ADJUSTMENTS

LEICH* L55 PBX

1. GENERAL

1.01 This section provides information concerning adjustments and disassembly procedures for the Leich L55 PBX.

1.02 The code letters AS, CS, RB, etc., shown in Table 1 refer to the designations stamped on the relays and shown on the circuits included in GSP 503-400-400.

2. MAINTENANCE

2.01 Commonly used tools, including relay spring adjustment tools, gauges, current flow and transmission test sets are required.

Buzzer and Hand Generator

2.02 Disconnect lead wires before removing the hand generator and buzzer. Use an Allen-head wrench to loosen the coupling screw on the buzzer shaft, then remove the shaft before loosening the buzzer mounting screws. To reassemble the unit, insert the shaft so the coupling engages, replace the buzzer mounting screws, and then tighten the coupling screw.

2.03 Relay NL and its associated capacitor are mounted on a bracket which may be loosened if necessary to afford easier access to wiring. Do not allow the relay cover to touch the multiple jacks of any adjacent unequipped cord circuits. If desired, trunk 1 may also be removed for greater ease of access. The handle and shaft assembly of the generator may be disengaged by turning the crank counterclockwise. Removal of the generator mounting screws permits this unit to be separated from the frame.

Battery and Buzzer Key Assembly

2.04 To gain access to the rear mounting screws of the battery and buzzer key assembly, remove the last cord circuit unit (or apparatus blank installed in its place). The relay unit for the attendant's position circuit and the front positioning pin for the unit must also be removed. Operator's circuit and cord circuit units may temporarily be placed in vacant cord positions, if any. After removing the screws holding the key assembly to the PBX frame, twist the assembly clockwise as seen from the front and lift it out over the writing shelf.

2.05 To remount this assembly, turn it clockwise from the vertical and insert it from the front of the switchboard, then straighten it to its correct position by a counterclockwise turn. Replace the mounting screws from the rear, using a long-handled screw driver equipped with screw gripping blades or jaws. Screw the positioning pin for the attendant's position circuit unit back into its tapped hole and replace the unit and the adjacent cord circuit, if any, in their normal locations.

Terminal Blocks

2.06 To gain access to one side of the terminal blocks, lift out the front door and remove the cord weight protector by loosening its mounting screws so that they permit disengagement at the keyhole slots. Be sure to re-install this protector after work on the terminal blocks is completed in order to avoid possible damage to wiring from the cord weights.

Jack-In Units

2.07 The cord, trunk, operator, conference, and tie trunk jack units are arranged for ready insertion or removal. These units, and apparatus blanks with which unequipped positions are filled, are held by quarter-turn fasteners slotted for screw driver operation. Connections are made by cable receptacles which mate with pins on a frame-mounted jack multiple. Relay bars for conference, tie trunk and line circuits are conventionally screw mounted. The first two are connected to their respective jack units by cables equipped with receptacles for quick disconnect.

Cord Units

2.08 For easy access to the wiring side of a cord unit, remove the fibreboard cord weight protector which is secured to angle brackets on the bar by means of screws in keyhole slots. To dismantle the ring key and supervisory lamp assembly, first remove the cotter pin which secures the talk key shaft to the remainder of that key assembly. Then free the bar which actuates the contacts

* ™ Automatic Electric Company.

of the night key by loosening its two set screws. Withdraw the shaft from the escutcheon and pick out the actuator bar once it is free of the shaft. Unscrew the shaft bushing and the two screws which hold the escutcheon. This frees the escutcheon and the buttons which actuate the ring keys, leaving that key and lamp assembly accessible for repair or removal.

2.09 To reassemble the unit, insert the ring key buttons in the front escutcheon and secure it with its two screws and screw-in shaft bushings. Hold the night key actuator bar in position, with its stud facing the springs, and insert the key shaft into the bushing through the actuator bar, and out the hole in the frame rib. Couple the shaft to the talk key with its cotter pin, making sure the handle faces upward when the key is released. Hold the actuator bar so that its stud is in line with the springs of the night key and its opposite face clears the frame by about 1/16", then tighten one set screw, operate the talk key and tighten the second set screw. Restore the talk key and operate the night key to insure that its contacts break fully.

2.10 If a cord unit must be modified for use in a two-position PBX, remove the standard four-foot cords by unfastening their terminals and unhooking the strain relief fastener. Mount the idler pulley assembly onto the frame. Thread in a replacement eight-foot cord, leading its terminal end through the hole in the escutcheon, over the two outside bottom pulleys of the weight, up over the idler pulley, back over the single top pulley of the weight, and up through the channel in the frame. Fasten the cord terminals to the terminal block as follows:

white to T (tip)
blue to R (ring)
red to S (sleeve)

Repeat with the second cord, then place the clamp over both cords and fasten the clamp to the frame.

Talk Key

2.11 Spring piles of the talk key are clamped to the key frame by the center screw of three. The two outer screws clamp individual springs together into the pile assembly. When replacing a spring pile, loosen the outer screws and lift the pile off its mounting. Remove the lift and then the stop. To replace them in the new pile, insert the longer-shanked end of the stop through contact springs into the square hole in the short, heavy-gauge top spring, with its teeth facing the free end of the contact springs. Slide the lower end of the stop forward, parting the contact springs so that each make spring rests on the upper surface of a stop tooth and each break spring rests on a bottom surface.

2.12 Place the tension spring and mounting screws in position and hold them with the forefinger of one hand. With the other hand insert the rectangular end of the lift through the contact springs and top spring into the smaller square hole in the tension spring, with the slots of the lift facing the clamped end of the contact springs. Slide the lower end of the lift backward, parting the lever springs so that each is engaged by one of the slots. The assembly may now be placed on its mounting and secured by the two outer screws.

2.13 Adjust the talk key as follows:

(1) The lift actuator must clear the lifts by 0.005 inch minimum as gauged by eye, with the key normal. If necessary, adjust the back stop at location A as indicated in Fig. 1.

(2) Travel of the lift which actuates the transfer combination must be 0.036 (±0.002) inch. If necessary, adjust the lift actuator at location B as indicated in Fig. 1.

(3) Travel of the other lift must be 0.028 (±0.002) inch. If necessary, adjust the lift actuator at location C as indicated in Fig. 1.

(4) Tension springs must not touch the top stop support. Do not alter the normal tension (200 to 400 grams).

(5) Tension of the break spring of the transfer combination against its stop must be between 20 and 25 grams.

(6) Tension of the make springs against their stops must be between 30 and 35 grams.

(7) Levers of the two break combinations must bear against the top of the lift stop

(8) Tension of the break spring of each break combination against its stop must be between 40 and 50 grams.

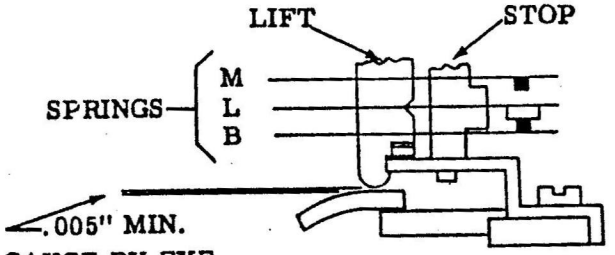
NOTE: The lever springs have only minimum tension of their own. Necessary tension is provided by the ten-

sion springs on top of the spring piles.

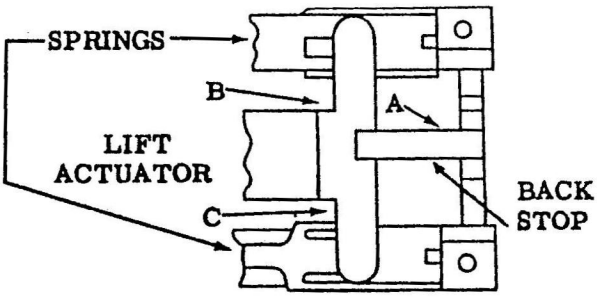
(9) The make contact of the transfer combination must close first. Before any break contacts open, all other make contacts must close simultaneously as gauged by eye, with a minimum travel of 0.008 inch.

(10) Transfer combination break springs must clear their stops by 0.003 inch minimum as gauged by eye with the key in its normal position.

(11) Transfer combination make springs must clear their stops by 0.003 inch minimum as gauged by eye with the key in its normal position.



SIDE VIEW



BOTTOM VIEW

Figure 1. Talk Key

Table 1. Relay Adjustment Requirements

CHANGES	RELAY		TEST	ADJ.	INSP.	NOTES
	AD TYPE 57 AL	RESID. .003 DISC	O	2700	2400	CONNECT GRD THROUGH RES
	PC. NO. RT-12038-B 57	.022 .012 .008 .008		.0046	.0049	TO AD-SPG 4; NSULATE
	COIL NO. D-280219-A		NO	3650	4000	AD-SPGS 3 & 4.
	NO.1 2500 OHMS			.0039	.0037	
	NO.2					
	AS TYPE SPL	RESID. .003 DISC	O	2970	2760	REMOVE BAR. CONNECT NEG.
	PC. NO. RT-555077-A	.030 .018 .010		.0080	.0086	BAT. TO S-SPG 24; GRD
	COIL NO. D-284330-A		NO	4410	4970	THROUGH RES TO RW WIRE ON
	NO.1 33 OHMS			.0054	.0048	AS WDG. DISCONNECT ONE
	NO.2		R	8240	8860	SIDE OF 20 MF ON AS WDG.
				.0029	.0027	
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO.1					
	NO.2					
	CS TYPE 57 AL	RESID. .003 DISC	O	1090	930	CONNECT RES BETWEEN
	PC. NO. RT-22076-B 12	.022 .012 .008		.0099	.0106	S-SPG 3. TEST WITH 430 OHMS
	COIL NO. D-284520-A		NO	1400	1600	IN SERIES.
	NO.1 450 OHMS			.0077	.0072	
	NO.2 450 OHMS					
	TYPE	RESID.				
	PC. NO. RT-	.022 .012				
	COIL NO. D-					
	NO.1					
	NO.2					
	H TYPE 57 AL	RESID. .003 DISC				IMPEDANCE COIL ONLY.
	PC. NO. RT-10507-B 42					
	COIL NO. D-280341-A					
	NO.1 150 OHMS					
	NO.2					
	RB TYPE 57 AL	RESID. .003 DISC				IMPEDANCE COIL ONLY.
	PC. NO. RT-10507-B 47					
	COIL NO. D-284520-A					
	NO.1 450 OHMS					
	NO.2 450 OHMS					
	S TYPE 57 AL	RESID. .003 DISC	O	.1570	1370	CONNECT GRD THROUGH RES
	PC. NO. RT-21385-B 12	.018 .008 .012 .005		.0059	.0062	TO T-SPG 22. TEST WITH RXA
	COIL NO. D-280219-A		NO	2400	2700	& 1200 OHMS IN PARALLEL.
	NO.1 2500 OHMS			.0049	.0046	
	NO.2					
	TYPE	RESID.				
	PC. NO. RT-	.018 .008 .012 .005				
	COIL NO. D-					
	NO.1					
	NO.2					
	TYPE	RESID.				NOTE: ALL TEST RESISTANCE
	PC. NO. RT-					VALUES AT 24V.
	COIL NO. D-					
	NO.1					
	NO.2					
USED ON						

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FORM AA-2398

Table 1. Relay Adjustment Requirements (Continued)

CHANGES	RELAY			TEST	ADJ.	INSP.	NOTES
	T TYPE 57 AL	RESID. .003 DISC	.022 .012 .008	O	2100	1870	REMOVE BAR. CONNECT GRD
	PC. NO. RT-22018-B 11				.0052	.0055	TO BK WIRE ON T-WDG AND
	COIL NO. D-280219-A			NO	2800	3080	NEG BAT THRU RES TO OTHER
	NO. 1 2500 OHMS				0045	.0043	T-WDG TERM. TEST WITH RXT
	NO. 2						& 1200 OHMS IN PARALLEL.
	TYPE	RESID.	.022 .012 .008				
	PC. NO. RT-						
	COIL NO. D-						
	NO. 1						
	NO. 2						
	A TYPE 57 AL	RESID. .003 DISC					IMPEDANCE COIL ONLY.
	PC. NO. RT-017910						
	COIL NO. D-280026-A						
	NO. 1 200 OHMS						
	NO. 2 200 OHMS						
	TYPE	RESID.					
	PC. NO. RT-						
	COIL NO. D-						
	NO. 1						
	NO. 2						
	BT TYPE 57 AL	RESID. .003 DISC	.020 .009 .008	O	3220	2720	CONNECT BAT THROUGH RES
	PC. NO. RT-12000-B 26				.0042	.0046	TO MULT PLUG LEAD-10.
	COIL NO. D-280219-A			NO	3900	4500	
	NO. 1 2500 OHMS				.00375	.0034	
	NO. 2						
	ON TYPE 57 AL	RESID. .003 DISC	.014 .008 .008 .008	O	2290	2030	DISCONNECT 10-PER SOCKET.
	PC. NO. RT-12058-B 61				.0083	.0088	CONNECT GRD THROUGH RES
	COIL NO. D-280077-A				2680	2890	TO SP-SPG 7. INSULATE ON
	NO. 1 700 OHMS				0071	.0067	SPGS 3 & 4. CONNECT NEG BAT
	NO. 2						TO 10 PER PLUG TERM 1.
	P TYPE 57 AL	RESID. .003 DISC					IMPEDANCE COIL ONLY.
	PC. NO. RT-10507-B 41						
	COIL NO. D-280026-A						
	NO. 1 200 OHMS						
	NO. 2 200 OHMS						
	SP TYPE 57 AL	RESID. .003 DISC	.020 .012 .008 .008 .008	O	1470	1300	CONNECT GRD THROUGH RES
	PC. NO. RT-21266-B 14				.0097	.0104	TO SP-SPG 8.
	COIL NO. D-280208-A			NO	1900	2100	
	NO. 1 1000 OHMS				.0083	.0077	
	NO. 2						
	TYPE	RESID.	.020 .012 .008 .008				
	PC. NO. RT-						
	COIL NO. D-						
	NO. 1						
	NO. 2						
	TYPE	RESID.					
	PC. NO. RT-						
	COIL NO. D-						
	NO. 1						
	NO. 2						

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FORM AA-2398

Table 1. Relay Adjustment Requirements (Continued)

CHANGES	RELAY	1 2 3 4 5 6 7 8 9 10 11 12 13	TEST	ADJ.	INSP.	NOTES
	NL TYPE SPL	RESID. .003 DISC	O	1330	1200	CONNECT GRD THROUGH RES TO MISC TERM 15. NO LINE OR SUPV LAMP MAY BE IN USE DURING TEST.
	PC. NO. RT-555078-A	.030 .018 .010		.018	.020	
	COIL NO. D-283275-A		R	3330	3690	
	NO. 1 5.2 OHMS			.0072	.0065	
	NO. 2					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
	R TYPE 57 AL	RESID. .0015	O	1140	1000	CONNECT GRD THROUGH RES TO R-SPG 3. INSULATE R-SPGS 3 & 4.
	PC. NO. RT-555074-A	.014 .008 .008		.0114	.012	
	COIL NO. D-284328-A		NO	1530	1670	
	NO. 1 2500 OHMS			.0095	.009	
	NO. 2 1000 OHMS					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					
USED ON	TYPE	RESID.				
	PC. NO. RT-					
	COIL NO. D-					
	NO. 1					
	NO. 2					

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				ISSUE:	

FORM AA-2398