



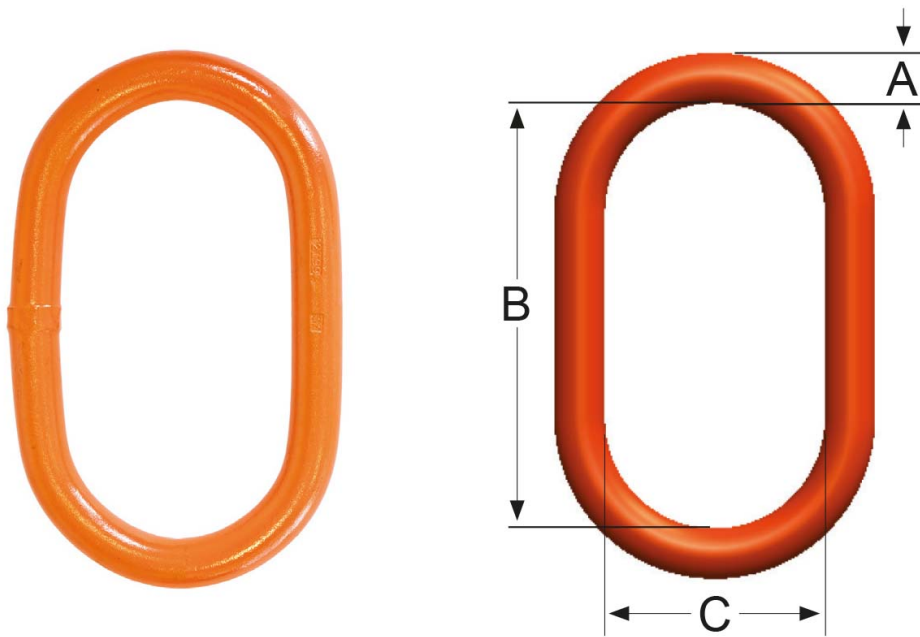
HA MASTER LINKS OS+

Certified to International Standards: DNV2.7-1, DNV2.7-3, BSEN ISO 10855-2, EN1677-4, ASME B30.26, API-2CCU - Aug. 2017

The HA range of Grade 8 master links and quad assemblies are widely used for offshore rigging and lifting sets for containers and are the industry leaders globally based on the following:

- Product available in diameters from 16mm up to 120mm and working load limits from 4.1 tonnes to 250 tonnes
- The links are manufactured from triple alloy steel in accordance with EN1677, which includes individually proof load tested to 2.5 times working load limit and 100% MPI
- MPF (Manufacturing Proof Force): $2.5 \times 9.81 \times \text{Working Load Limit (kN)}$ (min.)
- BF (Break Force): $\text{WLL} \times \text{Factor of Safety}$
- WLL (Working Load Limit) (tonne) @ 45° to vertical
- Factor of Safety: 5 : 1
- Embossing: as per Description column and Batch Number
- Design air temperature -40° min.
- Average impact energy (charpy) 42 Joules minimum impact resistance at -40°C up to 50mm diameter
- Operational temperature range is -40° C to + 200°C

William Hackett's lifting products are supported by the Assure platform which provides our distribution partners with genuine real time stock management, documentation, access to certificates, traceability and supply chain integration.



SPECIFICATIONS - Metric

DNV GL Type Approval TAS000013Z Rev. 3

Part Code	Description	A mm	B mm	C mm	WLL t	MPF kN	MBL kN	Mass Kg
330.160+	HA16ML OS+	16.0	150	75	4.10	101	201	0.68
330.22S+	HA22MLS OS+	22.0	162	90	11.00	270	540	1.47
330.220+	HA22ML OS+	22.0	270	140	7.00	172	343	2.28
330.250+	HA25ML OS+	25.5	270	140	9.30	229	456	3.11
330.28S+	HA28MLS OS+	28.0	200	110	19.50	479	956	2.95
330.280+	HA28ML OS+	28.0	270	140	14.50	356	711	3.78
330.320+	HA32ML OS+	32.0	270	140	19.00	466	932	5.02
330.360+	HA36ML OS+	36.0	270	140	26.00	638	1275	6.46
330.400+	HA40ML OS+	40.0	280	155	30.50	749	1496	8.46
330.450+	HA45ML OS+	45.0	320	175	40.00	981	1962	12.18
330.500+	HA50ML OS+	50.0	350	195	51.00	1251	2502	16.54
330.650+	HA65ML OS+	65.0	410	220	75.00	1840	3679	33.02
330.750+	HA75ML OS+	75.0	450	250	100.00	2453	4905	48.98
330.900	HA90ML*	90.0	500	300	150.00	2943	7360	86.00
330.1200	HA120ML*	120.0	610	410	250.00	4905	9810	197.00

SPECIFICATIONS - Imperial

DNV GL Type Approval TAS000013Z Rev. 3

Part Code	Description	A (inches)	B (inches)	C (inches)	WLL (lbs.)	MPF (lbs.)	MBL (lbs.)	Mass (lbs.)
330.160+	HA16ML OS+	5/8"	6"	3"	9,038	22,705	45,186	1.50
330.22S+	HA22MLS OS+	7/8"	6-1/2"	3-5/8"	24,250	60,698	121,396	3.24
330.220+	HA22ML OS+	7/8"	10-3/4"	5-5/8"	15,432	38,667	77,109	5.03
330.250+	HA25ML OS+	1"	10-3/4"	5-5/8"	20,503	51,481	102,512	6.86
330.28S+	HA28MLS OS+	1-1/8"	8"	4-3/8"	42,990	107,683	214,916	6.50
330.280+	HA28ML OS+	1-1/8"	10-3/4"	5-5/8"	31,967	80,031	159,838	8.33
330.320+	HA32ML OS+	1-1/4"	10-3/4"	5-5/8"	41,887	104,760	209,521	11.07
330.360+	HA36ML OS+	1-7/16"	10-3/4"	5-5/8"	57,320	143,427	286,630	14.29
330.400+	HA40ML OS+	1-9/16"	11"	6"	67,240	168,381	336,313	18.65
330.450+	HA45ML OS+	1-3/4"	12-3/4"	7"	88,184	220,537	441,074	26.85
330.500+	HA50ML OS+	2"	14"	7-3/4"	112,436	281,235	562,470	36.46
330.650+	HA65ML OS+	2-9/16"	16-9/64"	8-21/32"	165,347	413,647	827,070	72.80
330.750+	HA75ML OS+	2-61/64"	18"	10"	220,462	551,455	1,102,685	108.00
330.900*	HA90ML*	3-5/8"	21"	12-1/2"	330,693	661,611	1,654,590	189.59
330.1200*	HA120ML*	4-3/4"	24"	16-3/8"	551,156	1,102,685	2,205,371	434.31



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