

Part Catalogue No. 6192-3

April, 1925

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

PARTS OF

Westinghouse **Type E-3 Oil Circuit-Breakers**

300 to 3000 Amperes, 750 to 16,500 Volts, One and Three Poles
Automatic or Non-Automatic, Hand or Electrically Operated
Indoor, Wall or Pipe Mounted

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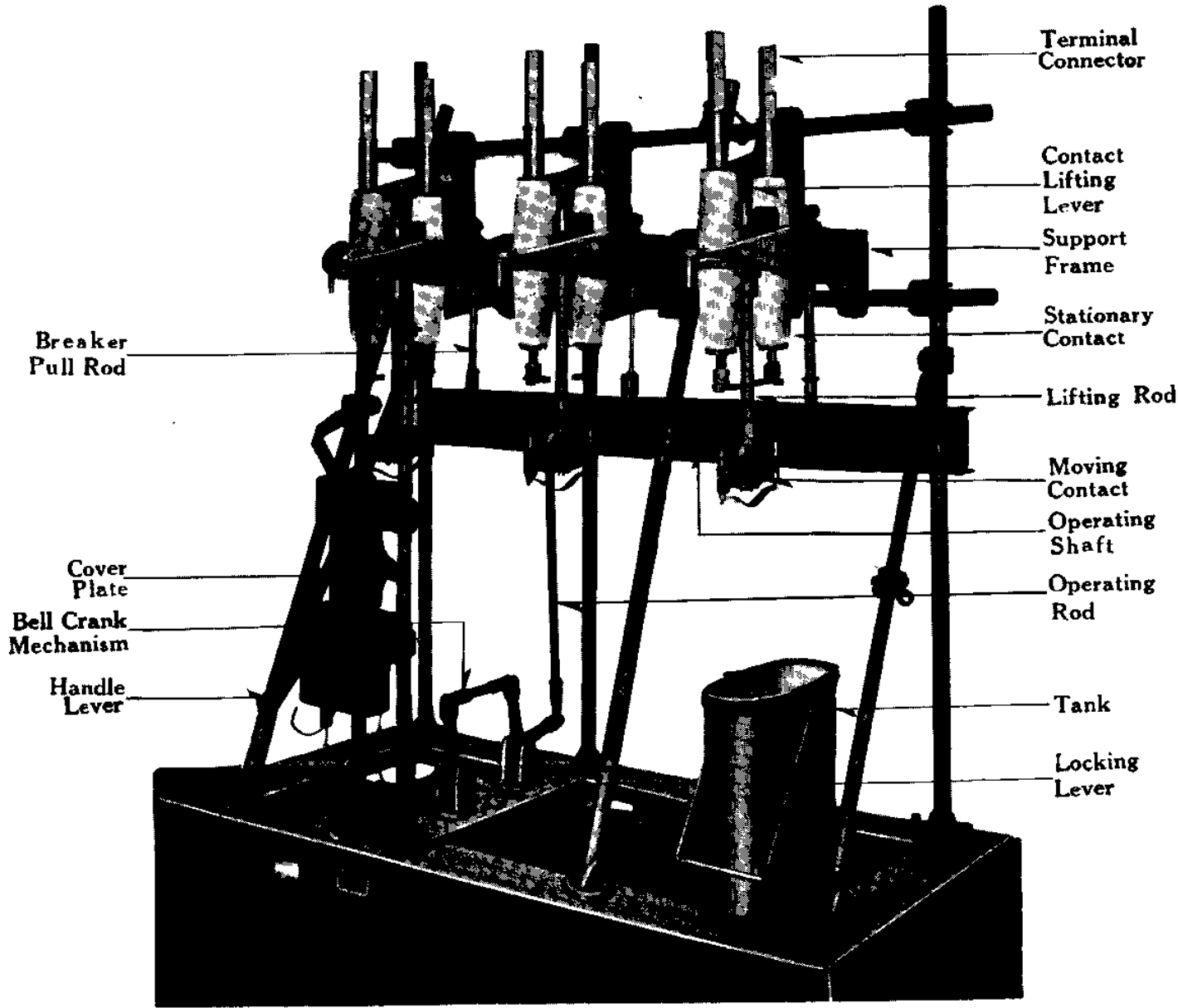
WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY

East Pittsburgh, Pa.

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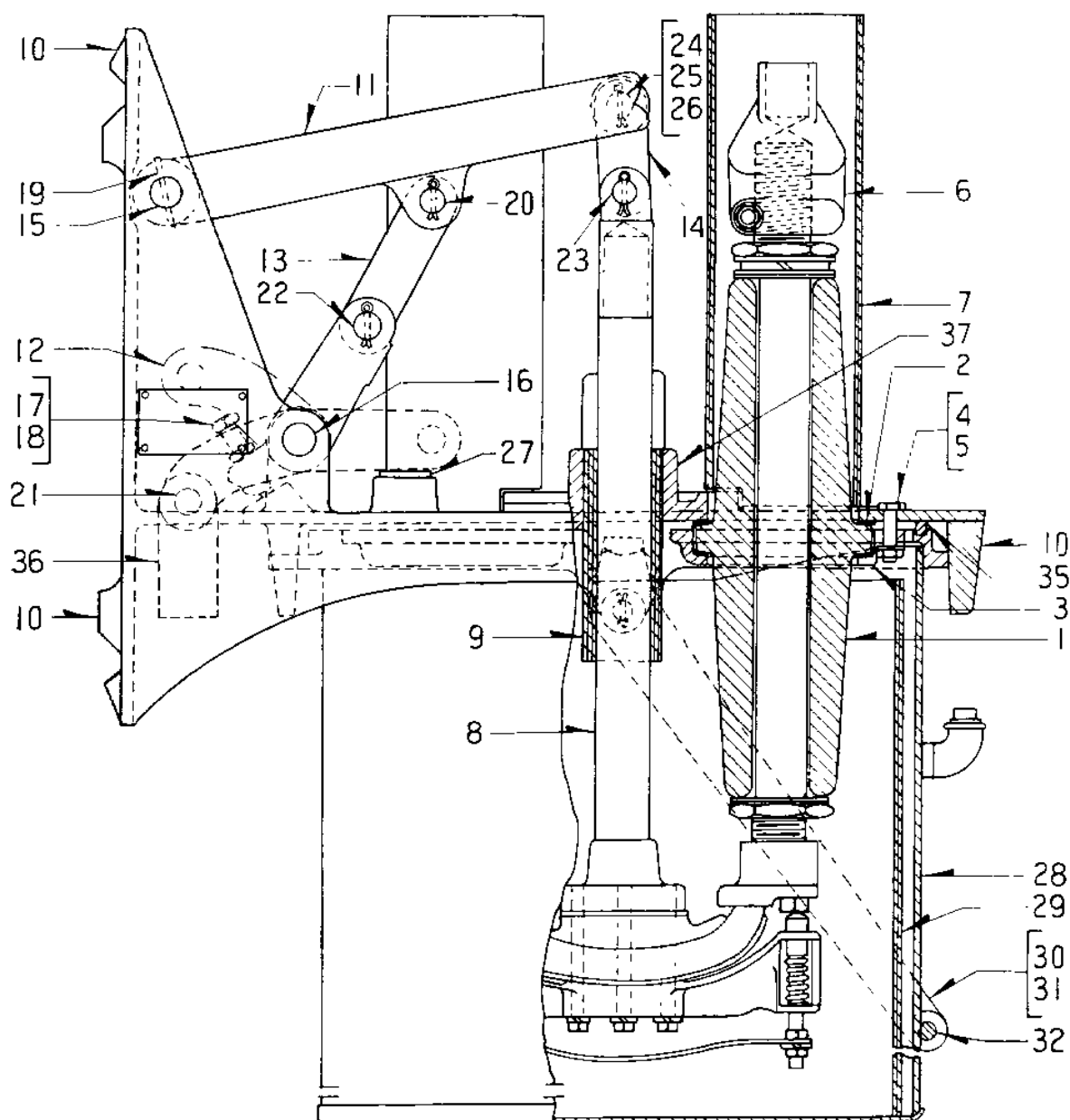
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TYPE E-3 OIL CIRCUIT-BREAKER
600 AMPERES, 16,500 VOLTS, 3-POLES, AUTOMATIC TRIP

POLE UNIT MAIN ASSEMBLY DETAILS
For 300, 600 and 1200 Amperes, 6600 to 16,550 Volts



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req.	Description
1	421986	2	Stationary contact complete for 300 amperes. For details see page 7
1	422000	2	Stationary contact complete for 600 amperes. For details see page 7
1	422005	2	Stationary contact complete for 1200 amperes. For details see page 8
2	184820	4	Lead washer for clamp ring and porcelain insulator
3	186329	2	Clamp ring for porcelain insulator
4	.....	6	Finished through bolt, $\frac{3}{8}$ " x $1\frac{3}{4}$ " (standard hardware), for clamp ring
5	.....	6	Lock washer $\frac{3}{8}$ " (standard hardware), for bolt
6	415001	2	Terminal for 300 amperes
6	422182	2	Terminal for 600 amperes
6	214594	2	Terminal for 1200 amperes
7	186993	2	Insulation tube over terminals for 300, 600 and 1200 amperes
8	421984	1	Moving contact complete for 300 amperes. For details see page 10
8	421999	1	Moving contact complete for 600 amperes. For details see page 10
8	415014	1	Moving contact complete for 1200 amperes. For details see page 10
9	219613	1	Guide tube for moving contact lifting rod for 300 and 600 amperes
9	422002	1	Guide tube for moving contact lifting rod for 1200 amperes
10	224171	1	Supporting frame
11	186327	1	Lifting lever with stud
12	186326	1	Closing lever
13	421981	1	Link for lifting lever and closing lever
14	421982	1	Link for lifting lever and rod end for moving contact

POLE UNIT MAIN ASSEMBLY DETAILS—Continued
For 300, 600 and 1200 Amperes, 6600 to 16,550 Volts

Illustrated on Page 3

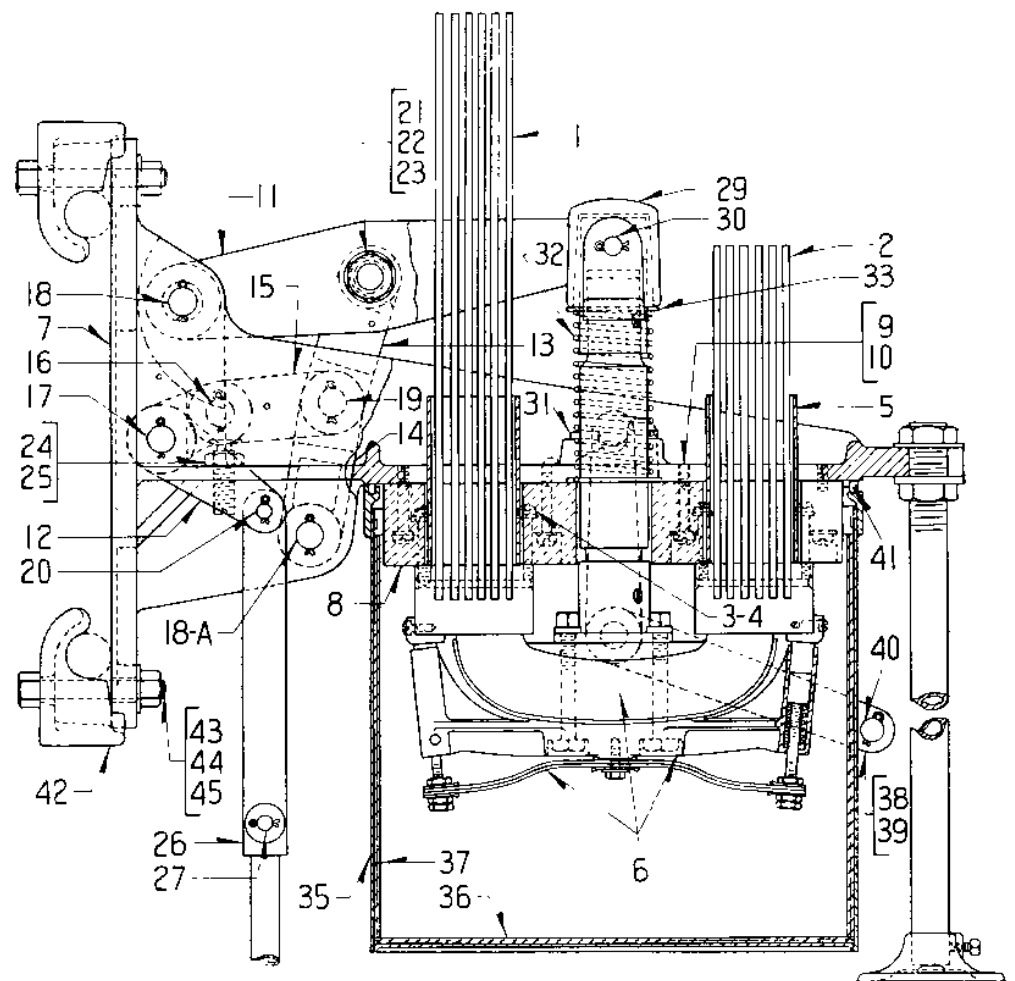
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req.	Description
15	421980	1	Bearing pin for lifting lever and supporting frame
16	421979	1	Bearing pin for closing lever and supporting frame
17	.....	1	Set screw, 1/2" x 2" (standard hardware), for closing lever
18	.....	1	Lock nut, 1/2"-13 (standard hardware), for screw
19	.....	1	Taper pin, No. 2 x 1 3/4" (standard hardware), for lifting lever and bearing pin
20	63619	1	Bearing pin for lifting lever and link
21	63613	1	Bearing pin for closing lever and remote control mechanism
22	63619	1	Bearing pin for closing lever and link
23	193274	1	Connecting pin for lifting lever link and lifting rod for 300 and 600 amperes
23	63619	1	Connecting pin for lifting lever link and lifting rod for 1200 amperes
24	422006	1	Stud for lifting lever
25	3429	1	Washer for stud for moving contact link on lifting lever
26	.....	1	C.R.S. rivet, 1/8" x 1 5/8" (standard hardware), for stud and lever
27	421983	1	Leather bumper
28	421989	1	Oil tank complete without lining
29	380361	1	Oil tank lining
30	186304	1	Locking lever for oil tank, right hand
31	186305	1	Locking lever for oil tank, left hand
32	194557	1	Handle for locking lever
33*	.....	2	C. R. S. rivet, ".127 x 1 1/4" (standard hardware), for handle
34*	186613	2	Stud used as guide for oil tank
35	.....	1	Square flax packing, 1/4" x 42", for oil tank
36	83129	1	Rod end for operating lever and operating mechanism
37	186328	1	Vent casting for 300 amperes
37	421998	1	Vent casting for 600 and 1200 amperes
38*	.....	4	Fillister head iron machine screw, 3/8"-16 x 3/4" (standard hardware), to fasten vent casting to support frame
39*	176939	3	U-Bolt to mount breaker on pipe frame
40*	.....	3	Hexagon iron nut, 1/2"-13 (standard hardware), for bolt
41*	.....	3	Lock washer, 1/2" (standard hardware), for bolt
42*	.....	3	W. I. washer, 1/2" (standard hardware), for bolt

*Not illustrated.

POLE UNIT MAIN ASSEMBLY DETAILS
For 3000 Amperes, 750 Volts



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req.	Description
1	422052	1	Stationary contact, long. For details see page 9
2	422053	1	Stationary contact, short. For details see page 9
3	.....	8	Fillister head iron machine screw, $\frac{3}{8}$ "-16 x $2\frac{1}{2}$ " (standard hardware), to fasten stationary contact to base
4	3415	8	Washer for screw
5	422059	2	Insulation tube, for stationary contact and base
6	422049	1	Moving contact complete. For details see page 11
7	422007	1	Supporting frame
8	422009	1	Slate base
9	.....	8	Fillister head iron machine screw, $\frac{3}{8}$ "-16 x $2\frac{1}{2}$ " (standard hardware), to fasten base to frame
10	3415	8	Washer for screw
11	422010	2	Lifting lever
12	422012	1	Closing lever for toggle link and lifting rod
13	422017	1	Toggle link, upper
14	422018	1	Toggle link, lower
15	405401	1	Link between closing lever and toggle links.
16	422016	1	Connecting pin for closing lever and link
17	422014	1	Bearing pin for closing lever and supporting frame
18	422013	1	Bearing pin for lifting lever and supporting frame
18-A	422015	1	Connecting pin for lower toggle link and support frame
19	422026	1	Connecting pin for toggle link and closing lever link
20	83814	2	Connecting pin for closing lever and connecting strap to pullrod
21	422011	1	Connecting pin for lifting lever and toggle link
22	.....	2	Lock washer, 1" (standard hardware), for pin
23	.....	2	Lock nut 1"-8 (standard hardware), for pin

POLE UNIT MAIN ASSEMBLY DETAILS—Continued
For 3000 Amperes, 750 Volts

Illustrated on Page 5

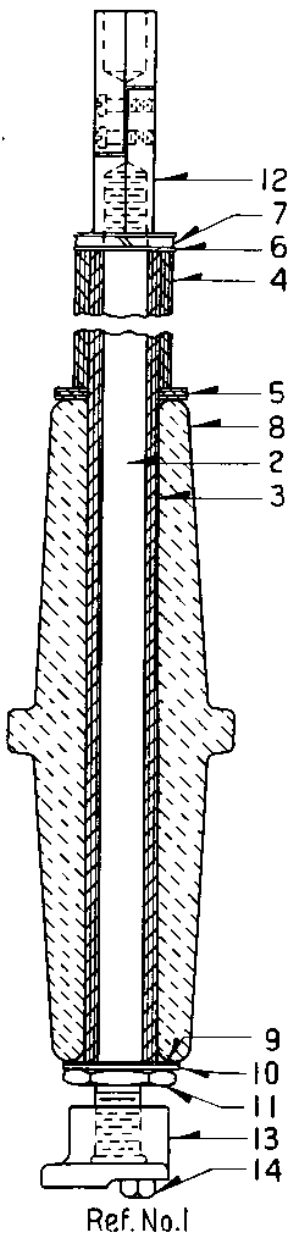
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req.	Description
24	422063	1	Set screw used as stop for closing lever
25	.....	1	Lock nut, $\frac{3}{4}$ " (standard hardware), for screw
26	422057	2	Connection strap for closing lever and pull rod
27	121154	1	Connecting pin for socket and connection straps
28*	422058	1	End socket for connection strap and pull rod
29	422048	1	Bumper casting for lifting rod
30	422047	1	Connecting pin for bumper and rod end
31	422008	10	Leather bumper
32	422050	1	Spring for lifting rod
33	422060	2	Washer for spring on lifting rod
34*	422056	1	Spacing collar for lifting lever
35	422019	1	Oil tank complete without lining
36	411020	1	Oil tank lining for bottom
37	411021	1	Oil tank lining for side
38	422022	1	Locking lever for oil tank, right hand
39	422023	1	Locking lever for oil tank, left hand
40	422027	1	Handle for locking lever
41	.....	1	Square flax packing, $1\frac{1}{4}$ " x 52", for oil tank
42	422062	4	Pipe clamp to mount breaker
43	.....	4	Tap bolt, $\frac{5}{8}$ " x $4\frac{1}{2}$ " (standard hardware), for pipe clamp
44	.....	4	Hexagon iron nut, $\frac{5}{8}$ "-11 (standard hardware), for bolt
45	3429	4	Washer for bolt

*Not illustrated.

STATIONARY CONTACTS AND DETAILS
For 300 and 600 Amperes, 15,000 and 16,500 Volts

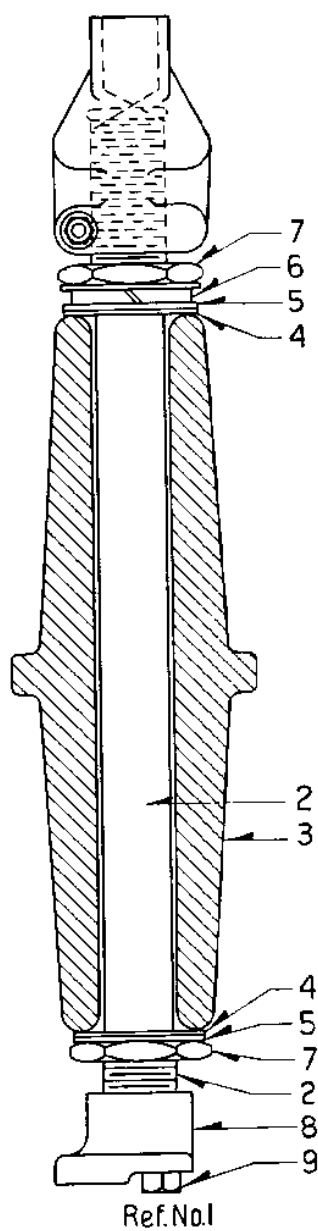


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Contact	Description
1	421986	2*	Stationary contact complete for 300 amperes
1	422000	2*	Stationary contact complete for 600 amperes
2	421987	1	Terminal rod for 300 amperes
2	422001	1	Terminal rod for 600 amperes
3	205288	1	Insulation tube for terminal rod
4	205289	1	Spacing tube for top of porcelain insulator and clamp washers
5	421988	1	Fibre washer for top of porcelain insulator and below spacing tube
6	182827	2	Washers for top of insulation and spacing tubes
7	....	1	Lock washer, 1" (standard hardware), used between washers for top of insulation and spacing tubes
8	61298	1	Porcelain insulator
9	184819	1	Lead washer for bottom of porcelain insulator
10	193740	1	Brass washer used between lead washer and clamp nut
11	7545	1	Clamp nut for washers below porcelain insulator
12	415001	1	Terminal for 300 amperes
12	422182	1	Terminal for 600 amperes
13	189960	1	Contact foot for 300 amperes
13	359810	1	Contact foot for 600 amperes
14	170101	1	Arcing screw

*Per pole unit.

STATIONARY CONTACT AND DETAILS
For 1200 Amperes, 6600 Volts

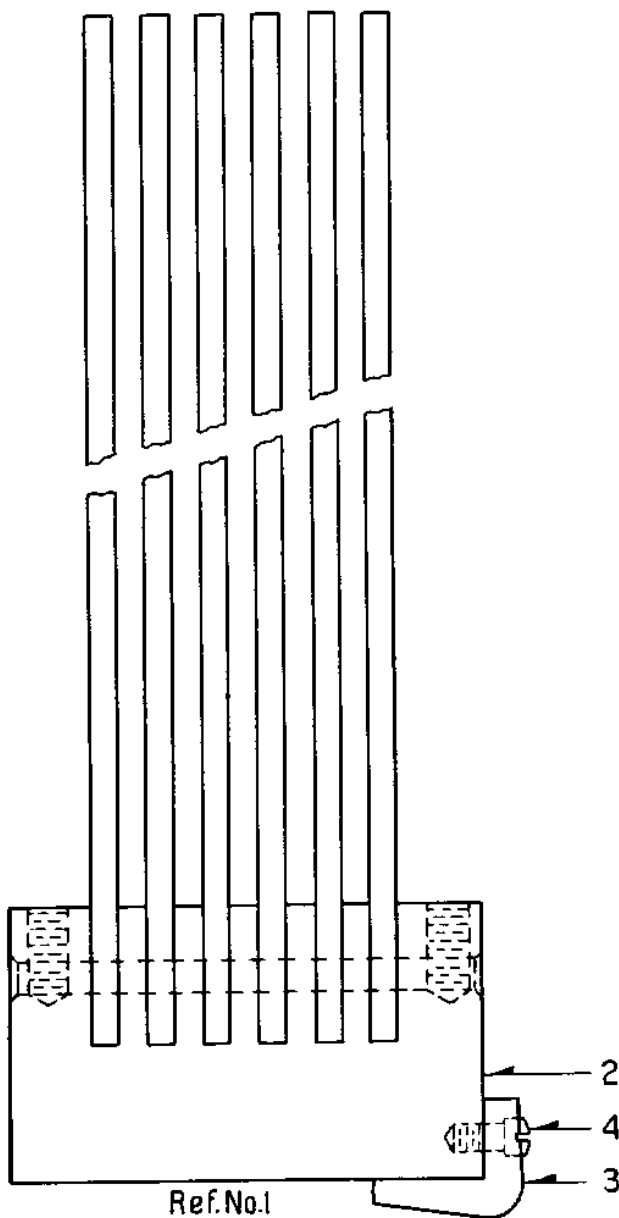


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Contact	Description
1	422005	2*	Stationary contact complete
2	422003	1	Terminal rod
3	61298	1	Porcelain insulator
4	209970	2	Lead washer for top and bottom of porcelain insulator
5	422004	3	Brass washer for top and bottom of porcelain insulator
6	.....	1	Lock washer, 1½" (standard hardware), used between brass washers for top of porcelain insulator
7	7547	2	Clamp nut for top and bottom of porcelain insulator
8	263321	1	Contact foot
9	170101	1	Arcing screw

*Per pole unit.

STATIONARY CONTACTS AND DETAILS
For 3000 Amperes, 750 Volts

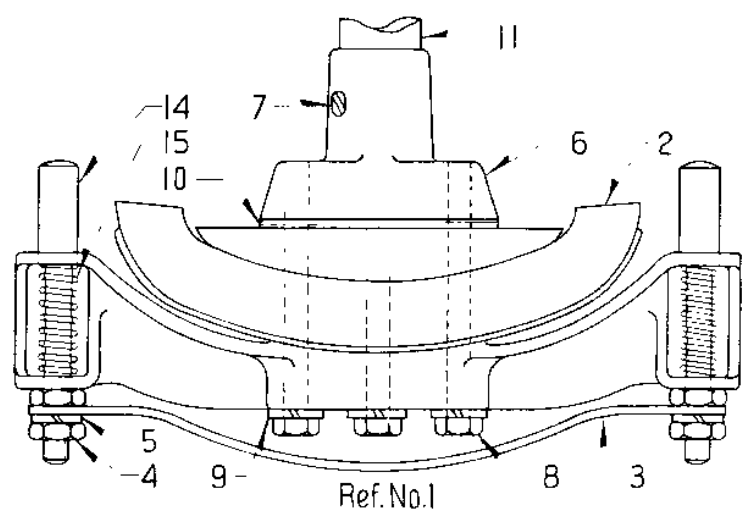


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Contact	Description
1	422052	2*	Stationary contact complete, long
1	422053	2*	Stationary contact complete, short
2	422054	1	Contact foot with strap for Style No. 422052
2	422055	1	Contact foot with strap for Style No. 422053
3	422051	1	Arcing contact
4	.....	3	Fillister head iron machine screw, No. 14-24 x 1/2" (standard hardware), to fasten arcing contact to foot

*Per pole unit

MOVING CONTACTS AND DETAILS
For 300, 600 and 1200 Amperes, 6600 to 16,500 Volts

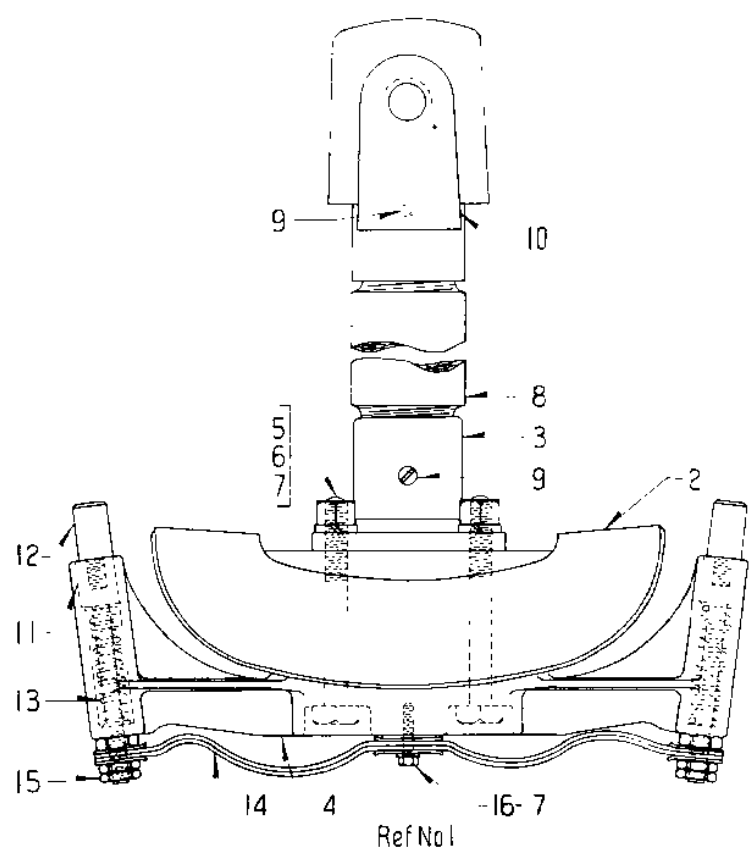


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION
All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. per Pole Unit			Description
		300 Amps.	600 Amps.	1200 Amps.	
1	421984	1	..	..	Moving contact complete
1	421999	..	1	..	Moving contact complete
1	415014	..	..	1	Moving contact complete
2	151237	1	..	..	Brush without shunt, arc plunger or lifting rod
2	186541	..	1	2	Brush without shunt, arc plunger or lifting rod
3	151238	1	..	..	Shunt
3	270708	..	1	2	Shunt
4	15309	4	..	..	Contact nut for shunt and arcing plunger
4	75206	..	4	8	Contact nut for shunt and arcing plunger
5	.....	2	..	..	Lock washer, $\frac{5}{16}$ " (standard hardware), for contact nut
5	.....	..	2	4	Lock washer, $\frac{3}{8}$ " (standard hardware), for contact nut
6	170098	1	1	..	Foot for lifting rod
6	415012	..	..	1	Foot for lifting rod
7	.....	1	1	1	Flat head iron wood screw, No. 12 x $\frac{3}{4}$ " (standard hardware), to fasten lifting rod to foot
8	.....	2	..	..	Tap bolt, $\frac{5}{16}$ " x $3\frac{1}{4}$ " (standard hardware), to fasten foot to brush
8	.....	..	2	4	Tap bolt, $\frac{3}{8}$ " x $3\frac{3}{4}$ " (standard hardware), to fasten foot to brush
9	.....	2	..	..	Lock washer, $\frac{5}{16}$ " (standard hardware), for bolt
9	.....	..	2	4	Lock washer, $\frac{3}{8}$ " (standard hardware), for bolt
10	188203	4	4	..	Liner between foot and brush block
11	421985	1	1	..	Wood lifting rod
11	415013	..	..	1	Wood lifting rod
12*	187512	1	1	..	Rod end for lifting rod
12*	187513	..	..	1	Rod end for lifting rod
13*	188490	3	3	..	Rivet to fasten rod end to lifting rod
13*	.....	..	..	3	C.R.S. rivet, ".182 x $1\frac{7}{8}$ " (standard hardware), to fasten rod end to lifting rod
14	151216	2	..	..	Arcing plunger
14	170100	..	2	4	Arcing plunger
15	151217	2	2	4	Arcing plunger spring

*Not illustrated.

MOVING CONTACT AND DETAILS
For 3000 Amperes, 750 Volts

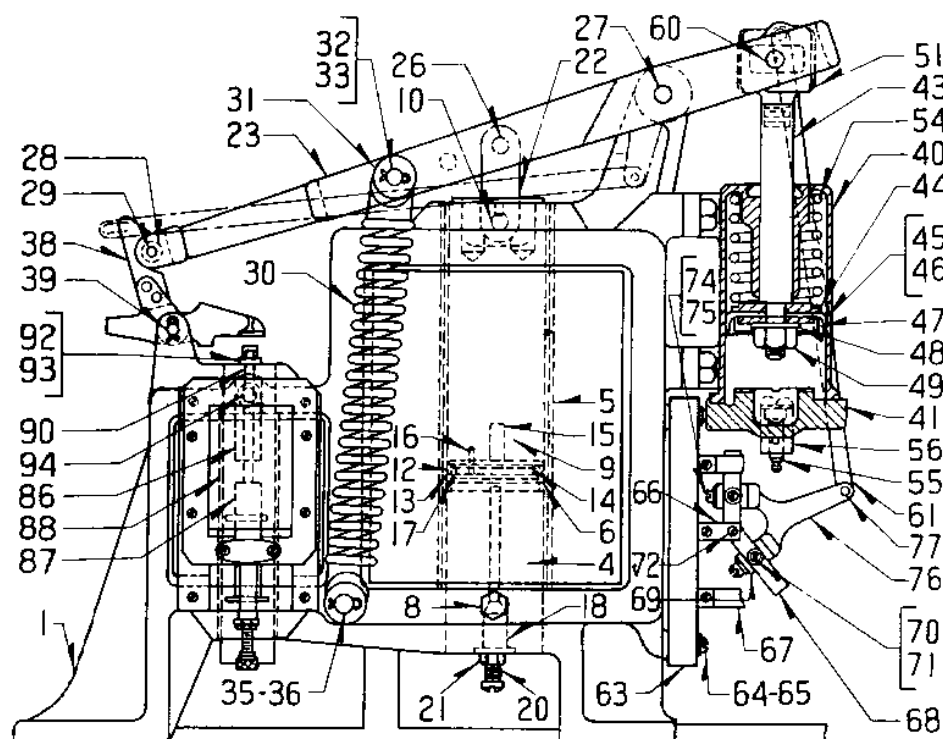


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Pole Unit	Description
1	422049	1	Moving contact complete
2	422043	2	Brush without shunt, bottom clamp, lifting rod or arcing details
3	422044	1	Top clamp used as foot for lifting rod
4	269547	2	Bottom clamp
5	.....	4	Tap bolt, 1/2" x 4 1/2" (standard hardware), to fasten top and bottom clamp to brush
6	.....	4	Lock washer, 1/2" (standard hardware), for bolt
7	.....	4	Hexagon iron nut, 1/2"-13 (standard hardware), for bolt
8	422046	1	Wood lifting rod
9	.....	2	Flat head wood screw, No. 14 x 1/4" (standard hardware), to fasten lifting rod to foot and rod end
10	422045	1	Rod end for lifting rod
11	184682	8	Arcing plunger
12	193921	8	Arcing tip
13	165083	8	Spring for arcing plunger
14	275101	4	Shunt
15	79369	24	Contact nut for shunt and arcing plunger
16	.....	4	Tap bolt, 5/16" x 1" (standard hardware), to fasten shunt to bottom clamp
17	.....	4	Lock washer, 5/16" (standard hardware), for bolt

ELECTRICALLY OPERATED MECHANISM

For 300, 600 and 1200 Amperes, Single Pole, Automatic and Non-Automatic



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Per Mechanism	Description
1	421994	1	Magnet frame for automatic trip
1	421995	1	Magnet frame for non-automatic trip
2*	.....	4	Tap bolt, $\frac{1}{2}$ " x $1\frac{1}{4}$ " (standard hardware), to mount frame
3*	237403	1	Stationary core for closing magnet complete, consisting of Ref. Nos. 4 to 7 inclusive
4	380261	1	Stationary core
5	380264	1	Brass tube
6	.....	1	Square flax packing, $\frac{3}{16}$ " x 10"
7*	.....	2	Flat head iron machine screw, No. 10-32 x $\frac{3}{8}$ " (standard hardware), to fasten tube to core
8	.....	2	Tap bolt, $\frac{1}{2}$ " x $2\frac{1}{4}$ " (standard hardware), to fasten stationary core to magnet frame
9	237404	1	Moving core of closing magnet
10	187758	1	Pin for moving core and link
11*	60972	1	Set screw to fasten pin to moving core
12	112503	1	Leather washer for moving core
13	184886	1	Expander for leather washer
14	194566	1	Follower for expander
15	83391	1	Screw to fasten leather, expander and follower to moving core
16	158209	1	Dowel pin to fasten leather, expander and follower to moving core
17	193738	4	Brass washer for top of stationary core
18	185454	1	Valve bushing
19*	184519	1	Brass ball for valve
20	277826	1	Adjusting screw for valve
21	.....	1	Hexagon iron machine screw nut, $\frac{5}{16}$ "-18 (standard hardware), for screw
22	237408	1	Link for operating lever and moving core
23	237405	1	Operating lever with stud for auxiliary switch link
24*	237406	1	Stud for auxiliary switch link
25*	7444	3	Washer for stud
26	105265	1	Connecting pin for operating lever and moving core link
27	48947	1	Bearing pin for operating lever and magnet frame
28	145393	1	Roller for operating lever
29	88904	1	Connecting pin for operating lever and roller
30	73631	2	Balance spring
31	421996	4	Spring end
32	421997	1	Connecting pin for spring and operating lever
33	3429	2	Washer for shaft
34*	275108	2	W. I. pipe spacer for shaft and spring end
35	275292	2	Shoulder pin for magnet bracket and spring

*Not illustrated.

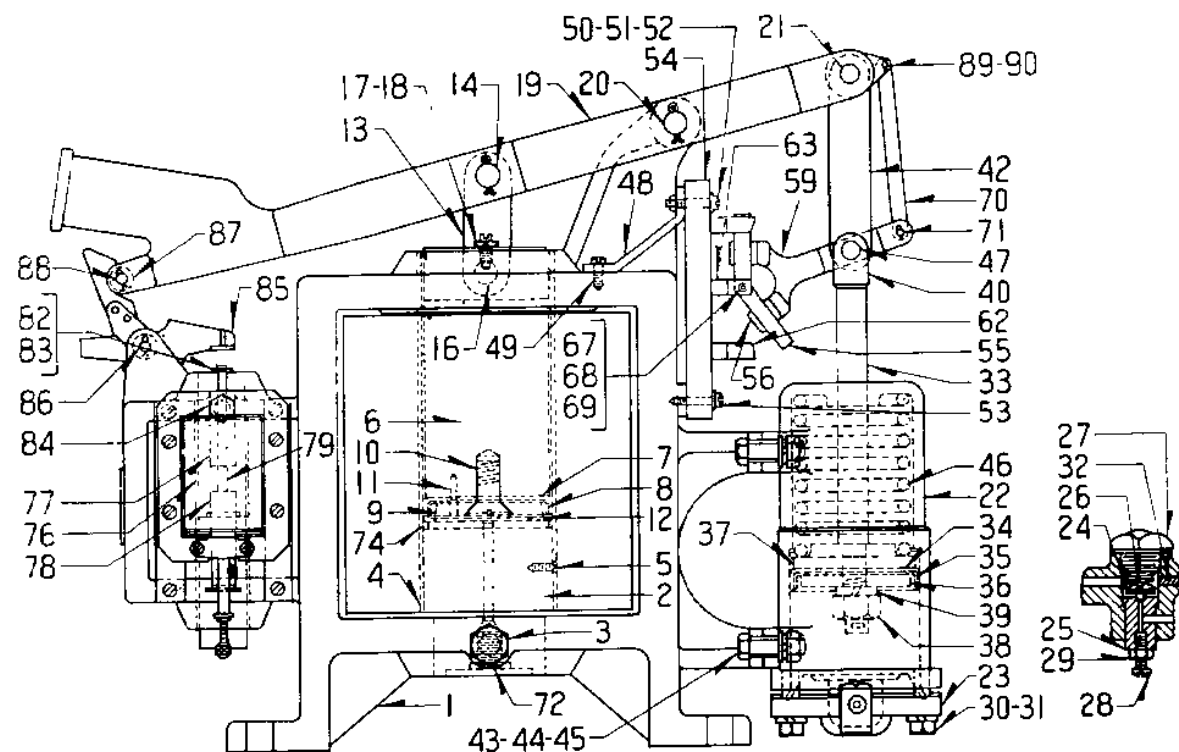
ELECTRICALLY OPERATED MECHANISM—Continued
For 300, 600 and 1200 Amperes, Single Pole, Automatic and Non-Automatic
 Illustrated on Page 12

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

Ref. No.	Style No.	No. per Mechanism	Description
36	3429	2	Washer for shoulder pin
37*	275107	2	W.I. pipe spacer for shoulder pin and spring end
38	186930	1	Trigger lever with trigger for automatic trip
38	150617	1	Trigger lever with trigger for non-automatic trip
39	63604	1	Bearing pin for trigger and magnet frame
40	186306	1	Cylinder for accelerating spring and dash pot
41	186307	1	Cover for cylinder
42*	.....	4	Tap bolt, $\frac{3}{8}$ " x $1\frac{1}{2}$ " (standard hardware), to fasten cover to cylinder
43	184941	1	Plunger rod for accelerating device
44	189651	1	Seating washer for leather and spring
45	112502	1	Leather washer for plunger rod
46	63710	1	Expander for leather
47	189652	1	Follower for expander
48	.....	1	Lock washer, $\frac{5}{8}$ " (standard hardware), for follower and plunger rod
49	.....	1	Hexagon nut, $\frac{5}{8}$ "-11 (standard hardware), for plunger rod
50*	104110	2	Washer between cover and cylinder
51	185760	1	Piston yoke to connect plunger rod to operating lever
52*	.....	1	C.R.S. rivet, $\frac{1}{8}$ " x $1\frac{1}{8}$ " (standard hardware), to fasten piston yoke to plunger rod
53*	237407	2	Pipe spacer for operating lever and plunger rod yoke
54	219335	1	Spring for cylinder
55	319039	1	Valve and stem
56	184300	1	Bushing for valve
57*	68776	1	Cap nut for valve
58*	185750	1	Brass plug for side of valve
59*	186295	1	Spring for valve
60	186309	1	Shoulder pin for operating lever and piston yoke
61	237409	1	Link for operating lever and auxiliary switch
62*	140189	1	Auxiliary switch complete, consisting of Ref. Nos. 63 to 84 inclusive
63	179156	1	Base
64	.....	4	Fillister head iron machine screw, No. 10-32 x $1\frac{3}{8}$ " (standard hardware), to mount switch to magnet frame
65	3410	4	Washer for screw
66	18642	2	Hinge jaw
67	18641	4	Break jaw
68	112003	2	Blade
69	138815	2	Cross bar
70	.....	4	Fillister head iron machine screw, No. 10-32 x $\frac{5}{8}$ " (standard hardware), to fasten cross bar to blade
71	3410	4	Washer for screw
72	.....	2	Fillister head iron machine screw, No. 6-32 x $\frac{5}{8}$ " (standard hardware), to fasten blade to hinge jaw
73*	46867	4	Nut for hinge jaw screw
74	.....	2	Fillister head iron machine screw, No. 14-24 x $1\frac{1}{4}$ " (standard hardware), to fasten lever to cross bar
75	7443	2	Washer for screw
76	182704	1	Lever for switch and link
77	117190	1	Connecting pin for switch lever and link
78*	.....	6	Fillister head iron machine screw, No. 6-32 x $\frac{1}{4}$ " (standard hardware), for jaw blocks
79*	58858	4	Cup washer for hinge jaw
80*	.....	6	Fillister head iron machine screw, No. 4-40 x $\frac{1}{2}$ " (standard hardware), to fasten lead to jaw block
81*	159070	6	Washer for screw
82*	144810	6	Crimp washer for screw
83*	.....	6	Hexagon nut, $\frac{1}{4}$ "-20 (standard hardware), for jaw stud
84*	3426	6	Washer for jaw stud
85*	184889	1	Trip magnet complete consisting of Ref. Nos. 86 to 93 inclusive
86	333124	1	Stationary core of trip magnet
87	333125	1	Moving core of trip magnet
88	333123	1	Brass tube for stationary core of trip magnet
89*	.....	2	Flat head iron machine screw, No. 10-32 x $\frac{3}{8}$ " (standard hardware), to fasten brass tube to stationary core
90	178553	1	Trip rod
91*	141901	1	Rivet to fasten trip rod to moving core
92	40646	1	Washer for trip rod
93	46870	1	Nut for trip rod
94	.....	1	Tap bolt, $\frac{1}{2}$ " x $1\frac{5}{8}$ " (standard hardware), to fasten stationary core to magnet frame

*Not illustrated.

ELECTRICALLY OPERATED MECHANISM
For 3000 Amperes, 3 Poles, Non-Automatic
For Use on Breakers Supplied Prior to January 1, 1917



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mechanism	Description
1	422038	1	Magnet frame
2	264230	1	Stationary core of closing magnet
3	.....	1	Tap bolt, $\frac{3}{4}$ " x $3\frac{1}{2}$ " (standard hardware), to fasten magnet to frame
4	333083	1	Brass tube used as cylinder for closing core
5	.....	1	Flat head iron machine screw, No. 14-24 x $\frac{1}{2}$ " (standard hardware), to fasten brass tube to stationary core
6	422035	1	Moving core of closing magnet
7	333085	1	Leather washer for moving core
8	189929	1	Expander for leather washer
9	271438	1	Follower for expander
10	117211	1	Screw to fasten follower, expander and leather to moving core
11	.....	1	C.R.S. dowel pin, $\frac{3}{16}$ " x $1\frac{1}{4}$ " (standard hardware), for follower, expander and leather
12	217009	2	Washer for top of stationary core
13	422037	1	Link for moving core and operating lever
14	63633	1	Connecting pin for operating lever and link for moving core
15*	422034	2	Dowel pin for link and shaft
16	422036	1	Swivel pin for moving core and link
17	165479	1	Set screw for moving core and swivel pin
18	.....	1	Lock nut, $\frac{3}{8}$ " (standard hardware), for set screw
19	422024	1	Operating lever
20	48948	1	Bearing pin for operating lever and magnet frame
21	422028	1	Connecting pin for operating lever and dash pot plunger rod
22	422029	1	Cylinder for dash pot
23	421916	1	Bottom for cylinder
24	319039	1	Valve and stem
25	184300	1	Valve bushing
26	186295	1	Spring for valve
27	68776	1	Cap nut for valve
28	.....	1	Fillister head brass machine screw, No. 10-32 x $\frac{1}{2}$ " (standard hardware), to adjust valve
29	40662	1	Nut for screw
30	.....	4	Tap bolt, $\frac{1}{2}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten cylinder bottom to cylinder
31	.....	4	Lock washer, $\frac{1}{2}$ " (standard hardware), for bolt
32	421917	1	Brass plug for side of valve
33	422030	1	Plunger rod
34	112506	1	Leather washer for plunger rod
35	187120	1	Expander for leather washer
36	277547	1	Follower for expander
37	319064	1	Seating washer for leather and spring

*Not illustrated.

ELECTRICALLY OPERATED MECHANISM—Continued
For 3000 Amperes, 3 Poles, Non-Automatic
For Use on Breakers Supplied Prior to January 1, 1917

Illustrated on Page 14

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

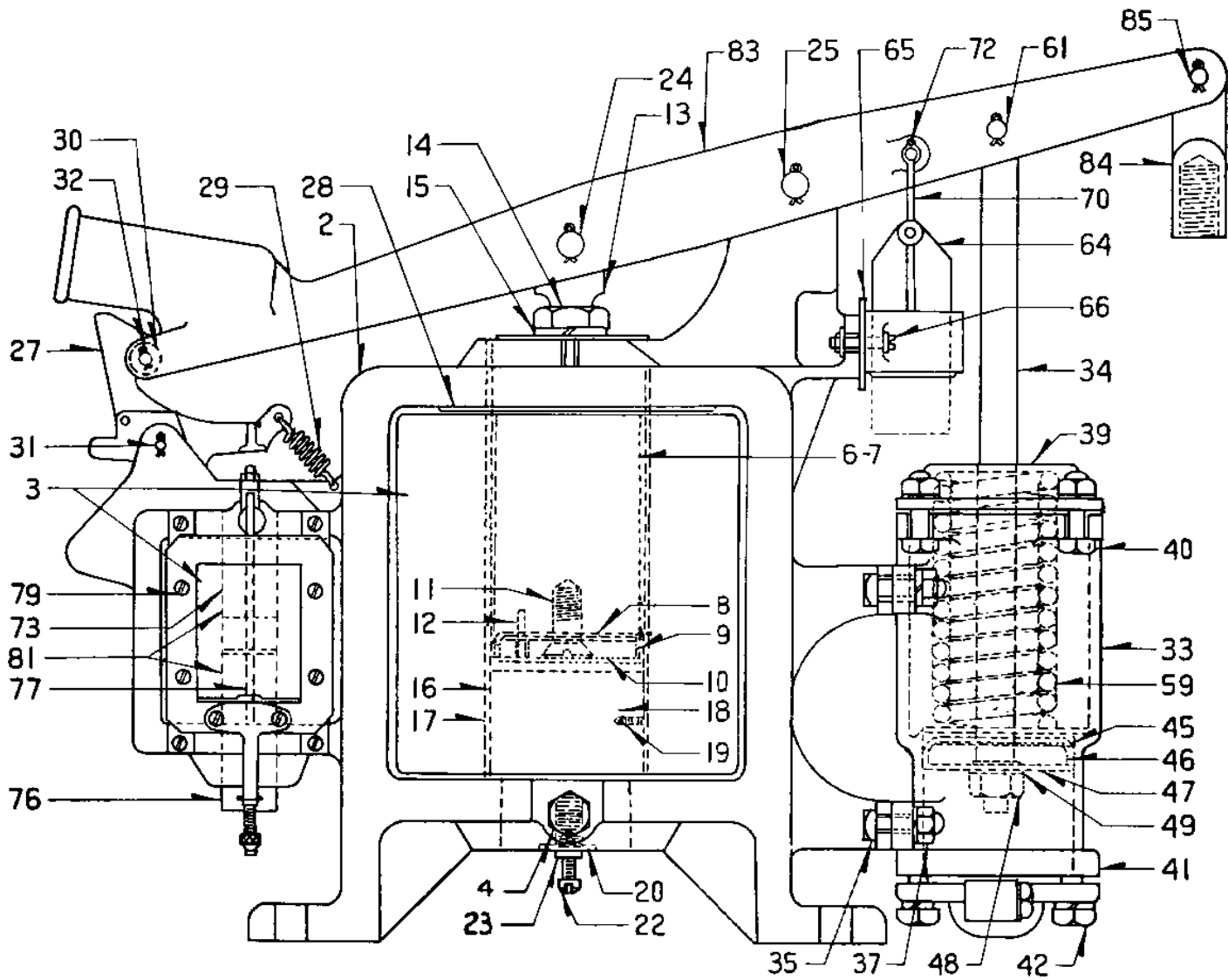
Ref. No.	Style No.	No. per Mechanism	Description
38	.....	1	Hexagon iron nut, $\frac{3}{4}$ "-10 (standard hardware), for plunger rod
39	.....	1	Lock washer, $\frac{3}{4}$ " (standard hardware), for nut
40	422031	1	Yoke for plunger rod and link
41*	422032	1	Dowel pin for yoke and plunger rod
42	422033	1	Link to connect plunger rod to operating lever
43	.....	3	Machine bolt, $\frac{1}{2}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten dash pot to frame
44	.....	3	Lock washer, $\frac{1}{2}$ " (standard hardware), for bolt
45	2892	3	Washer for bolt
46	122525	1	Spring for dash pot
47	422028	1	Connecting pin for plunger rod and link
48	422042	2	Support to mount top of switch to magnet frame
49	.....	2	Fillister head iron machine screw, No. 14-24 x $\frac{5}{8}$ " (standard hardware), to fasten auxiliary switch support to magnet frame
50	.....	2	Fillister head iron machine screw, No. 14-24 x $1\frac{1}{2}$ " (standard hardware), to fasten auxiliary switch to support
51	.....	2	Hexagon iron machine screw nut, No. 14-24 (standard hardware), for screws
52	.....	4	Washer for screws
53	.....	2	Fillister head iron machine screw, No. 14-24 x $1\frac{3}{8}$ " (standard hardware), to fasten auxiliary switch to magnet frame
54	179156	1	Slate base
55	112003	2	Blade
56	138815	2	Cross bar
57*	.....	4	Fillister head iron machine screw, No. 10-32 x $\frac{5}{8}$ " (standard hardware), to fasten blade to cross bar
58*	3410	4	Washer for screw
59	422041	1	Switch lever
60*	.....	2	Fillister head iron machine screw, No. 14-24 x $1\frac{1}{4}$ " (standard hardware), to fasten switch lever to cross bar
61*	7443	2	Washer for screw
62	18641	4	Break jaw
63	18642	2	Hinge jaw
64*	.....	6	Hexagon iron nut, $\frac{1}{4}$ "-20 (standard hardware), for break jaw and hinge jaw studs
65*	3426	6	Washer for studs
66*	.....	6	Fillister head iron machine screw, No. 6-32 x $\frac{1}{4}$ " (standard hardware), for jaw blocks
67	.....	2	Fillister head iron machine screw, No. 6-32 x $\frac{5}{8}$ " (standard hardware), to fasten blade to hinge jaw
68	58858	4	Spring washer for screw
69	46867	4	Nut for screw
70	422025	1	Link from operating lever to auxiliary switch
71	63593	1	Bearing shaft for auxiliary switch link
72	185454	1	Brass bushing for valve for stationary magnet core
73*	184519	1	Brass ball for valve for stationary magnet core
74	.....	1	Square flax packing, $\frac{3}{8}$ " x 26", for stationary core and cylinder
75*	184889	2	Shunt tripping magnet complete, consisting of Ref. Nos. 76 to 83 incl.
76	333123	2	Brass tube for core
77	333124	2	Stationary core
78	333125	2	Moving core
79	178553	2	Trip rod
80*	141901	2	Rivet for shunt moving core and trip rod
81*	.....	4	Flat head iron machine screw, No. 10-32 x $\frac{3}{8}$ " (standard hardware), to fasten stationary core to tube
82	40646	2	Washer for trip rod
83	46870	2	Nut for trip rod
84	.....	2	Tap bolt $\frac{1}{2}$ " x $1\frac{5}{8}$ " (standard hardware), to mount trip cores
85	186930	1	Trigger lever
86	63604	1	Bearing pin for trigger lever and magnet frame
87	145393	1	Roller for operating lever and trigger
88	88904	1	Connecting pin for operating lever and roller
89	117190	1	Connecting pin for auxiliary switch link
90	7444	1	Washer for connecting pin

*Not illustrated.

ELECTRICALLY OPERATED MECHANISM—Continued
For 3000 Amperes, 3 Poles, Non-Automatic
For Use on Breakers Supplied Prior to January 1, 1917
Illustrated On Page 14
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mechanism	Description
91*	422039	1	Operating shaft for electric mechanism and breaker pull rods
92*	415102	3	Bearing for shaft
93*	422040	4	Lever for shaft and pull rod
94*	63621	4	Bearing shaft for lever and pull rod
95*	.....	16	Tap bolt, 1/2" x 2" (standard hardware), to fasten lever to operating shaft
96*	32128	4	Key for operating shaft and lever
97*	422254	4	Rod end for lever and pull rod
98*	83129	1	Rod end for operating lever on mechanism
99*†	415082	1	Hand operating lever
100*‡	.....	1	Operating coil
101*‡	.....	1	Trip coil (specify whether for shunt trip or overload trip)

ELECTRICALLY OPERATED MECHANISM
For 3000 Amperes, 3 Poles, Non-Automatic
For Use on Breakers Supplied After January 1, 1917



REFERENCE NO. 1

Ref. No.	Style No.	No. per Mechanism	Description
1	415438	1	Magnet frame
2	.....	2	Tap bolt, 3/4" x 3 1/2" (standard hardware), to fasten magnet in frame
3	.....	2	Lock washer, 3/4" (standard hardware), for bolt
4	225439	1	Moving core for operating magnet
5	333085	1	Leather for moving core
6	189929	1	Expander for leather

*Not illustrated.
†One usually required per station.
‡When ordering coils give control voltage and complete nameplate reading of breaker.

ELECTRICALLY OPERATED MECHANISM—Continued
For 3000 Amperes, 3-Poles, Non-Automatic
For Use on Breakers Supplied After January 1, 1917

Illustrated on Page 16

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mechanism	Description
7	271438	1	Follower for expander
8	117211	1	Screw to fasten leather, expander and follower to moving core
9	151006	1	Dowel pin to prevent leather from turning
10	253488	1	Eye bolt for top of moving core
11	85635	1	Lock washer for eye bolt
12	255993	1	Nut for eye bolt
13	333086	3	Fullerboard washer between magnet frame and operating coil
14	273334	1	Stationary core and brass tube assembled for operating magnet
14	264230	1	Stationary core
15	333083	1	Brass tube
16	.....	1	Flat head iron machine screw, No. 14-24 x 1/2" (standard hardware), to fasten stationary core to tube
17	185454	1	Valve bushing
18*	184519	1	Brass ball for valve
19	277826	1	Adjusting screw for valve
20	.....	1	Nut, 5/16"-18 (standard hardware), for screw
21	63634	1	Connecting pin for operating lever and moving core eye bolt
22	276860	1	Bearing pin for magnet frame and operating lever
23	273087	1	Trigger lever with trigger
24	140362	1	Trigger spring
25	271427	1	Trigger roller
26	109229	1	Bearing pin for magnet frame and trigger
27	63603	1	Connecting pin for operating lever and trigger roller
28	250114	1	Dash pot cylinder
29	283043	1	Plunger rod for dash pot
30	.....	3	Machine bolt, 1/2" x 1 3/4" (standard hardware), to fasten dash pot cylinder to magnet frame
31	.....	3	Lock washer, 1/2" (standard hardware), for bolt
32	277560	1	Cover for dash pot cylinder
33	.....	4	Machine bolt, 1/2" x 1 3/4" (standard hardware), to fasten cover to dash pot cylinder
34	.....	4	Lock washer, 1/2" (standard hardware), for bolt
35	230342	1	Bottom cover for dash pot
36	.....	5	Tap bolt, 1/2" x 1 3/4" (standard hardware), to fasten bottom cover
37	.....	5	Lock washer, 1/2" (standard hardware), for bolt
38*	272649	1	Cast iron washer for plunger rod
39	112506	1	Leather for plunger
40	187120	1	Expander for leather
41	277547	1	Follower for expander
42	.....	1	Hexagon nut, 3/4"-10 (standard hardware), to clamp follower to plunger rod
43	.....	1	Lock washer, 3/4" (standard hardware), for nut
44*	185236	1	Valve assembly
45*	214139	1	Valve bushing
46*	198929	1	Valve spring
47*	68776	1	Cap nut for valve
48*	187761	1	Valve pin
49*	.....	1	Fillister head iron machine screw, No. 10-32 x 1/2" (standard hardware), to adjust valve pin
50*	40662	1	Nut for screw
51*	275056	1	Brass plug for side of valve
52*	122552	2	Gasket for bottom of dash pot
53	122525	1	Spring for dash pot
54*	277554	2	Spring holder
55	117200	1	Connecting pin for operating lever and plunger rod
56*	277557	2	Collar for plunger rod
57*	277548	2	Pin for collar
58	216071	1	Signal switch complete
59	263046	1	Fullerboard shield between switch and frame
60	.....	2	Fillister head iron machine screw, No. 14-24 x 1 3/4" (standard hardware), to mount switch on frame
61	.....	2	Lock washer, 1/4" (standard hardware), for screw
62	7443	2	Washer for screw
63	.....	2	Lock nut, No. 14-24 (standard hardware), for screw
64	384891	1	Link to operate signal switch
65	323744	1	Stud for operating lever and signal switch link
66	3272	1	Washer for stud
67	415439	1	Operating lever

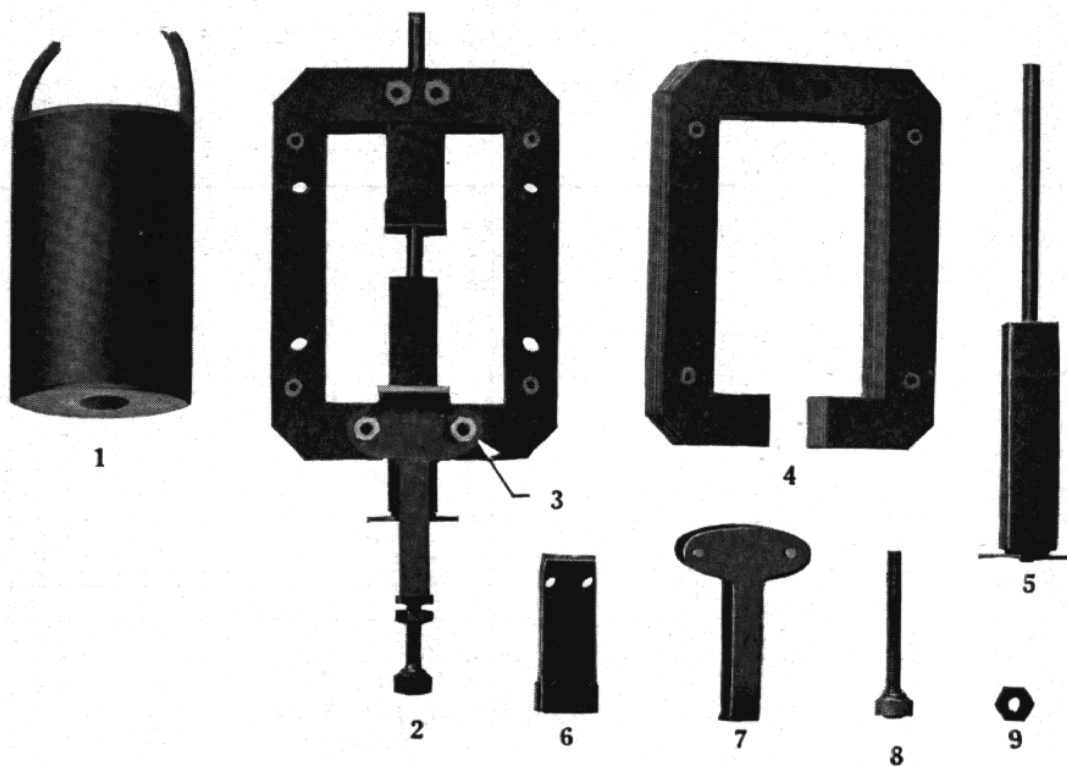
*Not illustrated.

ELECTRICALLY OPERATED MECHANISM—Continued
For 3000 Amperes, 3 Poles, Non-Automatic
For Use on Breakers Supplied After January 1, 1917
 Illustrated on Page 16

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mechanism	Description
68	248949	1	Rod end for operating lever and pull rod
69	87679	1	Connecting pin for operating lever and pull rod
70	333124	1	Stationary core for overload trip
71*	333123	1	Brass sleeve for stationary core
72*	.....	1	Flat head iron machine screw, No. 10-32 x $\frac{3}{8}$ " (standard hardware), to fasten sleeve to core
73	333125	1	Moving core for overload trip
74	193688	1	Plunger rod for moving core
75*	141901	1	Rivet for plunger rod and core
76*	40646	1	Washer for bottom of plunger rod
77	46870	1	Nut for top of plunger rod
78	184889	1	Overload trip core complete consisting of Ref. Nos. 70 to 77 inclusive

OVERLOAD TRIP ATTACHMENT DETAILS
For 300, 600, 1200 and 3000 Amperes



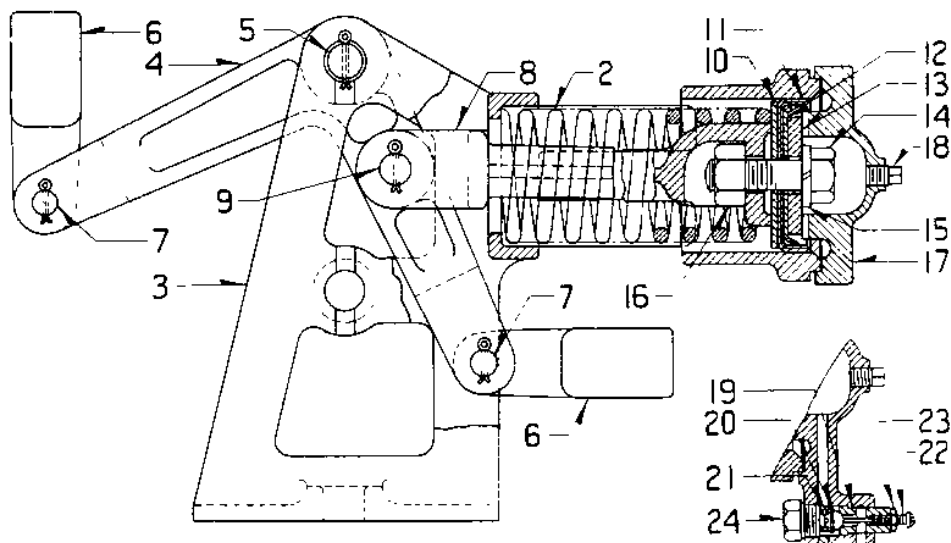
All Parts Are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. Req. 300-600-1200 Amperes	No. Req. 3000 Amperes	Description
1	.....	1†	2†	Overload trip coil
2	150614	..	2	Magnet circuit assembled complete but without coil
3	88828	2	4	Bracket used as coil seat
4	116759	1	2	Magnet frame
*	.....	2	..	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{1}{4}$ " (standard hardware), to fasten stationary core to magnet circuit
5	269460	1	..	Moving core
5	126283	..	2	Moving core
6	230317	1	..	Stationary core
6	116760	..	2	Stationary core
7	88827	1	2	Sheet copper guide for moving core
8	88829	1	2	Adjusting screw
9	46868	1	2	Nut for adjusting screw
*	.....	2	4	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten core guide to bracket
*	.....	..	8	Fillister head iron machine screw, No. 14-24 x $1\frac{1}{4}$ " (standard hardware), to fasten magnet circuit to bracket
10	150615	4	4	Bracket to mount magnet circuit
11	.....	8	8	Fillister head iron machine screw, No. 14-24 x $\frac{5}{8}$ " (standard hardware), to fasten bracket to magnet frame

*Not illustrated.

†When ordering coils give control voltage and complete name-plate reading of breaker on which coil is to be used.

ACCELERATING DEVICES AND DETAILS
For Hand Operated Breakers



REFERENCE NO. 1

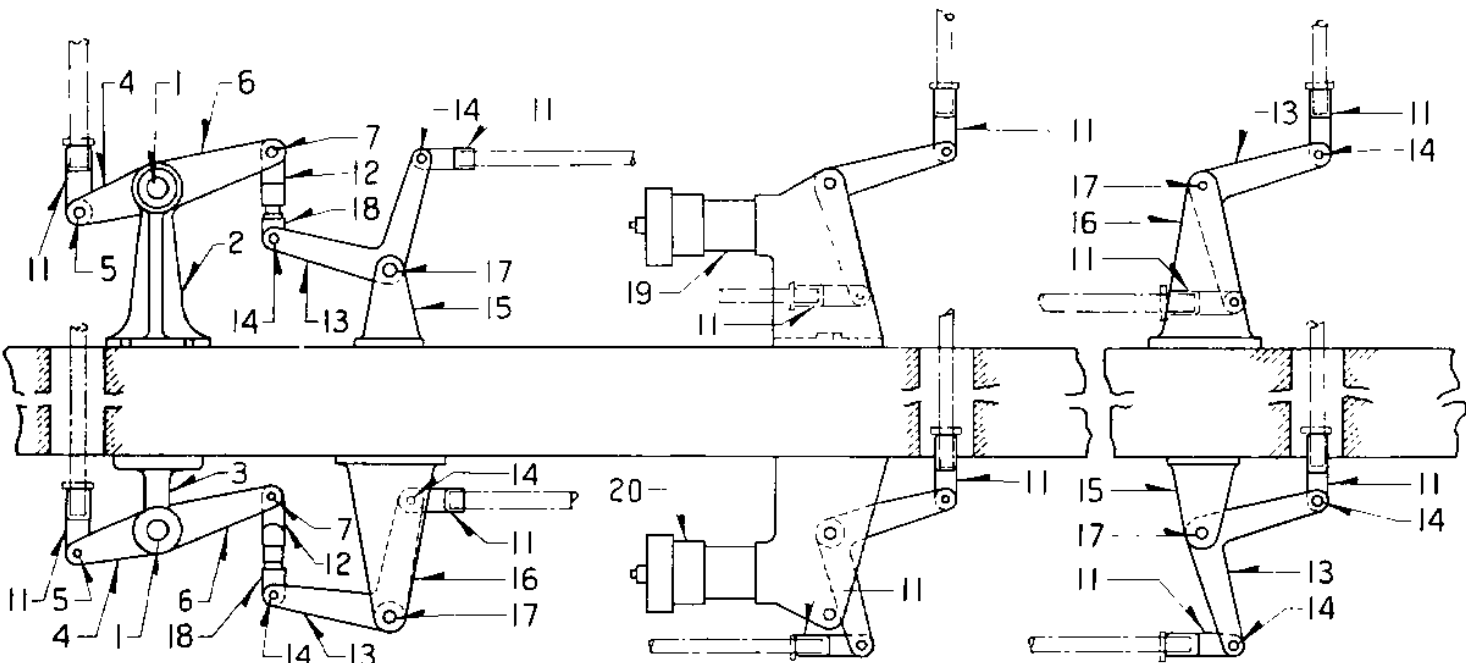
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Breaker	Description
1	210527	1	Accelerating device complete for above floor mounting
1	208925†	1	Accelerating device complete for below floor mounting
2	219335	1	Compression spring
3	220358	1	Cast iron bearing bracket
4	220359	1	Bell crank
5	88354	1	Bell crank shaft
6	72281	2	Rod end
7	83813	2	Rod end shaft
8	333489	1	Cast iron piston rod
9	63623	1	Cast iron piston rod shaft
10	220360	1	Spring seat washer
11	112502	1	Set of piston leathers
12	63710	1	Piston leather expander
13	189652	1	Piston follower
14	.....	1	Tap bolt, 5/8" x 2" (standard hardware), to fasten piston leathers, expander and follower to piston rod
15	.....	1	Lock washer, 5/8" (standard hardware), for bolt
16	.....	1	Hexagon iron nut, 5/8"-11 (standard hardware), for bolt
17	186307	1	Cylinder head cover
18	.....	1	Pipe plug, 1/8" (standard hardware), for cylinder head cover
*	.....	4	Machine bolt, 3/8" x 2 (standard hardware), for cylinder head cover
*	185750	1	Brass plug for cylinder head cover
*	113315	2	Paper gasket for cylinder head cover
19	214139	1	Brass valve bushing
20	185236	1	Brass valve and stem
21	198929	1	Valve spring
22	.....	1	Fillister head iron machine screw, No. 10-32 x 1/2" (standard hardware), for adjusting valve
23	40662	1	Nut for screw
24	68776	1	Valve cap nut

*Not illustrated.
†Same as Style No. 210527 except crank mounted in lower hole of bracket.

BELL CRANKS AND DETAILS

For Hand or Electrically Operated, Automatic or Non-Automatic, Pipe or Wall Mounted, Shaft on Floor or Below Floor, Bell Cranks and Bearings Above or Below Floor, 3 Poles



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Breaker	Description
1	421990	1	Operating shaft
2	422178	2	Bearing bracket for operating shaft for above floor mounting
3	69779	2	Bearing bracket for operating shaft for below floor mounting
4	185952	3	Lever for operating shaft and breaker pull rod
5	65150	3	Shaft for lever and rod end for pull rod
6	421991	1	Lever for operating shaft and control mechanism
7	65150	1	Shaft for lever and rod end for control mechanism
8*	.....	8	Tap bolt, 3/8" x 2 1/2" (standard hardware), to clamp lever to shaft
9*	.....	8	Hexagon nut, 3/8"-16 (standard hardware), for bolt
10*	84110	4	Key for lever and operating shaft
11	72281	3	Rod end for lever and breaker pull rod
12	83129	1	Rod end for lever and control mechanism

For Hand Operated, Automatic, Pipe or Wall Mounted, Bearings
Pipe Mounted, Bell Cranks Above or Below Floor

12	83129	1	Rod end for lever and control mechanism
13	272856	1	Bell crank to connect to operating shaft lever
14	83813	2	Shaft for bell crank and rod end
15	272857	1	Bracket for bell crank for above floor mounting
16	272858	1	Bracket for bell crank for below floor mounting
17	125685	1	Shaft for bracket and bell crank
18	241492	1	Socket for bell crank and rod end to connect to lever on operating shaft
19	210527	1	Accelerating device complete for above floor mounting. For details see page 19
20	208925	1	Accelerating device complete for below floor mounting. For details see page 19
23*	208929	1	Cover plate complete with coil. For details see page 22

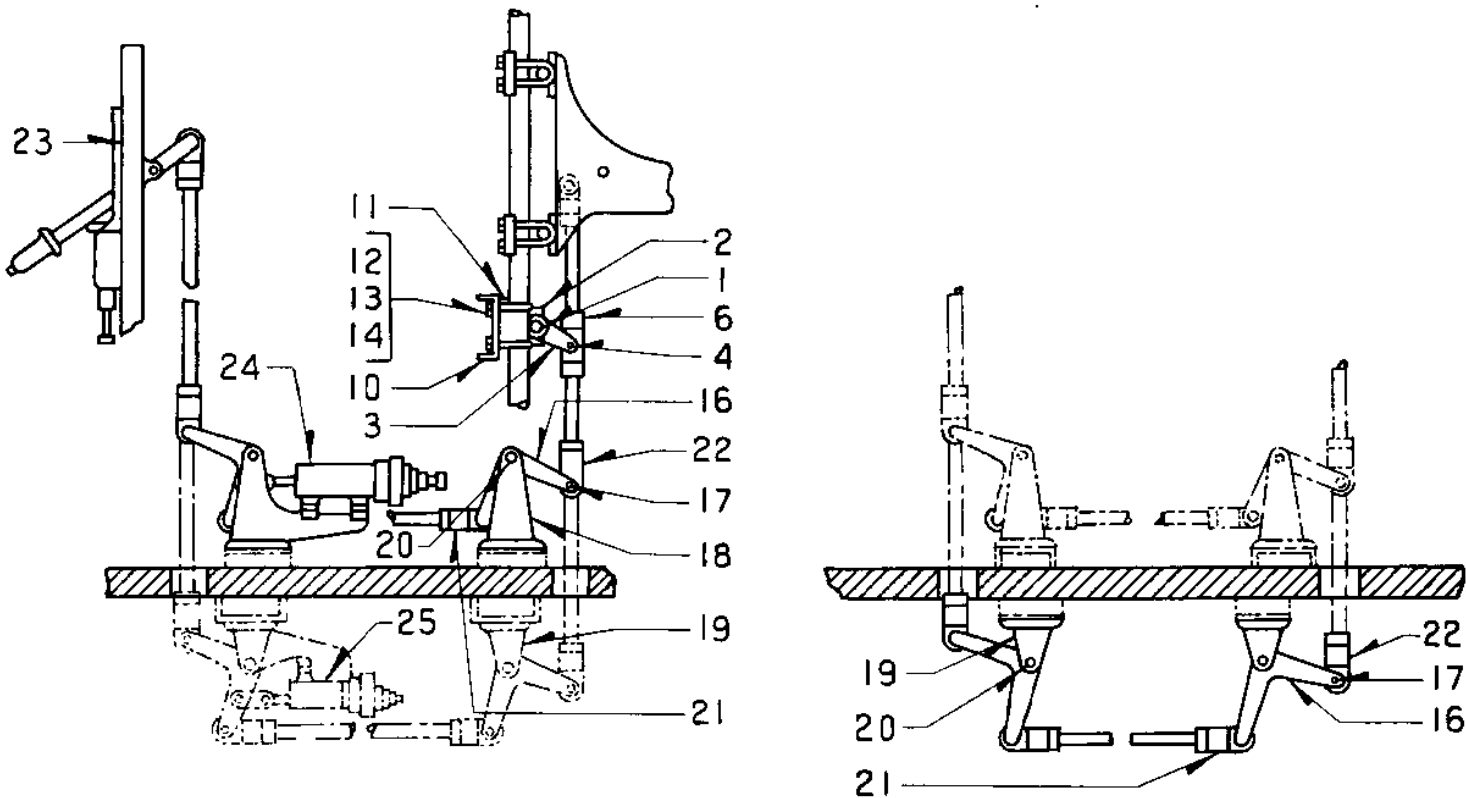
For Hand Operated, Non-Automatic, Pipe or Wall Mounting,
Bearings and Bell Cranks Above or Below Floor

11	72281	2	Rod end for operating rod between bell cranks
12	83129	1	Rod end for lever and control mechanism
13	272856	2	Bell crank for pull rod for handle lever and operating shaft lever
14	83813	4	Shaft for bell crank and rod end
15	272857	1	Bracket for bell crank for below floor mounting
16	272858	1	Bracket for bell crank for above floor mounting
17	125685	2	Shaft for bracket and bell crank
18	241492	1	Socket for bell crank and rod end to connect to lever on operating shaft
23*	255857	1	Cover plate complete. For details see page 23

*Not illustrated.

BELL CRANKS AND DETAILS

For Hand Operated, Automatic or Non-Automatic, Pipe Mounted, Shaft and Bearings Pipe Mounted, Bell Cranks Below Floor, 3 Poles



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Breaker	Description
1	421992	1	Operating shaft
2	185353	3	Bearing bracket for operating shaft
3	185952	3	Lever for operating shaft and breaker pull rod
4	65150	3	Shaft for lever and rod end for pull rod
5*	421991	1	Lever for operating shaft and control mechanism
6	72281	4	Rod end for lever and pull rod
7*	.....	8	Tap bolt, 3/8" x 2 1/2" (standard hardware), to clamp lever to shaft
8*	.....	8	Hexagon nut, 3/8"-16 (standard hardware), for bolt
9*	84110	4	Key for lever and operating shaft
10	421993	1	Channel iron support for bearing bracket
11	422222	2	Saddle for support and pipe frame
12	176939	4	U-bolt for support and pipe frame
13	.....	8	Hexagon nut, 1/2"-13 (standard hardware), for U-bolt
14	.....	8	Lock washer, 1/2" (standard hardware), for U-bolt
15*	.....	6	Machine bolt, 1/2" x 1 1/2" (standard hardware), to fasten bearing bracket to support
23	208929	1	Cover plate complete for automatic breakers. For details see page 22
23	255857	1	Cover plate complete for non-automatic breakers. For details see page 23

For Hand Operated, Non-Automatic Breakers Only

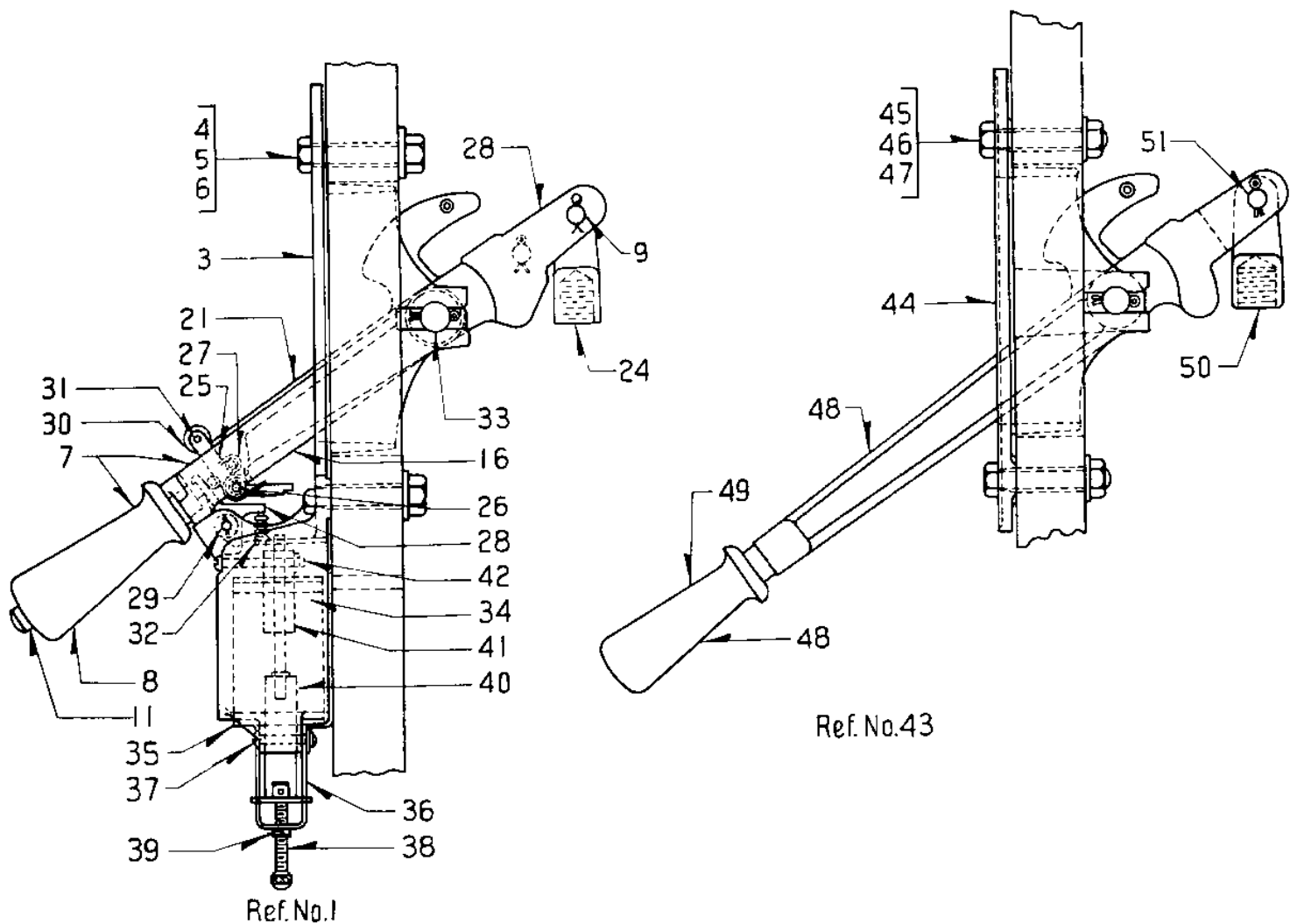
16	272856	2	Bell crank
17	83813	4	Shaft for bell crank and rod end
18	272857	2	Bracket for bell crank for above floor mounting
19	272858	2	Bracket for bell crank for below floor mounting
20	125685	2	Shaft for bracket and bell crank
21	83129	2	Rod end to connect control mechanism to breaker mechanism
22	72281	2	Rod end for lever and control mechanism

For Hand Operated, Automatic Breakers Only

16	272856	1	Bell crank to connect to pull rod for operating shaft lever
17	83813	2	Shaft for bell crank and rod end
18	272857	1	Bracket for bell crank for above floor mounting
19	272858	1	Bracket for bell crank for below floor mounting
20	125685	1	Shaft for bracket and bell crank
22	83129	2	Rod end for lever and control mechanism
24	210527	1	Accelerating device for above floor mounting. For details see page 19
25	208925	1	Accelerating device for below floor mounting. For details see page 19

*Not illustrated.

COVER PLATES, HANDLES, TRIPPING LEVERS AND DETAILS
For Automatic and Non-Automatic Breakers



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION
For Automatic Breakers

Ref. No.	Style No.	No. per Breaker	Description
1	208929	1	Cover plate complete with coil
2*	209835	1	Cover plate without coil
3	226547	1	Cover plate casting
4	.....	3	Tap bolt, 1/2"-13 x 3" (standard hardware), to mount cover plate
5	.....	3	Hexagon iron nut, 1/2"-13 (standard hardware), for bolt
6	2892	3	Washer for bolt
7	272568	1	Handle lever complete
8	94770	1	Handle grip complete
8	114187	1	Handle grip only
9	172132	1	Shaft to fasten rod end to handle lever
10*	114241	1	Stud for handle grip
11	75971	1	Push button
12*	193915	1	Push rod
13*	114185	1	Collar stop
14*	114186	1	Rivet for stop
15*	100500	1	Spring for push rod
16*	276771	1	Side bar, right hand
17*	276772	1	Side bar, left hand
18*	193914	4	Rivet for side bar
19*	276773	1	Trigger block
20*	276774	1	Handle block
21	276777	1	Trip lever casting
22*	229312	1	Tip for trip lever
23*	.....	2	Flat head iron machine screw, No. 6-32 x 3/8" (standard hardware), to fasten tip to casting
24	83129	1	Rod end
25	276768	1	Latch
26	85760	1	Shaft for latch
27	72065	1	Spring for latch
28	282390	1	Handle lever trigger complete
28	377531	1	Handle lever trigger casting
29	97988	1	Shaft for handle lever trigger
30	226532	1	Roller for latch
31	63591	1	Shaft for roller

*Not illustrated.

COVER PLATES, HANDLES, TRIPPING LEVERS AND DETAILS -Continued
For Automatic and Non-Automatic Breakers

Illustrated on Page 22

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Breaker	Description
32	276775	1	Spring for trigger
33	215198	1	Shaft for trip lever
34	224185	2	Coils
35	88828	2	Bracket used as coil seat
36	219614	2	Moving core guide
37	.....	4	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{1}{2}$ " (standard hardware), for moving core guide
38	88829	2	Adjusting screw
39	.....	2	Hexagon iron nut, No. 14-24 (standard hardware), for screw
40	126283	2	Moving core
41	214136	2	Stationary core
42	.....	4	Round head stove bolt, $\frac{3}{16}$ " x $2\frac{1}{4}$ " (standard hardware), for stationary core
For Non-Automatic Breakers			
43	255857	1	Cover plate complete
44	215128	1	Cover plate casting
45	.....	3	Tap bolt, $\frac{1}{2}$ "-13 x 3" (standard hardware), to mount cover plate
46	.....	3	Hexagon iron nut, $\frac{1}{2}$ "—13 (standard hardware), for bolt
47	2892	3	Washer for screw
48	209763	1	Handle lever complete
48	240519	1	Handle lever casting
49	44927	1	Handle grip complete
50	83129	1	Rod end for handle lever
51	172132	1	Shaft to fasten rod end to handle lever

*Not illustrated.

RENEWAL PARTS DATA
For Type E-3 Oil Circuit-Breakers

This List Covers the Minimum Amount of Renewal
Parts That Should Be Carried in Stock

Name of Part	No. per Pole Unit	No. per Breaker	Recommended for Stock		
Breaker pole units in use up to and including			3	9	15
Stationary contact complete, 300, 600 and 1200 amps.	2	..	1	2	4
Porcelain insulator for stationary contact, 300, 600 and 1200 amps.	2	..	1	4	6
Arcing screw, 300, 600 and 1200 amps.	2	..	6	18	30
Stationary contact, short, 3000 amps.	1	..	1	1	2
Stationary contact, long, 3000 amps.	1	..	1	1	2
Arcing contact, 3000 amps.	2	..	6	18	30
Brush without shunt or arcing plunger, 300, 600 and 1200 amps.	1	..	1	3	6
Brush without shunt or arcing plunger, 3000 amps.	2	..	2	6	6
Lifting rod.	1	..	1	3	6
Shunt, 300, 600 and 1200 amps.	1	..	1	3	6
Shunt, 3000 amps.	4	..	4	8	12
Arcing plunger, 300, 600 and 1200 amps.	2	..	6	18	30
Arcing plunger, 3000 amps.	8	..	16	32	48
Arcing plunger spring, 300, 600 and 1200 amps.	2	..	2	6	12
Arcing plunger spring, 3000 amps.	8	..	8	16	32
Tank without lining.	1	..	0	1	3
Lining for tank, bottom	1	..	0	1	3
Lining for tank, side	1	..	0	1	3
Leather bumper for closing lever, 300, 600 and 1200 amps.	1	..	1	2	4
Leather bumper for closing lever, 3000 amps.	10	..	10	20	40
Leather washer for moving core of closing magnet.	..	1	1	2	4
Metal expander for leather washer for moving core of closing magnet.	..	1	1	2	4
*Auxiliary switch blade	..	1	1	2	4
*Auxiliary switch hinge jaw	..	2	1	2	4
*Auxiliary switch break-jaw	..	4	2	4	8
†Signal switch complete.	..	1	1	2	4
Trigger lever with trigger.	..	1	0	1	2
Roller for operating lever.	..	1	0	1	2
Leather washer for dash pot plunger rod.	..	1	1	2	4
Metal expander for leather washer for dashpot plunger rod.	..	1	1	2	4
Valve and stem for dash pot.	..	1	1	2	4
Spring for valve.	..	1	1	2	4

*For breakers shipped prior to January 1, 1917.

†For breakers shipped after January 1, 1917.

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