



TF Technology

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Unrivalled reliability

Outstanding print quality

Low cost of ownership

Increased production
uptime

Delivering unrivalled reliability for industrial inkjet applications

Xaar's revolutionary patented TF Technology together with the unique Hybrid Side Shooter architecture enables ink in the printhead to flow directly past the back of the nozzle during drop ejection. This means that nozzles are continuously primed. As a result, single-pass printers can be run for a full production shift with minimal maintenance, delivering a leap forward in inkjet printer reliability.

TF Technology and the Hybrid Side Shooter architecture are unique to Xaar technology printheads. Other printheads cannot offer this combination which is vital to achieve the reliability required in industrial applications. Other advantages include outstanding print quality, low cost of ownership and increased production uptime.

Many applications benefit from TF Technology and the Hybrid Side Shooter architecture such as those requiring heavily pigmented inks, decorative metallics, suspensions, inks containing taggants and higher viscosity fluids.

TF Technology was developed by Xaar, world leader in the development and manufacture of piezoelectric drop-on-demand (DoD) inkjet technologies. The company, which was established in 1990, is headquartered in the UK, with a number of offices worldwide to serve all markets. Xaar's state-of-the-art printhead manufacturing lines are among the most innovative in the world.

TF Technology

Applications

Heavily pigmented ink used by ceramic tile printers

Heavily pigmented high opacity white ink for graphics and PCB legend printing

Decorative metallics for labels and primary packaging

Suspensions such as biomedical fluids and taggants in ink

Higher viscosity fluids such as varnishes and other coatings.



Unrivalled reliability

- TF Technology together with the unique Hybrid Side Shooter architecture enables ink or other fluids in the printhead to flow directly past the back of the nozzle during drop ejection, at very high flow rates
- The highest flow rate is necessary to ensure the nozzles are continuously primed, keeping the printhead operational and the nozzles firing
- The ink or fluid is in constant motion, preventing sedimentation and nozzle blocking, particularly in heavily pigmented inks
- Air bubbles and unwanted particles in the ink are carried away, radically improving reliability, even in the harshest industrial environment.

Outstanding print quality

- TF Technology is a technically superior and unique solution that minimises temperature variation across the printhead as heat is removed directly from within the actuator channels virtually eliminating print density variations
- Ink viscosity is also controlled like the temperature, delivering uniform printing across the swathe and throughout the print job.

Low cost of ownership

- Printheads with nozzles working to their full potential are essential for single-pass industrial printing
- TF Technology combined with Xaar Hybrid Side Shooter architecture delivers a significant step forward in running inkjet systems reliably for a full shift with minimal maintenance. Running costs are lower because downtime and ink wastage are reduced.

Increased production uptime

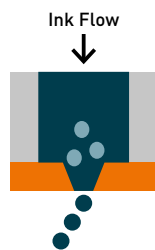
- Instant start up in the mornings and at the start of shifts due to nozzles being constantly primed
- Quick recovery of the printhead, for example following mechanical shock from media crash, means only one print would be lost and there is no need to stop the whole production line.

TF Technology in Pulsed mode

- In some printheads, TF Technology can also be set to operate in Pulsed mode – ink is recirculated when the printhead is not jetting
- This allows ink recirculation to be implemented with the minimum of complexity and cost but still improves reliability, enabling nozzle self-recovery, extending maintenance cycles and eliminating air bubbles.

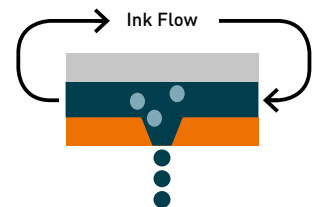
End shooter

- Traditional DoD technologies have one ink inlet and one outlet – the firing nozzle
- Printing can be disrupted by air bubbles and particles in the firing chamber, influencing jetting performance and potentially blocking the nozzles
- The air bubbles and particles may need to be removed by purging which will interrupt printing and consume ink
- Channel structure limits the fluid operating window.



Xaar's Hybrid Side Shooter

- Xaar's Hybrid Side Shooter architecture has an inlet and outlet for the ink as well as a separate nozzle
- The nozzle is in the side of the ink channel and the drop is fired perpendicular to the flow of the ink
- Uniquely, with Xaar's Hybrid Side Shooter, the ink flows directly past the nozzle during drop ejection, at very high flow rates, and carries away any unwanted particles or air bubbles
- This ensures particles and air bubbles are removed from the ink path in the printhead rather than being forced into the nozzle
- An external ink recirculation system can then filter out the particles and remove any air bubbles
- This delivers unrivalled reliability and maximum uptime for industrial applications.



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