TYPES M-31, M-32, MH-1 AND MH-2 MASTER SWITCHES

INSTRUCTIONS

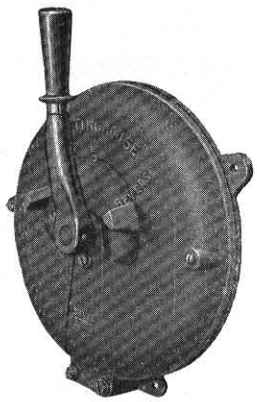

FIG. 1—TYPES M-31 AND MH-1 MASTER SWITCH

General Information

The types M and MH Master Switches, as accessories to Westinghouse Automatic Controllers, are used to obtain either one-point or two-point control for starting, stopping and reversing a motor. These switches are more commonly known as the "pancake" master switches.

Construction

The types M and MH Master Switches are enclosed in a strong cast iron case consisting of a base and cover. The cover may be easily removed by taking out two screws. A felt washer is placed at the joint between the cover and base to exclude dust. The switch is furnished either as a single unit or a double unit. The double unit consists of two single switches mounted back to back and operated by a common handle. Three lugs cast integral with the base are used in mounting the master switch on the wall. A tapped opening at the bottom of the case provides connection for a 1¼" conduit.

The moving element consists of a cast iron drum on which are mounted the main segment with arcing tips and the reset segments. A screw driver is all that is necessary to remove the segments and arcing tips from the drum.

The contact finger complete consists of a finger base, a finger release, a helical steel spring and a steel finger complete with braided shunt and adjusting screw. The finger is held in position by means of the spring, and locked in this position by the spring release. The contact pressure is positive and practically uniform throughout the life of the finger, and spring breakage is entirely eliminated. The finger is adjustable for wear by means of the adjusting screw, and may be removed for inspection or replacement without disturbing the wiring. An ordinary screw driver is the only tool required for removing the finger, or for removing the complete finger assembly. To remove the finger it is only necessary to loosen one screw holding shunt and depress the finger release, when the finger may be withdrawn.

The fingers complete are assembled on a micarta ring, which, in turn, is secured to the base casting. This construction provides ample creepage distances to ground and leaves all parts accessible for inspection and repairs.

A pawl and roller, operating against the tension of a coiled steel spring, provide suitable notching action to indicate the exact position of the drum.

Application

When used for single point control, of one motor, the single unit master switch closes the operating circuit of the line contactors. The closing of these contactors connects the motor to the line through starting resistance. The motor is accelerated by the action of the accelerating relays and contactors. With two-point control of one motor the operator is able to close the line contactors on the first point and the first accelerating contactor on the second point. The current limit accelerating relay, however, will not allow the accelerating contactor to close until the current in the motor circuit has decreased to the value corresponding to the relay setting.

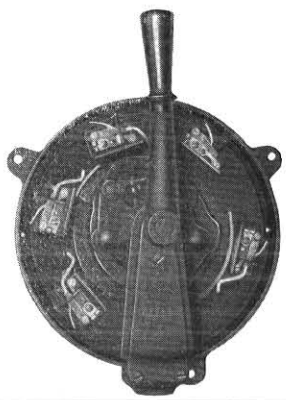

FIG. 2—MASTER SWITCH WITH COVER REMOVED

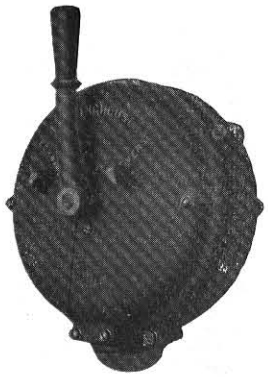

FIG. 3—TYPES M-32 MASTER SWITCH

The type M-32 Double Unit Master Switch is used ordinarily to open both sides of the line. The opening of both sides of the operating circuit insures the stopping of a motor in case one side of the line should become grounded. The double unit switch can also be used to furnish two-point control simultaneously for two motors, which are provided with separate control panels.

Maintenance

The arcing tips on the drum and the contact fingers are practically the only parts which will require renewal due to ordinary wear. We recommend frequent inspection to insure that the fingers and segments are making good contact and that screws, nuts, etc., have not become loosened. Minor replacements and adjustments, made at the time of inspection will prevent more expensive renewals.

*To be filed as an Instruction Leaflet and as Renewal Parts Data; for Renewal Parts, see reverse side of this sheet.

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RENEWAL PARTS DATA

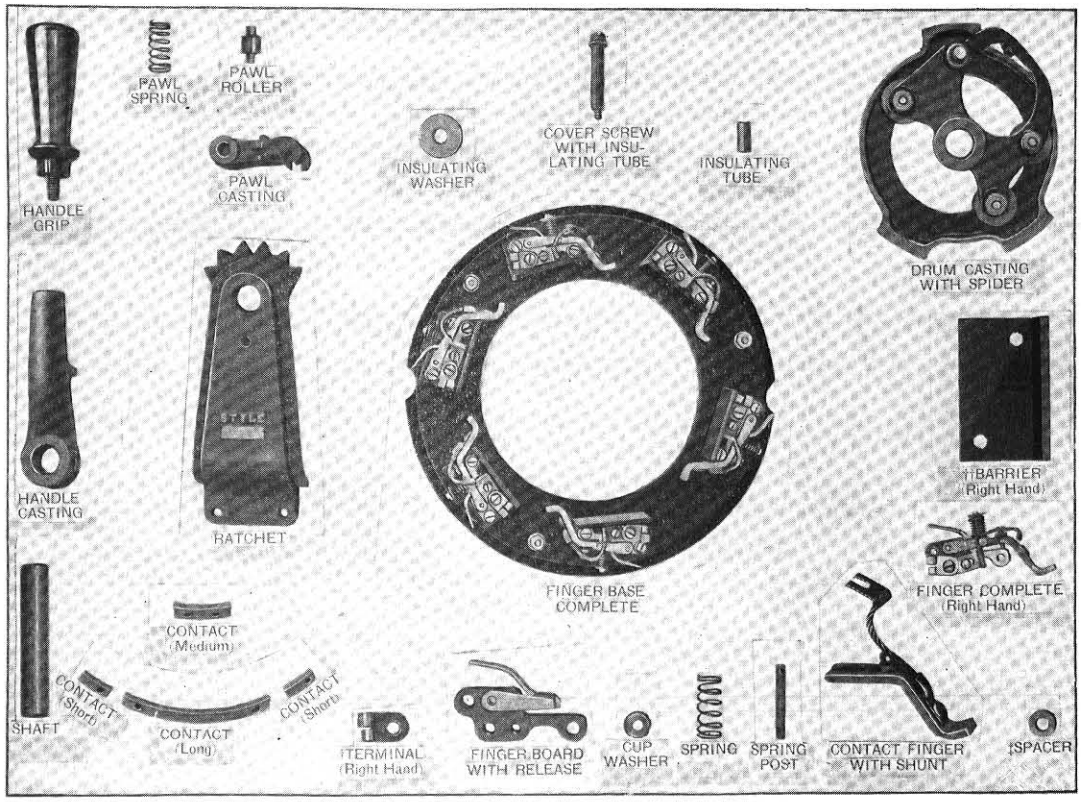

FIG. 4—RENEWAL PARTS FOR TYPES M-31, M-32, MH-1 AND MH-2 MASTER SWITCHES

Recommended Stock of Renewal Parts

Style Numbers of Switches: Type M-31 Single Unit... / Type M-32 Double Unit... / Type MH-1 Single Unit...			‡521157-B		‡584542-B		‡550961-B	
For Switches in use up to and including	1	5						
Name of Part	Recommended For Stock		No. Per Switch	Style No. of Part	No. Per Switch	Style No. of Part	No. Per Switch	Style No. of Part
Finger Base Complete	0	0	1	521158	2	521158	1	751713
Finger Complete—R.H.	0	1	6	501338	12	501338	4	501338
Finger Complete—L.H.	0	1	...	.....	...	.....	2	501339
Contact Finger with Shunt	6	12	6	501340	12	501340	6	501340
Finger Board with Release	0	0	6	573831	12	573831	6	573831
Spring Post	0	0	6	573832	12	573832	6	573832
Spring	0	1	6	501337	12	501337	6	501337
Terminal—R. H.	0	1	6	47268	12	47268	4	47268
Terminal—L.H.	0	1	...	.....	...	.....	2	59355
Cup Washer	0	0	6	58859	12	58859	6	58859
Barrier	0	1	6	501342	12	501342	6	501342
Insulating Washer 13¼" Diameter	0	0	1	516658	2	516658	1	584025
‡Drum Casting with Spider	0	0	1	x898025	2	x898025	1	x898053
Insulating Washer	0	0	6	304894	12	304894	6	304894
Insulating Tube	0	0	3	304895	6	304895	3	304895
Contact—Long	1	2	1	201280	2	201280	1	501334
Contact—Medium	1	2	1	201279	2	201279	1	501335
Contact—Short	1	2	2	201281	4	201281	1	501336
Contact Screw .190-32x⅜" Fil. Hd. I. M. Sc.	3	6	6	Std. Hdw.	12	Std. Hdw.	7	Std. Hdw.
‡Shaft	0	0	1	x653867	1	x653868	1	x653867
Snap Spring Ring	0	0	1	596633	1	596633	1	596633
Woodruff Key No. 11	0	0	2	Std. Hdw.	3	Std. Hdw.	2	Std. Hdw.
‡Handle Casting	0	0	1	x653869	1	x653869	1	x653869
Handle Grip	0	0	1	44929	1	44929	1	44929
Pawl Casting	0	0	1	234144	2	234144	1	234144
Pawl Roller	0	0	1	201276	2	201276	1	201276
Pawl Spring	0	1	1	488039	2	488039	1	488039
Ratchet	0	0	1	234141	2	234141	1	234141
Cover Screw with Insulation	0	0	2	574315	4	574315	2	574315

Parts indented are included in the part under which they are indented.

‡Any customer having plain or Sub. A Style Switch, and is in need of repairs for items marked (x), it is necessary to change to the improved design of spider, shaft, and handle casting assembly.

The following are the assembly styles that should be ordered:

For Type M-31 Single Unit Switch, order Assembly S#653870-A
For Type M-32 Double Unit Switch, order Assembly S#653871-A
For Type MH-1 Single Unit Switch, order Assembly S#598213-A

The other parts of plain and Sub. A Style Switches are the same as Sub. B Style Switches.

*To be filed as Renewal Parts Data and as an Instruction Leaflet; for Instructions, see reverse side of this sheet.

ORDERING INSTRUCTIONS

Name the part and give its style number. Give the complete nameplate reading. State whether shipment is desired by express, freight or by parcel post. Send all orders or correspondence to nearest Sales Office of the Company. Small orders should be combined so as to amount to a value of at least $1.00 net; where the total of the sale is less than this, the material will be invoiced at $1.00.