

## #985 - BIG SHOW

### 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 step-up 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 plug 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 ball (15/16" dia.) into ball tilt assembly and adjust bracket so ball will roll freely if front of cabinet is raised.

Check adjustment of the kick-off and slam switches:  
 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 the front door. These switches should close when front door is slammed or the bottom of the cabinet is kicked. Either switch when closed will energize the delay relay.

#### GENERAL GAME OPERATION

Place ball onto playfield by out hole.  
 Plug in the line cord.

#### Coin Game:

If the coin should be rejected, move on-off master switch at the bottom right front corner of cabinet to "on" position, then coin game. The coin lock-out device rejects all coins when power (master switch) is off.

- 1A. If the coin is inserted in the 1st (nickel) coin chute and the game is set for 1 play-5¢, it will energize the "coin relay". If game is set for 1 play-10¢, the first coin inserted will advance the "2 coin unit", then the 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 the coin is inserted in the 2nd (dime) coin chute and the game is set for 1 play-10¢, it will energize the "coin relay". If game is set for 2 plays-10¢, it will energize the "2nd coin chute relay" and the 2nd coin chute relay will advance the "credit unit" (2 steps) thru the coin credit circuit. (See 2nd coin chute adjustment plug positions on game adjustments).
- 1C. If the coin is inserted in the 3rd (quarter) coin chute and the game is set for 2-3-4-5-~~6~~ 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 coin credit circuit. (See 3rd coin chute adjustment plug positions on game adjustments).
- 1D. When the "credit unit" has been advanced from the 2nd or 3rd coin chute, (as described in section 1B and 1C) the front door "credit button" switch will energize the "credit relay" and then the credit relay will energize "coin relay".

### Sequence of operation

- 1A. When the 1st ball is played, the ball index relay will be energized by the 10 point relay, 100 point relay or 1000 point relay, and it will stay energized thru its own hold-in switch, outhole relay switch and a normally closed #6 score motor switch.
- 1B. When the 1st ball played returns to 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 thru a ball index relay switch will advance the ball count unit either two steps thru normally open #3 and #4 score motor switches during a one player game or one step thru a normally open #4 score motor switch during a two player game. The outhole relay then completes the circuit to the outhole kicker solenoid thru a normally open #7 score motor switch. The 1st ball is returned to the shooter and the game is now set for either 1st player, 2nd ball or 2nd player, 1st ball.
- 1D. Sequence 1A, 1B, and 1C are then repeated for each ball played until the last ball is played. When the last ball played returns to the outhole, the game over relay trip coil will be energized thru the ball count unit disc. The game over relay when tripped will turn off the ball in play lite, turn on 00-90 match lite and open the game play and scoring circuits.

NOTE: Regular ball to ball operation (sequence 1C) is interrupted whenever a player scores an extra ball with the exception that the outhole kicker solenoid will operate as indicated.

- 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 the normally closed delay relay switch.
- 2C. The coin relay will energize the reset relay thru a game over relay switch; operate the score motor and thru the (normally open) #2 score motor switch, energize the score reset relay. The reset relay will stay energized thru a normally closed #8 score motor switch, and until all score counter units are reset to zero position. The coin relay will latch the game over relay thru the (normally open) #4 score motor switch.
- 2D. The coin relay, thru the normally open #3 score motor switch will advance the total play meter, and thru the reset relay will reset ball count unit, and latch the 2nd coin relay. The coin relay will also reset the credit unit (1 step) when started by the credit relay. The coin relay will trip the 2nd coin relay when the reset relay is not energized.
- 3A. A ball in the out hole will energize the out hole relay thru a normally closed #1 score motor switch, and it will stay energized thru its own hold-in switch and 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 1st ball is kicked thru the ball trough to the shooter alley and the game is now ready for the "1st player" to begin play.
- 3C. To condition the game for "2nd player," inserting coin(s) or use of the credit button (before 1st ball is played) will energize the coin relay again. This time, the coin relay will not energize the reset relay. It will operate the score motor and advance the total play meter, subtract a credit from the credit unit, (if credit button was used) and trip the 2nd coin relay thru a normally open #3 score motor switch. The game is now set for "2 players."

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FEATURE OPERATION AND SCORINGBONUS SCORE FEATURE:

Bonus Scores start at 1000 and may be advanced to 19,000.

Bonus Scores are advanced by the following:

1. Upper left target.
2. Upper right target.
3. Left lane roll-over buttons when left lane light is lit.
4. Right lane roll-over buttons when right lane light is lit.
5. Left ball return lane roll-over.
6. Right ball return lane roll-over.
7. When Bonus Unit is in zero position and outhole relay is energized by #7 score motor cam switch.

Bonus Score is added to the players total score when the bonus score relay is energized or 2000 points for each 1000 bonus score when the double bonus lite is lit. The pulses are thru the score motor cam switches on double bonus. The bonus unit resets one position at a time until the entire bonus score is transferred. When the game is tilted, all bonus score is canceled.

EXTRA BALL FEATURE:

Extra Ball relay is energized when the extra ball target is hit when lit, also when the Hi-Score adjustment plug is set for extra ball and a pre-set Hi-Score is scored and when the ball goes over left or right out roll-over when the "Special" lite is lit.

Only one extra ball may be earned at any one time.

LEFT AND RIGHT LANES LITE FEATURE:

Left lane lite is lit when the left extra ball target is hit, when ball goes over top center or left lane roll-overs and during the play of the third and fifth balls. The lite remains lit during the play of the ball.

Right lane lite is lit when the right extra ball target is hit, when the ball goes over top center or right lane roll-overs and during the play of the third and fifth balls. The lite remains lit during the play of the ball.

When the lane is lit, the lane roll-over buttons advance the bonus unit and the bumper scores 1000 instead of 100.

DOUBLE BONUS FEATURE:

The double bonus lite will lite during the play of the third ball in a 3-ball game and during the play of the third and fifth ball in a 5-ball game.

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FEATURE OPERATION AND SCORING (Cont'd)

100,000 SCORE FEATURE:

There are two 100,000 score interlock relays, one for each player.

When a player has scored 100,000 points, the 100,000 relay is tripped, lighting the 100,000 lite on the score glass.

All 100,000 relays are latched at the start of each game.

GAME ADJUSTMENTS

PLAYFIELD 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 plug) 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.

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PARTS LIST

MISCELLANEOUS

Score Motor (Domestic)	E-119-354
Score Motor (Export)	E-119-411
Total Play Meter	E-130-10
Resistor (Coin Lockout)	
8200 Ohms, ½ Watt	E-105-6
Transformer	E-122-95

RELAY COILS

Delay	G-31-1600
Coin	G-31-2000
2nd Coin Chute	G-31-2000
3rd Coin Chute	G-31-2000
Credit	G-31-2000
Lock	G-33-2800
Reset	G-31-2000
2nd Coin (trip)	G-31-2000
2nd Coin (latch)	G-31-2000
Game Over (trip)	G-31-2000
Game Over (latch)	G-31-2000
2nd Player Relay (A)	G-32-2500
2nd Player Relay (B)	G-32-2500
#1 Score Reset	G-30-1500
1st & 2nd Player	
100,000 (trip)	G-31-2000
1st & 2nd Player	
100,00 (latch)	G-31-2000
Bonus Zero	G-32-2500
Bonus Score	G-31-2000
Outhole	G-31-2000
Ball Index	G-32-2500
Extra Ball	G-32-2500
Tilt	G-32-2500
Bonus Advance	G-31-2000
Lite Left Lane	G-32-2500
Lite Right Lane	G-32-2500
Left Lane	G-31-2000
Right Lane	G-31-2000
Top Center Lane	G-31-2000
Lft Extra Ball Target	G-31-2000
Right Extra Ball Target	G-31-2000
Extra Ball Target Lite	G-32-2500
Double Bonus	G-32-2500
500 Point	G-31-2000
1000 Point	G-31-2000
100 Point	G-31-2000
10 Point	G-31-2000
Thumper-Bumper	G-31-2000
Alternator	G-32-2500

ASSEMBLY COILS

Coin Lockout	FC-33-2600
10,100 & 1000	
Chimes (3)	CC-31-2000
Knocker	C-27-1000
Thumper-Bumper	A-25-1000
Outhole Kicker	A-25-950
Sling-Shots (2)	A-25-1200
Flippers (2)	AF-25-600/ 28-800

UNITS COILS

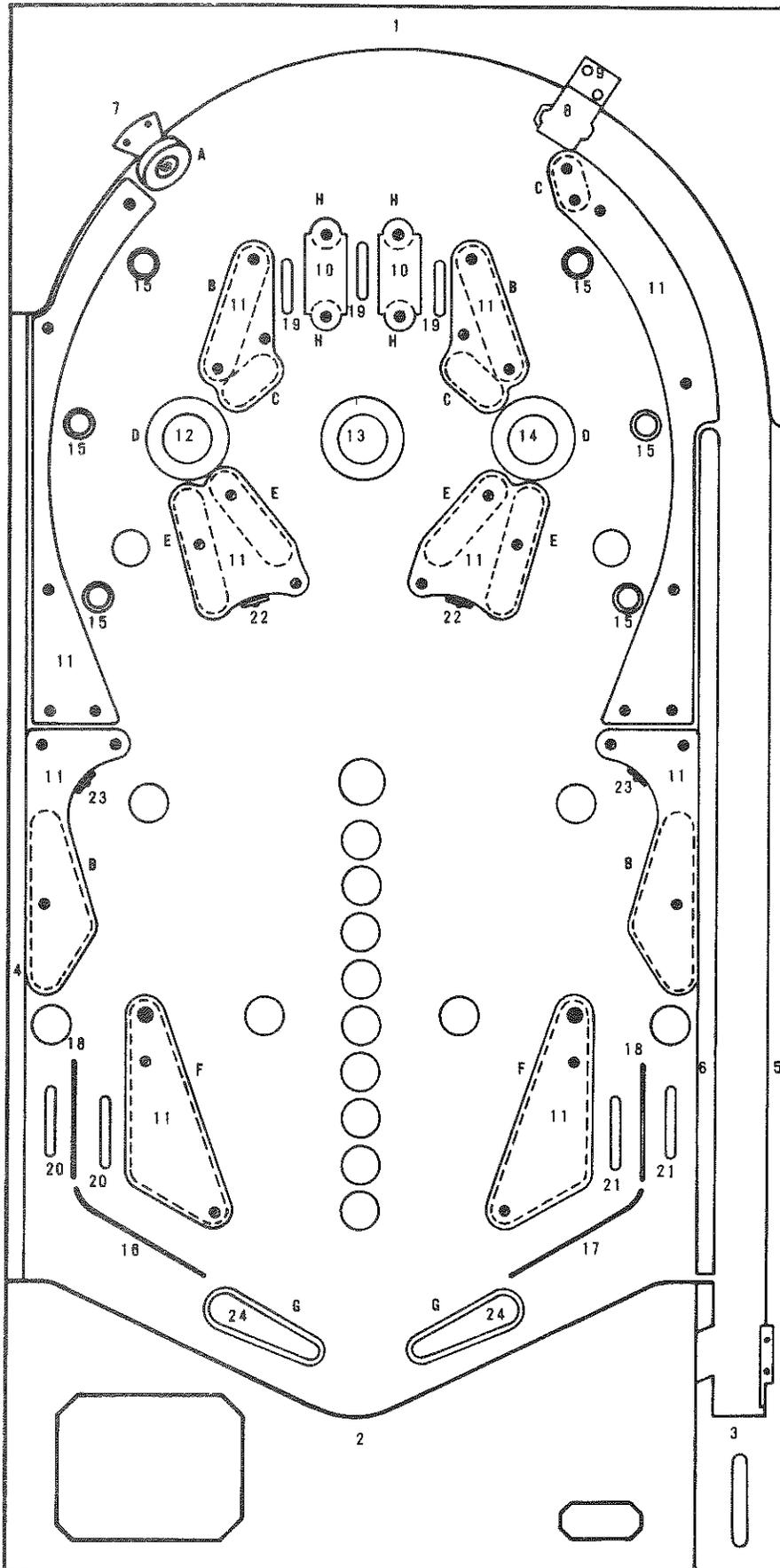
2 Coin (Step-Up)	CD-29-1600
Credit (Step-Up)	B-26-1100
Credit (Reset)	C-28-1100
Ball Count (Step-Up)	B-26-1100
Ball Count (Reset)	C-28-1100
00-90 (Step-Up)	B-27-1300
Score Drums (Step-Up) (8)	CD-29-1600
Bonus (Step-Up)	B-26-1100
Bonus (Reset)	C-28-1100

<u>OLD COIL NUMBER</u>	<u>NEW BALLY COIL NUMBER</u>
CO-25A-7	A-25-1050
CO-25GG-7	B-25-925
CO-25H-7	BC-25-925
CO-26A-9	A-26-1100
CO-26GG-9	B-26-1100
CO-27R-11	C-27-1000
CO-28R-15	C-28-1100
E-184-41	BF-27-1250
E-184-46	EA-30-1150
E-184-47	EA-32-1550
E-184-55	B-29-1200
E-184-56	A-27-1100
E-184-74	CF-28-1025
E-184-75	E-32-1700
E-184-112	EA-29-950
E-184-135	BA-25-925
E-184-155	D-27-425
E-184-156	D-28-500
E-184-160	B-25-750
E-184-175	AP-27-1300
E-184-180	CE-33-4800
E-184-190	AF-25-600/31-1000
E-184-204	AF-27-1000/32-1300
E-184-205	B-27-1300
E-184-206	CD-29-1600
E-184-207	A-27-1400
E-184-213	A-27-1300
E-184-218	F-31-1500
E-184-224	F-31-2100
E-184-231	CA-29-800/31-900
E-184-235	AK-25-1050
E-184-236	J-28-1100
E-184-237	BA-26-1040
E-184-241	AF-25-600/31-1000
E-184-243	A-26-1200
E-184-248	FC-30-1300
E-184-249	BF-28-1500
E-184-250	D-30-700
E-184-252	BB-26-655/32-1245
E-184-254	FC-30-1400
E-184-257	AP-25-1050
E-184-260	B-28-1600
E-184-261	AP-31-3000
E-184-262	A-26-1200
E-184-263	AF-27-775/31-861
E-184-264	A-28-1900
E-184-265	AF-25-600/31-1000
E-184-266	D-29-675
E-184-268	AF-26-750/31-900
E-184-269	FC-33-2600
E-184-270	AB-31-3000
E-184-271	AK-24-750
E-184-272	A-25-1000
E-184-274	FC-32-2100

NOTE:

THESE COILS MAY BE ORDERED BY THE OLD COIL NUMBER OR BY THE NEW COIL NUMBER OR BY BOTH.

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RUBBER PARTS

A	R-115-4	REBOUND	
B	R-521-3	2"	(4)
C	R-521	3/4"	(3)
D	R-521-1	1"	(2)
E	R-521-2	1-1/2"	(4)
F	R-521-5	3"	(2)
G	R-406-3	FLIPPER	(2)
H	R-243	5/16"	(10)

PANEL TOP PARTS

1	TOP ARCH	P-5838-53	
2	BOTTOM ARCH	P-5871-38	
3	SHOOTER GAUGE	P-6359-10	
4	SIDE RAIL (L)	CA-1208-2	
5	SIDE RAIL (R)	CA-1208-1	
6	INSIDE RAIL	CA-1208-14	
7	REBOUND ASSEMBLY	AS-493-3	
8	BALL GATE	A-1475-1	
9	BALL GATE COVER	P-2998-5	
10	PLASTIC GUIDE RAIL	C-695-1	(2)
11	LITE SHIELDS	A-2890-81	
12	BUMPER CAP (RED)	A-3738-1	
13	THUMPER CAP (GREEN)	A-3713-15	
14	BUMPER CAP (ORANGE)	A-3738-2	
15	ROLLOVER BUTTON	C-387-5	(8)
16	BALL GUIDE WIRE	M-121-43	
17	BALL GUIDE WIRE	M-121-44	
18	BALL GUIDE WIRE	M-121-45	(2)
19	ROLLOVER WIRE	M-1338-10	(3)
20	ROLLOVER WIRE	M-1338	(2)
21	ROLLOVER WIRE	M-1338-1	(2)
22	TARGET ASSEMBLY	AS-982-807	(2)
23	TARGET ASSEMBLY	AS-982-818	(2)
24	FLIPPER (WHITE)	C-811-5	(2)

● INDICATES MOVABLE POSTS FOR SCORING ADJUSTMENT

## TIME DELAY CIRCUIT

Purpose of the time delay circuit is to prevent unnecessary abuse of the machine it is installed in.

The time delay relay is energized anytime one of the slam switches are made to contact. There are two factory installed slam switches, one on the front door and one on the mechanism mounting board. (Any number of slam switches could be installed by the operator, to meet his individual requirement). The switches should be adjusted to have approximately 1/16" gap between the contacts. The weighted blade should be adjusted to attain the desired sensitivity. Decreasing the gap between contacts will make switch more sensitive. Opening the gap will reduce sensitivity.

The total time the delay relay is energized can be varied by changing the #455 lite bulb mounted on the delay relay frame. If unable to get a short enough time of delay, get a Westinghouse #455 bulb; these units are considerably faster. If still unable to bring the time down, check the location voltage. It should not be under 49.5 V.A.C. on the transformer secondary.