

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

BELL SYSTEM and TELETYPE CODE CROSS-REFERENCE	
Teletype Code	Bell System Code
LESU11	28C
LESU13	28F
LESU15	28G
LESU32	28H
LESU33	28J
LESU35	28F-1
LESU36	28G-1
LESU56	28LA
LESU57	28LB
LESU66	28L
LESU82	28P
LESU83	28P-1
LESU112	28AC
LESU116	28Y

Note:

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

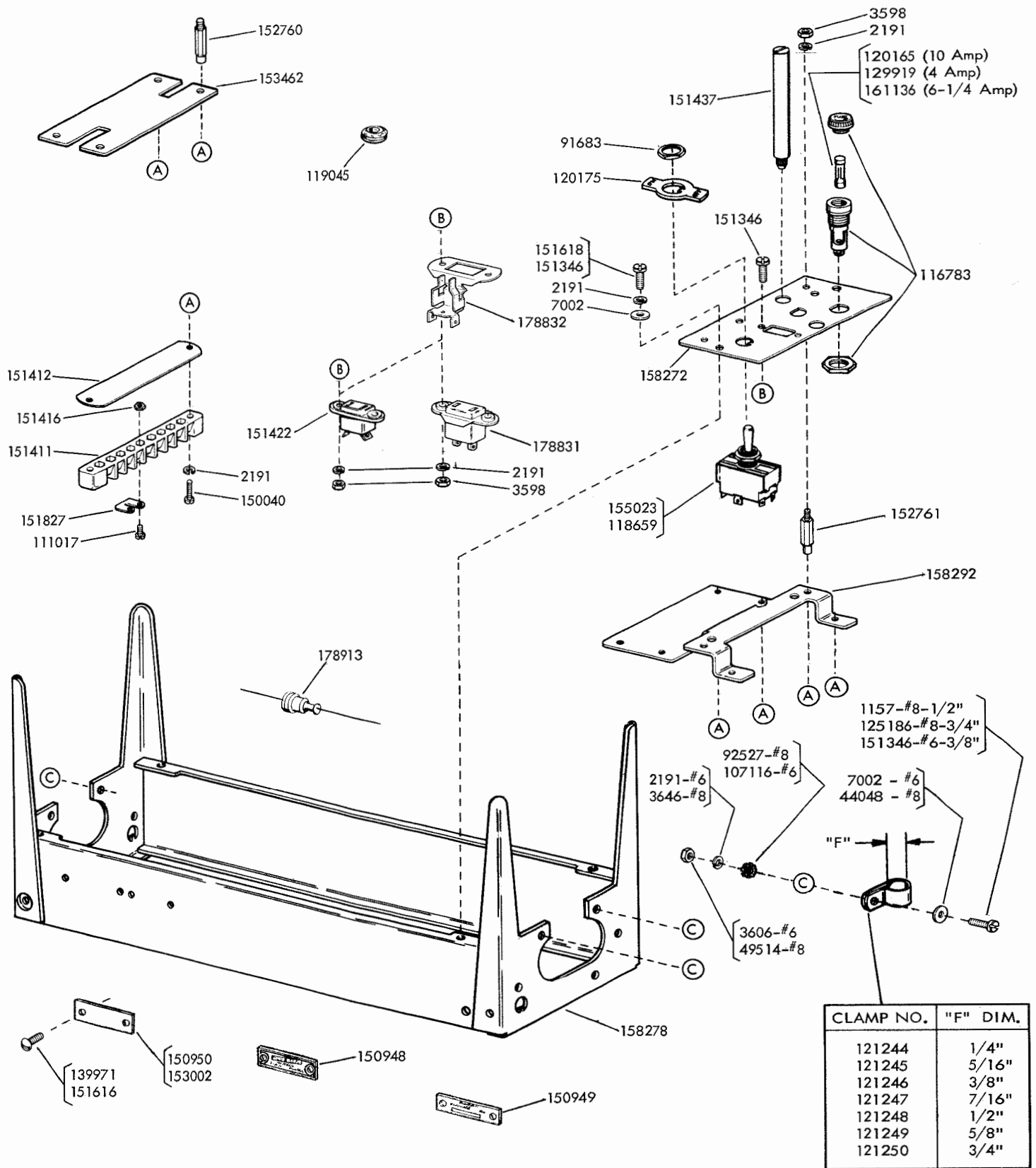
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CLAMP NO.	"F" DIM.
121244	1/4"
121245	5/16"
121246	3/8"
121247	7/16"
121248	1/2"
121249	5/8"
121250	3/4"

FIGURE 1. CONTAINER

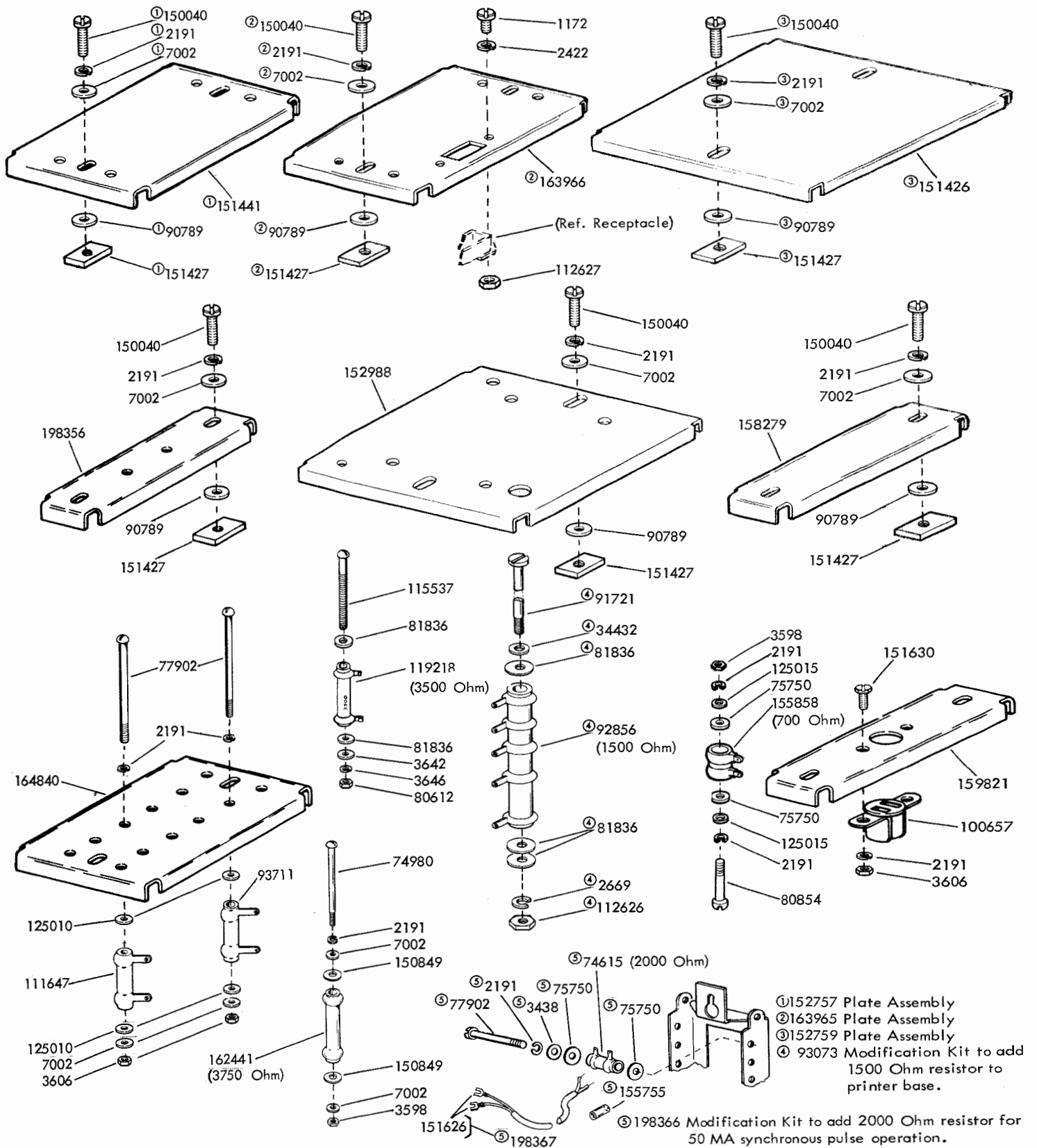


FIGURE 3. PLATES AND RESISTORS

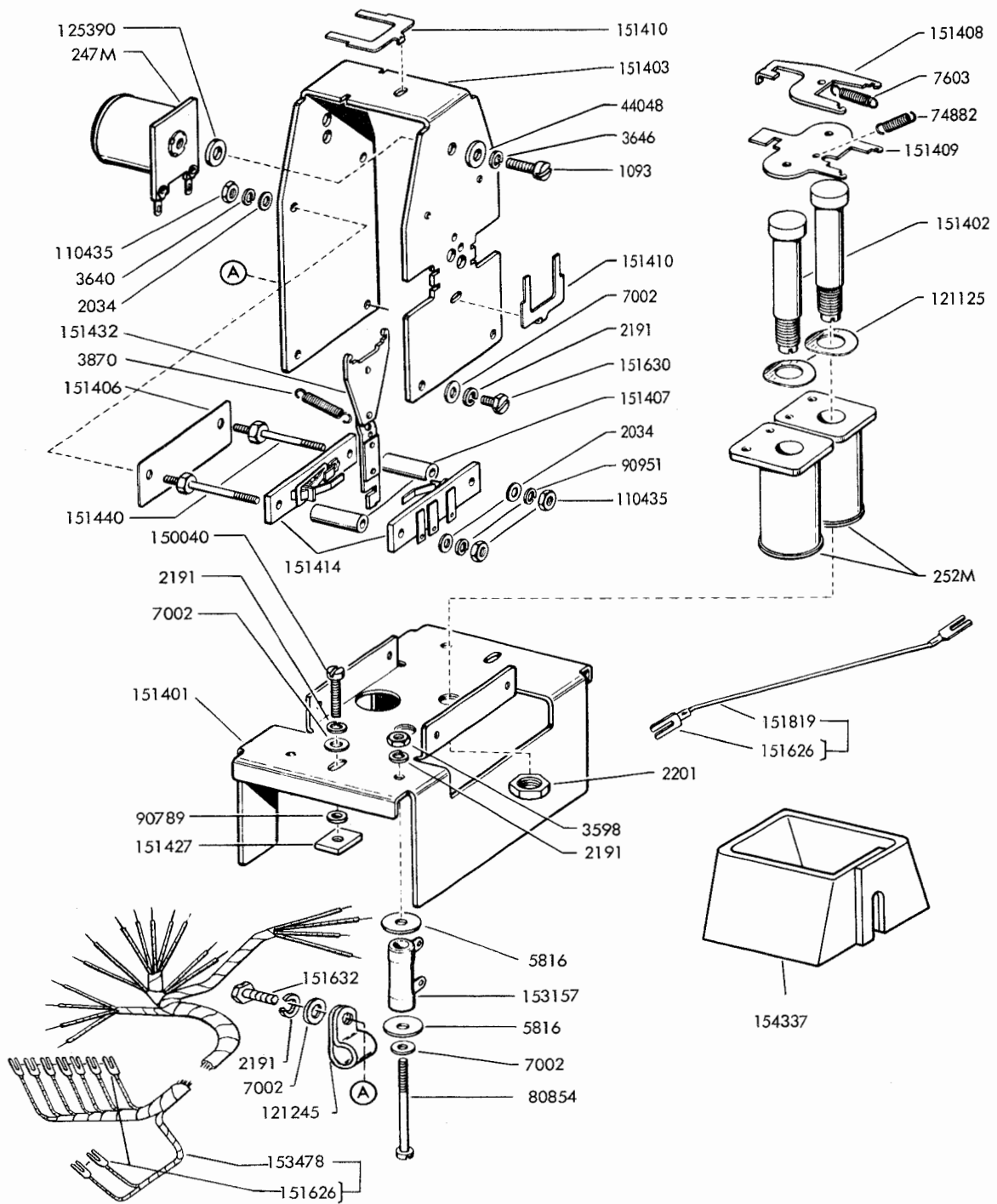


FIGURE 4. 153251 MOTOR CONTROL ASSEMBLY

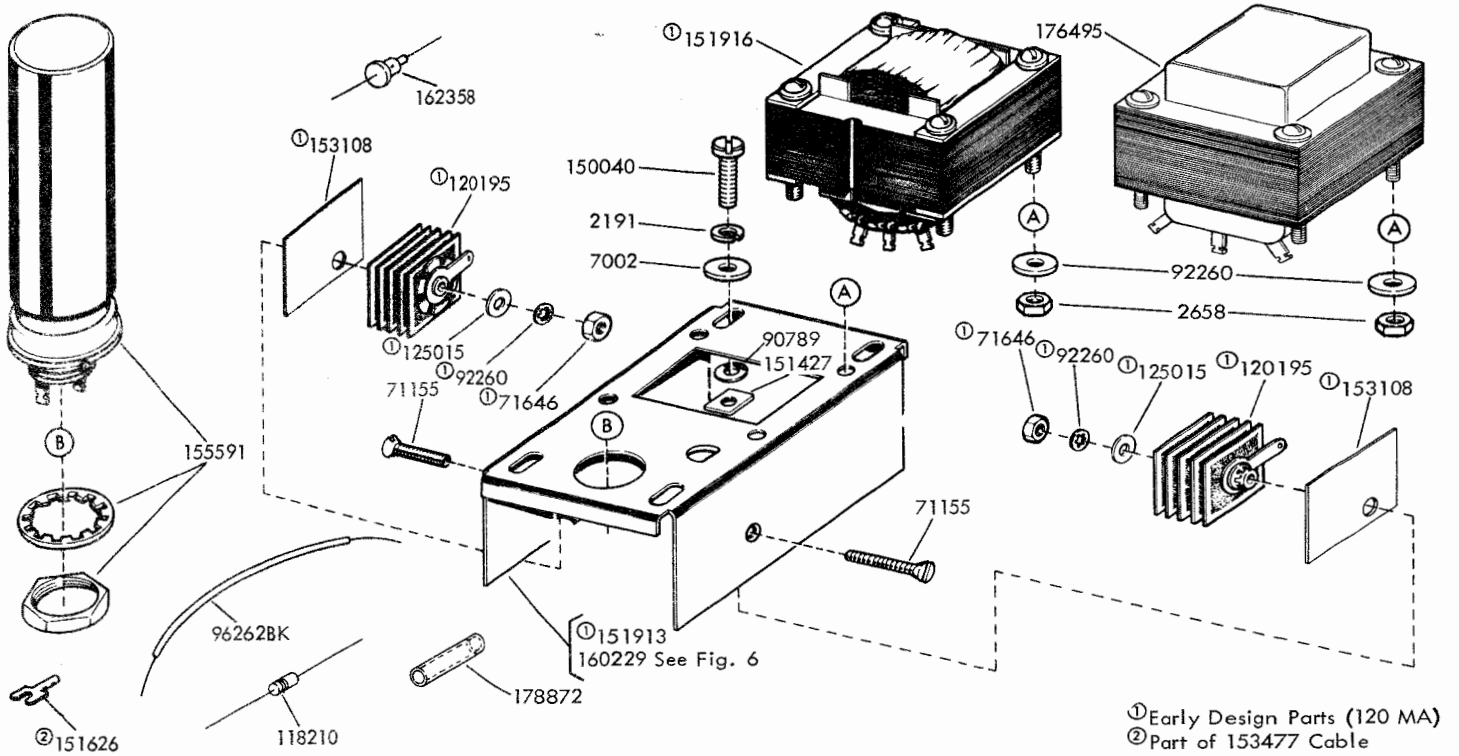


FIGURE 5. 152950 RECTIFIER AND CABLE ASSEMBLY (150 MA)

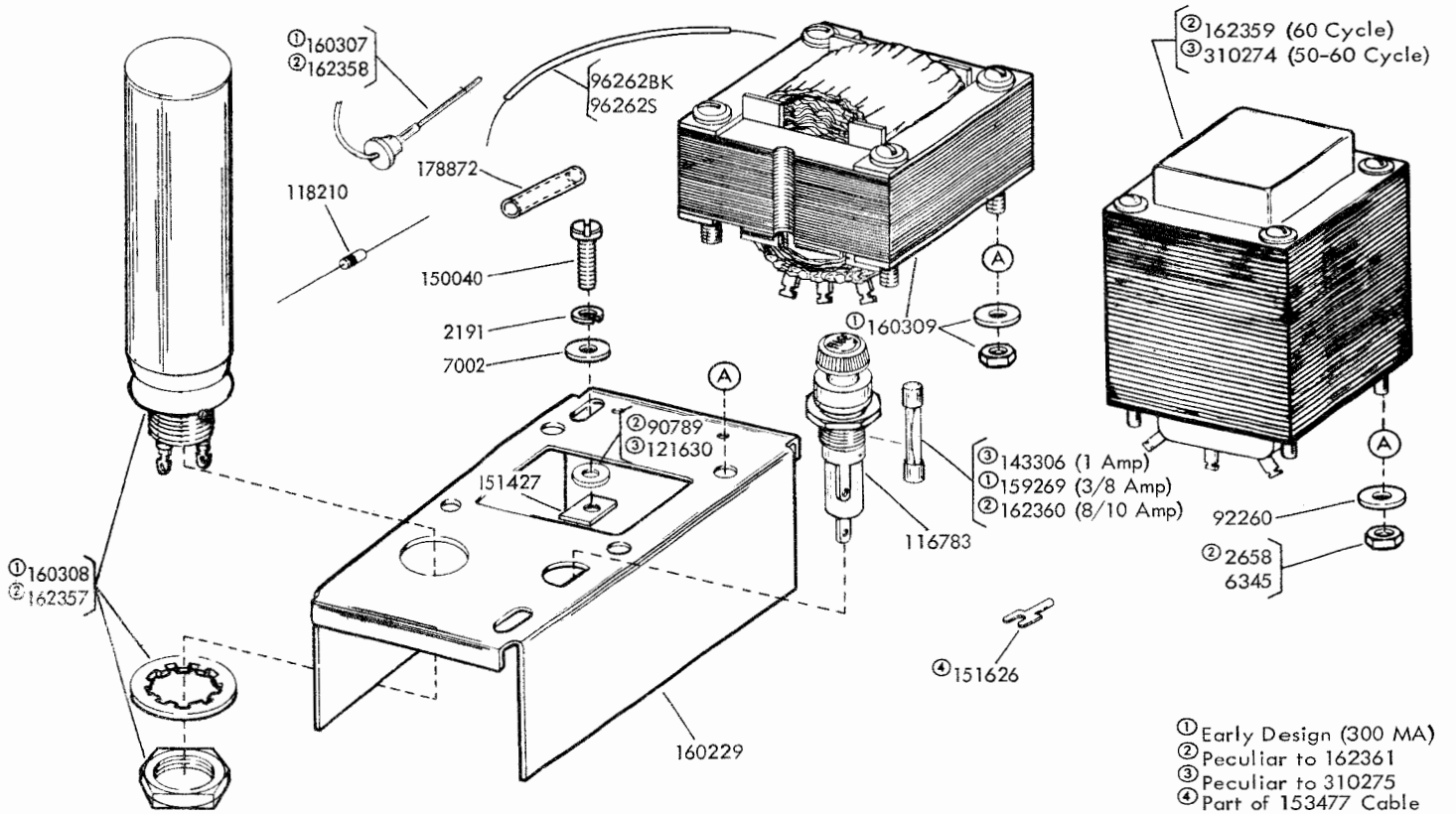
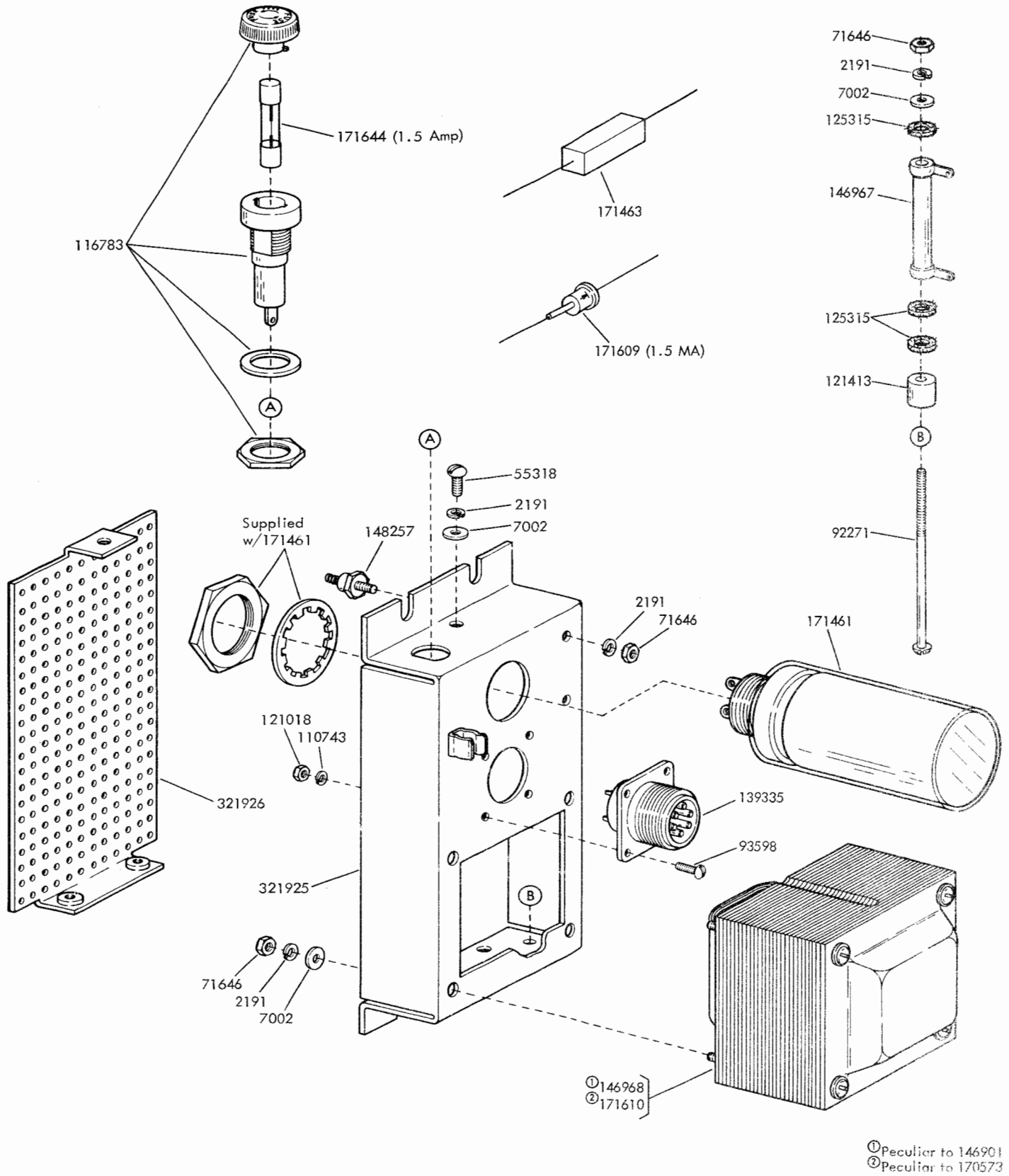


FIGURE 6. 162361 AND 310275 RECTIFIERS AND CABLE ASSEMBLIES (500 MA)



① Peculiar to 146901
 ② Peculiar to 170573

FIGURE 7. 146901 AND 170573 RECTIFIERS ASSEMBLIES

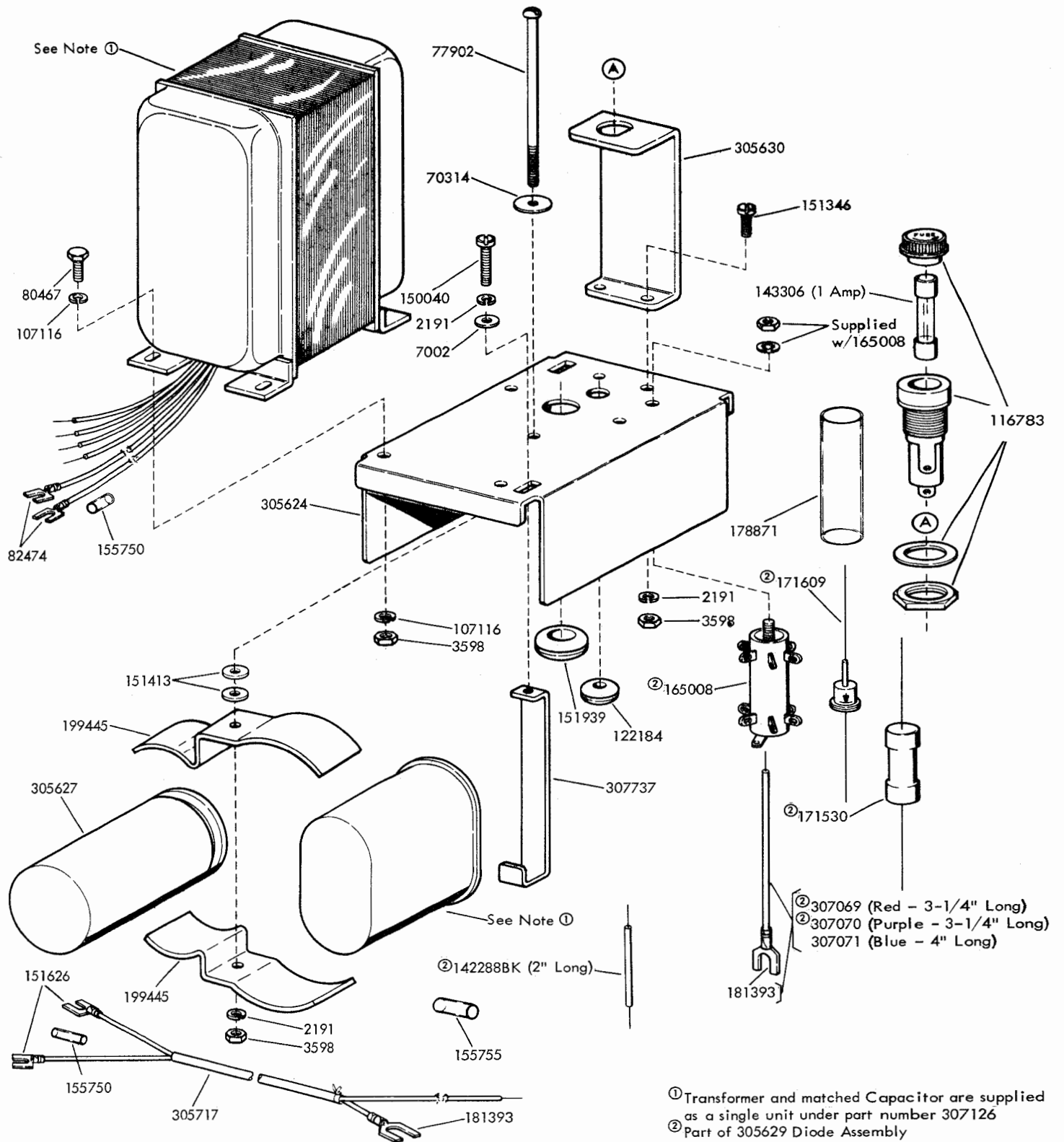


FIGURE 8. 305631 RECTIFIER ASSEMBLY

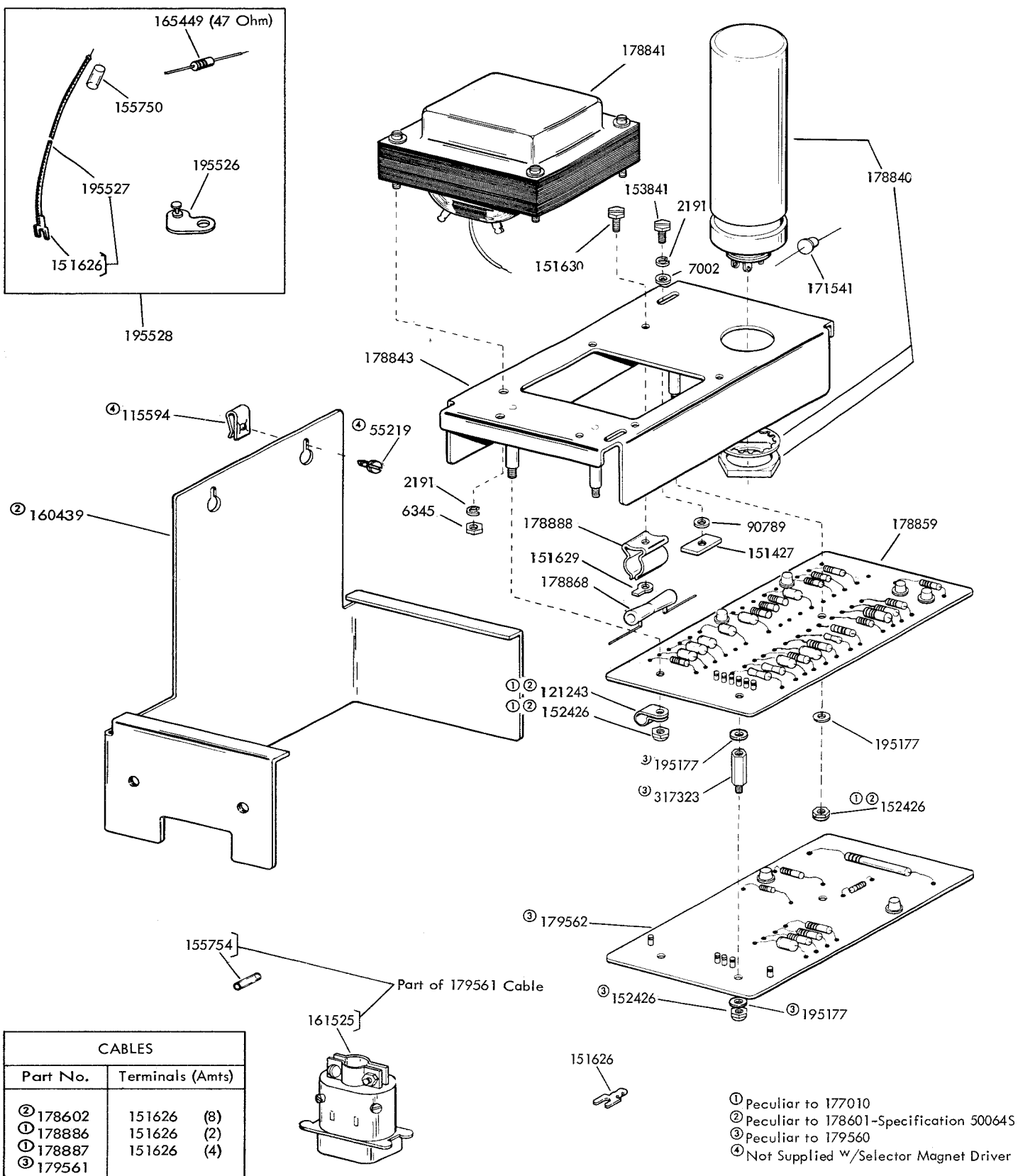


FIGURE 9. 177010 AND 178601 SELECTOR MAGNET DRIVER ASSEMBLIES
 179560 SELECTOR MAGNET DRIVER ASSEMBLY WITH OPEN LINE DETECTOR

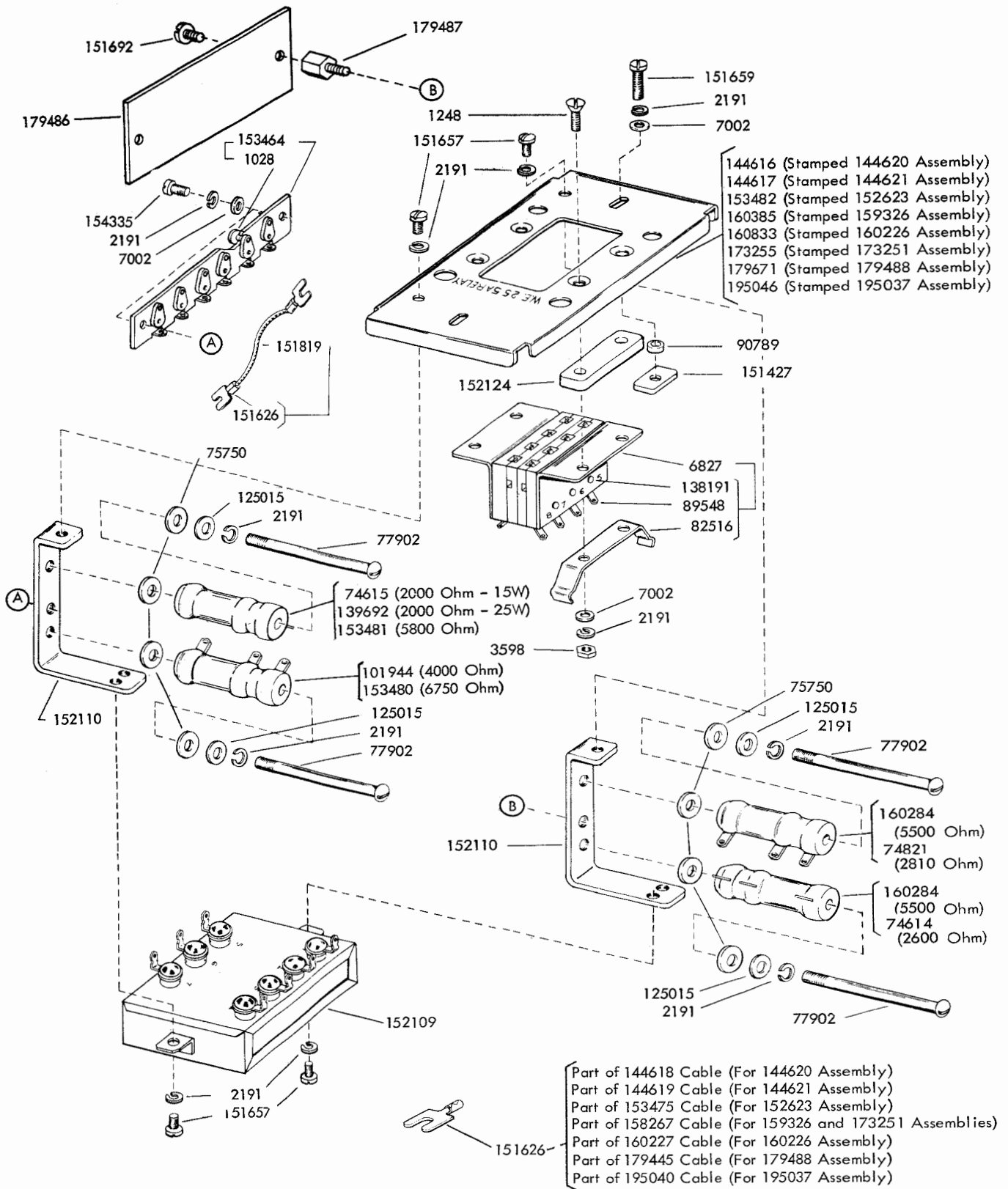


FIGURE 10. LINE RELAY MOUNTING

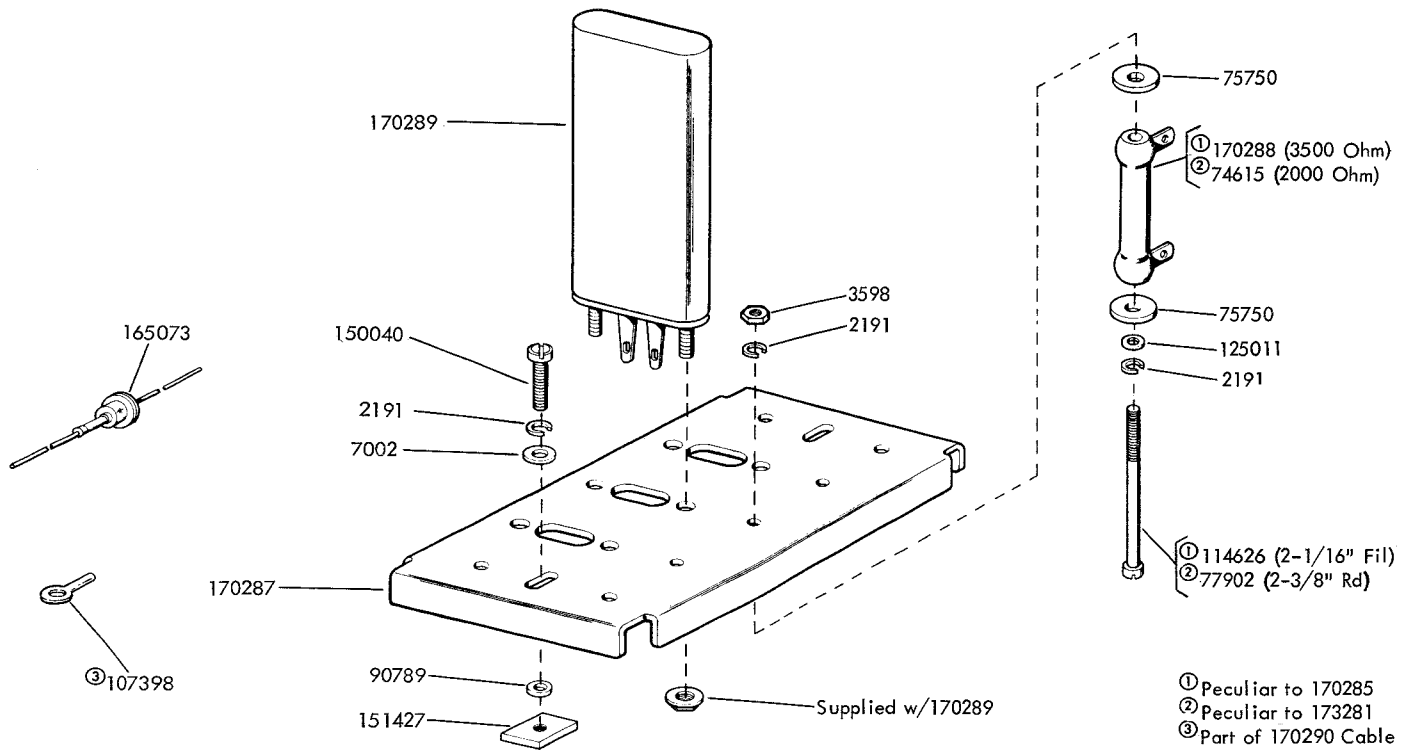


FIGURE 11. 170285 AND 173281 RESISTOR ASSEMBLIES

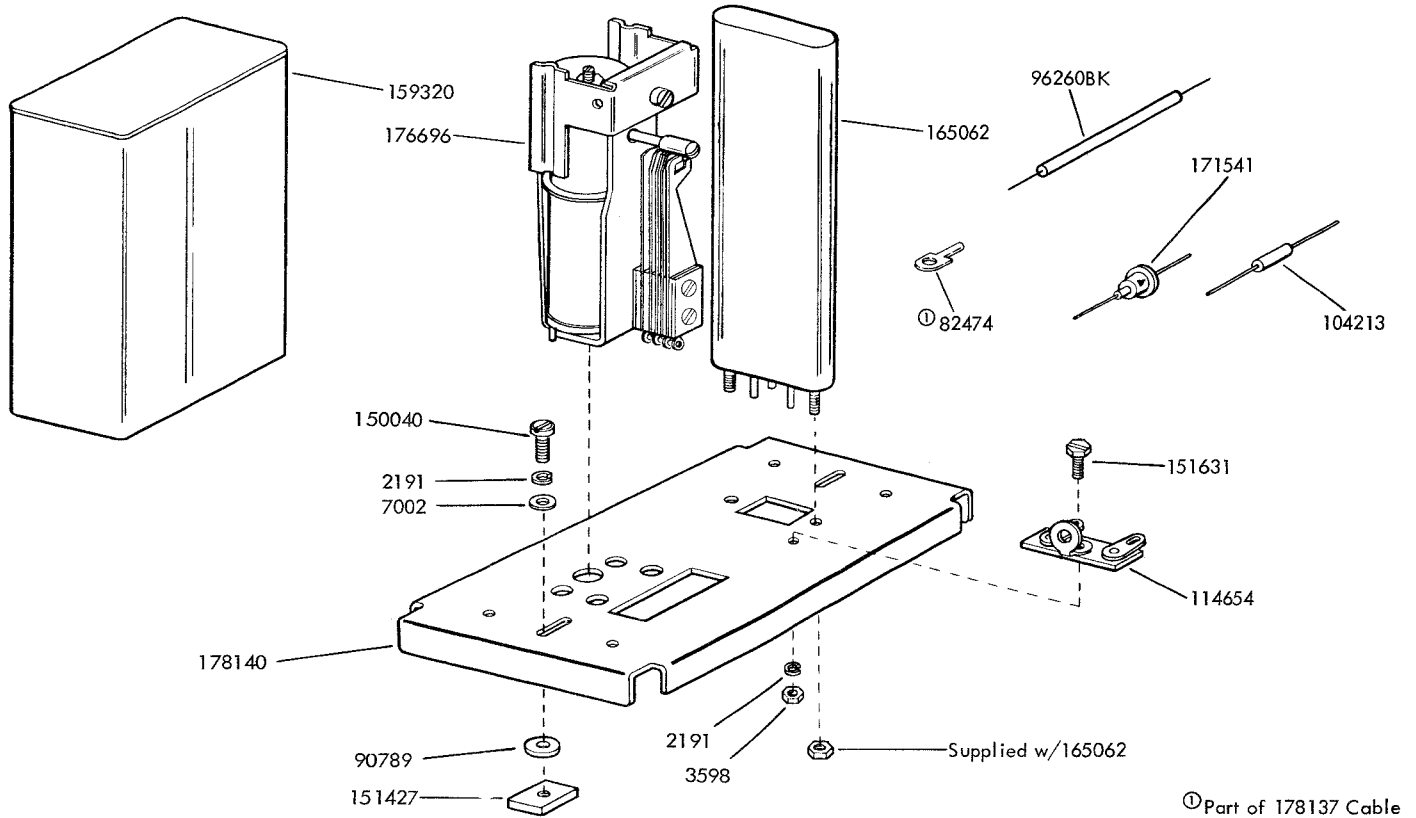


FIGURE 12. 178138 SLOW RELEASE RELAY ASSEMBLY (NON-CONTENTION)

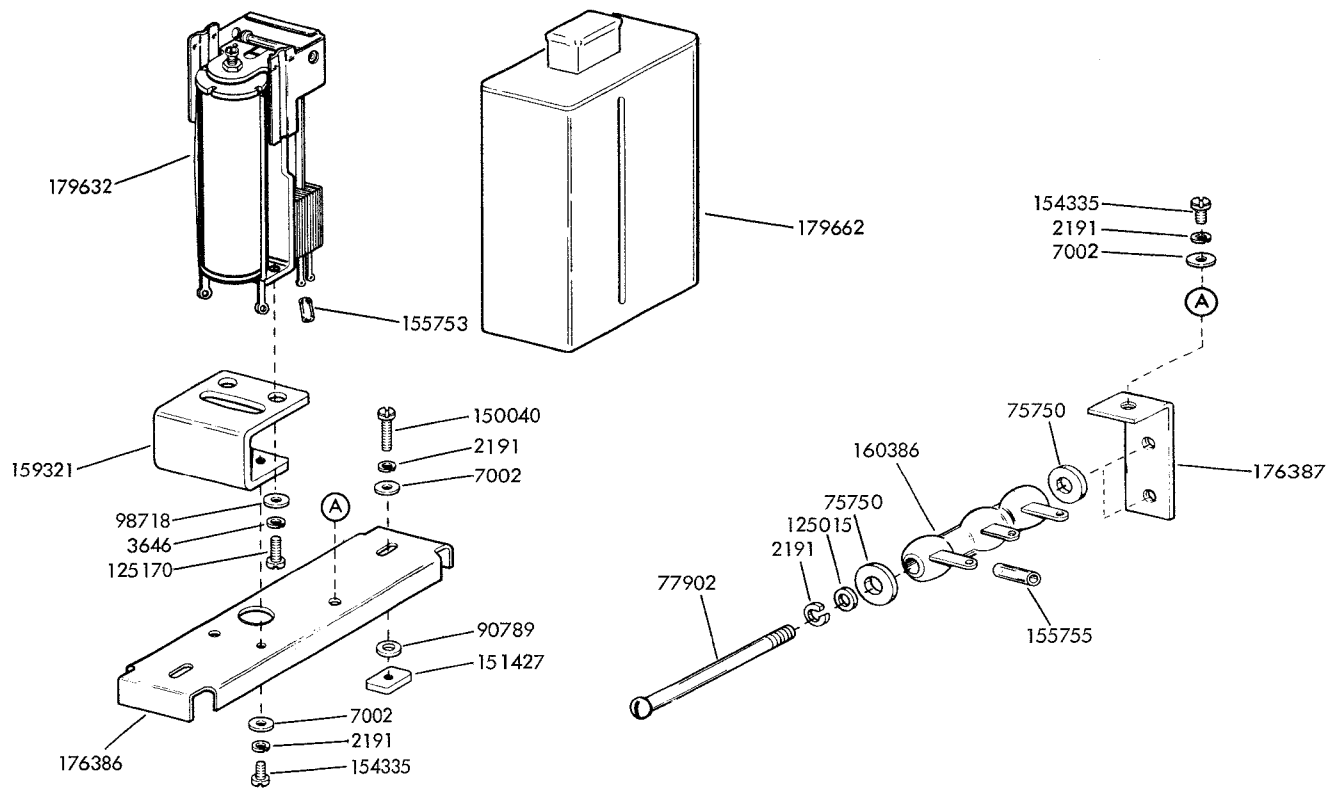


FIGURE 13. QUICK ACTING RELAY (10 MS) MECHANISM

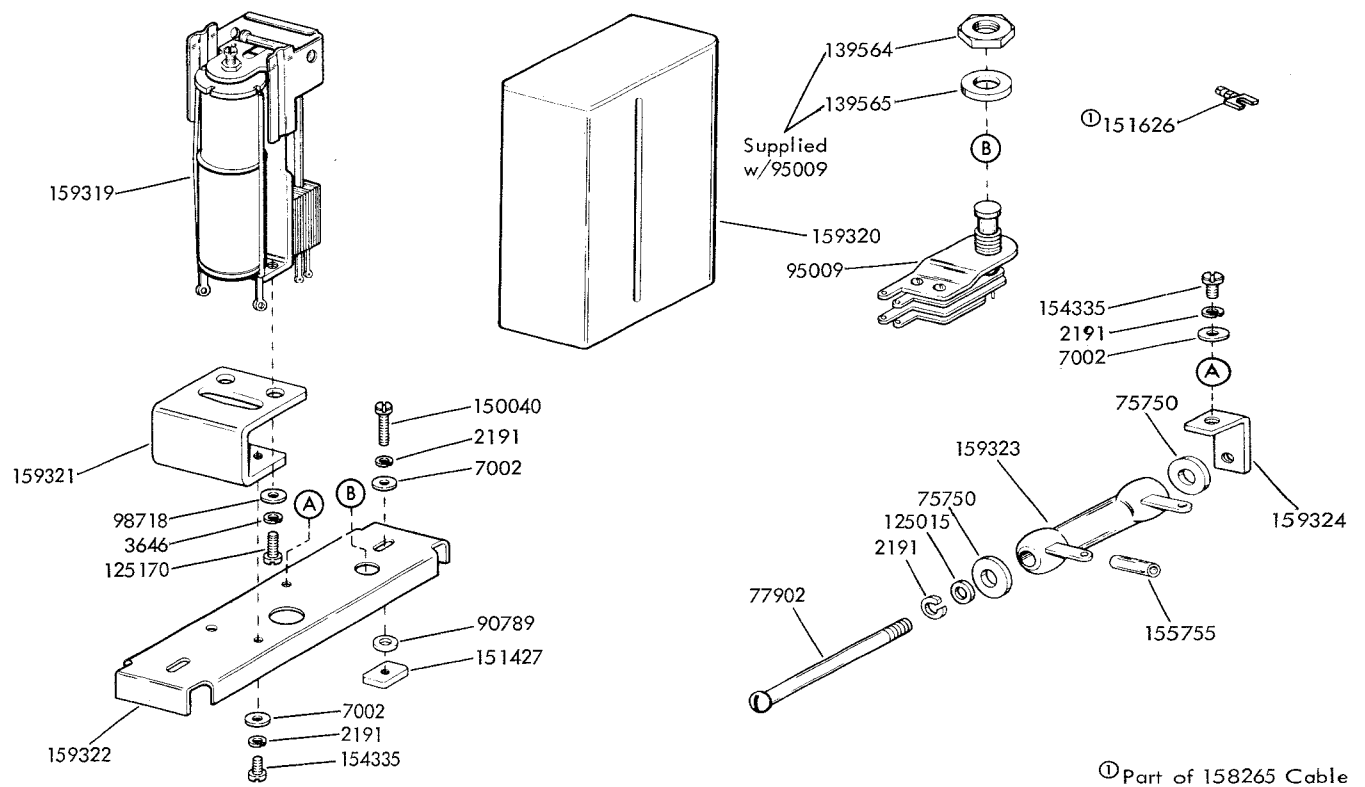


FIGURE 14. 159318 SLOW RELEASE RELAY ASSEMBLY

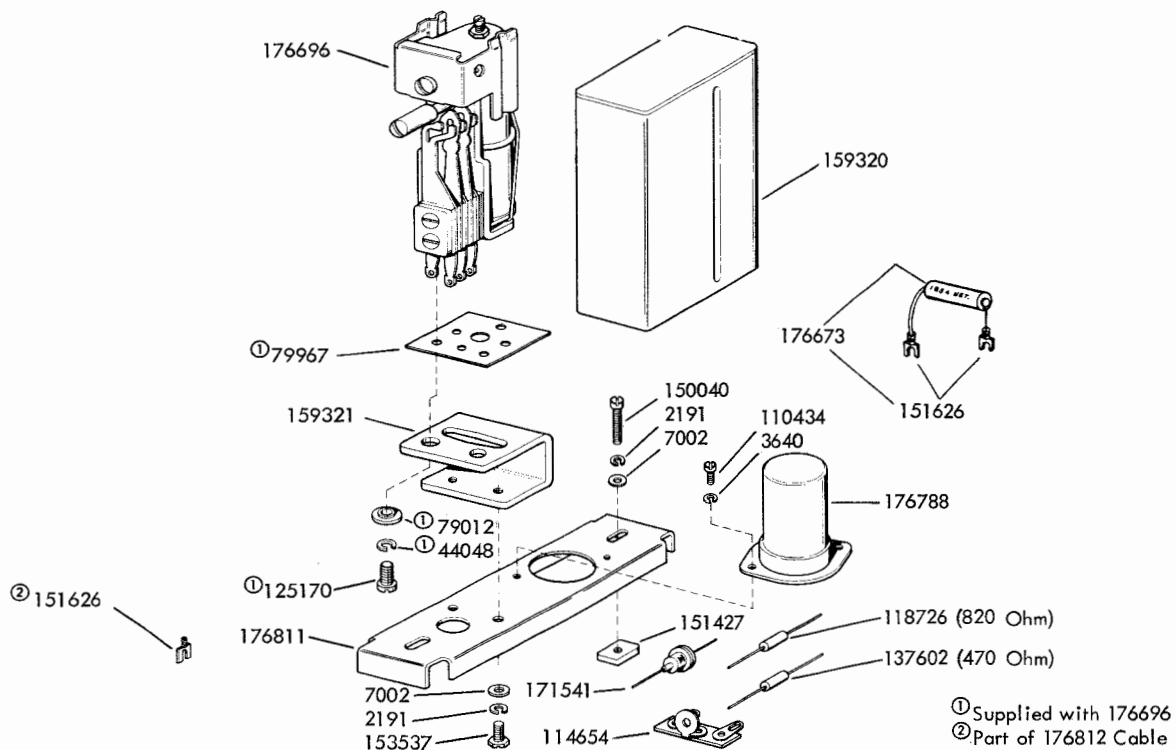


FIGURE 15. 176810 ANSWER-BACK CONTROL RELAY ASSEMBLY

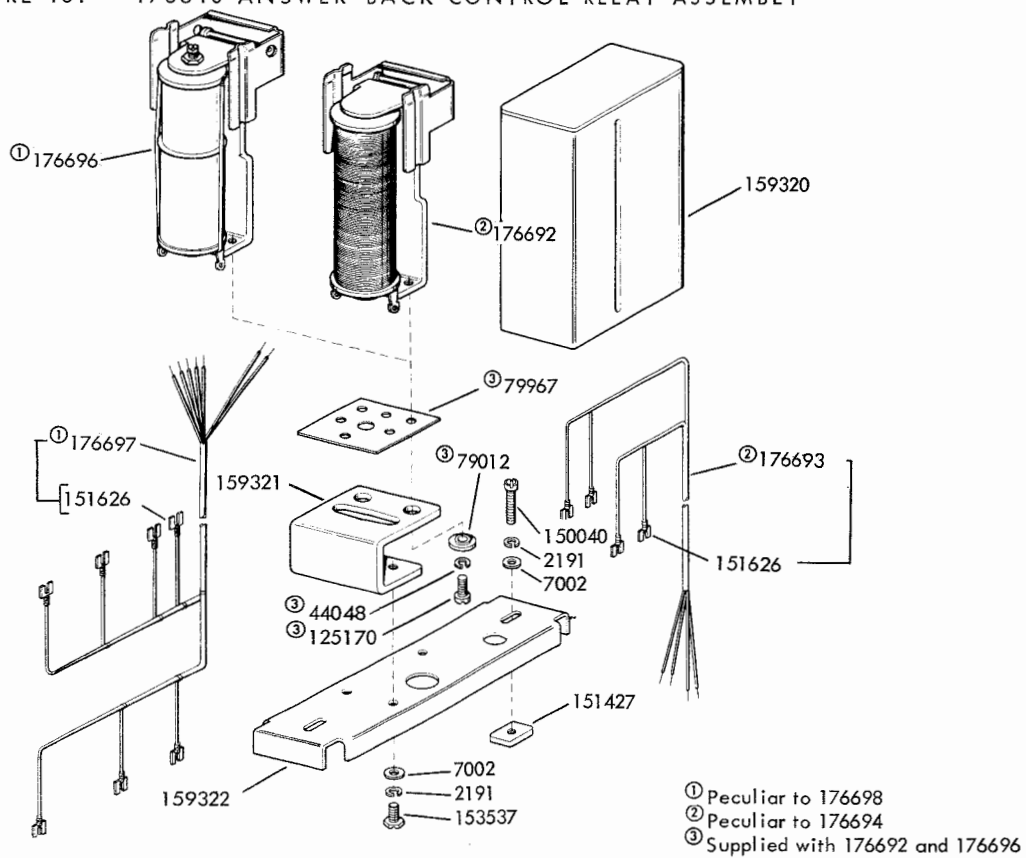


FIGURE 16. 176694 (MOTOR CONTROL) AND 176698 (SLOW RELEASE) RELAY ASSEMBLIES

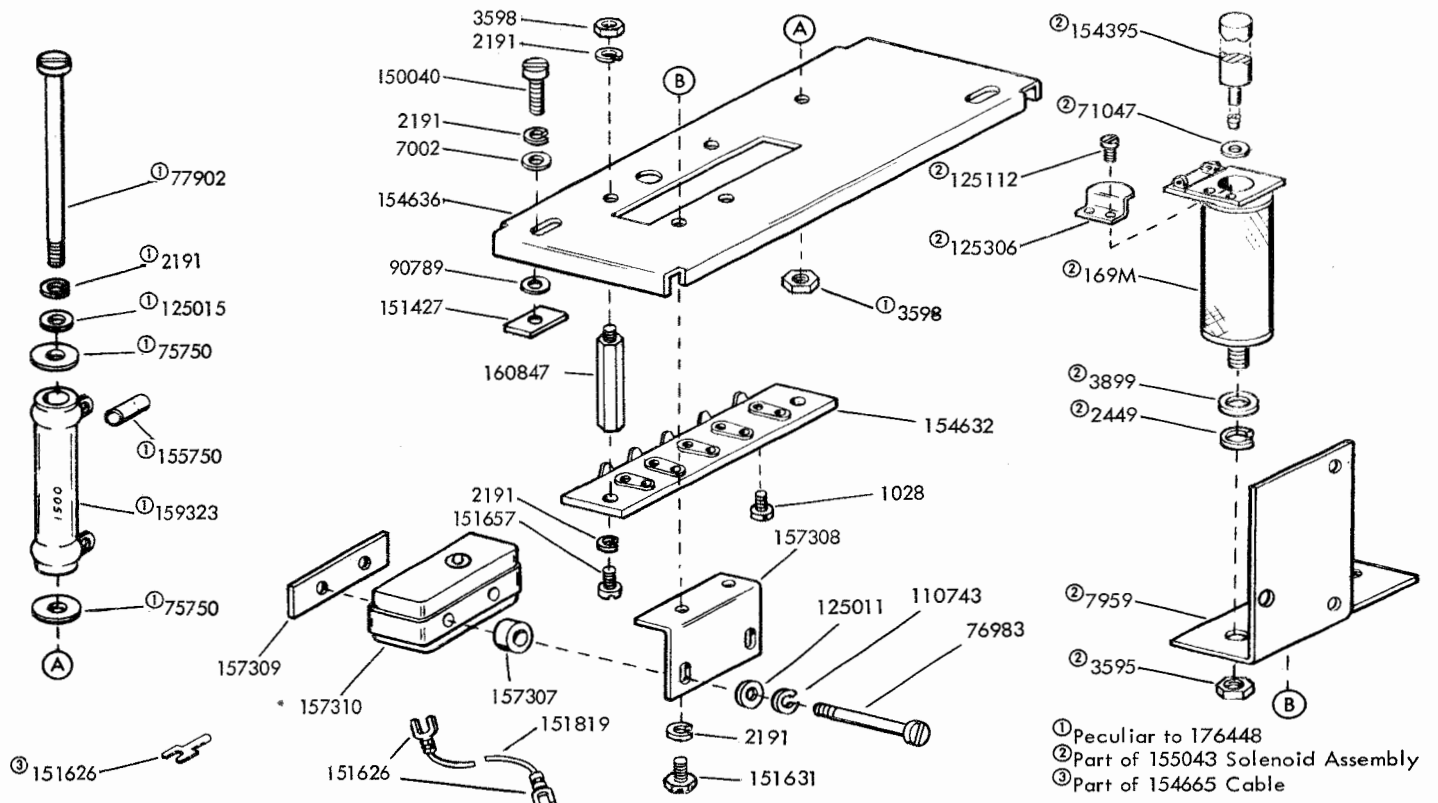


FIGURE 17. 152332 AND 176448 RELAY MOTOR CONTROL ASSEMBLIES

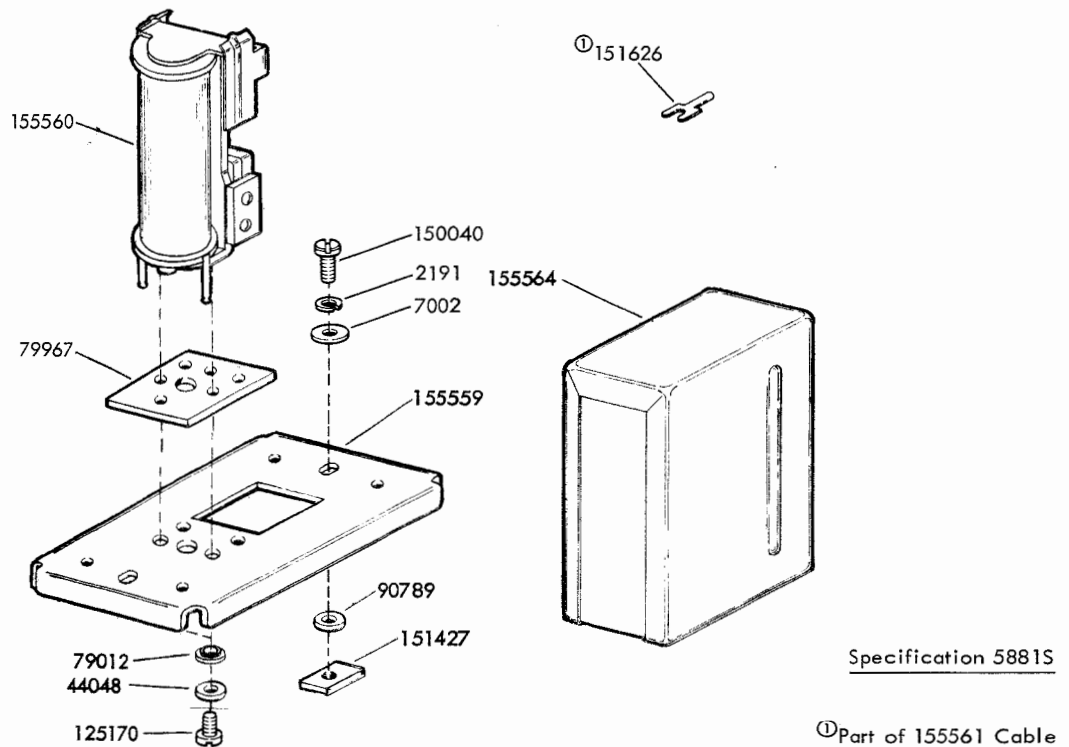


FIGURE 18. 15558 D.C. CONTROL RELAY ASSEMBLY

Specification 5881S

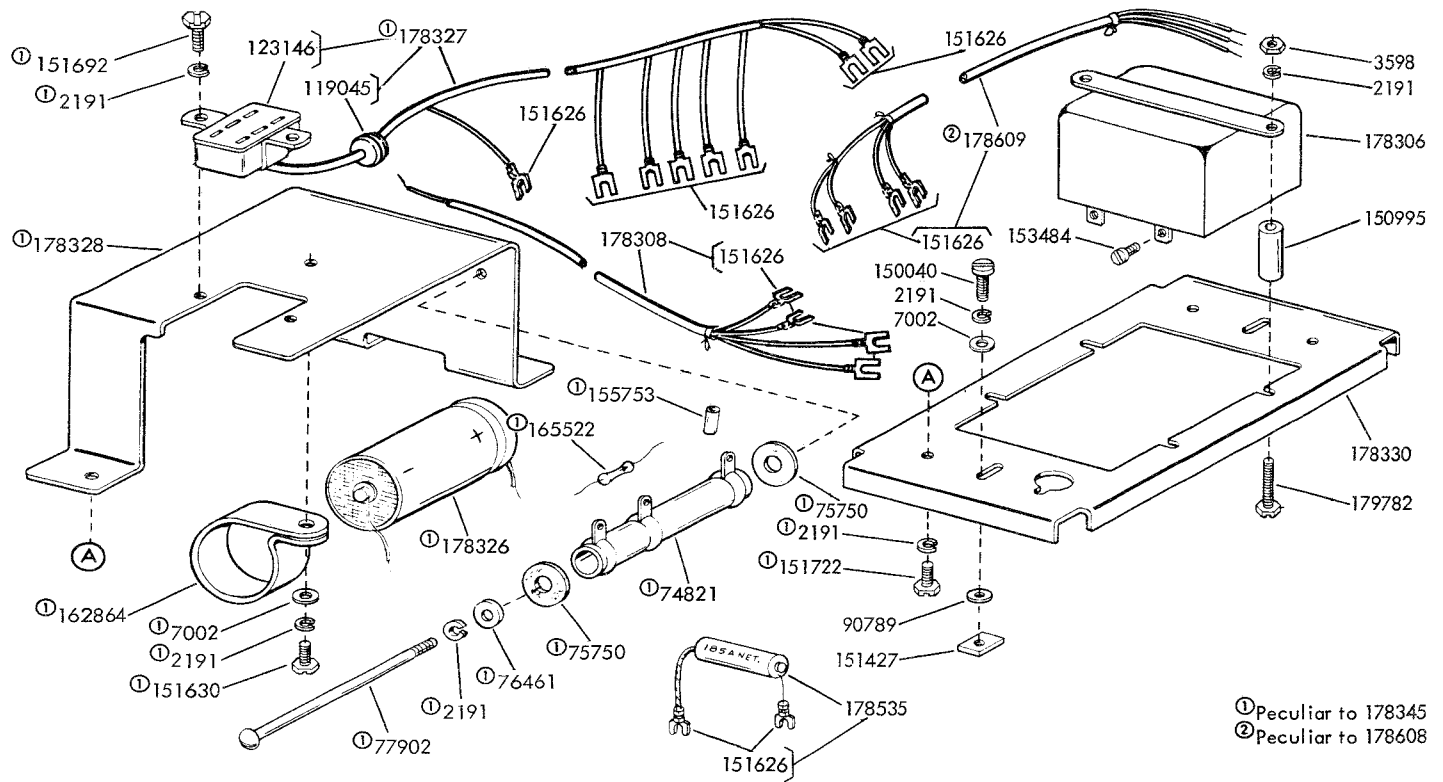


FIGURE 19. 178345 MODIFICATION KIT AND 178608 RELAY ASSEMBLY TO PROVIDE MOTOR CONTROL AND ANSWER BACK RELAYS

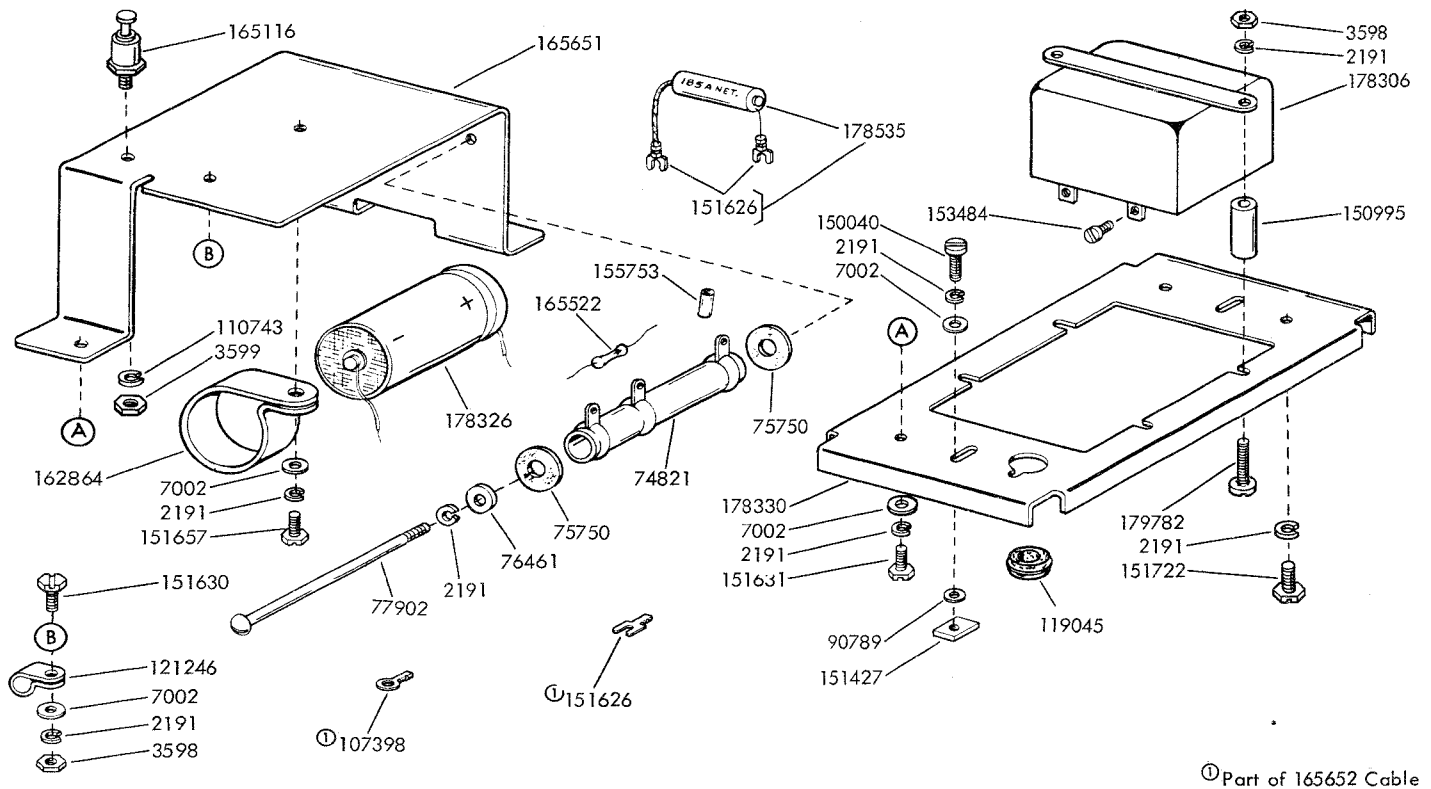


FIGURE 20. 165650 MOTOR CONTROL AND ANSWER BACK RELAY ASSEMBLY

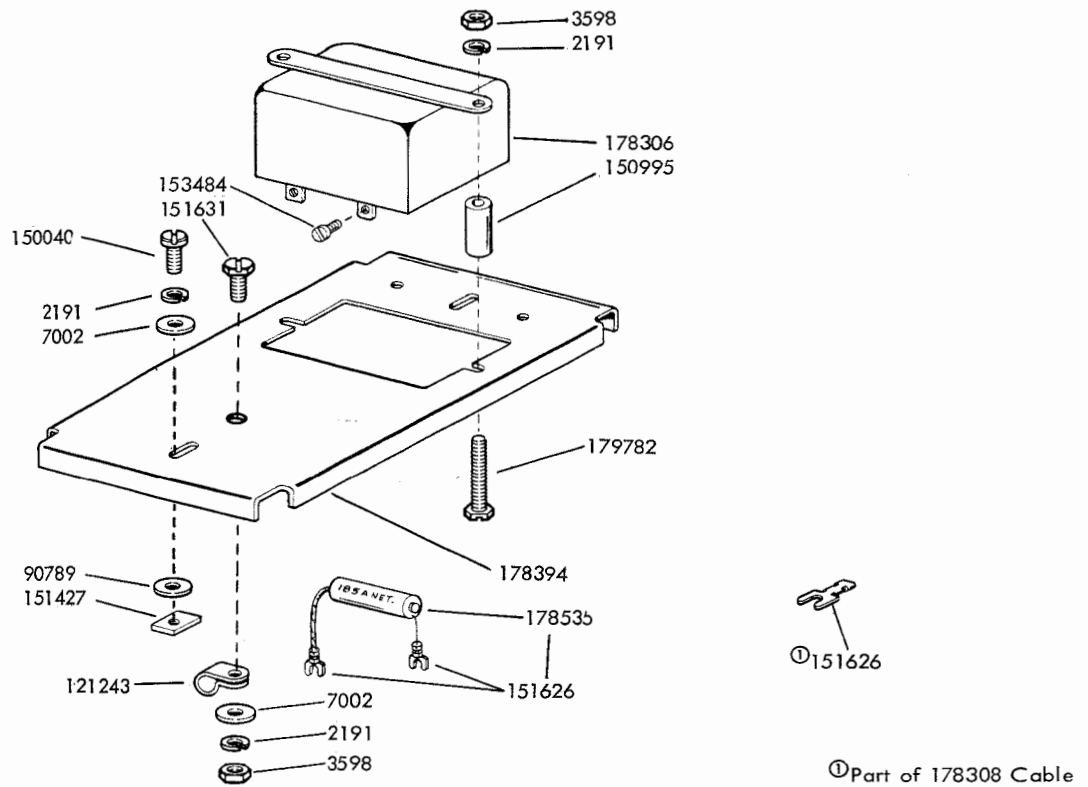


FIGURE 21. 178307 MOTOR CONTROL RELAY ASSEMBLY

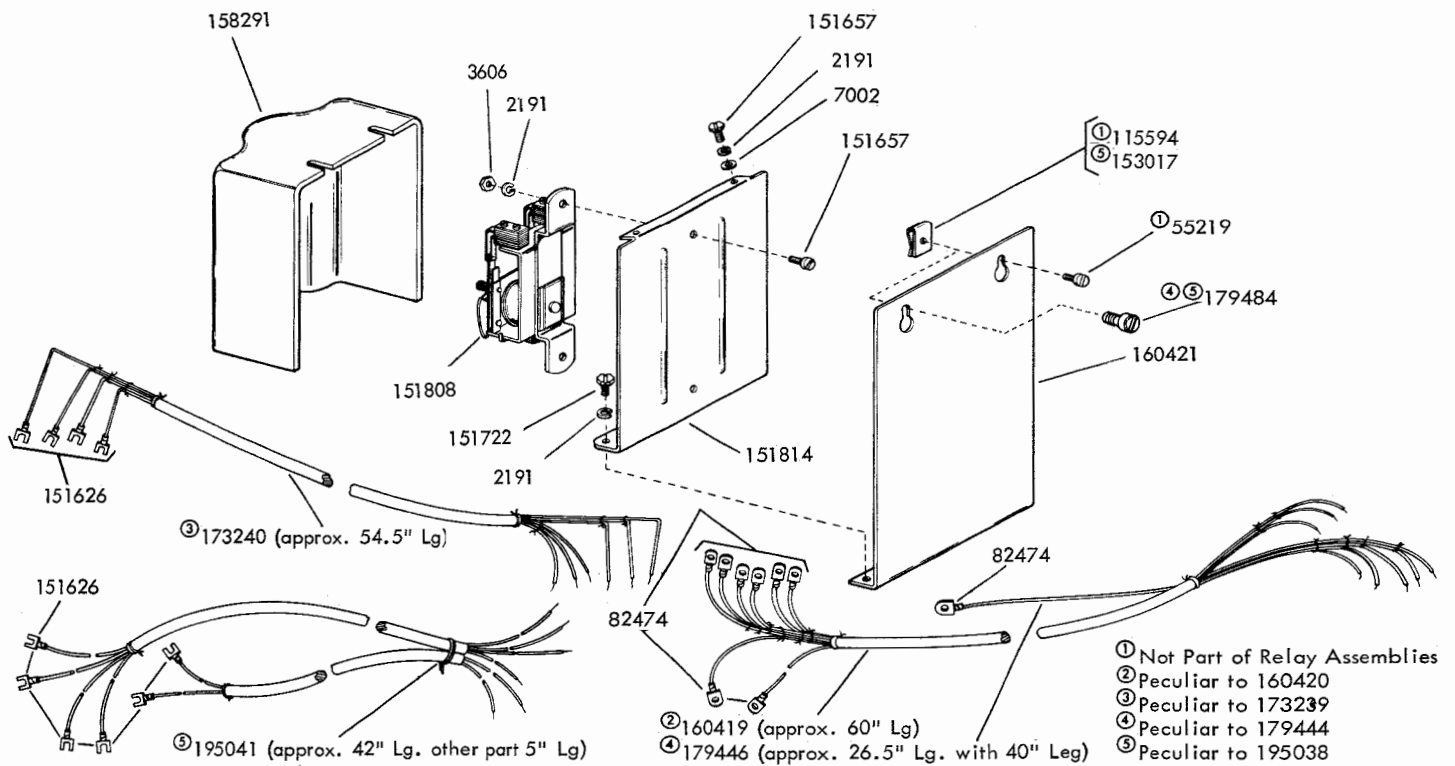


FIGURE 22. 160420 AND 195038 AUXILIARY LINE SHUNT RELAY ASSEMBLY
179444 AND 173239 AUXILIARY READER CONTROL RELAY ASSEMBLIES

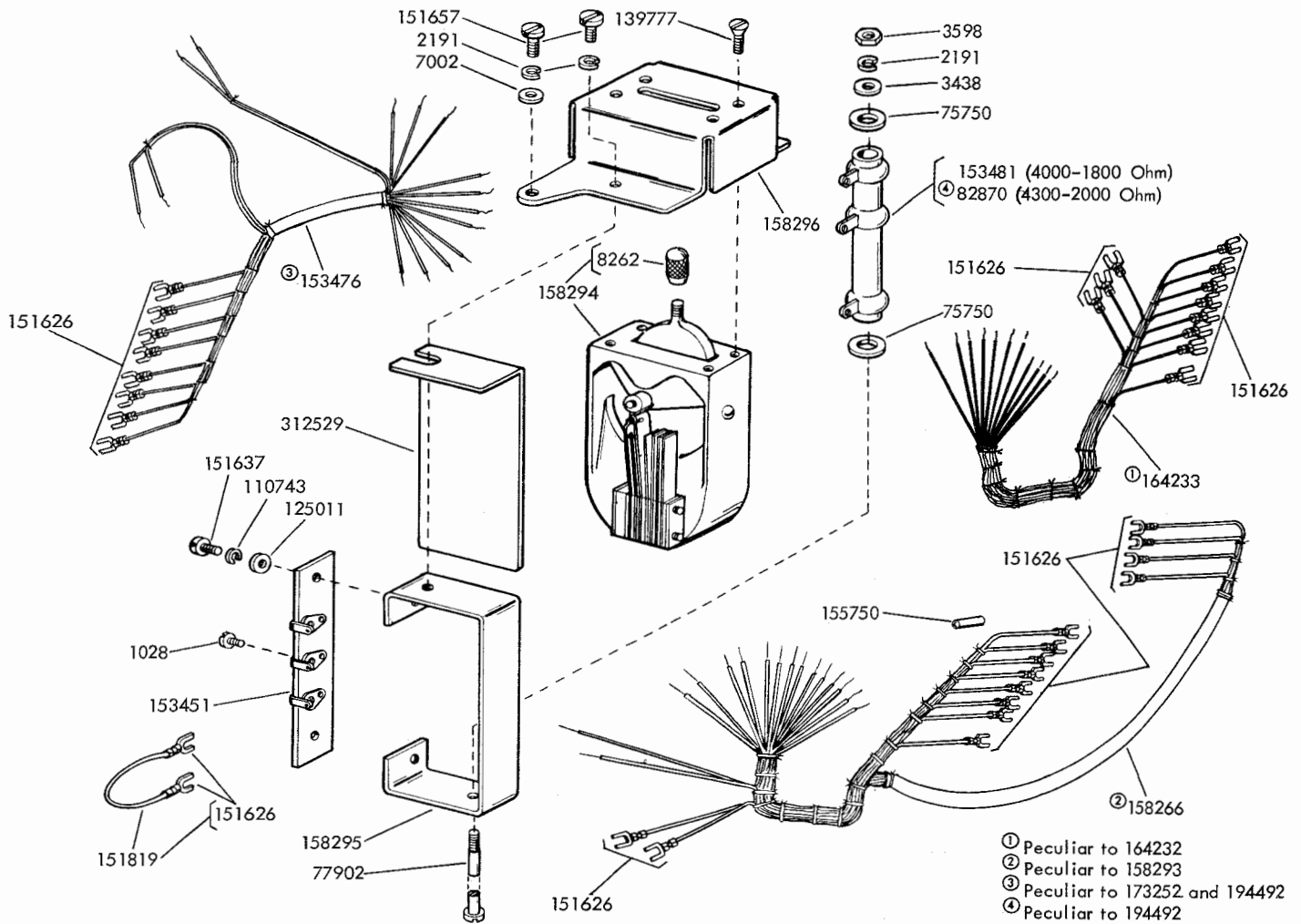


FIGURE 23. 158293, 164232, 173252 AND 194492 LINE TEST KEY ASSEMBLIES

② No longer available, furnish
162630 Modification Kit

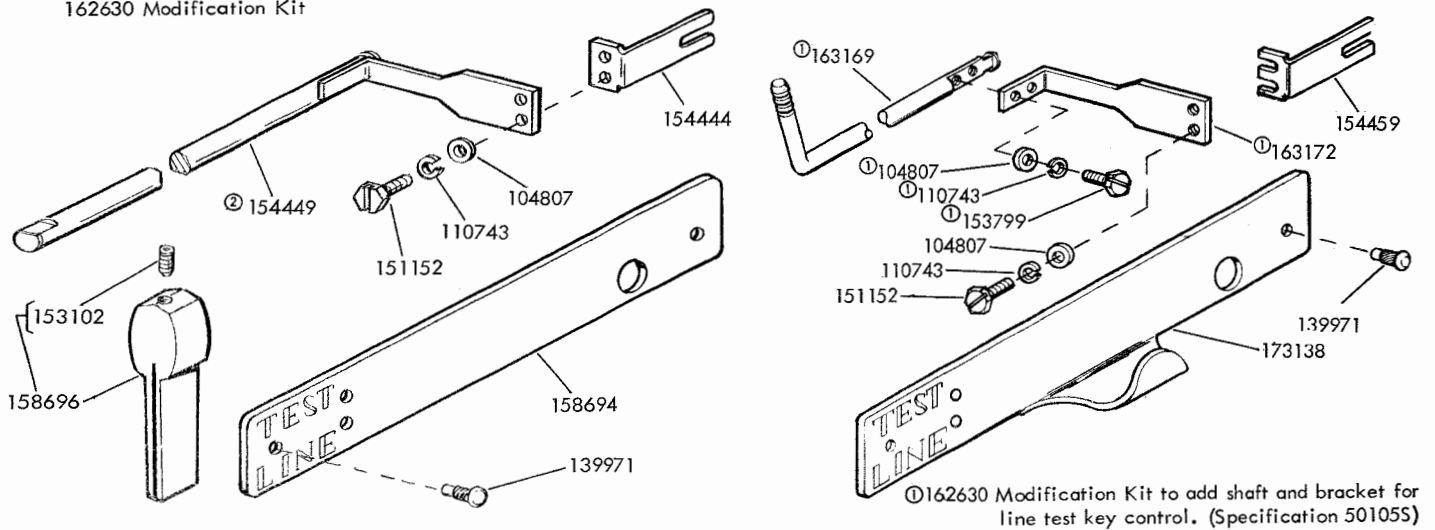


FIGURE 24. LINE TEST KEY CONTROL

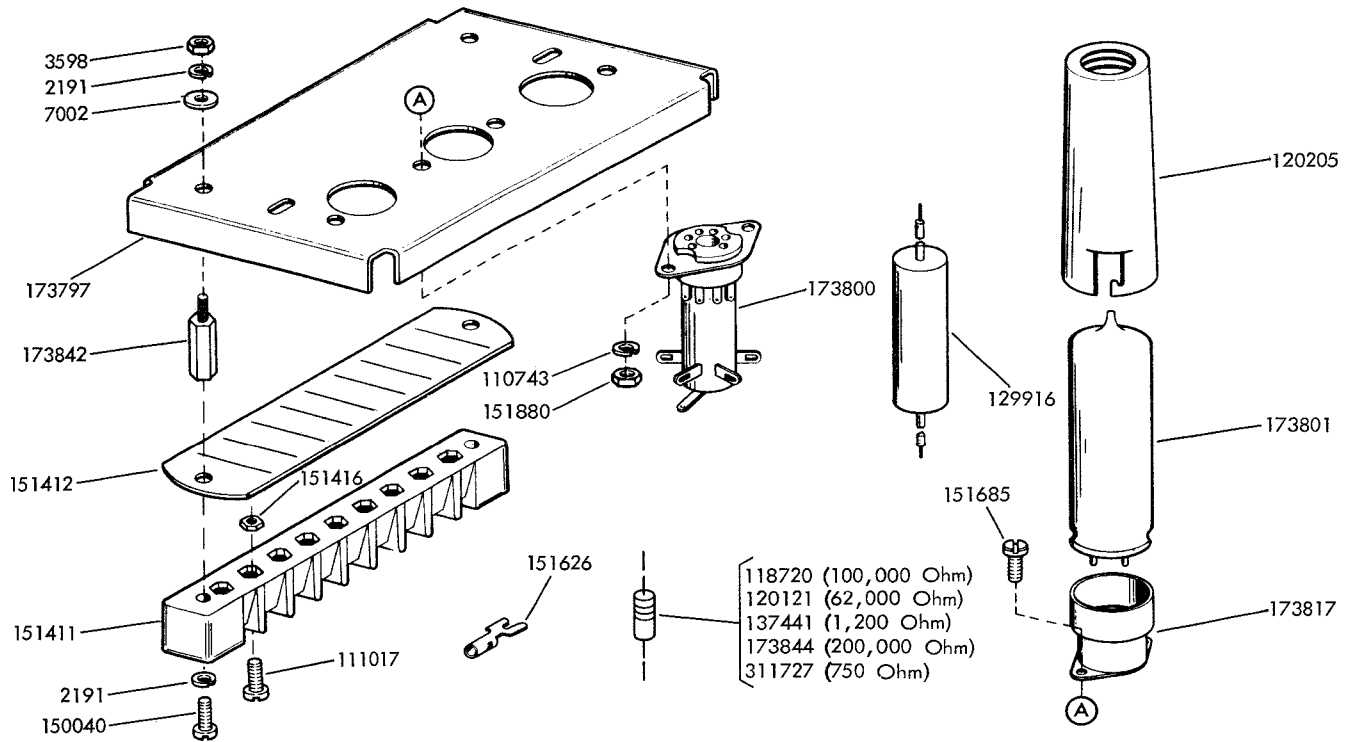


FIGURE 25. 173452 ELECTRONIC KEYSER ASSEMBLY

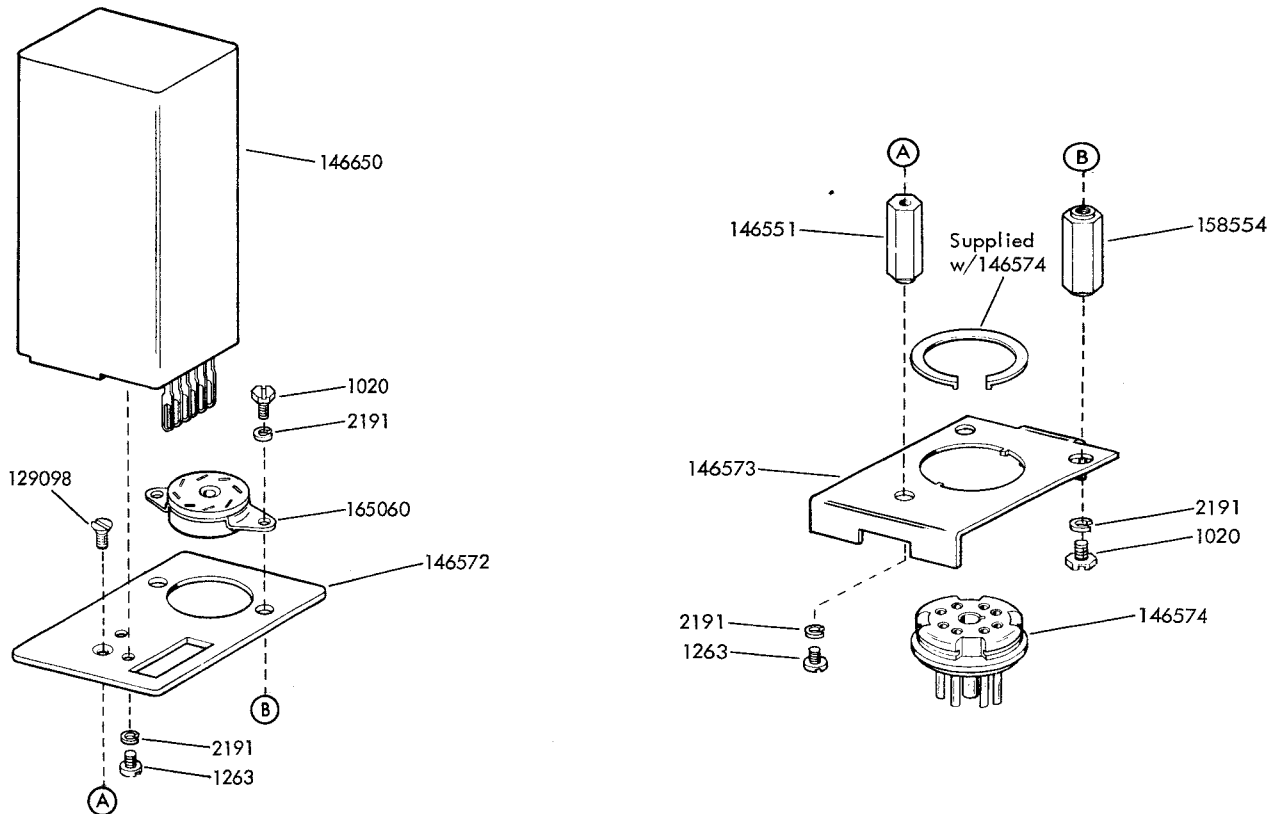


FIGURE 26. 146652 MODIFICATION KIT TO ADD WAVE SHAPING INDUCTOR

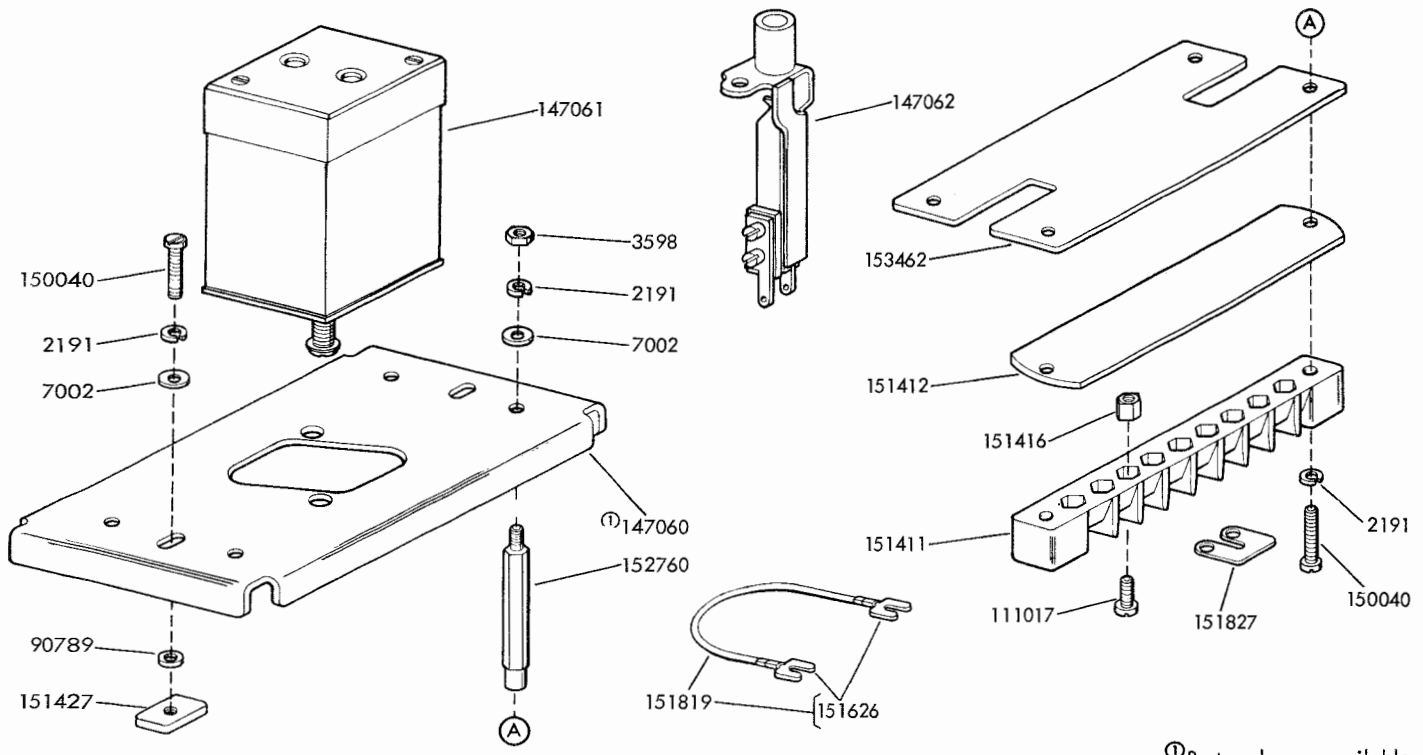
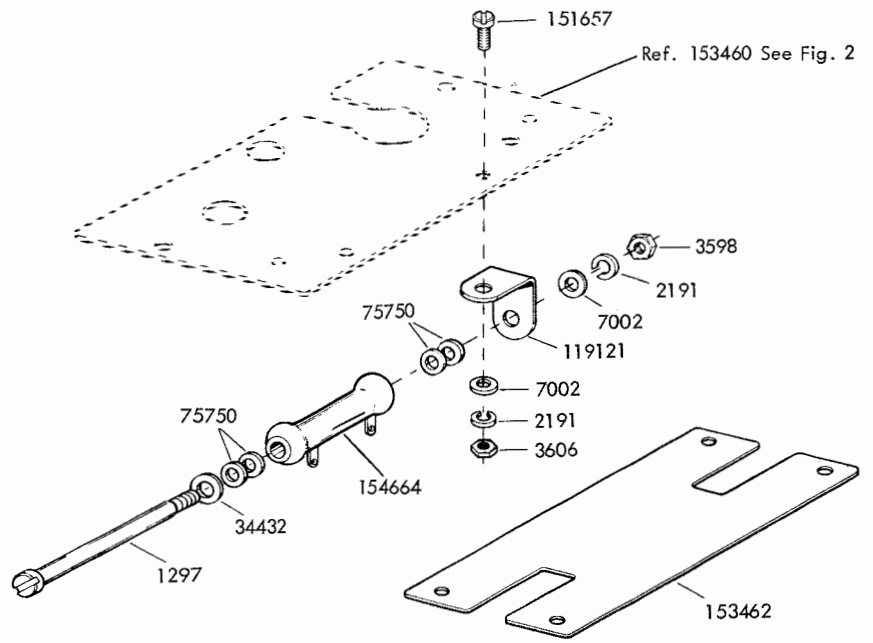
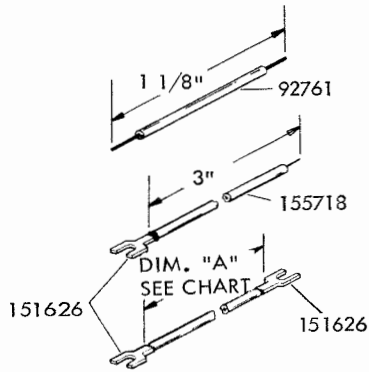


FIGURE 27. LINE JACK ASSEMBLY

PART NUMBER	"A" DIMENSION	PARTS REQUIRED
151819	3"	151626 (2)
157231	8"	151626 (2)
157232	9 1/4"	151626 (2)



Specification 5776S

ⓐ Part of 154870 Cable

FIGURE 28. 154747 MODIFICATION KIT TO ADD CONTINUOUS SPACING

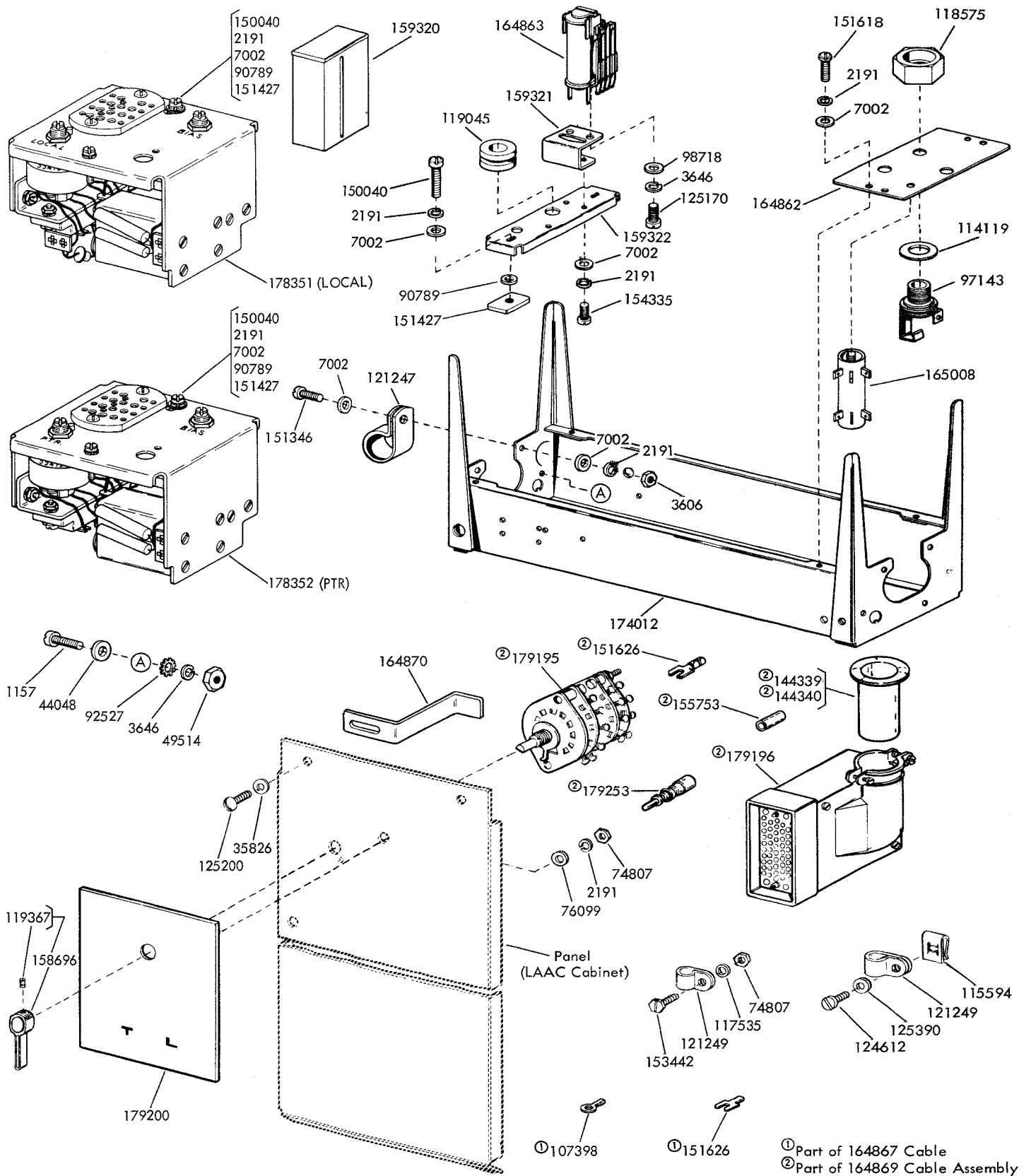


FIGURE 29. 164868 MODIFICATION KIT TO PROVIDE A CABINET WITH AN AUXILIARY ELECTRICAL SERVICE UNIT

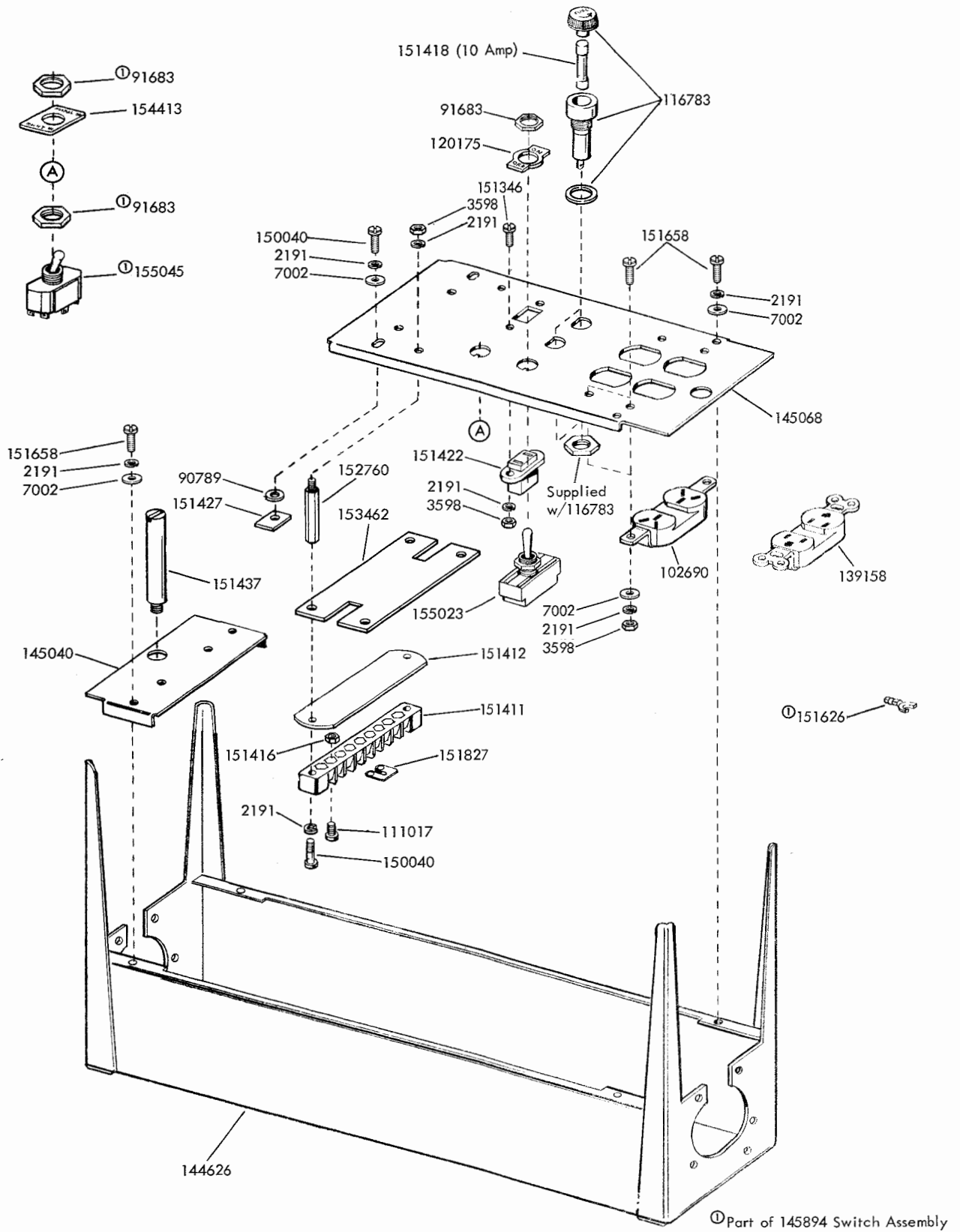


FIGURE 30. AUXILIARY ELECTRICAL SERVICE UNIT

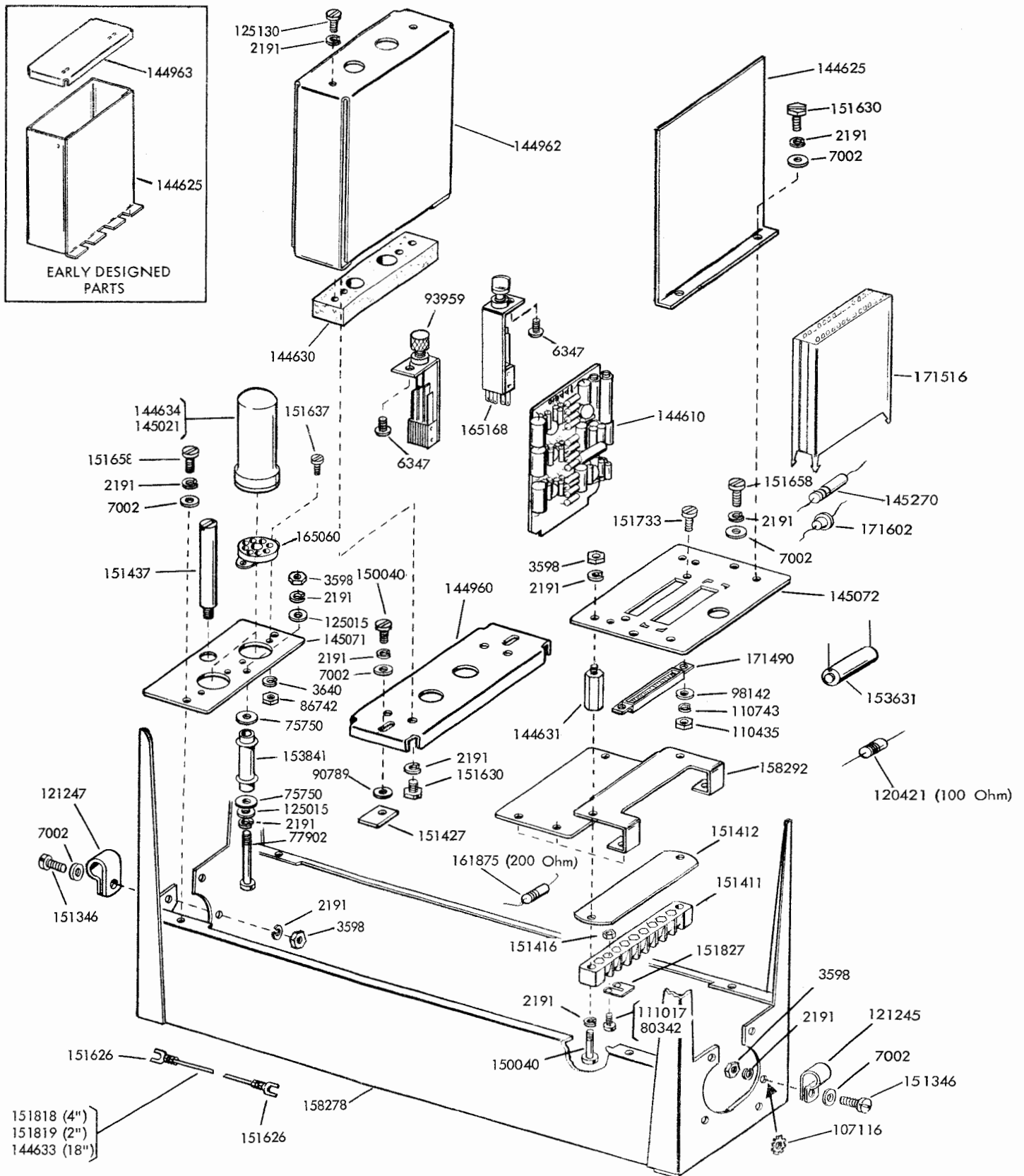


FIGURE 31. COMPONENTS TO PROVIDE FOR AC AND DC POWER DISTRIBUTION

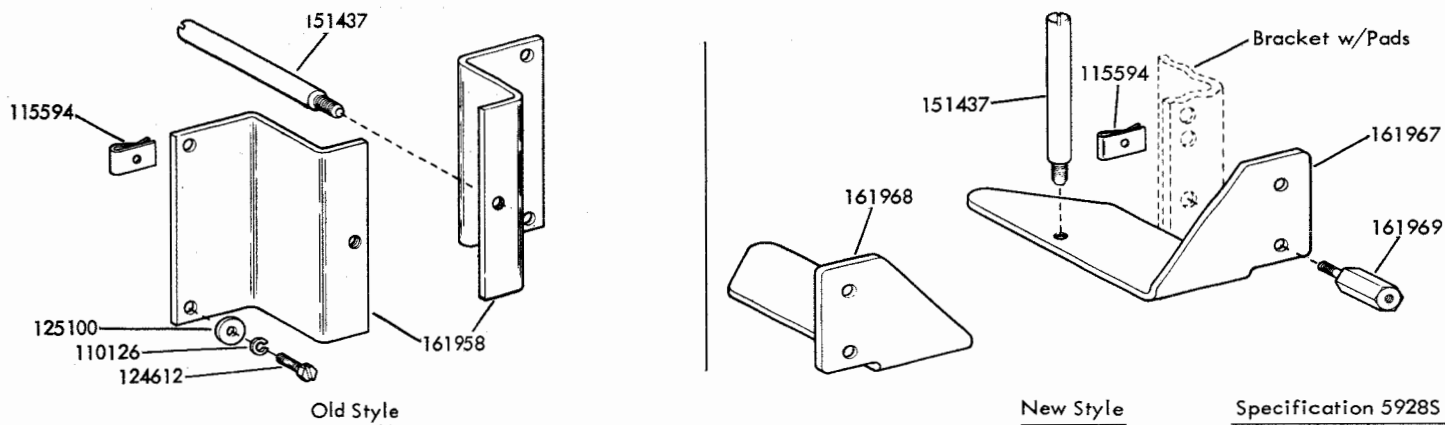


FIGURE 33. 161829 MODIFICATION KIT FOR MOUNTING AN ELECTRICAL SERVICE UNIT ON RELAY RACK BRACKETS

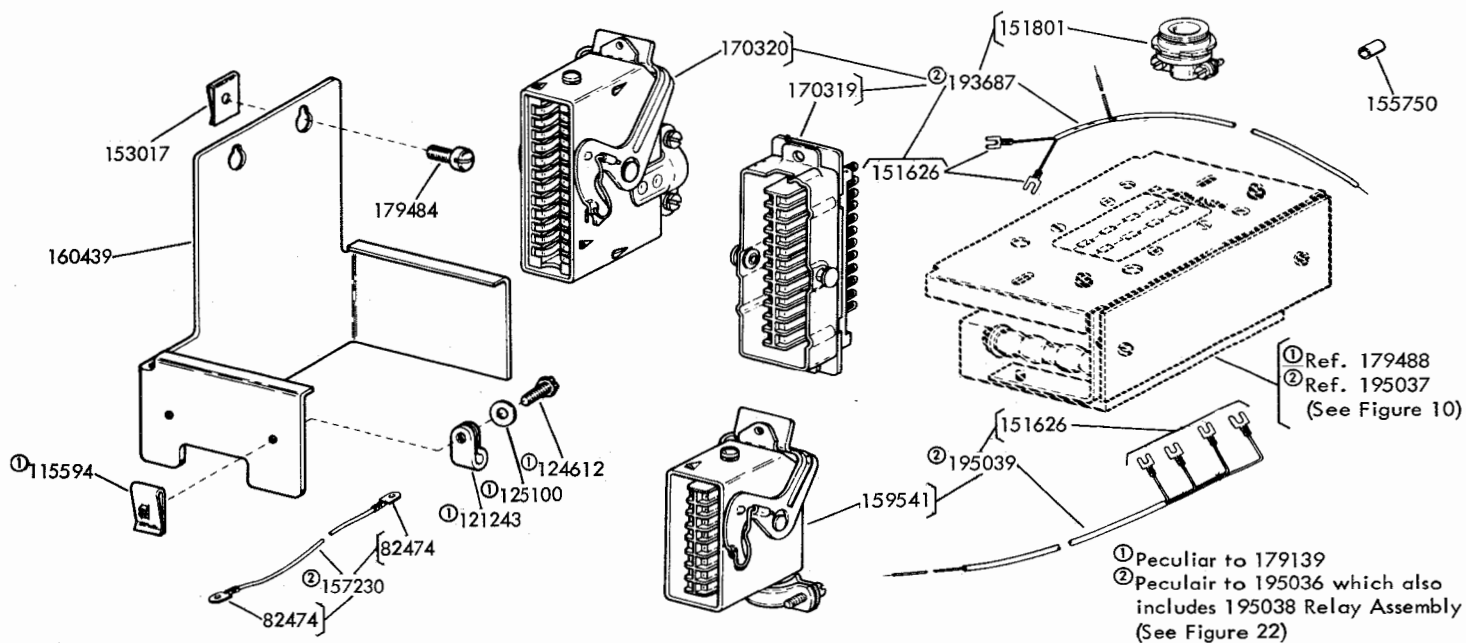


FIGURE 34. 179139 AND 195036 AUXILIARY REPERFORATOR LINE RELAY ASSEMBLY

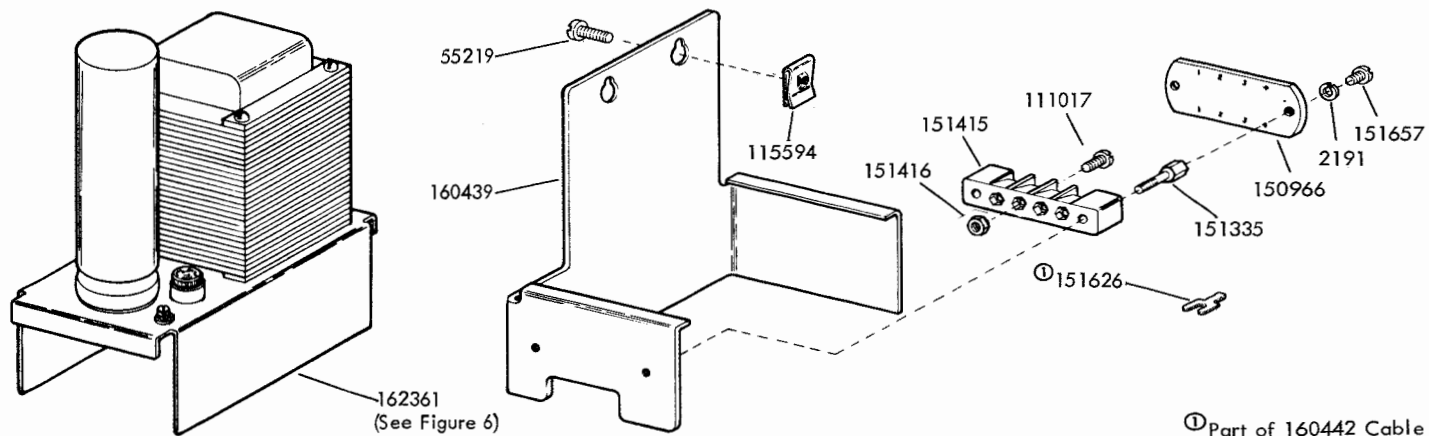
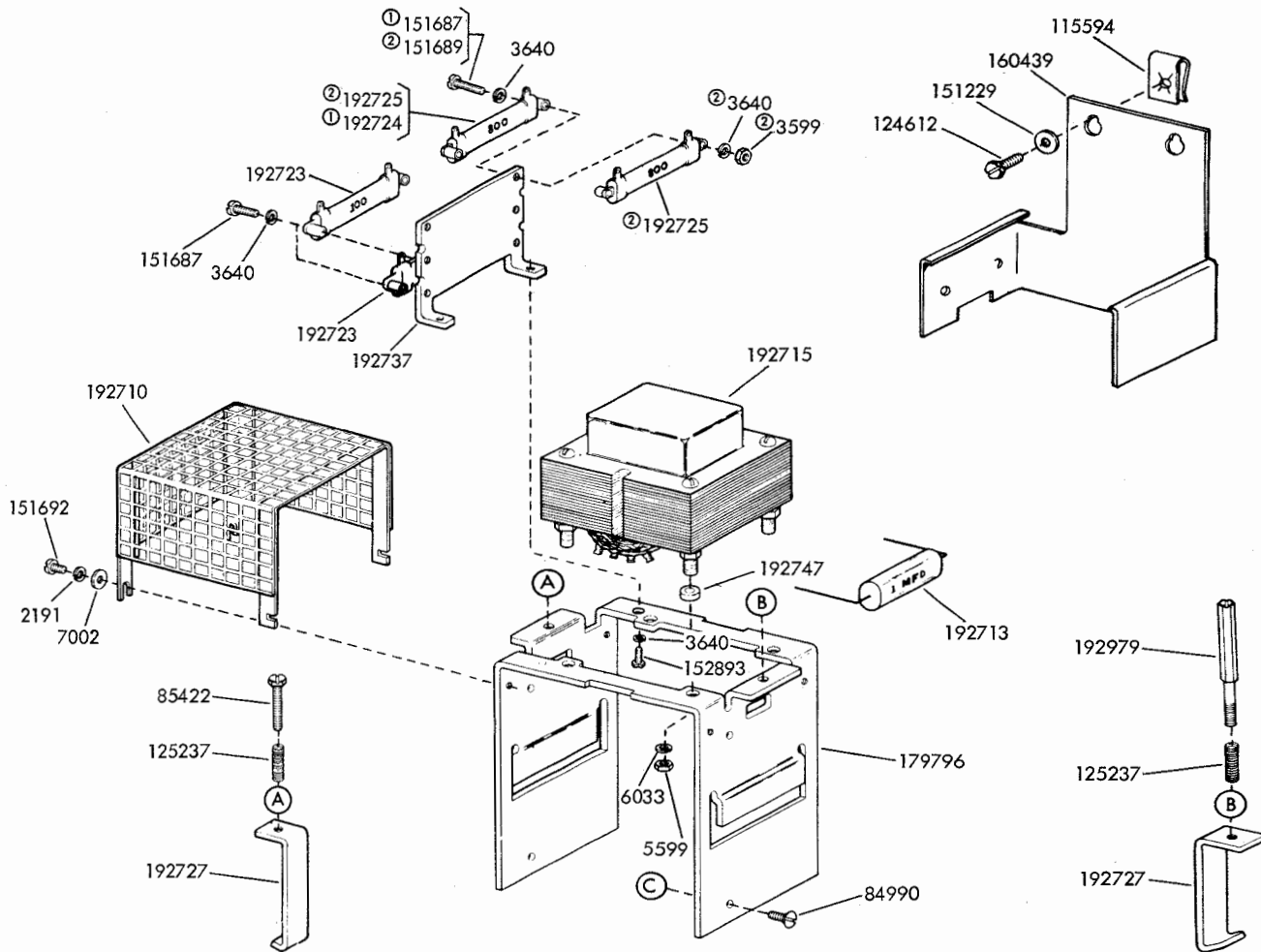
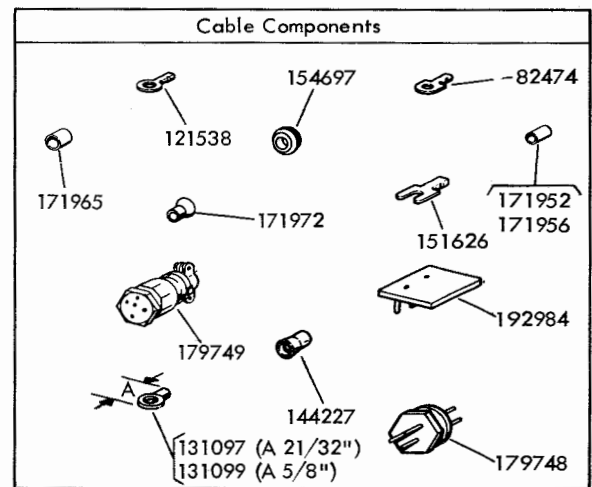


FIGURE 35. 160422 MODIFICATION KIT TO EQUIP CABINET WITH RECTIFIER

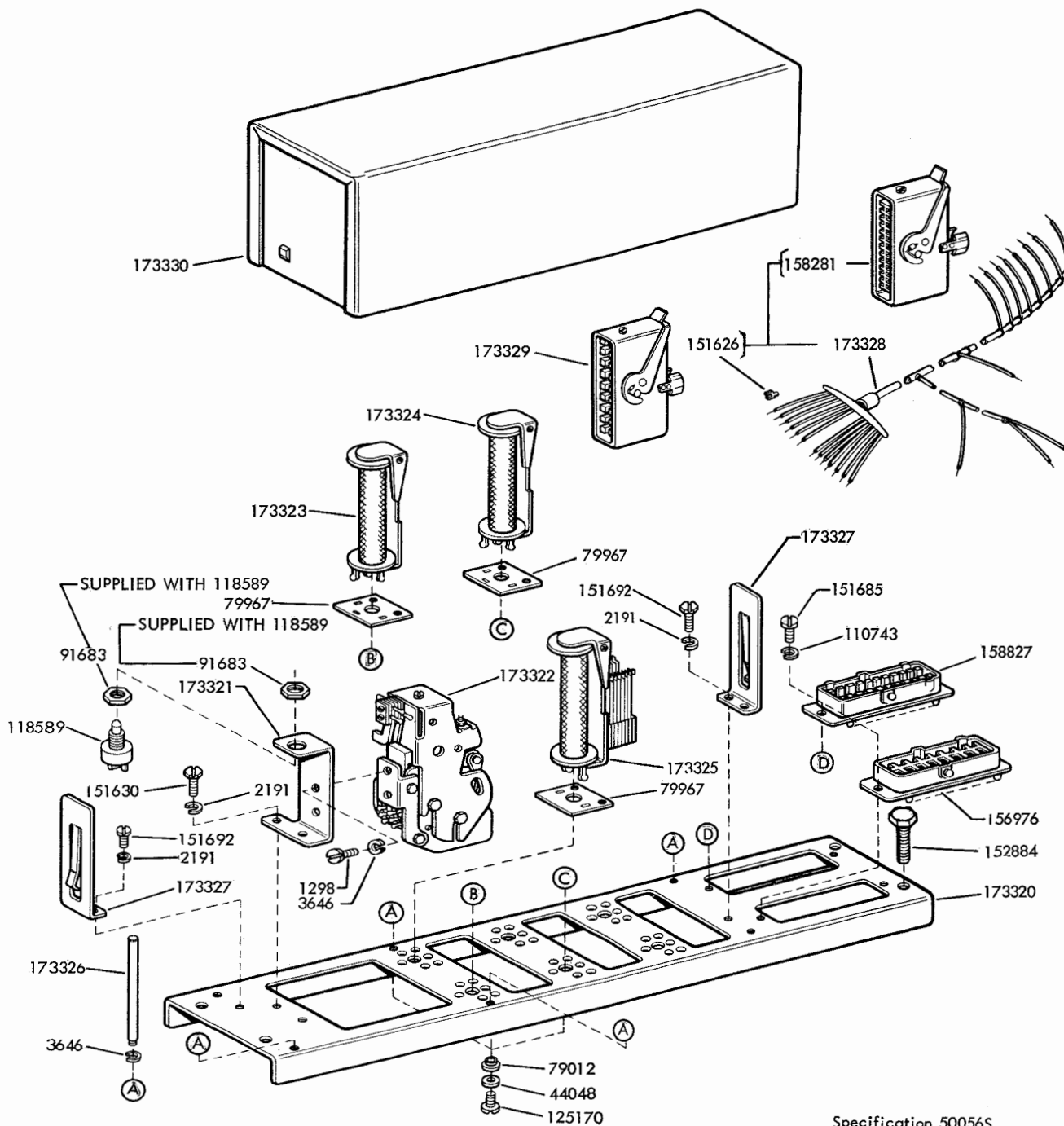


Jumpers			
Part No.	Color	Terminals	Length
151819	Black	151626 (2)	3-1/16"
156880	Black	121538 (2)	6-1/4"
157230	Black	151626 (2)	9-1/4"
157232	Black	151626 (2)	3-1/2"
195269	Green	82474 (1)	3-1/2"
195270	Green	131099 (1)	3-1/2"
305019	Brown		2"
305020	Purple		2"



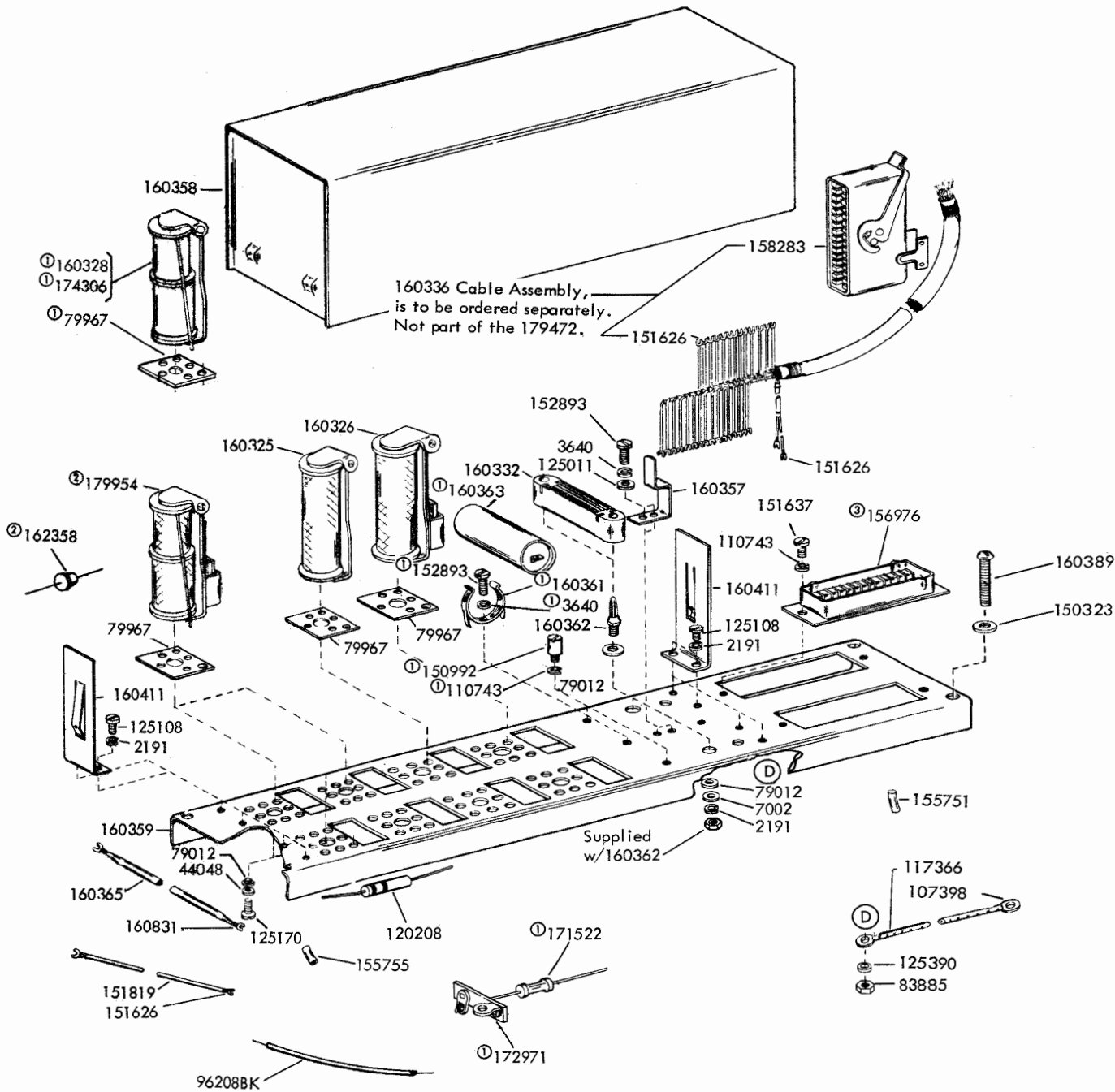
- ① Peculiar to 192730 Selector Magnet Driver Assembly
- ② Peculiar to 192740 Low Level Keyer Assembly

FIGURE 37. 179610 AND 179611 MODIFICATION KITS TO REDUCE RADIO FREQUENCY NOISE ON ASR SET (Includes Parts on This Figure and Figure 38)



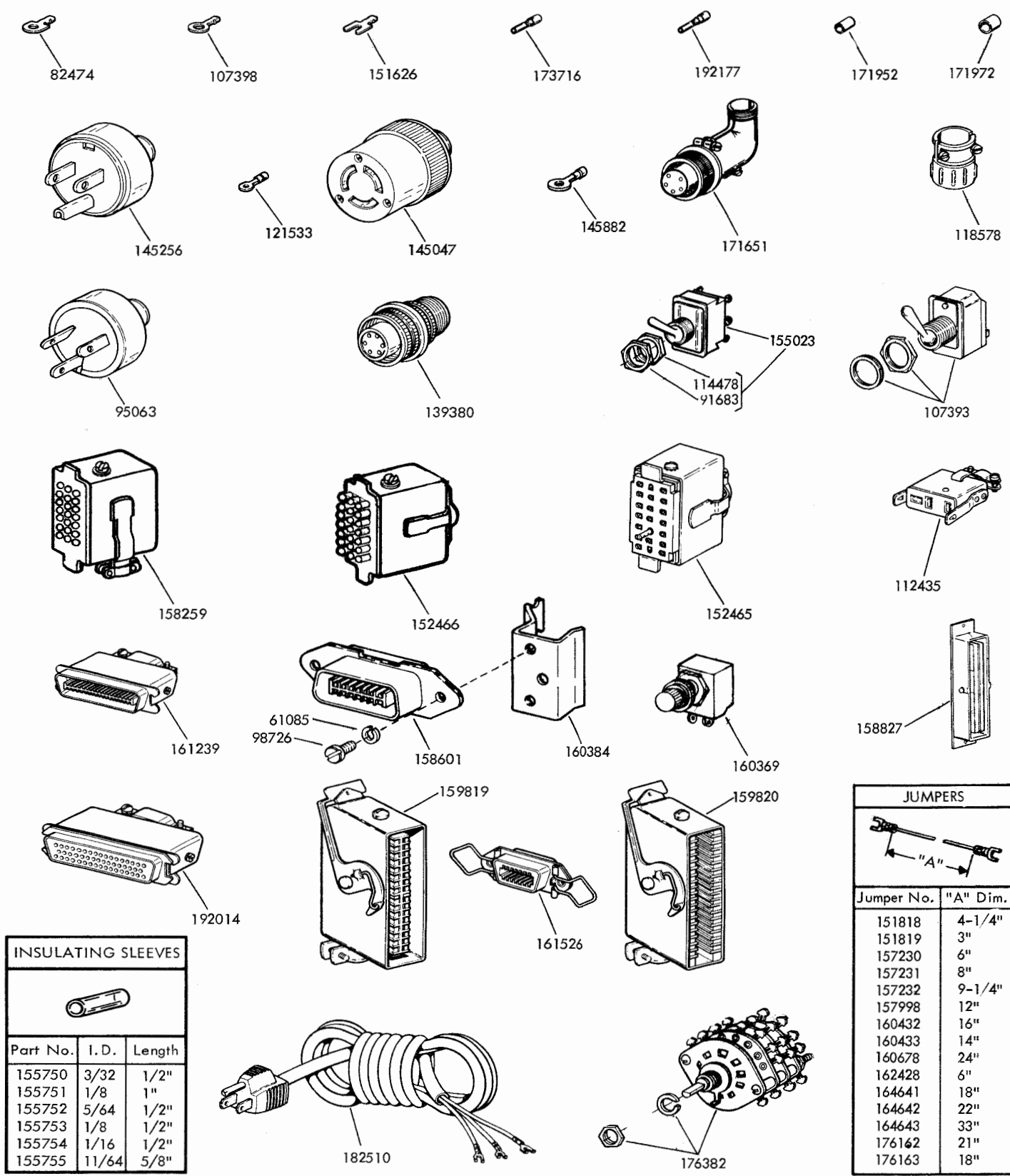
Specification 50056S

FIGURE 40. 162483 CALL DIRECTING RELAY UNIT



- ①Peculiar to Early Design 160334 Modification Kit. This feature no longer furnished - Specification 58875
- ②Also part of 179953 Modification Kit to convert early design 160334 Central Device to a 179472. Specification 501525
- ③Part of 179956 Cable Assembly

FIGURE 41. 179472 MODIFICATION KIT TO PROVIDE A TRANSMITTER CONTROL DEVICE



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.
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"
176162	21"
176163	18"

FIGURE 42. 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 15	74615	Resistor, 2,000 Ohm 5, 11, 12	110434	Screw, 4-40 x 3/16 Fil 14
247M	Coil, Magnet 6	74691	Resistor, 1,600 Ohm 24	110435	Nut, 4-40 Hex 6, 23
252M	Coil, Magnet 6	74807	Nut, 10-32 Shoulder Hex 21	110743	Washer, Lock 4, 8, 15, 16, 18, 19, 23, 30, 31
1020	Screw, 6-40 x 1/4 Hex 19	74821	Resistor, 2,810 Ohm 11, 16	111017	Screw, 6-40 x 5/16 Fil 3, 4, 19, 20, 22, 23, 25
1028	Screw, 4-40 x 1/4 Fil 11, 15, 18	74882	Spring 6	111647	Resistor, 1,000 Ohm 4, 5
1093	Screw, 8-32 x 7/16 Fil 6	74980	Screw, 6-40 x 1-13/16 Rd 5	112435	Socket 32
1157	Screw, 8-32 x 1/2 Fil 3, 21, 29	75750	Washer, Insulating 5, 11, 12, 13, 15, 16, 18, 20, 23, 24	112626	Nut, 10-32 Hex 5
1158	Screw, 6-32 x 5/16 Fil 4	76099	Washer, Flat 21	112627	Nut, 2-56 Hex 5
1172	Screw, 2-56 x 5/16 Fil 5	76461	Washer, Flat 16	114119	Washer, Insulating 21
1248	Screw, 6-40 x 1/2 Flat 11	76983	Screw, 4-40 x 1-1/4 Fil 15	114478	Nut, 15/32-32 Hex 32
1263	Screw, 6-32 x 1/4 Fil 19	77902	Screw, 6-40 x 2-3/8 Rd 4, 5, 9, 11, 12, 13, 15, 16, 18, 23, 24	114479	Rheostat, 1,500 Ohm 24
1264	Screw, 10-32 x 1/2 Flat 29	79012	Insulator 14, 15, 30, 31	114626	Screw, 6-40 x 2-1/16 Fil 12
1297	Screw, 6-40 x 2-7/16 Fil 20	79967	Insulator 14, 15, 30, 31	114654	Strip, Terminal 12, 14
1298	Screw, 8-32 x 1/4 Fil 30	80342	Screw, 6-40 x 23/64 Hex 23	115537	Screw, 8-32 x 2-1/4 Rd 5
2034	Washer, Flat 6	80467	Screw, 6-40 x 3/8 Hex 9	115594	Nut, Speed 10, 17, 21, 25, 27
2191	Washer, Lock 3 to 31	80612	Nut, 8-32 Hex 5	116783	Holder, Fuse 3, 7, 8, 9, 22, 24, 29
2201	Nut, 5/16-32 Hex 6	80854	Screw, 6-40 x 1-7/16 Fil 5, 6	117366	Jumper, 8-1/2" Green 31
2322	Washer, Lock 29	81836	Washer, Insulating 5	117535	Washer, Flat 21
2422	Washer, Lock 5	82474	Terminal 9, 12, 17, 25, 27, 32	118180	Resistor, 10,000 Ohm 26
2449	Washer, Lock 15	82516	Spring, Retaining 11	118210	Resistor, 22,000 Ohm 7
2658	Nut, 6-32 Hex 7	82870	Resistor, 6,300 Ohm 18	118575	Nut, 3/8-32 Insulating 21
2669	Washer, Lock 5, 29	83885	Nut, 6-32 Hex 31	118578	Clamp, 3/4 ID Cable 32
3438	Washer, Flat 5, 18, 29	84990	Screw, 6-40 x 1/4 Flat 26, 27	118589	Switch, Black Pushbutton 30
3595	Nut, 1/4-32 Hex 15	85422	Screw, 10-32 x 15/16 Hex 26, 27	118659	Switch, Toggle 3
3598	Nut, 6-40 Hex 3 to 6, 9, 11, 12, 15 to 20, 22, 23, 26, 28	86742	Nut, 4-40 Hex 23	118720	Resistor, 100K Ohm 19
3599	Nut, 4-40 Hex 4, 16, 27	89548	Spring, Contact 11	118726	Resistor, 820 Ohm 14
3606	Nut, 6-40 Hex 3, 4, 5, 17, 20, 21, 24	90789	Washer, Flat 5, 6, 7, 10, 11, 12, 13, 15, 16, 17, 20 to 24	119045	Grommet, Rubber 3, 16, 21
3639	Washer, Lock 29	90951	Washer, Lock 6	119121	Bracket 20
3640	Washer, Lock 6, 14, 23, 26, 27, 28, 31	91683	Nut, 15/32-32 Hex 3, 22, 30, 32	119218	Resistor, 3,500 Ohm 5
3642	Washer, Flat 5	91721	Screw, 10-32 x 2-3/4 Fil 5	119367	Screw, 8-32 Set 21
3646	Washer, Lock 3, 5, 6, 13, 21, 30	92260	Washer, Lock 7	120121	Resistor, 62,00 Ohm 19
3650	Washer, Flat 28	92271	Screw 6-32 x 2-3/4 Rd 8	120165	Fuse, 10 Amp 3, 24
3870	Spring 6	92527	Washer, Lock 3, 21	120175	Plate, Off-On 3, 22
3899	Spacer, .188" Thk 15	92761	Jumper, 1-1/2" Black 20	120195	Rectifier 7
5599	Nut, 8-32 Hex 26, 27	92856	Resistor, 1,500 Ohm 4, 5	120205	Shield, Tube 19
5816	Washer, Insulating 6	93073	Modification Kit 5	120208	Resistor, 22 Ohm 31
6033	Washer, Lock 26, 27	93598	Screw, 4-40 x 5/16 Rd 8	120421	Resistor, 100 Ohm 23
6345	Nut, 6-32 Hex 7, 10	93711	Resistor, 200 Ohm 5	121018	Nut, 4-40 Hex 8
6347	Screw, 6-32 x 3/8 Rd 23	93959	Key 23	121125	Washer, Spring 6, 26, 28
6827	Block 11	93984	Washer, Lock 29	121243	Clamp, 3/16" ID Cable 10, 17, 25, 28
7002	Washer, Flat 3 to 24, 26, 27, 28, 31	93985	Washer, Lock 29	121244	Clamp 1/4" ID Cable 3, 24
7603	Spring 6	95009	Switch, Push Button 13	121245	Clamp 5/16" ID Cable 3, 6, 23
7959	Bracket, Magnet 15	95063	Connector, 3 Pt Plug 32	121246	Clamp, 3/8" ID Cable 3, 16, 29
8262	Knob 18	96208BK	Jumper, 3" Lg Black 31	121247	Clamp, 7/16" ID Cable 3, 21, 23
8449	Spacer, .094" Thk 28	96260BK	Jumper, 3-1/2" Black 12	121248	Clamp, 1/2" ID Cable 3
34432	Washer, Flat 5, 20	96262BK	Jumper, 4" Lg Black 7	121249	Clamp, 5/8" ID Cable 3, 4, 21
35826	Washer, Flat 21	96262S	Jumper, 4" Lg Slate 7	121250	Clamp, 3/4" ID Cable 3
44048	Washer, Flat 3, 6, 14, 15, 21, 30, 31	97143	Jack 21	121413	Spacer, .344" Thk 8
49514	Nut, 8-32 Hex 3, 21	98142	Washer, Flat 23	121533	Terminal 32
55219	Screw, 8-32 x 3/8 Fil 10, 17, 25	98718	Washer, Flat 13, 21	121538	Terminal w/Insulator 27
55318	Screw, 6-32 x 1/4 Rd 8	98726	Screw, 3-48 x 1/4 Fil 32	121630	Washer, Flat 7
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