Pratt Paper

WINDER PROCEDURES

Shreveport, La
LESSON MENU

LESSON 25 – WINDER PROCEDURES
Lesson Objectives

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LESSON OBJECTIVES
This lesson will cover in step-by-step operating procedures performed on the winder at the Visy Paper mill. The learner is provided with a detailed description of each of the tasks the learner is expected to carry out in daily operation. Upon successful completion of this lesson, the learner will be able to:

• perform pre-startup procedures for the winder
• perform the roll line-up procedure for the winder
• perform the unwind stand preparation procedure for the winder
• perform the core injection procedure for the winder
• perform the manual winder threading procedure for the winder
• perform the automatic winder operation procedures for the winder
• perform the empty reel replacement procedure for the winder
• perform the winder shutdown procedure
• understand the purpose of the daily production sheet
• set the slitter widths for the winder
• change the slitter bands and blades on the winder
• perform the splicing procedure for the winder
• list the splicing standards for the winder
• discuss winder safety considerations
• discuss winder interlocks.
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SEGMENT 1

OPERATING SEQUENCE

Introduction

The operating instructions in this lesson pertain to the operation of the No. 15 paper machine dual-drum winder at the Visy Paper mill in Shreveport, Louisiana. As you examine the sequence for carrying out the winder operating procedures, keep in mind the winding principles discussed in the Winder System lesson.

All winder functions are controlled through the winder man/machine interface (MMI).
25.1.1

Pre-Startup Procedures

Before starting up the No. 15 paper machine winder system, the following INITIAL PRE-STARTUP procedures must be performed:

STEP 1   CHECK TO MAKE SURE the winder area is clear of all outside personnel and loose paper or other objects.

STEP 2   BE AWARE of incomplete installation of equipment and any fasteners or loose parts lying around.

NOTE: CONTACT the shift supervisor if anything is out of place.

STEP 3   CHECK the shutdown list for:

• required maintenance work
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• required electrical work
  and
• any unusual items that may have been shut down or disabled.

NOTE: If you notice anything irregular at any time during INITIAL PRE-STARTUP procedures, NOTIFY the shift supervisor immediately.

STEP 4 VISUALLY INSPECT the winder framework and surrounding area for tools and equipment.

STEP 5 CLEAR any debris or foreign material.

STEP 6 CHECK TO MAKE SURE instrument air is available.

STEP 7 CHECK TO MAKE SURE the winder hydraulic unit is operational.

STEP 8 CHECK TO MAKE SURE all electrical lockout padlocks have been removed and all motors are energized.

STEP 9 INFORM the shift supervisor that PRE-STARTUP is about to begin.

STEP 10 CHECK TO MAKE SURE all indicating instruments are in working order.
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STEP 11  **CHECK TO MAKE SURE** that all safety guards are in place.

STEP 12  **CHECK TO MAKE SURE** winder machine/man interface (MMI) power is **ON**.
25.1.2

Roll Line-Up

To perform the roll line-up procedure, the following steps must be taken:

STEP 1   LOCATE the day’s winder production sheet on the computer.

STEP 2   ENTER the necessary information into the computerized system.

STEP 3   CHECK TO MAKE SURE that the slitter widths correlate with the roll width shown on the day’s winder production sheet on the computer.

STEP 4   CHECK the following information against the specification listed on the winder production sheet:

- paper grade
- basis weight
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- set diameter
- width of the roll to be cut
- number of rolls to be cut within the set at the specified width
- customer number order
- number of rolls ordered by the customer at the specified width
- specified core size and related information trim average
- customer complaints originating from the winder and/or paper machine operation.

STEP 5 CHECK TO MAKE SURE the specified cores (diameter and length) are on hand at the winder.

STEP 6 CHECK TO MAKE SURE the following items are in adequate supply at the beginning and the end of each shift:

- cores and core plugs
- splicing tape
- “chalk” or ink markers for marking the rolls with holes or other defects
- proper size (4-inch) core chucks
- winder log sheets
- labels
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- slitter blades
- banding clips
  and
- steel strapping.

STEP 7  ALWAYS MAKE SURE the correct cores are pulled out and set aside for the upcoming changeover.

NOTE: This prevents confusion which can lead to loss of production.
25.1.3 Unwind Stand Preparation

To prepare the unwind stand, the following procedure must be followed:

**STEP 1** START the *winder hydraulic unit pump A (50P001A)* and the *winder hydraulic unit recirculation pump C (50P001C)*.

Note: The hydraulic system should be started 30 minutes before the **STARTUP** of the winder to allow the oil to warm up to operating temperature. The winder hydraulic unit pump A sends hydraulic oil to various cylinders at the winder components and supplies the rider roll with hydraulic oil. The *winder hydraulic unit pump B (50P001B)* acts as a spare. The winder hydraulic unit recirculation pump C recirculates hydraulic oil back to the oil reservoir, and the *winder hydraulic unit recirculation pump D (50P001D)* acts as a spare.

**STEP 2** START the hot melt glue units.

Note: Units must be started by the operator.
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### STEP 3
**CHECK TO MAKE SURE** the unwind stand is **CENTERED** before mounting a new jumbo roll on the winder unwind stand.

**NOTE:** The unwind stand is centered by pressing the **CENTERING** pushbutton on the unwind stand control panel.

If the reeler bridges before the unwind stand are lifted:

### STEP 4
**PRESS** the **LOWER** pushbutton to lower the reeler bridges.

**NOTE:** The bridges must be lowered prior to the unwind stand receiving the parent reel.
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**STEP 5**  RELEASE the parent reel onto the unwind stand by turning the **POPE STOPPER** switch to the **EJECT** position.

**STEP 6**  SET the slitters up for the desired set-up widths.

**NOTE:**  Refer to the **NORMAL OPERATIONS** “Slitter Set-Up” section of this lesson.

**STEP 7**  PRESS the **CLOSE CLAMPS** pushbutton to close the clamps and lock the spool into position.
STEP 8 PRESS the ENGAGEMENT pushbutton on the unwind control panel to engage the reeler spool coupling.

NOTE: The reeler spool coupling will only engage if the spool clamps are closed.
Core Injection/Placement

The cores can be injected both automatically and manually. New cores must be introduced to the winder using the core feeder. The cores will automatically be applied with glue during the feeding process.

**NOTE:** The reel ejector must be in the return position in order to take the cores from the feeder and place them, between the winding drums.

To inject the cores automatically, you must:

**STEP 1** CHECK TO MAKE SURE that the GENERAL SERVICES switch is in the AUTO position.

**STEP 2** LOAD the cores into the storage rack.

**STEP 3** PRESS the PREPARE pushbutton on the winder control panel.
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**NOTE:** This will bring the cores into the loading rack and apply the glue.

**STEP 4** PRESS the **CORE LOADING** pushbutton on the winder control panel.

**NOTE:** The cores will be picked up by the core loading arm (roll ejector) suction cups.

To inject the cores manually, the following procedure must be followed:

**STEP 1** INJECT the cores into the core feeder.

**STEP 2** CHECK TO MAKE SURE that the vacuum blower is switched on.

**STEP 2** PRESS the **PICKUP** pushbutton.

**NOTE:** The carriage should move down until the vacuum cups are in contact with the cores.
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**STEP 4** SWITCH ON the **START VACUUM** selector to activate the vacuum which picks up the cores.

**STEP 5** PRESS the **LIFTING** pushbutton to lift the cores.

**STEP 6** PRESS AND HOLD the **EJECT** pushbutton to move the cores to the releasing area above the winder drums.
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STEP 7  PRESS the LOWERING pushbutton to lower the carriage between the winder drums.

![Lowering Pushbutton](image)

STEP 8  RELEASE the STOP VACUUM switch to release the cores.

STEP 9  PRESS the LIFTING pushbutton to lift the carriage.

STEP 10 PRESS the RETURN pushbutton to return the ejector to its original position.
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25.1.5

Winder Threading

To thread the winder, the following procedure must be followed:

STEP 1  CHECK TO MAKE SURE a parent reel is on the unwind stand.

STEP 2  MEASURE the jumbo reel diameter.

STEP 3  ENTER the jumbo reel diameter into the control panel.

STEP 4  SWITCH ON the SEQUENCE START selector on the unwind control panel to initiate tail threading.

STEP 5  START the winder in THREAD mode.

STEP 6  PRESS the LIFT pushbutton to place the rider roll in the UP position.
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**STEP 7** **PRESS** the **LIFT** pushbutton to place the core guide in the **UP** position.

**STEP 8** **TURN** the **LOWERING TABLE** switch to the **LOWER** position to place the lowering table in the **DOWN** position.

**NOTE:** At this point, the operator may leave the control panel area and enter the unwind area.

**STEP 9** **START** the slitters.

**NOTE:** The edge slitters can be activated before starting the tail threading by pressing the **EDGE KNIFE ENGAGEMENT** button on the winder panel.
Otherwise, the edge slitters are engaged automatically during the threading sequence after the vacuum has been established.

**STEP 10** START the trim blowers.

**NOTE:** The trim blowers can be activated before starting the tail threading by pressing the **EDGE KNIFE ENGAGEMENT** button on the winder panel, or the trim threading blowers are started automatically when the edge knives are engaged.

**STEP 11** OPEN the middle slitter blades.

**STEP 12** START the drum roll vacuum blower.

**NOTE:** The drum roll vacuum blower must be started by the operator by turning the **DRUM VACUUM BLOWER** switch to the **START** position.
STEP 13  **TEAR** the tail on the parent reel from the center out to each side in a "V" shape.

STEP 14  **INSERT** the tail in the nip between the lead-in guide roll and the first threading belt.

**NOTE:** At this point, the No. 2 operator should enter the winding area and wait until the tail comes out from the drums. When it comes out, then:
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**STEP 15**  PASS the tail over the spreader roll around the top and under the bottom paper guide segmented roll.

**NOTE:** There are four load cells attached to the bottom segmented roll for tension control measurement.

**STEP 16**  PASS the tail through the slitters.

**WARNING:** EXTREME CARE SHOULD ALWAYS BE TAKEN AROUND SHARP SLITTERS AND CLOSED SPACES.

**STEP 17**  CHECK TO MAKE SURE the sheet is straight while threading the winder.

**STEP 18**  MONITOR the tail as it enters the slitters and ASSIST in keeping the tail straight.
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**STEP 19**  **CHECK TO MAKE SURE** the front and back slitters and trim slitters are in proper order.

**STEP 20**  The bottom web guide belts and transfer units **PICK UP** the tail and take it up between the two winder drums.

**NOTE:** Once the full web has traveled through the winder drums, then:

**STEP 21**  **TURN OFF** the air thread blowers are turned off using an **AIR BLOW STOP** pedal.

**STEP 22**  **STOP** the winder crawl speed with the pedal.
NOTE: At this point, the paper is at full width on the drum.

STEP 23 CUT the tail off 2 inches from the core set.

NOTE: The cross knife cutter will lift into cutting position by pressing CUT POSITION pushbutton. Then, press the ENGAGE button and take the sheet and tear against the blade. The cross cutter is then parked by pressing the RETRACTING pushbutton.

STEP 24 TAPE the tail to the core set.

STEP 25 ADJUST the paper to the desired tension by moving the paper lead-in guide roll adjustment selector switch to the UP or DOWN position.

NOTE: This should have to be adjusted only to run a bad jumbo roll of paper.
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STEP 26 ENGAGE the middle slitter blades by pressing the MIDDLE KNIVES ENGAGEMENT pushbutton on the winder control panel.

NOTE: Normally, the middle slitter blades are engaged automatically after a timed delay when the operator presses the AIR BLOW STOP pedal.

STEP 27 LOWER the core chucks.

STEP 28 CLOSE the core chucks.

STEP 29 LOWER the rider roll.
STEP 30  LOWER the safety barrier.

STEP 31  START the winder.

STEP 32  PUT the winder speed selector switch in the THREAD UP position.

NOTE: This will jog the winder over and put a few paper layers on the core.

STEP 33  MONITOR the first few layers on the core. When straight cuts without wrinkles appear, then:
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**STEP 34**  STOP the winder.

**STEP 35**  MEASURE the cuts. The cuts must be within $\pm \frac{1}{16}$th of an inch of the required specifications.

**STEP 36**  VERIFY that the cuts line up with the cores.

**STEP 37**  PRESS the LOWER pushbutton to lower the protection guard.

![Safety Barrier Lower Pushbutton]

**STEP 38**  START the winder.

**STEP 39**  PUT the winder speed selector switch in the RUN position.

**NOTE:** This will accelerate the winder to the pre-set speed.
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**STEP 40** OBSERVE the winder MMI, parent reel, and winder for anything out of the ordinary.

**STEP 41** OBSERVE the set of paper from the front of the winder to ensure that there are no tie-ups and that everything is running smoothly.

**NOTE:** When the desired diameter is reached, then:

**STEP 42** STOP the winder.

- Always stop the winder a few inches before the set diameter. The amount of diameter added to a set after the STOP button is pressed will vary depending on the caliper of the paper and the speed of the winder.
- When the automatic STOP CONTROL selector switch is activated, the winder will automatically shut down when the desired roll diameter is achieved.
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- Once the winder has come to a complete stop, then:

STEP 43 RAISE the protection guard.

STEP 44 PRESS the LIFT pushbutton to RAISE the rider roll.

STEP 45 UNCHUCK the set of paper rolls.

STEP 46 LOWER the core chucks.

STEP 47 CUT the tails off the rolls one sheet deep.
STEP 48  
TURN the lowering table LIFTING selector switch.  

**NOTE:** This will raise the lowering table. When the roll winding is complete, then:

STEP 49  
ACTIVATE the top and bottom sheet cutter.

STEP 50  
HOLD DOWN the EJECTION pushbutton to eject the roll set.  

**NOTE:** It is advised to eject the roll slightly and cycle the top sheet cutter. Upon final ejection, leave the top sheet cutter in the down position to ensure a good cut.

STEP 51  
TURN the LOWERING TABLE switch to the LOWER position and lower the lowering table slightly.

STEP 52  
PRESS the LOWER pushbutton for the safety barrier once you are sure everyone is clear of the winder.
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Safety Barrier Lower Pushbutton
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STEP 53  **EXAMINE** the roll set for defects.

STEP 54  **TURN** the **LOWERING TABLE** switch to the **LOWER** position and lower the lowering table completely.

**NOTE:** This will allow the roll set to roll onto the operating floor.

STEP 55  **SEPARATE** the rolls on the floor.

STEP 56  **PASS** your hand along the side of each roll while inspecting the edges for signs of:

- fuzzy cuts
- tears
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- cracked edges
- uneven belts of loose and tight paper
- grease stains.
- starch debris
- roll bursting
  and
- color variation.

**NOTE:** If the sides of the rolls appear to be excessively dusty,

**INSPECT** the slitters and rings for signs of wear.

**STEP 57**  **RUN** your hand across the top of each roll, feeling for ridges (corrugation).

**STEP 58**  **TAP** the top of each roll with a wooden wedge or mallet, listening for variations in tone that may indicate hard and soft spots.
25.1.6

Replacing Empty Reeler Spool (Unwind Stand Spool Release)

To replace the empty reeler spool, the following procedure must be followed:

**STEP 1**  PRESS the CENTERING pushbutton on the unwind stand control panel to center the unwind stand if the stand was not centered automatically.

**STEP 2**  PRESS the DISENGAGEMENT pushbutton to disengage the reeler spool coupling.

**STEP 3**  CHECK TO MAKE SURE the gear coupling is disengaged and the unwinder is centered and at zero (0) speed.
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STEP 4 PRESS the CLAMPS OPENING pushbutton to open the spool clamps and the spool can be removed by the crane.

STEP 5 INSERT a full reeler spool with the overhead crane or jumbo rack spool advance using the Reeler Bench control panel.

STEP 6 CLOSE the clamps and ENGAGE the gear coupling.

STEP 7 PRESS the ENGAGEMENT pushbutton to engage the gear coupling.
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STEP 8 PREPARE the winder for sheet thread-up.
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25.1.7

Winder Shutdown

Before shutting down the winder system, **ALWAYS** check to make sure no one is working on the winder and that **all** operating devices are in their home positions.

Perform the following steps for extended winder shutdown:

STEP 1  COMPLETE the unwinding parent reel.

STEP 2  RETRACT the slitters for inspection by PRESSING the 

DISENGAGE pushbutton and then the RETRACTING pushbutton.

STEP 3  INSPECT the slitters for nicks, wear rings, and other signs of wear.

STEP 4  STOP the hydraulic pumps using the HYDRAULIC PUMPS START/STOP button on the benchboard.
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**STEP 5**  
SWITCH OFF the voltage for the electric drives (50ME1/2/3/4/5/6).

*NOTE:* If you need assistance, contact the E&I department.

**STEP 6**  
STOP the winder trim removal fans (50P102)(50P103).

**STEP 7**  
SWITCH OFF the control voltage.

**STEP 8**  
CHECK TO MAKE SURE the winder is left with the rider roll in the lowered position and the winding cradle is fully upright after ejecting the wound roll set.
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STEP 9  GATHER any loose paper from around the winder and TOSS it into the winder trim repulper (21T500). Use the air hose to BLOW beneath the winder.
Introduction

Along with the pre-startup, startup, and shutdown routine, the operators must perform day-to-day functions. This segment provides instructions for those daily routines, which include the:

• daily production sheet
• setting slitter widths
• changing slitter bands and blades
  and
• splicing
25.2.1

**Daily Production Sheet**

The daily production sheet (on the computer) indicates the:

- number of rolls to be wound for an order number (it lists the number of times the slitter arrangement will have to be changed to produce the entire trim sheet)
- number of rolls to be cut within the set at the specified width and
- total number of sets to be completed.

The operator should start at the beginning of the trim cutting schedule unless otherwise instructed by a supervisor.

“Set-up” refers to the number of times the slitter arrangement will have to be changed to produce the entire production sheet.

During an average shift, the slitters may be set up numerous times. All changes within the slitter section can only be done while the winder is shut down.
25.2.2

Setting Slitter Widths

To set the slitter widths, the following procedure must be followed:

NOTE: When setting new slitter widths, always start with the rear-most slitter on the drive side. Use it as a reference when aligning the remaining slitters.

NOTE: The trim cutting schedule denotes width sizes in eighths and must be converted to a decimal equivalent for the slitter system set-up. For example, a width of 97-7 is actually 97 and 7/8ths. To convert 7/8ths to a decimal, divide the large number (8) by the small number (7). In this case, eight divided by seven equals 0.875.

STEP 1 PRESS the OFF pushbutton to stop the slitters motors.
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**WARNING:** NEVER RISK YOUR SAFETY BY REPOSITIONING THE SLITTERS WHILE THE SLITTERS ARE RUNNING.

**STEP 2** CHECK the new slitter widths with the specific order.

**STEP 3** MEASURE exactly from the back slitter to the new position of the second slitter.

**STEP 4** MOVE the second slitter to the new position with the automatic slitter positioning unit.

**NOTE:** When the slitter unit stops, then:

**STEP 5** STOP the automatic slitter positioning unit.

**STEP 6** MOVE the slitter unit slowly into a new position.

**STEP 7** PERFORM STEPS 3-7 until all slitters are in their new positions.

**NOTE:** If repositioning affects the trim width setting on the front slitter, then:
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**STEP 8** ALTER the front core chuck position to properly accommodate the trim width.

**STEP 9** START the slitter motors to make sure the slitters are operating.

**STEP 10** STOP the slitter motors.
25.2.3

Changing Slitter Blades

To change the slitter blades, the following procedure must be followed:

WARNING: ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT WHEN
CHANGING SLITTERS TO AVOID INJURIES TO THE HANDS.

STEP 1 PRESS the CHANGE BLADES button on the main Simatic control
screen.

STEP 2 PRESS the FUNCTION ON button.

NOTE: When the FUNCTION ON button is actuated, the
following will occur:

• all automatic functions lock
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- all controller releases lock
- all compressed air connections to the top blades switch to zero pressure
- compressed air only switches on to the service connections nos. 14 and 40.

At this point, updated info status will appear on the main screen. It is now safe to proceed with changing the blades.
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STEP 3  ARREST the blade collar by turning the stop gauge D until it clicks into place.

STEP 4  LOOSEN the five mounting screws O by approximately two revolutions.

STEP 5  REMOVE the blade and retaining ring by turning the retaining ring counterclockwise in the bayonet.

WARNING: EXTREME CARE SHOULD ALWAYS BE TAKEN AROUND SHARP BLADES AND CLOSED SPACES.

STEP 6  PLACE the new blade and the retaining ring on the knife collar in reverse order.

STEP 7  TURN the retaining ring counterclockwise in the bayonet.

STEP 8  TIGHTEN the five mounting screws with even force of between 6 to 10 Nm.

STEP 9  REPEAT as necessary with all blades that need to be replaced.

25.2.4
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**Splicing**

Splicing is necessary after sheet breaks and when the unwinding parent reel must be attached to the trailing edge of the previous reel. It is important that all splices are made smoothly to avoid wrinkling. The following procedure should be used when making a slice:

**NOTE:** Always use the EMERGENCY STOP pushbutton during a sheet break to avoid wasting paper.

**NOTE:** The unwind stand disc brakes only engage when the EMERGENCY STOP is activated.

**STEP 1** LOOK for the cause of the break.

**STEP 2** TEAR loose “broke” off of the parent reel.
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STEP 3  PULL the loose paper from under the parent reel.

STEP 4  BLOW out the winder if necessary.

STEP 5  RAISE the rider roll if it is not already raised.

STEP 6  MAKE a tail to thread though the winder.

STEP 7  MAKE sure each roll in the set is the same diameter.

STEP 8  PLACE a single-faced adhesive carrier tape across the full width of
the front winder drum, sticky-side down.

NOTE:  The tail should be threaded though the winder before
using the tape.

STEP 9  THREAD the tail through the winder, pulling it out straight and rolling
the tail up as you go.

STEP 10  PULL the tails out straight from the rolls in the winder and cut the tail
evenly.
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STEP 11 BRING the new tail over the set and manually roll up the rethreaded paper.

STEP 12 PUT the double-faced splicing tape down on the tail, leaving two inches protruding.

STEP 13 ENGAGE the slitters.

STEP 14 LOWER the rider roll.

STEP 15 PLACE a double-faced splicing tape into the carrier tape on the front winder drum.

STEP 16 PULL the ends of the set over the splicing tape and neatly trim along the edges of the tape.
STEP 17 MANUALLY ROLL the set of paper over for one revolution.

STEP 18 START the winder in THREAD UP position.

NOTE: The following events will occur:

• The splice tape is pulled off the carrier tape by the roll ends as they pass through the nip between the front winder drum and the set.

• The double-sided carrier tape then adheres to the new sheet as it passes through the nip between the set and the No. 1 winder drum and bonds them together.

STEP 19 CONTINUE to manually roll up the rethreaded roll ends until the splice becomes visible at the back side of the winder.

STEP 20 MANUALLY stop the roll set.

STEP 21 TRIM the ends of the rethreaded roll set along the edge of the splicing tape.

STEP 22 PUT the winder speed switch in the RUN position.

STEP 23 CLEAN up the floor behind the winder.
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Splicing Standards

The following splicing standards should be observed:

• The leading edge should be placed as close to the tape as possible without allowing the tape to protrude.

• The trailing edge should not be greater than 1/8th inch or less than 1/16th inch.

• Never tear the sheet into the splice as this will cause the splicing tape to stick to the next sheet.

• Any roll that contains more than three splices must be categorized as defective. If the splice is within five inches of the core or if the splices are less than an inch apart, the roll must be culled.

• Examine the roll from the end. The roll will be considered defective if the splice is not flush with the end of the roll face. If a single sheet sticks out of the splice, it must be sanded or trimmed off.
Introduction

When properly operated by conscientious operators, the winder is a safe work area. Inattentiveness, careless work habits, and neglect invite injury. Safety equipment and guidelines are provided to protect the operators.

Every effort is made at the Shreveport, La., paper mill to protect the operators' safety and well-being. The instructions provided in this lesson are presented in the interest of reducing winding-related injuries. These safety guidelines are not all-inclusive, but can be used to reinforce the mill safety program.

Emergency switches can be found at every work stand. Generally, emergency switches have red mushroom heads on a yellow stem, and therefore, are easily recognized. In dangerous situations, emergency switches can be activated by any person at the winder.
General Safety Guidelines

When working in the winder area, the following safety guidelines should be observed:

- **DO NOT** remove warning signs, guards, or boundaries. They are installed to warn personnel of possible danger.
- **MAKE NOTE** of all instructions on warning plates.
- **MAKE CERTAIN** barriers and guards are in place before starting the winder.
- **OBSERVE** colored boundaries marking dangerous areas.
- **REMOVE** foreign articles from the winder to prevent personnel from tripping and falling.
- **KEEP** aisles and walkways around the winder open and clear of obstructions.
- **ROLL** up hoses.
- **REMOVE** unnecessary materials and tools.
- **DO NOT** hurry or run on the stairs or walkways.
- **WIPE UP** any oil, grease, or water which may cause a person to slip or fall.
- **REMOVE** all obstructions which may impair visibility around the winder.
- **WEAR** eye safety equipment.
- **DO NOT** overreach. Keep proper footing at all times.
- **NEVER REACH** between or position yourself between rotary machine parts and guards.
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- **KEEP** clothing and body parts away from running belts, ropes, and nip points.
- **AVOID** contact with rotating winder parts.
- **DO NOT** wear loose clothing.
- **MAKE SURE** all non-operating personnel remain outside the safety boundaries when the winder is running.
- **KEEP** hands away from the drive units, wires, and rolls. **MAKE SURE** all guards over the drive components are in place.
- **NEVER** use hands to remove broke from rolls on operating machines.
- **MAKE SURE** all the interlocks are working properly.
- **DO NOT** operate the winder above thread speed unless the cradle is in position, the rider roll is lowered, and the roll ejector is retracted.
- **DO NOT** eject a rewound roll until the winder is stopped.
- **DO NOT** restart the winder after threading until you are absolutely sure that all personnel are outside the safety lines.
- **MAKE SURE** the slitters and paper rolls are stopped before attempting to thread the sheet through the winder.
- When preparing a tail on the core, **CHECK TO MAKE SURE** that all operators are out of the immediate area before lowering the rider roll.
- **NEVER** use a knife to attempt to separate two interwound rolls.
**Winder Procedures, Operations, and Safety**

- **DO NOT** attempt to separate joined rolls while the set is on the drums and the winder is running. Allow the set to run up and see if the force of the ejector will break the rolls apart as they drop on the lowering table.

- **BEWARE** of sharp slitter blades.

- **DO NOT** adjust slitters when they are in motion.

- **USE** care when adjusting or handling slitters.

- **DO NOT** handle slitters without wearing gloves and unless carriers are provided.

- **DISENGAGE** slitters before changing rings or blades.

- **DO NOT** operate the winder above thread speed or jog until the major nip guard is in its protective position.

- **NEVER** attempt to splice on the fly.

- **DO NOT** lift the rider roll until the winder has stopped.

- **STAND CLEAR** of suspended loads. **ALWAYS** exercise extreme care in transferring the reel into the unwind stand or moving a spent spool back to the paper machine reeler.
Winder Procedures, Operations, and Safety

• **WEAR** a safety helmet while under suspended obstacles.

• **WATCH FOR** swinging levers and clamping devices.

• **PAY ATTENTION** to drive shafts and motor couplings, and **DO NOT** remove the corresponding guards.

• **TAKE CARE** when hosing down machinery that the hose does not catch on rolls or wire and drag you into the machine.
Winder Procedures, Operations, and Safety

25.3.2

Safety Guidelines During Maintenance Shutdown

The following guidelines should be observed during a maintenance shutdown in the winder area:

• **ONLY** perform maintenance near moving parts when the task is unavoidable.

• **DO NOT WEAR** loose clothing. Wear appropriate personal safety equipment including safety shoes, gloves, a hard hat, etc.

• **INFORM** the shift supervisor of work to be performed in the basement, on the drive side, or in other uncontrollable areas.

• **ONLY ENTER** narrow passages if absolutely necessary, and **ONLY AFTER** informing the shift supervisor.

• **DO NOT TOUCH** moving parts.

• **DO NOT CLIMB** over structures, railings, or guards.

• **DO NOT BEND** over dangerous areas, and **DO NOT CRAWL** under the winder.

• **SWITCH OFF** energy supply, **STOP** the winder, and **LOCK** the winder against unintentional start before performing any type of maintenance in the winder or in its groups.
Winder Procedures, Operations, and Safety

- **INSPECT** the fixing screws and lifting hooks for corrosion and mechanical damage. Abrupt, uncontrolled rotation of parts with outstanding masses can be dangerous.

- **MAKE SURE** that lifting devices and components are adequate to load size and lifting angles before ANY load lifting.

- **INSPECT** load lifting elements such as cables, slings, etc., for wear and weak points before using.

- **KEEP** a safe distance from the rolls being lifted. Hooks and loops may slide. **DO NOT HANDLE** rolls manually.

- **DO NOT STAND BELOW LIFTED ROLLS.**

- **CHECK** hangers, pins, etc., periodically for wear and damage.

- **LOCK KNIFE DRIVE** when replacing tail cutter knife. **WEAR SAFETY GLOVES. INSTALL KNIFE COVER** before restarting.

- **EXERCISE CAUTION** when working near motors that may be started by remote control.

- **SAFELY REINSTALL** all parts of walkways, railings, boundaries, and guards that were dismounted when the maintenance work is concluded.
25.3.3

Winder Interlocks

Interlocks are the “safety net” of automatic or remotely controlled operating systems. Interlocks direct sequencing and accurate response to normal process variations. Interlocks also help keep the system running safely and efficiently. However, upsets beyond normal variations do occur and require direct operator intervention. Knowledge of the system interlocks will assist you in responding quickly and accurately to process upsets.

Before attempting to operate the winder, the operator should review this list of protective interlocks:

• For the winder to be displaced from the center, the unwind gear coupling must be engaged. When the coupling is disengaged, the unwinder will automatically return to the center.
Winder Procedures, Operations, and Safety

• To eject the reeler spool, the unwinder must be centered and at zero speed, the reeler spool coupling disengaged, and the track bridges lowered.

• The front slitters are provided with guards. The front slitters pivot away from the operator during threading.

• Idler brakes are provided to stop all driven and non-driven rolls when the drum drives have been shut off.

• The unwind brake engages on standstill and on emergency stop.

• Winder roll parking brakes engage at standstill. The No. 2 winder drum parking brake disengages upon injection of rolls.

• The roll extracting device will only be activated when the lowering table is in the lift position.

• The drum drive will not exceed thread speed unless the lowering table in the guard position.

• The rewind carriages may not be unchucked unless the drum drives have been stopped.

• If hydraulic pressure is lost, the rider roll will lock into position.

• The rider roll will not raise from the rewinding rolls any time the winder is in RUN mode.

• When the winder stops, the protection guard automatically goes up. The guard must be lowered before the winder will accelerate to operation speed.

• The tail threading sequence can begin if the Start Configuration is OK.
**Winder Procedures, Operations, and Safety**

For the cores to be loaded:

- the reel ejector must be in the return position
- no rolls on the winder drums
- photocell is **OFF**
- cores feeder is **ON**

and

- crawl/ tail sequence stop foot command is activated then the **CORES LOADING** pushbutton light is **ON**.

The **CORES LOWERING REQUEST** is activated when:

- the ejector is in the ejected position

and

- the cross knife is in the parked position.
For the paper roll ejector to operate the:

- rider roll must be completely up
- protection guards must be completely up
- lowering table must be completely up
- hydraulic pumps must be running
- emergency stop for roll change must not be activated
  and
- winder must be stopped.

For the winder drive to start, **ALL** of the following interlocks must be satisfied:

- hydraulic unit must be **ON** and pumps must be running
- hot melt glue units must be **ON**
- unwinder coupling engaged
- reeler spool on unwinder
- photocell obstructed
- sheet fixing lowered
- crosswise slitter on bottom
- fixing heads lowered
- heads closed
- rider roll lowered
- roll ejector in rest position
- protection guard lowered
Winder Procedures, Operations, and Safety

- lowering table raised

  and

- middle slitters propped.
**Winder Procedures, Operations, and Safety**

When properly operated, the winder is a safe work area. Careful attention to the instructions and procedures included in this lesson should help the operator safely perform daily operations on the No. 15 paper machine winder.