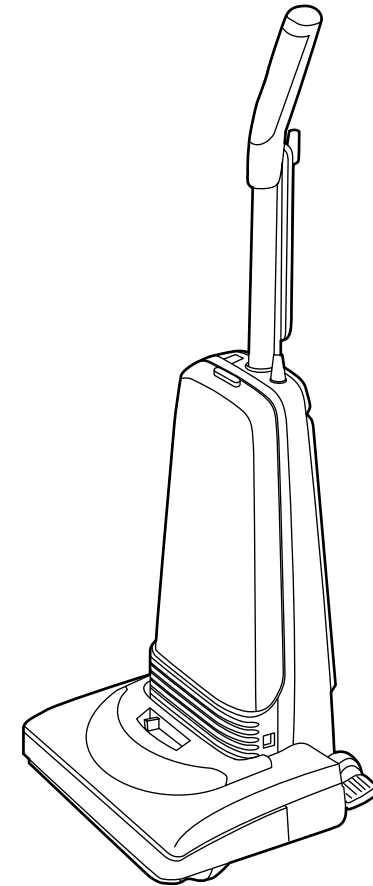


Service Manual

Commercial Vacuum Cleaner

MODEL MC-V325



■ SPECIFICATIONS

Model	MC-V325
Power Source	AC 120V (60 Hz)
Power Consumption	10.0 Amps
Cord Length	50 Ft.
Motor Protector	Yes
Height Adjust	4 Position
Weight	21 lbs.

Specifications are subject to change without notice for further improvement.

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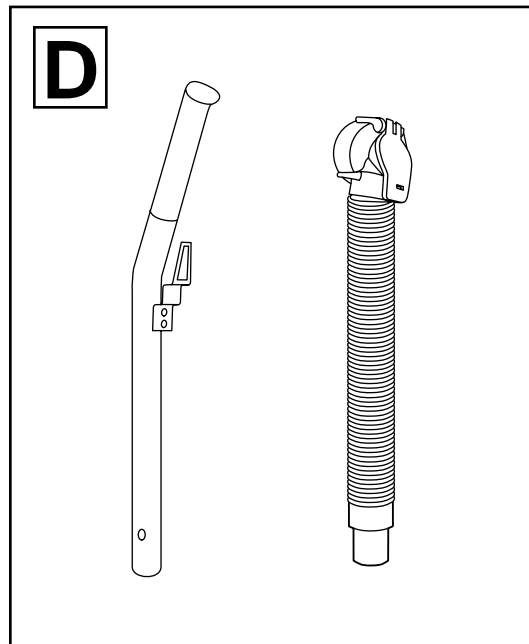
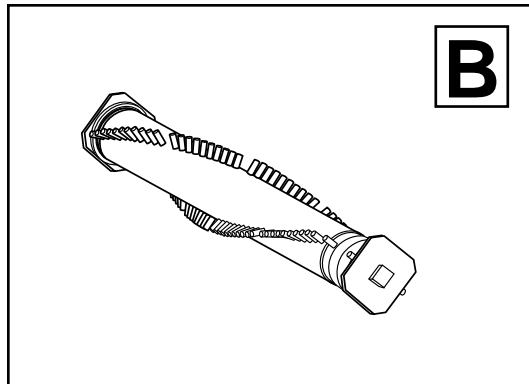
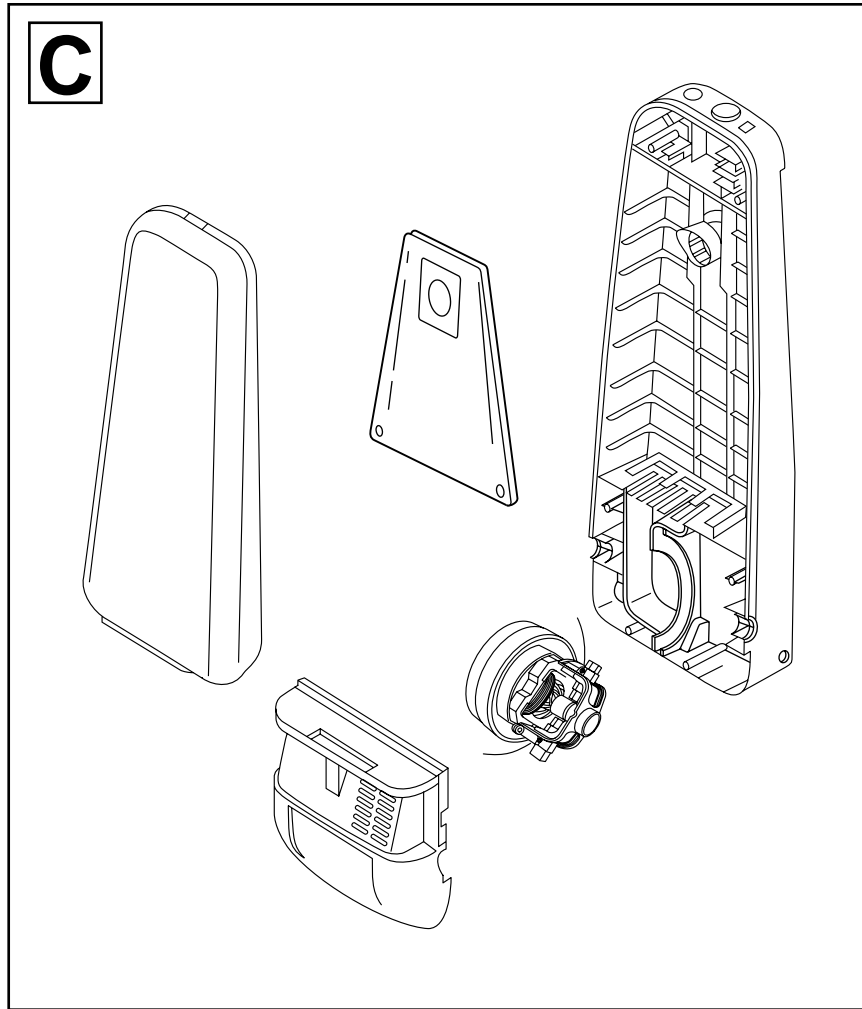
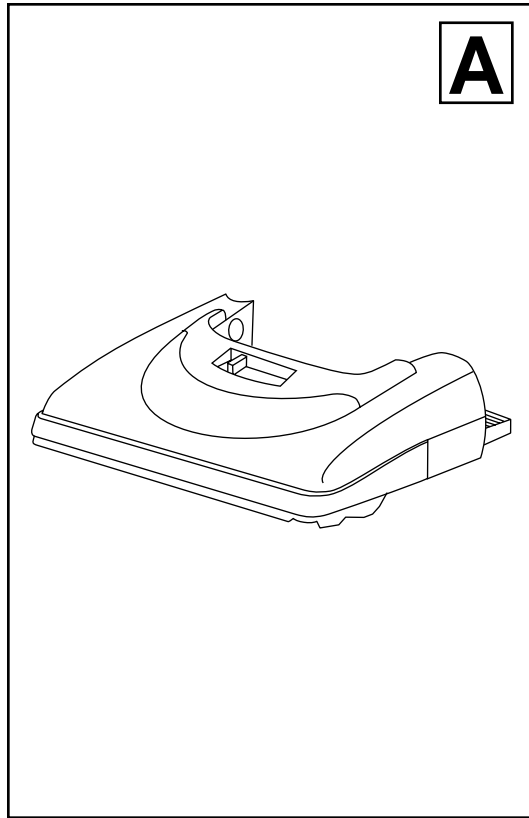
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EXPLODED VIEW (GENERAL PARTS)



TROUBLESHOOTING GUIDE

CONDITION	CHECKPOINT	METHOD OF INSPECTION	CAUSE/REMEDY
MOTOR FAILS TO ROTATE, (NO NOISE IS HEARD AT ALL).	<ul style="list-style-type: none"> Power source (plug socket). Cord switch. Motor continuity. Motor carbon brush is in contact with rotor. ON/OFF switch continuity. 	<ul style="list-style-type: none"> Measure power source voltage at plug socket by use of tester. Remove AC plug from the AC wall outlet. Connect ohm-meter across both ends of the power cord plug and operate the ON/OFF switch. If the meter indicates continuity, the AC cord, switch, motor winding are OK. If no continuity is found, proceed as follows: Remove dust cover and the switch cover, short across AC plug ends, open the ON/OFF switch and read across the black and white leads of the AC cord. If continuity, cord is OK. If no continuity, AC cord is open. Check continuity of motor. Remove noise suppressor and check if there is gap between carbon brushes and rotor. Remove switch cover, and check continuity across switch terminals. 	<ul style="list-style-type: none"> Power source is fault if voltage is lower than specified. Replace AC cord. If there is no continuity of motor replace motor. If there is gap between carbon brush and rotor, cause is either dust accumulated in brush holder or carbon brush worn out. Adjust or replace. If there is no continuity between both terminals, ON/OFF switch must be defective.
SUCTION POWER IS TOO WEAK.	<ul style="list-style-type: none"> Dust bag. Filters. Nozzle hose. 	<ul style="list-style-type: none"> Check quantity of dust accumulated in dust bag. Check for dirty filter. Remove nozzle hose and check. 	<ul style="list-style-type: none"> Replace dust bag if full. (Paper) Empty dust bag. (Cloth) Clean and/or Change Filters. If clogged, remove clog.
NOISE OR VIBRATION.	<ul style="list-style-type: none"> Dust in motor fan. Carbon brushes. Agitator roller bearing noise. Lower housing agitator grooves. 	<ul style="list-style-type: none"> Check dust accumulated in motor fan. Check uneven wear of carbon brushes. Hold bearing units in hand, and turn agitator, check rolling noise the agitator pulley section makes. Agitator should turn freely without any drag or friction. 	<ul style="list-style-type: none"> Clean dust out of motor fan and check filter condition. Replace carbon brushes. (Be sure to replace both carbon brushes at same time.) If noise is abnormal, agitator end cap is defective. Replace defective end cap. Lower housing is worn.
AGITATOR DOES NOT ROTATE.	<ul style="list-style-type: none"> Belt. 	<ul style="list-style-type: none"> Check condition of belt. 	<ul style="list-style-type: none"> Replace belt if necessary.

MOTOR FAN REPLACEMENT

Removal

1. Mark the position of the fan case's location on the motor with a pencil, or score it with a sharp object before disassembly. This will aid you in reassembling the fan case, (Fig. 18).

2. The fan case has three (3) crimped sections on it to hold the case onto the motor. These will have to be straightened by using a pair of needle nose pliers and by tapping out on the crimp area with a flat blade screwdriver. Be sure and straighten all three (3) crimped areas, (Fig. 18). Remove the fan case from the motor unit.

3. Tools required to remove the fan from the shaft will be a 1/8 - inch Allen wrench, a 1/2 -inch offset box wrench, torque wrench, and a hammer.

NOTE: Be careful when handling the sheet metal parts as there could be sharp edges. Do not scratch or bend the motor shaft. Scratches will cause belt breakage during operation.

4. Place the 1/2 - inch box wrench over the 1/2 -inch hex nut that holds the fan onto the motor shaft, (Fig. 19). While holding the wrench on the nut, place the 1/8 -inch Allen wrench into the end of the motor shaft and loosen the nut while holding the Allen wrench still. The nut will have to be turned clockwise as it is a left-hand thread. After removing the nut, remove the fan, (Fig. 19). There is a spacer left on the motor that is not required to be removed. If spacer is removed, reassemble per exploded view, (Fig. 18).

* Some models will have this washer and spacer.

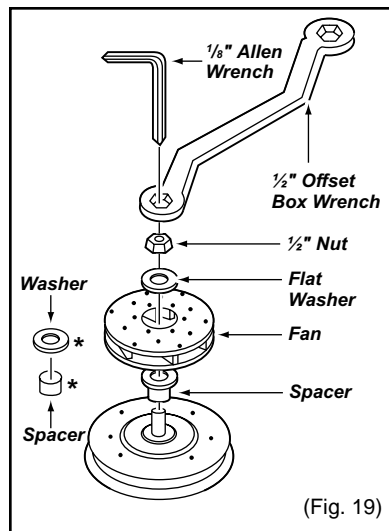
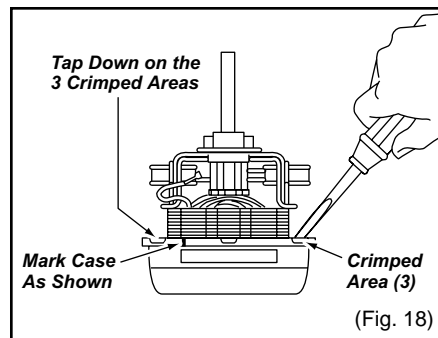
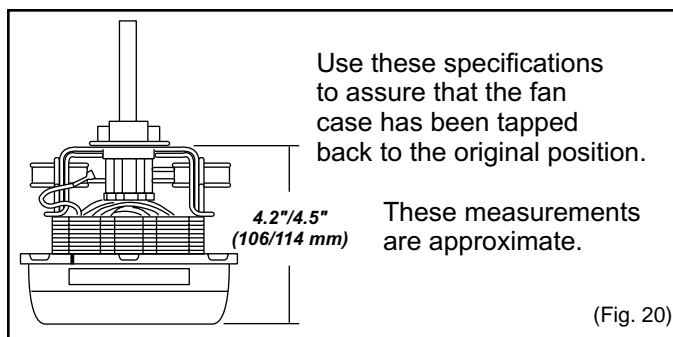
Installation

1. Place the new fan onto the motor shaft, making sure that the spacer is still on the motor. The large diameter hole, approximately 1 1/8 inch, will be on the top of the fan as you install it.

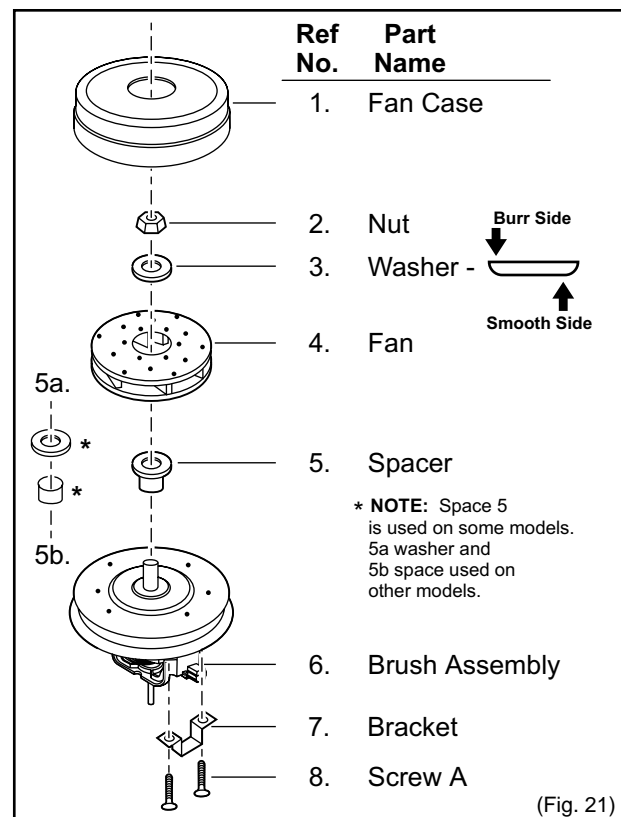
2. Install the flat washer with the burr side of the washer facing away from the fan, (Fig. 21). Screw the nut onto the motor shaft, turning it counterclockwise, left-hand threads, and torque to 20-30-inch pounds. Be sure to hold the motor shaft by placing the 1/8-inch allen wrench into the motor shaft end while torquing the nut, (Fig. 19).

3. Align your marks on the fan case as you put the fan case back on and tap around the case uniformly. Tap the three (3) crimped areas over and then use a flat blade screwdriver to recrimp them.

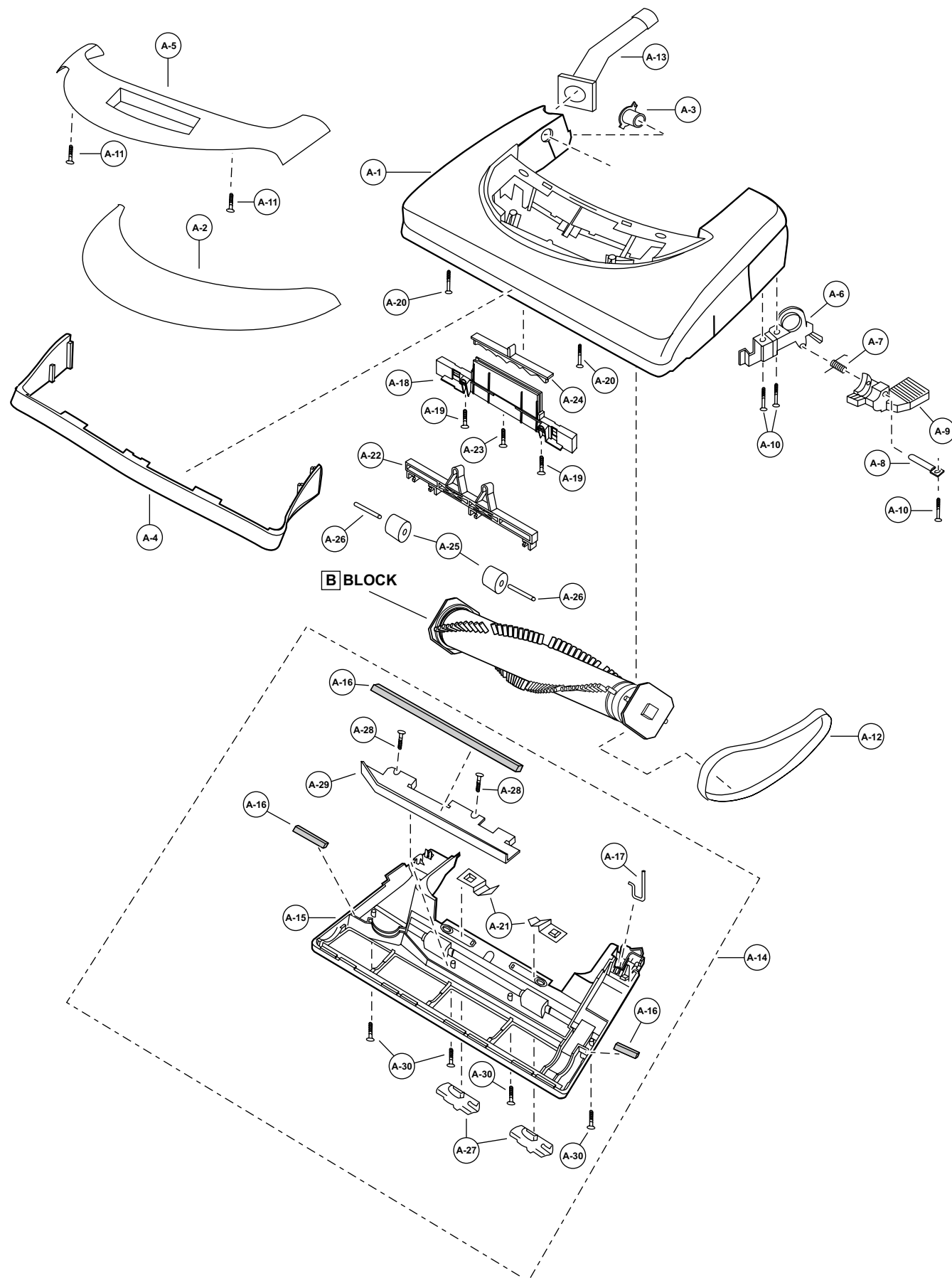
4. See (Fig. 20) for reassembly specifications.



EXPLODED VIEW



EXPLODED VIEW (NOZZLE HOUSING)... BLOCK



■ PARTS LIST (NOZZLE HOUSING)... **A** BLOCK

Ref. No.	Part Name & Description	Part No.	Quantity	Remarks
A - 1	Nozzle Housing	ACØ1ACBYZYU2	1	
A - 2	Window	AC21HAGZZYØ2	1	
A - 3	Shaft, Plastic	AMC25S-VØØ	1	
A - 4	Furniture Guard	AC1ØAAGZZVØ7	1	
A - 5	Light Cover	AC24HAPPZYU2	1	
A - 6	Bracket, Handle Release	AC43AAFY2ØØ	1	
A - 7	Spring, Pedal	AC58AAFVZØØ	1	
A - 8	Shaft, Pedal	AMC51A-V3Ø	1	
A - 9	Pedal, Handle Release	AMC47A-2VØU	1	
A - 10	Screw, Frame	AXTN4+14BFY	3	Shipped 10 per package
A - 11	Screw, Light Cover	AXTN4+16BFY	2	Shipped 10 per package
A - 12	Belt	AC28SJPZØØ	1	
A - 13	Nozzle Pipe	AC7ØSZA1ØØ	1	
A - 14	Lower Plate Assembly	AC91ABAYZVØ6	1	
A - 15	Lower Plate	AC27AAFVZVØ6	1	Includes A-16 Packing & A-30 Screws
A - 16	Packing, Lower Plate	AC19AARKZVØØ	1	
A - 17	Belt Guard	AC43SAFVZØØ	1	
A - 18	Slider Support	AC53KAPNZWØ3	1	
A - 19	Screw, Slider Support	AXTN4+16BFY	2	Shipped 10 per package
A - 20	Screw, Nozzle	AMC68A-V3Ø	2	Shipped 10 per package
A - 21	Stop Latch Spring	AC7ØNYUZØØ	2	
A - 22	Height Adjustment Cam	AC61KJPZVØ6	1	
A - 23	Screw, Slider Support	AC68AZAZØØ	1	Shipped 10 per package
A - 24	Sliding Knob	AC57HJPZVØ6	1	
A - 25	Wheel	AC9ØQNGZVØ6	2	
A - 26	Shaft, Wheel	AC16CNXZØØ	2	
A - 27	Latch	AMC68N-AVØK	2	
A - 28	Screw, Body Lower Plate	AXTN4+16BFY	2	Shipped 10 per package
A - 29	Body, Lower Plate	ACØ6AAJUZØØ	1	
A - 30	Screw, Metal Lower Plate	AXTS3+10BFY	4	Shipped 10 per package

■ MOTOR REPLACEMENT

Removal

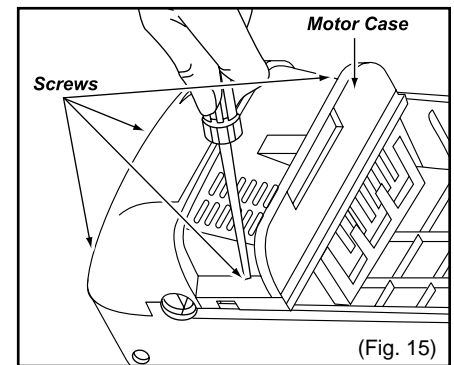
1. Remove the dust cover.
2. Remove the lower plate, agitator assembly, belt, the plastic shaft, slider support, light bulb assembly and the nozzle housing as instructed in the respective removal sections. Remove the plastic holder, (Fig. 15).

3. Turn the vacuum over to the front side.

NOTE: The bumper is positioned over the top of the motor case. Pull up on the portion of the bumper that lies across the top part of the motor case to free the motor case for removal.

4. Remove the four (4) screws from the motor case and then remove the motor case, (Fig. 15).

5. Disconnect the motor leads and remove the motor. Remove the motor support rubber, (rear), noise suppressor, and the motor support rubber, (front). Place these items on the new motor. See the **C Block** for a view of these.



Installation

1. Place the motor back into the dust compartment with brushes aligned parallel to the front edge of the dust compartment. The motor support, (rear) must also align with the tabs in the same direction.

2. Rewire per the **Pictorial Wiring Diagram**.

3. Replace the motor case and the four (4) screws.

4. Replace the bumper by inserting it into the groove in the dust container.

5. Turn the vacuum back over and replace the plastic holder, thick side out, plastic shaft, slider support, light bulb assembly, nozzle housing, belt, agitator assembly, and lower plate according to the respective installation instructions.

■ CARBON BRUSH REPLACEMENT

Removal and Installation

1. After removing the motor, see MOTOR REPLACEMENT, make sure that you have properly identified it. Note specifically that this motor is made in the U.S.A. as identified by the label on the side of the motor, or Made in U.S.A. stamped on the bottom.

2. Remove the amp terminals located on each brush end, (Fig. 16). Replace the brush assembly which should include the brush holder. Reinstall the amp terminals onto the new brush assembly. Complete brush change on one side before starting on the other side.

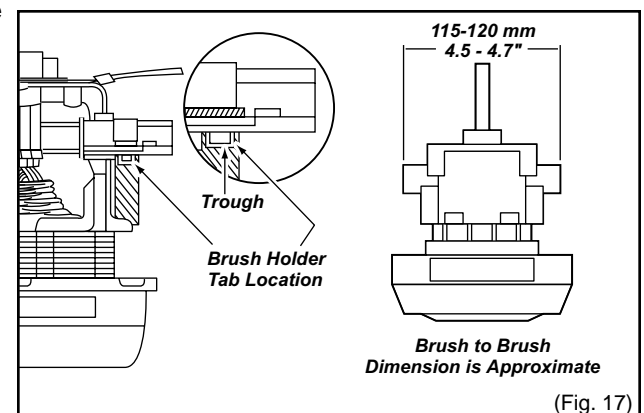
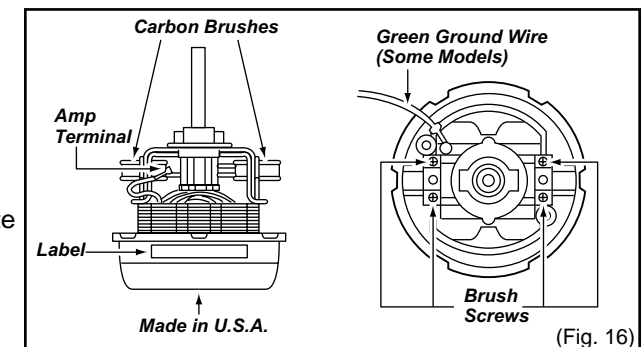
NOTE: Do not drop screws into the motor.

3. There are two (2) brushes located on the motor as identified in (Fig. 16). A Phillips head screwdriver will be required to remove the four (4) screws that hold the brush holders onto the motor. See (Fig. 16) for screw location.

NOTE: When inserting the brush assembly, be sure that the TAB on the bottom of the brush holder is positioned in the trough as shown in Fig. 18.

4. Replace the brush holder bracket with two (2) Phillips screws on each side of the motor.

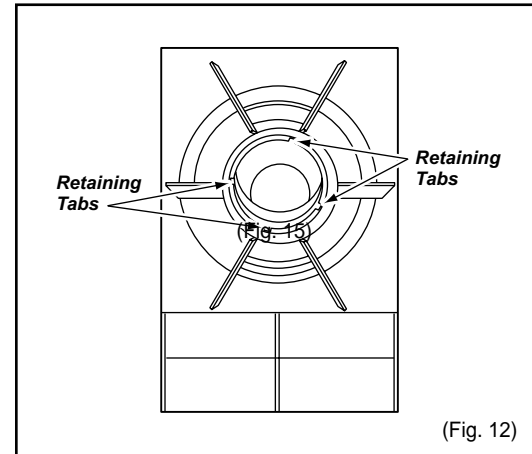
5. As a final check to assure proper installation of brushes, measure across the brushes for the approximate dimension as shown in (Fig. 17).



■ SUCTION INLET/HOSE REPLACEMENT

Removal and Replacement

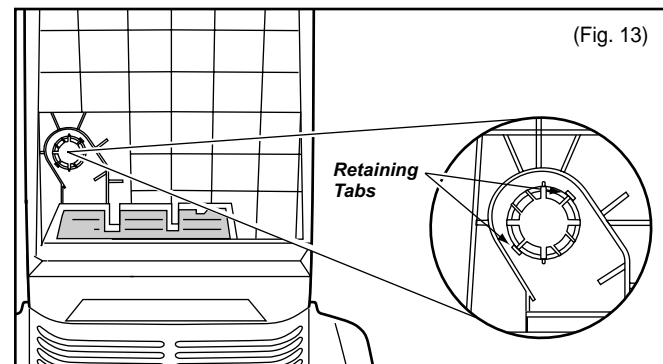
1. Remove the dust cover, dust bag, and the bag supporter.
2. The inside of the suction inlet/hose is snapped over the inside of the dust compartment. There are four (4) retaining tabs on the suction inlet, (Fig. 12). These four (4) tabs are force fitted into the opening and will have to be broken off using pliers or a hammer. If a hammer is used, take care to hit only the retaining tabs. Snap the new suction inlet/hose in place. Replace all items removed in the reverse order of removal.



■ MOTOR PROTECTOR REPLACEMENT

Removal

1. Remove the dust cover and dust bag.
2. Remove the motor protector (shown in the **C Block** inside the dust compartment) by pushing in, one at a time, on the tabs that secure it to the dust compartment, (Fig. 14). Push the motor protector out the back of the dust compartment.
3. Once the motor protector is out it can be disassembled for parts replacement.



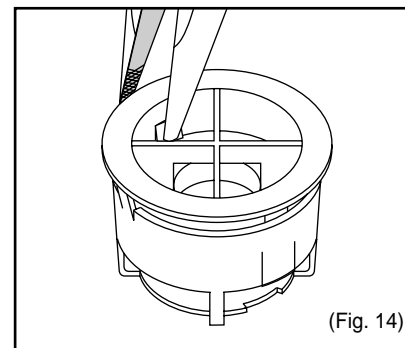
Disassembly

1. Holding a pair of needle nose pliers at an angle and in a position where one side of the pliers is against the locking tab, exert enough pressure on the tab to release it, (see Fig. 14).

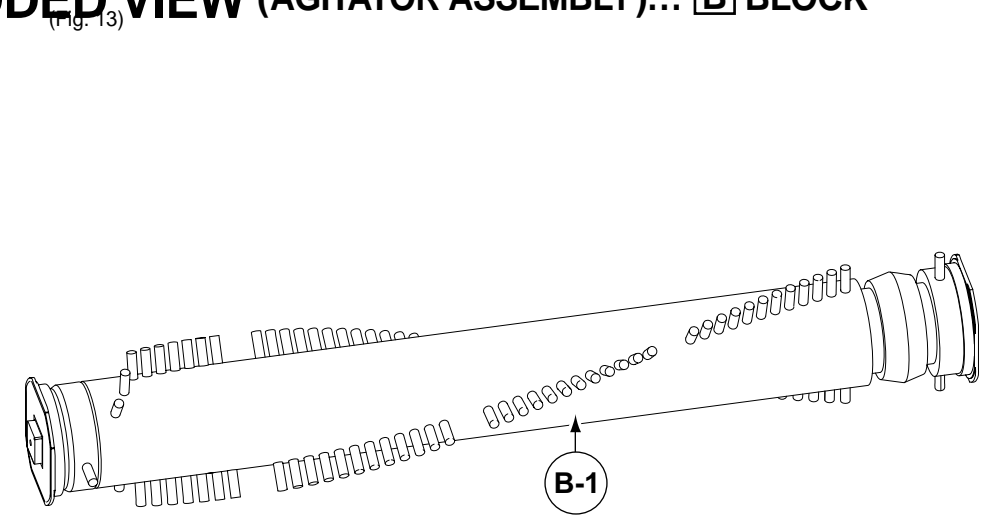
NOTE: There are two locking tabs present, but only one needs to be released. For reassembly look at the exploded view in the **C Block**.

Installation

1. Reinstall the motor protector into the dust compartment by aligning the two tabs, (Fig. 13), under the top flange with the slots in the dust compartment and applying pressure until it snaps into place.



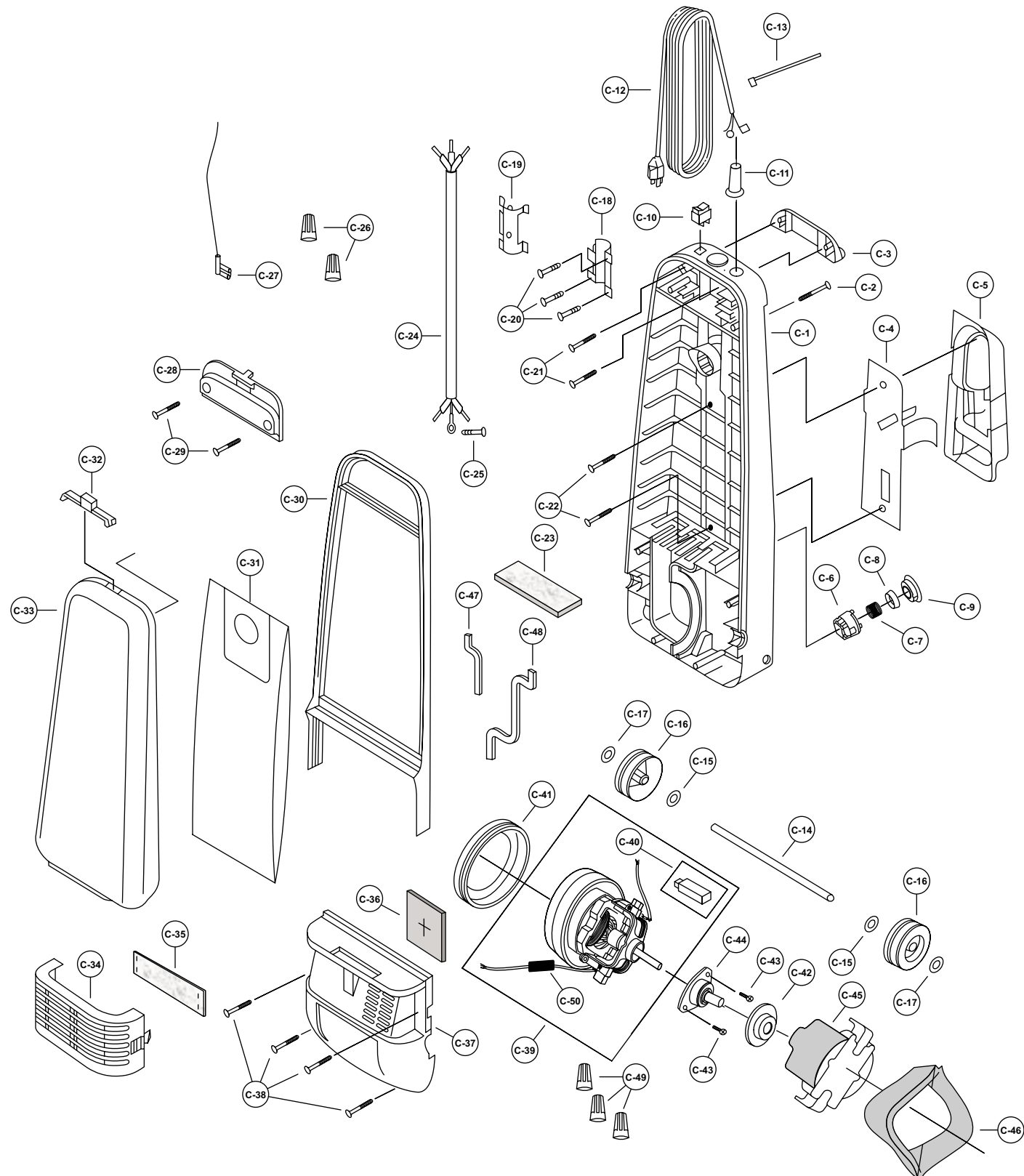
■ EXPLODED VIEW (AGITATOR ASSEMBLY)... **B** BLOCK



■ PARTS LIST (AGITATOR ASSEMBLY)... **B** BLOCK

Ref. No.	Part Name & Description	Part No.	Quantity	Remarks
B - 1	Agitator Unit	AC84RBRHZ000	1	

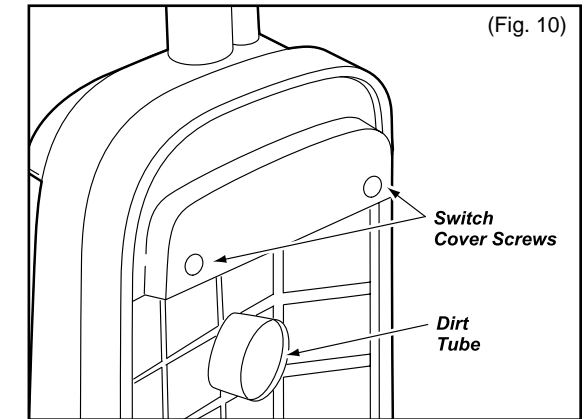
EXPLODED VIEW (BODY, MOTOR HOUSING, AND MOTOR)... BLOCK



POWER CORD AND ON/OFF SWITCH REPLACEMENT

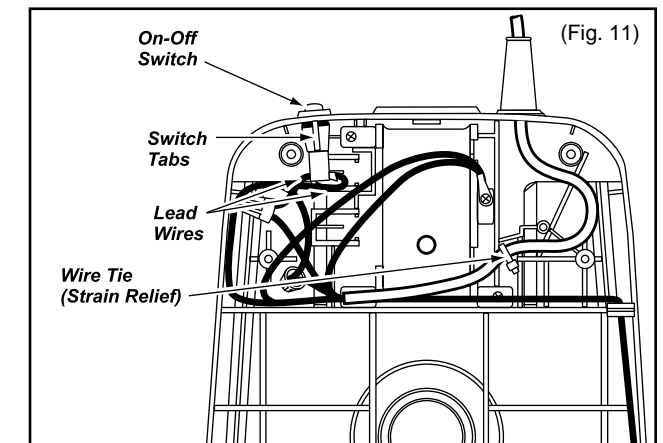
Removal

1. Push the on/off switch to the off position.
2. Remove the dust cover. Remove the two (2) screws that secure the switch cover, (Fig. 10), then pull straight out on the switch cover to remove it from the dust compartment.
3. Remove the wire tie strain relief, (Fig. 11 for power cord replacement), and the two (2) wire connectors.
4. Remove the on/off switch, (for on/off switch replacement) by depressing the switch retaining tabs while pushing up out of the dust compartment at the same time. Once the switch is out, remove the lead wires.
5. Pull the power cord out of the dust compartment, (for power cord replacement).



Installation

1. Insert the new power cord, (power cord replacement only), so that the insulation extends past the handle supporter as shown in (Fig. 11). Replace the wire tie with a new one and place back in same position as old one. This acts as a strain relief for the wiring.
2. Replace the wire connectors. Make sure the off position of the new on/off switch is positioned toward the front of the vacuum and insert by placing it back in the reverse manner by which the switch was removed. Tuck the wire connectors back into the dust compartment. Route all wiring and connect all wires according to the wiring diagram and wire management drawing shown earlier in this manual. Use the two (2) wire connectors removed earlier.
3. Replace the switch cover and the dust cover. Care should be taken not to pinch any wires.

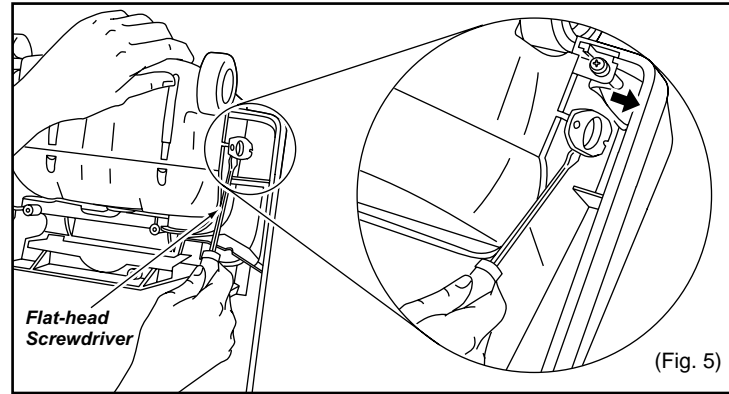


NOTE: For general servicing, it is necessary to eliminate pinching of any wire during reassembly. After servicing any electrical component or electrical enclosure, the unit should be reassembled and checked for dielectric breakdown or current leakage.

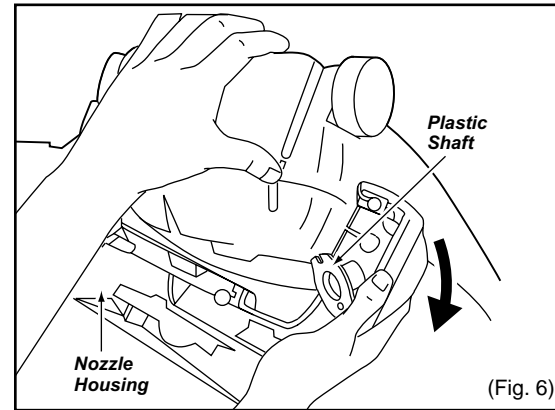
NOZZLE HOUSING AND NOZZLE PIPE REPLACEMENT

Removal

1. Remove the lower plate as outlined in the LOWER PLATE REMOVAL/INSTALLATION section.
2. Remove the belt and agitator assembly as outlined in the respective sections.
3. Remove the hose from the nozzle pipe and remove the nozzle pipe by pulling it up out of the nozzle housing.
4. Insert a flat blade screwdriver between the nozzle housing and the plastic shaft, pry out the plastic shaft as illustrated, (Fig. 5).



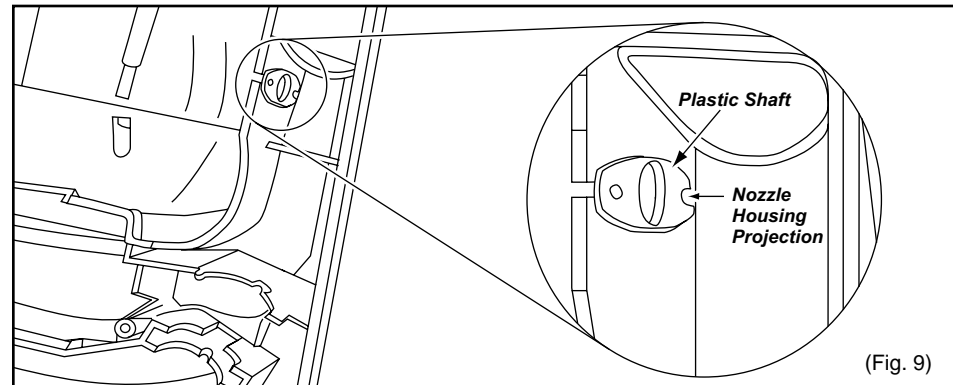
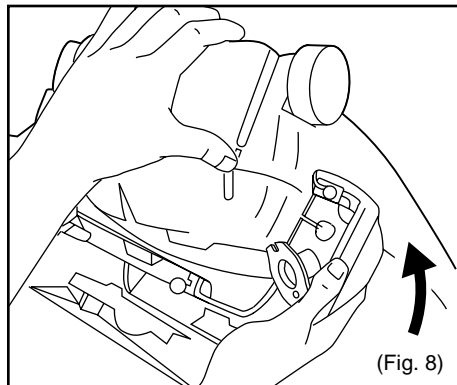
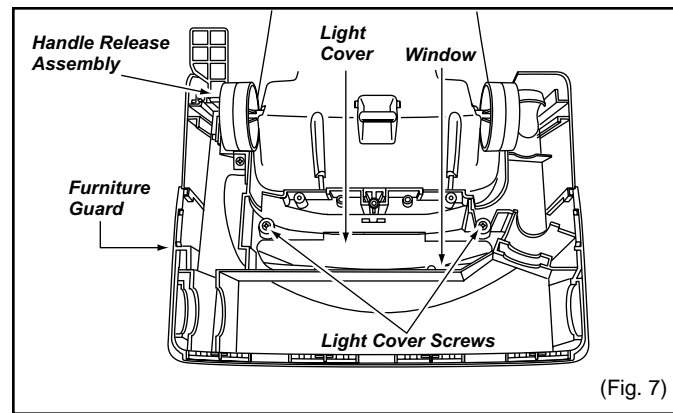
6. Remove the nozzle housing as illustrated, (Fig 6).
7. Remove the handle release assembly, height adjust assembly and furniture guard (Fig 7).
8. Remove the light cover and window, (Fig. 7) by removing the two (2) screws from the nozzle housing and pushing out on the light cover.



NOTE: If the motor case cover is removed, DO NOT turn vacuum over as the motor may fall out.

Installation

1. Install the window, light cover, handle release assembly, and furniture guard in the new nozzle housing, (Fig. 7).
2. Fit the nozzle from the motor shaft side first, and rotate it into place on the dust container as illustrated, (Fig. 8).
3. Slide the plastic shaft through the nozzle housing and into the dust container. Make sure that the slot on the bottom of the plastic shaft is down and fitted onto the projection, (Fig. 9).
4. Install the height adjust assembly.
5. Replace the nozzle pipe.

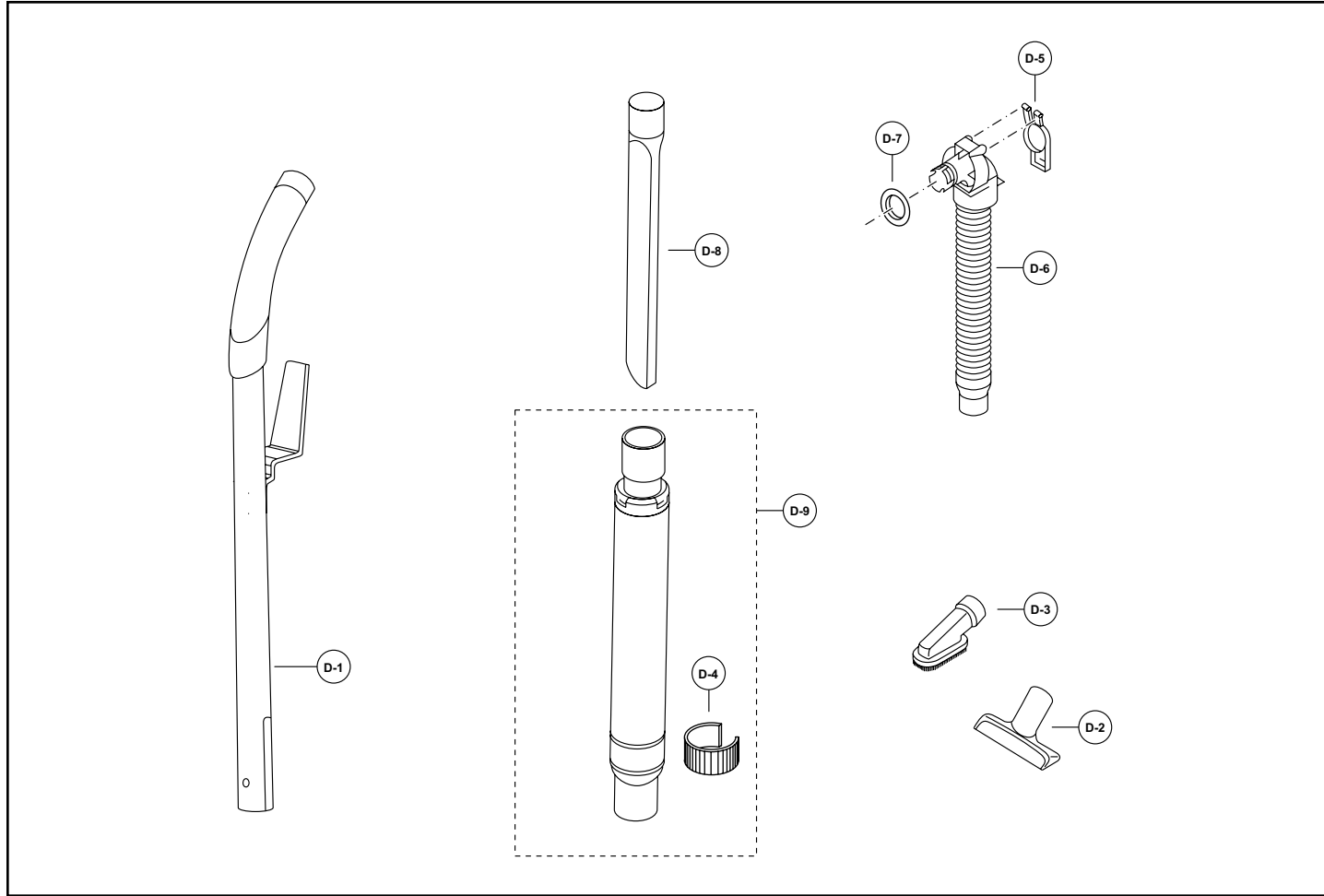


6. Install the belt, agitator assembly, and the lower plate according to the respective instructions.

PARTS LIST (BODY, MOTOR HOUSING, AND MOTOR)... BLOCK

Ref. No.	Part Name & Description	Part No.	Quantity	Remarks
C - 1	Dust Compartment	AC40KAGZZU01	1	Includes C-47 and C-48 Packing
C - 2	Screw, Handle	AMC73B-V30	1	Shipped 10 per package
C - 3	Carry Handle	AC64BYUZU01	1	
C - 4	Support Plate	AC43RYUZV07	1	
C - 5	Tool Holder	AC38PYUZU01	1	
C - 6	Protector Case	AC68KJMZV06	1	
C - 7	Spring, Protector, (Blue)	AC70KAHHZB00	1	
C - 8	Protector	AC69KJMZV06	1	
C - 9	Protector Supporter	AC18MJMZV06	1	
C - 10	Switch, On-Off	AC01EYVZV06	1	
C - 11	Rubber Protector	AC51E4GZU01	1	
C - 12	Power Cord, (50 Ft.)	AC94EAPPZY02	1	
C - 13	Wire Tie	AMC596-702	1	Shipped 10 per package
C - 14	Shaft, Wheel	AC16CUSZ00	1	
C - 15	Washer, Wheel	AXWG6E115FY	2	
C - 16	Wheel	AC01CV0ZVUB	2	
C - 17	Stopper, Wheel	AC74SUSZ00	2	
C - 18	Fitting, Handle	AMC69B-V30	1	
C - 19	Supporter, Handle	AMC53B-1LZ00	1	
C - 20	Screw, Handle Supporter	AXTN4+20BFY	3	Shipped 10 per package
C - 21	Screw, Carry Handle	AXTN4+16BFY	2	Shipped 10 per package
C - 22	Screw, Tool Holder	AXTN4+16BFY	2	Shipped 10 per package
C - 23	Filter, Secondary	AC37KYUZV00	1	
C - 24	Wire Cord	AC37GTCZ00	1	
C - 25	Screw, Grounding	AXYN4+E10FFY	1	Shipped 10 per package
C - 26	Wire Connector, Switch Area	AMC-1CTCE23	2	Shipped 10 per package
C - 27	Lead Wire, (Black)	AC44GTDZU00	1	
C - 28	Switch Cover	AC03EYU1V06	1	
C - 29	Screw, Switch Cover	AXTN4+16BFY	2	Shipped 10 per package
C - 30	Bumper	AC31AYUZV07	1	
C - 31	Dust Bag	AC16KJYZ00	1	
C - 32	Release Button, Dust Cover	AC13DYUZV07	1	
C - 33	Dust Cover	AC60KBAYZUU1	1	
C - 34	Filter Cover	AC41KYUZV07	1	
C - 35	Filter, Electrostatic Exhaust	AC30KCBYZ00	1	
C - 36	Filter, Motor Case	AC38KYUZV00	1	
C - 37	Motor Case	AC09FAGZZV07	1	
C - 38	Screw, Motor Case	AXTN4+20BFY	4	Shipped 10 per package
C - 39	Motor Assembly	AC92FAPNZ00	1	
C - 40	Carbon Brush, Motor	AC27FRFZ00	1 (Set)	
C - 41	Motor Support, (Front)	AMC02F-E00	1	
C - 42	Motor Support, (Rear)	AC03FAFYZ00	1	
C - 43	Screw, Motor Flange	AXYN4+E10FFY	2	Shipped 10 per package
C - 44	Motor Flange	AC25SAFYZ00	1	
C - 45	Motor Cover	AC93FTEZ0U	1	
C - 46	Noise Suppressor	AC99GAMMZ00	1	
C - 47	Body Packing, (Left)	AC40AYUZV00	1	
C - 48	Body Packing, (Right)	AC39AYUZV00	1	
C - 49	Wire Connector, Motor Area	AMC-1CTCE23	3	Shipped 10 per package
C - 50	Lead Wire Assembly	AC99WARGZ00	1	

EXPLODED VIEW (HANDLE, HOSE, AND ATTACHMENTS)... **D** BLOCK



BELT REPLACEMENT

Removal

1. Follow all of the instructions outlined in the agitator assembly removal section.

Installation

1. Place the new belt around the motor shaft and follow the instructions in the agitator assembly replacement section.

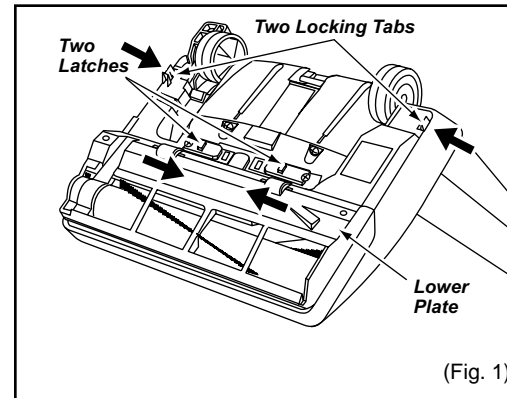
PARTS LIST (HANDLE, HOSE, AND ATTACHMENTS)... **D** BLOCK

Ref. No.	Part Name & Description	Part No.	Quantity	Remarks
D - 1	Handle Assembly	AC95BTCZV07	1	
D - 2	Upholstery Nozzle	AC62RYUZV06	1	
D - 3	Dusting Brush	AC88RYUZV06	1	
D - 4	Suction Control	AC54PYUZV06	1	
D - 5	Suction Inlet Cover	AC02HYUZV06	1	
D - 6	Hose Unit, Stretch	AC84PAGZZV06	1	
D - 7	Packing, Suction Inlet	AC64HYUZ00	1	
D - 8	Crevice Tool	AC60RZFZVU6	1	
D - 9	Wand, Telescoping	AC97QHGV06	1	

■ LOWER PLATE REMOVAL/INSTALLATION

Removal

1. Place the handle in the upright position.
2. Turn the vacuum cleaner over exposing the underside. Release the lower plate by pressing the two (2) latches and the two(2) locking tabs that secure it inward, (Fig 1).
3. Remove the lower plate and remove any residue that may exist in the belt area.



Installation

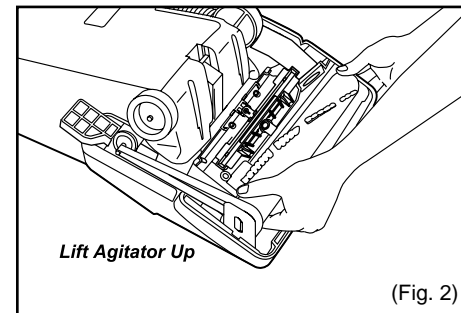
1. Hook the front of the lower plate into the slots on the front of the nozzle housing. Press the lower plate down until the locking tabs snap into place.
2. Fasten the lower plate by pushing the two (2) latches outward.

NOTE: For general servicing, it is necessary to eliminate pinching of any wire during reassembly. After servicing any electrical component or electrical enclosure, the unit should be reassembled and checked for dielectric breakdown or current leakage.

■ AGITATOR ASSEMBLY REMOVAL/INSTALLATION

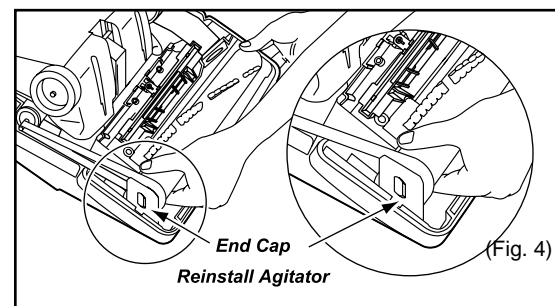
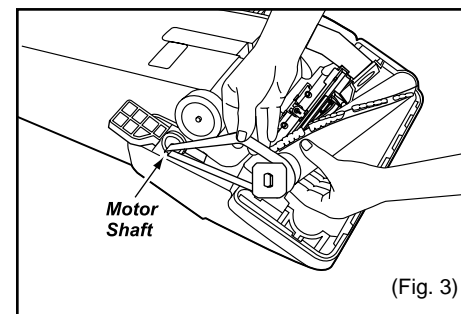
Removal

1. Remove the lower plate as outlined in the LOWER PLATE REMOVAL/INSTALLATION section.
2. Carefully lift up on the agitator assembly until it clears both sides of the nozzle housing, (Fig. 2).
3. Remove the belt from the motor shaft by sliding it off between the end of the shaft and the nozzle housing, (Fig. 3).

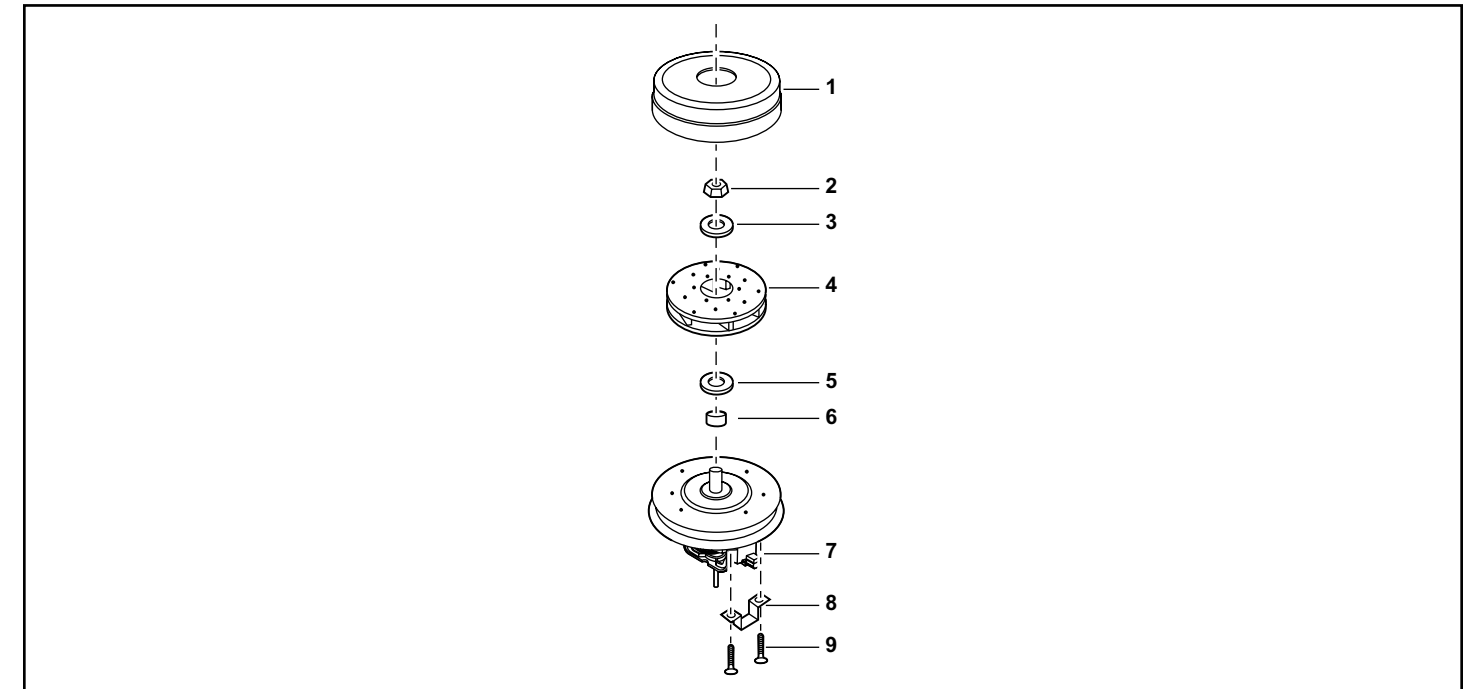


Installation

1. Place the belt around the motor shaft, (Fig. 3).
 2. Start the new agitator assembly back into the nozzle housing by placing the side opposite the belt partially into the slot. This will hold the agitator in place, and leave both hands free to place enough tension on the belt to allow that side of the agitator to return to the nozzle housing slot.
 3. Place the belt around the agitator pulley on the agitator assembly.
- Note:** There is a place for the belt to fit on one end of the agitator assembly only. This is the agitator pulley.
4. Use both hands to pull the belt tight, (Fig. 4), and slide the agitator assembly firmly into the slots on each end of the nozzle housing.
 5. Rotate the agitator assembly by hand to insure nothing rubs and to check for correct assembly.
 6. Replace the lower plate as outlined in the LOWER PLATE REMOVAL/INSTALLATION section.



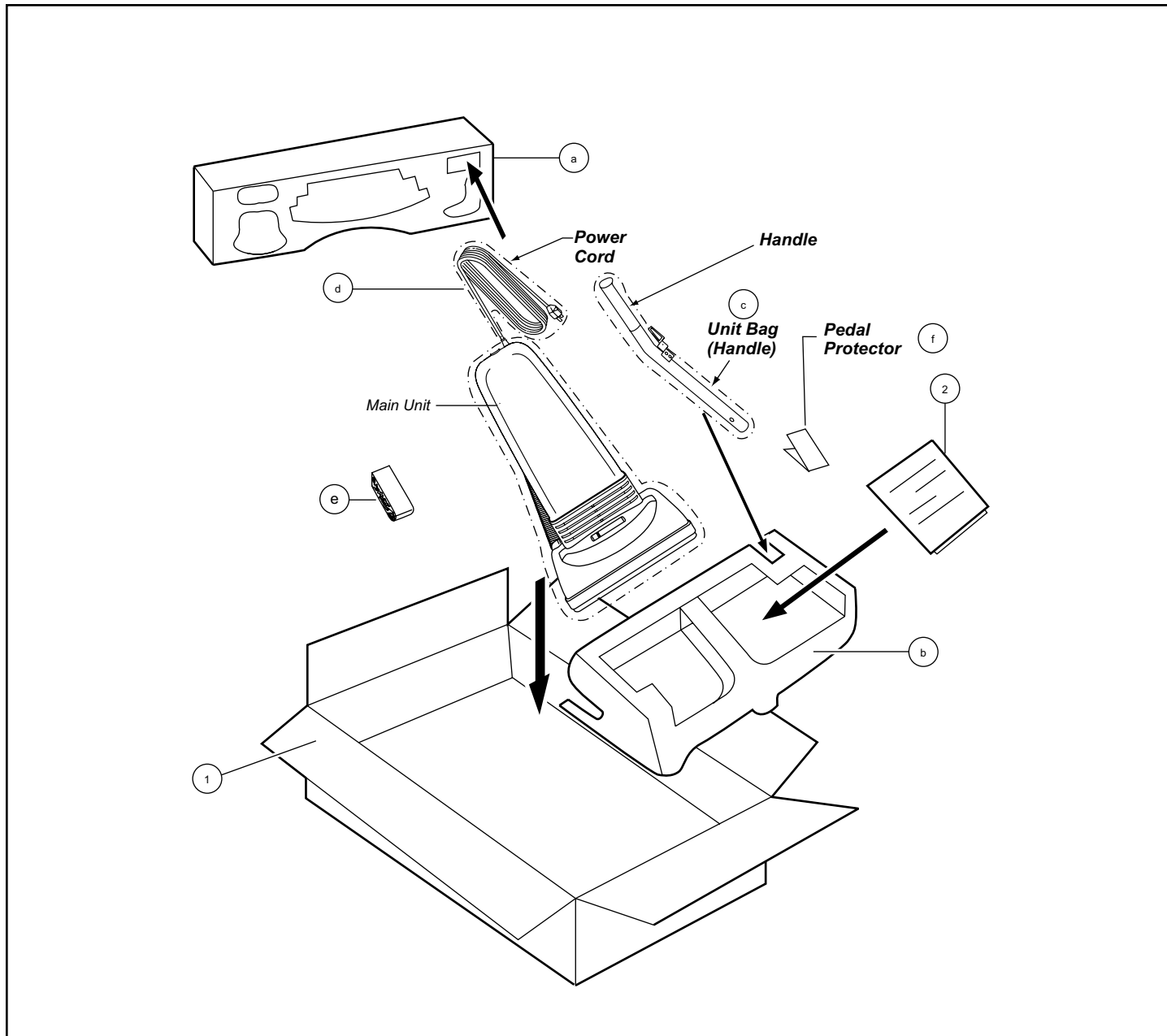
■ EXPLODED VIEW (MOTOR FAN ASSEMBLY)



■ PARTS LIST (MOTOR FAN ASSEMBLY)

Ref. No.	Part Name & Description	Part No.	Quantity	Remarks
1	Fan Case	AMC53F-AV00U	1	
2	Nut	AMC33F-AC00U	1	
3	Washer (a)	AMC62F-AV00U	1	
4	Fan	AC98FRFZ00	1	
5	Washer (b)	AC62FRFZ00	1	
6	Spacer	AC60FRFZ00	1	
7	Brush Assembly	AC27FRFZ00	1(Set)	
8	Bracket	AMC02D-V300U	2	
9	Screws	AMC40D-V300U	4	

EXPLODED VIEW (PACKAGING MATERIALS)



PARTS LIST (PACKAGING MATERIALS)

Ref. No.	Part Name & Description	Part No.	Quantity	Remarks
1	Packaging Assembly	AC61ZAPP1ØUØ	1	Includes 1 and items a-e
2	Operating Instructions	ACØ1ZBCYZØØØ	1	

COMPONENT REMOVAL CHART

COMPONENT TO BE REMOVED	COMPONENTS THAT MUST BE REMOVED	HOW TO REMOVE
Belt	Lower Plate Agitator Assembly	Release latches, depress tabs, and tilt off. Lift out with end caps.
Agitator Assembly	Lower Plate Belt	Release latches, depress tabs, and tilt off. Lift out with agitator.
Motor	Dust Cover Front Filter Cover Motor Housing	Depress latch and pull off. Pull off. Remove four screws and pull off.
On-Off Switch/ Power Cord	Dust Cover Switch Cover	Depress latch and pull off. Remove two screws and pull off.
Nozzle Housing/ Nozzle Pipe	Lower Plate Nozzle Pipe Agitator Assembly/Belt Handle Release Assembly	Release latches, depress tabs, and tilt off. Pull hose off and remove. Lift out with end caps. Remove three (3) screws and lift out.
Motor Protector/ Hose Assembly	Dust Cover Dust Bag	Depress latch and pull off. Pull off.