



K A Parts Limited
Elles House, 4b Invincible Road,
Farnborough, Hants, UK GU14 7QU

Rebuilding The Mixer

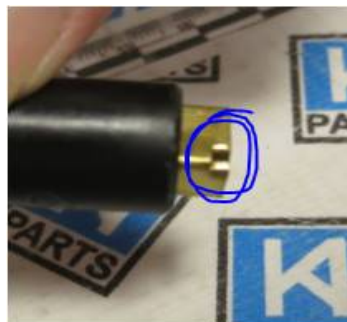
PR255

Introduction

This document will show you step by step how you rebuild your mixer following a conversion.

Step 1:

Firstly start with the upper housing - get your 'Brush holder inserts' which are gold and put them into your 'Brush holder housings' which are black, once these two are together you will need to place the two parts into the slots of either side of your upper housing, these will need to be placed in the slots in a certain way. If you look at your brush holder inserts (gold bits) you will see a little notch on either side of both of them (see picture below) they will need to go in with the notch on the top left corner and the other bottom right corner. You will put the motor brushes in later on.



Step 2:

Now that the brush holders are in your upper housing, it is time to put the 'Grub screws' in. These can also be called 'Set screws'. The grub screw will secure the brush housing holder in place. You will need to get a little screwdriver and carefully screw the grubs into the hole and onto the brush housing holder to secure them. Please make sure the housing holders have been pushed all the way into their slots.



Step 3:

Next we are going to be putting the 'Field assembly' back in, to do this you are going to slide the field assy into the back of the upper housing, please make sure that the black wire is at the top and



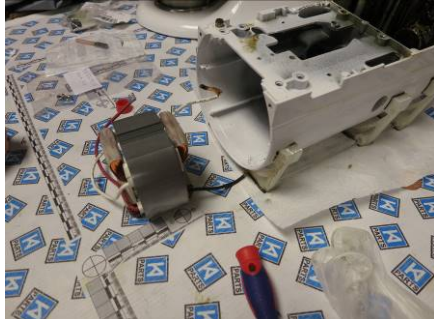


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Rebuilding The Mixer

PR255

the white one at the bottom as you are doing this, but do not slide the field assy all the way in so that you leave enough room to connect the cables to the brush housing holder.



Step 4:

It is now time to connect the cables to the housing holder, to do this you need some needle nose pliers and by turning the cables you should be able to slide them in between the brush holder and the housing holder.



Step 5:

Once you have connected the wires, you can push the field assy back into place and you will see two cables still in the way, please push these into the gaps to go above the housing and we can deal with them later. Now we are going to be putting the 'Stator Screws' onto the field assy to secure it in the upper housing. The stator screws look like very long screws which get screwed in to either side of the field assy. The stator screws can be screwed in by hand but will need a spanner to tighten them up. Do not forget to put the washer on the stator screws before you tighten them up.





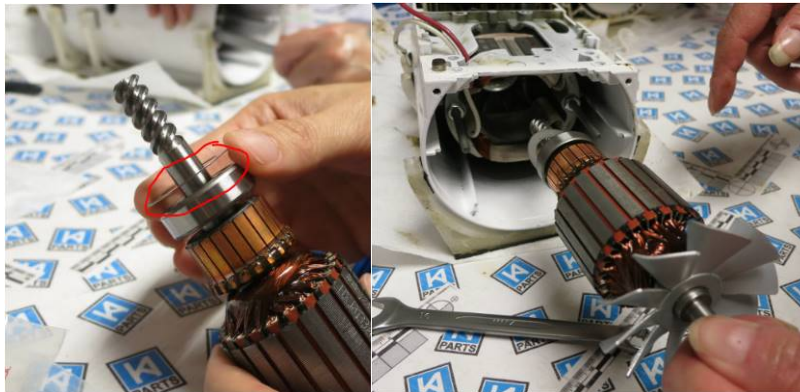
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Rebuilding The Mixer

PR255

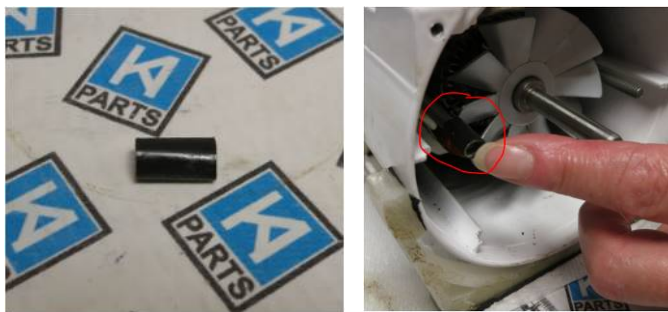
Step 6:

Once this is all put the bearing washer onto the front of the 'Armature', put the Armature through the field assy and move it around to make sure it is moving freely.



Step 7:

Now you are going to need to take the little black sleeve that's called a 'Sleeve motor stud' and place it onto the stator screw which is on the same side as the red and black wires. This is to prevent the wires rubbing on the metal.



Step 8:

Now you need to put your 'Bearing bracket' onto the Armature. You do this by sliding it on the end of the armature. Before you actually screw the bearing bracket on, it is a good time to check the motor brushes in case there is a problem and you go too far with putting the mixer back together. Slide the motor brushes into either side of the mixer and looking through the hole you should be able to see the motor brushes are in line with the armature. Unfortunately, you cannot see the motor brushes from my picture in line with the armature, but you can see what hole you're meant to look down.





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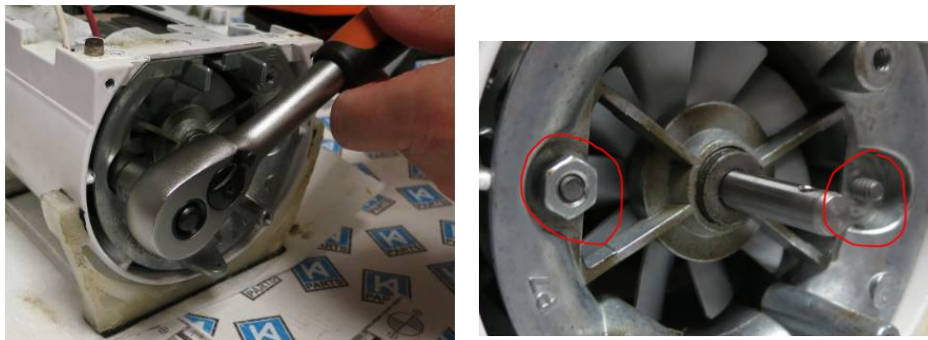
Rebuilding The Mixer

PR255



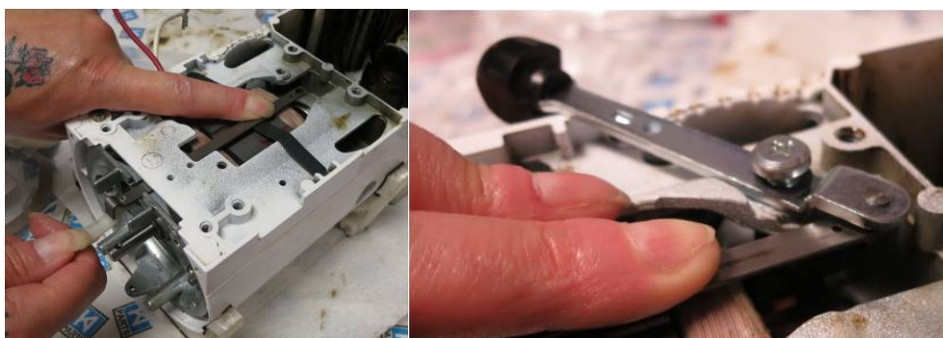
Step 9:

Once you have checked these you will need to put two 'Machine nuts' on either side of the bearing bracket to secure it on. You should use a socket wrench to tighten the machine nuts up.



Step 10:

Now its time for the 'Speed link and Cam' which will need to go on top of the field assy. The flat spring will need to go on top of the upper housing and the speed link + cam into the slot on top of the bearing cover and then the lever slots into the hole on the side of the upper housing and gets screwed in.





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Rebuilding The Mixer

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Step 11:

Once this is done you can go back to your bearing bracket. You will need to clean the bottom of the bearing bracket where the 'Phase board' is going to go, you can just use a baby wipe or water to clean this. Once it is all cleaned you will need to apply 'Thermal Grease' on to the bottom of the bearing bracket, please do this evenly. It is to stop the phase board from overheating.



Step 12:

Now its time to screw the 'phase board' where you have just put the thermal grease onto.



Step 13:

Once this has been screwed on you will need to put the 'Governor drive' on. Firstly you will need to get the tiny governor stud and place into the armature. There are two holes on the end of the armature and one is bigger then the other, you will need to place the governor stud into the larger hole with the notch on the stud facing upwards. Then you can place the governor drive onto the armature and tap gently until it is in place.





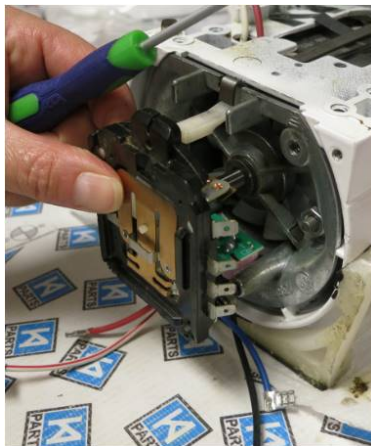
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Rebuilding The Mixer

PR255

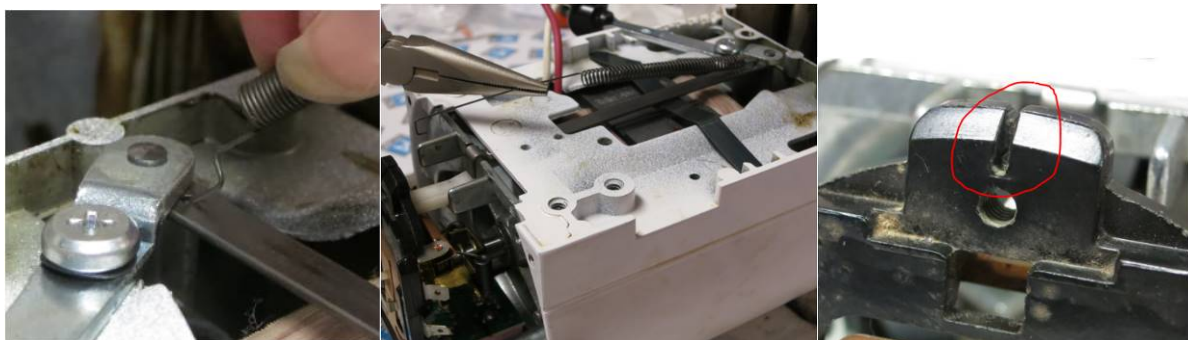
Step 14:

Now its time to put the 'Control Plate' on. To do this you will place it onto the bracket bearing and the governor drive. You will see two screws at the bottom of the control plate that you will need to screw on but not too tight.



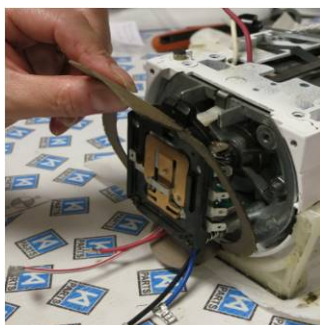
Step 15:

Now get the spring that you will attach from the speed control and pull over and attach it on to the slot of the control board.



Step 16:

Please now place the 'End Seal' gasket around the bearing bracket. (Please be careful as you do not want to snap this).





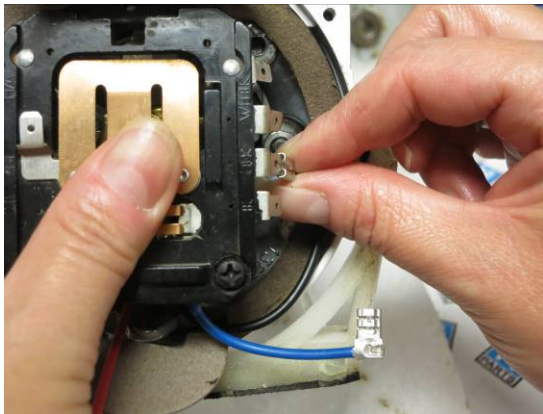
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Rebuilding The Mixer

PR255

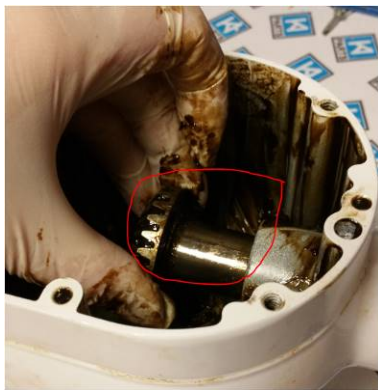
Step 17:

Now you will need to connect the wires from the phase board and field assy and connect them to the control board. The colours are written on the control board for you to place the correct colour wires on.



Step 18:

Now you are going to get your 'Hub Bevel' and slot it into the front of the inside of the upper housing.



Step 19:

Please now place your 'Gasket' onto the upper housing and make it line up with the holes.



Step 20:



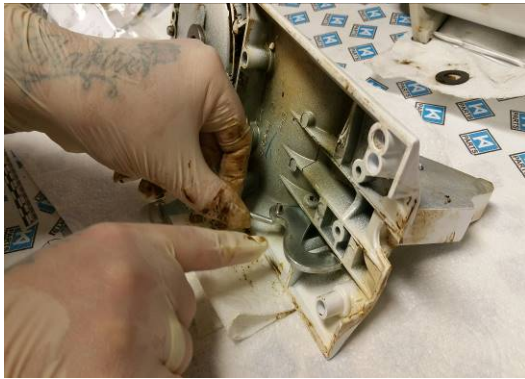


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Rebuilding The Mixer

PR255

We are now going to be working on the 'Lever Latch Assembly' on the 'Lower Housing'. The latch sits in the slot and the lever sits directly in the hole on the lower housing which will need to be screwed and also the hole on the side of the mixer will also need to be screwed.



Step 21:

Now you are going to need to tap the screw hole to screw the circuit board on to the lower gear case. Firstly to make the hole you are going to need to put the lower gear case onto the base and use the hinge pin to hold them together.



Step 22:





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Rebuilding The Mixer

PR255

What you are going to need to tap the holes are 'PH2 Cross' and your 'Self tapping screw kit' you will need to get the longest screw out of the self-tapping screw kit and put your ph2 cross together and gently put it in the hole and move it forwards and backwards until you feel it start to make the thread to fit the screw into. You can also tap the hole next to the circuit board to fit the earth connector. Please do not actually screw your circuit board in yet.

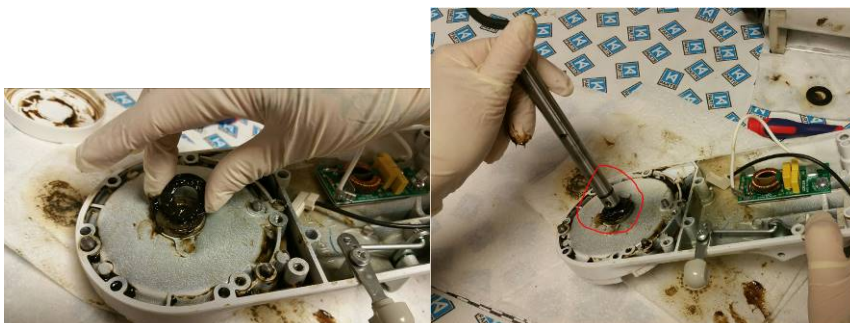


Step 23:

Now remove the base from the lower housing that you attached in step 21 by taking the Hinge pin out by using a drift punch.

Step 24:

On the lowerhousing put your grease on to where you are going to place the 2 fibre washers. Now get the vertical shaft and push it through with the O ring going through first.



Step 25:

Now get the 'Vertical centre shaft pin' into the shaft and get the 'pinion gear' and place it on top of the shaft facing upwards.





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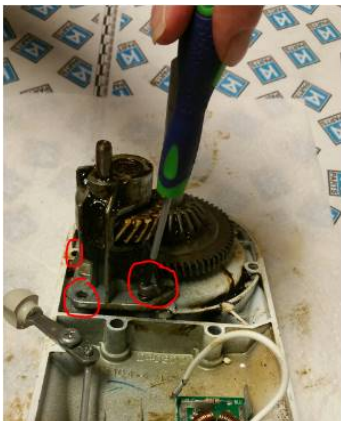
Rebuilding The Mixer

PR255



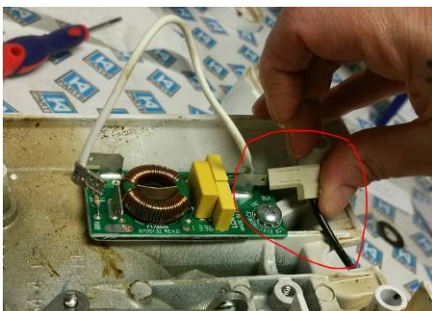
Step 26:

Once this is done you need to get your worm gear and bracket, it needs to be positioned on the screw holes and be screwed it.



Step 27:

You can now screw your circuit board in from step 22 please put the spikey washer on first and screw using the smaller screw from your 'self-tapping screw' set and you can fit your black connector onto the circuit board.



Step 28:





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Rebuilding The Mixer

PR255

Now connect the power cord to the circuit board, insure the cables do not touch any moving parts (keep them away from the area with the worm gear) and connect you can screw the earth cable into the hole you also made earlier. You must remember to make sure when you connect the two wires that they are facing down so that they do touch any other parts.



Step 29:

Now get your grease and cover all your gears, teeth and your shaft they need to be covered. This grease should last a life time.



Step 30:

Now its time to turn the lowergear case over to fit back onto the upper housing. Insure they drop into each other in the correct position.



Step 31:





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Now get your 5 'Special screws' and screw them in at the front of the lower housing.



Step 32:

Once the 5 special screws have been screwed in, you can screw the 4 screws in at the back of the upper housing, only screw these slightly until they are all in then you can tighten them all.



Step 33:

Now you can connect each lead and connect the black and white cables.

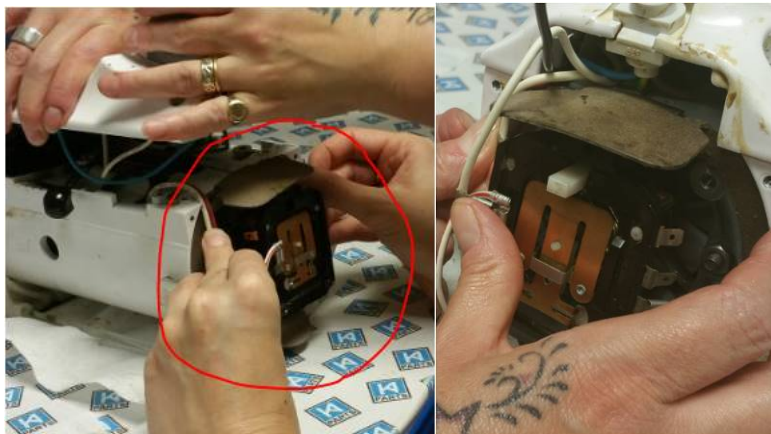




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Step 34:

Now place the motorbrushes back in the correct way with the bevelled side touching the notch on the brass holders and put your black caps back on. You will need a torch and small coin for this.



Step 35:

Now place your washer onto the lower gear case onto the vertical shaft, please put a little bit of grease on this, please also put some grease on the teeth of the internal gear but do not smoother it.





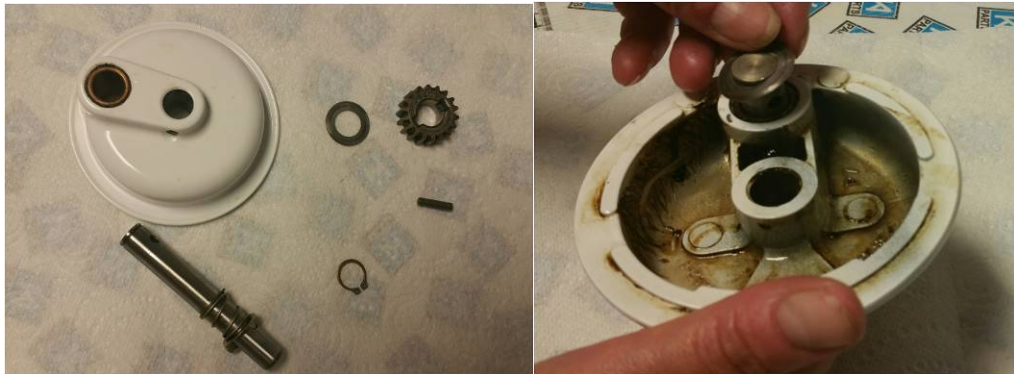
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Step 36:

Then get your planetary and all the bits that go with it together. Take your shaft and put it in the hole of the planetary (larger hole). Then turn it over and put your washer onto the shaft and then take the pin in and the pinion on top in line with the pin and your retaining ring clip into place on the groove of the shaft.



Step 37:

Now you are going to need to put the planetary back on, it will need to be in line with the vertical shaft and the teeth should also line up with from the pinion and the internal gears. Put a screwdriver through the top of the hole in the planetary to help you line it up so you can put the groove pin through, you will need to get a punch and mallet to slightly tap the groove pin through.



Step 38:

Step 38-42 are optional if you have purchased a head lock

Once this is done you are going to be drilling your two holes for you to fit your 'Headlock' in positioned on the back of your pedestal. Fit the template provided around the pedestal, you will see that the template has two holes on either side which match the two holes on your mixer. Please use these to line the template up exactly. Wrap the template around using Sellotape to hold it in place. Then you can cut around the two holes.





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Rebuilding The Mixer

PR255



Step 39:

Now you have cut through the holes on the side of the mixer you should be able to see that the template is in the correct place. You should now get a drift and look on the template at the two holes you will need to drill out, firstly get a 'drift' and a hammer and slightly tap the drift to make two marks, so when you put your drill on you will feel where to drill.



Step 40:

On the template it will tell you what size drill bit to use for each whole, you can now feel with your drill where the dent is and you can start drilling.





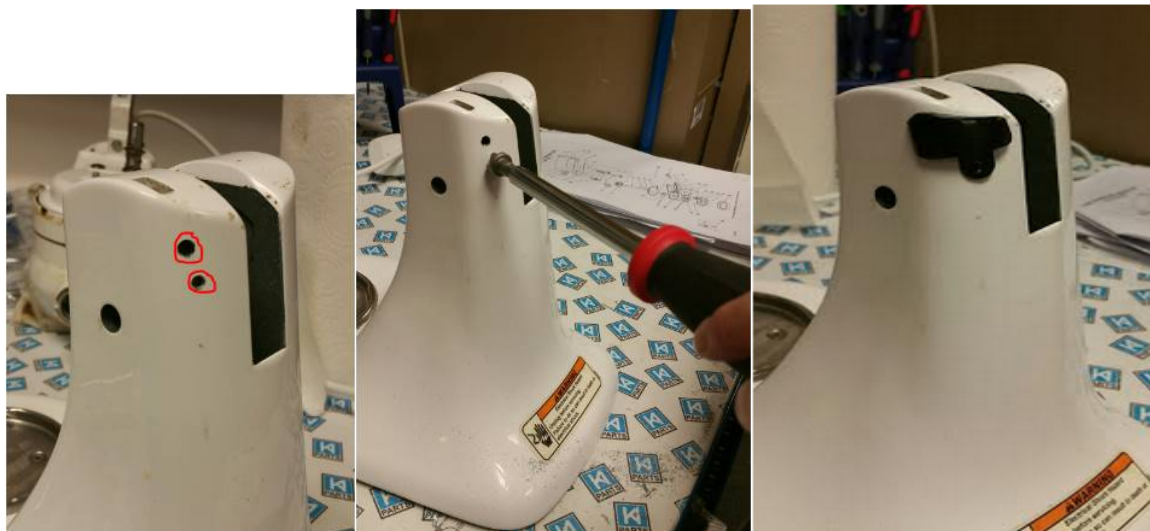
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Step 41:

Once the holes are drilled in you can remove your template. You can use a debur to smooth the holes out. Now place the head lock on to fit in the holes.



Step 42:

Now you are going to need a rivet and a rivet gun, to secure the headlock onto the pedestal. Put the rivet into the rivet gun and place in the hole, then you will need to squeeze the two ends of the gun together 2 or 3 times until the rivet snaps and the headlock is in place.



Step 48:

Now you will need to put the hinge pin through the hole. You can use a drift punch to gently tap the hinge in until it goes all the way through.





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Step 49:

Now you can put the pedestal back onto the mixer but keep it turned over. Looking into the pedestal you will see a hole which you will need to put your grub screw into and tighten with a screw driver, then you can turn the mixer back over.



Step 50:

You can now give your mixer a clean up from any grease.





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Step 51:

Now you can put your 'trim band' back around your mixer and secure it with its two screws at the back.



Step 52:

You can now screw your 'end cover' on, please make sure no cables are sticking out when you do this.





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Step 53:

Now put your drip ring around the planetary, this should easily slide on if not you can gently tap this with a rubber mallet.



Step 54:

Now you can fit your thumb screw and cap on the front of your mixer, place the cap in first then the thumb screw.



Step 55:

Your mixer should now be complete.

