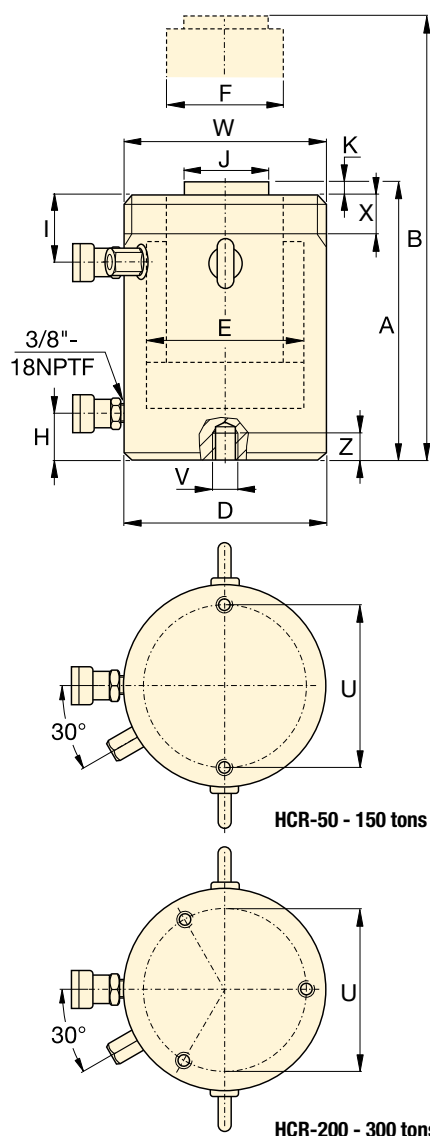




HCR-50 - 150 tons

HCR-200 - 300 tons

Collar Thread *

Model / Capacity tons	Thread Size	Thread Length
	W (mm)	X (in)
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 tons models. Collar thread is optional on 300 tons 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

Model / Capacity tons	Bolt Circle	Thread Size	Minimum Thread Depth	Number of Holes	Angle from Coupler (degrees)
	U (in)	V (mm)	Z (in)		
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°

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 tons models. Collar thread is optional on 300 tons models and higher.

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

For 400 - 1000 tons models, see pages 60-61.

For full product features see pages 50-51.

Cylinder Capacity	Stroke	Model Number	Maximum Cylinder Capacity at 10,150 psi tons	Cylinder Effective Area	Oil Capacity (in ³)		Collapsed Height
tons	(in)			(in ²)	Advance	Retract	A (in)
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 ¹⁾			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 ¹⁾			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

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

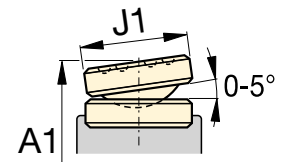
Double-Acting, High-Tonnage Cylinders

Capacity:
50 - 300 tons

Stroke:
1.97 - 11.81 inches

Maximum Operating Pressure:
10,150 psi

**HCR
Series**

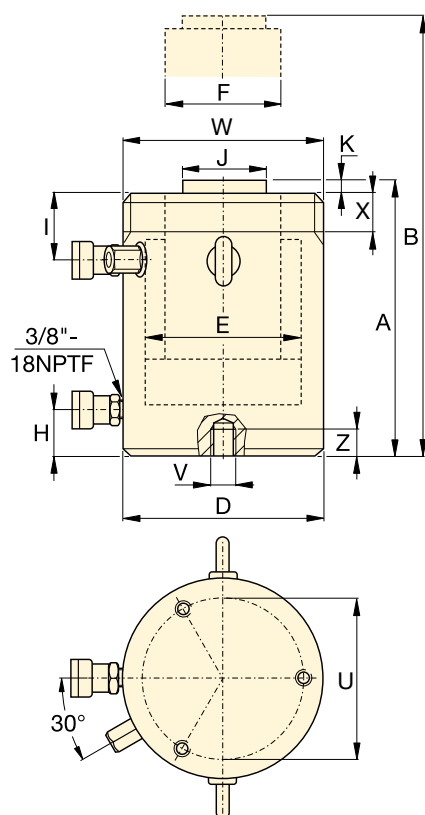


CATS-Series Tilt Saddle

	Extended Height B (in)	Outside Diameter D (in)	Cylinder Bore Diameter E (in)	Plunger Diameter F (in)	Base to Advance Port H (in)	Top to Retract Port I (in)	Standard Saddle Diameter J (in)	Saddle Protrusion from Plunger K (in)	 (lbs)	Model Number
	9.17	5.12	3.94	2.76	1.50	1.77	1.97	0.12	37	HCR502
	13.11								46	HCR504
	17.05								54	HCR506 ¹⁾
	21.50								68	HCR508
	25.43								76	HCR5010
	29.37								84	HCR5012 ¹⁾
	9.92	6.89	5.31	3.74	1.50	2.56	2.95	0.12	74	HCR1002
	13.86								90	HCR1004
	17.80								105	HCR1006
	22.80								131	HCR1008
	26.73								146	HCR10010
	30.67								161	HCR10012
	10.63	8.46	6.50	4.72	1.61	2.76	3.70	0.12	124	HCR1502
	14.57								148	HCR1504
	18.50								172	HCR1506
	23.50								209	HCR1508
	27.44								233	HCR15010
	31.38								257	HCR15012
	11.06	9.84	7.48	5.51	1.85	3.11	4.45	0.12	179	HCR2002
	15.00								212	HCR2004
	18.94								244	HCR2006
	23.94								306	HCR2008
	27.87								338	HCR20010
	31.81								371	HCR20012
	11.46	11.02	8.46	6.69	2.09	3.11	5.51	0.16	236	HCR2502
	15.39								279	HCR2504
	19.33								322	HCR2506
	24.84								407	HCR2508
	28.78								457	HCR25010
	32.72								500	HCR25012
	13.62	12.01	9.25	7.87	2.28	3.98	5.51	0.16	350	HCR3002
	17.56								404	HCR3004
	21.50								458	HCR3006
	25.43								512	HCR3008
	29.37								566	HCR30010
	33.31								620	HCR30012

Optional Tilt Saddle		
Saddle Diameter J1 (in)	Collapsed Height ²⁾ A1 (in)	Saddle Model Number
2.80	7.75	CATS50
	9.72	
	11.69	
	14.17	
	16.14	
	18.11	
2.80	8.35	CATS101
	10.31	
	12.28	
	15.31	
	17.28	
	19.25	
3.82	9.41	CATS150
	11.38	
	13.35	
	16.38	
	18.35	
	20.31	
4.96	9.80	CATS200
	11.77	
	13.74	
	16.77	
	18.74	
	20.71	
6.89	11.00	CATS300
	13.00	
	14.96	
	18.50	
	20.47	
	22.44	
6.89	13.19	CATS300
	15.16	
	17.13	
	19.00	
	21.00	
	23.00	

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 tons models and higher capacities.

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

For 50 - 300 tons models, see pages 58-59.

For full product features see pages 50-51.

Cylinder Capacity tons	Stroke (in)	Model Number	Maximum Cylinder Capacity at 10,150 psi tons	Cylinder Effective Area (in ²)	Oil Capacity (in ³)		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

Optional Collar Thread

Model / Capacity tons	Thread Size	Thread Length	Collar thread is optional on 300 tons models and higher. For collar thread on cylinder add suffix "E002" to model number. Example: HCR4006E002
	W (mm)	X (in)	
HCR400	M350 x 3	3.27	The collar thread length is designed for the full rated cylinder capacity.
HCR500	M400 x 4	3.54	
HCR600	M430 x 4	3.94	
HCR800	M505 x 5	4.80	
HCR1000	M570 x 5	5.39	

Base Mounting Holes

Model / Capacity tons	Bolt Circle U (in)	Thread Size V (mm)	Minimum Thread Depth Z (in)	Number of Holes	Angle from Coupler (degrees)
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



▲ 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.

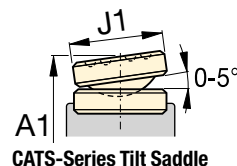
HCR Series



Capacity:
400 - 1000 tons

Stroke:
1.97 - 11.81 inches

Maximum Operating Pressure:
10,150 psi



Extended Height B (in)	Outside Diameter D (in)	Cylinder Bore Diameter E (in)	Plunger Diameter F (in)	Base to Advance Port H (in)	Top to Retract Port I (in)	Standard Saddle Diameter J (in)	Saddle Protrusion from Plunger K (in)	 (lbs)	Model Number
14.61	13.78	10.63	8.66	2.91	4.37	6.26	0.16	501	HCR4002
18.54								570	HCR4004
22.48								638	HCR4006
26.42								707	HCR4008
30.35								775	HCR40010
34.29								843	HCR40012
15.51	15.75	12.01	9.84	3.11	4.76	7.05	0.16	706	HCR5002
19.45								797	HCR5004
23.39								887	HCR5006
27.32								977	HCR5008
31.26								1,067	HCR50010
35.20								1,158	HCR50012
15.83	16.93	12.99	10.63	3.35	4.76	7.64	0.16	836	HCR6002
19.76								940	HCR6004
23.70								1,044	HCR6006
27.64								1,148	HCR6008
31.57								1,252	HCR60010
35.51								1,356	HCR60012
17.87	19.88	15.16	12.60	3.94	5.63	8.82	0.16	1,340	HCR8002
21.81								1,485	HCR8004
25.75								1,631	HCR8006
29.69								1,777	HCR8008
33.62								1,922	HCR80010
37.56								2,068	HCR80012
19.37	22.44	17.32	13.39	4.49	6.02	9.80	0.16	1,858	HCR10002
23.31								2,031	HCR10004
27.24								2,205	HCR10006
31.18								2,379	HCR10008
35.12								2,552	HCR100010
39.06								2,726	HCR100012

Optional Tilt Saddle		
Saddle Diameter J1 (in)	Collapsed Height * A1 (in)	Saddle Model Number
8.27	14.53	CATS400
	16.50	
	18.46	
	20.43	
	22.40	
	24.37	
9.06	15.43	CATS500
	17.40	
	19.37	
	21.34	
	23.31	
	25.28	
9.84	15.94	CATS600
	17.91	
	19.88	
	21.85	
	23.82	
	25.79	
10.83	18.15	CATS800
	20.12	
	22.00	
	24.00	
	26.00	
	28.00	
11.81	20.43	CATS1000
	22.40	
	24.37	
	26.34	
	28.31	
	30.28	

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