

Pro-Striker Maintenance Procedures - continued

Pin String Replacement -

1. Remove phillips head screw on lower side of pin.
2. Hold pin by neck and slap on hard surface or floor. The bottom will pop out. Be careful as the bottoms will sometimes fly out with great velocity.
3. Insert string down through top of pin.
4. Thread string through wood ball and tie knot.
5. Replace bottom by tapping pin on hard surface or floor, aligning screw hole.
6. Replace screw.
7. Reinstall pin and adjust string.

Tilt-Box Adjustment - Loosen screw to adjust. Raise for more sensitivity. Lower for less sensitivity. Screw *MUST* be tight. The tilt is located in the rear right of the cabinet.

Lane Height - The end of the lane must be flush with or slightly above the pin deck. If it is not, the ball will chip the end of the pin deck. To adjust, use the leg leveling screws at the end of the lane.

For Service Assistance

Design Plus Industries
6311 W. Development Dr.
Peoria, IL 61604

Phone: (309) 697-9778
Fax: (309) 697-9686

PLEASE HAVE SERIAL NUMBER OF GAME AVAILABLE WHEN CALLING FOR PARTS OR SERVICE ASSISTANCE.

Pro-Striker Trouble Shooting Guide

For Models: 1611PS, 1615PS, 1619PS, 1711PS, 1715PS, and 1719PS

Problem

Cause

Solution

1. Game won't power up

No input voltage

Check line voltage into power supply.

Blown Fuse

Check for and replace as needed.

Low power supply

Adjust power supply outputs or replace power output supply. Turn pod on top power unit until Red 5.3V-5.4 @ Power Supply.

2. No Display

Poor Cable Connections

Check display board connections. **OR** Check J- Pin 2 (output to display) for +12 V DC.

Voltage too low

Check power at supply outputs.

3. Three lights on Main board are constantly on.

Low voltage to main board

Check J7 on main board (input from board power supply for +12, +5 and ground).

Low voltage at power supply

Check voltage of power supply. (see #1)

Processor not inserted correctly

Check U8 on main board for bent or broken pins. Remove chip and reinstall carefully.

4. Poor Audio

VOLUME turned down.

Adjust audio at R78 on main board.

Pins dirty or bent at U16 or U21 on main board.

Remove and check chips. Reinstall carefully.

Loose wires at speaker.

Check speaker connections J8 1 & 2 on main board and at speaker terminals.

5. Compressor won't run

Blown fuse

Check and replace fuse at power supply

Relay on Cable loose or improperly installed

Red on #1 with no bent or dirty pins

Poor connection on I/O board

Check J17 (input from power supply) for +5V, +12V and ground. **OR** Check J15 #10 on I/O board for relay control (ground).

Check connections on compressor leads.

Pro Striker Trouble Shooting Guide

<u>Problem</u>	<u>Cause</u>	<u>Solution</u>
6. Ball Error -OR- Ball Missing or Stuck	No ball	Replace ball. Press ENTER to continue game.
	Ball tuck in back of game	Move ball so it rolls into the ball lift. Press ENTER to continue game. After game completion, level cabinet and clear debris from ramps.
	Other balls in game.	Move game at least 6" from wall to insure other balls (skee balls, etc.) roll out of the mouse hole in back of Pro-Striker. Remove other balls from game. Press ENTER to continue play.
	More than two balls in game.	Remove other balls from game; then Press ENTER to continue play. Note: If there are two Striker balls in game, they will both be delivered.
7. Pin Set Error -OR- Pins continually reset	Cabinet not level	Level using bulls eye in cabinet (pins should cover orange sensors).
	Pins setting too fast	Adjust set speed to 3 seconds. (From time pins start to lower) See Maintenance Procedures for setting pin speed adjustments.
	Pins setting too slow and game timing out before pins are set	Adjust set speed to 3 seconds (From top to bottom). See Maintenance Procedures for setting pin speed adjustment
	No input from a pin sensor	Check connection at I/O board (J1-J10) or replace sensor.
	Red on cable loose or improperly installed	Red on #1 with no bent or dirty pins.
	Improper string adjustments	See Maintenance Procedures
	No in-set cylinder activation	Insure main lift string is not too short. (See Maintenance Procedures) OR Replace switch and make sure yellow & black wires are connected to the lower two terminals. (Top terminal is not used)
	Worn pin bottoms- causing pins to fall over before ball has been	Replace Pin Bottom. (See Maintenance Procedures under Pin String Replacement)

Pro Striker Trouble Shooting Guide

<u>Problem</u>	<u>Cause</u>	<u>Solution</u>
8. Pins not pulling up or pulling slowly	Low or no air pressure	Game requires 65 PSI (external air) 75-80 PSI internal air-115V 70 PSI Internal air-220V
	Air Line Leaks	Check air lines and fittings for loose connections. Replace as needed.
	Pulleys or strings binding	Insure pulleys in top of cabinet turn easily and all strings move freely around pulleys and through plywood.
9. No Tickets	Lift Cylinder Worn	Replace Cylinder
	Ticket payout dips off	Main Board DIP 5 Switch #1 & #2 off. Turn on for desired ticket payout scheme.
	Poor connection at Main board	Check connection on Main board J5, Pin 7.
	Poor connection at dispenser	Check Molex connector on ticket dispenser.
	Defective dispenser	Replace dispenser. — or dispenser circuit board
10. Ball lift hesitates or lifts slowly	Tickets empty	Replace tickets. Press AUDIT button inside ticket door to continue play.
	Low air	Check regulator-adjust to proper setting (see if ball lift does not lower)
	Ball lift bracket binding	Check for proper alignment and bent or broken parts (cylinder and brackets)
	Air line leaks	Check air lines for loose connections or leaks, replace if needed.
11. Ball lift does not lower immediately after lifting	Cylinder worn	Replace Cylinder
	Reflector below ball lift is dirty or missing	Clean or replace reflector tape.
	No input from optical sensor (red light will be on when ball is not present and off when ball is present.)	Adjust sensor till red light is on with no ball or replace sensor. Also check connector on sensor. See #8. Pins not pulling up..., Item #1.
	Low or No air pressure	

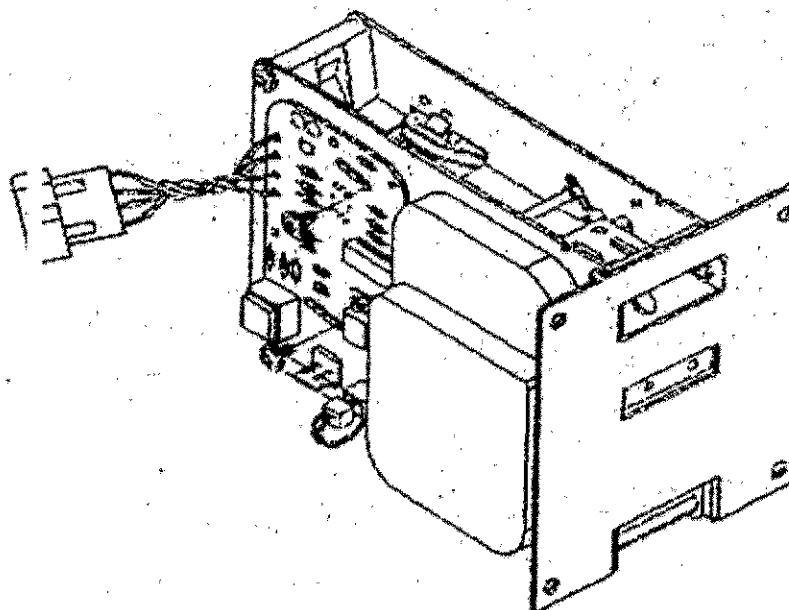
Pro Striker Trouble Shooting Guide

<u>Problem</u>	<u>Cause</u>	<u>Solution</u>
12. Game resets during play. (Screen blinks off)	Voltage drop from power supply	Check voltages at power supply, insure of no loose connections inside power supply or at an (5V-Red or 12V-Orange) connections in wiring harness. Coin game and tap power supply (see if game resets)
	Main board	Check all connectors on main board and tap or board to see if game resets. If so, replace board.
	Display controller board	Set voltage across any capacitor from C18 through C29 between 5.0V DC and 5.1V DC.
	Fluorescent Light going bad	Unplug lights see if problem is corrected— Replace lights
13. Displays shows: 0001 or 0002 but continues to allow play.	Display controller board	Voltage across capacitors C19-C29 should measure between 5.0V DC and 5.1V DC. It MUST not be above 5.1V DC. Adjust as necessary.
	ROM not seated properly or dirty pins	Remove & Reinstall ROMS 0,1,3,4 on Controller
14. Not holding pins on spare shot (second shot)	Pin string too long	Check and adjust pin strings and main lift string as indicated in the Maintenance procedures.
	Bad connection to pin cylinders	Check connection to pin holding cylinders on J16 and J15 #9 and 10. Check molex connectors to insure intact.
	Air line leaks	Check Red air lines for loose connections or leaks from holding valves to holding cylinders.
	Bad holding cylinder	Verify holding cylinder operation using the test mode. If all connections in place and cylinder still not operator properly, replace cylinder.
15. Tilts too often	Tilt set too sensitive.	Adjust tilt by moving cone shaped upward. Tighten holding screw to insure cone does not slip down.

Entropy's ENTD-2000 Quick Reference Guide

The ENTD-2000 has been designed with features that virtually eliminate ticket jams, it requires very little maintenance, making it the most reliable and compatible ticket dispenser on the market today. This guide is designed to explain the basic functions and specifications of the ticket dispenser. Please feel free to call ENTROPY for more details.

BASIC OPERATION



LOADING TICKETS:

- 1) Select ticket width.
- 2) Slide ticket through guide plates until they reach the rollers.
- 3) Depress the auto advance button until the tickets reach the desired location.
- 4) If tickets do not load, ensure that the upper rollers are engaged by pulling back on the latch bar.

NOTE: The upper rollers can be disengaged by pulling on the latch bar. This is useful to clear tickets, etc.

TICKET STOP ADJUSTMENT:

This function allows the length of the tickets protruding from the face plate to be adjusted.

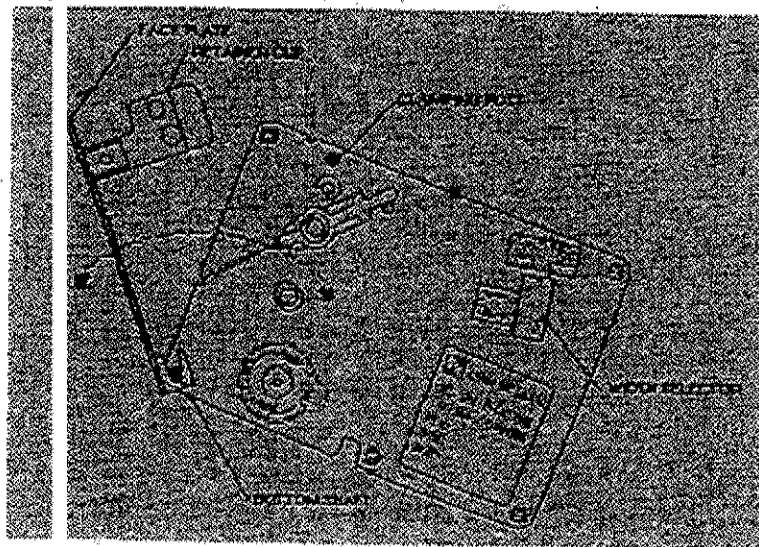
- 1) Turn the two Phillips pan headed screws on the PCB one quarter of a revolution counter-clockwise.
- 2) Move the board forward or backward to the appropriate position.
- 3) Re-tighten the screws.

CLEARING TICKET JAMS:

- 1) Gently pull any tickets that are between the rollers and front plate out the front of the unit.
- 2) Lift the upper rollers by pulling the latch bar back into the unlock position.
- 3) Unlatch the upper ticket guide by raising it off its post in the back.
- 4) Push the tickets away from the ticket width selector toward the optic switch.
- 5) Gently pull the tickets toward the rear of the unit.
- 6) Tear off the damaged tickets and put the upper ticket guide back into place.
- 7) Reload tickets as previously discussed. (Be sure to place the latch bar back to the locked position).

EASY RELEASE AND RE-INSTALL:

- 1) Hold the dispenser unit and bend the retainer clip to remove it from the face plate.
- 2) Swing the unit down then lift it slightly until the dispenser unit releases from the face plate.
- 3) To reinstall: align the post on the dispenser unit w/the U shape brackets on the face plate.
- 4) Swing unit up and snap in place



**-MAKE SURE THE POST WAS HOLDEN BEFORE RE-RUNNING-
ENSURE THE DISPENSER IS FIRMLY LOCKED IN PLACE FORE RUNNING IT AGAIN!**

LED FUNCTION:

GREEN LED: Notch output indicator.

YELLOW LED: Motor Enable.

STANDARD TICKET UNIT : TD-963CR

The TD-963CR is designed to fit more applications. The game's software turns the dispenser on with a logic high signal and monitors a return notch signal from dispenser to turn it off.

OUT PULSE TICKET UNIT : TD-963PR

The TD-963PR is designed for one logic input - one ticket game. The game pulses the dispenser once and one ticket is dispensed.

The TD-963SR uses a switch rather than a logic input. THE GAME MUST ENSURE THE SWITCH WILL NOT BE ACTIVATED MORE THAN TWICE PER SECOND.

ELECTRICAL CHARACTERISTICS:**TD-963CR :**

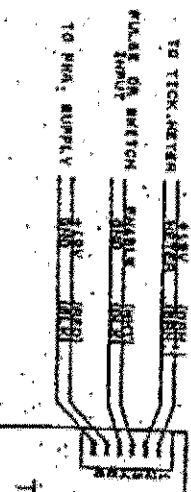
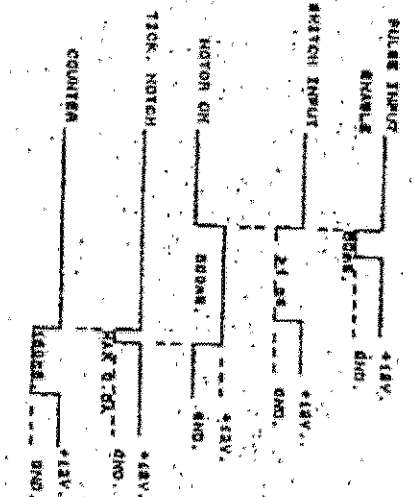
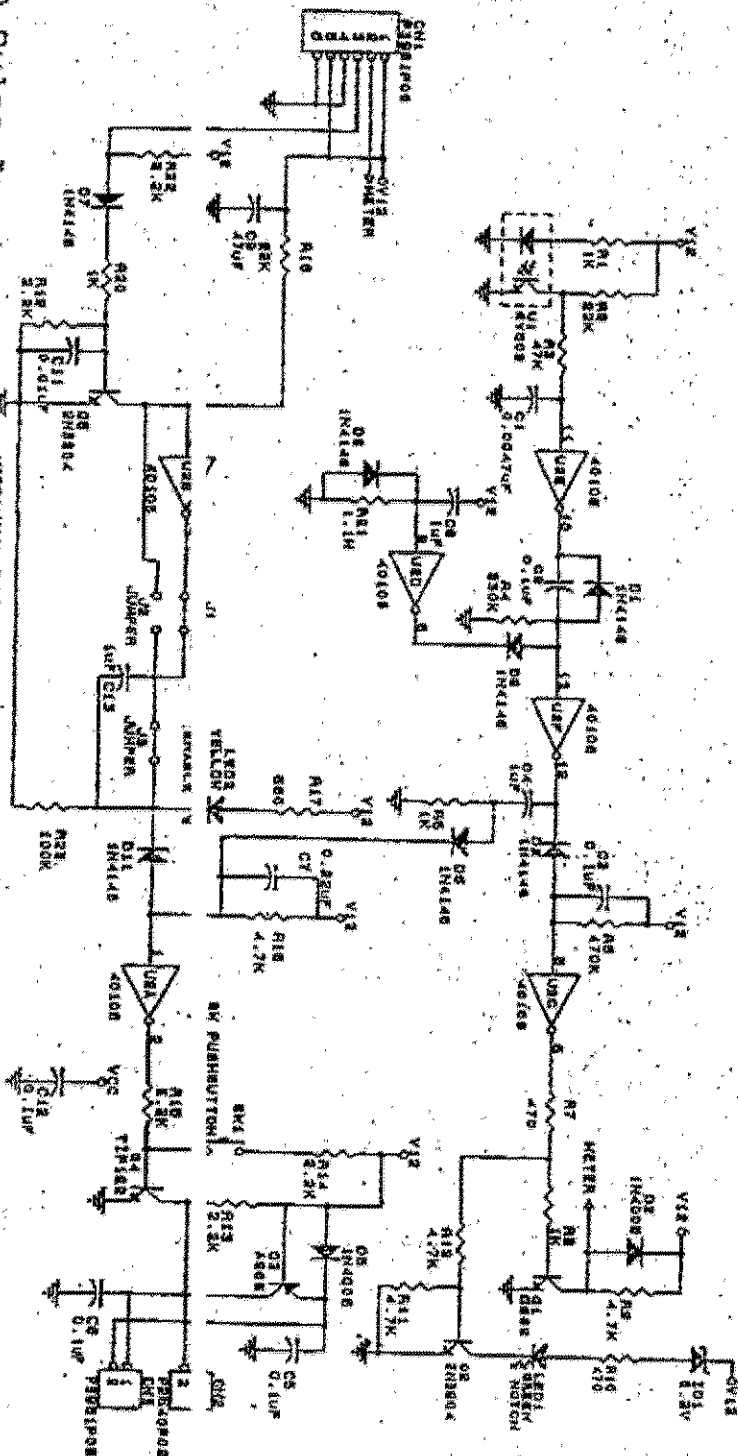
	Min.	Typical	Max.
Supply Voltage	11.0 V	12.0 V	13.0 V
Standby Current		25 mA	
Motor Start Current	1.2 A	1.3 A	1.4 A
Motor Run Current	0.3 A	0.3 A	0.35 A
Motor Enable Or Voltage	2.4 V		12 V
Motor Enable Or Current	160 μ A		4.2 mA
Motor Enable Or Voltage			1.0 V
Motor Enable Or Current			0
Ticket Notch Signal Current			50 mA
Ticket Notch Voltage Pull-up			30 V

Model # TD963P, Pulse Input
Model # TD963S, SW Input

NOTE: ENABLE PULSE MAY BE POSITIVE
OR NEGATIVE BY HAVING JUMPER
SET TO POSITIVE OR NEGATIVE
INPUT. (J1 OPEN, J2 SHORT)

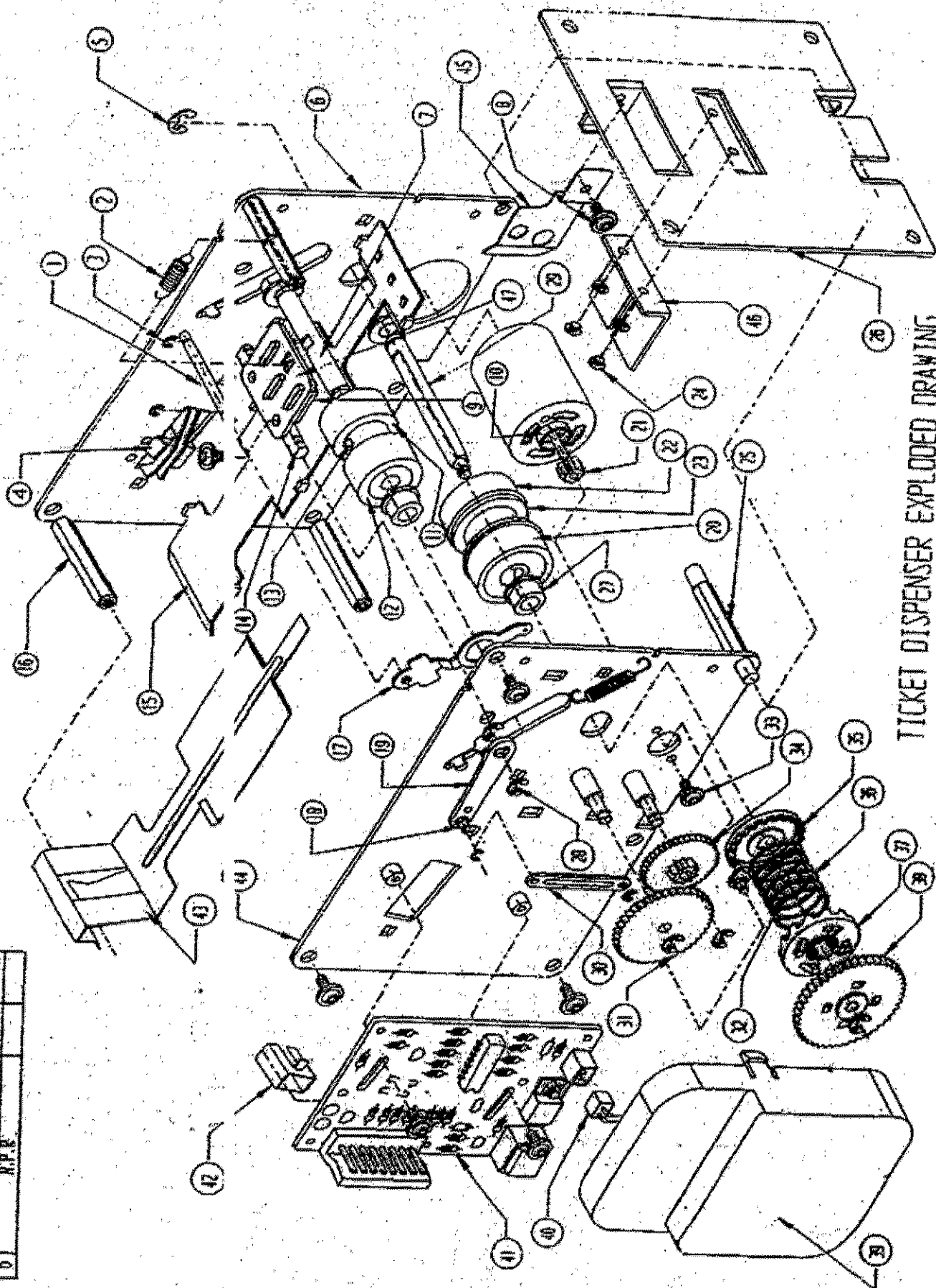
TICKET DISPENSER
TD-963P TO-963S

REV 0



963P

REV	DESCRIPTION OF CHANGE	DATE	APPR.
0	N.P.R.		



TICKET DISPENSER EXPLODED DRAWING

TD-963CR/PR

NO.	PART NO.	DESCRIPTION	QTY.	NO.	PART NO.	DESCRIPTION	QTY.
1	104-4011-00	PUL BACK BAR	1	31	101-1015-00	GEAR-12T, 40T	1
2	110-0005-00	STOPPER SPRING	1	32	101-1012-00	CLUTCH SLEEVE	1
3	106-6011-00	2mm E-RING	2	33	106-6002-00	M2.6X0.45+5PS-NI	2
4	101-1005-00	ADUSTER BLOCK	1	34	101-1014-00	GEAR-1 10T, 39T	1
5	106-6003-00	4mm E-RING	1	35	101-1011-00	BRAKE ACTION PLATE	1
6	102-2039-00	R-SIDE BRKT.	1	36	110-0006-00	CLUTCH SPRING	1
7	104-4013-00	IDLER SHAFT	1	37	101-1010-00	CLUTCH	1
8	106-6005-00	M3.0.5+6C-NI	16	38	101-1013-00	MAIN GEAR 46T	1
9	108-8001-00	STOPPER RUBBER 1/2" X 1"	1	39	101-1016-00	GEAR COVER	1
10	212-2002-00	DL MOTOR 12V	1	40	214-4001-00	MOTOR LEAD WIRE	1
11	104-4004-01	IDLER ROLLER	1	41	200-963C-00	P.C. BOARD ASSY (CONTINUOUS)	1
12	104-4004-03	IDLER ROLLER RUBBER	2	42	101-1007-00	OPTO SW. COVER	1
13	106-6001-00	M4.5 HEX SCREW	1	43	102-2034-00	TICKET GUIDE(UP)	1
14	104-4015-00	STOPPER SHAFT	1	44	102-2040-00	L-SIDE BRKT.	1
15	102-2041-00	TICKET GUIDE (BOTTOM)	1	45	102-2045-00	HOLD BLADE	1
16	104-4006-00	HEX POST	4	46	102-2035-00	TICKET GUIDE (FRONT)	1
17	102-2007-00	ROLLER SLIDE BRACKET	2	47	102-2038-00	STOPPER	1
18	104-4009-00	STOPPER	1	48	200-963P-00	P.C. BOARD ASSY. (PULSE)	1
19	102-2036-00	LEVER ARM	1	49			
20	101-1017-00	ROLLER (OUTER)	2	50			
21	104-4014	MOTOR PINION 10T	1	51			
22	102-2042	ROLLER RATCH	2	52			
23	101-1018	ROLLER (INNER)	2	53			
24	27-1008	#6-32 SCREW	2	54			
25	104-4017-00	ROTATION SHAFT	1				
26	102-2044-00	FACE PLATE	1				
27	105-5001-00	SHAFT BUSHING	4				
28	106-6019-00	3mm E-RING	6				
29	104-4012-00	MAIN SHAFT	1				
30	102-2037-00	LINK	1				