

Introduction

Flatbed UV printing is a technology that combines precision and innovation to redefine printing standards for industrial applications. This guide will explore the advantages of flatbed UV printing and its potential impact on printing processes.

UV printing integrates perfectly with the industrial segment's personalisation processes, one of the most important ongoing trends that allow businesses to be more competitive, reduce costs, and satisfy customers' needs.

Whether you are a graphic designer in your industry segment aiming to provide a different look at the products, a marketing professional who wants the company to position differently, a line director looking for a more productive and versatile solution, or a member of the purchasing department seeking to increase the quality/price ratio, it's time to consider UV printing as a solution that could meet all these needs and offer benefits and advantages for the business as a whole.





The Technology Behind Flatbed UV Printing

What makes flatbed UV printing such a powerful tool for personalisation in the industrial and manufacturing space?

Flatbed Printing Process

Flatbed UV printing is a seamless process that allows designs to come to life with sharp detail and accuracy on a wide variety of surfaces. The precision of the flatbed printing process results in consistent high-quality prints that meet industrial standards. Flatbed UV printers can print on several objects, even with uneven or rounded shapes, and accommodate items up to 20cm tall.

UV-curable Inks

UV-curable inks are specially formulated to dry instantly when exposed to ultraviolet light. This instant curing process eliminates the need for drying time, ensuring quick production turnaround and vibrant and detailed prints with tactile and textured effects. The ink dries on top of the surface and isn't absorbed into the material, resulting in a hard-wearing, ultra-durable finish.



Did You Know?

The global UV printer market will experience significant growth in the coming years. Flatbed UV printers are expected to play a crucial role in this expansion, offering versatile printing solutions, just-in-time deliveries, and one-off and small lots productions for a wide range of industries.



Benefits of Flatbed UV Printing for Industrial Applications

Versatility and Material Compatibility

Flatbed UV printers offer unparalleled versatility and enables printing on an extensive range of materials, from traditional substrates like paper and card to more unconventional surfaces like wood, glass, metal, plastic, ceramics. It's also possible to print on textured, curved or irregular surfaces. Printing with primer can expand the number of surfaces that can be printed on even further. This flexibility enables manufacturers to explore innovative and more profitable printing solutions and confidently expand their product offerings.

Quick Turnaround and Increased Productivity

The instant curing process of UV inks means that production turnaround times are quick and efficient. Printed materials can be handled immediately without drying time, streamlining production processes and reducing lead times. This efficiency is invaluable for industries with tight deadlines and high-volume printing requirements.

Reduced Operational Costs

Flatbed UV printing technology can deliver substantial long-term cost savings. The elimination of consumables such as drying equipment or screen-printing frames reduces operational expenses over time. Stocks can be adjusted according to production demands, lowering the total cost of items. Additionally, the efficiency of UV printing leads to increased productivity and reduced labour costs, making it a cost-effective solution for printing needs.

High Print Quality and Precision

Flatbed UV printing delivers exceptional print quality and precision. The instant curing process ensures sharp, vibrant colours and detailed reproductions of intricate designs, fine text, and lifelike images. This level of quality is essential for industries requiring superior image reproduction, such as packaging, labelling, and product and parts decoration.

Customisation and Personalisation

Customisation is invaluable in industrial and manufacturing applications and it's quick and easy with flatbed UV printing. From adding unique branding elements or serial numbers to individualised text and graphics, UV printing is incredibly versatile. This is a huge benefit to those looking to create bespoke products or small lots and enhance customer engagement through personalisation.

Colour Reproduction and Special 3D Effects

The availability of an extended range of ink configurations beyond the standard CMYK allows for a larger colour gamut. Full opacity white ink enables printing on transparent and dark materials. The ability to print varnish allows for gloss and matte effects, as well as embossed and tactical effects in different textures.

Compatibility with Existing Printing Processes

UV flatbed printing easily integrates with traditional printing processes, such as pad or screen printing, for when on-demand customised products are required. UV printing has a straightforward learning curve, enabling operators to become proficient in using their device as quickly as possible.

Durability

UV-curable inks are engineered for durability and longevity. This durability is particularly advantageous in industrial environments where printed materials must be hard-wearing and retain their graphic specifications over time.

Sustainability

Flatbed UV printing offers eco-friendly benefits compared to traditional printing methods. UV inks come with GreenGuard Gold certification to meet the strictest standard of low-impact printing. Additionally, eliminating intermediate steps like lamination and drying reduces waste and energy consumption, aligning with sustainability initiatives.



Applications of Flatbed UV Printing in Industrial Settings

Discover the Versatility of Flatbed UV Printing in Industrial Settings:



Industrial Component Decoration

Personalise equipment parts like housings, panels, keyboards, surfaces or even assembled products.



Product Labeling and Branding

UV printing can be used for product iteration and customisation depending on the needs of the industry where tailored approaches are required.



Customised Promotional Items

When producing customised items for promotion and branding both internally and externally, UV printing is the perfect solution for versatility and flexibility.



Packaging and Prototyping

UV technology is a cost-effective and quick method of personalising packaging, small lots, prototypes and mock-ups.

Into the Future: The Evolution of Flatbed UV Printing



Potential Future Developments

Flatbed UV printing continuously evolves and brings advancements that transform printing processes, presenting opportunities for industrial manufacturers to elevate their production capabilities and add value to their operations. So what are the developments that we can look forward to that will continue to revolutionise industrial print processes?

Increased Material Compatibility

Advancements in UV ink formulations may enable printing on a broader range of materials, expanding possibilities for industrial applications.

Different Print Speeds

The availability of varying print speeds in UV printing technology could provide the proper flexibility in case of future peaks or variations in production.

Improved Color Matching and Reproduction

Developments in colour management software combined with a wide range of available colours (CMYKWhOrRdGl) may result in more precise colour matching and reproduction, meeting the stringent requirements of various industries.

Integration with Automation

Integrating UV printing with automation systems could streamline production processes, reducing labour requirements and increasing efficiency.

In Conclusion: Forging Ahead

As industrial operations evolve and the need for product customisation increases, UV printing represents a major opportunity for businesses looking to drive efficiency, innovation, and sustainability.

The benefits to industrial manufacturers when they support their operation with digital print start with expanding their product offerings and achieving higher throughput and productivity with faster print speeds. It represents a strategic change for an organisation that can result in streamlined workflows and reduced labour costs through integrated automation systems, as well as precise colour accuracy that meets industry standards and eco-friendly practices that contribute to sustainability, making UV printing an indispensable tool for industrial settings.

If you want to learn more about flatbed UV printing and its applications, please explore our resources or contact our experts.



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