



**Kurz-Kasch, Inc.**

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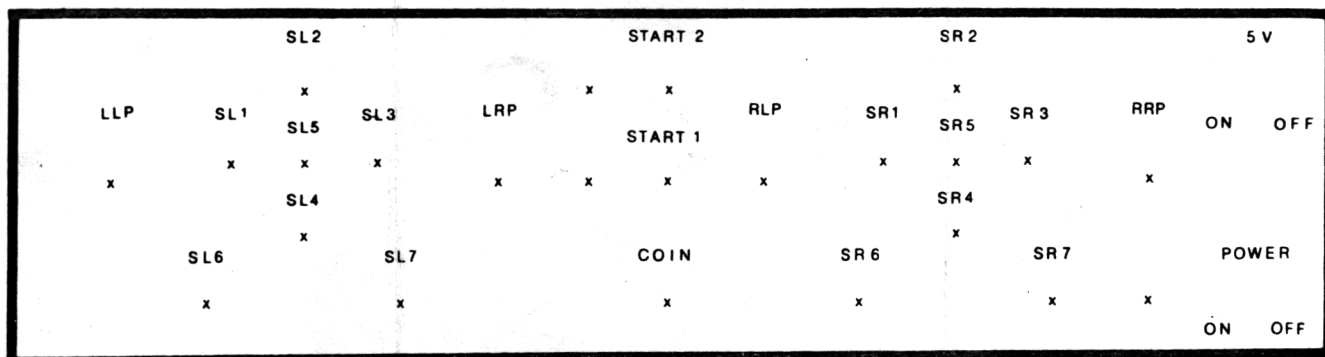
# Operating Instructions For Model

222 A, C

185B

280 ZZZAP

MIDWAY



1. Insert 185B card into program "B" connector, number side up.
  2. Insert 222A card into program "A" connector, number side up.
  3. Insert 222C card into test fixture with number side up.
  4. Insert GAME MOTHER BOARD into 222C card. (CAUTION: Align edgeboard to connector)
  5. Connect two remote connectors on 222A card to game control board with red dot showing.
  6. Connect 8 ohm speaker across 2 red wires coming from 9 pin molex connector on game control board.
- NOTE: DO NOT LET SPEAKER LEADS TOUCH GROUND.
7. Push 5 VOLT switch to ON.
  8. Push POWER switch to ON.
  9. Push COIN switch once.
  10. Push START 1 switch once.
  11. CONTROLS are:
    - RRP is steering control.
    - RLP is accelerator control.
    - SL6 is shift (Push down for low gear, up for high gear.)
  12. RESET is START 2.

**-WARNING-**  
please read in-  
structions before  
using this card  
set

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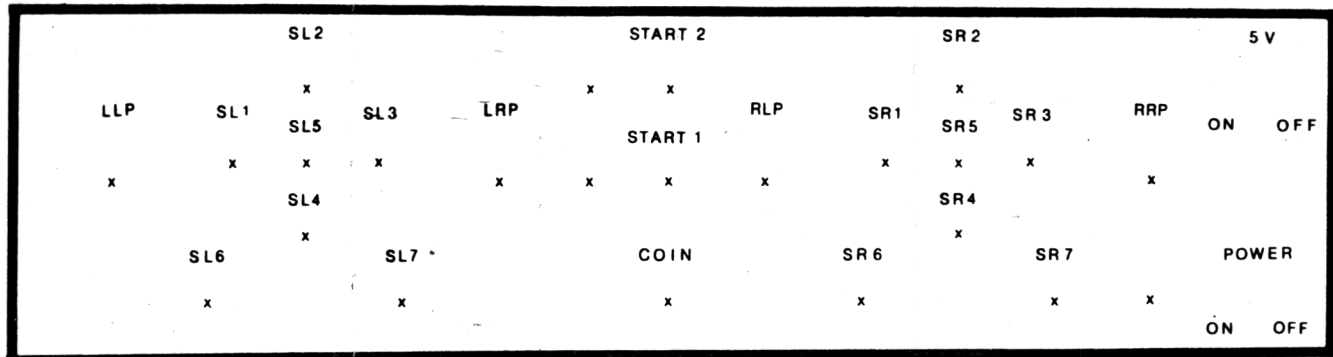
# Operating Instructions

## For Model 224 A, B, C

224 A, B, C

NIGHT DRIVER

# Atari



1. Insert 224 B card into program "B" connector, number side up.
2. Insert 224 A card into program "A" connector, number side up.
3. Insert 224 C card into TEST FIXTURE, with number side up.
4. Insert GAME BOARD into 224 C.
5. Connect a jumper wire from 5 VOLT jack on test fixture to end of 4 OHM, 10 WATT resistor near edgeboard connector. Also connect TEST FIXTURE ground strap to negative (-) end of 4700 MFD capacitor.
6. Push 5 VOLT switch to ON.
7. Push POWER switch to ON.
8. Push COIN switch once for COIN 1. LED will illuminate. Push SL7 switch once for COIN 2.
9. Push START 1 once. LED will extinguish.
10. Controls are:

1st - SR1	GAS - SR6	SL1 - Novice
2nd - SR2	SR5 - Car Right	SL3 - Expert
3rd - SR3	SL5 - Car Left	No buttons - Pro
11. ~~SR~~7 is test pattern.
12. Connect 8 OHM speaker to RED and BLACK wires on 224 A card.



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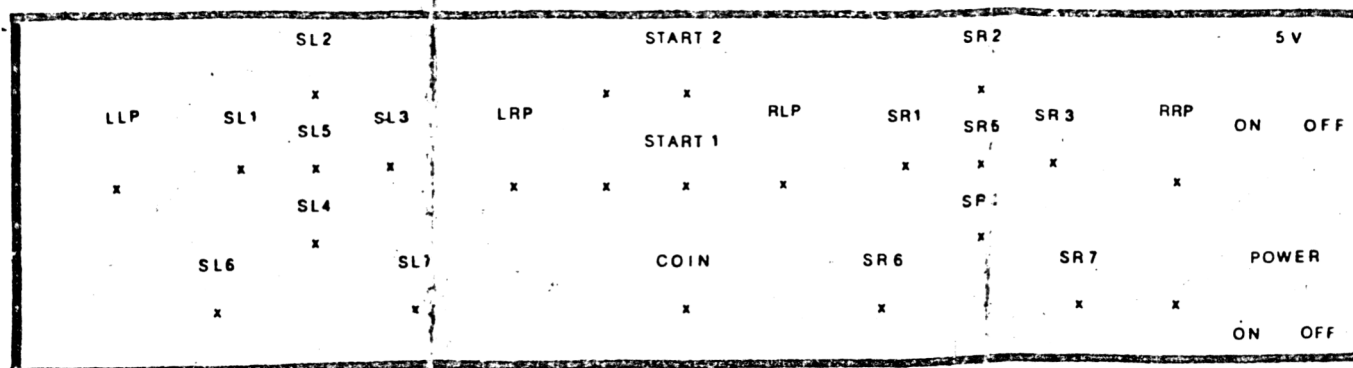
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# Operating Instructions For Model

231 A B C

SPRINT II

Atari



1. Insert 231B card into program "B" connector, number side up.
2. Insert 231A card into program "A" connector, number side up.
3. Insert 231C card into TEST FIXTURE, with number side up.
4. Insert GAME BOARD into 231G connector.  
Connect two 8 OHM speakers to A1 and A2 to GND.
5. Push POWER switch to ON.
6. Push COIN switch once for 1 CAR, twice for 2 CARS. Separate LED will illuminate for each coin.
7. SR7 is TRACK SELECT.
8. Push START 1 for 1 coin, START 2 for 2 coins.
9. PLAYER 1 controls are:

1st - SL1  
2nd - SL2  
3rd - SL3  
GAS - SL6

PLAYER 2 controls are:

1st - SR1  
2nd - SR2  
3rd - SR3  
GAS - SR6

SR5 turns car RIGHT.

SL5 turns car LEFT.

SLIDE switch on 231B card selects which players car can be turned.

SR4 is GAME TEST.



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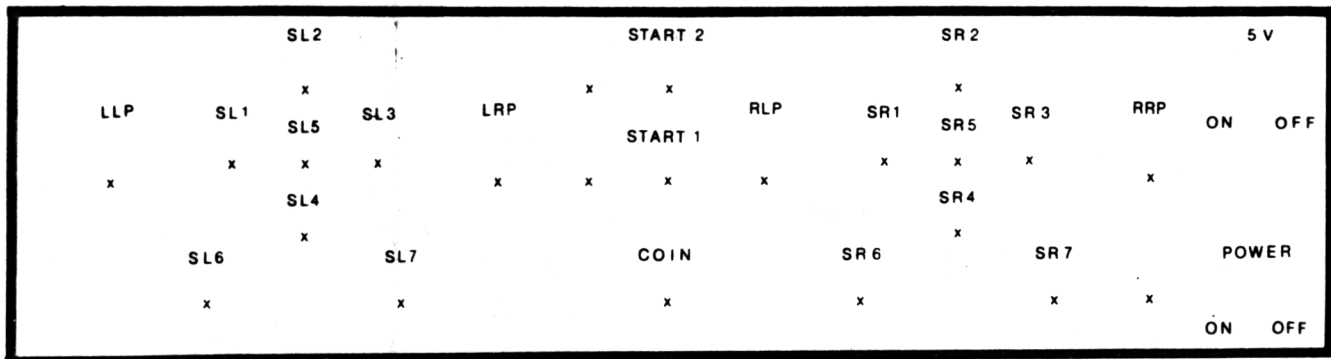
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## Operating Instructions

**For Model** 235A (185B & 222C)

MAZE

Midway



1. Insert 185B card into program "B" connector, number side up.
2. Insert 235A card into program "A" connector, number side up.
3. Insert 222C card into test fixture with number side up.
4. Insert game mother board into test fixture using 18 pin orientation.  
**CAUTION:** Make sure edgeboard pin alignment is correct.
5. Connect two remote connectors from 235A card to game control board with red dot showing.
6. Push 5 VOLT switch to ON.
7. Push POWER switch to ON.
8. Push COIN switch once.
9. Push SR5 for RIGHT PLAYER START. Push SL5 for LEFT PLAYER START.
10. RIGHT PLAYER CONTROLS

SR1 - OBJECT LEFT  
SR2 - OBJECT UP  
SR3 - OBJECT RIGHT  
SR4 - OBJECT DOWN

### LEFT PLAYER CONTROLS

SL1 - OBJECT LEFT  
SL2 - OBJECT UP  
SL3 - OBJECT RIGHT  
SL4 - OBJECT DOWN





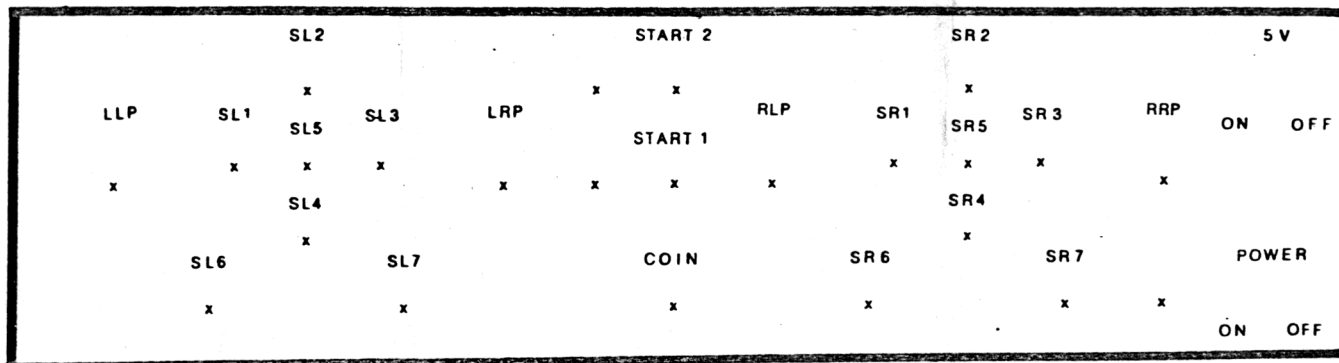
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# Operating Instructions For Model 241 A, C

BLOCKADE

Gremlin



1. Insert 241A card into program "A" connector, number side up.
2. Insert 241C card into Test Fixture, number side up.
3. Connect 5 keyed connectors to game board.
4. Slide the 5V switch to ON.
5. Slide the POWER switch to ON.
6. The BOOM switch turns the audio on or off during the attract mode. Switches 3,4,5 and 6 determine the length of the game. (Per manufacturer's instructions.)
7. Press Coin 1 time for 1 PLAYER and 2 times for 2.
8. 

PLAYER 1	PLAYER 2
SL1	LEFT
SL2	UP
SL3	RIGHT
SL4	DOWN

SR1	
SR2	
SR3	
SR4	



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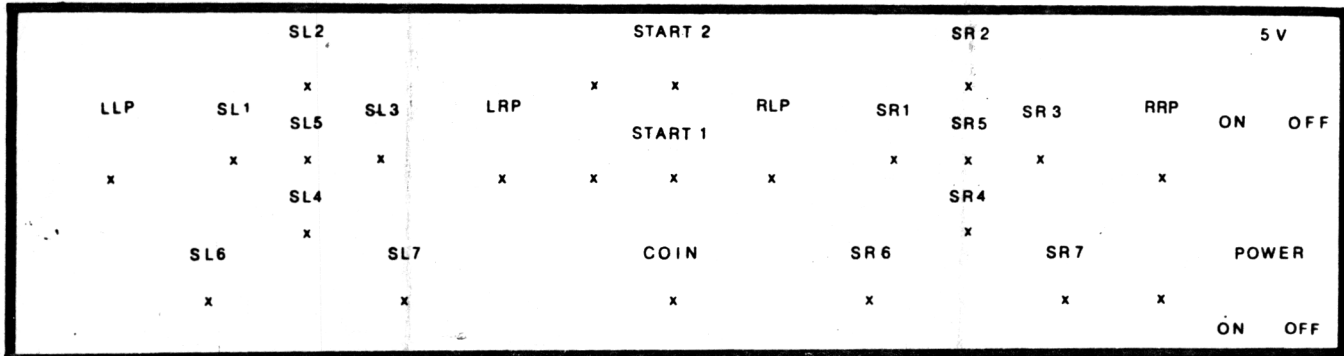
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# Operating Instructions

**For Model** 257ABC

Starship

Atari



1. Insert 257B card into program "B" connector, number side up.
2. Insert 257A card into program "A" connector, number side up.
3. Insert 257C card into test fixture, number side up.
4. Insert Starship game board into 257C card.
5. Connect speaker to speaker leads.
6. Slide power switch to "ON".
7. Push "COIN" to coin game.
8. Push "Start 1" to start game.
9.

LLP	-	Pitch
LRP	-	Roll
SL-5	-	Phasors
SL-6	-	Fast
SL-7	-	Proton
SR-7	-	Slam



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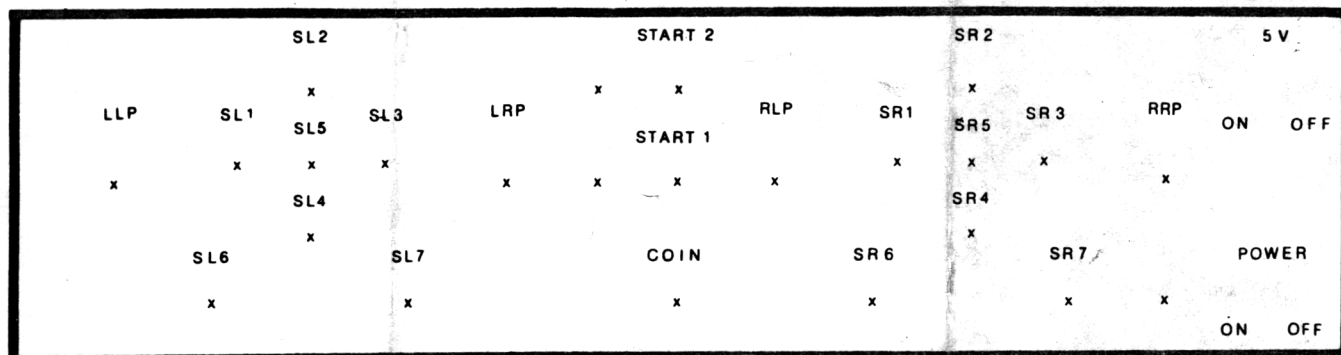
## Operating Instructions

### For Model

271A, 270B,C

Display

Bally Pinball



**CAUTION! HIGH VOLTAGE 230 VOLTS, PRESENT**

1. Insert the 270B card into the program B connector, number side up. Set the slide switch to 190 V!
2. Insert the 271A card into the program A connector, number side up.
3. Insert the 270C card into the test fixture, number side up.
4. Connect the Molex connector from the 271A card to the Display Board.
5. Connect the Red E-Z hook from the 270B card to the TP2 on the Display Board.
6. Set the slide switch on the 270B card to 190V. NOTE! If the switch is not set for 190V, permanent damage may be done to the display panel!
7. Slide the 5 VOLT, switch to "ON".
8. Slide the POWER switch to "ON".
9. Each digit on the display panel is enabled one at a time and any one may be selected as desired by pushing the proper switch.

SR-1	1's Digit
SR-2	10's Digit
SR-3	100's Digit
SR-4	1,000's Digit
SR-5	10,000's Digit
SR-6	100,000's Digit

10. Pushing the COIN switch will cause the count circuit on the 270C card to count by one. Holding the COIN switch will cause the count circuit to continue counting at approximately 1 PPS. The count circuit counts to 15 and starts over, so the digit selected should be blank between 9 and 0. The count circuit may be reset any time by pressing START 2.



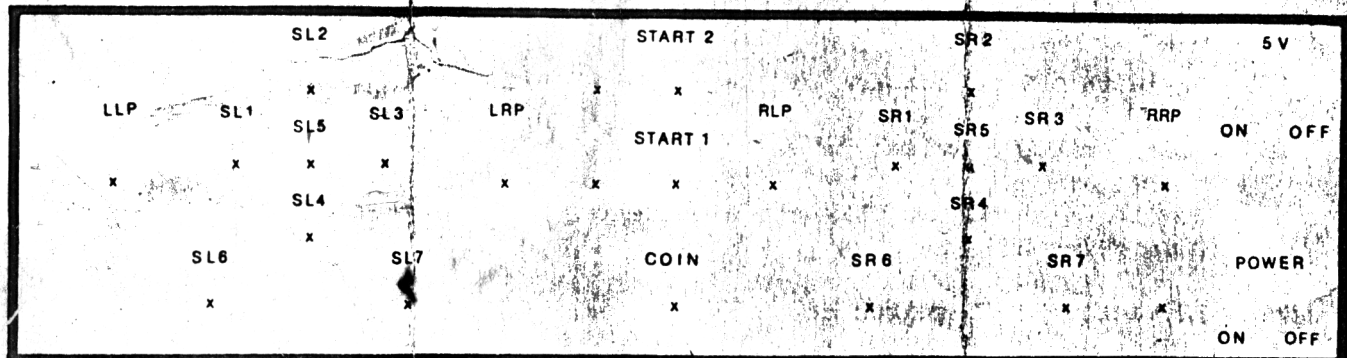


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# Operating Instructions

## For Model 273A



1. Insert the 270C card into the test fixture, number side up.
2. Insert the 273A card into the Program A connector, number side up.
3. Connect the 5 cables to the Solenoid Drive board.
4. See step 16 for testing the 190V regulator.
5. Slide the 5 Volt switch to "ON".
6. Slide the POWER switch to "ON".
7. The 47 ohm 1 W resistor on the 273A card is a load for the 5V regulator. Notice, the 5V at TP3 comes from the test fixture, and not from the 5V regulator.
8. SR-1 enables PB6, the flipper relay. The L.E.D.'s "L" and "R" indicate continuity through the relay contacts.
9. SR-2 enables PB5, the coin lock out, indicated by L.E.D. "5".
10. SR-3 enables PB7, indicated by the L.E.D. "7".
11. SR-4 enables PB4, indicated by the L.E.D. "4".
12. Push START 2 to reset the counter circuit on the 270C card.
13. Push START 1 to enable U2, the 1 of 16 decoder on the Solenoid Driver board. The outputs will light the L.E.D.'s on the 270C card.
14. Push COIN to advance the counter by one count. Holding the COIN button down, will allow the count circuit to count at about one count per second.

15. Slide the POWER switch to "OFF".
16. To check the 190 volt regulator, insert the 270 card into the program B connector, number side up. When not checking the 190V regulator, remove the 270B card.
17. Select 230V on the 270B card.
18. Connect the E-Z hook probe to TP4, the input to the 190V regulator.
19. Slide the 5V switch to "ON".
20. Slide the POWER switch to "ON".
21. Monitor the 190V at TP2 with a voltmeter while adjusting the voltage at RT1.
22. Slide the POWER switch to "OFF".
23. Remove the 270B card.





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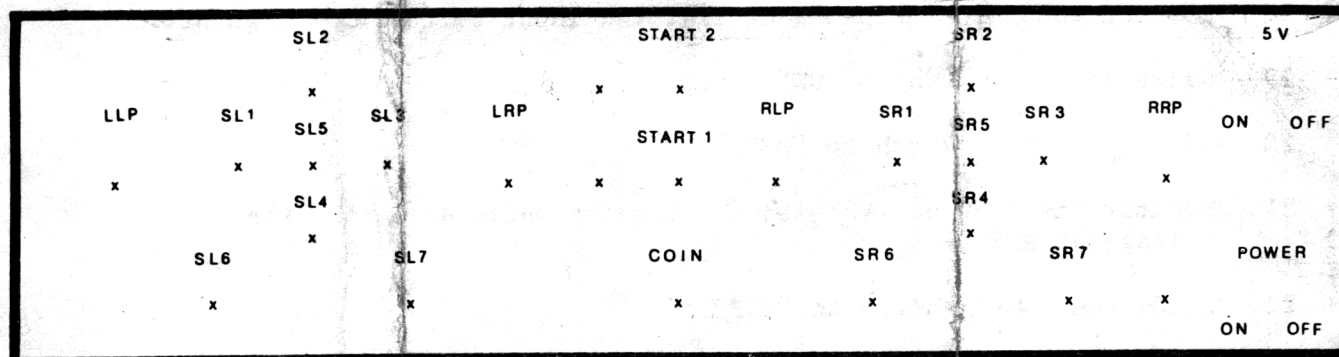
# Operating Instructions

## For Model

273A, 270BC

Solenoid Driver

Bally/Stern



1. Insert the 270C card into the test fixture, number side up.
2. Insert the 273A card into the Program A connector, number side up.
3. Connect the 5 cables to the Solenoid Drive board.
4. See step 16 for testing the 190V regulator.
5. Slide the 5 Volt switch to "ON".
6. Slide the POWER switch to "ON".
7. The 47 ohm 1 W resistor on the 273A card is a load for the 5V regulator. Notice, the 5V at TP3 comes from the test fixture, and not from the 5V regulator.
8. SR-1 enables PB6, the flipper relay. The L.E.D.'s "L" and "R" indicate continuity through the relay contacts.
9. SR-2 enables PB5, the coin lock out, indicated by L.E.D. "5".
10. SR-3 enables PB7, indicated by the L.E.D. "7".
11. SR-4 enables PB4, indicated by the L.E.D. "4".
12. Push START 2 to reset the counter circuit on the 270C card.
13. Push START 1 to enable U2, the 1 of 16 decoder on the Solenoid Driver board. The outputs will light the L.E.D.'s on the 270C card.
14. Push COIN to advance the counter by one count. Holding the COIN button down, will allow the count circuit to count at about one count per second.

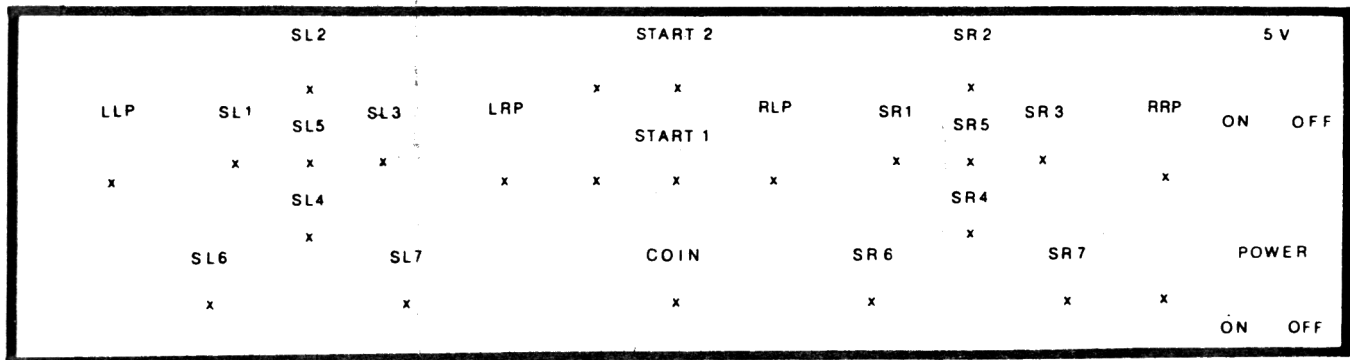


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# Operating Instructions

## For Model 275A, 270C



1. Insert the 270C card into the test fixture, number side up.
2. Insert the 275A card into the program A connector, number side up.
3. Connect the four cables from the 275A card to the Lamp Driver board.
4. Slide the 5 VOLT switch to "ON".
5. Slide the POWER switch to "ON".

NOTE: The 270C card provides a clock circuit and a 1 to 16 counter with BCD outputs to the four 1 of 16 decoders on the Lamp Driver board. Each 1 of 16 decoder is selected individually. The same outputs from each 1 of 16 decoders is or'ed together on the 275A card and turns on the proper L.E.D. on the 270C card.

6. Push START 2 to reset the clock and counter circuits.
7. Select the desired decoder by pushing:
 

SL-1	for U1
SL-2	for U2
SL-3	for U3
SL-4	for U4
8. Push COIN to advance the counter by one count. Holding the COIN button down will allow the count circuit to count at about 1 count per second.