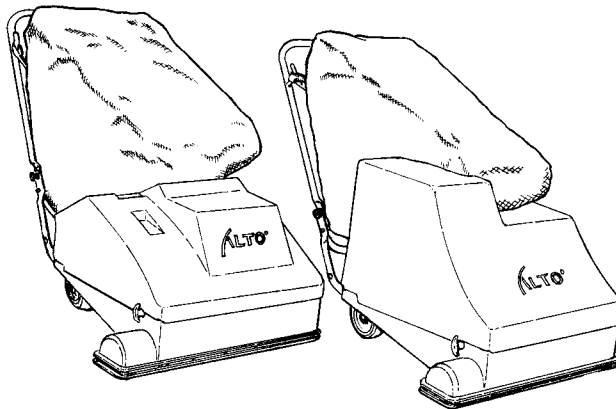


**IVIE Enterprises**

[www.ivie-ent.com](http://www.ivie-ent.com) Ph:(918)254-5161 or (888)262-5161 Fax:(918)250-4807



**Service  
Manual**



**590 & 590B  
Carpet Vacuum**

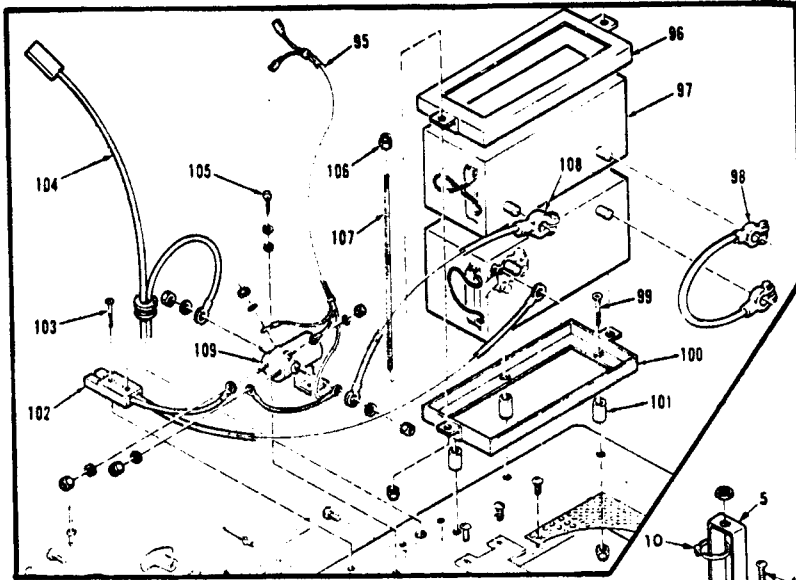
**READ THIS BOOK**

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your ALTO machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If your operator(s) cannot read English, have this manual explained fully before attempting to operate this machine.

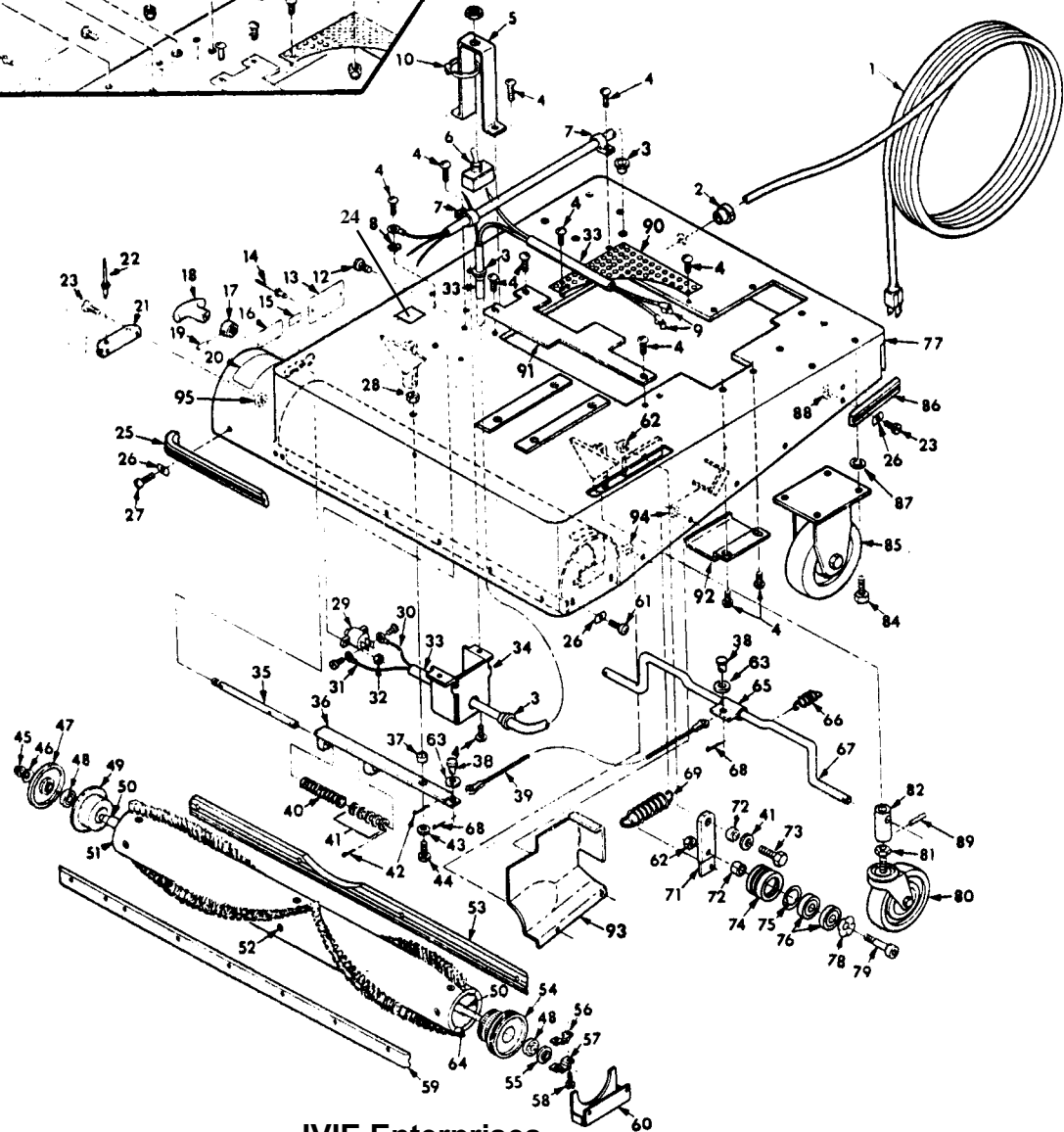
All directions given in this book are as seen from the operator's position at the rear of the machine.

For new books write to: ALTO U.S. Inc., 2100 Highway 265, Springdale, Arkansas 72764.

CLARKE TECHNOLOGY Model 590/590B  
Main Frame & Brush Assembly 4/01



**⚠ WARNING:** (Ref #97)  
Because of the positioning of the  
batterless, you must not use any  
other maintenance free battery.  
They may leak. Clarke Technology  
P.N. 40070A volt batteries are  
specially designed not to leak.



**IVIE Enterprises**

[www.ivie-ent.com](http://www.ivie-ent.com) Ph:(918)254-5161 or (888)262-5161 Fax:(918)250-4807

**CLARKE TECHNOLOGY Model 590 & 590B  
Main Frame & Brush Assembly 4/01**

Ref. No.	Part No.	Description	QTY
1	909007	Cord Assembly 75'	1
	40025A	Cord 230V	1
2	627561	Strain Relief	1
3	611101	Bushing, Motor	2
4	962835	Screw #10-24 x 1/2	13
5	610820	Bracket, Switch Mounting	1
6	47394A	Switch	1
7	812180	Clip, Nylon	2
8	980603	Washer #1110	1
9	911594	Clip, Terminal	1
10	899254	Tie, Nylon, Wire	2
11	691101	Bushing, Snap	1
12	962109	Screw, 10-24 x 5/8	2
13	NI*	Plate, Model & Serial No.	1
14	930082	Rivet, 1/8 x .310 Pop	2
15	215108	Label, Manufacture Date	1
16	805160	Label, Inspection	1
17	618522	Stop, Knob	1
18	613920	Handle, T-Knob	1
19	925554	Pin, .093 Dia. x .62 Roll	1
20	615125	Label, Brush Adjustment	1
21	617522	Roller, Asm. Side	1
22	930122	Rivet, 1/8 Dia. Pop	2
23	962727	Screw 8-32 x 1/2 Pan	7
24	77094A	Label, Ground Symbol	1
25	611221	Bumper	1
26	677211	Retainer, Bumper Strip	16
27	962900	Screw, 10-16 x 5/8	12
28	920349	Nut, 1/4-20	1
29	912362	Breaker, Circuit (120 Volt)	1
	912363	Breaker, Circuit (220 Volt)	1
	41416A	Breaker, Circuit 45 A (590B)	1
30	912364	Lead Asm., Motor/Circuit	1
31	952470	Wire Asm., SW/Circuit	1
32	920200	Nut, 10-24 Hex	2
33	618122	Sleeving, Leads	2
34	612324	Cover, Circuit Breaker	1
35	617423	Rod, Adjusting	1
36	615120	Lever Asm., Adjusting	1
37	618221	Spacer, Adjusting Lever	1
38	616720	Pin, Clevis	2
39	612420	Cable Asm., Adjusting	1
40	618320	Spring, Compression	1
41	980651	Washer	7
42	925036	Pin, Dia. 3/32 x 3/4	2
43	980646	Washer 9/32 x 5/8 x 1/16	1
44	962455	Screw 1/4-20 x 1	1
45	902734	Bearing, Nylon	1
46	618322	Spring, Wave	1
47	613605	Guard, Thread	1
48	902619	Bearing	2
49	610206	Adapter, Brush	1
50	617720	Shaft, Brush	1
51	610921	Brush, Half, Chevron	2
52	962821	Screw, 8-00 x 5/8	12
53	617920	Shoe, Rear	1
54	616908	Pulley, Brush, Drive	1

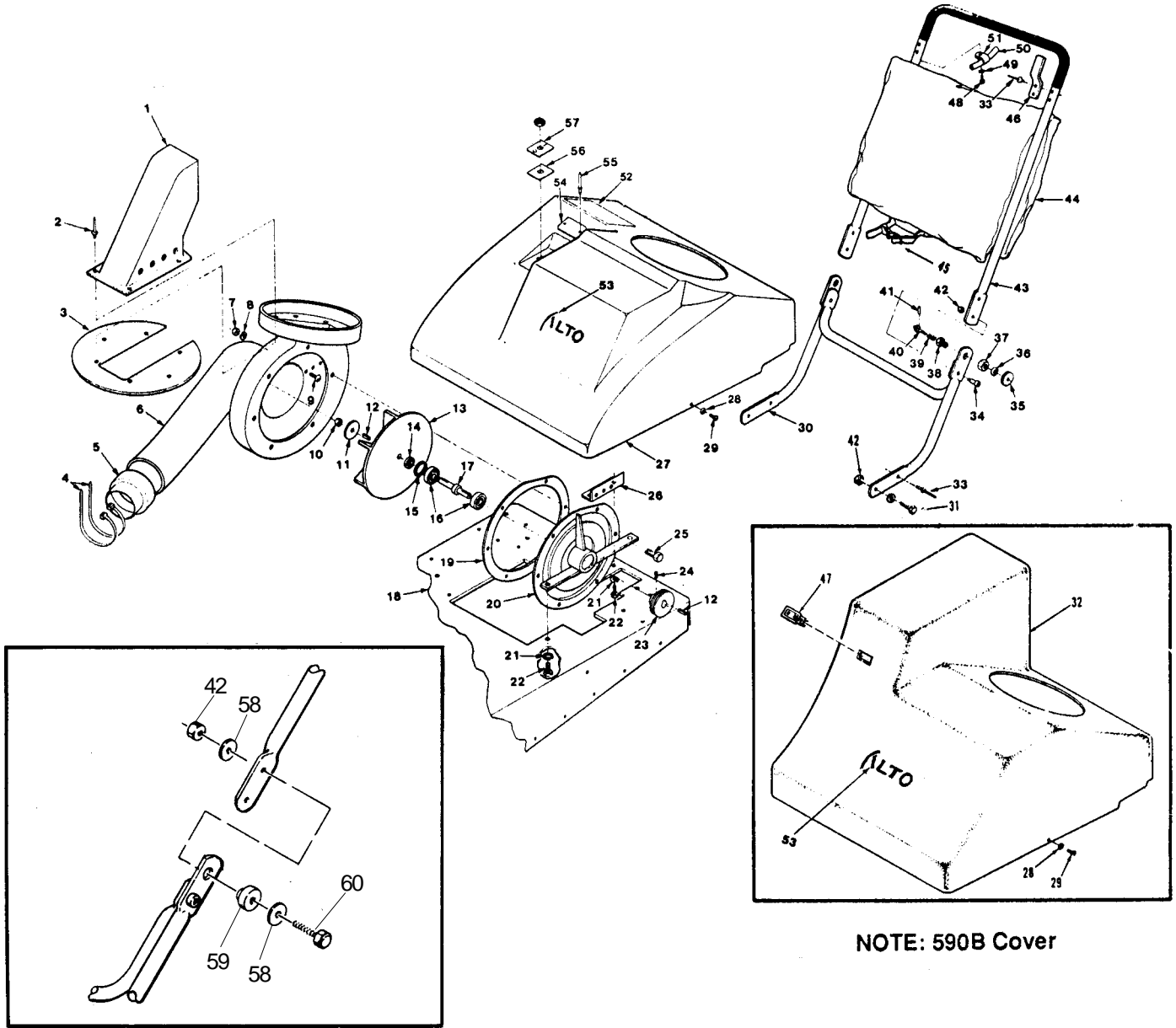
Ref. No.	Part No.	Description	QTY.
55	613601	Guard, Brush, Thread	1
56	618222	Spacer, Brush Adjustment	1
57	617206	Retainer	1
58	962968	Screw, 10-24 x 1/2 Pan	2
59	617921	Shoe, Front	1
60	617923	Shoe, Side	1
61	962992	Screw 8-32 x 3/8	2
62	920160	Nut 5/16-18	2
63	980982	Washer, Flat	2
64	619002	Tube, Brush	1
65	882156	Clip	1
66	628384	Spring, Latch	1
67	617726	Shaft, Adjustment	1
68	925004	Pin, 1/16 x 1/2	2
69	67901A	Spring, Idler Tension	1
70			
71	610322	Arm As., Idler	1
72	748250	Spacer, Idler, Arm	2
73	962158	Screw, 5/16-18 x 7/8	1
74	616920	Pulley, Idler	1
75	757360	Ring, Snap	1
76	902648	Bearing	2
77	613222	Frame, Asm., Main	1
78	980613	Washer, Wave	1
79	962395	Screw, 5/16-18 x 1 3/4	1
80	612722	Caster, Asm., Front	2
81	920196	Nut, 1/2-13	2
82	617725	Shaft, Caster	2
83			
84	85811A	Screw, 18 x 3/4	8
85	52109A	Caster, Rigid 6.0 x 1.5	2
86	611220	Bumper	1
87	980652	Washer, 5/16 x 9/16 x 1/16	8
88	612101	Clip	7
89	925044	Pin, Cotter	2
90	613622	Guard	1
91	613620	Guard	1
92	613621	Guard, Pulley	1
93	613623	Guard, Belt	1
94	920108	Nut, 6-32 Hx	2
95	49675A	Harness, Wire, Switch	1
96	61232A	Bracket, Battery, Top Pntd.	1
97	40703A**	Battery, 12 Volt to Serial# XE	2
	40070A**	Battery 12V GEL 90AH Beginning w/Serial # XE	2
98	41213A	Cable, Series, Neg.	1
99	962813	Screw 5/16-18 x 2 Ft.	3
100	61233A	Bracket, Battery, Bottom Pntd.	1
101	67860A	Spacer, Battery, Bracket Pntd.	3
102	49677A	Harness, Wire Charger (590B)	1
103	962980	Screw, 6-32 x 1 Pn St	2
104	49674A	Harness, Wire, Circuit Breaker	1
105	962983	Screw, 1/2-20 x 5/8	2
106	920342	Nut 3/8 Nylon	4
107	67127A	Rod, Battery	2
108	41212A	Cable, Battery Pos.	1
109	878561	Solenoid, 24 Volt	1
110	920112	Nut, 6 x 32	2
NI*	47609A	Terminal, Lug 5/16	1
NI*	85809A	Screw, 5/16-1/2	4
NI*	110854	Nut, 5/16	4

**NOTE:** \*\* 40703A use 40510A or 40511A Wet Battery Charger or equal

**NOTE:** \*\* 40070A use 40071A or 40072A Wet Battery Charger or equal

**Note: \*Not Illustrated**

CLARKE TECHNOLOGY Model 590/590B  
Housing Impeller & Handle Assembly Drawing  
4/01



590B Handle

NOTE: 590B Cover

**IVIE Enterprises**

[www.ivie-ent.com](http://www.ivie-ent.com) Ph:(918)254-5161 or (888)262-5161 Fax:(918)250-4807

**CLARKE TECHNOLOGY Model 590/590B**  
**Housing Impeller & Handle Assembly**  
**Parts List 4/01**

Ref #	Part No.	Description	Qty
1	612720	Deflector	1
2	84808A	Screw 10-24 x ¾	4
3	66621A	Plate, Adapter	1
4	619221	Cable, Tie	2
5	612422	Coupling, Air Duct	1
6	60068A	Housing, Impeller	1
7	920208	Nut ¼-20 Hx	3
8	980657	Washer ¼ Lock	3
9	962446	Screw, ¼-20 x 1"	3
10	920110	Nut 5/16-18	1
11	980210	Washer, Impeller	1
12	915044	Key 3/16 x 3/16 x 1"	2
13	614820	Impeller	1
14	618220	Spacer, Impeller	1
15	067304	Ring, Retainer	1
16	902550	Bearing	2
17	617704	Shaft, Impeller	1
18	613220	Frame, Main	1
19	613421	Gasket, Impeller, Cover	1
20	612327	Cover Asm., Impeller	1
21	980652	Washer 5/16 Lock	4
22	85811A	Screw 5/16-18 x ¾ Hex	4
23	616902	Pulley, Motor	1
24	962184	Screw ¼-20 x 3/8	2
25	962901	Screw 9/32 x ¾ Hex HiLo	6
26	618525	Support, Housing	1
27	60069A	Cover, Main	1
28	980257	Washer	4
29	962546	Screw 10-24 x 5/8	4

Ref #	Part No.	Description	Qty
30	64473A	Handle, Lower Half, w/Brace	1
31	85376A	Screw ¼-20 x 5/8 (590B only)	4
32	30026A	Cover, Main (590B only)	1
33	83002A	Rivet ¼ Dia. x .490	8
34	960357	Screw, Shoulder	2
35	615001	Knob, Handle Release	2
36	980603	Washer, 5/16 Plain	2
37	920280	Nut, 5/8-18 x 3/8 Hex Jam	2
38	617202	Retainer	2
39	618301	Spring, Handle, Release	2
40	617001	Plunger, Handle Release	2
41	925530	Pin, 3/32 x 1/2	2
42	920349	Nut ¼-20 ESNA Stop	10
43	64474A	Handle	1
44	610620	Bag, Filter	1
45	618508	Strap	1
46	614520	Hook, Cord, Storage	2
47	47365A	Switch, Power (590B only)	1
48	962731	Screw 8 x 1/2 Pn Type A	1
49	980621	Washer #1108	1
50	627562	Strain, Relief	1
51	812180	Clamp, Wire	1
52	615131	Label, Warning	1
53	77371A	Label, Alto	1
54	446303	Plate, Fire, Warning	1
55	930074	Rivet, 1/8 Closed End	2
56	613420	Gasket, Plate	1
57	616420	Plate, Switch	1
58	980413	Washer, Flat ¼	4
59	67864B	Spacer	2
60	962455	Screw ¼-20	2
NI◆	46730A	Static Strap (Battery Model)	1

**NOTE:** ◆ indicates a change has been made since last publication of this manual.

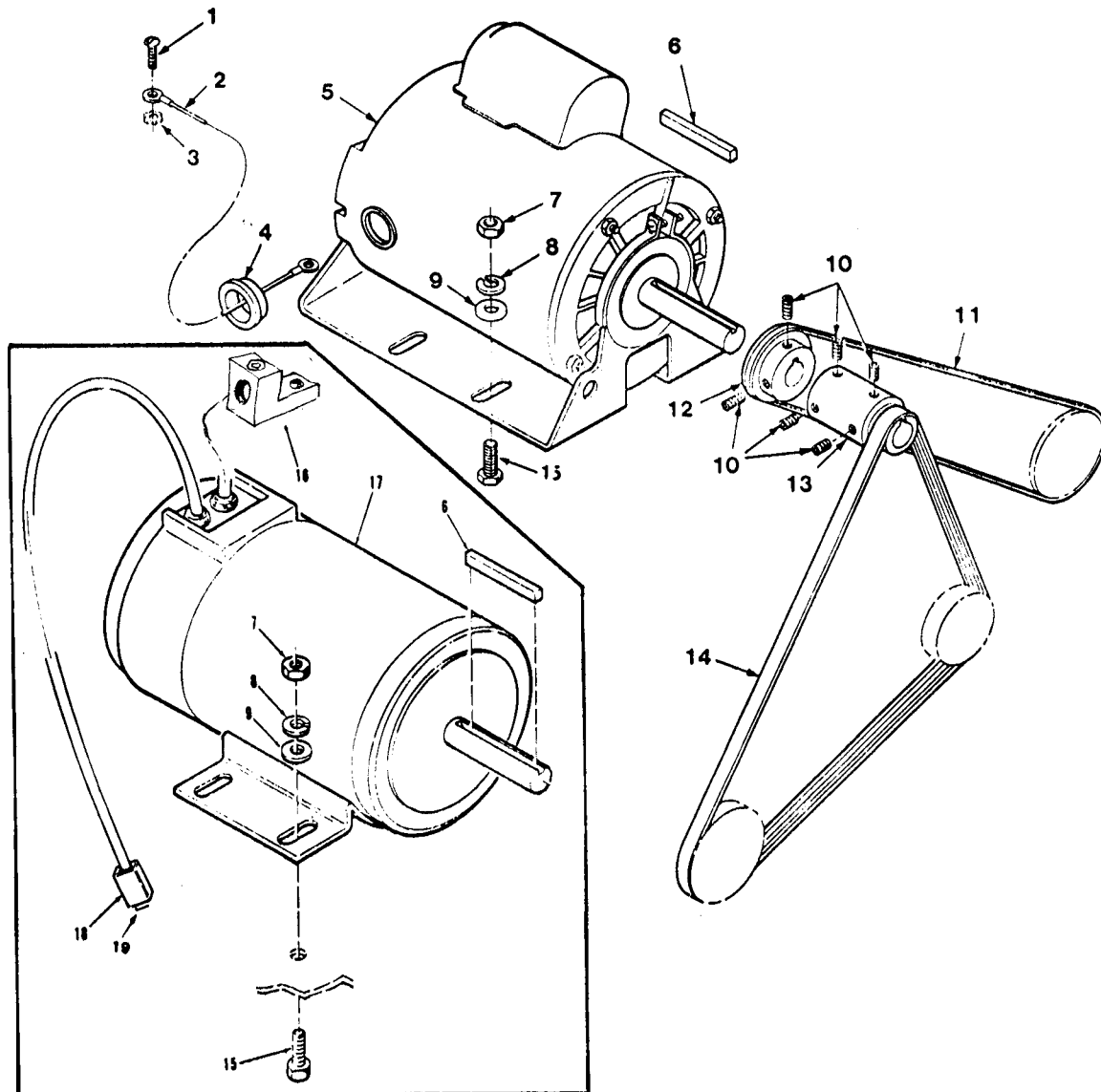
**IVIE Enterprises**

[www.ivie-ent.com](http://www.ivie-ent.com) Ph:(918)254-5161 or (888)262-5161 Fax:(918)250-4807

**CLARKE TECHNOLOGY Model 590/590B**  
**Motor & Drive Assembly**  
**Drawing & Parts List 12/98**

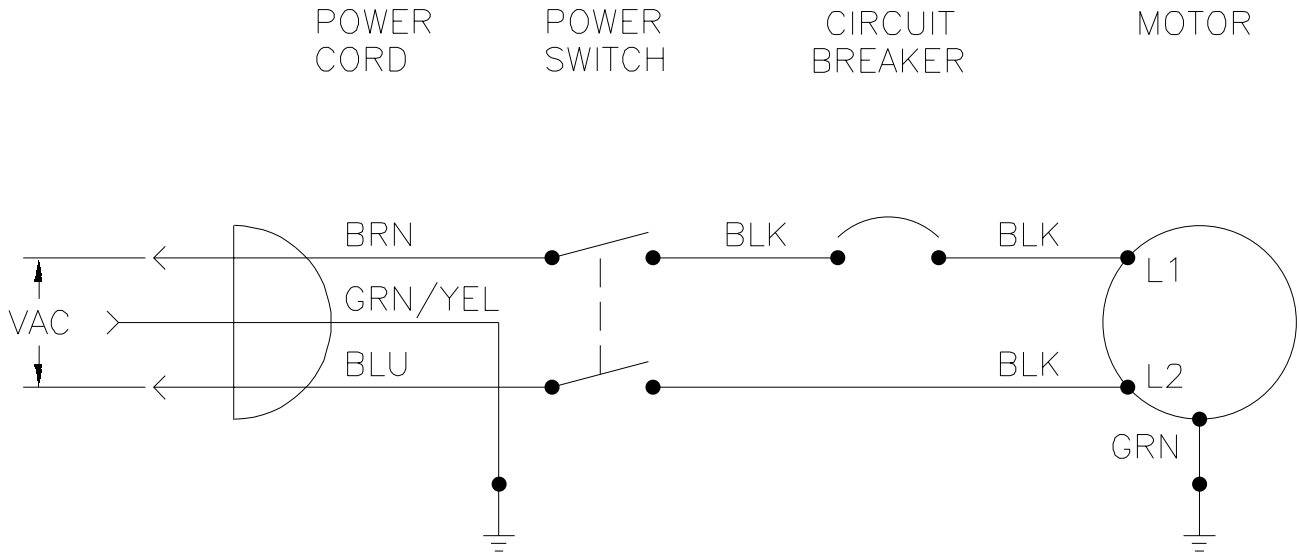
Ref #	Part No.	Description	Qty
1	962835	Screw 10-24 x 1/2 Hex	1
2	954010	Wire, Assembly #16 Green	1
3	980603	Washer #1110	1
4	611101	Bushing, Motor	1
5	615221	Motor, Drive (120 Volt)	1
6	615227	Motor, Drive (230 Volt)	1
7	55410A	Key 3/16 x 2 1/2	1
8	920256	Nut 5/16-18 Hex	4
9	980652	Washer .319 x .586 x .078	4
10	980651	Washer 11/32 x 11/16 x 1/16	4
11	962184	Screw 1/4-20 x 3/8	6

Ref #	Part No.	Description	Qty
11	903768	Belt, Fan	1
12	616901	Pulley, Motor, Impeller (120V)	1
	616906	Pulley, Motor, Impeller (230V)	1
13	616904	Pulley, Motor, Brush (120V)	1
	616905	Pulley, Motor, Brush (230V)	1
14	903769	Belt, Brush, Drive	1
15	962985	Screw 5/16-18m x 1 1/4 Hex	1
16	47609A	Terminal, Battery	1
17	56037A	Motor (24V) 3400 RPM (590 B)	1
18	41602A	Connector, Housing	1
19	41601A	Connector, contact	1

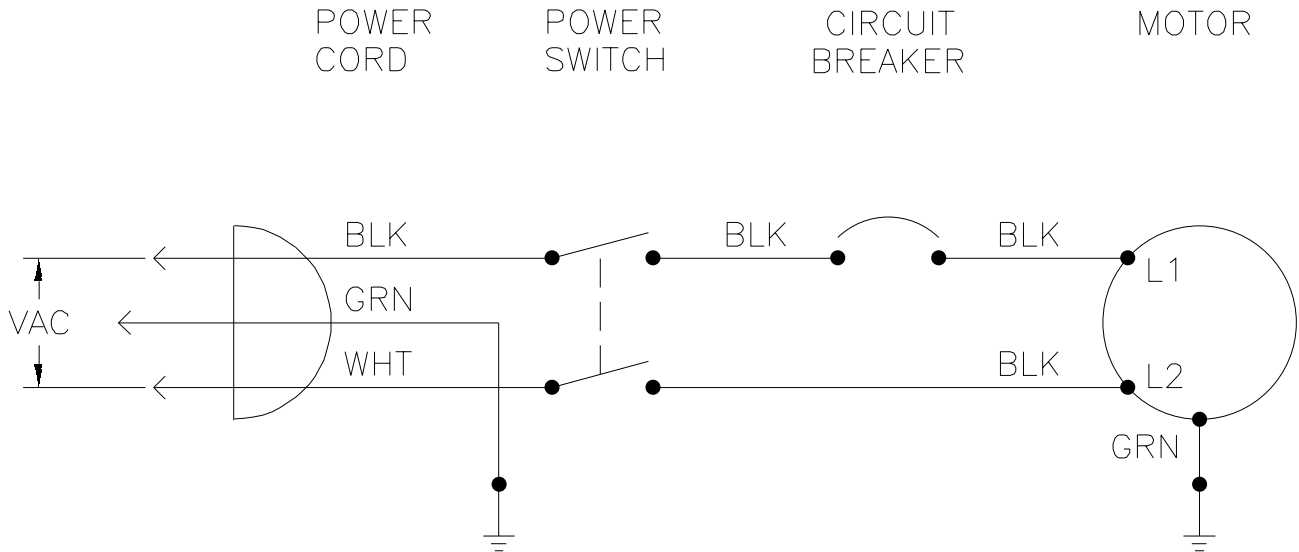


**NOTE: 590B Motor**

CLARKE TECHNOLOGY Model 590/590B  
Wiring Diagram 12/98



NOTE: FOR USE WITH PART NUMBER 615427.

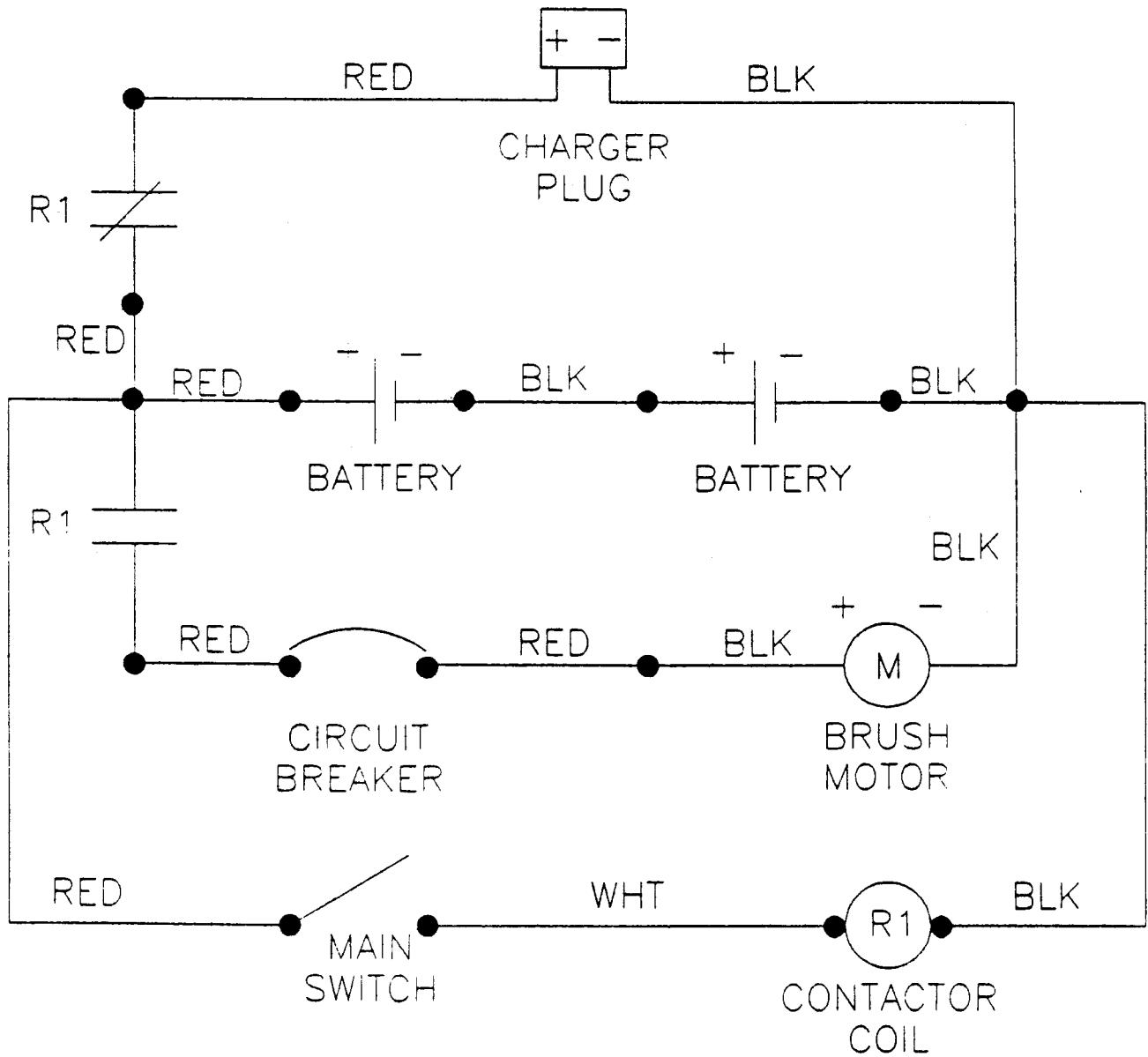


NOTE: FOR USE WITH PART NUMBER 615421.

**IVIE Enterprises**

[www.ivie-ent.com](http://www.ivie-ent.com) Ph:(918)254-5161 or (888)262-5161 Fax:(918)250-4807

CLARKE TECHNOLOGY Model 590B  
 Electrical Schematic 4/94  
 24 Volts DC



**IVIE Enterprises**

[www.ivie-ent.com](http://www.ivie-ent.com) Ph:(918)254-5161 or (888)262-5161 Fax:(918)250-4807