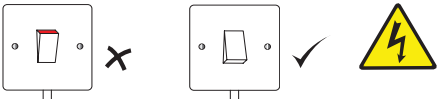
AB AB AB
09 10 11

dyson

# diagnostic service manual

Issued July 13

## Important safety information - read before proceeding further



Always ensure the product is isolated from the main Live supply prior to installing/repairing.

To avoid injury to yourself or the end user, all necessary safety tests as per local codes and regulations must be carried out prior to, and upon completion of all repairs/installations to AB09/10/11.

### Introduction

The instructions contained within this guide must be read carefully before attempting to repair the AB09/10/11 hand dryer. Failure to accurately follow the instructions may result in the incorrect operation or repair of the product, damage to property and/or personal injury. Dyson will not be held liable for any damage to property or personal injury as a result of failure to comply with the instructions contained herein.

### IMPORTANT SAFETY INFORMATION - Read before proceeding further

All electrical installation and repair work should be carried out by a qualified electrician or Dyson trained Service Engineer in accordance with current local codes or regulations.

Risk of electric shock! If casing is removed or handled improperly the internal components of the unit may cause harm or become permanently damaged.

### BEFORE INSTALLATION

Before beginning any installation work you must confirm the following.

#### WIRING

- Check that the electrical supply corresponds to that shown on the rating plate. If the unit is connected to any electrical supply other than stated on the rating plate of the unit, permanent damage or improper/unsafe operation of the hand dryer may result.
- A means for all-pole disconnection must be incorporated into fixed wiring, in accordance with national and local wiring regulations.
- When connecting the unit to the electricity supply use cable in accordance with national and local laws and applicable codes and standards.
- Ensure that the conduit and wires are long enough to connect to the backplate and the terminal block.

#### SAFETY

- Isolate the power before installation/repair/service.

#### INSTALLATION

- Make sure that the unit is installed in compliance with all building codes and/or regulations.
- The unit must be mounted on a flat vertical wall capable of supporting the full weight of the unit.
- Use fixings as specified in this installation guide.
- Ensure no pipe work (gas, water, air) or electrical cables, wires or duct work are located directly behind the drilling/mounting area.
- Dyson recommends the use of protective clothing, eye ware and materials when installing/repairing as necessary.
- Do not use sealant when fixing the unit to the wall.
- Do not use any jet wash equipment for cleaning on or near this unit.
- This appliance is intended to be permanently connected to the water mains.
- The water supply to this product must be fitted with a temperature control device in accordance with local regulations (in the US and Canada must comply with ASSE 1070 so that hot water delivered from this product is limited to a maximum temperature of 49°C/120°F).

LOCATION

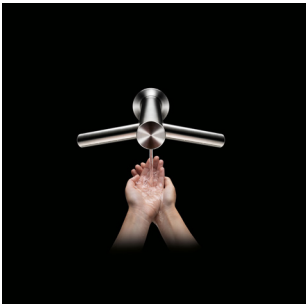
- The unit is designed for dry, internal location only.
- Consult local and national accessibility codes and regulations for relevant installation guidelines. Conformity and compliance is the responsibility of the installer.
- Ensure the required electrical and mixed feed water supplies is available for later connection.
- Water pressure must be: maximum 8 bar (0.8Mpa) and minimum 1 bar (0.1Mpa).
- The sink should not be fitted with a plug.
- When drilling holes, follow the instructions of the manufacturer of the work surface.

Protective safety footware must be worn when installing/repairing AB09/10/11.

**Recommended tools to repair AB09/10/11:**

1.5mm allen key
Torx T-15 screwdriver
Torx T-10 screwdriver
No. 2 sized Phillips screwdriver
Thin flat bladed screwdriver
Long/needle nosed pliers
Aerator tool
Tap spanner/wrench

## Testing for correct operation



1. Insert hands beneath the centre of the tap to automatically start the mixed water flow. If hands remain in place the water will continue to flow for a maximum of 30 seconds before automatically switching off.

2. Place hands beneath the tap arms to start the airflow. The water flow will automatically stop.

3. Draw hands though the airflow. Hands should be dry within approximately 12 seconds (14 seconds US and Canada).
   The airflow should stop within 4 seconds of hands being withdrawn from the product.
   If hands remain in place the air will automatically cut off after 30 seconds before automatically restarting again after 4 seconds.

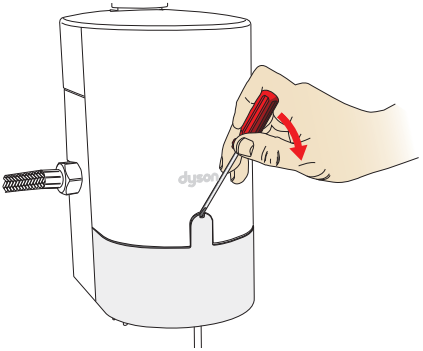
The following table summarises a number of potential failures, and recommended solutions to resolve them.

| Symptom | Likely fault | Solution (in order) | See section |
|---|---|---|---|
| No water, reduced water flow. Air working. | 1. Ensure mains water supply to the product is switched on. | | |
| | 2. Faulty/blocked Aerator. | • Check Aerator for blockages. Replace if necessary. | 4 (page 21) |
| | 3. Faulty Solenoid. | • Check Solenoid functions. Replace if necessary. | 1 (page 05) |
| | 4. Solenoid to PCB loom assy failure. | • Check Solenoid to PCB loom assy for fitting/function. Replace if necessary. | 2 (page 12) |
| | 5. Comms to PCB loom assy failure. | • Check Comms to PCB loom assy for fitting/function. Replace if necessary. | 2 (page 12) |
| | 6. PCB assy (Tap) failure. | • Check PCB assy (Tap) for alignment function. Replace if necessary. | 4 (page 21) |
| | 7. Power supply assy failure. | • Check Power supply assy for function. Replace if necessary. | 2 (page 12) |
| | 8. Water pipe service assy failure. | • Check Water pipe service assy for blockages. Replace if necessary. | 4 (page 21) |
| Water on all the time. | 1. Faulty Solenoid. | • Check Solenoid functions. Replace if necessary. | 1 (page 05) |
| | 2. Solenoid to PCB loom assy failure. | • Check Solenoid to PCB loom assy for fitting/function. Replace if necessary. | 2 (page 12) |
| | 3. PCB assy (Tap) failure. | • Check PCB assy (Tap) for alignment function. Replace if necessary. | 4 (page 21) |
| | 4. Lens housing assy failure. | • Check Lens housing assy is clean. Replace if necessary. | 4 (page 21) |
| Air on all the time. | 1. PCB assy (Tap) failure. | • Check PCB assy (Tap) for alignment function. Replace if necessary. | 4 (page 21) |
| | 2. Lens housing assy failure. | • Check Lens housing assy is clean. Replace if necessary. | 4 (page 21) |
| No power (No water/No air). | 1. Fault with mains power supply to product. | • Ensure mains power supply to product is switched on. | |
| | | • Test to ensure mains power supply to connector block is present. | |
| | 2. Power supply assy failure. | • Replace Power supply assy. | 2 (page 12) |

| Symptom | Likely fault | Solution (in order) | See section |
|---|---|---|---|
| Machine switching on intermittently - water and air.<br>or<br>Cutting out in use. | 1. PCB assy (Tap) failure.<br>2. Lens housing assy failure.<br>3. Comms loom assy failure.<br>4. Power supply assy failure. | • Check PCB assy (Tap) for alignment function. Replace if necessary.<br>• Check Lens housing assy is clean. Replace if necessary.<br>• Ensure Comms loom assy is adequately attached both ends.<br>• Test Comms loom assy for resistance and replace if necessary.<br>• Check Power supply assy for function. Replace if necessary. | 4 (page 21)<br>4 (page 21)<br>2 (page 12)&<br>4 (page 21)<br>2 (page 12)<br>2 (page 12) |
| No air/reduced airflow. Water working. | 1. Fault with Air hose assy.<br>2. Fault with Motor bucket assy. | • Ensure Air hose assy is adequately sealed onto threaded Tap stem.<br>• Check Air hose assy for splits and replace if necessary.<br>• Replace Motor and Bucket Service assy. | 4 (page 21)<br>2 (page 10)<br>1 (page 05) |

## Section 1
## Solenoid assembly removal

01



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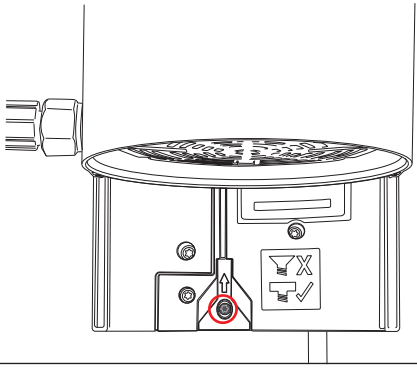

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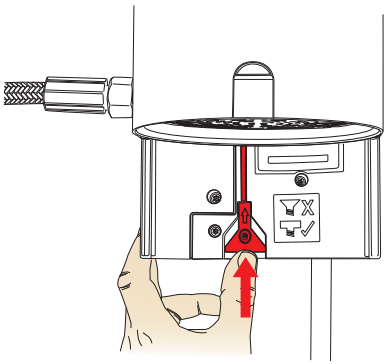

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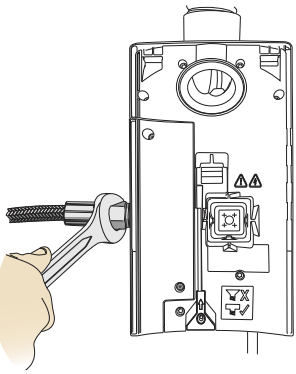

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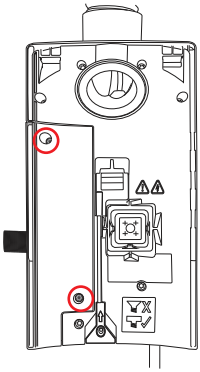

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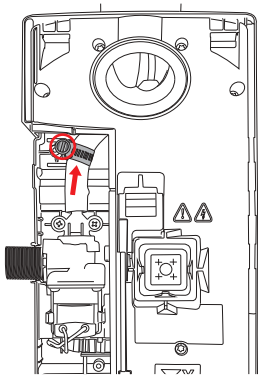
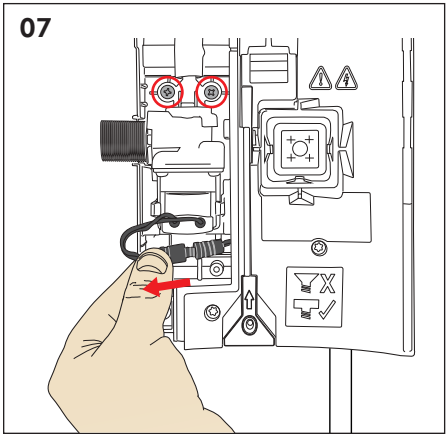
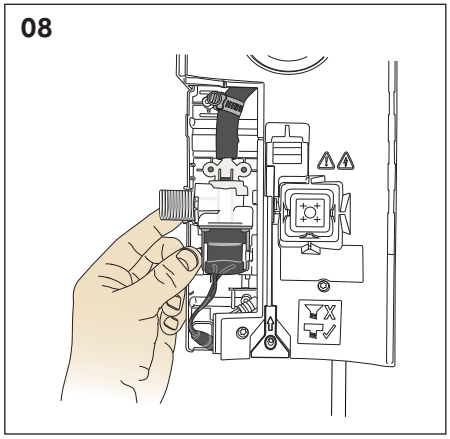
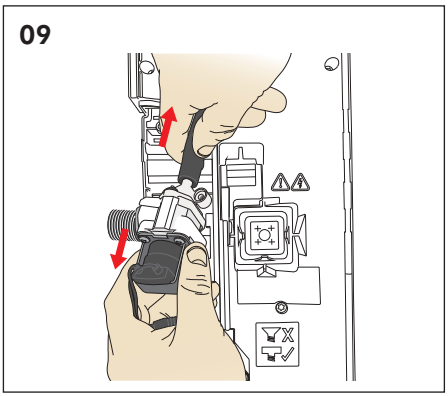





## Section 1
## Solenoid assembly removal

Warning: before continuing ensure the power and water supplies to the the machine are switched off.

01 Using a small flat bladed screwdriver, unclip and remove the HEPA filter from the base of the Motorbucket.

02 In some cases a T-15 screw may have been fitted into the Motorbucket release button. If this is the case, remove.

03 Press the Motorbucket release button and remove the Motorbucket.

04 Disconnect the mains water supply from the Solenoid assembly.

05 Remove the two T-15 screws in the water cover.

06 Loosen the water pipe clip on the water pipe.

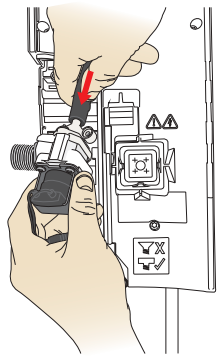
07 Disconnect the Solenoid connector and remove from the Solenoid to PCB loom. Remove the two Phillips screws.

08 Unclip the Solenoid from the Backplate.

09 Detach the Solenoid from the water pipe.

## Section 1
## Solenoid assembly fitting

10



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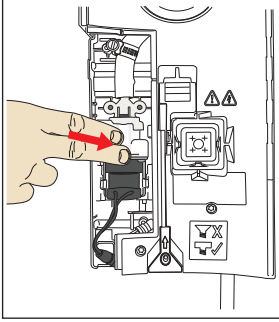

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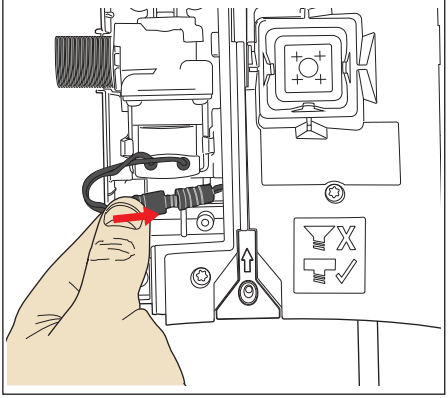

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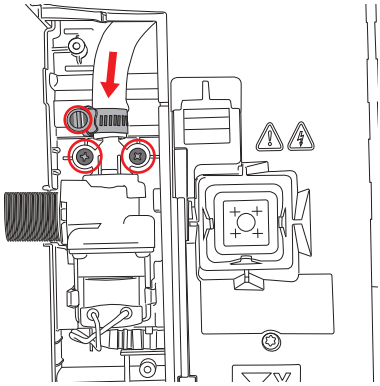

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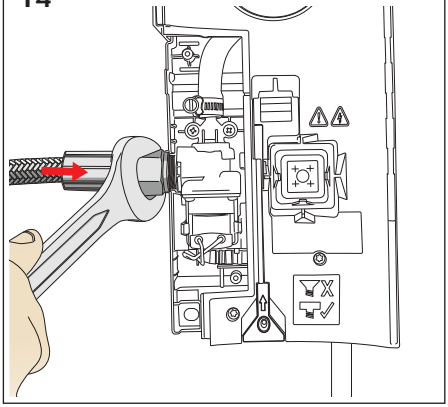

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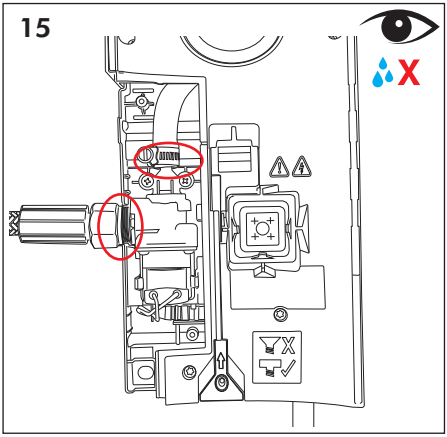

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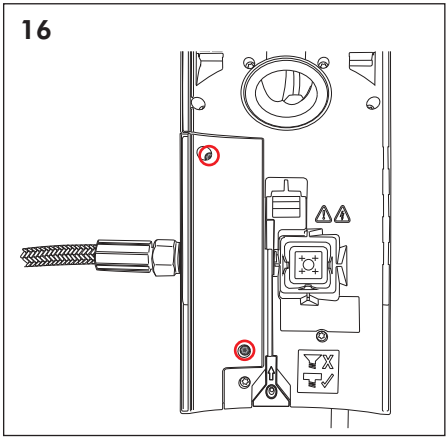

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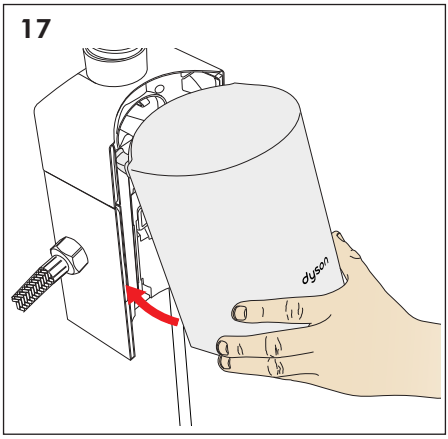


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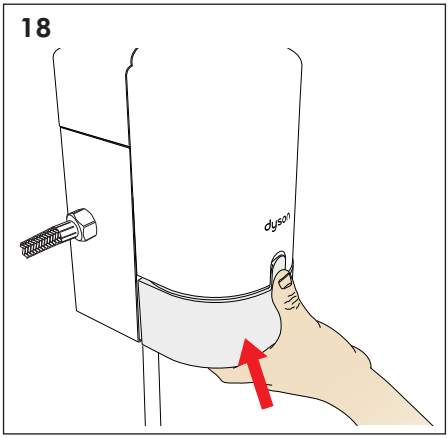


## Section 1
## Solenoid assembly fitting

10 Push the water pipe as far as possible onto the new Solenoid.

11 Clip the solenoid into the Backplate.

12 Connect the Solenoid to the Solenoid to PCB loom.

13 Locate the water pipe clip onto the end of the water pipe and fasten into place.
Fit the two Phillips screws.

14 Attach the mains water supply to the Solenoid.

15 Turn on the mains water supply. Check that there are no leaks at the Solenoid inlet.
Turn on the power to the product. Insert hands under the centre of the tap to activate the water.
Check that there are no leaks at the Solenoid outlet.

16 Refit the water cover and two screws.

17 Hook the top of the Motorbucket into the backplate. Push the bottom of the Motorbucket into position in the backplate.
If previously fitted, fit the T-15 screw into the Motorbucket release catch.

18 Clip the HEPA filter assembly into the base of the Motorbucket.

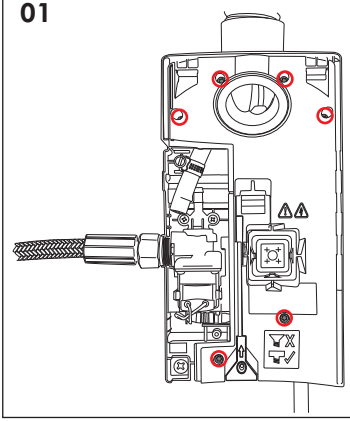
After reassembling the product follow the instructions on page 2 to test the product for adequate operation.

**Section 2**

**Air hose/Tap assembly removal**

Before continuing please follow steps 1-3 and 5-6 of Section 1 of this manual.

**01**



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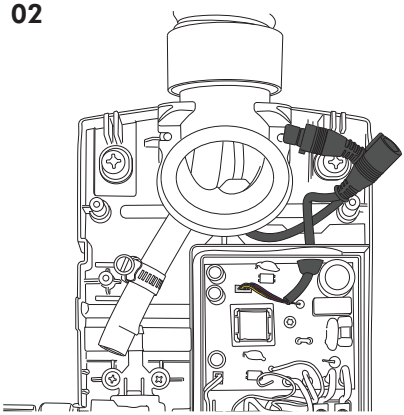

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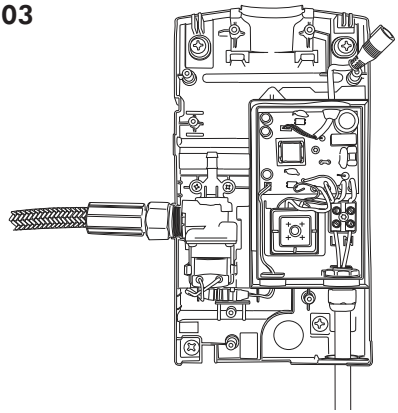

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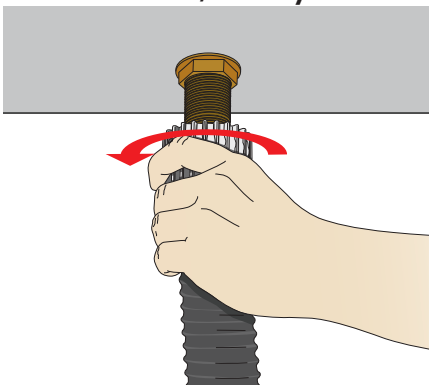

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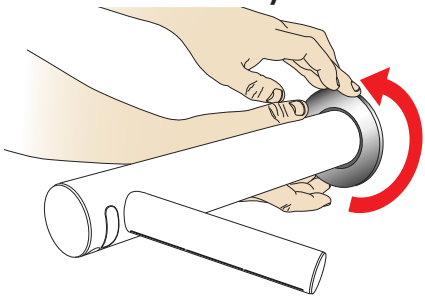

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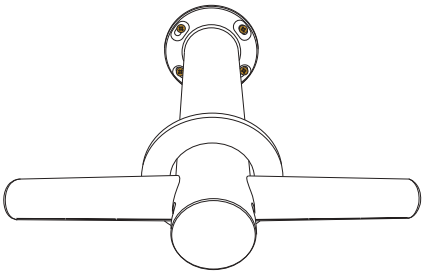
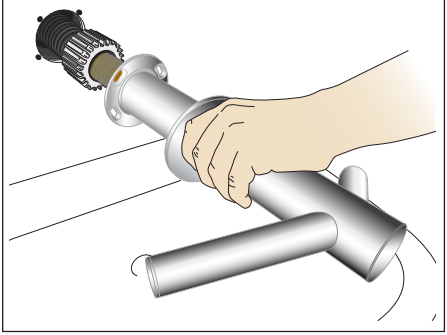
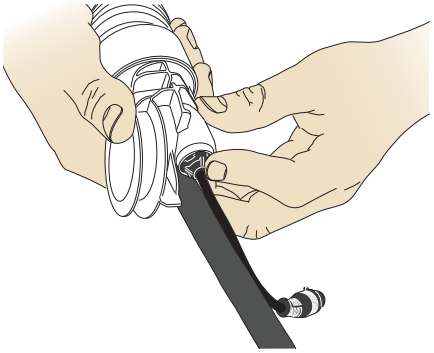


07 AB11 only



08 All models



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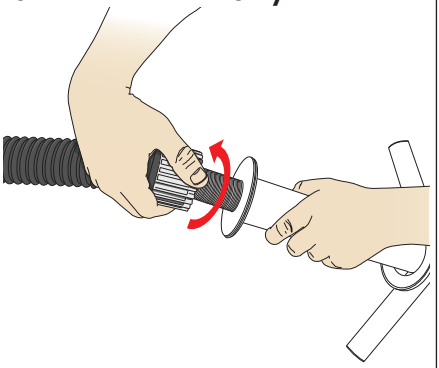

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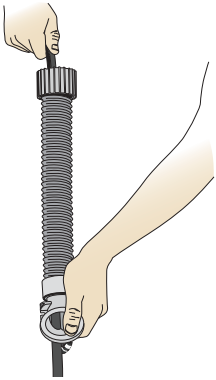
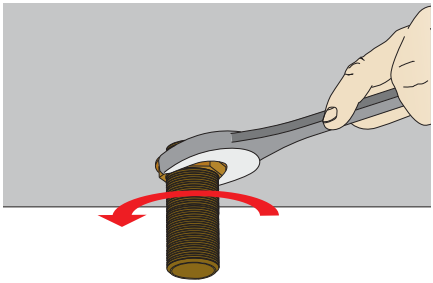


11 AB09/10 only



## Section 2
## Power supply assembly removal

Before continuing please follow steps 1-3 and 5 of Section 1 of this manual.

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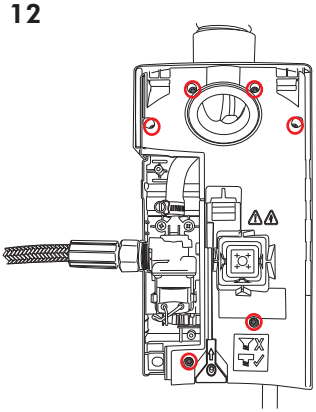

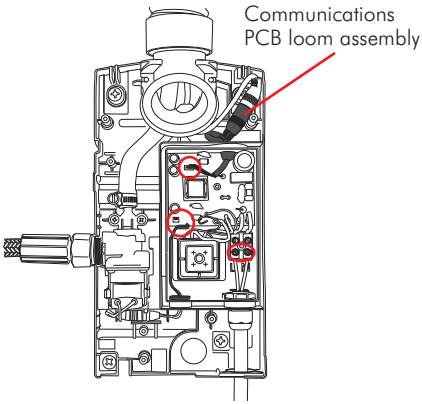


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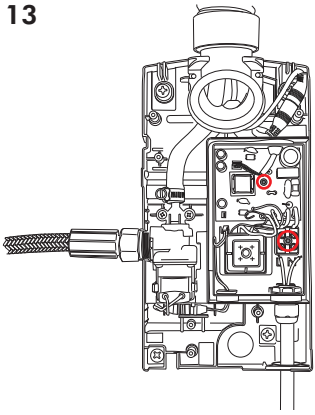

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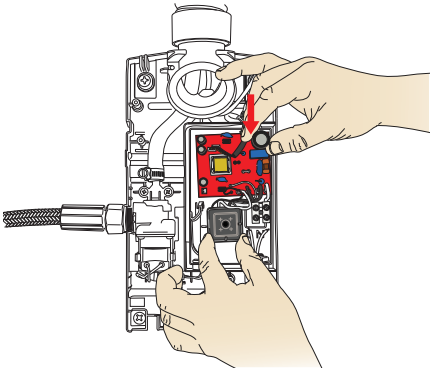

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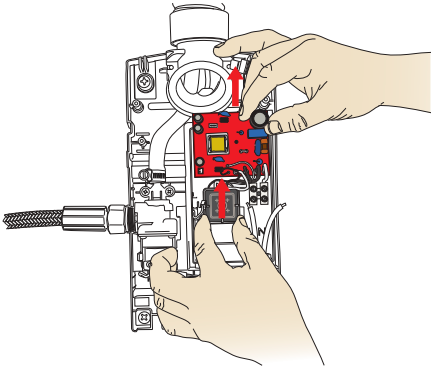


## Section 2
## Air hose/Tap/Power supply assembly removal
Warning: before continuing ensure the power and water supplies to the the machine are switched off.

### Air hose/Tap assembly removal
Before continuing please follow steps 1-3 and 5-6 of Section 1 of this manual.

All models:
01 Remove the six T-15 screws in the electrical cover.

02 Disconnect the Comms loom from the Comms to PCB loom.

03 Unclip the Air hose assembly from the Backplate.

AB09/10 only:
04 Unscrew the Air hose assembly from the threaded tap stem.

AB11 only:
05 Unscrew the Glamour cap from the Tap stem.

06 Remove the four screws attaching the Tap to the ducting.

07 Carefully pull the Tap and Air hose assembly out of the ducting.

All models:
08 Release the grommet attached to the Comms loom from the base of the Air hose assembly.

AB11 only:
09 Unscrew the Hose assembly from the Tap shell.

All models:
10 Firmly pull the water pipe assembly and Comms loom out of the Air hose assembly.

AB09/10 only:
11 Remove the main nut attaching the Tap assembly to the worktop. Remove the Tap assembly.

### Power supply assembly removal
Before continuing please follow steps 1-3 and 5 of Section 1 of this manual.

12 Remove the six T-15 screws in the electrical cover.
Disconnect the Live and Neutral wires from the connector block. Carefully disconnect the Comms to PCB loom and the Solenoid to PCB loom from the PCB assembly.

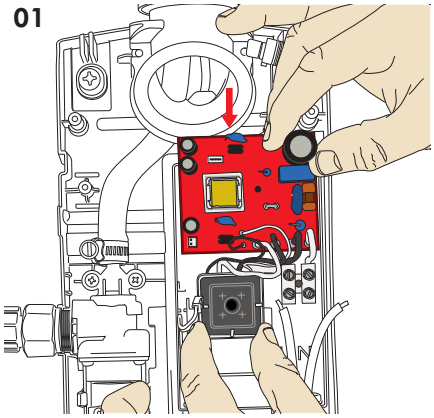
13 Remove the T-15 screw from the Connector block and the T-10 screw from the centre of the PCB.

14 Tilt the bottom of the PCB out of the Backplate and slide the PCB down to clear the communications cable grommet.

15 Slide the Power supply assembly away from the backplate.

## Section 2
## Power supply assembly fitting

01



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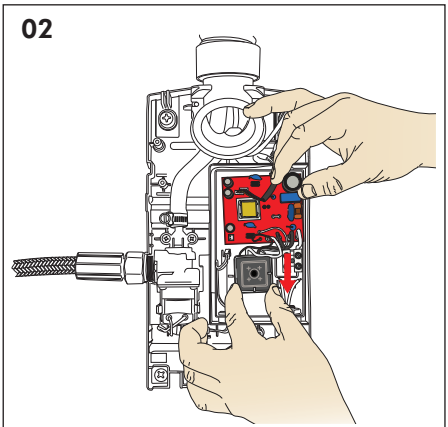

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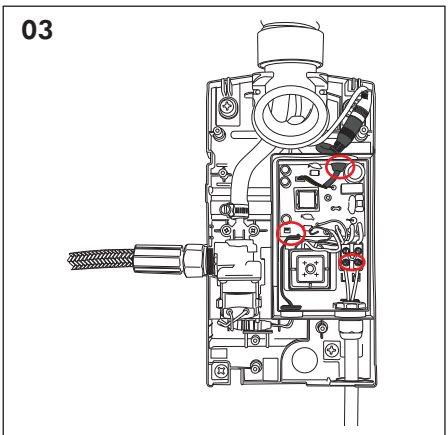

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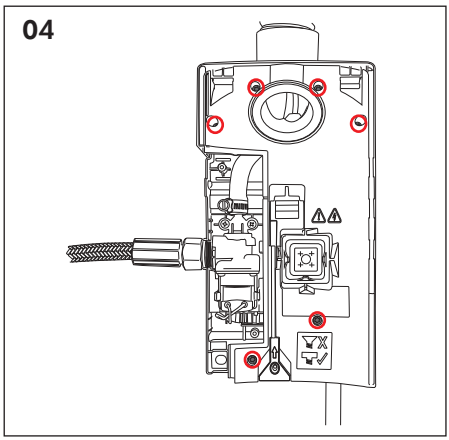
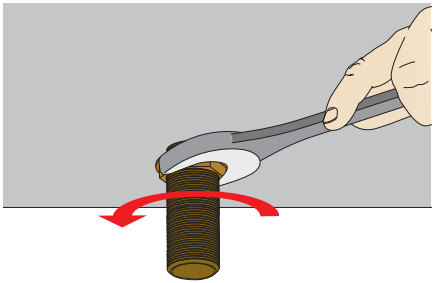


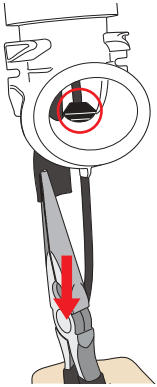
After fitting the Electrical cover, the existing parts should be fitted as previously shown (page 8, steps 16-18).

## Air hose/Tap assembly fitting

05 AB09/10 only



06 All models



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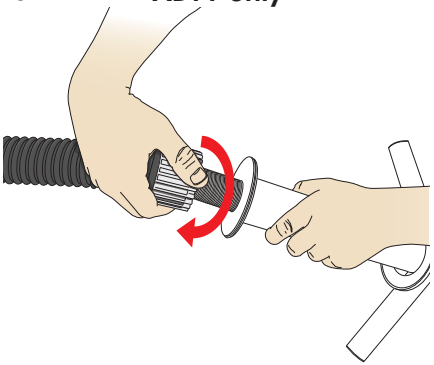

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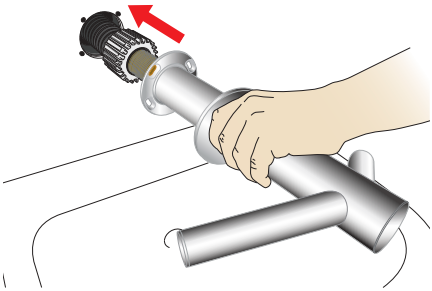

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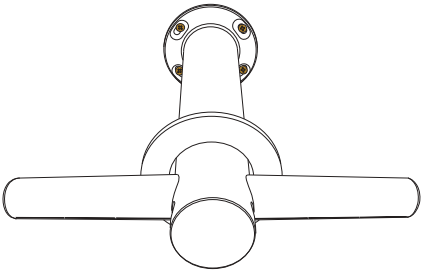

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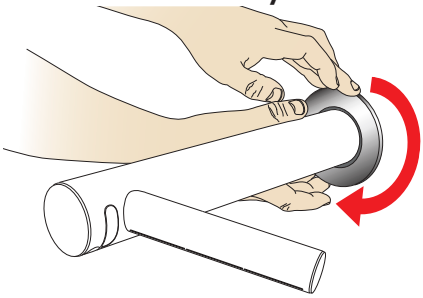
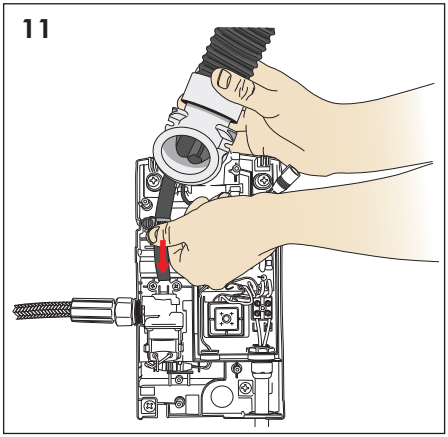
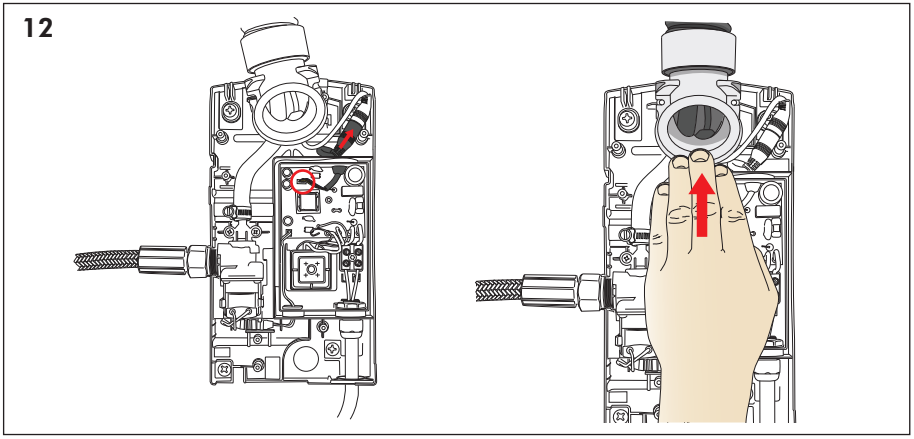
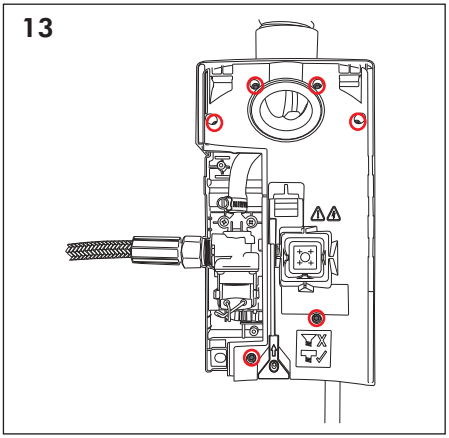
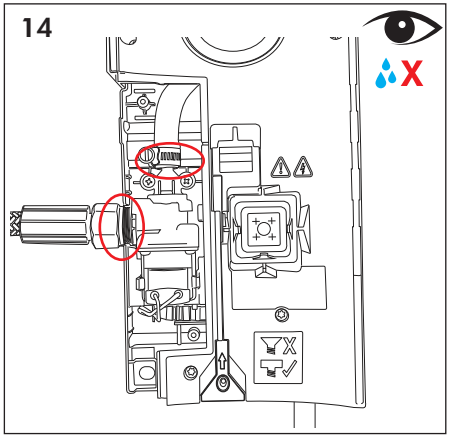





After fitting the Electrical cover, the existing parts should be fitted as previously shown (page 8, steps 16-18).

## Section 2
## Air hose/Tap/Power supply assembly fitting

### Power supply assembly fitting

01 Slide the new Power supply assembly into place.

02 Tilt the Power supply underneath the communications cable and locate into the Backplate.
Ensure the female connector block clicks into place.
Fit the T-10 screw into the centre of the PCB and the T-15 screw into the connector block.

03 Connect the Comms to PCB loom to the PCB assembly.
Connect the Solenoid to PCB loom assembly to the PCB.
Connect the Live and Neutral wires to the correct terminals of the connector block.

04 Fit the Electrical cover and six T-15 screws.

Refit the remaining components as detailed in steps 16-18 in Section 1 of this manual.

After reassembling the product, turn on the mains water and electricity supply and test the product by following the instructions on page 2 of this manual.

### Air hose/Tap assembly fitting

AB09/10 only:

05 If previously removed, locate the new Tap assembly into the worktop, ensuring that the larger of the two seals sits on top of the worktop, and the smaller on the underside. Fit and tighten the Tap nut.

All models:

06 Feed the water pipe assembly through the smaller of the two holes in the base of the Air hose assembly. (Note: pliers may be necessary to aid pulling it through).
Feed the Comms loom assembly through the larger of the two holes.
**Important:** ensure the grommet is adequately seated within the hole.

AB11 only:

07 Screw the Air hose assembly tight onto the Tap stem.

08 Lower the Tap and Air hose assemblies down into the ducting within the wall.

09 Align the Tap assembly with the four screw holes in the ducting. Fit the four screws.

10 Screw and tighten the Glamour cap onto the Tap stem mount.

All models:

11 Slide the water pipe clip onto the end of the water pipe. Locate the Water pipe assembly fully onto the Solenoid outlet.
Fit and tighten the Water pipe clip.

12 Connect the Comms loom to the Comms to PCB loom assembly. Dress neatly as shown.
Clip the Hose into the Backplate.

13 Fit the Electrical cover and six T-15 screws.

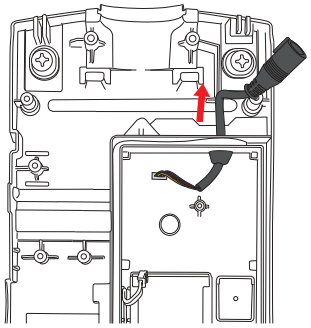
14 Turn on the mains water supply. Check that there are no leaks at the Solenoid inlet.
Turn on the power to the product. Insert hands under the centre of the tap to activate the water.
Check that there are no leaks at the Solenoid outlet.

Refit the remaining components as detailed in steps 16-18 in Section 1 of this manual.

After reassembling the product follow the instructions on page 2 to test the product for adequate operation.

**Section 3**
**Backplate replacement removal**
Before continuing the following parts need to be removed as previously shown:
the Solenoid assembly (pages 5-6), and the Air Hose and Power supply assemblies (pages 10-13).

**01**



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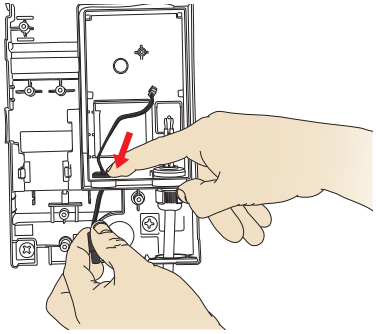

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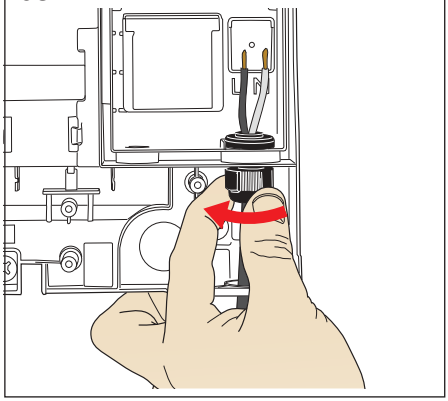

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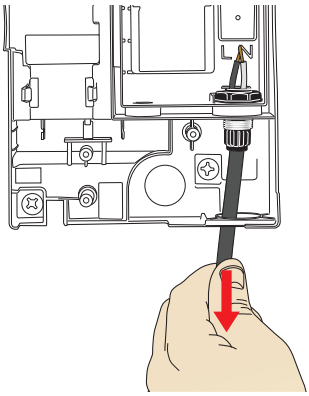

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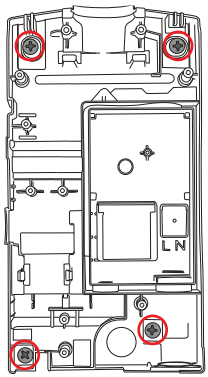
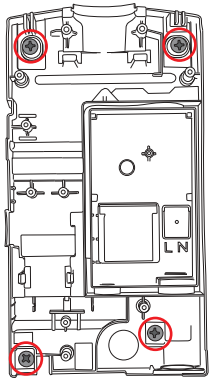


## Section 3
## Backplate replacement fitting

01

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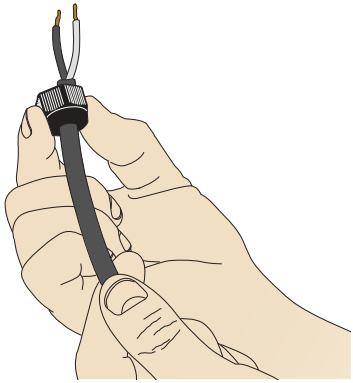

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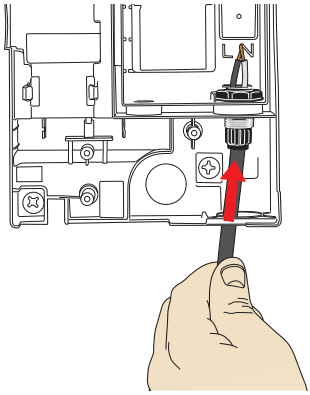


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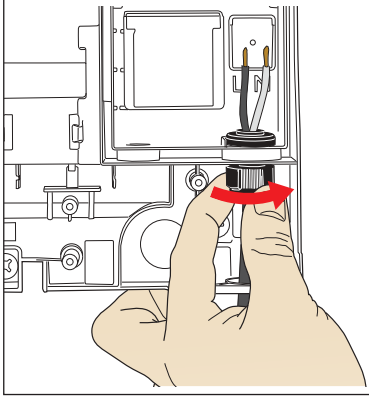


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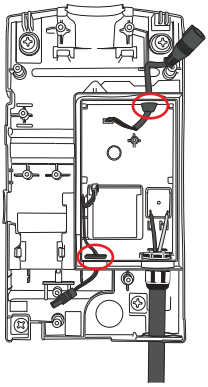


## Section 3
## Backplate replacement removal

Warning: before continuing ensure the power and water supplies to the the machine are switched off.
Before continuing the following parts need to be removed as previously shown:
the Solenoid assembly (pages 5-6), and the Air Hose and Power supply assemblies (pages 10-13).

01 Carefully release the grommet holding the Comms to PCB loom assembly.

02 Carefully release the grommet holding the Solenoid to PCB loom assembly.

03 Undo the Cable gland cap.

04. Remove the mains supply cord from the Backplate assembly.

05. Remove all screws attaching the Backplate Assy to the wall.

## Backplate replacement fitting

01 Attach the new Backplate assembly to the wall.

02. Remove the Cable gland cap from the new Backplate assembly and slide over the mains power supply cord.

03. Locate the mains power supply cord through the cable gland (it may be necessary to 'open up' the Gland to ease entry).

04. Tighten the Cable gland cap.

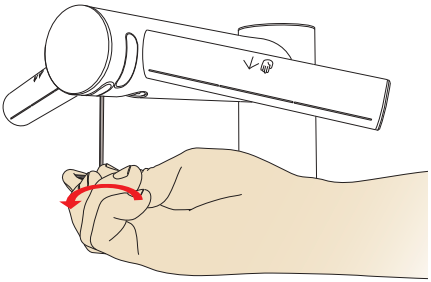
05. Refit both loom assemblies ensuring that both grommets are completely sealed.
**Important:** if either grommet is damaged to the extent that you are not satisfied that it continues to offer a watertight seal, a new loom must be fitted.

After fitting both looms, the following parts should be fitted as previously shown:
Power supply assembly (page 14),
Air hose assembly (pages 15 & 16),
Solenoid assembly (pages 7-8).

After reassembling the product follow the instructions on page 2 to test the product for adequate operation.

Section 4
Internals of Tap replacement removal

01



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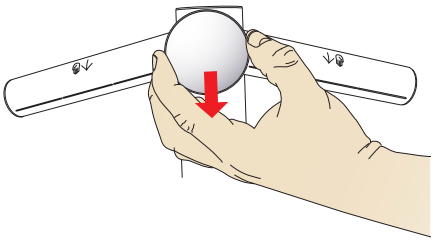

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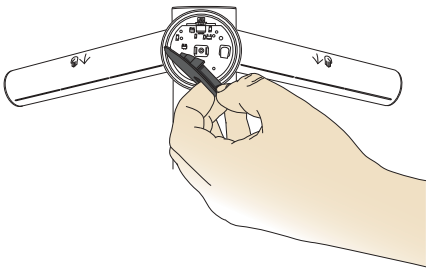

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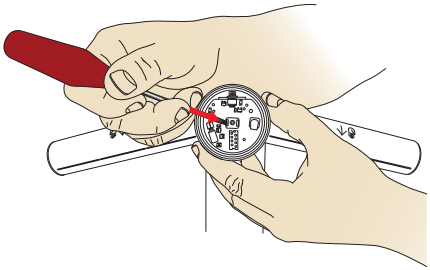

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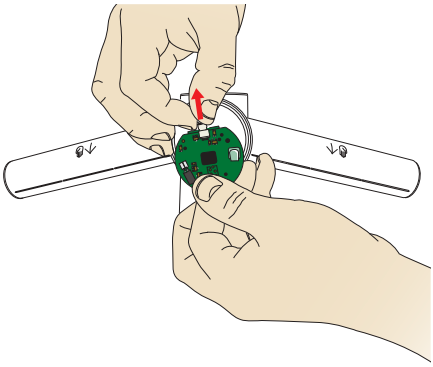

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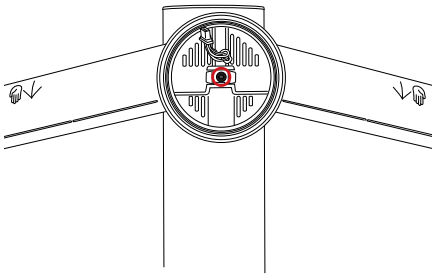

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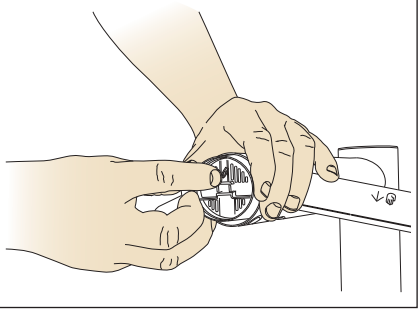

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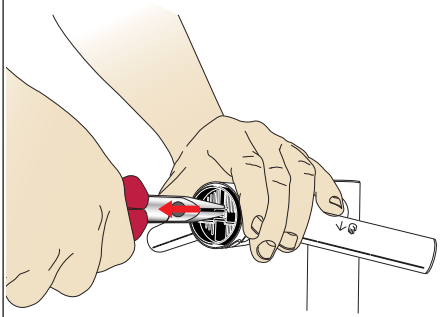

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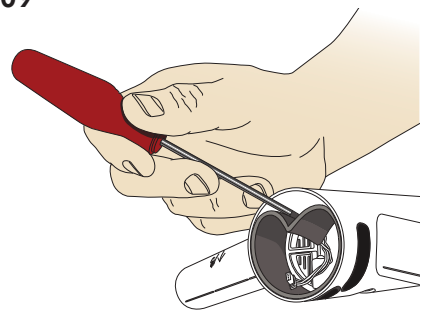

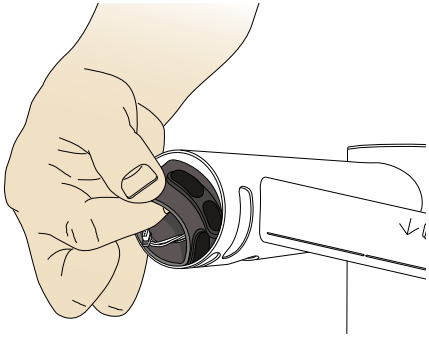

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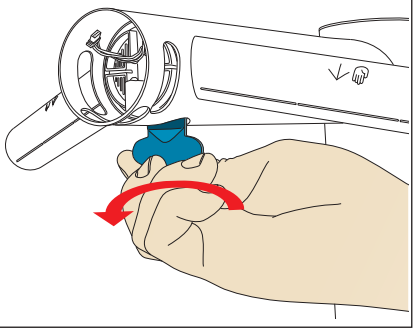

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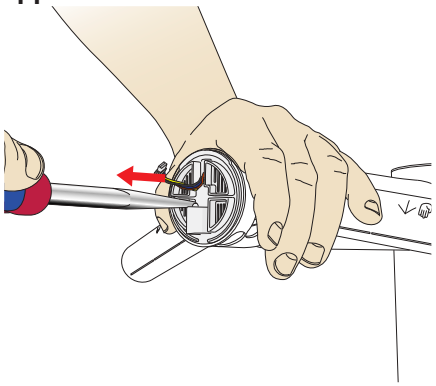

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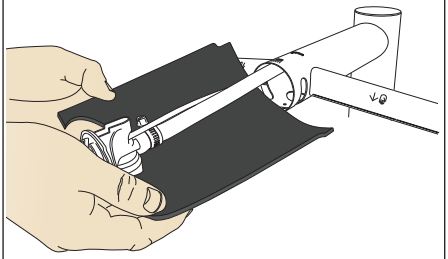

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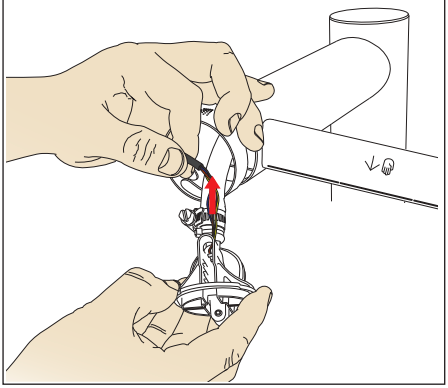

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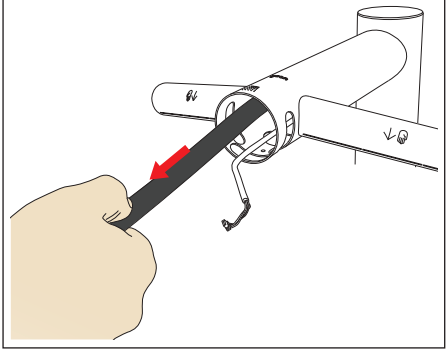

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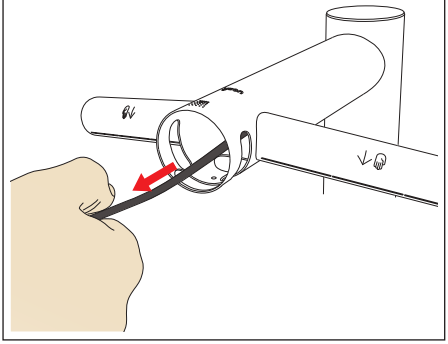


## Section 4
## Internals of Tap replacement removal

Warning: before continuing ensure the power and water supplies to the the machine are switched off.

01 Insert a 1.5mm or 1/16 Allen key into the small hole in the underside of the tap.
**Note:** it will be necessary to force the Allen key through a rubber sleeve and into the grub screw. Turn the Allen key between 12 and 15 times to fully undo the screw.
**Please note:** the grub screw will remain within the tap.

02 Remove the stem cap from the Tap.
**Please note:** the stem cap will be lightly bonded to the stem and will require force to remove.

03 Press the two central clips and remove the PCB housing outer.

04 Press the two same clips and carefully unclip the PCB from the PCB housing inner.

05 Carefully remove the PCB assembly being aware that a short wiring loom is attached to it. Carefully disconnect the loom from the PCB.

06 Remove the T-8 screw from inside the PCB housing inner.

07 Push the Comms cable through the hole in the PCB housing inner.

08 Using a pair of long nosed pliers carefully but firmly pull the PCB housing inner from the Tap.

09 Carefully insert a thin, flat bladed screwdriver between the casing of the tap and the top centre of the Lens housing assembly. A split-line in the Lens housing assembly allows you to push down and crease the housing so that it folds in on itself. With the Lens housing assembly creased, firmly pull it out of the tap.

10 Remove the Aerator from the underside of the tap.
**Note:** it is strongly advised to use the approved Aerator tool to perform this task.

**Important:** If the reason for the repair is to replace the Water pipe service assembly, or Comms loom assembly, please follow the instructions in the 'Air hose assembly removal' section of this manual (page 10), prior to coninuing with the following instructions.

11 Carefully but firmly using a pair of long nosed pliers pull the Water pipe service assembly out from the Tap.
**Note:** using the hole where the Aerator was previously situated to push the rear of the Water pipe housing may ease removal.

12 Remove the Thermal insulating sleeve.

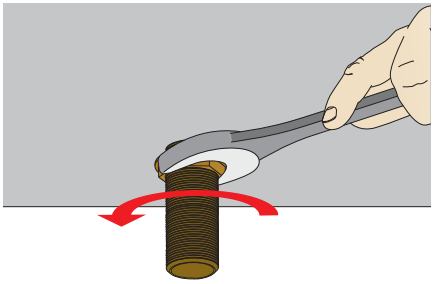
13 Carefully detach the Comms loom assembly from the Water pipe housing.

14 Pull the Water pipe service assembly out of the Tap.

15 Pull the Comms loom assembly out of the Tap.

Section 4
Internals of Tap replacement fitting

01



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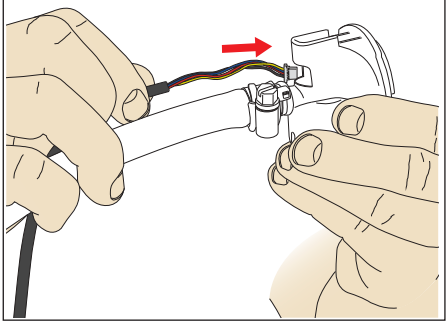

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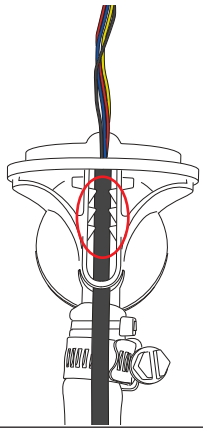

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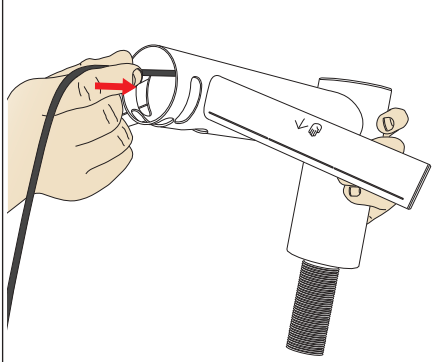

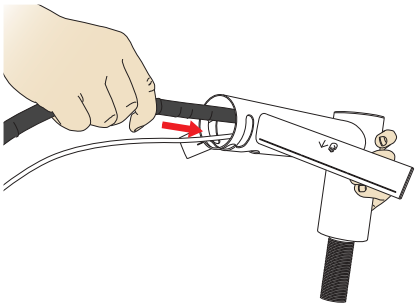

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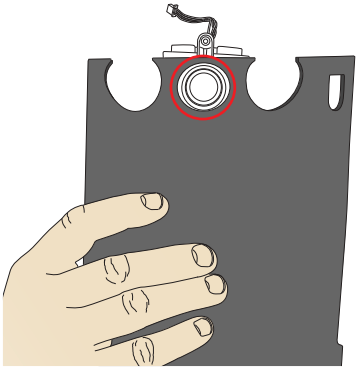

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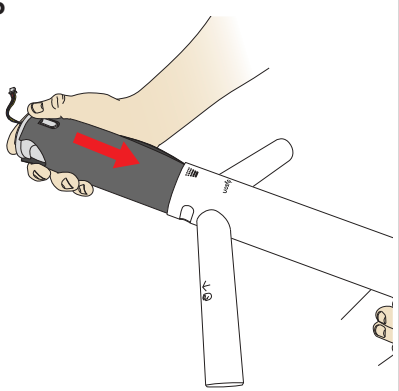

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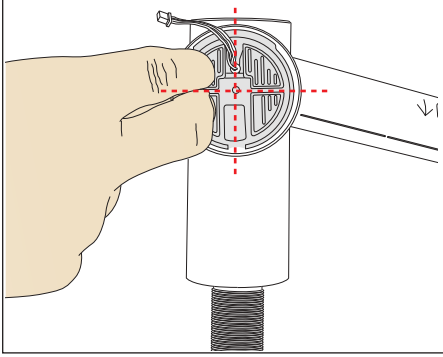

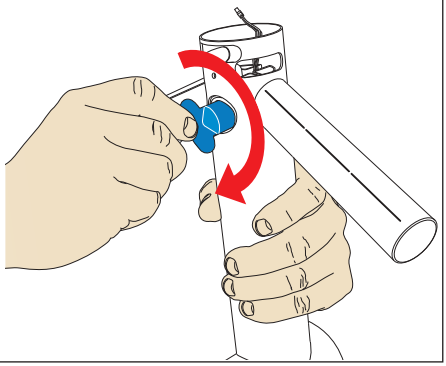

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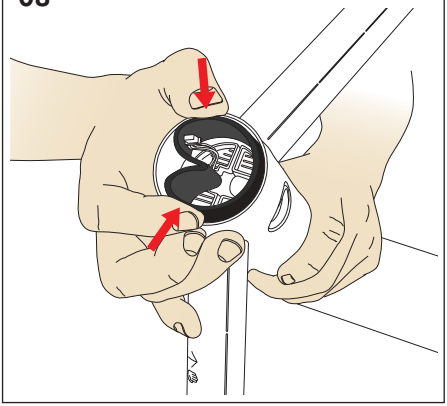

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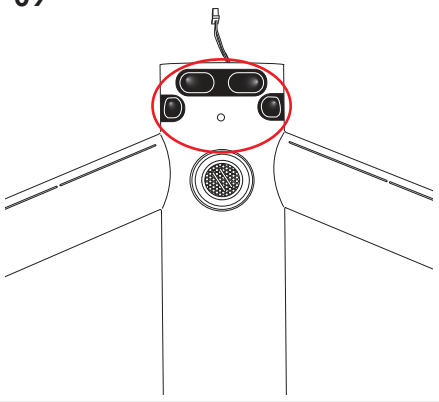

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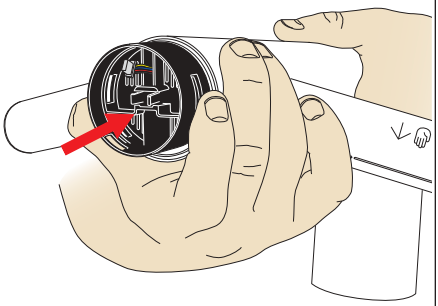

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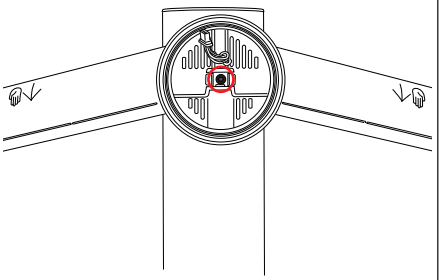

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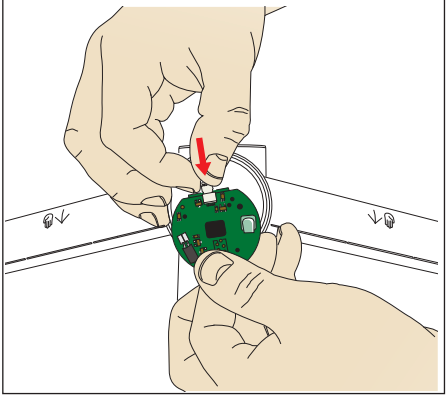

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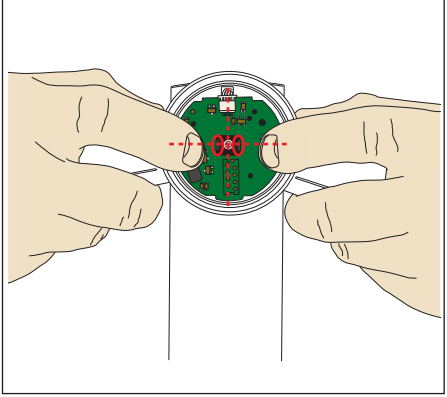

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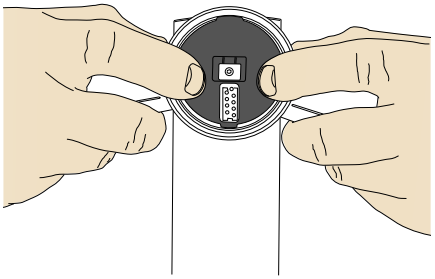

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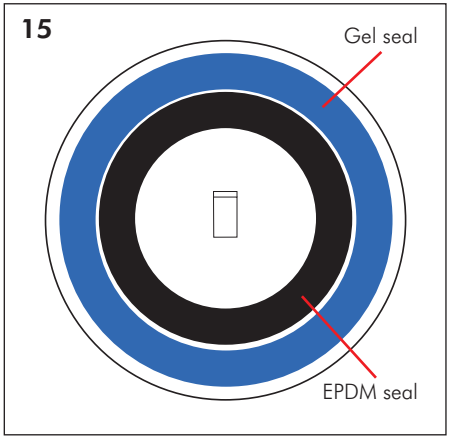


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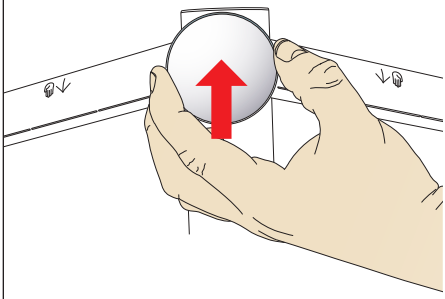

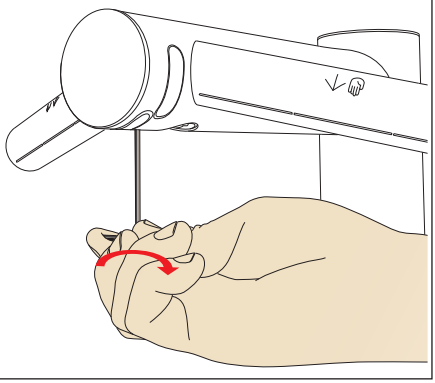

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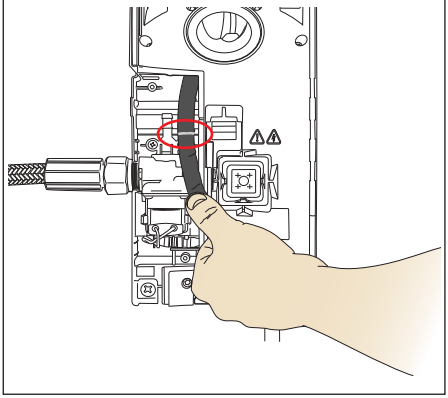


## Section 4
## Internals of Tap replacement fitting

Note: it is advisable to remove the Tap from it's location prior to fitting the internal components.

01 Remove the nut from the Tap stem.
Remove the Tap.

02 Feed the Comms cable through the Water pipe assembly housing.

03 Locate the Comms cable into the Water pipe assembly housing ensuring the outer insulation is securely fitted in all three grip details.

04 Feed the Comms cable and Water pipe assembly through the front of the tap.

05 Wrap the Thermal insulating sleeve around the Water pipe housing.
**Note:** the central hole in the sleeve locates over the Aerator housing.

06 Slide the Thermal insulating sleeve and components carefully into the stem.

07 Ensure the Water pipe assembly housing sits squarely within the Tap, and is aligned with the Aerator hole. Using the Aerator tool screw the Aerator into the housing hand tight.

08 Crease the Lens housing assembly at the split line and slide it into the Tap.

09 Ensure all individual lenses are seated centrally and are flush with the details in the underside of the tap.

10 Carefully feed the Comms cable connector through the PCB housing inner. Slide the PCB housing inner fully into the Tap.

11 Fit the T-8 screw.

12 Carefully connect the Comms cable to the PCB assembly.

13 Carefully locate the PCB assembly into the PCB housing inner. Ensure the PCB sits behind the two clips.
**Important:** the PCB must be seated squarely. Failure to do so may result in the continuous flow of air or water.

14 Ensure the surface of the PCB housing outer is clear of any glue residue. Locate the PCB housing outer ensuring it clips into position.

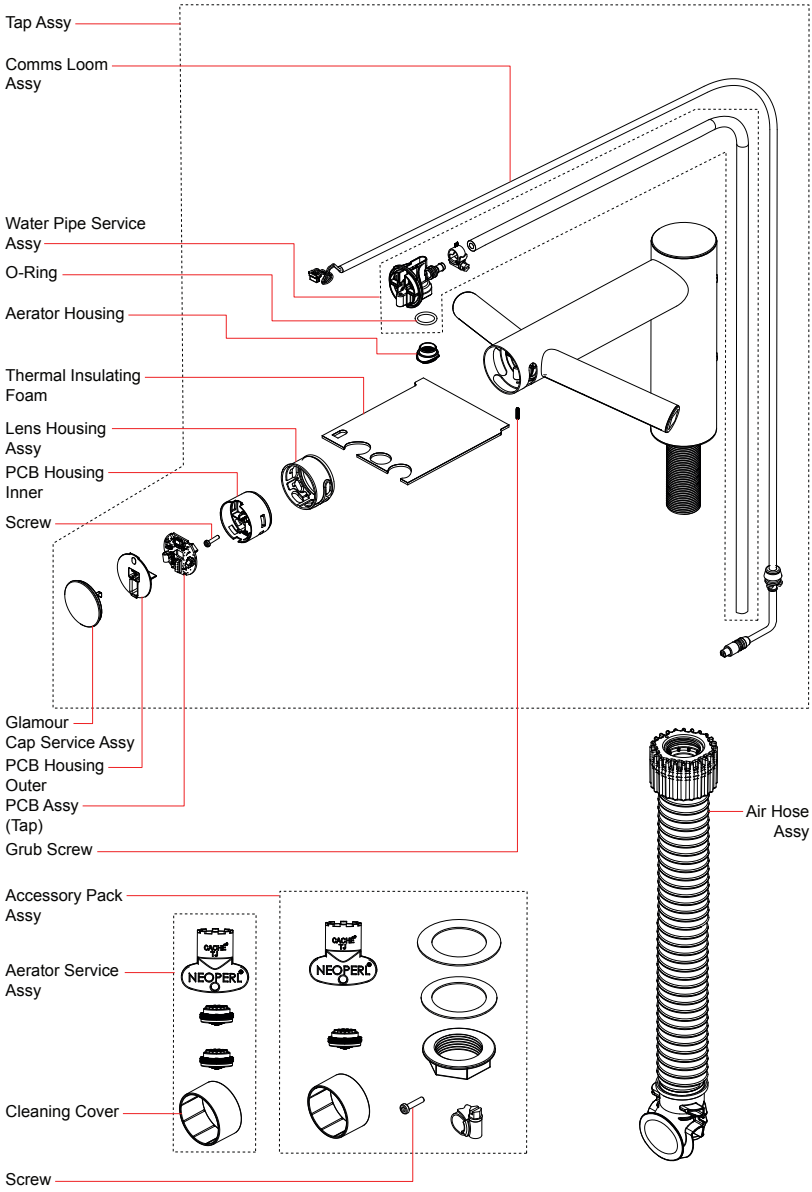
15 Inspect the EPDM (black) and Gel (blue) seals attached to the Glamour cap. If either appear to be damaged replace them. If you replace the Gel seal, it will be necessary to remove the plastic film from it before fitting the Glamour cap.

16 Locate the Glamour cap into the Tap. Retighten the grub screw until the Stem cap is fully secured (approximately 12-15 turns).

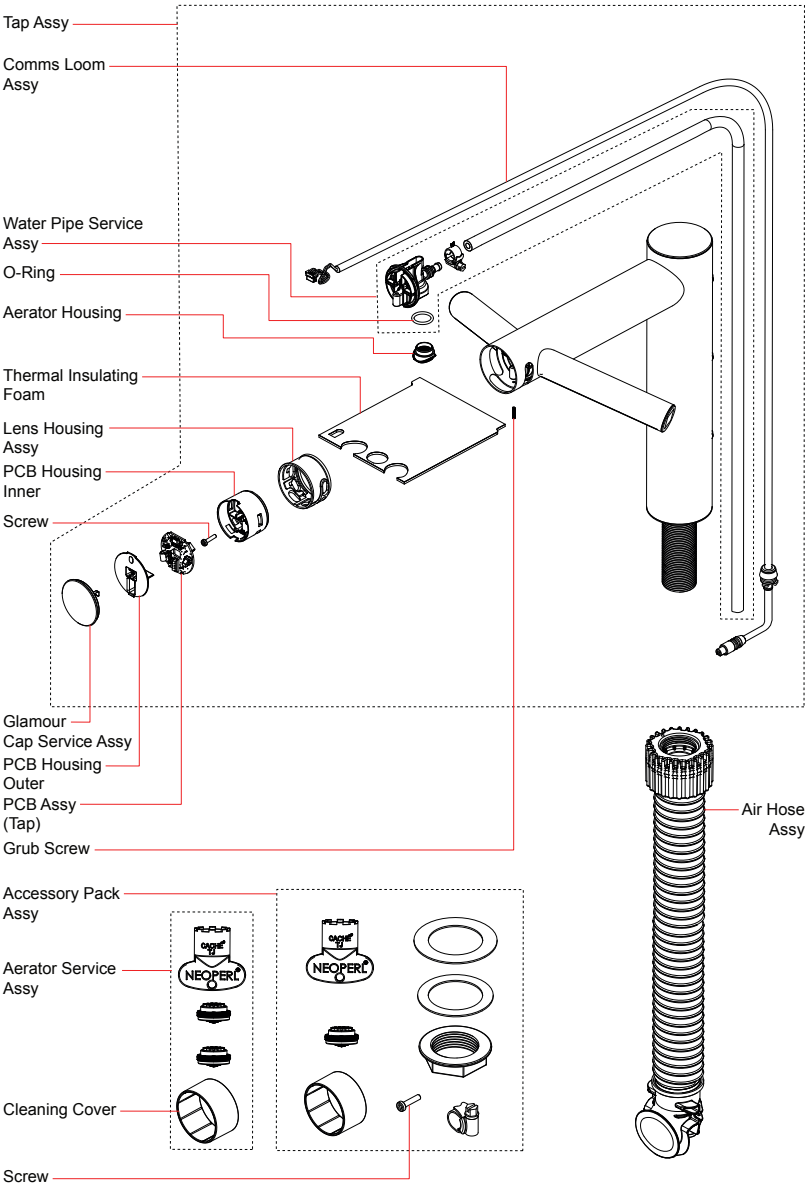
17 After fitting the Glamour cap you should continue by following the instructions in the 'Air hose/Tap assembly fitting' section of this manual (page 15).
**Note:** if you have replaced the Water pipe service assembly, it will be necesary to cut the pipe at the dotted line prior to attaching it to the Solenoid assembly.

After reassembling the product follow the instructions on page 2 to test the product for adequate operation.

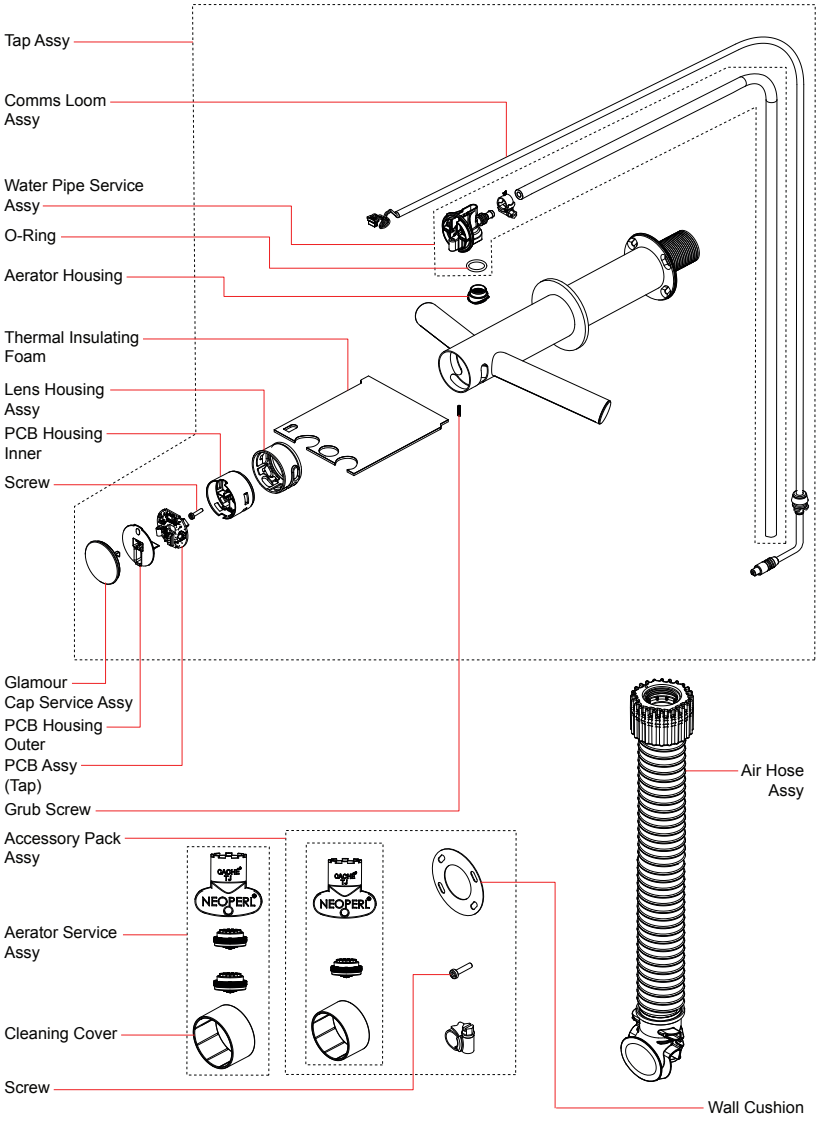
## Tap assembly AB09



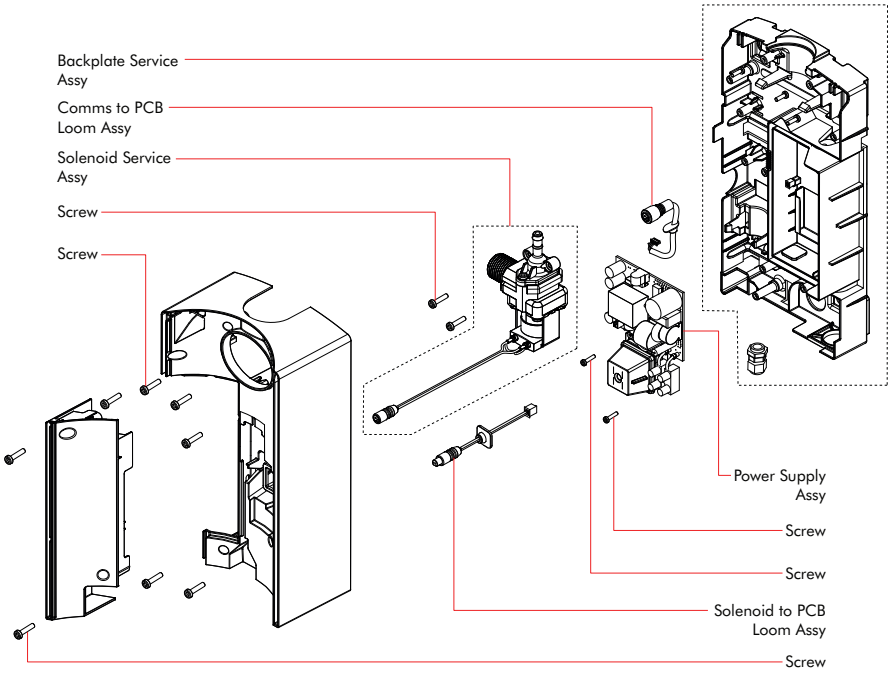
## Tap assembly AB10



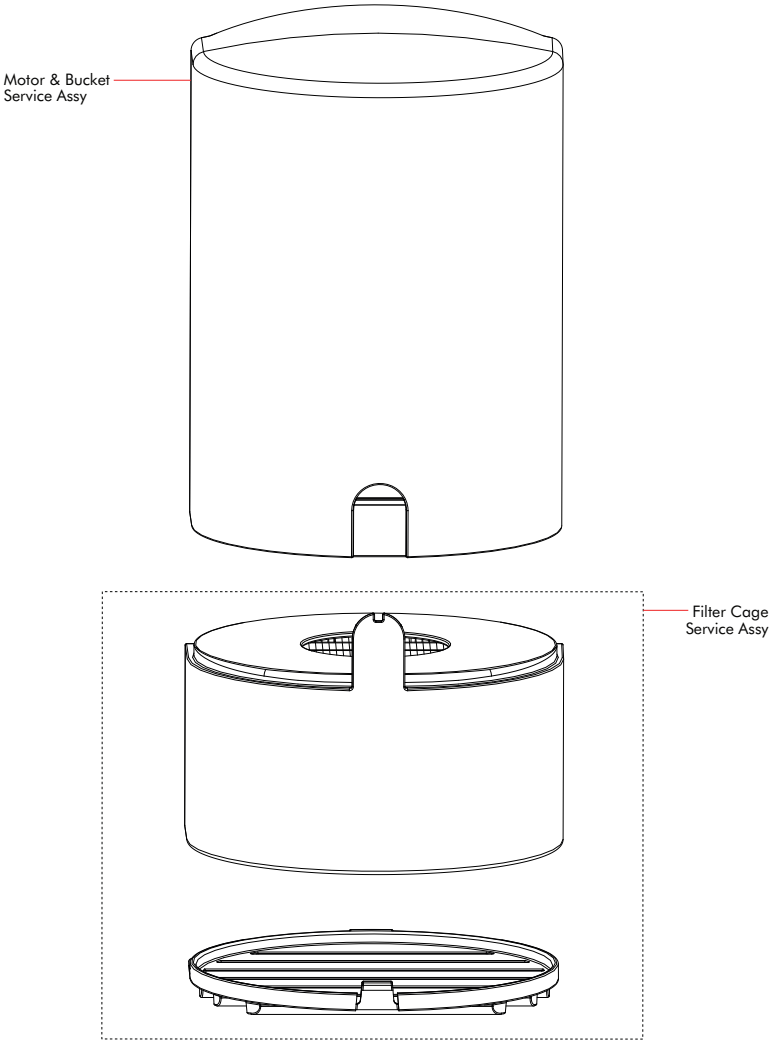
## Tap assembly AB11



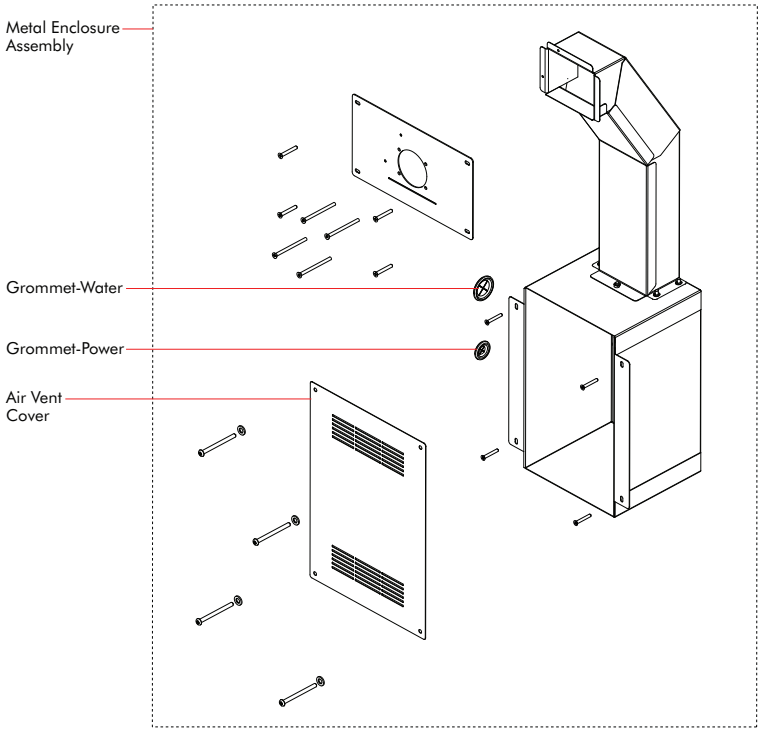
## Backplate assembly



## Motorbucket assembly



## Metal enclosure assembly



## AB09 10 11 Wiring schematic