

D2M-RS1 (Direct-to-Mesh by D2M Rapid Screen)
is a **NEW STENCIL MAKING TECHNOLOGY** that
dims the lights on traditional **PHOTOGRAPHIC**
STENCIL MAKING PROCESSES...



**Direct-To-Mesh
Imaging**

No Film, No washout,
No drying, No emulsion



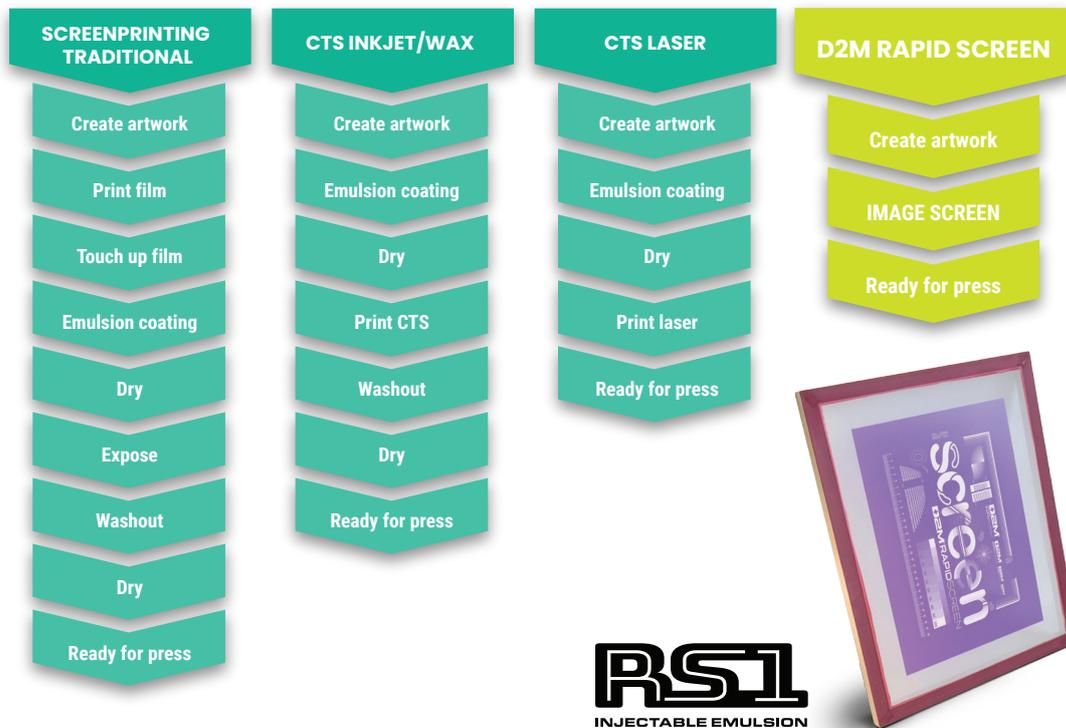
D2M Rapid Screen and DuralChrome of Switzerland have partnered to develop a new stencil making technology named D2M-RS1. The D2M-RS1 is an entirely new stencil making process that is built around a printable emulsion which is applied directly to the screen mesh in negative form. It is designed to almost eliminate the steps required for stencil making using conventional photo stencil processes. The D2M-RS1 eliminates the need for darkroom processes which typically consist of film positives/CTS equipment, emulsion pre-coating, drying, screen exposure and washout procedures. It eliminates many of the chemicals and energy requirements needed to make stencils including water, drying and air flow/humidity controls and specific lighting. The conventional production steps are bypassed with the D2M-RS1 which can be positioned on the print production floor. Screens can be prepared for printing in a fraction of the time it would take to do the same in a typical screen-printing darkroom. D2M reduces set-up costs and time, enabling smaller production runs to become more viable.

**NO darkroom • NO emulsion coating • NO washout
NO drying • NO films • NO CTS equipment • NO exposure**

Which Industry sector is D2M-RS1 designed for?

D2M-RS1 is primarily designed for the garment printing sector. It accommodates typical textile screen mesh counts and supports all common frame sizes up to 25"x 36" (64 cm x 91 cm). The emulsion is resistant to most brands of water-based and Plastisol inks typically used in the garment printing sector. D2M-RS1 has an output resolution of 2400DPI so artwork edge definition for both vector and photographic/halftone artwork requirements are pixel sharp and durable. The D2M-Rapid Screen stencil durability has been tested and withstands up to 4,000+ print impressions before edge definition shows signs of degradation.

Screenprinting process comparisons



Special Features

- Eliminate all dark room processes
- Eliminate all consumable costs
- Improve quality and speed-up "time to press"
- No emulsion, No washout, No drying, No film
- Up to 2400dpi resolution

The D2M-Rapid Screen Process

The D2M-RS1 uses a printable liquid emulsion technology to produce the negative directly onto the stencil mesh. It basically replaces emulsion pre-coating and therefore the need for film positives or CTS equipment. This direct printable emulsion is UV cured and jetted onto the mesh with a patented, proprietary encapsulation technology so that both sides of the screen mesh are encapsulated and hardened simultaneously. This in turn creates a fully imaged screen ready for the press without the need of any of the additional steps normally required with traditional screen preparation. Images or negatives have pixel sharp edges and definition up to 2400dpi. More detail is retained than with a film exposure, which can suffer from poor density, alignment errors and light undercutting.



Post Wash/Clean

The **D2M Rapid Screen[®] RS1** requires no chemicals for post wash out in most cases. Just high-pressure water reducing the need for chemicals in the wash out. Depending on ink brand and type, a common de-haze process maybe required.



The need for further masking of the screen is reduced in most cases. With Alpha print controller and Monitor located on the printer, the D2M-RS1 makes it easy to preview and output jobs, as well as build templates for precise image placement. The D2M-RS1 comes standard with an extremely fast and reliable RIP software that allows full user control over halftone dot shape, angle, and frequency. Color separations are rasterised by the RIP and sent to the D2M-RS1 Alpha control manager and show up as individual files that can be easily previewed, re-ordered and output. These files can be stored after the job is complete, much like storing film, and returned to the D2M-RS1 Screen whenever a repeat is ordered. This digital file is all that is required to re-produce the exact same screen as before.



Close-up of printable emulsion applied directly to the screen mesh in negative form.

D2M-RS1 workflow

First, mount a screen onto the D2M-RS1 pin registration system. Secondly RIP the artwork to D2M-RS1 machine and a printable emulsion is applied as a negative over the entire screen which is cured during the application process. Thirdly, remove the screen from the D2M-RS1 machine and dry off any moisture with light air pressure. Most full size screens are imaged in under three or four minutes and the screen can then go direct to the printing press for setup. The whole stencil making process is completed by the RIP station and a single piece of equipment being the D2M-RS1. The D2M-RS1 requires no chemicals for screen reclamation – The printable emulsion can be removed with high-pressure water.

The D2M Rapid Screen[®] RS1 steps

- Artwork is generated as a negative. Typically EPS, TIFF or Jpeg formats.
- Place a screen onto the **D2M Rapid Screen[®] RS1** printer and a unique injectable emulsion is applied as a negative over the entire screen which in turn reduces the need for masking in most cases. Most full size screens are imaged in under 3 minutes.
- The screen can then go direct to the press and start production... It's that simple

Traditional Photographic Method

The traditional/photographic stencil making process requires a dedicated darkroom setup that consists of; a UV light safe environment, a screen coating machine to apply the emulsion properly, a drying unit and humidity controller to dry and remove moisture from the emulsion, a film printer/CTS machine to print/transpose the artwork onto the screen, an exposure unit to expose the emulsion, a washout trough to wash out the unexposed emulsion after the stencil is developed. There are 4-5 pieces of equipment required to complete the stencil making process with additional energy, workspace and water requirements for processing.



A typical workflow/time frame would involve – Coat a clean screen with photographic emulsion (approximately 2 minutes). Dry the emulsion in a heated cabinet (it can take up to 24 hours to properly dry the emulsion). Print film positives or use a CTS system to print UV blocking dye onto the films/screens(it can take 4-5 minutes for each film positive or 1 minute per colour separation for CTS). Expose emulsion using dedicated exposure unit (3-4 minutes for film/30 seconds for CTS). Rinse the screen to wash out the unexposed emulsion (4-5 minutes). Dry the screen again in a drying cabinet (can take up to 15 minutes).The screen is then ready for press setup. For screen reclamation a dedicated soaking bath with emulsion removal chemicals needs to be used to remove the emulsion material from the mesh.

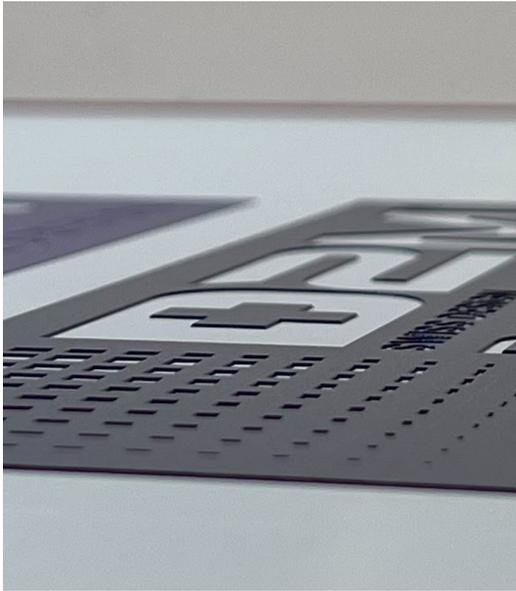


Reduce production time and costs

A direct to mesh stencil making technology that reduces production time and costs by up to 80%. Improve efficiency and simplify stencil making with no dark room requirements.

Make stencils in a more sustainable manner by reducing materials usage and energy costs.

Find out how **D2M Rapid Screen® RS-1** saves on costs, increases production capacity, and simplifies stencil making.



When will D2M-RS1 be industry ready?

A D2M-RS1 machine is in operation at selected test sites in Switzerland, Australia, Turkey, USA and Netherlands with screens/stencils showcased at the recent FESPA trade show in Munich, Germany. Full commercial release is expected in September. The resulting stencils and prints made using D2M-RS1 technology generated great interest particularly from screen printing equipment suppliers. The development and manufacturing of the D2M-RS1 is being completed by DuralChrome of Switzerland and D2M Rapid Screen which is constructing the equipment at its manufacturing facility.

Manual or Automatic Press

The **D2M Rapid Screen® RS1** is designed to work equally as well on manual or automatic presses. All common squeegee pressures used in typical production up to 85 psi with rounded standard blades will not break down edges of the D2M Rapid Screen® RS1 injectable emulsion. No operator retraining is required. Just use the standard settings or set up that are common in your shop today.



New Special Effects

Apart from generating hard wearing pixel sharp edges and definition, the D2M-RS1 allows for many unconventional embellishing effects. With the ability to precisely control the thickness of the printable emulsion levels, high build stencil making is easily achievable. This is a requirement for prints with raised areas requiring a unique 3D type embellishment. Achieving usable high build stencils with traditional photographic stencil making techniques is difficult to achieve and prone to inconsistencies, wastage and loss of production time. D2M-RS1 solves most, if not all, of these issues with its instant cure direct injectable emulsion system. The D2M-RS1 system is also capable of creating stencils with multiple emulsion thickness on a single screen, we know of no other screen making technology that can do this.

D2M-RS1 - Sustainability for both business and the environment

There are sustainable benefits that we expect the D2M-RS1 to deliver upon. The removal of the need for the traditional darkroom which can't function without a suite of dedicated processing equipment; the energy required to run the equipment and the chemical associated with photographic/darkroom stencil making. Most importantly the dramatic reduction of water usage for the overall screen-printing process, since the textile industry world wide is one of the largest users and polluters of water. D2M-RS1 is a single piece of equipment without the need for darkroom setup, energy usage and chemicals in comparison to photographic stencil making requirements. It's the beginning of a significant advancement in stencil making for the textile sector. This unique technology challenges our perceptions on how digital printing can be used to simplify manufacturing processes. Hats off to the innovators who are observant and dedicated to delivering smarter production systems that address many of the issues around sustainability and improving production practices. The traditional darkroom as we know it has been through significant technological change which shows no signs of fading.

SEEING IS BELIEVING. ORDER A SCREEN SAMPLE TODAY.

Test screens are available from **D2M Rapid Screen** for on-press trialling.

Send us your artwork and we will image a screen in your preferred mesh count.

You only pay the freight or use your nominated freight company.

(Limited to one screen and one mesh count only per order, 1 bit TIFF file required)

To place order please email info@d2mrapid.com and quote "Test Screen Please".