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## Operator's Manual

Libro De Instrucciones  
Manuel D'utilisation



C-1600, C-1800,  
C-2000, C-18DS  
and C-20DS

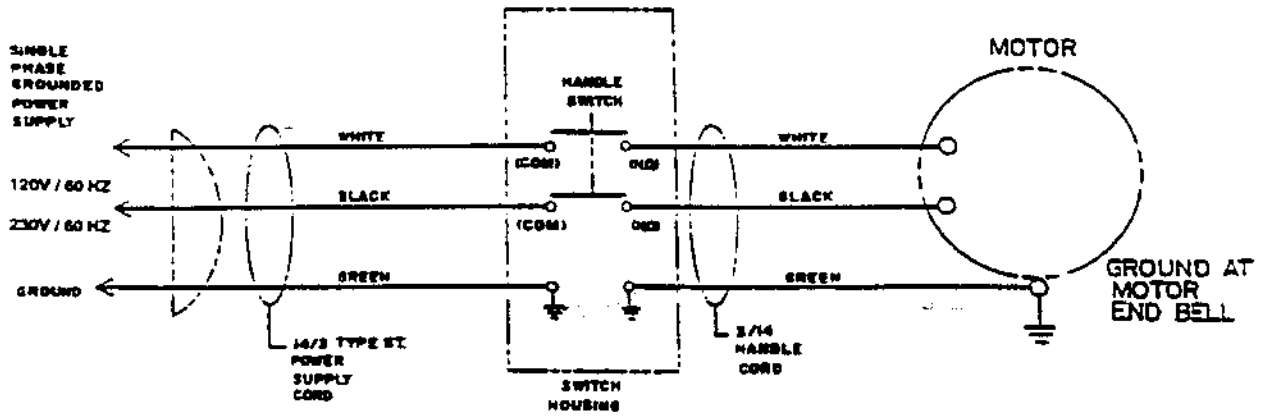
### READ THIS BOOK

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 you cannot read English, have this manual explained fully before attempting to operate this machine.

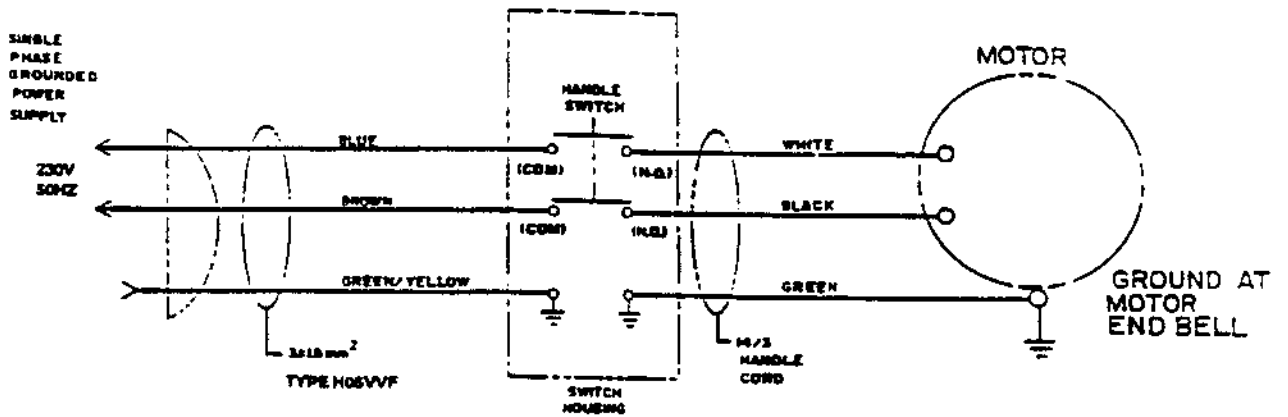
All directions given in this book are as seen from the operator's position at the rear of the machine.

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

CLARKE TECHNOLOGY C-1600, C-1800 & C-2000  
 Wiring Diagram 120/230V-60Hz 6/94

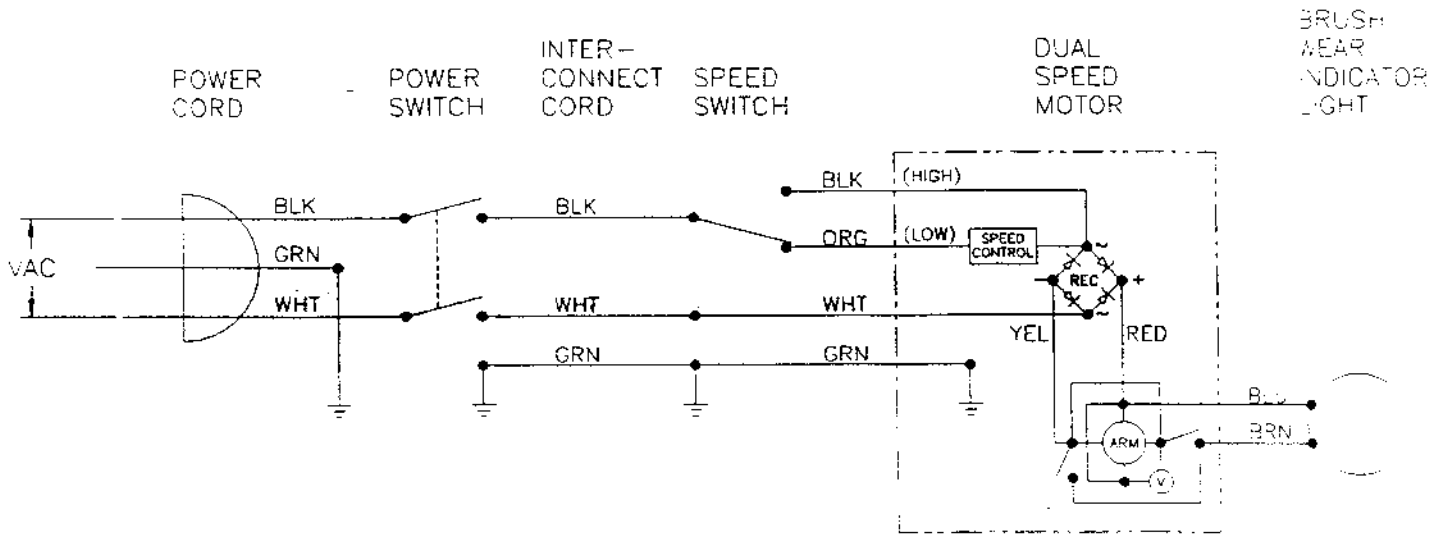


CLARKE TECHNOLOGY C-1600, C-1800 & C-2000  
 Wiring Diagram 230V-50Hz 6/94

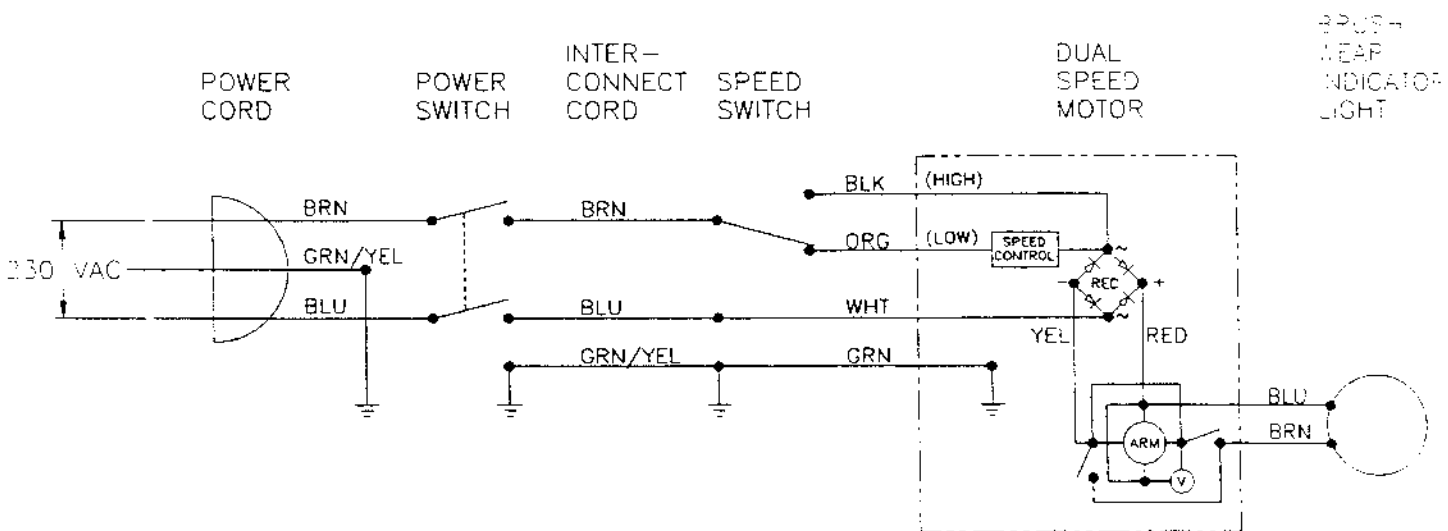


**⚠ WARNING:** All electrical repairs must be performed by qualified personnel only.

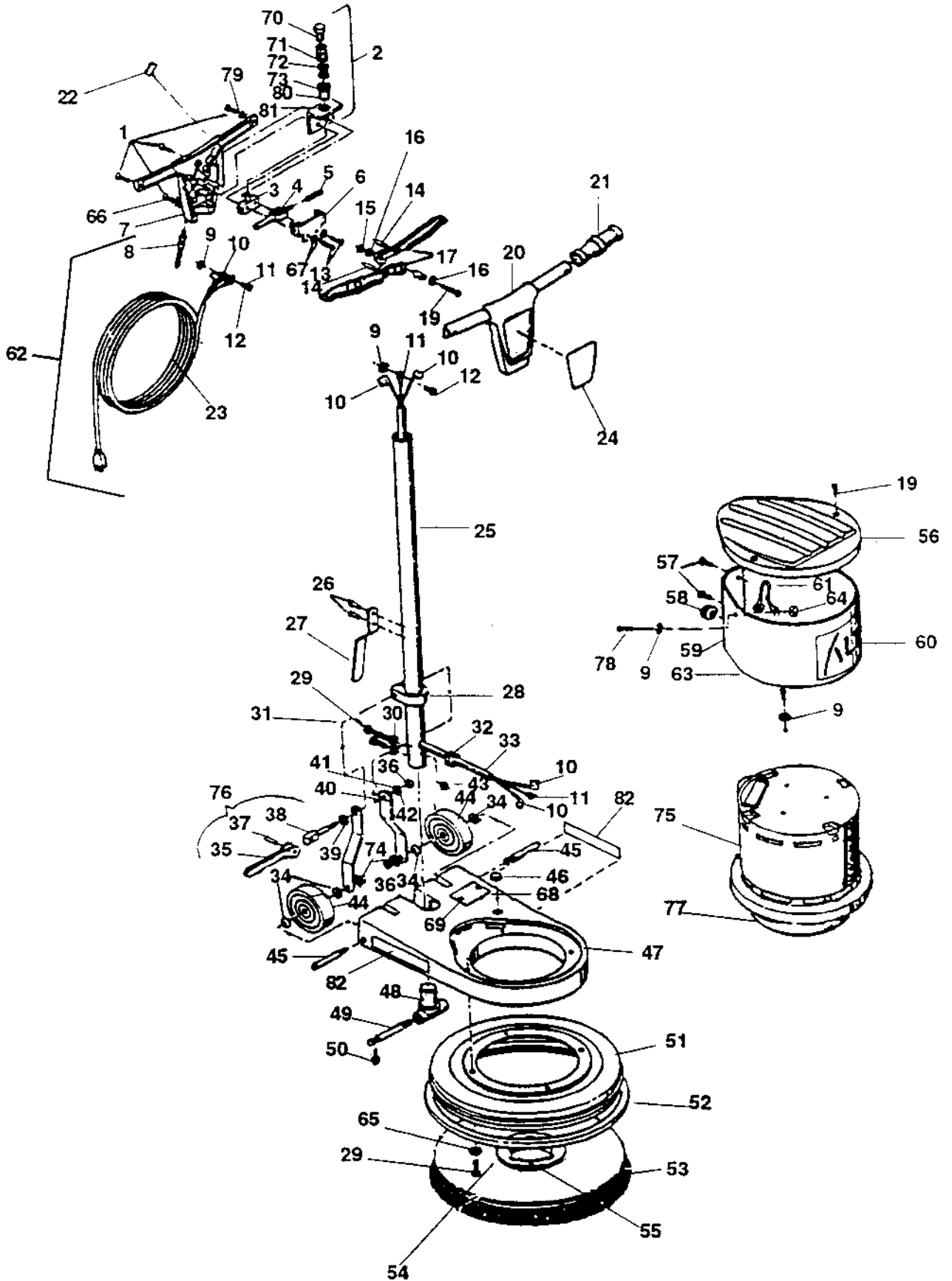
**CLARKE TECHNOLOGY C-18DS and C-20 DS**  
**Wiring Diagram 120V or 230V Models w/metal handles - 50/60Hz 12/98**



**CLARKE TECHNOLOGY C-18DS and C-20 DS**  
**Wiring Diagram 230V - 50/60 Hz Plastic Handle 12/98**



CLARKE TECHNOLOGY  
C-1600, C-1800 & C-2000  
Assembly Drawing 12/98



**CLARKE TECHNOLOGY**  
**C-1600, C-1800 & C-2000**  
**Assembly Drawing Parts List 12/98**

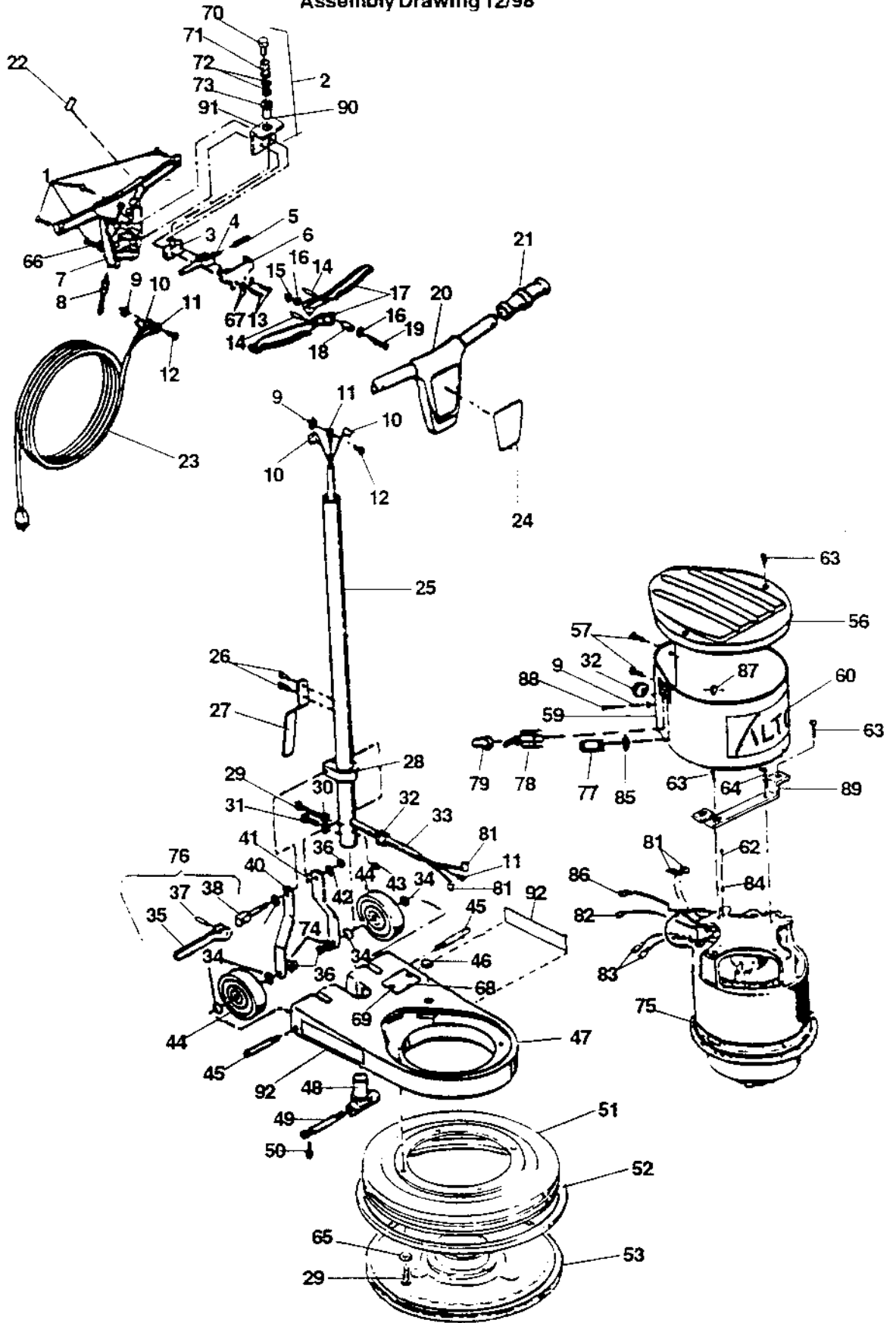
Ref.	Part No.	Description	Qty.
1	962487	Screw, 1/4-20 x 3/4	5
2	16029A	Kit, Switch Adapter	1
3	911690	Switch	1
4	448573	Interlock, Switch	1
5	58665A	Spring, Interlock	1
6	440873	Bracket	1
7	24530B	Switch Housing, Rear	1
8	467504	Strain Relief	1
9	980621	Washer, # 8 Star	3
10	911389	Terminal, N/I Flag	6
11	170687	Terminal, #10 Ring	3
12	962065	Screw, 8-32 x 1/4 Pan Head	2
13	962980	Screw, 6-32 x 1 Pn ST	2
14	925189	Pin, 3/16 x 1" Dowel	2
15	920296	Nut, 10-24 Hex	1
16	980982	Washer, #10 Plain	2
17	445174	Lever	2
18	508204	Spacer	1
19	962794	Screw, 10-24 x 1 Pan Hd	3
20	24529B	Switch Housing, Front	1
21	54501A	Grip	2
22	445178	Label, Interlock	1
23	42207A	Cord, Power	1
24	70028A	Label, C-1600	1
	70029A	Label, C-1800	1
	70030A	Label, C-2000	1
25	449071	Tube	1
26	930005	Pop Rivet	2
27	64325A	Cord Hook	1
28	442001	Clamp	1
29	85817A	Screw, 5/16-18 x 2" Hex Hd.	5
30	980652	Washer, 5/16 Lock	2
31	85812A	Screw, 5/16-18 x 7/8 Hex Hd.	1
32	737502	Strain Relief	1
33	41957A	Cord Asm (includes 10 & 11)	1
34	980681	Washer, Wave	4
35	461404	Cam Asm Lever	1
36	920248	Nut, 3/8-16 Hug Lock	3
37	925592	Pin, 1/4 x 1"	1
38	441301	Bolt	1
39	980349	Washer, Wear	1
40	440301	Arm Link, R.H.	1
41	440302	Arm Link, L.H.	1
42	980645	Washer, 3/8" Plain	1
43	920110	Nut, 5/16-18 Nylock	1

**NOTE:** ♦ indicates a change has taken place since last publication of this manual.

Ref.	Part No.	Description	Qty.
44	419752	Wheel	2
45	437761	Shaft, Wheel	2
46	57120A	Plug	1
47	23418A	Frame	1
48	449201	Tongue, Handle	1
49	447702	Shaft	1
50	962830	Screw 1/4-20 x 1" ST	2
51	67540B	Shield, C-2000	1
	67539B	Shield, C-1800	1
	67541B	Shield, C-1600	1
52	31225B	Bumper, C-2000	1
	31224B	Bumper, C-1800	1
	31230B	Bumper, C-1600	1
53	480916	Brush Asm C-2000 (optional)	(1)
	410974	Brush Asm C-1800 (optional)	(1)
	410953	Brush Asm C-1600 (optional)	(1)
54	962427	Screw, 12 x 1" Flat Hd Wood	3
55	466616	Locking Plate	1
56	32387A	Cover	1
57	962731	Screw, 8 x 1/2 Sheet Metal	2
58	611101	Bushing	1
59	69074B	Shroud, Motor C-Line	1
60	77371A	Label, ALTO 2.75"	1
61	48909A	Wire, Ground Bound	1
62♦	42090A*	Cord, Asm. 50'	(1)
63	962333	Screw, 10-32 x 1/4 Rd. Hd.	1
64	920065	Nut, 8-32 Lock	1
65	980664	Washer, 5/16 Star	1
	980652	Washer, 5/16 Split	3
66	87303A	Washer, 1/4 Star	1
67	980607	Washer, #6 Star	2
68	446303	Plate, Warning	1
69	930074	Rivet, 1/8" Dia.	2
70	51512A	Bushing, #6 Nylon	1
71	58664A	Spring, Switch Adapter	1
72	87023A	Washer, #4 Flat	3
73	30117A	Adapter, Switch	1
74	980215	Spacer	2
75	44638A	Motor, 230V, 50 Hz	Pg. 30
	44635A	Motor, 120V, 60 Hz	Pg. 30
76	441401	Asm includes Item #35,37, & 38	
77	54409A	Gearbox Asm.	Pg. 31
78	85303A	Screw, 8-32 x 3/8	1
79	87303A	Washer	1
80	58547A	Spring, Adaptor Return	1
81	69914A	Bracket, Spring Support	1
82	77378A	Label, Clarke Technology	2

\* Ref. # 62 includes ref. #'s 8, 10, 11 and 23.

CLARKE TECHNOLOGY  
 C-18DS and C-20 DS  
 Assembly Drawing 12/98



**CLARKE TECHNOLOGY**  
**C-18DS and C-20 DS**  
**Assembly Parts List 9/98**

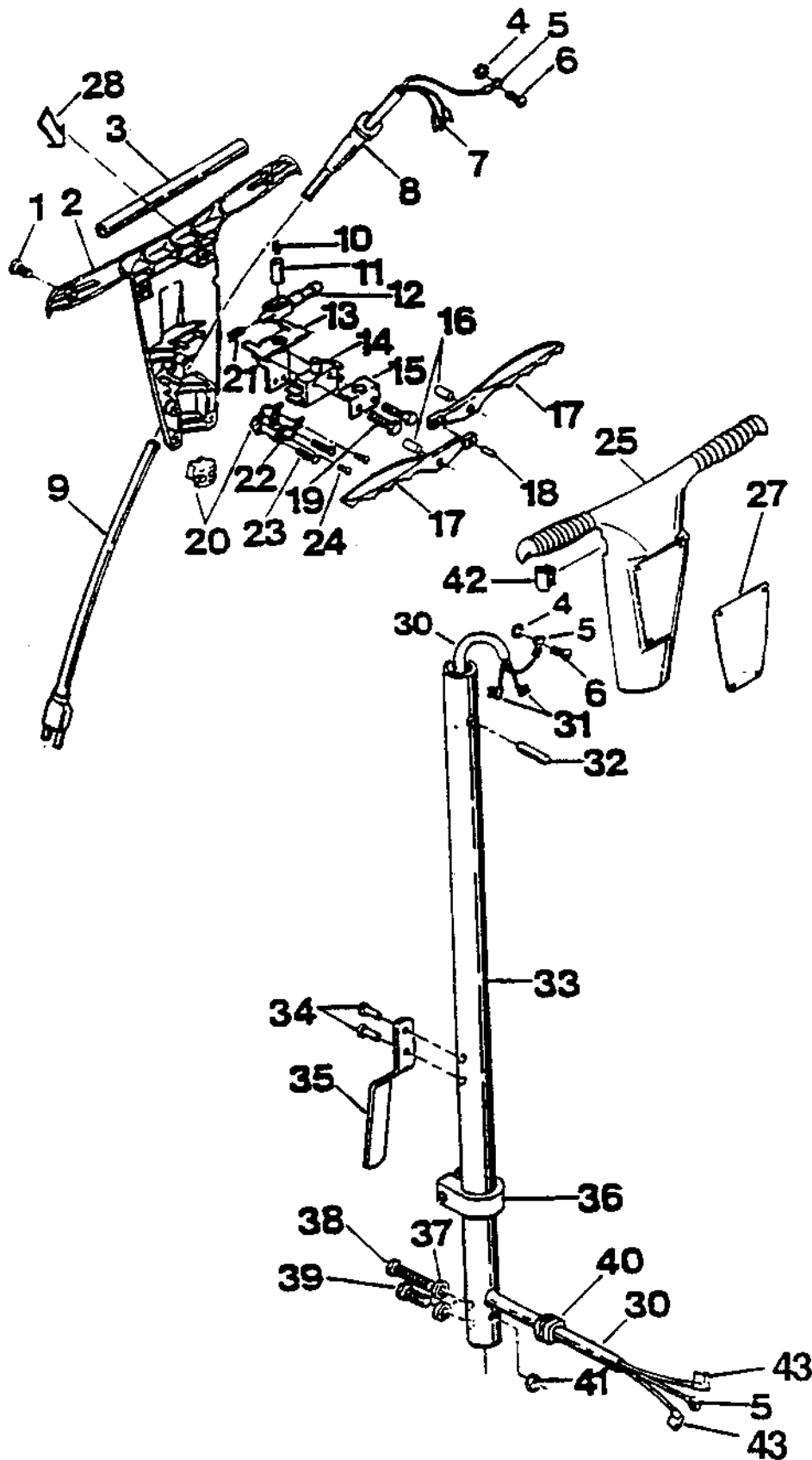
Ref.	Part No.	Description	Qty.
1	962487	Screw, 1/4-20 x 3/4	5
2	16029A	Kit, Switch Adapter	1
3	911690	Switch	1
4	448573	Interlock, Switch	1
5	58665A	Spring, Interlock	1
6	440873	Bracket	1
7	24530B	Switch Housing, Rear	1
8	467504	Strain Relief	1
9	980621	Washer, #8 Star	3
(NI)◆	980621	Washer, #8 Star (CE only)	(+1)
10	911389	Terminal, N/I Flag	6
11	170687	Terminal, #10 Ring	3
12	962065	Screw, 8-32 x 1/4 Pan Head	2
13	962980	Screw, 6-32 x 1 Pn ST	2
14	925189	Pin, 3/16 x 1" Dowel	2
15	920296	Nut, 10-24 Hex	1
16	980982	Washer, #10 Plain	2
17	445174	Lever	2
18	508204	Spacer	1
19	962794	Screw, 10-24 x 1 Pan Hd	1
20	24529B	Switch Housing, Front	1
21	54501A	Grip	2
22	445178	Label, Interlock	1
23	42205B	Cord, Power	1
24	70031A	Label, C-20DS	1
◆	70032A	Label, C-18DS	1
25	449071	Tube	1
26	930005	Pop Rivet	2
27	64325A	Cord Hook	1
28	442001	Clamp	1
29	85817A	Screw, 5/16-18 x 2" Hex Hd.	5
30	980652	Washer, 5/16 Lock	2
31	85812A	Screw, 5/16-18 x 7/8 Hex Hd.	1
32	737502	Strain Relief	2
33	41961A	Cord Asm (includes 10,11, 81)	1
34	980681	Washer, Wave	4
35	461404	Cam Asm Lever	1
36	920248	Nut, 3/8-16 Hug Lock	3
37	925592	Pin, 1/4 x 1"	1
38	441301	Bolt	1
39	980349	Washer, Wear	1
40	60456A	Arm Link, R.H.	1
41	60457A	Arm Link, L.H.	1
42	980645	Washer, 3/8" Plain	1
43	920110	Nut, 5/16-18 Nylock	1
44	419752	Wheel	2
45	437761	Shaft, Wheel	2
46	57120A	Plug	1
47	23418B	Frame, C-Line	1
48	449201	Tongue, Handle	1
49	447702	Shaft	1

Ref.	Part No.	Description	Qty.
50	962830	Screw 1/4-20 x 1" ST	2
51	67540B	Shield, C-20DS	1
◆	67539B	Shield, C-18DS	1
52	31225B	Bumper, C-20DS	1
◆	31224B	Bumper, C-18DS	1
53	17518A	Pad Driver Asm.	1
56	32387A	Cover	1
57	962731	Screw, 8 x 1/2 Sheet Metal	2
58	737502	Bushing	1
59	69086B	Shroud, Motor	1
60	77371A	Label, ALTO	1
61	980603	Washer, Shakeproof	1
62	85833A	Screw #10-32 x 3/8	1
63	962535	Screw, 10 x 3/4 PHST	2
64	962987	Screw, 10-24 x 3/8 PHST	2
65	980664	Washer, 5/16 Star	1
	980652	Washer, 5/16 Split	3
66	87303A	Washer, 1/4 Star	1
67	980607	Washer, #6 Star	2
68	446303	Plate, Warning	1
69	930074	Rivet, 1/8" Dia.	2
70	51512A	Bushing, #6 Nylon	1
71	58664A	Spring, Switch Adapter	1
72	87023A	Washer, #4 Flat	3
73	30117A	Adapter, Switch	1
74	980215	Spacer	2
75	44651A	Motor, 120V, 60 Hz	1
	44653A	Motor, 230V, 50 Hz	1
76	441401	Asm includes Item #35,37, & 38	1
77	34261A	Light, 230V	1
	34259A	Light, 120V	1
78	47402A	Switch	1
79	751321	Boot	1
80	77200A	Label, Switch/Light	1
81	47701A	Terminal, 14Ga F/I	2
82	47905A	Terminal, 14Ga F/I Male	1
83	47700A	Terminal, 18Ga F/I	2
84	980603	Washer #10 Shakeproof	1
85	80201A	Clip, Light	1
86	170687	Terminal, 14GA #10 Ring	1
87	920065	Nut, 8-32 Lock	1
(NI)◆	920065	Nut, 8-32 Lock (CE only)	(+1)
88	85303A	Screw, 8-32 x 3/8	1
(NI)◆	85303A	Screw, 8-32 x 3/8 (CE only)	(+1)
89	69439A	Bracket	1
90	58547A	Spring, Adaptor Return	1
91	69914A	Bracket, Spring Support	1
92	77378A	Label, Clarke Technology (.65)	2
NI◆	47201A	Filter (CE only)	1
NI◆	49310A	Wire (CE only)	1

NI = Not Illustrated

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

CLARKE TECHNOLOGY C-1600, C-1800, C-2000, C-18DS and C-20DS  
European Handle Assembly Drawing 12/98



**CLARKE TECHNOLOGY C-1600, C-1800, C-2000, C-18DS and C-20DS  
European Handle Assembly - Parts List ♦ 12/98**

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Ref	Part No.	Description	C-1600	C-1800	C-2000	C-18DS	C-20DS
			Qty.	Qty.	Qty.	Qty.	Qty.
1	962936	Screw 13-16 x 3/4 Pn	9			9	
2	35233B	Switch Housing, Rear	1			1	
3	449061	Tube	1			1	
4	980603	Washer, #10 Star	2			2	
5	170687	Terminal Ring	3			3	
6	962929	Screw 10-32 x 3/8	2			2	
7	47701A	Terminal	2			2	
8	38002A	Strain Relief	1			1	
9	42170A	Cord	1			1	
10	668370	Spring	1			1	
11	500241	Adapter	1			1	
12	38001A	Stop	1			1	
13	61124A	Bracket	1			1	
14	911690	Switch	1			1	
15	61108A	Bracket	1			1	
16	446760	Pin	2			2	
17	435131	Lever	2			2	
18	925599	Pin, 5/32 x 1/2	1			1	
19	962212	Screw, 6-32 x 7/8	2			2	
20	432032	Clamp, Cord	1			1	
21	67900A	Spring	1			1	
22	432034	Cap	1			1	
23	962727	Screw, #8 - 32 x 1/2	2			2	
24	962407	Screw, #8 - 32 x 1/2	2			2	
25	35232B	Switch Housing, Front	1			1	
27	70028A	Label, Switch Hsg., C-1600	1				
	70029A	Label, Switch Hsg., C-1800	1				
	70030A	Label, Switch Hsg., C-2000	1				
	70031A	Label, Switch Hsg., C-20DS					1
♦	70032A	Label, Switch Hsg., C-18DS					1
28	445178	Label, Interlock	1			1	
29							
30	41957A	Cord Assembly	(1)			(1)	
♦	41958A	Cord Assembly(CE)	(1)			(1)	
31	911389	Terminal Flag	4			2	
32	925600	Pin, Dowel	1			1	
33	439031	Tube	1			1	
34	930005	Pop Rivet	2			2	
35	64325A	Cord Hook	1			1	
36	442001	Clamp	1			1	
37	980652	Washer, 5/16 Lock	7			7	
38	85817A	Screw, 5/16-18 x 2	5			5	
39	85812A	Screw, 5/16 -18 x 7/8	1			1	
40	737502	Strain Relief	1			1	
41	920110	Nut, Stop	1			1	
42	446860	Plug, Rubber	1			1	
43♦	47808A	Terminal	-				2

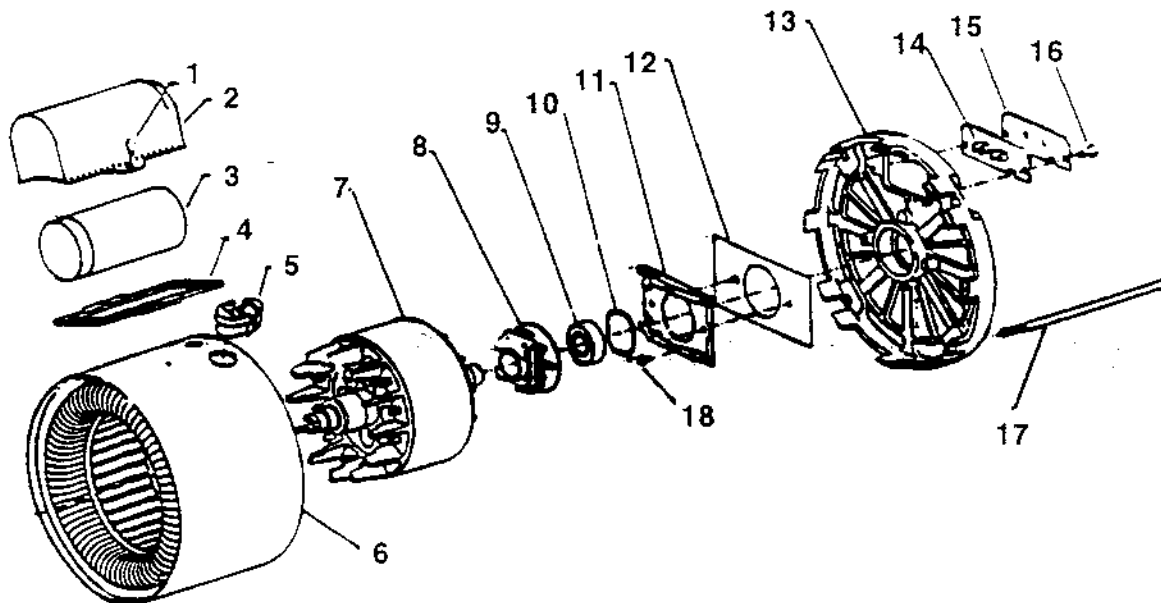
NOTE: ♦ indicates a change has been made since last publication of this manual.

CLARKE TECHNOLOGY C-1600, C-1800, C-2000

Motor Assembly Drawing & Parts List 8/95

Beginning with Serial No. OK

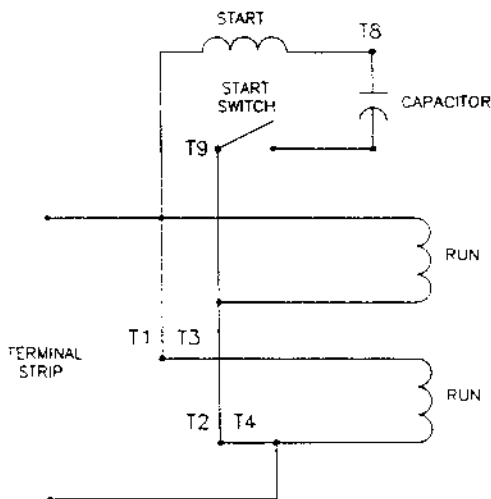
Note: If your machine has motor #44635A or #44638A refer to this drawing for service part replacement.



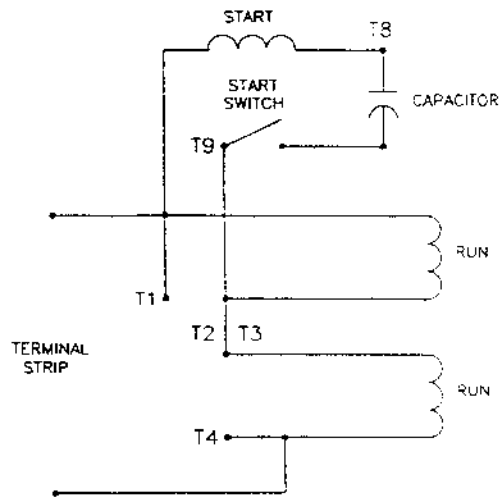
Ref.	Part No.	Description	Qty.
1	58030A	Screw #10-32 x.31 LG.	2
2	52018A	Capacitor Case	1
3	52019A	Start Capacitor	1
4	54330A	Gasket, Capacitor Case	1
5	737502	Strain Relief	1
6	58028A	Stator Frame Asm. - 60 Hz.	1
	53976A	Stator Frame Asm. - 50 Hz.	1
7	50400A	Rotor and Shaft Assembly	1
8	58029A	Centrifugal Switch Asm. 60 Hz.	1
	56461A	Centrifugal Switch Asm. 50 Hz.	1

Ref.	Part No.	Description	Qty.
9	902550	203 Bearing	1
10A	58673A	Wave Spring Washer	1
10B	87501A	Washer, 50 Hz	1
11	58032A	Stationary Switch	1
12	54713A	Stationary Switch Insulation	1
13	53523A	Bracket Opp. Shaft End	1
14	58911A	Terminal Board Asm.	1
15	58912A	Terminal Board	1
16	58034A	Screw #10-32 x .31	2
17	50691A	Bolt, .250-28 x 6.75 LG	4
18	58031A	Screw, #8-32 x .38 LG	2

120V Motor  
Electrical Schematic

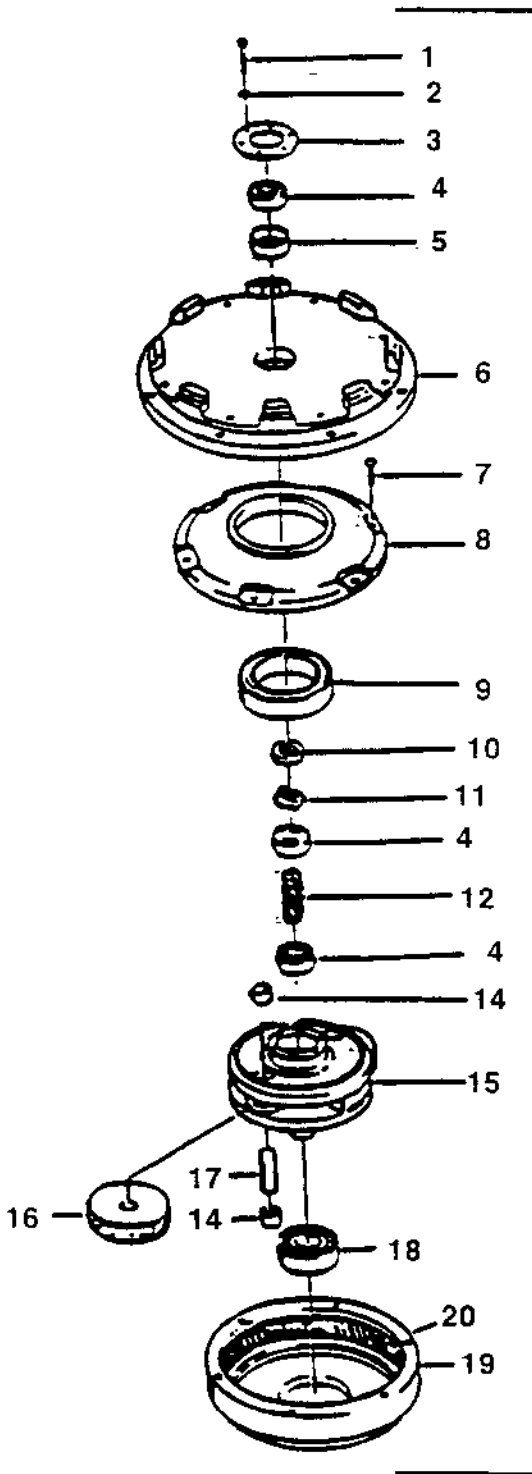


230V Motor  
Electrical Schematic



CLARKE TECHNOLOGY C-1600, C-1800, C-2000  
 Gearbox Assembly Drawing & Parts List 8/95  
 Beginning with Serial No. OK

Note: If your machine has gearbox #54409A refer to this drawing for service part replacement.

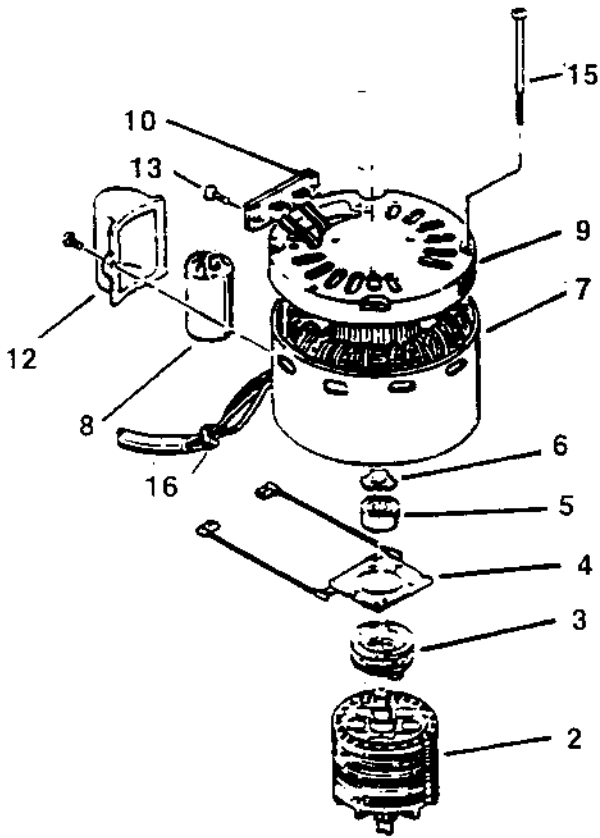


Ref.	Part No.	Description	Qty.
1	962966	Screw, Socket Hd. Cap	6
2	980650	Washer, Lock	6
3	56922A	Plate, Retainer	1
4	902606	Bearing	3
5	58513A	Spacer, Sleeve	1
6	53524A	Endshield	1
7	962794	Screw 10-24" x 1"	6
8	54858A	Cover, Housing	1
9	902736	Bearing	1
10	58314A	Retainer	1
11	442473	Coupling	1
12	58313A	Gear, Pinion	1
14	902737	Bearing, Needle	6
15	52020A	Cage	1
16	54408A	Gear, Idler	2
17	58312A	Shaft	2
18	902573	Bearing	1
19	54856A	Housing, Drive	1
20	503403	Gasket	1
21	54409A	Gearbox Asm., Complete	(1)

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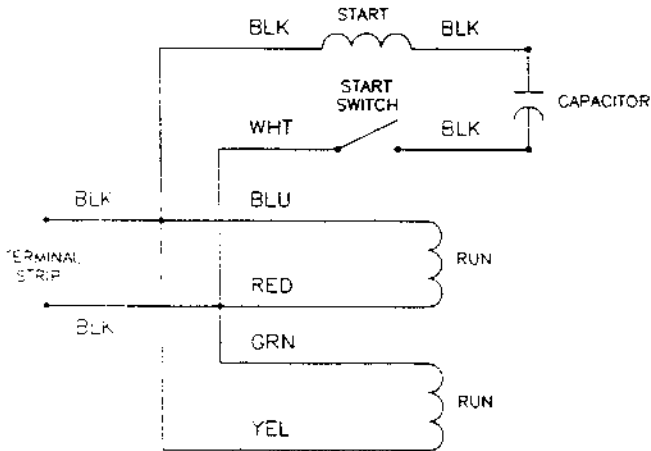
**CLARKE TECHNOLOGY C-1600, C-1800, C-2000  
Motor Assembly Drawing & Parts List 11/90**

**Note:** If your machine has motor #44626A/44627A/44628A refer to this drawing for service part replacements.

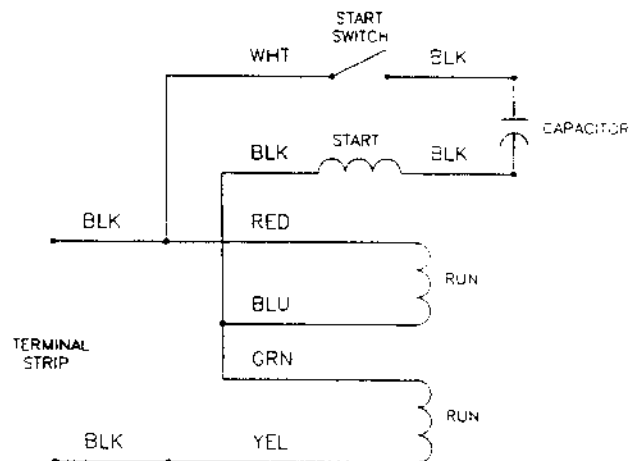


Ref.	Part No.	Description	Qty.
1		Rotor	1
2	447571	Rotor	1
3	911866	Centrifugal Switch 60 Hz.	1
	418578	Centrifugal Switch 50 Hz.	1
4	448507	Stationary Switch	1
5	902550	Ball Bearing	2
6	980217	Washer - Wave	1
7	57917A	Stator - Complete 60 Hz	1
8	502402	Capacitor	1
9	442901	End Bell	1
10	419270	Terminal Board	1
12	442305	Capacitor Cover	1
13	962727	Screw, 8-32 x 1/2 Pn Hd.	2
15	960107	Screw, 1/4-28 x 6-3/8 Hx. Hd.	4
16	611101	Bushing	1

**120V Motor  
Electrical Schematic**

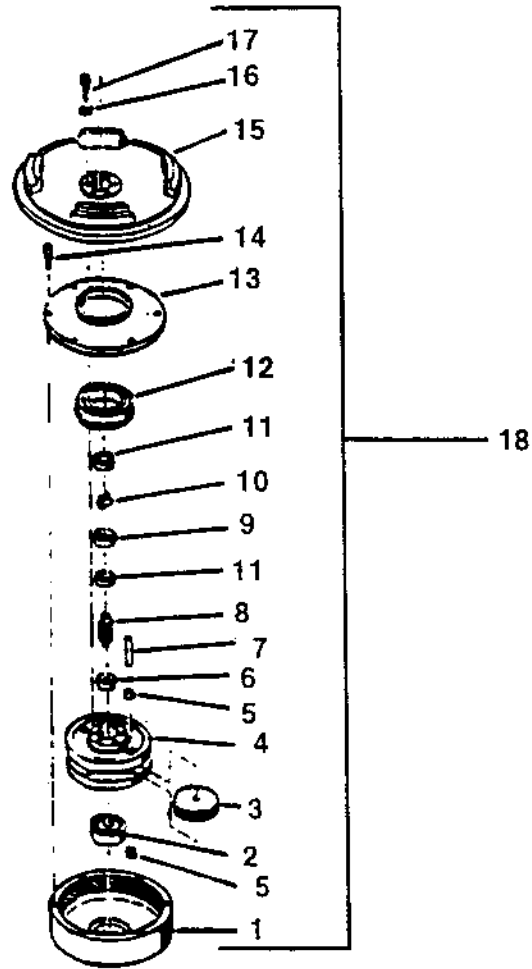


**230V Motor  
Electrical Schematic**



CLARKE TECHNOLOGY C-1600, C-1800, C-2000  
 Gearbox Assembly Drawing & Parts List 11/90

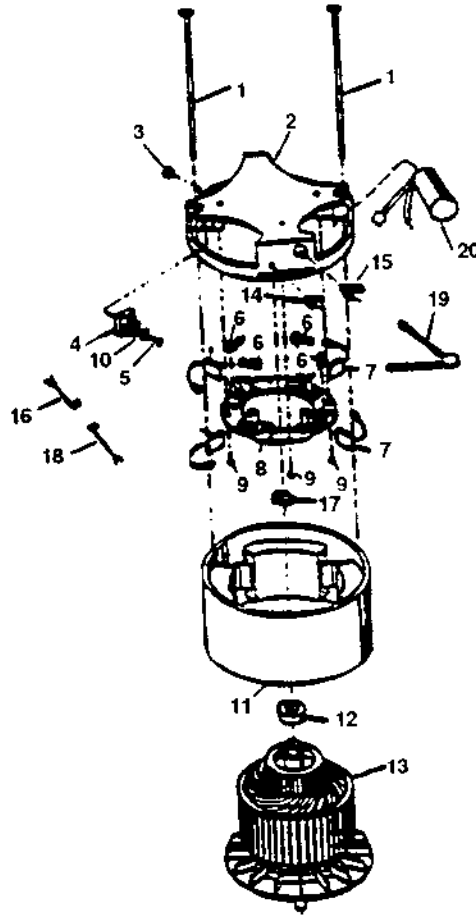
Note: If your machine has gearbox #443571 refer to this drawing for service part replacements.



Ref.	Part No.	Description	Qty.
1	444272	Housing	1
2	902573	Bearing	1
3	443572	Gear	2
4	444271	Housing	1
5	902737	Bearing	4
6	902735	Bearing	1
7	447771	Shaft	2
8	447071	Pinion	1
9	448272	Spacer	1
10	442473	Coupling	1
11	902606	Bearing	1
12	902736	Bearing	1
13	442372	Cover	1
14	962967	Screw - Socket Hd. Cap	6
15	440271	Adapter	1
16	980650	Washer - Lock	6
17	962966	Screw 10-32 x 1-1/4	6
18	443571	Gear Box	(1)

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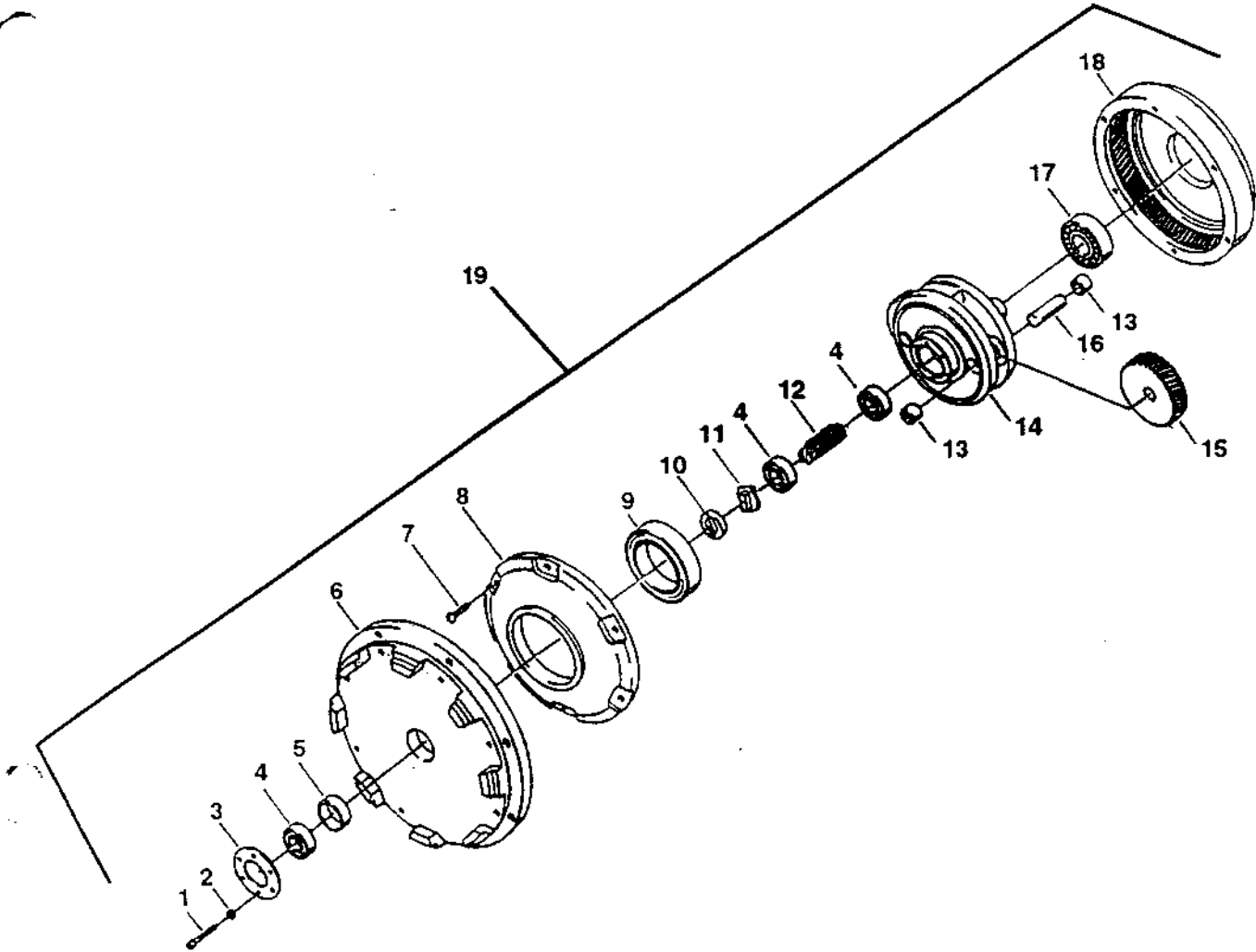
CLARKE TECHNOLOGY C-18DS and C-20DS  
Motor Assembly Drawing & Parts List 12/98



Ref	Part No.	Description	Qty.
1	50717A	Thru-Bolt	2
2	N/A	Commutator Bracket	1
3	56282A	Hex Nut	1
4	912287	Rectifier	1
5	962399	Screw	1
6	448396	Spring (Included with #8)	4
7	51405A	Brush Asm., (120V) (Included w/#8)	(4)
	40819A	Brush Asm., (230V) (Included w/#8)	(4)
8	40410A	Brush Board Asm. (120V)	(1)
	40411A	Brush Board Asm. (230V)	(1)
9	962310	Screw	4
10	980608	#8 Flat Washer	1
11	58057A	Stator Frame	1
12	902550	Bearing-Upper (Included w/#13)	1
13	40322A	Armature Asm. (120V) (Includes #12)	(1)
	40323A	Armature Asm. (230V) (Includes #12)	(1)
14	N/A	Strain Relief	1
15	N/A	Bushing	1
16	55648A	Red Lead	1
17	980076	Wave Washer	1
18	55647A	Yellow Lead	1
19	59606A	Varistor (120V) (Included w/#8)	(1)
	59607A	Varistor (230V) (Included w/#8)	(1)
20	46735A	Speed Control (120V)	(1)
	46736A	Speed Control (230V)	(1)

NOTE: Item #8 includes:  
Items (#6, 7, & 19)

**CLARKE TECHNOLOGY C-18DS and C-20DS  
Gearbox Assembly Drawing & Parts List 12/98**



Ref	Part No.	Description	Qty.
1	962966	Screw, Socket Hd. Cap	6
2	980650	Washer, Lock	6
3	56922A	Retainer, Bearing	1
4	902606	Bearing, Ball	3
5	58520A	Spacer, Sleeve	1
6	53539A	Endshield	1
7	962794	Screw 10-24" x 1"	6
8	54858A	Cover, Housing	1
9	902736	Bearing	1
10	58314A	Retainer	1
11	442473	Coupling	1
12	58313A	Gear, Pinion	1
13	902737	Bearing, Needle	6
14	N/A	Cage	1
15	54408A	Gear, Idler	3
16	58312A	Shaft	3
17	902573	Bearing, Ball	1
18	54856A	Housing, Drive	1
19	63602A	Gearbox Asm., Complete	(1)

# ALTO® Genuine Brushes and Accessories for Polishers

Accessories	FM-2300	FM-2000 C-2000	FM-1700	FM-1500	FM-13	C-1800 MP-18	C-1600 SANDER16	C-20DS
Polishing Brush	490912	480916	460908	450914	410903	410974	410953	480916
Dry Carpet (Capture) Brush		11406A	11406A			11405A		
Abrasive Coated Tynex		51446A	51444A	51442A		51445A	51443A	
Steel Wire Brush	490916	480924	460918	450916	510911	410984	410963	
Polypropylene Scrub Brush	51708A	51707A	51705A	51703A	51702A	51706A	51704A	
Nylon Brush (Carpet)			51499A	51497A	51496A	51701A	51498A	
High Speed Pad Driver Assembly		17518A				53153A	53154A	17518A
Sanding Disk 2" Center Assembly		480206	460215	450214		460215	460215	
Grinding Disk Assembly			500212	450212		500212	450212	
Replacement Stones			451212	451212		451212	451212	
Perma Grip Drive Pad Assembly	53155A	53156A	53158A	53160A	66101A	53157A	53159A	
Super Grip Drive Pad Assembly	53151A	37011A	37008A	53152A	37006A	37009A	37007A	
Solution Tank Assembly	508641	508641	508641	508641	418609	508641	508641	508641
Vantage Line Solution Tank Assembly	58928A	58928A	58928A	58928A		58928A	58928A	58928A
Spray Buff Attachment	440570	440570	440570	440570		440570	440570	440570

NOTE: Drive plates are included.

Machines larger than 17" are not recommended for carpet shampooing.  
Sanding disc paper available on request.