TECHNICAL SERVICE BULLETIN

6/26/95

merit industries, inc.

Problem: Monitor failure; R103 and R104 resistors can open.

Games affected: Games equipped with Eygo monitors. To determine if your game uses an Eygo monitor, look at the sticker on the neck board of the monitor; Eygo monitors are represented as Type 2, Type 3, Type 4, Type 5, Type 6 or Type 7.

Symptoms: Monitor fails to come on after power up.

Cause: Low power capacity of existing R103 and R104 resistors.

Solution: Replace existing 75K ohm 1/2W resistors with 75K ohm 1W resistors.

TOOLS:

Long screwdriver
Small wire cutters/small needle nose pliers
Soldering iron
Solder sucker (if available)

WARNING

SERVICE PERSON SHOULD BE WELL-EXPERIENCED IN WORKING WITH CRTs AND THEIR ASSOCIATED HIGH-VOLTAGE PARTS. *IF YOU ARE NOT WELL-EXPERIENCED, DO NOT ATTEMPT TO SERVICE THIS MONITOR BY YOURSELF.*

19" Upright Model

Refer to Figure 2 for component locations on the monitor board.

1. Power down the game and unplug the line cord from the power source.

2. Open the rear door, to access the monitor section of the cabinet.

1. 

MAKE SURE, BEFORE DISCONNECTING THE RED HIGH-VOLTAGE WIRE FROM THE MONITOR, TO DISCHARGE THE PICTURE TUBE ANODE BY TOUCHING THE SCREWDRIVER (OR SIMILAR METAL OBJECT) TO THE METAL CLIP UNDER THE "RUBBER CUP" AND TO THE METAL CHASSIS. BE CAREFUL NOT TO TOUCH THE PICTURE TUBE ANODE, OR THE METAL OF THE SCREWDRIVER, WHILE GROUNDING THE ANODE. NEGLECTING TO REMOVE THIS CHARGE CAN LEAD TO A SERIOUS SHOCK. Disconnect the red high-voltage wire from the rear of the monitor, by gently pulling up on the "rubber cup" (picture tube anode), and simultaneously touching the screwdriver against the clip underneath and to the metal chassis (ground). See Figure 1.

2. Disconnect the monitor from its power source.

3. Remove the monitor control board from the neck of the picture tube by gently pulling at it (and gently rocking it). **BE CAREFUL NOT TO BREAK THE NECK OF THE PICTURE TUBE.**

4. Disconnect the black ground wire from the monitor control board. Cut any tie wraps that may be holding the ground wire to other wires.

5. Disconnect the 18-pin header from the front edge of the board.

6. Disconnect the 6-pin connector that goes from the main header to the monitor board.

7. Disconnect the 4-pin connector, in the middle of the board, attaching the horizontal and vertical hold control wires.

8. Remove the screws holding the board in place and remove the board from the cabinet.

9. Disconnect the 3-pin connector attached to J50.

10. Disconnect the 2-pin connector, on the monitor side of the board, attaching the two red wires from the degaussing coil to the board.

11. Remove the existing resistors from R103 and R104, by heating the soldered area on each side of the resistor and gently pulling the resistor from the board. Remove the excess solder with a solder sucker if one is available.

12. Carefully solder the new resistors into place. **BE SURE NOT TO GET SOLDER ON ANY OTHER PIN POSITIONS AS YOU CAN CAUSE A SHORT**.

13. Reattach the 2-pin connector from the degaussing coil and the J50 connector first, as they are much harder to connect once you've put the board back in the cabinet.

14. Install the board back in the cabinet.

15. Discharge the picture tube anode again before reattaching the red high-voltage wire.

16. Reattach the high-voltage wire by putting one half of the clip in the hole and using the screwdriver to push in the other half.

17. Reattach the remaining wires to the board. Be sure to reconnect the 4-pin connector to the "A" connector on the board.

18. **BE VERY CAREFUL WHEN REATTACHING THE MONITOR CONTROL BOARD, SO AS NOT TO BREAK THE NECK OF THE PICTURE TUBE**. Align the notch on the board with the end of the neck and press **GENTLY,** but firmly until the board is in place. Reconnect the 8-pin connector to the monitor control board.

19. Close the rear door, plug in the line cord and power up the game.

13" Cabaret Model

Refer to Figure 2 for component locations on the monitor board.

1. Power down the game and unplug the line cord from the power source.

2. Open the rear door, to access the monitor section of the cabinet.

1. ***MAKE SURE, BEFORE DISCONNECTING THE RED HIGH-VOLTAGE WIRE FROM THE MONITOR, TO DISCHARGE THE PICTURE TUBE ANODE BY TOUCHING THE SCREWDRIVER (OR SIMILAR METAL OBJECT) TO THE METAL CLIP UNDER THE "RUBBER CUP" AND TO THE METAL CHASSIS. BE CAREFUL NOT TO TOUCH THE PICTURE TUBE ANODE, OR THE METAL OF THE SCREWDRIVER, WHILE GROUNDING THE ANODE. NEGLECTING TO REMOVE THIS CHARGE CAN LEAD TO A SERIOUS SHOCK.*** Disconnect the red high-voltage wire from the rear of the monitor, by gently pulling up on the "rubber cup" (picture tube anode), and simultaneously touching the screwdriver against the clip underneath and to the metal chassis (ground). See Figure 1.

2. Disconnect the monitor from its power source.

3. Remove the monitor control board from the neck of the picture tube by gently pulling at it (and gently rocking it). **BE CAREFUL NOT TO BREAK THE NECK OF THE PICTURE TUBE.**

4. Disconnect the black ground wire from the monitor control board. Cut any tie wraps that may be holding the ground wire to other wires.

5. Disconnect the 18-pin header from the front edge of the board.

6. Disconnect the 6-pin connector that goes from the main header to the monitor board.

7. Disconnect the 4-pin connector, in the middle of the board, attaching the horizontal and vertical hold control wires.

8. Remove the screws holding the monitor assembly to the monitor shelf and remove the whole assembly. (Some models of 13” cabaret will allow you to access all the screws securing the monitor board, without removing the monitor assembly. If you can remove the board without removing the monitor assembly, skip this step and Step 11. If ou are unsure, it is safest to remove the monitor assembly.)

9. Remove the screws holding the picture tube to the chassis and remove the tube.

10. Remove the screws holding the board in place and remove the board from the cabinet.

11. Disconnect the 3-pin connector attached to J50.

12. Disconnect the 2-pin connector, on the monitor side of the board, attaching the two red wires from the degaussing coil to the board.

13. Remove the existing resistors from R103 and R104, by heating the soldered area on each side of the resistor and gently pulling the resistor from the board. Remove the excess solder with a solder sucker if one is available.

14. Carefully solder the new resistors into place. **BE SURE NOT TO GET SOLDER ON ANY OTHER PIN POSITIONS AS YOU CAN CAUSE A SHORT**.

15. Reattach the 2-pin connector from the degaussing coil and the J50 connector first.

16. Install the board back in the chassis.

17. Discharge the picture tube anode again before reattaching the red high-voltage wire.

18. Reattach the high-voltage wire by putting one half of the clip in the hole and using the screwdriver to push in the other half.

19. Reattach the remaining wires to the board. Be sure to reconnect the 4-pin connector to the “A” connector on the board.

20. Reinstall the monitor chassis into the cabinet.

21. **BE VERY CAREFUL WHEN REATTACHING THE MONITOR CONTROL BOARD, SO AS NOT TO BREAK THE NECK OF THE PICTURE TUBE**. Align the notch on the board with the end of the neck and press **GENTLY,** but firmly until the board is in place. Reconnect the 8-pin connector to the monitor control board.

22. Reconnect the monitor to its power source.

23. Close the rear door, plug in the line cord and power up the game.

Countertop Model

Refer to Figures 3 and 4 for chassis disassembly information and Figure 2 for component locations on the monitor board.

1. Power down the game and unplug the line cord from the power source.

2. Open the rear door to gain access to the monitor section. To change the resistors, you will have to remove the lid and then remove the monitor chassis.

3. To remove the lid, unscrew the thumbscrews on each side of the chassis, push the lid forward, and pull up. You may have to disconnect the ground braid that runs from the power entry to the lid.

4. Remove the metal plate across the rear of the CPU section. Note the location of any ground straps attached to the back plate for later replacement.

5. Disconnect the monitor from its power source.

6. Disconnect the touchscreen cable from the board.

7. Disconnect the ground wire running from the touchscreen cable to the power supply.

8. Disconnect the 6-pin connector that goes from the main header to the monitor board.

9. Take the monitor controls off the Velcro strip so they can be removed with the monitor.

10. Remove the six nuts (three on each side, at the bottom) securing the monitor chassis to the main chassis.

11. Unscrew the nut on the top of the monitor chassis which secures the hook holding the monitor flyback.

12. Remove the monitor chassis and lay it on the flat surface on the back of the monitor board.

1. 

MAKE SURE, BEFORE DISCONNECTING THE RED HIGH-VOLTAGE WIRE FROM THE MONITOR, TO DISCHARGE THE PICTURE TUBE ANODE BY TOUCHING THE SCREWDRIVER (OR SIMILAR METAL OBJECT) TO THE METAL CLIP UNDER THE "RUBBER CUP" AND TO THE METAL CHASSIS. BE CAREFUL NOT TO TOUCH THE PICTURE TUBE ANODE, OR THE METAL OF THE SCREWDRIVER, WHILE GROUNDING THE ANODE. NEGLECTING TO REMOVE THIS CHARGE CAN LEAD TO A SERIOUS SHOCK. Disconnect the red high-voltage wire from the rear of the monitor, by gently pulling up on the "rubber cup" (picture tube anode), and simultaneously touching the screwdriver against the clip underneath and to the metal chassis (ground). See Figure 1.

2. Remove the monitor control board from the neck of the picture tube by gently pulling at it (and gently rocking it). **BE CAREFUL NOT TO BREAK THE NECK OF THE PICTURE TUBE.**

3. Disconnect the black ground wire from the monitor control board.

4. Disconnect the 4-pin connector, in the middle of the board, attaching the horizontal and vertical hold control wires.

5. Remove the screws holding the board in place and remove it from the monitor chassis. Disconnect the 2-pin connector, on the monitor side of the board, attaching the two red wires, from the degaussing coil, to the board.

6. Remove the existing resistors from R103 and R104 by heating the soldered area on each side of the resistor and gently pulling the resistor from the board. Remove the excess solder with a solder sucker if one is available.

7. Carefully solder the new resistors into place. **BE SURE NOT TO GET SOLDER ON ANY OTHER PIN POSITIONS AS YOU CAN CAUSE A SHORT**.

8. Discharge the picture tube anode, again, before replacing the red high-voltage wire.

9. Reattach the 2-pin connector from the degaussing coil.

10. Re-secure the board chassis to the monitor chassis.

11. Reattach the high-voltage wire by putting one half of the clip in the hole and gently using the screwdriver to push in the other half.

12. Reattach the remaining wires to the board. Be sure to reconnect the 4-pin connector to the “B” connector on the board.

13. **BE VERY CAREFUL WHEN REATTACHING THE MONITOR CONTROL BOARD TO THE PICTURE TUBE, TO MUCH FORCE WILL BREAK THE NECK OF THE TUBE.** Align the notch on the board with the end of the neck and press **GENTLY**, but firmly, until the board is in place.

14. Carefully put the monitor chassis back into the main chassis and secure it in place. Reattach the hook, holding the monitor flyback in place.

15. Replace the back plate across the CPU section and resecure any ground straps.

16. Put the lid back on and secure the thumbscrews.

17. Close the rear door, plug in the line cord and power up the game.

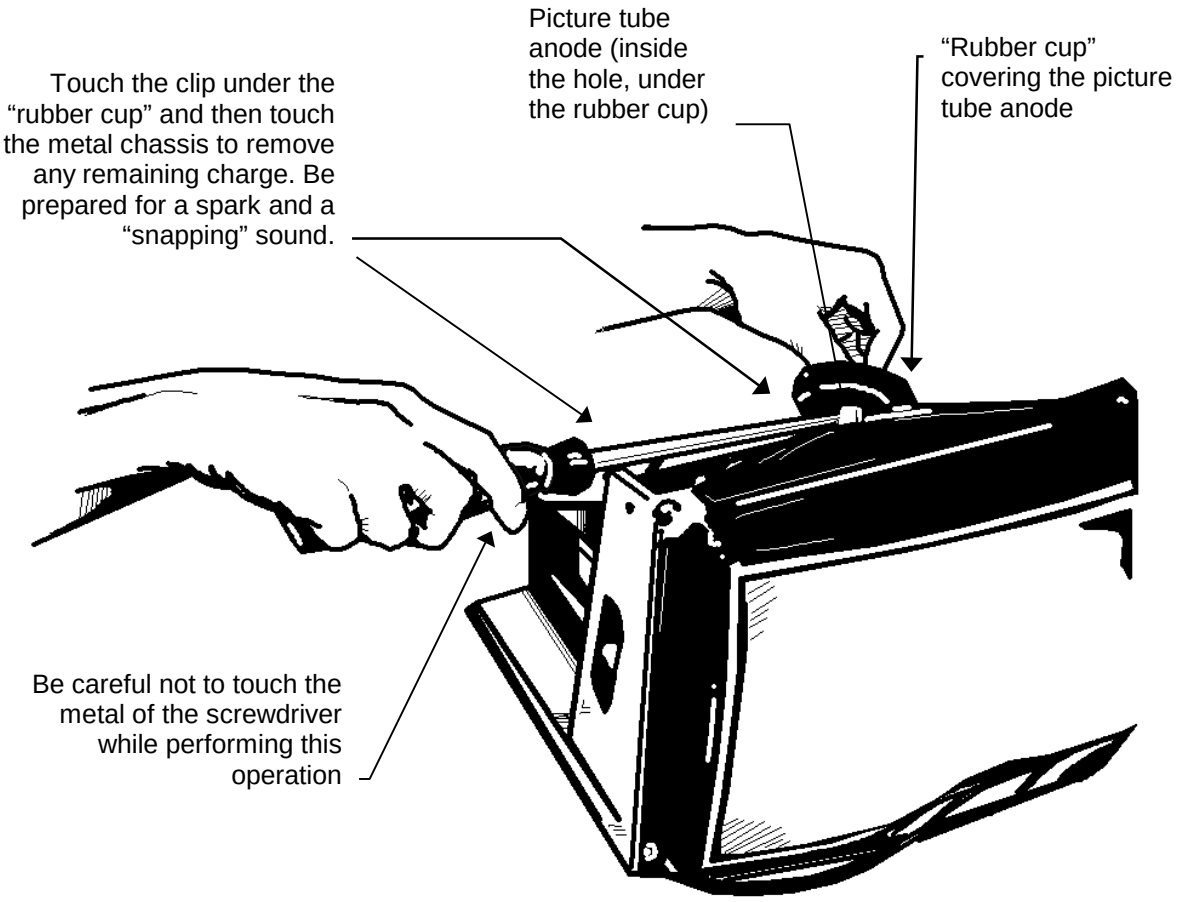

Figure 1 - Discharging the Picture Tube Anode

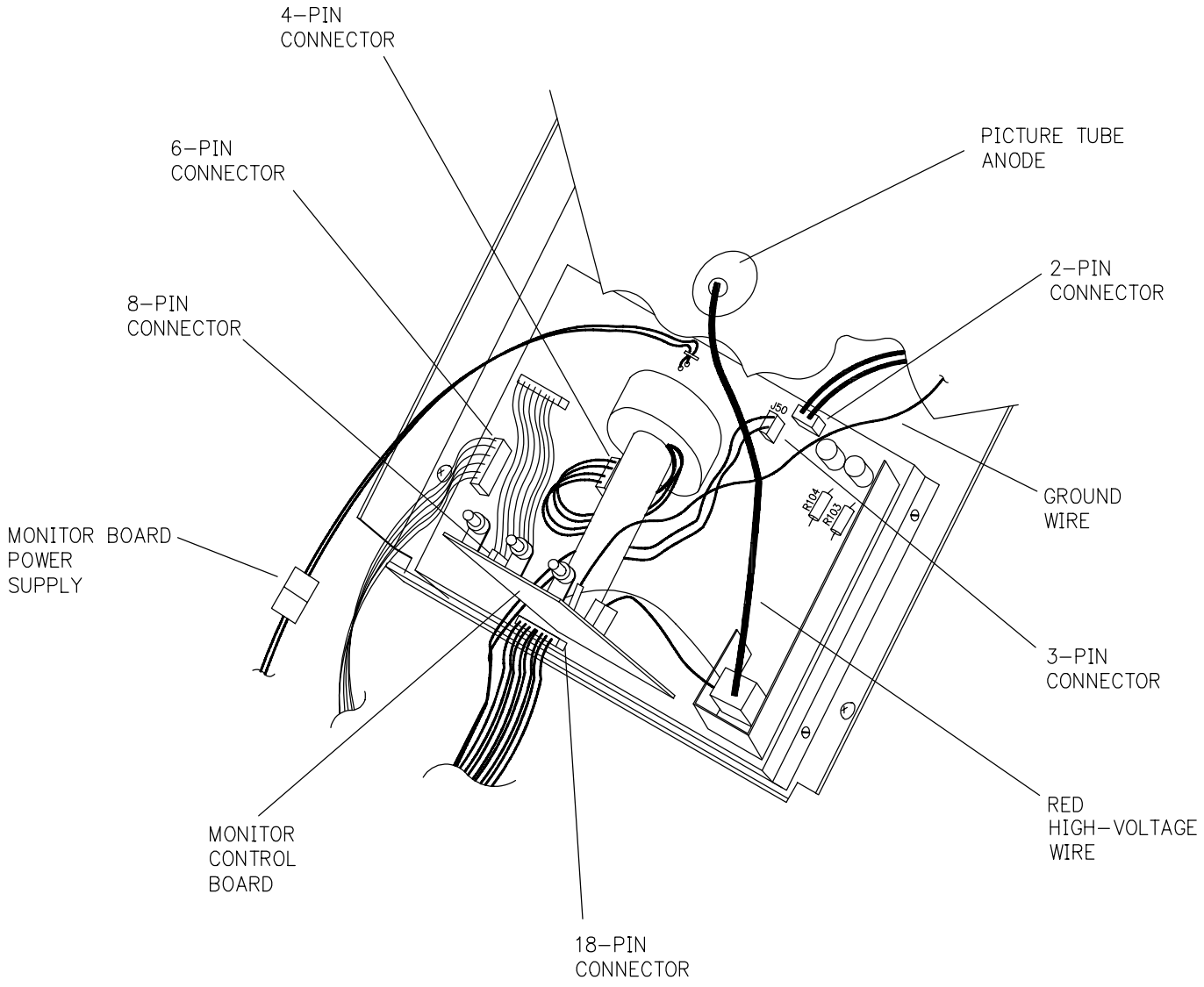

Figure 2 - Monitor Board Layout and Component Locations

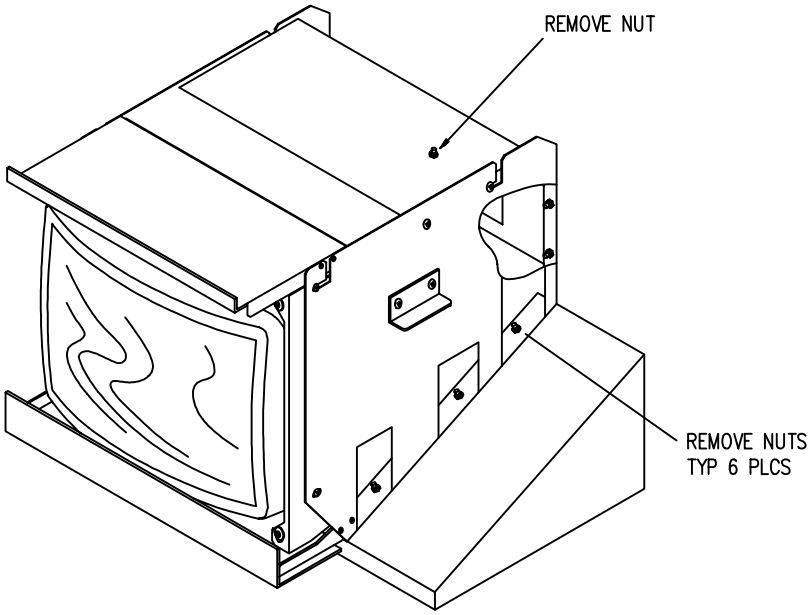

Figure 3 - Diagram for Disassembly of Monitor Chassis
13” Countertop

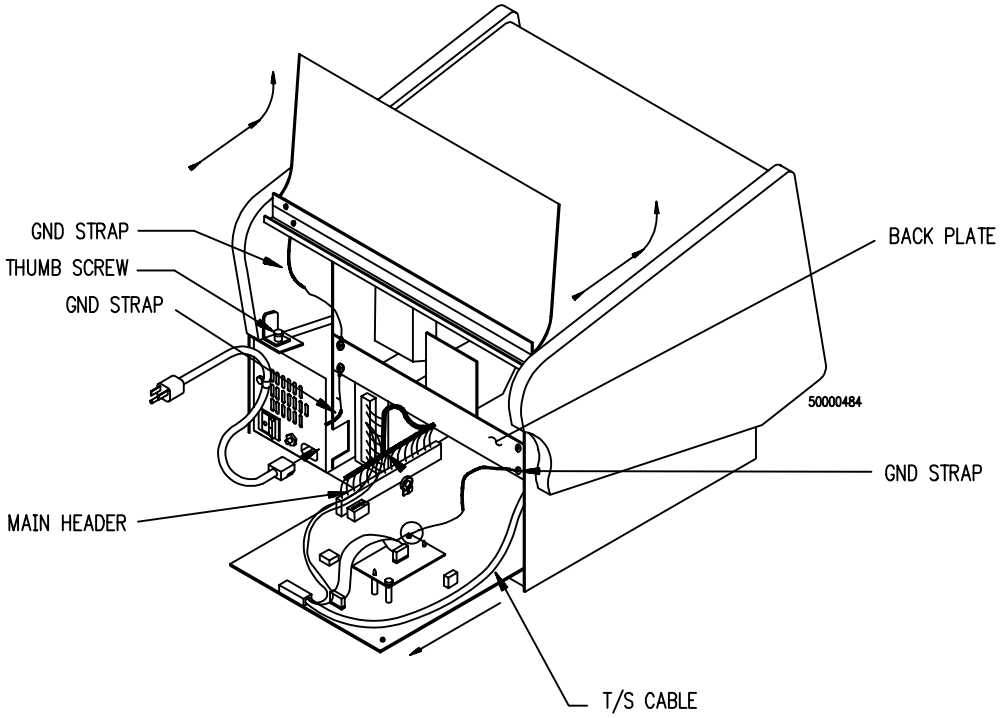

Figure 4 - 13” Countertop - Rear View