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Refill Damper Startup Instructions

Background:

Q1: What is a damper?

A1: Dampers are containers that properly provide inks to gravity and pressure fed print heads. All Epson pro printers contain dampers above the head under the print head cover. Dampers have no chip on them and this makes for a versatile delivery system in Epson desktop printers, as the chip is a one piece device and mounted separately from the ink damper. Our Generation5 (GEN5) dampers are the ultimate delivery device for inks.

Q2: What is a RATF chip? What is a RBTF? What is a RSTF?

A2: RATF is an acronym for "Reset All positions To Full" RBTF="Reset Button Push to Full" RSTF= "Reset Single Position to Full" Any and all of these chips are excellent means to reset your printer without removal of anything from the printer in the resetting process.

Q3: Why not these cheaper CISS and China refillable carts with a chip mounted directly to the carts?

A3: Mounted refillable carts and chips have the same encoding as Epson cart chips for levels, but the carts hold nearly 3 times as much ink. You'll be removing these carts and reseating them every time the printer "thinks a slot is empty". When you pull that cart you'll see ink in it and most likely just be reinserting it to reset the printer and not refilling it. Since it is likely you have a 4, 5 or 6 color printer these resets will be happening all of the time and you'll quickly lose sight / remembrance of when you last serviced it and you'll sooner or later run a tank dry. Here's a quick example of what you get with a damper versus a refillable china cart. You'll produce rapid wear and tear removing and resetting plus you promote ink drying on the ink supply stem while the cart is out of the printer. With nothing ever really removed you have low troubleshooting with the chip separate from the damper excellent versatility on "what can be done" to troubleshoot. To swap a damper you're not even touching the chip, for instance. To put in a cleaning cart damper, you're not touching the chip.

Action	China Refillable Sys	RATF Damper Sys	RBTF Damper Sys	RSTF Damper Sys
Refilling	Out of printer	In printer+	In printer+	In printer+
Resetting	Out of printer	In printer+	In printer+	In printer+
Wear & Tear	HIGH	NONE+	NONE+	NONE+
Troubleshooting	HIGH	LOW+	LOW+	LOW+
Versatility options	NONE	Excellent+	Excellent+	Excellent+
Future Proof	New System	New Chip Only+	New Chip Only+	New Chip Only+
Chip Encoding*1	Faster updates+	Slowest Updates	Slow Updates	Faster Updates+

*1 The only area where our system lags the China systems. It takes us longer to update the RA & RB chips. The RSTF chip is a China chip mounted to our damper bars and is always intended to be an interim chip, hence we are tied with the china systems on only one key measure and supersede them on all other measures.

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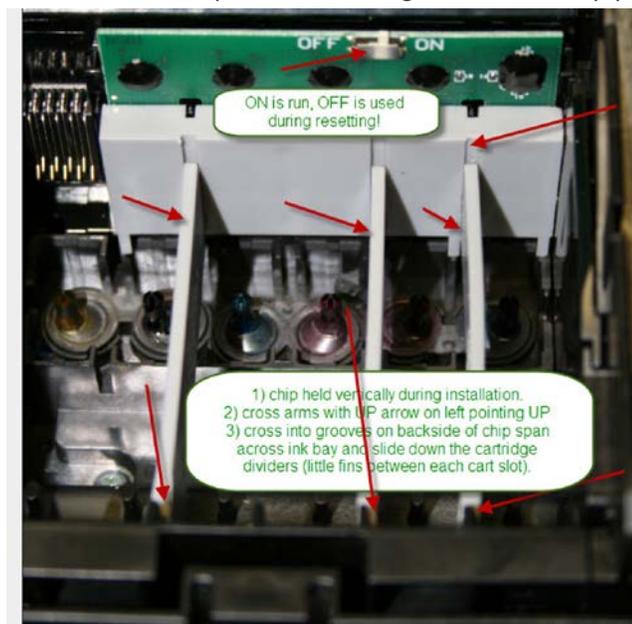
Refill Damper Startup Instructions

[A Complete Start to Finish sample video is here](#)

Q4: Ok I bought or want to know how it works, what do I Do?

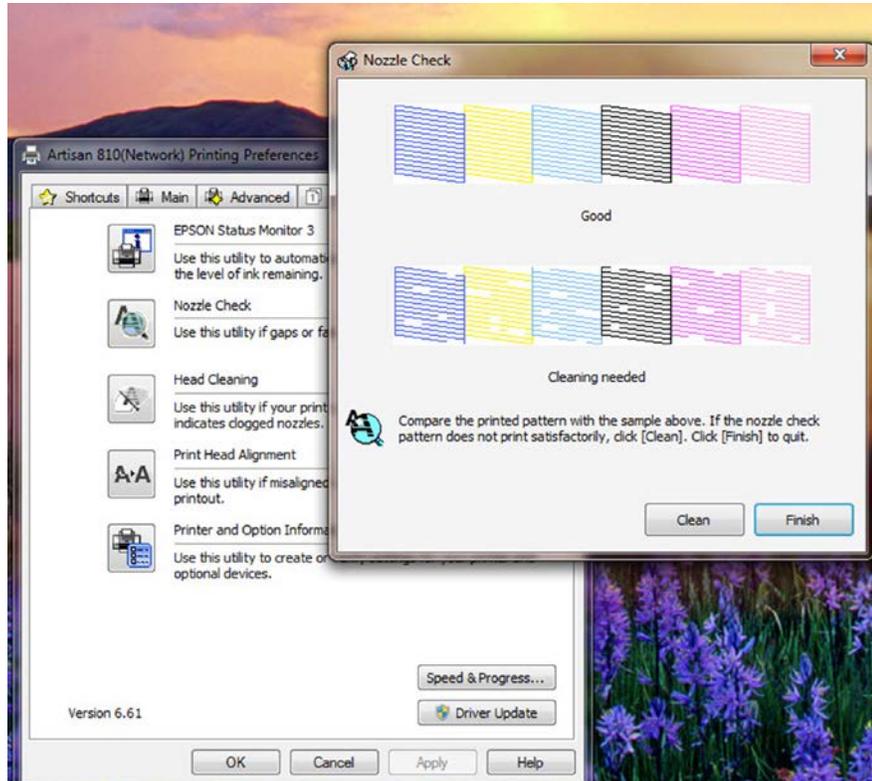
A4: Dampers need to be initially primed BEFORE installation, then chip installed, then partially filled dampers installed. Then dampers topped up and the printer tested. During testing (once you are sure the printer is operating) the carts should be rechecked to be completely and fully seated and then taped down to prevent upward movement. We just use choice 1 (strapping tape (the kind with the fibers embedded in the tape)) OR duct tape. The tape used should be about ¾ to 1 inch wide strip and not cover any access holes, air vents or refill ports. So there's the overview and let's get to the details;

- 1) Review the damper startup video here: [Damper Loading Video](#)
- 2) Install the Chip (this is a generic overview) chips may be slightly different due to positions but the basic mounting of all damper chip bars is the same;
 - A) Chip Held completely vertical during installation and slid downward until covering gold pins in printer and held firmly against pins. Scroll ahead to 9:20 minutes and second on this video to see this chip installation: [Live Damper Chip Install 9:20 to 10:20](#)
 - B) Cross Arms span the bay held with UP ARROW pointing up and slid downward in chip back slot and engaging the carts divider fins across to the other side of bay. DO NOT release your hold on chip until ALL cross arms are in the slots and pushed all the way to the bottom of chip slot. This wedges the chip in place and it (if positioned properly) will never need to be moved except in the case of MK PK chips like on the higher end desktop printers like R2880 etc. where two



chips are provided. In these cases we suggest a strong pair of angled grip forceps for removing the chip and cross arms without dislodgement of the dampers.

- 3) Install the partially filled dampers. Review again the damper startup video here: [Damper Loading Video](#) you should install the partially filled dampers as soon as possible immediately following the chip installation. Set chip to ON position (RATF type). Set Chip to ON (Dual Switch RATF type) by moving BOTH switches toward center (left switch moved right and right switch moved left/ towards center).
- 4) Top off, completely fill the cartridges see video : [refill top off dampers 27:42 - 29:00 minutes into video](#) hit ink button after closing up the cover and the printer will charge and show ink levels. Congratulations you are now refilling at 95% off retail. But you should know how to maintain, test and troubleshoot your system.
 - A) Testing is comprised of ink nozzles and flow test and the FIRST STEP is nozzle check tests. A sample of the typical nozzle check is here: You should know how to get to printing preferences and on the maintenance or utility tab access the built-in testing of performing a nozzle check.



- B) Nozzle checks tell you a lot of information and we want you to be well informed, so listen carefully here. Your printer here is a 1970's car with a carburetor. The carburetor is your print head. Broken Nozzle check patterns can indicate a 1) loss of flow to the head (as in not a good priming job) or 2) some air ingestion into the head or 3) some blocked nozzles underneath or even inside the head. If you know you had great nozzle checks prior to installing the system then you have all the data you need to narrow down to 1) OR 2).
- C) Here's how you proceed! (InkJetCarts is a bulk ink supply provider and a Green Manufacturer and we don't want you to waste anything more than you have too, even our lower cost ink is a valuable item to you and us). Epson would have you do a Head cleaning routine anytime that even one digit is missing and this is very wasteful of inks. All of your channels will fire ink to clear the head and you will see no result until a following nozzle check. Three or more head cleanings CAN nearly empty a SET of carts! That being said here's a chart of ink flow aid.

Nozzle check Results	All Colors Present & all >25% population each	All colors present some <20%	1 Pattern or more Blank/Missing or <20%
	Use color priming charts instead of head cleanings	Your call charts or Head Cleaning 50/50 chance	Head Cleaning routine required
Pattern results	Should not stall or starve	Be ready to cancel print	NO PRINTING AT ALL RECOMMENDED!

4) Continued

D) Per the chart above as a guide you should NEVER PRINT ANYTHING unless all colors are present and at least 25% population. Without satisfactory ink flow anything you'd print would look terrible anyway. You should really try for 100% nozzle checks all the time. Charts will cost much less than head cleaning routines but (per the chart there are sometimes you shouldn't use them, as in the case of your head is not firing anything on one or more colors). Back to the carbureted car example, if your head has so little ink in it that it will not fire inks you must do a head cleaning until you have something in it to help draw new inks from the dampers. By contrast if your head is printing and it gets worse and worse with each print actions you should inspect that the ink dampers are 1) fully inserted 2) contain inks and lastly if still no help 3) recheck the priming of the internal damper. To start using the charts as a cleaning, clearing and nozzle check/flow repairing aid you must actually print the charts correctly. To do this please review the HowToTest.pdf document found here : [How To Test Tutorial](#) or direct download : [How To Test Download](#) . The key elements of how to shoot the charts properly are in "advanced properties" and include highest quality paper for the chosen paper type, we prefer a higher quality media choice as well like "premium presentation matte" instead of plain paper for (more flow/dpi count is possible) with a higher quality media than with plain paper. Next component is that "ICM" and "OFF No Color is selected". Also disable high speed. Save this setting and use it only with the charts. Make sure these settings are not still active when using live / real images else you'll have no color management with your real photos. In the case of 6 channel printers or higher you should create a saved setting for each paper type you shoot prints to : For example a "Charts Glossy" and a "Charts Matte" separate saved setting. In Most Cases you'll be able to use plain paper for test charts as the actual media but you are controlling "the printer settings for testing purposes" Even 8 channel Epson printers do not NOT use all 8 channels and it is the printer paper type that determines which channels will fire in the production of that print. Another example is a 6 color Epson stylus photo 1400 where there is Cyan and a Light Cyan and the magentas as well. The light colors will fire on photo paper and the straight colors will fire on plain papers. You can print the Purge-Light magenta. Jpg chart all day long with the "Charts Matte" setting and you'll never even fire a drop of Light Magenta inks. In the case of the Epson desktops with two black cartridges of the same type (dual similar black carts), these printers throw you a minor curve ball where these cartridges fire on alternating prints and NOT together. The ONLY instance where both carts will ever fire is on the nozzle check. This adds a small variable to your troubleshooting whereas it might be important to print a small paragraph of text only to see which one shows signs of banding. The first one in the hopper is ODD and the second is the even print. Try to print the same text image on the timing of the good print and print a purge-black.jpg on the timing of the poorly printing black cartridge order. This will save inks from the cart that is printing well.

E) After you have great nozzle checks you should print a test image and inspect. A known excellent image is here and allows a full spectrum of color test. : [Test Chart PDI-Target DCP High Resolution](#) direct download here : [PDI Target Download](#)

5) Last but not least you should print a nozzle check at least every day that the printer is ON and being used. You should always turn off the printer at least every other day as a minimum for a maintenance action of the lower side of the head. You should use head cleanings only when absolutely necessary and no more than required. You should always print a nozzle check before using expensive media. Test charts will print at 1/20th of a head cleaning. Even though we'd never recommend 20 charts without checking something else first, this does give you a good idea of how much ink is saved over an Epson head cleaning routine.

Welcome to refilling and we're here to help. Don't hesitate to call or email us if you need help. We've been refilling for 30 years and if you're our eyes we'll tell you what's wrong.

More technical support documents and videos are coming soon. From Color Management 101 training to Advanced Print head cleaning and health videos and tutorials.

InkJetCarts is building Better Refillers and low Prices are Just a Bonus.