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Océ Radiant Fusing Technology

This bulletin discusses Radiant Fusing technology and its associated benefits as compared to its direct competition's fusing technologies.

Océ offers its customers two printing technologies in its wide format product lines – Radiant Fusing technology and Copy Press technology. Each technology offers customers significant benefits in the environments for which they were designed. Radiant Fusing technology is beneficial in the decentralized, on-demand, workgroup environment where customers appreciate the reliability, energy efficiency, low heat and noise, and instant-on product capabilities, along with very high image quality. In high-volume production environments, the Océ TDS800 with its Copy Press technology is valued for its high quality, extreme reliability, and very low cost of operation at high volumes.

Key Customer benefits

- No warm up time
- Sharper output
- Low power consumption
- Less noise and less heat
- Environmentally friendly

What is the electrophotographic process?

The term electrophotography means “to write with light using electricity”. During the electrophotographic process, light is converted from a binary (on/off) light source into black and white dots on a piece of paper. The process takes place on a photoconductor – usually called the drum – that rotates and creates the image.

How does this process work?

Step 1: The light-sensitive drum gets a negative electric charge.

Step 2: The drum is then exposed to light from the LED (light emitting diode) array. The drum becomes conductive at the points where light hits its surface. This causes the negative charge on these spots to disappear.

Step 3: The drum comes in contact with the toner. The negatively charged toner is attracted to the area of the drum where the points of light have caused the original negative charge to

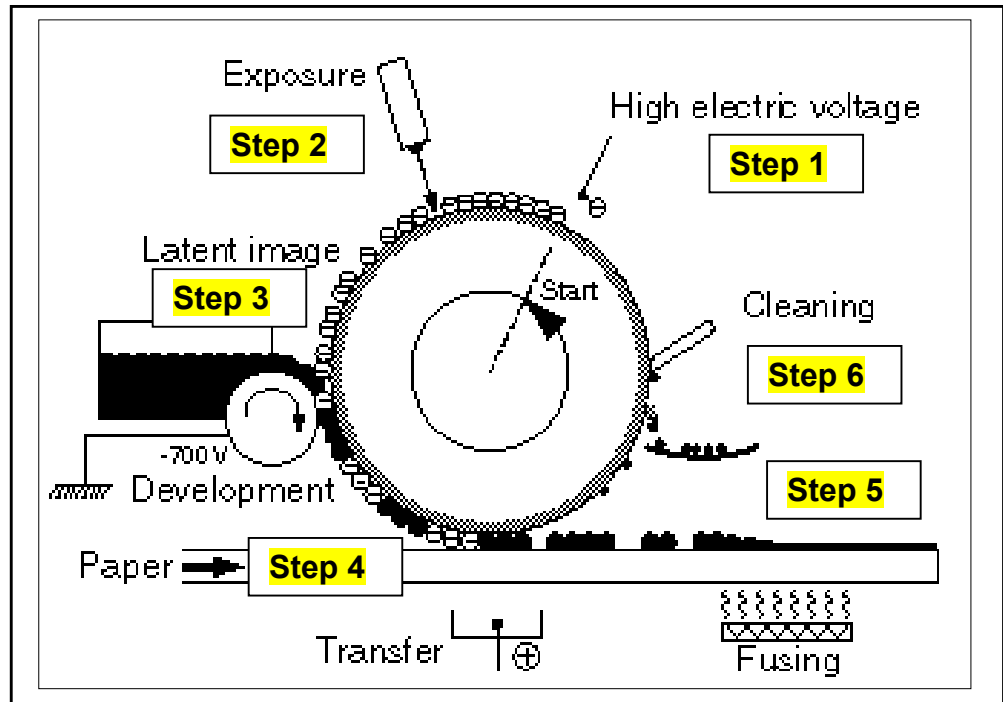


disappear. The image on the drum becomes visible as a layer of toner covers the discharged parts.

Step 4: A positive charge is applied through the media as it moves past the drum. The positive charge attracts the toner and causes it to move from the drum to the media.

Step 5: The toner is heated and fixed permanently (fused) onto the media. In an Océ Radiant Fusing® machine this is done via an array of heated wires. The heat rises up through the media, allowing the toner to literally melt down into the media. This minimizes any distortion of the image, which may be present on competitive systems, which use heated pressure fuser rollers.

Step 6: Toner particles left on the drum are removed and the drum is cleaned prior to printing the next image.



What makes Océ Radiant Fusing Technology different?

During the Radiant Fusing process, toner is fused to the media by a heat rising through the media from a grid of wires. The toner melts and is fused to the media without distorting the image. Competitive wide format printers use hot pressure rollers to fuse the image to the media. Additionally, these competitive systems require a lubricant on the fuser rollers to prevent the print from sticking to the roller. This lubricant is usually referred to as silicone oil, but may also be called silicone grease, fuser grease, or fuser wick. All these competitive systems may leave a silicone residue on the print, which can increase the likelihood of toner transfer if prints are stacked or folded.

Océ Copy Press process, on the other hand, is a drum, to transfer roller, to media process that fuses the image directly into the media using low heat and precise pressure. Océ Copy Press was developed to emulate an offset printing process, and is nothing like the competitive systems heated pressure fuser rollers.

What does this mean to a customer?

Océ Radiant Fusing produces superior image quality.

- The media travelling through the fuser never makes contact with pressure rollers used in other reprographic processes. These rollers smash the toner into the media, which can blur the printed image. Océ Radiant Fusing technology prevents resolution loss, dot size degradation and line fuzziness as the toner is melted exactly as it is placed on the media. The only toner-based printing system superior to Océ Radiant Fusing is Océ Copy Press.

Océ Radiant Fusing products operate at a lower temperature.

- Because there are no pressure rollers to heat, the Océ Radiant Fusing products maintain a lower temperature. During the printing process the wire grid is heated to fuse the toner to the media. The fusing section heats quickly to fuse the toner and cools quickly when the task is completed.
- Once printing is completed, the printer falls into a stand-by mode drawing a minimum of power. XES products have a standby mode of 1000 watts, as the pressure rollers must stay heated in preparation for the next print. The new KIP product claims to be energy efficient, but has a minimum standby mode of at least 600 watts. The low temperature stand-by mode gives Océ Radiant Fusing products Energy Star designation. This means that the US Environmental Protection Agency recognizes the printers as energy efficient products. Further Energy Star information is available in a separate bulletin.

This means:

Less energy use, which can lead to significant cost savings - When comparing the Océ to others, significant electricity cost savings can be seen over a year. There may also be a reduction in air conditioning costs, as the printers do not raise the temperature in their location.

Perfect for workgroup environments - Océ Radiant Fusing products generate less heat and noise so they fit easily into a workgroup environment. Also, the instant-on capability means no waiting for the machine to warm up before getting prints

Greater long-term reliability - Océ Radiant Fusing products generate less internal heat, and have fewer consumable parts (no fusers or fuser oil). The lower total heat preserves all parts of the machine, and fewer consumables means fewer parts which may require a service call to replace

Océ products increase productivity.

The low operating temperature needed to fuse the toner to the media means Océ Radiant fusing products are instant on. The printer warms up as prints are processed and cools down immediately afterwards. Competitive products need to stay in a costly, heat-producing standby mode in order to remain this productive. If they cool down, they then require several minutes warm up time, which adds to a customer's printing time.