL-MODELS

For 400 - 1000 ton models, see pages 58-59.

For full product features see pages 44-45.



Cylinder Capacity ton	Stroke (mm)	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)
50	50	HCL502	56 (550)	78,5	393	164
	100	HCL504			785	214
	150	HCL506			1178	264
	200	HCL508			1571	314
	250	HCL5010			1963	364
	300	HCL5012			2356	414
100	50	HCL1002	102 (1002)	143,1	716	187
	100	HCL1004			1431	237
	150	HCL1006			2147	287
	200	HCL1008			2863	337
	250	HCL10010			3578	387
	300	HCL10012			4294	437
150	50	HCL1502	153 (1497)	213,8	1069	209
	100	HCL1504			2138	259
	150	HCL1506			3207	309
	200	HCL1508			4276	359
	250	HCL15010			5346	409
	300	HCL15012			6415	459
200	50	HCL2002	202 (1985)	283,5	1418	238
	100	HCL2004			2835	288
	150	HCL2006			4253	338
	200	HCL2008			5671	388
	250	HCL20010			7088	438
	300	HCL20012			8506	488
250	50	HCL2502	259 (2541)	363,1	1815	249
	100	HCL2504			3631	299
	150	HCL2506			5446	349
	200	HCL2508			7261	399
	250	HCL25010			9076	449
	300	HCL25012			10.892	499
300	50	HCL3002	310 (3036)	433,7	2169	278
	100	HCL3004			4337	328
	150	HCL3006			6506	378
	200	HCL3008			8675	428
	250	HCL30010			10.843	478
	300	HCL30012			13.012	528

Base Mounting Holes (mm)

Model / Capacity ton	Bolt Circle U	Thread Size V	Minimum Thread Depth Z	Number of Holes	Angle from Coupler
HCL50	105	M8 x 1,25	10	2	90°
HCL100	150	M12 x 1,75	17	2	90°
HCL150	185	M12 x 1,75	22	2	90°
HCL200	215	M12 x 1,75	22	3	60°
HCL250	245	M12 x 1,75	22	3	60°
HCL300	260	M16 x 2	25	3	60°

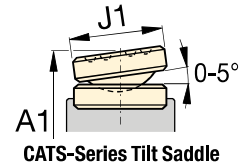
Single-Acting, Lock Nut Cylinders

Capacity:
50 - 300 ton

Stroke:
50 - 300 mm

Maximum Operating Pressure:
700 bar

HCL Series

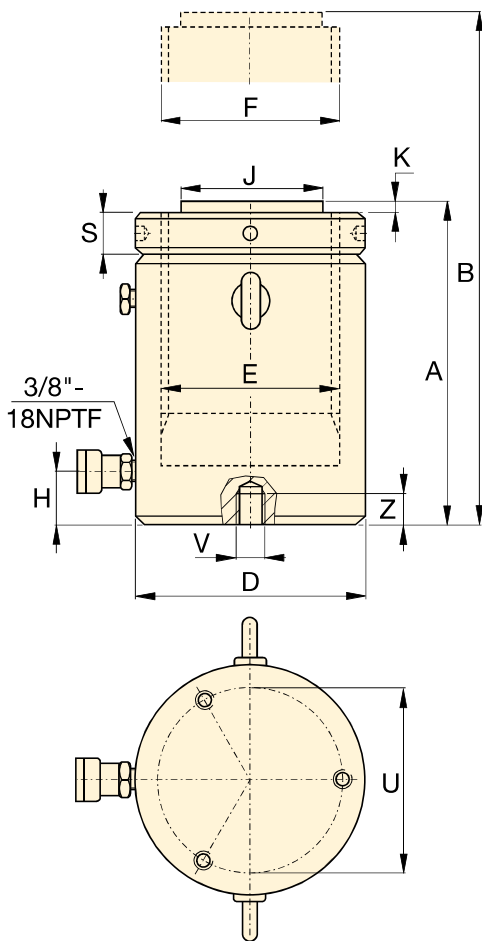


	Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter (threaded)	Base to Advance Port	Standard Saddle Diameter	Saddle Protrusion from Plunger	Lock Nut Height		Model Number	Optional Tilt Saddle		
	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (mm)	K (mm)	S (mm)			Saddle Diameter J1 (mm)	Collapsed Height * A1 (mm)	Saddle Model Number
	214	130	100	Tr 100 x 4	24	71	2	25	17	HCL502	71	179	CATS100
	314								22	HCL504		229	
	414								27	HCL506		279	
	514								32	HCL508		329	
	614								38	HCL5010		379	
	714								43	HCL5012		429	
	237	175	135	Tr 135 x 6	33	71	2	33	35	HCL1002	71	202	CATS100
	337								44	HCL1004		252	
	437								54	HCL1006		302	
	537								63	HCL1008		352	
	637								73	HCL10010		402	
	737								82	HCL10012		452	
	259	215	165	Tr 165 x 6	41	130	2	40	59	HCL1502	126	225	CATS201
	359								73	HCL1504		275	
	459								87	HCL1506		325	
	559								102	HCL1508		375	
	659								116	HCL15010		425	
	759								130	HCL15012		475	
	288	250	190	Tr 190 x 6	47	130	2	45	85	HCL2002	126	254	CATS201
	388								105	HCL2004		304	
	488								124	HCL2006		354	
	588								143	HCL2008		404	
	688								163	HCL20010		454	
	788								182	HCL20012		504	
	299	280	215	Tr 215 x 6	53	140	2	52	119	HCL2502	175	288	CATS300
	399								143	HCL2504		338	
	499								167	HCL2506		388	
	599								192	HCL2508		438	
	699								216	HCL25010		488	
	799								240	HCL25012		538	
	328	305	235	Tr 235 x 6	58	140	2	56	158	HCL3002	175	317	CATS300
	428								186	HCL3004		367	
	528								215	HCL3006		417	
	628								244	HCL3008		467	
	728								272	HCL30010		517	
	828								301	HCL30012		567	

* A1 = Collapsed height including CATS-Series tilt saddle.

HCL-Series, Single-Acting, Gravity Return Cylinders

- Lock nut provides positive and safe mechanical load holding
- Low-friction locking rings spin easy, save time and effort
- Designed to withstand 10% side-load up to 90% of maximum stroke
- Hardened surface resists side-loading and cyclic wear
- Overflow port as stroke limiter to prevent plunger blow-out
- Weather protected, inside and out
- Replaceable bearings enclose the plunger for support throughout the stroke
- Certified lifting eyes and base mounting holes.



SELECTION CHART 400 - 1000 TON HCL-MODELS

For 50 - 300 ton models, see pages 56-57.

For full product features see pages 44-45.

Cylinder Capacity ton	Stroke (mm)	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	Collapsed Height A (mm)
400	50	HCL4002	409 (4008)	572,6	2863	317
	100	HCL4004			5726	367
	150	HCL4006			8588	417
	200	HCL4008			11.451	467
	250	HCL40010			14.314	517
	300	HCL40012			17.177	567
500	50	HCL5002	522 (5114)	730,6	3653	357
	100	HCL5004			7306	407
	150	HCL5006			10.959	457
	200	HCL5008			14.612	507
	250	HCL50010			18.265	557
	300	HCL50012			21.918	607
600	50	HCL6002	611 (5987)	855,3	4276	380
	100	HCL6004			8553	430
	150	HCL6006			12.829	480
	200	HCL6008			17.106	530
	250	HCL60010			21.382	580
	300	HCL60012			25.659	630
800	50	HCL8002	831 (8149)	1164,2	5821	430
	100	HCL8004			11.642	480
	150	HCL8006			17.462	530
	200	HCL8008			23.283	580
	250	HCL80010			29.104	630
	300	HCL80012			34.925	680
1000	50	HCL10002	1085 (10.644)	1520,5	7603	484
	100	HCL10004			15.205	534
	150	HCL10006			22.808	584
	200	HCL10008			30.411	634
	250	HCL100010			38.013	684
	300	HCL100012			45.616	734

Base Mounting Holes (mm)

Model / Capacity ton	Bolt Circle U	Thread Size V	Minimum Thread Depth Z	Number of Holes	Angle from Coupler
HCL400	300	M16 x 2	25	3	60°
HCL500	340	M24 x 3	36	3	60°
HCL600	370	M24 x 3	36	3	60°
HCL800	440	M24 x 3	36	3	60°
HCL1000	500	M24 x 3	36	3	60°

Single-Acting, Lock Nut Cylinders



▲ Heavy lifting and foundation levelling. The lock nut provides mechanical load holding over a long period of time.

HCL Series



Capacity:

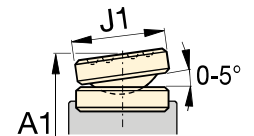
400 - 1000 ton

Stroke:

50 - 300 mm

Maximum Operating Pressure:

700 bar



CATS-Series Tilt Saddle

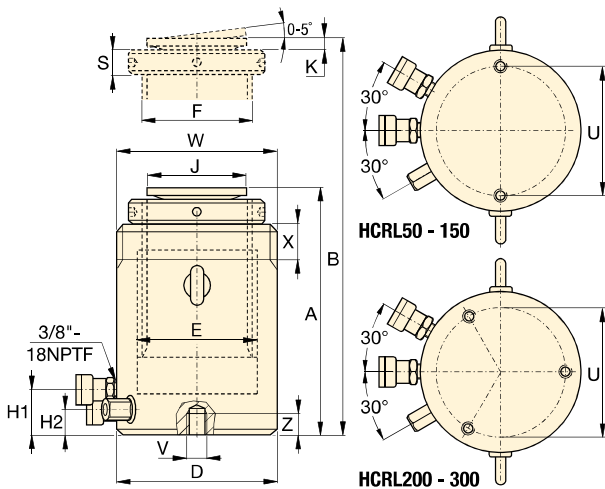
	Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter (threaded)	Base to Advance Port	Standard Saddle Diameter	Saddle Protrusion from Plunger	Lock Nut Height		Model Number	Optional Tilt Saddle		
	B (mm)	D (mm)	E (mm)	F (mm)	H (mm)	J (mm)	K (mm)	S (mm)			Saddle Diameter J1 (mm)	Collapsed Height * A1 (mm)	Model Number
	367	350	270	Tr 270 x 6	67	159	5	65	236	HCL4002	210	365	CATS400
	467								274	HCL4004		415	
	567								311	HCL4006		465	
	667								349	HCL4008		515	
	767								387	HCL40010		565	
	867								425	HCL40012		615	
	407	400	305	Tr 305 x 6	75	179	5	72	341	HCL5002	230	405	CATS500
	507								390	HCL5004		455	
	607								439	HCL5006		505	
	707								489	HCL5008		555	
	807								538	HCL50010		605	
	907								587	HCL50012		655	
	430	430	330	Tr 330 x 6	81	194	5	80	427	HCL6002	250	433	CATS600
	530								484	HCL6004		483	
	630								541	HCL6006		533	
	730								598	HCL6008		583	
	830								655	HCL60010		633	
	930								712	HCL60012		683	
	480	505	385	Tr 385 x 6	95	224	5	90	668	HCL8002	275	487	CATS800
	580								746	HCL8004		537	
	680								825	HCL8006		587	
	780								904	HCL8008		637	
	880								982	HCL80010		687	
	980								1061	HCL80012		737	
	534	570	440	Tr 440 x 6	110	249	5	105	959	HCL10002	300	561	CATS1000
	634								1059	HCL10004		611	
	734								1160	HCL10006		661	
	834								1260	HCL10008		711	
	934								1360	HCL100010		761	
	1034								1460	HCL100012		811	

* A1 = Collapsed height including CATS-Series tilt saddle.

▼ HCRL2006, HCRL506



- Hydraulically controlled fast retraction
- Lock nut provides mechanical load holding for a safe work environment
- Designed to withstand up to 10% side-load of maximum capacity
- Integrated tilt saddle allows up to 5 degrees of misalignment
- Hardened surface resists side-loading and cyclic wear
- Weather protected, inside and out
- Replaceable bearings enclose the plunger external and internally for support
- Certified lifting eyes, base mounting holes and collar thread as standard
- Stop-ring to prevent plunger blow-out
- Low friction lock nut, to spin easily, save time and effort.



SELECTION CHART 50 - 300 TON HCRL-MODELS

For full product features see pages 44-45.

Cylinder Capacity *	Stroke *	Model Number	Maximum Cylinder Capacity at 700 bar ton (kN)	Cylinder Effective Area (cm ²)	Oil Capacity (cm ³)	
					Advance	Retract
50	150	HCRL506	49 (479)	68,4	1025	86
	200	HCRL508			1367	115
	250	HCRL5010			1709	143
	300	HCRL5012			2051	172
100	150	HCRL1006	101 (990)	141,4	2121	236
	200	HCRL1008			2827	314
	250	HCRL10010			3534	393
	300	HCRL10012			4241	471
150	150	HCRL1506	153 (1501)	214,4	3216	236
	200	HCRL1508			4288	314
	250	HCRL15010			5360	393
	300	HCRL15012			6432	471
200	150	HCRL2006	204 (2001)	285,9	4288	530
	200	HCRL2008			5718	707
	250	HCRL20010			7147	884
	300	HCRL20012			8577	1060
250	150	HCRL2506	251 (2463)	351,9	5278	530
	200	HCRL2508			7037	707
	250	HCRL25010			8796	884
	300	HCRL25012			10.556	1060
300	150	HCRL3006	303 (2969)	424,1	6362	530
	200	HCRL3008			8482	707
	250	HCRL30010			10.603	884
	300	HCRL30012			12.723	1060

Collar Thread (mm)		
Model / Capacity ton	Thread Size W	Thread Length X
HCRL50	M130 x 2	42
HCRL100	M185 x 2	57
HCRL150	M222 x 3	70
HCRL200	M260 x 3	79
HCRL250	M290 x 3	85
HCRL300	M315 x 3	94

The collar thread length is designed for the full rated cylinder capacity.

Base Mounting Holes (mm)			
Model / Capacity ton	Bolt Circle U	Thread Size V	Minimum Thread Depth Z
HCRL50	105	M12 x 1,75	22
HCRL100	150	M12 x 1,75	22
HCRL150	185	M12 x 1,75	22
HCRL200	215	M12 x 1,75	22
HCRL250	245	M12 x 1,75	22
HCRL300	260	M16 x 2	25

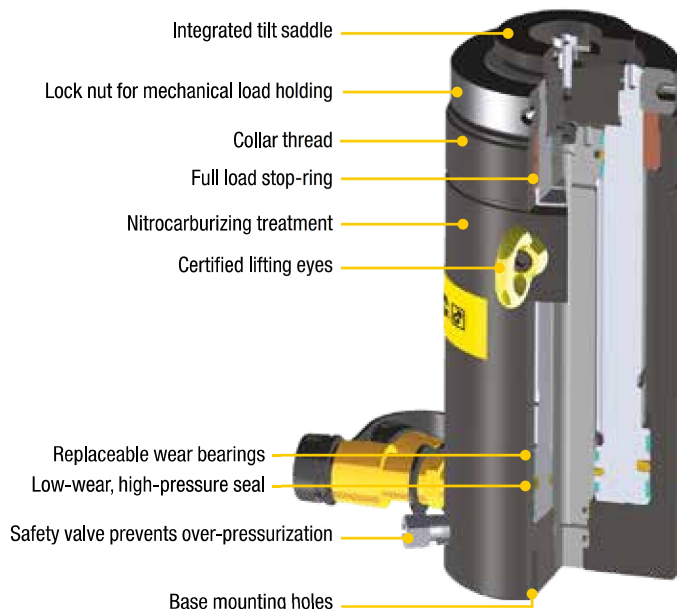
* Up to 2000 ton and additional stroke lengths available on request.

Double-Acting Lock Nut Cylinders

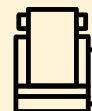


Higher Capacities, Larger Strokes

The HCRL-Series Cylinders are available up to 2000 ton capacity and additional stroke lengths available on request.



HCRL Series



Capacity:

50 - 300 ton

Stroke:

150 - 300 mm

Maximum Operating Pressure:

700 bar



Synchronous Lifting Systems

EVO-Series pumps the multi-functional lifting system and multiple lift point capabilities.

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Collapsed Height A (mm)	Extended Height B (mm)	Outside Diameter D (mm)	Cylinder Bore Diameter E (mm)	Plunger Diameter (threaded) F (mm)	Base to Advance Port H1 (mm)	Base to Retract Port H2 (mm)	Saddle Diameter J (mm)	Saddle Protrusion K (mm)	Lock Nut Height S (mm)	(kg)	Model Number
310	460	130	100	Tr 90 x 4	41	27	77	15	26	30	HCRL506
377	577									36	HCRL508
427	677									40	HCRL5010
477	777									45	HCRL5012
346	496	185	140	Tr 120 x 6	50	36	77	15	36	64	HCRL1006
421	621									77	HCRL1008
471	721									85	HCRL10010
521	821									94	HCRL10012
359	509	222	170	Tr 150 x 6	46	32	126	13	45	97	HCRL1506
434	634									116	HCRL1508
484	734									129	HCRL15010
534	834									142	HCRL15012
399	549	260	200	Tr 170 x 6	71	49	126	13	50	145	HCRL2006
469	669									168	HCRL2008
519	769									184	HCRL20010
569	869									200	HCRL20012
416	566	290	220	Tr 190 x 6	71	49	160	15	55	190	HCRL2506
491	691									224	HCRL2508
541	791									244	HCRL25010
591	891									265	HCRL25012
421	571	315	240	Tr 210 x 6	71	49	160	15	55	230	HCRL3006
496	696									269	HCRL3008
546	796									294	HCRL30010
596	896									319	HCRL30012