



OUT ^{of} SIGHT

INSTALLATION PROCEDURES AND GAME OPERATION INSTRUCTIONS

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OUT OF SIGHT

INSTALLATION PROCEDURES AND GAME OPERATION INSTRUCTIONS

All games have been carefully inspected before leaving the factory. However, minor troubles may result due to vibration during shipment. Plugs may come out of their sockets, tilt switches may be out of adjustment, etc.

The following steps should be taken to insure the proper operation of this machine:

VISUAL INSPECTIONS TO BE DONE BEFORE PLUGGING IN LINE CORD

1. Check for foreign material across the contacts.
2. Look for disconnected wires.
3. Check plugs to be sure they are securely seated in the sockets.
4. Dress cables to keep away from moving parts.
5. Inspect for cold solder connections.
6. Manually operate all step-up units. Action should not be sluggish.
7. Check the fuses. They should be firmly seated in the clips.
8. Adjust leg levers so that playboard has desired pitch and is level to the horizontal axis.
9. Check the tilt switches. Vibration tilt on playboard, pendulum tilt and ball roll tilt on side panel.
10. Adjust ball roll tilt and pendulum tilt.
11. Check the bounce switches on the bottom panel and in the lightbox.

PLUG IN THE LINE CORD

The coin chute lights and the scene lights in the lightbox should go on. If not, operate the on-off switch located at the bottom right front corner of the cabinet.

Raise the playboard and close the front door. Drop coins through the coin entrances to check alignment of coin feed troughs to rejectors. Check coin lockout wireforms; they should be out of the path of the coins when the game is on.

If the 1st coin chute adjustment is in 1 play position, inserting a coin in the 1st chute will actuate the start relay "S". Inserting a coin in the 2nd chute will actuate the 2nd chute relay "W". "W" relay will step the "replay" unit as indicated by the 2nd chute adjustment plug. (2, 3, 4, or 5 steps.)

If the 1st coin chute adjustment is in 2nd chute adjustment position, inserting a coin in the 1st or 2nd chute will actuate the 2nd chute relay "W".

In the above examples, if the coin actuates "W" relay it is necessary to push the red button on the front door to start the game.

OPERATING INSTRUCTIONS

1. Inserting a coin or pushing the replay button actuates "S" relay (start relay).
2. This relay will lockin through its own switch and a motor 2B switch.
3. "S" relay starts the motor running.
4. "SB2" relay and the total play meter are actuated by a switch on motor 2C through a switch that has been closed on "S" relay.
5. When "SB2" relay is tripped the score units and player unit reset sequence starts. The 1st player score units reset to zero through the P3 switch stack on the player unit by motor switch 1A. When these units reach zero the player unit steps once, the 2nd player score units reset to zero through the P4 switch stack on the player unit by motor switch 1A. When these units reach zero the player unit steps until P5A opens. The score units and player unit are now reset.
6. The control bank is reset by a switch on motor 1B through a switch on "U" relay.
7. Inserting additional coins or pushing the replay button will actuate the 2nd player relay (PB) through motor 2C switch.
8. Place the ball in the outhole. The ball return switch closes and completes the circuit to "O" relay through the zero position switch on the bonus unit and "QB". "O" relay locks in through its own switch and a switch on motor 2B. When "O" relay is energized, motor 4C actuates the ball return coil (which kicks the ball onto the runway) through a switch on "O" and normally closed switches on "P" and "XB" relays. The ball is now on the runway and is ready to be put into play.
9. The remaining balls that enter the outhole are kicked across the trough switch which pulls in "P" relay. "P" relay pulls in "O" relay which runs the motor. Switches on "XB", "ZB", motor 2C, "P", and motor 1A advances the player unit the required number of steps determined by the player unit switches and the player relay. (PB)

WHEN A TILT SWITCH IS MADE THE PLAYER LOSES THE BALL IN PLAY. IF THE PLAYER CAUSES ONE OF THE BOUNCE SWITCHES TO OPEN (IN THE LIGHTBOX, BOTTOM PANEL, OR FRONT DOOR) THE GAME WILL BE OVER. ADJUST THESE SWITCHES TO YOUR NEEDS.

PLAYFIELD OPERATION

The drop targets score 50 points. When lit, drop targets score 500 points and add bonus. When 10X light is on, hitting lit drop target 5000 points and adds two bonuses. Completing all drop targets lights double bonus light.

On 3 ball play completing either drop target sequence lights double bonus light.

The "Special" light is adjustable to come on at 8-10-12-15.

Steps depending on the setting of the adjustment plug.

The bonus is collected after each ball played. bonus always scores double on last ball.

The flippers are actuated by the player pressing buttons on the sides of the cabinet. The flipper coils have two windings: one of heavy wire that passes high current allowing a strong initial stroke; the second winding is of lighter wire and is in series with the first winding. The lighter winding is shorted out until a normally closed switch is opened by the flipper linkage. This allows the flipper to be held energized and not overheat because less current passes through the coil.

NOTE: THE PLAYBOARD PITCH SHOULD BE 3-1/2 DEGREES TO MAINTAIN PROPER BALL ACTION AND PLAYER APPEAL. THIS IS ACHIEVED BY RUNNING THE LEG ADJUSTERS ALL THE WAY IN AND THEN ADJUSTING THEM TO LEVEL THE MACHINE ON ITS HORIZONTAL AXIS.

ADJUSTMENT ON OUT OF SIGHT

LIGHTBOX

POINT SCORE ADJUSTMENT

This adjustment allows replays for various high scores. See point score adjustment card for instructions. Refer to recommended score card before making the changes. When changing the scores, change the card on the playfield card holder to agree.

BOTTOM PANNEL

3 - 5 BALL ADJUSTMENT

This adjustment changes the number of balls played per game. The third or fifth ball leaving the playfield will trip the "last ball" relay ("XB") through switch on "O", motor 1C, rivets on the Player unit disc, "ZB" and "XB" relays.

1ST COIN CHUTE ADJUSTMENT AND 2ND CHUTE ADJUSTMENT

This adjustment provides for the 1st chute to set up the game or to parallel the 2nd chute which steps the replay credit unit. If the adjustment is in 1 play position, inserting a coin in the 1st chute will set up the game. Inserting a coin in the 2nd chute will step the replay unit. (2, 3, 4, or 5 steps). If the adjustment is in 2nd chute adjustment position, inserting a coin in either chute steps the replay unit.

PLAYBOARD

SPECIAL FREQUENCY ADJUSTMENT

This adjustment controls when the "Special" light will come on. The range is 8-10-12-15 bonus steps.

SEE PLAYBOARD INFORMATION PAGE FOR MECHANICAL ADJUSTMENTS.

TILT AND FUSE PANEL

There are two sets of holes for mounting the tilt bob strike plate. By moving the strike plate closer to tilt bob support bracket the game will be less sensitive to tilting.

FRONT DOOR

COIN CHUTE SWITCH

The coin chute switches are carefully adjusted to the recommended pressures and gaps with a feeler gauge and a gram gauge. Under normal operation these switches will function as designed. However, if a sharp blow on the front door or dropping of the cabinet sets up the game, carefully inspect and adjust the coin chute switches as indicated on Page 10 of this booklet.

"RELAYS"

<u>NO.</u>	<u>COIL NO.</u>	<u>TYPE</u>	<u>CONTACTS</u>	<u>USE</u>
A	A-9740	AG.	5C	ALTERNATING RELAY
B	A-9735	AG.	5A	RIGHT & LEFT POP BUMPER RELAY
C	A-9735	AG.	3A	CENTER POP BUMPER RELAY
D	A-9735	AG.	3A	50 POINT RELAY
E	A-9735	AG.	4A, 1B	500 POINT & ADD BONUS UNIT RELAY
F	A-489	AS.	2 DISC	00-90 UNIT RELAY
G	A-9735	AG.	2A, 2C	10X TARGET VALUE & ADD BONUS UNIT RELAY
H	A-9738	AG.	1A, 1B, 1C	TILT HOLD RELAY
I	A-489	AS.	1A, 2 DISC	ADVANCE UNIT RELAY
J	A-9735	AG.	4A	BALL KICKER RELAY
L	A-9735	AG.	7A	1000 POINT RELAY
M	A-9735	AG.	6A	100 POINT RELAY
N	A-9735	AG.	6A	10 POINT RELAY
O	A-9735	AG.	6A	OUTHOLE RELAY
P	A-9735	AG.	3A, 1B, 1C	ADD PLAYER UNIT RELAY
Q	A-9735	AG.	4A, 1B	BONUS SCORE RELAY
R	A-9738	AG.	1A, 1B, 1C	HOLD RELAY
S	A-9740	AG.	5A	START RELAY
T	A-9742	AG.	1B	TILT RELAY
U	A-9735	AG.	4A	CONTROL BANK RESET REPLAY
V	A-9740	AG.	2A	REPLAY BUTTON RELAY
W	A-9740	AG.	3A, 2B	2ND CHUTE RELAY
AX	A-489		2A	BALL KICKER GATE RELAY
BX	A-489		2A	BALL SHOOTER GATE RELAY
CX	A-9740	AG.	2A	DOUBLE BONUS RELAY

"CONTROL BANK"

<u>NO.</u>	<u>COIL NO.</u>	<u>CONTACTS</u>	<u>USE</u>
LB	A-1118	2A, 1B	DOUBLE BONUS RELAY
PB	A-1118	2A, 2B	2ND PLAYER RELAY
ZB	A-1118	2A, 1B, 1C	1ST BALL RELAY
QB	A-1118	1A, 3B, 1C	GAME OVER RELAY
XB	A-1118	3A, 1B	LAST BALL RELAY
SB1	NO COIL	2A, 1B, 1C	RESET CONTROL SWITCHES
SB2	A-1118	2A, 2B	RESET CONTROL RELAY

"OTHER COILS USED"

<u>COIL NO.</u>	<u>DESCRIPTION</u>
A-5141	FLIPPER COILS
A-5194	KICKING RUBBER COILS
A-4893	POP BUMPER COILS
A-5195	CHIME COILS
A-1496	ADD REPLAY UNIT COIL
A-5194	SUBTRACT REPLAY UNIT COIL
A-9154	SCORING UNIT COILS
A-1496	ADD BONUS UNIT COIL
A-5194	SUBTRACT BONUS UNIT COIL
A-5194	KNOCKER COIL
A-4893	BALL KICKER COIL
A-1496	BALL RETURN COIL
A-1496	ADD PLAYER UNIT COIL
A-7677	COIN LOCKOUT COIL
A-5196	TARGET BANK RESET COILS
A-9479	CONTROL BANK RESET COIL
A-7760	MOTOR ASSEMBLY (60 HZ.)
A-11550	MOTOR ASSEMBLY (50 HZ.)
B-6183	TRANSFORMER (115V)
B-8091	TRANSFORMER (230V)
	MOTOR CAM A-7907

DISC & WIPERS

	<u>GEAR & SHAFT</u>	<u>DISC</u>	<u>WIPER</u>
PLAYER UNIT	A-12399	C-12569	B-12568
BONUS UNIT	A-13606	B-15273	B-15274
00-90 UNIT (F RELAY)	A-9012	A-9016 A-9017	B-9015 B-9015
ADVANCE UNIT (I RELAY)	A-9012	A-9016 A-9017	B-9015 B-9015

OUT OF SIGHT MOTOR SWITCHES

MOTOR 1A (S-POS.)	Inside Sw. Second Sw. Third Sw.	- Resets Score units. - Adds player unit. - Scoring
MOTOR 1B	Inside Sw. Second Sw.	- Resets control bank. - 1st player match.
MOTOR 1C (S-POS.)	Inside Sw. Second Sw. Third Sw. Fourth Sw. Fifth Sw. Sixth Sw.	- Motor runout. - Opens circuit to coin chute switches and replay button switch. - Opens circuit to ball kicker, trough and ball return switches. - Opens circuit to "XB" relay. - Opens circuit to "G" relay. - Opens circuit to playboard contacts.
MOTOR 1D	Switch	- Actuates "U" relay.
MOTOR 2B	Inside Sw. Second Sw.	- "J", "O", "P", "Q", "S", "U", "V", and "W" relay lockins. - "D", "E", and "G" relay lockins.
MOTOR 2C (L-POS.)	Inside Sw. Second Sw. Third Sw.	- Coin chute credit totalizer. - Add player unit control switch. - Actuates "PB", "SB2", total play meter and subtracts replay unit.
MOTOR 3B	Switch	- Bonus score control switch.
MOTOR 3C (S-POS.)	Inside Sw. Second Sw.	- Double bonus score control switch. - Actuates "QB" relay.
MOTOR 3D	Switch	- Opens circuit to playboard lights.
MOTOR 4A (S-POS.)	Switch	- Actuates "LB" relay, last ball only.
MOTOR 4B	Inside Sw. Second Sw. Third Sw.	- Coin chute credit totalizer. - 2nd player match. - Adds bonus unit.
MOTOR 4C (S POS.)	Inside Sw. Second Sw. Third Sw. Fourth Sw.	- Coin chute credit totalizer. - Actuates bonus unit or ball kicker - Subtracts bonus unit. - Resets target banks.

PLAYBOARD INFORMATION

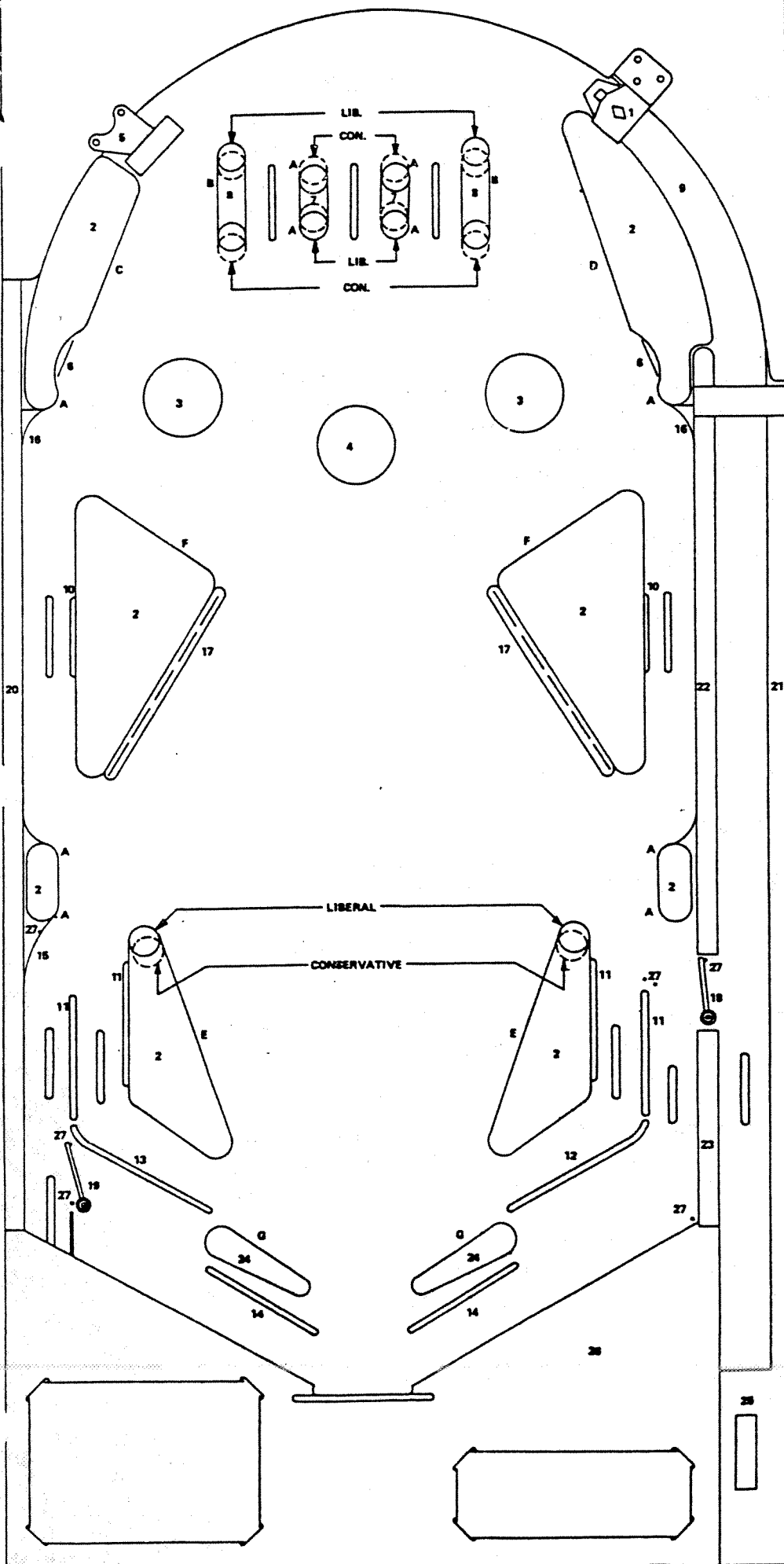
RUBBER RINGS

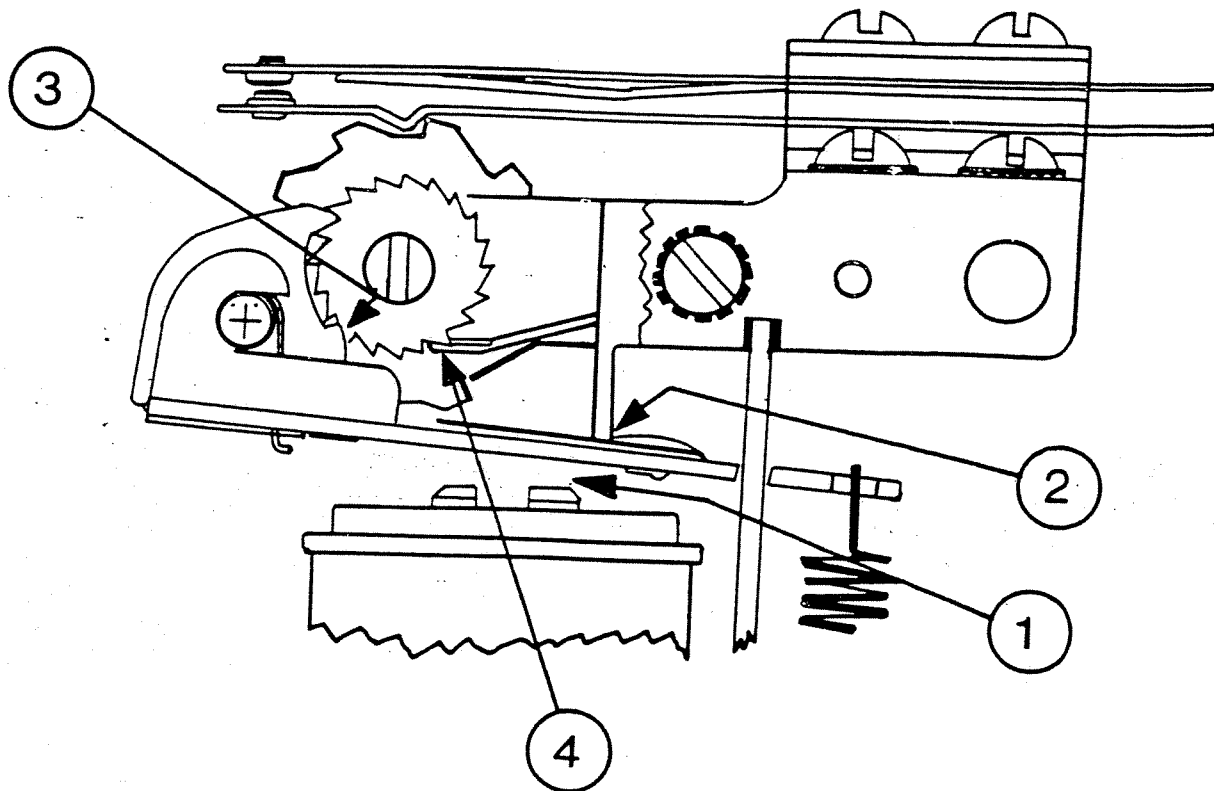
A	A-10217	(10)
B	A-10220	(2)
C	A-10222	(1)
D	A-10223	(1)
E	A-10224	(2)
F	A-10225	(4)
G	A-13151	(2)

PARTS LIST

- A-3290 Ball Gate.
- C-15206 Plastic Shield Set.
- Red Pop Bumper A-10436 and A-11426 Cap in Red.
- Yellow Pop Bumper A-10436 and A-11826 Cap in Blue.
- A-9143 Rebound Rubber.
- A-12301 White Target Blue Design.
- A-9394 Plastic Ball Guide. (Red)
- A-9395 Plastic Ball Guide. (Red)
- A-4246 Ball Guide Rail. (Wire Form)
- A-4831 Ball Guide Rail. (Wire Form)
- A-4832 Ball Guide Rail. (Wire Form)
- A-12106 Ball Guide Rail. (Wire Form)
- A-12107 Ball Guide Rail. (Wire Form)
- A-13798 Ball Snubber Rail. (Wire Form)
- A-14389 Ball Guide Flat Rail.
- B-15052 Ball Guide Flat Rail.
- A-15416 5 Position Target Bank. (Yellow Target Black Design)
- A-13652 Ball Return Gate.
- A-13652 Ball Kicker Gate.
- C-7393 Wood Rail. (Left Side)
- B-13977 Wood Rail. (Right Side)
- B-14391 Wood Rail. (Center Top)
- B-14392 Wood Rail. (Center Bottom)
- C-13150 Flipper.
- C-9767 Ball Shooter Gage.
- D-14386 Card Holder.
- A-10542 Steel Pin. (7)

C-11561 White Plastic Post (30) 1" High.





"AS" RELAY ADJUSTMENT

If an adjustment is needed, follow steps as outlined below:

The gap between the armature and the pole piece of the coil as measured at (1) should be approximately .050 inches. The drive pawl should travel 1-1/4 to 1-1/2 teeth on ratchet spindle. Both of these conditions depend on the outboard bearings being perpendicular to the relay frame.

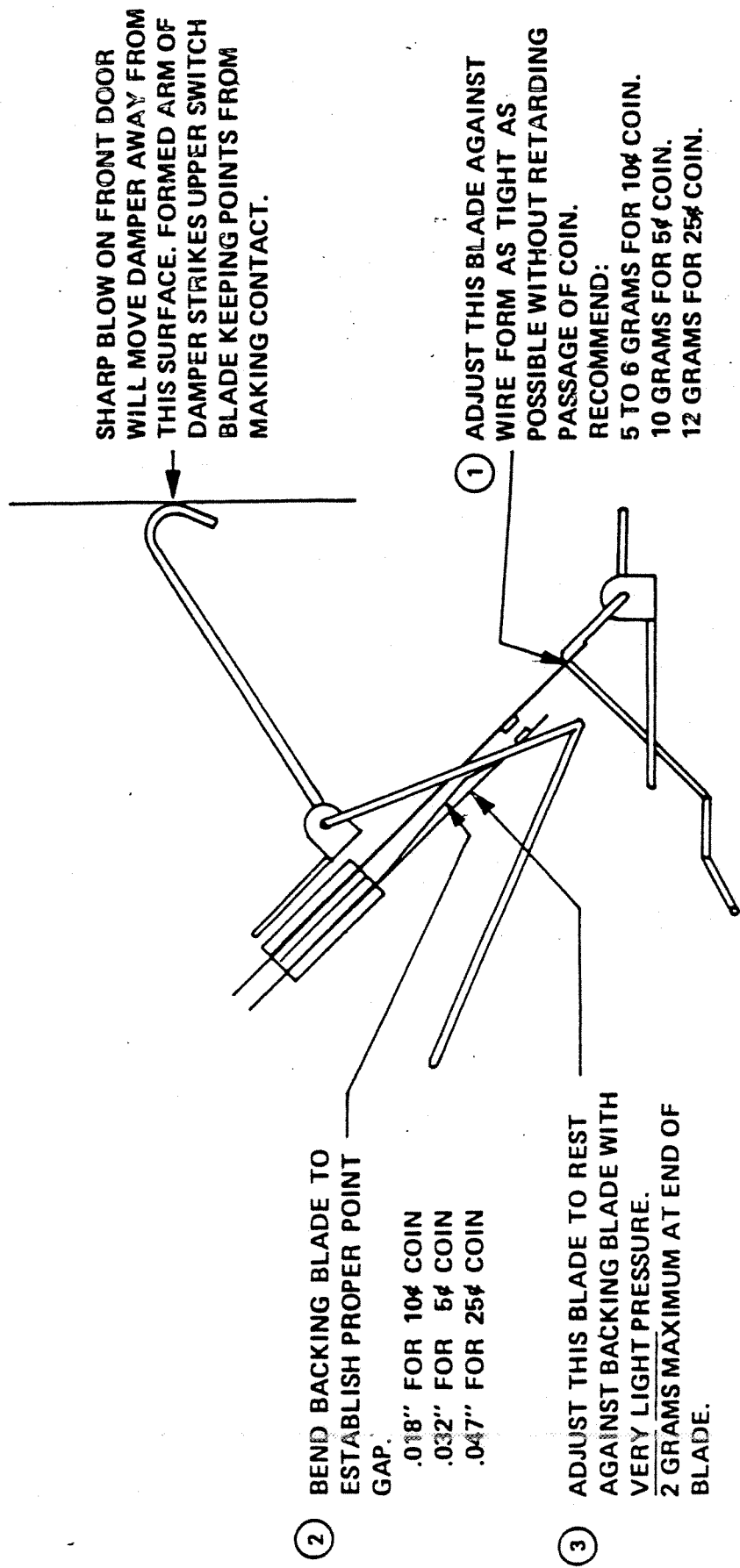
Tighten override stop (2) so that it just touches, but does not exert any pressure, on the armature. Check to see that the drive pawl is in firm contact with the ratchet spindle at (3).

Adjust the index spring to rest in the 1st tooth back of center (4) and to exert a minimum of pressure to the ratchet. This pressure can be adjusted by bending the index spring mounting arm. Check thru one revolution to be sure the index spring clears each tooth with a minimum of backlash.

Adjust bottom switch blade to rest lightly in depression of cam; adjust top blade that the gap between points is 1/32 inches and resting very lightly against blade.

If relay is equipped with a disc, the wiper will stop in the center of a step if the above adjustments are correct.

COIN SWITCH ADJUSTMENT



SHARP BLOW ON FRONT DOOR WILL MOVE DAMPER AWAY FROM THIS SURFACE. FORMED ARM OF DAMPER STRIKES UPPER SWITCH BLADE KEEPING POINTS FROM MAKING CONTACT.

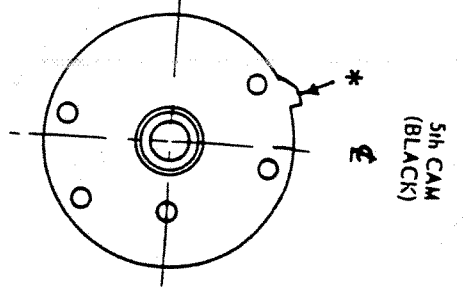
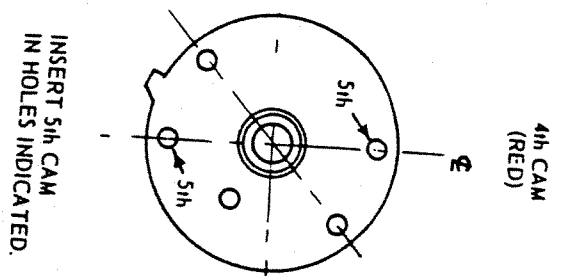
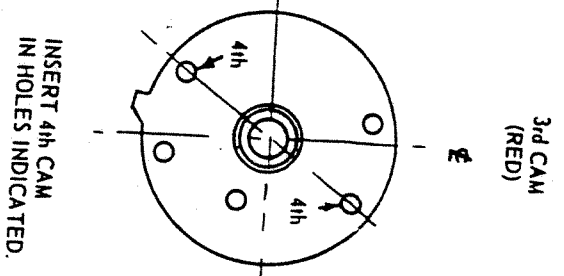
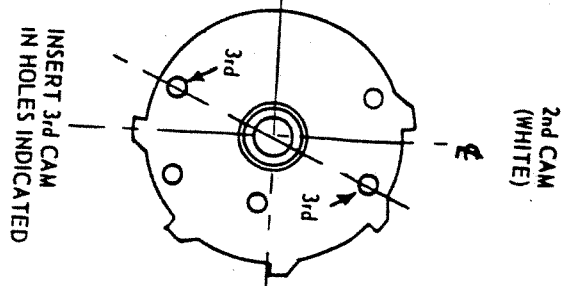
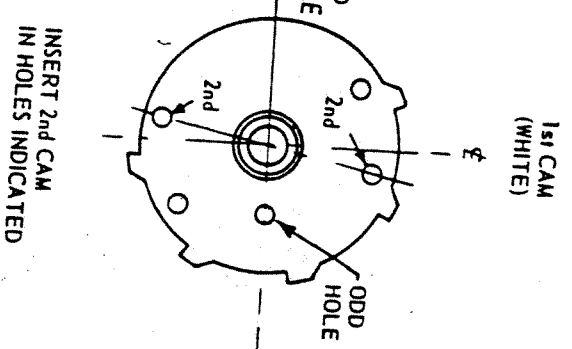
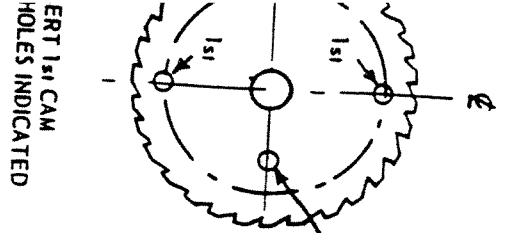
② BEND BACKING BLADE TO ESTABLISH PROPER POINT GAP.
 .018" FOR 10¢ COIN
 .032" FOR 5¢ COIN
 .047" FOR 25¢ COIN

③ ADJUST THIS BLADE TO REST AGAINST BACKING BLADE WITH VERY LIGHT PRESSURE. 2 GRAMS MAXIMUM AT END OF BLADE.

① ADJUST THIS BLADE AGAINST WIRE FORM AS TIGHT AS POSSIBLE WITHOUT RETARDING PASSAGE OF COIN.
 RECOMMEND:
 5 TO 6 GRAMS FOR 10¢ COIN.
 10 GRAMS FOR 5¢ COIN.
 12 GRAMS FOR 25¢ COIN.

PLAYER UNIT CAM LINE-UP (2 PLAYER GAME)

STEEL RATCHET



SINGLE TOOTH ON 5th CAM NOW LINES UP WITH FIRST TOOTH ON 1st CAM.
 * WHEN CAM FOLLOWER IS ON TOP OF THIS TOOTH UNIT IS AT ZERO POS.

