

#810 THE WIGGLER

INSTALLATION INSTRUCTIONS

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 one of the four balls into ball tilt assembly and adjust bracket so ball will roll over switch blade if front of cabinet is raised.

PLUG IN LINE CORD:

Check adjustment of the four (normally closed) anti-cheat switches that hold-in anti-cheat relay;

- (A) On front door.
- (B) On mounting board, next to alternator unit.
- (C) On mounting board, near cable jacks.
- (D) On mounting board, next to name unit.

Adjust switches so long blade is not touching actuating pin.

NOTE: Adjustment of above switches should be checked after game is plugged in. If not properly adjusted, the anti-cheat relay will drop out during normal playing of game.

SEQUENCE OF OPERATION AT START OF GAME

Set-up prior to starting game: (game not plugged in)

1. Place three balls into playfield by out hole.
Plug Game In:
No lites lit.

Insert Coin or (if replays on register) Push Replay Button:

1. Coin Relay (Trip) Coil is energized thru one of the coin chute relays or thru replay button and;
 - (A) Anti-Cheat Relay is energized and locked in thru anti-cheat and bounce switches, playfield and back box (general illumination) lites lit.
2. Start Relay is energized by coin relay thru #1 score motor cam switch and;
 - (A) Runs Score Motor
 - (B) Energizes the three Reset Relays which Resets All Point Score Units to zero.
Resets All Wiggle Jet Bonus Score Units to zero.
Energizes hold relay which locks in and turns off tilt lite.
 - (C) Resets coin unit to zero and lites 1 can play lite.
 - (D) Thru #3 score motor cam switch, Resets replay unit one step, if replay used. Advances total play meter. Resets ball count unit to zero and lites 1st ball lite.
 - (E) Thru #4 score motor cam switch, Resets player-up unit to zero and lites 1st player up lite. Energizes game-over relay (latch) coil and turns off game over lite.

(F) Thru #7 score motor cam switch, Energizes coin relay (latch) coil.

(G) Thru #10 score motor cam switch, Start relay is de-energized.

3. Ball Return Relay is Energized By Ball In Out Hole and;

- (A) Runs score motor.
- (B) Energizes ball return kicker solenoid thru #3 score motor cam switch, which kicks ball from out-hole into ball trough to close trough switch. Energizes player advance relay after last ball makes trough switch. Advances Player-Up Unit from sub-zero position thru #8 score motor cam switch.

4. Ball Release Relay is Energized By Trough Switches and;

- (A) Energizes ball release solenoid and ball is released to shooter alley. If more than one ball is released check:
 - a. Adjustment of ball trough switches. Switches are located under bottom of playfield arch and are visible when playfield is raised. Switches should be closed only when ball is on switch actuator.
 - b. Adjustment of top and lower hole switches. Switches should be closed only when balls are in holes.
 - c. Adjustment of top hole, lower hole and 1-2 hole relay switches. Relays are located on bottom of playfield. Top and lower hole relays should be energized only when ball is in respective (top or lower) hole. 1-2 hole relay should be energized when ball is in either hole.

5. Check that;

- (A) Tilt and game-over lites are off.
- (B) All point score units and Wiggle Set score units at zero.
- (C) 1st player up lite, 1st ball lite, 1 can play lite are ON.
- (D) Wiggle Alley gate is open.
- (E) Free ball gate is closed.
- (F) One Wigglesville Score lite is on.
- (G) All Wiggle Alley rollover lites are off.
- (H) Only one ball is released to shoot position.

6. Multiple Players:

Insert a 2nd coin or (if replays on register) push replay button for 2nd player,

- (1) Multiple Play Relay is energized thru one of the coin chute relays or thru replay button and;
 - (A) Runs score motor.
 - (B) Thru #3 score motor cam switch, Resets Replay Unit one step, if replay used. Advances total play meter.
 - (C) Thru #7 score motor cam switch, advances coin unit one step - lites 2 can play lite.

For 3rd and 4th player, same as above is repeated.

7. Coin credit sequence:

- (A) When multiple coin chutes are used at start of new game, coin credit is automatically used to start and lite 1 can play lite.

remaining credit or credits are registered on replay unit.

(B) When multiple play coin chutes are used after 1 can play but before 4 can play lite is lit, one credit is automatically used to add 2nd, 3rd or 4th player and remaining credit or credits are registered on replay unit.

(C) When multiple play coin chutes or single play coin chute are used after 4 can play lite is lit, all credit or credits (up to 25) are registered on replay unit.

BALLS IN PLAY OPERATION

SECTION 1 - Three balls at out hole position:

1. Each ball in out hole energizes the ball return relay when score motor is in index position and it remains energized thru its own switch and normally closed #8 score motor cam switch.
2. Ball return relay will operate the score motor and then operate ball return kicker solenoid thru #3 score motor cam switch.
3. 1st ball kicked from out hole to trough closes #1 trough switch. 2nd ball kicked from out hole to trough closes #2 trough switch. 3rd ball kicked from out hole to trough closes #3 trough switch. When the three trough switches are closed, player advance relay will be energized thru a switch on ball return relay when it's energized, or when ball return relay is not energized, thru a switch on hold relay. When game is tilted. The player advance relay remains energized thru its own switch and normally closed #10 score motor cam switch.
4. Player advance relay will operate the score motor and energize the player reset relay after last eligible player has played each ball. Player reset relay will advance the ball count unit thru #3 score motor cam switch, which in turn will reset the player up unit. If the last eligible player has not played a given ball, the player advance relay will advance the player up unit thru #8 score motor cam switch.
5. The three trough switches when closed will energize the ball release relay, when ball return relay drops out.

6. The ball release relay will operate the score motor and then operate the ball release solenoid thru #3 score motor cam switch.

7. The ball release solenoid operates a cam which kicks a ball into shooter alley.

8. After the last eligible player has played his last ball, the player reset relay will energize the match relay, which in turn will energize the game over relay (trip) coil thru #7 score motor cam switch.

BALLS IN PLAY OPERATION

SECTION 2 - Captive balls on playfield:

Operation is similar to operations in section 1 with the following exceptions.

1. A ball entering either or both the top or lower saucer holes will result in another (2nd or 3rd) ball being kicked into shooter alley, and shoot again lites backglass. A ball in either or both holes will remain captive until the blue center mushroom bumper is hit. When a ball is kicked out of top hole, 200 points is awarded to player. When a ball is kicked out of lower hole, 100 points is awarded to player.

2. A ball in either top or lower hole lites blue center mushroom bumper lite, which hit when lit kicks out ball or balls in saucer holes, advances respective player Wiggle jet counter unit and closes Wiggle Alley gate until only one ball is active on playfield.

3. If more than one ball is active on playfield, the last ball determines whether same player will or will not shoot again. If the last active ball becomes captive, shoot again lites and same player shoots again. If the last active ball goes into out hole, shoot again does not lite, next player up lites and next player shoots.

4. One ball or two balls captive in saucer holes function the same as one ball or two balls in ball trough with respect to the operation of player advance relay or the ball release relay.

5. The player advance relay will be energized when all three balls are active on playfield, with the last active ball going into out hole. If the last active ball goes into a saucer hole, ball release relay will be energized.

ADJUSTMENTS

PLAYFIELD PANEL LIBERAL ADJUSTMENTS:

When shipped from factory, all panel adjustments are set for conservative scoring operation. To make scoring more liberal, any or all of the following can be done.

- 1) Move posts under the two bottom plastic shields out (towards sides of game).
- 2) Remove yellow plastic from the two posts on left side of panel. Move top post up - bottom post down and replace yellow plastic with metal strap enclosed in instruction envelope.
- 3) Move post in front of Wiggle Alley gate on left side of panel down.

Spotting holes are provided for the movement of these posts and a card showing "liberal" and "conservative" positions will be found on game.

BELL ADJUSTMENT PLUG:

Located on back box insert. This plug provides positions to ring bell for 10 point scores, 100 point scores, or both 10 and 100 point scores.

HI SCORE ADJUSTMENT PLUGS:

Located on back box insert. These (2) plugs combine to provide a wide range of coverate to award replays for various high point scores. Recommended plug settings corresponding to score cards shipped with game will be found on score adjustment chart inside back door.

WIGGLE JET FEATURE ADJUSTMENT PLUG:

Located on mounting board. This plug provides positions to award replays or points for Wiggle jet feature scores.

WIGGLE JET SCORE ADJUSTMENT PLUG:

Located on mounting board. This plug provides positions at which replays or points can be awarded for Wiggle jet feature scores.

BALLS PER GAME ADJUSTMENT PLUG:

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

MATCH FEATURE ADJUSTMENT PLUG:

This plug provides positions to operate game with match feature on or off.

2nd & 3rd COIN CHUTE ADJUSTMENT PLUG:

Located on mounting board. This plug provides positions to give 2 to 6 plays per coin thru 2nd and 3rd coin chutes.

1st COIN CHUTE ADJUSTMENT PLUG:

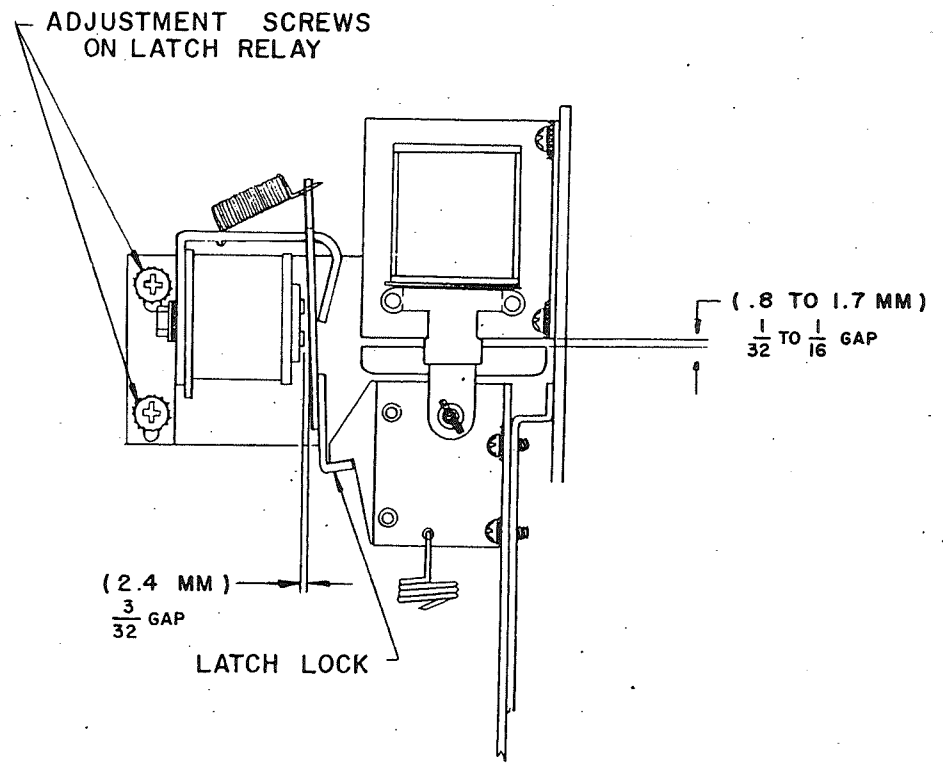
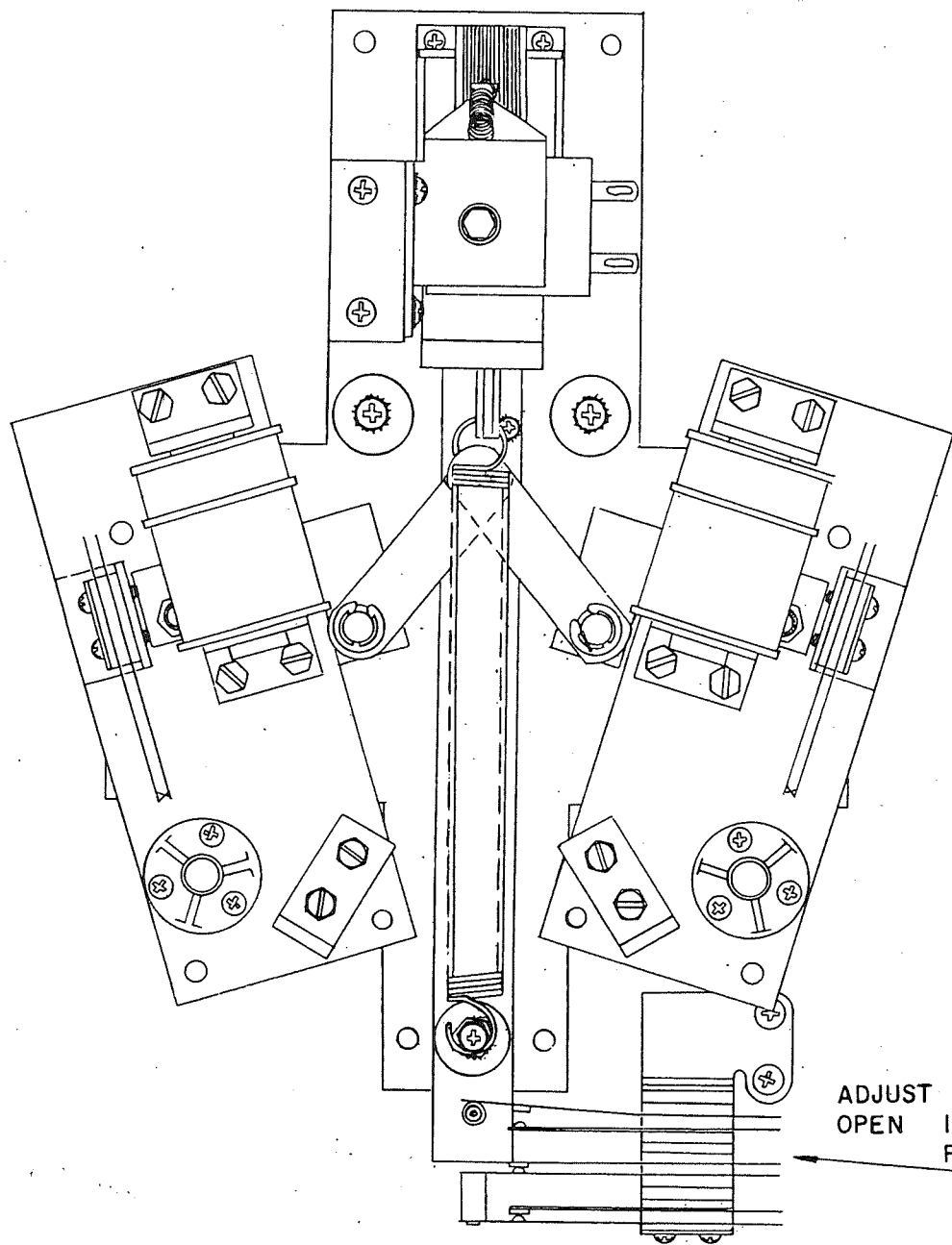
Located on alternator unit on mounting board. This plug provides positions to give 1 play per coin or 1st play per 2 coins thru 1st coin chute.

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PARTS LIST

<u>MISCELLANEOUS</u>	<u>PART NO.</u>		<u>PART NO.</u>
Transformer	E-122-95	Left Thumper Bumper	C-7800-334
Score Motor	E-119-354	Center Thumper Bumper	C-7800-334
Score Motor (German Games)	E-119-363	Right Thumper Bumper	C-7800-334
		Blue Center M.B.	C-7800-3316
		Wiggle Alley Gate	C-7800-332
<u>KK RELAY COILS</u>		<u>ASSEMBLY COILS</u>	
Ball Release	C-7800-331	Top Hole Kicker	E-184-56
Wigglesville	C-7800-331	Lower Hole Kicker	E-184-56
#2-3 Alley	C-7800-333	Ball Return Kicker	25-A-7
1 Alley	C-7800-333	Left Slingshot Kicker	E-184-243
Player Reset	C-7800-331	Right Slingshot Kicker	E-184-243
Right Out Rollover	C-7800-331	Left Thumper Bumper	E-184-190
Match	C-7800-331	Center Thumper Bumper	E-184-190
Player Advance	C-7800-333	Right Thumper Bumper	E-184-190
Ball Return	C-7800-331	Free Ball Gate	E-184-204
Hold	C-7800-332	Ball Release	E-184-213
Anti-Cheat	C-7800-3312	Left Flipper	E-184-190
Multi-Play	C-7800-331	Right Flipper	E-184-190
3rd Coin Chute	C-7800-331	Close Flippers	E-184-239
2nd Coin Chute	C-7800-331	Open Flippers	C-7800-334
1st Coin Chute	C-7800-331		
L. & R. Mushroom Bumper	C-7800-3316	<u>UNIT COILS</u>	
Free Ball	C-7800-341	Replay (Step-Up)	26-GG-9
Rebound Gate	C-7800-3316	Replay (Reset)	28-R-15
Shoot Again	C-7800-332	0-9 Match (Step-Up)	E-184-205
Close Flipper	C-7800-3312	Player Up (Step-Up)	26-GG-9
100 Point	C-7800-333	Player - Up (Reset)	28-R-15
10 Point	C-7800-333	Coin (Step-Up)	26-GG-9
1 Point	C-7800-333	Coin (Reset)	28-R-15
200 Point	C-7800-331	Ball Count (Step-Up)	E-184-205
Hole Kicker	C-7800-331	Ball Count (Reset)	28-R-15
Start	C-7800-331	Wiggle Alley (Step-Up)	26-GG-9
Coin (Trip)	C-7800-334	Wiggle Alley (Reset)	28-R-15
Coin (latch)	C-7800-331	Wigglesville (Step-Up)	E-184-205
Game Over (Trip)	C-7800-334	Alternator (Step-Up)	E-184-206
Game Over (Latch)	C-7800-331	1-9 Score (Step-Up)	E-184-206
Next Play	C-7800-332	10-90 Score (Step-Up)	E-184-206
#3 Reset	C-7800-331	100-900 Score (Step-Up)	E-184-206
#2 Reset	C-7800-331	1000-9000 Score (Step-Up)	E-184-206
#1 Reset	C-7800-331	Wiggle Jet Score (step-up)	E-184-206
Lower Hole	C-7800-3312		
Top Hole	C-7800-3312		
1 & 2 Hole	C-7800-3312		
Top L. & R. Rebound	C-7800-341		

1C-c	N.C.	D-5	90-3P 50-2P	Gray (Plastic) White (Plastic)	Opens circuits to the multiple play relay.
1C-d	N.C.	A-19	90	Gray	Opens circuit to the player-up unit reset coil.
1C-e	N.C.	C-31	21-7 36-6	Blue-Red Yellow-Brown	Opens circuit to the match relay.
1C-f	N.C.	H-33	98-2 14-1	Gray-Black Red-Green	Opens circuit to the ball return relay.
1C-g	N.C.	F-85	81-1 58-6	Black-Red White-Black	Opens 100 point scoring circuit.
1D-a	N.O.	H-24	80-6 91-6	Black Gray-Red	Completes regular player-up unit step-up circuit.
2B-a	N.C.	H-7	60-3P 80-3P	Brown (Plastic) Black (Plastic)	Opens lock-in circuit to the single coin relay, multiple play relay, and multiple coin relay.
2B-b	N.C.	A-34	70 83-4	Orange Black-Yellow	Opens circuit to the ball return relay, player-up relay, 50 point relay, and free ball relay.
2B-c	N.C.	A-36	31-8 70	Yellow-Red Orange	Opens circuit to the 10 point relay, 100 point relay, and 1 point relay.
2B-d	N.O.	B-32	27-1 21-7	Blue-Orange Blue-Red	Completes circuit to game-over relay thru match relay circuit.
2C-a	N.C.	J-14	54-1 91-6	White-Green Gray-Red	Subtracts a pulse from score motor switch 1A-d during replay step-up for multiple coin circuit.
2C-b	N.O.	K-64	40-4 25-6	Green Blue-White	Completes 3rd player match number replay scoring circuit.
2C-c	N.O.	F-18	45-3 61-6	Green-White Brown-Red	Completes circuit to replay unit reset coil, thumper control unit reset coil, and total play meter when playing off replays.
2C-d	N.O.	G-17	85-2 60-6	Black-White Brown	Completes replay unit step-up circuit when more coins are played after 4 can play relay is energized.
2C-e	N.O.	D-8	10-2P 20-2P	Red (Plastic) Yellow (Plastic)	Completes (9) target trip bank reset circuit.
3B-a	N.C.	G-14	58-7 51-2	White-Black White-Red	Subtracts a pulse from score motor switch 1A-d during replay step-up for multiple coin play.
3B-b	N.O.	K-63	25-6 10-7	Blue-White Red	Completes 2nd player match number replay scoring circuit.
3E-a	S.P.D.T.	P-51	45-4 30 83-3	Green-White Yellow Black-Yellow	Directs circuit to right top rollover lite or left top rollover lite on playfield.
3E-b	S.P.D.T.	K-87	93-5 91-3 74-5	Gray-Yellow Gray-Red Orange-Green	Directs circuit to score 50 or 10 points thru right and left top rollovers on playfield.
4B-a	N.O.	H-17	41-9 93	Green-Red Gray-Yellow	Completes circuit to the 4 can play trip relay.
4B-b	N.O.	F-9	60-2P 30-1P	Brown (Plastic) Yellow (Plastic)	Completes (8) and (7) trip bank reset circuit.
4B-c	N.O.	B-33	61-7 91	Brown-Red Gray-Red	Pulses ball return kicker solenoid when ball return relay circuit is completed.
4C-a	N.C.	H-15	78-1 51-2	Orange-Black White-Red	Subtracts a pulse from score motor switch 1A-d during replay step-up for multiple coin circuit.
4C-b	N.O.	H-16	57 41-9	White-Orange Green-Red	Completes circuit to the 2 can play trip relay.
4C-c	N.O.	K-65	20-7 25-6	Blue Blue-White	Completes 4th player match number replay scoring circuit.



EFFECTIVE ADJUSTMENTS
ON
MOVEABLE FLIPPER
ASSEMBLY

ADJUST SWITCH TO
OPEN IN LATCHED
POSITION