

RELAYS

111 (PART OF 163), 121, 122, 125, 149, 162, 178, AND 179 TYPES PIECE-PART DATA AND REPLACEMENT PROCEDURES

1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of 111-, 121-, 122-, 125-, 149-, 162-, 178-, and 179-type relays. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

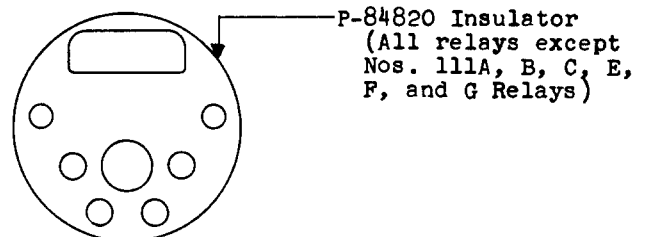
1.03 Part 2 of this section covers the piece-part numbers and the corresponding names of the parts which it is practicable to replace in the field in the maintenance of the above apparatus. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-Part Data.

1.04 Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2. This information is called Replacement Procedures.

2. PIECE-PART DATA

2.01 The figures included in this part show the various piece parts in their proper relation to other parts of the relay. The piece-part numbers of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department. Where these names differ from those in general use in the field, the latter names in some cases are shown in parenthesis.

2.02 When ordering piece parts for replacement purposes, give both the number and the name of the piece part. For example, P-82907 - Armature Assembly. Do not refer to the BSP number or to any information shown in parentheses following the piece-part numbers.



P-84820 Insulator
(All relays except
Nos. 111A, B, C, E,
F, and G Relays)

Fig. 1 - Insulator (Mounting Insulator)

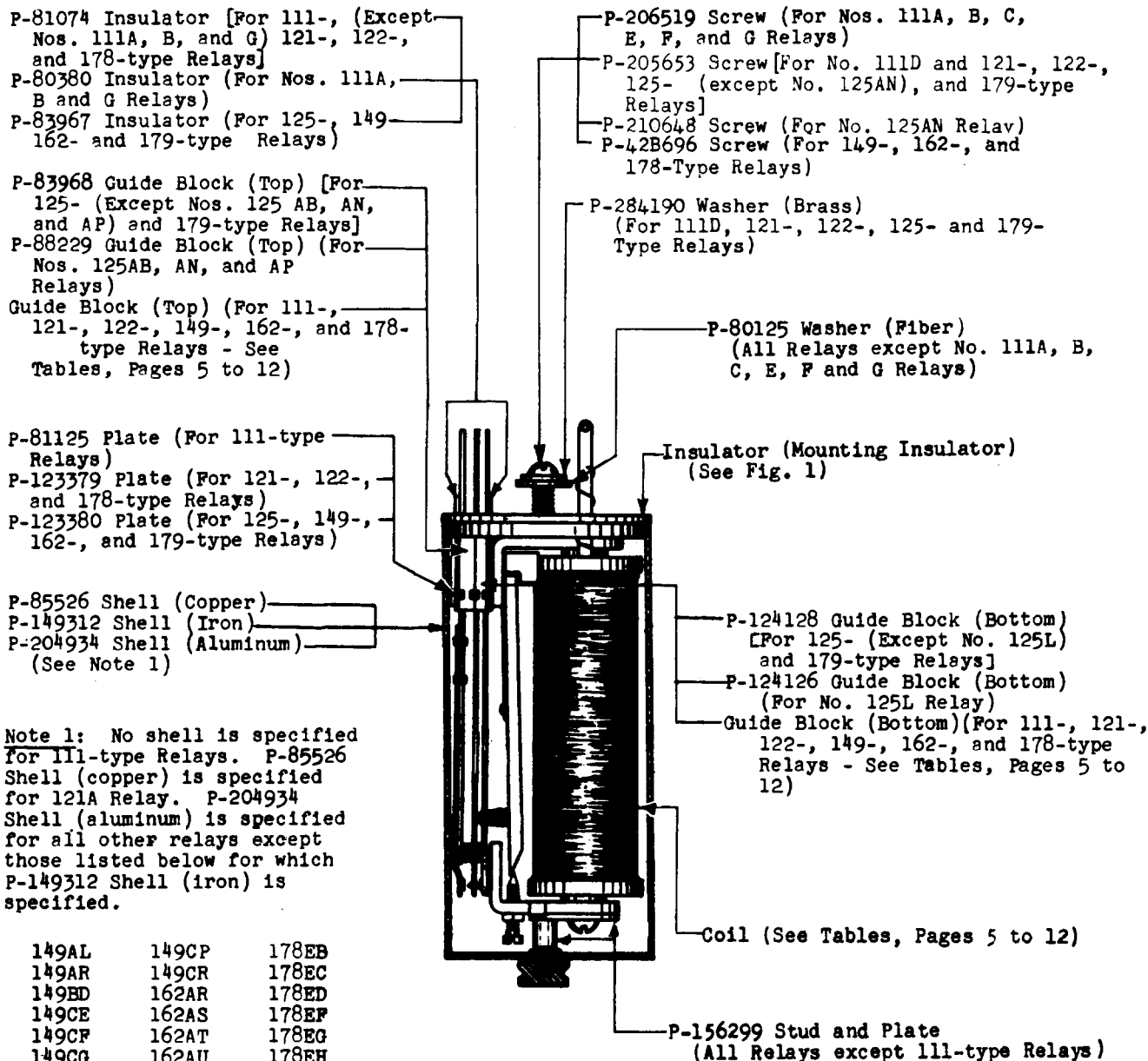


Fig. 2A - Relay With Captive Cover Nut

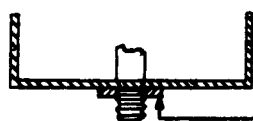


Fig. 2B - Relay With Hexagonal Cover Nut

Fig. 2 - 111-, 121-, 122-, 125-, 149-, 162-, 178-, and 179-type Relays (For Other Parts See Fig. 3)

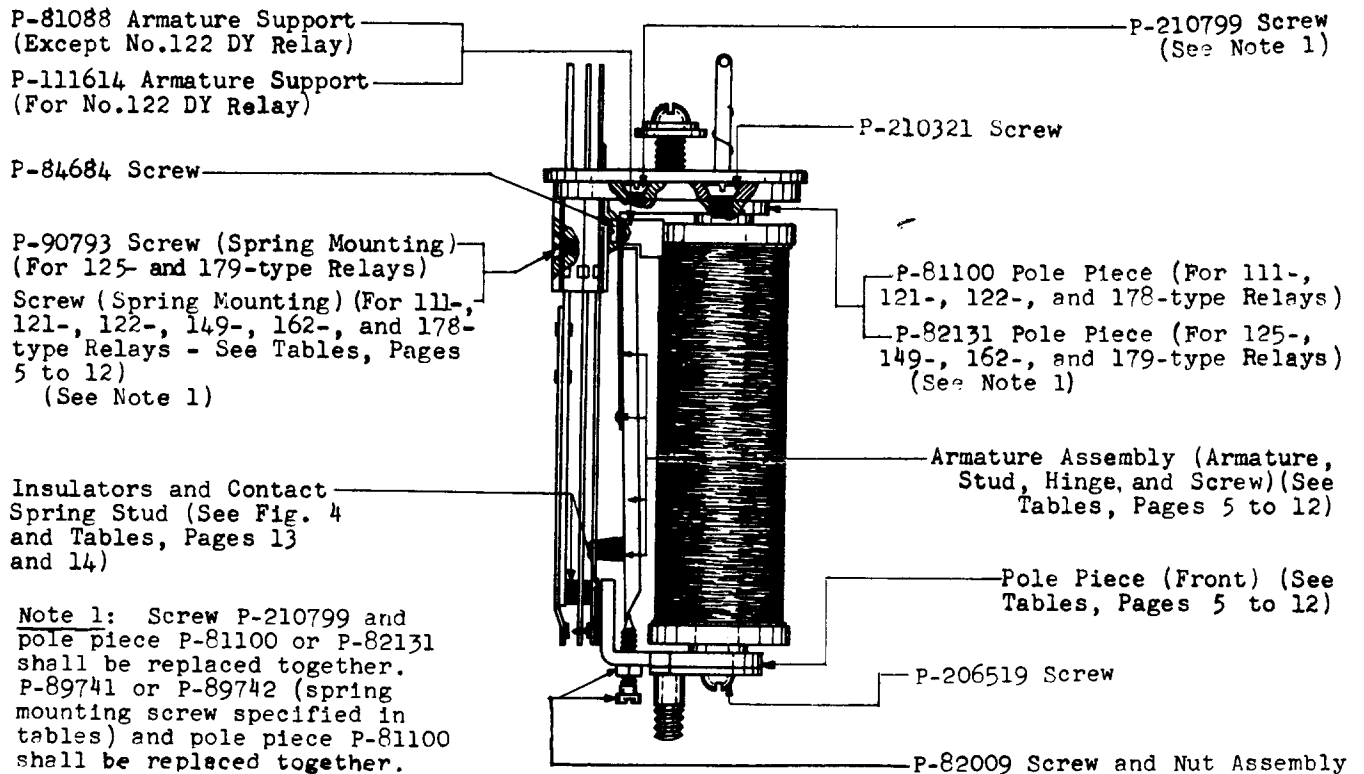
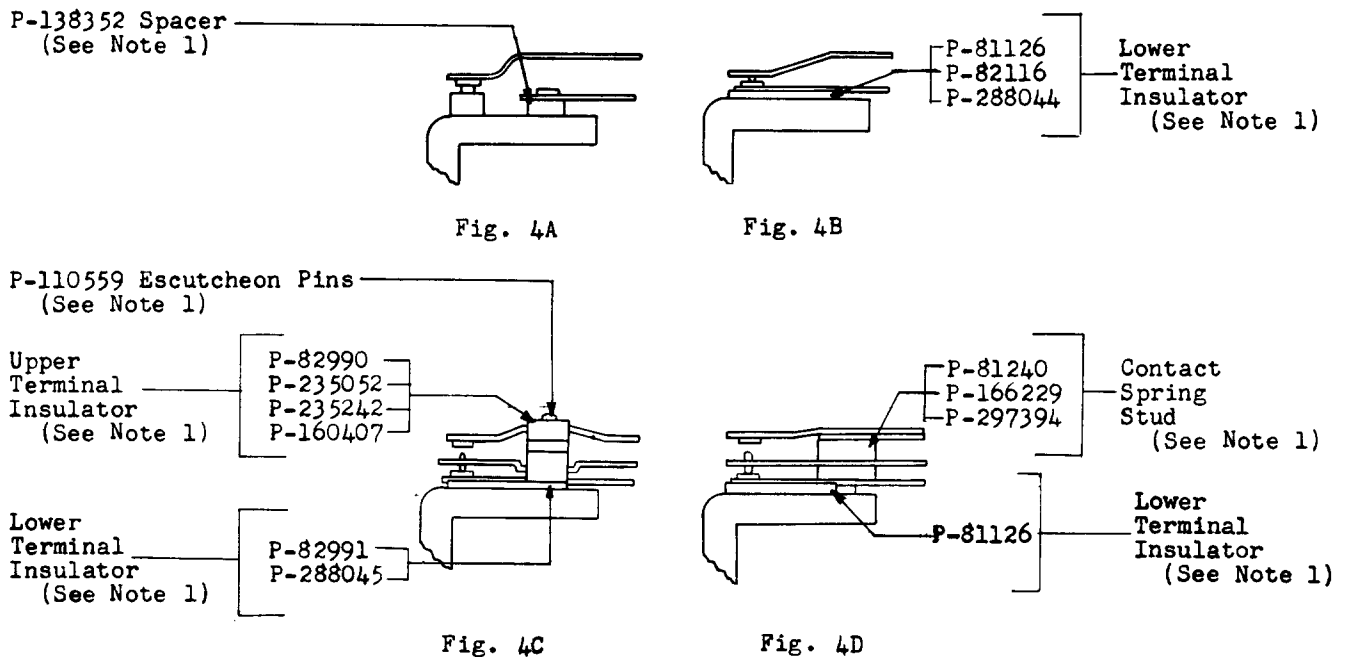


Fig. 3 - 111-, 121-, 122-, 125-, 149-, 162-, 178-, and 179-type Relays (For Other Parts See Fig. 2)



Note 1: See Tables, Pages 13 and 14, for parts associated with individual codes.

Fig. 4 - Contact Insulators and Contact Spring Studs (For All Relays Except 111-type)

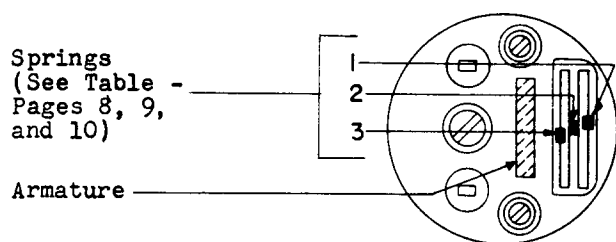


Fig. 5A - Springs Used on 149- and 162-type Relays

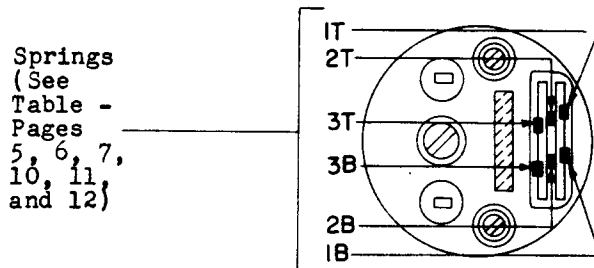


Fig. 5B - Springs Used on 111-, 121-, 122-, and 178-type Relays

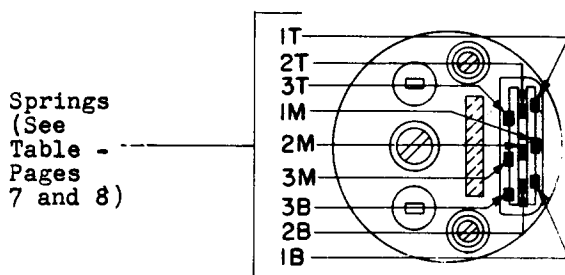


Fig. 5C - Springs Used on 125- and 179-type Relays

Fig. 5 - Spring and Spring Arrangement (Numbered as Viewed From Rear)

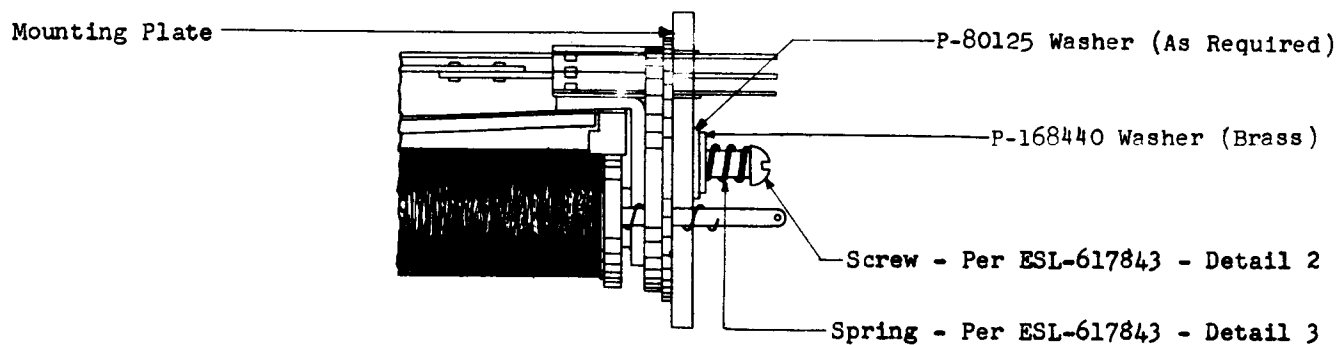


Fig. 6 - Shock Absorber Mounting

TABLE OF VARIABLE PARTS

Relay	Coil	Armature Assembly	Guide Block		Pole Piece (Front)	Screw (Spring Mounting)	Springs					
			(Top)	(Bottom)			1B	2B	3B	1T	2T	3T
111A	P-124953	P-82907	P-81095	P-32774	P-288118	P-89741	P-81529	P-81545	P-81517	P-81528	P-81543	P-81516
111B	P-124953	P-82907		P-82754	*P-81141	P-89741	P-81529			P-81528	P-81543	
111C	P-124953	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
111D	P-124953	P-112442		P-124127	P-288118	P-89742	P-81448	P-84685		P-81401	P-81452	
111E	P-124953	P-82907		P-124127	P-288118	P-89741	P-81529	P-83456		P-81528	P-83457	
111F	P-124953	P-82907	P-81095	P-124127	P-288118	P-89741	P-81529	P-81533	P-81517	P-81528	P-81543	P-81516
111G	P-126643	P-132696		P-81527	*P-81141	P-89741	P-109015			P-109014	P-81543	
121A	P-124959	P-82908		P-124127	P-288118	P-89742	P-81401	P-84685		P-81448	P-81452	
122A	P-126608	P-112442		P-124127	P-296767	P-89742	P-81520	P-81518		P-81401	P-81452	
122B	P-124984	P-112442		P-124127	P-296767	P-89742	P-81520	P-81518		P-81401	P-81452	
122C	P-124839	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
122D	P-124953	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122E	P-124957	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122F	P-124962	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122G	P-124989	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122H	P-124990	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122J	P-124967	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122K	P-124963	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122L	P-124959	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122M	P-124994	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122N	P-124964	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122P	P-124965	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122R	P-124997	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122S	P-124968	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122T	P-124999	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122U	P-125000	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122W	P-124842	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122Y	P-126601	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122Z	P-124953	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
122AA	P-124953	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AB	P-124967	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AC	P-124962	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AD	P-124957	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AE	P-124963	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AF	P-124959	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AG	P-124997	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AH	P-124964	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AJ	P-124961	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AK	P-125000	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AL	P-124994	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AM	P-124956	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AN	P-124968	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AP	P-126603	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AR	P-124989	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AS	P-124846	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122AT	P-124967	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122AU	P-126605	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122AW	P-126606	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122AY	P-126607	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122AZ	P-126608	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	

* When ordering this part, order P-81239 Contact Stud and P-81141 Front Pole Piece assembled together.

TABLE OF VARIABLE PARTS (CONTD)

SECTION 040-219-801

Relay	Coil	Armature Assembly	Guide Block		Pole Piece (Front)	Screw (Spring Mounting)	Springs					
			(Top)	(Bottom)			1B	2B	3B	1T	2T	3T
122BA	P-126609	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122BB	P-126610	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122BC	P-126611	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122BD	P-126612	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122BE	P-124953	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BF	P-124967	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BG	P-124965	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BH	P-124957	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BJ	P-126613	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BK	P-124959	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BL	P-124963	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BM	P-126629	P-82907		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
122BN	P-124981	P-82907	P-81095	P-122883	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BP	P-126607	P-82907	P-81095	P-122883	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BR	P-126614	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BS	P-126615	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BT	P-126616	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BU	P-126617	P-82907	P-81095	P-122883	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BW	P-126618	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BY	P-126619	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122BZ	P-126607	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122CA	P-126621	P-132697	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122CB	P-124953	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
122CC	P-126612	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122CD	P-126622	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122CE	P-135402	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122CF	P-124956	P-112442	P-81095	P-122883	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122CG	P-124956	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122CJ	P-126624	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122CK	P-126620	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
122CL	P-125000	P-112442	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122CM	P-126625	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122CN	P-126626	P-82907	P-81095	P-122883	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122CP	P-124959	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122CR	P-124842	P-132697	P-87889	P-124127	P-288118	P-89742	P-87908	P-86604	P-81517	P-87907	P-86603	P-81516
122CS	P-200017	P-132697	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122CT	P-126628	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122CU	P-126609	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122CW	P-126630	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122DA	P-126609	P-112442	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122DB	P-126612	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122DC	P-126632	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122DD	P-124965	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122DE	P-124962	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81717	P-81401	P-81452	P-81516
122DF	P-126633	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122DG	P-126634	P-132697	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122DH	P-126635	P-132702	P-87889	P-124127	P-296767	P-89742	P-110514	P-110520	P-81517	P-128004	P-81452	P-81516
122DJ	P-126636	P-112442	P-87889	P-124127	P-296767	P-89742	P-110514	P-110520	P-81517	P-128004	P-81452	P-81516
122DK	P-126637	P-134203	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122DL	P-126638	P-283005	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122DM	P-135474	P-132697	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516

Variable Parts for 122BA to 122DM Relays

TABLE OF VARIABLE PARTS (Cont)

RELAY	COIL	ARMATURE ASSEMBLY	GUIDE BLOCK		POLE PIECE (FRONT)	SCREW (SPRING MOUNTING)	SPRINGS					
			(TOP)	(BOTTOM)			1B	2B	3B	1T	2T	3T
122DN	P-126640	P-82907	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
122DP	P-132168	P-132696	P-81095	P-122883	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122DR	P-126641	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122DS	P-126642	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122DT	P-126643	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122DU	P-136047	P-132697	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122DY	P-124959	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122DZ	P-125000	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
122EA	P-124967	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
122EB	P-124957	P-112442	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122EC	P-124953	P-129567	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
122ED	P-128929	P-132697	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122EE	P-128930	P-283001	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
122EF	P-124959	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
122EG	P-130484	P-132697	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122EJ	P-135441	P-82908	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122EK	P-132048	P-283001	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122EL	P-126628	P-283001	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
122EM	P-124967	P-283007	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122EP	P-139485	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122ER	P-139556	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
122ET	P-139229	P-82908	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516

Variable Parts for 122DN to 125AD Relays

RELAY	COIL	ARMATURE ASSEMBLY	POLE-PIECE (FRONT)	SPRINGS								
				1B	2B	3B	1M	2M	3M	1T	2T	3T
125B	P-124954	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-82994	P-82119	P-82996	P-82994	P-82123
*125D	P-124955	P-84877	P-294991	P-82129	P-82125	P-82121	P-84992	P-84990	P-84989	P-82127	P-82125	P-82123
*125E	P-124956	P-84877	P-294991	P-82129	P-82125	P-82121	P-84992	P-84990	P-84989	P-82127	P-82125	P-82123
125H	P-124956	P-84877	P-294991	P-82129	P-82125	P-82121	P-82127	P-82125	P-82119	P-82127	P-82125	P-82123
125J	P-124958	P-84877	P-294991	P-82129	P-82125	P-82121	P-82127	P-82125	P-82119	P-82127	P-82125	P-82123
125L	P-124960	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-84977	P-82119	P-82996	P-82994	P-82123
*125N	P-124961	P-84877	P-294991	P-82129	P-82125	P-82121	P-84992	P-84990	P-84989	P-82127	P-82125	P-82123
*125P	P-124962	P-84877	P-294991	P-82129	P-82125	P-82121	P-84992	P-84990	P-84989	P-82127	P-82125	P-82123
125T	P-124964	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-82994	P-82119	P-82996	P-82994	P-82123
125Y	P-124965	P-84877	P-294991	P-87308	P-87309	P-82121	P-87308	P-87309	P-82119	P-87308	P-87309	P-82123
125Z	P-124965	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-82994	P-82119	P-82996	P-82994	P-82123
125AA	P-124966	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-82994	P-82119	P-82996	P-82994	P-82123
125AB	P-124967	P-84877	P-294991	P-88213	P-82125	P-82121	P-88209	P-82125	P-82119	P-88209	P-82125	P-82123

* For armature contact spring, order "P-84975 Spring."

TABLE OF VARIABLE PARTS (Cont)

RELAY	COIL	ARMATURE ASSEMBLY	POLE PIECE (FRONT)	SPRINGS								
				1B	2B	3B	1M	2M	3M	1T	2T	3T
125AE	P-124970	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-82994	P-82119	P-82996	P-82994	P-82123
125AG	P-124967	P-112441	P-294992	P-82996	P-82994	P-82121	P-82996	P-82994	P-82119	P-82996	P-82994	P-82123
125AM	P-200017	P-84877	P-294991	P-82129	P-82125	P-82121	P-82127	P-82125	P-82119	P-82127	P-82125	P-82123
125AP	P-126628	P-84877	P-294991	P-88213	P-82125	P-82121	P-88209	P-82125	P-82119	P-88209	P-82125	P-82123
179A	P-127832	P-112441	P-294992	P-202976	P-202977	P-169863	P-202976	P-202977	P-164452	P-202976	P-202977	P-169862

RELAY	COIL	ARMATURE ASSEMBLY	GUIDE BLOCK		POLE PIECE (FRONT)	SCREW (SPRING MOUNTING)	SPRINGS			
			(TOP)	(BOTTOM)			1	2	3	
149A	P-124839	P-113751	P-83968	P-124128	P-294991	P-90793	P-82127	P-84805	P-82119	
149B	P-124840	P-113751	P-83968	P-124128	P-294991	P-90793	P-82127	P-84805	P-82119	
149C	P-200017	P-132700	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149D	P-124959	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149E	P-124842	P-132941	P-83968	P-124128	P-294991	P-90793	P-82129	P-87309	P-82119	
149F	P-124843	P-132700	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149G	P-124848	P-113751	P-83968	P-124128	P-294991	P-90793	P-82129	P-87309	P-82119	
149H	P-124844	P-132700	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149J	P-124994	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149K	P-124846	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149L	P-124847	P-113751	P-83968	P-124128	P-294991	P-90793	P-82129	P-87309	P-82119	
149M	P-124965	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149N	P-126682	P-283002	P-88229	P-124128	P-294991	P-90793	P-294485	P-287880	P-164452	
149P	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452	
149R	P-129580	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149S	P-130715	P-132700	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149T	P-136043	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119	
149U	P-126648	P-283002	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119	
149W	P-200000	P-149156	P-83968	P-124128	**P-294993	P-90793	P-287866	P-287867	P-287868	
149Y	P-138723	P-113751	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119	
149AA	P-139485	P-113751	P-83968	P-124128	P-294991	P-90793	P-82127	P-84805	P-82119	
149AB	P-124956	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149AC	P-143556	P-132941	P-83968	P-124128	P-294991	P-90793	P-82127	P-84805	P-82119	
149AD	P-140923	P-283002	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452	
149AE	P-145407	P-283002	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119	
149AF	P-143556	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119	
149AG	P-155456	P-283002	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119	
149AH	P-157964	P-283002	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452	
149AL	P-149311	P-283011	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149AM	P-164082	P-113751	P-83968	P-124128	P-294991	P-90793	P-82129	P-87309	P-82119	
149AN	P-161242	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119	
149AP	P-161660	P-113751	P-83968	P-124128	P-294991	P-90793	P-82129	P-87309	P-82119	
149AR	P-162299	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452	
149AS	P-126648	P-283011	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	
149AT	P-126685	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119	
149AU	P-161491	P-283002	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119	

** When ordering this part, order P-81239 Contact Stud and P-294993 Front Pole Piece assembled together.

TABLE OF VARIABLE PARTS (CONTD)

Relay	Coil	Armature Assembly	Guide Block		Pole Piece (Front)	Screw (Spring Mounting)	Springs		
			(Top)	(Bottom)			1	2	3
149AW	P-143556	P-283006	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149AY	P-164623	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
149BA	P-155456	P-113751	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149BB	P-126648	P-283006	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149BC	P-164623	P-283006	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149BD	P-164623	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149BE	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119
149BF	P-126648	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
149BG	P-126650	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119
149BH	P-162299	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119
149BJ	P-143556	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
149BK	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149BL	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119
149BM	P-162299	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149BN	P-129580	P-147477	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119
149BP	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149BR	P-155456	P-283006	P-83968	P-124128	P-294991	P-90793	P-164839	P-164840	P-82119
149BS	P-162299	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149BT	P-143556	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-84805	P-82119
149BU	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149BW	P-126685	P-283006	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149BY	P-158413	P-113751	P-88229	P-124128	P-294991	P-90793	P-294485	P-287880	P-164452
149CA	P-126685	P-132941	P-88229	P-124128	P-294991	P-90793	P-287886	P-287887	P-287888
149CB	P-158413	P-113751	P-88229	P-124128	P-294991	P-90793	P-294485	P-287880	P-164452
149CC	P-126685	P-132941	P-88229	P-124128	P-294991	P-90793	P-287886	P-287887	P-287888
149CD	P-208964	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-87309	P-82119
149CE	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149CF	P-162299	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149CG	P-162299	P-283006	P-88229	P-124128	P-294991	P-90793	P-294485	P-164840	P-164452
149CH	P-214645	P-283002	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
149CJ	P-126685	P-283006	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149CL	P-126685	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
149CM	P-164623	P-283006	P-83968	P-124128	P-294991	P-90793	P-219369	P-164840	P-164452
149CN	P-143556	P-283006	P-88229	P-124128	P-294991	P-90793	P-88209	P-82125	P-82119
149CP	P-126685	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
149CR	P-223191	P-283006	P-83968	P-124128	P-294991	P-90793	P-82127	P-82125	P-82119
162A	P-124967	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162B	P-143556	P-283004		P-124128	P-246924	P-110997	P-110996	P-82119	
162C	P-126682	P-283000		P-124128	P-294991	P-110997	P-110996	P-82119	
162D	P-124953	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162E	P-126648	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162F	P-126684	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162G	P-126685	P-283004	P-83968	P-124126	P-294992	P-90793	P-82996	P-84977	P-82119
162H	P-126611	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162J	P-126634	P-132701	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162K	P-126643	P-132701	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162L	P-138648	P-114391	P-83968	P-124126	P-294992	P-90793	P-82996	P-84977	P-82119
162M	P-126648	P-283010	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162N	P-126628	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162P	P-143556	P-283004	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119
162R	P-126685	P-283004	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119

Variable Parts for 149AW to 162R Relays

TABLE OF VARIABLE PARTS (Contd)

Relay	Coil	Armature Assembly	Guide Block		Pole Piece (Front)	Screw (Spring Mounting)	Springs					
			(Top)	(Bottom)			1	2	3			
162S	P-128932	P-132701	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162T	P-155456	P-283000		P-124128	P-294991	P-110997	P-287877	P-164452				
162U	P-124997	P-283010	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162W	P-129580	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162Y	P-161789	P-114391	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AA	P-126685	P-283004	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AB	P-143556	P-283004		P-124128	P-294991	P-110997	P-287877	P-164452				
162AC	P-126648	P-283010	P-83968	P-124128	P-294992	P-90793	P-287869	P-287870	P-82119			
162AD	P-164648	P-132701	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AE	P-126648	P-114391		P-124128	P-294991	P-110997	P-110996	P-82119				
162AF	P-145407	P-165981		P-124128	P-294991	P-110997	P-287877	P-164452				
162AG	P-143556	P-166056	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AH	P-126685	P-283004		P-124128	P-294991	P-110997	P-287877	P-164452				
162AJ	P-164623	P-132701	P-83968	P-124128	P-294992	P-90793	P-202976	P-202977	P-164452			
162AK	P-126648	P-283010	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AL	P-164648	P-132701	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AM	P-126648	P-283004		P-124128	P-294991	P-110997	P-110996	P-82119				
162AN	P-155456	P-283004	P-83968	P-124128	P-294992	P-90793	P-202976	P-202977	P-164452			
162AP	P-164648	P-132701	P-83968	P-124128	P-294992	P-90793	P-82996	P-82994	P-82119			
162AR	P-126685	P-283004		P-124128	P-294991	P-110997	P-110996	P-82119				
162AS	P-126685	P-132701	P-83968	P-124128	P-294992	P-90793	P-202976	P-202977	P-164452			
162AT	P-143556	P-283004		P-124128	P-294991	P-110997	P-110996	P-82119				
162AU	P-126648	P-283010	P-82968	P-124128	P-294992	P-90793	P-202976	P-202977	P-164452			
							Springs					
							1B	2B	3B	1T	2T	3T
178A	P-126645	P-138583	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178B	P-126646	P-136600	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178E	P-126647	P-136600	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178F	P-126648	P-136600	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178G	P-126649	P-82908	P-87889	P-124127	P-288118	P-89742	P-87908	P-86604	P-81517	P-87907	P-86603	P-81516
178H	P-126650	P-82908	P-87889	P-124127	P-288118	P-89742	P-87908	P-86604	P-81517	P-87907	P-86603	P-81516
178J	P-126648	P-82907	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178K	P-128932	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178L	P-128935	P-82908	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178M	P-126685	P-132702	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-167855	P-163178	P-162595
178N	P-128933	P-112442	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-167855	P-163178	P-162595
178P	P-130775	P-283003	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
178R	P-126685	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178S	P-126685	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178T	P-126685	P-132697	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178U	P-129330	P-138583	P-81095	P-81527	P-296767	P-89742	P-162592	P-242183	P-163917	P-162593	P-242183	P-162595
178W	P-126648	P-82908	P-87889	P-124127	P-288118	P-89742	P-87908	P-86604	P-81517	P-87907	P-86603	P-81516
178AA	P-126685	P-283009	P-87889	P-124127	P-296767	P-89742	P-287883	P-287884	P-163917	P-287885	P-163178	P-162595
178AB	P-126685	P-283008	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
178AC	P-149311	P-283012	P-81095	P-81527	P-296767	P-89742	P-162592	P-242183	P-163917	P-81519	P-81526	P-81516
178AD	P-155456	P-43B082	P-81095	P-124127	P-43B081	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178AE	P-145407	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
178AF	P-126647	P-82908	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
178AG	P-126685	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516

*P43B081 pole piece is stamped "H" to indicate Hydrogen Annealed

TABLE OF VARIABLE PARTS (Contd)

Relay	Coil	Armature Assembly	Guide Block		Pole Piece (Front)	Screw (Spring Mounting)	Springs					
			(Top)	(Bottom)			1B	2B	3B	1T	2T	3T
178AH	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178AJ	P-128932	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178AK	P-200022	P-283008	P-81095	P-124127	P-288118	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
178AL	P-126685	P-283012		P-81527	P-288118	P-89741	P-287882	P-163917		P-287881	P-162595	
178AM	P-157781	P-283007		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
178AS	P-161951	P-248712	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178AT	P-136043	P-250209	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178AU	P-126647	P-82908	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
178AW	P-158413	P-82908	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
178AY	P-161241	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BA	P-161241	P-132697	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178BB	P-161241	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BC	P-136043	P-250209	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178BD	P-161491	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BE	P-162519	P-82907	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BF	P-126685	P-283005	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178BG	P-158413	P-283008	P-81095	P-124127	P-288118	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
178BH	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-163179	P-163178	P-81516
178BJ	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-163915	P-287879	P-163917	P-167855	P-287878	P-162595
178BK	P-163871	P-82908	P-81095	P-124127	P-288118	P-89742	P-163915	P-287879	P-163917	P-167855	P-287878	P-162595
178BL	P-126685	P-283005	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178BM	P-126648	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178BN	P-143556	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BP	P-166103	P-136600	P-81095	P-81527	P-296767	P-89742	P-162592	P-242183	P-163917	P-162593	P-242183	P-162595
178BR	P-126648	P-132702	P-87889	P-124127	P-296767	P-89742	P-110514	P-110520	P-81517	P-128004	P-81452	P-81516
178BS	P-162519	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178BT	P-126684	P-283013	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BU	P-126684	P-283013	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178BW	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-287874	P-287354	P-81517	P-287873	P-287344	P-287872
178BY	P-166103	P-283001	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
178CA	P-164623	P-283008	P-87889	P-124127	P-288118	P-89742	P-287876	P-167854	P-163917	P-287875	P-163178	P-162595
178CB	P-158413	P-283001	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178CC	P-164623	P-283008	P-81095	P-124127	P-288118	P-89742	P-287874	P-287354	P-287871	P-287873	P-287344	P-287872
178CD	P-126685	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178CE	P-164623	P-283008	P-81095	P-124127	P-288118	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
178CF	P-164623	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
178CG	P-164623	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178CH	P-143556	P-283005	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178CJ	P-126648	P-283008	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
178CK	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178CL	P-155456	P-283015	P-81095	P-124127	P-43B081	P-89742	P-247237	P-287354	P-81517	P-247238	P-287344	P-81516
178CM	P-126647	P-82908	P-81095	P-124127	P-288118	P-89742	P-163915	P-287879	P-163917	P-167855	P-287878	P-162595
178CN	P-164623	P-283012	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178CP	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
178CR	P-166103	P-82908	P-81095	P-124127	P-288118	P-89742	P-163915	P-287879	P-163917	P-167855	P-287878	P-162595
178CS	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178CT	P-126685	P-283012		P-124127	P-288118	P-89741	P-81529	P-81533		P-81528	P-81532	
178CU	P-126647	P-112442	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-167855	P-287878	P-162595
178CW	P-155456	P-43B082	P-81095	P-124127	P-43B081	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
178CY	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-219781	P-219780	P-81517	P-164053	P-81452	P-81516

*P43B081 pole piece is stamped "H" to indicate Hydrogen Annealed

TABLE OF VARIABLE PARTS (CONTD)

SECTION 040-219-801

Relay	Coil	Armature Assembly	Guide Block		Pole Piece (Front)	Screw (Spring Mounting)	Springs					
			(Top)	(Bottom)			1B	2B	3B	1T	2T	3T
178DA	P-143556	P-283008	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
178DB	P-162519	P-283008	P-81095	P-124127	P-288118	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
178DC	P-143556	P-250209	P-81095	P-81527	P-296767	P-89742	P-162592	P-242183	P-163917	P-162593	P-242183	P-162595
178DD	P-208883	P-283008	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
178DE	P-126647	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178DG	P-143556	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178DH	P-163871	P-82908	P-81095	P-124127	P-288118	P-89742	P-163915	P-287879	P-163917	P-167855	P-287878	P-162595
178DJ	P-143556	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178DK	P-126685	P-283008	P-87889	P-124127	P-288118	P-89742	P-287876	P-287879	P-163917	P-287875	P-287878	P-162595
178DL	P-209704	P-283005	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178DM	P-126685	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178DN	P-149311	P-283012	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178DP	P-128933	P-112442	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81401	P-81452	P-81516
178DR	P-208964	P-82908	P-87889	P-124127	P-288118	P-89742	P-287876	P-287879	P-163917	P-287875	P-287878	P-162595
178DS	P-143556	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178DT	P-143556	P-283005	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178DU	P-143556	P-283005	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178DW	P-164623	P-132696	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178DY	P-126685	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178EA	P-215264	P-283014	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-287889	P-81532	
178EB	P-208964	P-283007	P-81095	P-81527	P-296767	P-89742	P-81520	P-81526	P-81517	P-81519	P-81526	P-81516
178EC	P-164648	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-81401	P-81452	P-81516
178ED	P-216405	P-283008	P-216406	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-87907	P-81452	P-81516
178EE	P-126685	P-283009	P-87889	P-124127	P-296767	P-89742	P-110514	P-110520	P-81517	P-128004	P-81452	P-81516
178EF	P-126685	P-283005	P-81095	P-124127	P-296767	P-89742	P-162592	P-162594	P-163917	P-162593	P-162594	P-162595
178EG	P-126685	P-283008	P-81095	P-124127	P-288118	P-89742	P-81448	P-84685	P-81517	P-163179	P-163178	P-81516
178EH	P-136043	P-248712	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178EJ	P-221458	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178EK	P-221492	P-132696	P-81095	P-124127	P-296767	P-89742	P-81520	P-81518	P-81517	P-81519	P-81518	P-81516
178EL	P-126647	P-82908	P-81095	P-124127	P-288118	P-89742	P-81448	P-86604	P-81517	P-81401	P-86603	P-81516
178EM	P-129330	P-283008	P-87889	P-124127	P-288118	P-89742	P-87908	P-84685	P-81517	P-87907	P-81452	P-81516
178EN	P-143556	P-296768	P-81095	P-124127	P-288118	P-89742	P-163915	P-167854	P-163917	P-167855	P-163178	P-162595
179A	See page 8											

TABLE OF CONTACT INSULATORS AND CONTACT SPRING STUDS

RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD	RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD	RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD	RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD
121A	P-81126		122AJ	P-81126		122BU	P-81126	P-81240	122DJ	P-81126	P-81240
122A	P-81126	P-81240	122AK	P-81126		122BW	P-81126	P-81240	122DK	P-81126	P-81240
122B	P-81126	P-81240	122AL	P-81126		122BY	P-81126	P-81240	122DL	P-81126	P-81240
122C	P-81126	P-81240	122AM	P-81126		122BZ	P-81126	P-81240	122DM	P-81126	
122D	P-81126	P-81240	122AN	P-81126		122CA	P-81126		122DN	P-81126	P-81240
122E	P-81126	P-81240	122AP	P-81126		122CB	P-81126		122DP	P-81126	P-81240
122F	P-81126	P-81240	122AR	P-81126		122CC	P-81126	P-81240	122DR	P-81126	
122G	P-81126	P-81240	122AS	P-81126		122CD	P-81126	P-81240	122DS	P-81126	P-81240
122H	P-81126	P-81240	122AT	P-81126	P-81240	122CE	P-81126		122DT	P-81126	P-81240
122J	P-81126	P-81240	122AU	P-81126	P-81240	122CF	P-81126		122DU	P-81126	
122K	P-81126	P-81240	122AW	P-81126	P-81240	122CG	P-81126	P-81240	122DY	P-81126	
122L	P-81126	P-81240	122AY	P-81126		122CJ	P-81126		122DZ	P-81126	P-81240
122M	P-81126	P-81240	122AZ	P-81126		122CK	P-81126		122EA	P-81126	
122N	P-81126	P-81240	122BA	P-81126		122CL	P-81126		122EB	P-81126	
122P	P-81126	P-81240	122BB	P-81126		122CM	P-81126		122EC	P-81126	P-81240
122R	P-81126	P-81240	122BC	P-81126		122CN	P-81126	P-81240	122ED	P-81126	
122S	P-81126	P-81240	122BD	P-81126		122CP	P-81126	P-81240	122EE	P-81126	
122T	P-81126	P-81240	122BE	P-81126		122CR	P-81126		122EF	P-81126	P-81240
122U	P-81126	P-81240	122BF	P-81126		122CS	P-81126		122EG	P-81126	
122W	P-81126	P-81240	122BG	P-81126		122CT	P-81126		122EJ	P-81126	
122Y	P-81126	P-81240	122BH	P-81126		122CU	P-81126	P-81240	122EK	P-81126	
122Z	P-81126	P-81240	122BJ	P-81126		122CW	P-81126	P-81240	122EL	P-81126	
122AA	P-81126		122BK	P-81126		122DA	P-81126		122EM	P-81126	P-81240
122AB	P-81126		122BL	P-81126		122DB	P-81126	P-81240	122EP	P-81126	P-81240
122AC	P-81126		122BM	P-81126		122DC	P-81126	P-81240	122ER	P-81126	P-81240
122AD	P-81126		122BN	P-81126	P-81240	122DD	P-81126	P-81240	122ET	P-81126	
122AE	P-81126		122BP	P-81126	P-81240	122DE	P-81126	P-81240			
122AF	P-81126		122BR	P-81126	P-81240	122DF	P-81126				
122AG	P-81126		122BS	P-81126	P-81240	122DG	P-81126				
122AH	P-81126		122BT	P-81126	P-81240	122DH	P-81126	P-81240			

RELAY	LOWER TERMINAL INSULATOR	UPPER TERMINAL INSULATOR	ESCUTCHEON PINS	RELAY	LOWER TERMINAL INSULATOR	UPPER TERMINAL INSULATOR	ESCUTCHEON PINS	RELAY	LOWER TERMINAL INSULATOR	UPPER TERMINAL INSULATOR	ESCUTCHEON PINS
125B	P-82991	P-82990	P-110559	125T	P-82991	P-82990	P-110559	179A	P-82991	P-160407	P-110559
125D	P-82116			125Y	P-82116			*149 type	P-288044		
125E	P-82116			125Z	P-82991	P-82990	P-110559	149W	P-138352 Spacer		
				125AA	P-82991	P-82990	P-110559				
				125AB	P-82116						
125H	P-82116							162A	P-288045	P-235052	P-110559
125J	P-82116			125AE	P-82991	P-82990	P-110559	162B	P-288044		
								162C	P-288044		
125L	P-82991	P-82990	P-110559	125AG	P-82991	P-82990	P-110559	162D	P-288045	P-235052	P-110559
								162E	P-288045	P-235052	P-110559
125N	P-82116							162F	P-288045	P-235052	P-110559
125P	P-82116			125AM	P-82116			162G	P-288045	P-235052	P-110559
								162H	P-288045	P-235052	P-110559
				125AP	P-82116			162J	P-288045	P-235052	P-110559
								162K	P-288045	P-235052	P-110559

* Except No. 149W.

TABLE OF CONTACT INSULATORS AND CONTACT SPRING STUDS (Cont)

RELAY	LOWER TERMINAL INSULATOR	UPPER TERMINAL INSULATOR	ESCUTCHEON PINS	RELAY	LOWER TERMINAL INSULATOR	UPPER TERMINAL INSULATOR	ESCUTCHEON PINS	RELAY	LOWER TERMINAL INSULATOR	UPPER TERMINAL INSULATOR	ESCUTCHEON PINS
162L	P-288045	P-235052	P-110559	162AA	P-288045	P-235052	P-110559	162AL	P-288045	P-235052	P-110559
162M	P-288045	P-235052	P-110559	162AB	P-288044			162AM	P-288044		
162N	P-288045	P-235052	P-110559	162AC	P-288045	P-235052	P-110559	162AN	P-288045	P-235242	P-110559
162P	P-288045	P-235052	P-110559	162AD	P-288045	P-235052	P-110559	162AP	P-288045	P-235052	P-110559
162R	P-288045	P-235052	P-110559	162AE	P-288044			162AR	P-288044		
162S	P-288045	P-235052	P-110559	162AF	P-288044			162AS	P-288045	P-235242	P-110559
162T	P-288044			162AG	P-288045	P-235052	P-110559	162AT	P-288044		
162U	P-288045	P-235052	P-110559	162AH	P-288044			162AU	P-288045	P-235242	P-110559
162W	P-288045	P-235052	P-110559	162AJ	P-288045	P-235242	P-110559				
162Y	P-288045	P-235052	P-110559	162AK	P-288045	P-235052	P-110559				

RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD	RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD	RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD	RELAY	LOWER TERMINAL INSULATOR	CONTACT SPRING STUD
178A	P-81126	P-81240	178AT	P-81126	P-81240	178CG	P-81126	P-81240	178DU	P-81126	P-81240
178B	P-81126	P-81240	178AU	P-81126		178CH	P-81126	P-166229	178DW	P-81126	P-166229
178E	P-81126	P-297394	178AW	P-81126		178CJ	P-81126		178DY	P-81126	
178F	P-81126	P-297394	178AY	P-81126	P-81240	178CK	P-81126		178EA	P-81126	P-81240
178G	P-81126		178BA	P-81126		178CL	P-81126		178EB	P-81126	P-81240
178H	P-81126		178BB	P-81126	P-81240	178CM	P-81126		178EC	P-81126	
178J	P-81126	P-166229	178BC	P-81126	P-81240	178CN	P-81126	P-81240	178ED	P-81126	
178K	P-81126	P-81240	178BD	P-81126	P-81240	178CP	P-81126		178EE	P-81126	P-81240
178L	P-81126		178BE	P-81126	P-81240	178CR	P-81126		178EF	P-81126	P-166229
178M	P-81126	P-166229	178BF	P-81126	P-166229	178CS	P-81126		178EG	P-81126	
178N	P-81126	P-166229	178BG	P-81126		178CT	P-81126		178EH	P-81126	P-81240
178P	P-81126	P-81240	178BH	P-81126		178CU	P-81126	P-81240	178EJ	P-81126	P-81240
178R	P-81126	P-81240	178BJ	P-81126		178CW	P-81126		178EK	P-81126	P-81240
178S	P-81126	P-81240	178BK	P-81126		178CY	P-81126		178EL	P-81126	
178T	P-81126		178BL	P-81126	P-166229	178DA	P-81126		178EM	P-81126	
178U	P-81126	P-166229	178BM	P-81126		178DB	P-81126		178EN	P-81126	
178W	P-81126		178BN	P-81126	P-81240	178DC	P-81126	P-81240	*179A		
178AA	P-81126	P-81240	178BP	P-81126	P-166229	178DD	P-81126				
178AB	P-81126		178BR	P-81126	P-81240	178DE	P-81126	P-81240			
178AC	P-81126	P-81240	178BS	P-81126		178DG	P-81126	P-166229			
178AD	P-81126		178BT	P-81126	P-81240	178DH	P-81126				
178AE	P-81126	P-81240	178BU	P-81126	P-81240	178DJ	P-81126				
178AF	P-81126		178BW	P-81126		178DK	P-81126				
178AG	P-81126		178BY	P-81126		178DL	P-81126	P-166229			
178AH	P-81126		178CA	P-81126		178DM	P-81126	P-81240			
178AJ	P-81126		178CB	P-81126		178DN	P-81126	P-81240			
178AK	P-81126		178CC	P-81126		178DP	P-81126	P-166229			
178AL	P-81126		178CD	P-81126	P-81240	178DR	P-81126				
178AM	P-81126		178CE	P-81126		178DS	P-81126	P-81240			
178AS	P-81126	P-81240	178CF	P-81126		178DT	P-81126	P-166229			

*Listed after 125-type relays.

3. REPLACEMENT PROCEDURES3 01 List of Tools

<u>Spec No.</u>	<u>Description</u>
KS-6854	3-1/2-in. Screwdriver
-	4-in. Regular Screwdriver

3.02 After making any replacement of parts of a relay, the part or parts replaced shall meet the readjust requirements involved as specified in Section 040-219-701 covering this apparatus. Other parts whose adjustments may have been directly disturbed by the replacing operations shall be checked to the readjust requirements and an over-all operation check shall be made of the relay before restoring the circuit to service.

3.03 In replacing some parts, it will be necessary to remove the relay from the frame in order to obtain access to the part. Unsolder the leads from the terminals and remove the relay from the frame by removing the mounting screws with the 4-inch regular screwdriver.

3.04 No replacement procedures are specified for screws and other parts when the replacement procedure consists of a simple operation.

Coil, Armature Assembly, Armature Support, and Rear Pole Piece

3.05 Coil: To replace the coil, first remove the relay from the frame as outlined in 3.03. Remove the shell. Remove the front pole piece mounting screw with the 4-inch regular screwdriver and remove the stud and plate and the front

pole piece. Remove the coil mounting screw with the 4-inch regular screwdriver and replace the coil. Assemble and tighten the coil mounting screw securely. Reposition the front pole piece and stud and plate and tighten the pole piece mounting screw securely. Unless the relay is equipped with a riveted spring insulating plate, make sure the plate is properly positioned on the pin of the pole piece and that the contact springs fit in the grooves of the plate.

3.06 Armature Assembly, Armature Support, and Rear Pole Piece: To replace any of these parts, first remove the coil as outlined in 3.05. Remove the base plate mounting screw with the KS-6854 screwdriver and remove the base plate.

Remove the spring assembly mounting screw or screws with the KS-6854 screwdriver and remove the spring assembly. Remove the armature support mounting screws with the KS-6854 screwdriver and replace the armature assembly, armature support, or rear pole piece, as required. See Note 1, Fig. 3, for replacing rear pole piece. Assemble the armature support mounting screws, but do not tighten the screws. Assemble the base plate and base plate mounting screw, but do not tighten the screw. Position the coil in the base plate and assemble and tighten the coil mounting screw securely. Tighten the base plate mounting screw securely. Reposition the front pole piece and stud and plate and tighten the pole piece screw securely. Position and hold the armature so that it is in alignment with the front pole piece. Tighten the armature support mounting screws securely. Assemble the spring assembly and the front insulating plate, if it was removed, align the spring, and tighten the spring assembly screw or screws securely.