

3

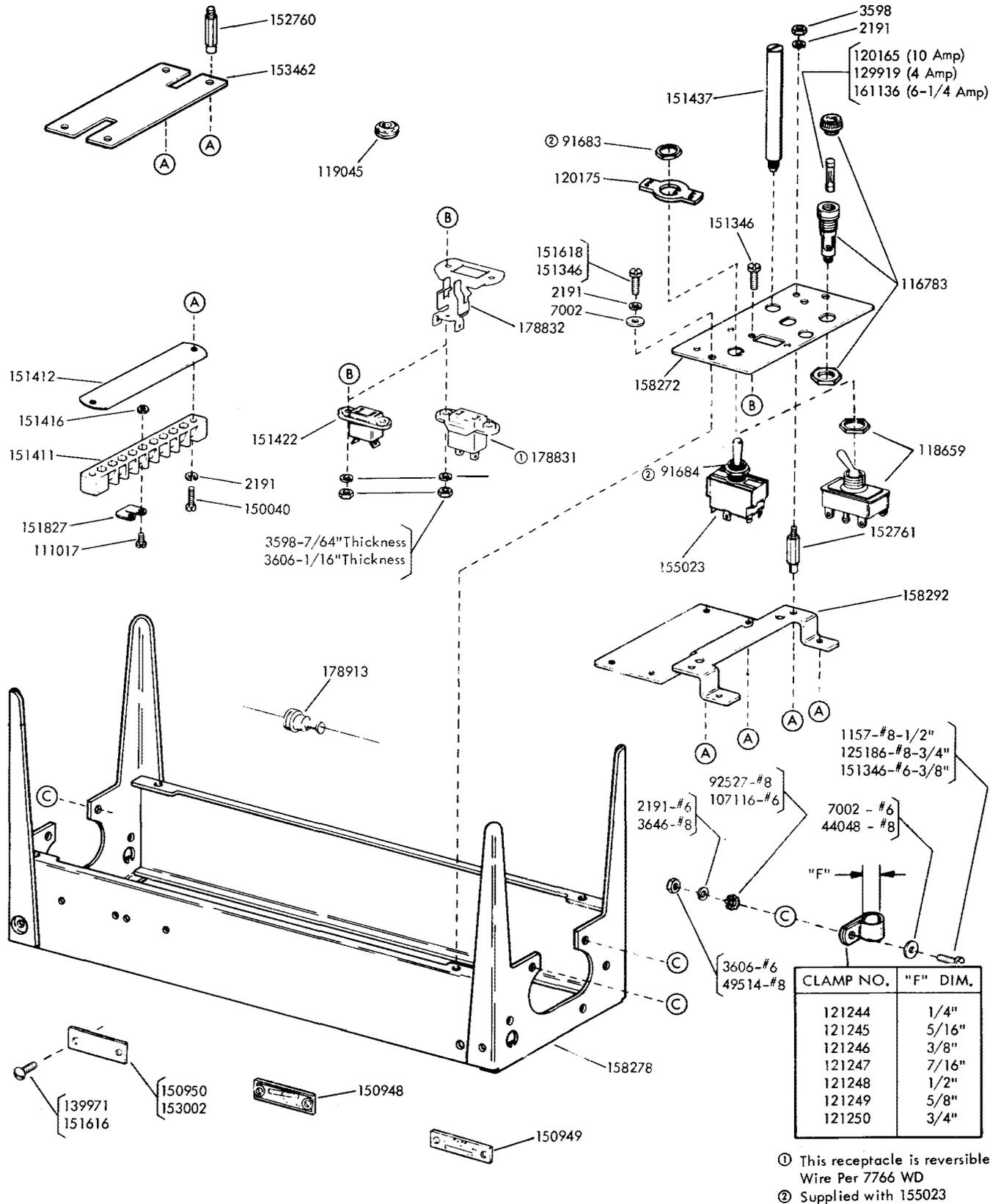
28 ELECTRICAL SERVICE UNIT (LESU)
for
AUTOMATIC SEND-RECEIVE SETS
PARTS

TELETYPE TO BELL SYSTEM CODE CROSS REFERENCE CHART		
Unit Description	Teletype Code	Bell System Code
Electrical Service Unit	LESU11	28C
	LESU13	28F
	LESU15	28G
	LESU32	28H
	LESU33	28J
	LESU35	28F-I
	LESU36	28G-I
	LESU56	28LA
	LESU57	28LB
	LESU66	28L
	LESU82	28P
	LESU83	28P-I
	LESU112	28AC
	LESU113	28AB
	LESU116	28Y
LESU128	28AK	
LESU134	28AJ	

The part identification information contained in the following change notices have been incorporated in this issue.	
TCN's	#540, #745, #857, #1241

Note. When ordering parts from this section, prefix each number with the letters TP.

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2	Line Shunt Relay and Mounting Plates	4	28	Resistor Modification Kits	20
3	Plates and Resistors	5	29	173452 Electronic Keyer Assembly	21
4	Mounting Brackets and Capacitor for 48 Volt Rectifier	6	30	146652 Modification Kit to add Wave Shaping Inductor	21
5	Low Tape Bell	6	31	Line Jack Assembly	22
6	153251 Motor Control Assembly	7	32	154747 Modification Kit to add Continuous Spacing	22
7	152950 Rectifier and Cable Assembly (150 MA)	8	33	164868 Modification Kit to Provide a Cabinet with an Auxiliary Electrical Service Unit	23
8	162361 and 310275 Rectifiers and Cable Assemblies (500 MA)	8	34	Auxiliary Electrical Service Unit	24
9	146901 and 170573 Rectifier Assemblies	9	35	Components to Provide for AC and DC Power Distribution	25
10	305631 Rectifier Assembly	10	36	Components to Provide Line Relays and Selector Battery	26
11	177010 and 178601 Selector Magnet Driver Assemblies 179560 Selector Magnet Driver Assembly with Open Line Detector	11	37	336176 Power Distribution Assembly	27
12	Line Relay Mounting	12	38	336177 Plate Assembly	28
13	170285 and 173281 Resistor Assemblies	13	39	310217 Selector Magnet Driver Assembly	29
14	178138 Slow Release Relay Assemblies (Non-Contention)	13	40	304605 Selector Magnet Driver Relay with Rectifier	30
15	Quick Acting Relay (10 MS) Mechanism	14	41	161829 Modification Kit for Mounting an Electrical Service Unit on Relay Rack Brackets	31
16	159318 Slow Release Relay Assembly	14	42	179139 and 195036 Auxiliary Reperforator Line Relay Assembly	31
17	176810 Answer-Back Control Relay Assembly	15	43	160422 Modification Kit to Equip Cabinet with Rectifier	31
18	176694 (Motor Control) and 176698 (Slow Release) Relay Assemblies	15	44	192750 Rectifier Assembly	32
19	152332 and 176448 Motor Control Relay Assemblies	16	45	179610 and 179611 Modification Kit to Reduce Radio Frequency Noise on ASR Set	33
20	155558 D.C. Control Relay Assembly	16	46	179610 and 179611 Modification Kit to Reduce Radio Frequency Noise on ASR Set (Continued)	34
21	178345 Modification Kit and 178608 Relay Assembly to Provide Motor Control and Answer-Back Relays	17	47	Rectifier-130 V DC-20 V AC	35
22	165650 Motor Control and Answer-Back Relay Assembly	17	48	162483 Call Directing Relay Unit	36
23	165673 and 178307 Motor Control Relay Assemblies	18	49	179472 Modification Kit to Provide a Transmitter Control	37
24	160420 and 195038 Auxiliary Line Shunt Relay Assemblies 179444 and 173239 Auxiliary Reader Control Relay Assemblies	18	50	Cable Components	38
25	158293, 164232, 173252, and 194492 Line Test Key Assemblies	19		Numerical Index	39
26	Line Test Key Control	19			



- ① This receptacle is reversible Wire Per 7766 WD
- ② Supplied with 155023

FIGURE 1. CONTAINER

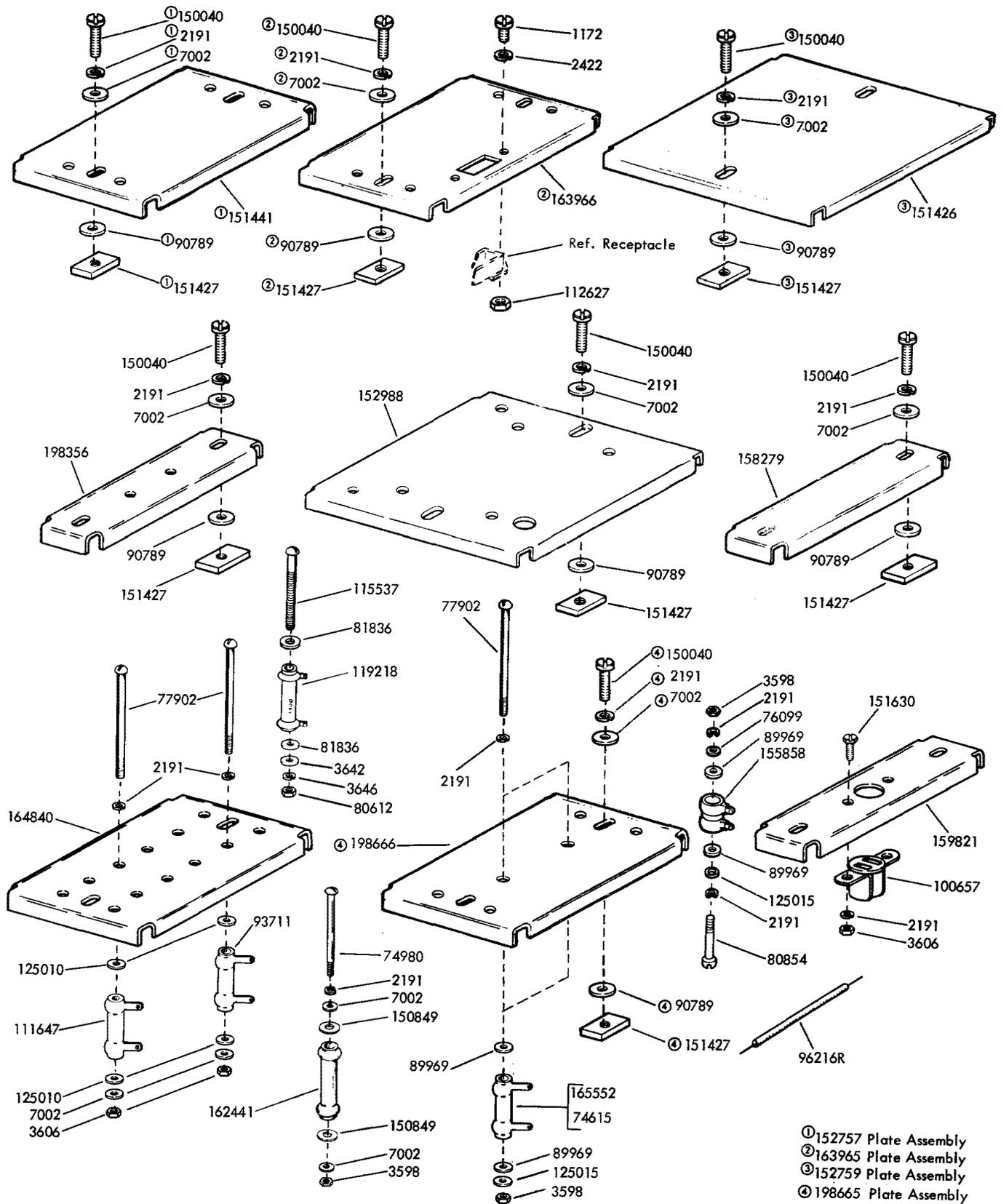


FIGURE 3. PLATES AND RESISTORS

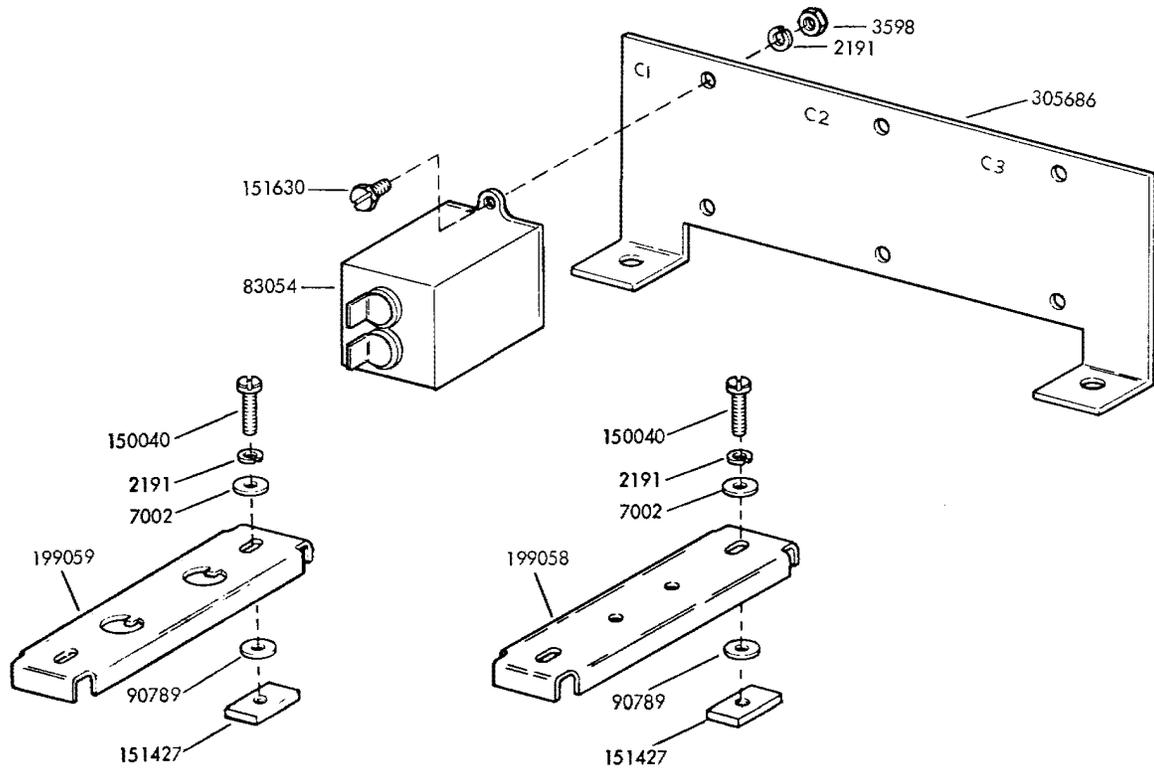


FIGURE 4. MOUNTING BRACKETS AND CAPACITOR FOR 48 VOLT RECTIFIER

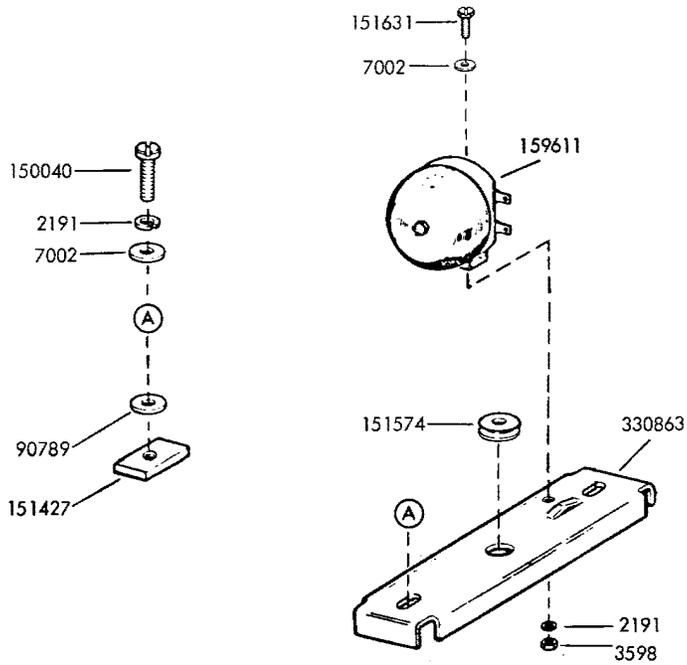


FIGURE 5. LOW TAPE BELL

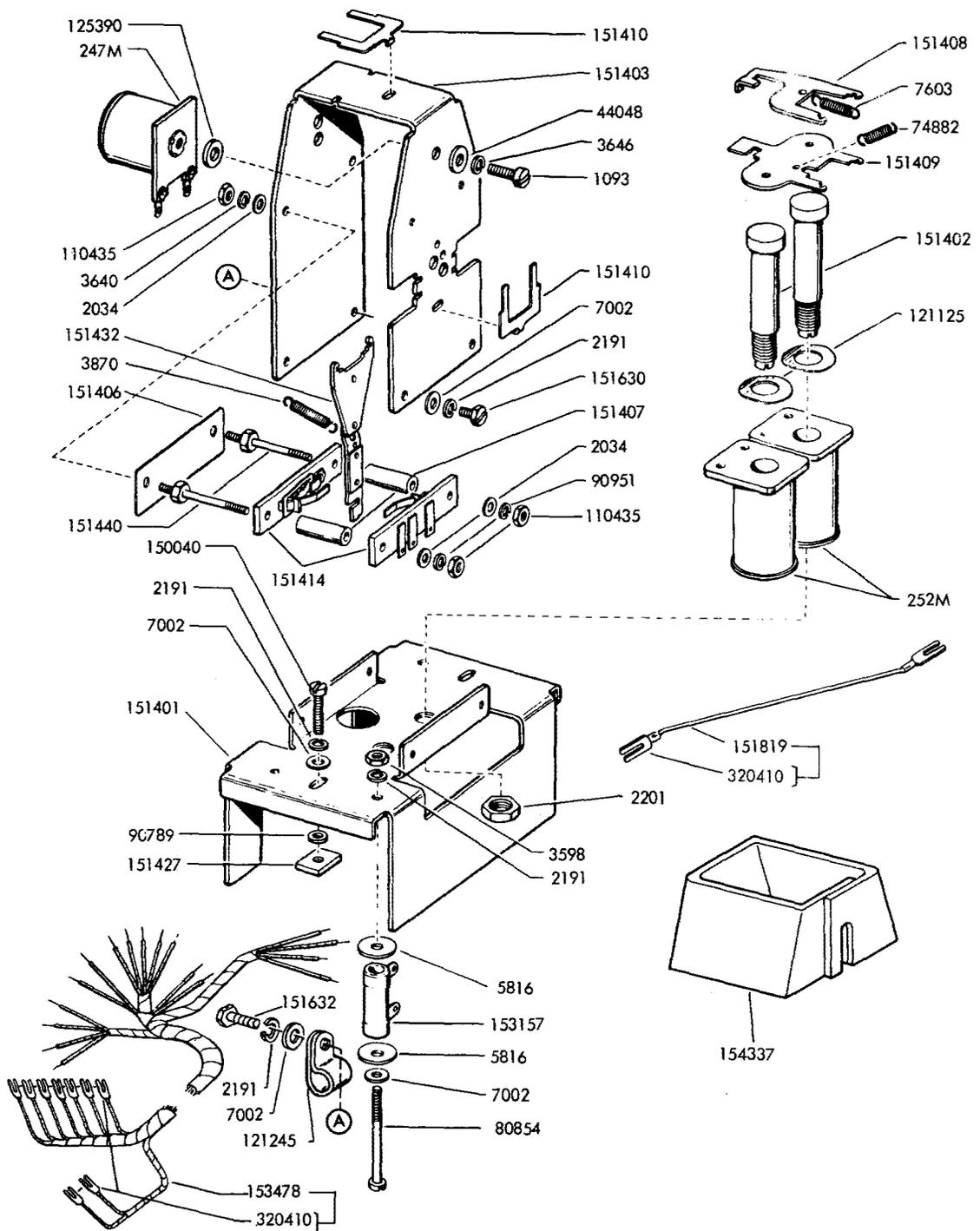


FIGURE 6. 153251 MOTOR CONTROL ASSEMBLY

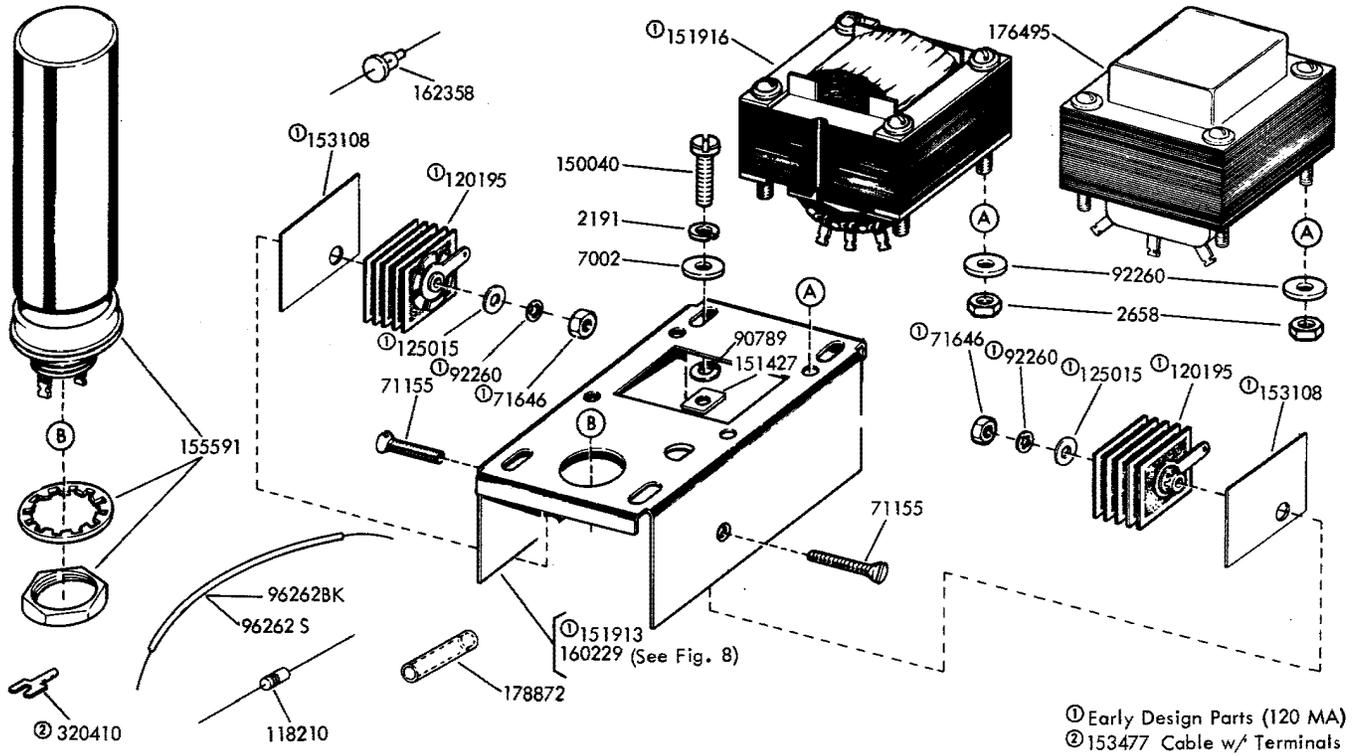


FIGURE 7. 152950 RECTIFIER AND CABLE ASSEMBLY (150 MA)

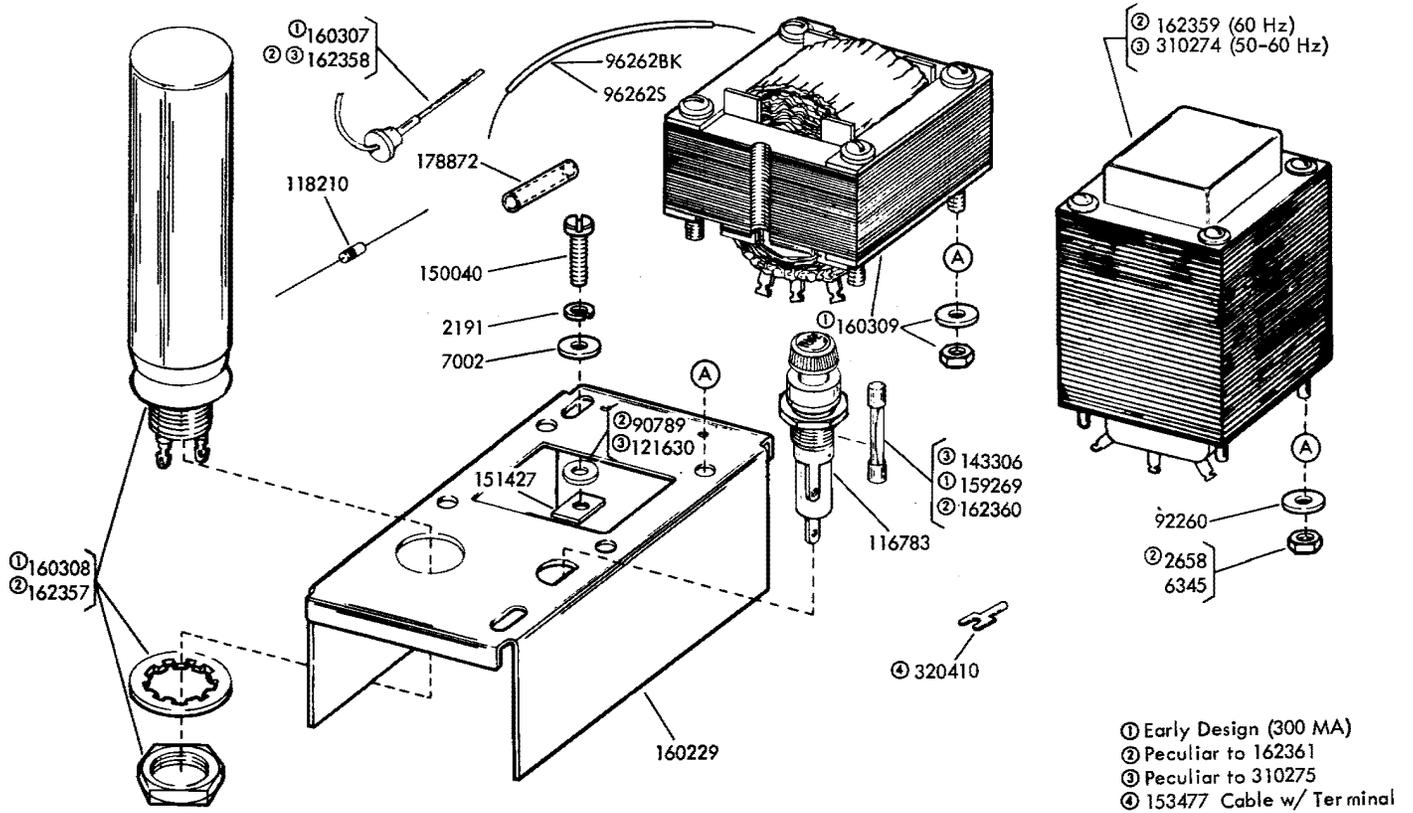


FIGURE 8. 162361 AND 310275 RECTIFIERS AND CABLE ASSEMBLIES (500 MA)

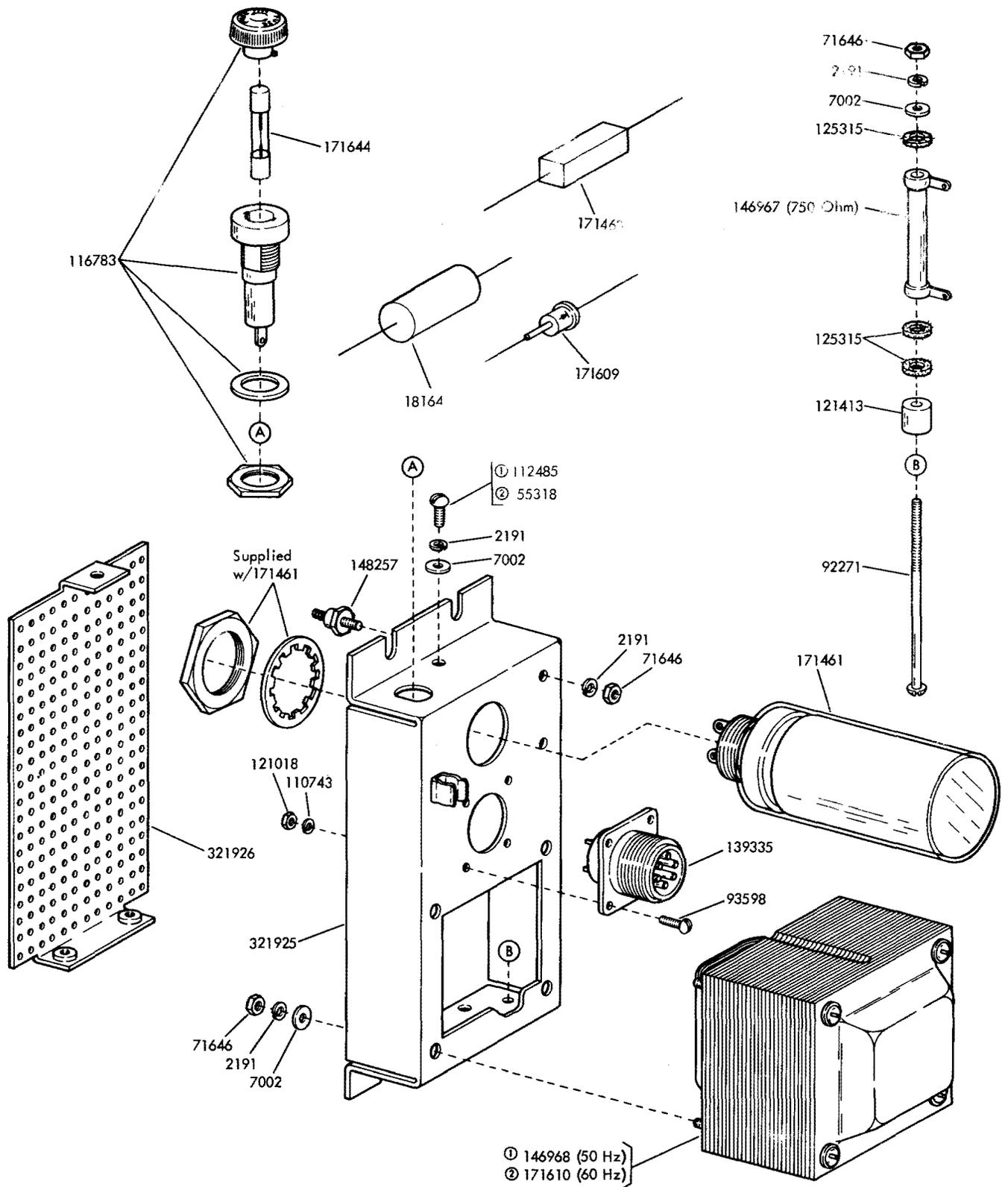


FIGURE 9. 146901 AND 170573 RECTIFIER ASSEMBLIES

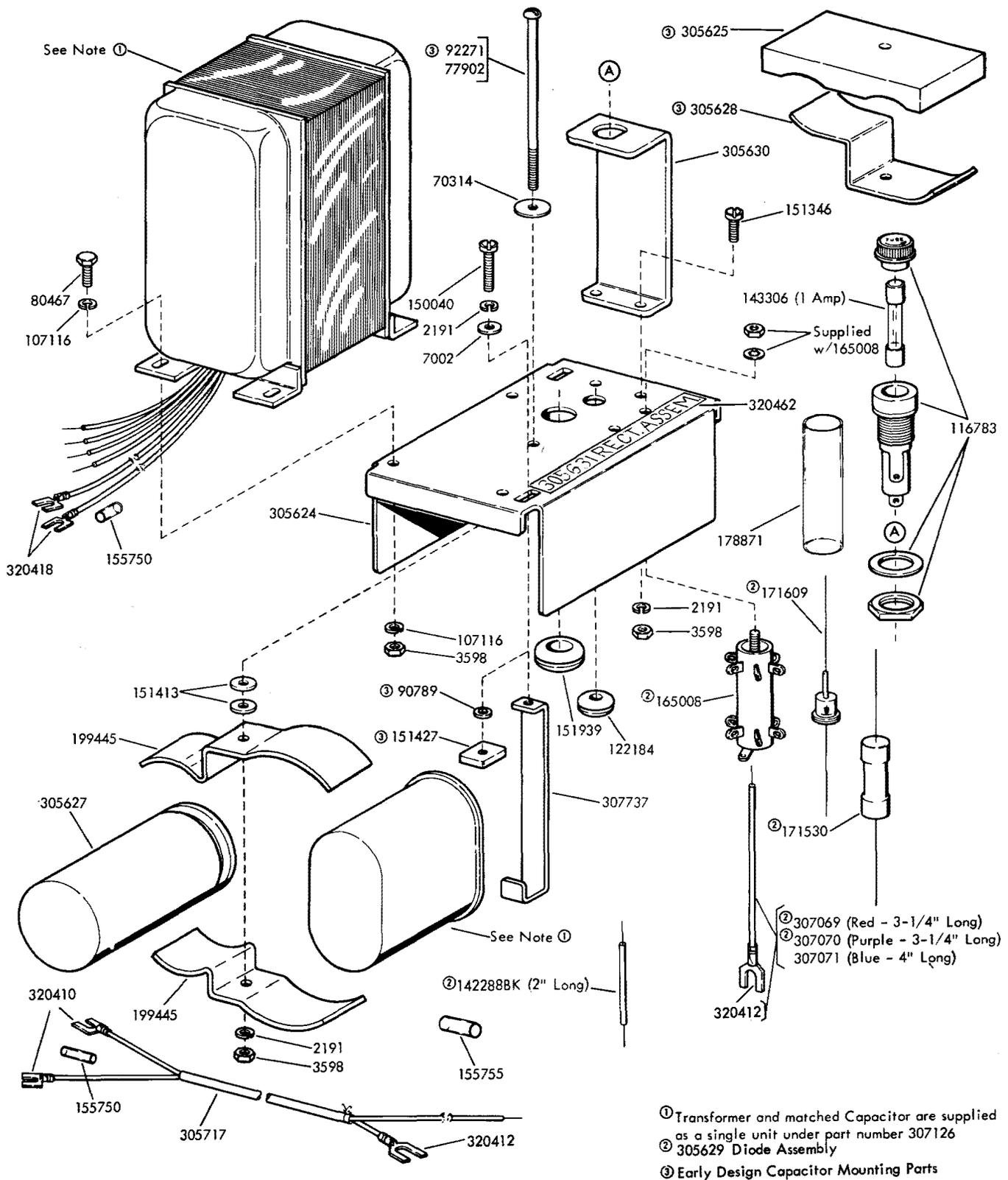


FIGURE 10. 305631 RECTIFIER ASSEMBLY

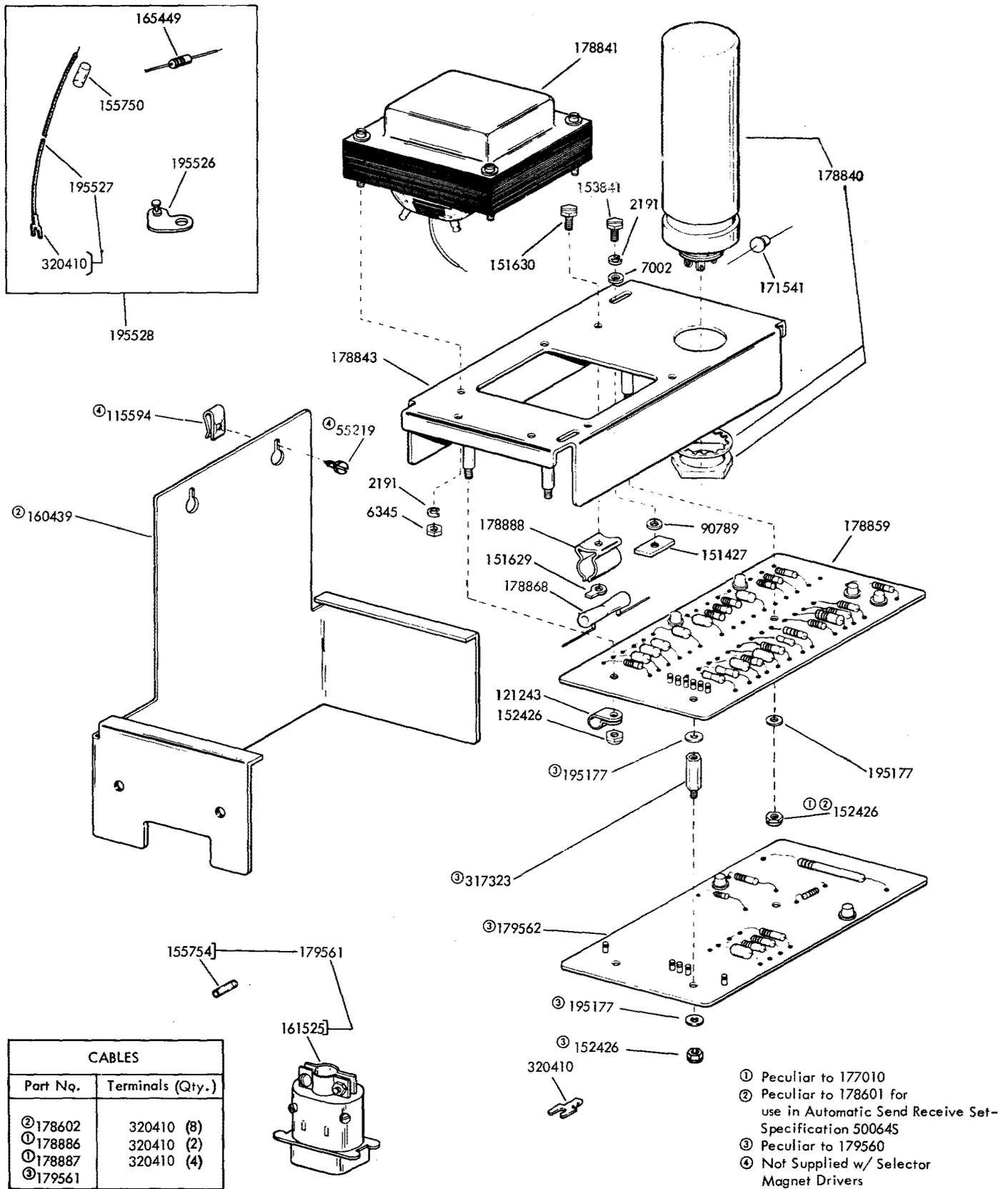


FIGURE 11. 177010 AND 178601 SELECTOR MAGNET DRIVER ASSEMBLIES
 179560 SELECTOR MAGNET DRIVER ASSEMBLY WITH OPEN
 LINE DETECTOR

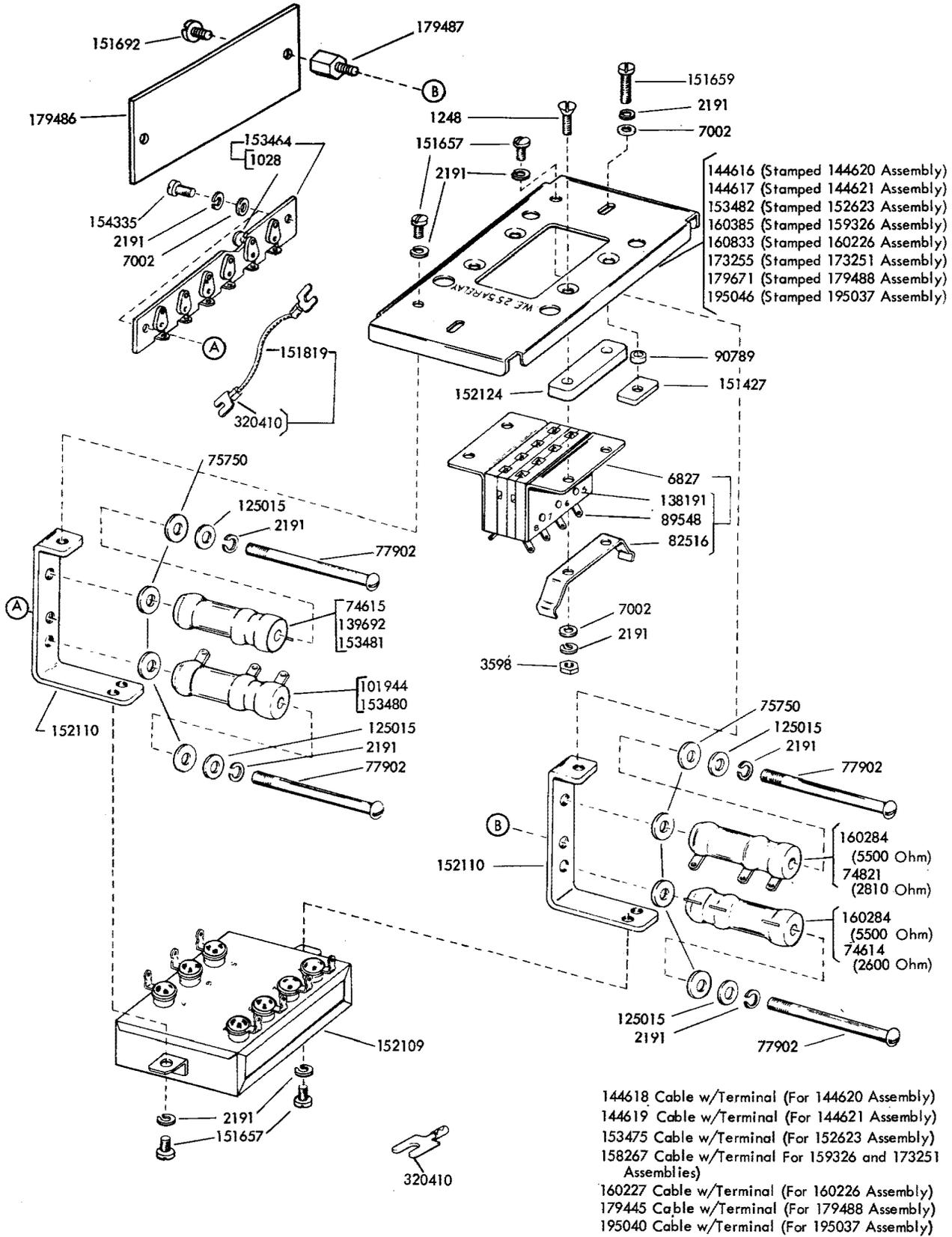


FIGURE 12. LINE RELAY MOUNTING

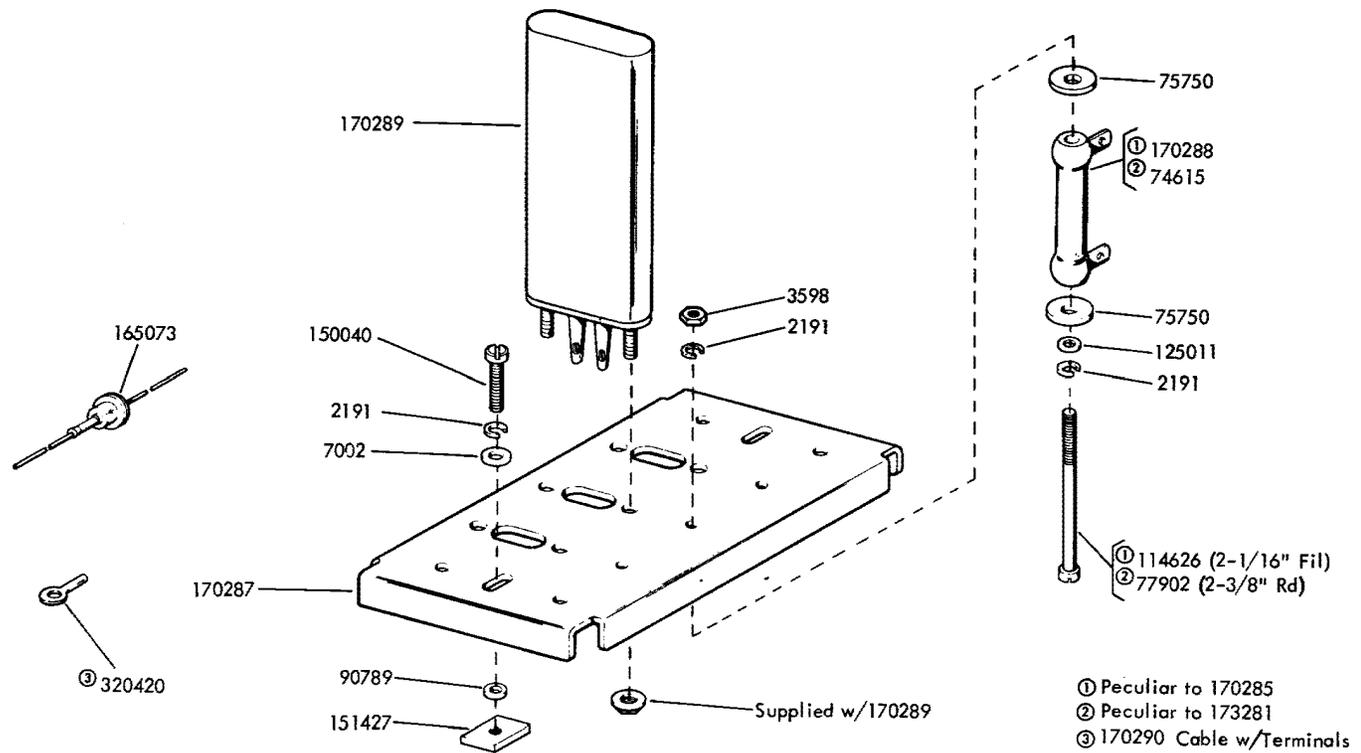


FIGURE 13. 170285 AND 173281 RESISTOR ASSEMBLIES

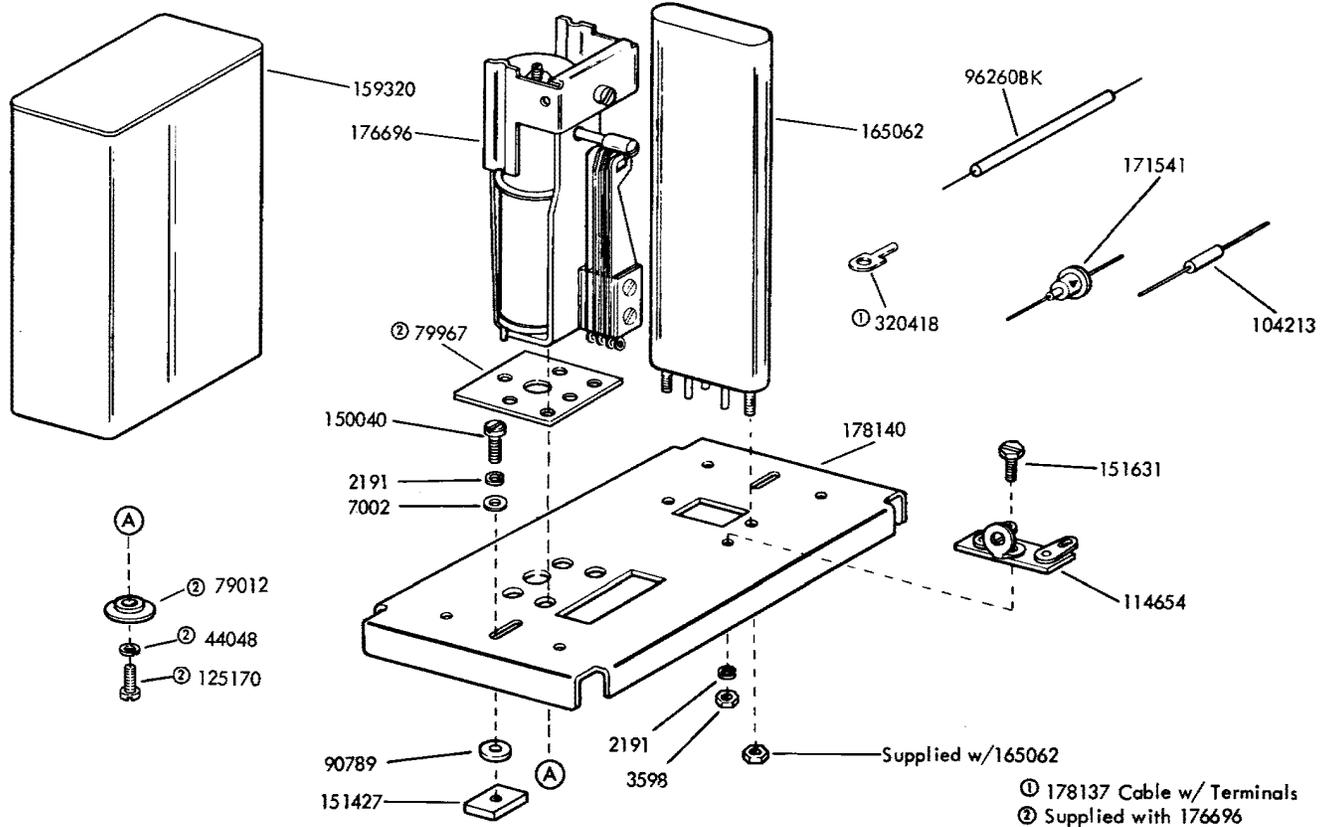


FIGURE 14. 178138 SLOW RELEASE RELAY ASSEMBLY (NON-CONTENTION)

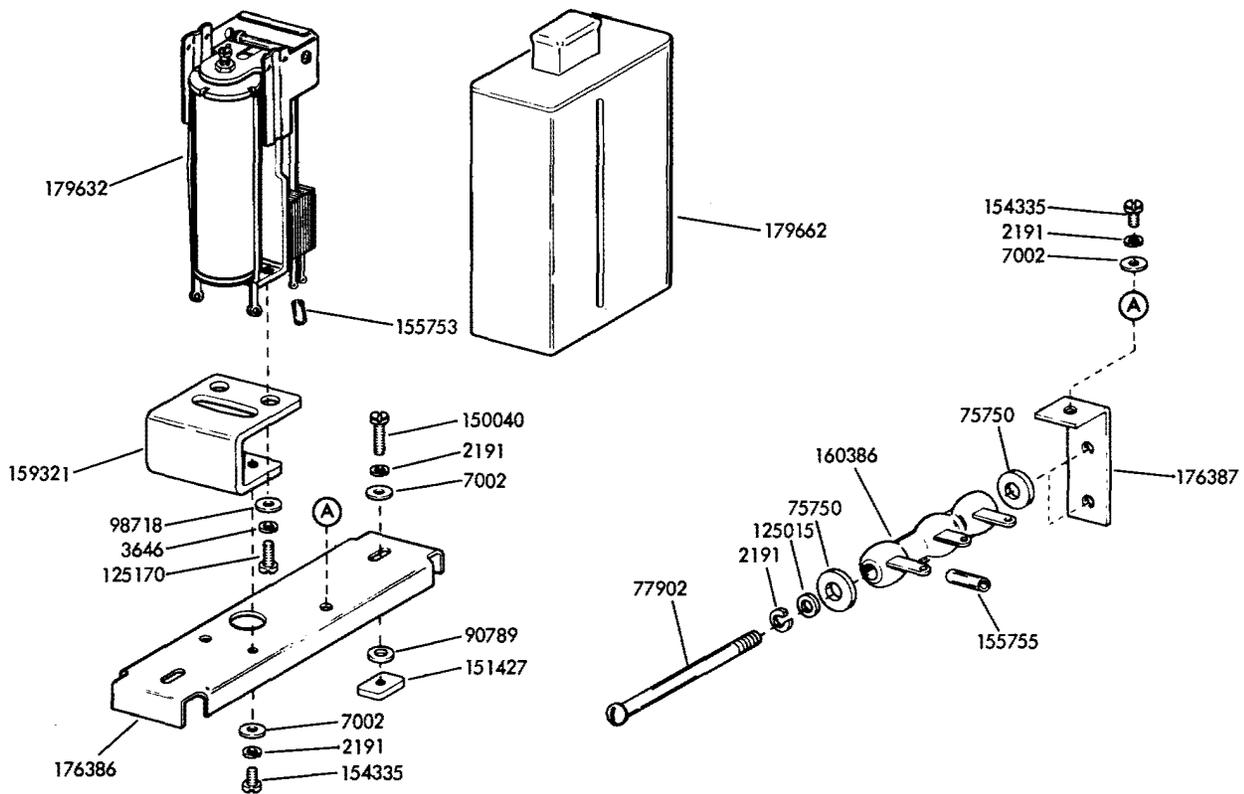


FIGURE 15. QUICK ACTING RELAY (10 MS) MECHANISM

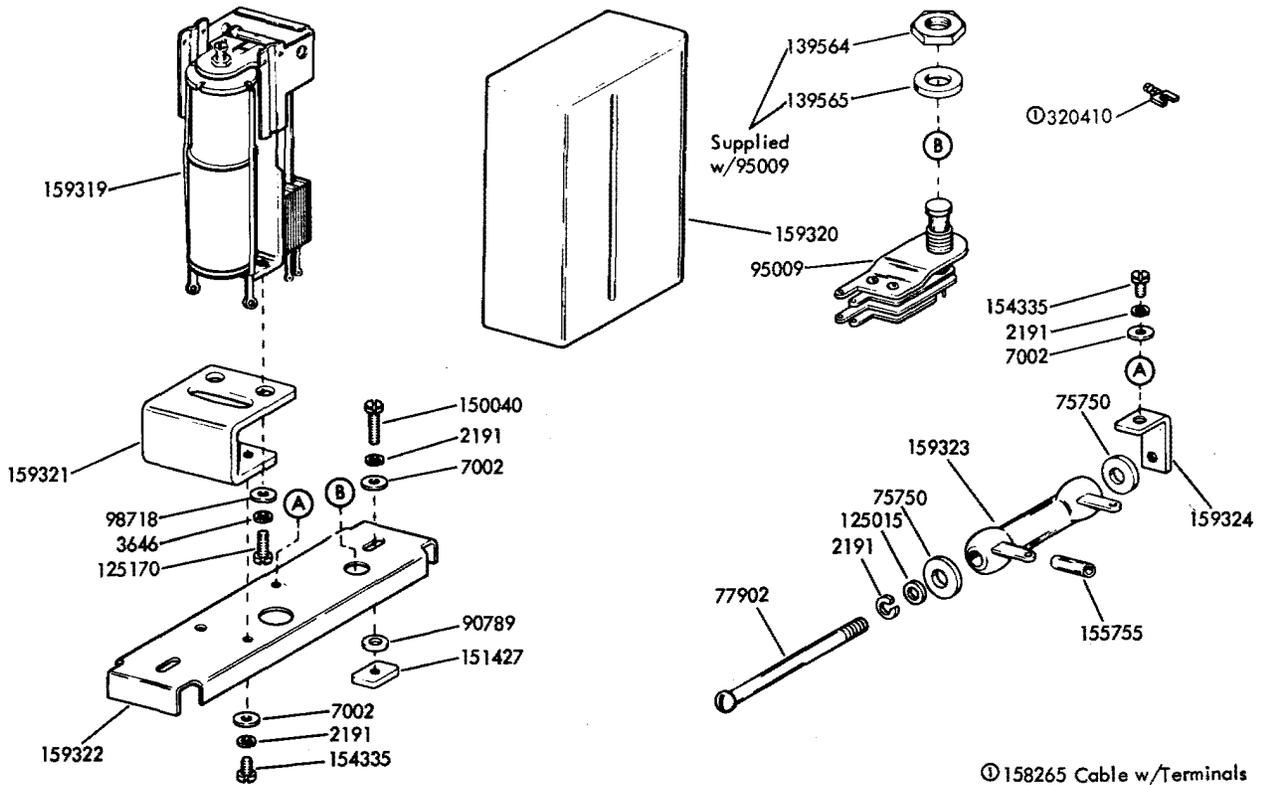


FIGURE 16. 159318 SLOW RELEASE RELAY ASSEMBLY

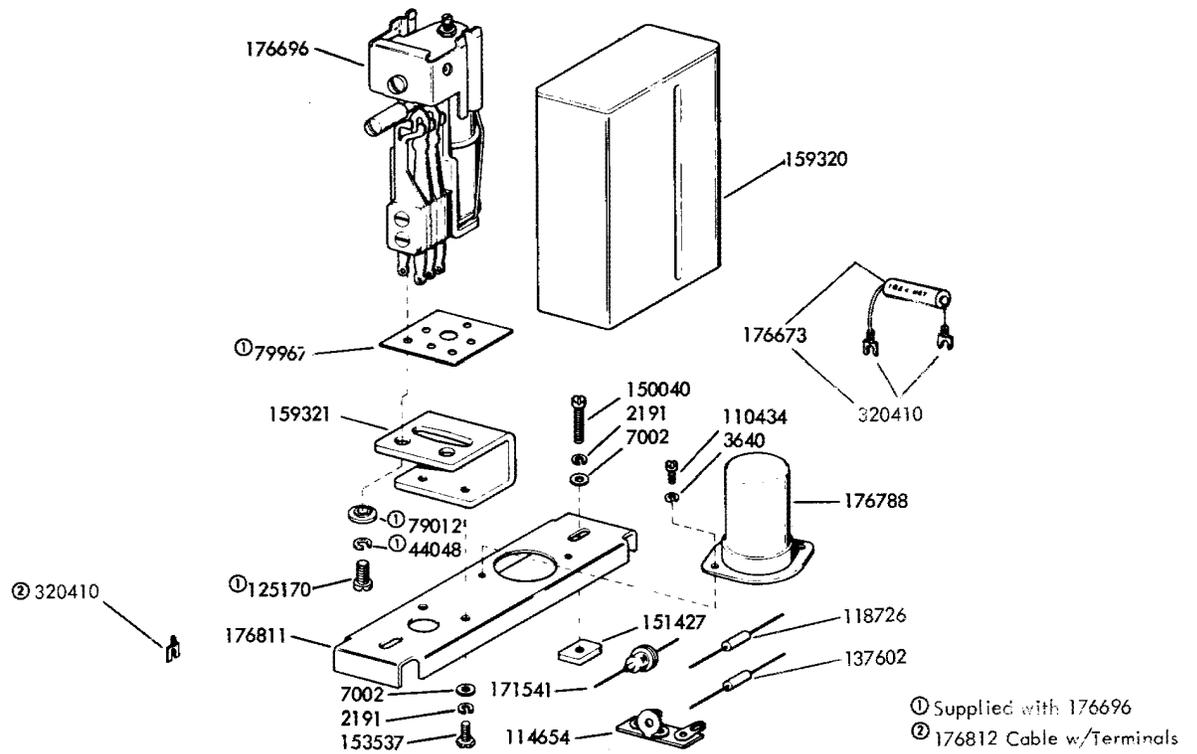


FIGURE 17. 176810 ANSWER-BACK CONTROL RELAY ASSEMBLY

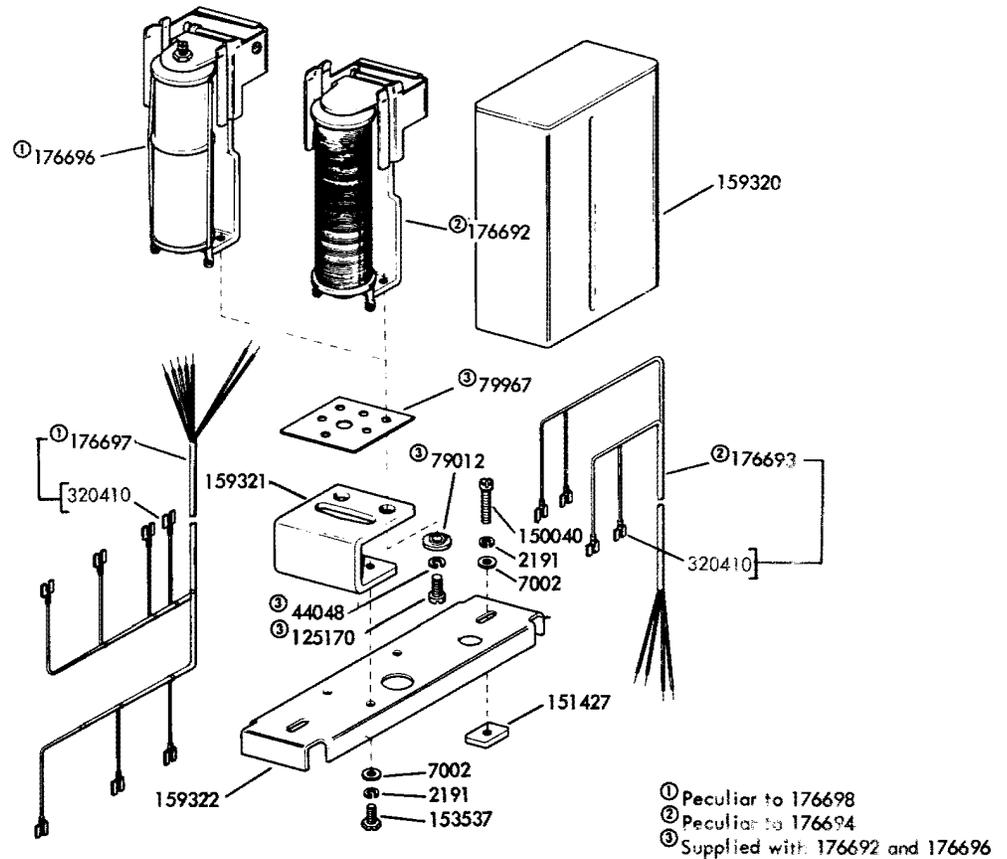


FIGURE 18. 176694 (MOTOR CONTROL) AND 176698 (SLOW RELEASE) RELAY ASSEMBLIES

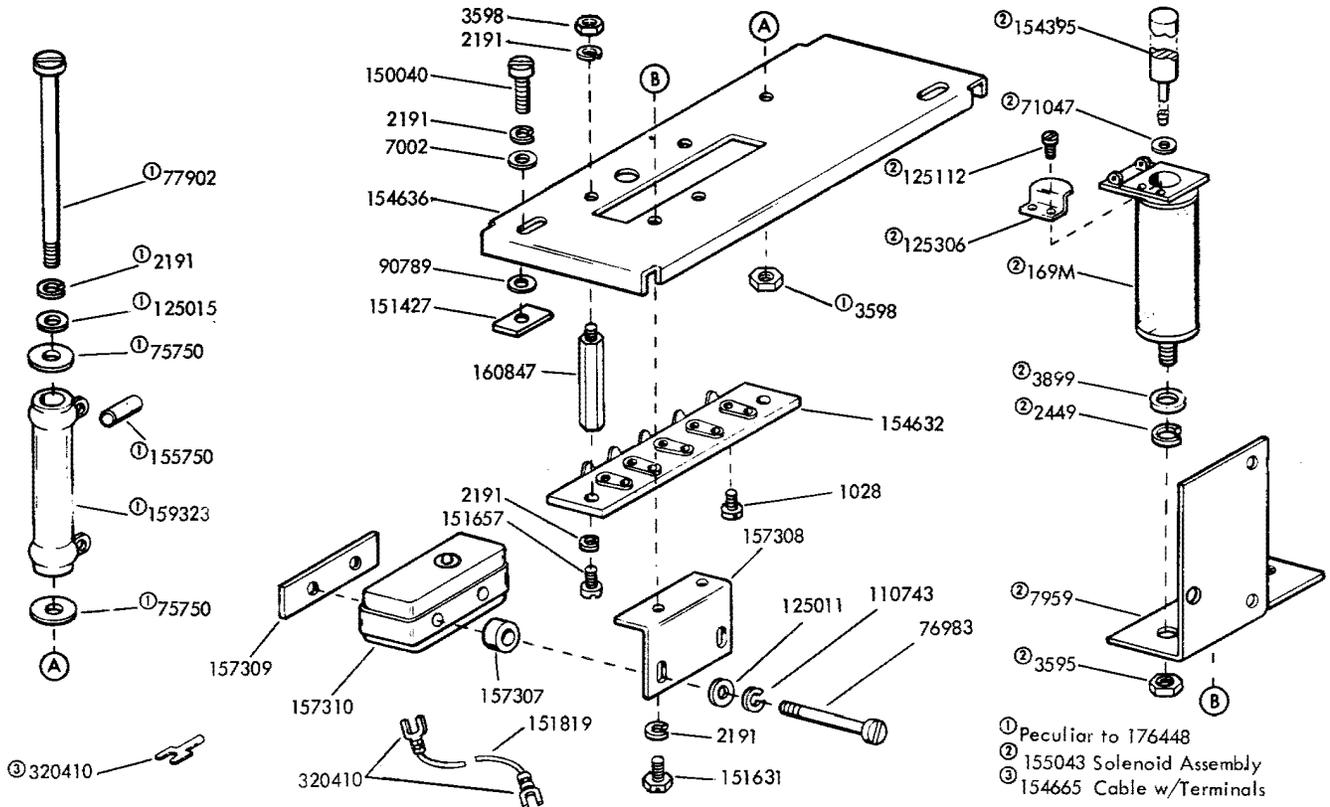


FIGURE 19. 152332 AND 176448 MOTOR CONTROL RELAY ASSEMBLIES

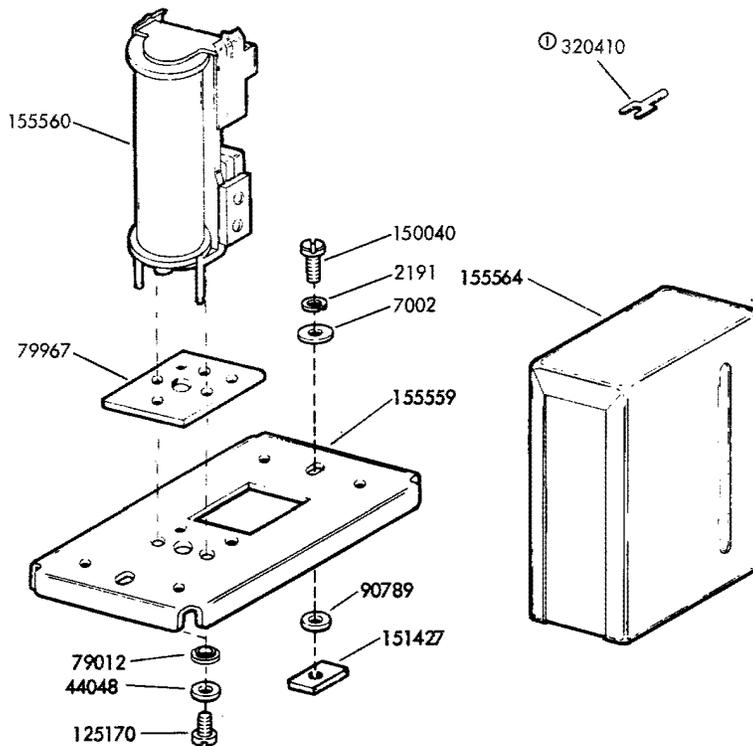


FIGURE 20. 15558 DC CONTROL RELAY ASSEMBLY

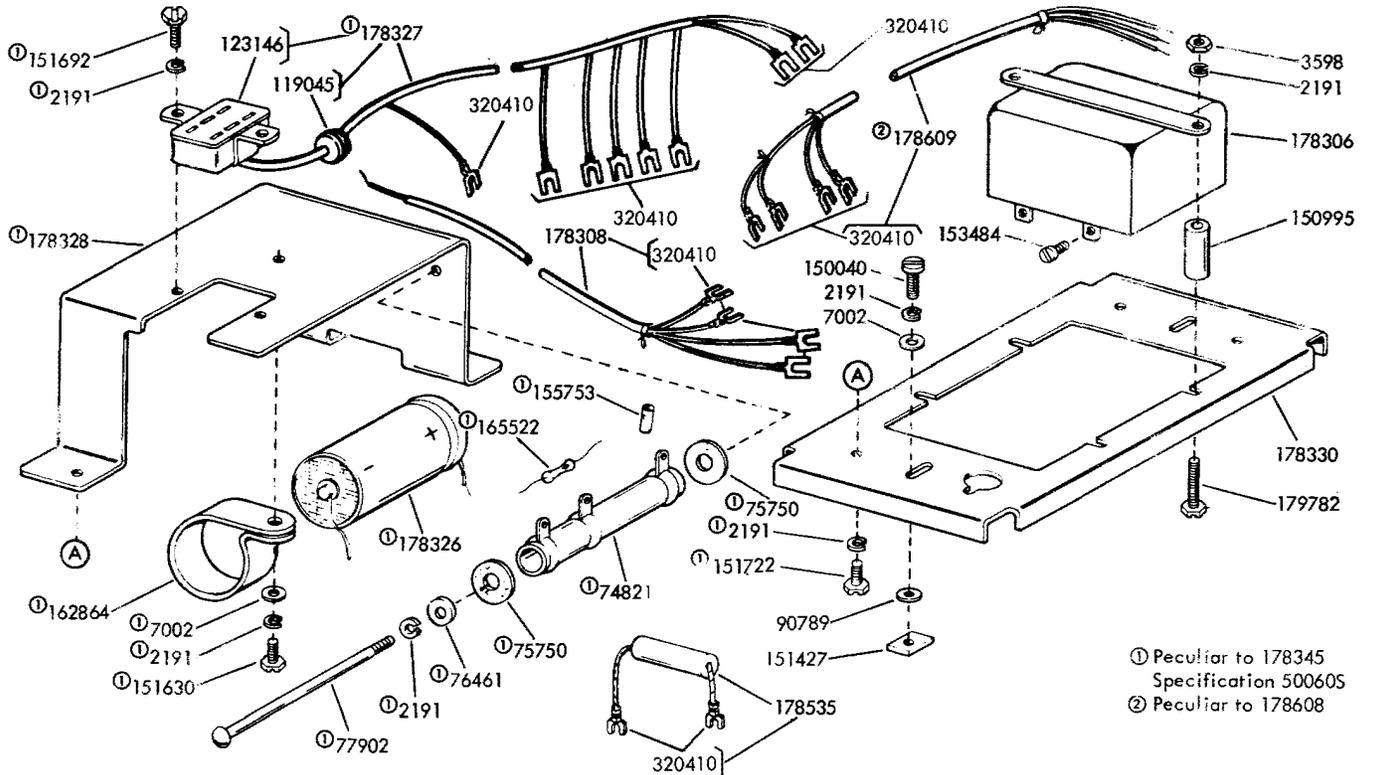


FIGURE 21. 178345 MODIFICATION KIT AND 178608 RELAY ASSEMBLY TO PROVIDE MOTOR CONTROL AND ANSWER BACK RELAYS

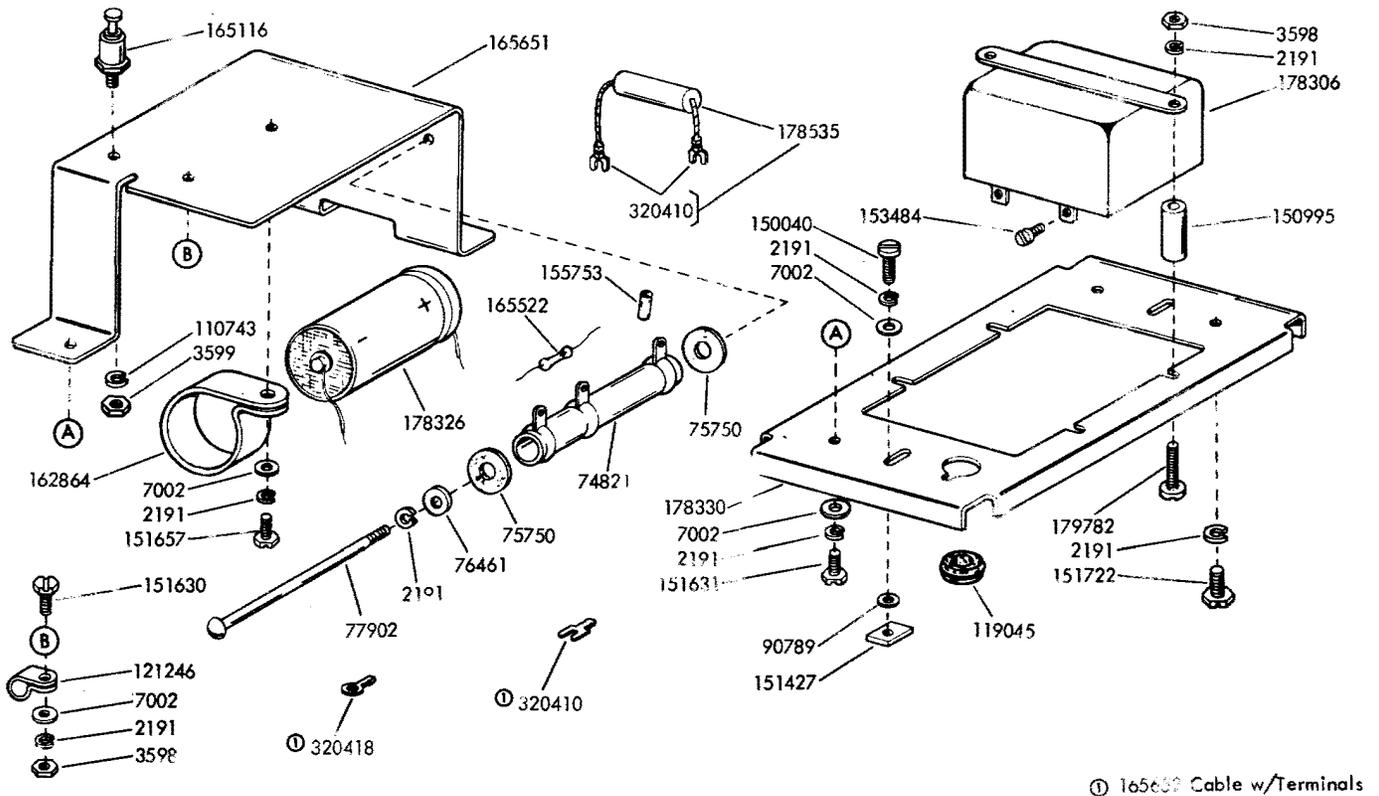


FIGURE 22. 165650 MOTOR CONTROL AND ANSWER-BACK RELAY ASSEMBLY

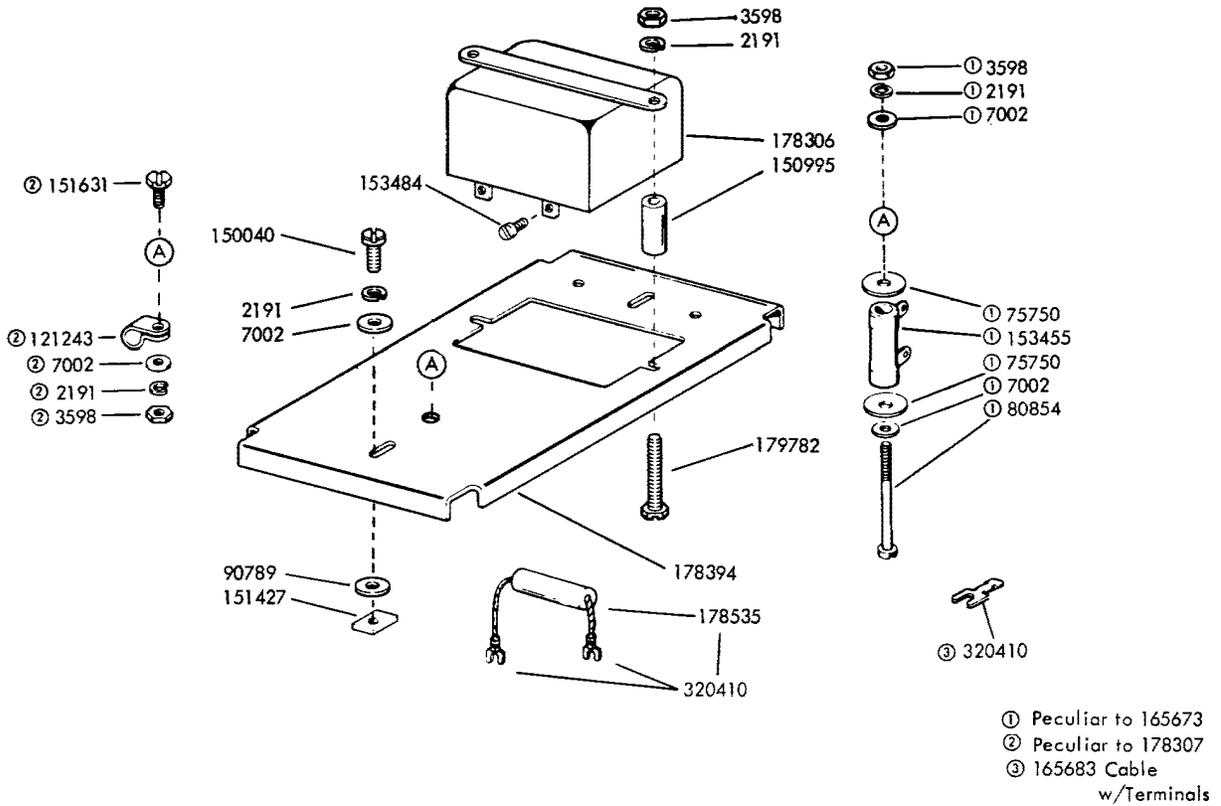


FIGURE 23. 165673 AND 178307 MOTOR CONTROL RELAY ASSEMBLIES

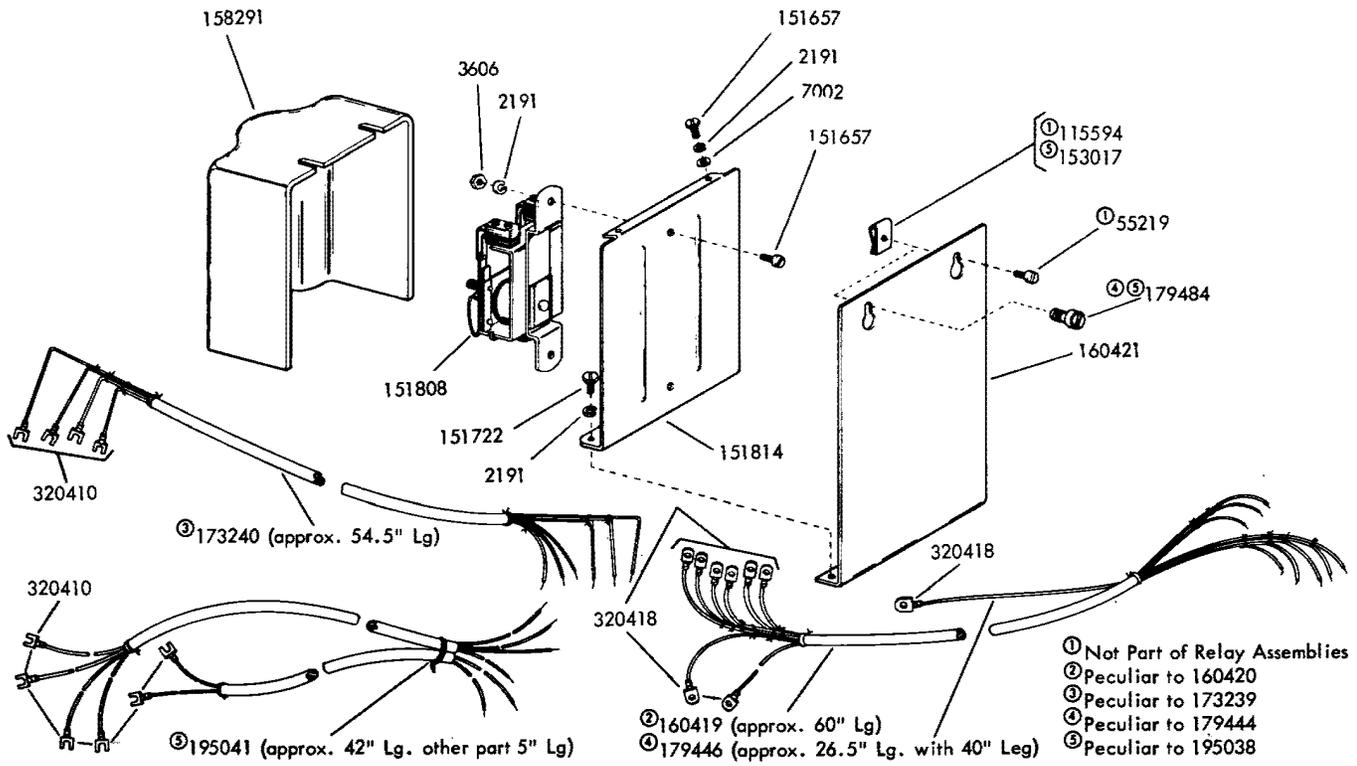


FIGURE 24. 160420 AND 195038 AUXILIARY LINE SHUNT RELAY ASSEMBLIES
179444 AND 173239 AUXILIARY READER CONTROL RELAY ASSEMBLIES

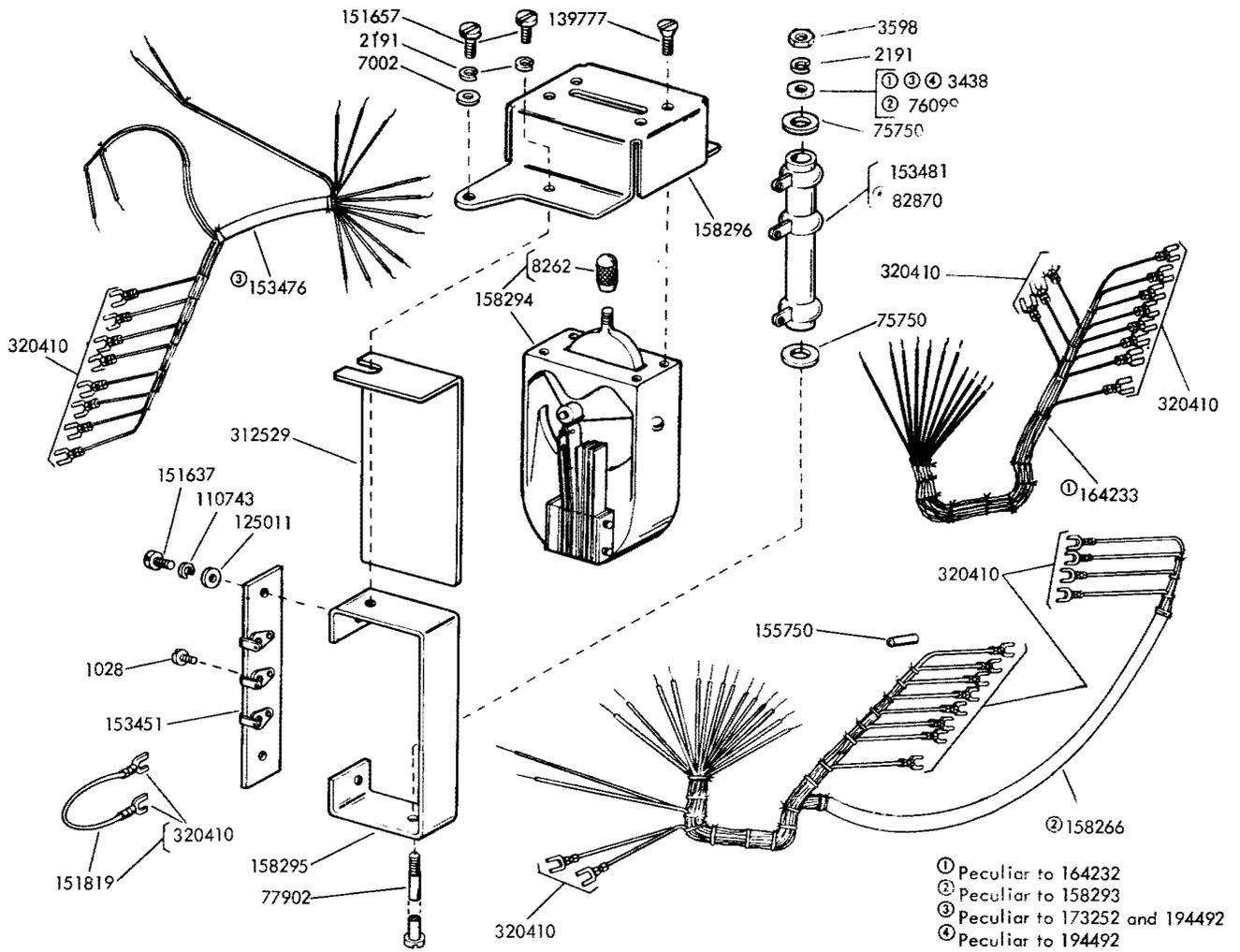


FIGURE 25. 158293, 164232, 173252 AND 194492 LINE TEST KEY ASSEMBLIES

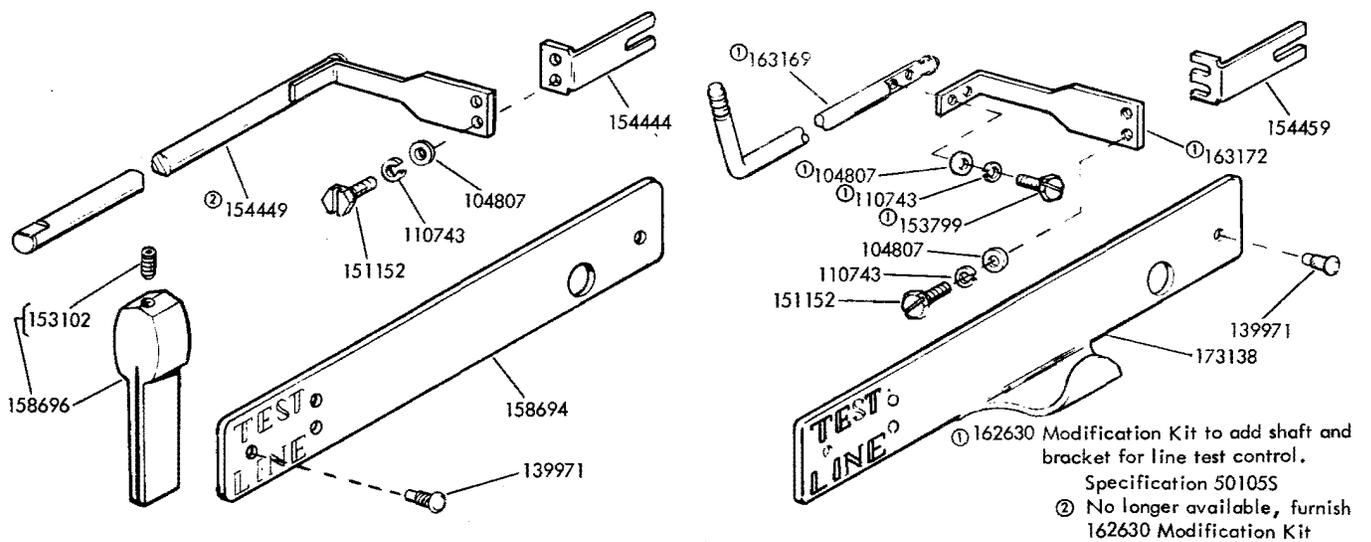


FIGURE 26. LINE TEST KEY CONTROL

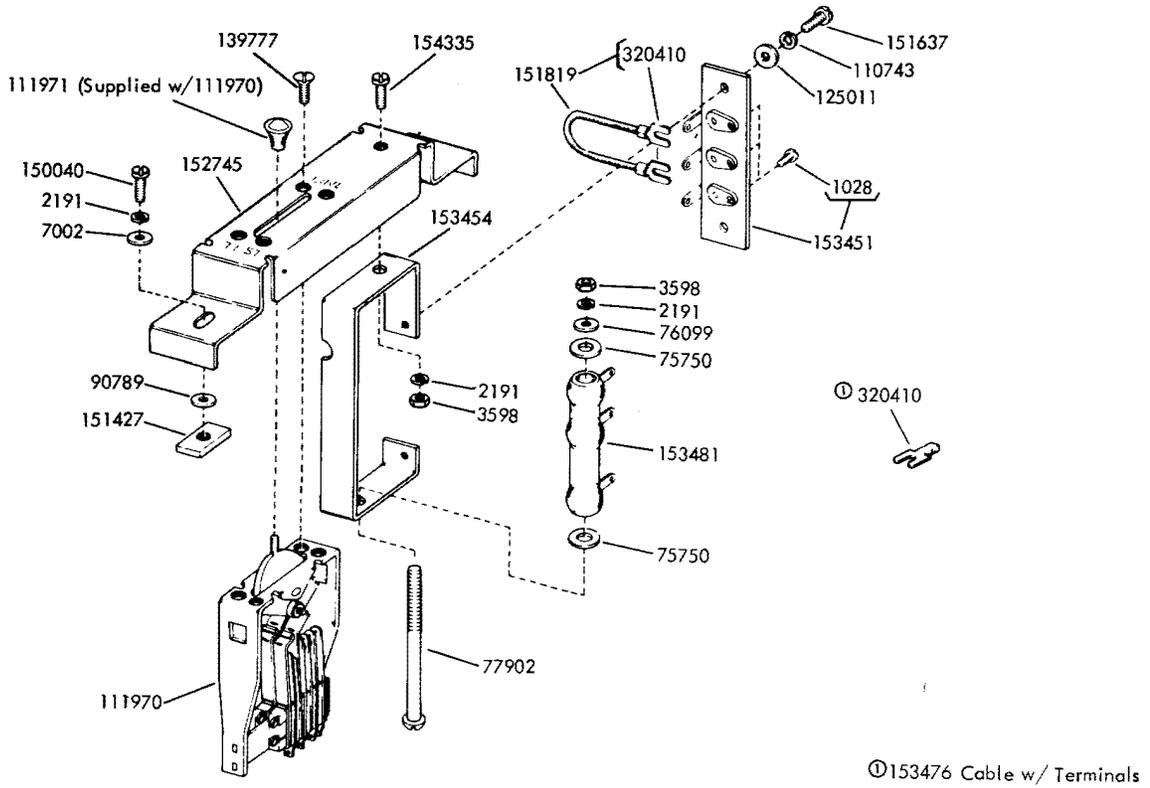


FIGURE 27. 152625 LINE TEST KEY ASSEMBLY

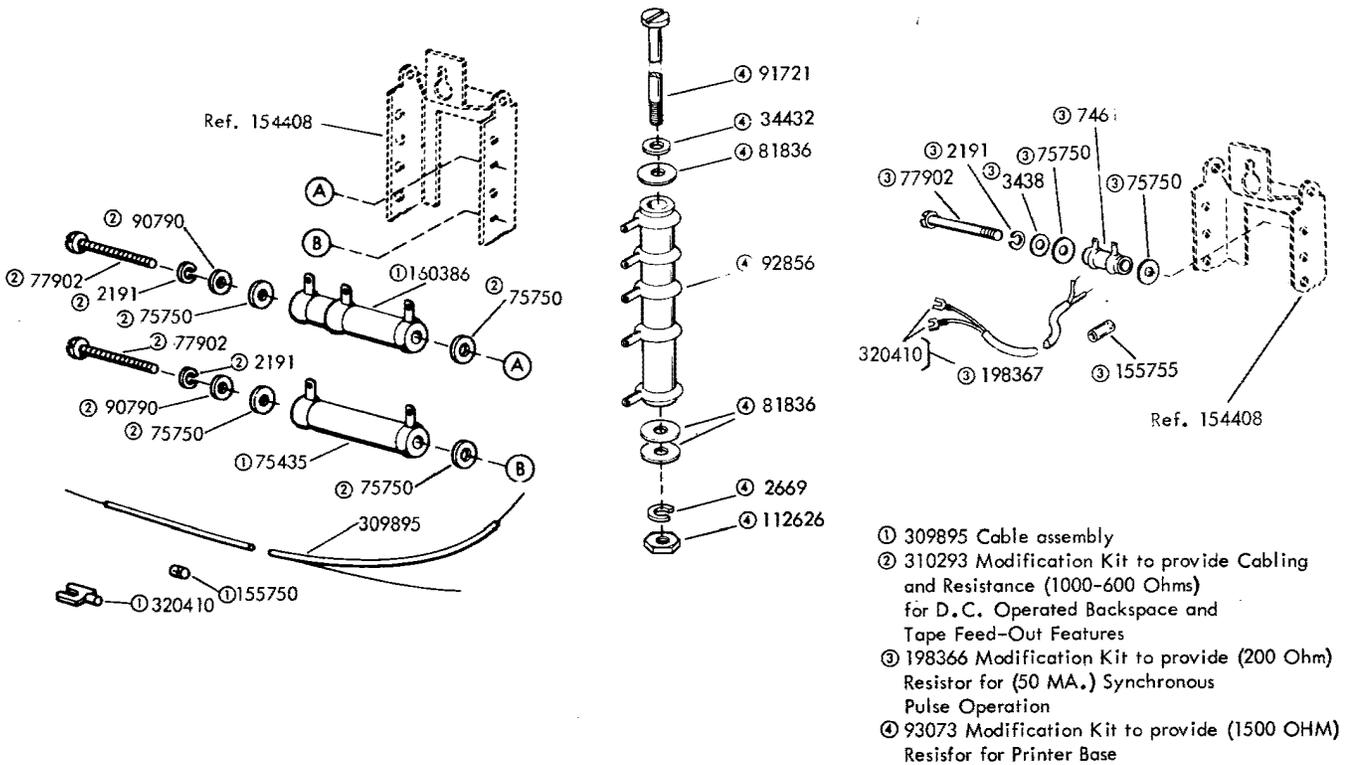


FIGURE 28. RESISTOR MODIFICATION KITS

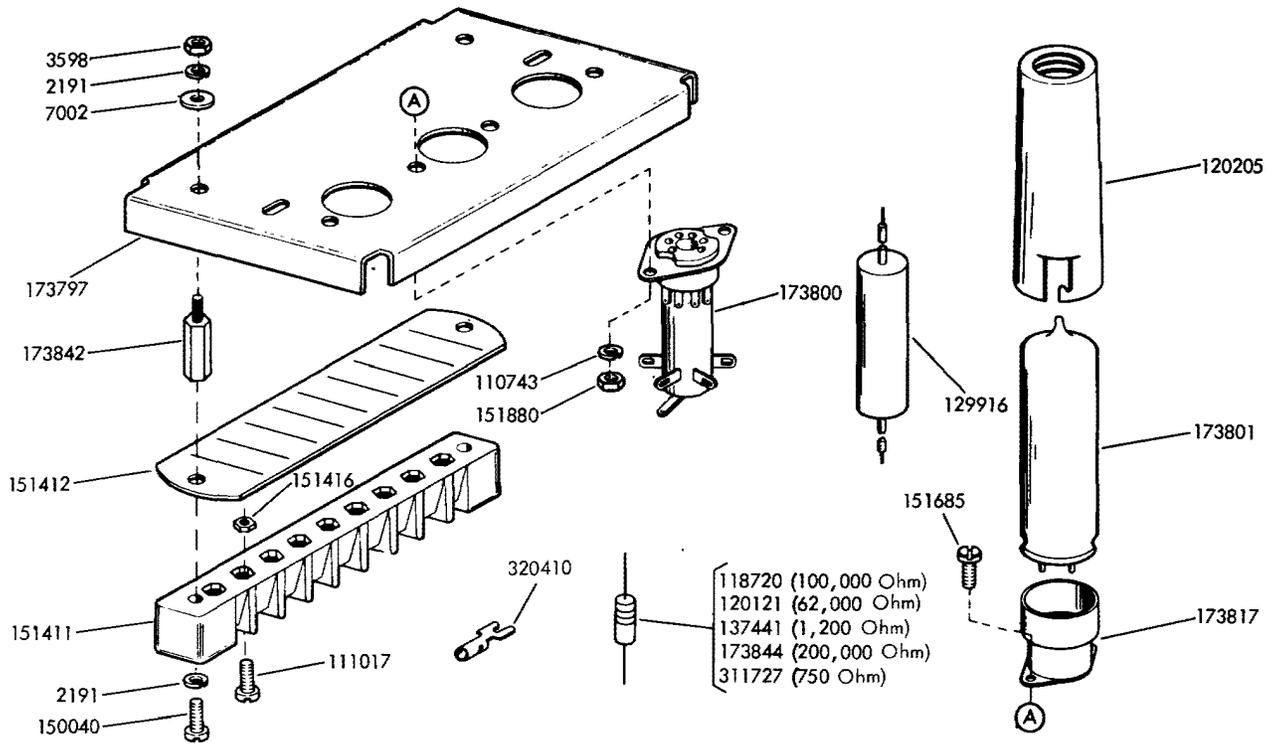


FIGURE 29. 173452 ELECTRONIC KEYSER ASSEMBLY

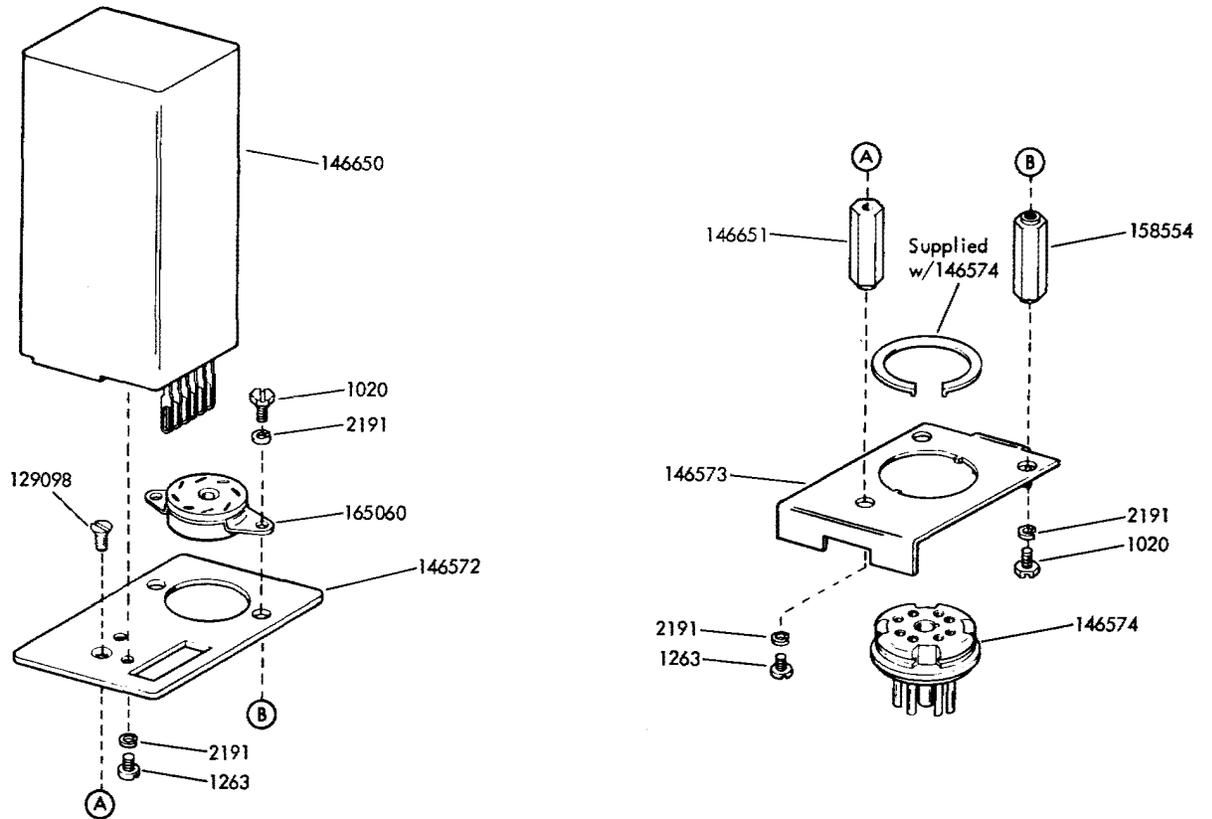
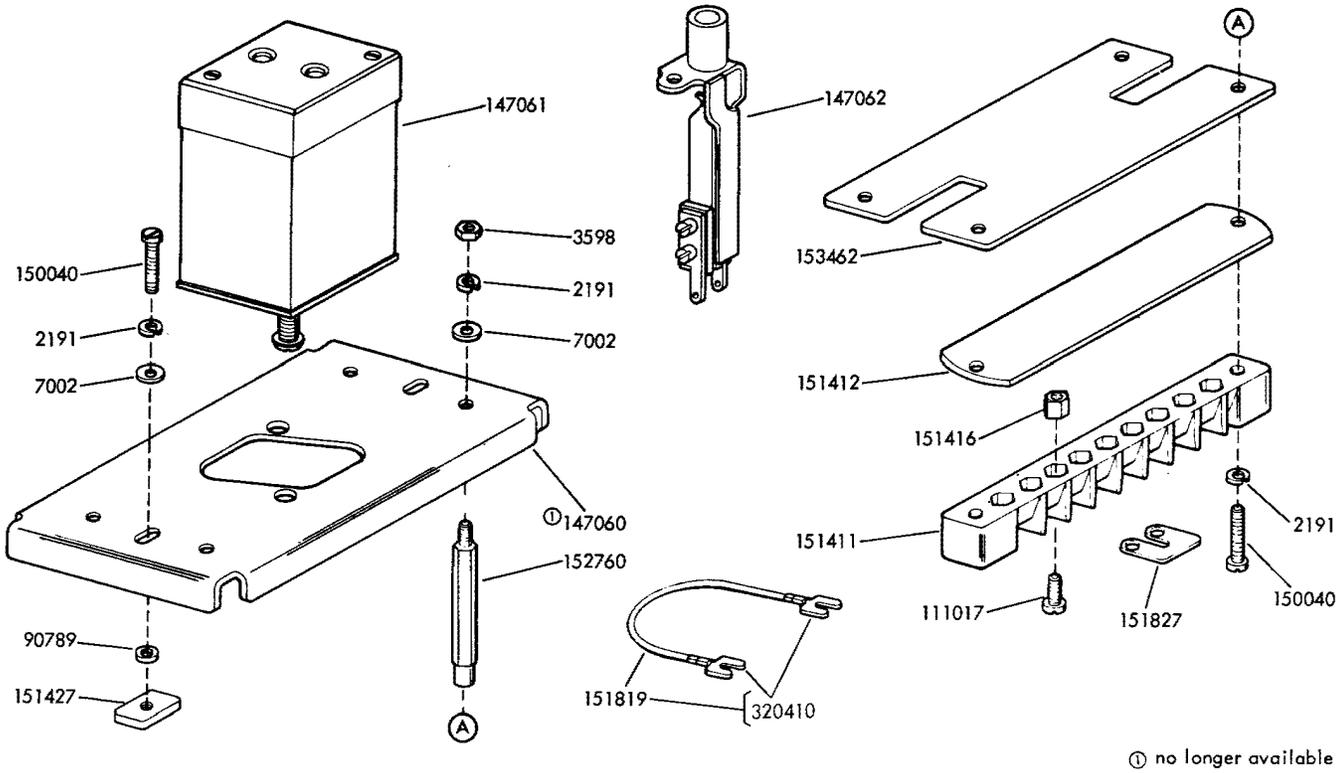


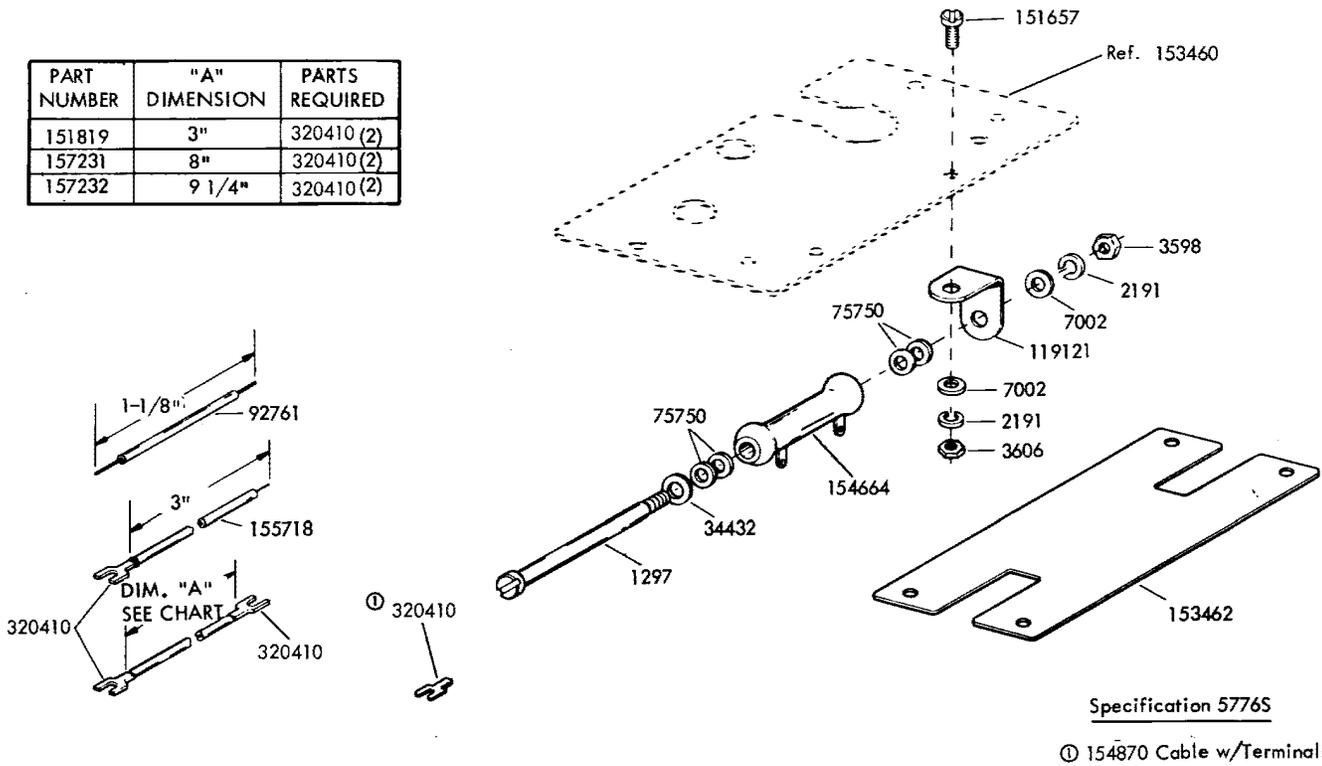
FIGURE 30. 146652 MODIFICATION KIT TO ADD WAVE SHAPING INDUCTOR



① no longer available

FIGURE 31. LINE JACK ASSEMBLY

PART NUMBER	"A" DIMENSION	PARTS REQUIRED
151819	3"	320410 (2)
157231	8"	320410 (2)
157232	9 1/4"	320410 (2)



Specification 5776S

① 154870 Cable w/Terminals

FIGURE 32. 154747 MODIFICATION KIT TO ADD CONTINUOUS SPACING

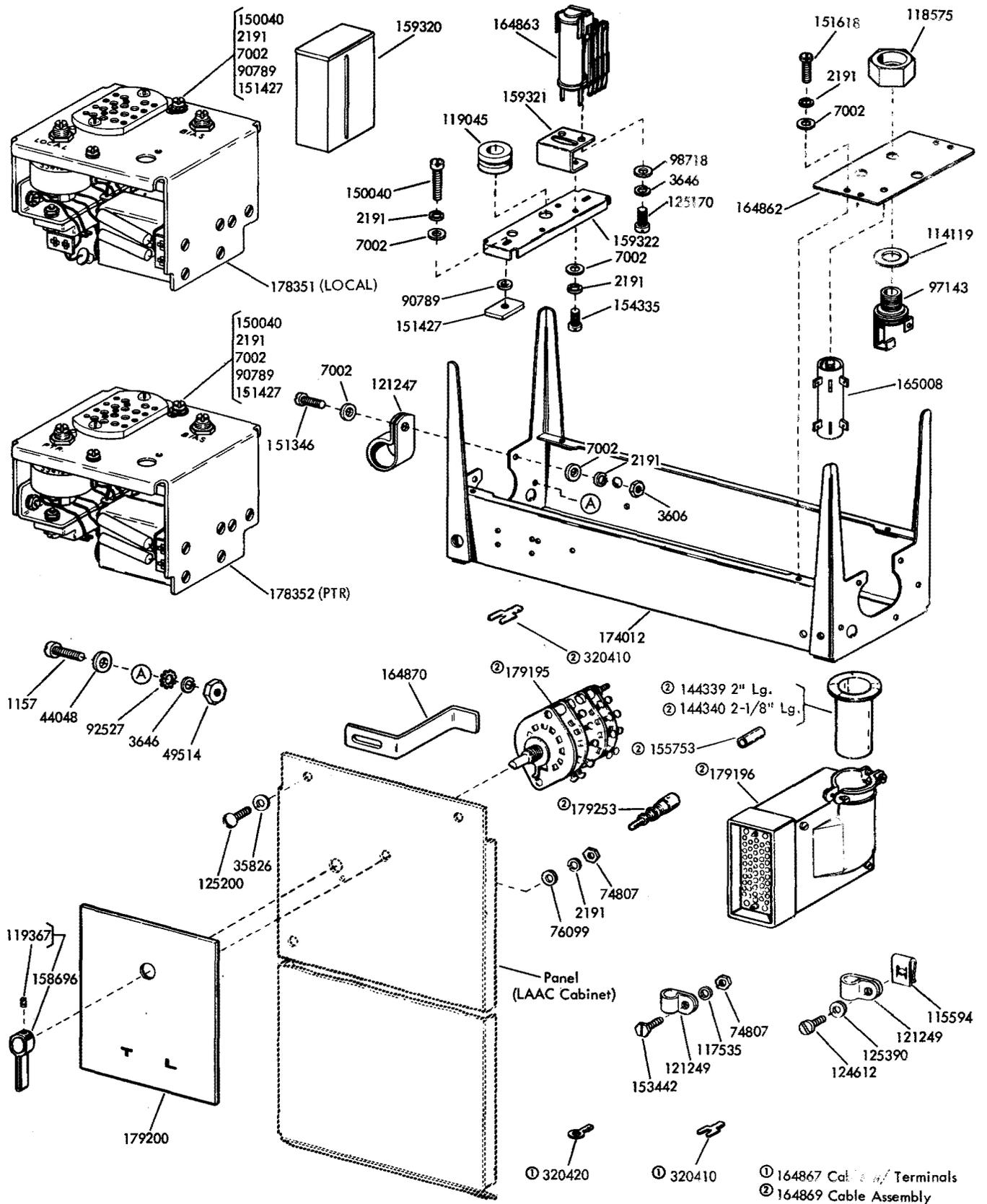


FIGURE 33. 164868 MODIFICATION KIT TO PROVIDE A CABINET WITH AN AUXILIARY ELECTRICAL SERVICE UNIT

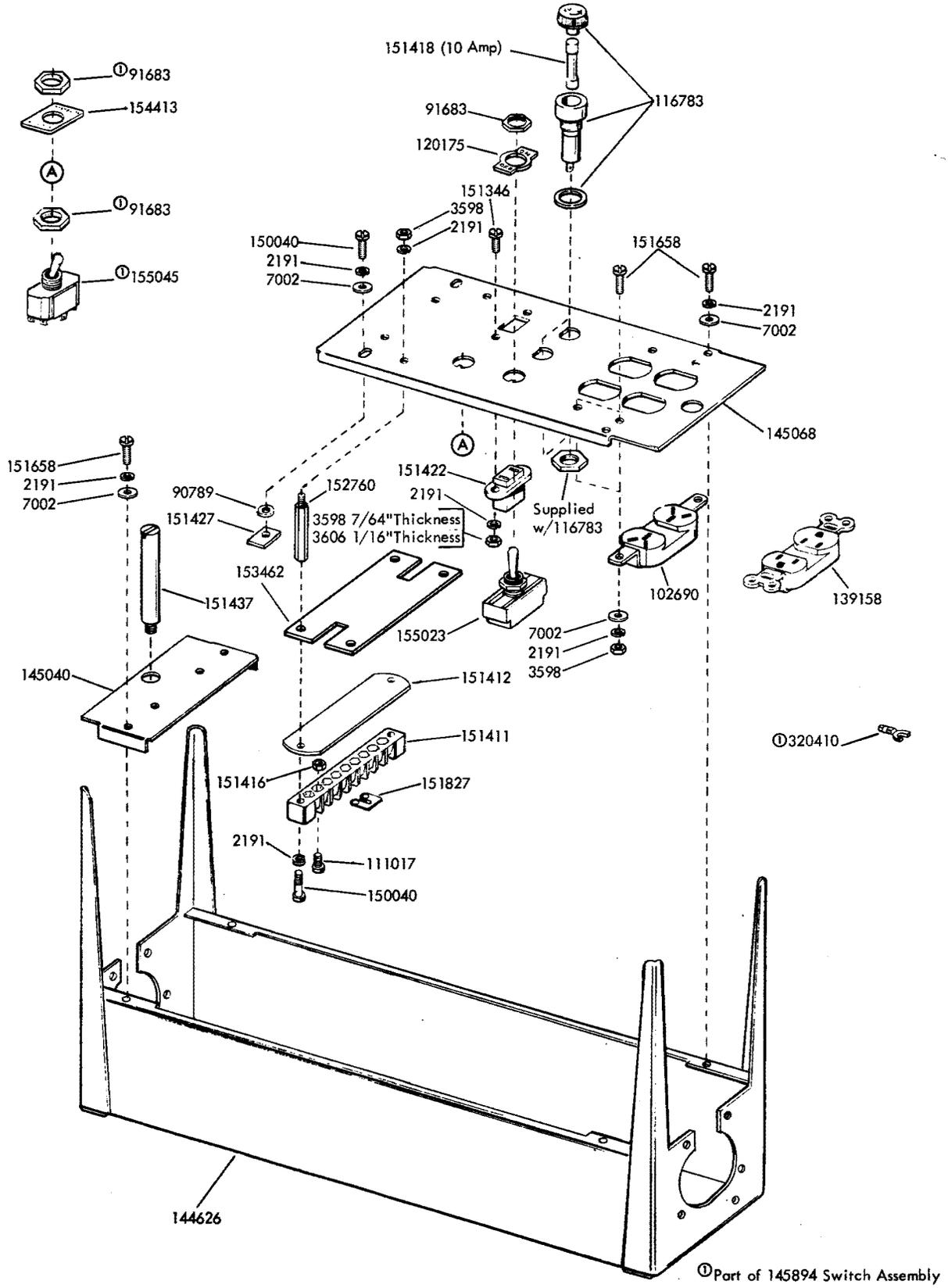


FIGURE 34. AUXILIARY ELECTRICAL SERVICE UNIT

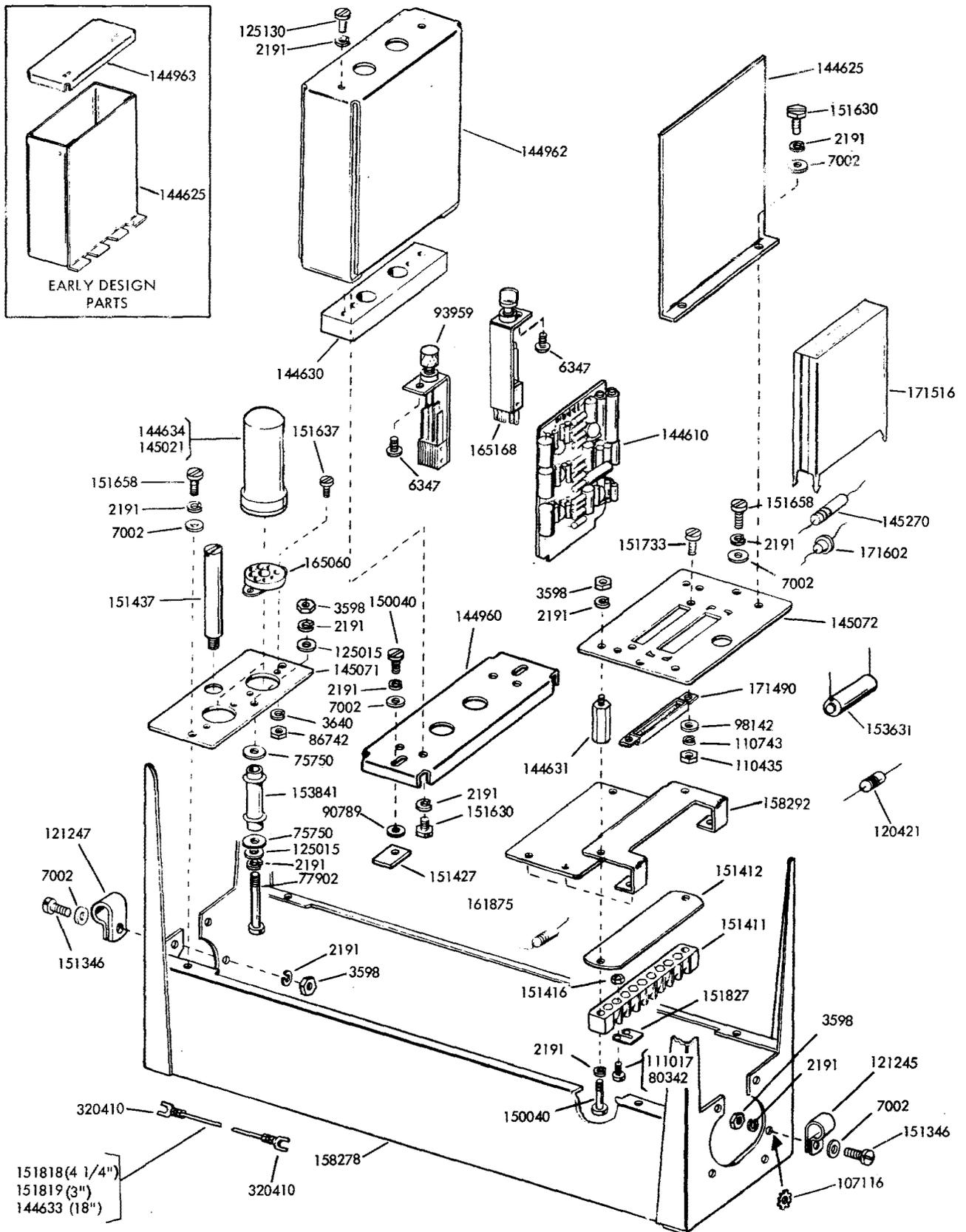
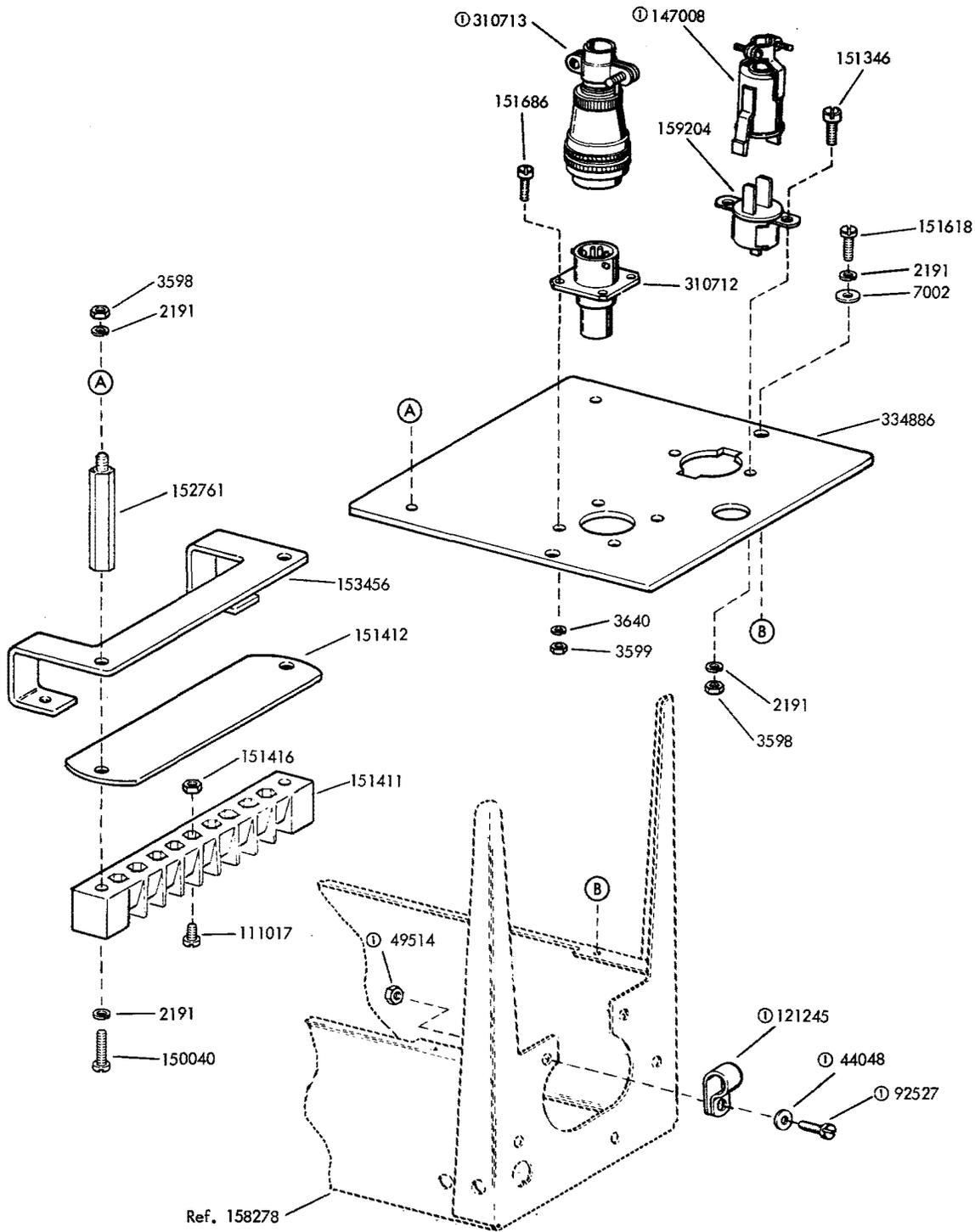
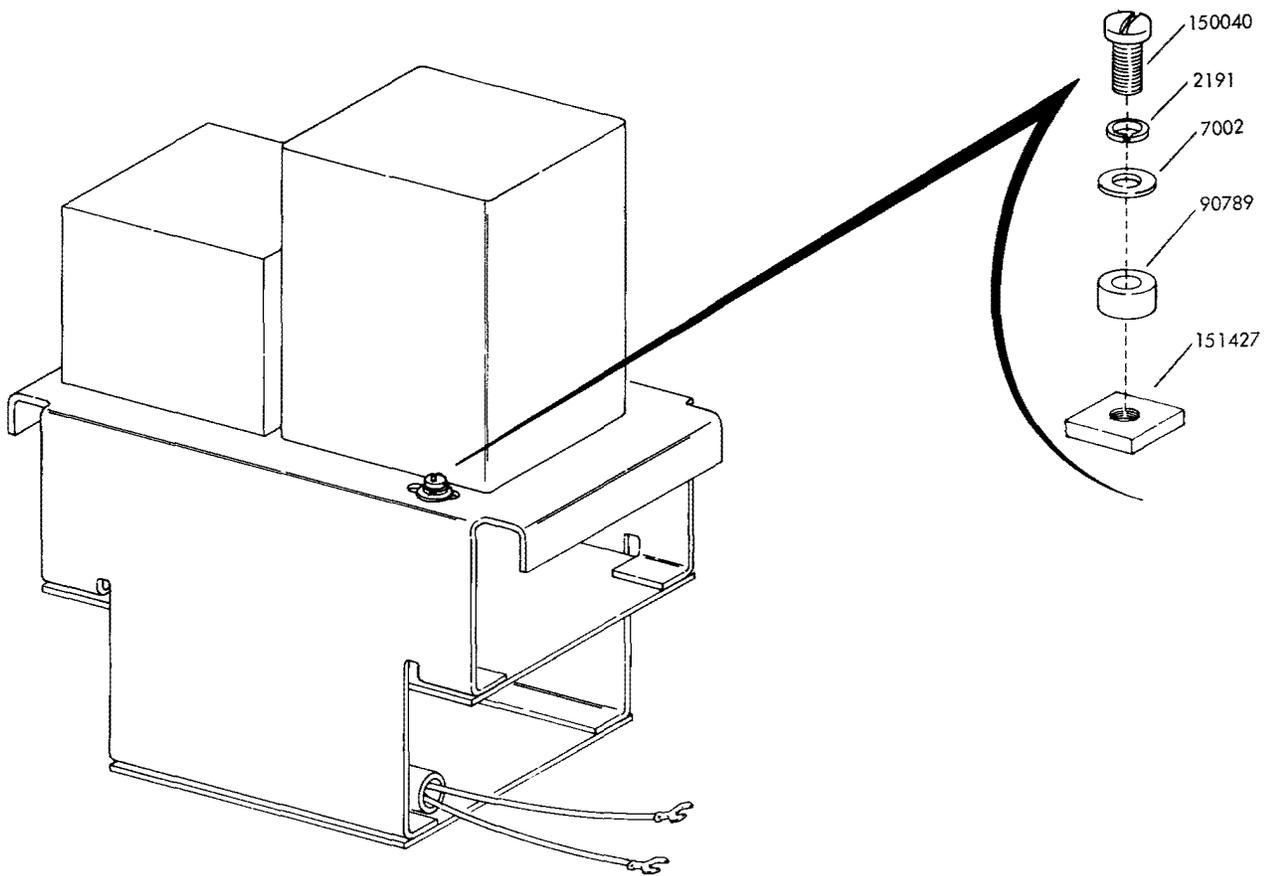


FIGURE 35. COMPONENTS TO PROVIDE FOR AC AND DC POWER DISTRIBUTION



Ⓢ Not Part of 336177 Plate Assembly

FIGURE 38. 336177 PLATE ASSEMBLY



A C INPUT DATA	117 Volts 60 Hertz 0.23 Amps
D C OUTPUT DATA	199 Volts 0.122 Amps

FIGURE 40. 304605 SELECTOR MAGNET DRIVER RELAY W/RECTIFIER

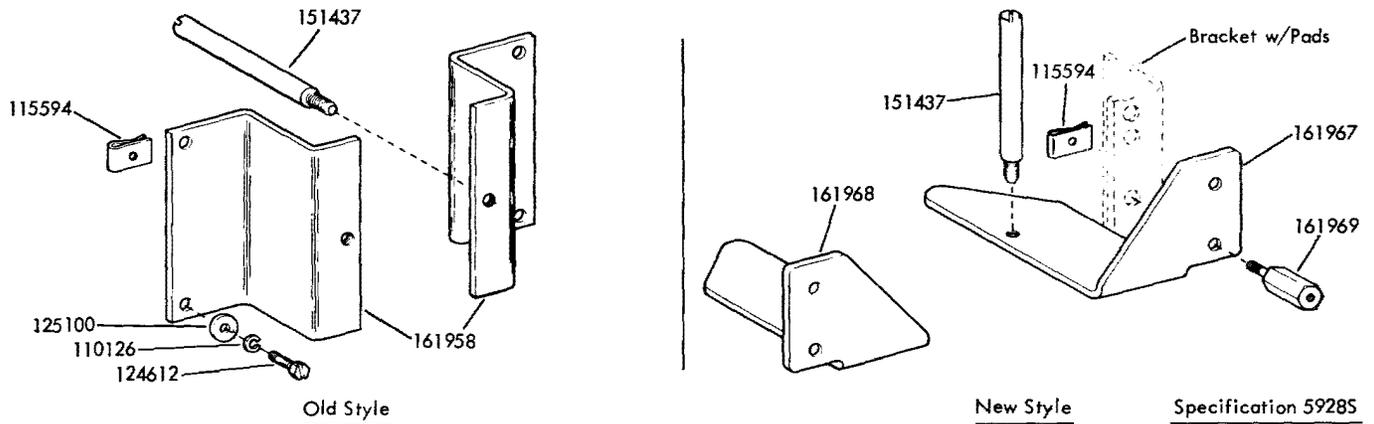


FIGURE 41. 161829 MODIFICATION KIT FOR MOUNTING AN ELECTRICAL SERVICE UNIT ON RELAY RACK BRACKETS

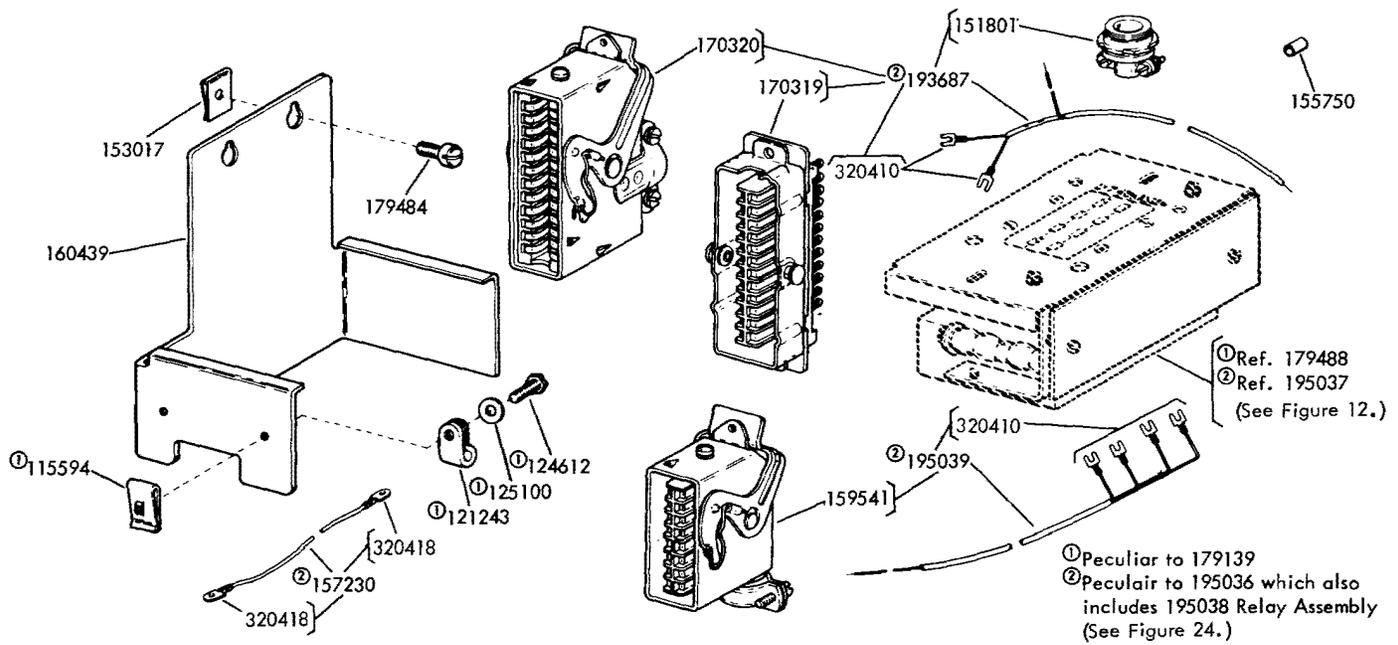


FIGURE 42. 179139 AND 195036 AUXILIARY REPERFORATOR LINE RELAY ASSEMBLY

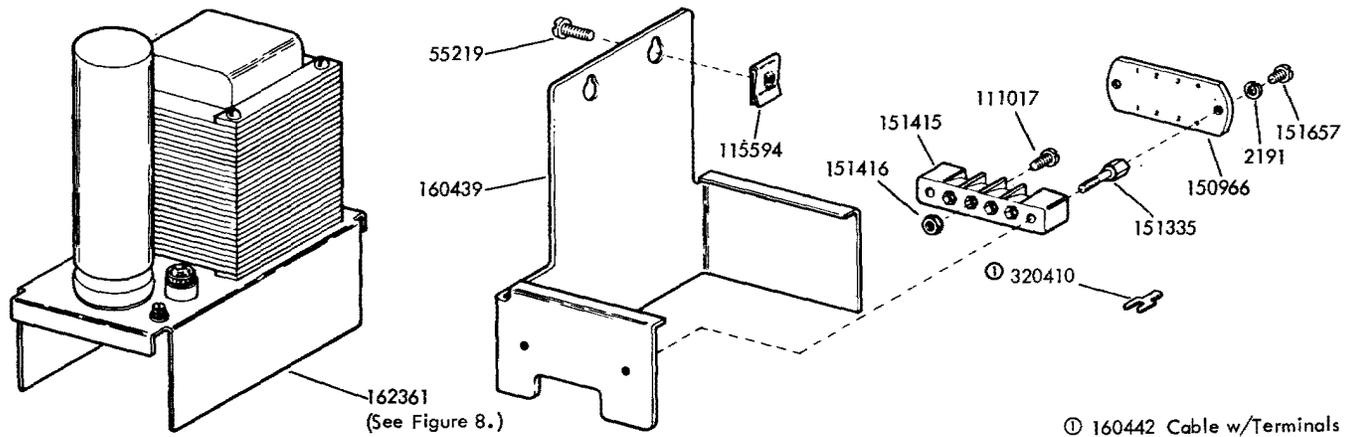
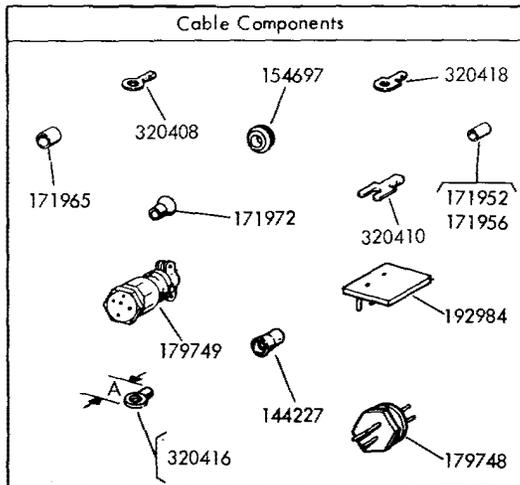
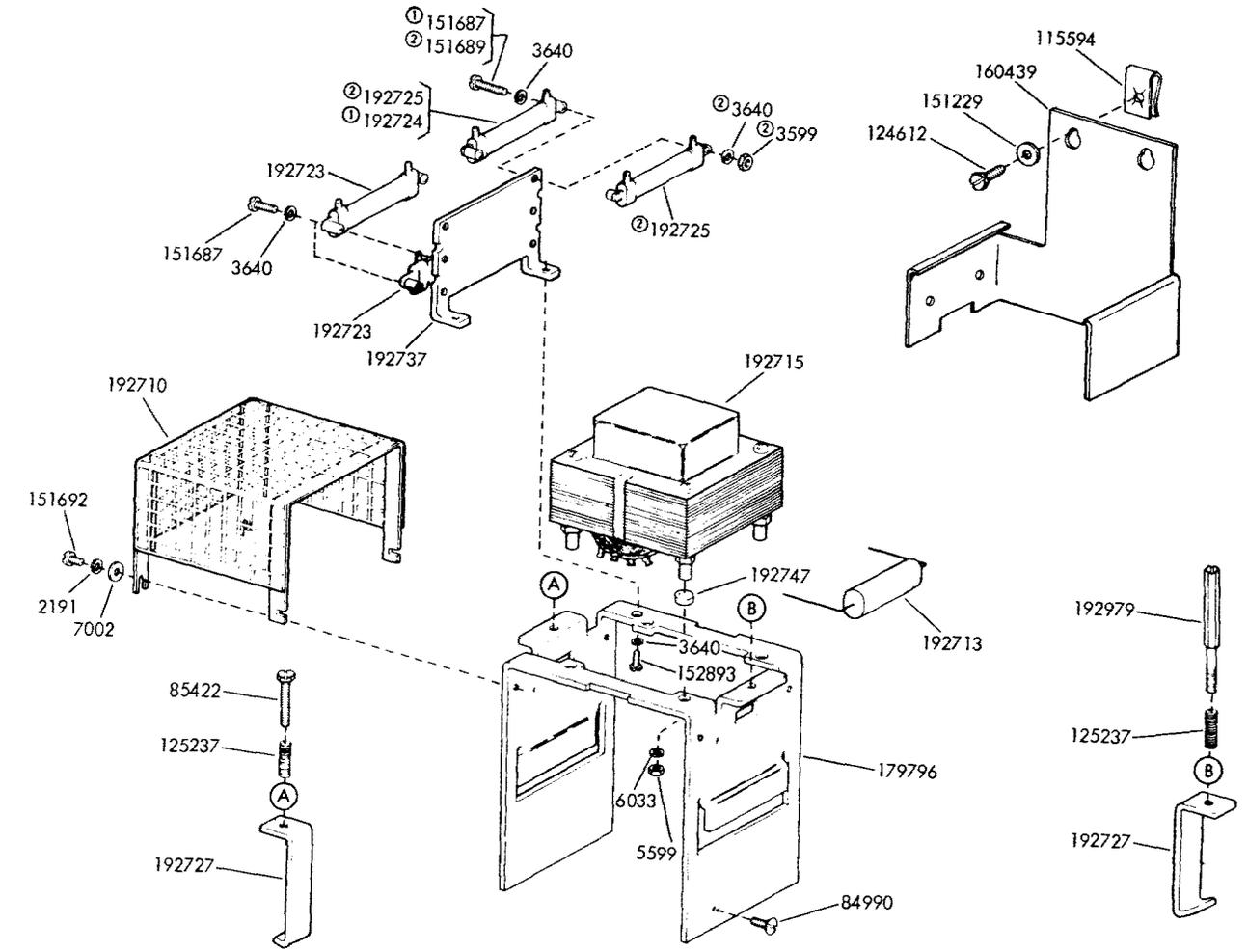


FIGURE 43. 160422 MODIFICATION KIT TO EQUIP CABINET WITH RECTIFIER



Jumpers			
Part No.	Color	Terminals	Length
151819	Black	320410 (2)	3-1/16"
156880	Black	320410 (2)	6-1/4"
157230	Black	320410 (2)	9-1/4"
157232	Black	320410 (2)	3-1/2"
195269	Green	320418 (1)	3-1/2"
195270	Green	320416 (1)	3-1/2"
305019	Brown		2"
305020	Purple		2"

Specification 50250S

- ① Peculiar to 192730 Selector Magnet Driver Assembly also shown on Figure 46
 - ② Peculiar to 192740 Low-Level Keyer Assembly also shown on Figure 46
- 179610 Modification Kit for use w/Auxiliary Reperforator
 179611 Modification Kit for use w/out Auxiliary Reperforator

FIGURE 45. 179610 AND 179611 MODIFICATION KITS TO REDUCE RADIO FREQUENCY NOISE ON ASR SET

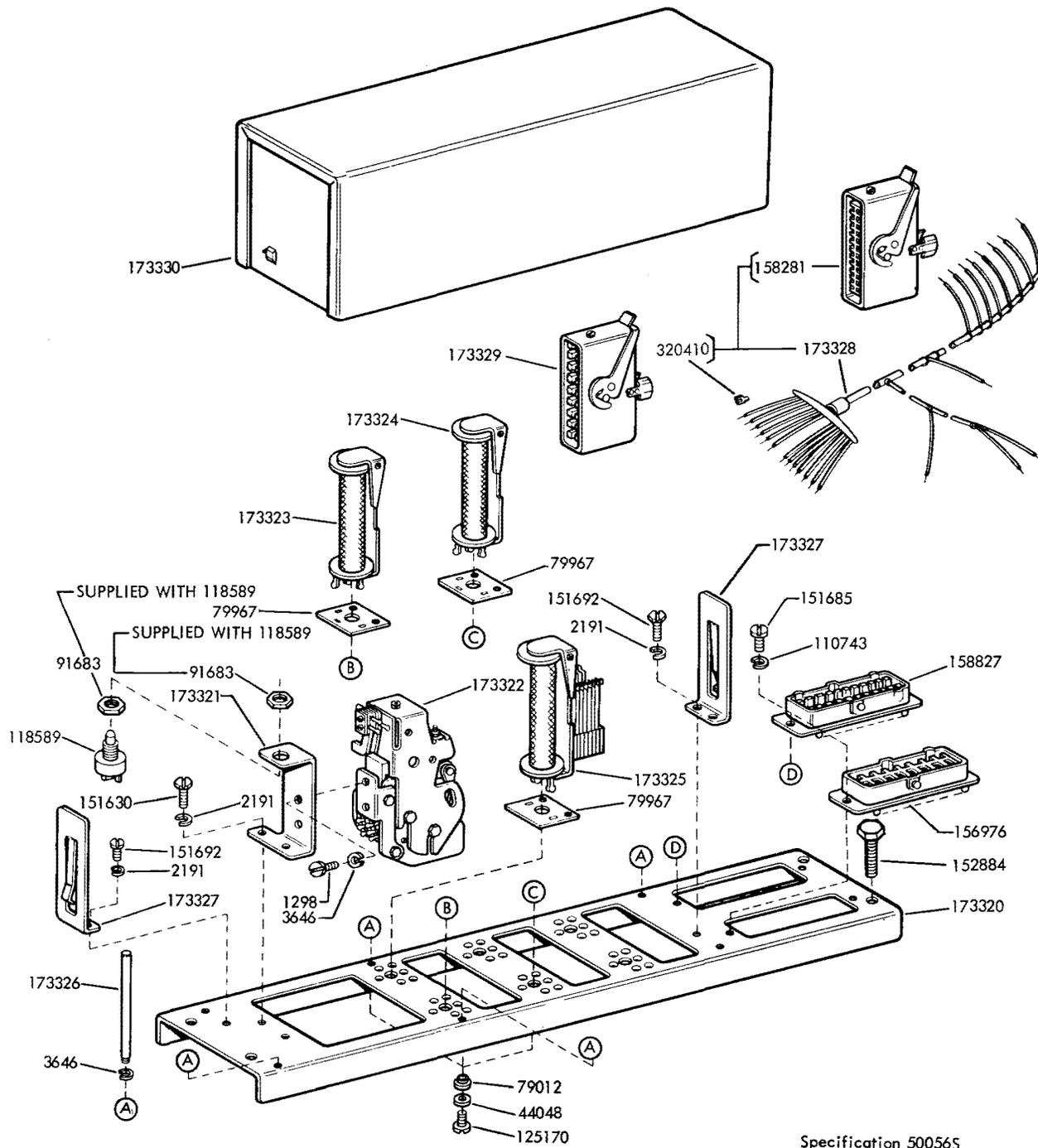
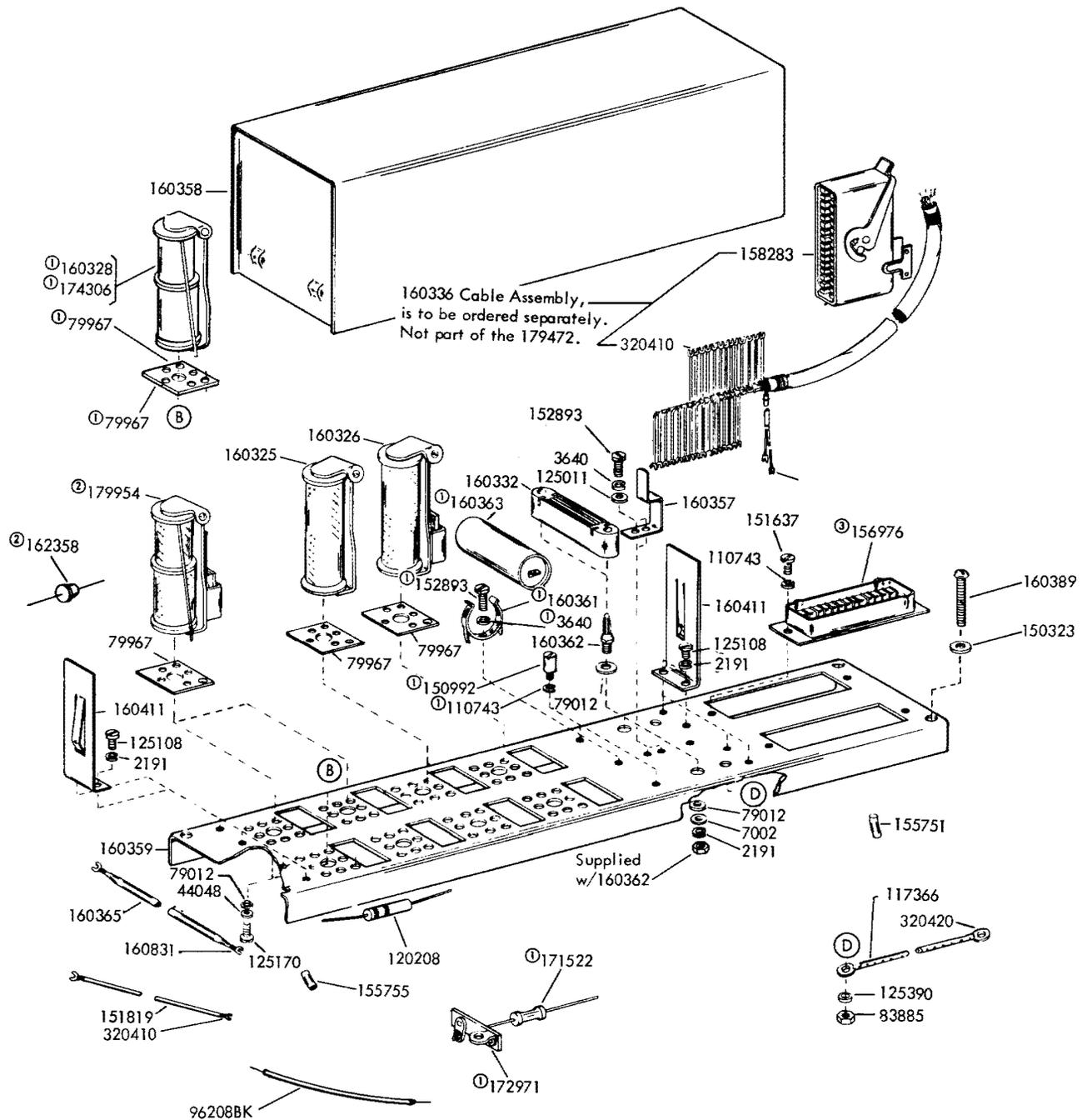
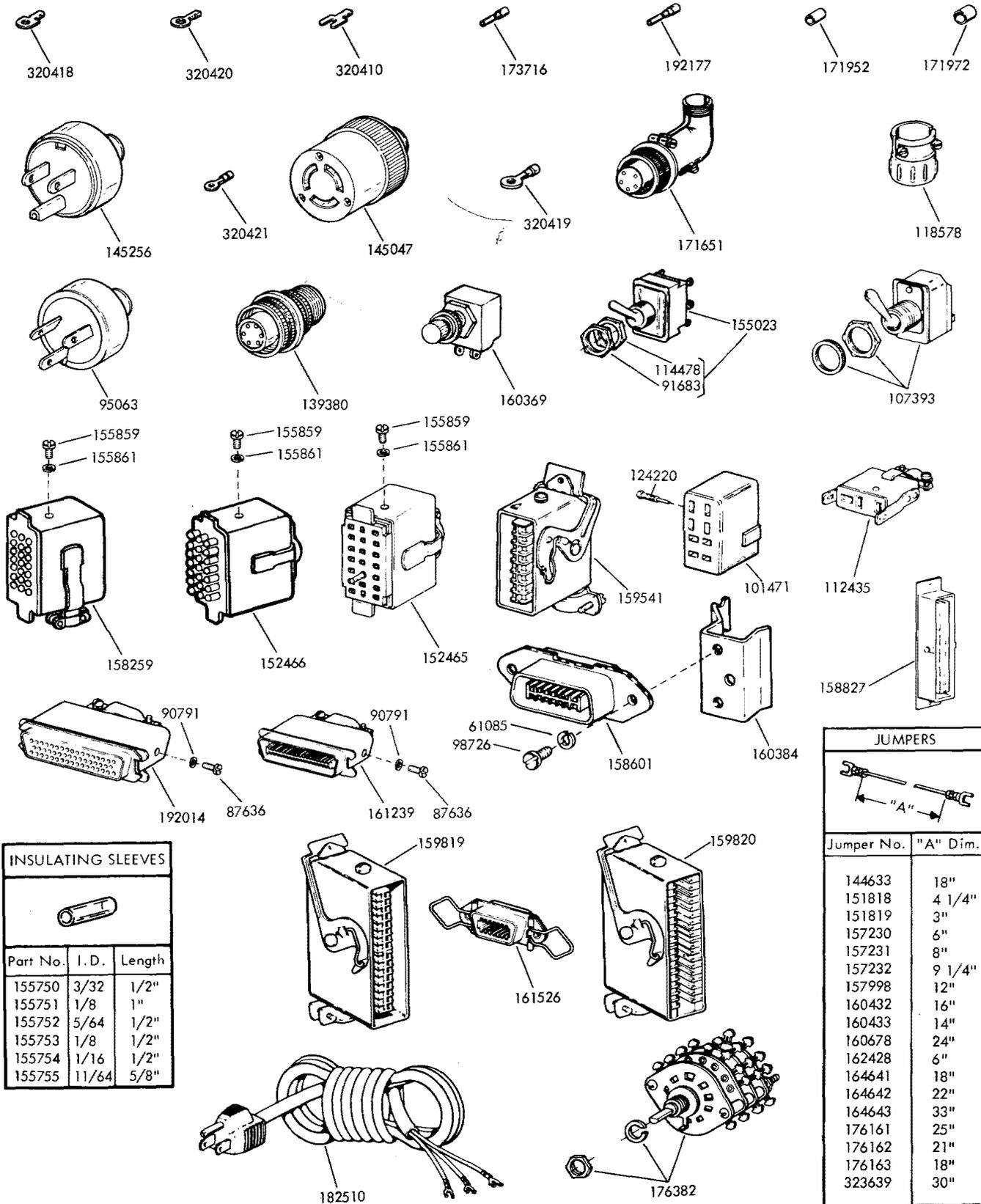


FIGURE 48. 162483 CALL DIRECTING RELAY UNIT



- Ⓐ Peculiar to Early Design 160334 Modification Kit. This feature no longer furnished - Specification 53875
- Ⓑ Part of 179953 Modification Kit to convert early design 160334 Central Device to a 179472. Specification 501525
- Ⓒ 179956 Cable Assembly

FIGURE 49. 179472 MODIFICATION KIT TO PROVIDE A TRANSMITTER CONTROL



INSULATING SLEEVES		
Part No.	I. D.	Length
155750	3/32	1/2"
155751	1/8	1"
155752	5/64	1/2"
155753	1/8	1/2"
155754	1/16	1/2"
155755	11/64	5/8"

JUMPERS	
Jumper No.	"A" Dim.
144633	18"
151818	4 1/4"
151819	3"
157230	6"
157231	8"
157232	9 1/4"
157998	12"
160432	16"
160433	14"
160678	24"
162428	6"
164641	18"
164642	22"
164643	33"
176161	25"
176162	21"
176163	18"
323639	30"

FIGURE 50. CABLE COMPONENTS

NUMERICAL INDEX

Part Number	Description and Page Number	Part Number	Description and Page Number	Part Number	Description and Page Number
169M	Coil, Magnet 16	7002	Washer, Flat 3 to 30, 32, 33,34,37	81836	Washer, Insulating 5,20
247M	Coil, Magnet 7	7603	Spring 7	82516	Spring, Retaining 12
252M	Coil, Magnet 7	7959	Bracket, Magnet 16	82870	Resistor, 6,300 Ohm 19
1020	Screw, 6-40 x 1/4 Hex 21	8262	Knob 19	83054	Capacitor, 1 MFD 6
1028	Screw, 4-40 x 1/4 Fil 12, 16,19,20	8449	Spacer, .094" Thk 29,34	83885	Nut, 6-32 Hex 37
1093	Screw, 8-32 x 7/16 Fil 7	34432	Washer, Flat 20,22	84990	Screw, 6-40 x 1/4 Flat 29,32,33
1157	Screw, 8-32 x 1/2 Fil 3, 23,27,35	35826	Washer, Flat 23	85422	Screw, 10-32 x 15/16 Hex 29,32,33
1158	Screw, 6-32 x 5/16 Fil 4	44048	Washer, Flat 3,7,13,15, 16,23,27,28,36,37	86742	Nut, 4-40 Hex 25
1172	Screw, 2-56 x 5/16 Fil 5	49514	Nut, 8-32 Hex 3,23,27,28	87636	Screw, 2-56 x 3/16 Rd 38
1248	Screw, 6-40 x 1/2 Flat 12	55219	Screw, 8-32 x 3/8 Fil 10,18,31	89548	Spring, Contact 12
1263	Screw, 6-32 x 1/4 Fil 21	55318	Screw, 6-32 x 1/4 Rd 9	89969	Washer, Insulating 5
1264	Screw, 10-32 x 1/2 Flat 35	61085	Lockwasher 38	90789	Washer, Flat 5,6,7,8,10, to 14,16,17,18,20,22,23, 24,25,26,30
1297	Screw, 6-40 x 2-7/16 Fil 22	70314	Washer, Flat 10	90790	Washer, Flat 20
1298	Screw, 8-32 x 1/4 Fil 36	70887	Nut, 10-24 Hex 35	90791	Lockwasher 38
2034	Washer, Flat 7	71047	Washer, Flat 16	90951	Lockwasher 7
2191	Lockwasher 3 to 37	71155	Screw, 6-32 x 1-1/4 Flat 8	91683	Nut, 15/32 Hex 3,24,36,38
2201	Nut, 5/16-32 Hex 7	71646	Nut, 6-32 Hex 8,9	91684	Nut, 15/32-32 Ring 3
2322	Lockwasher 35	73686	Resistor, 2,000 Ohm 26	91721	Screw, 10-32 x 2-3/4 Fil 20
2422	Lockwasher 5	74614	Resistor, 2,600 Ohm 12	92260	Lockwasher 8
2449	Lockwasher 16	74615	Resistor, 2,000 Ohm 5,12, 13,20	92271	Screw, 6-32 x 2-3/4 Rd 9,10
2658	Nut, 6-32 Hex 8	74691	Resistor, 1,6000 Ohm 26	92527	Lockwasher 3,23,27,28
2669	Lockwasher 20,35	74807	Nut, 10-32 Shoulder Hex 23	92761	Jumper, 1-1/2" Black 22
3438	Washer, Flat 19,20,29,35	74821	Resistor, 2,810 Ohm 12,17	92856	Resistor, 1,500 Ohm 4,20
3595	Nut, 1/4-32 Hex 16	74882	Spring 7	93073	Modification Kit 20
3598	Nut, 6-40 Hex 3,4,5,6,7, 10,12,13,16 to 22, 24, 25,27,28,29,32,34	74980	Screw,6-40 x 1-13/16 Rd 5	93598	Screw, 4-40 x 5/16 Rd 9
3599	Nut, 4-40 Hex 4,17,28,33	75435	Resistor, 600 Ohm 20	93711	Resistor, 200 Ohm 5
3606	Nut, 6-40 Hex 3,4,5,18, 22,23,24,26	75750	Washer, Insulating 12,13, 14,16,17,18,19,20,22, 25,26	93959	Key 23,25
3639	Lockwasher 29,35	76099	Washer, Flat 5,19,20,23	93984	Lockwasher 35
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