

INSTRUCTION BOOK
LOUDSPEAKER, DYNAMIC
TYPE IC/SBA-4J
TYPE IC/SBG-4J

JENSEN MANUFACTURING COMPANY
CHICAGO 38, ILLINOIS

Contract Nobs 61898

INSTRUCTION BOOK No. 137

~~498 USS BOSTON CAG-1~~

NAVSHIPS 365-2064

I. C. INSTRUCTION BOOK No. 33B

~~LC 0114~~

LC 0115

565-2

INSTRUCTION BOOK

LOUDSPEAKER, DYNAMIC

TYPE IC/SBA-4J

TYPE IC/SBG-4J

JENSEN MANUFACTURING COMPANY

CHICAGO 38, ILLINOIS

Contract NObs 59409
Contract NObs 61425
Contract NObs 61898

JENSEN INSTRUCTION BOOK No. 137

BUREAU OF SHIPS

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NAVY DEPARTMENT

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JULY, 1953

499 USS CANBERRA CAG-2
~~498 USS BOSTON CAG-1~~

GUARANTY

WE GUARANTEE that all of the equipment described in this book is in accordance with the requirements of the contract. We also guarantee all equipment against defects in material and workmanship which may develop within one year after delivery.

General Data

This instruction book covers two loudspeakers used as components in Shipboard announce Systems. Both are double reentrant horn type loudspeakers rated as High Power. Both are corrosion resistant and blastproof. They differ in the accessibility of the volume adjustment as listed below.

Navy Type Designation	IC/SBA-4J	IC/SBG-4J
BuShip Stock No.	S17L-91451-1001	S17L-91451-1002
Volume Adjustment	Internal Jumper on Terminal Board	External Rotary Tap Switch
Voltage	70/50	
Frequency Response	500-6000 cycles per second	
Power Input	7.5 watts max.	
Weight Unpacked	23 lbs.	
Packed	30 lbs.	
Dimensions	13" diameter x 10" deep	

SECTION 1

Introduction

1.1 SCOPE

This instruction book contains information pertinent to High Power Loudspeakers used on Shipboard Announcing Systems. For information on overall system operation and other components, refer to the applicable instruction book.

1.2 DEFINITIONS OF TECHNICAL TERMS

ACOUSTIC FEEDBACK

This is commonly called "feedback" or howl. This condition is caused by acoustical energy from the loudspeaker feeding back into the microphone or other acoustically sensitive devices in the input of the same amplifier.

DISTORTION

Distortion is a change in wave form occurring in a transducer or transmission medium.

DECIBEL

A Decibel (abbreviated db) is a unit of measure of the ratio of two amounts of power. If the amounts of power to be compared are P_1 and P_2 , then

$$\text{Number of decibels} = 10 \log_{10} \left(\frac{P_1}{P_2} \right)$$

LEVEL

Level is the magnitude of a signal expressed in terms of the number of decibels above or below an arbitrarily chosen reference. The common reference for sound pressure levels is .0002 dynes per square centimeter which is near the threshold of hearing.

SOUND AXIS

The sound axis of a reproducer is an imaginary line passing through the center of the radiating surface of the reproducer and perpendicular to this surface. Maximum sound output will usually be found on this axis.

HORN

A horn is an acoustic transducer consisting of a tube of varying sectional area.

LOUDSPEAKER

A loudspeaker is an electro-mechanical device which converts electrical energy into sound energy. (The shorter term, speaker, is frequently used where no ambiguity will result, as in compound terms.)

TRANSFORMER TURNS RATIO

The ratio of the number of turns in one winding to the number of turns in another winding.

TRANSFORMER VOLTAGE RATIO

The ratio of voltage between one winding and that of another winding determined by the transformer turns ratio.

SECTION 2

Description

2.1 TYPE IC/SBA-4J

These are compression type loudspeakers with double folded horns designed to produce high acoustic output with a minimum of power input. Type IC/SBA-4J is intended for locations where the acoustic output level should remain reasonably constant at all times. Volume adjustment is provided inside the loudspeaker by taps on the transformer. These taps provide volume and power input adjustments as listed below:

FULL POWER	7 watts
— 6 db	1.75 watts
— 12 db	.437 watts
— 18 db	.110 watts
— 24 db	.027 watts

2.2 TYPE IC/SBG-4J

The loudspeaker volume adjustment for the type IC/SBG-4J is provided by a tap switch accessible from the outside of the speaker. This tap switch provides the same volume adjustments available on the IC/SBA-4J loudspeaker as listed above.

2.3 TRANSFORMER

These loudspeakers Type IC/SBA-4J and IC/SBG-4J are designed to operate directly from a 70 volt audio distribution line or from a 50 volt line when a series protective resistor is used. The amplifiers with which these loudspeakers are intended to be used are designed to maintain a constant 70 volt output voltage independent of the loudspeaker load. Therefore there is no necessity for the use of a dummy load or balancing resistors when loudspeakers are disconnected from the line. Problems relating to impedance matching have been eliminated. Each loudspeaker is equipped with a line matching transformer. The electrical input power is 7 watts when the primary is connected to either a 50 or 70 volt audio power line and when the secondary is connected for "FULL" power output.

SECTION 3

Installation

3.1 CHOICE OF LOCATION

Mount loudspeakers so that the space in front is clear of obstructions and the sound axis of the loudspeaker is directed toward the center of the area which is to be covered. In locating loudspeakers keep in mind their sound distribution characteristics. Intelligibility will decrease as the listener moves farther away from the loudspeaker or too far to one side (away from the sound axis). In open air the intelligibility of the sound axis should be good up to about thirty degrees in any direction from the axis. In enclosed spaces this intelligibility increases to about forty degrees. Clearance should be provided on all sides to facilitate maintenance.

3.2 MOUNTING PROCEDURE

The loudspeakers may be pointed downward at any angle desired as long as they are mounted for proper drainage.

These loudspeakers are not watertight but are waterproof and salt-spray resistant. Drain holes are provided for the normal mounting position to drain off moisture which may enter the speaker. Two terminal tubes (4), Figure 7, are provided on one side of the loudspeaker. Mount the loudspeaker with these tubes downward if the loudspeaker is exposed to moisture or condensation.

To mount the loudspeaker, remove the horn (75) Figure 7, by loosening the three bolts (86), Figure 7, which can be seen by looking directly into the mouth of the horn.

Removal of the horn will expose the mounting plate (6), Figure 7, in which three mounting holes have been provided. Use the template supplied with each loudspeaker to obtain the proper locations for the three mounting studs or bolts. After fastening the speaker to the bulkhead bring the ship's wiring through one or both of the terminal tubes provided. The ship's wiring is connected to the proper terminals on the right hand terminal block (21-A) as shown on Figure 7. The ship's wiring is connected to MCC COM — and either MC 70V or MCX 50V depending upon the input line voltage. The power adjustment settings on the IC/SBA-4J are identified on the terminal block as follows: "FULL", -6db, -12db, -18db, and -24db. Loudspeakers are normally shipped with the jumper connected for FULL power output. The Elementary Wiring Diagram for the ship will indicate the proper primary and secondary tap for each speaker installation. The above adjustments may be made by moving the jumper wire which is connected to the terminal marked FULL to the secondary tap specified by the elementary wiring diagram.

SECTION 4

Adjustments

4.1 METHOD OF ADJUSTING VOLUME

These loudspeakers are not necessarily intended to operate at full power. By adjustment of the secondary connections of the line matching transformer the output of the loudspeaker may be varied to suit the requirements of the location of each individual speaker. In the type IC/SBA-4J this adjustment is made by choosing the proper tap connections on the terminal block inside the speaker. The type IC/SBG-4J provides the same choice of output adjustments by a tap switch accessible from the outside of the loudspeaker.

SECTION 5

Maintenance

5.1 PREVENTIVE MAINTENANCE

The nature of the construction and operation of these loudspeakers is such that preventive maintenance is not required for most installations. However, when a loudspeaker is installed in a location where it is subjected to considerable spray, salt incrustation is likely to occur. Under these conditions, to maintain optimum performance, clean the sound chamber and blast valve periodically. (See 5.5 for details.) In addition, inspect all solder joints, especially those on the head assembly, while the loudspeaker is disassembled. No period can be set for this cleaning as the requirements will vary.

5.2.1 REPLACEMENT AND REPAIR OF WIRING ASSEMBLY

REPLACEMENT OF WIRING ASSEMBLY

Take off horn (75) by loosening three screws (86). Remove incoming ship's wiring from terminal block (21-A). Remove leads to driver unit (48). In type IC/SBG-4J remove set screw (36), knob (35), and nut (34) from tap-switch. Remove driver unit (48) by removing 4 screws (67). Remove screws (40) holding terminal strips, and four screws (38) holding transformer in place. The complete strips, and four screws (38) holding transformer in place. The complete wiring assembly will now slip from the case for necessary repairs. However, a new wiring assembly may be taken from the spare parts box and put in the loudspeaker so that it will operate while the repairs are being made. Check the type number on the loudspeaker against the spare parts list, for the correct wiring assembly. Place the new wiring assembly in the loudspeaker by reversing the above procedure. Use the screws, lockwashers, (and in the case of Type IC/SBG-4J loudspeakers, nut, lockwasher, knob, and set screw) previously removed to fasten the assembly in place. Refer to Figure 7 for the correct location of the parts.

REPAIR OF WIRING ASSEMBLY

Check the continuity of the wiring of the faulty assembly against the applicable wiring diagram of Figure 7. Replace any faulty wires found. Check the resistance between terminals of the transformer (not terminal strip) against the values in Column 2 of Table 1.

TABLE 1

Terminals	Resistance (Ohms)	Voltage with 115 V., 60 c.p.s. between terminals Center and 2
Center-1	36-44	60-76
Center-2	51-63	115
3-4	.08-.10	1.0-1.2
3-5	.13-.17	1.7-2.1
3-6	.27-.33	3.1-3.9
3-7	.58-.72	7.3-8.9
3-8	.95-1.18	17.5-21.5
Center-3	Open	
Center-case	Open	
3-Case	Open	

Apply 115 volts, 60 c.p.s. to terminals Center and 2. Read the secondary voltages and check against the values in Column 3 of Table 1.

CAUTION: Make this test quickly. The low frequency used will overheat the transformer if the line voltage is connected for more than a minute or two. If either resistance or voltage varies from the values in Table 1, replace the transformer.

LOUDSPEAKER, DYNAMIC TYPES IC/SBA-4J AND IC/SBG-4J

5.2.2 REPLACEMENT AND REPAIR OF DRIVER UNIT

REPLACEMENT OF DRIVER UNIT

Loosen three screws (86) and remove horn (75). Disconnect wires from terminal of driver unit (48). Remove four screws (67) and lift out driver unit. Place driver unit face up on a clean flat surface. Do not place directly on a steel desk or table. Put a non-magnetic material under the unit if only a steel surface is available. Obtain a new unit and place it beside the old one with the terminals pointing in the same direction. Remove the three screws (62) holding the spacer (60) in place, and lift off the unit. Remove the blast valve (52) and the gasket (50) unless these have come off with the spacer. Transfer these three parts to the new unit, maintaining their same relative positions. Make sure the gasket fits into the recess on the unit. Fasten the spacer in place using the screws and lockwashers removed. Place the unit in the loudspeaker making sure the terminals are next to the leads in the wiring assembly. Fasten in place with the screws and lockwashers previously removed. Connect the voice coil leads to the unit. Replace the horn, making sure that gaskets (58) and (72) are in their proper place, and tighten the screws.

REPAIR OF DRIVER UNIT

In the instructions that follow, the numbers in parenthesis refer to the piece numbers on Figure 8. Set the driver unit on a flat, clean non-magnetic surface. Remove six screws (39), and lift head assembly (20) straight up. Inspect gap between top plate (10) and core tip (13) for dirt which would interfere with the motion of the voice coil. Fold a piece of scotch tape double so that there will be adhesive on both sides. Insert the tape in air-gap with the fold at right angles to the surface of the top plate. Pull the tape around the gap and remove. Repeat this operation with fresh tape until air-gap is entirely clean. If the sound chamber and diaphragm are to be left off for any appreciable length of time, cover the gap of the structure with scotch tape to keep out steel particles and dirt. Remove covering tape just before sound chamber and diaphragm assembly are installed in place.

If unit was removed because of rattles or intermittent sound, examine voice coil for loose wires or cracks. If no defects are found, hold head assembly in hands with diaphragm upward. Gently press the diaphragm downward and release slowly while holding the assembly close to the ear. A faint rubbing noise indicates dirt between diaphragm and sound chamber. Remove dirt usually by shaking the assembly. Remove salt incrustation inside assembly by pouring a little warm water through the holes in the sound chamber onto the diaphragm, shaking and draining. Repeat several times.

CAUTION: DO NOT LOOSEN OR REMOVE SCREWS (32) WHICH HOLD DIAPHRAGM TO SOUND CHAMBER.

To replace head assembly, place over magnetic structure so that the terminals are next to the lead slots. Lower the head assembly and rotate slightly until pins engage holes; then force into contact with magnetic structure.

Fasten in place with screws and lockwashers previously removed. Test driver unit with a maximum of 10 volts 60 cycles (115 volts, 60 cycles in series with an 80 ohm resistance of 100 watt, 115 volt lamp) across the terminals for a maximum of 10 seconds. There should be discernible a low-pitched hum that is free from buzzes, rattles, or other extraneous noises. When the driver has been repaired, return it to spare parts box.

SECTION 6

Parts Identification

6.1 LIST OF ILLUSTRATIONS

Figure 3	Parts for IC/SBA-4J	page 11
Figure 5	Parts for IC/SBG-4J	page 13
Figure 6	Parts for NL-100 Driver Unit	page 14

6.2 INTRODUCTION

Parts are identified by the item number as shown on the assembly drawings and stock list, Figures 7 and 8. Except for wiring assembly and tapswitch, all parts for the IC/SBA-4J and IC/SBG-4J are common. All parts numbers listed are the contractor's, since these are the only numbers that will completely identify the parts.

6.3 Parts List

FIG.	ITEM	NAME	FUNCTION	NO. REQ.	UNIT OF ISSUE	JENSEN PART NO.	SNSN
5,7,9	31	TAP SWITCH: non shorting, 5 position 6 solder lugs, not enclosed, ceramic 2-1/8" dia., x 2" long overall, 1/4" stainless steel shaft with flat and tapped for 6-32 set screw, brass nickel plated bushing 3/8" x 3/8" long, with non turning device on bushing, Ohmite Model 111-5 Spec. 35601.	Select transformer secondary on IC/SBG-4J.	1	1	11869	H17JRM-11869
3,5,7,9,	52	VALVE, blast: stainless steel case with phosphor bronze diaphragm; rated 9.5 psi; round case with 2 projecting pins 5/32" dia. on 2-3/32" ctrs.; 2-3/8" dia. x 1/4" thick; held by separate spacer plate; 2 drain holes.	To protect driver diaphragm from gun blast	1	1	11662	H17JRM-10035
3,5,7	58	GASKET: horn; neoprene; 27/32" ID x 1-1/4" OD x 3/16" thick.	Seals horn to blast valve.	1	1	11720	H17JRM-10039
3,5,7	50	GASKET: blast valve; neoprene 1-27/32" ID; 2-3/8" OD x 1/8" thick.	Seals blast valve to driver unit.	1	1	11647	H17JRM-10040
3,5,7	60	SPACER: phenolic; 4" x 4" x 21/64" thick; three mtg. holes 7/32" dia. on 1-13/16" radius at 75, 195, 315 degrees; 2 drain slots.	Retains blast valve.	1	1	11721	H17JRM-10042
2,4	72	GASKET: case; rubber; "O" ring; 8" dia. x 1/4" thick.	Seals case to horn.	1	1	11722	H33P1561-1500
7	86	SCREW: captive; slotted hex head; brass nickel plated; 5/16"-18 rolled thread portion 3/8" long, unthreaded shank .280" to .287" dia.	Fasten horn to case.	3	1	11736	H17JRM-10037

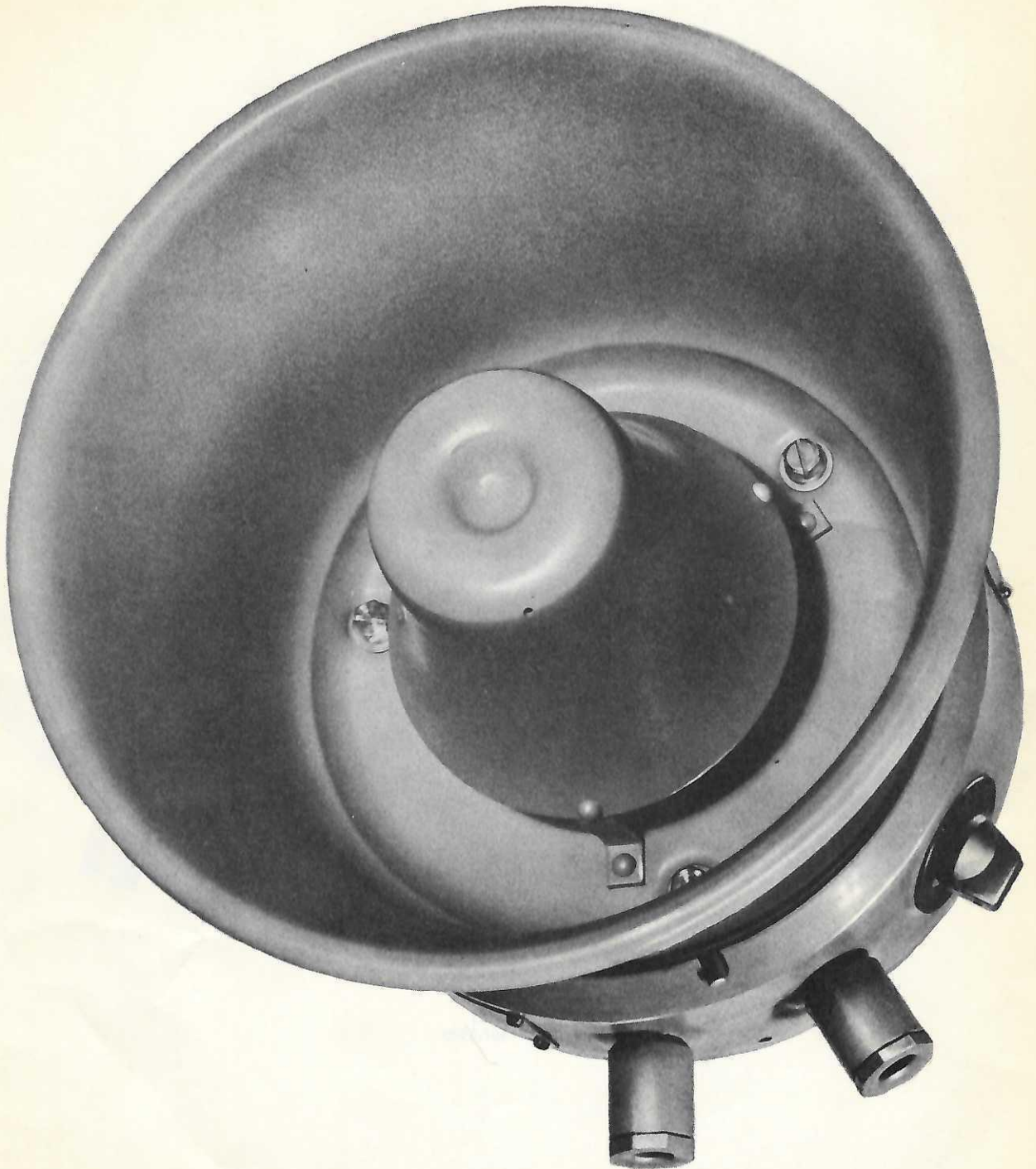
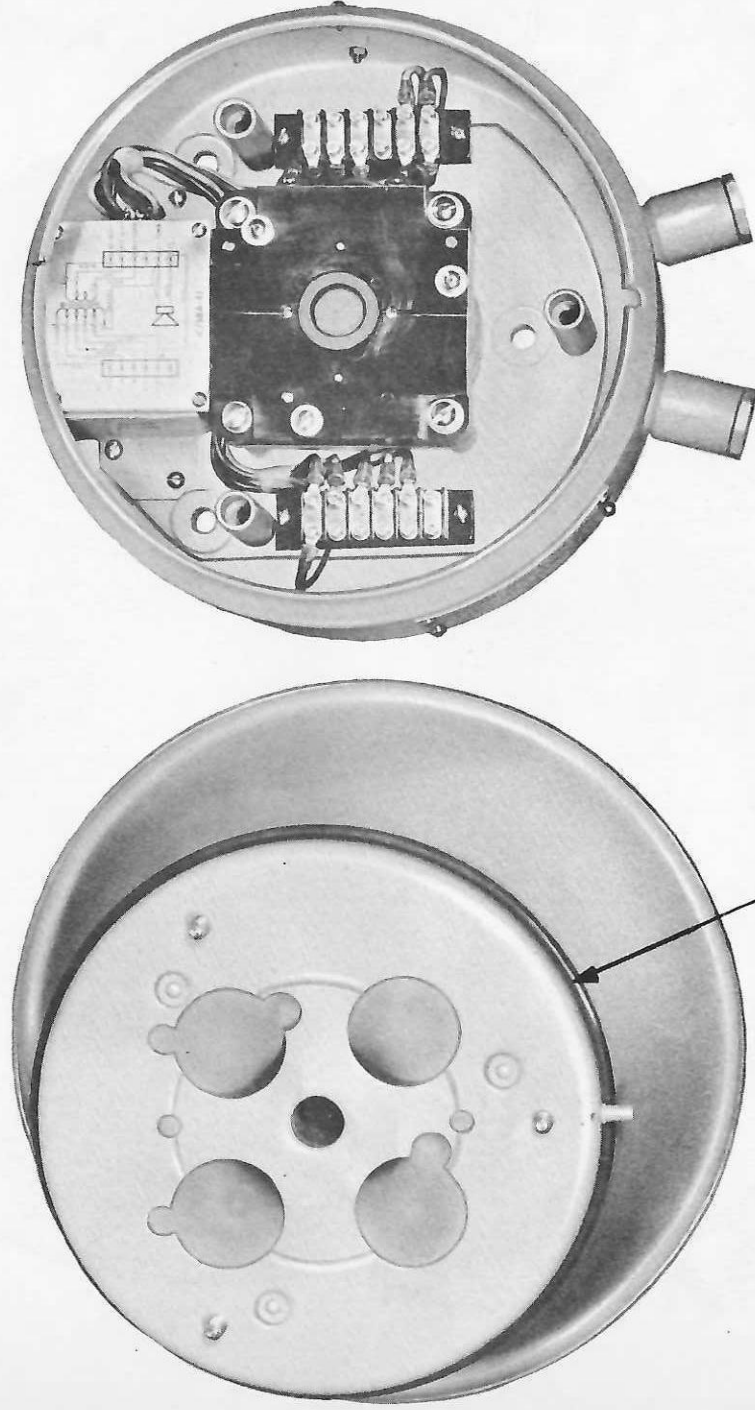


FIG. 1
Loudspeaker, Type IC/SBG-4J, Front View



GASKET
H33P1561-1500

72

FIG. 2
Loudspeaker, Type IC/SBA-4J, Horn Removed

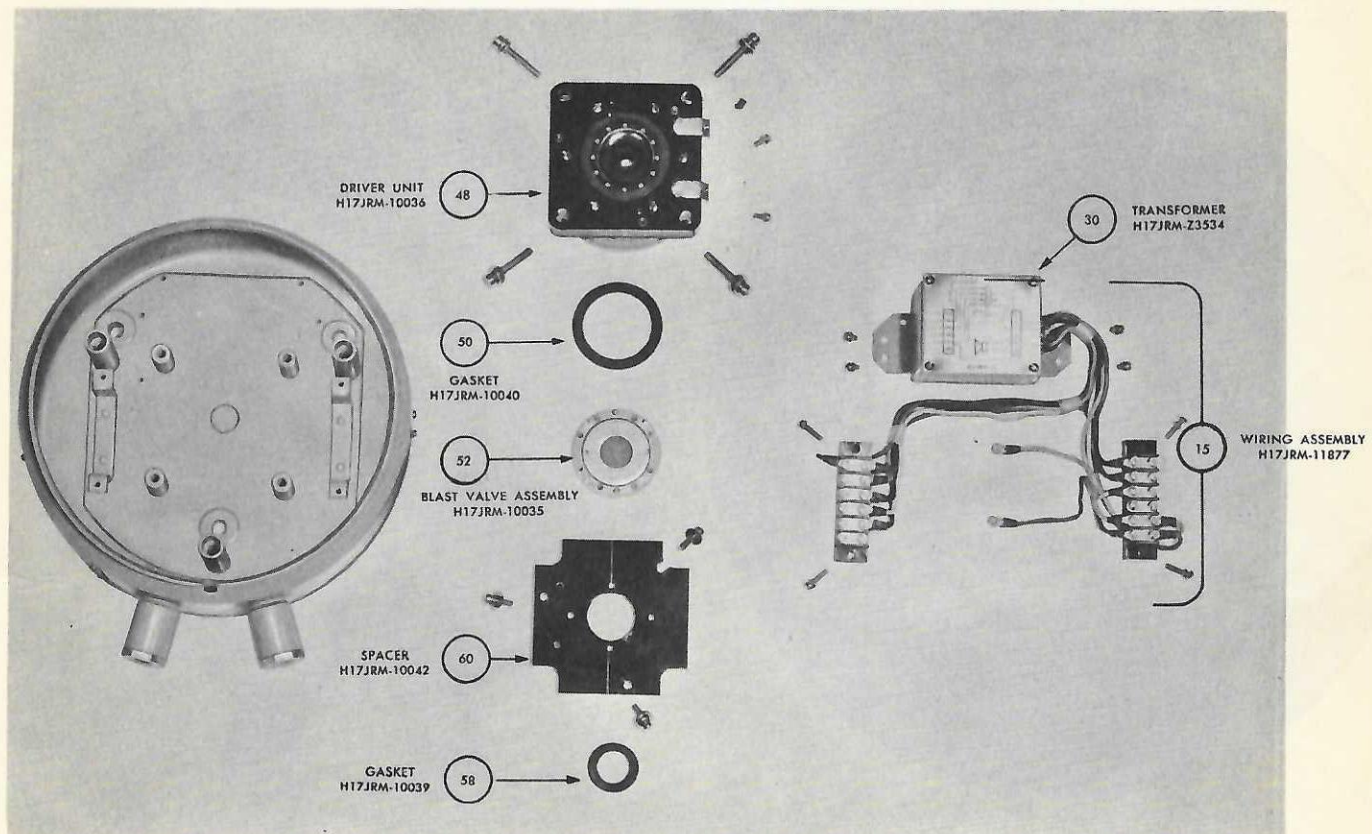


FIG. 3
Loudspeaker, Type IC/SBA-4J, Disassembled

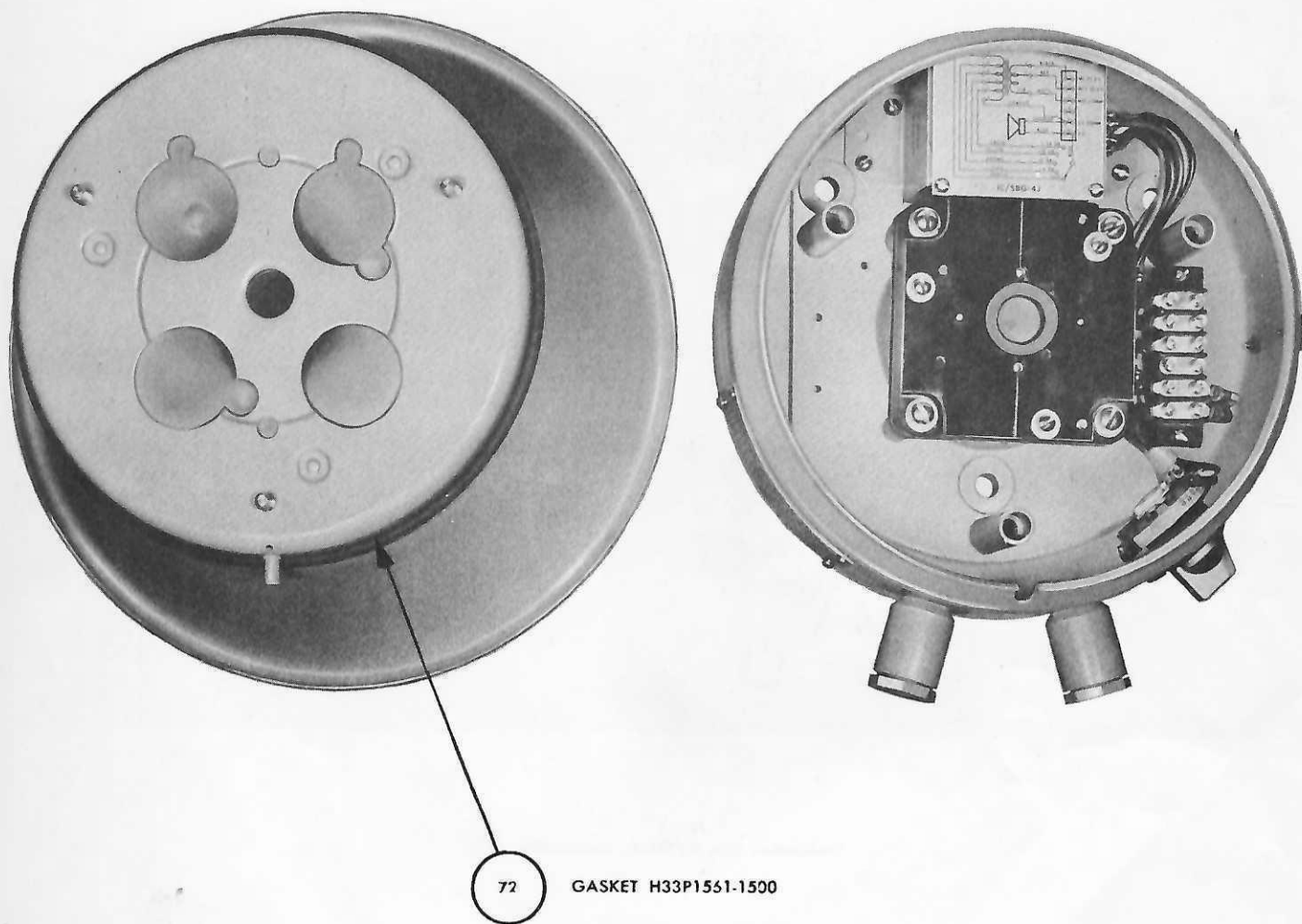


FIG. 4
Loudspeaker, Type IC/SBG-4J, Horn Removed

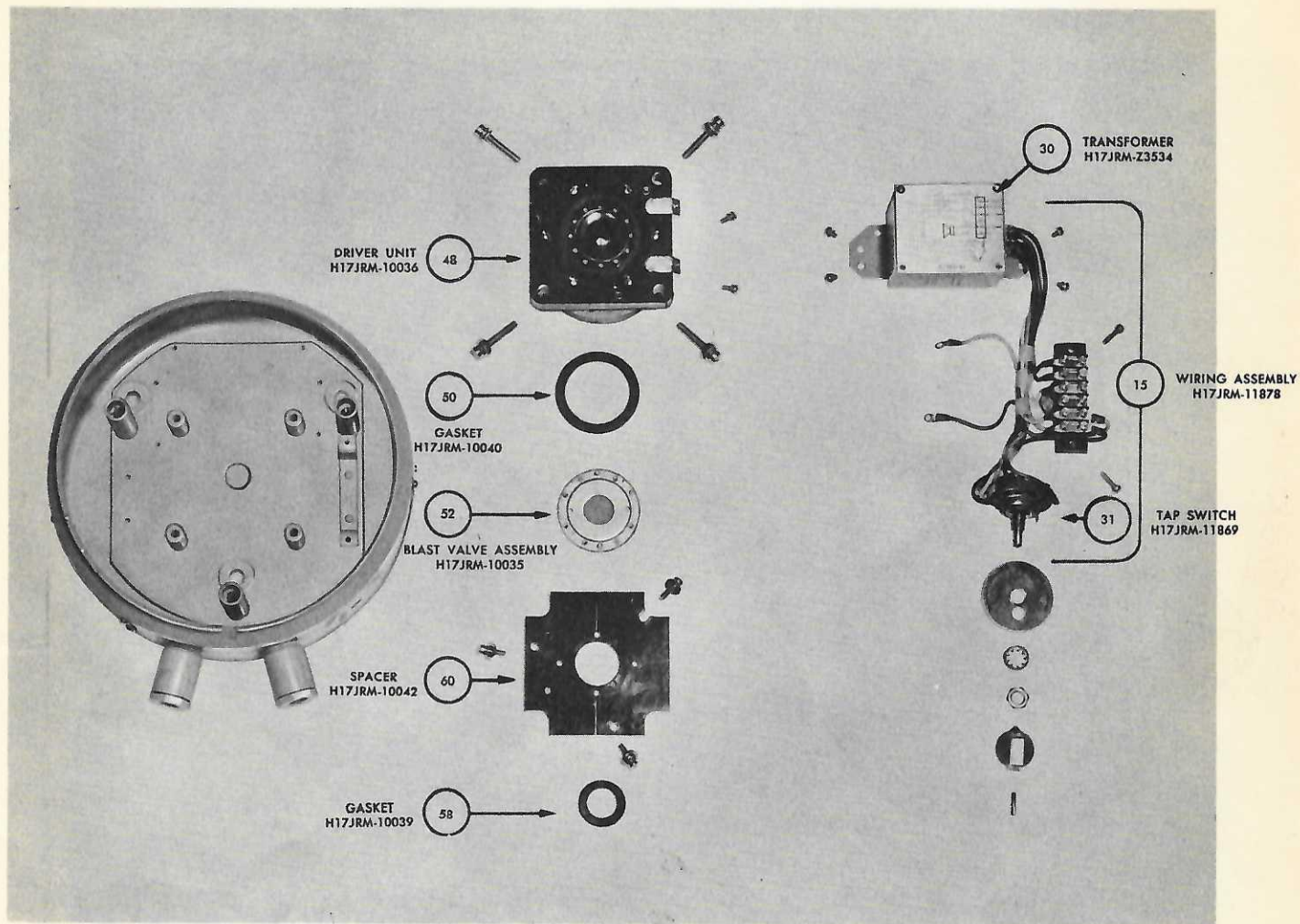


FIG. 5
Loudspeaker, Type IC/SBG-4J, Disassembled

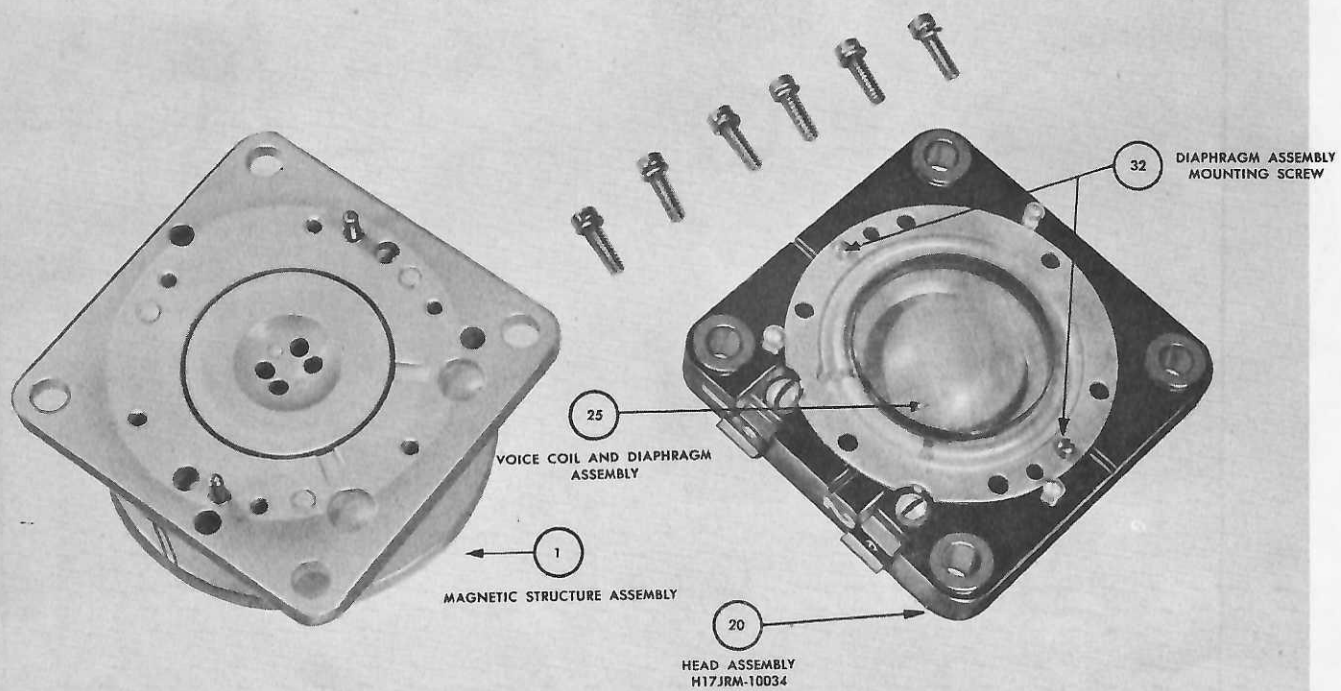
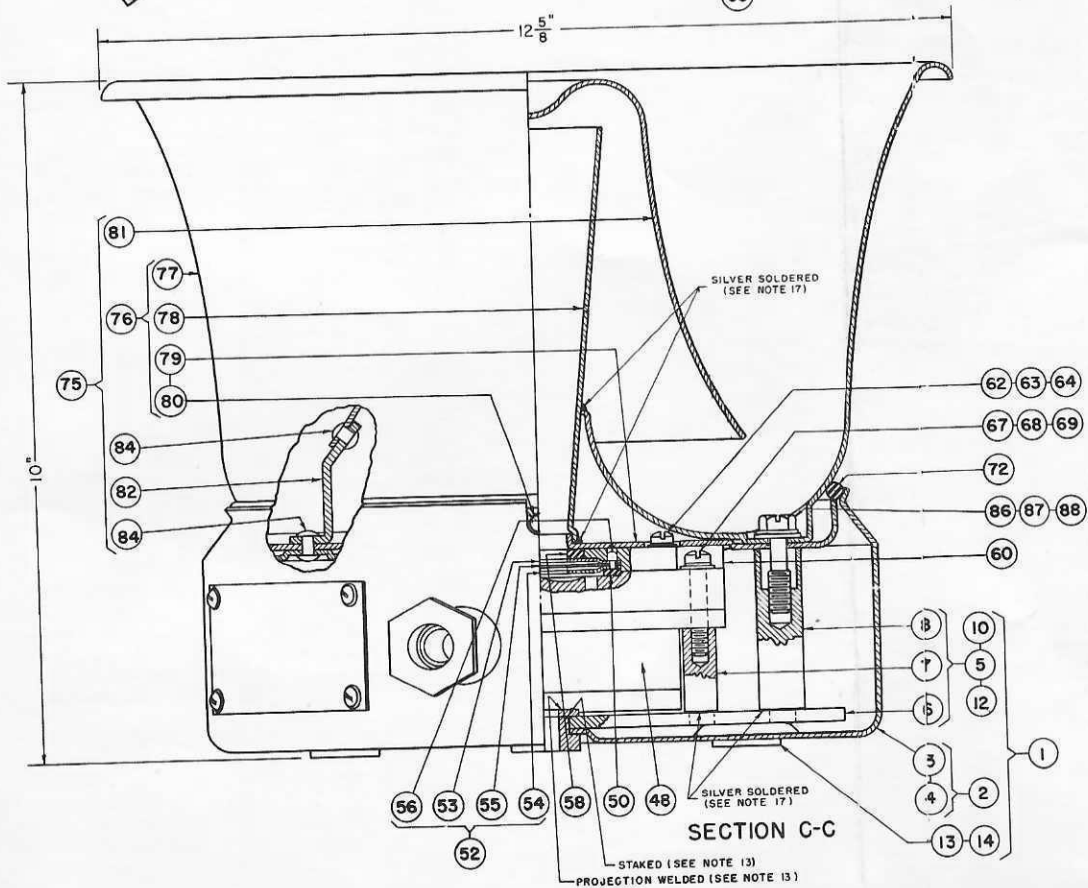
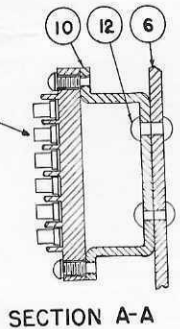
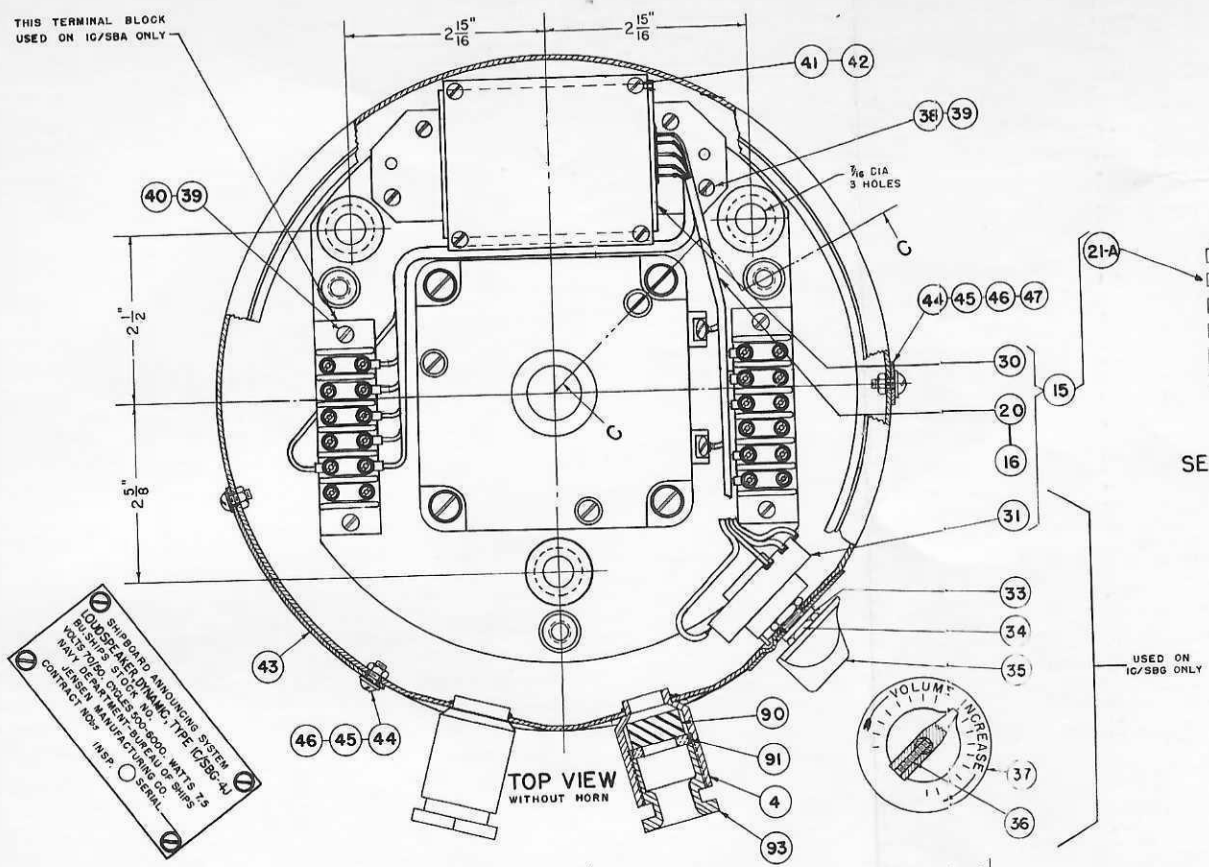


FIG. 6
Driver Unit Type NL-100, Disassembled

THIS TERMINAL BLOCK
USED ON IC/SBA ONLY



UNITED FOR SPECIFIC
S OTHERWISE SPECIFIED.

4B) OR VOICE COIL FOR
VOICE COIL & DIAPHRAGM
CTIVELY MAY BE

HRAGM (ITEM 55) FAIL
PLACED AS A UNIT.

MANUFACTURERS DWG.
NEIR SUPPLEMENTARY
Y ARROWS.

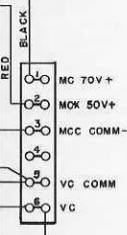
(EQUAL PARTS 200
TO THREADS OF ITEM

EL PARTS -
20% NITRIC ACID
60% NITRIC / 40%
WSE THOROUGHLY.

R PER SPEC JAN-P-735

ACCORDANCE WITH
(1)

S BAKING ENAMEL,
CLASS 2.



COND
PRESSURE
EET

STOCKLIST QUANTITIES ARE FOR ONE LOUDSPEAKER

REV REVISIONS

PIECE NO.	NAME OF PIECE	PIECES REQ. SBA/SBG	MATERIAL	MATERIAL SPEC.	REMARKS (SEE NOTE)	MF'S DWG. OR CODE NO.	STANDARD NAVY STOCK NO. OR BUSHIPS DWG. NO.
1	CASE, TERM. TUBE & MTG. PLATE ASSEMBLY	1	ASSEMBLY		7,9	11870-1	
2	CASE & TERM. TUBE ASSEMBLY	1	"		17	11870-2	
3	CASE - MADE FROM 11691	1	BRASS	COMM.	17	11871-1	
4	TERMINAL TUBE BODY	2	"			11871-2	
5	MOUNTING PLATE ASSEMBLY	1	ASSEMBLY		17	11872-1	
6	MOUNTING PLATE	1	BRASS	COMM.		11872-2	
7	MOUNTING STUD	4	"			11693	11873
8	MOUNTING STUD	3	"			11874	
9	MOUNTING BRACKET	2	BRASS	COMM.		11700	
10	1/8" X 3/8" RIVET	4	BRASS	"		11875-1	
11	WASHER	3	STAINLESS STEEL	18-8	6,13		
13	BUSHING	3	STAINLESS STEEL	18-8	6,13	11876	
15	WIRING ASSEMBLY	1	ASSEMBLY			11877	HITJRM-11877
16	CABLE ASSEMBLY	1	"		11	11878	HITJRM-11878
17		1	"		11	11879	
18		1	"		11	11880	
19							
20	TERMINAL LUG	15	COPPER	COMM.	12	40931	
21							
21-A	TERMINAL BLOCK ASSEMBLY	2	ASSEMBLY				STB6C
22							
23							
24							
25							
25-A							
26							
27							
28							
29							
29-A							
30	TRANSFORMER	1	ASSEMBLY			23534	HITJRM-23534
31	TAP SWITCH	1	ASSEMBLY		14	11869	HITJRM-11869
32							
33	3/8" LOCKWASHER - INT. TEETH - SHAKEPROOF	1	PHOS. BRONZE	COMM.	8		
34	3/8" - 32 X 1/8" HEX. NUT	1	BRASS	"	8		
35	KNOB	1	ZINC	"	8	11868	
36	No. 6 - 32 X 5/8" HD. LESS SET SCR.	1	STAINLESS STEEL	412	6		
37	DIAL PLATE	1	MONEL	46-M-7	8	11738	
38	No. 8 - 32 X 1/4" R.H.M. SCR.	6	BRASS	COMM.	8		
39	No. 8 LOCKWASHER	10	PHOS. BRONZE	"	8		
40	No. 8 - 32 X 3/8" R.H.M. SCR.	4	BRASS	"	8		
41	No. 6 - 32 X 1/4" R.H.M. SCR.	4	"	"	8		
42	No. 6 LOCKWASHER	4	PHOS. BRONZE	"	8		
43	NAMEPLATE	1	MONEL	46-M-7		11896-1	
44		1	"	"		11896-2	
45	No. 6 - 32 X 3/8" R.H.M. SCR.	6	BRASS	COMM.	8		
46	No. 6 LOCKWASHER	6	PHOS. BRONZE	"	8		
47	No. 6 - 32 HEX. NUT	6	BRASS	"	8		
48	DESIGNATION STRIP	1	MONEL	46-M-7		11735	
49	DRIVER UNIT - NL100	1	ASSEMBLY		2,15	11670	HITJRM-10034 SS502-3,000,431
50	GASKET	1	NEOPRENE	33-R-4		11647	HITJRM-10040
51							
52	BLAST VALVE ASSEMBLY	1	ASSEMBLY		3	11662	HITJRM-10035
53	CASE .043" THICK	1	STAINLESS STEEL	18-8	6	11638-1	
54	CASE .043" THICK	1	"	"	6	11638-2	
55	DIAPHRAGM .012" THICK	1	PHOS. BRONZE	COMM.	3,10	11639	
56	GUIDE PIN	2	STAINLESS STEEL	18-8	6	11640	
57							
58	GASKET	1	NEOPRENE	33-R-4		11720	HITJRM-10039
59							
60	SPACER	1	MOULD. PHENOL	JAN-P-14 M19-E-1		11721	HITJRM-10042
61							
62	No. 10 - 24 X 1/8" FIL. HD. M. SCR.	3	BRASS	COMM.	8		
63	No. 10 FLAT WASHER	3	"	"	8		
64	No. 10 LOCKWASHER	3	PHOS. BRONZE	"	8		
65							
66							
67	1/4" - 20 X 1 1/8" FIL. HD. M. SCR.	4	BRASS	COMM.	8,5		
68	1/4" FLAT WASHER	4	"	"	8		
69	1/4" LOCKWASHER	4	PHOS. BRONZE	"	8		
70							
71							
72	GASKET	1	RUBBER	33-R-4		11722	H33P1561-1500
73							
74							
75	HORN ASSEMBLY	1	ASSEMBLY		7,9	11892	
76	HORN SECTION ASSEMBLY - MADE FROM 11908	1	ASSEMBLY		17	11909	
77	HORN SECTION - MADE FROM 11726	1	BRASS	COMM.		11887	
78	HORN SECTION	1	"	"		11732	
79	HORN SECTION - MADE FROM 11888	1	"	"		11889	
80	LOCATING PIN	1	"	"		11890	
81	HORN SECTION - MADE FROM 11728	1	"	"		11729	
82	MOUNTING BRACKET	3	"	"		11734	
83							
84	3/8" X 3/8" RIVET	6	BRASS	COMM.			
85							
86	1/4" - 18 X 1 1/2" SLOT. HEX. H.M. SCR.	3	BRASS	COMM.	8,5	11736	HITJRM-10037
87	1/16" LOCKWASHER	3	PHOS. BRONZE	COMM.	8		
88	FLAT WASHER .325 I.D. X 3/4 O.D. X 1/8 THICK	3	STAINLESS STEEL	18-8	6		
89							
90	TERMINAL TUBE PLUG	2	NEOPRENE	33-R-4		11893	
91	TERMINAL TUBE GLAND WASHER	2	BRASS	COMM.	7	11695	5010-L-5
92							
93	TERMINAL TUBE GLAND NUT	2	BRASS	COMM.	5,7,9	11697	11894
94	TERMINAL TUBE PACKING	2	"	"	16		
95							

APPRO DATE

MASTER DRAWING
LOUDSPEAKER,
DYNAMIC

JENSEN MFG. CO.
CHICAGO 38, ILL.
DWG. NO. 11900-J

STD. NAVY STOCK NO:
S17-L-9451-1001 IC/SBA-4J
S17-L-9451-1002 IC/SBG-4J

NAVY DEPT BUSHIPS DWG NO REV
S6502 H 3 196 509

SCALE: FULL WT. CALC. 23 POUNDS

S

CHAMBER (PIECE 21)
WITH RED PRINTERS INK
EAR LAGUER.

7% NITRIC ACID SOLUTION
ROUGHLY.

0006" THICK.

LIED RESEARCH PRODUCTS,

EXCEPT SURFACE MARKED
LOW GREEN ALKYD-RESIN
N CO., NEWARK, N.J.)

GTION VARNISH & INSUL-
BAKE 4 HRS. AT 250°

3 1/2 TURNS NO. 34 B.B.S.
E 278" LONG, NOMINAL
A.C. IMPEDANCE AT 500-2000
6 OHMS ACCORDING TO THE
UPLED.

VARNISH (BROOKLYN

OBTAINED FROM MINNESOTA
MINN.

LEADS (ITEM 30) MAY BE
EH CO., NEWARK, N.J.)

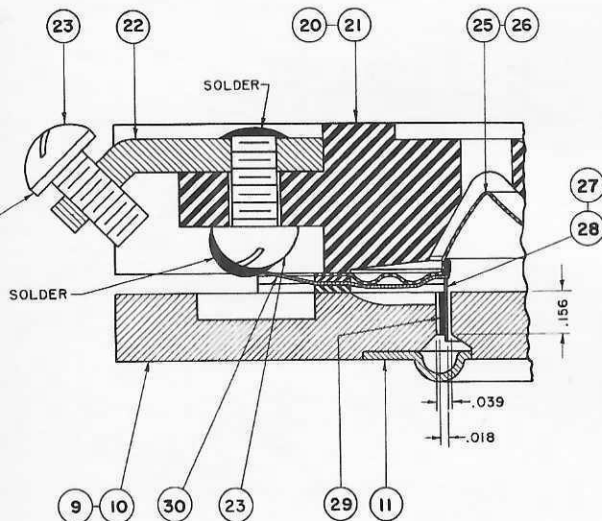
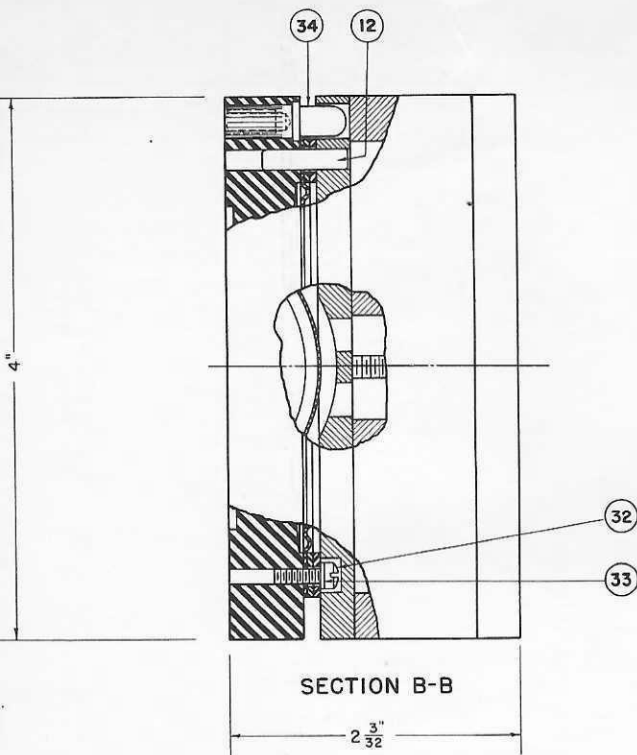
MANUFACTURE'S DWG. OR
EIR SUPPLEMENTARY
EN ARROWS.

AIL THE HEAD ASSEMBLY
UNIT.

ER FOR HEAD ASSEMBLY

QUANTITIES ARE FOR ONE REPRODUCER							REVISIONS							
PIECE NO.	NAME OF PIECE	PIECES REQ.		MATERIAL	MATERIAL SPEC.	REMARKS	MANUFACTURER'S DWG. OR CODE NO.	ZONE	REV.	DESCRIPTION	MFR DATE	APPRO	USN DATE	APPRO
1	MAGNETIC STRUCTURE ASSEMBLY	1		ASSEMBLY		NOTE 5, 6	11668		3	REDRAWN TO STANDARD FORMAT				
2	MAGNET	1		ALNICO X	COMM.		11650							
3	MAGNET	1		ALNICO X	"		11651							
4	CORE PLATE	1		STEEL	"	NOTE 3, 4	11655							
5	MAGNETIZING COIL	1		ASSEMBLY		" 7	11667							
6	No. 19 S.C.C. P.E. WIRE	AS REQ.		COPPER	COMM.									
7	TAPE - 1/2" X 3"	2		VINYL	"	NOTE 10								
8	No. 16 SLEEVING-BLACK- 2" LONG	2		VARNISHED CAMBRIC	"									
9	TOP PLATE ASSEMBLY	1		ASSEMBLY			11666							
10	TOP PLATE	1		STEEL	COMM.	NOTE 3, 4	11630							
11	CENTERING RING	1		STAINLESS STEEL	18-8	" 2	11656							
12	3/32" X 5/8" DOWEL PIN	2		STAINLESS STEEL	18-8	" 2								
13	CORE TIP	1		STEEL	COMM.	" 3, 4	11636							
14	1/4"-20 X 1 1/8" F.H.M. SCR.	3		BRASS	"									
15	No. 8-32 X 1 1/8" F.H.M. SCR.	2		BRASS	"									
16														
17														
18														
19														
20	HEAD ASSEMBLY	1		ASSEMBLY		NOTE 1, 14	11669							
21	SOUND CHAMBER	1		MOULDED PHENOLIC	JAN-P-14 MTS-E-1		11629							
		2		BRASS, 1/2" H	COMM.		11643							
22	TERMINAL													
23	No. 8-32 X 1/8" R.H.M. SCR.	4		BRASS	COMM.									
24	No. 8 LOCKWASHER - INTERNAL TEETH	2		PHOS. BRONZE	"									
25	V.C. & DIAPHRAGM ASSEMBLY	1		ASSEMBLY		NOTE 8	11661							
26	DIAPHRAGM	1		MOULDED PHENOLIC	COMM.		11660							
27	VOICE COIL ASSEMBLY	1		ASSEMBLY			11659							
28	VOICE COIL BOBBIN STRIP	1		PHENOLIC	COMM.		11657							
29	No. 34 P.E. CU. WIRE	AS REQ.		COPPER	"									
30	VOICE COIL LEAD	2		BERYLLIUM COPPER	BERALCTA	HARDEN & NOT IN DIP-NOTE 11	11658							
31	GASKET	2		LAMINATED PHENOLIC	JAN-P-13, 15, 16 M.S. OR 15M4	NOTE 9	11635							
32	No. 4-40 X 3/8" FIL. H. M. SCR.	2		BRASS	COMM.									
33	No. 4 LOCKWASHER-INTERNAL TEETH	2		PHOS. BRONZE	"									
34	GUIDE PIN	3		BRASS, 1/2" H	"		11755							
35														
36														
37														
38														
39	No. 10-24 X 3/8" FIL. H. M. SCR.	6		BRASS	COMM.									
40	No. 10 LOCKWASHER-INTERNAL TEETH	6		PHOS. BRONZE	"									

DRAWN BY VE J. DATE 1-19-49 TRACED BY T.J.C. DATE 6-9-55 CHECKED BY	MASTER DRAWING		JENSEN MFG. CO. CHICAGO 38, ILL. 1167 O-J	
	DRIVER UNIT NL-100		NAVY DEPT. BU SHIPS DWG NO. REV	
APPD DATE	STD. NAVY STK. NO. H17JRM-10036		S6502	H 3 000 431
SCALE: 2-1/8 4-1/2		WT: CALC. 4.4 LBS.		3

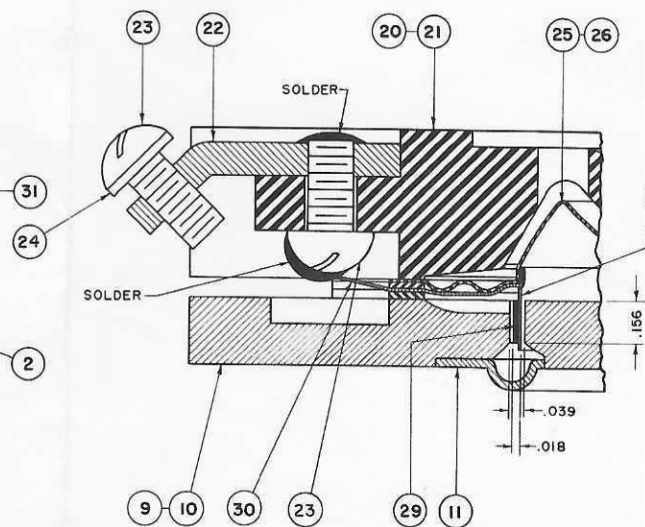
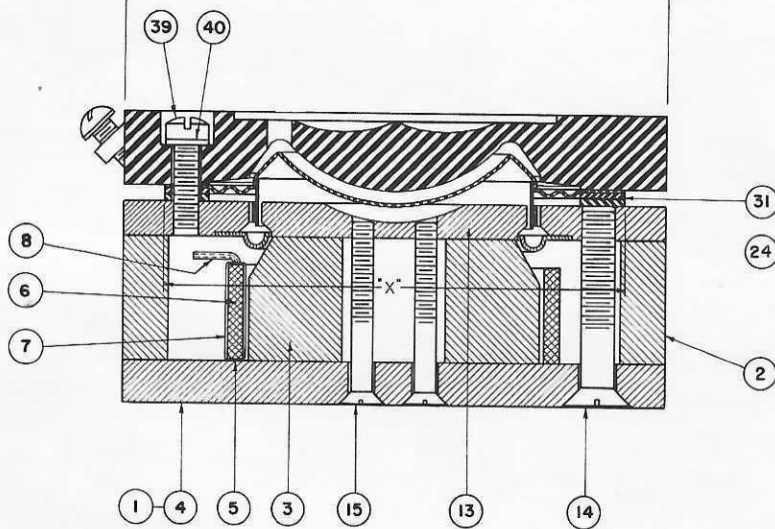
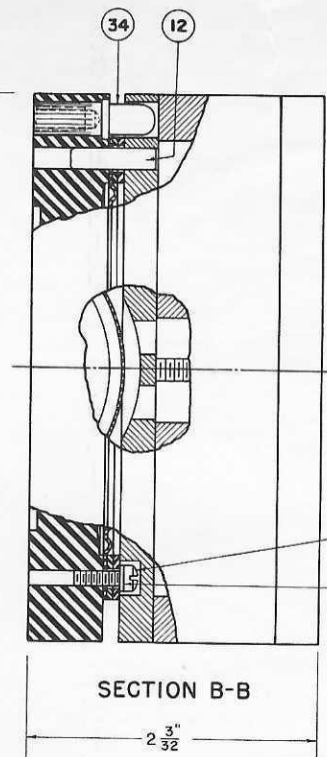
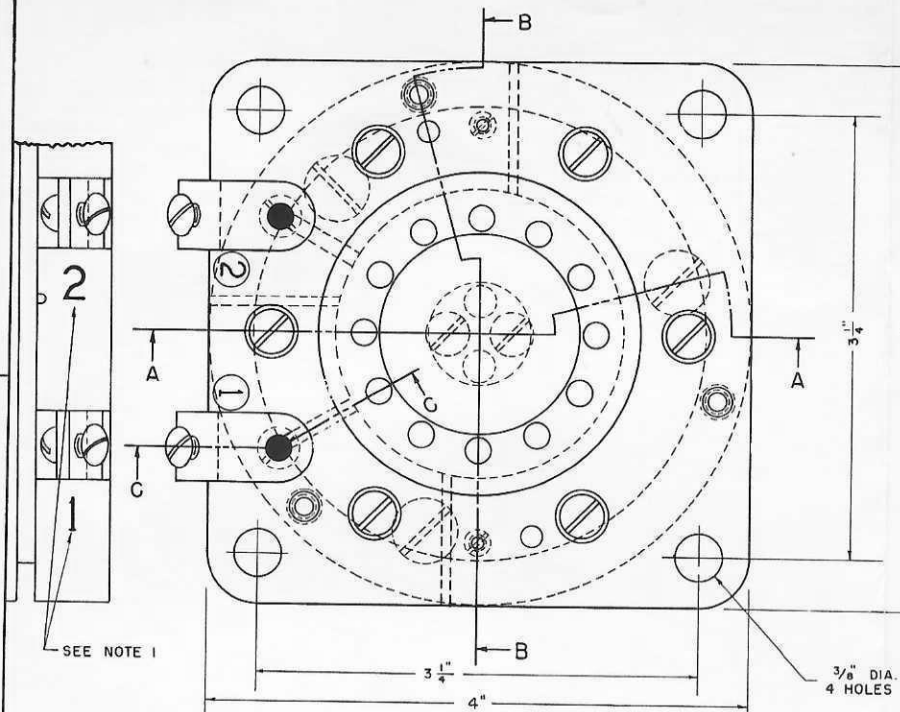


NOTES

1. $\frac{1}{4}$ " CHARACTERS ON SOUND CHAMBER (PIECE 21) LOCATED AS SHOWN. STAMP ON WITH RED PRINTERS INK & COVER WITH ONE COAT OF CLEAR LACQUER.
2. PASSIVATE BY DIPPING IN 20% NITRIC ACID SOLUTION FOR 30 SECONDS & RINSE THOROUGHLY.
3. CADMIUM PLATED .0004" - .0006" THICK.
4. PROCESS WITH IRIDITE (ALLIED RESEARCH PRODUCTS, CHICAGO, ILL.) OR EQUIVALENT.
5. CHROMATE PRIMER 52 P18
6. FINISH GREY BAKING ENAMEL EXCEPT SURFACE MARKED "X" 2.5 GY 6.0/0.5 LIGHT GRAY YELLOW GREEN ALKYL-RESIN BASE ENAMEL (MAAS & WALDSTEIN CO., NEWARK, N.J.)
7. DIP IN HARVEL 612-C (IRVINGTON VARNISH & INSULATOR CO., IRVINGTON, N.J.) AND BAKE 4 HRS. AT 250°
8. VOICE COIL IN ITEM 25 IS 43 1/2 TURNS NO. 34 B.B.S. GA. PLAIN ENAMELED WIRE. WIRE 278" LONG, NOMINAL RES. 6 1/2 OHMS D.C. AT 68°F. A.C. IMPEDANCE AT 500-2000 CPS VARIES FROM 11 TO 16 OHMS ACCORDING TO THE TYPE OF HORN TO WHICH IT IS COUPLED.
9. SPRAY WITH 74F FUNGICIDAL VARNISH (BROOKLYN VARNISH CO., BROOKLYN, N.Y.)
10. TAPE (ITEM 7) MAY BE OBTAINED FROM MINNESOTA MINING & MFG. CO., SAINT PAUL, MINN.
11. MATERIAL FOR VOICE COIL LEADS (ITEM 30) MAY BE OBTAINED FROM WILBUR B. DRIVER CO., NEWARK, N.J.
12. IN LIST OF MATERIAL, UNDER MANUFACTURER'S DWG. OR CODE NO. "ASSEMBLIES AND THEIR SUPPLEMENTARY DRAWINGS" ARE INCLUDED BETWEEN ARROWS.
13. SHOULD THE VOICE COIL FAIL THE HEAD ASSEMBLY (ITEM 20) IS REPLACED AS A UNIT.
14. STANDARD NAVY STOCK NUMBER FOR HEAD ASSEMBLY (ITEM 20) IS H17JRM-10034

QUANTITIES ARE FOR ONE REPR

PIECE NO.	NAME OF PIECE	PIECES REQ.	MATERIAL
1	MAGNETIC STRUCTURE ASSEMBLY	1	ASSEMBLY
2	MAGNET	1	ALNICO V
3	MAGNET	1	ALNICO V
4	CORE PLATE	1	STEEL
5	MAGNETIZING COIL	1	ASSEMBLY
6	No. 19 S.C.C. P.E. WIRE	AS REQ.	COPPER
7	TAPE - 1/2" X 3"	2	VINYL
8	No. 16 SLEEVING-BLACK- 2" LONG	2	VARNISHED CAMBIC
9	TOP PLATE ASSEMBLY	1	ASSEMBLY
10	TOP PLATE	1	STEEL
11	CENTERING RING	1	STAINLESS STEEL
12	3/16" X 1/2" DOWEL PIN	2	STAINLESS STEEL
13	CORE TIP	1	STEEL
14	1/4" - 20 X 1 1/2" F.H.M. SCR.	3	BRASS
15	No. 8-32 X 1 1/2" F.H.M. SCR.	2	BRASS
16			
17			
18			
19			
20	HEAD ASSEMBLY	1	ASSEMBLY
21	SOUND CHAMBER	1	MOULDED PHENOLIC
22	TERMINAL	2	BRASS, 1/2 M
23	No. 8-32 X 3/4" R.H.M. SCR.	4	BRASS
24	No. 8 LOCKWASHER - INTERNAL TEETH	2	PHOS. BRONZ
25	V.C. & DIAPHRAGM ASSEMBLY	1	ASSEMBLY
26	DIAPHRAGM	1	MOULDED PHENOLIC
27	VOICE COIL ASSEMBLY	1	ASSEMBLY
28	VOICE COIL BOBBIN STRIP	1	PHENOLIC
29	No. 34 P.E. CU. WIRE	AS REQ.	COPPER
30	VOICE COIL LEAD	2	BERYLLIUM COPPER
31	GASKET	2	LAMINATED PHENOLIC
32	No. 4-40 X 3/8" FIL. H.M. SCR.	2	BRASS
33	No. 4 LOCKWASHER - INTERNAL TEETH	2	PHOS. BRONZ
34	GUIDE PIN	3	BRASS, 1/2
35			
36			
37			
38			
39	No. 10-24 X 1/2" FIL. H.M. SCR.	6	BRASS
40	No. 10 LOCKWASHER - INTERNAL TEETH	6	PHOS. BRONZ



MAINTENANCE PARTS KIT STOCK NO. S17-M-133502-197 REPRODUCED FROM JENSEN MANUFACTURING CO'S DWG. NO.11901-D BUREAU OF SHIPS NO. S6502-3196510							
APPLICATION-LOUDSPEAKER, DYNAMIC							
MANUFACTURED BY JENSEN MANUFACTURING CO. CHICAGO 38, ILL.							
NAVY CONTRACT NObs							
ITEM NO.	NO. PER KIT	NAME OF PART	JENSEN SERVICE PART NO.	PIECE NO.	JENSEN DWG. NO.	BUREAU DGW. NO.	STANDARD NAVY STOCK NO.
1	8	HEAD ASSEMBLY	11669	20	11670-J	S6502-3000431	H17JRM-10034
2	2	DRIVER UNIT (NL-100)	11670	48	11900-J	S6502-3196509	H17JRM-10036
3	1	TAP SWITCH	11869	31			H17JRM-11869
4	2	TRANSFORMER	Z-3534	30			H17JRM-Z-3534
5	1	WIRING ASSEMBLY TYPE SBA	11877	15			H17JRM-11877
6	1	WIRING ASSEMBLY TYPE SBG	11878	15			H17JRM-11878
7	3	BLAST VALVE	11662	52	11900-J	S6502-3196509	H17JRM-10035
WEIGHT OF SPARE PARTS UNPACKED 17.5 POUNDS							
IDENTIFICATION OF EQUIPMENT FOR WHICH SPARE PARTS ARE INTENDED. LOUDSPEAKER, DYNAMIC TYPE 1C/SBA-4J & 1C/SBG-4J DATE: 8-19-52					WHEN RE-ORDERING ALWAYS REFER TO JENSEN MFG. CO. DRAWING & PIECE NUMBERS. NO. OF SHEETS 2 SHEET NO.1		

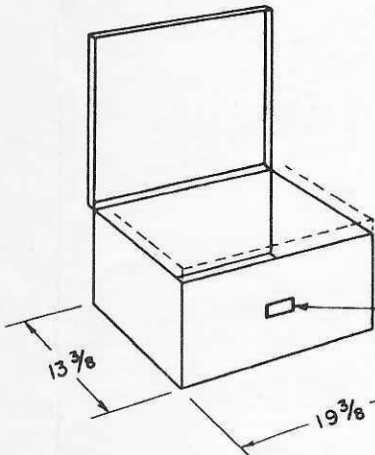
MAINTENANCE PARTS KIT STOCK NO. S17-M-133502-197 REPRODUCED FROM JENSEN MANUFACTURING CO'S DWG. NO.11901-D BUREAU OF SHIPS NO. S6502-3196510	
APPLICATION-LOUDSPEAKER, DYNAMIC	
MANUFACTURED BY JENSEN MANUFACTURING CO. CHICAGO 38, ILL.	
NAVY CONTRACT NObs	
	
IDENTIFICATION OF EQUIPMENT FOR WHICH SPARE PARTS ARE INTENDED LOUDSPEAKER, DYNAMIC TYPE 1C/SBA-4J & 1C/SBG-4J DATE: 8-19-52	

FIG. 9
Maintenance Parts Kit Plan

