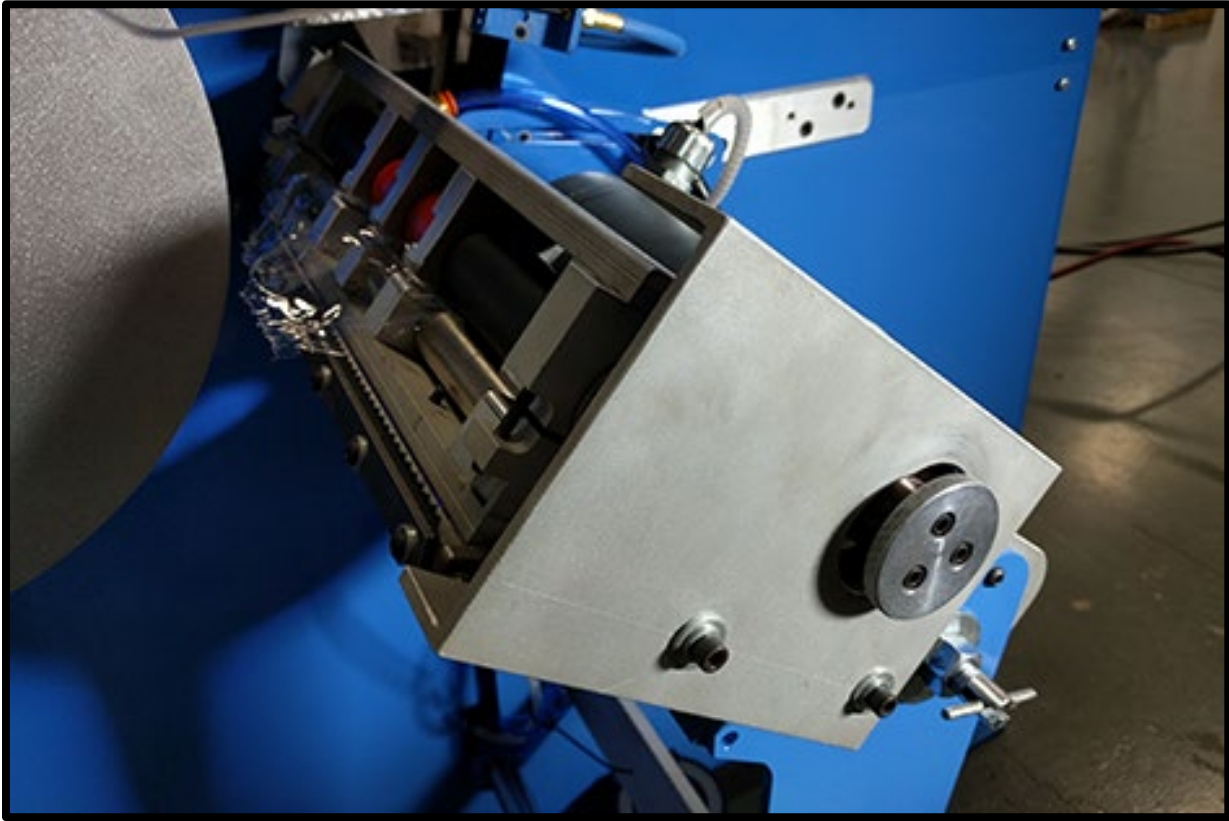


Stretch Wrap Module

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Introduction



REELEX Packaging Solutions offers a Stretch-Wrapping module that can be retrofitted to existing REELEX coiling machines as an add-on.

The module works by using compressed air to trap the film inside the outer layer of the coil during the final revolutions of the mandrel. This process is choreographed to coincide with the various stages of the winding process for seamless automated stretch-wrapping capability.

This module has been custom-designed for use with the REELEX coiling process and is operated by the REELEX machine controller.

Single-Spindle Machines

Function and Setup - G1 (Non-Touchscreen) Machines

NOTE: Applies to: D-750 G1 machines.

1. As a coil finishes winding, the controller signals the wrap module to advance the wrap material using motorized rollers. The start of the wrap process is controlled by the length counter value.
2. Using **Function 38**, the operator sets this value to the length count at which the stretch wrapper will begin to feed the film.
3. Compressed air is then blown through small slots that keep the film suspended, and the material is blown onto the rotating coil.
4. To control the speed at which the stretch wrap is fed out use **Function 36** to control the motor reference.
 - a. Numbers from 0 to 255 can be used.
 - b. 128 will be zero speed.
 - c. 0 and 255 will be full forward and full reverse depending on how the motor is wired.
5. Once the stretch wrap film has encountered the rotating coil, the film becomes engaged with the cable as it is wound onto the coil. The wrapper will continue to shoot the stretch wrap until **PRESET 2**. At this point the winding and stretch wrap process stops.
6. The operator then cuts the wire.
7. The operator then presses the START button to continue the wrap process.
8. The stretch wrap process is in tension mode now and the stretch wrap will be tight.
 - a. To control this tension on the stretch wrap use **Function 37** to control the motor reference.
 - b. Numbers from 0 to 255 can be used.
 - c. 128 will be zero speed.
 - d. 0 and 255 will be full forward and full reverse depending on how the motor is wired.
 - e. Use **Function 39** to enter the number of spindle revolutions the stretch wrap will continue to wrap for.
 - f. One revolution before the spindle stops rotating, the stretch wrap is automatically cut.
9. The coil is now fully wrapped and can be removed from the machine as a stabilized, contained coil. Further packaging and tube insertion may now take place.

Stretch Wrap Function Descriptions

Function Number	Function	Operation
FUNCTION 36	Blower Motor	Press L. RESET/ENTER to enter Data Input
FUNCTION 37	Tension Motor	Press L. RESET/ENTER to enter Data Input
FUNCTION 38	Length at which the stretch wrapper will start to blow stretch wrap onto the coil (length from Preset 2).	Use PRESET 2 thumb wheels as Data input
FUNCTION 39	Number of spindle revolutions after the cable it cut that the stretch wrap will continue onto the coil before the cutting of the stretch wrap.	Press L. RESET/ENTER to enter Data Input
FUNCTION 41	Length at which the stretch wrapper will start to blow stretch wrap onto the coil when the machine is in sequential mode.	Press L. RESET/ENTER to enter Data Input

Operating Procedure

1. As a coil finishes winding, the controller automatically signals the wrap module to advance the wrap material using motorized rollers.
2. Compressed air is then blown through small slots that keep the film suspended, and the material is blown onto the rotating coil.
3. Once the stretch wrap film has encountered the rotating coil, the film becomes engaged with the cable as it is wound onto the coil. The wrapper will continue to shoot the stretch wrap until **PRESET 2**. At this point the winding and stretch wrap process stops.
4. Cut the product below the guide tube and allow the loose end to hang freely.
5. Press the START button to continue the wrap process.
6. The stretch wrap process is now in tension mode and the stretch wrap will be tight. The module will automatically cut the wrap material.
7. When the mandrel stops rotating, press the ON/OFF button. The endform will lower and the coil may be removed from the machine.
8. Further packaging and tube insertion may now take place.

Function and Setup - G2 (Touchscreen) Machines

NOTE: Applies to: D-750 G2, S290 and RS1 machines.

On G2 machines, stretch wrap module options can be accessed on the Settings screen under “Additional Functions”.

NOTE: In order for “Additional Functions” button to be visible, the “Machine Equipped with Stretch Wrap Module” must be set to “Yes” under Help > Machine Configuration.

Stretch Wrap Adjustments

The screenshot shows a touchscreen interface for 'Stretch Wrapper Adjustments'. At the top, there are two input fields: 'Product ID / Part Number' and 'Product Name / Description'. Below these is a title 'Stretch Wrapper Adjustments' with a gear icon and a subtitle 'Adjustments can be made to the stretch wrap module. Use the attributes below to adjust timing, speeds, and length of wrap.' The interface is divided into several sections: 'Wrap Adjustment' with three input fields for 'Begin Wrapping' (12ft from End of Coil), 'Back Tension at' (5ft from End of Coil), and 'Cut Wrap at' (1ft from End of Coil); 'Motor Speed' with a 'Wrapper Motor Speed' input (6) and a scale '1 = Slowest, 10 = Fastest'; and 'Tension Adjustment' with a 'Back Tension on Wrap' input (2) and a scale '1 = Low, 5 = High'. At the bottom of the adjustment panel are 'Cancel' and 'Apply' buttons. Below the panel are four buttons: 'Save this Product to the List', 'Overwrite Changes to this Product', 'Delete this Product from List', and 'Packaging Calculator'. The very bottom of the screen has a navigation bar with icons for adding (+), confirming (✓), deleting (-), and a calculator icon.

NOTE: Adjustments that are made based on setting length occur at the set length **from the end of the coil** (or Preset 2). It is important to test these settings under normal production conditions, including product type, line speed, etc.

Begin Wrapping

Feet from the end of the coil at which stretch wrap will begin to advance. This function engages the wrapper motor in a forward direction at the speed determined by the “Motor Speed” setting, and turns on

the blower valve.

Back Tension at

At this footage (from the end of the coil), the wrapper motor will retard the forward motion and apply tension to the wrap. The amount of tension applied can be changed under “Tension Adjustment”.

Cut Wrap At

Feet from end of coil at which the wrap will be cut. If 0 feet, the wrap will be cut at Preset 2 (end of coil).

Motor Speed

This setting is an index from 1 to 10, with 10 being the fastest. The motor speed is controlled by writing a D to A value that corresponds to a voltage applied to the motor. The actual D to A value can be viewed at the terminal inside the controller. For simplicity, the HMI displays an index value which corresponds to the speed level of the motor (1 = minimum, 10 = maximum).

Back Tension on Wrap

This index value is similar to motor speed in that it represents an actual D to A value. In this case, the index value is the amount that the motor is restricted in the forward direction. 1 = motor speed in tension mode will be faster (less tension), 10 = motor speed in tension mode will be slower (more tension).

Operating Procedure

1. As a coil finishes winding, the controller automatically signals the wrap module to advance the wrap material using motorized rollers.
2. Compressed air is then blown through small slots that keep the film suspended, and the material is blown onto the rotating coil.
3. Once the stretch wrap film has encountered the rotating coil, the film becomes engaged with the cable as it is wound onto the coil. The wrapper will continue to shoot the stretch wrap until **Back Tension at** length is reached. Back tension will then be applied to the wrap.
4. Once **Cut Wrap at** is reached, the wrap is cut. If this setting is 0 feet, the cable can now be cut. Otherwise, the coil will continue winding until **Preset 2** is reached.
5. Cut the cable and remove the finished coil.

Dual-Spindle Machines

NOTE: Applies to: D-1500

Function and Setup - G1 (Non-Touchscreen) Machines

1. As a coil finishes winding, the controller automatically signals the wrap module to advance the wrap material using motorized rollers.
2. Compressed air is then blown through small slots that keep the film suspended, and the material is blown onto the rotating coil.
3. **PRESET 3** is the length at which the blower will begin blowing stretch wrap onto coil.
4. Once the stretch wrap film has encountered the rotating coil, the film becomes engaged with the cable as it is wound onto the coil. The wrapper will continue to shoot the stretch wrap until **PRESET 2**.
5. At **PRESET 2** this will stop and the stretch wrapper will go into tension mode.
6. The machine will transfer, “pull cable” and cut the cable.
7. After cut, the spindle with the completed coil will continue to wrap (spin) the cable tail using predetermined speed and values set by the “B” functions below.
8. The wrapper will cut the stretch wrap after reaching the “B4” value minus 1.

Tension and Air Control

Use potentiometers located inside the cabinet to control stretch wrapper blow and tension.

Total of 4 potentiometers, which are labeled.

- 2 for left spindle (1 for blow,1 for tension).
- 2 for right spindle (1 for blow,1 for tension).

Stretch Wrap Function Descriptions

Function numbers are entered via keypad.

Function Number	Function
B4	Number of spindle revolutions after cutting of wire. Stretch wrapper is in tension mode after cut. Used for both left and right spindles. NOTE: Cut location occurs at B4 - 1.

B5	DA value of left spindle after “Pull Cable” on transfer.
B6	DA value of right spindle after “Pull Cable” on transfer.

Operating Procedure

1. After transfer, the stretch wrap module will wrap the coil.
2. After B4 rotations the stretch wrap module will cut the film, the endform will come off and the coil can now be removed.
3. Further packaging and tube insertion may now take place.

Stretch Wrap Loading and Maintenance

Loading Film

1. Insert end plugs into film roll.
2. Drop assembled roll into slots. Sheet unrolls from bottom.
3. Manually engage film into rollers. Film feeds from bottom of roll.
4. Rotate handwheel to advance film through rollers.
5. Pull film into position.

Troubleshooting

Problem	Solution
Film jammed in rollers.	Retract film using handwheel. Check for and remove residual film stuck on rollers. Reload film. IMPORTANT: Make sure film is square to rollers and centered to mandrel. If it is getting pulled more in one direction, this can cause the film to curl and lead to jams.
Insufficient film advances during blower sequence on one or both sides.	For G1 machines, adjust potentiometer labeled “BLOW” for the appropriate side. This will increase or decrease the speed at which the stretch wrap propelled onto the coil. For G2 machines, use Stretch Wrap Adjustment settings to increase “Motor Speed”.
Film is slack or breaks during wrap sequence on one or both sides.	For G1 machines, adjust potentiometer labeled “TENSION” for the appropriate side. This will make the stretch wrap tighter or looser on the coil. For G2 machines, decrease the “Back Tension on Wrap” setting.
Insufficient or excess film is being applied after the cut (tension sequence).	For G1 machines, adjust number of number of spindle revolutions at cut. (B4). Use tension potentiometer to make stretch wrap tighter or looser. For G2 machines, adjust the amount of wrap being applied by changing the length at which the wrap is applied and cut.