



HA QUAD ASSEMBLIES OS+ Type Approval TAS000013Z Rev. 3

DNV Type Approval No. TAS000013Z Rev. 3

Certified to: DNV2.7-1, DNV2.7-3, BSEN ISO 10855-2, EN1677-4, ASTM E112, ASME B30.26, 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 150 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. 3.

MPF = Manufacturing Proof Force = 2.5 x 9.81 x 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

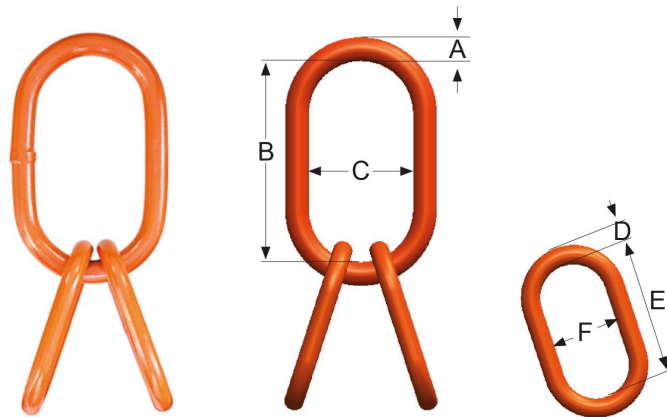
Manufactured in accordance with EN1677-4

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	D mm	E mm	F mm	WLL t	MPF kN	MBL kN	Mass Kg
350.160+	HA16QA OS+	16.0	150	75	14.5	125	60	4.10	101	201	1.62
350.220+	HA22QAS OS+	22.0	162	90	22.0	162	90	11.00	270	540	4.41
350.230+	HA23QA OS+	22.0	270	140	22.0	162	90	7.00	172	343	5.22
350.250+	HA25QA OS+	25.5	270	140	22.0	162	90	9.30	229	456	6.05
350.260+	HA26QA OS+	28.0	270	140	22.0	162	90	14.50	356	711	6.73
350.280+	HA28QAS OS+	28.0	200	110	22.0	162	90	14.50	356	711	5.89
350.320+	HA32QA OS+	32.0	270	140	28.0	200	110	19.00	466	932	10.92
350.360+	HA36QA OS+	36.0	270	140	28.0	200	110	26.00	638	1275	12.35
350.400+	HA40QA OS+	40.0	280	155	32.0	270	140	30.50	749	1496	18.50
350.450+	HA45QA OS+	45.0	320	175	36.0	270	140	40.00	981	1962	25.09
350.500+	HA50QA OS+	50.0	350	195	45.0	320	175	51.00	1251	2502	40.89
350.650+	HA65QA OS+	65.0	410	220	50.0	350	195	75.00	1840	3679	66.10
350.750+	HA75QA OS+	75.0	450	250	65.0	410	220	100.00	2453	4905	115.02
350.900	HA90QA*	90.0	510	300	70.0	400	200	150.00	3679	7358	164.10

SPECIFICATIONS - Imperial

Part Code	Description	A in	B in	C in	D in	E in	F in	WLL lbs	MPF kN	MBL kN	Mass lbs
350.160+	HA16QA OS+	5/8"	6"	3"	9/16"	4-15/16"	2-3/8"	9,038	22,705	45,186	3.57
350.220+	HA22QAS OS+	7/8"	6-1/2"	3-5/8"	7/8"	6-3/8"	3-9/16"	24,250	60,698	121,396	9.72
350.230+	HA23QA OS+	7/8"	10-3/4"	5-5/8"	7/8"	6-3/8"	3-9/16"	15,432	38,667	77,109	11.50
350.250+	HA25QA OS+	1"	10-3/4"	5-5/8"	7/8"	6-3/8"	3-9/16"	20,502	51,481	102,512	13.33
350.260+	HA26QA OS+	1-1/8"	10-3/4"	5-5/8"	7/8"	6-3/8"	3-9/16"	31,966	80,031	159,838	14.83
350.280+	HA28QAS OS+	1-1/8"	8"	4-3/8"	7/8"	6-3/8"	3-9/16"	31,966	80,031	159,838	12.98
350.320+	HA32QA OS+	1-1/4"	10-3/4"	5-5/8"	1-1/8"	7-7/8"	4-5/16"	41,887	104,760	209,521	24.07
350.360+	HA36QA OS+	1-7/16"	10-3/4"	5-5/8"	1-1/8"	7-7/8"	4-5/16"	57,319	143,428	286,630	27.22
350.400+	HA40QA OS+	1-9/16"	11"	6"	1-1/4"	10-5/8"	5-1/2"	67,240	168,381	336,312	40.78
350.450+	HA45QA OS+	1-3/4"	12-3/4"	7"	1-7/16"	10-5/8"	5-1/2"	88,184	220,537	441,073	55.31
350.500+	HA50QA OS+	2"	14"	7-3/4"	1-3/4"	12-5/8"	6-7/8"	112,434	281,235	562,469	90.14
350.650+	HA65QA OS+	2-9/16"	16-9/16"	8-21/32"	2"	13-3/4"	7-11/16"	165,345	413,648	827,068	145.72
350.750+	HA75QA OS+	2-61/64"	18"	10"	2-9/16"	16-1/8"	8-11/16"	220,460	551,456	1,102,683	253.57
350.900	HA90QA*	3-5/8"	21"	12-1/2"	2-3/4"	15-3/4"	7-7/8"	330,600	661,611	1,654,590	360.00