

Operating Instructions



Cable Measuring & Cutting System with RD-505A Roto-Drive, GC-575 Guillotine and PT-501 Turntable



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Installation Procedure

The cable measuring system needs to be set up on a sturdy steel bench with access to air and electric. The bench should measure at a minimum 60" X 30" and set to 28-30" high, for example CHDist.com bench #5598602.

1. The box contains the RD-505A, PT-501, GC-575 with bottom cover, CM-380, FLR with air hose coil, fasteners for mounting and instructions.

2. To prevent oil leaking from the gear reducer during shipment the venting screw was not installed in the RD-505. Remove the side cover by taking out 6 screws. Switch the screw (see photo) in the speed reducer with the one in the bag marked Speed Reducer Hardware.



3. Assembly drawing 505-110C shows the locations and mounting points of the cable measuring & cutting system. Place the units on a steel bench with the RD-505A located between the PT-501 and the GC-575. The CM-380 is located behind the GC-575 Guillotine. The GC-575 installation drawing shows the mounting holes and central 1-1/2 hole for chips. The GC-575 bottom cover must be installed below the table for safety.

4. Drawing 501-100 shows the location of components for the PT-501 turntable. Assemble components as shown; the central post 501-118 is screwed onto the base. The spool locator 501-119 is secured with an allen wrench to lock the cable spool to the PT-501. Place post extensions 501-116 (3) over the guide posts as shown in drawing.



5. Align everything according to the drawing making sure that the RD-505 and GC-575 cable guides are properly aligned.



6. Use a 1/4" transfer punch (spotter) to mark the mounting holes on the GC-575 and drill 3/8" holes in the center.
7. Use the 1/4" transfer punch to mark location of the RD-505A. Drill three 5/16" holes though bench.
8. Use the 1/4" transfer punch to mark location of the PT-501. Drill four 5/16" holes though bench.
9. Attach the three units to the workbench and GC-575 bottom cover with bolts and screws provided.

Electric and Pneumatic Connections

Note: All the air hoses are color-coded and the equipment has the matching color dot next to the air hose connection. Important: Make sure the hose connectors are completely screwed onto the fittings, if not air flow will be limited and the machine will not operate correctly

1. Connect the hoses between the RD-505A, PT-501, CM-380 and the GC-575 matching each hose with the corresponding colored connector.
2. Connect the foot switch to the connectors on the back of the CM-380. Match the color codes, if reversed the foot switch will not work.
3. Mount the filter/regulator/lubricator (FLR) to the bench. Connect the air hose from the FLR to the RD-505. The FLR prevents premature wear of the pneumatic components. Fill the lubricator with **Mobile #6 or equivalent oil**. Read the instructions included with the FLR for its operation and installation. **Only a few drops per hour are needed. Do not flood the pneumatic system with oil since this will cause a malfunction.** Connect an air hose to the FLR and set the pressure gauge to 90psi.



4. Proper pressure has been **set at the factory** but should be monitored to ensure correct operation. The **pressure gauges on the CM-380 should**

read 60 PSI and 25 PSI as labeled. The gage on the back of the **RD-505A** should read **25 PSI**. The pressure on the RD-505 rollers (which drive the cable) can be adjusted by setting an internal regulator. Remove the top cover on the RD-505 and locate the regulator labeled cable rollers to the right of the counter in the front of the unit. Remove the tamper proof cap on the regulator knob to adjust the roller pressure.

Note: Always supply the RD-505 with air before turning on the unit

5. Plug in the line cord from the RD-505A into an outlet supplying 115 VAC with a minimum of 15 Amps.

GC-575 Operation

Note: Oil machine once a day

The GC-575 accepts cables up to 15/16" measured O.D. Remove the screw under the oil daily label, place a few drops of Mobile #1 or equivalent oil to lubricate the cutting blade.

Note: The GC-575 is only cable of cutting copper and aluminum, cutting steel may severely limit the life of the blade.



Counter Description

The RD-505A is equipped with an Irion & Vosseler counter that is fully programmable. The user is able to set the desired length of cable to be stripped. In addition the counter is also able to track the total length and run time of the machine. The prescaler is also adjustable, which makes it possible to exactly adjust the counter to get accurate measurements. To operate the counter the user needs to set the start count to the desired value.

Counter Terms:

XP	Counter Reading - Inches Measured
P1	Preset 1 - Begins Deceleration
P2	Preset 2 – Stop
SC	Start Count Value – Inches to Cut
Σ	Totalizer – Total Length Cut in Inches
XB	Batch Counter Reading - Pieces Cut
B1	Batch Counter Setting - Pieces to Cut
\oplus	Elapsed Time - Hours
\rightarrow	Function Select Key
P/R	Programming Selection Key
C	Reset Key
+/-	Sign Key



Press \rightarrow to switch between each counter term. To modify a value press P/R. The selected LED now blinks. Press the C key (reset) to clear the value. Enter the new value and press P/R to store the value. The following values can only be reset: Counter Reading, Totalizer, Batch Counter Reading, and Elapsed Time.

Loading Cables

1. The distance from the GC-575 cable channel to the cutting blade is 4.75 inches. Draw a mark on the cable 4.75 inches from the end using the ruler on the guide arm.



2. Press the **Load Cable / Emergency Stop** button on the RD-505A.
3. While holding the button down, feed the cable all the way thru the RD-505A and into the GC-575 channel.
4. Line up the mark from **Step 1** with the end of the GC-575 channel to make an accurate first cut.



Procedure for Cutting Cables

Warning: Do not remove safety guards

Cable length cut can be adjusted from 1" to the maximum setting of the counter, 99,999,999.

The RD-505 decelerates at P1, measured in inches from the cable end.

- When cutting lengths less than 12 inches set P1 to 2 inches.
- When cutting lengths 12 to 36 inches set P1 to 5 inches.
- When cutting lengths over 36 inches set P1 to 10 inches.

Note: The RD-505 will not operate if $P1 > SC$. See the section on programming the counter for more information.

1) Turn on main power

- a) Check that the pressure on the RD-505 roller reads 25 PSI to ensure accurate cable feed
- b) The cable reel should be placed on payoff table to ensure accurate stripped lengths. **Any entanglement of the cable will affect the accuracy of the final stripped length.**

2) Setting the counter to desired length

- a) Press right arrow → until **SC** (Start Count) is displayed and press **P/R**
- b) Press **C** to clear display and enter desired length in inches
- c) Press **P/R** to store the new length
- d) Press right arrow → until **XP** is displayed. Press **C** to reset the value. **Always press C**: failure to do so will result in the first cable being cut to the previous size.

3) Setting the counter to the desired number of pieces

- a) Press right arrow → until **B1** (Batch Counter Setting - Pieces to Cut) is displayed then press **P/R**
- b) Press **C** to clear display and enter desired number of pieces to cut.
- c) Press **P/R** to store the new number
- d) Press right arrow → until **XB** (Batch Counter Reading - Pieces Cut) is displayed which shows the current batch count, press **C** to reset. **Note: XB must be less than B1 for machine to operate.**

Note: It is suggested that B1 be set to 1 when first starting the RD-505 so it will only make one cut for each press of the footswitch. Changes can then be made to the counter settings (especially when changing cable types) to ensure correct operation before making multiple cuts.

If XB is less than B1 machine will cycle and continue to make cuts until XB equals B1.

4) Starting the Cutting Cycle

- a) Press the foot switch.
- b) RD-505A measures out the cable length to be cut.
- c) The GC-575 saw will then cut the cable.
- d) The RD-505 will cut the length set by **SC** until B1 equals XB.

5) Stripping Another Batch of Cables

- a) If a different length is desired follow **Step 2** to set **SC** to a new value.
- b) Load cable (if required)
- c) Set **B1** to the desired number of pieces to cut following **Step 3**
- d) Press right arrow → until **XB** is displayed.
- e) Press **C** to reset **XB** to zero.
- f) Press foot switch to begin cycle.

If for any reason the machine needs to be reset or stopped simply press Cable Load / Emergency Stop. This will stop the machine immediately. Press footswitch to restart machine.

RD-505 Accuracy

Please note the **RD-505 is an accurate machine**, it has been calibrated at the factory with flat bar stock and is accurate to +- ¼ inch. **However measuring BX, AC or Flex is not accurate due to the nature of the play in its coils.** Depending on the type of cable **results may vary according to how tight the cable spiral is wound.** A spring will vary in length as is pulled or compressed, to determine its length; its the same principle with MC cable. The RD-505 will provide consistent, repeatable results but it is critical that the cable feed is unimpeded to ensure accurate lengths are measured each time. To fine tune the measured cable length the **pre-scaler** may be adjusted as required. The RD-505 has been calibrated at the factory to accurately cut a length of 144 inches. **If the pieces are not the desired length the pre-scaler needs to be changed to adjust the length of cable measured by the RD-505.** See Programing Field 3 Line 22

For instructions on changing this value see programming the counter below see Programing Field 3 Line 22

Prescaler = .1008 (Factory Setting)

To increase the length of cable cut lower this number

To decrease the length of cable cut raise this number.

Counter Reference Settings

Normally the counter would not need to have its programming parameters modified but they are provided here for reference. There are four levels of counter programming totaling of 46 “lines”.

When the counter first powers up it is in **Operator Mode**. To program the counter press the P/R key, the counter now changes to **Programming Mode**. Press the **F** key and *CodE* is displayed. Press → until the desired line is reached and input the correct value. After a value has been changed press → to change to the next value or press **P/R** to exit programming mode.

Programming Field 1

The LED of the selected value blinks. Values that have been set to Status 2 (P2, Σ, ⊕) can only be changed or reset while in Programming Mode. (See Programming Field 2)

Line 1 XP – Counter Reading - Inches Measured

Line 2 P1 – Preset 1 - Begins Deceleration with 10 inches remaining

Note: P1 sets the distance from the cable end at which the RD-505 begins to decelerate.

- When cutting lengths less than 12 inches set P1 to 2 inches.
- When cutting lengths 12 to 36 inches set P1 to 5 inches.
- When cutting lengths over 36 inches set P1 to 10 inches.

The RD-505 will not operate properly if P1 > SC.

Line 3 P2 – Preset 2 - Stop = 0 inches

Line 4 SC – Start Count - Inches

Line 5 Σ – Totalizer - Inches Cut

Line 6 XB – Batch Counter Reading – Pieces Cut

Line 7 B1 – Batch Counter Setting - Pieces to Cut

Line 8 ⊕ – Elapsed Time - Hours

Programming Field 2

SEAL is displayed and the corresponding LED of the selected parameter blinks

- 0 Full Access for operator (Read and alter parameters).
- 1 Restricted Access for operator (Read parameters only).
- 2 No Access for operator (No altering or reading of parameters)

Line 1	XP	–	Counter Reading	Stat=0
Line 2	P1	–	Preset Value 1	Stat=2
Line 3	P2	–	Preset Value 2	Stat=2
Line 4	SC	–	Start Count	Stat=0
Line 5	Σ	–	Totalizer	Stat=1
Line 6	XB	–	Batch Counter	Stat=0
Line 7	B1	–	Batch Preset	Stat=0
Line 8	\oplus	–	Elapsed Hour Meter	Stat=1

Programming Field 3

Line 21 Operating Modes = 0 Step preset

Line 22 **Prescaler, master counter = .1008**

Note: The prescaler may be changed to determine the length of cable cut. To increase the length of cable stripped lower this number, to decrease the length raise it.

Line 23 Multiplier, Batch Counter = 1

Line 24 Frequency, Master Counter Track A 0 – 10 kHz

Line 25 Frequency, Master Counter Track B 0 – 10 kHz

Line 26 Frequency, Batch Counter, XB 0 – 10 kHz

Line 27 Count Mode 1 – Differential

Line 28 Decimal Point 0 – No Decimal

Line 29 Reset, Master Counter 2 – External Static

Line 30 Reset, Batch Counter 2 – External Static

Line 31	Output time P1	Latch = continuous signal
Line 32	Output Time P2	Latch = continuous signal
Line 33	Output Time P3	Latch = continuous signal
Line 34	Accepting Preset Values P1, P2, & P3	0 – At Reset
Line 35	Address for Function Key	0 – No Function
Line 36	Function of Batch Counter XB	1 – Internal
Line 37	Pulses per Unit of Measurement with Tacho = 1.00	
Line 38	Measuring Time in Seconds	0 – Time Base 1s
Line 39	Assignment, Output 3	0 – Batch Counter XB
Line 40	Function Input XP Stop	0 – XP Stop
Line 41	Code Setting	0 – No Code

Programming Field 4

Line 43	Baud Rate	0 – 4800 Baud
Line 44	Parity	0 – Even Parity
Line 45	Address	0 – 0
Line 46	Stop Bits	0 – 1 Stop Bit

RD-505 and SM Drive Operation

Leeson SM drive accelerates the motor for 2 seconds (Pr 18) to running speed 60 Hz (Pr 31). When counter value $XP = P1$ (inches measured = distance from the end of the cable) the pre-signal is activated. The drive decelerates the motor for 0.8 seconds (Pr 19) to 5Hz (Pr 32). When the counter reads $XP = 0 = P2$ the PT-501 and RD-505 brakes are activated stopping the cable. The GC-575 will then cut the cable. If $XB < B1$ the RD-55 will dispense another length of cable of length SC until the number of pieces cut $XB =$ pieces to cut B1. Footswitch will not operate until XB is reset to 0.

Leeson SM Drive Parameters

Model: 174264

Under normal operation the SM Drive does not need to be programmed by the operator. For reference the settings related to the RD-505 are provided. If required the manual for this drive can be found at www.leeson.com

- Pr 01 Line Voltage = 01 High
- Pr 02 Carrier Frequency = 02 6kHz
- Pr 03 Start Method = 01 Normal
- Pr 04 Stop Method = 03 Ramp
- Pr 05 Standard Speed Source = 02 Preset Speed #1
- Pr 06 Relay Output = 01 None
- Pr 10 TB-13A Function Select = 04 Preset Speed #1
- Pr 11 TB-13B Function Select = 04 Preset Speed #2
- Pr 12 TB-13E Function Select = 01 None
- Pr 15 Control = 01 Terminal Strip
- Pr 16 Units = 02 Whole
- Pr 17 Rotation = 01 Forward Only
- Pr 18 Acceleration Time = 2.0 Sec
- Pr 19 Deceleration Time = 0.8 Sec
- Pr 21 DC Brake Time = 0.0 Sec
- Pr 22 DC Brake Voltage = 0.0%
- Pr 23 Minimum Frequency = 0.0 Hz
- Pr 24 Maximum Frequency = 60.0 Hz
- Pr 25 Current Limit = 150%
- Pr 27 Motor Overload = 100%
- Pr 28 Base Frequency = 60.0 Hz
- Pr 29 Fixed Boost = 5.3%
- Pr 30 Accel Boost = 0.0
- Pr 31 Preset Speed #1 = 60 Hz (Run Speed)
- Pr 32 Preset Speed #2 = 05 Hz (Pre-signal Speed)
- Pr 44 Password = 0.0 None

