

## #953 SPACE TIME

## INSTALLATION AND GENERAL GAME OPERATION INSTRUCTIONS

INSTALLATION

On all games there are certain items that should be checked after shipment. These are visual inspections which may avoid time consuming service work later. Minor troubles caused by abusive handling in shipment are unavoidable. Cable plugs and sockets may be loosened, switches (especially tilt switches) may go out of adjustment. Plumb bob tilt switch should always be adjusted after game is set on location and leg levelers are adjusted.

Visual inspections before plugging in line cord:

1. Check that all cable plugs are firmly seated in proper sockets.
2. Check that cables are clear of all moving parts and relays.
3. Check for any wires that may have become disconnected.
4. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
5. Check wires on relay coils for proper soldering, especially the bare (common) wire connecting a row of relay coils. Cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
6. Check that fuses are firmly seated and making good contact.
7. Check ( manually ) the stepping and resetting of all units. The wiper action should not be sluggish.
8. Check transformer for any foreign material shorting across wiring lugs.
9. Check wiring of transformer to correspond to location voltage.  
(Transformer wiring card in front cabinet).

Before line cord is plugged in:

Check all plugs and sockets and dress cables:

- (A) Plugs in correct sockets.
- (B) Plugs securely seated in sockets.
- (C) Dress cables away from relays.

Check adjustment of the three (normally open) tilt switches:

- (A) Panel tilt on bottom of playfield panel.
- (B) Plumb-bob tilt on left side of cabinet near front door
- (C) Ball tilt above plumb-bob tilt.

Insert the smaller ball (15/16" dia.) into the ball tilt assembly, and adjust the bracket so the ball will roll free to contact the switch blade, if front of cabinet is raised.

**Plug in line cord:**

Check adjustment of the (normally open) kick-off switch at rear of cabinet mounting board, near cable plugs. Check adjustment of the (normally open) anti-slam switch, on front door. If either of these switches is closed, the delay relay is energized momentarily.

**GENERAL GAME OPERATION**

Place ball into playfield by out hole.

**Coin Game:**

If coin should be rejected, move on-off master switch at bottom right front corner of cabinet to "on" position, then coin game. Coin lock-out device rejects all coins when power (master-switch) is off. Also check the delay relay. If this relay is energized, the game will not accept coins.

1A. If coin is inserted in 1st (nickel) coin chute and game is conditioned for 1 play-5¢, it will energize the coin relay. If game is conditioned for 1 play-10¢, the first coin inserted will advance the 2 coin unit, then second coin inserted will energize the coin relay thru the 2 coin unit switch.

(See 1st coin Chute adjustment plug positions on game adjustments sheet).

1B. If coin is inserted in 2nd (dime) coin chute and game is conditioned for 1 play-10¢, it will energize the coin relay. If game is conditioned for 2 plays-10¢, it will energize 2nd coin chute relay and 2nd coin chute relay will advance the credit unit (2 steps) thru the credit circuit.

(See 2nd coin Chute adjustment plug positions on game adjustments sheet).

1C. If coin is inserted in 3rd (quarter) coin chute and game is conditioned for 2-3-4-5 or 6 plays-25¢, it will energize the 3rd coin chute relay and the 3rd coin chute relay will advance the credit unit (2-3-4-5-6 steps) thru the credit circuit.

(See 3rd coin Chute adjustment plug positions on game adjustments sheet).

1D. When the credit unit has been advanced from 2nd or 3rd coin chute, (as described in Section 1B and 1C) the front door credit button switch, (when actuated) will energize the credit relay and then the credit relay will energize coin relay.

- 2A. The coin relay, when energized by any of the ways described, (in sections 1A thru 1D) will stay energized thru its own hold-in switch and (normally closed) #8 score motor switch.
- 2B. The coin relay will energize the lock relay which stays energized thru its own hold-in switch and a delay relay switch.
- 2C. The coin relay will energize the reset relay thru a game over relay switch operate the score motor and then thru (normally open) #2 and #11 score motor switches, energize the #1 and #2 score reset relays. The reset relay will operate the score motor. Both the reset and the score reset relays will be energized thru a normally closed #8 score motor switch, or until all score counter units are reset to zero position.
- 2D. The coin relay, thru a normally open #3 score motor switch will advance the total play meter, and thru the reset relay will reset the coin unit, ball count unit and the player up unit. The coin relay will also reset the credit unit, (1 step) when energized by the credit button. Then thru normally open #4 score motor switch, it will energize the game over relay latch coil.
- 3A. A ball on the out hole switch will energize the out hole relay thru a normally closed #1 score motor switch, and it will stay energized thru its own switch and a normally closed #10 score motor switch.
- 3B. The out hole relay will operate the score motor and then energize the out hole kicker solenoid thru a normally open #7 score motor switch. The ball will be kicked thru the ball trough to the shooter alley and the game is ready for the 1st player to begin play.
- 3C. To condition the game for 2nd player, inserting coin (s) or use the credit button before the 1st ball is played, it will energize the coin relay again. This time, the coin relay will not energize the reset relay. It will operate the score motor, advance the total play meter, subtract a credit from credit unit, (if credit button was used) and advance the coin unit thru a normally open #3 score motor switch. The game is now set for 2 players; repeating this sequence will set game for 3rd player and 4th player.

SEQUENCE OF OPERATION:

- 1A. When the 1st ball is played, the ball index relay will be energized by the 10 point, 100 point or 1000 point score relay and it will stay energized thru its own hold in switch, a normally closed out hole relay switch and normally closed #7 score motor switch.
  
- 1B. When the ball in play goes into the outhole, it will energize the outhole relay thru a normally closed #1 score motor switch, and it stays energized thru its own hold-in switch and a normally closed #10 score motor switch.
  
- 1C. The outhole relay operates the score motor, and if the game is set for single player, the ball count unit is advanced 1 step by a normally open #3 score motor switch, thru the coin unit "0" position. If the game is set for multiple players, (2 to 4) the player up unit is advanced 1 step thru normally open #4 score motor switch. The outhole relay then energizes the outhole kicker solenoid thru a normally open #7 score motor switch. The 1st ball is returned to shooter alley and game is now ready for either 1st player - 2nd ball or 2nd player - 1st ball. During a multiple player game; when the last eligible player's 1st ball returns to the outhole, the outhole relay advances the ball count unit 1 step thru a #3 score motor switch, the coin unit and/or player up unit, then the ball count unit, end of stroke switch, energizes the player reset relay. The player reset relay stays energized thru its own hold-in switch and a normally open #1 score motor switch, and the player-up unit thru a normally open #4 score motor switch. The game is set for 1st player - 2nd ball.
  
- 1D. When the last eligible player's last ball returns to the outhole, the outhole relay switch will advance the ball count unit, thru the #3 score motor switch, and the game-over interlock relay trip coil will be energized thru the ball count unit disc and the game is completed.

## Note:

Ball to ball sequence of operation is interrupted when a player scores an extra ball or tilts a ball in play.

## FEATURE OPERATION AND SCORING

Tunnel Feature:

The "flash motor" unit controls the tunnel flashing lites and tunnel scoring. The flash motor unit is controlled by the "tunnel relay" which is energized when a ball goes into the outhole, left or right (eject) hole and when the ball hits either "start tunnel" target. The flash motor stops when ball goes over shooter alley roll-over or whenever the "collect relay" is energized to score tunnel scores. The flash motor also stops when the game is tilted or completed.

Skill Shots: To register a high score when ball is in shooter alley, the ball shooter should be released so ball will go over shooter alley roll-over when "5000" score lite is lit, and the ball should be shot with just the right force to go into "collect tunnel" lane at top of playfield.

Right alley feature:

The alley has two gates. The upper gate is opened when ball goes into right eject hole. The lower gate is opened when ball goes into left eject hole. The gates remain open until ball goes into right alley, into outhole or when game is tilted. The top three rollovers score 1000 each and the bottom roll-over stops the flash motor unit and scores tunnel score lit.

Left alley feature:

There is no entrance gate into left alley, so ball can go into the alley at any time.

When ball goes into the alley, it stops the flash motor unit, scores lit tunnel score, and kicks ball to top of playfield.

Extra ball feature:

When the ball hits the extra ball target when lit, the game awards an extra ball and the same player shoots again lites are lit (lites on playfield and score glass). When same player shoots again is lit and the ball goes into the outhole, the ball is kicked into shooter alley and the same player shoots again. There is no advance of ball in play lite.

The extra ball target lite is controlled by 00-90 unit. Only one extra ball is awarded per ball in play.

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GAME ADJUSTMENTSPLAYFIELD PANEL POST ADJUSTMENTS:

Posts that control left and right outlane opening on panel (see panel sketch) can be moved to make access to outlanes easier or harder for ball to enter. Easier entry will decrease playing time and scoring. Harder entry will increase playing time and scoring.

HI-SCORE ADJUSTMENT PLUG:

Located on back box lite insert. This plug provides a wide range of coverage at which hi-score credits can be scored. (see the score adjustment card in back box for plug positions).

MATCH FEATURE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to operate match feature on or off.

HI-SCORE FEATURE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to award hi-score credit or extra ball.

BALLS PER GAME ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to operate game on 5 ball or 3 ball play.

1ST COIN CHUTE ADJUSTMENT PLUG:

Located on the 2 coin unit, on front cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 1 play for 2 coins thru the 1st (nickel) coin chute.

2ND COIN CHUTE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 2 plays for 1 coin thru the 2nd (dime) coin chute. Note: When this plug is set for 2 plays - 1 coin, brown-white (male pug) wire on 3rd coin chute adjustment must be in position 2.

3RD COIN CHUTE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to give 2 to 6 plays for 1 coin thru the 3rd (quarter) coin chute. Use orange-white (male plug) wire to set number of credits.