

Part Catalogue No. 6232

January, 1926

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

PARTS OF

Westinghouse

Solenoid Operating Mechanisms

For Alternating Current Circuits

Used With Large Oil Circuit-Breakers

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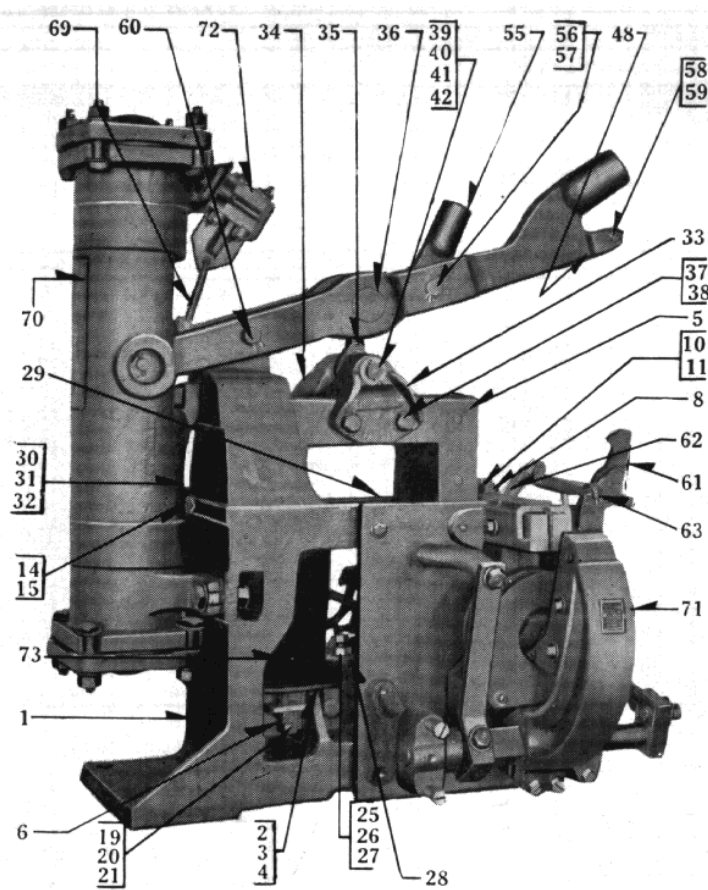
WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
East Pittsburgh, Pa.
Printed in U. S. A.

RENEWAL PARTS DATA
FOR
SOLENOID OPERATING MECHANISM

This list covers the minimum amount of Renewal Parts
that should be carried in stock

Name of Part	No. per Mechanism	Recommended For Stock
Trigger complete.....	1	1
Trigger Spring.....	1	1
Signal Switch complete.....	1	1
Leather Washer for Dash Pot.....	2	2
Leather Washer Expander.....	2	2
Valve with Stem.....	2	2
Valve Spring.....	2	2
Operating Coil for Low Voltage Clapper Release.....	1	1

MECHANISM FRAME AND DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Req.	Description
1	443136	1	Main frame
2	227213	2	Metal supporting washer for coil
3	443138	4	Micarta insulating washer for coil
4	443147	4	Steel washer to protect micarta insulation
5	443139	1	Moving core
6	443140	1	Stationary core
7*	443143	2	Micarta bushing for stationary core
8	443141	1	Guide for moving core, trigger end
9*	443142	1	Guide for moving core, dash pot end
10	.....	2	Fillister head iron machine screw, No. $\frac{5}{16}$ "-18x $\frac{3}{4}$ " (standard hardware), to fasten guide to frame
11	.....	2	Lock washer, $\frac{5}{16}$ " (standard hardware), for machine screw
12*	.....	2	Hexagon nut, $\frac{1}{2}$ "-13 (standard hardware), for guide
13*	.....	2	Lock washer, $\frac{1}{2}$ " (standard hardware), for guide
14	.....	1	Tap bolt, $\frac{5}{16}$ "-18x2 $\frac{3}{4}$ " (standard hardware), to fasten guide to frame
15	.....	1	Lock washer, $\frac{5}{16}$ " (standard hardware), for tap bolt
16*	443144	1	Strap to lower end of core guides
17*	443145	1	Micarta plate to insulate stationary core from frame
18*	443146	1	Micarta plate to insulate stationary core from strap
19	.....	4	Set screw, $\frac{3}{8}$ "-16x1 $\frac{1}{4}$ " (standard hardware), to clamp coil and coil washer to frame
20	.....	4	Hexagon nut, $\frac{3}{8}$ "-16 (standard hardware), for set screw
21	.....	4	Lock washer, $\frac{3}{8}$ " (standard hardware), for set screw
22*	.....	1	Set screw, $\frac{1}{2}$ "-13x1 $\frac{1}{2}$ " (standard hardware), for stationary core
23*	.....	1	Lock nut, $\frac{1}{2}$ "-13 (standard hardware), for set screw
24*	107315	1	Lock washer, for set screw
25	.....	3	Set screw, $\frac{3}{8}$ "-16x1 $\frac{1}{4}$ " (standard hardware), to clamp stationary core to frame

*Not illustrated.

MECHANISM FRAME AND DETAILS—Continued

Illustrated on Page 3

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Req.	Description
26	.....	3	Lock nut, 3/8"-16 (standard hardware), for set screw
27	107314	3	Lock washer for set screw
28	443133	2	Steel plate for set screw
29	443152	1	Coil support
30	.....	2	Fillister head iron machine screw, No. 14-24x3/4" (standard hardware), to fasten coil support to frame
31	3424	2	Washer for screw
32	443135	1	Micarta bushing for screw
33	399579	1	Magnet hanger, left hand
34	443413	1	Magnet hanger, right hand
35	443153	1	Eye bolt
36	443414	1	Swivel pin through main lever for eye bolt
37	.....	4	Tap bolt, 1/2"-13x6" (standard hardware), to fasten magnet hanger to moving core and stationary core to frame
38	.....	4	Lock washer, 1/2" (standard hardware), for tap bolt
39	92736	1	Pin through magnet hanger and eye bolt
40	443135	1	Micarta bushing for pin
41	117324	1	Fibre washer for bushing, 1/32" thick
42	169433	2	Fibre washer for bushing, 1/16" thick
43*	.....	2	Machine bolt, 1/4"-20x4" (standard hardware), to fasten overload magnet to frame, for single trip coil
44*	.....	2	Machine bolt, 1/4"-20x5 1/2" (standard hardware), to fasten overload magnet to frame, for double trip coil
45*†	178117	1	Hand closing lever (removable), downward pull
46*†	232229	1	Hand closing lever (removable), upward pull
47*†	443154	1	Main lever, for knife type signal switch, downward pull
48†	443155	1	Main lever, for moulded type signal switch, downward pull
49*†	443430	1	Main lever, for knife type signal switch, upward pull
50*†	443431	1	Main lever, for moulded type signal switch, upward pull

Parts Used With Switch

51*	443446	1	Main lever, downward pull
52*	443406	1	Clevis
53*	63634	1	Pin through main lever and rod end
54	.....	..	Not used
55	233252	1	Rod end for main lever
56	63634	1	Pin through main lever and rod end, upward pull
57	63632	1	Pin through main lever and rod end, downward pull
58	145393	1	Roller for main lever
59	63602	1	Roller pin
60	88353	1	Pin through main lever and frame
61	443407	1	Trigger complete
62	114909	1	Trigger spring
63	63604	1	Pin through trigger and frame
64*	182704	1	Lever for knife type signal switch
65*	.....	2	Fillister head iron machine screw, No. 14-24x1 1/4" (standard hardware), to fasten lever to switch
66*	7443	2	Washer for screw
67*	443410	1	Switch link for knife type signal switch
68*	443417	2	Switch link for 2 moulded type signal switches
69	277559	1	Switch link, for 1 moulded type signal switch
70	.....	1	Dash pot complete (for details see page 5)
71	.....	1	Clapper low voltage release (for details see page 7)
72	216071	1	Signal switch (for details see pages 10 and 12)
73**	.....	1	Operating Coil

*Not illustrated.

†Illustration shows down pull lever. For upward pull, main lever extends through dash pot.

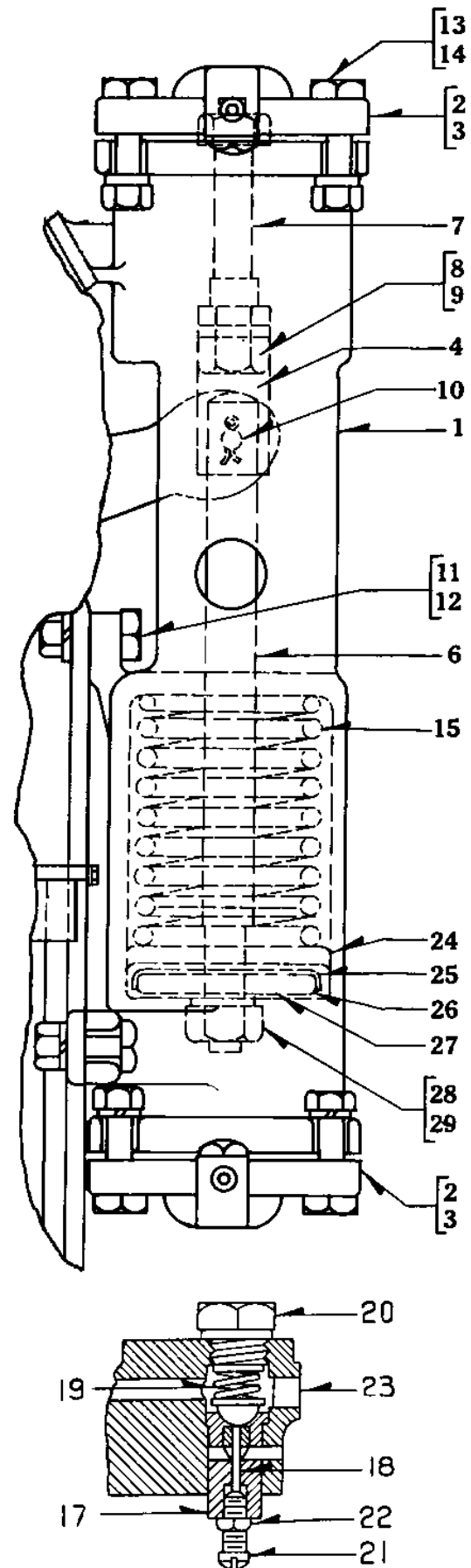
**When ordering coils give number on metal tag on the coil and complete nameplate reading of mechanism.

DASH POT DETAILS

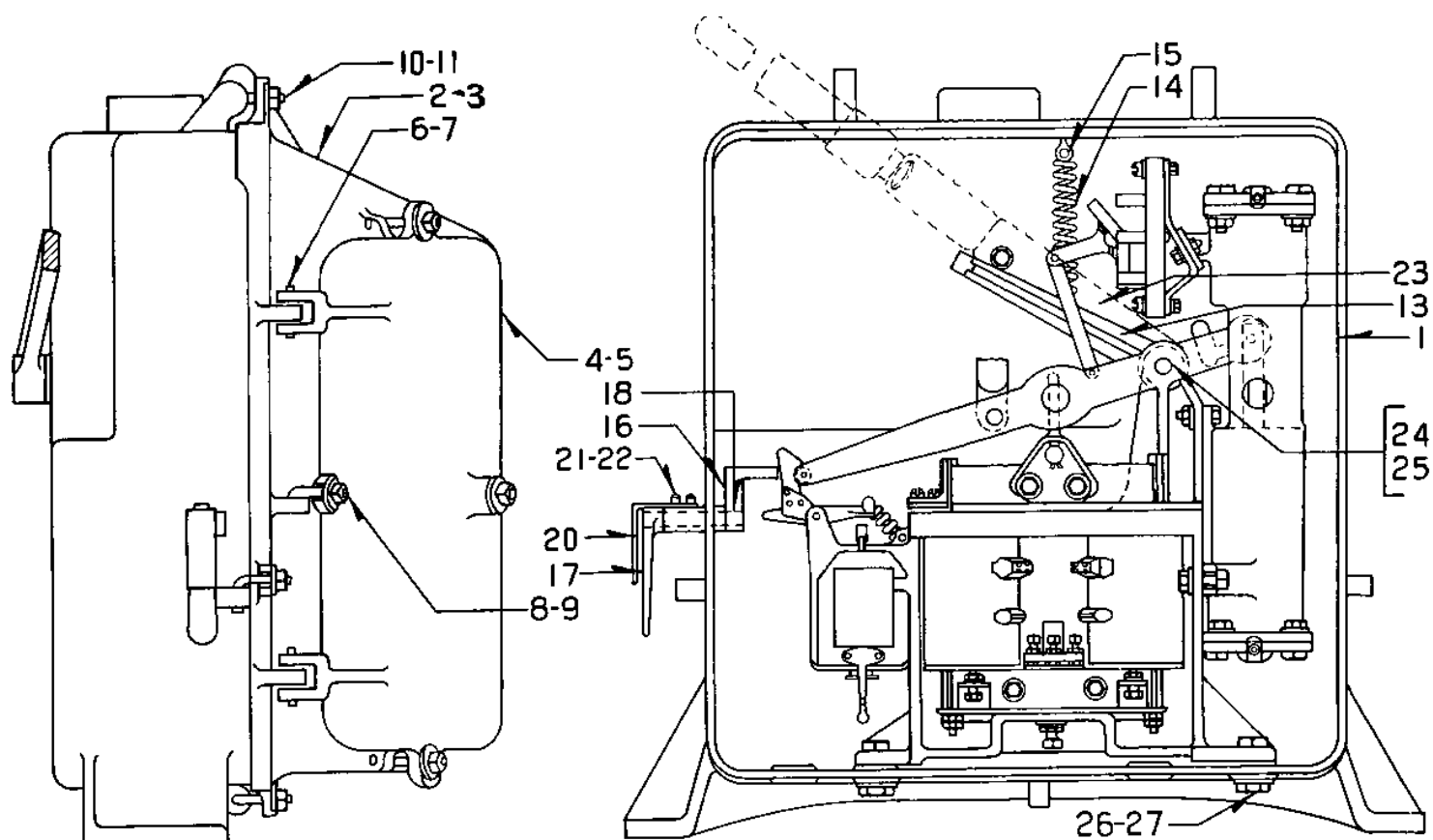
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Pot	Description
1	443149	1	Dash pot cylinder
2	421916	2	Cylinder end
3	122532	4	Cylinder end packing
4	443406	1	Clevis, for downward pull mechanism
5*	443432	1	Clevis, for upward pull mechanism
6	443150	1	Plunger rod, lower
7	443151	1	Plunger rod, upper
8	.....	1	Hexagon nut, $\frac{3}{4}$ "-10 (standard hardware), to fasten clevis to upper plunger rod
9	88907	1	Lock washer for nut
10	122953	1	Pin through main lever and rod
11	.....	3	Machine bolt, $\frac{1}{2}$ "-13x1 $\frac{3}{4}$ " (standard hardware), to fasten cylinder to frame
12	.....	3	Lock washer, $\frac{1}{2}$ " (standard hardware), for bolt
13	.....	8	Machine bolt, $\frac{1}{2}$ "-13x2 $\frac{1}{4}$ " (standard hardware), to fasten cylinder end to cylinder
14	.....	8	Lock washer, $\frac{1}{2}$ " (standard hardware), for bolt
15	122525	1	Dash pot spring, light
15	444365	1	Dash pot spring, medium
15	430375	1	Dash pot spring, heavy
16*	443412	1	Washer for spring, Style No. 430375
17	184300	2	Valve bushing
18	319039	2	Valve stem
19	186295	2	Valve spring
20	68776	2	Cap nut
21	.....	2	Fillister head brass machine screw, No. 10-32x $\frac{1}{2}$ " (standard hardware), to adjust valve
22	40662	2	Nut for adjusting screw
23	421917	2	Brass plug
24	319064	2	Spring seating washer
25	112506	2	Leather washer
26	187120	2	Leather washer expander
27	277547	2	Follower
28	.....	2	Hexagon nut, $\frac{3}{4}$ "-10 (standard hardware), to fasten leather washer and follower to plunger rod
29	.....	2	Lock washer, $\frac{3}{4}$ " (standard hardware), for nut

*Not illustrated.



MECHANISM HOUSING WITH SWINGING DOORS

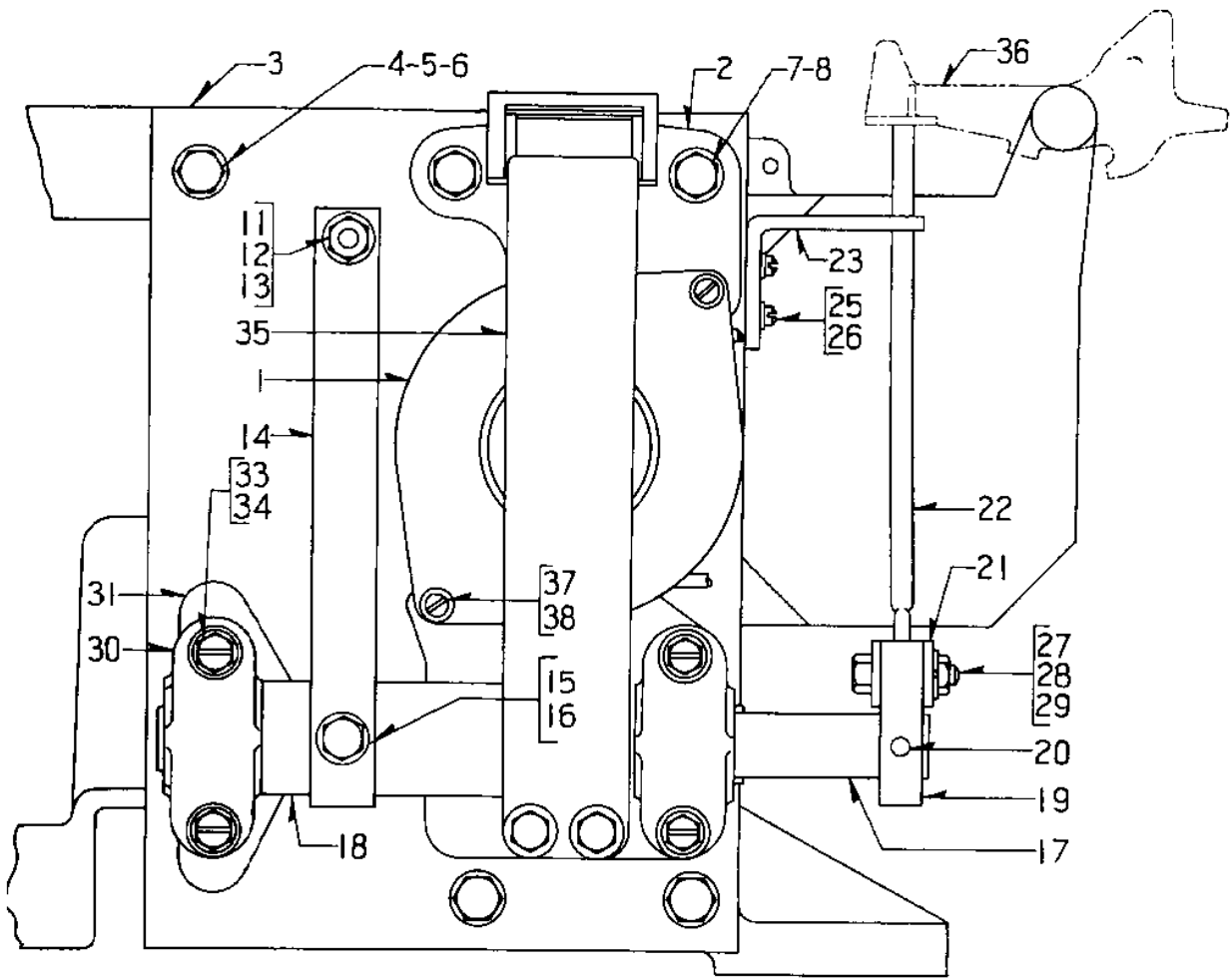


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Housing	Description
1	443438	..	Housing complete with bolt and spacer
2	443441	1	Cover frame
3	443442	1	Cover frame packing
4	443193	2	Door
5	443452	2	Door packing
6	443444	4	Door hinge pin
7	3429	8	Washer for hinge pin
8	390862	11	Hinge bolt, $\frac{1}{2}$ " diameter
9	.....	11	Wrought iron washer, $\frac{1}{2}$ " (standard hardware), for hinge bolt
10	435529	2	Hinge bolt, $\frac{5}{8}$ " diameter
11	.....	2	Wrought iron washer, $\frac{5}{8}$ " (standard hardware), for hinge bolt
12*	.....	1	Pipe plug, $1\frac{1}{4}$ " (standard hardware), for housing
13	411595	1	Closing lever
14	457086	1	Tension spring for closing lever
15	443453	1	Hinge bolt for spring
16	443439	1	Hand trip
17	233469	1	Hand trip handle
18	399695	1	Hand trip shaft
19*	.....	2	Taper pin, No. 2x1 $\frac{1}{4}$ " (standard hardware), to fasten hand trip and handle to shaft
20	443190	1	Guard for handle
21	.....	2	Fillister head iron machine screw, No. 14-24x $\frac{1}{2}$ " (standard hardware), to fasten guard to housing
22	7443	2	Washer for screw
23	443443	1	Handle lever
24	390961	1	Shaft for closing lever and handle lever
25	411597	2	Key for shaft
26	.....	3	Machine bolt, $\frac{3}{4}$ "-10x2 $\frac{3}{4}$ " (standard hardware), to mount magnet frame in housing
27	.....	3	Lock washer, $\frac{3}{4}$ " (standard hardware), for bolt

*Not illustrated.

CLAPPER LOW VOLTAGE RELEASE DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Release	Description
1	...	..	Operating coil (when ordering operating coil give stock order of mechanism and name plate information)
2	202213	1	Magnet frame
3	443427	1	Steel base
4	.....	3	Tap bolt, 3/8"-16x1 1/2" (standard hardware), to fasten magnet frame and base to mechanism
5	.....	3	Lock washer, 3/8" (standard hardware), for tap bolt
6	.....	3	Wrought iron washer, 3/8" (standard hardware), for tap bolt
7	202217	2	Screw to fasten magnet frame and base to mechanism
8	443429	5	Spacer for screw and bolt
9*	443425	2	Stop
10*	443428	1	Spring for stop
11	.....	2	Hexagon iron nut, 3/8" (standard hardware), for stop
12	.....	2	Lock washer 3/8" (standard hardware), for stop
13	.....	2	Wrought iron washer, 3/8" (standard hardware), for stop
14	443426	1	Strap for stop
15	...	1	Tap bolt, 1/2"-13x1 3/4" (standard hardware), to fasten strap to shaft
16	.....	1	Lock washer, 1/2" (standard hardware), for tap bolt
17	443419	1	Shaft
18	184049	1	Collar, small
19	443420	1	Collar, large
20	...	2	Taper pin, No. 4x2" (standard hardware), through shaft and collar
21	443421	1	Lever complete, attached to large collar
22	443422	1	Trip rod
23	443423	1	Guide bracket for trip rod

*Not illustrated.

CLAPPER LOW VOLTAGE RELEASE DETAILS—Continued

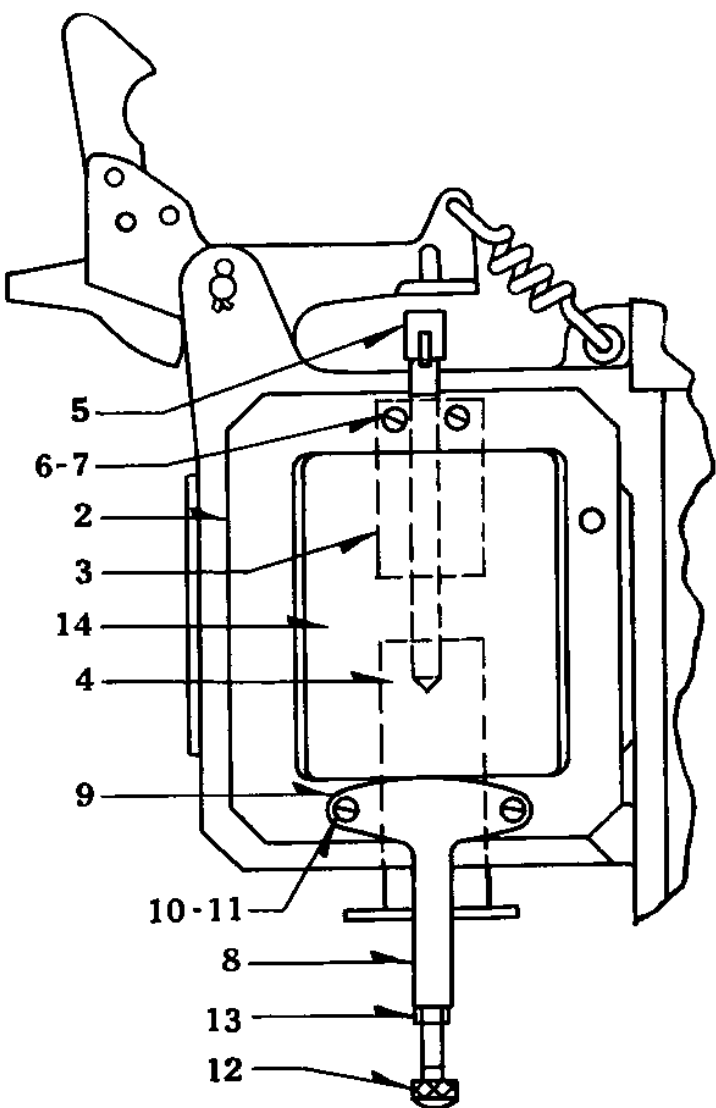
Illustrated on Page 7

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Release	Description
24*	443424	1	Pin through trip rod and lever
25	.....	2	Fillister head iron machine screw, No. 14-24x $\frac{3}{4}$ " (standard hardware), to fasten guide bracket to frame
26	.....	2	Lock washer, $\frac{1}{4}$ " (standard hardware), for screw
27	.....	2	Tap bolt, $\frac{3}{8}$ "-16x $1\frac{1}{4}$ " (standard hardware), to fasten lever to shaft
28	.....	2	Hexagon nut, $\frac{3}{8}$ " (standard hardware), for tap bolt
29	.....	2	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
30	202216	2	Bearing
31	202215	1	Bearing bracket
32*	215043	4	Bearing spring
33	.....	4	Tap bolt, $\frac{3}{8}$ "-16x $1\frac{1}{4}$ " (standard hardware), to fasten bearing to bearing bracket
34	.....	4	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
35	202214	1	Armature complete
36	443418	1	Trigger complete
37	.....	2	Fillister head brass machine screw, No. 14-24x $\frac{1}{2}$ " (standard hardware), to fasten coil to magnet frame
38	.....	2	Lock washer, $\frac{1}{4}$ " (standard hardware), for screw

*Not illustrated.

OVERLOAD AND SHUNT TRIP MAGNET DETAILS



REFERENCE NO. 1

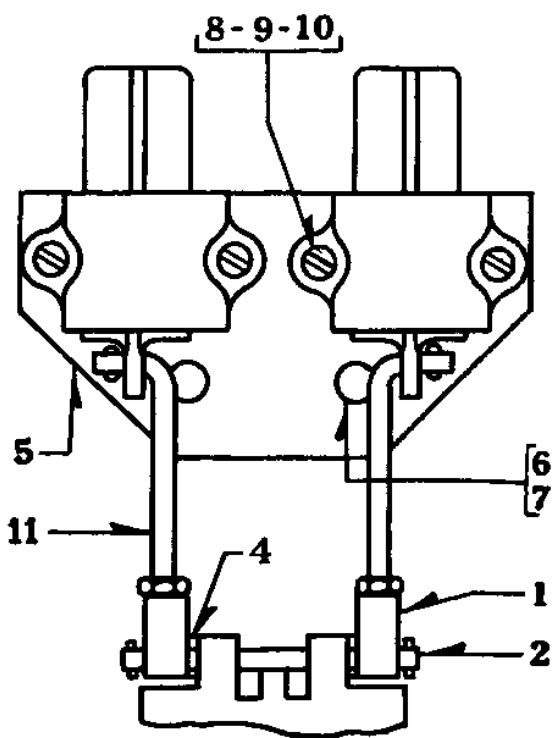
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Magnet	Description
1	256764	..	Magnet complete without coil
2	443449	1	Magnet frame
3	443447	1	Stationary core
4	443448	1	Moving core
5	273450	1	Cap for moving core stud
6	.....	2	Fillister head iron machine screw, No. 10-32x1 3/4" (standard hardware), to fasten stationary core to magnet frame
7	.....	2	Hexagon nut, No. 10-32 (standard hardware), for screw
8	286816	1	Moving core guide
9	319062	2	Coil support
10	.....	2	Fillister head iron machine screw, No. 10-32x2 1/4" (standard hardware), to fasten coil support and guide to magnet frame
11	.....	2	Hexagon nut, No. 10-32 (standard hardware), for screw
12	88829	1	Brass adjusting screw
13	46868	1	Brass nut for adjusting screw
14	.....	..	Operating coil (when ordering coil give the stock order number of the mechanism)

SIGNAL SWITCH AND MOUNTING DETAILS

Parts for Mounting and Operating Two Moulded Type Signal Switches

Style No. 216071

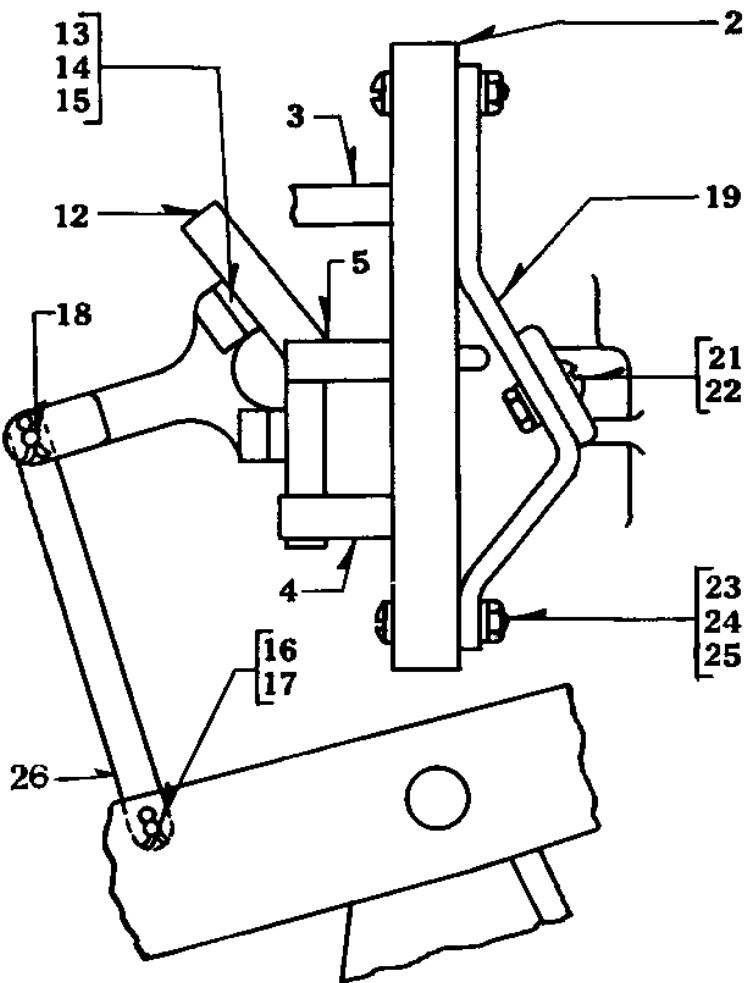


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Switch	Description
..	216071	..	Signal switch complete (for details see page 12)
1	443416	2	Hinge for switch link
2	443433	1	Pin through main lever and hinge, for downward pull
3*	443435	1	Pin through main lever and hinge, for upward pull
4	7444	2	Washer for hinge for upward pull
5	443415	1	Switch bracket
6	.....	2	Round head stove bolt, $\frac{3}{16}$ "-24x $\frac{7}{8}$ " (standard hardware), to fasten switch bracket to dash pot cylinder
7	4000	2	Lock washer, for stove bolt
8	.....	4	Round head stove bolt, $\frac{3}{16}$ "-24x1 $\frac{1}{4}$ " (standard hardware), to fasten switch to switch bracket
9	4000	4	Lock washer, for stove bolt
10	.....	4	Hexagon nut, No. 14-24 (standard hardware), to fasten link to hinge
11	443417	2	Signal switch link

*Not illustrated.

SIGNAL SWITCH AND MOUNTING DETAILS—Continued
Parts for Knife Type Signal Switch, 2-Pole, Double-Throw, Style No. 140189



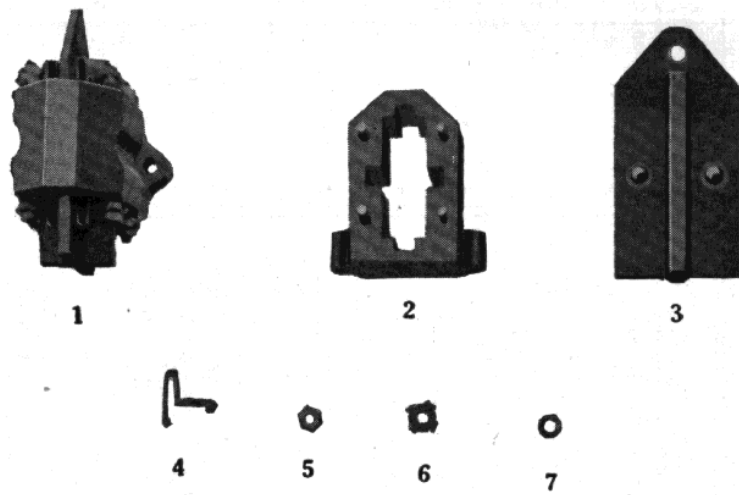
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Switch	Description
1*	140189		Signal switch complete, without mounting and operating details
2	415420	1	Slate base
3	18641	2	Break jaw, upper
4	430571	2	Break jaw, lower
5	18642	2	Hinge jaw
6*	.....	2	Fillister head iron machine screw, No. 6-32x $\frac{1}{2}$ " (standard hardware), through hinge jaw
7*	58858	4	Washer for screw
8*	46867	4	Nut for screw
9*	.....	6	Fillister head iron machine screw, No. 6-32x $\frac{1}{4}$ " (standard hardware), to fasten lead to jaws
10*	.....	6	Hexagon nut, $\frac{1}{4}$ "-20 (standard hardware), for screw
11*	3426	6	Washer for nut
12	112003	2	Blade
13	138815	2	Fibre bar
14	.....	4	Fillister head iron machine screw, No. 10-32x $\frac{5}{8}$ " (standard hardware), to fasten bar to blade
15	3410	4	Washer for screw
16	63597	1	Pin through switch link and main lever
17	443408	2	Brass spacer for link
18	106100	1	Pin through switch lever and switch link
19	225458	1	Switch support, right hand
20*	225459	1	Switch support, left hand
21	.....	2	Round head stove bolt, $\frac{1}{4}$ "-20 (standard hardware), to fasten support to frame
22	.....	2	Lock washer, $\frac{1}{4}$ " (standard hardware), for bolt
23	.....	4	Round head stove bolt, $\frac{3}{16}$ "-24x1 $\frac{1}{2}$ " (standard hardware), to fasten switch to support
24	3422	4	Washer for bolt
25	.....	4	Lock washer, $\frac{1}{4}$ " (standard hardware), for tap bolt
26	443410	1	Switch link

*Not illustrated.

SIGNAL SWITCH AND MOUNTING DETAILS—Continued

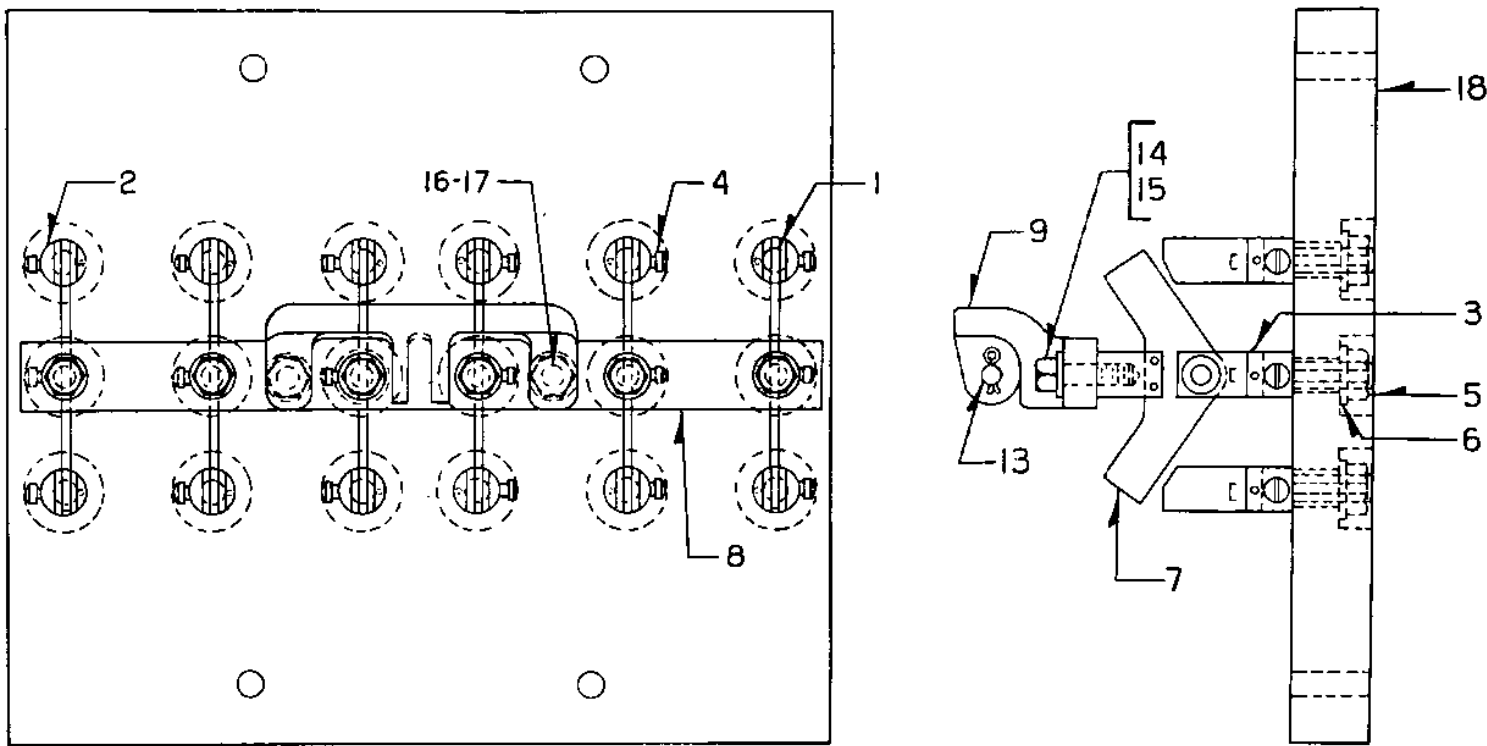
Parts for Moulded Type Signal Switch, Style No. 216071



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 piece
4	220999	8	Phosphor bronze contact finger
5	40662	16	Hexagon brass contact nut
6	148425	8	Crimp washer, used with nut, Ref. No. 5
7	.....	8	Lock washer, $\frac{1}{8}$ " (standard hardware), used with Ref. No. 5

SIX-POLE, DOUBLE-THROW, SIGNAL SWITCH DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Switch	Description
1	18641	6	Break jaw, right hand
2	430571	6	Break jaw, left hand
3	18642	6	Hinge jaw
4	.....	18	Fillister head iron machine screw, No. 6-32x1½" (standard hardware), to fasten lead to jaws
5	.....	18	Hexagon nut, ¼"-20 (standard hardware), to clamp jaws to base
6	3426	18	Washer for nut
7	382302	6	Blade
8	443436	1	Maple cross bar
9	402871	1	Switch lever
10*	443437	1	Switch link
11*	225458	1	Mounting strap, right hand
12*	225459	1	Mounting strap, left hand
13	88901	1	Pin through switch lever and switch link
14	.....	6	Tap bolt, ¼"-20x1¾" (standard hardware), to fasten cross bar to blade
15	7444	6	Washer for bolt
16	.....	2	Tap bolt, ¼"-20x7/8" (standard hardware), to fasten cross bar to switch lever
17		2	Washer, ¼" (standard hardware), for tap bolt
18	443148	1	Base

*Not illustrated.

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