



Finishing Technologies, Inc.  
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## Some Detailed Section Abstracts

### Winding - Introduction

Winding is one of the oldest of the web handling sciences. However, it is also one of the most misunderstood. All too often the winder is blamed for waste, because it is the first chance to get a good look at the product, when the problem may be that the web quality is not adequate for winding period. There are several classes of winder such as center, centerwind with layon roller, surface wind and center surface wind. The winder class tells you which of the TNT's (Tension, Nip and Torque) are available to tighten the wound roll. Also, there are many types of online winders such as turrets and reels, offline winders such as two drums and duplex, and niche winders such as gap and differential. An introduction to some of the common wound roll defects is also covered.

### Winder Mechanical Issues

Winding is above all else, a web handling machine so all design and maintenance considerations learned in the Web Handling and Converting class apply here. This is why the web class would be a good foundation for this class. Additionally, however, winders have their own set of unique concerns such as spreaders, slitters, automation, vibration and many others.

### Winder Control Issues

Winders, by far, have the most complicated drive motor controls found anywhere in the web industry and most places outside of the web industry. Also, they have more complicated setpoints which vary automatically during the operation of building a roll rather than they much simpler static setpoints that are typical of most controls. Winders also can have extremely complex automation, perhaps only surpassed by assembly machines and robots. For these and other reasons, a separate discussion above and beyond controls that may have been learned elsewhere is appropriate.

### Winder Ergonomic Issues

Rewinders have some of the highest man-machine-material integration found in the web industries. Thus it is not surprising that a separated discussion of HMI's and other operator issues needs to be discussed.

### Winder Physics

The physics of winding can quickly get complicated. However, Dr Roisum starts with a defect oriented view of winding to make sure that all the theory that is necessary to understand defects directly supports quality control.

### Winding Defects

This course covers most of the 100+ defects commonly found in wound rolls.

### Wound Roll Inspection and Measurement

This course covers dozens of ways to inspect or quantify the quality of a wound roll.