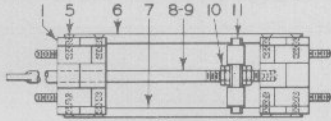
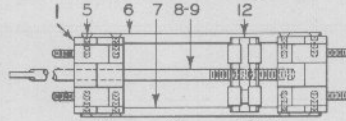


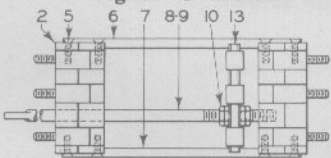
Locate Contact Springs on Controller by above Diagrams



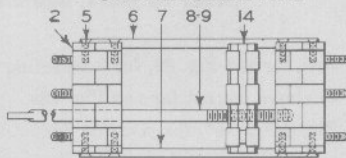
J-Frame Comp. 2Tier Signal Controller



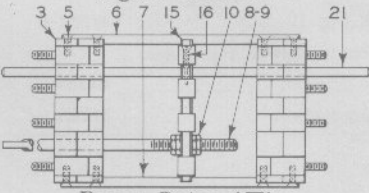
K-Frame Comp. 2Tier Switch Controller



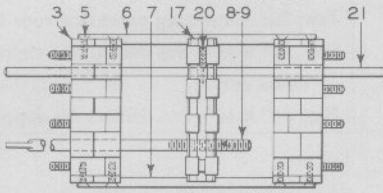
L-Frame Comp. 3Tier Signal Controller



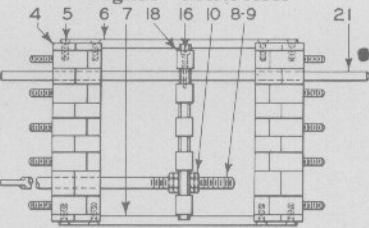
M-Frame Comp. 3Tier Switch Controller



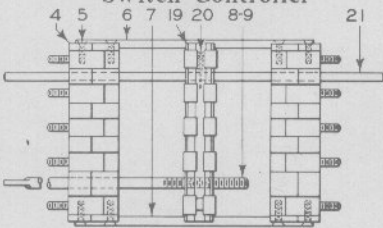
N-Frame Comp. 4Tier Signal Controller



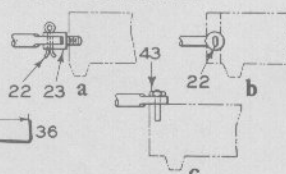
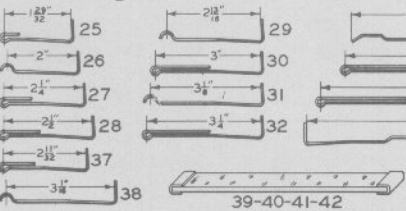
P-Frame Comp. 4Tier Switch Controller



R-Frame Comp. 5Tier Signal Controller



S-Frame Comp. 5Tier Switch Controller



Connection Methods

Circuit Controllers—High Voltage For Electric Interlocking Machines

## Electric Interlocking Machines

### Circuit Controllers—High Voltage

NOTE: The following table shows a number of circuit controllers complete with springs assembled as have been regularly furnished. When ordering circuit controllers complete refer to table below and specify by Fig. Number controller desired. If other combinations than those listed are required order must specify frame and contact springs required in each numbered space. (See top of Plate G0409 for numbering of spaces.) The table below shows references for circuit controllers complete for connecting to top of lever as shown in diagram c. When connections as shown in diagrams a and b are required same must be specified on order.

Stop Fig. 44 is not necessary with contact springs Figs 25, 26 and 27 and will not be supplied on complete controllers unless specified.

Order by plate, figure number and name

Fig.	DESCRIPTION	Frame Fig. No.	Springs (Fig. ref. as shown) assembled in spaces.												
			1	2	3	4	5	6	7	8	9	10			
A	Two Tier Signal Controller. Springs as specified .....	J	*	*	*	*									
A1	Two Tier Signal Controller for Battery-Indication Signal .....	J	30	27	—	29									
A2	Two Tier Signal Controller for Dynamic-Indication Signal .....	J	30	30	30	—									
B	Two Tier Switch Controller. Springs as specified .....	K	*	*	*	*									
B1	Two Tier Switch Controller for Dynamic-Indication Switch Machine .....	K	28	28	28	28									
C	Three Tier Signal Controller. Springs as specified .....	L	*	*	*	*	*	*							
C1	Three Tier Signal Controller for Battery-Indication Signal .....	L	30	29	30	27	30	27							
C2	Three Tier Signal Controller. Dynamic-Indication Signal .....	<del>L</del> N	30	30	30	25	30	25							

(Continued on following page)

## Electric Interlocking Machines Circuit Controllers—High Voltage

Order by plate, figure number and name

Fig.	DESCRIPTION	Frame Fig. No	Springs (Fig. ref. as shown) assembled in spaces.																	
			1	2	3	4	5	6	7	8	9	10								
D	Three Tier Switch Controller. Frame and Springs as specified.....	Note 1	*	*	*	*	*	*												
D1	Three Tier Switch Controller for Dynamic-Indication Switch Machine—Model 2 Int.	M	28	28	28	28	25	25												
D2	Three Tier Switch Controller for Dynamic-Indication Switch Machine—Model 5 Int.	M3	-	-	28	28	28	25												
E	Four Tier Signal Controller. Springs as specified.....	N	*	*	*	*	*	*	*	*	*									
E1	Four Tier Signal Controller for Battery-Indication Signal.....	N	30	30	30	29	-	27	-	27										
E2	Four Tier Signal Controller for Dynamic-Indication Signal.....	N	30	30	30	30	30	30	-	27										
E3	Four Tier Signal Controller, for control and ind. of Model 5C and 5D Sw. Mach.....	N	38	38	38	38	37	37	30	30										
F	Four Tier Switch Controller. Frame and Springs as specified.....	Note 2	*	*	*	*	*	*	*	*										
F1	Four Tier Switch Controller, for Dynamic-Indication Switch Machine—Model 2 Int.	P	28	28	28	28	25	25	25	25										
F2	Four Tier Switch Controller, for Dynamic-Indication, Single Sw.—Model 5 Int.....	P3	-	-	28	28	28	28	28	28										

(Continued on following page)

## Electric Interlocking Machines

# Circuit Controllers—High Voltage

Order by plate, figure number and name

Fig.	DESCRIPTION	Frame Fig. No.	Springs (Fig. ref. as shown) assembled in spaces.													
			1	2	3	4	5	6	7	8	9	10				
F3	Four Tier Switch Controller, for Dynamic-Indication, Double Sw.—Model 5 Int.....	P4	28	28	28	28	28	28	28	28						
G	Five Tier Signal Controller. Springs as specified.....	R	*	*	*	*	*	*	*	*	*	*	*	*	*	*
G1	Five Tier Signal Controller for Battery-Indication Signal.....	R	30	30	30	29	30	30			27			27		
G2	Five Tier Signal Controller for Dynamic-Indication Signal.....	R	30	30	30	30	30	27			27			27		
G3	Five Tier Signal Controller for control and ind. of Model 5C and 5D Sw. Mach.....	R	38	38	38	38	37	37	30	30	25	25				
H	Five Tier Switch Controller. Frame and Springs as specified.....	Note 3	*	*	*	*	*	*	*	*	*	*	*	*	*	*
H1	Five Tier Switch Controller for Dynamic-Ind. Sw. Mach.—Model 2 Int.....	S	28	28	28	28	25	25	25	25	25	25	25	25	25	25
H2	Five Tier Switch Controller for Dynamic-Ind. Single Sw.—Model 5 Int.....	S3	-	-	28	28	28	28	28	28	28	25	25	25	25	25
H3	Five Tier Switch Controller for Dynamic-Ind. Double Sw.—Model 5 Int.....	S4	-	-	28	28	28	28	28	28	28	28	28	28	28	28

Note 1—Specify frames Figs. M, M1, M2 or M3 as required.

Note 2—Specify frames Figs. P, P1, P2, P3 or P4 as required.

Note 3—Specify frames Figs. S, S1, S2S3 or S4 as required.

\*Specify springs Figs. 25 to 38 as required in each space (See Plate for numbering of spaces.)

## Electric Interlocking Machines

# Circuit Controllers—High Voltage

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

Fig. No.	Name	Drawing Reference
<b>Order by plate, figure number and name</b>		
J	Frame Complete, as shown, for two tier controller, for indirectly operated switch and for signal. Connection to lever as shown in diagram c, at bottom of Plate.....	7708-2 Gr. 7
J1	as above, except connection to lever as shown in diagram b.....	7708-2 Gr. 8
J2	same as Fig. J, except connection to lever as shown in diagram a..	7708-2 Gr. 9
K	Frame Complete, as shown, for two tier controller, for directly operated switch. Has contact block Fig. 12 which has contacts in spaces 1—2 shunted. Connection to lever as shown in diagram c, at bottom of Plate.....	7708-2 Gr. 10
K1	as above, except connection to lever as shown in diagram b.....	7708-2 Gr. 11
K2	same as Fig. K, except connection to lever as shown in diagram a..	7708-2 Gr. 12
L	Frame Complete, as shown, for three tier controller, for indirectly operated switch and signal. Connection to lever as shown in diagram c, at bottom of Plate.....	7708-3 Gr. 8
L1	as above, except connection to lever as shown in diagram b.....	7708-3 Gr. 9
L2	same as Fig. L, except connection to lever as shown in diagram a..	7708-3 Gr. 10
M	Frame Complete, as shown, for three tier controller, for directly operated switch. Has contact block Fig. 14, which has contacts in spaces 1—2 shunted. Connection to lever as shown in diagram c at bottom Plate. For Model 2 Interlocker.....	7708-3 Gr. 11
M1	as above, except connection to lever as shown in diagram b.....	7708-3 Gr. 12
M2	same as Fig. M, except connection to lever as shown in diagram a	7708-3 Gr. 13
M3	same as Fig. M, except has contact block Fig. 14a which has contacts in spaces 3—4 shunted. Connection to lever as shown in diagram c. For Model 5 Interlocker.....	7708-3 Gr. 14
N	Frame Complete, as shown, for four tier controller, for indirectly operated switch and signal. Connection to lever as shown in diagram c, at bottom of Plate.....	7708-4 Gr. 8

(Continued on following page)

Electric Interlocking Machines  
**Circuit Controllers—High Voltage**

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

Fig. No.	Name	Drawing Reference
<b>Order by plate, figure number and name</b>		
N1	as above, except connection to lever as shown in diagram b. . . . .	7708-4 Gr. 9
N2	same as Fig. N, except connection to lever as shown in diagram a. . . . .	7708-4 Gr. 10
P	Frame Complete, as shown, for four tier controller, for directly operated switch. Has contact block Fig. 17 which has contacts in spaces 1—2 shunted. Connection to lever as shown in diagram c, at bottom of Plate. For Model 2 Interlocker. . . . .	7708-4 Gr. 11
P1	as above, except connection to lever as shown in diagram b. . . . .	7708-4 Gr. 12
P2	same as Fig. P, except connection to lever as shown in diagram a. . . . .	7708-4 Gr. 13
P3	same as Fig. P, except has contact block Fig. 17a, which has contacts in spaces 3—4 shunted. Connection to lever as shown in diagram a. For Model 5 Interlocker. . . . .	7708-4 Gr. 14
P4	same as Fig. P3, except has contact block Fig. 17b which has contacts in spaces 1—2 and 5—6 shunted. For double switch lever on Model 5 Interlocker. . . . .	7708-4 Gr. 17
R	Frame Complete, as shown, for five tier controller, for indirectly operated switch and signal. Connection to lever as shown in diagram c, at bottom of Plate. . . . .	7708-5 Gr. 9
R1	as above, except connection to lever as shown in diagram b. . . . .	7708-5 Gr. 10
R2	same as Fig. R, except connection to lever as shown in diagram a. . . . .	7708-5 Gr. 11
S	Frame Complete, as shown, for five tier controller, for directly operated switch. Has contact block Fig. 19 which has contacts in spaces 1—2 shunted. Connection to lever as shown in diagram c, at bottom of Plate. For Model 2 Interlocker. . . . .	7708-5 Gr. 12
S1	as above, except connection to lever as shown in diagram b. . . . .	7708-5 Gr. 13
S2	same as Fig. S, except connection to lever as shown in diagram a. . . . .	7708-5 Gr. 14
S3	same as Fig. S, except has contact block Fig. 19a, which has contacts in spaces 3—4 shunted. Connection to lever as shown in diagram c. For Model 5 Interlocker. . . . .	7708-5 Gr. 15

(Continued on following page).

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**Circuit Controllers—High Voltage**

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Fig. No.	Name	Drawing Reference
<b>Order by plate, figure number and name</b>		
S4	same as Fig. S3, except has contact block Fig. 19b, which has contacts in spaces 3—4 and 7—8 shunted. For double switch lever on Model 5 Interlocker.....	7708-5 Gr. 17
1	End Block, for two tier controller.....	2565-12
2	End Block, for three tier controller.....	2565-13
3	End Block, for four tier controller.....	2565-14
4	End Block, for five tier controller.....	2565-15
5	Screw, No. 10-32 x 5/8" fl. hd., for fastening end blocks Figs 1, 2, 3 and 4 to guide bars Figs. 6 and 7.....	2602-1
6	Guide Bar, upper, for contact blocks.....	2562
7	Guide Bar, lower, for contact blocks.....	2561
8	Operating Rod Complete, includes bushing, for connecting to top of lever as shown in diagram c.....	54734 Gr. 1
9	Operating Rod, for connecting controllers to end of lever as shown in diagrams a and b. Does not include jaw Fig. 23 or cotter pin Fig. 22.....	2569
10	Nut, 1/4"-24 x 3/16" hex., for operating rods Figs. 8 and 9, for use with indirectly operated switch and signal controllers only.....	20098-1
11	Contact Block, with contacts, for two tier signal controllers.....	16912-2 Gr. 1
12	Contact Block, with contacts, for two tier switch controllers. Has contacts in spaces 1—2 shunted.....	3253 Gr. 1
13	Contact Block, with contacts, for three tier signal controllers.....	16912-3 Gr. 1
14	Contact Block, with contacts, for three tier switch controllers. Has contacts in spaces 1—2 shunted. For Model 2 Interlocker.....	3253-2 Gr. 1
14a	as above, except has contacts in spaces 3—4 shunted. For Model 5 Interlocker.....	3253-6 Gr. 1
15	Contact Block, with contacts, for four tier signal controllers.....	16912 Gr. 1
16	Screw, No. 6-32 fl. hd., for fastening guide rod Fig. 21 to contact block. For signal controllers only.....	49522-5

(Continued on following page)

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**Electric Interlocking Machines**  
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Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
<b>Order by plate, figure number and name</b>		
17	Contact Block, with contacts, for four tier switch controllers. Has contacts in spaces 1-2 shunted. For Model 2 Interlocker	3253-3 Gr. 1
17a	as above, except has contacts in spaces 1-2 shunted. For Model 5 Interlocker.	3253-7 Gr. 1
17b	same as Fig. 17, except has contacts in spaces 1-2 and 5-6 shunted. For double switch lever on Model 5 Interlocker.	3253-3 Gr. 2
18	Contact Block, with contacts, for five tier signal controllers.	16912-1 Gr. 1
19	Contact Block, with contacts, for five tier switch controllers. Has contacts in spaces 1-2 shunted. For Model 2 Interlocker	3253-4 Gr. 1
19a	as above, except has contacts in spaces 3-4 shunted. For Model 5 Interlocker.	3253-8 Gr. 1
19b	same as Fig. 19, except has contacts in spaces 3-4 and 7-8 shunted. For double switch lever on Model 5 Interlocker.	3253-8 Gr. 2
20	Screw, No. 10-32 fil. hd., for fastening guide rod Fig. 21, to contact block. For switch controllers only.	49522-4
21	Guide Rod, for controller.	31964
22	Cotter Pin, $\frac{3}{16}$ " x $\frac{3}{4}$ ", for fastening operating rod to jaw Fig. 23	088
23	Jaw, for connecting controllers to levers.	2611
24	Screw, $\frac{1}{4}$ "-24 x $\frac{5}{8}$ " sq. hd., with lock washer, for fastening circuit controller to frame.	{ 3144-1 0510-1
25	Contact Spring, for high-voltage use, makes contact at full normal or full reverse only.	2566-1
25a	as above, except chromium plated, for low-voltage use only.	2566-101
26	Contact Spring, for high-voltage use, makes contact at full reverse or full normal only when used with signal controller.	2674-2
26a	as above, except chromium plated, for low-voltage use only.	2674-102

(Continued on following page)

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

Fig. No.	Name	Drawing Reference
	<b>Order by plate, figure number and name</b>	
27	Contact Spring, for high-voltage use, makes contact after lever moves from indicating position to full normal or full reverse position.....	2566-4
27a	as above, except chromium plated, for low-voltage use only . . .	2566-104
28	Contact Spring, for high-voltage use, makes contact from normal indicating position to full normal position or from reverse indicating position to full reverse position when used with switch controller.....	2566-2
28a	as above, except chromium plated, for low-voltage use only . . .	2566-102
29	Contact Spring, for high-voltage use, makes contact at normal or reverse indicating positions only when used with signal controller.....	2674-1
29a	as above, except chromium plated, for low-voltage use only . . .	2674-101
30	Contact Spring, for high-voltage use, makes contact from normal indicating position to full normal position or from reverse indicating position to full reverse position when used with signal controller.....	2566-3
30a	as above, except chromium plated, for low-voltage use only . . .	2566-103
31	Contact Spring, for high-voltage use, makes contact between mid-stroke of levers and normal or reverse indicating position when used with signal controller.....	2674-3
31a	as above, except chromium plated, for low-voltage use only . . .	2674-103
32	Contact Spring, for high-voltage use, makes contact ahead of indicating position and remains closed to full normal or full reverse position when used with signal controller.....	2566-5
32a	as above, except chromium plated, for low-voltage use only . . .	2566-105
33	Contact Spring, for high-voltage use, makes contact at mid-stroke of levers only.....	2674-4

*(Continued on following page)*

**Electric Interlocking Machines**  
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Drawing references are shown for convenience in checking shipping lists and invoices.

Fig. No.	Name	Drawing Reference
<b>Order by plate, figure number and name</b>		
33a	as above, except chromium plated, for low-voltage use only. . . .	2674-104
34	Contact Spring, for high-voltage use, makes contact from mid-stroke of levers to full normal or full reverse position. . . . .	2566-6
34a	as above, except chromium plated, for low-voltage use only. . . .	2566-106
35	Contact Spring, for high-voltage use, makes contact from reverse indicating position to full normal position or from normal indicating position to full reverse position. . . . .	2566-7
35a	as above, except chromium plated, for low-voltage use only. . . .	2566-107
36	Contact Spring, makes contact from normal indicating position to reverse indicating position. . . . .	2674-5
37	Contact Spring, for high-voltage use, used with signal controller to make contact from full normal or reverse positions to just beyond locking position with full normal and reverse forced drop electric lock. . . . .	2566-48
37a	as above, except chromium plated, for low-voltage use only. . . .	2566-143
38	Contact Spring, for high-voltage use, used with signal controller in conjunction with spring Fig. 37 to make contact at normal or reverse indicating positions after spring Fig. 37 has opened	2674-9
38a	as above, except chromium plated, for low-voltage use only. . . .	2674-109
39	Glass Insulator, for two tier controllers. . . . .	54112 Gr. 1
40	Glass Insulator, for three tier controllers. . . . .	54112 Gr. 2
41	Glass Insulator, for four tier controllers. . . . .	54112 Gr. 3
42	Glass Insulator, for five tier controllers. . . . .	54112 Gr. 4
43	Bushing, for rod Fig. 8. . . . .	46314-2
44	Stop, used as reinforcing spring on contacts. . . . .	45597-7
	<b>Note:</b> This stop not necessary with contact springs Figs. 25, 26 and 27.	