



HA MASTER LINKS OS

DNV Type Approval No. TAS000013Z Rev. 2

Certified to: DNV 2.7-1, DNV 2.7-3, BSEN ISO 10855-2, EN1677-4, ASME B30.26 and API-2CCU - Aug. 2017

The HA range of master links and quad assemblies is the most complete range of links available today, in diameters from 16mm up to 120mm and working load limits up to 250 tonnes. The links are manufactured from triple alloy steel in accordance with EN1677, they are individually proof load tested to 2.5 times working load limit in accordance with EN1677 and they are all supplied with charpy impact values of in excess of 42 Joules at -40°C. The links are suitable for use in a temperature range of -40°C up to 200°C without reduction in working load limit.

The HA range of links are widely used in lifting sets for offshore containers and they are type approved to DNV 2.7-1 under approval number TAS000013Z Rev. 2.

MPF = Manufacturing Proof Force = $2.5 \times 9.81 \times \text{Working Load Limit (kN)}$ (min.)

BF = Break Force = WLL x Factor of Safety

WLL = Working Load Limit (tonne) @ 45° to vertical

Factor of Safety = 5 : 1

Embossing - As per Description column and Batch Number

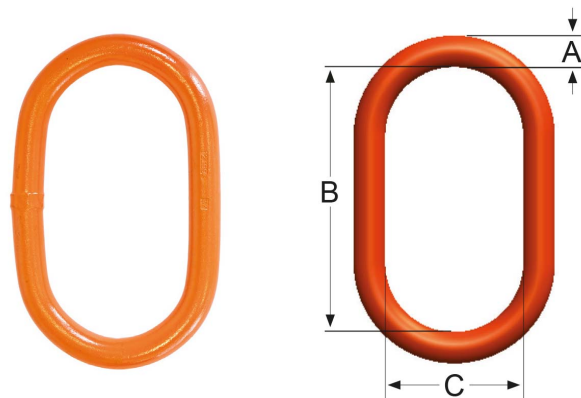
Manufactured in accordance with EN1677-4

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

*Certified on a batch basis to the requirements of DNV 2.7-1



SPECIFICATIONS

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	0.70
330.22S	HA22MLS OS	22.0	162	90	8.83	217	433	1.50
330.220	HA22ML OS	22.0	270	140	5.80	143	284	2.30
330.250	HA25ML OS	25.5	270	140	8.83	217	433	2.70
330.28S	HA28MLS OS	28.0	200	110	14.50	356	711	3.00
330.280	HA28ML OS	28.0	270	140	14.50	356	711	3.80
330.320	HA32ML OS	32.0	270	140	17.10	420	838	5.10
330.360	HA36ML OS	36.0	270	140	23.00	565	1128	6.50
330.400	HA40ML OS	40.0	280	155	28.10	690	1378	8.50
330.450	HA45ML OS	45.0	320	175	38.30	939	1878	12.20

330.500	HA50ML OS	50.0	350	195	45.00	1104	2207	16.60
330.600	HA60ML OS	60.0	410	220	65.00	1594	3188	29.20
330.650	HA65ML OS	65.0	410	220	75.00	1840	3678	33.20
330.700	HA70ML OS	70.0	450	250	85.00	2084	4169	44.30
330.750	HA75ML OS	75.0	450	250	100.00	2453	4905	49.30
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

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	45,182	1.54
330.22S	HA22MLS OS	7/8"	6-1/2"	3-5/8"	19,461	48,653	97,307	3.30
330.220	HA22ML OS	7/8"	10-3/4"	5-5/8"	12,783	31,958	63,916	5.07
330.250	HA25ML OS	1"	10-3/4"	5-5/8"	19,461	48,653	97,307	7.27
330.28S	HA28MLS OS	1-1/8"	8"	4-3/8"	31,958	79,895	159,790	6.61
330.280	HA28ML OS	1-1/8"	10-3/4"	5-5/8"	31,958	79,895	159,790	8.37
330.320	HA32ML OS	1-1/4"	10-3/4"	5-5/8"	37,688	94,221	188,442	11.24
330.360	HA36ML OS	1-7/16"	10-3/4"	5-5/8"	50,692	126,730	235,460	14.33
330.400	HA40ML OS	1-9/16"	11"	6"	61,932	154,831	309,662	18.73
330.450	HA45ML OS	1-3/4"	12-3/4"	7"	84,413	211,033	422,066	26.89
330.500	HA50ML OS	2"	14"	7-3/4"	99,180	247,950	495,900	36.59
330.600	HA60ML OS	2-23/64"	16-1/4"	8-3/4"	143,260	358,150	716,300	64.37
330.650	HA65ML OS	2-9/16"	16-9/64"	8-21/32"	165,340	413,684	826,847	73.20
330.700	HA70ML OS	2-3/4"	18"	10"	187,340	468,350	936,700	97.66
330.750	HA75ML OS	2-61/64"	18"	10"	220,460	551,456	1,102,687	108.68
330.900*	HA90ML*	3-5/8"	21"	12-1/2"	330,600	661,611	1,654,590	189.59
330.1200*	HA120ML*	4-3/4"	24"	16-3/8"	551,000	1,102,685	2,205,371	434.31



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