

The Oreck Manufacturing Company

8144 Dutch Tech Tune-Up & Service Guide

10/08/2007



Compiled by Clark DeNoble

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Increase Quality Through Interaction with the Field

Tune-Up DTX1300/1400

1. Functional Checks (Attach Hose and all other Powered Accessories)

a. Cord Winder



b. Hose Switch Main Motor only On-position Left



c. Main Power Switch On/Off



d. Leave Main Power Switch On

e. Main Motor Suction

f. Motor Watts Control Function-250 to 1300/1400



Increase Quality Through Interaction with the Field

g. DTX 1300-Park Switch On/Off -normally On, push in to turn unit Off



h. Hose Switch Off-position Center



i. Hose Switch Main Motor and Power Nozzle On-position Right



j. Power Nozzle Brush Roll



k. Remove Hose Assembly

Increase Quality Through Interaction with the Field

- l. Rotate Swivel forwards and backwards several times. Should be smooth without snaps and clicks.



- m. Front Wheel and Swivel



- n. Rear Wheels



- o. Accessory Cover



- p. Repair and/or replace parts as needed

Increase Quality Through Interaction with the Field

2. Clean and Inspect

- a. Power Cord
- b. Remove
 - i. Inner Filter Bag



- ii. Dust Chamber Filter



- iii. Exhaust Filter

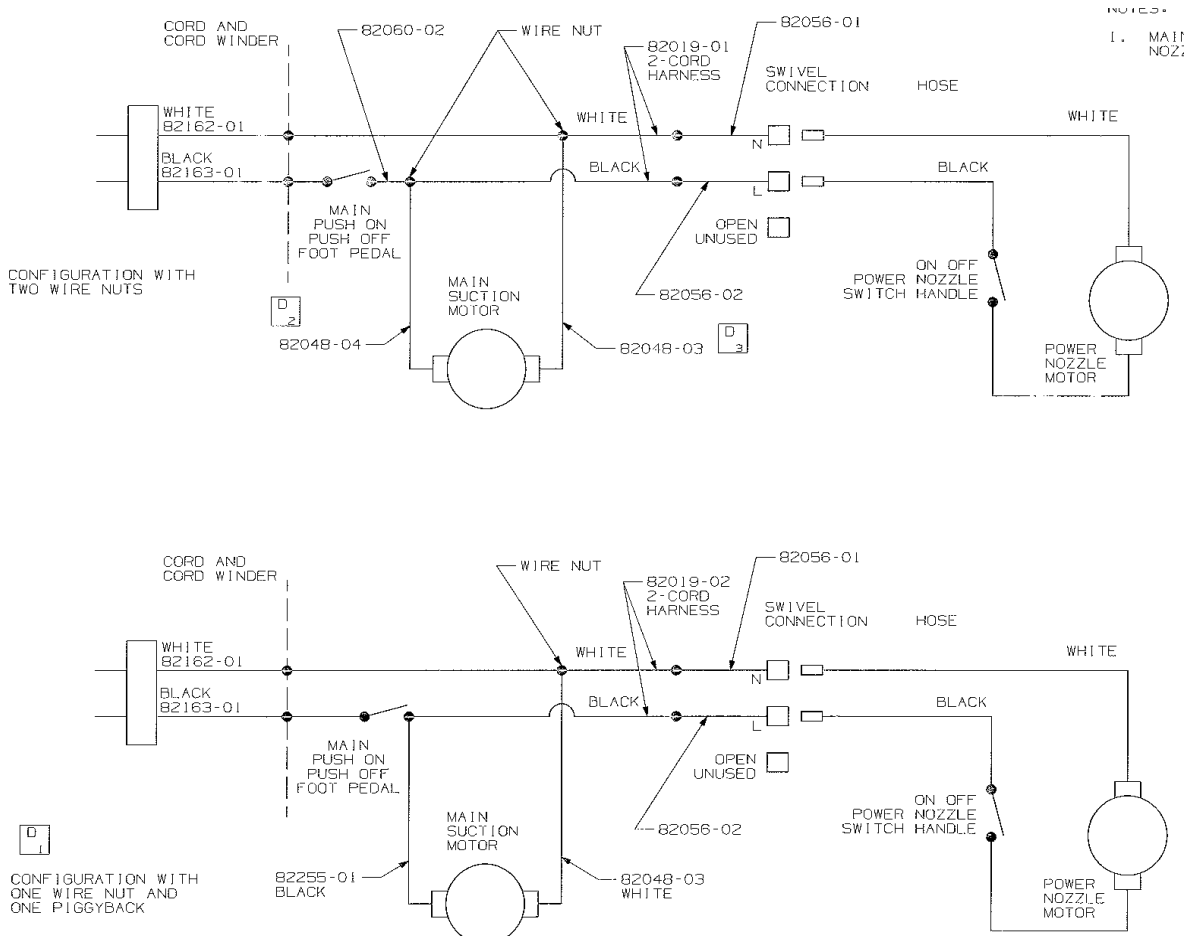


- c. Dust Chamber Filter & Holder
- d. Canister Externals
- e. Hose Assembly
- f. Wand/Power Nozzle Assembly
- g. Brushroll
- h. Accessories

3. Replace

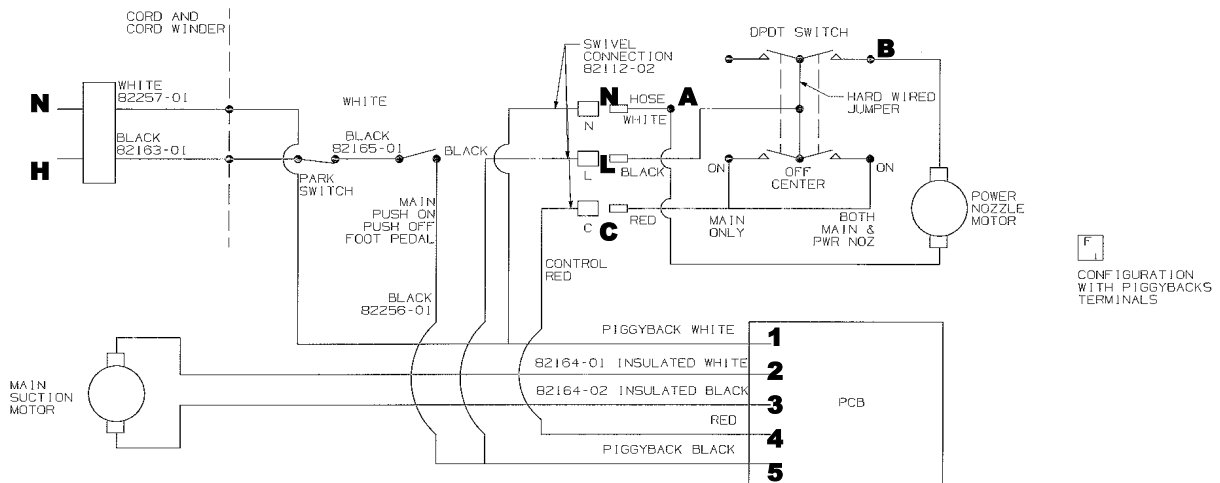
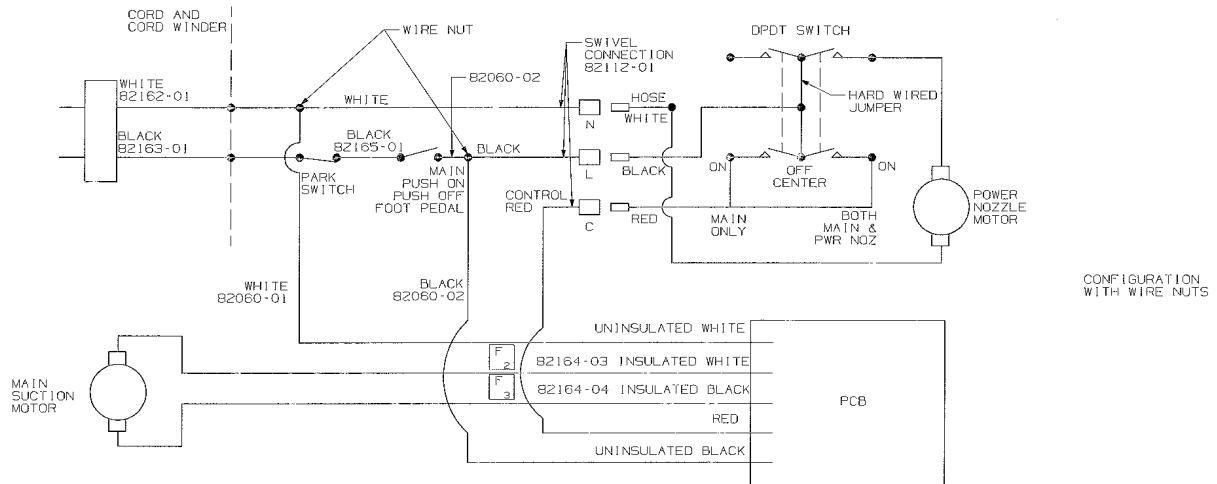
- a. Inner Filter Bag
- b. Dust Chamber Filter
- c. Exhaust Filter

Investigative and Repair Methods



DTX1100/1200 Wiring Diagrams

Increase Quality Through Interaction with the Field



DTX1300/1400 Wiring Diagrams



Power Nozzle Receptacle



Hose Receptacle

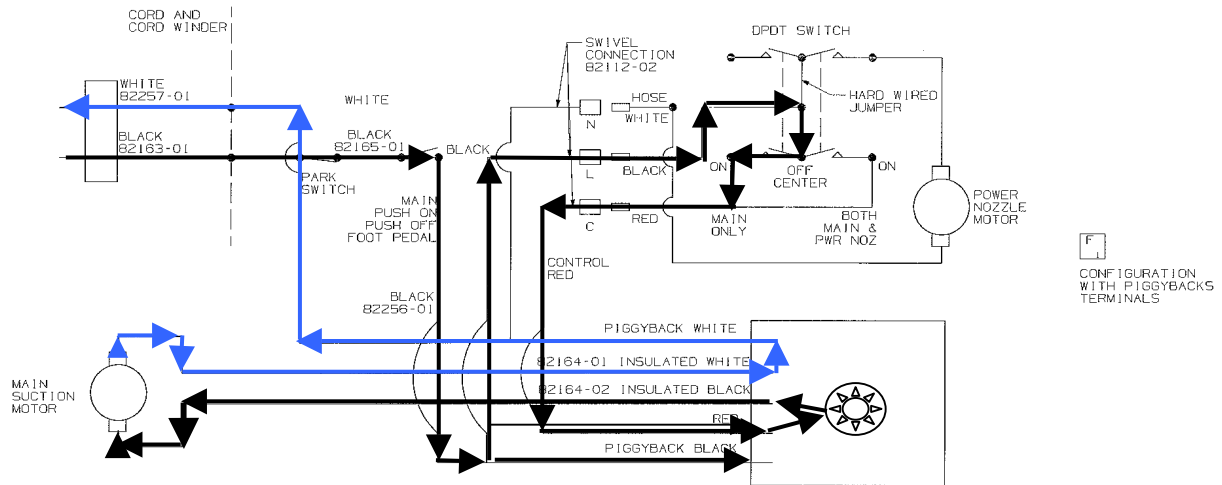


Hose Plug

Important: To operate the main motor either the hose must be connected or externally short C & L receptacle together using a wire with blade terminals at both ends or cut off a hose plug end, remove the conductor cover and connect L & C together internally. Reassemble.

Increase Quality Through Interaction with the Field

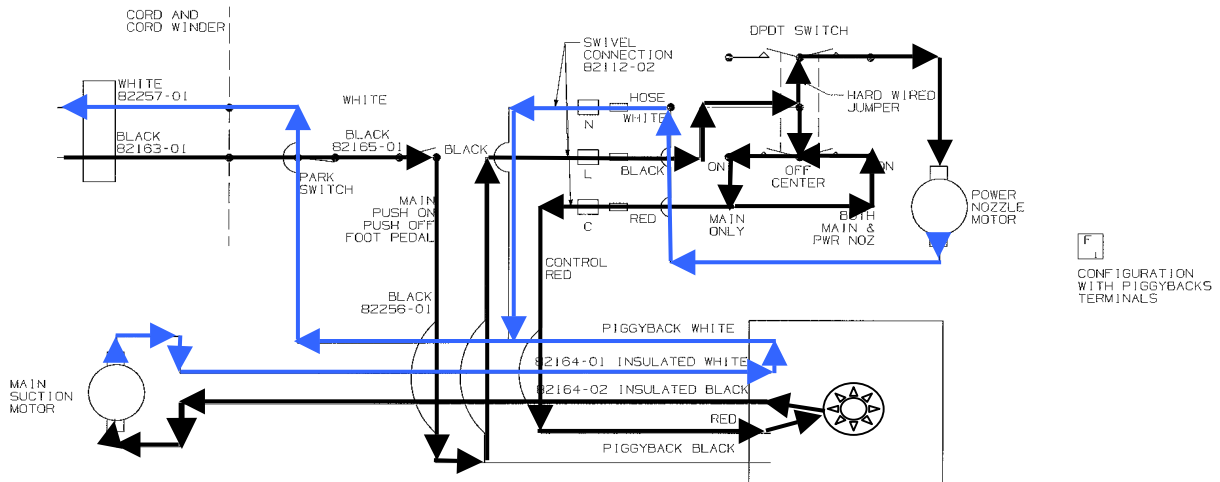
Main Motor Only Hose Handle Switch Toggled Left



Current flows from the AC receptacle through the hot blade of the power cord plug. Cord winder interconnects, main power switch, then branches (Piggyback) in one direction to apply power to the control board to operate its circuitry and the other direction through a harness to the line or L position of the swivel, up the hose to the handle assembly, through the switch, back down the hose to control or C position of the swivel, through the harness, into the control board, then out the control board and into the motor, out the motor back to the control board, out the control board, branching to the neutral or N position of the swivel for use when the power nozzle is activated, back through the cord winder, down the neutral leg of the power cord and out the neutral blade of the power cord into the AC receptacle.

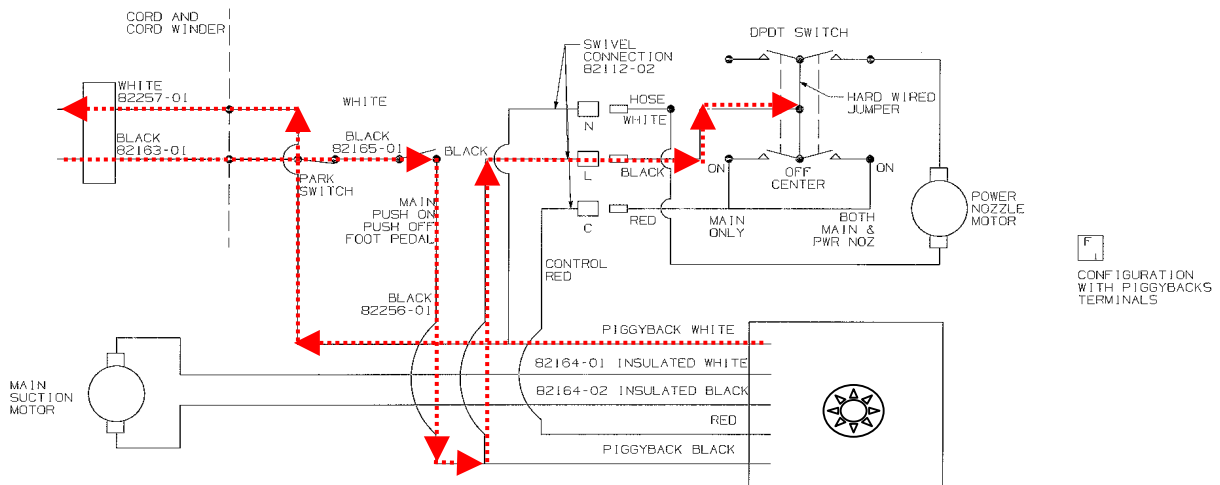
Increase Quality Through Interaction with the Field

Main Motor Plus Power Nozzle Handle Switch Toggled to the Right



Toggling the handle switch from left, past middle, to the right leaves the main motor as described but applies AC voltage through the handle switch, receptacle, harness and power nozzle motor. Then out the motor, down the hose, through neutral or N position on the swivel and harness to the unit's neutral.

When Nothing Works



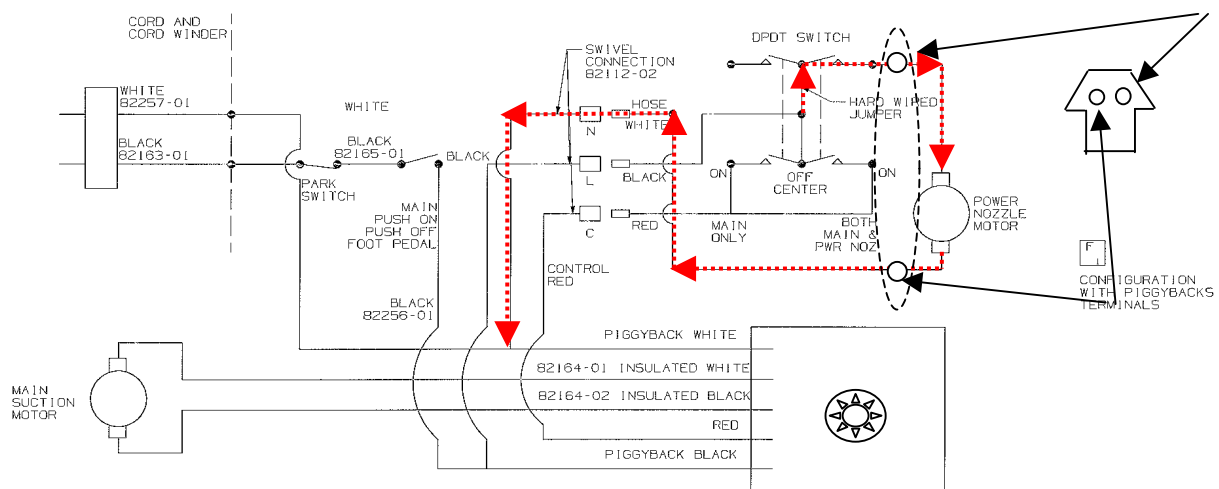
Use a Multimeter in Ohms or a Continuity Tester to:

1. If the problem is intermittent you should consider performing steps 1 & 2 while flexing components (swivel, harness, power lead to power switch, power switch, power lead to cord winder, cord winder contacts) to save time.
2. Check the hot side between the hot blade of the power cord plug and the L or center slot on the swivel. This checks the hot leg of the power cord, cord winder, interconnecting leads, main power switch, more leads, harness and swivel.

Increase Quality Through Interaction with the Field

- a. If you don't have continuity then back track until you get it then troubleshoot the components you had to skip until you find the culprit (Swivel, harness, power lead to power switch, power switch, power lead to cord winder, cord winder contacts, power cord).
 - b. If you do have continuity then continue to 2.
3. Check the neutral side between the neutral blade on the power cord plug and the neutral terminal on the control board. This checks power lead to the cord winder, cord winder contacts and neutral leg of the power cord.
 - a. If you don't have continuity then back track until you get it then troubleshoot the components you had to skip until you find the culprit (Power lead to cord winder, cord winder contacts, power cord).
 - b. If you still have uninterrupted continuity then see step 1, the AC Voltage source must be suspect or there are multiple problems with the unit.

When Main Motor Works But The Power Nozzle Does Not



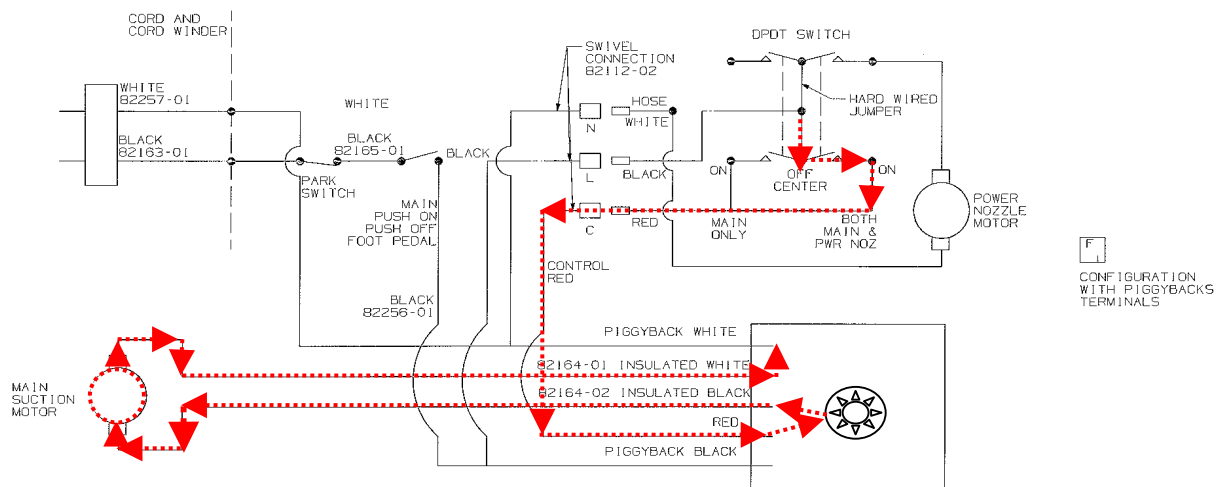
Use a Multimeter in Ohms or a Continuity Tester to:

1. If the problem is intermittent you should consider performing steps 1 & 2 while flexing components (swivel, harness, power to power head, handle switch assembly, power lead connections up in the handle or down at the hose end blade to N) to save time.
2. Since the main motor works we only need to with the portion of the circuit, components and connections that affect the power nozzle.
3. Toggle the power nozzle handle switch to the right. Check between the hot blade of the power cord plug and the B receptacle on the power nozzle (Be sure the main power switch is on).
 - a. If no continuity then the problem should be in the power nozzle handle switch assembly.
 - b. If you measure continuity then check the between the neutral blade on the power cord plug and the neutral or A receptacle of the power nozzle handle.

Increase Quality Through Interaction with the Field

- i. If you see continuity then the problem is in the power nozzle assembly.
- ii. If you don't see continuity then check the between the neutral blade on the power cord plug and the neutral/N slot on the swivel.
 1. If you see continuity then the problem is in the hose handle assembly.
 2. Check continuity of the components until you find the problem.

Power Nozzle Works Main Motor Does Not-Toggle the Hose handle Switch to the Right



Use a Multimeter in Ohms or a Continuity Tester to:

1. If the problem is intermittent you should consider performing steps 1 & 2 while flexing components (swivel, harness, power to power head, handle switch assembly, power lead connections up in the handle or down at the hose end blade to C) to save time.
2. Since the power nozzle works we only need to look at the circuit, components and connections that affect the main motor (which is about everything).
3. Check that all harness and power leads are connected to the control board. If disconnected the motor will isolated and won't work.
4. Check for continuity between the red lead on the control board and the hot plug blade of the power cord.
 - a. If you have continuity then that means all components on the hot side up to the control board are good.
5. Check for continuity between the piggyback white leads on the control board and the neutral plug blade of the power cord.
 - a. If you have continuity then that means all components on the neutral side from the control board through the power cord are good.

Increase Quality Through Interaction with the Field

6. Remove the insulated white and black leads from the control board. Perform a continuity check between these two leads. They are the motor leads. This checks the motor leads and motor.
 - a. If you have continuity in steps 4, 5 & 6 then it leaves the control board as the problem. Reconnect leads to control board.
 - b. A way to confirm this possibility is to use a wire lead with alligator clips on both ends. Clip one end to red terminal with red lead connected and the other end to the insulated black terminal with lead connected.
 - i. Toggle the hose handle switch to center/Off.
 - ii. Plug the power cord into an active outlet.
 - iii. Toggle the switch to the right and left, the motor should run in both positions.
 - c. If you don't have continuity the likely problem is a dislocated motor lead or rarely the motor.

If you can successfully apply these processes to the Dutch Tech then you should have little problem using continuity checks to isolate problems in other units.

Increase Quality Through Interaction with the Field

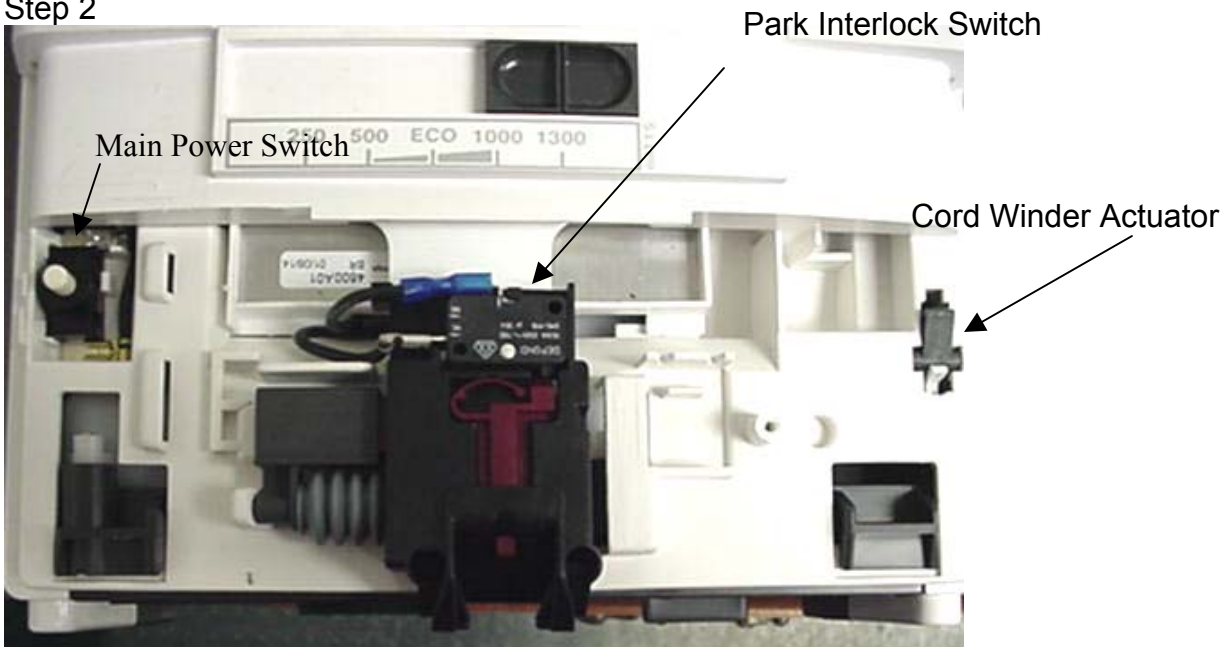
Disassembly

Step 1



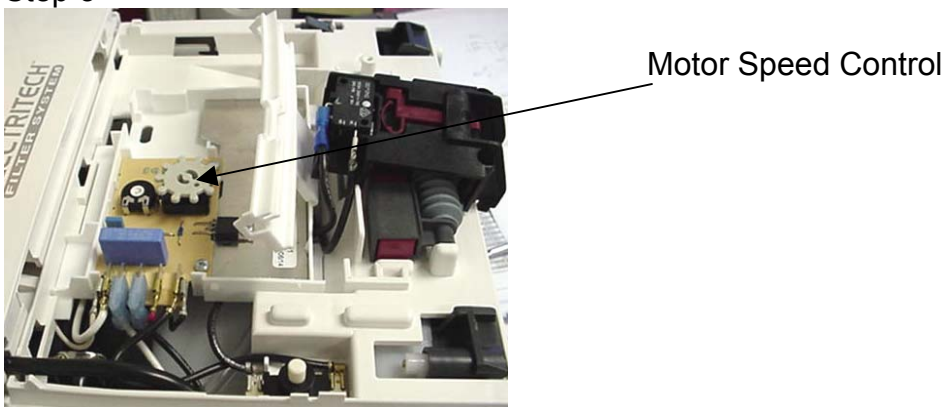
Service Screw

Step 2



Park Cover & Pedals Removed

Step 3



Slide Panel Removed

Increase Quality Through Interaction with the Field

Step 4



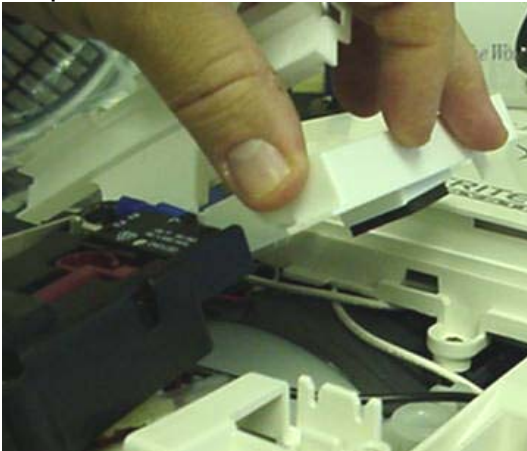
Remove Park

Step 5



Cord Winder Actuator

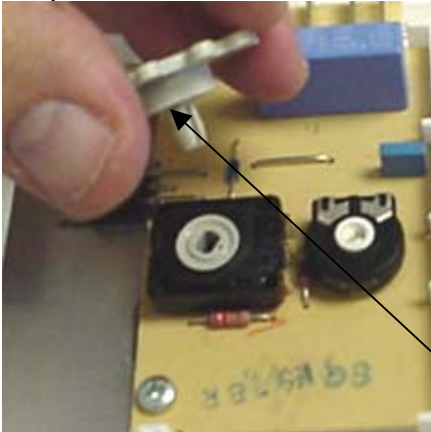
Step 6



Remove Circuit Board Holder

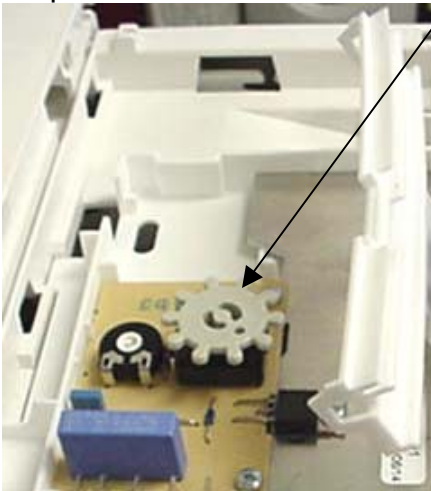
Increase Quality Through Interaction with the Field

Step 8



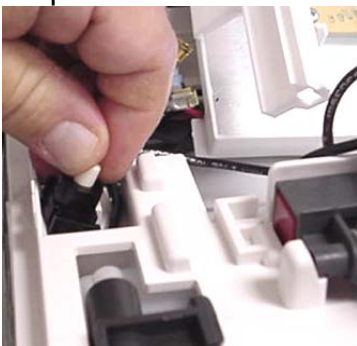
Remove Motor Speed Control Drive Wheel

Step 9



Open Circuit Board Holder

Step 10



Remove Main Power Switch

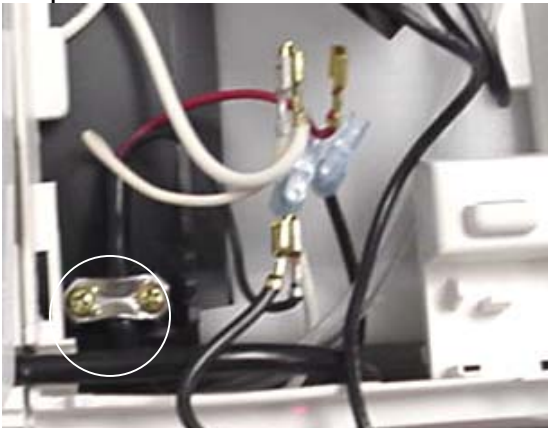
Increase Quality Through Interaction with the Field

Step 11



Remove Check Bag Indicator Assembly

Step 12



Remove Harness Cord Clamp

Step 13



Accessory Cover & Spring

Step 14



Harness Lead Lid Cover & Screws

Increase Quality Through Interaction with the Field

Step 15



Remove Dust Cover

Unsnap one side and remove cover.

Step 16



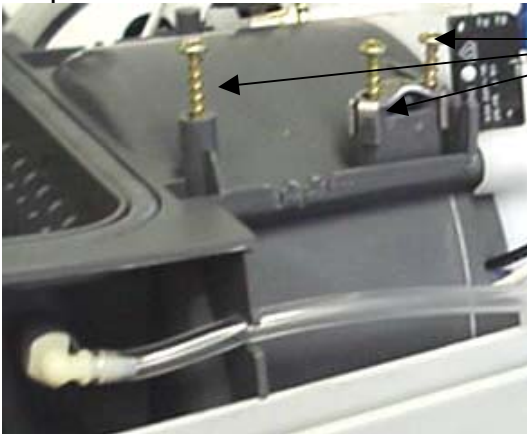
Remove Upper Housing Screws



Remove Upper Housing

Increase Quality Through Interaction with the Field

Step 17



If you are unsure about what screws go where leave them in their bosses until needed.

Check Bag Indicator Tube

Step 18



Retaining Plate

Pull out the bumper from the front of the retaining plate to expose the retainer plate snaps (4).

Remove Buffer Strap

Step 19



To unfasten the rear snaps stick a flat head screwdriver blade down behind the rib. Push the handle of the screwdriver away and down.

Unsnap Retaining Plate

Increase Quality Through Interaction with the Field

Step 20

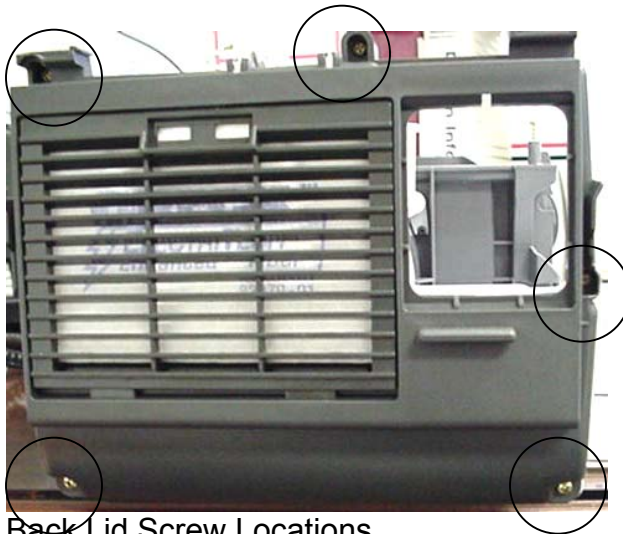


Dust Chamber
Motor Housing
Back Lid

If removing the assembly only, perform steps 21, 23 & 24 before removing the assembly from the lower housing.

Dust Chamber/Motor Housing/Back Lid Assembly Screw Locations

Step 21



Back Lid Screw Locations

Step 22



Cord Winder Cooling Tube

Increase Quality Through Interaction with the Field

Step 23



Remove Cord Outlet

Step 24



Remove Cord Outlet from Cord.

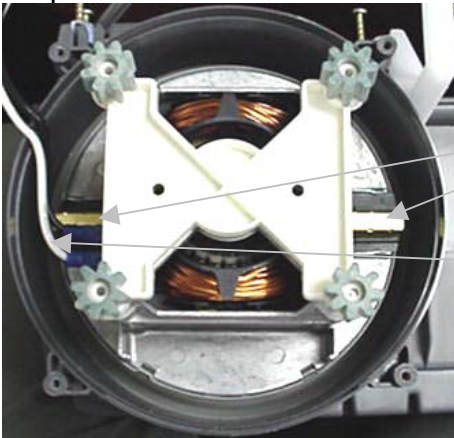
Step 25



Motor Housing Screws

Increase Quality Through Interaction with the Field

Step 26

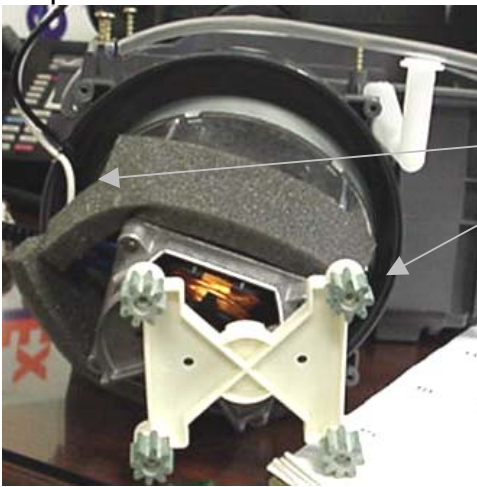


Note the orientation of the motor brushes

Note the orientation of the motor leads.

Spacer & Grommets

Step 27



The foam silencer has cutouts for the motor brush locations.

Foam Silencer

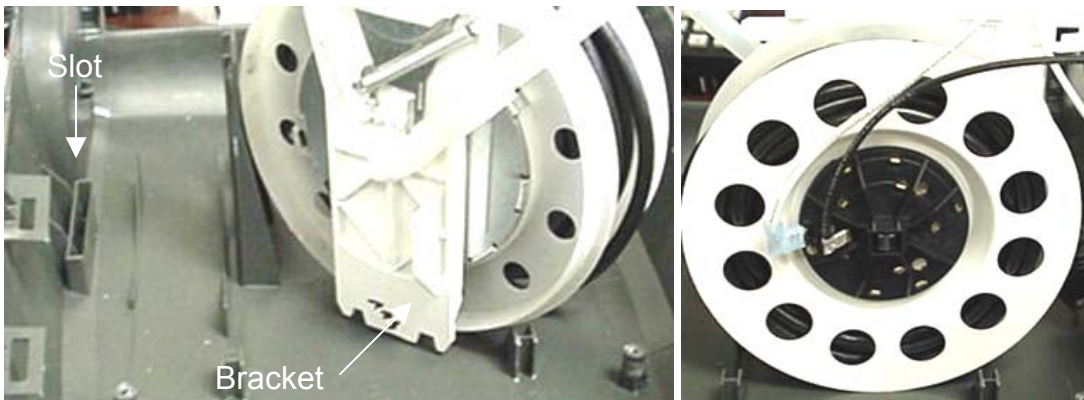
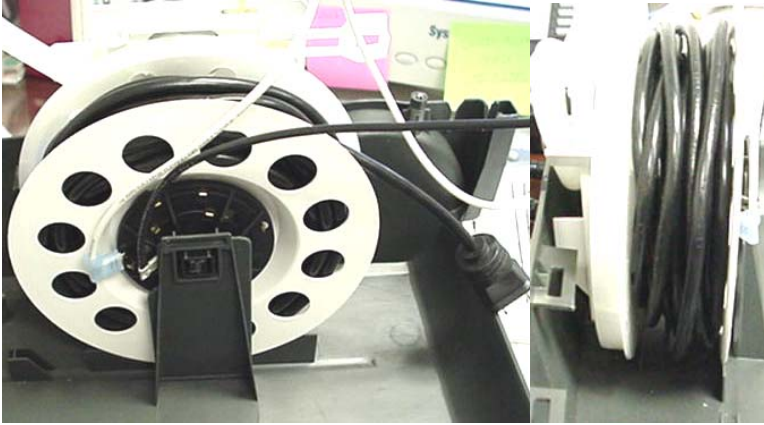
Step 28



Remove Motor

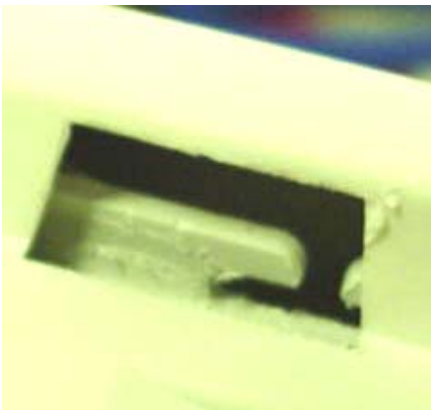
Step 31

Increase Quality Through Interaction with the Field



Cord Winder

One of the major causes of problems with the winder is not getting the bracket into the slot correctly. Just be sure the bracket is completely captured in the slot, not on top of, in front of or behind the slot. The upper part of the cord winder should be positioned in the opening as shown below:

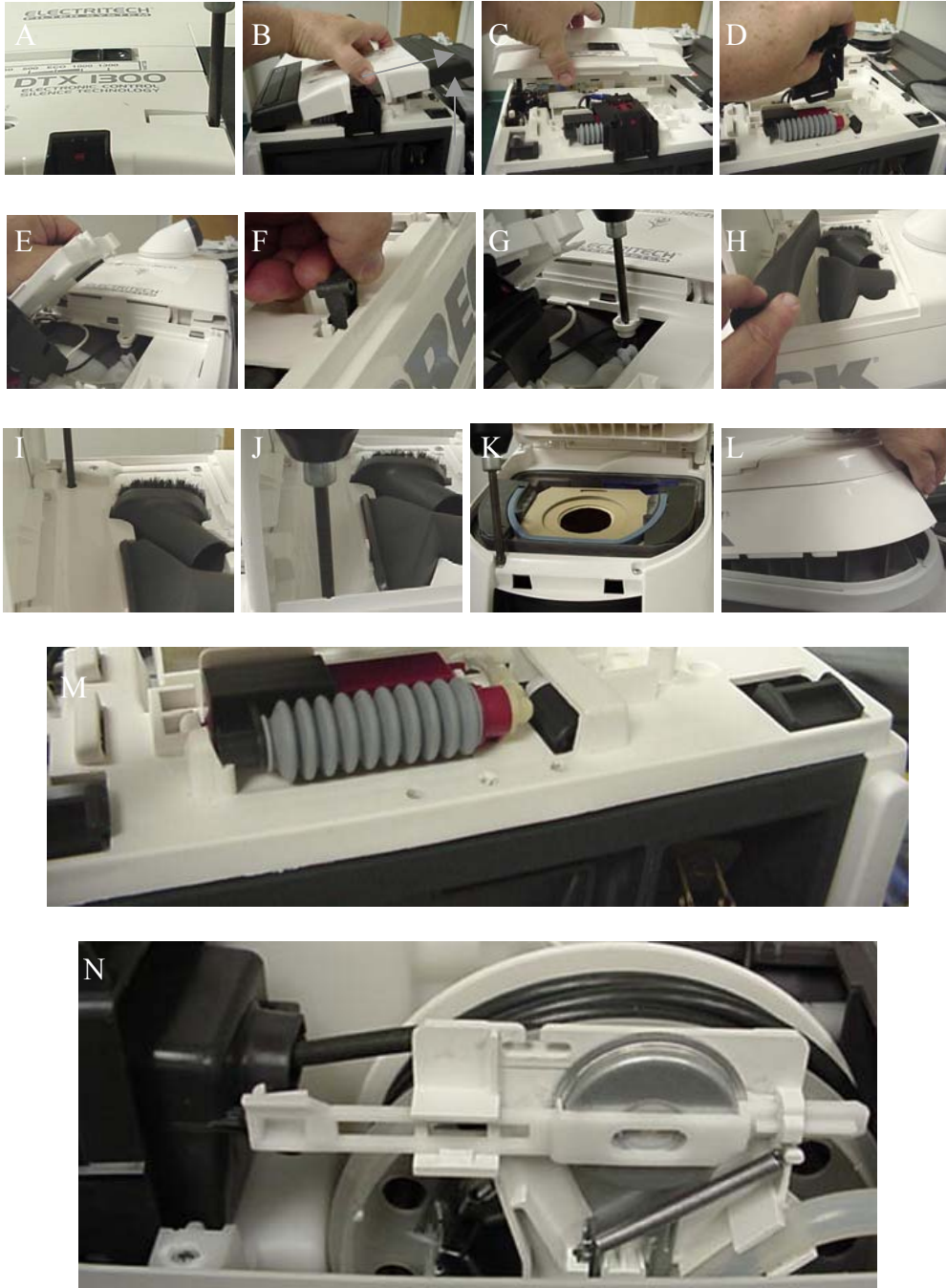


Increase Quality Through Interaction with the Field

Cord Winder Replacement Without Disconnecting Everything

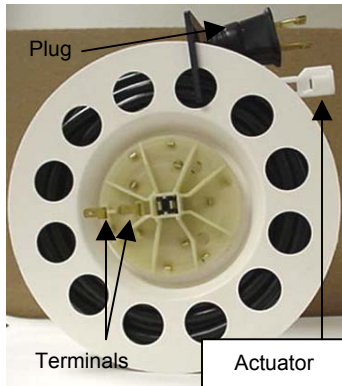
1. Remove service screw (A)
2. Lift panel up and pull off right (B)
3. Remove circuit board cover (C)
4. Unhook park (D)
5. Move circuit board holder (E)
6. Remove cord winder actuator (F)
7. Remove 5 screws (G, H, I, J, K)
8. Lift upper housing & unhook (L, M)
9. Remove cord winder (N)

This instruction eliminates total disassembly just to replace the cord winder. Only two leads and a cooling tube to the cord winder need to be disconnected and reconnected. See the disassembly instruction to finish the cord winder removal.



Cord Winder Disassembly

1. Note the positions of the actuator, plug and terminals.



2. Top View



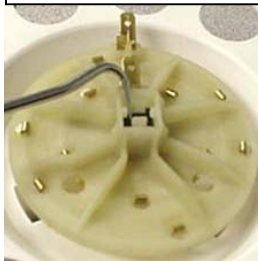
3. Cord unwound from the reel.



5. Ring Contact Holder



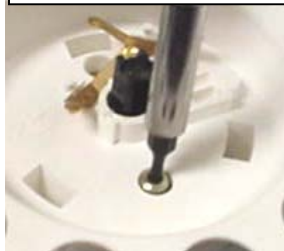
6. Unsnap the holder retainers



7. Remove the holder



8. Remove 2 screws with a T15 Torx bit.



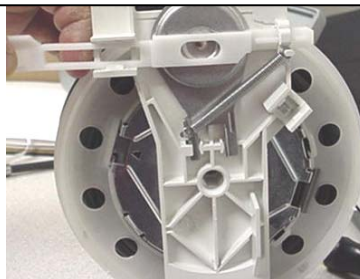
9. Remove cord retainer and cord.



10. Fasten leads as in 9 and reassemble



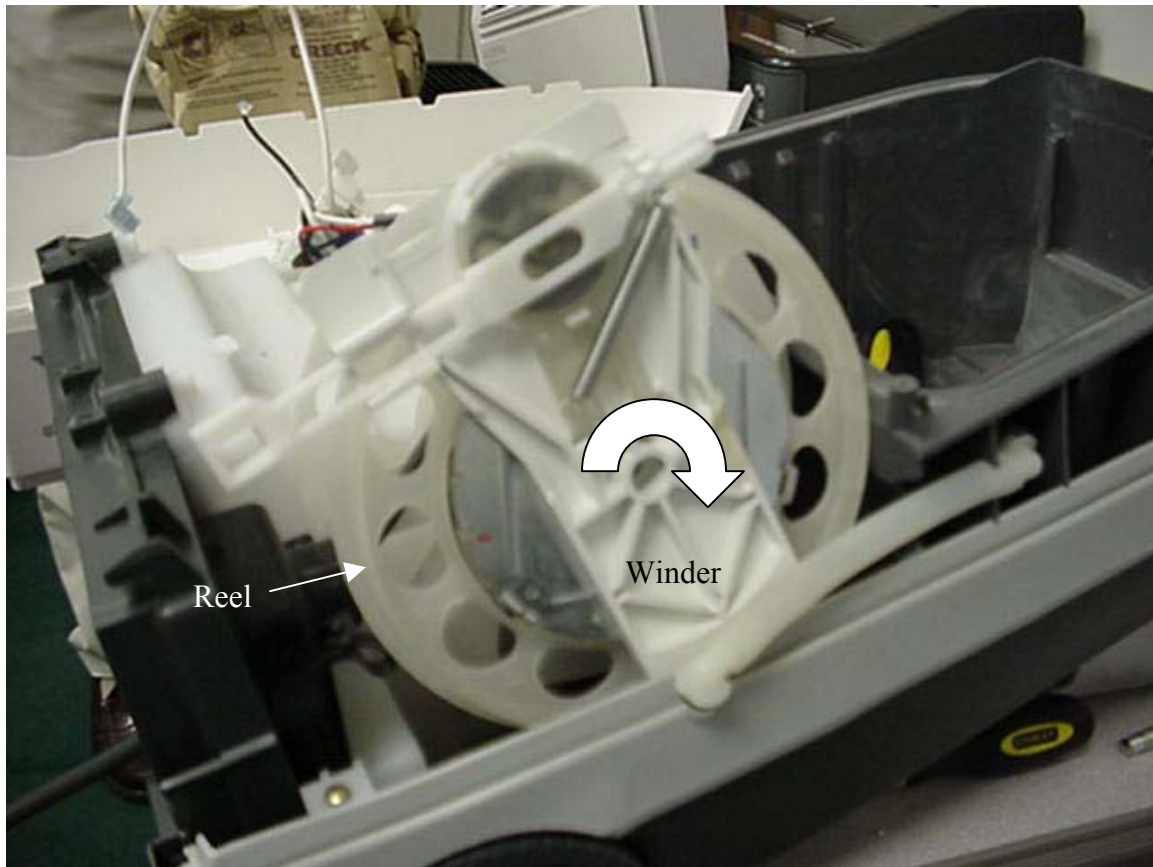
11. A view of the other side of the reel.



Increase Quality Through Interaction with the Field

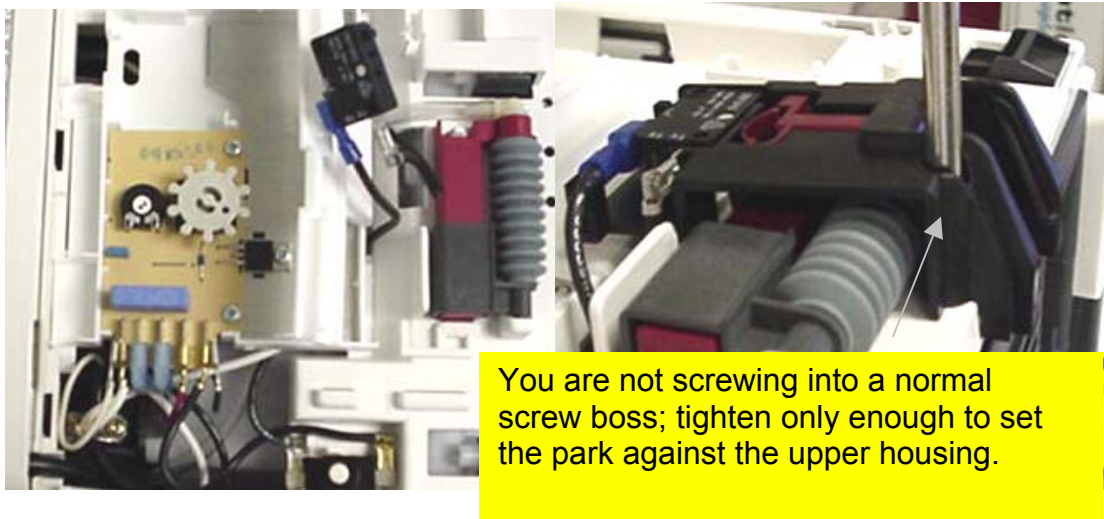
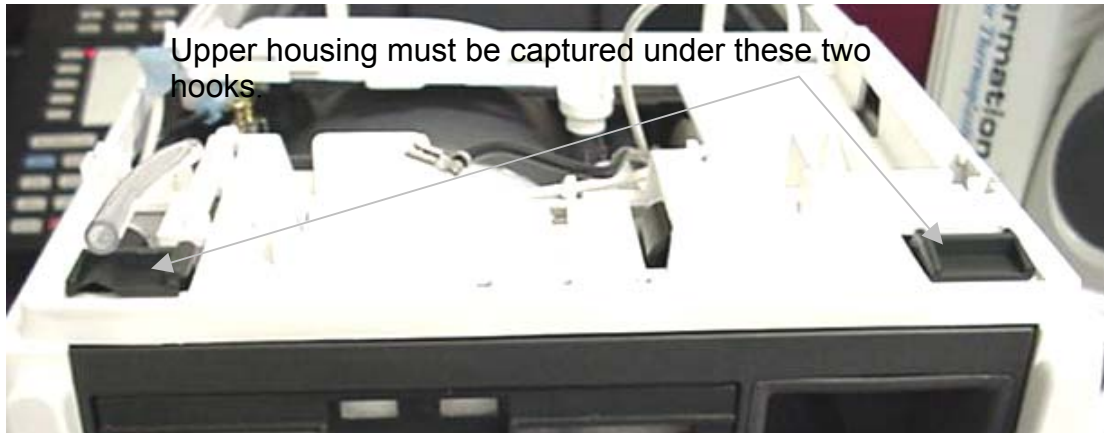
To tighten the tension of the cord winder:

1. Remove the pedal assembly (1 screw).
2. Remove the park assembly (2 screws).
3. Remove the motor control cover.
4. Remove the motor control but leave wires connected.
5. Remove the 5 screws fastening the top cover to the bottom housing.
6. Remove the winder actuator from the top cover.
7. Lift and swing the top cover to the left side.
8. Unwind all the cord from the reel.
9. Remove cooling tube from winder.
10. Lift up the cord winder, mark the terminal where the black lead is connected and disconnect the black lead and white lead from the winder.
11. Hold the reel stationary and turn the winder assembly clockwise until you feel resistance build then stop (do not over tighten).
12. Reassemble.

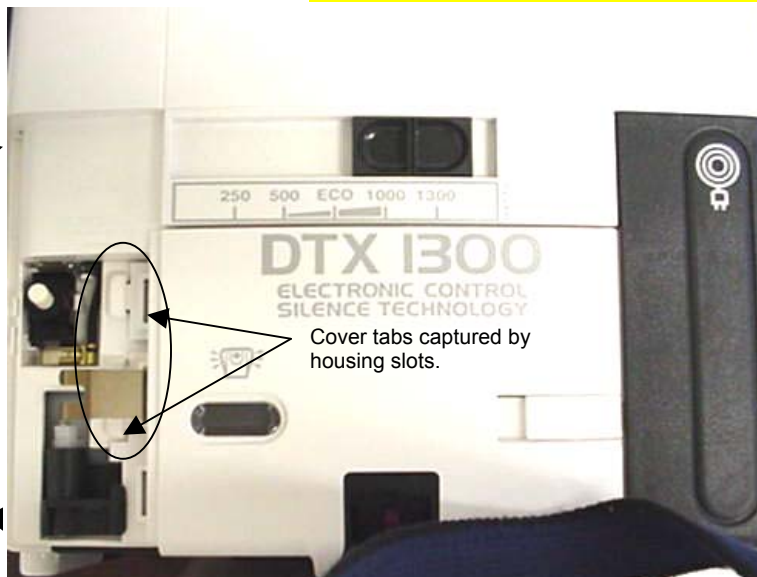


Increase Quality Through Interaction with the Field

Helpful Assembly Hints

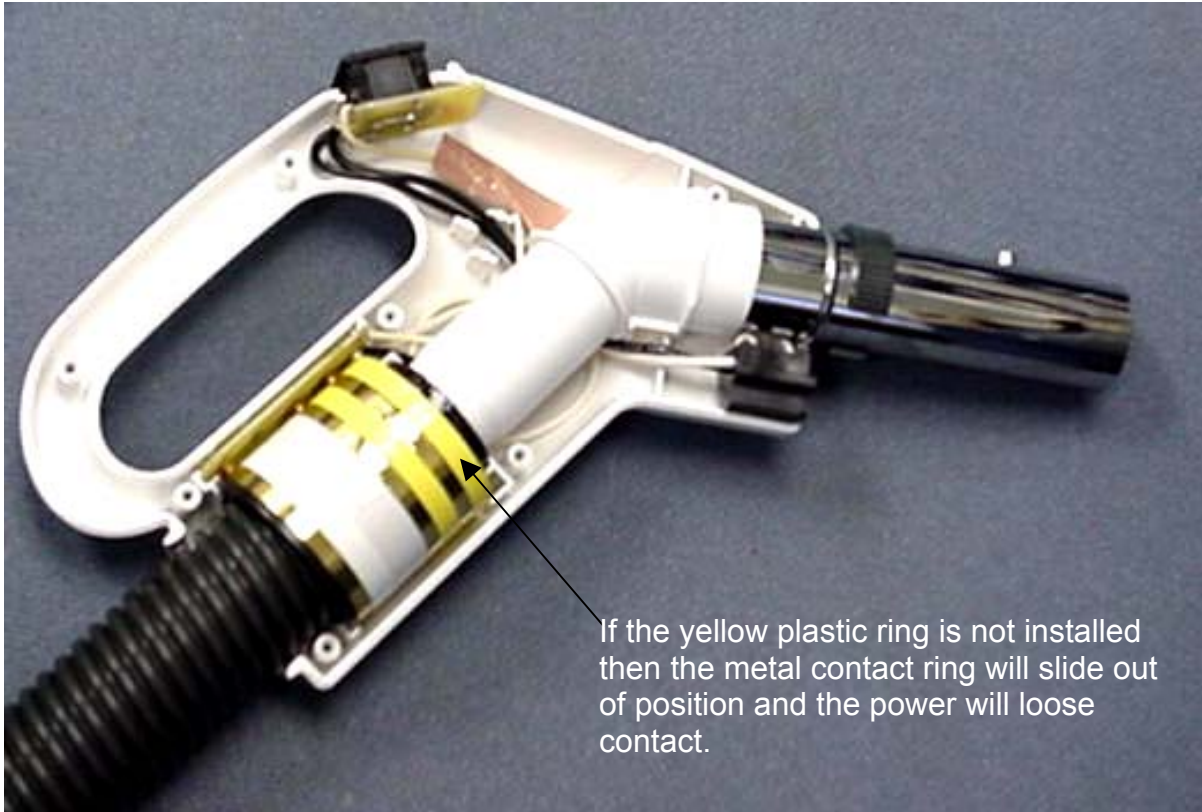


Assembly is easier if the power-peddle is removed.



Increase Quality Through Interaction with the Field

Inside the DTX 1300/1400 Hose Handle



EBK340 - DTX1400 Power Nozzle Service

10/08/2007

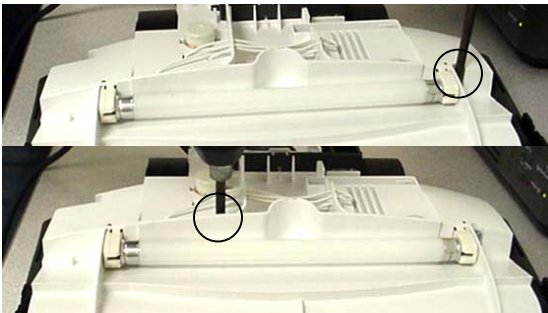


Turn the nozzle over and tilt the top cover from the back.

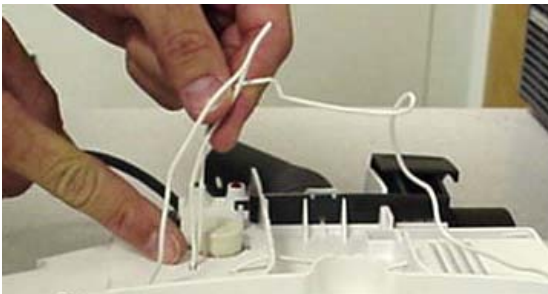
Increase Quality Through Interaction with the Field



Remove the top cover.



Remove the 2 service cover screws.

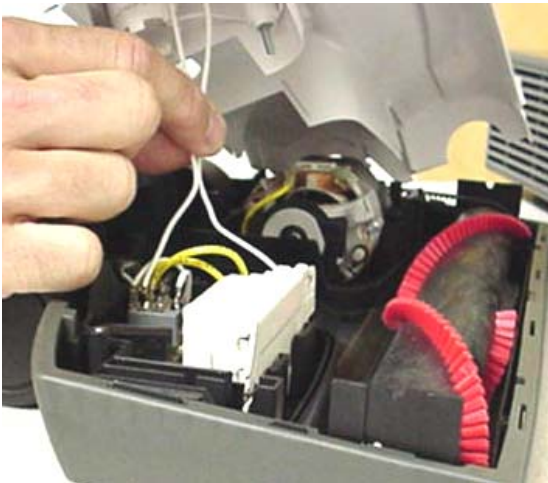


Loosen the wire leads from their resting slots. Straighten the wire leads where they go through the service cover, otherwise they may break loose from the terminal connections on the other side when the service cover is removed.

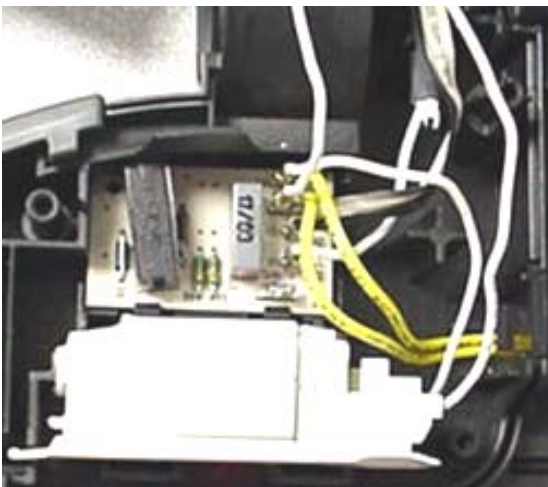
Increase Quality Through Interaction with the Field



Slowly lift off the service cover.

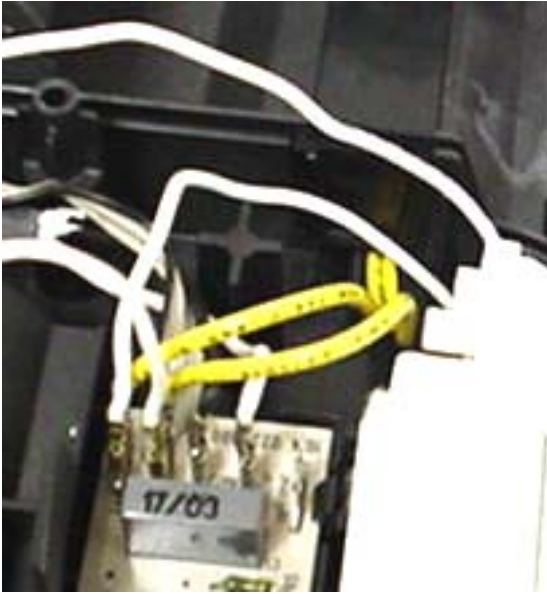


Carefully pull the slack wire through the hole in the service cover.

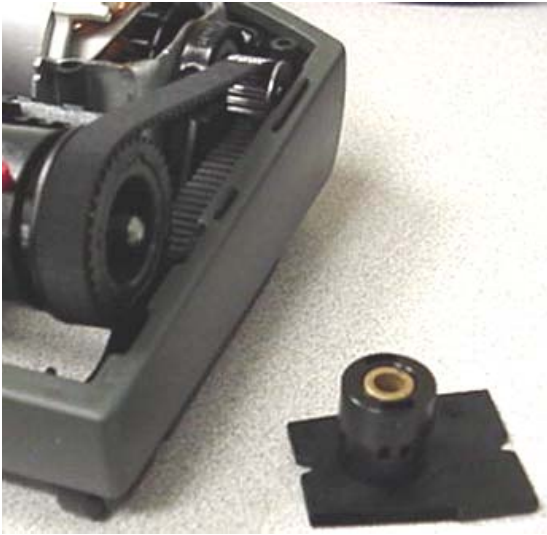


Three views: circuit board wiring

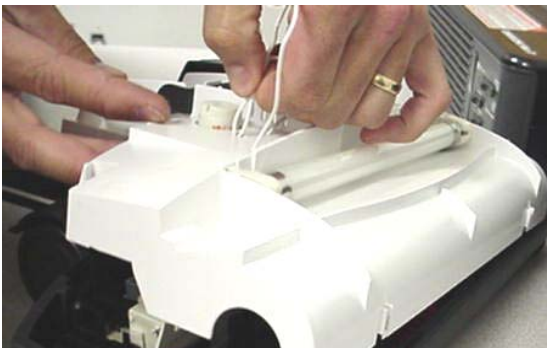
Increase Quality Through Interaction with the Field



Increase Quality Through Interaction with the Field



Brushroll, bearing and belt removal is easy and the bearing holder can only be installed one way.

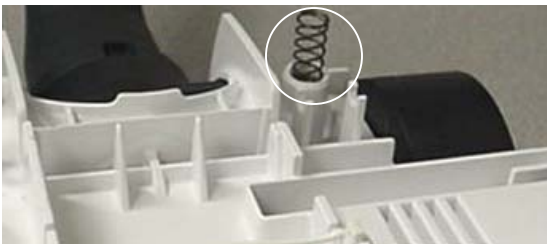


Reinstall the service cover.
Carefully guide the wire leads through the hole.



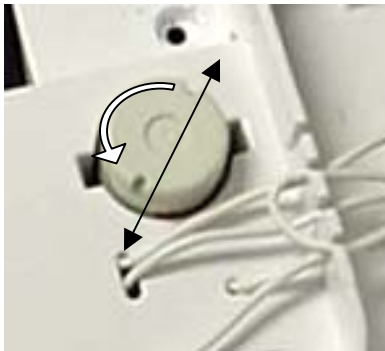
Insure that the LED's fit in their holders.

Seat the service cover.



If the nozzle neck release actuator is removed the actuator spring may get lost.

Increase Quality Through Interaction with the Field



Increase Quality Through Interaction with the Field

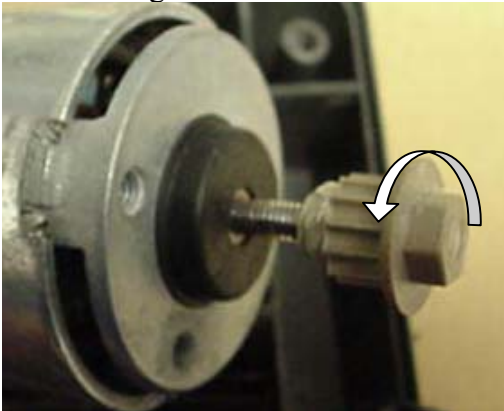
EBK 280/340

Power Head Motor Replacement

The service motor, 82228-01, does not have the cog installed.
You must save the cog from the old motor.

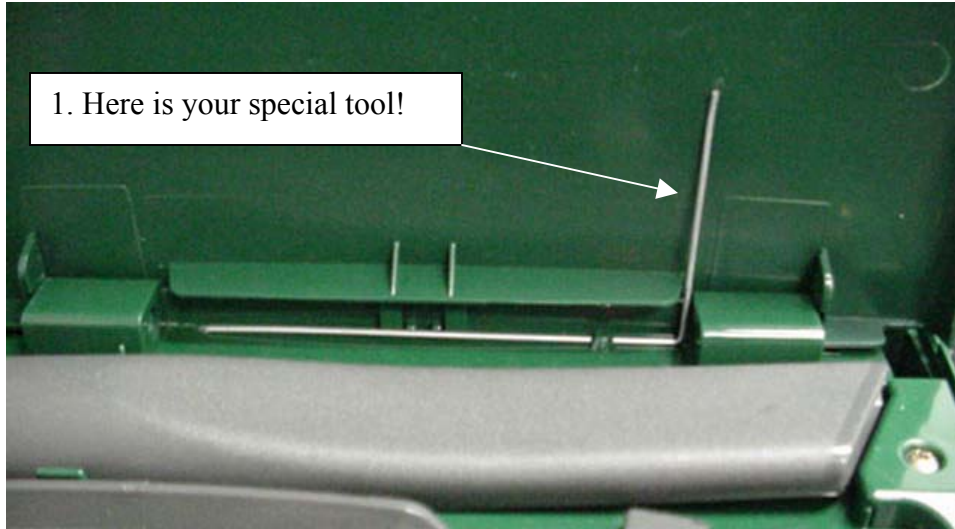


Turn the cog counterclockwise to remove it from the old motor.

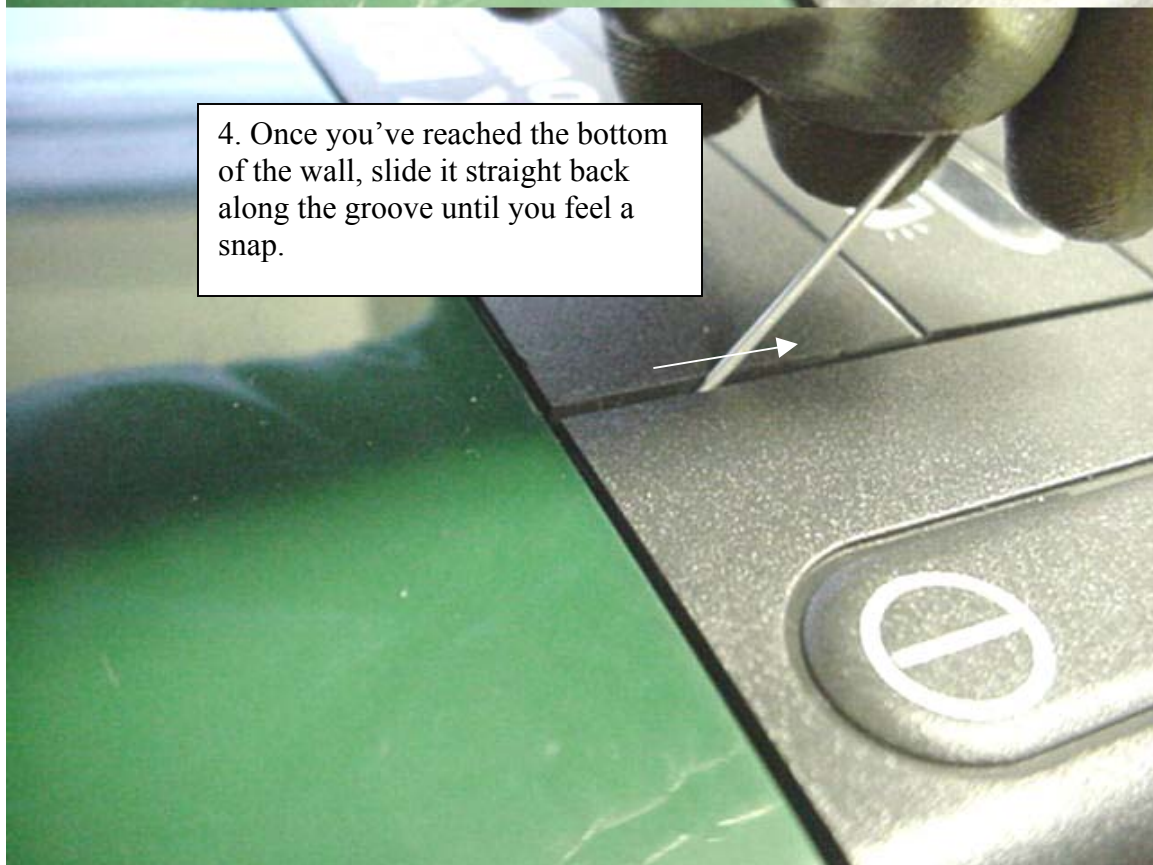
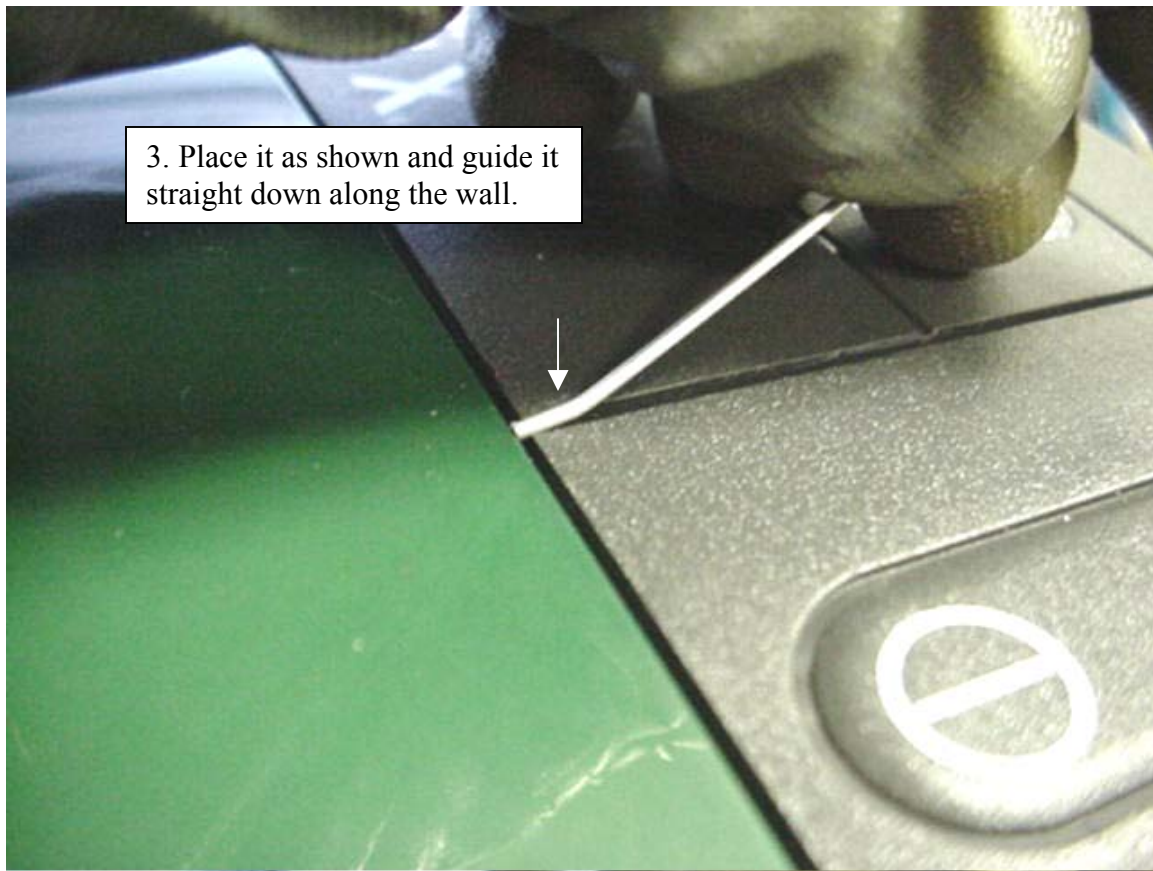


Increase Quality Through Interaction with the Field

Rear Cover Removal-DTX1100/1200



Increase Quality Through Interaction with the Field

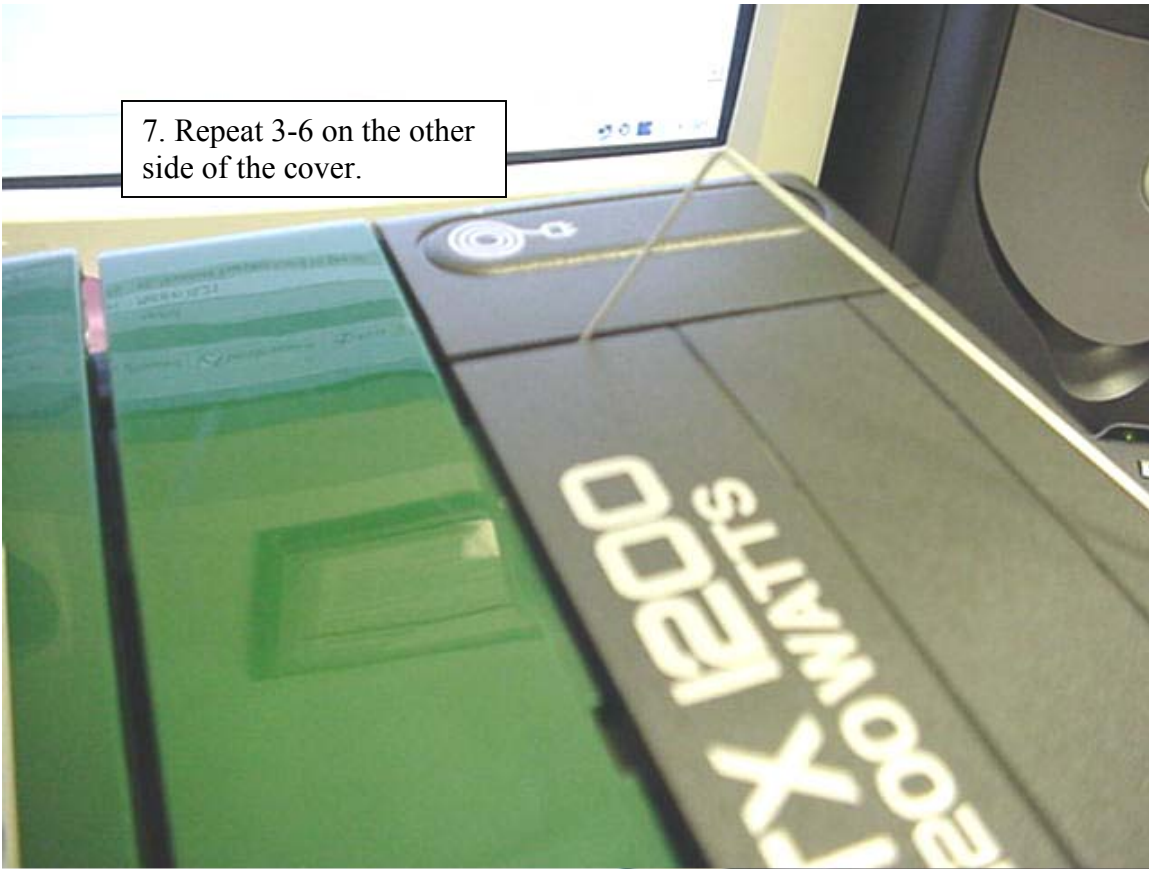


Increase Quality Through Interaction with the Field



Increase Quality Through Interaction with the Field

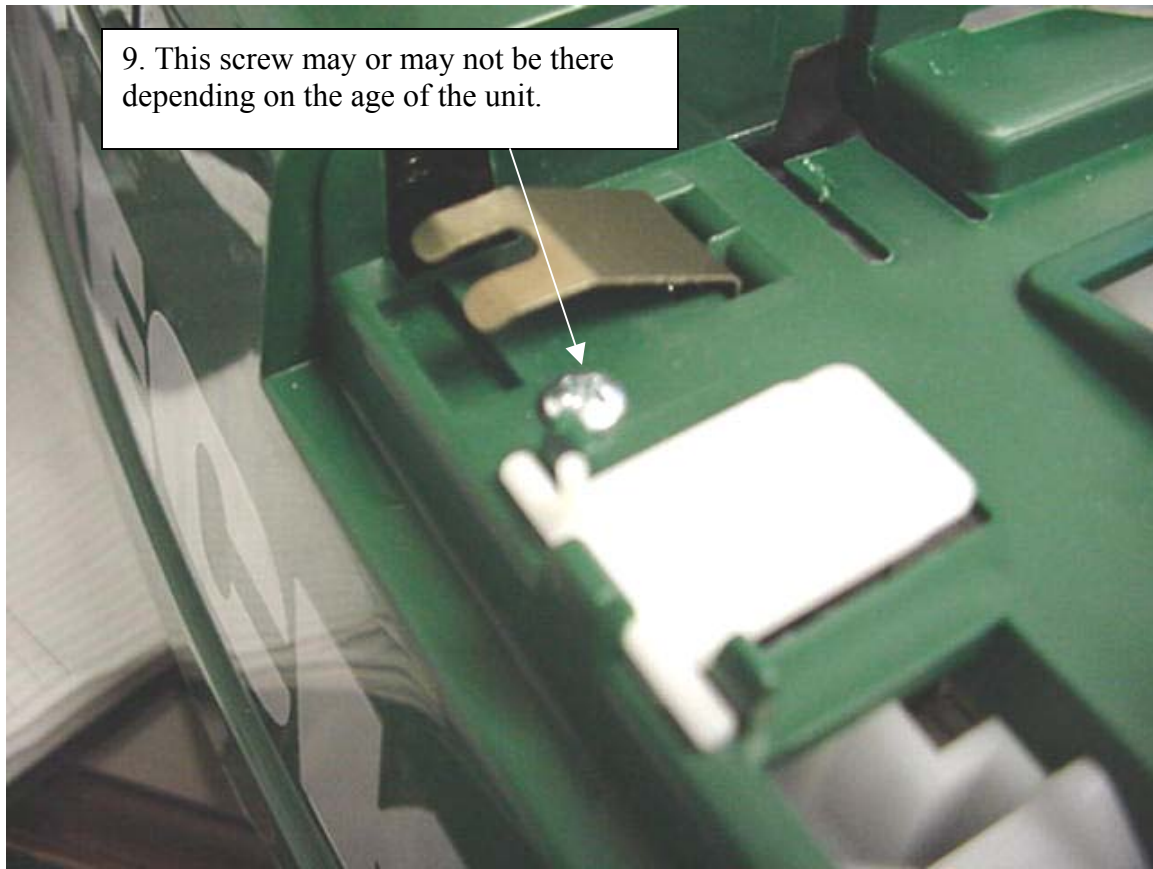
7. Repeat 3-6 on the other side of the cover.



8



Increase Quality Through Interaction with the Field



The rest of the disassembly is similar to the DTX1400.