Automated Solutions for Slit Roll Handling

Scott Hamric
Sage Automation Inc.
BENEFITS OF USING AUTOMATION

- Improved Safety
- Increased Productivity
- Reduction in Damaged Product
- Increased Consistency and Quality
- Predictable Operation Cost
• Heavy – Some rolls can weigh up to 6,000lbs and are awkward to handle with hoist or forklifts in a precise manner.
• Narrow – Rolls less than 6 inch in width become difficult to handle without automation as they can unwind or be unpredictable.
• Delicate – Fragile materials can be damaged by manual interaction but can be positioned easily with precision by custom end of arm tools.
Benefits of a 3d Simulation:

- Ability to create accurate rate analysis: hourly, daily, & weekly production #s
- Physics engine which can simulate gravity, collisions, bouncing etc.
- Virtual motors, set to real world acceleration and deceleration curves
- Can use a physical PLC to run the simulation to test the code
- Allows for a more in-depth study and evaluation of a process or system
- Can be a valuable Tool for Engineers needing a Proof of Concept to secure funding from management
- Ability to explore projects in Virtual Reality using tools like the HTC VIVE
3D Simulations help solve complex real world situations using virtual gantry or arm robots, conveyors, forklifts, up-enders, photo-eyes, prox. switches, light curtain, and even custom equipment or sensors modeled to actual scale in real-time. They can be programmed by an actual PLC to test code before running a system live.

Processes Shown in Simulation:
• Infeed Roller Conveyor with Down-Ender
• Unwind and Spooler Robots
• V-Belt Conveyor for Spools
• Upper and Lower Gantry Robots with J-Hook E.O.A.T.
• Roll-Lifts and Stretch Wrapper

Video Presentation
AUTOMATED ROLL HANDLING METHODS

- Robotic Picking and Sorting
- Winder/Unwinder Loading
- Spooler Unloading
- Up-ending and Roll Transfer Carts
- Picking and Placing Headers and Footers
- Conveyors and Accumulation Zones
- Stretch Wrapping
Examples of Roll Handling Equipment:

- Slit Sorting Gantry Robot
- Header Placer E.O.A.T.
- J - Hook
- Roll Transfer Cart
- Up-Ender
- Shaft Extractor
- Header Placer
• Less damage to product
• Cleaner product
• Better packaging
• Consistent and predictable quality
• Increase volume without an increase in direct labor
SAFETY & ERGONOMIC CONCERNS

• Heavy, bulky rolls are dangerous to handle

• Repetitive tasks

• Allows workers to focus on more important tasks such as quality, production rate, etc.
Sage Automation Inc.
4925 Fannett Rd.
Beaumont, TX 77705

www.sagerobot.com
800-731-9111

Youtube.com/sageautomation