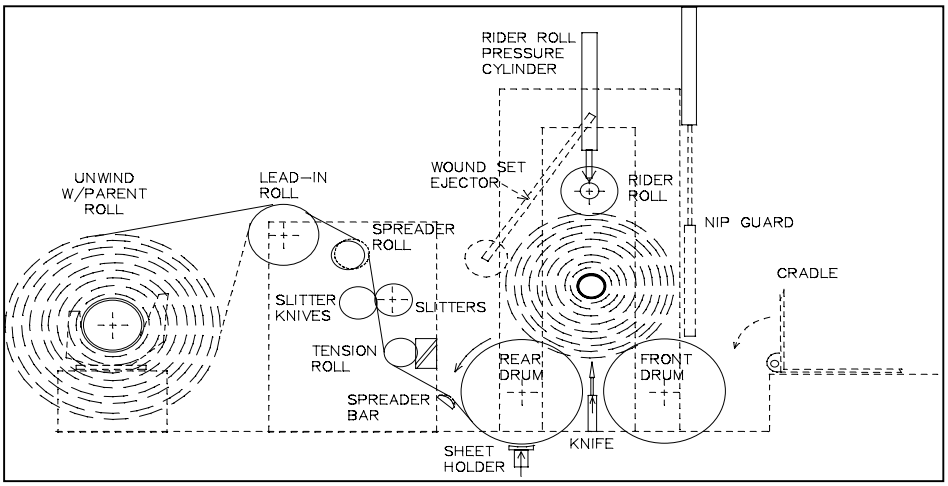
TMEIC Corporation

Winder System Diagram



Mechanical Components of a Winder	Associated Drive Control Concepts	Regenerative Drives
Unwind High inertial load. The parent roll of paper is driven from the center spool. Top speed of 8500 to 10000 fpm with high rates of acceleration and even higher rates of deceleration.	The high inertial load and the high rates of acceleration / deceleration normally determine the power rating of the unwind drive. The unwind drive must provide the sheet tension over the entire diameter range requiring constant power operation.	Yes
Lead In Roll The steel roll is used to change the sheet path.	The lead in roll is to be speed synchronized with the paper so as to minimize its influence on the sheet tension	Yes
Slitter Knives The rotating slitter knives are each normally powered by pancake-style ac motors. There may be 10 to 30 slitter knives.	All of the ac motors are powered by one scaler controlled inverter. The knives are to operate at approximately 5 to 10% above the sheet speed in order to make clean cuts.	Yes
Front Drum / Rear Drum The front and rear drums operate in unison to wind up the paper on the cores. The front drum pulls the sheet around the cores to produce tension in the wound roll of paper. The roll of paper will have very tightly wound wraps around the core and tapered to less tightly wound wraps on the outer portions of the of the roll.	The rear drum has the greater angle of paper wrapping the roll and is therefore the speed regulated drive / roll. The front drum shares the torque requirements with the rear drum. The torque of the front drum is tapered from a high value to a lower value as the set of paper is wound to form a tightly wound roll of paper.	Yes
Rider Rolls The rider rolls are forced down on the cores to insure that the cores do not vibrate out of position. As the set builds up in diameter the	The rider rolls are torque regulated to pull the sheet around the cores and to supply their own losses.	Yes

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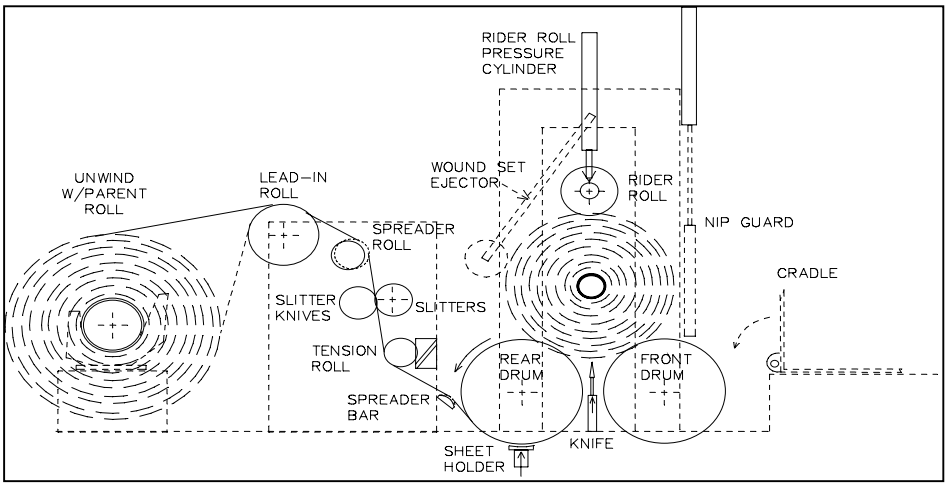

Mechanical Components of a Winder	Associated Drive Control Concepts	Regenerative Drives
rider rolls pressure is relieved so as not to produce too much tension in the sets of paper.		