

# Technical Disclosure Commons

---

Defensive Publications Series

---

June 2020

## MULTIPLE INK LINES PURGE TOOL

HP INC

Follow this and additional works at: [https://www.tdcommons.org/dpubs\\_series](https://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

INC, HP, "MULTIPLE INK LINES PURGE TOOL", Technical Disclosure Commons, (June 23, 2020)  
[https://www.tdcommons.org/dpubs\\_series/3356](https://www.tdcommons.org/dpubs_series/3356)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

## **Multiple Ink Lines Purge Tool**

**Abstract:** A time-saving multiple ink lines purge tool for FI towers of a printer.

This disclosure relates to the field of printers.

A technique is disclosed that enables a service technician to plug multiple needles in the FI towers of the carriage of a printer to purge several ink lines at a time.

Some printers, such as for example large format printers, have at least 4 ink color lines. At times during servicing, these lines may be purged by a service technician. The purge process is quite slow, and can take about 5 minutes. Up to now, a technician purges each ink line one using just one tube with needle. The technician has to wait until each ink line purge has finished to start the next purge. It is a very long process. A purge of a single ink line can last as long as 4 or 5 minutes. Alternatively, the technician uses several tubes with needles, but a single technician has to take care of each soft-tube with needle. Since ink is likely to remain in the needle after the purge, the technician has to take care of up to 20 soft tubes with a needle dirty of ink, which is likely to splash ink to anything or anybody nearby.

According to the present disclosure, and as understood with reference to the Figure, a multiple needle holder tool 10 for multiple ink lines purge allows the service technician to purge as many ink lines at a time as desired. The amount of time saved increases with the number of colors utilized by the printer.

The technician can place as many needles 20 as there are FI towers to be purged. For example, there can be up to 20 needles, with 2 per each ink line. The needles can be inserted tightly by means of luer thread connections placed in the invented tool. The tool avoids interferences with other parts.

Once the technician has placed the needles in the luer connections, the next step requires the connection of soft tubes 30 from the barbs of the part to a waste ink tank. Valves can be assembled for better protection against backflow. To make the whole system easier and simpler, all the tubes can be merged in one by means of fittings in order to use fewer tubes.

The tool can be placed by the technician on a flat surface (e.g. on a desk, or on the printer itself), and by controlling the position of the tool, controlling the position of all the needles.

The disclosed tool and technique advantageously provide an easy, time-saving solution by purging all the required ink lines at a time, instead of having to perform the purge process for each line sequentially. One tool purges all the lines. The tool also helps the technician by having all the needles aligned in the proper position, which in turn helps prevent ink splashing in from forgotten needles on the floor, carpet, or personnel. The tool is easy to manufacture, and can be 3D-printed in one part. It is easy to carry, and reduces the amount of material required to purge a printer, as the technique just needs to carry this tool instead of several tubes. It is easy to push into the FI towers, and easy to pull.

*Disclosed by Eduard Serra and Joan-Albert Miravet Jimenez, HP Inc.*

