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DTG & Alternative Garment Print Technologies

Ri 3000	600 dpi	6 channels	51 seconds*
Ri 6000	600 dpi	12 channels	27 seconds*

DTG (Direct to Garment) is a relatively new garment printing technology. It uses purpose designed inkjet printers, such as Ricoh's Ri 3000 and Ri 6000, to apply water-based pigment inks directly to cotton and cotton/polyester mix garments. Because the process is digital, the design can be changed from one garment to the next.

Advantages	Limitations
✔ Digital process supports personalisation	✗ Limited range of substrates (cotton and cotton/polyester mix only)
✔ Perfect registration between individual ink colour	✗ Standard inks (no PMS colour or speciality inks)
✔ Capable of reproducing any type of graphic: no limitation on half tones, transparent backgrounds or photos	
✔ Print onto light and dark coloured garments	
✔ White ink base eliminates show through	
✔ Water-based pigment inks give garments a soft feel	
✔ Simple three-step production process	
✔ Small footprint and eco-friendly inks	
✔ Affordable technology offers a fast ROI	

Professional quality

Highly reliable

Simple operation

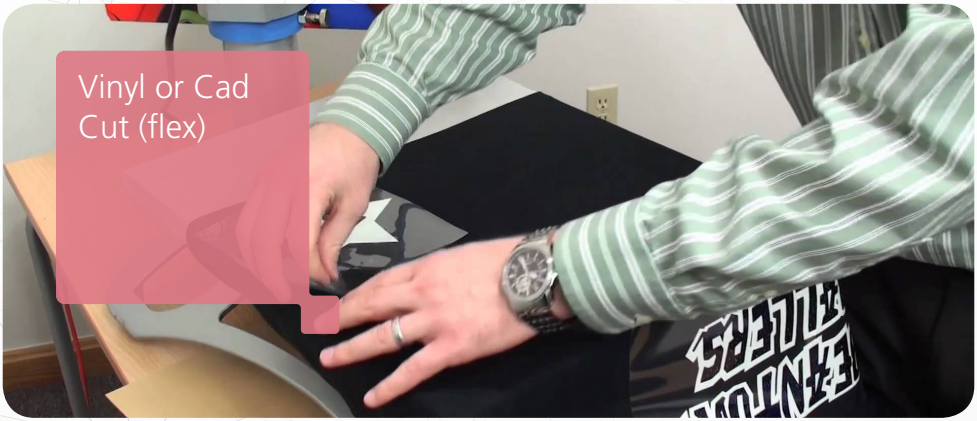
Heat Transfer

Images are printed onto specialised heat transfer paper using a laser printer and transferred to the garment using a heat process. The process supports local production and personalisation (like Inkjet DTG) but can be fiddly as images must be printed in reverse, the heat transfer paper has to be trimmed before the image is applied and specialised paper is required to apply a white underlay.

Advantages	Limitations
✔ Low cost of entry (uses existing print technology)	✗ Not suitable for larger production volumes
✔ Digital process supports personalisation	✗ Specialised paper or alternative techniques required to apply a white base layer for dark and coloured garments
	✗ Images must be printed in reverse and trimmed
	✗ Image size limited by the printer/ paper size
	✗ Printed image is non-breathable and feels stiff to touch
	✗ Poor wash ability limits garment life

Dye Sublimation printing uses a similar process to heat transfer. Images are printed onto a release paper using a dye sublimation inkjet printer and transferred to the garment using a heat process. The process supports local production and personalisation, like Inkjet DTG, but images must be printed in reverse and dye sublimation is only suitable for printing onto white polyester fabrics.

Advantages	Limitations
✔ Digital process supports personalisation	✗ Not suitable for larger production volumes
✔ Low initial set up cost (requires a specialised dye sublimation printer)	✗ Limited range of substrates (white polyester only)
✔ Small footprint and eco-friendly process	✗ No white ink / white ink base
✔ Produces natural soft-touch garments (similar to IDTG)	✗ It is not possible to print a true black
✔ It is possible to print full-garment images	✗ Images must be printed in reverse



Vinyl or Cad Cut (flex)

Vinyl or Cad Cut printing also uses a similar process to heat transfer. Designs (logos, shapes, letters and numbers) are cut from a special vinyl material using an industrial cutting machine or plotter and transferred to garments using a heat press. The process is ideal for printing one or two-colour messages or logos onto garments.

Advantages	Limitations
✔ Low initial set up cost	✗ Not suitable for larger production volumes
✔ Supports a wide range of substrates / material	✗ The printed image is not breathable, and feels stiff to touch
✔ Print onto light and dark coloured garments	✗ Poor wash ability limits garment life
✔ There are many different vinyl colours (metallic, flock, fluorescent etc)	
✔ Great for one and two-colour messaging (logos, names etc)	

This is a high volume print process. A blade or squeegee presses inks through a mesh stencil or screen onto the garment. Each colour requires a separate screen which must be accurately aligned to ensure registration. As the screen rebounds away from the substrate the ink remains on the substrate. Textile printed with multi-coloured designs use a wet on wet technique.

Advantages	Limitations
✔ Industrialised print process support long print runs	✗ Screen presses are expensive to buy and have a large footprint
✔ Supports a wide range of substrates / material	✗ Analogue print process does not support personalisation
✔ PMS colours and speciality inks available	✗ Not suitable/cost effective for low to medium production volumes
✔ Excellent wash ability extends garment life	✗ Flat image quality (process doesn't support halftones)
	✗ Hazardous chemicals (solvents) are used in the cleaning process

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