

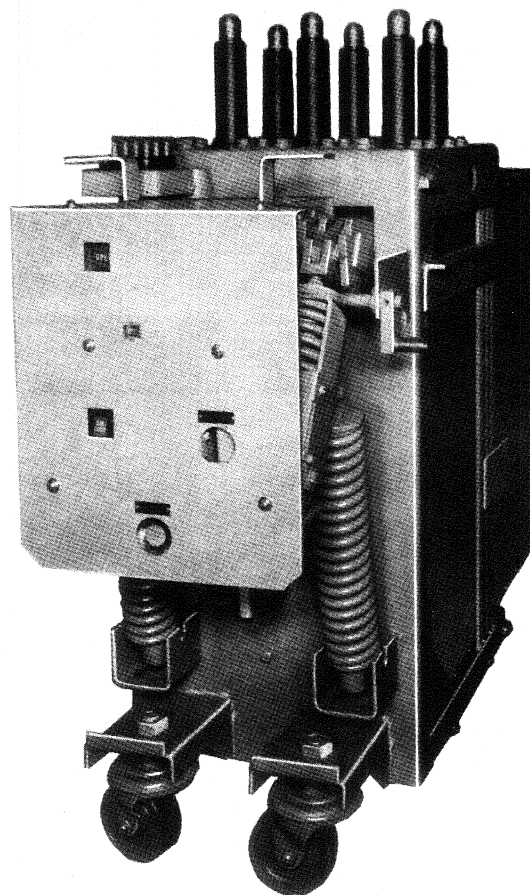


RENEWAL PARTS

Type ML-13 Mechanisms

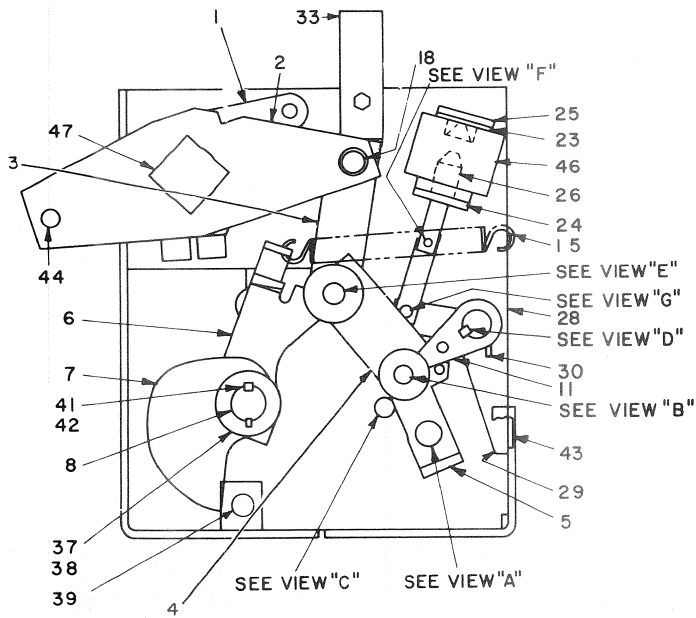
Ordering Instructions

1. Always specify the complete nameplate data of the mechanism.
2. Specify the quantity, catalog number (if listed), reference number (if listed), description, and this bulletin number.
3. Standard hardware, such as screws, bolts, nuts, washers, etc., is not listed in this bulletin. Such items should be purchased locally.
4. Renewal parts for breakers qualified for use in 1E equipment will require different ordering information for certain parts.
5. For prices, refer to the nearest office of the General Electric Company.

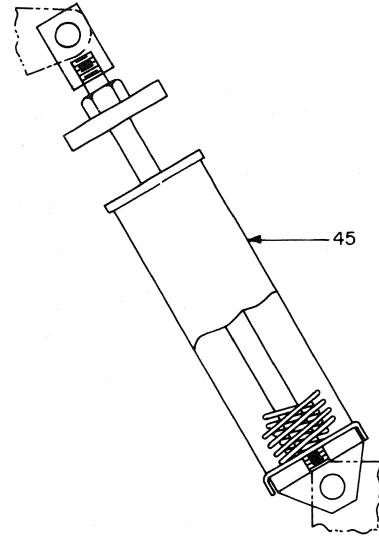


Data is subject to change without notice.

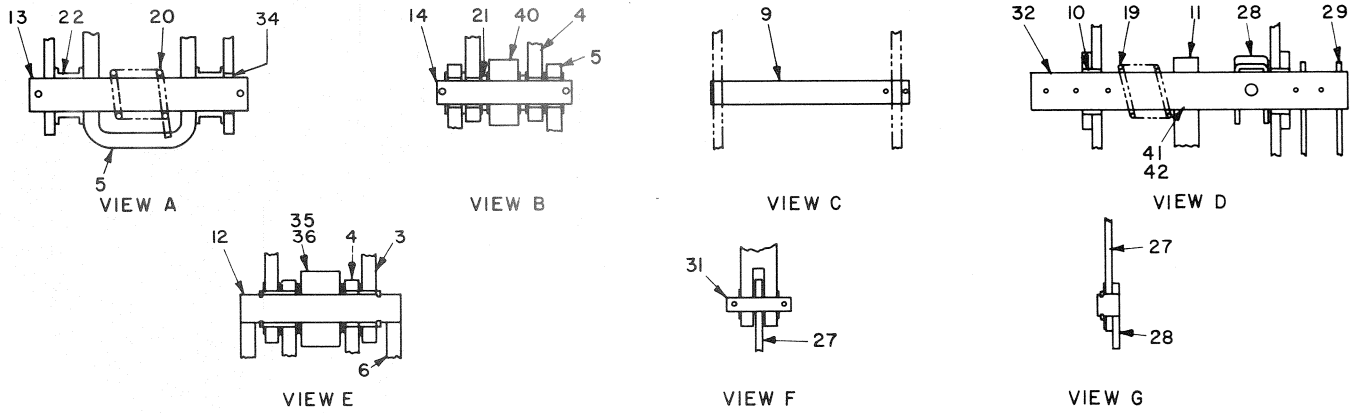
ML-13 STORED ENERGY MECHANISM



A. Sectional side view



B. Opening spring assembly



C. Detailed view

Fig. 1.

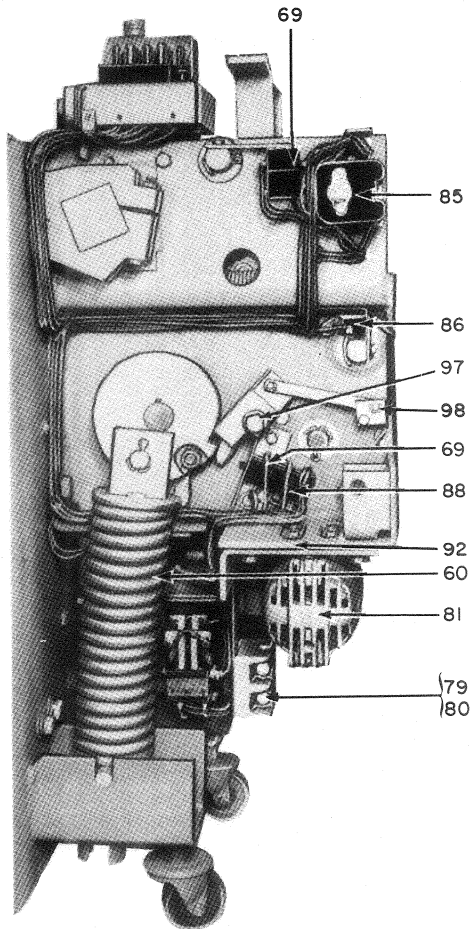
ML-13 STORED ENERGY MECHANISM

GEF-4379

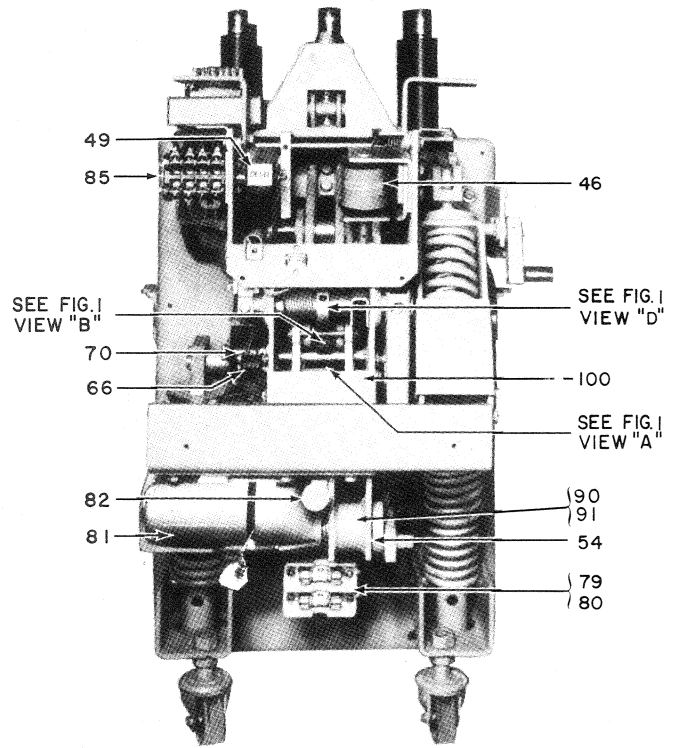
Ref. No.	Number Required for Type AM-						Catalog Number	Description
	4.16 KV		7.2 KV		13.8 kV			
	250 MVA	350 MVA	500 MVA	500 MVA	750 MVA	1000 MVA		
1	4	4	4	4	4	4	134C3488P1	Crank
2	2	2	2	2	2	2	213X702G11	Crank
3	1	1	1	1	1	1	213X702G12	Link
4	2	2	2	2	2	—	213X702G20	Link
4	—	—	—	—	—	2	134C3585P3	Link
5	1	1	1	1	1	2	213X702G21	Link
5	—	—	—	—	—	1	213X702G19	Link
6	1	1	1	1	1	1	213X702G13	Prop
7	1	1	1	1	1	1	0105C9311G2	Cam
8	1	1	1	1	1	1	0105C9310P4	Cam shaft
9	1	1	1	1	1	1	105C9304P3	Stop pin
10	2	2	2	2	2	2	456A885P21	Bushing
11	1	1	1	1	1	1	105C9302G2	Latch (trip)
12	1	1	1	1	1	1	105C9302P4	Pin (prop)
13	1	1	1	1	1	1	105C9301P7	Pin
14	1	1	1	1	1	1	105C9301P8	Pin
14	—	—	—	—	—	1	134C3585P5	Pin
15	1	1	1	1	1	1	137A9252P1	Prop spring
ΔΔ16	Δ	1	1	—	1	1	6071231P1	Prop spring No. 2
ΔΔ17	Δ	1	1	—	1	1	108B5466G1	Support
18	1	1	1	1	1	1	105C9308P4	Shaft
19	1	1	1	1	1	1	137A9262P1	Latch spring
20	1	1	1	1	1	1	137A9261P1	Reset spring
21	2	2	2	2	2	—	456A876P134	Spacer
22	2	2	2	2	2	2	456A876P136	Spacer
23	1	1	1	1	1	1	114C5347P6	Pole piece
24	1	1	1	1	1	1	114C5347G1	Coil support (tripping)
25	1	1	1	1	1	1	105C9316P2	Coil support (tripping)
26	1	1	1	1	1	1	114C5347P4	Armature
27	1	1	1	1	1	1	105C9316P5	Link
28	1	1	1	1	1	1	105C9316G1	Crank
29	1	1	1	1	1	1	105C9316P8	Crank
30	1	1	1	1	1	1	105C9316P9	Paddle
31	1	1	1	1	1	1	6076402P5	Pin
32	1	1	1	1	1	1	114C5324P8	Trip shaft
33	1	1	1	1	1	1	161A4287G1	Handle
34	2	2	2	2	2	2	456A885P206	Bushing
35	1	1	1	1	1	1	414A112P52	Bearing (O.R.)
36	1	1	1	1	1	1	414A112P53	Bearing (I.R.)
37	2	2	2	2	2	2	414A112P94	Bearing (O.R.)
38	2	2	2	2	2	2	414A112P95	Bearing (I.R.)
39	2	2	2	2	2	2	414A112P61	Bearing (O.R.)
40	1	1	1	1	1	—	414A112P1	Bearing (O.R. & I.R.)
40	—	—	—	—	—	1	414A112P54	Bearing (O.R.)
41	3	3	3	3	3	3	N3401P808	Woodruff key
42	1	1	1	1	1	2	105C9310P7	Square key
ΔΔ43	1	1	1	1	1	1	0105C9317G1	Mechanism cover
44	3	3	3	3	3	3	619C478P19	Pin
45	∅1	—	—	—	—	—	213X505G17	Opening spring
45	†1	—	—	—	—	—	213X341G7	Opening spring
45	—	1	1	1	—	—	213X341G23	Opening spring
45	—	—	—	—	1	*1	213X341G24	Opening spring
45	—	—	—	—	—	∅1	213X341G3	Opening spring
46	1	1	1	1	1	1	6275070G1	Trip coil, 24 Vdc
46	1	1	1	1	1	1	6275070G3	Trip coil, 32 Vdc
46	1	1	1	1	1	1	6174582G34	Trip coil, 48 Vdc
46	1	1	1	1	1	1	6174582G1	Trip coil, 110-125 Vdc
46	1	1	1	1	1	1	6174582G15	Trip coil, 220 Vdc
46	1	1	1	1	1	1	6174582G2	Trip coil, 250 Vdc
46	1	1	1	1	1	1	6174582G13	Trip coil, 115 Vac
46	1	1	1	1	1	1	6174582G3	Trip coil, 230 Vac
47	1	—	—	—	—	—	6443518P2	Square shaft
47	—	1	1	1	1	‡1	6443518P1	Square shaft
ΔΔ48	1	††1	—	—	—	—	161A4283G1	Square shaft spacer
ΔΔ48	—	—	1	1	1	1	161A4283G2	Square shaft spacer

Δ For Type "B" only
 ΔΔ Not illustrated
 ∅ 1200 amp. only
 † 2000 and 2500 amp. only
 * 1200 and 2000 amp. only
 ∅ 3000 and 3750 amp. only
 ‡ For 3000 and 3750 amp. order Cat. No. 6443518P3
 †† For 3000 amp. order Cat. No. 161A4283G4

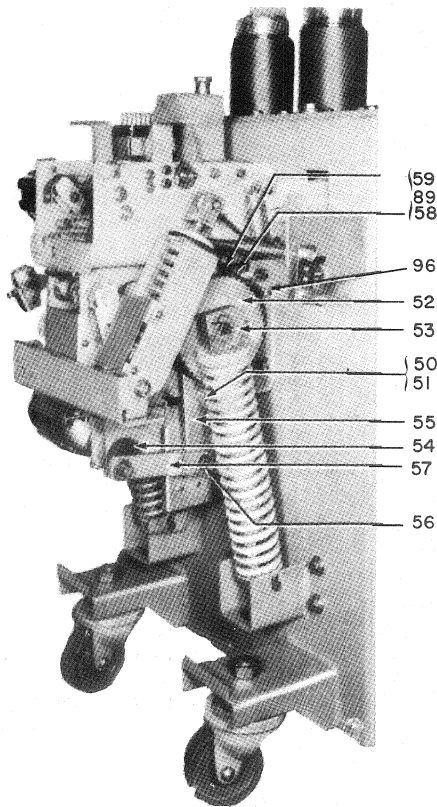
ML-13 STORED ENERGY MECHANISM



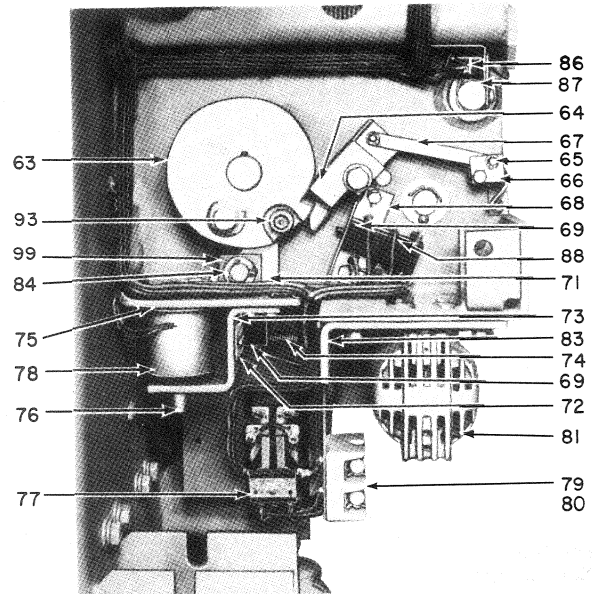
A. Left side view



B. Front view



C. Right side view



D. Left side (bottom) view

Fig. 2.

ML-13 STORED ENERGY MECHANISM

GEF-4379

Ref. No.	Number Required for Type AM-						Catalog Number	Description
	4.16 KV		7.2 KV		13.8 kV			
	250 MVA	350 MVA	500 MVA	500 MVA	750 MVA	1000 MVA		
49	1	1	1	1	1	1	105C9308G2	Indicator (open-closed)
50	1	1	1	1	1	1	213X702G16	Pawl (Driving)
51	1	1	1	1	1	1	161A4241P1	Pawl spring
52	1	1	1	1	1	1	105C9310G1	Ratchet wheel
53	2	2	2	2	2	2	213X702G22	Bearing block
54	1	1	1	1	1	1	165B7926P1	Eccentric
55	1	1	1	1	1	1	0257A6975G1	Crank
56	1	1	1	1	1	1	105C9314P3	Pin
57	1	1	1	1	1	1	213X702G18	Link
58	1	1	1	1	1	1	213X702G14	Pawl (outside)
59	1	1	1	1	1	1	213X702G15	Pawl (inside)
60	2	—	—	2	—	—	114C5393G1	Closing spring ¹
60	—	—	—	—	—	—	114C5393G2	Closing spring ²
60	—	—	2	2	2	—	114C5393G3	Closing spring ³
60	—	—	—	—	—	2	114C5393G4	Closing spring ⁴
60	—	—	—	—	—	2	114C5393G5	Closing spring ⁵
60	—	2	2	—	—	2	114C5393G6	Closing spring ⁶
60	2	—	—	—	—	—	114C5393G7	Closing spring ⁷
60	—	—	—	—	2	—	114C5393G9	Closing spring ⁸
60	—	—	—	—	—	—	114C5393G11	Closing spring ⁹
63	1	1	1	1	1	1	105C9311G2	Cam
64	1	1	1	1	1	1	105C9311G3	Striker
65	1	1	1	1	1	1	6076402P10	Pin
66	1	1	1	1	1	1	105C9306G2	Indicator (Chrdg/Dischrgd)
67	1	1	1	1	1	1	105C9306P7	Link
68	1	1	1	1	1	1	105C9306P5	Switch plate
69	3	3	3	3	3	3	456A866P5	Switch (N.O.)
70	1	1	1	1	1	1	161A4230P1	Indicator spring
71	1	1	1	1	1	1	114C5342G1	Latch (closing)
72	1	1	1	1	1	1	105C9309P5	Switch plate
73	1	1	1	1	1	1	114C5347G2	Coil support
74	1	1	1	1	1	1	161A4231P1	Closing latch spring
75	1	1	1	1	1	1	114C5347P7	Pole piece
76	1	1	1	1	1	1	114C5347G3	Armature
77	1	1	1	1	1	1	137A7575P4	Relay, 48 Vdc
77	1	1	1	1	1	1	137A7575P1	Relay, 110-125 Vdc
77	1	1	1	1	1	1	108B5565G1	Relay, 220-250 Vdc
77	1	1	1	1	1	1	137A7575P5	Relay, 115 Vac
77	1	1	1	1	1	1	137A7575P2	Relay, 230 Vac
78	1	1	1	1	1	1	6174582G34	Closing coil, 48 Vdc
78	1	1	1	1	1	1	6074582G1	Closing coil, 110-125 Vdc
78	1	1	1	1	1	1	6174582G15	Closing coil, 220 Vdc
78	1	1	1	1	1	1	6174582G2	Closing coil, 250 Vdc
78	1	1	1	1	1	1	6174582G10	Closing coil, 115 Vac
78	1	1	1	1	1	1	6174582G14	Closing coil, 230 Vac
79	1	1	1	1	1	1	456A864P121	Fuse block
80	2	2	2	2	2	2	456A864P111	Fuse, 48 Vdc
80	2	2	2	2	2	2	456A864P123	Fuse, 110-125 Vdc
80	2	2	2	2	2	2	456A864P124	Fuse, 220-250 Vdc
80	2	2	2	2	2	2	456A864P123	Fuse, 115 Vac
80	2	2	2	2	2	2	456A864P124	Fuse, 230 Vac
81	1	1	1	1	1	1	0184B7360G001	Motor, 48 Vdc
81	1	1	1	1	1	1	0184B7360G002	Motor, 110 Vdc
81	1	1	1	1	1	1	0184B7360G002	Motor, 125 Vdc
81	1	1	1	1	1	1	0184B7360G003	Motor, 220 Vdc
81	1	1	1	1	1	1	0184B7360G003	Motor, 250 Vdc
81	1	1	1	1	1	1	0184B7360G002	Motor, 115 Vac
81	1	1	1	1	1	1	0184B7360G003	Motor, 230 Vac
82	1	1	1	1	1	1	105C9306G1	Closing button
83	1	1	1	1	1	1	105C9313G1	Motor mount

Refer to
footnotes
1 thru 9

¹ 4.16-250 STD. MOM., 2000-2500 amp., 13.8-250/500 STD. MOM.

² 4.16-150/250 STD. MOM., 1200 amp.

³ 7.2-500 STD. MOM., 13.8-500 HI. MOM., 13.8-750-5 STD. MOM.

⁴ 13.8-750-2, 3, 4, HI. MOM., 13.8-1000-4, 1200-2000 amp.

⁵ 13.8-1000-3, 1200-2000 amp., 13.8-1000-4-300-3750 amp.

⁶ 13.8-1000-3, 3000-3750 amp.

⁷ 4.16-350, 7.2-500 HI. MOM., 13.8-750-2, 3, 4 STD. MOM.

⁸ 4.16-250 HI. MOM.

⁹ 13.8-750-5 HI. MOM.

ML-13 STORED ENERGY MECHANISM

Ref. No.	Number Required for Type AM-						Catalog Number	Description
	4.16 KV		7.2 KV		13.8 kV			
	250 MVA	350 MVA	500 MVA	500 MVA	750 MVA	1000 MVA		
84	1	1	1	1	1	1	105C9309P4	Shaft
85	1	1	1	1	1	1	137A9192G11	Auxiliary switch
86	1	1	1	1	1	1	161A4282G1	Latch checking switch
87	1	1	1	1	1	1	105C9311P2	Striker
88	1	1	1	1	1	1	456A866P6	Switch (N.C.)
89	2	2	2	2	2	2	161A5909P1	Pawl spring
90	2	2	2	2	2	2	414A112P59	Bearing
91	2	2	2	2	2	2	414A112P60	Bearing
92	1	1	1	1	1	1	456A864P138	Terminal board
93	1	1	1	1	1	1	414A112P58	Closing Latch Roller
ΔΔ94	1	1	1	1	1	1	161A4289P2	Thrust race
ΔΔ95	1	1	1	1	1	1	161A4289P3	Thrust race
96	1	1	1	1	1	1	105C9307P17	Spring support
97	1	1	1	1	1	1	456A876P141	Spacer
98	1	1	1	1	1	1	456A876P139	Spacer
99	1	1	1	1	1	1	456A876P140	Spacer
100	1	1	1	1	1	1	105C9304P13	Cover

∅ 1200 amp only.

ΔΔ Not illustrated

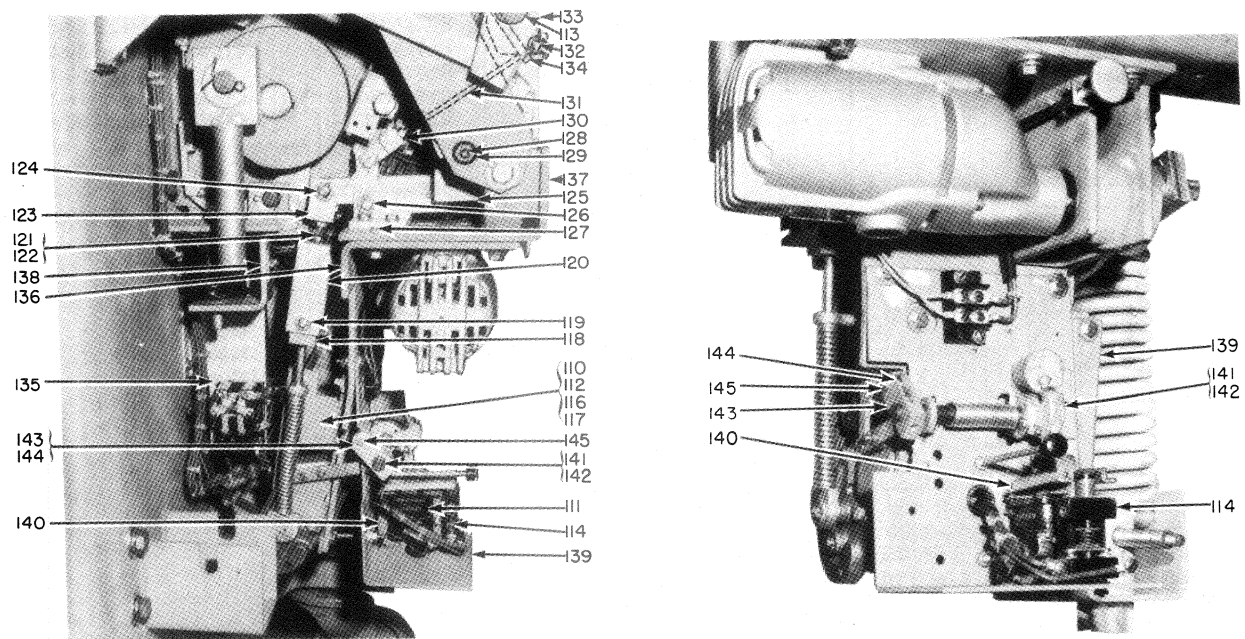


Fig. 3. Current trip and undervoltage device

ML-13 STORED ENERGY MECHANISM

GEF-4379

CURRENT TRIP AND UNDERVOLTAGE DEVICE (See Fig. 3)

Ref. No.	Number Required for								Catalog Number	Description
	Current Trip	Current Trip and U.D. (Time/Delay)	U.D. 48 Vdc (Inst.)	U.D. 125 Vdc (Inst.)	U.D. 250 Vdc (Inst.)	U.D. 230 Vac (Inst.)	U.D. 230 Vac (Time/Delay)	U.D. 115 Vac (Inst.)		
110	3	3	—	—	—	—	—	—	6174599G2	Coil, 3A
111	—	—	1	—	—	—	—	—	6275017G45	Coil, 48 Vdc
111	—	—	—	1	—	—	—	—	6275017G15	Coil, 125 Vdc
111	—	—	—	—	1	—	—	—	WSF3241202	Coil, 250 Vdc
111	—	—	—	—	—	1	1	—	6275017G12	Coil, 230 Vac
111	—	—	—	—	—	—	—	1	6275017G16	Coil, 115 Vac
112	3	3	—	—	—	—	—	—	6116449G1	Instantaneous trip solenoid
113	1	1	1	1	1	1	1	1	114C5400P12	Shaft trip
114	—	—	1	1	1	—	—	—	6275259G2	Cutoff switch, dc
114	—	1	—	—	—	1	1	1	6275259G1	Cutoff switch, ac
∆∆115	—	—	1	—	—	—	—	—	161A5937G3	Resistor, 48 Vdc
∆∆115	—	—	—	1	—	—	—	—	161A5937G1	Resistor, 125 Vdc
∆∆115	—	—	—	—	1	—	—	—	161A5937G2	Resistor, 250 Vdc
116	1	—	—	—	—	—	—	—	114C5434G1	Current trip
116	—	1	1	1	1	1	1	1	114C5434G2	Current trip
117	1	1	1	1	1	1	1	1	6116526G2	Latch checking switch
118	1	1	1	1	1	1	1	1	134C3598P4	Head
119	1	1	1	1	1	1	1	1	6076403P17	Pin
120	1	1	1	1	1	1	1	1	134C3598P2	Yoke
121	1	1	1	1	1	1	1	1	134C3598P1	Piston
122	1	1	1	1	1	1	1	1	208A8097P1	Spring
123	1	1	1	1	1	1	1	1	114C5399P8	Clevis
124	1	1	1	1	1	1	1	1	114C5401P4	Pin
125	1	1	1	1	1	1	1	1	114C5399G4	Crank
126	1	1	1	1	1	1	1	1	6076404P9	Pin
127	1	1	1	1	1	1	1	1	114C5401P3	Bearing
128	1	1	1	1	1	1	1	1	114C5401P5	Pin
129	1	1	1	1	1	1	1	1	114C5400P10	Roller
130	1	1	1	1	1	1	1	1	114C5400P4	Clevis
131	1	1	1	1	1	1	1	1	114C5400G1	Rod
132	1	1	1	1	1	1	1	1	6076402P17	Pin
133	1	1	1	1	1	1	1	1	114C5400P7	Crank
134	1	1	1	1	1	1	1	1	114C5400P8	Paddle
135	1	1	1	1	1	1	1	1	108B5595G1	Plate relay mounting
136	1	1	1	1	1	1	1	1	114C5401G1	Motor mount
137	1	1	1	1	1	1	1	1	114C5399P1	Mechanism frame
138	1	1	1	1	1	1	1	1	114C5347G4	Coil support
139	—	—	1	1	1	1	—	1	114C5402P1	Undervoltage frame
139	—	1	—	—	—	—	1	—	114C5402P7	Undervoltage frame
140	—	—	1	1	1	1	—	1	6316605G23	Undervoltage device (dc instantaneous)
140	—	1	—	—	—	—	1	—	6316605G24	Undervoltage device (ac time delay)
141	—	—	1	1	1	1	—	1	114C5402G1	Crank and shaft
142	—	1	—	—	—	—	1	—	114C5402G2	Crank and shaft
143	—	1	1	1	1	1	1	1	114C5399P4	Clevis
144	—	1	1	1	1	1	1	1	414A112P40	Bearing
145	—	1	1	1	1	1	1	1	114C5399P5	Pin
∆∆146	—	1	—	—	—	—	1	—	114C5402G3	Cover

∆∆ Not illustrated

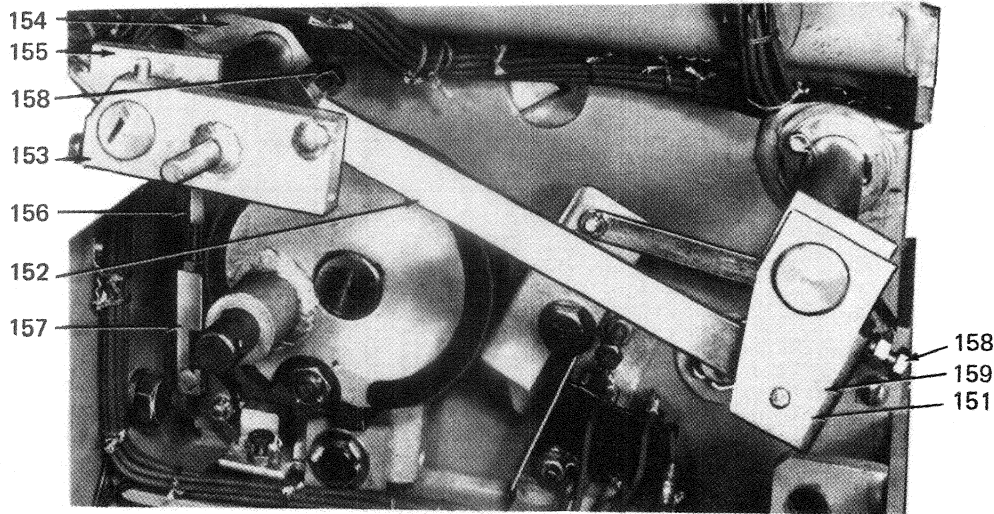
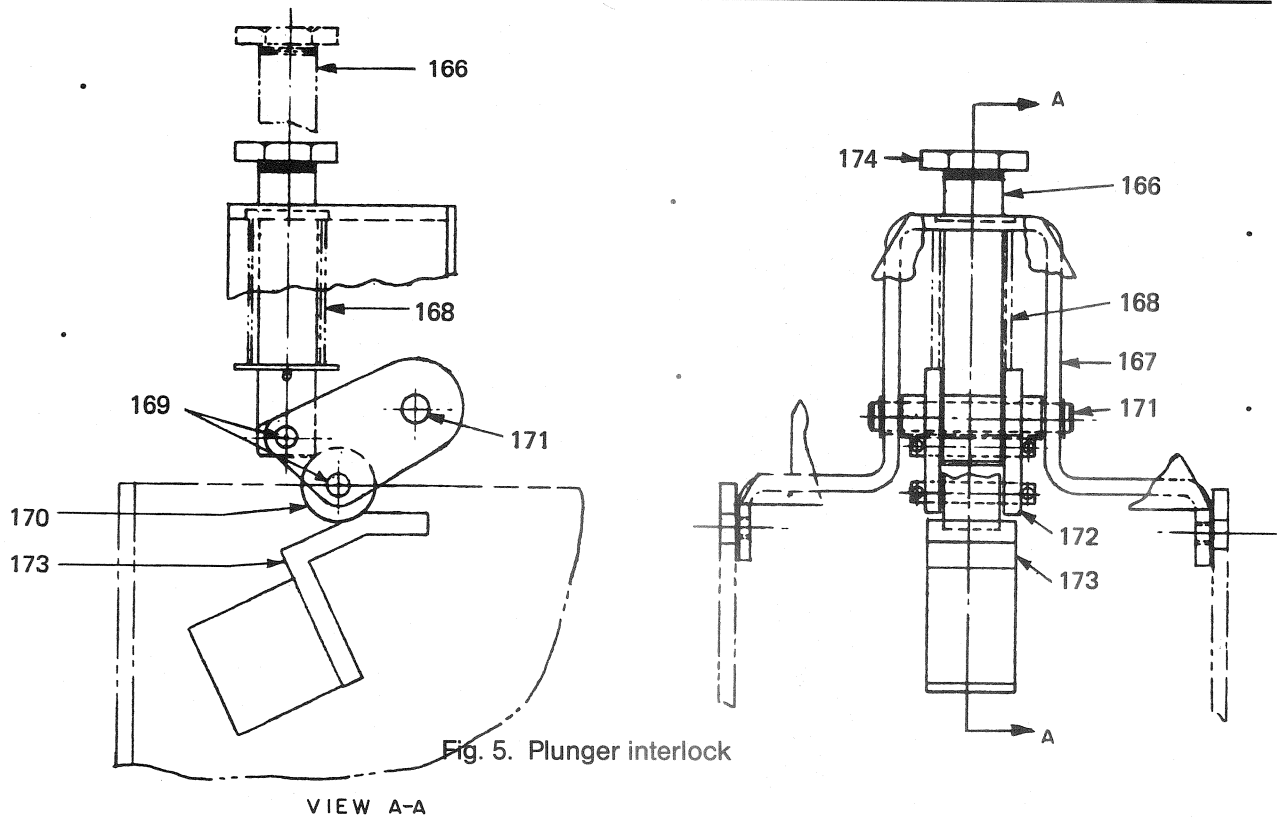


Fig. 4. Spring release

SPRING RELEASE (See Fig. 4)

Ref. No.	Ampere Rating	Number Required for Type AM-						Catalog Number	Description
		4.16 KV		7.2 KV	13.8 kV				
		250 MVA	350 MVA	500 MVA	500 MVA	750 MVA	1000 MVA		
150	1200A							114C5413G1	Spring discharge assembly, complete
	2000A	1	—	—	—	—	—		
	1200A								
150	2000A	—	—	1	1	1	1	114C5413G2	Spring discharge assembly, complete
150	3000	—	—	—	—	—	1	114C5413G3	Spring discharge assembly, complete
150	1200	—	1	—	—	—	—	114C5413G4	Spring discharge assembly, complete
150	3000	—	1	—	—	—	—	114C5413G5	Spring discharge assembly, complete
151	All	1	1	1	1	1	1	114C5341P2	Crank
	1200								
152	2000	1	1	—	—	—	—	114C5341P11	Link
152	3000	—	—	—	1	—	—	114C5341P11	Link
	1200								
152	2000	—	—	1	1	1	1	114C5341P9	Link
152	3000	—	1	—	—	—	—	114C5341P10	Link
153	All	1	1	—	—	—	—	114C5343G2	Crank
153	All	—	—	1	1	1	1	114C5343G3	Crank
154	All	—	—	1	1	1	1	114C5343G2	Crank
155	All	1	1	1	1	1	1	114C5324P6	Clevis
156	All	1	1	1	1	1	1	114C5343P11	Rod
157	All	1	1	1	1	1	1	114C5342G4	Clevis
158	All	1	1	1	1	1	1	208A8068P1	Crank
*159	All	1	1	1	1	1	1	114C5341P8	Paddle

* Part not illustrated (position only indicated)



Plunger Interlock for ML-13 Mechanism (See Fig. 5)

Ref. No.	Cat. No.	No. Reqd.	Description
165	0105C9305G001	1	Plunger interlock, complete
166	0236C0897P012	1	¶Plunger
167	0105C9305G002	1	Bracket assembly
168	006509728P001	1	Spring
169	0137A6085P023	2	Pin
170	0236C0787P014	1	Roller
171	0414A0110P006	1	Pin
172	0105C9305P006	2	Crank
173	0105C9305P007	1	Clip
174	0161A5948P001	1	Bolt

¶ For Type AM13.8-1000, 1200, and 2000 amps., order Cat. No. 0236C0787P27

Secondary Disconnect Device (See Fig. 6)

Ref. No.	Cat. No.	No. Reqd.	Description
180	0108B1931G005	1	Secondary disconnect device complete, 16 points
181	006319964P002	16	Contact plug
182	000848768P001	16	Lockwasher for contact plug
183	006505244P001	1	Contact socket, 16 point
184	0366A0234P001	†	Contact nut for No. 8 wire
184	0366A0234P002	†	Contact nut for No. 14 wire
148	0366A0234P003	†	Contact nut for No. 12 wire

† Total of 16 required. Order size and quantity to correspond with size and quantity of wires entering the secondary disconnect device.

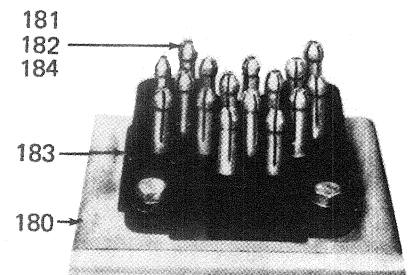


Fig. 6. Secondary disconnect device

ML-13 STORED ENERGY MECHANISM

PARTS RECOMMENDED FOR NORMAL MAINTENANCE

Ref. No.	Catalog Number	No. Req'd	Description
46	6275070G1	1	Trip coil, 24 Vdc
46	6275070G3	1	Trip coil, 32 Vdc
46	6174582G34	1	Trip coil, 48 Vdc
46	6174581G1	1	Trip coil, 110-125 Vdc
46	6174582G15	1	Trip coil, 220 Vdc
46	6174582G2	1	Trip coil, 250 Vdc
46	6174582G13	1	Trip coil, 115 Vac
46	6174582G3	1	Trip coil, 230 Vac
77	137A7575P4	1	Relay, 48 Vdc
77	137A7575P1	1	Relay, 110-125 Vdc
77	108B5565G1	1	Relay, 220-250 Vdc
77	137A7575P5	1	Relay, 115 Vac
77	137A7575P2	1	Relay, 230 Vac
78	6174582G34	1	Closing coil, 48 Vdc
78	6074582G1	1	Closing coil, 110-125 Vdc
78	6174582G15	1	Closing coil, 220 Vdc
78	6174582G2	1	Closing coil, 250 Vdc
78	6174582G10	1	Closing coil, 115 Vac
78	6174582G14	1	Closing coil, 230 Vac
81	0184B7360	1	G001—Motor, 48 Vdc
81	0184B7360	1	G002—Motor, 110 Vdc
81	0184B7360	1	G002—Motor, 125 Vdc
81	0184B7360	1	G003—Motor, 220 Vdc
81	0184B7360	1	G003—Motor, 250 Vdc
81	0184B7360	1	G002—Motor, 115 Vac
81	0184B7360	1	G003—Motor, 230 Vac
51	161A4241P1	1	Driving pawl spring
69	456A866P5	3	Switch (N.O.)
74	161A4231P1	1	Closing latch spring
85	137A9192G11	1	Auxiliary switch
88	456A866P6	1	Switch (N.C.)
89	161A5909P1	2	Latching pawl spring

MEMORANDUM
