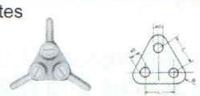
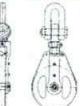
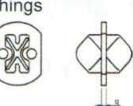
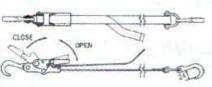
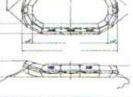


Rigging Equipment & General Deck Items

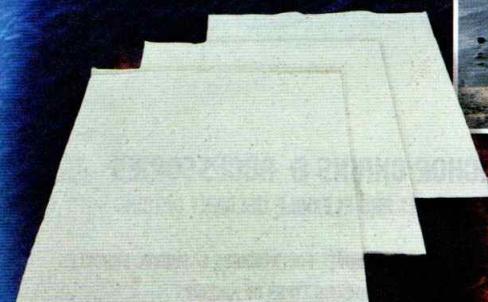
Shackles P. 23-1 ~ 10		Turnbuckles P. 23-10 ~ 12		Wire Clips/ Thimbles/Sockets P. 23-12 ~ 15		Chains/Links P. 23-15 ~ 21	
Cargo Hooks P. 23-21 ~ 22		Delta Plates P. 23-22		Sling Chains & Hooks P. 23-22 ~ 27		Steel Cargo Blocks P. 23-27 ~ 29	
Wood Cargo Blocks P. 23-29 ~ 31		Container Lashings P. 23-31 ~ 34		Car Claspers P. 23-34		Ladders P. 23-34 ~ 42	
Scaffolds/Stages/ Boatswain's Chairs P. 23-42		Cargo Nets/Safety Nets P. 23-42 ~ 43		Cargo Bags/ Sling Belts P. 23-43 ~ 44		Canvas/Canvas Maintenance Items P. 23-44 ~ 46	
Hatch Wedges/ Hatch Cover Tapes P. 23-46 ~ 47		Rat Guards P. 23-47		Riggers' Vises/ Wire Rope Grips P. 23-47		Fenders P. 23-47 ~ 50	
Scupper Plugs P. 23-50		Deck Coverings P. 23-50 ~ 51		Oil Pollution Counter- measures P. 23-51 ~ 53		Tank Check Boats P. 23-53	
Tank Mirrors P. 23-53		Oil Funnels/Oil Sample Cans P. 23-53		Hand Cuffs P. 23-54		Deck Chairs P. 23-54	
Dunnage Bags/ Plywood P. 23-54 ~ 55		Nails P. 23-55		Acryl Sheets P. 23-55		Waste/Rags P. 23-55 ~ 56	
Used Drums/ Used Cement Bags P. 23-56		Sand/Cement/ Blasting Sand P. 23-56 ~ 57		Separation Nets/ Covering Sheets P. 23-57 ~ 58		Hatch Cover Parts P. 23-58 ~ 61	

Requirement of Certificate

Please mention on your request for cargo handling gear such as shackles, turnbuckles, cargo blocks, chains, etc. if you require a certificate, and specify which type of certificate: Class/Factory/ Manufacturer, etc.

Oil Absorbents Eco-Friendly UC mat

エコタイプ油吸着材 ユーシーマット®



Stable in quality



**Environmentally
friendly**

**Made from
natural cotton fiber**

**JPA Eco Mark
certified product**

CODE	Type	Size	Weight	Unit
23 25 37	Sheet	500 x 500 mm	10kg/box	App.100 sht/box
23 25 38		650 x 650 mm	15kg/box	App.100 sht/box
23 25 39	Roll	W 650 x L 25 mtr	5.85kg/roll	1 roll/bag



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website : www.yaho.toyobo.co.jp



1. Shackles

M Class Straight Shackles - SA

with Flat Head Pin

(Ref. JIS B 2801-1996)

Grilletes Rectos Cabeza Cilindrica con Clavija
SA型シャックル 直型卸克



Drop forged carbon steel shackle with flat head pin and split pin hole on the other end. Used for heavy work. Please specify Ungalvanized (Black) or Galvanized shackle is required.

Unit Per Pcs.						
CODE	Type	Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.					
23 37 01	23 37 21	34	50	116	40	7.0
	02	22	36	54	42	8.0
	03	23	38	57	46	9.0
	04	24	40	60	48	10.0
	05	25	42	63	51	11.0
23 37 06	23 37 26	44	66	149	54	12.5
	07	27	46	68	56	13.0
	08	28	48	72	58	14.0
	09	29	50	75	60	16.0
	10	30	55	83	65	18.0
23 37 11	23 37 31	60	90	205	70	20.0
	12	32	65	98	77	25.0
	13	33	70	105	238	31.5
	14	34	75	112	255	35.0
	15	35	80	120	272	40.0
23 37 16	23 37 36	85	128	289	102	45.0
	17	37	90	135	306	50.0

M Class Straight Shackles - SB

with Hexagon Head Bolt

(Ref. JIS B 2801-1996)

Grilletes Rectos Pasador Tornillo con Tuerca
SB型シャックル SB型带六角螺栓的直型卸克



Drop forged carbon steel shackle with a hexagon, metric coarse threaded bolt, which has a split pin hole at the end and a securing nut. Please specify Ungalvanized (Black) or galvanized shackle is required.

Unit Per Pcs.						
CODE	Body Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.					
23 37 41	23 37 66	20	31	M24	68	24
	42	67	22	M24	75	26
	43	68	24	M30	81	3.6
	44	69	26	M30	88	3.6
	45	70	28	M33	95	4.8
23 37 46	23 37 71	30	45	M36	102	36
	47	72	32	M36	109	38
	48	73	34	M39	116	40
	49	74	36	M42	123	42
	50	75	38	M45	129	46
23 37 51	23 37 76	40	60	M48	136	48
	52	77	42	M48	142	51
	53	78	44	M48	149	54
	54	79	46	M48	156	56
	55	80	48	M56	163	58
23 37 56	23 37 81	50	75	M56	170	60
	57	82	55	M64	187	65
	58	83	60	M64	205	70
	59	84	65	M 72x6	221	77
	60	85	70	M 80x6	238	83
23 37 61	23 37 86	75	112	M 80x6	255	90
	62	87	80	M 90x6	272	96
	63	88	85	M 90x6	289	102
	64	89	90	M100x6	306	108

M Class Straight Shackles - SC

with Eye Bolt

(Ref. JIS B 2801-1996)

Grilletes Rectos Cabeza Punzón "Jis" Roscado

SC型シャックル SC型带孔螺栓的直型卸克



SC

A drop forged, carbon steel shackle with an eye bolt which has a metric coarse thread on one end. Please specify Ungalvanized (Black) or Galvanized shackle is required.

CODE		Body Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	Unit Per Pcs.	S.W.L. Ton
Ungalv. (Black)	Galv.							
23 38 01	23 38 16	16	26	M18	54	19	1.6	
	02	17	29	M20	61	21	2.0	
	03	18	31	M24	68	24	2.5	
	04	19	34	M24	75	26	3.15	
	05	20	39	M30	81	30	3.6	
23 38 06	23 38 21	26	41	M30	88	32	4.0	
	07	22	43	M33	95	34	4.8	
	08	23	45	M36	102	36	5.0	
	09	24	48	M36	109	38	6.3	
	10	25	50	M39	116	40	7.0	
23 38 11	23 38 26	36	54	M42	123	42	8.0	
	12	-	57	M45	129	46	9.0	
	13	-	60	M48	136	48	10.0	

M Class Straight Shackles - SD

with Eye Bolt

(Ref. JIS B 2801-1996)

Grilletes Rectos Cabeza Punzón "Jis" Roscado Roscado

SD型シャックル SD型带孔螺栓的直型卸克



SD

A drop forged, carbon steel shackle with an eye bolt which has metric coarse threads at one end. Please specify Ungalvanized (Black) or Galvanized shackles is required.

CODE		Body Diam. mm	Opening mm	Screw Pin Thread	Clear Length mm	Pin Diam. mm	Unit Per Pcs.	S.W.L. Ton
Ungalv. (Black)	Galv.							
-	23 38 41	16	32	M20	53	21	1.0	
-	42	20	40	M24	68	24	1.6	
-	43	22	44	M27	74	27	2.0	
-	44	24	48	M27	81	29	2.5	
-	45	26	52	M30	88	32	3.15	
-	23 38 46	28	56	M33	95	34	3.5	
23 38 31	47	30	60	M36	102	36	4.0	
	48	34	68	M42	115	42	5.0	
	33	49	76	M45	129	45	6.3	
	34	50	80	M48	136	48	7.0	
23 38 35	23 38 51	42	84	M48	142	51	8.0	
	36	52	96	M56	163	58	10.0	
	37	53	104	M56	177	62	12.5	
	38	54	116	M64	198	68	16.0	

Note: Both SC, SD shackles are similar in type, but opening and SWL differ in the same size. Sizes of the opening in SD type are double the body size.

M Class Bow Shackles - BA

with Flat Head Pin

(Ref. JIS B 2801-1996)

Grillete Lira Cabeza Cilindrica con Clavija

BA型シャックル BA型带六角螺栓的弓型卸克



BA

A weldless, drop forged, carbon steel shackle with a flathead pin which has a hole for a securing pin at one end. Please specify Ungalvanized (Black) or Galvanized shackles is required.

Unit Per Pc.

CODE		Oval Body Small Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.					
23 38 61	23 38 81	34	50	156	40	7.0
62	82	36	54	169	42	8.0
63	83	38	57	175	46	9.0
64	84	40	60	188	48	10.0
65	85	42	63	194	51	11.0
23 38 66	23 38 86	44	66	203	54	12.5
67	87	46	68	212	56	13.0
68	88	48	72	219	58	14.0
69	89	50	75	227	60	16.0
70	90	55	83	247	65	18.0
23 38 71	23 38 91	60	90	275	70	20.0
72	92	65	98	299	77	25.0
73	93	70	105	318	83	31.5
74	94	75	112	342	90	35.0
75	95	80	120	366	96	40.0
23 38 76	23 38 96	85	128	389	102	45.0
77	97	90	135	419	108	50.0

M Class Bow Shackles - BB

with Hexagon Head Bolt

(Ref. JIS B 2801-1996)



BB

Grillete Lira Pasador Tornillo con Tuerca
BB 型シャックル BB 型带六角螺栓的弓型卸扣

A weldless, drop forged, carbon steel shackle with a hexagon, metric coarse threaded bolt, nut, and a split pin hole at the other end. Please specify Ungalvanized (Black) or Galvanized shackle is required.

Unit Per Pc.

CODE		Oval Body Small Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.						
23 39 01	23 39 26	20	31	M24	92	24	2.5
02	27	22	34	M24	104	26	3.15
03	28	24	39	M30	111	30	3.6
04	29	26	41	M30	119	32	4.0
05	30	28	43	M33	127	34	4.8
23 39 06	23 39 31	30	45	M36	135	36	5.0
07	32	32	48	M36	148	38	6.3
08	33	34	50	M39	156	40	7.0
09	34	36	54	M42	169	42	8.0
10	35	38	57	M45	175	46	9.0
23 39 11	23 39 36	40	60	M48	188	48	10.0
12	37	42	63	M48	194	51	11.0
13	38	44	66	M48	203	54	12.5
14	39	46	68	M48	212	56	13.0
15	40	48	72	M56	219	58	14.0
23 39 16	23 39 41	50	75	M56	227	60	16.0
17	42	55	83	M64	247	65	18.0
18	43	60	90	M64	275	70	20.0
19	44	65	98	M 72x6	299	77	25.0
20	45	70	105	M 80x6	318	83	31.5
23 39 21	23 39 46	75	112	M 80x6	342	90	35.0
22	47	80	120	M 90x6	366	96	40.0
23	48	85	128	M 90x6	389	102	45.0
24	49	90	135	M100x6	419	108	50.0

M Class Bow Shackles - BC

with Eye Bolt

(Ref. JIS B 2801-1996)



BC

Grillete Lira Cabeza Ponzón "Jis" Perno Roscado
BC 型シャックル BC 型带孔螺栓的弓型卸扣

Weldless, drop forged, carbon steel shackle with an eye bolt which has a metric coarse threaded end. Please specify Ungalvanized (Black) or Galvanized shackle is required.

CODE		Oval Body Small Diam. mm	Opening mm	Screw Pin Thread	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.						
23 39 51	23 39 66	16	26	M18	70	19	1.6
52	67	18	29	M20	84	21	2.0
53	68	20	31	M24	92	24	2.5
54	69	22	34	M24	104	26	3.15
55	70	24	39	M30	111	30	3.6
23 39 56	23 39 71	26	41	M30	119	32	4.0
57	72	28	43	M33	127	34	4.8
58	73	30	45	M36	135	36	5.0
59	74	32	48	M36	148	38	6.3
60	75	34	50	M39	156	40	7.0
23 39 61	23 39 76	36	54	M42	169	42	8.0
62	77	38	57	M45	175	46	9.0
63	78	40	60	M48	188	48	10.0

M Class Bow Shackles - BD

with Eye Bolt

(Ref. JIS B 2801-1996)



BD

Grillete Lira Cabeza Ponzón "Jis" Perno Roscado
BD 型シャックル BD 型带孔螺栓的弓型卸扣

A weldless, drop forged, carbon steel shackle with an eye bolt which has metric coarse threads on the end. Please specify Ungalvanized (Black) shackle or Galvanized shackle is required.



SA

Straight Shackles - SA

with Flat Head Pin

(Ref. JIS B 2801-1977)

Grilletas Rectas Cabeza Cilíndrica con Clavija
SA 型シャックル 不锈钢 SA 型卸扣

Drop forged carbon steel shackle with flat head pin and split pin hole on the other end. Used for heavy work. Please specify Ungalvanized (Black) shackle or Galvanized shackle is required.

CODE		Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.					
23 01 01	23 13 01	34	50	116	40	7.0
02	02	36	54	123	42	8.0
03	03	38	57	129	46	9.0
04	04	40	60	136	48	10.0
05	05	42	63	142	51	11.0
23 01 06	23 13 06	44	66	149	54	12.0
07	07	46	68	156	56	13.0
08	08	48	72	163	58	14.0
09	09	50	75	170	60	15.0
10	10	55	83	187	65	18.0
23 01 11	23 13 11	60	90	205	70	22.0
12	12	65	98	221	77	26.0
13	13	70	105	238	83	30.0
14	14	75	112	255	90	35.0
15	15	80	120	272	96	40.0
23 01 16	23 13 16	85	128	289	102	45.0
17	17	90	135	306	108	50.0

Straight Shackles - SB

with Hexagon Head Bolt
(Ref. JIS B 2801-1977)

Grilletes Rectos Pasador Tornillo con Tuerca
SB 型シャックル SB 型带六角螺栓的直型卸扣

Drop forged carbon steel shackle with a hexagon, metric coarse threaded bolt, which has a split pin hole at the end and a securing nut. Please specify Ungalvanized (Black) shackle or Galvanized shackle is required.

CODE		Unit Per Pc.					
Ungalv. (Black)	Galv.	Body Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	S.W.L. Ton
23 01 21	23 13 21	20	31	M24	68	24	2.5
22	22	22	34	M24	75	26	3.0
23	23	24	39	M30	81	30	3.6
24	24	26	41	M30	88	32	4.2
25	25	28	43	M33	95	34	4.8
23 01 26	23 13 26	30	45	M36	102	36	5.4
27	27	32	48	M36	109	38	6.2
28	28	34	50	M39	116	40	7.0
29	29	36	54	M42	123	42	8.0
30	30	38	57	M45	129	46	9.0
23 01 31	23 13 31	40	60	M48	136	48	10.0
32	32	42	63	M48	142	51	11.0
33	33	44	66	M48	149	54	12.0
34	34	46	68	M48	156	56	13.0
35	35	48	72	M56	163	58	14.0
23 01 36	23 13 36	50	75	M56	170	60	15.0
37	37	55	83	M64	187	65	18.0
38	38	60	90	M64	205	70	22.0
39	39	65	98	M 72x6	221	77	26.0
40	40	70	105	M 80x6	238	83	30.0
23 01 41	23 13 41	75	112	M 80x6	255	90	35.0
42	42	80	120	M 90x6	272	96	40.0
43	43	85	128	M 90x6	289	102	45.0
44	44	90	135	M100x6	306	108	50.0



SB

Straight Shackles - SD

with Eye Bolt
(Ref. JIS B 2801-1977)

Grilletes Recto Cabeza Punzón
SD 型シャックル SD 型带孔螺栓的直型卸扣



SD

A drop forged, carbon steel shackle with an eye bolt which has metric coarse threads at one end. Please specify Ungalvanized (Black) or Galvanized shackles is required.

Unit Per Pc.							
CODE	Body Diam. mm	Opening mm	Screw Pin Thread	Clear Length mm	Pin Diam. mm	S.W.L. Ton	
Ungalv. (Black)	Galv.	Diam. mm					
23 13 71	23 01 71	10	M12	34	12	0.4	
23 01 72	23 13 72	12	M14	40	15	0.6	
	73	14	M16	47	17	0.8	
	74	16	M20	54	20	1.0	
	75	20	M24	68	24	1.5	
23 01 76	23 13 76	22	M27	74	27	2.0	
	77	24	M27	81	29	2.5	
	78	26	M30	88	32	3.0	
	79	28	M33	95	34	3.5	
	80	30	M36	102	36	4.0	
23 01 81	23 13 81	34	M42	115	42	5.0	
	82	38	M45	129	45	6.0	
	83	40	M48	136	48	7.0	
	84	42	M48	142	51	8.0	
	85	48	M56	163	58	10.0	
23 01 86	23 13 86	52	M56	177	62	12.0	
	87	58	M64	198	68	15.0	

Note: Both SC, SD shackles are similar in type, but opening and SWL differ in the same size. Sizes of the opening in SD type are double the body size.

Straight Shackles - SC

with Eye Bolt
(Ref. JIS B 2801-1977)

Grilletes Recto Cabeza Punzón
SC 型シャックル SC 型带孔螺栓的直型卸扣



SC

A drop forged, carbon steel shackle with an eye bolt which has a metric coarse thread on one end. Please specify Ungalvanized (Black) or Galvanized shackle is required.

Unit Per Pc.						
CODE	Body Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	S.W.L. Ton
Ungalv. (Black)	Galv.	Diam. mm				
23 13 51	23 01 51	6	M 8	20	8	0.2
	52	8	M10	27	10	0.35
	53	10	M12	34	12	0.6
23 01 54	23 13 54	12	M14	40	15	0.9
	55	14	M16	47	17	1.2
23 01 56	23 13 56	16	M18	54	19	1.5
	57	18	M20	61	21	2.0
	58	20	M24	68	24	2.5
	59	22	M24	75	26	3.0
	60	24	M30	81	30	3.6
23 01 61	23 13 61	26	M30	88	32	4.2
	62	28	M33	95	34	4.8
	63	30	M36	102	36	5.4
	64	32	M36	109	38	6.2
	65	34	M39	116	40	7.0
23 01 66	23 13 66	36	M42	123	42	8.0
	67	38	M45	129	46	9.0
	68	40	M48	136	48	10.0

Bow Shackles - BA

with Flat Head Pin
(Ref. JIS B 2801-1977)

Grilletes Lira Cabeza cilindrica con Clavija
BA 型シャックル BA 型平头销的弓型卸扣



BA

Unit Per Pc.							
CODE	Oval Body Small Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. Ton		
Ungalv. (Black)	Galv.	Diam. mm					
23 02 01	23 14 01	34	50	156	40	7.0	
	02	36	54	169	42	8.0	
	03	38	57	175	46	9.0	
	04	40	60	188	48	10.0	
	05	42	63	194	51	11.0	
23 02 06	23 14 06	44	66	203	54	12.0	
	07	46	68	212	56	13.0	
	08	48	72	219	58	14.0	
	09	50	75	227	60	15.0	
	10	55	83	247	65	18.0	
23 02 11	23 14 11	60	90	275	70	22.0	
	12	65	98	299	77	26.0	
	13	70	105	318	83	30.0	
	14	75	112	342	90	35.0	
	15	80	120	366	96	40.0	
23 02 16	23 14 16	85	128	389	102	45.0	
	17	90	135	419	108	50.0	

Bow Shackles - BB

with Hexagon Head Bolt
(Ref. JIS B 2801-1977)

Grillete Lira Pasador Tornillo con Tuerca

BB 型シャックル BB 型带六角螺栓的弓型卸扣



BB

A weldless, drop forged, carbon steel shackle with a hexagon, metric coarse threaded bolt, nut, and a split pin hole at the other end. Please specify Ungalvanized (Black) shackle or Galvanized shackle is required.

Unit Per Pcs.

CODE		Oval Body Small Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	S.W.L. Ton	Unit Per Pcs.
Ungalv. (Black)	Galv.							
23 02 21	23 14 21	20	31	M24	92	24	2.5	
22	22	22	34	M24	104	26	3.0	
23	23	24	39	M30	111	30	3.6	
24	24	26	41	M30	119	32	4.2	
25	25	28	43	M33	127	34	4.8	
23 02 26	23 14 26	30	45	M36	135	36	5.4	
27	27	32	48	M36	148	38	6.2	
28	28	34	50	M39	156	40	7.0	
29	29	36	54	M42	169	42	8.0	
30	30	38	57	M45	175	46	9.0	
23 02 31	23 14 31	40	60	M48	188	48	10.0	
32	32	42	63	M48	194	51	11.0	
33	33	44	66	M48	203	54	12.0	
34	34	46	68	M48	212	56	13.0	
35	35	48	72	M56	219	58	14.0	
23 02 36	23 14 36	50	75	M56	227	60	15.0	
37	37	55	83	M64	247	65	18.0	
38	38	60	90	M64	275	70	22.0	
39	39	65	98	M 72x6	299	77	26.0	
40	40	70	105	M 80x6	318	83	30.0	
23 02 41	23 14 41	75	112	M 80x6	342	90	35.0	
42	42	80	120	M 90x6	366	96	40.0	
43	43	85	128	M 90x6	389	102	45.0	
44	44	90	135	M100x6	419	108	50.0	

Bow Shackles - BC

with Eye Bolt

(Ref. JIS B 2801-1977)

Grillete Lira cabeza Punzón "Jis" Perno Roscado

BC型シャックル BC型带孔螺栓的弓型卸扣



BC

Weldless, drop forged, carbon steel shackle with an eye bolt which has a metric coarse threaded end. Please specify Ungalvanized (Black) or Galvanized shackle is required.

Unit Per Pcs.

CODE		Oval Body Small Diam. mm	Opening mm	Screw Pin Thread	Clear Length mm	Pin Diam. mm	S.W.L. Ton	Unit Per Pcs.
Ungalv. (Black)	Galv.							
23 14 51	23 02 51	6	11	M 8	32	8	0.2	
52	52	8	14	M10	40	10	0.35	
53	53	10	17	M12	48	12	0.6	
23 02 54	23 14 54	12	20	M14	55	15	0.9	
55	55	14	24	M16	63	17	1.2	
23 02 56	23 14 56	16	26	M18	70	19	1.5	
57	57	18	29	M20	84	21	2.0	
58	58	20	31	M24	92	24	2.5	
59	59	22	34	M24	104	26	3.0	
60	60	24	39	M30	111	30	3.6	
23 02 61	23 14 61	26	41	M30	119	32	4.2	
62	62	28	43	M33	127	34	4.8	
63	63	30	45	M36	135	36	5.4	
64	64	32	48	M36	148	38	6.2	
65	65	34	50	M39	156	40	7.0	
23 02 66	23 14 66	36	54	M42	169	42	8.0	
67	67	38	57	M45	175	46	9.0	
68	68	40	60	M48	188	48	10.0	

Bow Shackles - BD

with Eye Bolt

(Ref. JIS B 2801-1977)

Grillete Lira cabeza Punzón "Jis" Perno Roscado

BD型シャックル BD型带孔螺栓的弓型卸扣



BD

A weldless, drop forged, carbon steel shackle with an eye bolt which has metric coarse threads on the end. Please specify Ungalvanized (Black) shackle or Galvanized shackle is required.

Unit Per Pcs.

CODE		Oval Body Small Diam. mm	Opening mm	Screw Pin Thread	Clear Length mm	Pin Diam. mm	S.W.L. Ton	Unit Per Pcs.
Ungalv. (Black)	Galv.							
23 14 71	23 02 71	20	31	M 8	32	8	0.15	
72	72	22	34	M10	40	10	0.3	
73	73	24	39	M12	48	12	0.5	
23 02 74	23 14 74	24	41	M14	55	15	0.7	
75	75	26	43	M16	63	17	0.9	
23 02 76	23 14 76	28	46	M20	70	20	1.2	
77	77	30	50	M20	89	21	1.3	
78	78	32	57	M24	100	24	1.8	

Note: Both BC and BD shackles are similar in type, but the opening and SWL differ in the same size. Sizes of the openings in the BD types are double the smaller diams. of the oval body.

Straight Shackles - SE

with Eye Bolt

Grillete Recto Cabeza Punzón

旧 JIS-SE 型シャックル SE 型带孔螺栓的直型卸扣



Drop forged steel shackle with eye bolt. Please specify whether you require galvanized or ungalvanized shackles.

Unit Per Pcs.

CODE		Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. ton	Unit Per Pcs.
Black							
23 03 01	22	34	75	26	3		
02	24	39	81	30	3.6		
03	26	41	88	32	4.2		
04	28	43	95	34	4.8		
05	30	45	102	36	5.4		
23 03 06		32	48	109	38	6.2	
07	34	50	116	40	7		
08	36	54	123	42	8		
09	38	57	129	46	9		
10	40	60	136	48	10		
Galvanized							
23 03 11	22	34	75	26	3		
12	24	39	81	30	3.6		
13	26	41	88	32	4.2		
14	28	43	95	34	4.8		
15	30	45	102	36	5.4		
23 03 16	32	48	109	38	6.2		
17	34	50	116	40	7		
18	36	54	123	42	8		
19	38	57	129	46	9		
20	40	60	136	48	10		

Screw Pin "D" Shackles

Grilletas Recto Cabeza Punzón "D"

D型雜用シャックル "D"型螺柱銷卸扣(黑的)



CODE		Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. ton	Unit Per Pcs.
Black							
23 03 21	6	12	22	6.5	0.138		
22	8	17	27	8.5	0.216		
23	9	18	31	10	0.284		
24	12	24	40	13	0.468		
25	16	30	50	17	0.8		

(to be continued)

CODE	Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. ton	Unit Per Pcs.
23 03 26	19	36	64	20	1.0	
27	22	43	74	23	1.5	
28	25	47	82	27	2.0	
29	28	55	95	30	2.5	
30	32	58	103	34	3.2	
23 03 31	38	73	125	40	4.2	

Galvanized

23 03 41	6	12	22	6.5	0.138
42	8	17	27	8.5	0.216
43	9	18	31	10	0.284
44	12	24	40	13	0.468
45	16	30	50	17	0.8
23 03 46	19	36	64	20	1.0
47	22	43	74	23	1.5
48	25	47	82	27	2.0
49	28	55	95	30	2.5
50	32	58	103	34	3.2
23 03 51	38	73	125	40	4.2

Screw Pin Countersink Shackles

(Carver Shackles)

Grilletes Recto Cabeza Ranura

沈みシャックル 沈头螺柱銷卸扣 (黒的)



Made of drop forged steel with countersink and slotted pins. The shackle pins are also galvanized above the threading. When ordering, please specify whether galvanized or black shackles are required.

Unit Per Pcs.

CODE	Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. ton	Unit Per Pcs.
Black						
23 03 63	9	18	32	9	0.3	
64	12	26	40	12	0.5	
65	16	32	52	16	0.8	
66	19	38	64	19	1.0	
67	22	44	75	22	1.5	
Galvanized						
23 03 83	9	18	32	9	0.3	
84	12	26	40	12	0.5	
85	16	32	52	16	0.8	
86	19	38	64	19	1.0	
87	22	44	75	22	1.5	
23 03 88	25	50	83	25	2.0	
89	28	43	95	34	4.8	
90	32	48	109	38	6.2	
91	38	57	129	46	9.0	

Roller Shackles

Grillete con Rodillo

ローラーシャックル 滚轮卸扣

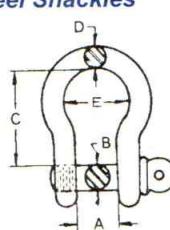


Drop forged roller shackle with a hexagon bolt pin and nut. A cotter pin hole is located at the end of the pin thread to prevent the nut from loosening and coming off. Commonly used as lashing equipment for lumber vessels and log carriers.

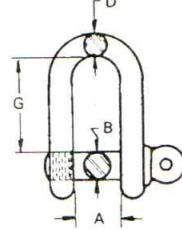
Unit Per Pcs.

CODE	Body Diam. mm	Roller Width x Diam. mm	S.W.L. ton
23 04 01	25	44 x 63	3
03	32	60 x 85	5

U.S. Federal Specification (RR-C-271b) Mild Steel Shackles



Screw Pin Anchor



Screw Pin Chain

Nominal Size	Pin Dia (D)	Inside Length (C)	Inside Length (G)	Inside Width (A)	SWL Short Ton
1/4	5/16	1-1/8	7/8	15/32	0.2
5/16	3/8	1-1/4	1	17/32	0.3
3/8	7/16	1-7/16	1-1/4	21/32	0.4
7/16	1/2	1-11/16	1-1/2	23/32	0.6
1/2	5/8	1-15/16	1-11/16	13/16	0.9
9/16	5/8	2-1/8	1-13/16	7/8	1.2
5/8	3/4	2-1/2	2	1-1/16	1.4
3/4	7/8	3	2-5/16	1-1/4	2.0
7/8	1	3-1/4	2-7/8	1-7/16	2.7
1	1-1/8	3-3/4	3-1/4	1-11/16	3.6
1-1/8	1-1/4	4-1/4	3-1/2	1-13/16	4.9
1-1/4	1-3/8	4-1/2	3-11/16	2	6.3
1-3/8	1-1/2	5-1/4	4-1/2	2-1/4	7.6
1-1/2	1-5/8	5-3/4	5	2-3/8	9.4
1-5/8	1-3/4	6-1/4	5-1/4	2-5/8	11
1-3/4	2	7	5-7/8	2-7/8	13
2	2-1/4	7-3/4	6-3/4	3-1/4	16
2-1/4	2-1/2	8-3/4	7-1/8	3-3/4	18
2-1/2	2-3/4	10	8	4-1/8	24

Stainless Steel Screw Pin "D" Shackles

Grillete con Perno Roscado Tipo D de Acero Inoxidable

ステンレス雑用シャックル 不锈钢 D 型卸克



Made of stainless steel which is suitable for using in corrosive surroundings.

Unit Per Pcs.

CODE	Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. ton
23 35 01	7	14	23	7	0.17
02	8	17	29	8	0.23
03	9	18	32	9	0.3
04	12	24	40	12	0.5
05	13	26	40	12.6	0.65
23 35 06	16	32	52	16	0.8
07	19	38	64	19	1.0
08	22	44	75	22	1.5
09	25	50	83	25	2.0
10	28	56	97	28	2.5
23 35 11	32	64	102	32	3.2
12	38	76	125	38	4.5

Stainless Steel Straight Shackles-SB with Hexagon Head Bolt (Ref. JIS B 2801-1977)

Grillete con Perno Cabeza Hexagonal Tipo de Acero Inoxidable

ステンレス SB 型シャックル 不锈钢 SB 型卸克



Stainless steel shackle with a hexagon, metric coarse threaded bolt, which has a split pin hole at the end and a securing nut.

CODE	Body Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Unit Per Pcs.	
					Pin Diam. mm	S.W.L. ton
23 35 21	12	20	M14	40	15	1.0
22	14	24	M16	47	17	1.25
23	16	26	M18	54	19	1.6
24	18	29	M20	61	21	2.0
25	20	31	M24	68	24	2.5
23 35 26	22	34	M24	75	26	3.15
27	24	39	M30	81	30	3.6
28	26	41	M30	88	32	4.0
29	28	43	M33	95	34	4.8
30	30	45	M36	102	36	5.0
23 35 31	32	48	M36	109	38	6.2
32	34	50	M39	116	40	7.0
33	36	54	M42	123	42	8.0
34	38	57	M45	129	46	9.0
35	40	60	M48	136	48	10.0

23 35 76	20	31	M24	68	24	2.5
77	22	34	M24	75	26	3.15
78	24	39	M30	81	30	3.6
79	26	41	M30	88	32	4.0

Stainless Steel Bow Shackles-BC

with Eye Bolt

(Ref. JIS B 2801-1977)



Grillete con Perno de Ojo Tipo BC de Acero Inoxidable

ステンレス BC 型シャックル 不锈钢 BC 型卸扣

Stainless steel shackle with an eye bolt which has a metric coarse threaded end.

Unit Per Pcs.

CODE	Oval Body Small Diam. mm	Opening mm	Screw Pin Thread	Clear Length mm	Pin Diam. mm	S.W.L. ton
23 36 01	6	11	M 8	20	8	0.2
02	8	14	M10	27	10	0.32
03	10	17	M12	34	12	0.6
04	12	20	M14	40	15	1.0
05	14	24	M16	47	17	1.25
23 36 06	16	26	M18	54	19	1.6
07	18	29	M20	61	21	2.0
08	20	31	M24	68	24	2.5
09	22	34	M24	75	26	3.15
10	24	39	M30	81	30	3.6
23 36 11	26	41	M30	88	32	4.0

Green Pins Standard Shackles

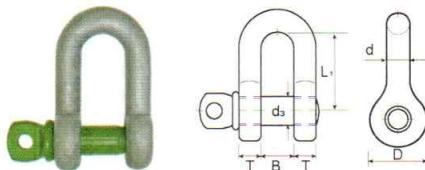
Grilletas estándar Green Pin

グリーンピン標準シャックル Green Pin® 标准卸扣

High quality, high tensile "Green Pin" shackle can be identified by the green coloured pin and the marking on the shackle body and pin. Green pin shackles meet all relevant requirements of the Machinery Directive 2006/42/EC and all latest amendments.

Dee Shackles with Screw Collar Pin

G-4151



Material: Body and pin high tensile steel, Grade 6, quenched and tempered

Safety Factor: MBL equals 6 x WLL (Working Load Limit)

Standard: EN 13889 and meets performance requirements of US Fed. Spec. RR-C-271 Type IVB Class 2, Grade A

Finish: Hot dipped galvanized

Temperature Range: -20°C to + 200°C

Certification: At no extra charges this product can be supplied with a works certificate, material certificate, manufacturer test certificate, EC Declaration of Conformity and all shackles starting from 2 t can be supplied with DNV 2.7-1 certificate.

(to be continued)

Stainless Steel Straight Shackles-SC

with Eye Bolt

(Ref. JIS B 2801-1977)



Grillete con Perno de Ojo Tipo SC de Acero Inoxidable

ステンレス SC 型シャックル 不锈钢 SC 型卸扣

Made of stainless steel which is suitable for using in corrosive surroundings.

Unit Per Pcs.

CODE	Body Diam. mm	Opening mm	Clear Length mm	Pin Diam. mm	S.W.L. ton
23 35 51	6	11	20	8	0.2
52	8	14	27	10	0.32
53	10	17	34	12	0.6
54	12	20	40	15	1.0
55	14	24	47	17	1.25
23 35 56	16	26	54	19	1.6
57	18	29	61	21	2.0
58	20	31	68	24	2.5
59	22	34	75	26	3.15
60	24	39	81	30	3.6
23 35 61	26	41	88	32	4.0
62	28	43	95	34	4.8
63	30	45	102	36	5.0
64	32	48	109	38	6.2
65	34	50	116	40	7.0
23 35 66	36	54	123	42	8.0
67	38	57	129	46	9.0
68	40	60	136	48	10.0

Stainless Steel Bow Shackles-BB

with Hexagon Head Bolt

(Ref. JIS B 2801-1977)



Grillete con Perno de Cabeza Hexagonal Tipo BB

de Acero Inoxidable

ステンレス BB 型シャックル 不锈钢 BB 型卸扣

A stainless steel shackle with a hexagon, metric coarse threaded bolt, nut, and a split pin hole at the other end.

Unit Per Pcs.

CODE	Oval Body Small Diam. mm	Opening mm	Thread Bolt and Nut	Clear Length mm	Pin Diam. mm	S.W.L. ton
23 35 71	10	17	M12	34	12	0.6
72	12	20	M14	40	15	1.0
73	14	24	M16	47	17	1.25
74	16	26	M18	54	19	1.6
75	18	29	M20	61	21	2.0

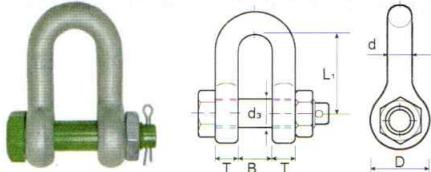
Unit Per Pcs.

CODE	Diameter			Width Inside	Length Inside	Working Load Limit	Weight
	Body	Pin	Eye				
	d mm	d3 mm	D mm				
23 45 01	5	6	12	8	22	0.33	0.02
02	7	8	16	10	26	0.5	0.05
03	9	10	20	12	31	0.75	0.09
04	10	11	22	15	37	1	0.14
05	11	13	26	17	43	1.5	0.19
23 45 06	13	16	34	20	51	2	0.32
07	16	19	39	25	60	3.25	0.54
08	19	22	46	28	70	4.75	0.87
09	22	25	52	33	85	6.5	1.34
10	25	28	59	40	99	8.5	2.08
23 45 11	28	32	66	44	106	9.5	2.77
12	32	35	72	47	111	12	3.72
13	35	38	80	53	134	13.5	5.14
14	38	42	88	56	148	17	6.85
15	45	50	103	70	174	25	11.5
23 45 16	50	57	111	78	199	35	16.9
17	57	65	130	90	222	42.5	24.7
18	65	70	145	100	238	55	32.7

Name of Mfr.: Van Beest BV

Dee Shackles with Safety Bolt

G-4153



Material: Body and pin high tensile steel, Grade 6, quenched and tempered

Safety Factor: MBL equals 6 x WLL (Working Load Limit)

Standard: EN 13889 and meets performance requirements of US Fed. Spec. RR-C-271 Type IVB Class 3, Grade A

Finish: Hot dipped galvanized

Temperature Range: -20°C to + 200°C

Certification: At no extra charges this product can be supplied with a works certificate, material certificate, manufacturer test certificate, EC Declaration of Conformity and all shackles starting from 2 t can be supplied with DNV 2.7-1 certificate.

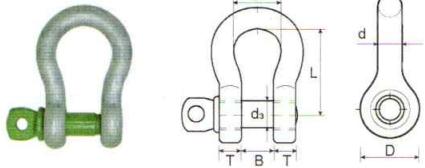
Unit Per Pcs.

CODE	Diameter			Width Inside	Length Inside	Working Load Limit	Weight
	Body	Pin	Eye				
	d mm	d3 mm	D mm				
23 45 21	13	16	34	20	51	2	0.39
22	16	19	39	25	60	3.25	0.67
23	19	22	46	28	70	4.75	1.08
24	22	25	52	33	85	6.5	1.66
25	25	28	59	40	99	8.5	2.46
23 45 26	28	32	66	44	106	9.5	3.4
27	32	35	72	47	111	12	4.51
28	35	38	80	53	134	13.5	6.1
29	38	42	88	56	148	17	7.63
30	45	50	103	70	174	25	13.3
23 45 31	50	57	111	78	199	35	18.6
32	57	65	130	90	222	42.5	26
33	65	70	145	100	238	55	35.4
34	75	83	162	122	270	85	53

Name of Mfr.: Van Beest BV

Bow Shackles with Screw Collar Pin

G-4161



Material: Body and pin high tensile steel, Grade 6, quenched and tempered

Safety Factor: MBL equals 6 x WLL (Working Load Limit)

Standard: EN 13889 and meets performance requirements of US Fed. Spec. RR-C-271 Type IVA Class 2, Grade A

Finish: Hot dipped galvanized

Temperature Range: -20°C to + 200°C

Certification: At no extra charges this product can be supplied with a works certificate, material certificate, manufacturer test certificate, EC Declaration of Conformity and all shackles starting from 2 t can be supplied with DNV 2.7-1 certificate.

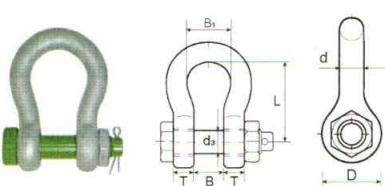
Unit Per Pcs.

CODE	Diameter			Width Inside	Length Inside	Width Bow	Working Load Limit	Weight
	Body	Pin	Eye					
	d mm	d3 mm	D mm					
23 45 41	5	6	12	8	25	16	0.33	0.02
42	7	8	16	10	33	20	0.5	0.05
43	9	10	20	12	37	22	0.75	0.1
44	10	11	22	15	42	26	1	0.14
45	11	13	26	17	49	29	1.5	0.19
23 45 46	13	16	34	20	59	32	2	0.36
47	16	19	39	25	73	43	3.25	0.63
48	19	22	46	28	87	51	4.75	1.01
49	22	25	52	33	95	58	6.5	1.5
50	25	28	59	40	109	68	8.5	2.21
23 45 51	28	32	66	44	124	75	9.5	3.16
52	32	35	72	47	132	83	12	4.31
53	35	38	80	53	152	92	13.5	5.55
54	38	42	88	56	167	99	17	7.43
55	45	50	103	70	203	126	25	12.9
23 45 56	50	57	111	78	225	138	35	18.2
57	57	65	130	90	254	160	42.5	26.3
58	65	69	145	100	294	180	55	37.6

Name of Mfr.: Van Beest BV

Bow Shackles with Safety Bolt

G-4163



Material: Body and pin high tensile steel, Grade 6, quenched and tempered

Safety Factor: MBL equals 6 x WLL (Working Load Limit)

Standard: EN 13889 and meets performance requirements of US Fed. Spec. RR-C-271 Type IVA Class 3, Grade A

Finish: Hot dipped galvanized

Temperature Range: -20°C to + 200°C

Certification: At no extra charges this product can be supplied with a works certificate, material certificate, manufacturer test certificate, EC Declaration of Conformity and all shackles starting from 2 t can be supplied with DNV 2.7-1 certificate.

Unit Per Pcs.

CODE	Diameter							Working Load Limit	Weight	Unit Per Pcs.	
	Body		Pin	Eye	Width Inside	Length Inside	Width Bow			Unit Per Pcs.	
	d mm	d3 mm	D mm	B mm	L mm	B1 mm	Ton	kg			
23 45 61	7	8	16	10	33	20	0.5	0.06			
62	9	10	20	12	37	22	0.75	0.11			
63	10	11	22	15	42	26	1	0.16			
64	11	13	26	17	49	29	1.5	0.22			
65	13	16	34	20	59	32	2	0.42			
23 45 66	16	19	39	25	73	43	3.25	0.74			
67	19	22	46	28	87	51	4.75	1.18			
68	22	25	52	33	95	58	6.5	1.77			
69	25	28	59	40	109	68	8.5	2.58			
70	28	32	66	44	124	75	9.5	3.66			
23 45 71	32	35	72	47	132	83	12	4.91			
72	35	38	80	53	152	92	13.5	6.54			
73	38	42	88	56	167	99	17	8.19			
74	45	50	103	70	203	126	25	14.3			
75	50	57	111	78	225	138	35	19.9			
23 45 76	57	65	130	90	254	160	42.5	28.4			
77	65	70	145	100	295	180	55	39.6			
78	75	83	162	122	370	190	85	62			

Name of Mfr.: Van Beest BV

Green Pin Sling Shackles

Bow Shackles with Safety Bolt

Grillettes deeslings Green Pin

グリーンピンスリングシャックル Green Pin® 吊索卸扣

These shackles cover a range from WLL 7 tons up to 1,500 tons. Compared to the standard Green Pin shackles they have an increased bow radius for saving slings and improving wearability. These shackles are ideal for use with wire rope and synthetic sling applications.

Material: Body and pin alloy steel, Grade 8, quenched and tempered

Safety Factor: MBL equals 5 × WLL

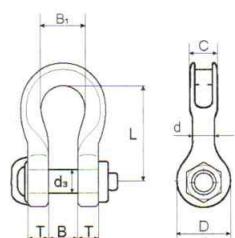
Finish: Shackle bow painted silver, pin painted green

Temperature Range: -20°C to + 200°C

Certification: Can be supplied with a works certificate, material certificate, manufacturer test certificate, EC declaration of Conformity and all shackles from 75 ton are supplied with a Lloyd's Register of Shipping Certificate on proof load. An MPI and/or US inspection certificate can be supplied on request.

Note: ± 5% forging tolerance on inside width and length

P-6033



CODE	Size mm					WLL	Weight
	Body Diam.	Pin Diam.	Eye Diam.	Inside Width	Inside Length		
	d	d3	D	B	L	ton	kg
23 45 79	22	22	46	28	107	7	2
80	28	28	61	40	134	12.5	4
99	35	35	69	50	165	18	7
81	40	42	90	65	186	30	13
82	55	51	109	80	225	40	21
23 45 83	60	57	115	85	268	55	30
84	68	70	125	105	325	75	48
85	85	80	154	130	406	125	92
86	94	95	178	140	439	150	140
87	110	105	198	150	534	200	205
23 45 88	126	120	226	170	602	250	264
89	135	134	245	185	668	300	360
90	160	160	293	220	656	400	580
91	170	180	328	250	771	500	780
92	190	200	347	275	841	600	980
23 45 93	200	215	392	300	859	700	1,360
94	218	230	420	325	966	800	1,430
95	242	255	466	350	979	900	1,650
96	260	270	490	380	986	1,000	2,120
97	285	300	510	430	1,081	1,250	3,700
23 45 98	285	320	550	460	1,110	1,500	4,000

Name of Mfr.: Van Beest BV

Forged Screw Pin Shackles

G-210, G-209

Grillettes Forjados 鍛造スクリューピンシャックル 鍛造U形鉤



G-210, Straight Type



G-209 Bow Type

Straight Shackle

Unit Per Pcs.

CODE	Nominal Shackle Size Inches	Safe Working Load (t)	Weight (kg)
G-210 (Galv)			
23 41 01	1/4	0.5	0.05
02	5/16	0.75	0.08
03	3/8	1	0.13
04	7/16	1.5	0.20
05	1/2	2	0.27
23 41 06	5/8	3.25	0.57
07	3/4	4.75	1.20
08	7/8	6.5	1.43
09	1	8.5	2.15
10	1-1/8	9.5	3.06
23 41 11	1-1/4	12	4.11
12	1-3/8	13.5	5.28
13	1-1/2	17	7.23
14	1-3/4	25	12.10
15	2	35	19.20
23 41 30	2-1/2	55	32.50

Name of Mfr.: Crosby®

Bow Shackle

Unit Per Pcs.

CODE	Nominal Shackle Size Inches	Safe Working Load (t)	Weight (kg)
G-209 (Galv)			
23 41 61	3/16	0.33	0.03
62	1/4	0.5	0.05
63	5/16	0.75	0.09
64	3/8	1	0.14
65	7/16	1.5	0.17

(to be continued)

Unit Per Pcs.			
CODE	Nominal Shackle Size Inches	Safe Working Load (t)	Weight (kg)
G-209 (Galv)			
23 41 66	1/2	2	0.33
67	5/8	3.25	0.62
68	3/4	4.75	1.07
69	7/8	6.5	1.64
70	1	8.5	2.28
23 41 71	1-1/8	9.5	3.36
72	1-1/4	12	4.31
73	1-3/8	13.5	6.14
74	1-1/2	17	7.80
75	1-3/4	25	12.60
23 41 91	2	35	20.40
92	2-1/2	55	38.90

Name of Mfr.: Crosby®

Bolt Type Anchor & Chain Shackles

G-2130, G-2150

Grilletes Tipo Perno con Pasador y de Ancla

ボルト型アンカー及びチェインシャックル 鍛造 U 形鍵鉤 (帯螺帽)



G-2130 Anchor Shackle



G-2150 Chain Shackle

Anchor Shackle

Unit Per Pcs.

CODE	Nominal Shackle Size Inches	Safe Working Load (t)	Weight (kg)
G-2130 (Galv)			
23 42 74	3/16	0.33	0.03
75	1/4	0.5	0.05
88	5/16	0.75	0.10
89	3/8	1	0.15
90	7/16	1.5	0.22
23 42 31	1/2	2	0.36
32	5/8	3.25	0.62
33	3/4	4.75	1.23
34	7/8	6.5	1.79
35	1	8.5	2.28
23 42 36	1-1/8	9.5	3.75
37	1-1/4	12	5.31
38	1-3/8	13.5	7.18
39	1-1/2	17	8.62
40	1-3/4	25	15.40
23 42 41	2	35	23.70
42	2-1/2	55	44.60
43	3	85	70
44	3-1/2	120	120
45	4	150	153

Name of Mfr.: Crosby®

Chain Shackle

Unit Per Pcs.

CODE	Nominal Shackle Size Inches	Safe Working Load (t)	Weight (kg)
G-2150 (Galv)			
23 42 91	1/4	0.5	0.06
92	5/16	0.75	0.10
93	3/8	1	0.15
94	7/16	1.5	0.22
61	1/2	2	0.34

(to be continued)

Unit Per Pcs.			
23 42 62	5/8	3.25	0.67
63	3/4	4.75	1.14
64	7/8	6.5	1.74
65	1	8.5	2.52
66	1-1/8	9.5	3.45
23 42 67	1-1/4	12	4.90
68	1-3/8	13.5	6.24
69	1-1/2	17	7.72
70	1-3/4	25	14.20
71	2	35	21.20
23 42 72	2-1/2	55	38.60
73	3	85	56

Name of Mfr.: Crosby®

Anchor Shackles

Alloy Bolt Type G-2140

Grillete Lira de Ancla Crosby (Acero Forjado)

バウシャックル合金ボルト止タイプ

鍛造 U 形鍵鉤 (帯合金螺帽)



G-2140

Meets the performance requirements of Federal Specification RR-C-271G, Type IVA, Grade B, Class 3. Quenched and tempered alloy bows and alloy bolts shackles.

Sizes from 3/8 to 5 are made from forged alloy steel, and sizes 6 & 7 are made from cast alloy steel.

Unit Per Pcs.

CODE	Nominal Shackle Size Inches	Working Load Limit(t)	Weight Each (kg)
G-2140 (Galv)			
23 43 59	3/8	2	0.15
60	7/16	2.67	0.22
68	1/2	3.33	0.36
69	5/8	5	0.76
70	3/4	7	1.23
23 43 86	7/8	9.5	1.79
87	1	12.5	2.57
88	1-1/8	15	3.75
89	1-1/4	18	5.31
90	1-3/8	21	7.18
23 43 01	1-1/2	30	8.52
02	1-3/4	40	15.4
03	2	55	23.6
04	2-1/2	85	43.5
05	3	120	81
23 43 06	3-1/2	150	120
07	4	175	153
16	4-3/4	200	209
17	5	250	276
18	6	300	362
23 43 19	7	400	500

Note : Name of Mfr.: Crosby®

Wide Body Shackles

G-2160/G-2160E

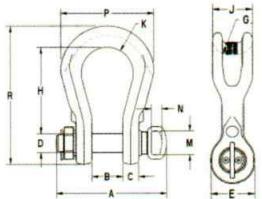
Grillete de Eslinga Crosby

ワイドボディシャックル 寬幅 U 形鍵鉤

Greatly improves the durability of wire rope slings. The increase in shackle bow radius provides minimum 58 % gain in the sling bearing surface and eliminates the need for a thimble. Increases the usable sling strength a minimum of 15 %. Forged alloy steel from 7 through 300 metric tons, and cast alloy steel from 400 through 1,550 metric tons. G-2160E as Easy-Loc type will be provided for Working Load Limit 75 to 300 metric tons.



G-2160E



G-2160E

Unit Per Pcs.

CODE	Working Load Limit (t)	Dimensions in Millimeters						Weight (kg)
		A	B	C	D	K	R	
23 43 08	7	105	31.8	17.5	22.4	31.8	149	1.81
09	12.5	137	42.9	23.4	28.7	41.4	194	4.54
10	18	170	51.6	29.5	35.1	50.8	238	6.80
15	30	195	60.2	35.1	41.4	63.5	289	11.34
20	40	236	73.2	42.9	50.8	76.2	346	20.90
23 43 32	55	263	82.6	50.8	57.2	88.9	397	32.21
21	75*	382	105	60.7	69.9	92.5	474	49.9
22	125*	450	130	78.7	80	110	584	86.2
23	200*	491	150	86.1	105	138	773	185
24	300*	574	187	109	133	160	953	358
23 43 25	400	772	220	131	160	185	985	518
26	500	849	250	146	180	225	1,085	653
27	600	916	275	158	200	247	1,200	967
28	700	990	300	167	215	270	1,275	1,170
29	800	1,059	325	185	230	277	1,323	1,372
23 43 30	900	1,112	350	198	250	293	1,387	1,712
31	1,000	1,169	380	212	270	308	1,405	1,850
33	1,250	1,278	432	233	300	323	1,660	2,588
34	1,550	1,588	465	282	320	338	1,896	3,650

*Working Load Limit 75 to 300 ton will be G-2160E with Easy-Loc.

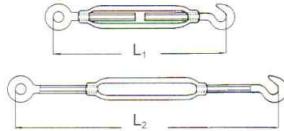
Name of Mfr.: Crosby®

Turnbuckles Eye and Hook

Tensor Abierto Cáncamo - Gancho

片アイ、片フックターンバックル

架式单眼单钩松紧螺旋扣(黑皮)



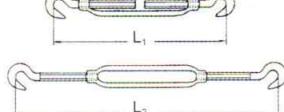
Unit Per Pcs.

Black			Galvanized		
CODE	Thread Diam. × mm	Frame Length mm	CODE	Thread Diam. × mm	Frame Length mm
23 05 31	6 × 100		23 05 46	6 × 100	
32	8 × 125		47	8 × 125	
33	9 × 150		48	9 × 150	
34	12 × 200		49	12 × 200	
35	16 × 250		50	16 × 250	
23 05 36	19 × 300		23 05 51	19 × 300	
37	22 × 325		52	22 × 325	
38	25 × 350		53	25 × 350	
39	32 × 400		54	32 × 400	
40	38 × 450		55	38 × 450	

Turnbuckles Hook and Hook

Tensor Abierto Gancho - Gancho

両フックターンバックル 双钩螺旋卸扣(黑皮)



Unit Per Pcs.

Black			Galvanized		
CODE	Thread Diam. × mm	Frame Length mm	CODE	Thread Diam. × mm	Frame Length mm
23 05 61	6 × 100		23 05 76	6 × 100	
62	8 × 125		77	8 × 125	
63	9 × 150		78	9 × 150	
64	12 × 200		79	12 × 200	
65	16 × 250		80	16 × 250	
23 05 66	19 × 300		23 05 81	19 × 300	
67	22 × 325		82	22 × 325	
68	25 × 350		83	25 × 350	
69	32 × 400		84	32 × 400	
70	38 × 450		85	38 × 450	

Turnbuckles Jaw and Jaw

U.S. Federal Spec FT-T-791b

Tensor Abierto Horquilla - Horquilla

ジョー & ジョーターンバックル 双爪螺旋卸扣(镀锌)

Drop forged steel D6 Brand Turnbuckle of hex. neck frame bodies. All jaw end fittings are supplied with hex. head bolts & nuts. Weldless, self coloured, hot drip galvanized turnbuckle is available.



2. Turnbuckles

Drop Forged Steel Turnbuckles

Frame Type

Tensor Avero Forjado - Tipo Abierto

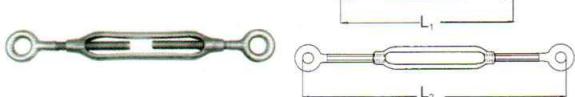
杵式ターンバックル 杵型螺旋卸扣(黑皮)

Turnbuckle fittings are hot galvanized above the threading. When ordering this type of equipment, please specify the type of turnbuckle required such as "eye" and "eye", etc., and if the turnbuckle should be galvanized or ungalvanized.

Turnbuckles Eye and Eye

Tensor Abierto Cáncamo - Cáncamo

両アイ、ターンバックル 架式双眼环螺旋卸扣(黑皮)



Unit Per Pcs.

Black		Galvanized	
CODE	Thread Diam. × mm	CODE	Thread Diam. × mm
23 05 01	6 × 100	23 05 16	6 × 100
02	8 × 125	17	8 × 125
03	9 × 150	18	9 × 150
04	12 × 200	19	12 × 200
05	16 × 250	20	16 × 250
23 05 06	19 × 300	23 05 21	19 × 300
07	22 × 325	22	22 × 325
08	25 × 350	23	25 × 350
09	32 × 400	24	32 × 400
10	38 × 450	25	38 × 450

Unit Per Pcs.

Galvanized

CODE	Thread Diam. Inch	Frame Take up Inch	Breaking Strength		Weight kg	Unit Per Pcs.	
			kN	tf			
23 06 21	3/8	6	26.4	2.7	0.41		
23 06 22		6			0.74		
23 23	1/2	9	49	5.0	0.93		
24		12			1.12		
23 06 25		6			1.37		
26	5/8	9	78.4	8.0	1.57		
27		12			1.92		
23 06 29		6			1.98		
30	3/4	9	117.6	12.0	2.24		
31		12			2.55		
32		18			3.28		
23 06 33	7/8	12	161.7	16.5	3.72		
34		18			4.6		
23 06 35		6			3.99		
36	1	12	225.4	23	5.04		
37		18			6.27		
38		24			7.89		
23 06 39		12			10.5		
80	1-1/4	18	343	35	12.4		
81		24			14.6		
23 06 82		12			16.7		
83	1-1/2	18	480.2	49	19.2		
84		24			21.7		

Turnbuckles Jaw and Eye

U.S. Federal Spec FT-T-791b

Tensor Abierto Horquilla - Cáncamo

ジョー & アイターンバッカル 单爪单眼环螺旋扣 (镀锌)

**Galvanized**

CODE	Thread Diam. Inch	Frame Take up Inch	Breaking Strength		Weight kg	Unit Per Pcs.	
			kN	tf			
23 06 61	3/8	6	26.4	2.7	0.41		
23 06 62		6			0.74		
63	1/2	9	49	5.0	0.93		
64		12			1.12		
23 06 65		6			1.37		
66	5/8	9	78.4	8.0	1.57		
67		12			1.92		
23 06 69		6			1.98		
70	3/4	9	117.6	12.0	2.24		
71		12			2.55		
72		18			3.28		
23 06 73		12	161.7	16.5	3.72		
74	7/8	18			4.6		
23 06 75		6			3.99		
76	1	12	225.4	23	5.04		
77		18			6.27		
78		24			7.89		
23 06 79		12			10.5		
85	1-1/4	18	343	35	12.4		
86		24			14.6		
23 06 87		12			16.7		
88	1-1/2	18	480.2	49	19.2		
89		24			21.7		

Forged Steel Pipe Turnbuckles

Tensor Tubular (Cerrado) de Acero Forjado

パイプ式ターンバッカル 双眼环松紧螺旋扣 (黒皮)

These turnbuckle fittings are hot galvanized above the threading. When ordering, please specify what type of turnbuckle is required, i.e. "eye" and "eye", etc., and whether the turnbuckle should be black or galvanized steel.

Pipe Turnbuckles - PS (Pipe Swage) Type

Tensor Tubular Tipo P.S.

PS 式パイプターンバッカル PS 型双眼环松紧螺旋扣 (黒皮)

Pipe frame turnbuckle with collapse at the middle of the frame for secure turning by the grip. Available ungalvanized (black) or galvanized (electric plated).

Pipe Turnbuckles Eye and Eye PS Type

Unit Per Pcs.

CODE	Nom. Size	Thread Dia	Frame Length mm	Length Eye to Eye mm		Breaking Load	
				Min.	Max.	kN	tf
Black							
23 04 41	9	W 3/8	150	180	300	13.7	1.4
42	12	W 1/2	200	265	430	21.6	2.2
43	16	W 5/8	250	335	540	31.4	3.2
44	19	W 3/4	300	395	640	47.1	4.8
45	22	W 7/8	320	430	695	62.8	6.4
23 04 46	25	W 1	350	470	750	84.3	8.6
47	32	W 1-1/4	400	520	810	357.9	36.5

Galvanized

CODE	Nom. Size	Thread Dia	Frame Length mm	Length Eye to Eye mm		Breaking Load	
				Min.	Max.	kN	tf
23 04 51	9	W 3/8	150	180	300	13.7	1.4
52	12	W 1/2	200	265	430	21.6	2.2
53	16	W 5/8	250	335	540	31.4	3.2
54	19	W 3/4	300	395	640	47.1	4.8
55	22	W 7/8	320	430	695	62.8	6.4
23 04 56	25	W 1	350	470	750	84.3	8.6
57	32	W 1-1/4	400	520	810	357.9	36.5

Galvanized

CODE	Nom. Size	Thread Dia	Frame Length mm	Length Eye to Hook mm		Breaking Load	
				Min.	Max.	kN	tf
Black							
23 04 61	9	W 3/8	150	180	300	6.9	0.7
62	12	W 1/2	200	265	430	10.8	1.1
63	16	W 5/8	250	335	540	13.7	1.4
64	19	W 3/4	300	395	640	24.5	2.5
65	22	W 7/8	320	430	695	33.3	3.4
23 04 66	25	W 1	350	470	750	42.2	4.3
67	32	W 1-1/4	400	520	810	73.5	7.5

Galvanized

CODE	Nom. Size	Thread Dia	Frame Length mm	Length Hook to Hook mm		Breaking Load	
				Min.	Max.	kN	tf
23 04 71	9	W 3/8	150	180	300	6.9	0.7
72	12	W 1/2	200	265	430	10.8	1.1
73	16	W 5/8	250	335	540	13.7	1.4
74	19	W 3/4	300	395	640	24.5	2.5
75	22	W 7/8	320	430	695	33.3	3.4
23 04 76	25	W 1	350	470	750	42.2	4.3
77	32	W 1-1/4	400	520	810	73.5	7.5

Pipe Turnbuckles Hook and Hook PS Type

CODE	Nom. Size	Thread Dia	Frame Length mm	Length Hook to Hook mm		Breaking Load	
				Min.	Max.	kN	tf
Black							
23 04 81	9	W 3/8	150	180	300	6.9	0.7
82	12	W 1/2	200	265	430	10.8	1.1
83	16	W 5/8	250	335	540	13.7	1.4
84	19	W 3/4	300	395	640	24.5	2.5
85	22	W 7/8	320	430	695	33.3	3.4
23 04 86	25	W 1	350	470	750	42.2	4.3
87	32	W 1-1/4	400	520	810	73.5	7.5

(to be continued)

CODE	Nom. Size	Thread Dia	Frame Length mm	Length Hook to Hook mm		Breaking Load		Unit Per Pc.
				Min.	Max.	kN	tf	
Galvanized								
23 04 91	9	W 3/8	150	180	300	6.9	0.7	
92	12	W 1/2	200	265	430	10.8	1.1	
93	16	W 5/8	250	335	540	13.7	1.4	
94	19	W 3/4	300	395	640	24.5	2.5	
95	22	W 7/8	320	430	695	33.3	3.4	
23 04 96	25	W 1	350	470	750	42.2	4.3	
97	32	W 1-1/4	400	520	810	73.5	7.5	

Pear Shape Lashing Links (Grab Links)

Eslabón (Anilla) Forma de Pera

ラッシング用リンク 梨形捆扎环 (黑皮)

Pear shaped end links for chain or lashing turnbuckles. Forged steel, self-color or galvanized finish. Has 22 mm diam., 240 mm outside length and 130 mm outside width.



Unit Per Pc.

CODE	Description	Diam. mm	Overall Length mm x Width mm		Unit Per Pc.
			Length mm	Width mm	
23 11 81	Black	22	240	130	
82	Galvanized	22	240	130	

Log Lashing Spanners

Llaves para Trincar Troncos

ログラッシング用締付けレンチ 原木捆扎扳手

Light to carry and easy to use to tighten the turnbuckles for lashing log and lumber cargoes on deck. Can be used for the final lashing in port, as well as the important task of retightening turnbuckles daily on the voyage. You'll make the job faster and easier, reducing your crew's time and exposure on deck.



Unit Per Pc.

CODE	Type	Opening mm	For	Weight kg	Unit Per Pc.
23 07 73	30	105/30	Specially designed to fit the new style small turnbuckles.		
74	45	105/45	Old style large turnbuckles, but can be used efficiency on all sizes.	2.4	
23 07 75	30	105/30	Above original spanner with a one-way sprocket.	2.4	
78	42	105/42			
23 07 79	42	105/42	A forward/reverse and static positions with a 42mm sprocket opening.	2.4	

Leather Pouch

23 07 80 Leather Pouch for above all spanners to ensure the health and safety for users

Chain Type Load Binders

Carraca de Cadenas チェーン式荷締機 链式扎紧装置

Ratchet type lever operated device for tightening or binding pipes, logs, etc.



CODE	S.W.L. Ton	Max. Pull Distance mm	Min. Distance Hook to Hook mm	Unit Per Pc.	
				Chain Diam. mm	Weight kg
23 07 76	0.5	1,350	350	6.3	3.7
77	1.0	1,420	420	6.3	6.0

Rigging Screws

Tensor con Guardacabo リギング スクリュー 舱装松紧螺旋扣

Drop forged frame with a solid thimble and bolt ends. When ordering, please specify the diameter or circumference of the wire rope to be used with the rigging screw. Also specify whether Ungalvanized (Black) or Galvanized rigging screws will be required when ordering.



CODE		Nominal Size mm	Dia. of Rope Applied mm	Screw Rod		SWL Tons	Weight kg
Ungalv. (Black)	Galv.			Thread Size mm	Length mm		
23 07 81	23 19 81	14	14	M24	350	2.1	5.97
82	82	16	16	M27	380	2.6	8.58
83	83	18	18	M30	420	3.3	11.6
84	84	22	20 and 22.4	M33	450	5.1	14.8
85	85	24	24	M39	480	5.9	19.4
23 07 86	23 19 86	26	25	M42	500	6.9	23.9
87	87	30	28 and 30	M48	540	9.2	30.2
88	88	32	32	M48	560	10.5	36.2
89	89	34	34	M52	590	11.5	43.2
90	90	36	36	M56	620	13.0	51.1
23 07 91	23 19 91	38	38	M60	640	14.5	59.9
92	92	40	40	M64	670	16.5	70.7
93	93	42	42.5	M68	720	18.5	93.5
94	94	45	45	M68	740	21	105
95	95	48	47.5	M76x6	770	23	117
23 07 96	23 19 96	50	50	M76x6	780	25.5	124

3. Wire Clips/Thimbles/Sockets

Standard Wire Clips

Cast Iron

Sujetacables Tipo Estándar de Hierro Fundido

鉄物スタンダード型ワイヤークリップ

标准铸铁钢丝绳卡环 (黑皮)



Made of cast iron and designed to hold one wire rope tight and securely to another. When ordering, please specify whether galvanized or black wire clips are required. Also, please specify the diameter of the wire rope to be used with the wire clip.

Black			Galvanized			Unit Per Pc.	
CODE	Wire Size Diam. mm	U-Bolt Diam. mm	CODE	Wire Size Diam. mm	U-Bolt Diam. mm	Unit Per Pc.	
23 08 01	4.5	4.5	23 08 16	4.5	4.5	4.5	
02	6	6	17	6	6	6	
03	8	6	18	8	6	6	
04	9	8	19	9	8	8	
05	12	9	20	12	9	9	
23 08 06	16	13	23 08 21	16	13	13	
07	19	13	22	19	13	13	
08	22	16	23	22	16	16	
09	25	16	24	25	16	16	
10	28	19	25	28	19	19	
23 08 11	32	19	23 08 26	32	19	19	
12	38	22	27	38	22	22	
13	44	25	28	44	25	25	
14	50	25	29	50	25	25	

Wire Rope Clips

Malleable Iron

U.S. Federal Spec. FF-C-450b

Sujetacable de Acero Maleable

アメリカ型マレーブルワイヤークリップ

可锻铸铁钢丝绳卡环 (黑皮)



Made of malleable iron with a grooved rope channel to hold the wire ropes securely together.

Unit Per Pc.

Black			Galvanized		
CODE	Wire Size Diam. inch	U-Bolt Diam. inch	CODE	Wire Size Diam. inch	U-Bolt Diam. inch
23 08 31	1/8	3/16	23 08 46	1/8	3/16
32	3/16	1/4	47	3/16	1/4
33	1/4	5/16	48	1/4	5/16
34	5/16	5/16	49	5/16	5/16
35	3/8	3/8	50	3/8	3/8
23 08 36	7/16	3/8	23 08 51	7/16	3/8
37	1/2	7/16	52	1/2	7/16
38	9/16	1/2	53	9/16	1/2
39	5/8	1/2	54	5/8	1/2
40	3/4	9/16	55	3/4	9/16
23 08 41	7/8	5/8	23 08 56	7/8	5/8
42	1	5/8	57	1	5/8

Wire Rope Clips

Drop Forged Steel (F Type)

Sujetacable de Acero Forjado

F型鍛造クリップ 压锻钢钢丝绳卡环 (FR-型, 镀锌)



Specially, designed with tapered wings at the base in order to assure a very tight and firm grip to wire ropes.

Unit Per Pc.

Black			Galvanized		
CODE	Wire Size Diam. mm	U-Bolt Th'd Diam.	CODE	Wire Size Diam. mm	U-Bolt Th'd Diam.
23 08 61	8	M 8	23 08 76	8	M 8
62	10	M10	77	10	M10
63	12	M12	78	12	M12
64	14	M12	79	14	M12
65	16	M14	80	16	M14
23 08 66	18	M14	23 08 81	18	M14
67	20-22	M18	82	20-22	M18
68	24-25	M20	83	24-25	M20
69	26-28	M22	84	26-28	M22
70	30-32	M22	85	30-32	M22
23 08 71	33-38	M27	23 08 86	33-38	M27
72	40-45	M30	87	40-45	M30
73	47-50	M33	88	47-50	M33

Standard Wire Clips

Stainless Steel

Sujetacable Tipo Estándar de Acero Inoxidable

ステンレス製ワイヤークリップ 不锈钢钢丝绳夹头



Made of stainless steel and designed to hold one wire rope tight and securely to another. Please specify the diameter of the wire rope to be used with the wire clip.

Unit Per Pc.

CODE	Wire Size Diam. mm.	U-Bolt		Weight grm
		Diam. mm	Thread	
23 36 51	1.5	1.7	M 1.8	5
52	2	2.5	M 3	8
53	3	3.0	M 3	11
54	4	3.5	M 4	19
55	5	5.0	M 5	26

(to be continued)

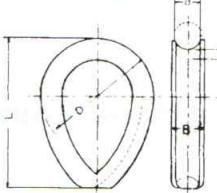
23 36 56	6	5.3	M 6	35
57	8	7.1	M 8	78
58	10	8.9	M10	160
59	12	10.8	M12	240
60	14	10.8	M12	270
23 36 61	16	12.6	M14	410
62	18	12.6	M14	460
63	20-22	16.3	M18	800

Wire Rope Thimbles (A Type)

Guardacabos para Cable de Acero (Tipo A)

ワイヤーロープシンブル A型 钢丝绳套环 (A型, 镀锌)

A wrought steel, galvanized type thimble for use with bare steel wire rope. Please specify the diameter of the wire rope to be used with the thimble when ordering.



Unit Per Pc.

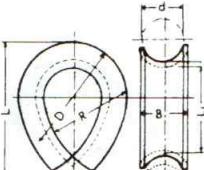
CODE	Nominal Size mm	Applicable Wire Rope Diam. mm	Dimensions mm		
			L	D	B
23 09 01	6	6	36	27	8
02	8	8	48	36	10
03	9	9	51	40	11
04	10	10	58	45	13
05	12	12	68	54	15
23 09 06	14	14	78	61	17
07	16	16	92	72	20
08	18	18	100	75	22
09	20	20	112	86	24
10	22	22	122	95	27
23 09 11	24	24	136	105	29
12	26	26	144	110	31
13	28	28	156	120	33
14	30	30	166	130	35
15	32	32	180	140	38
23 09 16	34	34	186	145	40
17	36	36	196	150	42
18	38	38	205	160	44
19	40	40	220	170	46
20	42	42	232	180	50
23 09 28	44	44	242	190	52
29	46	46	252	195	54
22	48	48	260	205	56
23	50	50	274	215	58
30	55	55	310	235	65
23 09 26	60	60	335	255	70
31	65	65	358	276	75

Manila Rope Thimbles (C Type)

Guardacabos para Cuerda de Manila (Tipo C)

マニラロープコース C型 钢质马尼拉棕绳套环 (C型, 镀锌)

A wrought steel, galvanized, C type thimble for use with manila rope. Please specify the diameter of the rope to be used with the thimble when ordering.



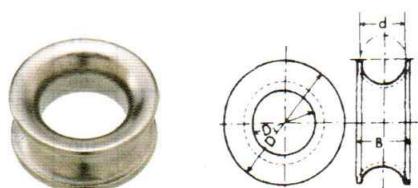
Manila Rope Round Thimbles

(D Type)

Guardacabos Redondos para Cuerda de Manila (Tipo D)

マニラロープコース D 型 钢质马尼拉棕绳圆套环 (D-型, 镀锌)

D type round thimble for use with manila rope. Made of galvanized wrought steel. Please specify the diameter of the rope to be used with the thimble when ordering.



Unit Per Pcs.

CODE	Nominal Size mm	Applicable Manila Rope Diam. mm	Dimensions mm	
			D	D1
23 09 72	10	10	38	23
73	12	12	38	23
75	16	16	48	27
86	19	19	48	27
78	22	22	55	35
23 09 87	25	25	55	35
81	28	28	73	40
83	32	32	73	40

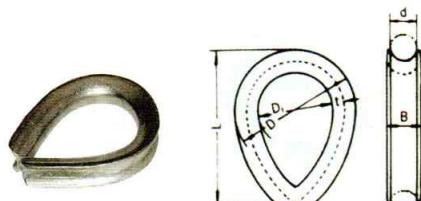
Stainless Steel Wire Rope Thimbles

(A Type)

Guardacabo del Cable de Acero Inoxidable

ステンレス製ワイヤーロープシンブル A 型 A 型不锈钢三角圈

A stainless steel thimble which resist deformation and collapse even in frequent use. Please specify the diameter of the wire rope to be used with the thimble when ordering.



CODE	Nominal Size mm	Applicable Wire Rope Diam. mm	Dimensions mm		
			L	D	B
23 36 71	6	6	36	27	8
72	8	8	48	36	10
73	9	9	51	40	11
74	10	10	58	45	13
75	12	12	68	54	15
23 36 76	14	14	78	61	17
77	16	16	92	72	20
78	18	18	100	75	22
79	20	20	112	86	24
80	22	22	122	95	27
23 36 81	24	24	136	105	29
82	26	26	144	110	31
83	28	28	156	120	33
84	30	30	166	130	35
85	32	32	180	140	38
23 36 86	34	34	186	145	40
87	36	36	196	150	42
88	38	38	205	160	44
89	40	40	220	170	46
90	42	42	232	180	50

Corresponding Shackle Sizes to Wire Rope Thimble

Thimble Size	Shackle Size		
	SE	SD	SA
8	-	-	10
9	-	-	10
10	-	-	12
12	16	14/16	14/16
14	18	-	18
16	20	20	20
18	22	-	22
20	24	-	24
22	26	-	26
24	28	-	28
26	30	-	30
28	32	-	32
30	34	-	-
32	36	-	-
34	38	-	-
36	40	-	-

Wire Clamps for Topping Lift

Sujetacables para Peligallo

荷役つり索ニッパ 吊货钢丝绳夹头 (重型)

Made of carbon steel for topping lifts. Used as temporary holders when the topping lifts are fastened to cleats or the like.



CODE	Nominal Size	Applicable Wire Rope Diam. mm	SWL Tons	Unit Per Pcs.	
				Butterfly Nut torque kgf/cm ²	Wt. kg
23 10 11	14	14 (6×24)	0.4	400	3.46
12	16	16 (6×24)	0.4	400	3.46
13	18	18 (6×24)	0.4	400	3.46
01	20	20 (6×24)	0.4	400	3.46
02	22	22 (6×24)	0.4	400	3.46
23 10 05	25	25 (6×24)	0.4	500	13.7
06	28	28 (6×24)	0.4	500	13.7

Wire Rope Lubricators

Lubricadores de Cable
ワイヤーロープリケーター 钢丝绳润滑器

A unique method of automatically lubricating on wire ropes, utilizing a high pressure collar with seals which delivers grease into the core of the wire ropes while providing a thin grease film outer coating as wire ropes pass through the lubricator. Lubrication protects the ropes against corrosion while also providing excellent lubrication of wire strands both internally and externally. This can provide safety lubrication work for crew and reduce the labor on lubrication by up to 90%, and significant increases in wire rope life.



Lubricator can also remove the grease or contamination from the wire rope prior to lubrication with cleaner attachment, which improve the effectiveness of the lubrication process.

There are several brands available, and each brand has different applicable rope diameters and accessories, so please specify the manufacturer and brand name when ordering replacement seals.

Specifications

Maker	Viper Wire Rope Lubricator		Ferryl		Saemah
Model	Mid MKII	Mini MKII	Wire Rope Lubricator		SIGMALUB
Applicable Rope Dia.	6 mm - 67 mm	6 mm - 36 mm	1 - 50 mm	50 - 90 mm	6 mm - 44 mm
Lubrication Speed	4.5 kg/min	2.5 kg/min	40 m /min	40 m /min	-
Seal Replacement	Up to 15,000 meters				-
Accessories	Grease Pump, Air Pump, Air Regulator, 1m clear hose, 4m x 1/2" High Pressure Hose, 2 x Ratchet Strap, 4 x Shackle, Shoulder Strap, Carry Case.	Grease Pump, Air Pump, Air Regulator, 4m x 3/8" High Pressure Hose, 2 x Ratchet Strap, 4 x Shackle, Carry Case.	Grease Pump, Air Regulator, High Pressure Hose, Set of Seals, Groove Cleaners, Self-retracting Ratchet Straps, Scraper Plates, Spare set of Seals, Wire Rope Grease (IMPA 450404 Ferryl 202 Standard), Carry Case.	Grease Pump, Air Regulator, 4m x 3/8" High Pressure Hose, Set of Seals & Cleaner, Spare set of seals & Cleaner, Ratchet Strap, Carry Case.	
Weight (kg)	9.5	2.9	4.5	14	3.4

How to order: CODE

Wire rope lubricator, APPLICABLE ROPE DIA, MANUFACTURER AND BRAND NAME etc.

CODE	Description	Unit
23 10 16	Wire rope lubricators, complete	Set
17	Spare seals for specific wire rope diameter	Pc.
18	Groove cleaners for specific wire rope diameter	Pc.

Wire Rope Sockets

Terminales para Cables

ワイヤーロープソケット 钢丝套(开式)

Drop forged carbon steel, self coloured wire socket for standing wire rope of a ship's mast, post, etc.



Open type



Closed type

Open Type CODE	Applicable Wire Rope Diam. mm	Rope Hole Size mm	Overall Length mm	Closed Type CODE
23 10 51	16	20	193	23 10 76
52	18	23	210	77
53	20	25	227	78
54	22.4	30	245	79
55	24	32	262	80
23 10 56	25	33	281	23 10 81
57	28	36	298	82
58	30	38	316	83
59	31.5	40	335	84
60	33.5	42	353	85
23 10 61	35.5	44	373	23 10 86
62	37.5	47	392	87
63	40	49	413	88
64	42.5	52	434	89
65	45	54	474	90
23 10 66	47.5	57	494	23 10 91
67	50	60	516	92
68	53	63	536	93
69	56	66	567	94
70	60	70	619	95
23 10 71	63	74	641	23 10 96

Spelter Sockets G-416/G-417

Tomas de espelta G-416/G-417
スペルターソケット 斯派尔特插座



Forged steel sockets through 38mm, cast alloy steel 40mm through 60mm.

Open Socket G-416 Closed Socket G-417
Unit Per Pcs.

Open Type CODE	Rope Dia mm	Rope Hole Size mm	Overall Length mm	Weight kg
23 10 21	14-16	17.5	171	1.63
22	18	20.6	202	2.64
23	20-22	23.9	235	4.38
24	24-26	28.7	268	7.03
25	28-30	31.8	300	9.75
23 10 26	32-35	38.1	335	14.1
27	38	41.4	384	21.4
28	40-42	44.5	413	24.9
29	44-48	51.0	464	37.2
30	50-54	57.0	546	59.0
23 10 31	56-60	63.5	597	76.0

Name of Mfr.: Crosby®

Unit Per Pcs.

Closed Type CODE	Rope Dia mm	Rope Hole Size mm	Overall Length mm	Weight kg
23 10 32	14-16	17.5	162	1.13
33	18	22.4	194	1.92
34	20-22	25.4	226	3.28
35	24-26	28.7	254	4.76
36	28-30	31.8	283	6.46
23 10 37	32-35	38.1	309	8.95
38	38	41.4	355	13.24
39	40-42	44.5	390	16.32
40	44-48	51.0	445	25.96
41	50-54	57.2	505	35.83
23 10 42	56-60	66.8	546	47.62

Name of Mfr.: Crosby®

Unit Per Pcs.

4. Chains/Links

Stud Link Anchor Chain Cables

Flush Butt Welded

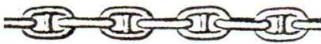
(Ref.JIS F 3303-1993)

Cadenas con Cartrete/Soldadas Eléctrica

フラッシュバット溶接アンカーチェーン

嵌入式对接缝焊的有档链环锚链钢索

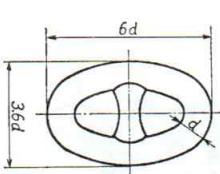
The specifications of these flush butt welded Anchor Chain Cables and their accessories for ship and harbour use are as follows.



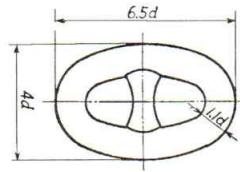
Nominal Size	Denoted by the diameter "d" shown in the sketch.
One Length	One length of the chain is 25 or 27.5 mtrs between the farther point end of the inner side of the end link and that of the opposite end link. May be also including the joining shackle and kenter shackle.
Nos. of Link	The total number of links for each length is odd except where it includes a swivel.
Shape & Size of Link, Shackle, etc.	The shape of each link, shackle and swivel must be determined in proportion to the size as shown in the sketches. They must be uniform in shape, and those next to each other must fit properly and move freely.

Specification

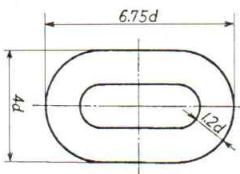
Kind of Chain	Symbol	Material
Stud Link Chain	Class 1 ST 1	SBC 300 : Steel bars for chains SS-400 : Rolled steel got general structure S20C : Cold rolled special steel strip
	Class 2 ST 2	SBC 490 : Steel bars for structure
	Class 3 ST 3	SBC 690 : Steel bars for structure (or KBC)



Common link



Enlarged link



End link

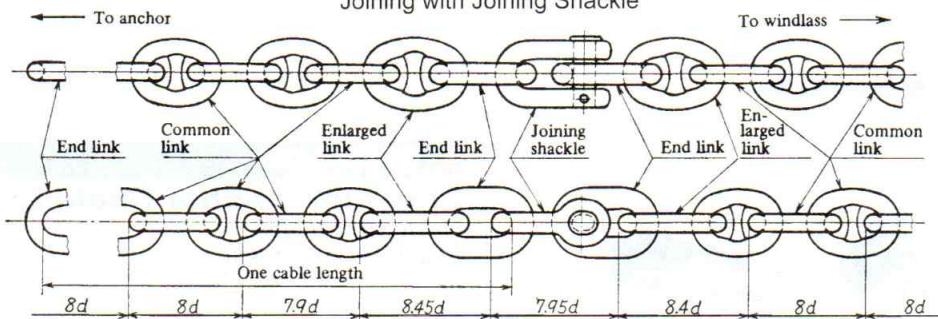


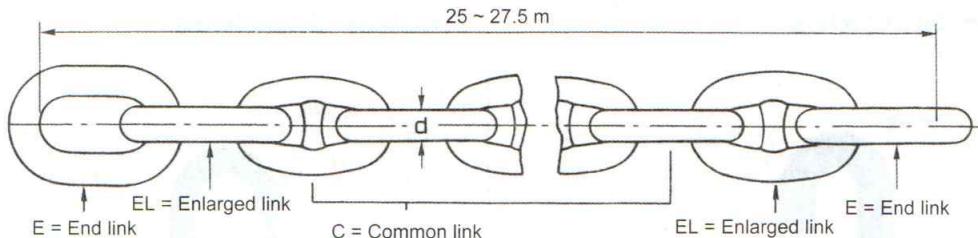
Swivel

Chain Dia (d)	Outside Length of Common Link (6d)	Outside Width of Common Link (3.6d)	Class II		Class III	
			Proof Test Load	Breaking Test Load	Proof Test Load	Breaking Test Load
mm	mm	mm	kN	kN	kN	kN
28	168	100.8	321	449	449	624
30	180	108.0	368	514	514	735
32	192	115.2	417	583	583	833
34	204	122.4	468	655	655	937
36	216	129.6	523	732	732	1,050
38	228	136.8	581	812	812	1,160
40	240	144.0	640	896	896	1,280
42	252	151.2	703	981	981	1,400
44	264	158.4	769	1,080	1,080	1,540
46	276	165.6	837	1,170	1,170	1,680
48	288	172.8	908	1,270	1,270	1,810
50	300	180.0	981	1,370	1,370	1,960
52	312	187.2	1,060	1,480	1,480	2,110
54	324	194.4	1,140	1,590	1,590	2,270
56	336	201.6	1,220	1,710	1,710	2,430
58	348	208.8	1,290	1,810	1,810	2,600
60	360	216.0	1,380	1,940	1,940	2,770
62	372	223.2	1,470	2,060	2,060	2,940
64	384	230.4	1,560	2,190	2,190	3,130
66	396	237.6	1,660	2,310	2,310	3,300
68	408	244.8	1,750	2,450	2,450	3,500
70	420	252.0	1,840	2,580	2,580	3,690
73	438	262.8	1,990	2,790	2,790	3,990
76	456	273.6	2,150	3,010	3,010	4,300
78	468	280.8	2,260	3,160	3,160	4,500
81	486	291.6	2,410	3,380	3,380	4,820
84	504	302.4	2,580	3,610	3,610	5,160
87	522	313.2	2,750	3,850	3,850	5,500

Remark: Larger or smaller sizes than the above list are also available.

Joining with Joining Shackle



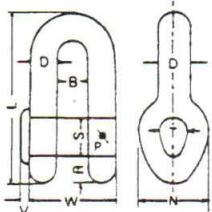


Nominal Diametr d mm	Kind of Link	Size mm									Approx. No. of Link	
		Diameter			Length			Width			Per 27.5 mtr	Per 25 mtr
		Min.	Sta	Max.	Min.	Sta	Max.	Min.	Sta	Max.		
14	C	13.0	14.0	15.5	81.9	84.0	86.1	49.2	50.4	51.6	487	441
	EL	14.4	15.4	16.9	88.8	91.0	93.2	54.6	56.0	57.4	2	2
	E	15.8	16.8	18.3	89.3	91.5	93.7	54.6	56.0	57.4	2	2
16	C	15.0	16.0	17.5	93.6	96.0	98.4	56.2	57.6	59.0	423	385
	EL	16.6	17.6	19.1	101.4	104.0	106.6	62.4	64.0	65.6	2	2
	E	18.2	19.2	20.7	105.3	108.0	110.7	62.4	64.0	65.6	2	2
17.5	C	16.5	17.5	19.0	102.4	105.0	107.6	61.5	63.0	64.5	387	353
	EL	18.2	19.2	20.7	111.0	113.8	116.6	68.3	70.0	71.7	2	2
	E	20.0	21.0	22.5	115.2	118.1	121.0	68.3	70.0	71.7	2	2
19	C	18.0	19.0	20.5	111.2	114.0	116.8	66.6	68.4	70.1	357	323
	EL	19.9	20.9	22.4	120.5	123.5	126.5	74.1	76.0	77.9	2	2
	E	21.8	22.8	24.3	125.1	128.3	131.5	74.1	76.0	77.9	2	2
20.5	C	19.5	20.5	22.0	120.0	123.0	126.0	71.9	73.8	75.6	331	301
	EL	21.5	22.5	24.0	130.0	133.3	136.6	80.0	82.0	84.0	2	2
	E	23.6	24.6	26.1	135.0	138.4	141.8	80.0	82.0	84.0	2	2
22	C	21.0	22.0	23.5	128.7	132.0	135.3	77.2	79.2	81.1	307	279
	EL	23.2	24.2	25.7	139.5	143.0	146.5	85.8	88.0	90.2	2	2
	E	25.4	26.4	27.9	144.8	148.5	152.2	85.8	88.0	90.2	2	2
24	C	23.0	24.0	25.5	140.4	144.0	147.6	84.3	86.4	88.5	281	255
	EL	25.4	26.4	27.9	152.1	156.0	159.9	93.6	96.0	98.4	2	2
	E	27.8	28.8	30.3	158.0	162.0	166.0	93.6	96.0	98.4	2	2
25	C	24.0	25.0	26.5	146.3	150.0	153.7	87.8	90.0	92.2	269	245
	EL	26.5	27.5	29.0	158.5	162.5	166.5	97.5	100.0	102.5	2	2
	E	29.0	30.0	31.5	164.6	168.8	173.0	97.5	100.0	102.5	2	2
26	C	25.0	26.0	27.5	152.1	156.0	159.9	91.3	93.6	95.9	259	235
	EL	27.6	28.6	30.1	164.8	169.0	173.2	101.4	104.0	106.6	2	2
	E	30.2	31.2	32.7	171.2	175.5	179.8	101.4	104.0	106.6	2	2
28	C	27.0	28.0	29.5	163.8	168.0	172.2	98.3	100.8	103.3	241	219
	EL	29.8	30.8	32.3	177.5	182.0	186.5	109.2	112.0	114.8	2	2
	E	32.6	33.6	35.2	184.3	189.0	193.7	109.2	112.0	114.8	2	2
30	C	29.0	30.0	31.5	175.5	180.0	184.5	105.3	108.0	110.7	225	203
	EL	32.0	33.0	34.7	190.2	195.0	199.8	117.0	120.0	123.0	2	2
	E	35.0	36.0	37.8	197.5	202.5	207.5	117.0	120.0	123.0	2	2
32	C	31.0	32.0	33.6	187.2	192.0	196.8	112.4	115.2	118.0	209	191
	EL	34.2	35.2	37.0	202.8	208.0	213.2	124.8	128.0	131.2	2	2
	E	37.4	38.4	40.3	210.6	216.0	221.4	124.8	128.0	131.2	2	2
34	C	33.0	34.0	35.7	198.9	204.0	209.1	119.4	122.4	125.4	197	179
	EL	36.4	37.4	39.3	216.5	222.0	227.5	132.6	136.0	139.4	2	2
	E	38.8	40.8	42.8	223.8	229.5	235.2	132.6	136.0	139.4	2	2
36	C	35.0	36.0	37.8	210.6	216.0	221.4	126.4	129.6	132.8	185	169
	EL	38.6	39.6	41.6	228.2	234.0	239.8	140.4	144.0	147.6	2	2
	E	41.2	43.2	45.4	237.0	243.0	249.0	140.4	144.0	147.6	2	2
38	C	37.0	38.0	39.9	222.3	228.0	233.7	133.4	136.8	140.2	175	159
	EL	39.8	41.8	43.7	240.9	247.0	253.1	148.2	152.0	155.8	2	2
	E	43.6	45.6	47.5	249.6	256.0	262.4	148.2	152.0	155.8	2	2
40	C	39.0	40.0	42.0	234.0	240.0	246.0	140.4	144.0	147.6	167	151
	EL	42.0	44.0	46.2	253.5	260.0	266.5	156.0	160.0	164.0	2	2
	E	46.0	48.0	50.4	263.3	270.0	276.7	156.0	160.0	164.0	2	2
42	C	40.0	42.0	44.1	245.7	252.0	258.3	147.5	151.2	154.9	159	143
	EL	44.2	46.2	48.5	266.2	273.0	279.8	163.8	168.0	172.2	2	2
	E	48.4	50.4	52.9	276.5	283.5	290.6	163.8	168.0	172.2	2	2
44	C	42.0	44.0	46.2	257.4	264.0	270.6	154.5	158.4	162.3	151	137
	EL	46.4	48.4	50.8	278.9	286.0	293.1	171.6	176.0	180.4	2	2
	E	50.8	52.8	55.4	289.6	297.0	304.4	171.6	176.0	180.4	2	2

Joining Shackles

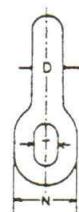
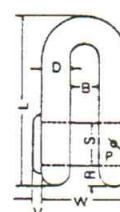
Grilletes de Unión ジョイニングシャックル

连接钩环

 $D = 1.3d + \text{Tolerance}$ $L = 7.1d$ $W = 4d$ $P = 0.3d$ $R = 0.8d$ $N = 2.8d$ $S = 1.6d$ $V = 0.2d$ $T = 1.2d$ $B = 1.4d$ 

Anchor Shackles

Grilletes de Ancla アンカーシャックル 锚钩环

 $D = 1.4d + \text{Tolerance}$ $L = 9d$ $W = 5.05d + \alpha$ $P = 0.4d$ $R = 0.8d$ $N = 3.0d$ $S = 2.1d$ $V = 0.3d$ $T = 1.4d$ 

23

Rigging Equipment & General Deck Items

Size of chain Applied (d)		D 1.3d	L 7.1d	S 1.6d	W 4d	B 1.4d	Weight/pce
m/m	in	m/m	m/m	m/m	m/m	m/m	kg
28	1-1/8 1-3/16	36	199	45	112	39	5.6
30		39	213	48	120	42	6.8
32	1-1/4	42	227	51	128	45	7.9
34	1-5/16	44	241	54	136	48	10.0
36	1-3/8	47	256	58	144	50	12.0
38	1-1/2	49	270	61	152	53	13.9
40	1-9/16	52	284	64	160	56	15.6
42	1-5/8	55	298	67	168	59	17
44	1-3/4	57	312	70	176	62	20
46	1-13/16	60	327	74	184	64	23
48	1-7/8	62	341	77	192	67	25
50	2	65	355	80	200	70	30
52	2-1/16	68	370	83	208	73	35
54	2-1/8	70	383	86	216	76	40
56	2-3/16	73	398	90	224	78	45
58	2-1/4	75	412	93	232	81	50
60	2-3/8	78	426	96	240	84	53
62	2-1/2	81	440	99	248	87	60
64	2-9/16	83	454	102	256	90	65
66	2-5/8	86	469	106	264	92	70
68	2-11/16	88	483	109	272	95	80
70	2-3/4	91	497	112	280	98	87
73	2-7/8	95	518	117	292	102	95
76	3	99	540	122	304	106	110
78	3-1/16	101	554	125	312	109	120
81	3-3/16	105	575	130	324	113	130
84	3-5/16	109	596	134	336	118	147
87	3-7/16	113	618	139	348	122	160

Remark: Shackles of sizes other than those listed above are also available upon request.

How to order: 23 - 11 - 78

Joining shackle for 28(d) mm stud link anchor chain cable, ST2 with certificate

Note: When ordering, be sure to state the size of the anchor chain for which these shackles are to be used. These shackles are proof and break tested to the same specification loads as the anchor chain with which they are used.

Remark: Shackles of sizes other than those listed above are also available upon request.

How to order: 23 - 11 - 79

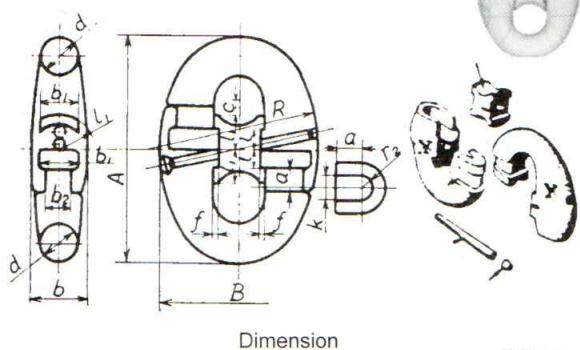
Anchor shackle for 28(d) mm stud link anchor chain cable, ST2 with certificate

Note: When ordering, be sure to state the size of the anchor chain for which these shackles are to be used. These shackles are proof and break tested to the same specification loads as the anchor chain with which they are used.

Kenter Shackles

Grillettes de Tipo Kenter

ケンターシャックル 双半式连接钩环



Remark: "d" is the nominal diameter of the chain.

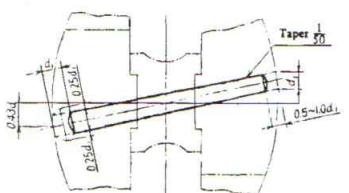
How to order: 23 - 11 - 80

Kenter shackle for diam. mm(d) stud link anchor chain cable, (class of chain) with certificate

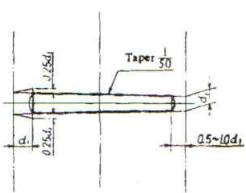
Taper Pins

Pasadores Cónicos テーバーピン 圆柱销

For Kenter Shackle



For Joining Shackle and Anchor Shackle



Dimension

Kind of shackle	Nominal dia. of chain							
	24-28	30-38	40-46	48-54	56-62	64-70	73-78	80-87
Joining shackle d1	6	8	10	12	14	16	18	20
Kenter shackle and anchor shackle d1	8	10	12	14	16	20	22	24

Chain & Shackle

Cadena y Grillete チェーン & シャックル 链条和卸扣

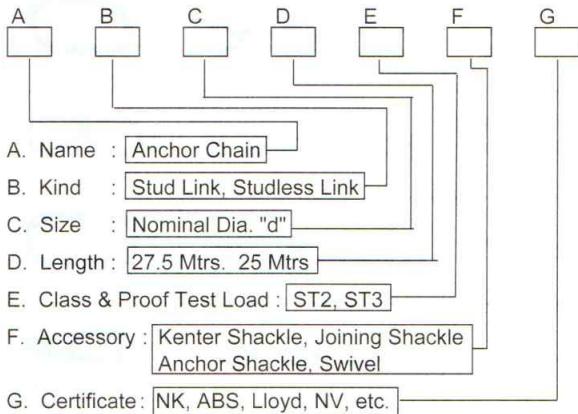
Anchor Cable

Sizes must be determined in proportion to the "d" size and fit properly and move freely

- Kenter Shackle
- Joining Shackle
- Anchor Shackle
- Swivel

Guide of How to order

When ordering, please fill the following column.



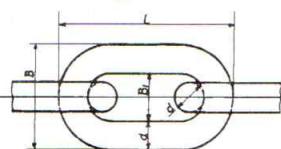
Chains for General Use

(Ref. JIS F 2106-1988)

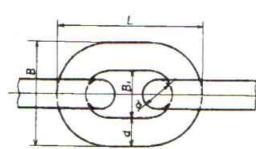
Cadenas de Uso General

船用一般チェーン 普通无档链环(长环)

Galvanized, rolled steel chains for general uses such as for guard or fence chains or for accommodation chain ladder slings. Two types of chains, short link and long link are available. Please specify the total length of the chain required in meters when ordering.



Long Chain



Short Chain

Unit Per Mtr.

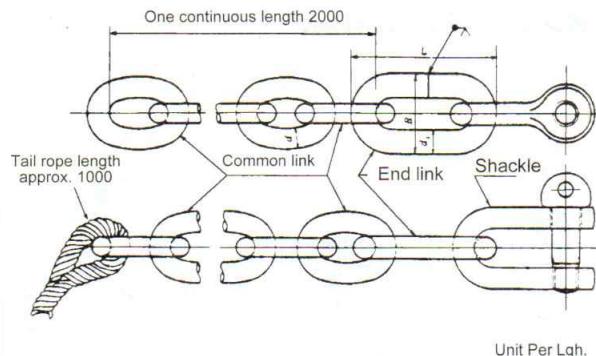
CODE	Nom. Size	Dimensions mm				SWL Tons	Wt. Kg. Per Mtr.
		d	L	B	B1		
Long Link							
23 11 01	6	6	36	21	9	0.2	0.7
02	8	8	48	28	12	0.4	1.2
03	9	9	54	32	14	0.6	1.6
04	11	11	66	39	17	0.8	2.6
05	13	13	78	46	20	1.2	3.4
23 11 06	16	16	96	56	24	1.8	5.1
07	19	19	114	67	29	2.5	7.3
Short Link							
23 11 11	6	6	30	21	9	0.2	0.8
12	8	8	40	28	12	0.4	1.4
13	9	9	45	32	14	0.6	1.8
14	11	11	55	39	17	0.8	2.9
15	13	13	65	46	20	1.2	4.0
23 11 16	16	16	80	56	24	1.8	5.9
17	19	19	95	67	29	2.5	8.3

General Purpose Chains

Cadenas para Propósitos Generales 雜用チェーン 铁链条

General purpose chain for ordinary applications not required high tensile strength. Used for tow chains, binding or tie down chains made of stainless steel or brass. Please specify type of chain, kind of material, size of link, required working load, required overall length, etc.

Type No.	Type Name	Appearance	Size
1	Welded Curb		
2	Double Loop Coil		
3	Heavy Link		
4	Sash		



Unit Per Lgh.

CODE	Chain Diam. mm	End Link Diam. mm	Shackle Type & Size mm	S.W.L. Tons	Wt. Per Lgth. Kg	Applicable with rope Diam. mm
Cargo Handling (Chain Length 2 mtrs)						
23 11 31	8	9	SC 10	0.6	3.66	16 - 18
32	10	13	SC 12	0.8	5.44	-

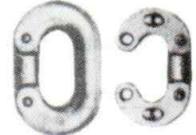
Cargo Handling (Chain Length 2 mtrs)

Mooring (Chain Length 2 mtrs)						
23 11 35	6	8	SD 10	0.3	2.28	16
36	8	9	SD 12	0.6	3.66	18
37	10	13	SD 14	0.8	5.44	20-22.4
38	12	13	SD 16	1.0	8.24	24-28
39	14	16	SD 20	1.5	10.70	24-28
23 11 40	16	19	SD 22	2.0	13.80	24-28

Connecting Links**(Missing Links)**

Enlaces de conexión (Enlaces que faltan)

コネクティング・リンク 缺失的链接



Drop forged, heat treated steel. Used for the temporary or permanent repair of chains through the replacement of individual lengths. When ordering, please specify whether galvanized or black steel links will be required.

Brass					
CODE	Type		Body Diam. mm	A×B×C mm	Weight grm/ mtr
	No.	Name			Recommen- dable Working Load Kg
23 11 41	1	Welded Curb	2.0	8.9×3.4	88
23 11 42	2	Double Loop Coil	2.0	28×5.5	88
23 11 43	4	Sash	0.5 (Thick)	15.2×2.2×5.5	28
44			0.7 (Thick)	14.8×2.7×6.4	46
45			0.8 (Thick)	14.4×4.0×8.0	66
					50
					30
					40

Black			Galvanized		
CODE	Link Diam. mm	Overall Dimension mm	CODE	Link Diam. mm	Overall Dimension mm
23 11 51	8	40 × 28	23 11 66	8	40 × 28
52	9	45 × 32	67	9	45 × 32
53	11	56 × 38	68	11	56 × 38
54	13	59 × 42	69	13	59 × 42
55	16	77 × 54	70	16	77 × 54
23 11 56	19	95 × 65	23 11 71	19	95 × 65
57	22	112 × 75	72	22	112 × 75
58	25	124 × 88	73	25	124 × 88
59	28	138 × 97	74	28	138 × 97
60	32	158 × 113	75	32	158 × 113
23 11 61	38	187 × 135	23 11 76	38	187 × 135

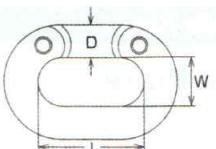
Stainless Steel Connecting Links

Eslabones de Conexión de Acero Inoxidable

ステンレス製連結リンク 不锈钢连接件

Made of stainless steel to resist rust. Used for the temporary or permanent repair of chains through the replacement of individual lengths.





Unit Per Pcs.

CODE	Working Load Limit		Size mm			Weight grm
	kfg	kN	D	L	W	
23 11 85	200	1.96	8	24	12	35
86	300	2.94	10	30	14.5	60
87	400	3.92	11	33	17	86
88	550	5.39	13	37	19	128
89	800	7.84	16	48	24	259

Steel Round Rings

Argollas (Anillas) de Acero モッコリング 钢圆环

Flush butt welded steel ring for use with a cargo sling, cargo hook, chain, etc. Available in original black steel colour only.



Unit Per Pcs.

CODE	Diam. x I.D. mm	Wt. kg	CODE	Diam. x I.D. mm	Wt. kg
23 11 91	25 x 125	1.82	23 11 95	36 x 150	4.70
92	28 x 125	2.32	96	38 x 150	5.30
93	32 x 125	3.11	97	50 x 200	12.0
94	32 x 150	3.60			

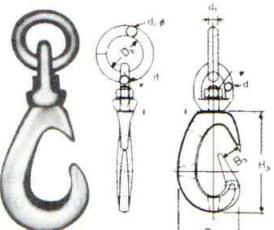
5. Cargo Hooks

Cargo Hooks

with Swivel Eye
(Ref. JIS F2105-1990)

Gancho de Carga Giratorio
スイベル カーゴフック
转环式吊货钩

Made of high tensile, heat treated carbon steel. Provided in its original color with a swivel and ring. Specify the required S.W.L. when ordering.

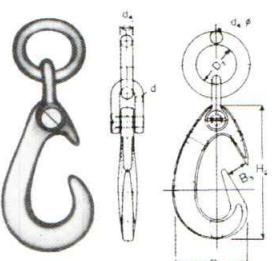


Unit Per Pcs.

CODE	SWL		Size mm			Weight kg
	kN	tf	Hook B ₃	Ring D ₁	D ₂	
23 12 01	9.8	1	38	22	75	6.0
02	19.6	2	44	25	85	12.0
03	29.4	3	47	32	95	20.0
04	49	5	50	42	120	36.3

Cargo Hooks with Shackle (Ref. JIS F2105-1990)

Gancho de Carga Grilleta
固定式カーゴフック
卸扣式带圆环吊货钩



Made of high tensile, heat treated carbon steel. Provided in its original colour with a countersunk screw pin shackle and ring. Please specify the required S.W.L. when ordering.

Unit Per Pcs.

CODE	SWL		Size mm			Weight kg
	kN	tf	Hook B ₃	Ring D ₁	D ₂	
23 12 06	9.8	1	38	22	75	6.0
07	19.6	2	44	25	85	11.0
08	29.4	3	47	32	95	18.0
09	49	5	50	42	120	33.0

Seattle Pattern Cargo Hooks

Gancho de Carga, Modelo "Seattle"
シャトル式(ケンカ巻)カーゴフック

升降式吊货钩(双吊杆用)



Drop forged steel provided in its original colour. Composed of a swivel eye and ring connected to two eyes and swivels. When ordering, please specify the required safe working load of the cargo hook from the sample given below.

Unit Per Pcs.

CODE	S.W.L. Ton	Estimated Weight Kg	Hook Inner Length mm.	Ring I.D. mm.
23 12 11	3	20	180	100
12	5	40	220	140
13	10	60	250	160

Hoist Eye Hooks with Latch

Gancho de Carga con Ojo y con Gatillo
鍛造環及びバネ付フック 眼环式安全货钩



Drop forged and heat treated. Fitted with a safety spring latch.

Unit Per Pcs.

CODE	S.W.L. Ton	Eye ID mm	Opening mm	Overall Length mm
23 12 31	1/2	19	25	127
32	1	25	32	150
33	2	33	36	183
34	3	37	40	219
35	5	49	52	277
23 12 36	8	60	64	356
37	10	68	71	397

Swivel Eye Cargo Hooks with Latch

Gancho de Carga Giratorio con Gatillo



スイベル式カーゴフック 转环式安全吊货钩

Drop forged and heat treated from a special bar steel. When ordering, please specify the safe working load required for the use of the cargo hooks.

Unit Per Pcs.

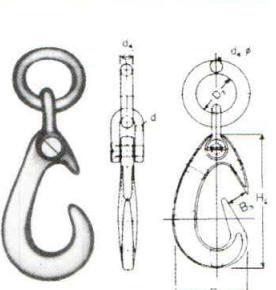
CODE	S.W.L. Ton	Overall		Throat Opening mm	Swivel Ring Clear Width mm
		Length mm	Width mm		
23 12 51	1	168	81	26	38
52	1-1/2	194	92	27	44
53	2	206	104	31	44
54	3	244	125	38	51
55	5	315	165	48	64

Cargo Hooks

with Shackle

(Ref. JIS F2105-1990)

Gancho de Carga Grilleta
固定式カーゴフック
卸扣式带圆环吊货钩



Safety Latch Hooks

Gancho de Carga con Gatillo de Seguridad
ラッチロックフック 安全套锁钩

Drop forged and heat treated. When released, the latch closes automatically and will not open unless a release button on the body is pushed. When ordering, please specify the safe working load from the examples in the table below.



Unit Per Pcs.

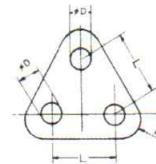
CODE	S.W.L. Ton	Eye Diam.		Opening mm	Overall Length mm
		I.D. mm	Width mm		
23 12 41	1.2	22	11.5	29	141.5
45	2	28	14	37	176
42	3.2	34	16	45	214
43	5.3	44	20	55	266
44	8	56	26	62	328
23 12 46	10	60	30	68	382
47	12	70	32	80	414
48	17	80	35	100	445
49	20	90	40	120	526

6. Delta Plates

Delta Plates (Monkey Face)

Placas Triangulares デルタプレート (三角板) 三角板

Equilateral triangles designed for cargo working or towing. Made from drop forged, natural coloured steel plate with 3 holes for attaching shackles.



Unit Per Pcs.

CODE	S.W.L. ton	Dimensions mm				Countersink Shackle mm
		L	Dφ	R	Thick	
23 12 81	2.0	54	23	25	22	18
82	3.0	66	28	30	25	22
83	4.8	84	36	39	35	28
84	7.0	102	42	47	40	34
85	10.0	120	50	55	45	40

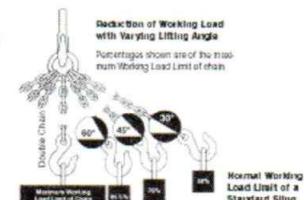
7. Sling Chains & Hooks

Sling Chains

Eslina de Cadena スリングチェーン 链条

Available single leg type, 2-leg type, or 3-leg type sling chain suitable for overhead lifting. Slings are furnished preassembled to the alloy steel chain with link or hook at both ends. 2-leg and 3-leg type chain slings provide more stability and strength than single leg chain sling. All attachments are mechanically connected to chain. The drop forged identification tag is attached to the master end coupling link of each chain sling. Please specify chain size, type and reach when ordering.

How Lifting Angles Reduce Working Load Limits of Slings



Cam-Alloy Chain Specifications

CODE	Nominal Size	Size mm			Working Load Limit Ton	Weight kg	Total Size		Nominal Dimensions		Working Load Limit		Weight Lbs/ 100 ft.	Links/ ft.				
		Inch	mm	Material Diam. mm			Length	Width										
23 12 71	9	95	30	30	0.4	0.32	18	8	2,100	970	43	17.5						
72	13	125	32	35	0.7	0.65	7	22	4,300	1,950	74	13.8						
73	16	145	37	38	1.0	1.2	10	31	8,800	3,990	148	10.0						
74	19	180	42	50	1.5	2.1	13	40	15,000	6,800	250	7.8						
75	22	200	47	55	2.0	2.9	16	49	22,600	10,250	379	6.5						
23 12 76	25	228	54	60	2.5	4.2	20	61	35,300	16,000	610	4.9						
77	28	250	59	65	3.0	6.4	22	69	42,700	19,400	775	4.4						
78	32	285	65	80	4.5	10.0	25	71	47,700	21,600	965	4.3						
79	38	335	75	85	6.0	15.6	26	89	72,300	32,800	1,525	3.5						
80	44	362	84	102	8.0	19.0	32	44										

Single Leg Type

Type CO SOS SOG SSG SSS SOF

Chain Size		Oblong Link		Working Load Limit			
Inch	mm	Nominalk Size Material mm	Inside Dimensions mm	Width	Length	Lbs	Kg
7/32	5.5	10	38	76	2,100	970	
9/32	7	15	64	127	4,300	1,950	
3/8	10	21	76	152	8,800	4,000	
1/2	13	29	102	203	15,000	6,800	
5/8	16	29	102	203	22,600	10,300	
3/4	20	32	102	203	35,300	16,000	
7/8	22	41	133	267	41,700	19,400	
1	26	48	152	305	47,700	21,600	
1-1/4	32	51	178	356	72,300	32,800	

2-Leg Type

Type DOS Type DOG Type DOF

Chain Size		Oblong Link			
Inch	mm	Nominalk Size Material mm	Inside Dimensions mm	Width	Length
7/32	5.5	10	38	76	
9/32	7	15	64	127	
3/8	10	21	76	152	
1/2	13	29	102	203	
5/8	16	32	102	203	
3/4	20	41	133	267	
7/8	22	48	152	305	
1	26	51	178	356	
1-1/4	32	57	203	406	

Working Load Limit

Chain Size							
Inch	mm	(a) at 60°		(a) at 90°		(a) at 120°	
		Lbs	Kg	Lbs	Kg	Lbs	Kg
7/32	5.5	3,600	1,630	3,000	1,360	2,100	970
9/32	7	7,400	3,400	6,100	2,700	4,300	1,950
3/8	10	15,200	6,900	12,400	6,900	8,800	3,990
1/2	13	26,000	11,800	21,200	9,600	15,000	6,800
5/8	16	39,100	17,700	32,000	14,500	22,600	10,300
3/4	20	61,100	27,700	49,900	22,600	35,300	16,000
7/8	22	74,000	33,500	60,400	27,350	42,700	19,400
1	26	82,600	37,900	67,400	31,000	47,700	21,600
1-1/4	32	125,200	56,800	102,200	46,400	72,300	32,800

3-Leg, 4-Leg Type

Type TOS

Type TOG

Chain Size		Oblong Link	
Inch	mm	Nominalk Size Material mm	Inside Dimensions mm
		Width	Length
7/32	5.5	15	64
9/32	7	21	76
3/8	10	29	102
1/2	13	32	102
5/8	16	41	133
3/4	20	48	152
7/8	22	51	178
1	26	57	203
1-1/4	32	70	229
			406

Working Load Limit

Chain Size	Inch mm	(a) at 60°		(a) at 90°		(a) at 120°	
		Lbs	Kg	Lbs	Kg	Lbs	Kg
		5,450	2,470	4,450	2,020	3,140	1,430
7/32	5.5	11,200	5,100	9,100	4,100	6,450	2,900
9/32	7	22,800	10,300	18,600	8,400	13,200	6,000
3/8	10	39,000	17,700	31,800	14,400	22,500	10,200
1/2	13	58,700	26,600	47,900	21,700	33,900	15,400
5/8	16	91,700	41,600	74,900	34,000	53,000	24,000
3/4	20	110,900	50,250	90,600	41,050	64,000	29,050
7/8	22	123,900	56,900	101,200	46,500	71,500	32,800
1	26	187,800	85,200	153,400	69,600	108,400	49,200

How to order chain slings.**23 - 11 - 77: Chain sling with the following information;**

- Determine the maximum load to be lifted.
- Refer to the table above and choose the proper type of chain sling (single, double, etc) dictated by the size, shape and weight of the load.
- Estimate the approximate angle between a leg of the sling and the load during operation.
- Select proper attachments (hooks and master links) for your chain sling.
- Determine the overall reach from bearing point on master link to bearing point on attachment.
- Refer to the Working Load Limit Chart and to your predetermined angle of the type sling you have selected.
- Choose the chain size which meets your requirements.

Note: Angle to the load on multiple leg slings will be 60° or greater as long as the distance between lifting eyes of load is not greater than reach shown on identification tag.

Eliminator Single/Double Hooks

A-1361/A-1362

Enganche sencillo/doble Eliminator

エリミネーターフック ELIMINATOR 单 / 双挂钩

The Crosby® ELIMINATOR® combines selected features and functionality of a master link, connecting link, grab hook and adjuster legs to provide you with one fitting that is suitable for applications that require an adjustable length chain sling. Made of forged alloy steel - quenched and tempered. It can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i) (A) and 1926.1501(g)(4)(iv) (B). Suitable for use with Grade 100 and Grade 80 chain. Use the A-1361 and A-1362 in combination to make 3 leg chain slings. All sizes are RFID (Radio Frequency Identification) equipped.



A-1361 Single Hook



A-1362 Double Hook

23

Rigging Equipment & General Deck Items

A-1361 Single Hook

Unit Per Pcs.

CODE	Chain Size		Frame Size	Working Load Limit (t)	Weight Each (kg)
	Inch	mm			
23 43 40	1/4	7	2	2.0	1.76
41	5/16	8	2	2.6	1.76
42	3/8	10	3	4.0	2.94
43	1/2	13	4	6.8	6.12
44	5/8	16	5	10.3	10.9

Note : Proof tested at 2.5 times the Working Load Limit

Name of Mfr. : Crosby®

A-1362 Double Hook

Unit Per Pcs.

CODE	Chain Size		Frame Size	Working Load Limit (t)	Weight Each (kg)
	Inch	mm			
23 43 45	1/4	7	2	3.9	2.13
46	5/16	8	2	5.0	2.13
47	3/8	10	3	8.0	3.67
48	1/2	13	4	13.6	7.84
49	5/8	16	5	20.5	14.3

Note : Proof tested at 2 times the Working Load Limit

Name of Mfr. : Crosby®

Clevis Sling Hooks

L-1339

Gancho de Clevis Sling

クレビススリングフック 吊鉤

Forged alloy steel quenched and tempered. Suitable for use with Grade 100 and Grade 80 chain.



L-1339

Unit Per Pcs.

CODE	Chain Size (mm)	Working Load Limit (t)	Weight (kg)
23 43 50	6	1.5	0.29
51	7	2.0	0.72
52	8	2.6	0.71
53	10	4.0	1.17
55	13	6.8	2.39
23 43 56	16	10.3	4.45
57	18-20	16.0	8.30
58	22-23*	21.0	11.2

*22-23mm size does not have cam, latch attaches to unique pin.

Name of Mfr. : Crosby®

Cradle Grab Hooks

A-1338

Ganchos de Agarre para Cunas

クレードルグラブフック 摆篮抓钩



A-1338

Forged alloy steel quenched and tempered. Innovative cradle design allows for 100% efficiency of Grade 100 chain, suitable for use with Grade 100 and 80 chain.

Unit Per Pcs.

CODE	Chain Size (mm)	Working Load Limit (t)	Weight (kg)
23 43 61	7	2.0	0.20
62	8	2.6	0.45
63	10	4.0	0.82
65	13	6.8	1.18
66	16	10.3	3.18

Name of Mfr. : Crosby®

Eye Hooks

L-320AN

Ganchos de ojo アイフック 挂钩



L-320AN

Alloy steel quenched and tempered.

Unit Per Pcs.

CODE	Opening Size (mm)	Working Load Limit (t)	Weight (kg)
23 43 71	22.6	1	0.28
72	23.1	1.5	0.40
73	25.4	2	0.65
75	27.7	3	0.94
76	34.5	5	1.95
23 43 77	40.9	7	3.76
78	53.0	11	6.80
79	57.5	15	9.42
80	76.5	22	17.9

Name of Mfr. : Crosby®

Latching Eye Hooks

S-315A

Gancho con Seguro

ラッチングアイフック



S-315A

铸造弹簧鎖型掛鉤（带眼）

Hook is forged alloy steel, quenched and tempered with integrated heavy duty latch.

Unit Per Pcs.

CODE	Chain Size (mm)	Working Load Limit for Wire Rope (Short Tons)	Overall Length mm	Weight (kg)
23 43 81	6	1	104.6	0.25
82	7 - 8	2	144.9	0.59
83	10	3	186.5	1.18
84	13	5	228.4	2.13
85	16	7	279	3.88

Name of Mfr. : Crosby®

Eye Hooks

with Locking Latch S-1316

Ganchos de Ojo con Pestillo de Bloqueo S-1316

ロック・ラッチ付きアイフック 带锁和门的挂钩



Forged alloy steel, quenched & tempered.

Recessed trigger design is flush with the hook body, protecting the trigger from potential damage. Suitable for use with Grade 100 and Grade 80 chain.

CODE	Chain Size (mm)	Grade 10 Alloy Chain W.L.L (t) (4:1)	Working Load Limit (t) (5:1)	Overall Length (mm)	Unit Per Pcs.	
					Weight Each (kg)	Unit Per Pcs.
23 46 01	6	1.45	1.00	100	0.39	
02	7 - 8	2.60	1.90	135	0.82	
03	10	4.00	2.50	167	1.54	
04	13	6.80	5.62	209	2.72	
05	16	10.3	7.53	256	6.83	
23 46 06	18-20	16.0	9.98	274	8.61	
07	22	20.0	12.0	317	12.70	
08	26	27.1	-	371	22.45	

Name of Mfr.: Crosby®

Swivel Hooks

S-1326

Ganchos giratorios スイベルフック 旋转挂钩



Forged alloy steel, quenched & tempered.

The S-1326 hook is a positioning device and is not intended to rotate under load. Rated for both wire rope and for use with Grade 80/100 chain.

CODE	Chain Size (mm)	Grade 10 Alloy Chain W.L.L (t) (4:1)	Working Load Limit (t) (5:1)	Overall Length (mm)	Unit Per Pcs.	
					Weight (kg)	Unit Per Pcs.
23 46 11	6	1.45	1.16	156	0.57	
12	7 - 8	2.60	2.1	193	1.18	
13	10	4.00	3.2	224	2.13	
14	13	6.80	5.4	284	3.92	
15	16	10.3	8.2	328	7.71	
23 46 16	18-20	16.0	12.8	358	10.9	
17	22	20.0	16.0	417	13.2	

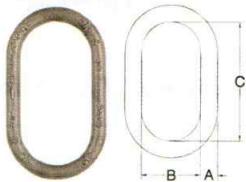
Name of Mfr.: Crosby®

Master Links

A-342

Anillas Maestra

マスター リンク 通用吊環



Made of alloy steel, quenched & tempered.

CODE	Diam. Inches	Dimension (mm)			Working Load Limit (t)	Weight (kg)
		A	B	C		
23 44 01	1/2	13	71.1	127	3.40	0.59
02	5/8	16	76.2	152	4.00	0.69
03	3/4	19	81.3	152	5.60	0.91
09	7/8	22	95.3	162	6.90	1.50
04	1	26	109	191	11.8	2.77
05	1-1/4	32	140	241	17.7	5.44
23 44 06	1-1/2	38	150	267	27.7	8.44
07	1-3/4	44	152	305	38.5	11.4
08	2	51	178	356	46.5	16.8

Name of Mfr.: Crosby®

Weldless Sling Links

G-341

Eslabones de Forma de Pera

スリングリンク 無縫吊環



G-341

Forged from a special quality carbon and alloy bar steel. Weldless and available in galvanized (G) alloy steel.

CODE	Diam. (mm)	Working Load Limit Single Pull (t)	Unit Per Pcs.	
			Weight (kg)	Unit Per Pcs.
23 44 11	10	0.82	0.10	
12	13	1.32	0.25	
13	16	1.91	0.48	
14	19	2.72	0.85	
15	22	3.76	1.25	
23 44 16	25	4.90	1.97	
17	32	7.60	3.45	
18	35	9.30	5.13	

Name of Mfr.: Crosby®

Connecting Links

A-1337

Enlaces de Conexión

コネクティングリンク 接连接链

Forged alloy steel, quenched and tempered. Locking system that provides for simple assembly and disassembly, no special tools needed. Suitable for use with both Grade 80 and 100 chain.



A-1337

CODE	Chain Size (mm)	Working Load Limit (t)	Unit Per Pcs.	
			Weight (kg)	Unit Per Pcs.
23 44 31	7	2.0	0.13	
32	8	2.6	0.19	
39	10	4.0	0.35	
33	13	6.8	0.73	
34	16	10.3	1.41	
23 44 35	20	16.0	2.90	
36	22	19.4	3.56	
37	26	27.1	5.01	
38	32	41.0	9.53	

Name of Mfr.: Crosby®

Alloy Chain

Spectrum 8 & 10

Cadena Grado アロイチェーン 鑄造鍊

Made from a heat treated alloy steel. Spectrum 8 is finished with black paint. Spectrum 10 is 25% stronger than grade 80 alloy chain and finished with red paint for 6-16mm and black paint for 20-32mm.



Spectrum 8 (Grade 80)

Unit Per Mtr.

CODE	Chain Size (mm)	Working Load Limit (t)	Meters per Drum	Unit Per Mtr.	
				Weight per Meter (kg)	Unit Per Mtr.
23 44 41	6	1.1	200	0.8	
30	7	1.5	200	1.1	
42	8	2.0	200	1.4	
43	10	3.2	200	2.3	
44	13	5.4	150	3.8	
23 44 45	16	8.2	100	5.6	
46	19	11.6	50	7.8	
40	20	12.8	50	9.9	
47	22	15.5	50	10.6	
48	23	16.0	50	11.8	
23 44 49	26	21.6	50	14.8	
50	32	32.8	50	21.6	

Name of Mfr.: Crosby®

Spectrum 10 (Grade 100)

Unit Per Mtr.

CODE	Chain Size (mm)	Working Load Limit (t)	Meters per Drum	Weight per Meter (kg)
23 44 10	6	1.5	200	0.9
19	7	1.95	200	1.2
20	8	2.6	200	1.6
29	10	4.0	200	2.5
69	13	6.8	150	4.1
23 44 70	16	10.3	100	6.2
96	20	16.0	50	9.4
97	23	21.0	50	13.0
98	26	27.1	50	16.4
99	32	41.0	50	25.8

Name of Mfr.: Crosby®

Forged Regular Swivels**G-402**

Eslabón Giratorio Regular

鍛造レギュラースイベル

鍛造通用型旋環



G-402

Quenched, tempered and hot dip galvanized.

Unit Per Pcs.

CODE	Body Size (mm)	Working Load Limit (t)	Weight (kg)
23 44 51	6	0.39	0.10
52	8	0.57	0.18
53	10	1.02	0.32
54	13	1.63	0.60
55	16	2.36	1.13
23 44 56	19	3.27	1.82
57	22	4.54	2.83
58	25	5.67	4.06
59	32	8.16	7.42
60	38	20.50	20.80

Name of Mfr.: Crosby®

Sling Saver Web Connectors**S-280**

Conectores de redes para economizar eslingas

スリング・金属金具接続用補助コネクター

吊绳与金属配件连接用辅助连接器

Increasing synthetic sling efficiency as compared to standard anchor and chain shackle bows and conventional eye hooks. This allows 100% of the slings rated Working Load Limit to be achieved. Allowing better load distribution on internal fibers.



Durable vinyl cover that protects sling at eye, and keeps sling positioned correctly on spool.

Unit Per Pcs.

CODE	Round Sling Size (No.)	Web Slings			Working Load Limit (t)	Weight Each (kg)
		Webbing Width (mm)	Eye Width (mm)	Ply		
23 44 61	1 & 2	50	50	2	2.95	0.68
62	3	35	75	2	4.08	0.86
63	4	50	100	2	5.67	1.32
64	5 & 6	75	150	2	7.70	2.31

Note : Maximum Proof Load is 2 times the Working Load Limit.

Name of Mfr.: Crosby®

Sling Saver Web Sling Shackles**S-281**

Grilletes de eslingas de redes para economizar eslingas

スリング・金属金具接続用シャックル 吊绳与金属配件连接用卸扣

Designed to connect synthetic web slings and synthetic round slings to eyebolts, pad eyes, and lifting lugs. All alloy construction.



Increased radius of bow gives wider sling bearing surface resulting in an increased area for load distribution, thus: Increasing synthetic sling efficiency as compared to standard anchor and chain shackle bows and conventional eye hooks.

Unit Per Pcs.

CODE	Round Sling Size (No.)	Web Slings			Working Load Limit (t)	Weight Each (kg)
		Webbing Width (mm)	Eye Width (mm)	Ply		
23 44 65	1 & 2	50	50	2	2.95	0.54
66	3	35	75	2	4.08	0.68
67	4	50	100	2	5.67	1.13
68	5 & 6	75	150	2	7.70	1.95

Note : Maximum Proof Load is 2 times the Working Load Limit.

Name of Mfr.: Crosby®

Sling Saver Web Sling Shackles**S-252/S-253**

Grilletes de eslingas de redes para economizar eslingas

スリング・金属金具接続用シャックル 吊绳与金属配件连接用卸扣

Same shackle to model S-280, but available in size 3.25 to 50 metric tons and in both a Screw Pin and Bolt, Nut and Cotter Pin configuration. Bolt (Pin) has a larger diameter that provides better load distribution.



S-252 S-253

S-252 Bolt Type Sling Shackle

Unit Per Pcs.

CODE	Round Sling Size (No.)	Web Slings Eye Width (mm)	Working Load Limit (t)	Weight Each (kg)
23 44 71	1 & 2	25	3.25	0.64
72	3 & 4	35	6.5	1.09
73	5 & 6	50	8.75	1.86
74	7 & 8	75	12.5	3.63
75	9 & 10	100	20.5	7.67
23 44 76	11 & 12	125	35	15.9
77	13	150	50	26.1

Note : Maximum Proof Load is 2.5 times the Working Load Limit.

Name of Mfr.: Crosby®

S-253 Screw Pin Sling Shackle

Unit Per Pcs.

CODE	Round Sling Size (No.)	Web Slings Eye Width (mm)	Working Load Limit (t)	Weight Each (kg)
23 44 78	1 & 2	25	3.25	0.64
79	3 & 4	35	6.5	1.00
80	5 & 6	50	8.75	1.72
81	7 & 8	75	12.5	3.31
82	9 & 10	100	20.5	6.89
23 44 83	11 & 12	125	35	14.0
84	13	150	50	23.6

Note : Maximum Proof Load is 2.5 times the Working Load Limit.

Name of Mfr.: Crosby®

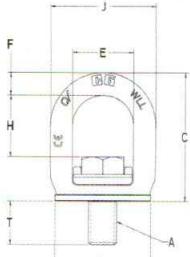
Slide-loc Lifting Points

SL-150

Puntos de suspensión con juntas deslizantes

スライドロックリフティングポイント 滑锁吊点部件

Available in capacities from 0.5 to 3.2 metric tons. Bail is Forged Alloy Steel - Quenched and Tempered, and swivels 360° degree. Meets the Machinery Directive 2006/42/EC guidelines and is marked with CE accordingly.



Unique locking mechanism makes the lifting point well suited for quick attachment to load surface. No need for tools.

Metric Thread

CODE	Bolt Size	Dimensions (mm)			Working Load Limit (ton)	Weight Each (kg)	Unit Per Pcs.
		E	H	T			
23 44 91	M10 × 1.5 × 25	28.0	27.8	14.6	0.50	0.14	
92	M12 × 1.75 × 30	33.0	32.9	18.3	0.75	0.23	
93	M16 × 2 × 40	37.0	37.0	24.5	1.50	0.50	
94	M20 × 2.5 × 50	43.9	43.6	31.0	2.30	0.94	
95	M24 × 3 × 60	52.8	52.8	37.0	3.20	1.60	

Note : Ultimate load is 4 times the Working Load Limit.

Name of Mfr. : Crosby®

8. Steel Cargo Blocks

Steel Cargo Blocks

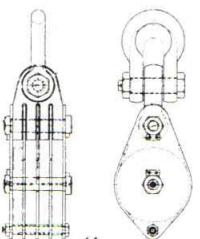
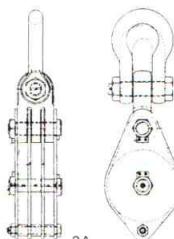
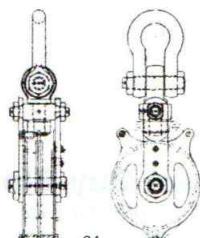
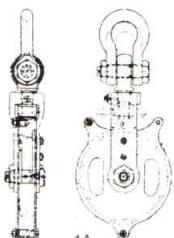
without Becket

(Ref. JIS F 3421-1989)

Bloques de Carga de Acerosin Becket

船用荷役鋼製滑車 ベケット付き

钢制货块 不带贝克特



Without Becket

Unit Per Pcs.

CODE	Type	Sheave		Wire Rope Dia mm	Shackle SB or BB	SWL		Weight kg	
		No.	Dia. mm			kN	tf		
23 15 01	1A	220	12.5	22	13.7	1.4	16		
		240	14	26	17.2	1.75	21		
		280	16	30	22.1	2.25	33		
		340	20	34	34.3	3.5	52		
		430	25	42	53.9	5.5	84		
		480	28	48	68.6	7.0	123		
23 15 07	2A	240	14	34	63.7	6.5	47		
		280	16	38	83.4	8.5	67.5		
		340	20	46	127.5	13	114		
		430	25	60	206	21	205		
		480	28	70	275	28	314		
23 15 12	3A	430	25	75	314	32	382		
23 15 13	4A	430	25	80	392	40	490		
23 15 14	1A	1	410	24	40	49	5	74	
	15	2A	2	410	24	60	186	19	145
	16	3A	3	410	24	70	284	29	302
	17	4A	4	410	24	80	353	36	370

Denotes: 1-Single Block, 2-Double, 3-Triple, 4-Quadruple, A-Without Becket

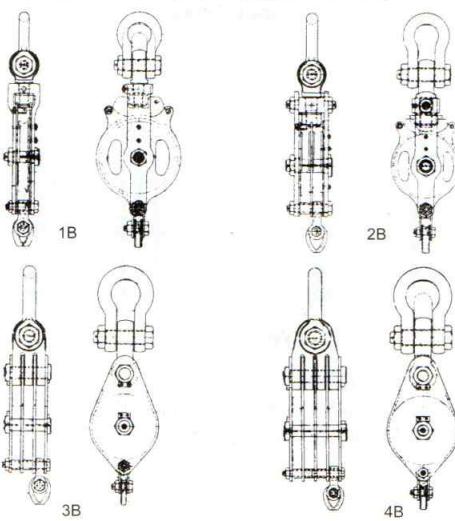
Steel Cargo Blocks

with Becket

(Ref. JIS F 3421-1989)

Bloques de Carga de Acero con Becket

船用荷役鋼製滑車 ベケット付き 钢制货梯 带贝克特



How to order: CODE

Cargo block, steel, with becket, TYPE, NO. of SHEAVE and SHEAVE DIA.

With Becket

Unit Per Pcs.

CODE	Type	Sheave		Wire Rope Dia mm	Shackle SB or BB	SWL		Weight kg
		No.	Dia. mm			kN	tf	
23 15 21	1B	220	12.5	26	13.7	1.4	21	
		240	14	30	17.2	1.75	29	
		280	16	34	22.1	2.25	45	
		340	20	42	34.3	3.5	73	
		430	25	55	53.9	5.5	135	
		480	28	60	68.6	7.0	188	
23 15 27	2B	240	14	38	78	8	59	
		280	16	40	98	10	79	
		340	20	55	157	16	155	
		430	25	65	245	25	253	
		480	28	75	333	34	381	

(to be continued)

How to order: CODE

Cargo block, steel, without becket, TYPE, NO. of SHEAVE and SHEAVE DIA.

CODE	Type	Sheave		Shackle SB or BB	SWL		Weight kg
		No.	Dia mm		Dia mm	kN	
23 15 32	3B	3	430	25	80	353	36 416
23 15 33	4B	4	430	25	85	431	44 527
23 15 34	1B	1	410	24	50	49	5 81
35	2B	2	410	24	65	226	23 190
36	3B	3	410	24	75	324	33 309
37	4B	4	410	24	80	392	40 398

Denotes: 1-Single Block, 2-Double, 3-Triple, 4-Quadruple
B-With Becket

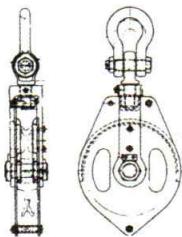
Steel Plate Cargo Blocks

with Roller Bearing

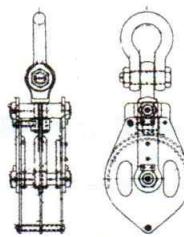
(Ref. JIS F 3429-1995)

Motonés de Carga con Rodamiento Tipo Japones

船用荷役鋳鋼製滑車（ころ軸受入り） 無素環单滑輪轴承吊货滑车



Without Becket



With Becket

How to order : CODE

Cargo block, steel plate, with roller bearing, WITHOUT or WITH BECKET, TYPE, NO. of SHEAVE and SHEAVE DIA

Without Becket

CODE	Type	Becket	Sheave		Dia W.R. mm	Shackle SB or BB	SWL Tons	Wgt. kg
			Nos	Dia mm				
23 15 51			340	20	34		3.5	58
52	1AR	W/out	S'gle	430	25	42	5.5	96
53				480	28	48	7.0	131
23 15 54			340	20	46		13.0	122
55	2AR	W/out	D'ble	430	25	60	21.0	227

Denotes: 1-Single Block, 2-Double Block
R-With Roller Bearing, A-Without Becket

With Becket

CODE	Type	Becket	Sheave		Dia W.R. mm	Shackle SB or BB	SWL Tons	Wgt. kg
			Nos	Dia mm				
23 15 56			340	20	42		3.5	77
57	1BR	With	S'gle	430	25	55	5.5	147
58				480	28	60	7.0	198
23 15 59			340	20	55		16.0	160
60	2BR	With	D'ble	430	25	65	25.0	259

Denotes: 1-Single Block, 2-Double Block
B-With Becket, R-With Roller Bearing

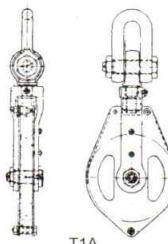
Steel Blocks

for Topping Unit

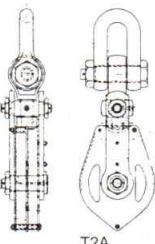
(Ref. JIS F 3427-1990)

Motonés de Carga con Rodamiento

船用荷役つり索鋼製滑車 无素环钢制单滑轮转子轴承吊货滑车



Without Becket



With Becket

How to order: CODE

Block, steel, for topping unit, WITHOUT or WITH BECKET, TYPE, NO. of SHEAVE and SHEAVE DIA.

Without Becket

CODE	Type	Becket	Sheave		Dia W.R. mm	Shackle	SWL Tons	Wgt. kg
			Nos	Dia mm				
23 15 66		T1A	S'gle	460	33.5	SB 60	11	143
67		T2A	D'ble	460	33.5	SB 85	42	330

Denotes: T - For Topping Unit
1 - Single Block, 2 - Double Block
A - Without Becket

With Becket

CODE	Type	Becket	Sheave		Dia W.R. mm	Shackle	SWL Tons	Wgt. kg
			Nos	Dia mm				
23 15 68		T1B	S'gle	460	33.5	SB 75	11	217
69		T2B	D'ble	460	33.5	SB 90	50	350

Denotes: T - For Topping Unit
1 - Single Block, 2 - Double Block
B - With Becket

Steel Guy Blocks

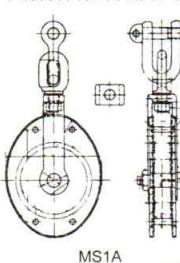
with Swivel for Fibre Rope

(Ref. JIS F 3419-1990)

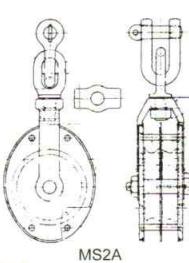
Motonés de Cáncamo Giratorio para Cuerda

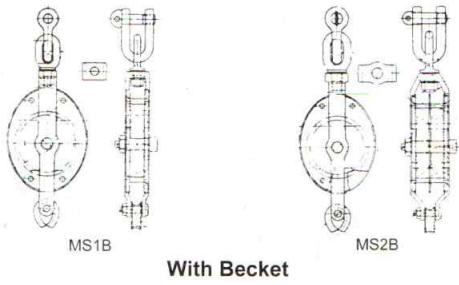
船用ロープガイ銅製滑車 (スイベル付)

无素环钢制转动式单滑轮导索滑车



Without Becket





With Becket

How to order: CODE

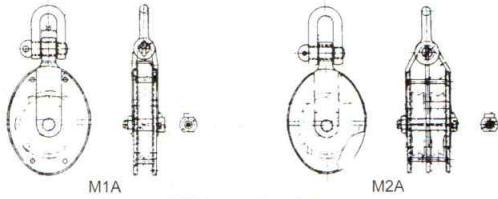
Guy block, steel, with swivel for fibre rope, WITHOUT or WITH BECKET, TYPE, NO. of SHEAVE and SHEAVE DIAM.

CODE	Type	Becket	Unit Per Pc.					
			Sheave Nos	Dia mm	Dia W.R. mm	Shackle	SWL Tons	Wgt. kg
23 15 71	MS1A	W/out	S'gle	160	24	SD 22	0.50	10.4
72	MS2A	"	D'ble	160	24	SD 24	1.80	14.5
73	MS1B	With	S'gle	160	24	SD 22	0.47	11.49
74	MS2B	"	D'ble	160	24	SD 24	2.20	15.50

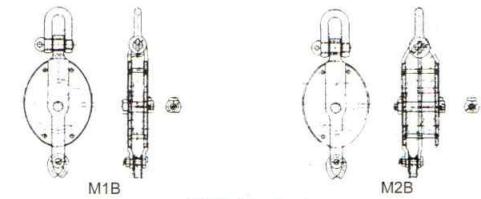
Denotes: M - For Hemp or Synthetic Fibre Rope
S - With Swivel
1 - Single Block, 2 - Double Block
A - Without Becket, B - With Becket

Steel Blocks for Fibre Rope Guy
(Ref. JIS F 3424-1990)

Motonos para Cuerda
船用ロープガイ鋼製滑車 船用鋼製遵索用轉動滑車



Without Becket



With Becket

How to order: CODE

Block, steel, for fibre rope guy, WITHOUT or WITH BECKET, TYPE, No. of SHEAVE and SHEAVE DIAM.

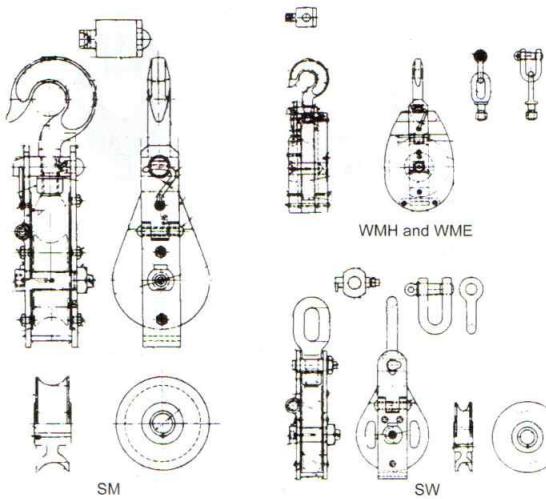
CODE	Type	Becket	Unit Per Pc.					
			Sheave Nos	Dia mm	Dia F.R. mm	Shackle	SWL Tons	Wgt. kg
23 15 76	M1A	W/out	S'gle	160	24	SD 22	0.50	8.88
77	M2A	"	D'ble	160	24	SD 24	1.80	14.4
78	M1B	With	S'gle	160	24	SD 22	0.47	10.0
79	M2B	"	D'ble	160	24	SD 24	2.20	15.0

Denotes: M - For Hemp or Synthetic Fibre Rope
1 - Single Block, 2 - Double Block
A - Without Becket, B - With Becket

Steel Snatch Blocks

(Ref. JIS F 3422-1990)

Pastecas de Acero 船用切欠き滑車 钩头式钢制开口滑车

**How to order: CODE**

Snatch block, steel, for USE, TYPE, SHEAVE DIAM.

CODE	Accessory	Nominal Size mm	Sheave Dia mm	Rope Dia mm			SWL kN	Wgt. kg
				160	200	250		
Type SM - Steel Snatch Block for Hemp or Synthetic Fibre Rope								
23 15 81	With Hook	200	200	65	12.3	1.25	30	
Type SW - Steel Snatch Block for Wire Rope								
23 15 82		160	160	20	9.8	1.0	12.1	
83	With Eye	200	200	25	19.6	2.0	27.1	
84		240	240	28	29.4	3.0	47.6	

Type WM - Wooden Snatch Block for Hemp or Synthetic Fibre Rope							
23 15 85	With Hook	260	160	24	4.9	0.5	10.0
86		330	200	30	7.4	0.75	17.8
23 15 87	With Eye	260	160	24	4.9	0.5	10.8
88		330	200	30	7.4	0.75	17.2

Denotes: S - Steel, W - Wood, M - Hemp or Synthetic Fibre Rope
2nd W - Wire Rope, H-Hook, E-Eye

Note: SM, SW - Nominal size is diameter of sheave.
WMH, WME - Nominal size is height of shell.

9. Wood Cargo Blocks**Internal Bound Wood Blocks**
(Ref. JIS F 3426-1990)

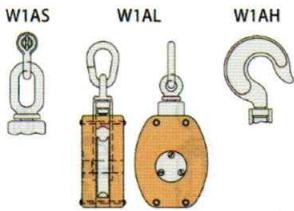
Motonos y Cuadernales sin con Ganchos Cáncamo o Grillete
船用鋼帶木製滑車 钩头式单滑轮铁带木滑车

Code Table for Internal Bound Wood Blocks

Becket	Accessory	Model	Code No.
Without Becket	With Hook	W1AH W2AH	23 16 01 - 05 23 16 51 - 55
	With Link	W1AL W2AL W3AL	23 16 06 - 11 23 16 56 - 59 23 17 01 - 05
	With Shackle	W1AS W2AS W3AS	23 16 12 - 25 23 16 60 - 69 23 17 06 - 15
	With Hook	W1BH W2BH	23 16 31 - 35 23 16 71 - 75
	With Shackle	W1BS W2BS W3BS	23 16 36 - 45 23 16 76 - 85 23 17 21 - 30

Denotes: A - Without Becket, B - With Becket
H - With Hook, L - With Link
S - With Shackle

Single Sheave without Becket
supplied with Hook, Link or Shackle



How to order: CODE

Wood block, single sheave, without becket, SYMBOL, TYPE, and SHELL HEIGHT

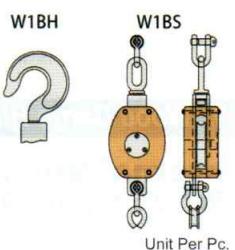
Unit Per Pcs.

CODE	Symbol	Type	Becket	Shell Height	Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 16 01 02 03 04 05	W1AH	Hook	W/ out	140	90	14	0.18	2.32
				180	120	18	0.29	3.62
				200	130	20	0.35	4.73
				220	140	22	0.42	6.48
				240	160	24	0.50	8.44
23 16 06 07 08 09 10 11	W1AL	Link	W/ out	180	120	18	0.29	3.62
				200	130	20	0.35	4.73
				220	140	22	0.42	6.48
				240	160	24	0.50	8.44
				280	180	28	0.66	12.11
				300	200	30	0.75	14.24
23 16 12 13 14 15 16 17 18 19 20 21 22 23 24 25	W1AS	Shackle	W/ out	140	90	14	0.18	2.32
				SC 10	120	18	0.29	3.62
				SD 12	130	20	0.35	4.73
				SC 10	140	22	0.42	6.48
				SD 12	160	24	0.50	8.44
				SC 12	180	28	0.66	12.11
				SD 14	200	30	0.75	14.24
				SC 12	220	30	0.75	14.24
				SD 14	240	30	0.75	14.24
				SC 12	260	30	0.75	14.24
				SD 16	280	30	0.75	14.24
				SC 14	300	30	0.75	14.24
				SD 20				
				SC 16				
				SD 20				
				SC 18				
				SD 22				

Denotes: W - Wood, 1 - Single Block, L - Link, H - Hook
S - Shackle, A - Without Becket

Note: Nominal size is height of shell.

Single Sheave with Becket
supplied with Hook or Shackle

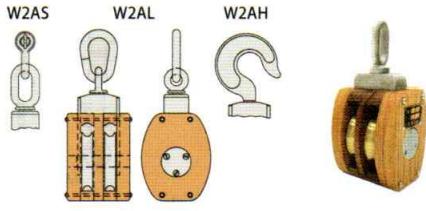


Unit Per Pcs.

CODE	Symbol	Type	Becket	Shell Height	Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 16 31 32 33 34 35	W1BH	Hook	With	140	90	14	0.17	2.77
				180	120	18	0.27	4.82
				200	130	20	0.33	5.77
				220	140	22	0.40	8.16
				240	160	24	0.47	10.33
23 16 36 37 38 39 40 41	W1BS	Shackle	With	140	90	14	0.17	2.77
				SC 10	120	18	0.27	4.82
				SD 12	130	20	0.33	5.77
				SC 12	180	22	0.37	4.82
				SD 16	190	24	0.40	8.16
				SC 14	200	24	0.47	10.33
42 43 44 45	W1BS	SD 16	With	180	120	18	0.27	4.82
				200	130	20	0.33	5.77
				220	140	22	0.40	8.16
				240	160	24	0.47	10.33

Denotes: W - Wood, 1 - Single Block, B - With Becket, H - Hook, S - Shackle
Note: Nominal size is height of shell.

Double Sheave without Becket
supplied with Hook, Link or Shackle



How to order: CODE

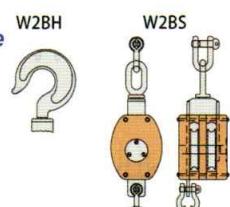
Wood block, double sheave, without becket, SYMBOL, TYPE, and SHELL HEIGHT

Unit Per Pcs.

CODE	Symbol	Type	Becket	Shell Height	Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 16 51 52 53 54 55	W2AH	Hook	W/out	140	90	14	0.66	3.69
				180	120	18	1.10	6.30
				200	130	20	1.30	8.96
				220	140	22	1.60	10.55
				240	160	24	1.80	14.18
23 16 56 57 58 59	W2AL	Link	W/out	180	120	18	1.10	6.30
				200	130	20	1.30	8.96
				220	140	22	1.60	10.55
				240	160	24	1.80	14.18
				260	180	26	1.90	15.84
23 16 60 61 62 63 64 65 66 67 68 69	W2AS	Shackle	W/out	140	90	14	0.66	3.69
				SC 12	120	18	1.10	6.30
				SD 14	130	20	1.30	8.96
				SC 14	140	22	1.60	10.55
				SD 20	160	24	1.80	14.18
				SC 16	180	26	1.90	15.84
				SD 20	200	28	2.10	17.48
				SC 18	220	30	2.20	17.04
				SD 22	240	30	2.20	17.04
				SC 20	260	30	2.20	17.04
				SD 24	280	30	2.20	17.04

Denotes: W - Wood, 2 - Double Block, A - Without Becket, H - Hook, L - Link, S - Shackle
Note: Nominal size is height of shell.

Double Sheaves with Becket
supplied with Hook or Shackle



Unit Per Pcs.

CODE	Symbol	Type	Becket	Shell Height	Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 16 71 72 73 74 75	W2BH	Hook	With	140	90	14	0.79	4.39
				180	120	18	1.30	7.30
				200	130	20	1.60	10.11
				220	140	22	1.90	12.12
				240	160	24	2.20	17.04
23 16 76 77 78 79 80 81 82 83	W2BS	Shackle	With	140	90	14	0.79	4.39
				SC 12	120	18	1.30	7.30
				SD 16	130	20	1.60	10.11
				SC 16	140	22	1.90	12.12
				SD 20	160	24	2.20	17.04
				SC 18	180	26	2.20	17.04
				SD 22	200	28	2.40	17.04
				SC 20	220	30	2.40	17.04
84 85	W2BS	SD 24	With	140	120	18	1.30	7.30
				SD 28	130	20	1.60	10.11
				SD 32	140	22	1.90	12.12
				SD 36	160	24	2.20	17.04
				SD 40	180	26	2.20	17.04

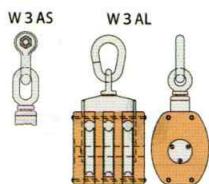
Denotes: W - Wood, 2 - Double Block, B - With Becket, H - Hook, S - Shackle

Note: Nominal size is height of shell.

Triple Sheaves without Becket supplied with Link or Shackle

How to order: CODE

Wood block, triple sheave, without becket, SYMBOL, TYPE, and SHELL HEIGHT



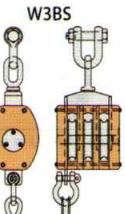
CODE	Symbol	Type	Becket	Shell Height	Unit Per Pcs.			
					Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 17 01	W3AL	Link	W/out	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 06		Shackle SC 18 SD 22		200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 07		W/out	T'ple	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 08		W3AS	SB 22 SD 26	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 09			W/out	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 10		W3AS	SB 24 SD 28	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 11			W/out	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 12		W3AS	SB 26 SD 30	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 13			W/out	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 14		W3AS	SB 26 SD 30	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89
23 17 15			W/out	200	130	20	1.8	12.25
				220	140	22	2.1	16.24
				240	160	24	2.5	20.65
				280	180	28	3.3	29.08
				300	200	30	3.8	35.89

Denotes: W - Wood, 3 - Triple Block, A - Without Becket, L - Link, S - Shackle
Note: Nominal size is height of shell.

Triple Sheaves with Becket supplied with Shackle

How to order: CODE

Wood block, triple sheave, with becket, SYMBOL, TYPE, and SHELL HEIGHT



CODE	Symbol	Type	Becket	Shell Height	Unit Per Pcs.			
					Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 17 21		Shackle SC 18 SD 22		200	130	20	2.0	13.61
				220	140	22	2.4	17.72
				240	160	24	2.8	22.87
				280	180	28	3.7	32.95
				300	200	30	4.2	42.28
23 17 22		W3BS	With	200	130	20	2.0	13.61
				220	140	22	2.4	17.72
				240	160	24	2.8	22.87
				280	180	28	3.7	32.95
				300	200	30	4.2	42.28

Denotes: W - Wood, 3 - Triple Block, B - With Becket, S - Shackle
Note: Nominal size is height of shell.

External Bound Wood Blocks

with Thimble and Shackle

(Ref. JIS F3423-1982)

Motonos y Cuadernales con Guardacabos Horquillas

船用鋼索帶木製滑車 卸扣式外索單滑輪木滑車 (带套环)



How to order: CODE

Wood block, external bound, with thimble and shackle, TYPE, SHELL HEIGHT, TYPE of SHACKLE and THIMBLE, and NO. of SHEAVE

CODE	Type	Shell Height	Shackle	Thimble	Unit Per Pcs.			
					Sheave Nos	Rope Size	SWL Tons	Wgt. kg
23 17 41	W1	100	SD 10	B 8	65	10	0.40	0.62
		120	SD 12	B 10	80	12	0.52	1.10
		140	SD 14	B 12	90	14	0.72	2.74
		180	SD 20	B 16	120	18	1.16	3.90
23 17 45	W2	100	SD 10	B 8	65	10	0.70	0.72
		120	SD 12	B 10	80	12	0.98	1.44
		140	SD 14	B 12	90	14	1.32	4.48
		180	SD 20	B 16	120	18	2.20	8.58

Denotes: W - Wood, 1 - Single Block, 2 - Double Block

Note: Nominal size is height of shell.

Handy Billy

Bombillo Portátil de Achique (Billy Cómodo)

テーキル 手动滑车

A tackle comprising of a rope and a double and single block. Used in light lifting work around the ship.



Lashing Snatch Block, 150 mm S.W.L. 5 tons

Code	Type	Unit Per Pcs.			
		Sheave Nos	Rope Size	SWL Tons	Pcs.
23 17 51	Lashing snatch block, 150 mm S.W.L. 5 tons				

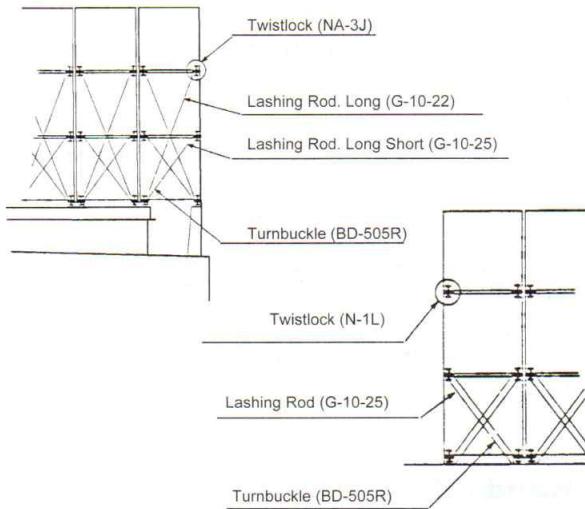
10. Container Lashings

Container Lashing and Securing Gears

Trinage de Contenedores

コンテナーラッシング用具 集装箱底角 (镀锌)

The lashing gear and lashing systems described below will ensure the safety of cargo during transport, secured efficiently with the minimum amount of lashing used. From among a wide range of products, the most popular models are illustrated below with the respective specifications.



23

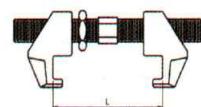
Rigging Equipment & General Deck Items

Stackers

	CODE	23 18 01	Unit Per Pc.
	Model	M-1G	
Type	Single Stacker		
Flange Thickness	12 mm		
Weight	2.8 kg		
Finish	Galvanized		

	CODE	23 18 02	Unit Per Pc.
	Model	M-3	
Type	Double Stacker		
Flange Thickness	12 mm		
Pitch of Cone to Cone	204 mm		
Weight	8.3 kg		
Finish	Painted with Primer		

Bridge Fittings



Unit Per Pc.

CODE	23 18 06	Unit Per Pc.
Model	L-3L	
Feature	Allowable container distance: L: 102 - 294 mm	
Weight	4.9 kg	
Finish	Galvanized	

Twistlocks

	CODE	23 18 11	Unit Per Pc.
	Model	N-1R	
Feature	Right Hand Lock		
Flange Thickness	25 mm		
Weight	5.6 kg		
Min. B.L.	500 kN		
Finish	Galvanized		

(to be continued)

CODE	23 18 12
Model	N-1L
Feature	Left Hand Lock
Flange Thickness	25 mm
Weight	5.6 kg
Min. B.L.	500 kN
Finish	Galvanized

CODE	23 18 13
Model	MTL-2
Feature	Left Hand Lock
Flange Thickness	30 mm
Weight	6.4 kg
Min. B.L.	500 kN
Finish	Galvanized

Semi-Auto Twistlocks

When loading the containers, put the semi-auto twistlocks in the bottom corner fittings of the containers at quay, the twistlocks will be locked automatically by putting on the other containers. The NA-3J twistlock is locked with the handle in the horizontal position.

When unloading the containers, unlock the twistlocks by using the bar and remove the semi-auto twistlocks from the containers at quay.

	CODE	23 18 31	Unit Per Pc.
	Model	NA-3J	
Feature	Horizontal Lock		
Flange Thickness	29 mm		
Weight	7.2 kg		
Min. B.L.	500 kN		
Finish	Galvanized		

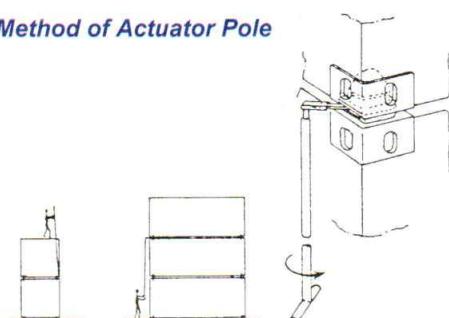
Note: NA-3J is a dual function type twistlock.

Actuator Poles (Aluminium)

	CODE	Model	Length	Unit Per Pc.
	23 18 16	N-OV-V	1.8 m	Aluminium
	17	-14	4.3 m	
	18	-22	6.7 m	
	23 18 21	N-OH	1.8 m	Aluminium
	22	-14	4.3 m	
	23	-22	6.7 m	
	23 18 26	N-OV-U	1.8 m	Aluminium
	27	-14	4.3 m	
	28	-22	6.7 m	

Note: The above models, made of aluminum, can be divided at any length.

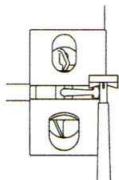
Handling Method of Actuator Pole



Actuator Poles (Carbon Glass Fiber)

	CODE	Model	Length	Material	Unit Per Pcs.
	23 18 33	RL-R-50	5.0 m		
	34	RL-R-20	2.0 m	Carbon Glass Fibre	
	35	RL-R-29 (JOINT)	2.9 m		

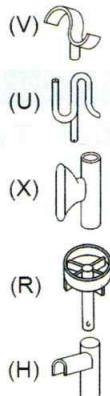
Note: The length of the above models, made of carbon glass fiber, cannot be changed.

How to use (RL-R)

The shape of the head piece depends on the type of twistlock.

V, U, X and R: Vertical
H: Horizontal

Choose the material (aluminium or carbon glass fiber), length, and shape of the head piece.

**Turnbuckles**

Size: mm	Unit Per Pcs.				
	CODE	23 18 36	Model	BD-505R	Feature
			Jaw Bolt, Hook Bolt, Pipe Body		As Per Sketch
			Size		As Per Sketch
			Weight	14.0 kg	
			Min. B.L.	500 kN	
			Finish	Galvanized	

Size: mm	Unit Per Pcs.				
	CODE	23 18 37	Model	BF-505R	Feature
			Jaw Bolt, Hook Bolt, Flame Body		As Per Sketch
			Size		As Peer Sketch
			Weight	14.9 kg	
			Min. B.L.	500 kN	
			Finish	Galvanized	

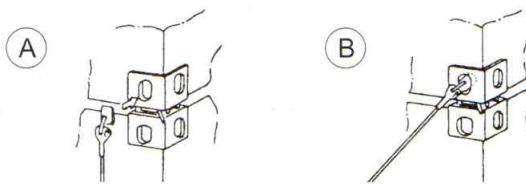
Size: mm	Unit Per Pcs.				
	CODE	23 18 38	Model	BD-505RS	Feature
			Jaw Bolt, Swivel Hook, Pipe Body		As Per Sketch
			Size		As Per Sketch
			Weight	11.3 kg	
			Min. B.L.	500 kN	
			Finish	Galvanized	

Hinge Rod G-10

Unit Per Pcs.					
CODE	Model	Rod Diam. mm	Length mm	Proof Test Load Tons	Min. B/L Tons
Short					
23 18 74	G-10-25	25	2,100	37.5	50.0
Long					
23 18 76	G-10-22	22	4,700	27.0	36.0

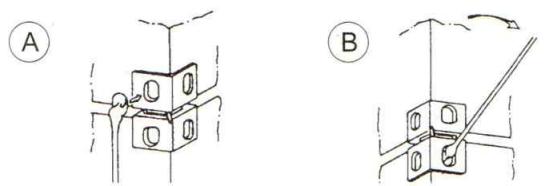
Extension Rods

Unit Per Pcs.		
Size: mm	CODE	23 18 81
	Model	G-8-50
	Size	As Per Sketch
	Weight	3.0 kg
	Min. B.L.	500 kN
	Finish	Galvanized

Handling Method of Lashing Rod**Upper Lashing**

A Insert hinge rod into the lower end hole of third tier container.

B Swing the other end to cross lashing direction and tighten with the turnbuckle.

**Lower Lashing**

A Insert the hook of a short lashing rod into the lower end hole of the second tier container.

B Swing the other end to cross the lash and tighten it with the turnbuckle.

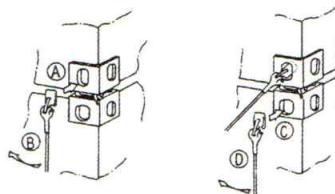
Handling method of the Hinged Lashing Rod. Same lashing rods and turnbuckles as mentioned above.

**"Parallel Lashing System"**

When the parallel lashing system is used, the lashing is made by applying the hinge rod to the lower end hole of the second tier container. The same hinge rod should also be applied to the upper end hole of the first tier container.

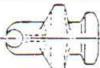
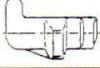
The lashing length is adjusted with the turnbuckle. A sagged, slackened, or overfastened lashing is not desirable.

The lashing should be adjusted to the proper level with the turnbuckle.



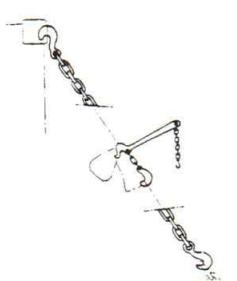
- A. Insert the hinge rod into the bottom hole of the second tier container.
- B. Turn the fitting to secure the internal cross lashing.
- C. Insert the hinge rods into the upper end hole of the first tier container.
- D. Turn the fitting to secure the internal cross lashing with the turnbuckle.

Corner Hooks

	Unit Per Pc.
	
CODE	23 18 83
Model	CH-1
Weight	2.7 kg
Feature	Preferable for Bar Lashing
Finish	Galvanized
	
CODE	23 18 84
Model	CH-2
Weight	2.7 kg
Feature	Permit Crossing of 2 Lashing Bars
Finish	Galvanized

Lashing Chains

	Unit Per Pc.
CODE	23 18 91
Model	LC-23-20
Feature	Both End Hook
B. L.	20.0 Tons
Finish	Dip Tar Epoxy
Length	As Per Request
Chain Tensioners	
CODE	23 18 92
Model	CT-1-20
B. L.	20.0 Tons
Finish	Dip Tar Epoxy



Cargo Lashing Belt

Cinturón de Amarre de Carga カーゴラッシングベルト 货物绑带

Used to secure cargo or goods on deck to protect cargo from moving which leads to accidents. Typically made with a nylon or polyester and it can be fastened with metal buckle.

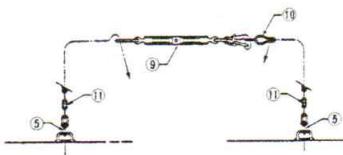
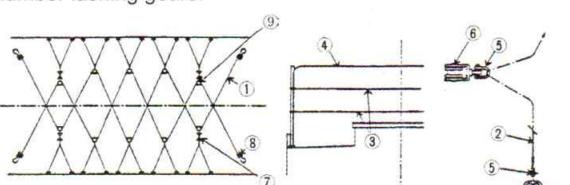


Unit Per Pc.					
CODE					
Size					
Length					
23 21 88	1"	1 mtr	CODE	Size	Length
89	1"	2 mtr	23 21 97	2"	1 mtr
90	1"	3 mtr	98	2"	2 mtr
			99	2"	3 mtr

Lumber Lashing Gears

Trinage de Madera 木材ラッシング用具 木材捆绑链条

Following illustrations will be of guidance in how to order lumber lashing gears.



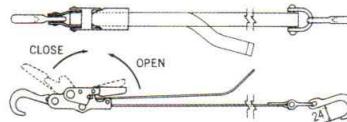
- ① ③ ④ Lashing Wire, Standard size is 22-26 mm ø, 6 x 24
- ② Pendant Wire
Loop at both ends, Standard size is 20 mm ø, 6 x 24
- ⑤ Shackle B/L 20T or 30T
- ⑥ Snatch Block
- ⑦ Turnbuckle
- ⑧ Wire Rope Clip
- ⑨ Turnbuckle for Lumber Lashing, PTL: 8.0T, BL: 20.1T
- ⑩ Grab Link with long link, PTL: 5.6T, BL: 14.1T
- ⑪ Lashing Chain End Link at both ends BL: 18.0T

11. Car Clasps

Belt Type Car Clasps

Catraca Cinta Poliéster ベルト式カークラスパー 皮带式车辆固定器

Made of polyester belt with hooks at both end and used for fixing cars on deck for car careers. Max. length between hook and hook will be 1,350 mm and firmly secured by tightening lever.



Safe Working Load	400 kg
Max. Breaking Load	1,600 kg
Length	Max. 1,400 mm
Weight	Min. 400 mm
23 19 01	0.9 kgs
Car clasper, belt type, normal working load 400 kg	

12. Ladders

Pilot Ladders

Escalas de Práctico パイロットラダー 木质舷梯

Manufactured in compliance with ISO 799-1:2019

Excerpt of Pilot Ladder Rules

1. Side Ropes
Each side rope shall be mildew-resistant manila rope, or a spun thermoset polyester rope with a polypropylene core of a colour that contrasts with the spun polyester. Ropes shall have a breaking strength of at least 24 kN, and the diameter should be 20 mm (63 mm circumference).
2. Steps
The distance of inner edge of side ropes should be more than 400 mm. The centre of each hole shall be at least 50 mm from the short edge of the step. The width of step is no less than 115 mm, and thickness no less than 25 mm. Each step shall be equally spaced at 330±20 mm, of one-piece construction, of either hardwood or resilient plastic or rubber material, and its surface is grooved or patterned, or of a textured non-skid type which shall be integral with the step and shall be either moulded or cut into the step with the nominal depth of 3 mm. Non-skid adhesive sheeting may not be used.

3. The bottom 4 steps shall be made only of resilient synthetic or rubber materials. The rest of the ladder steps shall be of either hardwood or synthetic material.

4. Spreader Steps

Each spreader step shall meet the requirements for other ladder steps, except that each spreader step shall be at least 1.8 meter long.

Number of steps and relative positions of spreaders

No. of Steps	The position of Preventer Steps	No. of Steps	The position of Preventer Steps
6	5	22	5, 14
7	5	23	5, 14, 21
8	5	24	5, 14, 22
9	5	25	5, 14, 23
10	5	26	5, 14, 23
11	5	27	5, 14, 23
12	5	28	5, 14, 23
13	5	29	5, 14, 23
14	5, 12	30	5, 14, 23
15	5, 13	31	5, 14, 23
16	5, 14	32	5, 14, 23, 30
17	5, 14	33	5, 14, 23, 31
18	5, 14	34	5, 14, 23, 32
19	5, 14	35	5, 14, 23, 32
20	5, 14	36	5, 14, 23, 32
21	5, 14		

Remark: Spreader-step positions are determined by the step number counted from the bottom of the ladder.

5. Replacement Steps

Damaged steps shall be replaced with replacement steps meeting the relevant requirements in item 2 and 4, and shall not include more than two replacement steps and one replacement spreader step. If a ladder requires a third replacement step or a second replacement spreader step, it shall be rebuilt.

6. Step Fixing Piece

Step fixtures shall have rope seizing or purpose made arrangement such as solid nylon clamp blocks or hardwood clamp blocks to prevent the fasteners from loosening. Cable ties, u-clamps, worm driven clips are unacceptable.

7. Fastening Hardware

Each metal fastener shall be made of material which is inherently or treated to be corrosion resistant. Ferrous metal part (not stainless steel) shall be coated in accordance with ISO 1461, stainless steel part shall be of a marine grade alloy with a corrosion resistance at least equal to grade "4401-316-001" in ISO 15510:2014, aluminium part shall be 5 254 alloy or other grade containing not more than 0.06 % copper in accordance with ISO 209:2007. Metals in contact with each other shall be galvanically compatible, or insulated to prevent galvanic corrosion in a marine environment.

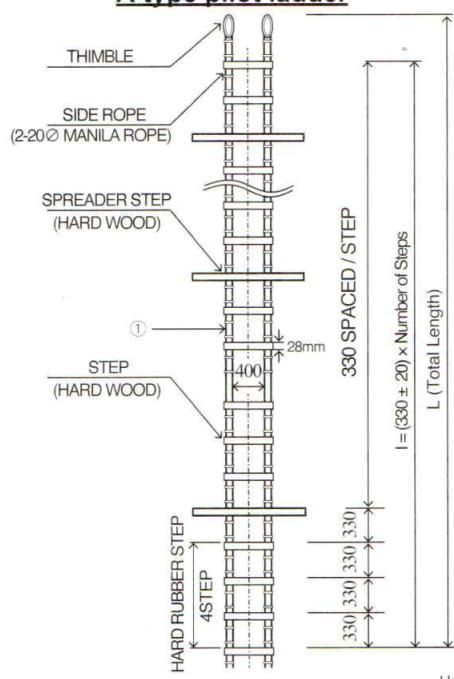
8. Marking

The bottom of the top step and bottom of the lowest spreader step of the ladder shall be marked with:

- the name and address of the manufacturer;
- the manufacturer's model designation;
- "ISO 799-1" and "SOLAS";
- the year of assembly or reassembly of the ladder;
- identification of the approved maritime safety administration, along with any approval indications required by that administration, and
- where used, identification of an approved organization acting on behalf of the maritime safety administration.

The construction of the pilot ladder

A type pilot ladder

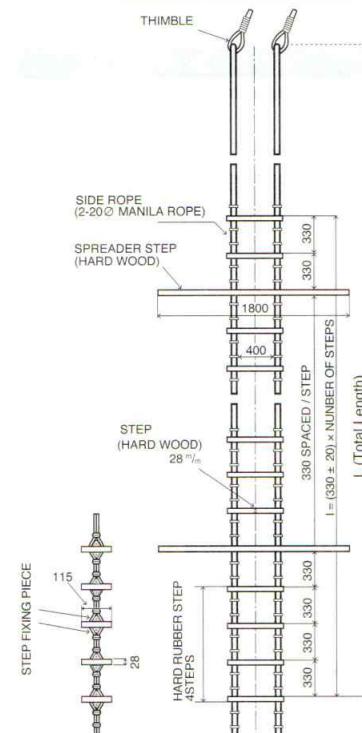


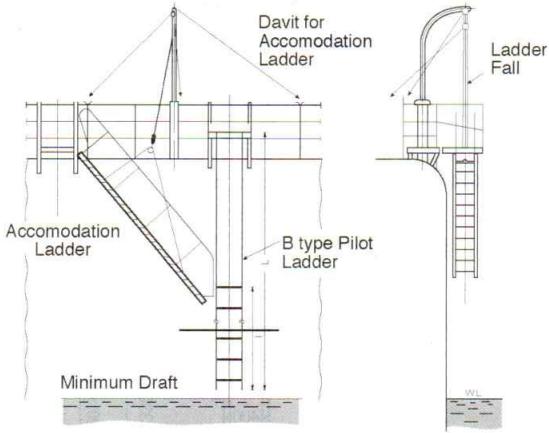
Unit Per Set

CODE	Type	Length	Numbers of	
			Total Steps	Preventer Steps
23 20 03	A	15 Mtr	45	5
		12 Mtr	36	4
		9 Mtr	27	3
		6 Mtr	18	2

* Other length is also available on request.

B type pilot ladder





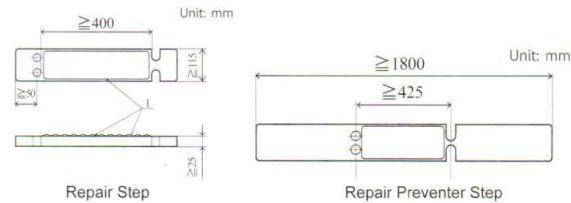
with ladder design, use and maintenance in order to facilitate the rigging of the ladder to the required height.



Unit Per Pc.

CODE	Description	Material	Size L×W×TH mm
23 20 11 16	Step	Hard Wood Rubber	525 × 115 × 28
12	Preventer Step	Hard Wood	1,800 × 115 × 28
13	Step Fixing	Hard Wood	—

Repair Steps and Preventer Steps



Unit Per Pc.

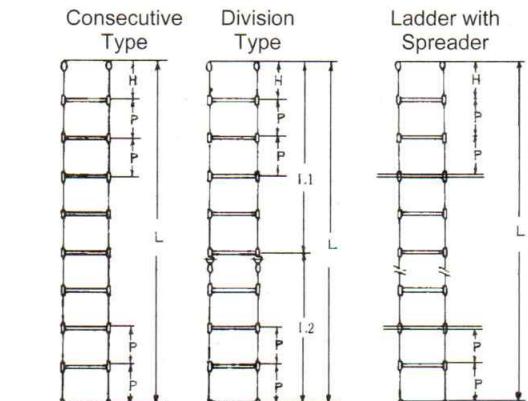
CODE	Description	Material	Size L×W×TH mm
23 20 14	Repair Step	Hard Wood	525 × 115 × 25
15	Repair Preventer Step	Hard Wood	1,800 × 115 × 25

Aluminium Alloy Rope Ladders with GS Type Oval Step

Escalas de Aleación de Aluminio Tipo GS
アルミ合金 GS 型ステップロープライダー
铝合金 GS 型踏板绳梯

Aluminium alloy steps with synthetic fibre side rope. Light weight, easy handling, long life, non-corrosive, unbreakable, and very safe to the user. Suitable for various uses such as: – embarkation, liferaft, chain locker, draft survey, painting, etc.

Length of ladder, type of step, number of spreaders are optional, and are made to order according to the user's specifications.



Steps



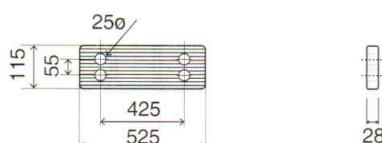
Wood Step

Rubber Step



Spreader Step

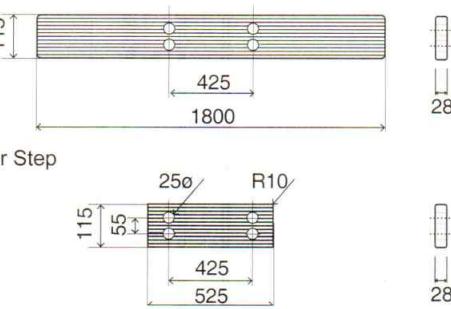
Wood Step



Spreader Step



Rubber Step



Step Fixing Piece

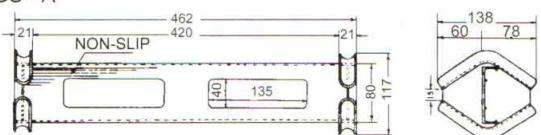
A permanent marking should be provided at regular intervals (e.g. 1 mtr) throughout the length of the ladder consistent

Standard Specifications for the Rope Ladders

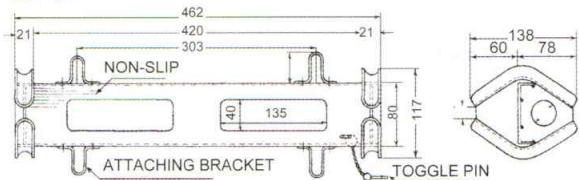
Step Pitch	35 mm ^q
Side Rope	14 mm ^q Synthetic Fibre Rope
Step Type	GS-A, GS-B, GS-C, SD
Length	Option
Ladder Type	Consecutive Type Division Type Ladder with Spreader

Aluminium Alloy Rope Ladder - Complete Set**How to order:** 23 - 20 - 20Rope Ladder, alum-alloy. (step type) x (ladder type) x (length),
Specify the Ladder type, step type and length**Replacement Steps**

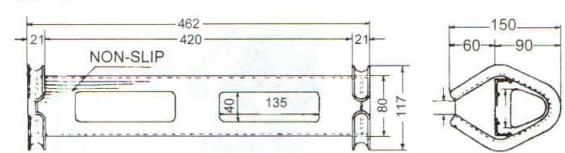
GS - A



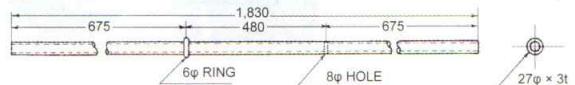
GS - B



GS - C

**Preventer**

SD

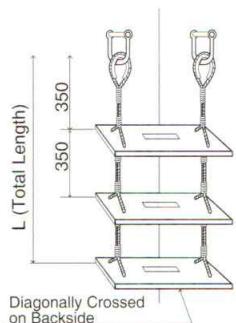
**Replacement Steps & Preventer only**

CODE	Type	Size mm	Weight	Application
23 20 21	GS -A	117 x 462	580 grm	Step for general use
22	GS -B	117 x 462	650 grm	Step for using the SD
23	GS -C	117 x 462	800 grm	Step for use as the lowest step of the rope ladder and connecting another rope ladder with shackle
24	SD	27φ x 1,830	1,150 grm	A bar to prevent twisting the rope ladder, using with GS-B, IS-B type steps detachable when not required

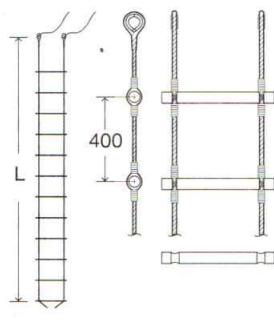
Rope Ladders(Jacob's Ladders)
(Ref. JIS F3612-1990)

Escaleras de Bote Peldaño Plano (de Viento) なわばしご 登乘梯

Flat or round wooden rungs supported with Manila or Synthetic Fibre rope. Ideal for general purpose use.



Flat Step



Round Step (Jacob's Ladder)

Specifications

Type	Flat Step (Ref. JIS F3612-1995)	Round Step (Jacob's Ladder)
Size	L460 x W100 x T22 mm	Dia 36 mm x L 460 mm
Step Space	350 mm	400 mm
Side Rope	Manila: 2xØ16 mm or Synthetic Rope: 2xØ14 mm	Manila: 2xØ18 mm or Synthetic Rope: 2xØ18 mm
Length	User's Option	

How to order: 23 - 20 - 26

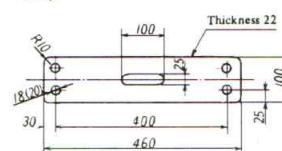
Ladder, rope, flat step, LENGTH

23 - 20 - 27

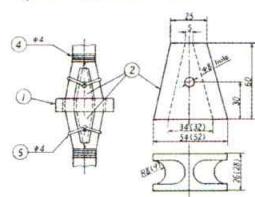
Ladder, Jacob's, round step (Dia 36 mm x L 460 mm), LENGTH

23 - 20 - 28Ladder, Jacob's, round step (Dia 35 mm x L 400 mm), LENGTH
(Normally supplied in European countries)**Replacement Steps and Split Distance Pieces for Flat Step Ladder**

Step



Split Distance Piece



Made of hard wood and tested to withstand 735 N (75 kgf) load at the middle of the step.

23 20 41	Rope ladder step, hard wood, flat, L460 x W100 x T22 mm	Pc.
42	Split distance piece for 14 mm synthetic fibre rope, H60 x W54 x T26 mm	"
43	Split distance piece for 16 mm manila rope, H60 x W52 x T28 mm	"

Replacement Round Steps for Jacob's Ladder

Unit Per Pc.

CODE	23 20 44	23 20 45
Size mm	Dia 36 mm x L 460 mm	Dia 35 mm x L 400 mm

Pilot Ladders

as per latest MED/USCG Approved

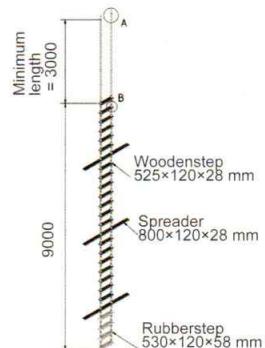
Escalas de Práctico aprobadas por MED/USCG

MED/USCG 承認バイロットラダー

获MED/USCG 认证的引航员梯

Steps have nonskidding surface and are secured with aluminium clamps. Ropes not painted or coated or covered and thimbles will be provided. Rope will be spliced to top on the ladder.

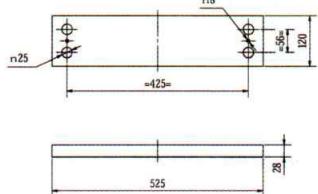
Two patterns of step thickness are available as indicated in the table below, but thinner size step is most common..



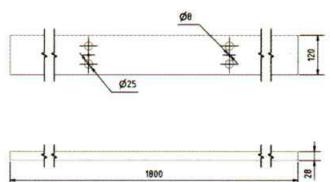
	Regular Step	Normalisation Step
Wooden Step	525 x 120 x 28 mm	525 x 115 x 63 mm
Spreader	1,800 x 120 x 28 mm	1,800 x 115 x 63 mm
Rubber Step	530 x 120 x 80 mm	530 x 120 x 80 mm

Unit Per Set		
CODE	Length	Step Size
23 20 29	3 mtr	Regular
31	6 mtr	
32	9 mtr	
23 20 30	3 mtr	Normalisation
33	6 mtr	
34	9 mtr	

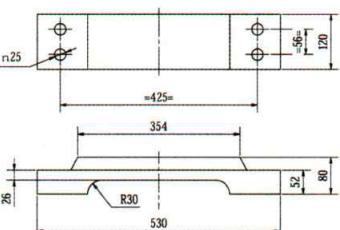
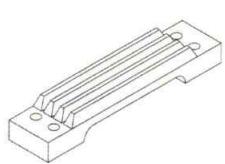
Regular Size Steps



Regular Size Wooden Step

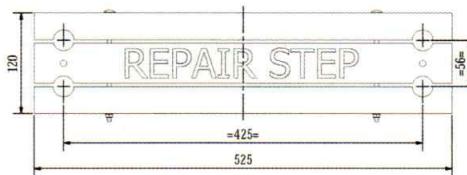


Regular Size Spreader Step

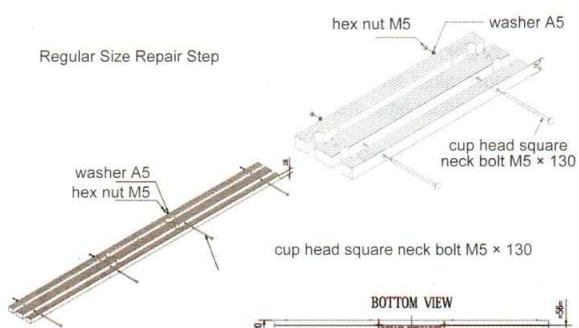


Regular Size Rubber Step

Regular Size Repair Steps



Regular Size Repair Step



BOTTOM VIEW

Regular Size Repair Spreader

Regular Size Steps

Unit Per Pc.		
CODE	Items	Size mm
23 20 35	Wooden Step	525 x 120 x 28
36	Spreader	1,800 x 120 x 28
37	Rubber Step	530 x 120 x 80
23 20 38	Repair Wooden Step	525 x 120 x 28
39	Repair Spreader	1,800 x 120 x 28

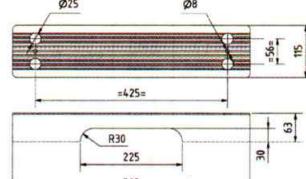
A permanent marking should be provided at regular intervals (e.g. 1 mtr) throughout the length of the ladder consistent with ladder design, use and maintenance in order to facilitate the rigging of the ladder to the required height.



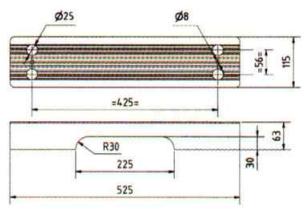
Normalisation Size Steps

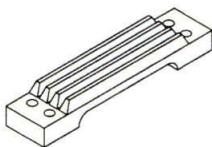


Normalisation Size Wooden Step

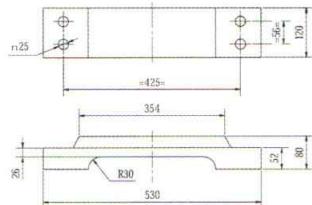
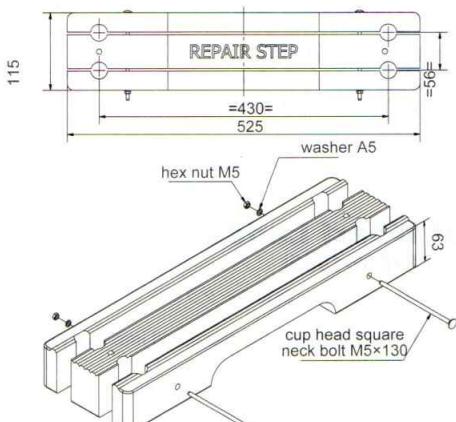


Normalisation Size Wooden Spreader

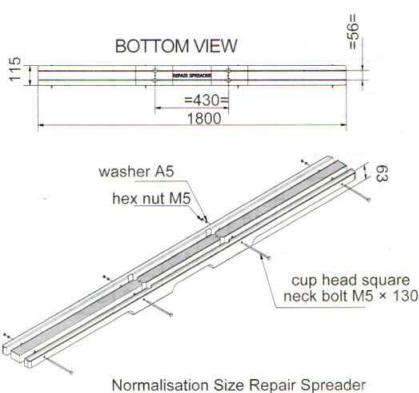




Normalisation Size Rubber Step

**Normalisation Size Repair Steps****BOTTOM VIEW**

Normalisation Size Repair Step



Normalisation Size Repair Spreader

Normalisation Size Steps

CODE	Items	Size mm	Unit Per Pc.
23 20 46	Wooden Step	525 x 115 x 63	
47	Spreader	1,800 x 115 x 63	
48	Rubber Step	530 x 120 x 80	
23 20 49	Repair Wooden Step	525 x 115 x 63	
50	Repair Spreader	1,800 x 115 x 63	

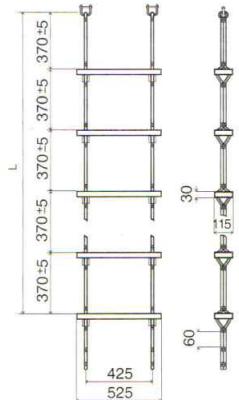
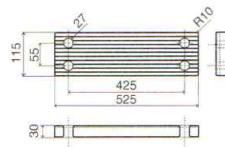
Embarkation Ladders

(Ref. E.L.M. J 2000)

Escaleras de embarque 乗込み用はしご 救生登乗梯

The embarkation ladder is used on a merchant vessels to embark survival crafts.

Each wooden part must be hardwood that is free from knots, and each metal fastener must be made of a corrosion metal. Each side rope must be continuous from the top of the ladder to the bottom and must not be painted or otherwise coated or covered.

**Specifications**

Side Rope	Manila (or synthetic) rope with 2-3/4" cir. (22 mm dia)
Clear space between side rope	370 mm ± 5 mm
Step Size	W:115 mm x TH:30 mm x L:525 mm
Distance of center hole for each side rope	425 mm

23 20 52 Ladder, embarkation, length mtr, with further details

Set

23

Rigging Equipment & General Deck Items

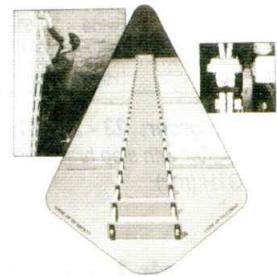
Synthetic Step/Spreader and Rope Pilot Ladders

Escalas de Práctico Material Sintético

合成樹脂製パイロットラダー

引水梯

Steps and spreaders have hand holes and are molded from high-impact elastomer. Assembled with white dacron ropes, which have double the strength of manila ropes.



Connected by stainless steel bolts and nuts. Will resist fracturing and parting under severe conditions. Also this rope ladder conforms to USCG and meets the international requirements of the convention for SOLAS 1974.

- HIGH STRENGTH ALLOY
- STAINLESS STEEL FASTENINGS
- ELIMINATES UNRELIABLE MARLIN MOUSINGS
- EXCEEDS 2000 LB. REQUIRED LOAD TEST BY 100%
- MOLDED SYNTHETIC STEPS AND SPREADERS

Name of Mfr.: Coast Marine & Industrial Supply, Inc.

How to order: 23 - 20 - 56

Pilot ladder synthetic step/spreader and rope, finished length

Pilot Ladder with Step Brace Type SOLAS Approved

Escala de Práctico con Tirante (aprobado por SOLAS)

沿え駒付きパイロットラダー 帯塾塞領航梯 (SOLAS) 認可

Fully comply with and exceed SOLAS Regulations and IMO Standards. These ladders are designed with new stainless steel clamping device tested to withstand loads up to 2,000

lbs (907.2 kilos). This new clamp will not slip or loosen with age. Manila rope and steps are fixed with hardwood step brace.

All steps are made from Ash hardwood, but the bottom 4 steps are furnished with in synthetic.



Pilot Ladder with all wood steps
Model No. PW

Pilot Ladder with bottom
4 - steps in synthetic
Model No. PWS

Specifications

1 Step	Ash hardwood 4.5" (115 mm) wide \times 20.5" (520 mm) long \times 1" (25 mm) thick.
2 Spreader	Ash hardwood 4.5" (115 mm) wide \times 70" (1.8 m) long \times 1" (25 mm) thick.
3 Step Brace	Ash hard wood
4 Clamp	Corrosion resistant stainless steel
5 Rope	Mildew-retardant manila 0.75" (19 mm) dia., 2.25" (65 mm) circ.
6 Lashing Ring & Thimble	Hot dipped galvanized lashing rings and thimble
7 Lanyard	10 ft. (3 mtr) lanyards with spliced in hot dipped galvanized ring and thimble for easy rope replacement
8 Lower 4 Steps	The 4 lower steps of pilot ladders are made with high impact Ultra-Poly synthetic 4.5" (115 mm) wide \times 20.5" (520 mm) long \times 1" (25 mm) thick with non-skid surface. Coloured safety orange.
9 Ties	High strength nylon-UV stabilized for longer life

How to order: 23 - 20 - 61

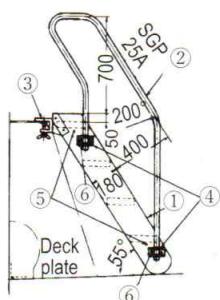
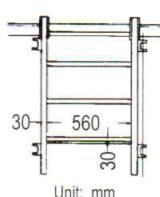
Pilot ladder with step brace type, SOLAS approved, TOTAL LENGTH (mtr)

Bulwark Ladders

(Ref. JIS F2614-1967)

Escala Amurada ブルワークラダー 舷梯

WOOD

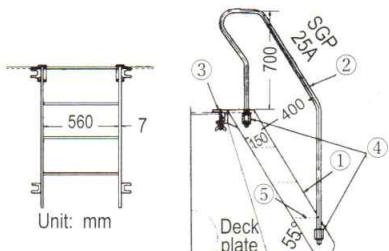


- 1. Sideboard & Tread
- 2. Handrail
- 3. Securing Fitting
- 4. Handrail Socket
- 5. Tie Bolt
- 6. Hex. Bolt & Nut

How to order: 23 - 20 - 66

Bulwark ladder, wood, HEIGHT \times WIDTH \times HOOK TYPE & SIZE, (With further details if necessary)

STEEL



- 1. Side Plate
- 2. Handrail
- 3. Securing Fitting
- 4. Handrail Socket
- 5. Tread

How to order: 23 - 20 - 67

Bulwark ladder, steel, HEIGHT \times WIDTH \times HOOK TYPE & SIZE, (With further details if necessary)

Steel Wharf Ladders

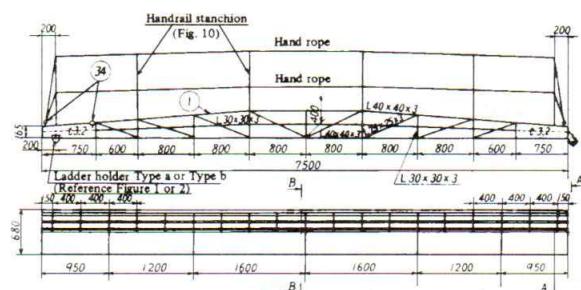
(Ref. JIS F2612-1990)

Pasarela - Escala de Muelle 鋼製ワークラダー 钢制码头梯子

These steel wharf ladders are classified into two types A (one body) and B (jointed).

Type	Shape	Dimensions m			Reference				
		Calculated mass kg		Body Part L ₁	Part L ₂	Total	Roller	Grand Total	
		L	L ₁	L ₂					
A5		5	-	-	-	148	13	161	
A7.5		7.5	-	-	-	188	13	201	
B10		10	7	3	176	93	269	21	290
B12.5		12.5	8	4.5	262	179	441	21	462
B15		15	9	6	318	225	543	21	564

Type A-7.5



How to order: 23 - 20 - 71

Wharf ladder, steel, TYPE \times OVERALL LENGTH \times WIDTH, (With further details if necessary)

Handrail Stanchions and Sockets for Steel Wharf Ladder

Pasamanos para Escalas de Muelle (Pasarelas)
鋼製ワーフラダー用スタンション及びソケット
钢制码头梯子的扶手支柱、套节

Steel made round bar for hanging hand rope at both sides of wharf ladder.

Please specify length "H" when ordering.



How to order: 23 - 20 - 72

Handrail stanchion and socket, steel for steel wharf ladder,
LENGTH "H"

Aluminium Alloy Wharf Ladders

(Ref. JIS F2613-1990)

Escala de Muelle de Aluminio Aleado

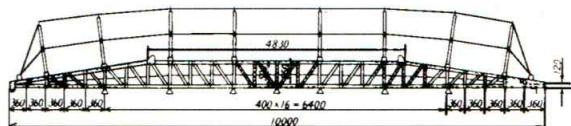
アルミニウム合金製ワーフラダー 铝合金制码头梯子

These aluminium alloy wharf ladders are classified into two types A (one body) and B (jointed).

Type	Shape	Dimensions (m)			Calculated mass (kg)
		L	L ₁	L ₂	
A5		5	-	-	118
A7.5		7.5	-	-	168
A10		10	-	-	221
B10		-	5	5	244
A12.5		12.5	-	-	296
B12.5		-	6.25	6.25	319
A15		15	-	-	362
B15		-	7.5	7.5	388

Remarks:
1. Calculated mass does not include that of the handrail rope.
2. Calculated mass shows that of the ladder 600 mm in breadth.

Main structure A10



How to order: 23 - 20 - 76

Wharf ladder, aluminium alloy, TYPE x OVERALL LENGTH x WIDTH, (With further details if necessary)

Handrail Stanchions and Sockets for Aluminium Alloy Wharf Ladder

Escorso de Pasamano y Enchufe para Escala de Aluminio

アルミニウム合金製ワーフラダー用スタンション及びソケット
铝合金岸梯子的扶手支柱、套节

Aluminium alloy made round bar for hanging hand rope at both sides of wharf ladder. Standard length between center of the eye for handrail rope and other end is 990mm for JIS type aluminium alloy wharf ladder, but in other case please specify the length according to the specification of the wharf ladder in use.

How to order: 23 - 20 - 77

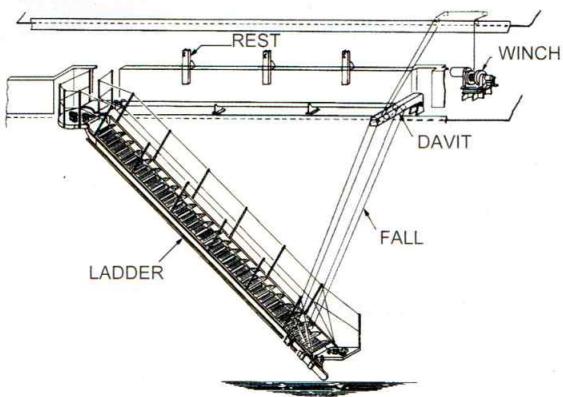
Handrail stanchion and socket, aluminium alloy, for aluminium alloy wharf ladder, LENGTH

Aluminium Alloy Accommodation Ladders

23

Escala Real de Aleación de Aluminio

アルミニウム合金製船側はしご 铝合金制舷梯



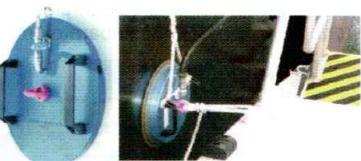
How to order: 23 - 20 - 81

Accommodation ladder, aluminium alloy, NOMINAL SIZE (LENGTH) x WIDTH, (Further details are available upon request)

Securing Suction Pads for Accommodation Ladder "Blue Box"

Almohadillas de succión de agarre para la escala de práctico "Blue Box"
アコモデーションラダー固定用パッド 引航员软梯固定吸盘

Used to secure the bottom of the accommodation ladder to the ship's side and insures the accommodation ladder rests firmly against the ship's side. (Requested by the amendments 2000 to the SOLAS regulation, Chapter V, Regulation 23 'Pilot Transfer Arrangement') The arrangement shall be provided to enable the pilot to embark and disembark safely on either side of the ship by an accommodation ladder in conjunction with the pilot ladder, or other equally safe and convenient means, whenever the distance from the surface of the water to the point of access to the ship is more than 9 meters.



Can be operated from free supplied deck air at 6 to 7 kgf/cm², and the unit is made from non ferrous material therefore is resistant to corrosion. Class ABS certified.

Specifications:

Pressure range: 25 to 102 p.s.i.

Consumption of compressed air: 26.4 Nl/min

Right angle holding force: About 3,200 N at 80& vacuum

Weight: 7 kg

23 20 91	Securing suction pad for accommodation ladder, 'Blue Box'	Pc.
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Name of Mfr.: PTR Holland Group

Securing Device

for Pilot Ladder

Almohadillas de sujeción de agarre para la escala de práctico
パイロットラダー固定装置 引航员软梯固定吸盘

Developed to make sure the pilot ladder is stable for the pilot and can safely board and disembark from the ship. By using two vacuum generated spreaders can always secure the ladder firmly regardless the thickness of the paint on the ship, even if the surface is not smooth and has chipped paint. The required pressure range to this device is 1.4 – 4.0 bar, and has holding force at 715 kg.



The device complies with the new SOLAS regulations 1045 (27), and Class Lloyd's certified.

23 20 92	Securing suction pad for ladder, SPT-928	Set
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Name of Mfr.: PTR Holland Group

Holding Magnets

for Pilot Ladder

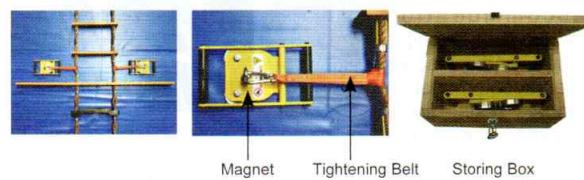
Imanes de sujeción para la escala de práctico

パイロットラダー固定用マグネット 引航员软梯固定磁铁

Specially developed to make life safer for sea harbor pilots by providing removable anchor points for the ladder on the ship's side. Designed to withstand aggressive marine environments, and powder-coating in safety yellow for high visibility. Resin encapsulation of magnetic elements makes the product seaworthy.

They are lightweight at around 3 kg, providing more than 800 kg of clamping force even through many layers of paint and salt scale and grime on a ship's hull. A derlin roller makes the hull magnet simple to attach and release. Class ABS certified.

The holding magnet is sold in piece, and tightening belt and storing wooden box are separate order.



CODE	Descriptions	Unit
23 20 93	Holding magnet for pilot ladder	Pc.
94	Tightening belt for holding magnet	Lgh.
95	Storing wooden box only for two holding magnets	Pc.

Name of Mfr.: PTR Holland Group

13. Scaffolds/Stages/Boatswain's Chairs

Prefabricated Steel Pipe Scaffolds

Andamio de Tubos de acero Prefabricado

組立パイプ足場 (ローリングタワー) 组合式钢管架

A safe, movable, prefabricated scaffold made of galvanized high tensile steel pipe frames; easy to assemble and disassemble.

Each step set comprises 4 wheels attached with jacks for moving and adjusting the height of the feet for use on a rough surface. Each section is fitted with 2 steel step plates and safety rails. The floor is made of checkered steel plate. Dimensions are 1,500 x 1,800 mm.



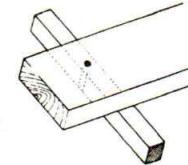
Unit Per Set

CODE	Number of Nominal Steps	Height mm	Numbers of Main Frames
23 21 01	2	3,200 ~ 3,660	4
02	3	4,700 ~ 5,160	6
03	4	6,200 ~ 6,660	8
04	5	7,700 ~ 8,160	10
05	6	9,200 ~ 9,660	12

Stages

Tabla de Andamio 足場板 带横衬踏板

A floor or a platform of planks fitted with transverse bearers, slung by ropes and put over ship's side or in holds, for men to work on when cleaning and painting. Standard dimension is W300 x T40 x L4,000 mm.



23 21 11	Stage, 300(W) x 40(T) x 4,000(L) mm with transverse bearer	Pc.
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Boatswain's Chairs

Guindola de Arboladura ポースンチェア 油漆用椅

Narrow wooden seat, suspended by rope and used by seamen when working aloft or over the side of the ship. Standard size is L 620 x W 160 x T 25 mm with Ø20 mm rope.



23 21 21	Boatswain's chair	Set
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14. Cargo Nets/Safety Nets

Polypropylene Rope Cargo Net Slings

Red de carga de Polipropileno

ロープもっこ 丙纶绳吊货网

Can be made to the desired specifications. Some common sizes are listed below.



	Unit per Pc.		
Description	CODE	23 21 51	23 21 52
Net Size		2.5 x 2.5 Mtrs	3 x 3 Mtrs
Mesh Size		200 x 200 mm	
Rim Rope Size		24 mm dia.	
Mesh Rope Size		18 mm dia.	
Name of Synthetic Fibre Rope		Polypropylene (P.P.)	

Wire Rope Cargo Net Slings

Red de Carga de Cable

ワイヤもっこ 钢丝绳吊货网

Can be made to the desired specifications.
Some common sizes are listed below.



Unit per Pc.

	CODE	23 21 56	23 21 57
Description			
Net Size		2.5 x 2.5 Mtrs	3 x 3 Mtrs
Mesh Size		200 x 200 mm	
Wire Rope Construction		6 x 24 Galv.	
Rim Rope Size		12 mm diam.	
Mesh Rope Size		9 mm diam.	

Gangway Safety Nets

Polypropylene

Red Protección Escala

ギャングウェイネット 丙纶绳舷梯安全网

For security of life and property. All mesh ropes are securely knitted in position. Can be made to desired specifications. Some common sizes are listed below.



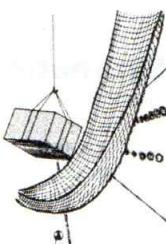
Unit per Sht.

	CODE	23 21 61	23 21 62	23 21 63
Description				
Net Size		5 x 10 mtr	4 x 16 mtr	20 x 20 mtr (for Cape Size)
Mesh Size				150 mm
Rim Rope Size				10 mm dia.
Mesh Rope Size				8 mm dia.
Material				Polypropylene (P.P.)

Cargo Safety Nets

Red Protección de Carga カーゴネット 吊货网

Usually made of synthetic rope. To hang between ship and dock or wharf to catch and prevent packages from dropping overboard into the water when loading or discharging freight. Made to order. When ordering, please specify the following points :

**How to order: 23 - 21 - 65**

Net, safety, cargo, Name of synthetic rope, Size of overall length and width, Size of mesh opening, Rope size of rim, Rope size of mesh.

Personnel Transfer Device

Equipo para traslado de personal 人員輸送装置 人员输送装置

Personnel transfer device is used to quickly and effectively transport personnel on and off of platforms. Passengers are encompassed with tightened stainless steel ropes that protects from any side impact that may occur. It is equipped with quick release safety lanyards to provide safety and give the passengers confidence while in transit. Made of sturdy and very durable aluminum skeleton to protect them from falling objects, also shock absorbing feet is equipped to protect from hard landing. Available for 4, 6 & 8 persons capacity and also loaded a stretcher in the event of emergency situation. ABS Certification report is available.



Model	Capacity	Size (inch)	Weight
X-904-4	4 persons	90" x 90" x 34"	600 lbs
X-904-6	6 persons	102" x 102" x 36"	700 lbs
X-904-8	8 persons	102" x 102" x 36"	900 lbs

Name of Mfr. : Billy Pugh Co. Inc.

How to order: 23 - 21 - 66

Personnel Transfer Device, Model number., capacity etc.

15. Cargo Bags/Sling Belts

Cargo Sling Bags

Sacos de Carga con Eslinges 袋モック 吊货袋



Made of polyester, light weight, handy foldable cargo sling bag. Very useful for storage.

Size : 1 x 1.2 x 1.2 mtrs
Capacity : 1 ton

23 21 81	Cargo sling bag, polyester 1 x 1.2 x 1.2 Mtr	Pc.
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Cargo Aluminium Bags

Bolsas de aluminio para mercancías



アルミシート製保冷バッグ 铝箔保冷袋

Made of aluminium sheet for heat insulation, keeping fresh/frozen provisions cool during transportation. Foldable, easy to set up with Velcro fastener.

Size: 1,080 x 970 x 1,350 mm

23 21 83	Cargo bag, aluminium 1,080 x 970 x 1,350 mm	Pc.
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One Way Flexible Containers

Contenedor de Poliéster Desechable

使い捨てフレキシブルコンテナ 一次性吊货袋



A one way type flexible container makes the transport, delivery, and loading of blasting sand, copper bits, or other bulk materials fast and easy. It reduces the costs and extra effort for loading bulk materials because the slings are loaded and then stay on deck until the material is used. Several types are available, but the most common types are shown below.

CODE	23 21 86	23 21 87	Unit Per Pcs.
Type	Draw string with bottom release	Without bottom release	
Material Cubic Volume Capacity Weight Capacity	Polypropylene/Polyester 1,000 - 2,000 Ltr 500 - 1,000 kg		

Belt Slings

Eslinas de correas ベルトスリング 带式吊索

Belt & endless types are available, and they weigh about one third the weight of a wire sling. The seamed part is so soft that it is easier to handle than other sling types.

Polyester Slings

Eslinas de Poliéster ポリエスチルスリング 涤纶吊索

Easy to handle by lighter and more flexible character of polyester.



Specification

Width of Sling (mm)		25 mm	35 mm	50 mm	75 mm	Unit Per Mtr.
Breaking Strength kN (Ton)		48 (4.8)	75 (7.5)	96 (9.6)	150 (15.0)	
Style of Sling	Angle					
		Working Strength Ton				
Straight	-	0.80	1.25	1.60	2.50	
Choke	-	0.64	1.00	1.28	2.00	
Basket	$\alpha = 0^\circ$	1.60	2.50	3.20	5.00	
Basket	$\alpha \leq 45^\circ$	1.44	2.25	2.88	4.50	
Basket	$45^\circ < \alpha \leq 90^\circ$	1.12	1.75	2.24	3.50	

How to order: 23 - 21 - 31

Sling, Polyester, belt type, width 25 mm x length 1 mtr

Unit Per Pcs.

CODE	Length mtr	CODE	Length mtr	Unit Per Pcs.
Width: 25 mm		Width: 50 mm		
23 21 31	1	23 21 43	1	
32	2	44	2	
33	3	45	3	
34	4	46	4	
35	5	47	5	
36	6	48	6	
Width: 35 mm		Width: 75 mm		
23 21 37	1	23 21 71	1	
38	2	72	2	
39	3	73	3	
40	4	74	4	
41	5	75	5	
42	6	76	6	

Other than listed size:

How to order: 23 - 21 - 95

Sling, Polyester, belt type, width x length



Endless Type Sling

How to order: 23 - 21 - 96

Sling, Polyester, endless type, width x length

16. Canvas/Canvas Maintenance Items

White Cotton Canvas

Lona de Algodón Blanco 綿帆布 棉帆布



For the partial renewal, repairing or patch work of canvas products such as awnings, hatch tents, etc. The standard width is 915 mm (36") and one bundle is supplied in a length of 50 mtr or cut to size.

CODE	No.	Thickness mm	Grams Per m ²	Test Strength Wrap x Fill (kg/3 cm)	Unit Per Mtr.
23 22 01	2	1.43	941	180 x 140	
02	3	1.25	867	160 x 140	
03	4	1.23	794	160 x 120	
04	6	1.07	647	120 x 120	
05	8	0.93	510	80 x 80	
23 22 06	9	0.78	500	80 x 120	
07	10	0.74	428	80 x 90	
08	11	0.67	348	80 x 40	

Remark: Colour is usually white.

Waterproof Cotton Canvas

Lona de Algodón Impermeable 防水綿帆布 防水棉帆布

Constructed and spun in the same way as the above cotton repair canvas but the material is water proofed in order to give it resistance to seawater, sunlight and assure a long lasting service. Standard width is 915 mm (36"), length 50 mtrs or cut to order.

CODE	No.	Thickness mm	Grams Per m ²	Test Strength Wrap x Fill (kg/3 cm)	Color
23 22 11	4	1.23	940	178 x 148	W. OD
12	6	1.07	845	126 x 125	"
13	9	0.78	620	84 x 123	"
14	10	0.74	555	81 x 78	"
15	11	0.67	480	81 x 45	"

Denotes: W - White, O.D. - Olive Drab

Synthetic Fibre Tarpaulin Canvas

Lona de Fibra Sintética 合織ターポリン 合成纤维舱盖帆布(丙纶)



Light in weight but a strong and rigid material for covers, awnings, tents, etc. Resistant to seawater, sunlight and other effects. Constructed with a special synthetic resin compound. It is necessary to seal the needle holes with a waterproof agent or modified polythene resin. Standard length of bolt is 50 mtr and random.

CODE	Thick mm	Width mm	Grm/m ²	Colour	Unit Per Mtr.
Polyester					
23 22 21	0.82	1,040	700	G	
23 22 22	0.73	920	640	Gr. O. OD	
23 22 23 24	0.65 " 1,030	930	575 "	Gr. O. OD. G. W	
23 22 25 26	0.60 " 1,030	930	525 "	Gr. O. OD. G. W	
23 22 27 28	0.54 " 1,030	930	470 "	Gr. O. OD. G. W. Gr. O. OD. G	
23 22 29	0.58	1,830	535	Gr. W	
23 22 30	0.47	930	465	Gr. W	
Vinylon					
23 22 41 42	0.88 0.75	1,040 920	760 645	G	
43	0.65	920	550	Gr. G. O	
44	0.73	1,020	580	"	
23 22 45 46	0.58 0.68	920 1,020	450 500	Gr. G. O	
47	0.50	920	440	"	
Nylon					
23 22 51	0.70	1,370	810	G.O	
23 22 52 53	0.52 " 1,850	1,370 1,850	620 "	Gr. G. B. O. OD. W OD. O	
23 22 54 55	0.42 " 1,850	1,370 1,850	490 "	Gr. G. B. O. OD. W OD. O	
23 22 56 57	0.35 " 1,850	1,370 1,850	480 "	Gr. G. B. O. OD. W OD. O	

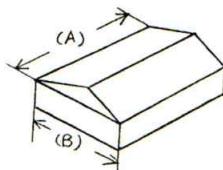
Denotes: Gr - Green, O - Orange, W - White,
G - Grey, OD - Olive Drab, B - Blue

Hatch Covers

Cintas de Escotilla

ハッチカバー 装货口盖

Made to your specifications with advance notice. Material is synthetic fibre tarpaulin. When ordering, please specify the hatch coaming size, (A) and (B). The finished size of the hatch cover will be (A) + 1.7 mtr and (B) + 2.2 mtr.



Canvas thickness is usually No. 4. Available in green or grey.

How to order: 23 - 22 - 58

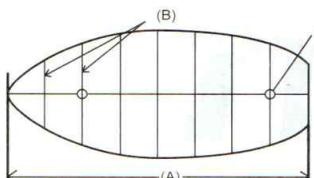
Hatch cover, synthetic fibre tarpaulin, colour, coaming size (A) _____, (B) _____.

Lifeboat Covers

Fundas para Botes Salvavidas ライフボートカバー 救生船盖

Made to your specifications with advance notice. The material is synthetic fibre tarpaulin.

When ordering, please specify the (A) overall length, (B) beam length at several intervals, and (C) position of boat fall wire holes. Canvas thickness is usually No. 4 and available in green, grey, orange, and white colours.



- (A) - Overall Length
- (B) - Beam length at several intervals
- (C) - Position of Boat Fall Wire Hole

How to order: 23 - 22 - 59

Lifeboat cover, synthetic fibre tarpaulin, colour, colour, size (A) _____, (B) _____, (C) _____.

Note: Before making the above items, sailmaker specialists will come aboard ship upon request to take proper measurements. This is to avoid errors with the finished size.

Sail Makers Leather Palms

Reempujo セールパーム 缝帆布手袋

Designed for repair work of canvas and similar clothes in connection with sail needles. Hide mounted. Furnished for righthand use unless otherwise specified.



Unit Per Pcs.

CODE	Description
23 22 61	Right hand use
62	Left hand use

23

Sail Makers Needles

Agujas para Coser Velas セール針 缝(帆)针

For canvas repair work. Packed in 12 pcs per paper container.



Unit Per Pcs.

CODE	No.	O'all Length	CODE	No.	O'all Length
23 22 66	10	95 mm	23 22 69	15	65 mm
67	12	80 "	70	16	60 "
68	14	75 "			

Beewax

Cera ピーワックス 蜂蜡

Commercial grade beewax weighing about 250 or 500 gram. For waxing twine or thread used in sewing or stitching canvas, leather, etc.



Unit Per Pcs.

CODE	23 22 76	23 22 77
Weight gram.	250	500

Grommet Dies

(Setting Dies)

Máquina para Hacer Ollaos グロメットダイス 铜扣铆盘

Drop forged steel made for inserting sheet brass washer and teeth grommets. When ordering, specify the number and size as listed below due to various existing standards in different countries.



Unit Per Pcs.

CODE	No.	Diam. mm	CODE	No.	Diam. mm
23 22 81	25	10	23 22 83	30	16
82	28	13	84	32	19

Grommets

Ollaos グロメット 帆布袋铜扣

Made of brass and rounded into a rim to serve as a reinforcement for rope holes in canvas or tarpaulin. When ordering, please specify the number related to the hole diameter as listed in the ordering table below. Supplied one gross per box.



Unit Per Gross					
CODE	No.	Diam. mm	CODE	No.	Diam. mm
23 22 86	25	10	23 22 88	30	16
87	28	13	89	32	19

Serving Boards

Maceta de Aforrar

サービスングボード 卷缠锤（硬木）



Made of ash with a hardwood handle. Used for serving a rope tightly and neatly.

Unit Per Pcs.			
CODE	23 23 01	23 23 02	
Size	80 x 80 mm	100 x 100 mm	

Serving Mallets

Maceta de Afollar

サービスングマレット 木棰



Wooden mallet with a semicircular groove along the top of the head. Used for serving rope when considerable tension is desired. Made of ash with a hardwood handle.

Unit Per Pcs.			
CODE	Size mm	CODE	Size mm
23 23 06	50 x 180	23 23 08	80 x 200
07	65 x 190		

Round Mallets

Mazo Redondo 丸マレット 圆木锤



Made of a hardwood head and handle. Metal bands on both faces will be attached upon request.

Unit Per Pcs.			
CODE	Size mm	CODE	Size mm
23 23 11	80 x 120	23 23 13	100 x 150
12	90 x 165		

Wood Hand Fids

Pasador Costuras de Madera

マニラスパイキ 木笔



A tapered wooden pin used to separate the strands when splicing rope.

Unit Per Pcs.			
CODE	Length mm	CODE	Length mm
23 23 21	150	23 23 26	400
22	200	27	500
23	250	28	600
24	300	29	700
25	350		

Steel Marline Spikes

Pasador Costuras de Acero

マーリンスパイク (插钢丝绳) 铁笔

Tapered and sharp pointed iron pin used for opening up a rope when splicing. Has a perforation at the larger end to hold a lanyard.



Unit Per Pcs.			
CODE	Length mm	CODE	Length mm
23 23 31	150	23 23 36	400
32	200	37	450
33	250	38	500
34	300	39	600
35	350		

17. Hatch Wedges/Hatch Cover Tapes

Hatch Wedges, Hard Wood

Cuñas Escotilla ハッチウェッジ 舱口楔块

Made of hard wood. Used to bottom down canvas hatch covers.



CODE	Nominal Size	Size mm			Weight kg
		L	W	H	
23 23 51	200	200	50	50	0.30
52	250	250	60	60	0.43
53	300	300	70	70	0.58

Hatch Cover Tapes

Cintas de Escotilla ハッチカバーテープ 装货口盖封带

Sealant tapes for hatch covers on board vessels. Many brands are available either in STRIPS or in ROLLS, their designs and performance vary between brands. Several brands are shown below as a reference. For the correct application, please inquire to either the manufacturer or the distributor.



Roll Type



Strip Type

Roll Type

		Unit Per Box		
CODE	Brand	Size	Roll/ Box	Weight kg
23 24 41	Nemo	W 75 mm x 1.5 mm x 20 mtr	4	10
42		W 100 mm x 1.5 mm x 20 mtr	3	10
43		W 150 mm x 1.5 mm x 20 mtr	2	10
23 24 45	Optimo	W 101 mm x 1.6 mm x 20 mtr	2	11.4
46		W 152 mm x 1.6 mm x 20 mtr	2	16.2
23 24 48	Dry-Cargo Standard Duty	W 100 mm x 1.6 mm x 20 mtr	3	12
49		W 150 mm x 1.6 mm x 20 mtr	2	12
23 24 51	Dry-Cargo Heavy Duty	W 75 mm x 2.7 mm x 20 mtr	4	18
52		W 100 mm x 2.7 mm x 20 mtr	3	18
53		W 150 mm x 2.7 mm x 20 mtr	2	18
23 24 35	Dry-Cargo X-Lam	W 100 mm x 1 mm x 20 mtr	3	10
36		W 150 mm x 1 mm x 20 mtr	2	10
23 24 56	Maritape	W 100 mm x 15.25 mtr	4	8.7
57		W 150 mm x 15.25 mtr	4	13.0
23 24 54	Canseal-R Marine Tape	W 100 mm x 1.5 mm x 22 mtr	3	6.8
55		W 150 mm x 1.5 mm x 22 mtr	2	6.8
37		W 300 mm x 1.5 mm x 22 mtr	1	6.8
23 24 44	DrySeal	W 100 mm x 2.0 mm x 23 mtr	3	7
47		W 150 mm x 2.0 mm x 23 mtr	2	7
50		W 300 mm x 1.8 mm x 23 mtr	1	7

Name of Mfr.: Nemo - Isoltema s.p.a.

Dry-Cargo - Cullen Metcalfe & Co.

Maritape - Henry Company,

Optimo - BC Taechang Ind. Corp

Canseal-R Marine Tape - Innovative Manufacturing Inc.

DrySeal - Sporema

Strip Type

		Unit Per Box		
CODE	Brand	Size	Roll/ Box	Weight kg
23 24 61	Ram-Nek	W 75 mm x 5 mm x 122 cm	60's	41
62		W 110 mm x 5 mm x 122 cm	30's	16
63		W 150 mm x 5 mm x 122 cm	30's	36.5
23 24 72	Gulf-Seal	W 110 mm x 5 mm x 122 cm	30's	19
73		W 150 mm x 5 mm x 122 cm	30's	36

Name of Mfr.: Ram-Nek / Gulf-Seal - Henry Company

18. Rat Guards**Rat Guards**

Rateras ラットガード 老鼠挡

Fitted closely on hawsers and lines to prevent rats from boarding the ship. Conforms with all quarantine regulations.



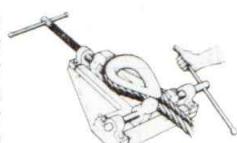
Unit Per Pcs.

CODE	Guard Diam. mm	Applicable Rope Diam. mm
23 23 61	600	56
62	600	65
63	600	73
64	600	All smaller ropes than above

19. Riggers' Vises/Wire Rope Grips**Riggers' Vises**

Prensa para Empalmar Cables 三角バイス 三角形老虎钳

This portable riggers' forming vise is in wide-spread use wherever cable and wire ropes are used or handled. Ideal for forming cable or wire rope around thimbles or fixtures, making slings for either splicing or "U" shaped bolt clamps, or clip installations. Rigid construction, two sizes available.



		Unit Per Pcs.	
CODE	Size	Wire Rope Capacity	Weight
23 23 81	No. 1 (Small)	16 - 28 mm dia.	19.2 kg
82	No. 2 (Large)	16 - 38 mm dia.	26.6 "

Wire Rope Grippers

Mordazas de Arrastre ワイヤーロープグリッパー 钢丝绳夹

Compact and easy to handle. It is tight, yet won't damage the wire. Easily installed and released by a cam operation, will not jam. Made of heat treated forged steel.



Unit Per Pcs.

CODE	Model No.	Applicable Rope Fmm	Strength Capacity Ton	Weight kg
23 23 85	6	4 - 6	0.5	0.5
	86	8 - 10	0.75	0.9
	87	12 - 14	1.5	2.0
	88	16 - 20	3.0	4.8
	89	22 - 26	5.0	7.6
23 23 90	32	28 - 32	7.0	8.0

20. Fenders**Rope Netted Fenders****Ball Shape**

Defensas de Cuerda ポールフェンダー 球形绳网防碰垫

Made with an interior filling of ground cork packed into strong gunny bags and netted on the outside, usually with polypropylene rope.



23 24 01	Rope Netted Ball Fender, 300 mm diam.	Pcs.
02	Rope Netted Ball Fender, 360 mm diam.	"
03	Rope Netted Ball Fender, 450 mm diam.	"

Pneumatic Rubber Fenders

Defensas de Goma (Neumática)

空気式防舷材 充气式橡胶护舷缓冲材料

The characteristics of floating type pneumatic fenders are as follows.

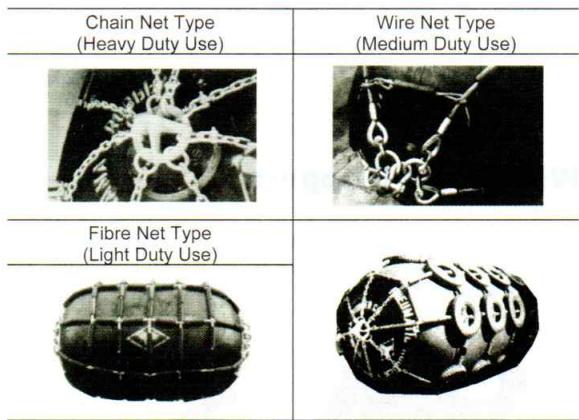
1. Advantages

- a. Adaptable to change in the tidal level.
- b. Low and uniform surface pressure.
- c. Simple and low cost installation.
- d. Low maintenance cost.

2. Types**a. Net Type**

The net-type fender is covered by a chain net, wire net or fibre net for small size fenders.

Usually these nets have used tyres together with rubber sleeves for additional protection, except for the fibre net which has only rubber sleeves. Chain nets last longer against corrosion while wire nets are light and more easily repaired.



b. Sling Type

This type has eyelets built into the fender body for easy installation. Handling of the sling type is easy due to its light weight. Its maintenance is also easy.

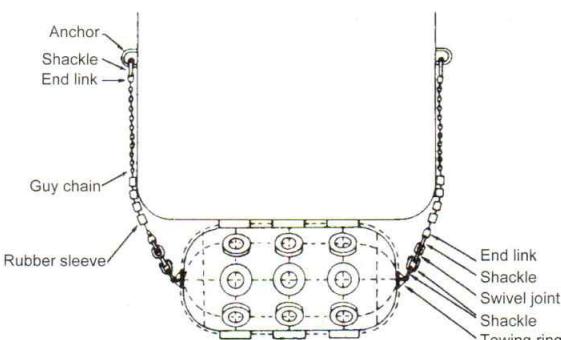
4. Performance Table (Initial Pressure 0.5 kgf/cm²)

Nominal Size Diam x Length mm	Guaranteed Energy Absorption (E) and Reaction Force (R) (at 60% deflection)		Net Type Fender Body Weight kg	Chain Net kg	Wire Net kg	Synthetic Fibre Net kg	Sling Type Fender Body Weight kg
	E	R					
500 x 1,000	0.6 tf.m	6.5 tf	24	-	30	20	29
600 x 1,000	0.8	7.5	28	-	30	22	34
700 x 1,500	1.7	13.8	47	150	40	37	53
1,000 x 1,400	3.2	18.3	72	190	80	51	80
1,000 x 2,000	4.6	26.0	92	230	140	57	100
1,200 x 2,000	6.3	30.0	110	300	190	68	130
1,350 x 2,500	10.2	43.1	210	330	200	-	245
1,500 x 3,000	15.4	58.5	275	490	350	-	320
1,700 x 3,000	19.3	64.5	370	580	440	-	430
2,000 x 3,500	31.0	88.4	500	980	640	-	560
2,200 x 4,500	50.0	129.0	750	1,450	1,060	-	880
2,500 x 4,000	66.7	139.0	820	1,260	910	-	930
2,500 x 5,500	95.0	204.0	1,360	1,630	1,160	-	1,460
3,300 x 4,500	118.0	190.0	1,570	1,630	1,270	-	-
3,300 x 6,500	183.0	304.0	2,020	2,680	1,910	-	-
3,300 x 10,600	309.0	531.0	2,570	4,670	3,300	-	-
4,500 x 9,000	478.0	580.0	4,260	4,810	3,520	-	-
4,500 x 12,000	652.0	806.0	5,460	7,240	5,190	-	-

5. Installation Methods

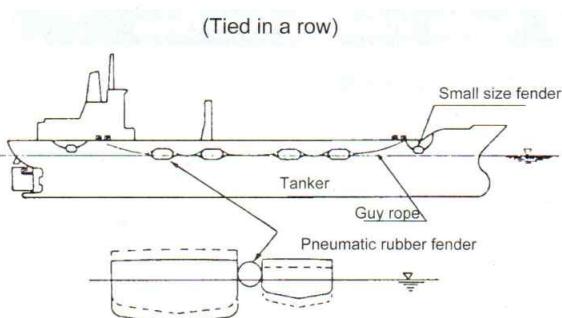
a. Jetty Quay and Dolphin Use

At both ends of the fender's chain or wire net, first fit the shackles, then the swivel joints and then further shackles should be installed. A guy chain or guy rope is secured to the outer shackle. The swivel joint prevents twisting of the guy.

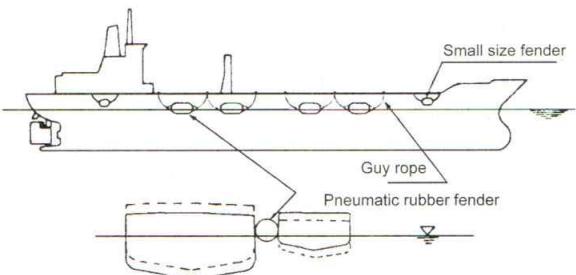


b. Ship to Ship

The following are examples of the installation method. Four pieces of large size fenders are usually floated as primary fenders to absorb impact energy at berthing. Two pieces of small-size fenders are hung high on the hull at both bow and quarter of the smaller ship to prevent contact during rolling due to swell. (Tied in a row)



(Fenders guyed individually)



6. Installation Equipment

The typical installation equipment and necessary parts for installations are shown below.

There are the various sizes of shackles, swivels, ring rubber sleeves, thimbles, etc. according to the applicable fender capacity.

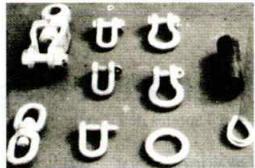
How to order: 23 - 24 - 11

Fender, rubber, pneumatic,

Nominal size _____

Type of fitting _____

Initial internal pressure _____



Foam Filled Rubber Fenders

Defensas de Goma
(Rellena de Espuma)

フォームラバー防舷材

泡沫填充式护舷缓冲材料



Performance Table

Size Diam x Length mm	Normal Performance 60% Deflection		Maximum Performance 80% Deflection		Weight Approx. kg		
	Reflection Force Ton	Energy Absorption ton-m	Reflection Force Ton	Energy Absorption ton-m	Chain Net Type	Wire Net Type	Hook Type
1,000 x 1,500	19.5	4.13	61.6	11.2	340	170	160
1,000 x 2,000	28.3	6.00	89.8	16.4	400	220	200
1,200 x 1,800	28.1	7.14	88.7	19.4	450	240	210
1,200 x 2,000	32.3	8.21	102	22.4	480	250	270
1,200 x 2,500	42.9	10.9	136	29.8	560	320	330
1,300 x 2,500	45.6	12.6	144	34.2	700	470	350
1,500 x 2,500	50.5	16.0	160	43.7	780	480	490
1,500 x 3,000	63.7	20.3	202	55.2	940	610	580
1,700 x 3,000	69.9	25.2	221	68.5	960	610	690
2,000 x 3,000	78.0	33.0	246	89.8	1,250	840	780
2,000 x 3,500	95.6	40.5	303	110	1,490	1,030	1,010
2,000 x 4,000	113	48.0	359	131	1,620	1,210	1,200
2,200 x 4,500	141	65.7	447	179	2,190	1,770	-
2,500 x 4,000	133	70.4	420	191	2,290	1,800	-
2,500 x 5,000	177	93.8	561	256	2,840	2,370	-
2,500 x 5,500	199	105	631	288	3,040	2,550	-
3,000 x 5,000	202	128	639	349	3,940	3,250	-
3,000 x 6,000	255	162	808	442	4,770	4,000	-
3,300 x 6,500	303	212	959	577	6,760	5,170	-
3,500 x 7,000	347	257	1,100	702	7,500	6,080	-
3,500 x 8,000	409	303	1,297	828	8,770	7,170	-
4,000 x 8,000	453	384	1,436	1,047	10,130	8,220	-
4,500 x 9,000	574	547	1,818	1,419	13,810	11,330	-

Used Tyres

Neumáticos Usados 中古タイヤ 旧轮胎
Worn rubber tyre, suitable to use as a fender for tug boats, fishing boats, etc.



23 24 21	Used tyre, ruber, SIZE	Pc.
----------	------------------------	-----

Used Bicycle Interior Tubes

Cámaras de bicicleta Usados 中古自転車チューブ 自行车旧内胎

Worn interior tube for bicycles, and normally used for binding over the leaked hole on the pipes or fittings as an emergency measure.

23 24 22	Used bicycle interior tube	Pc.
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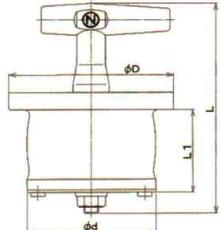
21. Scupper Plugs

Scupper Plugs

Llaves de Hundir Adrede 排水口栓 排水口栓

For sealing the scupper holes for spilled oil or polluted liquids. Easy to use, insert plug in the drain hole and tighten the handle until a slight resistance is felt, the rubber plug will be expanded and held firmly in place. Rubber parts are made of oil resistant rubber (CR). Seven types are available according to the pipe size. Specify the applicable drain pipe diameter when ordering, referring to the plug application list.

50N-65 to 150



Application List

Model No. 50N-	Pipe Type	Pipe Size						
		50	65	80	100B	100	125	150
50A (2B)	Sch80	●						
	Sch40	●						
	SGP	●						
65A (2-1/2B)	Sch160		●					
	Sch80		●					
	Sch40			●				
	SGP			●				
80A (3B)	Sch160			●				
	Sch80			●				
	Sch40			●				
	SGP			●				
100A (4B)	Sch160				●			
	Sch80				●			
	Sch40				●			
	SGP				●			
125A (5B)	Sch160					●		
	Sch80					●		
	Sch40					●		
	SGP					●		
150A (6B)	Sch160						●	
	Sch80						●	
	Sch40						●	
	SGP						●	

CODE	Model	Dimensions mm				Unit Per Pc.
		d	D	L	L1	
23 24 81	50N-50	45	65	145	55	0.3
82	50N-65	52	75	145	55	0.4
83	50N-80	65	85	160	65	0.5
84	50N-100B	85	110	160	65	0.6
85	50N-100	90	115	160	65	0.6
86	50N-125	110	135	160	65	0.8
87	50N-150	135	160	160	65	1.0

Mini Drain Plugs

Mini Tapones de Drenaje 排水プラグ 迷你排水塞

Designed for closing appliance for deck scupper holes. Rubber expansion mechanism, easy operation, non screw.



23 24 89	Mini Drain Plug, dia 32mm	Pc.
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22. Deck Coverings

Deck Coverings

Tapas de Cubierta デッキカバー 甲板圆盖

Used to seal deck openings of tankers, barges, and cargo vessels. Simple and reliable cover which does not require the drilling of holes and the insertion of studs to install.



Made of bronze or stainless steel to eliminate sparking. Fits to any standard 318 mm deck opening and will fit to a deck thickness of up to 76 mm.

Unlike other deck covers, the quick action cover is perfectly flat. There are no protruding parts to trip over. Removed with a special speed wrench which provides security against theft and gives rapid action for opening and closing. Frequently used as tank ventilators in place of ventilator gratings.

CODE	Description	Unit
23 24 91	Deck cover, bronze, for 318 mm deck opening	Pc.

Deck Safety Protection Cover

Tapa de protección de seguridad de cubierta

安全用デッキカバー 甲板安全盖

A family of safety protection cover designed to prevent crew from falls and other injuries associated with open manholes on-board vessels and platforms. Specifically designed to allow ventilation and utilities to remain accessible while still covering the hole and protecting the crew. Max payload is 205 kg (450 lbs).



SE65 SE65L SE85 SE90L

	CODE	23 24 92	23 24 31	23 24 32	23 24 33
Model	SE65	SE65L	SE85	SE90L	
Nom. Hole size	400×600 mm	400×600 mm	600×800 mm	600×800 mm	
Bolt Centers	approx. 480 ×670 mm approx. 500×700 mm (NS)		approx. 874×680 mm (ISO/DIN) approx. 870×670 mm approx. 860×660 mm approx. 900×700 mm	approx. 874×680 mm (ISO/DIN) approx. 870×670 mm approx. 860×660 mm approx. 900×700 mm	
Standards	NS 6261, ISO 5894, DIN 83402 standards	NS 6261 (6262, 6263), ISO 5894, DIN 83402 standards.	ISO, 5894 DIN standards	ISO, 5894 DIN standards	
Weight	9.6 kg	4 kg	18 kg	12 kg	

Name of Mfr.: Rustibus®

23. Oil Pollution Countermeasures

Overflow-Prevention Tanks

Tanques para Prevención de Derrame de Combustible
燃料油排出防止タンク 防燃油溢流柜

This portable and foldable, fuel oil, overflow-prevention tank is made of transparent urethane film, processed by an all-double stitch method of high frequency welding. It is oil resistant, coldproof (-45°C), heatproof (70°C), long wearing, and airtight. Easily attached over an air release vent, this portable overflow catch performs most effectively in keeping the deck free from oil. A and B type available. When ordering, please specify the type and capacity of the tank.

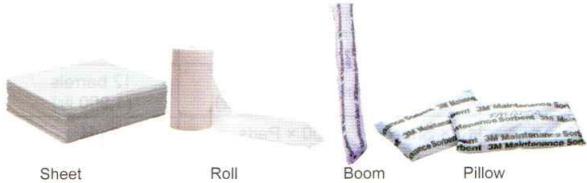
For Goose Neck Type
Air Vent A TypeFor Bonnet Type
Air Vent B Type

CODE	Connector Size mm.		Tank Capacity Ltr	Type	Unit Per Pcs.
	Length	Dia.			
23 25 01	1,500	200	40	A (For Goose Neck Type Air Vent)	
	1,500	200	100		
	1,500	300	300		
	1,500	300	500		
23 25 05	1,500	350	40	B (For Bonnet Type Air Vent)	
	1,500	350	100		
	1,500	350	300		
	1,500	350	500		

Oil Absorbents

Absorbente de Petróleo 油吸着材 吸油纸

Made from specially treated polypropylene microfibers or polypropylene mixed with polyester, and ideal for emergency spill and daily clean-up of oils with no-sweeping or shoveling required. Less time is required to use and dispose of these materials. They are available in sheets, rolls booms and assorted sets in drum containers.

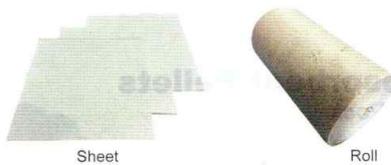


CODE	Type	Size	Weight	Unit
23 25 14 11	Sheet	430 × 480 mm	44 grm/sht 45 grm/sht	50 sht/box 100 sht/box
		430 × 480 mm Static resist.	45 grm/sht	100 sht/box
23 25 13	Roll	W965 × L43.9 mtr	9.1 kg/roll	1 roll/bag
23 25 15	Boom	Ø76 × L1,200 mm	360 grm/lgh	12 lgh/box
23 25 17	Pillow	177 × 380 mm	170 grm/pc	16 pcs/box

Oil Absorbents Eco-Friendly

Absorbentes de Aceite Ecológicos エコタイプ油吸着材 环保吸油剂

Eco-friendly oil absorbents made from unused natural cotton fibers in the production cycle of cotton yarn. It is coated with water-repellent substance and selectively adsorbs oil in emergency spill or daily clean-up. Compared to synthetic fibre absorbents, it has low calorific value of incineration and causes less damage to the furnace, yet it is high strength, excellent cost performance and stable quality. Approved by MLIT and Eco Mark program by JPA.



CODE	Type	Size	Weight	Unit
23 25 37 38	Sheet	500 × 500 mm	10 kg/box	App.100 sht/box
		650 × 650 mm	15 kg/box	App.100 sht/box
23 25 39	Roll	W 650 × L 25 mtr	5.85 kg/roll	1 roll/bag

Emergency Oil Spill Response Containers

Unidad (Equipo) de Emergencia para Fugas de Aceite
オイルスpill対応キット 溢油兼容性套件

To comply with international maritime regulations all vessels are required to carry on board sufficient absorbent materials to mop up oil spills of 7 or 12 barrels (1,100 litres or 1,900 litres) dependent on length of vessel.



23 25 16



23 25 31/32

Unit Per Set

CODE	23 25 16	23 25 31	23 25 32
For Oil Spill	30 ltr absorption	7 barrels (1,100 ltr)	12 barrels (1,900 ltr)
Composed of:	10 x Sheets 3 x Booms 2 x Pillows 1 x Disposal bags 1 x Clamping bands 1 x Dangerous substance label	400 x Pads (40 x 50 cm) 20 x 3 mtr Booms 25 x Waste bag rolls 2 x Gloves 2 x Boots 2 x Overall 1 x Big bag 1 x 25 ltr cleaning & degreasing agent 1 x Jet spray unit 10 ltr	400 x Pads (40 x 50 cm) 50 x Pads (80 x 100 cm) 32 x 3 mtr Booms 25 x Waste bag rolls 2 x Gloves 2 x Boots 2 x Overall 2 x Big bag 1 x 25 ltr cleaning & degreasing agent 1 x Jet spray unit 10 ltr

Dimension 32 x 50 cm 140 x 77 x 120 cm 145 x 100 x 135 cm

Warning!

Always exercise extreme care when cleaning up flammable liquid spills. Activities such as walking, rubbing, and pumping can generate static electricity in products with high electrical resistance such as rubber hoses, plastic containers, tanks, etc. The Static Resistant Oil Sorbent will help reduce static charge build-up but will not provide you with a static free environment. Also exercise extreme care when handling, storing, or disposing of any absorbent material containing flammable liquids.

Oil Absorbent Pellets**Igneous Rock**

Absorbente de Petróleo en Grano

油吸着材(粒状) 油吸附剂(粒状)

Made from glassy, igneous rock which is crushed into pellet sized fragments and heat treated. The pellets are extremely light weight and contain white sand like grains which have continuous pores which create strong oil absorbency through capillary action.



Types No. 1 and 2 absorb only oil whereas types 3 and 4 absorb oil and water. Pellets are not toxic or harmful to sealife.

Unit Per Bag

CODE	23 25 21	23 25 22	23 25 23	23 25 24
Type	No. 1	No. 2	No. 3	No. 4
Pellet Size (mm)	Less than 1.2	20.0 - 5.0	Less than 1.2	Less than 5.0
Standard Unit Volume Weight	0.055 kg/Ltr	0.10 kg/Ltr	0.055 kg/Ltr	0.17 kg/Ltr
Package	100 Ltr/Bag	10 kg/Bag	100 Ltr/Bag	100 Ltr/Bag

(to be continued)

Application	1. Treatment for spilled oil from a tanker accident, etc. 2. Treatment for floating oil from bilge, dirty ballast tank, tank cleaning, etc. 3. Treatment for oil from Petroleum Refinery, Petrochemical Plant, etc. 4. Fire Extinguishing against Alkyl Alum Metallic Potassium, Metallic Sodium, etc.	1. Treatment of oil pollution on the floor of the various plants and road surfaces. 2. Treatment of oil pollution on the road surface from tank lorry, train, cargo truck, etc. 3. Fire Extinguishing against Alkyl Alum Metallic Potassium, Metallic Sodium, etc.
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Natural Fiber Oil Sorbents

Absorbente de Petróleo de Fibra Natural

天然繊維油吸着剤 天然纤维油吸附剂

An all natural oil sorbent made from natural wood fiber of recycled paper products. Comes in pellet and loose particulate form and can be used effectively on water as well as land as a substance which is light, easy to clean, and allows for a high oil recovery rate.

On water the sorbent instantly neutralizes the harmful effects of oil spills and forms islands for clean recovery with minimal residue and no sheen. Will absorb only the oil, not the water.

Oil can be recovered from the sorbent by squeezing it, or the materials can be burned and used as fuel in approved facilities.

CODE	Type	Weight Size	Unit
23 25 26	Loose Particle Solvent (Universal Use)	20 lb	Bag
23 25 27	"	60 lb	Drum
23 25 28	Sorbent Boom	10' x 4" Dia.	Pc.
23 25 29	Sorbent Sock	4' x 3"	Pc.

Chemical Absorbents

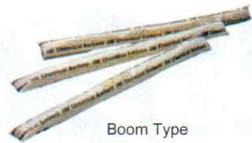
Absorbentes Químicos

化学葉品吸収材 化学吸收剂

Ideal solution for hazardous spill control. They provide very high absorption capacities and are suitable for absorbing a very wide range of liquids – even aggressive acids and alkalis.



Sheet Type



Boom Type



Pillow Type



Folded Type

CODE	Type	Size	Weight	Unit
23 25 46	Sheet	280 x 330 mm	26 grm/sh	50 sht/box
47	Boom	ø76 x L1,200 mm	360 grm/lgh	12 lgh/box
48	Pillow	177 x 380 mm	170 grm/pc	16 pcs/box
49	Folded	127 mm x 15.2 mtr	1,600 grm/rol	1 rol/box

Multi Purpose Absorbent

Absorbente Multiuso 多目的用吸着剤(粒状)
多功能吸收剂

The super multi-purpose absorbent instantly absorbs all kinds of liquids, of any viscosity, off any hard surface, leaving that surface clean and dry. This includes spills of oils, chemical products, solvents, paints, engine fuel, hydraulic oils, brake fluid, glycol, acids, bases, polymers, glue, herbicide, food (semi liquids), drinks and all bodily fluids (except for hydrofluoric acid). It has virtually unlimited uses as a dry absorbent that is safe in all applications.



Available for approx. 3 kg bag for 30 liters.

23 25 33	Multi Purpose Absorbent, 3 kg for 30 liters	Bag
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Inflatable Oil Fences

Defensas Antiderrames

膨張式オイルフェンス

膨胀式油堵



Made to conform to the Marine Pollution Prevention Law. The fence is made of rubber lined, strong synthetic fibre cloth and it is resistant to wear from oil, seawater and all types of weather. The fencing is provided in 20 mtr lengths which can be connected together and extended with the use of fasteners and shackles.



CODE	Surface of Water		Weight kg	Length mtr	Unit Per Lgh.
	Above mm	Below mm			
23 25 51	200	300	50	20	
52	300	400	60	20	

Sawdust

Serrín おがくず 木屑



Used on deck or in the engine room as an oil absorbent. The sawdust is spread on deck where oil has accumulated or is likely to accumulate through leakage or overspill. Packed in a durable paper bag.

CODE	Unit Per Bag		CODE	Unit Per Bag	
	kg/bag	kg/bag		kg/bag	kg/bag
23 29 47	8	23 29 46	10		

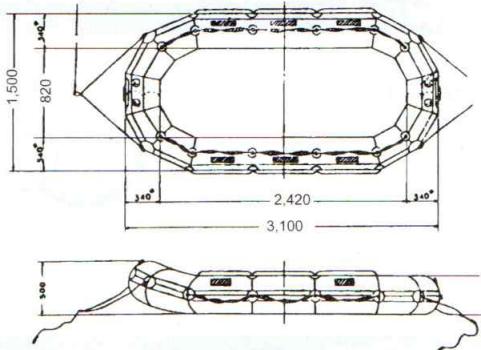
24. Tank Check Boats

Inflatable Deep Tank Check Boats

Balsa Inflable para Inspección de Tanques

膨張式点検ボート 膨脹式检查船

Designed for inspection of deep tanks of tanker ships. Made from electro conductive, oil proof, acid proof, neoprene coated nylon cloth.



Specification

Capacity	5 Persons
Tube Buoyancy	600 kg or more
Total Buoyancy	Approx. 1,300 kg
Boat Weight	30 kg
Inflated by	Air blow
Accessories	Standard accessories attached

23 25 66	Inflatable deep tank check boat, capacity 5 persons	Set
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25. Tank Mirrors

Tank Mirrors

Espejos de Inspección タンクミラー 油船用反射镜

Made from stainless steel and highly polished finishing. A useful tool during loading and discharging operations.

23 25 81	Tank mirror, stainless steel, 100 x 125 mm	Pc.
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26. Oil Funnels/Oil Sample Cans

Galvanized Oil Funnels

Esbudos para Aceite 油漏斗 镀锌油漏斗

Made from a heavy galvanized tin plate with a brass strainer.



CODE	Diam. mm	CODE	Diam. mm	Unit Per Pc.
				Unit Per Pc.
23 26 01	100	23 26 05	225	
02	125	06	250	
03	150	07	280	
04	200	08	350	

Oil Sample Cans

Latas para Muestra de Petróleo

オイルサンプル缶 油样品桶

Made of galvanized iron, 2 sizes available.



23 26 26	Oil sample can, 1 Ltr.	Pc.
27	Oil sample can, 4 Ltr.	"

27. Hand Cuffs**Hand Cuffs**

Esposas 手錠 手铐

Made from stainless steel.
Furnished with two sets of keys.

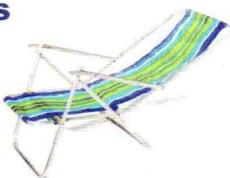


23 26 21 Hand cuffs, stainless steel

Pr.

28. Deck Chairs**Folding Deck Chairs****Pipe Frame**Sillas de Cubierta/Bastidor de Acero
ポンポンベッド 管架甲板折椅

The frame is made of stainless steel pipe with woven plastic tubing forming the seat. Can be folded into a sitting position or reclined back.



23 26 31 Deck chair, folding pipe frame

Pc.

Folding Deck Chairs**Wooden Frame**Sillas de Cubierta/Bastidor de Madera
デッキチェア 木質架甲板折椅

A folding deck chair made with a wooden frame and a light canvas. It has an armrest that can be adjusted at three different settings. The inside width is 600 mm and the overall length is 1,250 mm.



23 26 32 Deck chair, folding wood frame

Pc.

Pipe Frame Folding Chairs**with Arm Rest**

Sillas Plegables de Bastidor de Acero con Apoya-brazos

折疊椅子 管架式折椅 (带扶手)

Seat and back are made of alum. pipe and coloured vinyl mesh strip. Folds compactly for storage.



23 26 33 Chair, folding, alum. pipe frame with arm rest

Pc.

29. Dunnage Bags/Plywood**Inflatable Dunnage Bags**

Bolsas Inflables para Protección de Cargas

膨脹式袋緩衝材 膨脹式缓冲袋

Reusable dunnage bag made from strong plastic film combined with several layers of hard-wearing, water-resistant paper. It can



withstand pressure loads up to 15 - 20 tons and temperatures from 20°C to 65°C.

This dunnage bag gives the best protection imaginable from transport damage, absorbing harmful shocks time after time without loosing its shape. Suitable for protecting drums, boxes, palletized goods, tins, bottles, large machinery or machinery parts, large pipes and special cargoes, etc. Simply insert the dunnage bag in any space between items loaded in cargo and inflate it. This dunnage bag will prevent the cargo from moving during transport and will protect items from any shock occurring from contact with other packages.

Unit Per Box					
CODE	Size cm	Nos. per Box	CODE	Size cm	Nos. per Box
23 26 51	60 x 110	15	23 26 54	100 x 140	15
52	85 x 120	12	55	100 x 185	10
53	85 x 220	8	56	100 x 220	10

Name of Mfr.: Bates Cargo - Pak ApS

Eco Inflatable Dunnage Bags

Eco-friendly type such as biomass material bag is also available for your choice

Unit Per Pc.			
CODE	Size mm	CODE	Size mm
23 26 57	850 x 1,200	23 26 59	1,000 x 2,200
58	850 x 1,850		

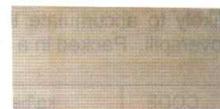
Inflators for Dunnage Bag

Suitable for use with all kinds of compressed air systems. Can inflate the largest dunnage bag in 30 seconds with this quick inflator.

23 26 61 Inflator for dunnage bag, Standard
62 Inflator for dunnage bag, QuickPc.
"**Plywood**

Contrachapado ベニヤ板 三夹板

Two types of plywood are available, a common type and a waterproof type for marine use.



Unit Per Pc.

910 mm x 1,820 mm (3' x 6')		1,210 mm x 2,420 mm (4' x 8')	
CODE	Thickness mm	CODE	Thickness mm
Common Type			
23 27 01	2.7	23 27 11	2.7
02	3	12	3
03	4	13	4
04	5.5	14	5.5
05	9	15	9
23 27 06	12	23 27 16	12
07	15	17	15
08	18	18	18
09	21	19	21
10	24	20	24

(to be continued)

		Unit Per Pcs.	
910 mm x 1,820 mm (3' x 6')		1,210 mm x 2,420 mm (4' x 8')	
CODE	Thickness mm	CODE	Thickness mm
Water-proof Type			
23 27 21	2.7	23 27 31	2.7
22	3	32	3
23	4	33	4
24	5.5	34	5.5
25	9	35	9
23 27 26	12	23 27 36	12
27	15	37	15
28	18	38	18
29	21	39	21
30	24	40	24

30. Nails

Common Wire Nails

Clavos 钉 铁钉

Flat type with a diamond driving point. Supplied by kilogram but usually packed four kilograms per box.



Unit Per Kgs.			
CODE	Length mm	CODE	Length mm
Common Wire Nails			
23 27 51	10	23 27 60	50
52	13	61	65
53	16	67	70
54	19	62	75
55	22	63	90
23 27 56	25	23 27 64	100
57	32	65	125
58	38	66	150
59	45		
Brass Nails			
23 27 71	19	23 27 75	38
72	22	76	50
73	25	77	65
74	32	78	75
Copper Nails			
23 27 81	19	23 27 83	25
82	22	84	32

Copper Tacks

Puntillas コッパータック 紫铜平头钉

Made of Copper with flat heads and cut points.



Unit Per Kgs.			
CODE	Length mm	CODE	Length mm
23 27 91	12	23 27 93	20
92	16	94	25

31. Acryl Sheets

Transparent Acrylic Sheets

Placa de Acrílico Transparente 透明アクリル板 透明丙烯板

Made of break-resistant, plexiglass, clear acrylic plastic. Standard size is 1 mtr x 2 mtr. When ordering, please specify the required thickness.



Unit Per Shrt.			
CODE	Thickness	CODE	Thickness
23 28 31	2 mm	23 28 34	5 mm
32	3 "	35	6 "
33	4 "		

32. Waste/Rags

Wiping Waste

Estopa 糸ウエス 清洁用废纱



Available in a white or coloured type wiping waste. Consists of selected new cotton threads properly blended to obtain maximum absorption. Sold by kilograms but usually packed in bags of 50 kg.

23 29 01	Waste, cotton white, sterilized	Kgs
02	Waste, cotton color, sterilized	"

23

Wiping Rags

Trapos 布ウエス 清洁用破布



Available in white, light-colour or coloured type rags. All material has been thoroughly washed and sterilized. One bundle contains five 4-kg packets. Sold by kg.

23 29 06	Rags, white, 60% cotton, sterilized	Kgs
05	Rags, white, 90% cotton, sterilized	"
07	Rags, white 100% cotton, sterilized	"
08	Rags, light colour sterilized	"
09	Rags, colour, sterilized	"

Paper Wiping Rags

Papel Limpiamanos 紙ウエス 清洁用纸



A disposable paper rag designed for use in place of cotton rags.

Unit Per C/S

CODE	Size mm	Contents
23 29 11	450 x 290	4,000 shts/case
12	380 x 380	100 shts x 15 box/case

Roll Paper Wiping Rags

Papel Limpiamanos Bobinas 紙ウエスロール型 清洁用卷筒纸

A sanitary paper wiping rag supplied in rolls for a variety of uses. There are many types available but the most common types have been selected and described below with respective specifications. The roller stands and dispensers are sold separately.



A-Tork

Designed for a wide variety of heavy duty wiping applications. A-Tork is a simpler, more efficient and more hygienic material than rags or cotton waste.

E-Tork

Specially developed to replace rags and cloths. E-Tork is for more detailed work such as the polishing of enamel paint or the cleaning of precision engineering parts. E-Tork is chemically pure and features an absorption rate as much as 4 times greater than cotton materials.

M-Tork & Mini Tork

Intended principally as a towel wipe. This single ply material can be utilized for many other lightweight purposes such as cleaning kitchen counters, bathroom fixtures or first aid rooms. Has the same quality paper as the A-Tork type.

Unit Per Box				
CODE	Type	Paper Size	Ply	Rolls/Box
23 29 21	A-Tork	290 mm x 240 mtr	2	4 rolls
22	E-Tork	320 mm x 230 mtr	2	2 "
23	M-Tork	250 mm x 275 mtr	1	6 "
24	Mini-Tork	220 mm x 120 mtr	1	12 "

Name of Mfr.: SCA Hygiene Paper AB

Roll Paper Dispensers

Porta-rollo Papel Limpiamano

ロールペーパーディスペンサー 卷筒清洁纸支架 (地板式支架)

Designed for use with the rolled paper rags mentioned above. Paper rags and rolls are sold separately.



Unit Per Pcs.

CODE	Type	Size mm	Application
23 29 31	Floor stand	500 x 500 x 880	A-tork, E-Tork & M-Tork
32	Wall stand	290 x 455 x 380	
23 29 34	M-box	248 x 273 x 324	M-Tork
23 29 35	Mini-box	178 x 184 x 279	Mini-Tork

Sludge Bags

Bolsa para el Lodo スラッジ処理用袋 汚泥袋

A thick Polypropylene bag for sludge disposal. Strengthened with inner Polyethylene bag to protect against leakage, and attached with string for binding the opening.

Size: width 600 mm x length 1,000 mm.



23 29 40	Sludge bag, polypropylene with inner, size 600 x 1,000 mm	Pcs.
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Used Gunny Bags

Sacos Usados de Yute 中古麻袋 旧麻布袋

A coarse jute bag for use as a wiping rag, as dunnage, or as a trash disposal or container for sawdust, sand, or



pellets. Size approx. 580 - 710 x 1,000 - 1,010 mm weighing approx. 0.8 - 1 kg. Sold by individual pieces.

23 29 41	Gunny bag, used
----------	-----------------

Pcs.

33. Used Drums/Used Cement Bags**Used Drums**

Bibones de Segunda Mano 中古ドラム 旧油桶

A 200 ltr used drum which is cleaned for general purpose use. Available in cap type and open lid type.



23 29 42	Drum, used, 200 Ltr, cap type
----------	-------------------------------

Pcs.

23 29 43	Drum, used, 200 Ltr, open lid type
----------	------------------------------------

Pcs.

Used Cement Bags

Bolsas de Cemento, Usadas 中古セメント袋 旧水泥袋

Worn empty paper bag.

23 29 44	Used cement bag, empty
----------	------------------------

Pcs.

34. Sand/Cement/Blasting Sand**Sand**

Arena 砂 黄沙

Used for scrubbing wood decks, extinguishing fires, and in mixing cement. Packed in a strong plastic bag containing approx. 25 kg.

23 29 50	Sand, fine 25 kg
----------	------------------

Bag

Portland Cement

Cemento Portland セメント 普通水泥

Used chiefly as a coating for tanks, bilges, etc. Supplied 25 kg or 40 kg per package in a durable paper bag.



CODE	Description	Contents kg	Unit
23 29 56	Portland cement	25	
51		40	Bag
23 29 57	Quick-dry cement	25	
52		40	Bag
23 29 53	White cement	20	
54		40	Bag
23 29 55	Drying agent	2	Can

Garnet Blasting Grit

Abrasivo de soplado de granate

プラスチック用ガーネット 石榴石喷砂磨料

Garnet Abrasive is derived from mined Almandine and Andradite mineral deposits, and most commonly used as a high-performance blast media, for the cleaning of metal and



fibreglass structures. As an inert, non-toxic, natural mineral, it is also used on sites where water contamination is a concern. Various grain sizes are available. Packed in quantity of 25 kg in strong paper bags or metric ton.

CODE	Mesh	Particle dia	Finish Surface Roughness	Unit
23 29 82	12-20	1,400-800 μm	80-100 μm	25 kg/bag
23 29 83				Ton
23 29 84	20-40	800-300 μm	50- 80 μm	25 kg/bag
23 29 85				Ton
23 29 88	30-60	600-250 μm	30- 50 μm	25 kg/bag
23 29 89				Ton

Blasting Copper Grit

Gramalla de Cobre

サンドブラスト用 S.P. グリット

噴砂用銅砂



Made from slag, a byproduct from a copper smelting refinery. Copper grit is less expensive than steel grit and works as effectively because the grits have pointed edges and contain over 30% iron. Can be collected and reused. The size of the grit is 0.5 - 4.5 mm in mesh and it is packaged in quantities of 30 kg in durable paper bags. Sold by metric ton.

Grid Size	Medium Grade	8 mesh		10 mesh		Fine Grade		
		CODE	23 29 60	23 29 61	23 29 62	23 29 63	23 29 64	23 29 65
Unit	30 kg	Ton	30 kg	Ton	30 kg	Ton	30 kg	Ton
4 5.00 Mesh/mm	-		-		-		-	
8 2.50	5.9 %		0.1 %		-		-	
16 1.18	25.9 %		40.1 %		27.2 %		-	
20 0.85	51.8 %		54.2 %		55.4 %		-	
30 0.60	12.2 %		4.6 %		13.8 %		21.9 %	
50 0.30	4.1 %		1.0 %		3.6 %		70.7 %	
60 0.25	0.1 %		0.1 %		0.1 %		3.0 %	
100 0.15	0.1 %		0.1 %		0.1 %		3.7 %	
140 0.10	-		-		-		0.5 %	
PAN	-		-		-		0.2 %	

Blasting Sand

Gramalla de Arena サンドブラスト用珪砂 噴沙

Abrasive grains of sand for sandblasting which are economical for cleaning metal surfaces. Various grain sizes of silica are available. Packed in quantities of 30 kg in strong paper bags. Sold by metric ton.

CODE		23 29 66	23 29 67	23 29 68	23 29 69	23 29 70	Unit Per Ton
Nominal Grain Size	No. 2	No. 3A	N. 3B	No. 4	No. 5		
6 Mesh	3.25 mm	0.4 %	-	-	-	-	
8	2.36	65.5	0.6%	-	-	-	
10	1.70	33.0	58.8	-	-	-	
14	1.18	0.1	40.1	52.4%	0.2%	-	
20	0.85	-	0.4	45.2	21.9	0.2%	
28	0.60	-	0.1	2.4	59.8	2.6	
35	0.425	-	-	-	15.5	44.3	
48	0.30	-	-	-	2.1	28.6	
65	0.212	-	-	-	0.3	14.2	
100	0.15	-	-	-	0.2	7.8	
150	0.106	-	-	-	-	2.0	
200	0.075	-	-	-	-	0.2	
270	0.053	-	-	-	-	0.1	

Dry Walnut Shell for Turbo Charger Cleaner

Cáscara de Nuez
過給機カーボン除去用くるみ殻 干核桃壳



Made of walnut shell and crushed into grit. Suitable to use for cleaning up the dirt sticks from nozzles and blades of turbocharger. There are several types of grain size and packed in 20 kg paper bag. Please specify grit size when ordering.

CODE	Grit No.	Size μ	Unit Per Bag
23 29 73	#20	840 - 1,190	
74	#16	1,000 - 1,410	
75	#14	1,190 - 1,680	
76	#12	1,410 - 2,000	
77	#10	1,680 - 2,380	
23 29 78	# 8	2,000 - 2,830	

35. Separation Nets/Covering Sheets

Cargo Separation Nets

Red de Separación de Carga

カーゴセパレーションネット 隔货网

Made of synthetic fibre mesh for cargo separation. Several kinds of net sizes and colours are available. The most common size is 5 x 6 mtrs. Please specify the quantity and colour required when ordering.

23 29 81	Cargo separation net 5 x 6 mtrs coloured	Pc.
----------	--	-----

Burlap

Arpillera バーラップ 粗麻布



A coarse jute cloth used on board a ship chiefly as a protective cover for items on deck or exposed cargo. The size of a bundle is approx. W 115 cm x L 100 mtrs. Weighs 300 grams per square meter.

CODE	Width cm	Gauge	Weight Per Sq/Mtrs. grm
23 29 87	115	No. 6	300

Biodegradable Stretch Films Eco-friendly

Film estirable biodegradable Ecológico

生分解性ストレッチフィルム

生物降解拉伸膜 生态友好型



Designed for eco-friendly alternative to traditional plastic stretch films for wrapping the goods. Made from biodegradable material that decomposes naturally over time, capable of breaking down into non-toxic elements and contributing to reduce environmental impact.

Available in 500 mm width x 160 mtr length.

23 29 91	Stretch film biodegradable, W: 500 mm x 160 mtr, 2.2 kg/roll	Rls.
----------	--	------

Squared Polyethylene Sheets

Placa de Polietileno Cuadrada ブルーシート 平面聚酯合成板

Ready made square polyethylene sheet suitable for use protecting equipment on deck, covering rope coils which are exposed to sunlight or seawater, and covering interior floors,

etc. during painting or while in dock. All sheetings have holes enforced with grommets for tying the sheets down or connecting sheets together. Blue coloured sheet will be supplied unless specified otherwise.



Unit Per Sht.					
CODE	Size mtr	Wgt. sht kg	CODE	Size mtr	Wgt. sht kg
23 30 31	1.8 x 1.8	0.4	23 30 43	4.5 x 4.5	2.5
32	1.8 x 2.7	0.6	44	4.5 x 5.4	3.0
33	1.8 x 3.6	0.8	23 30 45	5.4 x 5.4	3.6
34	1.8 x 4.5	1.0	46	5.4 x 7.2	4.8
35	1.8 x 5.4	1.2	47	5.4 x 9.0	6.0
23 30 36	2.7 x 2.7	0.9	23 30 48	7.2 x 7.2	6.4
37	2.7 x 3.6	1.2	49	7.2 x 9.0	8.0
38	2.7 x 4.5	1.5			
39	2.7 x 5.4	1.8			
23 30 40	3.6 x 3.6	1.6	23 30 50	9.0 x 9.0	10.0
41	3.6 x 4.5	2.0	23 30 51	10.0 x 10.0	12.4
42	3.6 x 5.4	2.4			

23

36. Hatch Cover Parts

MacGregor Hatch Cover Parts

Piezas de Cubierta de Escotilla MacGregor

マックグレーガーハッチカバー部品 合成纤维舱盖帆布(丙纶)

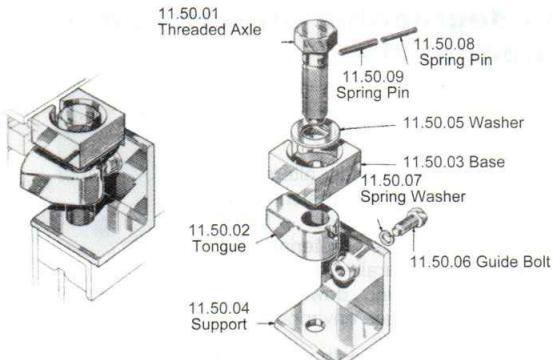
As a wide variety of spare parts are available, code numbers have only been provided for the most commonly used parts for convenience. Before ordering, please clearly specify the following points to avoid unnecessary confusion and misdelivery.

1. Part Name
2. Part Number
3. Name of Original Manufacturer
4. Shipyard Hull Number
5. Besides above, Necessary information if any

11.50 Flush Deck Cleat Assembly

Conjunto de Cornamusa de Ubierta Enrasada

フラッシュデッキクリートアセンブリー 平头甲板夹板组件

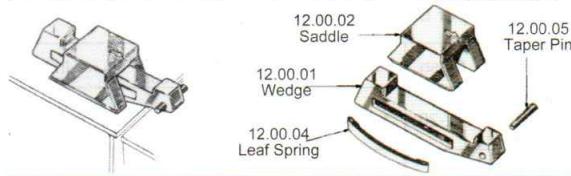


CODE	Item No.	Item	Unit
23 32 26	11.50	Flush Deck Cleat Assembly	Set
27	11.50.01	Threaded Axle	Pc.
28	02	Tongue	"
29	03	Base	"
30	04	Support	"
31	05	Washer	"
32	06	Guide Bolt	"
33	07	Spring Washer	"
34	08	Spring Pin	"
35	09	Spring Pin	"

12.00 Cross Joint Wedge Assembly

Conjunto de Cuna de Junta Transversal

クロスジョイント・ウェッジ・アッセンブリー 十字接头楔形组件



CODE	Item No.	Item	Unit
23 32 41	12.00	Cross Joint Wedge Assembly	Set
42	12.00.01	Wedge	Pc.
43	02	Saddle	"
44	04	Leaf Spring	"
45	05	Taper Pin	"

Quick Acting Cleat Assembly

Conjunto de Grapas de Acción Rápida

クイックアクティングクリートアッセンブリー 快装板组件

13.00 315 mm Rod Length

13.01 405 mm Rod Length

Both 22 mm Dia.



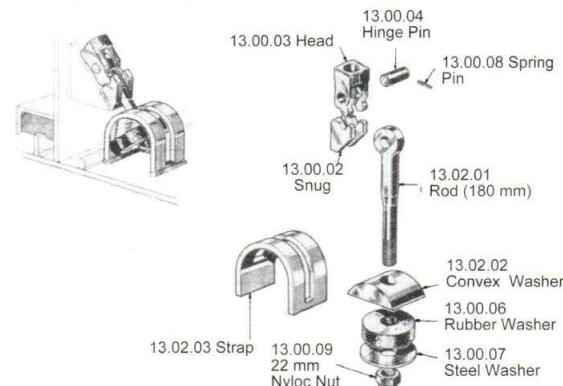
CODE	Item No.	Item	Unit
23 32 50	13.00	Quick Acting Cleat Assembly 315 mm	Set
23 32 51	13.01	Quick Acting Cleat assembly 405 mm	Set
23 32 52	13.00.01	Rod 315 mm	Pc.
	53	Snug	"
	54	Head	"
	55	Hinge Pin	"
	56	Crutch	"
	57	Rubber Washer	"
	58	Steel Washer	"
	59	Spring Pin	"
	60	Nyloc Nut 22 mm	"
23 32 61	13.01.01	Rod 405 mm	Set

13.02 Quick Acting Cleat Assembly

180 mm Rod Length 22mm Dia.

Conjunto de grapas de acción rápida

クイックアクティングクリートアッセンブリー 快装板组件



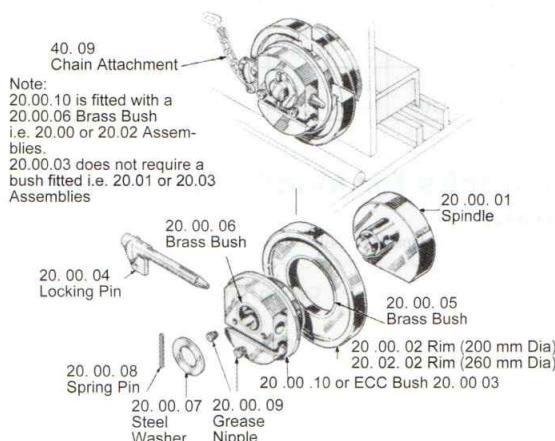
CODE	Item No.	Item	Unit
23 32 66	13.02	Quick Acting Cleat Assembly 180 mmL x 22 mmΦ	Set
23 32 53	13.00.02	Snug	Pc.
54	03	Head	"
55	04	Hinge Pin	"
57	06	Rubber Washer	"
58	07	Steel Washer	"
59	08	Spring Pin	"
60	09	Nyloc Nut 22 mm	"
67	02.01	Rod 180 mm	"
68	02	Convex Washer	"
69	03	Strap	"

Eccentric Wheel Assembly

Conjunto de Rueda Excéntrica 偏心ホイールアセンブリ 偏心轮组件

20.00/20.01 200 mm Ø

20.02/20.03 260 mm Ø



CODE	Item No.	Item	Unit
23 32 71	20.00	Eccentric Wheel Small Model Assembly 200 mm	Set
23 32 72	20.01	Eccentric Wheel for Wheel Load 2 tons max. Assembly 200 mm	Set
23 32 73	20.02	Eccentric Wheel for Wheel Load 5 tons max. Assembly 260 mm with Brass Bush	Set
23 32 74	20.03	Eccentric Wheel for Wheel Load 5 tons max. Assembly 260 mm without Brass Bush	Set
23 32 75	20.00.01	Spindle	Pc.
76	02	Rim 200 mm dia.	"
77	03	Eccentric Bush	"
78	04	Locking Pin	"
79	05	Brass Bush	"
80	06	Brass Bush	"
81	07	Steel Washer	"
82	08	Spring Pin	"
83	09	Grease Nipple	"
84	10	Eccentric Bush	"
85	02.02	Rim 260 mm dia.	"
23 32 86	40.09	Chain Attachment	Pc.

22.04 Balancing Roller Assembly

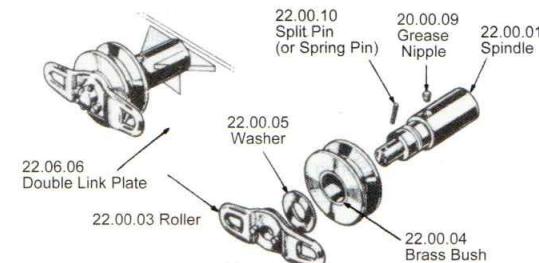
2-1/2-4 Tons

Conjunto de Rodillos de Equilibrado

バランスグローラーアセンブリ 平衡辊组件

For normal Single Pull and Magronest Covers 2-1/2-4 tons weight with Double Link Plate.

22.04 & 22.06 Assembly



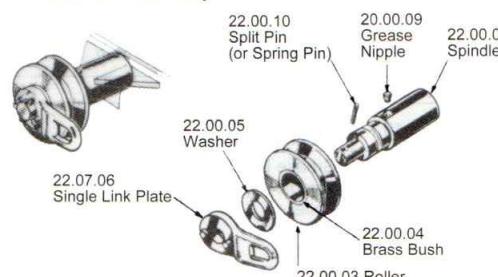
CODE	Item No.	Item	Unit
23 32 91	22.04	Balancing Roller Assembly 2-1/2-4 tons with double link plate	Set
23 32 83	20.00.09	Grease Nipple	Pc.
92	22.00.01	Spindle	"
93	03	Roller	"
94	04	Brass Bush	"
95	05	Washer	"
96	10	Spring Pin	"
97	06.06	Double Link Plate	"

22.05 Balancing Roller Assembly

2-1/2-4 Tons

For normal Single Pull and Magronest Covers 2-1/2-4 tons weight with Single Link Plate.

22.05 & 22.07 Assembly



CODE	Item No.	Item	Unit
23 33 01	22.05	Balancing Roller Assembly 2-1/2-4 tons with single link plate	Set
23 32 83	20.00.09	Grease Nipple	Pc.
92	22.00.01	Spindle	"
93	03	Roller	"
94	04	Brass Bush	"
95	05	Washer	"
96	10	Spring Pin	"
23 33 02	07.06	Double Link Plate	"

22.09 Balancing Roller Assembly

Above 4 Tons

For normal Single Pull and Magronest Covers above 4 tons weight with Double Link Plate.

22.09 & 22.12 Assemblies



CODE	Item No.	Item	Unit
23 33 06	22.09	Balancing Roller Assembly 4 tons with double link plate	Set
23 32 83	20.00.09	Grease Nipple	Pc.
23 33 07	22.03.01	Spindle	"
08	03	Roller	"
09	04	Brass Bush	"
10	05	Washer	"
11	10	Spring Pin	"
12	09.06	Double Link Plate	"

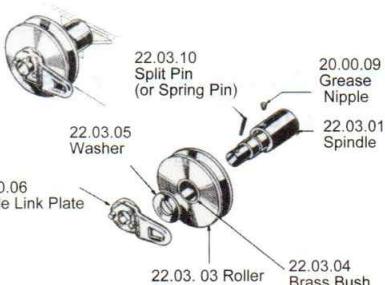
22.10 Balancing Roller Assembly Above 4 Tons

Conjunto de Rodillos de Equilibrado

バランスシングローラーアセンブリ 平衡辊组件

For normal Single Pull and Magronest Covers above 4 tons weight with Single Link Plate.

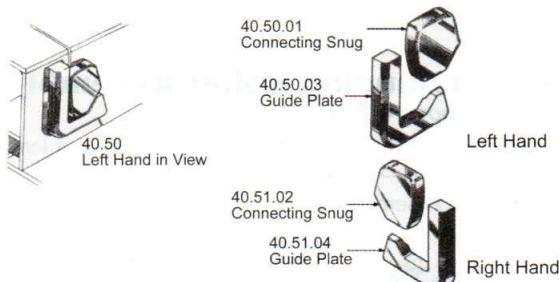
22.10 & 22.11 Assemblies



CODE	Item No.	Item	Unit
23 33 16	22.10	Balancing Roller Assembly 4 tons with single link plate	Set
23 32 83	20.00.09	Grease Nipple	Pc.
23 33 07	22.03.01	Spindle	"
08	03	Roller	"
09	04	Brass Bush	"
10	05	Washer	"
11	10	Spring Pin	"
17	22.10.06	Single Link Plate	"

40.50 & 40.51 Junction Pieces Left & Right Hand

Piezas de unión ジャンクションピース 连接件



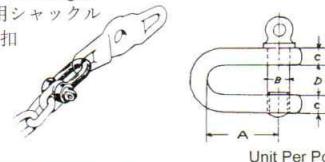
CODE	Item No.	Item	Unit
23 33 21	40.50	Junction Piece, Left Hand	Set
22	40.50.01	Connecting Snug, Left Hand	Pc.
23	03	Guide Plate, Left Hand	Pc.
24	40.51	Junction Piece, Right Hand	Set
25	51.02	Connecting Snug, Right Hand	Pc.
26	51.04	Guide Plate, Right Hand	Pc.

Shackles for MacGregor Hatch Cover

Grilletas para Tapa de Escotilla MacGregor

マクレガーハッチカバー用シャックル

用于 MacGregor 舱口盖的卸扣



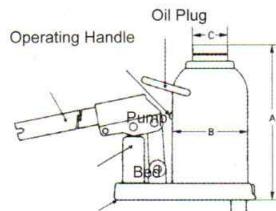
CODE	Part No.	Size mm				Use for Towing Chain
		A	B	C	D	
23 33 31	4005	80	16	18	20	14 ømm
	32 06	53	16	18	20	14 "
	33 07	116	22	26	25	18 "
	34 08	74	22	26	25	18 "
	35 KL-2	65	19	16	25	13 "
	36 3	60	19	16	25	13 "
	37 4	55	19	16	25	13 "
	38 60	60	16	18	20	13 "
	39 70	70	16	18	20	13 "
	K-95	95	22	26	25	16-19 "
23 33 40	105	105	22	26	25	16-19 "

Oil Jacks for MacGregor Hatch Cover

Gatos de aceite para tapa de escotilla MacGregor

マクレガーハッチカバー用オイルジャック 舱口盖的油升降机

Carrying Handle



CODE	Part No.	Size mm				Capacity ton
		A	B φ	C φ	Stroke	
23 33 51	MCH-5B	138	63.5	32	60	5
	52 7B	150	88.3	42	60	7
	53 7C	240	88.3	42	150	7
	54 7F	180	-	-	100	7
	55 10B	159	100.8	48	60	10

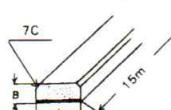
Remark: Mounting Beds for above Jacks are available as optional attachments. Before ordering, please ask for more details.

Packing for MacGregor Hatch Cover

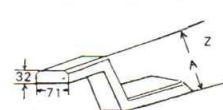
Embalaje para Tapa de Escotilla MacGregor

マクレガーハッチカバー梱包 MacGregor 舱口盖包装

Sponge Packing



Corner Packing



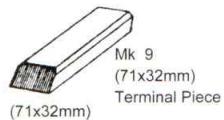
CODE	Part No.	Description	Unit
23 33 62	-	Sponge packing, A-71 x B-32	Mtr
23 33 63	-	Sponge packing, A-92 x B-50	"
23 33 67	Z112	Corner packing, 32x71xA-112	Pc.
23 33 68	Z132	Corner packing, 32x71xA-132	"

Various Types of Rubber Pads

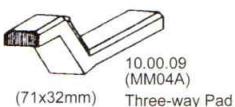
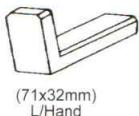
Varios Tipos de Almohadillas de Goma

各種ラバーパッド 各種橡胶垫

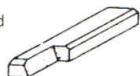
Mk 8 5-1/2" x
2-3/4" x 1-1/2"



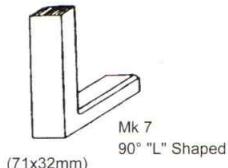
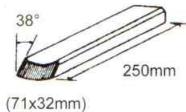
MM05 (Mk 1)
Two-way Joint



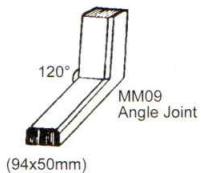
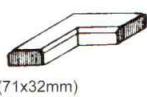
MM07A (Mk 2)
Left or Right Hand



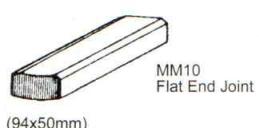
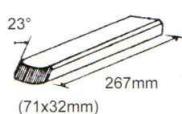
10.00.10
End Piece



MM02A (Mk 4)
90° Flat Angle Joint



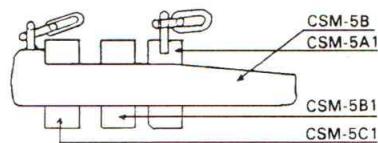
MM06 (Mk 3)
Terminal Piece



Aboves are illustrated only for reference and not coded.

Hatch Wedges

Cuñas de escotilla ハッチ ウェッジ 舱口楔



CODE	Item No.	Item	Unit
23 33 81	CS -5D	Wedge Assembly	Set
82	CSM-5B	Wedge	Pc.
83	CSM-5A1	Saddle	"
84	CSM-5B1	"	"
85	CSM-5C1	"	"
86	CSH-5	Wedge Holder	"

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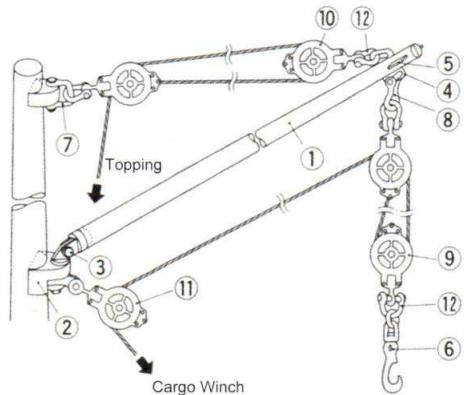


Comparison Table for Hatch Cover Parts

CODE	Description	Parts No.		Unit
		MacGregor	Ascargo	
23 32 26	Hatch Flush Deck Cleat Assembly	#11.50	#25	Set
27	Hatch Threaded Axle	#11.50.01	#25.1	Pc.
28	Hatch Tongue	#11.50.02	#25.2	Pc.
29	Hatch Base	#11.50.03	#25.3	Pc.
30	Hatch Support	#11.50.04	#25.4	Pc.
31	Hatch Washer	#11.50.05	#25.5	Pc.
32	Hatch Guide Bolt	#11.50.06	#25.6	Pc.
33	Hatch Spring Washer	#11.50.07	#25.7	Pc.
34	Hatch Spring Pin	#11.50.08	#25.8	Pc.
35	Hatch Spring Pin	#11.50.09	#25.9	Pc.
23 32 41	Hatch Cross Joint Wedge Assembly	#12.00	#7	Set
42	Hatch Wedge	#12.00.01	#7.3	Pc.
43	Hatch Saddle	#12.00.02	#7.1	Pc.
44	Hatch Leaf Spring	#12.00.04	#7.2	Pc.
45	Hatch Taper Pin	#12.00.05	#7.4	Pc.
23 32 50	Hatch Quick Acting Cleat Assembly 315 mm	#13.00	#17	Set
51	Hatch Quick Acting Cleat Assembly 405 mm	#13.01	#18	Set
52	Hatch Rod 315mm	#13.00.01	#17.1	Pc.
53	Hatch Snug	#13.00.02	#17.2 / #18.2	Pc.
54	Hatch Head	#13.00.03	#17.3 / #18.3	Pc.
55	Hatch Hinge Pin	#13.00.04	#17.4 / #18.4	Pc.
56	Hatch Crutch	#13.00.05	#17.5 / #18.5	Pc.
57	Hatch Rubber Washer	#13.00.06	#17.6 / #18.6	Pc.
58	Hatch Steel Washer	#13.00.07	#17.7 / #18.7	Pc.
59	Hatch Spring Pin	#13.00.08	#17.8 / #18.8	Pc.
60	Hatch Nylock Nut 22 mm	#13.00.09	#17.9 / #18.9	Pc.
61	Hatch Rod 405 mm	#13.01.01	#18.1	Set
23 32 66	Hatch Quick Acting Cleat Assembly 180 mm	#13.02	#20	Set
53	Hatch Snug	#13.00.02	#20.2	Pc.
54	Hatch Head	#13.00.03	#20.3	Pc.
55	Hatch Hinge Pin	#13.00.04	#20.4	Pc.
57	Hatch Rubber Washer	#13.00.06	#20.6	Pc.
58	Hatch Steel Washer	#13.00.07	#20.7	Pc.
59	Hatch Spring Pin	#13.00.08	#20.8	Pc.
60	Hatch Nylock Nut 22 mm	#13.00.09	#20.9	Pc.
67	Hatch Rod 180 mm	#13.02.01	#20.1	Pc.
68	Hatch Convex Washer	#13.02.02	#20.10	Pc.
69	Hatch Strap	#13.02.03	#20.5	Pc.
23 32 71	Hatch Eccentric Wheel Model Ass'y 200 mm	#20.00	#26	Set
72	Hatch Eccentric Wheel	#20.01	-	Set
73	Hatch Eccentric Wheel w/Bush	#20.02	#27	Set
74	Hatch Eccentric Wheel w/o Bush	#20.03	-	Set
75	Hatch Spindle	#20.00.01	#26.1	Pc.
76	Hatch Rim 200 mm dia	#20.00.02	#26.2	Pc.
77	Hatch Eccentric Bush	#20.00.03	#26.3	Pc.
78	Hatch Locking Pin	#20.00.04	#26.4	Pc.
79	Hatch Brass Bush	#20.00.05	#26.5	Pc.
80	Hatch Brass Bush	#20.00.06	#26.6	Pc.
81	Hatch Steel Washer	#20.00.07	#26.7	Pc.
82	Hatch Spring Pin	#20.00.08	#26.8	Pc.
83	Hatch Grease Nipple	#20.00.09	#26.9	Pc.
84	Hatch Eccentric Bush	#20.00.10	#26.3	Pc.
85	Hatch Rim 260 mm dia	#20.02.02	#27.2	Pc.
86	Hatch Chain Attachment	#40.09	#26.10	Pc.
23 32 91	Hatch Roller Ass'y 2 -1/2 - 4 ton w/Double Link Plate	#22.04	#31	Set
83	Hatch Grease Nipple	#20.00.09	#31.8	Pc.
92	Hatch Spindle	#22.00.01	#31.1	Pc.
93	Hatch Roller	#22.00.03	#31.2	Pc.
94	Hatch Brass Bush	#22.00.04	#31.6	Pc.
95	Hatch Washer	#22.00.05	#31.5	Pc.
96	Hatch Spring Pin	#22.00.10	#31.7	Pc.
97	Hatch Double Link Plate	#22.06.06	#31.3	Pc.

CODE	Description	Parts No.		Unit
		MacGregor	Ascargo	
23 33 01	Hatch Roller Ass'y w/Single Plate	#22.05	-	Set
23 32 83	Hatch Grease Nipple	#20.00.09	#31.8	Pc.
92	Hatch Spindle	#22.00.01	#31.1	Pc.
93	Hatch Roller	#22.00.03	#31.2	Pc.
94	Hatch Brass Bush	#22.00.04	#31.6	Pc.
95	Hatch Washer	#22.00.05	#31.5	Pc.
96	Hatch Spring Pin	#22.00.10	#31.7	Pc.
23 33 02	Hatch Single Link Plate	#22.07.06	#31.4	Pc.
23 33 06	Hatch Balance Roller Ass'y 4ton w/Double Link Plate	#22.09	#32	Set
23 32 83	Hatch Grease Nipple	#20.00.09	#32.8	Pc.
23 33 07	Hatch Spindle	#22.03.01	#32.1	Pc.
08	Hatch Roller	#22.03.03	#32.6	Pc.
09	Hatch Brass Bush	#22.03.04	#32.2	Pc.
10	Hatch Washer	#22.03.05	#32.5	Pc.
11	Hatch Spring Pin	#22.03.10	#32.7	Pc.
12	Hatch Double Link Plate	#22.09.06	#32.3	Pc.
23 33 16	Hatch Balance Roller Ass'y w/Single Plate	#22.10	-	Set
23 32 83	Hatch Grease Nipple	#20.00.09	#32.8	Pc.
23 33 07	Hatch Spindle	#22.03.01	#32.1	Pc.
08	Hatch Roller	#22.03.03	#32.6	Pc.
09	Hatch Brass Bush	#22.03.04	#32.2	Pc.
10	Hatch Washer	#22.03.05	#32.5	Pc.
11	Hatch Spring Pin	#22.03.10	#32.7	Pc.
17	Hatch Single Link Plate	#22.10.06	#32.4	Pc.
23 33 21	Hatch Junction Piece Left Hand	#40.50	#35	Set
22	Hatch Connecting Snug Left Hand	#40.50.01	#35.1.I	Pc.
23	Hatch Guide Plate Left Hand	#40.50.03	#35.2.I	Pc.
24	Hatch Junction Piece Right Hand	#40.51	-	Set
25	Hatch Connecting Snug Right Hand	#40.51.02	#35.1.D	Pc.
26	Hatch Guide Plate Right Hand	#40.51.04	#35.2.D	Pc.
23 33 31	Shackle for Hatch	#4005	#4005	Pc.
32	Shackle for Hatch	#4006	#4006	Pc.
33	Shackle for Hatch	#4007	#4007	Pc.
34	Shackle for Hatch	#4008	#4008	Pc.
35	Shackle for Hatch	KL-2	KL-2	Pc.
36	Shackle for Hatch	KL-3	KL-3	Pc.
37	Shackle for Hatch	KL-4	KL-4	Pc.
38	Shackle for Hatch	KL-60	KL-60	Pc.
39	Shackle for Hatch	KL-70	KL-70	Pc.
40	Shackle for Hatch	KL-95	KL-95	Pc.
41	Shackle for Hatch	KL-105	KL-105	Pc.
23 33 51	Oil Jack for Hatch	#MCH-5B	#MCH-5B	Pc.
52	Oil Jack for Hatch	#MCH-7B	#MCH-7B	Pc.
53	Oil Jack for Hatch	#MCH-7C	#MCH-7C	Pc.
54	Oil Jack for Hatch	#MCH-7F	#MCH-7F	Pc.
55	Oil Jack for Hatch	#MCH-10B	#MCH-10B	Pc.
23 33 62	Sponge Packing A-71 X B-32	-	-	Mtr
63	Sponge Packing A-92 X B-50	-	-	Mtr
67	Corner Packing 32 X 71 XA 112	Z-112	Z-112	Pc.
68	Corner Packing 32 X 71 XA132	Z-132	Z-132	Pc.
23 33 XX	Terminal Piece 5-1/2" X 2-3/4" X 1-1/2"	Mk8	#43.1	Pc.
23 33 XX	Terminal Piece 71 X 32 mm	Mk9	#43.2	Pc.
23 33 XX	Two-way Joint 71 X 32 mm	MM05 (Mk 1)	#43.3	Pc.
23 33 XX	Three-way Pad 71 X 32 mm	#10.00.09 MM04A	#43.4	Pc.
23 33 XX	Left or Right Hand	MM07A (Mk 2)	#43.5	Pc.
23 33 XX	End Piece 71 X 32 X 250 mm	10.00.10	#43.7	Pc.
23 33 XX	90deg 'L' Shaped 71 X 32 mm	Mk7	#43.6	Pc.
23 33 XX	90deg Flat Angle Joint 71 X 32 mm	MM02A (Mk 4)	#43.9	Pc.
23 33 XX	Angle Joint 94 X 50mm	MM09	#43.8	Pc.
23 33 XX	Terminal Piece 71 X 32 X 267 mm	MM06 (Mk 3)	#43.10	Pc.
23 33 XX	Flat End Joint 94 X 50mm	MM10	#43.11	Pc.

Mast Hardware



No.	Descriptions
1	Boom
2	Gooseneck Bracket
3	Derrick Boom Heel Fitting
4	Derrick boom Head Fitting
5	Stay Wire Fitting
6	Cargo Hook
7	Topping
8	Topping Bracket
9	Shackle
10	Cargo Block for Cargo Hold
11	Cargo Block for Topping Lift
12	Cargo Block for Cargo Hold Guide

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Marine Fittings

Fairleaders	Open Rollers	Guy Cleats	Bollards
		 Technical drawing showing dimensions: L, L', B, H, T.	
Closed Rollers	Deck End Rollers	Eye Plates - C	Eye Plates - D
		 Technical drawing showing dimensions: A, B, H, T.	 Technical drawing showing dimensions: A, B, H.
Open Chocks	Panama Chocks	Eye Plates - E	Eye Plates - F
 Technical drawing showing dimensions: L, L', B, H, D, T.	 Technical drawing showing dimensions: L, L', B, H, D, T.	 Technical drawing showing dimensions: L, H, D, T.	 Technical drawing showing dimensions: L, L', B.
Closed Chocks	Mooring Pipes	Ring Plates - B	Ring Plates - D
 Technical drawing showing dimensions: L, L', B, H, D, T.	 Technical drawing showing dimensions: L, L', B, H, D, T.	 Technical drawing showing dimensions: L, L', B, D.	 Technical drawing showing dimensions: L, L', B, D.