

INSTRUCTIONS FOR INSTALLING THE 336474**
MODIFICATION KIT TO MODIFY MODEL 35 RO,
KSR, AND ASR SWITCHED NETWORK SETS HAVING
THE 1967 ASCII* CODE TO USE THE UCC29

1. GENERAL

1.01 The 336474** modification kit modifies Model 35 RO, KSR, and ASR Switched Network Sets, having the 1967 ASCII Code, to use the UCC29 call control unit.

1.02 The following components (not furnished with the kit) must be used with the 336474 modification kit to provide an operational station:

1 UCC29 call control unit

1 109C or F data set or 186627 set logic assembly

1 334889 (no dial), 334890 (rotary dial), or 334891 (TOUCH-TONE®) set of faceplate parts (appropriate) to accommodate operator controls and indicators

1 336463 cable assembly (only 109C or F data set).

The additional required components for the Model 35 RO Set are given in Table 1, for the KSR set in Table 2, and for the ASR set in Table 3.

TABLE 1

COMPONENTS REQUIRED FOR MODEL 35 RO OPERATION

CODE	DESCRIPTION
LB801	Base
LESU302	Electrical Service Unit
LAC305	Cabinet
161295	Gear Set-100 WPM
LMU3	Motor, Synchronous
LP831 DC/AVA	Typing Unit-Friction Feed
LP846 DC/AUZ	Typing Unit-Sprocket Feed

*American National Standard Code for Information Interchange

TABLE 2

COMPONENTS REQUIRED FOR MODEL 35 KSR OPERATION

CODE	DESCRIPTION
LAC305	Cabinet
LESU300	Electrical Service Unit
LK807AVJ	Keyboard
LMU3	Motor, Synchronous
161295	Gear Set-100 WPM
320457	Mounting Hardware
LP831 DC/AVA	Typing Unit-Friction Feed

TABLE 3

COMPONENTS REQUIRED FOR MODEL 35 ASR OPERATION

CODE	DESCRIPTION
LAAC305	Cabinet
LESU349	Electrical Service Unit
LAK816/AVJ	Keyboard Base
LMU3	Motor, Synchronous
LCXB800	Transmitter Distributor Base
LXD803	Transmitter Distributor
163025	Reperforator Gear Set-100 WPM
161295	Printer Gear Set-100 WPM
320492	Mounting Hardware-ASR
LP831 DC/AVA	Typing Unit-Friction Feed
LRPE807	Nontyping Reperforator
LPR809DRM	Typing Reperforator
LP846 DC/AUZ	Typing Unit-Sprocket Feed

1.03 The 10 and 48 v ac transformer and fuse usually mounted on the LCCU300 or LCCU301 are provided along with a mounting plate to hang from the existing relay rack in the pedestal of the LAAC305 or LAC300 or 309 cabinet.

1.04 An adapter cable to interconnect the LESU349, LESU302 or LESU300 and UCC29 and a cable connecting the transformer and fuse to the "C" wiring field on the LESU are provided.

1.05 A larger value fuse for the UCC29 is provided to handle the increased load of the Model 35 motors over the Model 33 motor.

- 1.06 A strapping card is provided to replace the signal regenerator on the LESU349 and LESU300 when the set is used with the 109C or F data set.
- 1.07 A spacer plate with mounting screws is provided. This plate will mount the 186627 set logic assembly or 109C or F data set and the break light and reset switch of the 186630 break detector modification kit to the Model 35 cabinet.
- 1.08 Stunt box parts are furnished to enable the tape reader to turn off from an EOT in the tape with only one fill character after the EOT code, instead of two.

Note: Parts to incorporate the new line feature are provided. On friction feed units CR on LF is provided along with the disabling option. On sprocket feed units CR on LF, CR on FF, and CR on VT are provided with the disabling option for CR on LF and CR on VT.

- 1.09 The customer must remove and discard the elapsed time indicator if present, from the UCC29.
- 1.10 The interface from the CAH and CAJ connectors of UCC29 to the 109C or F data set or the 186627 set logic is presented to the functions and features of the Model 35 ASR, RO or KSR set equivalent to those in a Model 33 ASR or KSR set using UCC29 as shown on 8163WD schematic. This is accomplished through the 336497 cable interconnecting the LESU349, 302 or 300 and UCC29.
- 1.11 Figure 1 describes the circuit paths between UCC29 and the Model 35 ASR, RO or KSR set, without including every intermediate point as shown on 8226WD schematic for the ASR, 8228WD schematic for the KSR or 6040WD schematic for the RO set. The heavy broken line paths in Figure 1 indicate the 336497 and 336498 cable assemblies.
- 1.12 The UCC29 call control unit is described in Sections 574-123-100 and 574-202-104. Non-Bell customers refer to Teletype Bulletin 310B. The Model 35 ASR sets are covered in Teletype Bulletin 280B and the Model 35 RO and KSR sets in Teletype Bulletin 281B. The 186627 set logic assembly is covered in Teletype Specification 50694S.

Note: The 109C data set is described in BTL CD and SD-1D164-01 and the 109F data set in BTL CD and SD-1D199-01.

- 1.13 The 181879 transformer is furnished to provide 48v ac to be rectified for the noncontention relay, TD clutch magnet, answer-back control, mode switch control lamp circuits and 10v ac for TD ON and CALL IN and MOTOR ON lamps on the ASR set or the noncontention relay and answer-back control circuit on the KSR and RO set.

SPECIFICATION 50695S

- 1.14 The 336498 cable interconnects the 181879 transformer with the $\frac{1}{2}$ amp SL-BL fuse and the "C" wiring field of the LESU349, 300 or 302.
- 1.15 The selector magnet driver on the LESU349 is used to drive the LPR reperforator selector magnets on the ASR set. The LP printer selector magnets will be driven by the SMD on the UCC29.
- 1.16 The 161136 fuse (6- $\frac{1}{4}$ amp SL-BL) and 185686 label replaces the 3.2 amp fuse and label on the UCC29 when used on a Model 35 ASR set. For the KSR and RO application the 129919 fuse (4 amp SL-BL) and 185684 label are used
- 1.17 Shorter screws are provided to mount the cover latch on the cabinet to avoid interference with the set logic assembly.
- 1.18 A diode to be inserted in series with the motor control relay at the UCC terminal strip is furnished to eliminate a current flow through the mode switch and motor control relays when in the KT mode which causes failure of the motor to turn off or failure of the mode switch relays to de-energize and revert the ASR set to the "T" position.
- 1.19 When used with the 109C or F data set, the Model 35 ASR set may not be used to prepare tape locally in the "T" or "TTs" position. The reperforator will be blinded in the T and TTs modes.
- 1.20 The signal regenerator on the ASR and KSR sets cannot be used with the 109C or F data set and must be replaced with a strapping card.
- 1.21 When used with the UCC29 call control unit, the Model 35 RO set provides no "HERE IS" or "BREAK" switch operable by a maintenance man for test purposes.
- 1.22 The Model 35 RO set is not compatible with the 186630 break detection and indication modification kit.
- 1.23 The ROTR option cannot be used with the 336474 modification kit.
- 1.24 An EOT function bar and pawl to operate the lever in the next higher number slot, is furnished for installation in stunt box slot 24, to turn the tape reader off rapidly after an EOT in the tape. A relay in the 101C or 105A data set responded rapidly to turn off the tape reader with only one fill character but this is not provided on the 109 type data sets (ASR only).

1.25 The 336474 modification kit consists of:

<u>Qty</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty</u>	<u>Part No.</u>	<u>Description</u>
1	4703	Spring	1	182182	Holder
1	7002	Washer	1	185227	Keytop
2	55320	Screw	1	185679	Label
1	72522	Wick	1	185684	Label
1	103092	Connector	1	185686	Label
1	117176	Fuse	1	185718	Diode
1	119649	Ring	1	192466	Bar
1	121245	Clamp	1	192471	Bar
5	125015	Washer	1	193476	Strap
2	129505	Screw	2	194776	Screw
1	129919	Fuse	1	194819	Spring
2	153017	Nut	1	198654	Bracket
1	153598	Pawl	1	199309	Stud
1	153604	Pawl	1	199359	Plate
1	154697	Grommet	1	301664	Plate
1	157240	Spring	1	307219	Strap
1	161136	Fuse	1	334884	Mod kit
2	165103	Screw	1	336459	Plate
1	177564	Card	1	336495	Plate
1	180886	Strap	1	336496	Insulator
10	181241	Screw	1	336497	Cable
1	181879	Transformer	1	336498	Cable
			1	336958	Wire

2. INSTALLATION

- 2.01 Remove the two 192274 pan head screws which secure the cover latch. Mount the latch with the shorter 129505 screws. See Figure 2.
- 2.02 Remove and discard the elapsed time indicator and bracket from the UCC29.
- 2.03 Disconnect the power cord of UCC29, slip on the 103092 cord connector and reconnect the power cord to the same screw terminals from which it was removed (BK to CZ-4, W to CZ-2 and G to ground screw).
- 2.04 Install the 185718 diode assembly on UCC29 in series with the motor control relay by removing the metal jumper between terminals 5 and 6 on the CZ terminal strip, ~~moving the black and slate wires from 6 to 5, moving the black wire on 8 (from the motor control relay) to 6 and placing the 185718 diode assembly between 6 and 8, with the cathode end on terminal 6.~~ Solder the slate lead of the 336958 cable assembly to the break detector card connector, terminal A, if the UCC29 is not already so equipped. Route the slate lead along the left side of the UCC29 to pin CAA7 (connector numbered 4). Soldering this slate lead is necessary only on the ASR set and may be omitted on the KSR and RO sets.
- 2.05 Mount the UCC29 in place with five 181241 screws w/lockwasher. Connect the ground lead from the UCC29 to the cabinet.
- ~~2.06 Install the set logic assembly or 109C or F data set illustrated in Figure 2 discarding the 192270 bracket.~~
- 2.07 Relieve the strain on the signal line cord as it leaves the rear of UCC29 with a 181241 screw w/lockwasher and 125015 flat washer securing a 121245 cable clamp in the tapped hole through the base plate.
- 2.08 Remove the relay rack from the pedestal to ease cable installation. Plug the 336497 cable into the rear of the call control (positions 3 through 8). Push the molex connectors of both the LESU cable and 336497 through the right rear hole of the cabinet into the lower compartment. Plug the cable from the LESU349 into the other end of the 336497 cable (connectors numbered 3,4,6, 7 and 8). LESU300 and 302 use connectors numbered 6, 7, and 8 only. Position cables so that the Model 35 cover may be closed. Replace the relay rack.
- 2.09 Replace the 323609 signal regenerator card on the LESU300 or 349 with the 177564 strapping card when using the 109C or F data set.
- 2.10 Replace the 3.2 amp fuse and label on the UCC29 with the 161136 6- $\frac{1}{2}$ amp fuse and 185686 label when used on a Model 35 ASR set. For the KSR and RO application the 129919 fuse (4 amp SL-BL) and 185684 label are used.

2.11 Mount the 181879 transformer loosely to the 336495 mounting plate with four 181241 screws w/lockwashers and 125015 flat washers. Insert the 182182 fuse holder in the hole provided on the plate. Use the 117176 ½ amp SL-BL fuse and affix the 185679 label along side of it. Slip the terminals of the 336498 cable assembly on the transformer and fuse terminals, see Figure 4. Use the insulated slip on terminals on the fuse holder. Slip the 336496 insulator under the flat washers and tighten. Refer to Figure 3. Hang the plate with assembled transformer from the center of the relay rack with two 165103 screws and 153017 speed nuts. Connect the other end of the cable to LESU349, 300 or 302, see Figure 4. Route the cable through the left rear hole of the ASR cabinet or right rear hole of the KSR or RO cabinet and inside the LESU container. On the "C" wiring field of LESU349, connect the purple wire to terminal 3R, slate to 1T, green to 7L, yellow to 5E and orange to 6E.

Disconnect, tape and tie back the existing green-slate on 2E. Connect the red wire to 2E. Remove the white-red-slate, wire on C-7E (from the T key, terminal 10) and connect it to C-3P. Reroute the lead through the slot for the H through T "C" wiring field board. On the "C" wiring field of LESU300, connect the purple wire to terminal 3L, green to 2G, slate to 1N, yellow to 4AA, orange to 5AA, red to 2E. On LESU302, connect purple to 3L, green to 5G, slate to 1N, yellow to 4AA, orange to 5AA, and red to 2D.

2.12 When the 186627 set logic assembly is used, make sure that the diode on the signal regenerator card connector is connected with the cathode end soldered to terminal L and the anode to terminal A, otherwise the keyboard and tape reader would be shunted. When the 109C or F data set is used, remove this diode.

2.13 When the 109C or F data set is used in an ASR set, make wiring changes to blind the reperforator when in the "T" or "TTS" mode as follows. On LESU349, solder a strap across the 1800 ohm resistor on the MSR wire spring relay terminals 3 and 4B. Move the R-Y and O leads on the "C" wiring field from C-3H to C-1J. Strap C-3H to C-2P with the 307219 strap provided.

2.14 Secure the lower edge of the proper faceplate to the cabinet with the following hardware in this kit: 199309 stud, 198654 locating bracket, 194819 spring clip, 7002 flat washer, and 119649 retaining ring. Refer to Figure 6.

2.15 Secure the 301664 plate over the hole in the cabinet reserved for the speaker with two 194776 screws.

2.16 Discard the 199353** speaker volume control Plate (mounted on cabinet) of LESU349 or 300 on the ASR or KSR set and use the blank 199359** plate furnished.

2.17 Install the LESU electrical service unit in the cabinet.

SPECIFICATION 50695S

2.18 Figure 5 gives the actual wiring diagram of the 336497 cable assembly.

~~2.19 On LESU302 in the Model 35 RO, add the 193476 strap between pins W2 and X2 (connectors numbered 7 and 6) and add the 180886 strap between pins V1 and V2 (connector numbered 8). Remove the red-blue lead from pin 6 of the V connector on the 336497 cable (connector numbered 8), tape and tie back.~~

~~2.20 When a 109 type data set with a hand held receiver is used with this kit, slip the 154697 grommet over the coiled cord before running it through the bell ringer adjustment slot.~~

2.21 Add the following parts in slot 24 of stunt box AVA of LP831 or AUZ of LP846: 192466 function bar-EOT, 153604 pawl, 4703 spring, 157240 spring, and 72522 wick. ~~Replace the 152653 pawl in slot 25 with 153598.~~ Install the 153604 pawl with the long arm first. On sprocket feed typing units install the 334884 modification kit to add the new line feature. The 334884 kit comes with installation instructions. On friction feed printers use the 192471 LE function bar in place of that in 334884 kit. Replace the line feed keytop with the 185227 new line keytop furnished.

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SPECIFICATION 50695S

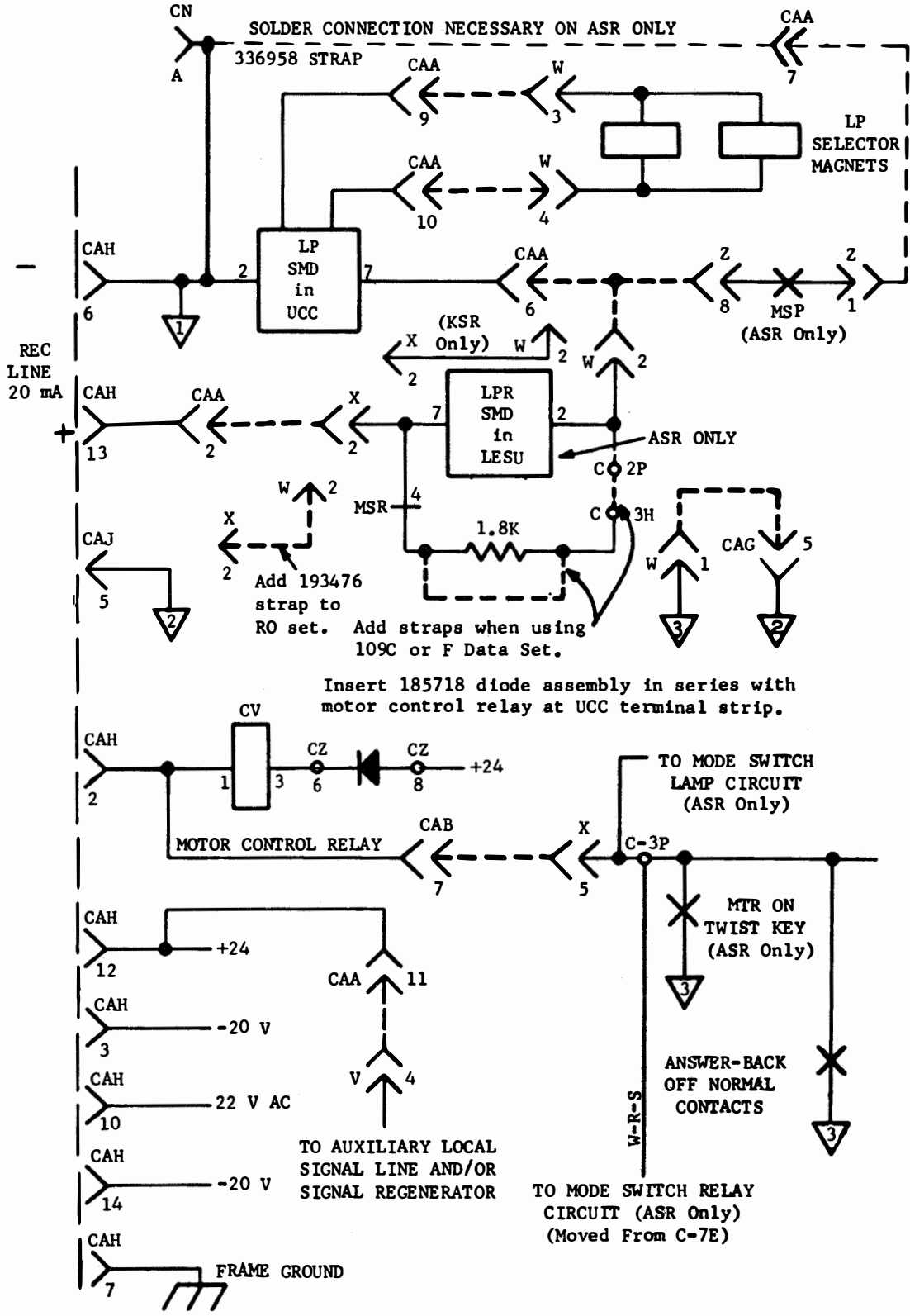


Figure 1A

SPECIFICATION 50695S

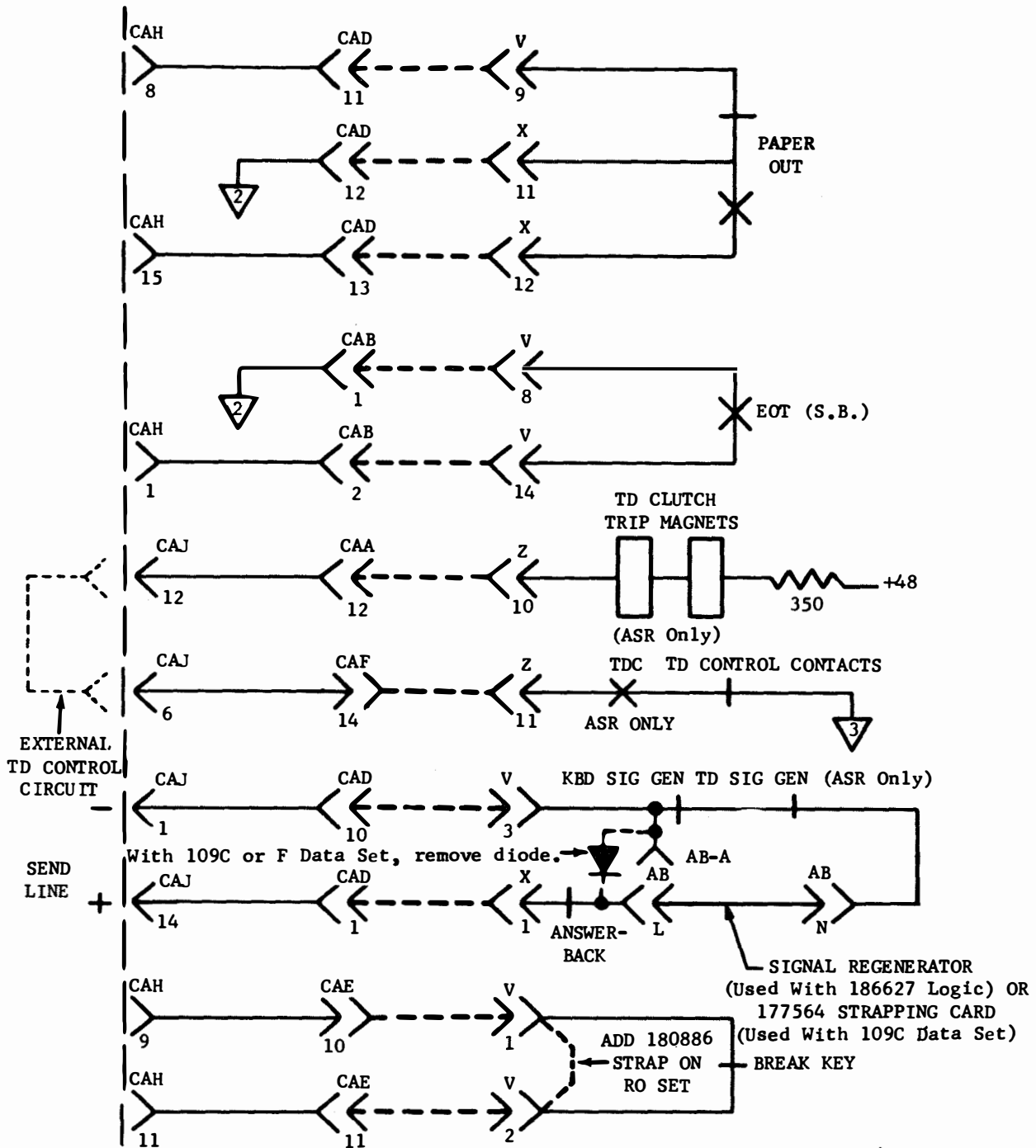
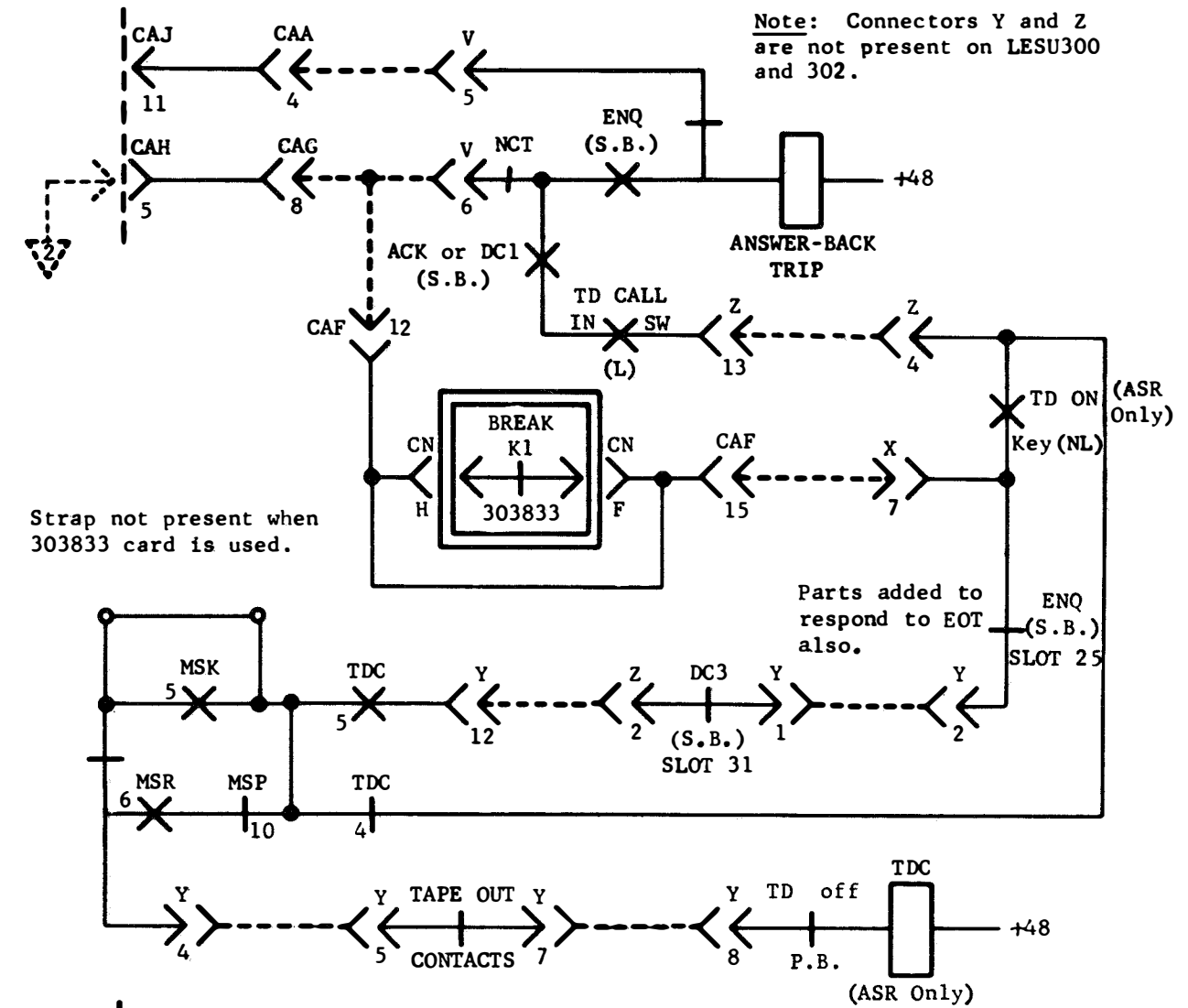


Figure 1B

SPECIFICATION 50695S

ASR AND KSR SET CIRCUITRY



RO SET CIRCUITRY

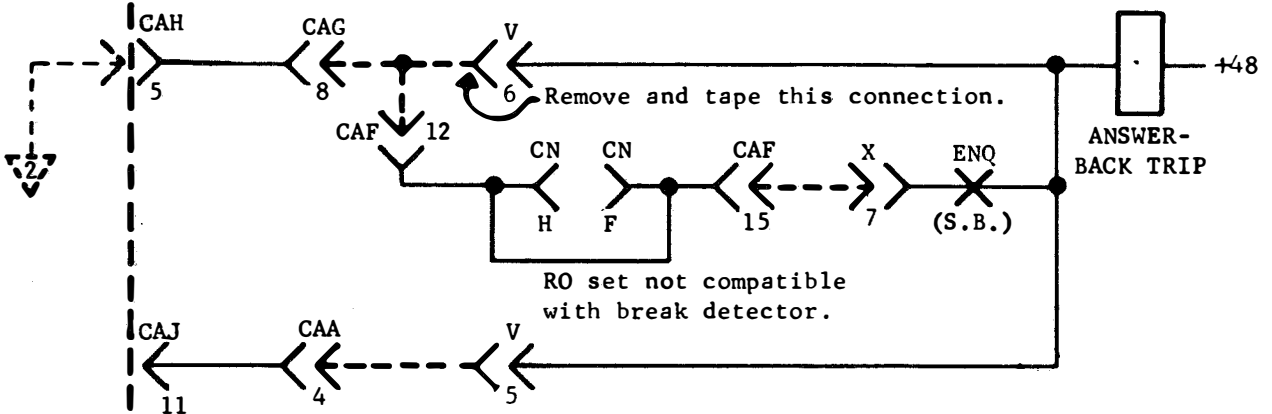


Figure 1C

SPECIFICATION 50695S

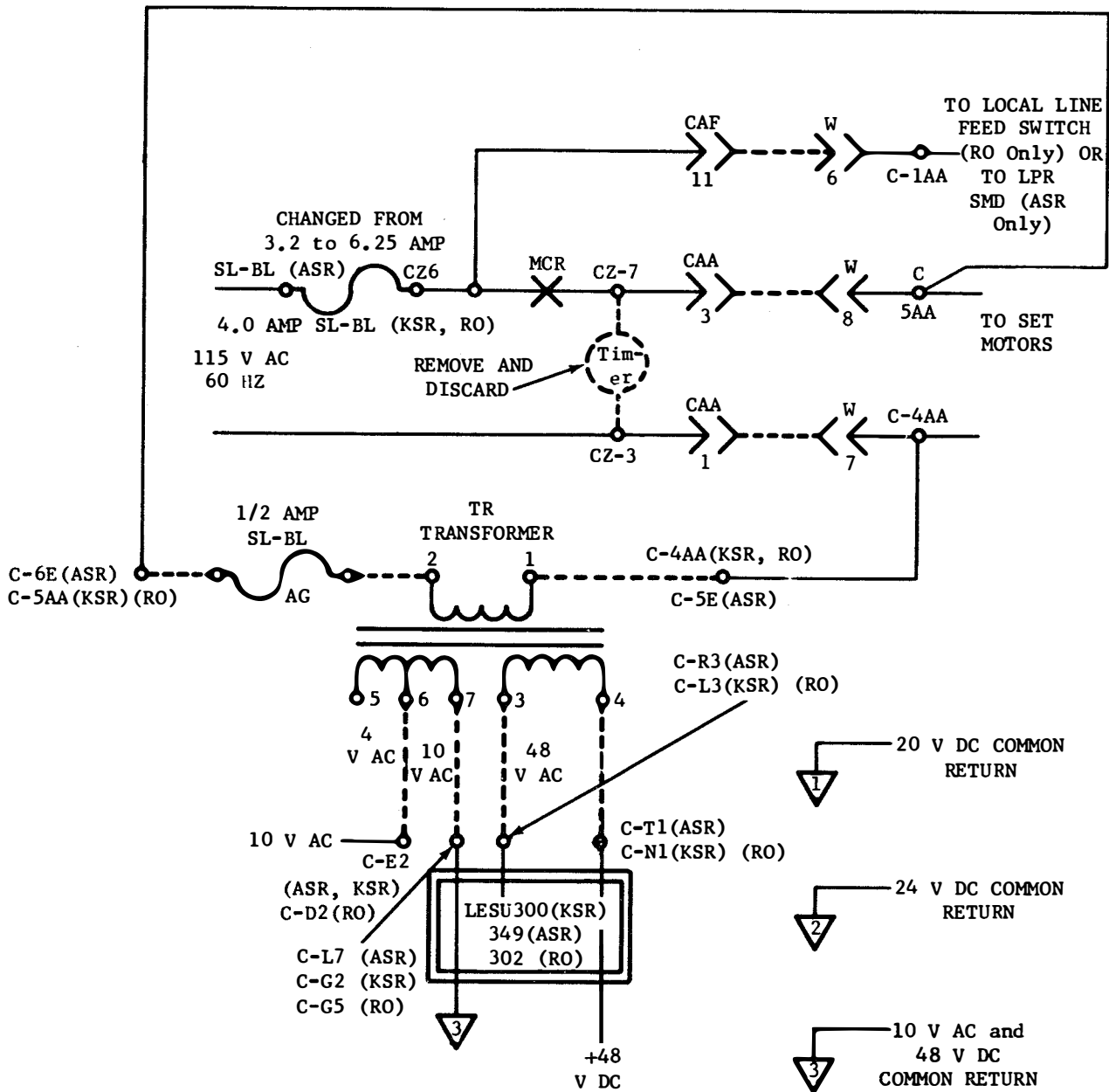


Figure 1D

SPECIFICATION 50695S

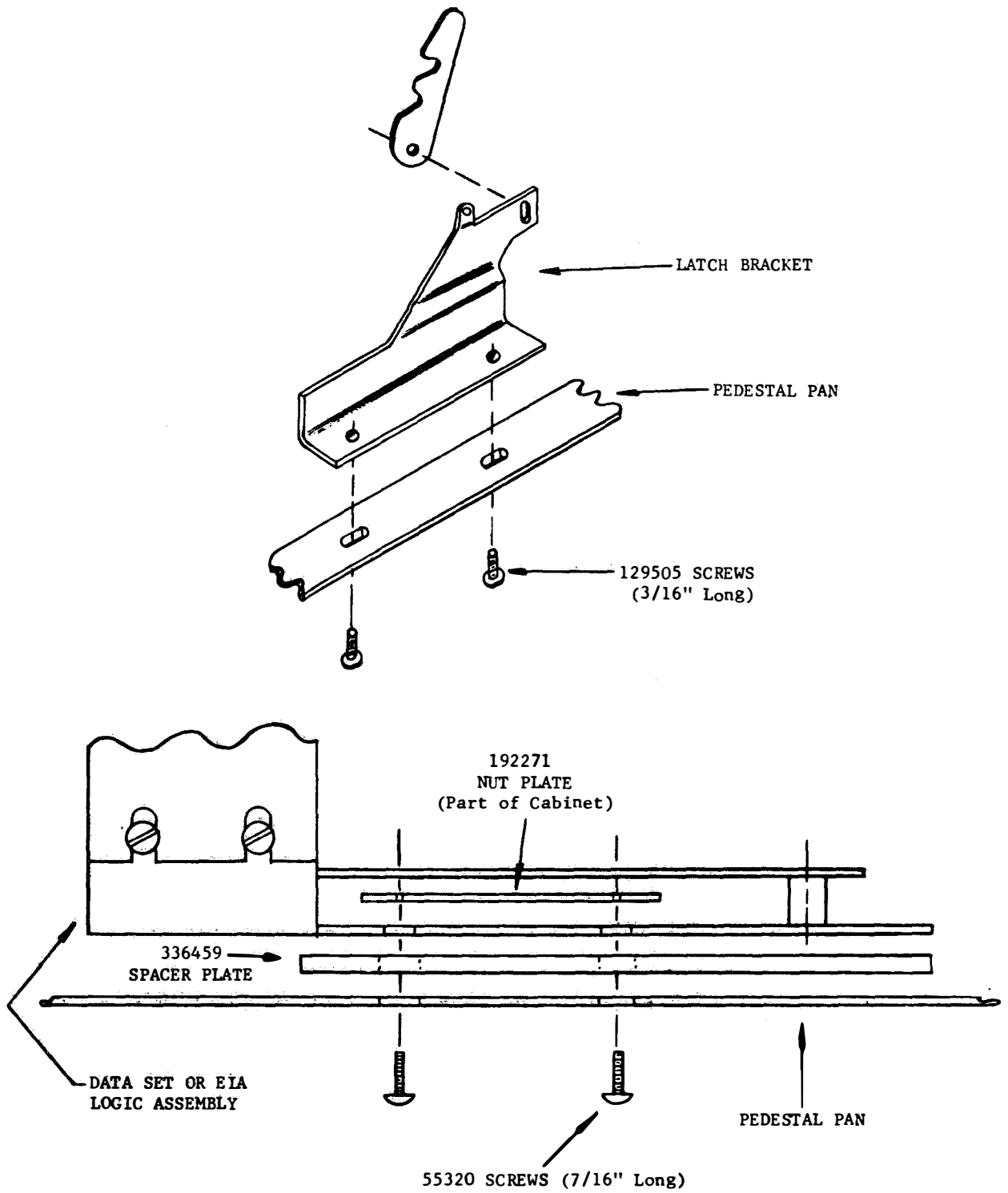


Figure 2

SPECIFICATION 50695S

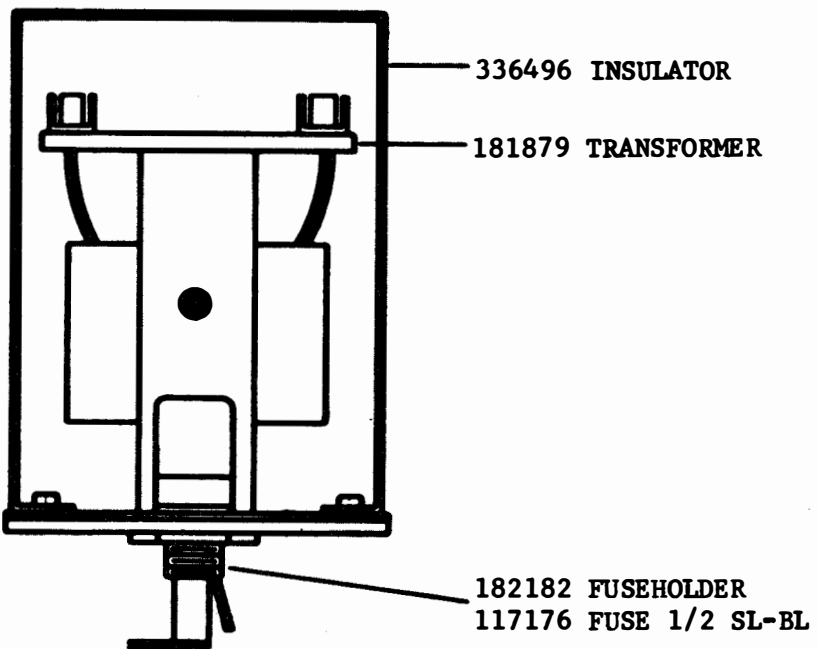
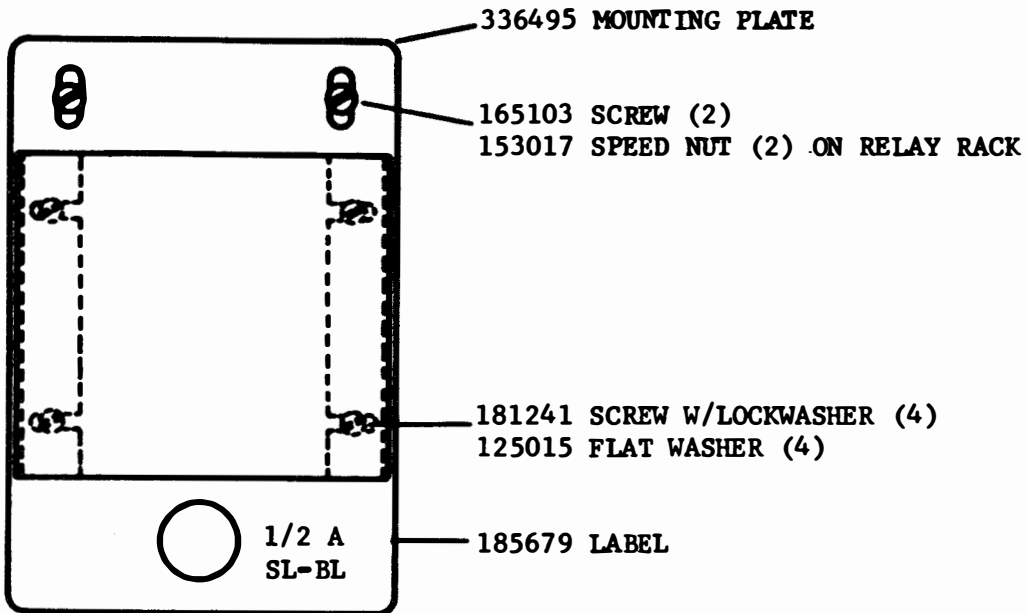
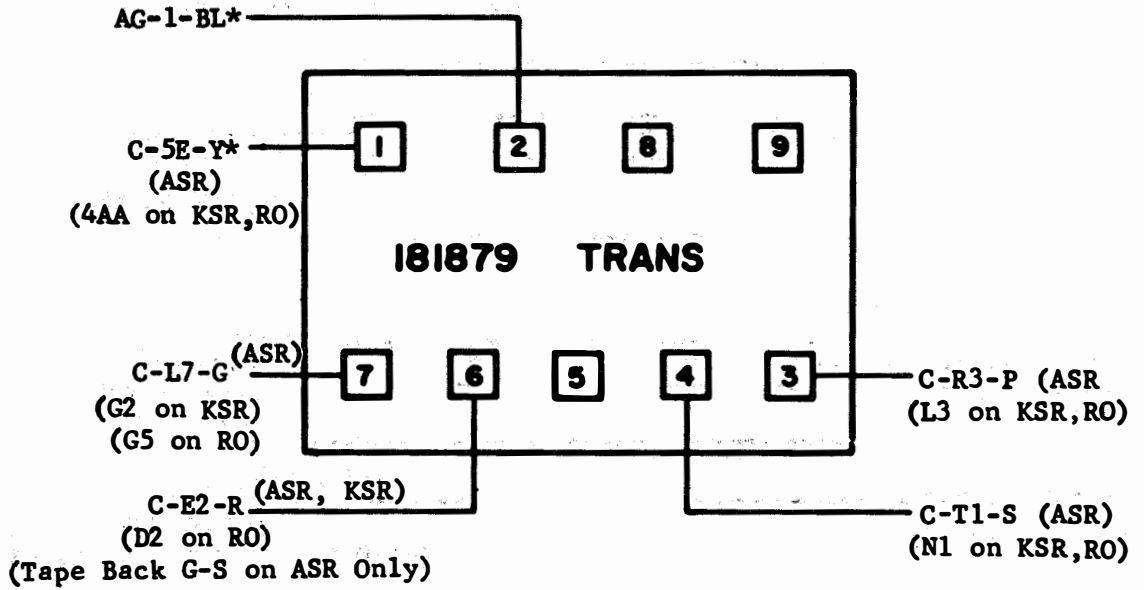


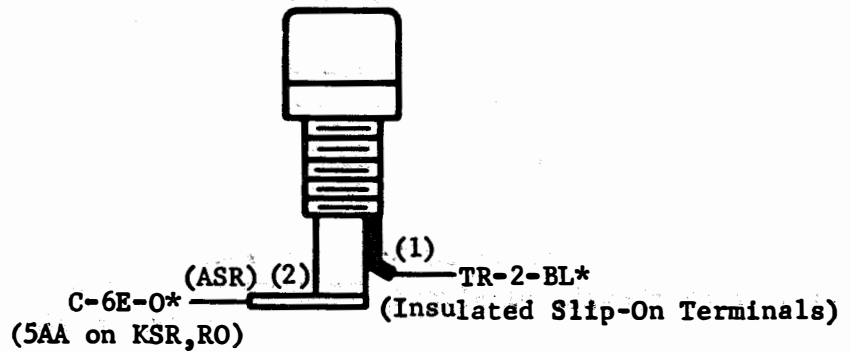
Figure 3

SPECIFICATION 50695S

TR
TRANSFORMER
 (10-14-48 V AC)



AG
FUSE HOLDER
 1/2 AMP SL-BL

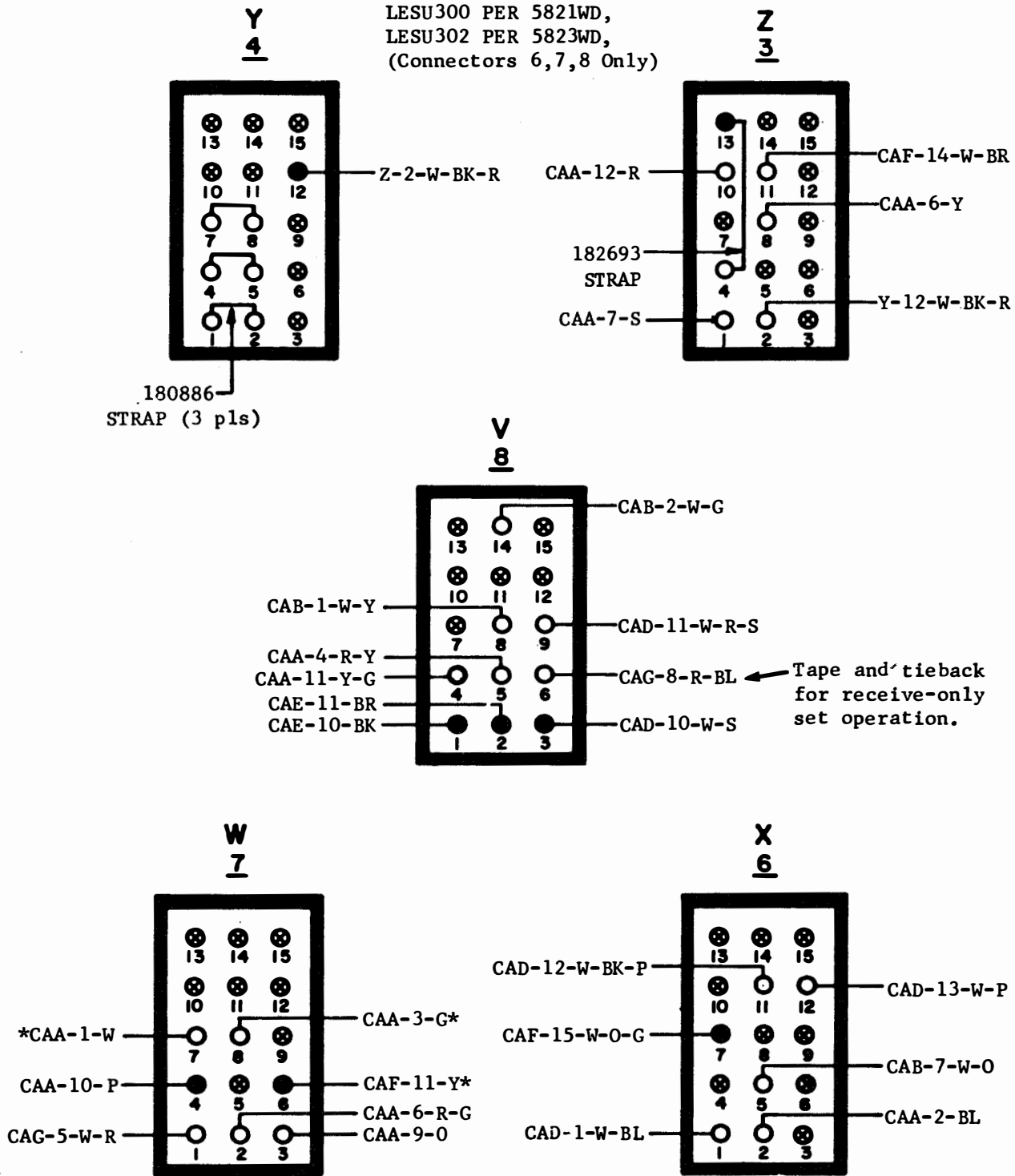


ACTUAL WIRING OF 336498 CABLE

Figure 4

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LESU349 PER 8142WD OR
 LESU300 PER 5821WD,
 LESU302 PER 5823WD,
 (Connectors 6,7,8 Only)



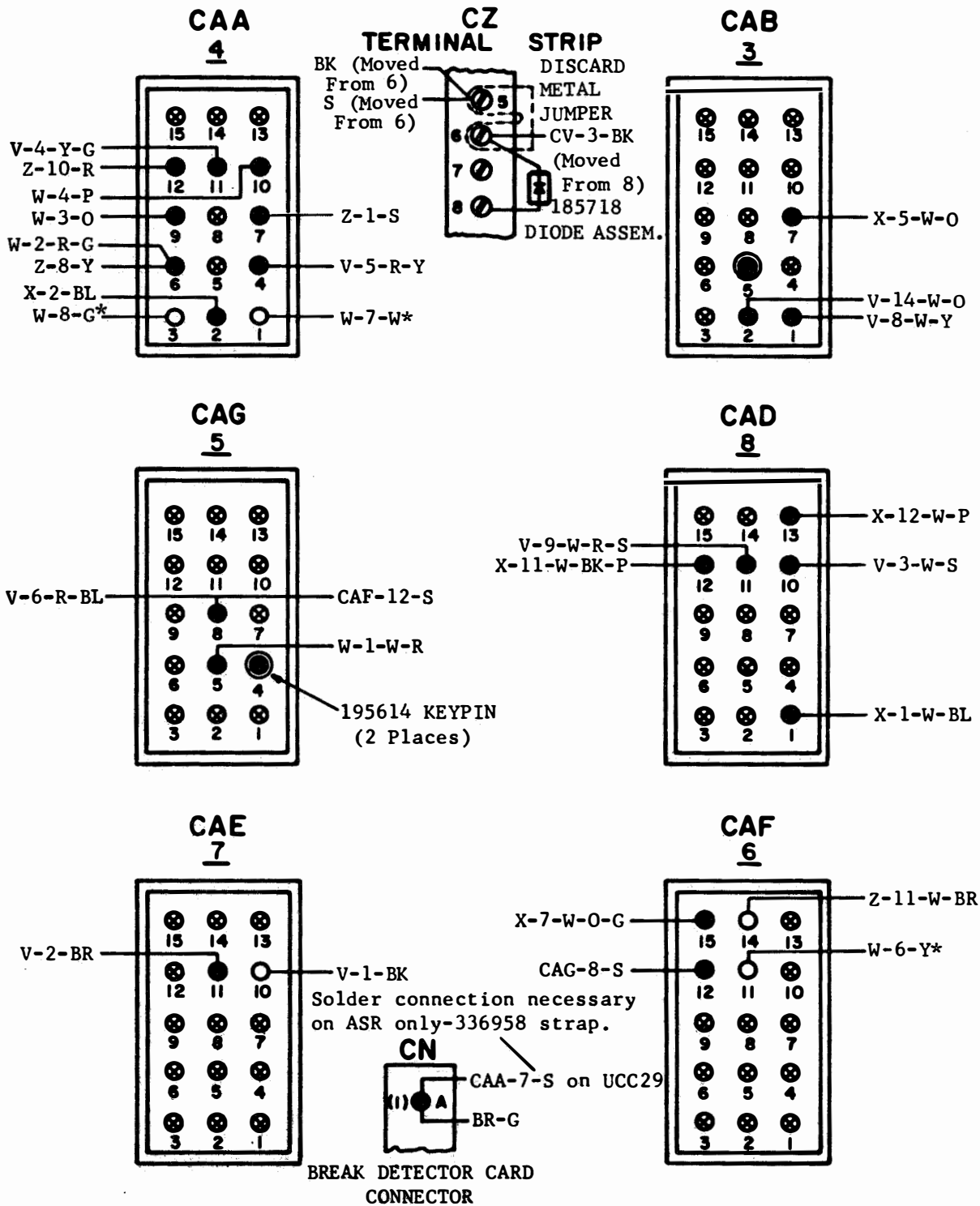
*Asterisk indicates 18 AWG wire.

ACTUAL WIRING OF 336497 CABLE

Figure 5A

SPECIFICATION 50695S

UCC29
per 8162WD



*Asterisk indicates 18 AWG wire.

ACTUAL WIRING OF 336497 CABLE

Figure 5B

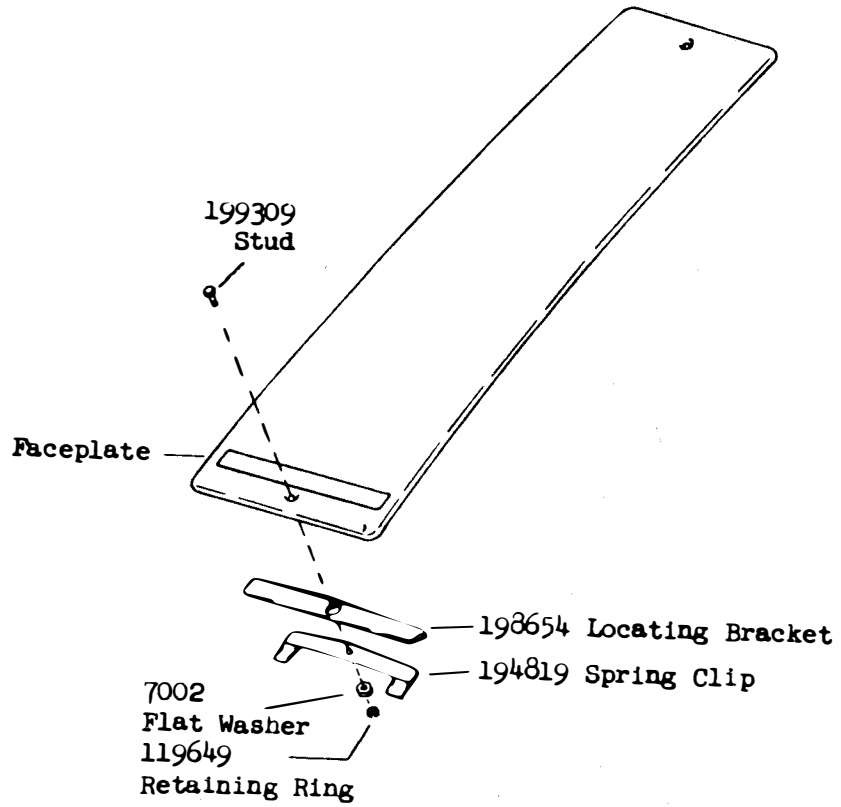


Figure 6