



## USING ABSOLUTE BLACK INKS FOR MAKING SCREEN POSITIVES ON THE EPSON STYLUS PRO 4000

The following instructions explain how the i2i Absolute Black ink for making screen positives is installed on an Epson Stylus Pro 4000. The Absolute Black ink can be installed in one or multiple cartridges on the printer, can be used alongside full color inks for regular color printing, or can be used in combination with our Absolute Clear inks for the non-active channels on a dedicated screen positive printing machine. The choice of which combination of inks to use is not discussed in these instructions. If you need guidance on the best combination of inks to use for your application, then please refer to the 'Absolute Black buying guide' on our website, or call 847-827-0747.

If you intend to use the Absolute Black inks in every channel of your machine, or in combination with the Absolute Clear inks, then it is best to turn off the 'Auto Nozzle Check' feature on your printer. The auto nozzle check only works with normal full color inks. To turn off the auto nozzle check, go to the menu on the printer display and select 'Printer Set Up' and then 'Auto Nozzle Check'. Set the auto nozzle check to off.

The Absolute Black inks, Absolute Clear inks, and Cave Paint Elite full color pigment inks are supplied in pre-filled 220 ml size cartridges, or in bulk bottles for use with our refillable cartridges. The installation method for pre-filled cartridges is explained first below. If you are going to install refillable cartridges and bulk inks then proceed to the next section.

### INSTALLING PRE-FILLED CARTRIDGES

**Installing on a brand new printer that has never been used with inks before, or on a printer that has been flushed with cleaning fluid.**

Simply install the cartridges in the printer and follow the instructions on the display. The machine should automatically perform an 'initial fill' routine immediately after installing the cartridges to fill the ink system with inks. If the printer does not automatically start this fill process then see the 'Running an initial fill routine' below. When the machine has finished the initial fill routine (indicated by 'Ready' showing on the display), perform a manual nozzle check print on plain paper using the driver software utility to check that all jets are firing on the print heads you intend to use for printing. If you are installing Absolute Black in the black channel only and Absolute Clear in all the other channels, then the nozzle check print will show the black print head only – this is fine. If the nozzle check print shows that some jets are not firing then perform manual cleaning cycles (not auto cleaning) and nozzle check prints until you get a good print. You are now ready to start printing.

**Installing Absolute Black ink in the black channel only on a printer that has Epson original black ink installed, and is going to be used alongside Epson original inks, Absolute Clear inks, or Cave Paint Elite color inks in the other cartridges.**

The Absolute Black ink is mixable with the original Epson black pigment ink (Photo Black or Matte Black) but we recommend purging the ink through to the print head to eliminate any strange printing effect that can be caused by a mixture of the two inks. This can easily be done by running an 'initial fill' routine on the printer. Unfortunately, Epson printers do not have a built in routine to purge ink through the black channel only so

running the 'initial fill' routine will purge through all the channels on the machine. Because of this, all the other cartridges installed on the machine will need at least 25% ink remaining in them (excluding the black cartridge that you are about to change). You will also need at least 25% capacity left in the maintenance tank. Set the printer to run an initial fill (see instructions below) and install the pre-filled Absolute Black cartridge in the black channel, and original Epson cartridges, Absolute Clear cartridges, or Cave Paint Elite pigment ink cartridges in the other channels. Run the initial fill routine and then perform a manual nozzle check print on plain paper using the driver software utility to check that all jets are firing on the print heads you intend to use for printing. If you are installing Absolute Black in the black channel only and Absolute Clear in all the other channels, then the nozzle check print will show the black print head only – this is fine. If the nozzle check print shows that some jets are not firing then perform manual cleaning cycles (not auto cleaning) and nozzle check prints until you get a good print. You are now ready to start printing.

### **Installing Absolute Clear inks, or Cave Paint Elite color inks on a printer that has the Epson original ink installed.**

Simply install the cartridges as the existing cartridges run empty. Both the Absolute Clear ink and the Cave Paint Elite inks are freely mixable with the Epson original inks, so no cleaning or purging is required.

### **Installing Absolute Black ink in every channel on a printer that is using Epson original pigment inks.**

We strongly recommend that a printer running existing Epson inks should be flushed out before installing the Absolute Black ink in every channel on the machine, and Ink2image supplies cleaning cartridges for this purpose. Failure to do so can result in bad printed output or nozzle clogging. To flush out a printer and install the Absolute Black cartridges in every channel, you will need at least 50% capacity left in the maintenance tank. To flush the machine, set the printer to run an initial fill routine (see instructions below) and install cleaning cartridges in every channel. Run the initial fill routine and then ideally leave the printer to 'soak' overnight if possible to allow the cleaning fluid to dissolve any dried ink deposits in the ink system. Set the printer to run another initial fill routine and install the Absolute Black cartridges in every channel. Run the initial fill routine and then perform a manual nozzle check print on plain paper using the driver software utility to check that all jets are firing. If the nozzle check print shows that some jets are not firing then perform manual cleaning cycles (not auto cleaning) and nozzle check prints until you get a good print. You are now ready to start printing. The cleaning cartridges are good for another three flushes, so keep them for re-use in case you ever want to use the machine for full color printing again.

## **RUNNING AN INITIAL FILL ROUTINE**

The printer has a handy initial fill routine built into the firmware that fills the machine's ink system with inks or cleaning fluid. The routine is very simple to set and use. You should always bear in mind that the maintenance tank will need at least 25% capacity remaining in order to run the routine. If the maintenance tank is nearly full then the printer will not allow you to run the initial fill, and an empty tank will need to be installed before the routine can be performed.

### **Setting the initial fill routine**

With the printer switched on, remove all the cartridges from the machine. Turn the printer off by pressing the power button. The printer pump will run for a minute or so before the machine turns itself off.

## Running the initial fill routine

The next time you turn the machine on, the display will prompt you to install cartridges. After you have installed all the cartridges and pushed down the cartridge locking levers, the machine will start running the initial fill routine and the display will show a % figure indicating the progress of the routine which takes about ten minutes. You will need to be present during the running of the routine as the display will prompt you to lift the cartridge locking levers up and down several times during the process. When the routine has finished, the display will read 'ready'.

## INSTALLING REFILLABLE CARTRIDGES

Refillable cartridges are designed for use with bulk inks supplied in bottles, and offer considerable savings over single use pre-filled cartridges. Refillable cartridges can be purchased individually, but are generally supplied in starter kits that include an initial supply of ink. Ink2image refillable cartridges are simple to install, easy to use, and will provide you with many hours of trouble free and lower cost printing. However, the successful use of the system is dependent on how accurately you follow this guide during installation. Please read these instructions and familiarize yourself with the system components before you start the installation. Please also remember that you are now about to start working with bulk ink instead of sealed cartridges. During installation, protect the area around your printer in case of ink spillage and wear the disposable gloves included with the kit. Have a roll of paper towel handy. Remember, accidents can happen!

### SYSTEM COMPONENTS

1. Refillable Cartridges (8).
2. Disposable gloves.
3. Priming syringe with end adaptor.
4. Filling funnels.
5. Instruction CD or printed instructions.



The method of installing refillable cartridges is different than with pre-filled single use cartridges. Firstly, the cartridges are supplied empty and you will need to fill them. Secondly, the first time you fill a refillable cartridge, the cartridge will need to be primed using the included syringe to remove a small amount of air from an ink channel in the front of the cartridge. However, this priming is not necessary if you are going to run an initial fill routine during installation – see options below. Thirdly, refillable cartridges can be used with cleaning fluid prior to filling them with ink if flushing of the printer is required before installing the Absolute Black inks – see options below. The details on filling and priming refillable cartridges are included in the next section of these instructions. Read the section below for specific instructions on the ink set up that you intend to use.

The Epson Pro 4000 has a useful feature that enables the cartridge ink monitoring chip readers to be turned off when using refillable cartridges. This means that the cartridge ink levels are not monitored by the machine or the driver software and no manual resetting of the chips is required when a cartridge runs down. You simply keep a visual eye on the ink levels in the translucent refillable cartridges and top up ink levels as required – this can be done without removing the cartridges from the machine. However, if you intend to run

refillable cartridges in some channels alongside single use pre-filled cartridges in other channels, then we recommend that you do not turn off the chip readers as you will not know when the single use cartridges are empty. In this case, you will need a manual chip resetter to reset the ink monitor chips on the refillable cartridges each time you refill them. Chip resetters are available from Ink2image. If you are going to use refillable cartridges in every channel on the machines then the chip readers should be turned off before beginning the installation.

### **Turning off the chip readers on an Epson 4000 Printer**

Start with the printer turned off.

Press and hold the **Left Arrow**, **Up Arrow**, and **Down Arrow** buttons, and push the **Power** button to turn on the printer.

When the display shows '**SELF TESTING**', release all buttons.

Press **Down Arrow** once, until you see '**SERVICE CONFIG**' on the display.

Press the **MENU** button once. The display will read '**CHANGE DEVICE-ID**'.

Press the **Down Arrow** button two times, until the display reads '**ED MODE**'.

Press the **MENU** button once.

The display reads '**\*X**'.

Press the **Down Arrow** button until the display reads '**O**'.

Press the **MENU** button once, and the display will read '**\*O**'.

Note: Options in the Ed Mode function are: **X** = UK AND NORTH AMERICA – CHIP ON **N**= ASIA - CHIP ON **O**= CHIP OFF - ALL COUNTRIES. Should you ever want to turn the chip readers back on then you would enter 'X' as the Ed Mode setting.

Push the **Power** button to turn the machine off.

Push the **Power** button to turn the machine on.

The printer will display '**Ready**' with '**OXXXXXXXX**' in place of the normal ink cartridge status bars. Note that the status of all ink cartridges will no longer be monitored. This setting is written to the printer's memory, and will not change when the power is cycled.

### **Installing refillable cartridges on a brand new printer that has never been used with inks before, or on a printer that has been flushed with cleaning fluid.**

Simply fill and install all the refillable cartridges (without priming) in the printer and follow the instructions on the display. The machine should automatically perform an 'initial fill' routine immediately after installing the cartridges to fill the ink system with inks. If the printer does not automatically start this fill process then see the 'Running an initial fill routine' below. When the machine has finished the initial fill routine (indicated by 'Ready' showing on the display), perform a manual nozzle check print on plain paper using the driver software utility to check that all jets are firing on the print heads you intend to use for printing. If you are installing Absolute Black in the black channel only and Absolute Clear in all the other channels, then the nozzle check print will show the black print head only – this is fine. If the nozzle check print shows that some jets are not firing then perform manual cleaning cycles (not auto cleaning) and nozzle check prints until you get a good print. You are now ready to start printing.

**Installing a refillable cartridge and Absolute Black ink in the black channel only on a printer that has Epson original black ink installed, and is going to be used alongside Epson original inks, Absolute Clear inks, or Cave Paint Elite color inks in pre-filled single use cartridges.**

The Absolute Black ink is mixable with the original Epson black pigment ink (Photo Black or Matte Black) but we recommend purging the ink through to the print head to eliminate any strange printing effect that can be caused by a mixture of the two inks. This can easily be done by running an 'initial fill' routine on the printer. Unfortunately, Epson printers do not have a built in routine to purge ink through the black channel only so running the 'initial fill' routine will purge through all the channels on the machine. Because of this, all the cartridges installed on the machine will need at least 25% ink remaining in them (excluding the black cartridge that you are about to change). You will also need at least 25% capacity left in the maintenance tank. Set the printer to run an initial fill (see instructions below) and install the refillable cartridge filled with Absolute Black ink in the black channel (no priming required), and original Epson cartridges, Absolute Clear cartridges (single use or refillable), or Cave Paint Elite pigment ink cartridges (single use or refillable) in the other channels. Run the initial fill routine and then perform a manual nozzle check print on plain paper using the driver software utility to check that all jets are firing on the print heads you intend to use for printing. If you are installing Absolute Black in the black channel only and Absolute Clear in all the other channels, then the nozzle check print will show the black print head only – this is fine. If the nozzle check print shows that some jets are not firing then perform manual cleaning cycles (not auto cleaning) and nozzle check prints until you get a good print. You are now ready to start printing.

### **Installing refillable cartridges using Absolute Clear inks, or Cave Paint Elite color inks on a printer that has the Epson original ink installed.**

Simply install the refillable cartridges as the existing cartridges run empty. Each refillable cartridge will need priming with the included syringe (see instructions below). Both the Absolute Clear ink and the Cave Paint Elite inks are freely mixable with the Epson original inks, so no cleaning or purging is required.

### **Installing refillable cartridges and Absolute Black ink in every channel on a printer that is using Epson original pigment inks.**

We strongly recommend that a printer running existing Epson inks should be flushed out before installing the Absolute Black ink in every channel on the machine. Ink2image supplies cleaning fluid in bulk for use in refillable cartridges for this purpose. Failure to do so can result in bad printed output or nozzle clogging. To flush out a printer and install the Absolute Black inks in every channel, you will need at least 50% capacity left in the maintenance tank. To flush the machine, set the printer to run an initial fill routine (see instructions below). Fill each refillable cartridge with around 1" of cleaning fluid (no cartridge priming required) and install the cartridges in every channel. Run the initial fill routine and then ideally leave the printer to 'soak' overnight if possible to allow the cleaning fluid to dissolve any dried ink deposits in the ink system. Set the printer to run another initial fill routine. Empty any cleaning fluid remaining in the refillable cartridges by pouring it out through the filling hole and back into the cleaning fluid bottle, and fill all the cartridges with Absolute Black ink (no cartridge priming required). Install the Absolute Black cartridges in every channel. Run the initial fill routine and then perform a manual nozzle check print on plain paper using the driver software utility to check that all jets are firing. If the nozzle check print shows that some jets are not firing then perform manual cleaning cycles (not auto cleaning) and nozzle check prints until you get a good print. You are now ready to start printing.

## **RUNNING AN INITIAL FILL ROUTINE**

The printer has a handy initial fill routine built in to the firmware that fills the machine's ink system with inks or cleaning fluid. The routine is very simple to set and use. You should always bear in mind that the maintenance tank will need at least 25% capacity remaining in order to run the routine. If the maintenance

tank is nearly full then the printer will not allow you to run the initial fill, and an empty tank will need to be installed before the routine can be performed.

### **Setting the initial fill routine**

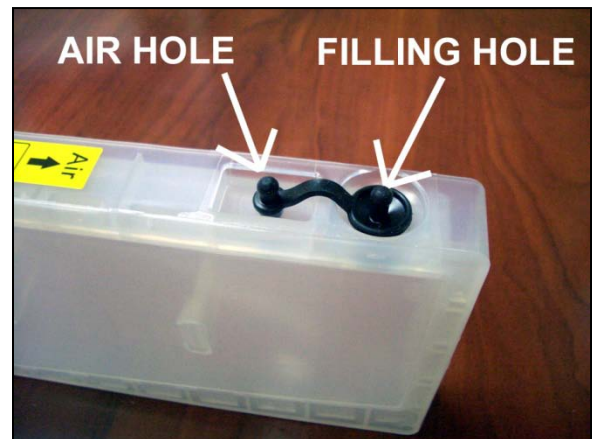
With the printer switched on, remove all the cartridges from the machine. Turn the printer off by pressing the power button. The printer pump will run for a minute or so before the machine turns itself off.

### **Running the initial fill routine**

The next time you turn the machine on, the display will prompt you to install cartridges. After you have installed all the cartridges and pushed down the cartridge locking levers, the machine will start running the initial fill routine and the display will show a % figure indicating the progress of the routine which takes about ten minutes. You will need to be present during the running of the routine as the display will prompt you to lift the cartridge locking levers up and down several times during the process. When the routine has finished, the display will read 'ready'.

### **FILLING REFILLABLE CARTRIDGES**

Firstly, familiarize yourself with the two holes and the rubber bungs on top of the cartridges. The smaller hole is the air vent hole that lets air into the cartridge as ink is used up. The rubber bung **must be removed from the air vent hole when the printer is being used** or ink will not be allowed to flow out of the cartridge. The only times that you should push the rubber bung into the air vent hole is when you have the cartridge out of the printer, or if you intend to not use the printer for an extended period of time – putting the bung in the air vent hole will prevent ink evaporation. The bigger hole on the top of the cartridge is the ink filling hole and the bung should only be removed from this hole when you are filling a cartridge. The ink filling hole should have the bung inserted during normal operation.



Fill the cartridges that you are going to install at this point. To do this, place each cartridge on a flat surface. If you are concerned about spilling ink then place a few layers of paper towel under the cartridge. Remove the bung from the ink filling hole and leave the bung in the air vent hole. Place a clean filling funnel into the filling hole, as in this picture. Before pouring ink into the cartridge, double check that you are filling the correct color cartridge with the correct ink color. Slowly pour ink into the funnel and fill the cartridge to within ½" (1 cm) of the top. Remove the funnel and insert the bung back into the filling hole. Wash out the funnel with water under a faucet, dry the funnel with paper towel, and store in a clean, safe place for use the next time you need to refill. Repeat the filling process with each cartridge in turn using a clean funnel for each cartridge and ensuring you fill the correct color ink into the correct color cartridge.



Remove the funnel and insert the bung back into the filling hole. Wash out the funnel with water under a faucet, dry the funnel with paper towel, and store in a clean, safe place for use the next time you need to refill. Repeat the filling process with each cartridge in turn using a clean funnel for each cartridge and ensuring you fill the correct color ink into the correct color cartridge.



## PRIMING CARTRIDGES INDIVIDUALLY

If you are installing refillable cartridges one at a time so existing standard cartridges can be used up, you will need to extract a small amount of air from each refillable cartridge that gets trapped during the initial filling process before you first install the cartridge in the printer. Failure to do this will mean that this trapped air will eventually make its way to the print head and cause some nozzle drop outs during printing. Several cleaning cycles would be needed to remove this air if this happens.

To remove this trapped air, take the priming syringe with end adaptor fitted and gently insert the syringe through the rubber seal in the ink exit valve at the front of a cartridge, as in this picture. Remove the rubber bung from the air vent hole on the top of the cartridge and gently pull on the syringe plunger until a small amount of ink is sucked into the syringe. Replace the rubber bung in the air vent hole and remove the syringe from the ink exit hole. Any ink in the syringe can be returned to the ink bottle of the appropriate color or type. Wash the syringe out with water under a faucet. Repeat this process with each cartridge you intend to install at this point, remembering to wash out the syringe between colors so that no cross contamination of colors can occur. Once you have removed the air from all the cartridges, install the cartridge or cartridges into the printer just as you would with normal cartridges. **Remember to remove the rubber bung from the air vent hole on each cartridge after you install them.** The printer is now ready to be used. **Please note** that this process of using a syringe to remove air is not required when installing all the cartridges at one time – the machine’s initial fill routine as described in the previous sections will automatically remove the trapped air.



## REFILLING THE REFILLABLE CARTRIDGES

Cartridges should be refilled before the ink levels get to within ½” (1 cm) of the bottom of the cartridge or when the printer display indicates that the cartridge is empty. Refilling a cartridge is easy and can be performed with the cartridge in the printer. Before refilling a cartridge though, it is advisable to reset the chip on the cartridge so that the cartridge will read full again once it has been refilled. Resetting of the cartridge chip is only necessary if you have not turned off the chip readers on the printer, as described earlier in these instructions. If you are running refillable cartridges in all channels on the printer and have the chip readers tuned off, then ignore the chip resetting procedure in the next paragraph and continue to the refill instructions below.

To reset a cartridge chip, insert the rubber bung into the air vent hole on the top of the cartridge, and remove the cartridge from the printer. Take the chip resetter and line up the seven pins on the chip resetter with the seven gold contacts on the cartridge chip as in this picture. Gently push the resetter onto the chip (the pins are spring loaded). If the pins on the resetter are lined up correctly with the gold pads then the light on the resetter will flash red for a few seconds and then turn green. The green light indicates that the chip has been successfully reset to full. Reinstall the cartridge back into the printer ready for refilling.



Before refilling, always double check you are putting the correct ink into the correct color cartridge. To refill a cartridge, simply remove the bung from the filling hole and using a clean funnel, fill the cartridge with ink to within ½" (1 cm) of the top surface. Remove the funnel and insert the bung back into the filling hole. Wash out the funnel with water under a faucet and keep in a safe and clean place for the next time you need to refill.

## **USER TIPS**

The use of an Ink2image refillable cartridge system is very simple to use as long as you remember these important points:-

1. Top up the cartridges regularly with ink. Be aware that certain colors will be used more quickly than others depending on what type of printing you do. For instance, the black ink will be used quicker than the other cartridges if you are printing screen positives using the black cartridge only. Or, if your ink set up also allows you to print full color images, then the light colors will also run down quickly. Never let the ink levels drop below ½" (1 cm) from the bottom of the cartridge and don't fill higher than ½" (1 cm) from the top of cartridge.
2. If you do accidentally let a cartridge run dry, refill and prime the cartridge as described above.
3. When you have finished printing, always turn your printer off.
4. Always try and use your printer at least once a week, even if you only print one small print. This will keep the ink fresh in the printer's print heads and reduce the chance of clogging or drying out of the inks. If you are not going to use your printer for more than four weeks, then we recommend removing the cartridges and flushing the printer with cleaning cartridges or, if you are using refillable cartridges, then fill the cartridges with cleaning fluid and perform an initial fill routine.
5. The ink cartridge chips can fail from time to time. A failed chip will show up as an 'Install cartridge' message on the printer display. If this happens, then the cartridge will need to be replaced and spare refillable cartridges are available from Ink2image. Replacing the cartridge is simple – just follow the 'Installing cartridges individually' section above. You may want to consider keeping a spare set of refillable cartridges on hand if your printer is used in a production environment where down time is critical.

Apart from these points, you should use your printer just as you would with normal cartridges and, as long as you follow these simple guidelines, you will enjoy trouble free and cost saving printing.

If you require technical assistance or support with your Ink2image refillable cartridge system, please initially contact the store or dealer where the system was purchased. All Ink2image dealers are well trained in the operation of the system and can help with most problems. Alternatively, contact Ink2image technical support on 1-800-443-9508 or 847-827-0747, or at [inquiries@ink2image.com](mailto:inquiries@ink2image.com).

### **30 DAY GUARANTEE TO REPLACE DEFECTIVE PARTS**

Ink2image guarantees all parts are defect-free for a period of 30 days from the date that you receive your new Ink2image refillable cartridge system. If you have received a defective part, please initially contact the retailer or dealer from where the system was purchased.



## DISCLAIMER

Because Ink2image refillable cartridges are self installed by the user, Ink2image is not responsible for any damages to your printer, whether they are or are not related to the Ink2image refillable cartridge system. Please contact the store or dealer where the printer was purchased, or the printer manufacturer for any problems or questions related to the printer and its operation.

If the Customer chooses to use ink in the system from another manufacturer other than Ink2image, and is not satisfied with the ink, or it clogs the printer or the bulk feed system, it will be the Customers responsibility to pay for the parts to repair the system and restore it to normal usage. We can only guarantee that the Ink2image refillable cartridge system will deliver Ink2image ink just as well as a normal ink cartridge. We will not accept returns of used systems, or systems filled with third party ink that the customer later decides does not meet their specific needs.