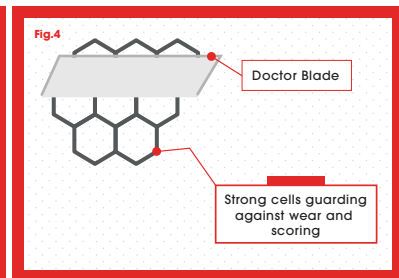
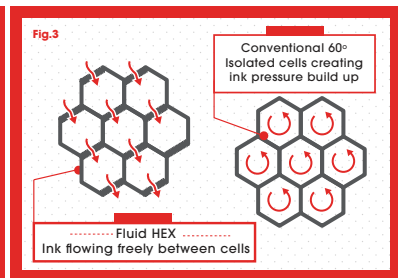
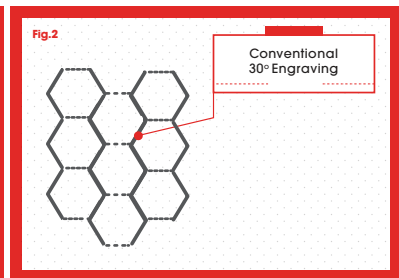
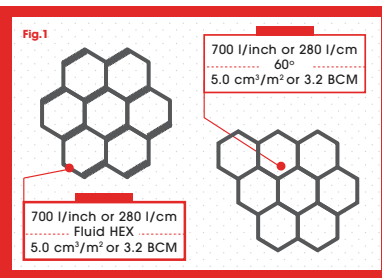


UV Ink Engraving

- ✓ Elimination / Reduction of UV ink 'spitting'
- ✓ Multi-functional engraving (process, tone and solid)
- ✓ Trusted engraving format, consistent engraving ratios
- ✓ Improving solids, reducing pin-holing and improving lay due to improved release characteristics
- ✓ Greater release characteristics, keeping print cleaner on the run
- ✓ Smoother cells with greater Doctor Blade support reducing vibration, increasing print consistency and making the engraving more resistant to scoring
- ✓ Increased lifespan on wear compared to conventional 60° engravings in normal operating conditions
- ✓ Increased cleaning characteristics



Fluid HEX - UV Ink Engraving

Fluid HEX is a development of our Opticell conventional 60° engraving for our UV Narrow Web customers which is specifically designed to avoid ink 'spitting'.

Opticell and other conventional 60° engravings have long been the standard for Flexo printing in the Narrow Web industry. The Opticell engraving standard is very flexible and allows printers to meet their broader needs. Unfortunately this engraving format is known to potentially create 'spitting' when printing with UV inks. Fluid HEX reduces if not eliminates this issue whilst maintaining continuity of existing anilox specifications and print quality.

Print Quality

Fluid HEX offers the flexibility of printing both process and solid work across a selection of substrates. Customers often utilise a number of varying engraving specifications in order to meet the gamut of their print requirements. If you are currently printing with conventional 60° engravings, the transition to Fluid HEX is simple. The engraving specifications are identical, meaning that we can produce like for like replacements of your standard engravings.

For example if you are printing a mid range solid with a 500 lpi / 200 lcm x 60° x 7.0 cm²/m² or 4.5 BCM and producing good results, then we would simply produce a 500 lpi / 200 lcm x Fluid HEX x 7.0 cm²/m² or 4.5 BCM which would produce the same print characteristics and quality.

If however, you are looking to reduce your anilox inventory by increasing the print latitude of your anilox specifications whilst reducing the element of 'spitting' in your print process then you may wish to consider another of our engraving styles... Fluid UV.

Fig.1 A comparison between the cell configuration and capability of a Fluid HEX and conventional 60° engraving.

UV Ink 'Spitting'

'Spitting' creates down time and a loss of print efficiency. Fluid HEX has been developed specifically to reduce if not eliminate this issue. Often the solution to 'spitting' is for customers to revert back to outdated engraving styles such as channelled 30° cells with poor print characteristics. Fluid HEX allows our customers to maintain the print quality of a 60° engraving with the added benefit of reducing or even eliminating ink 'spitting'.

Fig.2 Conventional 30° engraving with poor print characteristics. An outdated solution for ink 'spitting'.

UV ink 'spitting' is caused by a number of factors ranging from ink type, temperature, doctor blade, doctor blade unit and the anilox engraving in use. There are two factors that can cause an anilox specifically to 'spit':

- 1) Isolated cells with too few gaps between each other can cause a build up of ink pressure in individual cells causing inconsistent ink release resulting in 'spitting'. Fluid HEX tackles this by creating an open style engraving preventing the build up of pressure within cells.

Fig.3 The open nature of the Fluid HEX engraving allows ink to flow easily around the cells, stopping ink pressure from building up.

- 2) Anilox can cause 'spitting' if its surface finish is inconsistent due to insufficient micro-finishing after laser engraving. Re-cast produced after laser engraving creates inconsistencies on the anilox surface which can create vibration on the Doctor Blade causing ink to 'spit' between the blade and anilox. The open format of Fluid HEX means that we are able to give the cells enhanced micro-finishing, smoothing the cell surface which decreases vibration on the Doctor Blade and therefore reduces the likelihood of 'spitting'.

If a conventional 60° engraving is given additional micro-finishing it will stop the 'spitting' caused by blade vibration, conversely however, it is likely to still create 'spitting' by producing closed cell walls that increase ink pressure build up. Fluid HEX combats both of these factors. The semi-channelled nature of the cell allows our operatives to increase the micro-polish on the engraving thus reducing vibration against the Doctor Blade without closing the cell wall. This semi-channelled style additionally stops the build up of UV ink pressure.

Increased Cleanability

A major benefit of Fluid HEX is that the anilox will stay cleaner for longer as the ink is less likely to become trapped in the cell due to its open nature. If the cell does become blocked with ink, the open nature of Fluid HEX allows for easier cleaning with both hand chemicals and mechanical methods. This ability for the anilox to stay cleaner for longer allows improved efficiencies through an increase in volume consistency both during use and after cleaning.

Lifespan

Tests show that lifespan of the anilox is improved due to the increased release characteristics of Fluid HEX meaning that ink continues to release well from the cell configuration over time.

Due to the flowing nature of Fluid HEX, we are able to increase the automated micro-finishing process that is conducted after engraving. On traditional cells this increased "polish" would create poor release characteristics by creating a closed cell wall. However with the open nature of the Fluid HEX design, we are able to increase micro-finishing without compromising cell release characteristics. The major benefit of this is to create a stronger, smoother cell that is more robust against the doctor blade, which makes the cell more resistant to polish and score lines and therefore offers the printer a potential benefit in terms of lifespan. Furthermore the smoother engraving creates less vibration against the Doctor Blade and therefore improves print consistency.

Fig.4 The extra micro-polishing of the engraving allows for improved resistance to wear and scoring.