

# ASTRON BELT

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## TEMPORARY INSTRUCTION MANUAL

*Bally*

MIDWAY MFG. CO.

10601 W. Belmont Avenue  
Franklin Park, Illinois 60131  
U.S.A.



Phone: (312) 451-9200 Cable Address: MIDCO Telex No.: 72-1596

**WARNING**

**THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.**

**WARNING:** This equipment generates, uses, and can radiate radio frequency energy and if not used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a CLASS A computing device pursuant to SUBPART J of PART 15 of FCC RULES, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

**ELECTRICAL BULLETIN:** FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

**CAUTION:** TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

**ATTENTION:** POUR PREVENIR CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

**Bally MIDWAY**<sup>TM</sup>

*Invites You To Use*

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10601 West Belmont Avenue, Franklin Park, Illinois, 60131

phone (312) 451-9200

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Printed in U.S.A.

## 2. TEST PROCEDURES

1) Fig. 8 is shown when TEST SW. is pushed

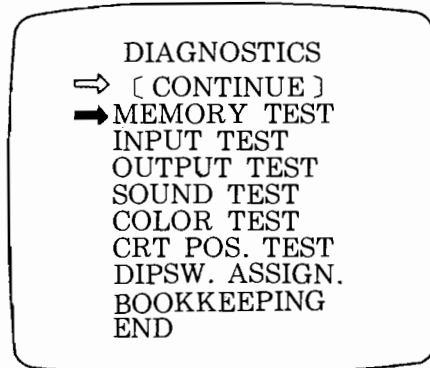


FIG. 8

- Bring the arrow sign (by operating control lever) to CONTINUE first, and move it to one of the tests to start. push START button, and the tests will be performed in order starting from the test where the arrow was originally set to the END one by one.
  - If START button is pushed when the arrow is at CONTINUE it will change to INDIVIDUAL. Pushing it again returns it to CONTINUE.
  - If the arrow is at INDIVIDUAL first and brought to a certain test which you want to perform, only that test is performed by pushing the START button.
- 2) When each test is finished in the case of CONTINUE push START button, and it will go into the following test. If START button is pushed in the case of INDIVIDUAL FIG. 8 is shown. If you want to end the test mode at this time, bring the arrow to END and push START button, and it will return to ADVERTISEMENT mode.

### 3. TEST ITEMS

#### (1) Memory Test :

Indication of "GOOD" following the IC No. means the IC is all right.

Push START button to go into following test item.

```

          DIAGNOSTICS
        MEMORY TEST
      RAMS CHECK
IC. 37 GOOD      IC. 5 GOOD
IC. 69 GOOD      IC. 6 GOOD
                  IC. 12 GOOD
                  IC. 13 GOOD
      EPROMS CHECK
IC. 3 GOOD       IC. 18 GOOD
IC. 10 GOOD      IC. 29 GOOD

```

#### (2) Input Test

- Operate control lever and switches as indicated on the screen.  
When "ON" is indicated at the right side of a certain tested item the item is OK.
- Operate dip switches. If the indication of "ON" or "OFF" alternates at this time the switch is working OK.

```

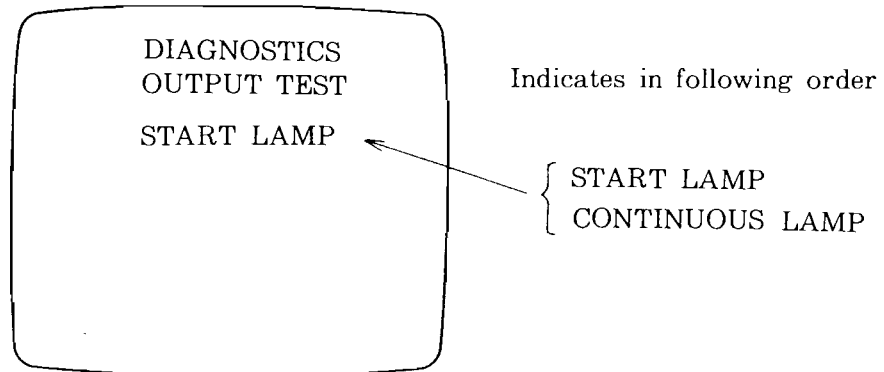
          DIAGNOSTICS
        INPUT TEST
RIGHT ON         COIN #1
LEFT             COIN #2
UP              TEST
DOWN            SERV.
FIRE            START
                CONT.
      1  2  3  4  5  6  7  8
DIPSW. A OFF ON ON OFF ON OFF ON ON
DIPSW. B ON OFF OFF OFF OFF ON ON OFF

```

**NOTICE :** When you test the START button or TEST SW., push it for a reasonable short period of time. If the pushing pressure lasts for 1 second or longer the computer takes it as a input for END of TESTS.

- When the test is ended push START button for more than 1 second.

## (2) OUTPUT TEST

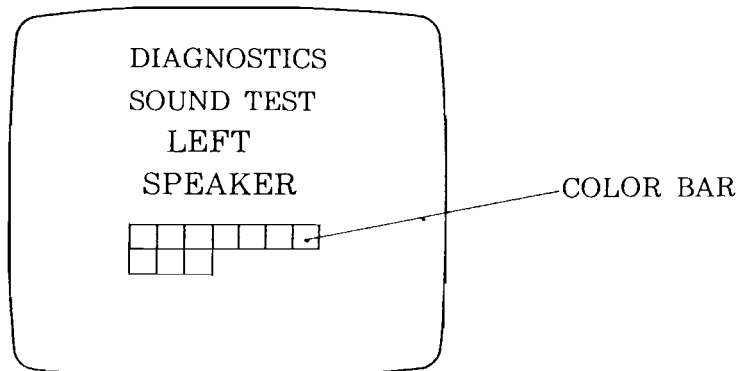


- If the lamp lights up it is functioning properly.

Above tests proceed automatically until START button is pushed at which time it moves on to the following test.

## (4) Sound Test

The sounds are produced by the indicated speaker. A little later the indicator disappears and the sounds stop.



Testing order :

- LEFT SPEAKER
- RIGHT SPEAKER
- LEFT-RIGHT BALANCE ADJUST
- VIBRASEAT CHECK

The indication on the screen changes as follows if START button is pushed when test - (d) is finished.

DIAGNOSTICS  
SOUND TEST  
  
PUSH FIRE BUTTON !

This is to test all sound effects.

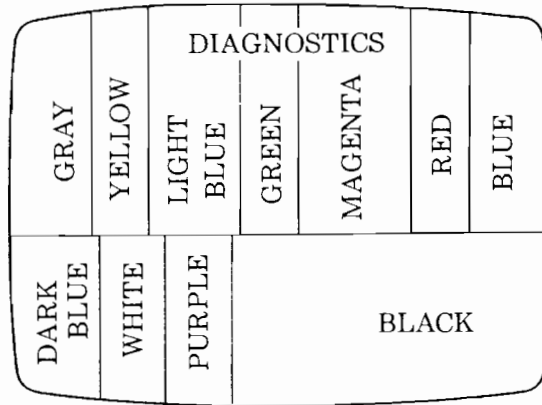
As FIRE button is pushed repeatedly, each sound is produced by speakers and the names of each are indicated one by one.

SOUND      (a) PLAYER SHIP SOUND  
              (b) PLAYER FIRE SOUND  
              (c) ENEMY FIRE SOUND  
              (d) ALARM 1  
              (e) ALARM 2  
              (f) ALARM 3  
              (g) ALARM 4    - (Repeats)

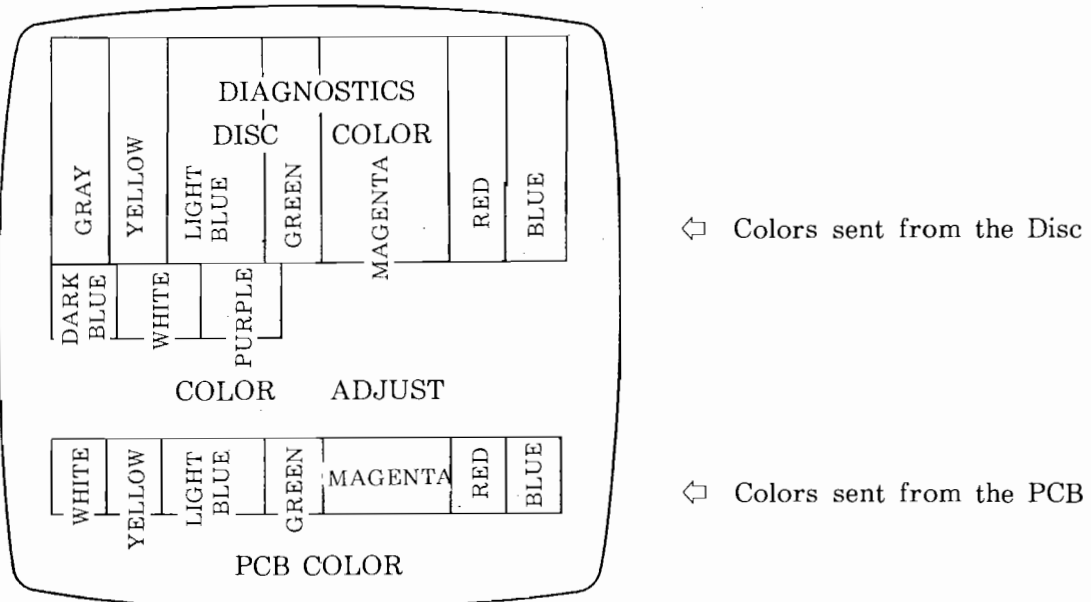
If START button is pushed, it stops repeating and goes to the next test step.

(5) Color Test

The "COLOR ADJUSTMENT" indicator appears on the screen temporarily after which it disappears and the color bar is indicated. The color bar signal is sent from the disc.

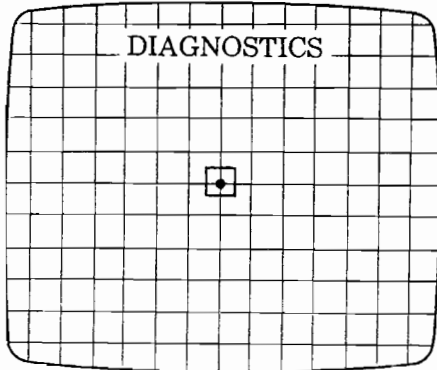


- When the adjustment is finished put START button and the indicator changes as follows :



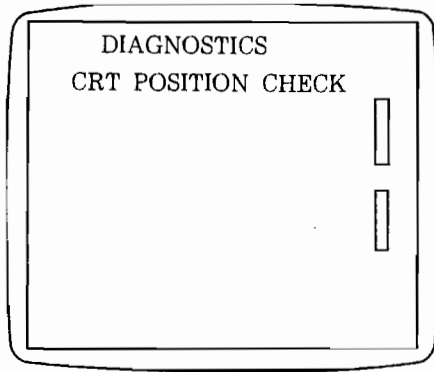
The purpose of this indication is for comparison of the two sources. Adjust each source to balance the two by means of rotating VR 6,7 and 8 of color de-modulator attached to CRT unit.

(6) Pattern Position Check



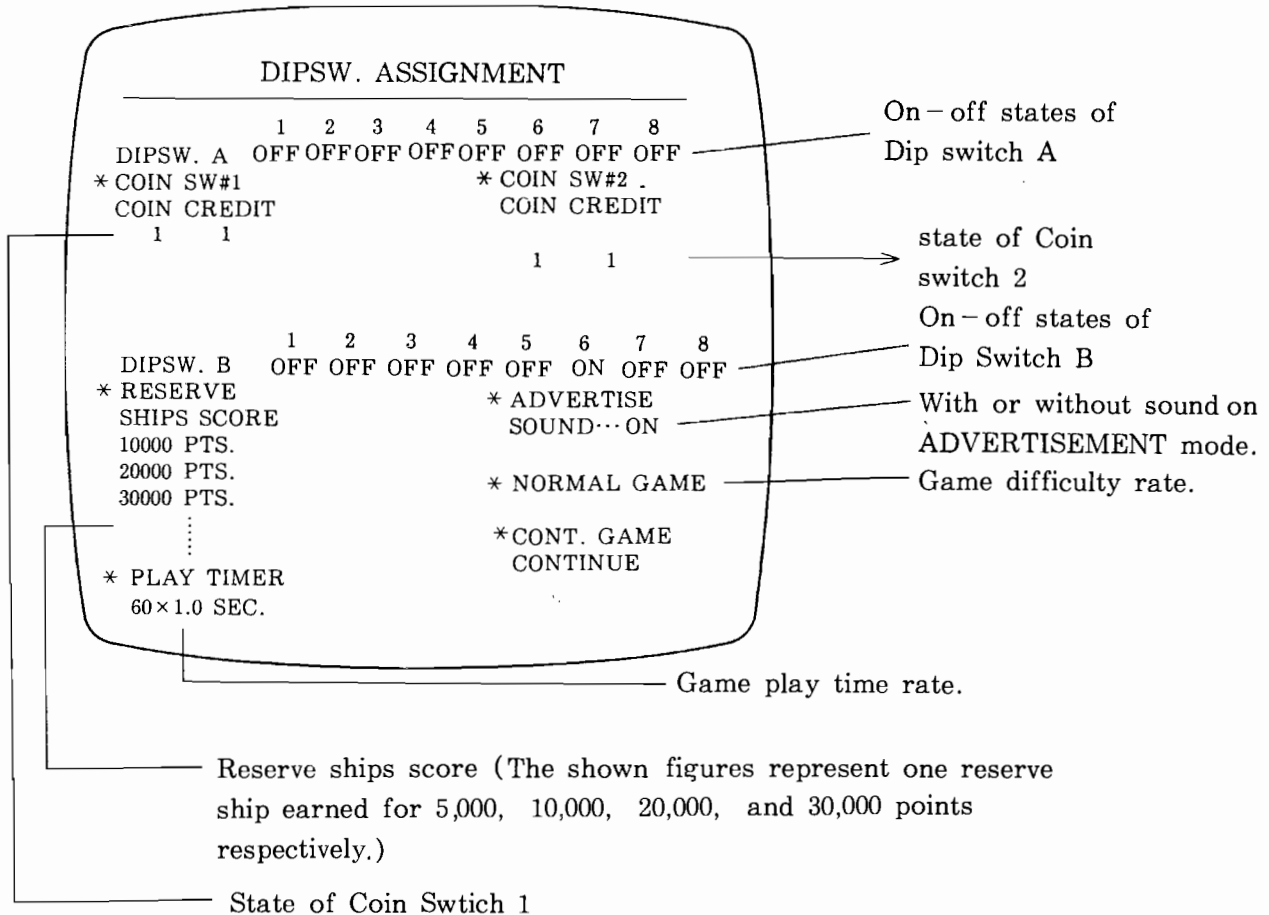
By the indicated cross-hatch lines centering of the resters and their linearity is easily checked.

Push START button to Proceed to next test.



- If two vertical lines are on the the same line, coordinates of two sources (PCB and DISC) coincide. If not, turn VR 1 on PCB so that the two lines are on the same line.
- Next, adjust VR on TV - PCB so that the four sides of raster are placed inside of the screen as shown.

(7) Dip switch assignments





(8) Bookkeeping information

BOOKKEEPING		
PUSH FIRE BUTTON !		
COIN CHUTE 1	0 0 0	1
COIN CHUTE 2	0 0 0	2
COIN CREDIT	0 0 0	3
SERVICE CREDIT	0 0 0	4
TOTAL CREDIT	0 0 0	5
* TOTAL TIME	00H00M00S	6
TOTAL BONUS SHIP	0 0 0	7

- 1 ..... Coin number that passed through coin chute 1
- 2 ..... Coin number that passed through coin chute 2
- 3 ..... Total credit number operated by coin switches.
- 4 ..... Free play number by SERVICE SWITCH.
- 5 ..... Total credit number by coin and service switches.
- 6 ..... Total operating time. (Hour-Minute-Second)
- 7 ..... Total reserve ship number earned.

After confirming the above data push the FIRE button and proceed to indicate the information as shown below.

BOOKKEEPING		
PUSH FIRE BUTTON !		
** SINGLE GAME **		I Credit game
NUMBER OF GAMES	203	Total games number
AVE. SCORE	7230	Average score points
HI - SCORE	9320	Highest score points
LOW-SCORE	4230	Lowest score points
** GAME TIME **		
TOTAL	<input type="checkbox"/> H <input type="checkbox"/> M <input type="checkbox"/> S	Total game time
AVERAGE	<input type="checkbox"/> H <input type="checkbox"/> M <input type="checkbox"/> S	Average game times
LONGEST	<input type="checkbox"/> H <input type="checkbox"/> M <input type="checkbox"/> S	Longest game times

(SINGLE GAME) indication in above screen changes to (2 CONTINUOUS GAMES), BY PUSHING FIRE button, and all data changes accordingly.

When the gathering of information is over push START button. Now all testing is finished and it returns to ADVERTISEMENT mode.

All above data regarding the bookkeeping disappears from the memory if main switch is off at anytime.

4. SCREEN MAP

○ ADVERTISE ( DEMONSTRATION )

INSERT COINS  
 FOR GAME CREDITS.  
 CREDITS CAN BE USED  
 FOR INDIVIDUAL OR  
 CONTINUOUS PLAY.  
 ASTRON BELT GAME  
 © SEGA 1983  
 FILM SEQUENCE  
 © TOEI 1979  
 CREDIT 0

○ Wording for 1 game credit.

PUSH START BUTTON  
 FOR INDIVIDUAL PLAY  
 ASTRON BELT GAME  
 © SEGA 1983  
 FILM SEQUENCE  
 © TOEI 1979  
 CREDIT 1

○ Wording for 2 or more game credits.

PUSH START BUTTON  
 FOR INDIVIDUAL PLAY  
 OR  
 PUSH CONTINUE BUTTON  
 FOR CONTINUOUS PLAY.  
 ASTRON BELT GAME  
 © SEGA 1983  
 FILM SEQUENCE  
 © TOEI 1979  
 CREDIT 5

○ INDIVIDUAL PLAY

SINGLE GAME      SCORE  
 HI-SCORE      1 2 3 4 5 6 0  
 6 5 4 3 2 1 0  
 TIME : 35

○ Wording in the case where player,  
 who has run out of time, is shifting  
 to his holding of reserve ships.

2 CONT. GAMES      SCORE  
 HI-SCORE      2 3 4 5 6 0 0  
 6 5 4 3 2 1 0  
 EXTENDED PLAY  
 TIME : 00

○ CONTINUOUS PLAY

SINGLE GAME      SCORE  
 HI-SCORE      3 4 5 6 7 0 0  
 6 5 4 3 2 1 0

PLAYER'S RESERVE SHIPS



○ CREDIT IS LEFT

PUSH START BUTTON  
FOR NEW INDIVIDUAL PLAY  
OR  
PUSH CONTINUE BUTTON  
FOR CONTINUOUS PLAY  
FROM LAST SCENE.

ASTRON BELT GAME  
© SEGA 1983  
FILM SEQUENCE  
© TOEI 1979  
CREDIT 2

○ OPTION

YOU NOW HAVE THE  
OPTION TO CONTINUE  
FROM LAST SCENE  
BY INSERTING COINS  
WITHIN 10 COUNT-DOWN

10

CREDIT 0

○ Wording for the game which has entered into continuous play.

2 CONT GAMES SCORE  
HI-SCORE 4567800  
0543210

CONTINUOUS PLAY

TIME : 60

○ Wording for the player ship having reached the final scoring scene.

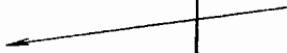
CONGRATULATIONS !  
YOU HAVE REPULSED THE  
ENEMY BUT OTHERS  
ARE ON THEIR WAY TO  
CONQUER THE EARTH !  
PREPARE FOR THE NEXT  
CHALLENGE.  
GOOD LUCK TO YOU.

○ RANKING LIST

```
ENTER YOUR INITIALS
SINGLE GAME
HI-SCORE 6543210 ABC
1 6543210 ABC
2 5432160 TTC
3 4321650 CCA
4 3216540 DEF
5 2165430 GHI
6 1654320 JKL
7 987650 POR
CREDIT 0
```

```
RANKING LIST
SINGLE GAME
HI-SCORE 6543210 ABC
12 890120
13 678900
14 665430
15 654320
16 643210
17 632100
18 567890
CREDIT 0
```

YOUR SCORE & RANKING



## 8. EPROM / PROM LOCATION (ASTRON BELT )

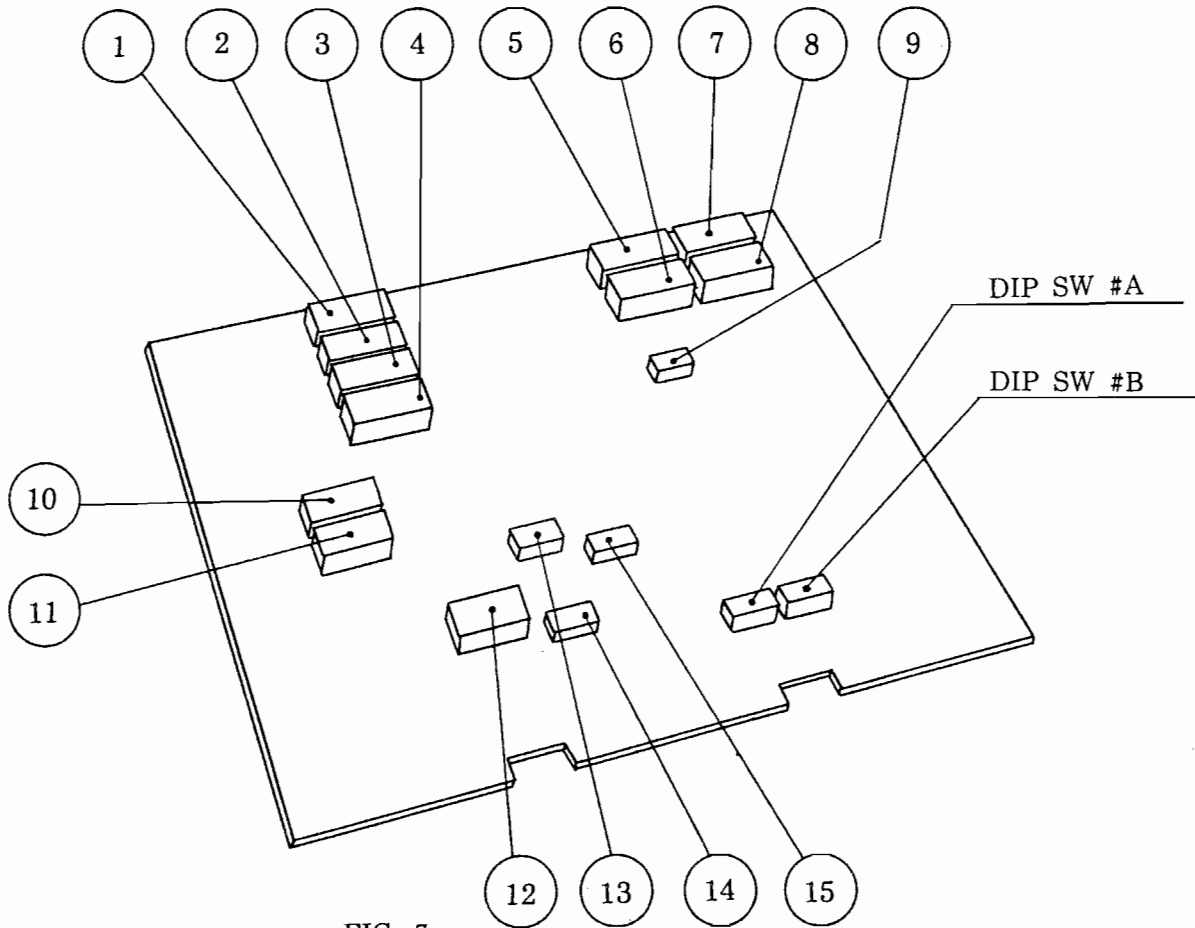
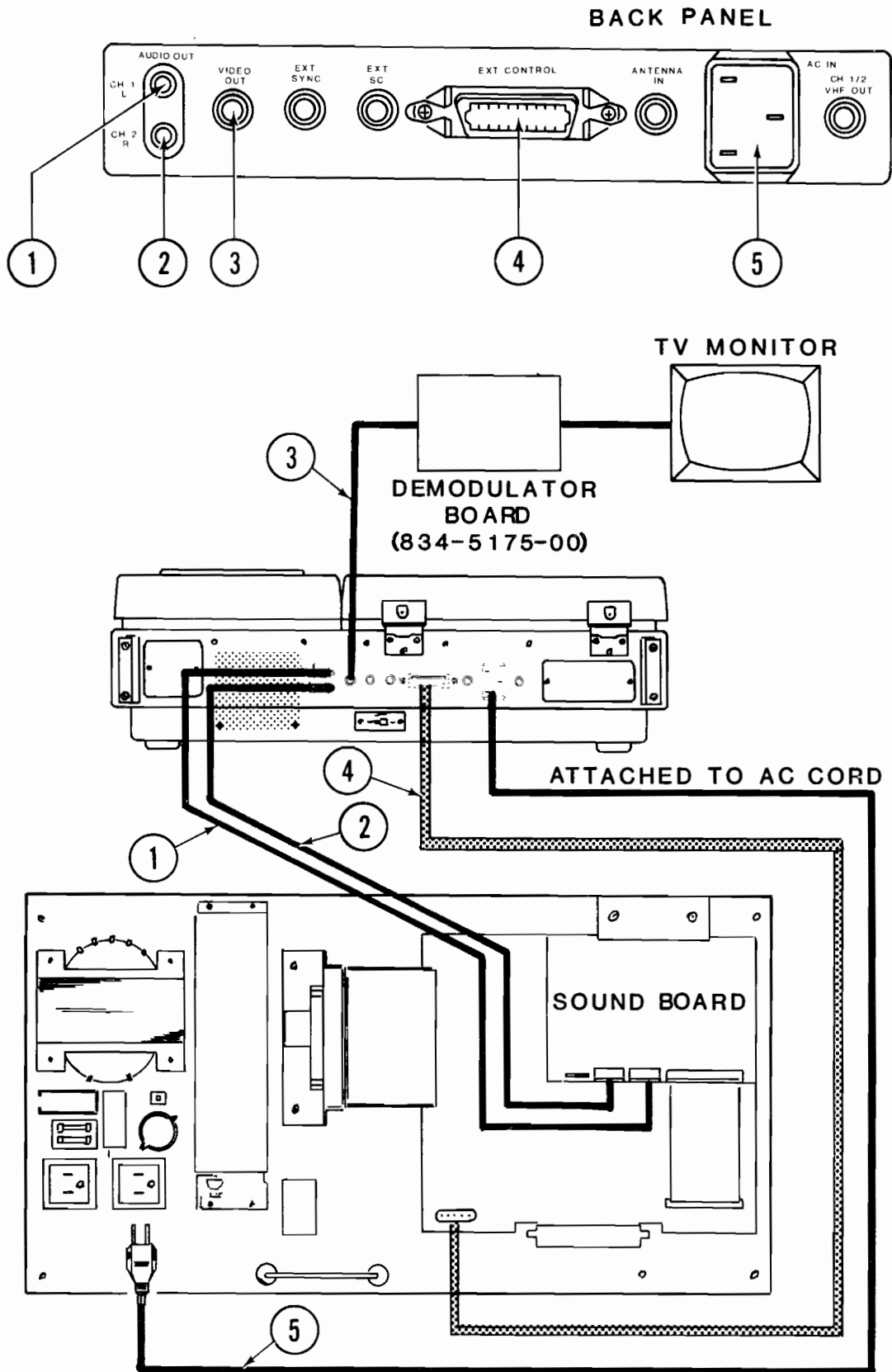


FIG. 7

ASSY IC BOARD NO.		834-5174			
①	EPROM PROGRAM	316-5282			
②	EPROM "	316-5283			
③	EPROM "	316-5284			
④	EPROM "	316-5285			
⑤	EPROM OBJECT	316-5286			
⑥	NOT USED	————			
⑦	EPROM OBJECT	316-5338			
⑧	NOT USED	————			
⑨	ROM CONTROL	316-5277			
⑩	EPROM FIX C/G	316-5280			
⑪	EPROM FIX C/G	316-5281			
⑫	ROM COLOR	316-5279			
⑬	ROM CONTROL	316-5276			
⑭	ROM CONTROL	316-5278			
⑮	ROM CONTROL	316-5275			

# CONNECTION TO VIDEO DISC PLAYER



## ADJUSTMENTS FOR IC BOARD (ASTRON BELT)

COIN/CREDIT OPTIONS SWITCH		DIP SW #A							
OPTION		1	2	3	4	5	6	7	8
1 COIN	1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN	2 CREDITS	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
1 COIN	3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN	4 CREDITS	ON	ON	OFF	OFF	ON	ON	OFF	OFF
1 COIN	5 CREDITS	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
1 COIN	6 CREDITS	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2 COINS	1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3 COINS	1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	OFF
4 COINS	1 CREDIT	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
2 COINS	3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	ON
2 COINS	1 CREDIT								
4 COINS	2 CREDITS	OFF	ON	OFF	ON	OFF	ON	OFF	ON
5 COINS	3 CREDITS								
6 COINS	4 CREDITS								
2 COINS	1 CREDIT								
4 COINS	3 CREDITS	ON	ON	OFF	ON	ON	ON	OFF	ON
1 COIN	1 CREDIT								
2 COINS	2 CREDITS								
3 COINS	3 CREDITS	OFF	OFF	ON	ON	OFF	OFF	ON	ON
4 COINS	4 CREDITS								
5 COINS	6 CREDITS								
1 COIN	1 CREDITS								
2 COINS	2 CREDITS								
3 COINS	3 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
4 COINS	5 CREDITS								
1 COIN	1 CREDITS								
2 COINS	3 CREDITS	OFF	ON	ON	ON	OFF	ON	ON	ON
1 COIN	2 CREDITS								
2 COINS	4 CREDITS								
3 COINS	6 CREDITS	ON	ON	ON	ON	ON	ON	ON	ON
4 COINS	8 CREDITS								
5 COINS	11 CREDITS								
<b>COIN SW #1</b>						<b>COIN SW #2</b>			

### OPTION SWITCH SETTING

DIP SW#B

OPTION		1	2	3	4	5	6	7	8
ADVERTISE	ON	OFF							
SOUND	OFF	ON							
PLAY	60 SEC.		OFF	OFF					
TIMER	50 SEC.		ON	OFF					NOT USED
	40 SEC.		OFF	ON					
	∞ SEC.		ON	ON					
NORMAL GAME					OFF				
HARD GAME					ON				
RESERVE SHIPS	5000, 10000, 20000					OFF	OFF		
SCORE	5000, 20000, 40000					ON	OFF		
	10000, 20000, 30000					OFF	ON		
	10000, 20000, 40000					ON	ON		
CONTINUE GAME								OFF	
SELECT GAME								ON	