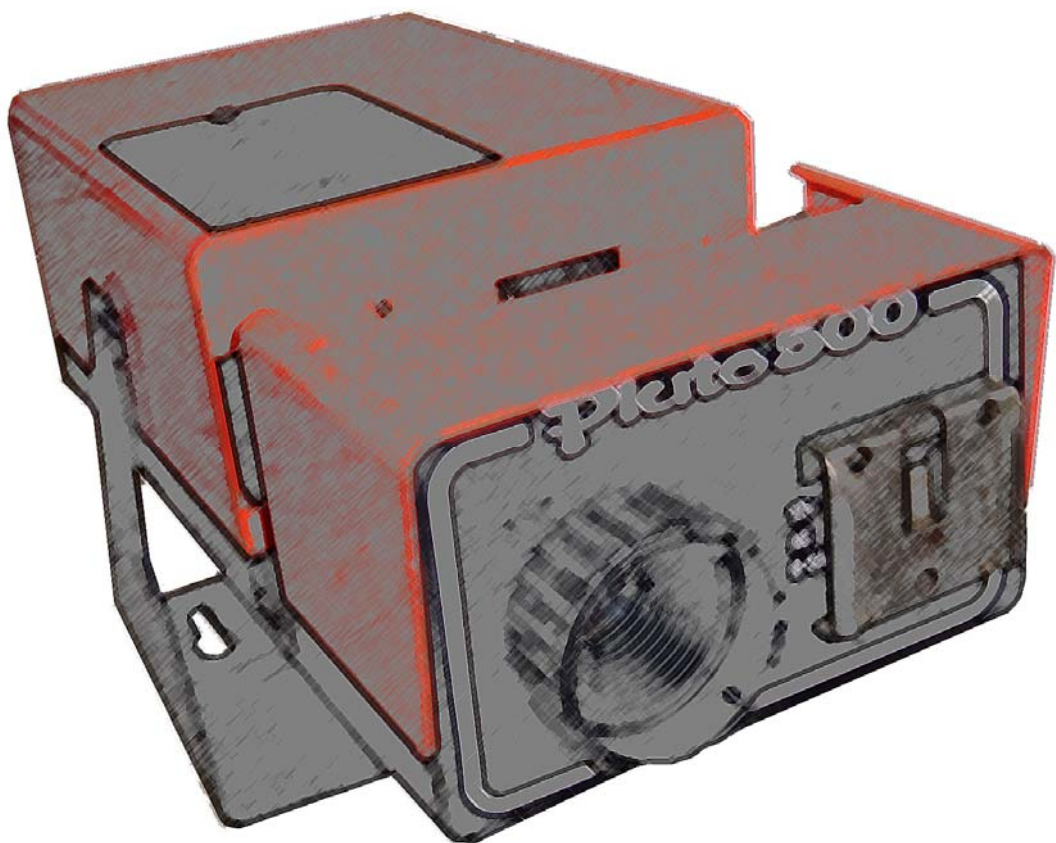


# SERVICING INFORMATION



## PLUTO ELECTRONICS PLUTO 500

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## **Servicing the Pluto 500 effects projector.**

This is a short guide on how to service the main component parts of the projector. Servicing is intended to keep the projector in optimum working condition.

This is not a guide to renovation as that is more involved.

You will need some simple tools to complete the service and some cleaning solutions.

Tools:

Cross point screwdrivers

Snipe nose pliers

Cleaning Solutions:

Isopropyl Alcohol or Methylated spirit

General purpose 'foam cleaner' or warm soapy water

You will also need a small brush (pastry brush or similar size) and some cleaning cloths. To clean the lens and heat filters you need a clean, preferably lint-free cloth.

Before starting, it's a good idea to wear vinyl or latex gloves, especially if the projector is exceptionally dirty inside (usually they are due to age of unit).

Please note that this document is offered as a guide. I do not accept any responsibility for damage to equipment or persons as a result of actions advised in this document.

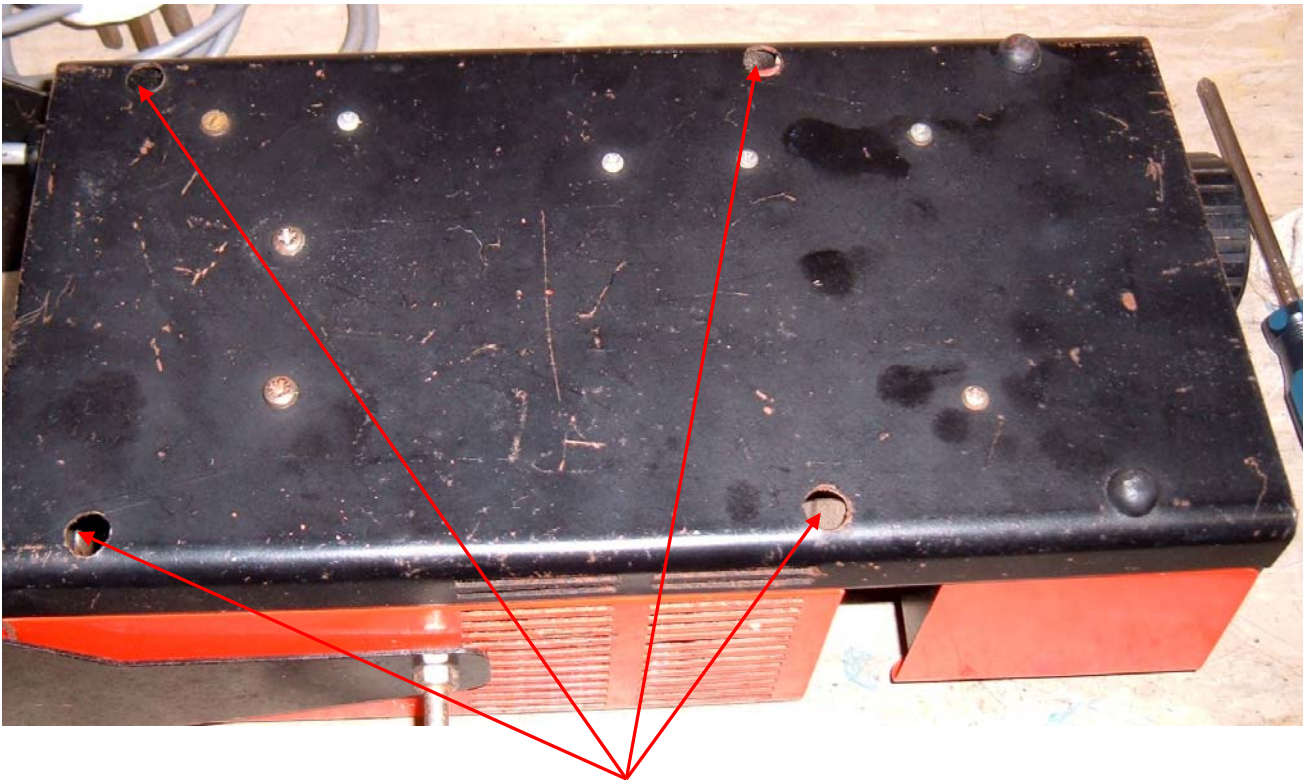
## STEP 1

Disconnect the power cord from the mains outlet! VERY IMPORTANT

## STEP 2

Start by removing the main cover from the projector body.

To do this you loosen the four recessed retention screws (about 4 turns of the screw, anti clockwise for each screw). The screws are indicated below.



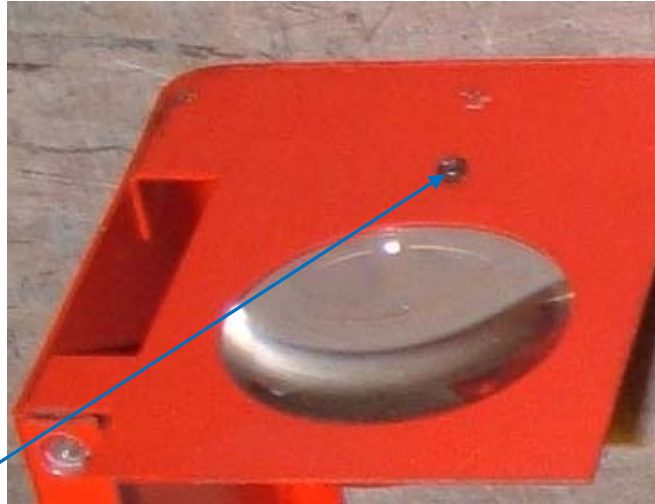
Location of the four recessed screws to remove the cover

Once the screws are loosened you can remove the top cover (with the stand attached), by sliding the cover forward (toward the lens) and lifting off.

If you remove the four screws completely to lift off the cover, you need to partially screw them back in the cover for re-assembly. Trying to fit them via the access holes shown is very difficult.

### STEP 3

With the cover now removed, you can remove the lens. Slacken the screw just above the lens so the clip holding the lens can be rotated, thus releasing the lens from the cover.



Loosen this screw to remove the lens. Note the flat side of the lens is on the cover metalwork.

### STEP 4

The Lens and top cover can now be cleaned.

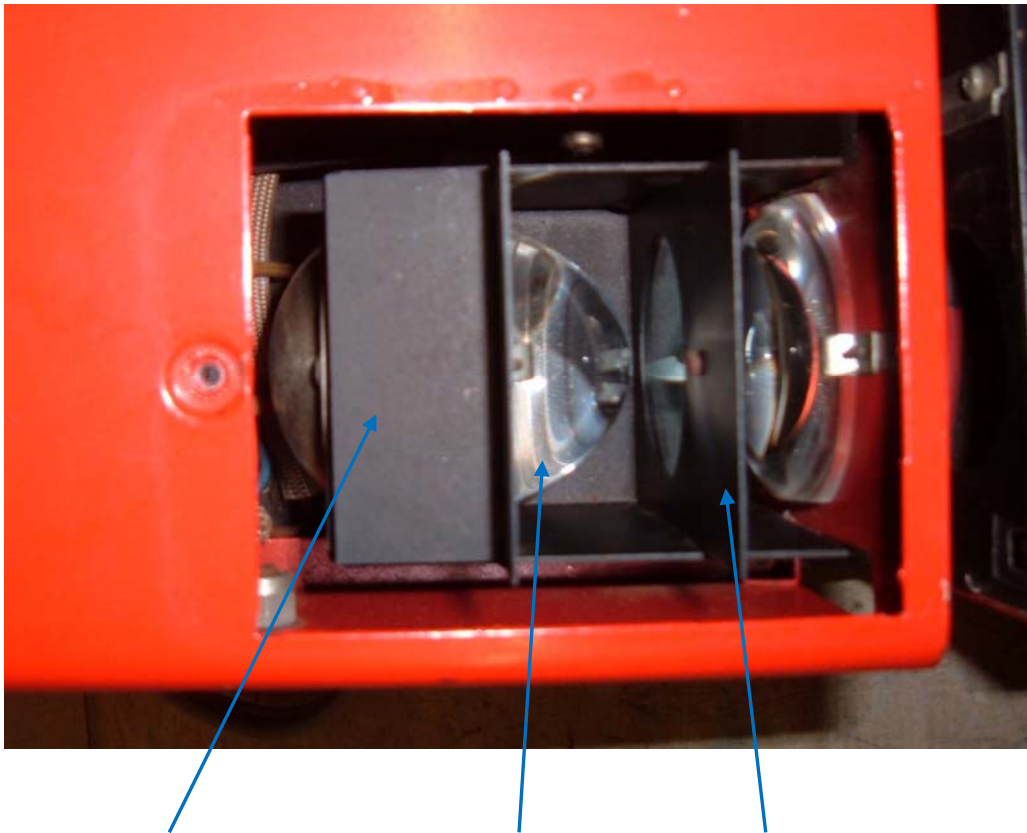
Start by cleaning the top cover and stand with general cleaning solution or a 'foam cleaner', wipe away any excess and dry. Stubborn oily deposits can be removed with spirit or alcohol.

Very carefully clean the lens, first with a small amount of foam clean or soapy water. Dry thoroughly then clean using some spirit or alcohol and a clean dry lint free cloth.

Make sure both parts are thoroughly clean, avoid handling the lens with bare fingers as finger marks if left, will eventually become permanent marks.

## STEP 5

The lamp house components indicated below can now be removed.



Lamp (under cover)    Condenser lens    Heat filter

These slide out vertically. When removing the lamp, be careful not to twist it and use a small plastic bag to first cover the lamp. Do Not touch the lamp with bare fingers, if you do then clean the lamp envelope with alcohol or spirit.

The lens and heat filter can now be cleaned, first with a small amount of foam clean or soapy water. Dry thoroughly then clean both parts using some spirit or alcohol and a clean dry lint free cloth.

Make sure both parts are thoroughly clean, avoid handling the lens and heat filter with bare fingers as finger marks if left, will eventually become permanent marks.

Place these parts away from the work area until re assembly.



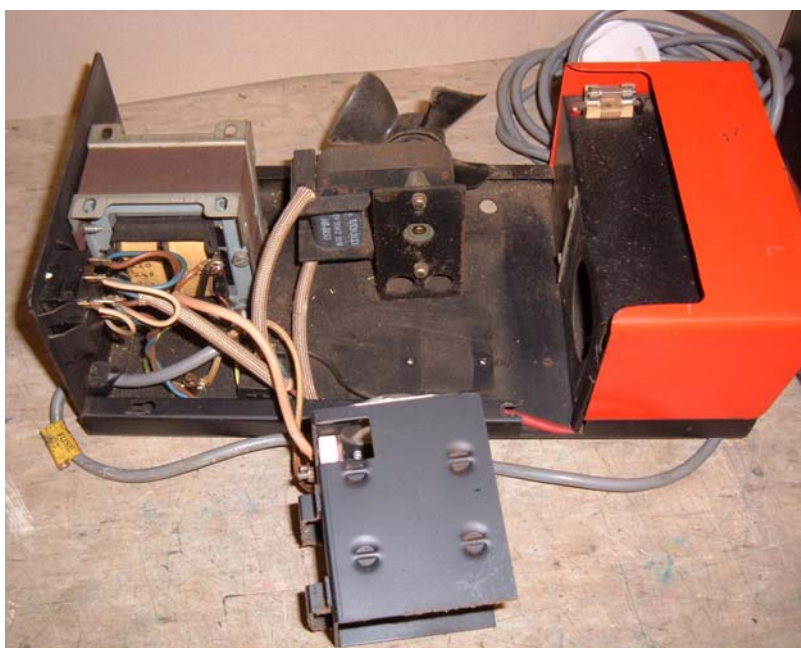
## STEP 6

The fan unit can now be serviced. Start by first removing the lamp housing to gain access to the fan motor mounts.



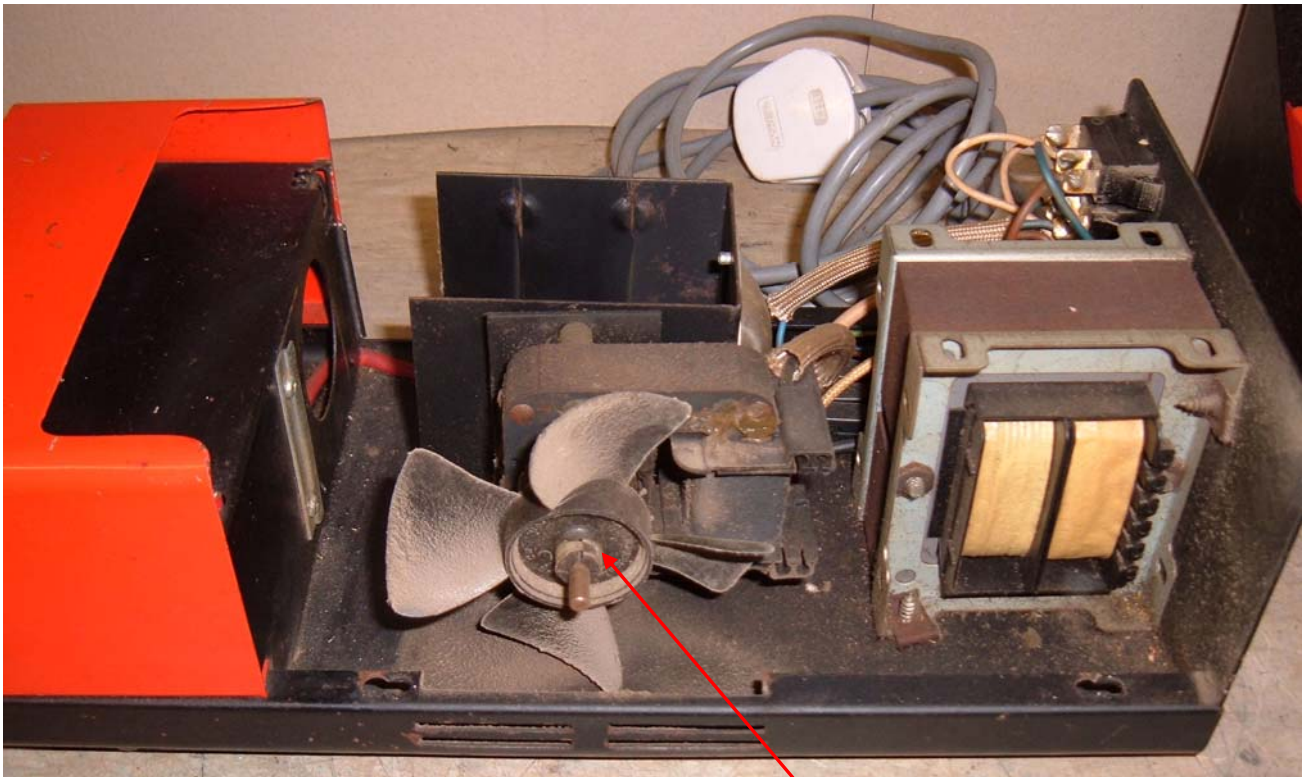
Remove the two screws to release the lamp housing

Once removed, place the lamp housing with wires attached on the work bench



Lamp Housing Removed.

Once access to the fan motor mounts is available, begin by removing the fan blades from the motor shaft. Use a fingers to carefully pull the centre boss (do not pull the blades), or use a screwdriver as a lever.



Pull the fan blade off the motor shaft (do not pull the blades).

Clean the blades with warm soapy water or 'foam cleaner' and dry thoroughly.

The motor can now be cleaned using a brush. Check the motor turns freely, if stiff the motor must be removed and serviced.

Undo the two motor mounting nuts to remove the motor.

Do not disconnect the motor wiring.

Fully removing the two long bolts will enable the motor to be disassembled.



Both bearing plates and the rotor now removed from the armature.

Clean any residue from the bearing plates and the motor spindle. Be careful not to lose the two fibre washers and the steel shim.

After brushing clean the armature, the spindle of the armature can be lightly oiled (don't apply too much) and the motor re-assembled. Use a standard oil or motor oil (not an anti corrosive like wd40).

Check the motor can be spun freely by hand and re mount in the projector.

Push the fan blade back onto the motor shaft (do not push the blades) until the main centre boss is level with the motor bearing endplate.

Check the blades spin freely and do not foul on the body of the fan or base of the projector.

## **STEP 7**

As a final step to servicing the main body, clean all the dust and debris from the bottom of the projector using a brush, and if necessary a damp cloth. Ensure the area is dry (especially around the wiring and transformer).

Inspect the lamp holder and replace if necessary. Re fit the lamp housing to the projector base. Check the lamp leads are clear of obstructions and not trapped under anything.

Finally clean and buff the aluminium reflector in the lamp housing, being careful not to scratch the surface.



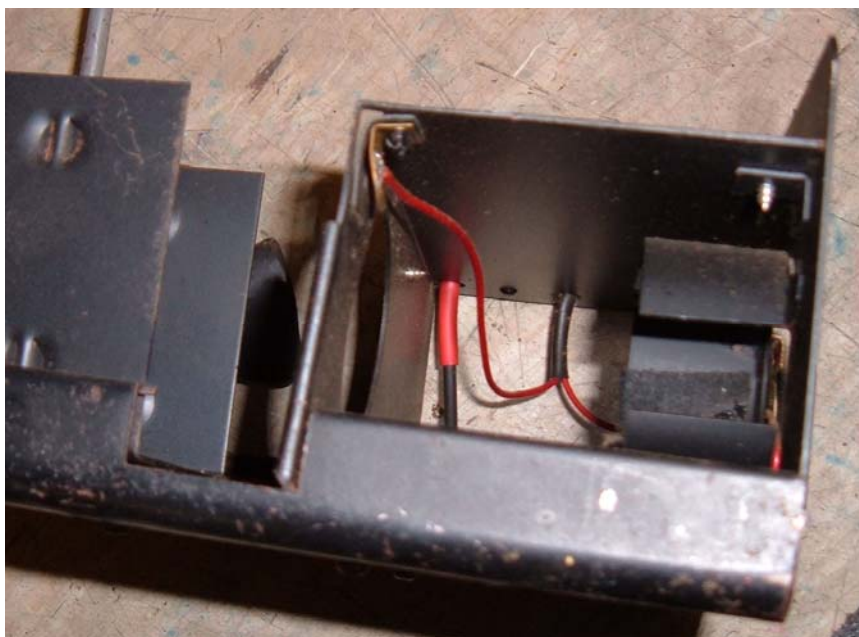
## STEP 8

Inspect the front of lens and interchange power wiring.

To gain access to the wiring the front top cover must be removed. This is done in the same manner as the main cover, via two screws located under the rubber push on feet.



Pull out the rubber feet to reveal screws for removal of top front cover.



With the cover removed the wiring is clearly visible for inspection.

Check the wiring and state of the fuse holder. Replace or remedy as required.

## STEP 9

Re assemble the projector by first re fitting the top covers, then fit the lamp lens, and heat filter in the lamp housing.

Avoid handling the lamp with bare fingers, use a clean cloth or plastic bag. If you do touch the lamp, clean it with alcohol or spirit. The lamp is made from quartz not glass, and finger grease will burn into the quartz causing a dark 'hotspot' resulting in poor light, and premature lamp failure.

## STEP 10

Ensure all screws are replaced and tight. Test the projector operates correctly and the fan is running smoothly.

Should any of the wiring have come adrift during this procedure, you can check against the following diagram.

