

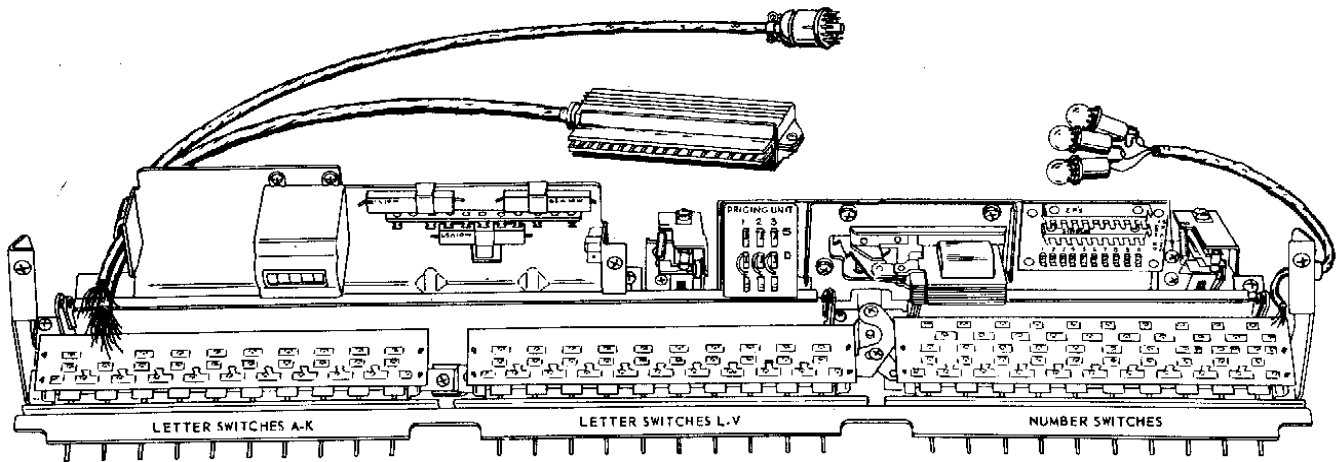
SEEBURG

TORMAT ELECTRICAL SELECTOR

TYPE TES201

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The Tormat Electrical Selector, Type TES201, is a part of the Seeburg Tormat Selection System and Credit System which includes the Tormat Memory Unit on the Select-O-Matic Mechanism and the Tormat Selection System. It is designed for use with the Select-O-Matic "200" Models KS200 and KD200 and is operated from a selector key panel having a row of twenty lettered keys and a row of ten numbered keys. Its principal functions are to connect a letter and a number circuit of the Tormat Memory Unit into a selection write-in circuit and to complete a circuit that initiates the operational sequence of the system. These functions are performed when two of the selection switches are operated by pressing a lettered selector key and a numbered key.

The component parts of the Selector are assembled on a steel frame and are protected by a steel cover. All electrical connections to the associated Tormat Memory Unit and to the Selection System are made with a 12-contact plug and a 36-contact plug that connect to sockets in the units with which it is associated.

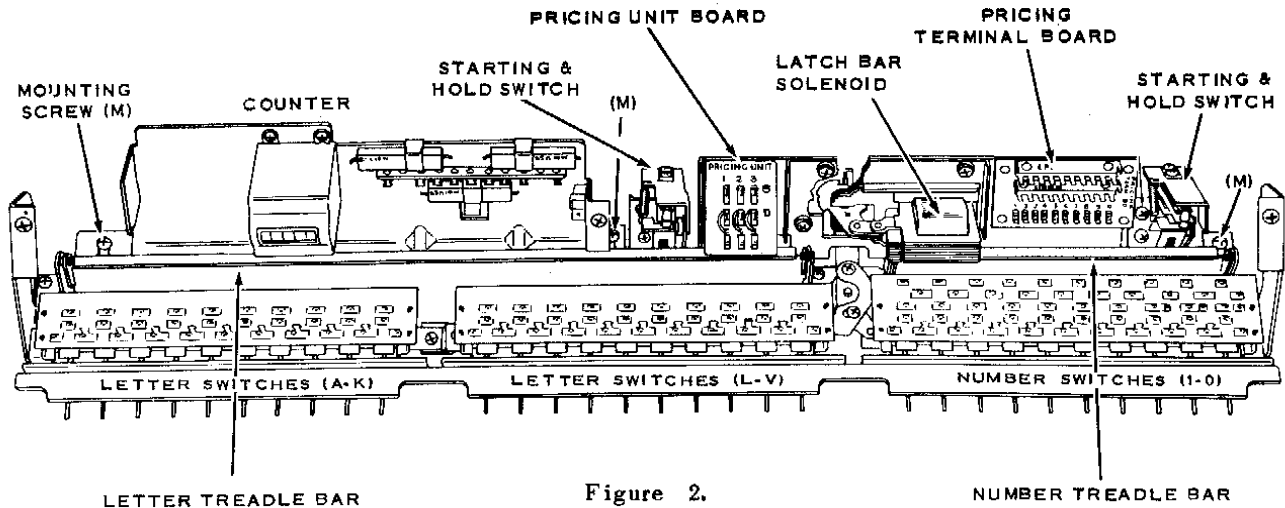
The principal component parts of the Selector include three selection switch assemblies, a latch bar operating solenoid, three credit indicating lights, a selection pricing terminal board, a pricing unit board and two switch groups each of which has two pairs of contacts. There is also a counter which totals the number of selections made with remote control Wall-O-Matics as well as those made with the Electrical Selector.

The credit indicating lights are extended on their connecting leads so they illuminate the selection and credit information windows that are in the cabinet frame casting at the right of the selector key panel. They are 6-volt lamps operated at 25 volts through resistors and connect to an add-and-subtract credit switch that is part of the Selection Pricing Unit in the phonograph. A different light is turned on to indicate when selections can be made in accordance with the selections pricing unit being used.

The three selection switches each incorporate a latch bar and ten selector switches. These switch assemblies are not interchangeable. The two associated with the lettered keys and circuits are identical in contact arrangement and dimensions but their latch bars are not the same. The switch assembly associated with the numbered keys and circuits differs from the "letter switches" in that it includes contacts and circuits for starting the operation sequence as well as control of circuits of the Tormat Memory Unit.

The latch bar function is to hold a selection switch (and selector key) in the pressed-in position when a selection is being made and to release it when the selection operation sequence is completed. The bars in the two letter switch assemblies are coupled end-to-end so they operate as a single continuous bar. The latch bar of the number switch is independent of the letter switches but the bars in both letter and number switches are linked to and controlled

TORMAT ELECTRICAL SELECTOR, TYPE TES201



by the latch bar solenoid. The linkage between the solenoid and the bars is spring biased so the bar position permits free in-and-out movement of the selection switches when the solenoid is not energized. When the solenoid is energized, the bars move to a position in which they will hold a pressed-in switch in the operated position however, the bars are designed so a latched-in switch will be released if another switch in same number or letter switch group is pressed in. The solenoid is energized when credits are set up in the phonograph Pricing Unit.

The shafts or stems of the selector switches extend through the switch frame. They operate a treadle bar when a selector key is pressed and the treadle bar, in turn, operates a switch group consisting of a spring-leaf switch and a snap-action, over-center switch. One of the two switch groups is associated with the numbered switches and operates when any numbered selector key is pressed. The other operates when any lettered key is pressed.

The two spring-leaf switches in the two switch groups are parallel connected and are part of a timing relay holding circuit that is completed through interlocking contacts on the relay when any one of the thirty selector keys is pressed. These switches are the Hold Switches, contacts U and W.

The snap-action switches are the Starting Switches, contacts V and Z. They are series connected and, together, are part of a circuit that includes a Subtract Solenoid in the Dual Pricing Unit of the Selection System. When a letter key and a number key are pressed, the starting switches complete the circuit to a

solenoid which, when energized, closes switch contacts that control the power to the Tormat Memory Unit, the selection counter and the timing relay. They also close, momentarily, the circuit for a play control add solenoid that, in turn, controls, through a play control unit, the power to the phonograph amplifier and the mechanism motor.

The pricing terminal board consists of two ten-point terminal strips and ten flexible leads. One end of each of the leads connects to the start switches through one of the ten numbered selector switches and has at its other end a push-on terminal for easy and simple connection to either of the two terminal strips marked "EP" and "Singles". By choice of terminal strip connection any group of twenty record selections can be "sold" for either two prices when a Dual Pricing Unit is in use. If a Single Pricing Unit is being used, the leads are connected to the "Singles" strip.

The credit light and "starting" circuits of the selection system are not the same for Dual and Single Pricing Units. These circuits are terminated at the pricing unit board and are connected to suit the Pricing Unit with which the phonograph is equipped.

REMOVAL OF SELECTOR

All adjustments of the mechanical linkage, all switch adjustments and all circuits of the Selector are accessible for inspection and service without removing it from the cabinet. The entire unit may, however, be removed by pulling out the two connecting plugs at the end of the cable and taking out three screws that are at the back edge of the selector frame. These screws are identified at (M) in Figure 2.

TORMAT ELECTRICAL SELECTOR, TYPE TES201

When replacing the Selector in the cabinet it should be fastened securely with the mounting screws. It should be positioned so there is a little clearance between the ends of the selection switch shafts and the back of the selector keys. If it is too far toward the keys the selection switches may not return far enough to the released position to open the timing relay circuit.

LUBRICATION

Oil all pivots with one drop of Seeburg No. 53014 Select-O-Matic Special Purpose Oil. Use Aero Lubriplate sparingly as indicated in Figure 3. (*Aero Lubriplate and No. 53014 Oil is available from your Seeburg Distributor.*)

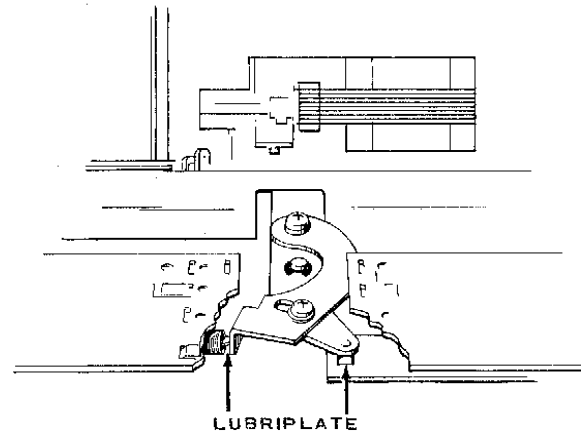
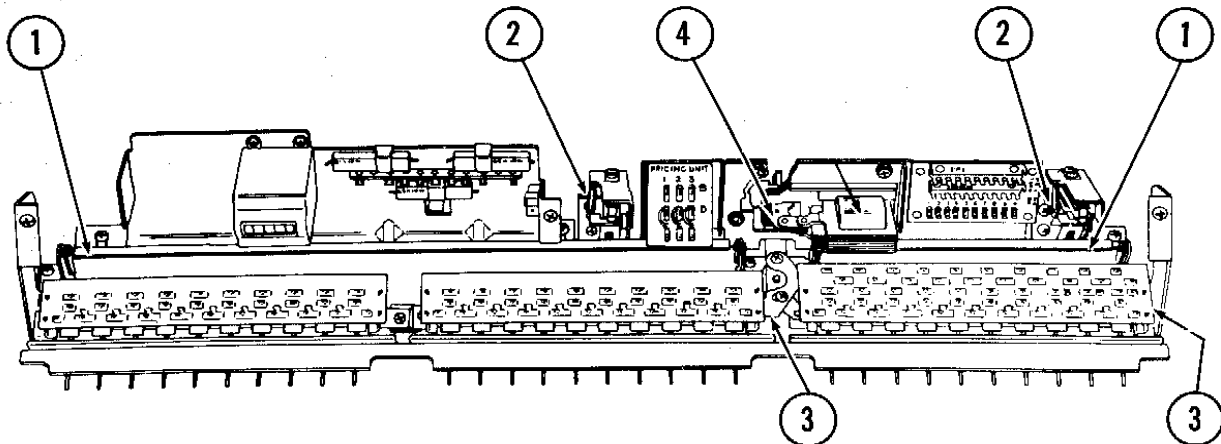


Figure 3.

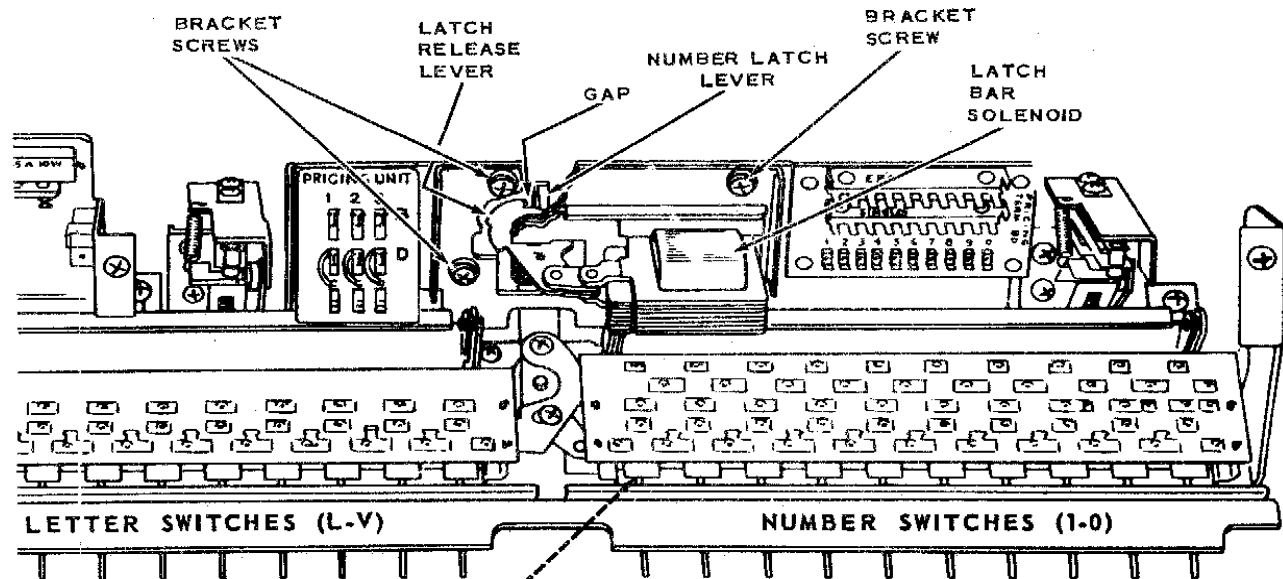
SPRING ADJUSTMENTS



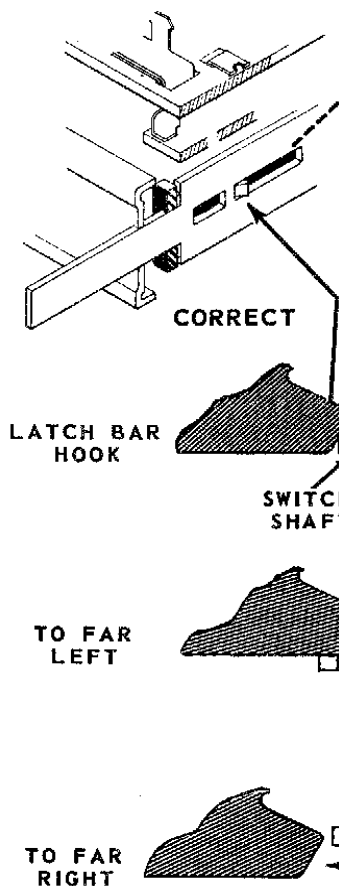
<p>① TREADLE BAR SPRINGS</p> <p>5 - 50 Z.</p> <p>3 - 40 Z.</p> <p>RETURN THE TREADLE BARS TO NORMAL REST POSITION AGAINST SELECTION SWITCHES.</p>	
<p>② ACTUATOR LEVER SPRING</p> <p>SHIFTER BLADE</p> <p>5 1/2 - 7 1/2 OZ.</p> <p>HOLD SHIFTER BLADE - MEASURE FORCE AS INDICATED BY ARROW.</p>	<p>③ LATCH BAR SPRING</p> <p>6 TO 7 OUNCES HERE TO START MOVEMENT.</p>
<p>④ LATCH RELEASE LEVER SPRING</p> <p>RESTRAIN MOVEMENT OF NUMBER LATCH LEVER - FORCE TO START MOVEMENT OF SOLENOID ARMATURE IS THEN 1 LB.</p>	

TORMAT ELECTRICAL SELECTOR, TYPE TES201
ADJUSTMENT NO. 1 - NUMBER SWITCH

This adjustment positions the latch bar in the NUMBER selector switch so that when credits are established, the numbered selector switches will latch in the pressed-in position but permit change of selection by operating another numbered switch.



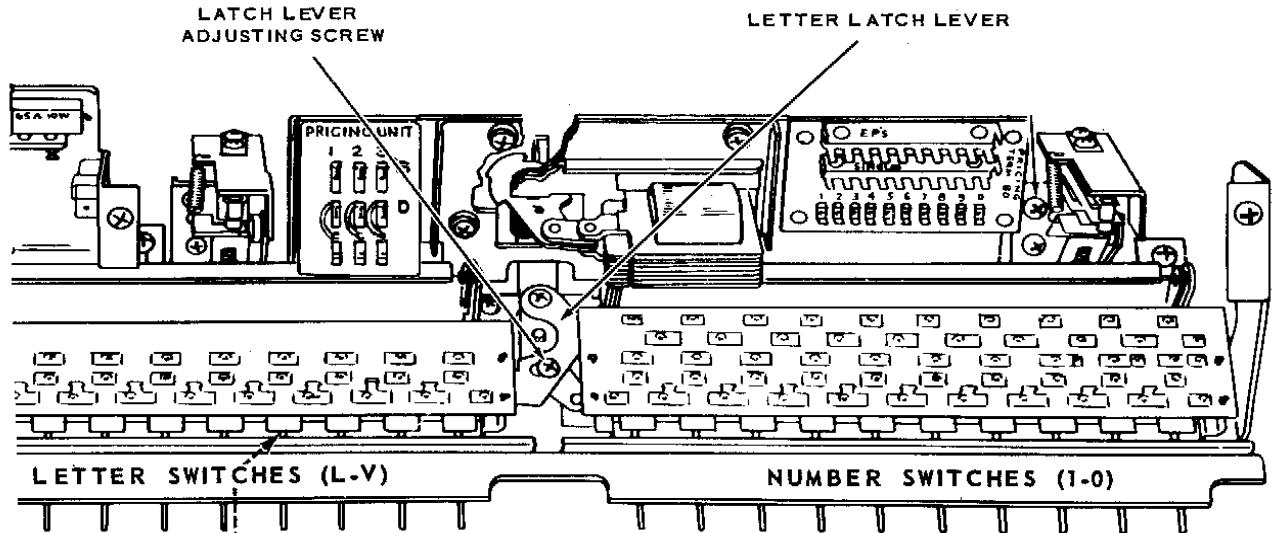
NOTE: When making this adjustment the latch bar solenoid must be in the energized position, all linkage and bars must be free to move without binding and there should be a 1/64" to 1/16" gap between the latch release lever and the number latch lever.



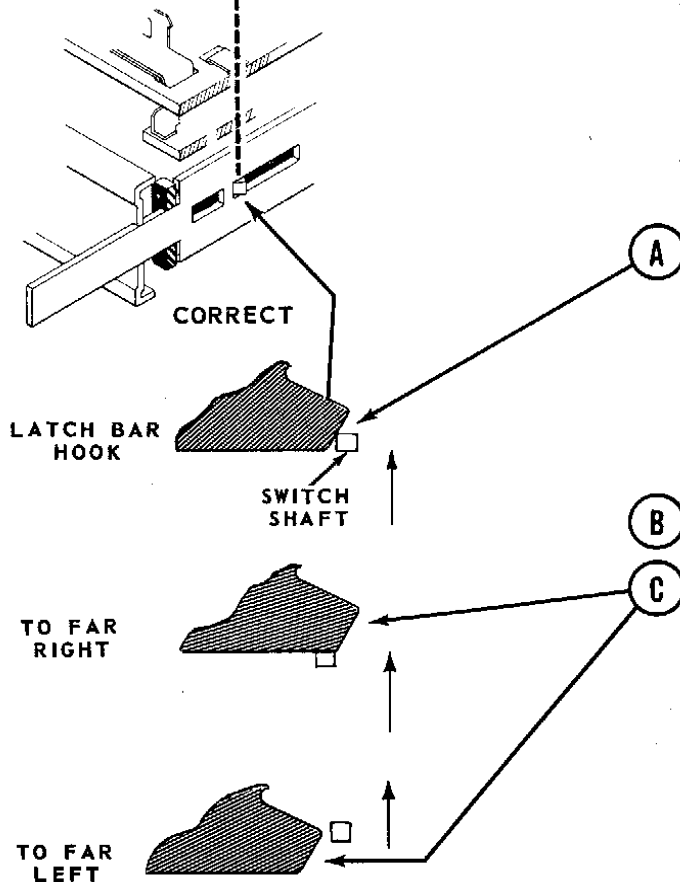
- A** Loosen the three screws holding the Latch Bar Solenoid Bracket and position the Solenoid so the shaft of a number selector switch, when pressed in will engage the latch bar at the mid-point of the sloping edge of the latch bar hook.
- B** If the Latch Bar Solenoid is too far to the left, the selector keys will be locked. If the Solenoid is too far to the right, the selector keys will not latch or the latching will be erratic.
- C** After the correct position of the Latch Bar Solenoid has been made, the bracket holding screws must be securely tightened.

TORMAT ELECTRICAL SELECTOR, TYPE TES201
ADJUSTMENT NO. 2 - LETTER SWITCH L-V

This adjustment positions the latch bar of the L-V LETTER SWITCH so the lettered selector switches will operate in the same manner provided for the numbered switches in Adjustment No. 1.



NOTE: Before making this adjustment, Adjustment No. 1 must be correct, the latch bar solenoid must be in the energized position, all linkage and bars must be free to move without binding and there should be 1/64" to 1/16" gap between the latch release lever and the number latch lever.



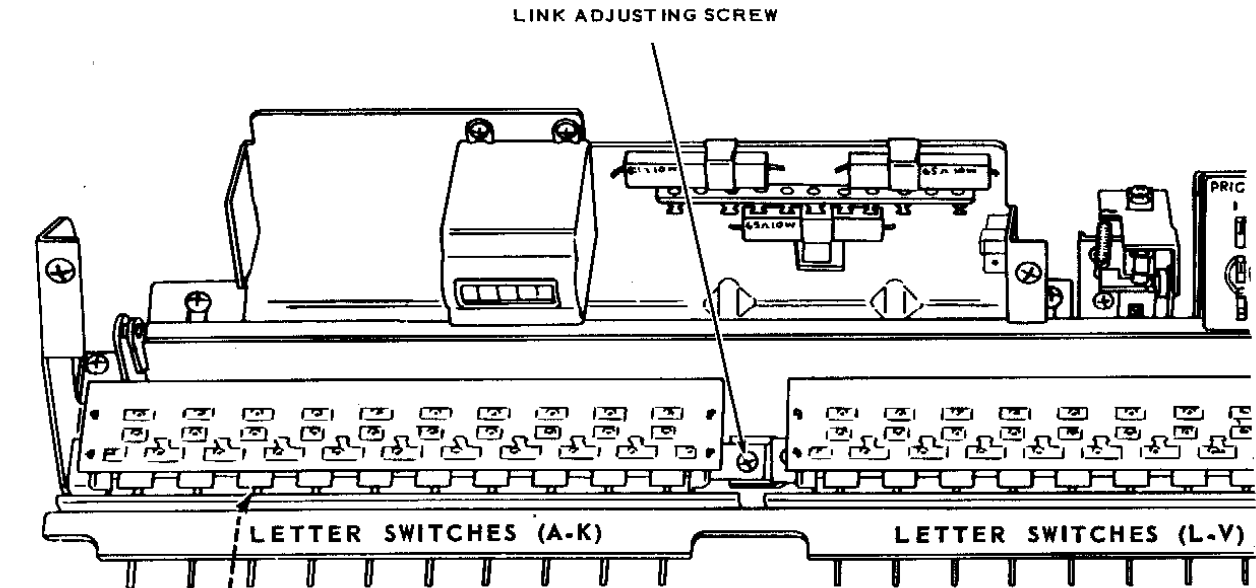
A Loosen the screw in the latch lever at the right-hand end of the L-V Letter Switch and, holding the latch bar at the left of the switch, position it so the lettered switch shafts (L to V), when pressed in, engage the latch bar at the mid-point of the latch bar hook.

B Securely tighten the adjusting screw.

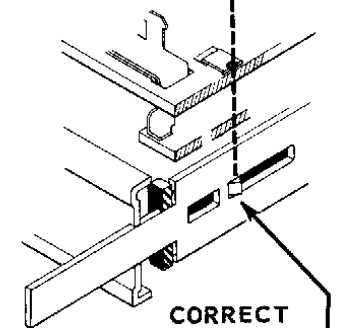
C Check this adjustment by pressing a number and letter (L to V) selector switch while manually holding the latch bar solenoid in the energized position, then slowly release the solenoid. The lettered and the numbered switches should release at the same time. If the letter latch lever is too far to the left, the lettered switch will release before the numbered switch; if the letter latch lever is too far to the right, the lettered switch will release after the numbered switch.

TORMAT ELECTRICAL SELECTOR, TYPE TES201
ADJUSTMENT NO. 3 - LETTER SWITCH A-K

This adjustment positions the latch bar of the A-K LETTER SWITCH so these lettered selector switches will operate in the same manner provided for the L-V LETTER SWITCH in Adjustment No. 2.



NOTE: Before making this adjustment, Adjustments No. 1 and 2 must be correct, the latch bar solenoid must be in the energized position, all linkage and bars must be free to move without binding and there should be 1/64" to 1/16" gap between the release lever and the number latch lever.



LATCH BAR HOOK

SWITCH SHAFT

TO FAR RIGHT

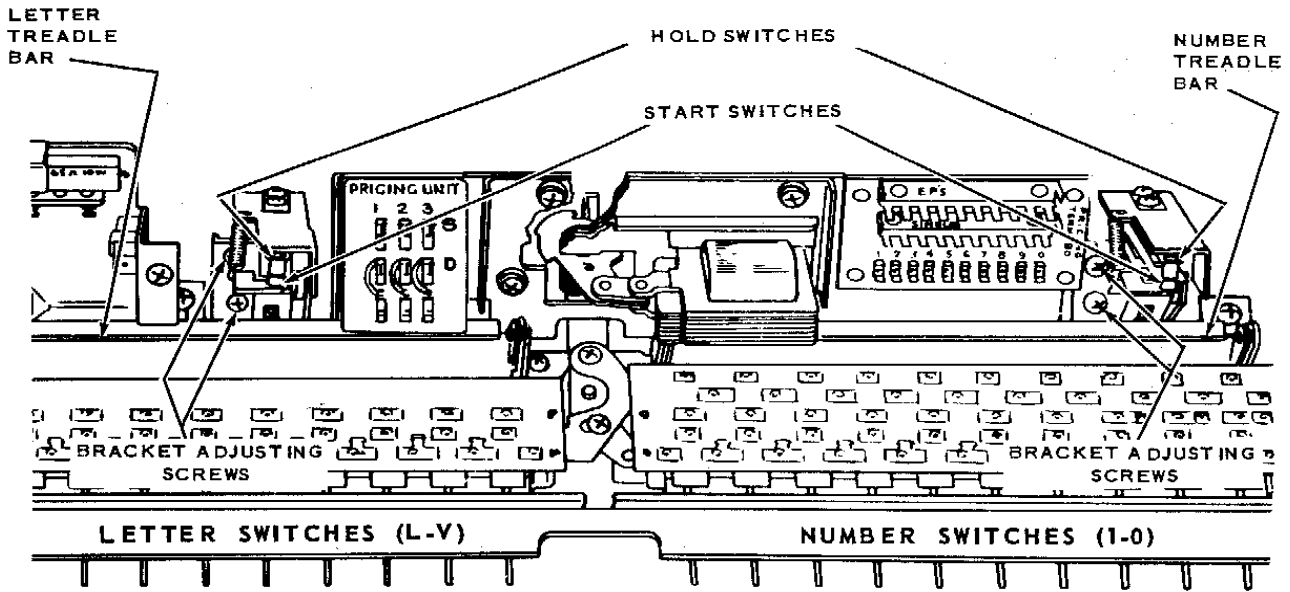
TO FAR LEFT

A Loosen the screw in the latch bar link between the A-K and the L-V letter switches and position the A-K switch latch bar so the A to K switch shafts, when pressed in, engage the latch bar at the mid-point of the latch bar hook.

B Securely tighten the adjusting screw.

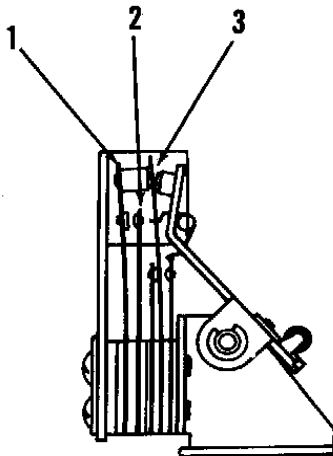
C Check this adjustment by pressing a lettered switch in the A to K group and one in the L to V group while manually holding the latch bar solenoid in the energized position, then slowly release the solenoid. Both lettered switches should release at the same time. If the A-K latch bar is too far to the left, the switch in the A-K group will release first; if the A-K latch bar is too far to the right, the switch in the L-V group will release first.

**TORMAT ELECTRICAL SELECTOR, TYPE TES201
START AND HOLD SWITCH ADJUSTMENT**



NOTE: Check treadle bar operation before making adjustments. Rubber bumpers in bars should rest against selector switch frame when no selector key is pressed in.

The timing of operation of the snap action Start Switches is adjusted by positioning the brackets for the entire switch assembly. DO NOT ADJUST BY BENDING THE SNAP ACTION SWITCH BLADES.



A. Loosen the bracket holding screws and position the switches so the Start Switch contacts close when the selector switches have approximately 1/16" more travel before latching by latch bars.

With all selector switches released and the treadle bar bumpers against the selector switches - -

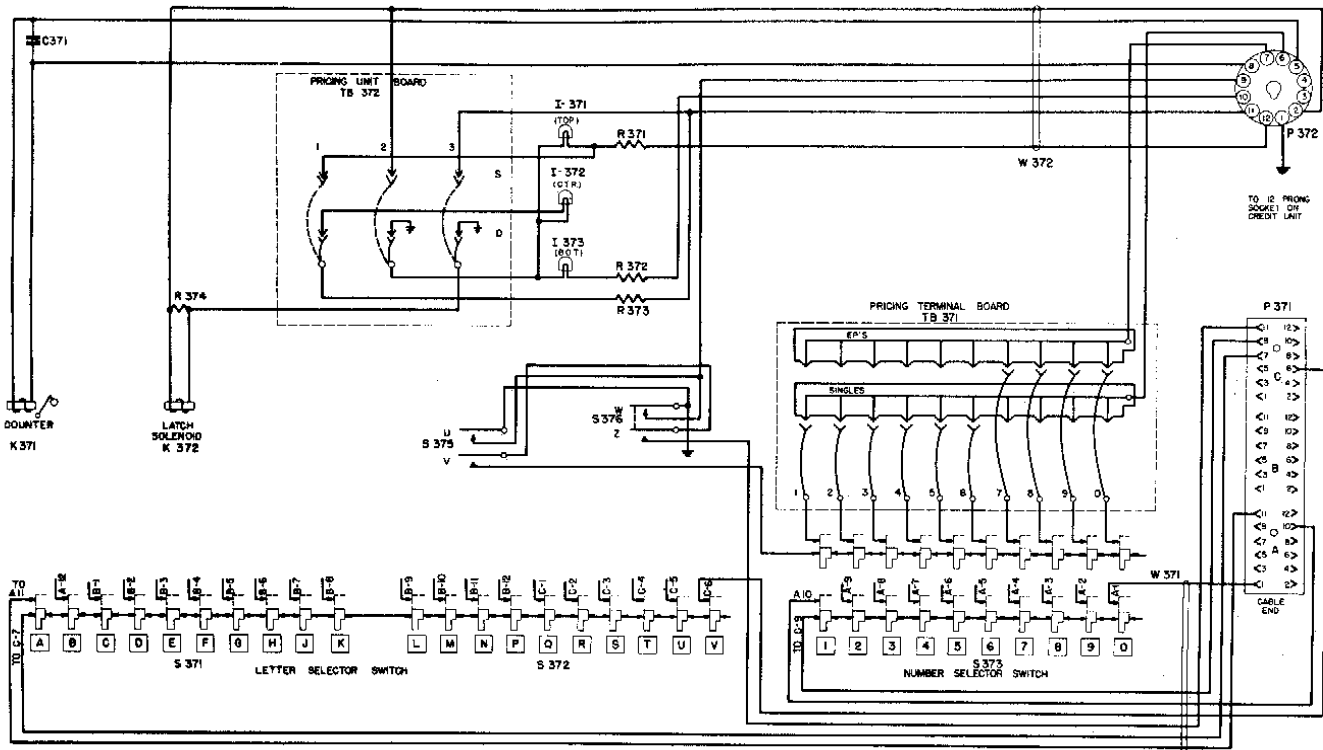
B. Adjust Blade No. 1 so its fibre lift bears against Blade No. 3 approximately 2 oz. (50 grams).

C. Adjust Blade No. 2 for 1/32" contact gap.

D. Readjust force of Blade No. 1 against Blade No. 3 so Blade No. 2 moves approximately blade thickness (1/64") when contacts close.

E. Check operation: Hold Switch must close before Start Switch closes and open after Start Switch opens.

TORMAT ELECTRICAL SELECTOR, TYPE TES201



Schematic Diagram

PARTS LIST

Item	Part No.	Part Name
C371	86259	.02 Ceramic
I 371	410823	Credit Lamp Socket Assembly
I 372	410823	Credit Lamp Socket Assembly
I 373	410823	Credit Lamp Socket Assembly
	505173	Panel Lamp No. 55
K371	410903	Counter Assembly
K372	410684	Latch Solenoid
P371	604094	Cable Connector
P372	410707	Plug
R371	81178	Resistor 65 Ohm, 10 Watt
R372	81178	Resistor 65 Ohm, 10 Watt
R373	81178	Resistor 65 Ohm, 10 Watt
R374	81183	Resistor 100 Ohm, 10 Watt
S371	410616	Selector Switch (A-K)
S372	410617	Selector Switch (L-V)
S373	410618	Selector Switch (Numbers)
S375	410654	Snap Switch
S376	410654	Snap Switch
TB371	410645	Pricing Term. Board Assembly
TB372	410934	Pricing Unit Term. Board Assembly
W371	410908	Matrix Cable
W372	410910	Control Cable