

# Océ TDS800 Technologies

Technology information



**Breakthrough wide format print productivity**

*Unique technologies in the Océ TDS800 system*



- **Océ Image Logic: Unique image-processing technology**
- **Océ Copy Press: Unique offset-like printing technology**
- **Productivity that's incomparable**







## **Breakthrough wide format print productivity**

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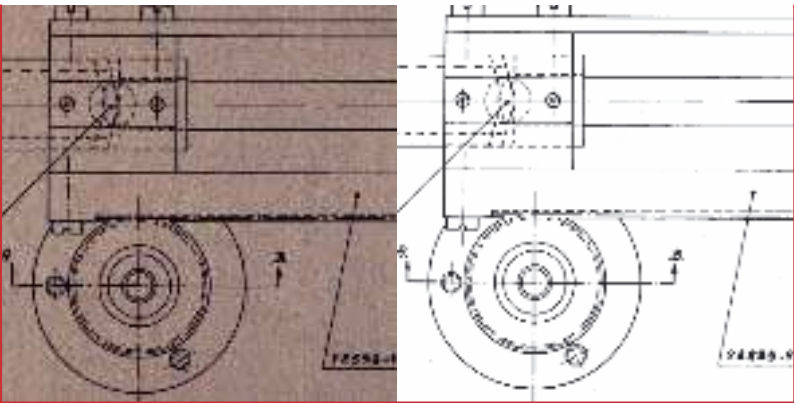
At the heart of the Océ TDS800 are the proprietary Océ Copy Press and Océ Image Logic® technologies. They provide the basis for the system's total productivity concept of quality, reliability, ease of use and throughput. These state-of-the-art technologies are Océ's answer to the shortcomings of the conventional electro-photographic principle. Paper jams are virtually eliminated, ozone emissions are close to zero, and print and copy quality is taken to a new level. The result is crisp line drawings with smooth, solid fills, clear reproduction of colour originals, smoothly rasterised documents without moiré artefacts and distortion-free photo enlargements. In other words, productivity and quality you can count on: every document, every day.



## Océ Image Logic: Unique image-processing technology



Océ Image Logic is Océ's unique intelligent image-processing technology for easy-to-use 'green button' copying and scanning. It enables any original to be copied or scanned to file at optimum quality, right first time. This simple green button approach saves valuable time and ensures that all information is reproduced correctly, without wasting media by trial and error.



### Green button copying and scanning

Océ Image Logic automatically enhances scanned data using three key digital technologies to ensure outstanding copies, first time every time:

- Automatic Background Compensation suppresses undesired backgrounds, producing clean copies even from old and dirty originals.
- Advanced filtering enhances weak lines and balances halftones. Weak information such as pencil lines is distinguished from 'background noise' and digitally enhanced. Shaded areas are also identified, and smoothed and softened by the filtering process without loss of information.
- Error diffusion converts the 256 grey scales into a black & white image, ensuring solid fills, faithfully reproduced lines and perfect halftones, and reproducing screened originals without disturbing moiré patterns.

With these advanced capabilities, Océ Image Logic is the leading technology for productive 'green button' copying and scanning. Every document is scanned perfectly every time, forming the basis for consistently high-quality copying and reliable archiving with maximum information retention.

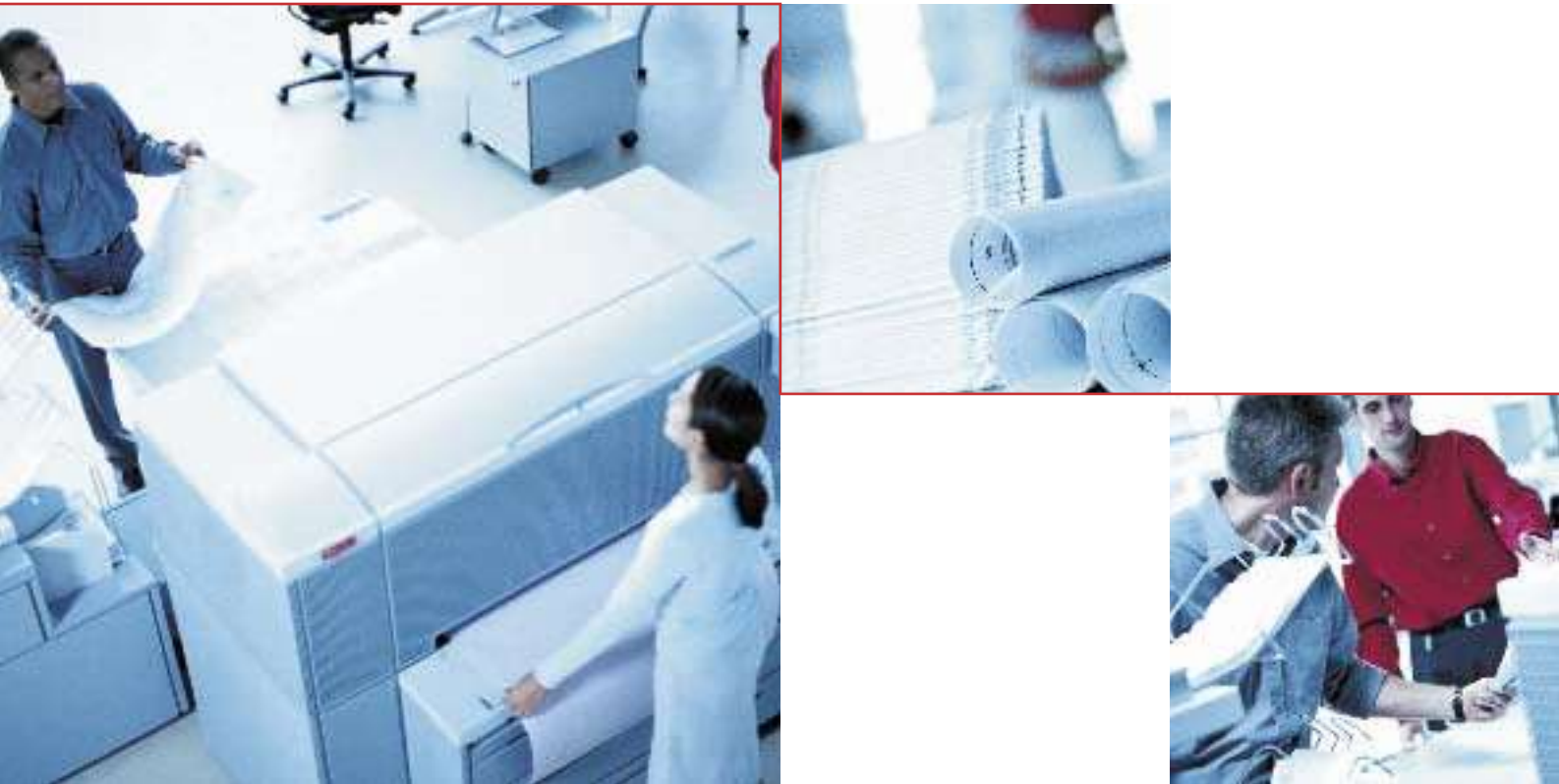
### Handling special originals

The Océ TDS800's 400x400 dpi scanner enables the operator to select directly from different types of special originals:

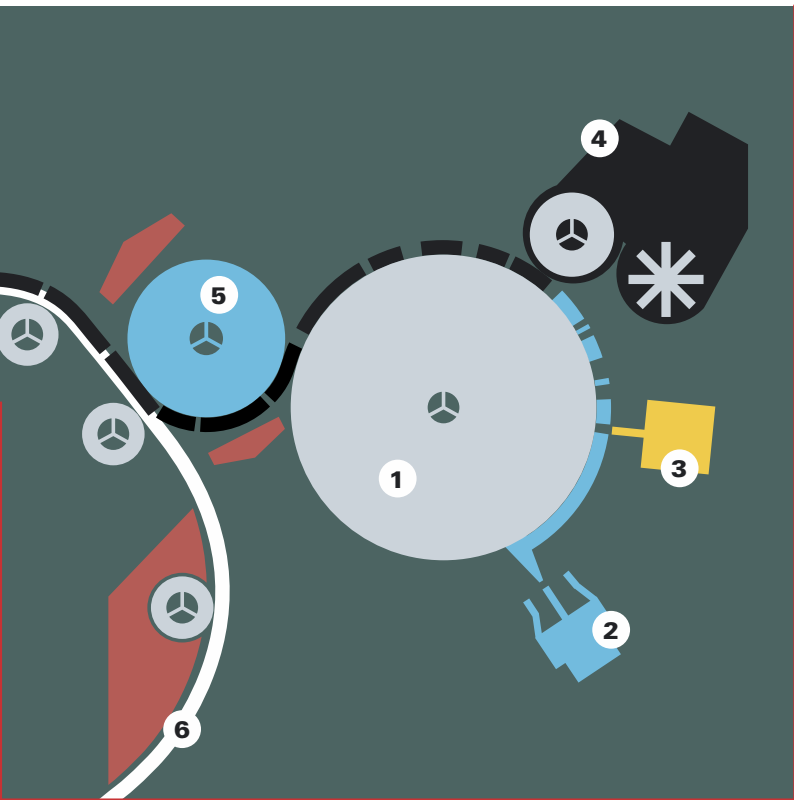
- Lines and text: default mode for technical documents
- Photo: optimal grey scale translation and reproduction for an even, smooth impression
- Greys and lines: fine information is retained while area fills are smoothed into soft images and distinct areas; ideal for example for reproducing maps
- Printed matter: fine grids in illustrations and photographs on printed matter are reproduced without disturbing moiré artefacts
- Dark originals: line and text information in dark and low-contrast originals such as diazo intermediates is enhanced and reproduced clearly
- Blueprints: in this mode the image is inverted; black is printed as white and white is printed as black, which significantly enhances legibility



## Océ Copy Press: Unique offset-like printing technology



Océ Copy Press technology ensures consistently high printing quality, even after hundreds of thousands of prints. It replaces the conventional electrophotographic technology, which has long been a barrier to improvement of print quality and reliability. An offset-like principle takes the print image to the paper, and not the other way round. In the Océ TDS800 the proven quality of this technology goes one step further. Improvements in the toner unit ensure solid black areas are printed consistently over time. The result is uniform, intense solid areas, well differentiated grey scales and high sharpness of even the finest lines. Quality is further enhanced by the ultra-fine, carrier-free monocomponent toner.



**The unique Océ Copy Press technology actually presses the image onto the media, for consistently high quality**

- 1. Organic photoconductor (OPC drum)**
- 2. Corona unit**
- 3. LED printhead**
- 4. Direct toner transfer**
- 5. Compact transfer fuse unit (CTF)**
- 6. Simple media path along pre-heater**

### **Six components of unique Océ Copy Press technology**

#### **1. Organic photoconductor (OPC drum)**

The heart of the Copy Press system is Océ's unique organic photoconductor (OPC), an extremely light-sensitive and durable OPC drum which guarantees high quality.

#### **2. Corona unit**

As it revolves, the OPC drum is charged by a pin-array corona unit. Its ozone emission has been brought down to close to zero. Resistant to pollution, it ensures a virtually constant charge level over time.

#### **3. LED printhead**

An LED (Light Emitting Diode) printhead projects the image onto the OPC drum, producing a very sharp and accurate latent image, even of single pixel lines.

#### **4. Direct toner transfer**

The latent image is developed by direct transfer of Océ's unique monocomponent toner. This results in extremely precise transfer and eliminates waste toner. Moreover, flying toner particles are virtually eliminated, adding to a healthy working environment.

#### **5. Compact transfer fuse unit (CTF)**

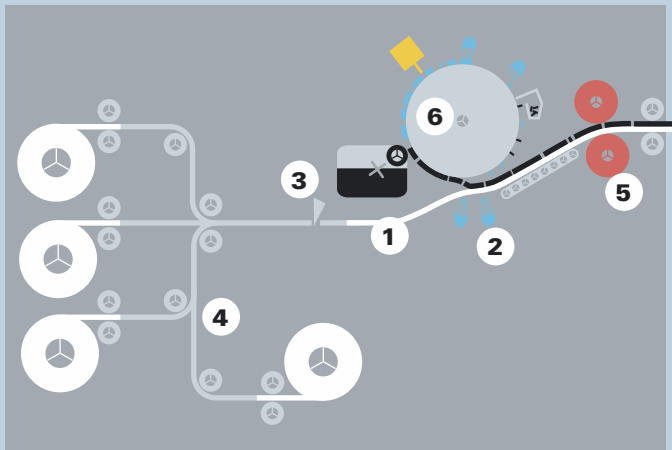
Océ's compact toner transfer unit (CTF) conveys the toner image from the OPC onto the paper, closely resembling offset printing. This process prevents contact between the media and the photoconductor, eliminating the risk of damage to the photoconductor. Direct application of the toner via the CTF unit ensures 100 percent toner transfer, further contributing to image quality and minimising the risk of toner pollution.

#### **6. Simple paper path along pre-heater**

Since the print image is brought to the paper and not the other way round, the paper path is simple and reliable -- so simple that jams are virtually eliminated. The paper is pre-warmed, allowing low fusing temperatures and preventing the media from warping or wrinkling.

# Productivity that's incomparable

This table shows a comparison between Océ Copy Press technology and conventional electro-photographic technology in the key areas of sensitivity to internal paper jams, copy and print quality and environmental issues.



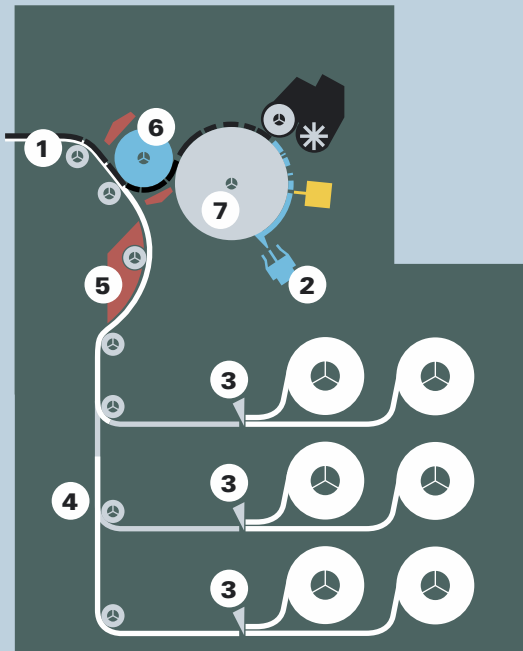
- 1. Paper path
- 2. Corona units
- 3. Paper cutter
- 4. Less sturdy materials
- 5. Fuse unit
- 6. Photoconductor

## Conventional electro-photographic technology

### Sensitivity to internal paper jams

Issue	Problem	Disadvantage
1. Paper path	Long paper path: through the middle of the machine to the sensitive photoconductor and fusing area	Complex internal mechanism results in many potential jam areas and wasted paper
2. Corona units	3-8 corona units: several charges are required to make a copy	Charges generate excessive static electricity and heat increasing chance of jams
3. Paper cutters	1 paper cutter is used to cut all different media rolls	Rewinding of roll needed when different media sizes are used within a set, increasing chance of jams and reducing productivity
4. Material use	Less sturdy uncoated materials often used, including paper path guides (some machines weigh around 400 kg)	Less durable parts may result in more frequent paper jams and required service visits
5. Sensitivity to humidity	Paper at room temperature passes through high-temperature process, past flat plating	Paper can stick to condensation on flat plating, leading to paper jams



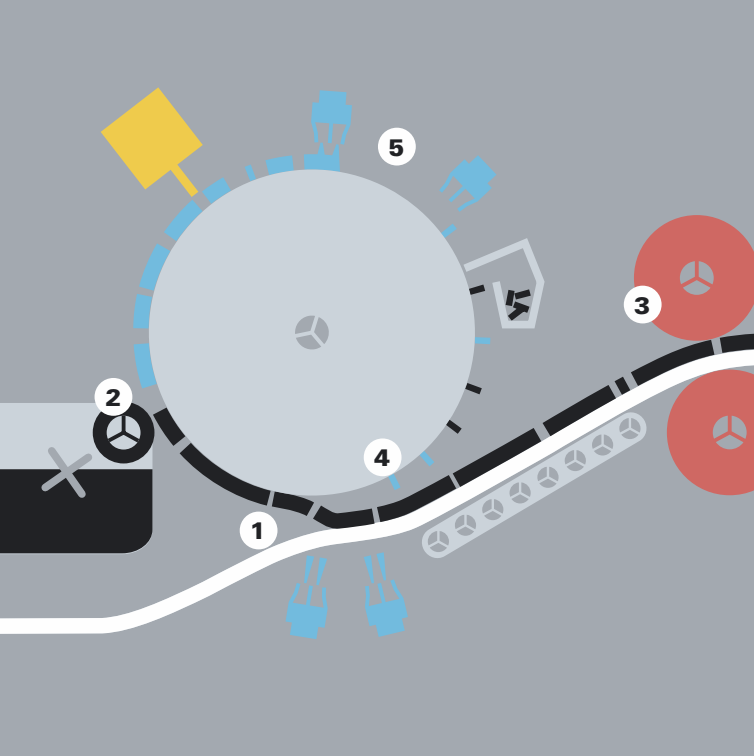


- 1. Paper path
- 2. Corona unit
- 3. Paper cutters
- 4. Robust materials
- 5. Pre-heater
- 6. Compact transfer fuse unit
- 7. Photoconductor

## Océ TDS800 breakthrough Copy Press technology

### Sensitivity to internal paper jams

Issue	Solution	Advantage
1. Paper path	Short, simple paper path: does not pass sensitive parts; the image is brought to the paper	No internal jams in photoconductor area because images go past it instead of through it
2. Corona units	Only 1 electrical charge is needed because of the highly efficient imaging system	Virtually no static electricity and reduced chance of paper jams
3. Paper cutters	3 cutters; all 6 rolls are positioned for immediate cutting	No time-consuming rewinding of rolls needed, resulting in less jams and higher productivity
4. Material use	Robust coated metal plating and durable materials are used throughout the machine (machine weighs 939 kg)	Constant reliability over years of intensive use
5. Sensitivity to humidity	Paper is pre-heated before fusing and led via ribbed, coated plating	Virtually no jams because temperature differences and surfaces between paper and contact points are limited



1. Toner transfer
2. Toner unit with developer
3. Fuse unit
4. Photoconductor
5. Corona units

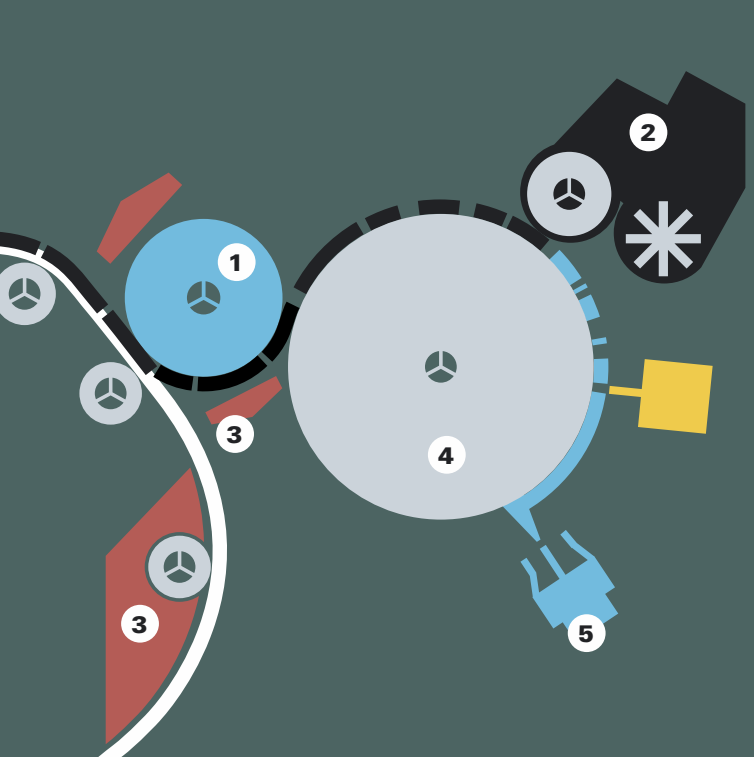
## Conventional electro-photographic technology

### Copy and print quality

Issue	Problem	Disadvantage
1. <b>Electrical toner transfer</b>	Toner has to “jump” from photoconductor to paper	Spotted, soiled prints and need for frequent cleaning of corona unit because of floating toner particles
2. <b>Developer aging</b>	Developer loses ability to hold a charge	Print quality deteriorates and prints become lighter as charge diminishes and developer carries less toner
3. <b>Toner fusing temperature</b>	High-temperature toner fusing: toner melts onto surface of media	Incomplete toner transfer on some films; humid paper results in loss of information and soiling of prints by floating toner; media may warp or wrinkle
4. <b>Photo-conductor location</b>	Paper travels to the photoconductor	Scratches or damage to the photoconductor from clearing paper jams show up as unwanted marks on prints

### Environmental issues

Issue	Problem	Disadvantage
5. <b>Ozone emissions</b>	3-8 corona units: several charges create ozone	Relatively high ozone emissions (up to 0.05 ppm) increasing risk of “Sick Building Syndrome”
5. <b>Toner fusing temperature</b>	High-temperature toner fusing (around 180°C)	Operating environment warms up



1. Compact transfer fuse unit
2. Monocomponent toner unit
3. Pre-heaters
4. Photoconductor
5. Corona unit

## Océ TDS800 breakthrough Copy Press technology

### Copy and print quality

Issue	Solution	Advantage
<b>1. Electrical toner transfer</b>	Surface-to-surface transfer: no electrical charge is required for toner transfer because toner is pressed directly into the paper (offset-like)	Eliminates floating toner particles, toner spots and soiled prints
<b>2. Developer aging</b>	Unique monocomponent toner system works without developer	Consistently high-quality prints and no developer to replace
<b>3. Toner fusing temperature</b>	Offset-like image transfer with low temperature: 2-step toner transfer and media pre-heating ensure 100% toner transfer without media distortion	High-quality prints: no loss of information, minimal risk of toner contamination in the machine and smooth media
<b>4. Photo-conductor location</b>	Paper never comes into contact with the photoconductor; operator cannot access the photoconductor	Crisp, clean prints with little chance of damage to photoconductor

### Environmental issues

Issue	Solution	Advantage
<b>5. Ozone emissions</b>	Only 1 corona unit	Virtually no ozone emissions (<0.0008 ppm at peak production) ensuring a healthy work environment
<b>6. Toner fusing temperature</b>	Paper pre-heating, effective insulation and low fusing temperature (around 100°C); EPA Energy Star® compliant	Operating environments remains pleasant to work in





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## Printing for Professionals

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Océ enables its customers to manage their documents efficiently and effectively by offering print and document management products and services for professional environments

Océ is active in approximately 80 countries, with direct sales and service organisations in some 30 countries. Océ employs 23,000 people worldwide. Annual revenue in 2002 exceeded € 3.2 billion.

## Océ-Technologies B.V.

Venlo, The Netherlands

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