67-2535 J. Carter

SAN FRANCISCO NAVAL SHIPYARD
SAN FRANCISCO, CALIFORNIA

ELECTRICAL INFORMATION

Wire and Cable Sizes

For Navy Standard Cables

1952

12ND SFNS P8-2

9516—NAVY—MI-DPPO12ND 5-21-52—2M

PREFACE

This book has been compiled by Shop 51 of Naval Shipyard Mare Island in conjunction with Shop 51 of Naval Shipyard San Francisco, and published by both activities and the Training Section as an aid for all Shipyard employees who are assigned to handle electrical wire, cable and equipment.

Appreciation is expressed to the following Mare Island Naval Shipyard activities for the information supplied by them:

Electrical Design Section
Hull Design Section
Sonar Laboratory
Supply Department Technical Section

Every effort has been made to incorporate the latest and most accurate available data in this book, but the employee must keep in mind that ship construction and repair methods are continuously being revised to correspond with the latest design requirements. Any errors, discrepancies or alterations should be brought to the attention of the shop training section so that supplementary pages can be issued for correction or clarification.

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CABLE—TYPE, DESCRIPTION AND USE

R.C.—RUBBER COVERED ARM.—ARMORED

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NOTES

1. Only Current Type Navy Cables are listed in this book.
2. For Discontinued and Obsolete Types see Cable Comparison Guide, (NavShips 250-660-23) 1946, or see Section S62-2 of General Specifications for Machinery for Vessels of the United States Navy, or Catalog of Navy Material, General Stores, Section 15 Group 2.
3. Revised 1952

B. C. BELL CORD

Synthetic Resin Insulation Dark Green Rayon Braid

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	26	2613	.250	.5			8											15-C-51000
3	26	2613	.270	.5			9											15-C-51020

D C O P

Double Conductor, Oil Resistant, Portable

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	21	½T1	.250				8											15-C-52050
2	21	½T2	.190				6											15-C-52010
2	10	1	.250			⅜	8										2	15-C-10340-108
2	16	1½	.310		A	⅜	10	3/8	11/16	31/64	1-5/16	1-1/4	3/8	3/4	3/8	AA	3	15-C-10340-110
2	16	2	.330		A	⅜	11	3/8	11/16	31/64	1-5/16	1-1/4	3/8	3/4	3/8	AA	4	15-C-10340-120
2	26	3	.425		B	⅜	14	1/2	7/8	35/64	1-7/16	1-7/16	1/2	7/8	17/32	A	8	15-C-10340-125
2	41	4	.460		B	⅜	15	1/2	7/8	35/64	1-7/16	1-7/16	1/2	7/8	17/32	A	11	15-C-10340-130
2	65	6	.510		C		17	3/4	1-1/8	47/64	1-9/16	1-5/8	11/16	1	11/16	F	16	15-C-10340-135
2	90	9	.570		C		18	3/4	1-1/8	47/64	1-9/16	1-5/8	11/16	1	11/16	F	20	15-C-10340-140
2	140	14	.705		D	⅜A	23	3/4	1-1/8	47/64	1-11/16	1-5/8	3/4	1-1/8	49/64	H	29	15-C-10340-145
2	228	23	.860		G	½	28	1	1-3/8	61/64	2-1/16	2	7/8	1-3/8	15/16	M	41	15-C-10340-150
2	304	30	.960		J	¾	31	1-1/4	1-11/16	1-17/64	2-3/16	2-3/8	1-1/16	1-1/2	1-5/64	P[11]	49	15-C-10340-155
2	418	83	1.45		N		46	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W[5]	97	15-C-10340-157
2	1254	250	2.10		V		67	2-1/2	2-15/16	2-5/16	3-11/16	3-11/16	2-3/16	2-11/16	2-3/64	Y[12]	250	15-C-10340-160
2	2052	400	2.50		Y		80	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-33/64	Z[15]	350	15-C-20340-165

D D G T

Double Conductor, Degaussing, Taped

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	7	17	.83	5	G	½	27	1	1-3/8	61/64	2-1/16	2	7/8	1-3/8	15/16	M		15-C-3800
2	7	53	1.14	6.7	K	1	37	1-1/4	1-11/16	1-17/64	2-5/16	2-3/8	1-3/16	1-9/16	19/64	W[1]		15-C-3802
2	19	105	1.46	8.7	N	1	47	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W[5]		15-C-3804
2	37	212	1.78	11.7	S	1½	57	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-55/64	Y[10]		15-C-3806
2	61	400	2.25	13.5	W		72	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y[13]		15-C-3808

D H F A

Double Conductor, Heat and Flame-resistant, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	7	3	.53	3.5	C		17	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	12	15-C-4518
2	7	4	.778	5	E	½	25	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	2-7/32	I	20	15-C-4520
2	7	9	.842	5.5	G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	41	15-C-4522
2	7	14	.922	6	G	¾	30	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	55	15-C-4524
2	7	23	.992	6.5	J	¾	32	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-5/64	P11	72	15-C-4526
2	19	30	1.11	7	K		36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1	87	15-C-4528
2	19	40	1.17	7.5	L	1	38	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	100	15-C-4530
2	19	50	1.22	8	L	1	39	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	116	15-C-4532
2	37	60	1.34	8.5	M	1	43	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-7/16	1-13/16	1-5/16	W3	132	15-C-4534
2	37	75	1.47	9.5	N	1¼	47	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	155	15-C-4536
2	61	100	1.59	10	P		51	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	183	15-C-4538
2	61	125	1.67	11	R		54	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	210	15-C-4540
2	61	150	1.85	12	S		59	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	246	15-C-4542
2	61	200	1.97	12.5	T		63	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	284	15-C-4544
2	61	250	2.14	13.5	V		69	2-1/2	2-15/16	2-5/16	3-11/16	3-11/16	2-3/16	2-11/16	2-1/16	Y12	332	15-C-4546
2	91	300	2.28	15	W		73	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y13	380	15-C-4548
2	127	400	2.51	16	Y		80	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-17/32	Z15	453	15-C-4550

D H F R

Double Conductor, Heat and Flame-resistant, Radio

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	7	4	.844		G	½	27	1	1-3/8	13/32	2-1/16	2	7/8	1-3/8	15/16	M	24	15-C-10492

D H F T A

Double Conductor, Heat and Flame-resistant, Thin-walled, Armored

2	7	9	.530		C	⅜	17	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		15-C-4550-30

D H F W

Double Conductor, Heat and Flame-resistant, Wire

2	10	1	.150	.5	OC		5	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	3	15-C-4683-30

D R I A

Double Conductor, Resin Insulated, Armored

2	7	3	.435		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	9	15-C-10957
2	7	4	.480		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	14	15-C-10957-10
2	7	9	.586		C		19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	23	15-C-10957-30
2	7	14	.642		D	⅜A	21	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	31	15-C-10957-40
2	7	23	.712		D	⅜A	23	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	41	15-C-10957-50

D R I P

Double Conductor, Resin Insulated, Plain

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	7	3	.385		B	⅜	12	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	9	15-C-10980-35
2	7	4	.430		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	12	15-C-10980-36
2	7	9	.536		C		17	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	20	15-C-10980-38
2	7	14	.592		D		19	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	28	15-C-10980-40
2	7	23	.662		D	⅜A	21	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	39	15-C-10980-50

F C O P

Four Conductor, Oil-resistant, Portable

4	41	4	.55		C		18	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	11	15-C-10340-200
4	90	9	.66		D	⅜A	21	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	18	15-C-10340-205
4	684	133	2.0		T		64	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	120	15-C-10340-210

F C O T P

Four Conductor, Oil-resistant, Thin-Walled, Portable

4	41	4	.44		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-10340-500

F H F A

Four Conductor, Heat and Flame-resistant, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
4	7	3	.51	4	G	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F	10	15-C-4558
4	7	4	.865	5.5	G	½	28	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	17	15-C-4560

F H F T A

Four Conductor, Heat and Flame-resistant, Thin-Walled, Armored

4	7	9	.62		D	⅜A	20	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		15-C-4570

F R I A

Four Conductor, Resin Insulated, Armored

4	7	3	.48	2	B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	8	15-C-10958
4	7	4	.54	2.5	C		17	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	13	15-C-10958-10

F R I P

Four Conductor, Resin Insulated, Plane

4	7	3	.43		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-10981-50
4	7	4	.49		C	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F		15-C-10981-60

M C O S

Multiple Conductor, Shielded, Pressure Resisting

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	16	1608	.46		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-10950
4	16	1608	.51		C	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F		15-C-10952
6	10	1005	.465		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-10948
7	16	1608	.595		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		15-C-10956

M C S P

Multiple Conductor, Shielded, Pressure Resisting

6	10	1005	.595		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		15-C-10954-50

M D G A

Multiple Conductor, Degaussing, Armored

19	7	6	1.29	8	M	1	41	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/8	1-13/16	1-5/16	W3	11.	15-C-3846
19	7	14	1.52	9.5	P	1¼	49	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	17.5	15-C-3848
19	7	23	1.82	10.5	S	1½	58	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	24.	15-C-3850
19	19	40	2.10	12.5	V		67	2-1/2	2-15/16	2-5/16	3-11/16	3-11/16	2-3/16	2-11/16	2-1/16	Y12	35.	15-C-3852

M D G B

Multiple Conductor, Degaussing, Binnacle

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
12	1	1022	.45		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-3842

M D G D

Multiple Conductor, Degaussing, Control

3	7	4107	.59		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		15-C-3810
7	7	4107	.72		E	⅜A	23		1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I		15-C-3812

M D G L

Multiple Conductor, Degaussing, Leaded

19	7	14	1.52		P	1¼	49	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7		15-C-3854

M D G T

Multiple Conductor, Degaussing, Taped

91	7	13	2.75	17	AA		88										11.5	15-C-3820
34	7	41	2.75	17	AA		88										32	15-C-3818
30	7	52	2.75	17	AA		88										40	15-C-3816
24	7	66	2.75	17	AA		88										50	15-C-3814

M H F A

Multiple Conductor, Heat and Flame-resistant, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
7	7	2828	.859	5.5	G	½	27	1	1-3/8	31/32	2-1/16	2	15/16	1-3/8	15/16	M	6	15-C-4584
10	7	2828	1.037	6.5	J	¾	33	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11	8	15-C-4586
14	7	2828	1.118	7.5	K	¾	35	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1	12	15-C-4588
19	7	2828	1.209	8.0	L	1	39	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	16	15-C-4590
24	7	2828	1.375	9.0	M	1	44	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/16	1-13/16	1-5/16	W3	21	15-C-4593
30	7	2828	1.456	9.5	N	1¼	47	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	26	15-C-4596
37	7	2828	1.569	10.5	P		50	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	33	15-C-4598
44	7	2828	1.734	11.0	S	1½	56	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	39	15-C-4600

M H F F

Multiple Conductor, Heat and Flame-resistant, Flexible

2	26	2613	.46		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	2	15-C-10341-10
4	26	2613	.52		C	⅜	17	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F	3	15-C-10341-15
7	26	2613	.627		D	⅜A	20	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	6	15-C-10341-20
10	26	2613	.795		F	⅜A	26	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L	8	15-C-10341-25
14	26	2613	.844		G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	12	15-C-10341-30
19	26	2613	.995		J	¾	32	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11	16	15-C-10341-35
24	26	2613	1.12		K	1	36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1	21	15-C-10341-43
30	26	2613	1.194		L	1	38	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	26	15-C-10341-50
37	26	2613	1.29		M	1	41	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/8	1-13/16	1-5/16	W3	33	15-C-10341-55
44	26	2613	1.42		N	1	46	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	39	15-C-10341-60

M M O P

Multiple Conductor, Microphone, Oil Resistant, Portable

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
5	21	525	.325		A	⅜	10	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA		15-C-10956-75

M D G Y

Multiple Conductor, Degaussing, Tape Armored (Steel)

17	7	41	2.45	20	Y		78	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-17/32	Z15	52	15-C-3840
15	7	52	2.45	20	Y		78	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-17/32	Z15	58	15-C-3830
12	7	66	2.45	20	Y		78	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-17/32	Z15	58	15-C-3828

P B J X

Pyrometer Base Lead Wire

2	1	4107	.48		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-10466-10

S C O P

Single Conductor, Oil-resistant, Portable

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	288	23	.46		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	44	15-C-10373
1	304	60	.60		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	84	15-C-10373-**25**
1	760	150	.87		G	½	28	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	169	15-C-10373-**50**
1	988	200	.98		J	¾	31	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11	206	15-C-10374
1	1254	250	1.085		K	¾	35	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1	242	15-C-10374-**25**
1	4033	800	1.67		R		54	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	573	15-C-10374-**50**

S D G A

Single Conductor, Degaussing, Armored

1	127	400	1.27	10	M	1	41	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-5/16	1-13/16	1-5/16	W3	440	15-C-3856
1	127	500	1.36	10	M	1	44	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-7/16	1-13/16	1-5/16	W3	520	15-C-3858
1	127	650	1.46	11	N	1	47	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	610	15-C-3860
1	127	800	1.58	12	P	1¼	51	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	710	15-C-3862
1	127	1000	1.71	12	R		55	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	830	15-C-3864
1	127	1300	1.88	13	T		60	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	980	15-C-3866
1	127	1600	2.03	13	T		65	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	1120	15-C-3868
1	127	2000	2.24	14	W		72	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y13	1280	15-C-3870

S H F A

Single Conductor, Heat and Flame-resistant, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	7	3	.355	2.5	A	⅜	11	3/8	11/16	1/2	15/16	1-1/4	3/8	3/4	3/8	AA	14	15-C-4608
1	7	4	.5	3.0	C	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	24	15-C-4610
1	7	9	.656	4.0	D	⅜ A	21	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	49	15-C-4612
1	7	14	.684	4.5	D	⅜ A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	65	15-C-4614
1	7	23	.719	4.5	D	⅜ A	23	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	85	15-C-4616
1	19	30	.749	5.0	E	⅜ A	24	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	104	15-C-4618
1	19	40	.774	5.0	E	⅜ A	25	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	119	15-C-4620
1	19	50	.802	5.5	F	½	26	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L	137	15-C-4622
1	37	75	.865	5.5	G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	181	15-C-4626
1	61	100	.911	6.0	G	¾	29	1	1-3/8	31/32	2-1/16	2	1	1-3/8	15/16	M	214	15-C-4628
1	61	150	1.01	6.5	J	¾	32	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11	289	15-C-4632
1	61	200	1.06	6.5	K	¾	34	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1	332	15-C-4634
1	91	300	1.18	7.5	L	1	38	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	430	15-C-4636
1	127	400	1.34	8.5	M	1	43	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-7/16	1-13/16	1-5/16	W3	530	15-C-4638
1	127	500	1.429	9.0	N	1	45	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-1/2	1-15/16	1-7/16	W5		
1	127	650	1.532	10	P	1¼	49	2	2-7/16	1-15/16	2-7/8	3-3/16	1-5/8	2-1/16	1-9/16	X7		
1	127	800	1.647	10.5	R		53	2	2-7/16	1-15/16	3	3-3/16	1-3/4	2-1/4	1-21/32	X8		

S H F L

Single Conductor, Heat and Flame-resistant, Leaded

1	127	650	1.65	12.5	R		53	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	722	15-C-4682-20
1	127	800	1.77	13.0	S	1½	57	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	865	15-C-4682-25
1	127	1000	1.90	14.0	T		61	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	1030	15-C-4682-30

S H F P

Single Conductor, Heat and Flame-resistant, Propulsion

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	61	200	1.26	8.5	M	1	40	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-5/16	1-13/16	1-5/16	W3	332	15-C-4684-50
1	91	300	1.38	9.0	M	1	44	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-7/16	1-13/16	1-5/16	W3	430	15-C-4684-55
1	127	400	1.49	9.5	N	1¼	48	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	530	15-C-4684-60
1	127	500	1.58	10.5	P	1¼	51	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	618	15-C-4684-65
1	127	650	1.68	11.0	R		54	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	722	15-C-4684-70
1	127	800	1.80	12.0	S	1½	58	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	865	15-C-4684-75

S H F R 4

Single Conductor, Heat and Flame-resistant, Radio

1	7	4497	.54	3.5	C	⅜	17	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	30	15-C-10494

Single Conductor, Heat and Flame-resistant, Switchboard

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	10	1	.125	.5			4										3	15-C-4685-10
1	41	1½	.140	.5			4										3	15-C-4685-15
1	26	2½	.145	.5			5										8	15-C-4685-17
1	7	3	.155	.5			5										9	15-C-4685-20
1	7	4	.195	1.			6										25	15-C-4685-30
1	7	6	.220	1.			7										36	15-C-4685-35
1	7	9	.248	1.			8										50	15-C-4685-40
1	140	14	.285	1.5	A	⅜	9	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA	69	15-C-4685-45
1	49	26	.365	2.0	B	⅜	12	1/2	7/8	9/16	1-7/16	1-7/16	7/16	7/8	17/32	A	95	15-C-4685-53
1	49	42	.425	2.5	B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	123	15-C-4685-57
1	133	66	.505	3.0	C	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	155	15-C-4685-63
1	61	100	.543	3.5	C	⅜	17	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	195	15-C-4685-65

S R I

Single Conductor, Resin Insulated

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	1	3/5	.06				2										3	15-C-4687-10
1	1	1	.07				2										4	15-C-4687-20
1	10	1	.075				2										4	15-C-4687-23
1	1	1½	.077				2										4	15-C-4687-25
1	41	1½	.09				3										5	15-C-4687-30
1	1	2½	.09				3										7	15-C-4687-35
1	26	2½	.102				3										8	15-C-4687-40
1	7	3	.102				3										8	15-C-4687-45
1	19	3	.105				3										8	15-C-4687-50
1	41	4	.125				4										11	15-C-4687-60
1	7	4	.105				3										13	15-C-4687-55
1	7	6	.15				5										14	15-C-4687-72
1	65	6	.16				5										15	15-C-4687-80
1	7	9	.178				6										19	15-C-4687-90
1	90	9	.19				6										19	15-C-4687-93
1	140	14	.215				7										25	15-C-4687-98
1	49	26	.285		A	⅜	9	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA	41	15-C-4687-113
1	49	42	.34		A	⅜	11	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA	53	15-C-4687-118
1	133	66	.42		B	⅜	13	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	74	15-C-4687-123
1	61	100	.453		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	100	15-C-4687-130

S R I A

Single Conductor, Resin Insulated, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	7	3	.182	1.0			6										10	15-C-10959
1	7	4	.205	1.0	OC		7										14	15-C-10959-10
1	7	6	.23	1.0	OB		7										17	15-C-10959-20
1	7	9	.258	1.5	OB	⅜	8										22	15-C-10959-30
1	7	14	.29	1.5	OA	⅜	9										30	15-C-10959-40

S R I B

Single Conductor, Resin Insulated, (textile) Braid

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	1	3/5	.095	.5			3										4	15-C-4688-10
1	1	1	.105	.5			3										5	15-C-4688-20
1	10	1	.11	.5			4										5	15-C-4688-18
1	1	1½	.112	.5			4										6	15-C-4688-25
1	41	1½	.125	.5			4										6	15-C-4688-30
1	1	2½	.125	.5			4										8	15-C-4688-35
1	26	2½	.137	.5			4										9	15-C-4688-40
1	7	3	.137	.5			4										9	15-C-4688-45
1	19	3	.140	.5			5										9	15-C-4688-50
1	7	4	.165	1.	OC		5										13	15-C-4688-55
1	7	6	.19	1.	OC		6										16	15-C-4688-60
1	7	9	.218	1.	OB		7										21	15-C-4688-65
1	140	14	.255	1.	OB	⅜	8										28	15-C-4688-75
1	49	26	.325	1.	OA	⅜	10										42	15-C-4688-95
1	49	42	.389	1.	A	⅜	12	3/8	11/16	1/2	1-5/16	1-1/4	7/16	3/4	3/8	AA	58	15-C-4688-105
1	133	66	.465	1.	B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	83	15-C-4688-110

T C O P

Triple Conductor, Oil-resistant, Portable

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
3	21	½	.25			⅜	8											15-C-52315
3	16	2	.345		A	⅜	11	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA	5	15-C-10425
3	26	3	.45		B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	6	15-C-10450
3	41	4	.48		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	9	15-C-10452
3	65	6	.55		C	⅜	18	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	12	15-C-10454
3	90	9	.60		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	16	15-C-10456
3	140	14	.75		E	⅜A	24	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	24	15-C-10456-50
3	288	23	.90		G	½	29	1	1-3/8	31/32	2-1/16	2	15/16	1-3/8	15/16	M	31	15-C-10457
3	209	42	1.25		M	1	40	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-5/16	1-13/16	1-5/16	W3	43	15-C-10458
3	760	150	1.82		S	1½	58	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	122	15-C-10460
3	1254	250	2.24		W		72	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y13	175	15-C-10462
3	2052	400	2.80		AA		90										250	15-C-10464

T H F A

Triple Conductor, Heat and Flame-resistant, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
3	7	3	.56	3.5	C		18	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	10	15-C-4648
3	7	4	.812	5.0	F	½	26	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	27/32	L	17	15-C-4650
3	7	9	.881	5.5	G	¾	28	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	36	15-C-4652
3	7	14	.968	6.0	J	¾	31	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11	47	15-C-4654
3	7	23	1.04	6.5	K	¾	33	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-1/16	1-9/16	1-5/32	W1	64	15-C-4656
3	19	30	1.17	7.5	L	1	37	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	77	15-C-4658
3	19	40	1.23	8.0	L	1	39	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	88	15-C-4660
3	19	50	1.29	8.5	M	1	41	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/8	1-13/16	1-5/16	W3	101	15-C-4662
3	37	60	1.42	9.0	N	1	46	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	116	15-C-4664
3	37	75	1.56	10.0	P	1¼	50	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	136	15-C-4666
3	61	100	1.68	11.0	R		54	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	160	15-C-4668
3	61	125	1.78	11.5	S	1½	57	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	185	15-C-4670
3	61	150	1.97	12.5	T		63	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	216	15-C-4672
3	61	200	2.09	13.5	V		67	2-1/2	2-15/16	2-5/16	3-11/16	3-11/16	2-3/16	2-11/16	2-1/16	Y12	250	15-C-4674
3	61	250	2.28	14.5	W		73	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y13	290	15-C-4676
3	91	300	2.43	15.5	X		78	3	3-9/16	2-7/8	3-15/16	4-5/16	2-1/2	3	2-13/32	Z14	320	15-C-4678
3	91	350	2.55	16.5	Y		82	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-17/32	Z15	360	15-C-4679
3	127	400	2.67	17.0	Z		85	3	3-9/16	2-7/8	4-1/2	4-5/16	2-3/4	3-1/8	2-11/16	Z16	400	15-C-4680

T H F R 4

Triple Conductor, Heat and Flame-resistant, Radio

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
3	7	4497	.883	5.5	G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	22	15-C-10496

T R F

Tough Jacket, Flexible

3	259	105	.76		E	½	24		1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	121	15-C-3345
3	259	133	.81		G	½	26		1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	141	15-C-3359
3	427	168	.86		G	½	28		1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	170	15-C-3370

T R I A

Triple Conductor, Resin Insulated, Armored

3	16	2	.374	2.0	A	⅜	12	3/8	11/16	1/2	1-5/16	1-1/4	7/16	3/4	3/8	AA	5	15-C-10960
3	7	3	.455	2.0	C	⅜	15	3/4	1-1/8	3/4	1-9/16	1-5/8	1/2	1	11/16	F	8	15-C-10960-10
3	7	4	.503	2.0	C	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F	13	15-C-10960-20
3	7	9	.617	2.5	C	⅜ A	20	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	20	15-C-10960-40
3	7	14	.678	3.0	D	⅜ A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	26	15-C-10960-50
3	7	23	.754	3.0	E	⅜ A	24	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	38	15-C-10960-60

TRIP

Triple Conductor, Resin Insulated, Plain

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
3	16	2	.324		A	⅜	10	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA	4	15-C-10984-42
3	7	3	.405		B	⅜	13	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	7	15-C-10984-44
3	7	4	.453		C	⅜	14	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F	8	15-C-10984-46
3	7	9	.567		C		18	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	19	15-C-10984-48
3	7	14	.628		D	⅜A	20	3/4	1-1/8	3/4	1-11/16	1-5/8	11/16	1-1/8	25/32	H	25	15-C-10984-50
3	7	23	.704		D	⅜A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	35	15-C-10984-60

TRXF

Tough Jacket, Extra Flexible

3	2109	84	.60		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	110	15-C-3374
3	2658	105	.68		D	⅜A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	121	15-C-3375
3	3353	133	.75		E	⅜A	24	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	141	15-C-3376

T T H F W A

Twisted Pair, Telephone, Heat and Flame-resistant, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	7	704	.38	2.5	B	3/8	12	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-12130
3	7	704	.50	3.5	C	3/8	16	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F		15-C-12132
5	7	704	.59	4.0	C	3/8 A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		15-C-12134
10	7	704	.69	4.5	D	3/8 A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		15-C-12136
15	7	704	.80	5.5	F	1/2	26	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L		15-C-12138
20	7	704	.88	6.0	G	1/2	28	1	1-3/8	31/32	2-1/16	2	15/16	1-3/8	15/16	M		15-C-12140
30	7	704	1.03	7.0	J	3/4	33	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	13/32	P11		15-C-12142
40	7	704	1.13	7.5	K	1	36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1		15-C-12144
50	7	704	1.25	8.5	M	1	40	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-5/16	1-13/16	1-5/16	W3		15-C-12146
60	7	704	1.35	9.0	N	1	43	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-7/16	1-15/16	1-7/16	W5		15-C-12148

T T O P

Twisted Pair, Telephone, Oil-resistant, Portable

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
3	10	950	.48		B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		15-C-12101
5	10	950	.59		C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	1-1/16	1	11/16	F		15-C-12102
10	10	950	.70		D	⅜A	23	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		15-C-12103
15	10	950	.83		G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M		15-C-12104

T T R S

Twisted Pair, Telephone, Radio, Shielded

2	7	1119	.68		D	⅜A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		15-C-10995
4	7	1119	.74		E	⅜A	24	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I		15-C-10995-5
6	7	1119	.88		G	½	28	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M		15-C-10995-10
8	7	1119	1.08		K	¾	36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1		15-C-10995-15
16	7	1119	1.19		M	1	38	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/16	1-13/16	1-5/16	W3		15-C-10995-20

T T R S A

Twisted Pair, Telephone, Radio, Shielded, Armored

2	7	1119	.74	5.0	E	⅜A	24	1	1-3/8	31/32	1-11/16	1-5/8	13/16	13/16	27/32	I		15-C-10670
4	7	1119	.80	5.5	F	½	26	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L		15-C-10672
8	7	1119	1.01	6.5	J	¾	32	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11		15-C-10674
16	7	1119	1.25	8.0	M	1	40	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/16	1-13/16	1-5/16	W3		15-C-10682

WATERTIGHT CABLE

Maximum Voltage—600 V. A. C., 1000 V. D. C.

Type No.	Conductors	Area in C. M. (Nominal)	Outside Diameter	O.D. Nearest 32nd. Inch	Tube Size	Greenfield Connector	Wt.-Lbs./Ft. (Nominal)	Ampere Rating (Maximum)	
								40 C. Amb.	50 C. Amb.
SHOF-23	1	22,910	.460	15	B	3/8	.148	88	80
SHOF-60	1	61,260	.600	19	C	3/8A	.332	162	153
SHOF-150	1	153,100	.870	28	G	1/2	.747	285	268
SHOF-200	1	199,100	.980	31	J	3/4	.938	323	306
SHOF-250	1	252,700	1.085	35	K	3/4	1.280	397	362
SHOF-800	1	812,700	1.670	54	R		3.210	803	732
DHOF-3	2	2,613	.425	14	B	3/8	.099	23	21
DHOF-4	2	4,121	.460	15	B	3/8	.115	30	28
DHOF-6	2	6,533	.510	16	C	3/8	.146	41	37
DHOF-9	2	9,053	.570	18	C		.167	50	45
DHOF-14	2	14,070	.705	23	D	3/8A	.285	60	54
DHOF-23	2	22,910	.860	28	G	1/2	.402	80	72
DHOF-30	2	30,550	.960	29	J	3/4	.606	90	83
DHOF-83	2	84,230	1.450	46	N	1	1.32	169	152
DHOF-250	2	252,700	2.100	67	V		2.73	322	287
DHOF-400	2	413,500	2.500	80	Y		4.40	422	382

WATERTIGHT CABLE

Maximum Voltage—600 V. A. C., 1000 V. D. C.

Type No.	Conductors	Area in C.M. (Nominal)	Outside Diameter	O.D. Nearest 32nd. Inch	Tube Size	Greenfield Connector	Wt.-Lbs./Ft. (Nominal)	Ampere Rating (Maximum)	
								40 C. Amb.	50 C. Amb.
THOF-3	3	2,613	.450	14	B	3/8	.115		
THOF-4	3	4,121	.480	15	B	3/8	.133		
THOF-6	3	6,533	.550	18	C		.174		
THOF-9	3	9,045	.600	19	C	3/8A	.196		
THOF-14	3	14,070	.750	24	E	3/8A	.355		
THOF-23	3	22,910	.900	29	G	3/4	.518		
THOF-42	3	42,110	1.250	40	M	1	.958		
THOF-150	3	153,100	1.820	58	S	1-1/2	2.40		
THOF-250	3	252,700	2.240	72	W		3.76		
THOF-400	3	413,500	2.800	90	AA		5.95		
FHOF-3	4	2,613	.480	15	B	3/8	.127		
FHOF-4	4	4,121	.550	18	C		.162		
FHOF-9	4	9,045	.660	21	D	3/8A	.273		
FHOF-133	4	137,800	2.00	64	T		2.780		

NOTE: For applications requiring a single cable in free air, the ratings of 14,000 circular mil and larger cables may be increased by 15 percent.

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-4/U	50	1/20	2	Syn. Res.	0.246	8	OB	30			1,900	
RG-5/U	51	0.051	2	Syn. Res.	0.328	11	A	30	2.6	4.7	3,000	Microwave Cable
RG-5A/U	50	16	2	Syn. Res.	0.264	8	OA	28	2.6		3,000	Non-Contaminating Jacket
RG-6/U	75	0.028	2	Syn. Res.	0.332	11	A	20	2.8	5.3	2,700	I.F. and Video
RG-7/U	95	0.036	1	Syn. Res.	0.370	12	A	14	2.0	3.8	1,000	Air Spaced Low Cap.
RG-8/U	52	7/21	1	Vinol	0.405	13	B	29	2.1	4.2	4,000	Gen. Purpose Med. Size Flex.
RG-9/U	52	7/21	2	Vinol	0.420	13	B	29	2.0	4.0	4,000	Med. Low Level Cir.
RG-9A/U	51	7/21	2	Syn. Res.	0.42	13	B	30	2.3	4.2	4,000	Non-Contaminating Jacket
RG-10/U	52	7/21	1	Armor	0.475	15	B	29	2.1	4.2	4,000	Same as RG-8/U
RG-11/U	75	7/26	1	Vinol	0.405	13	B	20	2.1	3.8	4,000	Flex. Video and Commun.
RG-12/U	75	7/26	1	Armor	0.475	15	B	20	2.1	3.8	4,000	Same as RG-11/U
RG-13/U	75	7/26	2	Vinol	0.420	13	B	20	2.1	3.8	4,000	I. F.
RG-14/U	51	10	2	Vinol	0.545	17	C	30	1.4	2.8	5,500	Gen. Pur. Semi-Flex. Pwr. Trans.
RG-15/U	75	0.057	2	Syn. Res.	0.545	17	C	20	1.5	2.9	5,000	Med. Pwr. Cont. Flex.
RG-16/U	52	0.128	1	Syn. Res.	0.63	20	D	30	1.2	2.8	6,000	For Pressurization

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-17/U	51	0.188	1	Vinol	0.870	28	G	30	.85	1.8	11,000	High Pwr. Trans.
RG-18/U	51	0.188	1	Armor	0.945	30	J	30	.85	1.8	11,000	Same as RG-17/U
RG-19/U	51	0.25	1	Syn. Res.	1.12	36	K	30	.68	1.5	14,000	High Pwr. Trans.
RG-20/U	51	0.25	1	Armor	1.195	38	L	30	.68	1.5	14,000	Same as RG-19/U
RG-21/U	51	0.051	2	Vinol	0.332	11	A	30	14	25	2,700	Attenuator Cable
RG-22/U	95	Two 27/16	1	Vinol	0.405	13	B	30	3.6	7.0	1,000	Small Twin Conductor
RG-22A/ U	95	Two 2/18	2	Syn. Res.	0.420	13	B	16	3.4		1,000	Twin Conductor
RG-23/U	125	7/21	2	Vinol	0.650	21	D	13	1.7	3.5	3,000	Balanced Dual Coax.
RG-24/U	125	27/21	2	Vinol	0.715 X 1.01		J	13	1.7	3.5	3,000	Same as RG-23/U
RG-25/U	50	19/.0117	2	Neoprene	0.565	18	C	60			5,650	Med. Size Pulse Cable
RG-25A/U	48	19/.0117	2	Syn. Rub.	0.505	16	C	50			5,650	Replaces RG-25/U
RG-26/U	50	19/.0185	1	Armor	0.475	15	B	60			5,650	Armored RG-25/U
RG-26A/U	48	19/.0117	1	Armor	0.505	16	C	50			5,650	Replaces RG-26/U
RG-27/U	50	19/.0185	1	Armor	0.65	21	D	50			10,600	Lge. Pulse Cable
RG-28/U	50	19/.0185	2	Neoprene	0.805	26	F	50			15,000	Lge. Pulse Cable

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max Voltage R. M. S.	Remarks
RG-29/U	51	0.032	1	Syn. Res.	0.184	6	OC	30	4.2	7.9	1,900	Small Video for Equip.
RG-30/U	50	7/26	1	Syn. Res.	0.250	8	OB					Low Loss Dielectric
RG-32/U	51	7/21	1	Syn. Res.	0.465	15	B					
RG-33/U	51	0.102	1	L. S.	0.470	15	B				4,200	Spec. Equip. Cable
RG-34/U	72	7/21	1	Syn. Res.	0.625	20	D	21	1.9	3.5	5,200	Spec. Equip. Cable
RG-35/U	71	1/9	1	Armor	0.910	30	G	21	0.7	1.8	10,000	Cable to Replace Rigid Lines
RG-36/U	69	0.162	1	Armor	1.18	38	L				13,000	Cable to Replace Rigid Lines
RG-37/U	50	1/20	1	Syn. Res.	0.190	6	OB	38			750	Spec. Equip. Cable
RG-38/U	50	1/17	2	Syn. Res.	0.292	9	OA	38	9.0	19.0	1,000	Attenuator Cable
RG-39/U	70	1/22	2	Syn. Res.	0.292	9	OA	28	910		1,000	Highly Flexible
RG-40/U	70	1/22	2	Neoprene	0.420	13	B	28	1.0		1,000	Spec. Equip. Cable
RG-41/U	70	16/30	1	Neoprene	0.425	14	B	27	10.0		3,000	Used for Twisting
RG-42/U	76	0.0285	1	Vinol	0.275	11	OA	20	17	29	2,700	Attenuator Cable
RG-43/U	95	7/21	1	Syn. Res.	0.617	20	D					
RG-48/U				Brass	3 x 1½						1,900	Wave Guide SG SV

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-49/U				Brass	2 x 1							Wave Guide SG-6B
RG-52/U				Brass	1 x 1½							Wave Guide
RG-53/U				Brass	½ x ¼							Wave Guide
RG-54/U	58	7/26	1	Syn. Res.	.250	8	OB	27			1,500	Superceded by RG-54A/U
RG-54A/U	58	7/0.0152	1	Syn. Res.	.250	8	OB	26.5	3.1	5.7	3,000	Similar to RG-30/U
RG-55/U	51	1/20	2	Syn. Res.	.206	7	OB	28	4.2	7.9	1,900	I.F. for Equip. Wiring
RG-56/U		19/.0117	1	Plastic	.535	17	C	28.5			1,900	Spec. Twist Characteristic
RG-57/U	95	Two 7/21	1	Syn. Res.	.625	20	D	17	3.0	5.9	3,000	Lge. Twin Conductor
RG-58/U	53.5	1/20	1	Vinol	.195	6	OB	28	4.2	7.9	1,900	Internal Hook-Up, Solid Cond.
RG-58A/U	52	1/20	1	Vinol	.195	6	OB	28	5.3	9.6	1,900	Stranded Inner Cond.
RG-59/U	70	1/22	1	Syn. Res.	.242	8	OB	21	3.8	7.0	2,300	Small Video Cable
RG-60/U	50		1	Neoprene	.425	14	B					
RG-62/U	93	1/22	1	Vinol	.242	8	OB	13.5	3.1	5.5	750	Low Capacity
RG-63/U	125	1/22	1	Vinol	.405	13	B	10	2.0	3.6	1,000	
RG-63A/U	125	1/20	1	Vinol	.415	13	B				1,000	Air-Spaced

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-64/U	48	19/.0117	2	Syn. Rub.	.495	16	C				8,000	
RG-64A/U	48	19/.0117	2	Neoprene	.475	15	B	50			5,650	
RG-65/U	950	1/32F	1	Syn. Res.	.285	9	OA	44			1,000	Delay Lines
RG-66/U				Silver								Wave Guide
RG-67/U				Alum.								Wave Guide
RG-68/U				Alum.								Wave Guide
RG-69/U				Brass								Wave Guide
RG-71/U	93	1/22	2	Syn. Res.	.250	8	OB	13.5	3.1	5.5	750	Low Capacity
RG-72/U	150	1/22	1	Vinylite	.630	20	D					
RG-74/U	52	1/10	2	Armor	.615	20	C	29.5	1.4	2.8	5,500	High Voltage Pulse
RG-75/U				Alum.								Wave Guide
RG-76/U	50	.250		Brass								Trans. Line
RG-77/U	48	19/.0117	2	Syn. Res.	.415	13	B	50			5,650	High Voltage Pulse
RG-78/U	48	19/.0117	1	Vinol	.385	12	B	50			5,650	High Voltage Pulse
RG-79/U	125	1/22	1	Armor	.475	15	B	10	2.0	2.6	1,000	

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-79A/U	125	1/22	1	Armor	.475	15	B	10			1,000	
RG-80/U	51	.375	1		.938	30	J					Rigid Beaded
RG-81/U	52	.062	1	Pyrotenax	.375	12	A	38			5,700	Semi-Flexible
RG-82/U	52	.125	1	Pyrotenax	.750	24	E	37			6,400	Semi-Flexible
RG-83/U	35	10	1	Vinol	.405	13	B	44	3	4.5	2,000	Antenna Match Equip.
RG-84/U	71	9	1	Lead	1.00	16	J	21			10,000	
RG-85/U	71	9	1	Jute	1.565	40	P	21			10,000	Underground
RG-87/U	52	7/9	2	Fibre Glass	.355	11	A	27			5,000	High Temp. Use
RG-89/U	125	1/22	1	Vinylite	.632	20	D		2		1,000	Spec. Low Capacity
RG-91/U				Brass								**Wave Guide**
RG-92/U	50	.375	1	Copper	.812	26	F				4,000	Tubing-Teflon Beading
RG-93/U	50	.188	1	Fibre Glass	.465	15	B	27				Abrasion, Moisture Resit.
RG-94/U	50	10	2	Fibre Glass	.465	15	B	27				Abrasion, Moisture Resit.
RG-95/U				Alum.	2 x 1							Wave Guide
RG-108/U	76	Two 7/28	1	Vinyl	.235	8	OB	23			1,000	

CABLE COAXIAL

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-111/U	95	2-7/.0152	2	Armor	.490	16	C	16	3.4		1,000	
RG-114/U	185	33	1	Vinyl	.405	13	B	6.5				
RG-115/U	52	7/21	2	Fibre Glass	.370	12	A	34			8,000	
RG-122/U	50	27/36T	1	Vinyl	.160	5	OC	29.3			1,900	
RG-130/U	95	Two 7/21	1	Vinyl	.625	20	D	17			3,000	
RG-131/U	95	Two 7/21	1	Armor	.710	23	D	17			3,000	
KS-9011					.685	22	D					RG-/U No. Unassigned
KS-9309					.750	24	E					RG-/U No. Unassigned

TEFLON DIELECTRIC UHF CABLES, HIGH TEMP. USE

Army-Navy Type Number	Characteristic Impedance	Inner Conductor Wire Size	No. Shielding Braids	Outer Covering	Outside Diameter	O.D. In 32nd In.	Tube Size	MMFD/FT Capacitance	Attenuation DB/100Ft. 100MC	Attenuation DB/100Ft. 300MC	Max. Voltage R. M. S.	Remarks
RG-87A/U	50	7/20	2	Fibre Glass	.425	14	B	29	2.1	4.0	3,000	
RG-116/U	50	7/20	2	Armor	.475	15	B	29	2.1	4.0	3,000	Similar to RG-10/U
RG-117/U	50	.188	1	Fibre Glass	.730	23	E	29	.78	1.58	6,000	
RG-118/U	50	.188	1	Armor	.780	25	E	29	.78	1.58	6,000	Similar to RG-18/U
RG-119/U	50	10	2	Fibre Glass	.465	15	B	29	1.35	2.6	4,000	
RG-120/U	50	10	2	Armor	.515	32	C	29	1.35	2.6	4,000	
RG-126/U	50	7/24	1	Fibre Glass	.275	9	OA	29			2,000	

TEFLON CABLE INTERCONNECTION

TEFLON TO POLYETHELENE ABOVE OR BELOW HEAT ZONE STANDARD INSTALLATIONS

TYPE I H.V.	TYPE II L.V.	TYPE III	TYPE IV
RG-18/U	RG-18/U	RG-10/U	RG-10/U
UG-154/U	UG-167A/U	MX-564/U	MX-564/U
UG-586/U	UG-29B/U	UG-218/U	UG-23B/U
		UG-29B/U	UG-218/U
UG-532/U	UG-557/U	UG-557/U	MX-564/U
RG-118/U	RG-118/U	RG-118/U	RG-116/U

SUBSTITUTE INSTALLATIONS

TYPE IA H.V.	TYPE IIIA
RG-18/U	RG-10/U
UG-154/U	MX-564/U
UG-215/U	UG-218/U
	UG-270/U
UG-532/U***	UG-532/U***
RG-118/U	UG-118/U

***REDUCE DIA. OF PIN OF UG-532/U BY 0.010" TO FIT UG-215/U OR UG-270/U

TEFLON TO TEFLON - IN HEAT ZONE STANDARD INSTALLATIONS

TYPE X H.V.	TYPE XI L.V.	TYPE XII
RG-118/U	RG-118/U	RG-116/U
UG-532/U	UG-557/U	MX-564/U
UG-533/U	UG-29B/U**	UG-218/U*
		UG-23B/U*
UG-532/U	UG-557/U	MX-564/U
RG-118/U	RG-118/U	RG-116/U

* ONLY THE "B" VERSION OF THESE CONNECTORS WITH THE SYN. RUBBER GSKTS. REPLACED WITH SILICONE MAY BE USED IN THIS APPLICATION.
** "B" VERSIONS ONLY

TEFLON CABLE INSTALLATIONS

ASSEMBLY INSTRUCTIONS

No.	CONNECTOR UG-()/U	CABLE RG-()/U	DRAWING NUMBER
1	21	10	RE49AA196
2	21, 23	116	RE49F578
3	21A,21B,23A,23B	116	RE49F379
4	21A,21B,23A,23B	****	RE49F406
5	154	18	RE49F339
6	167 167A	18 18	RE49Z232 RE49F2001
7	532	118	RE49F580
8	557	118	RE49F584

****Instructions for installing armor clamp with improved type N connector.

R. F. CABLE SPECIFICATIONS

Cable	Drawing	Specification
RG-10/U		JAN-C-17
RG-18U		JAN-C-17
RG-116/U	RE49AA460	
RG-118/U	RE49AA582	

CABLE CONNECTORS

Connectors	Drawing
UG-21B/U	RE49F402
UG-23B/U	RE49F402
UG-29B/U	RE49F258
UG-154/U	RE49F284
UG-167A/U	RE49F215
UG-215/U	RE49F344
UG-270/U	RE49F388
UG-532/U	RE49F562
UG-533/U	RE49F563
UG-557/U	RE49F583
UG-586/U	RE49F591

NOTES:

1. Use only unbroken lengths of Teflon Cable in heat zone. Use most economical length that will do the job with minimum waste.
2. Install only standard installations except when shortages of connectors make the use of substitute installations mandatory.
3. Where two Teflon Cables must be connected follow standard installations. See page 27G.

TEFLON CABLE
FOR HIGH TEMPERATURE
RE62F2000B

CIRCUIT IDENTIFICATION

(Follow Plan for Specification of Importance & Readiness Class)

Circuit	Name	Importance	Readiness Class
A	Officers' Call Bell System—NV-4		
AC	CCA Transfer Indicator System—NV-2		
AH	Battery Ampere Hour Indicator System—SV-1		
AS	Sonar Torpedo Warning Signal—SV-2		
BL	Barrier Ready Light System—NV-2		
BM	Bearing Monitor System—SV-2		
BP	Battery Position Order System—SV-2		
BU	Barrier-Up Indicator System—NV-2		
BV	Ventilation Damper Position Indicator—NV-1		
CA	Collision Alarm Signal System—SV-1 Surface, V-1 Subs		
CF	Constant Frequency Supply System—SV-1		
DB	Depth Indicator System—V-2		
DC	Depth Control System—V-2		
DG	Remote Draft Indicator System—NV-2		
DW	Wrong Direction Indicator System—V-2		
E	Voice Tube & Sound Powered Telephone Call Bell—SV-1		
EA	Fireroom Emergency Signal System—NV-1		
EB	Boiler Feed Signal System—NV-1		
1EC	Lubricating Oil Low Pressure Alarm-Main Engine—SV-2		
2EC	Lubricating Oil Low Pressure Alarm-Auxiliaries—SV-1		
ED	Generator Air High Temperature Alarm—SV-1		
EF	Bearing High Temperature Alarm System—NV-1		
EG	Engine Governor Control & Tachometer System—SV-2		
EH	Cruising Turbine Exhaust Alarm System—SV2		
EJ	Feed Pressure Alarm System—NV-2		
EK	Air Pressure Alarm System—NV-2		
EN	Low Flow Superheater Protection System—NV-1		
EQ	Desuperheater High Temperature Alarm—SV-1		
ET	Boiler Temperature Alarm System—NV-1		
EV	Explosive Vapor Detector System—SV-1		
EW	Circulating Water High Temperature Alarm—NV-1		
F	High Temperature Alarm—SV-1		
FC	Flight Crash Signal System—NV-2		
FD	Flooding Alarm System—NV-1		
FH	Sprinkling Alarm—SV-1		
FL	Flight Deck Landing Observers Signal System—NV-2		
FR	Carbon Dioxide Release Alarm System—NV-1		
FV	Conflagration Ventilation Signal—NV-1		
FW	Flight Deck Landing Observers Signal System—NV-2		
G	General Alarm and Chemical Attack Alarm—SV-1		

CIRCUIT IDENTIFICATION

(Follow Plan for Specification of Importance & Readiness Class)

Circuit	Name	Importance	Readiness Class
GD	Diving Alarm System—SV-2		
HB	Anchor Order System—NV-2		
HC	Anemometer Indicator System—NV-1		
HD	Wind Direction Indicator System—NV-1		
HE	Wind Intensity Indicator System—NV-1		
HG	Air Flow Indicator System—NV-1		
HT	Heeling Order System—NV-2		
HYD	Hydrogen Detector System—SV-1		
J	Dial Telephone System—NV-1		
JA-JZ	Primary Battle Telephone Circuits—V-1		
K	Propeller Revolution Indicator System—NV-2		
KM	Engine Revolution Indicator System—NV-2		
L	Rudder Order System—V-2		
1LA	Course—Steering Order System—SV-2		
2LA	Secondary Conn Course—Steering Order—SV-2		
LB	Steering Emergency Signal System—V-2		
LC	Gyro Compass System—V-2		
LCS	Electrical Steering Control System—V-2		
LF	Landing Officer's Contact System—NV-2		
LM	Magnetic Compass System (Remote Indicating)—SV-1		
LR	Inclination Angle Recorder System—SV-2		
LS	Submersible Steering Gear Alarm—SV-2		
LT	Remote Tank Level Indicator System—NV-1		
M	Propeller Order System—NV-2		
MB (1 & 2)	Engine Order and Motor Order System—V-2		
3MB	Engine Control Indicator System—V-2		
1MC	General Announcing—SV-1		
2MC	Engineers' Announcing—SV-1		
3MC	Aviators' Announcing—SV-1		
4MC	Damage Control Announcing—SV-2		
5MC	Flight Deck Announcing—SV-2		
6MC	Intership Announcing—SV-2		
7MC	Submarine Control Announcing—V-1		
10MC	Docking Control Announcing—SV-1		
11-16MC	Turret Announcing—SV-3		
17MC	Double Purpose Battery Announcing—SV-3		
18MC	Bridge Announcing System—NV-2		
19MC	Ready Room Announcing—SV-2		
20MC	Combat Information Announcing—SV-1		
21MC	Captain's Command Announcing—SV-1		

CIRCUIT IDENTIFICATION

(Follow Plan for Specification of Importance & Readiness Class)

Circuit	Name	Importance	Readiness Class
22MC	Radio Room Announcing—NV-1		
23MC	Distribution Control Announcing System—SV-1		
24MC	Flag Officer's Command Announcing System—SV-1		
25MC	Wardroom Announcing System—NV-4		
26MC	Machinery Operation Announcing System—SV-1		
27MC	Sonar Control Announcing—SV-1		
28MC	Squadron Announcing System—NV-4		
29MC	Sonar Information Announcing System—SV-2		
30MC	Bomb Shop Announcing System—SV-2		
31MC	Escape Trunk Announcing System—SV-2		
32MC	Missilé Control Announcing System—SV-3		
33MC	Gunnery Control Announcing—SV-3		
34MC	Life Boat Announcing System—SV-1		
MD	Engine Control and Indicator System—V-2		
MG	Cruising Turbine Air Clutch Protective System—SV-2		
ML	Mast Position Indicator System—SV-1		
MP	Sound Motion Picture System—NV-4		
N	Rudder Angle Indicator System—V-2		
3N	Emergency Rudder Angle Indicator System—SV-2		
NB	Bow Plane Angle Indicator System—V-2		
NR	Bow Plane Rigging Indicator System—SV-2		
NS	Stern Plane Angle Indicator System—V-2		
PB	Pyrometer Indicator System—NV-1		
PR	Pyrometer Recorder System—SV-1		
PW	Clutch Position Indicator System—SV-2		
QA	Air Lock Indicator System—NV-1		
QD	Gasoline Compartment Exhaust Blower Ind. and Alarm—V-1		
RA	Turret Emergency Alarm System. NV-1		
RC	Catapult Signal System—NV-2		
RF	Traffic Control Ready Light System—NV-2		
RW	Rocket Warning Signal—SV-3		
S	I.C. Switchboard Power Interties—V-1		
1SB	Salinity Indicator for Distilling Plants—SV-1		
2SB	Salinity Ind. System for Condensate Systems—SV-1		
3SB	Salinity Indicator for Battery Cooling—SV-1		
SN	Snorkel Safety System—V-2		
SP	Shaft Position Alarm System—NV-2		
SR	Electric Character Transmission and Indicator—NV-1		
SW	Sonar Alerting System—SV-1		
TB	Forced Draft Blower Tachometer System—NV-1		

CIRCUIT IDENTIFICATION

(Follow Plan for Specification of Importance & Readiness Class)

Circuit	Name	Importance	Readiness Class
TD	Water Level Indicator System—NV-1		
TG	Vehicle Stowage Signal System—NV-1		
TJ	Trim Angle Indicator System—V-2		
TL	Dead Reckoning System—SV-2		
TP	Main Ballast Tank Indicator System—NV-1		
TR	Hull Opening Indicator System—V-1		
TS	Turret Sprinkling Control System—NV-1		
TV	Television Plot Transmission System—NV-2		
TW	Train Warning Signal System—NV-1		
VS	Valve Position Indicator System—NV-1		
W	Whistle Operating System—NV-2		
XJ	Supplementary Telephone Circuits—SV-1		
XJA-XJZ	Auxiliary Battle Telephone System—SV-1		
XLC	Auxiliary Gyro Compass System—V-2		
XN	Auxiliary Rudder Angle Indicator System—NV-2		
XNB	Auxiliary Bow Plane Angle Indicator System—NV-2		
XNS	Auxiliary Stern Plane Angle Indicator System—NV-2		
Y	Underwater Log System—V-2		
4Y	Dummy Log System—NV-3		
GE	Main Battery Control—V-3		
GEP	Main Battery Remote Control—V-3		
GM	Heavy Machine-Gun Control—V-3		
GMP	Heavy Machine-Gun Remote Control		
GR	A. S. Attack Plotter—V-3		
GS	Double Purpose Battery Control—V-3		
GSP	Double Purpose Battery Remote Control—V-3		
GT	Optical Target Designation—SV-3		
GU	A. S. Projecter Control—V-3		
GW	Rocket Control—V-3		
GY	Light Machine-Gun Control—V-3		
1LG	Main Battery Gyro Stabilizer—V-3		
2LG	Double-purpose Battery Gyro Stabilizers—V-3		
8LG	A. S. Gyro Stabilizer—V-3		
9LG	Rocket Gyro Stabilizer—V-3		
LP	Loading Position Indicator—SV-3		

CIRCUIT IDENTIFICATION

(Follow Plan for Specification of Importance & Readiness Class)

Circuit	Name	Importance	Readiness Class
1MT	Mine Laying Timing System—SV-3		
2MT	Mine Laying Counter System—SV3		
1PA	Main Battery Gun Firing—V-3		
2PA	Double Purpose Battery Gun Firing—V-3		
4PA	Heavy Machine-Gun Firing—V-3		
6PA	Torpedo Firing—V-3		
7PA	Depth Charge Projector Firing—V-3		
8PA	A. S. Projector Firing—V-3		
9PA	Rocket Firing System—V-3		
PD	Radar Target Designation System—SV-3		
PE	Main Battery Radar Indicating System—V-3		
PEP	Main Battery Radar System (Automatic)—V-3		
PL	Teleplotter System		
PM	Heavy Machine-Gun Radar (Indicating)—V-3		
PMP	Heavy Machine-Gun Radar (Automatic)—V-3		
PS	Double-Purpose Battery Radar (Indicating)—V-3		
PSP	Double-Purpose Battery Radar (Automatic)—V-3		
PW	Clutch Wrong-Position Indicator—SV-2		
Q	Projectile Hoist Operating Handle Elec. Interlock—SV-3		
QB	Shell Hoist Latch Indicator—V-3		
QC	Powder Hoist Control—V-3		
QE	Projectile Hoist Control—V-3		
QM	Training Gear Power Control—V-3		
QP	Elevating Gear Power Control—V-3		
QN	Parbuckling Gear Power Control—V-3		
QR	Projectile Ring Power Control—V-3		
QS	Turret Slide Control—V-3		
1R	M. B. Gun Ready Light—SV-3		
2R	Double Purpose Battery Gun Ready Light—SV-3		
6R	Torpedo Ready Light and Battle Order—SV-3		
9R	Rocket Ready Light—SV-3		
R-CA	Countermeasures Antennas		
R-CC	Countermeasures Control		
R-CM	Countermeasures Modulators		
R-CP	Countermeasures Power		
R-CT	Countermeasures Trigger		
RE	Turret Power Elevating Indicator		
R-ER	Radar System Repeaters		
1R-ER	Air Search		
2R-ER	Surface Search		

CIRCUIT IDENTIFICATION

(Follow Plan for Specification of Importance & Readiness Class)

Circuit	Name	Importance	Readiness Class
3R-ER	I.F.F. Equipment		
4R-ER	Main Battery Fire Control (Forward)		
5R-ER	Secondary Battery Fire Control		
6R-ER	Auxiliary Anti-Aircraft Battery		
7R-ER	Heavy Machine Gun Battery		
8R-ER	Torpedo Director Circuits		
9R-ER	Beacon Circuits		
12R-ER	Air Search		
13R-ER	A.E.W. Radar		
42R-ER	Main Battery Fire Control (Aft)		
RP	Projectile Ring Indicator Light—SV-3		
R-RA	Radio Communication System Xmtr/Rcvr Antenna		
R-RP	Radio Communication System Power Cables		
R-RR	Radio Communication Receiving Cables		
R-RT	Radio Communication System Transmitter Cables		
R-RV	Radio Communication Systems, Radiophone Cables		
R-RB	Radio Communication Systems, Broadcast Dist. Cables		
R-RF	Radio Communication Systems, Freq. Meter Ext. Cables		
RS	Sonar Target Designation—SV-3		
R-SA	Sonar Attack Aids		
R-SD	Sonar Depth Determination		
R-SL	Sonar Listening		
R-SR	Sonar Ranging		
R-SS	Sonar Sounding		
R-ST	Sonar Shipboard Anti-Sub Attack Teacher		
SO	Stabilized Sonar System—V-3		
1U	Main Battery Cease-Firing Signal—SV-3		
2U	Double-Purpose Battery Cease-Firing Signal—SV-3		
4U	Heavy Machine Gun Battery Cease-Firing Signal—SV-3		
5U	Light Machine Gun Battery Cease-Firing Signal—SV-3		
9U	Rocket Cease-Firing Signal—SV-3		
45U	Sector Control Cease-Firing—SV-3		
1VB	Main Battery Salvo Signal—SV-3		
2VB	Double-Purpose Battery Salvo Signal System—SV-3		
VE	Depth Charge Release Signal—SV-3		

SOUND POWERED TELEPHONE CIRCUITS

Circuit	Designation
JA	Captain's Battle Circuit
1JB1-4	Turret Spotters
JC	Control (Ordnance)
1JC	Turret Control
2JC	Double Purpose Contol
4JC	Heavy Machine Gun Control
5JC	Light Machine Gun Control
JCT	Control (Target Designation)
JD	Unassigned
JE	Unassigned
JF	Flag Officers
1JF	Navy Flag
2JF	Air Recognition
3JF	Air Distant Control
4JF	Air Local Control
5JF	Gun Fire Support
6JF	Flag Information
1JG	Aircraft Control
2JG	Aircraft Information
3JG	Aircraft Service
5JG	Aviation Ordnance
7JG	Conflagration Control
JH	Switchboard Cross Connecting
JI	Unassigned
1JK1-4	Turret Fuzesetters Computers
1JK10-60	Turret Fuzesetters Turrets
2JK1-4	Double Purpose Fuzesetters Computers
2JK10-180	Double Purpose Fuzesetters Mounts
JL	Lookouts (Surface and Sky)
JM	Mine Control
JN	Illumination Control
JN1-4	Illumination Control Groups
JO	Switchboard Operators
1JP1-4	Turret Control Groups
1JP10-60	Turret Control Turrets
2JP1-6	Double Purpose Control Groups
2JP10-180	Double Purpose Mounts
4JP1-25	Heavy Machine Gun Control Groups
8JP	ASW Weapon Group Control
9JP	Rocket Group Control

SOUND POWERED TELEPHONE CIRCUITS

Circuit	Designation
10JP	Guided Missile Group
1JQ1-4	Turret Sightsetters Computers
1JQ10-60	Turret Sightsetters Turrets
2JQ1-4	Double Purpose Sightsetters Computers
2JQ10-180	Double Purpose Sightsetters Mounts
JR	Debarkation Control
1JS	Combined Radar-Radio Information
2JS	CIC Interphone Circuit
20JS	Radar Repeater
21JS	Search Radar No. 1
22JS	Search Radar No. 2
23JS	Search Radar No. 3
24JS	Search Radar No. 4
51JS	Radio Direction Finder
61JS	Sonar Information No. 1
62JS	Sonar Information No. 2
63JS	Sonar Information No. 3
71JS	Radar Repeater Control
81JS	Radar-Radio Countermeasure
82JS	Radio Intelligence
83JS	SESP
1JV	Maneuvering, Docking, and Catapult Control
2JV-5JV	Engineer's Circuit
JW	Ship Control Rangefinders
1JW1-4	Turret Range Control Groups
1JW10-60	Range Control Turrets
2JW1-4	Double Purpose Range Groups
2JW10-180	Double Purpose Mounts
JX	Radio and Signals
JY	Unassigned
2JZ	Damage and Stability Control
3JZ	Upper Deck Repair
4JZ	Forward Repair
5JZ	After Repair
6JZ	Amidships Repairs
7JZ	Engineer's Repair
8JZ	Flight Deck Repair
9JZ	Magazine Sprinkling and Ordnance Repair Forward
10JZ	Magazine Springling and Ordnance Repair Aft.

SUPPLEMENTARY (STRING TYPE) TELEPHONE CIRCUITS

Circuit	Designation
X1J	Captain's and Admiral's Cruising
X1J	Ship's Administration (in general used only on ships not having a Ship's Service Telephone System installed.)
X2J	Leadsman and Anchor Control
X3J	Deck and Engineer Watch Officers
X4J	Electrical Service
X6J	Radar Service
X7J	Gasoline Control
X8J	Aviators' Ready Room
X9J	Air Intelligence
X11J	Signal Spotters
X11J1-2	Signal Spotters
X12J-1	Capstan Control
X13J	Plane Crane Control
X15J	Fog Oil Filling
X16J	Plane Elevator
X17J	5-inch Ammunition Supply
X17J1-5	5-inch Ammunition Mounts
X18J	Machine Gun Ammunition Supply Circuit
X18J1-3	Machine Gun Ammunition Hoists
X19J	24-inch Signal Searchlight
X20J	Bomb Elevators
X21J	Catapult Control
X21J1-3	Catapult Control No. 1 to 3
X22J	Boatswain's Mate
X24J	Ammunition Transfer
X25J	Sonar Service
X26J	Burst Observers and Photo-triangulation (AG-128)
X27J	Stores Issue
X28J	Net Laying Control
X29J	Timing and Recording Circuit
X30J	Wind Box Information
X40J	Casualty Communication
X41J	Bomb Shop Service Circuit No. 1
X42J	Bomb Shop Service Circuit No. 2

AUXILIARY BATTLE TELEPHONE CIRCUITS

Circuit	Designation
XJA	Captain's Battle Circuit
X1JC	Auxiliary Turret Control
X2JC	Auxiliary Double Purpose Control
X1JG	Aircraft Control
X1JV	Auxiliary Maneuvering and Docking
XJX	Radio and Signals
X2JZ	Damage and Stabiity Control

SPECIAL SUPPLEMENTARY CIRCUITS FOR TURRETS

X101J-X103J	Turret Officer's Circuit Turret 1
X104J-X106J	Powder Hoists Turret 1
X107J-X109J	Projectile Hoist
X201J-X203J	Turret Officer's Circuit Turret 2
X204J-X206J	Powder Hoist Turret 2
X207J-X209J	Projectile Hoist
X301J-X303J	Turret Officer's Circuit Turret 3
X304J-X306J	Powder Hoist Turret 3
X307J-X309J	Projectile Hoist
X401J-X403J	Turret Officer's Circuit Turret 4
X404J-X406J	Powder Hoist Turret 4
X407J-X409J	Projectile Hoist
X501J-X503J	Turret Officer's Circuit Turret 5
X504J-X506J	Powder Hoist Turret 5
X507J-X509J	Projectile Hoist
X601J-X603J	Turret Officer's Circuit Turret 6
X604J-X606J	Powder Hoist Turret 6
X607J-X609J	Projectile Hoist

GS CIRCUIT IDENTIFICATION

Double Purpose Battery Control System
Secondary Battery for BB—CL—CA
Main Battery for DD and Auxiliary

1GS	Gun Battle Orders
2	Gun Train Orders
3	Gun Elevation Orders
4	Director Train Angle
5	Director Elevation Angle
7	Own Ship's Course
8	Search Light Train Order
9	Search Light Shutter Controls
13	Fuse Setter Order
14	Director Train Control
15	Director Elevation Control
16	Director Train Information
17	120 Volt D.C. Supply
18	Search Light Elevation Order
19	Sight Angle Order
20	Sight Deflector Order
22	Deflection Spot
23	Elevation Spot
24	Auxiliary Illumination—6 Volts
25	Parallax Range
26	Elevation Parallax
27	Instrument Heaters
28	Stable Element Follow-up
29	Director Parallax
31	Observe Range Finder Range
32	Range Finder Correction
33	Range Spot Order
35	Director Elevation Information
37	Target Angle Repeaters
42	Star Shell Train Order
43	Star Shell Elevation Order
50	Stable Element Level
51	Control Transmitter Signals
52	Gun Train Order Information
53	Star Shell Fuse Setting Order
62	Star Shell Train Spot Order
63	Star Shell Elevation Spot Order
73	Star Shell Range Spot Order
81	Search Light Battery Arc and Shutter
GSL	Double Purpose Battery Miscellaneous A.C. Supply Circuit

IDENTIFICATION OF CABLES AND COLOR CODE OF CABLE TAGS

C	Interior Communication Cables
D	Degaussing
F	Ship's Service Lighting Feeders and General Power Feeders
FB	Battle Power Feeders
G	Fire Control Circuits
MS	Mine Sweeping
P	Electric Propulsion Cables
R	Electronic, Radio, Radar, and Sonar Cables
RL	Running, Anchor, and Signal Lights
XFE	Emergency Lighting and Emergency Power Feeders

CABLE IDENTIFICATION TAGS (IMPORTANCE)

	Ships Constructed Prior to 1950	New Construction
Vital circuits (V)	Light Blue	Red
Semivital (SV)	Green	Yellow
Nonvital (NV)	Gray	Gray

CLASSIFICATION COLORS (READINESS CLASS) ON IC SWITCHBOARD AND PANELS

Class 1—Yellow-continuously energized
Class 2—Black-underway Circuits
Class 3—Red-battle Circuits
Class 4—White-convenience Circuits

NOTE:FOLLOW PLAN FOR SPECIFICATION AND READINESS CLASS

STUD PADS

NOTES:

1. STACKING OF STUD PADS TO A MAXIMUM HEIGHT OF 3" IS PERMISSIBLE FOR SIZES 1H THROUGH 12H.

2. THE JUNCTION OF STACKED PADS WITH EACH OTHER SHALL BE WELDED IN TWO INCREMENTS, EACH $\frac{3}{8}$" LONG AND SPACED 180° ON CENTERS TO PREVENT LOOSENING FROM VIBRATION OR ADJUSTMENTS.

STUD PAD

SIZES
1H TO 6H
WITH SOLID HEAD

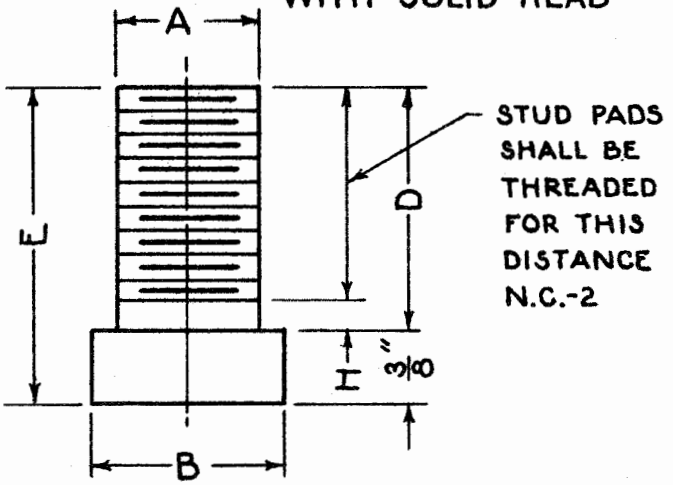


TABLE 1

STUD PAD DIMENSIONS					
SIZE	A & THD	B	D	E	H
1H	$\frac{1}{4}$"-20	$\frac{1}{2}$"	$\frac{1}{2}$"	$\frac{7}{8}$"	$\frac{1}{16}$"
2H	$\frac{5}{16}$"-18	$\frac{9}{16}$"	$\frac{3}{4}$"	$1\frac{1}{8}$"	$\frac{1}{16}$"
3H	$\frac{3}{8}$"-16	$\frac{5}{8}$"	$\frac{3}{4}$"	$1\frac{1}{8}$"	$\frac{1}{16}$"
4H	$\frac{1}{2}$"-13	$\frac{3}{4}$"	$\frac{7}{8}$"	$1\frac{1}{4}$"	$\frac{5}{32}$"
5H	$\frac{5}{8}$"-11	$\frac{7}{8}$"	$1\frac{1}{4}$"	$1\frac{5}{8}$"	$\frac{5}{32}$"
6H	$\frac{3}{4}$"-10	1"	$1\frac{1}{4}$"	$1\frac{5}{8}$"	$\frac{5}{32}$"

STUD PAD

SIZES

7H TO 12H

WITH TAPPED HOLE

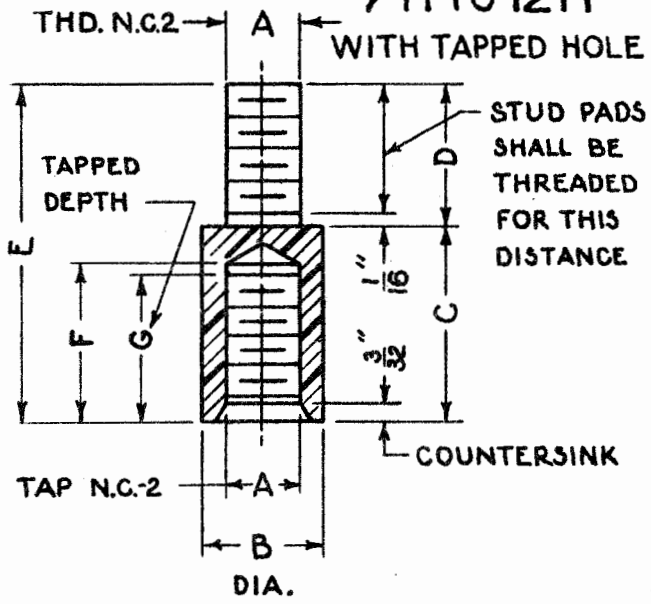


TABLE 2

STUD PAD DIMENSIONS							
SIZE	A & THD	B	C	D	E	F	G
7H	1/4"-20	1/2"	1"	1/2"	1 1/2"	3/4"	5/8"
8H	5/16"-18	9/16"	1"	3/4"	1 3/4"	13/16"	3/4"
9H	3/8"-16	5/8"	1"	3/4"	1 3/4"	13/16"	3/4"
10H	1/4"-20	1/2"	2"	1/2"	2 1/2"	1 3/4"	5/8"
11H	5/16"-18	9/16"	2"	3/4"	2 3/4"	1 3/4"	13/16"
12H	3/8"-16	5/8"	2"	3/4"	2 3/4"	1 3/4"	13/16"

SIZES
13H TO 18H

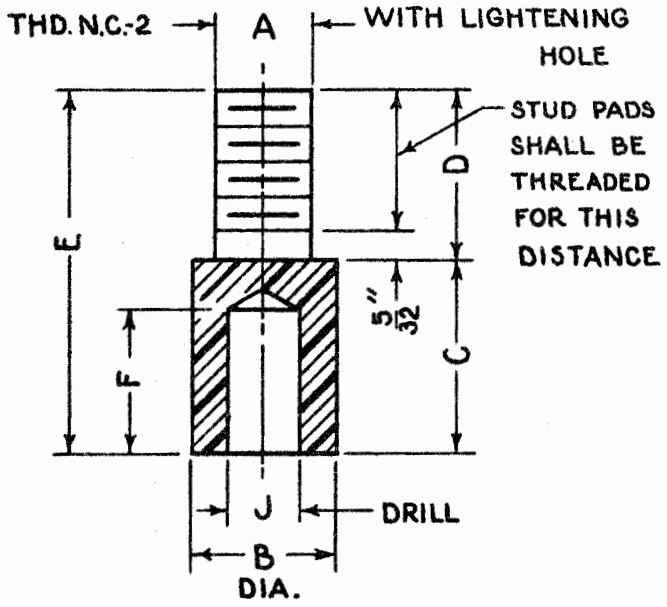


TABLE 3

STUD PAD DIMENSIONS							
SIZE	A & THD.	B	C	D	E	F	J
13H	1/2"-13	3/4"	1"	7/8"	1 7/8"	3/4"	3/8"
14H	5/8"-11	7/8"	1"	1 1/4"	2 1/4"	3/4"	1/2"
15H	3/4"-10	1"	1"	1 1/4"	2 1/4"	3/4"	5/8"
16H	1/2"-13	3/4"	2"	7/8"	2 7/8"	1 3/4"	3/8"
17H	5/8"-11	7/8"	2"	1 1/4"	3 1/4"	1 3/4"	1/2"
18H	3/4"-10	1"	2"	1 1/4"	3 1/4"	1 3/4"	5/8"

CURRENT COLOR CODE OF MULTIPLE CONDUCTOR CABLE

1	Black	Tracer	Tracer
2	White		
3	Red		
4	Green		
5	Orange		
6	Blue		
7	White	Black	
8	Red	Black	
9	Green	Black	
10	Orange	Black	
11	Blue	Black	
12	Black	White	
13	Red	White	
14	Green	White	
15	Blue	White	
16	Black	Red	
17	White	Red	
18	Orange	Red	
19	Blue	Red	
20	Red	Green	
21	Orange	Green	
22	Black	White	Red

23	White	Black	Red
24	Red	Black	White
25	Green	Black	White
26	Orange	Black	White
27	Blue	Black	White
28	Black	Red	Green
29	White	Red	Green
30	Red	Black	Green
31	Green	Black	Orange
32	Orange	Black	Green
33	Blue	White	Orange
34	Black	White	Orange
35	White	Red	Orange
36	Orange	White	Blue
37	White	Red	Blue
38	Brown		
39	Brown	Black	
40	Brown	White	
41	Brown	Red	
42	Brown	Green	
43	Brown	Orange	
44	Brown	Blue	

CURRENT COLOR CODE OF TELEPHONE TWISTED PAIR ENAMEL AND COTTON

1	Blue		White
2	Orange		White
3	Green		White
4	Brown		White
5	Slate		White
6	Blue	White	White
7	Blue	Orange	White
8	Blue	Green	White
9	Blue	Brown	White
10	Blue	Slate	White
11	Orange	White	White
12	Orange	Green	White
13	Orange	Brown	White
14	Orange	Slate	White
15	Green	White	White

16	Green	Brown	White	
17	Green	Slate	White	
18	Brown	White	White	
19	Brown	Slate	White	
20	Slate	White	White	
21–40	First 20 Repeated		Red	
41–60	First 20 Repeated		Black	
61–80	First 20 Repeated		Red	White
81–100	First 20 Repeated		Black	White
101–120	First 20 Repeated		Red	Black
121–140	First 20 Repeated		Black	Orange
141–160	First 20 Repeated		Black	Green
161–180	First 20 Repeated		Black	Brown
181–200	First 20 Repeated		Black	Slate

CURRENT COLOR CODE OF TELEPHONE TWISTED PAIR SYNTHETIC WITH ONE BLUE

1	White	Black	16	Brown	White	31	Orange	Green	46	Brown	Blue
2	Red	Black	17	Slate	White	32	Blue	Green	47	Slate	Blue
3	Green	Black	18	Yellow	White	33	Brown	Green	48	Yellow	Blue
4	Orange	Black	19	Purple	White	34	Slate	Green	49	Purple	Blue
5	Blue	Black	20	Tan	White	35	Yellow	Green	50	Tan	Blue
6	Brown	Black	21	Pink	White	36	Purple	Green	51	Pink	Blue
7	Slate	Black	22	Green	Red	37	Tan	Green	52	Slate	Brown
8	Yellow	Black	23	Orange	Red	38	Pink	Green	53	Yellow	Brown
9	Purple	Black	24	Blue	Red	39	Blue	Orange	54	Purple	Brown
10	Tan	Black	25	Brown	Red	40	Brown	Orange	55	Tan	Brown
11	Pink	Black	26	Slate	Red	41	Slate	Orange	56	Pink	Brown
12	Red	White	27	Yellow	Red	42	Yellow	Orange	57	Yellow	Slate
13	Green	White	28	Purple	Red	43	Purple	Orange	58	Purple	Slate
14	Orange	White	29	Tan	Red	44	Tan	Orange	59	Tan	Slate
15	Blue	White	30	Pink	Red	45	Pink	Orange	60	Pink	Slate

All lugs will be ordered by type number whether they are solder, solderless or water seal type.

For all wires 4497 C.M. or less either solder or approved solderless type lugs shall be used.

For all Radio, Radar, and Sonar wiring solderless type lugs shall not be used.

For all I.C. and F.C. circuits approved solderless types shall be used except as follows: I.C. and F.C. equipment provided with solder type lugs by the manufacturer, unless otherwise approved . . . Wiring equipment or appliances in which electrical clearance would be reduced below minimum standard by the use of solderless type lugs.

Do not split pairs of telephone cables. Match impedance on all speakers. Ground armor of cables to ship's structure at amplifier, speaker and microphone units and radio spaces exposed to R.F. fields preferably at alternate hangers along cable length within spaces.

As cables and conductors are talked out and identified, both cables and conductors must be properly tagged and lugged.

Color code must always be used in lugging; the smallest conductor number in each cable is the black wire; the next larger (sometimes a double letter number) is the white, the next largest is the red and so on through the multi-conductor color code.

All lugs must be stenciled with the conductor number on the front of the lug and the cable number on the back.

Phenolic tubing markers may be used only where the size of lug prevents its being stenciled.

Cables must be laid up in connection boxes in a neat workmanlike manner.

Wire numbers on terminals are to face up so that they can be easily read.

CABLE NOTES

1. Cables to be grouped in one layer, not piled unless approved by supervisor and not over 9″ in width. Hangers to be spaced not over 16″ center to center.

2. Multiple rows of cables on decks shall not exceed five. A 3/4″ x 3/32″ steel cable strap is to be placed every 4th hanger and at each hanger at bends. Maximum total width of cables is 15″. Hanger spacing not to exceed 16″ center to center. 1/2″ minimum clearance to be allowed between top of largest cable and deck or bottom of hanger flange.

3. Multiple rows of cables on steel bulkheads shall not exceed two except on specific approval. Maximum total width of cables is 9″. Hanger spacing not to exceed 16″ center to center. 3/4 x 1/8″ steel cable strap is to be placed at each hanger.

4. See plan 9 S 3980-L for methods of supporting cables on bulkheads, in machinery spaces, main cableways or passages.

5. Where cables pass thru N. W. T. bulkheads or beams less than 1/4″, bushings shall be used.

6. Pyrometer cable—Connect copper wire to negative terminal, iron wire to positive terminal.

7. Tubes with insufficient clearance for cables may be reamed in place.

SONAR SPECIAL CABLES

Army-Navy Type No.	No. of Conductors	Strands Per Conductor	Size	Outside Diameter	O.D. in 32nd. Inch	Outer	Tube Size	Greenfield Connector	Remarks
325J	2								Use 325 AD
325K	2	41/30AWG	14AWG	.606	19	Rubber	C		
325L	5	65/34AWG	18AWG	.503	16	Rubber	C	⅜	Shielded
325M	5 Pr.		1600C.M.	1.00	32	Armor	J	¾	Lead Sheath
325N	2	41/34AWG	18AWG	.411	13	Rubber	B	⅜	Shielded
325P	2 Pr.		4000C.M.	.908	29	Rubber	G	¾	
325Q	19	7/22AWG	14AWG	1.380	44	Armor	M	1	Lead Sheath
325R	30	7/22AWG	14AWG	1.699	54	Armor	R		Lead Sheath
325S	2	41/34AWG	18AWG	.470	15	Armor	B	⅜	
325T	6			.906	29	Armor	G	½	Combination Shielded
325U	2		14AWG	.531	17	Rubber	C	⅜	
325V				.844	27		G	½	
325W	2		19AWG	.610	20	Lead	C		
325X	4	65/34AWG	16AWG	.477	15	Rubber	B	⅜	Shielded
325Y	5		21AWG			Rayon			
325Z	2	41/34AWG	14AWG	.370	12	Rubber			Use MCOS-2

SONAR SPECIAL CABLES

Army-Navy Type No.	No. of Conductors	Strands Per Conductor	Size	Outside Diameter	O.D. in 32nd. Inch	Outer	Tube Size	Greenfield Connector	Remarks
325AA	2		18AWG	.287	9	Rubber	OA	⅜	Shielded-Microphone
325AB	1	37/30AWG	14AWG	.625	20	Rubber	D	⅜A	Shielded-Hard Service
325AC				.875	28		G	½	
325AD	2	7/22AWG	14AWG	1.234	40	Armor	L	1	
325AE	2	41/30AWG	14AWG	1.189	38	Tirex	L	1	
325AF	10		2800C.M.	.769	25	Tirex	E	⅜A	Shielded
325AG	2		4000C.M.	.811	26	Brnze Arm.	F	½	Lead Sheath
325AH	2		4000C.M.	2.313	74	Plastic	X		Submarine Use
325AJ	2		14AWG			Tirex			Portable Rubber Sheath
325AK	9		2/14, 7/16	1.151	37	Armor	L	1	1 Shielded
325AL	2		14AWG	.669	21	Brnze Arm.	D	⅜A	
325AM	4		14AWG	1.153	37	Armor	L	1	1 Pr. Shielded
325AN	2	41/34AWG	18AWG	.470	15	Steel Braid	B	⅜	
325AP	2	7/22AWG	14AWG	.909	29	Rubber	G	¾	Shielded
325AQ	25		# 14-20 Sing. & 1 Quad			Abras.-Resist.			
325AR	3		16AWG	.360	12	Sel. Rub	A	⅜	

SONAR SPECIAL CABLES

Army-Navy Type No.	No. of Conductors	Strands Per Conductor	Size	Outside Diameter	O.D. in 32nd. Inch	Outer	Tube Size	Greenfield Connector	Remarks
325AT	14								Coax. underground
325AU	14								Coax. underground
325AV	2		8AWG	1.132	36	Arm-Tar	K	1	Submarine Coax.
325AW	10		14AWG	1.400	45	Arm-Tar	N	1	Submarine Control
325AX	3		14AWG	.638	20	Rubber	D	⅜A	
325AY	3		14AWG	.701	22	Armor	D	⅜A	
325AZ	6		18AWG			Tirex			Type "S"
325AVP	2		8AWG	1.132	36	Vinylite	K	1	Submarine Coax.
325AWP	10		14AWG	1.400	45	Vinylite	N	1	Submarine Control
325BA	1		19/0	.675	22	Vinyl-Arm	D	⅜A	
325BB		Identical to 325T except for rubber content							
325BC				.900	29		G	¾	Shielded R-F
325BD	2								
325BE	1	7/30AWG		.250	8	Vinylite	OB	⅜	Similar to 325AX
325BF	1		16AWG	.430	14	Armor	B	⅜	Similar to 325AY
325BG	2		14AWG	.656	21	Armor	D	⅜A	Shielded-Solid Dielectric

SONAR SPECIAL CABLES

Army-Navy Type No.	No. of Conductors	Strands Per Conductor	Size	Outside Diameter	O.D. in 32nd. Inch	Outer	Tube Size	Greenfield Connector	Remarks
325BH	2		1/14, 1/18	.235	8	Armor	OB		Coaxial
325BJ	2	41/34AWG	18AWG	.281	9	Syn. Rub	OA	3/8	Shielded
325BK	1		22AWG	.252	8	Vinyl	OA	3/8	
325BL	1	7/26AWG		.480	15	Vinyl	B	3/8	
325BM	2		18AWG	.280	9		OA	3/8	
325BN	4	41/34AWG	18AWG			Buna S			
325BP	1		16AWG	.185	6		OC		
325BQ									Similar to FHFA-3
325BR	6								2 Shielded Prs.
325CL	2		1/18, 1/34	.409	13	Plastic	B	3/8	R-F Coax.

WM CABLES

		Outside Diameter	O.D. in 32nd. Inch		Tube Size	Greenfield Connector	Catalogue Number
1/U		.490	16		B	3/8	16-C-1513-16
2/U		.590	19		C		16-C-1750
3/U		.500	16		C	3/8	16-C-1818

DECIMAL EQUIVALENTS

1/32	.0313	17/32	.531
1/16	.0625	9/16	.562
3/32	.0938	19/32	.594
1/8	.125	5/8	.625
5/32	.156	21/32	.656
3/16	.188	11/16	.688
7/32	.219	23/32	.719
1/4	.250	3/4	.750
9/32	.281	25/32	.781
5/16	.313	13/16	.813
11/32	.344	27/32	.844
3/8	.375	7/8	.875
13/32	.406	29/32	.906
7/16	.438	15/16	.938
15/32	.469	31/32	.969
1/2	.500	1″	1.000

INSIDE DIAMETER OF STUFFING AND TERMINAL TUBES

OC	7/32	.216	R	1-3/4	1.750
OB	9/32	.281	S	1-7/8	1.875
OA	11/32	.343	T	2-1/16	2.062
A	13/32	.406	V	2-3/16	2.187
B	1/2	.515	W	2-5/16	2.312
C	5/8	.640	X	2-1/2	2.500
D	3/4	.750	Y	2-19/32	2.609
E	13/16	.812	Z	2-25/32	2.781
F	27/32	.843	AA	2-7/8	2.875
G	15/16	.953	BB	3-1/8	3.125
J	1-1/16	1.062			
K	1-3/16	1.171			
L	1-1/4	1.265			
M	1-13/32	1.406			
N	1-1/2	1.515			
P	1-5/8	1.625			

STUFFING TUBE, CLAMP AND CLEARANCE HOLE DATA

Tube Size	Min. Pack. Size	Pipe Size	CLEARANCE HOLES							Clamp Size	Term. Tube Clearance Drill
			Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear.	Alum. Bush.	Clamp Drill		
A	3/16	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA	9/16
B	3/16	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A	11/16
C	3/16	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F	13/16
D	3/16	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H	15/16
E	3/16	3/4	1-1/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I	1
F	3/16	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L	1
G	1/4	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M	1-1/8
J	1/4	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11	1-1/4
K	1/4	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1	1-3/8
L	1/4	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2	1-7/16
M	1/4	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/16	1-13/16	1-5/16	W3	1-9/16
N	1/4	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5	1-3/4
P	1/4	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7	1-7/8
R	5/16	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8	2
S	3/8	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10	2-1/8
T	3/8	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2	2-9/16	1-15/16	Y10	2-3/8
V	3/8	2-1/2	2-15/16	2-5/16	3-11/16	3-11/16	2-3-16	2-11/16	2-1/16	Y12	2-1/2
W	3/8	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y13	2-11/16
X	3/8	3	3-9/16	2-7/8	3-15/16	4-5/16	2-1/2	3	2-13/32	Z14	2-13/16
Y	3/8	3	3-9/16	2-7/8	4-1/16	4-5/16	2-5/8	3-1/16	2-17/32	Z15	2-15/16
Z	3/8	3	3-9/16	2-7/8	4-1/2	4-5/16	2-3/4	3-1/8	2-11/16	Z16	3-1/8
AA	3/8										3-3/16
BB	3/8										3-7/16

STEEL TERMINAL TUBES

TYPES 51 & 58-1 (Machined) & 52 & 58 (Drawn)

Tube Size	O.D. of Tube	Drill Hole	Types 58-1 & 58 Insert Size	Opening of Hex. Nut
A	15/16	9/16	3/8	13/32
B	1-1/16	11/16	15/32	17/32
C	1-3/16	13/16	19/32	21/32
D	1-5/16	1-0	23/32	3/4
E	1-5/16	1-0	25/32	13/16
F	1-3/8	1-0	13/16	27/32
G	1-5/8	1-1/8	29/32	31/32
J	1-3/4	1-1/4	1-1/32	1-1/16
K	1-7/8	1-3/8	1-1/8	1-5/32
L	1-15/16	1-7/16	1-7/32	1-1/4
M	2-1/8	1-9/16	1-3/8	1-13/32
N	2-3/16	1-3/4	1-15/32	1-17/32
P	2-5/16	1-7/8	1-19/32	1-5/8
R	2-7/16	2-0	1-23/32	1-3/4
S	2-7/8	2-1/8	1-27/32	1-7/8
T	3-1/16	2-3/8	2-1/32	2-1/16
V	3-3/16	2-1/2	2-5/32	2-3/16
W	3-5/16	2-11/16	2-9/32	2-5/16
X	3-1/2	2-13/16	2-15/32	2-1/2
Y	3-5/8	2-15/16	2-9/16	2-19/32
Z	3-13/16	3-1/8	2-3/4	2-25/32
AA	4-1/16	3-3/16	2-27/32	2-7/8
BB	4-1/4	3-7/16	3-3/32	3-1/8

Types 51 & 52—Dwg. Bu Ships: 9-S-5235-L

Types 58 & 58-1—Dwg. Bu Ships: 9-S-5356-L

Types 58 & 58-1—Used for sealing ends of electric cables entering watertight sheet metal enclosures.

STEEL TERMINAL TUBES

TYPE 53 (45° El.) & 55 (90° El.)—TYPE 59 (Threaded Neck)

Tube Size	TYPES 53 & 55			TYPE 59		
	O.D. of Tube	Opening of Hex. Nut	Drill Hole	O.D. of Tube	Opening of Hex. Nut	Drill Hole
A	63/64	13/32	9/16	63/64	13/32	9/16
B	1-7/64	17/32	11/16	1-7/64	17/32	11/16
C	1-15/64	21/32	13/16	1-15/64	21/32	13/16
D	1-23/64	3/4	1-	1-23/64	3/4	1-0
E	1-23/64	13/16	1-	1-23/64	13/16	1-0
F	1-13/32	27/32	1-	1-13/32	27/32	1-0
G	1-19/32	31/32	1-1/8	1-19/32	31/32	1-1/8
J	1-47/64	1-1/16	1-1/4	1-47/64	1-1/16	1-1/4
K	1-27/32	1-5/32	1-3/8	1-27/32	1-5/32	1-3/8
L	1-59/64	1-1/4	1-7/16	1-59/64	1-1/4	1-7/16
M	2-7/64	1-13/32	1-9/16	2-7/64	1-13/32	1-9/16
N	2-15/64	1-17/32	1-3/4	2-15/64	1-17/32	1-3/4
P	2-23/64	1-5/8	1-7/8	2-23/64	1-5/8	1-7/8
R	2-31/64	1-3/4	2-0	2-31/64	1-3/4	2-0
S	2-55/64	1-7/8	2-1/8	2-55/64	1-7/8	2-1/8
T	3-3/64	2-1/16	2-3/8	3-11/64	2-1/16	2-3/8
V				3-5/16	2-3/16	2-1/2
W				3-7/16	2-5/16	2-11/16
X				3-9/16	2-1/2	2-13/16
Y				3-11/16	2-19/32	2-15/16
Z				3-7/8	2-25/32	3-1/8
AA				4-1/16	2-7/8	3-3/16
BB				4-5/16	3-1/8	3-7/16

Type 53—Dwg. Bu Ships: 9-S-5342-L

Type 55—Dwg. Bu Ships: 9-S-5343-L

Type 59—Dwg. Bu Ships: 9-S-5457-L

Type 59—Used for cables entering sheet steel enclosures.

STEEL TERMINAL TUBES

TYPES 60 & 61 (Smooth Neck)—TYPE 62 (Threaded)

Tube Size	O.D. of Tube	Opening of Hex. Nut	Drill Hole	
OC	3/4	7/32	7/16	
OB	13/16	9/32	1/2	
OA	15/16	11/32	9/16	
B	1-1/16	17/32	11/16	
C	1-3/16	21/32	13/16	
D	1-5/16	3/4	15/16	
E	1-5/16	13/16	1-0	
F	1-3/8	27/32	1-0	

Type 60—Machined—Dwg. Bu Ships: 9-S-5621-L

Type 61—Drawn—Dwg. Bu Ships: 9-S-5621-L

Type 62—Threaded Neck—Dwg. Bu Ships: 9-S-5621-L

Used for small boats.

ELECTRICAL CONDUCTOR BUSHINGS

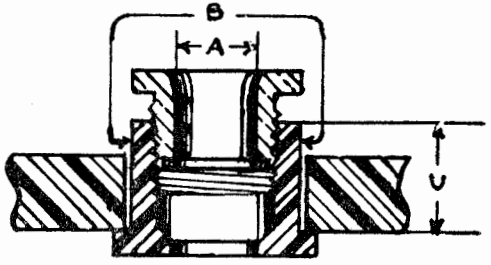
TYPE 4—BRASS

Size	Nut Opening	Overall Diameter	Clear Hole	
A	13/32	15/16	23/32	
B	17/32	1-1/16	27-32	
C	21/32	1-3/16	31/32	
D	3/4	1-5/16	1-3/32	
E	13/16	1-3/8	1-5/32	
F	27/32	1-7/16	1-7/32	
G	31/32	1-9/16	1-11/32	
J	1-1/16	1-11/16	1-15/32	
K	1-5/32	1-3/4	1-17/32	
L	1-1/4	1-7/8	1-21/32	
M	1-13/32	2-0	1-25/32	
N	1-17/32	2-1/8	1-29/32	
P	1-5/8	2-1/4	2-1/32	
R	1-3/4	2-7/16	2-7/32	
S	1-7/8	2-9/16	2-11/32	
T	2-1/16	2-3/4	2-17/32	
V	2-3/16	2-7/8	2-21/32	
W	2-5/16	3-0	2-25/32	
X	2-1/2	3-3/16	2-31/32	
Y	2-19/32	3-5/16	3-3/32	
Z	2-25/32	3-7/16	3-7/32	

Dwg. Bu Ships: 9-S-4268-L

STEEL STUFFING TUBES FOR DECKS AND BULKHEADS TYPE 30-1

Bu Ships Dwg. 9-S-4680-L For Decks and Blkhds. Not Greater than ¾" Thick



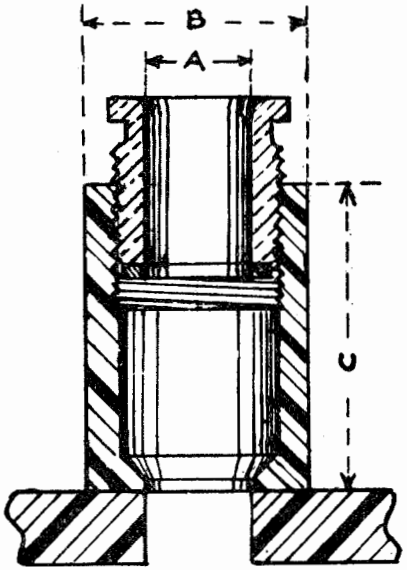
TYPE 30-1

Tube Size	Clear. Hole	Dimensions			Stock Number
		A	B	C	
A	1-5/16	13/32	1-1/4	1-1/2	17-T-9401
B	1-7/16	33/64	1-3/8	1-1/2	17-T-9403
C	1-9/16	41/64	1-1/2	1-1/2	17-T-9405
D	1-11/16	3/4	1-5/8	1-1/2	17-T-9407
E	1-11/16	51/64	1-5/8	1-1/2	17-T-9409
F	1-3/4	27/32	1-11/16	1-1/2	17-T-9411
G	2-1/16	61/64	2	1-9/16	17-T-9413
J	2-3/16	1-1/16	2-1/8	1-9/16	17-T-9415
K	2-5/16	1-11/64	2-1/4	1-7/8	17-T-9417
L	2-3/8	1-17/64	2-5/16	1-7/8	17-T-9419
M	2-9/16	1-13/32	2-1/2	1-7/8	17-T-9421
N	2-3/4	1-33/64	2-11/16	1-7/8	17-T-9423
P	2-7/8	1-5/8	2-13/16	1-7/8	17-T-9425
R	3	1-3/4	2-15/16	1-7/8	17-T-9427
S	3-3/8	1-7/8	3-5/16	2-3/4	17-T-9429
T	3-9/16	2-1/16	3-1/2	2-3/4	17-T-9431
V	3-11/16	2-3/16	3-5/8	2-3/4	17-T-9433
W	3-13/16	2-5/16	3-3/4	2-3/4	17-T-9435
X	3-15/16	2-1/2	3-7/8	2-3/4	17-T-9437
Y	4-1/16	2-39/64	4	2-3/4	17-T-9439
Z	4-1/4	2-25/32	4-3/16	2-3/4	17-T-9441
AA		2-7/8			17-T-9443
BB		3-1/8			17-T-9445

STEEL STUFFING TUBES FOR DECKS AND BULKHEADS

TYPE 30-2A

Bu Ships Dwg. 9-S-5166-L



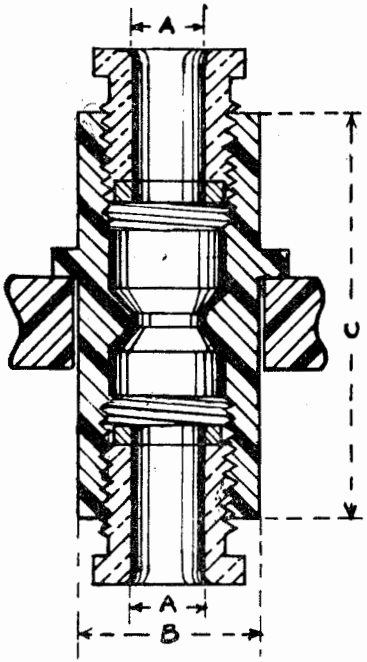
TYPE 30-2A

Tube Size	Clear. Hole	Dimensions			Stock Numbers
		A	B	C	
A	13/32	13/32	1-1/4	1-3/4	17-T-9503-100
B	33/64	33/64	1-3/8	1-3/4	17-T-9503-105
C	41/64	41/64	1-1/2	1-3/4	17-T-9503-110
D	3/4	3/4	1-5/8	1-3/4	17-T-9503-115
E	13/16	13/16	1-5/8	1-3/4	17-T-9503-120
F	27/32	27/32	1-11/16	1-3/4	17-T-9503-125
G	61/64	61/64	2	1-13/16	17-T-9503-130
J	1-1/16	1-1/16	2-1/8	1-13/16	17-T-9503-135
K	1-11/64	1-11/64	2-1/4	3-1/8	17-T-9503-140
L	1-17/64	1-17/64	2-5/16	3-1/8	17-T-9503-145
M	1-13/32	1-13/32	2-1/2	3-1/8	17-T-9503-150
N	1-33/64	1-33/64	2-11/16	3-1/8	17-T-9503-155
P	1-5/8	1-5/8	2-13/16	3-1/8	17-T-9503-160
R	1-3/4	1-3/4	2-15/16	3-1/8	17-T-9503-165
S	1-7/8	1-7/8	3-5/16	5-1/8	17-T-9503-170
T	2-1/16	2-1/16	3-1/2	5-1/8	17-T-9503-175
V	2-3/16	2-3/16	3-5/8	5-1/8	17-T-9503-180
W	2-5/16	2-5/16	3-3/4	5-1/8	17-T-9503-185
X	2-1/2	2-1/2	3-7/8	5-1/8	17-T-9503-190
Y	2-39/64	2-39/64	4	5-1/8	17-T-9503-195
Z	2-25/32	2-25/32	4-3/16	5-1/8	17-T-9503-200
AA	2-7/8	2-7/8	4-1/4	6-7/8	17-T-9503-205
BB	3-1/8	3-1/8	4-1/2	6-7/8	17-T-9503

STEEL STUFFING TUBES FOR SUBMARINE BULKHEADS

TYPE 46-1

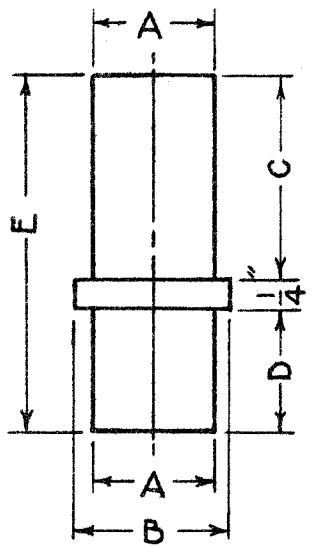
Bu Ships Dwg. 9-S-5100-L



Tube Size	Clear. Hole	Dimensions			Stock Number
		A	B	C	
A	1-5/16	13/32	1-1/4	3-5/8	17-T-10051-200
B	1-7/16	33/64	1-3/8	3-5/8	17-T-10051-203
C	1-9/16	41/64	1-1/2	3-5/8	17-T-10051-206
D	1-11/16	3/4	1-5/8	3-5/8	17-T-10051-209
E	1-11/16	13/16	1-5/8	3-5/8	17-T-10051-212
F	1-3/4	27/32	1-11/16	3-5/8	17-T-10051-215
G	2-1/16	61/64	2	3-3/4	17-T-10051-218
J	2-3/16	1-1/16	2-1/8	3-3/4	17-T-10051-221
K	2-5/16	1-11/64	2-1/4	4-1/2	17-T-10051-224
L	2-3/8	1-17/64	2-5/16	4-1/2	17-T-10051-227
M	2-9/16	1-13/32	2-1/2	4-1/2	17-T-10051-230
N	2-3/4	1-33/64	2-11/16	4-1/2	17-T-10051-233
P	2-7/8	1-5/8	2-13/16	4-1/2	17-T-10051-236
R	3	1-3/4	2-15/16	4-1/2	17-T-10051-239
S	3-3/8	1-7/8	3-5/16	6-1/4	17-T-10051-242
T	3-9/16	2-1/16	3-1/2	6-1/4	17-T-10051-245
V	3-11/16				17-T-10051-248

PLUG FOR B'H'D OR HULL TUBE 46-1
FOR SUBMARINES

WHEN TUBE WILL BE USED
AT A LATER DATE
TUBE 46-1

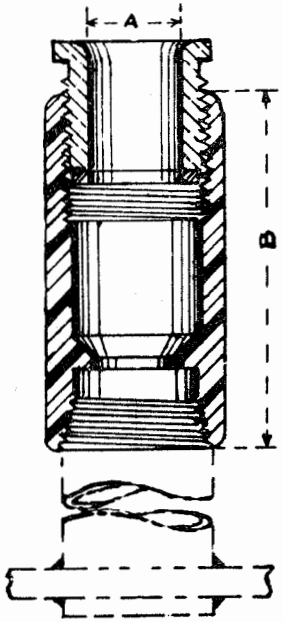


TUBE	PLUG DIMENSIONS A	B	C	D	E
A	3/32	0.751	3 1/4	1 3/8	4 7/8
B	15/32	0.876	3 1/4	1 3/8	4 7/8
C	19/32	1.0	3 1/4	1 3/8	4 7/8
D	23/32	1.122	3 1/4	1 3/8	4 7/8
E	25/32	1.122	3 1/4	1 3/8	4 7/8
F	13/16	1.188	3 1/4	1 3/8	4 7/8
G	29/32	1.376	3 1/4	1 3/8	4 7/8
J	1 1/32	1.501	3 1/4	1 3/8	4 7/8
K	1 1/8	1.636	3 3/8	1 1/2	5 1/8
L	1 7/32	1.688	3 3/8	1 1/2	5 1/8
M	1 3/8	1.876	3 1/2	1 1/2	5 1/4
N	1 15/32	1.938	3 5/8	1 5/8	5 1/2
P	1 19/32	2.063	3 5/8	1 5/8	5 1/2
R	1 23/32	2.188	3 3/4	1 3/4	5 3/4
S	1 27/32	2.562	5 1/8	1 7/8	7 1/4
T	2 1/32	2.734	5 1/8	2 1/8	7 1/2

STUFFING TUBES FOR KICKPIPES

TYPE 48-5 (BRASS)—TYPE 48-6 (STEEL)

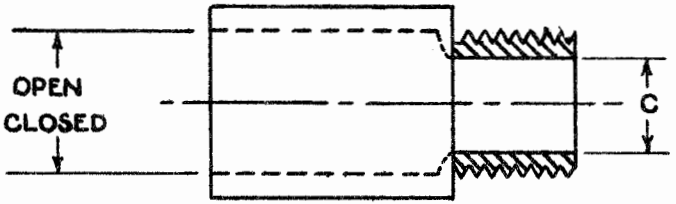
Bu Ships Dwg. 9-S-5166-L



Tube Size	Pipe Size	Clear. Hole	Dimensions			Stock Numbers	
			A	B	X	48-5	48-6
A	3/8	11/16	13/32	2-3/8	1-1/8	17-T-10055-107	—150
B	1/2	7/8	33/64	2-7/16	1-1/4	17-T-10055-108	—155
C	3/4	1-1/8	41/64	2-1/2	1-3/8	17-T-10055-109	—160
D	3/4	1-1/8	3/4	2-1/2	1-1/2	17-T-10055-110	—165
E	1	1-3/8	27/32	2-5/8	1-5/8	17-T-10055-111	—170
F	1	1-3/8	27/32	2-5/8	1-5/8	17-T-10055-112	—175
G	1	1-3/8	61/64	2-11/16	1-13/16	17-T-10055-113	—180
J	1-1/4	1-11/16	1-1/16	2-3/4	2	17-T-10055-116	—185
K	1-1/4	1-11/16	1-11/64	4-1/16	2-1/16	17-T-10055-117	—190
L	1-1/4	1-11/16	1-17/64	4-1/16	2-1/8	17-T-10055-118	—195
M	1-1/2	1-15/16	1-13/32	4-1/16	2-5/16	17-T-10055-119	—200
N	1-1/2	1-15/16	1-33/64	4-1/8	2-7/16	17-T-10055-120	—205
P	2	2-7/16	1-5/8	4-1/8	2-3/4	17-T-10055-122	—210
R	2	2-7/16	1-3/4	4-1/8	2-3/4	17-T-10055-124	—215
S	2	2-7/16	1-7/8	6-1/8	3-1/16	17-T-10055-125	—220
T	2-1/2	2-15/16	2-1/16	6-5/16	3-1/4	17-T-10055	—225
V	2-1/2	2-15/16	2-3/16	6-5/16	3-3/8	17-T-10055	—230
W	2-1/2	2-15/16	2-5/16	6-5/16	3-1/2	17-T-10055	—235
X	3	3-9/16	2-1/2	6-3/8	3-7/8	17-T-10055	—240
Y	3	3-9/16	2-39/64	6-3/8	3-7/8	17-T-10055	—245
Z	3	3-9/16	2-25/32	6-3/8	3-15/16	17-T-10055	—250
AA	3	3-9/16	2-7/8	8-1/8	4	17-T-10055	—255

GREENFIELD CONNECTORS

SIZES AND DIMENSIONS



TO BE USED ONLY IN NON-WATERTIGHT APPLICATIONS

SIZE	OPEN	CLOSED	C	I.P.S.
3/8	9/16	1/4	7/16	1/2
3/8A	13/16	5/8	9/16	1/2
1/2	15/16	3/4	11/16	1/2
3/4	1 1/8	7/8	27/32	3/4
1	1 1/2	1 1/8	1	1
1 1/4	1 21/32	1 1/2	1 5/16	1 1/4
1 1/2	1 7/8	1 13/16	1 1/2	1 1/2

S S G A

Single Conductor, Shipboard, General Use, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
1	7	3	.305	4.0	A	⅜	10	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA		
1	7	4	.323	4.0	A	⅜	10	3/8	11/16	1/2	1-5/16	1-1/4	3/8	3/4	3/8	AA		
1	7	9	.371	4.5	A	⅜	12	3/8	11/16	1/2	1-5/16	1-1/4	9/16	3/4	3/8	AA		
1	7	14	.414	5	B	⅜	13	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		
1	7	23	.453	6	B	⅜	14	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		
1	19	30	.484	6	B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		
1	19	40	.515	6	C	⅜	32	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		
1	19	50	.570	7	C	⅜A	18	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		
1	37	60	.609	7	C	⅜A	20	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		
1	37	75	.652	8	D	⅜A	21	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		
1	61	100	.719	9	D	⅜A	23	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		
1	61	125	.788	9	E	⅜A	25	1	1-3/8	31/32	1-11/16	1-5/8	13/16	1-3/16	27/32	I		
1	61	150	.844	10	G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M		
1	61	200	.922	11	G	¾	30	1	1-3/8	31/32	2-1/16	2	1	1-3/8	15/16	M		
1	91	300	1.051	13	J	¾	34	1-1/4	1-11/16	1-9/32	2-3/16	2-3/16	1-1/8	1-1/2	1-3/32	P11		
1	127	400	1.168	14	L	1	37	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2		
1	127	500	1.290	15	M	1	41	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-3/8	1-13/16	1-5/16	W3		
1	127	650	1.421	17	M	1	45	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-1/2	1-13/16	1-5/16	W3		
1	127	800	1.535	18	P	1¼	49	2	2-7/16	1-15/16	2-7/8	3-3/16	1-5/8	2-1/16	1-9/16	X7		

D S G A

Double Conductor, Shipboard, General Use, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
2	7	3	.441	5.5	B	⅜	14	1/2	7/8	1/2	1-7/16	1-7/16	1/2	7/8	17/32	A		
2	7	4	.477	6	B	⅜	15	1/2	7/8	1/2	1-7/16	1-7/16	1/2	7/8	17/32	A		
2	7	9	.594	7	C	⅜A	19	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		
2	7	14	.680	8	D	⅜A	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		
2	7	23	.781	9	F	⅜A	25	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L		
2	19	30	.852	10	G	½	27	1	1-3/8	31/32	2-1/16	2	7/8	1-3/8	15/16	M		
2	19	40	.898	11	G	½	29	1	1-3/8	31/32	2-1/16	2	15/16	1-3/8	15/16	M		
2	19	50	.961	12	J	¾	31	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11		
2	37	60	1.031	13	J	¾	33	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11		
2	37	75	1.124	13	K	1	36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1		
2	61	100	1.217	15	L	1	39	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2		
2	61	125	1.374	17	M	1	44	1-1/2	1-15/16	1-1/2	2-9/16	2-5/8	1-7/16	1-13/16	1-5/16	W3		
2	61	150	1.479	18	N	1¼	47	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5		
2	61	200	1.633	20	R	1¼	52	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8		
2	61	250	1.759	21	S		56	2	2-7/16	1-15/16	3-3/8	3-3/16	1-13/16	2-3/8	1-15/16	Y10		
2	91	300	1.891	23	T		61	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	1-15/16	2-3/8	1-15/16	Y10		
2	127	400	2.119	25	T		68	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2-1/8	2-9/16	1-15/16	Y10		

T S G A

Three Conductor, Shipboard, General Use, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
3	7	3	.461	5.5	B	⅜	15	1/2	7/8	9/16	1-7/16	1-7/16	1/2	7/8	17/32	A		
3	7	4	.499	6.0	C	⅜	16	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F		
3	7	9	.625	7.5	D	⅜A	20	3/4	1-1/8	3/4	1-11/16	1-5/8	11/16	1-1/8	25/32	H		
3	7	14	.718	9	D	⅜A	23	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		
3	7	23	.812	10	F	½	26	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L		
3	19	30	.902	11	G	¾	29	1	1-3/8	31/32	2-1/16	2	15/16	1-3/8	15/16	M		
3	19	40	.950	11	J	¾	30	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1	1-1/2	1-3/32	P11		
3	19	50	1.019	12	J	¾	32	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11		
3	37	60	1.110	13	K	¾	36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1		
3	37	75	1.184	14	L	1	38	1-1/4	1-11/16	1-9/32	2-3/8	2-3/8	1-1/4	1-13/16	1-3/16	W2		
3	61	100	1.316	16	M	1	42	1-1/2	1-11/16	1-1/2	2-9/16	2-5/8	1-3/8	1-13/16	1-5/16	W3		
3	61	125	1.458	17	N	1	46	1-1/2	1-15/16	1-1/2	2-3/4	2-5/8	1-9/16	1-15/16	1-7/16	W5		
3	61	150	1.565	19	P	1¼	50	2	2-7/16	1-15/16	2-7/8	3-3/16	1-11/16	2-1/16	1-9/16	X7		
3	61	200	1.719	21	R		55	2	2-7/16	1-15/16	3	3-3/16	1-13/16	2-1/4	1-21/32	X8		
3	61	250	1.844	22	S		59	2	2-7/16	1-15/16	3-3/8	3-3/16	1-15/16	2-3/8	1-15/16	Y10		
3	91	300	2.007	24	T		64	2-1/2	2-15/16	2-5/16	3-9/16	3-11/16	2-1/16	2-9/16	1-15/16	Y10		
3	91	350	2.123	25	V		68	2-1/2	2-15/16	2-5/16	3-11/16	3-11/16	2-3/16	2-11/16	2-1/16	Y12		
3	127	400	2.253	27	W		72	2-1/2	2-15/16	2-7/8	3-13/16	4-5/16	2-5/16	2-13/16	2-1/4	Y13		

F S G A

Four Conductor, Shipboard, General Use, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
4	7	3	.497	6	B	3/8	16	1/2	7/8	9/16	1-7/16	1-7/16	9/16	7/8	17/32	A		
4	7	4	.563	7	C		18	3/4	1-1/8	3/4	1-9/16	1-5/8	11/16	1	11/16	F		
4	7	9	.680	8	D	3/8	22	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		

M S C A

Multiple Conductor, Shipboard, Control, Armored

No. of Cdrs.	Strands Per Cdr.	Area in C. M.	Cable Diam.	Rad. of Bend	Tube Size	Greenfield Conn.	O.D. in 32nd Inch	Pipe Size	CLEARANCE HOLES							Clamp Size	Cap Amps	Catalog Number
									Riser Pipe	Inside Pipe	Bkd. Hole	Deck Hole	Cable Clear	Alum Bush.	Clamp Drill			
7	7	2	.534	6.0	C	⅜	17	3/4	1-1/8	3/4	1-9/16	1-5/8	9/16	1	11/16	F		
10	7	2	.672	8.0	D	⅜A	21	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		
14	7	2	.718	8.5	D	⅜A	23	3/4	1-1/8	3/4	1-11/16	1-5/8	3/4	1-1/8	25/32	H		
19	7	2	.788	9.5	F	⅜A	25	1	1-3/8	31/32	1-3/4	2	7/8	1-1/4	29/32	L		
24	7	2	.905	11.0	G	½	29	1	1-3/8	31/32	2-1/16	2	15/16	1-3/8	15/16	M		
30	7	2	.951	11.5	J	¾	30	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11		
37	7	2	1.022	12.5	J	¾	33	1-1/4	1-11/16	1-9/32	2-3/16	2-3/8	1-1/16	1-1/2	1-3/32	P11		
44	7	2	1.134	13.5	K	1	36	1-1/4	1-11/16	1-9/32	2-5/16	2-3/8	1-3/16	1-9/16	1-5/32	W1		

LGT., I.C., AND F.C. SOLDER LUGS

215 I.C.

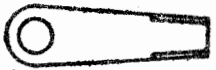
220 I.C.

214 TERMINAL

SPECIAL I.C.

A.G.O. ROTARY

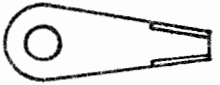
216 I.C.



#5 SPECIAL

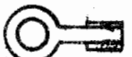
210 I.C.

211 I.C.



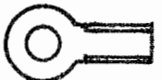
213 I.C.

#0 LGT.



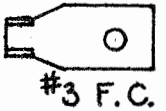
#1 LGT.

#2 LGT.

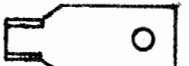


#3 LGT.

#1 F.C.



#3 F.C.



#4 F.C.

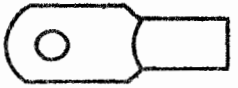
G.E.

INST.

SOLDER POWER LUGS

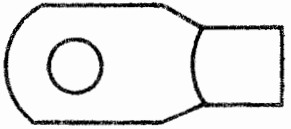
NO. 2 - $\frac{9}{64}$" HOLE
25 AMP. 4000 C.M.

NO. 4 - $\frac{3}{16}$" HOLE
35 A. 9000 C.M.

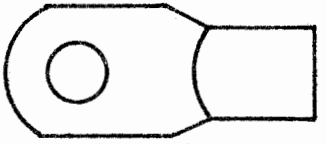


NO. 4A $\frac{3}{16}$" HOLE
50 A. 14,000 C.M.

NO. 5 - $\frac{9}{32}$" HOLE
70 A. 30,000 C.M.



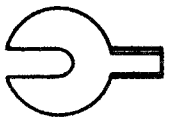
NO. 5A $\frac{9}{32}$" HOLE
90 A. 50,000 C.M.



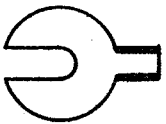
NO. 6 - $\frac{11}{32}$" HOLE
125 A. 60,000 C.M.

NO.	AMP.	CIR. MIL AREA	SIZE HOLE	NO.	AMP.	CIR. MIL AREA	SIZE HOLE	NO.	AMP.	CIR. MIL AREA	SIZE HOLE
6A	150	75,000	$\frac{13}{32}$"	8A	250	250,000	$\frac{1}{2}$"	10	400	500,000	$\frac{5}{8}$"
7	175	100,000	$\frac{13}{32}$"	9	325	400,000	$\frac{1}{2}$"	11	475	650,000	$\frac{3}{4}$"
8	235	150,000	$\frac{1}{2}$"	9A	362	450,000	$\frac{1}{2}$"	12	550	800,000	$\frac{3}{4}$"

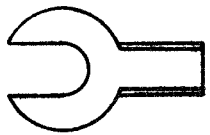
LGT., BATTERY, AND STAKON LUGS, TELEPHONE



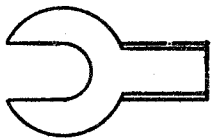
A LGT.



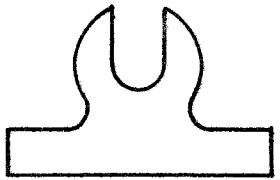
B LGT.



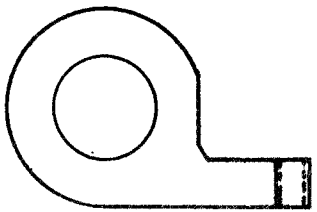
C LGT.



D LGT.



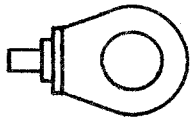
E LGT.



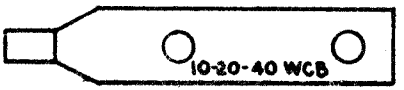
BATTERY

L38 0.156" HOLE TELE.

A77 #8 SCREW



A71 $\frac{5}{16}$" HOLE STAKON



A5 HOLE 0.173" $\frac{7}{8}$" APART STAKON

NOTE: SERIES "A" ARE TELEPHONE LUGS

A38 HOLE 0.156 STAKON

A36 0.187" HOLE

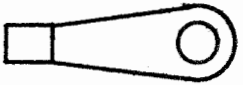
STAKON TERMINAL LUGS

B5 0.173"HOLE $\frac{7}{8}$"APART
10-20-40 W.C.B.

B6 0.187"HOLE

A36 0.187"HOLE

B9 0.140"HOLE



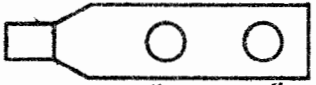
B12 0.193"HOLE

B15 0.169"HOLE-$\frac{3}{32}$"LIP
SEL. SW.

B16 0.169"HOLE

B17 0.169"HOLE

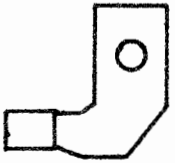
LG'T.
B33 0.149"HOLE



B30 0.187"HOLE $\frac{1}{2}$"APART

B38 0.156"HOLE

LG'T.
B36 0.187"HOLE



B43 0.169"HOLE
FLAG TYPE

B46 0.169"HOLE
$\frac{7}{32}$"BOSS REINFORCED

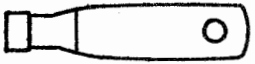
B71 0.265"HOLE

B80 0.144"HOLE
CENTER LOCATED
$\frac{1}{8}$"FROM END & $\frac{1}{8}$"
FROM SIDE. SEL.SW.

C77 FOR #8 SCREW

STAKON AND SCREW TYPE LUGS

C36 #10 SCREW



WSB11 0.125"HOLE

WSB 25 0.187"HOLE

WSB 28 0.187"HOLE $\frac{5}{16}$" APART

WSB 32 0.187"HOLE $\frac{5}{16}$" APART

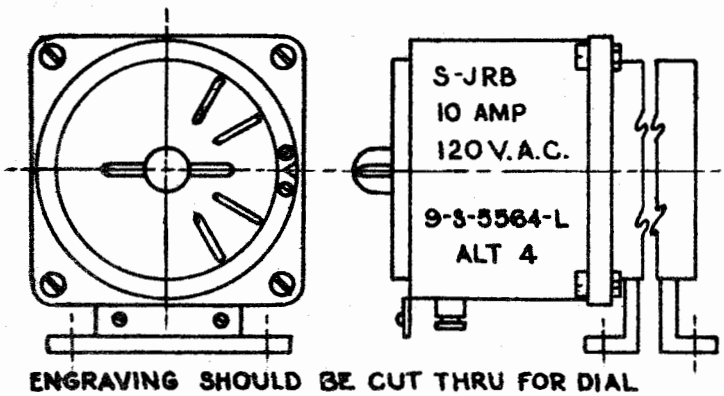
WSB 82 0.144"HOLE $\frac{3}{16}$" LIP

WSB 150 0.177" HOLE MAY BE USED WITH NAVY TYPE JR SWITCHES. $\frac{1}{16}$" LIP

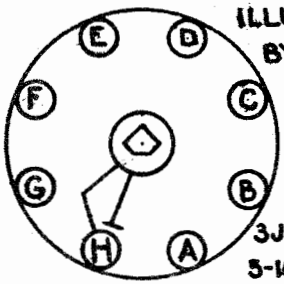
WS INDICATES WATER SEAL. LUGS AVAILABLE IN BOTH WS & NON WS

LUG TERMINALS, SOLDERLESS, PRESSURE GRIP MECHANICAL CONNECTING FOR SHIPBOARD USE
TYPE CLS SCREW TYPE
FURNISHED UNDRILLED
ORDER BY NAVY CABLE NO. 1 OR 2 HOLES

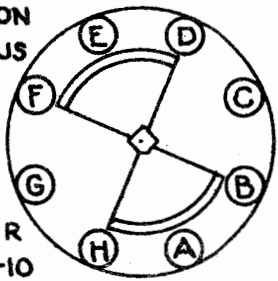
APPROX. AWG SIZE	NAVY CABLE SIZE RANGE
14-8	4-14
6-4	23-40
3-1	50-75
1/0-2/0	100-125
3/0-4/0	150-200
	250-350
	400-500
	650-800
	1000
	1600-2000



ENGRAVING SHOULD BE CUT THRU FOR DIAL ILLUMINATION BY LUMINUS PLATE

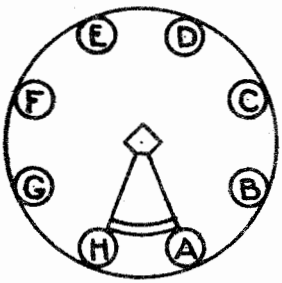


3JR
5-10
COMMON ROTOR



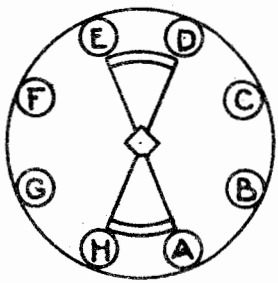
4JR
5-10
SPECIAL CUTOUT

1JR 5-10-15-25



SINGLE POLE

2JR 5-10-15-25



DOUBLE POLE

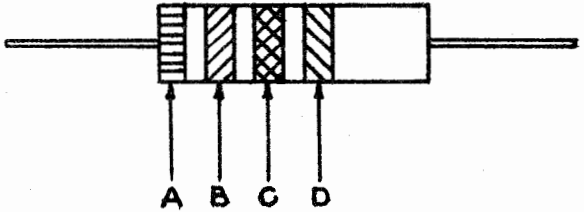
NOTE: CONTACTS ARE LETTERED A B C COUNTER CLOCKWISE ON JR AND LETTERED A B C CLOCKWISE ON JB

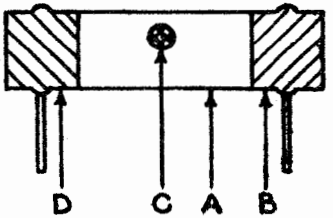
STANDARD RADIO-INDUSTRY COLOR CODE

COLOR	SIGNIFICANT FIGURE	DECIMAL MULTIPLIER	TOLERANCE IN PERCENT*	VOLTAGE RATING	
Black	0	1	± 20 (M)		
Brown	1	10	—	100	
Red	2	100	± 2 (G)	200	
Orange	3	1,000	—	300	
Yellow	4	10,000	—	400	
Green	5	100,000	—	500	
Blue	6	1,000,000	—	600	
Violet	7	10,000,000	—	700	
Grey	8	100,000,000	—	800	
White	9	1,000,000,000	—	900	
Gold	—	1.0	± 5 (J)	1000	
Silver	—	0.01	± 10 (K)	2000	
No Color	—	—	± 20	500	

*LETTER SYMBOL IS USED AT END OF TYPE DESIGNATION IN RMA STANDARDS AND JAN SPECIFICATIONS TO INDICATE TOLERANCE

RMA & JAN COLOR CODING OF COMPOSITION RESISTORS





AXIAL LEADS	COLOR	RADIAL LEADS
BAND A	INDICATES FIRST SIGNIFICANT FIGURE IN OHMS	BODY A
BAND B	INDICATES SECOND SIGNIFICANT FIGURE	END B
BAND C	INDICATES DECIMAL MULTIPLIER	BAND C OR DOT
BAND D	INDICATES TOLERANCE IN PERCENT IF NO COLOR APPEARS IN THIS POSITION, TOLERANCE IS 20%	BAND D

NOTE: SEE RADIO COLOR CODE

COLOR CODING OF CERAMIC CAPACITORS

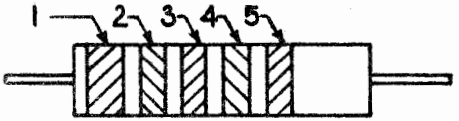


FIG. 1 -COLOR CODE

1. TEMPERATURE COEFFICIENT
2. FIRST SIGNIFICANT FIGURE
3. SECOND SIGNIFICANT FIGURE
4. DECIMAL MULTIPLIER
5. CAPACITANCE TOLERANCE

FIG. 2 -TYPE DESIG.

RI CC 20 C H 10 O K

A B C D E F G H

A RMA CLASS
B CERAMIC CAPACITOR
C STYLE (CASE SIZE)
D TEMP. COEFF.
E TOLERANCE ON TEMP. COEFF.
F SIGNIFICANT FIGURES
G NO. OF ZEROS
H TOLERANCE ON CAPACITANCE

NOTE: FOR MOLDED MICA CAP. (CM) F & G COMBINE TO SHOW CAP.

COLOR	SIG. FIG.	DECIMAL MULT.	CAPACITANCE TOLERANCE IN PERCENT (C > 10 μμf)	CAPACITANCE TOLERANCE IN μμf (C ≤ 10 μμf)
BLACK	0	1	±20 (M)	—
BROWN	1	10	±1 (F)	±0.1 (B)
RED	2	100	±2 (G)	—
ORANGE	3	1,000	—	—
YELLOW	4	10,000	—	—
GREEN	5	—	±5 (J)	±0.5 (D)
BLUE	6	—	—	—
VIOLET	7	—	—	—
GREY	8	0.01	—	±0.25 (C)
WHITE	9	0.1	±10 (K)	1.0 (F)
SILVER	—	—	—	—

NOTE: LETTERS IN PARENTHESES = TYPE DESIG. IN FIG. 2

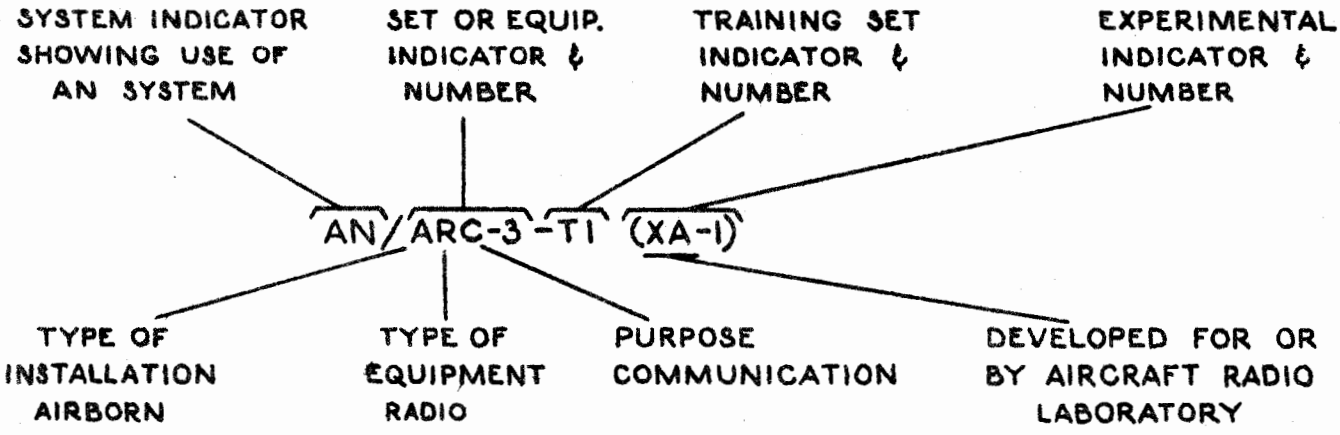
CLEAR SLEEVING SIZES

I. D. SIZE	I. D. INCHES	C. M. CONDUCTOR	I. D. SIZE	I. D. INCHES	C. M. CONDUCTOR	I. D. SIZE	I. D. INCHES	C. M. CONDUCTOR
.160	5/32	3,000	.520	33/64	60,000	1.030	1-1/32	400,000
.250	1/4	4,000	.570	37/64	75,000	1.100	1-3/32	500,000
.280	9/32	9,000	.630	5/8	100,000	1.165	1-11/64	650,000
.320	5/16	14,000	.680	11/16	125,000	1.225	1-7/32	800,000
.360	23/64	23,000	.760	49/64	150,000	1.285	1-9/32	
.400	13/32	30,000	.820	53/64	200,000	1.365	1-23/64	
.430	7/16	40,000	.890	57/64	250,000	1.470	1-15/32	
.450	29/64	50,000	.960	61/64	300,000	1.585	1-37/64	

NOTE: THE CONDUCTOR SIZES ARE NOMINAL AS INSULATION THICKNESS WILL VARY.

JOINT ARMY-NAVY OR AN NOMENCLATURE

TAKEN FROM REF. DATA FOR RADIO ENGINEERS - 3RD EDITION
FEDERAL TELEPHONE AND RADIO CORP.



SEE PAGE 79

JOINT ARMY-NAVY NOMENCLATURE SYSTEM

Set or Equip. Indicator Letters Type of Installation	Type of Equipment	Purpose
A Airborne	A Invisible light, heat radiation	A Auxiliary assemblies (not complete operating sets)
B Underwater mobile, submarine	B Pigeon	B Bombing
C Air transportable (inactivated, do not use)	B Carrier (Wire)	C Communications
D Pilotless carrier		D Direction finder
G Ground, general ground use (includes two or more ground installations)	G Telegraph or teletype (wire)	G Gun directing
		H Recording (photographic, meteorological, and sound
	I Interphone and public address	
K Amphibious	K Telemetering	
M Ground, mobile in a vehicle which has no function other than transporting the equipment	M Meteorological	M Maintenance and test assemblies
	N Sound in air	N Navigational aids
P Ground, pack, or portable	P Radar—	P Reproducing (Photo and sound)
	Q Underwater sound	Q Special, or combination of types
	R Radio	R Receiving
S Shipboard	S Special types, magnetic, etc., or combinations of types	S Search
T Ground, transportable	T Telephone (wire)	T Transmitting
U General utility (includes two or more general classes)		
V Ground, vehicular, installed in vehicle designed for other functions, i.e. tanks	V Visual and visible light	
W Underwater, fixed		W Remote control
	X Facsimile or television	X Identification and recognition

JOINT ARMY-NAVY NOMENCLATURE SYSTEM

TABLE OF COMPONENT INDICATORS

Indicator	Family Name
AB	Support, Antenna
AM	Amplifiers
AS	Antenna Assemblies
AT	Antennas
BA	Battery, primary type
BB	Battery, secondary type
BZ	Signal Devices, Audible
C	Control Articles
CA	Commutator Assemblies, Sonar
CB	Capacitor Bank
CG	Cables and Trans. Line, R. F.
CK	Crystal Kits
CM	Comparators
CN	Compensators
CP	Computers
CR	Crystals
CU	Coupling Devices
CV	Converters (electronic)
CW	Covers
CX	Cords
CY	Cases
DA	Antenna, Dummy
DT	Detecting Heads
DY	Dynamotors
E	Hoist Assembly
F	Filter
FN	Furniture
FR	Frequency Measuring Devices
G	Generators
GO	Goniometers
GP	Ground Rods
H	Heads, Hand, and Chest Sets
HC	Crystal Holder
HD	Air Conditioning Apparatus
ID	Indicating Devices
IL	Insulators
IM	Intensity Measuring Devices
IP	Indicators, Cathode-Ray Tube
J	Junction Devices
KY	Keying Devices
LC	Tools, Line Construction

JOINT ARMY-NAVY NOMENCLATURE SYSTEM

TABLE OF COMPONENT INDICATORS

Indicator	Family Name
LS	Loudspeakers
M	Microphones
MD	Modulators
ME	Meters, Portable
MK	Maintenance Kits or Equipments
ML	Meteorological Devices
MT	Mountings
MX	Miscellaneous
O	Oscillators
OA	Operating Assemblies
OS	Oscilloscope, Test
PD	Prime Drivers
PF	Fittings, Pole
PH	Photographic Articles
PP	Power Supplies
PT	Plotting Equipments
PU	Power Equipments
R	Radio and Radar Receivers
RD	Recorders and Reproducers
RE	Relay Assemblies
RF	Radio Frequency Component
RG	Cables and Trans. Line, Bulk R. F.
RL	Reel Assemblies
RP	Rope and Twine
RR	Reflectors
RT	Receiver and Transmitter
S	Shelters
SA	Switching Devices
SB	Switchboards
SG	Generators, Signal
SM	Simulators
SN	Synchronizers
ST	Straps
T	Radio and Radar Transmitters
TA	Telephone Apparatus
TD	Timing Devices
TF	Transformers
TG	Positioning Devices
TH	Telegraph Apparatus
TK	Tool Kits or Equipments
TL	Tools

JOINT ARMY-NAVY NOMENCLATURE SYSTEM

TABLE OF COMPONENT INDICATORS

Indicator	Family Name
TN	Tunning Units
TS	Test Equipment
TT	Teletype and Facsimile Apparatus
TV	Tester, Tube
U	Connectors, Audio and Power
UG	Connectors, R. F.
V	Vehicles
VS	Signaling Equipment, Visual
WD	Cables, Two-Conductor
WF	Cables, Four-Conductor
WM	Cables, Multiple-Conductor
WS	Cables, Single-Conductor
WT	Cables, Three-Conductor
ZM	Impedance Measuring Devices

JOINT ARMY-NAVY NOMENCLATURE SYSTEM

EXPERIMENTAL INDICATORS

In order to identify a set or equipment of an experimental nature with the development organization concerned, the following indicators will be used within the parentheses:

XA Aircraft Radio Laboratory, Wright Field, Dayton, Ohio.

XB Naval Research Laboratory, Anacostia Sta., Belleville, D. C.

XC Coles Signal Laboratory, Red Bank, New Jersey.

XE Evans Signal Laboratory, Belmar, New Jersey.

XG USN Electronic Laboratory, San Diego, California.

XM Squier Signal Laboratory, Fort Monmouth, New Jersey.

XN Navy Department, Washington, D. C.

XU USN Underwater Sound Laboratory, Fort Trumbull, New London, Connecticut.

XW Watson Laboratories, Red Bank, New Jersey.

Example of AN type number

AN/ARC-3 (XA-2) Second experimental type developed for Air-Craft Radio Laboratories.

SCHEME OF MAJOR GROUPING

NAVSHIPS 250-202-4, 1951

S1	Design
S3	Ship Readiness
S4	Service to Ships
S5	Laying Out
S6	Launching
S7	Docking
S8	Trials
S11	Hull Structures
S12	Hull Fittings
S13	Armor
S14	Deck Coverings
S15	Air Fuel Cargo Stow.
S16	Access Openings
S17	Booms, Masts, & Spars
S18	Rigging & Canvas
S19	Preservative Coatings
S20	Winches & Capstans
S21	Hydraulic Speed Mach.
S22	Steering & Diving
S23	Industrial Gases
S24	Ship Control
S25	Towing & Equip.
S26	Mooring & Equip.
S28	Designating
S29	Seaworthiness
S30	Storerooms
S31	Repair Parts
S32	Office Spaces
S33	Berthing
S34	Commissary Spaces
S35	Laundry Spaces
S36	Sanitation Spaces
S37	Medical & Dental Spaces
S38	Vent & Heating
S39	Insulation
S40	Machinery Plant Gen.
S41	Main Propulsion
S42	Reduction Gears
S43	Shafts & Bearings
S44	Propellers
S45	Lubrication
S46	Condensers
S47	Pumps
S48	Piping
S49	Compressors
S50	Aux. Machinery
S51	Boilers
S52	Uptakes
S53	Blowers
S55	Fuel Oil & Equip.
S56	Boiler Feed Water
S58	Distilling Plant
S59	Refrigeration
S60	Electric Plant Gen.
S61	Electric Power Gen.
S62	Electric Power Distrib.
S63	Elect. Power Applications
S64	Lighting
S65	I.C. Sys. & Apparatus
S66	Searchlights
S67	Electronics
S69	Elect. Instruments
S70	Signaling Apparatus
S71	Fire Control
S72	Turrets
S73	Armament
S74	AA Guns
S75	Torpedoes
S76	Mines & Depth Charge Stow.
S78	Ammunition
S79	Small Arms
S81	Degaussing
S82	Small Boats
S83	Airplane Handling & Stow.
S85	Motion Picture Projection
S86	Training Apparatus
S87	Ind. & Recording Inst.
S88	Damage Control
S89	Nuclear Reactors
S90	Nuclear Projection
S91	Workshop Equip.
S92	Tools & Equip., Portable
S93	Fire Fighting
S94	Ship Sal'vge, Rescue & Equip
S96	Track & Suspension Sys.
S97	Heat Transfer Equip.

TROUBLE IN A SYNCHRO SYSTEM

When trouble occurs on a new job:

1. Check all wiring. Ring out circuits. Tighten all terminals.
2. Set all units on electrical zero.

Common troubles that occur after a system has been in service:

1. Opens, shorts, grounds, and misconnections at switches.
2. Heavy oil or water may leak into the Synchro housing causing overheating, sluggish action and shorted windings.
3. Lugs on terminal boards often loosen up due to vibration and cause intermittent open circuits.
4. Bearings sometimes rust due to inadequate rust-preventing lubrication. This usually causes jerky operation and overheating.
5. Windings occasionally become open or shorted due to vibration or corrosion.
6. Lamination or windings occasionally get loose, causing mechanical hum and vibration.
7. Worn slip rings and dirty brushes cause intermittent operation.
8. Synchro Motors sometimes oscillate or spin due to defective dampers or to short circuits.

SYNCHRO TROUBLE SHOOTING

If units hum and get hot, overload indicator lights, or fuses blow, be sure the motor is not jammed mechanically. Then turn the generator smoothly in one direction and see how the motor acts:

IF:	IF:	IF:
Overload Indicator lights, and units hum at all Generator Settings: **One unit gets hot.** Motor follows smoothly in the right direction, but reads wrong. ROTOR CIRCUIT IS OPEN OR SHORTED Trouble is in unit which does not heat up. If fuse blows, look for rotor short in respective unit.	Overload Indicator lights, and units hum at all Generator settings except two opposite ones: **Both units get hot.** Motor stays on one reading all the time or swings abruptly to the opposite one. May oscillate or spin. STATOR CIRCUIT IS SHORTED	Overload Indicator lights, and units hum only occasionally, at two opposite Generator settings: **Both units get warm.** Motor turns smoothly in one direction, then stalls or reverses and turns the other way. STATOR CIRCUIT IS OPEN

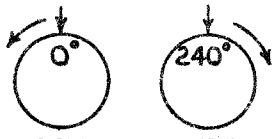
IF UNITS DO NOT OVERLOAD OR GET HOT, BUT MOTOR READS WRONG OR TURNS BACKWARD, FOLLOWING THE GENERATOR SMOOTHLY:

THE WIRING BETWEEN THE ROTORS OR THE STATORS IS MIXED UP, OR UNITS ARE NOT ZEROED.

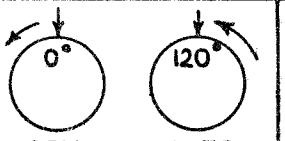
—SEE MALFUNCTION TABLE.

SYNCHRO MALFUNCTION TABLE

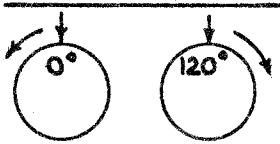
MOTOR READS WRONG OR TURNS BACKWARD – NORMAL TORQUE – NO O.L.



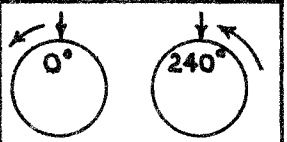
GEN. MTR.
S1-S2 REVERSED



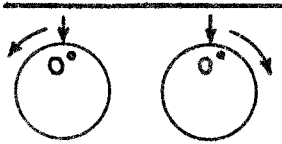
GEN. MTR.
S1-S2, S2-S3, S3-S1



GEN. MTR.
S2-S3 REVERSED



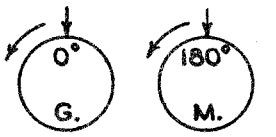
GEN. MTR.
S1-S3, S2-S1, S3-S2



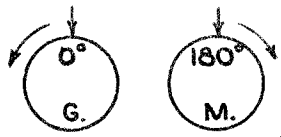
GEN. MTR.
S1-S3 REVERSED

ARROW SHOWS DIRECTION OF ROTATION OF UNIT. TABLES APPLY TO STD. CONNECTION BTWN. 1 GEN. & 1 MTR.

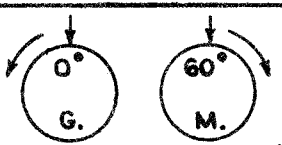
MOTOR READS WRONG OR TURNS BACKWARD NORMAL TORQUE – NO OVERLOAD



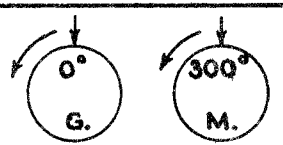
R1-R2 REVERSED



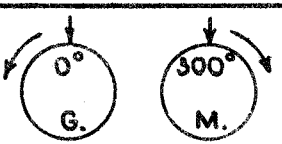
S1-S3 REVERSED &
R1-R2 REVERSED



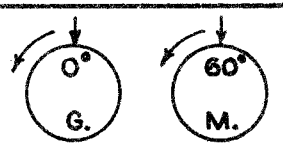
S1-S2 REVERSED &
R1-R2 REVERSED



S1-S2, S2-S3, S3-S1 &
R1-R2 REVERSED



S2-S3 REVERSED &
R1-R2 REVERSED



S1-S3, S2-S1, S3-S2 &
R1-R2 REVERSED

TROUBLE SHOOTING SYNCHROS WITH AN AC VOLTMETER

Any trouble except an open in the stator circuit will cause one or more of the voltages to be wrong, as follows;

Symptoms

IF: Voltage between one pair of S leads is 0 for all Generator positions. Voltage between other pairs of S leads varies from 0 to 78 volts. R1-R2 voltages are both 115 volts.

TROUBLE: S LEADS ARE SHORTED.
(Where 0 volts is read at all positions)

IF: S voltages vary from 0 to 55 volts, R1-R2 voltage on one unit is 115 volts, on the other unit is 0 volts.

TROUBLE: R LEADS ARE SHORTED.
(on unit where 0 volts is read)

IF: S voltages vary from 0 to 75 volts, R voltage is 115 volts on both units.

TROUBLE: ONE ROTOR IS OPEN INTERNALLY.
(see below)

IF: S voltages vary from 0 to 80 volts, R voltage is 115 volts on one unit and 90 volts on the other.

TROUBLE: ROTOR SUPPLY LEADS ARE OPEN.
(on unit reading 90 volts)

TO CHECK FOR OPEN WINDINGS: Disconnect Stator Leads on suspected unit and read the voltage between them:

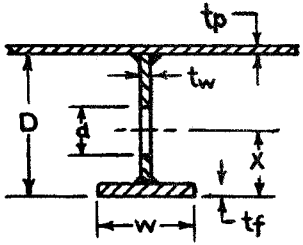
IF: All Stator voltages are 0, and Rotor voltage is 115 volts.

TROUBLE: ROTOR IS OPEN.

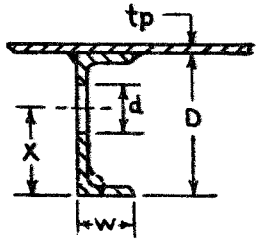
IF: One S voltage is normal, other two are 0.

TROUBLE: STATOR IS OPEN.
(The lead that is common to the two connections that read 0 is open.)

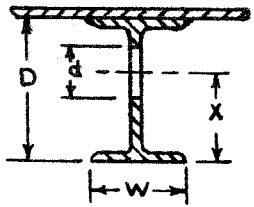
HOLES IN BEAMS FOR SURFACE VESSELS



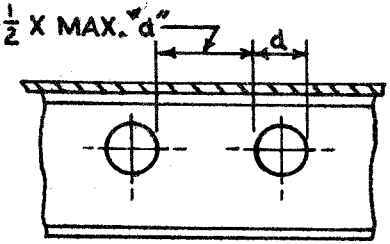
WELDED TEE



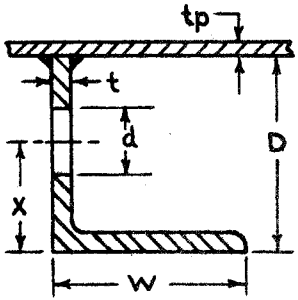
CHANNELS & BULB L



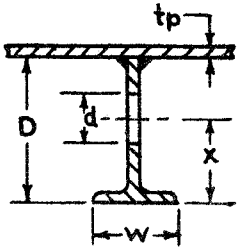
STD. WF & I-BEAMS



DIMENSIONS FIT ALL FIVE CASES



ANGLE



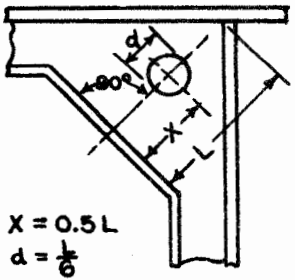
JUNIOR I-BEAMS

THE FOLLOWING TABLES GIVE DISTANCES FOR "X" AND "d" FOR UNREINFORCED HOLES IN RESPECTIVE BEAMS.

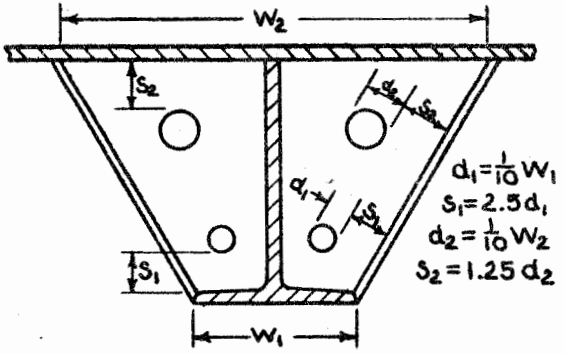
NOTE: FOR SURFACE VESSELS ONLY

FROM BUSHIPS NO. S1103 H 800101-0

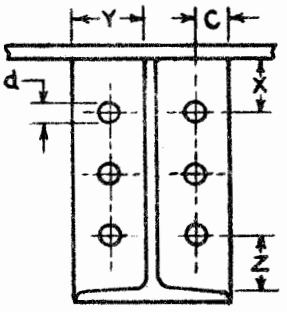
HOLES IN BRACKETS-SUPPORT POINTS-FOR SURFACE VESSELS



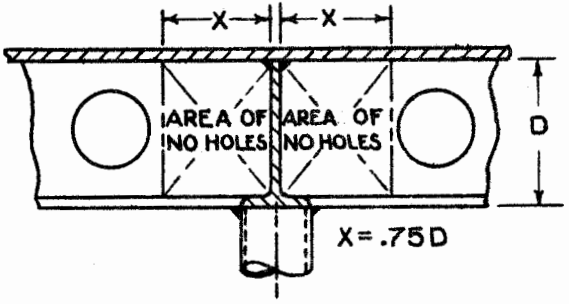
X = 0.5 L
d = $\frac{1}{6}$
L = DIAGONAL DEPTH OF BKT.



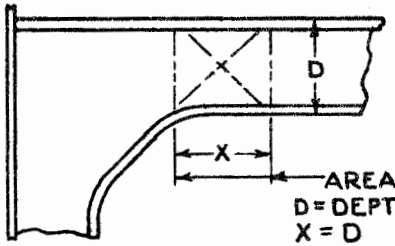
$d_1 = \frac{1}{10} W_1$
$S_1 = 2.5 d_1$
$d_2 = \frac{1}{10} W_2$
$S_2 = 1.25 d_2$



X = .75Y
Z = X
C = .5Y
d = .25Y



X = .75D



AREA OF NO HOLES
D = DEPTH OF BEAM
X = D

INDICATOR LIGHTS

I.C. Circuit VS

For Valve Position ind. cir.

Furnished complete with two Navy Type TB-12 lamps for each dial.

The two jewels are amber and blue, and are marked open and shut respectively.

Type 2 Two Dial—Stock No. 17-1-380—3½″ x 3½″ x 4″

General Purpose

For general shipboard use.

Glass disk lenses are not furnished with these lights, but are listed separately.

Lenses are etched on one side and are colored amber, blue, clear, green, opal, red, white, yellow.

Two lamps, Navy Type CS-3 or CS-5/17 are required for each dial.

Bulkhead mounted
Panel mounted } 1, 2, 3, 4, or 6 dials.

Nonwatertight Panel and Switchboard

These lights are furnished without lamps or globes. They require a Navy Type TS-52 lamp.

Specify wether for 6-10, 120, or 450 volt operation.

A 1″ dia. hole is required for mounting.

Type A Supplied with transformer or resistor as required. AC or DC.
Panel thickness 3/16″-2″—length 4-3/4″

Type C Without transformer or resistor, order separately as required. AC or DC.
Panel thickness 1/8″-3/8″—length 2-1/2″

INDICATOR LAMPS

			BASE	BULB	LGTH. IN.	NAVY TYPE	STOCK NO.
I.C. Cir.	.50 Amps.	2.5V	Min. S.	T3-1/4	1-3/16	TB-12	G17-L-6363-100
I.C. Cir.	.15 Amps.	6-8V	Min. Bay S.C.	T3-1/4	1-3/16	TB-14	G17-L-6297
Ships Service	.38 Amps.	20V	C.S.	T7	1-7/8	CS-3	G17-L-605
Swbd.	.25W	105-125V	Bay C.D.C.	T4-1/2	1-1/2	VG-12	G17-L-6811-25
Swbd.	.45 Amps.	6-8V	Min. Bay S.C.	G4-1/2	1-1/16	TS-52	G17-L-5207

Bay.C.	Bayonet Candelabra
S.C.	Single Contact
D.C.	Double Contact
S.	Screw
Min.Bay.	Miniature bayonet
C.S.	Candelabra screw

INDICATOR LIGHTS

I.C. Circuit BU
For Barrier-up Ind. Cir.
Furnished Complete with red lenses, adjustable polaroid dimmers, and two TB-14 lamps per dial.

Type 1-two dial 3-1/2″ x 3-1/2″ x 4″

Target Markings	Stock No.
1 and 2	17-1-370
1 and 3	17-1-370-10
2 and 3	17-1-370-20
5 and 6	17-1-370-30

Type 3-four dial 8″ x 4-3/4″ x 4″

Target Markings	Stock No.
1, 2, 3, 4,	17-1-371
1, 2, 3, 5,	17-1-371-10
1, 2, 4, 5,	17-1-371-20
1, 3, 4, 5,	17-1-371-30
2, 3, 4, 5,	17-1-371-40

HANGERS

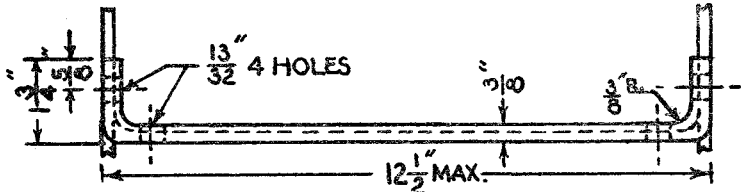
Which conform to 9-S-3980-L sheet 77 alt 27 15, Oct., '50

Types 9-9X-12 are made of steel

Types 9L-9LX are made of Aluminum

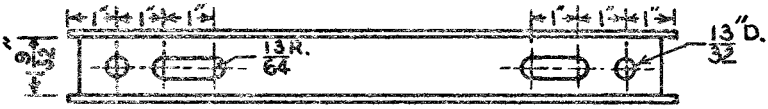
When ordering hangers, specify the type, length and quantity required.

The following is a typical Type 9 or 9L hanger:

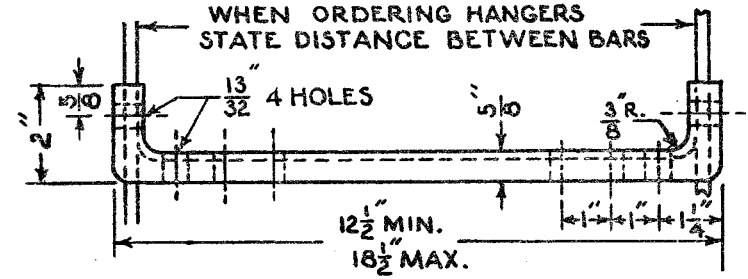


TYPE 9L ALUMINUM HANGERS will be made with two end holes only, additional holes will be drilled or punched as necessary to fit cable straps, the same applies to Type 9LX.

TYPE 9 STEEL HANGERS will be made similar to type 9L with the exception of two slots added thus: Bottom View



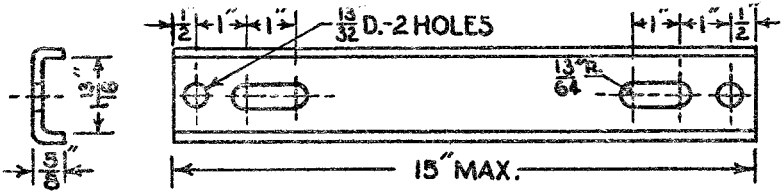
The following is a typical Type 9X or 9LX Hanger



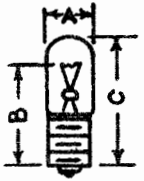
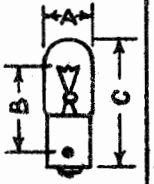
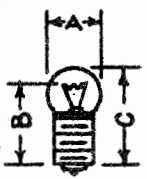
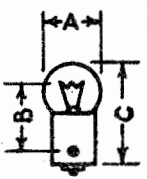
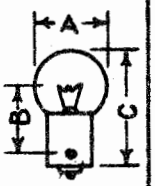
Type 9LX, aluminum hangers made with 2 end holes only—.

Type 9X, steel made the same as type 9, above with 2 slots in addition to the 2 end holes.

Type 12, steel hanger, has no curved ends.



PILOT LAMP DATA

MAXIMUM SIZE					
TYPE NO.	T-3¼	T-3¼	G-3½	G-3½	G-4½
BASE	SCREW (MINIATURE)	BAYONET (MINIATURE)	SCREW (MINIATURE)	BAYONET (MINIATURE)	BAYONET (MINIATURE)
BULB	TUBULAR	TUBULAR	SMALL ROUND	SMALL ROUND	LARGE ROUND
LAMP NUMBERS	40 41 42 46 48 292	40A 43 44 45 47 49 49A 292A	50	51	55

LAMP NO.	MAX. DIMENSIONS		
	A	B	C
40	15/32"	29/32"	1 1/8"
40A	15/32	29/32	1 1/8
41	15/32	29/32	1 1/8
42	15/32	29/32	1 1/8
43	15/32	29/32	1 1/8
44	15/32	29/32	1 1/8
45	15/32	29/32	1 1/8
46	15/32	29/32	1 1/8
47	15/32	—	1 1/8
48	15/32	29/32	1 1/8
49	15/32	23/32	1 1/8
49A	15/32	23/32	1 1/8
50	1/2	23/32	15/16
51	1/2	1/2	15/16
55	5/8	1/2	1 1/16
292	15/32	29/32	1 1/8
292A	15/32	23/32	1 1/8

PILOT LAMP DATA

Lamp No.	Bead Color	Base	Bulb Type	Volts	Amps.	Used For
40	Brown	Screw	T-3¼	6-8	0.15	Dials
40A†	Brown	Bayonet	T-3¼	6-8	0.15	Dials
41	White	Screw	T-3¼	2.5	0.5	Dials
42	Green	Screw	T-3¼	3.2		Dials
43	White	Bayonet	T-3¼	2.5	0.5	Dials and Tuning Meters
44	Blue	Bayonet	T-3¼	6-8	0.25	Dials and Tuning Meters
45	*	Bayonet	T-3¼	3.2	‡	Dials
46△	Blue	Screw	T-3¼	6-8	0.25	Dials and Tuning Meters
47†	Brown	Bayonet	T-3¼	6-9	0.15	Dials
48	Pink	Screw	T-3¼	2.0	0.06	Battery Set Dials
49§	Pink	Bayonet	T-3¼	2.0	0.06	Battery Set Dials
□	White	Screw	T-3¼	2.1	0.12	Dials
49A§	White	Bayonet	T-3¼	2.1	0.12	Dials
50	White	Screw	G-3½	6-8	0.2	Auto-Radio Dials; Flashlights
51△	White	Bayonet	G-3½	6-8	0.2	Auto-Radio Dials; Panel Boards
——	White	Screw	G-4½	6-8	0.4	Auto-Radio Dials; Flashlights
55	White	Bayonet	G-4½	6-8	0.4	Auto-Radio Dials; Flashlights
292★	White	Screw	T-3¼	2.9	0.17	Dials
292A	White	Bayonet	T-3¼	2.9	0.17	Dials and Coin Machines

* White in G.E. and Sylvania; Green in National Union Raytheon and Tung-Sol.

‡ 0.35 in G.E. and Sylvania; 0.5 in National Union Raytheon and Tung-Sol.

† 40A and 47 are interchangeable.

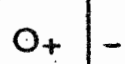
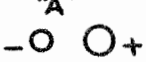
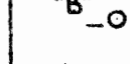
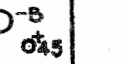
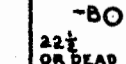
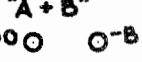
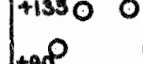
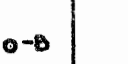
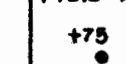
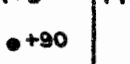
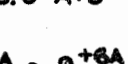
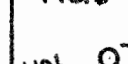
§ 49 and 49A are interchangeable.

△ Have frosted bulb.

□ Replace with No. 48.

★ Use in 2.5 volt sets where regular bulb burns out too frequently.

RCA BATTERY SOCKET PATTERNS

101 "A"  $1\frac{1}{2}$V	102 "A"  3V	103 "A"  $4\frac{1}{2}$V	104 "A"  6V	105 "A"  PILOT $7\frac{1}{2}$V	107 "B" +45	110 "B" OR DEAD +45
111 "B"  $22\frac{1}{2}$ OR DEAD PILOT +45 +45	112 "C" 	113 "C" 	115 "A+B" 	116 "A+B" 	FIG.1 "B+C" 	FIG.2 "A+B"
FIG.3 "A+B"  RECESSED	FIG.4 "A+B"  RECESSED	FIG.5 "A+B" 	FIG.6 "A+B" 	FIG.7 "A+B+C" 	FIG.8 "B" 	FIG.9 "A+B"

TOP VIEWS ARE SHOWN

NOS. 101-116 ARE BASED ON CORRESPONDING RMA STANDARD BATTERY SOCKET PATTERNS. ANY PARTICULAR BATTERY TYPE MAY NOT PROVIDE ALL VOLTAGES SHOWN ON PATTERNS APPLICABLE TO THE TYPE.

DISCHARGE CHARACTERISTICS

126 Cell Storage Battery Type VLA-47B Exide 1/C
For Fleet Type Submarines

	Time Rate (Hours)	Service Ratings—Capacity After 75 Cyc. 1.210 Sp. Gr. Amps.	1.210 Sp. Gr. K.W.	1.250 Sp. Gr. Amps.	1.250 Sp. Gr. K.W.	Final Cell Volts At Terminals Avg.	Final Cell Volts At Terminals Min.	Final Voltage at Battery Terminals	Efficiency Amp. Hr %	Efficiency Watt Hr. %
1	½	6440	1171	8050	1463	1.31	1.05	160	90	55
2	1	4255	869	5320	1087	1.46	1.28	180	90	61
3	3	1935	440	2420	551	1.61	1.51	201	90	68.5
4	5	1300	304	1620	379	1.65	1.57	207	90	70.5
5	6	1130	267	1410	333	1.66	1.58	208	90	71.5
6	10	745	179	930	223	1.69	1.63	212	90	73
7	20	409	100	510	124	1.71	1.66	215	90	74
8	36	244	60	305	75	1.72	1.68	217	90	75
9	48	188	46	235	58	1.72	1.68	217	90	75

CAPACITY AT DIFFERENT INITIAL TEMPERATURES

	60°F. Hr.	60°F. Min.	70°F. Hr.	70°F. Min.	80°F. Hr.	80°F. Min	90°F. Hr.	90°F. Min	100°F. Hr.	100°F. Min	110°F. Hr.	110°F. Min	120°F. Hr.	120°F. Min	130°F. Hr.	130°F. Min
1		26		28		30		31		32		33		34		35
2		54		57	1	00	1	02	1	04	1	05	1	06	1	08
3	2	46	2	53	3	00	3	05	3	08	3	11	3	13	3	16
4	4	41	4	52	5	00	5	06	5	10	5	14	5	18	5	21
5	5	38	5	50	6	00	6	08	6	13	6	17	6	21	6	25
6	9	30	9	46	10	00	10	10	10	17	10	23	10	26	10	30
7	19	14	19	40	20	00	20	12	20	20	20	28	20	34	20	37
8	34	58	35	34	36	00	36	14	36	24	36	32	36	39	36	39
9	46	48	47	31	48	00	48	12	48	20	48	26	48	31	48	31

CHARGING DATA

126 Cell Storage Battery Type VLA-47B Exide 1/C
For Fleet Type Submarines

Data on modified constant potential charge following a 48 hour rate discharge of 11280 amper hours in 1.250 specific gravity.

Charge Rate	Approx. Time		Approx. Battery Volts		
	Hr.	Min.	Start	Av.	End
Start 2700 Amperes	1	40	284	288	292
Constant Potential Tapering From 2700 Amps. to 300 Amps.	5	10	292	292	292
Finish 300 Amperes	3	10	292	314	334

T.V.G. TABLE

Voltages at various temperatures at which charging current must be reduced to next step.

Temp.	Batt.	Cell
50	311	2.47
55	309	2.455
60	307	2.44
65	306	2.425
70	304	2.41
75	302	2.395
80	300	2.38
85	298	2.365
90	296	2.35
95	294	2.335
100	292	2.32
105	290	2.305
110	289	2.29
115	287	2.275
120	285	2.26
125	283	2.245
130	281	2.23

SP. GR. CORRECTION & CHARGING DATA

126 Cell Storage Battery Type VLA-47B Exide 1/C
For Fleet Type Submarines

CORRECTION OF SP. GR. FOR HEIGHT OF ELECTROLYTE

The operating SP. GR. is based on electrolyte at normal level which is 6-7/16″ below the top of the filling vent. For each 1″ below this level, subtract 8 Points (.008SP. GR.) from the hydrometer reading. For each 1″ above this level, add 8 points to the reading. Correction for temperature is to be made as usual. Do not fill above normal level, as this is also maximum level for filling. Measure height of electrolyte when cells are not gassing.

TYPICAL CHARGE DATA

Following a 3 hour rate discharge of 7260 amp. hours in 1.250 specific gravity. Data will vary with temp. and Batt. age.

Charge Rate	Approx. Time		Approx. Battery Volts		
	Hr.	Min.	Start	Av.	End
Start 2700 Amperes	1	00	284	288	292
Constant Potential Tapering From 2700 Amps. to 300 Amps.	3	30	292	292	292
Finish 300 Amperes	2	40	292	314	334

TEMPERATURES LIMITS AND NOTES

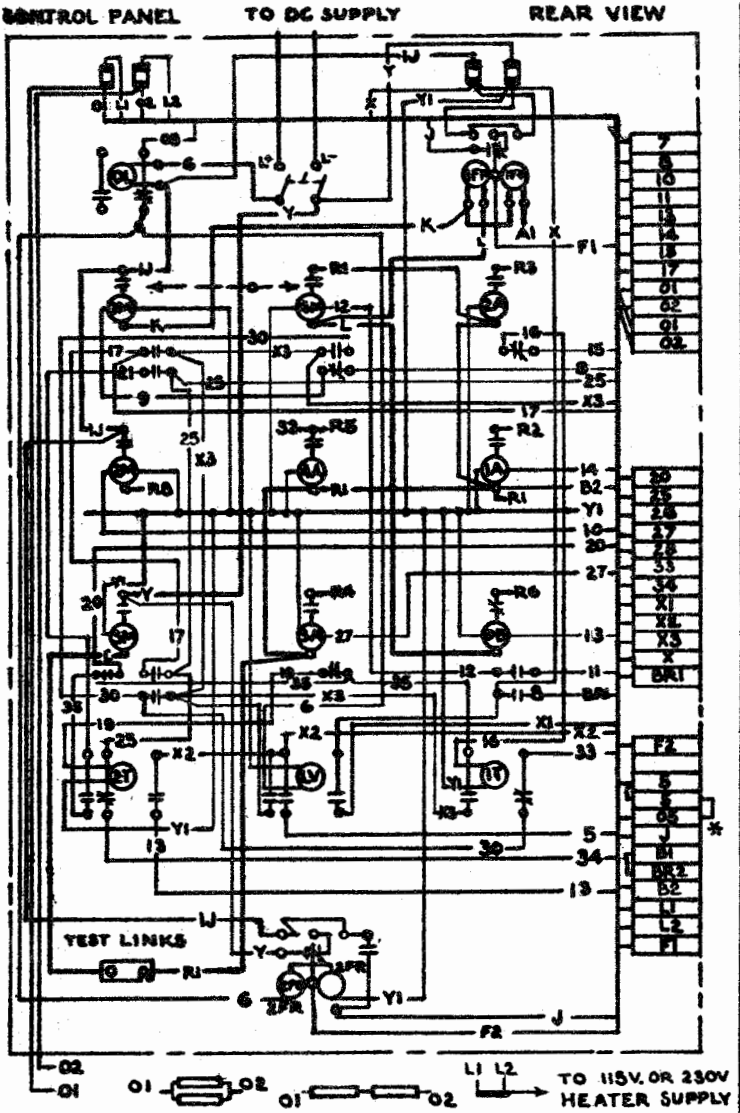
126 Cell Storage Battery Types VLA-47B and MAW-67A Exide

1. On account of variation of gassing in respect to voltage, all charging should be conducted as set forth in battery instructions.
2. Battery voltage discharge curves are based on voltages at terminals of each 126 cell battery unit and include loss in the intercell connectors on the basis of 2% drop at the one hour rate in 1.250 sp. gr. for type VLA-47B and 1.265 sp. gr. for type MAW-67A.
3. The voltage curves should not be applied as a limiting feature for individual cells. See average and minimum final cell volts in table of discharge characteristics.
4. Capacity based on initial electrolyte temperature of 80 degrees F.
5. Storage batteries shall comply with section S 41-6 of General Specifications for Machinery.
6. Discharge curves are based on service capacity.

PERMISSIBLE TEMPERATURES LIMITS

During charging and discharging the temperature shall not exceed 130 degrees F. except in case of emergency or during required engineering runs. The cooler the battery is kept the better.

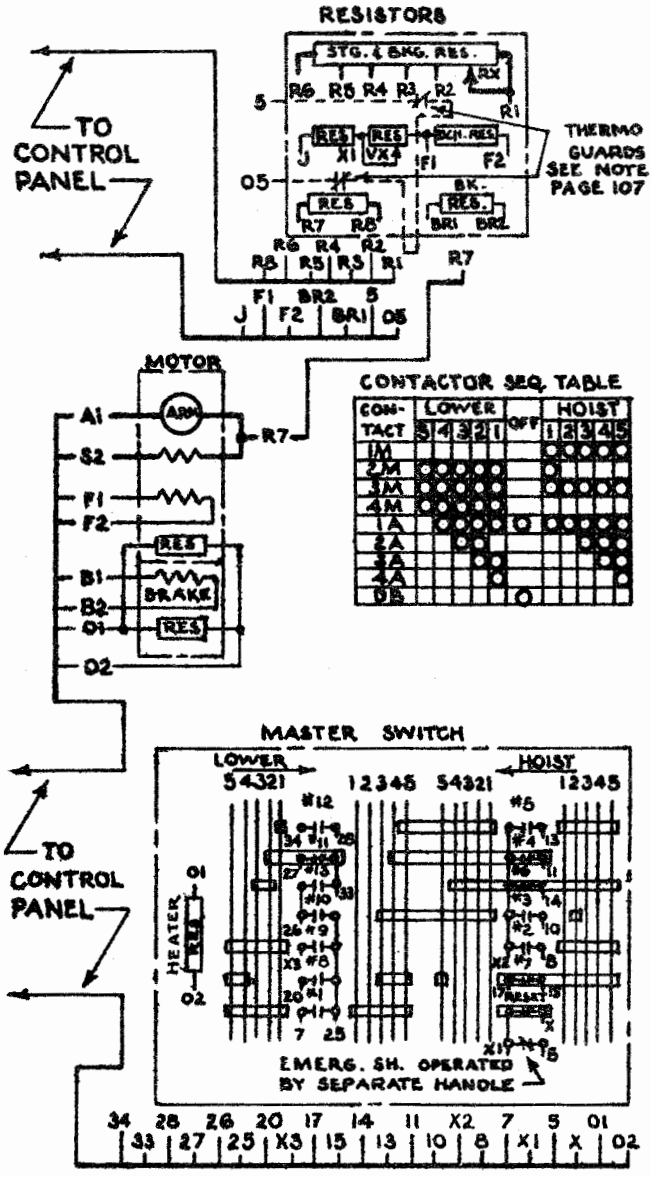
WESTINGHOUSE WINCH CONTROLLER WIRING DIAGRAM



PANEL HEATER (IF USED) CONNECTIONS:
FOR 115 VOLT HEATER SUPPLY CONNECT TUBES IN PARALLEL

FOR 230 V. CONNECT TUBES IN SERIES

* IF THERMOGUARDS ARE USED DISCONNECT JUMPER 5 TO 05 & CONN. PER DOTTED LINES ON PAGE 108 (SHEET 1 OF 2-SEE PAGE 108)



CLASS 8530 MARINE WINCH CONTROL

(SHEET 2 OF 2 - SEE PAGE 107)

PACKING—PREFABRICATED

Type-1, for stuffing tubes

Type-2, for terminal tubes

Tube size letter=Packing size

ASSIGNMENT OF TYPES

STUFFING TUBES

Drawing Number	Packing Type Required
9-S-5100-L	1
9-S-5166-L, Alt. 10 or later	1
9-S-4436-L, Alt. 9 and later	1
9-S-5166-L, Alt. 9 or Earlier	1A

SIZE	Diameter of Packing, Inches
A-F	3/16
G-P	1/4
R	5/16
S-Z	3/8

BuShips No.
9000-S6202 73286 Alt. 2

TERMINAL TUBES

Drawing No.	Packing Type Required
9-S-5235-L	2
9-S-5342-L	2
9-S-5343-L	2
9-S-5355-L	2
9-S-5457-L	2
9-S-5010-L	2
9-S-5110-L	1A
9-S-5111-L	1A

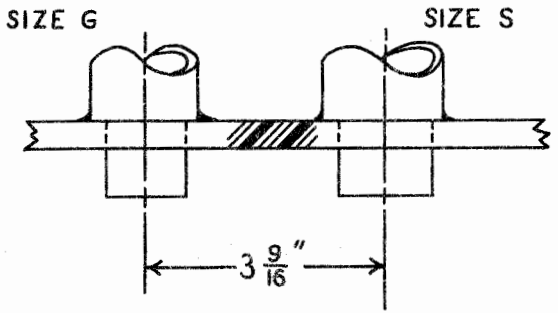
PLUGS AND OUTLETS

Drawing No.	Packing Type Required
9-S-4440-L	2
9-S-4797-L	2
9-S-4859-L	2
9-S-4861-L	2
9-S-4112-L	2
9-S-4525-L	2
9-S-4799-L	2
9-S-4908-L	2

TYPICAL SPACING BETWEEN STUFFING TUBE CENTERS

FOR MEDIUM STEEL
DECKS OR BULKHEADS

EXAMPLE



DIMENSIONS ARE THOSE DESIRED FOR NORMAL WRENCH TIGHTENING OPERATION. THESE DIMENSIONS MAY BE ADJUSTED TO SUIT EACH PARTICULAR SHIP INSTALLATION AS APPROVED BY THE SUPERVISOR. FOR DRILLING REQUIREMENTS ON BALLISTIC DECKS & BULKHEADS SEE APPLICABLE DETAIL SPECIFICATIONS.

PIPE DRILL	SIZE	A	B	C	D	E	F	G	J	K	L	M	N	P	R	S	T	V	W	X	Y	Z	AA
3 17/32	AA	3 5/8	3 11/16	3 3/4	3 13/16	3 13/16	3 7/8	4	4 1/16	4 1/8	4 3/16	4 1/4	4 5/16	4 7/16	4 1/2	4 11/16	4 3/4	4 13/16	4 7/8	4 15/16	5	5 1/16	5 1/8
3 17/32	Z	3 5/8	3 11/16	3 3/4	3 13/16	3 13/16	3 13/16	4	4 1/16	4 1/8	4 1/8	4 1/4	4 5/16	4 3/8	4 7/16	4 5/8	4 1/4	4 1/4	4 1/8	4 15/16	5	5 1/16	
3 17/32	Y	3 1/2	3 9/16	3 5/8	3 11/16	3 11/16	3 3/4	3 7/8	3 15/16	4	4 1/16	4 1/8	4 1/4	4 5/16	4 3/8	4 7/16	4 5/8	4 11/16	4 3/4	4 13/16	4 1/8		
3 17/32	X	3 7/16	3 1/2	3 9/16	3 5/8	3 5/8	3 11/16	3 13/16	3 3/8	4	4	4	4 3/16	4 1/4	4 5/16	4 1/2	4 7/16	4 5/8	4 11/16	4 3/4			
2 29/32	W	3 3/8	3 7/16	3 1/2	3 9/16	3 9/16	3 5/8	3 3/4	3 13/16	3 3/8	3 15/16	4	4 1/8	4 3/16	4 1/4	4 7/16	4 1/2	4 9/16	4 5/8				
2 29/32	V	3 5/16	3 3/8	3 7/16	3 1/2	3 1/2	3 9/16	3 11/16	3 3/4	3 13/16	3 7/8	3 15/16	4 1/16	4 1/8	4 3/16	4 1/8	4 7/16	4 1/2					
2 29/32	T	3 1/4	3 5/16	3 3/8	3 7/16	3 7/16	3 1/2	3 5/8	3 11/16	3 3/4	3 13/16	3 7/8	4	4 1/8	4 1/8	4 6/16	4 3/8						
2 13/32	S	3 3/16	3 1/4	3 5/16	3 3/8	3 3/8	3 3/8	3 9/16	3 5/16	3 11/16	3 11/16	3 13/16	3 7/8	3 15/16	4	4 1/16							
2 13/32	R	3	3 1/16	3 1/8	3 3/16	3 3/16	3 3/16	3 3/8	3 7/16	3 1/2	3 1/2	3 5/8	3 11/16	3 3/4	3 15/16								
2 13/32	P	2 15/16	3	3 1/16	3 1/8	3 1/8	3 1/8	3 5/16	3 3/8	3 7/16	3 7/16	3 9/16	3 5/8	3 11/16									
1 15/16	N	2 7/8	2 15/16	3	3 1/16	3 1/16	3 1/16	3 1/4	3 5/16	3 7/8	3 3/8	3 1/2	3 7/16										
1 15/16	M	2 3/4	2 13/16	2 7/8	2 15/16	2 15/16	3	3 1/8	3 3/16	3 1/4	3 5/16	3 3/8											
1 45/64	L	2 11/16	2 15/16	2 13/16	2 7/8	2 7/8	2 7/8	3 1/16	3 1/8	3 1/16	3 3/16												
1 45/64	K	2 5/8	2 11/16	2 3/4	2 13/16	2 13/16	2 7/8	3	3 1/16	3 1/8													
1 45/64	J	2 9/16	2 5/8	2 11/16	2 3/4	2 3/4	2 13/16	2 15/16	3														
1 21/64	G	2 1/2	2 9/16	2 5/8	2 11/16	2 11/16	2 3/4	2 7/8															
1 21/64	F	2 3/8	2 7/16	2 1/2	2 9/16	2 9/16	2 9/16																
1 21/64	E	2 5/16	2 3/8	2 7/16	2 1/2	2 1/2																	
1 3/32	D	2 5/16	2 3/8	2 7/16	2 1/2																		
1 3/32	C	2 1/4	2 5/16	2 3/8																			
1 7/8	B	2 3/16	2 1/4																				
23/32	A	2 1/8																					

9-S-3980-L ALT 27

CONNECTIONS FOR D.C. MACHINES

FOR D.C. MOTORS

SHUNT WOUND

Counter Clockwise	Clockwise
A1-F1 to one side of line	A2-S1 to one side of line
A2-F2 to other side of line	A1-F2 to other side of line

SERIES WOUND

Counter Clockwise	Clockwise
A1 to one side of line	A2 to one side of line
S2 to other side of line	S2 to other side of line
A2-S1 tied together	A1-S1 tied together

COMPOUND OR SHUNT WITH STABILIZING SERIES (Six Lead Machines)

Counter Clockwise	Clockwise
A1-F1 to one side of line	A2-F1 to one side of line
F2-S2 to other side of line	F2-S2 to other side of line
A2-S1 tied together	A1-S1 tied together

Standard direction of shaft rotation for non-reversing motors is counterclockwise facing the end opposite the drive.

FOR D.C. GENERATORS

SHUNT WOUND

Clockwise (Standard)	Counter Clockwise
A2 for one side of line	A1 for one side of line
F1 thru rheostat to A2	F1 thru rheostat to A1
A1-F2 for other side of line	A2-F2 for other side of line

COMPOUND WOUND

Clockwise (Standard)	Counter Clockwise
A2 for one side of line	A1 for one side of line
F1 thru rheostat to A2	F1 thru rheostat to A1
F1-A1-S2 tied together	F2-A2-S2 tied together
S1 for other side of line	S1 for other side of line

Standard direction of shaft rotation for generators is clockwise facing the end opposite the drive.

NOTE: Commutating pole machines have the brushes set on neutral and pinned in place. Brushes should never be shifted away from neutral.