




IT'S DOWN TO THE WIRE®



INDUSTRIAL CATALOGUE

arcuswire.com

2 0 2 2

A close-up, high-contrast photograph of a metal pipe, likely stainless steel, covered in numerous water droplets. The pipe is oriented diagonally from the bottom left towards the top right. The background is a soft, out-of-focus grey. The lighting highlights the metallic texture and the individual droplets on the surface.

"We don't just aim to meet your expectations and project requirements; we strive to exceed them while providing remarkable value." David Sheedy, CEO.

Welcome to our hamma® Industrial catalogue.

Showcasing the latest stainless steel fittings, you'll find the perfect solution for your needs.

PERFORMANCE BY DESIGN

The industry leading hamma® range of stainless steel fittings are designed and manufactured by global leaders Kinzi and distributed exclusively by the Arcus Wire Group across Australia and New Zealand.

SCAN TO VIEW THE
KINZI VIDEO



Since 1971, Kinzi has been supplying stainless steel hardware to companies worldwide. Kinzi's in house design, engineering and mould facility controls the manufacturing process from concept to finished product. With an understanding of product applications, Kinzi develops products utilising the right materials for the job and determines the most efficient production process.

Kinzi utilises Solid Works, Auto Cad and Magma casting simulation software. Finite element analysis, 3D printing, and rapid prototyping ensure smarter decisions and efficient product development. Recognising that dimensions and consistency are critical, Kinzi's engineering team works hand in hand with the in-house quality assurance team to ensure an identical product every time.

SUPPORT

As a recognised industry leader in stainless steel wire rope and fittings for nearly 60 years, Arcus Wire Group brings a wealth of experience, knowledge and expertise to help customers with stainless steel projects of any size or complexity.

Today our hamma® products are used by architects to support innovative structural designs; landscapers to support shade sails and arbours; farmers to support wide-load, travelling irrigation systems; engineers to support multi-lane suspension bridges for vehicles and pedestrians; riggers to support masts on some of the world's largest ocean going yachts; and many more applications.





















CONTACT US


If you have any questions or need help selecting the right hamma® fitting for your needs call our expert team on 1800 272 879 or email sales@arcuswire.com.

We are a silver member of the Australian Stainless Steel Development Association (ASSDA) and an ASSDA Accredited Fabricator. This means that we have the knowledge and skills to supply and manufacture custom stainless steel cables to the highest industry standards.

hamma® Industrial Shackles Page 9

 D SHACKLE	 D SHACKLE WITH COLLARED PIN	 D SHACKLE WITH SQUARE HEAD PIN	 D SHACKLE WITH LOCKING PIN	 D SHACKLE WITH SLOT HEAD PIN	 D SHACKLE WITH HEXAGONAL SINK PIN
 D SHACKLE WIDE	 BOW SHACKLE (ANCHOR)	 BOW SHACKLE (ANCHOR) WITH COLLARED PIN	 D SHACKLE LONG	 D SHACKLE LONG WITH COLLARED PIN	 D SHACKLE LONG WITH SLOT HEAD PIN
 HALYARD SHACKLE WITH LOCKING PIN	 HALYARD SHACKLE CROSS BAR WITH LOCKING PIN	 HEADBOARD SHACKLE CROSS BAR WITH LOCKING PIN	 TWISTED SHACKLE	 TWISTED SHACKLE WITH COLLARED PIN	 QUICK LINK











hamma® Industrial Swivels Pages 15

 SWIVEL (EYE-EYE)	 SWIVEL (JAW-JAW)
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hamma® Industrial Wire Rope Grips & Thimbles Pages 16

 WIRE ROPE GRIP	 DUPLEX GRIP	 THIMBLE (HEAVY DUTY)	 THIMBLE (STANDARD)
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hamma® Industrial Hooks & Snaps Page 19

 GRAB HOOK (CLEVIS END)	 SLIP HOOK (EYE END WITH SAFETY LATCH)	 BOLT SNAP (SWIVEL EYE)	 SNAP HOOK	 SPRING SNAP (CIRCULAR HOOK WITH ANGLED LATCH)	 SPRING SNAP (ANGLED HOOK WITH EYE END)
 SPRING HOOK	 SPRING HOOK (WITH EYE)	 SPRING HOOK WITH SCREW NUT	 EYE SNAP (SWIVEL END)		


















hamma® Industrial Rings & Pads Page 23

					
ROUND RING	D RING	D RING WITH THIMBLE	TRIANGLE RING	SQUARE PAD EYE	SINGLE PAD EYE WITH SINGLE RING
					
DOUBLE PAD EYE WITH DOUBLE RINGS	DIAMOND PAD EYE	SADDLES			

hamma® Industrial U Bolts & Eye Bolts Pages 27

					
EYE NUT	COLLARED EYE BOLT (SHORT THREAD)	COLLARED EYE BOLT (50MM THREAD)	COLLARED EYE BOLT WITH WASHER AND NUT	EYE BOLT WITH DOUBLE WASHER AND NUT	SCREW EYE (WOOD)
					
SOCKET DRIVE FOR SCREW EYE (WOOD)	COLLARED SCREW EYE (WOOD)	DIN 444 EYE BOLT (HALF THREAD)	DIN 444 EYE BOLT (FULL THREAD)	FEMALE ADJUSTER WITH HEX SOCKET	SWAGE DEAD END
					
SWAGE DROP NOSE TOGGLE	EXTENDED TOGGLES				

hamma® Industrial Turnbuckles & Terminals Page 35

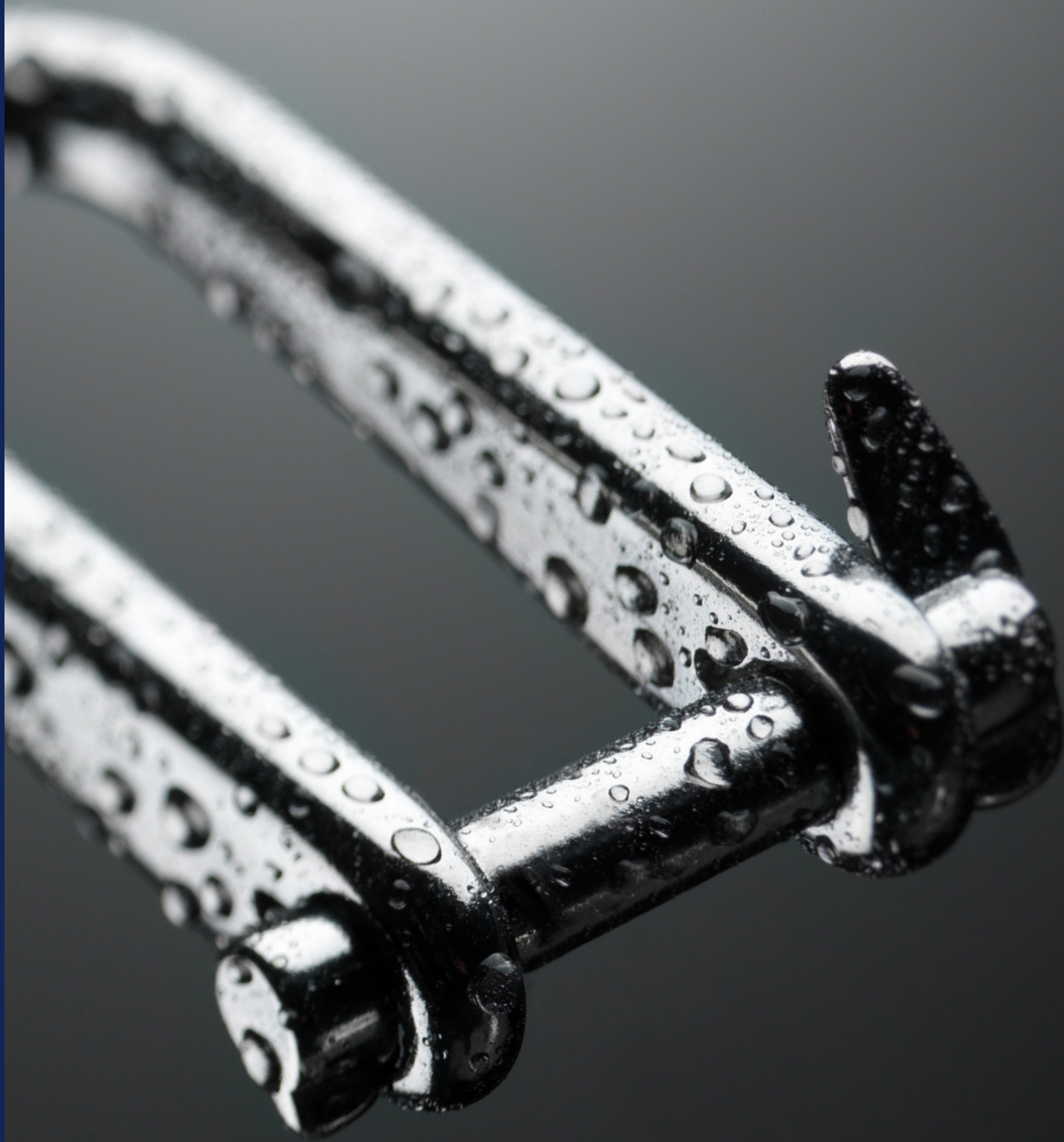
					
EYE-EYE TURNBUCKLE	HOOK-EYE TURNBUCKLE	HOOK-HOOK TURNBUCKLE	JAW-JAW TURNBUCKLE	JAW-JAW RIGGING SCREW	TOGGLE-TOGGLE RIGGING SCREW
					
JAW-SWAGE RIGGING SCREW	JAW-SWAGE RIGGING SCREW (MINI)	SWAGE FORK (MINI)	SWAGE STUD (LHT)	SWAGE STUD (RHT)	SWAGE EYE
					
SWAGE FORK	LIFELINE PELICAN HOOK	LIFELINE PELICAN HOOK WITH SWAGE STUD	LIFELINE SWIVEL SCREW	LIFELINE SWIVEL CROSS SCREW	



hamma® Industrial Wire Rope and Fittings, 54 lineal metre Spider Glass Wall, RACV Grand Ballroom, Queensland, Australia

New Products Pages 43


					
2-HOLE FLAT WITH BASE	1-HOLE ROUND WITH BASE	1-HOLE FLAT WITH BASE	2-HOLE FLAT WITH EXTENSION & BASE	2-HOLE ROUND WITH EXTENSION & BASE	2-HOLE ROUND WITH BASE
					
BASE	EXTENSION	2-HOLE FLAT	2-HOLE ROUND	THREAD JOINER	STANDOFF LAG SCREW
					
1 HOLE ROUND	1 HOLE FLAT				



hamma® Industrial Shackles

D Shackle


S360

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-0004	4	4	8	16	3,000	550
HM-6360-0005	5	5	10	20	2,000	1,000
HM-6360-0006	6	6	12	24	1,200	1,700
HM-6360-0008	8	8	16	32	500	2,800



D Shackle with Collared Pin


S360CP

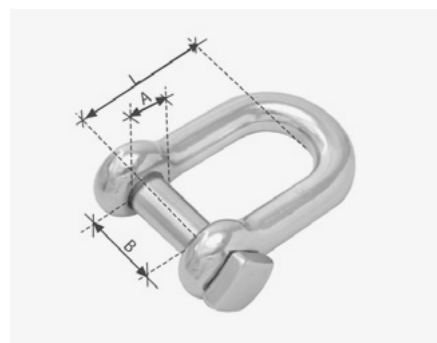
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-0410	10	10	20	40	250	4,500
HM-6360-0412	12	12	24	48	150	6,000
HM-6360-0416	16	16	32	64	60	10,000
HM-6360-0419	19	19	38	76	45	15,000



D Shackle with Square Head Pin


S360B

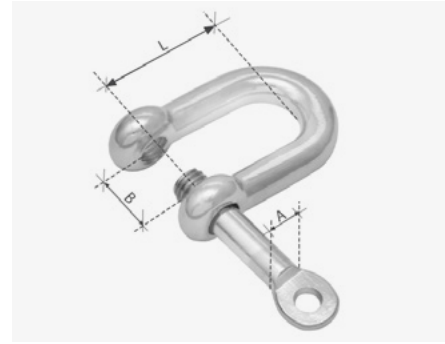
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-1010	10	10	20	40	200	4,500
HM-6360-1012	12	12	24	48	150	6,000



D Shackle with Locking Pin


S360LK

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-5006	6	5.25	12	24	1,000	1,400
HM-6360-5008	8	7.10	16	32	500	2,800
HM-6360-5010	10	8.90	20	40	250	4,000



D Shackle with Slot Head Pin


S360C

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-4005	5	5	10	20	2,000	1,000
HM-6360-4006	6	6	12	24	1,000	1,700
HM-6360-4008	8	8	16	32	400	2,800
HM-6360-4010	10	10	20	40	250	4,500
HM-6360-4012	12	12	24	48	150	6,000



D Shackle with Hexagonal Sink Pin


S360CI

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-5106	6	6	12	24	1,000	1,700
HM-6360-5108	8	8	16	32	450	2,800
HM-6360-5110	10	10	20	40	250	4,500
HM-6360-5112	12	12	24	48	150	6,000



D Shackle Wide


S360WO

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-9008	8	8	28	35	400	2,500
HM-6360-9010	10	10	40	60	150	3,350
HM-6360-9012	12	12	48	72	80	4,000



Bow Shackle (Anchor)


S370

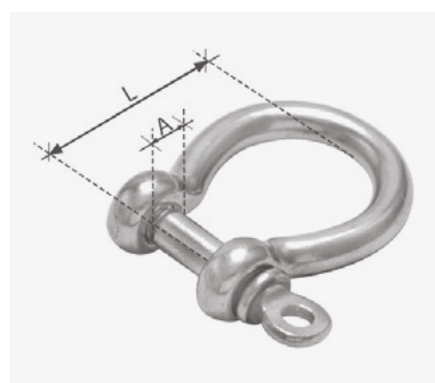
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6370-0004	4	4	8	20.0	2,000	550
HM-6370-0005	5	5	10	25.5	1,700	1,000
HM-6370-0006	6	6	12	30.0	800	1,700
HM-6370-0008	8	8	16	41.0	400	2,800



Bow Shackle (Anchor) with Collared Pin


S370CP

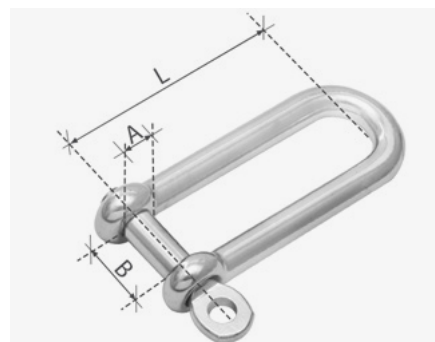
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6370-3010	10	10	20	51.0	200	4500
HM-6370-3012	12	12	24	61.0	120	6,000
HM-6370-3016	16	16	32	82.0	50	10,000
HM-6370-3019	19	19	38	97.0	30	15,000
HM-6370-3022	22	22	44	110.0	20	19,000



D Shackle Long


S362

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6362-0006	6	6	12	48	700	1,700
HM-6362-0008	8	8	16	64	300	2,500



D Shackle Long with Collared Pin


S362CP

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6362-3010	10	10	20	80	150	3,500
HM-6362-3012	12	12	24	96	80	5,400



D Shackle Long with Slot Head Pin


S362C

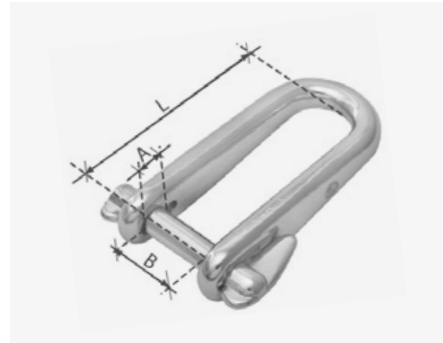
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6362-1006	6	6	12	48	600	1,700



Halyard Shackle with Locking Pin


S365LK

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6365-0005	5	5	13	40.50	800	1,000
HM-6365-0006	6	6	16	46.00	500	1,600
HM-6365-0008	8	8	22	64.00	250	2,250



Halyard Shackle Cross Bar with Locking Pin


S365DLK

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6365-1005	5	5	13	40.50	800	1,000
HM-6365-1006	6	6	16	46.00	500	1,600
HM-6365-1008	8	8	22	64.00	230	2,250



Headboard Shackle Cross Bar with Locking Pin


S364LK

PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)	C (MM)		B.L. (KGS)
HM-6364-0006	6	7.1	12	11.25		400	1,900
HM-6364-0008	8	8.9	16	15.00		180	3,700



Twisted Shackle


S380

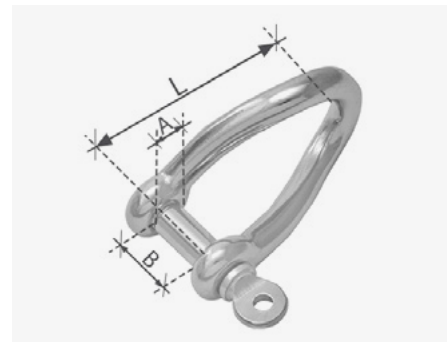
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6380-0006	6	6	12	36	600	1,600
HM-6380-0008	8	8	16	44	180	2,800



Twisted Shackle with Collared Pin


S380CP

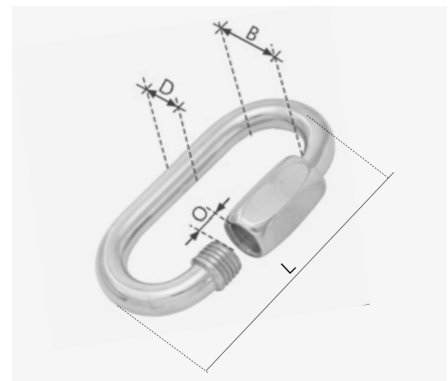
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6360-8010	10	10	20	51	200	4,600



Quick Link

S7350

PRODUCT CODE	SIZE (MM)	B (MM)	D (MM)	L (MM)	O (MM)	
HM-2735-0004	4	11	4	39.5	5.5	2,000
HM-2735-0005	5	12.5	5	48.5	6.5	1,200
HM-2735-0006	6	14	6	57	7.5	800
HM-2735-0008	8	17	8	74	10.0	300
HM-2735-0010	10	20	11	89	12.0	200




hama® Stainless Steel Wire Rope Balustrade, Ephraim Island, Queensland, Australia



hamma[®] Industrial Swivels

Swivel (Eye-Eye)


S018

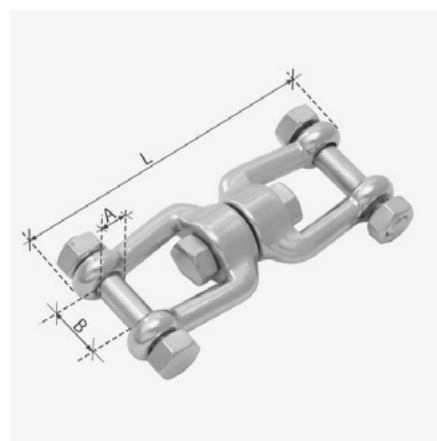
PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6018-0006	6	6	14.70	66	450	1,200
HM-6018-0008	8	8	20.50	94	200	1,900
HM-6018-0010	10	10	24.00	118	100	3,500
HM-6018-0013	13	13	31.00	152	50	5,000



Swivel (Jaw-Jaw)

S0182


PRODUCT CODE	SIZE	ØA (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6018-2006	6	6	12	66	400	1,200
HM-6018-2008	8	8	16	94	150	1,900
HM-6018-2010	10	10	20	118	80	3,500
HM-6018-2013	13	13	26	152	40	5,000
HM-6018-2016	16	16	32	188	25	8,500
HM-6018-2019	19	19	38	223	15	10,000



hamma® Industrial Wire Rope Grips & Thimbles

Wire Rope Grip


S260

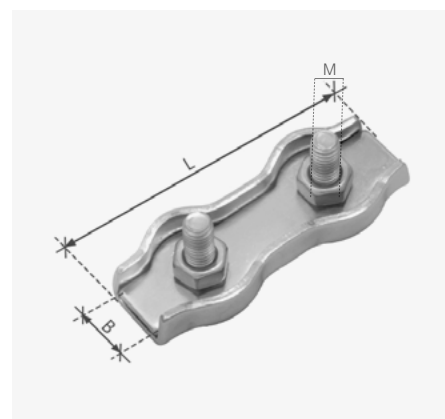
PRODUCT CODE	SIZE	B (MM)	L (MM)	M (MM)	
HM-6260-0002	2	7	17.5	M3	3,000
HM-6260-0003	3	8	21	M3	2,500
HM-6260-0004	4	10	23	M4	1,200
HM-6260-0005	5	12	29	M5	800
HM-6260-0006	6	14	32	M6	500
HM-6260-0008	8	17.5	40	M8	300
HM-6260-0010	10	21	50	M10	200
HM-6260-0012	12	26	62	M12	100
HM-6260-0014	14	28	67	M14	100
HM-6260-0016	16	32	78	M16	60
HM-6260-0019	19	34	83	M19	50



Duplex Grip


SF512

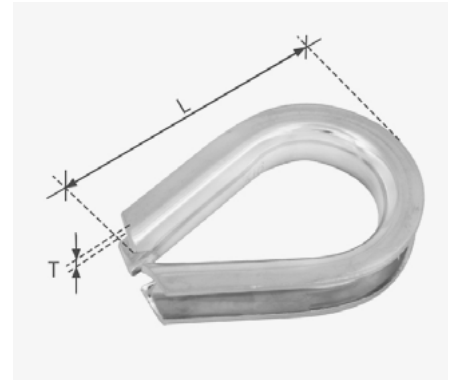
PRODUCT CODE	SIZE	B (MM)	L (MM)	M THREAD	
HM-6512-0003	3	7	34	M4	1,500
HM-6512-0004	4	9.2	40	M5	700



Thimble (Heavy Duty)


SF414

PRODUCT CODE	SIZE (INCH)	B (MM)	L (MM)	T (MM)	
HM-6414-0615	5/16"	27.3	63	2	300
HM-6414-0803	3/8"	29	73	2.5	160
HM-6414-0201	1/2"	38	92	4	80
HM-6414-0805	5/8"	45	106	4	70
HM-6414-0403	3/4"	50.8	125	5	25



Thimble (Standard)

SF234U

PRODUCT CODE	SIZE (MM)	B (MM)	L (MM)	T (MM)	
HM-6234-0002	2	10	25	0.8	5,000
HM-6234-0003	3	12.5	28.5	1	3,500
HM-6234-0004	4	13	33.0	1.2	2,000
HM-6234-0005	5	15.5	36.5	1.2	1,500
HM-6234-0006	6	17	40	1.5	1,000
HM-6234-0008	8	22.5	51	1.5	500
HM-6234-0010	10	26	58.5	2	300
HM-6234-0012	12	31	68	2	300
HM-6234-0014	14	34	74	2.5	130
HM-6234-0016	16	37.5	83	2.5	150
HM-6234-0018	18	40	92	3	60
HM-6234-0020	20	45	104	2	50
HM-6234-0022	22	50.5	115	4	40
HM-6234-0025	25	54	125	4	30




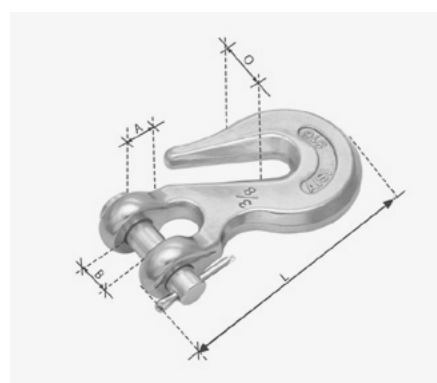


hamma® Industrial Hooks & Snaps

Grab Hook (Clevis End)


S330

PRODUCT CODE	SIZE (INCH)	B (MM)	A (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6330-0104	1/4"	9.5	11.1	79.6	8.7	150	2,100
HM-6330-0516	5/16"	11.5	12.7	96	11.1	90	3,100
HM-6330-0308	3/8"	12.7	15	108.6	12.7	60	4,000
HM-6330-0102	1/2"	17	19	143.7	16.6	25	7,350



Slip Hook (Eye End with Safety Latch)


S325X

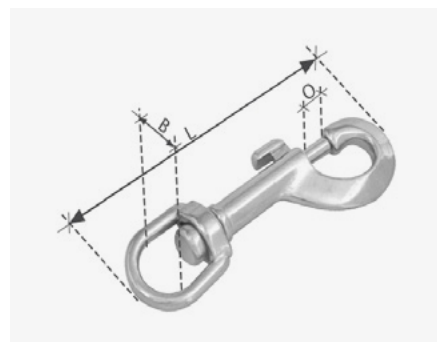
PRODUCT CODE	SIZE (INCH)	ØB (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6325-5516	5/16"	16	108	24	100	2,900



Bolt Snap (Swivel Eye)

S225


PRODUCT CODE	SIZE (INCH)	B (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6225-0304	3/4"	20.5	91	8	500	650

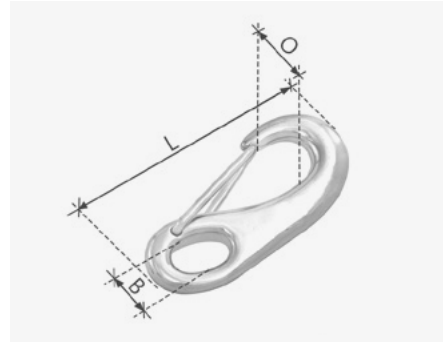


Exclusive to Arcus Wire Group across Australia and New Zealand, the hamma® range of stainless steel fittings are manufactured by global leader and Kinzi. Since 1971, Kinzi has been supplying stainless steel hardware to companies worldwide.

Snap Hook


S2470

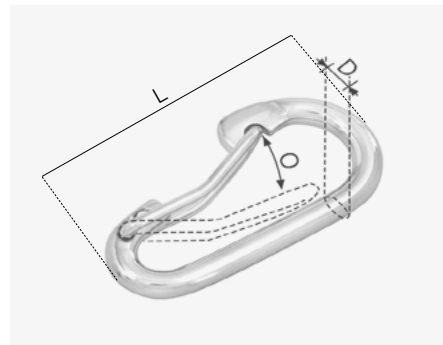
PRODUCT CODE	SIZE (MM)	ØB (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6247-0032	32	4	32	7	1,500	80
HM-6247-0050	50	6.6	50	10	1,000	220
HM-6247-0070	70	9	70	14	450	500
HM-6247-0100	100	13.8	98	20	150	900



Spring Snap (Circular Hook with Angled Latch)


SF24302B

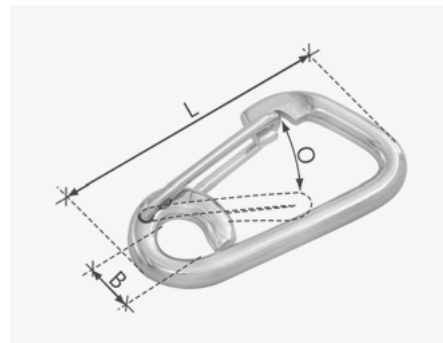
PRODUCT CODE	SIZE (MM)	D (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6243-1206	6	6	60	14	1000	830
HM-6243-1208	8	8	80	20	350	1,600



Spring Snap (Angled Hook with Eye End)


SF2430

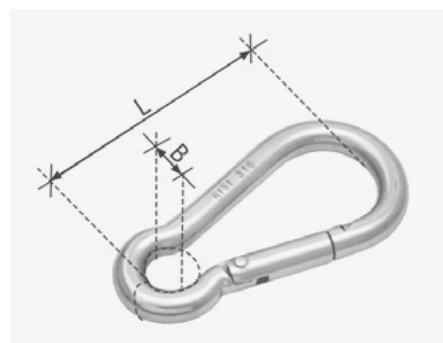
PRODUCT CODE	SIZE (MM)	ØB (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6243-0006	6	10	61	12.5	500	750
HM-6243-0008	8	12	81	17	300	1,750



Spring Hook


SF2450

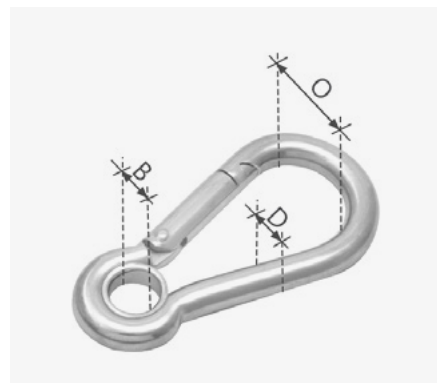
PRODUCT CODE	SIZE (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6245-0005	5	8	40	1,500	160
HM-6245-0060	6	10	48	1,000	300
HM-6245-0080	8	13	64	400	600
HM-6245-0100	10	17	80	200	800



Spring Hook (with Eye)


SF2450X

PRODUCT CODE	SIZE (MM)	B (MM)	ØD (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6245-0204	4	6.5	4.5	33	11.5	2,500	100
HM-6245-0205	5	7	5	40	16	1,500	160
HM-6245-0206	6	9	6	48	18	800	300
HM-6245-0208	8	12	8	64	23.5	400	600
HM-6245-0210	10	16	10	80	30	200	800



Spring Hook with Screw Nut


SF2450N

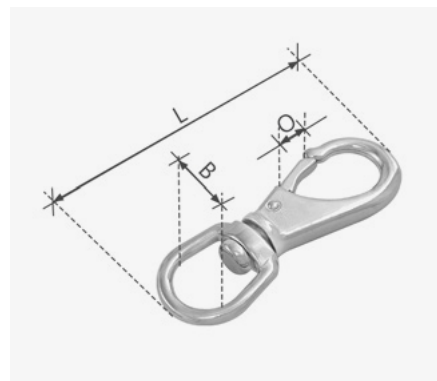
PRODUCT CODE	SIZE (MM)	B (MM)	ØD (MM)	L (MM)	O (MM)		B.L. (KGS)
HM-6245-0006	6	5	6.6	60	6.5	800	400
HM-6245-0008	8	28	8	80	8.5	400	700
HM-6245-0010	10	15	10	100	10	150	900



Eye Snap (Swivel End)

S251

PRODUCT CODE	SIZE (MM)	O (MM)	B (MM)	L (MM)		B.L. (KGS)
HM-6251-0003	3	19.5	117.5	20.5	200	340




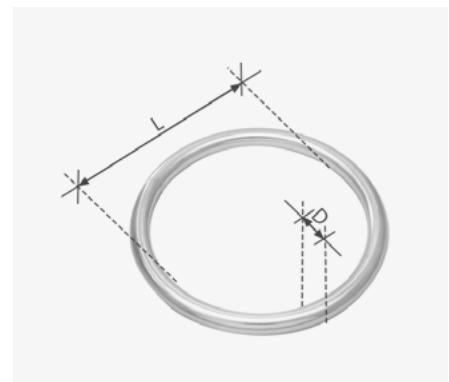


hamma[®] Industrial Rings & Pads

Round Ring


SF317 * Limited G304 Stock Available

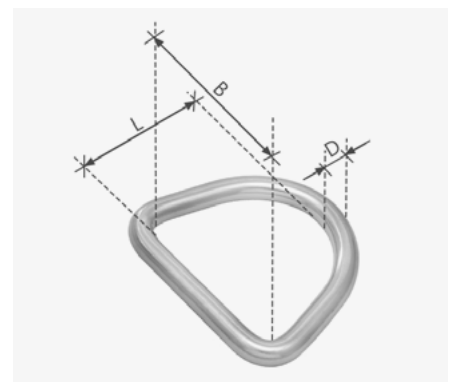
PRODUCT CODE	SIZE (MM)	D (MM)	L (MM)		B.L. (KGS)
HM-6317-0535	5*35	5	35	1,000	2,000
HM-6317-0540	5*40	5	40	800	2,000
HM-6317-0640	6*40	6	40	600	2,700
HM-6317-0650	6*50	6	50	400	2,700
HM-6317-0850	8*50	8	50	300	5,000
HM-6317-1075	10*75	10	75	100	8,500
HM-6317-1010	10*100	10	100	70	8,500
HM-6317-1012	10*120	10	120	45	8,500
HM-6317-1212	12*120	12	120	60	10,000



D Ring


SF3250 * Limited G304 Stock Available

PRODUCT CODE	SIZE (MM)	B (MM)	ØD (MM)	L (MM)		B.L. (KGS)
HM-6325-0425	4*25	27	4	22	2,500	800
HM-6325-0640	6*40	39	6	34	700	1,800
HM-6325-0650	6*50	51	6	43	500	1,800
HM-6325-0850	8*50	51	8	43	300	2,800
HM-6325-0265	10*65	65	10	55	150	5,000



D Ring with Thimble


SF3257 * This item is G304 only

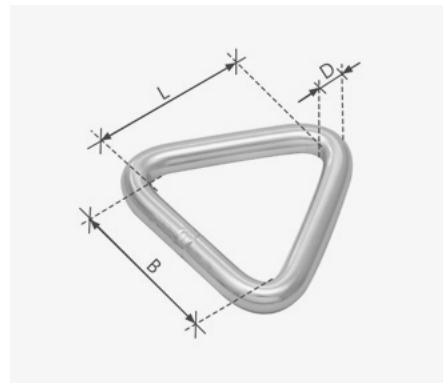
PRODUCT CODE	SIZE (MM)	D (MM)	D1 (MM)	T (MM)		B.L. (KGS)
HM-4325-7231	6x30	6	23.4	11	600	1,800
HM-4325-7351	6x50	6	35.0	12.5	200	1,800
HM-4325-7235	8x50	8	35.0	23.5	150	2,800



Triangle Ring


SF3252

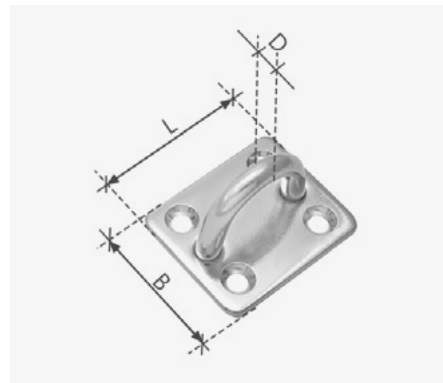
PRODUCT CODE	SIZE (MM)	B (MM)	D (MM)	L (MM)		B.L. (KGS)
HM-6325-2650	6*50	51	6	45	500	2,000
HM-6325-2850	8*50	50	8	45	350	2,800



Square Pad Eye


SF321 * This item is G304 only

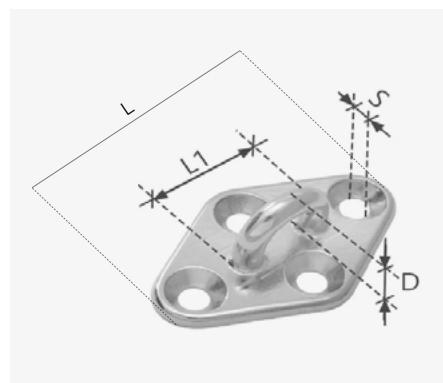
PRODUCT CODE	SIZE (MM)	B (MM)	D (MM)	L (MM)		B.L. (KGS)
HM-4321-0006	6	34	6	40	500	1,000
HM-4321-0008	8	39	8	50	300	1,600



Diamond Pad Eye

SF3211 * This item is G304 only

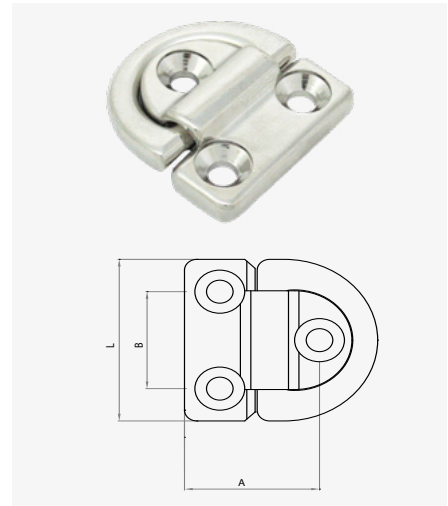
PRODUCT CODE	SIZE (MM)	D (MM)	L (MM)	L1 (MM)	ØS (MM)		B.L. (KGS)
HM-4321-1005	5	5	59	15	4.1	500	700
HM-4321-1006	6	6	64	19	4.1	500	1000
HM-4321-1008	8	8	80	23	5.1	250	1600



Single Pad Eye with Single Ring

SPE/SINGLE/EP

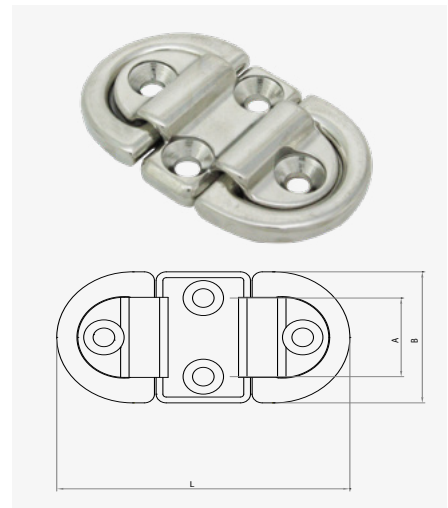
PRODUCT CODE	SIZE (MM)	A (MM)	B (MM)	L (MM)	SCREW USE	B.L. (KGS)	
HM-6106-4546	6x46.5	27	45	46.5	M6	2,200	250
HM-6108-5961	8x61	35	59	61	M8	4,000	150
HM-6001-0757	10x77	53	45	75	M10	7,000	100



Double Pad Eye with Double Rings

SPE/DOUBLE/EP

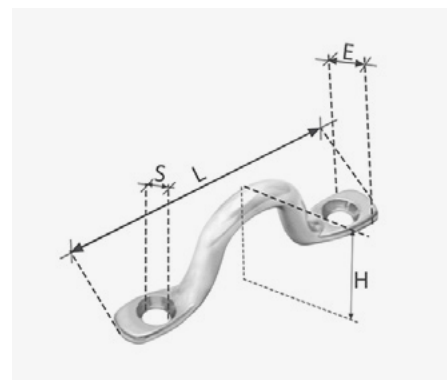
PRODUCT CODE	SIZE (MM)	A (MM)	B (MM)	L (MM)	SCREW USE	B.L. (KGS)	
HM-6106-4587	6	27	45	87	M6	3,600	250
HM-6108-5999	8	35	59	99	M8	6,800	150
HM-6101-0751	10	45	75	126	M10	12,000	50

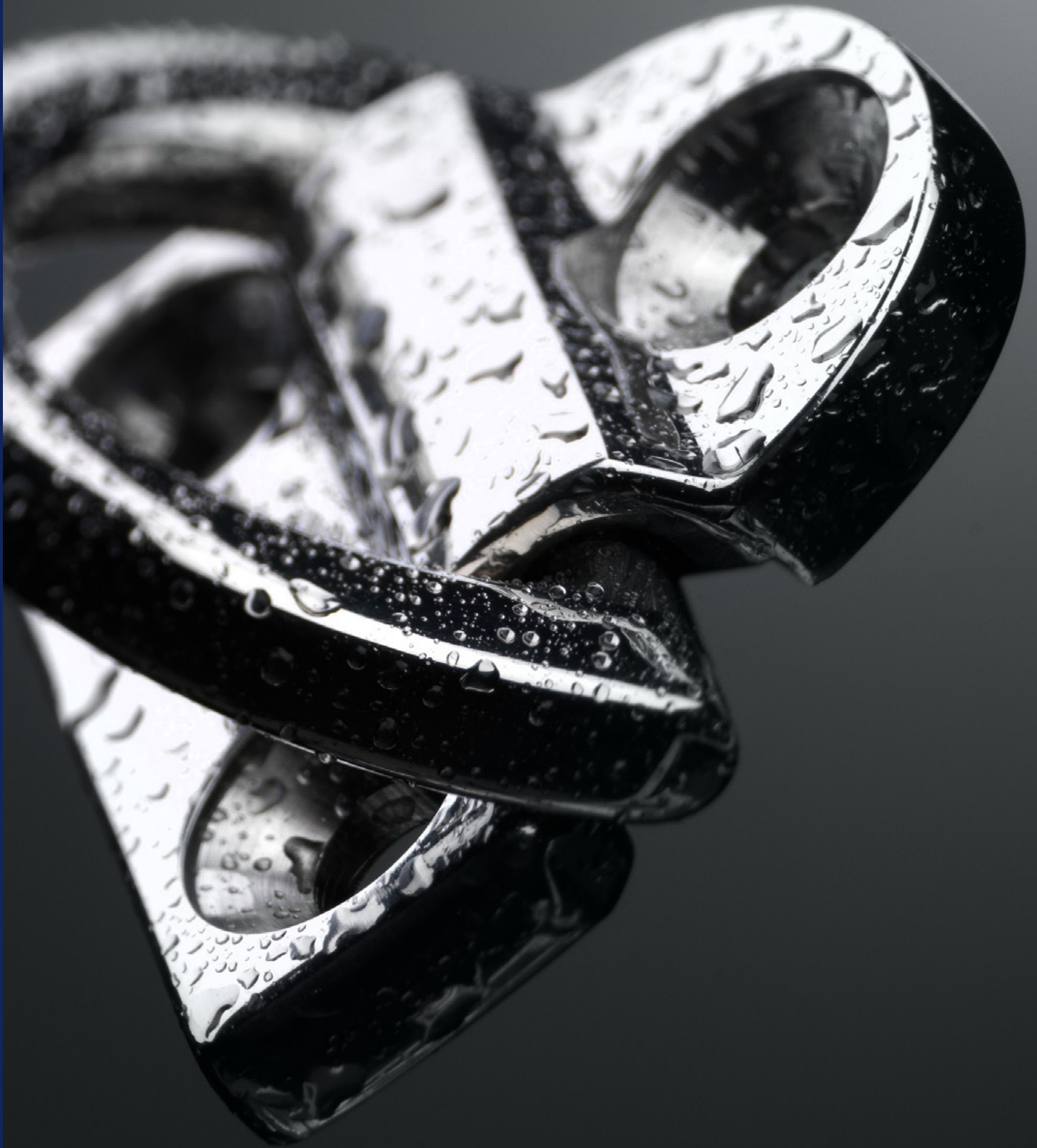


Saddle

SF322

PRODUCT CODE	SIZE (MM)	L (MM)	S (MM)	E (MM)	H (MM)	G (MM)
HM-4322-0005	5mm	50	4	9	17	20
HM-4322-0006	6mm	60	5	11.3	22	25
HM-4322-0008	8mm	65	6	13.6	25	25




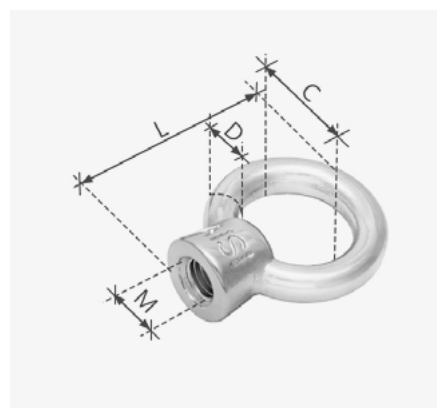


hamma[®] Industrial U Bolts & Eye Bolts

Eye Nut


S3061

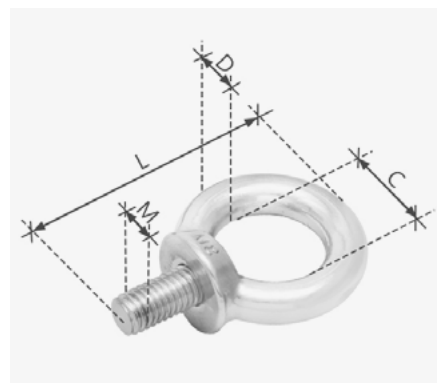
PRODUCT CODE	SIZE (MM)	C (MM)	D (MM)	L (MM)	M (MM)		B.L. (KGS)
HM-6306-1006	6	16	5	31	M6	2,000	1,100
HM-6306-1008	8	20	6.2	39.3	M8	1,000	1,300
HM-6306-1010	10	25	8	48	M10	500	2,600
HM-6306-1012	12	30	10	61	M12	250	3,500
HM-6306-1016	16	35	12.5	72	M16	100	8,000
HM-6306-1020	20	40	16	86	M20	60	10,500



Collared Eye Bolt (Short Thread)


S580

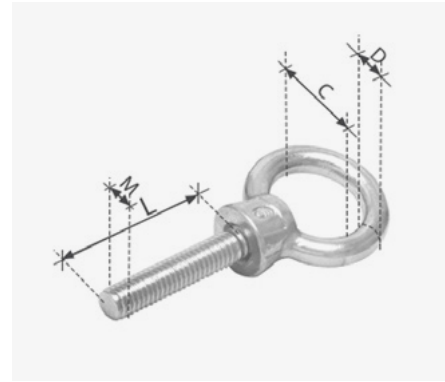
PRODUCT CODE	SIZE (MM)	THREAD LENGTH (MM)	D (MM)	L (MM)	M (MM)		B.L. (KGS)
HM-6580-0006	6	10	6	37	M6	1,200	1,300
HM-6580-0008	8	14	8	49	M8	500	2,000
HM-6580-0010	10	18	10	62	M10	300	2,600
HM-6580-0012	12	20	12	74	M12	150	4,900
HM-6580-0016	16	27	14	90	M16	120	7,000
HM-6580-0020	20	30	16	102	M20	70	10,000
HM-6580-0024	24	38	20	126	M24	30	15,000



Collared Eye Bolt (50mm Thread)


S306

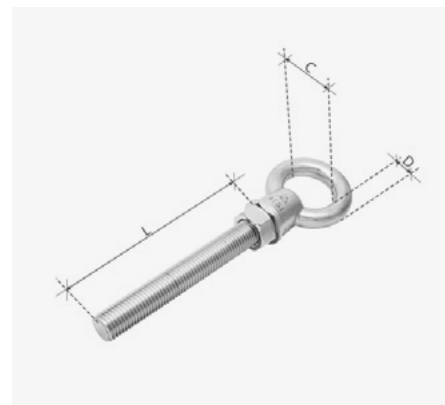
PRODUCT CODE	SIZE (MM)	C (MM)	ØD (MM)	L (MM)	M (MM)		B.L. (KGS)
HM-6306-0650	06*50	16	5	50	M6	1,000	1,100
HM-6306-0850	08*50	20	6.2	50	M8	500	1,800
HM-6306-1050	10*50	25	8	50	M10	250	2,600
HM-6306-1250	12*50	30	10	50	M12	130	3,500
HM-6306-1650	16*50	35	12.5	50	M16	100	8,000



Collared Eye Bolt with Washer and Nut


S307

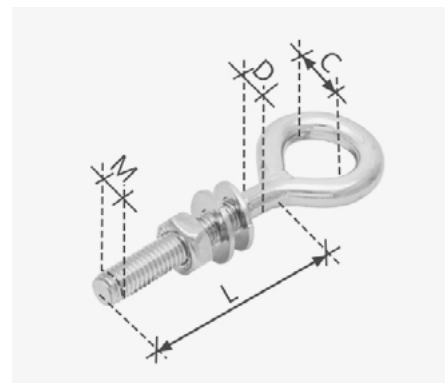
PRODUCT CODE	SIZE (MM)	C (MM)	D (MM)	L (MM)		B.L. (KGS)
HM-6307-1012	10*120	25	8	120	180	2,600
HM-6307-1210	12*100	30	10	100	100	3,500
HM-6307-1212	12*120	30	10	120	100	3,500
HM-6307-2100	12*150	30	10	150	70	3,500
HM-6307-1670	16*100	35	12.5	100	70	8,000
HM-6307-1615	16*150	35	12.5	150	60	8,000



Eye Bolt with Double Washer and Nut


SF3191

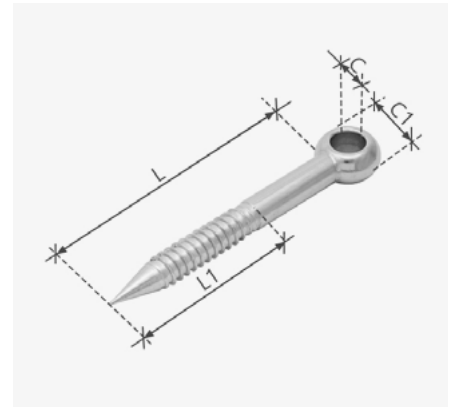
PRODUCT CODE	SIZE (MM)	C (MM)	D (MM)	L (MM)	M (MM)		B.L. (KGS)
HM-6319-1640	6*40	13	5.25	40	M6	1,000	1,000
HM-6319-1655	6*55	13	5.25	55	M6	800	1,000
HM-6319-1680	6*80	13	5.25	80	M6	800	1,000
HM-6319-1610	6*100	13	5.25	100	M6	700	1,000
HM-6319-1835	8*35	17	7	35	M8	500	1,800
HM-6319-1880	8*80	17	7	80	M8	450	1,800
HM-6319-1810	8*100	17	7	100	M8	250	1,800
HM-6319-1102	10*120	21	8.8	120	M10	200	2,400



Screw Eye (Wood)


SF3182

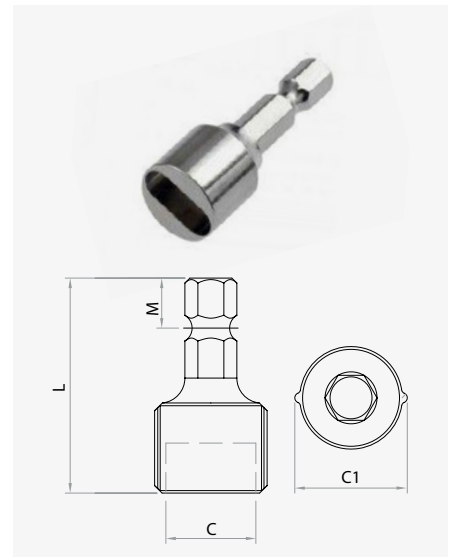
PRODUCT CODE	SIZE (MM)	C (MM)	C1 (MM)	L (MM)	L1 (MM)	
HM-2318-2640	6*40	6.2	14	40	28	2,000
HM-2318-2660	6*60	6.2	14	60	40	1,700
HM-2318-2860	8*60	8.2	18	60	40	1,000
HM-2318-2810	8*100	8.2	18	100	40	500
HM-2318-2180	10*80	10.3	20	80	55	500
HM-2318-2127	12*100	12.3	24.5	100	65	250



Socket Drive For Screw Eye (Wood)


4SOCKETD00600

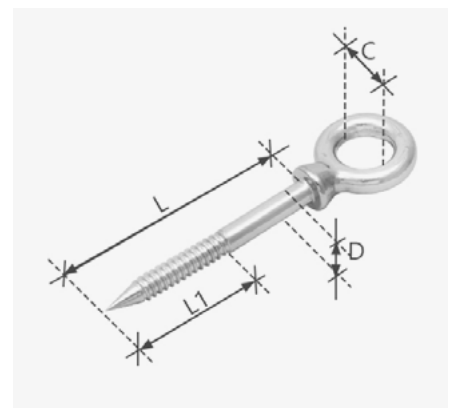
PRODUCT CODE	SIZE (MM)	C (MM)	C1 (MM)	L (MM)	M (MM/INCH)	
HM-SOCKET	6	20.5	22.5	43	10	150



Collared Screw Eye (Wood)


S3291

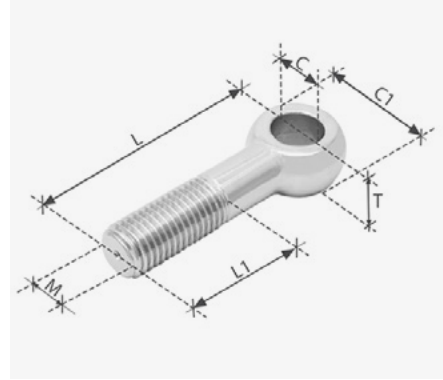
PRODUCT CODE	SIZE (MM)	C (MM)	D (MM)	L (MM)	L1 (MM)	
HM-6329-1680	6*80	14	6	80	48	800
HM-6329-1880	8*80	18	8	80	48	350
HM-6329-1180	10*80	22	10	80	48	230
HM-6329-1110	10*100	22	10	100	60	200
HM-6329-1210	12*100	27	12	100	60	130
HM-6329-1212	12*120	27	12	120	72	100



Din 444 Eye Bolt (Half Thread)


SFDIN444

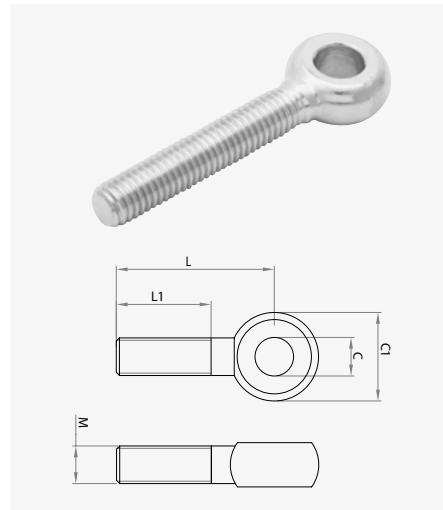
PRODUCT CODE	SIZE (MM)	C (MM)	C1 (MM)	L (MM)	L1 (MM)	T (MM)	M (THREAD)	
HM-2444-0640	6*40	6.2	14	40	22	7	M6	2,000
HM-2444-0660	6*60	6.2	14	60	36	7	M6	1,500
HM-2444-1250	12*50	12.2	25	50	25	14	M12	400



Eye Bolt (Full Thread)


SFDIN444FT

PRODUCT CODE	SIZE (MM)	C (MM)	C1 (MM)	L (MM)	L1 (MM)	M (THREAD)	
HM-2444-2612	6*19	6.2	14	19	10	M6	4,000
HM-2444-0625	6*25	6.2	14	25	15	M6	3,000



Female Adjuster with Hex Socket

S7500i

PRODUCT CODE	SIZE (MM)	D (MM)	D1 (MM)	L (MM)	M (THREAD)		B.L. (KGS)
HM-6750-0153	5	8	12	30	M5	2500	600
HM-6750-0163	6	8	12	35	M6	2500	1250
HM-6750-0840	8	10	14	40	M8	2000	1600
HM-6750-0045	10	13	17	45	M10	1000	3250





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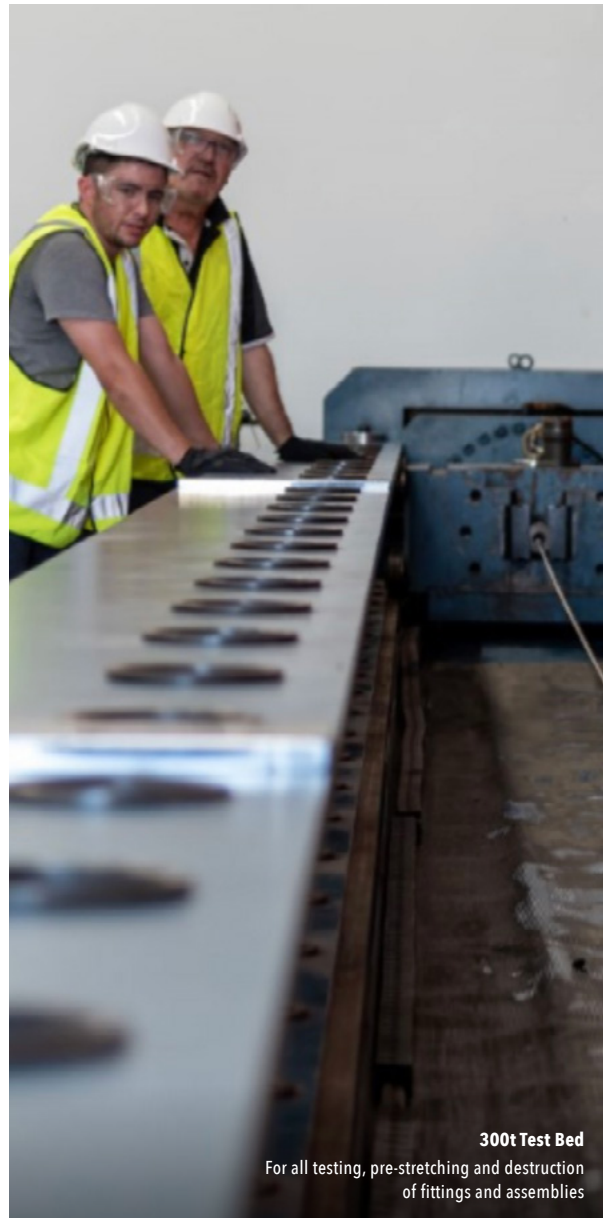
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Swage Dead End

S7500

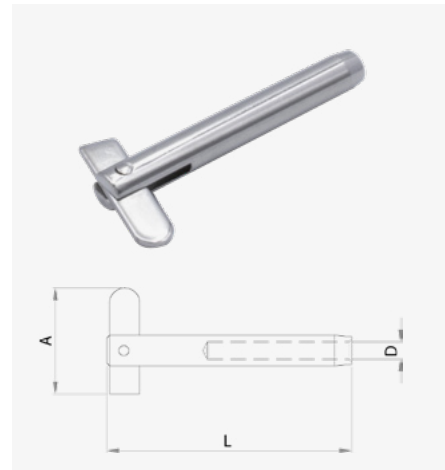
PRODUCT CODE	FOR CABLE (MM)	C (MM)	D1 (MM)	T (MM)	L (MM)	
HM-6750-0180	3.2	6.3	10	3	32	2,500
HM-6750-0532	4.0	7.5	12	4	42	2,500



Swage Drop Nose Toggle

S7801TP-ACS

PRODUCT CODE	FOR CABLE (MM)	A (MM)	D (MM)	L (MM)	B.L. (KGS)
HM-7801-TP	3.2	22	3.4	51	2,500



Extended Toggles

PRODUCT CODE	THREAD SIZE	PIN SIZE	THROAT INSIDE TOGGLE MEASUREMENTS (MM)	PIN TO PIN MEASUREMENTS (MM)	OVERALL LENGTH (MM)
AWG-EXT-12500	M12	M12	19	42	500
AWG-EXT-16500	M16	M16	27	54	500
AWG-EXT-20500	M20	M20	35	65	500
AWG-EXT-24500	M24	M24	41	80	500






hama® Industrial Wire Rope and Fittings, Shade Sail Structure, Ramat Gan National Park, Israel



hamma[®] Industrial Turnbuckles & Terminals

Eye-Eye Turnbuckle


S311E

PRODUCT CODE	SIZE	MIN LENGTH (MM)	MAX LENGTH (MM)	L1 (MM)	M (MM)		B.L. (KGS)
HM-6311-7005	5	124	170	70	M5	650	680
HM-6311-7006	6	154	220	90	M6	300	1,500
HM-6311-7008	8	210	280	120	M8	150	2,300
HM-6311-7010	10	257	350	150	M10	80	3,100
HM-6311-7012	12	325	460	200	M12	50	4,400
HM-6311-7016	16	390	610	250	M16	25	8,100



Hook-Eye Turnbuckle


S311HE

PRODUCT CODE	SIZE	MIN LENGTH (MM)	MAX LENGTH (MM)	L1 (MM)	M (MM)		B.L. (KGS)
HM-6311-7105	5	124	170	70	M5	650	130
HM-6311-7106	6	162	220	90	M6	300	350
HM-6311-7108	8	210	280	120	M8	150	650
HM-6311-7110	10	256	350	150	M10	80	800
HM-6311-7112	12	330	460	200	M12	50	1,400



Hook-Hook Turnbuckle


S311H

PRODUCT CODE	SIZE	MIN LENGTH (MM)	MAX LENGTH (MM)	L1 (MM)	M (MM)		B.L. (KGS)
HM-6311-7205	5	124	170	70	M5	650	130
HM-6311-7206	6	170	220	90	M6	300	350
HM-6311-7208	8	208	280	120	M8	150	650
HM-6311-7210	10	266	350	150	M10	80	800
HM-6311-7212	12	335	460	200	M12	50	1,400



Jaw-Jaw Turnbuckle


S311J

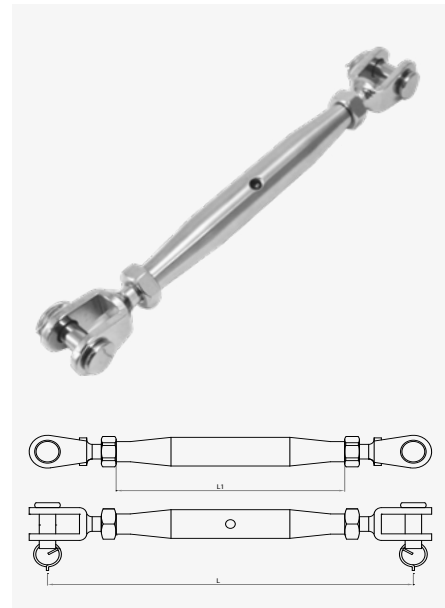
PRODUCT CODE	SIZE	MIN LENGTH (MM)	MAX LENGTH (MM)	L1 (MM)	M (MM)		B.L. (KGS)
HM-6311-6405	5	114	170	70	M5	500	750
HM-6311-6406	6	137	220	90	M6	300	1,400
HM-6311-6408	8	179	265	120	M8	130	2,200
HM-6311-6310	10	220	350	150	M10	80	3,450
HM-6311-6312	12	296	455	200	M12	40	5,000
HM-6311-6316	16	328	470	200	M16	15	8,000



Jaw-Jaw Rigging Screw


SF312P

PRODUCT CODE	SIZE	MIN LENGTH (MM)	MAX LENGTH (MM)	L1 (MM)	H (MM)	J (MM)		B.L. (KGS)
HM-6312-0505	5	115	185	80	11.5	7.5	500	750
HM-6312-0506	6	142	215	90	12.5	8.3	250	1,400
HM-6312-0508	8	160	259	105	15.5	12	150	2,200
HM-6312-0510	10	200	399	125	17.5	12.5	100	3,450
HM-6312-0512	12	245	380	150	27	15	50	5,000
HM-6312-0616	16	304	440	190	34	17	20	8,000



Toggle-Toggle Rigging Screw


S3125

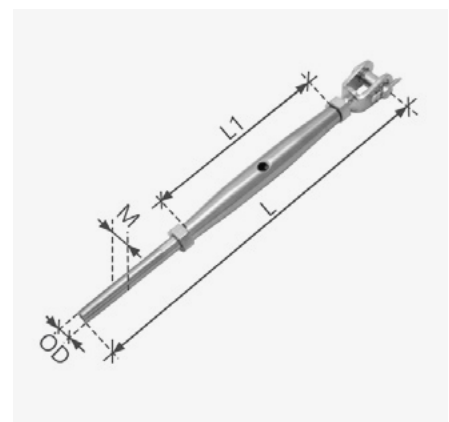
PRODUCT CODE	SIZE	MIN LENGTH (MM)	MAX LENGTH (MM)	L1 (MM)	H (MM)	J (MM)		B.L. (KGS)
HM-6312-5008	8	180	260	105	17	11	140	1,650
HM-6312-5010	10	220	315	125	20	14	75	2,500
HM-6312-5012	12	258	375	150	25	14	35	3,700



Jaw-Swage


SF3121P

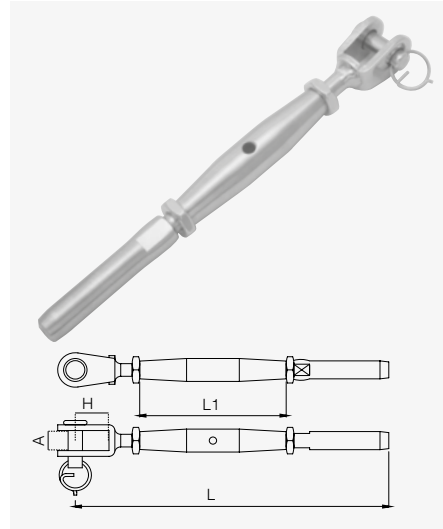
PRODUCT CODE	WIRE SIZE (MM/ INCH)	M (THREAD)	MIN LENGTH (MM)	MAX LENGTH (MM)	A (MM)	H (MM)		B.L. (KGS)
HM-6312-1017	2.5mm	M5	150	193	6	11.5	600	600
HM-6312-1122	3mm	M5	142	193	7	11.5	600	600
HM-6312-1016	3mm	M6	170	207	8	12.5	350	1,000
HM-6312-1007	1/8"	M5	156	193	7	11.5	600	600
HM-6312-1008	1/8"	M6	170	207	8	12.5	350	1,000
HM-6312-1050	4mm	M6	185	207	8	12.5	350	1,000
HM-6312-1018	4mm	M8	205	260	11	18.5	200	1,400
HM-6312-1015	3/16"	M8	205	260	11	15.5	200	1,400
HM-6312-1027	3/16"	M10	240	340	12	17.5	125	2,200
HM-6312-1064	5mm	M8	210	260	11	15.5	200	1,400
HM-6312-1009	5mm	M10	240	340	13	17.5	100	2,200
HM-6312-1010	6mm	M12	295	380	15	28	50	4,000
HM-6312-1006	1/4"	M10	247	340	15	28	75	2,200
HM-6312-1040	1/4"	M12	295	380	14	27	50	4,000
HM-6312-1098	8mm	M12	303	380	13	27	40	4,500
HM-6312-1073	8mm	M14	328	410	15	28	30	6,000
HM-6312-1070	8mm	M16	370	495	17	25	30	6,500
HM-6312-1074	10mm	M16	380	495	17	25	30	8,200
HM-6312-1071	10mm	M20	405	560	20	39	15	8,500
HM-6312-1455	12mm	M20	414	560	20	39	15	12,500
HM-6312-1424	14mm	M24	610	760	30	55	15	18,500
HM-6312-1461	16mm	M24	610	760	30	55	15	18,500



Jaw/Swage Rigging Screw (Mini)


SF3121P/MIN

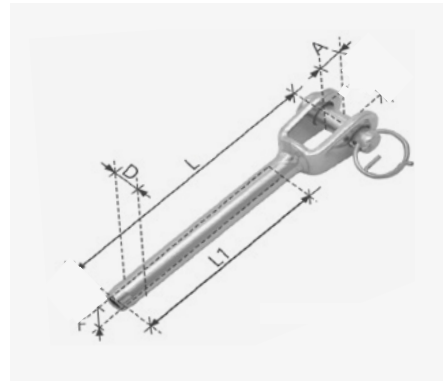
PRODUCT CODE	SIZE (MM)	M (THREAD)	L (MM)	L1 (MM)	OD (MM)		B.L. (KGS)
HM-6312-1020	3.2mm	M5	107	50	3	800	750



Swage Fork (Mini)


SF7803S

PRODUCT CODE	SIZE (INCH)	L (MM)	L1 (MM)	A (MM)	D (MM)		B.L. (KGS)
HM-6780-3518	1/8"	48	28	5	7	1500	700



Swage Stud (LHT)


SF7801L

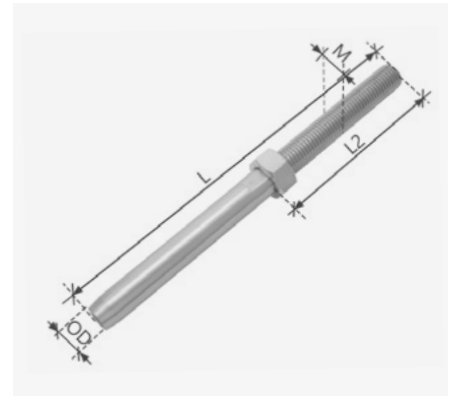
PRODUCT CODE	SIZE (MM/INCH)	M (THREAD)	L (MM)	L2 (MM)	OD (MM)	
HM-6780-1160	1/8"	M5	90	40	6.3	1,500
HM-6780-1107	1/8"	M6	90	40	6.3	1,400
HM-6780-1108	4mm	M6	106	48	7.5	750
HM-6780-1109	4mm	M8	118	60	7.5	750
HM-6780-1036	6mm	M12	162	79	12.5	150



Swage Stud (RHT)

SF7801

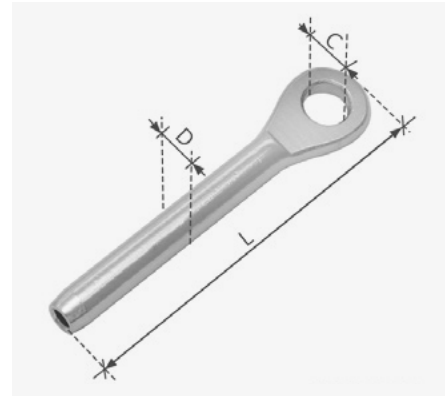
PRODUCT CODE	SIZE (MM/INCH)	M (THREAD)	L (MM)	L2 (MM)	OD (MM)	
HM-6780-1012	2.5mm	M5	86	40	5.5	2,000
HM-6780-1089	2.5mm	M6	85	42	5.5	1,400
HM-6780-1068	3mm	M5	80	40	6.3	1,400
HM-6780-1020	3mm	M6	97	48	6.3	1,200
HM-6780-1073	1/8"	M5	90	40	6.3	1,500
HM-6780-1007	1/8"	M6	90	40	6.3	1,400
HM-6780-1061	4mm	M6	117	57	7.5	750
HM-6780-1076	4mm	M8	115	57	7.5	750
HM-6780-1017	3/16"	M8	124	60	9.1	600
HM-6780-1095	5mm	M8	128	57	9.1	450
HM-6780-1026	5mm	M10	128	61	9.1	600
HM-6780-1134	6mm	M10	162	80	12.5	150
HM-6780-1028	6mm	M12	162	79	12.5	150
HM-6780-1056	8mm	M12	175	76	16.1	150
HM-6780-1171	8mm	M14	180	90	16.1	100
HM-6780-1030	8mm	M16	214	102	16.1	100
HM-6780-1018	10mm	M16	225	105	17.8	80
HM-6780-1014	10mm	M20	225	105	17.8	80
HM-6780-1566	12mm	M20	278	116	21.4	70
HM-6780-1995	14mm	M24	328	140	25	20
HM-6780-1993	16mm	M24	387	170	28.1	20



Swage Eye


SF7802

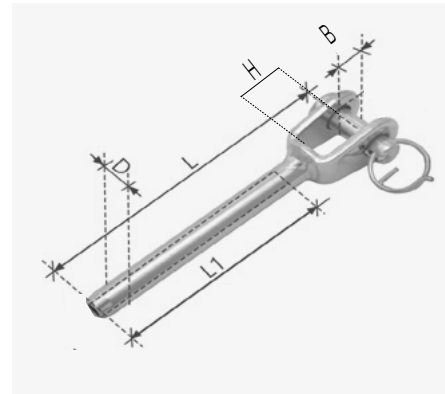
PRODUCT CODE	SIZE (MM/INCH)	C (MM)	D (MM)	L (MM)		B.L. (KGS)
HM-6780-2202	2mm	5.5	5.53	56	2,500	850
HM-6780-2225	2.5mm	5.5	5.53	56	2,500	850
HM-6780-2203	3mm	6.5	6.35	62	2,000	1,000
HM-6780-2718	1/8"	6.5	6.35	62	2,000	1,000
HM-6780-2204	4mm	8.5	7.54	76	1,200	1,350
HM-6780-2731	3/16"	10.5	9.12	87	500	2,500
HM-6780-2205	5mm	10.5	9	87	500	2,500
HM-6780-2306	6mm	13	12.54	107.5	300	4,500
HM-6780-2714	1/4"	13	12.54	107.5	300	4,500
HM-6780-2208	8mm	14.5	16.13	133	125	6,700



Swage Fork


SF7803

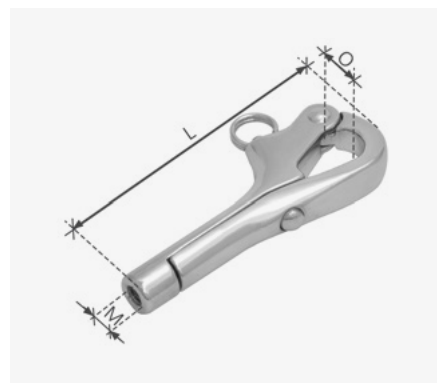
PRODUCT CODE	SIZE (MM/INCH)	B (MM)	D (MM)	H (MM)	L (MM)	L1 (MM)		B.L. (KGS)
HM-6780-3025	2.5mm	5	5.53	11.5	62	35	1,500	700
HM-6780-3003	3mm	5	6.35	12.5	68	38	1,000	1,250
HM-6780-3418	1/8"	5	5.53	11.5	68	38	1,000	700
HM-6780-3718	1/8"	6	6.35	12.5	68	38	1,000	1,250
HM-6780-3904	4mm	6	7.54	12.5	77	45	1,000	1,250
HM-6780-3004	4mm	8	7.54	15.5	77	45	500	1,800
HM-6780-3316	3/16"	9	9.12	15.5	87	51	250	2,650
HM-6780-3005	5mm	10	9.12	15.5	87	51	250	2,650
HM-6780-3006	6mm	12	12.54	27.0	109	64	150	4,000
HM-6780-3908	8mm	12	16.13	28.0	148	80	150	4,000
HM-6780-3008	8mm	14	16.13	28.0	148	80	70	6,500
HM-6780-3010	10mm	16	17.85	33.5	154	90	50	9,000
HM-6780-3012	12mm	19	21.44	39.0	176	105	40	11,000
HM-6780-3114	14mm	25	25.00	55.0	257	140	10	13,000
HM-6780-3116	16mm	25	28.17	55.0	281	160	10	18,000



Lifeline Pelican Hook


S2831

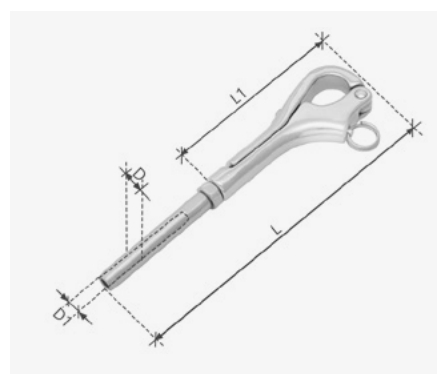
PRODUCT CODE	SIZE (MM)	L (MM)	M (MM)	O (MM)		B.L. (KGS)
HM-6283-1006	6	75	M6	13	400	1,200
HM-6283-1008	8	100	M8	16	200	1,500



Lifeline Pelican Hook with Swage Stud


S2831/S7801

PRODUCT CODE	SIZE (MM)	D (MM)	D1 (MM)	L (MM)	L (MM)	DIA Ø CABLE (MM)		B.L. (KGS)
HM-6283-1413	4mm*M6	7.54	4.3	130	75	4	300	1,000
HM-6283-1414	4mm*M8	7.54	4.3	165	100	4	150	1,000
HM-6283-1514	5mm*M8	9.08	5.3	176	100	5	150	1,500



Lifeline Swivel Screw

S3062/E1

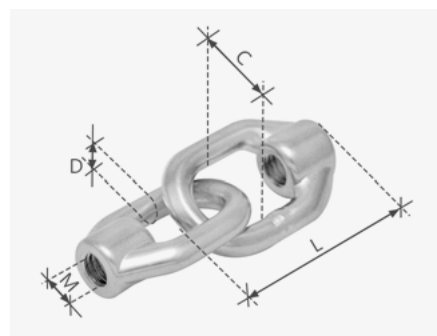
PRODUCT CODE	SIZE (MM/INCH)	C (MM)	ØD (MM)	L (MM)	M (THREAD)	
HM-6306-2108	8	15	6.5	37.5	M8	1,000



Lifeline Swivel Cross Screw

S3062/E2

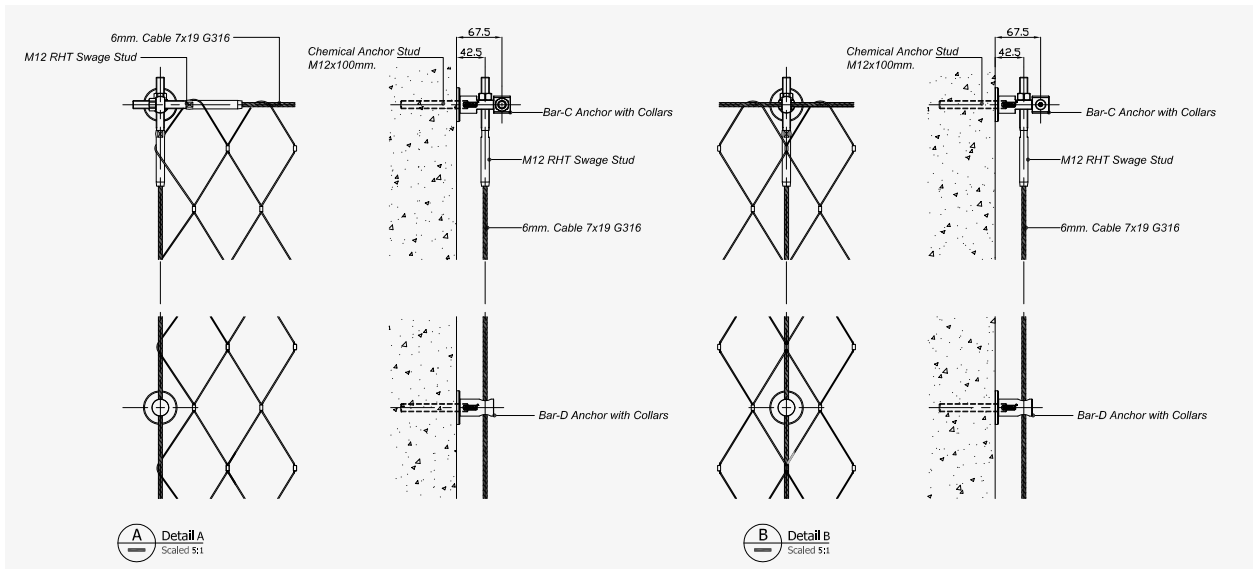
PRODUCT CODE	SIZE (MM/INCH)	C (MM)	M (THREAD)	ØD (MM)	L (MM)	B.L. (KGS)
HM-6306-2208	8	15	M8	6.5	37.5	500





New Products

hamma[®] Standoffs



Flexi-Mesh Commercial Green Wall



Flexi-Mesh Commercial Green Wall

ELECTRO POLISH FINISHED

- Long lasting in the built environment
- Highly resistant

TIMBER, MASONRY FIXING

- M12 chemical set or combo lag thread fixings

DESIGN LAYOUT FLEXIBILITY

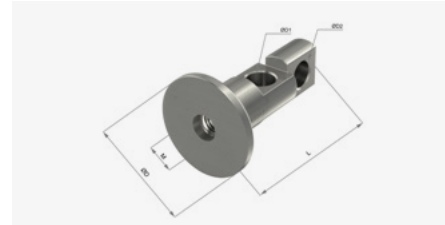
- Vertical
- Horizontal
- Combinations of above
- Diamond

COMMERCIAL AND DOMESTIC APPLICATION

hamma® Standoffs Assemblies

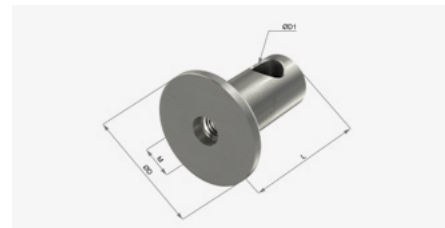
2-HOLE FLAT WITH BASE

PRODUCT CODE	D1 (MM)	D2 (MM)	M	D (MM)	L (MM)
HM-ARC20-2FB	14.0	14.0	M12	50.0	80.0



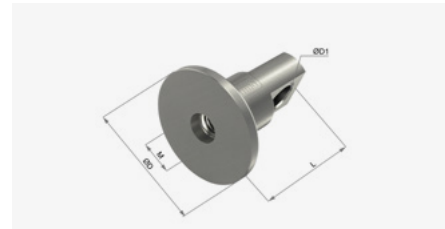
1-HOLE ROUND WITH BASE

PRODUCT CODE	ØD1 (MM)	M	ØD (MM)	L (MM)
HM-ARC20-1RB	14.5	M12	50.0	55.0



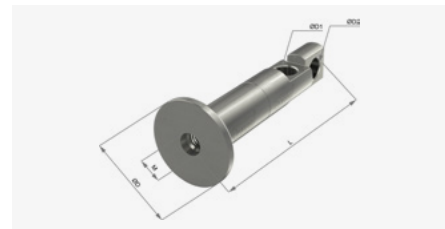
1-HOLE FLAT WITH BASE

PRODUCT CODE	ØD1 (MM)	M	ØD (MM)	L (MM)
HM-ARC20-1HB	14.0	M12	50.0	55.0



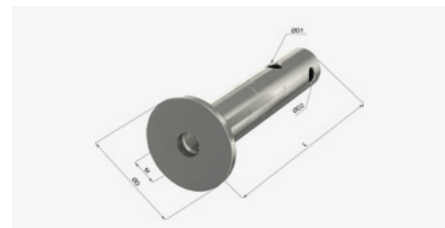
2-HOLE FLAT WITH EXTENSION & BASE

PRODUCT CODE	D1 (MM)	D2 (MM)	M	D (MM)	L (MM)
HM-ARC20-2FEB	14.0	14.0	M12	50.0	130.0



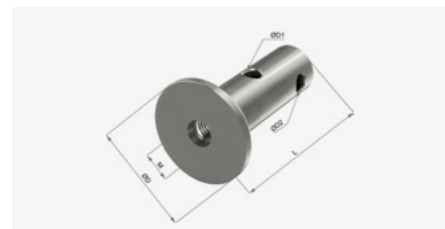
2-HOLE ROUND WITH EXTENSION & BASE

PRODUCT CODE	ØD1 (MM)	ØD2 (MM)	M	ØD (MM)	L (MM)
HM-ARC20-2REB	14.0	14.0	M12	50.0	130.0



2-HOLE ROUND WITH BASE

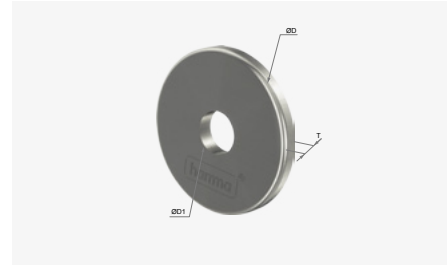
PRODUCT CODE	ØD1 (MM)	ØD2 (MM)	M	ØD (MM)	L (MM)
HM-ARC20-2RB	9.0	9.0	M12	50.0	80.0



hamma[®] Standoffs Components

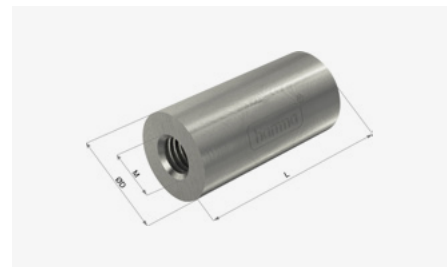
BASE

PRODUCT CODE	D1 (MM)	ØD	T
HM-ARC20-BASE	13.0	50.0	5.0



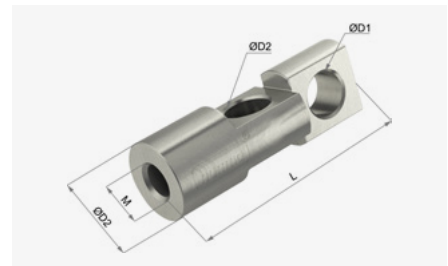
EXTENSION

PRODUCT CODE	M	L (MM)	ØD
HM-ARC20-BAR-A	M12	50.0	25.4



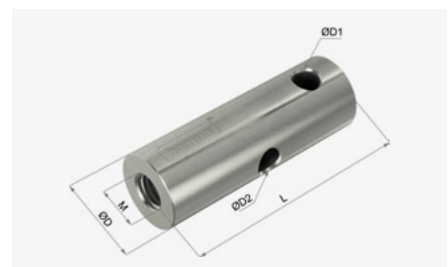
2-HOLE FLAT

PRODUCT CODE	M	L (MM)	ØD	T	ØD1	ØD2
HM-ARC20-BAR-C	M12	75.0	14.0	13.5	14.0	25.4



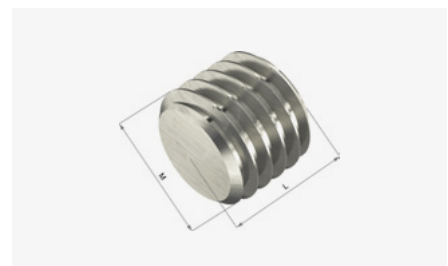
2-HOLE ROUND

PRODUCT CODE	M	L (MM)	ØD	ØD1	ØD2
HM-ARC20-BAR-B	M12	75.0	25.4	9.0	9.0



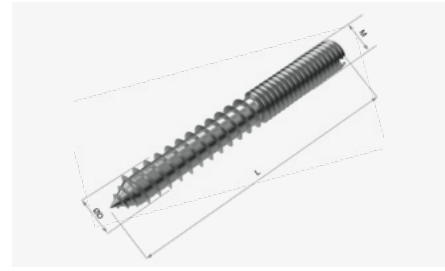
THREAD JOINER

PRODUCT CODE	M	L (MM)
HM-ARC20-THREAD	M12	18.0



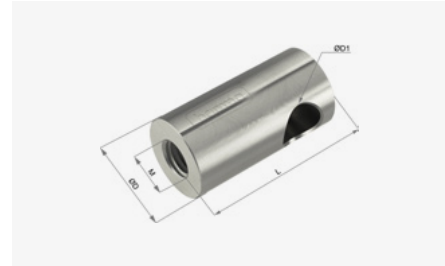
STANDOFF LAG SCREW

PRODUCT CODE	D (MM)	M	L (MM)
HM-ARC20-LAG	10	12x1.75	80



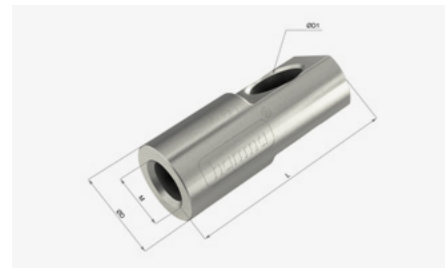
1 HOLE ROUND

PRODUCT CODE	M	L (MM)	ØD	ØD1
HM-ARC20-BAR-D	M12	50.0	25.4	14.5



1 HOLE FLAT

PRODUCT CODE	M	L (MM)	ØD	T	ØD1
HM-ARC20-BAR-E	M12	50.0	25.4	13.5	14.0



Conversions & Codes

CONVERSIONS

IMP	METRIC
1/8	3.17
5/32	3.96
3/16	4.76
7/32	5.55
1/4	6.35
9/32	7.14
5/16	7.93
3/8	9.52
7/16	11.1
1/2	12.7
9/16	14.28
5/8	15.875
3/4	19.05
7/8	22.2
1"	25.4
1 1/8	28.57
1 1/4	31.75

RIGGING SCREWS

THREAD SIZE	CODE
1/8	2
1/4	4
5/16	5
3/8	6
7/16	7
1/2	8
9/16	9
5/8	10
3/4	12
7/8	14
1	16
1 1/8	18
1 1/4	20

Swage Tolerance Guide

WIRE Ø IN / MM	BEFORE SWAGE Ø MM	AFTER SWAGE Ø MM	TOLERANCE
1/16	4.00	3.50	+0.00 -0.12
1.5mm	4.00	3.50	
3/32	5.54	4.82	
2.5mm	5.54	4.82	
1/8	6.35	5.56	
3mm	6.35	5.56	
5/32	7.54	6.35	
4mm	7.54	6.35	
3/16	9.12	7.92	
5mm	9.12	7.92	
7/32	10.84	9.52	+0.00 -0.18
1/4	12.55	11.12	
6mm	12.55	11.12	
9/32	14.30	11.12	
7mm	14.30	12.70	
5/16	16.13	12.70	+0.00 -0.20
8mm	16.13	14.30	
9mm	17.85	14.30	
3/8	17.85	15.87	
10mm	17.85	15.87	
7/16	19.84	17.47	
11mm	19.84	17.47	+0.00 -0.23
12mm	21.44	19.05	
1/2	21.44	19.05	
14mm	25.00	22.22	
9/16	25.00	22.22	+0.00 -0.25
5/8	28.17	25.40	
16mm	28.17	25.40	
3/4	34.52	31.75	+0.00 -0.30
19mm	34.52	31.75	

FORCE AND TENSILE STRENGTH CONVERSIONS

1 kg	=	9.81N	1 N	=	9.81N
1 Mpa	=	1 N/mm ²	1 Pa	=	1 N/m ²

FORCE AND TENSILE STRENGTH CONVERSIONS

1 Lb	=	4.45N	1 Kip	=	4.45N
1 foot	=	0.305m	1 inch	=	25.4mm
1 ft ²	=	0.0929m ²	1 in. ²	=	645mm ²
1 psi	=	6890 Pa	1 ksi	=	689MPa

WIRE CLEANING AND MAINTENANCE GUIDELINES

CLEANING AND MAINTENANCE OF STAINLESS STEEL

The visual performance of stainless steel depends on five interrelated factors:

- Surface finish- smooth and clean and free of crevices
- Grade selection- appropriate and economical for the environment.
- Good design-rain washing of exterior surfaces and uniform draining with no ponding.
- Maintenance program- regular cleaning
- End user expectations

These technical guidelines outline and suggest how to perform and implement a maintenance program for the cleaning of stainless steel, for removing common stains and also some recommendations for remedial action if stains occur beyond regular maintenance or where such maintenance has not been performed.

MAINTENANCE: ROUTINE REMOVAL OF GRIME

Stainless steel holds its appearance best when it is cleaned and washed regularly. When washing it is best to use a soap or detergent or 1% ammonia solution in warm, low chloride water with cloths or soft brushes to avoid the scratching of the surface. Smears will be reduced if the surface is dried afterwards. This treatment best applies to bare stainless steel. Bleaches or abrasive powders or paste's are not recommended. Simply wiping with a damp cloth is not adequate as is smear corrosive deposits without removing them. Routine cleaning prevents stubborn stains building up. As a rule of thumb, if a window nearby is to be cleaned, then so should the stainless.

- Do not use harsh scrubbing tools scourers or chemicals
 - Do not rub with steel wool or scrape with steel tools. Stainless steel wool scouring pads are available for heavy duty work. They will scratch the stainless steel surface but won't leave fragments to go rusty (cross contamination).
 - Do not use scourers or cleaning cloths that have been used on ordinary steel. If using a scourer, test an inconspicuous area first as you could end up with a bright polished spot that doesn't match the rest of the surface. A scourer (such as Scotchbrite™) is simply plastic fibres with abrasive glued to the to the fibres. It will scratch the surface.
 - Do not rub plastic or other scourers across the grain of brushed or linished surfaces as this will form

crevices which will trap contaminants and may cause corrosion.

- Do not use concentrated bleach or hydrochloric acid-based cleaning products.
- Do not drag rough items across a stainless surface. Remember that grit under smooth objects can scratch quite badly.
- Avoid extended contact with salts or carbon steel items especially if wet. All can stain.

REMOVING SPECIFIC STAINING

The following procedures are recommended for getting rid of the most common types of staining.

FINGERPRINTS, OIL & GREASE AND OTHER ORGANIC CONTAMINATION

If mild detergents or strong alkaline formulations don't shift finger marks, you can remove them with a bit of glass cleaner on a soft cloth. Alternatively, you can use a small amount of alcohol, methylated spirits, acetone, mineral turpentine or eucalyptus oil. Then rinse with water then preferably dry.

You can give longer protection to high traffic areas by lightly rubbing with olive oil or baby oil followed by a polish and shine using a soft cloth. Proprietary formulations including lanolin based gels are available and are used extensively by the marine industry.

REMOVING PAINT

Apply paint stripper, taking care to follow all safety instructions. You may need to use a nylon brush or a scourer, but avoid metal scrapers as they will damage the surface.

ADHERENT SCALES AND MORTAR

Cement and mortar splashes should be washed of immediately before they set. Scales from hard water and dried mortar can be removed chemically but not using chemicals that contain hydrochloric acid. Hot 25% acetic acid (vinegar) or warm 10% phosphoric acids are very effective. Following the acid wash, the surface should be neutralised with dilute ammonia or sodium bicarbonate solution, rinsed and dried.

RUST MARKS (TEA STAIN)

The brown surface stains that can occur on stainless steel during the atmospheric exposure are simply cosmetic rust stains. This brown 'tea staining' on stainless steels will not progress to potential structural damage as could occur with a carbon steel structure. As a first step, apply a chalk based, bleach free, cream cleanser with a soft damp cloth and rub gently. If the mark still

won't shift, it might be necessary to use a proprietary stainless steel cleaner. These are usually based on dangerous chemicals (such as phosphoric, oxalic or sulphuric acids) and must be handled with care according to the manufacturer's directions. After cleaning it is important to neutralise the acid with a 1% ammonia or sodium bicarbonate solution, rinse with clean water and wipe dry. If the rust has pitted the surface, it can be repaired with professional polishing and expert advice.

REMEDIAL WORK: CLEANING RUST STAINED FLAT SURFACES

Early action after the onset of tea staining is desirable, before the appearance of the underlying surface is changed. If the surface is pitted then it is probable that it will require mechanical repolishing. After mechanically cleaning off tea staining, it is preferable to passivate the surface by using nitric acid gel or, if the item is portable, by immersion in a nitric acid bath.

For marine exposures, passivation is very strongly recommended. In contrast to other acids, nitric acid is a strong, oxidising acid cleaner that has the added advantage that that it is a passivating agent. The Nickel Institute has suggested that rust may be removed by the use of a 10% phosphoric oxalic acid followed by a 1% ammonia solution neutralisation and then rinse with water.

Alternatively, a mild acid based cleaner such as sulphuric acid (used in some saucepan cleaners) can be used with some care to avoid local changes in appearance.

Never, ever use hydrochloric or sulphuric acids. There are also proprietary chemical cleaning treatments often based on citric acid or other cleaning chelating compounds. Although there agents passivate in the sense of removing free iron and other foreign matter, they do not augment the surface oxide film. Use of liquid acids on site is generally unsatisfactory as contact time is short and the acid may run off and damage adjacent components. Unlike the hydrofluoric acid pickling process used after welding, nitric acid passivation process does not normally change the surface appearance of stainless steel, although it may cloud a mirror polish finish. Careful trials on inconspicuous areas are recommended prior to full scaling. Arcus Wire Group uses electro-polishing and is also used by some contractors to smooth rough edges and both clean and passivate the surface.

AFTERWARDS- PREVENTION OF RECURRENCE

If tea staining has occurred, one or more of the five factors outlined in the introduction have not been considered carefully enough when the wire was designed or manufactured.

To improve the incidence of recurrence you can take the following steps:

- Increase the frequency of maintenance
- Check that the product is suitable for the application
- Replace part with a more suitable product for the application/environment
- Replace the part with a more suitable grade of stainless steel

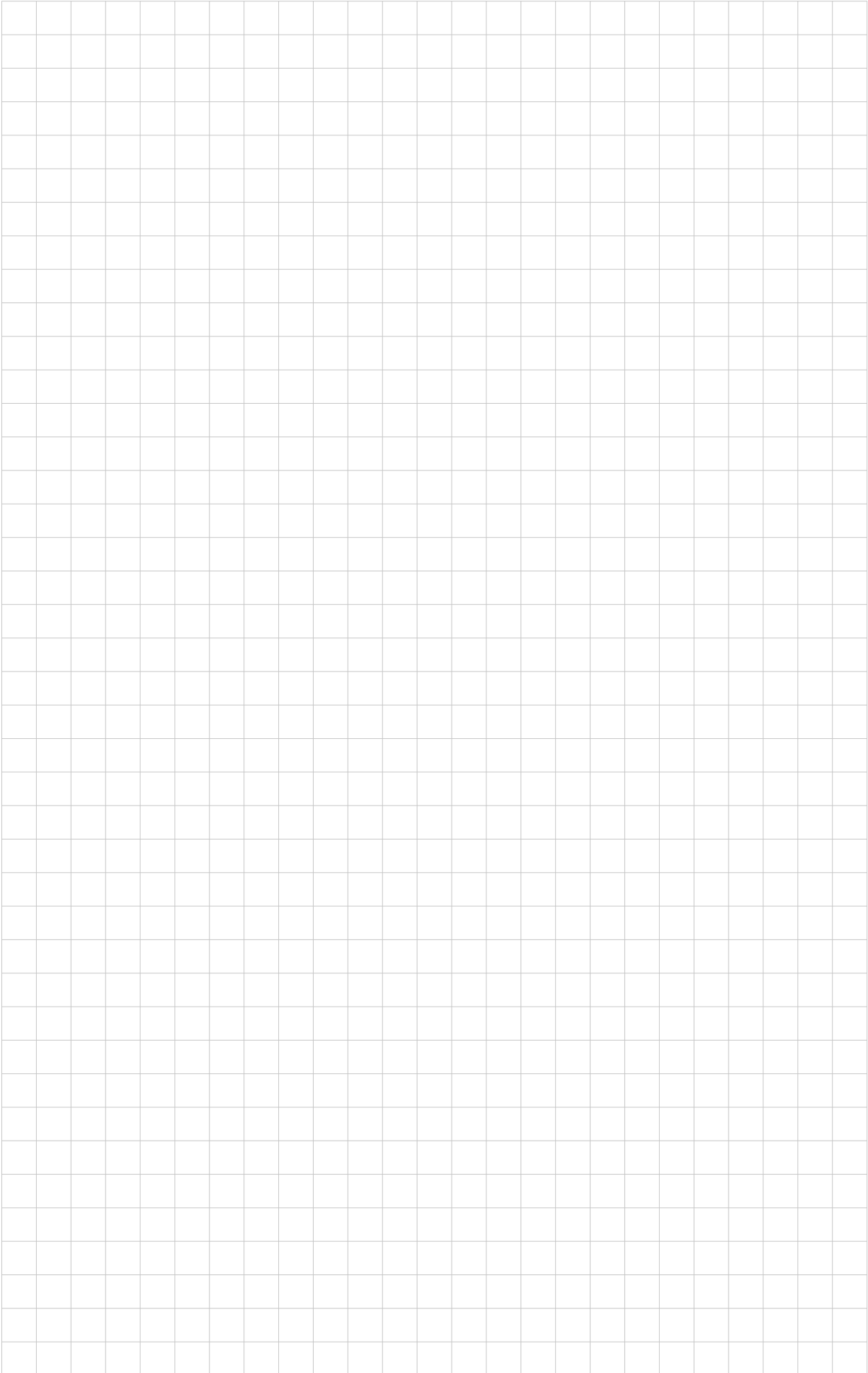
If consideration of these steps indicates an uneconomic result stainless can then be painted. Paint systems using lacquers and polyurethane top coats are available and have been used successfully, but care and understanding is required. Painting the stainless steel is a step that should only be used if the last option as it is irreversible.

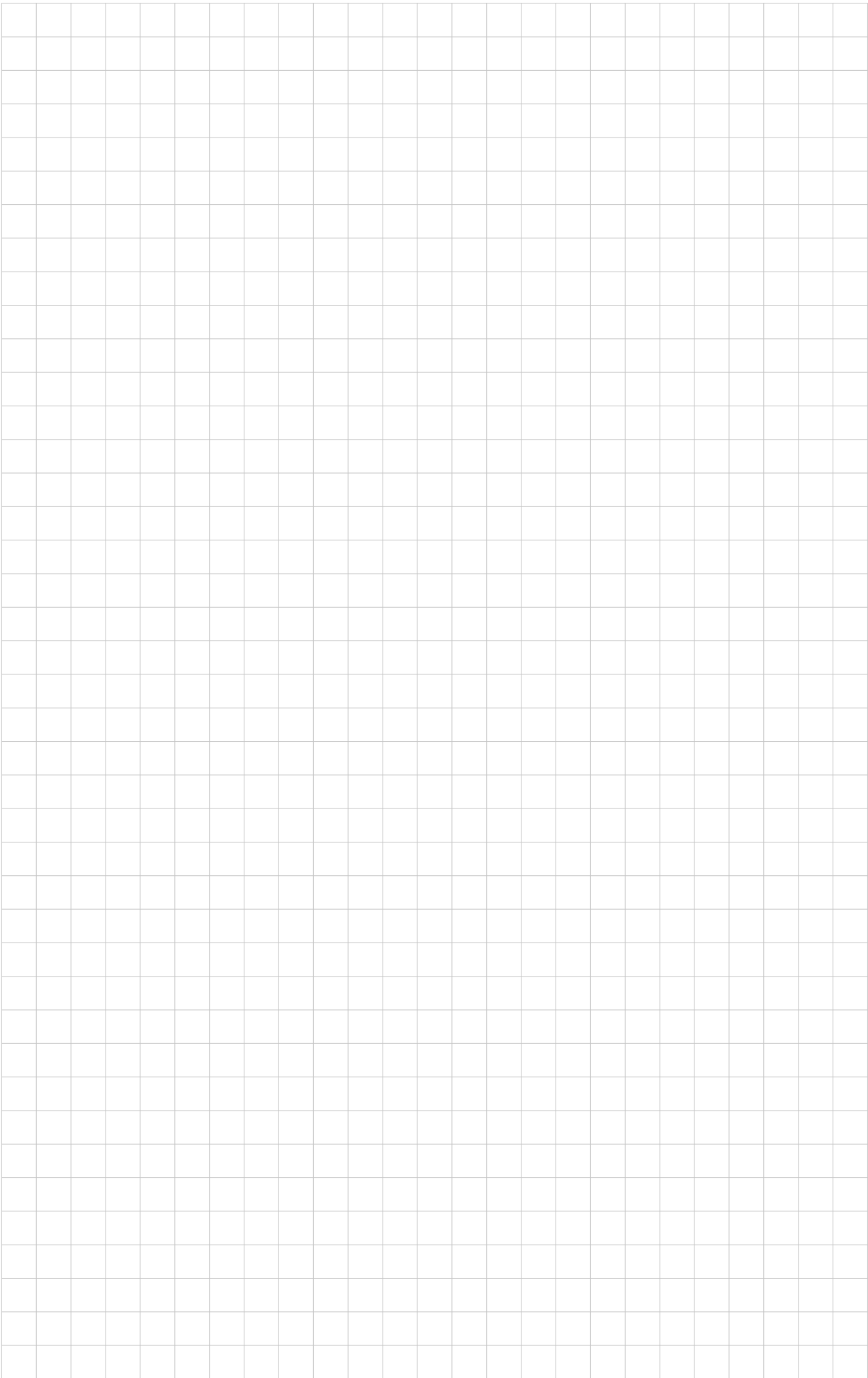
Below is a cleaning schedule that is recommended by the stainless steel industry and also Arcus Wire Group. It is important to note that every environment is different, so if you have any questions about cleaning, care and maintenance of stainless steel make sure you contact Arcus Wire Group and get the right advice.

STAINLESS STEEL CLEANING SCHEDULE

ENVIRONMENT	DISTANCE FROM COASTLINE	CLEANING SCHEDULE
Mild	15km+	Every 12 months
Moderate	1-5km	Every 4-6 months
Marine/Industrial/Urban	500m	Every 3 months
Severe Marine/Industrial/Busy Urban	500m	Weekly

Email all recorded documentation of inspections including photos to sales@arcuswire.com using the project name and date as the reference.







FOR MORE INFORMATION
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SALES@ARCUSWIRE.COM

arcuswire.com