

Part Catalogue No. 6192-9

July, 1924

For prices refer to Catalogue 10-A or apply to nearest District Office

PARTS OF

Westinghouse **Type E-9 Oil Circuit-Breakers**

**Manually and Electrically Operated
Automatic and Non-Automatic
Single Throw, Pipe Mounting
For Indoor Service**

**25 Cycles, 400 to 2250 Amperes, 4500 to 25,000 Volts
60 Cycles, 300 to 2000 Amperes, 4500 to 25,000 Volts**

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When ordering repair parts give the complete Name Plate Reading. Always give the name of the part wanted and the Style Number or the Stock Order Number of the breaker on which the part is to be used.

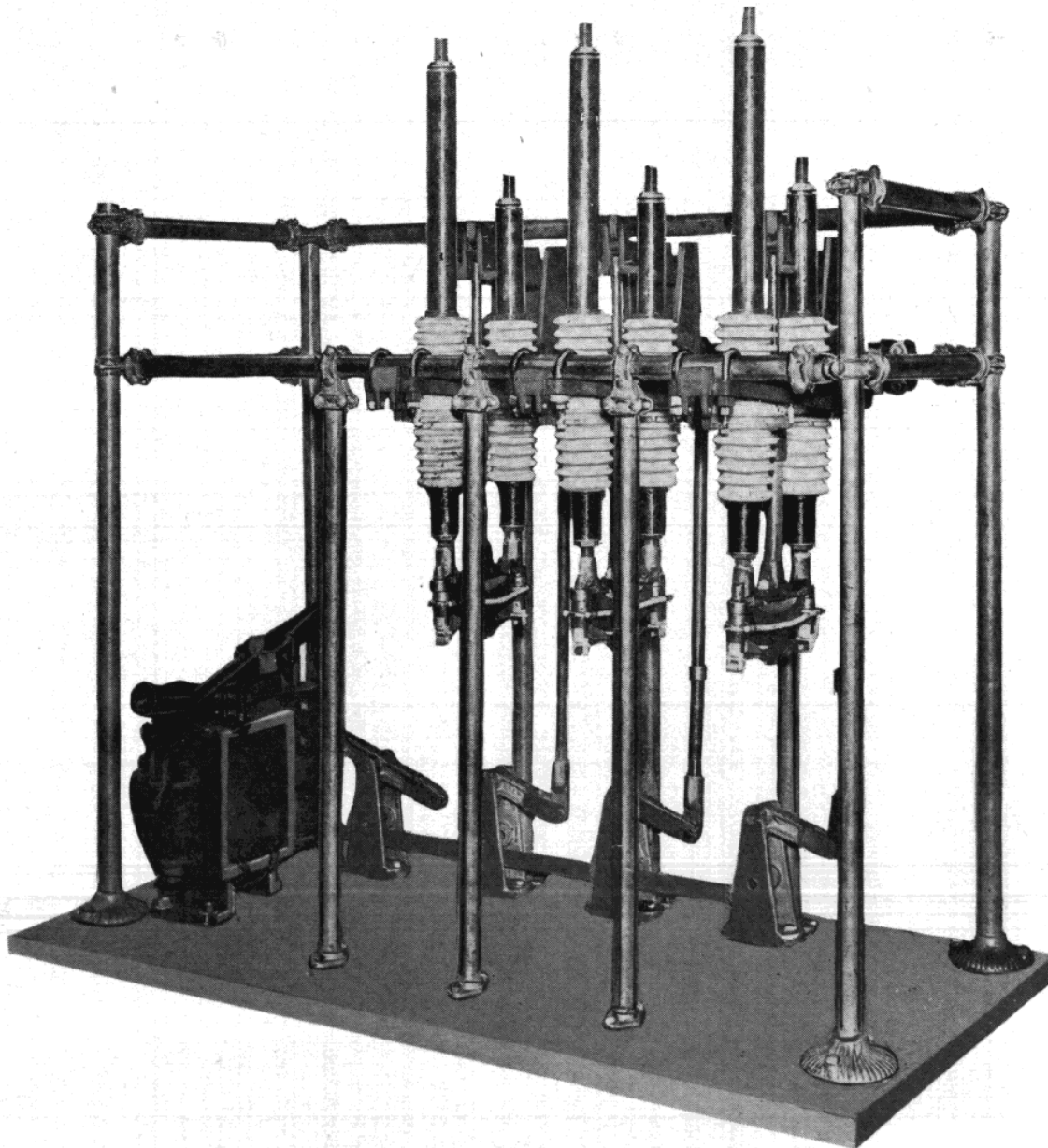


WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
East Pittsburgh, Pa.

Printed in U. S. A.

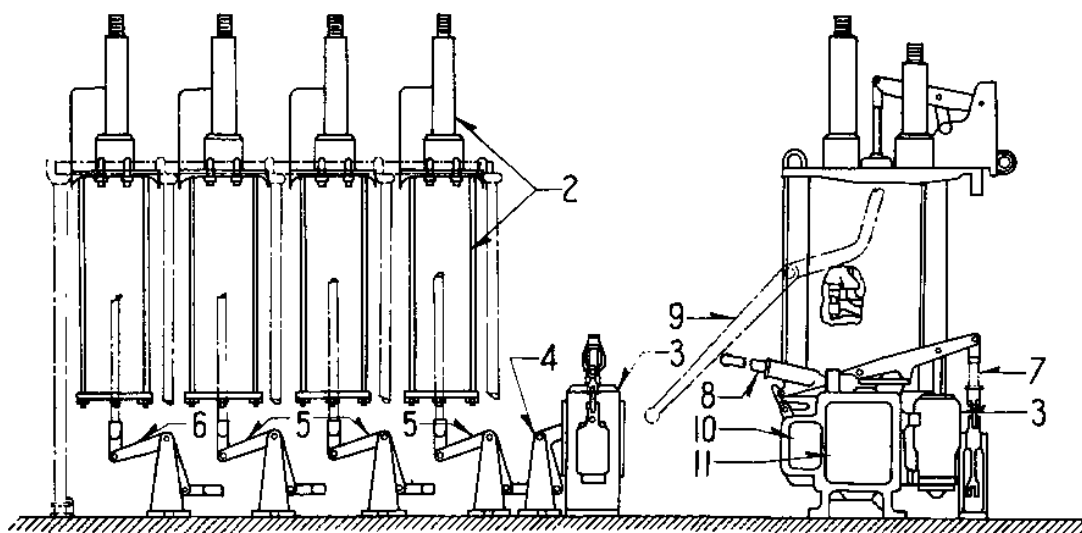
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TYPE E-9 OIL CIRCUIT-BREAKER
PIPE MOUNTING, THREE POLE, SINGLE THROW
ELECTRICALLY OPERATED, FULL AUTOMATIC
WITH TANKS REMOVED

MAIN ASSEMBLY
Electrically Operated, Non-Automatic, Shunt Trip breakers



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No. 1 Complete Breakers					Ref. No. 2 Breaker Units Complete		Ref. No. 3 Electrical Mechanisms Complete		Ref. No. 4** Bell Crank		Ref. No. 5** Bell Crank	
	Amperes											
Style No.	60 Cycles	25 Cycles	Volts	Poles	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.
249719	300	400	25,000	2	2	277801	1	277496	1	270455	1	235897
249720	300	400	25,000	3	3	277801	1	277496	1	270455	2	235897
249721	300	400	25,000	4	4	277801	1	277496	1	270455	3	235897
249722	600	750	25,000	2	2	277802	1	277496	1	270455	1	235897
249723	600	750	25,000	3	3	277802	1	277496	1	270455	2	235897
249724	600	750	25,000	4	4	277802	1	277496	1	270455	3	235897
249725	1200	1350	15,000	2	2	277803	1	277496	1	270455	1	235897
249726	1200	1350	15,000	3	3	277803	1	277496	1	270455	2	235897
249727	1200	1350	15,000	4	4	277803	1	277497	1	270455	3	235897
249728	1600	1800	7,500	2	2	277804	1	277496	1	270455	1	235897
249729	1600	1800	7,500	3	3	277804	1	277496	1	270455	2	235897
249730	1600	1800	7,500	4	4	277804	1	277497	1	270455	3	235897
249731	2000	2250	4,500	2	2	277805	1	277496	1	270455	1	235897
249732	2000	2250	4,500	3	3	277805	1	277496	1	270455	2	235897
249733	2000	2250	4,500	4	4	277805	1	277497	1	270455	3	235897
Ref. No. 1 Complete Breakers†† Style No.	Ref. No. 6** Bell Crank		Ref. No. 7 Rod Ends		Ref. No. 8† Removable Hand Closing Lever		Ref. No. 9† Tank Lifter		Ref. No. 10† Tripping Coil		Ref. No. 11† Closing Coil	
	No. Req.	Style No.	No. Req.	Style No.	Style No.	Style No.	Style No.	No. Req.	No. Req.	No. Req.		
249719	1	214596	1	72281	233229	276439		1		1		
249720	1	214596	1	72281	233229	276439		1		1		
249721	1	214596	1	72281	233229	276439		1		1		
249722	1	214596	1	72281	233229	276439		1		1		
249723	1	214596	1	72281	233229	276439		1		1		
249724	1	214596	1	72281	233229	276439		1		1		
249725	1	214596	1	72281	233229	276439		1		1		
249726	1	214596	1	72281	233229	276439		1		1		
249727	1	214596	1	248949	233229	276439		1		1		
249728	1	214596	1	72281	233229	276439		1		1		
249729	1	214596	1	72281	233229	276439		1		1		
249730	1	214596	1	248949	233229	276439		1		1		
249731	1	214596	1	72281	233229	276439		1		1		
249732	1	214596	1	72281	233229	276439		1		1		
249733	1	214596	1	248949	233229	276439		1		1		

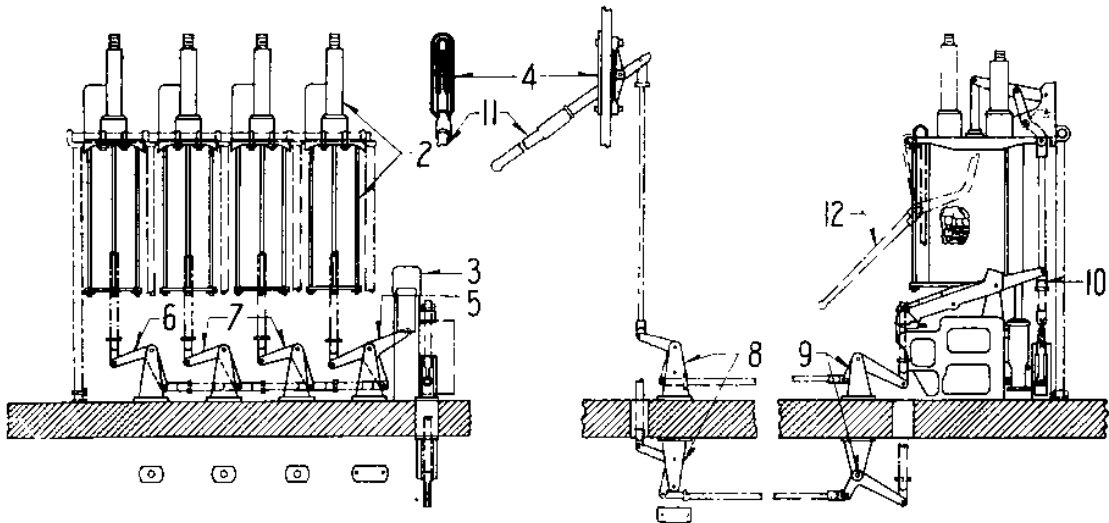
**For mounting above or below floor.

†Order one coil per breaker, giving stock order number or style number, amperes volts and control circuit, as per name plate data.

††Not part of breaker style number; usually one per station required.

†††For ampere and voltage rating, see above table.

MAIN ASSEMBLY
Hand Operated, Full Automatic, Transformer Trip Breakers



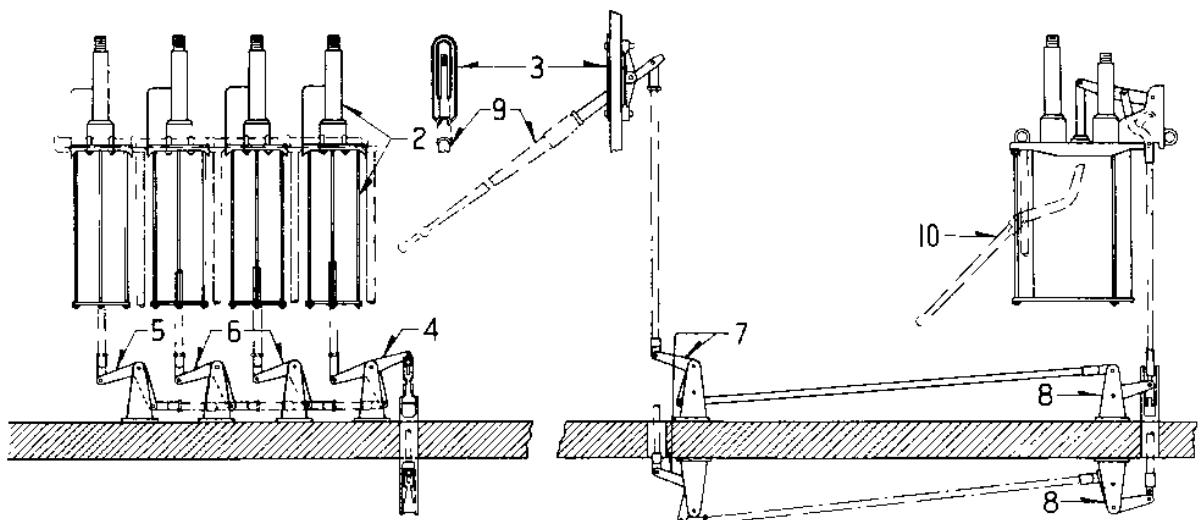
REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No. 1 Complete Breakers					Ref. No. 2 Breaker Units Complete		Ref. No. 3 Hand Operating Mechanisms		Ref. No. 4 Cover Plate for Handle		Ref. No. 5** Bell Crank		
	Amperes		Volts	Poles	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	
	60 Cycles	25 Cycles											
Style No.													
249674	300	400	25,000	2	2	277801	1	277906	1	277469	1	272830	
249675	300	400	25,000	3	3	277801	1	277907	1	277469	1	272830	
249676	300	400	25,000	4	4	277801	1	277907	1	277469	1	272830	
249677	600	750	25,000	2	2	277802	1	277906	1	277469	1	272830	
249678	600	750	25,000	3	3	277802	1	277907	1	277469	1	272830	
249679	600	750	25,000	4	4	277802	1	277907	1	277469	1	272830	
249680	1200	1350	15,000	2	2	277803	1	277906	1	277469	1	272830	
249681	1200	1350	15,000	3	3	277803	1	277907	1	277469	1	272830	
249682	1200	1350	15,000	4	4	277803	2	277907	2	277469	2	272830	
249683	1600	1800	7,500	2	2	277804	1	277906	1	277469	1	272830	
249684	1600	1800	7,500	3	3	277804	1	277907	1	277469	1	272830	
249685	1600	1800	7,500	4	4	277804	2	277907	2	277469	2	272830	
249686	2000	2250	4,500	2	2	277805	1	277906	1	277469	1	272830	
249687	2000	2250	4,500	3	3	277805	1	300291	1	277469	1	272830	
249688	2000	2250	4,500	4	4	277805	2	277907	2	277469	2	272830	
Ref. No. 1 Complete Breakers†	Ref. No. 6** Bell Crank		Ref. No. 7** Bell Crank		Ref. No. 8** Bell Crank		Ref. No. 9** Bell Crank		Ref. No. 10 Rod End		Ref. No. 11† Removable Hand Closing Lever		Ref. No. 12† Tank Lifter
	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	
	Style No.		Style No.		Style No.		Style No.		Style No.		Style No.		
249674	1	214596	..	None	1	270454	1	277905	1	248949	233229	276439	
249675	1	214596	1	235897	1	270454	1	277905	1	248949	233229	276439	
249676	1	214596	2	235897	1	270454	1	277905	1	248949	233229	276439	
249677	1	214596	..	None	1	270454	1	277905	1	248949	233229	276439	
249678	1	214596	1	235897	1	270454	1	277905	1	248949	233229	276439	
249679	1	214596	2	235897	1	270454	1	277905	1	248949	233229	276439	
249680	1	214596	..	None	1	270454	1	277905	1	248949	233229	276439	
249681	1	214596	1	235897	1	270454	1	277905	1	248949	233229	276439	
249682	2	214596	..	None	2	270454	2	277905	2	248949	233229	276439	
249683	1	214596	..	None	1	270454	1	277905	1	248949	233229	276439	
249684	1	214596	1	235897	1	270454	1	277905	1	248949	233229	276439	
249685	2	214596	..	None	2	270454	2	277905	2	248949	233229	276439	
249686	1	214596	..	None	1	270454	1	277905	1	248949	233229	276439	
249687	1	214596	1	235897	1	270454	1	277905	1	248949	233229	276439	
249688	2	214596	..	None	2	270454	2	277905	2	248949	233229	276439	

**For mounting above or below floor.
†Not part of breaker style number; usually one per station required.
‡For ampere and voltage rating, see above table.

MAIN ASSEMBLY
Hand Operated, Non-Automatic, Breakers



REFERENCE NO. 1

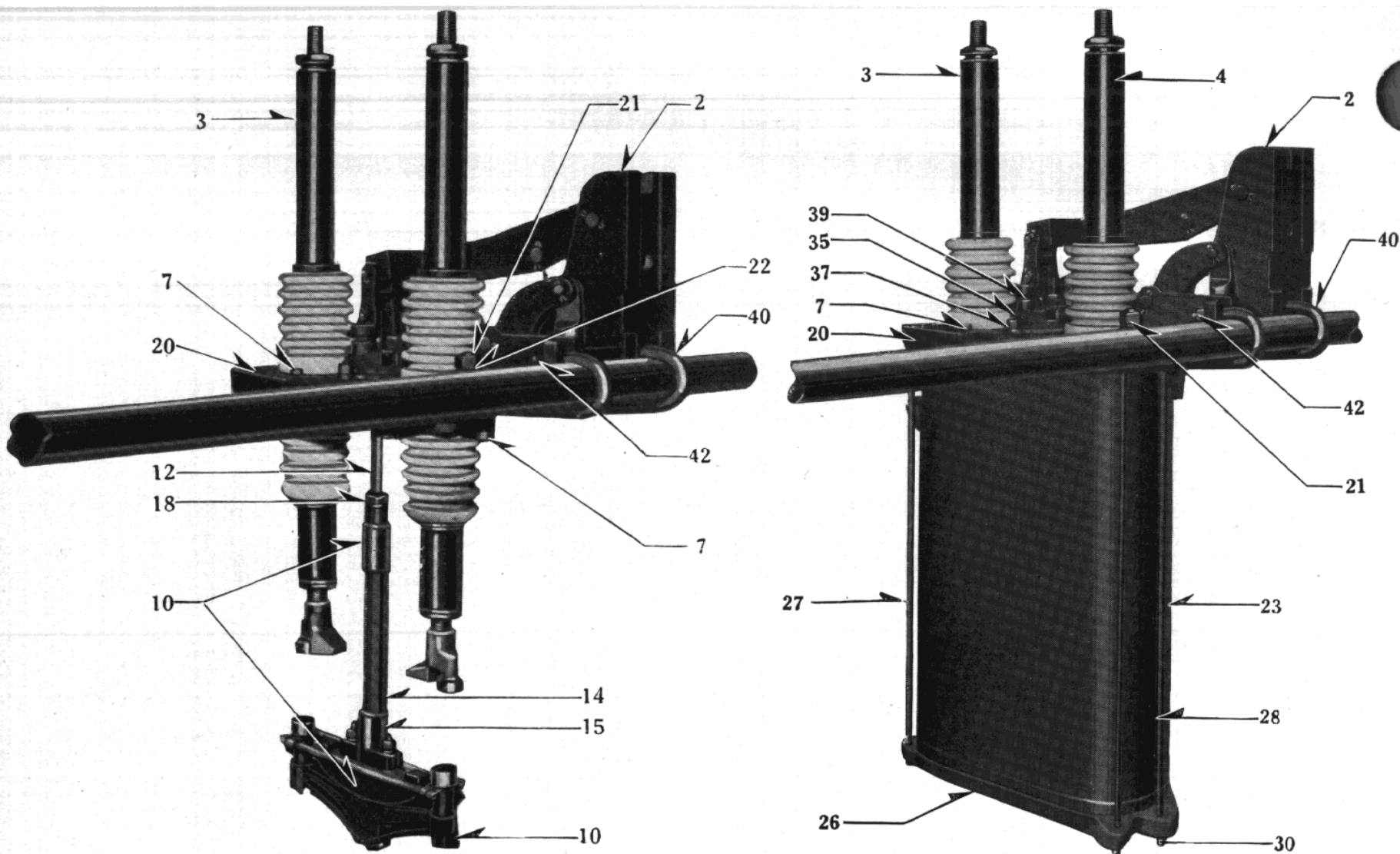
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No. 1 Complete Breakers	Amperes			Poles	Ref. No. 2 Breaker Units Complete		Ref. No. 3 Cover Plate for Handle		Ref. No. 4† Bell Crank		Ref. No. 5† Bell Crank	
	Style No.	60 Cycles	25 Cycles		No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.
249644	300	400	25,000	2	2	277801	1	277469	1	272830	1	214596
249645	300	400	25,000	3	3	277801	1	277469	1	272830	1	214596
249646	300	400	25,000	4	4	277801	1	277469	1	272830	1	214596
249647	600	750	25,000	2	2	277802	1	277469	1	272830	1	214596
249648	600	750	25,000	3	3	277802	1	277469	1	272830	1	214596
249649	600	750	25,000	4	4	277802	1	277469	1	272830	1	214596
249650	1200	1350	15,000	2	2	277803	1	277469	1	272830	1	214596
249651	1200	1350	15,000	3	3	277803	1	277469	1	272830	1	214596
249652	1200	1350	15,000	4	4	277803	1	277469	1	272830	1	214596
249653	1600	1800	7,500	2	2	277804	1	277469	1	272830	1	214596
249654	1600	1800	7,500	3	3	277804	1	277469	1	272830	1	214596
249655	1600	1800	7,500	4	4	277804	1	277469	1	272830	1	214596
249656	2000	2250	4,500	2	2	277805	1	277469	1	272830	1	214596
249657	2000	2250	4,500	3	3	277805	1	277469	1	272830	1	214596
249658	2000	2250	4,500	4	4	277805	1	277469	1	272830	1	214596

Ref. No. 1 Complete Breakers*	Ref. No. 6† Bell Crank		Ref. No. 7† Bell Crank		Ref. No. 8† Bell Crank		Ref. No. 9† Removable Hand Closing Lever	Ref. No. 10† Tank Lifter
	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.		
249644	..	None	1	270454	1	270455	233229	276439
249645	1	235897	1	270454	1	270455	233229	276439
249646	2	235897	1	270454	1	270455	233229	276439
249647	..	None	1	270454	1	270455	233229	276439
249648	1	235897	1	270454	1	270455	233229	276439
249649	2	235897	1	270454	1	270455	233229	276439
249650	..	None	1	270454	1	270455	233229	276439
249651	1	235897	1	270454	1	270455	233229	276439
249652	2	235897	1	270454	1	270455	233229	276439
249653	..	None	1	270454	1	270455	233229	276439
249654	1	235897	1	270454	1	270455	233229	276439
249655	2	235897	1	270454	1	270455	233229	276439
249656	..	None	1	270454	1	270455	233229	276439
249657	1	235897	1	270454	1	270455	233229	276439
249658	2	235897	1	270454	1	270455	233229	276439

*For ampere and voltage rating, see above table.
†For mounting above or below floor.
‡Not part of breaker style number; usually one per station required.

BREAKER UNITS AND DETAILS



REFERENCE No. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION
All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Unit	Description
1	277801†	..	Breaker unit complete, 300 amperes, 60 cycle, 400 amperes, 25 cycle, 25,000 volts
1	277802†	..	Breaker unit complete, 600 amperes, 60 cycle, 750 amperes, 25 cycle, 25,000 volts
1	277803†	..	Breaker unit complete, 1200 amperes, 60 cycle, 1350 amperes, 25 cycle, 15,000 volts
1	277804†	..	Breaker unit complete, 1600 amperes, 60 cycle, 1800 amperes, 25 cycle, 7500 volts
1	277805†	..	Breaker unit complete, 2000 amperes, 60 cycle, 2250 amperes, 25 cycle, 4500 volts
2	277779	1	Breaker unit operating mechanism complete, for Style Nos. 277801, 277802 and 277803. For details see page 12
2	277781	1	Breaker unit operating mechanism complete, for Style Nos. 277804 and 277805. For details see page 12
3	277784	1	Stationary contact, short, for Style No. 277801. For details see page 9
3	277786	1	Stationary contact, short, for Style No. 277802. For details see page 9
3	277788	1	Stationary contact, short, for Style No. 277803. For details see page 9
3	277790	1	Stationary contact, short, for Style No. 277804. For details see page 9
3	277792	1	Stationary contact, short, for Style No. 277805. For details see page 9
4	277785	1	Stationary contact, long, for Style No. 277801. For details see page 9
4	277787	1	Stationary contact, long, for Style No. 277802. For details see page 9
4	277789	1	Stationary contact, long, for Style No. 277803. For details see page 9
4	277791	1	Stationary contact, long, for Style No. 277804. For details see page 9
4	277793	1	Stationary contact, long, for Style No. 277805. For details see page 9
5*	277741	2	Adjusting ring for contacts, for Style No. 277801
5*	277742	2	Adjusting ring for contacts, for Style Nos. 277802 and 277803

*Not illustrated.

†See Ref. No. 2, pages 3, 4 and 5, for application of these Style Numbers.

BREAKER UNITS AND DETAILS—Continued

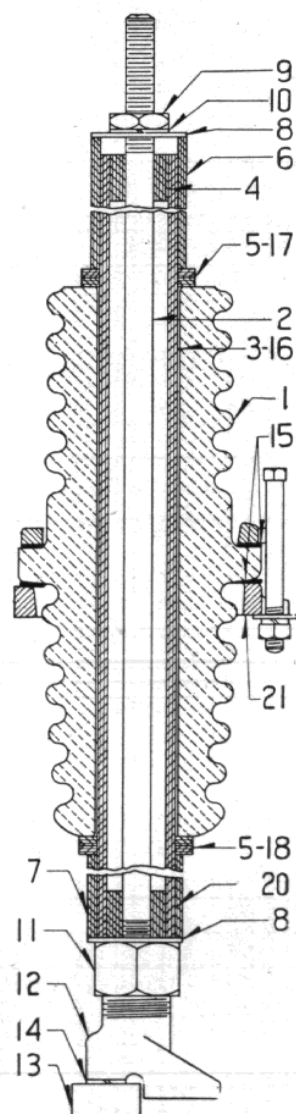
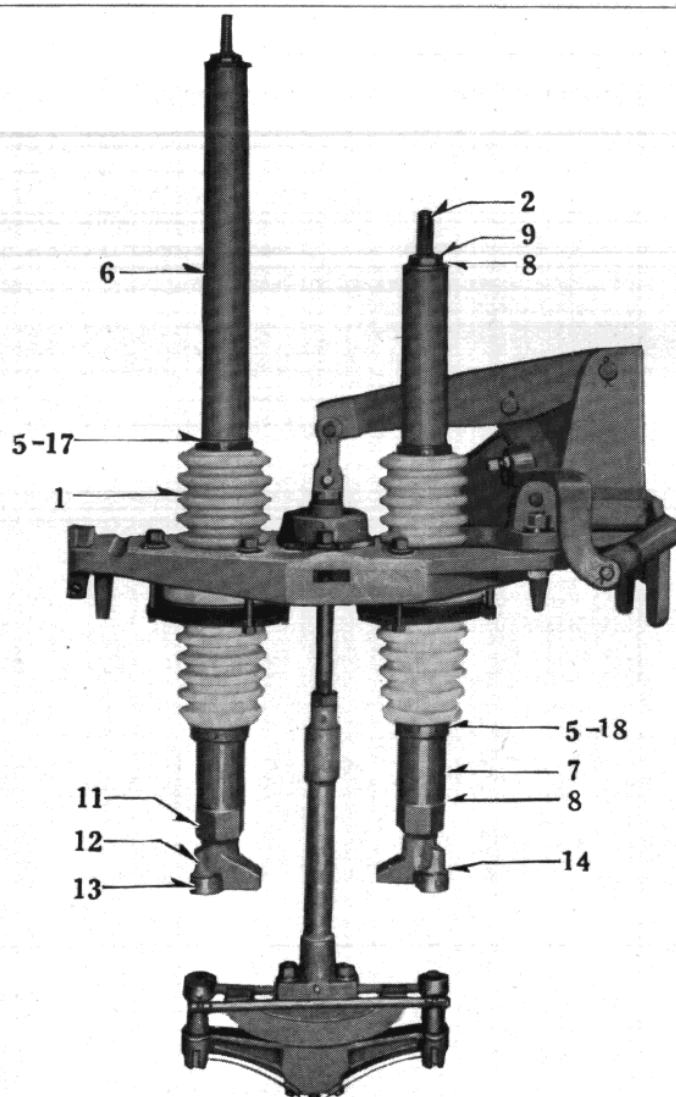
Illustrated on Page 6

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Unit	Description
7	233256	2	Clamp ring for contacts, for Style No. 277801
7	277347	2	Clamp ring for contacts, for Style Nos. 277802 and 277803
7	277356	2	Clamp ring for contacts, for Style No. 277804
7	.....	..	Clamp ring for contacts, for Style No. 277805. See Ref. No. 21, page 9
*	.....	3	Machine bolt, $\frac{3}{8}$ " x $3\frac{3}{4}$ " (standard hardware), to mount stationary contacts to base, for Style Nos. 277801, 277802 and 277803
*	.....	3	Machine bolt, $\frac{3}{8}$ " x $3\frac{1}{2}$ " (standard hardware), to mount stationary contacts to base, for Style Nos. 277804 and 277805
8*	.....	3	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt
9*	.....	3	Wrought iron washer, $\frac{3}{8}$ " (standard hardware), for machine bolt
10	277794	1	Moving contact complete, for Style Nos. 277801 and 277802. For details see pages 10 and 11
10	277795	1	Moving contact complete, for Style No. 277803. For details see pages 10 and 11
10	277333	1	Moving contact complete, for Style No. 277804. For details see pages 10 and 11
10	277334	1	Moving contact complete, for Style No. 277805. For details see pages 10 and 11
11*	277782	1	Lifting rod assembled complete, for Style Nos. 277804 and 277805
12	248613	1	Steel lifting rod only, for Style Nos. 277801, 277802 and 277803
12	277723	1	Steel lifting rod only, for Style Nos. 277804 and 277805 (Part of Ref. No. 11)
13*	301691	1	Steel pin, to fasten lifting rod to rod end, for Style Nos. 277801, 277802 and 277803
14	384901	1	Wooden lifting rod with rod ends, for Style Nos. 277804 and 277805 (Part of Ref. No. 11)
15	277473	1	Stud, to connect wooden rod to contact, for Style Nos. 277804 and 277805 (Part of Ref. No. 11)
16*	.....	2	Taper pin, No. 2 x $1\frac{1}{2}$ " (standard hardware), to fasten wooden rod to steel rod and pin, for Style Nos. 277804 and 277805 (Part of Ref. No. 11)
17*	88907	1	Lock washer, for stud
18	.....	1	Lock nut, $\frac{3}{4}$ " (standard hardware), for use on stud and lifting rod
19*	.....	1	Spring cotter, $\frac{3}{16}$ " x $1\frac{1}{2}$ " (standard hardware), for stud, for Style Nos. 277804 and 277805
20	277724	1	Base for mechanism, for Style Nos. 277801, 277802 and 277803
20	277744	1	Base for mechanism, for Style Nos. 277804 and 277805
21	.....	3	Machine bolt, $\frac{5}{8}$ " x $2\frac{1}{2}$ " (standard hardware), to fasten breaker mechanism to base
22	.....	3	Lock washer, $\frac{5}{8}$ " (standard hardware), for machine bolt
23	277719	1	Tank complete with lining
24*	357156	1	Tank lining (Part of Ref. No. 23)
25*	41470	1	Oil gauge, for tank (Part of Ref. No. 23)
26	277743	1	Tank cradle, for tank support
27	280491	1	Hinge bolt, used as front tie rod for tank
28	280490	2	Rear tie rod, for tank
29*	63614	1	Pin to fasten hinge bolt
30	.....	3	Hexagon iron nut, $\frac{5}{8}$ " (standard hardware), for tie rod
31*	.....	3	Lock washer, $\frac{5}{8}$ " (standard hardware), for tie rod
32*	3429	3	Wrought iron washer for tie rod
33*	229124	2	Terminal, for Style No. 277801
33*	229774	2	Terminal, for Style No. 277802
34*	7544	2	Terminal nut, for Style No. 277801
34*	7545	2	Terminal nut, for Style No. 277802
35	277730	1	Upper vent
36*	277731	1	Lower vent, for Style Nos. 277801, 277802 and 277803
37	.....	2	Machine bolt, $\frac{3}{8}$ " x $1\frac{1}{4}$ " (standard hardware), to clamp upper and lower vents
38*	.....	2	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt
39	215108	2	Bumper, for upper vent
40	176939	2	U-bolt, rear, for pipe mounting
41*	244521	2	J-bolt, front, for pipe mounting
42	.....	6	Hexagon iron nut, $\frac{1}{2}$ " (standard hardware), for U-bolt and J-bolt
43*	.....	6	Lock washer, $\frac{1}{2}$ " (standard hardware), for U-bolt and J-bolt
44*	.....	6	Wrought iron washer, $\frac{1}{2}$ " (standard hardware), for J-bolt

*Not illustrated.



STATIONARY CONTACT
Parts Listed on Page 9
8

STATIONARY CONTACTS AND DETAILS

Illustrated on Page 8

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Complete Stationary Contacts			Ref. No. 1 Porcelain Insulators One Per Contact Style No.	Ref. No. 2 Terminal Rods One Per Contact Style No.	Ref. No. 3 Insulating Tubes One Per Contact Style No.	Ref. No. 4 Spacing Tubes For Top of Terminal Rod No. Per Cont. Style No.	Ref. No. 5 Fibre Washer Four Per Contact Style No.	Ref. No. 6 Outside Top Tubes One Per Contact Style No.
Amperes 60 Cycles	Style No.	Size						
300	277784†	Short	116597	277746	384906	2 220972	384866	384908
300	277785†	Long	116597	277745	384905	2 220972	384866	384907
600	277786†	Short	116597	277748	384906	2 215160	384866	384908
600	277787†	Long	116597	277747	384905	2 215160	384866	384907
1200	277788†	Short	116597	277750	384910	.. None	384866	384908
1200	277789†	Long	116597	277749	384909	.. None	384866	384907
1600	277790†	Short	247655	277754	None	1 220981	None	384913
1600	277791†	Long	247655	277753	None	1 220981	None	384914
2000	277792†	Short	247655	277752	None	.. None	None	384913
2000	277793†	Long	247655	277751	None	.. None	None	384914

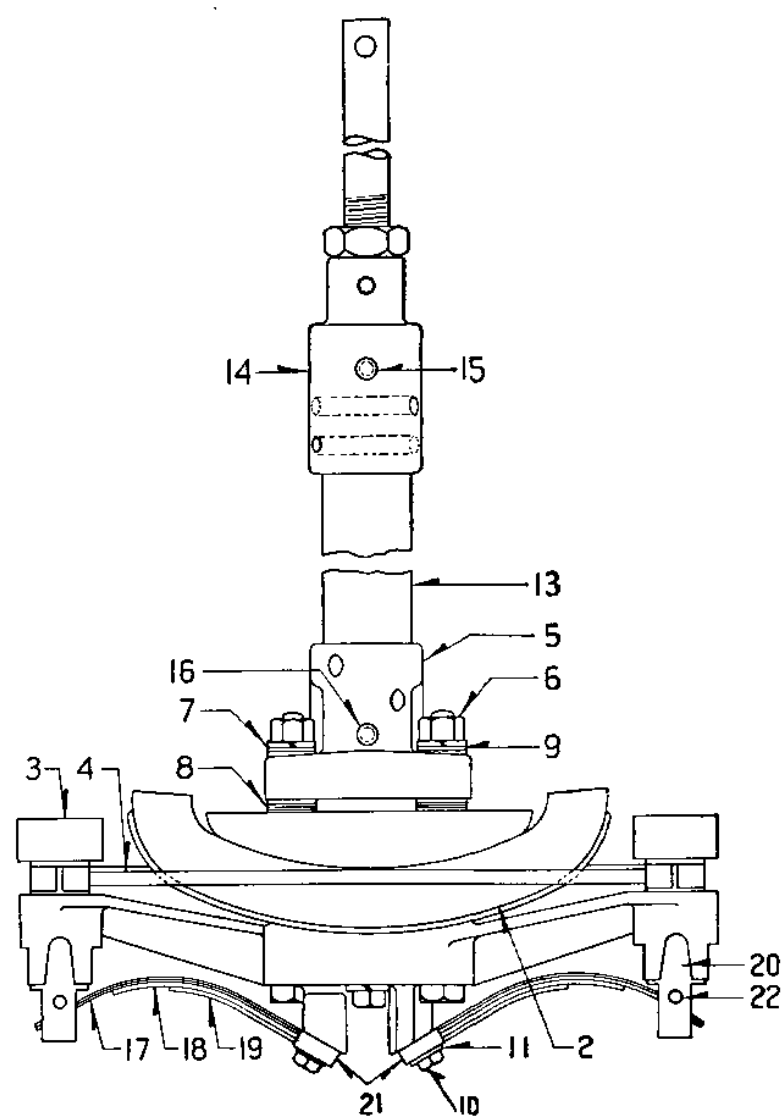
Complete Stationary Contacts			Ref. No. 7 Outside Bottom Tube One Per Cont. Style No.	Ref. No. 8 Brass Clamp Washers No. Per Cont. Style No.	Ref. No. 9 Nuts for Top of Terminal Rod One Per Cont. Style No.	Ref. No. 10 Lock Washers for Term. Rod One Per Cont. Style No.	Ref. No. 11 Nuts for Bot. of Terminal Rod One Per Cont. Style No.
Amperes 60 Cycles	Style No.	Size					
300	277784†	Short	244520	2 250219	7544	107316	235961
300	277785†	Long	244520	2 250219	7544	107316	235961
600	277786†	Short	244520	3 184410	211911	203604	211911
600	277787†	Long	244520	3 184410	211911	203604	211911
1200	277788†	Short	244520	3 277430	211915	211850	211915
1200	277789†	Long	244520	3 277430	211915	211850	211915
1600	277790†	Short	None	3 277121	211913	257812	211913
1600	277791†	Long	None	3 277121	211913	257812	211913
2000	277792†	Short	None	3 239038	211914	201341	211914
2000	277793†	Long	None	3 239038	211914	201341	211914

Complete Stationary Contacts			Ref. No. 12 Contact Feet One Per Cont. Style No.	Ref. No. 13 Arcing Tip One Per Cont. Style No.	Ref. No. 14 Lock Washer for Arcing Tip One Per Contact Style No.	Ref. No. 15 Fullerboard Washers Two Per Contact Style No.	Ref. No. 16 Insulating Tubes for Terminal Rod One Per Contact Style No.
Amperes 60 Cycles	Style No.	Size					
300	277784†	Short	277732	233225	107315	380380	None
300	277785†	Long	277732	233225	107315	380380	None
600	277786†	Short	277733	233225	107315	380380	None
600	277787†	Long	277733	233225	107315	380380	None
1200	277788†	Short	277734	233225	107315	380380	None
1200	277789†	Long	277734	233225	107315	380380	None
1600	277790†	Short	277735	233225	107315	300874	384911
1600	277791†	Long	277735	233225	107315	300874	384912
2000	277792†	Short	277736	233225	107315	300874	384911
2000	277793†	Long	277736	233225	107315	300874	384912

Complete Stationary Contacts			Ref. No. 17 Fibre Washer for Top of Insulator Two Per Cont. Style No.	Ref. No. 18 Fibre Washers for Bottom of Insulator One Per Cont. Style No.	Ref. No. 19* Spacing Tube for Middle of Terminal Rod One Per Contact Style No.	Ref. No. 20 Spacing Tubes for Lower End of Terminal Rod One Per Contact Style No.	Ref. No. 21 Clamp Ring One Per Contact Style No.
Amperes 60 Cycles	Style No.	Size					
300	277784†	Short	None	None	None	None	None†
300	277785†	Long	None	None	None	None	None†
600	277786†	Short	None	None	None	None	None†
600	277787†	Long	None	None	None	None	None†
1200	277788†	Short	None	None	None	None	None†
1200	277789†	Long	None	None	None	None	None†
1600	277790†	Short	384871	384915	221008	221008	None†
1600	277791†	Long	384871	384915	221008	221008	None†
2000	277792†	Short	384871	384916	None	221007	277356
2000	277793†	Long	384871	384916	None	221007	277356

*Not illustrated.
†See page 6 for application of these Style Numbers
‡See page 6 for Style Number.

MOVING CONTACTS AND DETAILS



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Contact	Description
1	277794†**	..	Moving contact complete, 300 or 600 amperes, 60 cycles
1	277795†**	..	Moving contact complete, 1200 amperes, 60 cycles
1	277333††	..	Moving contact complete, 1600 amperes, 60 cycles
1	277334††	..	Moving contact complete, 2000 amperes, 60 cycles
2	215153	1	Brush complete for two arcing tips, for Style Nos. 277794 and 277333
2	215154	2	Brush complete for one offset arcing tip, for Style Nos. 277795 and 277334
2	215155	2	Brush complete, without arcing tip, for Style No. 277334
3	233226	2	Arcing tip
4	275052	2	Shunt complete, for Style Nos. 277794 and 277333
4	275053	2	Shunt complete, for Style Nos. 277795 and 277334
5	272012	1	Lifting rod foot, to connect lifting rod to brush, for Style No. 277794
5	277604	1	Lifting rod foot, to connect lifting rod to brush, for Style No. 277795
5	277437	1	Lifting rod foot, to connect lifting rod to brush, for Style No. 277333
5	277436	1	Lifting rod foot, to connect lifting rod to brush, for Style No. 277334
6	.....	2	Machine bolt, 3/8" x 4 1/4" (standard hardware), to fasten lifting rod foot to brush, for Style No. 277794
6	.....	4	Machine bolt, 3/8" x 4 1/2" (standard hardware), to fasten lifting rod foot to brush, for Style No. 277795
6	.....	6	Machine bolt, 3/8" x 4 1/2" (standard hardware), to fasten lifting rod foot to brush, for Style No. 277333
6	.. . . .	8	Machine bolt, 3/8" x 4 1/2" (standard hardware), to fasten lifting rod foot to brush, for Style No. 277334

†See Ref. No. 10, page 7, for application of these Style Numbers.
**Includes lifting rod.
†Without lifting rod.

MOVING CONTACTS AND DETAILS—Continued

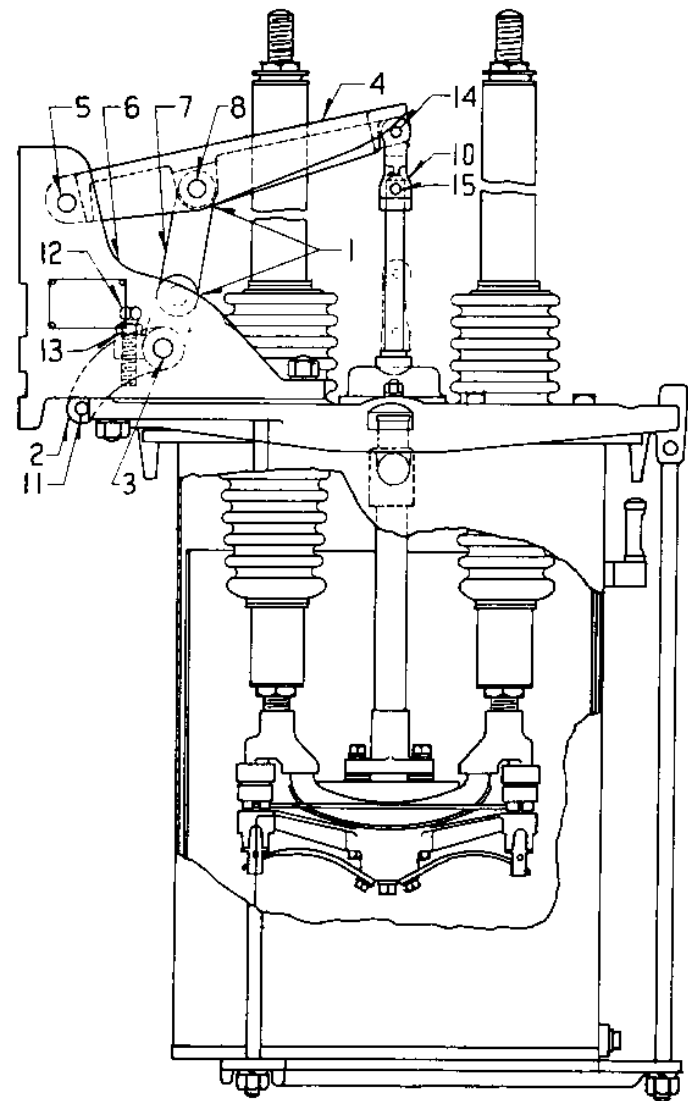
Illustrated on Page 10

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Contact	Description
7	.....	2	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt, for Style No. 277794
7	.....	4	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt, for Style No. 277795
7	.....	6	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt, for Style No. 277333
7	.....	8	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt, for Style No. 277334
8	178397	8	Liner used between brush block and lifting rod foot, for Style No. 277794
8	178397	16	Liner used between brush block and lifting rod foot, for Style No. 277795
8	178397	24	Liner used between brush block and lifting rod foot, for Style No. 277333
9	101681	4	Washer, for machine bolt, for Style No. 277794
9	101681	12	Washer, for machine bolt, for Style No. 277795
9	101681	18	Washer, for machine bolt, for Style No. 277333
9	101681	16	Washer, for machine bolt, for Style No. 277334
10	.....	2	Tap bolt, $\frac{1}{4}$ " x 1" (standard hardware), to fasten arcing plunger spring to brush, for Style Nos. 277794, 277795, 277333 and 277334
11	.....	2	Lock washer, $\frac{1}{4}$ " (standard hardware), for tap bolt, for Style Nos. 277794, 277795, 277333 and 277334
12*	107315	2	Lock washer, for arcing tip, for Style Nos. 277794, 277333 and 277334
12*	.....	2	Lock washer, $\frac{1}{2}$ " (standard hardware), for arcing tip, for Style No. 277795
13	285128	1	Wood lifting rod, for Style No. 277794
13	285135	1	Wood lifting rod, for Style No. 277795
14	273346	1	Rod end, to connect wood rod to steel rod, for Style No. 277794
14	233253	1	Rod end, to connect wood rod to steel rod, for Style No. 277795
15	193681	3	Steel pin, to fasten wood rod to rod end, for Style No. 277794
15	275986	3	Steel pin, to fasten wood rod to rod end, for Style No. 277795
16	193681	3	Steel pin, to fasten wood rod to foot, for Style No. 277794
16	384880	3	Steel pin, to fasten wood rod to foot, for Style No. 277795
17	247362	6	Arcing plunger spring (long)
18	247363	4	Arcing plunger spring (intermediate)
19	247364	4	Arcing plunger spring (short)
20	233044	2	Arcing plunger
21	226539	2	Clip washer, for arcing plunger
22	246428	2	Steel pin, used as spring bearing

*Not illustrated.

BREAKER UNIT OPERATING MECHANISMS
Style Nos. 277779 and 277781



REFERENCE NO. 1

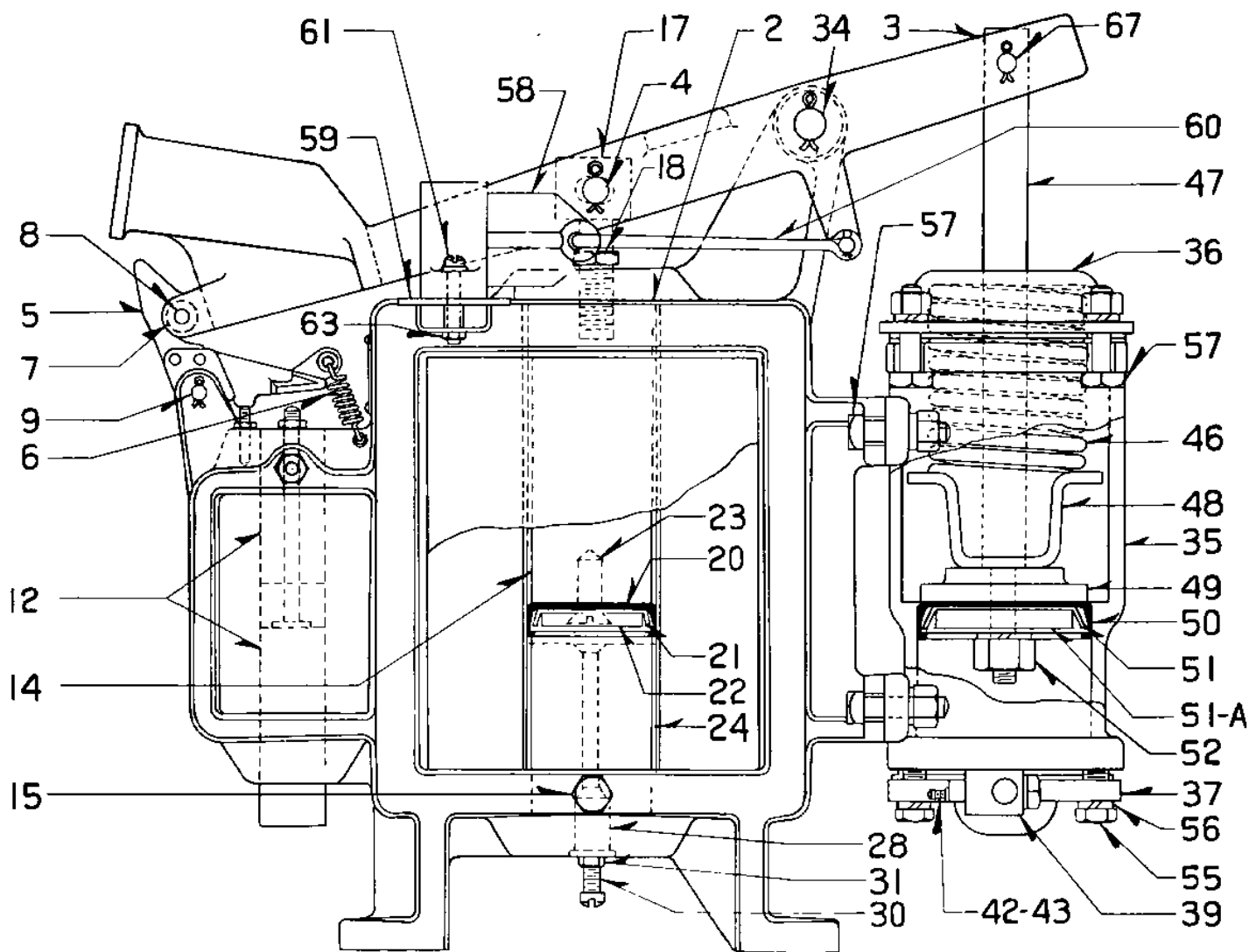
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION
All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Mechanism	Description
1	277779†	..	Breaker unit operating mechanism complete, consisting of Ref. Nos. 2 to 15 inclusive
1	277781†	..	Breaker unit operating mechanism complete, consisting of Ref. Nos. 2 to 15 inclusive
2	277729	1	Closing lever, for Style No. 277779
2	277728	1	Closing lever, for Style No. 277781
3	246429	1	Bearing shaft, for closing lever and bracket
4	277725	1	Main lever, for Style No. 277779
4	233245	1	Main lever, for Style No. 277781
5	48948	1	Bearing shaft, for main lever and bracket
6	277727	1	Main bracket, to mount mechanism
7	273987	1	Toggle link, to connect main lever and closing lever, for Style No. 277779
7	277720	1	Toggle link, to connect main lever and closing lever, for Style No. 277781
8	87676	1	Shaft, for toggle link and main lever
8	245642	1	Shaft, for toggle link and closing lever
9*	72281	1	Rod end, to connect closing lever and operating rod
10	272648	1	Bumper link, to connect main lever and lifting rod, for Style No. 277779
10	277726	1	Bumper link, to connect main lever and lifting rod, for Style No. 277781
11	65150	1	Shaft, for rod end and closing lever
12	.....	1	Set screw, 1/2" x 3" (standard hardware), for adjusting closing lever
13	.....	1	Lock nut, 1/2" (standard hardware), for set screw
14	256185	1	Shaft, to fasten bumper link to main lever
15	256185	1	Shaft, to fasten bumper link to lifting rod

*Not illustrated.

†See Ref. No. 2, page 6, for application of these Style Numbers.

ELECTRICAL MECHANISM
Style No. 277496



REFERENCE No. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Mechanism	Description
1	277496†	..	Electrical mechanism complete, without coils
2	333458	1	Cast iron magnet frame
3	241475	1	Cast steel main lever
4	63622	1	Shaft, to fasten magnet plunger to main lever
5	257692	1	Steel trigger complete
6	79858	1	Spring, for trigger
7	145393	1	Steel roller, for trigger
8	88904	1	Shaft, to fasten trigger roller in main lever
9	117213	1	Shaft, used as trigger bearing
10*	60965	1	Set screw, to adjust trigger
11*	.....	1	Iron machine screw nut, No. 14-24 (standard hardware), for set screw
*	.....	..	Tripping coil. When ordering, give Stock Order or Style Number, amperes, volts and control circuit as per Name Plate Data
12	184889	1	Tripping core
13*	.....	1	Tap bolt, 1/2" x 1 1/2" (standard hardware), to fasten stationary core in frame
14	277579	1	Moving core, for magnet
15	.....	2	Tap bolt, 1/2" x 2 1/4" (standard hardware), to fasten magnet in frame
16*	.....	2	Lock washer, 1/2" (standard hardware), for tap bolt

*Not illustrated.
†See Ref. No. 3, page 3, for application of this Style Number.

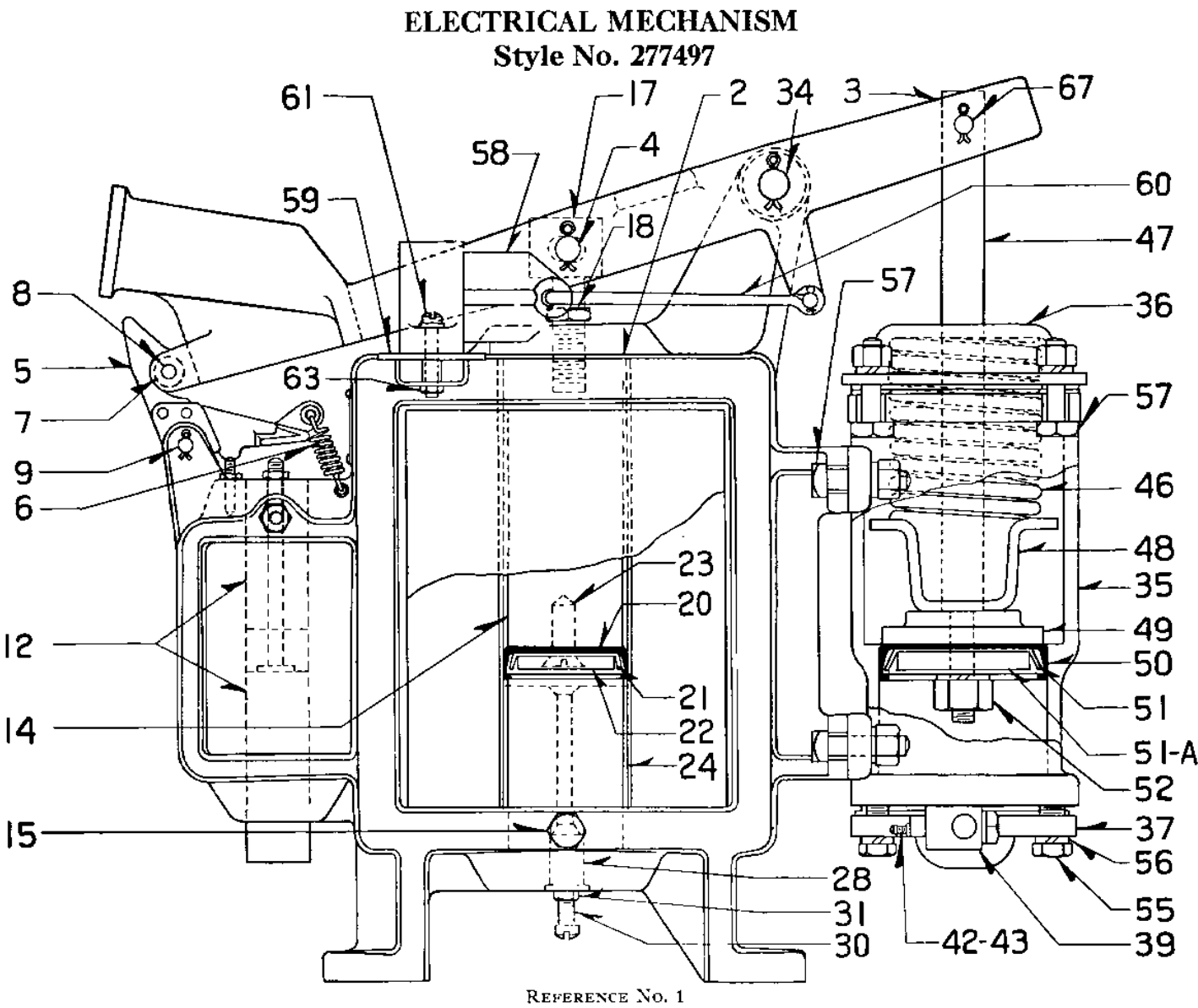
ELECTRICAL MECHANISM—Continued
Style No. 277496

Illustrated on Page 13

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Mechanism	Description
17	271527	..	Eye bolt, for top of moving core
18	199315	1	Nut, for eye bolt
19*	88907	1	Lock washer, for eye bolt
*	.....	..	Closing coil. When ordering, give Stock Order or Style Number, amperes, volts and control circuit, as per Name Plate Data
20	112503	1	Piston leather
20-A*	158209	1	Pin, for bottom of core, to hold follower
21	184886	1	Piston leather expander
22	194566	1	Cast iron follower, for core
23	83391	1	Screw, to fasten follower and expander to core
24	237403	1	Stationary core and brass sleeve assembled
25*	380264	1	Brass sleeve for stationary core
26*	380261	1	Stationary core, only
27*	.....	1	Flat head iron machine screw, No. 10-32 x 3/8" (standard hardware), to fasten brass sleeve to stationary core
28	185454	1	Brass plug, for bottom of magnet
29*	184519	1	Brass ball, for bottom of magnet
30	277826	1	Adjusting screw, for brass ball
31	.....	..	Iron machine screw nut, No. 20-18 (standard hardware), for adjusting screw
32*	.....	1	Flax packing, 3/16" square x 10" long, for top of stationary core
33*	357163	3	Fullerboard washer used between magnet and frame
34	92736	1	Shaft, to fasten main lever to magnet frame
35	250114	1	Cast iron dash pot cylinder
36	277560	1	Cover, for dash pot
37	230342	1	Bottom, for dash pot
38*	214139	1	Brass valve bushing, for dash pot
39	185236	1	Brass valve, for dash pot
40*	198929	1	Valve spring
41*	187761	1	Valve pin
42	.....	1	Fillister head iron machine screw, No. 10-32 x 1/2" (standard hardware), to adjust valve pin
43	40662	1	Nut, for adjusting screw
44*	275056	1	Brass plug for side of valve casting
45*	68776	1	Cap nut, for valve
46	122525	1	Spring for dash pot
47	248457	1	Plunger rod, for dash pot
48	277554	1	Spring holder, for dash pot
49	272649	1	Piston leather seating washer, for dash pot
50	112506	1	Piston leather, for dash pot
51	187120	1	Piston leather expander, for dash pot
51-A	277547	1	Follower, for expander
52	.....	1	Hexagon nut, 3/4" (standard hardware), to fasten follower to expander
53*	.....	1	Lock washer, 3/4" (standard hardware), used between nut and follower
54*	122532	1	Gasket, for bottom of dash pot
55	.....	4	Tap bolt, 1/2" x 1 3/4" (standard hardware), to fasten bottom to dash pot
56	.....	4	Lock washer, 1/2" (standard hardware), for tap bolt
57	.....	7	Machine bolt, 1/2" x 1 3/4" (standard hardware), to fasten cover to dash pot and to mount dash pot
58	216071	1	Signal switch complete. For details, see page 25
59	263046	1	Fullerboard shield used between signal switch and frame
60	323745	1	Link, for signal switch and main lever
61	.....	2	Fillister head iron machine screw, No. 14-24 x 1 3/8" (standard hardware), to mount signal switch
62*	.....	2	Lock washer, 1/4" (standard hardware), for screw
63	.....	2	Iron machine screw nut, No. 14-24 (standard hardware), for screw
64*	7443	2	Washer, for screw
65*	323744	1	Stud, for main lever and signal switch link
66*	3272	1	Washer, for stud
67	63615	1	Shaft, for main lever and dash pot plunger
68*	63613	1	Shaft, for main lever and rod end. See Ref. No. 7 on page 3

*Not illustrated.



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Mechanism	Description
1	277497†	..	Electrical mechanism complete, without coils
2	277580	1	Cast iron magnet frame
3	277582	1	Cast steel main lever
4	63634	1	Shaft, to fasten magnet plunger to main lever
5	273087	1	Steel trigger complete
6	140362	1	Spring, for trigger
7	271427	1	Steel roller, for trigger
8	63603	1	Shaft, to fasten trigger roller in main lever
9	109229	1	Shaft, used as trigger bearing
10*	.....	..	Not used
11*	.....	..	Not used
*	.....	..	Tripping coil. When ordering, give Stock Order or Style Number, amperes, volts and control circuit, as per Name Plate Data
12	184889	1	Tripping core, for overload trip mechanism
13*	.....	..	Not used
14	225439	1	Moving core, for magnet
15	.....	2	Tap bolt, 3/4" x 3 1/2" (standard hardware), to fasten magnet in frame
16*	.....	2	Lock washer, 3/4" (standard hardware), for tap bolt
17	253488	1	Eye bolt, for top of moving core
18	255993	1	Nut, for eye bolt
19*	85635	1	Lock washer, for eye bolt
*	.....	..	Closing coil. When ordering, give Stock Order or Style Number, amperes, volts and control circuit, as per Name Plate Data
20	233085	1	Piston leather
20-A*	115006	1	Pin, for bottom of core to hold follower
21	189929	1	Piston leather expander

*Not illustrated.

†See Ref. No. 3, page 3, for application of this Style Number.

ELECTRICAL MECHANISM—Continued
Style No. 277497

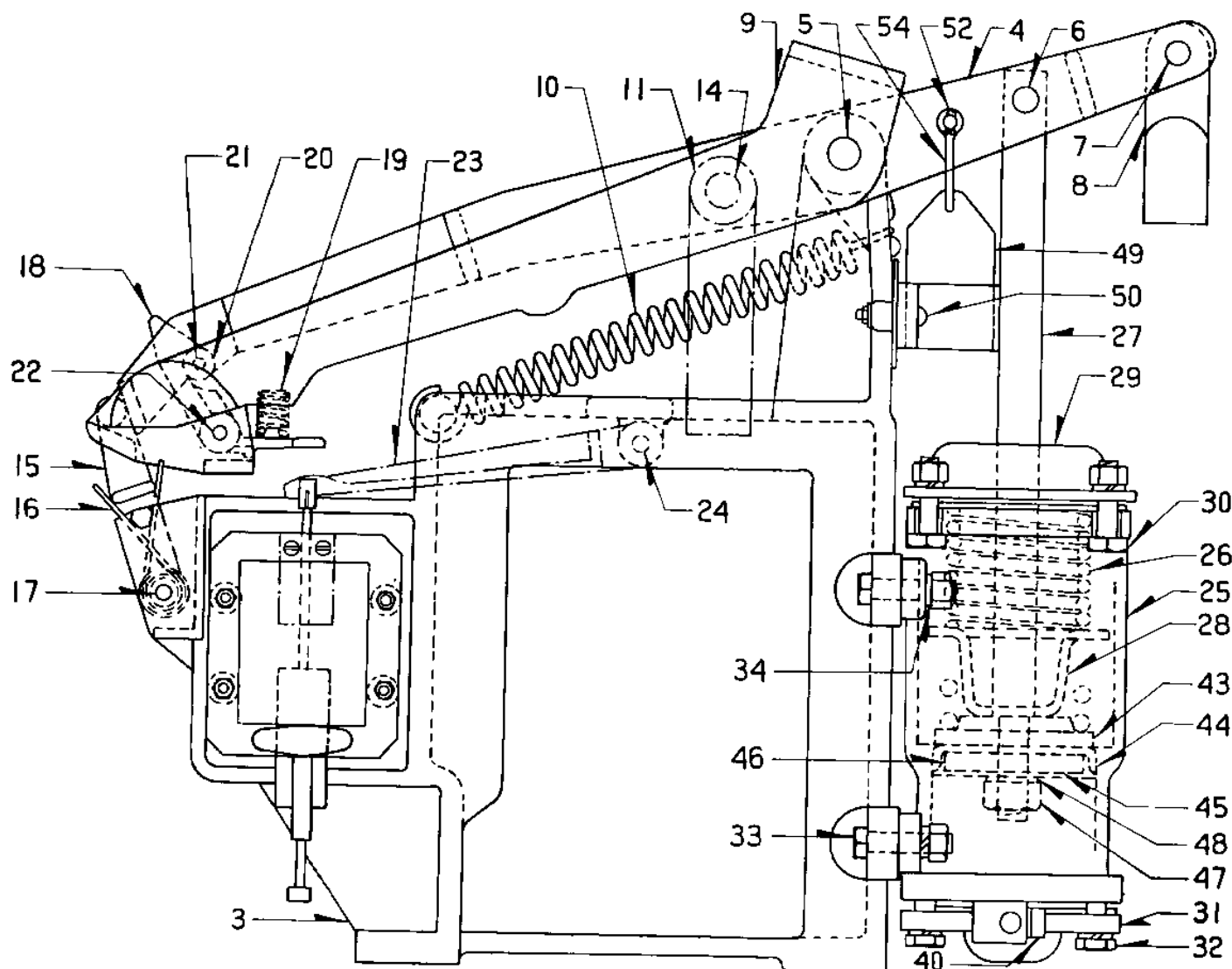
Illustrated on Page 15

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Mechanism	Description
22	277547	1	Cast iron follower, for core
23	117211	1	Screw, to clamp follower and expander to core
24	273334	1	Stationary core and brass sleeve assembled
25*	333083	1	Brass sleeve, for stationary core
26*	264230	1	Stationary core, only
27*	.....	1	Flat head iron machine screw, No. 14-24 x 1/2" (standard hardware), to fasten brass sleeve to stationary core
28	185454	1	Brass plug, for bottom of magnet
29*	184519	1	Brass ball, for bottom of magnet
30	277826	1	Brass screw, for adjusting brass ball
31	.....	1	Iron machine screw nut, No. 20-18 (standard hardware), for adjusting screw
32*	.....	1	Flax packing, 3/16" square x 13" long, for top of stationary core
33*	333086	3	Fullerboard washer, used between magnet and frame
34	276860	1	Shaft, to fasten main lever to magnet frame
35	250114	1	Cast iron dash pot cylinder
36	277560	1	Cover, for dash pot
37	230342	1	Bottom, for dash pot
38*	214139	1	Brass valve bushing, for dash pot
39	185236	1	Brass valve, for dash pot
40*	198929	1	Valve spring
41*	187761	1	Valve pin
42	.....	1	Fillister head machine screw, No. 10-32 x 1/2" (standard hardware), to adjust valve pin
43	40662	1	Nut, for adjusting screw
44*	275056	1	Brass plug, for side of valve casting
45*	68776	1	Cap nut, for valve
46	122525	1	Spring, for dash pot
47	273372	1	Plunger rod, for dash pot
48	277554	1	Spring holder, for dash pot
49	272649	1	Piston leather seating washer, for dash pot
50	112506	1	Piston leather, for dash pot
51	187120	1	Piston leather expander, for dash pot
51-A	271438	1	Follower, for expander
52	.....	1	Hexagon nut, 3/4" (standard hardware), to clamp follower to expander
53*	.....	1	Lock washer, 3/4" (standard hardware), used between nut and follower
54*	122532	1	Gasket, for bottom of dash pot
55	.....	5	Tap bolt, 1/2" x 1 3/4" (standard hardware), to fasten bottom of dash pot
56	.....	5	Lock washer, 1/2" (standard hardware), for tap bolt
57	.....	7	Machine bolt, 1/2" x 1 3/4" (standard hardware), to fasten cover and to mount dash pot
58	216071	1	Signal switch, complete. For details see page 25
59	263046	1	Fullerboard shield, used between signal switch and frame
60	384891	1	Link, for signal switch and main lever
61	.....	2	Fillister head iron machine screw, No. 14-24 x 1 3/8" (standard hardware), to mount signal switch
62*	.....	2	Lock washer, 1/4" (standard hardware), for screw
63	.....	2	Iron machine screw nut, No. 14-24 (standard hardware), for screw
64*	7443	2	Washer, for screw
65*	323744	1	Stud, for main lever and signal switch link
66*	3272	1	Washer, for stud
67	117200	1	Shaft, for main lever and dash pot plunger
68*	87679	1	Shaft, for main lever and rod end. See Ref. No. 7 on page 3

*Not illustrated.

HAND MECHANISMS, FULL AUTOMATIC
Style Nos. 277906, 277907 and 300291



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Mechanism	Description
1	277906†	..	Hand mechanism complete, for 2 pole breakers
1	277907†	..	Hand mechanism complete, for all 3 or 4 pole breakers, except 3 pole, 2000 ampere breakers
1	300291†	..	Hand mechanism complete, for 3 pole, 2000 ampere breakers
2*	277539	1	Overload release mechanism complete with coil, for Style No. 277906. For details see pages 19 and 20
2*	277540	1	Overload release mechanism complete with coil, for Style Nos. 277907 and 300291. For details see pages 19 and 20
3	277586	1	Cast iron frame, for mechanism
4	274856	1	Main lever
5	127688	1	Bearing shaft, for main lever
6	63614	1	Shaft, for main lever and dash pot plunger rod
7	105265	1	Shaft, for main lever and rod end
8	248949	1	Rod end, for end of main lever. See Ref. No. 10, page 4
9	277587	1	Closing lever
10	272177	1	Spring, for closing lever
Ref. Nos. 11-12-13-14			Not used
15	273391	1	Cast iron dog, to engage end of closing lever
16	277569	1	Spring, for dog
17	140734	1	Shaft, for dog
18	277541	1	Trigger complete
19	199287	1	Spring, for trigger
20	145393	1	Roller, for trigger
21	63601	1	Shaft, for roller
22	107356	1	Shaft, for trigger
*	277568	1	Trip arm on pull rod
*	.....	1	Machine bolt, 3/8" x 1 1/4" (standard hardware), for trip arm

*Not illustrated.

†See Ref. No. 3, page 4, for application of these Style Numbers.

HAND MECHANISMS, FULL AUTOMATIC—Continued **Style Nos. 277906, 277907 and 300291**

Illustrated on Page 17

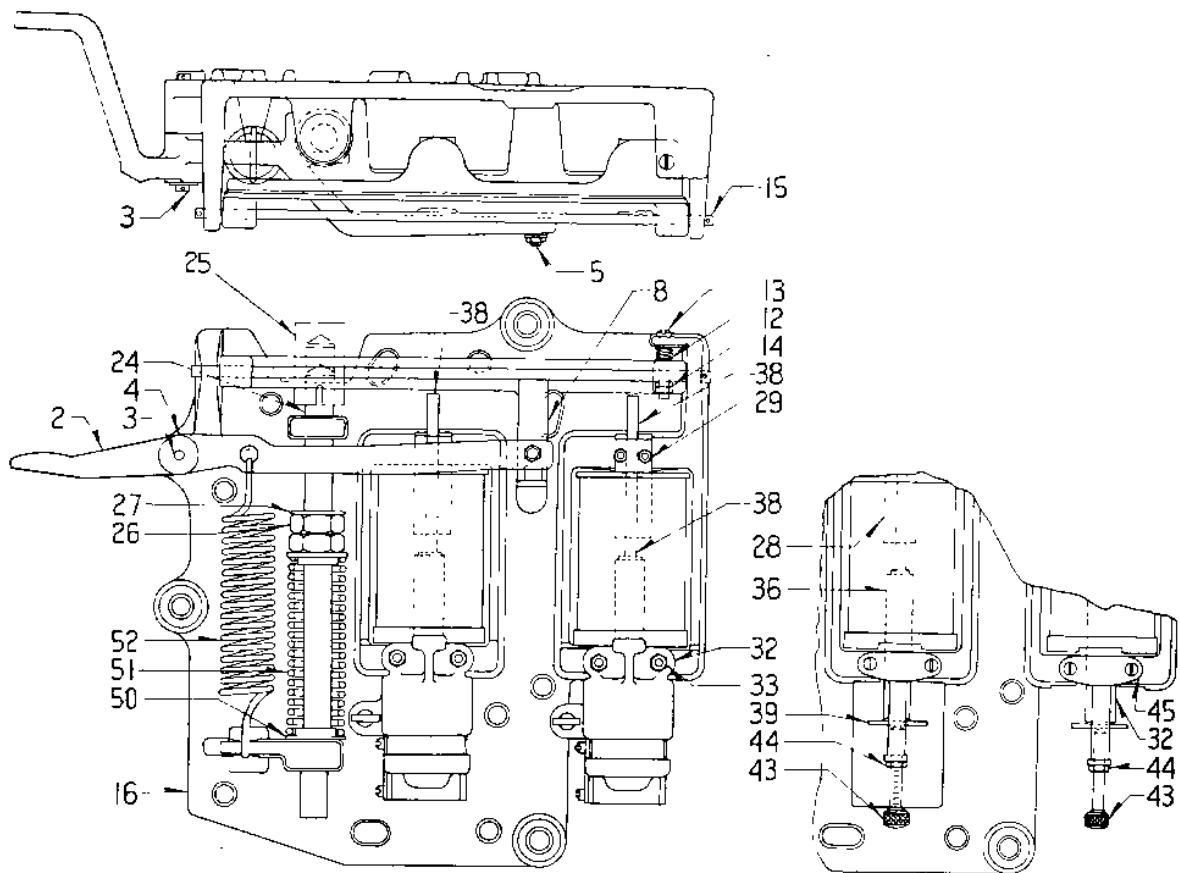
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Mechanism	Description
*	.....	1	Lock washer, $\frac{3}{8}$ " (standard hardware), for machine bolt
*	.....	1	Set screw, $\frac{3}{8}$ " x $\frac{3}{4}$ " (standard hardware), for trip arm
*	.....	1	Lock nut, $\frac{3}{8}$ " (standard hardware), for set screw
Ref. Nos. 23-24			Not used
25	250114	1	Cast iron dash pot cylinder
26	272917	1	Spring, for dash pot, for Style Nos. 277906 and 277907
26	122525	1	Spring, for dash pot, for Style No. 300291
27	273372	1	Plunger rod, for dash pot
28	277554	1	Spring holder, for dash pot, for Style No. 300291
29	277560	1	Cast iron cover, for dash pot
30	.....	4	Machine bolt, $\frac{1}{2}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten dash pot cover
31	230342	1	Cast iron bottom, for dash pot
32	.....	4	Machine bolt, $\frac{1}{2}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten dash pot bottom
33	.....	3	Machine bolt, $\frac{1}{2}$ " x 2" (standard hardware), to mount dash pot on frame
34	.....	11	Lock washer, $\frac{1}{2}$ " (standard hardware), for machine bolt
35*	214139	1	Brass bushing, for valve assembly
36*	185236	1	Brass valve, for dash pot bottom
37*	198929	1	Spring, for valve
38*	187761	1	Pin, for valve
39*	.....	1	Fillister head iron machine screw, No. 10-32 x $\frac{1}{2}$ " (standard hardware), to adjust valve pin
40	40662	1	Nut, No. 10-32 (standard hardware), for screw
*	68776	1	Cap nut, for valve
41*	275056	1	Brass plug, for side of valve casting
42*	122532	1	Gasket, for bottom of dash pot
43	272649	1	Piston leather seating washer
44	112506	1	Piston leather
45	187120	1	Piston leather expander
46	277547	1	Piston follower, for expander
47	.....	1	Hexagon nut, $\frac{3}{4}$ " (standard hardware), to clamp follower to expander
48	.....	1	Lock washer, $\frac{3}{4}$ " (standard hardware), used between nut and follower
49	216071	1	Signal switch. For details see page 25
50	.....	2	Round head stove bolt, $\frac{1}{4}$ " x $1\frac{1}{2}$ " (standard hardware), to mount signal switch on frame
51*	.....	2	Lock washer, $\frac{1}{4}$ " (standard hardware), for stove bolt
52	323744	1	Stud in main lever, for signal switch link
53*	3272	1	Washer, for stud
54	277559	1	Link, for signal switch and main lever
55*	384892	1	Extension lever
56*	.....	2	Tap bolt, $\frac{3}{8}$ " x 1" (standard hardware), to mount extension lever
57*	3428	2	Washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
58*	.....	2	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
59*	.....	3	Tap bolt, $\frac{3}{8}$ " x $2\frac{1}{2}$ " (standard hardware), to mount overload release mechanism
60*	283038	3	Brass tube spacer, for tap bolt
61*	3428	3	Washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
62*	.....	3	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
63*	.....	3	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt and spacer

*Not illustrated.

OVERLOAD RELEASE MECHANISMS AND DETAILS
Style Nos. 277539 and 277540



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION
All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req.	Description
1	277539†	..	Overload release mechanism complete, with one coil
1	277540†	..	Overload release mechanism complete, with two coils
*	224185	1	Overload coil, 5 amperes, for Style No. 277539
*	224185	2	Overload coil, 5 amperes, for Style No. 277540
2	384929	1	Cast steel trip lever
3	63605	1	Shaft, for trip lever
4	3272	1	Washer, for shaft
5	220349	1	Square head screw, for trip lever
6*	.....	1	Lock washer, 1/4" (standard hardware), for screw
7*	.....	1	Lock nut, 1/4" (standard hardware), for screw
8	333474	1	Malleable iron trigger
9*	220349	1	Square head screw, for trigger
10*	.....	1	Lock washer, 1/4" (standard hardware), for screw
11*	.....	1	Lock nut, 1/4" (standard hardware), for screw
12	72065	1	Spring for trigger
13	.....	1	Fillister head iron machine screw, No. 10-32 x 1 3/4" (standard hardware), for trigger spring
14	.....	2	Hexagon iron machine screw nut, No. 10-32 (standard hardware), for screw
15	380237	1	Shaft, for trigger
16	333472	1	Cast iron mechanism frame
17*	283060	3	Spacing rod, for cover
18*	.....	3	Tap bolt, 5/16"-18 x 3/4" (standard hardware), for spacing rod
19*	.....	3	Tap bolt, 3/8"-16 x 1" (standard hardware), for spacing rod
20*	333473	1	Cast iron cover for frame
21*	.....	3	Tap bolt, 3/8" x 2 1/2" (standard hardware), to mount mechanism frame
22*	3428	3	Washer, for bolt
23*	.....	3	Lock washer, 3/8" (standard hardware), for tap bolt
24	283056	1	Plunger rod, for tripping lever and retrieving lever
25	283057	1	Steel cap, for plunger rod
26	.....	2	Lock nut, 5/8" (standard hardware), for plunger rod
27	3429	1	Washer, for plunger rod
28	116760	1	Stationary core complete, for Style No. 277539
28	116760	2	Stationary core complete, for Style No. 277540

*Not illustrated.

†See Ref. No. 2*, page 17, for application of these Style Numbers.

OVERLOAD RELEASE MECHANISMS AND DETAILS—Continued
Style Nos. 277539 and 277540

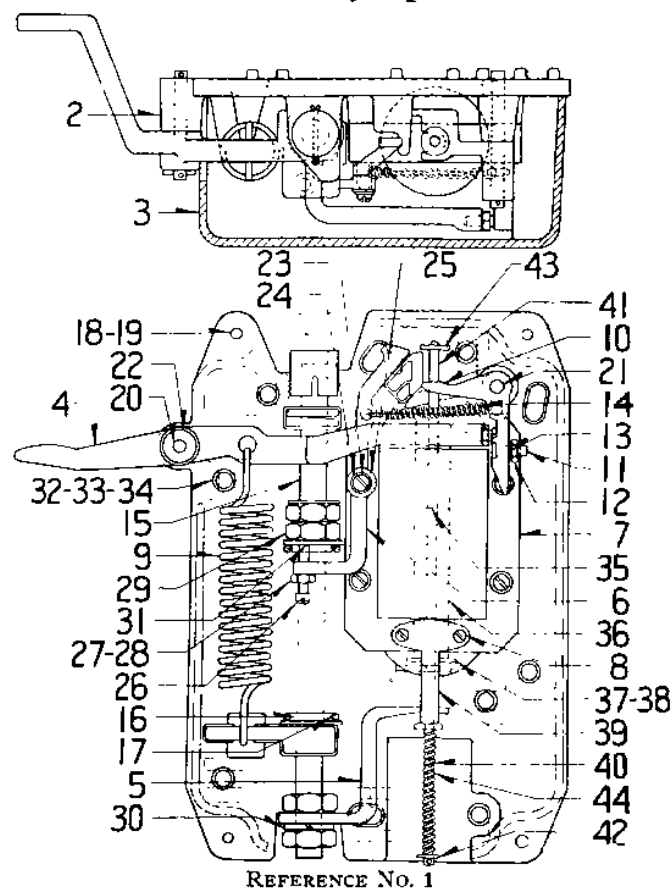
Illustrated on Page 19

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION
All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req.	Description
29	.....	2	Fillister head iron machine screw, No. 10-32 x 2½" (standard hardware), to mount stationary core, for Style No. 277539
29	.....	4	Fillister head iron machine screw, No. 10-32 x 2½" (standard hardware), to mount stationary core, for Style No. 277540
30*	4000	2	Lock washer, for screw
30*	4000	4	Lock washer, for screw
31*	.....	2	Iron machine screw nut, No. 10-32 (standard hardware), for screw
31*	.....	4	Iron machine screw nut, No. 10-32 (standard hardware), for screw
32	88828	2	Bracket for coil, for Style No. 277539
32	88828	4	Bracket for coil, for Style No. 277540
33	.....	2	Fillister head iron machine screw, No. 10-32 x 1¾" (standard hardware), to mount coil bracket, for Style No. 277539
33	.....	4	Fillister head iron machine screw, No. 10-32 x 1¾" (standard hardware), to mount coil bracket, for Style No. 277540
34*	4000	2	Lock washer, for screw
34*	4000	4	Lock washer, for screw
35*	.....	2	Iron machine screw nut, No. 10-32 (standard hardware), for screw
35*	.....	4	Iron machine screw nut, No. 10-32 (standard hardware), for screw
36	126283	1	Moving core and plunger rod complete
36	126283	2	Moving core and plunger rod complete
37*	116761	1	Moving core assembled
38	148509	1	Plunger rod, for core
39	116763	1	Guide washer, for bottom of core and plunger rod
40*	3423	1	Washer between guide washer and core
41*	.....	1	Dowel, ".086 x ¼", to fasten guide washer to core
42*	233098	1	Washer, for top of core
43	88829	1	Adjusting screw, for Style No. 277539
43	88829	2	Adjusting screw, for Style No. 277540
44	.....	1	Iron machine screw nut, No. 14-24 (standard hardware), for adjusting screw
44	.....	2	Iron machine screw nut, No. 14-24 (standard hardware), for adjusting screw
45	219614	1	Core guide, for Style No. 277539
45	219614	2	Core guide, for Style No. 277540
46*	384892	1	Extension lever
47*	.....	2	Tap bolt, ⅜" x 1" (standard hardware), to mount lever
48*	3428	2	Washer, for bolt
49*	.....	2	Lock washer, ⅜" (standard hardware), for bolt
50	333476	2	Spring seat, for compression spring, for retrieving lever
51	283058	1	Compression spring, for retrieving lever
52	283059	1	Tension spring, for retrieving lever

*Not illustrated.

UNDER VOLTAGE RELEASE MECHANISMS AND DETAILS
Style Nos. 287132, 289880 and 289882
For Hand or Electrically Operated Breakers



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Mechanism	Description
1	287132**	..	Under voltage release mechanism complete, without coil
1	289880†	..	Under voltage release mechanism complete, without coil
1	289882‡	..	Under voltage release mechanism complete, without coil
*	.....	..	Coil. When ordering, give complete Name Plate Reading and control voltage
2	380260	1	Cast iron base
3	380258	1	Cast iron cover
4	380259	1	Cast steel trip lever
5	301716	1	Malleable iron retrieving lever
6	380256	1	Malleable iron locking lever
7	116759	1	Magnet frame complete
7-A*	88828	2	Guide bracket
8	.....	2	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten guide bracket to magnet
8-A*	.....	2	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{1}{4}$ " (standard hardware), to fasten stationary core to magnet
9	283059	1	Tension spring for trip lever
10	380262	1	Malleable iron trigger
11	220349	2	Square head screw, for trigger and latch for trip lever
12	.....	2	Lock nut, $\frac{1}{4}$ " (standard hardware), for square head screw
13	.....	1	Lock washer, $\frac{1}{4}$ " (standard hardware), for square head screw
14	107323	1	Tension spring, for trigger
15	380263	1	Retrieving plunger
16	283057	1	Cold rolled steel cap, for retrieving plunger
17	283058	1	Pressure spring, for retrieving plunger
17-A*	333476	2	Malleable iron seat, for pressure spring
18	.....	4	Fillister head iron machine screw, No. 14-24 x $\frac{5}{8}$ " (standard hardware), to fasten cover to base
19	.....	4	Hexagon iron nut, No. 14-24 (standard hardware), for cover screws
20	63605	1	Shaft, for trip lever and frame
21	63606	1	Shaft, for trigger and frame

*Not illustrated.

**For electrically operated 4 pole, 1200 to 2000 ampere, breakers.

†For electrically operated 2 and 3 pole, 300 to 2000 ampere and 4 pole, 300 to 600 ampere, breakers.

‡For hand operated breakers.

UNDER VOLTAGE RELEASE MECHANISMS AND DETAILS—Continued

Style Nos. 287132, 289880 and 289882

For Hand or Electrically Operated Breakers

Illustrated on Page 21

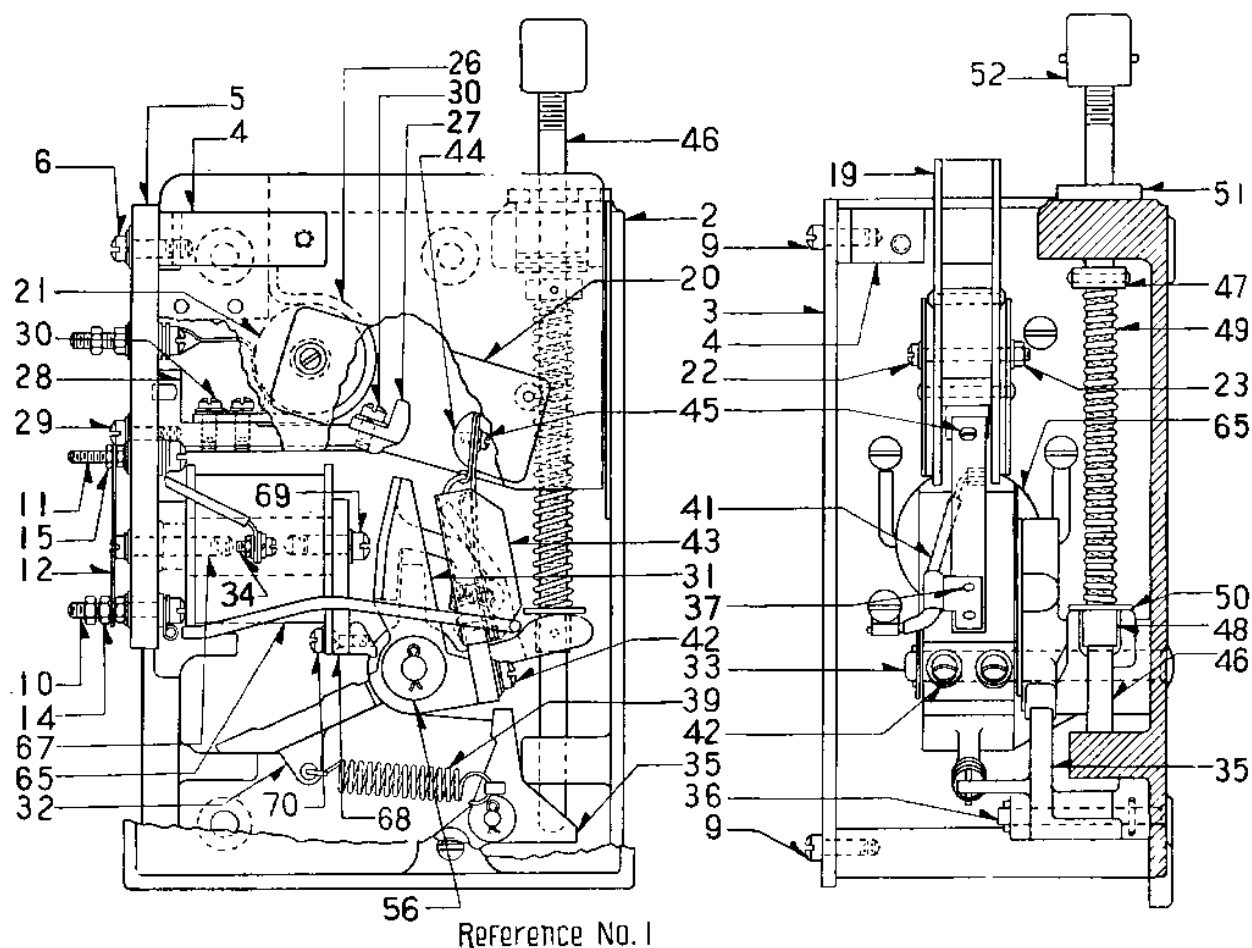
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Mechanism	Description
22	3272	1	Washer, for tripping lever shaft
22-A*	380257	1	Brass tube, used as bearing for locking lever
23	.....	1	Fillister head iron machine screw, No. 14-24 x 2" (standard hardware), to fasten locking lever and magnet to base
24	7443	1	Washer, for locking lever screw
25	.....	1	Lock washer, $\frac{1}{4}$ " (standard hardware), for locking lever screw
25-A*	.....	3	Fillister head iron machine screw, No. 14-24 x $1\frac{3}{8}$ " (standard hardware), to fasten magnet to base
25-B*	7443	3	Washer, for magnet screw
25-C*	.....	3	Lock washer, $\frac{1}{4}$ " (standard hardware), for magnet screw
26	.....	1	Fillister head iron machine screw, No. 14-24 x $1\frac{1}{8}$ " (standard hardware), used to adjust locking lever
27	.....	1	Hexagon iron nut, No. 14-24 (standard hardware), for locking lever adjusting screw
28	7443	1	Washer, for locking lever adjusting screw
29	.....	4	Lock nut, $\frac{5}{8}$ " (standard hardware), used to adjust retrieving plunger
30	100516	1	Lock washer, used with lock nut on retrieving plunger
31	3429	1	Washer, used on retrieving plunger
31-A*	380268	1	Extension lever, for Style No. 289880
31-A*	285154	1	Extension lever, for Style No. 287132
31-A*	384917	1	Extension lever, for Style No. 289882
32	.....	3	Tap bolt, $\frac{3}{8}$ " x 2" (standard hardware), for mounting under voltage release mechanism
32-A*	.....	2	Tap bolt, $\frac{3}{8}$ " x 1" (standard hardware), to mount extension lever
33	3428	5	Washer, for mounting bolt
33-A*	384918	1	Spacer, for tap bolt and base, for Style No. 289880
34	.....	5	Lock washer, $\frac{3}{8}$ " (standard hardware), for mounting bolt
34-A*	289883	1	Moving and stationary cores assembled complete
35	116760	1	Stationary core
36	116761	1	Moving core
36-A*	.....	1	Dowel, ".085 x $\frac{1}{16}$ ", for moving core
37	3423	2	Iron washer, for base of moving core
38	116763	1	Sheet copper washer, for base of moving core
39	219396	1	Core guide
40	385288	1	Stem complete with lower brass sleeve
40-A*	219399	1	Stem only
41	219397	1	Upper brass sleeve, for stem
41-A*	301722	1	Lower brass sleeve, for stem
42	7444	1	Washer, for bottom end of stem
43	325113	1	Washer, for top end of stem
44	294567	1	Spring, for stem
45*	.....	2	Phosphor bronze rivet, ".0641 x $\frac{5}{16}$ " (standard hardware), to rivet sleeve to stem
46*	148909	1	Under voltage release mechanism coil, 25 cycle, 110 volts; 60 cycle, 220 volts
46*	148907	1	Under voltage release mechanism coil, 25 cycle, 220 volts; 60 cycle, 440 volts
46*	165220	1	Under voltage release mechanism coil, 25 cycle, 440 volts
46*	201482	1	Under voltage release mechanism coil, 25 cycle, 550 volts
46*	201482	1	Under voltage release mechanism coil, 25 cycle, 600 volts, plus one resistance
			Style No. 186470
46*	148908	1	Under voltage release mechanism coil, 60 cycle, 110 volts
46*	241504	1	Under voltage release mechanism coil, 60 cycle, 600 volts

*Not illustrated.

CUT-OFF SWITCH AND DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Frame, Cover, Terminal Base and Details

Ref. No.	Style No.	No. Per Breaker	Description
1	277491	1	Cut-off switch complete
2	333519	1	Frame
3	333520	1	Cover
4	289919	1	Supporting bracket
5	333521	1	Terminal base
6	.....	2	Fillister head iron machine screw, No. 14-24 x $\frac{3}{4}$ " (standard hardware), to fasten cover support to terminal base
7*	7443	15	Iron washer
8*	.....	10	Lock washer, $\frac{1}{4}$ " (standard hardware)
9	.....	5	Fillister head iron machine screw, No. 14-24 x $\frac{5}{8}$ " (standard hardware), to fasten cover to support and to frame
10	.....	2	Fillister head brass machine screw, No. 14-24 x $1\frac{1}{4}$ " (standard hardware), used as a terminal stud
11	.....	2	Fillister head brass machine screw, No. 10-32 x $1\frac{1}{4}$ " (standard hardware), used as a terminal stud
12	303949	1	Connection strap
13*	243981	2	Copper terminal
14	46868	5	Hexagon brass nut, to fasten connection strap and terminal on stud
15	40662	4	Hexagon brass nut, to fasten connection strap on terminal stud
16*	3422	8	Iron washer
17*	4000	6	Lock washer
18*	148425	6	Crimp washer

Arc Shield, Contact Tip and Details

19	333523	1	Arc shield with spacers and pole pieces
20	303944	2	Steel pole piece
21	246392	1	Blowout coil
22	.....	1	Fillister head iron machine screw, No. 10-32 x $1\frac{1}{2}$ " (standard hardware), to fasten blowout coil and pole pieces to arc shield
23	40662	1	Hexagon iron nut, for No. 10-32 machine screw
24*	4000	8	Lock washer for machine screw
25*	246096	1	Blowout coil core
26	333524	1	Arcing horn
27	184665	1	Contact tip

*Not illustrated.

CUT-OFF SWITCH AND DETAILS—Continued

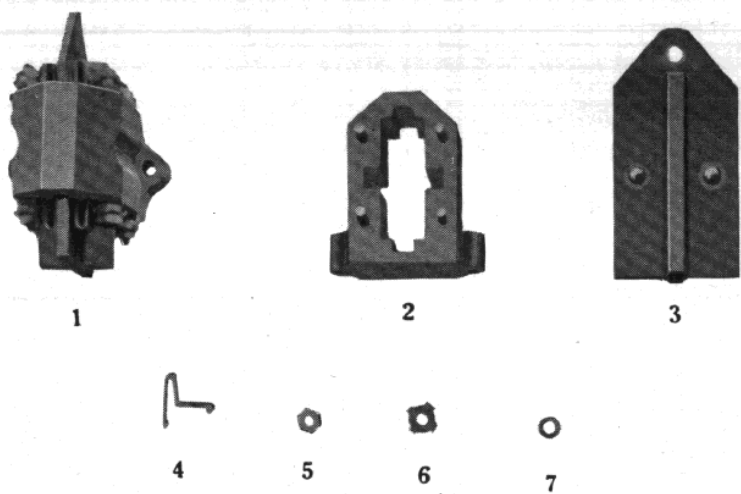
Illustrated on Page 23

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION**Armature, Trip Lever, Coil and Details**

Ref. No.	Style No.	No. Per Breaker	Description
28	301928	1	Contact support
29	.....	5	Fillister head iron machine screw, No. 14-24 x $\frac{3}{4}$ " (standard hardware), to fasten contact support to terminal base
30	.....	3	Fillister head brass machine screw, No. 10-32 x $\frac{1}{2}$ " (standard hardware), to fasten arcing horn and contact tip to support
31	333525	1	Armature
32	333526	1	Trip lever
33	283044	1	Hinge pin, for armature and trip lever
34	242860	..	Lead screw
35	282417	1	Tripping trigger
36	283045	1	Hinge pin, for tripping trigger
37	.....	2	Round head copper rivet, $\frac{1}{8}$ " x $\frac{5}{8}$ " (standard hardware)
38*	283052	1	Compression spring
39	283053	1	Tension spring
40*	333527	1	Moving contact complete with block, shield, spring stop and clip
41	303948	1	Shunt with clips
42	.....	3	Fillister head iron machine screw, No. 14-24 x $\frac{3}{4}$ " (standard hardware), to fasten support to armature
43	333529	1	Arc shield
44	283048	1	Contact tip
45	.....	1	Fillister head brass machine screw, No. 10-32 x $\frac{5}{16}$ " (standard hardware), to fasten contact tip and shunt to armature
46	283046	1	Trip rod
47	283049	1	Trip rod collar
48	283047	1	Trip rod spacer
49	283051	1	Compression spring
50	3428	1	Iron washer
51	301927	1	Hexagon brass nut
52	333531	1	Trip rod cap
53*	333530	1	Rivet to fasten collar on trip rod
54*	333532	1	Operating link
55*	2892	2	Iron washer, for link
56	3427	2	Washer for pin Style No. 283044
57*	333533	1	Switch lever
58*	85531	2	Hinge pin, for link and switch lever
59*	87679	1	Hinge pin, for switch lever
61*	333534	1	Connection strap
62*	63628	1	Hinge pin, for bell crank and connection strap
63*	63619	1	Hinge pin, for switch lever and connection strap
64*	3428	2	Washer for pin, Style No. 63628
65	.....	1	Cut-off switch coil
66*	283054	1	Cut-off switch core
67	.....	1	Fillister head iron machine screw, No. 14-24 x $1\frac{1}{4}$ " (standard hardware), to fasten coil core to terminal base
68	333535	1	Pole piece
69	.....	3	Fillister head iron machine screw, No. 14-24 x $\frac{3}{4}$ " (standard hardware), to fasten pole piece to coil core
70	.....	1	Fillister head iron machine screw, No. 8-32 x $\frac{1}{2}$ " (standard hardware), to fasten pole piece to trip coil washer
71*	125680	1	Lock washer for machine screw

*Not illustrated

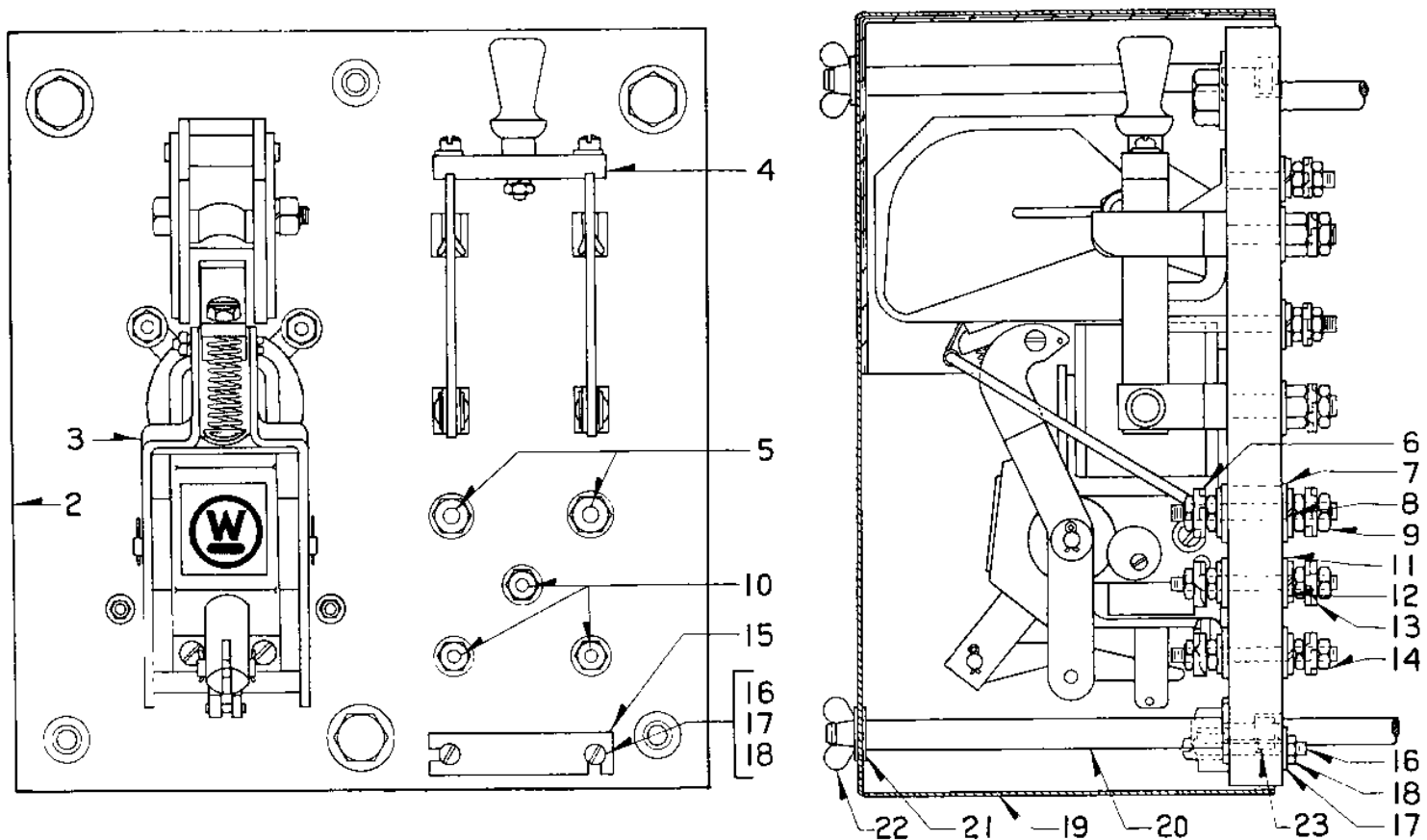
SIGNAL SWITCH AND DETAILS
Style No. 216071



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Switch	Description
1	216071	..	Signal switch complete
2	377723	1	Moulded composition switch body and studs
3	220996	1	Moulded composition plunger with contact pieces
4	220999	8	Phosphor bronze contact finger
5	40662	16	Hexagon brass contact nut
6	148425	8	Crimped washer, used with nut Ref. No. 5
7	.....	8	Lock washer, 1/8" (standard hardware), used with nut Ref. No. 5

CONTROL PANEL AND MOUNTING DETAILS



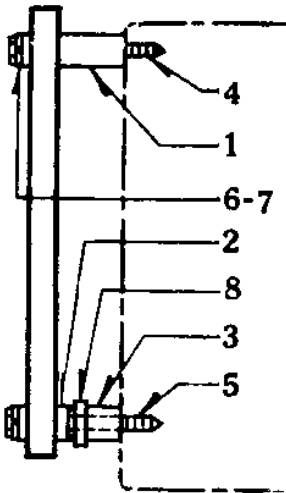
REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Panel	Description
1	375085	..	Control panel complete, with 125 volt coils
1	375086	..	Control panel complete, with 250 volt coils
1	376371	..	Control panel complete, without coils
*	384953	1	Operating coil, 125 volts
*	384954	1	Operating coil, 250 volts
*	375628	1	Releasing coil, 125 volts
*	375629	1	Releasing coil, 250 volts
2	385048	1	Slate panel
3	398300	1	Type S-1 Control Relay. For details see Part Catalogue No. 6221
4	398301	1	Type A knife switch. 2 pole, single-throw, 100 amperes, 250 volts, direct current. For details see page 28
5	361711	2	Copper terminal stud, large
6	163424	8	Iron washer, for terminal stud
7	7458	4	Iron washer, for terminal stud
8	.....	10	Lock washer, 1/4" (standard hardware), for terminal stud
9	46868	8	Hexagon brass nut, for terminal stud
10	361706	3	Copper terminal stud, small
11	3421	6	Washer, for terminal stud
12	4000	6	Lock washer, for terminal stud
13	148425	12	Crimped brass washer, for terminal stud
14	40662	12	Hexagon brass nut, for terminal stud
15	199656	1	Fibre wire cleat
16	.....	2	Fillister head iron machine screw, No. 10-32 x 1 1/2" (standard hardware), to fasten wire cleat to slate panel
17	3410	2	Washer, for machine screw
18	.....	2	Hexagon iron nut, No. 10-32 (standard hardware), for machine screw
19	385051	1	Cover complete
20	385049	3	Stud, for cover
21	7444	12	Washer, for stud
22	197938	3	Wing nut, for stud
23	.....	3	Hexagon iron nut, 1/4" (standard hardware), for stud

*Not illustrated.

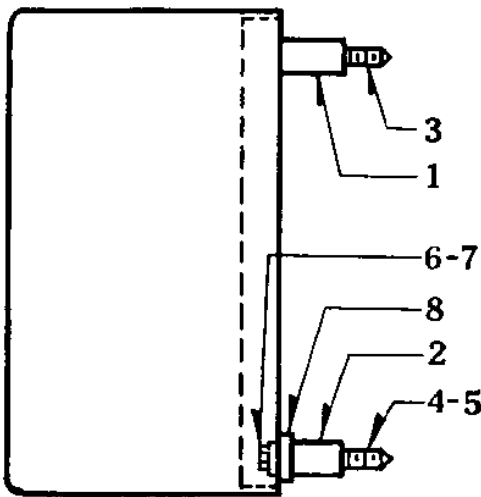
CONTROL PANEL AND MOUNTING DETAILS—Continued
Mounting Details for 3" Mechanism
For 2 or 3 Pole Breakers and for 4 Pole, 300 or 600 Ampere, Breakers



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

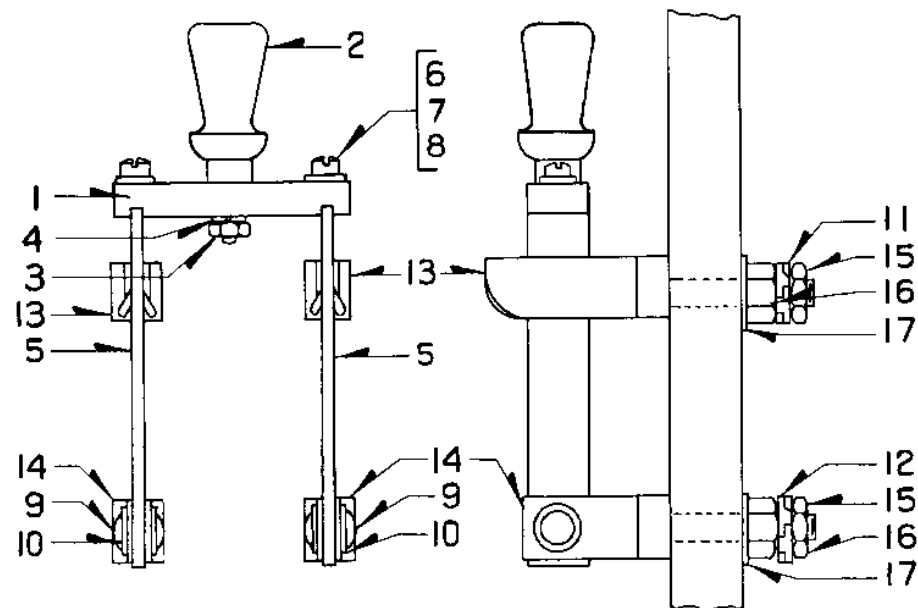
Ref. No.	Style No.	No. Per Panel	Description
1	394495	2	Upper spacer, for mounting bolts
2	394496	1	Lower spacer, short, used between panel and strap
3	394497	2	Lower spacer, long, used between strap and breaker mechanism
4	.....	2	Tap bolt, $\frac{5}{16}$ " x $3\frac{1}{2}$ " (standard hardware), for mounting panel, upper end
5	.....	3	Tap bolt, $\frac{5}{16}$ " x 2" (standard hardware), for mounting panel and strap, lower end
6	.....	5	Lock washer, $\frac{5}{16}$ " (standard hardware), for bolts
7	3272	3	Washer for panel mounting bolts
8	394501	1	Mounting strap

Mounting Details for 4" Mechanism
For 4 Pole, 1200, 1600 or 2000 Ampere Breakers



Ref. No.	Style No.	No. Per Panel	Description
1	394499	2	Upper spacer, for mounting bolts
2	394498	1	Lower spacer, for mounting bolt and strap
3	.....	2	Tap bolt, $\frac{5}{16}$ " x 3" (standard hardware), for mounting panel, upper end
4	.....	1	Tap bolt, $\frac{5}{16}$ " x $2\frac{1}{2}$ " (standard hardware), for mounting strap and breaker mechanism
5	.....	1	Tap bolt, $\frac{5}{16}$ " x $1\frac{1}{4}$ " (standard hardware), for mounting panel and strap
6	.....	4	Lock washer, $\frac{5}{16}$ " (standard hardware), for bolts
7	3272	3	Lock washer, for bolts to mount panel
8	394500	1	Mounting strap

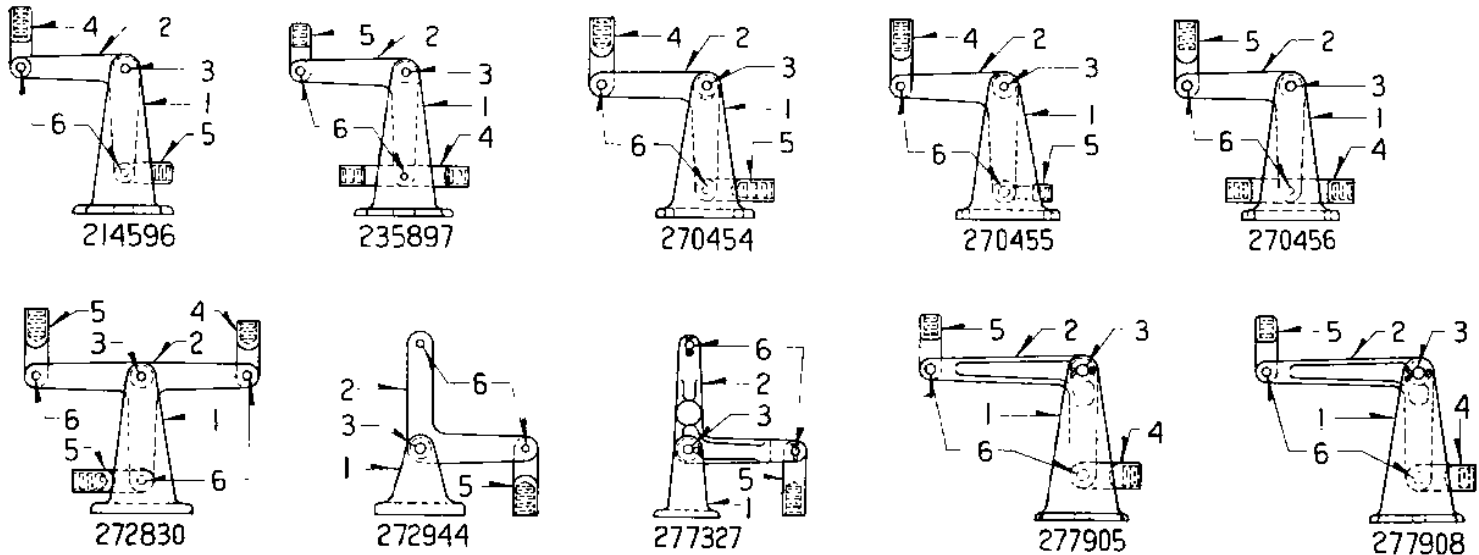
TYPE A KNIFE SWITCH, Style No. 398301, AND DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Switch	Description
..	398301	..	Type A knife switch, 2-pole, single-throw, 100 amperes, 250 volts, direct current
1	385050	1	Cross bar
2	293081	1	Handle complete
3	40662	1	Hexagon iron nut, to fasten handle to cross bar
4	4000	1	Lock washer, used under hexagon iron nut
5	189777	2	Switch blade
6	.....	2	Fillister head iron machine screw, No. 10-32 x 3/4" (standard hardware), to fasten switch blade to cross bar
7	40662	2	Hexagon iron nut, for machine screw
8	3410	2	Washer, to fit between hexagon iron nut and cross bar
9	.....	2	Copper rivet, 1/8" x 1/2" (standard hardware), used as a hinge pin for switch blade
10	230883	4	Washer, for rivet
11	23216	4	Terminal clip, for break jaw
12	194512	8	Terminal clip, for hinge jaw
13	189769	2	Break jaw complete
14	189768	2	Hinge jaw complete
15	369094	4	Contact nut, for hinge and break jaws
16	15309	4	Hexagon brass nut, to fasten hinge and break jaws to base
17	3272	4	Iron washer, used under hexagon brass nut

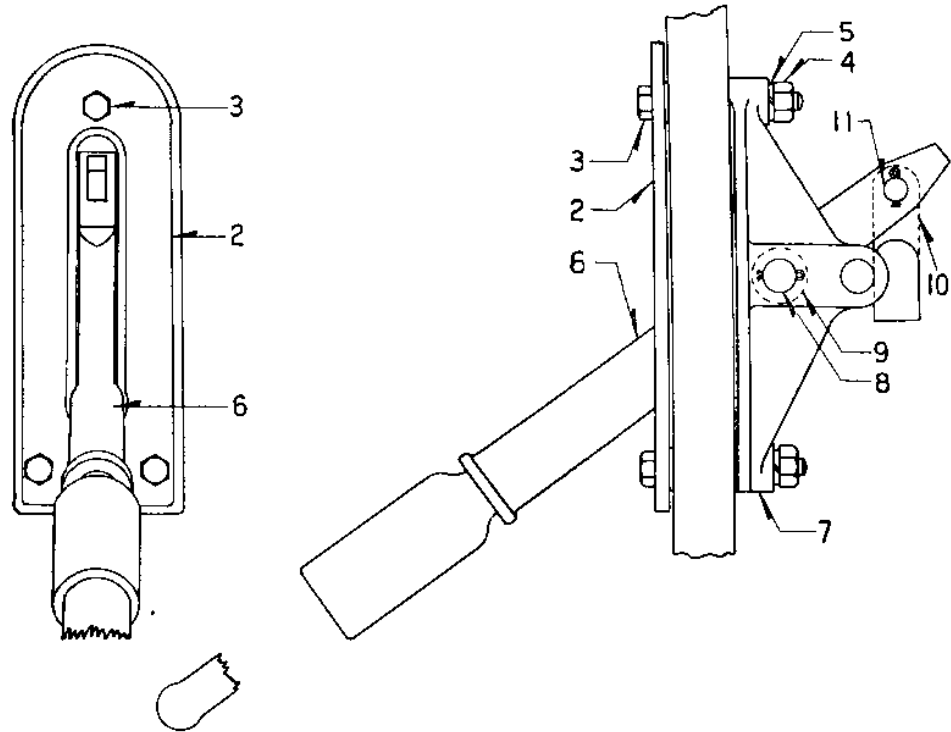
BELL CRANKS AND DETAILS
For Mounting Above or Below Floor



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Complete Bell Cranks	Ref. No. 1 Brackets		Ref. No. 2 Bell Cranks		Ref. No. 3 Shafts		Ref. No. 4 Adjustable Rod Ends		Ref. No. 5 Non-Adjustable Rod Ends		Ref. No. 6 Shafts	
Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.	No. Req.	Style No.
214596	1	272857	1	272856	1	125685	1	72281	1	83129	2	83813
235897	1	272857	1	272856	1	125685	1	235962	1	83129	2	83813
270454	1	289443	1	283040	1	88354	1	248949	1	248949	2	105265
270455	1	289443	1	283040	1	88354	1	248949	1	277888	2	105265
270456	1	289443	1	283040	1	88354	1	296361	1	248949	2	105265
272830	1	289443	1	287270	1	88354	1	239919	2	248949	3	105265
272944	1	283039	1	283040	1	88353	..	None	1	248949	2	105265
277327	1	272858	1	272856	1	125685	..	None	1	72281	2	83813
277905	1	384928	1	384927	1	125685	1	83129	1	72281	2	83813
277908	1	277857	1	283042	1	125685	1	83129	1	72281	2	83813

COVER PLATE AND DETAILS

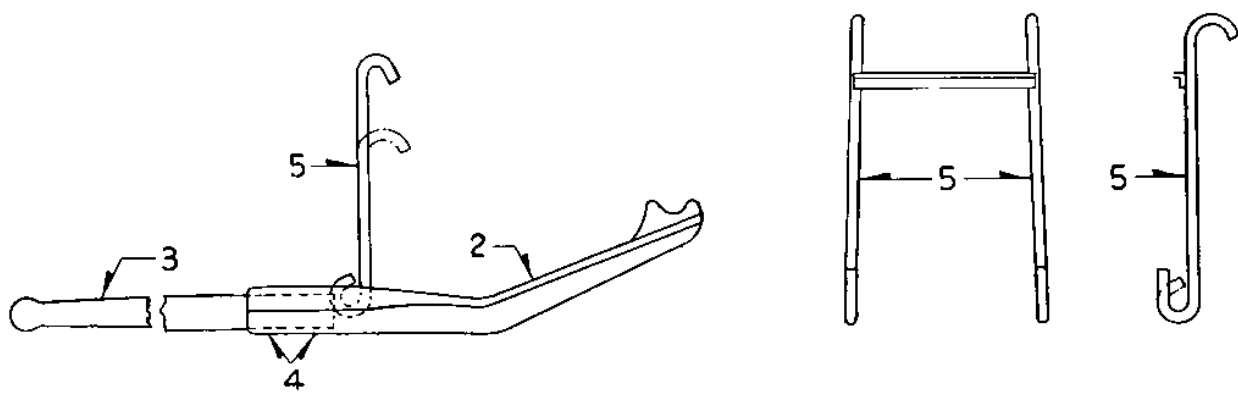


REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Req.	Description
1	277469	1	Cover plate complete
2	312432	1	Cover plate casting
3	.....	3	Tap bolt, 5/8" x 4 3/4" (standard hardware), to mount cover plate
4	.....	3	Hexagon nut, 5/8" (standard hardware), for tap bolt
5	.....	3	Lock washer, 5/8" (standard hardware), for tap bolt
6	384919	1	Handle lever
7*	312431	1	Handle lever bearing bracket
8	283061	1	Shaft, to fasten handle lever to bearing bracket
9	3359	2	Washer, for handle bearing shaft
10	233252	1	Rod end, for handle lever
11	92712	1	Shaft, to fasten rod end to handle lever

TANK LIFTER AND DETAILS



REFERENCE NO. 1

Ref. No.	Style No.	No. Per Lifter	Description
1	276439	..	Tank lifter complete
2	384924	1	Tank lifter casting
3	384926	1	Wood handle
4		1	Flat head wood screw, No. 14 x 1 3/4" (standard hardware), to fasten handle to casting
5	384925	1	Links and cross bar assembled

*Not illustrated.

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