

SUBJECT: Safeguarding & Safety Precautions For LITTELL Feeding Machines

WARNING

To prevent serious injury to persons involved with LITTELL Feeding Machines, Read & Comply with all of the following safety instructions.

SAFETY INSTRUCTIONS:

Immediate action, by users of this machinery, must be taken to apply accident prevention safeguards and safety precautions as specified in this report. Due to today's high probability of employees receiving insufficient training or supervision combined with the possibilities of committing unsafe, careless or negligent acts, this precautionary action is mandatory.

To prevent serious injury to persons in your company, use the safety information contained in this report to assist yourself in accomplishing both the required addition and continued use of the necessary safeguards and safety precautions.

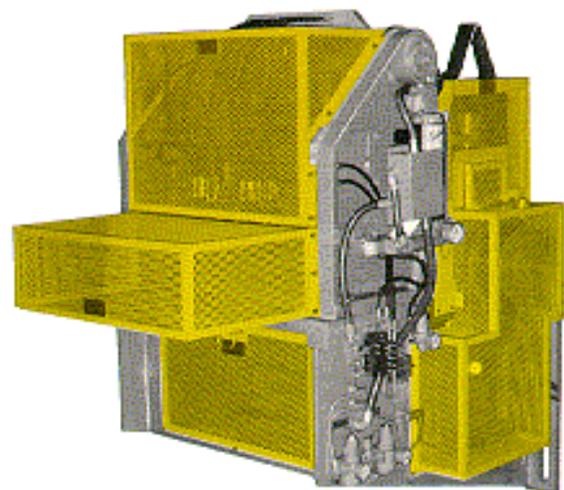
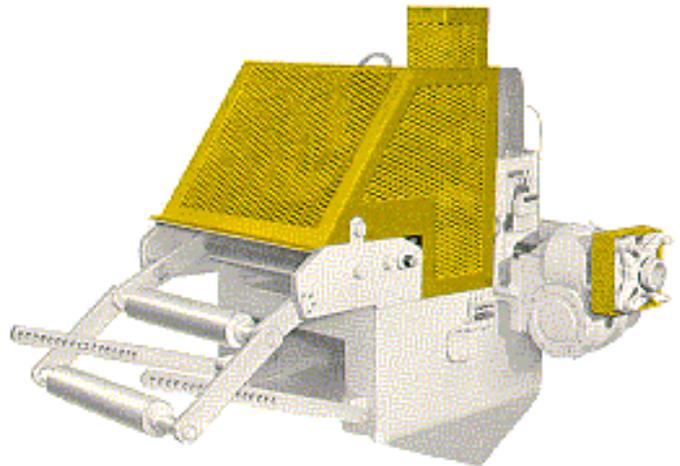
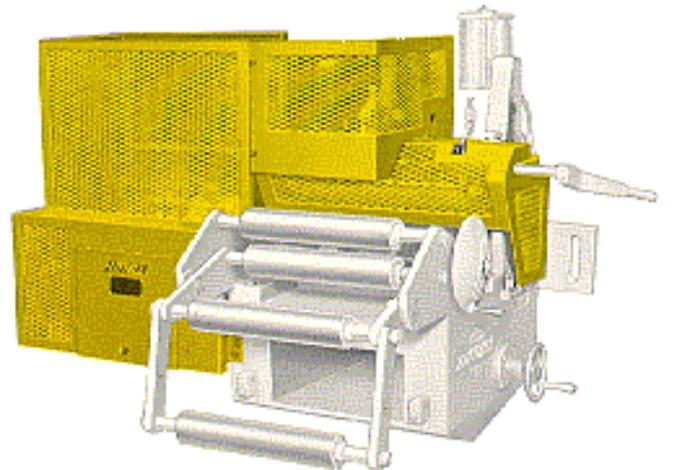
Throughout this report the word "USER" means any individual, partnership, corporation, or other form of enterprise which employs, contracts with, hires, benefits from, or is responsible for the persons who install, setup, adjust, operate, service, maintain, repair or work on or around machinery originally manufactured by Littell.

It is the Employer's responsibility to comply with the OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION'S general industry standards, part 1910, Title 29 of the CODE OF FEDERAL REGULATIONS.

WARNING

ONLY MECHANICAL POWER PRESSES WHICH COMPLY WITH FEDERAL REGULATIONS (OSHA-1910.217) SHALL BE ALLOWED TO UTILIZE, POWER, AND OR CONTROL FEEDERS AND SCRAP CUTTERS OR OTHER LITTELL ASSOCIATED MACHINERY.

There exists an infinite number of design variables in the numerous punch press applications which utilize Littell feeding machines. When these variables are combined with the numerous variety of feeding machine designs with their options and accessories, it is easy to understand that standardized, mass produced, and immediately available safeguards from Littell are impractical. Safeguard designs will vary and must be tailored to each individual machine.



However, there are general areas which have common hazards and common solutions for developing the general design of each safeguard.

This report illustrates the design of typical safeguards required for these common areas and provides a guideline that can be used in developing, manufacturing, and applying them.

Compare all the following safeguarding illustrations in this report against your present feeders and identify those areas which are inadequately protected including existing safeguards which are defective. These areas must be given immediate attention in order to correct deficiencies and to accomplish the addition of the required safeguards.

Special attention must be given to safeguarding all machine rollers which work and propel the material. Present trends indicate that these rollers are high risk and hazardous. They can cause severe injury to fingers, hands, and arms of persons attempting to unsafely clean or thread material while rollers are in motion.

Fixed roll enclosures, allowing passage of material only, must be permanently mounted to the main frame of the machinery and require the use of tools for their removal. These enclosures must prevent hand and finger access to the roller hazards generally referred to as NIP, PINCH, or SQUEEZE points.

If a special application requires frequent access to the machinery rollers (CONSIDERED RARE) interlock enclosures must be incorporated. They must create and maintain a "MACHINE SHUTDOWN" and prevent roller rotation whenever the enclosure allows hand and finger access to the roll hazards.

This report is not intended to illustrate every safeguard which may be required or to limit the application of safeguarding to those shown in this report. It is intended to describe some of the hazards which exist, to require safeguarding to eliminate or to minimize those hazards, and to define certain responsibilities.

To effectively apply a safeguard it must be designed, manufactured, installed and used properly for each application; otherwise persons may seek to circumvent it. The user must become familiar with the various types of safeguards used throughout the industry and determine which type fits his application best and provides maximum protection.

Many manufacturers are equipped to furnish standard or special safeguards. A list of suppliers

can be easily found in "BEST'S SAFETY DIRECTORY" of the

A.M. BEST COMPANY,
AMBEST ROAD
OLDWICK, NEW JERSEY 08858

To assist users in judging the safeguarding of machinery a "DIRECTORY OF SAFETY LITERATURE, STANDARDS & REGULATIONS" has been included in this report. Users should obtain and review this material immediately.

The addition of safeguards is not the sole remedy for accident prevention. To realize maximum protection benefits, the safety precautions in this report must be incorporated into use's safety training programs. Persons involved with Littell machinery must be supervised and tested to determine and continually insure that all have been adequately instructed by demonstrating, with discrete repetition, their awareness and understanding of these safety precautions including other applicable safety practices, codes, standards, and regulations which are not included in this report.

Many accidents have occurred due to a supervisors lack of training; because of this lack of training, the supervisor is incapable of developing the necessary safety awareness and cannot transfer safe work procedures to others.

Users must make certain that only persons who understand Littell machinery, its intended use, care and safety requirements and who are able to communicate this knowledge be given the responsibility of instructing, training, and supervising others involved with this machinery.

It is the user's responsibility to interpret and to explain all safety precautions and signs to persons who do not read or understand English BEFORE they are allowed to use and care for this machinery.

WARNING:

ONLY PERSONS WHO THOROUGHLY UNDERSTAND AND COMPLY WITH ALL OF THE GIVEN SAFETY PRECAUTIONS ARE QUALIFIED TO USE AND CARE FOR LITTELL MACHINERY WHICH HAS BEEN SAFEGUARDED AS INSTRUCTED IN THIS REPORT. MAKE CERTAIN THESE PRECAUTIONS ARE APPLIED IMMEDIATELY.

The user must decide what personal protective safety equipment is required to perform each job safely. Items such as safety glasses, shoes, gloves, helmets, spats, protective sleeves and material handling equipment are common in the metal working industry.

Guarding Feed Drive Components:

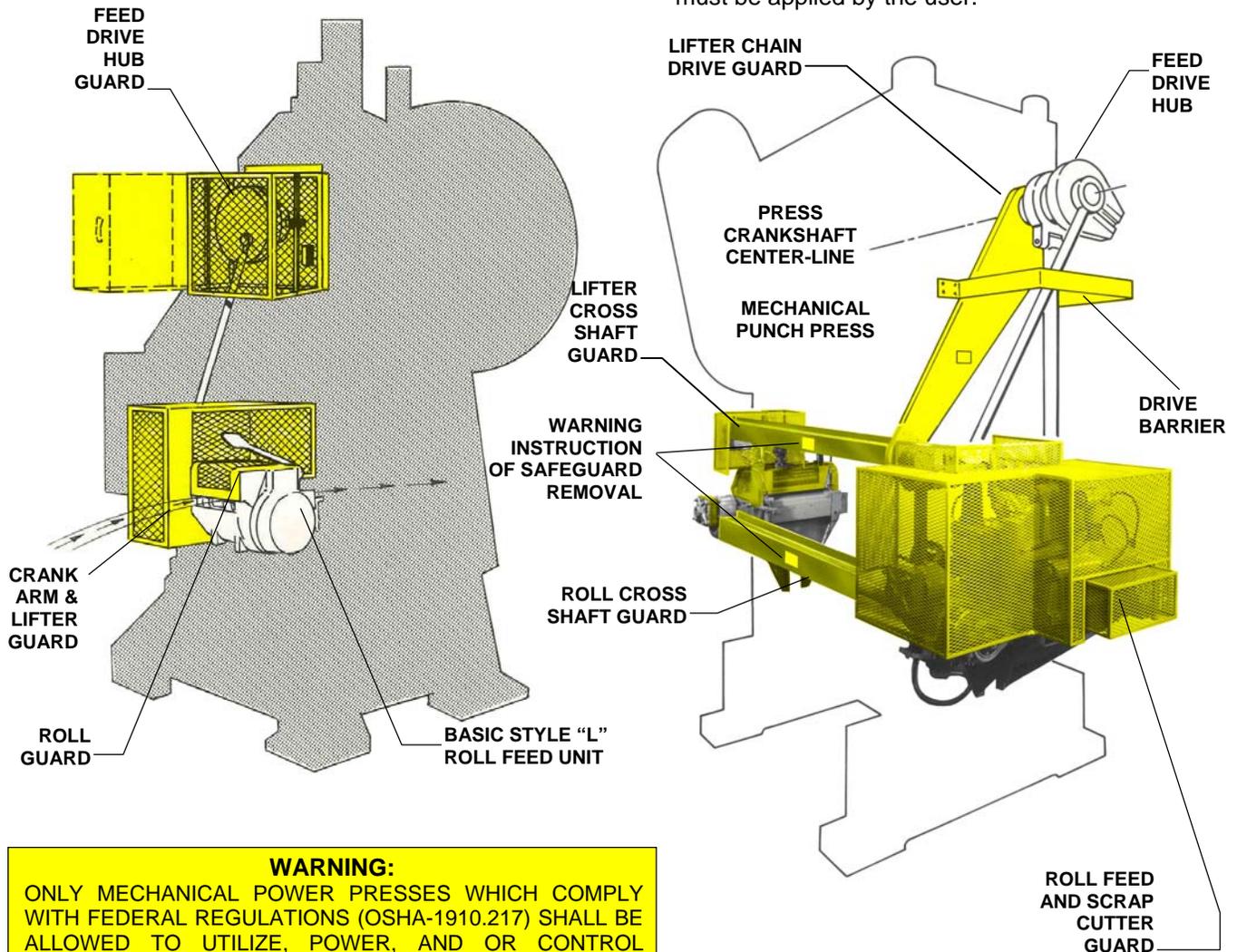
Press driven double roll feeds normally have two rotary driven shafts connected across the press. On Open Back Inclinable and Gap Frame presses, these shafts are normally located on the front and on Straight Side models they are located on the rear of the press. Regardless of their front or rear location, the user shall safeguard all cross drive shafts as required by Federal Regulations for Mechanical Power Transmission Apparatus - OSHA - Subpart O - 1910.219.

When the feed drive components, located on the press crankshaft, have a hazardous motion less than 7 feet from the operator's support position, normally floor level, the user shall apply safeguarding to prevent exposure to the rotating and orbiting hazard as required by OSHA - 1910.219.

On large presses these crankshaft feed drive components are normally beyond reach when standing at floor level. Their access shall only be allowed after a safe press "shutdown" condition exists and is maintained. The press is unable to power rotate its flywheel and crankshaft and is disarmed as required by Federal Regulations for Mechanical Power Presses - Subpart O - OSHA - 1910.217.

Feed roll lifter power transmission chains driven by the press crankshaft must be safeguarded by the user per Federal Regulations - OSHA - 1910.219.

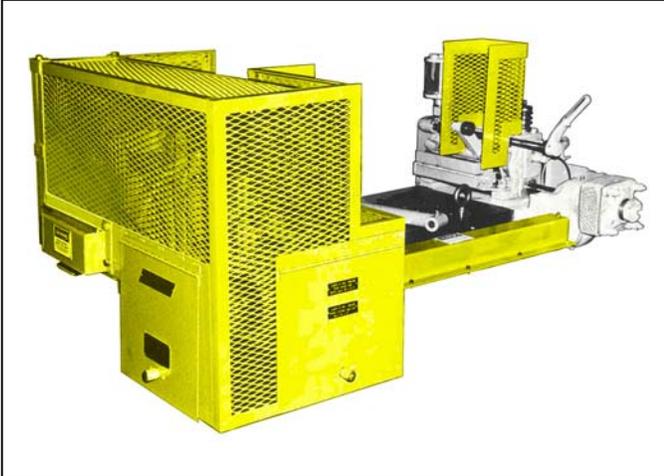
To prevent the possibility of the feeder rack drive or other drive connection rods from hazardous orbiting or falling, when broken or accidentally left disassembled, a protection strip or restriction barrier must be applied by the user.



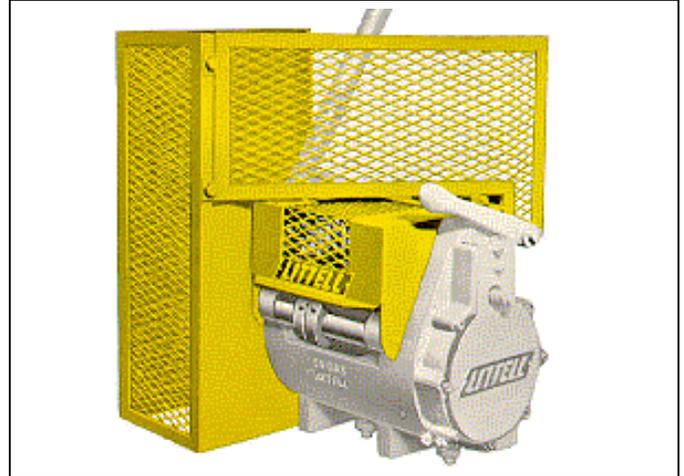
WARNING:
ONLY MECHANICAL POWER PRESSES WHICH COMPLY WITH FEDERAL REGULATIONS (OSHA-1910.217) SHALL BE ALLOWED TO UTILIZE, POWER, AND OR CONTROL FEEDERS AND SCRAP CUTTERS OR OTHER LITTELL ASSOCIATED MACHINERY.

Guarding Feed Drive Components: (Cont'd)

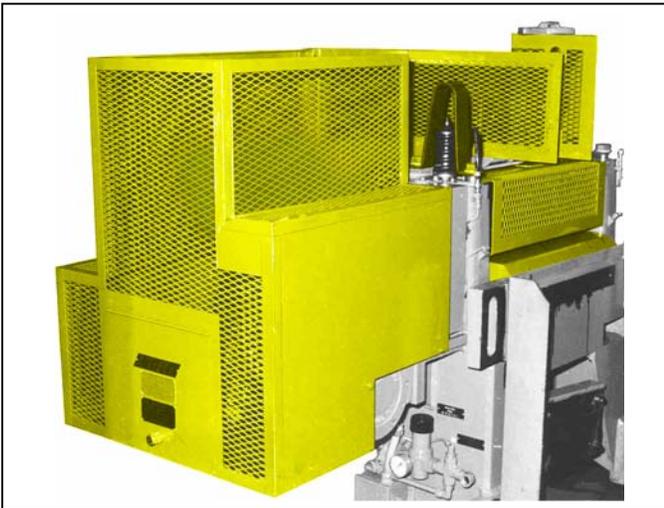
The feeder main drive shafts, mechanical clutch and the reciprocating drive rack or crank connection rod require safeguarding. The following illustrates several guard varieties constructed to enclose hazardous moving mechanical transmission components of various arrangements on several feed models.



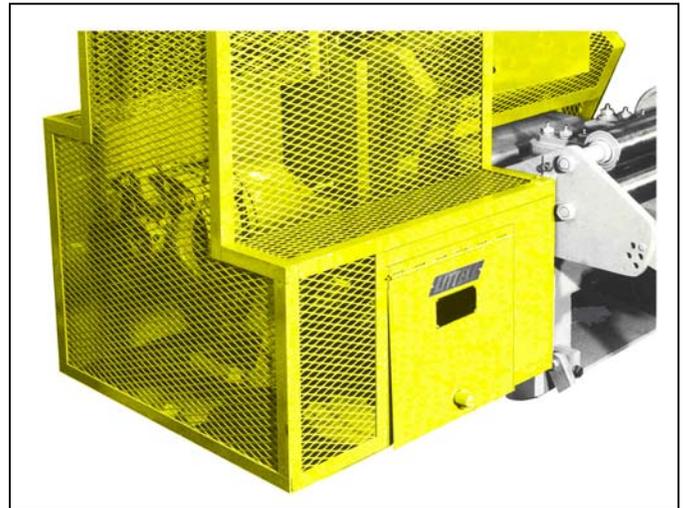
- Rotary cross drive shaft between entry and exit feed is enclosed with formed sheet metal.
- Access door allows manual hand wrenching of the main drive shaft for feed roll rotation.
- Access door allows lubrication of mechanical clutch and roll drag brake adjustment.



- A single multi-purpose guard can be easily shaped on smaller models to include several different machine functions. Above illustrates the roll lifter area guard combined with the main drive area guard.
- This guard is high to restrict access over the top. The top opening is shaped to clear the maximum drive rod motion without creating a pinch or shear point.



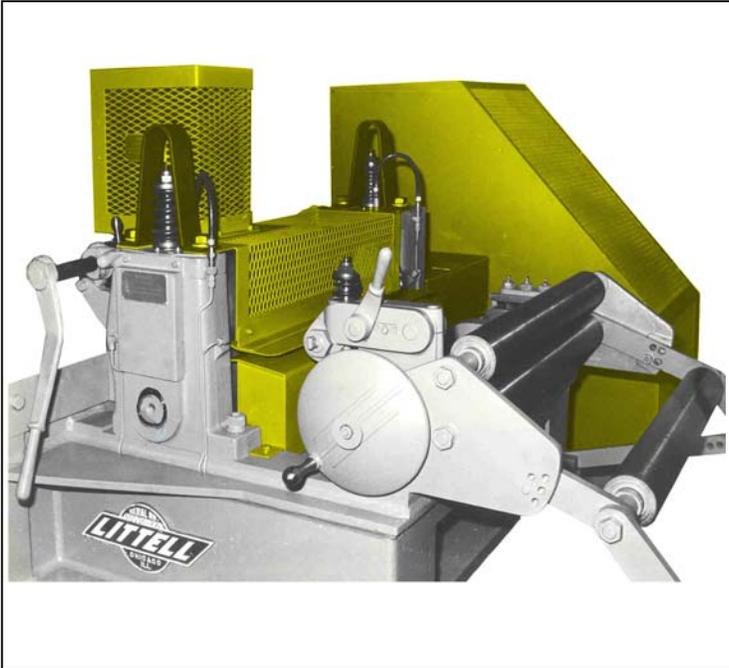
- Shape and locate guards to clear and prevent containment of gages, regulators, valves, instruction tags or other operational controls that require frequent access and visibility.
- Guards should not obstruct access to the main feed/press mounting and clamping studs which allow feed pass line height adjustment.



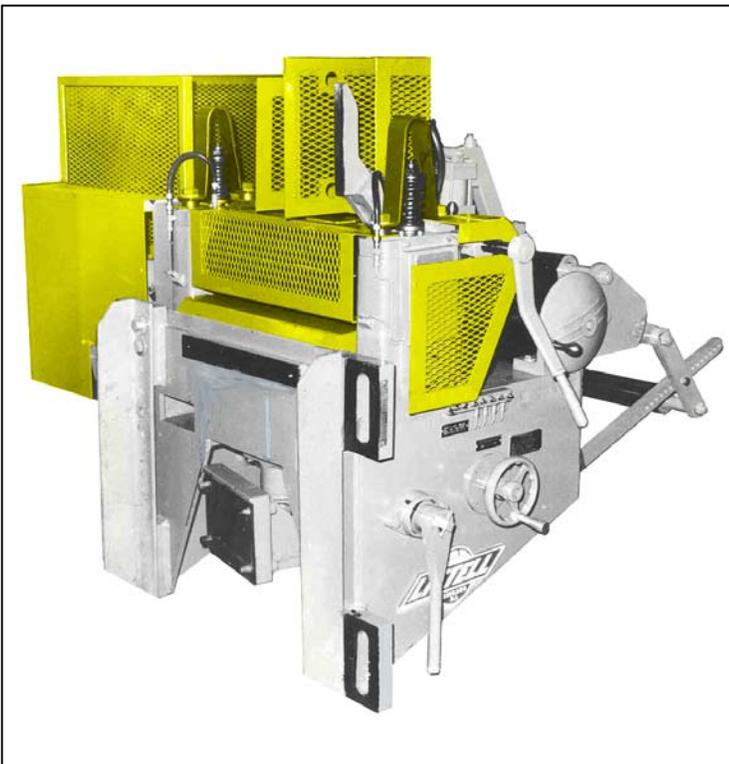
- Expanded metal construction allows visual inspection of oil sight gages and other components which require frequent monitoring.
- Lightweight access doors are permanently attached and hinged on top to increase the probability of returning them to their closed position.
- Safety Caution plate is attached to each door warning of possible hazards.

Guarding Feed Rolls:

The roll enclosure is one of the most important guards on a feeding machine and must be given careful consideration. After they are applied an inspection should be made to confirm that they actually prevent hand and finger access to the roll nip, pinch, or squeeze hazard points. The following illustrates several enclosure varieties.



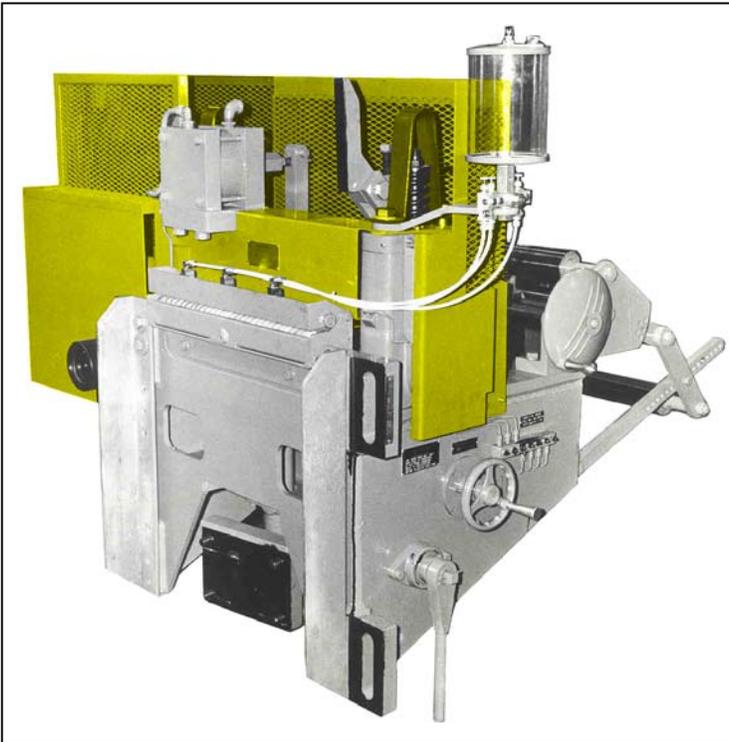
- The upper and lower rolls are guarded by enclosures permanently mounted to the feed frame.
- The enclosure opening, restricted to allow passage of feeding material only, is funnel shaped to assist entry threading of the materials leading edge and provides structural rigidity.
- The solid sheet metal formed enclosure prevents lower roll access and provides pass line support and guidance of the material between entry side guides and feed rolls.
- The maximum permissible opening for material passage and prevention of hand and finger access must comply with the specifications on page 11 of this report and the roll guarding recommendations given in the National Safety Council's "Accident Prevention Manual for Industrial Operations."



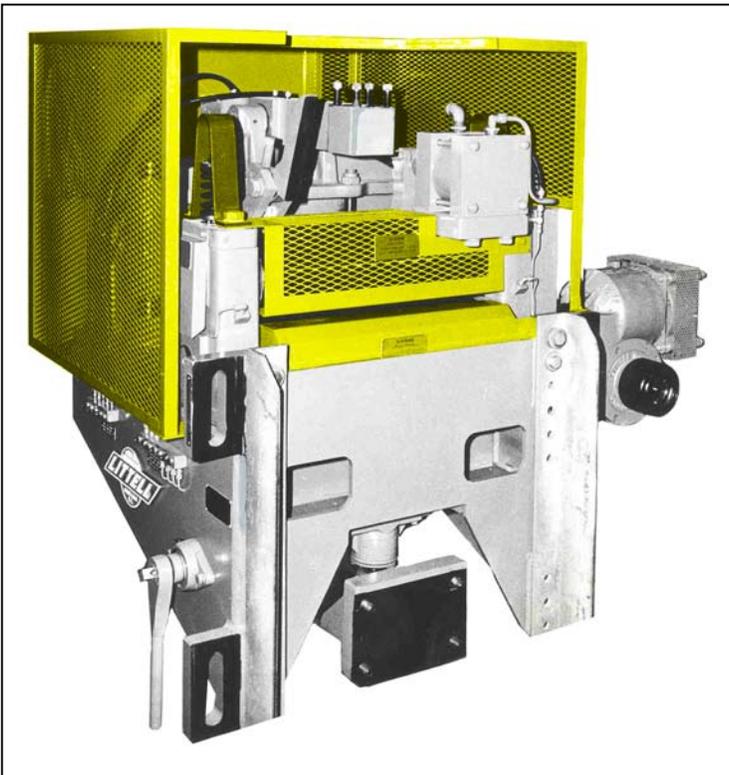
- Expanded metal roll enclosure allows visual inspection of the roll surface.
- The upper enclosure is funneled inward toward the feed roll to assist threading the material's lead edge.
- The upper enclosure is cut out to clear the automatic roll lifter lever and provides support of the lifter lever guard.
- All operational handwheels, levers and handles are accessible and do not require guard removal.

Guarding Feed Rolls: (Cont'd)

The following are additional illustrations showing roll enclosures that do not interfere with operational controls and frequent lubrication points on both entry and exit feeds.



- The oiler reservoir and its flow control valves are positioned externally from all guards and are within easy reach for manual adjustment and refilling.
- The non-powered oiler rolls are not enclosed by the feed roll guards and allow visual inspection of the lubricant flow and performance of the fluid distribution.
- All grease lubricant points requiring frequent service are positioned externally from all guards and are centralized in manifold blocks.



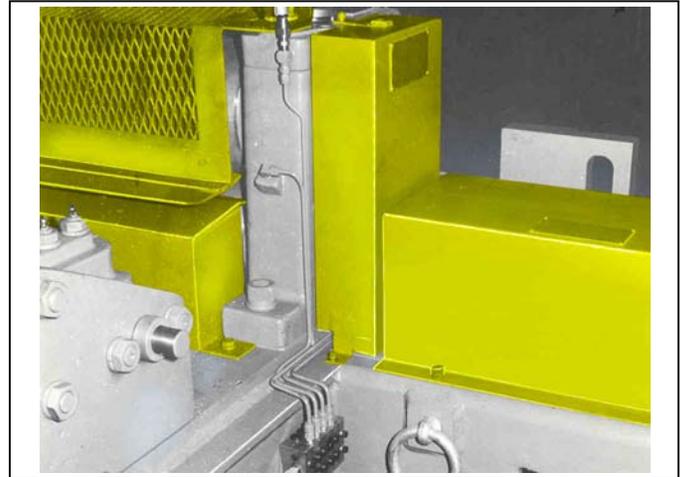
- The exit feed upper roll guard opening is funneled toward the roll to resist catching or snagging of the material skeleton.
- The upper roll guard is shaped to clear the roll lifter cylinder.
- The solid sheet metal formed enclosure prevents access to the lower roll and provides a smooth surface to support and guide the skeleton.
- Each guard contains a Safety Caution plate warning not to operate the machine with the guard removed.

Guarding Other Components:

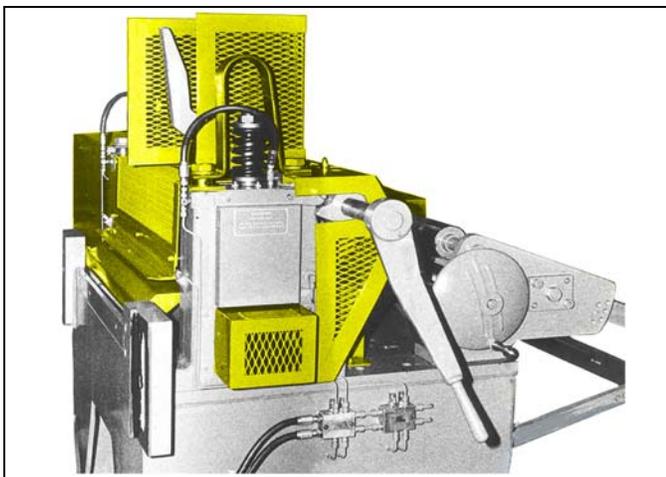
There are several common feed functions that require guarding. These vary in purpose, design, size, and location. Each requires a guard specifically shaped for each feed. The following are illustrations of common functions with some of their individually tailored guards.



- closed. Rotating pulleys, sprockets, shafts, couplings, gears, moving belts, chains, linkage, levers, and other hazardous components are guarded.
- All operational controls and frequent adjustments are positioned externally for access and monitoring without requiring penetration of, or exposure to, a hazard area.



- The upper and lower feed roll gears are enclosed with solid sheet metal. Remote and external grease lubrication lines, automatically or manually fed, should provide the necessary and frequent lubrication without exposure to hazardous gears.
- The lower feed roll shaft extension is enclosed between the crank drive and the main bearing roll frame.
- All guards are permanently bolted to the feed structure and require tools for removal.



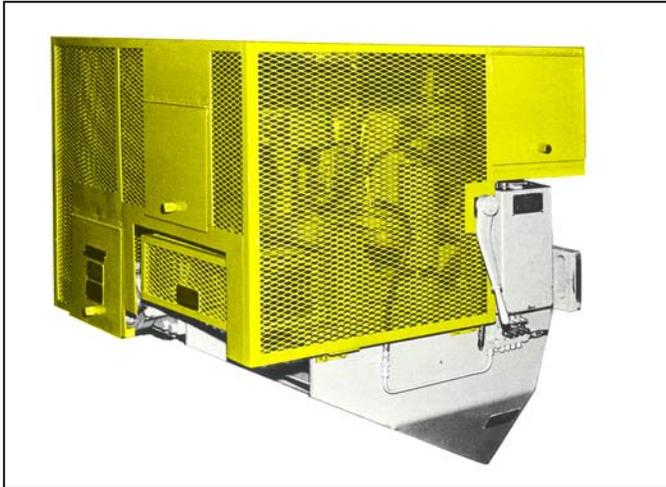
- Upper roll lifter levers are enclosed when the feeds shown are installed against a press and the lifter drive components.
- Lower roll shaft and their rotating components projecting from the main bearing frame are enclosed.



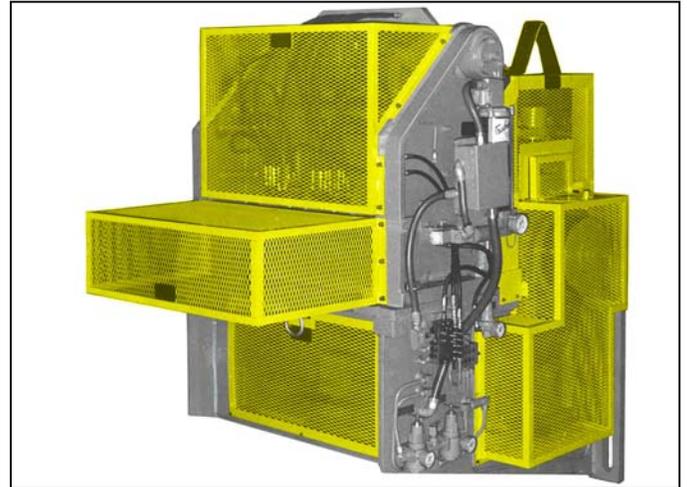
- Upper roll bearing boxes and their guided surfaces are covered.
- A practical and inexpensive safeguard is applied when Feed Rolls, Anti-Backup Rolls and Power Threading Rolls, normally positioned directly next to one another, are enclosed within the same guard.

Guarding Scrap Cutters:

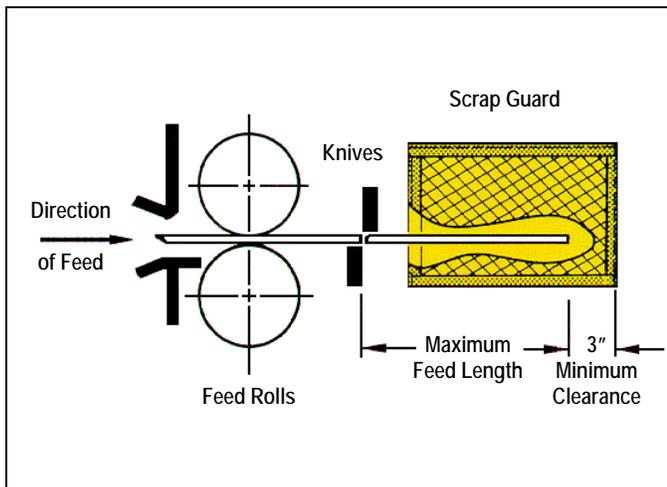
The scrap cutter area is hazardous. The moving scrap skeleton, reciprocating cutter knives, stripper, and linkage are shown enclosed in the following illustrations. The “post type” cutter is completely covered to safeguard the moving frame pinch points. The “slide type” is enclosed by attaching several guards to its “fixed” side frames.



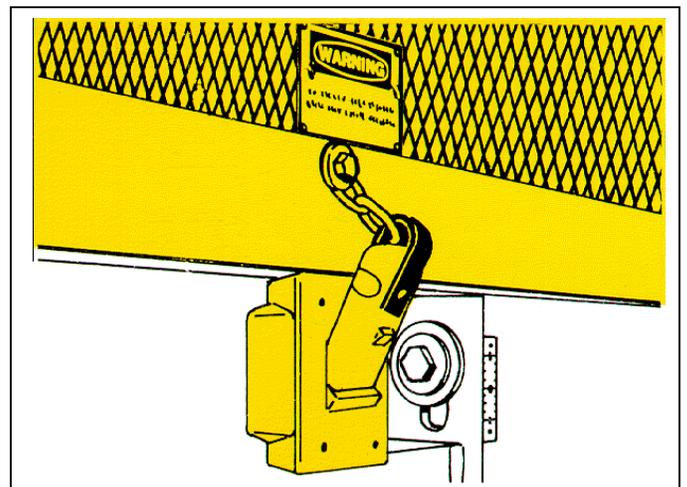
- Enclosures must prevent hand and finger access between the feed roll and scrap cutter frames. Operational hand levers should be externally located to prevent unnecessary guard removal. A door allows access for scrap cutter adjustment without exposure to the cutting knife area. All manual grease lubrication points are located externally.



- Power transmission components positioned under the scrap cutter are enclosed. Cutting knives and their moving frames are guarded. The top is open for main drive rod adjustments.



- The cutting knife and scrap guard, attached to the lower knife base, must always be at least 3” longer than the maximum feed length.
- The bottom opening will allow scrap to fall into a container or conveyor.

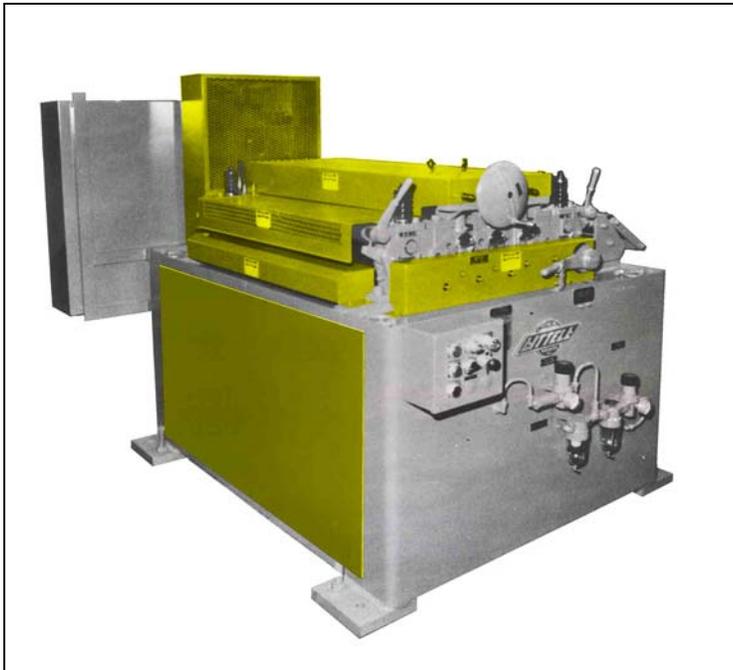


- Where application requires frequent entry between feed roll and cutter frames, an electrically interlocked safeguard is required. A safety plug, permanently attached to a hinged access door, must be removed from its receptacle creating and maintaining a press-feed-cutter “SHUTDOWN” when unsafe access capability develops.

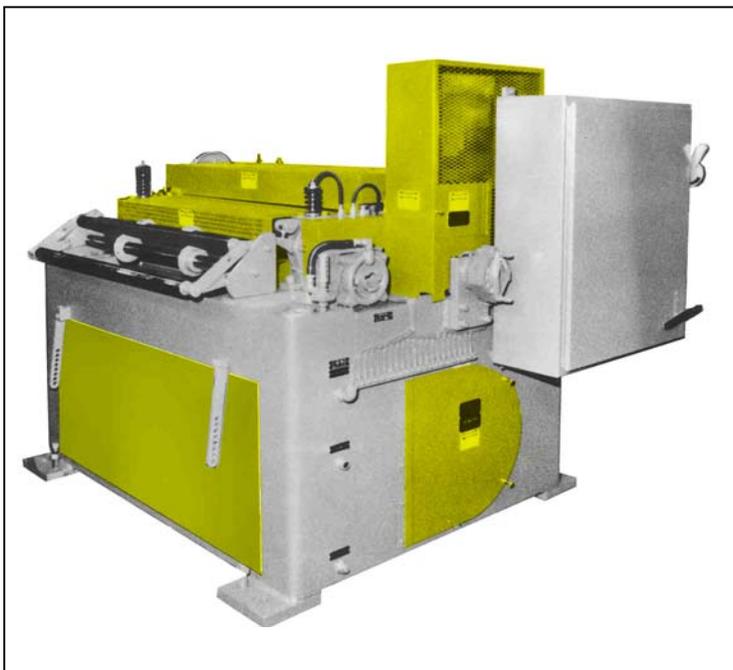
Feeding Machine with Independent Drive:

WARNING:

Littell feeding machines with independent feed roll drive capability shall never be used to "TRIGGER" - "ARM" - "TRIP" or "CYCLE" a Punch Press or Shear. The feed's electrical control interface signals shall only communicate that a feed roll has completed its rotation. When the feeder control receives a "begin feed signal" from a press or shear, it is assumed this signal is only given when it is safe to power rotate the feed rolls and when unsafe a "stop" signal will be given.



- All powered rolls are enclosed without obstructing access to operational controls.
- Power transmission components are enclosed within the main structure.
- All enclosures are constructed and applied with the same principles for independent feeds as on press driven feeds.



- The drive rack and orbiting drive disc are enclosed. A hinged access door allows feed length adjustment.
- Grease lubrication points are externally located to prevent the need for internal access to hazardous areas.

Guard Application, Design & Construction:

APPLICATION

Special attention must be given to safeguarding all machine rollers which work and propel the material. Present trends indicate that these rollers are high risk and hazardous. They can cause severe injury to fingers, hands and arms of persons attempting to unsafely clean or thread material while rollers are in motion.

Fixed roll enclosures, allowing passage of material only, must be permanently mounted to the main frame of the machinery and require the use of tools for their removal. These enclosures must prevent access to the roller hazards generally referred to as NIP, PINCH, or SQUEEZE points.

If a special application requires frequent access to the machinery rollers (CONSIDERED RARE), interlocked enclosures must be incorporated. They must create and maintain a "MACHINE SHUTDOWN" and prevent roller rotation whenever the enclosure allows access to the roll hazards.

Standard and special machines contain many varieties of optional devices and accessories which are positioned near the entry and exit rolls. Independently powered auxiliary equipment may be combined with these rolls creating unusual circumstances. When these situations exist, additional customized safeguarding may be required. Users must become familiar with their various local, state, and federal laws requiring machine safeguarding and should review the National Safety Council's machine guarding literature for assistance in identifying and guarding these possible hazards.

SUGGESTED DESIGN

Roll enclosures must allow for the free passage of material but prevent hands and fingers from reaching the roll nip position. This nip or hazard position varies with roll diameter position and arrangement. The following illustrations and related chart specify Littell's roll enclosure shapes and their maximum openings for material passage for each machine, roll diameter and roll arrangement.

The material passage openings are funnel shaped to give structural rigidity and assist in directing and guiding the materials lead edge during threading and unthreading operations. Support tables are placed .125" below material processing position to prevent unnecessary contact

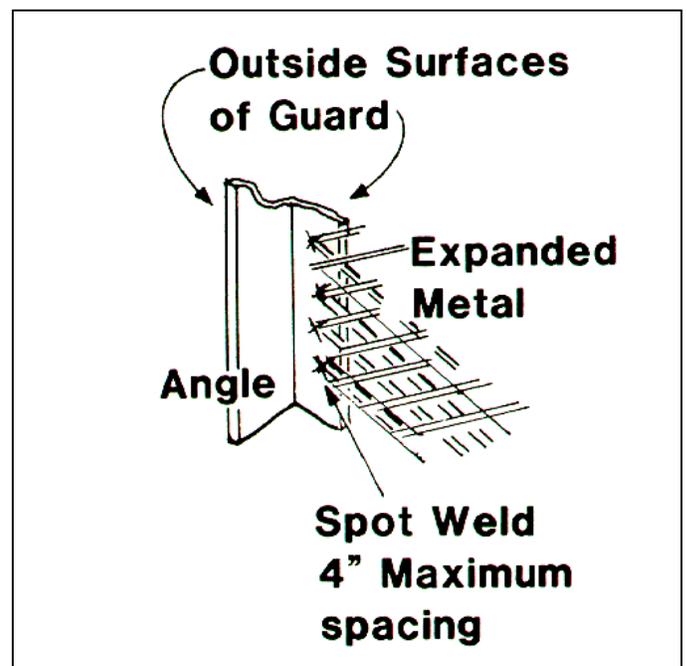
SUGGESTED CONSTRUCTION

Littell has made extensive use of 1" x 1" x 1/8" steel angle, 16 gage sheet metal and flattened expanded metal as basic materials as they are light in weight, comparatively low in cost, available and provide a smooth exposed surface.

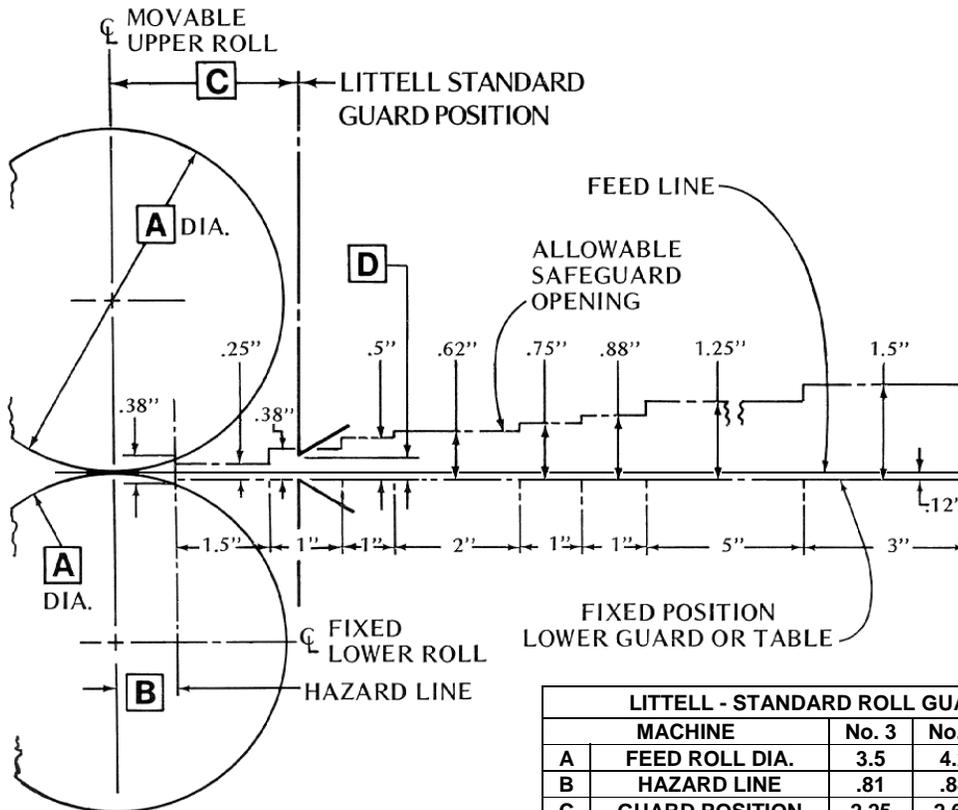
The steel angle provides maximum structural strength. The 16 gage sheet metal provides enclosure ability and is easily formed into irregular shapes or contours. The expanded metal allows good visibility during strip thread up, observation of machine components and material during feeding operations. Maintenance and lubrication functions are aided as, oil gages, lubricant, and components requiring monitoring are visible through the expanded metal. Visibility is improved when the expanded metal is painted flat black.

All metal used in guard construction must be free from dangerous burrs and sharp edges. Expanded metal and sheet metal shall be securely attached to the frame of the guard by welding on center to center distance of 4" max. or less. Littell recommends welding as it is more suitable in withstanding the vibrations and other stresses associated with automatic punch press operations.

All joints of the framework shall be made equivalent in strength to the frame material.



Guard Application, Design & Construction:



The maximum permissible opening for material passage and prevention of hand and finger access must comply with the specifications and intentions of this report and the roll guarding recommendations given in the National Safety Council's "Accident Prevention Manual for Industrial Operations."

LITTELL - STANDARD ROLL GUARD POSITION & OPENINGS							
MACHINE	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	
A	FEED ROLL DIA.	3.5	4.2	5.5	6.25	7.33	8.66
B	HAZARD LINE	.81	.88	1.0	1.06	1.16	1.25
C	GUARD POSITION	2.25	2.62	3.25	4.0	4.62	5.0
D	MAX. OPENING	.31	.38	.38	.50	.56	.62

COMMON GUARDING OBJECTIVES/GUIDELINES

The following is a list of guarding objectives and guidelines which should be utilized where applicable. All have been incorporated into the guards shown in this report.

- The roll enclosure is one of the most important guards on these machines and must be given careful consideration. After they're applied an inspection should be made to confirm if they actually prevent hand and finger access to the roll nip, pinch, or squeeze hazard points.
- The roll enclosure opening, restricted to allow passage of feeding material only, is funnel shaped to assist entry threading of the material's leading edge and provides structural rigidity.
- All operational handwheels, levers, and handles are accessible without requiring guard removal.
- Guards are permanently bolted to the machine and require tools for removal.
- Mechanical power transmission components are enclosed. Rotating pulleys, sprockets, shafts, couplings, gears and moving belts chains, linkage, levers, and other hazardous components are guarded.
- Grease lubrication points are externally located to prevent the need for internal access to hazardous areas.
- The solid sheet metal formed enclosure prevents access to the lower roll and provides a smooth surface to support and guide the material.
- Expanded metal roll enclosure allows visual inspection of the roll surface.
- Shape and locate guards to clear and prevent containment of gages, regulators, valves, instruction tags or other operational controls that require frequent access and visibility.
- Each guard contains a Safety Caution plate warning not to operate the machine with the guard removed.
- Safety Caution plates are located near the operational control station for easy recognition.

Standard Safety Caution Signs:

In order to alert and remind everyone involved with this machinery of the hazards resulting from unsafe practices and procedures, the following signs should be applied by the user. Littell has mass produced and inventoried these standardized safety caution signs and is using them on our newly manufactured machines. Littell strongly recommends that users request and apply these signs to their Littell machines as soon as possible. These signs are not meant to frighten anyone; nor should they be interpreted to mean that the machine is unsafe. They should be permanently located and securely fastened nearest each machine's push button control station for immediate recognition.

Signs are OSHA Black and Yellow coated metal .062" THK. x 5.00" HIGH.

CAUTION:
It is the user's responsibility to interpret and explain all safety precaution and signs to persons who do not read or understand English before they are allowed to use and care for Littell Machinery.

Inspect frequently to prevent signs from being hidden or covered and replace when defaced or significantly damaged.

The user should add additional signs to warn against hazards which result from other auxiliary equipment which he or others have combined with Littell Machinery.

CAUTION

- READ & COMPLY with the Littell instruction manual before installing, using or servicing this machine.
- NEVER exceed the maximum machine capacities. Consult the Littell manual for capacity limitation and warnings.
- NEVER modify, alter or change the design, or intended use of this machine. If this machine does not meet your requirements, discontinue its use immediately and notify Littell.
- BEFORE servicing or repairing, always use proper tag and lockout safety procedures to exhaust, disconnect, and control all hazardous energy and motion, both entering or contained within this machine.
- NEVER REMOVE OR DISFIGURE THIS PLATE
PLATE NO. 145897
LITTELL

General Plate No. 145897

CAUTION

HAZARDOUS AREA-READ FOLLOWING CAREFULLY.

- MAINTAIN SAFE CLEARANCE: Machine starts automatically at any time by remote drive control.
- MAKE CERTAIN the press or shear has been turned off, its flywheel stopped and the feed & cutter power supply disconnected & locked out before set up, servicing & repairing.
- BEFORE and during operation make certain everyone is clear of the cutter, press, feed, strip, straightener, coil and uncoiler.
- NEVER place your hands or fingers, with or without gloves, on or near revolving rolls or moving strip for any reason.
- NEVER thread or enter a coil strip into revolving rolls.
- NEVER operate with any safeguard removed or missing. Discontinue using until all are in place and functioning.
- NEVER leave machine operating unattended.
- NEVER REMOVE OR DISFIGURE THIS
PLATE No. 147605
LITTELL

Feed & Cutter Plate No. 147605

CAUTION

HAZARDOUS AREA-READ FOLLOWING CAREFULLY.

- MAINTAIN SAFE CLEARANCE: Machine starts automatically at any time by remote control.
- NEVER Rely on the strip loop position control to maintain a machine stop condition: Disconnect it's power supply.
- BEFORE and during operation make certain everyone is clear of the straightener, strip, coil and uncoiler.
- NEVER place your hands or fingers, with or without gloves on or near revolving rolls or moving strip for any reason.
- NEVER thread or enter a coil strip into revolving rolls.
- NEVER operate with any safeguard removed or missing. Discontinue using until all are replaced & functioning.
- NEVER leave machine operating unattended.
- NEVER REMOVE OR DISFIGURE THIS
PLATE No. 147606
LITTELL

Straightener Plate No. 147606

CAUTION

HAZARDOUS AREA-READ FOLLOWING CAREFULLY

- MAINTAIN SAFE CLEARANCE: Machine starts automatically by remote control.
- STAY CLEAR of Revolving Spindle, Keepers, Coil & Moving Strip.
- LOAD ONLY Stable, Banded or Retained Coils.
- MAKE CERTAIN this machine safely supports and controls the coil before removing the coil loading device.
- NEVER OVERLOAD: Excessive force applied by cranes, fork trucks, or other loading devices may cause the loss of safe coil support and control. Inspect daily for machine damage and repair before using.
- NEVER REMOVE OR DISFIGURE THIS PLATE
PLATE NO. 145896
LITTELL

Uncoiler Plate No. 145896

Safety Precautions:

WARNING

READ AND UNDERSTAND ALL OF THE FOLLOWING:

FAILURE TO COMPLY WITH ANY ONE PRECAUTION MAY CAUSE SERIOUS BODILY INJURY TO YOURSELF OR OTHERS.

ONLY PERSONS WHO THOROUGHLY UNDERSTAND AND COMPLY WITH ALL OF THE FOLLOWING SAFETY PRECAUTIONS ARE QUALIFIED TO SAFELY USE AND CARE FOR LITTELL MACHINERY.

- Read and comply with the feeding machine instruction manual before installing, using or servicing.
 - Never exceed the maximum machine capacities. Consult the instruction manual for capacity limitations and additional safety precautions.
 - Never modify, alter or change the design or intended use of the machine. If it doesn't meet your requirements, discontinue its use immediately and notify Littell.
 - Before servicing, repairing, maintaining, or cleaning, always use proper tag and lockout safety procedures to exhaust, disconnect, and control all hazardous energy and motion, both entering and contained within this machine.
 - Before using, read, understand, and comply with all safety warnings.
 - Know the location and access to the emergency stop controls.
 - Before using, know what machinery safeguards exist and their proper location.
 - Never operate the feeder and scrap cutter with its safeguards removed or missing. Discontinue using until all are replaced and function properly.
 - Maintain a sense of personal safety awareness. Observe all safety warnings and practices. Be on the lookout for hazardous conditions. Report hazards and obtain instruction for their control from your supervisor.
 - Before operating machinery, always make certain all persons are in a safe location.
 - Stay alert; don't become careless or over confident. Avoid preoccupation, inattention, distraction and talking when loading and using uncoiler/recoilers.
- Use personal protective equipment and clothing such as safety glasses, helmets, gloves, spats, shoes, and protective sleeves as required to suit the operation.
 - Never wear clothing or jewelry that could cause part of the body to be caught or dragged into moving coil, strip or machinery.
 - Follow only your instructed work procedures that you have been trained for. If a new or unfamiliar situation arises, ask your foreman for safe instructions before proceeding.
 - Feeders and scrap cutters start automatically. Always maintain a safe clearance from the feeder, scrap cutter and both the entering strip and exiting skeleton.
 - Mechanical punch presses may, accidentally and without warning, cycle or propel a feeder and scrap cutter. Make certain the press has been turned "OFF" and the press flywheel has stopped turning before servicing, repairing, maintaining, adjusting, retiming, cleaning, or unjamming a feeder or scrap cutter.
 - Standard feed roll enclosures are permanently mounted and require tools for removal. They are not designed nor intended to allow rapid removal or frequent access to the rollers. If a special application requires such access, special safeguarding must be requested and installed that will cause an automatic "Shutdown" of the machine to occur and be maintained when the roll enclosure is removed or the safeguarded area is unsafely penetrated.
 - Never position yourself under, above or in the direction and path of a coil strip.

PROHIBITED



**KEEP AWAY FROM
REVOLVING ROLLS**

PROHIBITED



**NEVER CLEAN ROLLS
WHILE REVOLVING**

- Never position your hands on or near revolving rolls for any reason.
- Never place your hands (with or without gloves) on a moving strip or skeleton.

Safety Precautions:(Cont'd)

- Never cross over or under operating equipment or the coil strip.
- Safe and productive performance of the feeder and scrap cutter depends on proper set up and adjustment. Make certain the following have been accomplished properly by testing them in a "manual or inch" mode before activating an "automatic or continuous" operation.
 - Align feed and scrap cutter with the die.
 - Unobstructed passage of strip and skeleton.
 - Support and guidance of strip and skeleton.
 - Feed length or progression.
 - Feed start and stop positions.
 - Feed roll brake, release and pressure.
 - Feed roll strip release, regrip and pressure.
 - Sufficient roll traction upon strip.
 - Sufficient free loop storage.
 - Proper scrap cutter knife travel.
 - Position scrap cutter knife for minimum shear across skeleton.
 - Sufficient anti-backup roll grip.
- Before propelling coil strip through the feeder and scrap cutter make certain all persons are safely clear from the moving strip, associated press, shear or other machines, including the coil and dispensing machinery.
- Never thread or enter a coil strip into revolving feeder rolls.

TO THREAD SAFELY ALWAYS:

 1. STOP THE MACHINE.
 2. OPEN ENTRY ROLLS.
 3. ENTER STRIP.
 4. CLOSE ENTRY ROLLS.
 5. REMOVE HANDS FROM STRIP.
 6. START MACHINE.
 7. INCH OR JOG STRIP TO COVER DIE.
- Protect yourself and others from injury by never bypassing or eliminating any safety device, feature, or procedure.
- Never over-reach, climb, or stand on places other than safely and properly designated ladders, steps and walkways.
- Never cycle the press, shear or feeder until all scaffolding, ladders, tools and other repair or adjusting equipment has been safely cleared away.
- Before servicing, repairing, maintaining, cleaning, or unjamming a feeder and scrap cutter which is propelled and controlled by a punch press, always make certain the press maintains a safe stop condition and is disarmed per Federal Regulation OSHA-1910-217 to prevent accidental feed propulsion and transmittal of any hazardous energy or motion.
- Only qualified electrical, pneumatic, or hydraulic personnel should work on respective circuitry.
- Always tag, lockout, vent, and exhaust hydraulic and pneumatic pressure that, as stored or trapped energy, could cause dangerous machinery motion.
- Before and during servicing, repairing, maintaining, or cleaning, always maintain a machine shutdown by tagging and locking out the electrical disconnect switch supply power to the feeder to prevent other persons from accidentally restarting the machinery.
- Always make certain all machinery components will maintain a safe position during all maintenance and repairs, by using adequate physical blocking, restraint, and control procedures. Never depend upon the machine's hydraulic or pneumatic power to hold or maintain any components in a constant position.
- Never leave the press, shear, or feeder unattended with the power turned on.

A SAFETY FIRST WARNING

It is impossible to foresee all possible uses, and applications of this machine. Therefore it is also impossible, to warn you in advance of every possible hazard, or to tell you that this machine will always be absolutely "hazard free". Your best protection against injuries to yourself or others is to always be cautious and remind yourself to think "SAFETY FIRST" before attempting any questionable, unfamiliar, infrequent, physical involvement with this machine that you have NOT been specifically trained for. When these situations arise, act cautiously, think "SAFETY FIRST", and protect yourself and others by requesting detailed safety instructions and related training from your management before attempting any such involvement for the care and use of this machine.

DIRECTORY**SAFETY LITERATURE / STANDARDS / REGULATIONS**

The following is a list of some of the Federal Regulations and other safety literature which users should obtain and review before applying safeguards to Littell Products. Each publication has been cross referenced to some (but not necessarily all) of the areas in which they are involved. Many other publications exist (such as American National Standards) and can be easily identified in the "Sources of Standards" listed in the OSHA Federal Regulations below.

APPLICABLE SAFETY LITERATURE / STANDARDS / REGULATIONS	INVOLVEMENT AREA
"Accident Prevention Manual for Industrial Operations." By National Safety Council - Chicago, IL 60611	<ul style="list-style-type: none"> ● Complete Sourcebook for industrial safety.
"Guards - Illustrated - Ideas for Mechanical Safety." By National Safety Council - Chicago, IL 60611	<ul style="list-style-type: none"> ● Machine guarding Methods and devices.
Littell Safety Awareness Report No. SAR-100 - Unbanding Coils. Littell Safety Awareness Report No. SAR-102 - Safeguarding and Safety Precautions for Coil Strip Straightening Machines. Littell Safety Awareness Report No. SAR-103 - Safeguarding and Safety Precautions for Uncoilers. Littell Safety Awareness Report No. SAR-108 - Roll Cleaning Safety Precautions.	<ul style="list-style-type: none"> ● Specific safety instructions and safety precautions on the safe-guarding, care and use of Littell products.
OSHA - Part 1910 - Subpart D - Walking and Working Surfaces. SECTIONS: 1910.21 Definitions. 1910.22 General Requirements. 1910.23 Guarding Floor and Wall Openings and Holes. 1910.24 Fixed Industrial Stairs. 1910.25 Portable Wood Ladders. 1910.26 Portable Metal Ladders. 1910.27 Fixed Ladders. 1910.28 Safety Requirements for Scaffolding. 1910.31 Sources of Standards.	<ul style="list-style-type: none"> ● Access to Press Crank Shaft of Feeders - Drive Adjustments. ● Protection from Floor Pits for Strip Loop Storage. ● Access to "Hard To Reach" areas of large machinery for servicing or repairing.
OSHA - Part 1910 - Subpart J - General Environmental Controls. SECTIONS: 1910.144 Safety Color Code for marking Physical Hazards. 1910.145 Specifications for Accident Prevention Signs and Tags. 1910.147 Sources of Standards.	<ul style="list-style-type: none"> ● Regulations for identifying and communicating hazards
OSHA - Part 1910 - Subpart N - Material Handling and Storage. SECTIONS: 1910.176 Handling Material - General. 1910.178 Powered Industrial Trucks. 1910.179 Overhead and Gantry Cranes. 1910.184 Slings. 1910.189 Sources of Standards.	<ul style="list-style-type: none"> ● Safe care and use during service or repairs of machines. ● Safe Coil Handling & Loading. ● Safe Scrap Handling & Unloading.
OSHA - Part 1910 - Subpart O - Machinery and Machine Guarding. SECTIONS: 1910.211 Definitions. 1910.212 General Requirements for All Machines. 1910.217 Mechanical Power Presses. 1910.219 Mechanical Power Transmission Apparatus. 1910.221 Sources of Standards.	<ul style="list-style-type: none"> ● Safeguarding of all machine hazards. ● Mechanical Power Presses used with Littell Roll Feeds Safely.
OSHA - Part 1910 - Subpart S - Electrical. SECTIONS: 1910.308 Application. 1910.309 National Electrical Code.	<ul style="list-style-type: none"> ● Safe addition of electrical interlocks. ● Safe care and use of machinery with electrical power.
American National Standard Institutes. Safety Requirements for the Construction, Care, and Use of Shears No. ANSI-B11.4. American National Standard Institutes. Safety Requirements for the Construction, Care, and Use of Mechanical Power Presses No. ANSI-B11.1	<ul style="list-style-type: none"> ● Safe care and use when combined with Littell Products.

Additional copies of this Safety Awareness Report are available and supplied free to all our product users when requested. We recommend that users place this report in existing Littell machinery instruction or service manuals which should always be readily available to everyone involved with this machinery allowing them to maintain familiarity with all safeguards, their purpose, location, and warnings.

If you should need additional information or copies contact the Littell Service Department.

Although this report is not a "SAFETY CODE OR STANDARD", the addition of safeguarding and adherence to the safety precautions contained in this report will assist users in complying with the existing Federal Regulations.

This Safety Awareness Report was produced and freely distributed because Littell cares about the safety of its product users. Please help reduce hazards and prevent accidents by complying with its instructions.

Special note:

LITTELL assumes no responsibility in connection herewith, nor can it be assumed that all acceptable safety measures are contained in this publication, or that other additional measures may not be required under particular or exceptional circumstances or conditions.

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