Operating Instructions and Parts Catalog

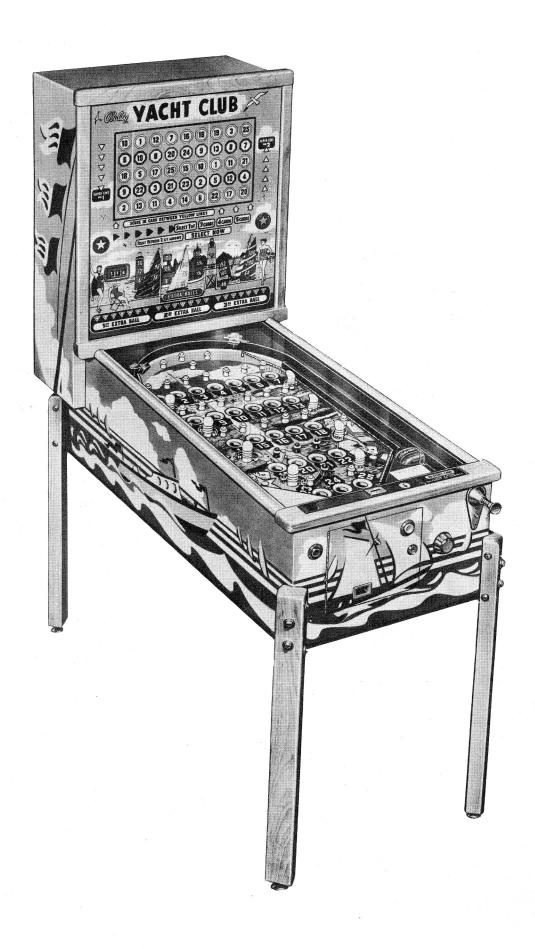
CONFIDENTIAL: DO NOT LEAVE INSTRUCTIONS IN GAME



IMPORTANT!

Note that this manual is a combination Operating Instructions AND PARTS CATALOG. Part Numbers are marked on the various illustrations and a list of miscellaneous parts appears on the back cover.

FOR QUICKEST SERVICE STATE CORRECT PART NUMBER WHEN ORDERING PARTS



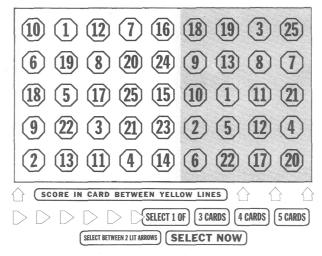
Replay amusement game: 5 balls plus 3 extra balls

EXTRA COINS MAY BE DEPOSITED

- (1) TO QUALIFY TO CHANGE SELECTED CARD
- (2) TO QUALIFY TO SCORE 3-IN-LINE SCORE
 BY LIGHTING 2-IN-LINE IN SUPER-LINE NO. 1
- (3) TO QUALIFY TO SCORE 4-IN-LINE SCORE
 BY LIGHTING 2-IN-LINE IN SUPER-LINE NO. 2
- (4) TO QUALIFY TO SPOT 15, 16, 23, 24
- (5) TO ADVANCE SCORES
- (6) TO PLAY FOR EXTRA BALLS

NEW SHIFTING, OVERLAPPING CARDS: Card on backglass contains 45 numbers that may be grouped by player into his choice of one of 5 different cards, each Selected Card containing numbers 1 to 25, inclusive, arranged in a square 5 numbers wide by 5 numbers high.

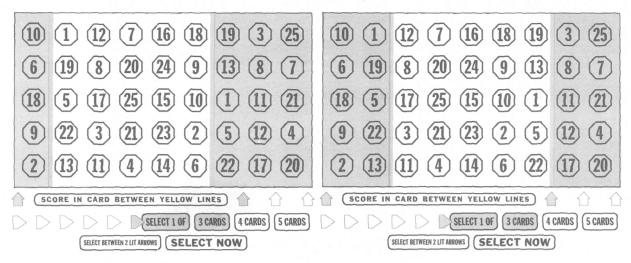
When first coin* is deposited, 2 yellow bracket-lines light, framing first Card, as illustrated below. As instructed by panel on backglass, player shoots to SCORE IN CARD BETWEEN YELLOW LINES.



FIRST CARD. No yellow arrows lit. Player is confined to First Card. See next page for other selectable cards.

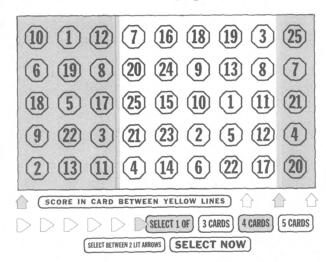
Pointer-lights under card on backglass flash when coins are deposited and advance at mystery-intervals. When light advances to sixth and final pointer, panels light to tell player to SELECT ONE OF 3 CARDS -- First Card, illustrated above, or Second or Third Card, illustrated on page 118. Another panel tells player to SELECT BETWEEN 2 LIT ARROWS.

^{*}When replays are registered, Buttons are pressed, instead of coins being deposited.



SECOND CARD and THIRD CARD. Lit yellow arrows show that player may shift yellow bracket-lines at will, selecting and reselecting his choice of one of 3 cards -- First Card, Second Card or Third Card.

As additional coins* are deposited, panel-lights advance at mystery intervals from 3 CARDS to 4 CARDS, as illustrated below, then to 5 CARDS, as illustrated on page 119.



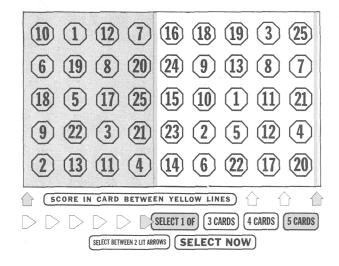
FOURTH CARD. Lit yellow arrows show that player may select and reselect his choice of one of 4 cards -- First Card, Second Card, Third Card or Fourth Card.

By turning Selector-Knob player may shift yellow-light bracketlines back and forth, selecting and re-selecting his choice of one of 3, 4 or 5 cards, depending on panel lit -- until fourth ball is shot**.

Numbers previously scored automatically transfer to Selected Card.

^{*}When replays are registered, Buttons are pressed, instead of coins being deposited.

^{**}Selector Knob is ineffective after fourth ball is shot.



FIFTH CARD. Lit yellow arrows show that player may select and re-select his choice of one of 5 cards -- First Card, Second Card, Third Card, Fourth Card or Fifth Card.

<u>NEW SUPER-LINES:</u> Pointer-lights at left of Card on backglass flash when coin* is deposited and advance at mystery-intervals. When light advances to fifth and final pointer, SUPER-LINE No. 1 panel lights, qualifying player for No. 1 Super-Line score***.

As additional coins* are deposited, pointer-lights at right of Card advance to qualify player for No. 2 Super-Line Score***.

<u>SPOTTEM FEATURE:</u> Red Star and Yellow Star on backglass flash when coins* are deposited and, at mystery intervals, light and remain lit.

Red Star Roll-over on playfield spots 23 and 24, when Red Star is lit.

Yellow Star Roll-over on playfield spots 15 and 16, when Yellow Star is lit.

GUARANTEED FEATURES: Regardless of number of coins* deposited, each feature, after lighting, remains lit until end of game.

2-in-line in Super-Line No. 2 scores 4-in-line score, when SUPER-LINE NO. 2 is lit.

^{*}When replays are registered, Buttons are pressed, instead of coins being deposited.

^{***2-}in-line in Super-Line No. 1 scores 3-in-line score, when SUPER-LINE NO. 1 is lit.

<u>ADVANCING SCORES</u>****: Scores**** appear in scene on backglass, advancing at mystery intervals when coins* are deposited.

GUARANTEED SCORES****: Scores**** either advance to higher bracket or remain as high as on previous coin*, never drop back to a lower bracket, regardless of number of coins* deposited.

EXTRA-BALLS FEATURE: After shooting 4 balls, player may press Extra-Balls Button and deposit additional coins* to play for extra balls.

Pointer-lights above 1st EXTRA BALL flash when coins* are deposited and advance at mystery-intervals. When light advances to seventh and final pointer of first group, 1st EXTRA BALL lights and first extra ball is released.

As additional coins* are deposited pointer-lights advance above 2nd EXTRA BALL and 3rd EXTRA BALL, lighting 2nd EXTRA BALL and 3rd EXTRA BALL, releasing second extra ball and third extra ball.

GUARANTEED ADVANCE TO EXTRA BALLS: Pointer-lights either advance or remain as far advanced as on previous coin*, never drop back to a less advanced position.

Coins deposited to play for extra balls do not light other scoring-advantages or advance scores.

After pressing Extra-Balls Button, player may not play to light other scoring-advantages or to advance scores.

*When replays are registered, Buttons are pressed, instead of coins being deposited.

****5-in-line: 96-96-100-100-150-150-192-300

4-in-line: 12-16-24-32-48-72-100-200

3-in-line: 4- 6- 8- 12- 18- 36- 48- 64

Numbers lit in line may be in horizontal, vertical or diagonal lines, but numbers lit in diagonal line must be in line running directly from corner to corner of Card.

2-in-line in Super-Line No. 1 scores 3-in-line score when SUPER-LINE NO. 1 is lit.

2-in-line in Super-Line No. 2 scores 4-in-line score when SUPER-LINE NO. 2 is lit.

Numbers in line must be in Selected Card.

Only one 3-in-line score registers per game.

Only one 4-in-line score registers per game.

Only highest score registers.

INSTALLATION AND OPERATING INSTRUCTIONS

Fasten 4 legs to cabinet with bolts and washers furnished. Place back-box in position. Unlock and open back-door and fasten the back-box to cabinet with bolts and washers furnished. (2 back-door locks are common.)

Plug power line into 110-115 volt 60 cycle Alternating Current only. Turn on power by turning toggle-switch on. Toggle-switch is located on lower left side of back-box.

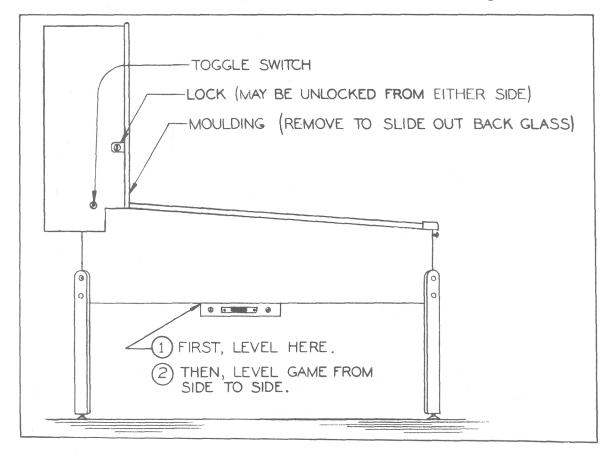
ACCESS TO MECHANISM AND LIGHT BULBS

Back-glass may be removed from either side by unlocking side desired and removing upright moulding. (Remove moulding by pulling bottom portion.)

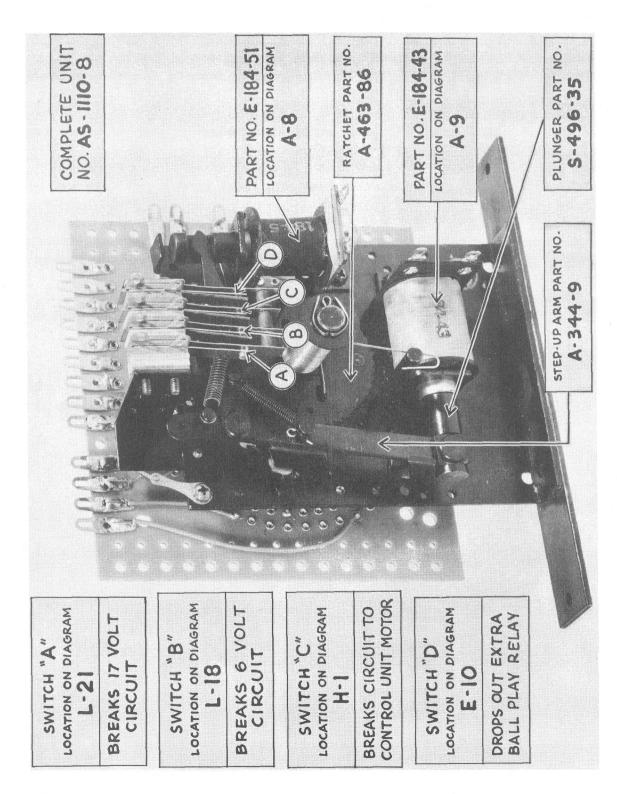
After removing back-glass, access to mechanism may be obtained by raising 2 slide brackets on insert, located on left and right edges of insert. Insert may then be tilted forward for easy accessibility.

BE SURE TO LEVEL GAME

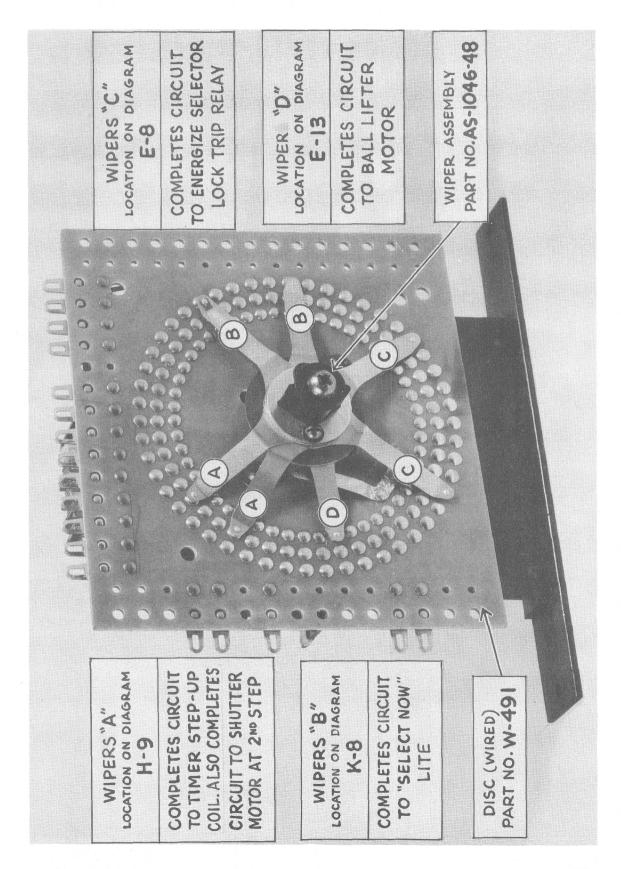
See instructions for leveling below. Place 8 balls in game.



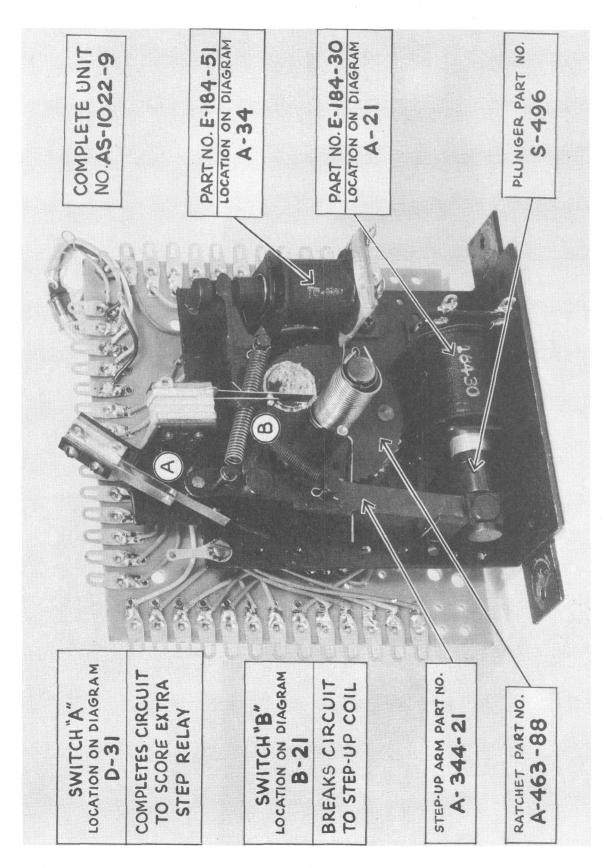
TIMER UNIT - COIL SIDE



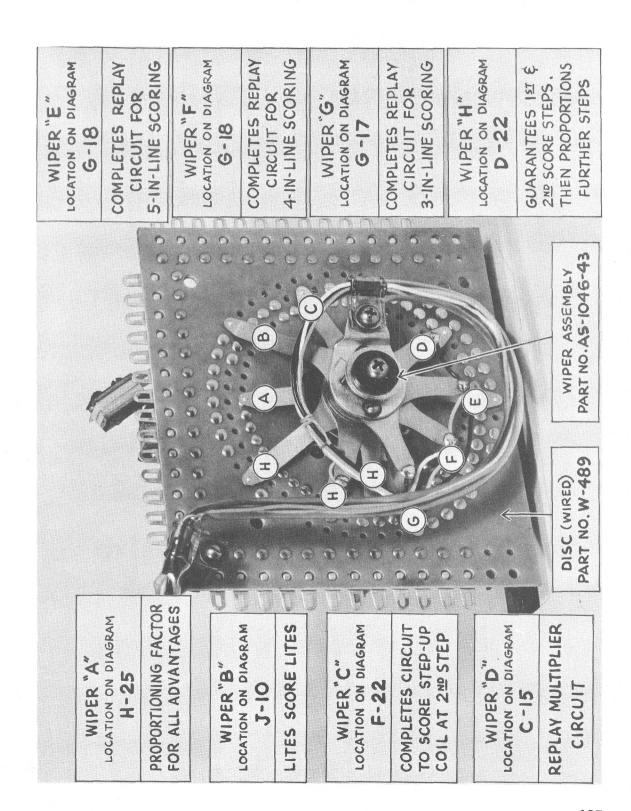
TIMER UNIT - WIPER SIDE



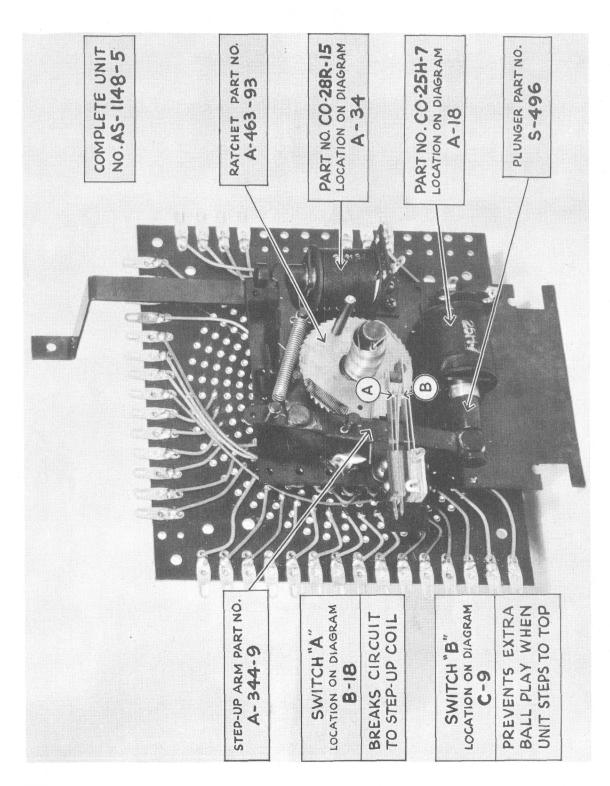
SCORE UNIT - COIL SIDE



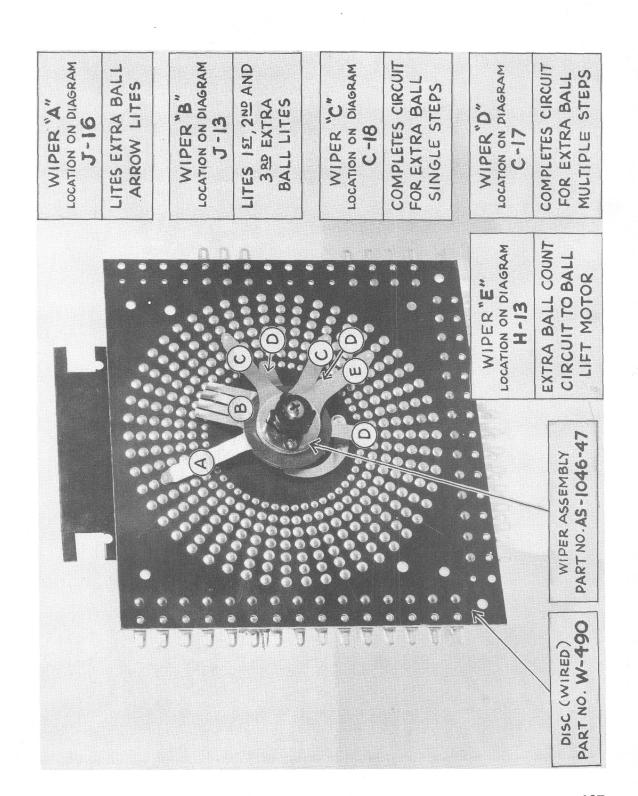
SCORE UNIT — WIPER SIDE



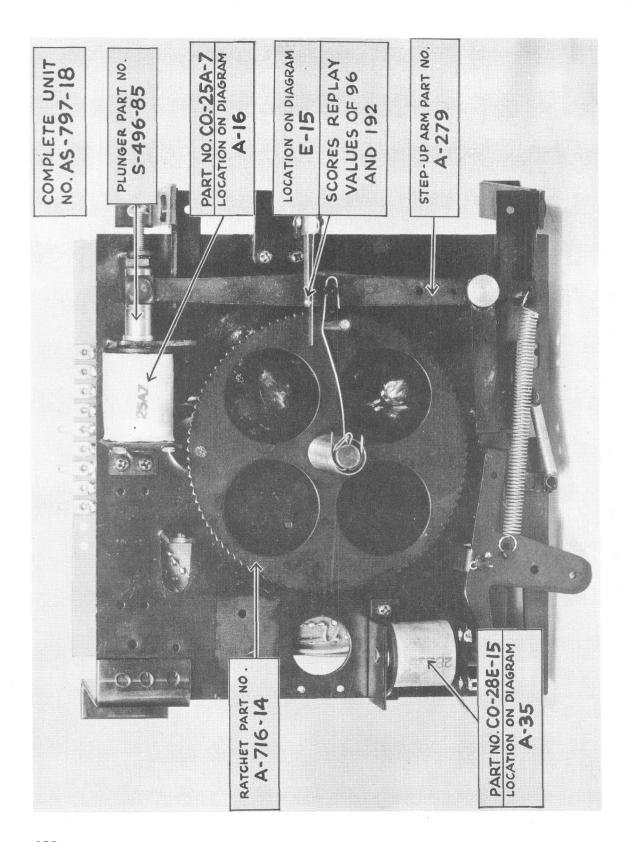
EXTRA BALL UNIT - COIL SIDE



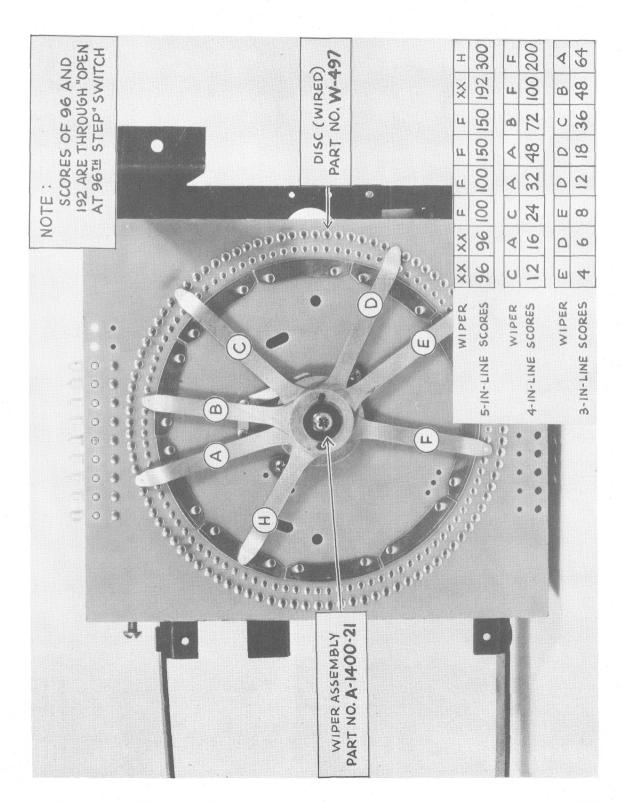
EXTRA BALL UNIT — WIPER SIDE



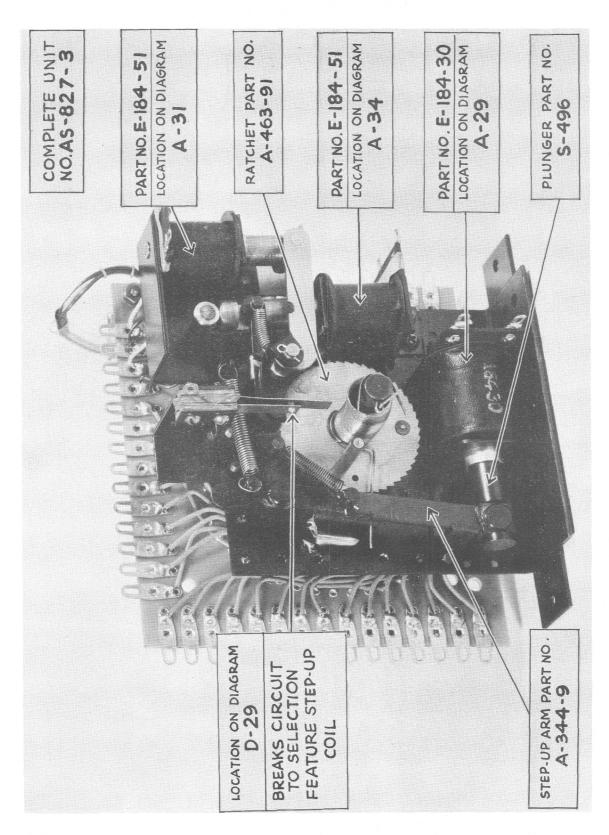
REPLAY COUNTER — COIL SIDE



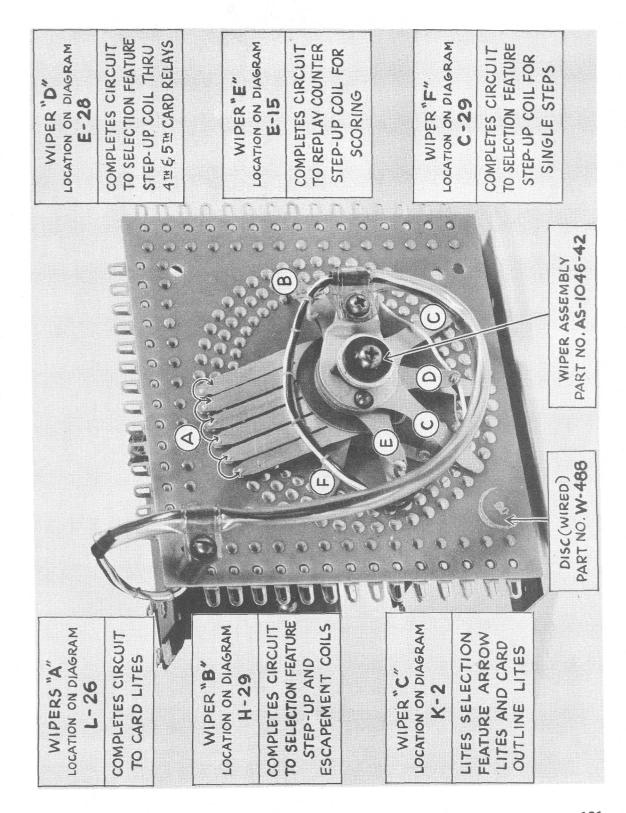
YACHT CLUB REPLAY COUNTER — WIPER SIDE



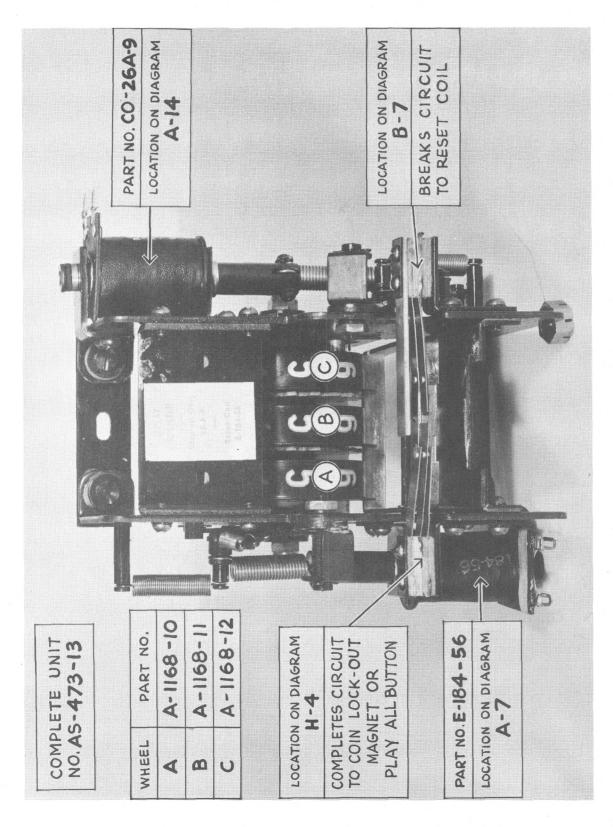
SELECTION FEATURE UNIT — COIL SIDE



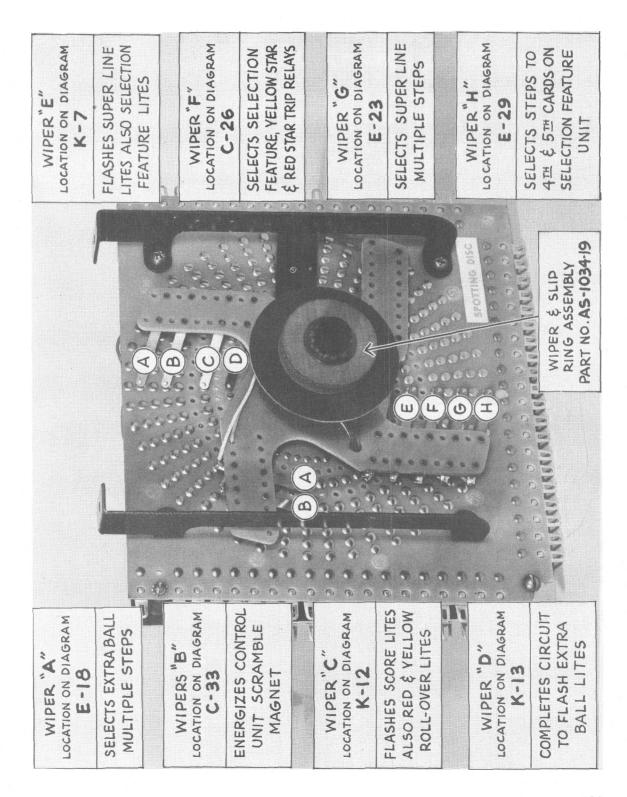
SELECTION FEATURE UNIT — WIPER SIDE



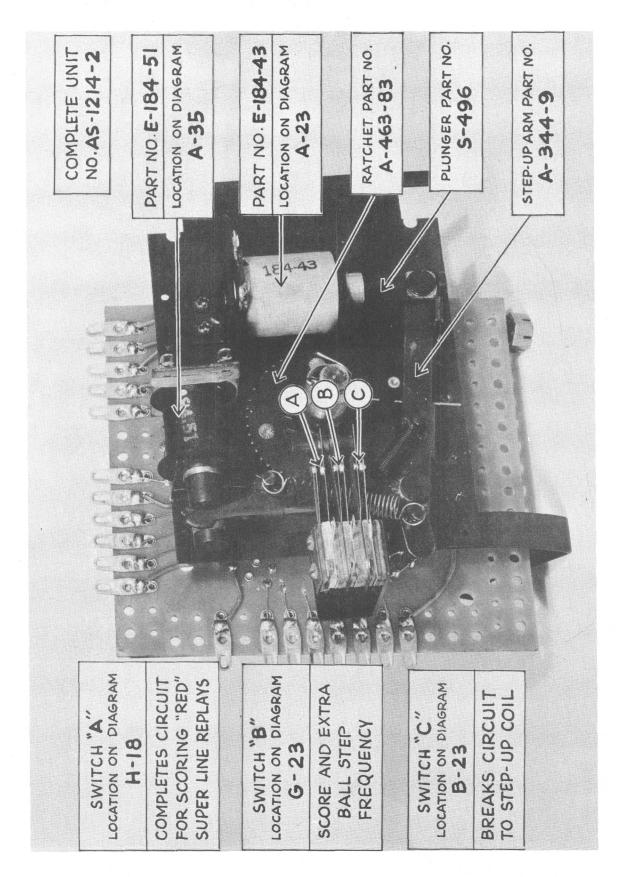
REPLAY REGISTER UNIT



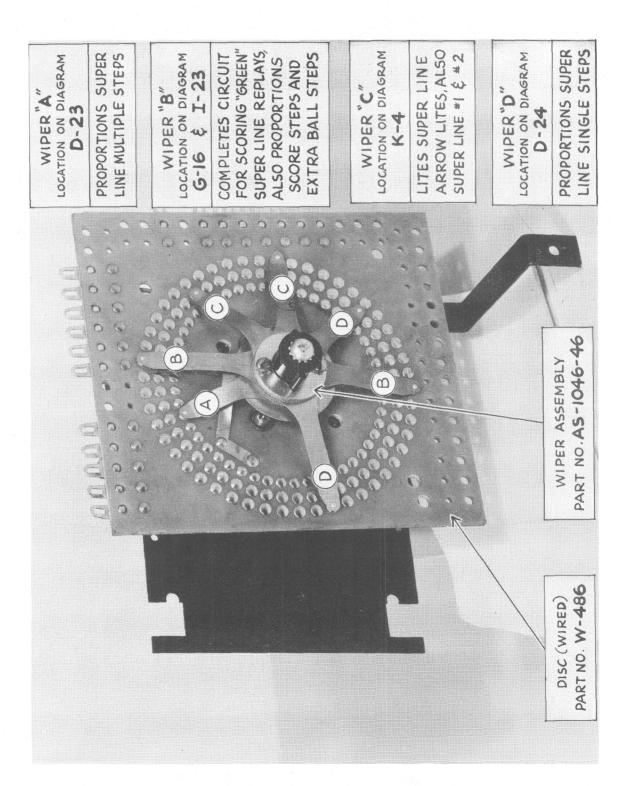
CONTROL UNIT SPOTTING DISC AND WIPERS



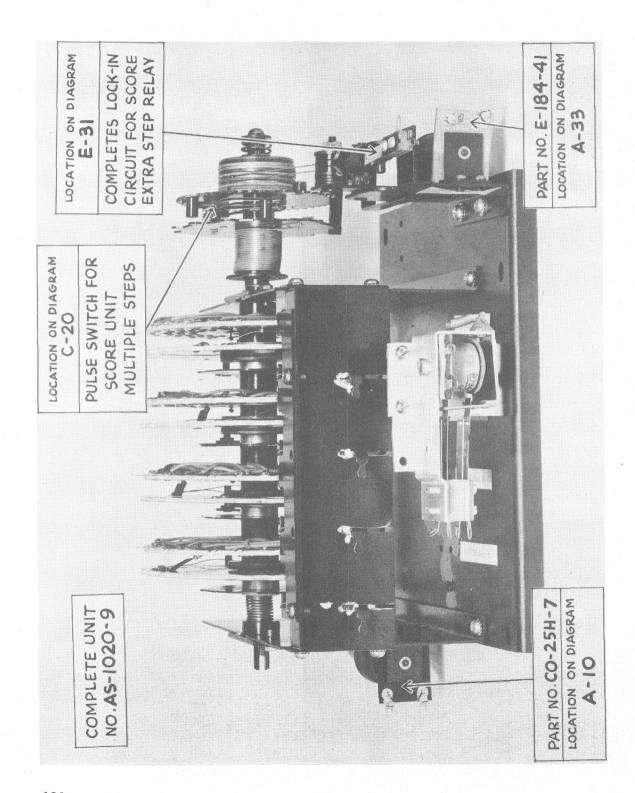
SUPER-LINE UNIT — COIL SIDE



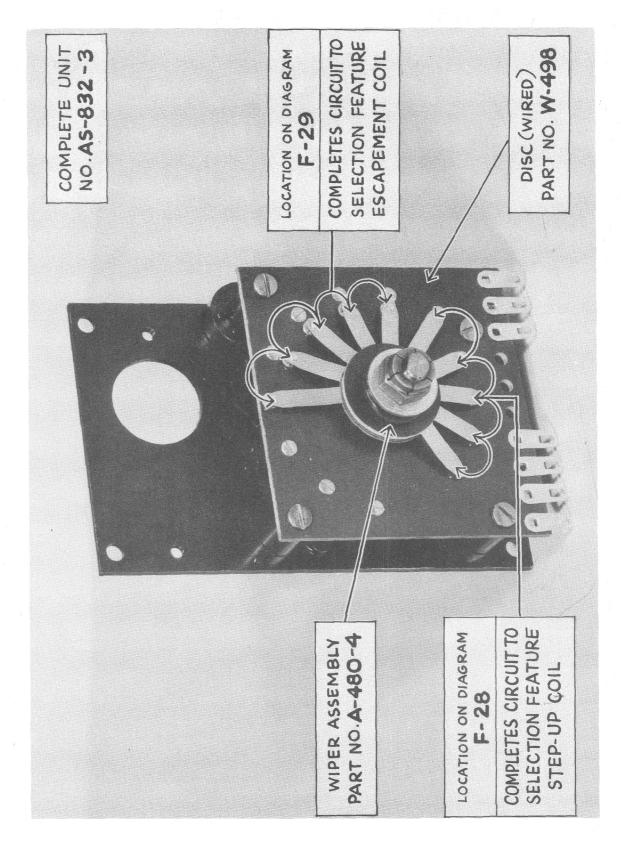
SUPER-LINE UNIT — WIPER SIDE



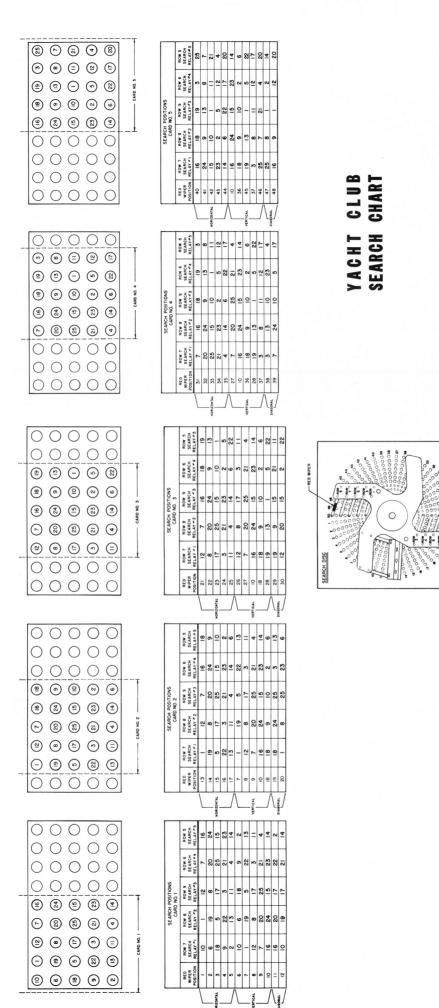
YACHT CLUB MIXER UNIT

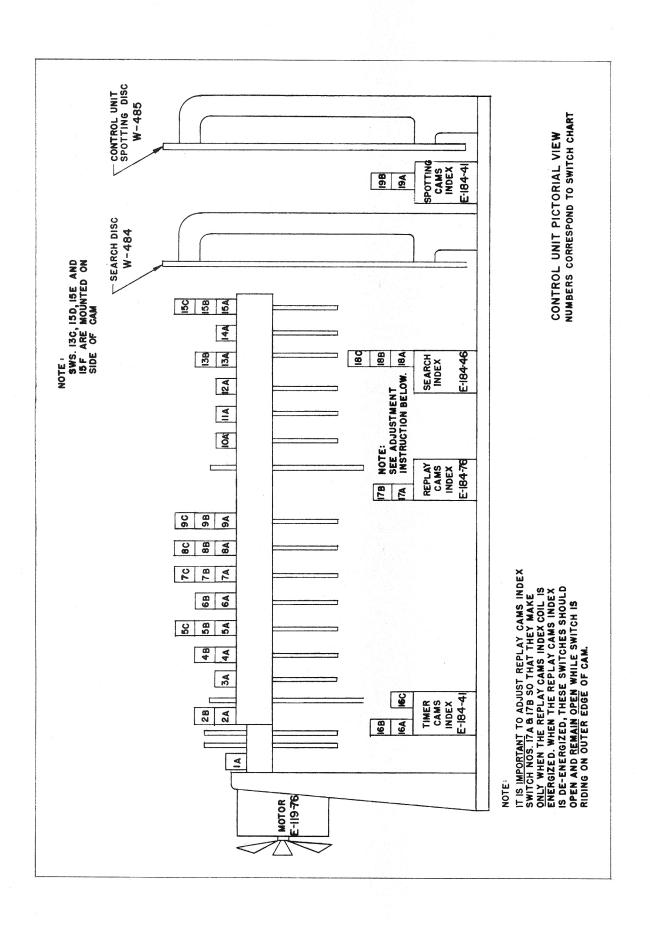


ROTARY SELECTOR UNIT



NOTES

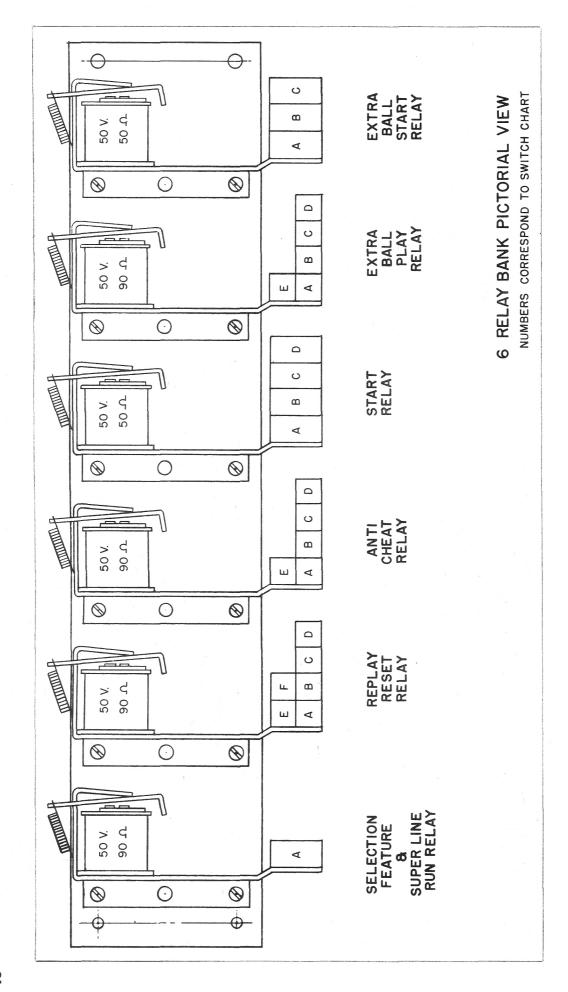




CONTROL UNIT CAM SWITCHES

FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW ABOVE

RELAY SWITCH OR CAM SWITCH	LOCATION ON DIAGRAM	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
1A N.O.	F-8	36-10 65-2	Yellow-Brown Brown-White	Energizes timer unit step-up coil.
2A N.O.	H7	30 27–4	Yellow Blue-Orange	Energizes replay register reset coil and reflex play magnet.
2B N.C.	F-10	30 15-2	Yellow Red-White	Drops out extra ball play relay.
3A N.C.	1-5	83-3	Black-Yellow	Drops out start and extra ball start relays.
4A N.O.	J-13	48-2	Green-Black Brown	Completes circuit to extra ball flash lites.
4B N.O.	C-33	74	Orange-Green Yellow	Energizes control unit spotting cams index coil and scores extra step index
		78-4	Orange-Black	coĭ1.
5A N.O.	G-8	71-9 65-2	Orange-Red Brown-White Brown-Yellow	Energizes timer reset coil during timing cycle.
5B N.O.	B-18 B-32	63-10 21-1 25	Blue-Red Blue-White	Energizes extra ball unit step-up coil. Steps unit from a minus one position to the zero position.
		78-10	0range-Black	Pulls in anti-cheat relay, after power to game has been turned off and then on.
6A N.C.	F-25	74-8 23-7	Orange-Green Blue-Yellow	Completes circuit to extra ball unit step-up coil for multiple steps.
6B N.C.	1-27	98-1 21-3	Grey-Black Blue-Red	Completes circuit to super line and selection feature step-up coils for multiple steps.
7A N.O.	B-19	25-4 63-10	Blue-White Brown-Yellow	Energizes extra ball unit step-up coil for single steps.
7B N.O.	C-22	54-5 90-5	White—Green Grey	Energizes score unit step-up coil for single steps.
7C N.O.	1-6	30 71–2	Yellow Orange—Red	Pulses coin lock magnet during timing cycle.
8A N.O.	D-26	83-8 61	Black-Yellow Brown-Red	Pulse switch for energizing red and yellow trip relays. Also selection feature trip relay.
8B N.O.	C-24	65-5 36	Brown-White Yellow-Brown	Energizes super line unit step-up coil for single steps.
8C N.O.	B-29	23-2 50-8	Blue-Yellow White	Energizes selection feature step-up coil for single steps.
9A Alt.	D-20	71	Orange-Red	Proportions score multiple steps.
9B Alt.	D-18	25-3 91-9 48-4	Blue-White Grey-Red Green-Black	Proportions extra ball multiple steps.
9C Alt.	F-23	93-9 74-8	Grey-Yellow	Description of the second seco
9C Alt.	F-23	56-4	Orange-Green White-Brown	Proportioning for scores and extra balls.
10A N.O.	8-15	54-8 93-8	White—Green Grey—Yellow	Replay multiplier switch.
11A N.O.	8-15	54-8 91-8	White-Green Grey-Red	Replay multiplier switch.
12A N.O.	8-16	54-8 90-8	White-Green Grey	Replay multiplier switch.
13A N.O.	8-16	54-8	White-Green	Replay multiplier switch.
13B N.O.	8-14	81-8 38-4 80-10	Black-Red Yellow-Black	Energizes replay register step-up coil and reflex replay magnet.
13C N.O.	H-14	27 21–3	Black Blue-Orange Blue-Red	Completes lock—in circuit for search index coil and replay cams index coil.
14A N.C.	1-15	56-7	White-Brown	Prevents the start of a second replay scoring until the replay cams are
15A N.O.	C-23	93 93–1	Grey-Yellow Grey-Yellow	indexed in their normal position. Pulses super line unit for multiple steps.
15B N.O.	C-28	36 56-10	Yellow-Brown White-Brown	Pulses selection feature unit for multiple steps.
15C N.O.	1-29	52-5 54-6	White-Blue White-Green	Energizes selection feature escapement coil.
15D N.O.	B-17	142 78	Red-Green Orange-Black	Energizes extra ball unit step-up coil for multiple steps.
15E N.O.	C-6	63-10 75-2	Brown-Yellow Orange-White	Pulse switch for operating replay meter and replay register reset coil
15F N.O.	K-9	53-2 15-3	White-Yellow Red-White	when replay reset relay is energized. Pulse switch for flashing "Select Now" lite.
IMER CAMS	A-10	60-5 70	Brown	
NDEX COIL	A-10 D-9	80-4 81-2	Orange Black Black-Red	Energized by switches on start relay and extra ball start relay. Completes lock-in circuit for extra ball play relay during timing cycle.
-	0-9 G-6	81-2 74-2 14-9	Orange-Green Red-Green	Opens circuit to coin lock-out magnet during timing cycle.
	G-6	71-2 20-P	Orange-Red Blue (Plastic)	opens circuit to coin lock—out magnet during timing cycle. Completes circuit to run control unit motor.
		60-P	Brown (Plastic)	
EPLAY CAMS NDEX COIL	A-14	70 40–4	Orange Green	Energized by switch on search index, when 3 or more in line are scored.
17A N.O.	G-14	80 -1 0 27	Black Blue-Orange	Completes lock—in circuit for search index coil and replay cams index coil. NOTE: See pictorial view above for proper adjustment.
17B N.O.	H-15	56-7 93	White—Brown Grey—Yellow	Completes lock-in circuit for search index coil when replay cams index coil is energized. NOTE: See pictorial view above for proper adjustment.
SEARCH INDEX	A-13	70 80 -1 0	Orange Black	Energized when 3 or more in line are scored.
18A N.O.	A-14	80 - 10 40-4	Black Green	Energizes replay cams index coil.
18B N.C.	8-8	27-2 90-9	Blue-Orange Grey	Opens timer step-up circuit while replays are being scored.
18C N.C.	1-5	30 83-3	Yellow Black-Yellow	Opens start and extra ball start relay circuits while replays are being scored.
POTTING CAMS	A-33	70 78–4	Orange Orange—Black	Energized by control unit cam switch #48.
19A N.O.	J-6	36-5 83-4	Yellow-Brown Black-Yellow	Completes circuit to flash selection feature lites.
19B N.O.	J-13	13-4 30-5	Red-Yellow Yellow	Completes circuit to flash score lites also red and yellow star rollover lites.

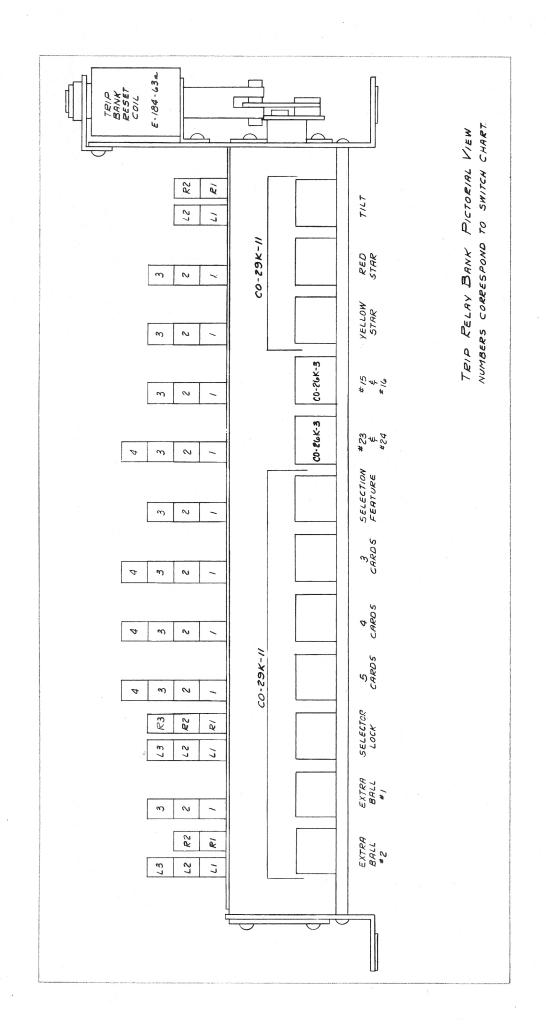


6 RELAY BANK SWITCHES

FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW ABOVE

CODE

RELAY SWITCH OR CAM SWITCH	LOCATION ON DIAGRAM	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
SELECTION FEATURE AND SUPER CARD RUN RELAY COIL	A-30	70 83–8	Orange Black—Yellow	Protects Selection Feature and Super Card multiple step runs.
A N.O.	H-27	98 –1 83–8	Grey-Black Black-Yellow	Lock—in switch for selection feature and super card run relay.
REPLAY RESET RELAY COIL	A-6	70 75–2	Orange Orange—White	Energizes when anti-cheat relay drops out.
A S.P.D.T.	C-7	53-2 13-9 27-4	White-Yellow Red-Yellow Blue-Orange	Directs circuit to replay meter during replay cancel.
B N.O.	G-2	20-P 60-P	Blue (Plastic) Brown(Plastic)	Operates Control Unit motor.
C N.O.	D-6	50-2 75-2	White Orange-White	Lock—in switch for replay reset relay.
D N.C.	E-3	63-2 21-6	Brown-Yellow Blue-Red	Opens start circuit during replay cancel.
E N.C.	E-5	20-3 25-10	Blue Blue-White	Opens extra ball start circuit during replay cancel.
F N.O.	A6	41-6 61-5	Green-Red Brown-Red	Completes circuit to replay meter during replay cancel.
ANTI-CHEAT RELAY COIL	A-32	70 25	Orange Blue-White	Energized by cam switch #5c.
A N.O.	B-32	78-10 25	Orange-Black Blue-White	Lock—in switch for anti-cheat relay.
B N.O.	L-31	10 10-10	Red Red	Breaks 17 volt circuit when relay drops out.
C N.O.	L-26	40-7 54-7	Green White-Green	Breaks 6 volt circuit when relay drops out.
D N.O.	B-9	91-2 93-6	Grey-Red Grey-Yellow	Completes circuit to extra ball play relay.
E N.C.	E6	50-2 75-2	White Orange-White	Energizes replay reset relay when anti-cheat relay drops out.
START RELAY COIL	A-3	70 21–6	Orange Blue—Red	Energized by coin switch and red button switch
A N.C.	B-9	91-2 81-2	Grey-Red Black-Red	Opens circuit to extra ball play relay.
B N.C.	B-23	36 10-5	Yellow-Brown Red	Opens circuit to super line unit step-up coil.
C N.O.	G-3	48-2 63-2	Green-Black Brown-Yellow	Lock-in switch for start relay.
D N.O.	E-10	41-3 13-3	Green-Red Red-Green	Completes circuit to timer cams index coil.
EXTRA BALL PLAY RELAY COIL	A-9	70 93–6	Orange Grey—Yellow	Energizes when yellow button is pressed.
A S.P.D.T.	F4	50-2 51-2 63-2	White White-Red Brown-Yellow	Directs circuit to start relay or extra ball start relay.
B S.P.D.T.	E-10	74-2 15-2 41-3	Orange-Green Red-White Green-Red	Completes circuit to timer cams index coil, also lock—in switch for extra ball play.
C N.O.	J-29	30 2 1 –4	Yellow Blue-Red	Lights extra ball lite in back box.
D N.O.	F-5	25-10 51-2	Blue-White White-Red	Completes circuit to extra ball start and extra ball trip relays.
E N.C.	J-6	30 83–4	Yellow Black-Yellow	Opens super line flash circuits.
EXTRA BALL START RELAY COIL	A5	70 20–3	Orange Blue	Energizes when yellow button is pressed.
A N.C.	B-17	75–6 78	Orange-White Orange-Black	Opens circuit to extra ball unit step-up coil.
B N.O.	C-10	74-2 80-4	Orange-Green Black	Operates mixer latch and timer cam index coil.
C N.O.	G5	48-2 25-10	Green-Black Blue-White	Lock—in switch for extra ball start relay.

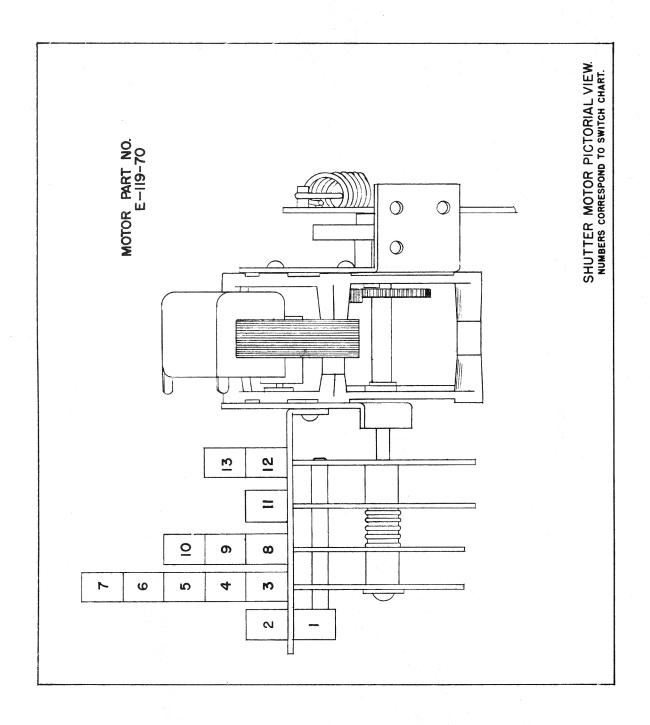


YACHT CLUB TRIP RELAY BANK CHART

FOR POSITION OF SWITCHES

CODE
N.C NORMALLY CLOSED
N.ONORMALLY OPEN
M.B.B MAKE BEFORE BREAK
S.P.D.T SINGLE POLE DOUBLE THROW

RELAY SWITCH DR CAM SWITCH	LOCATION ON DIAGRAM	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
EXTRA BALL #2	A4	70	Orange	Energized by switch on extra ball play relay.
TRIP COIL L1 S.P.D.T.	G-21	20-3 45-6 41-10	Blue Green-White	Directs circuit to score unit step-up coil or extra ball unit step-up coil.
		80-3	Green-Red Black	
L2 S.P.D.T.	H-24	74-8 15-6 75-10	Orange-Green Red-White Orange-White	Extra ball proportioning factor thru score disc.
L3 N.O.	1-20	41-10 18-8	Green-Red Red-81ack	Extra ball proportioning.
R1 S.P.D.T.	G-25	23-7 50-10	Blue-Yellow White	Extra ball proportioning.
R2 N.C.	F-25	52-1 74-8	White-Blue Orange-Green Black-Yellow	Breaks circuit to "Red Button" advantages.
EXTRA BALL #1	A-4	83-8	81ack-Yellow Orange	Energized by switch on extra ball play relay.
TRIP COIL	J-12	20-3	Blue Brown	Directs circuit to flash score and rollover lite or extra ball lites.
		30 13–4	Yellow Red-Yellow	
2 S.P.D.T.	D-20	61-2 30 71	Brown-Red Yellow Orange-Red	Breaks circuit to score unit step-up coil and completes circuit to step extra ball unit from minus one to zero position.
3 N.O.	D-12	91-1 38-3	Grey-Red Yellow-Black	Completes circuit to ball lifter motor.
SELECTOR LOCK	A-8	70 Jumper	0range	Energized by ball lifter cam switch when timer steps to 4th position.
.1 N.O.	D-8	71–4 27–2	Orange-Red Blue-Orange	Completes circuit to timer step-up coil thru control unit cam switch 1A.
.2 N.O.	D-9	13 80-2	Red-Yellow Black	Completes circuit to energize extra ball play relay.
.3 N.C.	B-8	61-10 Jumper	Brown-Red	Breaks circuit to its own coil, when this relay is tripped.
N.O.	I-15	56-7 18-4	White-Brown Red-Black	Completes replay circuit when this relay is tripped.
2 N.C.	H-29	54-6 74-3	White-Green Orange-Green	Completes circuit to step-up and reset selection feature unit.
73 N.C.	J-8	14-1 15-3	Red-Green Red-White	Breaks circuit to "Select Now" lite.
Cards Trip	A-25	70 Jumper	0 range	Energizes when selection feature unit steps to 9th position.
S.P.D.T.	J-8	18-2 14-1	Red-Black Red-Green	Completes circuit for 3 and 5 card arrow lites.
N.C.	H-21	51 90-3	White-Red Grav	Proportioning for scores and extra ball steps.
N.C.	8-25	60-4	Green-Red Brown	Breaks circuit to this coil.
N.O.	D-27	Jumper 51-7	White-Red	Completes circuit to selection feature step-up coil.
Cards Trip	A-24	52-5	White-Blue Orange	Energizes when selection feature unit steps to 8th position.
s.P.D.T.	J8	Jumper 10-2	Red	Completes circuit for 3 and a card arrow lites.
1		51 38–9	White-Red Yellow-Black	
N.C.	H-21	36-2 41-10	Yellow-Brown Green-Red	Proportioning for scores and extra ball steps.
N.C. N.O.	B-24 D-27	65-4 Jumper	Brown-White	Breaks circuit to this coil. Completes circuit to selection feature step-up coil.
		43-1 52-5	Green-Yellow White-Blue	
Cards Trip	A-24 K-7	70 Jumper 14-1	0 range Red-Green	Energizes when selection feature unit steps to 7th position. Completes circuit to "Select one of lite"
S.P.D.T.	L-1	20 10-2 18	Blue Red Red-Black	Breaks circuit to selection indicator lites.
N.C.	B-24	56-1 81	White-Brown Black-Red	Breaks circuit to this coil.
N.O.	J-7	Jumper 38-9	Yellow-Black	Completes ci .uit to 3 cards arrow lite.
	A-25	70	Black-Yellow	Energized by control unit cam #8A, when circuit is complete thru all other factors.
RIP COIL	J=8	38-6 14-1	Orange Yellow-Black Red-Green	other factors. Completes circuit to all selection feature lites.
N.O.	B-28	30 52-5	Yellow White-Blue	Completes circuit to selection feature step-up coil.
N.C.	G-22	50-8 41-10 93-4	White Green-Red Grey-Yellow	Scores and extra ball proportioning.
	8-11	93–4 70	Grey-Yellow Orange	Energized when red star trip relay is tripped and ball hits corresponding rollover switch on panel.
723 & #24 RIP COIL N.O.	J-32	Jumper 74-1	Orange-Green Yellow	rollover switch on panel. Lites #24 card lite.
N.O.	J-32	30 71–1	Orange-Red	Lites #23 card lite.
N.C.	E-20	30 78-1	Yellow Orange-Black Green-Black	Extra ball proportioning thru mixer #4.
N.C.	B-11	48-6 60-6	Brown	Breaks circuit to this coil when tripped.
#15 & #16	B-11	Jumper 70	0range	Energized when yellow star trip relay is tripped and ball hits corresponding rollover switch on panel.
RIP COIL N.O.	J-32	Jumper 56	White-Brown	corresponding rollover switch on panel. Lites #16 card lite.
N.O.	J-32	30 54-1 30	Yellow White-Green Yellow	Lites #15 card lite.
N.C.	F-20	78-1 75-4	Orange-Black Orange-White	Extra ball proportioning thru mixer #4.
N.C.	8-11	85-9 Jumper	Black-White	Breaks circuit to this coil when tripped.
ELLOW STAR	A-26	70 74–10	Orange Orange-Green	Energized by control unit cam switch #8A when circuit is complete thru all other factors.
RIP COIL N.O.	J-12	53-6 30	White-Yellow Yellow	Lites yellow star rollover lite.
N.O.	D-11	75-9 85-9	Orange-White Black-White	Completes circuit to energize \$15 & \$16 relay.
N.C.	C-27	50-4 13-6	White Red-Yellow	Proportioning for red star trip relay.
ED STAR RIP COIL	A-27	70 13-6	Orange Red-Yellow	Energized by control unit cam switch #8A when circuit is complete thru all other factors.
N.O.	J-12	52-6 30	White-Blue Yellow	Lites red star rollover lite.
N.O.	0-11	78-9 60-6	Orange-Black Brown	Completes circuit to energize #23 & #24 relay.
8 N.C.	C-26	74-10 98-5	Orange-Green Grey-Black	Proportioning for yellow star trip relay.
ILT TRIP COIL	A-12	70 23–5	Orange Blue-Yellow	Energized by plumb bob tilt in cabinet.
1 S.P.D.T.	L-29	41-9 45-8	Green-Red Green-White	Breaks 6 volt lite circuit and lites tilt lite.
.2 N.C.	G-1	81-6	B1ack-Red	Breaks circuit to control unit motor.
		10 P 60 P	Red (Plastic) Brown (Plastic)	
81 S.P.D.T.	I-11	91-5 30 21-3	Grey-Red Yellow Blue-Red	Breaks circuit to ball counting, extra ball and replay circuit. Completes circuit to shutter motor.
2 N.C.	L-30	10-6	Red	Breaks 17 volt circuit.

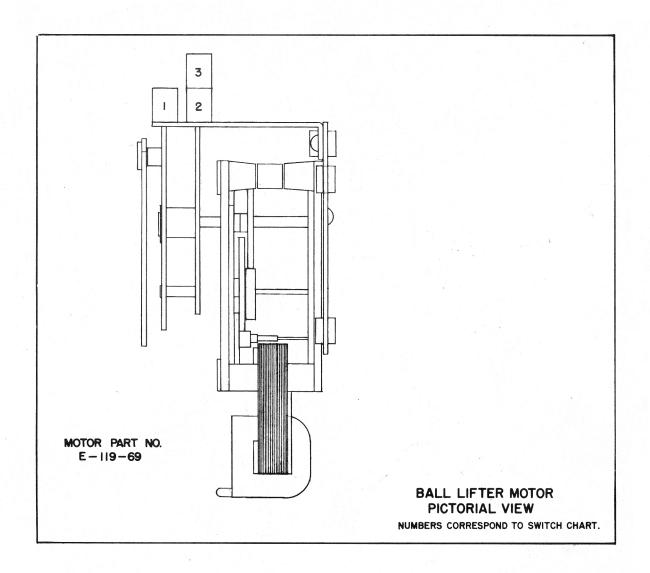


SHUTTER MOTOR CAM SWITCHES FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW ABOVE

N.C. NORMALLY CLOSED
N.O. NORMALLY OPEN
M.B.B. MAKE BEFORE BREAK
S.P.D.T. ... SINGLE POLE DOUBLE THROW

CODE

HOTELS VALUE	LOCATION			
OR CAM SWITCH	DIAGRAM	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
1 N.O.	πE-3	30 98-8	Yellow Grey-Black	Energizes score unit reset coil, selection feature complete reset coil and extra ball unit reset coil.
2 N.O.	1-31	30 61-7	Yellow Brown-Red	Energizes selection feature escapement coil.
3 S.P.D.T.	D-10	20-6 13-3 80-4	Blue Red-Yellow Black	Breaks circuit to shutter motor and makes circuit to timer cams index coil.
т N.О.	G-11	18-3 20-6	Red-Black Blue	Completes circuit to shutter motor.
5 N.O.	H-11	91-5 18-3	Grey-Red Red-Black	Completes circuit to shutter motor.
6 N.O.	E-27	83-8 85-1	Black-Yellow Black-White	Completes circuit to selection feature step-up coil.
7 N.C.	1–29	14-2 21-3	Red-Green Blue-Red	Completes circuit to selection feature unit step-up coil.
8 N.O.	C-35	30 83-2	Yellow Black-Yellow	Energizes replay counter reset cojl and super line unit reset coil.
9 N.O.	8-1	30 71–9	Yellow Orange-Red	Energizes timer unit reset coil.
10 N.O.	G-2	70-P 20-P	Orange (Plastic) Blue (Plastic)	Orange (Plastic) Energizes trip bank reset coil. Blue (Plastic)
11 N.C.	F-13	31-3 36-3	Yellow-Red Yellow-Brown	Completes circuit to ball lifter motor.
12 N.C.	1-14	21–3 93	Blue-Red Grey-Yellow	Completes replay circuit for scoring replays.
13 N.O.	G -1 0	30 20–6	Yellow Blue	Carry—over switch for shutter motor.



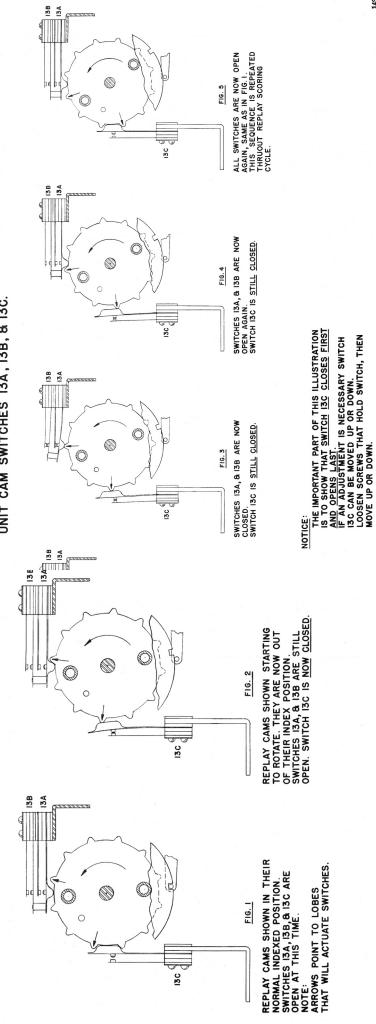
BALL LIFTER MOTOR CAM SWTCHES

FOR POSITION OF SWITCHES
REFER TO PICTORIAL VIEW ABOVE

CODE	
N. C NORMALLY CLOSED	
N. O NORMALLY OPEN	
M. B. B MAKE BEFORE BREAK	
S. P. D. T SINGLE POLE DOUBLE THROW	

RELAY S		LOCATION ON DIAGRAM	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
1	N.O.	G-13	30 9 1 –1	Yellow Grey-Red	Carry-over switch for ball lifter motor.
2	N.O.	H-8	30 10-4	Yellow Red	Energizes selector lock trip relay coil
3	N.O.	E-9	43-2 27-3	Green-Yellow Blue-Orange	Energizes timer unit step-up coil.

CORRECT ADJUSTMENT FOR CONTROL UNIT CAM SWITCHES 13A, 13B, & 13C.



MISCELLANEOUS PARTS

G-225 Back Glass M-168-13 Ball 1 1/8" A-1475 Ball Gate P-1950-71 Ball Gate Spring Only AS-493-2 Ball Rebound Assembly C-119-4 Bumper Post P-1900-10 Cash Box A-1533 Coin Slide AS-277-21 Coin Switch Assembly - Complete 5¢ AS-277-22 Coin Switch Assembly - Complete 10¢ Ca-567-9 Front Door Only CA-665-2 Front Moulding A-1138-6 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Replay Control Unit A-1138-7 Index Arm Spotting Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box Ca-350-1 Leg C-258-5 Light Shield Post - Top Panel Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 Plate - Coin Entry 5¢ Plate - Coin Entry 5¢ Plate Instruction R-203 Rebound Rubber for AS-493-2	PART NO.	NAME OF PART
A-1475	G-225	Back Glass
P-1950-71 Ball Gate Spring Only	M-168-13	Ball 1 1/8"
AS-493-2 C-119-4 P-1900-10 Cash Box A-1533 Coin Slide AS-277-21 Coin Switch Assembly - Complete 5¢ AS-277-22 Coin Switch Assembly - Complete 10¢ CA-567-9 CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit Index Arm Timing Control Unit A-1138-6 Index Arm Replay Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-1 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 CA-350-1 Leg C-258-5 Index Arm Spotting Control Unit M-281-6 M-281-14 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 Plate - Coin Entry 10¢ P-2210-16 R-203 Rebound Rubber for AS-493-2	A-1475	Ball Gate
AS-493-2 C-119-4 Bumper Post P-1900-10 Cash Box A-1533 Coin Slide AS-277-21 Coin Switch Assembly - Complete 5¢ AS-277-22 Coin Switch Assembly - Complete 10¢ CA-567-9 CA-567-9 CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit Index Arm Timing Control Unit A-1138-6 Index Arm Replay Control Unit Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box CA-350-1 CA-350-1 Leg C-258-5 Index Arm Spotting Control Unit M-281-6 M-281-6 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 Plate - Coin Entry 10¢ P-2210-16 R-203 Rebound Rubber for AS-493-2	P-1950-71	Ball Gate Spring Only
C-119-4 P-1900-10 Cash Box A-1533 Coin Slide AS-277-21 Coin Switch Assembly - Complete 5¢ AS-277-22 Coin Switch Assembly - Complete 10¢ E-130- CA-567-9 Front Door Only CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-7 Index Arm Replay Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 CA-350-1 Leg C-258-5 M-281-6 M-281-6 M-281-6 M-281-14 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 P-2210-16 R-203 Rebound Rubber for AS-493-2	AS-493-2	Ball Rebound Assembly
A-1533 Coin Slide AS-277-21 Coin Switch Assembly - Complete 5¢ AS-277-22 Coin Switch Assembly - Complete 10¢ E-130- Counter 48 Volt CA-567-9 Front Door Only CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-6 Index Arm Replay Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 Lamp #58 20 Volt Lite Box CA-350-1 Leg C-258-5 Light Shield Post - Top Panel M-281-6 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 Plate - Coin Entry 5¢ P-2210-9 Plate - Coin Entry 10¢ P-2210-16 Rebound Rubber for AS-493-2	C-119-4	• • • • • • • • • • • • • • • • • • • •
AS-277-21 Coin Switch Assembly - Complete 5¢ AS-277-22 Coin Switch Assembly - Complete 10¢ E-130- Counter 48 Volt CA-567-9 Front Door Only CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-6 Index Arm Replay Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 Lamp #58 20 Volt Lite Box CA-350-1 Leg C-258-5 Light Shield Post - Top Panel M-281-6 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 Plate - Coin Entry 5¢ P-2210-9 Plate - Coin Entry 10¢ P-2210-16 R-203 Rebound Rubber for AS-493-2	P-1900-10	Cash Box
AS-277-22 E-130- CA-567-9 Front Door Only CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 E-125-5 Lamp #47 Top Panel E-125-1 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 CA-350-1 Leg C-258-5 Light Shield Post - Top Panel M-281-6 M-281-14 Lock and Keys - Front Door M-281-14 P-2210-8 P-2210-9 Plate - Coin Entry 5¢ P-2210-16 R-203 Rebound Rubber for AS-493-2	A-1533	Coin Slide
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CA-567-9 CA-665-2 Front Door Only CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit Index Arm Timing Control Unit A-1138-6 Index Arm Replay Control Unit Index Arm Spotting Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 CA-350-1 CA-350-1 Leg C-258-5 M-281-6 M-281-6 M-281-6 P-2210-8 P-2210-9 P-2210-16 R-203 Rebound Rubber for AS-493-2	AS-277-22	
CA-567-9 CA-665-2 Front Moulding A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-7 Index Arm Replay Control Unit E-125-2 Lamp #47 Top Panel E-125-5 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 CA-350-1 Leg C-258-5 Light Shield Post - Top Panel M-281-6 M-281-6 Dock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 P-2210-16 R-203 Rebound Rubber for AS-493-2	E-130-	· -
CA-665-2 A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 E-125-5 Lamp #47 Top Panel E-125-1 CA-350-1 CA-350-1 C-258-5 M-281-6 M-281-6 M-281-6 M-281-6 P-2210-8 P-2210-9 P-2210-16 R-203 Front Moulding Index Arm on Index Coil Assembly - Extra Step Unit Index Arm Timing Control Unit Index Arm Replay Control Unit Index Arm Spotting Control Unit Index Arm Spotting Control Unit Index Arm Timing Control Unit Index Arm Pelay Index I		Front Door Only
A-1138-3 Index Arm on Index Coil Assembly - Extra Step Unit A-1138-6 Index Arm Timing Control Unit A-1138-7 Index Arm Spotting Control Unit E-125-2 E-125-5 Lamp #47 Top Panel E-125-1 Lamp #55 6-8 Volt Bottom Panel & Lite Box E-125-1 CA-350-1 CA-350-1 Leg C-258-5 Light Shield Post - Top Panel M-281-6 M-281-6 M-281-14 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 Plate - Coin Entry 5¢ P-2210-16 R-203 Rebound Rubber for AS-493-2		
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E-125-1 CA-350-1 Leg C-258-5 Light Shield Post - Top Panel M-281-6 M-281-14 Lock and Keys - Front Door M-2210-8 P-2210-9 P-2210-16 R-203 Lamp #58 20 Volt Lite Box Log Post - Top Panel Lock and Keys - Front Door Lock and Keys - Back Door Plate - Coin Entry 5¢ Plate - Coin Entry 10¢ Plate Instruction Rebound Rubber for AS-493-2		
CA-350-1 C-258-5 Light Shield Post - Top Panel M-281-6 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 Plate - Coin Entry 5¢ P-2210-16 Plate Instruction R-203 Rebound Rubber for AS-493-2		•
C-258-5 Light Shield Post - Top Panel M-281-6 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 Plate - Coin Entry 5¢ P-2210-9 Plate - Coin Entry 10¢ P-2210-16 R-203 Rebound Rubber for AS-493-2		-
M-281-6 Lock and Keys - Front Door M-281-14 Lock and Keys - Back Door P-2210-8 P-2210-9 P-2210-16 P-2210-16 R-203 Lock and Keys - Front Door Lock and Keys - Front Door Plate - Coin Entry 5¢ Plate - Coin Entry 10¢ Plate Instruction Rebound Rubber for AS-493-2		
M-281-14 Lock and Keys - Back Door P-2210-8 Plate - Coin Entry 5¢ P-2210-9 Plate - Coin Entry 10¢ P-2210-16 Plate Instruction R-203 Rebound Rubber for AS-493-2		
P-2210-8 P-2210-9 Plate - Coin Entry 5¢ P-2210-16 Plate Instruction R-203 Rebound Rubber for AS-493-2		
P-2210-9 Plate - Coin Entry 10¢ P-2210-16 Plate Instruction R-203 Rebound Rubber for AS-493-2		
P-2210-16 Plate Instruction R-203 Rebound Rubber for AS-493-2		
R-203 Rebound Rubber for AS-493-2		
M-170 Rebound Spring Double Post Top Panel	M-170	Rebound Spring Double Post Top Panel
E-105-6 Resistor Bottom Panel		
AS-187-12 Shooter Assembly Complete		
A-1540 Shooter Housing Only		-
A-100-7 Shooter Rod		<u> </u>
SP-200-24 Shooter Spring		
SP-233 Shooter Spring Outside Barrel		
R-108-3 Shooter Tip		
M-280-15 Slug Rejector 5¢		
M-280-16 Slug Rejector 10¢		
E-122-19 Transformer		The state of the s
M-412-2 Wire Wiper only for Slip Rings		