



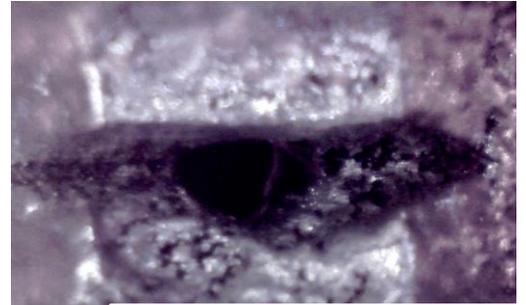
# Understanding the Causes of Nozzle Wear

Viper XPT-6000

## Causes of Nozzle Wear on the Viper XPT

The nozzle tips of any spray system are a wear item in the Viper XPT and will over time due to a variety of factors, erode the spray tip causing poor spray patterns. Below are several of the common factors that can cause spray tip degradation and poor pretreatment machine performance.

1. **Erosion:** Erosion is the gradual removal of nozzle material which causes the nozzle orifice and internal flow passages to enlarge. When this happens your spray pattern will change and additional pretreatment will be applied to the garment in comparison to when the tip was new.
2. **Corrosion:** Some pretreatments that are used in DTG printing are very highly corrosive. This can cause the nozzle material to wear internally as well as externally, enlarging the orifice and corroding the spray tip features causing irregular spray patterns.



This is a close up of a corroded or eroded spray tip which will cause irregular spray patterns.

3. **Caking/Bearding:** This is the build-up of pretreatment material on the inside or outer edges of the orifice. Most typically if nozzle tips are not cleaned and flushed daily, pretreatment can dry and build up on the tips. Many times this is imperceptible to the naked eye, but this build-up can cause irregular spray patterns by obstructing the orifice and/or flow passages inside the tip.



Notice the gummed up area and polymers collected around the orifice.

4. **Accidental Damage:** Use of improper cleaning tools can result in scratches that can affect nozzle performance and spray patterns. Dropping the tip during maintenance or installation can also damage the nozzle tip causing irregular spray patterns. When cleaning the Viper's spray tips, use only a soft bristle toothbrush and Viper Anti-Venom cleaning solution. Make sure to rinse off with water after cleaning to help remove any contaminants.

5. **Clogging:** Clogging is when unwanted solid particles block the inside of the orifice and cause distorted spray patterns. Most commonly what happens in the Viper is as the polymers in the pretreatment separate from solution they can collect and, when the Viper is sprayed are not able to be blown through the nozzle tip where it can collect causing a clog and a bad spray pattern.



Polymer build-up in the orifice is one cause of clogging.