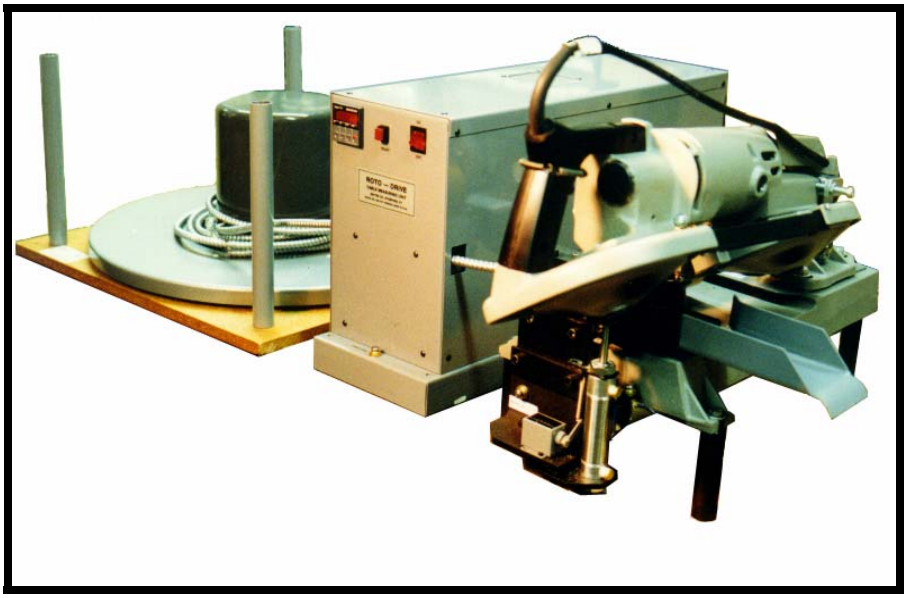
Operating Instructions

Cable Measuring & Cutting System With RD-505A Roto-Drive and AV-525 Cut-Off Saw



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Installation Procedure

The Cable Measuring System needs to be set up on a bench with access to air and electric. Minimum size of the bench is 60” X 30” and should be level.

1. Boxes contain RD-505A, FLR with air hose coil, fasteners for mounting and manuals.

2. Remove the machine from boxes.

3. Assembly drawing 505-110A shows the locations and mounting points of the machines. Place the units on a sturdy bench, the RD-505A to the left of the AV-525. Align machines according to the drawing making sure that the RD-505 opening and the AV-525 vise are properly aligned.

4. Trace around the 3 legs on the AV-525 and drill 3/8" holes in the center.

5. Use a ¼” transfer punch (spotter) to mark location of the RD-505A. Drill three 5/16” holes though bench.

6. Attach the two units to the workbench 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. Make sure that the ***hose connectors are screwed all the way*** *to make the proper air connection.*

1. Connect the hoses between the RD-505A and the AV-525 matching each hose with the colored connector.

2. Connect the foot switch to the connectors on the back of the RD-505A. 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. Only a few drops per hour are needed and can be increased depending on usage. ***Do not flood the pneumatic system with oil since this could cause a malfunction.*** Connect and air hose to the FLR and set the pressure gauge to 90psi.

4. The pressure gauge on the AV-525 should read **60 PSI** and the RD-505A should read **25 PSI**. The pressure on the RD-505 rollers (which drives the cable) can be adjusted by setting an internal regulator. Remove the top cover; the regulator knob is to the right of the counter in the front of the machine. (Do not adjust the regulator on the rear panel) The regulator on the AV-525 can be adjusted by turning the regulator knob on the top panel.

5. Plug in the line cords from the AV-525 and RD-505A into an outlet supplying 115 VAC with a minimum of 15 Amps.

AV-525 Setup

Note: Before first use read the Porter-Cable manual for maintenance, blade replacement, safety features, etc. Unplug air and electric before performing any maintenance.

Check that the cutting saw is moving freely up and down manually. Adjustment screws are provided to align the saw.

The AV-525 accepts cables up to 15/16" measured O.D. Please note that a guide (labeled 0 to ½") must be installed inside the vise jaws for cutting cables smaller than ½" measured O.D. To cut cables larger than ½" remove this guide by unscrewing the two screws. The vise can be adjusted by sliding the cylinder bracket and retightening the holding screws. The small blade guard parallel to the cutting blade must never be removed.

When the **Start/Manual Cut button** is pressed the AV-525 band saw lowers slowly. When bottom valve is actuated, the saw returns to the ready position. The cutting and return speed can be adjusted by the speed control knobs located behind the Cycle Speed label. The knob closest to the cast body controls the down stroke of cutting speed while the other controls the up stroke.

The AV-525 also has a mechanical counter that can be reset by turning the dial until 0 is displayed.

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 only 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
◷	Elapsed Time - Hours
➔	Function Select Key
P/R	Programming Selection Key
C	Reset Key
+/-	Sign Key

Press ➔ 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. Press the Load Cable / Emegency Stop button in front of the RD-505A.
2. While holding the button down, feed the cable all the way thru the RD-505A and the AV-525 Vise.
3. Cable should be a few inches past the band saw blade.

Procedure for Cutting Cables

<u>Warning: Do not permanently remove any safety guard</u>

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

Note: Counter value P1 must be changed to cut shorter than 12" lengths – see section on Programming the Counter

1) Turn on main power
   a) Check that the RD-505 pressure gauge reads 25 PSI to ensure accurate cable feed
   b) Cable reel should be placed on payoff table or equivalent dispenser 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. **<u>Always press C</u>**: 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. XB must be less than B1 for machine to operate.

   Note: It is suggested that B1 be set to 1 when first starting the machine or when changing cable types to ensure correct operation. This way the machine will cycle only once for each press of the footswitch.

4) Start the AV-525
   a) Depress the trigger switch to start the band saw
   b) Reset the mechanical counter on the AV-525 turning the knob until it reads 000000. Reset the counter after each batch or use it as a totaliser.
   c) Move the spring band over the trigger to keep the saw running.
   d) Make a trimming cut by pressing the Start/Manual Cut Button when starting a new coil. This zeros the cable length for the RD-505A.

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

5) Start Cutting Cycle
   a) Tap the foot switch.
   b) RD-505A measures out the cable length to be cut.
   c) The AV-525 saw will then cut the cable.
   d) The RD-505 will cut lengths of cable until B1 equals XB.

6) Stripping Another Batch of Cables
   a) If a different length is desired follow Step 2 to set counter to a new length.
   b) Load cable
   c) Make a trimming cut by pressing the Start/Manual Cut Button.
   d) Set the desired number of pieces to cut following Step 3
   e) Press right arrow ➔ until XB is displayed.
   f) Press C to reset XB to zero.
   g) 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. Reset XP to 0 and restart machine.

Please note the RD-505 is a highly accurate machine, however the nature of measuring BX, AC or Flex is not. Depending on the type of cable cut results may vary according to how tight the cable spiral is wound. Think of how a spring can vary in length as is pulled straight to determine its length. 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-scalar may be adjusted as required (see programming the counter).

Programming the Counter

Normally the counter would not need to have its programming parameters changed 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 = 10 inches

Note: This value sets the cable length remaining at which the RD-505 begins to decelerate. When cutting small lengths (12-36 inches) P1 must be set to 3.5 inches. When cutting lengths over 36 inches P1 should be set to 10 inches.

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
Line 7	B1	–	Batch Counter Setting - Pieces to Cut
Line 8	🕒	–	Elapsed Time - Hours

Programming Field 2

StAt 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	🕒	–	Elapsed Hour Meter	Stat=1

Programming Field 3

Line 22	**Prescaler, master counter = 1.015** *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

S10 Saftronics Drive Parameters

Model: S101E50-91FS

Normally the S10 Drive does not need to be programmed by the operator. For reference the settings related to the RD-505 are provided. Information and the manual for this drive can be found at www.saftronics.com.

Main Speed Reference = 60 Hz Displayed on drive

F-01 Acceleration Time = 2.0s

F-02 Deceleration Time = 0.8s

F-08 SP1 Frequency = 5Hz
Speed drive decelerates to when P1 pre-signal is reached

F-19 Multifunction Input Terminal = 2 SP1

F-20 Multifunction Input Terminal Reset Function = 3 Emergency Stop

RD-505 and S10 Operation

Drive accelerates for 2.0 seconds (F01) to Main Speed 60 Hz. When counter value XP reaches pre-signal (P1) SP1 is activated. This sets speed to 5 Hz (F-08). When counter reaches 0 (P2) drive stops and applies DC braking.