DIY DTG PRINTING

Required Maintenance

What you must do keep your printer from clogging and to keep it working well.

1. **DAILY USE**

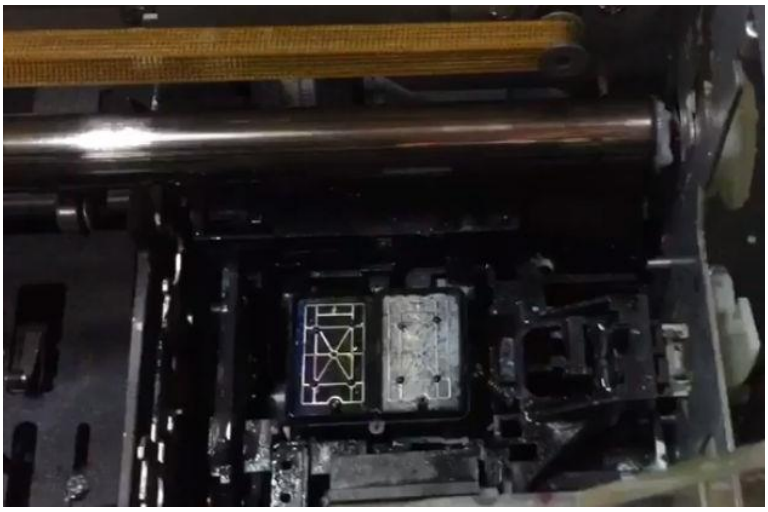
Print daily. Even if just a small image on paper.
This gets the ink moving and helps open up heads that might be partially clogged.

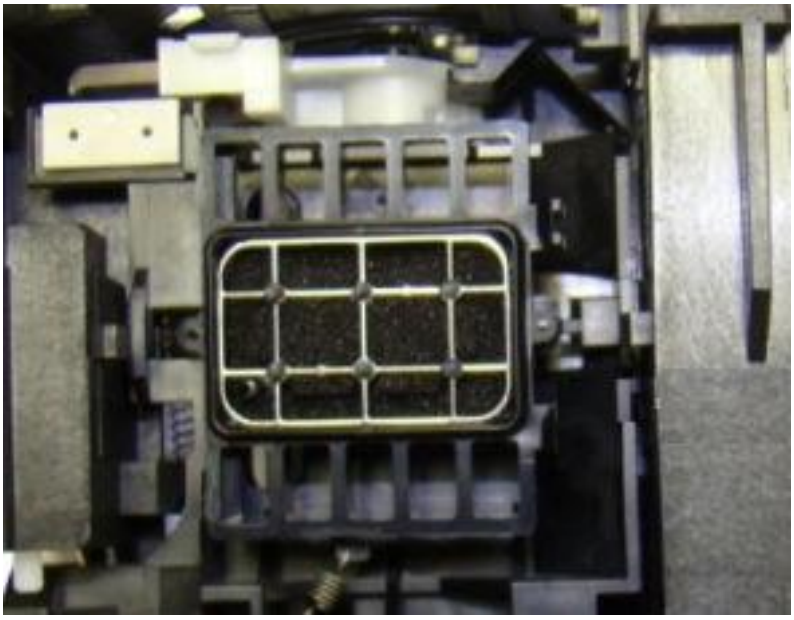
2. **WETCAPPING - Keep Capping Station always Moist**

The capping station typically has a foam "sponge" in the bed of it, there is a chance this foam will get crusty and full of ink. This ink can start to dry out. By simply putting drops of head cleaning fluid in the capping station top, you will keep the head "moist" and help prevent it from drying out.

The Capping Station often resides on the right side of the printer, and is responsible for all aspects of system flushes and cleaning cycles. The Capping Station raises up slightly to create a perfect seal around the print head nozzle plate, then a lower pump activates to pull ink or cleaning solution through the nozzles. Any buildup of ink around the edges of the capping station (or blockage in the lines beneath the assembly) can prevent a seal from forming and will render any attempt at cleaning cycles, ineffective.

Examples of EPSON P600 and L1800/1390 CAPPING STATION SPONGES

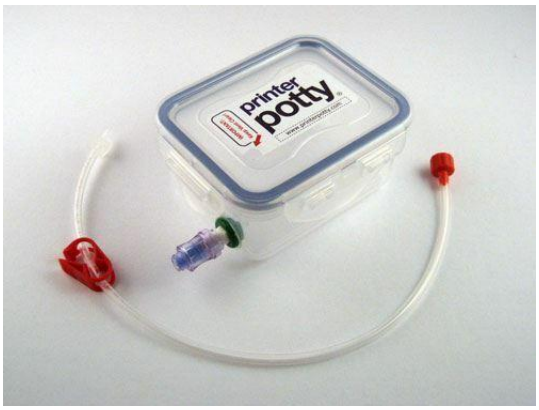




EXTERNAL WASTE TANK

Ensure that you have a fluid catcher, like a small bottle or a container in the back of the printer, connected to the clear tube that protrudes out the back. When the printer performs a cleaning (and often after a wet-capping and ink-charge) it will cycle dirty ink and excess fluid out from the capping station and out through the outflow tubes.

You may need to empty out this external waste tank when it gets full.



A Nozzle Check Every Day. A nozzle check tells you how the nozzles are firing. It is like a "report card." If all the nozzles are firing and the print is weak, then something else is going on. If only 50% of the nozzles are firing then it is OBVIOUS why the print is weak and the reason you only have 50% nozzles is probably a clogged capping station, crusty wiper blade or the machine has been setting for a week without use.

In order to see the **white ink** on a nozzle check, use clear film or something transparent. You can't clearly see how well the white ink is printing on white paper.

3. PRINT RUN Cleanings

Print heads are quite robust. But you can burn them out. You can damage or " burn out " print heads prematurely if you continuously print without performing a regular timed cleaning. The golden rule is DO A CLEANING about every 10-15 white ink prints and about 15-20 CMYK only prints.

Clean the Capping Station area

The capping station is that “tray” that comes up against the bottom of the head assembly and caps it or seals it so the head does not clog. And, it caps the head from outside air when you are doing a head cleaning.

The problem is the capping station can get ink chunks (especially the white) over a period of time. After all, when the machine does a head cleaning cycle the capping station caps the head and a vacuum draws ink out of the head and dumps it into the waste tank. There is a chance excess ink sitting on top of the foam that lines the capping station will start to build up and dry.

If the capping station does not cap tightly, the **Printhead will clog**.
If the clog is white ink, there may be NO WAY to salvage the $600- $800 print head (in the case of P600 Epson).
A “foam tipped swap” works well (available from most drug stores, medical suppliers, or your DTG supplier). Simply soak it in cleaning fluid, or even warm water.

Clean the Wiper Blade

All Epson based printers have a small wiper blade. This blade is used to wipe the bottom of the head. As you print high speed and literally dump ink on a T-Shirt the bottom of the head can start to get ink build up. The wiper wipes the head.

If you are printing with white ink, the wiper can start to get a gummy buildup of white or other ink causing the wiper to not be effective. You should clean the wiper the same way as the capping station. Weekly or several times a week, depending on your print run volume.


Clean up Wiper
& Capping

Clean the Bottom of the Print Head – very gently

When you are printing with the head very low and close to the shirt (for the best quality) the head may start to pick up lint off the shirt.

And, ink can simply start to build up from the amount of ink being pumped through it. The Wiper Blade is supposed to clean off the bottom of the head but ink will start to get around the edge of the head. Using your foam tipped swab, wipe down the bottom of the head and around the edges. Be careful not to scratch the bottom of the head.

Check Your Ink Levels

One of the problems with an "open ink system" is that there is a close relationship between the height of the ink cartriges or tanks and the bottom of the head. If the bottles are too high, ink will siphon out of the head (you might wake up to find all the ink on the machine and the floor). If the ink bottles are too low, you will have ink starvation. If you are using a tank ink system or open cartridges, do NOT overfill the cartridges or bottles. However, if you allow them to get low on ink, you will introduce air into the tubes, and it will take lots of work to get it out.

Shake the White Ink

The CMYK colors are much more stable than the white ink. The Titanium Oxide (TIO2) will settle overnight. Some brands of white ink have "hard settling" where the ink turns to small chunks. If you shake the ink a little you shake the chunks back into it. Head clogs! Other newer brands have a better way of trapping the TIO2 pigment and the settling is "soft settling." This means you can give the ink a shake and the thicker ink in the bottom of the bottle mixes back ink.

You should get in the habit of gently rotating and agitating the white ink bottles or cartridges each morning before you print AND every night before you go home. Just rotate and agitate a little. Very Gently.

Monthly/Weekly Maintenance

If you print a lot you will undoubtedly start to get lint from shirts on major parts of your printer. All Epson based printers have drive belts, encoder strips and other moving parts that can get lint and ink stuck to them.

Clean the Encoder Strip

For most printers, this can be cleaned once a week.

The Encoder Strip is that little strip of plastic that goes across the back of the machine. If you look closely at it you will see small little marks on it. This is the "calibration points" to the printer. The head has a sensor that reads the check marks on this strip and from that calibrates itself.

If you start to get printer errors, or images in weird locations and images in odd various parts of the shirt, chances are the Encoder Strip has ink or lint or dirt on it.

Clean the Encoder Strip very carefully. Extremely carefully.
Use a foam tipped swab or better yet a small pre-packaged pad soaked with Isopropyl Alcohol.

Environmental and Location Concerns that Effect Print Quality

Environment also impacts clogging issues. Besides contributing to ink drying, low humidity or extreme temperatures may cause print heads to overheat. The machine will respond by pushing ink through the print head to cool it, thus wasting ink and costing money.

All DTG machines are sensitive to DRY CONDITIONS. The ink in the head is more prone to clog if the air is dry. If you are in a dry area with low humidity, OR, if you plan to put the machine in a room with very dry heat in the winter, consider using a humidifier. The ideal conditions are: 45% to 65% relative humidity, dust free, with no airflow over printer. Room temperature 68 to 85°F (20 to 29°C).

Try NOT to pretreat (dark) shirts too close to the machine. The mist of the pretreatment may get around the head and clog it.

The Capping Station or also referred to as Maintenance Station is an important component to all Direct to Garment Printer. The print head needs to be protected when not in use and also needs some way to pull ink through the system to prime and clean before printing. If this part is not maintained properly it can cause low print quality and lead to head clogging.

What does the Capping Station do?
Think of the Capping Station like home base for the printer. When the print head moves to its home position a square cap moves up and creates a seal around the print head. This helps create a semi air tight seal around all the ink nozzles. If the print head was left exposed it would clog up very quickly due to the water based ink used for DTG printing. To move ink through the system and to prime the print head with ink a pump is also inside the Capping Station. Because the cap creates a nice seal against the print head it allows ink to be pulled threw the nozzles when the pump is activated. So when a print head clean is performed ink is pulled through the print head for a second and then pulled out into your waste ink container. During this process the wiper blade comes up and cleans across the print head plate.

Keeping the Capping Station clean and running right is very important. The maintenance required is very simple and should only take you a few minutes. The cap area should always be cleaned when you are done printing. The wiper blade should also be cleaned off during this time. A non-static foam applicator should be used with cleaning solution from the manufacturer. Once a week I have found running some cleaning fluid through the Capping Station helps keep all the tubes and connectors free and flowing. The Capping Station is considered a consumable part and will not last forever. Long-term maintenance will mean replacement of some parts.