

821 – "ROCK MAKERS"

INSTALLATION & GENERAL OPERATION INSTRUCTIONS

INSTALLATION

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 two 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, next to name unit.
- (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

Set-up prior to starting game:

1. Place ball 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) Energizes the three Reset Relays which operates the Score Motor and Resets All Point Score Units to zero. Resets all Rock-A-Rock score units to zero.
 - (B) Resets coin unit to zero and lites 1 can play lite.
 - (C) 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.
 - (D) 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.
 - (E) Thru #7 score motor cam switch. Energizes coin relay (latch) coil.

(F) 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 when ball makes trough switch. Advances Player-Up Unit from sub-zero position thru #8 score motor cam switch.
4. Check that:
 - (A) Tilt and game-over lites are off.
 - (B) All point score units and Rock-A-Rock score units at zero.
 - (C) 1st player up lite, 1st ball lite, 1 can play lite are ON.
5. 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.
6. For 3rd and 4th player, sequence above is repeated. Coin credit sequence:
 - (A) When multiple play coin chutes are used at start of new game, one credit is automatically used. To start game and lite 1 can play lite, remaining 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 credits (up to 25) are registered on replay unit.

BALLS IN PLAY OPERATION

SECTION 1 – Ball at out hole position:

1. 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. Player advance relay will be energized thru a ball trough switch or when game is coined while ball is in shooter alley, the player advance relay is energized by rebound gate switch. The player advance relay remains energized thru its own switch and normally closed #10 score motor cam switch.

4. If the last eligible player has not played, the player advance relay will advance the player up unit thru #8 score motor cam switch.
5. After the last eligible player has played, a ball return relay switch will energize the player reset relay. This relay will advance the ball count unit thru score motor #3 cam switch. The ball count unit end-of-stroke switch

- will in turn reset the player up unit and the game is set for the 1st player again.
6. 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.

#821 - "ROCK MAKERS"

FEATURE INSTRUCTIONS

ROCK MAKERS FEATURE:

R-O-C-K-M-A-K-E-R-S rollover buttons, (10)

Hit when not lit score 10 points and energize respective trip relays to lite letter in name.

Hit when lit score 1 point. When either "Rock" or "Makers" is completed, scores 100 points and advances "Rock-A-Rock" score of player.

When both "Rock" and "Makers" are completed, the trip relays are reset and roll-over buttons are re-activated.

The trip relays are also reset at start of each game and when a ball returns to out hole.

ROCK-A-ROCK FEATURE:

"Rock-A-Rock" score of player up advances when either "Rock" or "Makers" is lit. Stops at score of 9.

Scores are reset at start of each game.

When (adjustable) scores are attained, game registers a replay or (with kit installed) an added ball.

FREE BALL FEATURE:

- 1) "Rock Crusher" lane (no gate).

If ball enters "Rock Crusher" lane but does not go thru top right gate, ball will return to shooter alley as a free ball.

- 2) Free Ball Gate Feature:

Free ball roll-over button feature lite is lit by upper center and lower center roll-over buttons.

Free ball gate is "opened" by roll-over button hit when lit.

Free ball gate is "closed," when a ball in play is delivered thru gate, when a ball in play returns to out hole, and when flippers are closed while a ball is in play.

"Shoot-Again" lite on panel lites when a ball in play is delivered thru free ball gate.

- 3) With Add-A-Ball kit installed, when (adjustable) Hi Scores or (adjustable) "Rock-A-Rock" scores are attained, the Add-A-Ball relay is energized. "Shoot Again" lite is then lit to indicate player has earned a free (added) ball.

TOP LANES SCORE FEATURE:

Top left and right lanes score 10 or 100 when lit.

Lites are lit by either top left or top right roll-over buttons. Lites remain lit until blue mushroom-bumper is hit or until a ball returns to out hole.

Top center lane scores 20 or 200 when lit.

Lite is lit by top right rebound. Lite remains lit until blue mushroom-bumper is hit or until a ball returns to out hole.

CLOSE FLIPPERS FEATURE:

Flippers close when blue mushroom-bumper is hit.

Flippers open when either yellow mushroom-bumper is hit, when a ball returns to out hole and when game is tilted.

GAME ADJUSTMENTS

PLAYFIELD PANEL POST ADJUSTMENTS:

The playfield panel has several posts that can be moved at operators discretion to increase and decrease games scoring potential. A card showing liberal and conservative positions of these posts will be found in 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 provide a wide range of coverage at which replays or added balls* can be awarded for Hi-Scores. Recommended plug settings corresponding to score cards shipped with game will be found on Hi-Score adjustments chart inside back door.

ROCK-A-ROCK FEATURE ADJUSTMENT PLUG:

Located on mounting board. This plug provides positions to award replays or added balls* for pre-set Rock-A-Rock feature scores.

HI SCORE FEATURE ADJUSTMENT PLUG:

Located on mounting board. This plug provides positions to award replays or added balls* for pre-set hi-scores.

ROCK-A-ROCK SCORE ADJUSTMENT PLUG:

Located on mounting board. This plug provides positions at which replays or added balls* can be awarded for Rock-A-Rock 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:

Located on mounting board. This plug provides positions to operate game with or without match feature award.

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

* When Add-A-Ball conversion kit (K-313-3) is used.

PARTS LIST

	<u>PART NO.</u>		<u>PART NO.</u>
<u>MISCELLANEOUS</u>		<u>ASSEMBLY COILS</u>	
Transformer	E-122-95	Ball Return Kicker	CO-25-A-7
Score Motor (Domestic)	E-119-354	Left Thumper Bumper	E-184-241
Score Motor (Export)	E-119-372	Top Thumper Bumper	E-184-241
Trip Bank Motor	E-119-362	Right Thumper Bumper	E-184-241
		Upper Left Slingshot	CO-25-A-7
<u>TRIP RELAY COILS:</u>		Lower Left Slingshot	CO-25-A-7
All	E-184-155	Right Slingshot	CO-25-A-7
		Top Left Flipper	E-184-246
<u>KK RELAY COILS</u>		Lower Left Flipper	E-184-190
#2 Advance	C-7800-331	Right Flipper	E-184-190
#1 Advance	C-7800-331	Open Flippers	C-2794-305
Yellow Mushroom Bumper	C-7800-3316	Close Flippers	E-184-239
Blue Mushroom Bumper	C-7800-3316	Free Ball Gate	E-184-204
Series	C-7800-351	Sounder	CO-27-R-11
Player Reset	C-7800-331	Bell	CO-31-0-55
Match	C-7800-331		
Player Advance	C-7800-333	<u>UNIT COILS</u>	
Ball Return	C-7800-331	Coin (Step-Up)	CO-26-GG-9
Hold	C-7800-332	Coin (Reset)	CO-28-R-15
Anti-Cheat	C-7800-3312	Player-Up (Step-Up)	CO-26-GG-9
Multi-Play	C-7800-331	Player-Up (Reset)	CO-28-R-15
3rd Coin Chute	C-7800-331	Ball Count (Step-Up)	E-184-205
2nd Coin Chute	C-7800-331	Ball Count (Reset)	CO-28-R-15
1st Coin Chute	C-7800-331	0-9 Match (Step-Up)	E-184-205
Start Coin Chute	C-7800-331	Replay (Step-Up)	CO-26-GG-9
50 Point	C-7800-331	Replay (Reset)	CO-28-R-15
1 Point	C-7800-333	Score (All)	E-184-206
10 Point	C-7800-333	Rock-A-Rock (All)	E-184-206
100 Point	C-7800-333	Alternator	E-184-206
Close Flipper	C-7800-3312		
Game-Over (Trip)	C-7800-334	<u>UNIT CONTACT DISC'S</u>	
Game-Over (Latch)	C-7800-331	Coin	W-923-81
Coin (Trip)	C-7800-334	Player-Up	W-1004-17
Coin (Latch)	C-7800-331	Ball Count	W-1043-1
Top Center Lane	C-7800-341	0-9 Match	W-1034-8
Top Side Lanes	C-7800-341	1-9 Score	A-2212-7
Free Ball Rollover Button	C-7800-341	100-900 Score	A-2212-7
Free Ball	C-7800-341	1000-9000 Score	A-2212-7
Shoot Again	C-7800-3316		
#3 Reset	C-7800-331	<u>UNIT WIPER ASSEMBLIES</u>	
#2 Reset	C-7800-331	Coin	AS-1024-108
#1 Reset	C-7800-331	Player-Up	AS-1046-498
Left Thumper Bumper	C-7800-334	Ball Count	AS-1046-464
Top Thumper Bumper	C-7800-334	0-9 Match	AS-1046-501
Right Thumper Bumper	C-7800-334	1-9 Score	A-1618-3
Add-A-Ball (W/K-313-3)	C-7800-336		

<u>UNIT WIPER ASSEMBLIES</u>	<u>PART NO.</u>
(cont.)	
100-900 Score	A-1618-3
1000-9000 Score	A-1618-3

<u>SCORE MOTOR SWITCHES</u>	
Cam #1	SW-250-4
Cam #2	SW-200-140
Cam #3	SW-500-8
Cam #4	SW-400-23
Cam #5	SW-400-23
Cam #6	SW-310-26
Cam #7	SW-400-23
Cam #8	SW-210-67
Cam #9	SW-200-140
Cam #10	SW-040-12
Cam #11	SW-400-23