RACH, Aluminium Hollow Plunger Cylinders

ENERPAC
POWERFUL SOLUTIONS. GLOBAL FORCE.

▼ Shown from left to right: **RACH-1504, RACH-15010, RACH-206, RACH-306**

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 **P-392** or **P-802** 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**
- **CR-400 coupler and dustcap included on all models**
- **All cylinders meet ASME B-30.1 and ISO 10100 standards.**

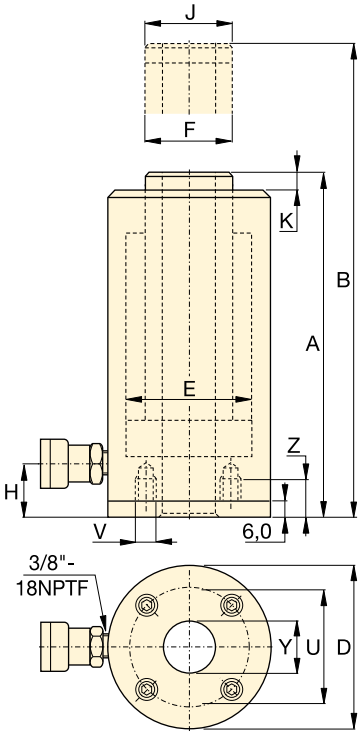
Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm^2)
20 (229)	50	**RACH-202**	32,7
	100	**RACH-204**	32,7
	150	**RACH-206**	32,7
	200	**RACH-208**	32,7
	250	**RACH-2010**	32,7
30 (358)	50	**RACH-302**	51,1
	100	**RACH-304**	51,1
	150	**RACH-306**	51,1
	200	**RACH-308**	51,1
	250	**RACH-3010**	51,1
60 (596)	50	**RACH-602**	84,7
	100	**RACH-604**	84,7
	150	**RACH-606**	84,7
	200	**RACH-608**	84,7
	250	**RACH-6010**	84,7
100 (1157)	50	**RACH-1002**	164,6
	100	**RACH-1004**	164,6
	150	**RACH-1006**	164,6
	200	**RACH-1008**	164,6
	250	**RACH-10010**	164,6
150 (1588)	50	**RACH-1502**	225,8
	100	**RACH-1504**	225,8
	150	**RACH-1506**	225,8
	200	**RACH-1508**	225,8
	250	**RACH-15010**	225,8

◀ *An RACH-306 powered by a P-392 hand pump used to extract corroded carriage pins of refuse collection vehicles.*

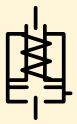
Single-Acting, Aluminium Hollow Plunger Cylinders

Steel Base Plate Mounting Holes			
Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth [1] Z (mm)
RACH-20	80	M6	12
RACH-30	110	M6	12
RACH-60	160	M6	12
RACH-100	220	M10	12
RACH-150	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

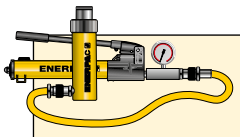
Maximum Operating Pressure:
700 bar

Oil Capacity (cm³)	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	**RACH-202**
327	251	351	100	75	55	29	55	10	27	6,1	**RACH-204**
491	315	465	100	75	55	29	55	10	27	7,1	**RACH-206**
654	378	578	100	75	55	29	55	10	27	8,0	**RACH-208**
818	442	692	100	75	55	29	55	10	27	9,0	**RACH-2010**
256	208	258	130	95	70	29	70	10	34	8,0	**RACH-302**
511	267	367	130	95	70	29	70	10	34	9,5	**RACH-304**
766	333	483	130	95	70	29	70	10	34	11,2	**RACH-306**
1022	395	595	130	95	70	29	70	10	34	12,9	**RACH-308**
1277	458	708	130	95	70	29	70	10	34	14,5	**RACH-3010**
423	251	301	180	130	100	61	100	12	54	16,2	**RACH-602**
847	315	415	180	130	100	61	100	12	54	19,5	**RACH-604**
1270	380	530	180	130	100	61	100	12	54	25,6	**RACH-606**
1694	445	645	180	130	100	61	100	12	54	26,0	**RACH-608**
2117	510	760	180	130	100	61	100	12	54	29,6	**RACH-6010**
823	258	308	250	185	145	61	145	14	79	33,8	**RACH-1002**
1646	325	425	250	185	145	61	145	14	79	39,8	**RACH-1004**
2487	391	541	250	185	145	61	145	14	79	46,2	**RACH-1006**
3291	459	659	250	185	145	61	145	14	79	52,2	**RACH-1008**
4114	527	777	250	185	145	61	145	14	79	58,8	**RACH-10010**
1129	280	330	275	205	150	61	145	14	79	48,9	**RACH-1502**
2258	360	460	275	205	150	61	145	14	79	55,7	**RACH-1504**
3387	430	580	275	205	150	61	145	14	79	63,0	**RACH-1506**
4517	500	700	275	205	150	61	145	14	79	70,1	**RACH-1508**
5646	570	820	275	205	150	61	145	14	79	77,2	**RACH-15010**

▼ Shown from left to right: **RCH-306, RCH-120, RCH-1003**

- **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**
- **RCH-120 includes AR-630 coupler and has 1/4" NPTF port**
- **RCH-121 and RCH-1211 have FZ-1630 reducer and AR-630 coupler, all other models feature CR-400 coupler.**

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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▼ *Hollow plunger cylinder RCH-1003 used in an application for intermediate boom suspension on a dragline.*

Cylinder Capacity ton (kN)	Stroke (mm)	Model Number	Cylinder Effective Area (cm^2)	Oil Capacity (cm^3)
13 (125)	8	**RCH-120**	17,9	14
	42	**RCH-121***	17,9	75
	42	**RCH-1211**	17,9	75
	76	**RCH-123**	17,9	136
20 (215)	49	**RCH-202***	30,7	150
	155	**RCH-206**	30,7	476
30 (326)	64	**RCH-302***	46,6	298
	155	**RCH-306**	46,6	722
60 (576)	76	**RCH-603***	82,3	626
	153	**RCH-606**	82,3	1259
95 (931)	76	**RCH-1003***	133,0	1011

* Available as set, see note on this page.

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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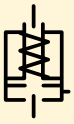
RCH Series



Capacity:
13 - 95 ton

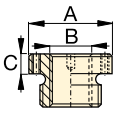
Stroke:
8 - 155 mm

Center Hole Diameter:
17,3 - 79,0 mm

Maximum Operating Pressure:
700 bar

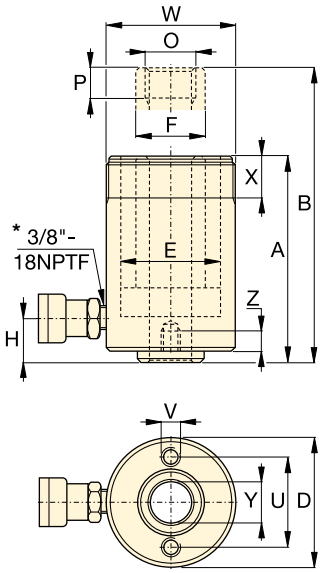
Optional Heat Treated Hollow Saddles

Saddle Type	Cylinder Model Number	Saddle Model Nr.	Saddle Dimensions (mm) A	B	C
Threaded Hollow	RCH-202, 206	HP-2015	53	1”- 8	9
	RCH-302, 306	HP-3015	63	1¼"- 7	9
	RCH-603, 606	HP-5016	91	1⅝"- 5½	12
	RCH-1003	HP-10016	126	2½"- 8	13

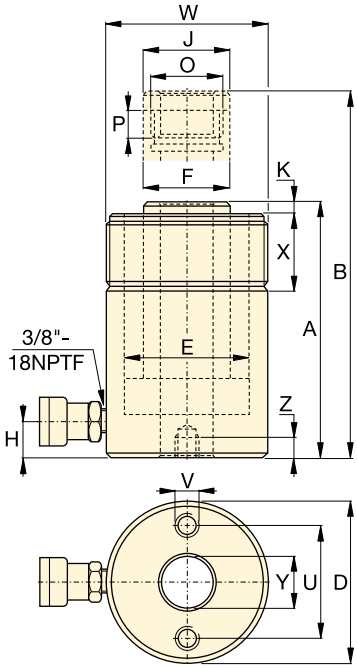


Smooth hollow saddles are standard on all RCH-models (except RCH-120, RCH-1211).

RCH-121 and RCH-1211 have a 47 mm dia. boss that protrudes 6 mm from base.



RCH-120 to RCH-123 models
* 1/4" NPTF for RCH-120 only



RCH-202 to RCH-1003 models

Base Mounting Hole Dimensions (mm)

Model Number	Bolt Circle U	Thread V	Thread Depth Z
RCH-120	50,8	5/16"-18 UNC	9,0
RCH-121	–	–	–
RCH-1211	–	–	–
RCH-123	50,8	5/16"-18 UNC	12,7
RCH-202	82,6	3/8"-16 UNC	9,4
RCH-206	82,6	3/8"-16 UNC	9,4
RCH-302	92,2	3/8"-16 UNC	14,0
RCH-306	92,2	3/8"-16 UNC	14,0
RCH-603	130,3	½"-13 UNC	14,0
RCH-606	130,3	½"-13 UNC	14,0
RCH-1003	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	–	–	¾"-16 UN	16	2¾"-16	30	17,3	1,5	RCH-120
120	162	69	54,1	35,1	25	–	–	–	–	2¾"-16	30	19,5	2,8	RCH-121*
120	162	69	54,1	35,1	25	–	–	¾"-16 UN	16	2¾"-16	30	17,3	2,8	RCH-1211
184	260	69	54,1	35,1	25	–	–	–	–	2¾"-16	30	19,5	4,4	RCH-123
162	211	98	73,1	54,1	19	54	9,7	1 9/16"-16 UN	19	3⅞"-12	38	26,9	7,7	RCH-202*
306	461	98	73,1	54,1	25	54	9,7	1 9/16"-16 UN	19	3⅞"-12	38	26,9	14,1	RCH-206
178	242	114	88,9	63,5	21	63	9,0	1 13/16"-16 UN	22	4½"-12	42	33,3	10,9	RCH-302*
330	485	114	88,9	63,5	25	63	9,0	1 13/16"-16 UN	22	4½"-12	42	33,3	21,8	RCH-306
247	323	159	123,9	91,9	31	91	12,0	2¾"-16 UN	19	6¼"-12	48	53,8	28,1	RCH-603*
323	476	159	123,9	91,9	31	91	12,0	2¾"-16 UN	19	6¼"-12	48	53,8	35,4	RCH-606
254	330	212	165,1	127,0	38	126	12,0	4"-16 UN	25	8⅜"-12	60	79,0	63,0	RCH-1003*

RRH-Series, Hollow Plunger Cylinders

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▼ Shown from left to right: **RRH-3010, RRH-1001, RRH-6010**

Versatility in Testing, Maintenance and Tensioning Applications

- **Relief valves prevent damage in case of over-pressurisation**
- **Baked enamel finish for increased corrosion resistance**
- **Collar threads enable easy fixturing (except RRH-1001 and RRH-1508)**
- **Double-acting version for fast retraction**
- **Nickel-plated, floating center tube increases product life**
- **Hollow plunger allows for both pull and push forces**
- **CR-400 coupler and dust cap included on all models**
- **Plunger wiper reduces contamination, extending cylinder life.**

Pump Selection

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

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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 ton	Stroke (mm)	Model Number	Max. Cylinder Capacity (kN) Advance	Max. Cylinder Capacity (kN) Retract	Cylinder Effective Area (cm^2) Advance	Cylinder Effective Area (cm^2) Retract	Oil Capacity (cm^3) Advance	Oil Capacity (cm^3) Retract
30	178	RRH-307	326	213	46,6	30,4	829	541
	258	RRH-3010	326	213	46,6	30,4	1202	784
60	89	RRH-603	576	380	82,3	54,2	733	482
	166	RRH-606	576	380	82,3	54,2	1366	900
	257	RRH-6010	576	380	82,3	54,2	2115	1393
95	38	RRH-1001	931	612	133,0	87,4	505	333
	76	RRH-1003	931	612	133,0	87,4	1011	666
	153	RRH-1006	931	612	133,0	87,4	2035	1337
	257	RRH-10010	931	612	133,0	87,4	3420	2246
145	203	RRH-1508	1429	718	204,1	102,6	4144	2083

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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RRH Series

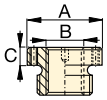
Capacity:
30 - 145 ton

Stroke:
38 - 258 mm

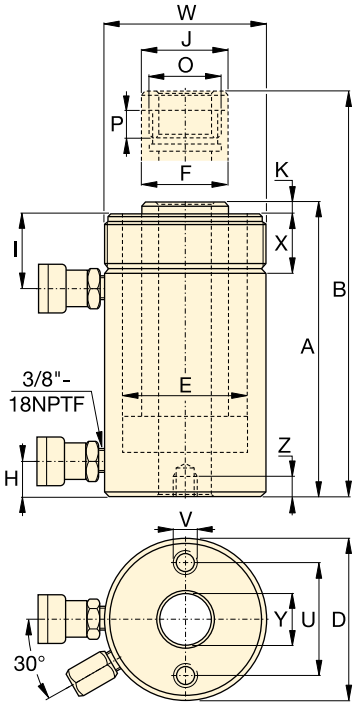
Center Hole Diameter:
33,3 - 79,2 mm

Maximum Operating Pressure:
700 bar

Optional Heat Treated Hollow Saddles					
Saddle Type	Cylinder Model Number	Saddle Model Nr.	Saddle Dimensions (mm) A	B	C
Threaded Hollow	RRH-307, 3010	HP-3015	63	1¼"- 7	9
	RRH-603, 606, 6010	HP-5016	91	1⅝"- 5½	12
	RRH-1001, 1003, RRH-1006, 10010	HP-10016	126	2½"- 8	13



Smooth hollow saddles are standard on all RRH-models.



Base Mounting Hole Dimensions (mm)			
Model Number	Bolt Circle U	Thread V	Thread Depth Z
RRH-307	92,2	⅜" - 16	15,7
RRH-3010	92,2	⅜" - 16	15,7
RRH-603	130,0	½" - 13	14,0
RRH-606	130,0	½" - 13	14,0
RRH-6010	130,0	½" - 13	14,0
RRH-1001	177,8	⅝" - 11	19,0
RRH-1003	177,8	⅝" - 11	19,0
RRH-1006	177,8	⅝" - 11	19,0
RRH-10010	177,8	⅝" - 11	19,0
RRH-1508	–	–	–

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	4½"- 12	42	33,3	21	RRH-307
431	689	114	88,9	63,5	25	60	63	9	1 13/16"- 16	22	4½"- 12	42	33,3	27	RRH-3010
247	336	159	123,9	91,9	31	66	91	12	2¾"- 16	19	6¼"- 12	48	53,8	28	RRH-603
323	489	159	123,9	91,9	31	66	91	12	2¾"- 16	19	6¼"- 12	48	53,8	35	RRH-606
438	695	159	123,9	91,9	31	66	91	12	2¾"- 16	19	6¼"- 12	48	53,8	45	RRH-6010
165	203	212	165,1	127,0	38	44	126	12	4"- 16	25	–	–	79,2	33	RRH-1001
254	330	212	165,1	127,0	38	85	126	12	4"- 16	25	8⅜"- 12	60	79,2	61	RRH-1003
342	495	212	165,1	127,0	38	85	126	12	4"- 16	25	8⅜"- 12	60	79,2	79	RRH-1006
460	717	212	165,1	127,0	38	85	126	12	4"- 16	25	8⅜"- 12	60	79,2	106	RRH-10010
349	552	247	190,5	152,4	38	60	127	4	4¼"- 12	25	–	–	79,2	111	RRH-1508