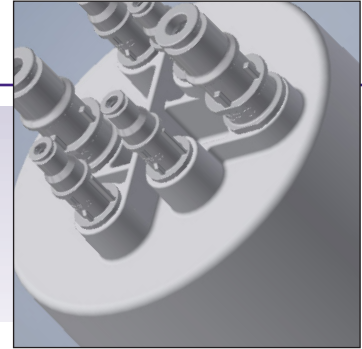


Inkjet, Digital Drop on Demand OEM

Multi-fluid module assembly, USA

Industry Sector:	Inkjet
Application:	Continuous Inkjet System (CIJ)
Products:	Multi-fluid Module Assembly
Primary Motive:	New Product Development
Location:	USA
Project Date:	2016



Customer Overview:

A global CIJ printer manufacturer of labeling, marking and machines who prints to design on a variety of substrates such as paper, polymer films and plastics.

Their printers can be found in a wide range of applications and industries, including food and beverage, extrusion, cable and wire, cosmetics, personal care, pharmaceutical and health care, electronic components, automotive, building materials and other industrial sectors.

Customer's Problem:

The customer's market drivers for the next generation of printers was to design printer that offered less downtime and maintenance and increased yield in print runs.

Designing a system with fewer filters but without compromising the performance and cleanliness of the fluid would mean less critical components to change.

Downtime is a concern for any manufacturing line as it delays production. Moreover, the removal of a filter causes ink to be lost from the system, which is often a volatile fluid such as MEK.

Porvair Solution:

Our solution was to design a module which has incorporated 3 of the 4 filters in a single assembly and used a series of quick release connectors that were drip-free. This module offered several key benefits.

Firstly, the system downtime was greatly reduced through servicing one self-contained unit rather than three individual filters. This change was made even quicker with the inclusion of quick release connectors.

In addition, the choice of drip-free connectors gave the OEM a great marketing tool; CIJ printers use hazardous and flammable liquids, therefore ensuring no leaks during service made for a safer product.

Project Overview:

Porvair worked closely with design engineers from both OEMs, implementing our designs and ensuring they were compatible with the system and its components.

By using our 3D technology, the printer OEM bought into our initial design ideas at a very early stage. We produced working prototypes prior to tool purchase, designed and manufactured from a solid polypropylene bar. After 2 months of testing, all 8 prototypes were still running perfectly.

Product and System Information:

The assembly used a series of filters – polypropylene depth media (Polyfil™) with Vyon® cores and 2 mesh discs. The assembly housing is standard polypropylene and the connectors were jointly designed with quick release connectors.

Other Opportunities:

We forecast all the CIJ OEMs moving to similar modular systems. The non-drip connectors for standard capsule filters is also an area to be exploited.