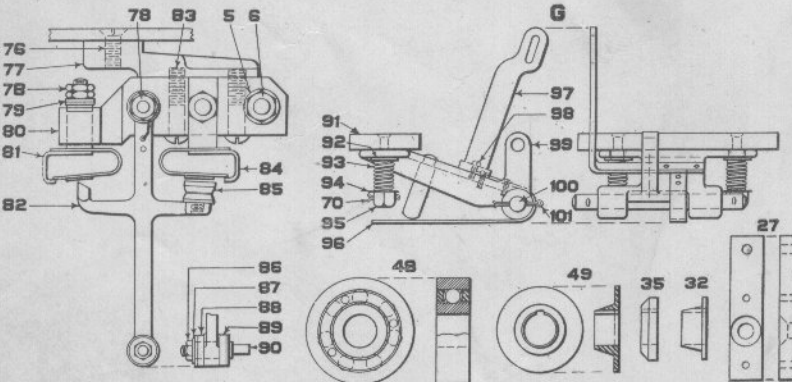
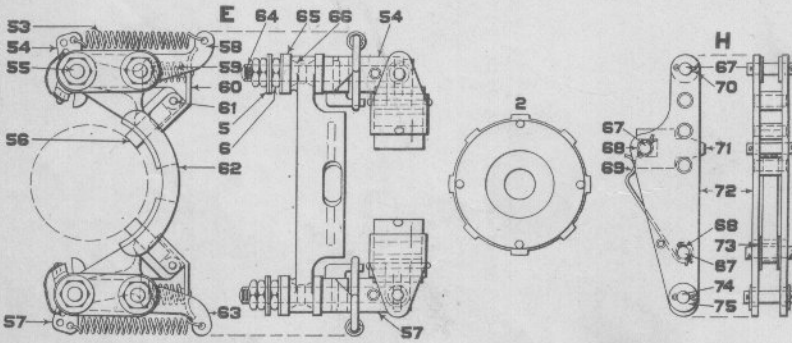


A-MODEL 2A LOW VOLTAGE MOTOR COMPLETE-8-10 VOLTS

B-MODEL 2A LOW VOLTAGE MOTOR COMPLETE-20 VOLTS

C-MODEL 2A MOTOR COMPLETE-110 VOLTS



Model 2A Direct-Current Motors

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, 110 Volts

Note: Motors shown on this plate are equipped with contacts as shown which are operated by armature of retaining mechanism.

Cores Fig. 18 and Coils Fig. 30, furnished for Magnet complete to retain mechanism are equipped for quick releasing unless otherwise specified. Coils for slow releasing will be furnished when required.

Holding Coils are furnished to operate on same voltage as Motor. Holding Coils can be furnished to operate on other voltages when specified.

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
A	Motor Complete, (8-10 volts)..... Specify whether Signal is to operate in upper or lower quadrant, right or left hand indication.	
B	Motor Complete, (20 volts)..... Specify whether Signal is to operate in upper or lower quadrant, right or left hand indication.....	
C	Motor Complete, (110 volts)..... Specify whether Signal is to operate in upper or lower quadrant, right or left hand indication.	
D	Armature Complete for 8-10 volt Motor Fig. A.....	
D1	Armature Complete for 20 volt Motor Fig. B.....	
D2	Armature Complete for 110 volt Motor Fig. C.....	
E	Brush Holder Bracket Complete as shown. (2-53, 1-54, 2-55, 2-56, 1-57, 1-58, 2-59, 2-60, 2-61, 8-5, 8-6, 1-62, 1-63, 2-64, 4-65, 4-66).....	37930-1
F	Magnet Complete, for Retaining Mechanism on 8-10 volt Motor Fig. A as shown. Includes Coils, Cores, Cap, Nuts, Washers, etc. (2-18, 2-19, 1-20, 1-21, 2-22, 1-23, 1-24, 1-25, 4-26, 2-30, 2-31, 2-38, 1-39).....	

(Continued on following page)

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, or 110 Volts

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
F1	Magnet Complete for Retaining Mechanism on 20 volt Motor Fig. B as shown. Includes Coils, Cores, Cap. Nuts, Washers, etc. (2-18, 2-19, 1-20, 1-21, 2-22, 1-23, 1-24, 1-25, 4-26, 2-30a, 2-31a, 2-38, 1-39). See Note.....	
F2	Magnet Complete, for Retaining Mechanism on 110 Volt Motor Fig. C as shown. Includes Coils, Cores, Cap. Nuts, Washers, etc. (2-18a, 2-19, 1-20, 1-21, 2-22, 1-23, 1-24, 1-25, 4-26, 2-30b, 2-31b, 2-38, 1-39). See Note.....	
G	Armature Support Complete as shown. (1-91, 2-92, 2-93, 2-94, 2-70, 2-95, 1-96, 1-97, 4-98, 1-99, 1-100, 2-101).....	49021
H	Link Complete as shown, for Retaining Mechanism. Specify whether Signal is to operate in upper or lower quadrant, right or left hand indication. (3-67, 2-68, 1-69, 8-70, 1-71, 1-72, 4-73, 1-74, 4-75).....	32666-1
1	Cotter Pin, $\frac{3}{16}$ " x $6\frac{1}{4}$ ", for Cover Fig. 40.....	35622
2	Ratchet Complete as shown, for Retaining Mechanism.....	43621
3	Screw, No. 10-32 x $\frac{5}{8}$ " rd. hd. machine, for fastening Oiler Fig. 4 to Frame Fig. 47.....	2784
4	Oiler Complete with Bracket and tube for oiling rear Bearing. . .	48674-1
5	Washer, brass, used on Terminal Posts and Screws, as shown. .	1225
6	Nut, No. 14-24 x $\frac{1}{8}$ " thick hex., for Terminal Posts and Screws, as shown.....	46989
7	Screw, No. 14-24 x $1\frac{1}{4}$ " rd. hd., used as terminal post, as shown. .	1411-1
8	Insulating Washer for Screw Fig. 7.....	4001
9	Bushing for Screw Fig. 7.....	7811
10	Eye Bolt, $\frac{1}{4}$ "-20 x $2\frac{1}{4}$ " for fastening Motor Cover Fig. 40.....	29963
11	Pin, $\frac{3}{16}$ " x $\frac{1}{8}$ " for Eye Bolt Fig. 10.....	7568
12	Washer for Eye Bolt Fig. 10.....	069

(Continued on following page)

March 1923

GENERAL RAILWAY SIGNAL COMPANY

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, or 110 Volts

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
13	Wing Nut, $\frac{1}{4}$ "-20 for Eye Bolt Fig. 10.....	29995
14	Stud, $\frac{1}{4}$ "-24, for fastening Brush Holder Fig. E to Bearing Bracket Fig. 41.....	50618
15	Pin, $\frac{1}{16}$ " x $\frac{3}{4}$ " for Stud Fig. 14.....	4793-1
16	Screw, No. 6-32 x $\frac{3}{8}$ " rd. hd., for Nut Fig. 17.....	2552
17	Adjusting Nut, $\frac{1}{2}$ "-13 x $\frac{1}{4}$ ", for Armature Shaft.....	30032
18	Core for Pick Up and Holding Coils for Magnet Complete Fig. D used on 8-10 and 20 volt Motors. See Note.....	
18a	as above, except for 110 volt Motor. See Note.....	49024
19	Nut, $\frac{3}{8}$ "-16 hex., for Core Fig. 18.....	1156
20	Cap for Magnet Complete Fig. F.....	33204-1
21	Yoke for Cores Fig. 18, as shown.....	48844
22	Tube, copper, for Cores Fig. 18.....	50624
23	Insulator used in Cap Fig. 20, as shown.....	49836
24	Upper, Insulating Block for Magnet Complete Fig. F, as shown.....	49834-1
25	Lower Insulating Block for Magnet Complete Fig. F, as shown..	49835-1
26	Screw, No. 8-32 x $1\frac{1}{2}$ " rd. hd., for fastening Cap Fig. 20 to Bearing Bracket Fig. 41.....	2430
27	Hanger Block for Link Complete Fig. H.....	32686
28	Pin, $\frac{1}{8}$ " x $\frac{1}{2}$ " for fastening Hanger Block Fig. 27 to Bearing Bracket Fig. 41.....	1240
29	Screw, No. 14-24 x $\frac{1}{2}$ " fl. hd. for fastening Hanger Block Fig. 27 to Bearing Bracket Fig. 41.....	5263-1
30	Holding Coil for 8-10 volt Motor, as shown. See Note.....	
30a	as above, except for 20 volt Motor. See Note.....	
30b	as above except for 110 volt Motor. See Note.....	
31	Pickup Coil for 8-10 volt Motor, as shown.....	
31a	Pickup Coil for 20 volt Motor, as shown.....	

(Continued on following page)

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, or 110 Volts

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
31b	Pickup Coil for 110 volt Motor, as shown.....	43658
32	Friction Cone for Ratchet Fig. 2, as shown.....	30506
33	Spring for Friction Cone Figs. 32 and 49.....	16448
34	Pin, $\frac{1}{8}$ " x $\frac{9}{16}$ ", for Friction Cones Figs. 32 and 49.....	43656
35	Cone for Ratchet Fig. 2, as shown.....	43655
36	Insulating Washer, $\frac{1}{16}$ ", as shown.....	34254
37	Spacer Washer, .015" thick, for Armature Shaft, as shown.....	17546
38	Washer $\frac{5}{8}$ " x $1\frac{1}{2}$ " x $\frac{1}{16}$ ", for Core Fig. 18.....	38496
39	Link for Cores Fig. 18.....	
40	Cover Complete for Bearing Bracket. Includes Gasket.....	
41	Bearing Bracket, with Stud for Brush Holder Bracket, Hanger Block for Link, Eye Bolt, Wing Nut, Pins and Washer. (1-Bearing Bracket, 1-10, 1-11, 1-12, 1-13, 1-14, 1-15, 1-27, 2-28, 1-29, 1-5, 2-6, 1-100, 1-101).....	
41a	as above, except with Cover, Cotter Pin, Binding Post, Nuts, Washers, Bushings and Cap Screws. (1-Bearing Bracket, 1-10, 1-11, 1-12, 1-13, 1-14, 1-15, 1-27, 2-28, 1-29, 6-5, 5-6, 1-100, 1-101, 1-41, 1-40, 1-1, 1-7, 6-8, 1-9, 4-42, 1-43).....	
42	Cap Screw, $\frac{5}{16}$ "-18 x $1\frac{1}{4}$ ", for fastening Bearing Bracket Fig. 41 to Frame Fig. 47.....	50499
43	Insulating Bushing for Lead Wires, as shown.....	27371
44	Screw, $\frac{3}{8}$ "-16 x 1" fill. hd., for fastening Pole Piece Fig. 45 to Frame Fig. 47.....	29864
45	Pole Piece, as shown (4 required).....	29864
46	Field Coil, as shown, for 8-10 volt motor (4 required).....	
46a	as above, except for 20 volt motors.....	
46b	as above, except for 110 volt Motor.....	
47	Frame, as shown.....	29825

(Continued on following page)

March 1923

GENERAL RAILWAY SIGNAL COMPANY

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, or 110 Volts

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
48	Ball Bearing Complete, as shown (2 required).....	47790
49	Friction Cone for Motor Pinion Fig. 52.....	30077
50	Collar for Armature Shaft, as shown.....	30650
51	Cotter Pin, $\frac{1}{8}$ " x $1\frac{1}{4}$ " for Collar Fig. 50.....	041
52	Motor Pinion, as shown.....	30075
53	Spring for Brush Holder Levers Figs. 54 and 57, as shown.....	37936
54	Upper Lever, as shown.....	37934
55	Screw, No. 14, 24 x $2\frac{3}{32}$ " hex., for holding Levers Figs. 54 and 57 to Brush Holder Bracket Fig. 62.....	37939-1
56	Brush, as shown.....	37938
57	Lower Lever, as shown.....	37933
58	Upper Arm, as shown.....	37938
59	Spring for Cap Fig. 60.....	37974
60	Cap with Stud for Brush Fig. 56.....	50808
61	Pin for fastening Cap Fig. 60 to Levers Figs. 54 and 57.....	18142
62	Brush Holder Bracket for Fig. E.....	37937-1
63	Lower Arm, as shown.....	37931
64	Screw, No. 14-24 x $1\frac{1}{2}$ " sq. hd., for fastening Arms Fig. 58 and 63 to Bracket Fig. 62.....	50874
65	Insulating Link, as shown (4 required).....	35521
66	Bushing for Screws Figs. 55 and 64. (4 required).....	37976-1
67	Pin, $\frac{3}{16}$ " x $\frac{7}{8}$ ", as shown for Fig. H.....	32689
68	Bushing for Pin Fig. 67, as shown.....	32729
69	Spring for Dog Fig. 71, as shown.....	43651
70	Cotter Pin, $\frac{1}{16}$ " x $\frac{3}{8}$ ", for Pins Fig. 67 and 74, as shown.....	0652
71	Dog for Link Complete Fig. H.....	43650
72	Link, two sides assembled with Spacers for Fig. H.....	43645
73	Washer for Bushing Fig. 68, as shown.....	50587

(Continued on following page)

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, or 110 Volts

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
74	Pin, $\frac{3}{16}$ " x $\frac{15}{16}$ " for fastening Link Fig. H to Armature Support Fig. G.....	38495
75	Washer, $\frac{3}{8}$ ", for Pin Figs. 67 and 74, as shown.....	42312
76	Screw, No. 14-24 x $\frac{5}{8}$ " fl. hd., for fastening Bracket for Hold Clear Contacts Fig. 77 to Bearing Bracket Fig. 41.....	0409
77	Bracket for Hold Clear Contacts Fig. 80, as shown.....	47208-1
78	Nut, No. 10-32 x $\frac{3}{16}$ " hex., as shown.....	577
79	Washer, as shown.....	3890
80	Insulation Block Complete with Binding Posts, as shown.....	47201
81	Left Hand Contact Complete, as shown.....	47203
82	Arm Complete, as shown. Includes (1-85, 1-86, 2-87, 1-88, 1-89, 1-90).....	47202
82a	as above, except Arm only.....	47209
83	Screw, No. 14-24 x $1\frac{1}{8}$ " rd. hd. for fastening Insulation Block Fig. 80 to Bracket Fig. 77.....	0516
84	Right Hand Contact Complete, as shown.....	43625
85	Contact Complete, as shown.....	34435
86	Nut, No. 4-36 x $\frac{1}{4}$ " hex., for Stud Fig. 90, as shown.....	12680
87	Washer, $\frac{1}{8}$ ", for Stud Fig. 90.....	13016
88	Insulating Washer for Stud Fig. 90.....	43639
89	Insulating Bushing for Stud Fig. 90, as shown.....	43692
90	Stud for Arm, Fig. 82.....	43640
91	Armature with Studs for Armature Support Fig. G.....	49020
92	Washer, for Spring Fig. 93.....	5046
93	Spring for Armature Fig. 91.....	33209
94	Eyelet for Spring Fig. 93.....	41858
95	Castle Nut for Spring Fig. 93.....	33247
96	Spring for Support Fig. 99, as shown.....	33200

(Continued on following page)

March 1923

GENERAL RAILWAY SIGNAL COMPANY

Model 2A Direct-Current Motors and Motor Parts

8-10 Volts, 20 Volts, or 110 Volts

Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
Order by plate, figure number and name		
97	Lever to operate Contact Arm for Armature Support Complete Fig. 6.....	43644
98	Screw No. 6-32 x $\frac{1}{4}$ " rd. hd., for fastening Lever Fig. 97 and Spring Fig. 96 to Support Fig. 99.....	2613
99	Support. Includes Stud, as shown.....	
100	Shaft for fastening Armature Support Complete Fig. 6 to Bearing Bracket Fig. 41.....	32758
101	Cotter Pin $\frac{1}{16}$ " x $\frac{7}{8}$ ", for Shaft Fig. 100.....	30039