



Electronic Service Manuals

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Serving the Cleaning Industry Since 1922

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170TD Automatic Scrubber

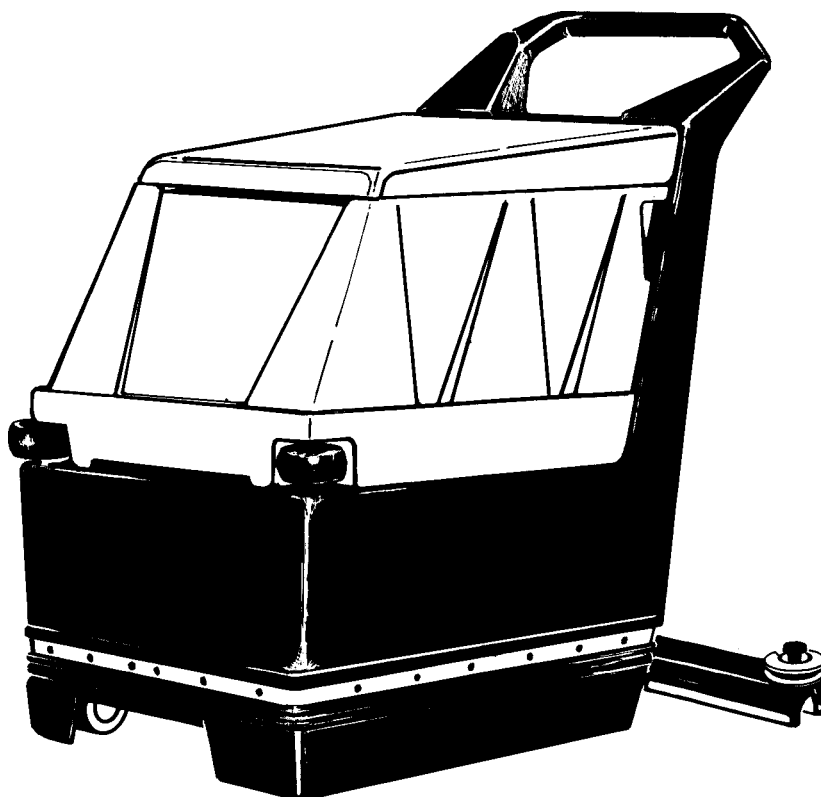
**Model: MC17026-00
MC17026QP**

OPERATION

SERVICE

PARTS

CARE



Revised 8/03

Minuteman[®]

EC Declaration of Conformity

according to Directives 89/392 and 89/336

We, Minuteman International Incorporated, of 111 South Rohlwing Road Addison Illinois 60101 USA, declare under our sole responsibility that the products MC17026-00CE, MC17500-00CE Commercial Automatic Floor Scrubbing machines to which this declaration relates corresponds to the relevant requirements of the EC Directives 89/392 and 89/336. The following standards were used to determine compliance with the Directives: EN 292, EN 294, EN 811, EN 55011, EN 55104, EN 50082-2 and EN 335-2-72

SOUND		VIBRATION
75 dB Operator	72 dB At 3m	.68 m/s² At Operators Hand Grips
Tests were conducted on 6/7/96 with calibrated sound and vibration equipment under the conditions noted below: General Condition: Cloudy Wind: 0 km/hr Temperature: 29°C Humidity: 85% Barometric Pressure: 29.5		

Jeff Pollack

Jeff Pollack, Standards Engineer

April 2, 2002

Date

TABLE OF CONTENTS

	Page
Safety Instructions	1
Electrical Requirements	2
Control Panel Identification	3
Brush Installation Instructions	4
Operating Instructions/Maintenance	5
Main Polyethelene Components	6 & 7
Solution/Recovery Tank	8 & 9
Vacuum Components	10 & 11
Brush Drive Assemblies	12 & 13
Squeegee Assembly	14 & 15
Wiring Diagram	16

IMPORTANT SAFETY INSTRUCTIONS

CAUTION: Operators must read and understand this manual before operating or maintaining this equipment.

- Keep hands and feet clear of moving parts while machine is in operation.
- All switches must be in the “OFF” position when charging batteries.
- Electrical motors and components can cause an explosion when operated near explosive materials or vapors. Do not operate this machine near flammable materials such as solvents, thinners, fuels, grain dusts, etc.
- Make sure all switches are turned “OFF” and battery connections are removed before performing any maintenance procedures.
- Store or park this machine on a level surface only.
- These machines are designed for level floor operation only. DO NOT OPERATE on ramps or inclines.
- Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of batteries.
- This machine is not suitable for picking up hazardous dusts.

Charging batteries generates explosive gases. DO NOT CHARGE BATTERIES WHEN OPEN FLAMES OR SPARKS ARE PRESENT. DO NOT SMOKE. Make sure the charger is turned off before disconnecting it from the batteries. Charge the batteries in a well-ventilated area.

Maintenance and repairs must be performed by authorized personnel.

SAVE THESE INSTRUCTIONS

ELECTRICAL REQUIREMENTS:

This piece of equipment operates on 24 Volt DC.

BATTERY REQUIREMENTS:

2 x 12V 80 Amp Hour 20 Hour Rate Deepcycle P/N 956721

2 x 12V 105 Amp Hour 20 Hour Rate Deepcycle P/N 956712

BATTERY SERVICE AND INSTALLATION:

*Warning: Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of batteries.

BATTERY INSTALLATION:

1. Disconnect tank drain hose from rear of machine.
2. Disconnect vacuum recovery hose.
3. Raise tank assembly by gripping side hand holds, and tilting forward.
4. Position tank kickstand as shown below, figure 1, to hold tank in upright position. To lower, raise tank slightly forward and manually move kickstand to freed position.
5. Install batteries as shown in figure 2.

CHARGING OF BATTERIES:

Charging of batteries generates explosive gases. DO NOT CHARGE BATTERIES WHEN OPEN FLAMES OR SPARKS ARE PRESENT. DO NOT SMOKE. Make sure the charger is turned off before disconnecting it from the batteries. Charge the batteries in a well-ventilated area. Fluid levels should be checked before and after charging and maintained at the proper levels.

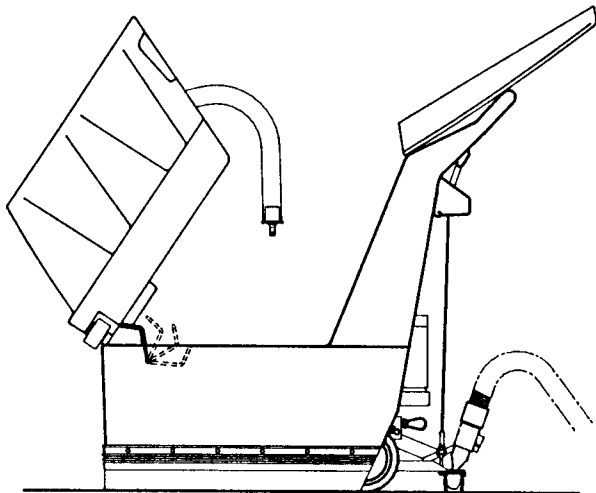


Fig.1

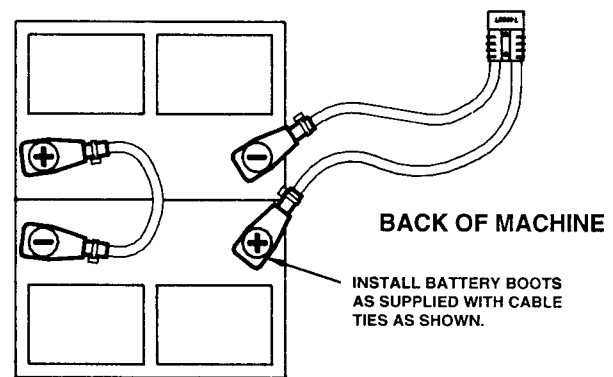
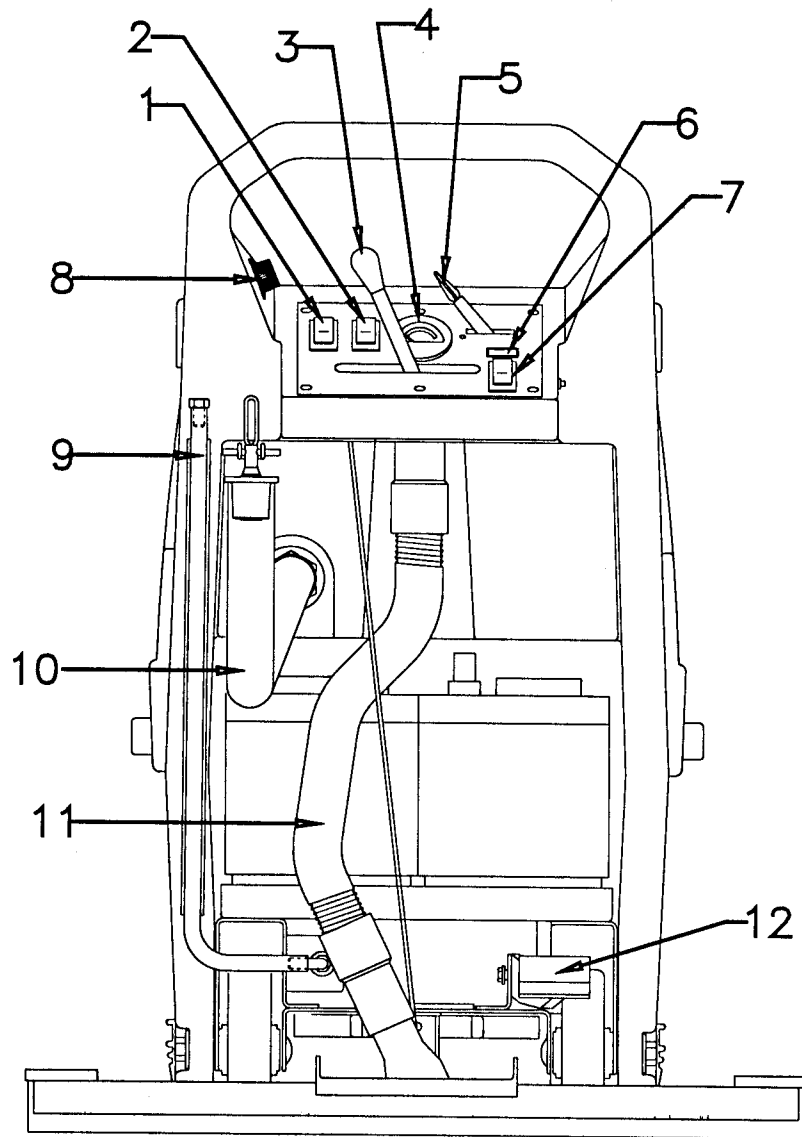


Fig.2



- | | |
|----------------------------|---|
| 1. Direction switch | 7. Main power switch |
| 2. Vacuum switch | 8. Speed control knob |
| 3. Squeegee lift lever | 9. Drain hose for clean solution tank |
| 4. Battery condition meter | 10. Drain hose for recovery tank |
| 5. Solution control lever | 11. Vacuum recovery hose |
| 6. Main power indicator | 12. Foot pedal for raising/lowering brush |

BRUSH REMOVAL

Empty solution and recovery tanks.

Disconnect batteries.

Remove squeegee assembly.

Lower brush.

Tilt machine as shown (figure 3) until machine rests on foot pedal.

Brush has a snap-on push off clutch plate. Pushing brush away from the machine from the side, will release brush assembly.

To install: Hold brush in the center and snap on to drive hub.

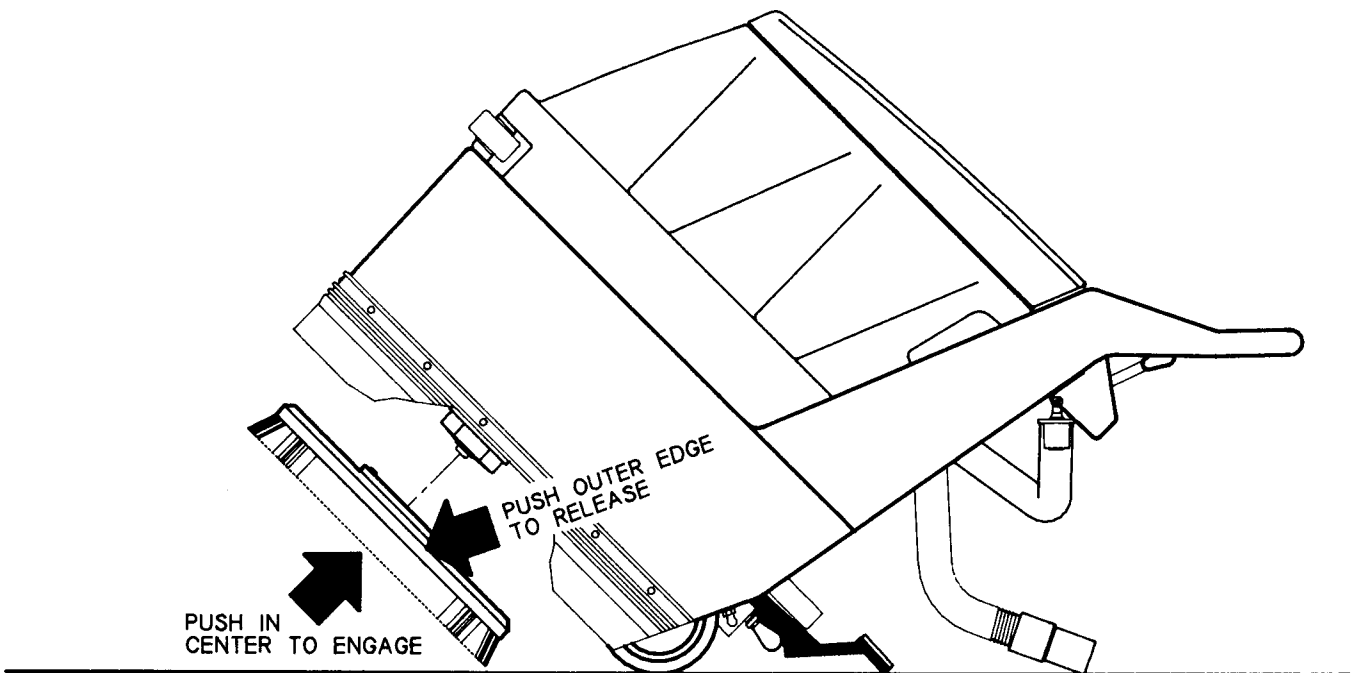


Fig.3

OPERATING INSTRUCTIONS

1. Filling: Fill the solution tank with the desired amount of water and add liquid cleaning solution to the proper dilution ratio. DO NOT USE powdered cleaning chemicals. Powders are unlikely to dissolve thoroughly, resulting in clogging the in-line solution filter. This can reduce or stop water flow to the brush.
2. Close lid.
3. Lower brush assembly.
 - To lower the brush, first push the pedal slightly towards the center of the machine (unlock it), then release it slowly.
 - To lift the brush, press the pedal down until lift mechanism engages.
4. Turn on brush switch.
5. Adjust solution control feed lever.
6. Turn on vacuum switch.
7. Lower squeegee assembly.

After Use:

1. Turn off solution feed.
2. Switch off brush and raise.
3. Raise squeegee assembly.
4. Turn off vacuum motor.

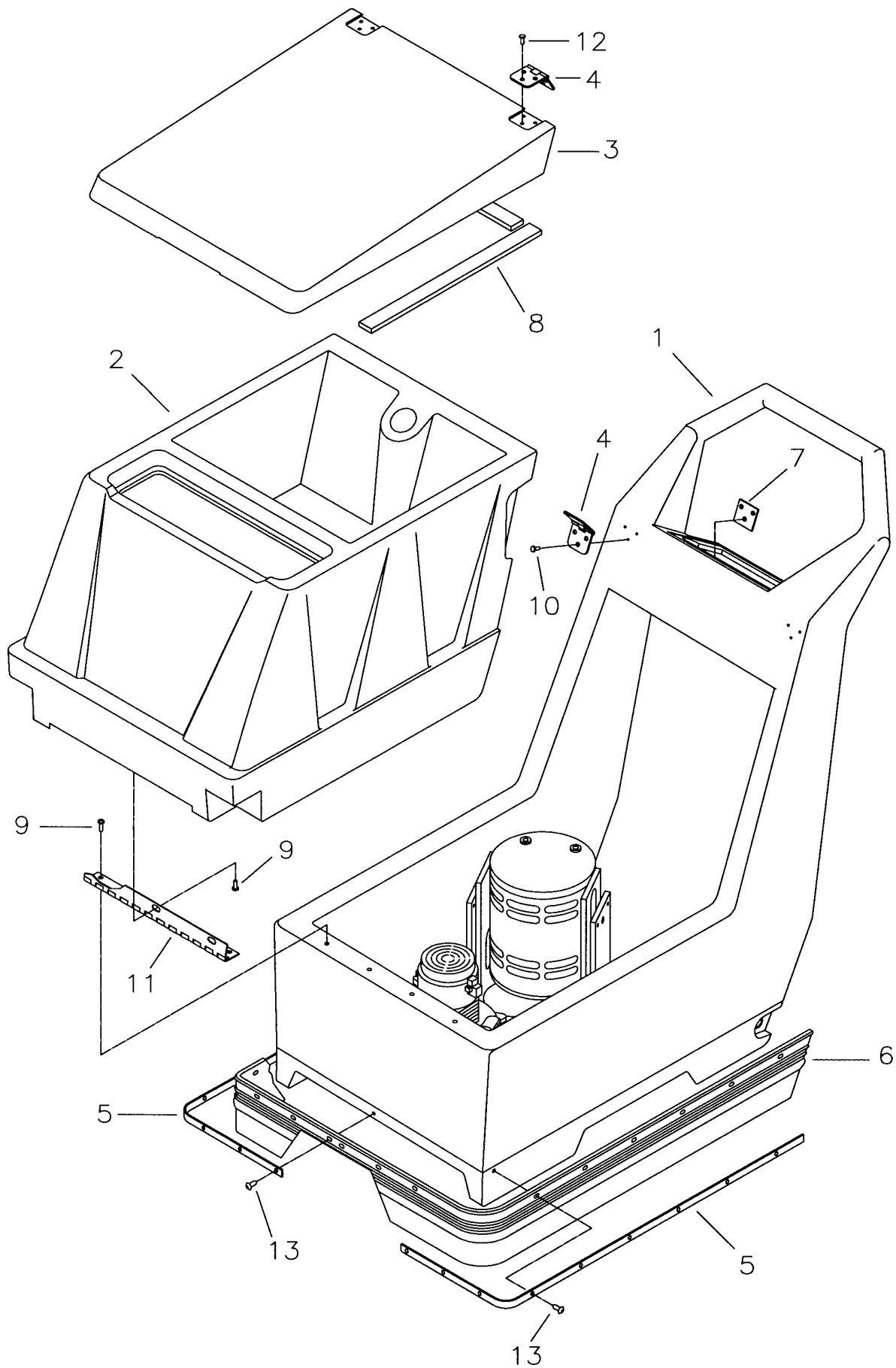
Solution and recovery tanks should be emptied after every use.

MAINTENANCE:

When cleaning, servicing or maintaining the machine the power should be switched off.

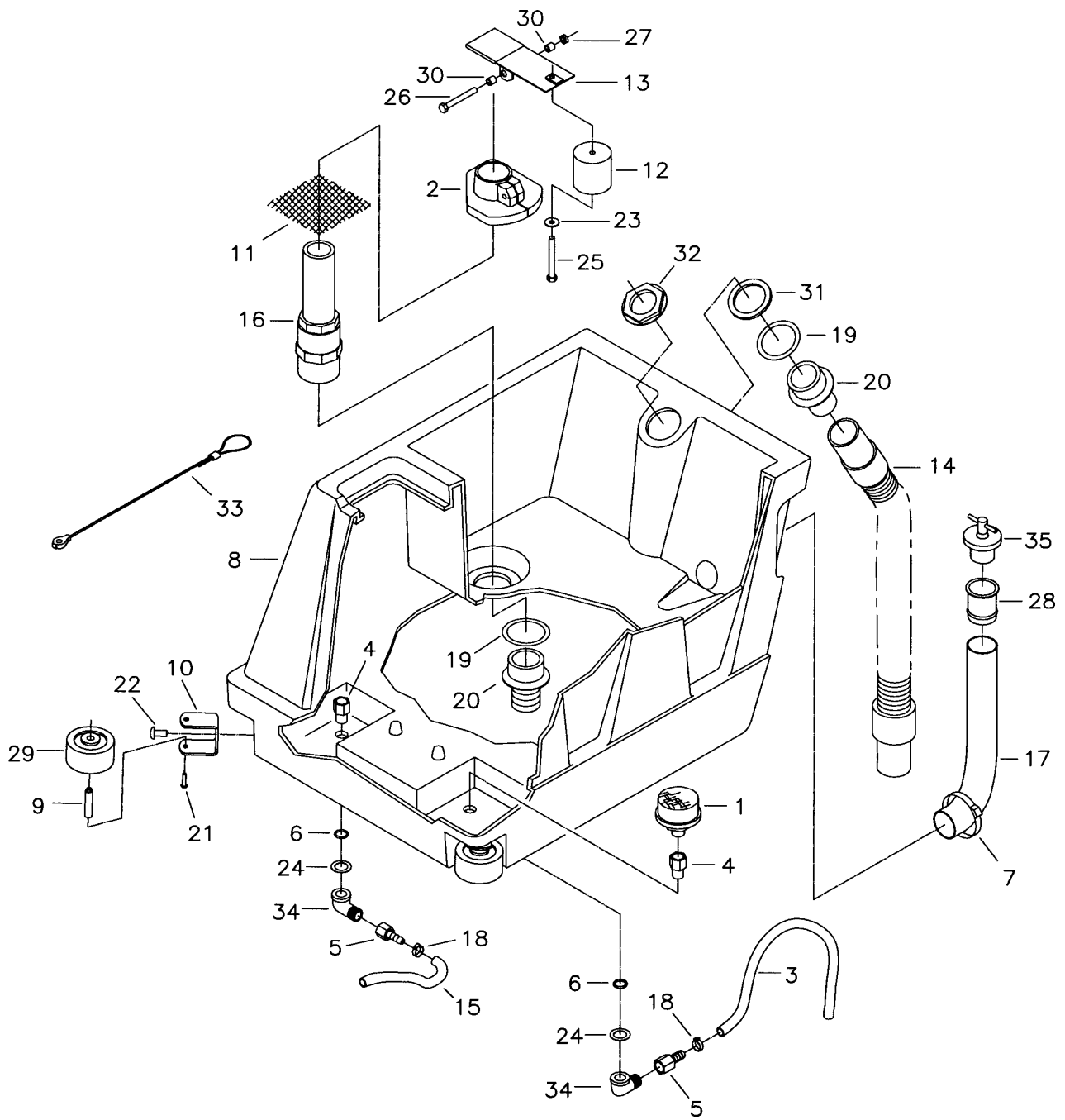
- | | |
|---------|---|
| Daily | <ol style="list-style-type: none">1. Clean float assembly & squeegee blades. Vac filter.2. Recharge batteries (check battery acid levels before and after charging). |
| Monthly | <ol style="list-style-type: none">1. Check wear on squeegee blades.2. Grease rear wheels.3. Grease pivot points on brush motor assembly. |

Every 500 hours check condition of carbon brushes on vacuum motor and brush drive motor.



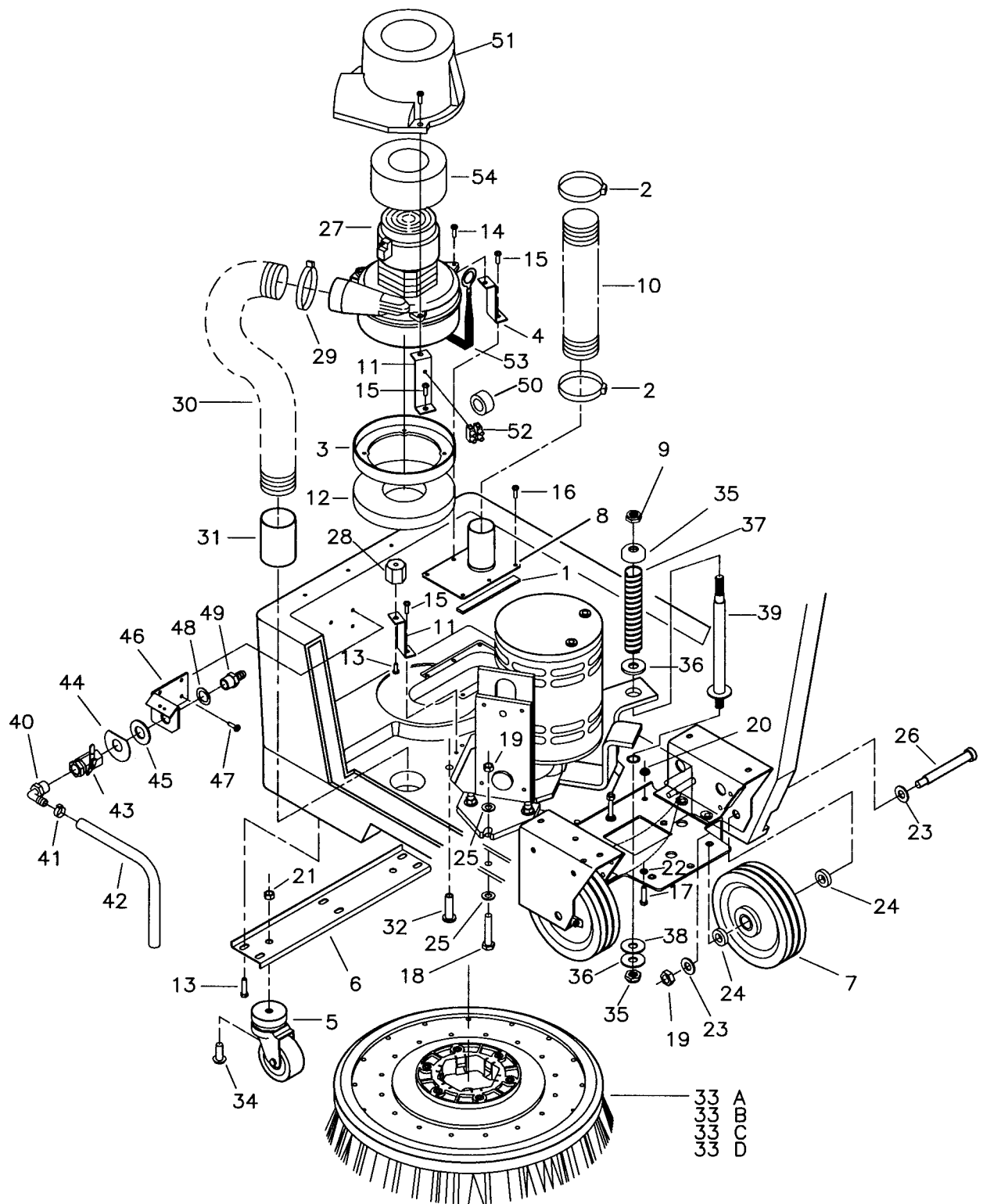
Parts List

Item	Part No.	Qty.	Description
1	430000TD	1	Base 170TD
2	430001MCH	1	170 Sol/Recovery Tank Assy
3	430002	1	Cover Poly 170 Burgundy
4	430044	2	Hinge Lid 17 B/E
5	430046	2	Side Skirt Retainer 17
6	430049	1	Splash Skirt 17 B/E
7	430126	2	Hinge Backing Plate
8	430136	1	Gasket Seal Kit (4)
9	712560	6	SCR-MC 1/4-20 x .50 SS
10	712536	6	SCR-MC 10-24 x .62 SS
11	450021	1	Hinge
12	712822	6	SCR-THMS 10-24 x .50 STPL
13	711161	18	SCR-Hi/Lo #10 x 3/4 PL



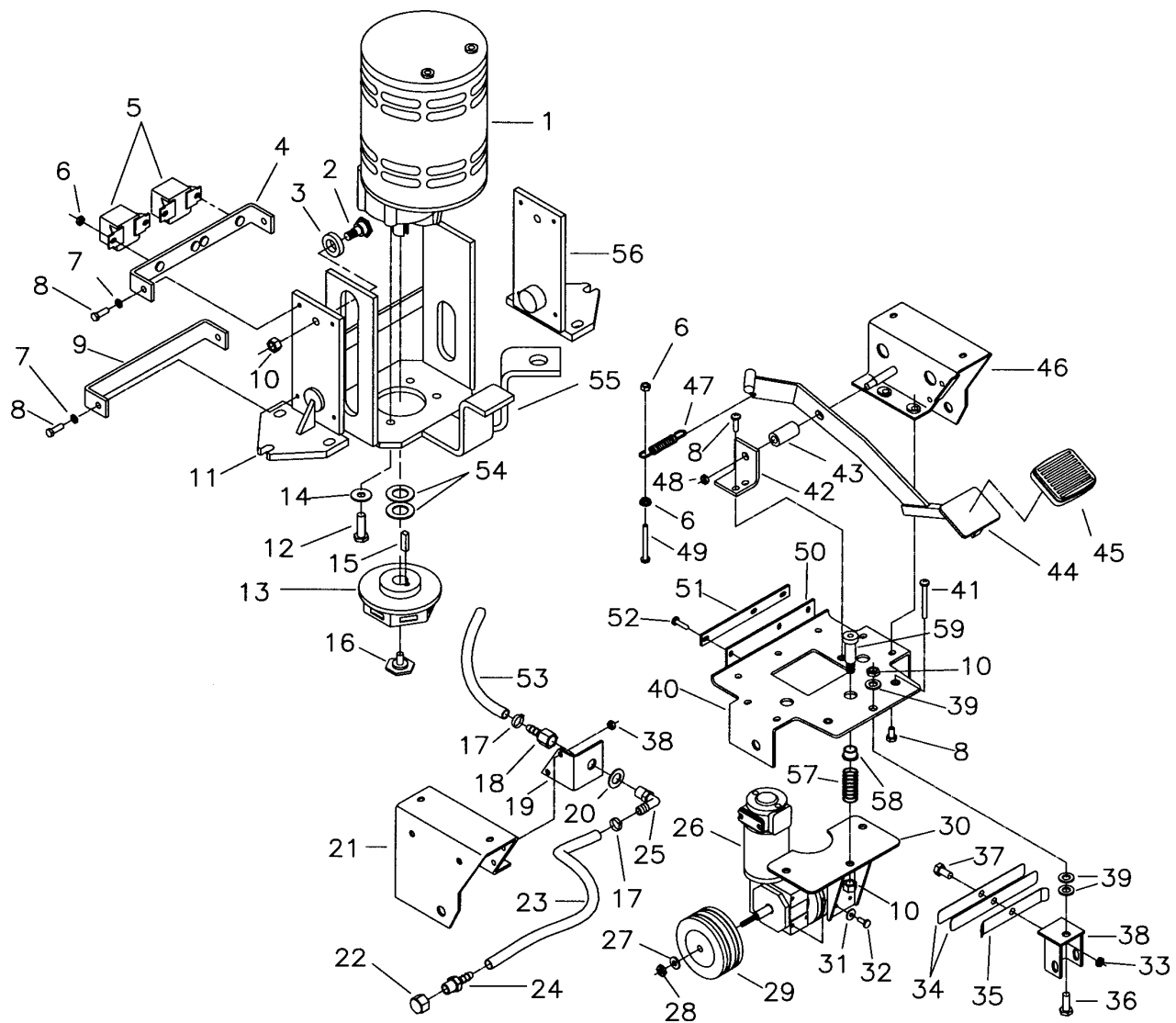
Parts List

Item	Part No.	Qty.	Description
1	130118	1	Solution Strainer
2	200173	1	Float Housing
3	210401	2	Solution Hose
4	210409	2	Fitting Brass 3/8MPT 3/8FPT
5	210410	2	Fitting Brass 3/8 FPT 3/8 Barb
6	210414	2	"O" Ring 2-113
7	260203	1	Hose Clamp
8	430001MCH	1	170 Sol/Recovery Tank Assy.
9	430037	2	Bumper Wheel Axle
10	430038	2	U Bracket Wheel Mount
11	430050	1	Filter Screen 4 x 4
12	430089	1	Float 17B
13	430090	1	Float Valve Weldment
14	430098	1	Vac Recover Hose 22 C/L
15	430116	1	Hose 3/8 Nyloc x 34"
16	430121	1	Standpipe Assy. 170/175
17	430199	1	Hose White Wireloc 24"
18	450076	1	Crimp Clamp SS 185R
19	450081	2	WSR SS 1.908 x 2.41 x .03
20	450083	2	Insert Fitting
21	710353	2	SCR-MC 10-32 x .37 STPL
22	710985	2	SCR-SC 3/8 - 16 x .62
23	711504	1	WSR-Flat 1/4 ID SS
24	711513	2	WF .689 x 1.06 x .029 SS
25	712092	1	SCR Nylon 1/4-20 x 2.5
26	712568	1	SCR-MC 1/4 - 20 x 2.25 SS
27	712667	1	Nut-Hex 1/4 - 20 SS Nyloc
28	760343	1	Tube Hose 24/32B
29	762331	2	Wheel, 2.5 D x 1.28 W x .38 ID
30	762384	2	Bushing SS .277 x .375 x .37
31	828970	1	WSR NEOP 1.87 x 2.4 x .125
32	828971	1	Nut 1 1/2 Pipe Thread
33	829559	1	Cable Assy 170/175
34	830062	2	Fitting Brass 90 3/8MPT
35	833316	1	Drain Plug



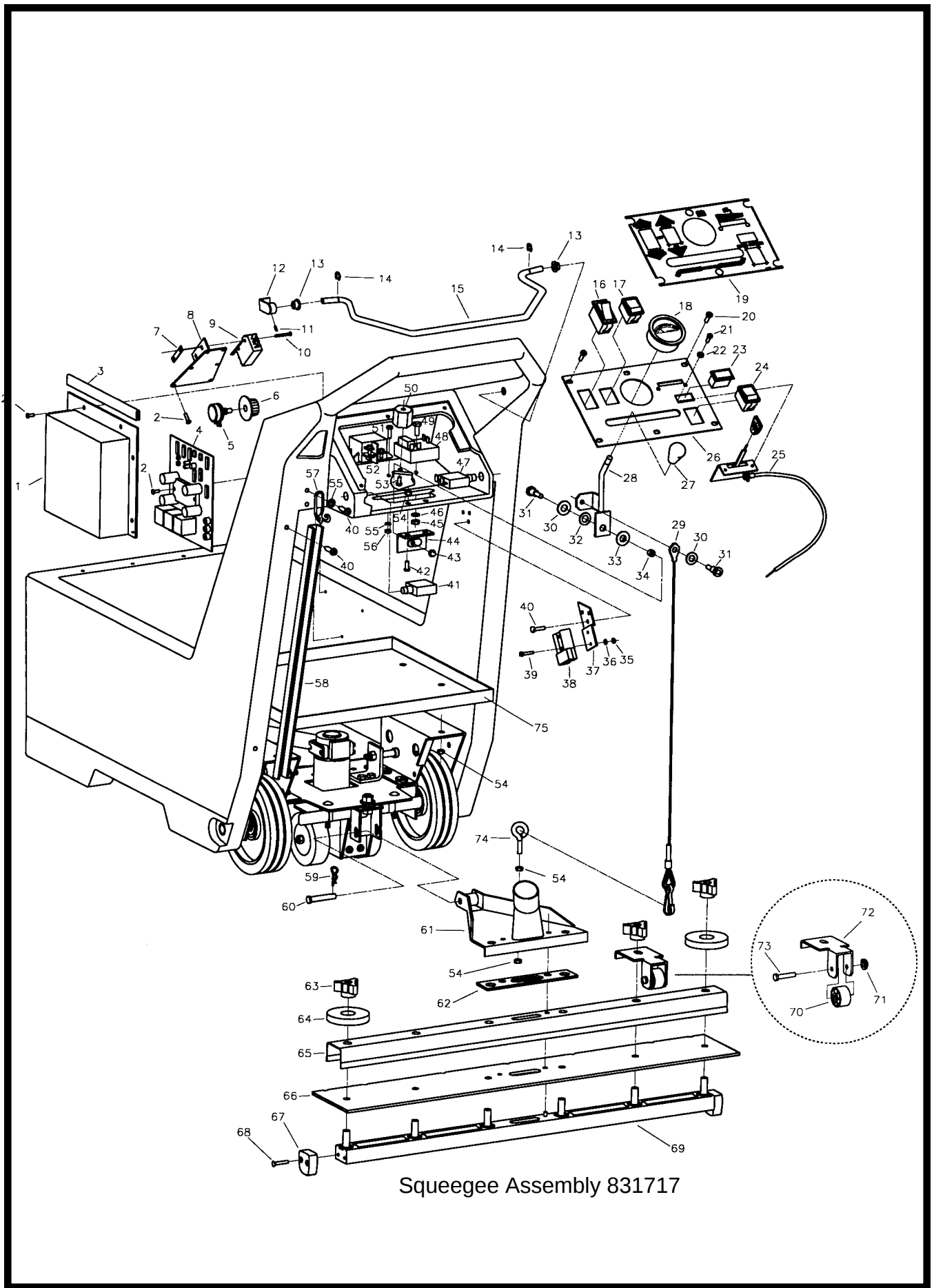
Parts List

Item	Part No.	Qty.	Description
1	250041	1	Seal, Rubber
2	831001	2	Crimp Clamp 44OR
3	290017	1	Molded Vac Mtr Gasket
4	430018	2	Z Bracket
5	430029	2	Caster
6	430042	1	Caster Mounting Bracket
7	430138-1	2	Wheel 6"
8	430069	1	Vacuum Manifold Assembly
9	828264	1	Spring Washer Cup
10	430099	1	Vacuum Hose
11	450038	2	Z Bracket
12	460019	1	Gasket 3.75x5.75x.75
13	710178	7	SCR-MC ¼-20 x .50 STPL
14	712129	3	SCR-TR ¼-20 x 1.00 HWH
15	711106	4	SCR-ST-A 10 x .75 PL
16	711161	5	SCR-Hi/Lo #10 x ¾ PL
17	711210	3	BLT-HH ¼-20 x 1.25 STPL
18	711243	6	BLT-HH 3/8-16 x 1.5 STPL
19	711380	8	Nut-Nyloc 3/8-16
20	711425	3	Nut-Flanged ¼-20
21	711439	2	Nut-Flanged Wizz 3/8-16
22	711506	3	WSR-Flat 5/16 STPL
23	711509	6	WSR-Flat ½
24	430149	4	Bushing .531 x 1 x .25 SS
25	711515	12	WSR-Flat .406 x .812 x .062
26	712090	2	Shoulder Bolt ½ x 3.5
27	740063	1	Vac Motor 24V
28	740132	1	Insulator, Glastic
29	760859	1	Clamp, Hose
30	762398	1	Hose, Rubber Flex 2 x 13
31	801013	1	Sleeve, Hose
32	832136	1	Nylon Sleeve Sol. Feed
33A	430034	1	Nylon Brush
33B	430108	1	Pad Driver
33C	430111	1	Poly Grit Brush
33D	430132	1	Strato Grit Brush
34	710986	2	SCR-SC 3/8-16 x 1.00
35	364-816	1	Nut-Nyloc ½
36	711510	3	Washer
37	828301	1	Spring
38	711559	1	WSR-Internal Lock 3/4
39	210083	1	Adj. Rod Weldment
40	450040	1	Elbow 3/8 MPT x 3/8 Barb
41	450076	1	Crimp Clamp SS
42	210401	1	Solution Hose 3/8
43	809413MCH	1	Solution Valve
44	829463	1	WSR-Flat 0.75 x 2.00 x .05
45	828975	1	WSR-Neo .75 x 1.50 x .09
46	210370	1	Solution Valve Bracket
47	711106	3	SCR-ST-A 10 x .75 PL
48	711513	1	WSR-Flat .689 x 1.06 x .029
49	342430	1	Hose Barb 3/8 MPT x 3/8 Barb
50	742254	1	Torriod Ferrite
51	840112CTD	1	Vac Cover
52	832996	1	Terminal Block
53	742281	1	Ground Strap
54	380035	1	Foam Ring



Parts List

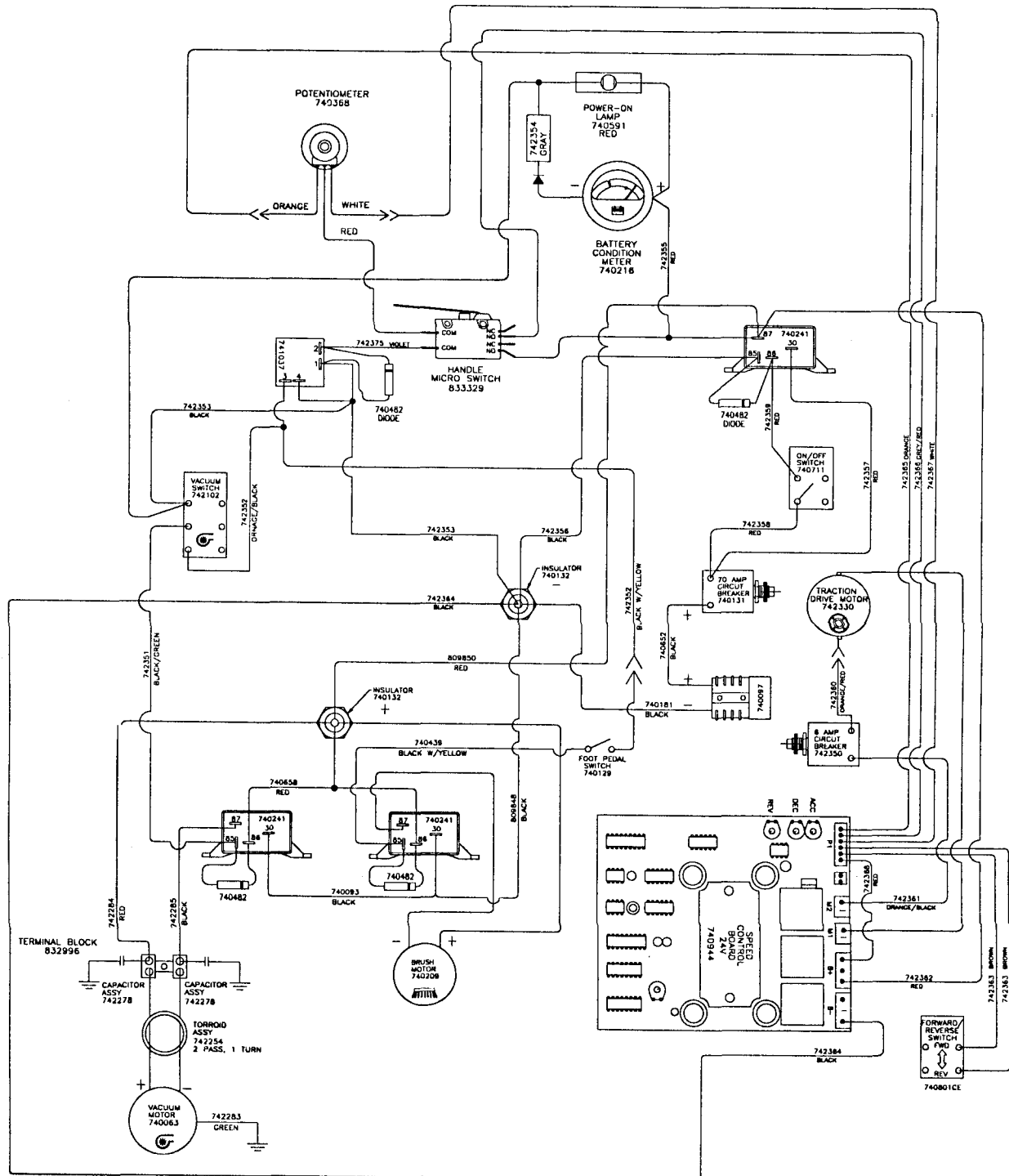
Item	Part No.	Qty.	Description
1	740209	1	Gear Motor 24V
2	210124	1	Bearing Stud
3	361254	1	Bearing
4	430013	1	Stabilizer Bracket
5	740241	2	Contacto 24V 50A
6	711425	8	Nut-Flanged Wizz ¼-20
7	711535	4	WSR-Helical .26 x .50 x .02
8	711202	12	BLT-HH ¼-20 x .50 STPL
9	430106	1	Stabilizer Bar - Lower
10	711380	1	Nut-Nyloc 3/8-16
11	430009MCH	1	Motor Bracket Weldment Machined
12	710986	3	SCR-SC 3/8-16 x 1.00 STPL
13	430035	1	Drive Hub
14	711555	1	WSR-Loc Internal
15	320268	1	Pin
16	210066	1	Drive Hub Retainer
17	450076	2	Crimp Clamp SS
18	833473	1	Hose Barb ¼ FPT x 3/8 Barb
19	100000	1	Mounting Bracket Quick Disc.
20	711579	1	WSR-Flat .56 x 1.00
21	430081	1	Wheel Mount U Strut Left
22	430114	1	Nylon Cap ¼ FPT HC4
23	430118	1	Clear Dump Hose C/L 22"
24	828952	1	3/8 barb x ¼ MPT
25	833325	1	Elbow ¼ MPT x 3/8 Barb
26	742330	1	Transaxle 170TD
27	711505	2	WSR-Flat ¼
28	430313	2	Nut-Nyloc M6
29	430308	1	Wheel
30	430319	1	Motor Mount Weldment
31	711553	4	WSR-Int. Tooth #10
32	711355	4	SCR-MC 10-32 x .500
33	711374	1	Nut-Nyloc 5/16-18
34	430066	2	Squeegee Return Spring Long
35	430067	1	Squeegee Return Spring Short
36	711246	1	BLT-HH 3/8-16 x .87 STPL
37	711227	1	BLT-HH 5/16-18 x .62
38	430030	1	Squeegee Mount Weldment
39	711515	3	WSR-Flat .44 x .87 x .07
40	430306	1	Mounting Plate Weldment
41	712569	2	SCR-MC ¼-20 x 1.50 SS
42	430088	1	L Bracket Motor Lift
43	430113PLT	1	Bushing
44	430014	1	Motor Lift Weldment
45	210142	1	Pedal
46	430064	1	Wheel Mount U Strut Right
47	430051	1	Return Spring
48	711379	1	Nut-Flanged Wizz 5/16-18
49	711212	1	BLT-HH ¼-20 x 1.50
50	361203	1	Rubber Skirt
51	361205	1	Skirt Retainer
52	711106	3	SCR-ST-A 10 x .75
53	430116	1	Hose 3/8 Nylon x 34"
54	711517	3	WSR-Flat .77 x 1.37 x .03
55	430003	1	Motor Mount Weldment
56	430009	1	Motor Bracket Weldment
57	833102	3	Compression Spring
58	260041	3	Flange Bushing
59	710992	3	Shoulder Bolt ½ x 1.25



Parts List

Item	Part No.	Qty.	Description
1	430301	1	Speed Control Cover
2	711161	14	SCR-Hi/Lo 10 x 5/8
3	430316	1	Edge Seal
4	740944	1	Speed Control Board
5	740368	1	Potentiometer Assembly
6	809874	1	Knob
7	711430	1	Tinnerman Plate
8	210362	1	Switch Bracket
9	833329MCH	1	Micro Switch
10	710307	2	6-32 x 1.00 Screw
11	711002	1	SCR-SK 8-32 x .500
12	430312	1	Cam Assembly
13	829052	2	Nylon Flanged Bushing
14	711721	2	Retaining Ring
15	430313	1	Wire Handle
16	809754	1	Switch, Rocker
17	742102	1	Switch, 2-Position
18	740216	1	Gauge, Battery Condition
19	715752	1	Decal
20	712822	6	SCR-THMS 10-24 x .50 STPL
21	711124	2	SCR-ST-B 10 x .37
22	712320	2	WSR-Nylon .22 x .45 x .04
23	740591	1	Panel Light Assembly
24	740711	1	Switch
25	430053	1	Solution Control Cable
26	430307	1	Dashboard
27	760592	1	Knob, Oval Tapered
28	430060	1	Squeegee Lift Arm Assembly
29	430052	1	Squeegee Lift Cable Assembly
30	711506	2	WSR-Flat 5/16 STPL
31	712041	2	BLT-Shoulder 1/4-20 x .44 x .37
32	711523	1	WSR-Wave .37 x .68 x .02
33	829014	1	Flanged Bushing
34	762058	1	Spacer .319 x .375 x .250
35	711301	2	Nut-Hex 6-32
36	711551	2	WSR-Internal Lock #6
37	430087	1	Anderson Plug Bracket
38	740097	1	SB50 Red 111783G2FOR B43
39	710207	2	SCR-MC 6-32 x .87 STPL
40	711161	7	SCR-Hi/Lo #10 x 3/4
41	742350	1	Circuit Breaker 6A
42	710180	2	SCR-MC 1/4-20 x .75
43	711352	1	Nut-Acorn 1/4-20
44	430059	1	Squeegee Lift Bracket Assembly
45	711373	1	Nut-Nyloc 1/4-20
46	711505	1	WSR-Flat 1/4
47	740131	1	Circuit Breaker, Dive Motor
48	741037	1	5 Sec. Delay Timer
49	711211	1	BLT-HH 1/4-20 x 1.37
50	740132	1	Insulator, Glastic
51	710356	2	SCR-MC 10-32 x .62 STPL
52	740241	1	Contact, 24V 50A
53	710178	1	SCR-MC 1/4-20 x .50
54	711425	6	Nut-Flanged Wizz 1/4-20
55	711503	4	WSR-Flat #10
56	711350	2	Nut-Nyloc 10-32
57	760286	1	Wire Formed Hook
58	430120	1	U Channel
59	711808	1	Cotter Pin - Hair #13
60	430105	1	Clevis Pin .312 x .175
61	430070	1	Squeegee Mount Assembly
62	430073	1	Gasket, Diecut
63	430074	6	Adjusting Nut
64	430085	2	Squeegee Bumper Wheel
65	430078	1	U Profile
66	11-145	1	Squeegee Blade
67	430076	2	Nylon Squeegee Insert
68	712517	4	SCR-MC 8-32 x 1 SS FH
69	430079	1	Casting, Squeegee Assembly
70	370031	2	Wheel

WIRING DIAGRAM



LIMITED WARRANTY

Minuteman International, Inc. warrants to the original purchaser/user that this product is free from defects in workmanship and materials under normal use and service for a period of three years from date of purchase. In addition, Minuteman International, Inc. will, at its option, honor labor warranty claims for the first 12 months from date of sale, provided such claims are submitted through and approved by factory authorized repair stations. Minuteman International, Inc. will, at its option, repair or replace without charge, except for transportation costs, parts that fail under normal use and service when operated and maintained in accordance with the applicable operation and instruction manuals.

This warranty does not apply to normal wear, or to items whose life is dependent on their use and care, such as belts, cords, switches, hoses, rubber parts, electrical motor components or adjustments. Parts not manufactured by Minuteman International, Inc. such as engines, batteries, battery chargers, hydraulic pumps, and tires are covered by and subject to the warranties and/or guarantees of their manufacturers. Please contact Minuteman International, Inc. for procedures in warranty claims against these manufacturers.

Special warning to purchaser — Use of replacement filters and/or prefilters not manufactured by Minuteman International, Inc. or its designated licensees, will void all warranties expressed or implied.

A potential health hazard exists without exact original equipment replacement.

All warranted items become the sole property of Minuteman International, Inc. or its original manufacturer, whichever the case may be.

Minuteman International, Inc. disclaims any implied warranty, including the warranty of merchantability and the warranty of fitness for a particular purpose. Minuteman International, Inc. assumes no responsibility for any special, incidental or consequential damages.

This limited warranty is applicable only in the U.S.A. and Canada, and is extended only to the original user/purchaser of this product. Customers outside the U.S.A. and Canada should contact their local distributor for export warranty policies. Minuteman International, Inc. is not responsible for costs or repairs performed by persons other than those specifically authorized by Minuteman International, Inc. This warranty does not apply to damage from transportation, alterations by unauthorized persons, misuse or abuse of the equipment, use of non-compatible chemicals, or damage to property, or loss of income due to malfunctions of the product.

If a difficulty develops with this machine, you should contact the dealer from whom it was purchased.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion or limitation of special, incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

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