

DC
24

dyson



service manual

Issued Jan 08

This manual is written specifically for Dyson trained engineers and covers the full DC24 range. The service instructions assume the engineer has the approved tools and test equipment with them.

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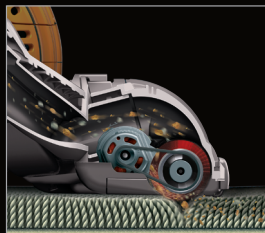
DC
24

dyson ball

Concentrated technology



Concentrated technology
All round performance. But only 2/3 the size.



Independent brushbar motor
Deep cleans carpets. Toothed belt doesn't slip or need replacing.

Reversible wand

For cleaning awkward areas.

Hygienic and quick to empty

Just press the button at the top of the cyclone and the dust empties from the bottom.

Fingertip brush control

Turn brushbar on and off at the touch of a button.

Dyson Cyclone™ technology

Patented technology that doesn't lose suction power as you vacuum.

On-board accessory tool

Nozzle converts to a brush tool for dusting.

No extra costs

Washable filters and no bags to buy.

Clear bin™

Made of tough polycarbonate, lets you see when it needs emptying.

Dyson Ball™ technology

Steers smoothly with a turn of the wrist.

Washable lifetime HEPA filter

HEPA filter is ideal for allergy sufferers.

Ultra-lightweight and compact

DC24 is our lightest upright machine. What's more, the handle compresses so you can store it in small spaces.



Electrical safety testing



Ensure that at all times during the repair and testing of products that customers, pets, children and you are not exposed to any Live electrical supply.

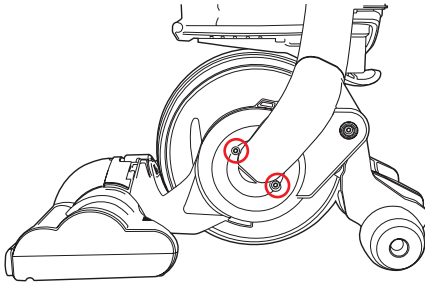
Insulation test

The following tests **must** be performed prior to and upon completion of all repairs to Dyson floorcare products and **before** any functional checks. **You must ensure that a full visual inspection of the product is completed prior to repair.**

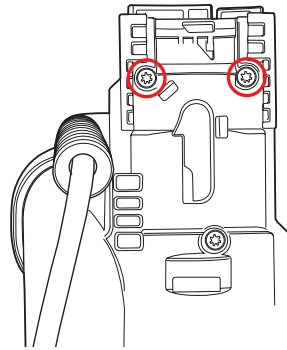
These tests are vital to avoid any possibility of personal injury to the end user.

The Seaward Primetest 200 (or equivalent) should be used to test the electrical insulation of a Class 11 appliance; it indicates any electrical leakage.

Insulation test points:



Test the two screws highlighted in the upright switch cover.



Test the two screws highlighted in the rear of the duct assembly.

Test results

An insulation test reading of $>2 \text{ M}\Omega$ is acceptable.

A reading of below $2 \text{ M}\Omega$ is not considered safe and further investigation, rectification and testing must be completed before the product is used. The following components must be visually inspected:

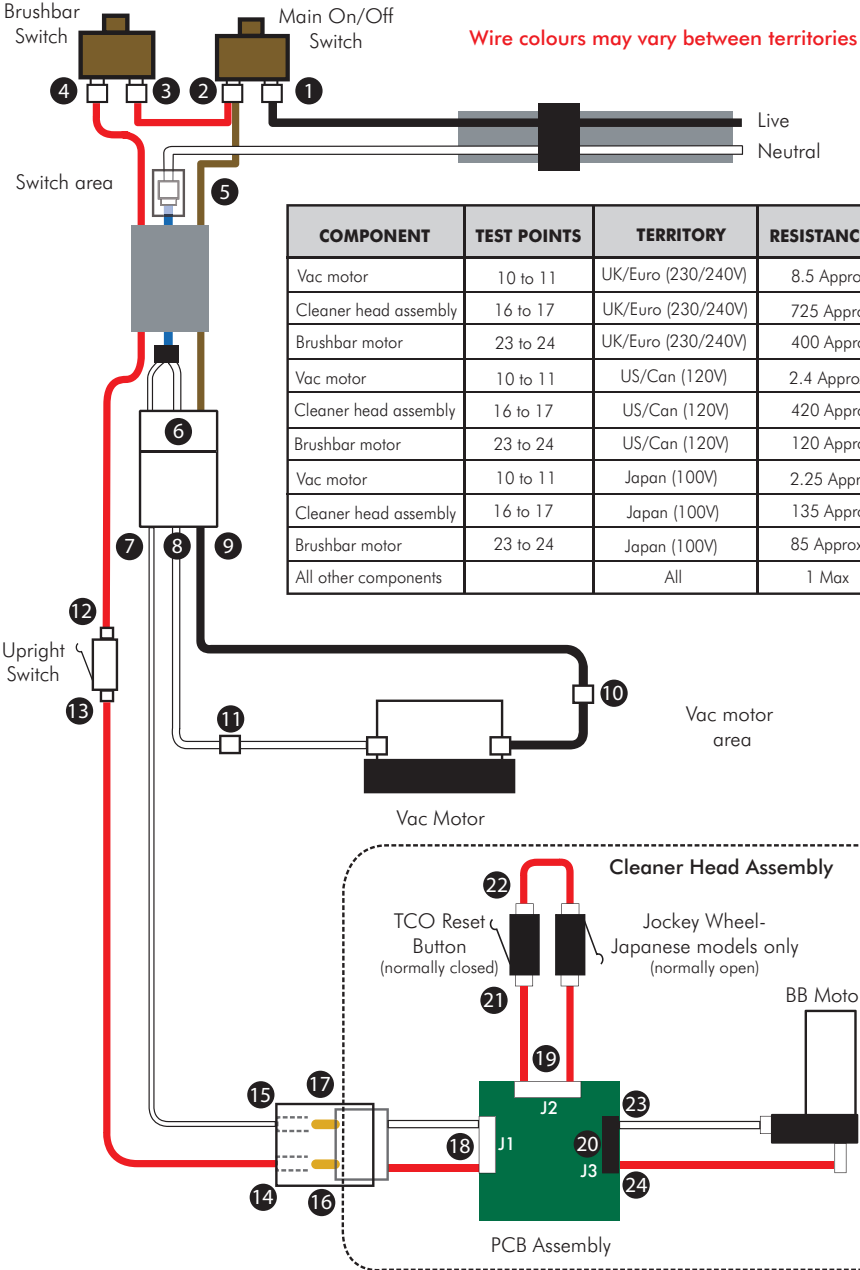
- The wiring behind the upright switch cover.
- All wiring behind the switch housing.

If you cannot repair a product with an insulation test reading of below $2 \text{ M}\Omega$ you must inform the customer that the product is unsafe to use.

Please inform the customer of the required actions to repair the product (including the charge structure).

If the product is left un-repaired please indicate on your paperwork/hand held device that the product is electrically unsafe and attach a 'WARNING: product electrically unsafe' sticker in a visible location on the product.

Wiring Schematic



Electrical fault diagnosis

When DC24 is switched on in the upright position, the brushbar motor is off. Tilting the machine into normal vacuuming mode will automatically operate the upright switch, turning the brushbar motor on. The brushbar motor can be switched off using the brushbar switch.

The vacuum motor of DC24 is fitted with a heat sensitive Thermal Cut-Out (TCO). This will shut the motor down for up to 60 minutes if it reaches a temperature >96 degrees celcius. Excessive temperatures within the motor are usually caused by machine/filter blockages.

The cleaner head is fitted with a TCO reset switch that will shut the brushbar motor off if it is put under an excessive load (blocked/seized brushbar etc.). The cause of the shut down should be cleared and the TCO reset by pressing the switch.

If the cause of the brushbar motor cut-out is not rectified the TCO will repeatedly reactivate, preventing the brushbar from turning.

Electrical fault diagnosis

Note: all 'connection' numbers and 'continuity' checks refer to the illustration and table on page 3.

No machine power (vac motor and brushbar motor off)

- 1) Check for damage/electrical failure to the plug, fuse and powercord. Check the mechanical actuation of the on/off switch.
- 2) Check for a loose connection at points 1, 2, 5 and 6.
- 3) Test the resistance of the powercord, fuse (UK only), on/off switch and internal powercord (live and neutral wire only).

No power to the vac motor (brushbar motor on in tilt position)

- 1) Check connections at points 10 and 11.
- 2) Test the resistance of the motor cable assembly and vac motor (points 8-9).
- 3) Check the vac motor brushes, windings, commutator etc. for signs of wear.

No power to the brushbar motor (vac motor on)

- 1) Ensure the TCO reset button has been pressed.
- 2) Check connections at points 3, 4, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 and 22.
- 3) Check the brushbar motor and PCB assembly for signs of damage/wear.
- 4) Test the resistance of the brushbar switch (points 3-4), the internal powercord assembly (red wire only, points 4-12), the upright switch (points 12-13), the yoke loom (points 7-15 and 13-14) and the cleaner head assembly (points 16-17).
- 5) Replace the PCB assembly and retest. If the fault is not rectified replace the cleaner head assembly.

Brushbar motor on in upright position (switches off with brushbar switch)

- 1) Check the mechanical actuation of the upright switch. Ensure the micro switch isn't jamming or sticking.

Brushbar switch does not switch brushbar motor off in tilt position

- 1) Check for correct location of the brushbar reset arm (see item 121, page 49).
- 2) Check the mechanical actuation of the brushbar switch.
- 3) Test the resistance of the brushbar switch (points 3-4).

Brushbar turns when cleaner head assembly is off the floor (Japanese models only)

- 1) Check the mechanical actuation of the Jockey wheel.
- 2) Test the resistance of the TCO reset button/Jockey wheel loom.
- 3) Replace the PCB assembly and retest. If the fault is not rectified replace the cleaner head assembly.

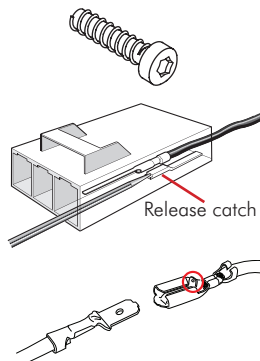
General notes



Disconnect the machine from the electrical outlet at all times during repair and test. Failure to do so could result in electric shock or personal injury.

Wire colours may vary between territories.

All screws used in DC24 are Torx T15 unless otherwise stated.



DC24 contains a connector behind the upright switch cover. To disconnect any wires from it you will have to insert a fine bladed tool (1mm) to activate the release catch.

Some female terminal clips used in DC24 contain a locking mechanism. The release pip will need to be activated before separation from the male terminal can occur.

Recommended tools to repair DC24:

Torx T-8, T-10, T-15 screwdrivers

Philips screwdriver

Large flat bladed screwdriver

Terminal screwdriver

1mm flat bladed screwdriver

Long/needle nosed pliers

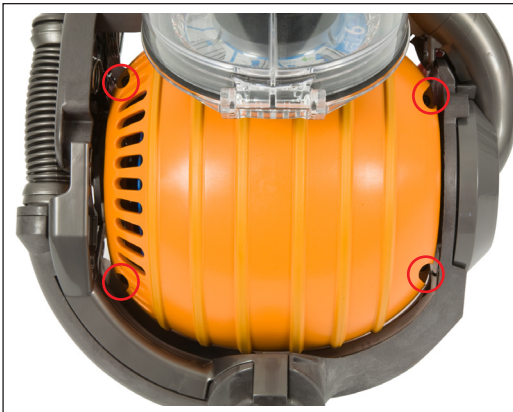
Motor and yoke assembly replacement - removal



01 Release the c-clip from the top of the cleaner head assembly.



02 Remove the cleaner head assembly.



03 Remove the four screws from the ball assembly.



04 Remove the two halves of the ball assembly.



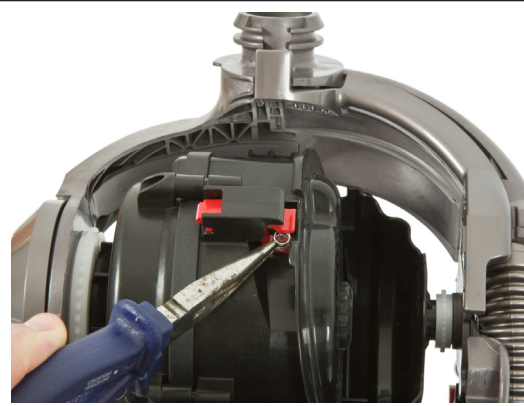
05 Remove the post filter assembly.



06 If it needs replacing the post filter button can be prised out of the post filter assembly.



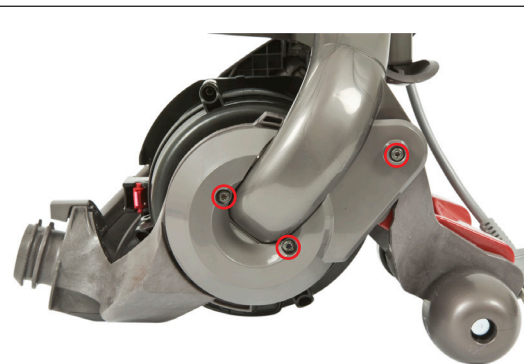
07 To fit, align the button onto the spring and push firmly into the retainers.



- 08** If the post filter offering arm needs replacing carefully release the spring.



- 09** With the spring removed firmly push the post filter offering arm out of the housing on the motor bucket.
Fit in reverse.



- 10** Remove the three long screws in the upright switch cover.



11 Twist the upright switch cover off the side of the product.



12 Separate the internal cable connector.



13 Detach the wire from the lower terminal of the upright switch.



- 14** Remove the long screw next to the arrow.



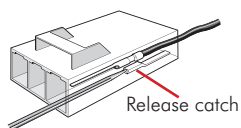
- 15** Firmly pull the lower duct hose off the side of the product.



- 16** Remove the long screw behind the lower duct hose.



- 17** Release the yoke and motor assemblies from the duct assembly.



- 18** Release the yoke wire from the cable connector.



- 19** Remove the yoke assembly from the motor bucket.



- 20** If the swivel lock needs replacing release the catch from the yoke assembly.



- 21** With the end released remove the swivel lock from the middle of the yoke assembly.



- 22** To fit, lower the swivel lock onto the detail on the middle of the yoke assembly.



- 23** Ensure when fitting the swivel lock into the side of the yoke assembly that the spring locates onto the side of the peg.



- 24** If necessary the connector clip can be removed by initially inserting a screwdriver into the gap.



- 25** Once initially released it can then be removed by easing it away from the yoke assembly.



- 26** To fit, ensure the yoke loom grommet is positioned in the connector clip as shown.



- 27** Ensure the yoke loom loops around the pip detail on the yoke.



- 28** Align the lugs on the connector clip with the detail on the yoke assembly. Rotate the clip to lock into position.



29 If replacing the motor remove the motor inlet seal.



30 Remove the bearings from either end of the motor bucket.



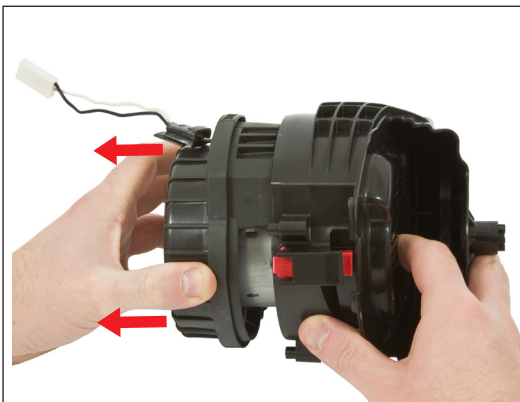
31 Remove the four screws in the motor bucket.



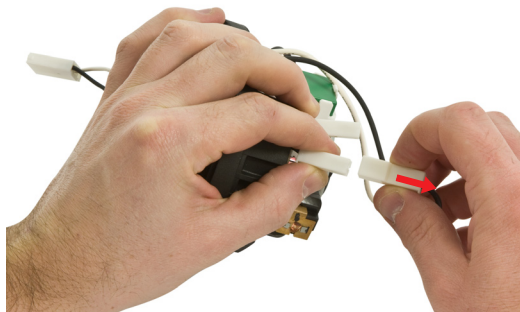
32 Separate the two halves of the motor bucket.



33 Remove the motor cable assembly from the motor bucket front.



34 Remove the motor from the motor bucket rear assembly.



35 Detach the motor wires from the motor cable assembly.

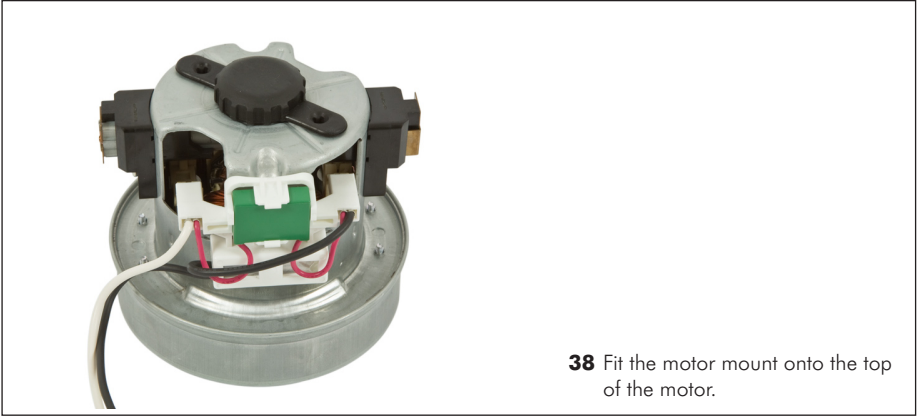


36 Remove the fancase seal and motor mount from the motor.



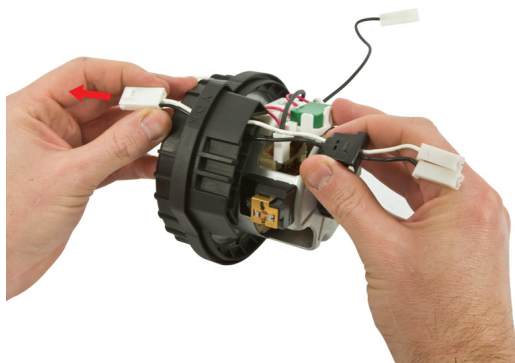
37 Remove the motor cable assembly from the fancase seal if necessary.

Motor and yoke assembly replacement - fitting





- 41** Ensure the fancase seal is seated centrally on the base of the motor.



- 42** If previously removed fit the wiring harness through the opening in the fancase seal. Connect the motor wires to the harness.



- 43** Dress the motor wires and harness neatly into the fancase seal.



- 44** Feed the wiring harness through the opening in the motor bucket front. Pull the wiring harness grommet through the opening ensuring the notch detail catches.



- 45** Locate the motor bucket front into the fancase seal.



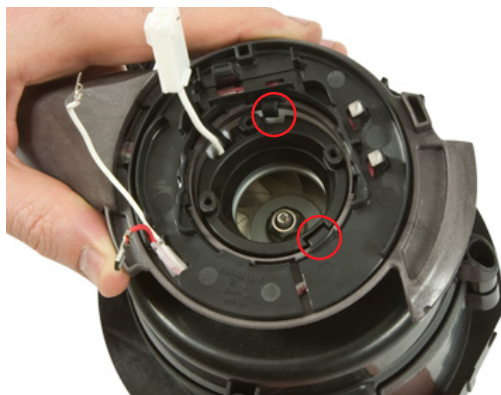
- 46** Lower the motor bucket rear assembly onto the motor. Ensure the motor mount protudes through the hole in the bucket.



- 47** Ensure the motor bucket rear assembly is located within the detail on the fan case seal
Fit the four screws.



- 48** Fit the bearings on the ends of the motor bucket.



- 49** Align the tabs on the connector clip with the slots in the end of the motor bucket.



- 50** Ease the other end of the yoke assembly onto the lug on the motor bucket.



- 51** Locate the yoke wire into the cable connector.



- 52** Fit the motor inlet seal.



- 53** Before fitting the yoke and motor bucket onto the duct ensure the internal cable wires are located into the channels on the duct.



- 54** Position the motor bucket and yoke onto the screws boss on the duct assembly.



- 55** Slide the other end into the duct ensuring the three holes align. Fit a long screw next to the arrow and a long screw on the other side behind the hose.



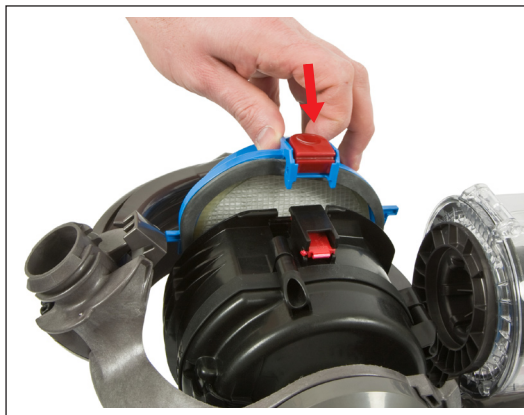
- 56** Reconnect the two halves on the cable connector. Connect the red wire to the upright switch. Dress all wires neatly into the channels provided.



- 57** Fit the upright switch cover onto the side of the duct assembly. Fit the three long screws.



- 58** Fit the lower duct hose onto the side of the product ensuring the ends are seated around all edges.



- 59** Fit the post filter assembly. Fit the two halves of the ball assembly. Fit the four screws.



- 60** Locate the c-clip onto the top of the cleaner head assembly.



- 61** Align the pins on the cleaner head assembly with the plug on the yoke assembly. Clip the cleaner head into position.

Stabiliser and pedal removal



- 62** Remove the three long screws in the upright switch cover.



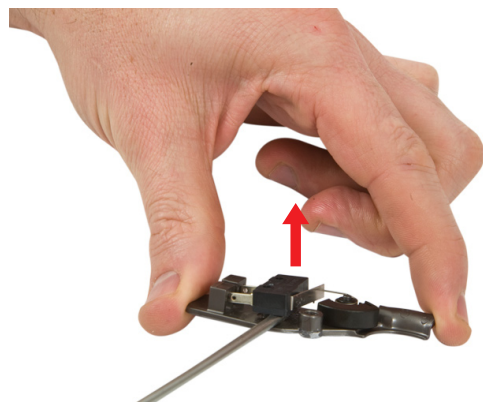
- 63** Twist the upright switch cover off the side of the product.



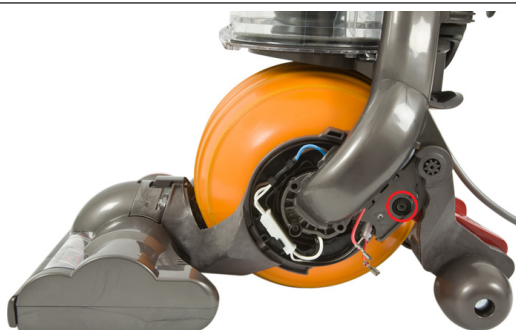
- 64** Detach the two wires from the upright switch. Undo the short screw in the upright switch housing.



65 Carefully remove the upright switch housing.



66 If it needs replacing the upright switch can be carefully removed from the housing.



67 Remove the short screw and plastic washer.



- 68** Remove the short screw and plastic washer from the other side of the duct.
Remove the pedal assembly.



- 69** Remove the short screw and plastic washer holding the stabiliser assembly onto the duct assembly.



- 70** Prise the stabiliser over the large lug on the other side of the duct assembly.



71 Using a pair of long nosed pliers unclip the stabiliser assembly from the spring.

Stabiliser and pedal replacement-fitting



- 72** Squeeze the spring firmly over the lug on the stabiliser assembly.



- 73** Locate the small lug on the stabiliser assembly into the hole in the side of the duct.
Fit a plastic washer and short screw.



- 74** Firmly lever the other side of the stabiliser assembly over the large lug.



75 Slide the pedal axles into the channels in the stabiliser assembly.



76 Locate the lugs on the pedal into the holes on either side of the duct. Fit the plastic washers and short screws.



77 If previously removed ensure the upright switch and cam are positioned correctly on the upright switch housing.



- 78** Carefully fit the upright switch housing onto the side of the duct assembly. Locate the cam spring into the channel on the duct. Fit the short screw. Attach the two red wires to the upright switch.



- 79** Fit the upright switch cover onto the side of the duct. Fit the three long screws.

Valve wheel replacement



80 Remove the cyclone and bin assemblies from the product.



81 Remove the Torx T-8 screw and washer.



82 Slide the centre of the valve wheel onto the lug on the end of the valve hatch and remove. Fit in reverse.

Valve hose replacement-removal

Before continuing the following parts should be removed as previously shown:

Valve wheel (Page 33)



- 83** Release the top of the valve hose assembly from the side of the duct assembly.



- 84** Remove the rear retaining lug from the valve.



- 85** Remove the second retaining lug. Twist the hose and remove. Remove the seal from the base of the hose.

Valve hose replacement-fitting



- 86** Fit the seal ensuring the hole in the seal fits over the detail on the shuttle.



- 87** Lower the hose into the duct ensuring the pin on the shuttle locates into the channel.



- 88** Locate the retaining lugs on either side of the shuttle into the valve.



89 Push the hose onto the duct ensuring it is adequately seated.

After fitting the previous parts the following parts should be fitted as previously shown:

Valve wheel (Page 33)

Valve hatch replacement-removal

Before continuing the following parts should be removed as previously shown:

Valve wheel (Page 33)

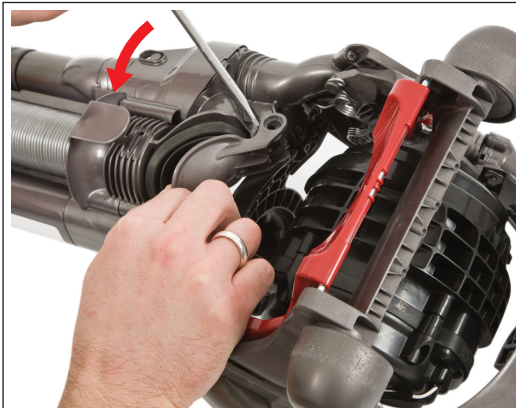
Ball assembly (Page 6)



90 Remove the screw and captive washer from the hatch.



91 Carefully push the axle out of the valve hatch.



92 Carefully prise the valve hatch off the lugs on the valve.



93 The valve seal can be removed if necessary.

Valve hatch replacement-fitting



- 94** If previously removed fit the valve hatch seal onto the valve. Ensure it is adequately seated.



- 95** Fit the Valve hatch over the lugs on the valve.



- 96** Locate the legs of the spring into the channels on the hatch and valve. Using a screwdriver hold the spring under tension whilst sliding the axle into position.



- 97** Hold the axle in place to stop it from turning whilst fitting the screw and captive washer.

After fitting the following parts should be replaced as previously shown:

Valve wheel (Page 33)

Ball assembly

Switch and powercord removal



98 Remove the wand assembly from the product.



99 Undo the three screws in the rear of the duct assembly.



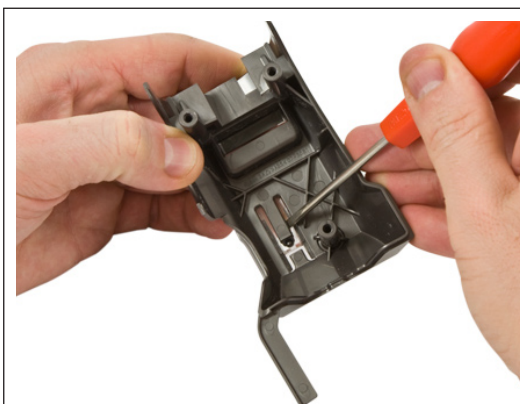
100 Remove the switch cover from the front of the duct assembly.



101 Remove the switch buttons from the switch cover.*

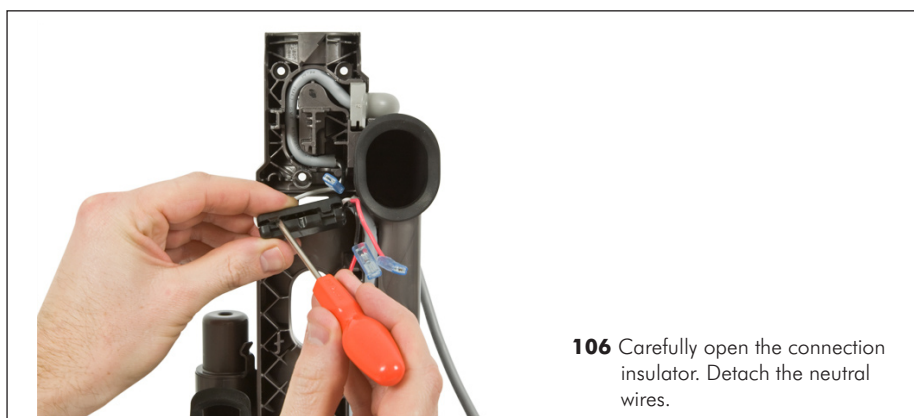
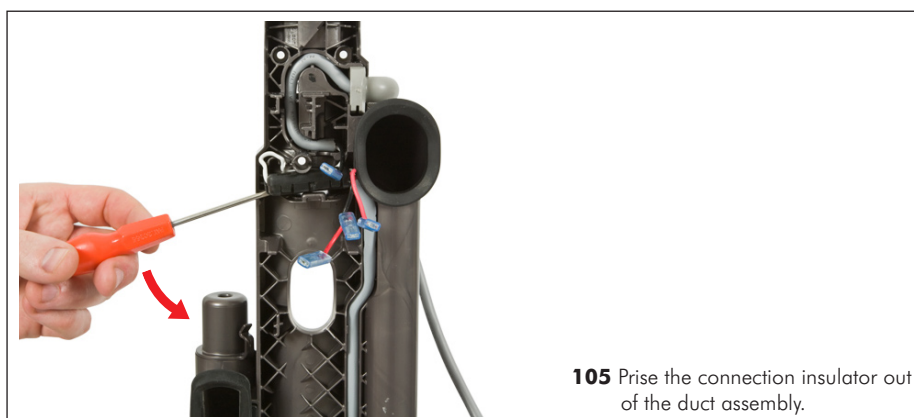
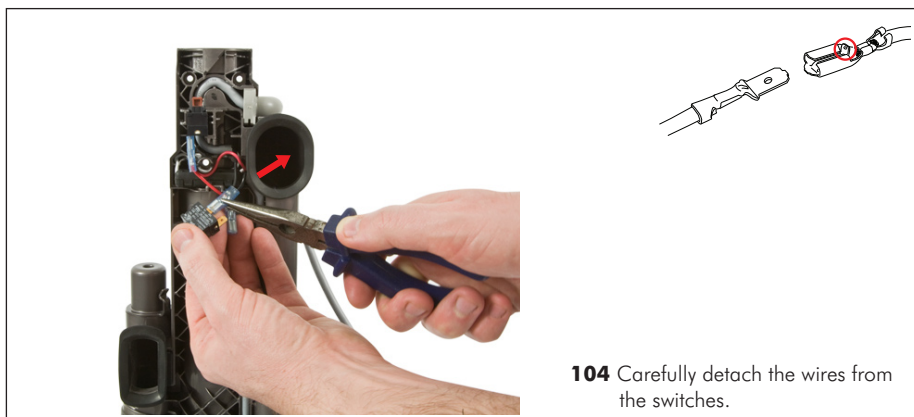


102 If the locking slider or switch cover need replacing carefully remove the spring.



103 Prise the catch on the rear of the switch cover to remove the locking slider.
Fit in reverse.

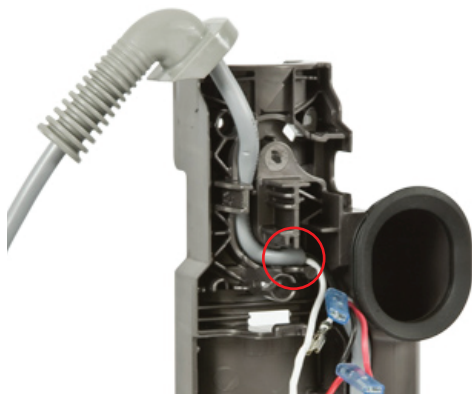
* only necessary if replacing.





107 Remove the powercord assembly from the duct.

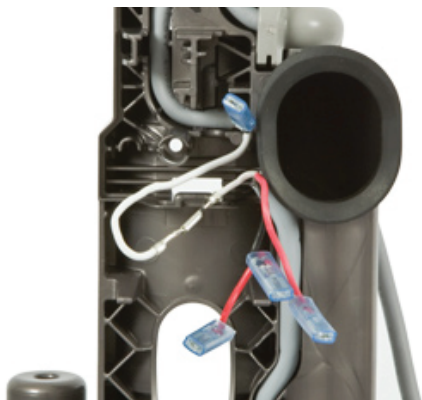
Switch and powercord - fitting



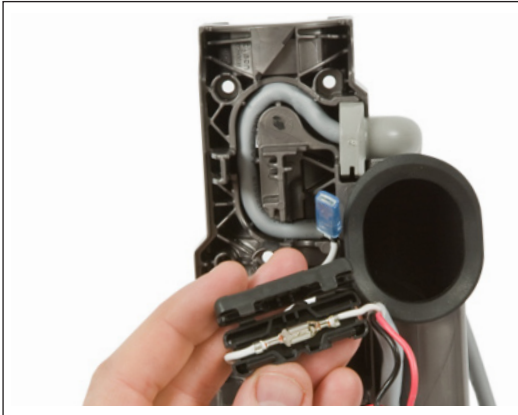
108 Feed the powercord assembly through the cable protector. Locate the end of the outer insulation into the channel as shown.



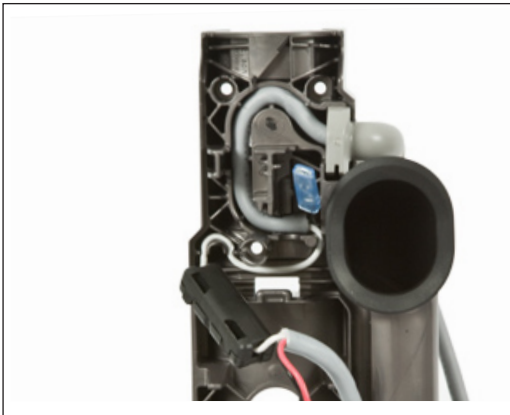
109 Locate the cable protector into the side of the duct assembly.



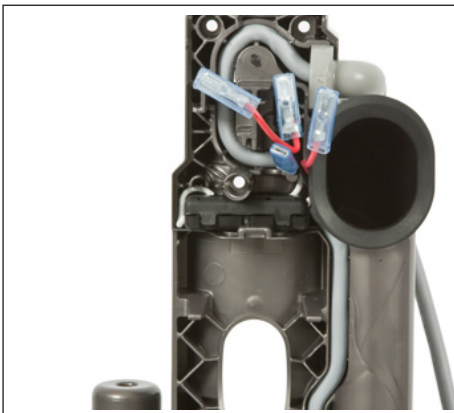
110 Attach the neutral wires together.



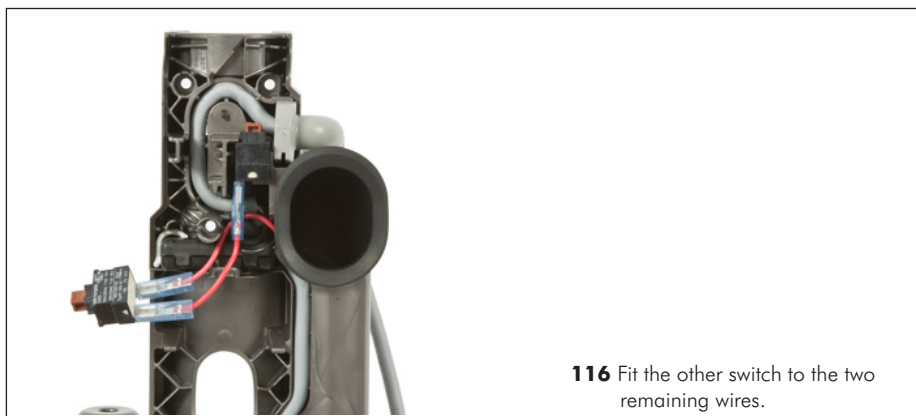
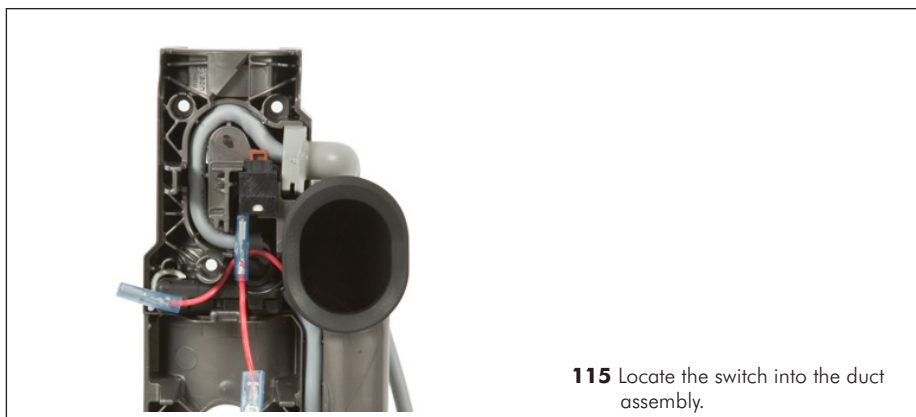
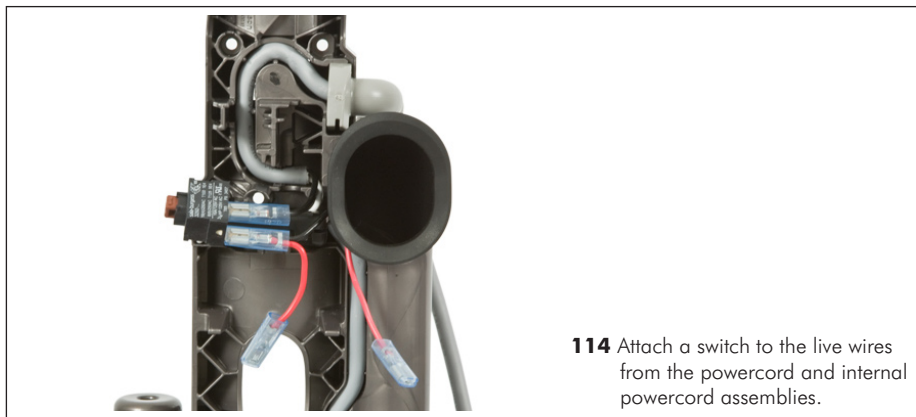
111 Locate the connection insulator over the neutral wires.

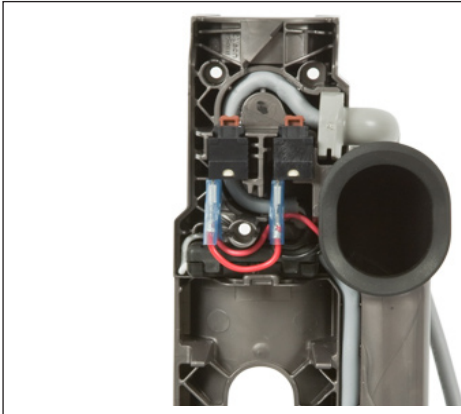


112 Route the neutral wire into the channel as shown.



113 Locate the connection insulator into the duct assembly.





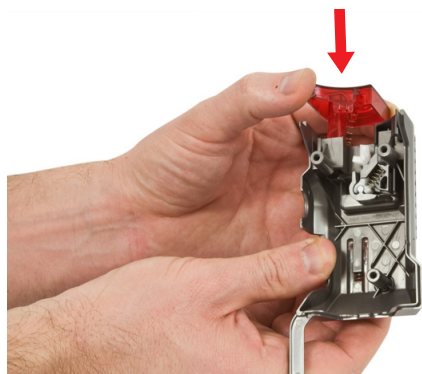
117 Locate the second switch into the duct assembly.



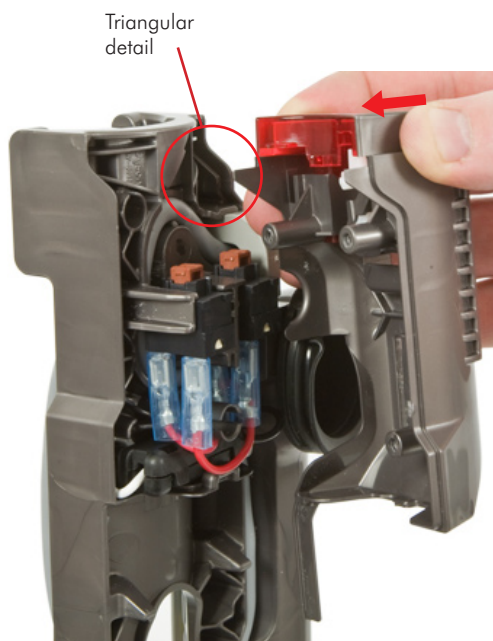
118 If previously dismantled ensure the brushbar button, brushbar reset arm and spring are assembled as shown.



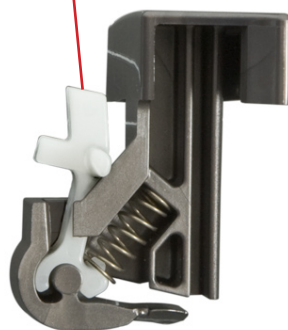
119 Lower the brushbar button into the switch cover.



120 Lower the On/Off button and spring into the switch cover.



Brushbar reset
arm



121 Locate the switch cover onto the front of the duct assembly. Ensure when fitting that the brushbar reset arm locates into the triangular detail on the duct. Hold the switch cover in place and test the buttons. The brushbar button should work independently from the On/Off button.



- 122** Pressing the On/Off button when the brushbar button is off should also activate the brushbar button. If this does not work check the position of the brushbar reset arm in the triangular detail. When working satisfactory fit the three screws.

Duct assembly replacement - dismantle

Before continuing the following parts should be removed as previously shown:

Motor and yoke assembly (Pages 5 - 11)

Stabiliser and pedal assembly (Pages 26- 29)

Valve wheel (Page 33)

Valve hose assembly (Page 34)

Valve hatch assembly (Pages 37- 38)

Switch and powercord assembly (Pages 41- 44)



123 The hose can be removed from the product at any time. If still present remove it by pressing the catch on the front of the duct assembly.



124 And then release it from the rear.



125 The combination tool clip can also be removed at any stage by undoing the screw in the centre of it.



126 And sliding it off the side of the duct.
Fit in reverse.



127 Undo the two screws shown.



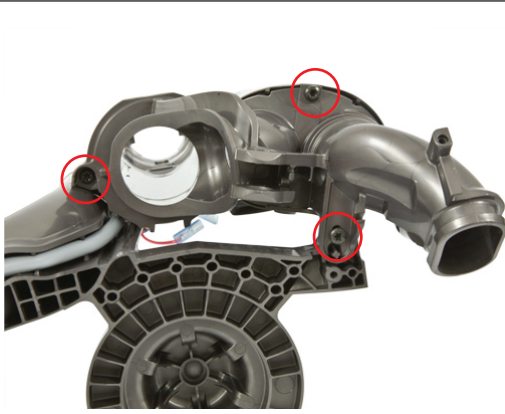
128 Followed by the screw on the underside of the duct.



129 With the screws removed slide the upright lock assembly off the side of the duct.



130 Should it need replacing the pedal plunger can be replaced by carefully detaching the spring and removing the plunger. Fit in reverse.



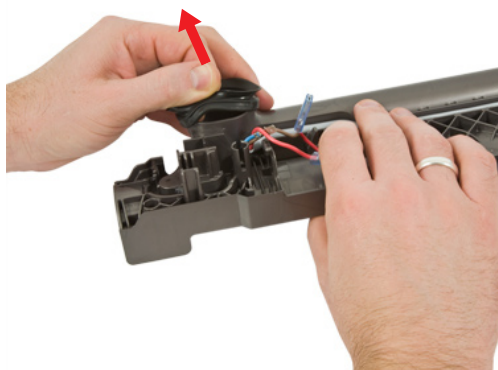
131 Undo the three screws in the underside of the duct assembly.



132 Remove the valve U-bend from the duct assembly.



133 Remove the entry seal from the duct assembly.



134 Remove the exhaust seal from the duct assembly.

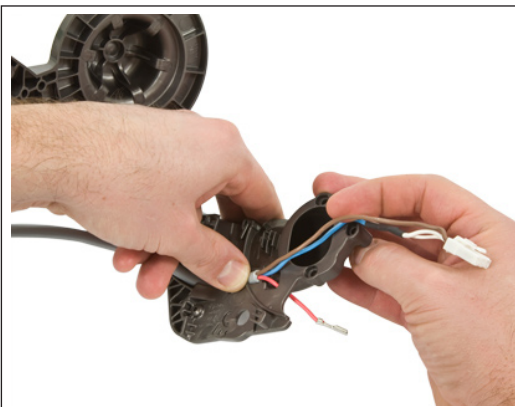


135 Remove the internal powercord assembly from the duct assembly.

Duct assembly replacement - fitting



- 136** Slide the end of the outer insulation of the internal powercord under the retainer in the base of the duct assembly.



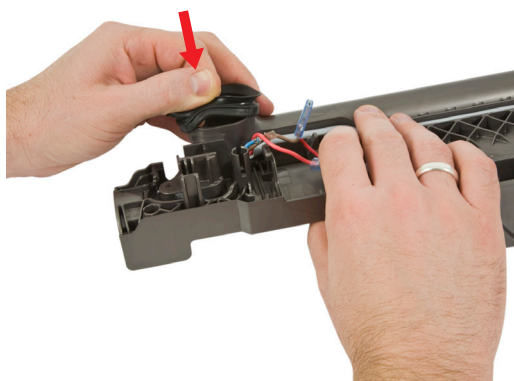
- 137** Push the end of the insulation into the channel.



- 138** Feed the switch end of the internal powercord through the window in the duct assembly.



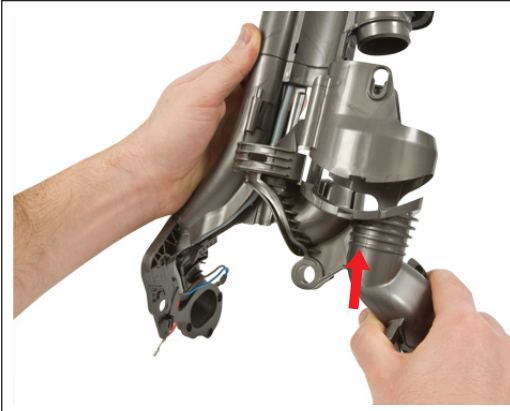
139 Locate the internal powercord under all the retainers along the length of the duct assembly.



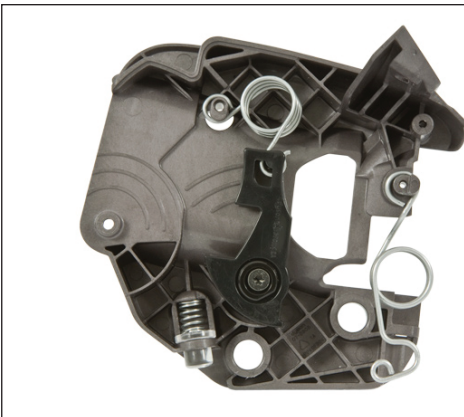
140 Fit the exhaust seal.



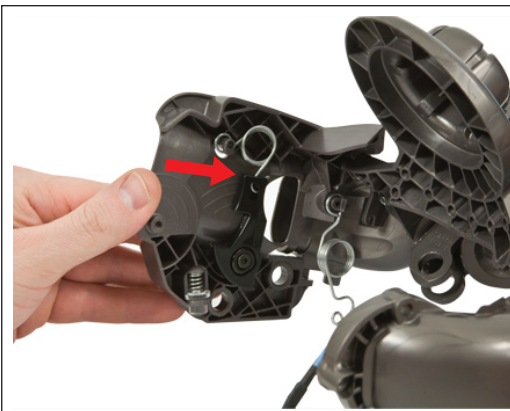
141 Fit the entry seal.



- 142** Locate the valve U-bend onto the base of the duct assembly. Fit the three screws.



- 143** Before fitting the upright lock assembly ensure the pedal spring is located in the orientation shown.



- 144** Slide the upright lock assembly onto the valve U-bend. Fit the three screws.



145 Locate the hose onto the rear of the duct assembly.

After fitting, the following parts should be fitted as previously shown:

Motor and yoke assembly (Pages 23 - 25)

Stabiliser and pedal assembly (Pages 30 - 32)

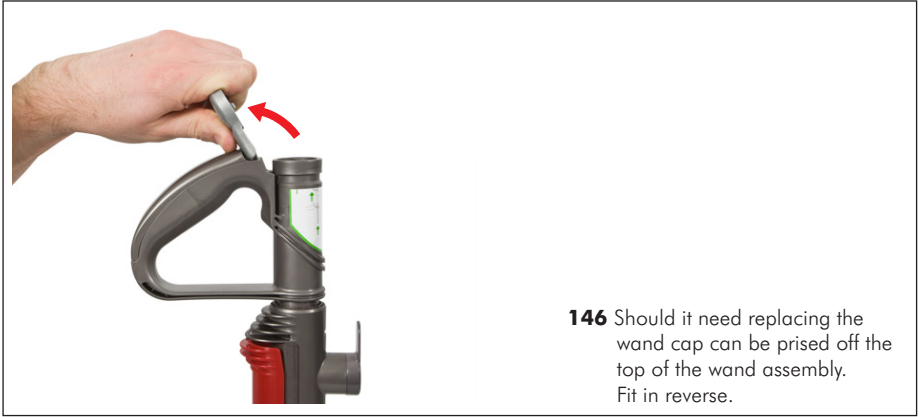
Valve hose assembly (Pages 35 - 36)

Valve hatch assembly (Pages 39 - 40)

Valve wheel (Page 33)

Switch and powercord assembly (Pages 45 - 50)

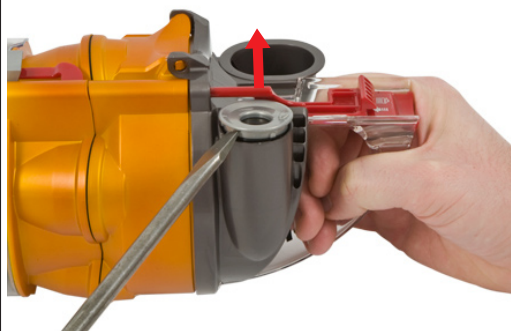
Sub assemblies-Wand handle assembly



Sub assemblies-cyclone assembly



147 Any parts that make up the bleed valve can be replaced by unlocking the bleed valve cap assembly.



148 With the bleed valve cap unlocked, prise it away from the cyclone cap assembly. Remove all parts of the bleed valve from the cyclone cap assembly. Fit in reverse.



149 The cyclone cap assembly can be replaced by prising it off the cyclone assembly. Fit in reverse.



- 150** The bin seal can be replaced. When fitting a new one ensure the detail on the seal aligns with the notch on the cyclone assembly.



- 151** If the FDC seal needs replacing ensure the new one covers all the ribs on the dust collector.

Sub assemblies-bin assembly



152 The bin catch can be replaced by prising off from the lugs on the bin.



153 To fit, press firmly onto the lugs ensuring the spring locates onto the retainers.



154 The bin base assembly can be firmly prised off the base of the bin.



- 155** If replacing the bin base seal ensure the new one is fitted adequately around all edges of the bin base.



- 156** Firmly press the new bin base assembly onto the lugs on the bin.

Sub assemblies-cleaner head assembly



- 157** The soleplate wheels or axles can be removed by prising out of the soleplate. To fit firmly push into place.



- 158** If the flicker strip needs replacing lift the end out of the soleplate using a thin flat bladed screwdriver.



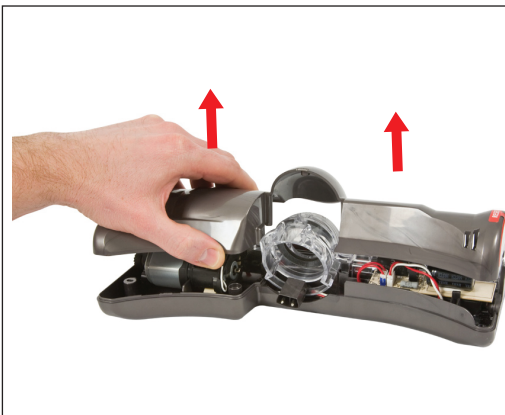
- 159** With the end released slide the flicker strip out of the retainers in the soleplate.



- 160** To fit, slide along the length of the soleplate under the retainers. Press the end under the last retainer.



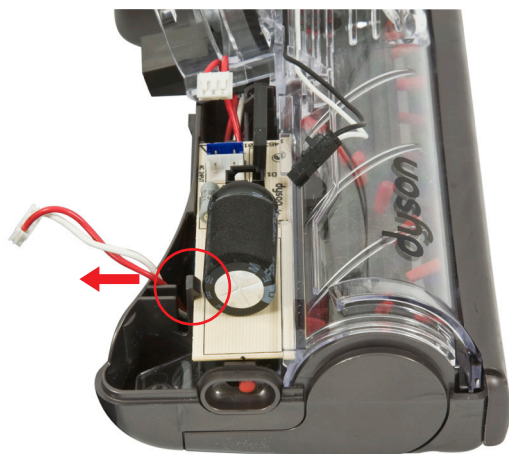
- 161** If the PCB need replacing, remove the flicker strip and nine Torx T-10 screws (eight in Japanese models).



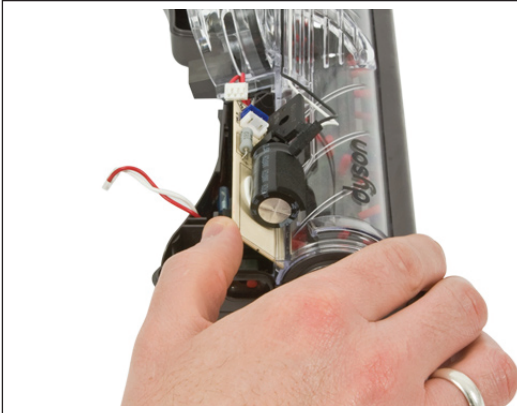
- 162** With the screws removed, lift the brushbar motor cover off the cleaner head.



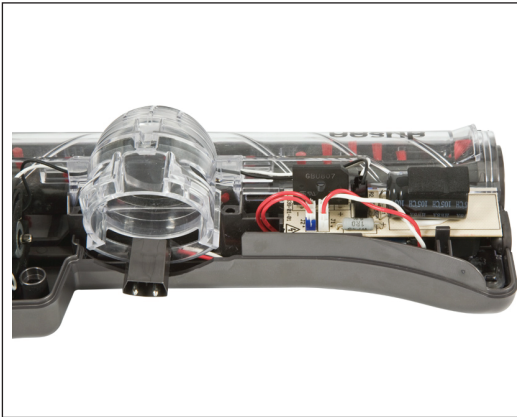
163 Carefully detach all wires from the board.



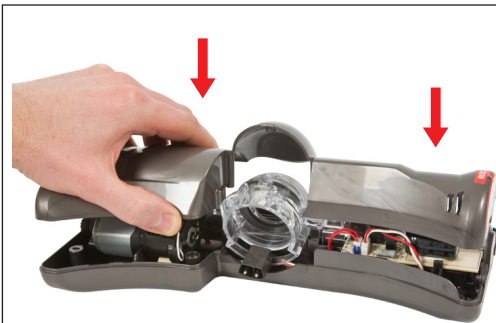
164 Release the PCB assembly from under the retaining catch.



- 165** To fit locate the front of the new PCB assembly under the brush housing and lower under the retaining catch.

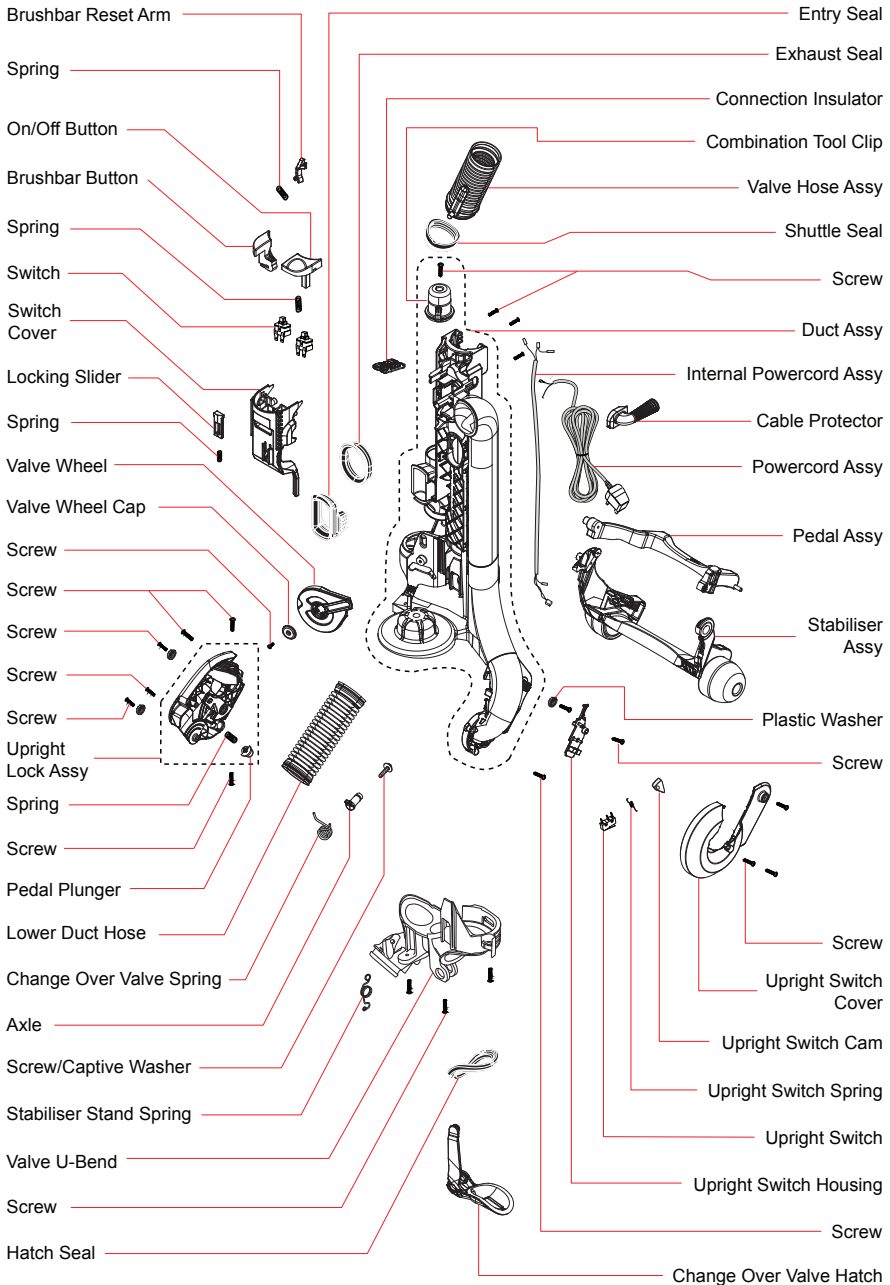


- 166** Reconnect all wires to the PCB assembly.

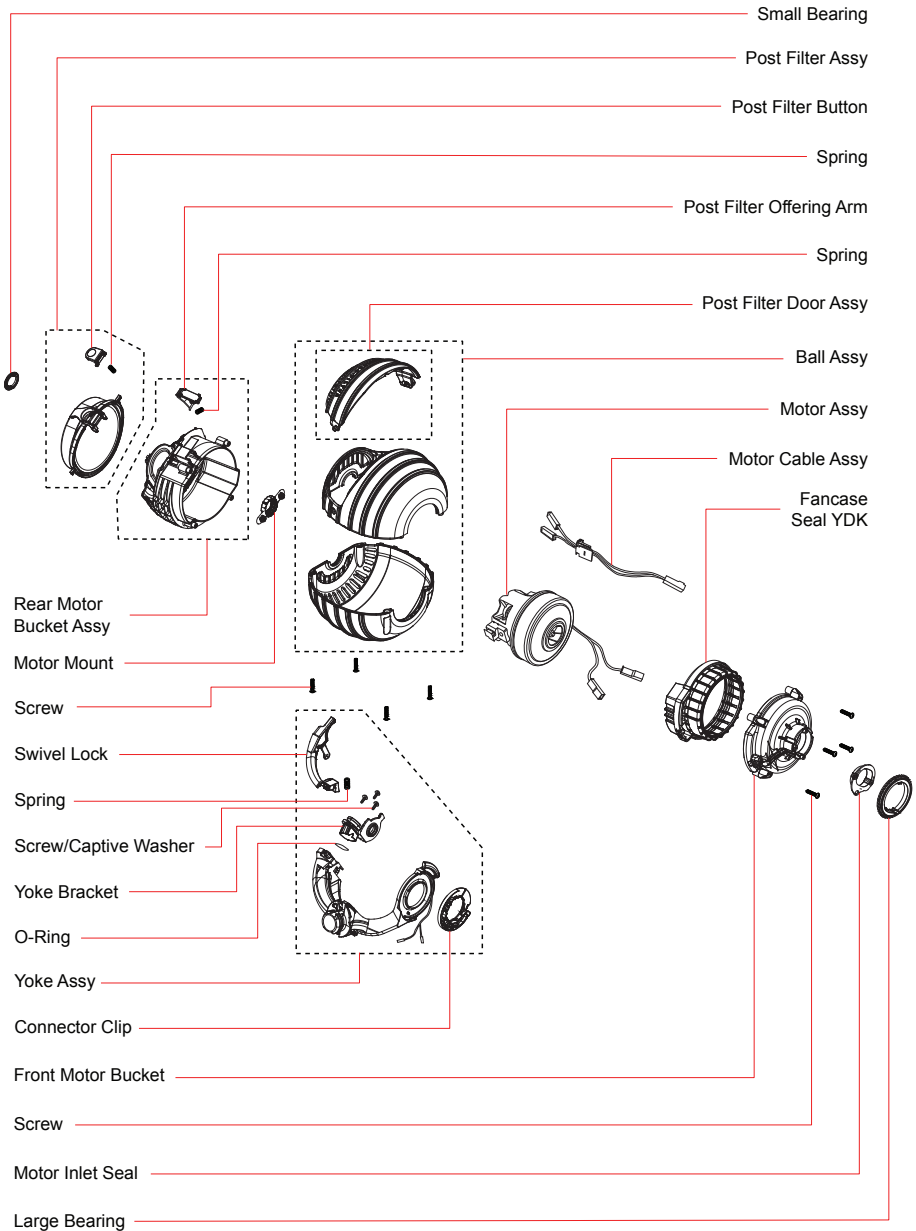


- 167** Lower the brushbar motor cover onto the cleaner head assembly. Fit the nine screws and flicker strip.

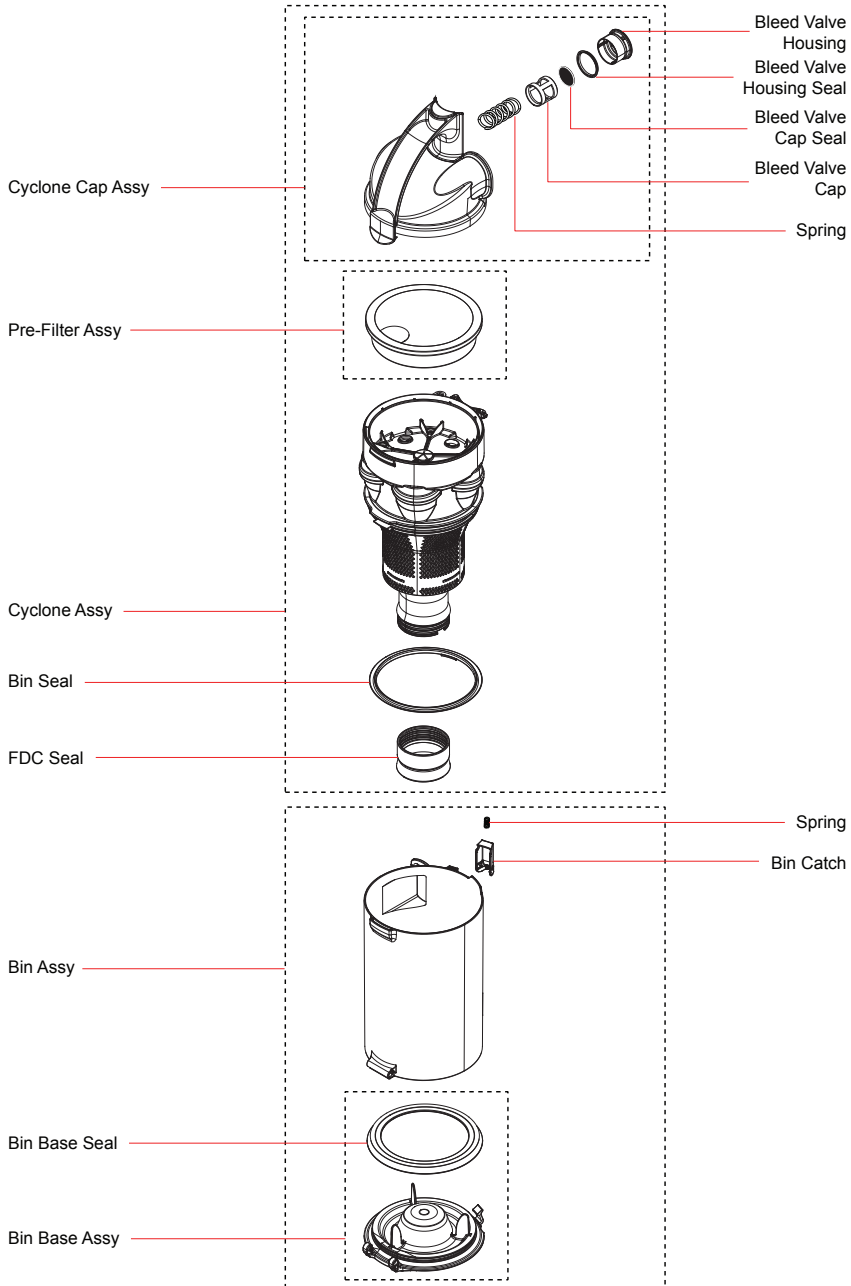
Main body



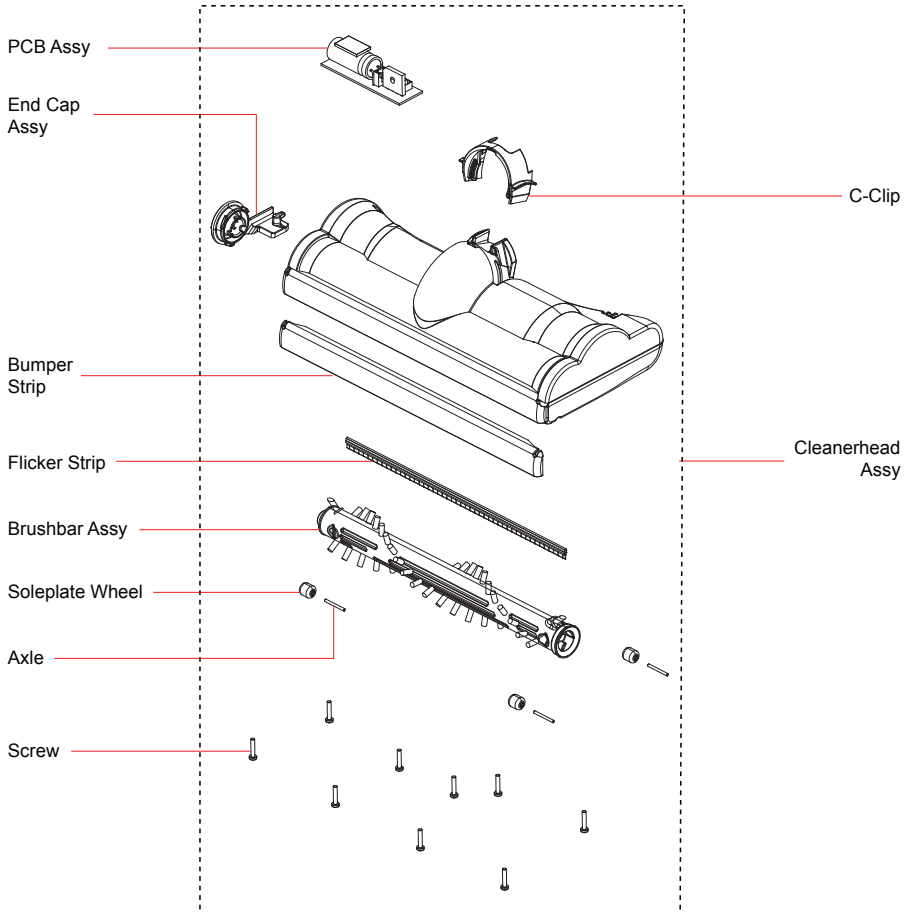
motor assembly



Cyclone and bin assemblies



Cleaner head assembly



Wand and hose assemblies

