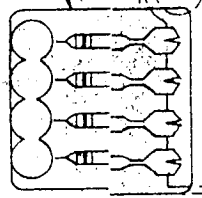


*A" NEW DECAL

(25)



FRONT GAM

NOTE: TERMINALS POINTING TO BOTTOM

VIOLET ②
GREY ③

BACK SIDE

INSTRUCTIONS:

- ① APPLY DECALS TO FRONT, AS SHOWN, LINING-UP WITH EXISTING DECALS. (SEE UPPER-RIGHT)
- ② CUT PIG-TAIL OFF, FLUSH WITH PANEL.
- ③ DRILL HOLES FROM FRONT SIDE. (SEE TEMPLATE, DRAWING # 38-0025)
- ④ INSTALL SWITCHES (1 LARGE AND 4 SMALL) WITH BUTTONS EXTENDING OUT THE FRONT SIDE. SECURE THEM WITH NUTS ON THE BACK SIDE. NOTE: ITEM'S #9 HAVE TERMINALS LABELED AS SUCH: THE "C" TERMINAL SHOULD BE AT THE BOTTOM. ("C" TERMINAL IS THE COMMON SWITCH LINE)
- ⑤ CONNECT WIRE HARNESS: FIND EACH WIRE AS DESCRIBED IN PARTS LIST; SOLDER THEM TO THE CORRECT TERMINALS (THE LONG VIOLET WIRE CONNECTS PLAYER CHANGE SWITCH TO "C" TERMINAL ON THE BOTTOM-MOST GAME SELECT SWITCH.) (THE BARE WIRE, #10, CONNECTS ALL 4 "C" TERMINALS ON GAME SELECT SWITCHES.)
- ⑥ PLACE 3 WIRE HOLDERS (#4) APPROX. AS SHOWN, BEING CAREFUL NOT TO BLOCK LAMP WINDOWS.
- ⑦ USE CABLE TIES (#13) TO SECURE WIRES TO HOLDERS, AND TO BUNDLE WIRES BELOW GAME SELECT SWITCHES, AS SHOWN.
- ⑧ PLUG WIRE HARNESS CONNECTOR INTO MAIN BOARD IN THE SAME PLACE THAT THE OLD PIG-TAIL WAS PLUGGED IN. POSITION IT SO THE WIRES THAT LEAVE THE CONNECTOR GO TOWARD THE FRONT PANEL, AND WHEN LOOKING FROM THE BACK OF THE GAME, THE PURPLE WIRE IS POSITIONED ON THE RIGHT-HAND SIDE.

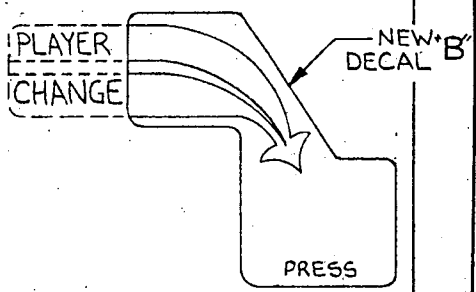
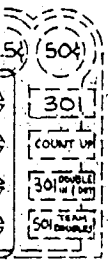
(A) (B) (C) (S)

GREY ③
VIOLET ②

CUT PIG-TAIL OFF AT EDGE OF PANEL

BLEU ⑤
GREEN ⑥
YELLOW ⑦
WHITE ⑧

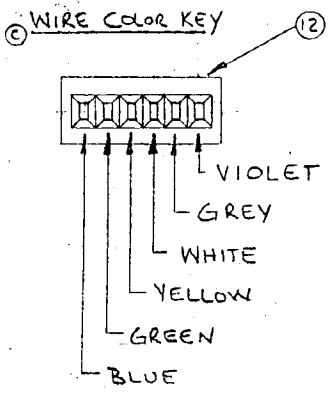
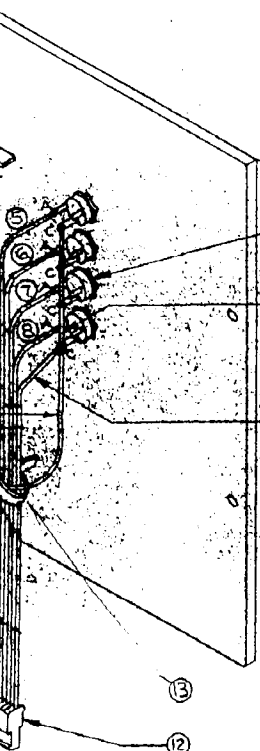
FRONT OF PANEL



(AFFECTED AREAS ONLY, SHOWN) (EXISTING FEATURES=DASHED LINES)
(NEW FEATURES=SOLID LINES)

NAME PANEL

QTY	ITEM	PART#	DESCRIPTION
1	A	16-0053	GAME SELECT DECAL
1	B	16-0052	PLAYER CHANGE DECAL
1	1	08-0009	SWITCH, PLAYER CHANGE
1	2	15-0183	VIOLET 21" LG.
1	3	15-0185	GREY 28 1/2" LG.
3	4	13-0078	WIRE HOLDER, ADHESIVE
1	5	15-0182	BLUE 11 1/2" LG.
1	6	15-0181	GREEN 10 3/4" LG.
1	7	15-0180	YELLOW 10" LG.
1	8	15-0186	WHITE 9 1/4" LG.
4	9	08-0006	SWITCH, GAME SELECT
1	10	15-0187	BARE 2 3/4" LG.
1	11	15-0184	VIOLET 9" LG.
1	12	10-0018	CONNECTOR -6 PIN
4	13	13-0029	CABLE TIE



- D CORRECTED WIRES DME 6-23-88 ECH
- C ADDED WIRE COLOR KEY LABELED WIRES DME 4-11-88
- B REVISED PART NOON MEMO 2-24-88 NO.4 WAS 13-0030 DME 3-24-88
- REV. A CORRECTED MFT NUMBERS 10-7-87-JR

Arachnid 6421 Material Avenue • Rockford, Illinois 61132

SCALE: HALF APPROVED BY: DRAWN BY J.R.P.

DATE: 6-8-87 00-4500-25A REVISED

PANEL ASSY - 4500 - W/MANUAL SWITCHES

INST. MANUAL SW. ASSEMBLY CONVERSION DRAWING NUMBER 38-0026

27234



SERVICE BULLETIN

SERVICE BULLETIN

CONCERNING THE 4500 SERIES GAME

JANUARY 29, 1986

On some of the early models of the 4500 series game, it is possible that the center top might bubble out slightly away from the plastic that it is mounted against. It will be noticed on these games that the area behind game over, remove darts, and throw darts has no adhesive. If the band of adhesive above the game over area doesn't hold it tight, please follow this procedure to remedy.

You will need a bottle of super glue and a flat object approssimently 3 " x 5 ".

1. Remove the front touch panel (Remember to remove the connector from the touch panel to the pc board) by removing the six screws on the front of the game.
2. With a small blade screwdriver, carefully insert into the space at the top of the board where it has separated. Move the blade side to side to open up the area above the game over area (Look at the back side to see the area), being careful not to stretch the material. If the material gets stretched, it will not return to it's original shape.
3. Being very careful not to get super glue on your fingers, put 8 to 10 drops down between the touch panel and the plastic. Quickly spread it around by pressing on the 2 outside surfaces, again watching from the back of the panel to see what you are doing.
4. Take the flat object, press it against the front touch panel, holding tight for a minute and a half. After this it should be dry and tight and not bubble any more.

All new games have adhesive behind the entire touch panel so this will not be a problem in the future. If there are any questions please feel free to call 1-800-435-8319 (In Illinois 815-654-0210).

Gene Harlan - Chief Engineer
Arachnid



SERVICE BULLETIN

December 30, 1986

4500 SERIES GAMES

The following service tips should help with possible problem areas on the 4500 Series Game.

1. Make sure that the screws on the top printed circuit board of the power supply that hold the 5V regulator in are tight. If these screws come loose, the regulator loses its ground connection allowing the unregulated 11 volts to go directly to the logic board. The most sensitive part is the Eprom, and it, if not other integrated circuits, can be affected. We have switched in production to a screw with a lock washer. Adding a lock washer to existing games would also be a good idea.
2. If a problem occurs with the target lamp so that it stays on continuously, the cause is usually that the triac (under the power supply. CAUTION - 120 VAC PRESENT! UNPLUG BEFORE SERVICING) has shorted. Most reports indicate that it happens when a bulb burns out. When the new bulb is inserted, it stays on all the time. When a bulb burns out, the filament breaks and can fall across the posts in a fashion that causes a much higher current draw than normal which will make the triac short. Replace the triac with an SC146D (we've had the best luck with Motorola). We are currently investigating what seems to be a problem with triacs made by Thompson labeled BTB 10400 B. Initial reports indicate a higher than normal failure rate in the field.
3. If the target lamp doesn't come on at all yet the lamp is good, the problem usually lies with the MOC3030 opto isolator located under the power supply (CAUTION - 120 VAC PRESENT - UNPLUG BEFORE SERVICING!).
4. Coin meters were added to the 4500 Series Game at S/N 3850. To instigate this change, the top power supply board was changed to provide an extra +5 VDC connection. The new power supplies will work with older games, but the older ones won't work in the new games as the *wires* which are supposed to have +5 VDC will be grounded preventing coin up from occurring.
5. If a problem occurs on coin up or when **any** sound happens on the game, re-solder or replace C19 (1 ufd 50V). It appears that if this capacitor is not functioning properly, that the sound is getting into the power supply causing logic problems.

For further questions or assistance, you may call 1-800-435-8319.
In Illinois 1-815-654-0212.

ARACHNID, INC.

Gene Harlan

Chief Engineer



INSTALLATION INSTRUCTIONS FOR DOUBLE BULLSEYE - ALL GAMES

Your Double Bullseye Accessory Kit should contain the following items:

1. Inner Bull (Black)
2. Outer Bull (Red)
3. Decal
4. New Switch Matrix (Matrix is already installed on new double bull games)

Carefully remove the dart head from your dart game by removing the 4 bolts holding the dart head in the game. Lay the dart head flat on a table, with the white backboard facing you.

HINT: Before removing the eight nuts holding the dart head together, place a piece of tape on the heads of the screws (segment side of dart head) to hold them in place after nuts are removed.

Refer to your game parts manual for illustrations on how this disassembly process is done.

Disassemble and reassemble dart head as follows:

- a) Remove the 8 nuts holding the target back to the spider.
- b) Remove the switch matrix.
- c) Remove white molded matrix cushion (older dart heads use a clear vinyl gasket and a red rubber damper)
- d) Check for dirt and broken tips between spider and cups. Install new double bullseye.
- e) Clean and reinstall matrix cushion. The smooth side of the cushion comes in contact with the segments.

IMPORTANT

THERE SHOULD BE A SMALL U SHAPE CUTOUT ON THIS CUSHION. POSITION IT TO THE LEFT OF THE CENTER LOCATION HOLE AT THE "20" SEGMENT ON THE SPIDER (BEHIND THE "DOUBLE 1" SEGMENT).

f) If your kit includes a new Switch Matrix, install it with the tails on the left and the 9 pin connector on top. Store the old Matrix in a safe place. If your kit does not contain a new Matrix, simply reinstall the old one in the same manner.

- g) Clean and reinstall target back and 8 nuts, tighten only finger tight.

NOTE

BOLTS MUST BE FINGER TIGHT ONLY. ANY TIGHTER COULD CLOSE CONTACTS IN THE MATRIX AND CAUSE INACCURATE SCORING OR NO SCORING AT ALL.

NOTE

IT IS IMPORTANT TO KEEP DIRT OUT OF THE AREA BETWEEN THE SPIDER AND SEGMENTS AS THIS CAN CAUSE NON-SCORING OR IMPROPER SCORING. ON A HEAVILY PLAYED GAME IT IS A GOOD IDEA TO DO PREVENTIVE MAINTENANCE ON A REGULAR BASIS IN THE FORM OF DISASSEMBLING THE DART HEAD, CLEANING AND REASSEMBLING. THIS CAN HELP PREVENT SERVICE CALLS IN BETWEEN REGULAR VISITS.

NOTE

ALTHOUGH THE DART HEAD IS DISASSEMBLED AND REASSEMBLED AS **IN THE PAST** (WITH 4500 AND 5000 SERIES GAMES), WITH NEWER **4850'S, 6000'S** AND 7000'S IT IS INSTALLED WITH THE 3 LEADS IN THE DOWNWARD DIRECTION. THIS MEANS THAT THE "20" ON THE YELLOW SPIDER IS NOT AT THE TOP. THE PROGRAM WAS MODIFIED TO REFLECT THIS CHANGE. MAKE SURE THAT IF USING A DART HEAD FROM AN OLDER SERIES GAME THAT THE RED AND BLACK SEGMENTS ARE IN THEIR PROPER ORDER (SINGLE 20 IS RED).

ACTIVATING THE DOUBLE BULL OPTION

(Important--Skip Step A if modifying a 4800 series game. Go on to Step B.)

A. FOR 6000's AND 7000's

On 6000 and 7000 series games, there is a 4 position Dip Switch on the main P.C. Board. Some older 6000 games may not have this switch installed. It should be located just above **U20** on your 6000 main P.C. Board (Above U18 on 7000 P.C. boards). Install one if it is not there already. Flipping SW3 of this Dip Switch (see Figure 1) will activate or deactivate the Double Bull. SW3 ON = Double Bull ON; SW3 OFF = Double Bull OFF (Single 50 point Bull is on). See your owners manual for other switch functions.

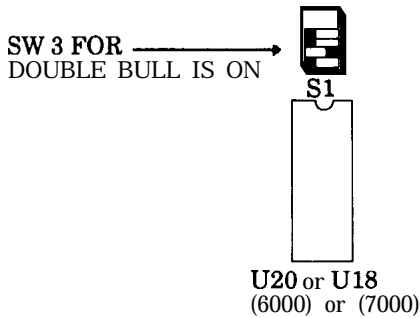


Figure 1
D.I.P. Switch Location on Main P.C. Board, CPS side, 6000 & 7000 Series Games

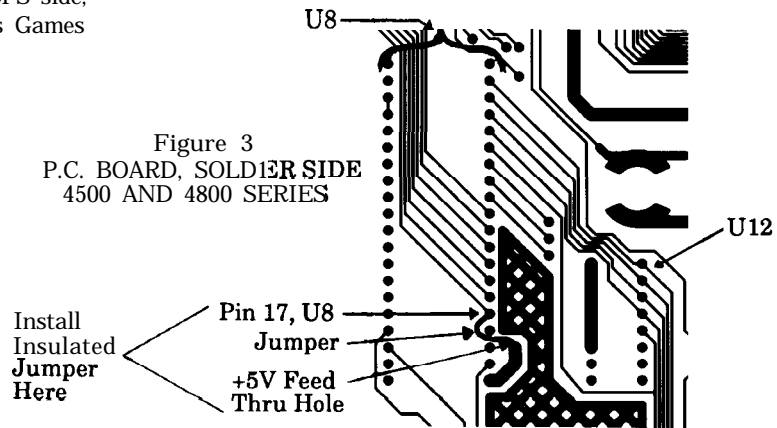
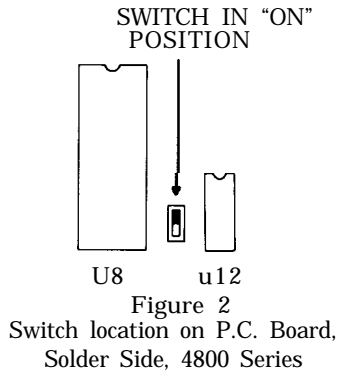


Figure 3
P.C. BOARD, SOLDIER SIDE
4500 AND 4800 SERIES

Install the long decal strip underneath the Web above the component tray. It is not necessary to remove the old decal. You may skip Step B.

B. For 4800's:

To activate the Double Bull option, run a jumper from pin 17 of **U8** to **+5V**. This can be done as shown in Figure 3. Some newer games (in 4800 Series) may have a switch installed on the P.C. Board. If so it will be located near U8, on the solder side. of the P.C. board. Simply flip it to the "on" or "up" position. Figure 2 illustrates this.

Install the decal strip in a convenient location above the competitor strip on the instruction panel.

If you have any questions, please call Arachnid, Inc. at 1-800-435-8319 (In Illinois 1-815-654-0212).