



# AN UPDATE ON DIRECT-TO-GARMENT PRINTERS

If you're considering buying a DTG printer, you now have an incredible variety of options.

**Eileen Fritsch**

**D**irect-to-garment (DTG) printers have come a long way since the first models were introduced at the 2004 SGIA Expo. Engineers, software developers, and chemists have made remarkable advances in printheads, equipment design, inks, workflow, and software.

They have some powerful economic incentives to do so. According to an online presentation by AnaJet regional manager Charles Burwell, garment printing in the US is a \$23 billion industry. While the garment printing industry is still about 95% screen, digital printing is gradually becoming more prevalent.

As the technology has moved from entry-level to production-grade, more and more garment decorators are adding DTG capabilities to their businesses. Harry Oster of Equipment Zone notes that, "Initially, many DTG machine buyers were starting a business based solely on that machine." Today, screen printers, embroiderers, promotional-products firms, and apparel manufacturers are buying DTG equipment to complement their existing production equipment. Other buyers of DTG equipment include digital and in-plant graphics printers, sign shops, educational and non-profit institutions, sports retailers, e-commerce companies, and home-based studios and start-ups.

As the customer base has expanded and become more diverse, so has the selection of machines and accessories. Firms that have been in the DTG business for years

have introduced upgrades that reflect some of the ease-of-use and productivity improvements their customers have requested. New DTG printers from companies such as M&R, Lawson Screen & Digital Products, Kornit, and Aeoon Technologies reflect a deep understanding of the needs of higher-volume screen printers as well as textile and apparel manufacturers.

While the proliferation of DTG printers has enabled more companies (and individuals) to get into the decorating business, screen printing firms have some advantages that newcomers to the business can't match. For one thing, screen printers already have relationships with apparel vendors and many of the biggest potential customers for DTG output, such as corporate brands, non-profits, and sports teams. Plus, experienced screen printers already understand how to prepare designs and graphics for garment printing. They are equipped with heat presses and dryers, and have systems for inventory management and pricing.

According to a spokesperson for AnaJet, screen printers who incorporate DTG technology may be pleasantly surprised by some of the changes digital printing can bring. For example, they may be able to price their garments higher per piece for small-quantity orders. Full-color orders and intricate graphics may command higher prices per piece. Oster added, "What we commonly see is a screen printer

buying DTG to handle the orders they might otherwise turn down. The job might involve a full-color image with an order of only a few dozen pieces.”

Some screen printers use DTG machines to print full-color event-sponsor logos on the backs on shirts that have been screen printed with a one- or two-color left chest image on the front. One helps a client test the market appeal of new T-shirt designs using the client’s e-commerce site and the screen printer’s DTG equipment. Once enough orders start coming in, the client commits to a longer run of shirts that will be produced on the screen presses. DTG printers are also useful for printing sample shirts. Bringing a personalized sample shirt to a potential new customer can be a terrific way for a salesperson to make a positive first impression.

### From entry level to production

Some observers believe the DTG printing business got off to a shaky start when entrepreneurs began launching modified versions of Epson printers with printheads originally engineered to print photographs on coated papers. Things started to improve when companies such as Brother and AnaJet recognized the need for heavier-duty printers designed specifically for printing directly to garments.

Since then, many of the first-generation DTG models have been retired in favor of more robust printers. Most newer models use more durable, industrial-grade printheads from companies such as Ricoh, Spectra, Kyocera, and others. Last year, Epson made waves in the DTG market by introducing its SureColor F2000 printers with new PrecisionCore TFP printheads that are better suited to the specific requirements of textile printing. Some distributors that built a customer base selling modified Epson printers are now authorized resellers of Epson SureColor F2000 printers.

### About the DTG Sourclist

The DTG Sourclist on pages 24-30 was compiled to help you see the enormous variety of printers that are now offered. Some machines are clearly designed for ease-of-use in start-up businesses, offices, sign shops, and storefront environments. Other printers are geared for higher-volume production of T-shirts and other promotional products.

The type of DTG printer that’s right for you depends partly on your business goals and partly on the requirements and expectations of your existing customer base. For example: Do you want to use the printer to produce promotional products other than T-shirts? Do you want a machine that can work with your existing screen-printing equipment? Will you use DTG equipment to fulfill a steady stream of small-run or one-off orders for custom shirts that come in through an online storefront? Do you want a portable DTG printer that you can take to conventions, sports tournaments, music festivals, and other events?

Here are few things to keep in mind about the specs on this sourclist.

• **All of the printers on this list use water-based pigmented inks and piezo drop-on-demand printheads. Unless otherwise noted, each printer was designed to print on 100% cotton and up to 50/50 cotton/polyester-blend shirts.** Some models can print on polyester if a pretreatment is applied first.

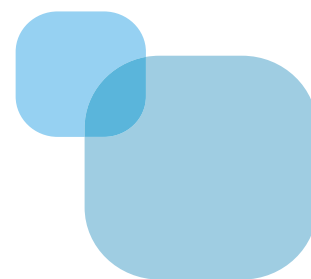
• **The maximum print area listed in the specs shows the standard-size platen supplied with the printer.** If a manufacturer offers an upgrade option that allows you to expand the maximum print size, that information is listed under “Features and Options.”

• **Printing on dark shirts is slower and more costly than printing on white shirts.** Dark shirts must be pre-treated (either with a power sprayer or on an automatic pretreatment machine) so that an opaque layer of white ink can be applied as an underbase for the printed colors. Without the pretreatment, the white ink wouldn’t stay on the surface of the shirt. Without the white ink underbase, the vibrant colors of the design would get lost in the blackness of the shirt.

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BelQuette



Brother

**Models:**

**Aeoon**

**Inks:** CMYK + up to 8 Whites

**Printhead:** Kyocera KJ4B

**Resolution:** 2400 x 2400 dpi (max); 2400 x 1200, 1200 x 1200, 600 x 1200, 1200 x 600, and 600 x 600 dpi (production)

**Throughput:** Up to 400 light shirts/hr (A4-size design); Up to 200 dark shirts/hr (A4-size design)

**Max print size:** 78.74 x 39.37 in.

**Software:** Aeoon Designer RIP

**NeoFlex**

**Inks:** CMYK + 4 Whites or 2 x CMYK

**Printhead:** Epson MicroPiezo AMC

**Resolution:** 1440 x 1440 (max)

**Throughput:** Up to 60 light shirts/hr; Up to 20 dark shirts/hr

**Max print size:** 17 x 42 in.

**Software:** NeoRIP

**Features:**

- Modular system designed for mainstream garment decoration by Aeoon Technologies, an Austrian company experienced in textile printing
- Up to 12 colors of sublimation inks available
- Spot-color inks available
- Fully automatic cleaning and capping station
- RIP generates white underbase and synchronizes files with machine
- Can print photorealistic images on three T-shirts simultaneously
- Printhead moves over table that holds platens for 1, 2, or 3 garments
- Inks available in sealed cartridges or bulk ink system
- Programmable auto-clean for clog prevention
- Semi-automatic platen height adjustment up to 2.77 in.
- RIP includes user-defined media settings, template creator, white grayscale printing, and more

**Options:**

- 78.74 x 39.37-in. table standard; can be equipped with two (39.37 x 39.37 in. each) or three (21.65 x 39.97 in. each) tables instead
- Inline pretreatment station for fully automated coating
- Vacuum tables
- Maximum print size upgrade to 98.43 x 157.5 in.
- Printhead upgrade from 4 (standard) to as many as 12

ANAJET [www.anajet.com](http://www.anajet.com)

**Models:**

**mPower mP5i**

**Inks:** CMYK + 2 Whites

**Printhead:** Ricoh MH2420

**Resolution:** 300-600 dpi

**Throughput:** 40-60 light shirts/hr (12 x 10-in. design); 20-30 dark shirts/hr (12 x 10-in. design)

**Max print area:** 14 x 18 in.

**Software:** AnaRIP

**mPower mP10i**

**Inks:** 2 x CMYK + 4 Whites

**Printhead:** Ricoh MH2420

**Resolution:** 300-600 dpi

**Throughput:** 80-100 light shirts/hr (12 x 10-in. design); 40-50 dark shirts/hr (12 x 10-in. design)

**Max print area:** 14 x 18 in.

**Software:** AnaRIP

**Features:**

- Easy-to-use, single-platen digital apparel printer for garment decorators, promotional-product distributors, commercial and digital printers, retailers, new business start-ups, and non-profit organizations
- Introduced in 2011 by AnaJet, a company founded in 2006 as one of the first mass producers of DTG printers
- Minimal footprint for use in offices, garages, shops, or vans
- Made and supported in US with globally sourced components
- Air-tight, closed-loop ink-delivery system
- Automatic platen adjustment for garments up to 3 in.
- Ana RIP includes drag-and-drop media, automatic background strikeout, ink-cost calculator, advanced art customization, and TrueView WYSIWYG capability

**Options:**

- Platens for hats, sleeves, and youth sizes
- Integrated design interface ("Spark") for quick graphic design
- Can add foil effects to pretreated shirts printed with white underbase
- Can print on canvas, tile, wood, and other surfaces



AnaJet

BELQUETTE [www.belquette.com](http://www.belquette.com)

**Model:**

**Mod1**

**Inks:** 2 x CMYK or CMYK + 4 Whites

**Printhead:** Epson DX5

**Resolution:** 1440 x 1440 dpi (max); 720 x 720; 1440 x 720 dpi (production)

**Throughput:** 45-60 light shirts/hr; 12-24 dark shirts/hr

**Max print area:** 13 x 19 in.

**Software:** PowerRIP Mod1 and ModQueue Manager for job production

**Features:**

- BelQuette was founded in 1996 to adapt digital-printing technologies to meet the demand for customized, personalized products
- Modular system with Quick-Change Platen Indexing, and Rapid, Multi-Pass with Time Delay
- Closed-ink bag system keeps outside elements from entering the system
- Inks are micro-filtered and degassed
- Printhead height can be adjusted to up to 6 in.
- Independent height controls allow printing on uneven or sloped products
- Can print on thicker garments
- Designed, made and supported in the US
- RIP has customized controls for increasing white or color ink densities and can generate white underbase layers

**Options:**

- Platens include dual chest, dual sleeve, toddler, chest, pocket, and hats
- Edge Pretreater can support all three major types of pretreatments: dark garments, light garments, and polyester
- EdgeLINK Software can connect Mod1 PowerRIP to Edge Pretreater to print the white underbase only where the image will be printed, leaving no visible lines where the pretreatment was applied
- JobVault Software uses visual previews to help users recall stored job files for reprinting

**Models:**

**GT-341**

**Inks:** CMYK

**Printhead:** Brother

**Resolution:** 1200 dpi (max); 600 dpi (production)

**Throughput:** 25-50 light shirts/hr (10 x 12 in.)

**Max print area:** 14 x 16 in.

**GT-361**

**Inks:** CMYK + 2 Whites

**Throughput:** 25-50 light shirts/hr (10 x 12-in. design);

10-14 dark shirts/hr (10 x 12-in. design)

**Max print area:** 14 x 16 in.

**GT-381**

**Inks:** CMYK + 4 Whites

**Throughput:** 25-50 light shirts/hr (10 x 12-in. design);

20-25 dark shirts/hr (10 x 12-in. design)

**Max print area:** 14 x 16 in.

**Features:**

- Brother has been making direct-to-garment printers since 2005 and started shipping the GT-3 Series of upgradeable printing systems in 2012
- The entry-level GT-341 for printing on light shirts can be expanded to the GT-361 (with two whites) and the GT-381 (with four whites)
- Brother makes its own firmware, software, and printheads
- A RIP isn't required
- One-pass technology allows the white underbase to be printed in the same pass as the four colors

**Options:**

- Larger platen expands maximum print area to 16 x 18 in. (CMYK) or 16 x 17 in. (CMYK + White)
- Platens for baby, youth, adult, and over-size shirts
- Can print on caps, hoodies, coasters, and other soft goods and promotional items
- Horizontal and vertical pretreating equipment from other OEMs
- Brother DTG Pre-Treat Paper by Neenah Paper are pre-saturated 12 x 12-in. pre-treatment sheets that can be cut to size
- Digital Factory Apparel's Brother Edition software can be used by those who need exact color matching for logo work, as well as to manage job queues

**Models:**

**DTG Viper**

**Inks:** 2 x CMYK or CMYK + 4Whites

**Printhead:** Epson

**Resolution:** 720 x 1440 dpi

**Max print area:** 16.5 x 29 in.

**Software:** DTG RIP PRO

**DTG M2**

**Inks:** 2 x CMYK or CMYK + 4 Whites

**Printhead:** Epson

**Resolution:** 1440 x 1440 dpi

**Throughput:** 50 light shirts/hr (full-size designs);

25 dark shirts/hr (full-size designs)

**Max print area:** 17.7 x 24 in.

**Software:** RIP Pro 5

**DTG M4**

**Inks:** 2 x CMYK or CMYK + 4Whites

**Printhead:** Epson

**Resolution:** 1440 x 1440 dpi

**Max print area:** 24 x 36 in.

**Software:** RIP Pro 5

**Features:**

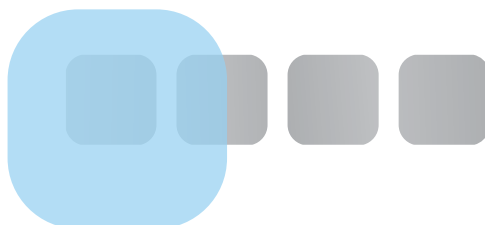
- ColDesi, Inc. specializes in commercial apparel decorating equipment and serves embroiderers, custom T-shirt producers, screen printers, and producers of promotional apparel
- Productivity-boosting conveyor-belt garment-loading system carries a 4-2-1 platen that can print four small garments, two average garments, or one oversize item (including T-shirts, towels, and bags)
- Tucloc hold-down system secures garments (including thicker items) without frames
- White Ink Management System reduces risk of head clogs

**Options:**

- DK20 DTG Heat Press
- DTG Pretreating Machine
- Platens for hats, sleeves, oversize shirts, zippered hoodies, youth, and toddler sizes
- Additional platens (same as above)
- Upgrade to 24 x 47 in. print area

- Dual-platen system features lateral-printing
- Firmware designed for textile printing
- 4-2-1 platen system
- Tucloc hold-down system
- White Ink Management System reduces risk of head clogs
- iQWeave eliminates banding at all resolutions

- Wider printer geared for screen printers or T-shirt shops that specialize in short-runs (up to 100 garments) with multi-color designs or variable data
- The RIP can simultaneously print up to four different designs on the four shirts loaded on the 4-2-1 platen system



ColDesi

## EPSON [www.epson.com/cgi-bin/Store/jsp/Pro/SeriesSureColorF2000/Overview.do](http://www.epson.com/cgi-bin/Store/jsp/Pro/SeriesSureColorF2000/Overview.do)

### Models:

#### SureColor F2000-Color

**Inks:** CMYKcLm

**Printhead:** Epson PrecisionCore TFP

**Resolution:** 1440 x 720 dpi (max)

**Throughput:** 44 sec (light shirt, 8 x 10-in. design)

**Max print area:** 14 x 16 in.

**Software:** Garment Creator

#### SureColor F2000-White

**Inks:** CMYK + 2 Whites

**Printhead:** Same as above

**Resolution:** 1440 x 1440 dpi (max)

**Throughput:** 82 sec (light shirt, 8 x 10-in. design);

142 sec (dark shirt, 8 x 10-in. design)

**Max print area:** Same as above

**Software:** Same as above

### Features:

- Purpose-built DTG printer for ease-of-use and image quality
- Small footprint and quiet operation make it suitable for event sites, offices, stores, and home studios
- Color edition prints in four colors on white or light-colored garments
- White edition prints on light or dark garments
- Next-generation PrecisionCore TFP printhead uses more advanced piezo materials and delivers higher durability and commercial-grade performance
- Easy access to cover for printer maintenance and print viewing
- Printhead height is adjustable for garments up to 0.98-in. thick
- Epson UltraChrome DG inks are supplied in 600-ml or 250-ml smart-filtering cartridges that clear inks of contaminants that could clog the printhead
- Epson Pretreatment fluid formulated to maintain the soft hand of the fabric without a sticky residue or odor (small visible outline on the garment washes out with first wash)
- Easy-to-use software with simple interface, job-accounting tools, and independent controls for color and white imaging

### Options:

- Platens for large (16 x 20-in.), small (10 x 12-in.), and sleeve (4 x 4-in.) designs
- Third-party RIP software offers additional levels of imaging capabilities



## EQUIPMENT ZONE [www.equipmentzone.com](http://www.equipmentzone.com)

### Model:

#### Veloci-Jet XL

**Inks:** CMYK + 4 Whites

**Printhead:** Teflon Coated Piezo

**Resolution:** 1440 x 1440 dpi (max);

1440 x 720 dpi (production)

**Throughput:** 35-50 light shirts/hr; 20-24 dark shirts/hr

**Max print area:** 13 x 24 in.

**Software:** EZ RIP

### Features:

- Heavy-duty DTG printer introduced in 2011
- Built in the US with solid steel and aluminum components by a company that has been in the for industry 23 years
- Extra-long print area enables printing all-over designs on average-size T-shirts or other promotional items such as sweatshirts, towels, and mouse pads
- Quick-swap shirt boards for easy loading
- Easy-open cover for maintenance
- Printhead height can be adjusted up to 6 in.
- Dual-shirt holder lets users print two shirts in one pass
- Closed-bag bulk ink system for lower ink costs
- RIP optimizes images for lower ink costs and brighter prints
- Software enables users to print from Photoshop, Illustrator, or CorelDraw and includes ink-cost calculator and advanced white under-base controls

### Options:

- SpeedTreater-TX automatic pretreater
- Dual-cap attachment
- Dual-shirt holder
- Zipper-hoodie holder
- Pretreat paper
- Dual-sleeve holder

## KORNIT [www.kornit.com/directtogarment/dtgprinters/](http://www.kornit.com/directtogarment/dtgprinters/)

### Models:

#### Avalanche

**Inks:** CMYK + White (12 heads)

**Printhead:** Spectra Polaris

**Resolution:** 630 dpi (max)

**Throughput:** Up to 200 light garments/hr;

Up to 100 dark garments/hr

**Max print area:** 23.5 x 35 in.

**Software:** QuickP Production

### Features:

- All four printers in the Avalanche Series use an integrated pretreatment station that sprays garments with a Kornit Wetting Solution that includes a fixation agent that reacts with the NeoPigment inks during curing
- In-line pretreatment allows printing on cotton, polyester, cotton-polyester blends, Lycra, viscose, silk, leather, denim, linen, wool, and more
- Dual-bridge system enables parallel printing of two platens

### Options:

- Available platens: children's, single sleeve, dual sleeve, universal, tote bag, grand pallet, and super-grand pallet

## Kornit (continued)

### Models:

#### Avalanche DC Pro

**Inks:** CMYK + White + discharge ink system (14 heads)

**Printhead:** Spectra Polaris

**Resolution:** 630 dpi (max)

**Throughput:** Up to 200 light garments/hr;  
Up to 100 dark garments/hr

**Max print area:** Up to 23.5 x 35 in.

**Software:** QuickP Production

#### Avalanche Hexa

**Inks:** CMYKRG + White

**Printhead:** Spectra Polaris

**Resolution:** 600 dpi (max)

**Throughput:** Up to 250 light garments/hr;  
Up to 140 dark garments/hr

**Max print area:** 23.5 x 35 in.

**Software:** QuickP Production

#### Avalanche 1000

**Inks:** CMYK + White

**Printhead:** 24 Spectra Polaris heads

**Resolution:** 600 dpi (max)

**Throughput at production resolution:** Up to 300 light garments/hr; Up to 170 dark garments/hr

**Max print area:** 23.5 x 35 in.

**Software:** QuickP Production

#### Breeze

**Inks:** CMYK + White

**Printhead:** 6 Spectra piezo

**Resolution:** 600 dpi (max)

**Throughput:** Up to 40 light garments/hr;  
Up to 25 dark garments/hr

**Max print area:** Up to 14 x 18 in.

**Software:** QuickP Production

#### Paradigm II

**Inks:** CMYK

**Printhead:** 8 Spectra piezo

**Resolution:** 630 dpi (max)

**Throughput:** Up to 200 light garments/hr;  
Up to 200 dark garments/hr

**Max print area:** 15.5 x 19.5 in.

**Software:** QuickP Production

### Features:

- Discharge ink system supports a soft feel and vintage look

### Options:

- Available platens: children's, single sleeve, dual sleeve, universal, tote bag, grand pallet, and super-grand pallet



- The addition of red and green inks provides a 30% wider color gamut, making it easier to match corporate logos, licensed sports team colors, and other designs

- Available platens: children's, single sleeve, dual sleeve, universal, tote bag, grand pallet, and super-grand pallet

- Designed for fast, mass production of high-quality garments
- Includes integrated humidity control and backup battery system for increased reliability

- Available platens: children's, single sleeve, dual sleeve, universal, tote bag, grand pallet, and super-grand pallet

- Industrially designed tabletop printer for commercial use
- Web-to-print ready for quick launch of e-commerce sites
- Integrated, automated pretreatment process works with Kornit's NeoPigment inks to print to cotton, polyester, cotton-polyester blends, Lycra, viscose, silk, leather, denim, linen, wool, and more
- Adjustable printhead height for printing over zippers, buttons, and raised objects
- One-pass white and CMYK print mode
- 150-ml ink containers

- Children's platen

- Brings benefits of full-color digital printing to screen presses
- Can be set up as a print station on a manual or automatic screen carousel or oval machine
- Users can combine flock, foil, metallic, and glitter inks with digitally printed images
- Reduces amount of color passes and screens needed
- Printheads are height-adjustable for printing over zippers, buttons, and other raised objects
- Prints on multiple fabric types, including light, dark, and dischargeable
- Automatic maintenance system

- Ability to print on rigid or flexible materials



Kornit

## Kornit (continued)

### Models:

#### Storm II

**Inks:** CMYK + White

**Printhead:** 8 Spectra piezo

**Resolution:** 630 dpi (max)

**Throughput:** Up to 150 light garments/hr;

Up to 80 dark garments/hr

**Max print area:** Up to 20 x 28 in.

**Software:** QuickP Production

#### Thunder

**Inks:** CMYK + White

**Printhead:** 6 Spectra piezo

**Resolution:** 630 dpi (max)

**Throughput:** Up to 80 light garments/hr;

Up to 30 dark garments/hr

**Max print area:** Up to 14 x 18 in.

**Software:** QuickP Production

### Features:

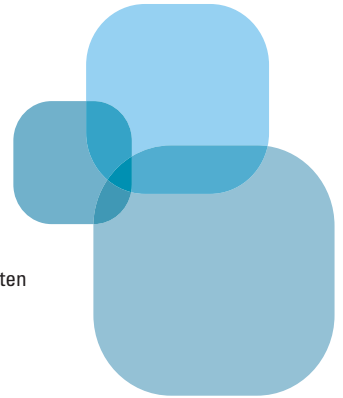
- Engineered for volume printing of garments and cut pieces
- Bulk ink system with 1.5-l bottles for uninterrupted operation
- Degassing system for smooth ink flow
- Integrated, automated pretreatment process works with Kornit's NeoPigment inks to print cotton, polyester, cotton-polyester blends, Lycra, viscose, silk, leather, denim, linen, wool, and more
- Dual-platen setup for greater productivity
- Web-to-print ready for quick launch of e-commerce sites

- Industrially designed printer for medium-range DTG production
- Integrated, automated pretreatment process works with Kornit NeoPigment inks to print cotton, polyester, cotton-polyester blends, Lycra, viscose, silk, leather, denim, linen, wool, and more

### Options:

- Available platens: children's, single sleeve, dual sleeve, universal pallet, tote bag, and grand pallet

- Children's platen



## LAWSON SCREEN & DIGITAL PRODUCTS [www.lawsonsp.com](http://www.lawsonsp.com)

### Model:

#### Diamond-Jet

**Inks:** CMYK + 2 Whites

**Printhead:** Ricoh Gen IV

**Resolution:** 1200 x 1200 dpi (max); 600 x 600 and

1200 x 600 dpi (production)

**Throughput at production resolution:** 120-240 light

shirts/hr; 20-60 dark shirts/hr

**Max print area:** 15 x 19 in.

**Software:** RIP Color Print

### Features:

- Industrial DTG printer for continual use and multi-shift operations
- Designed and produced by a well-established, US-based manufacturer of screen-printing equipment, inkjet printers, and pretreating equipment
- Variable-pass print modes for good, better, best quality
- Automatic head-tending maintenance and white-ink recirculation
- Bulk ink system for lower ink costs
- Printhead height adjustable up to 2 in.

### Options:

- Platens for large, youth, and child-size shirts plus specialized and custom platens
- Five models of pretreat equipment: Pre-Treat Vertical; Pre-Treat Zoom; Pre-Treat Zoom XL; Pre-Treat Zoom Pro; and Pre-Treat Easy-Stroke
- Digi-Dry Box, a specialized dryer to properly cure water-based digital inks, compatible with all DTG models
- Digi-Star Dryer, an energy-efficient convection-air dryer for curing textile inks

## M & R [www.mrprint.com](http://www.mrprint.com)

### Model:

#### M-LINK

**Inks:** CMYK + 2 Whites

**Printhead:** Ricoh GEN4 industrial

**Resolution:** 1200 x 1200 dpi (max); 600 x 900

or 600 x 600 dpi (production)

**Throughput:** Up to 48 light shirts/hr;

Up to 24 dark shirts/hr

**Max print area:** 13 x 19 in.

**Software:** M-RIP Software

### Features:

- M&R, a leading manufacturer of screen-printing equipment, designed the M-LINK industrial DTG printer for screen printers, embroiderers, and other garment-decorating professionals
- Beta tested in 2013; hard launch later in 2014
- Can be used as a standalone printer or teamed with the M&R Link Mobile Pallet System and any M&R screen press
- Mobile Pallet System has built-in microregistration so substrates can move between the DTG printer and screen press without loss of registration
- Includes built-in stand, computer, and RIP
- Can handle T-shirts, sweatshirts, cut pieces, and most smooth, flat fabric surfaces
- Three print modes include conventional bi-directional and two-pass printing plus One-Pass Express Printing that can print white and colors in one pass (best for shirts with tonal gradations instead of heavy solids)
- White ink recirculation system
- RIP software prints images with maximum sharpness, superior shading and gradations, and color accuracy

### Options:

- iPrep Pretreatment System can deliver full-front coverage in 7-10 sec
- Conveyor dryers
- T-shirt folding and packaging equipment

## MELCO [www.melco.com](http://www.melco.com) or [www.melco.com/direct-garment-t-shirt-printers](http://www.melco.com/direct-garment-t-shirt-printers)

### Model:

#### G3-T-Shirt Printer

**Inks:** CMYKK + 4 Whites

**Printhead:** Epson DX5

**Resolution:** 1440 x 1440 dpi

**Throughput:** 40-60 light shirts/hr;  
15-20 dark shirts/hr

**Max print area:** 16.5 x 23.6 in.

**Software:** MelcoRIP

### Features:

- Melco, a US-based manufacturer of embroidery machines, has partnered with a leading maker of DTG printers on the easy-to-operate, high-resolution G3
- Third-generation, Epson-based T-shirt printer designed to prevent white ink clogs
- Designed for large, all-over prints
- Can print on hoodies and sweatshirts
- Printhead height can be adjusted up to 1 in.
- Pressure-sealed bulk ink system feeds nine refillable ink cartridges
- On a wheeled stand, one person can easily move the printer through standard-sized doors to different locations
- RIP automatically determines white ink density for optimal amount of white underbase, reducing white ink usage
- Software also includes T-shirt templates, cost calculators, and ability to print directly from graphic software
- 3-minute daily maintenance procedures



Melco

## MESA DISTRIBUTORS [www.dtgamerica.com](http://www.dtgamerica.com)

### Model:

#### Summit DTG 520

**Inks:** CMYK + 4 Whites

**Printhead:** Epson

**Resolution:** 1440 x 2880 dpi (max);  
720 dpi (production)

**Throughput:** Up to 60 light shirts/hr (10 x 10-in.  
design); Up to 20 dark shirts/hr (10 x 10-in. design)

**Max print area:** 16 x 20 in.

**Software:** RIP

### Features:

- Developed by an established distributor of apparel-decorating equipment, including embroidery and rhinestone machines, laser-transfer printers, and heat presses
- Bulk ink system for lower ink costs
- White ink recirculation system
- 4-in-1 configurable platen can hold one large adult shirt, two youth shirts, two sleeve platens, or four child's platens
- RIP software can be used by up to four operators

### Options:

- Maximum print size can be increased to 16.5 x 45 in.
- Polyester pretreatment fluid for coating polyester shirts

## POLYPRINT [www.texjetprinter.com](http://www.texjetprinter.com)

### Model:

#### TexjetPLUS

**Inks:** CMYK + W with precoating  
and cleaning cartridges

**Printhead:** Epson DX5

**Resolution:** 1440 x 1440 dpi (max);  
Four production modes

**Throughput:** 40-60 light shirts/hr;  
15-20 dark shirts/hr

**Max print area:** 16.5 x 23.6 in.

**Software:** Texjet RIP

### Features:

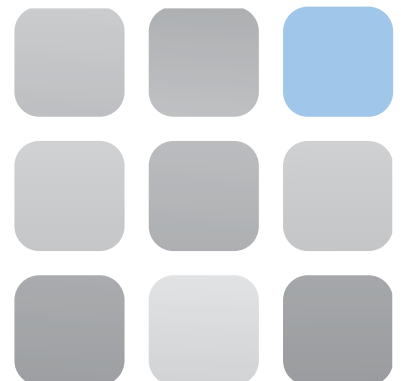
- Developed by Greek firm that specializes in digital textile printing and launched the first Texjet model in 2006
- Robust construction for heavy-duty use
- Can print on cotton, cotton/Lycra, cotton/elastane, cotton/poly blends, linen, viscose, and 100% polyester
- Compact enough for easy transport
- White-ink agitation system enables printer to remain idle for up to 30 days without removing the inks and with no maintenance or waste
- Closed-loop system with pressurized, refillable cartridges
- RIP provides automatic white-mask generation and manages white ink quantity and contrast
- Software includes T-shirt templates and cost calculator
- Print modes include one pass CMYK + White
- Easy-load frame system
- Printhead height can be adjusted up to 1 in.
- Six-month printhead warranty

### Options:

- Polyprint PreTreater III
- Easy Tables (three exchangeable platens)
- Screen and digital combination model
- Printer stand



Polyprint





• **Print quality doesn't depend solely on printheads, resolution, and droplet size.** Other factors that affect quality include the RIP software, sturdiness and precision of the media-transport mechanism, evenness of any pretreatment, humidity in the printroom, prepress skills of the designers and operators, and consistency of the garments supplied by the T-shirt vendors.

• **Throughput speeds can be misleading.** The time it takes to print a shirt depends on the size and color density of the design, thickness of the fabric, and efficiency in loading and unloading each garment. The overall time required to produce dark shirts depends on how quickly they can be pretreated and how much time is required to create and print the white underbase. Productivity is also affected by how long it takes to set up each job and cure the wet ink with either a heat press or conveyor oven. When you handle a lot of very small orders for many customers, you may spend a lot of time walking each customer through the process.

• **Production print modes can be helpful.** Because not every client needs super-quality photographic images, some models offer a "fine" print mode for photographic prints and a "fast" or "speed" mode for logos and lettering. While some designs printed in the production modes won't be as bright or vibrant as they would be if printed at maximum resolution, many customers will be happy with the results and wouldn't know the difference unless they saw shirts in the two modes side by side.

• **Some DTG printers can be used to print other promotional products such as coasters, mouse pads, tote bags, towels, or even prestretched art canvases.** If you plan to use your DTG printer to make photo merchandise on a variety of precoated surfaces, you may want to consider a device that can print images at higher resolutions. But if you plan to use your DTG printer solely to print

cotton T-shirts, keep in mind that many customers may never expect you to print photos. An image printed with water-based inks on a soft, exquisitely comfortable T-shirt simply can't show the same level of detail as a high-resolution image on a glossy inkjet photo paper. So it may not matter if the printhead can't eject ultra-tiny droplets for super-high resolutions.

• **The capabilities of the RIP are important.** Before choosing a printer, check out the features and functionality of the RIP. Some RIPs are designed for extreme ease of use by employees who may not be familiar with graphics programs. If you will be accepting a lot of customer-prepared job files, you may want software that lets you easily tweak the files for optimal output. If you will be printing a mix of T-shirts and sweatshirts, you will want the ability to control the

amount of ink used to achieve optimal saturation. A good DTG RIP will also be able to control where and how much white ink is required to produce underbases. More sophisticated RIP software can help you boost image quality, control ink usage, or match brand colors.

**Five questions to ask before you buy**

The DTG Sourcelist is intended to be a quick snapshot of the current options in DTG printers. In addition to asking questions about ink costs and other supplies, it's important to ask questions such as:

**1. What humidity and temperature levels must be maintained in the printroom to keep this printer working properly?** If the printroom air is hot and dry, the water-based inks can dry and clog your printhead nozzles.



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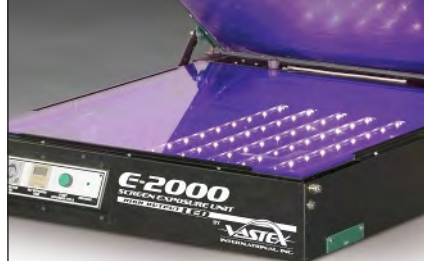
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### Screen Capacities:

- 47 x 31 in. (119 x 79 cm)
- 41 x 31 in. (104 x 79 cm) shown (36 X25 in. [91.4 X 63.5 cm] in a registration fixture)
- 23 x 31 in. (58 x 79 cm)
- 21 x 24 in. (53 x 70 cm) shown



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The printer's spec sheet will tell you if the operating environment must be maintained at 45% relative humidity or above.

**2. What types of accessories will you need?** If you plan to print on dark shirts, you will need some sort of system for pretreating the shirts. While you can use a handheld power sprayer, automated or manual pretreatment systems built specifically for this job are available that can help you quickly and evenly apply the just right amount of pretreatment for a specific application. Newcomers to garment decorating may need to buy a heat press or dryer to accompany the printer.

**3. What types of garments produce the best print quality and washability?** Some DTG users have found that they get more consistent results from certain types and brands of garments.

**4. How much maintenance is required on a daily or weekly basis?** Some of the newer systems have been engineered to reduce the amount of maintenance required. But for optimum, consistent performance, you should follow the manufacturer's maintenance instructions—usually a few minutes spent cleaning at the end of a print session.

**5. What kind of training and technical support is included?** Easy access to good technical support is crucial. Even experienced screen printers are likely to have questions about specific parts of the workflow such as the pretreatment process. DTG experts advise you to take advantage of the training that is offered and then give yourself time to learn the ins and outs of the machine before using it on live jobs.

As you read through the DTG Source-list, you'll get a pretty good sense of what types of problems the newer machines have been designed to solve. Nearly all of the printers in the Source-list can be viewed in action on YouTube. Many vendors of DTG printers have produced informative webinars

and white papers, and some participate in brand-specific discussion groups hosted in online forums.

### What's next?

Now that garment decorators have become more comfortable using DTG printers, look for technology advances to continue and new machines to be introduced. Current owners of DTG equipment would love to see lower ink costs and features that boost overall productivity.

Resolute, a UK-based supplier of textile inks, recently announced a white ink that won't require dark garments or polyester to be pretreated. Resolute plans to use the white ink in a Hybrid DTG system that they expect to demo later this summer.

Last fall, Kornit introduced the Avalanche Hexa, which uses the first six-color, wide-gamut inkset. It is being targeted at printers who cater to fashion designers or clients with critical reference colors such as those in brand logos and licensed team sportswear. Kornit's inline pretreatment system used with the company's NeoPigment inks has significantly expanded the range of textiles that can be printed on Kornit's DTG printers.

Manufacturers of DTG equipment understand that many issues still must be resolved before DTG printing is more widely accepted among screen printers. Andy Bucholz of Eastern Shore Signs in Cape Charles, Virginia, bought his first DTG printer to produce short runs of T-shirts for his sign customers. That initiative proved so successful that he started printing canvas bags and promotional products for new groups of customers. Now that he has added other types of digital printing equipment, he offers small businesses complete packages of signs, product labels, promotional items, and apparel.

But he has also expanded into screen printing. For certain types of jobs such as bigger orders of dark shirts, he has learned it still makes sense to screen print. ▣