OPTIMIZATION CAN HELP

Use Optimization’s Media Conveyance Facility (MCF) to help you develop and improve your web handling. We go beyond consulting by creating and/ or applying our tools and capabilities to analyze and solve challenging web handling problems.

Our tools and capabilities include all our MCF assets including previous experience and problem solving capabilities, such as design of experiments (DOE), statistical analyses (including use of JMP or Minitab) and general problem solving skills.

The MCF is led by a group of engineers, technologists, designers and tradesmen with over 200 years of combined mechanical and electrical experience in web handling development and measuring/modeling.

Web Handling Project Management

Optimation incorporates key building blocks for a successful web handling development project. We take a systematic approach by working with you throughout the four (4) major steps of the project life-cycle.

Web Handling Equipment

Laminator

- Combining and Peeling of Different Webs
- Max. Web Width: 14 in (356 mm)
- Line Speed Capability: 175 fpm (50 mpm)
- Web Tension Capability: 1.5 lb/in through nip
- Nip Roller Capability: 5-100 lbs contact force range
- Readily configurable to multiple conveyance geometries
- 3 independent drives: 2 winders/1 nip drive braked unwinders
- Load Cell Control

Thin Web Rewinder

- Low Tension, Low Traction Experiments on Ultra Thin Webs
- Max. Web Width: 14 in (356 mm)
- Line Speed Capability: 2000 fpm (610 mpm)
- Web Tension Capability: 2-50 lbs
- Pressure Roller Winding: 5-50 lbs contact force range
- Operates in rewind (unwind-wind) or endless band mode
- Conveys fractional mil web thicknesses
- Low hysteresis float roller design for regulation of very low web tension

Narrow Width Rewinder

- Rounds out conveyance experimentation capability in width range of 1 to 5 inches
- Max. Web Width: 5.5 in (140 mm)
- Line Speed Capability: 4000 fpm (1219 mpm)
- Web Tension Capability: 2-50 lbs (9-222N)
- Pressure Roller Winding with 5-25 lbs Contact Force Range
- Environmental Chamber for Studies at Controlled Temperature/Humidity Conditions
- Breadboard Design for maximum Web Path Flexibility

The end result of the implementation of the major steps in the project life cycle is the solution to your web handling problem.
Web Handling Development Experience

Optimation has conducted experiments and achieved solutions for the common web handling problems to the more complex. Our experiments and solutions address common problems related to web and production quality. For demanding situations, we can also provide OEM Machine/Component Development and Proof-of-Concept services. Examples of our experience include:

Web Quality
- Developed a film separation/peeling process to enable defect free production of a low cost coextruded multi-layer thermal receiver product.
- Created roll winding first principles model that clarify the impact of product and process parameters on wound roll induced web non-planarity due to web thickness non-uniformity.

OEM Machine/Component Development
- Developed and evaluated a low cost gudgeon for use on an existing winder chuck to enable replacement of a conventional film core with a low cost cardboard core in a continuous film coating operation.
- Generated roller traction first principles model that accounts for roller surface roughness and profile and used the model to develop low cost options for achieving reliable slip free roller conveyance at high speeds.
- Developed and applied air reverser web clearance models to the design of hole patterns for a large number of production machines.

Production Quality
- Optimized layon roller process and design parameters to achieve improved web and roll quality by conducting high speed process studies on paper and PET webs.
- Implemented bowed and anti-wrinkle rollers in numerous locations to eliminate wrinkling concerns upstream of critical processes such as gravure coaters and nip drives.

Proof-of-Concept
- Developed and implemented an web edge interleaving process to enable noncontact film winding.
- Designed, developed and implemented an induction heating edge knurling process for improved wound roll and web quality and increased web coating width.
- Utilized Optimization's MCF to develop and demonstrate robust conveyance components and a web path system to enable wrinkle-free conveyance of new product in an existing production machine.
- Provided winding and conveyance machine commissioning for a new copper foil manufacturing facility for winding optimization, enhanced process understanding, elimination of conveyance defects, and increased speed capability.

What’s Your Next Step?
Contact Dr. Kevin Cole at 585-321-2300 x2125