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ACADEMY

# MASTER CLASS

FLEXIBLE PACKAGING

**Print Technologies for Flexible Packaging**

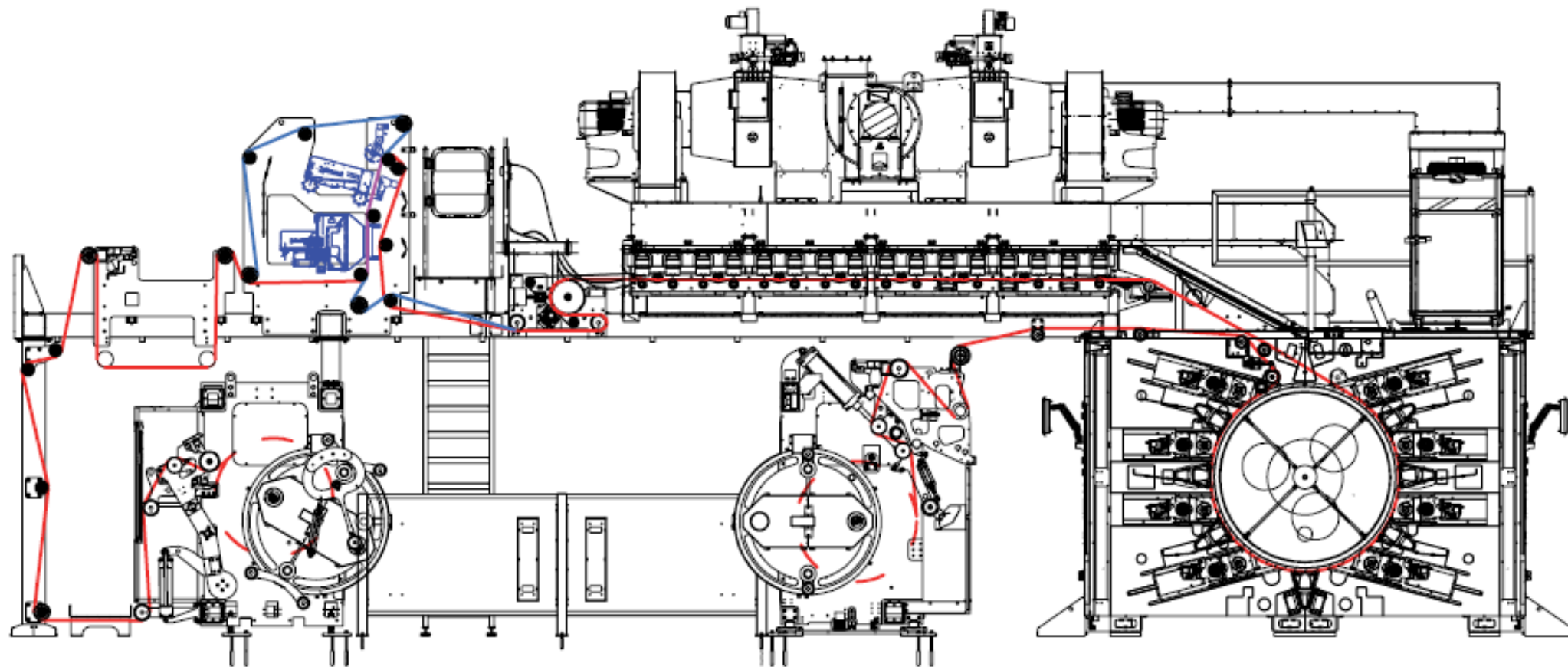
**Sept 10<sup>th</sup>, 2024**

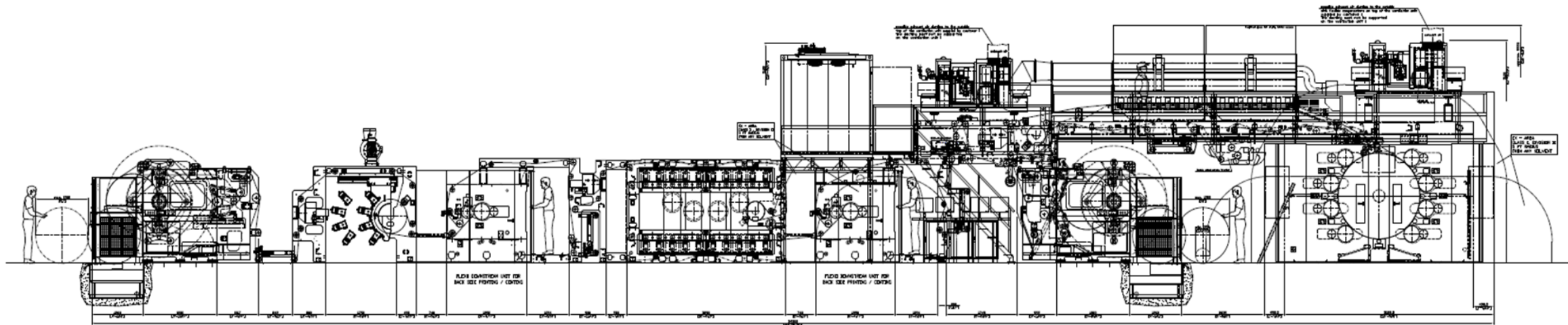
**Chris Marshall, Area Sales Manager**

**Bobst North America**

# CI Flexo



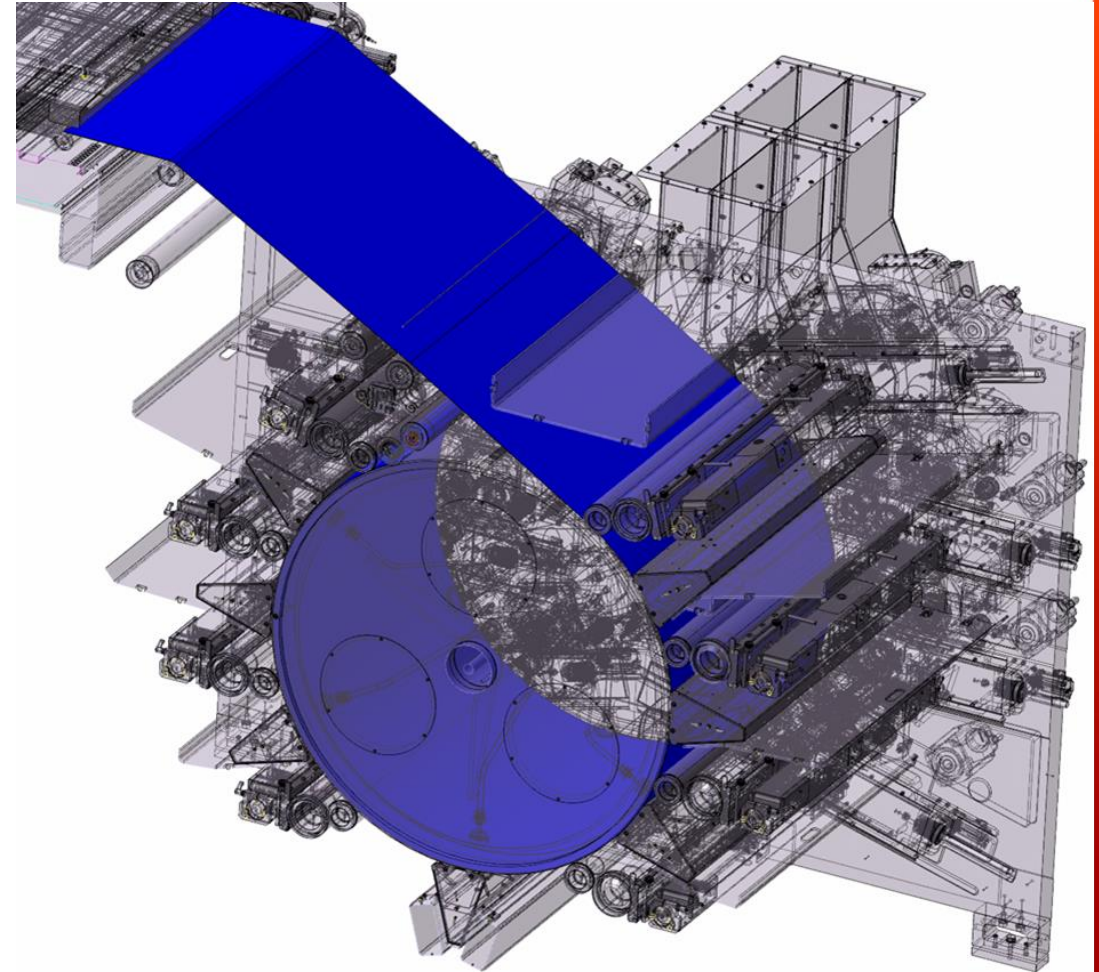




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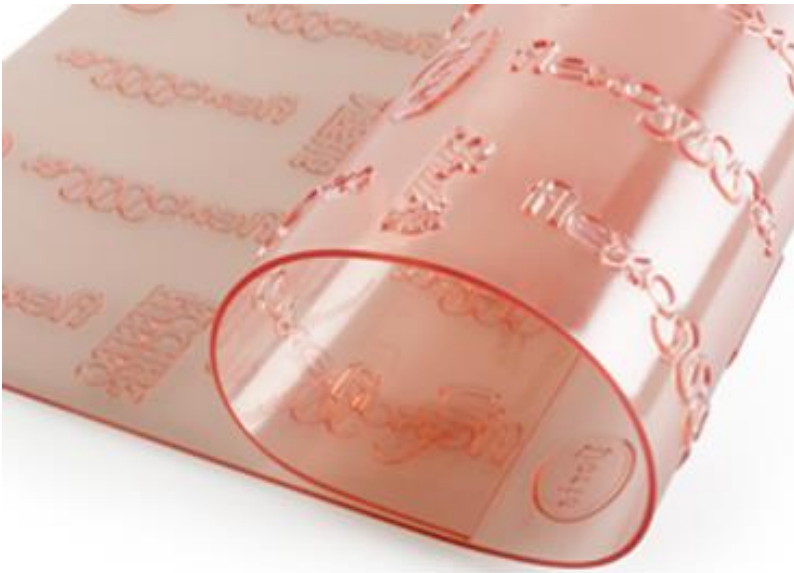
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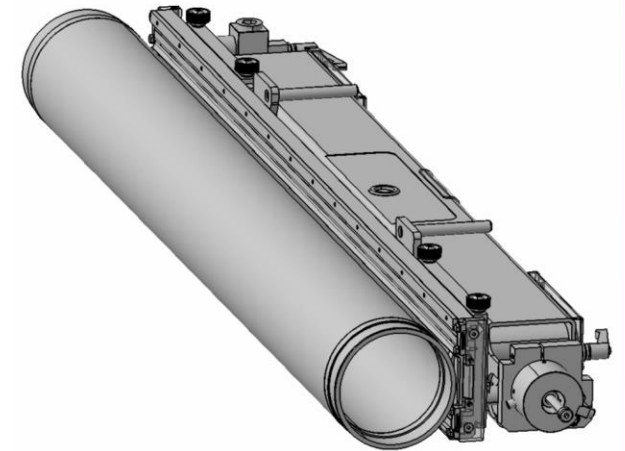
- Stable material handling around a chilled central impression drum. Drum chilled to 30c/86f
- Ideal for extensible substrates such as thin LDPE, thin gauge OPP and ALU foil.
- Flying splice winders that cycle reels at full speed.
- High-capacity dryers
- Ideal for temperature and tension-sensitive materials.
- CI drum controls the temp of the substrate thus keeping the web tension stable.
- Temp and pressure control is critical to keep material stable.



- Up to 90” for film printing. On paper/board up to 110”
- 1350 – 2800 ft per minute
- Applications
  - Aluminum foil
  - Films/flexible packaging - mono or multi-layer film.
  - Carton board
  - Paper
  - Laminates – such as paper/alu/pe constructions
  - Rigid PET – Hummus lids.
- Tension range: – 20 Newtons up to 3000 Newtons.
  - 20 – 600 Newtons for Flexibles and >600 Newtons for paper/board.

- Polymer printing plates.
- Quick to produce, easy to store, and relatively cheap.
- Different plate hardness and mounting tape characteristics.

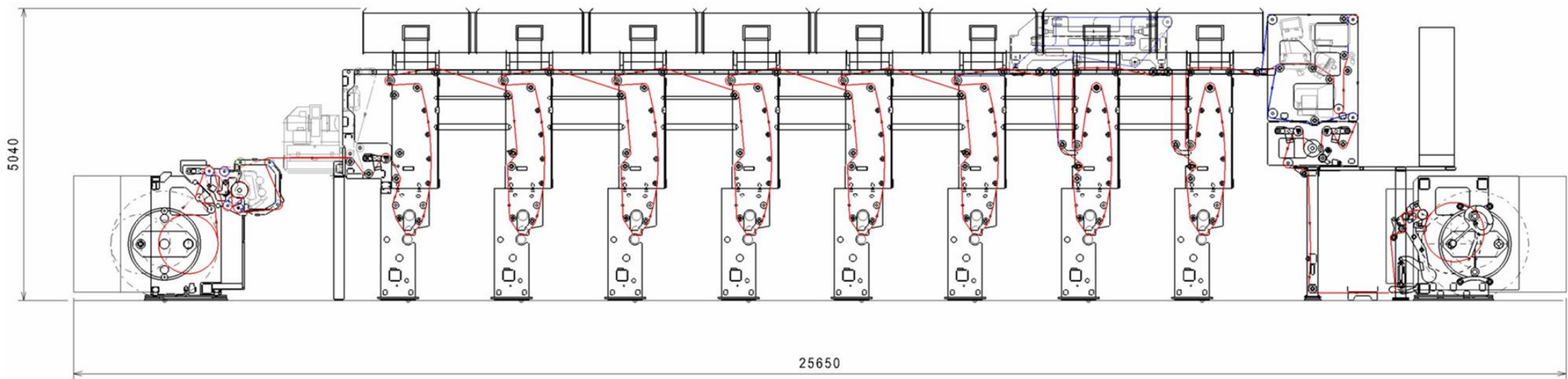


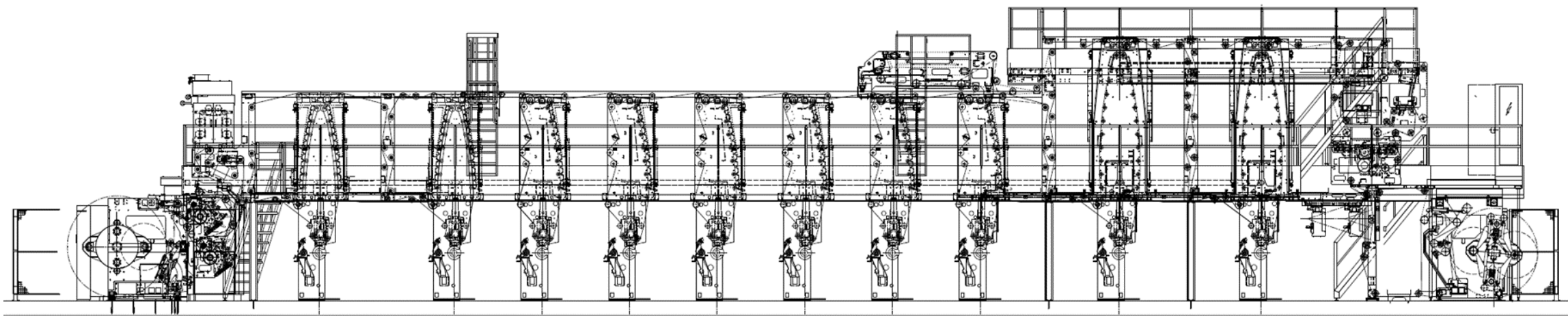




# RotoGravure







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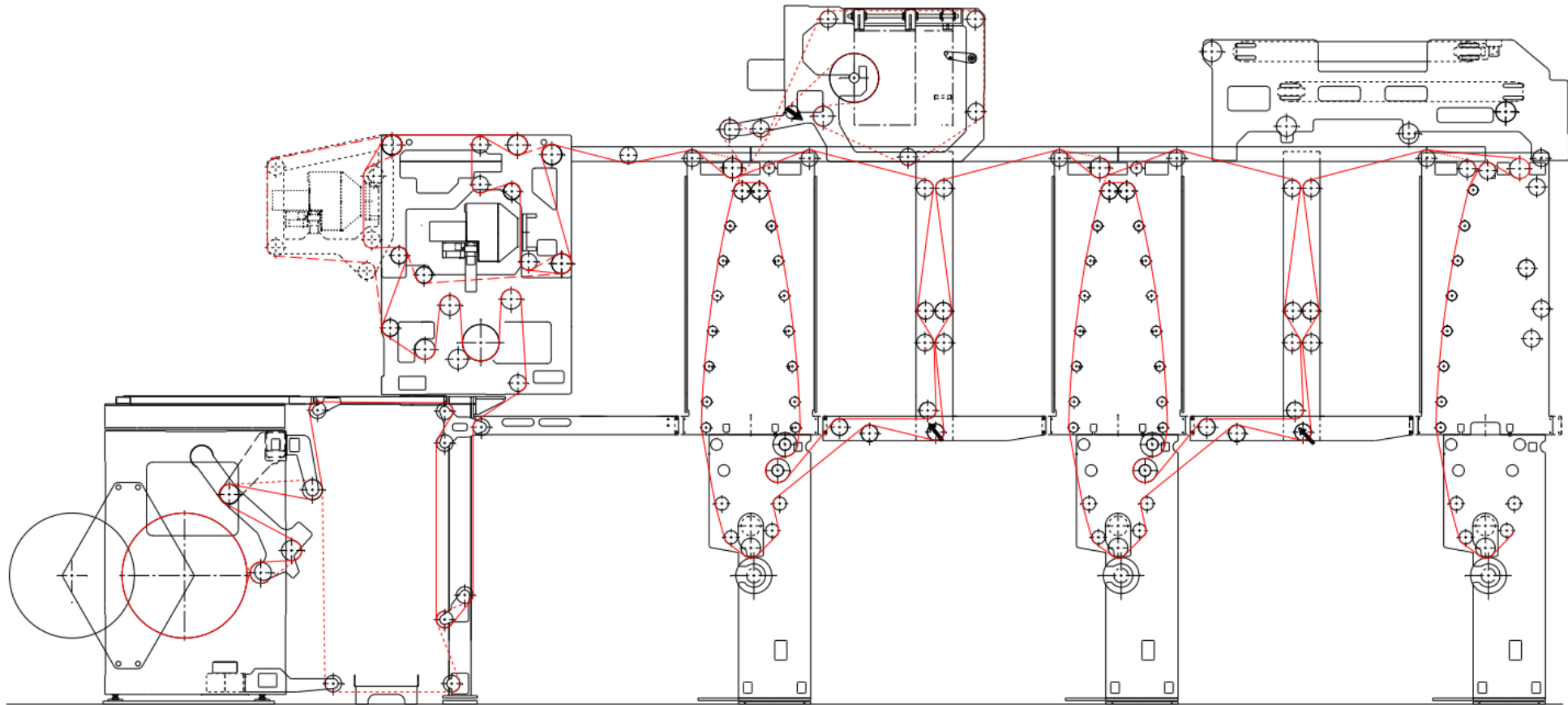
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- Print widths – 31.5” – 59”
- Upto 2000 ft per min
- Applications
  - Aluminum foil
  - Films/flexible packaging - mono or multi-layer film.
  - Carton board
  - Paper
  - Laminates – such as paper/alu/pe constructions
  - Presses are capable of printing LDPE.
  - New generation of mono-materials such as BOPE and MDOPE can be run
  - Tension range:
    - 40 – 500 Newtons for Flexibles and >600 Newtons for paper/board.



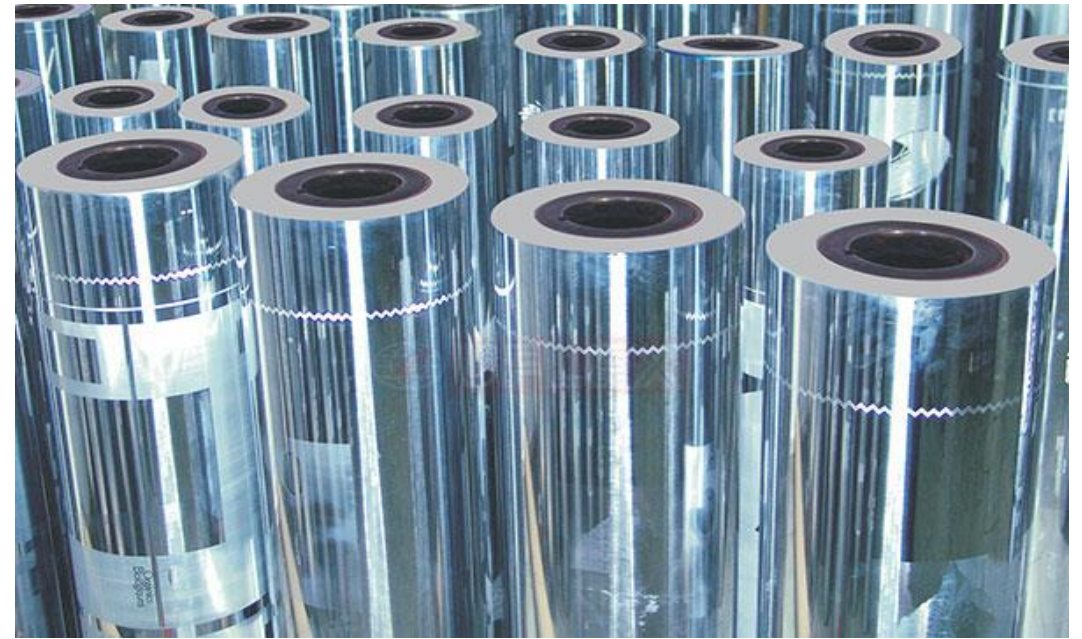
- Outlet of each dryer there is a chill roller on the dryer exit.
- Web cleaner is available along with Corona treatment.
- Registration is controlled by a scanning head.
  - Fix reference control to the first color laid down.
- ECG – we’re starting to see greater interest in Extended Color Gamut on roto presses.
  - Extended savings on job changes.





- Dryer length
  - 1.75m single side up to 4.2m double side dryer.
    - 4.2m is an 8.4m dryer.
  - Water-based and solvent ink systems.
  - Inline lamination.
  - Inline coating, electron beam, UV, and other embellishments.

- Cylinder storage can be challenging
- Dechrome, re-copper, re-engrave, and re-chrome is the process for engraving new graphics.

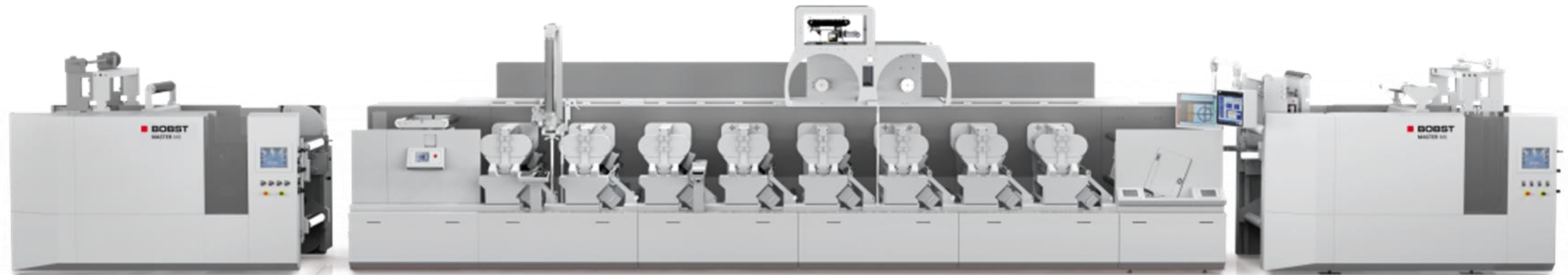


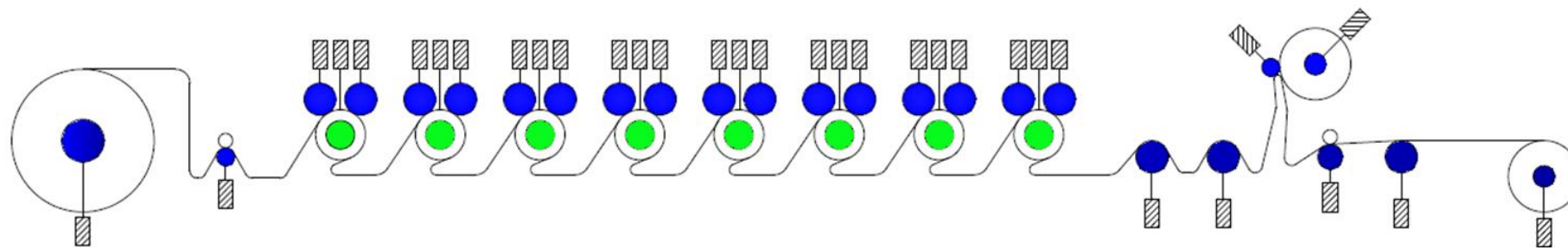
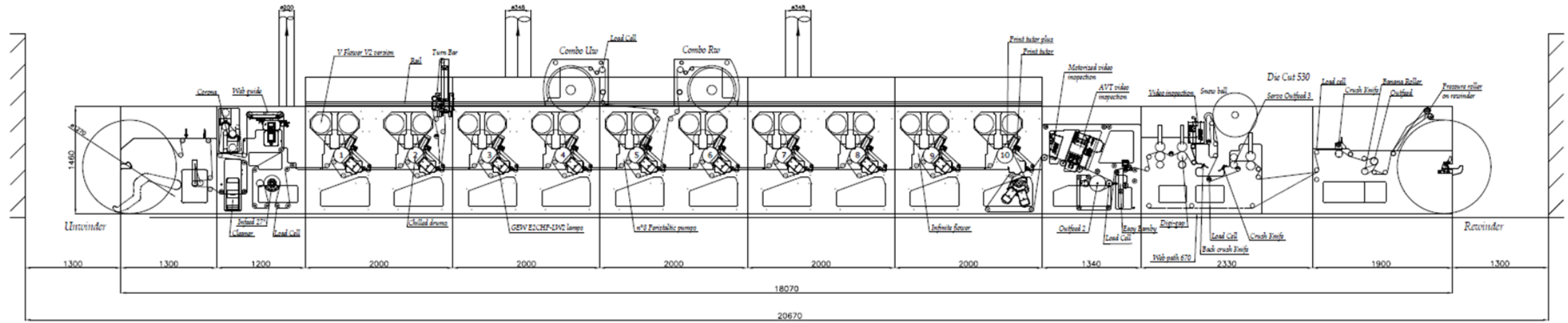


- Reason for RotoGravure
  - Higher print quality.
  - Higher consistency within long print runs.
  - Existing tooling within the current business.
  - The skill required to run the machine is lower than CI flexo.

Globally Bobst builds 40 – 50 Roto presses per year. Mainly for Asia.

# Inline Flexo- Mid Web

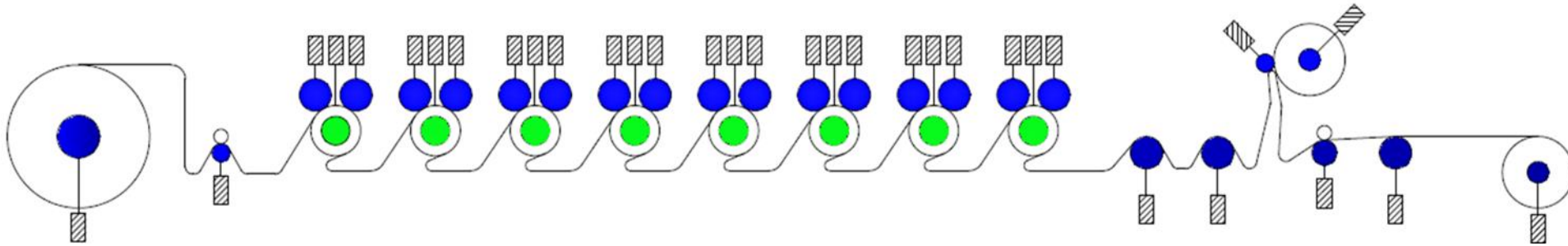




	Break
	Non Driven
	Driven
	Servo Driven
	Non Driven Chilled Drum
	Driven Chilled drum
	Belt
	Line shaft

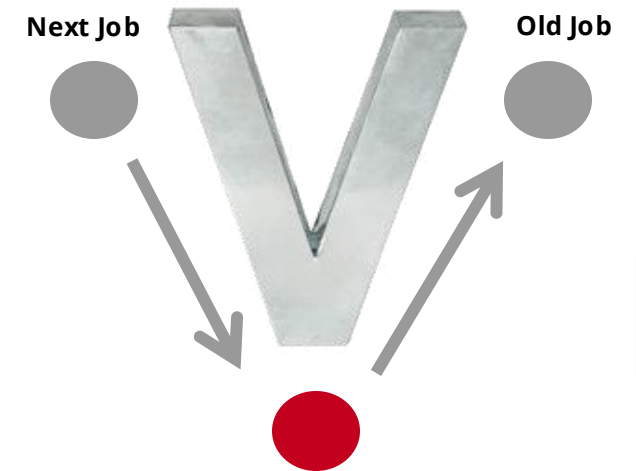
- Up to 26" width — 16.93", 20.8" & 26.3"
- 656ft/min – 200m/min
- Applications
  - Pressure-sensitive label stock
  - Aluminum
  - Films/Flexible packaging - wrap-around labels, shrink sleeves & IML
  - Light Carton Board
  - Paper – wet glue, coupon,
  - Laminates – paper/alu/pe constructions
- Polymer plates

- Chilled drums for accurate temperature control
- Multiple drying options for solvent, water, and UV inks
- Accurate tension control for various substrates
- Reel to reel & reel to sheet
- ECG ready
- Automatic register control
- Non-stop winders for smaller reels.
- Embellishments – lamination, hot and cold foil, Cast & Cure, Touch & Feel, Screen printing & UV Varnish



## V-Flower 2 – Non-stop changeovers on Mid Web presses

- Automatic swing exchange of cylinders
- A new sleeve is placed on the impression roller whilst the previous sleeve is lifted.
- Instant changeovers without the need to stop the press
- Runs in sequence – vastly reducing set-up time and waste.



## Mid Web press printing units can be upgraded to allow the use of solvent ink.

The upgrade of the printing unit consists in:

- 2000 mm printing unit module (for up to 2 PUs)
- Distancing of the motors from the solvent source
- Chambered doctor blade
- Ink pump for solvent ink
- Hot air drier (different options available)
- Fully automatic register control (optional)
- Motorized pressure adjustment (optional)
- Viscosimeter (optional)
- Wash-up system for doctor blade chamber and anilox roller (optional)

# Camera and Web Guide Systems





## Camera Systems

- Video web monitoring systems – matrix cameras systems. Cycling camera system.
- 100% camera inspection systems – fixed cameras recording 100% of the print web.
- Identification of defects in real-time.
- Barcode verification.
- Color monitoring on both matrix and 100% inspection systems.
- PDF comparator – comparing JPG/TIF to printed image
- Repeat length monitoring
- Digimark monitoring for embedded barcodes.



- **Web Guides**

- CI Flexo – 1 edge guide before the CI and one before the rewinder. There can be up to 4 on a press.
- RotoGravure – 1 edge guide before the 1<sup>st</sup> print station.
- Inline Mid Web – 1 edge guide before the 1<sup>st</sup> print station.



# Web Cleaners



- **Web Cleaners**

- Non-contact and contact web cleaners.
- Contact web cleaners used by paper and board converters to due the volume of dust.



# Digital for Flexible Packaging



- 15.75" – 30" width
- 3 colors at 175ft per min. slower with more colors.
- Applications
  - Pressure-sensitive label stock
  - Films – PET, BOPP, BOPE, MDO PE & BOPA.
  - Laminates – paper/alu/pe construction
- Up to 7 colors – C,M,Y,K, Orange, Violet and Green
- 6 colors if you include white – C,M,Y,K, Orange, Violet and white
- Most jobs will run C,M,Y,K and white (with a possible second white)
  - Water based primer needed.
- Small footprint press. Length 385" x width 189" x Height 106"



- 40" unwind – 31.5" rewind.
- Electrophotography inks – Not UV
  - Indirect food contact only. The converters using Indigo's do use the sealant as a functional barrier.
  - Fast response to market.
  - Ideal for shorter runs.
  - Downtime at 50% - for maintenance and set ups.
  - Not ideal for LD/LLDPE's.





# Thank You

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