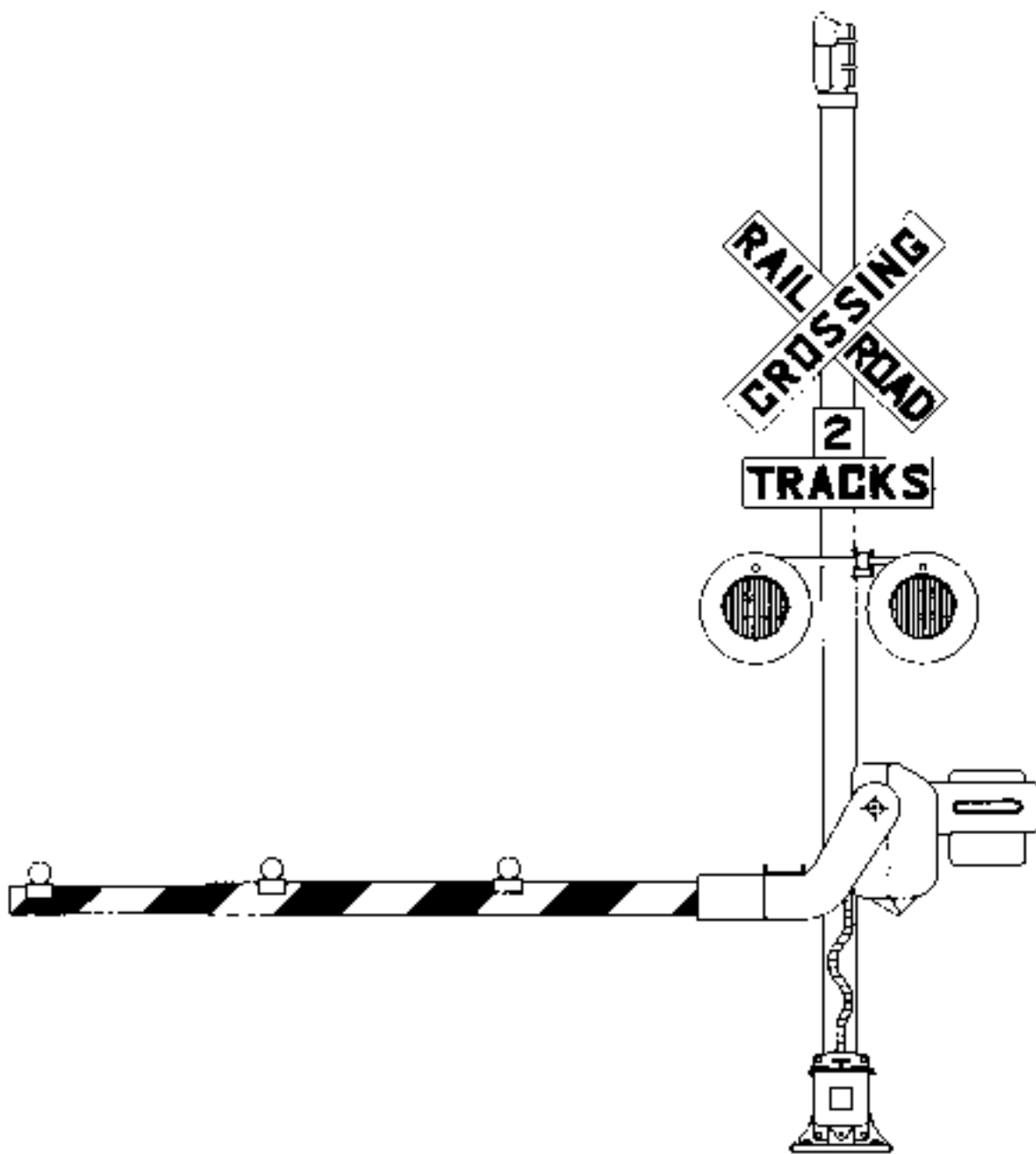


# Model 10 Crossing Signal



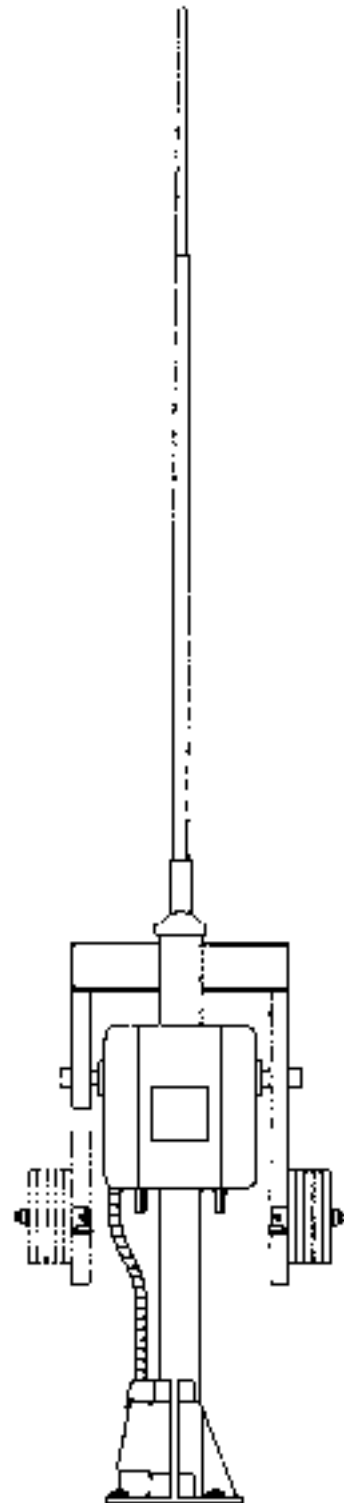
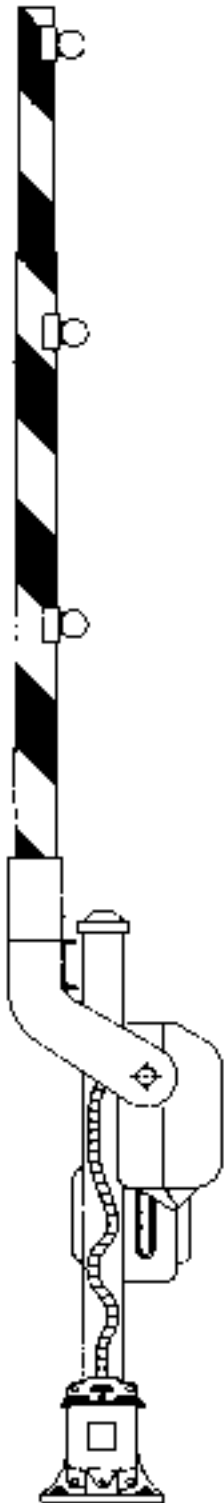
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# Model 10 Gate Crossing Signal

For use with Cantilever Flashing Light Structures, or as a Sidewalk Gate

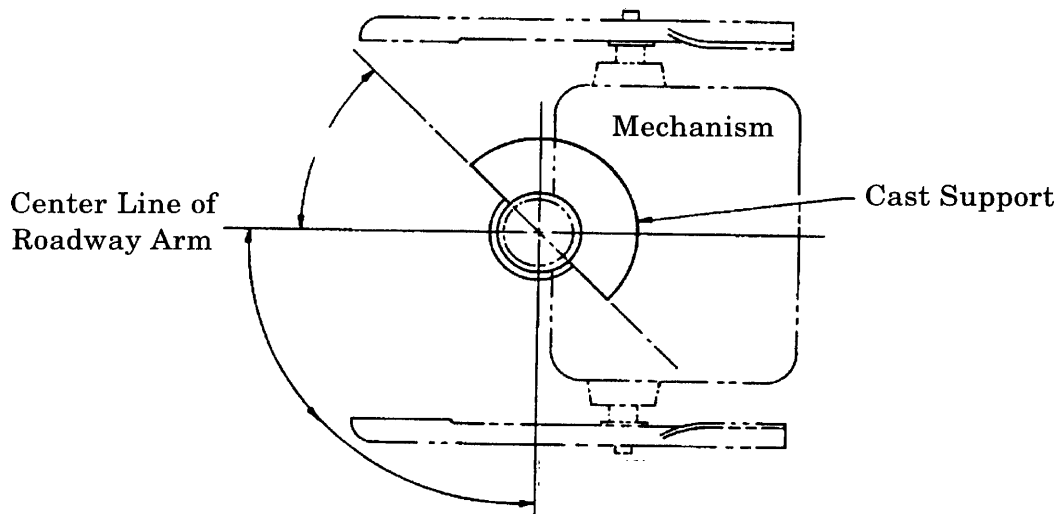


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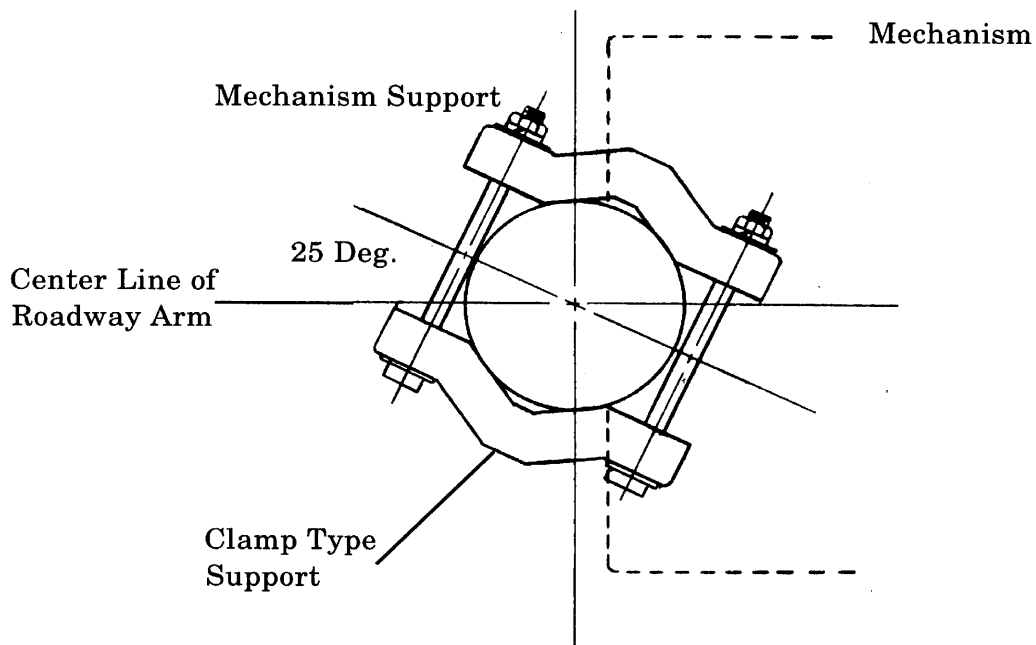
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## Mechanism Support for Model 10 Gate Signals



**Cast Mechanism Support Installation  
Part 3565-380-A**



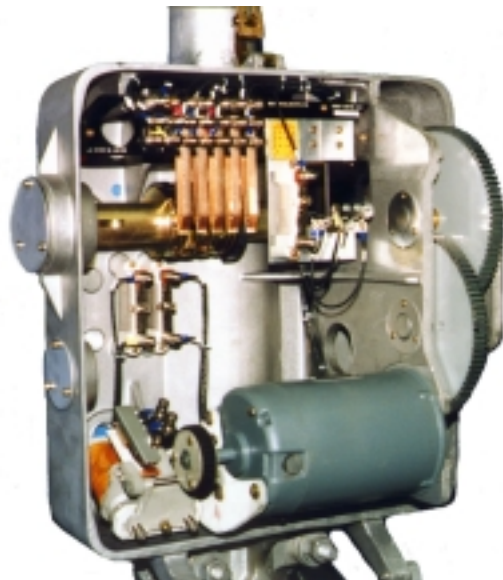
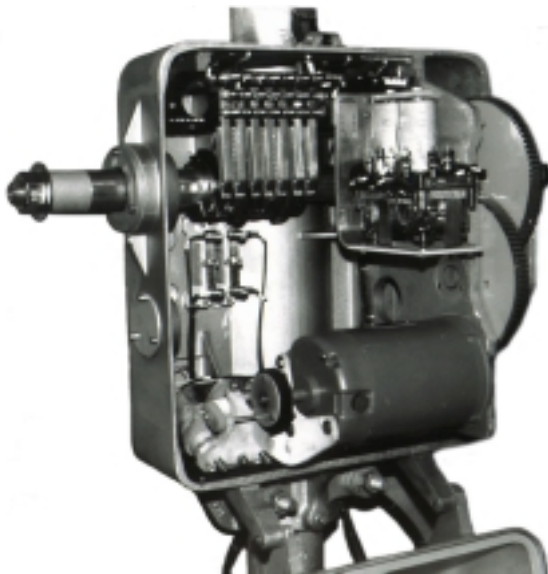
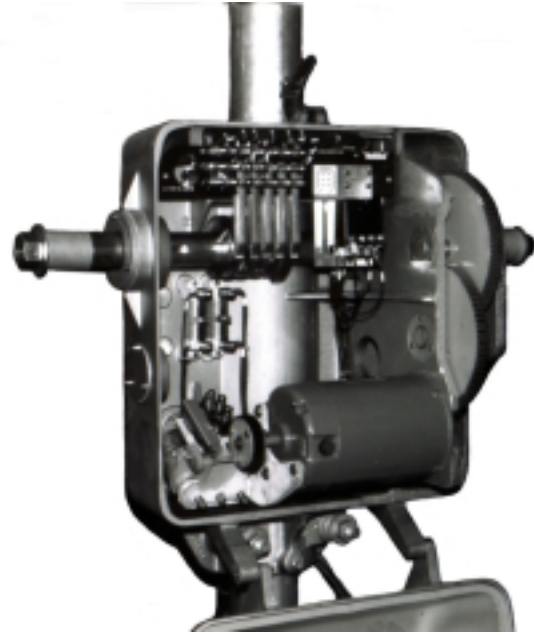
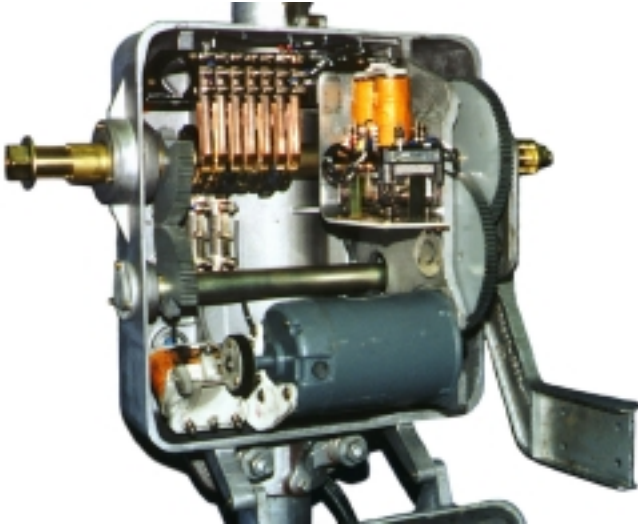
**Clamp Type Mechanism Support Installation  
Part 3565-396**

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### 3590 Series Crossing Gate Mechanisms Internal View



<b>Basic Gate Mechanism</b>							
	2 Wire Control	3 Wire Control	Vital Relay	Non-Vital Relay	Contacts	Standard Mainshaft	Single End Mainshaft (RH)
3590		X	X		7	X	
3590B		X		X	5	X	
3593	X		X		7	X	
3593B	X			X	5	X	
3593C	X			X	5	X	
3593E	X			X	6	X	
3593F	X			X	6	X	
3593I	X		X		7	X	
3593NJ	X		X		7	X	
3595		X	X		7		X
3596	X		X		7		X
3596B	X			X	5		X
3596NJ	X		X		7		X

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### 3590 Series Crossing Gate Mechanism

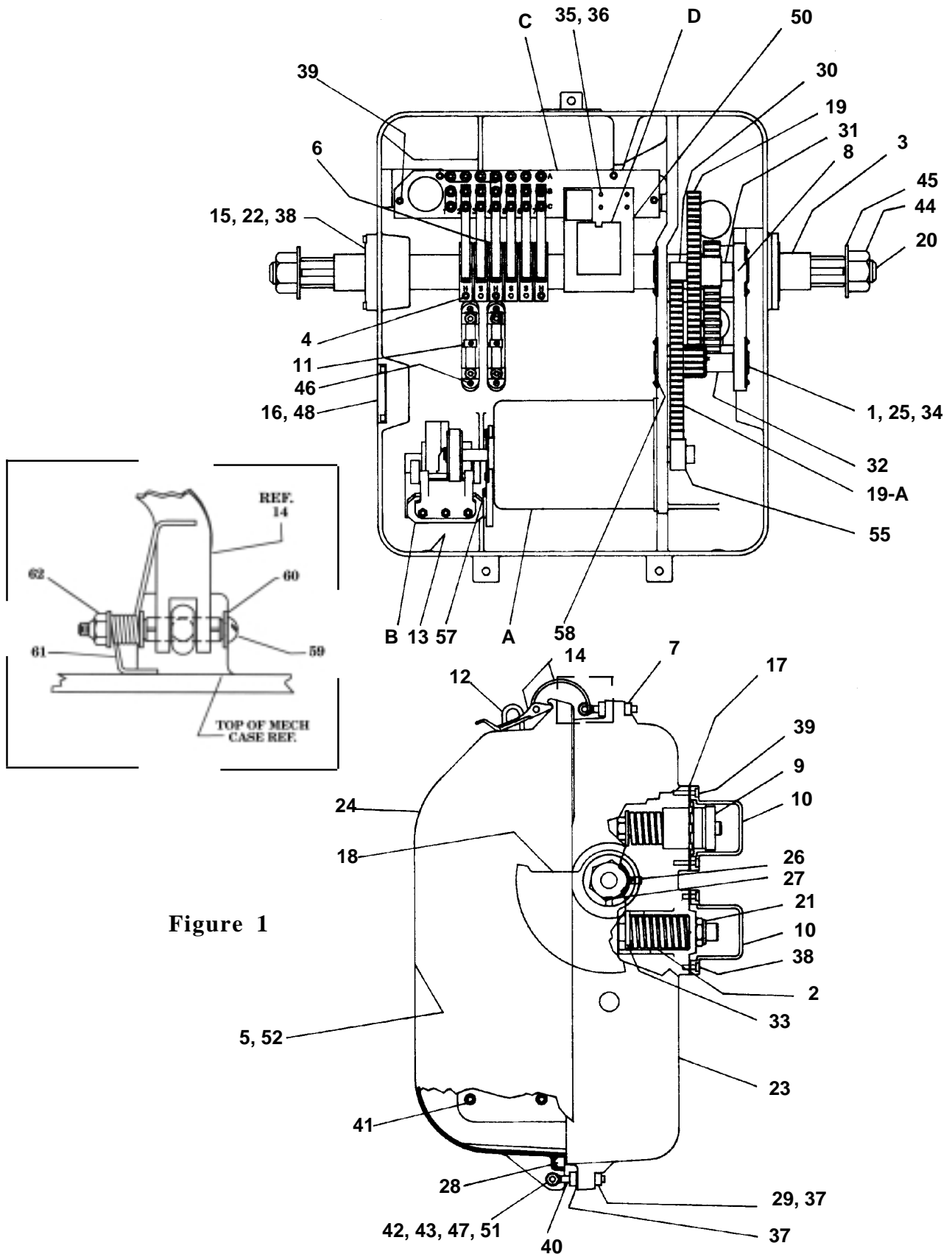


Figure 1

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**3590 Series  
Crossing Gate Mechanism  
Replacement Parts  
Refer to Figure 1**

<b>Ref. No.</b>	<b>Description</b>	<b>Part No.</b>
1	Bearing Cover	38-0045-30
2	Spring, Vertical Stop	38-0045-38
3	Spacer Tube	38-0045-42
4	Cam Assembly	38-0045-55
5	Wiring Diagram (Consult W-C-H)	
6	Slide Cam Assembly	38-0045-92
7	3/8"-16 Square Nut	JJ-11-JJ-3
8	Gear Shaft for Intermediate Gears	38-0045-267
9	Horizontal Stop Pin Assembly	38-0045-305
10	Stop Pin Cover	38-0045-329-M
11	Adjustable Resistance Unit	1110-1
12	Staple	1265-4
13	Ventilator Screen	1265-6-B
14	Hasp Assembly*	1265-40-1*
15	Main Shaft Bearing	3580-166
16	End Cap	3580-291
17	Neoprene Gasket	3580-281
18	Gear Segment	3590-219-F
19	Gear Cluster	3590-220-F
19-A	Gear Cluster With Hole	3590-220-G
20	Main Shaft	3590-222
20-A	Single End (Right) Main Shaft (Not Shown)	3590-226
21	Nut, Nylon Insert, for Vertical Stop Assembly	3590-231
22	Main Shaft Cap	3590-232
22-A	Main Shaft Cap Without Hole (Not Shown)	3590-232-1
23	Case	3590-234-2-M
24	Cover*	3590-240-2-M*
25	Bearing	3590-249
26	Set Screw	3590-251
27	Woodruff Key	3590-254
28	Cover Gasket*	3590-258-2*
29	3/8" Lockwasher	RR-00-AM-3

\*Call for ordering reference on Serial Number prior to #28119.

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## Replacement Parts (Continued)

Refer to Figure 1

Ref. No.	Description	Part No.
30	Spacer	3590-277
31	Spacer	3590-278
32	Spacer	3590-279
33	Vertical Stop Pin Assembly	3590-293
34	#8-32 x 3/8" Button Head Socket Cap Screw	BB-32-BB-3-0037
35	#10-24 x 1-1/4 Round Head Machine Screw	AA-10-CC-3-0125
36	#10 Split Lock Washer	RR-00-AH-3
37	3/8" Hex Nylok Nut	AL-12-JJ-3
38	1/4"-20 x 3/4" Hex Head Socket Cap Screw	BB-23-EE-3-0075
39	1/4"-20 x 1-1/4" Hex Head Socket Cap Screw	BB-23-EE-3-0125
40	Eyebolt	3590-381
41	3/8"-16 x 3/4" Socket Cap Screw	BB-59-JJ-3-0075
42	5/26"-18 x 2 1/4" Hex Head Bolt	CC-12-GG-3-0225
43	3/8"-16 Hex Nut	HH-12-JJ-3
44	1-1/4"-7 Hex Nut	JJ-12-AD-3
45	1-1/4" ID Flat Washer	3570-114
46	10-24 x 1-3/4" Round Head Machine Screw	AA-10-CC-3-0175
47	1/4" Plain Washer	PP-00-AJ-3
48	1/4"-20 x 3/8" Hex Socket Cap Screw	BB-23-EE-3-0037
50	Mtg. Brkt. for Non-Vital Relay	38-0045-190-1
50-A	Mtg. Brkt. & Spring Base Assembly for Vital Relay (Not Shown)	38-0045-225
51	5/16"-18 Hex Nylok	AL-12-GG-3
52	Installation Manual	
54	Arc Suppressor (Optional) Not Shown	38-0045-293
55	Pinion Gear	3590-218
56	Mounting Kit for 5" Mast (Not Shown)	3590-294
57	Cap Screw	38-0045-282
58	Spacer for Bearing Cap	3590-275
59	10-32 x 2 Round Head Machine Screw Steel	AA-10-DD-3-02
60	#10 Plain Steel Washer	PP-00-AH-3
61	Torsion Spring-Formed	3590-382
62	10-32 Nylon -Lok Hex Nut	AL-12-DD-3

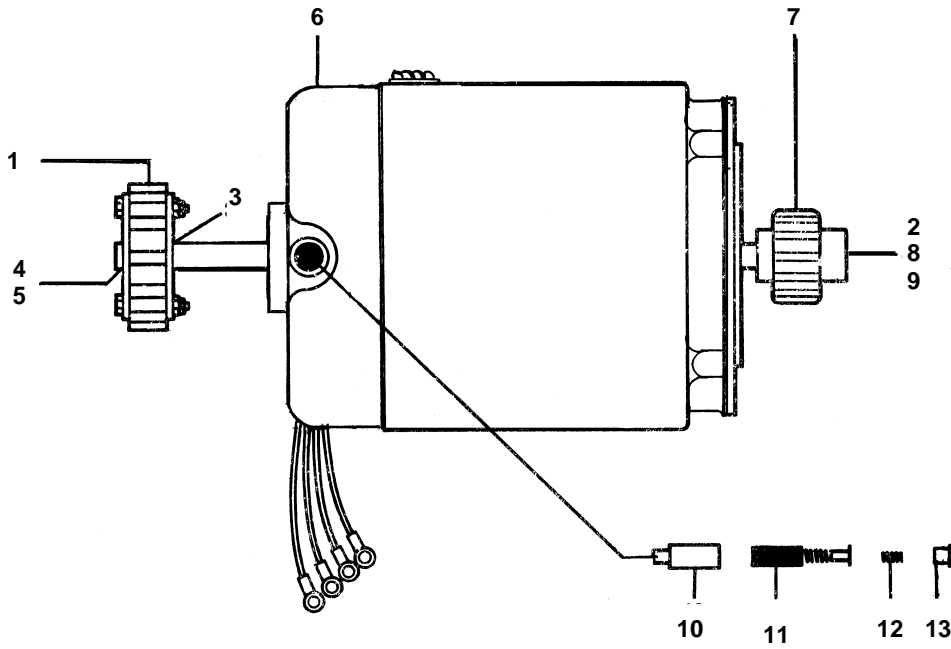
\*Call for ordering reference on Serial Number prior to #28119.

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## Motor and Ratchet Wheel Reference A



Ref. No	Description	Part No.
A	Motor Assembly Complete	38-0045-82X
<b>REPLACEMENT PARTS</b>		
1	Ratchet Wheel Assembly	38-0045-262
2	Motor Pinion Woodruff Key	38-0045-86
3	Washer	38-0045-182
4	Ratchet Wheel Key	3580-270
5	Snap Ring	3580-271
6	Motor	3590-217X
7	Motor Pinion Gear	3590-218
8	Round Head Nylok Machine Screw 8-32 x 1/2"	BJ-10-BB-3-005
9	Washer	38-0045-241
10	Brush Holder	38-0045-117
11	Motor Brush	38-0045-118
12	Cap Spring	38-0045-137
13	Brush Cap	38-0045-268

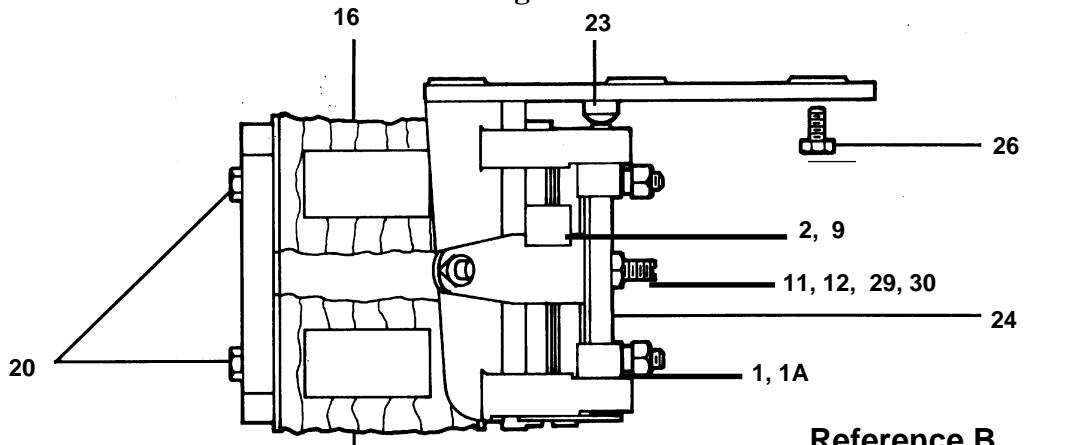
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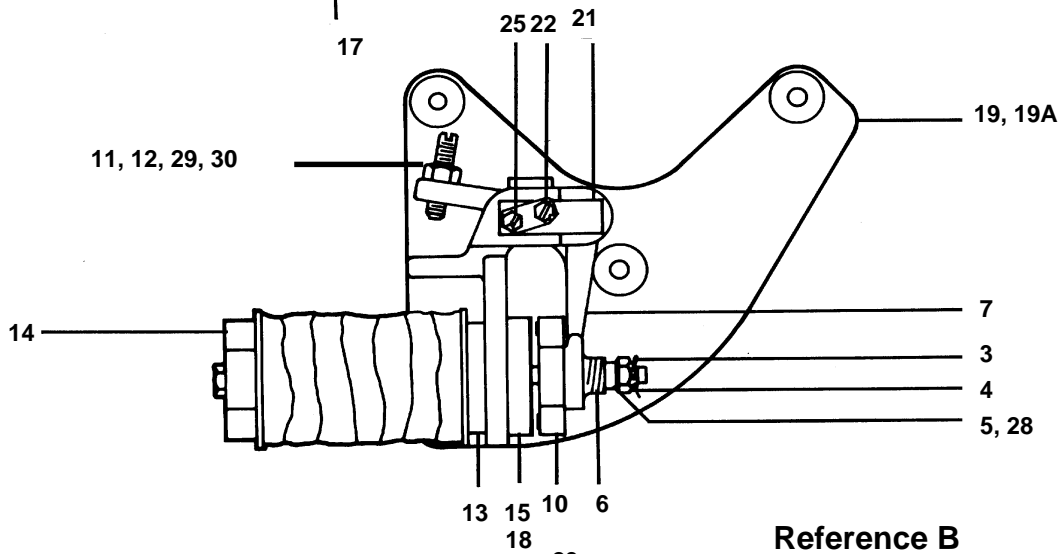
### Hold Clear Assembly

Reference B, B1

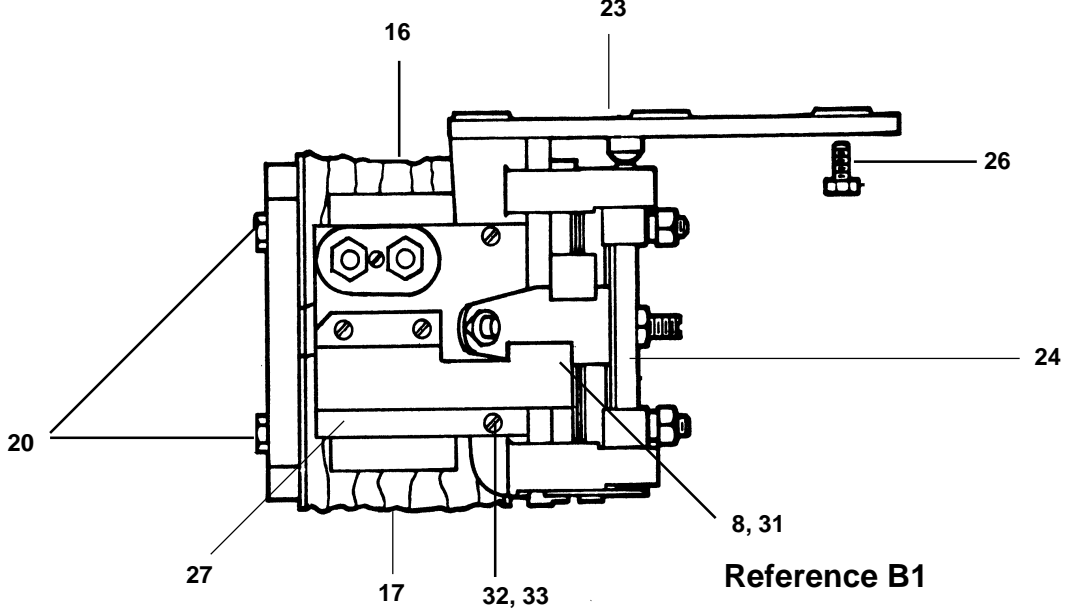
Figure 2



Reference B



Reference B



Reference B1

**WESTERN-CULLEN-HAYES, INC.**

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## Hold Clear Assembly

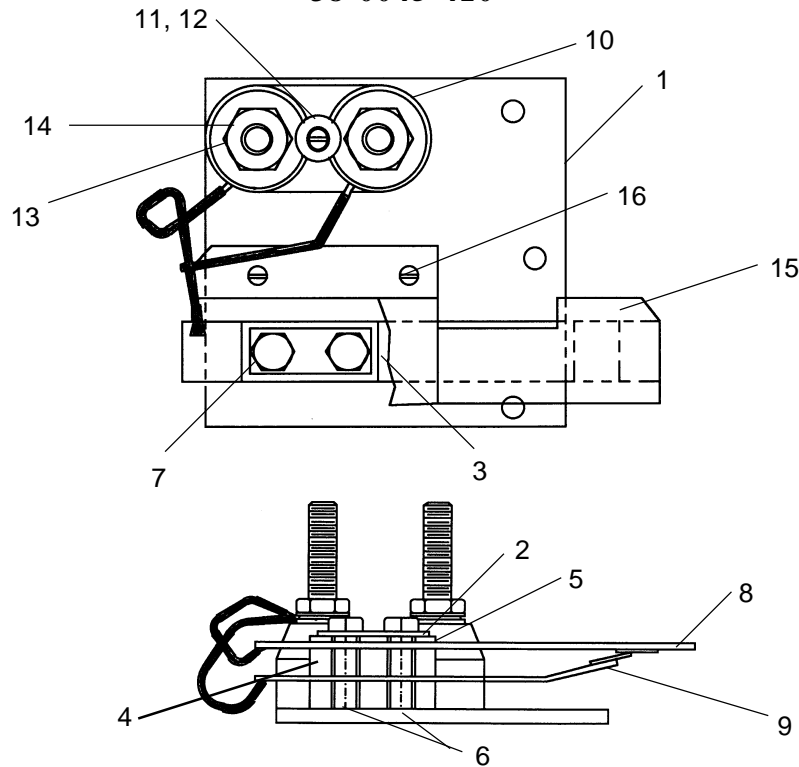
Refer to Figure 2

Ref. No.	Description	Part No.
B	Hold-Clear Assembly	38-0045-254
B1	Hold-Clear Assembly with Motor Down Contact	38-0045-340
1	Armature and Support Bracket Assembly, Consists of Ref: 2,3,4,5,6,7,9,10,11,12,28,29 and 30	38-0045-159
1A	Armature & Support Bracket Assembly for Hold Clear With Motor Down Contact, Consists of Ref: 2,3,4,5,6,7,8,9,10,11,12,28,29,30 and 31	38-0045-159-1
2	Pawl	38-0045-7
3	Cotter Pin	38-0045-139
4	Castle Nut	38-0045-140
5	Cup Washer	38-0045-220
6	Compression Spring	38-0045-223
7	Armature Support Bracket	38-0045-246
8	Cam	38-0045-390
9	Pawl Mounting Screw	38-0045-261
10	Armature Sub-Assembly	38-0045-265
11	1/4-20 Hex Jam Nut	KK-12-EE-8
12	Set Screw	38-0045-266
13	Coil Spacer	38-0045-147
14	Magnet Yoke	38-0045-148
15	Magnet Pole and Core Sub-Assembly	38-0045-151
16	Hold Coil, 340 Ohms	38-0045-158
17	Pick Coil, 32 Ohms	38-0045-162
18	Mounting Screw, Pole/Core Sub Assy to Hold -Clear Base	38-0045-260
19	Hold-Clear Base	38-0045-248
19A	Hold-Clear Base For Contact Plate	38-0045-322
20	Mounting Screw, Magnet Yoke to Pole/Core Sub-Assembly	38-0045-264
21	Hinge Pin Stop	38-0045-152
22	Bolt/Screw Keeper	38-0045-153
23	Set Screw, Nickel Plated Brass	38-0045-157
24	Hinge Pin	38-0045-160
25	Hex Bolt, Nickel Plated Brass	38-0045-279
26	Hex Head Cap Screw, Grade 8	38-0045-282
27	Motor Down Contact Block	38-0045-410
28	Plain Washer 1/4 ID-7/16 OD x 1/32	AH-00-AJ-8
29	Nylok Nut 1/4 x 20	AL-00-EE-3
30	External Lock Washer	TT-00-AJ-3
31	#8-32x3/4 Fillister Head Machine Screw	AA-16-BB-3-0075
32	#8-32x1/2 Round Head Machine Screw	AA-10-BB-8-005
33	#8 Lockwasher	SS-00-AG-3

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**Motor Down Contact Block**  
**38-0045-410**

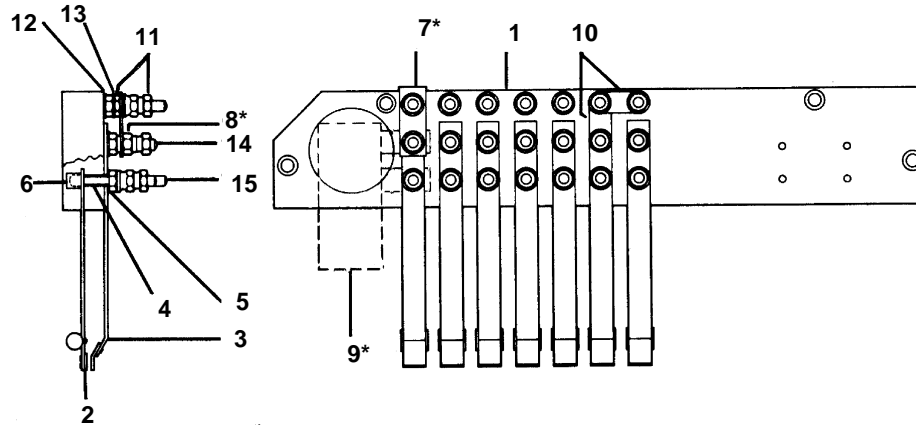


Ref. No	Description	Part No.
1	Mounting Bracket	38-0045-375
2	Washer Plate	38-0045-376
3	Keeper	38-0045-380
4	Mounting Block Spacer	38-0045-381
5	Spacer	38-0045-382
6	Insulator	38-0045-383
7	Screw	38-0045-384
8	Upper Contact Spring Assembly	38-0045-387
9	Lower Contact Spring Assembly	38-0045-388
10	Terminal Block	2506-2
11	#10-32 x 1/2 Round Head Machine Screw	AA-10-DD-8-005
12	#10 Lockwasher External	TT-00-AH-3
13	A.A.R. Clamp Nut	10707
14	Washer	10708
15	Guard	38-0045-386
16	#8-32 x 1/4 Round Head Machine Screw	AA-10-BB-8-0025

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## Circuit Controller Assembly Reference C

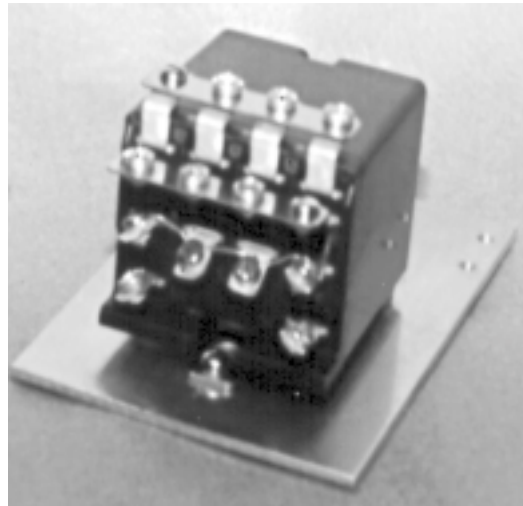


Ref. No.	Description	Part No.
C	Circuit Controller Assembly Listed on Following Page	
1	Terminal Board	38-0045-21
2	Back Contact Spring Assembly	38-0045-27
3	Front Contact Spring Assembly	38-0045-28
4	Insulator Sleeve	38-0045-29-A
5	Insulator Washer	38-0045-29-B
6	Binding Post Seat	38-0045-77
7*	Test Terminal (Location will vary)	38-0045-89-R
8*	Gold Nut (Location will vary)	38-0045-290
9*	Arc Suppressor (Optional)	38-0045-293
10	Connector	1705-4
11	Binding Nut	10706
12	Clamp Nut	10707
13	Washer	10708
14	Binding Post 1-7/8 Lg.	10709-2
15	Binding Post 2-1/4 Lg.	10709-3

## Complete Circuit Controller Assembly

<b>Circuit Controller</b>						
Mechanism	38-0045-20	38-0045-20-1	38-0045-235	38-0045-235-1	38-0045-235-2	38-0045-423
3590	X					
3590B		X				
3593			X			
3593B				X		
3593C					X	
3593E						X
3593F						X
3593I			X			
3593NJ			X			
3595	X					
3596			X			
3596B				X		
3596NJ			X			
Contacts	7	5	7	5	5	6

## Mechanism Relays

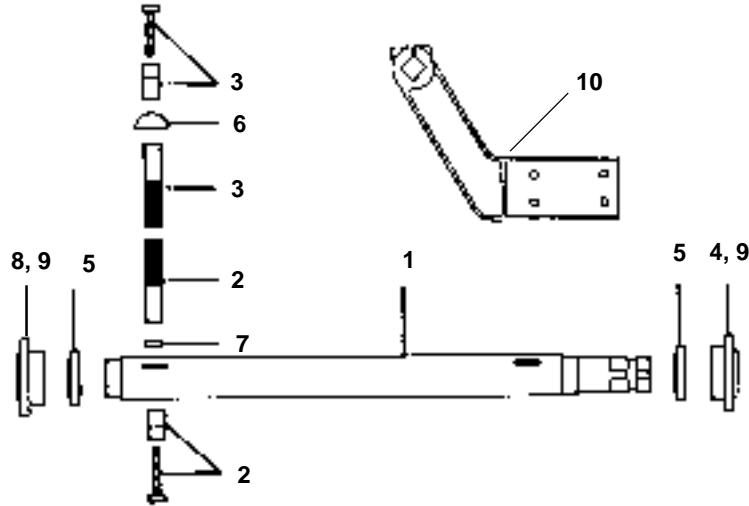


**Reference D**

**Reference D1**

Ref. No.	Description	Part No.
D	1000 OHM Vital Relay	38-0050-200
	160 OHM Vital Relay	38-0050-300
D1	Non-Vital Relay for 3590B mechanism with mounting plate (Not shown)	38-0045-188-1
	Non-Vital Relay for all other mechanisms with mounting plate (Shown)	38-0045-188-2
	Non-Vital Relay only for 3590B mechanism	91254-10
	Non-Vital Relay only for all other mechanisms	91254-11
	Cover for Non-Vital Relay (Not Shown)	91254-1

### Sidewalk Kit



Ref. No.	Description	Part No.
E	Sidewalk Arm Shaft Kit (for Right or Left Hand use)	3590-295

### REPLACEMENT PARTS

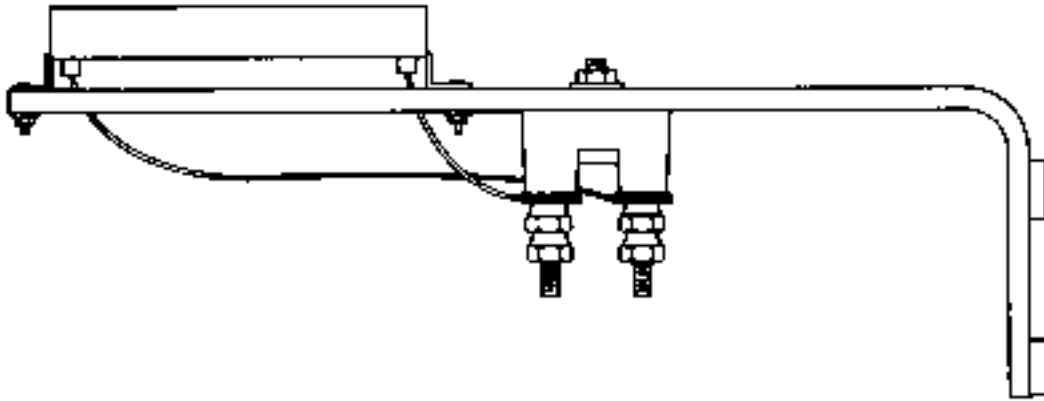
1	Sidewalk Arm Shaft	3590-223
2	Gear Segment w/clamp and Assembly Bolts, for Sidewalk Shaft.	3590-224
3	Gear Segment w/clamp and Assembly Bolts, for Main Shaft.	3590-225
4	Collar	3590-227
5	Bearing	3590-248
6	Woodruff Key, for Main Shaft	3590-254
7	Key, for Sidewalk Shaft	3590-255
8	Cap	3580-226-M
9	1/4-20 x 3/4 Machine Socket Screw	AA-15-EE-3-0075
10	Sidewalk Gate Arm Support (not included in kit)	3565-111
11	Sidewalk Arm Adapter Steel (not shown)	3565-265

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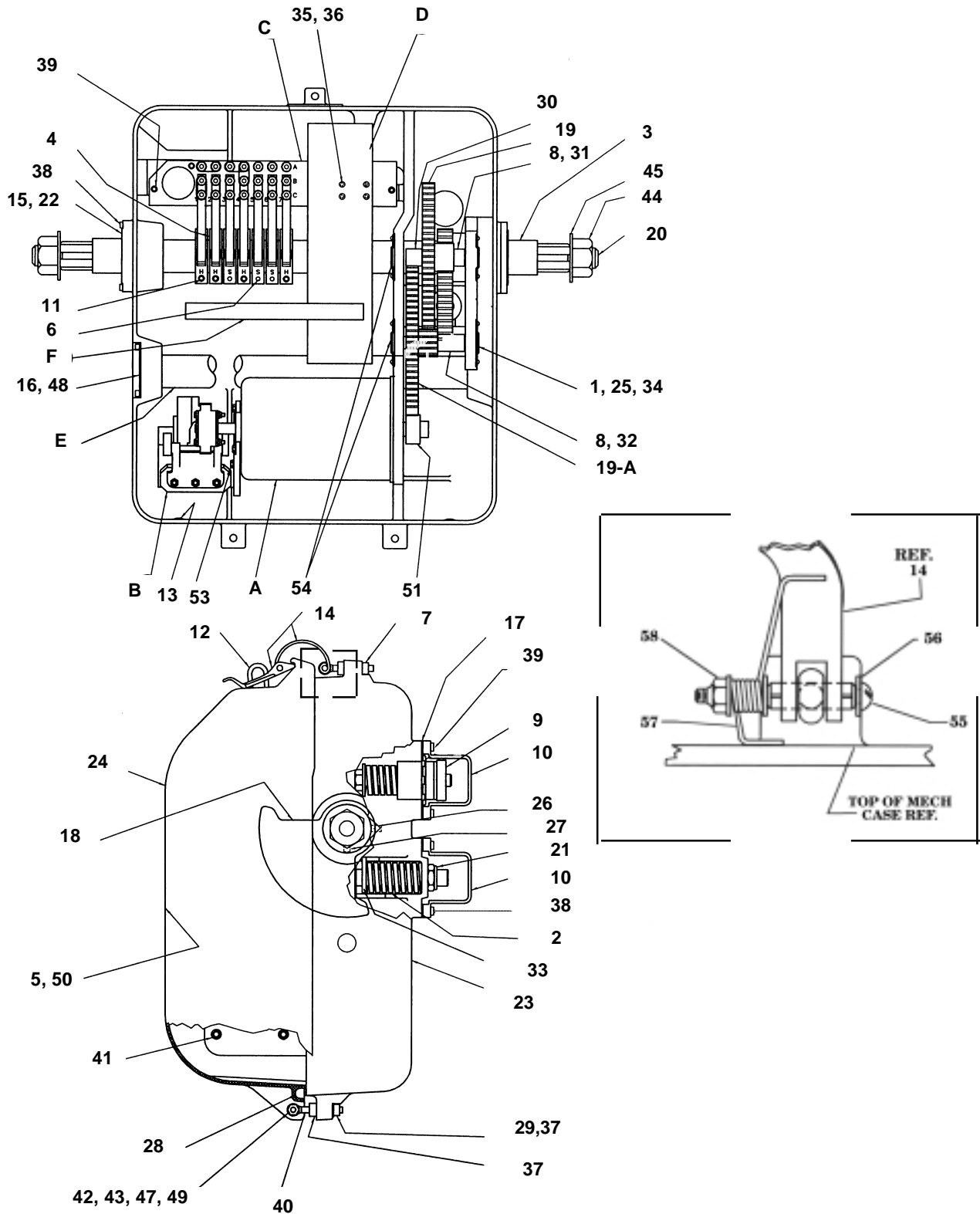
### Contact Heater Assembly



Ref. No.	Description	Part No.
F	Contact Heater Assembly Complete, 115 VAC, 50 Watt, 500 Ohms	38-0045-287
F1	Contact Heater Assembly Complete, 24 VDC, 50 Watt, 25 Ohms	38-0045-318
F2	Contact Heater Assembly, 12 VDC, 50 Watt, 10 Ohms	38-0045-355

### 3597 Series Crossing Gate Mechanism

Figure 1



**WESTERN-CULLEN-HAYES, INC.**

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**3597 Series  
Crossing Gate Mechanism  
Replacement Parts  
Refer to Figure 1**

<b>Ref. No.</b>	<b>Description</b>	<b>Part No.</b>
1	Bearing Cover	38-0045-30
2	Spring, Vertical Stop	38-0045-38
3	Spacer Tube	38-0045-42
4	Cam Assembly	38-0045-55
5	Wiring Diagram	3597-WD
6	Slide Cam Assembly	38-0045-92
7	3/8"-16 Square Nut	HH-11-JJ-3
8	Gear Shaft for Intermediate Gears	38-0045-267
9	Horizontal Stop Pin Assembly	38-0045-305
10	Stop Pin Cover	38-0045-329-M
11	Cam Assembly	38-0045-536
12	Staple	1265-4
13	Ventilator Screen	1265-6-B
14	Hasp Assembly	1265-40-1
15	Main Shaft Bearing	3580-166
16	End Cap	3580-291
17	Neoprene Gasket	3580-281
18	Gear Segment	3590-219-F
19	Gear Cluster	3590-220-F
19-A	Gear Cluster With Hole	3590-220-H
20	Main Shaft	3590-222
20-A	Single End (Right) Main Shaft (Not Shown)	3590-226
21	Nut, Nylon Insert, for Vertical Stop Assembly	3590-231
22	Main Shaft Cap	3590-232
22-A	Main Shaft Cap Without Hole (Not Shown)	3590-232-1
23	Case	3590-234-2-M
24	Cover	3590-240-2-M
25	Bearing	3590-249
26	Set Screw	3590-251
27	Woodruff Key	3590-254
28	Cover Gasket	3590-258-2
29	3/8"" Lockwasher	RR-00-AM-3

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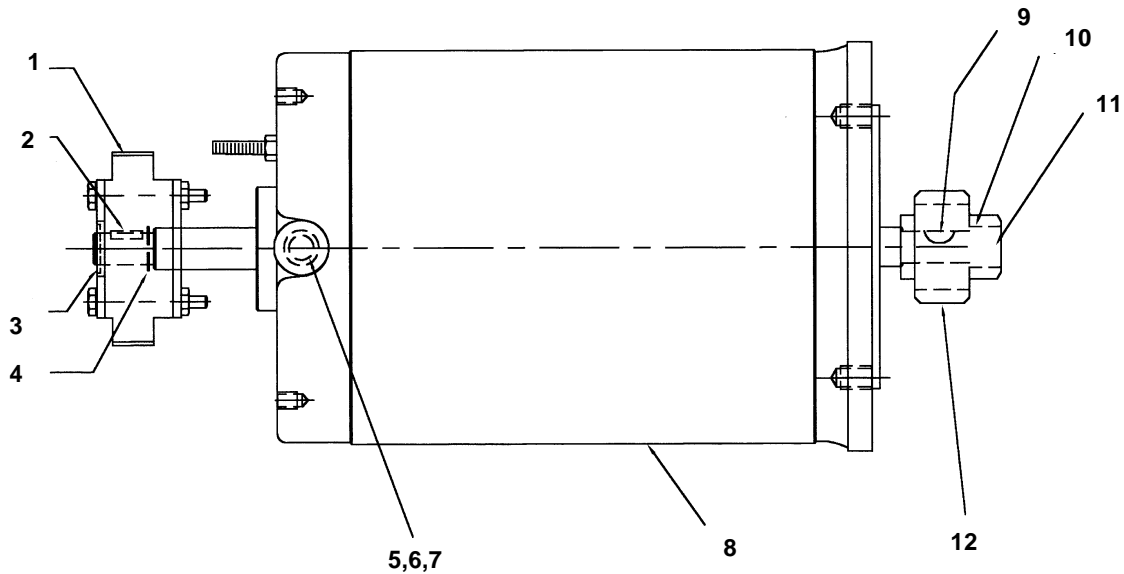
**3597 Series  
Crossing Gate Mechanism  
Replacement Parts (Continued)  
Refer to Figure 1**

Ref. No.	Description	Part No.
30	Spacer	3590-277
31	Spacer	3590-278
32	Spacer	3590-279
33	Vertical Stop Pin Assembly	3590-293
34	#8-32 x 3/8" Button Head Socket Cap Screw	BB-32-BB-3-0037
35	#10-24 x 1-1/4 Round Head Machine Screw	AA-10-CC-3-0125
36	#10 Split Lock Washer	RR-00-AH-3
37	3/8" Hex Nylok Nut	AL-12-JJ-3
38	1/4"-20 x 3/4" Hex Head Socket Cap Screw	BB-23-EE-3-0075
39	1/4"-20 x 3/4" Hex Head Socket Cap Screw	BB-23-EE-3-0075
40	Eyebolt	3590-381
41	3/8"-16 x 3/4" Socket Cap Screw	BB-59-JJ-3-0075
42	5/26"-18 x 2 1/4" Hex Head Bolt	CC-12-GG-3-0225
43	3/8"-16 Hex Nut	HH-12-JJ-3
44	1-1/4"-7 Hex Nut	JJ-12-AD-3
45	1-1/4" ID Flat Washer	3570-114
46	10-24 x 2-3/4" Round Head Machine Screw	AA-10-CC-3-0275
47	1/4" Plain Washer	PP-00-AJ-3
48	1/4"-20 x 3/8" Hex Socket Cap Screw	BB-23-EE-3-0037
49	5/16"-18 Hex Nylok	AL-12-GG-3
50	Installation Manual	3597-IM
51	Pinion Gear	3597-22
52	Mounting Kit for 5" Mast (Not Shown)	3590-294
53	Cap Screw	38-0045-282
54	Spacer for Bearing Cap	3590-275
55	10-32 x 2 Round Head Machine Screw Steel	AA-10-DD-3-02
56	#10 Plain Steel Washer	PP-00-AH-3
57	Torsion Spring-Formed	3590-382
58	10-32 Nylon -Lok Hex Nut	AL-12-DD-3

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## Motor and Ratchet Wheel Reference A

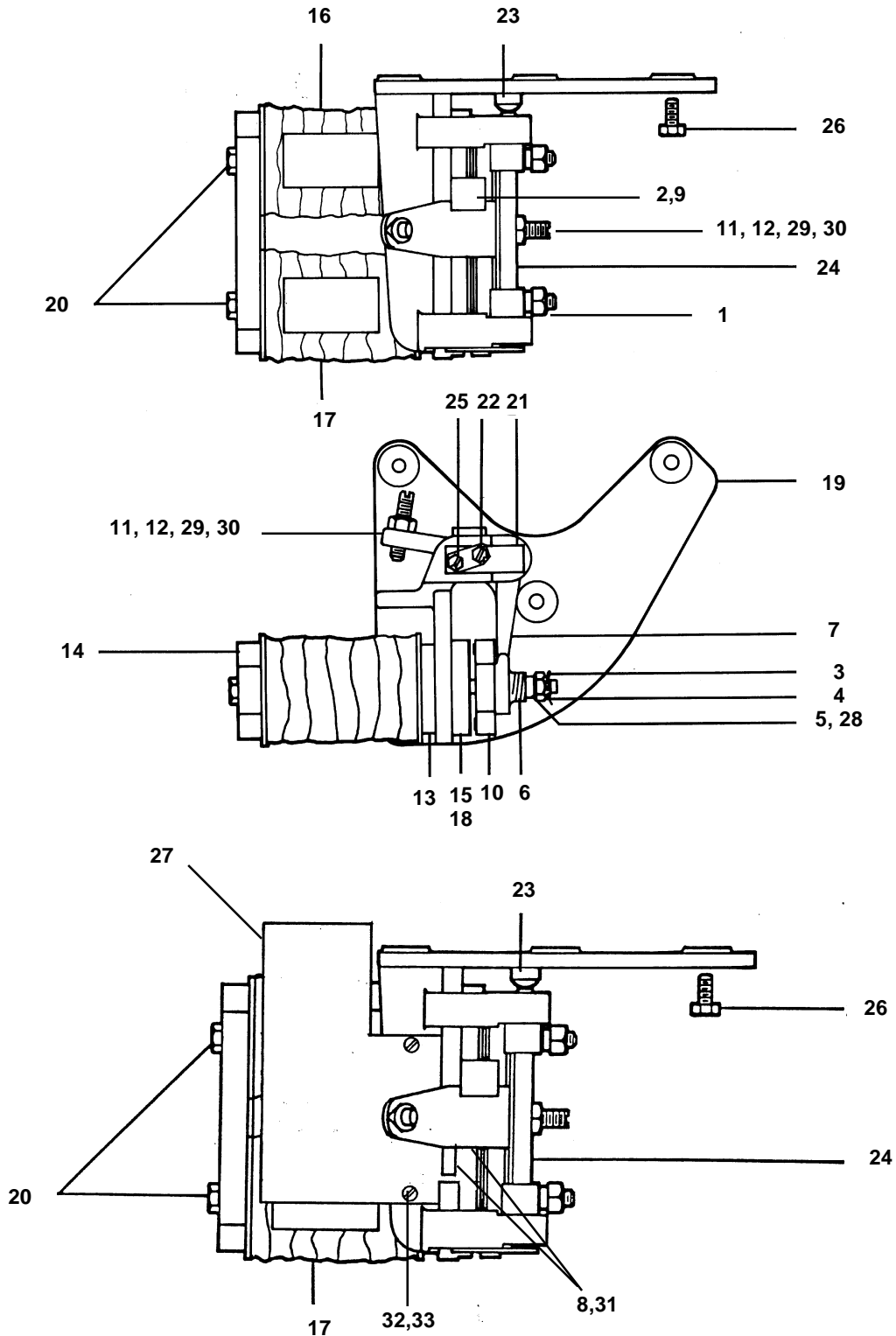


Ref. No	Description	Part No.
A	Motor Assembly Complete	3597-20
<b>REPLACEMENT PARTS</b>		
1	Ratchet Wheel	38-0045-262
2	Ratchet Wheel Key	3580-270
3	Snap Ring	3580-271
4	Washer	38-0045-182
5	Motor Brush Cap	3597-20-12
6	Motor Brush	3597-20-13
7	Motor Brush Holder	3597-20-14
8	Motor	3597-20-1
9	Motor Pinnion Woodruff Key	3597-21
10	Washer	38-0045-241
11	8-32 x 1/2" Nylock Round Head Machine Screw	BJ-10-BB-3-005
12	Motor Pinnion Gear	3597-22

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**Hold Clear Assembly**  
**38-0045-510**  
Reference B  
Figure 2



**WESTERN-CULLEN-HAYES, INC.**

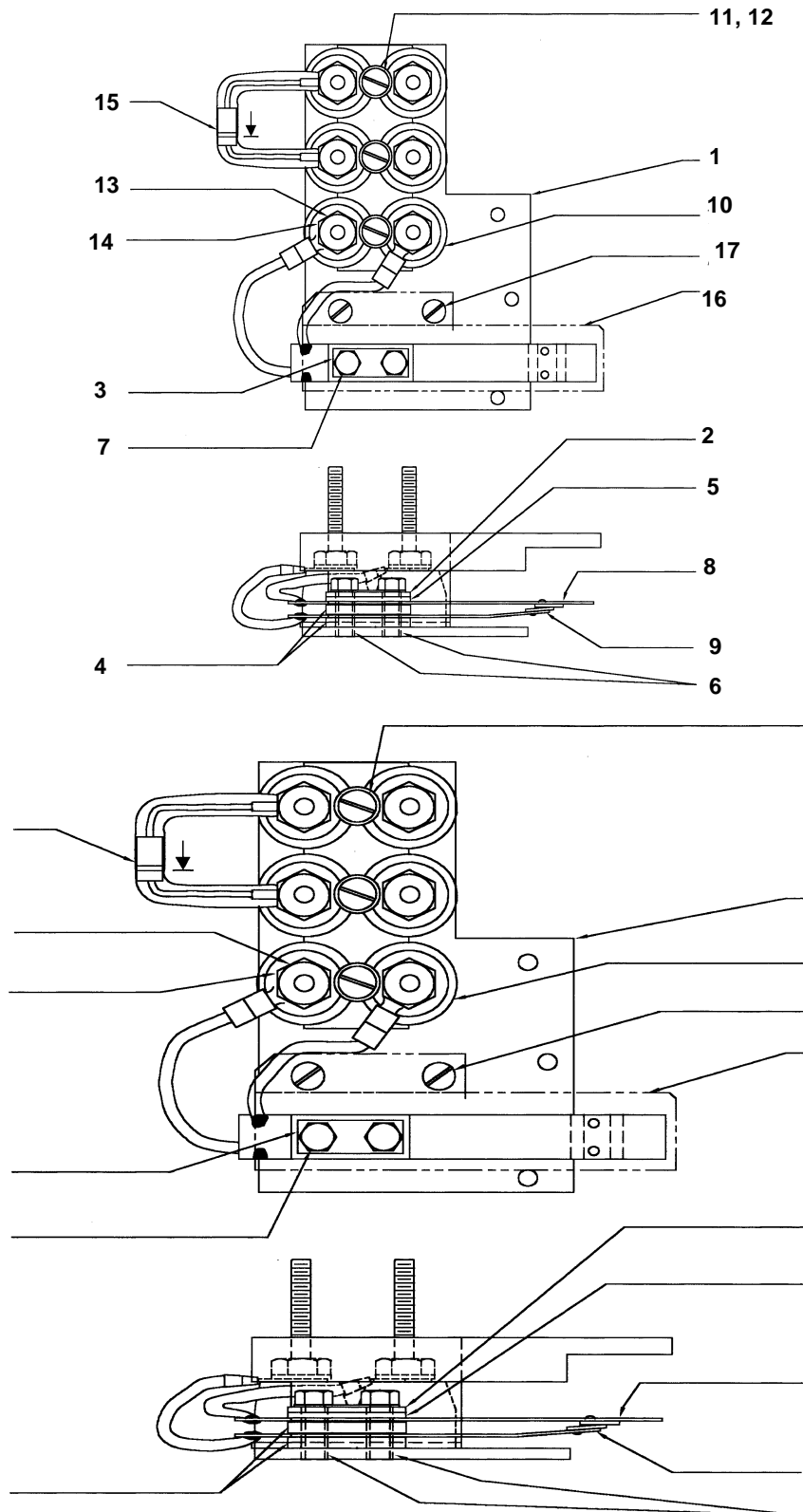
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(773) 254-9600

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FAX (773) 254-1110

**Hold Clear Assembly**  
**38-0045-510**  
**Refer to Figure 2**

<b>Ref. No.</b>	<b>Description</b>	<b>Part No.</b>
B	Hold-Clear Assembly with Motor Down Contact	38-0045-510
1	Armature & Support Bracket Assembly for Hold Clear With Motor Down Contact, Consists of Ref: 2,3,4,5,6,7,8,9,10,11,12,28,29,30 and 31	38-0045-159-1
2	Pawl	38-0045-7
3	Cotter Pin	38-0045-139
4	Castle Nut	38-0045-140
5	Cup Washer	38-0045-220
6	Compression Spring	38-0045-223
7	Armature Support Bracket	38-0045-319
8	Cam	38-0045-385
9	Pawl Mounting Screw	38-0045-261
10	Armature Sub-Assembly	38-0045-265
11	1/4-20 Hex Jam Nut	KK-12-EE-8
12	Set Screw	38-0045-266
13	Coil Spacer	38-0045-147
14	Magnet Yoke	38-0045-148
15	Magnet Pole and Core Sub-Assembly	38-0045-151
16	Hold Coil, 340 Ohms	38-0045-158
17	Pick Coil, 32 Ohms	38-0045-162
18	Mounting Screw, Pole/Core Sub Assembly to Hold -Clear Base	38-0045-260
19	Hold-Clear Base For Contact Plate	38-0045-322
20	Mounting Screw, Magnet Yoke to Pole/Core Sub-Assembly	38-0045-264
21	Hinge Pin Stop	38-0045-152
22	Bolt/Screw Keeper	38-0045-153
23	Set Screw, Nickel Plated Brass	38-0045-157
24	Hinge Pin	38-0045-160
25	Hex Bolt, Nickel Plated Brass	38-0045-279
26	Hex Head Cap Screw, Grade 8	38-0045-282
27	Motor Down Contact Block	38-0045-513
28	Plain Washer 1/4 ID-7/16 OD x 1/32	AH-00-AJ-8
29	Nylok Nut 1/4 x 20	AL-00-EE-3
30	External Lock Washer	TT-00-AJ-3
31	#8-32x3/4 Fillister Head Screw	AA-16-BB-3-0075
32	#8-32x1/4 Round Head Machine Screw	AA-10-BB-8-005
33	#8 Lockwasher	SS-00-AG-3

### Motor Down Contact Block 38-0045-513



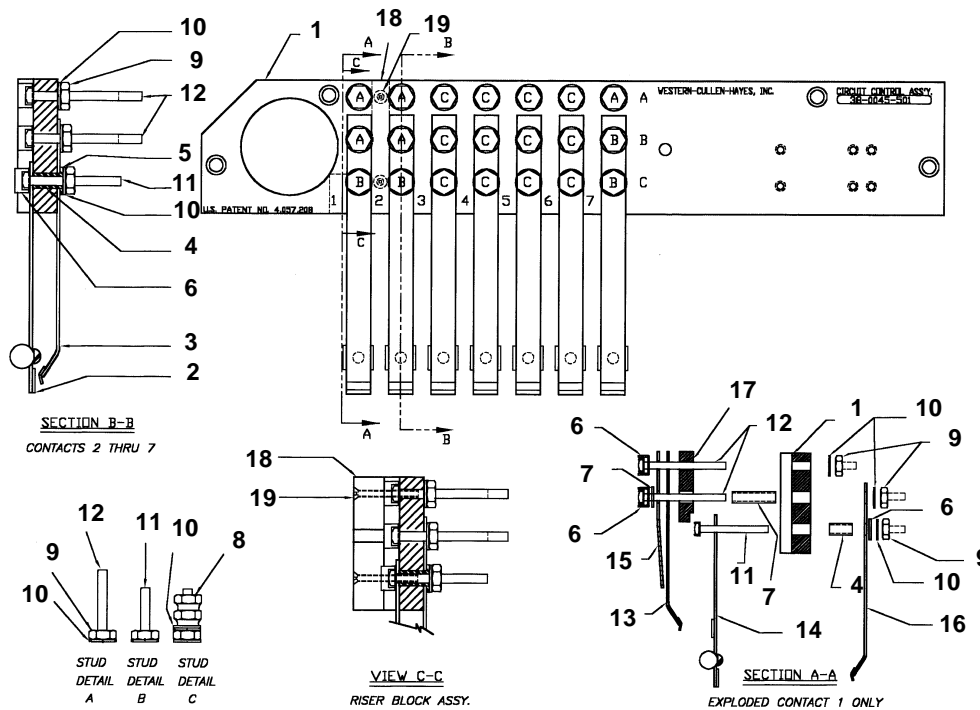
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## Circuit Controller Assembly 38-0045-501 Reference C



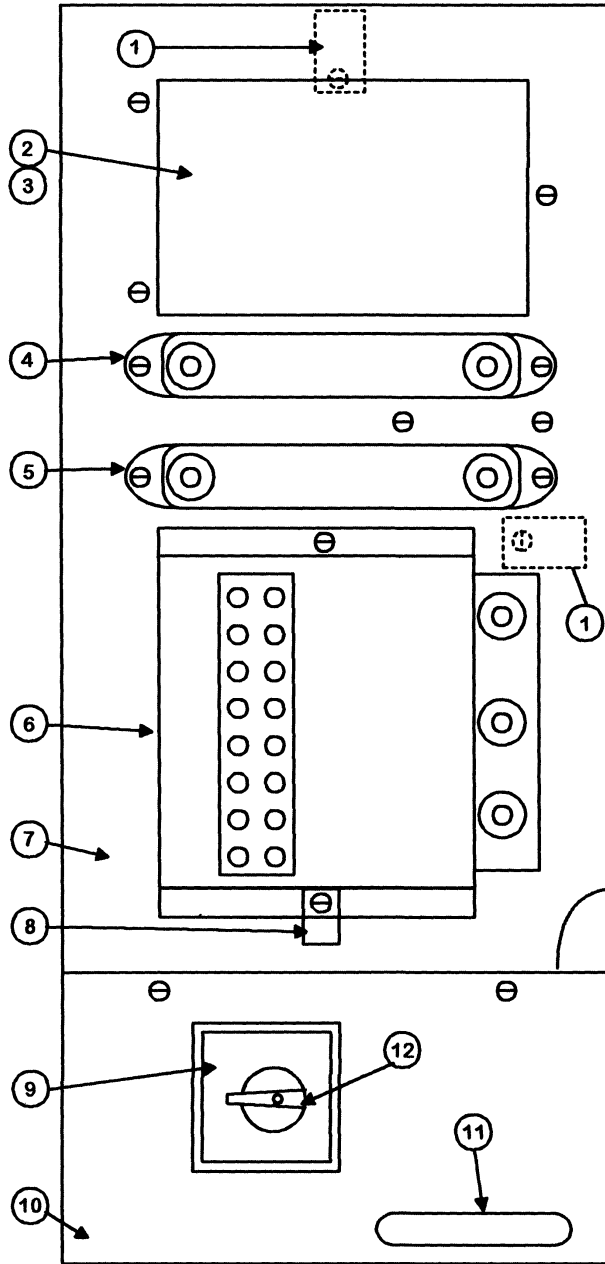
Ref. No	Description	Part No.
1	Terminal Board	38-0045-501-1
2	Back Contact. Contacts 2 thru 7	38-0045-27
3	Front Contact. Contact 2 thru 7	38-0045-28
4	Insulating Sleeve	38-0045-29-A
5	Insulating Washer	38-0045-29-B
6	Binding Post Seat	38-0045-77
7	Insulating Sleeve	38-0045-525
8	Binding Nut	10706
9	Clamp Nut	10707
10	AAR Washer	10708
11	Binding Post, 1-7/8" lg	10709-2
12	Binding Post, 2-1/4" lg	10709-3
13	Back Contact. Contact 1	38-0045-520
14	Heel Contact. Contact 1	38-0045-521
15	Contact Stiffener. Contact 1	38-0045-522
16	Front Contact. Contact 1	38-0045-523
17	Insulating Block	38-0045-505
18	Riser Block	38-0045-526
19	6-32x1-1/4" Flat Head Screw	38-0045-527

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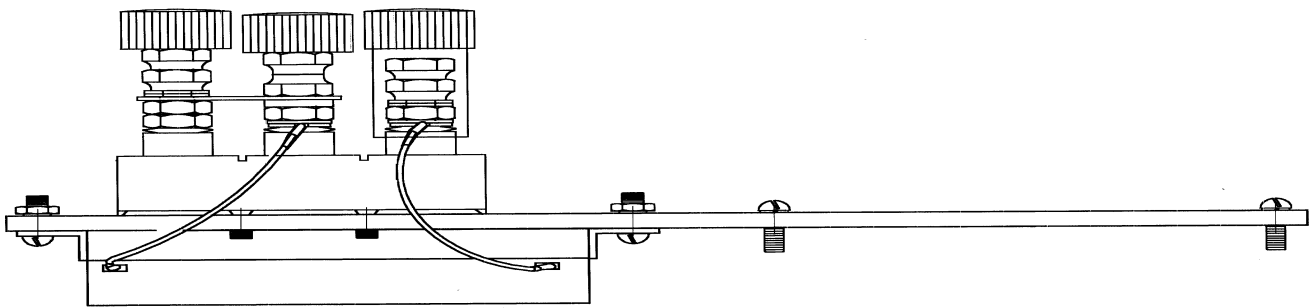
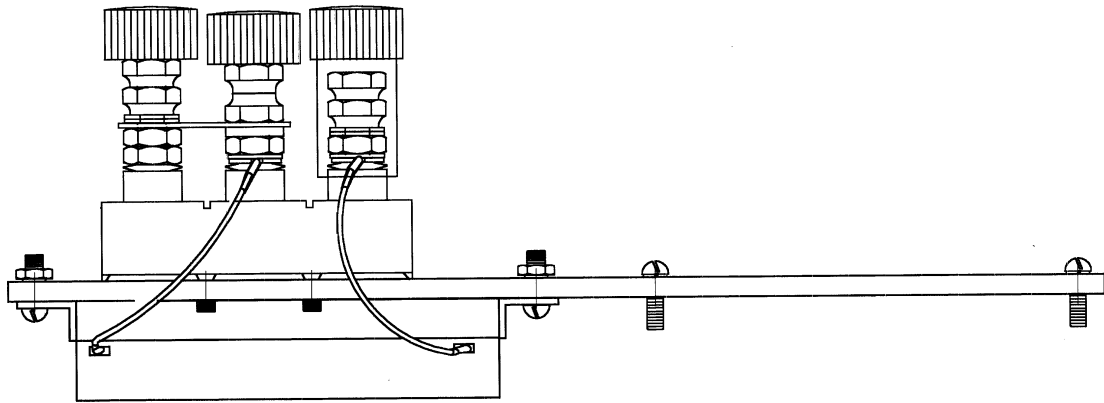
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### Control Assembly 3597-3-A Reference D



Ref. No.	Description	Part Number
1	Wire Clamp	1953-12-B
2	Relay	91254
3	Relay Cover	91254-1
4	1.5 Ohm Resistor	1110-2
5	1.5 Ohm Resistor	1110-2
6	Electronic Gate Monitor	3597-1
7	Relay Panel	3597-3-1
8	Wire Clamp	1953-6-A
9	Cam Switch Complete	3597-2
10	Cam Switch Panel	3597-3-2
11	Lube Label	38-0045-500
12	Cam Switch Knob	3597-2-1

**3597 Contact Heater Assembly  
Reference F**



## Set-Up and Adjustment Tools

**Spring Scale**, PN: 3562-210

Used for measuring gate arm torque.

**Torque wrench with socket**, PN: 3590-K-9.

Used for measuring gate arm torque.

**Snap ring pliers**, PN: 3590-1007

Used for ratchet wheel removal.

**.020 gauge**, PN: 3590-1012

Used to adjust ratchet wheel to hold clear pawl clearance.

**.032 gauge**, PN: 3590-1011

Used to adjust gap on hold clear mounted power down contact.

**Ounce spring scale**, PN: 3565-211

Used to measure contact spring pressure.

**1/16" insulated gauge** , PN: 3590-1010

**Contact bending tool for contacts without stiffeners**, PN: ES-6104-2

**Contact bending tool for contacts with stiffeners**, PN: ES-6104-1

Used to adjust circuit board contact.

**Angle finder**, PN: 3590-1014

Used to set contact cam operating position.

**3/32" wire gauge**, PN: 3590-1013

Used to check vertical stop to segment gear clearance.

**Tool kit**, PN: 3590-K-11

Includes snap ring pliers, 3/32", 3/16" and 7/32" T handle allen wrenches, 7/16" combination wrench and canvas pouch.

**Bison all temperature lubricating grease**, PN: 3590-1650

For lubrication of gears and contact cams, 1 quart can.