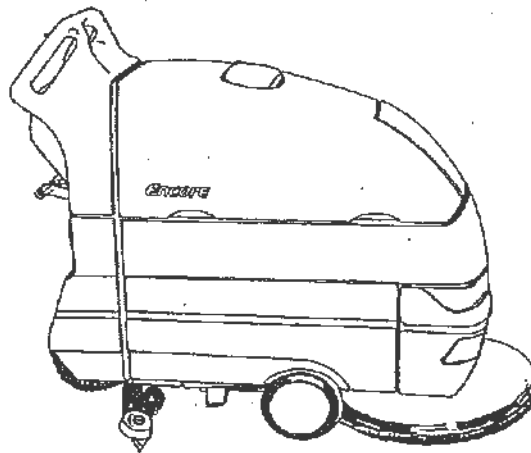


# ALTO<sup>®</sup>

CLARKE  
TECHNOLOGY

Operator's  
Manual



ENCORE  
S20/L20

## 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 operator(s) cannot read English, have this manual explained fully before attempting to operate this machine.

Si Ud. o sus operadores no pueden leer el Inglés, se hagan explicar este manual completamente antes de tratar el manejo o servicio de esta máquina.

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.

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## Accessories

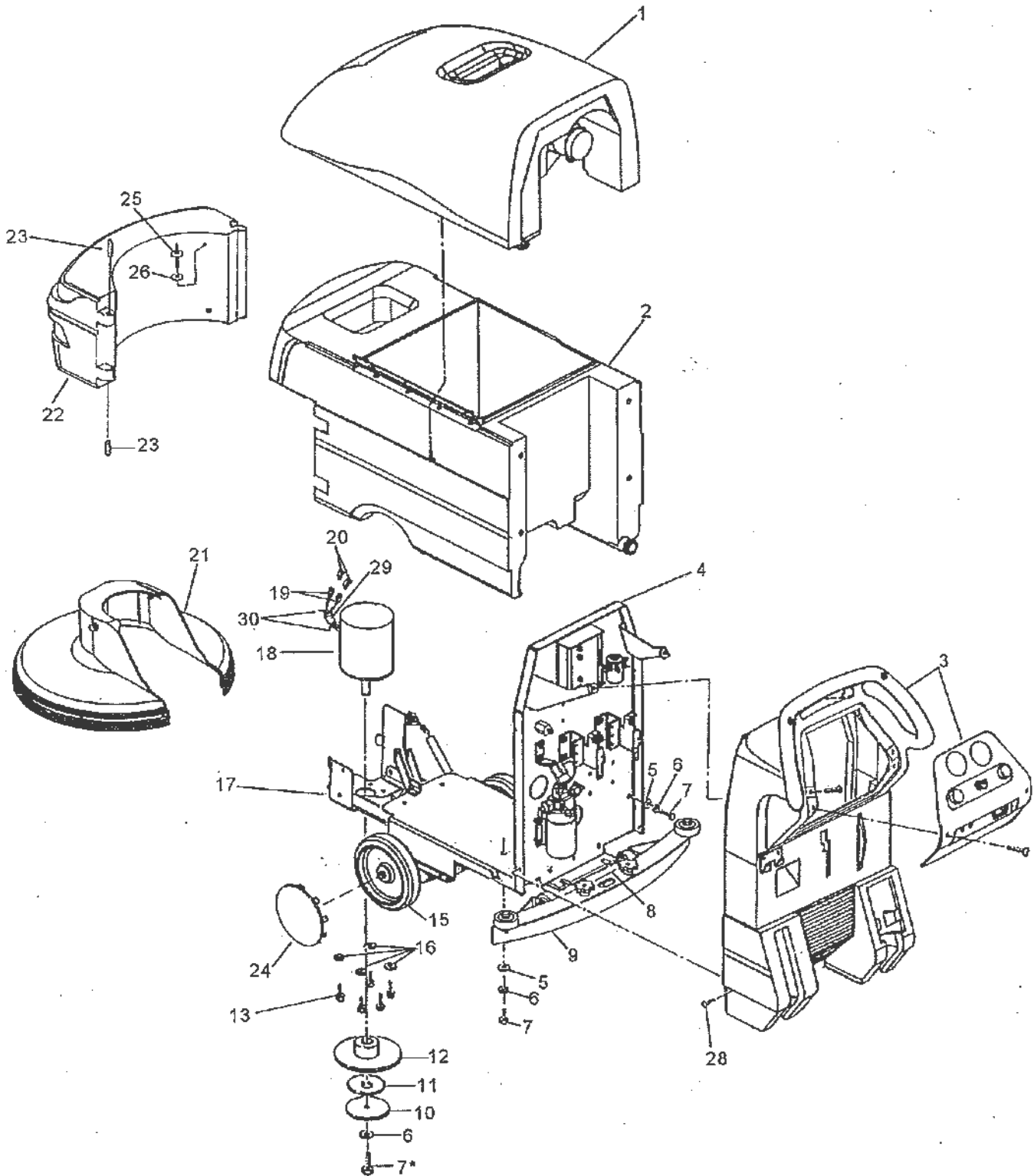
### ACCESSORIES

<u>Description</u>	<u>Part No.</u>
Pad Driver, Dual Direction	51453D
Base	57370A
Retainer	57369A
Pad/Brush Clutch Plate Metal	66649A
Spacer (for Clutch Plate 66649A)	58531A
Dual Direction Clutch Plate	30034A
Spacer (for Clutch Plate 30034A)	58530A
Clutch Plate Screws	962819
Clutch Plate Nuts	80084A
Grit Brush Dual Direction	51450D
Poly Brush Dual Direction	51447D
Clean Grit Dual Direction	51474D
Nylon Brush .016 Dual Direction	51482D
Grit-Lite Dual Direction	51484B
Kit, Conversion from metal to Dual Direction Clutch Plate	10055A
Power Wand Kit	10662A
ESP Recycle System Kit	10663A
Clarke Care Kit	14607A
Hour Meter Kit	10656A
29" Squeegee Kit	18820A
32" Squeegee Kit	10129A
Polydur, Protectant	50478A
Kit, Grease Gun	55420A
Kit, Low Voltage Cut-off 24 Volt	14097A
Brush Meter Option	10667A
Electronic Solution Module	10669A
Brake Option	10635A

### Pads by Case

<u>Color</u>	<u>2000</u>
Yellow	979199
White	976067
Red	976068
Green	976169
Blue	976069
Brown	976070
Black	976170
Ultra H.S.	979206

CLARKE TECHNOLOGY  
Encore S20 / L20  
Final Assembly Drawing 4/03



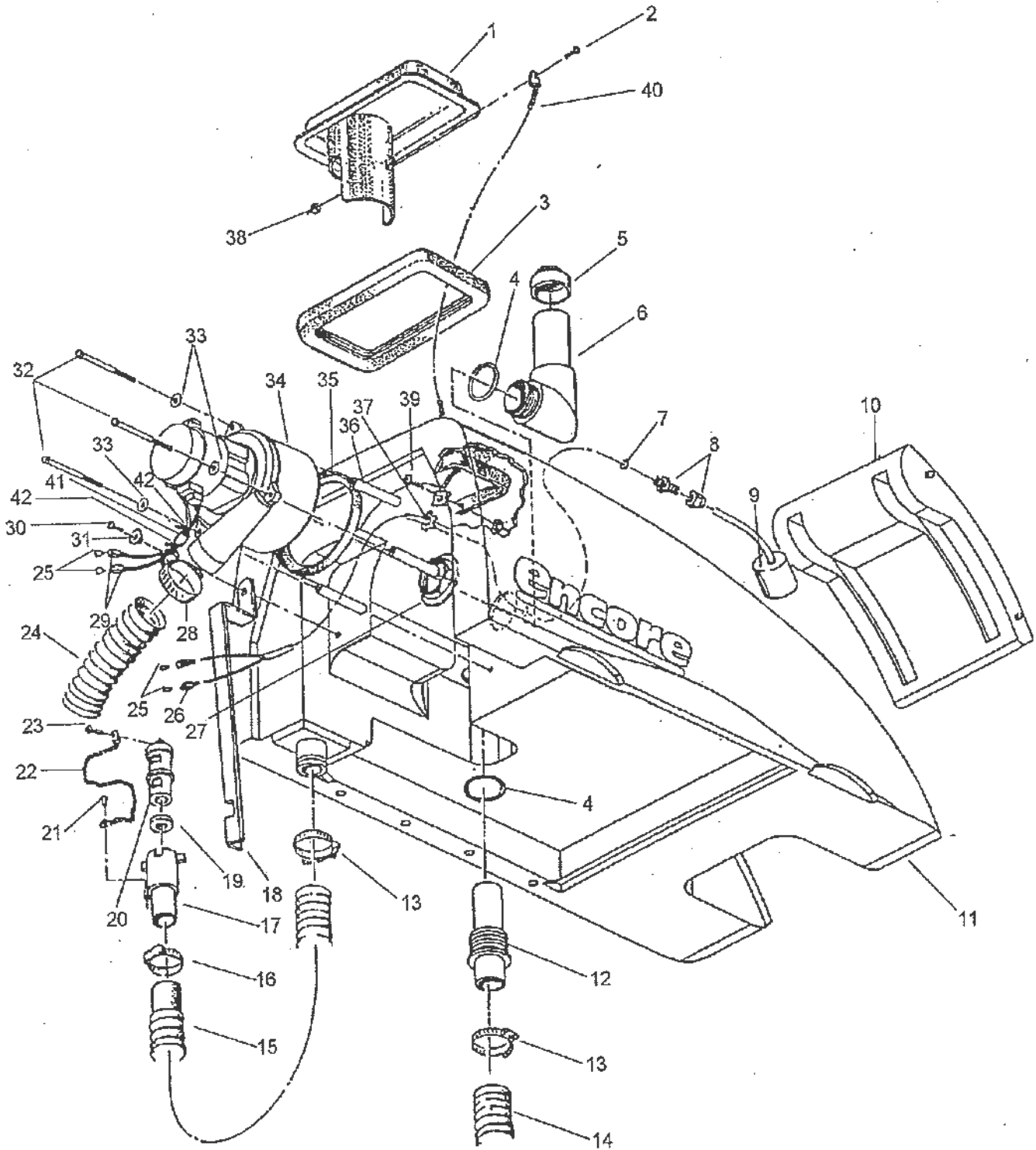
\* Recommended 12 ft. lbs torque, also apply blue loctite.

CLARKE TECHNOLOGY  
Encore S20 / L20  
Final Assembly Parts List 4/03

Ref #	Part No.	Description	Qty. L20	Qty. S20
1	See Pg 30	Tank Asm., Recovery	Ref.	Ref.
2	See Pg 32	Tank Asm., Solution	Ref.	Ref.
3	See Pg 58,66	Cover Asm., Electrical	Ref.	Ref.
4	See Pg 57,65	Panel Asm., Rear	Ref.	Ref.
5	980651	Washer, Flat, $\frac{5}{16}$	8	8
6	980652	Washer, Lock, $\frac{5}{16}$	9	9
7	85811A	Screw, $\frac{5}{16}$ -18 x $\frac{3}{4}$	9	9
8	See Pg 34	Lift Asm., Squeegee	Ref.	Ref.
9	See Pg 35,36	Squeegee Asm.	Ref.	Ref.
10	980210	Washer, Impeller	1	1
11	980679	Washer, Spacer, $\frac{3}{16}$ x $1\frac{1}{2}$ x $\frac{1}{8}$	1	1
12	20308A	Adaptor, Motor	1	1
13	85727A	Screw, $\frac{3}{8}$ -16 x 1.0	4	4
15	See Pg 37	Transaxle Asm.	Ref.	-
	See Pg 38	Axle Asm.	-	Ref.
16	980638	Washer, Lock, $\frac{3}{8}$	4	4
17	See Pg 39	Lift Asm., Brush	Ref.	Ref.
18	44809B	Motor, Brush	1	1
19	41601A	Connector	2	2
20	41602A	Housing, Connector	2	2
21	See Pg 40	Housing Asm., Brush	Ref.	Ref.
22	32403B	Cover, Front	1	1
23	36902A	Pins, Nylon	2	2
24	34711B	Hub Cap	2	2
25	80246A	Rivet, Plastic Anchor	1	1
26	80245A	Washer, Nylon	1	1
27	699202	Wire Tie	2	2
28	85518A	Screw	6	6
29	47202A	Suppressor	1	1
Ni	See Pg 25,26	Brush or Pad Drivers	1	1
Ni	41211A	Cable Asm., Battery	1	1
Ni	41206A	Cable Series	1	1
Ni	38720A	Spacer, Battery Front	1	1
Ni	38721A	Spacer, Battery Side	1	1

NOTE: For battery placement and connections see page 8.

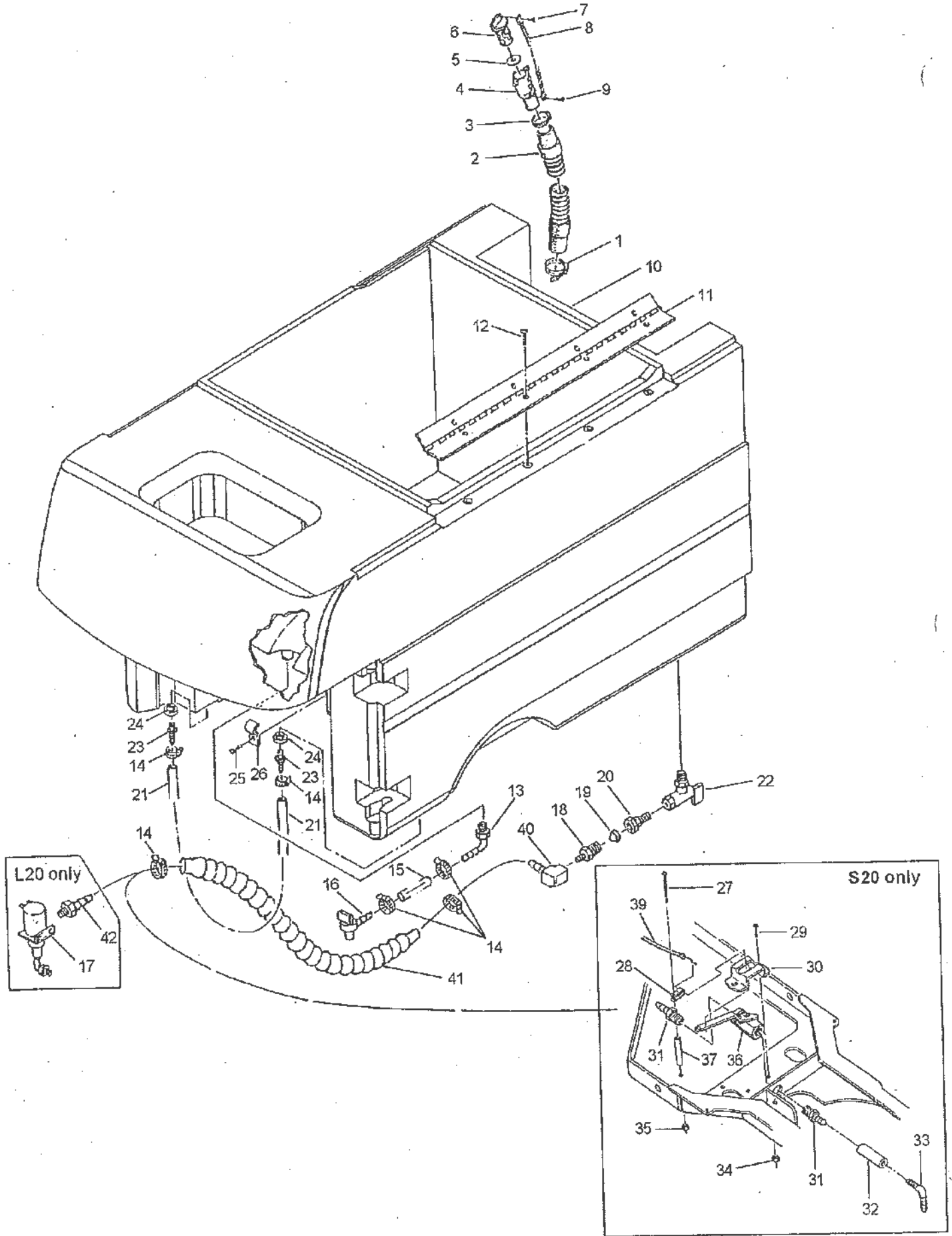
CLARKE TECHNOLOGY  
Encore S20/L20  
Recovery Tank Assembly Drawing 7/02



**CLARKE TECHNOLOGY**  
**Encore S20/L20**  
**Recovery Tank Assembly Parts List 7/02**  
**Drawing #18114A**

Ref #	Part No.	Description	Qty.
1	36209A	Lid	1
2	962798	Screw, 10-24 x 1/2 Pan	1
3	34256A	Gasket, Lid	1
4	837304	O-Ring	2
5	58069A	Strainer	1
6	39336B	Tube, Stand	1
7	59877A	Seal, Washer	1
8	56459A	Relief, Strain	1
9	10660A	Switch, Float Kit (includes #s 7,25,26)	1
10	32401B	Lid, Fill, Solution	1
11	30266A	Tank, Recovery	1
12	30132A	Tube, Stand	1
13	752020	Clamp, Hose	2
14	824103	Hose, Squeegee	1
15	30443A	Hose, Drain	1
16	832002	Clamp	1
17	839401	Valve, Drain	1
18	65503A	Latch, Recovery	1
19	833407	Gasket, Drain	1
20	833901	Drain Valve Handle	1
21	962943	Screw, 8-18 x 1/2 PN	1
22	52206A	Chain	1
23	962987	Screw, 10-24 x 3/8 Pan	1
24	674110	Hose	1
25	41809A	Contact	4
26	43402A	Housing, Connector	2
27	920797	Nut	1
28	872010	Clamp, Hose	1
29	43401A	Housing, Vac Motor Connector	2
30	962986	Screw, 5/16-18 x 3/4	1
31	87621A	Washer, Shoulder Nylon	1
32	85728A	Screw, 1/4-20 x 4 Hex	3
33	87026A	Washer, Flat, 1/4	3
34	44917A	Motor, Vac	1
35	643418	Gasket	1
36	58533A	Spacer	3
37	82100A	Nut, Lock	1
38	81110A	Nut, 10-24 ESNA	1
39	85519A	Screw	1
40	692409	Chain, Cover	1
41	47202A	Suppressor	1
42	699202	Wire Tie	2
NI	839410	Valve Asm. (includes Item#17,19, 20, 21, 22)	1

CLARKE TECHNOLOGY Encore S20/L20  
Solution Tank Assembly Drawing 7/02

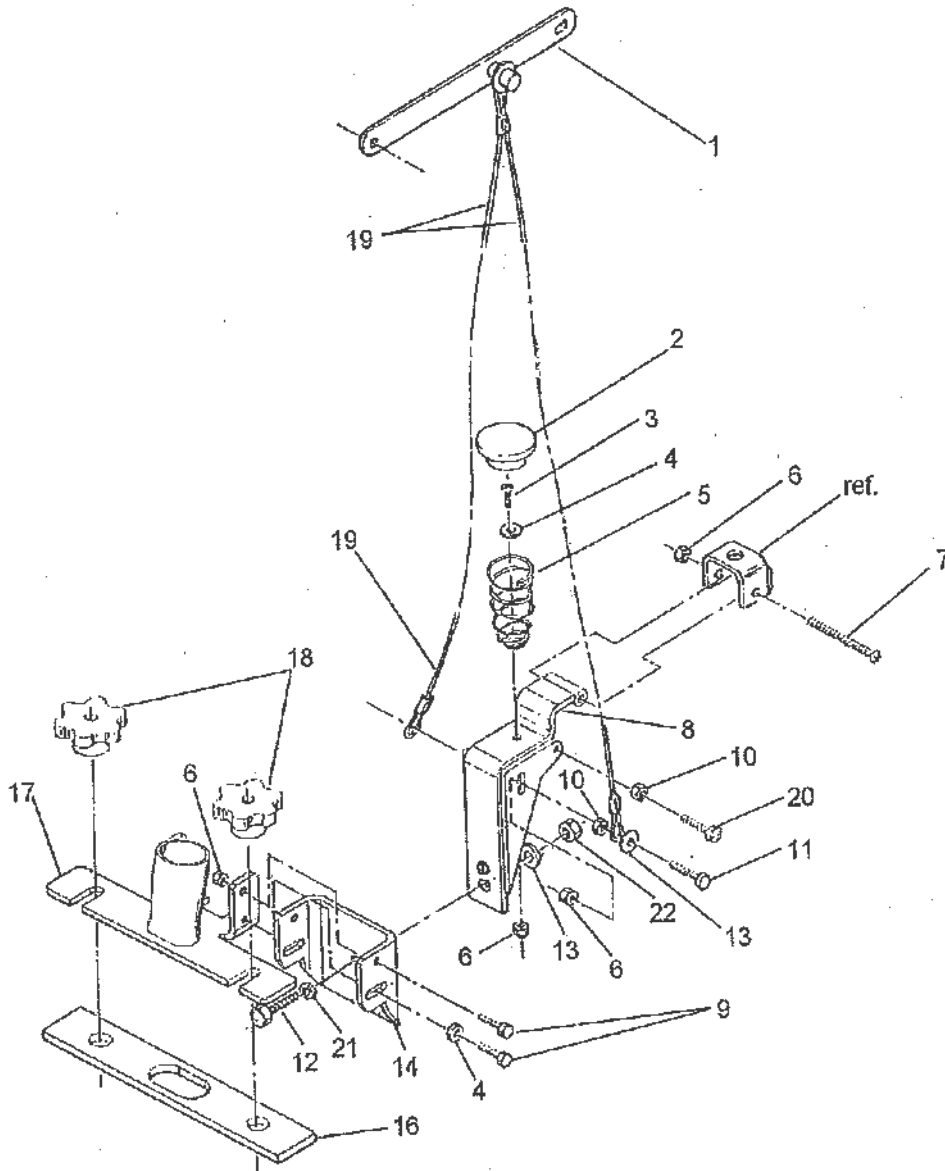




CLARKE TECHNOLOGY  
Encore S20/L20  
Solution Tank Assembly Parts List 7/02

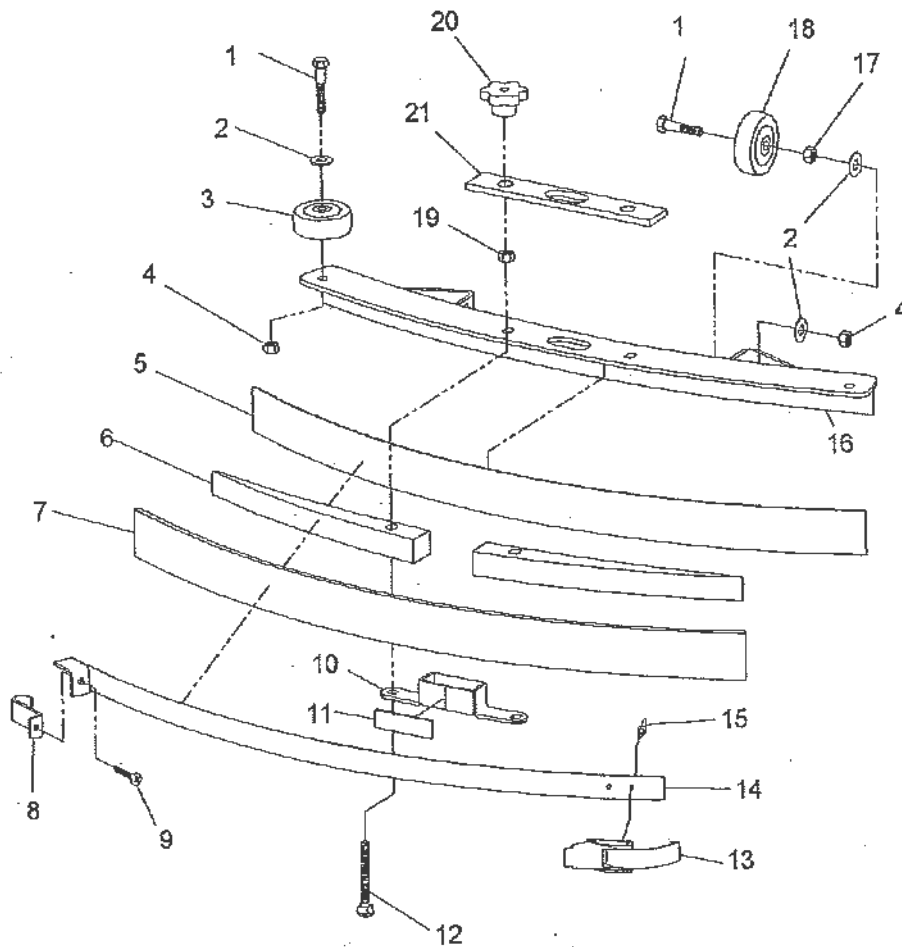
Ref #	Part No.	Description	L20	S20
1	752020	Clamp	1	1
2	30442A	Hose, Drain	1	1
3	832002	Clamp	1	1
4	839401	Valve, Drain	1	1
5	833407	Gasket, Drain	1	1
6	833901	Drain Valve Handle	1	1
7	962987	Screw, 10-24 x 3/8	1	1
8	52206A	Chain	1	1
9	962943	Screw, 8-18 x 1/2 PN	1	1
10	30265A	Tank, Solution	1	1
11	64517A	Hinge, Solution/Recovery	1	1
12	85398A	Screw, 1/4-20 x 5/8	4	4
13	55162A	Hosebarb	1	1
14	50248A	Clamp, Hose	6	6
15	39335A	Hose, 17'	1	1
16	59612A	Valve, Drain, Battery	1	1
17	59610A	Valve, Flow, Electric	1	-
18	30131A	Adaptor, Hose	1	-
19	838517	Filter, Screen	1	1
20	51205A	Adapter, Swivel, 3/8 NPT to GHT	1	1
21	30172A	Hose, Braided, .375 ID x 16 1/2"	1	1
22	51204A	Valve, Solution, Shut-Off	1	1
23	52414A	Connector Straight Hose/Tank	2	2
24	51518A	Bushing	2	2
25	84237A	Screw, 10-32 x 1/2	1	1
26	782002	Clamp	1	1
27	85702A	Screw, 1/4-20 x 1 3/4	-	1
28	832102	Clamp	-	1
29	962798	Screw 10-24-1/2	-	2
30	820823	Bracket	-	1
31	53618A	3/8 x 3/8 NPT Hosebarb	-	2
32	39337A	Hose 2 1/2"	-	1
33	53607A	Hosebarb, Elbow	-	1
34	81110A	Nut, 10-24	-	2
35	81104A	Nut, 1/4-20 ESNA	-	1
36	849401	Valve	-	1
37	678215	Spacer	-	1
38	53619A	3/8 x 1/4 NPT Hosebarb	1	-
39	11703A	Solution Cable	-	ref.
40	53617A	Elbow, 3/8 x 1/4 NPT Hosebarb	1	1
41	35138A	Hose, Solution	1	1
NI	839410	Valve Asm. (includes Item #4, 5, 6, 8, 9)	-	-
NI	39332A	Bulk 100 ft. of hose per P/N 39335A and 39337A	-	-
NI	50389A	Plunger	-	-
NI	50390A	Spring	-	-
NI	50391A	Diaphragm	-	-

CLARKE TECHNOLOGY Encore S20/L20  
Squeegee Lift Assembly Drawing and Parts List 6/01  
Drawing # 18814A



Ref #	Part No.	Description	Qty.
1	ref.21,pg56,65	Handle	-
2	30517A	Bushing	1
3	85600A	Screw, 1/4-20 x 3/4	1
4	87026A	Washer, 1/4, SS	3
5	50034A	Spring, Squeegee	1
6	81104A	Nut, Nylock, 1/4	6
7	85396A	Screw, 1/4-20 x 2 SS	1
8	60225A	Swivel, Squeegee	1
9	170915	Screw, 1/4-20 x 3/4	4
10	920208	Nut, 1/4-20, Plated	4
11	962481	Screw, 1/4-20 x 1 1/4 Hex	2
12	85730A	Screw, 3/8-16, Hex	1
13	87031A	Washer, Flat, 3/8, SS	3
14	69860B	Pin, Bracket Weldment	1
16	34260B	Gasket, Squeegee	Ref.
17	61283A	Bracket, Tube	1
18	25201A	Knob, Clamping	Ref.
19	61677A	Cable, Lift, Squeegee	-
20	86408A	Screw, 1/4-20x1 Truss	2
21	980638	Lockwasher, 3/8 LT Spring Type	1
22	81111A	Nut, 3/8-16 ESNA	1

**CLARKE TECHNOLOGY Encore S20/L20**  
**Squeegee Assembly Drawing and Parts List 5/99**  
**29" Asm. - 18820A (Optional)**  
**33" Asm. - 18821A**



Ref #	Part No.	Description	29"	33"
1	962522	Screw, 3/8-16 x 2" Hex	4	4
2	980687	Washer, 15/32 I.D. x 15/16 O.D.	6	6
3	59950A	Wheel, Guide	2	2
4	81111A	Nut, 3/8-16 ESNA	4	4
5	30950A	Blade, Ribbed, Urethane	-	1
	30951A	Blade, Ribbed, Urethane	1	-
6	38713A	Spacer, 29"	2	-
	38719A	Spacer, 33"	-	2
7	30931A	Blade, Rubber, Outer	1	-
	30946A	Blade, Rubber, Outer	-	1
8	62421A	Clamp, End	1	1
9	86004A	Screw, 1/4-20 x 1 1/2 Hex	1	1
10	62712A	Duct, Squeegee Inlet	1	1
11	37016A	Pad, Squeegee Grip	1	1
12	80011A	Screw, 3/8-16 x 3 CR S.S.	2	2
13	55722A	Latch, Squeegee Strap	1	1
14	62442A	Clamp, Squeegee 29"	1	-
	62445A	Clamp, Squeegee 33"	-	1
15	170932	Rivet, Pop 3.16 S.S. 1/8"	2	2
16	69059A	Squeegee Weldment 29"	1	-
	69672A	Squeegee Weldment 33"	-	1
17	81207A	Nut, 3/8-16 S.S.	2	2
18	419702	Wheel	2	2
19	81301A	Nut, 3/8-16 Jam S. S.	2	2
20	25201A	Knob	Ref	Ref
21	34260B	Gasket	Ref	Ref

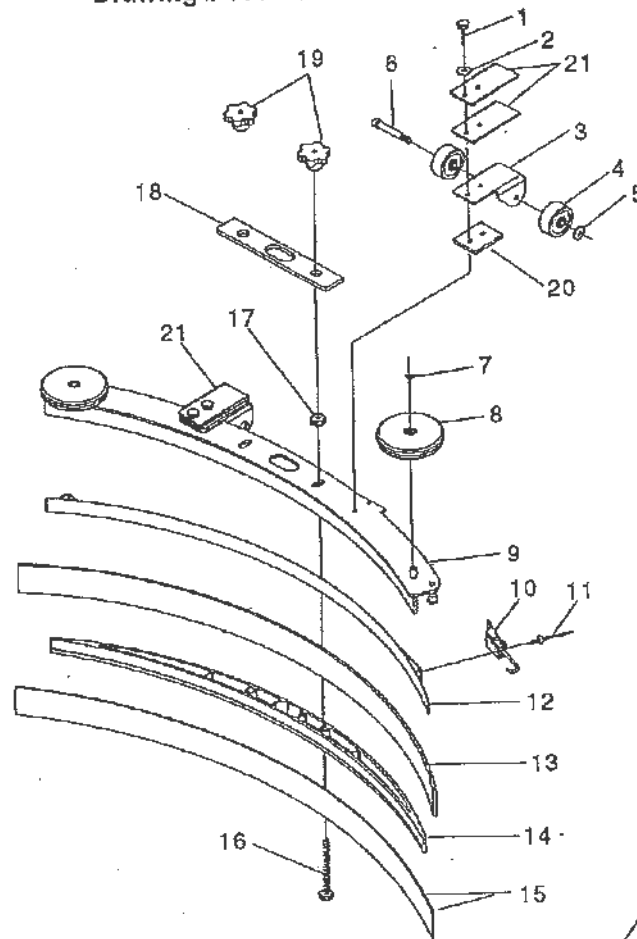
**Optional:**

- NI 30938A Nitrile 29" Outer Blade
- NI 30949A Nitrile 33" Outer Blade
- NI 30930A Rubber 29" Inner Blade
- NI 30947A Rubber 33" Inner Blade

**NOTE:**

When changing blades loosen nuts #19. Clamp blades on squeegee. Retighten #19 nuts. This will allow spacer #6 to readjust to different blade thickness.

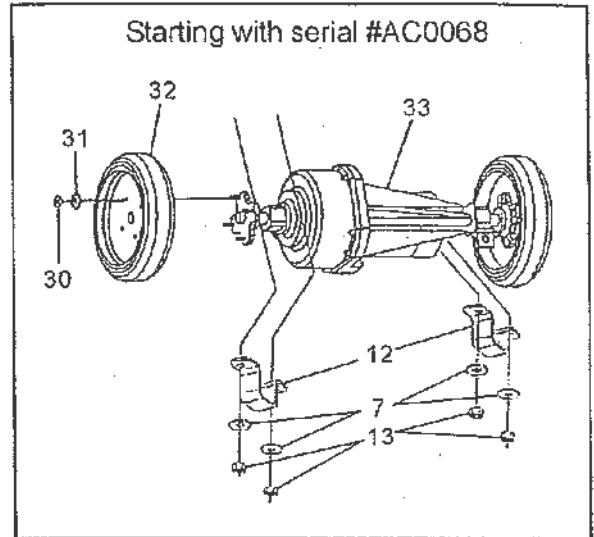
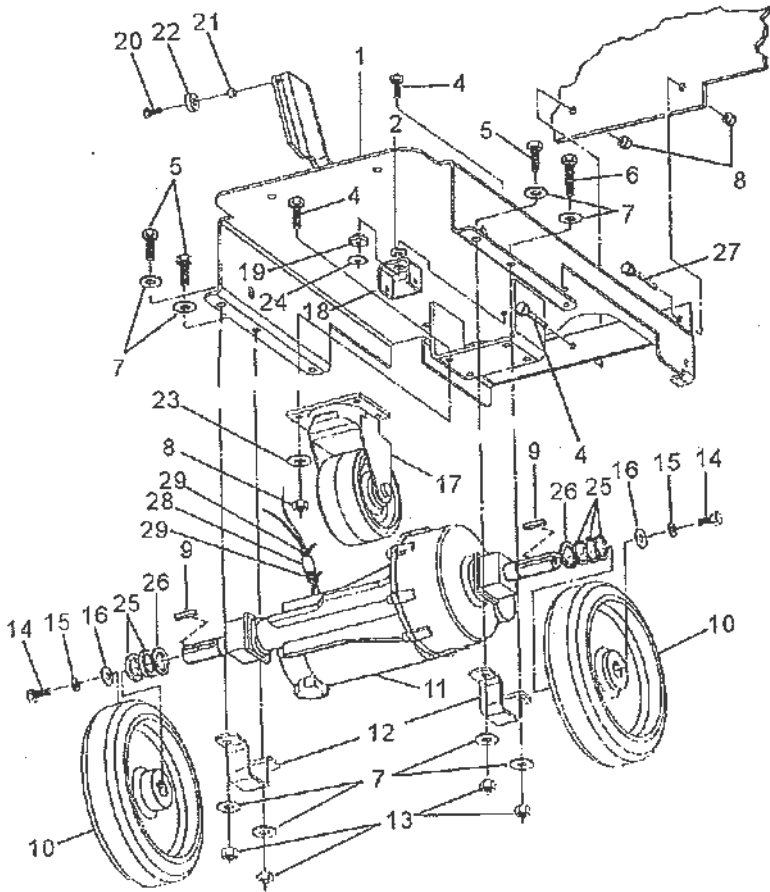
Clarke®  
 Encore S20/L20  
 Squeegee Assembly Drawing 7/03  
 Drawing # 10068A and 10129A



Ref. #	Part No.	Description		
			10068A	10129A
			39"	32"
			Qty	Qty
1◆	80252A	Screw, 1/4-20 x 1 Hex SS	-	4
◆	80253A	Screw, 1/4-20 x 1 1/2 Hex SS	4	-
2	980657	Washer, 1/4 Lock	4	4
3	60243A	Bracket, Squeegee Wheel	2	2
4	30049B	Wheel, Squeegee	4	4
5	81104A	Nut, 1/4-20	2	2
6	60254A	Bolt, Shoulder 5/16 x 2 1/4	2	2
7	50958A	Ring, 3/8 ID Snap	2	2
8	30048A	Wheel, Guide, 4 Inch Diameter	2	2
9	60272A	Channel, Squeegee Weldment 39"	1	-
	60234A	Channel, Squeegee Weldment 32"	-	1
10	50835A	Latch, Squeegee Clamp	1	1
11	930086	Rivet, 3/16 x .450 Aluminum	2	2
12	60252A	Strap, Clamp, Squeegee Retainer 39"	1	-
	60232A	Strap, Clamp, Squeegee Retainer 32"	-	1
13	30069A	Blade, Rear, Gum Rubber, 39"	1	-
	30067A	Blade, Rear, Gum Rubber, 32"	-	1
14	30058A	Spacer, Squeegee 39"	1	-
	30047A	Spacer, Squeegee 32"	-	1
15	30091A	Blade, Front Ribbed 39"	1	-
	30066A	Blade, Front Ribbed 32"	-	1
16	80011A	Screw, 3/8-16 x 3	2	2
17	81301A	Nut, 3/8-16 Jam SS	2	2
18	34260B	Gasket	1	1
19	25201A	Knob	2	2
20	60358A	Shim, Squeegee Wheel	2	2
21◆	61370A	Weight	8	4

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

**CLARKE TECHNOLOGY Encore L20**  
**Frame Transaxle Assembly Drawing and Parts List 2/03**



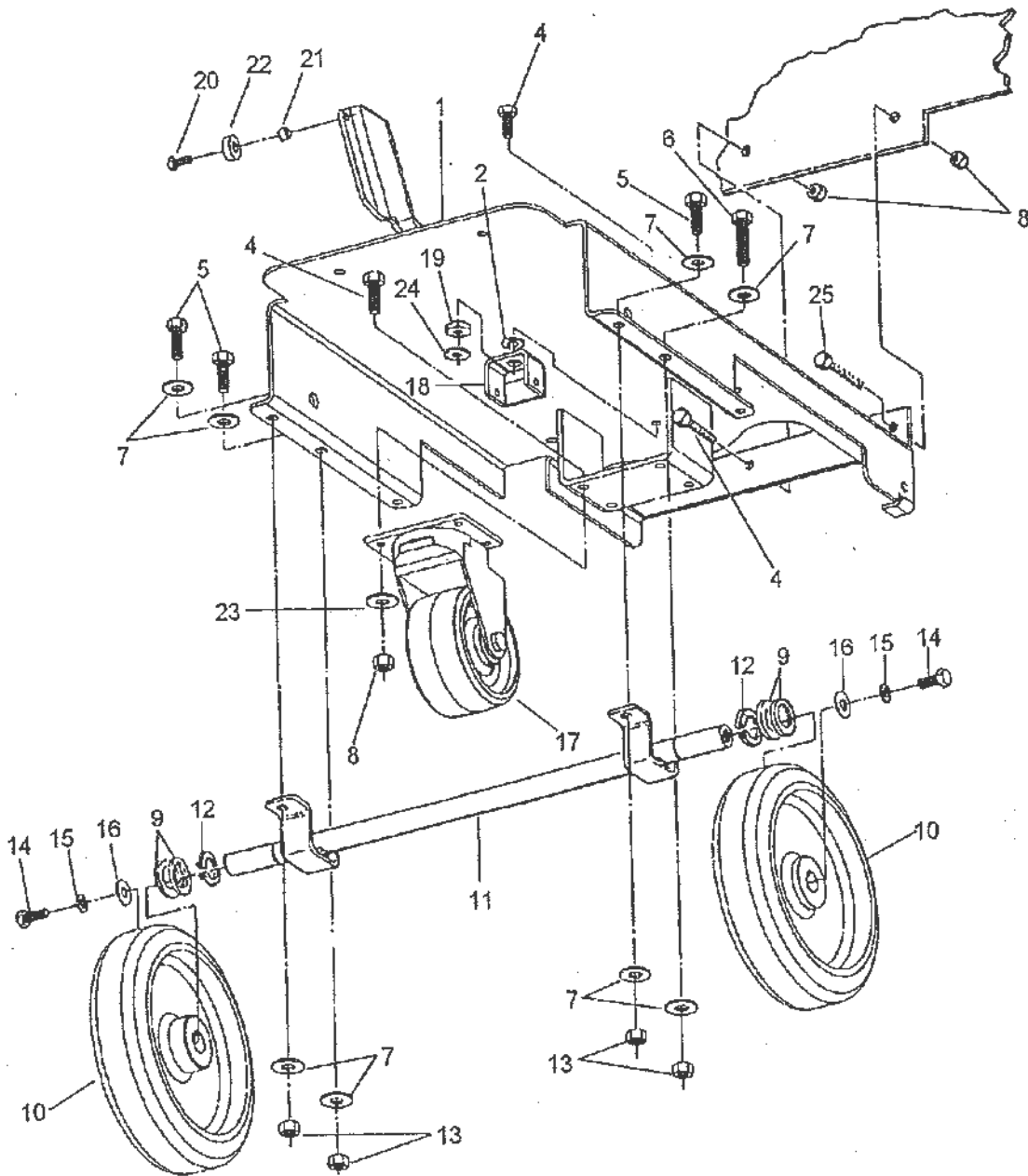
Ref #	Part No.	Description	Qty.
1	63431A	Frame	1
2	87607A	Washer, Nylon	1
4	85811A	Screw, $\frac{5}{16}$ -18 x $\frac{3}{4}$	7
5	85727A	Screw, $\frac{3}{8}$ -16 x 1	3
6	85836A	Screw, $\frac{3}{8}$ -16 x 2	1
7	87031A	Washer, Flat, $\frac{3}{8}$ , SS	8
8	920110	Nut, $\frac{5}{16}$ -18 ESNA	7
9	915044	Key, $\frac{3}{16}$ x $\frac{3}{16}$ x 1	2
10	69204B	Wheel, Traverse (Grooved)	2
	69204A	Wheel, Traverse (Smooth)opt.	2
11*	10380A	Transaxle (incl 30, 31, 32, 33)	1
12	62435A	Clamp, Transaxle	2
13	81105A	Nut, $\frac{3}{8}$ -16 ESNA	4
14	962620	Screw, Hex, $\frac{5}{16}$ -24 x $\frac{3}{4}$	2
15	980652	Washer, Lock, $\frac{5}{16}$	2
16	980205	Washer	2

Ref #	Part No.	Description	Qty.
17	61675A	Caster	1
18	61252A	Bracket, Squeegee	1
19	61433A	Nut, Spacer	1
20	85391A	Screw, $\frac{1}{4}$ -20 x $\frac{5}{8}$	1
21	608210	Spacer, Bolt	1
22	51516A	Bushing	1
23	980651	Washer, Flat, Plated, $\frac{5}{16}$	4
24	81112A	Nut, $\frac{5}{16}$ ESNA Thin SS	1
25	87616A	Washer	5
26	57423A	Ring, Retainer	2
27	85814A	Screw, $\frac{5}{16}$ -18 x $1\frac{1}{4}$	1
28	47202A	Suppressor	1
29	699202	Wire Tie	2
30	81217A	Nut, $\frac{1}{4}$ -20 S.S. Thin	8
31	87026A	Washer, Flat $\frac{1}{4}$ S.S.	8
32	30071A	Wheel Assembly	2
33	52827A	Transaxle (after serial #AC0068)	1

NOTE: \*69165A Transaxle Assembly has been cross-referenced to 10380A but service parts are still available

Transaxle P/N			
Qty	Description	*69165A	52827A
1	Motor, Transaxle	45044A	40579A
1	Coupler, Motor Drive	52660A	50983A
1	Gear Box and Assembly	69189A	40577A
1	Brush Asm., Comm End	52940A	40578A
2	Sleeve, Elastomeric	51202A	51056A
2	Flange, Wheel Kit		10135A

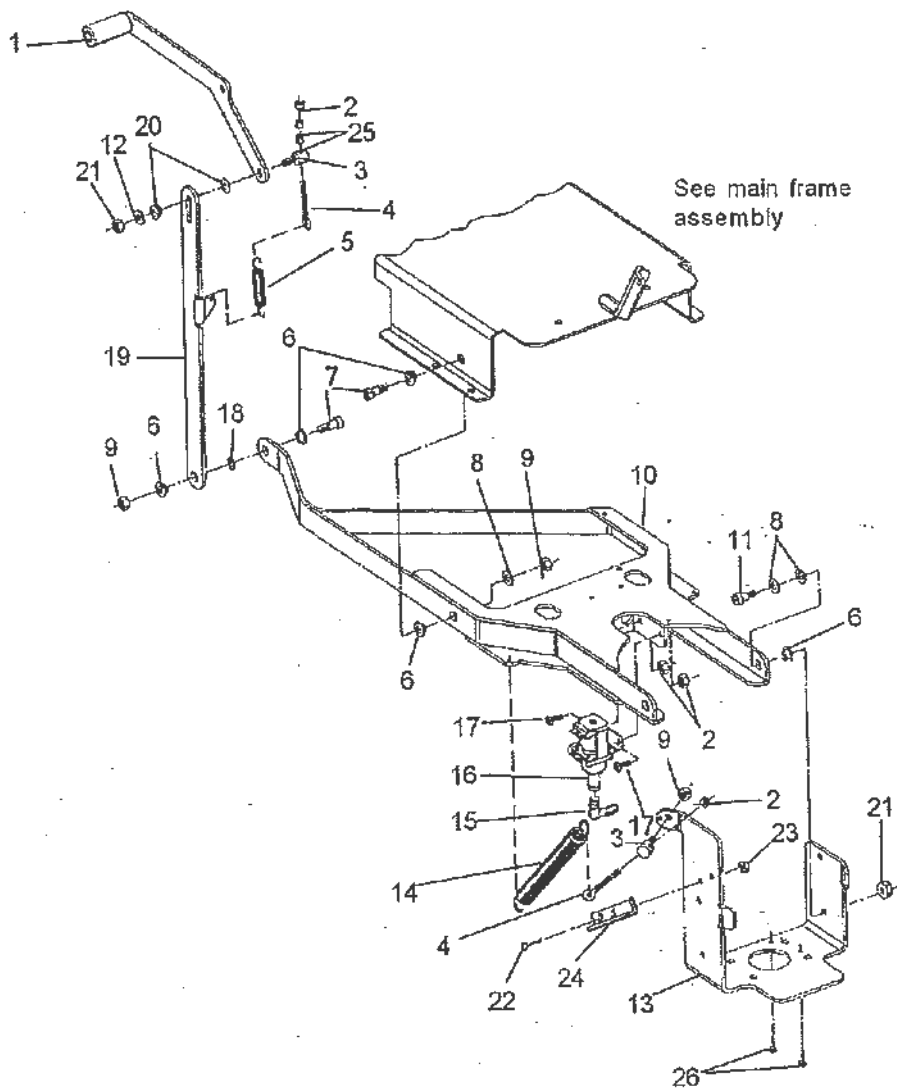
**CLARKE TECHNOLOGY**  
**Encore S20**  
**Frame Assembly Drawing and Parts List 4/02**



Ref #	Part No.	Description	Qty.
1	63431A	Frame Weldment	1
2	87607A	Washer, Nylon	1
4	85811A	Screw, $\frac{5}{16}$ -18 x $\frac{3}{4}$	7
5	85727A	Screw, $\frac{3}{8}$ -16 x 1	3
6	85836A	Screw, $\frac{3}{8}$ -16 x 2	1
7	87031A	Washer, Flat, $\frac{3}{8}$ , SS	8
8	920110	Nut, $\frac{5}{16}$ -18 ESNA	7
9	87616A	Washer	4
10	69205A	Wheel, Non-Traverse	2
11	60535A	Axle, Non-Traverse	1
12	57423A	Ring, Retainer	2

Ref #	Part No.	Description	Qty.
13	81105A	Nut, $\frac{3}{8}$ -16 ESNA	4
14	962620	Screw, Hex, $\frac{5}{16}$ -24 x $\frac{3}{4}$	2
15	980652	Washer, Lock, $\frac{5}{16}$	2
16	980205	Washer	2
17	61675A	Caster	1
18	61252A	Bracket, Squeegee	1
19	61433A	Nut, Spacer	1
20	85391A	Screw, $\frac{1}{4}$ -20 x $\frac{5}{8}$	1
21	608210	Spacer, Bolt	1
22	51516A	Bushing	1
23	980651	Washer, Flat, Plated, $\frac{5}{16}$	4
24	81112A	Nut, $\frac{5}{16}$ ESNA Thin SS	1
25	85814A	Screw, $\frac{5}{16}$ -18 x $1\frac{1}{4}$	1

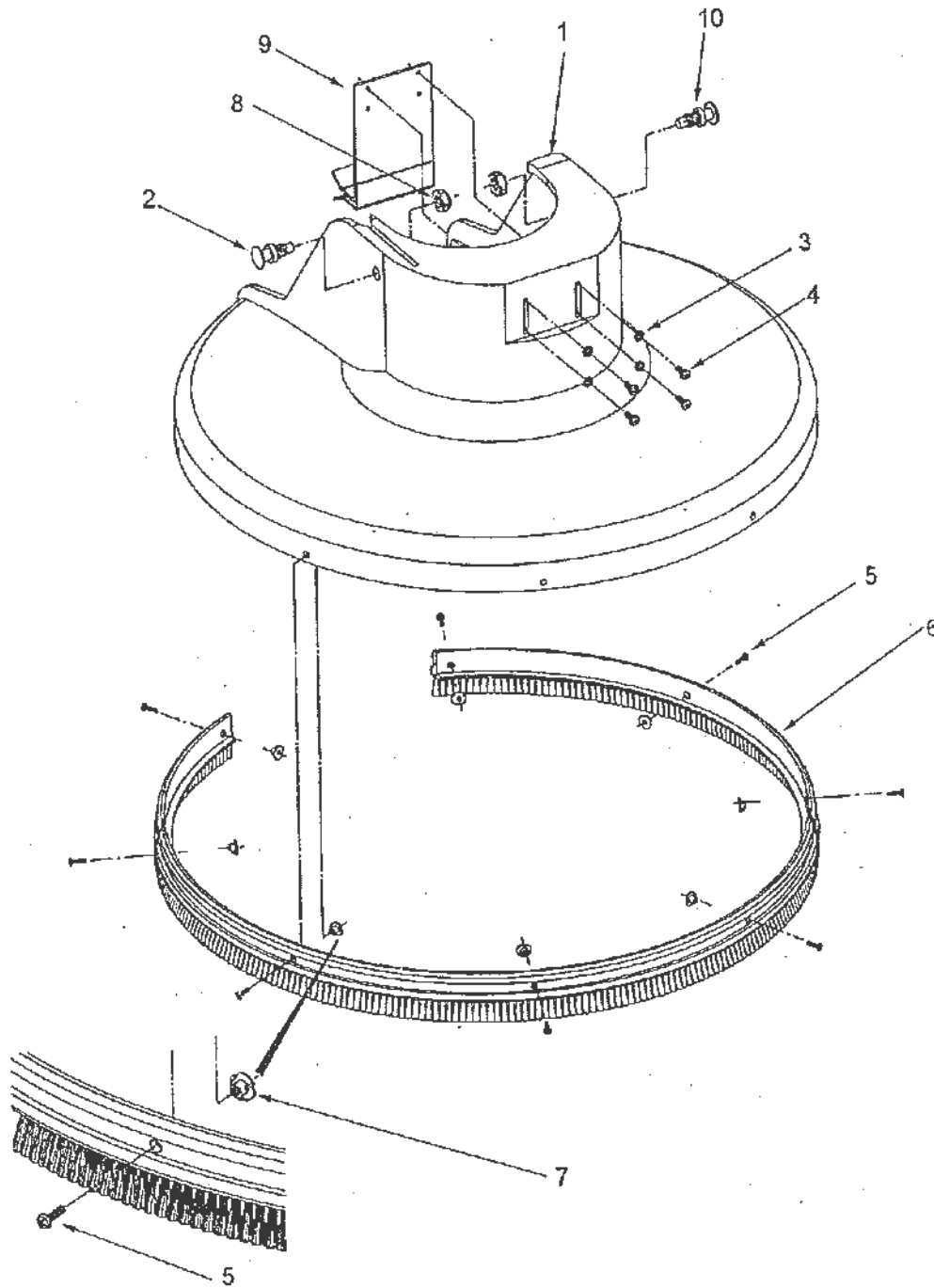
CLARKE TECHNOLOGY  
 Encore S20/L20  
 Brush Lift Assembly Drawing and Parts List 6/02  
 Drawing #11446A



Ref #	Part No.	Description	Qty.
1	ref. 37, pg 57,65	Handle, Lift, Brush	-
2	81104A	Nut, 1/4-20 ESNA	4
3	848508	Swivel, Rod, Brake	2
4	80042A	Screw, Eye, Adjustment	2
5	58691A	Spring, Pressure, Sander	1
6	87620A	Washer, Shoulder,	8
7	80041A	Bolt, Shoulder, 3/8 x 1/2	3
8	87818A	Washer	6
9	920181	Nut, 5/16, ESNA	4
10	63432A	Frame, Brush Lift	1
11	80040A	Bolt, Shoulder, 3/8 x 3/8	2
12	980692	Washer	1

Ref #	Part No.	Description	Qty.
13	89861A	Bracket, Motor, Brush	1
14	56493A	Spring	1
15	53607A	Hosebarb	1
16	59610A	Valve, Solution	Ref
17	85391A	Screw, 1/4-20 x	2
18	87619A	Washer, 375032	1
19	60207A	Link, Brush Lift	1
20	87621A	Washer, 3001	2
21	81112A	Nut, 5/16-18 Thin ESNA SS	3
22	962798	Screw 10-24 x 1/2	2
23	81110A	Nut 10-24	2
24	64239A	Plate, Deflector	1
25	608210	Spacers (optional)	
26	962554	Screw	2

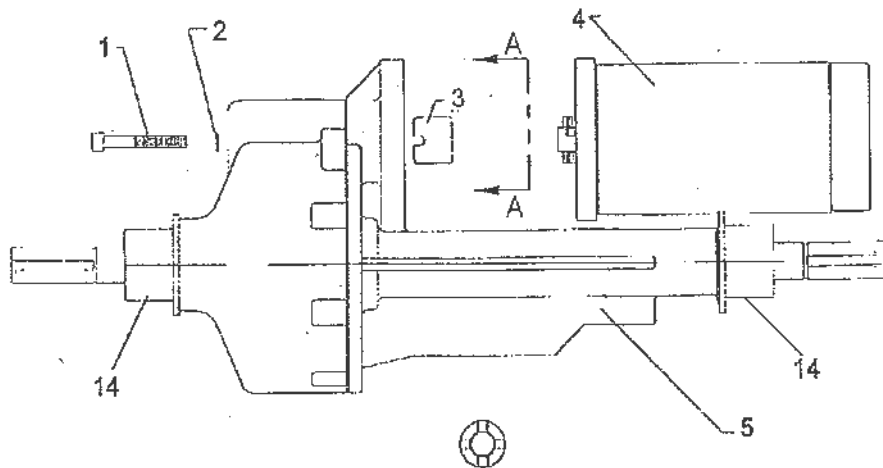
CLARKE TECHNOLOGY  
 Encore S20/L20  
 Brush Housing Assembly Drawing and Parts List 7/02  
 Drawing # 11447A



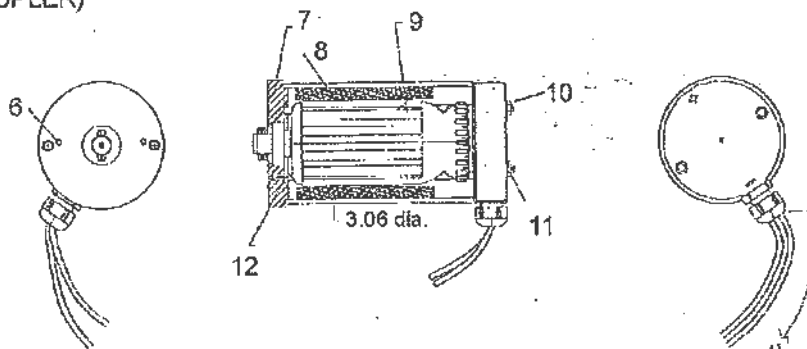
Ref #	Part No.	Description	Qty.
1	30255A	Housing, Brush (S20)	1
2	636706	Pin	1
3	980603	Washer	4
4	962798	Screw, 10-24 x 1/2	4
5	84237A	Screw, 10-32 x 1/2	8
6	38241A	Skirt, Fibers	1
7	82004A	Nut, 10-32 "T"	8
8	920278	Nut, 1/2-20 S.S. Jam	2
9	62438A	Bracket, Stop, Housing, Brush	1
10	66550A	Pin	1



CLARKE TECHNOLOGY Encore L20  
Transaxle Repair Parts 4/01



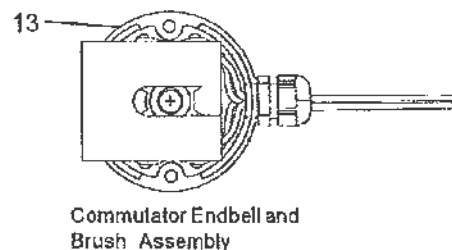
VIEW A ~ A  
(COUPLER)



Ref #	Part No.	Description	Qty.
1		Screw, 1/4-20	-
2		Washer, 1/4 Lock	-
3	52660A	Coupler	1
4	45044A	Motor	1
5	69189A	Transaxle Gearbox Assembly	1
6		Pin, Dowel	-
7		End Plate, Output	-
8		Magnet and Housing Assembly	-
9		Armature and Bearing Assembly	-
10		Washer, #10 Lock	-
11		Nut 10-32	-
12		Stud	-
13	52940A	Commutator End Bell & Brush Asm.	1
14	51202A	Mount, Bushing	2

Torque #1 80 inch pounds  
Torque #11 40-45 inch pound tooth nuts  
#12 Loctite #262

NOTE: Transaxle unit is sealed. No lubrication required

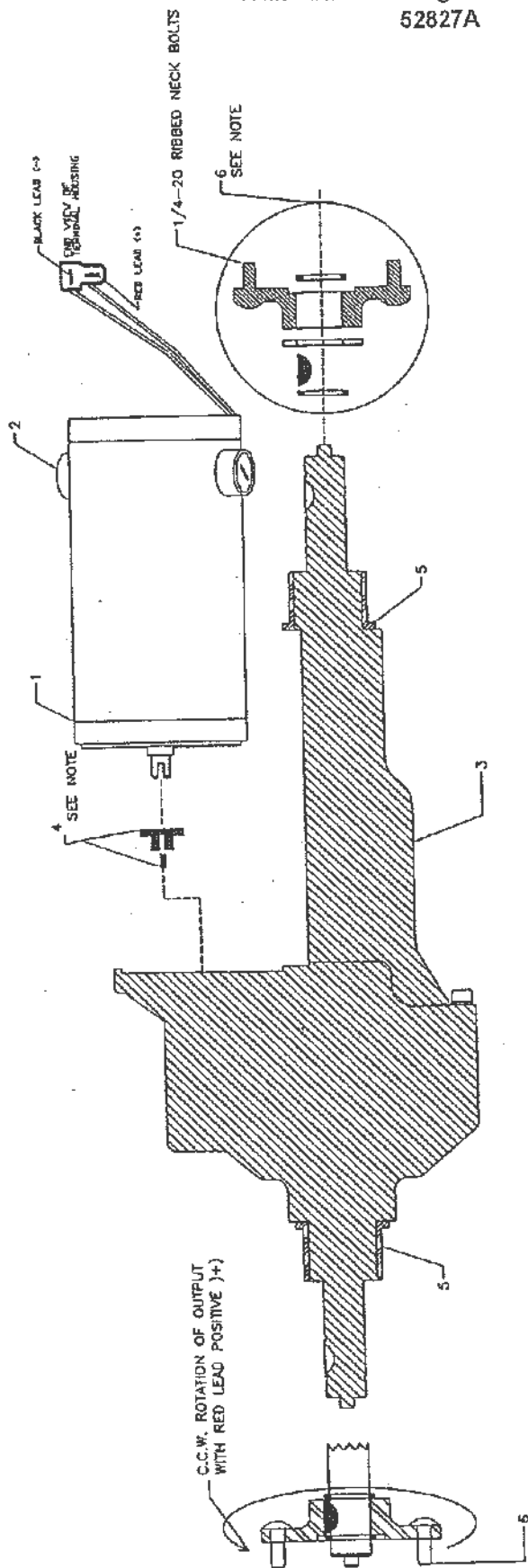


Installation Instructions:

1. With motor still fastened to transaxle gearbox, remove old endbell by backing off the two 10-32 nuts and removing the lock washers. Slide endbell off motor.
2. Assemble new commutator endbell and brush assembly by sliding it over shaft and motor studs until brush retaining clip bottoms out. Holding endbell still, slide retaining clip out from between the brushes and commutator. Push the endbell on the rest of the way until endbell casting bottoms on the motor frame. Replace the lock washers and nuts and torque the nuts 40-45 in.-lbs.

CLARKE TECHNOLOGY  
 Encore S20/L20  
 Transaxle Drawing & Parts List 2/03  
 52827A

*A/C*  
*Hydrolite*

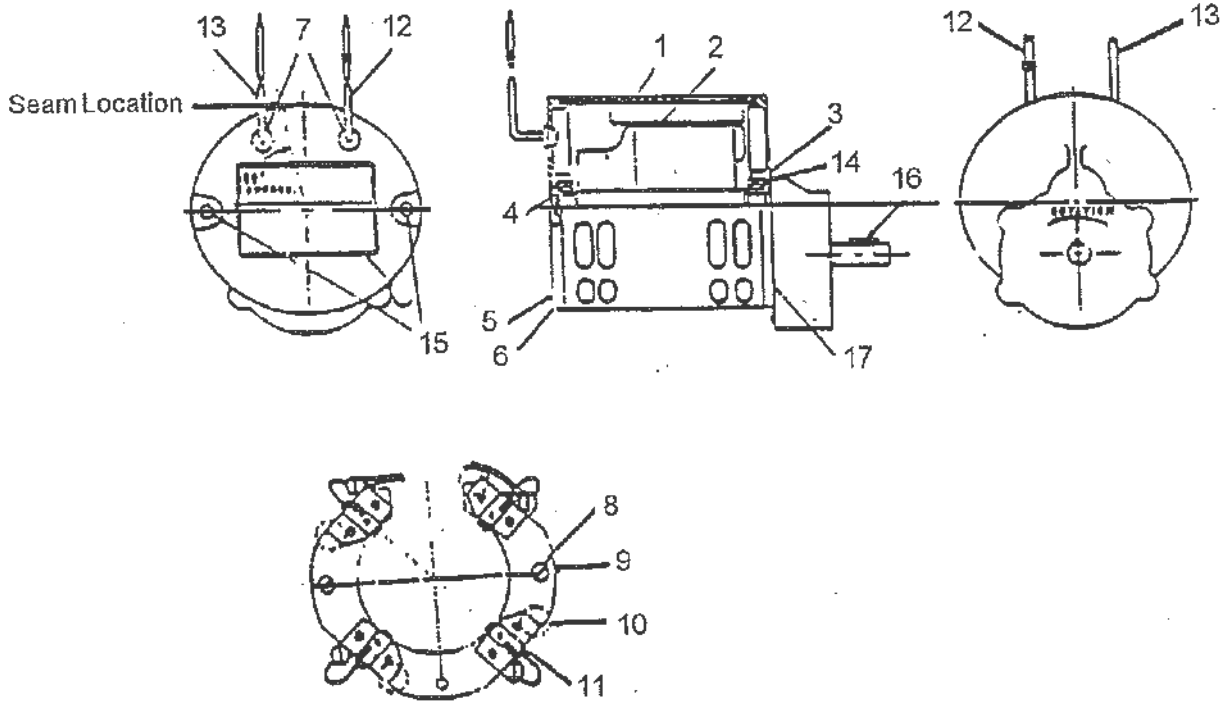


REF.	CLARKE P/N	DESCRIPTION	QTY
6	10135A	WHEEL HUB KIT	2
5	5056A	MOUNT, BUSHING	2
4	5098.3A	COUPLER, TRANSEXLE	1
3	40577A	GEARBOX ASM., TRANSEXLE	1
2	40578A	BRUSH ASM., CDM END	1
1	40579A	MOTOR, TRANSEXLE	1
REF.	CLARKE P/N	DESCRIPTION	QTY

NOTE:  
 ITEM #4 INCLUDES THE FOLLOWING PARTS:  
 (1) MOTOR COUPLER  
 (1) MOTOR KEY

ITEM #6 INCLUDES THE FOLLOWING PARTS:  
 (2) SNAP RINGS  
 (1) WOODRUFF KEY  
 (1) WHEEL FLANGE  
 (4) 1/4-20 X 1" LONG RIBBED CARRIAGE BOLTS  
 (1) 0.010" THICK SHIM

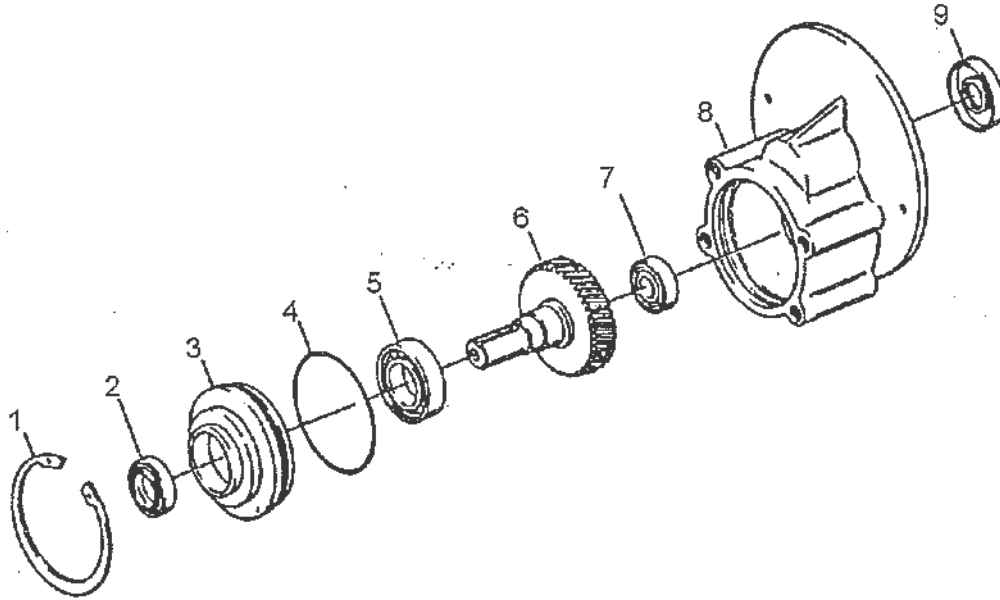
**CLARKE TECHNOLOGY**  
**Encore S20/L20**  
**Brush Motor Drawing & Parts List 4/01**  
**Motor Asm. 44809B**



Item	Part No.	Description	Qty
1	56478A	Stator Frame Assembly (w/Magnets & Clips)	1
2	50142A	Armature Assembly (w. B.E. & F.E. Bearings)	1
3	902654	Bearings B.E.	1
4	902550	Bearing F.E.	1
* 5		Commutator Bracket Assembly (w/Brush BRD Assembly Leads)	1
6	50520A	Commutator Bracket	1
7	56480A	Strain Relief	2
8	962546	Brush Board Screw	2
9	50517A	Brush Board Assembly (w/ Springs & Brushes)	1
10	448396	Brush Spring	4
11	40826A	Brush Assembly	4
12	55657A	Lead Assembly	1
13	55656A	Lead Assembly	1
* 14		Helical Washer	1
15	50515A	Thru Bolt	2
16	80501A	Shaft Key	1
17	54238A	B.E. Bracket Assembly (Gear Box)	1

\* NOTE: Parts not available at this time.

CLARKE TECHNOLOGY  
 Encore S20/L20  
 Gearbox Assembly Drawing and Parts List 7/97  
 Form #54238A



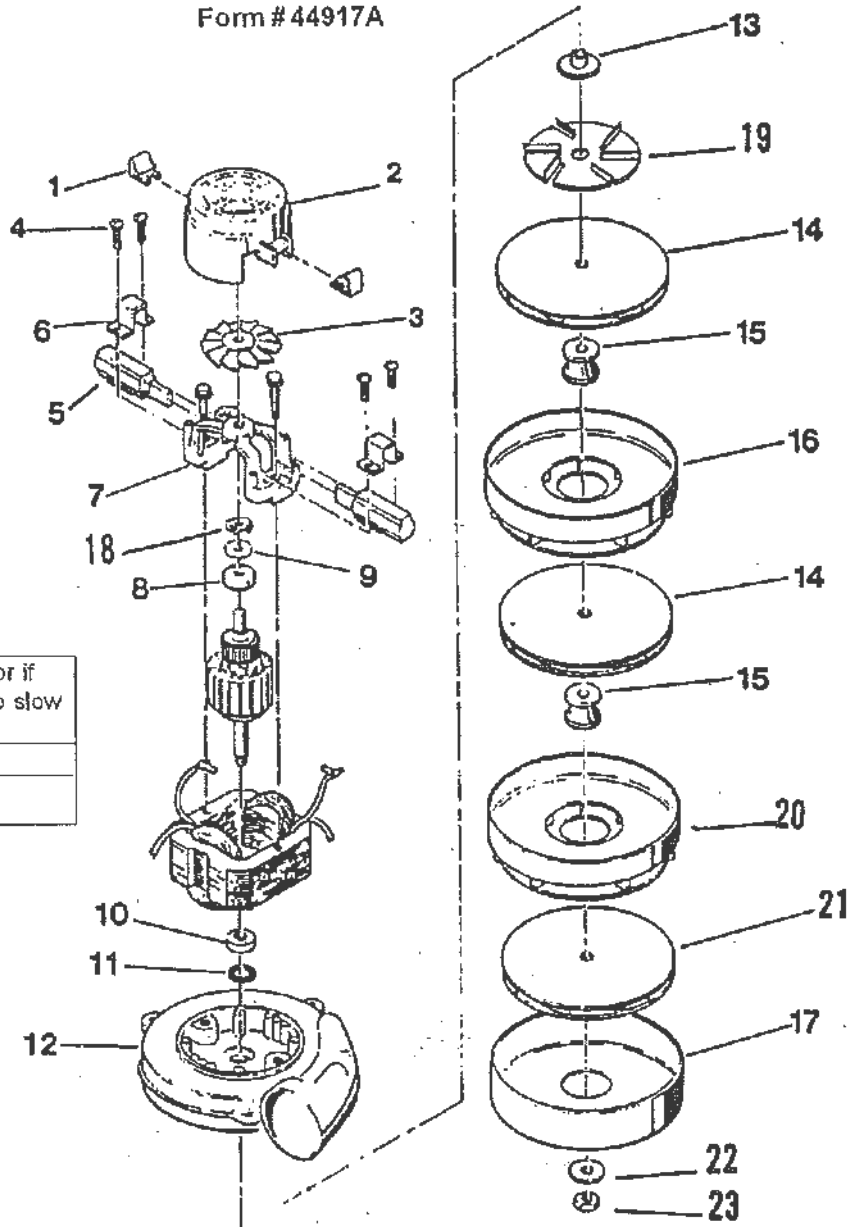
Ref #	Part No.	Description	Qty
1	57846A	Ring, Snap	1
2	507641	Seal, Oil, Small	1
3	52050A	Cap End	1
4	56668A	O-Ring	1
5	51176a	Bearing, Large	1
6	58316A	Shaft & Gear	1
7	902605	Bearing, Small	1
8	54883A	Housing	1
9	58144A	Seal, Oil Large	1
10	NI	Darina EP2 Grease	4 oz.

CLARKE TECHNOLOGY Encore S20/L20

Vacuum Motor Model

Drawing 4/01

Form # 44917A



\* Recommended Brush Replacement

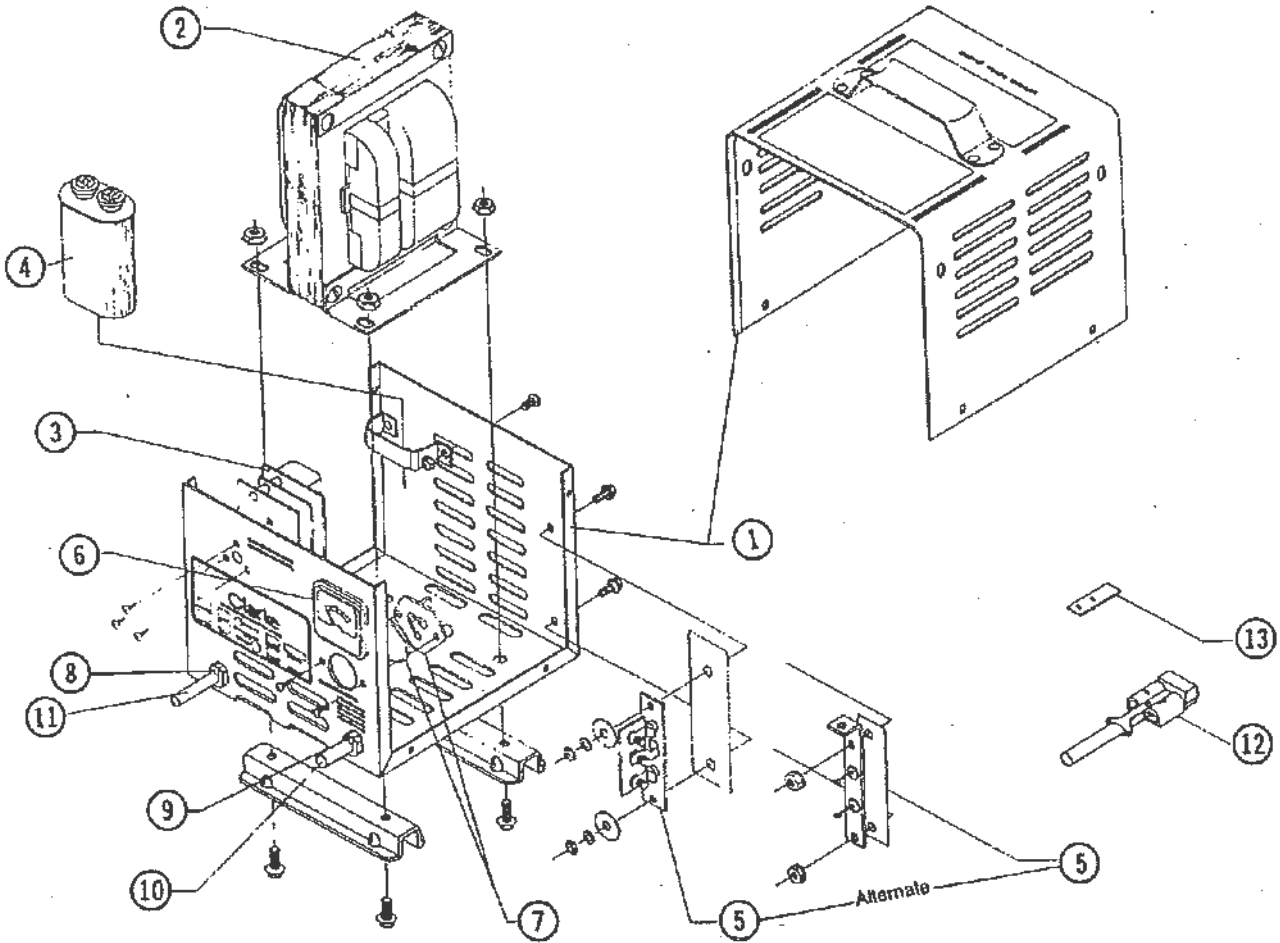
1 <sup>st</sup>	Replace at 800 hours or if vacuum motor runs too slow to pick up water
2 <sup>nd</sup>	50% of 1 <sup>st</sup>
3 <sup>rd</sup>	33% of 1 <sup>st</sup>

Ref #	Part No.	Description	Qty
* 1		Clip (optional)	2
2	54809A	Housing Vent	1
3		Fan	1
4	85303A	Screw - 8x32 - 3/8 P.N.	4
5	40817A	Brush, Mechanism	2
* 6		Clamp	2
7	50618A	Bracket, Commutator End	1
8		Bearing	1
9	672714	Disc	1
10		Bearing	1
11	59803A	Washer, Neoprene	1
12		Bracket, Fan End	1
* 13		Spacer	1

Ref #	Part No.	Description	Qty
14	53914A	Fan, Rotating	2
15	658201	Spacer	2
* 16		Fan, Stationary	1
* 17		Shell, Fan	1
* 18		Spring, Load	1
* 19		Fan, Air Seal	1
* 20		Fan, Stationary	1
* 21		Fan, Rotating	1
* 22		Washer	1
* 23		Nut	1

\*NOTE: Parts not available at this time.

CLARKE TECHNOLOGY  
Encore S20/L20  
Battery Charger Drawing and Parts List 7/97



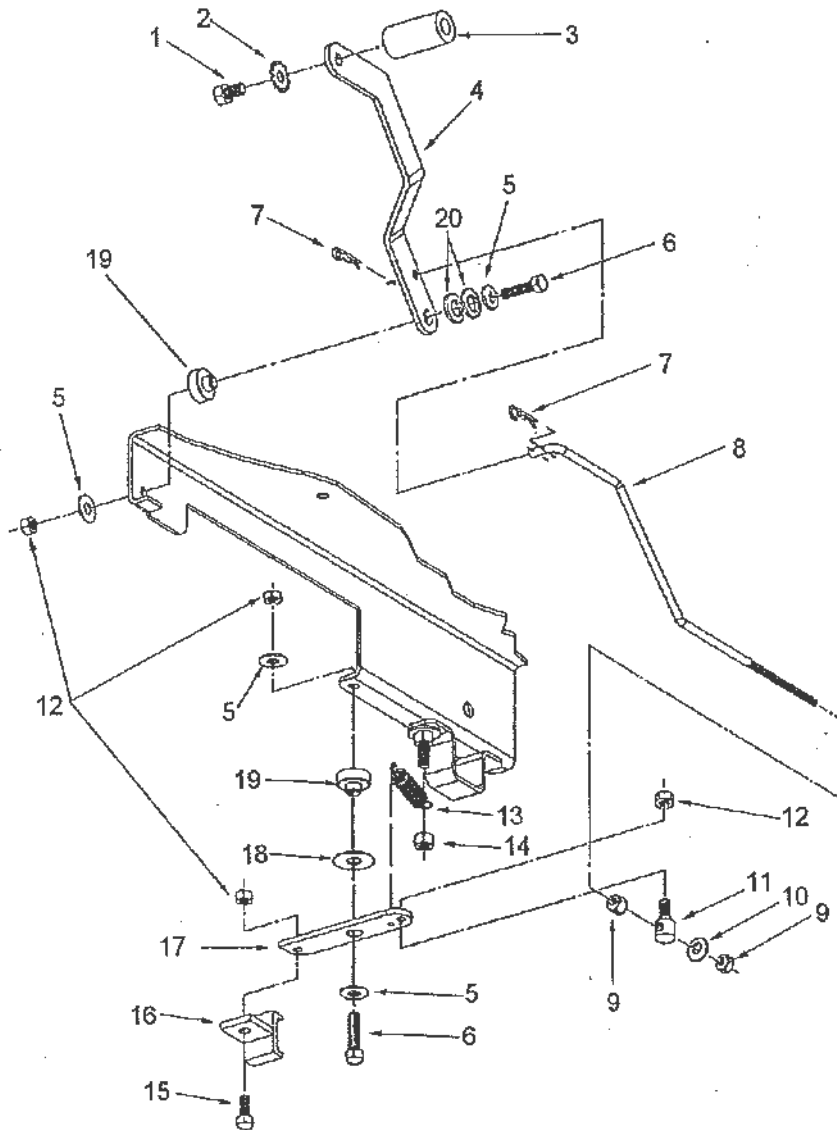
**WARNING:** All electrical repairs must be performed by qualified personnel only.

Charger #40512A: 24 volt, 25 amp D.C., 115 volt, A.C., 60 Hz.  
Charger #40513A: 24 volt, 25 amp D.C., 230 volt, A.C., 50 Hz

Ref. No.	Description	Charger 40512A	Charger 40513A
1	Charger Case	41129A	* -----
2	Transformer	* -----	48409A
3	Electronic Controller Kit	47500A	48200A
4	Capacitor, 660 V.A.C.	912132	912132
5	Heat Sink Assembly	912212	912212
6	Ammeter	40200A	40200A
7	Fuse Holder	912382	912382
8	Strain Relief, A.C. Cord	* -----	* -----
9	Strain Relief, D.C. Cord	747553	747553
10	D.C. Cord Assembly	51986A	51986A
11	A.C. Cord Assembly	51974A	908947
12	Housing, Red	911470	* -----
13	D.C. Plug Lock Key	795020	795020

\* NOTE: Parts not available at this time.

**CLARKE TECHNOLOGY**  
**Encore S20/L20**  
**Optional Brake Drawing and Parts List 5/98**  
**Form # 10635A**



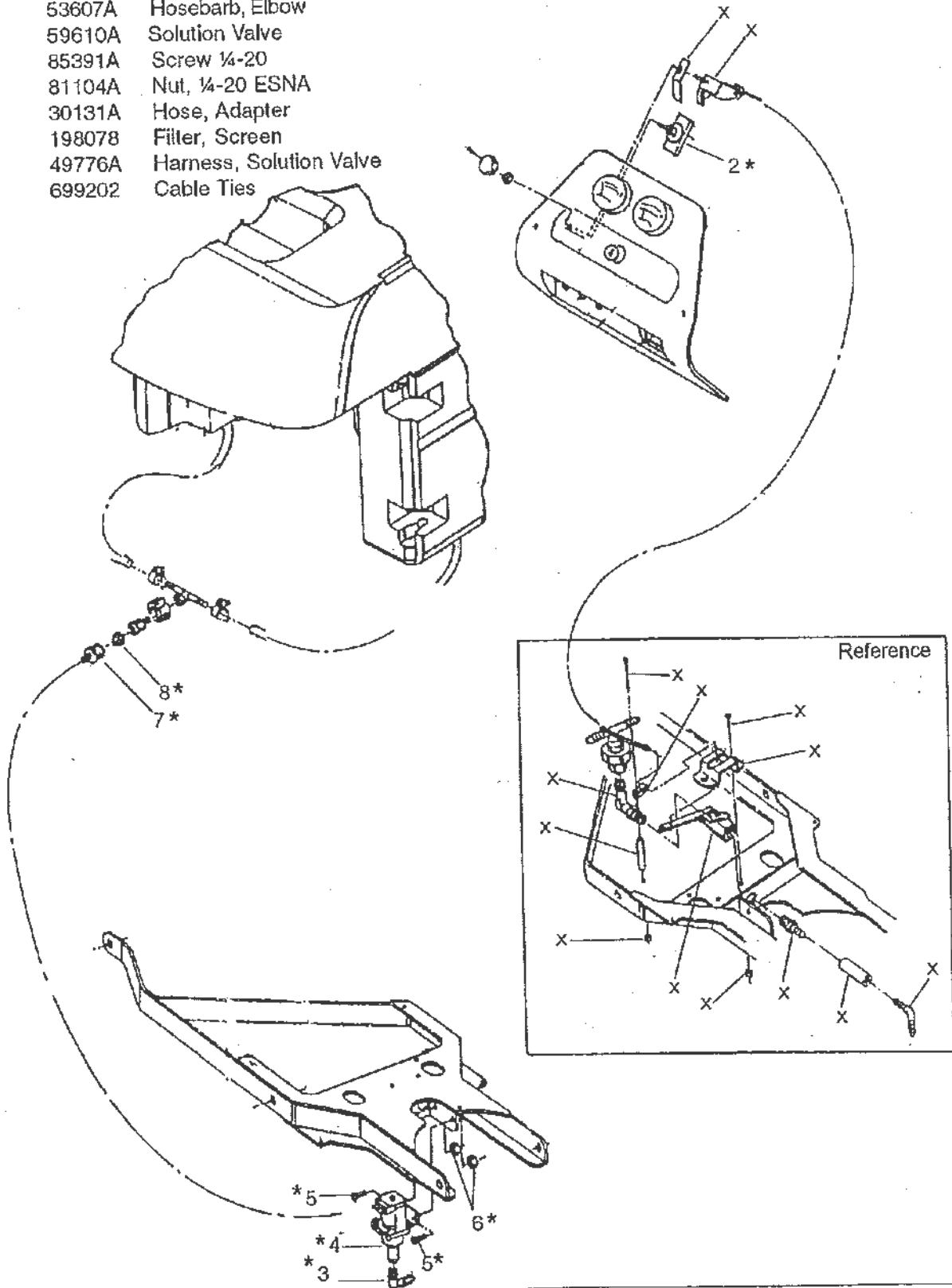
Ref #	Part No.	Description	Qty.
1	85389A	Screw, 3/8-16 x 5/8	1
2	980666	Washer, Starlock, 3/8	1
3	64490A	Handle	1
4	65627A	Brake, Lever	1
5	980651	Washer, Flat, 5/16	4
6	85814A	Screw, 5/16-18 x 1 1/4	2
7	836711	Clip	2
8	67161A	Rod, Brake	1
9	81104A	Nut, 1/4-20 ESNA	2
10	87026A	Washer, Flat, 1/4	1
11	848508	Swivel, Rod, Brake	1
12	920110	Nut, 5/16-18 ESNA	4
13	848302	Spring, Arm, Brake	1
14	81105A	Nut, 3/8-16 ESNA	1
15	85811A	Screw, 5/16-18 x 3/4	1
16	66212A	Pad, Brake	1
17	60451A	Bar, Brake	1
18	87607A	Washer, Flat, Nylon, 1/2	1
19	67877A	Spacer	2
20	980673	Washer	2

**CLARKE TECHNOLOGY**  
**Encore S20 Drawing & Parts List**  
**Electronic Solution Valve Kit 10669A**  
*(this diagram is for models without Solution Shut-Off)*

Parts included in Kit:

Ref #	Qty	Part No.	Description
1	1	53619A	Hosebarb, 3/8 x 1/4 NPT (for use on models w/shut-off valve only)
2	1	44308A	Solution Control Module
3	1	53607A	Hosebarb, Elbow
4	1	59610A	Solution Valve
5	2	85391A	Screw 1/4-20
6	2	81104A	Nut, 1/4-20 ESNA
7	1	30131A	Hose, Adapter
8	1	198078	Filter, Screen
NI	1	49776A	Harness, Solution Valve
NI	6	699202	Cable Ties

NOTE: \* indicates parts included in Kit.  
 NOTE: x indicates parts that are shown only for removal and are already present on machine



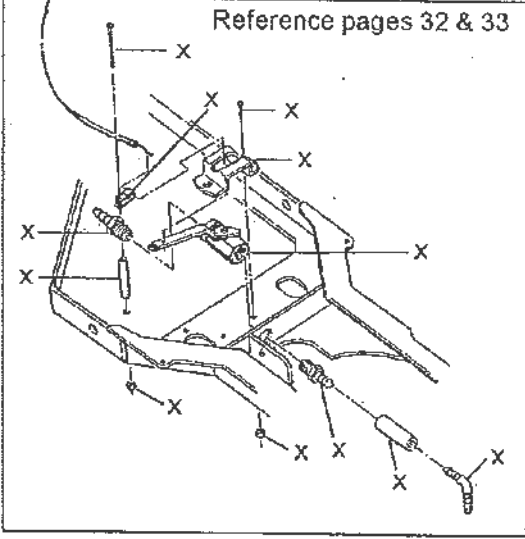
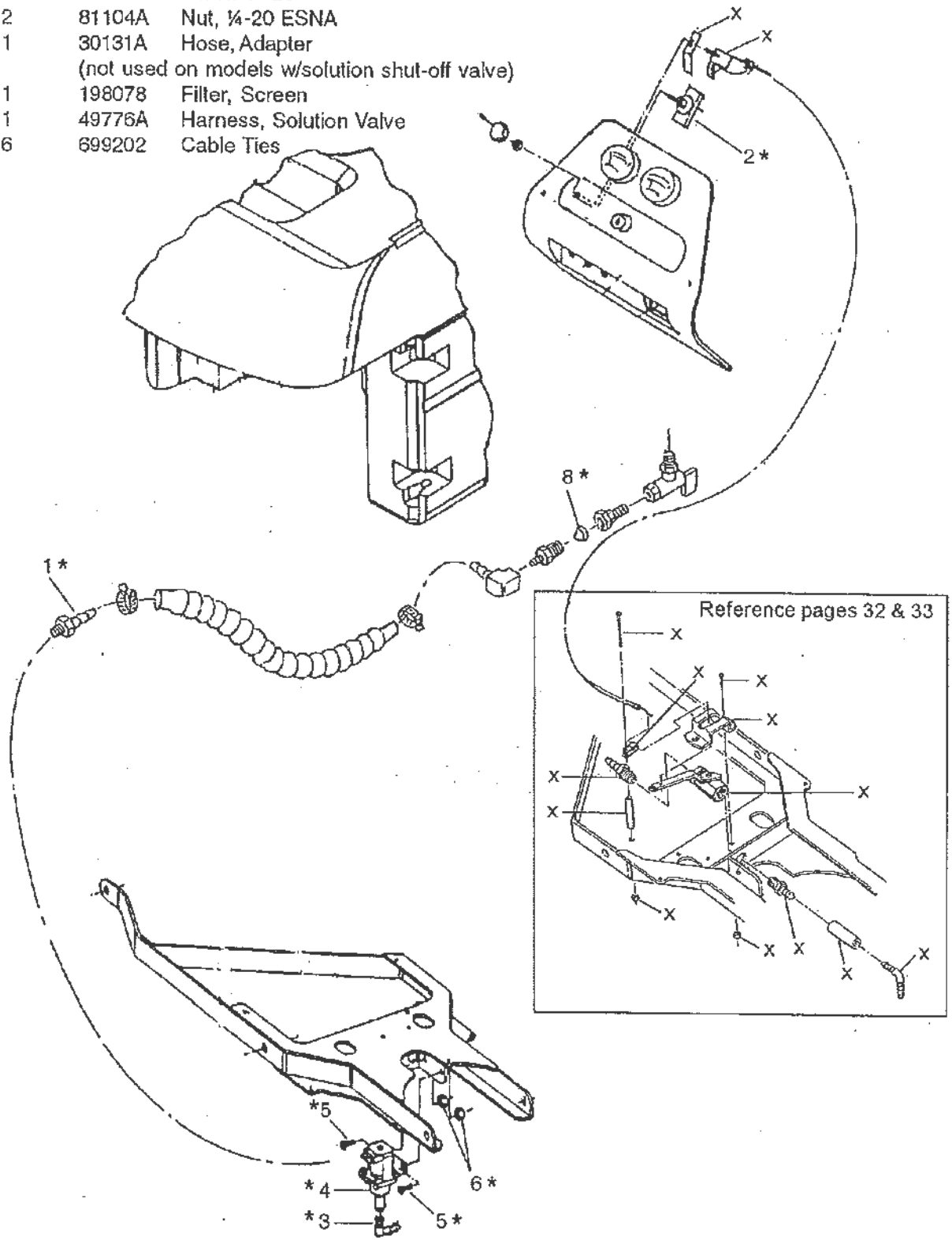


**CLARKE TECHNOLOGY**  
**Encore S20 Drawing & Parts List**  
**Electronic Solution Valve Kit 10669A**  
*(this diagram is for models with Solution Shut-Off)*

Parts included in Kit:

Ref #	Qty	Part No.	Description
1	1	53619A	Hosebarb, 3/8 x 1/4 NPT
2	1	44308A	Solution Control Module
3	1	53607A	Hosebarb, Elbow
4	1	59610A	Solution Valve
5	2	85391A	Screw 1/4-20
6	2	81104A	Nut, 1/4-20 ESNA
7	1	30131A	Hose, Adapter (not used on models w/solution shut-off valve)
8	1	198078	Filter, Screen
NI	1	49776A	Harness, Solution Valve
NI	6	699202	Cable Ties

NOTE: \* indicates parts included in Kit.  
 NOTE: x indicates parts that are shown only for removal and are already present on machine.

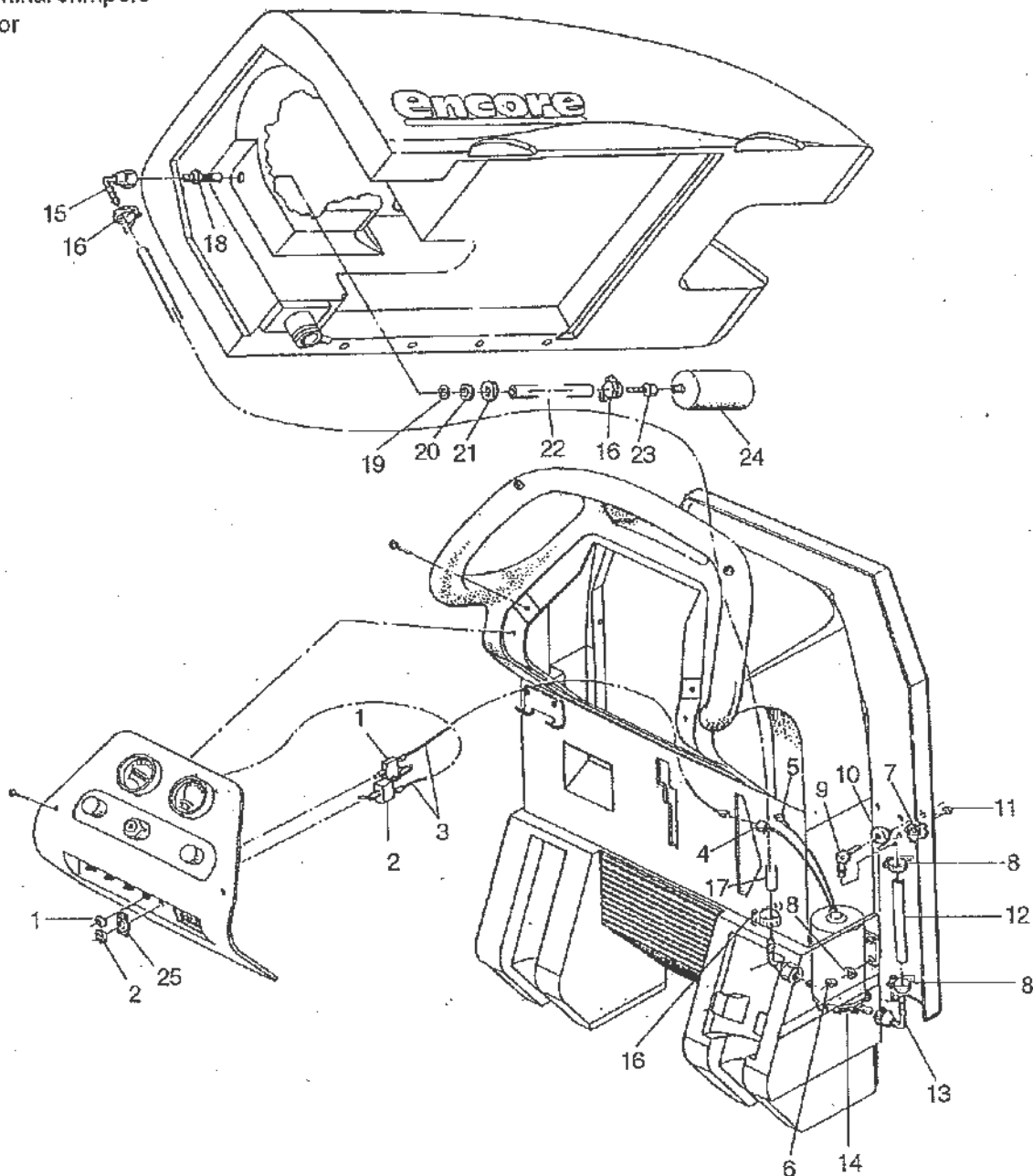


**CLARKE TECHNOLOGY**  
**Encore S20/L20 Drawing & Parts List**  
**ESP Recycle System Kit 10663A 6/01**

Tools Needed:

- Adjustable wrench
- Short or right angle Phillips® screwdriver
- Wire strippers
- Wire terminal crimpers
- Drill motor

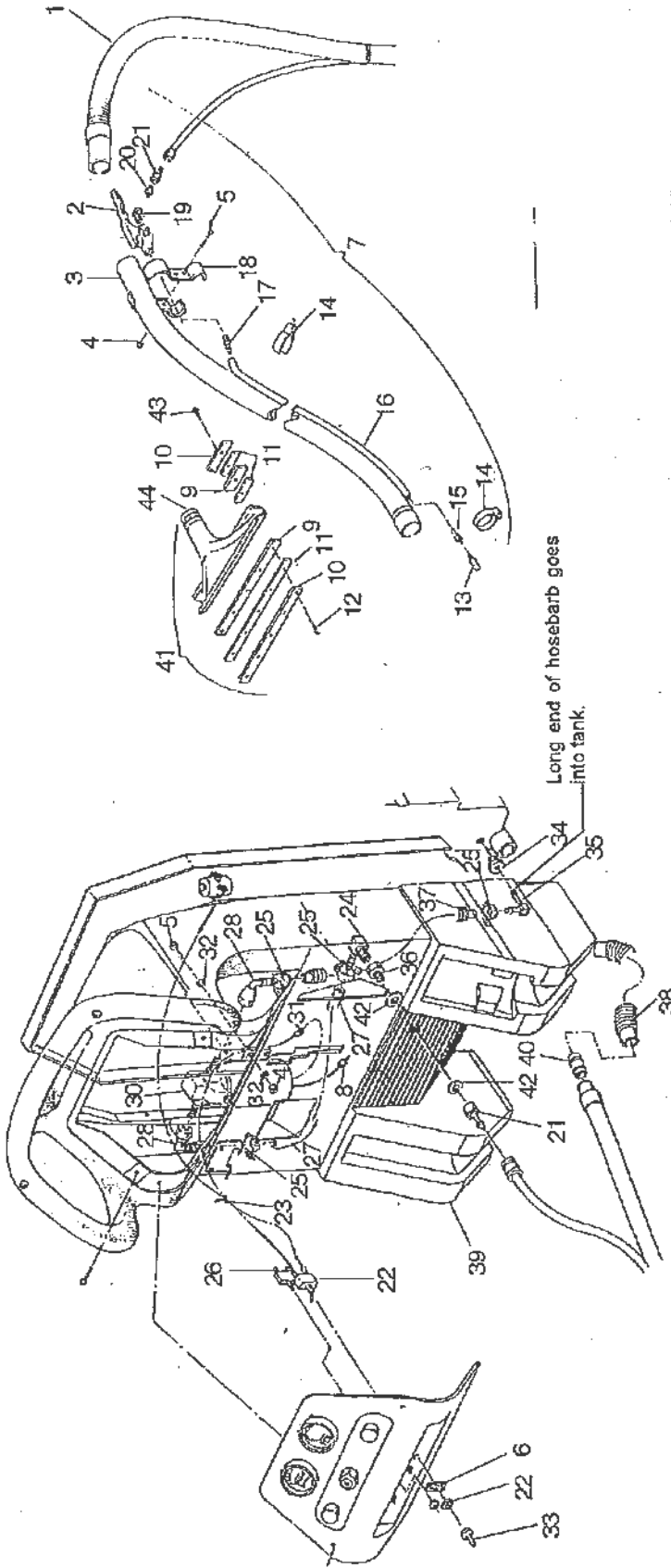
- 3/8" diameter drill bit
- 7/16" diameter drill bit
- 15/32" diameter drill bit
- 7/8" diameter drill bit



Ref#	Part No.	Description	Qty
1	41418B	Breaker, Circuit 10 Amp	1
2	47320A	Toggle Switch	1
3	49770A	Harness, ESP	1
4	47905A	Terminal, Male Q.D.	1
5	911933	Terminal, Ring	1
6	920296	Nut, 10-24 ESNA	4
7	980643	Washer #10	8
8	722021	Hose Clamp	2
9	51526A	Barb, 90°	1
10	51518A	Bushing	1
11	962862	Screw 10-24 x 1½	4
12	30172A	Hose 8"	1
13	692870	Elbow, Swivel	1

Ref#	Part No.	Description	Qty
14	45937A	Pump	1
15	53631A	Elbow, Swivel Pump	2
16	722030	Hose clamp	3
17	30451A	Hose PVC	1
18	60342A	Adapter, Recovery Tank	1
19	56682A	O Ring	1
20	980019	Washer, Nylon	1
21	920802	Nut, Nylon	1
22	30452A	Hose, Clear 17½"	1
23	65112A	Hose Barb	1
24	53997A	Filter	1
25	646302	Plate, Switch	1
NI	699202	Cable Ties	12

CLARKE TECHNOLOGY  
 Encore S20  
 Powerwand System Kit 10662A



Ref#	Part No.	Description	Qty
24	53607A	Elbow, Hosebarb	1
25	722021	Clamp, Hose	4
26	41431A	Circuit Breaker 35A	1
27	30450A	Hose Clear 14"	1
28	692870	Elbow	2
29	631806	Floor Tool	1
30	45937A	Pump - 24V	1
31	911933	Terminal, Ring	1
32	980643	Washer, Flat #10	8
33	751321	Boot, Switch	1
34	51518A	Bushing	1
35	51526A	Barb 90°	1
36	727595	Reducer	1
37	35138A	Hose	1
38	-----	Existing Squeegee Vac Hose (ref.)	(ref.)
39	-----	Rear Cover	(ref.)
40	682408	Hose Connector	1
41	639329	Floor Tool Assembly	1
42	980673	Washer	2
43	962122	Screw 8-32 x 5/8FH	5
44	639002	Tube, Adapter	1
NI	699202	Wire Tie	12

Ref#	Part No.	Description	Qty
1	59232A	Hose Assembly	1
2	699450	Valve	1
3	639804	Wand Assembly	1
4	920296	Nut, 10-24 Nylon	6
5	962862	Screw, 10-24 x 1 1/2 PN	6
6	646302	Plate, Switch	1
7	19518A	Spray Wand Assembly	1
8	47704A	Terminal	1
9	30916A	Inner Blade	2
10	682012	Blade Clamp	2
11	30917A	Blade, Outer	3
12	84200A	Screw, 8-32 x 1/2 FH	5
13	54149A	Nozzle, Wand	1
14	722195	Hose Clip	4
15	50301A	Adapter	1
16	30421A	Hose, Wand	1
17	720271	Adapter	1
18	62436A	Clamp, Valve	2
19	722824	Elbow, 1/4-45°	1
20	697501	Reducer	1
21	737140	C.D. Male	2
22	47320A	Toggle Switch	1
23	49771A	Harness, Wiring	1

\*NOTE: #41 includes- #s 9-12, 29, 43

CLARKE TECHNOLOGY  
Encore S20 Parts List  
Brush Meter Kit 10667A

Parts included in Kit:

1	40218A	Brush Meter
1	79045A	Instruction Sheet
1	49775A	Brush Meter Harness
1	699202	Cable Ties

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CLARKE TECHNOLOGY  
Encore S20 Parts List  
Hour Meter Kit 10656A

Kit includes:

<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
43202A	Harness, Hour Meter	1
912226	Meter, Hour	1

# CLARKE TECHNOLOGY

## Encore S20/L20

### Low Voltage Cut-Off Kit 14097A

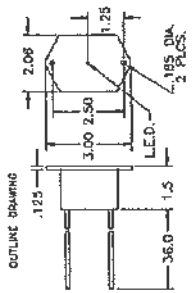
**GENERAL:** The purpose of this device is to prevent over discharge of the batteries in your machine. This is done by turning off the brush motor(s) when the battery pack voltage falls too low.

**WARNING:** After installing the device, the brush motor(s) will turn off automatically and without warning.

**WARNING:** If there is any possible hazard in turning off the brush motor(s) automatically and without warning, do NOT install this module.

**WARNING:** This module will NOT control a high current load directly. A high current load may be controlled by the module by wiring the device to the load.

**NOTE:** This module will NOT protect against low voltage damage caused by any other non-manufactured function.



**WARNING:** This device may be mounted in any position on long as it is securely fastened. It is recommended that the module be mounted with the trip indicator visible through the keyway.

**WARNING:** The module must be mounted in a straight line in the selected location.

Page 1

**INSTALLATION INSTRUCTIONS FOR LOW VOLTAGE CUT-OFF MODULE**

If it has been determined that wiring off the brush motor(s) will NOT create any possible hazard, inspect the schematic of your machine to locate the control wire for the brush motor solenoid.

The module is to be wired in series with the end of the brush solenoid. This is done by removing one of the two wires attached to the solenoid's operating coil and joining this wire to the control wire for the brush motor solenoid. The original silver wire which was attached to the terminal from which the original control wire was removed. The module must not interrupt more than 1 amp or it may be damaged.

Connect the red (R+) to a source of positive battery voltage. The black (B-) to a source of negative battery voltage. The silver wire which was disconnected from the brush motor solenoid must be reconnected to the battery pack. This is the plug that is not attached to the battery pack. If your machine does not have a battery pack, disconnect plug, connect the red or black wire to the positive terminal of the battery pack. The silver wire side of the which that turns on and off, not the "hot" side. Proper polarity must be observed for correct module operation.

**WARNING:** When the battery pack voltage falls low enough to require the brush motor(s) to be turned off, the L.E.D. on the module will come on. These two indications tell the operator the batteries are low and must be recharged.

**RESETTING:** To reset the module, reinsert the batteries. Recharging the batteries for the module to reset properly.

Page 2

**SPECIFICATIONS:**

**GENERAL:** This device shall be used to prevent damage to components that are sensitive to operating on low voltage by opening a control circuit when a low voltage condition is detected.

**DELICATE:** A low voltage condition shall be detected by the module. Upon tripping, the internal relay contacts shall open. The L.E.D. terminals and they shall remain open until RESET.

**TRIP TIME:** Upon tripping, the internal relay contacts shall open. The contacts of the internal relay shall be re-closed by the re-applying a voltage greater than the RESET VOLTAGE.

**TRIP VOLTAGE:** 21.0 VDC +/- 0.5 VDC

**TRIP TIME:** 10 seconds +/- 2 seconds

**RESET TIME:** 100 seconds +/- 10 seconds

**RESET VOLTAGE:** 23.5 VDC +/- 0.5 VDC

**RATED SYSTEM VOLTAGE:** 24 VDC

**CONTROL CIRCUIT CURRENT:** Up to 1 Amp @ 24 VDC

**PACKAGE PLASTIC CONTAINER:** 1.5" H x 3" W x 3" L, with two 0.185" diameter holes on 2.0" centers.

**TRIP INDICATOR:** One LED contained between mounting holes turns on when in tripped condition.

**CONNECTIONS:** Four #18 copper lead wires 38" long. B+ to be red, B- to be black, and LOAD to be white.

1. ONE (1) COPY OF INSTALLATION INSTRUCTIONS TO BE PACKAGED WITH ONE (1) MODULE TO PRODUCE ONE (1) KIT.

