

# Epson DX4 Print Head Recovery with PHD3

Recovering Epson print heads is no easy task due to their fragility. Unlike most other print heads, they can be easily damaged with pressure, sonic power, fluid chemistry and high temperature. Therefore it's a good idea to avoid using too much of these.

## Step 1. Flush the print head's plastic manifold

This step is required only for completely clogged print heads. Detach the plastic manifold from your Epson DX4 print head and flush it using Print Head Doctor machine with fluid # 1DX. Refer to our video on more detailed instructions. That video can be found by searching "Epson DX4 recovery" on YouTube. You can flush it in a forward or reverse direction. When done, re-attach the manifold.

## Step 2. Forward flush the print head

Set up your print head as per diagram below. Use fluid # 1DX. For water-based print heads, use fluid 1W. All "W" fluids are designed for water-based Epson heads, while "DX" fluids are for eco-solvent Epson heads. Set fluid temperature to 25°C. Start recovery cycle called **LPRF Foam-Free (F8)**. This cycle does not use any ultrasound or air, therefore the risk of print head damage is close to zero. Always keep an eye on the pressure. The gauge should not go higher than the MAX Pressure at any moment of time. After 10-15 minutes, lift the adapter to check nozzles while the machine is pumping fluid. Increase pressure for a moment up to a maximum of 7 psi to be able to see the jets coming out of the nozzles. Decrease it immediately. Continue the cycle and re-check nozzles at the end of it. If you don't see any improvements, proceed to Step 3. Otherwise keep repeating Step 2.

## Step 3. Reverse Flush the print head

PHD3 users: If you have a Reverse Flushing cap, set up your print head for reverse flushing as shown on the chart in this document. If you don't have RF Cap, use another (suction) method of reverse flushing as shown on a chart. Run **Syphon (F6)** cycle. After it's completed, set up your print head for Forward Flushing and run it with F8 cycle. During the cycle, turn on the ultrasound on the tank manually for 20 seconds. Any longer exposure to the ultrasound will increase the chances of print head damage.

## Step 4. Proceed with Forward Flushing

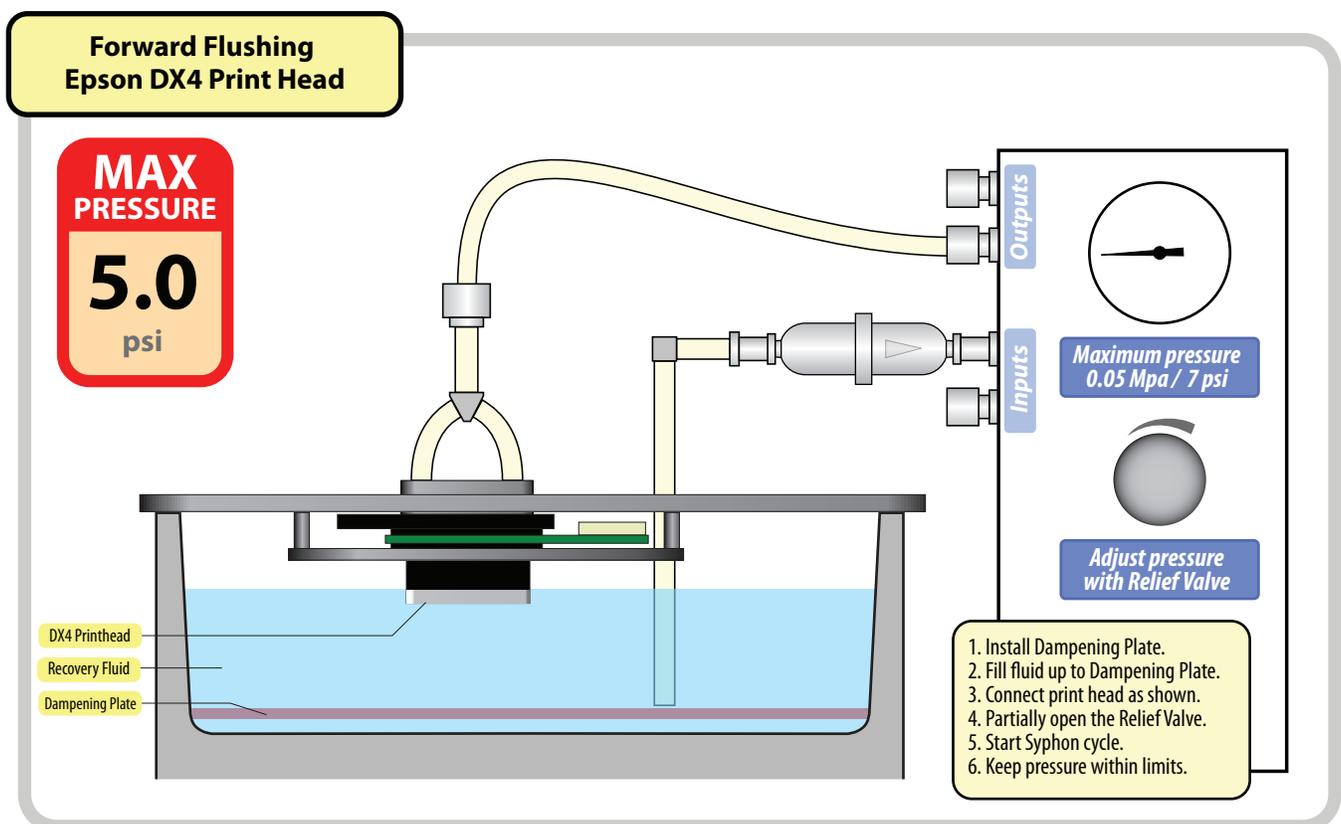
If you don't see improvements in the nozzles condition, increase fluid temperature to 30°C and repeat the F8 cycle. Still no improvement: move on to the next fluid (the fluid with the next number). When changing fluids, follow instructions contained in a separate manual. You may manually add 20-second intervals of ultrasound during these flushes. Try to keep the use of the ultrasound to a minimum.

Don't forget to clean the electronics on a print head with a Contact Cleaner spray or with alcohol. Fill print head with the flushing solution that came with your ink, and then purge it out with air. Let the print head sit for 24 hours before installing it on a printer.

### Factors Contributing to Epson Print Head Destruction

1. Too much ultrasonic power.
2. High internal pressure.
3. Aggressive chemistry of fluids.
4. Excessive temperature.

**Keep these factors down!**

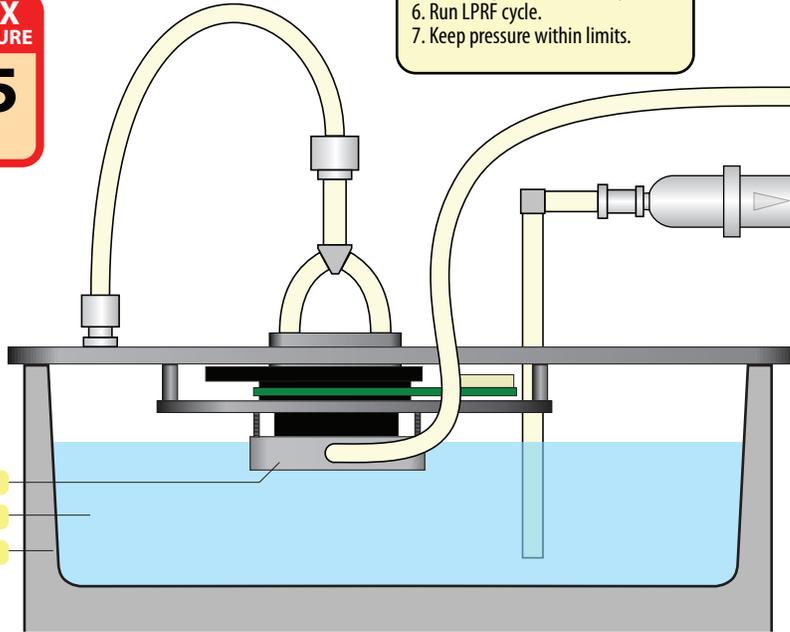


### Reverse Flushing DX4 head with Reverse Flushing cap

**MAX  
PRESSURE**  
**15**  
psi

1. Install Reverse Flushing cap.
2. Install 1st stage filter(s).
3. Connect RF cap tubing to output.
4. Plug the second output port.
5. Connect print head to adapter.
6. Run LPRF cycle.
7. Keep pressure within limits.

RF Cap  
Recovery Fluid  
Tank



**Outputs**

**Inputs**

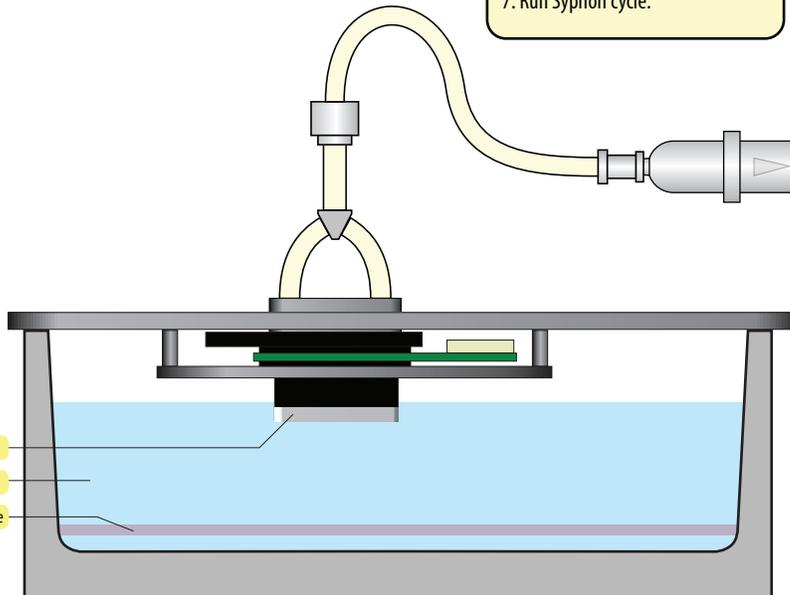
Maximum pressure  
0.15 Mpa / 22 psi

Adjust pressure  
with Relief Valve

### Reverse Flushing DX4 head using Suction Method

1. Plug both output ports.
2. Plug one input port.
3. Open Relief Valve (one turn).
4. Install Dampening Plate.
5. Fluid must reach Dampening Plate.
6. Connect print head as shown.
7. Run Syphon cycle.

DX4 Printhead  
Recovery Fluid  
Dampening Plate



**Outputs**

**Inputs**

Pressure at zero

Relief valve open