PRODUCTION DATA

Width Range:	24" to 84" (610 to 2135 mm)
Height Range:	24" to 52" (610 to 1320 mm)
Length Range:	36" to 96" (915 to 2440 mm)
Production:	90 bales / hr
Cycle Time:	Average 40 sec. Cycle
Maximum Footage of Wire:	Up to 300' depending on wire gauge.
Wire Size Range:	9-16 AWG
Wire Type:	Round or Oval-Steel, Steel bands ,or Plastic straps

SYSTEM OVERVIEW

Bales are loaded by a clamp truck onto the Dewiring Feed Conveyor entry station. Each bale must be oriented so that the tying wires are parallel with the direction of travel through the Dewiring Station. An detection sensor is located at the infeed ramp of the conveyor to detect the presence of a bale at the loading zone of the conveyor. It is used to auto-restart the conveyor while the truck is loading the conveyor. After the bale exits the infeed sensor area, the feed conveyor will run one full length to the forward photo where the bale will become ready to be transferred into the Dewiring Machine.

The bales are conveyed into the Dewiring Machine where the automatic cycles of wire breaking, removal, and coiling occur. After the bale enters the Dewiring Machine, it will convey to the forward end of the dewire machine and be position for the dewiring cycle. When the bale is in position, the breaker beam will lower and contact the bale. When the bale is sensed, the breaker will cycle, breaking the wires while the breaker beam continues down into the bale. This will cause it to separate, and the front of the bale will fall away. When the bale separation is sensed, the gatherer blades will cycle to the center and gather the wires. When the wires are gathered, the gatherer beam will rotate down moving the wires into the coiling chamber. The coiler will extend, trapping the wires, and the gatherer will rotate up to the intermediate position. The gatherer blades will return to the out position while the dewired fiber is being conveyed out of the dewiring machine, the coiler will coil the wire. An ultrasonic sensor will be provided and located at the discharge side of the Dewiring Machine. The sensor will monitor the level of the discharged product and cause the Dewiring Machine to stop discharging when a maximum height has been achieved. The discharge cycle will resume once the existing discharge conveyor has moved the dewired product clear of the loading area. The discharge cycle continues until the remaining dewired fiber has been conveyed onto the existing discharge conveyor. When the coiling is complete, the coiler will retract and the coil will be ejected onto the coil discharge chute. After the dewired fiber is conveyed out of the Dewiring Machine, another bale will be conveyed from the existing Feed Conveyor into the Dewiring Machine. This cycle continues as long as bales are on the Feed Conveyor and the controls are selected to automatic.

-102, 202 DEWIRING FEED CONVEYOR

GENERAL OPERATION

Bales are loaded by a clamp truck onto the Dewiring Feed Conveyor. Each bale must be oriented so that the tying wires are parallel with the direction of travel through the Dewiring Machine. A bale sensor located at the infeed position of the infeed conveyor will detect the presence of a bale that has been pushed into position by the clamp truck. The conveyor will run one full length positioning the bale to be loaded into the dewirer.

OPERATOR CONTROLS LOCATED IN OPERATOR CONSOLE

MANUAL/AUTO, green illuminated, normally open push button.

When in AUTO, the green light illuminate, and the conveyor will operate as described above without any operator intervention. If the light is flashing , the machine is in MANUAL mode; a push of the button will switch the mode to AUTO.

(NOTE: once the conveyor has run its full length, the conveyor will stop and wait for another bale).

When in MANUAL, the operator may use the FORWARD or REVERSE buttons to run the conveyor. If the light is on solid , the machine is in AUTO mode; a push of the button will switch the mode to MANUAL (flashing).

If the AUTO/MANUAL button is ineffective the conveyor is turned off by the stop button. Check the EMERGENCY STOP buttons.

REV & FWD, 3 position selector switch, spring return to center.

When REV is selected in MANUAL mode, the conveyor will run in the reverse direction.

When FWD is selected in MANUAL mode, the conveyor will run in the forward direction until the conveyor forward photo becomes blocked. The conveyor will stop and not allow the product to be conveyed any further unless the Dewiring Machine belt conveyor is also running in the forward direction.

DEWIRING FEED CONVEYOR (continued)

STOP, a red, maintained, mushroom head pushbutton. This control button is located at the operator control station.

When the STOP button is pushed, the conveyor will stop and remain stopped until the STOP button is reset (pulled). The AUTO/MANUAL green light will become OFF.

When the STOP is reset (pulled), the machine will be automatically reset to MANUAL (Flashing).

-103, 203 DEWIRING MACHINE

GENERAL OPERATION

The baled fiber automatically or manually enters the Dewiring Machine from the Dewiring Feed Conveyor. After the bale enters the Dewiring Machine, it will convey to the forward end and be positioned for the dewiring cycle. When the bale is in position, the breaker beam will lower and contact the bale. When the bale is sensed, the breaker will cycle, breaking the wires while the breaker beam continues down into the bale. This will cause it to separate, and the front of the bale will fall away. When the bale separation is sensed, the gatherer blades will cycle to the center and gather the wires. When the wires are gathered, the gatherer beam will rotate down moving the wires into the coiling chamber. The coiler will extend, trapping the wires, and the gatherer will rotate up to the intermediate position. The gatherer blades will return to the out position while the dewired fiber is being conveyed out of the dewiring machine, the coiler will coil the wire. An ultrasonic sensor will be provided and located at the discharge side of the Dewiring Machine. The sensor will monitor the level of the discharged product and cause the Dewiring Machine to stop discharging when a maximum height has been achieved. The discharge cycle will resume once the existing discharge conveyor has moved the dewired product clear of the dewirer unloading area. The discharge cycle continues until the remaining dewired fiber has been conveyed onto the existing discharge conveyor. When the coiling is complete, the coiler will retract and the coil will be ejected onto the coil discharge chute. After the dewired fiber is conveyed out of the Dewiring Machine, another bale will be conveyed from the existing Feed Conveyor into the Dewiring Machine. This cycle continues as long as bales are on the Feed Conveyor and the controls are selected to automatic.

OPERATOR CONTROLS LOCATED ON THE OPERATOR CONSOLE

STOP, a red, maintained, mushroom head push button.

When the STOP button is pushed, the Dewiring Machine will stop and remain stopped until the STOP button is reset (pulled). The AUTO/MANUAL green light will be OFF. When the STOP is reset (pulled), the machine will be automatically reset to MANUAL(flashing). This "Stop" Mushroom button also stops the hydraulic unit.

-103, 203 DEWIRING MACHINE (continued)

MANUAL/AUTO, green illuminated push button.

When in AUTO, the button will illuminate solid GREEN, and the Dewiring Machine will operate as described above without any operator intervention. If the light is flashing, the machine is in MANUAL mode; a push of the button will switch the mode to AUTO.

When in MANUAL, the operator may use the FORWARD, REVERSE, or CYCLE push buttons to run the Dewiring Machine. If the light is solid GREEN, the machine is in AUTO mode; a push of the button will switch the mode to MANUAL (flashing).

CYCLE, normally open push button.

If in MANUAL mode, pressing the CYCLE button will start the cycle of the Dewiring Machine. The machine will only CYCLE if it is in its home position. If the machine is not at its home position, it can be returned to home by pressing the RESET button.

RESUME CYCLE, blue illuminated normally open push button.

If the Dewiring Machine has been stopped during its cycle, the RESUME CYCLE button will illuminate to indicated that the machine was stopped during its cycle. Pressing the RESUME CYCLE push button will cause the machine to restart and complete the cycle.

RESET, normally open push button.

Pressing the RESET button places the Dewiring Machine into MANUAL mode and aborts the machine cycle, causing the Dewiring Machine to return to its home position.

BELT CONVEYOR

REV & FWD, normally open push buttons.

When the REV button is pressed in MANUAL mode, the dewiring machine's belt conveyor will run in the reverse direction.

When the FWD button is pressed in MANUAL mode, the dewiring machine's belt conveyor will run in the forward direction until the bale reaches the forward position. It will continue forward if the dewiring machine is also running forward.

AUXILIARY CONTROL STATION B CONTROLS

SWEEPER EXTEND, normally open push button. This control is located at CSB.

If in MANUAL mode, pressing the SWEEPER EXTEND push button will cause the sweeper arm to extend. Once the pushbutton is released, the sweeper arm will fully retract.

EXT/HOME, 3 position selector switch, spring return to center. This control is located at CSB.

When EXT is selected and the Dewiring Machine is operating in the MANUAL mode, the coiler carriage will move to the extended position.

When HOME is selected and the Dewiring Machine is operating in the MANUAL mode, the coiler carriage will retract to the home position.

INDEX/COIL, 3 position selector switch, spring return to center. This control is located at CSB.

When INDEX is selected and the Dewiring Machine is operating in the MANUAL mode, the coiler will rotate in the index position.

When COIL is selected and the Dewiring Machine is operating in the MANUAL mode, the coiler will rotate in the coiling direction.

-104, 204 HYDRAULIC UNITS

GENERAL OPERATION

The Hydraulic Unit provides hydraulic power for the Dewiring Machine. As long as hydraulic pressure is needed, the hydraulic unit's motor will run, pumping fluid to serve the requirements of the Dewiring Machine. If hydraulic pressure is not required due to a slow down in processing, the hydraulic unit motor will stop after an adjustable time delay. When hydraulic pressure is again required, the motor will restart automatically.

OPERATOR CONTROLS LOCATED AT OPERATOR CONTROL STATION

Hydraulic START / STOP, illuminated buttons (This control is located at CSA).

When the START button is pushed the button will illuminate and the Hydraulic Unit motor will start. As long as hydraulic pressure is required, the motor will continue to run. If hydraulic pressure is not required, the hydraulic unit motor will stop after a time delay. When hydraulic pressure is again required, the motor will restart automatically.

When the STOP button is pushed, the start button light will extinguish, and the hydraulic unit motor will stop and remain stopped until the start button is pushed. If the hydraulic unit motor starter should trip or a hydraulic fluid low level or high temperature fault is detected during operation, the hydraulic unit's motor will stop. The START & STOP button's will flash. This will signal the operator that a fault condition exist, and that the hydraulic unit will not auto-restart until the fault is cleared. After the fault condition no longer exists, the operator will be required to PUSH and RE-PULL the START button to restart a hydraulic unit.

STOP MUSHROOM BUTTON

The RED MUSHROOM STOP used for the DEWIRING MACHINE is also used for the HYDRAULIC UNIT which supplies motive fluid power to the de-wiring Machine. Pushing this stop button will not only stop the De-wiring Machine, it will also stop the Hydraulic Pump.

NOTE: Lamb recommends that a lockable motor disconnect be located near Dewiring Machine for the hydraulic motor. This will allow operations or maintenance the ability to easily place the Dewiring Machine in a zero energy state.

-110 SYSTEM CONTROLS

ELECTRICAL CONTROL SYSTEM GENERAL OPERATION

The -110, 210 Control System provides the machine and operator control for all the Lamb equipment supplied under the 11990359 order. Primary control for this area is provided by a Modicon 984-145 PLC control system.

This Control System's hardware is housed in one (1) floor mounted steel control console (NEMA 12X) designated Control System A (CSA) and one machine mounted PB Station (CSB). In addition to these there is a

A second pushbutton station, designated Control Station B (CSB), will be provided by Lamb and is to be located near the coiler area of the Dewiring Machine. This station will provide the operator control of the coiler area for maintenance purposes. CSB like CSA will be supplied with Allen Bradley 800H pushbuttons which will be pre-wired and shop tested prior to shipping.

OPERATOR CONTROLS LOCATED IN OPERATOR CONTROL STATION

EMERGENCY STOP AREA CONTROLS

The system is designed with an Emergency Stop button and should be hardwired into adjacent conveying equipment controls (ie. Nielson & Hiebert incline conveyor). This SYSTEM E-STOP is in addition to the individual machine stop functions.

EMERGENCY STOP, maintained mushroom head push button. This control is located at CSA.

When an EMERGENCY STOP button is pushed, the PLC will disable the output power of all the devices which are controlled by this PLC. This is accomplished by dropping out the Master Control Relay, which removes power from the output modules. The outputs will remain disabled until the EMERGENCY STOP button is enabled and the RESET button is pushed.

RESET, green illuminated push button. This control is located at CSA.

A RESET push button must be pushed to clear an EMERGENCY STOP condition. When the EMERGENCY STOP push button is enabled (pulled), a push of the RESET push button returns the system to run. The RESET button is hardwired into the master control circuit. The RESET light illuminates (Green) after the EMERGENCY STOP button has been enabled, and the RESET push button has been pushed signifying the master control relay is energized. Other wise the Green Light is OFF.

-110 System Controls (Continued)

Note: Machines that were in mid-cycle when an EMERGENCY STOP button was pushed will require manual intervention to restart after the EMERGENCY STOP condition is reset. The system will be put in manual mode when reset, and it will require automatic to be intentionally chosen to auto-restart/resume the machine cycle. The dewiring machine may require a "Home" condition before resuming AUTO in certain situations.