

Hydraulic Cylinders

Harken cylinders outlast and outperform. After hundreds of thousands of cycles in the lab, they have proven themselves worldwide on everything from race boats to bluewater cruisers and megayachts. Our cylinders stand up to years of high-stress use and harsh marine environments. Their efficiency, longevity, and reliability are evident in the high-quality components and workmanship.



USES

Harken offers a full range of cylinders for mast, sail, and keel controls.

FEATURES

Graphite-filled Teflon[®] rod seals and bronze-filled Teflon[®] piston seals are extremely low-friction and last longer than polyurethane seals.

Performance O-rings and slant springs in the nonabsorbent Teflon[®] seals maintain a consistent and reliable fit over time.

Smooth anti-snap clevis pins protect rigging and crew.

MATERIALS

Rods and pins are made with Nitronic 50.

Cylinders are available in stainless steel or Hardkote-anodized*, Teflon[®]-impregnated 6061-T6 aluminum.

*Clear (silver) anodizing is available but offers less protection than black Hardkote.

OPTIONS

Standard pull cylinders have air-spring returns.

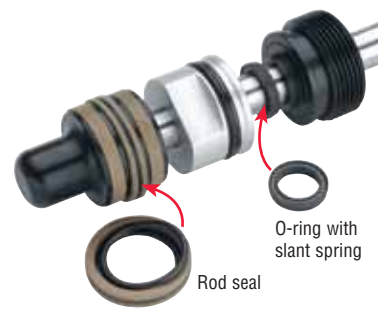
Contact Harken for push, push/pull, or pull/pull cylinders.

Cylinders include a clevis jaw on each end, but can also be fitted with blocks and different eye types.

Custom lengths are available.

MAINTENANCE

Regularly inspect visible components for material imperfections. All service and repair should be done by a certified hydraulic technician. Replacement seals are available worldwide.



High-performance O-ring and spring-energized seals



Rods can be fitted with a variety of high-quality Harken end controls. Contact Harken.

Ordering Single-Acting & Locking Cylinders

To order use the chart below. Standard cylinders are black Hardkote-anodized with clevises on both ends. Clevises, marine eyes, barrel pin eyes, and blank end fittings are offered in black Hardkote-anodized aluminum, clear-anodized aluminum, or mirror-polished stainless steel finishes. Lashing eyes and low-profile lashing cylinder end fittings are available in black Hardkote-anodized aluminum. For optional materials and fittings, replace the last three letters of the part number with your selections.

Standard Cylinder Part Number

(Standard cylinder is black Hardkote-anodized aluminum with rod clevis and cylinder-end clevis)

H Y C S 0 3 5 1 3 0 3 5 0 B C C

Hydraulic

Cylinder

Action Type

S = Single-acting pull

L = Locking

Bore Diameter (mm)

Rod Diameter (mm)

Stroke Length (mm)

Materials

B = Black Hardkote-anodized aluminum

C = Clear-anodized aluminum

S = 316 Stainless steel

Rod End Fittings

C = Clevis: Cylinders come standard with the clevis on rod ends.

L = Lashing eye: This soft attachment lashing has soft radii and can accept a small amount of off-axis loading.

M = Marine eye: These rigging fittings are designed to fit a standard toggle or clevis with the same size pin.

N = No fitting

Cylinder End Fittings

C = Clevis: Cylinders come standard with the clevis on cylinder ends.

B = Barrel-pin eye: The barrel pin eye is used when a few degrees of side-to-side articulation is needed, allowing slight self-alignment when the cylinder is tensioned or unloaded.

L = Lashing eye: This low-profile lashing end attaches to the frame of the boat (or mast butt). Eliminating the toggle, clevis, bracket, pins not only saves weight but space, allowing more stroke on the cylinder.

M = Marine eye: These rigging fittings are designed to fit a standard toggle or clevis with the same size pin.

X = Blank: Cylinders that attach at only one end are fitted with a blank on the unused end of the cylinder.

Materials

Hardkote

Stainless Steel

Clear-Anodized

Rod End Fittings

Clevis

Lashing eye

Marine eye

No fitting

Cylinder End Fittings

Clevis

Barrel-pin eye

Lashing eye

Marine eye

Blank

Hydraulic Cylinders

Part No.	Pin center length (closed)*		Weight**		Diameter										Pull force***				Breaking load												
	-Size	Stroke	6061-T6 Aluminum	316 Stainless	Volume	Gap/pin	Bore	Rod	Max OD	@ 1000 psi 69 bar	@ 2000 psi 138 bar	@ 3000 psi 207 bar	@ 4000 psi 276 bar	@ 5000 psi 345 bar	lb	kg	lb	kg													
HYCS025110265	-6	10.4	265	18.7	474	2.1	0.97	4.5	2.03	7	0.11	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903
HYCS025110360	-6	14.2	360	22.4	569	2.5	1.13	5.2	2.36	9	0.15	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903
HYCS025110530	-6	20.9	530	29.1	739	3.1	1.42	6.5	2.96	13	0.22	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903
HYCS035130230	-10	9.1	230	19.4	494	3.4	1.54	7.6	3.44	12	0.19	1/2	12.7	1 3/8	35	1/2	13	1.81	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYCS035130350	-10	13.8	350	24.0	609	4.1	1.88	9.3	4.20	18	0.29	1/2	12.7	1 3/8	35	1/2	13	1.81	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYCS035130510	-10	20.1	510	31.1	789	5.2	2.37	11.8	5.36	26	0.42	1/2	12.7	1 3/8	35	1/2	13	1.81	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYCS040160260	-12	10.2	260	20.0	508	4.6	2.08	9.7	4.41	15	0.24	5/8	15.9	1 1/2	40	5/8	16	1.98	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYCS040160375	-12	14.8	375	24.8	629	5.6	2.53	11.9	5.39	22	0.35	5/8	15.9	1 1/2	40	5/8	16	1.98	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYCS040160625	-12	24.6	625	35.6	905	7.8	3.54	16.8	7.62	36	0.59	5/8	15.9	1 1/2	40	5/8	16	1.98	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYCS045160260	-17	10.2	260	20.0	507	5.4	2.47	12.0	5.46	21	0.35	5/8	15.9	1 1/4	45	5/8	16	2.27	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYCS045160375	-17	14.8	375	25.0	634	6.6	3.01	14.8	6.69	31	0.51	5/8	15.9	1 1/4	45	5/8	16	2.27	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYCS045160800	-17	31.5	800	43.1	1095	10.9	4.96	24.7	11.19	66	1.08	5/8	15.9	1 1/4	45	5/8	16	2.27	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYCS055190275	-22	10.8	275	22.4	568	9.3	4.23	21.2	9.63	36	0.59	3/4	19.1	2 1/8	55	3/4	19	2.86	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYCS055190400	-22	15.7	400	27.3	693	11.2	5.09	25.6	11.62	52	0.86	3/4	19.1	2 1/8	55	3/4	19	2.86	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYCS055190900	-22	35.4	900	49.7	1263	19.5	8.84	45.2	20.50	118	1.93	3/4	19.1	2 1/8	55	3/4	19	2.86	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYCS065220300	-30	11.8	300	25.1	637	12.9	5.83	28.9	13.12	51	0.83	7/8	22.2	2 1/2	65	7/8	22	3.17	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYCS065220450	-30	17.4	450	31.0	787	15.6	7.06	35.0	15.87	76	1.25	7/8	22.2	2 1/2	65	7/8	22	3.17	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYCS065221025	-30	40.4	1025	55.4	1407	26.5	12.03	59.8	27.12	174	2.85	7/8	22.2	2 1/2	65	7/8	22	3.17	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYCS075250300	-40	11.8	300	27.6	700	20.5	9.29	46.8	21.23	74	1.22	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYCS075250475	-40	18.7	475	34.4	874	24.9	11.28	56.8	25.74	118	1.93	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYCS075251150	-40	45.3	1150	63.2	1606	42.8	19.40	98.1	44.51	284	4.66	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYCS080250300	-48	11.8	300	28.3	719	23.7	10.73	56.3	25.55	81	1.33	1 1/8	28.6	3 1/8	80	1	25	4.07	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYCS080250475	-48	18.7	475	35.1	892	28.8	13.05	68.4	31.04	129	2.11	1 1/8	28.6	3 1/8	80	1	25	4.07	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYCS080251150	-48	45.3	1150	64.0	1626	49.7	22.56	118.8	53.87	312	5.11	1 1/8	28.6	3 1/8	80	1	25	4.07	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYCS090320375	-60/-76	14.8	375	31.3	796	34.5	15.64	80.7	36.60	124	2.03	1 1/4	31.8	3 1/2	90	1 1/4	32	4.57	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYCS090320550	-60/-76	21.7	550	39.3	999	42.1	19.11	98.6	44.72	182	2.98	1 1/4	31.8	3 1/2	90	1 1/4	32	4.57	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYCS100320425	-90	16.7	425	35.0	889	51.0	23.15	119.9	54.5	190	3.11	1 3/8	34.9	4	100	1 1/4	32	5.2	132	11339	5143	22678	10287	34018	15430	45357	20573	56696	25717	113400	51437
HYCS100320625	-90	24.6	625	43.3	1099	62.0	28.14	146.1	66.4	268	4.39	1 3/8	34.9	4	100	1 1/4	32	5.2	132	11339	5143	22678	10287	34018	15430	45357	20573	56696	25717	113400	51437
HYCS115350475	-110	18.7	475	39.9	1014	70.2	31.82	163.5	74.3	270	4.43	1 1/2	38.1	4 1/2	115	1 1/8	35	5.8	147	14419	6541	28839	13081	43258	19622	57678	26162	72097	32703	144200	65408
HYCS115350700	-110	27.6	700	49.4	1255	85.7	38.86	200.7	91.2	397	6.51	1 1/2	38.1	4 1/2	115	1 1/8	35	5.8	147	14419	6541	28839	13081	43258	19622	57678	26162	72097	32703	144200	65408
HYCS130380475	-150	18.7	475	42.9	1090	103.9	47.11	239.7	109.0	353	5.79	1 3/4	44.5	5 1/8	130	1 1/2	38	6.5	165	18862	8556	37724	17111	56585	25667	75447	34222	94309	42778	188600	85548
HYCS130380700	-150	27.6	700	51.8	1315	121.9	55.30	284.3	129.2	520	8.52	1 3/4	44.5	5 1/8	130	1 1/2	38	6.5	165	18862	8556	37724	17111	56585	25667	75447	34222	94309	42778	188600	85548
HYCS145480500	-195	19.7	500	39.9	1014	141.6	64.25	317.9	144.5	457	7.49	2 1/8	54	5 1/4	145	1 7/8	48	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279
HYCS145480750	-195	29.5	750	54.5	1384	168.5	76.43	381.7	173.5	685	11.23	2 1/8	54	5 1/4	145	1 7/8	48	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279

*For pin center length open add stroke length to pin center length closed **Rod ends (forks) included in weights *** Max relief setting is 5,000 psi / 345 bar