

Heathkit® Manual

for the

STATION SPEAKER Model SP-99

595-3249

HEATH COMPANY
BENTON HARBOR, MICHIGAN 49022

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INTRODUCTION

The Heathkit Model SP-99 Station Speaker is an accessory that you can use for communications receivers. The 3" speaker is housed in an attractive cabinet whose color and design matches the latest Heathkit transceivers and receivers.

PARTS LIST

Remove the parts from the carton and check each part against the following list. The key numbers correspond to the numbers on the "Parts Pictorial" (Illustration Booklet, Page 1). Return any part that is in an individual envelope back into the envelope, after you have identified it, until that part is called for in a step. Do not throw away any packing material until you account for all the parts.

To order a replacement part, always include the PART NUMBER. Use the Parts Order Form furnished with this kit. If a Parts Order Form is not available, refer to "Replacement Parts" inside the rear cover of this Manual. For prices, refer to the separate "Heath Parts Price List."

| KEY | HEATH | QTY. | DESCRIPTION |
|-----|----------|------|-------------|
| No. | Part No. | | |

METAL PARTS

| | | | |
|----|------------|---|----------------|
| A1 | 90-1347-1 | 1 | Cabinet top |
| A2 | 90-1331-1 | 1 | Cabinet bottom |
| A3 | 203-2233-1 | 1 | Front panel |
| A4 | 204-2798 | 1 | Bracket |

HARDWARE

NOTE: The hardware is shown full size so you can place any nut, screw, etc, you are uncertain about over the drawing. Also, the hardware may be packed in more than one envelope. Open all of the envelopes (marked HDW) before you check the hardware against the Parts List.

| | | | |
|----|----------|----|--|
| B1 | 250-1434 | 14 | #6 × 3/8" self-tapping phillips screw |
| B2 | 250-1425 | 4 | 6-32 × 1/2" phillips screw |
| B3 | 252-3 | 4 | 6-32 nut |
| B4 | 253-60 | 4 | #6 flat washer |
| B5 | 254-1 | 4 | #6 lockwasher |

| KEY | HEATH | QTY. | DESCRIPTION |
|-----|----------|------|-------------|
| No. | Part No. | | |

MISCELLANEOUS

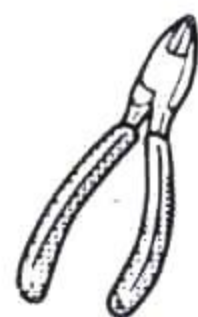
| | | | |
|----|---------|-----|--|
| C1 | 73-4 | 5 | Rubber grommet |
| | 73-168 | 1 | 1/4" foam tape |
| | 74-47 | 18" | Double-stick tape |
| C2 | 75-853 | 1 | Styrofoam baffle |
| C3 | 209-98 | 1 | Grille cloth |
| C4 | 261-28 | 4 | Foot |
| | 343-11 | 48" | Shielded cable |
| C5 | | 1 | Blue and white label |
| C6 | 401-210 | 1 | 3" speaker |
| C7 | 438-4 | 1 | Phono plug |
| | 597-260 | 1 | Parts Order Form |
| | | 1 | Assembly Manual (See front Page for part number.) |
| | | | Solder |



ASSEMBLY NOTES

TOOLS

You will need these tools to assemble your kit.



DIAGONAL
CUTTERS



WIRE
STRIPPERS



PHILLIPS
SCREWDRIVER

OTHER HELPFUL TOOLS



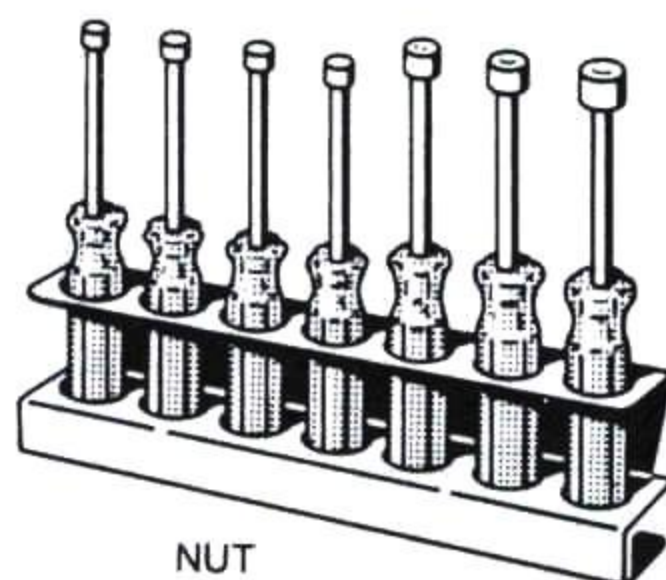
NUT STARTER
(May Be Supplied
With Kit)



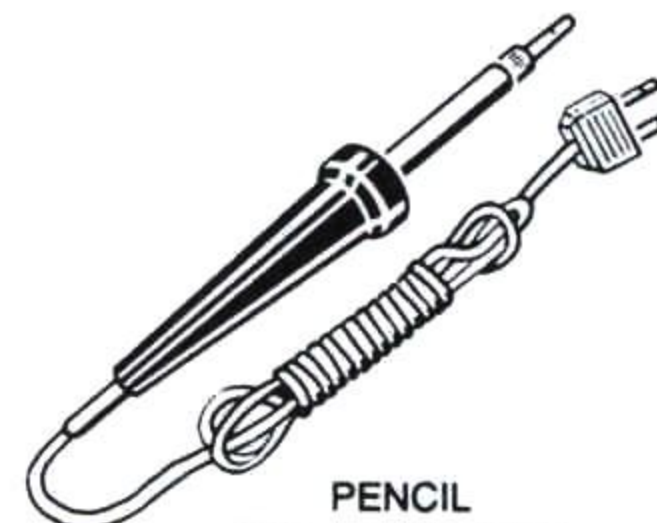
DESOLDERING
BULB*



DESOLDERING
BRAID*



NUT
DRIVERS



PENCIL
SOLDERING IRON
(22 to 25 WATTS)

*To Remove Solder From Circuit Connections.

ASSEMBLY

1. Follow the instructions carefully. Read the entire step before you perform each operation.
2. This kit uses a separate "Illustration Booklet" that contains an Illustration (Pictorial) that is too large for the Assembly Manual. Keep the "Illustration Booklet" with the Assembly Manual.
3. Position all parts as shown in the Pictorial.
4. Solder only when you are instructed to do so.

STEP-BY-STEP ASSEMBLY

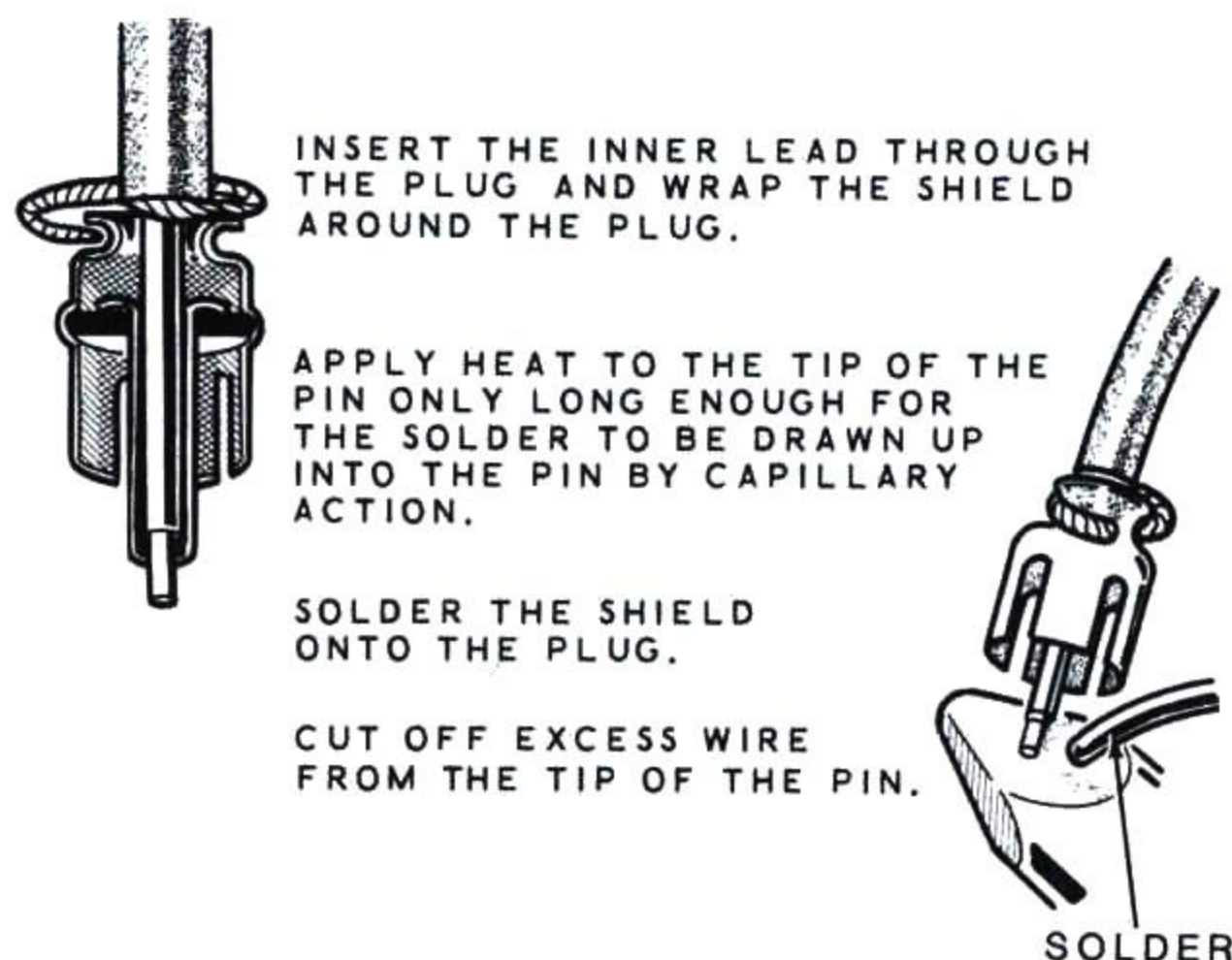
Refer to Pictorial 1 (Illustration Booklet, Page 2) for the following steps.

- () Refer to the inset on the Pictorial and install a rubber grommet into one of the five bracket holes as shown.
- () Similarly install rubber grommets at the four remaining bracket holes.

NOTE: When you handle the speaker in the following steps, make sure not to damage the delicate paper cone.

- () Mount the 3" speaker to the bracket with four 6-32 \times 1/2" phillips screws, #6 flat washers, #6 lockwashers, and 6-32 nuts. Position the hardware and the speaker terminals as shown. Do not overtighten the hardware.

PREPARE THE ENDS AS SHOWN



Detail 1A

Refer to Detail 1A for the following four steps.

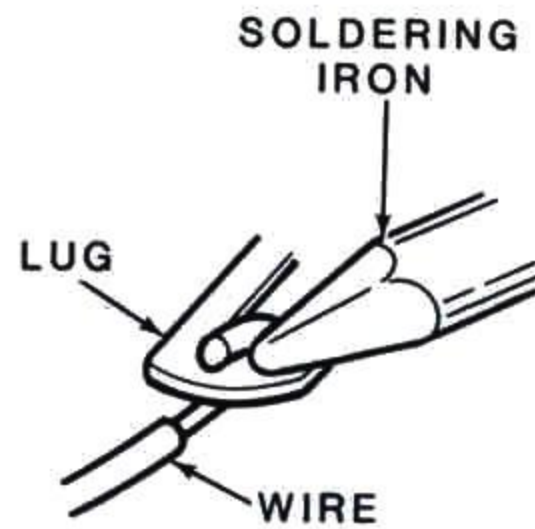
- () Remove 1-1/2" of outer insulation from one end of the shielded cable and 1" of outer insulation from the other end. Be careful not to cut too deep into the outer insulation or you may cut into the shield wires.
- () Unwrap the outer shield wire from the inner wire at each end of the shielded cable. Twist the outer shield wire strands together and apply a small amount of solder to the end to hold them together.
- () Remove 1/4" of insulation from the inner wire at each end of the shielded cable, and twist the wire strands tightly together. Then apply a small amount of solder to the wire strands as before.
- () Assemble the phono plug to the 1" prepared end of the shielded cable as shown.
- () Insert the other end of the shielded cable through the indicated rubber grommet in the bracket. Tie a loose knot 3" from the end of the shielded cable.

Connect the 1-1/2" prepared end of the shielded cable to the 3" speaker terminals as follows:

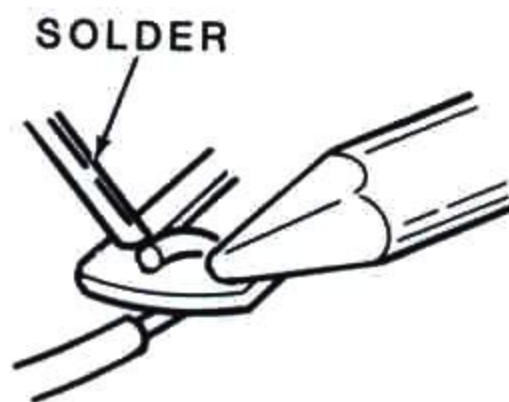
- () Inner lead to the positive-marked (+) terminal.
- () Shield lead to the negative-marked (-) terminal.
- () Solder the shielded cable leads to the speaker terminals and cut off the excess lead lengths. Use the procedure shown on the following Page. Do not use more heat than necessary to solder the connections or you could damage the speaker.



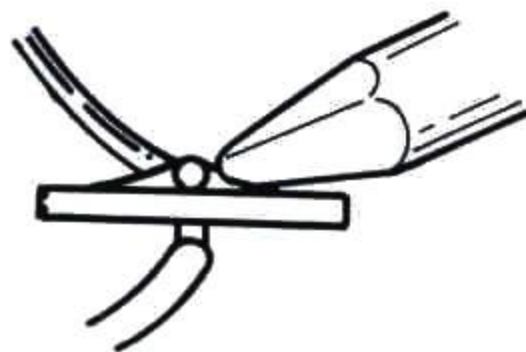
1. Push the soldering iron tip against the wire and the lug. Heat both the wire and the lug for two or three seconds.



2. Apply solder to the wire and the lug, not to the soldering iron. **IMPORTANT:** Let the heat of the wire and lug melt the solder.



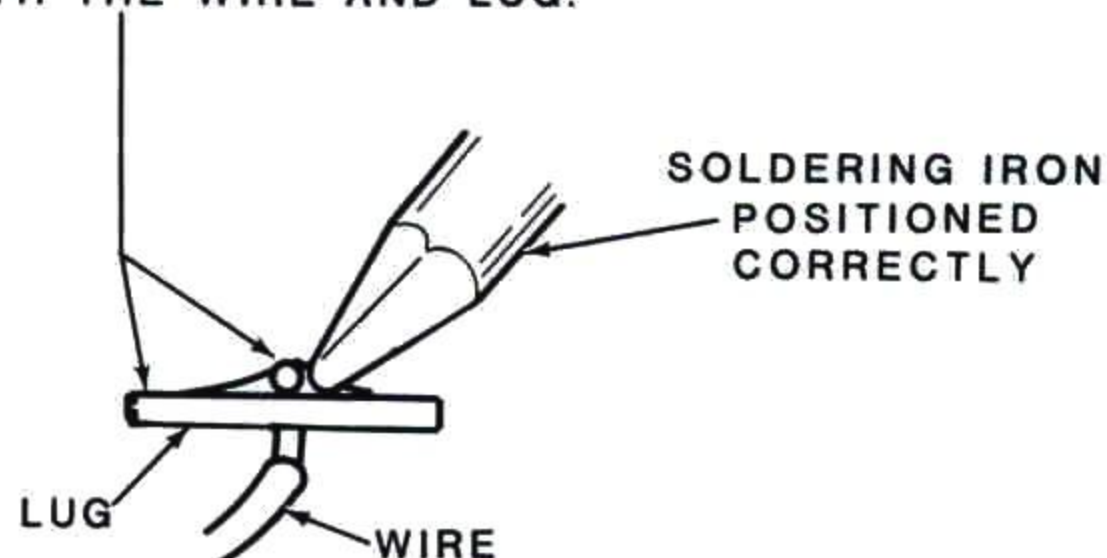
3. As the solder begins to melt, allow it to flow around the connection. Then remove the solder and the iron and let the connection cool.



A GOOD SOLDER CONNECTION

When both the wire and the lug are heated at the same time, the solder will flow onto the wire and the lug evenly. The solder will make a good electrical connection between the wire and the lug.

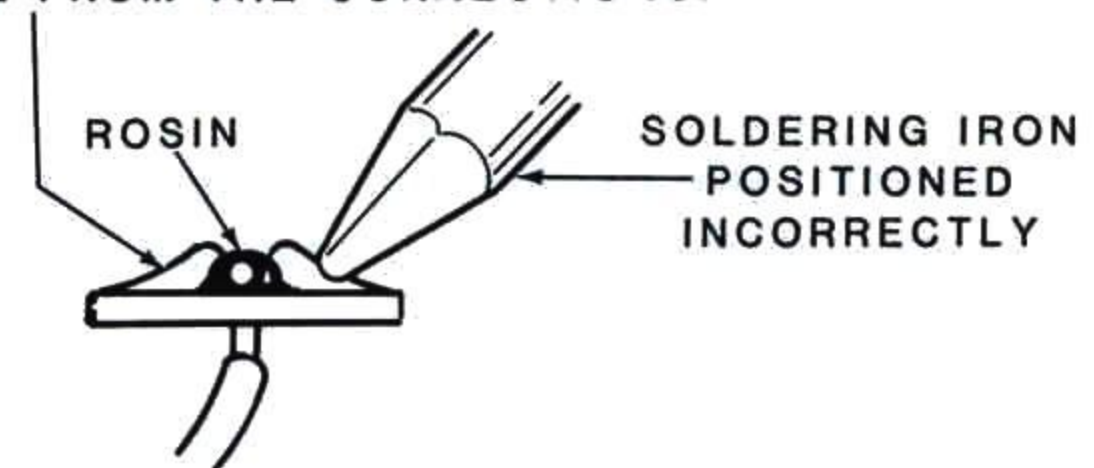
SOLDER FLOWS OUTWARD AND GRADUALLY BLENDS WITH THE WIRE AND LUG.



POOR SOLDER CONNECTIONS

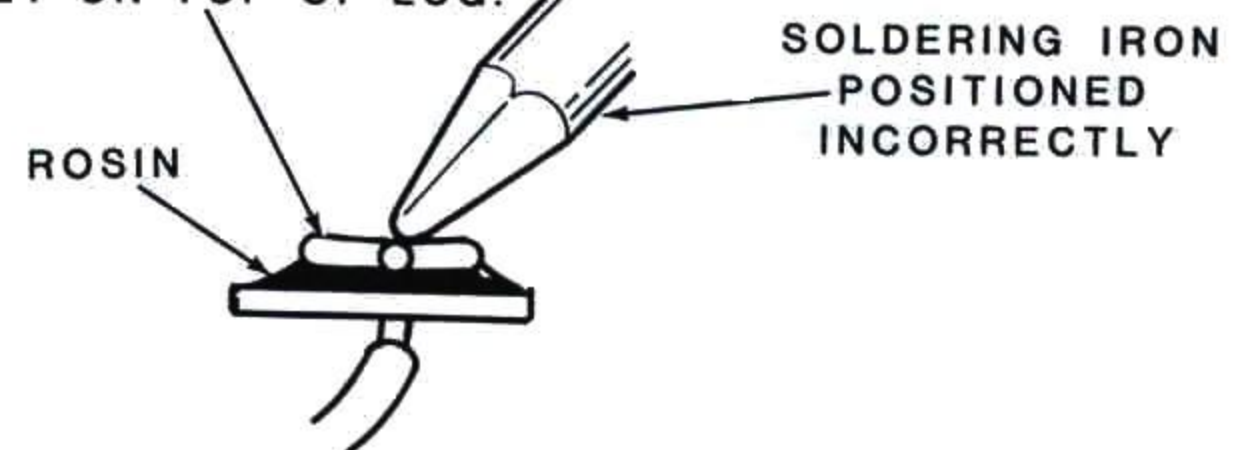
When the wire is not heated sufficiently, the solder will not flow onto the wire as shown above. To correct, reheat the connection and, if necessary, apply a small amount of additional solder to obtain a good connection.

SOLDER DOES NOT FLOW ONTO THE LUG AND WIRE. A DARK ROSIN BEAD SURROUNDS AND INSULATES THE WIRE FROM THE CONNECTIONS.

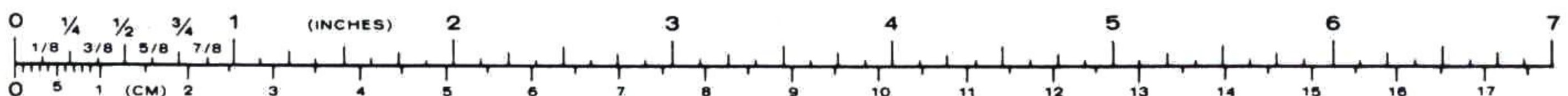


When the lug is not heated sufficiently, the solder will blob on the lug as shown above. To correct, reheat the connection and, if necessary, apply a small amount of additional solder to obtain a good connection.

SOLDER APPEARS TO FLOW INWARD AND SET ON TOP OF LUG.



- () Position the cabinet bottom as shown in the Pictorial. Remove the backing paper from each of the feet and press a foot onto the cabinet bottom at the four corner locations. Keep the edges of the foot 1/4" from the two outside edges of the cabinet.
- () Mount the bracket assembly to the cabinet bottom with four #6 × 3/8" self-tapping phillips screws as shown.
- () Cut two 3" and two 5-3/4" pieces of double-stick tape.



- () Position the front panel with the speaker grille as shown. Apply the 3" and 5-3/4" pieces of double-stick tape to the inside of the front panel as shown. Once you press the tape firmly against the panel, remove the backing from the tape.
- () Carefully press the grille cloth onto the double-stick tape so the three sides of the cloth are against the bottom and side front panel flanges.
- () Cut two 6" pieces of 1/4" foam tape.
- () One at a time, remove the paper backing from each 6" piece of 1/4" foam tape and carefully press the tape along the top and bottom front panel flanges as shown.
- () Position the front panel with the grille openings down and mount it to the cabinet bottom at A and B with two #6 × 3/8" self-tapping phillips screws. Do not overtighten the screws.
- () Route the shielded cable along the side of the cabinet bottom. Then install the styrofoam baffle so the sides of the baffle are centered with the center screw holes in the cabinet bottom.
- () Make sure the baffle is perpendicular to the cabinet bottom; then lower the cabinet top onto the cabinet bottom. Install two #6 × 3/8" self-tapping phillips screws at C and D first. Then install the remaining six #6 × 3/8" self-tapping phillips screws in the cabinet. Keep the front edges of the cabinet halves even as you tighten the screws.
- () Remove the backing from the blue and white label and press the label onto the inside of the cabinet bottom at the indicated location. NOTE: Refer to the numbers on this label if you ever have any correspondence with Heath Company regarding this kit.

This completes the assembly of your speaker.

SPECIFICATIONS

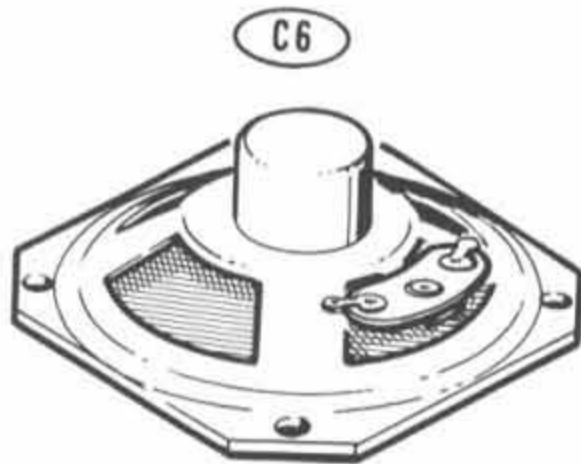
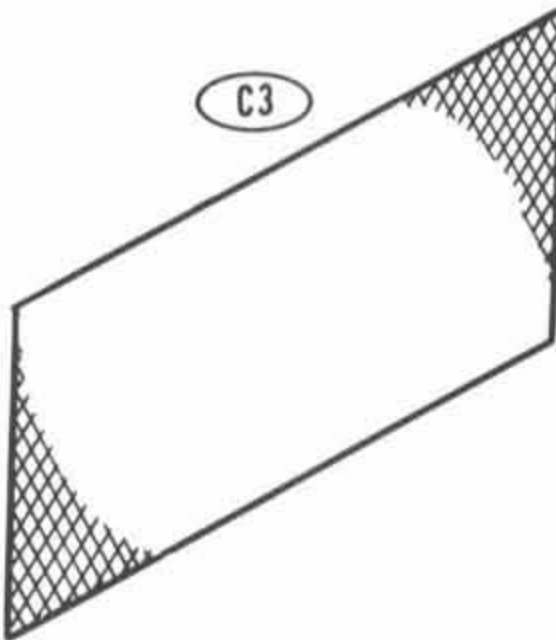
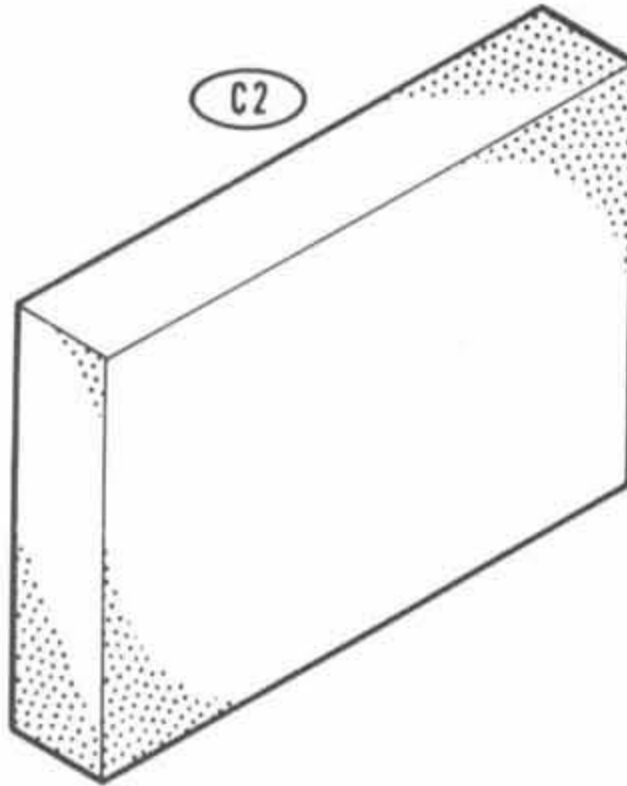
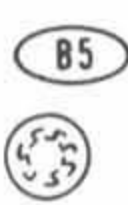
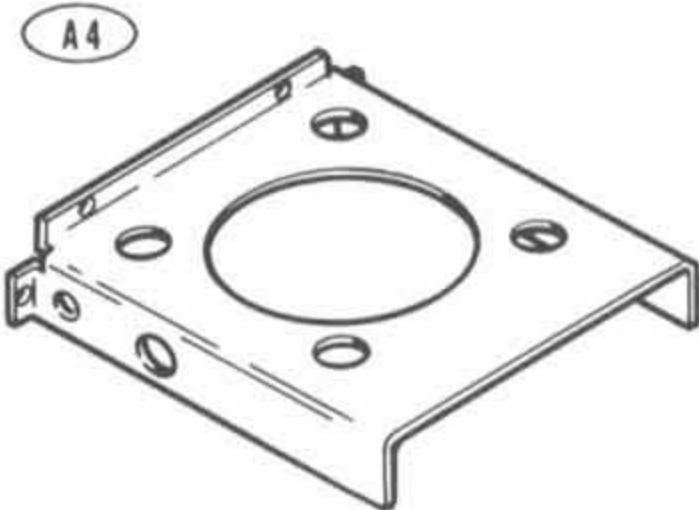
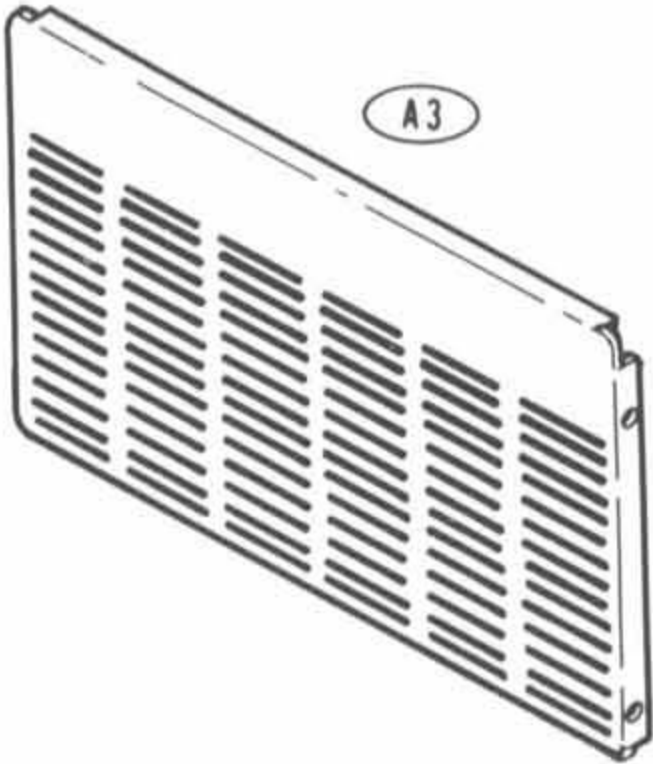
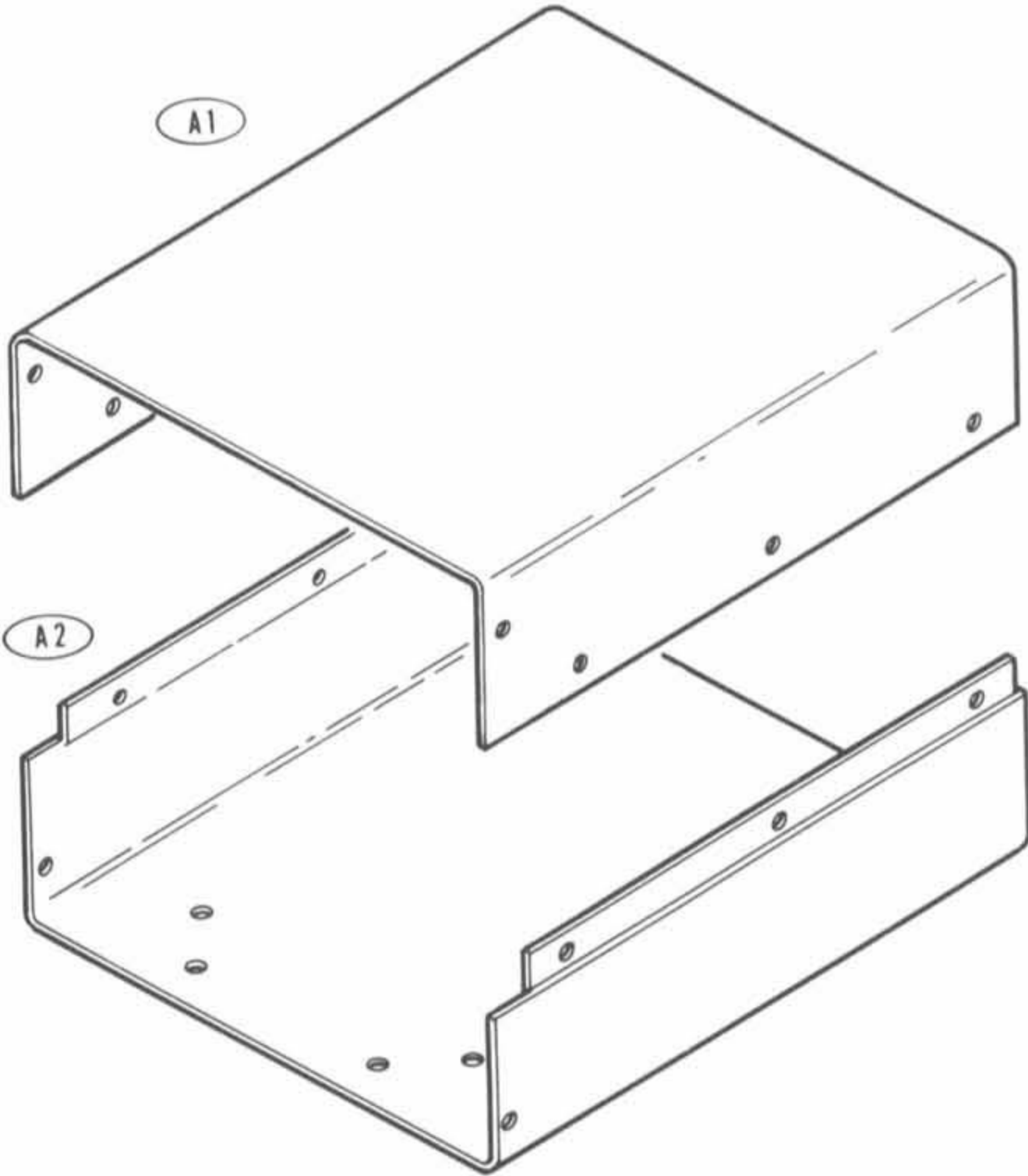
| | |
|--------------------------|---|
| Speaker Size | 3" round. |
| Impedance | 8 ohms. |
| Frequency Response | 200 to 5000 Hz. |
| Magnet Weight | 4 oz. (11.34 grams). |
| Cabinet | Aluminum w/brown splatter finish. |
| Dimensions | 4-1/2" × 6-3/4" × 8" (11.4 × 17.15 × 20.3 cm). |
| Net Weight | 1.6 lbs. (.726 kg). |
| Maximum Wattage | 1.5 watts rms. |

The Heath Company reserves the right to discontinue products and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.

ILLUSTRATION BOOKLET

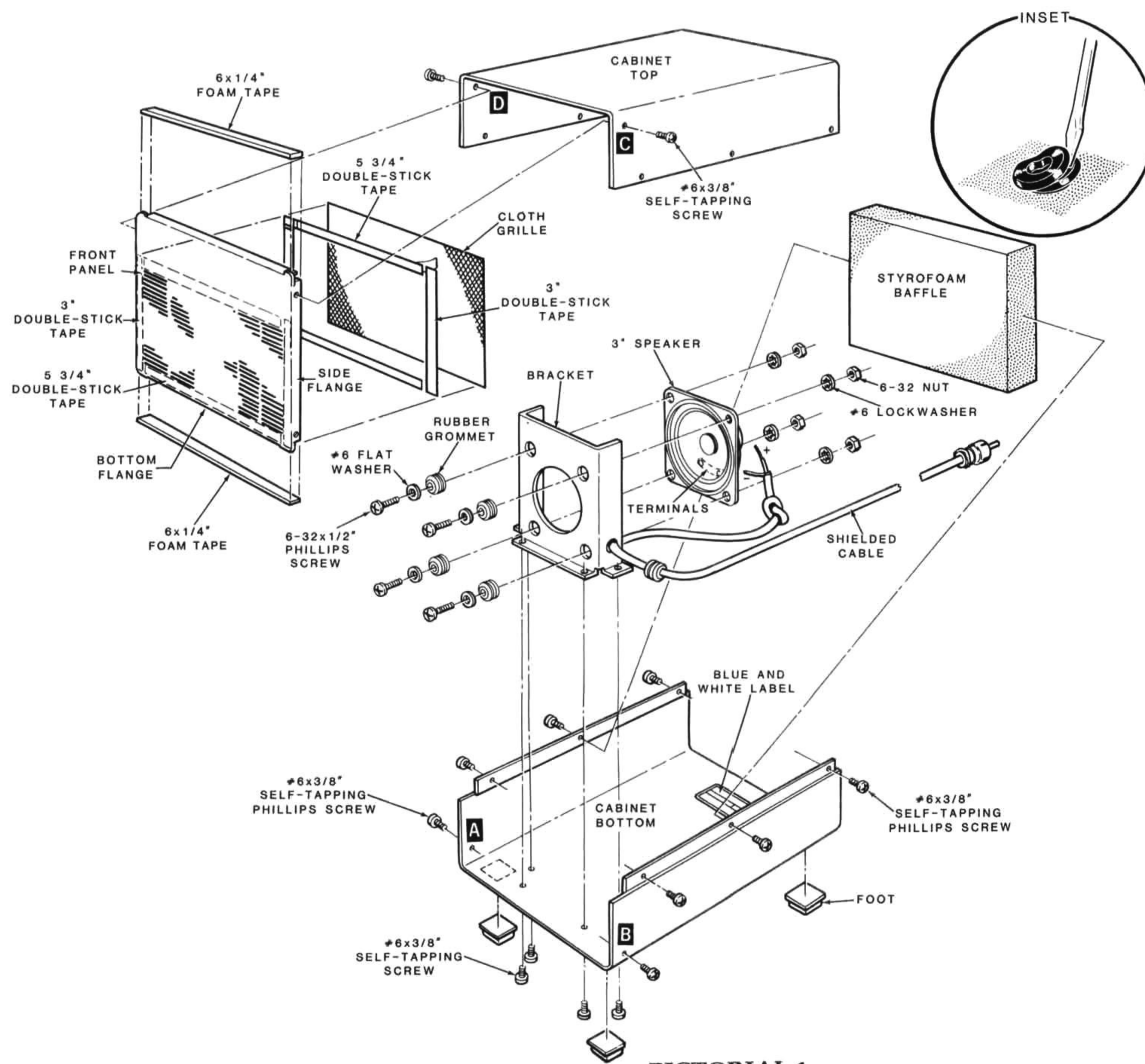
Part of 595-3249

PARTS PICTORIAL



Model SP-99

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PICTORIAL 1