

## TROUBLE SHOOTING CHART

Complaint	Symptom	Cause	Remedy
Instrument will not operate or light up.	Instrument inoperative.	8 amp. fuse blown.	Replace fuse.
		Broken line connection.	Trace wiring from power supply to Junction Box. Make sure instrument receives the 110 AC supply.
8/10 Amp fuse blown.	Mechanism inoperative, turntable, amplifier and Rainbow Unit Motors operate.	Cam shaft Switch out of adjustment	See Section on cam shaft switch adjustment.
		End of transfer arm caught behind the transfer arm rest.	Bend transfer arm rest slightly outward.
		Shorted record rack motor.	Replace motor.
		Short in transfer motor or mechanism circuit.	Replace motor or remove short from mechanism circuit.
		Open in transfer motor or its circuit.	Replace motor or repair open in circuit.
8/10 Amp. fuse blown, mechanism in playing position.	Mechanism inoperative, turntable, amplifier and Rainbow Unit Motors operate.	Cam shaft switch out of adjustment.	See section - cam shaft switch adjustment.
		Record rack switches not operating correctly.	See section - record rack switch adjustment.
		Short in D. C. Motor or mechanism circuit.	Replace motors or remove short from mechanism circuit
1/2 Amp. fuse blown.	No credits can be registered or selections made.	Trip lever on one of the coin trip switches remains in operated position.	Remove coin from trip lever. See that lever operates freely. Line up slots in coin switch with coin selector slots.
		Credit and selection circuit shorted or grounded.	Check circuit with an ohmmeter.
No plays for coin.	Credit unit does not register any coin.	1/2 Amp. fuse blown.	See complaint - 1/2 Amp. fuse blown.
		Credit wheel does not revolve.	Check credit wheel for binding or a defective spring.
		Credit solenoid does not operate.	Check common line to coin trip switches and credit solenoid. See if plug is in socket at credit unit and junction box.
	Credit unit registers coin but no selection can be made.	Main credit switch does not complete circuit.	Adjust main credit switch to make contact as soon as the post on back of credit wheel moves away from switch.
		Credit unit relay contacts not closed.	Adjust relay contacts.
	Credits lost but no selection made.	Selector fingers do not trip.	Check input voltage. Check selector assembly springs.

## TROUBLE SHOOTING CHART (Continued)

Complaint	Sympton	Cause	Remedy
No plays for coin.	Selector fingers trip but mechanism does not start.	Starting switch does not make contact.	Adjust starting switch.
		8/10 Amp. fuse blown.	See section 8/10 Amp. fuse blown.
		Record rack motor won't run.	Check Mechanism Junction Box for a short or open circuit and check contacts of the Reversing Control Relay therein.
	More than one credit removed and only one selection made.	Escapement in credit unit not operating.	Adjust escapement.
All or some of the selector buttons dead.	Series circuit through selector switches open.	Check for selector switch sticking in operated position. Check for loose connection or an open circuit, in series circuit through selector switches back to rectifier.	
	Selections can be made without coins being inserted.	Credit wheel does not reset.	Check reset magnet to see if operative. Check escapement adjustment.
All credits removed and selections can still be made.	Main credit switch remains closed.	Adjust main credit switch so that the post on credit wheel will open switch when all credits are removed.	
	Mechanism in playing position - no record on turntable.	Inner shoe stuck in hub of transfer arm.	Clean bearing surfaces.
Transfer arm does not pick up records from turntable.	Two records on turntable or records not placed back on rack.	Transfer arm bent.	Correct arm.
		Lubricant stiff or gummy.	Place 4 or 5 drops of sewing machine oil on bearing surfaces of Transfer Unit.
		Inner shoe sticks in hub of Transfer arm.	Clean bearing surfaces.
		Outer shoe sticking on rubber bumper of transfer arm support.	Eliminate stickiness.
Transfer arm does not grip records properly.	Record not gripped properly when removed from rack.	Record rack does not stop in correct position.	Adjust record rack switches. See section record rack switch adjustment.
		Transfer arm bent.	Correct arm.

Complaint	Symptom	Cause	Remedy
Transfer arm does not grip records properly.	Record not gripped properly when removed from turntable.	Transfer arm bent.	Correct arm.
		Turntable assembly out of alignment.	Adjust height and position of turntable assembly.
Transfer motor does not stop after placing record on turntable.	8/10 Amp. fuse blown. Mechanism remains in playing position.	Cam shaft switch out of adjustment.	Adjust cam shaft switch. See section on cam shaft adjustment.
		Record rack switches not restoring to normal position.	Bend the stop bracket on the switch lever mounting plate to allow the trip levers to make and break circuits in both operated and non-operated positions. Make sure the trip lever operates freely.
Transfer motor does not stop after placing record in rack.	8/10 Amp. fuse blown. Mechanism remains at rest in restored position.	Cam shaft switch out of adjustment.	Adjust cam shaft switch. See section on cam shaft adjustment. Check nut on cam switch lever for looseness.
Transfer assembly does not operate smoothly.	Transfer arm moves in an unsteady manner.	One or both of the Allen set screws in the cam shaft drive sprocket and the cam shaft driven sprocket loose.	Tighten both set screws with an Allen wrench.
Turntable, amplifier and Rainbow unit motors operate continuously.	Mechanism wont operate.	8/10 Amp. fuse blown.	See section on 8/10 Amp. fuse blown.
	Circuits to all three not broken.	Contacts of junction box relay do not break.	Check armature of relay for binding. Check contacts of relay for correct gap. Check winding of relay (330 ohm). Check circuit to relay.
Instrument does not operate after placing record on turntable.	Turntable, amplifier and Rainbow unit motors do not operate.	Open circuit through the contacts of the junction box relay.	Check contact points and circuit for continuity.
Mechanism jams.	Transfer cam jams against toggle pin unit.	Binding in toggle pin unit.	Free toggle pin unit. Clean bearing surfaces.
	Sluggish action of mechanism.	Operating mechanism in extremely cold location.	Place a few drops of fine machine oil on bearing surfaces of trunnion bearing and between inner shoe shaft and hub of outer shoe.
		Binding in transfer assembly.	Clean all bearing surfaces and lubricate. See section - Lubrication.
	Gears lock just as record shoes grip record on turntable.	Incorrect height of transfer arm on support and rubber bumper.	Straighten support and replace rubber bumper if necessary. Over all height of support and bumper from top of boss must be $5-1/16'' \pm 1/64''$ .
Transfer arm bent to one side.		Straighten transfer arm.	
Needle does not contact record.	Misses record entirely.	Pickup arm assembly out of adjustment.	See section on pickup arm assembly adjustment.
		Pickup cable on top of adjusting screw.	Straighten cable
		Pickup arm assembly hangs up on post.	Clean post and inside of tube. Apply light film of machine oil.
Needle misses first part of record.	Needle is not placed on starting margin of record.	Cam spring bent or out of adjustment.	Straighten cam spring and adjust so that needle is placed on record just before pin on bottom of pickup arm hinge clip releases from cam spring.

## TROUBLE SHOOTING CHART (Continued)

Complaint	Symptom	Cause	Remedy
Must cancel by hand.	Record does not cancel automatically.	Faulty cut-off grooves in record.	Replace record.
		Improper adjustment of reversing switch.	See section - reversing switch.
		Cut-off circuit open through reversing switch.	Check for faulty switch. Check for open circuit, especially plug connection.
Record will not cancel.	Mechanism will not begin reverse cycle.	8/10 Amp. fuse blown.	See section on 8/10 Amp. fuse.
Mechanism does not complete reverse cycle.	Mechanism stalled in reverse cycle.	Power cut off while mechanism was in reverse cycle, de-energizing the reversing control relay located in mechanism junction box.	Push cancel button or operate reversing switch. Either one will re-energize the reversing control relay and put mechanism back in operation.
		Cam Shaft Switch out of adjustment.	Adjust Cam Shaft Switch.
No Music.	Reproduction can not be heard.	Volume Control.	See that volume control is turned up. Check connections. Check for open circuit or burned out Volume control. See section on volume control.
		Amplifier.	Check plug and terminal connections. Replace tubes. Be sure they make good contact in their sockets. Check amplifier. See section on Amplifier.
		Speaker.	Check speaker circuits for open or loose connections.
		Crystal pickup.	Check pickup leads for open or loose connections. Replace crystal pickup cartridge.
Music distorted.	Reproduction fuzzy.	Mechanism bolted down tightly to chassis.	Loosen the four bolts and let the mechanism float on the springs.
		Amplifier gain set too high.	Lower volume control setting.
		Crystal pickup defective.	Replace crystal pickup cartridge.
Music fades.	Volume varies.	Tubes or crystal pickup cartridge.	Check tubes. Replace crystal pickup cartridge.
Imperfect reproduction.	Scratching or high surface noise.	Worn needle or record.	Replace.
		Record condition control set improperly.	Adjust control.
	Music slow.	Turntable slow.	Check input voltage. Replace turntable motor.
	Hum.	Tube.	Check tubes by replacing.
		Filter condenser.	Check condenser for an open circuit.