

## HCR-Series, Double-Acting Cylinders

- Fast advance and retract
- Designed to withstand up to 10% side-load of maximum capacity <sup>1)</sup>
- 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 AND 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 (in)	Model Number	Maximum Cylinder Capacity at 10,150 psi (ton)	Cylinder Effective Area (in <sup>2</sup> )	Oil Capacity (in <sup>3</sup> )		Collapsed Height A (in)
					Advance	Retract	
50	1.97	HCR502	62	12.17	23.96	12.22	7.20
	3.94	HCR504			47.93	24.44	9.17
	5.91	HCR506 <sup>1)</sup>			71.89	36.66	11.14
	7.87	HCR508			95.86	48.89	13.62
	9.84	HCR5010			119.82	61.11	15.59
	11.81	HCR5012 <sup>1)</sup>			143.78	73.33	17.56
100	1.97	HCR1002	113	22.19	43.67	22.05	7.95
	3.94	HCR1004			87.35	44.09	9.92
	5.91	HCR1006			131.02	66.14	11.89
	7.87	HCR1008			174.70	88.19	14.92
	9.84	HCR10010			218.37	110.23	16.89
	11.81	HCR10012			262.05	132.28	18.86
150	1.97	HCR1502	168	33.14	65.24	30.73	8.66
	3.94	HCR1504			130.48	61.47	10.63
	5.91	HCR1506			195.73	92.20	12.60
	7.87	HCR1508			260.97	122.94	15.63
	9.84	HCR15010			326.21	153.67	17.60
	11.81	HCR15012			391.45	184.40	19.57
200	1.97	HCR2002	223	43.95	86.51	39.54	9.09
	3.94	HCR2004			173.02	79.08	11.06
	5.91	HCR2006			259.53	118.62	13.03
	7.87	HCR2008			346.04	158.16	16.06
	9.84	HCR20010			432.55	197.70	18.03
	11.81	HCR20012			519.06	237.24	20.00
250	1.97	HCR2502	286	56.27	110.77	41.52	9.49
	3.94	HCR2504			221.55	83.04	11.46
	5.91	HCR2506			332.32	124.55	13.43
	7.87	HCR2508			443.09	166.07	16.97
	9.84	HCR25010			553.87	207.59	18.94
	11.81	HCR25012			664.64	249.11	20.91
300	1.97	HCR3002	341	67.23	132.34	36.49	11.65
	3.94	HCR3004			264.68	72.97	13.62
	5.91	HCR3006			397.02	109.46	15.59
	7.87	HCR3008			529.36	145.94	17.56
	9.84	HCR30010			661.71	182.43	19.53
	11.81	HCR30012			794.05	218.91	21.50

Collar Thread* (in)		
Model / Capacity (ton)	Thread Size W	Thread Length X
HCR50	M130 x 2	1.18
HCR100	M175 x 3	1.81
HCR150	M215 x 3	2.17
HCR200	M250 x 3	2.48
HCR250	M280 x 3	2.52
HCR300*	M305 x 3	2.87

\* 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 (in)					
Model / Capacity (ton)	Bolt Circle U	Thread Size V	Minimum Thread Depth Z	No. of Holes	Angle from Coupler
HCR50	4.13	M12 x 1,75	0.87	2	90°
HCR100	5.91	M12 x 1,75	0.87	2	90°
HCR150	7.28	M12 x 1,75	0.87	2	90°
HCR200	8.46	M12 x 1,75	0.87	3	60°
HCR250	9.65	M12 x 1,75	0.87	3	60°
HCR300	10.24	M16 x 2	0.98	3	60°

<sup>1)</sup> HCR506 and HCR5012: 7% side-load of maximum capacity.

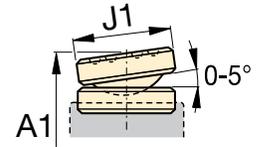
# Double-Acting, High-Tonnage Cylinders

Capacity:  
**50 - 300 ton**

Stroke:  
**1.97 - 11.81 inches**

Maximum Operating Pressure:  
**10,150 psi**

**HCR**  
Series



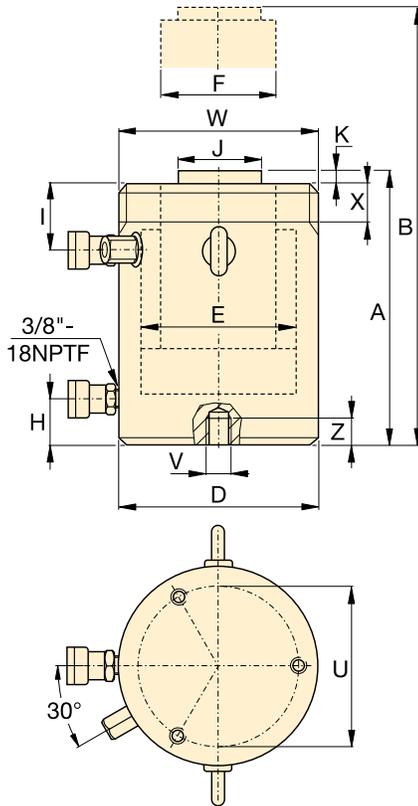
CATS-Series Tilt Saddle

Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter	Base to Advance Port	Top to Retract Port	Standard Saddle Diameter	Saddle Protrusion from Plunger	Retract Oil Volume	Weight	Model Number	Optional Tilt Saddle		
											Saddle Diameter J1 (in)	Collap. Height* A1 (in)	Saddle Model Number
9.17	5.12	3.94	2.76	1.50	1.77	1.97	0.12	12.22	37	HCR502	2.80	7.75	CATS50
13.11								24.44	46	HCR504		9.72	
17.05								36.66	54	HCR506 <sup>1)</sup>		11.69	
21.50					48.89			68	HCR508	14.17			
25.43					61.11			76	HCR5010	16.14			
29.37					73.33			84	HCR5012 <sup>1)</sup>	18.11			
9.92	6.89	5.31	3.74	1.50	2.56	2.95	0.12	22.05	74	HCR1002	2.80	8.35	CATS101
13.86								44.09	90	HCR1004		10.31	
17.80								66.14	105	HCR1006		12.28	
22.80					88.19			131	HCR1008	15.31			
26.73					110.23			146	HCR10010	17.28			
30.67					132.28			161	HCR10012	19.25			
10.63	8.46	6.50	4.72	1.61	2.76	3.70	0.12	30.73	124	HCR1502	3.82	9.41	CATS150
14.57								61.47	148	HCR1504		11.38	
18.50								92.20	172	HCR1506		13.35	
23.50					122.94			209	HCR1508	16.38			
27.44					153.67			233	HCR15010	18.35			
31.38					184.40			257	HCR15012	20.31			
11.06	9.84	7.48	5.51	1.85	3.11	4.45	0.12	39.54	179	HCR2002	4.96	9.80	CATS200
15.00								79.08	212	HCR2004		11.77	
18.94								118.62	244	HCR2006		13.74	
23.94					158.16			306	HCR2008	16.77			
27.87					197.70			338	HCR20010	18.74			
31.81					237.24			371	HCR20012	20.71			
11.46	11.02	8.46	6.69	2.09	3.11	5.51	0.16	41.52	236	HCR2502	6.89	11.00	CATS300
15.39								83.04	279	HCR2504		13.00	
19.33								124.55	322	HCR2506		14.96	
24.84					166.07			407	HCR2508	18.50			
28.78					207.59			457	HCR25010	20.47			
32.72					249.11			500	HCR25012	22.44			
13.62	12.01	9.25	7.87	2.28	3.98	5.51	0.16	36.49	350	HCR3002	6.89	13.19	CATS300
17.56								72.97	404	HCR3004		15.16	
21.50								109.46	458	HCR3006		17.13	
25.43								145.94	512	HCR3008		19.00	
29.37								182.43	566	HCR30010		21.00	
33.31								218.91	620	HCR30012		23.00	

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

## HCR-Series, Double-Acting Cylinders

- Fast advance and retract
- Designed to withstand up to 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 collar threads
- Optional collar threads on 300 ton models and higher capacities



### SELECTION CHART AND 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 (in)	Model Number	Maximum Cylinder Capacity at 10,150 psi (ton)	Cylinder Effective Area (in <sup>2</sup> )	Oil Capacity (in <sup>3</sup> )		Collapsed Height A (in)
					Advance	Retract	
400	1.97	HCR4002	450	88.75	174.70	58.71	12.64
	3.94	HCR4004			349.39	117.42	14.61
	5.91	HCR4006			524.09	176.14	16.57
	7.87	HCR4008			698.79	234.85	18.54
	9.84	HCR40010			873.49	293.56	20.51
	11.81	HCR40012			1048.18	352.27	22.48
500	1.97	HCR5002	575	113.25	222.92	73.15	13.54
	3.94	HCR5004			445.85	146.30	15.51
	5.91	HCR5006			668.77	219.45	17.48
	7.87	HCR5008			891.70	292.60	19.45
	9.84	HCR50010			1114.62	365.75	21.42
	11.81	HCR50012			1337.55	438.90	23.39
600	1.97	HCR6002	673	132.57	260.97	86.27	13.86
	3.94	HCR6004			521.94	172.54	15.83
	5.91	HCR6006			782.90	258.81	17.80
	7.87	HCR6008			1043.87	345.08	19.76
	9.84	HCR60010			1304.84	431.35	21.73
	11.81	HCR60012			1565.81	517.62	23.70
800	1.97	HCR8002	916	180.44	355.21	109.81	15.91
	3.94	HCR8004			710.41	219.63	17.87
	5.91	HCR8006			1065.62	329.44	19.84
	7.87	HCR8008			1420.82	439.26	21.81
	9.84	HCR80010			1776.03	549.07	23.78
	11.81	HCR80012			2131.24	658.89	25.75
1000	1.97	HCR10002	1196	235.68	463.94	186.92	17.40
	3.94	HCR10004			927.88	373.84	19.37
	5.91	HCR10006			1391.83	560.76	21.34
	7.87	HCR10008			1855.77	747.68	23.31
	9.84	HCR100010			2319.71	934.59	25.28
	11.81	HCR100012			2783.65	1121.51	27.24

Collar Thread (in)		
Model / Capacity (ton)	Thread Size W	Thread Length X
HCR400	M350 x 3	3.27
HCR500	M400 x 4	3.54
HCR600	M430 x 4	3.94
HCR800	M505 x 5	4.80
HCR1000	M570 x 5	5.39

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 (in)					
Model / Capacity (ton)	Bolt Circle U	Thread Size V	Min. Thread Depth Z	Number of Holes	Angle from Coupler
HCR400	11.81	M16 x 2	0.98	3	60°
HCR500	13.39	M24 x 3	1.42	3	60°
HCR600	14.57	M24 x 3	1.42	3	60°
HCR800	17.32	M24 x 3	1.42	3	60°
HCR1000	19.69	M24 x 3	1.42	3	60°

# Double-Acting, High-Tonnage Cylinders



## HCR Series

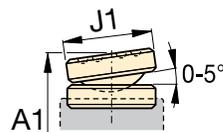


Capacity:  
**400 - 1000 ton**

Stroke:  
**1.97 - 11.81 inches**

Maximum Operating Pressure:  
**10,150 psi**

▲ 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.



CATS-Series Tilt Saddle

Extended Height	Outside Diameter	Cylinder Bore Diameter	Plunger Diameter	Base to Advance Port	Top to Retract Port	Standard Saddle Diameter	Saddle Protrusion from Plunger	Retract Oil Volume	Weight	Model Number	Optional Tilt Saddle		
											Saddle Diameter J1	Collap. Height* A1	Saddle Model Number
B (in)	D (in)	E (in)	F (in)	H (in)	I (in)	J (in)	K (in)	(in <sup>3</sup> )	(lbs)		(in)	(in)	
14.61	13.78	10.63	8.66	2.91	4.37	6.26	0.16	58.71	501	HCR4002	8.27	14.53	CATS400
18.54								117.42	570	HCR4004		16.50	
22.48								176.14	638	HCR4006		18.46	
26.42								234.85	707	HCR4008		20.43	
30.35								293.56	775	HCR40010		22.40	
34.29								352.27	843	HCR40012		24.37	
15.51	15.75	12.01	9.84	3.11	4.76	7.05	0.16	73.15	706	HCR5002	9.06	15.43	CATS500
19.45								146.30	797	HCR5004		17.40	
23.39								219.45	887	HCR5006		19.37	
27.32								292.60	977	HCR5008		21.34	
31.26								365.75	1,067	HCR50010		23.31	
35.20								438.90	1,158	HCR50012		25.28	
15.83	16.93	12.99	10.63	3.35	4.76	7.64	0.16	86.27	836	HCR6002	9.84	15.94	CATS600
19.76								172.54	940	HCR6004		17.91	
23.70								258.81	1,044	HCR6006		19.88	
27.64								345.08	1,148	HCR6008		21.85	
31.57								431.35	1,252	HCR60010		23.82	
35.51								517.62	1,356	HCR60012		25.79	
17.87	19.88	15.16	12.60	3.94	5.63	8.82	0.16	109.81	1,340	HCR8002	10.83	18.15	CATS800
21.81								219.63	1,485	HCR8004		20.12	
25.75								329.44	1,631	HCR8006		22.00	
29.69								439.26	1,777	HCR8008		24.00	
33.62								549.07	1,922	HCR80010		26.00	
37.56								658.89	2,068	HCR80012		28.00	
19.37	22.44	17.32	13.39	4.49	6.02	9.80	0.16	186.92	1,858	HCR10002	11.81	20.43	CATS1000
23.31								373.84	2,031	HCR10004		22.40	
27.24								560.76	2,205	HCR10006		24.37	
31.18								747.68	2,379	HCR10008		26.34	
35.12								934.59	2,552	HCR100010		28.31	
39.06								1121.51	2,726	HCR100012		30.28	

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