



Electronic Service Manuals

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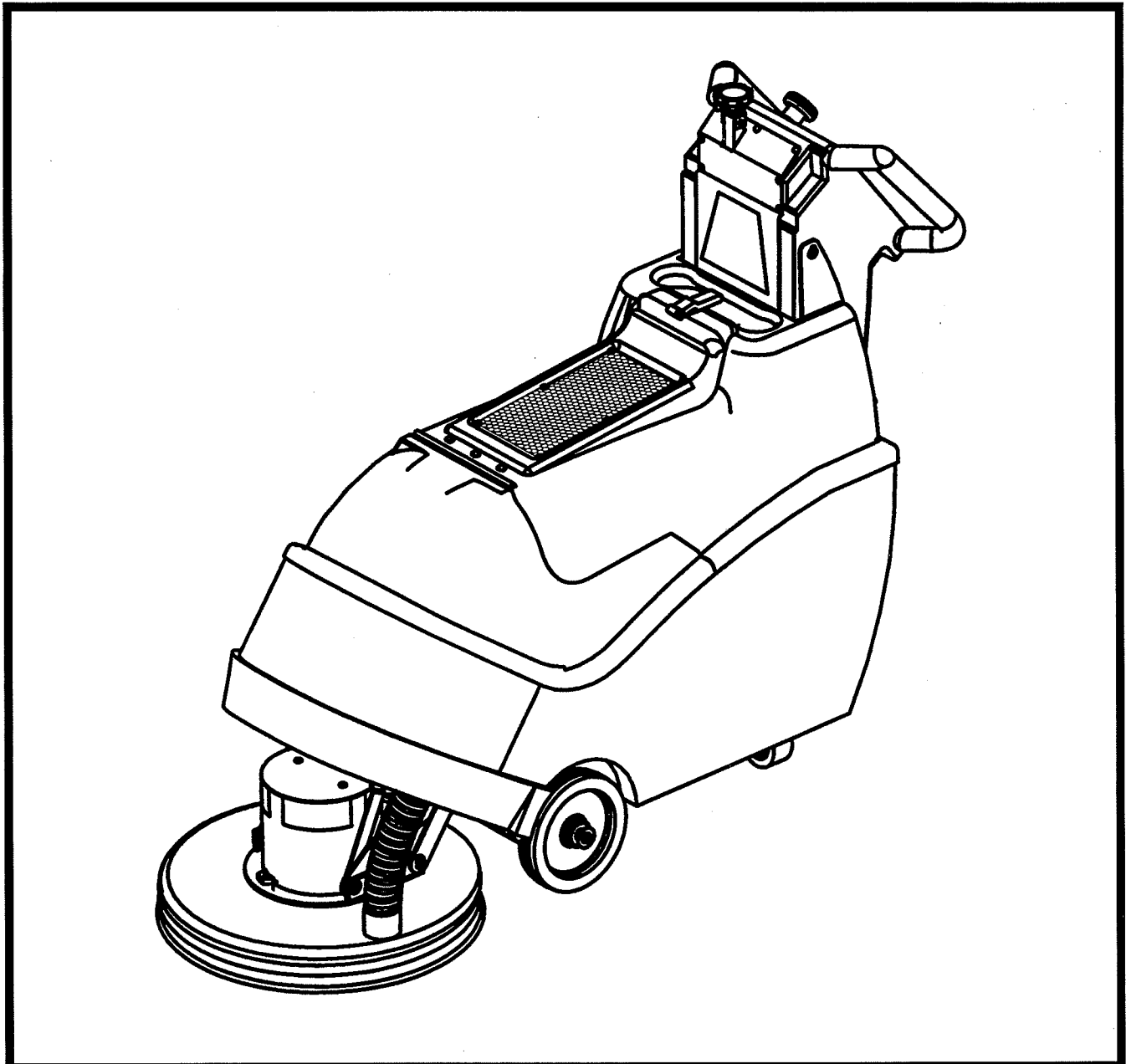
Serving the Cleaning Industry Since 1922

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Lumina 20 Battery Burnisher

Model:
M26036QP
M26036CE

■ OPERATION ■ SERVICE ■ PARTS ■ CARE



Revised 5/02

Minuteman[®]

Contents

Illustration, Spare Parts, Operation, and Service

Precautions	1
Operating Instructions	2
Inspection	2
Maintenance	2
Pad Installation & Adjustment	3
Circuit Breakers	3
Carbon Brush Replacement	3
Battery Service, Installation, & Charging	4
Machine Overview, Control Panel Diagram	4
Base Assembly	5 - 6
Mainframe Assembly	7 - 8
Cover Assembly	9
Pad Driver Assembly	10
Pressure Adjustment Assembly	11
Electrical Assembly	12
Dashboard Assembly	13
Schematic Diagram	14 - 15
Warranty Policy	Back Cover

IMPORTANT SAFETY INSTRUCTIONS

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

Keep hands and feet clear of moving parts while machine is in operation.

Disconnect the power to the machine by pressing the red Emergency Disconnect Button when charging batteries or during installation or removal of pads.

During operation, loose objects on the floor can become dangerous projectiles if struck by the high speed pad. Special attention should be paid in removing or avoiding loose floor tile, electrical cables, telephone connection boxes.

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 dust, etc.

Keep machine moving to reduce the risk of damaging floor finish and floor.

Make sure the red Emergency Disconnect Button is pressed and the battery connector is unplugged from the machine 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.

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 machine. Charge the batteries in a well-ventilated area with the battery cover removed completely.

Maintenance and repairs must be performed by authorized personnel.

SAVE THESE INSTRUCTIONS

OPERATING INSTRUCTIONS

INSPECTION

Carefully unpack and inspect your burnisher for shipping damage. Each unit is tested and thoroughly inspected before shipment; any damage is the responsibility of the delivery carrier who should be notified immediately.

ELECTRICAL

This machine is battery operated and designed to operate on 36 volts DC (3) 12 volt batteries.

BATTERIES

Burnishers are shipped with batteries. (3 required)

Part No. 956701 12V 165AH 20 Hr. Rate (Standard)

Part No. 956210 12V 210AH 20 Hr. Rate (Optional)

We do not recommend mixing AMP hour capacities. Any alternate battery sets can be used if they equal physical size and capacity. See next page for service and installation.

OPERATION

Before starting, familiarize yourself with the machine and its controls (see "Machine Overview" and "Control Panel" diagrams). To turn the machine ON, do the following:

1. Make sure 20" high speed pad is used. Make sure the pad is installed on the machine by following instructions under "Pad Installation."
2. Make sure that no battery charger is plugged into the recharge port.
3. Lift the red emergency disconnect button so it is in the up position.
4. Lower the pad driver assembly by pushing the pedal slightly outward on the machine (unlock it), and then release it slowly.
5. Turn the power switch to the ON position. The pad driver will then slowly adjust itself to the floor. Move forward in a straight line, check the reading on the Operating Range Meter and make sure you are in the Green ZOne.
6. Adjust the pad pressure as needed by turning the knob accordingly. (See Pad Pressure Adjustments.)

AFTER USE

To raise the pad driver, push down until the pedal arm engages into the pedal catch. Turn machine off by pressing the "O" button of the power switch on the control panel. Machine can be cleaned with a mild detergent and a damp cloth. Batteries should be charged after each use or when the battery condition meter shows a low charge. Once the battery charger reads 0 amps, the batteries are recharged. This should take approximately 6 hours if the batteries are completely discharged.

MAINTENANCE

Periodically remove batteries from machine. Clean the batteries and battery tray with a solution of baking soda and water. Check all battery cables and wiring for signs of damage and wear. Replace as needed. Grease front wheel and rear caster zerks once a month for best operation.

FLOOR SEAL STRIP

When the floor seal strip show signs of excessive wear, seal should be replaced. The strip can be removed by loosening the screw on the retainer strap until the seal can slide off of the pad shroud housing. To install new seal, slip the retainer strap over the new seal strip and pad shroud. Make sure the seal is seated equally around the perimeter and the holes on the floor seal are oriented towards the back portion of the shroud.

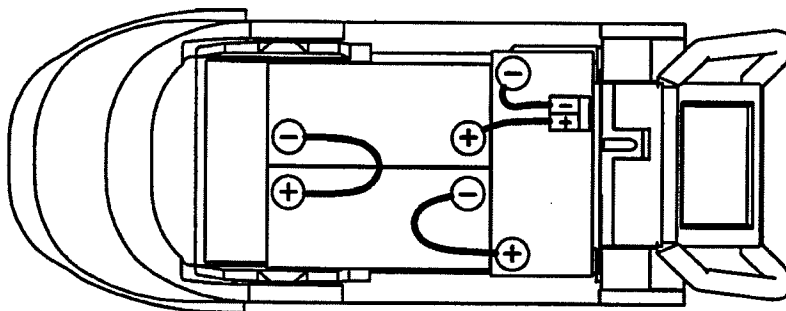
BATTERY SERVICE AND INSTALLATION

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.

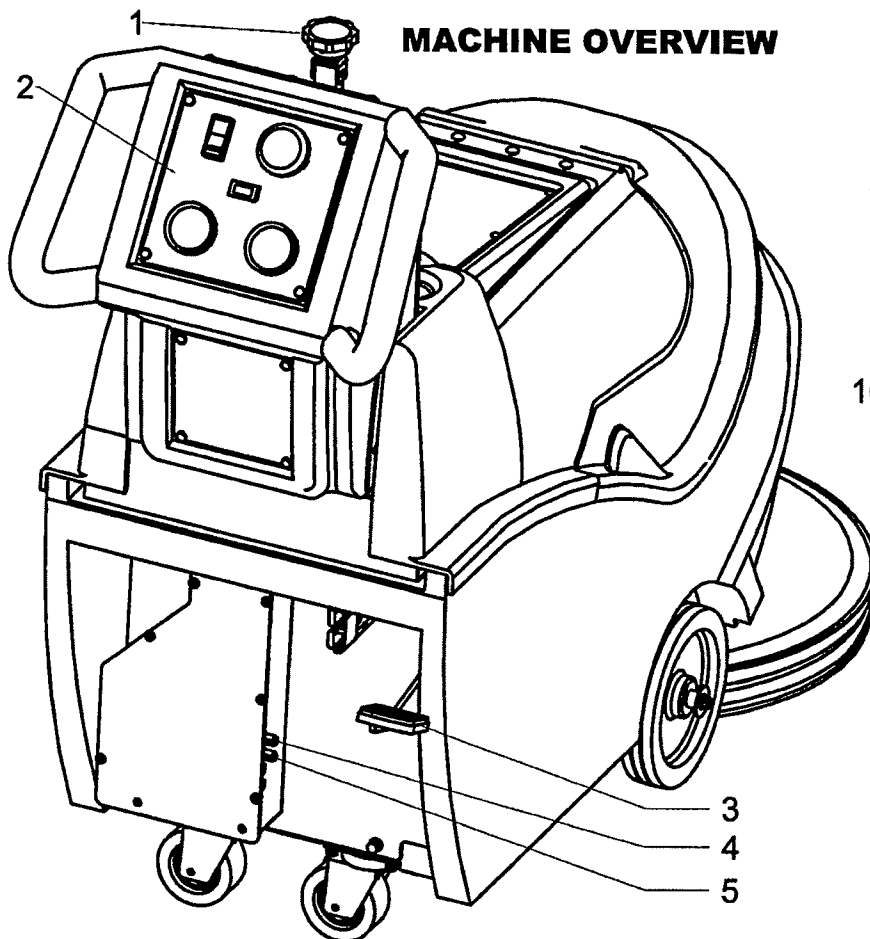
CHARGING OF BATTERIES

Charging batteries generates explosive gasses. **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 with battery cover removed completely. Fluid levels should be checked before and after charging and maintained at the proper levels. If the burnisher is not used for extended periods of time, batteries should be kept fully charged with a boost charge once a week.

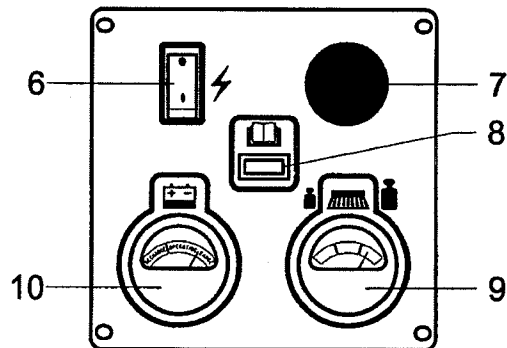
BATTERY CABLE ROUTING



MACHINE OVERVIEW



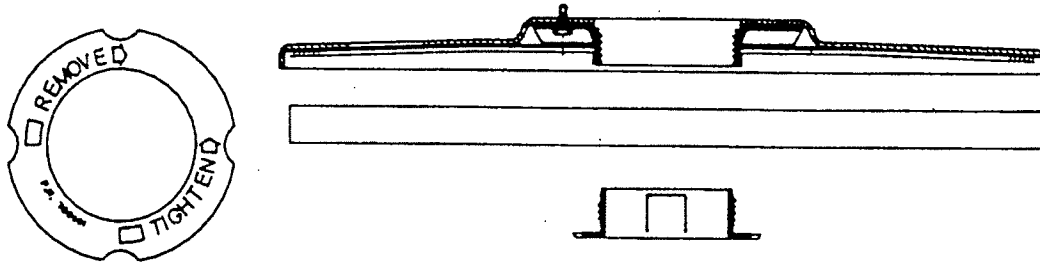
CONTROL PANEL



1. Pad Pressure Adjust Knob
2. Dashboard Control Panel
3. Foot Pedal
4. Circuit Breaker 70 AMP
5. Circuit Breaker 3 AMP
6. Main Power Switch
7. Emergency Button
8. Carbon Brush Indicator
9. Pad Pressure Gauge
10. Battery Gauge

Pad Installation

The red emergency disconnect button and power must be in the OFF position before installation and the pad driver assembly in the RAISED position. Remove center cup locking device by gripping on outer edges and turning clockwise. **NOTE:** Center cup cannot be pulled out; it must be unscrewed. After removing used pad, place new pad on pad driver assembly using outer flange of pad driver to center the pad. Push centering locking cup through the pad and into the pad driver assembly. The ratchet teeth on the center cup will engage into the pad driver assembly and should be pushed in as far as possible. If further tightening is needed, rotate the center-locking cup counter-clockwise.



PAD PRESSURE ADJUSTMENTS

The pad pressure adjust knob is located on the top of the control console. Counter-clockwise rotation increases pad pressure, the opposite rotation decreases. Different floors, conditions, and pads produce varying pad load conditions. Ideal burnishing conditions are maintained while the operating range meter remains in the Green Zone. If the meter reads in the Red Zone decrease the pad pressure. When the machine is operated in the Red Zone for a long period of time motor overload will occur and the 70-amp circuit breaker for the motor will trip. If the motor circuit trips:

1. Check pad condition.
2. Decrease pad pressure.
3. Reset circuit breaker.

CIRCUIT BREAKER PROTECTION

70 amp circuit breaker protects pad driver motor from excessive overload conditions.

3 amp circuit breaker protects control circuits against possible electrical shorts.

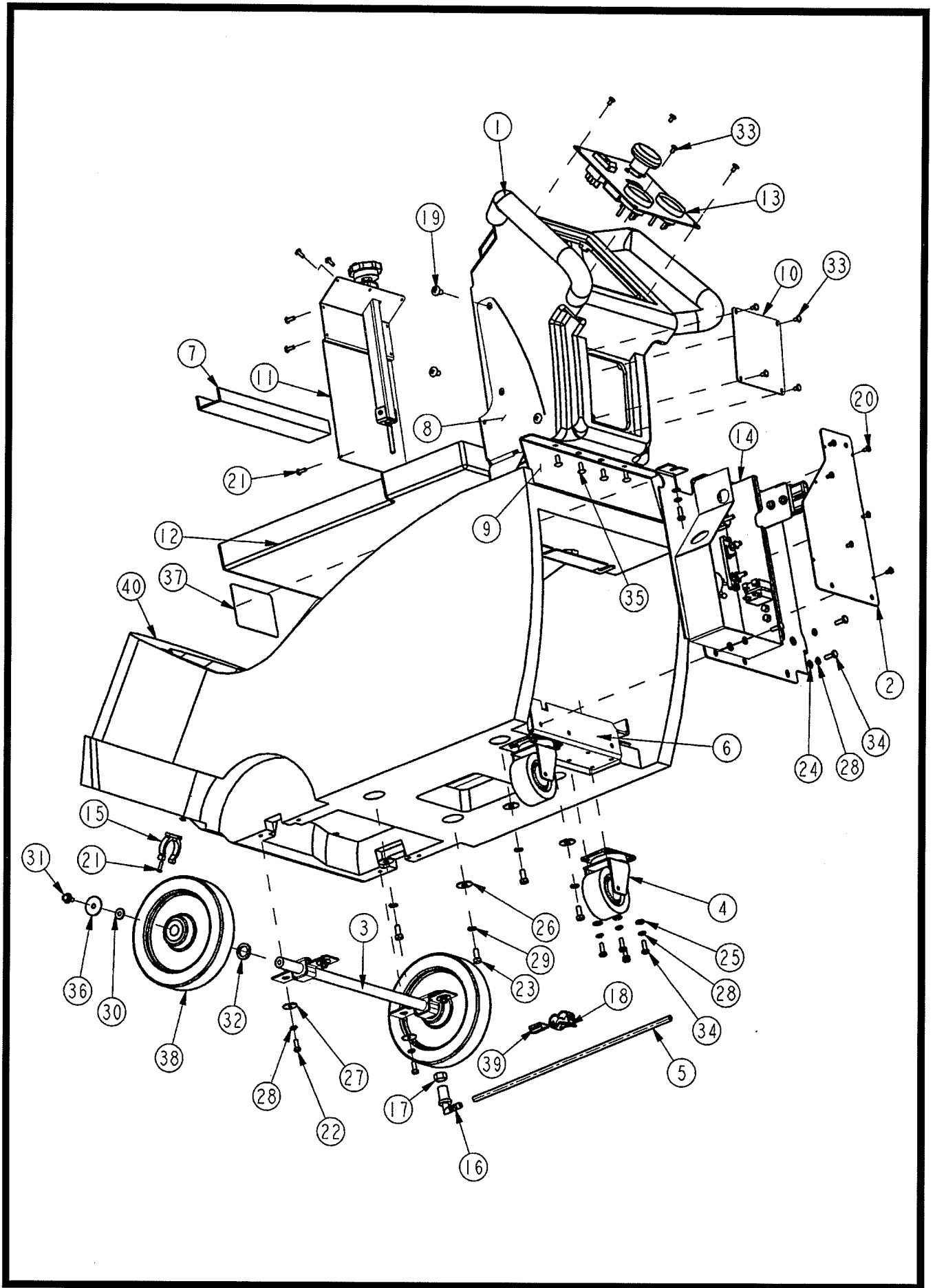
If either circuit breaker trips, first determine the cause and correct the condition before resetting the breakers.

CARBON BRUSH REPLACEMENT

Design life of carbon brushes is between 1800-2000 hours. Replace brushes if worn to 3/8" or less, broken, or chipped. All carbon brushes should be replaced when motor is serviced. Four (4) are required, P/N 572003. Red indicator on control panel will glow when carbon brush service is required.

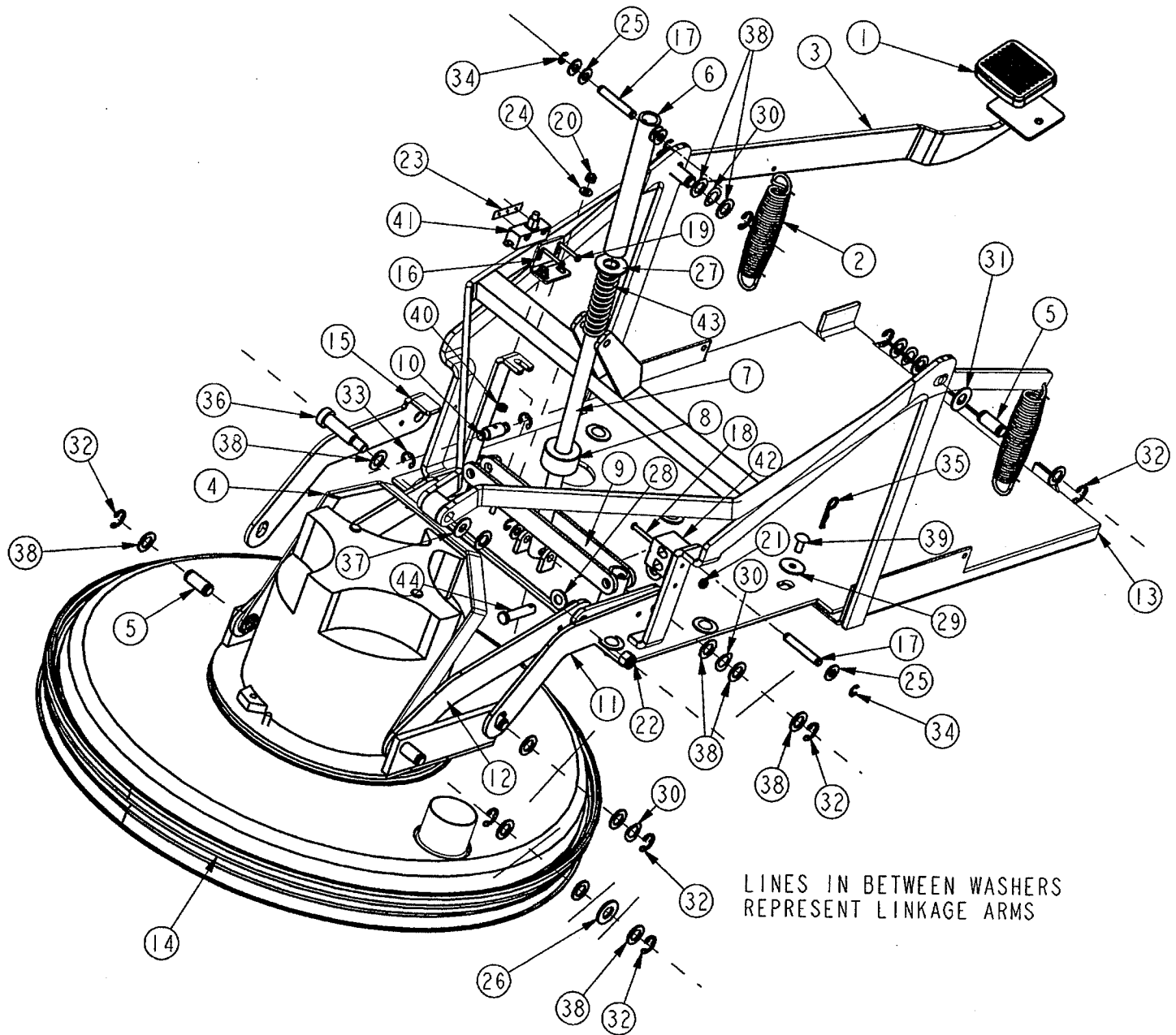
CARBON BRUSH SERVICE

1. Disconnect batteries from machine.
2. Remove two screws that hold dust control housing and motor cover to motor.
3. Blow out top of motor with air line.
4. Loosen screw and remove carbon brush lead.
5. Slide brush spring off the back of carbon brush and remove brush.
6. Reverse order for installation of new carbon brushes.



Parts Listing

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	200104	1	Handle Console 200
2	200154	1	Panel Cover Weldment
3	200250	1	Axle Weldment
4	200345	2	Caster, 3-1/2 Polyurethane
5	260224	1	Silicone Hose 18 C/L
6	260536	1	Base Plate Weldment
7	260537	1	Lumina Battery Spacer
8	260538	1	Front Handle Bracket Weldment
9	260541	1	Rear Handle Brkt
10	260544	1	Panel Cover
11	260549	1	Pressure Adj Assembly
12	260558	1	Battery Box
13	260569	1	Dash Brd Assy, Burnisher
14	260570	1	Electrical Panel Assembly
15	260579	1	Tool Clip, 1.5" Hose
16	320271	1	Fitting Nylon 90 1/4mpt x 3/8hb
17	320272	2	Nozzle Body Locknut
18	320273	1	Hose Shut-Off Clamp
19	710195	6	SCR-MC 5/16-18 x .50
20	711124	6	Pan Head ST #10 x .37
21	711160	11	#10 x 5/8 Hi-Lo
22	711203	4	BLT-HH 1/4-20 x .62 STPL
23	711228	4	BLT-HH 5/16-18 x .75 ST PL
24	711504	6	WSR-Flat 1/4 ID SS
25	711505	8	1/4 WSR
26	711507	4	WSR-Flat 3/8 (.38x1.12x.06)
27	711519	4	WSR-Flat .25 x 1.01 x .06
28	711544	18	WSR-Helical 1/4
29	711545	4	WSR-Helical 5/16
30	711575	2	WSR-Flt .31 x .75 x .06 ST
31	712042	2	BLT-WSR HH 5/16-18 x .62
32	712318	2	WSR-Flat .75 x 1.12 x .12 PL
33	712540	8	10-24 x .37 SS Truss HD SCR
34	712562	14	Bolt-HH 1/4-20 x 3/4 SS
35	712565	9	SCR-MC 1/4-20 x .63 SS TR HD
36	712759	2	WSR-Flt .31 x 1.37 x .06 SS
37	715430	1	Decal, Battery Routing
38	762332	2	Wheel 8 x 2 x .75 w/Bearing
39	809444	1	Clip Cord
40	200102MCH	1	Base Machined



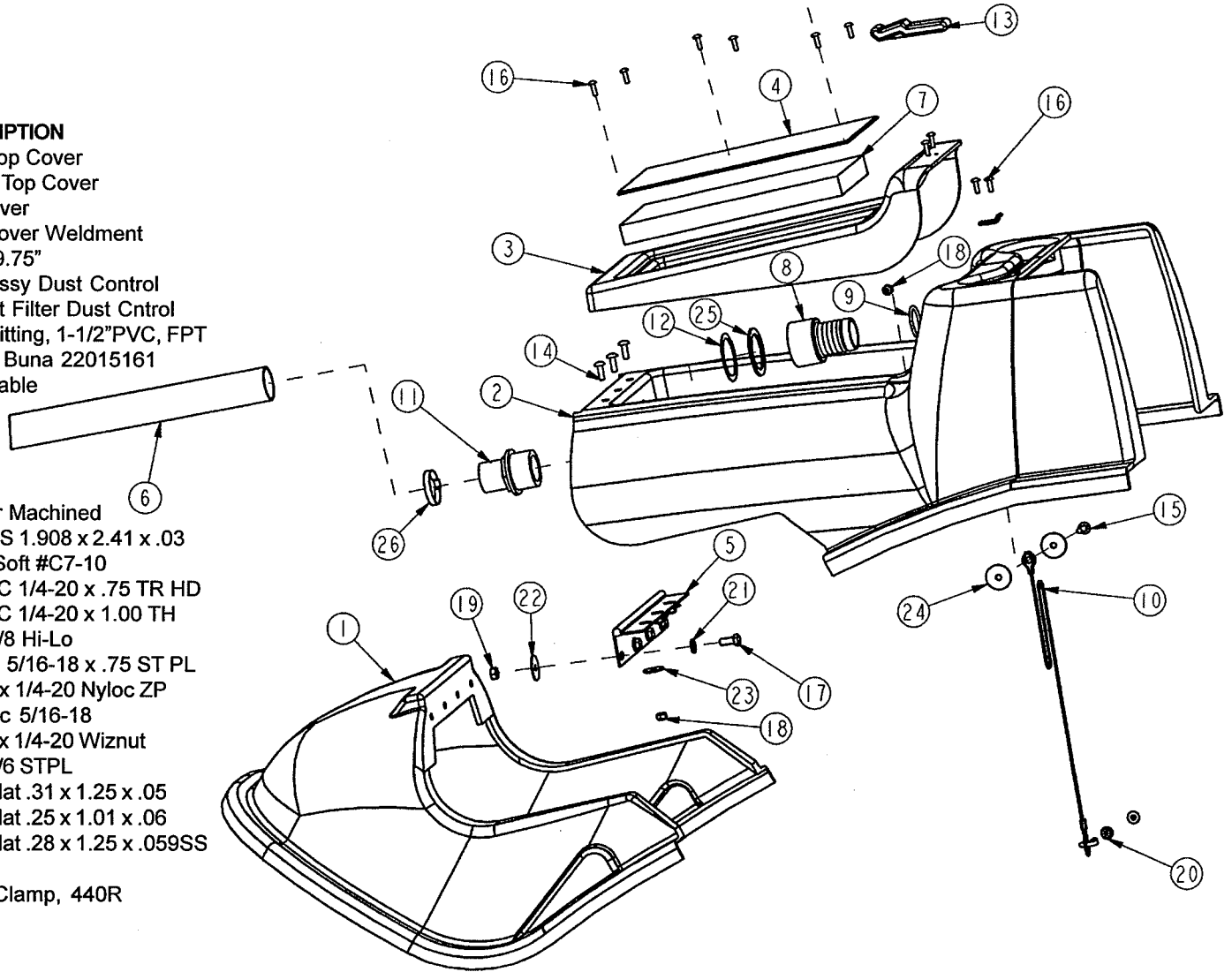
LINES IN BETWEEN WASHERS
REPRESENT LINKAGE ARMS

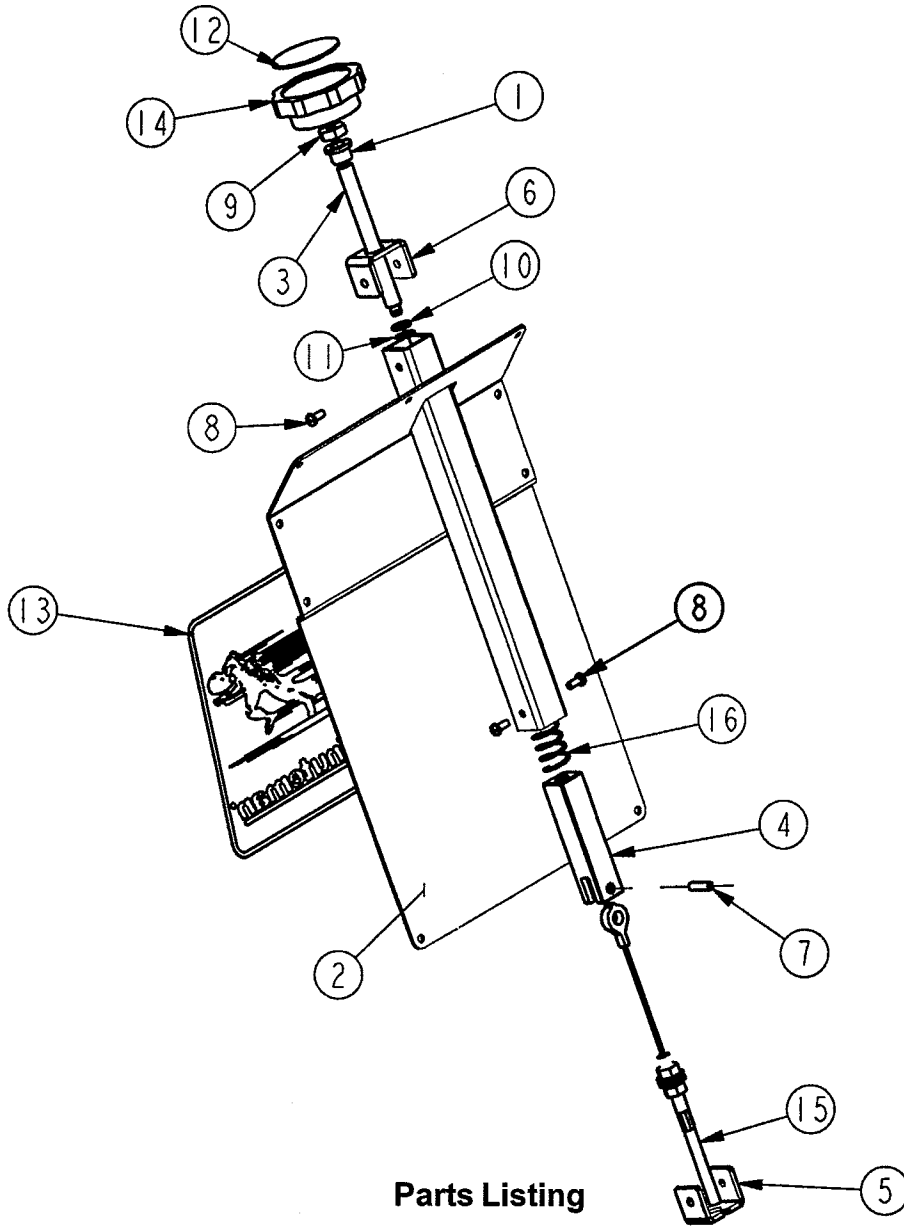
Parts Listing

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	210142	1	Pedal Pad
2	260211	2	Hobby Spring
3	260511	1	Upper WMT
4	260513	1	Motor Lift Weldment
5	260519	4	Pivot Pin
6	260521	1	Guide Tube
7	260522	1	Spring Guide
8	260523	1	Spring Spacer 1.50 x .632 x .84
9	260524	2	Adjustment Link
10	260525	1	Adjustment Nut
11	260528	1	Link
12	260529	2	Trailing Link
13	260536	1	Base Plate Weldment
14	260565	1	Motor Assembly
15	260576	1	Link
16	260577	1	Switch Interlock Bracket
17	670605	2	Roller Pin
18	710036	1	SCR-MC 8-32 x 1.50 ST PL
19	710307	2	SCR-MC 6-32 x 1.0 ST PL PAN HD
20	711350	2	Nut, Hex 10-32 ST PL - Nyloc
21	711372	1	Nut, Hex 8-32 Nyloc
22	711380	1	Nut-Nyloc 3/8-16 Nut
23	711430	1	Nut-Tinnerman Twin 6-32
24	711503	2	WSR, Flat #10
25	711506	8	WSR-5/6 STPL
26	711509	2	WSR-Flat 1/2 (.54x1.082x.087)
27	711511	1	WSR-Flat .62 x 1.31 x .09
28	711515	2	WSR-Flat .406 x .812 x .0625
29	711519	6	WSR-Flat .25 x 1.01 x .01
30	711524	6	WSR-Wave .52 x .87 x .01
31	711592	2	WSR Nylon .5 x 1.06 x .06
32	711713	14	Retaining Ring-E Type Ext .500
33	711717	2	Retaining Ring-E Type .37
34	711721	4	Retaining Ring-E Type
35	711808	1	Cotter Pin-Hair
36	712102	1	BLT-SHLDR 1/2 x 1-1/2
37	712301	1	WSR-Flat .87 x .38 x .06
38	712310	28	WSR-Flat .52 x .87 x .06 PL
39	712565	6	SCR-MC 1/4-20 x .63 SS TR HD
40	712905	1	Nut-Hex 10-24 NIPL
41	743080	1	Brush Switch
42	743598	1	Terminal Block, 2 Pos
43	762339	1	Spring Compression
44	831965	1	3/8 x 1.63" Clevis Pin

Parts Listing

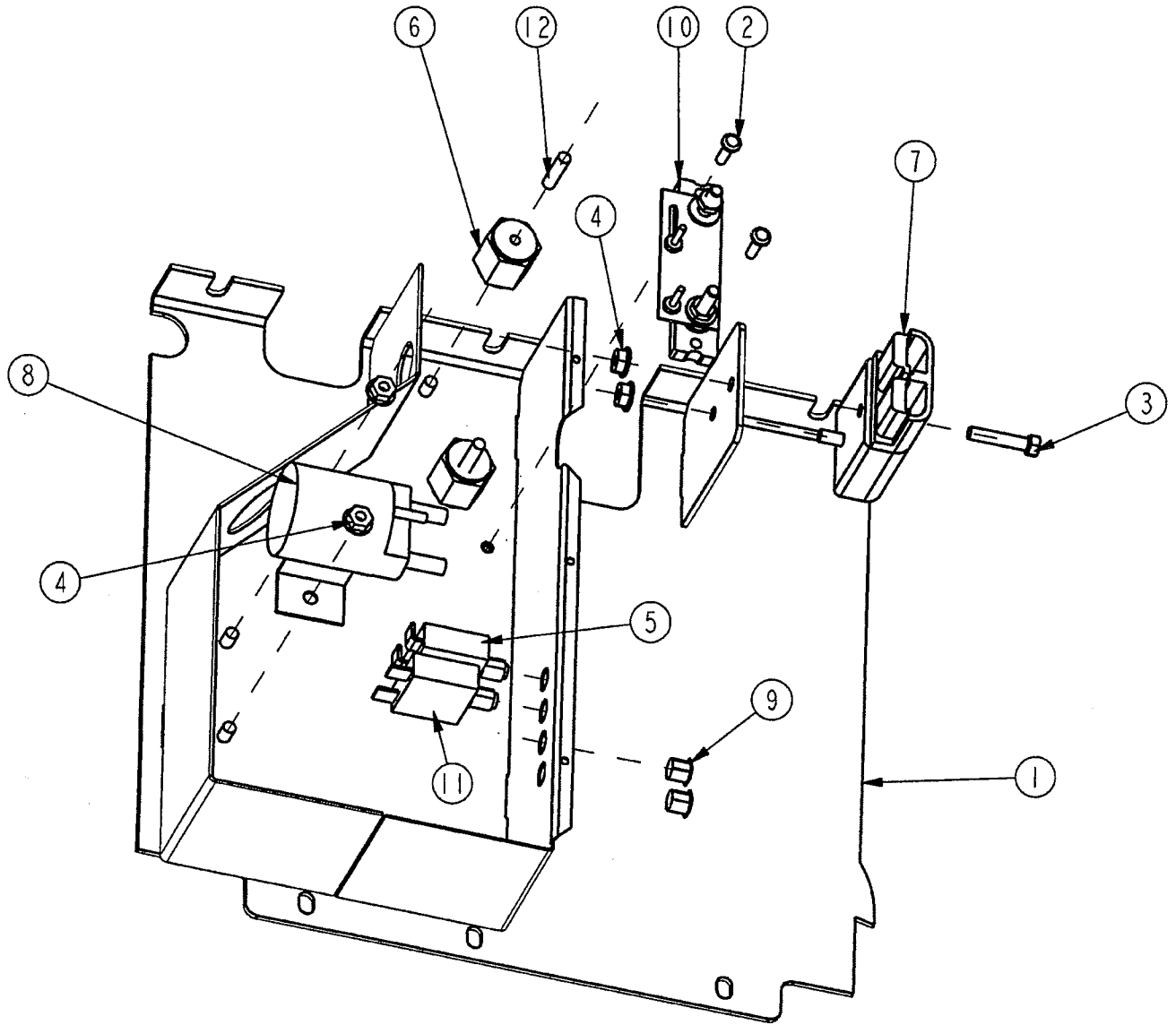
ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	260501	1	Fixed Top Cover
2	260502	1	Moving Top Cover
3	260503	1	Bag Cover
4	260504	1	Filter Cover Weldment
5	260560	1	Hinge 9.75"
6	260590	1	Hose Assy Dust Control
7	260592	1	Exhaust Filter Dust Control
8	260596	1	Insert Fitting, 1-1/2"PVC, FPT
9	310008	1	O Ring Buna 22015161
10	320246	1	Tank Cable
11	450037	1	Adapter Machined
12	450081	1	WSR-SS 1.908 x 2.41 x .03
13	450207	1	Latch, Soft #C7-10
14	710180	3	SCR-MC 1/4-20 x .75 TR HD
15	710182	1	SCR-MC 1/4-20 x 1.00 TH
16	711160	10	#10 x 5/8 Hi-Lo
17	711228	4	BLT-HH 5/16-18 x .75 ST PL
18	711373	4	Nut, Hex 1/4-20 Nyloc ZP
19	711374	4	Nut-Nloc 5/16-18
20	711425	2	Nut, Hex 1/4-20 Wiznut
21	711506	4	WSR-5/6 STPL
22	711516	4	WSR-Flat .31 x 1.25 x .05
23	711519	3	WSR-Flat .25 x 1.01 x .06
24	712761	2	WSR-Flat .28 x 1.25 x .059SS
25	828970	1	Gasket
26	831001	1	Crimp Clamp, 440R





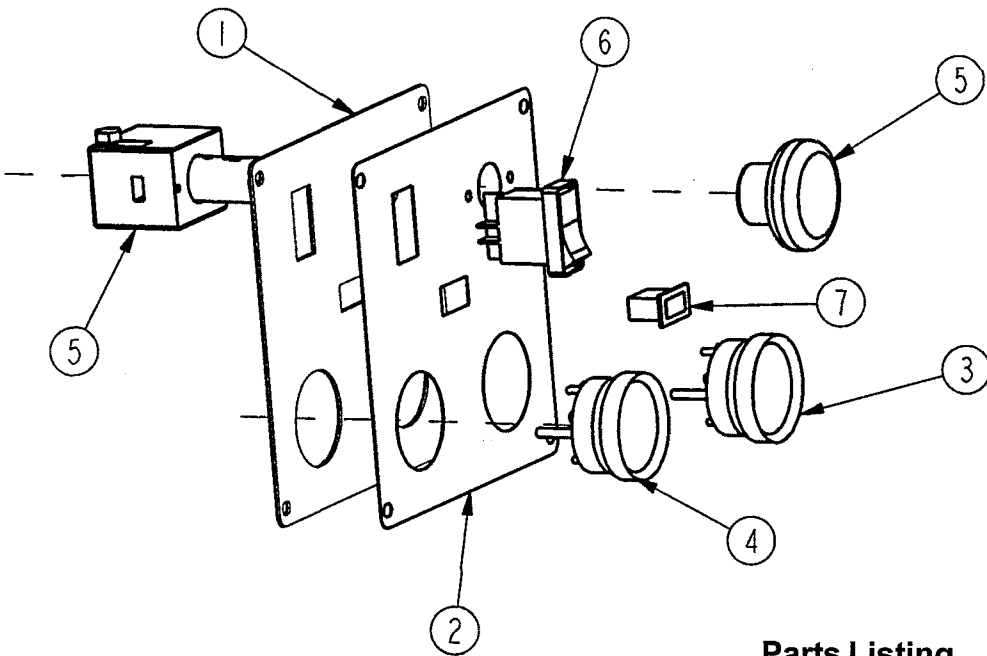
Parts Listing

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	260066	1	Oilite Bushing
2	260547	1	Press Adj Mount Weld
3	260554	1	Press Adj Screw
4	260557	1	Press Adj Slide
5	260562	1	Press Adj Ret Brkt
6	260563	1	Press Adj Ret Brkt
7	260564	1	Roll Pin 3/16" x3/4"
8	710328	4	SCR-MC 8-32 x .37 ST PL - Round Head
9	711391	1	Nut-Hex Jam 3/8-16 ST PL
10	711566	1	WSR-Flat .259 x .500 x .07
11	711720	1	.250 Dia Retaining Ring-E Type
12	715038	1	Decal, Pad Pressure
13	715634	1	Decal, Minuteman ID
14	760034	1	Knob, Adj (Set Screw)
15	762253	1	Cable, Assy Pressure
16	833102	1	Spring .62 x .75 x 1.75



Parts Listing

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	260542	1	Back Panel Weldment
2	710356	2	SCR-MC 1032X.62 Pan HD
3	711210	2	BLT-H 1/4-20 x 1.25 STPL
4	711425	4	Nut, Hex 1/4-20 Wiznut
5	740131	1	Circuit Breaker - 70 amp
6	740132	2	Insulator, Glastic
7	740147	1	CB 175 Gray Housing
8	740243	1	Contactor 36V 124-117111
9	742749	2	Heyco, Hole Plug
10	743464	1	Shunt Calibrated Assy
11	746006	1	Circuit Breaker - 3A
12	833638	2	Brass Stud



Parts Listing

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	260546	1	Dashboard, Burnisher
2	715297	1	Decal, Lumina 20
3	740135	1	Meter, 100A DC (Pressure)
4	740136	1	Meter, Volt 22V45V Battery
5	742202	1	Emergency Stop Switch
6	809754	1	Switch, Rocker
7	746100-1	1	Light Assembly

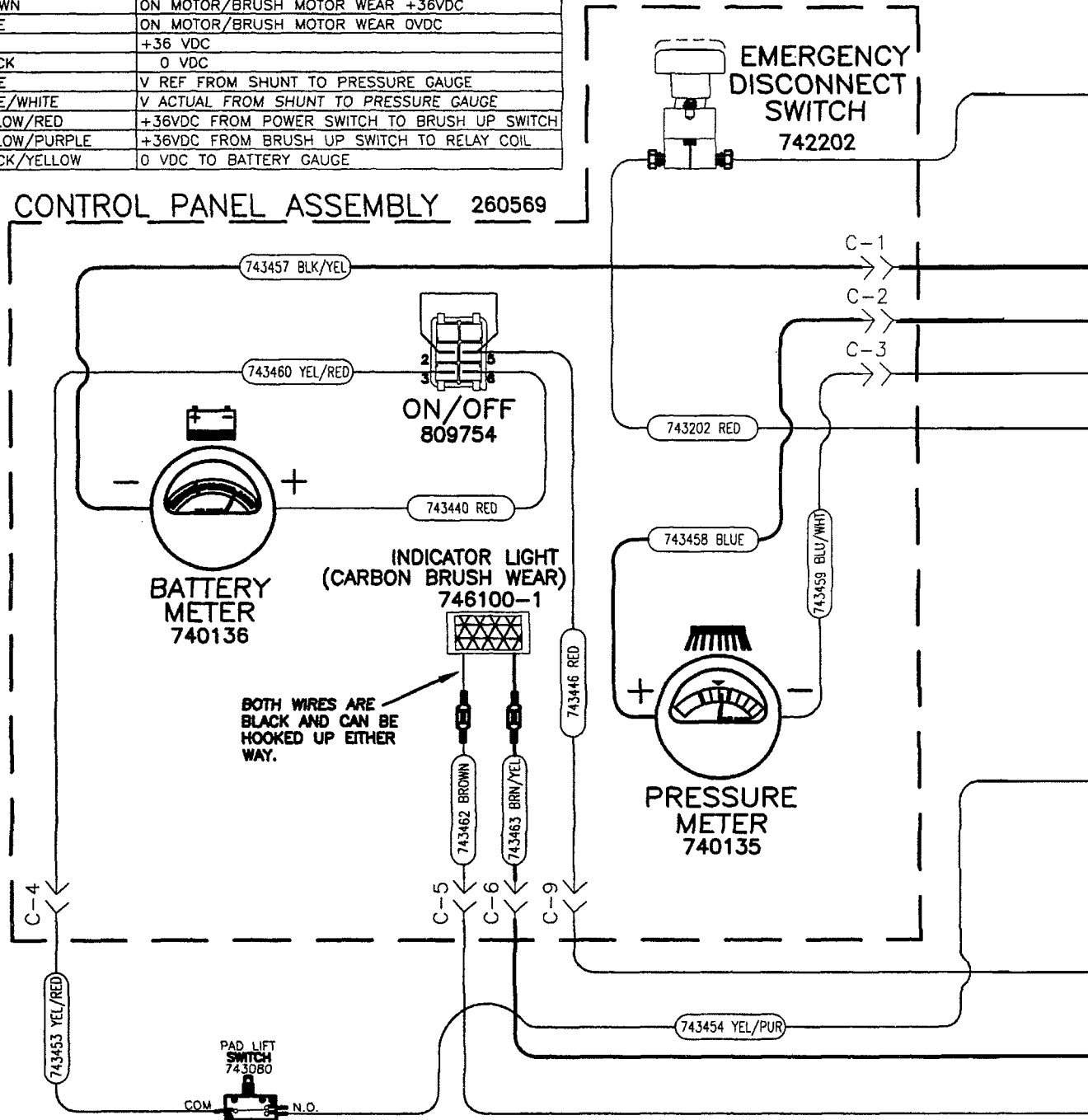
	<p>Dust Skirt P/N 260595</p>
	<p>Carbon Brush Replacements P/N 572003 (Qty 4)</p>
	<p>210 amp Hour Battery (Optional) P/N 956210</p>
	<p>Paper Bag Replacements P/N 370202PKG</p>



SCHEMATIC DIAGRAM M26036QP

WIRE COLOR CODE	
BROWN	MOTOR/BRUSH MOTOR WEAR TO INDICATOR
BROWN/YELLOW	MOTOR/BRUSH MOTOR WEAR TO INDICATOR
BROWN	ON MOTOR/BRUSH MOTOR WEAR +36VDC
BLUE	ON MOTOR/BRUSH MOTOR WEAR 0VDC
RED	+36 VDC
BLACK	0 VDC
BLUE	V REF FROM SHUNT TO PRESSURE GAUGE
BLUE/WHITE	V ACTUAL FROM SHUNT TO PRESSURE GAUGE
YELLOW/RED	+36VDC FROM POWER SWITCH TO BRUSH UP SWITCH
YELLOW/PURPLE	+36VDC FROM BRUSH UP SWITCH TO RELAY COIL
BLACK/YELLOW	0 VDC TO BATTERY GAUGE

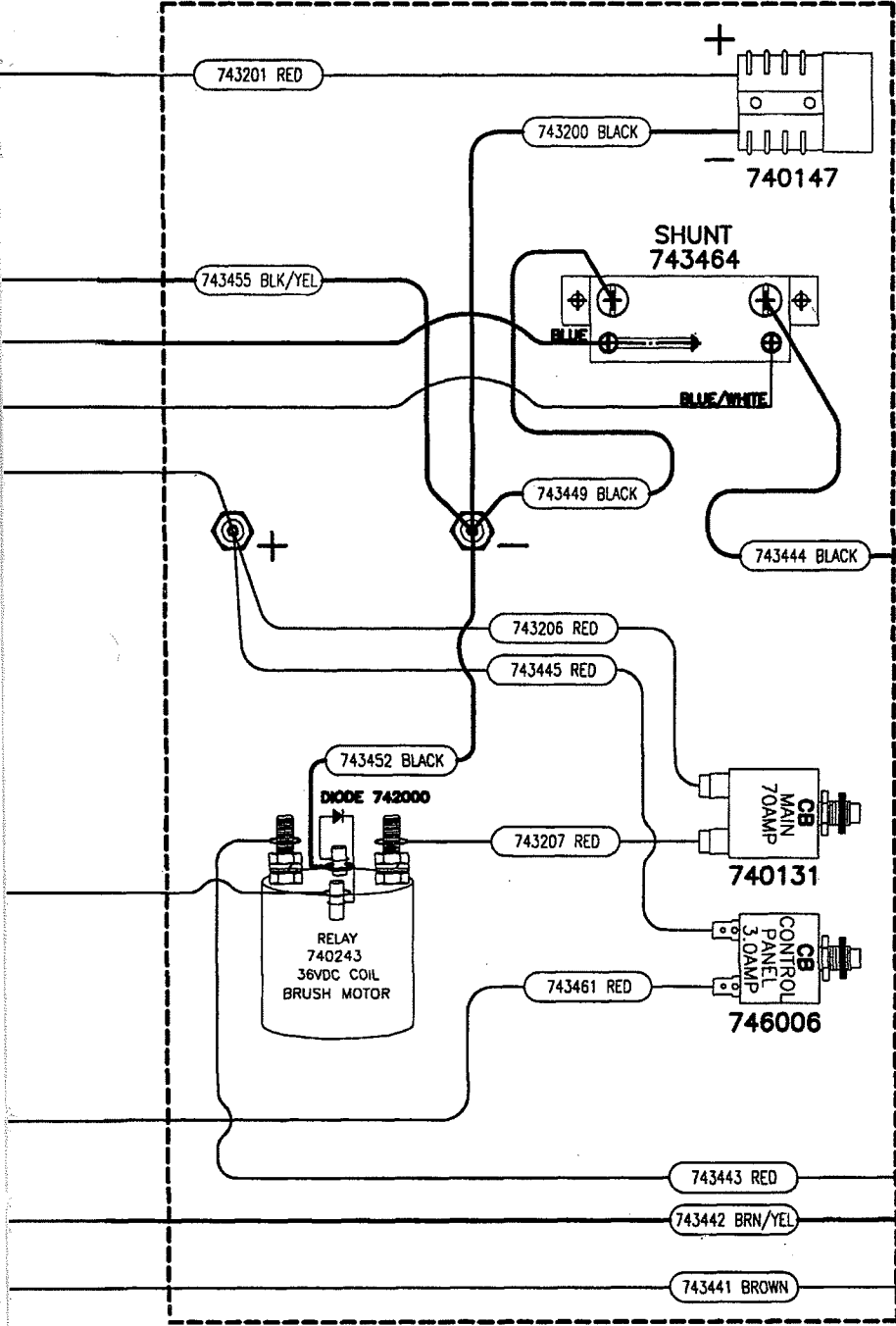
CONTROL PANEL ASSEMBLY 260569



745073

SCHEMATIC DIAGRAM M26036QP, con't.

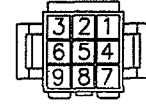
REAR PANEL ASSEMBLY 743439



743467 WIRE HARNESS

C
REAR VIEW OF PLUG
MACHINE SIDE

C
REAR VIEW OF RECEPTACLE
CONTROL PANEL SIDE

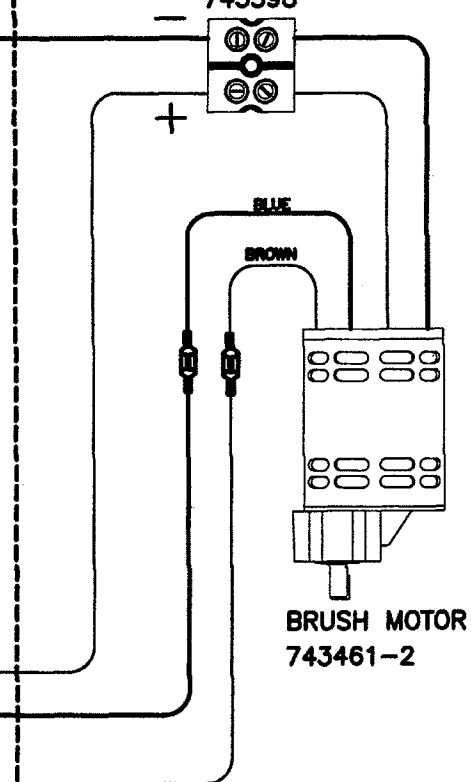


740318 FEMALE PIN
740320 PLUG

740317 MALE PIN
740319 RECEPTACLE

POSITION	WIRE COLOR
1	BLACK/YELLOW
2	BLUE
3	BLUE/WHITE
4	YELLOW/RED
5	BROWN
6	BROWN/YELLOW
7	EMPTY
8	EMPTY
9	RED

TERMINAL BLOCK 743598



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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988170
Printed in U.S.A.