



APPLICATION NOTE

DrafStation RJ-900X-U1 for Dye Sublimation

DrafStation

RJ-900X-U1



Mutoh's DrafStation RJ-900X-U1 printer can be used for digital **dye sublimation** applications.

Next to the RJ-900X-U1, you require sublimation transfer paper, a polyester (coated) substrate and a heat press or calendar.

This technique offers a **relatively low setup cost**, the advantages of digital design as well as its **detail and good quality**.

Transfer is possible onto all kinds of **polyester fabrics and polyester coated materials** such as banners, flags, pennants, prototypes, sports goods, gadgets, apparel, personalised interior décor, polyester coated ceramics, aluminium and tile murals, tradeshow and exhibition graphics, etc...

The main benefits of the dye sublimation process are :

- Vibrant colours
- Superb scratch- and water resistance.
- Images that will not crack.
- More user-friendly than screen printing, which requires the use of solvents and dyes.



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1. What is “Dye Sublimation”?

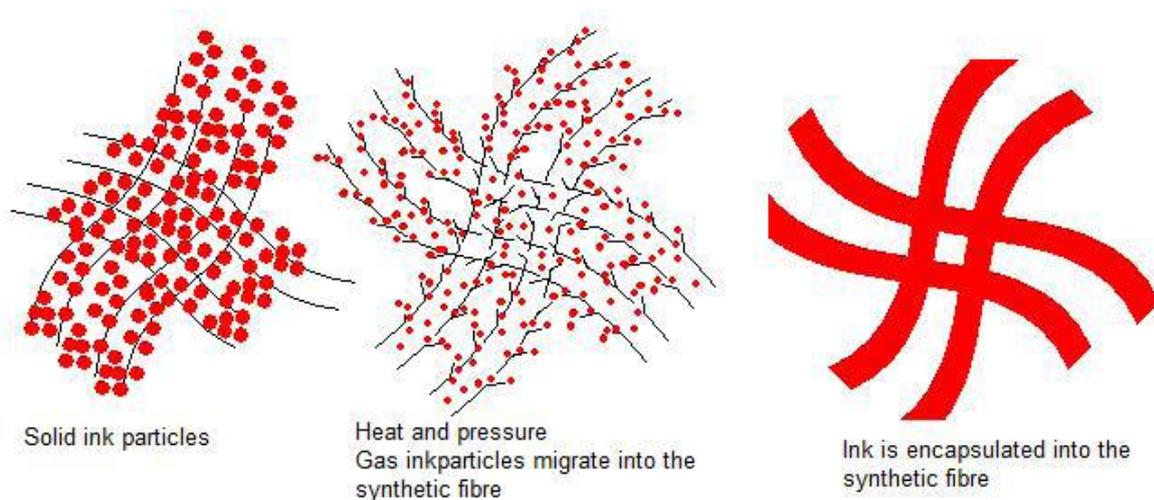
Digital dye sublimation is a physical process that uses heat to transfer the printed dye ink to a medium such as fabrics and clothing. The image on the paper is the mirror image of the final design. The image can be placed onto the fabric and heated, transferring the completed image onto the material via the dye-sublimation process.



RJ-900X-U1

Media

Transfer is possible onto all kinds of **polyester fabrics** or **polyester-coated** materials. The transfer paper to print on DrafStation RJ-900X-U1 should have a minimum weight of 95 g / m². Lighter paper is printable, but more sensitive to wrinkling.



Process

Dye sublimation occurs when a **substance transforms** between the solid and gas state without first turning the solid particles into a liquid stage.

The sublimation of an image happens when **the heat in the press** causes the **dye** particles of the images to **sublimate**. This temperature varies according to the specs of the material to sublimate on. Typical temperatures are between 180° and 220° C.

For optimum performance, it is best that all water is evaporated before starting the sublimation process

2. Target markets



copy shops	short run customisation of soft signage on textile
gift shops	mugs, mouse pads, clocks, mobile covers
fashion	blouses, rain jackets, t-shirts, sportswear, shoe laces
graphic arts	greeting cards, posters
car decoration	prints on polyester-coated aluminium parts
home furnishing	fabrics, carpet tiles, cushions, etc...
wallpaper fabrics	personalised (art) wallpaper
promotional	t-shirts, flags, banners, booth decoration
engravers	images on polyester-coated materials such as metals, etc.
sports wear	customised for soccer, basketball, cycle wear, hockey uniforms, snowboards, helmets, etc...
interior decoration	sheets, polyester-coated ceramics and tile murals

For every market, economical, cost-efficient “one-offs” are possible, without compromising on quality when compared to traditional processes.



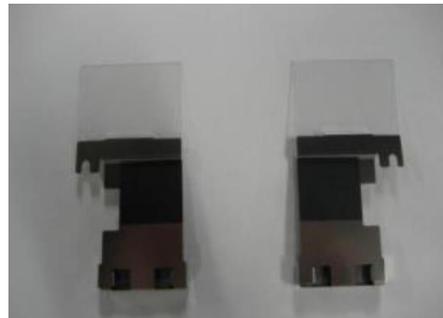
3. Items available from Mutoh

3.1 Mutoh tools

List of all tools needed for this application.

DrafStation RJ-900X-U1 - Standard Configuration

- 4-Colour printer
- Max. Media Width: 1080 mm (42.51")
- Max. Print Width: 1074 mm (42.28")
- High stand
- 2" media scroller
- Set of 2" → 3" conversion flanges
- Set of media retainers to keep the media edges flat to the printing table, so that the moving print head cannot touch the media. They are used in case of using heavy ink loads or when using thin media.
- No software, no ink, no cleaning and no take-up system



Media retainer set (RJ9-PH)

Winder/Unwinder (Optional)

VJ-1213-TUP20 Torque Winder for RJ-900X-U1

Open cassette for ink load & cleaning (Optional)



KY-08701

Open cassette + funnel for ink load & cleaning for Mutoh dye sublimation inks.

4 pcs. Needed for a DrafStation RJ-900X-U1



3.2 Mutoh Sublimation Inks

Universal transfer & direct sublimation ink

VJDS2-100-BK	1 litre	black
VJDS2-100-CY	1 litre	cyan
VJDS2-100-MG	1 litre	magenta
VJDS2-100-YE	1 litre	yellow

Water-based disperse cleaning liquid

MY-80844	0.5l	Water-based textile cleaning liquid (*)
MY-80845	1l	Water-based textile cleaning liquid (*)
MY-80846	2l	Water-based textile cleaning liquid (*)
RJ80CR02-500	500cc	CR02 liquid for pre-wash and long store
RJ80CR02-1000	1000cc	CR02 liquid for pre-wash and long store

(*) The water-based textile cleaning liquid is used for a thorough cleaning of the ink path for example to change to another ink. After using this cleaning liquid, always wash it away using demi-water or CR02. If water-based textile cleaning liquid is not washed away, it can cause permanent clogging.

4. Tools

4.1 Heat presses

Platen presses are used for transferring dye sublimation prints on individual objects such as cut apparel parts, T-shirts, sports apparel, bags, etc. Platen presses are also used to transfer onto rigid substrates such as wood, metals and ceramic tiles.

These presses are available in manual, pneumatic or electro-magnetic versions. Their size varies from “33 x 33 cm” to ... over single format, double format to wide format presses.



4.2 Transfer paper

A transfer paper should be chosen in accordance with the application. Transfer onto fabrics can be done with any paper.

Reference brands:

Neenah Coldenhove	https://www.coldenhove.com/products/jetcol/
Sappi Digital	https://www.sappi.com/nl/dye-sublimation-papers
Beaver Paper Group	https://www.beaverpaper.com/texprint-grand-format/
Kaspapir	http://www.kaspar-papir.com/papers.php#
Felix Schoeller Group	https://www.s-race.com/home

4.3 Polyester fabrics

Hereby a short list of polyester fabrics manufacturers:

Pongs	https://products.pongs.com/page/2?lang=en
Georg-Otto-Friedrich	https://www.g-o-friedrich.com/en/products
A.berger	https://bergertextiles.com/?lang=en_GB
Neschen	https://www.neschen.de/en/product_category/print-media/media-for-dye-sublimation-print-technology/#pdetails
Concordia Textiles	https://www.concordiatextiles.com/en/sublitexco/