



SAFETY INFORMATION

Surface Winder Safety



Figure (1) – Surfstart Winder



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INTRODUCTION

The Black Clawson **Surface Winder** was designed to meet the winding needs of the pulp, paper, non-woven, and converting industries.

This safety bulletin deals only with Surface Winders for use in the non-woven and converting industry manufactured by Black Clawson Converting Machinery Inc. and Surface Winders manufactured prior to March 14, 2003 by Black Clawson Company and Black Clawson Converting Machinery LLC.

Black Clawson's original version of a surface winder was the **Autoflyte Reel** for the winding up of paper and paperboard at the end of paper machines in the pulp & paper industry and in some converting plants especially at the end of off-machine coaters. **Figure 2** shows an Autoflyte Reel with a high top guard which is used where access for sheet turn-up is not required. See **Figure (2)**.

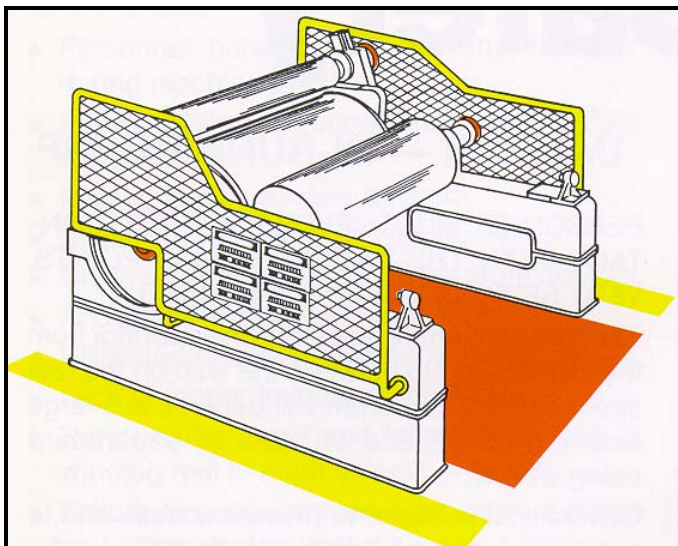


Figure (2) – Autoflyte Reel and Guard

To better meet the needs of the converting industry, Black Clawson developed the Surfstart Winder, see Figures (1, 3a, & 3b), the Roll Support Surfstart Winder, see Figure (4), and the Advanced Technology Surfstart (ATS) Winder, see Figure (5). Many of the hazards described herein are common to all designs. Refer also to the Black Clawson Company REEL SAFETY BULLETIN C.E.Bul-2-5/98 that pertains to reel safety in pulp & paper mills.

The purpose of the Autoflyte Reel, the Surfstart Winder and the Advanced Technology Surfstart (ATS) is to wind paper, paperboard, non-wovens, and other products of uniform tension and density across the width of the web. These Surface Winders must be capable of continuous and intermittent operation to meet the needs of on and off machine operations as well as the needs of the production process. Grades, properties, speeds, and widths differ from machine to machine and from plant to plant. Although the purpose of the Autoflyte Reel, the Surfstart Winder, and the Advanced Technology Surfstart (ATS) remains the same, all Single Drum Winders are not alike. Some, like the Advanced Technology Surfstart (ATS) Winder, have unique features that will be discussed later in this bulletin. Others have been designed to incorporate cut-off and roll change mechanisms that were once particular only to Turret Winders. Refer also to Black Clawson Converting Machinery Inc. TURRET WINDER SAFETY BULLETIN BCCMI BUL. 4-05/04



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INTRODUCTION - continued

IT IS ESSENTIAL THAT OPERATING PERSONNEL BE THOROUGHLY TRAINED IN THE SAFETY AND OPERATING PROCEDURES APPLICABLE TO THE SINGLE DRUM WINDER AND THE GRADE OF PAPER, PAPERBOARD OR PRODUCT INVOLVED.

LACK OF PROPER TRAINING CAN BE A MAJOR CAUSE OF SERIOUS PERSONAL INJURY.

The Surface Winder is also the transfer point between the preceding section and the next stage in production. Special safety measures must be taken while transporting the heavy rolls of product from the winder whether by crane or transfer rails.

Adequate barrier guards and safety devices must be installed along with adequate safety measures to protect and remind personnel of the potential Surface Winder hazards. **For examples of unsafe practices see Page 13.**

IMPORTANT NOTE

This bulletin applies only to Black Clawson Surface Winders and illustrates typical methods of safe operation. Some horizontal reels and single drum winders look alike. If the instructions in this bulletin do not apply to your particular Black Clawson Surface Winder, please contact Black Clawson Converting Machinery, Inc. immediately for assistance in safely operating and guarding your particular Surface Winder.

DANGER IN-RUNNING NIP

PERSONNEL MUST NEVER COME INTO CONTACT WITH THE IN-RUNNING NIP POINTS. VERY SERIOUS INJURY CAN RESULT.

The type of guarding to protect the operator from the in-running nip between the web on the reel spool or core and the winder reel drum will depend, to a large extent, on the grade of paper, paperboard or other material being wound. Generally, it is easier to prevent access and to automate threading and sheet transfer for lighter grades than it is for heavy grades where manually aided transfers are sometimes required. Therefore guarding on heavy grades must sometimes be modified to allow limited access to the Surface Winder. Although it is sometimes impossible to completely guard the Surface Winder and still operate it, we present here, in this bulletin, a number of illustrations of barrier guards and safety devices as well as suggestions for safe threading and sheet transfer. Black Clawson Converting Machinery Inc. can also assist in developing automatic sheet transfer and sheet threading systems for your Black Clawson Surface Winder.

DANGER ROTATING SHAFTS

All transmission shafts such as main in-drive, gear quadrants, belts and pulleys etc. must be guarded in accordance with OSHA's regulation Subpart R 1910.261(b)(1).



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SURFASTART WINDERS

Older versions of Surfstart Winders resembled a paper machine reel and were commonly used on off-machine coaters. **Figure 3a** shows a typical side barrier guard for use with heavy grades where operator access is required for manual turn-up of the sheet to the empty spool. The guard is designed so that the operator cannot come into contact with the nip. In addition, a safety mat must be installed in front of the winding drum to keep operators at a safe distance from the winding nip. For continuous operation see sections on "Threading" pg. #10 & #11..

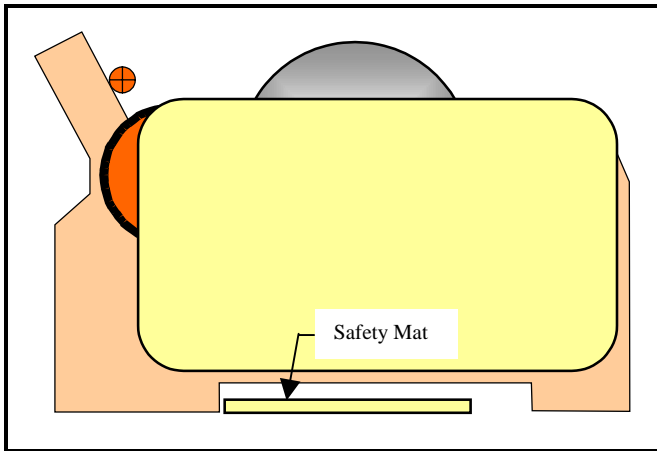


Figure (3a) – Older Surfstart Winder

Figures (1) & (3b) show the type of side barrier guarding used on a modern Surfstart Winder equipped with state of the art sheet transfer and sheet turn-up. As a general rule surface winders for the converting industry are threaded by hand with the winder stopped. In cases where the operation is continuous consult sections on "Threading".

This type of side barrier guarding is also used on the Black Clawson Advanced Technology Surfstart (ATS) WINDER. See **Figure (5)**.

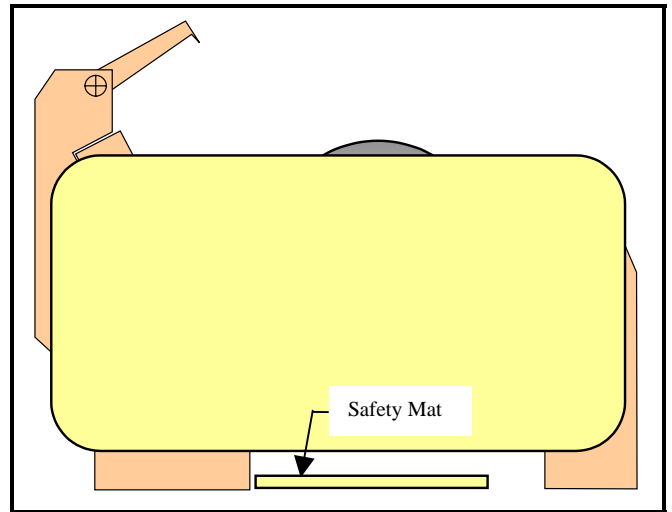


Figure (3b) – Modern Surfstart Winder

ROLL SUPPORT SURFASTART WINDERS

To satisfy the requirements of manufacturers to eliminate the need to rewind rolls onto small cores after coming off the reel or Surfstart Winder, Black Clawson developed the Roll Support Surfstart Winder. The Roll Support Surfstart instead of using conventional reel spools can now wind up on small cores because the winding roll weight is supported at larger roll diameters thereby relieving the shaft stress at the ends of the core. See **Figure (4)**.



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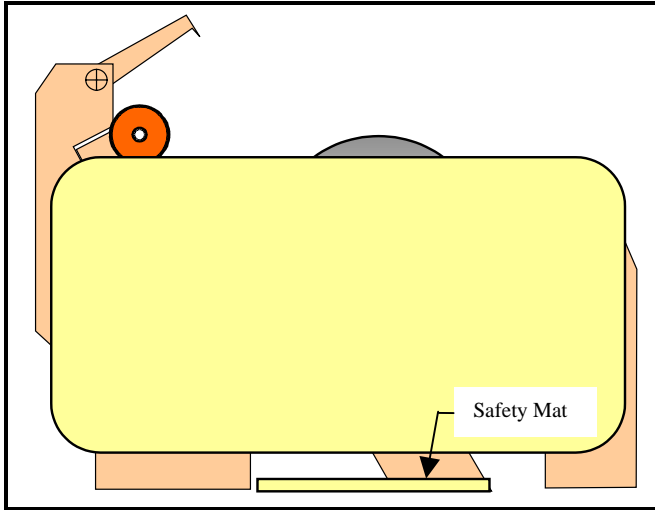


Figure (4) – Roll Support Surfstart Winder

DANGER ROLLING NIPS

The nip created by the winder spool or core shaft bearing housings rolling on the horizontal frames must be guarded by the full length side barrier guard as shown in **Figures (1) through (4)**.

DANGER NIP POINTS

The nip created by the shock absorber, located at the end of the winder, and winder spool or core shaft housing and the nip created by the winder brake and the spool or brake coupling must be guarded as shown in **Figures (1) through (4)**

Where a roll transfer system is used, the transfer rails must be guarded to prevent accidental contact with the operator. In

addition, sufficient space must be allowed between rolls to prevent personal injury. The gate between the winder and the transfer rails is interlocked with the kick-out mechanism.

ADVANCED TECHNOLOGY SURFASTART WINDERS (ATS)

This is a hybrid winder encompassing the features of the roll support Surfstart Winder and the principles of the conventional two-drum winder. The Advanced Technology Surfstart (ATS) incorporates technology where the winding roll is supported throughout its winding cycle. The Advanced Technology Surfstart (ATS) winder is shown in **Figure (5)**.

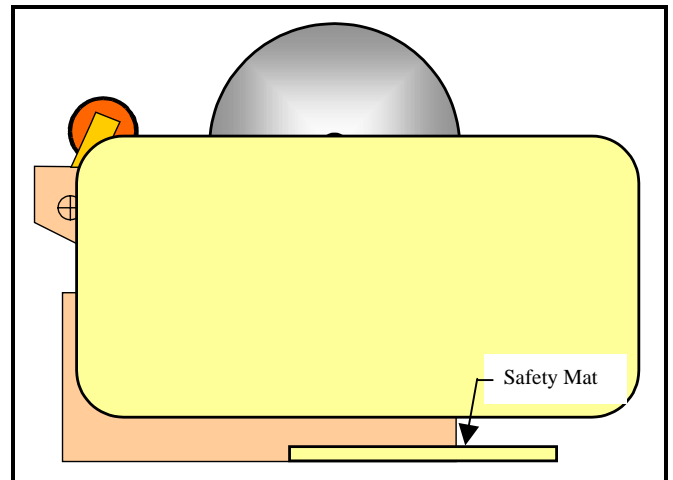


Figure (5) – Advanced Technology Surfstart (ATS) Winder



SAFETY INFORMATION

WARNING GOING BETWEEN FRAMES

PERSONNEL MUST NEVER GO BETWEEN THE FRAMES on any Autoflyte Reel, Surfstart Winder, Roll Support Surfstart Winder or Advanced Technology Surfstart (ATS) Winder while the winder is running either to touch or inspect the winding roll. Procedures must be developed to eliminate this unsafe practice.

FAILURE TO COMPLY WITH THIS WARNING COULD RESULT IN SERIOUS PERSONAL INJURY.

Black Clawson Converting Machinery Inc. supplies pressure sensitive mats on converting surface winders that will stop the winder if personnel enter the space between the frames. If your particular surface winder does not have pressure sensitive mats in this location it is strongly recommended that these mats be installed.

FAILURE TO FOLLOW THIS SAFETY RULE OR INSTALL PRESSURE SENSITIVE MATS CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

WARNING THREADING

These winders are intended for the converting industry where the roll to be converted is unwound at the unwinder, processed, and then wound onto the surface winder. During a web break the machine must be stopped and a tail or rope threaded onto the winder by hand.

NEVER THREAD THE WINDER BY HAND WHILE THE MACHINE IS RUNNING. SERIOUS PERSONAL INJURY COULD RESULT. FOLLOW THREADING PROCEDURE ON PAGES #10 & #11.

If your process does not allow the machine to be stopped for threading or rethreading, please contact Black Clawson Converting Machinery, Inc. for assistance in ensuring the safe operation of your Black Clawson Surface Winder.

DANGER ROLL TRANSFER

In all situations, personnel must stay clear of the wound roll being transferred by means of rolling on transfer rails. Warnings must also be given when wound rolls are being transferred by crane from the winder to the storage area. Due to the heavy weight of the wound rolls they must be handled with caution. Excessive bumping or banging of spools or core shafts on transfer rails can result in damaged journals. Bent or damaged spools or core shaft journals must be replaced. Damaged journals can break causing personal injury or machine damage.

FAILURE TO HEED THIS WARNING CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



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DANGER TAGGING & MARKING

Never tag or mark rolls for product defects or breaks by placing cards into the nip by hand. Mechanical devices should be used to mark or tag the edge of the roll. In the absence of a mechanical device, a hand held feeding device as shown in **Figure (6)** must be used.

FAILURE TO FOLLOW THIS SAFETY PROCEDURE CAN RESULT IN SERIOUS HAND AND BODY INJURIES.

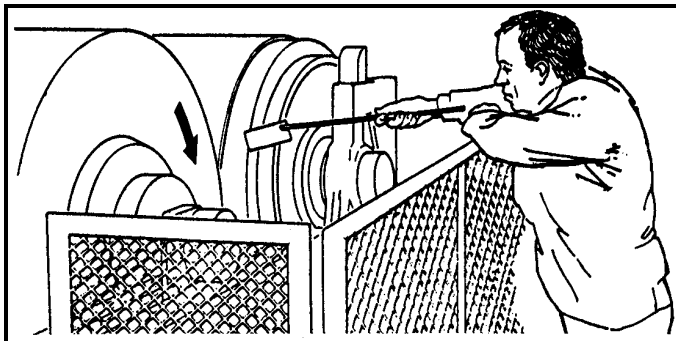


Figure (6) - Manual Tagging

SHEET TURN-UP & TRANSFER SYSTEMS

Systems for sheet turn-up and sheet transfer vary according to grade and in many cases the preference of the end user. Whatever system is selected, the system must be reliable and safe for its intended use. Most modern Surfstart

Winders, Roll Support Surfstart Winders, and Advanced Technology Surfstart (ATS) Winders are equipped with automatic transfer systems. These systems incorporate an overhead cut-off knife as shown in **figures (3b), (4), and (14)** or a shoe mounted knife as shown in **figures (5) and (13)**. Some Surfstart Winders incorporate the rope transfer system described in the following pages. Most modern surface winders use sheet transfer systems with cut-off knives. However this bulletin also illustrates in **Figures (7) through (13)** knife-less transfer systems that are in use in the Converting Industry today.

Because of the hazard of the nip, the sheet transfer from the full roll to the empty spool must never be done by hand. The products being produced and the slitting requirements determine the appropriate method of sheet transfer and sheet turn-up.

The following is a list of current practices used on older surface winders recommended by Black Clawson Converting Machinery, Inc.

- A. On light weight paper grades up to 60 lbs./3000 ft², the turn-up can be fully automatic with either an air shower on the doctor, see Figure (7) for Transfer Sequence, or by a gooseneck arrangement not shown.



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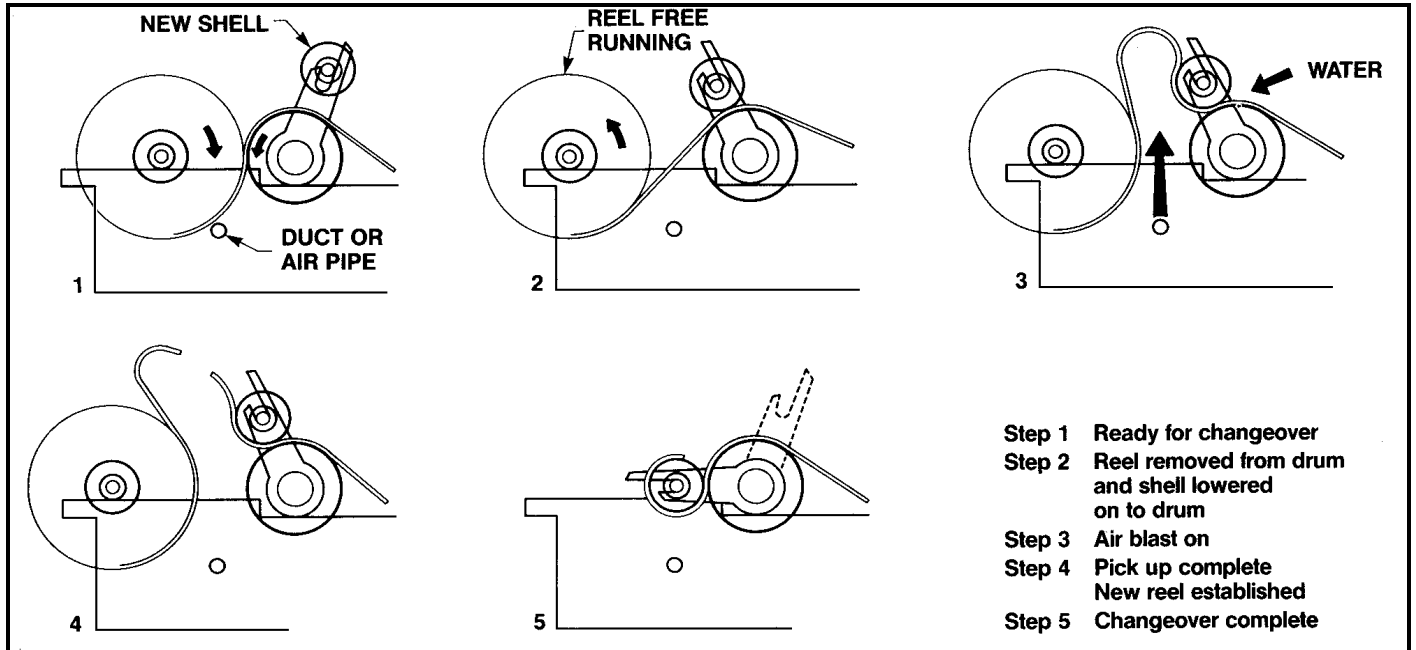


Figure (7) - Sheet Transfer Sequence

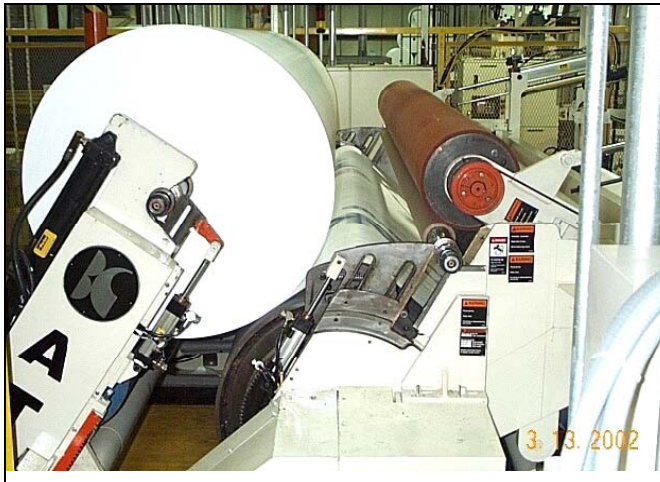


Figure (8) – Advanced Technology Surfstart (ATS) with “pop-up knife shoe transfer system” (Guards omitted for clarity)

B. On medium weight paper grades in the range of 60 lbs./3000 ft² to 90 lbs./3000 ft², the turn-up can be done by the rope transfer system. See **Figures (9) and (10)** for the general principles of using the string method. Many plants now use repulpable tape. On particularly tough sheets nylon string is used.

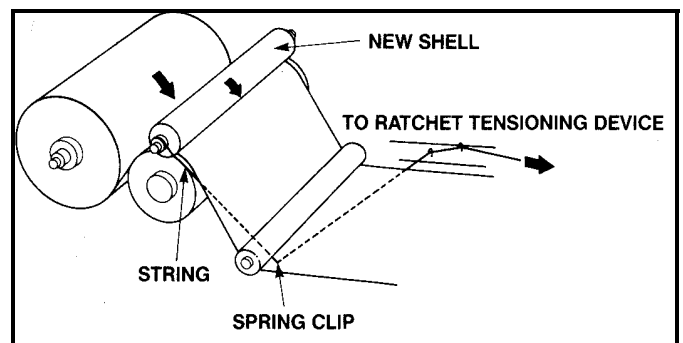


Figure (9) – Example String Method



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SHEET TURN-UP & TRANSFER SYSTEMS - continued

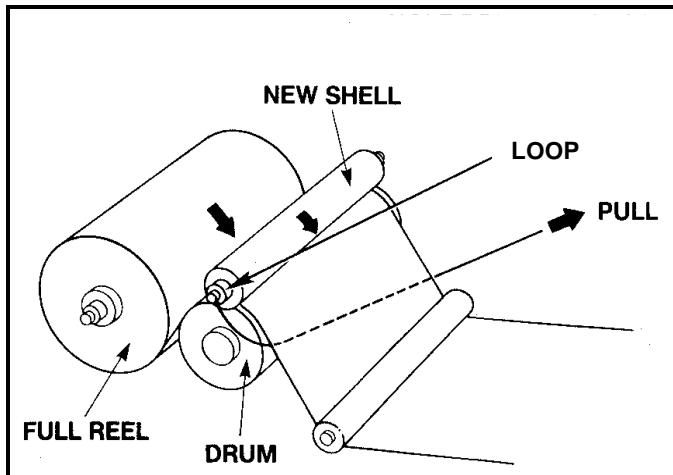


Figure (10) – Example String Method

Figure (11) shows a close-up of the string tearing the sheet spirally across the reel spool or core at turn-up.

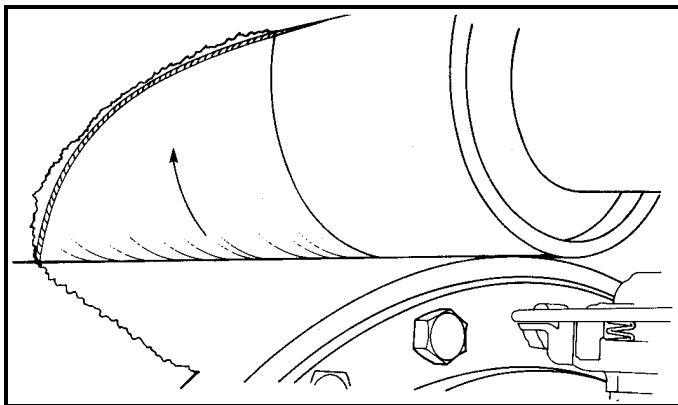


Figure (11) – Close-up of Sheet Tear.

There are variations of this string turn-up method that automate the sequence and minimize the involvement of personnel. One such system is illustrated in Figures (12) and (13) and another (not illustrated) is manufactured by Sandar Industries and is called the TUSA III.

In place of the loop at the reel spool or core journal a sticky card with the string attached can be fed into the nip between the reel spool or core and the reel drum. See Figure (12) for preparation.

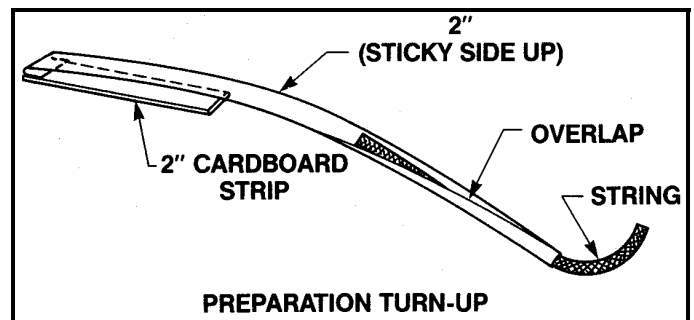


Figure (12) – Nip Fed String.

The sticky cardboard is inserted between the reel spool or core and drum mechanically. Figure (13) shows a simple method for inserting the sticky card and string.



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SHEET TURN-UP & TRANSFER SYSTEMS - continued

your operator's manual for safe operation of these particular systems. See **Figure 14**.

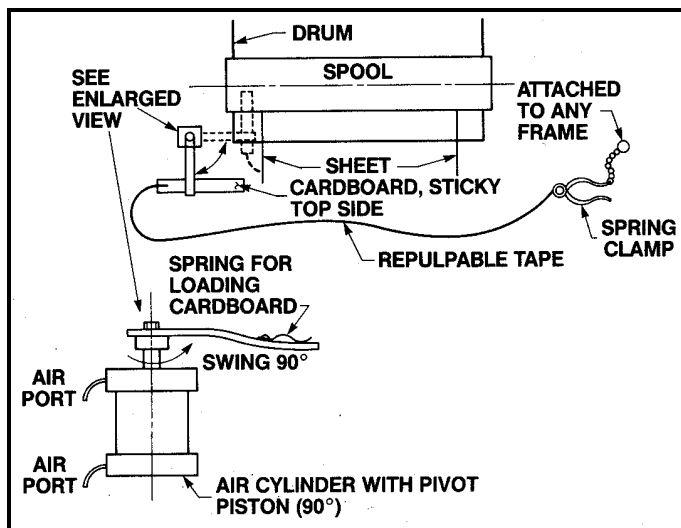


Figure (13) – Nip Fed System

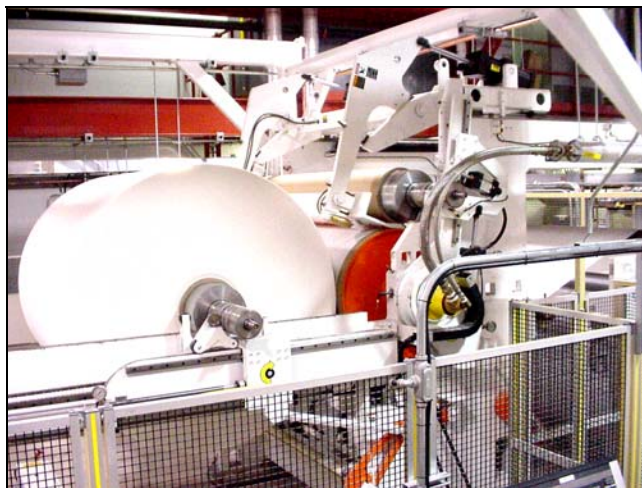


Figure (14) – Surfastart with stationary knife

The air blast has also been successful in this weight range. Refer to **Figure (7)**. The hose length and hose connection placement must prohibit the possibility of an operator becoming entangled with the hose should the hose accidentally enter the nip.

If the mill uses a hand-held air hose to transfer the sheet, the hose must be equipped with a metal nozzle at least 30" long in order to avoid the nip hazard.

- C. On heavy weight paper grades above 90 lbs./3000 ft², the only practical turn-up method is by string or repulpable tape as fully described in "B" previously and illustrated in **Figures 7 through 13**.
- D. Most non-wovens inline slit on the forming process. When inline slitting, a transfer shoe or stationary knife transfer system must be used. Consult

NOTE:

Black Clawson Converting Machinery Inc. can assist you in developing a turn-up method to suit your grade of paper, board, non-wovens, or other material.

CAUTION SHEET THREADING

In order to avoid the hazard of the in-running nip point, OSHA Regulation 1910.261 (k) (25) requires that "Feeder belts, carrier ropes, air, carriage, or other equally effective means shall be provided for starting paper into the nip of drum type reels." The following is a list of current procedures recommended by Black Clawson Converting Machinery, Inc.

- A. On light weight paper grades up to 60 lbs./3000 ft², sheet threading is done by threading ropes. The initial turn-up must be done by air by means of a suitably located air shower that directs



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CAUTION SHEET THREADING - Continued

the tail over the reel spool as soon as the tail has passed through the nip. If the turn-up is by a hand held air-shower, refer to comments in "B" on "Sheet Transfer". On certain paper grades a squirt of water directed on the in-going nip will turn-up the tail over the reel spool.

- B. On medium weight paper grades 60 lbs./3000 ft² up to 90 lbs./3000 ft², sheet threading is done by threading ropes. Two methods of initial turn-up are common, by air as described in "A" above or by using string or repulpable tape. If the string method is used, the plant must always have a partly wound spool or empty spool in the secondary ways. The operator feeds the tail over the drum and into the nip created by the spool and the drum. The sheet is widened to full sheet and with the proper tension created by the spool in the secondary ways, the "Rope Trick" turn-up is accomplished on the empty spool in the 12 o'clock position as previously described.
- C. On heavy weight sheets 90 lbs./3000 ft² and above, sheet threading is accomplished by threading ropes. The initial turn-up can be done as previously described in "B" by using (2) spools and the "Rope Trick". On particularly heavy, thick grades, a more even turn-up is accomplished by motorizing the rope travel across the machine and thereby controlling the speed at which the rope cuts.
- D. On non-wovens, threading is normally accomplished by hand stringing a rope

through the winder with the winder drive locked out. The rope is then attached to the empty spool or core shaft and wound up. Once the winding parameters are set the operator does an automatic turn-up and the partially wound roll is discarded.

DANGER RETHREADING

The previous two sections entitled "Sheet Transfer and Reel Turn-up" and "Sheet Threading" dealt with either the initial threading of a reel on to a bare spool or the transfer of the product from the full reel to a bare spool. The following are recommended procedures following a sheet break for threading onto a partly wound spool. The grade of product being produced determines the appropriate method of rethreading.

- A. On light weight paper grades up to 60 lbs./3000 ft², sheet rethreading is done by threading ropes. As the partly wound spool is in the horizontal ways a squirt or spray of water into the in-going nip or an air jet from below the reel will make the tail follow the partly wound spool.
- B. On medium weight paper grades from 60 lbs./3000 ft², up to 90 lbs./3000 ft², sheet threading is done by threading ropes. The procedure for threading onto a partly wound spool is the same as for "A" above and in addition a sticky tag can be used. The tag has adhesive on both sides and the procedure for insertion into the nip is the same as previously described for tagging. See "Danger - Tagging" and Figure (6).



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DANGER RETHREADING - continued

- C. On heavy weight paper grades 90 lbs./3000 ft² and above, sheet rethreading is done by threading ropes. The procedure for attaching to a partly wound spool is to use the sticky tag method as described in "B".
- D. On non-wovens, re-threading is accomplished by hand stringing a rope through the winder with the drive locked out. The rope is attached to the partly wound spool and the winder restarted to complete the wind.

WARNING

If you cannot accomplish the rethreading in accordance with the procedures outlined above, you must eject the partly wound spool, thread and turn-up the sheet as described in the "Sheet Threading".

Never lean over or stand between the reel frames and try to push the tail into the partly wound spool, or try to attach the tail to the partly wound spool by hand while the winder is running. Such improper and dangerous procedures could result in serious nip injuries to the hands and other body parts.

FAILURE TO FOLLOW THESE SAFETY INSTRUCTIONS MAY RESULT IN VERY SERIOUS PERSONAL INJURIES.

SPECIALTY GRADES

The plastics and specialty grade industries have adapted winding machinery that has traditionally been used in the paper/board industry. Black Clawson Converting Machinery Inc. has developed specialty turn-up and threading devices for these industries. If your plant currently uses a Black Clawson reel and your grade is not covered in this section, please call Black Clawson Converting Machinery, Inc. for information.

WARNING EMERGENCY STOPS

All surface winders must be equipped with devices that will stop the machine quickly in an emergency. These emergency stops must be located so any person working on the machine can quickly disconnect the machine section, or the entire machine from the source of power in case of an emergency.

Emergency stop devices shall be red. Stop buttons shall have a yellow background.

Emergency stop devices should be tested periodically to make certain they are operational at all times.

Emergency stops are not safety devices that can prevent an accident and must never be used as an operational tool.

All employees must be made aware of the emergency stops in their work area as part of their safety training.



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UNSAFE PRACTICES

- Personnel between the Reel, Surfstart or Advanced Technology Surfstart (ATS) and the preceding section.
- Failure to bring reel spools or core shafts up to speed before sheet transfer.
- Making sheet transfers by hand.
- Cleaning the drum during operation.
- On the run adjustments of the drum doctors.
- Contact with threading rope nips.
- Utilization of bent or unbalanced reel spools or core shafts.
- Lack of proper training procedures.
- Hand marking or hand insertion of tags in winding roll to mark defects or breaks.
- Failure to keep working area clear of broke, waste and other tripping hazards.
- Improper handling of waste material.
- Failure to properly lock out controls and drives during maintenance operations.
- Placing hands on surface of winding roll.
- Hoisting wound rolls while still rotating.
- Use of improper hoisting equipment and hardware.
- Static electricity build-up.
- Improper use of handrails and footwalks.
- Inadequate barriers and/or guardrails.
- Standing on barriers and/or guardrails.
- Standing between the frames of the Autoflyte Reel, Surfstart Winder or ATS.
- Improper threading.

OPERATION

The following is a quick reference for safely operating an Autoflyte Reel, Surfstart Winder, Roll Support Surfstart, or Advanced Technology Surfstart (ATS).

- The Reel or Winder crane should not require manual spool or core shaft unhooking. The necessity for operating personnel to reach over equipment must be eliminated. The strong back to be cable supported at each end, not pivoted from a center support hook. Reel hooks are to pivot in machine direction only.
- All non-operating personnel are to be out of the machine area before activating drives and operating controls. Injuries may result if this is not done. Mirrors should be used to provide operator with a view of the drive side area.
- When placing reel spools or core shafts in primary arms, clamp them in position with primary arm "load" pressure before removing crane hooks.
- Do not use hand-held devices to turn-up new rolls. If an emergency air hose is required, hose must be equipped with an approximate two feet long metal nozzle. Hose length and hose connection placement must prohibit the possibility of an operator becoming encircled with the hose.
- If threading ropes are used, make sure that the sheaves have a minimum clearance of 3" at the rope nips to prevent injury to hands.
- When threading by hand the Autoflyte Reel, Surfstart or Advanced Technology Surfstart (ATS) winder must be stopped.





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OPERATION - continued

- Primary arm air cylinder hoses and limit switch wiring must be positioned and anchored so as to prohibit loops being caught in the moving mechanism.
- Do not mark defects or breaks by manually placing cards into the nip. A mechanical device should be used to mark the edge of the roll or place the card into the nip.
- Stop the Autoflyte Reel, Surfstart or Advanced Technology Surfstart (ATS) WINDER before attempting to remove waste material. Waste material may become entangled with rotating equipment and cause injury to personnel.
- Do not operate with damaged parts or with reel spools or core shafts that may have bent journals or otherwise indicate out of balance condition.
- Do not stack reel spools or core shafts one on top of another.
- Material samples must not be taken from a finished roll while the roll is suspended from a moving hoist or crane.
- Empty spools or core shafts must not be left suspended from a hoist or crane.
- Hoist must not be left in the lower position.
- Hoist chains or hooks must not be engaged around the reel spool or core shaft until spool or core shaft has stopped revolving.

MAINTENANCE

BEFORE PERFORMING MAINTENANCE ON THE SURFACE WINDER THE FOLLOWING SAFETY RULES MUST BE REVIEWED.

- Do not remove safety signs. They are installed to warn personnel of possible hazards. Observe all instructions on the signs.
- Observe all color coding.
- Footwalks, handrails, barriers, and guards must be in place before starting the machine.
- Do not over-reach, climb, or stand on places other than properly designed and designated ladders, steps, or walkways.
- Aisles must be clean and clear of obstructions. Wipe up spilled oil, grease, and unnecessary water. Good house-keeping prevents injuries.
- Keep clothing and all parts of the body away from in-going nips, travelling belts, ropes, and rotating or pivoting loading mechanisms.
- Beware of head-high obstacles in and around the machine area. Wear proper head protection where indicated.
- Exhaust blasts from air motors may blow dirt, scale, or other foreign materials into eyes causing eye injury. Wear proper eye protection when indicated.
- Keep all parts of the body away from drives and rotating equipment.
- Do not walk or crawl under operating equipment.
- Any nip point on machinery is a danger area. Keep clothing and all parts of the body away at all times. And especially do not wear loose clothing that could become entangled in roll nips.



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MAINTENANCE - continued

- Do not operate equipment until all personnel are accounted for and outside of machine safety lines.
- Guards should be provided for all exposed head bolts on rolls. Rotating nuts or cap-screws on roll heads may catch clothing or loose paper. Use caution in these areas while the machine is running. Never climb between guards and moving machinery.
- Keep hands away from belt and chain drives. Make certain that all guards or drive components are in place.
- Lock out all drives and controls before working on machinery.
- All non-operating personnel are to be out of the machine area before activating drives and operating controls. Mirrors should be used to provide the operator with a view of the drive side area.
- Inspect slings and cables for worn or weak spots before using them. Keep all personnel from under machine components when lifting. Use lifting points specified by manufacturer. Do not allow chains or other lifting devices to hang in the aisles.
- Do not walk under machinery, rolls, or other items being transported by overhead crane equipment.
- Do not depend on hydraulic or pneumatic devices to hold equipment in a raised position while performing maintenance. Pin, chain, or block in a raised position.
- Inspect chains and clevis pins at frequent intervals for wear and damage. Block under and around units raised by chains when performing maintenance to prevent injury to personnel.
- Tie sling securely when attempting to lift machine components. Rotation of out of balanced pieces could be hazardous.
- Release pressure from oil and air lines before disassembly. Oil and air under pressure can be dangerous to personnel in the area.
- Use proper stops when applying hydraulic movement equipment to bearings, heads, gears etc. These items may travel at high rate of speed once they have broken loose from the fit.
- Be sure that all slings and cables are designed to lift the loads, taking into consideration the angles of the hookup and the load to be lifted.
- Use lifting points as specified by manufacturers. Where provision has been made for lifting eyes to be screwed into a tapped hole, make sure that eyebolt is tightened to the shoulder and that the eye is parallel to the lifting plane to prevent breakage.
- Do not stand astraddle of the machine in-drive or motor couplings.
- Personal articles are not to be stored in electrical switch boxes, panels, or in other potentially hazardous places.
- When threading machinery, feet must be squarely and properly placed for adequate balance.



SAFETY INFORMATION

Safety Signs

INTRODUCTION

Operators of Black Clawson machinery, where practical and appropriate, may be protected from certain hazards by a physical barrier and may in addition, be warned of those hazards by the placement of Safety Signs. These signs alert persons to the degree or level of the hazard, the nature of the hazard, to how the hazard can be avoided, and the consequences of involvement with the hazard.

The following examples illustrate the ANSI Z535 standard series format for product safety signs and labels. These standards must be referred to when design safety signs and labels. Not all safety signs will have a pictorial panel.

Color-coding for the words DANGER, WARNING, CAUTION, and SAFETY INSTRUCTION is important for the identification of the hazard level.



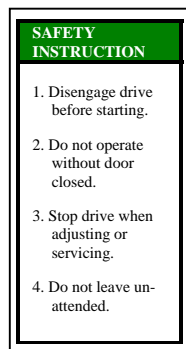
DANGER – (white letters with a red background) indicates an immediate hazard that if not avoided **WILL** result in death or serious injury. This should be limited to the most extreme situations.



WARNING – (black letters with an orange background) indicates a potential hazard that if not avoided **COULD** result in death or serious injury.



CAUTION – (black Letters with a yellow background) indicates a potential hazard that if not avoided **MAY** result in minor or moderate injury. It is also used to alert against unsafe practices and/or property damage.



SAFETY INSTRUCTION – (white letters with a green background) is used to convey multiple messages stating procedures or actions that must be followed for the safe operation of the product.



SAFETY INFORMATION

AVAILABLE SAFETY SIGNS

The following safety signs are available for your Black Clawson machine. Other safety signs may be available, including dual language. Signs can be provided for situations not covered by those listed below.

Contact Black Clawson Converting Machinery, Inc. for additional information on availability, sizes, material, and placement.

SAFETY SIGNS ARE NEVER TO BE USED IN LIEU OF GUARDING WHERE GUARDING IS FEASIBLE.

<u>PART #</u>	<u>HAZARD</u>	<u>PART #</u>	<u>HAZARD</u>
380008	Confined space.	402037	General safety instructions
391899	50 Lb. Weight limit	395073	Personal protective equipment
362051	ISO electrical symbol	395074	Airborne contamination
394978	Hazardous voltage	395085	Static electricity
394979	Roll to roll nip	395107	Gear nip
394981	Belt or chain nip	395114	Equipment above
394982	Pinch point	395115	Hot surface area
394983	Automatic movement	395126	Imminent machine movement
394985	Rotating equipment	395128	Low clearance
394987	Hazardous area	395129	Hot fluids
394990	Shear and crushing point	395132	Radiation
394993	Web edges and wrap points	395138	Electrical grounding
394994	Fixed member nip	395139	Hot water or steam
395027	Web and rolls may be hot	395143	Do not remove guard
395028	Multiple electrical sources	395149	Guard removed
395029	Unexpected machine motion		



SAFETY INFORMATION

Reference Information

All machine operators, maintenance and supervisory personnel should read and understand not only the selected OSHA sections listed, but also all applicable OSHA codes pertaining to their job duties and functions.

OSHA and ANSI standards are updated periodically and the section numbers may change. The following references are correct at the time of printing. Owners of machines should be aware of the most recent standards applicable to their machine.

OSHA REGULATIONS

The following list of regulations from OSHA CFR 29, Section 1910 is for your reference. OSHA regulations are available on line at www.osha.gov.

Subpart G – Occupational Health
§95 – Noise exposure

Subpart I – Personal Protective Equipment
§133 – Eye and face protection
§134 – Respiratory protection

Subpart J – General Environmental Controls
§146 – Confined Space
§147 – Lockout Tagout.

Subpart N – Material Handling
§179 – Overhead cranes

Subpart O - Machinery & Machine Guarding
§212 - General requirements
§219 – Power transmission

Subpart R – Special Industries
§261 Pulp Paper and Board Mills.
(a) General Requirements
(b) Safe Practices
(i) Finishing Room

Subpart S – Electrical
§303 – General requirements

ANSI STANDARDS

The American National Standards Institute publishes consensus standards of interest to machinery users.

Z535.4 - Safety Signs and Labels



SAFETY INFORMATION

NATIONAL & INTERNATIONAL STANDARDS

The International Standards Organization (ISO) and the International Electrotechnical Commission (IEC) lists many standards of interest as does the European Union whose standards are nearly identical. In addition, many countries promulgate their own standards. A source for many of these can be found at www.global.ihs.com.

INSTRUCTION MANUALS

It is essential that operators be thoroughly trained in surface winder safety and the procedures applicable to the process in which they are involved.

Black Clawson Converting Machinery, Inc. provides instruction manuals with all machine orders. All operators should read and understand the information in these manuals before operating the machine.

LACK OF PROPER TRAINING AND UNDERSTANDING CAN BE A MAJOR CAUSE OF SERIOUS PERSONAL INJURY.

IMPORTANT INFORMATION

For help with guarding or on how to safely operate your Black Clawson Converting Machinery, Inc's Surface Winder or for such assistance or help with guarding surface winders manufactured prior to March 15, 2003 by The Black Clawson Company or Black Clawson Converting Machinery LLC, contact:

Black Clawson Converting Machinery, Inc.
46 North First Street
Fulton, NY 13069, USA
Telephone – (315) 598 7121

Please locate the serial number plate on the machine in question and write down the Black Clawson order number and serial number, if any. This will greatly expedite locating information on your specific machine.

BC Order No.

Serial No.
