



# Mooring & towing

## 9. Mooring & towing

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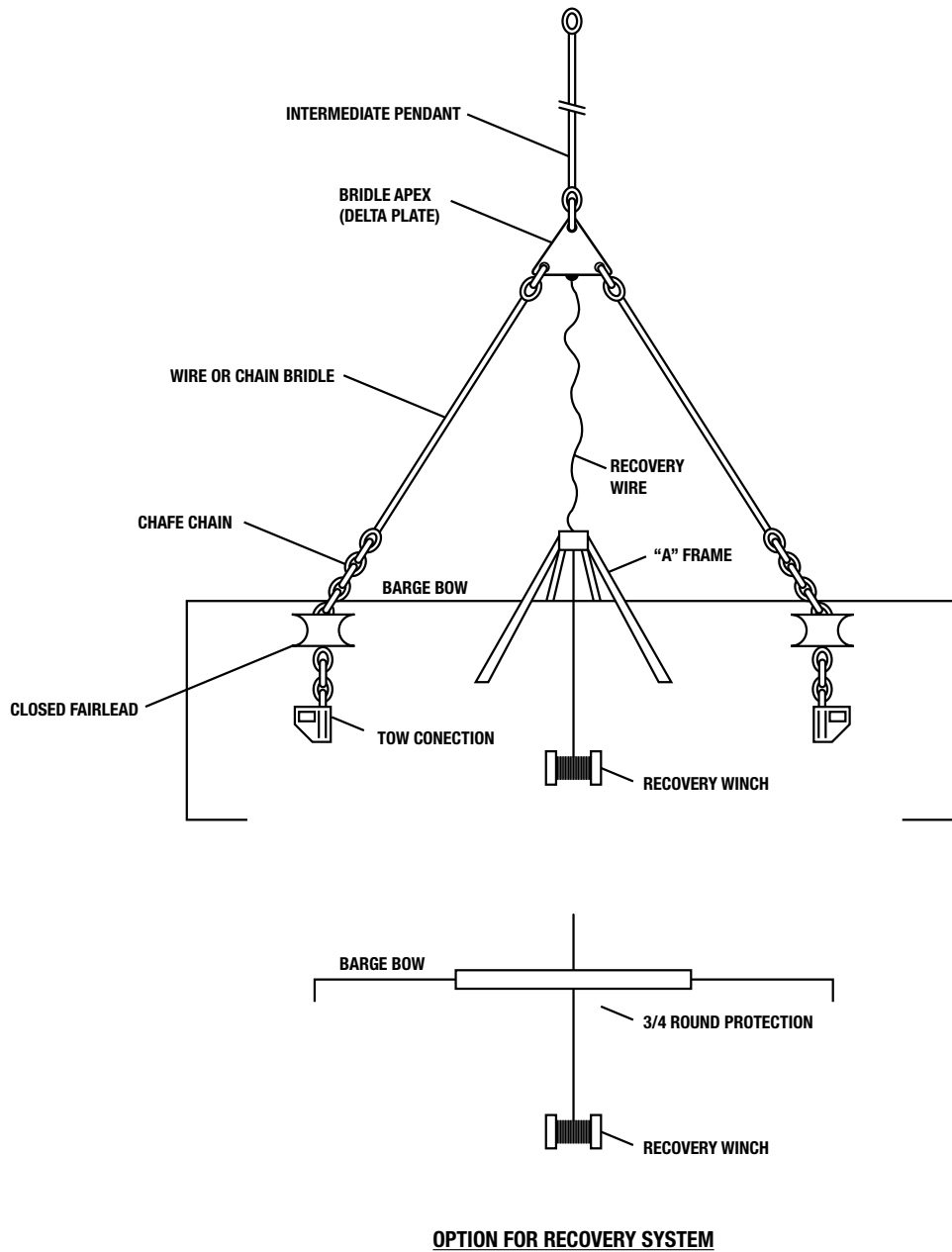
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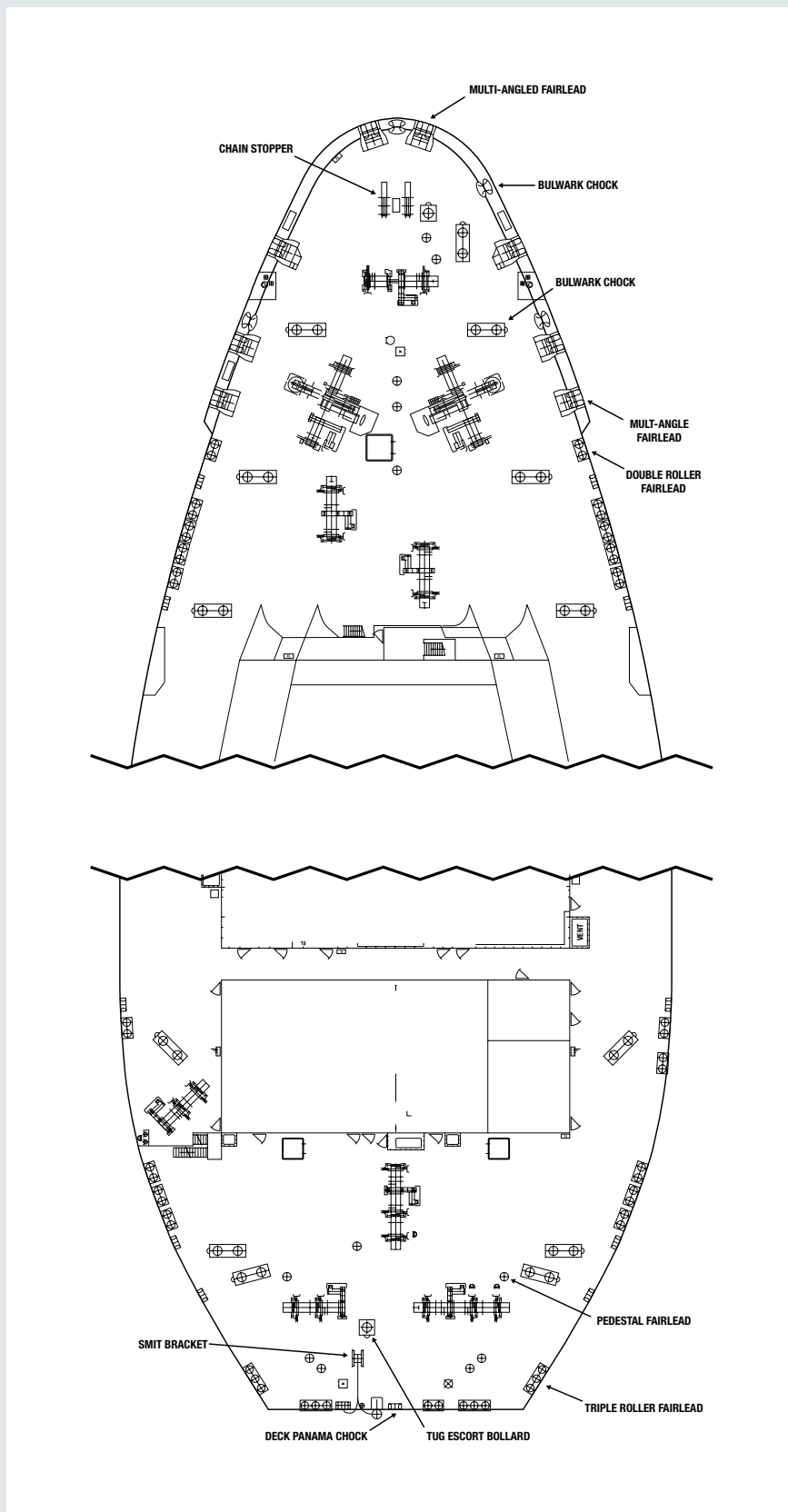
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## Main tow bridle



## Mooring points & deck equipment; anchor types



Stockless



A.C. 14



L.W.T.



Danforth



Moorfast



Stato



Stevin MK 3



Stevfix



Stevin



Stevmud



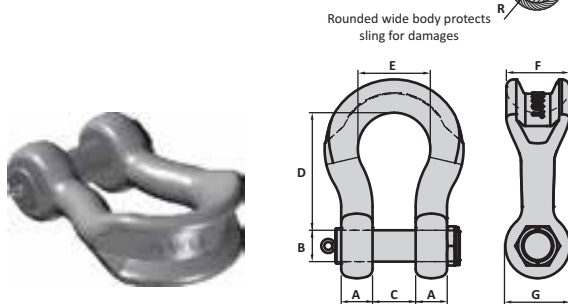
Hook

## Studlink chaincable test loads

Chain Diameter		Grade U2		Grade U3		Approx. Min weight per 27,5 mtr with shackle
		Proof load	Breaking load	Proof load	Breaking load	
inches	mm	kN	kN	kN	kN	kg
1/2	12,5	66	92	92	132	110
9/16	14	82	116	116	165	130
5/8	16	107	150	150	216	160
11/16	17,5	127	179	179	256	190
3/4	19	150	211	211	301	225
13/16	20,5	175	244	244	349	265
7/8	22	200	280	280	401	300
15/16	24	237	332	332	476	360
1	26	278	389	389	556	420
1 1/8	28	321	449	449	642	490
1 3/16	30	368	514	514	735	565
1 1/4	32	417	583	583	833	635
1 5/16	34	468	655	655	937	720
1 7/16	36	523	732	732	1,050	800
1 1/2	38	581	812	812	1,160	895
1 9/16	40	640	896	896	1,280	995
1 5/8	42	703	981	981	1,400	1,100
1 3/4	44	769	1,080	1,080	1,540	1,200
1 13/16	46	837	1,170	1,170	1,680	1,320
1 7/8	48	908	1,270	1,270	1,810	1,440
2	50	981	1,370	1,370	1,960	1,560
2 1/16	52	1,060	1,480	1,480	2,110	1,675
2 1/8	54	1,140	1,590	1,590	2,270	1,820
2 3/16	56	1,220	1,710	1,710	2,430	1,935
2 5/16	58	1,290	1,810	1,810	2,600	2,075
2 3/8	60	1,380	1,940	1,940	2,770	2,220
2 7/16	62	1,470	2,060	2,060	2,940	2,365
2 1/2	64	1,560	2,190	2,190	3,130	2,550
2 5/8	66	1,660	2,310	2,310	3,300	2,695
2 11/16	68	1,750	2,450	2,450	3,500	2,890
2 3/4	70	1,840	2,580	2,580	3,690	3,030
2 7/8	73	1,990	2,790	2,790	3,990	3,290
3	76	2,150	3,010	3,010	4,300	3,555
3 1/16	78	2,260	3,160	3,160	4,500	3,755
3 3/16	81	2,410	3,380	3,380	4,820	4,035
3 5/16	84	2,580	3,610	3,610	5,160	4,395
3 7/16	87	2,750	3,850	3,850	5,500	4,760
3 9/16	90	2,920	4,090	4,090	5,840	5,005
3 5/8	92	3,040	4,260	4,260	6,080	5,200
3 3/4	95	3,230	4,510	4,510	6,440	5,570
3 13/16	97	3,340	4,680	4,680	6,690	5,760
3 15/16	100	3,530	4,940	4,940	7,060	6,130
4	102	3,660	5,120	5,120	7,320	6,505
4 1/8	105	3,850	5,390	5,390	7,700	6,895
4 3/16	107	3,980	5,570	5,570	7,960	7,140
4 3/8	111	4,250	5,940	5,940	8,480	7,715
4 1/2	114	4,440	6,230	6,230	8,890	8,085
4 5/8	117	4,650	6,510	6,510	9,300	8,445
4 3/4	120	4,850	6,810	6,810	9,720	9,110
4 13/16	122	5,000	7,000	7,000	9,990	9,240
4 7/8	124	5,140	7,200	7,200	10,280	9,700
5	127	5,350	7,490	7,490	10,710	10,040
5 1/8	130	5,570	7,800	7,800	11,140	10,420
5 3/16	132	5,720	8,000	8,000	11,420	10,910
5 3/8	137	6,080	8,510	8,510	12,160	11,720

### GN FORGED ROPE SHACKLE TYPE H14 SLING PROTECTOR (WIDE BODY)

Material : Alloy steel quenched and tempered  
Safety factor : Up and including 1500 ton 5 times  
Above 1500 ton 4 times  
Finish : Painted

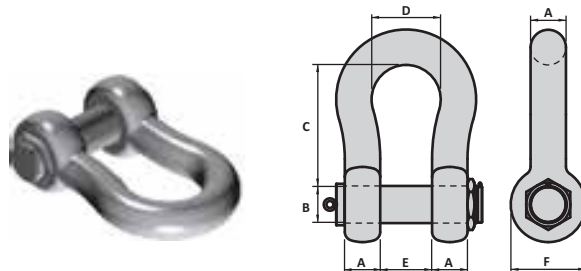


WLL ton	A mm	B mm	C mm	D mm	E mm	F mm	G mm	R mm
30	35	45	60	176	128	80	89	45
40	45	50	73	210	140	95	105	50
55	60	56	90	240	160	115	116	60
75	70	70	105	290	185	120	150	70
125	80	80	130	365	220	150	165	80
150	90	95	140	390	250	170	200	90
200	105	105	150	480	275	205	225	110
250	120	120	170	550	300	240	240	130
300	140	134	185	600	350	265	280	140
400	160	160	220	600	370	320	330	170
500	170	180	250	650	450	340	350	180
600	180	200	275	720	490	370	405	190
700	210	215	300	750	540	400	465	210
800	220	230	325	780	555	420	465	210
900	238	250	350	850	585	440	480	220
1000	240	270	380	850	615	460	530	230
1250	260	300	430	930	645	530	570	270
1500	280	320	460	950	680	560	610	290
1750	310	360	480	1000	700	580	660	300
2000	320	385	500	1050	720	600	680	300



### GN BOW SAFETY PIN SHACKLE TYPE H10

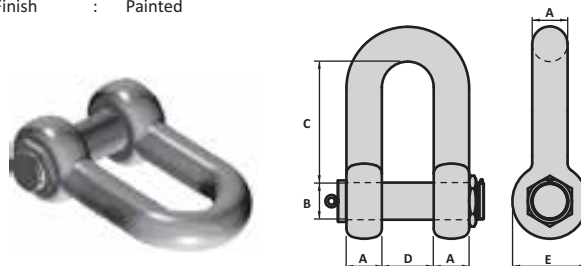
Material : Forged alloy steel quenched and tempered  
Safety factor : 5 times  
Standards : Generally to U.S. Federal Spec RR-C-271  
Finish : Painted



WLL ton	A mm	B mm	C mm	D mm	E mm	F mm
120	89	95	381	238	150	200
150	102	108	400	275	170	230
200	120	125	500	290	180	260
250	125	140	540	305	200	260
300	135	150	600	305	200	305
400	165	175	650	325	225	350
500	175	185	700	350	250	370
600	195	205	700	375	275	405
700	205	215	700	400	300	435
800	210	220	700	400	300	435
900	220	230	700	420	320	465
1000	230	240	700	420	340	480
1250	270	270	750	450	360	570
1500	280	290	800	450	360	610

### GN DEE SAFETY PIN SHACKLE TYPE D15

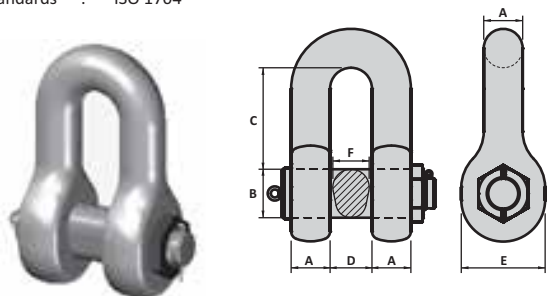
Material : Forged alloy steel quenched and tempered  
Safety factor : 5 times  
Finish : Painted



WLL ton	A mm	B mm	C mm	D mm	E mm
120	89	95	267	150	200
150	89	95	310	130	190
150	102	108	315	170	230
150	102	108	400	170	230
175	100	110	360	155	220
200	120	125	500	180	260
250	130	140	455	195	280
300	140	150	490	205	300
350	150	160	520	220	320
375	160	170	550	235	340
400	170	180	585	250	360
500	180	190	615	265	380

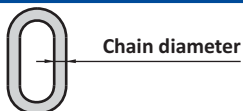
### JOINING SHACKLE WITH PEAR SHAPE PIN TYPE D16

Material : Forged steel R3/R3S/R4  
Finish : Painted  
Standards : ISO 1704



Dimensions related to nominal chain diameter

- A = 1.3 x chain diameter
- B = 1.6 x chain diameter
- C = 3.4 x chain diameter
- D = 1.4 x chain diameter
- E = 2.8 x chain diameter
- F = 1.2 x chain diameter

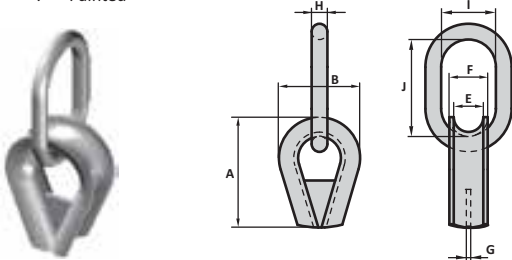


**THIMBLE WITH LINK**

**TYPE K10**

Suitable for fibre rope

Material : Thimble mild steel  
Link alloy steel quenched and tempered  
Finish : Painted



Rope size inch	A mm	B mm	E mm	F mm	G mm	H mm	I mm	J mm	MBL link ton
9"/10"	370	290	100	130	16	51	190	350	144
9"/10"	370	290	100	130	16	57	200	400	188
12 1/2"/13"	450	330	115	155	20	57	200	400	188
12 1/2"/13"	450	330	115	155	20	63	230	430	232
14"/15"	520	370	135	175	20	63	230	430	232
14"/15"	520	370	135	175	20	72	250	440	336
16"/18"	580	390	155	195	20	72	250	440	336
16"/18"	580	390	155	195	20	80	250	450	420
19"/20"	600	440	170	210	20	80	250	450	420
19"/20"	600	440	170	210	20	90	300	460	524
20"/21"	600	440	180	220	20	90	300	460	524
20"/21"	600	440	180	220	20	100	300	500	628
20"/21"	600	440	180	220	20	115	400	600	1000

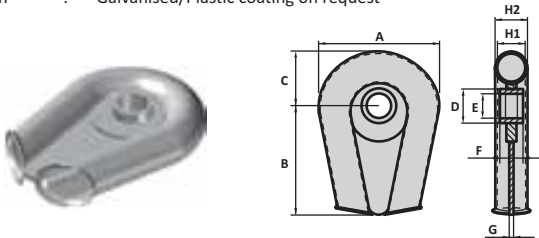


**TUBULAR THIMBLE**

**TYPE K11**

Suitable for fibre rope

Material : Mild steel  
Finish : Galvanised/Plastic coating on request



Rope size inch	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H1 mm	H2 mm
6"	254	200	126	-	60	-	30	64	70
8"	318	250	158	-	80	-	40	82	89
10"	419	360	210	190	132	105	15	107	114
12"	521	416	250	194	144	130	20	132	140
15"	625	539	282	194	144	150	25	159	168
18"	734	640	336	219	169	175	30	183	194
21"	829	780	374	219	169	200	30	207	219
24"	924	915	421	273	201	225	40	232	245
27"	1035	1060	477	273	201	250	50	260	273



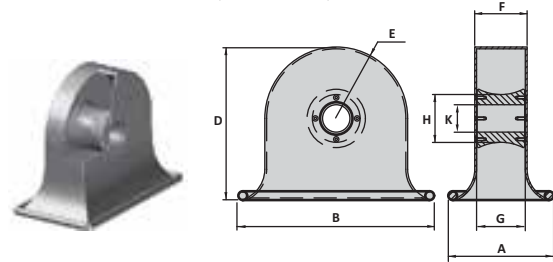
**BELLMOUTH THIMBLE**

**TYPE K13**

Suitable for fibre rope

Material : Mild steel  
Stainless steel  
(Spools can be supplied in galvanised or stainless steel)

Finish : Galvanised (mild steel)  
Self coloured (stainless steel)



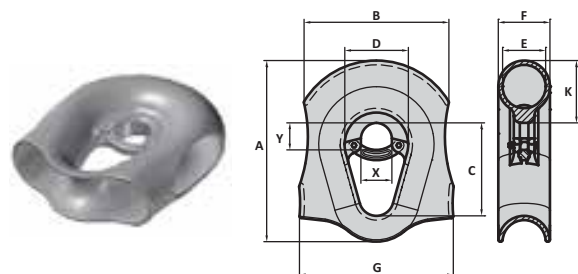
Rope size inch	A mm	B mm	D mm	E mm	F mm	K mm	H mm	G mm
10"-12"	400	640	480	195	166	86	175	147
15"-16"	440	746	608	248	193	105	196	172
18"-21"	454	844	660	300	228	118	204	205
22"-24"	450	1000	758	400	266	135	290	245

**CAST THIMBLE**

**TYPE K14**

Suitable for fibre rope

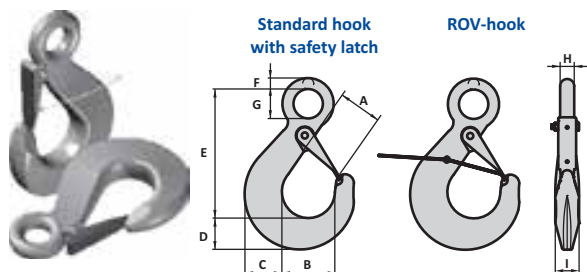
Material : Cast steel  
Stainless steel  
Finish : Galvanised (mild steel)  
Self coloured (stainless steel)  
Plastic coating on request



Rope size inch	A mm	B mm	C mm	D mm	E mm	F mm	G mm	K mm	X mm	Y mm
11"-13"	530	320	270	175	132	157	477	170	105	105
14"-15"	655	476	357	258	154	183	598	200	116	124
16"-18"	795	542	380	283	184	212	721	252	136	140
19"-21"	940	657	457	348	209	265	880	309	158	177
22"-24"	1043	814	575	410	244	298	867	360	180	200

### EYE HOOK (ROV)

Material : Grade 80  
Safety : 4 times  
Finish : Painted



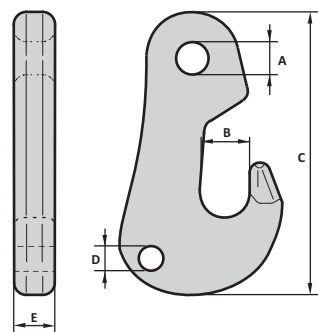
WLL ton	MBL ton	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
8	32	38	62	53	46	174	20	32	20	35
12.5	50	53	79	67	58	219	25	40	25	45
16	64	58	88	75	65	246	28	46	28	50
20	80	64	99	85	73	277	32	52	32	56
28	112	71	112	96	83	313	36	60	36	63
31	125	81	125	106	92	349	40	66	40	70
40	160	93	140	116	103	386	45	72	45	78
50	200	106	158	135	116	442	50	84	50	89
63	250	119	176	151	130	494	56	90	56	99
80	320	131	198	168	145	610	63	102	63	110
100	400	151	225	195	172	650	74	116	74	125
150	600	173	250	225	199	765	86	130	86	160
200	800	200	275	260	237	850	102	150	102	180
250	1000	233	310	290	269	928	120	170	120	200
300	1200	264	350	330	310	1052	140	190	140	220
400	1600	303	400	380	344	1195	170	210	170	240



### TYPE HK2

### ANCHOR LINE HOOK

Material : Alloy steel  
Safety factor : 4 times  
Finish : Painted



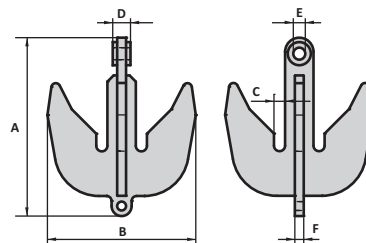
WLL ton	MBL ton	A mm	B mm	C mm	D mm	E mm
15	60	38	58	343	32	45
20	80	40	74	343	32	60
25	100	52	86	440	38	65
50	200	80	112	618	45	90
80	320	90	130	709	62	110
100	400	100	150	850	70	120

### TYPE HK6



### CHAIN GRAPNEL

Material : Forged steel  
Safety : 4 times  
Finish : Painted/self coloured

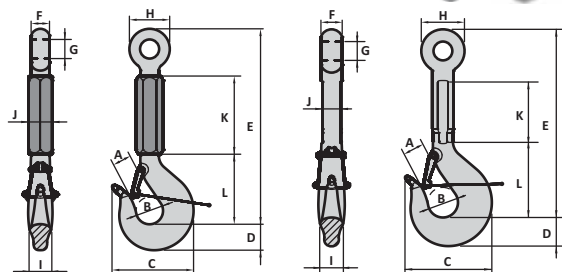


WLL ton	A mm	B mm	C mm	D mm	E mm	F mm
150	1778	1372	102	114	100	76
200	2008	1670	125	200	145	100
250	2008	1670	125	200	145	100

### TYPE HK7

### ROV SHANK HOOK

Material : Alloy steel quenched and tempered  
Safety : 4 times  
Finish : Painted



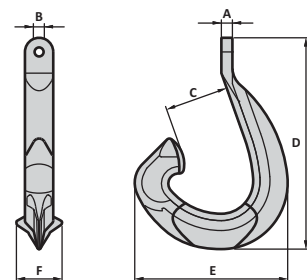
Type for Hook WLL 5.4 ton up to WLL 80 ton

Type for Hook WLL 100 ton up to WLL 400 ton

WLL ton	MBL ton	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm
5.4	21.6	35	50	161	40	515	34	31	68	32	45	250	150
12.5	50	40	63	200	58	565	45	40	90	45	60	260	180
16	64	45	70	224	67	610	48	44	102	53	60	280	190
25	100	50	80	248	75	650	56	52	105	60	70	270	230
32	128	60	90	288	85	800	65	60	140	67	80	360	265
40	160	70	100	316	95	820	70	70	150	75	85	330	285
50	200	75	112	343	106	850	75	72	160	85	100	350	285
63	252	85	125	376	118	900	85	85	180	95	110	360	322
80	320	100	140	418	132	950	100	85	210	106	120	290	390
100	400	110	160	462	150	1000	110	100	230	118	98	320	400
125	500	130	180	509	170	1050	125	100	260	132	106	280	450
160	640	140	200	584	190	1100	140	130	305	150	120	280	500
200	800	160	224	648	212	1200	160	130	350	170	136	280	560
250	1000	180	250	740	236	1200	180	145	370	190	150	300	630
300	1280	200	280	825	265	1250	200	160	405	212	165	300	700
400	1600	225	315	920	300	1300	220	185	465	236	180	300	800

### J WIDE BODY CHASER

Material : Mild steel  
Proofload : 1.5 times WLL  
Finish : Painted



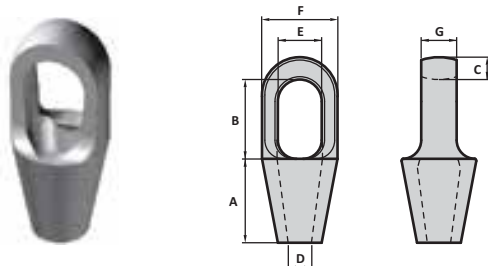
WLL ton	A mm	B mm	C mm	D mm	E mm	F mm
150	125	105	680	2220	1780	330
200	180	150	680	2220	1780	550
250	180	150	680	2220	1780	600



### CLOSED SPELTER SOCKET

### TYPE S01

Material : Cast steel  
Safety : 5 times  
Finish : Painted/galvanised  
Up to Type No. 215 standard galvanised

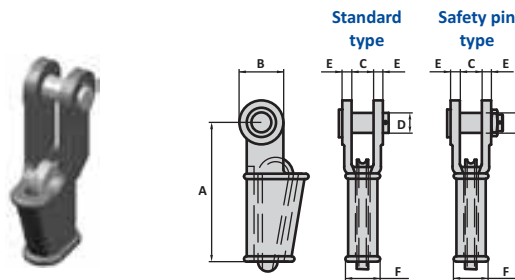


Type No.	Wire dia mm	Wire dia inch	MBL ton	A mm	B mm	C mm	D mm	E mm	F mm	G mm
290	6-7	3/8"	3	51	46	11	8	20	37	13
292	8-10	3/8"	6	51	52	14	11	24	43	16
294	11-13	1/2"	12	64	59	18	14	29	51	22
296	14-16	5/8"	24	77	65	20	18	35	67	25
298	18-19	3/4"	32	90	75	26	21	42	75	31
201	20-22	3/4"	45	101	90	33	24	47	92	38
204	23-26	1"	70	114	103	36	28	57	104	44
207	27-30	1 1/4"	100	127	116	39	32	63	114	51
212	31-36	1 1/2"-1 3/4"	125	139	130	43	38	70	127	57
215	37-39	1 3/4"	150	152	155	51	41	79	136	63
217	40-42	1 3/4"	200	165	171	54	44	82	146	70
219	43-48	1 3/4"-1 1/2"	260	190	198	55	51	89	171	76
222	49-54	2"-2 1/4"	280	216	224	62	57	96	193	82
224	55-60	2 1/4"-2 3/4"	360	228	247	73	63	108	216	92
226	61-68	2 3/4"-2 3/4"	450	248	270	79	73	140	241	102
227	69-75	2 3/4"-2 3/4"	480	279	286	76	79	159	273	124
228	76-80	3"-3 3/4"	520	305	298	83	86	171	292	133
229	81-86	3 1/4"-3 3/4"	600	330	311	102	92	184	311	146
230	87-93	3 3/4"-3 3/4"	700	356	330	102	99	197	330	159
231	94-102	3 3/4"-4"	875	381	356	108	108	216	362	178
233	108-115	4 1/2"	1100	450	425	120	125	235	405	190
240	122-130	5"	1250	500	475	120	138	260	515	205
250	140-155	5 1/2"-6"	1400	580	550	150	160	300	550	225
260	158-167	6 1/2"	1600	675	600	175	175	325	600	300

### OPEN WEDGE SOCKET

### TYPE S03

Material : Cast steel  
Safety : 5 times  
Finish : Painted/galvanised  
Up to Type No. 5 standard galvanised



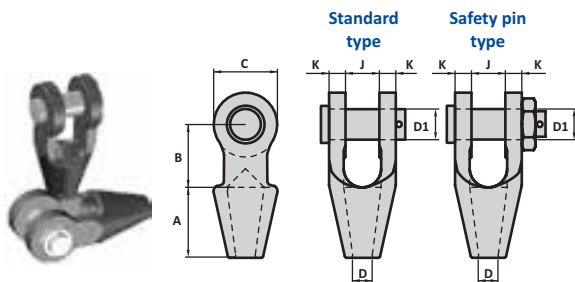
Type No.	Wire dia mm	Wire dia inch	MBL ton	A mm	B mm	C mm	D mm	E mm	F mm
0.5	9-10	3/8"	10	145	47	20	21	11	26
1	11-13	1/2"	16	146	57	25	25	12	32
2	14-16	5/8"	25	176	70	31	30	15	44
3	18-19	3/4"	32	212	80	38	35	16	44
4	20-22	3/4"	45	240	96	44	41	19	52
5	24-26	1"	70	274	114	51	50	22	58
6	27-29	1 1/4"	100	310	130	57	57	25	66
7	30-33	1 1/4"	125	350	146	63	64	28	79
8	34-36	1 1/2"	125	400	148	69	64	28	79
9	37-40	1 1/2"	150	450	160	76	70	30	93
10	41-43	1 3/4"	200	500	174	76	76	33	95
11	44-48	1 3/4"-1 1/2"	260	550	200	89	89	39	111
12	49-53	2"	280	650	200	101	95	46	140
13	56	2 1/4"	360	660	250	114	108	54	136
14	63	2 1/2"	450	840	270	127	121	60	161
15	75	3"	520	1000	300	146	133	76	186



### OPEN SPELTER SOCKET

### TYPE S02

Material : Cast steel  
Safety : 5 times  
Finish : Painted/galvanised  
Up to Type No. 115 standard galvanised

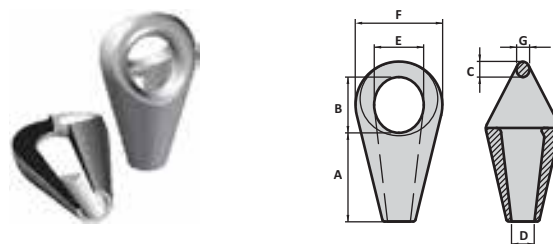


Type No.	Wire dia mm	Wire dia inch	MBL ton	A mm	B mm	C mm	D mm	D1 mm	J mm	K mm
192	6-7	3/8"	3	52	40	34	8	18	17	8
194	8-10	3/8"	6	58	45	40	11	21	20	11
196	11-13	1/2"	12	64	51	49	14	26	25	12
198	14-16	5/8"	24	76	64	62	18	30	32	14
100	18-19	3/4"	32	89	76	80	21	35	38	16
104	20-22	3/4"	45	101	89	90	24	41	44	19
108	23-26	1"	70	114	101	120	28	51	51	22
111	27-30	1 1/4"	100	127	114	130	32	57	57	25
115	31-36	1 1/2"-1 3/4"	125	139	127	144	38	63	63	28
118	37-39	1 3/4"	150	152	162	160	41	70	76	30
120	40-42	1 3/4"	200	165	165	176	44	76	76	33
125	43-48	1 3/4"-1 1/2"	260	190	178	200	51	89	89	39
128	49-54	2"-2 1/4"	280	216	228	216	57	95	101	46
130	55-60	2 1/4"-2 3/4"	360	228	250	236	63	108	113	53
132	61-68	2 3/4"-2 3/4"	450	248	273	264	73	121	127	60
135	69-75	2 3/4"-2 3/4"	480	279	279	276	79	127	133	73
138	76-80	3"-3 3/4"	520	305	286	284	86	133	146	76
140	81-86	3 1/4"-3 3/4"	600	330	298	296	92	140	159	79
142	87-93	3 3/4"-3 3/4"	700	356	318	340	99	152	171	83
144	94-102	3 3/4"-4"	875	381	343	362	108	178	191	89
146	108-115	4 1/2"	1100	460	440	440	125	190	208	101
150	122-130	5"	1250	500	500	560	138	250	210	120
160	140-155	5 1/2"-6"	1400	580	500	600	160	275	230	140
170	158-167	6 1/2"	1600	675	600	650	175	290	310	175

### CR SOCKET

### TYPE S04

Material : Cast steel  
Safety : 5 times  
Finish : Painted/galvanised  
Up to Type No. 519 standard galvanised

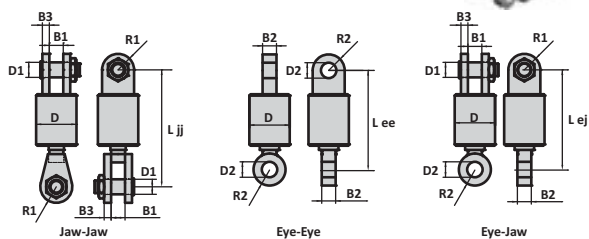


Type No.	Wire dia mm	Wire dia inch	WLL ton	MBL ton	A mm	B mm	C mm	D mm	E mm	F mm	G mm
512	31-36	1 1/2"-1 3/4"	28	140	140	85	38	39	75	124	35
517	38-42	1 1/2"-1 3/4"	32	160	160	110	42	44	92	130	38
519	43-48	1 3/4"-1 1/2"	40	200	188	128	50	51	110	180	45
522	49-54	2"-2 1/4"	50	250	215	125	55	57	115	200	50
524	55-60	2 1/4"-2 3/4"	60	300	230	145	65	63	135	230	57
526	61-68	2 3/4"-2 3/4"	80	400	250	160	75	73	160	265	65
527	69-75	2 3/4"-2 3/4"	100	500	280	175	80	79	170	278	70
528	76-80	3"-3 3/4"	120	600	315	210	85	86	184	300	75
529	81-86	3 1/4"-3 3/4"	140	700	340	205	100	92	204	320	90
530	87-93	3 3/4"-3 3/4"	160	800	360	220	105	99	215	340	95
531	94-102	3 3/4"-4"	180	900	380	240	110	108	234	376	100
533	108-115	4 1/2"-4 1/2"	200	1000	450	260	125	120	252	400	110
540	122-130	4 3/4"-5"	250	1250	517	293	140	140	275	460	125

### CLOSED BODY SWIVEL

Material : High tensile steel  
Safety factor : 5 times  
Finish : Painted

### TYPE SW1



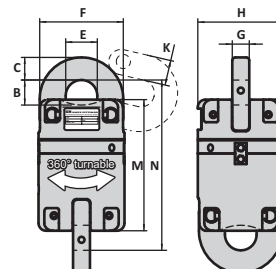
WLL ton	B1 mm	B2 mm	B3 mm	D1 mm	D2 mm	D mm	Ljj mm	Lee mm	Ljj mm	R1 mm	R2 mm
17	65	60	30	63	65	170	480	410	410	70	70
25	76	70	30	70	72	190	565	450	480	75	75
35	90	80	35	80	82	250	690	540	585	85	85
55	110	100	50	100	103	270	800	690	705	105	105
70	120	100	50	108	111	290	796	752	752	115	115
85	130	125	75	127	130	350	840	830	815	135	135
120	155	140	90	152	155	430	893	920	885	170	170
150	170	160	100	178	181	470	1003	960	925	190	190
200	175	170	120	190	193	530	1230	1210	1220	220	200
250	200	190	125	250	253	600	1340	1380	1360	260	260
300	250	230	175	290	293	750	1480	1580	1530	300	300

### CR-D CHAIN SWIVEL

Material : Alloy steel quenched and tempered  
Safety factor : 5 times  
Finish : Painted

### TYPE SW4

#### 800 SERIE



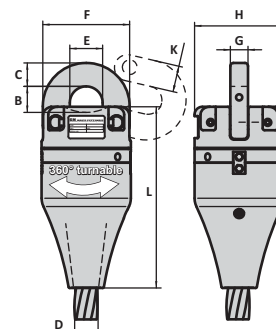
Type No.	Suitable chain	WLL ton	MBL ton	B mm	C mm	E mm	F mm	G mm	H mm	K mm	M mm	N mm
822	2"	50	250	70	60	84	222	45	238	69	348	452
826	2 1/2"	80	400	120	100	112	340	70	380	114	520	690
828	3"	120	600	140	120	140	400	80	430	130	610	850
830	3 1/2"	160	800	140	120	140	400	80	430	130	610	850
833	4"	200	1000						(in development)			

### CR-D ROPE SWIVEL

### TYPE SW5

Material : Alloy steel quenched and tempered  
Safety : 5 times  
Finish : Painted

#### 700 SERIE

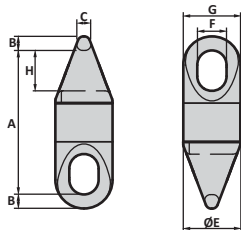


Type No.	Wire dia inch	Suitable chain	WLL ton	MBL ton	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm
722	2"-2 1/4"	2"	50	250	70	60	59	84	222	45	238	69	463
726	2 1/2"-2 3/4"	2 1/2"	80	400	120	100	78	94	274	70	300	90	643
728	3"-3 1/4"	3"	120	600	140	120	86	112	340	70	380	114	645
730	3 1/2"-3 3/4"	3 1/2"	160	800	140	120	99	140	400	80	430	130	780
733	4"-4 1/2"	4"	200	1000					(in development)				

### CR CHAIN SWIVEL

### TYPE SW2

Material : Alloy steel quenched and tempered  
Finish : Painted

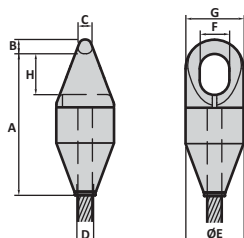


Size inch	MBL ton	PL ton	A mm	B mm	C mm	E mm	F mm	G mm	H mm
2"	250	100	610	55	50	200	115	200	165
2 1/4"	300	120	700	65	57	225	135	230	195
2 1/2"	400	160	710	75	65	250	150	270	205
3"	600	240	805	85	75	300	175	342	240
3 1/2"	800	320	945	105	95	330	205	360	285
4"	900	360	1065	110	100	360	225	380	320

### CR ROPE SWIVEL

### TYPE SW3

Material : Alloy steel quenched and tempered  
Finish : Painted



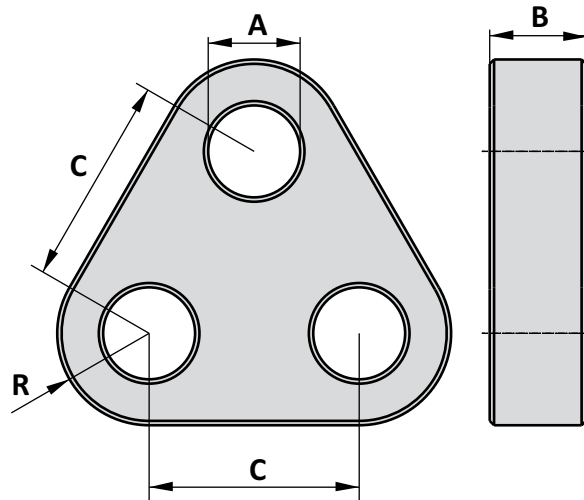
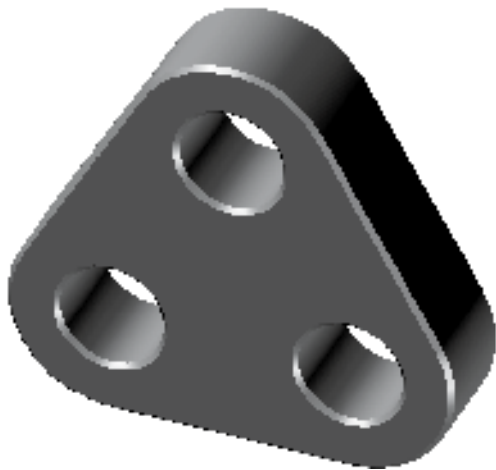
Size inch	Rope dia mm	MBL ton	PL ton	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm
2"	40-54	250	100	625	55	50	57	200	115	200	165
2 1/4"	55-60	300	120	690	65	57	63	225	135	230	195
2 1/2"	61-72	400	160	720	75	65	73	250	150	270	205
3"	73-84	600	240	835	85	75	86	300	175	342	240
3 1/2"	85-93	800	320	965	105	95	99	330	205	360	285
4"	94-105	900	360	1055	110	100	108	360	225	380	320



# TRIANGLE PLATE

# TYPE TR1

Material : High tensile steel  
 Safety factor : 5 times  
 Finish : Painted  
 Certificates : Material certificate 3.1  
 on request Material certificate 3.2  
 Proofload certificate  
 Classification inspection certificate  
 (DNV, Lloyds, ABS, BV etc.)



Art. No.	WLL ton	MBL ton	A mm	B mm	C mm	R mm	Weight kg
75001700	17	85	47	35	120	65	10
75002500	25	125	55	40	150	80	18
75003500	35	175	60	50	160	90	28
75005500	55	275	75	70	210	105	58
75008500	85	425	90	80	230	135	96
75012000	120	600	105	100	280	170	188
75015000	150	750	115	110	320	185	256
75017500	175	875	115	110	320	195	274
75020000	200	1000	140	120	390	215	390
75025000	250	1250	150	140	390	240	518
75030000	300	1500	160	150	420	250	617
75040000	400	2000	185	200	490	300	1170
75050000	500	2500	200	200	550	360	1619
75060000	600	3000	220	200	600	400	1972

Tolerance: Forged parts  $\pm 5\%$ , machined parts  $\pm 1$  mm

## Towing & mooring, anchor and pennant lines

Nominal diameter	Approximate weight	Minimum Breaking Load	
		metric ton	kN
mm	kg/m		
42	7.32	125	1,226
44	8.05	138	1,354
48	9.60	164	1,609
51	10.30	184	1,805
52	10.80	192	1,889
54	13.50	207	2,031
57	13.55	231	2,266
58	14.00	240	2,354
61	15.40	264	2,590
68	17.00	291	2,855
64	19.25	329	3,227
71	21.00	359	3,522
76	24.74	411	4,032
77	25.00	425	4,169
83	25.64	500	4,905
92	38.20	600	5,886
96	41.00	655	6,426
103	45.00	800	7,848
114	57.40	939	9,212
127	70.80	1,138	11,164
139	82.80	1,305	12,802
152	99.00	1,370	13,440

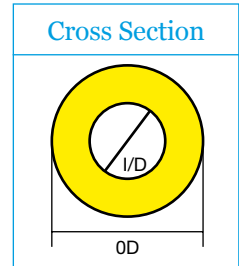
## Mooring ropes (8 strand)

Specifications		Polypropylene / Monofilament		Polyamide Multifilament (Nylon)		Garfil Mariflex	
Circumference inch	Diameter mm	Wt./Coil of 220 mtr in kgs	Breaking Strength Kgf	Wt./Coil of 220 mtr in kgs	Breaking Strength Kgf	Wt./Coil of 220 mtr in kgs	Breaking Strength Kgf
3.0	24	57	8129	78	12,036	70	12,000
3.5	28	78	10,710	107	15,810	96	15,800
4.0	32	101	13,464	139	19,992	124	20,000
4.5	36	129	16,932	176	24,888	157	24,900
5.0	40	158	20,502	218	29,988	195	30,000
5.5	44	194	24,582	264	35,802	238	35,800
6.0	48	229	28,560	312	42,024	282	46,290
6.5	52	268	33,048	365	48,858	330	54,300
7.0	56	312	37,842	425	55,998	378	62,800
7.5	60	359	43,248	486	63,852	438	72,000
8.0	64	407	48,960	554	72,012	495	82,600
9.0	72	515	61,506	702	89,964	627	102,000
10.0	80	638	75,582	867	109,956	775	125,500
11.0	88	772	90,678	1,049	130,968	1,100	156,000
12.0	96	917	107,100	1,250	154,020	1,315	185,000
13.0	104	1,078	122,400	1,465	182,070	1,540	216,000
14.0	112	1,254	141,780	1,698	210,120	1,790	250,000
15.0	120	1,430	163,200	1,951	240,108	2,050	286,000

## Wire tow rope protectors

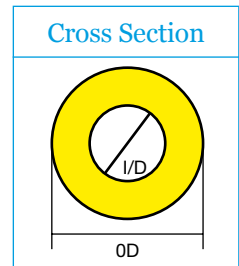
### Towing Sleeves - Standard Duty

Rope diameter		Part number	Nominal sleeve sizes				Lengths
			Inside diameter		Outside diameter		
Ins	mm		Ins	mm	Ins	mm	
1,42	36	RS.1036	1,88	47	5	122	1M 2M 3M
1,65	42	RS.1042	2,20	56	5	122	1M 2M 3M
1,73	44	RS.2044	2,36	60	5	122	1M 2M 3M
1,97	50	RS.2050	2,36	60	5	122	1M 2M 3M
2,13	54	RS.2054	2,40	62	5	122	1M 2M 3M
2,20	56	RS.3056	2,68	68	5	122	1M 2M 3M
2,36	60	RS.4060	2,93	72	5	122	1M 2M 3M
2,52	64	RS.4064	3,08	78	5	122	1M 2M 3M



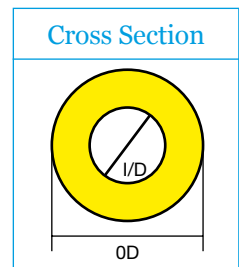
### Towing Sleeves - Heavy Duty

Rope diameter		Part number	Nominal sleeve sizes				Lengths
			Inside diameter		Outside diameter		
Ins	mm		Ins	mm	Ins	mm	
1,88	48	SHD.548	2,36	60	6,5	165	1M 2M 3M
2,20	56	SHD.556	2,68	68	6,5	165	1M 2M 3M
2,36	60	SHD.1260	2,83	72	6,5	165	1M 2M 3M
2,52	64	SHD.1264	3,08	78	6,5	165	1M 2M 3M
2,68	68	SHD.1268	3,08	78	6,5	165	1M 2M 3M
2,83	72	SHD.1272	3,30	84	6,5	165	1M 2M 3M
3,00	76	SHD.1276	3,30	84	6,5	165	1M 2M 3M



### Towing Sleeves - Extra Heavy Duty

Rope diameter		Part number	Nominal sleeve sizes				Lengths
			Inside diameter		Outside diameter		
Ins	mm		Ins	mm	Ins	mm	
1,88	48	EHD.548	2,36	60	7,4	188	1M 2M
2,20	56	EHD.556	2,68	68	7,4	188	1M 2M
2,36	60	EHD.1260	2,83	72	7,4	188	1M 2M
2,52	64	EHD.1264	3,08	78	7,4	188	1M 2M
2,68	68	EHD.1268	3,08	78	7,4	188	1M 2M
2,83	72	EHD.1272	3,30	84	7,4	188	1M 2M
3,00	76	EHD.1276	3,30	84	7,4	188	1M 2M



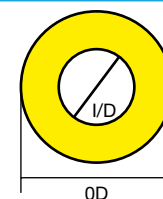


## Wire tow rope protectors

### Towing Sleeves - Extra Heavy Duty Plus

Rope diameter		Part number	Nominal sleeve sizes				Lengths
Ins	mm		Inside diameter		Outside diameter		
			Ins	mm	Ins	mm	
2,36	60	EHD+1260	3,08	78	8,27	210	3M
2,68	68	EHD+1268	3,08	78	8,27	210	3M
2,83	72	EHD+1272	3,30	84	8,27	210	3M
3,00	76	EHD+1276	3,30	84	8,27	210	3M
3,15	80	EHD+1280	3,94	100	8,27	210	3M
3,30	84	EHD+1284	3,94	100	8,27	210	3M
3,54	90	EHD+1290	3,94	100	8,27	210	3M

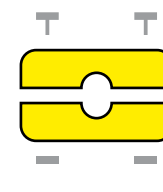
Cross Section



### Towing Shoes

Rope diameter		Part number	Nominal sleeve sizes		Lengths
Ins	mm		Ins	mm	
1,73	44	HP.4744	9.05 x 6.10	230 x 155	2M 3M
2,05	52	HP.4752	9.05 x 6.10	230 x 155	2M 3M
2,20	56	HP.4756	9.05 x 6.10	230 x 155	2M 3M
2,52	64	HP.4764	9.05 x 6.10	230 x 155	2M 3M
2,68	68	HP.4768	9.05 x 6.10	230 x 155	2M 3M
2,75	70	HP.4770	9.05 x 6.10	230 x 155	2M 3M
3,00	76	HP.4776	9.05 x 6.10	230 x 155	2M

Cross Section



Sleeves can be supplied square-ended or tapered.

Shoes supplied with tapered ends only.

In addition to the above range, custom-made sizes can be supplied.

V-THANE® is the registered trade name of Hallam Polymer Engineering Limited.