

**OPERATING INSTRUCTIONS
RLL (RAPID LIGHT LOOP)
Part number 10900462 and 10900463**

INSTALLATION:

The RLL unit, when received, should be checked for shipping damage. If damage has occurred, contact the carrier that handled the shipment first and then Rapid-Air to report the damage.

The RLL unit is shipped pretested, set to a working height of 30", and set for payout operation. It should be set in place on a level surface, although each stand is provided with (4) base thru holes for 7/16 bolts if the unit is to be bolted to the floor.

Each RLL unit assembled is prewired with an Amp 14 pin circular or 25 pin D sub connector that matches a connector output on every Rapid-Air device capable of running from an external loop controller. Optional cord adapters are available for interfacing each style. Contact Rapid-Air for details. The RLL gets its 115 VAC power from the controlled device. Once the plug is attached, the RLL is ready to run.

Fig RLL-1 is a drawing of the RLL unit.

The RLL unit (10900462 and 10900463) consists of the following major components.

1. Infrared Transmitter part # 69100087 (4 required)
2. Infrared Receiver part # 69100089 (4 required)
3. Control Interface pwb. part #69100091
4. Jog Pushbutton part # 69100257
- 5a. Cable Assy: 28900226 for 10900462 14 pin Amp
- 5b. Cable Assy: 28900227 for 10900463 25 pin

Refer to Fig RLL-2

INFRARED TRANSMITTER ASSY:

Each transmitter assy. transmits a beam of light to the receiver assy. If the beam is interrupted by material the receiver will send the appropriate control signal to the interface control pwb. There are no adjustments or user replaceable components on this assy.

INFRARED RECEIVER ASSY:

Each receiver assy. receives the light beam from the transmitter assy. and sends the appropriate control signal to the interface pwb if material interrupts the light. There is one factory adjustment on this assy. and should never need to be field adjusted. In the event of complete receiver replacement, a field alignment of this assy. maybe required. Please contact Rapid-Air for details prior to any adjustments

CONTROLLER INTERFACE PWB ASSY.

The interface board contains a Payout/Rewind switch and user adjustable Max. output and Jog speed potentiometers. Refer to the adjustments section prior to changing these setpoints. The RLL is factory set for (Payout) mode and will send a 6 VDC output to the controlled unit when the material is at the top of the loop. All loop control functions are fixed and never need adjustment. See the adjustment section prior to selecting the Rewind mode. There is one user replaceable fuse. Power down prior to any service to the fuse or while performing any maintenance. Qualified electrical personnel should perform service to this equipment. 115 VAC is present on this PWB.
CAUTION:::

JOG PUSHBUTTON:

The Jog Pushbutton is used to assist the operator in the initial thread up of material. The jog speed is adjustable and can be tuned to match the needs of the specific operation. For location of this potentiometer, refer to the adjustments section.

CABLE ASSEMBLY:

The cable assembly was designed to make the installation of the RLL to a Rapid-Air Reel, Straightener, or Rapid Roll as easy as possible. The power and control connection is accomplished through one of two types of connectors. Optional adapter cables are available for the two conversions when required. Contact Rapid-Air for details or assistance for this and also when interfacing non Rapid-Air equipment.

OPERATION:

PAYOUT MODE:

With the RLL in place and electrically connected to a Reel, Straightener, etc, that is powered, the RLL is ready for loop control operation. The top light beam (ON), if interrupted by material will give the full speed signal to the controlled device. The (Ramp Up) light beam if interrupted by material will give an increase in speed from previous. The Ramp Down light beam if interrupted by material will give a decrease in speed from previous. The bottom light beam if interrupted by material will fully stop the motor. The Ramp Up or Ramp Down and Hold functions are not affected by the full on or full off functions. In this manner the loop window will be controlled between the Ramp Up and Ramp Down light beams.

To start thread up, press the jog button. The controlled device will run at jog speed, paying out material for the operator to work with. With the material held between the light posts walk material to the controlled device and thread up. The controlled device will stop when the bottom beam is interrupted by material. The RLL and the controlled device are now ready to run material.

As the loop depth diminishes the RLL will automatically increase the motor speed keeping the loop depth fairly constant at 9 to 15 inches above the floor.

OPERATION:

REWIND MODE

CAUTION:

Keep clear of rotating hardware during thread up. Turn power off of take up reel during thread up or place take up reel in the JOG mode. Make certain material is taut and above RLL upper beam prior to power up.

Set the Payout/Rewind switch to Rewind on the Control Pwb of the RLL. This will automatically switch light beam operation to give full speed at the bottom of the loop and the motor to be full off if the top light beam is interrupted by material. Caution: Remember to keep material taut in this mode during tread up keeping the motor of the controlled device off. As the loop depth now becomes lower the motor speed will increase and eventually the loop will be controlled between 12 and 18 inches from the floor.

Turn on power on take up reel or place in run mode. The RLL will start auto control as the material falls below the top light beam.

ADJUSTMENTS

RECEIVER BOARD 69100089 ASSY.

Refer to Fig. RLL-2

There is one potentiometer on each of the receiver boards. This is factory adjusted for a 5 micro second pulse width TP-3 to TP-4. This alignment will need to be made only if a receiver is damaged, replaced or if a support post is bent. Static adjustment in the field maybe accomplished with a DVM. Adjust pot for 7.90 to 7.97 VDC as measured between TP-3 and TP-4 on the receiver pwb. Please contact Rapid-Air prior to making this adjustment.

INTERFACE CONTROL PWB 69100091 ASSY.

Refer to Fig. RLL-2

There are 2 user adjustable setpoints and 1 mode select switch on this assy. There are 2 factory set pots on this assy. R43 is a Preset Ramp Voltage. R25 is a Ramp Null.

Do not adjust R43 or R25.

JOGSPEED POTENTIOMETER R39

Adjust this pot to increase or decrease jog speed. Jog speed is attenuated by the % of speed potentiometer on the controlled device.

MAX. VOLTAGE OUTPUT. R33

This pot is set for normal 6 VDC operation. Adjust this pot to increase voltage to 10 VDC only if required by controlled device drive.

PAYOUT/REWIND MODE SELECT

Select either payout or rewind mode from this switch. Payout mode is selected by setting the toggle switch towards the interior of the board.

TROUBLESHOOTING ELECTRONIC CIRCUITRY

69100089 RECEIVER BOARD

1. Place in payout mode. Block bottom light beam. Controlled device motor should stop if on. Block top light beam with material. Motor should run approx. 95 % full speed. Block second to bottom light beam. Motor will slow to approx half speed. Continue to Ramp down motor speed by blocking second to bottom light beam. Ramp up motor speed by blocking second to top light beam. If any of these functions do not work check appropriate receiver alignment using 2 below as a guide.
2. Each receiver should respond to a blocked beam by sending a high (no pulses) signal to the interface control pwb. Check TP-3 to TP-4 with a scope. Align pwb for 5 micro second pulse width TP-3 to TP-4 with no material blocking beam. Approx. 7.92 to 7.97 VDC with a DVM, if a scope is not available.
3. If each of the receivers are checked for proper alignment and a function still doesn't work, the problem is most likely a defective control pwb 69100091.
4. There is one fuse on the main pwb, FI. This is a PICO 1 amp Little fuse. Turn power off before removal. 115 VAC is present in this circuit.
5. Contact Rapid-Air for assistance, if fuse is checked and problem still persists.

