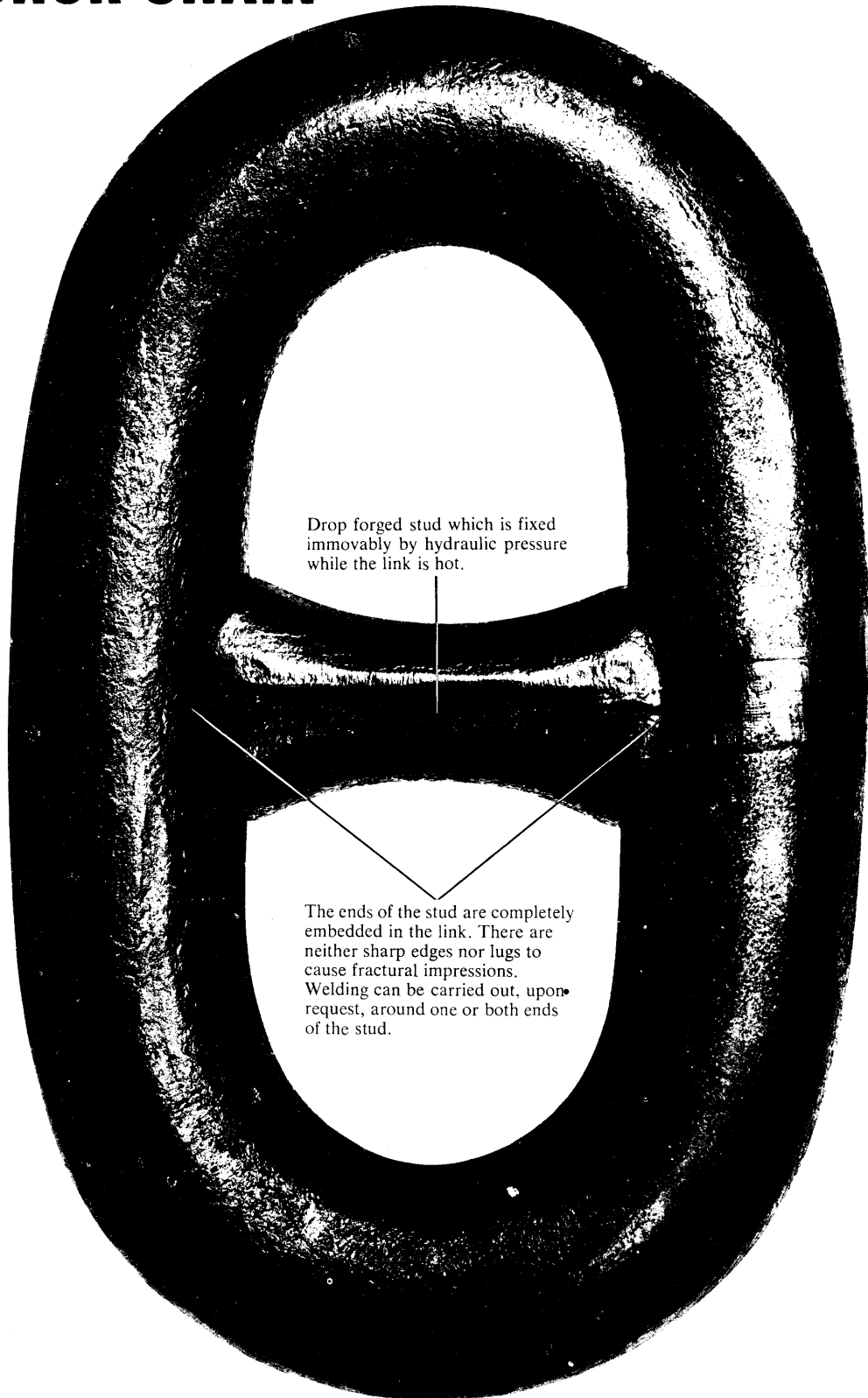




W.J. KEATING LIMITED

ANCHOR CHAIN



Drop forged stud which is fixed immovably by hydraulic pressure while the link is hot.

The ends of the stud are completely embedded in the link. There are neither sharp edges nor lugs to cause fractural impressions. Welding can be carried out, upon request, around one or both ends of the stud.



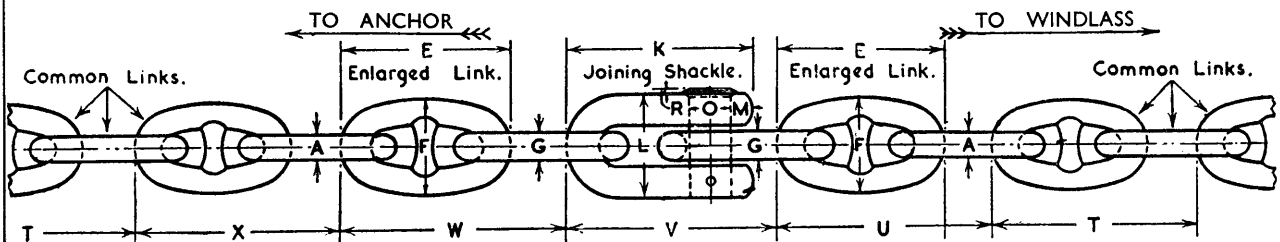
STEEL STUD LINK

† DIMENSIONS OF COMMON LINKS, ENLARGED LINKS, END LINKS,

COMMON LINKS				ENLARGED LINKS				END LINKS				BOLT TYPE JOINING SHACKLE						
A	B		C	D	E		F	G	H		I	J	K		L	M	N	
Nom- inal Dia.	Length overall		* Width mean	Dia- meter	Length overall		* Width mean	Dia- meter	Length overall		† Width min.	Dia- meter	Length overall		† Width min.		Width of shackle eye	
	min.	max.			min.	max.			min.	max.			min.	max.				
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
2 7/16	14 5/8	14 15/16	8 3/4	2 5/8	15 3/4	16 1/8	9 7/16	2 15/16	16 1/2	16 13/16	10	3 3/16	17 5/16	17 5/8	9 3/4	1 15/16	6 13/16	
2 3/8	14 1/4	14 9/16	8 9/16	2 9/16	15 3/8	15 3/8	9 1/4	2 5/8	16 1/16	16 3/8	9 3/4	3 1/16	16 5/8	17 3/16	9 1/2	1 7/8	6 5/8	
2 5/16	13 3/8	14 3/16	8 5/16	2 1/2	15	15 3/8	9	2 3/4	15 5/8	15 15/16	9 1/2	3	16 7/16	16 3/4	9 1/4	1 7/8	6 1/2	
2 1/4	13 1/2	13 13/16	8 1/8	2 7/16	14 5/8	14 15/16	8 3/4	2 11/16	15 3/16	15 1/2	9 1/4	2 15/16	16	16 5/16	9	1 13/16	6 5/16	
2 3/16	13 3/8	13 7/16	7 7/8	2 3/8	14 1/2	14 9/16	8 9/16	2 5/8	14 3/8	15 1/16	9	2 11/16	15 9/16	15 13/16	8 3/4	1 3/4	6 3/8	
2 5/8	12 3/4	13 1/16	7 5/8	2 1/16	13 3/4	14 1/8	8 1/16	2 9/16	14 3/4	14 5/8	8 3/4	2 1/4	15 3/8	15 3/8	8 1/2	1 11/16	5 11/16	
2 1/16	12 3/8	12 5/8	7 7/16	2 1/4	13 1/2	13 13/16	8 1/2	2 1/2	13 15/16	14 3/16	8 1/2	2 11/16	14 11/16	14 15/16	8 1/4	1 5/8	5 3/8	
2	12	12 1/4	7 3/16	2 3/8	12 3/4	13 1/16	7 3/8	2 3/8	13 3/8	13 3/4	8 1/4	2 5/8	14 1/4	14 1/2	8	1 5/8	5 5/8	
1 15/16	11 5/8	11 5/8	7	2 1/16	12 3/8	12 5/8	7 7/16	2 5/16	13 5/8	13 5/16	8	2 1/2	13 13/16	14	7 3/4	1 9/16	5 7/16	
1 7/8	11 1/4	11 1/2	6 3/4	2	12	12 1/4	7 3/16	2 1/4	12 11/16	12 15/16	7 11/16	2 7/16	13 5/16	13 9/16	7 1/2	1 1/2	5 1/4	
1 13/16	10 7/8	11 1/8	6 1/2	1 15/16	11 3/8	11 5/8	7	2 3/16	12 1/4	12 1/2	7 7/16	2 3/8	12 5/8	13 1/8	7 1/4	1 7/16	5 1/16	
1 3/4	10 1/2	10 3/4	6 1/16	1 7/8	11 1/4	11 1/2	6 3/4	2 1/8	11 13/16	12 1/16	7 3/16	2 1/4	12 7/16	12 11/16	7	1 3/8	4 7/8	
1 11/16	10 1/8	10 3/8	6 1/16	1 13/16	10 5/8	11 1/8	6 1/2	2	11 7/16	11 5/8	6 11/16	2 3/16	12	12 3/16	6 3/4	1 3/8	4 3/4	
1 5/8	9 3/4	9 15/16	5 7/8	1 3/4	10 3/4	10 3/4	6 5/16	1 15/16	11 1/16	11 3/16	6 11/16	2 5/16	11 9/16	11 3/8	6 1/2	1 5/16	4 9/16	
1 9/16	9	9 9/16	5 5/8	1 11/16	10 3/8	10 3/8	6 1/16	1 5/8	10 9/16	10 3/8	6 1/16	2	11 1/16	11 7/16	6 1/4	1 1/4	4 5/8	
1 1/2	9	9 3/16	5 3/8	1 5/8	9 3/4	9 15/16	5 7/8	1 13/16	10 1/8	10 5/16	6 3/16	1 15/16	10 11/16	10 7/8	6	1 3/16	4 3/8	
1 7/16	8 5/8	8 13/16	5 1/16	1 9/16	9 3/8	9 9/16	5 5/8	1 3/4	9 1/4	9 13/16	5 11/16	1 7/8	10 1/4	10 3/8	5 3/4	1 5/8	4	
1 3/8	8 1/4	8 7/16	4 13/16	1 1/2	9	9 3/16	5 3/8	1 5/8	9 5/16	9 7/16	5 11/16	1 3/4	9 13/16	9 15/16	5 1/2	1 1/8	3 7/8	
1 5/16	7 7/8	8 1/16	4 3/4	1 7/16	8 5/8	8 13/16	5 3/16	1 9/16	8 7/8	9	5 7/16	1 11/16	9 3/8	9 1/2	5 1/4	1 1/16	3 11/16	
1 1/4	7 1/2	7 11/16	4 1/2	1 3/8	8 1/4	8 7/16	4 13/16	1 1/2	8 5/16	8 3/8	5 5/8	1 5/8	8 3/4	9 1/16	5	1	3 1/2	
1 3/16	7 1/8	7 1/4	4 1/4	1 1/8	7 7/8	8 1/8	4 3/4	1 7/16	8 1/16	8 3/16	4 7/8	1 9/16	8 7/16	8 9/16	4 3/4	7/16	3 5/16	
1 1/8	6 3/4	6 1/2	4 1/16	1 1/4	7 1/2	7 11/16	4 1/2	1 3/8	7 5/8	7 3/16	4 5/8	1 7/16	8	8 1/8	4 1/2	7/8	3 1/8	
1 1/16	6 3/8	6 3/8	3 13/16	1 1/16	7 1/8	7 1/4	4 1/4	1 1/4	7 3/16	7 1/16	4 3/8	1 3/8	7 9/16	7 11/16	4 1/4	7/8	3	
1	6	6 5/8	3 3/4	1 1/16	6 3/8	6 1/2	3 13/16	1 1/16	6 1/2	6 5/8	4	1 1/16	7 5/8	7 1/4	4	7/8	2 13/16	
15/16	5 5/8	5 3/4	3 3/8	1	6	6 1/8	3 5/8	1 5/8	6 1/16	6 7/16	3 7/8	1 1/4	6 11/16	6 3/4	3 3/4	3/4	2 5/8	
7/8	5 1/4	5 3/8	3 1/8	7/8	5 5/8	5 5/8	3 3/8	1 7/8	5 15/16	6	3 3/8	1 1/8	6 1/4	6 5/16	3 1/2	3/4	2 7/16	
13/16	4 7/8	4 15/16	2 15/16	15/16	5 1/4	5 3/8	3 1/8	1	5 1/2	5 9/16	3 3/8	1 1/16	5 13/16	5 7/8	3 1/4	5/8	2 1/4	
3/4	4 1/2	4 9/16	2 11/16	13/16	4 7/8	4 15/16	2 15/16	7/8	5 1/16	5 1/8	3 1/8	1	5 3/8	5 7/16	3	5/8	2 1/8	
11/16	4 1/4	4 3/8	2 3/4	3/4	4 3/4	4 9/16	2 11/16	3/4	4 11/16	4 1/4	2 3/4	7/8	4 13/16	5	2 3/4	9/16	1 11/16	
5/8	3 3/4	3 13/16	2 1/4	1/2	4 1/8	4 3/16	2 1/2	3/4	4 1/8	4 5/16	2 1/8	13/16	4 7/16	4 1/2	2 1/2	1/2	1 3/4	
9/16	3 3/8	3 7/16	2	5/8	3 3/4	3 13/16	2 1/4	11/16	3 13/16	3 7/16	2 5/16	3/4	4	4 1/16	2 1/4	7/16	1 9/16	
1/2	3	3 1/16	1 13/16	9/16	3 3/8	3 7/16	2	5/8	3 3/8	3 7/16	2 1/16	3/4	3 9/16	3 5/8	2	3/8	1 3/8	
7/16	2 3/8	2 1/16	1 9/16	1/2	3	3 1/16	1 13/16	1/2	2 15/16	3	1 13/16	9/16	3 3/16	3 3/16	1 3/4	3/8	1 1/4	

* Cols. C and F—Tolerance allowed PLUS or MINUS 0.10 diameter of the common or enlarged links.

† All Dimensions are after statutory proof load has been applied.





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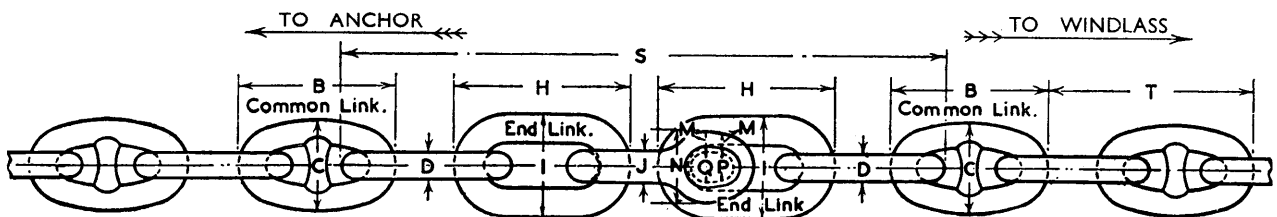
ANCHOR CABLES

BOLT TYPE JOINING SHACKLES, SHACKLE BOLTS AND PINS

§ SHACKLE BOLT				SHACKLE PIN	ASSEMBLY								PITCHES					COMMON LINKS
O	P	Q	R	d	Length over 10 common links				Length over enla. g links, end links and shackle				T	U	V	W	X	A
				Taper 1 in 16 on dia.	min.	max.			min.	max.			Min. pitch of common links	Min pitch from common to enlarged link	Min. pitch to shackle	Min. pitch from shackle	Min. pitch from enlarged link	Diameter of material
in.	in.	in.	in.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	in.	in.	in.	in.	in.	in.
$3\frac{3}{8}$	$2\frac{7}{16}$	$2\frac{15}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	8	$6\frac{3}{8}$	8	$9\frac{1}{2}$	4	$7\frac{13}{16}$	4	$9\frac{1}{2}$	$19\frac{1}{2}$	$20\frac{7}{16}$	$19\frac{1}{2}$	$20\frac{9}{16}$	$19\frac{5}{16}$	$2\frac{7}{16}$
$3\frac{13}{16}$	$2\frac{3}{8}$	$2\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	8	$3\frac{1}{2}$	8	$6\frac{7}{8}$	4	$6\frac{3}{8}$	4	$8\frac{1}{16}$	19	$19\frac{15}{16}$	$18\frac{15}{16}$	$20\frac{1}{16}$	$18\frac{15}{16}$	$2\frac{3}{8}$
$3\frac{11}{16}$	$2\frac{5}{16}$	$2\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	8	$1\frac{1}{8}$	8	$4\frac{1}{4}$	4	$5\frac{1}{8}$	4	$6\frac{13}{16}$	$18\frac{1}{2}$	$19\frac{7}{16}$	$18\frac{1}{2}$	$19\frac{8}{8}$	$18\frac{5}{16}$	$2\frac{5}{16}$
$3\frac{5}{8}$	$2\frac{1}{2}$	$2\frac{11}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	7	$10\frac{1}{2}$	8	$1\frac{5}{8}$	4	$3\frac{5}{8}$	4	$5\frac{3}{16}$	18	$18\frac{15}{16}$	$17\frac{15}{16}$	$19\frac{1}{16}$	$17\frac{13}{16}$	$2\frac{1}{2}$
$3\frac{1}{2}$	$2\frac{3}{8}$	$2\frac{5}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	7	$7\frac{7}{8}$	7	$11\frac{1}{4}$	4	$2\frac{3}{8}$	4	$3\frac{3}{4}$	$17\frac{1}{2}$	$18\frac{7}{16}$	$17\frac{1}{2}$	$18\frac{8}{8}$	$17\frac{6}{16}$	$2\frac{3}{8}$
$3\frac{3}{8}$	$2\frac{5}{8}$	$2\frac{7}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	7	$5\frac{1}{4}$	7	$8\frac{3}{8}$	4	0	$\frac{1}{16}$	4	17	$17\frac{1}{16}$	17	$18\frac{1}{16}$	$16\frac{13}{16}$	$2\frac{5}{8}$
$3\frac{5}{16}$	$2\frac{1}{8}$	$2\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	7	$2\frac{5}{8}$	7	$5\frac{1}{8}$	3	$11\frac{7}{16}$	4	0	$16\frac{1}{2}$	$17\frac{7}{16}$	$16\frac{7}{16}$	$17\frac{1}{2}$	$16\frac{5}{16}$	$2\frac{1}{8}$
$3\frac{3}{16}$	2	$2\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	7	0	7	$2\frac{1}{2}$	3	$9\frac{1}{16}$	3	$10\frac{1}{16}$	16	$16\frac{8}{16}$	$16\frac{1}{16}$	$16\frac{3}{4}$	$15\frac{3}{8}$	2
$3\frac{1}{8}$	$1\frac{15}{16}$	$2\frac{5}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	6	$9\frac{3}{8}$	6	$11\frac{7}{8}$	3	$8\frac{1}{4}$	3	$9\frac{5}{16}$	$15\frac{1}{2}$	$16\frac{8}{8}$	$15\frac{9}{16}$	$16\frac{5}{16}$	$15\frac{3}{8}$	$1\frac{15}{16}$
3	$1\frac{7}{8}$	$2\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	6	$6\frac{3}{4}$	6	$9\frac{1}{4}$	3	$6\frac{3}{4}$	3	8	15	$15\frac{5}{8}$	15	$15\frac{3}{8}$	$14\frac{7}{8}$	$1\frac{7}{8}$
$2\frac{7}{8}$	$1\frac{13}{16}$	$2\frac{3}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	6	$4\frac{1}{2}$	6	$6\frac{3}{8}$	3	$5\frac{1}{8}$	3	$5\frac{9}{16}$	$14\frac{1}{2}$	$15\frac{1}{8}$	$14\frac{1}{2}$	$15\frac{3}{16}$	$14\frac{3}{8}$	$1\frac{13}{16}$
$2\frac{13}{16}$	$1\frac{3}{4}$	$2\frac{5}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	6	$1\frac{1}{2}$	6	4	3	$3\frac{7}{8}$	3	$5\frac{1}{8}$	14	$14\frac{8}{8}$	$13\frac{15}{16}$	$14\frac{1}{16}$	$13\frac{3}{8}$	$1\frac{3}{4}$
$2\frac{11}{16}$	$1\frac{11}{16}$	2	$\frac{3}{16}$	$\frac{1}{2}$	5	$10\frac{7}{16}$	6	$1\frac{3}{8}$	3	$2\frac{3}{4}$	3	$3\frac{13}{16}$	$13\frac{1}{2}$	$14\frac{1}{8}$	$13\frac{9}{16}$	$14\frac{5}{16}$	$13\frac{3}{8}$	$1\frac{11}{16}$
$2\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{15}{16}$	$\frac{3}{16}$	$\frac{1}{2}$	5	$8\frac{1}{4}$	5	$10\frac{1}{8}$	3	$1\frac{1}{4}$	3	$2\frac{1}{16}$	13	$13\frac{8}{8}$	13	$13\frac{3}{4}$	$12\frac{3}{8}$	$1\frac{5}{8}$
$2\frac{1}{2}$	$1\frac{7}{8}$	$1\frac{7}{8}$	$\frac{3}{16}$	$\frac{1}{2}$	5	$5\frac{5}{8}$	5	$7\frac{1}{2}$	2	$11\frac{5}{8}$	3	$0\frac{1}{16}$	$12\frac{1}{2}$	$13\frac{3}{8}$	$12\frac{1}{2}$	$13\frac{1}{4}$	$12\frac{3}{8}$	$1\frac{9}{16}$
$2\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{13}{16}$	$\frac{3}{16}$	$\frac{1}{2}$	5	3	5	$4\frac{7}{8}$	2	$10\frac{7}{16}$	2	$11\frac{3}{8}$	12	$12\frac{5}{8}$	12	$12\frac{11}{16}$	$11\frac{7}{8}$	$1\frac{1}{2}$
$2\frac{5}{16}$	$1\frac{7}{16}$	$1\frac{1}{2}$	$\frac{3}{16}$	$\frac{1}{2}$	5	0	5	$2\frac{1}{4}$	2	$9\frac{1}{16}$	2	$9\frac{1}{16}$	$11\frac{1}{2}$	$12\frac{3}{8}$	$11\frac{1}{2}$	$12\frac{3}{16}$	$11\frac{3}{8}$	$1\frac{7}{16}$
$2\frac{3}{16}$	$1\frac{3}{8}$	$1\frac{5}{8}$	$\frac{3}{16}$	$\frac{1}{2}$	4	$9\frac{3}{4}$	4	$11\frac{1}{8}$	2	$7\frac{7}{8}$	2	$8\frac{5}{8}$	11	$11\frac{5}{8}$	$11\frac{1}{16}$	$11\frac{13}{16}$	$10\frac{7}{8}$	$1\frac{3}{8}$
$2\frac{1}{8}$	$1\frac{5}{16}$	$1\frac{9}{16}$	$\frac{3}{16}$	$\frac{1}{4}$	4	$7\frac{1}{8}$	4	9	2	$6\frac{3}{8}$	2	$7\frac{1}{8}$	$10\frac{1}{2}$	$11\frac{5}{8}$	$10\frac{1}{2}$	$11\frac{1}{4}$	$10\frac{3}{8}$	$1\frac{5}{8}$
2	$1\frac{1}{4}$	$1\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{4}$	4	$4\frac{1}{2}$	4	$6\frac{3}{8}$	2	$4\frac{7}{8}$	2	$5\frac{13}{16}$	10	$10\frac{8}{8}$	$9\frac{15}{16}$	$10\frac{1}{16}$	$9\frac{7}{8}$	$1\frac{1}{4}$
$1\frac{7}{8}$	$1\frac{3}{8}$	$1\frac{7}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	4	$1\frac{7}{8}$	4	$3\frac{3}{8}$	2	$3\frac{9}{8}$	2	$4\frac{5}{16}$	$9\frac{1}{2}$	$10\frac{8}{8}$	$9\frac{1}{2}$	$10\frac{3}{16}$	$9\frac{3}{8}$	$1\frac{1}{16}$
$1\frac{13}{16}$	$1\frac{1}{8}$	$1\frac{3}{8}$	$\frac{1}{16}$	$\frac{1}{4}$	3	$11\frac{1}{4}$	4	$0\frac{1}{2}$	2	$2\frac{1}{16}$	2	$2\frac{7}{8}$	9	$9\frac{5}{8}$	$8\frac{15}{16}$	$9\frac{11}{16}$	$8\frac{7}{8}$	$1\frac{1}{8}$
$1\frac{11}{16}$	$1\frac{1}{16}$	$1\frac{1}{4}$	$\frac{1}{16}$	$\frac{1}{4}$	3	$8\frac{5}{8}$	3	$9\frac{7}{8}$	2	$1\frac{1}{8}$	2	$1\frac{1}{2}$	$8\frac{1}{2}$	$9\frac{8}{8}$	$8\frac{1}{2}$	$9\frac{1}{4}$	$8\frac{3}{8}$	$1\frac{1}{16}$
$1\frac{5}{8}$	1	$1\frac{3}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	3	6	3	$7\frac{1}{4}$	1	$10\frac{3}{4}$	1	$11\frac{5}{8}$	8	$8\frac{5}{16}$	8	$8\frac{3}{8}$	$7\frac{15}{16}$	1
$1\frac{1}{2}$	$\frac{15}{16}$	$1\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	3	$3\frac{3}{8}$	3	$4\frac{5}{8}$	1	$9\frac{5}{16}$	1	$9\frac{7}{8}$	$7\frac{1}{2}$	$7\frac{13}{16}$	$7\frac{1}{2}$	$7\frac{13}{16}$	$7\frac{7}{16}$	$\frac{15}{16}$
$1\frac{3}{8}$	$\frac{13}{16}$	$1\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	3	$0\frac{3}{4}$	3	2	1	$8\frac{1}{16}$	1	$8\frac{1}{2}$	7	$7\frac{1}{16}$	$7\frac{1}{16}$	$7\frac{3}{8}$	$6\frac{15}{16}$	$\frac{7}{8}$
$1\frac{5}{16}$	$\frac{13}{16}$	1	$\frac{1}{8}$	$\frac{1}{4}$	2	$10\frac{3}{4}$	2	$10\frac{3}{4}$	1	$6\frac{9}{16}$	1	7	$6\frac{1}{2}$	$6\frac{13}{16}$	$6\frac{1}{2}$	$6\frac{13}{16}$	$6\frac{7}{16}$	$\frac{13}{16}$
$1\frac{3}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{16}$	$\frac{1}{4}$	2	$7\frac{1}{2}$	2	$8\frac{1}{8}$	1	$5\frac{5}{16}$	1	$5\frac{5}{8}$	6	$6\frac{7}{16}$	$6\frac{1}{16}$	$6\frac{3}{8}$	$5\frac{15}{16}$	$\frac{3}{4}$
$1\frac{1}{8}$	$\frac{11}{16}$	$\frac{13}{16}$	$\frac{1}{16}$	$\frac{1}{4}$	2	$4\frac{5}{8}$	2	$5\frac{1}{2}$	1	$4\frac{7}{8}$	1	$4\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{13}{16}$	$5\frac{1}{8}$	$5\frac{15}{16}$	$5\frac{7}{16}$	$\frac{11}{16}$
1	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{1}{16}$	$\frac{1}{4}$	2	$2\frac{1}{4}$	2	$2\frac{5}{8}$	1	$2\frac{1}{2}$	1	$2\frac{1}{8}$	5	$5\frac{5}{16}$	5	$5\frac{5}{8}$	$4\frac{15}{16}$	$\frac{8}{8}$
$\frac{7}{8}$	$\frac{9}{16}$	$\frac{11}{16}$	$\frac{1}{16}$	$\frac{1}{8}$	1	$11\frac{5}{8}$	2	$0\frac{1}{4}$	1	$1\frac{1}{16}$	1	$1\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{13}{16}$	$4\frac{1}{2}$	$4\frac{13}{16}$	$4\frac{7}{16}$	$\frac{9}{16}$
$\frac{13}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{16}$	$\frac{1}{8}$	1	9	1	$9\frac{5}{8}$		$11\frac{5}{8}$		$11\frac{15}{16}$	4	$4\frac{7}{16}$	$4\frac{3}{16}$	$4\frac{5}{16}$	$3\frac{13}{16}$	$\frac{1}{2}$
$\frac{11}{16}$	$\frac{1}{16}$	$\frac{1}{2}$	$\frac{1}{16}$	$\frac{1}{8}$	1	$6\frac{3}{8}$	1	7		$10\frac{3}{8}$		$10\frac{11}{16}$	$3\frac{1}{2}$	$3\frac{13}{16}$	$3\frac{1}{2}$	$3\frac{7}{8}$	$3\frac{7}{16}$	$\frac{7}{16}$

† Cols. I and L—Tolerance allowed PLUS 0.15 diameter of the end links or shackles.

§ The axis of all shackles shall be parallel to the axis of the cable holder shaft.





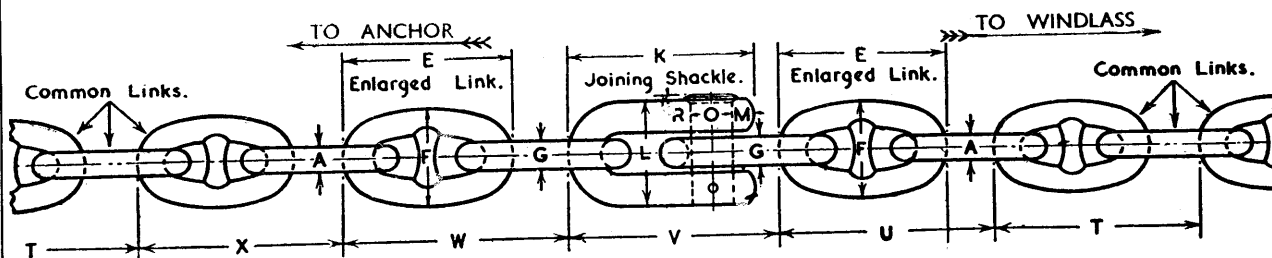
STEEL STUD LINK

‡ DIMENSIONS OF COMMON LINKS, ENLARGED LINKS, END LINKS,

COMMON LINKS				ENLARGED LINKS				END LINKS				BOLT TYPE JOINING SHACKLE					
A	B		C	D	E		F	G	H		I	J	K		L	M	N
Nom- inal Dia.	Length overall		* Width mean	Dia- meter	Length overall		* Width mean	Dia- meter	Length overall		† Width min.	Dia- meter	Length overall		† Width min.		Width of shackle eye
	min.	max.			min.	max.			min.	max.			min.	max.			
in. 4 1/2	in. 27	in. 27 5/8	in. 16 3/16	in. 4 13/16	in. 28 7/8	in. 29 9/16	in. 17 1/16	in. 5 3/8	in. 30 3/8	in. 31	in. 18 7/16	in. 5 7/8	in. 32	in. 32 3/8	in. 18	in. 3 3/8	in. 12 3/8
4 7/8	26 3/4	27 1/2	16	4 1/2	28 1/2	29 3/8	17 3/8	5 1/16	30	30 9/16	18 3/16	5 3/4	31 9/16	32 1/8	17 3/4	3 3/8	12 7/8
4 3/8	26 1/4	26 5/8	15 3/4	4 11/16	28 3/8	28 13/16	16 7/8	5 1/4	29 9/16	30 3/16	1 1/16	5 1 1/8	31 1/8	31 1/8	17 1/2	3 1/2	12 1/2
4 5/8	25 3/4	26 1/8	15 1/2	4 5/8	27 3/4	28 7/16	16 5/8	5 3/16	29 1/8	29 3/4	17 1/16	5 5/8	30 3/8	31 1/4	17 1/4	3 7/8	12 1/8
4 1/4	25 1/2	26 1/8	15 5/16	4 9/16	27 3/8	28	16 7/16	5 1/8	28 11/16	29 7/16	17 7/16	5 1/2	30 3/16	30 3/8	17	3 3/8	11 7/8
4 3/16	25 1/8	25 3/4	15 1/16	4 1/2	27	27 5/8	16 3/16	5	28 5/16	28 7/8	17 3/16	5 7/8	29 3/4	30 5/16	16 3/4	3 3/8	11 1/2
4 1/8	24 3/4	25 5/16	14 7/8	4 7/16	26 5/8	27 1/4	16	4 15/16	27 7/8	28 7/16	16 15/16	5 3/8	29 5/16	29 7/8	16 1/2	3 5/8	11 3/8
4 1/16	24 3/8	24 13/16	14 3/8	4 3/8	26 1/4	26 7/8	15 3/4	4 7/8	27 7/16	28	16 11/16	5 1/4	28 7/16	29 7/16	16 1/4	3 1/4	11 1/4
4	24	24 9/16	14 3/8	4 1/4	25 1/2	26 3/8	15 1/16	4 13/16	27	27 9/16	16 7/16	5 3/16	28 7/16	29	16	3 3/8	11 3/8
3 15/16	23 3/8	24 3/16	14 3/16	4 3/16	25 1/8	25 3/4	15 1/8	4 3/4	26 5/8	27 1/8	16 3/16	5 1/8	28	28 1/2	15 3/4	3 1/8	11
3 3/4	23 1/2	23 13/16	13 13/16	4 1/8	24 3/4	25 1/16	14 5/8	4 3/8	26 3/16	26 11/16	15 15/16	5 1/16	27 9/16	28 1/16	15 1/2	3 1/8	10 7/8
3 13/16	22 3/8	23 3/16	13 3/4	4 1/16	24 3/8	24 1/2	14 3/8	4 1/16	25 3/4	26 1/4	15 11/16	4 1/8	27 3/8	27 3/8	15 1/4	3 1/8	10 1/2
3 1 1/16	22 1/2	23 1/16	13 1/2	4	24	24 9/16	14 3/8	4 1/8	25 5/16	25 7/8	15 3/8	4 7/8	26 3/16	27 3/16	15	3	10 1/8
3 1/8	22 1/4	22 5/8	13 1/4	3 15/16	23 1/2	24 3/8	14 3/8	4 7/16	24 13/16	25 7/16	15 1/2	4 13/16	26 3/16	26 11/16	14 3/4	2 13/8	10 3/8
3 5/16	21 3/4	22 1/2	13 1/16	3 7/8	23 1/4	23 13/16	13 13/16	4 3/16	24 1/2	25	14 7/8	4 1/8	25 3/4	26 1/4	14 1/2	2 3/8	10 1/8
3 9/16	21 3/8	21 7/8	12 7/8	3 13/16	22 7/8	23 7/16	13 3/4	4 1/4	24 1/16	24 9/16	14 5/8	4 5/8	25 5/16	25 13/16	14 1/4	2 7/8	10
3 1/2	21	21 3/8	12 3/4	3 1/2	22 3/4	23 3/16	13 1/2	4 3/16	23 3/8	24 1/8	14 3/8	4 9/16	24 7/8	25 3/8	14	2 13/8	9 3/4
3 7/16	20 3/8	21 1/8	12 3/8	3 1/16	22 3/8	22 5/8	13 1/4	4 1/8	23 1/4	23 1/8	14 3/8	4 1/2	24 7/16	24 7/8	13 3/4	2 1/2	9 1/2
3 3/8	20 1/4	20 3/4	12 1/8	3 5/8	21 3/4	22 1/4	13 1/16	4 1/16	22 13/16	23 1/4	13 7/8	4 3/8	24	24 7/16	13 1/2	2 1/8	9 7/8
3 5/16	19 3/4	20 9/16	11 13/16	3 9/16	21 3/8	21 5/8	12 5/8	4	22 3/8	22 13/16	13 3/8	4 7/16	23 3/8	24	13 1/4	2 3/8	9 1/4
3 1/4	19 1/2	19 15/16	11 15/16	3 1/2	21	21 1/2	12 3/8	3 3/8	21 1/8	22 3/8	13 3/8	4 1/4	23 1/4	23 9/16	13	2 3/8	9 1/8
3 3/16	19 1/8	19 9/16	11 1/2	3 7/16	20 5/8	21 1/8	12 3/8	3 13/16	21 7/16	21 15/16	13 1/8	4 1/8	22 11/16	23 1/16	12 3/4	2 5/8	8 13/8
3 1/8	18 3/4	19 3/16	11 1/4	3 3/8	20 1/4	20 1/2	12 1/8	3 1/2	21 1/8	21 1/8	12 3/8	4 7/16	22 9/16	23 1/8	12 1/2	2 1/2	8 1/2
3 1/16	18 3/8	18 13/16	11	3 1/16	19 3/8	20 1/16	11 5/8	3 1/16	20 1/16	21 1/8	12 9/16	4	21 3/4	22 3/16	12 1/4	2 7/8	8 3/8
3	18	18 7/16	10 13/16	3 1/8	19 1/8	19 9/16	11 1/2	3 5/16	20 1/4	20 11/16	12 5/8	3 7/16	21 5/16	21 3/4	12	2 3/8	8 3/4
2 15/16	17 3/4	18 3/16	10 3/8	3 5/16	18 3/4	19 3/16	11 1/4	3 1/2	19 13/16	20 1/4	12 1/16	3 13/16	20 7/16	21 1/4	11 3/4	2 3/8	8 1/4
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2 1/2	16 1/2	16 5/8	9 5/8	2 13/16	17 5/8	18 1/16	10 9/16	3 5/16	18 3/16	18 13/16	11 1/16	3 7/16	19 9/16	19 13/16	11	2 1/8	7 1/2
2 1/8	16 1/8	16 1/2	9 1/8	2 7/8	17 1/4	17 5/8	10 3/8	3 1/4	18 3/16	18 1/2	11 1/16	3 1/2	19 1/2	19 1/2	10 3/4	2 1/8	7 1/4
2 5/8	15 3/4	16 1/8	9 7/16	2 13/16	16 3/4	17 1/4	10 13/16	3 1/8	17 3/4	18 1/16	10 13/16	3 7/16	18 13/16	19	10 1/2	2 1/8	7 3/8
2 3/8	15 3/8	15 3/4	9 1/4	2 3/4	16 1/2	16 7/8	9 5/8	3 1/16	17 1/16	17 3/8	10 9/16	3 5/16	18 1/8	18 3/8	10 1/4	2 7/8	7 1/16
2 1/2	15	15 3/8	9	2 1/16	16 1/2	16 1/2	9 11/16	3	16 3/4	17 1/4	10 1/4	3 1/4	17 3/4	18 1/8	10	2	7

* Cols. C and F.—Tolerance allowed PLUS or MINUS 0.10 diameter of the common or enlarged links.

† All dimensions are after statutory proof load has been applied.





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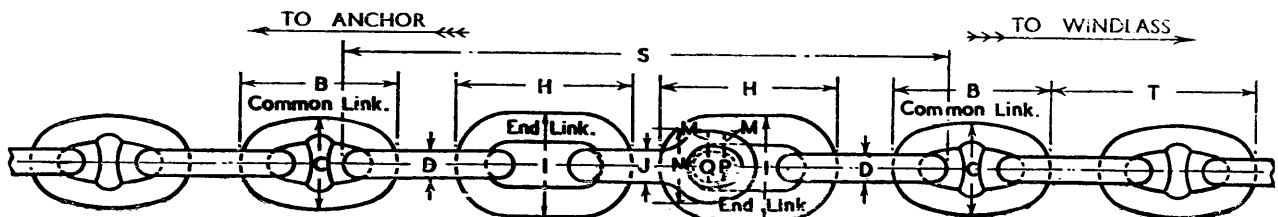
ANCHOR CABLES

BOLT TYPE JOINING SHACKLES, SHACKLE BOLTS AND PINS

§ SHACKLE BOLT				SHACKLE PIN	ASSEMBLY								PITCHES					COMMON LINKS
O	P	Q	R	d	Length over 10 common links			S		T	U	V	W	X	A			
				Taper 1 in 16 on dia.	min.	max.	min.	max.	min.	max.	Min. pitch of common links	Min pitch from common to enlarged link	Min. pitch to shackle	Min. pitch from shackle	Min. pitch from enlarged link	Diameter of material		
in. 7 7 7	in. 4 4 4	in. 5 5 5	in. 1 1 1	in. 1 1 1	ft. 15 15 15	in. 9 6 3	ft. 16 16 10	in. 3 0 3	ft. 8 8 8	in. 6 5 3	ft. 9 8 7	in. 35 35 35	in. 37 37 35	in. 36 35 34	in. 37 37 36	in. 35 35 34	in. 4 4 4	
6 6 6	4 4 4	5 5 5	7 7 7	7 7 7	15 14 14	1 10 7	15 15 15	7 4 7	8 8 8	2 1 1	8 4 2	3 34 33	35 35 35	34 33 33	36 35 35	34 33 33	4 4 4	
6 6 6	4 4 4	4 4 4	7 7 7	7 7 7	14 14 14	5 2 0	14 14 14	10 8 5	7 7 7	10 9 6	8 7 7	33 32 32	34 34 33	32 32 32	34 34 33	32 32 31	4 4 4	
6 6 6	3 3 3	4 4 4	3 3 3	3 3 3	13 13 13	9 6 4	14 14 13	3 0 9	7 7 7	5 4 2	8 6 5	31 31 30	32 32 31	31 31 30	32 32 32	31 30 30	3 3 3	
6 5 5	3 3 3	4 4 4	3 3 3	3 3 3	13 12 12	1 10 8	13 13 13	7 3 1	7 7 6	1 0 0	7 2 1	30 29 29	31 30 30	29 28 28	31 30 30	29 29 28	3 3 3	
5 5 5	3 3 3	4 4 4	3 3 3	3 3 3	12 12 12	5 3 0	12 12 12	10 8 5	6 6 6	9 7 6	7 6 6	28 28 27	29 29 28	28 27 27	30 29 28	28 27 27	3 3 3	
5 5 5	3 3 3	4 4 4	5 5 5	5 5 5	11 11 11	9 7 4	12 11 11	2 1 8	6 6 6	5 3 2	7 5 4	27 26 26	28 27 27	27 26 26	28 27 27	26 26 25	3 3 3	
5 5 4	3 3 3	3 3 3	5 5 5	5 5 5	11 10 10	7 11 8	11 11 11	6 3 1	6 5 5	3 11 10	6 1 0	25 25 24	26 26 25	25 24 24	27 26 25	25 24 24	3 3 3	
4 4 4	3 2 2	3 3 3	5 5 5	5 5 5	10 10 10	6 3 0	10 10 10	10 7 4	5 5 5	8 6 5	5 5 5	24 23 23	24 24 23	23 23 23	25 24 24	23 23 22	3 2 2	
4 4 4	2 2 2	3 3 3	5 5 5	5 5 5	9 9 9	10 7 4	10 9 9	1 11 8	5 5 5	4 2 1	5 5 5	22 22 21	23 22 22	22 22 21	23 23 22	22 21 21	2 2 2	
4 4 4	2 2 2	3 3 3	5 5 5	5 5 5	9 8 8	2 11 9	9 3 0	6 3 0	5 4 4	5 10 9	5 1 1	21 20 20	21 20 20	21 20 19	22 21 21	20 20 19	2 2 2	

† Cols. I and L—Tolerance allowed PLUS 0.15 diameter of the end links or shackles.

§ The axis of all shackles shall be parallel to the axis of the cable holder shaft.

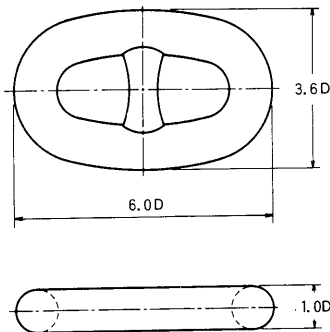




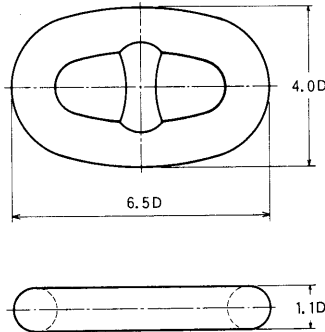
DETAILS OF CHAIN LINKS AND ATTACHMENTS

D=nominal diameter of chain

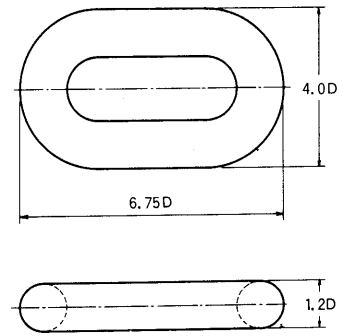
Common link = C



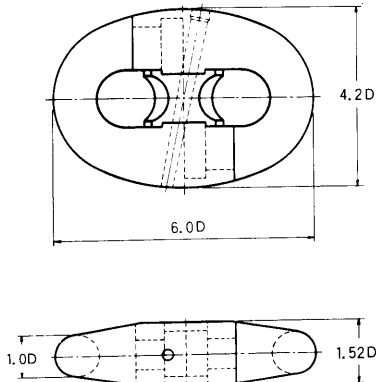
Enlarged link = EL



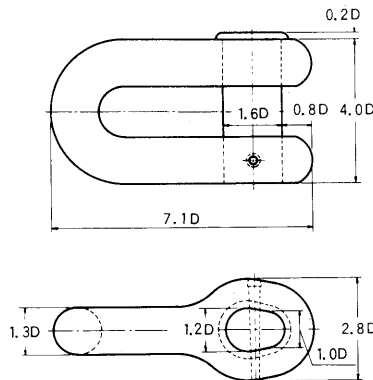
End link = E



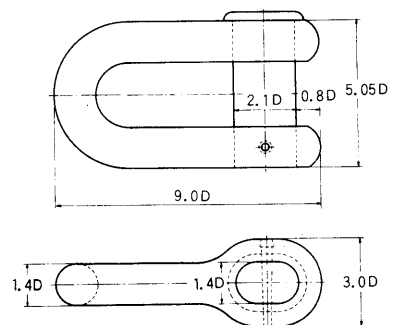
Kenter shackle = K · S



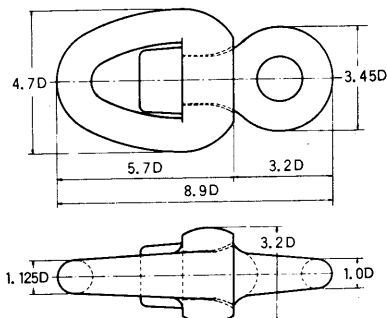
Joining shackle = J · S



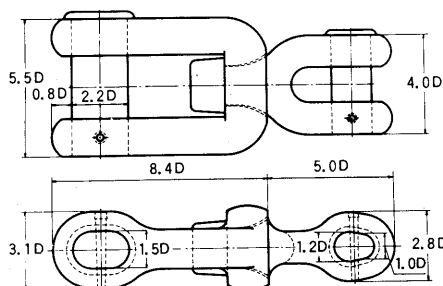
Anchor shackle (type D) = A · S



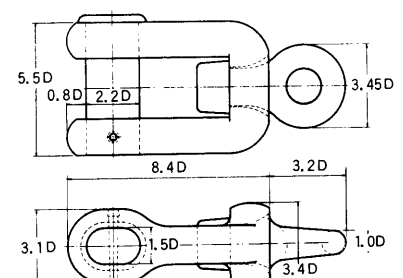
Swivel = SW



Anchor swivel shackle = A · SW · S(a)



Anchor swivel shackle = A · SW · S(b)

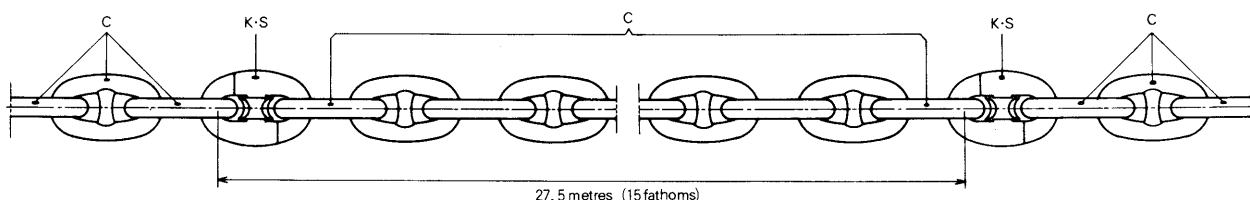




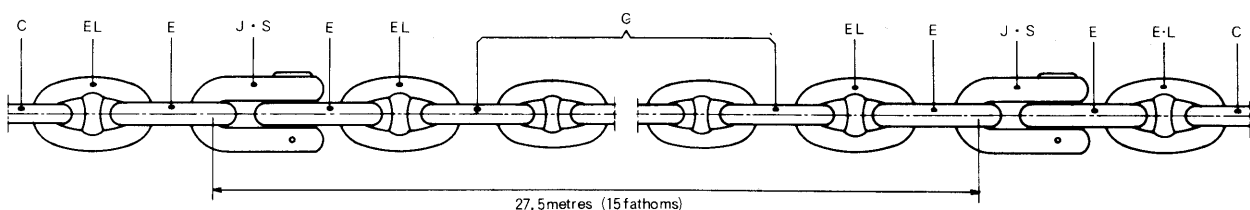
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STANDARD ARRANGEMENTS FOR SHIPS

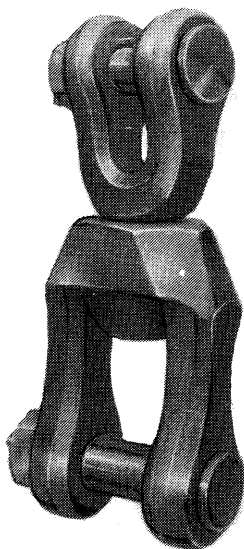
Each anchor chain cable is divided into lengths of 27.5 metres (15 fathoms), which are connected with each other by joining shackles of Kenter type (formerly type D was used).



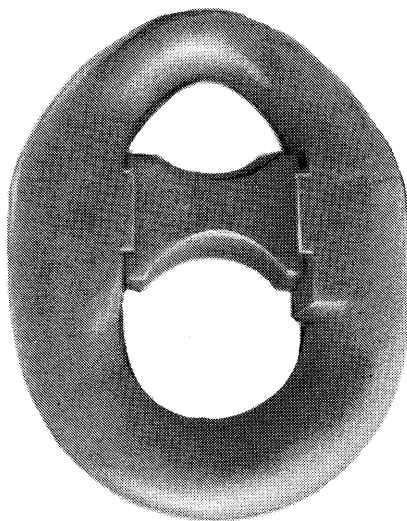
Connection with kenter shackles



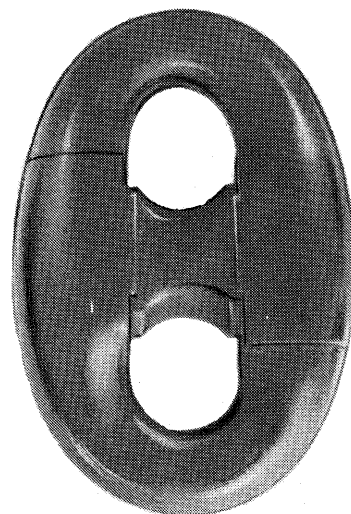
Connection with joining shackles (type D)



**SWIVEL
SHACKLE**
(All forged steel)



**KENTER ANCHOR
SHACKLE**



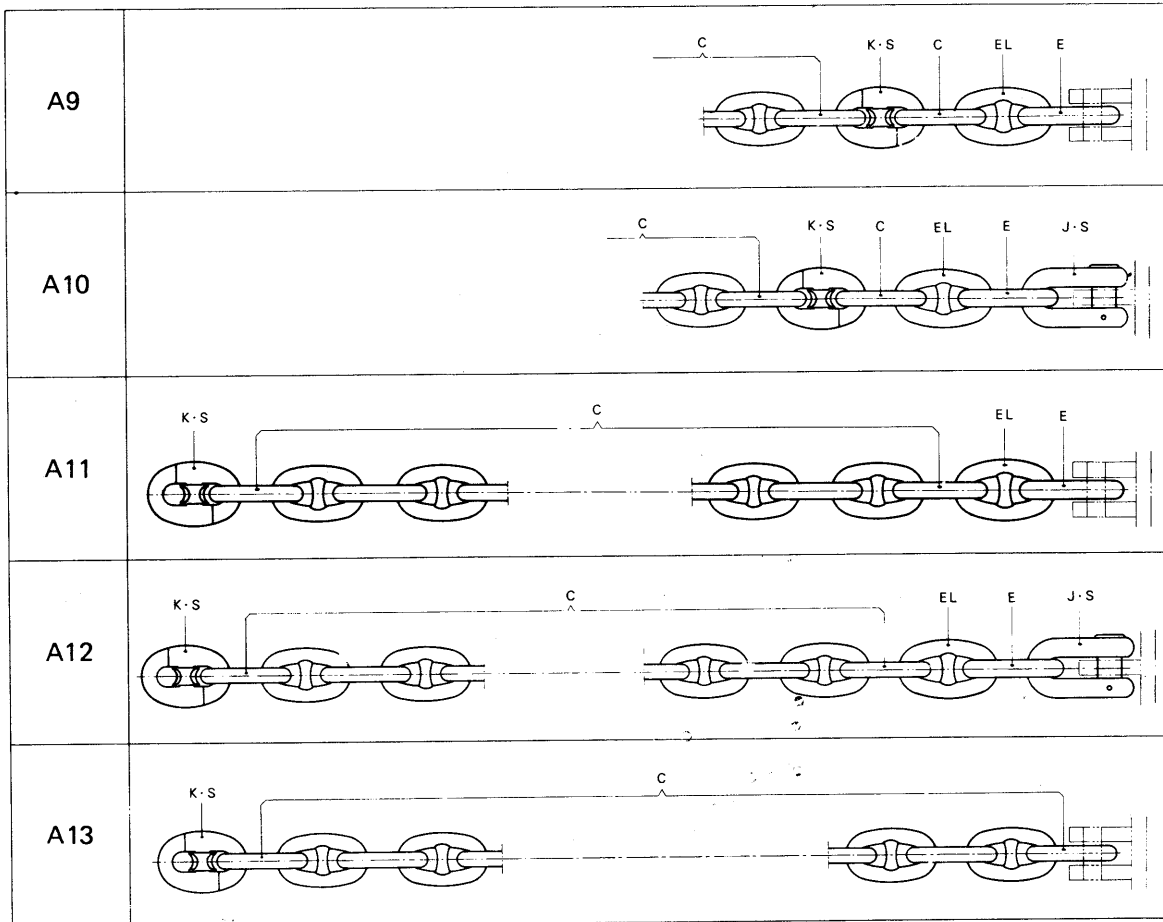
**KENTER JOINING
SHACKLE**



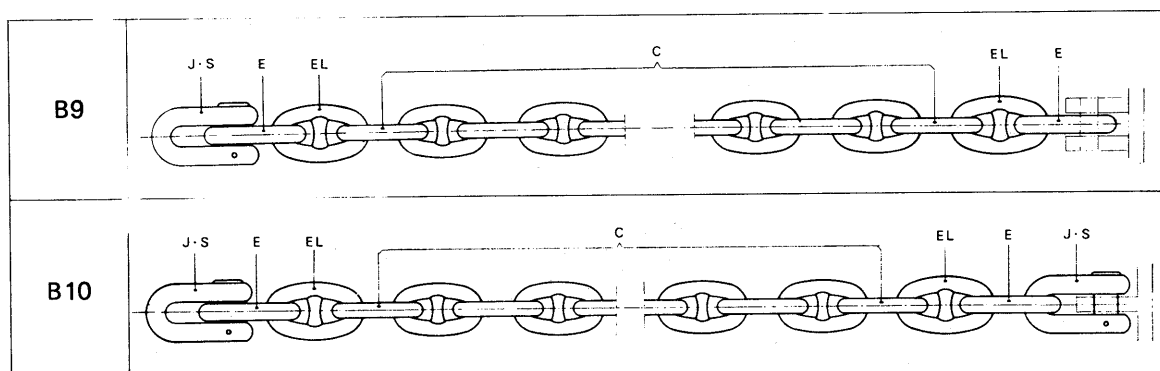
COUPLING IN THE CHAIN LOCKER

A. Kenter shackle type

TYPE



B. "D" Joining shackle type

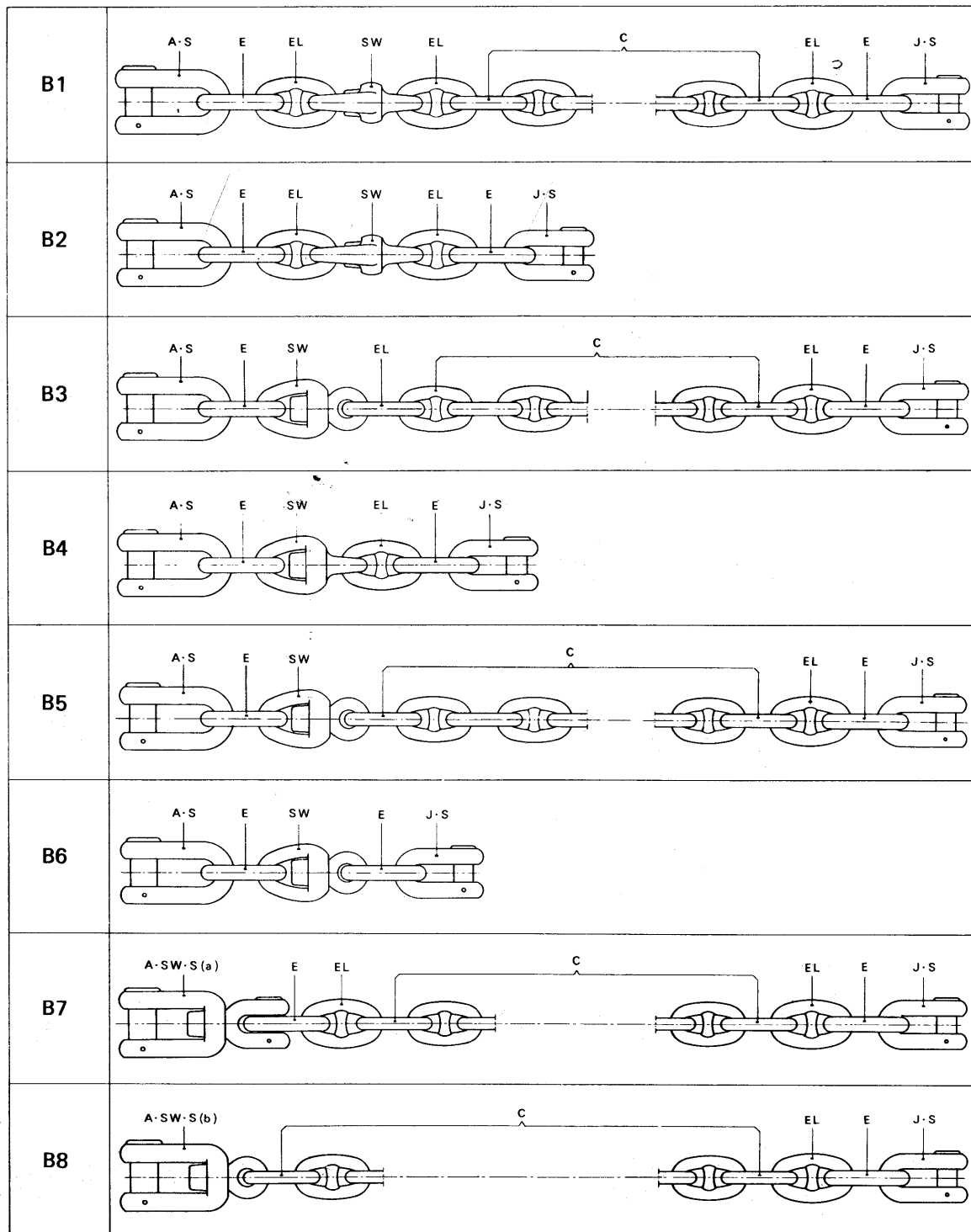




COUPLING TO THE ANCHOR

B. "D" Joining shackle type

TYPE

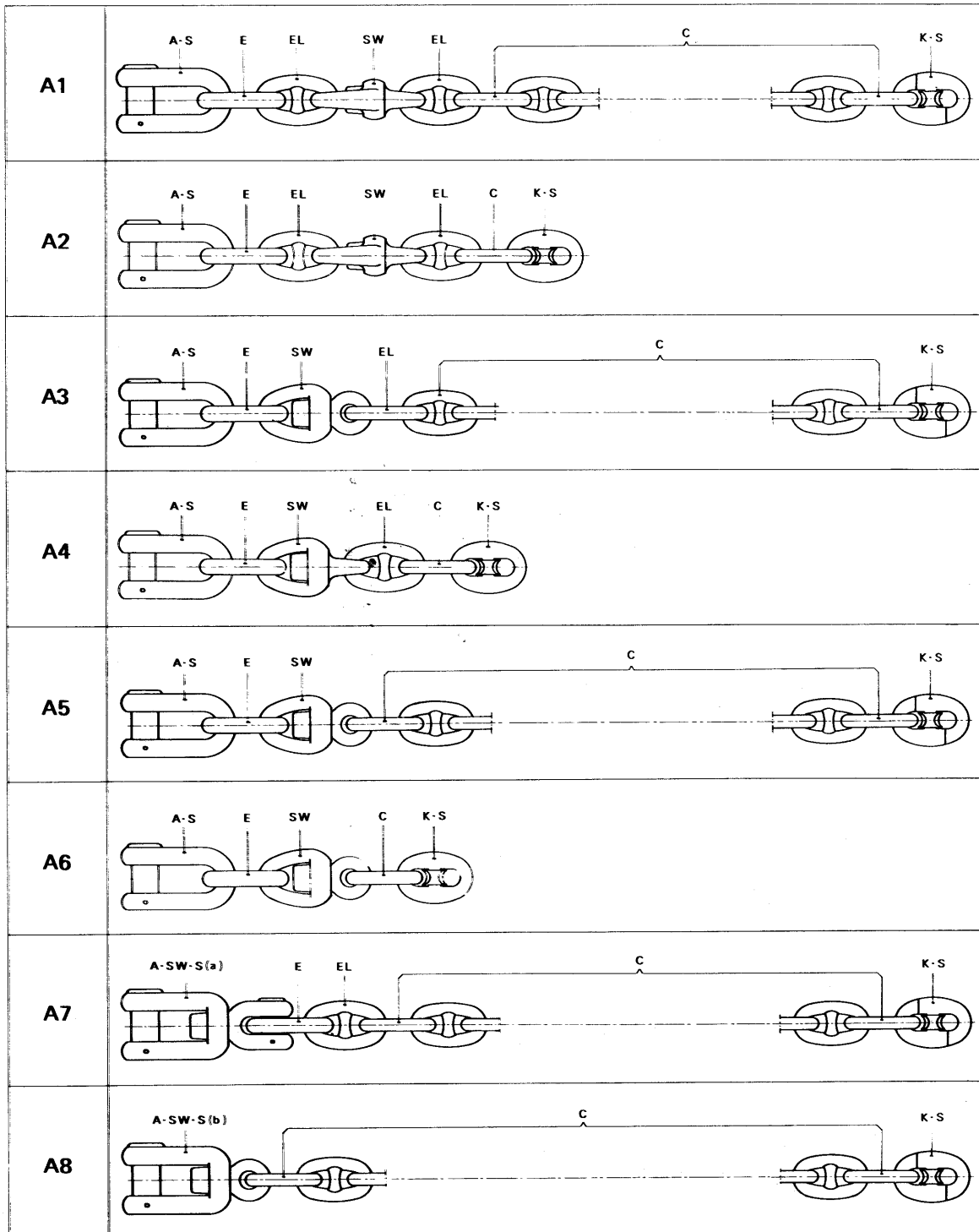




COUPLING TO THE ANCHOR

A. Kenter shackle type

TYPE





7-COMMON LINKS OF .75 NOMINAL PROPORTION
(OR NUMBER SPECIFIED)

Diagram illustrating the assembly of a cable with the following components labeled:

- SLIP
- TWO .75 COMMON LINKS (OR NUMBER SPECIFIED)
- ONE .75 COMMON LINK
- ADJUSTING SCREW
- LUGGED SHACKLE

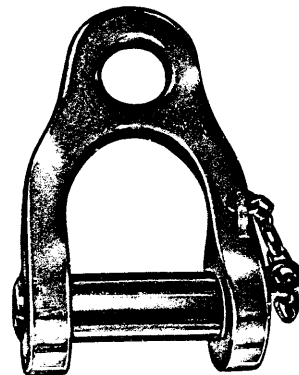
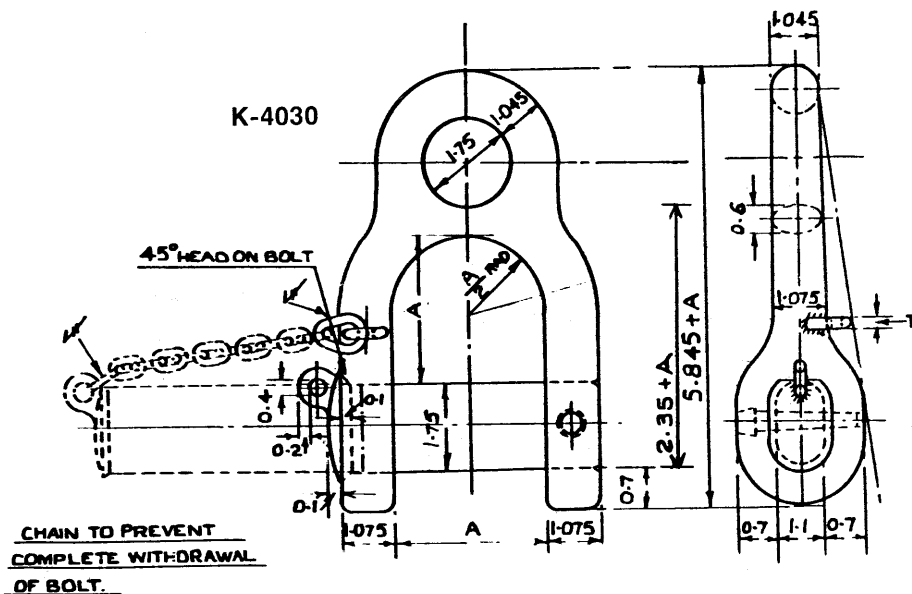
A technical diagram of a chain assembly. It shows a horizontal chain with three main components: two 'ENLARGED LINK' and one 'SWIVEL PIECE'. The 'ENLARGED LINK' are oval-shaped with internal links visible. The 'SWIVEL PIECE' is a rectangular component with a central pin. The chain is shown in a perspective view with dashed lines indicating the continuation of the chain. Labels with arrows point to the respective parts: 'ENLARGED LINK' (top left), 'SWIVEL PIECE' (top center), 'END LINK' (top right), 'END LINK' (bottom left), and 'ENLARGED LINK' (bottom center).



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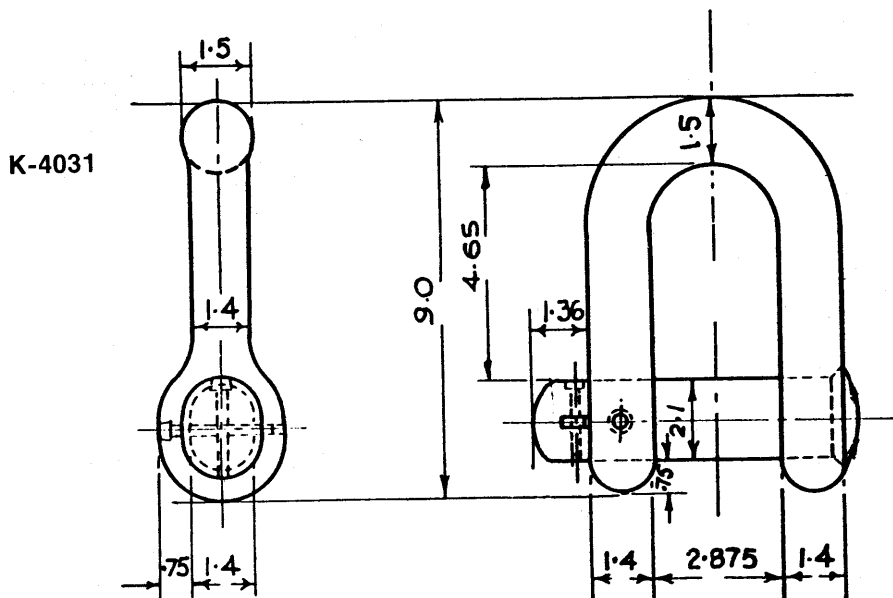
SHACKLE SECURING TO BUOY

NOTE: Dimensions shown in table are inches
Dimensions shown in sketch are nominal multipliers of chain cable diameter.



NOMINAL SIZE OF CABLE	DEPTH & WIDTH A
ABOVE 2 3/4"	8 1/4"
ABOVE 2 1/4" & UP TO 2 3/4"	8 1/4"
" 1 7/8" " " 2 1/4"	7 1/4"
" 1 1/2" " " 1 7/8"	5 3/4"
" 1 1/8" " " 1 1/2"	4 1/2"
1 1/8" & BELOW	3 3/4"

ANCHOR SHACKLE FOR MOORING PENDANT & BRIDLE CHAINS AS REQUIRED FOR STANDARD MOORING EQUIPMENT





EQUIPMENT TABLES

Equipment Number		Equipment Letter					Stud Link Chain Cables for Bower Anchor				Metric Units	
Exceed- ing	Not Exceed- ing	NK	LR	AB	NV	BV	Total Length	Diameter			Number	Weight per Anchor
								Mild Steel (Grade 1)	Special Quality Steel (Grade 2)	Extra Special Quality Steel (Grade 3)		
							metres	mm	mm	mm		kg
50	70	A1	A	U1	—	—	220	14	12.5	—	2	180
70	90	A2	B	U2	—	—	220	16	14	—	2	240
90	110	A3	C	U3	—	—	247.5	17.5	16	—	2	300
110	130	A4	D	U4	—	—	247.5	19	17.5	—	2	360
130	150	A5	E	U5	—	—	275	20.5	17.5	—	2	420
150	175	B1	F	U6	—	—	275	22	19	—	2	480
175	205	B2	G	U7	—	—	302.5	24	20.5	—	2	570
205	240	B3	H	U8	—	—	302.5	26	22	—	3	660
240	280	B4	I	U9	—	—	330	28	24	—	3	780
280	320	B5	J	U10	—	—	357.5	30	26	—	3	900
320	360	C1	K	U11	—	—	357.5	32	28	—	3	1020
360	400	C2	L	U12	—	—	385	34	30	—	3	1140
400	450	C3	M	U13	—	—	385	36	32	—	3	1290
450	500	C4	N	U14	—	—	412.5	38	34	—	3	1440
500	550	C5	O	U15	—	—	412.5	40	34	—	3	1590
550	600	D1	P	U16	—	—	440	42	36	—	3	1740
600	660	D2	Q	U17	—	—	440	44	38	—	3	1920
660	720	D3	R	U18	—	—	440	46	40	—	3	2100
720	780	D4	S	U19	s	—	467.5	48	42	—	3	2280
780	840	D5	T	U20	t	—	467.5	50	44	—	3	2460
840	910	E1	U	U21	u	—	467.5	52	46	40	3	2640
910	980	E2	V	U22	v	—	495	54	48	42	3	2850
980	1060	E3	W	U23	w	—	495	56	50	44	3	3060
1060	1140	E4	X	U24	x	—	495	58	50	46	3	3300
1140	1220	E5	Y	U25	y	—	522.5	60	52	46	3	3540
1220	1300	F1	Z	U26	z	—	522.5	62	54	48	3	3780
1300	1390	F2	A†	U27	A	—	522.5	64	56	50	3	4050
1390	1480	F3	B†	U28	B	—	550	66	58	50	3	4320
1480	1570	F4	C†	U29	C	—	550	68	60	52	3	4590
1570	1670	F5	D†	U30	D	—	550	70	62	54	3	4890
1670	1790	G1	E†	U31	E	—	577.5	73	64	56	3	5250
1790	1930	G2	F†	U32	F	—	577.5	76	66	58	3	5610
1930	2080	G3	G†	U33	G	—	577.5	78	68	60	3	6000
2080	2230	G4	H†	U34	H	—	605	81	70	62	3	6450
2230	2380	G5	I†	U35	I	—	605	84	73	64	3	6900
2380	2530	H1	J†	U36	J	—	605	87	76	66	3	7350
2530	2700	H2	K†	U37	K	—	632.5	90	78	68	3	7800
2700	2870	H3	L†	U38	L	—	632.5	92	81	70	3	8300
2870	3040	H4	M†	U39	M	—	632.5	95	84	73	3	8700
3040	3210	H5	N†	U40	N	—	660	97	84	76	3	9300
3210	3400	J1	O†	U41	O	—	660	100	87	78	3	9900
3400	3600	J2	P†	U42	P	—	660	102	90	78	3	10500
3600	3800	J3	Q†	U43	Q	—	687.5	105	92	81	3	11100
3800	4000	J4	R†	U44	R	—	687.5	107	95	84	3	11700
4000	4200	J5	S†	U45	S	—	687.5	111	97	87	3	12300
4200	4400	K1	T†	U46	T	—	715	114	100	87	3	12900
4400	4600	K2	U†	U47	U	—	715	117	102	90	3	13500
4600	4800	K3	V†	U48	V	—	715	120	105	92	3	14100
4800	5000	K4	W†	U49	W	—	742.5	122	107	95	3	14700
5000	5200	K5	X†	U50	X	—	742.5	124	111	97	3	15400
5200	5500	L1	Y†	U51	Y	—	742.5	127	111	97	3	16100
5500	5800	L2	Z†	U52	Z	—	742.5	130	114	100	3	16900
5800	6100	L3	A*	U53	A*	—	742.5	132	117	102	3	17800
6100	6500	L4	B*	U54	B*	—	742.5	—	120	107	3	18800
6500	6900	L5	C*	U55	C*	—	770	—	124	111	3	20000
6900	7400	M1	D*	U56	D*	—	770	—	127	114	3	21500
7400	7900	M2	E*	U57	E*	—	770	—	132	117	3	23000
7900	8400	M3	F*	U58	F*	—	770	—	137	122	3	24500
8400	8900	M4	G*	U59	G*	—	770	—	142	127	3	26000
8900	9400	M5	H*	U60	H*	—	770	—	147	132	3	27500
9400	10000	N1	I*	U61	I*	—	770	—	152	132	3	29000
10000	10700			U62			770	—	—	137	3	31000
10700	11500			U63			770	—	—	142	3	33000
11500	12400			U64			770	—	—	147	3	35500
12400	13400			U65			770	—	—	152	3	38500
13400	14600			U66			770	—	—	157	3	42000
14600				U67			770	—	—	162	3	46000



TESTING REQUIREMENTS

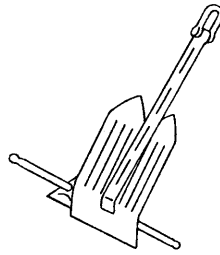
Metric Units

LLOYD'S REGISTER OF SHIPPING

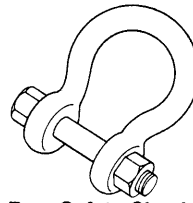
Inch/Pound Units

Chain Diameter	Grade				Minimum weight per length of 27.5m	
	U2		U3			
	Proof Load	Breaking Load	Proof Load	Breaking Load	With Dee Shackle	With Lugless Shackle
mm	kg	kg	kg	kg	kg	kg
12.5	6700	9400	9400	13500	107	105
14	8400	11800	11800	16800	130	127
16	10900	15300	15300	22000	160	157
17.5	13000	18300	18300	26100	190	186
19	15300	21500	21500	30700	220	216
20.5	17800	24900	24900	35600	252	248
22	20400	28600	28600	40900	290	286
24	24200	33900	33900	48500	350	345
26	28300	39700	39700	56700	410	405
28	32700	45800	45800	65500	480	475
30	37500	52400	52400	74900	550	545
32	42500	59400	59400	84900	620	615
34	47700	66800	66800	95500	700	690
36	53300	74600	74600	107000	785	775
38	59200	82800	82800	118000	875	860
40	65300	91400	91400	131000	965	950
42	71700	100000	100000	143000	1055	1040
44	78400	110000	110000	157000	1150	1130
46	85300	119000	119000	171000	1260	1240
48	92600	130000	130000	185000	1370	1345
50	100000	140000	140000	200000	1485	1455
52	108000	151000	151000	215000	1605	1575
54	116000	162000	162000	231000	1725	1690
56	124000	174000	174000	248000	1850	1810
58	132000	185000	185000	265000	1985	1945
60	141000	198000	198000	282000	2125	2075
62	150000	210000	210000	300000	2275	2220
64	159000	223000	223000	319000	2430	2370
66	169000	236000	236000	337000	2590	2525
68	178000	250000	250000	357000	2755	2685
70	188000	263000	263000	376000	2925	2850
73	203000	285000	285000	407000	3185	3100
76	219000	307000	307000	438000	3460	3360
78	230000	322000	322000	459000	3640	3535
81	246000	345000	345000	492000	3940	3820
84	263000	368000	368000	526000	4240	4105
87	280000	393000	393000	561000	4555	4405
90	298000	417000	417000	596000	4870	4705
92	310000	434000	434000	620000	5085	4905
95	329000	460000	460000	657000	5405	5210
97	341000	477000	477000	682000	5630	5425
100	360000	504000	504000	720000	5970	5745
102	373000	522000	522000	746000	6210	5970
105	393000	550000	550000	785000	6580	6320
107	406000	568000	568000	812000	6845	6575
111	433000	606000	606000	865000	7380	7080
114	453000	635000	635000	907000	7795	7475
117	474000	664000	664000	948000	8220	7870
120	495000	694000	694000	991000	8650	8270
122	510000	714000	714000	1019000	8960	8550
124	524000	734000	734000	1048000	9275	8835
127	546000	764000	764000	1092000	9740	9270
130	568000	795000	795000	1136000	10210	9710
132	583000	816000	816000	1165000	10540	10005
137	620000	868000	868 000	1240000	11320	10750
142	658000	921000	921000	1316000	12110	11500
147	697000	975000	975000	1393000	12950	12300
152	736000	1030000	1030000	1471000	13890	13200

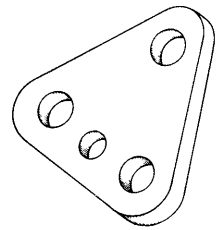
Chain Diameter	Grade				Minimum weight per length of 15 fathoms	
	U2		U3			
	Proof Load	Breaking Load	Proof Load	Breaking Load	With Dee Shackle	With Lugless Shackle
Inches	Tons	Tons	Tons	Tons	Cwt	Cwt
1/2	6.82	9.55	9.55	13.64	2-1/8	2-1/16
9/16	8.61	12.05	12.05	17.22	2-5/8	2-9/16
5/8	10.60	14.83	14.83	21.19	3-1/4	3-3/16
11/16	12.78	17.90	17.90	25.57	3-5/8	3-9/16
3/4	15.17	21.24	21.24	30.34	4-3/8	4-5/16
13/16	17.75	24.85	24.85	35.50	5-1/8	5-1/16
7/8	20.52	28.73	28.73	41.00	5-7/8	5-3/4
15/16	23.49	32.88	32.88	46.97	6-3/4	6-5/8
1	26.65	37.30	37.30	53.30	7-5/8	7-1/2
1-1/8	33.50	46.90	46.90	67.00	9-3/4	9-5/8
1-3/16	37.25	52.10	52.10	74.45	10-7/8	10-3/4
1-1/4	41.15	57.60	57.60	82.25	12	11-7/8
1-5/16	45.20	63.30	63.30	90.40	13-1/4	13-1/16
1-7/16	53.90	75.45	75.45	107.80	15-7/8	15-11/16
1-1/2	58.50	81.90	81.90	117.00	17-1/4	17
1-9/16	63.30	88.60	88.60	126.60	18-3/4	18-1/2
1-5/8	68.25	95.50	95.50	136.45	20	19-5/8
1-3/4	78.65	110.10	110.10	157.25	23-1/8	22-3/4
1-13/16	84.10	117.70	117.70	168.15	24-7/8	24-1/2
1-7/8	89.70	125.60	125.60	179.40	26-5/8	26-1/8
2	101.40	142.00	142.00	202.85	30	29-3/8
2-1/16	107.51	150.50	150.50	215.00	31-7/8	31-1/4
2-1/8	113.75	159.25	159.25	227.50	33-3/4	33
2-3/16	120.15	168.25	168.25	240.30	35-7/8	35-1/8
2-5/16	133.45	186.80	186.80	266.85	40	39-1/8
2-3/8	140.30	196.40	196.40	280.55	42-1/4	41-1/4
2-7/16	147.30	206.20	206.20	294.55	44-1/2	43-3/8
2-1/2	154.45	216.20	216.20	308.85	47	45-7/8
2-5/8	169.15	236.80	236.80	338.30	52	50-5/8
2-11/16	176.70	247.40	247.40	353.40	54-1/2	53-1/8
2-3/4	184.40	258.20	258.20	368.85	57-1/8	55-5/8
2-7/8	200.25	280.35	280.35	400.45	62-5/8	60-7/8
3	216.60	303.20	303.20	433.15	68-3/8	66-3/8
3-1/16	224.95	314.90	314.90	449.85	71-1/4	69-1/8
3-3/16	242.05	338.85	338.85	484.05	77-3/8	75
3-5/16	259.60	363.45	363.45	519.25	83-5/8	81
3-7/16	277.70	388.75	388.75	555.35	90-1/8	87-1/8
3-9/16	296.20	414.65	414.65	592.35	96-3/4	93-1/2
3-5/8	305.60	427.85	427.85	611.25	100	96-1/2
3-3/4	324.80	454.70	454.70	649.55	106-5/8	102-3/4
3-13/16	335.25	469.33	469.33	670.50	110-7/8	106-3/4
3-15/16	354.33	496.06	496.06	708.65	116-3/4	112-1/2
4	364.35	510.15	510.15	728.75	120-5/8	116
4-1/8	384.75	538.65	538.65	769.50	128-5/8	123-1/2
4-3/16	397.00	555.77	555.77	793.95	134-3/4	129-3/8
4-3/8	426.65	597.30	597.30	853.25	145-3/8	139-3/8
4-1/2	448.10	627.35	627.35	896.20	154-1/8	147-5/8
4-5/8	469.90	657.85	657.85	939.80	163	156
4-3/4	492.00	688.80	688.80	984.00	172	164-1/2
4-13/16	501.78	702.49	702.49	1000.36	176-5/8	168-5/8
4-7/8	515.73	722.03	722.03	1031.47	182-1/8	173-1/2
5	537.18	752.06	752.06	1074.36	191-5/8	182-1/2
5-1/8	558.87	782.42	782.42	1117.74	201-3/8	191-1/2
5-3/16	573.45	802.83	802.83	1146.91	207	196-1/2
5-3/8	610.33	854.46	854.46	1220.66	222-3/8	211-1/8
5-9/16	647.75	906.85	906.85	1295.51	237-3/8	225-1/2
5-3/4	685.66	959.93	959.93	1371.34	253-7/8	241
6	724.00	1013.61	1013.61	1448.01	274-1/8	260-1/2



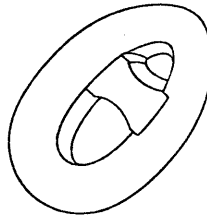
Moorfast or Offdrill Anchor



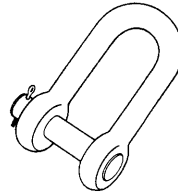
Bow Safety Shackle or Screw Pin



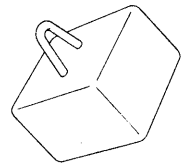
Flounder Plate



Anchor Joining Link



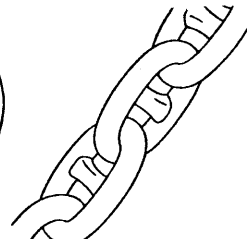
Round Pin Shackle²



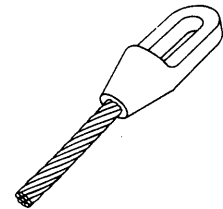
Cast or Concrete Sinker



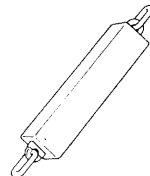
Chain Connecting Link



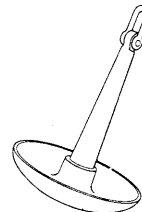
Welded Stud Link or ORQ Chain



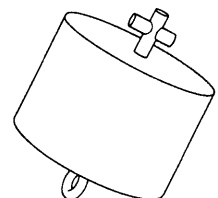
Wire Rope



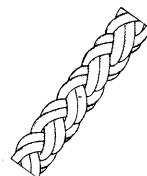
Cast or Concrete Clump



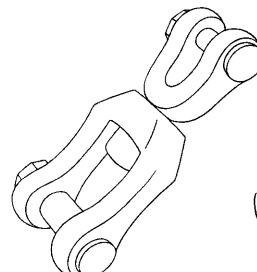
Mushroom Anchor



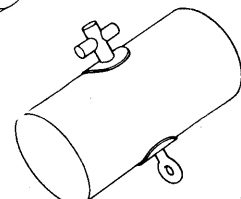
Pick-up Buoy



Polypropylene Hawser

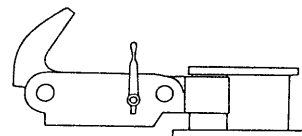


Swivel Shackle



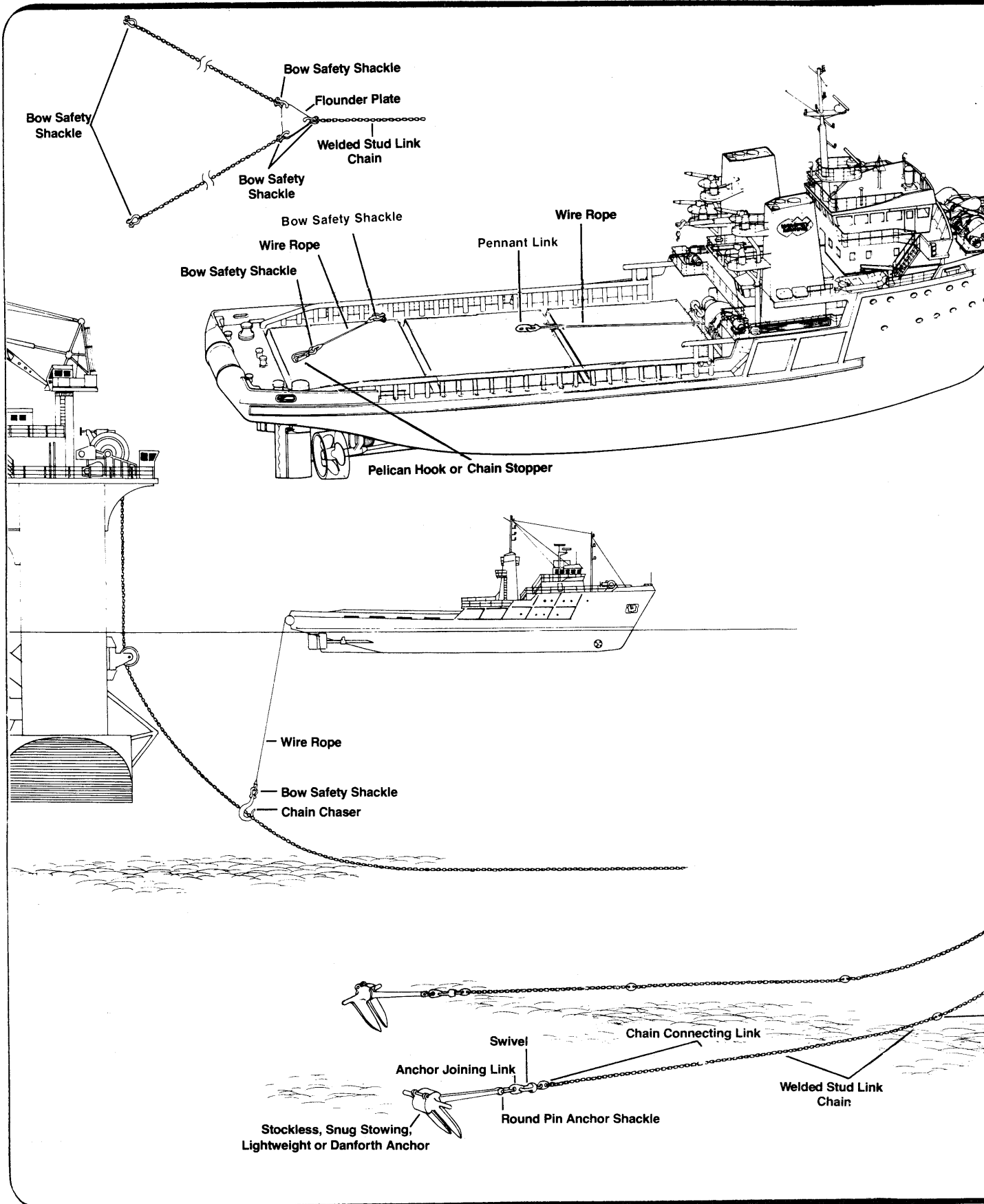
Mooring Buoy

Quick Release Hook



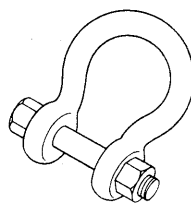
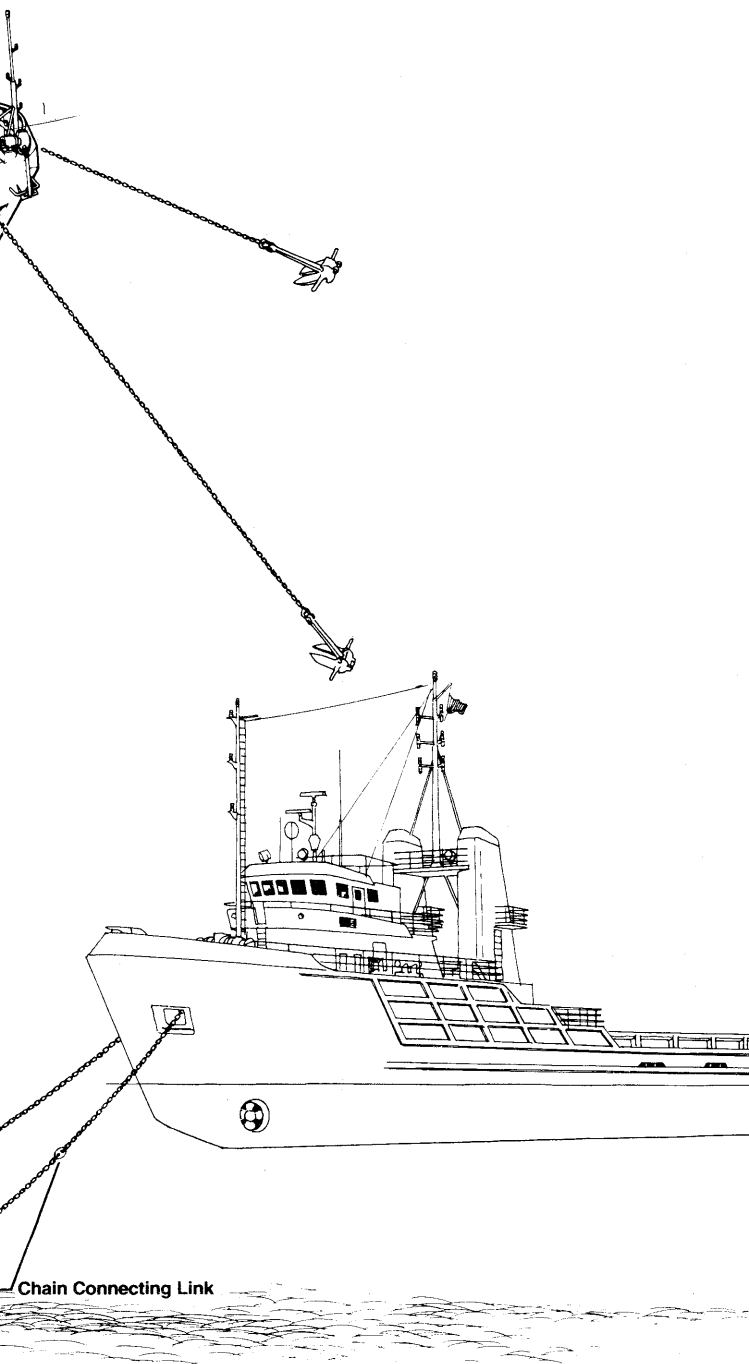


W.J. KEATING LIMITED

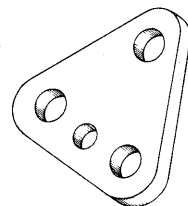




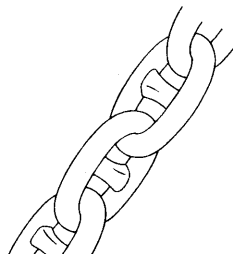
W.J. KEATING LIMITED



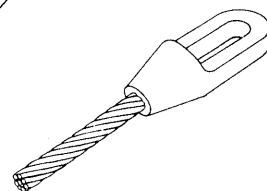
**Bow Safety Shackle
or Screw Pin**



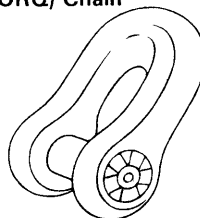
Flounder Plate



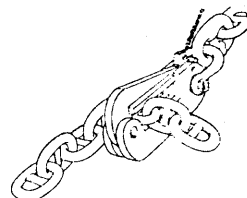
**Welded Stud Link
(ORQ) Chain**



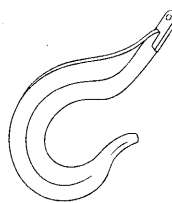
Wire Rope



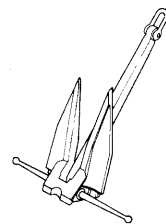
Hinge Link



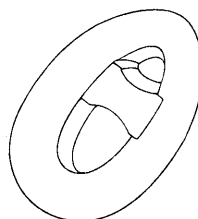
Chain Stopper



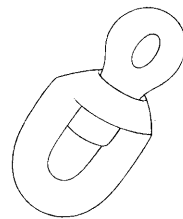
J-Chain Chaser



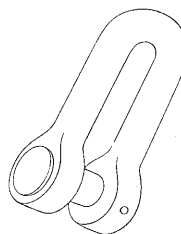
Anchor



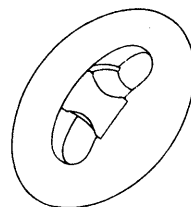
Anchor Joining Link



Swivel



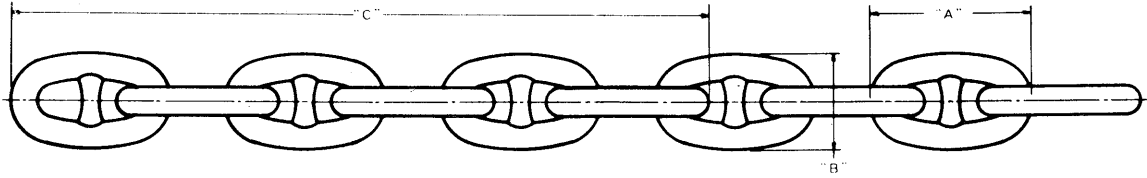
**Round Pin Chain
Shackle**



Chain Connecting Link



WELDED OIL RIG CHAIN



CHAIN SIZE	LINK LENGTH A	LINK WIDTH B	LENGTH OVER SIX LINKS C	OIL RIG QUALITY (API)		SPECIAL QUALITY		EXTRA STRENGTH	
				PROOF TEST POUNDS	BREAK TEST POUNDS	PROOF TEST POUNDS	BREAK TEST POUNDS	PROOF TEST POUNDS	BREAK TEST POUNDS
1	6	3-9/16	26	85,000	128,000	84,000	129,000	130,000	180,600
1-1/8	6-3/4	4	29-1/4	107,000	162,000	106,000	161,000	164,300	225,400
1-1/4	7-1/2	4-1/2	32-1/2	132,000	198,000	130,000	198,000	201,500	277,200
1-3/8	8-1/4	4-15/16	35-3/4	158,000	238,000	157,000	235,000	243,300	329,000
1-1/2	9	5-3/8	39	187,000	282,000	185,000	280,000	286,700	392,000
1-5/8	9-3/4	5-7/8	42-1/4	218,000	329,000	216,000	325,000	334,800	455,000
1-3/4	10-1/2	6-5/16	45-1/2	251,000	379,000	249,000	380,000	385,900	532,000
1-7/8	11-1/4	6-3/4	48-3/4	287,000	432,000	285,000	432,000	441,700	604,800
2	12	7-3/16	52	324,000	489,000	322,000	488,000	499,000	683,000
2-1/16	12-3/8	7-7/16	53-5/8	344,000	518,000	342,000	518,000	530,000	725,000
2-1/8	12-3/4	7-5/8	55-1/4	364,000	548,000	362,000	548,000	561,000	767,000
2-3/16	13-1/8	7-7/8	56-7/8	384,000	579,000	382,500	579,100	592,800	810,700
2-1/4	13-1/2	8-1/8	58-1/2	405,000	611,000	403,000	610,000	624,600	854,000
2-5/16	13-7/8	8-5/16	60-1/8	427,000	643,000	425,000	642,500	658,700	899,500
2-3/8	14-1/4	8-9/16	61-3/4	449,000	676,000	447,000	675,000	692,000	945,000
2-7/16	14-5/8	8-3/4	63-3/8	471,000	710,000	469,500	709,500	727,700	993,000
2-1/2	15	9	65	494,000	744,000	492,000	744,000	762,000	1,041,600
2-9/16	15-3/8	9-1/4	66-5/8	517,000	780,000	516,000	778,500	799,800	1,090,000
2-5/8	15-3/4	9-7/16	68-1/4	541,000	815,000	540,000	813,000	837,000	1,138,000
2-11/16	16-1/8	9-11/16	69-7/8	565,000	852,000	565,000	849,000	875,700	1,188,000
2-3/4	16-1/2	9-7/8	71-1/2	590,000	889,000	590,000	885,000	914,000	1,239,000
2-13/16	16-7/8	10-1/8	73-1/8	615,000	927,000	615,000	925,000	953,000	1,295,000
2-7/8	17-1/4	10-3/8	74-3/4	640,000	965,000	640,000	965,000	992,000	1,351,000
2-15/16	17-5/8	10-9/16	76-3/8	666,000	1,004,000	666,500	1,005,000	1,032,000	1,407,000
3	18	10-13/16	78	693,000	1,044,000	693,000	1,045,000	1,067,000	1,452,000
3-1/16	18-3/8	11	79-5/8	719,000	1,084,000	720,500	1,086,500	1,109,000	1,510,000
3-1/8	18-3/4	11-1/4	81-1/4	747,000	1,125,000	748,000	1,128,000	1,152,000	1,567,900
3-3/16	19-1/8	11-1/2	82-7/8	774,000	1,167,000	776,050	1,169,000	1,195,000	1,624,900
3-1/4	19-1/2	11-11/16	84-1/2	802,000	1,209,000	804,100	1,210,000	1,238,000	1,681,900
3-5/16	19-7/8	11-15/16	86-1/8	830,000	1,251,000	833,150	1,253,000	1,283,000	1,741,000
3-3/8	20-1/4	12-1/8	87-3/4	859,000	1,295,000	862,200	1,296,000	1,327,700	1,801,600
3-7/16	20-5/8	12-3/8	89-3/8	888,000	1,339,000	892,100	1,339,550	1,373,800	1,861,900
3-1/2	21	12-5/8	91	918,000	1,383,000	922,000	1,383,100	1,419,800	1,922,000
3-5/8	21-3/4	12-15/16	94-1/4	977,000	1,473,000	1,021,000	1,566,000	1,572,000	2,176,700
3-3/4	22-1/2	13-3/8	97-1/2	1,039,000	1,566,000	1,120,000	1,750,000	1,724,000	2,432,000
3-7/8	23-1/4	14	100-3/4	1,101,000	1,660,000	1,205,000	1,863,000	1,855,000	2,589,000
4	24	14-3/8	104	1,165,000	1,756,000	1,298,000	1,996,500	1,998,900	2,775,000

To supply the need of the Offshore Oil Industry, Hamanaka offers Oil Rig Quality, Special Quality and Extra Strength flash welded chain. Chain can be made in continuous lengths omitting the need for chain connecting links.

Material — Fine grain alloy steel is used to develop optimum mechanical properties and superior proof and break loads.

Heat Treatment — All chain is heat treated to refine welding and minimize any presence of Widmanstatten structure.

Studs — The forged stud is pressed into the link and secured by welding all around one end opposite the link weld.

Test Specimens — Four extra links are manufactured with every

length of chain or with every heat of bar material. Three links are subjected to ultimate break load and one link is used to supply certified test specimens. These specimens are charpy impact, mechanical property and photomicrographic; the specimens are taken opposite link weld at the 2/3R position.

Inspection — All testing and inspection is certified by regulating testing agencies.

Prior to painting, all chain is visually inspected for surface defects by qualified personnel and by customer's representative, if desired.

Ultrasonic inspection of chain can be conducted per customer's request.



W.J. KEATING LIMITED

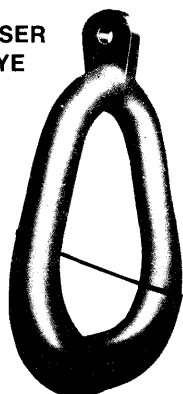
MOORING CABLE AND ANCHOR RECOVERY EQUIPMENT



**K-4042
J CHASER**

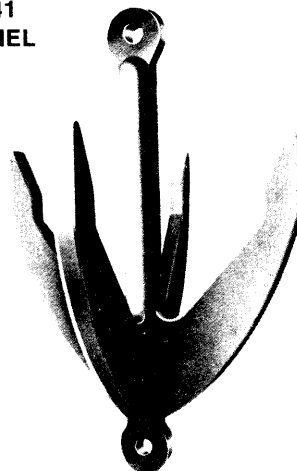
TEST LOAD — 250 TONS

**K-4043
PERMANENT CHASER
WITH SHACKLE EYE**



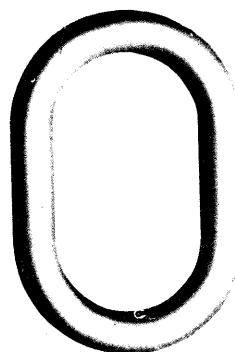
TEST LOAD — 250 TONS

**K-4041
GRAPNEL**



TEST LOAD — 150 TONS

**K- 4044
PERMANENT
CHASER
PLAIN TYPE**



TEST LOAD — 300 TONS

J Chaser	Permanent Chaser with shackle eye	Grapnel	Permanent Chaser Plain Type
A 9'-6"	6'-0"	8'-0"	5'-6"
B 5'-10"	4'-4"	5'-4"	3'-8"
C 3'-0"	3'-6"	3'-0"	4'-1"
D 2'-0"	3'-0"	3'-0"	2'-3"
Weight 4000	2650	3600	2300
091-8804	091-8822	091-8840	091-8868

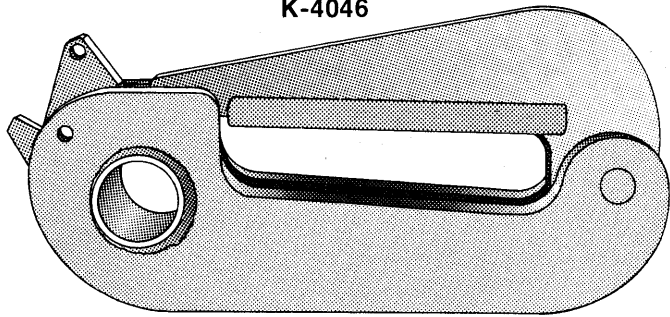


W.J. KEATING LIMITED

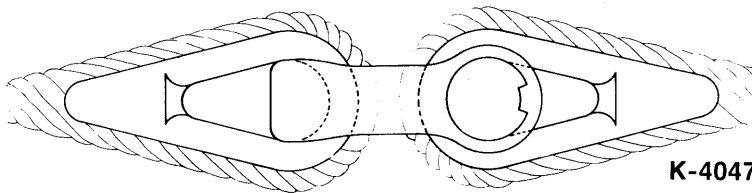
CHAIN STOPPERS

SWL 35T	SWL 50T
K-4045	K-4046
062-0037	062-0028

K-4045
K-4046



PENDANT - LINE SHACKLE



K-4047

SECURING NUT

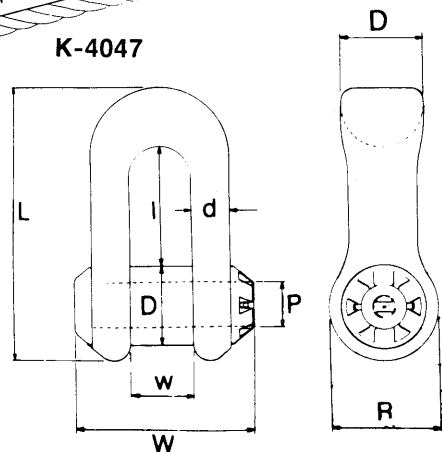
Castellated: for ease of placement and removal by one man.
Contoured: to avoid wire rope damage on winch drums.

SHACKLE BODY

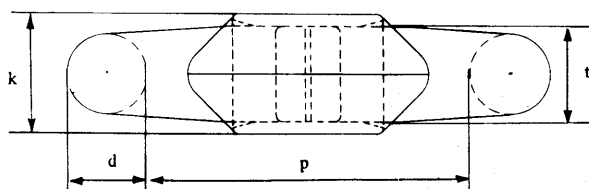
With optimum curvature to accommodate thimbles and avoid thimble collapse. Note Bolt Spacer (BS) with same function.

DIMENSIONS IN MILLIMETRES

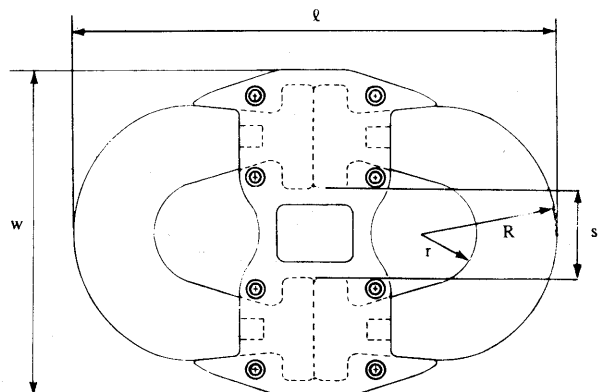
D	d	W	w	L	I	R	P
130	57	292	114	442	195	174	74



CHAIN CONNECTING LINK



d = nominal dia. of common link
 $l = 6d$ $k = 1.5d$ $R = 1.65d$
 $w = 4.06d$ $t = 1.18d$ $r = 0.65d$
 $p = 4d$ $s = 1.15d$



K-4048 Part No.
062-0019