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INSTRUCTIONS

Loudspeaker, Dynamic

LS-305A/SIC and LS-306A/SIC

LOOSEN 4
CAPTIVATED
SCREWS TO
OPEN FOR
MOUNTING



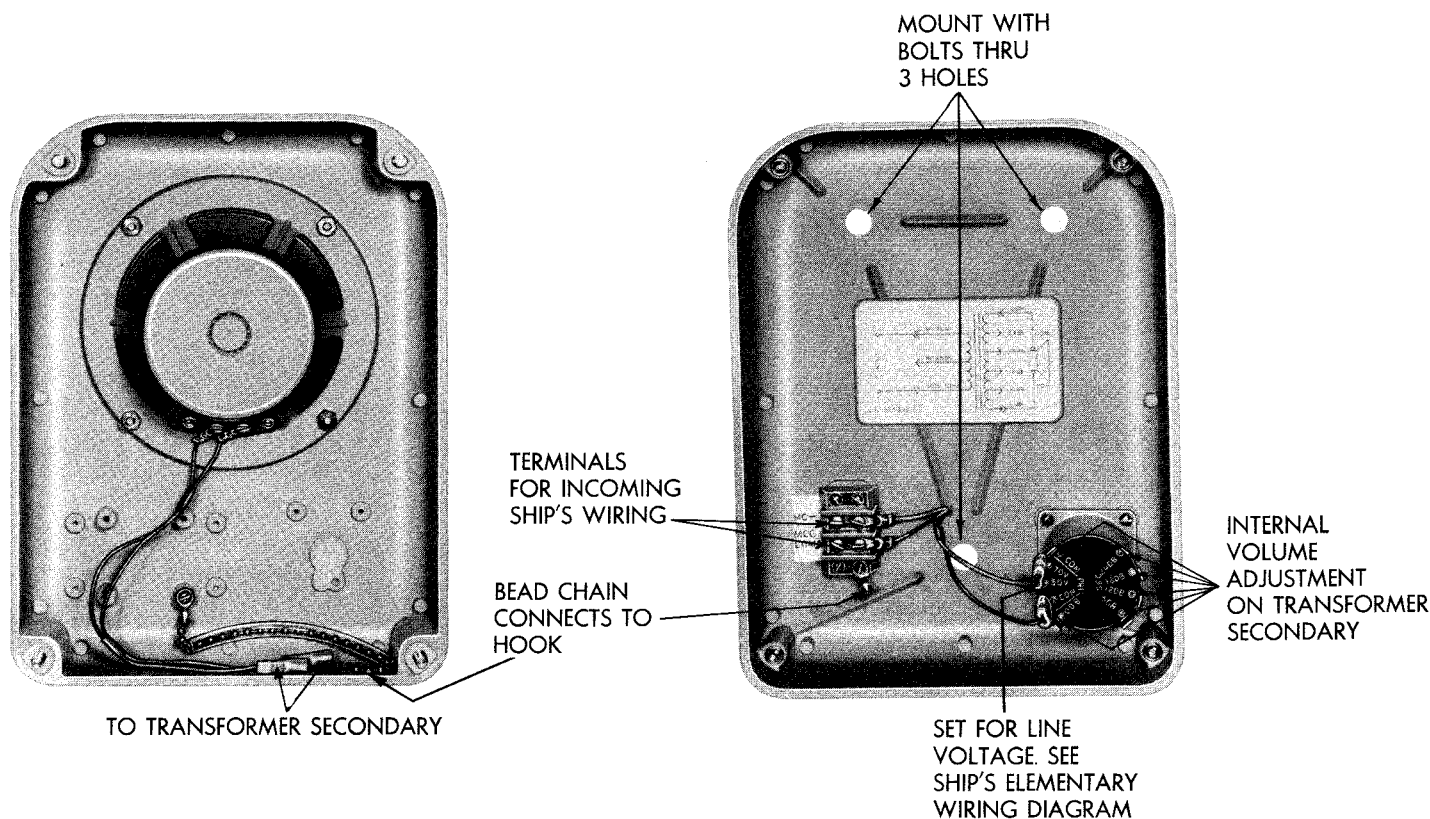
KNOB FOR EXTERNAL
VOLUME ADJUSTMENT
ON LS-306A/SIC ONLY

Jensen
MANUFACTURING

Division of The Muter Company

6601 S. LARAMIE AVE., CHICAGO 38, ILLINOIS

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LS-305A/SIC

DESCRIPTION: The LS-305A/SIC and LS-306A/SIC are designated as low power loudspeakers. They are intended for reproduction of speech and alarm signals in sheltered areas of ships, such as living spaces, in which the noise level is comparatively low.

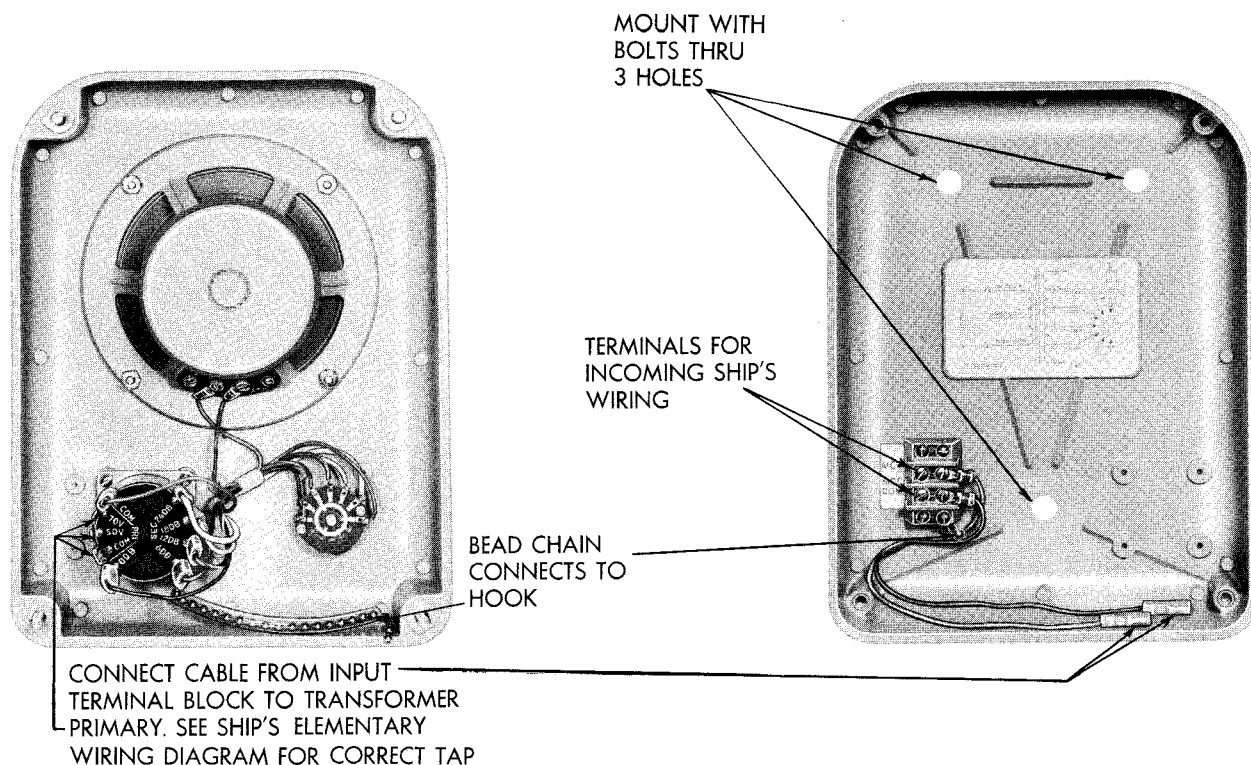
The LS-305A/SIC and LS-306A/SIC are basically similar in construction, except that the LS-306A/SIC has an external knob for adjusting the volume of sound output. The output of the LS-305A/SIC is adjusted internally. Both units contain line transformers with taps enabling use of these loudspeakers with either a 50 or 70 volt line. The transformer is mounted in the back part of the LS-305A/SIC case and in the front part of the LS-306A/SIC case.

INSTALLATION: Decide on a location for the loudspeaker, usually as high as possible on the bulkhead and aimed in such a direction as to cover the largest effective area. Refer to ship's plans, where applicable, for specific location. Loosen the

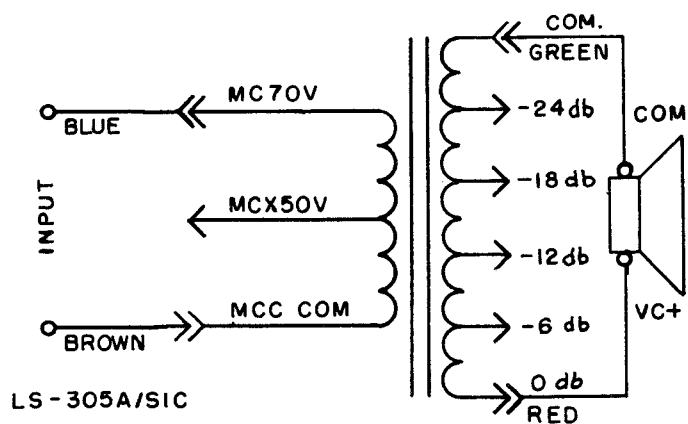
four 1/4-20 filister head screws from the front of the loudspeaker and separate the two halves of the case. Wiring between the case halves may be disconnected at the transformer. The bead-chain strain protector may be separated by slipping the end bead out of the lug. Drill or punch holes in the case back for terminal tubes as required. Mount the back of the case to the bulkhead, using the three mounting holes provided. A mounting template is included as part of these instructions.

Install the ship's cabling in the terminal tubes. Line connections are made to the terminal board according to the ship's elementary wiring diagram.

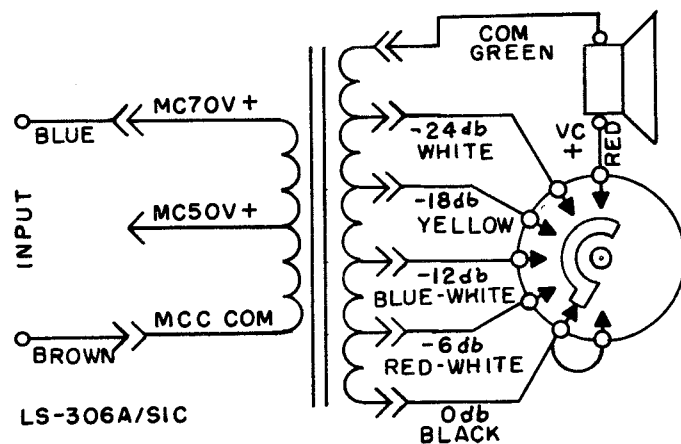
The input terminals are marked "MC+" and "MCC COM". Adjustment for 50 or 70 volt line is made on the transformer (see schematic diagrams on page 3). The lead from input terminal "MC+" is pushed onto transformer terminal "MC70V" for 70 volt line, or "MCX50V" for 50 volt line.



LS-306A/SIC



Schematic
LS-305A/SIC

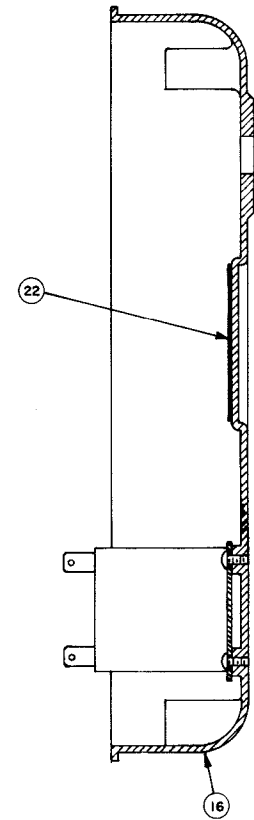
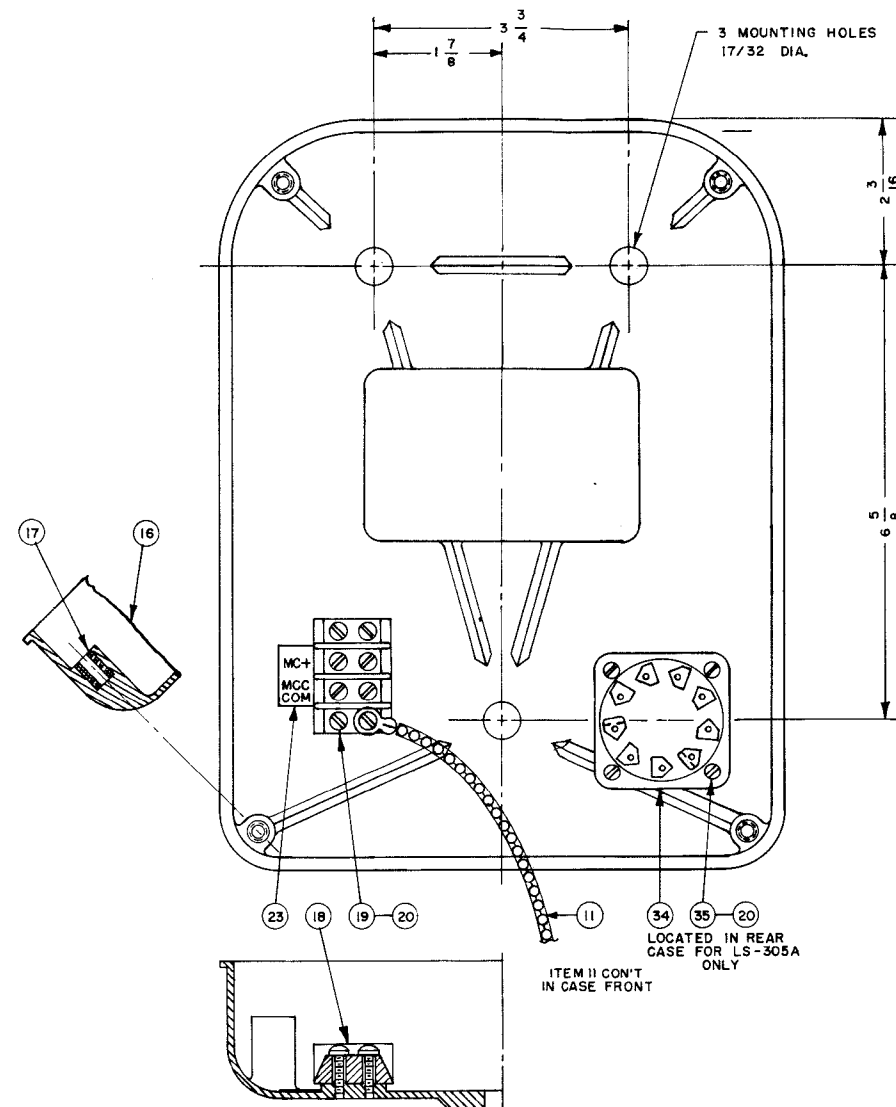
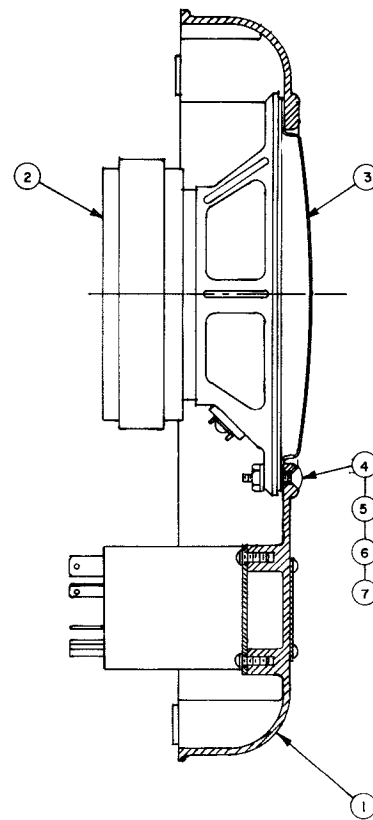
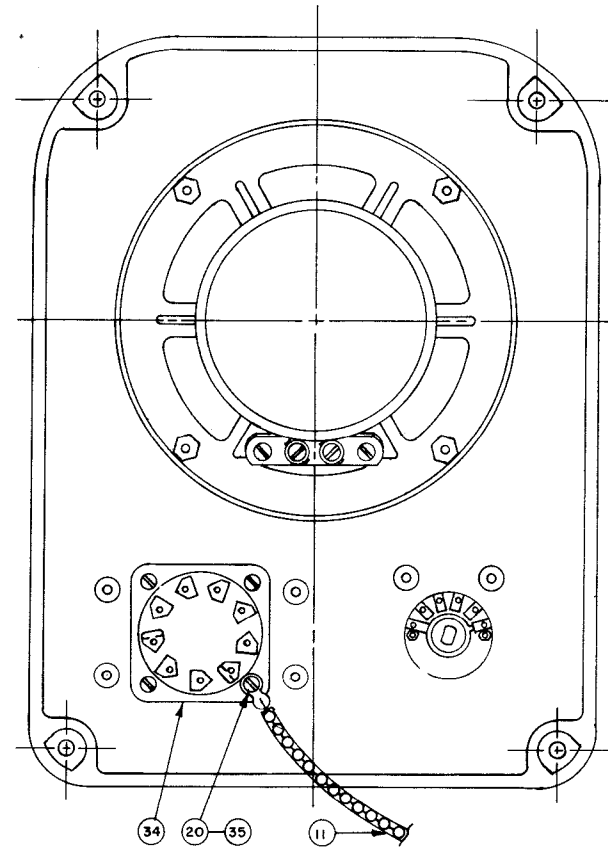
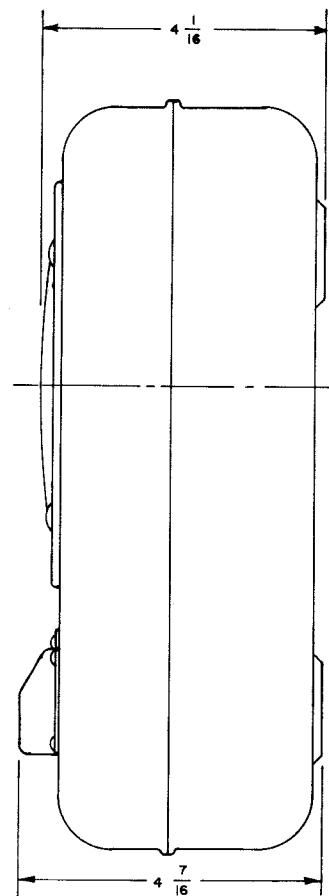
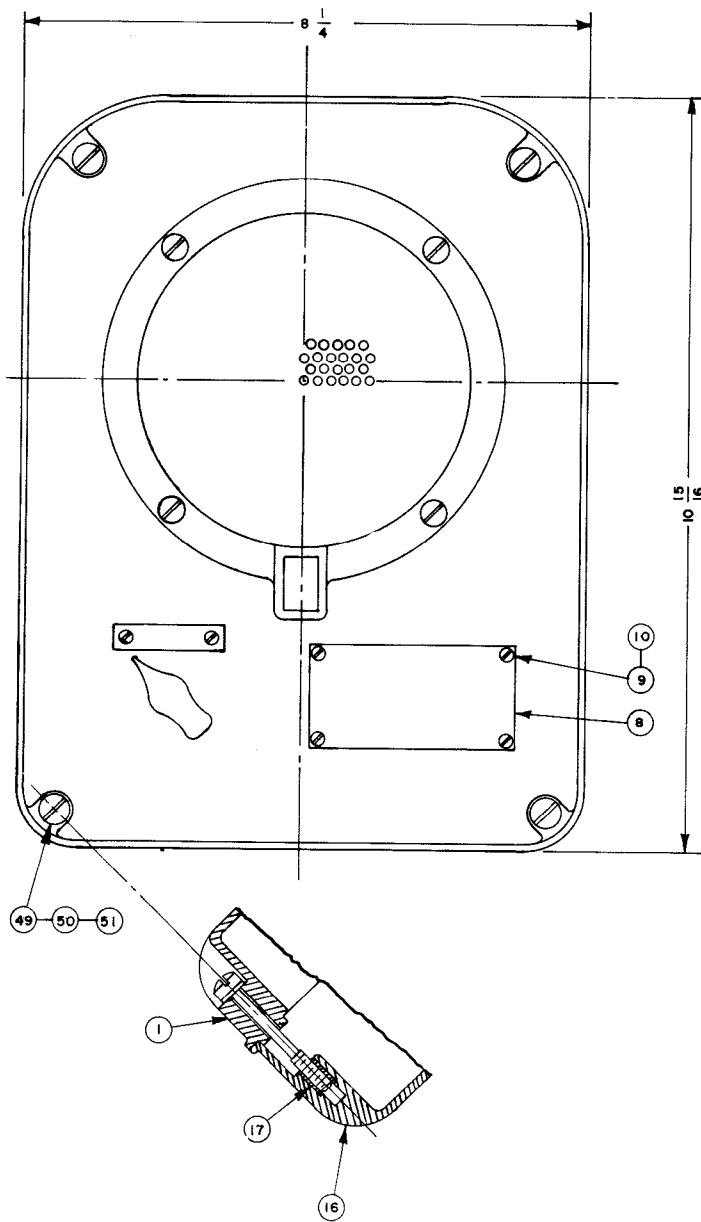


Schematic
LS-306A/SIC

ADJUSTMENT: When installing an LS-305A/SIC loudspeaker, the desired volume level is adjusted by connecting the red lead to the proper terminal on the transformer, "Odb" being loudest and "-24db" being softest. Each successive terminal from "Odb" through "-24db" reduces the volume 6 decibels as indicated on the wiring diagram inside of the loudspeaker case. Proper adjustment of this tap will depend on available ship's plans or upon previous installation experience. The green wire

connects to "COM" on the transformer. No internal volume adjustment is required for the type LS-306A/SIC loudspeaker during installation. Brown and blue leads are connected to the transformer according to the directions given in the INSTALLATION section.

After line connections and volume adjustments have been made, replace the cover, making sure that none of the wiring is pinched between the two halves of the case.

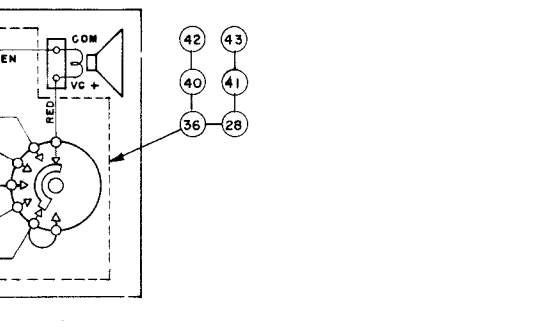
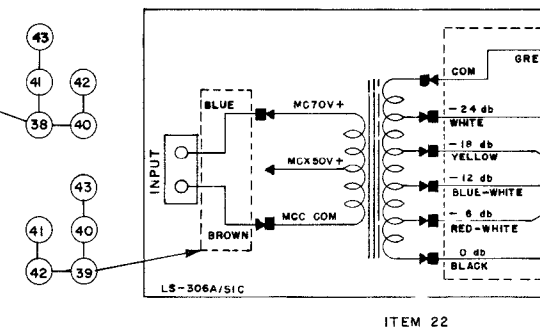
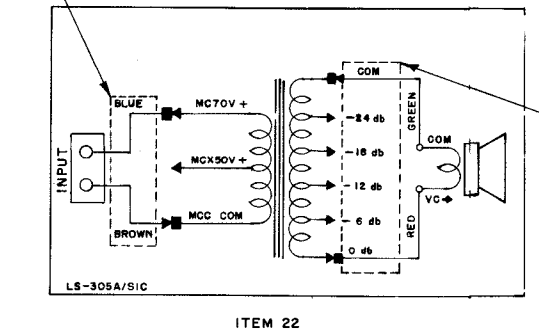
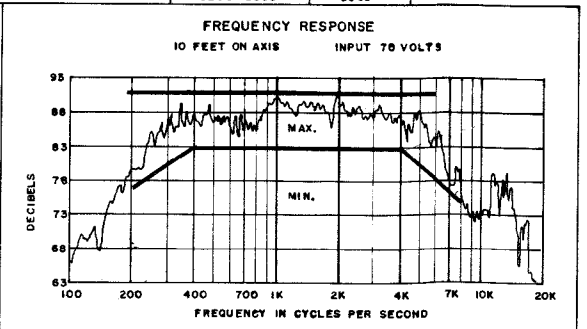
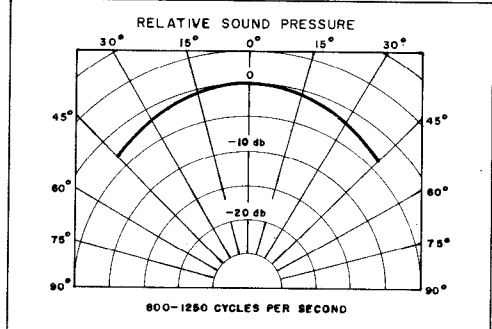


PC. NO.	NAME	REQ.	MATERIAL	MAT'L. SPEC.	CONTRACTOR	BUSHIPS	UNIT	FEDERAL	REMARKS
1	CASE, FRONT	1	ALUMINUM	QQ-A-591	780111				2,4
2	LOUDSPEAKER	1	ASSEMBLY	690140	NA-306A				2,4
3	GRILLE SCREEN	1	STEEL	COMM.	570218				4,7
4	NO. 8-32 X 3/4 OVAL HD. M.S.	4	BRASS	COMM.					8
5	NO. 8 LOCKWASHER, INT. TEETH	4	PHOS. BRZE	COMM.					8
6	NO. 8 FLAT WASHER	4	BRASS	COMM.					8
7	NO. 8-32 HEX NUT	4	BRASS	COMM.					8
8	NAMEPLATE	1	ST. STEEL	COMM.	423739				8
9	NO. 4-40 X 1/4 BINDER HD. M.S.	4	BRASS	COMM.	423741				8
10	NO. 4 LOCKWASHER, INT. TEETH	4	PHOS. BRZE	COMM.	630621				8
11	RETAINER	1							
12									
13									
14									
15									
16	CASE, REAR	1	ALUMINUM	QQ-A-591	780211				2,4
17	INSERT	1	ST. STEEL	COMM.	780212				2,4
18	TERMINAL STRIP	1	ASSEMBLY	MIL-T-5064	38T82				
19	NO. 6-32 X 5/8 ROUND HD. M.S.	4	BRASS	COMM.					8
20	NO. 6 LOCKWASHER, INT. TEETH	8	PHOS. BRZE	COMM.					8
21									8
22	WIRING DIAGRAM	1	METAL-CAL	COMM.	860135				8
23	DESIGNATION STRIP	1	METAL-CAL	COMM.	860136				8
24					840502				
25									
26									
27									
28	ROTARY SWITCH	1	ASSEMBLY	MIL-S-3769	780307				8
29	3/8-32 X 1/8 HEX NUT	1	BRASS	COMM.					8
30	3/8 L.D. LOCKWASHER, INT. TEETH	1	PHOS. BRZE	COMM.					8
31	KNOB	1	ALUMINUM	46A1	640404				5,4
32	NO. 6-32 X 7/16 IN HEX SET SC.	1	ST. STEEL	COMM.					
33	INDICATOR PLATE	1	MONEL	MIL-N-894	18049				
34	TRANSFORMER	1	ASSEMBLY	MIL-T-57	8-3641				3
35	NO. 6-32 X 1/4 ROUND HD. M.S.	4	BRASS	COMM.					8
36	CABLE & SWITCH ASSEMBLY	1	ASSEMBLY	MIL-W-76	A470019				9
37	CABLE ASSEMBLY	1	ASSEMBLY	MIL-W-76	A470292				
38	CABLE ASSEMBLY	1	ASSEMBLY	MIL-W-76	A470293				
39	CABLE ASSEMBLY	1	ASSEMBLY	MIL-W-76	A470294				
40	SOLDERLESS TERMINAL LUG	4	ASSEMBLY	COMM.	AMP 40391				8
41	MALE CONNECTOR	2	ASSEMBLY	COMM.	3000-MI-49				10
42	FEMALE CONNECTOR	2	ASSEMBLY	COMM.	3000-MI-49				10
43	INSULATOR	4	VINYL	COMM.	3000-RESA-2				10
44									
45									
46									
47									
48	CAPTIVE SCREW	4	ST. STEEL	COMM.	850207				
49	1/4 LOCKWASHER, INT. TEETH	4	PHOS. BRZE	COMM.					8
50	1/4 X 3/16 X .040 FLAT WASHER	4	BRASS	COMM.					8

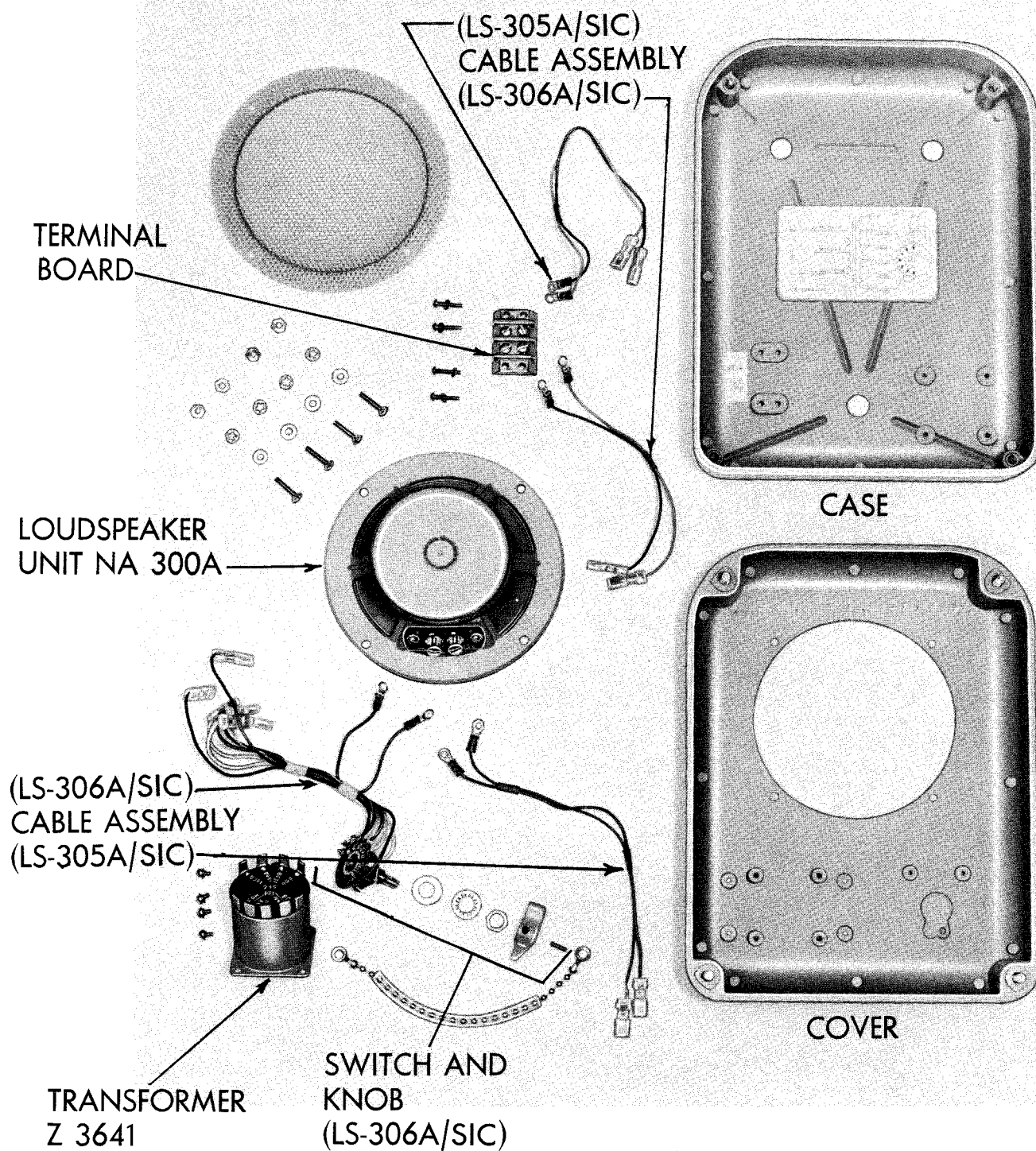
NOTES

- LOUDSPEAKER SHALL BE IN ACCORDANCE WITH BUSHIPS SPEC MIL-A-2022 EXCEPT AS MODIFIED BY THIS DRAWING, QPL CERTIFICATE OF COMPLIANCE REQUIRED, CERTIFICATE OF APPROVAL NUMBER, NY81-38 COVERS THIS REQUIREMENT FOR JENSEN MANUFACTURING CO.
- ALL ALUMINUM PARTS SHALL RECEIVE IRIDITE NO.14 PROCESS, OR EQUIVALENT PER SPEC MIL-C-5814.
- TRANSFORMER (PC. 34) SUPPLIED BY MIDWEST COIL & TRANSFORMER CO., CHICAGO, ILL. AND SHALL HAVE ELECTRICAL CHARACTERISTICS AS SHOWN IN THE TABLE.
- ONE COAT ZINC CHROMATE PRIMER PER SPEC MIL-P-15528, ONE COAT ALKYL-RESIN ENAMEL, LIGHT NAVY GRAY, PER SPEC MIL-E-18090, TYPE 3, CLASS 2.
- ROTARY SWITCH (PC. 28) SUPPLIED BY OAK MFG. CO., CRYSTAL LAKE, ILL.
- SOLDERLESS TERMINAL (PC. 40) SUPPLIED BY AIRCRAFT MARINE PRODUCTS, HARRISBURG, PA.
- CADMIUM PLATE & IRIDITE OLIVE DRAB PER SPEC, QQ-P-416, CLASS A, TYPE 2.
- NICKEL PLATE PER SPEC, QQ-N-290 TYPE 1 CLASS III.
- APPLY ANTI-FUNGUS VARNISH PER SPEC MIL-V-173A TO ALL SOLDER CONNECTIONS.
- CONNECTORS & INSULATOR (PC. 41, 42 & 43) SUPPLIED BY ARK-LES SWITCH CORP., WATERTOWN, MASS.
- INSERT (ITEM 17) SUPPLIED BY GROOV-PIN CORP., RIDGEFIELD, N.J.

MEASURED ON AXIS AT 10 FEET WITH 70 VOLT INPUT		
FREQUENCY RANGE	MIN.	S. P.
320 - 500	85	db
500 - 800	85	db
800 - 1250	85	db
1250 - 2000	85	db
2000 - 3200	85	db
3200 - 5000	85	db



TRANSFORMER DATA			
SECONDARY TERMINAL CONNECTIONS	SECONDARY VOLTAGE AT 10 FEET (± 10%)	MINIMUM AXIAL SOUND PRESSURE AT 10 FEET (± 10%) DB	NOMINAL PRIMARY WINDING IMPEDANCE AT 1000 CPS
0 db - COM	3.0	5	88
1.5 db - COM	1.5	2.5	82
12 db - COM	.75	1.3	76
18 db - COM	.4	.6	70
24 db - COM	.3	.4	64



COMPOSITE PARTS LS-305A/SIC and LS-306A/SIC

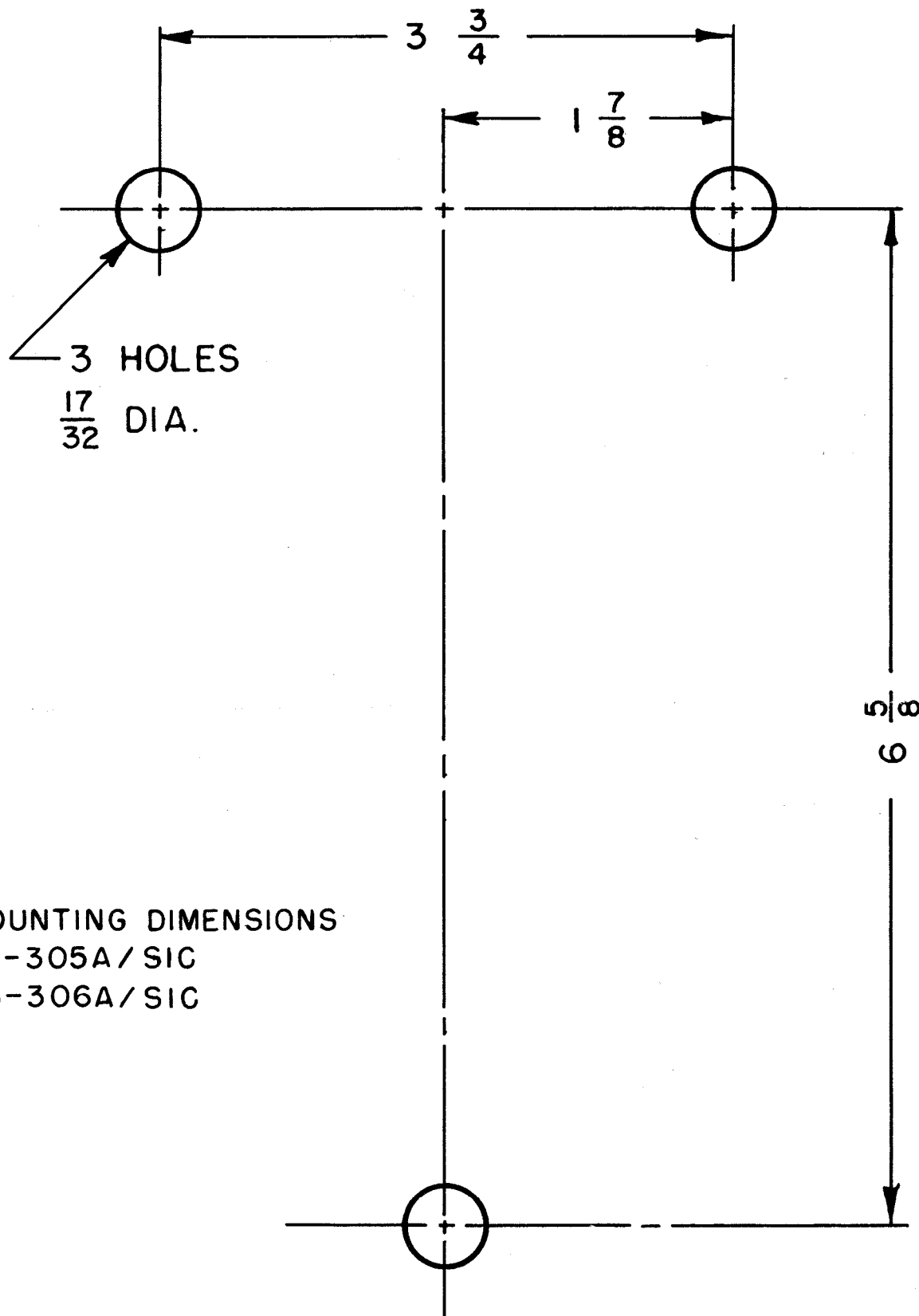
Repair Parts List for LS-305A/SIC and LS-306A/SIC Loudspeakers

DESCRIPTION	FUNCTION	MFG. NAME & PART NO.	JENSEN PART NO.	F.S.N.
Transformer Audio Frequency	Matches impedance of input line to voice coil	Mid-West Coil and Transformer Co.	Z-3641	
Volume Switch	Regulates Volume		720307	
Loudspeaker Assy.	Converts elec. Input Signal to acoustic output	Jensen NA-300A	690140	
Terminal Board	Terminals for input from ship's wiring	General Products Corp. 38TB2		

MAINTENANCE: Should the loudspeaker fail, make sure that a signal is arriving at the input terminal strip. Then check the transformer windings and the loudspeaker voice coil for continuity with an ohmmeter. Typical transformer primary resistance between terminals "COM" and "MC70V" is 140 ohms. Secondary resistance between terminals "COM" and "Odb" is 0.4 ohms, with intermediate taps in proportion. The transformer secondary resistance and voice coil resistance must be measured with one of the voice coil ter-

minals disconnected. The voice coil should measure about 7 ohms and an audible click should be heard when contact is made with the ohmmeter test probe. Check the wiring and tap switch (on the LS-306A/SIC) for continuity.

If the loudspeaker works, but is low in volume or the sound is distorted, the NA-300A driver unit should be replaced. It is secured to the case by the four screws in the front grille.



MOUNTING DIMENSIONS
LS-305A / SIC
LS-306A / SIC