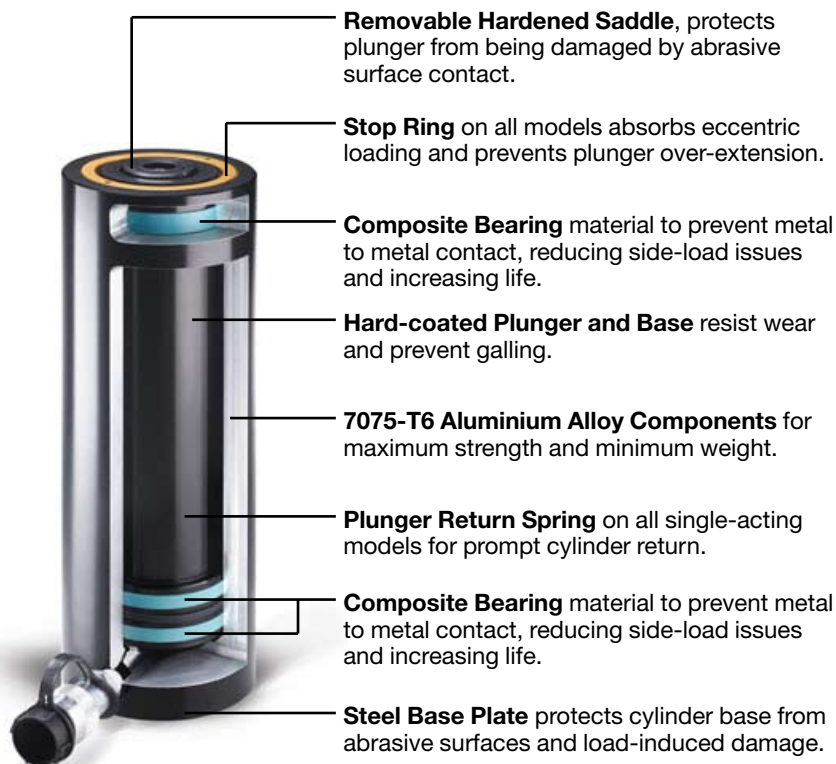


The Enerpac Lightweight Aluminium Cylinders

▼ 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:
20 - 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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RAC-Series, Single-Acting, Cylinders

The lightweight general purpose spring return aluminium cylinders.

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RACL-Series, Lock Nut, Cylinders

The lightweight spring return aluminium cylinders with lock nut for mechanical load holding.

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RACH-Series, Hollow Plunger Cylinders

For both push and pull forces with a single-acting cylinder.

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RAR-Series, Double-Acting Cylinders

The lightweight aluminium cylinders for lifting and lowering.

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RAC-Series, Aluminium Cylinders

▼ Shown from left to right: RAC-5010, RAC-15010, RAC-304, RAC-208



- 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 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.



◀ The unique Enerpac RA-Series cylinders – lightweight and entirely made of aluminium alloy – these RAC-506 cylinders are ideal for the positioning of tunnel elements under the river. (High Speed Train Line, The Netherlands)

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 P-392 or P-802 make the optimal lightweight set.

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Lock Nut Cylinders

When positive mechanical load holding is required, RACL-Series Aluminium Lock Nut Cylinders are the ideal choice.

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▼ SELECTION CHART

Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number *	Cylinder Effective Area (cm ²)
20 (218)	50	RAC-202	31,2
	100	RAC-204	31,2
	150	RAC-206	31,2
30 (309)	50	RAC-302	44,2
	100	RAC-304	44,2
	150	RAC-306	44,2
50 (496)	50	RAC-502	70,9
	100	RAC-504	70,9
	150	RAC-506	70,9
100 (1002)	100	RAC-1004	143,1
	150	RAC-1006	143,1
	200	RAC-1008	143,1
150 (1589)	150	RAC-1506	227,0

* Note: Every RAC-cylinder is available with a stroke of 50, 100, 150, 200 and 250 mm.

Single-Acting, Aluminium Cylinders



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.

RAC Series



Capacity:

20 - 150 ton

Stroke:

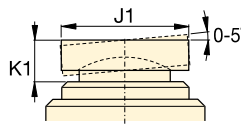
50 - 200 mm

Maximum Operating Pressure:

700 bar

Optional Bolt-on Tilt Saddle Dimensions (mm)

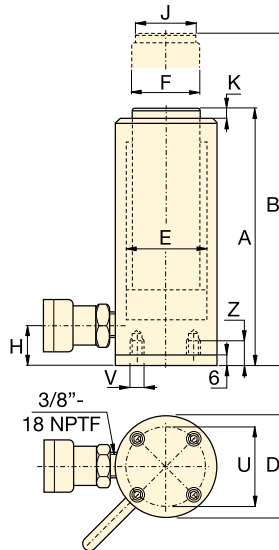
For Cylinder Model / Capacity ton	Tilt Saddle Model Number	Tilt Saddle Diameter J1	Saddle Protrusion from Plunger K1
RAC-50	CATG-50	50	24
RAC-100	CATG-150	91	31
RAC-150	CATG-200	118	35



Steel Base Plate Mounting Holes

Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth ¹⁾ Z (mm)
RAC-20	70	M6	12
RAC-30	80	M6	12
RAC-50	110	M6	12
RAC-100	160	M6	12
RAC-150	200	M6	12

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



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.

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)	Weight (kg)	Model Number *
156	174	224	85	63	50	27	40	3	3,6	RAC-202
312	224	324	85	63	50	27	40	3	4,1	RAC-204
468	274	424	85	63	50	27	40	3	4,6	RAC-206
221	181	231	100	75	60	32	40	3	4,5	RAC-302
442	231	331	100	75	60	32	40	3	5,2	RAC-304
663	281	431	100	75	60	32	40	3	5,9	RAC-306
354	186	236	130	95	80	30	50	3	8,5	RAC-502
709	236	336	130	95	80	30	50	3	9,8	RAC-504
1063	286	436	130	95	80	30	50	3	11,1	RAC-506
1431	271	271	180	135	110	46	94	3	19,6	RAC-1004
2147	321	471	180	135	110	46	94	3	21,9	RAC-1006
2863	371	571	180	135	110	46	94	3	24,2	RAC-1008
3405	343	493	230	170	140	51	113	3	33,3	RAC-1506

▼ Shown from left to right: RACL-1006, RACL-504, RACL-5010



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



◀ The portable lock nut cylinder RACL-1506 used for extended load supports during epoxy injection for bridge reinforcement.

To Secure Loads Mechanically



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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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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▼ SELECTION CHART

Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number *	Cylinder Effective Area (cm ²)
30 (309)	50	RACL-302	44,2
	100	RACL-304	44,2
	150	RACL-306	44,2
50 (496)	50	RACL-502	70,9
	100	RACL-504	70,9
	150	RACL-506	70,9
100 (1002)	50	RACL-1002	143,1
	100	RACL-1004	143,1
	150	RACL-1006	143,1
150 (1589)	50	RACL-1502	227,0
	100	RACL-1504	227,0
	150	RACL-1506	227,0

* Note: Every RACL-cylinder is available with a stroke of 50, 100, 150, 200 and 250 mm.

Single-Acting, Aluminium Lock Nut Cylinders

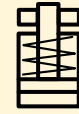


Aluminium versus Steel

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.

RACL Series



Capacity:

30 - 150 ton

Stroke:

50 - 150 mm

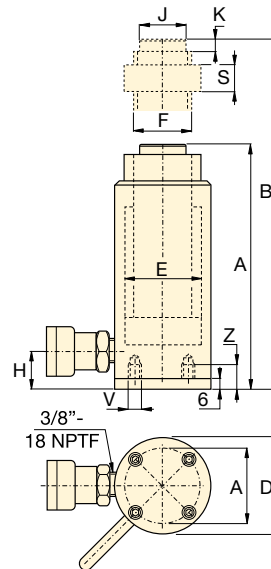
Maximum Operating Pressure:

700 bar

Optional Bolt-on Tilt Saddle Dimensions (mm)				
For Cylinder Model / Capacity ton	Tilt Saddle Model Number	Tilt Saddle Diameter J1	Saddle Protrusion from Plunger K1	
RACL-50	CATG-50	50	24	
RACL-100	CATG-150	91	31	
RACL-150	CATG-200	118	35	

Steel Base Plate Mounting Holes			
Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth ¹⁾ Z (mm)
RACL-30	80	M6	12
RACL-50	110	M6	12
RACL-100	160	M6	12
RACL-150	200	M6	12

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



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.



Lifting an Unbalanced Load ?

When lifting an unbalanced load Enerpac synchronous Lifting Systems can be the solution with multiple lift point capabilities from 4 to 64 points.

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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 fr. Plunger K (mm)	Lock Nut Height S (mm)	Lock Nut (kg)	Model Number *
221	231	281	100	75	Tr 60 x 4	33	40	3	50	5,4	RACL-302
442	218	381	100	75	Tr 60 x 4	33	40	3	50	6,1	RACL-304
663	331	481	100	75	Tr 60 x 4	33	40	3	50	6,8	RACL-306
354	236	286	130	95	Tr 80 x 4	30	50	3	50	9,3	RACL-502
709	286	386	130	95	Tr 80 x 4	30	50	3	50	10,6	RACL-504
1063	336	486	130	95	Tr 80 x 4	30	50	3	50	11,9	RACL-506
716	296	346	180	135	Tr 110 x 6	46	94	3	75	21,9	RACL-1002
1431	346	446	180	135	Tr 110 x 6	46	94	3	75	24,2	RACL-1004
2147	396	546	180	135	Tr 110 x 6	46	94	3	75	26,5	RACL-1006
1135	323	373	230	170	Tr 140 x 6	51	113	3	80	32,2	RACL-1502
2270	373	473	230	170	Tr 140 x 6	51	113	3	80	36,2	RACL-1504
3405	423	573	230	170	Tr 140 x 6	51	113	3	80	40,2	RACL-1506

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



- 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.



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

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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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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▼ SELECTION CHART

Cylinder Capacity @ 700 bar ton (kN)	Stroke (mm)	Model Number *	Cylinder Effective Area (cm ²)
20 (229)	50	RACH-202	32,7
	150	RACH-206	32,7
30 (358)	50	RACH-302	51,1
	150	RACH-306	51,1
60 (596)	100	RACH-604	84,7
	150	RACH-606	84,7
100 (1157)	150	RACH-1006	164,6

* Note: Every RACH-cylinder is available with a stroke of 50, 100, 150, 200 and 250 mm.

Single-Acting, Aluminium Hollow Plunger Cylinders

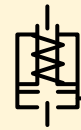


Aluminium versus Steel

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.

RACH Series



Capacity:
20 - 100 ton

Stroke:
50 - 150 mm

Center Hole Diameter:
27 - 79 mm

Maximum Operating Pressure:
700 bar



Steel Base Plate

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

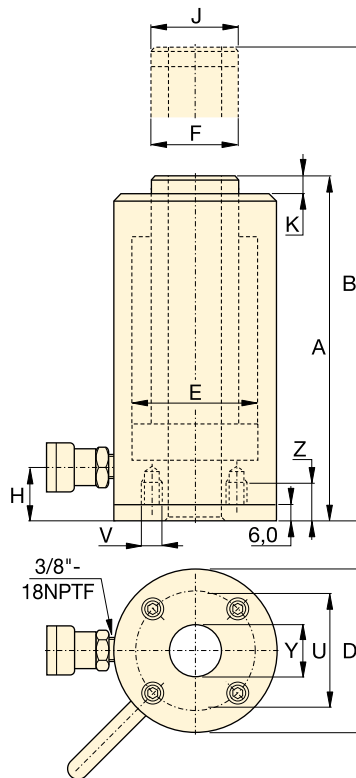
The base holes in these aluminium cylinders are designed for securing the steel base plate. **They will not withstand the capacity of the cylinder.**

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



Standard Features

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



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	230	M6	12

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

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 Adv. Port H (mm)	Saddle Diameter J (mm)	Saddle Protrusion from Plunger K (mm)	Center Hole Diameter Y (mm)	Model Number *
164	188	238	100	75	55	29	55	10	27	RACH-202
491	315	465	100	75	55	29	55	10	27	RACH-206
256	208	258	130	95	70	29	70	10	34	RACH-302
766	333	483	130	95	70	29	70	10	34	RACH-306
847	315	415	180	130	100	61	100	12	54	RACH-604
1270	380	530	180	130	100	61	100	12	54	RACH-606
2487	391	541	250	185	145	61	145	14	79	RACH-1006

▼ Shown from left to right: RAR-5010, RAR-308, RAR-204



- 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 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.

The Lightweight Solution for Tensioning and Testing



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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Optimum Performance

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

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▼ An RAR-506 was easy to position under a bulldozer for repair of frame member.



▼ SELECTION CHART

Cylinder Capacity @ 700 bar ton	Stroke (mm)	Model Number *	Maximum Cylinder Capacity (kN)		Cylinder Effective Area (cm ²)		Oil Capacity (cm ³)	
			Push	Pull	Push	Pull	Push	Pull
50	50	RAR-502	496	187	70,9	26,7	354	134
	100	RAR-504	496	187	70,9	26,7	709	267
	150	RAR-506	496	187	70,9	26,7	1063	401
100	100	RAR-1004	1002	557	143,1	79,5	1431	795
	150	RAR-1006	1002	557	143,1	79,5	2147	1193
	200	RAR-1008	1002	557	143,1	79,5	2863	1590
150	150	RAR-1506	1589	924	227,0	132,0	3405	1980

* Note: Every RAR-cylinder is available with a stroke of 50, 100, 150, 200 and 250 mm.

Double-Acting, Aluminium Cylinders



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.

RAR Series

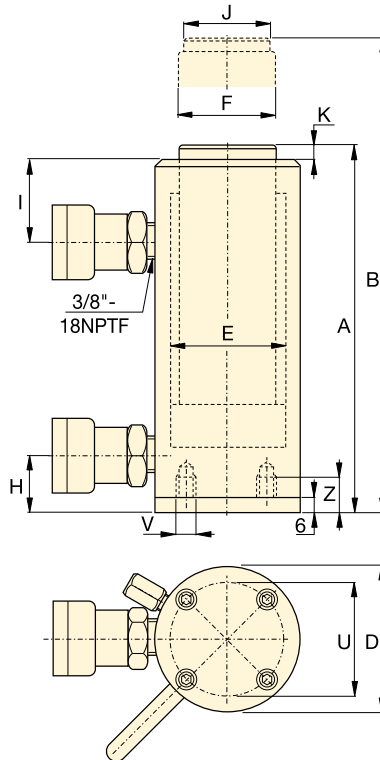


Capacity:
50 - 150 ton

Stroke:
50 - 200 mm

Maximum Operating Pressure:
700 bar

Optional Bolt-on Tilt Saddle Dimensions (mm)				
For Cylinder Model / Capacity ton	Tilt Saddle Model Number	Tilt Saddle Diameter J1	Saddle Protrusion from Plunger K1	
RAR-50	CATG-50	50	24	
RAR-100	CATG-150	91	31	
RAR-150	CATG-200	118	35	



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.

Steel Base Plate Mounting Holes			
Cylinder Model / Capacity ton	Bolt Circle U (mm)	Thread V (mm)	Thread Depth ¹⁾ Z (mm)
RAR-50	110	M6	12
RAR-100	165	M6	12
RAR-150	200	M6	12

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



Standard Features

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

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 *
201	251	145	95	75	30	56	50	3	11,1	RAR-502
251	351	145	95	75	30	56	50	3	12,7	RAR-504
301	451	145	95	75	30	56	50	3	14,3	RAR-506
301	401	185	135	90	43	80	94	3	19,3	RAR-1004
351	501	185	135	90	43	80	94	3	22,2	RAR-1006
401	601	185	135	90	43	80	94	3	25,1	RAR-1008
348	498	230	170	110	38	75	113	3	33,2	RAR-1506