# VELOX®

# Velox Digital Decoration Solutions for Aerosol Cans

Velox's advanced direct-to-shape digital decoration solutions are the world's only digital solutions offering mass production decoration for aerosol cans. With unparalleled speed, superior decoration quality, and capabilities, Velox's robust industrial-grade solutions fully address the market's emerging needs. Featuring utmost operation flexibility, low total cost of ownership (TCO), and built-in sustainability, the Velox IDS-AC™ series for straight-wall aerosol cans, and Velox IDS-SC™ series for shaped aerosol cans boost efficiency and productivity.



Velox IDS-SC™ series for shaped aerosol cans



Velox IDS-AC™ series for straight-wall aerosol cans

# Velox Decoration Solutions for Aerosol Cans

**Direct-to-shape digital decoration for mass production**

# Benefits

## Unprecedented Decoration Quality

### Superior decoration features

- Photorealistic image quality
- Wide color gamut
- Accurate color matching
- Smooth gradients and halftones
- Sharp texts (including reversed type)
- Superb printing properties, including adhesion, scratch, and heat resistance
- Outstanding image quality on pre-white or non-white-coated aerosol cans

### Unique enhancements

- Selective or full highly opaque white coverage
- Selective digital embellishments
- Seamless 360° decoration
- Shaped-area printing
- Seam line printing (for tin aerosol cans)
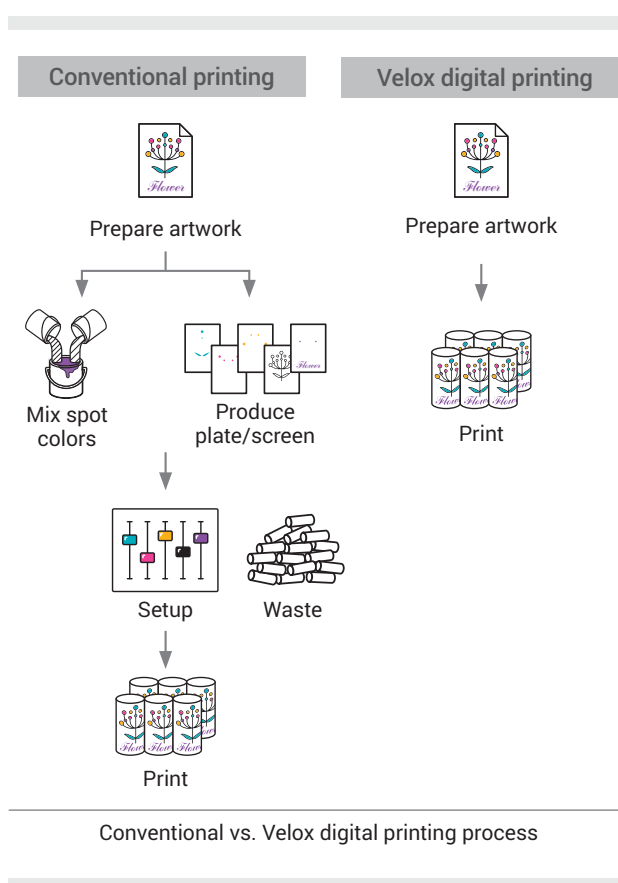
# Full Operational Flexibility

- Near-zero setup time

- Ultra-high decoration speed

- Unrestricted run lengths with no minimum order quantity (MOQ)

- Simplified process with no pre-treatment, base coating, or decorative/protective over-varnishing

- End-of-line or offline printing (for shaped aerosol cans) servicing multiple production lines with one Velox system to enable:
  - High-quality decoration jobs and special features
  - Short runs for reducing decorator setup time overload and increasing line productivity
  - Last-minute decoration requirements per customer needs

- Fast diameter changeover time

- Automated processes with no required print expertise

- Full repeatability

# Low Total Cost of Ownership (TCO)

- Zero make-ready costs with no plate preparation costs, calibration waste, or operator setup time

- Greater capacity given faster print speed than production line and virtual zero-setup time

- Smooth and reliable 24/7 productivity

- Lower process costs with virtually no pre-/post-treatment requirements

- Lower cost per copy given highly efficient ink coverage

- Zero overproduction and inventory costs given decoration-on-demand capabilities

# Built-in Sustainability

- Reduced waste with no plate preparation, color mixing, or calibration waste

- Reduced energy consumption with fewer process steps and less decoration equipment

- Elimination of VOC burner

- Plastic savings with no labels and sleeves given direct-decoration printing

- Lower overproduction and inventory



**Conventional printing** | **Velox digital printing**

Prepare artwork → Mix spot colors / Produce plate/screen → Setup / Waste → Print

Prepare artwork → Print

Conventional vs. Velox digital printing process

# Unprecedented Decoration Quality

The Velox IDS-AC series and Velox IDS-SC series provide convertors with superior digital decoration on straight-wall or shaped aerosol cans. The comprehensive offering delivers photorealistic image quality, smooth gradients, halftones, and sharp texts. With high-resolution printing and up to 14 process colors always available in the system, the solutions feature an extremely wide color gamut and high color matching. Full cover or selective application of Velox's opaque white ink enables Pantone® color printing on white-based areas, while delivering colorful metallic effects on areas where translucent colors are printed directly on the metallic substrate. The Velox IDS-AC series and Velox IDS-SC series maintain unique capabilities, including selective digital embellishments, seamless 360° decoration, and printing on the shaped area to further enhance aerosol can appearance.



Fine graphic elements
Wide color gamut
Selective white
Metallic colors
Photorealistic images

Smooth gradients and halftones
Sharp texts/ reversed texts
Shaped-area printing
Selective digital matte/gloss

Seamless 360° decoration
Seam line printing

Velox's seamless decoration includes printing on the seam line

Current technology: welding seam line is visible

# Full Operational Flexibility

The advanced decoration solutions deliver mass production speeds – up to 250 cpm for straight-wall aerosol cans and up to 500 cpm for shaped aerosol cans – and operational flexibility that are attainable only through the Velox's digital technology.

With unparalleled speed and near-zero setup time, the Velox IDS-AC series and Velox IDS-SC series enable on-demand printing, short time to market, and seamless job transition with no run length limitations. The Velox IDS-SC series decorates shaped aerosol cans at the end of the line or offline at a speed faster than that of the line itself to increase the capacity and efficiency of an entire manufacturing site. And by shifting high-quality decoration jobs and special features, short runs, and last-minute decoration requirements to the Velox IDS-SC, jobs from multiple lines can be printed on one system. This eliminates the need for additional production lines to meet capacity, and reduces setup overload from existing lines. Solution efficiency is further enhanced by enabling late-stage decoration of previously produced aerosol cans without having to adjust the line for each customer.

Eliminating the need for pre-treatment, base coating, and protective over-varnishing, ovens and drying systems, and embellishment units, the two series greatly facilitate the printing process. They also feature a range of automated processes such as prepress and job preparation software with web-to-print connectivity support, calibration, and on-the-fly inspection to ensure easy operation even without prior print expertise.

# Standard Line Decoration Units vs. Velox Digital Decoration Solutions

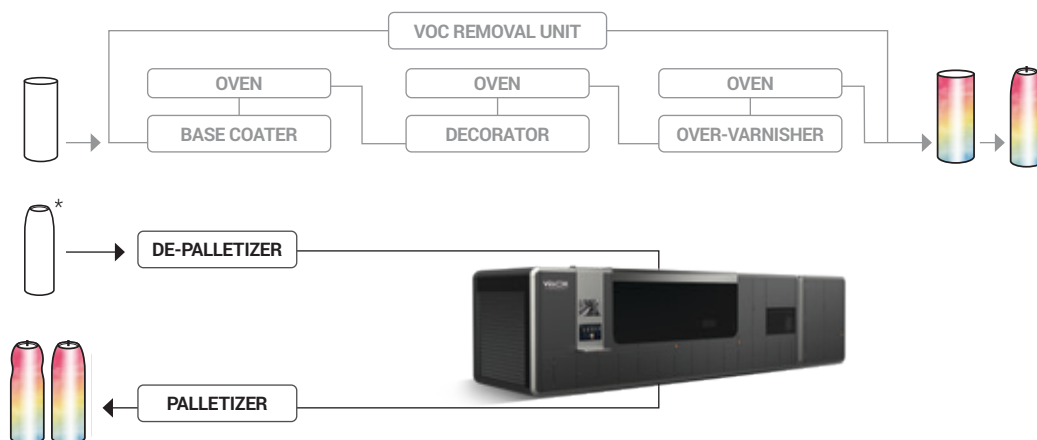## Inline aerosol can decoration

**Standard line decoration**

| VOC REMOVAL UNIT | | |
|---|---|---|
| OVEN | OVEN | OVEN |
| BASE COATER | DECORATOR | OVER-VARNISHER |

**Velox IDS-AC digital decoration**



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## End of the line/offline **2-piece** aerosol can decoration

**Standard 2-piece line decoration**

| VOC REMOVAL UNIT | | |
|---|---|---|
| OVEN | OVEN | OVEN |
| BASE COATER | DECORATOR | OVER-VARNISHER |

**Velox IDS-SC digital decoration**

DE-PALLETIZER

PALLETIZER
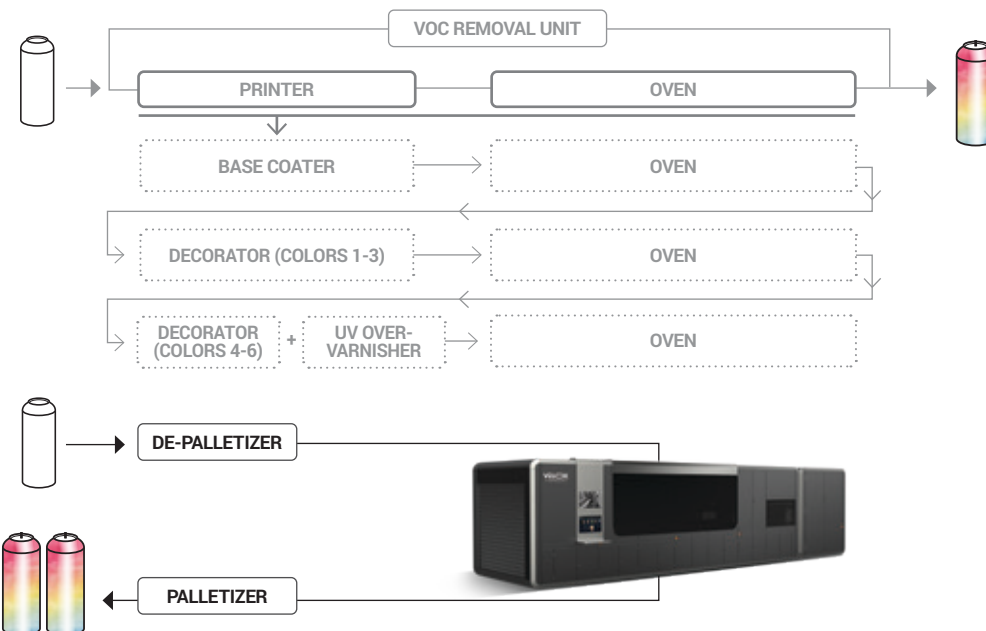


*Coated aerosol can after necking

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## End of the line/offline **3-piece** aerosol can decoration

**Standard 3-piece line decoration**

| VOC REMOVAL UNIT | |
|---|---|
| PRINTER | OVEN |
| BASE COATER | OVEN |
| DECORATOR (COLORS 1-3) | OVEN |
| DECORATOR (COLORS 4-6) + UV OVER-VARNISHER | OVEN |

**Velox IDS-SC digital decoration**

DE-PALLETIZER

PALLETIZER

# Low Total Cost of Ownership

Velox's digital decoration technology virtually eliminates plate preparation, calibration waste, and setup time to drastically cut costs. Boosting overall production capacity with an extremely short setup time and high speed, the Velox IDS-AC series and Velox IDS-SC series are efficient for both short- and long-run lengths.

The solutions do not require ink mixing, base-coater, and top-varnish process steps, thereby removing the need for ovens and a VOC burner while delivering time and cost savings. Their highly efficient ink coverage reduces ink consumption to further increase cost savings. And by moving to decoration-on-demand, they eliminate overproduction while reducing inventory waste and accompanying costs. This unique combination of time, material and labor savings also lowers OPEX and ensures a rapid return on investment (ROI).

### Conventional printing costs

| Ink | Labor | Production waste | Plates/screens | Setup time | Drum cleaning |
|-----|-------|------------------|----------------|------------|---------------|

### Velox digital printing costs

| Ink | Labor |
|-----|-------|

# Built-In Sustainability

Offering a far more sustainable process than analog decoration, the Velox IDS-AC series and IDS-SC series eliminate substrate waste, lower energy costs, and reduce equipment and production line processes. They replace sleeves and labels with direct printing, cut down on inventory storage and risk of obsolescence, and simplify the supply chain to deliver eco-friendly solutions that meet today's demanding environmental requirements.

Eliminates
**Setup waste, plates and storage**

Removes
**Spot-ink kitchen**

Eliminates
**Cleaning solvents**

Eliminates
**Labels and sleeves usage**

Saves
**Electricity and footprint**

Minimizes
**Inventory and risk of obsolescence**

# Cutting-Edge Core Technology

Velox's proprietary direct-to-shape digital technology comprises two core elements – breakthrough ink and innovative system architecture – both developed specifically to deliver unparalleled digital printing performance.
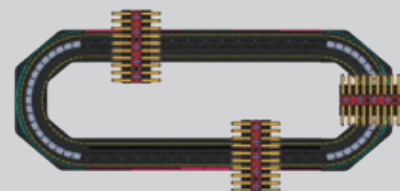
This end-to-end approach is essential to achieving a meaningful performance leap, reaching far beyond any other direct-to-shape digital printing technology. In addition to providing superior decoration quality and capabilities at high-volume production, Velox's technology enables a highly efficient and flexible production process and a significantly lower total cost of ownership (TCO) than any other direct-to-shape digital printing technology.

## Adaptive Deposition Architecture™ (ADA) Technology

Robust system architecture enables utmost precision and flexibility, with inherent scale and expansion capabilities.

- Multiple independent print engines – Parallel printing of hundreds of containers in a smooth mechanical movement enables superior print quality with mass production

- Process optimization – The autonomous carriage mechanism decouples the dependency between print stations and allows a nonstop process regardless of the time required at each station

- System scalability – Extremely efficient hardware utilization, with easy optional field upgrades, support higher production speeds, additional colors and features

- Accurate ink-drop deposition – Dedicated motion system and algorithms perfect image sharpness and color matching



Dependency-free process

## Variable Viscosity Ink™ (VVI) Technology

Specially developed and formulated Velox digital UV inks enable excellent print properties, unprecedented decoration quality and high ink efficiency.

- Micro-pixel drop shape control – Enables both extremely small drop diameter for fine details and text and wide drop diameter for high ink-coverage efficiency

- Wide color gamut – Exceptionally vivid and intense process colors

- Superb functional properties – High adhesion and abrasion resistance

- Substrate and surface-agnostic – Outstanding printing performance on virtually any aerosol can



Micro-pixel drop shape control