Schatten Design
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Handmade Pickups For Acoustic Instruments
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Assembly Instructions - Schatten Design Coil Winding Machine Model D (release 1)

Thank you for purchasing one of our seventh generation coil winding machines. While the concept of the winder is simple, the execution is not. The Model D is a heavy duty machine; it is robustly built and will offer you years of service with little or no attention.

Important notes

When the power supply is initially connected to the machine it will run through a diagnostic test and will display that information on the screen. It will show the following:

a) Board - indicates the current board voltage. It will normally read between 4.5 and 5 volts.
b) Hall - normally will read between 1 and 5 volts. Note that on occasion it may read 0 volts if the Hall sensor trigger happens to be lined up directly with the sensor itself. This is not an issue.
c) SDA and SCL (OLED display) - both will normally read between 1 and 5 volts.

On completion of the diagnostic test the machine will begin a countdown from three to zero. Make sure that the winder direction is set to OFF and that the speed control pot is also turned fully OFF. Otherwise when the countdown gets to zero the machine will begin running.

Tools you'll need:, small adjustable wrench or 7/16" (11mm) wrench, small phillips head screw driver, large phillips head screw driver.
Power Supply Specifications: 12 volt, 1000 milliamp, center positive.
The counter has an internal battery which will retain count information even when the machine is not plugged in. Battery life for the internal battery is spec'd at eight to ten years.

Traverse Assembly

There are two small holes drilled near the front right of the white work surface
1) Mount the traverse support 'A' to the work surface using the two small screws and washers as shown 'C'.
2) Install the nut 'D' to the end of the threaded portion of the traverse shaft 'B'.
3) Install the flat washer 'E' onto the traverse shaft.
4) Thread the traverse shaft with washer and nut into the traverse support as far as it will go.
5) With a small wrench tighten the nut against the traverse support.
6 Install the two collars 'F' onto the traverse shaft. Make sure to have the allen screws facing straight up.

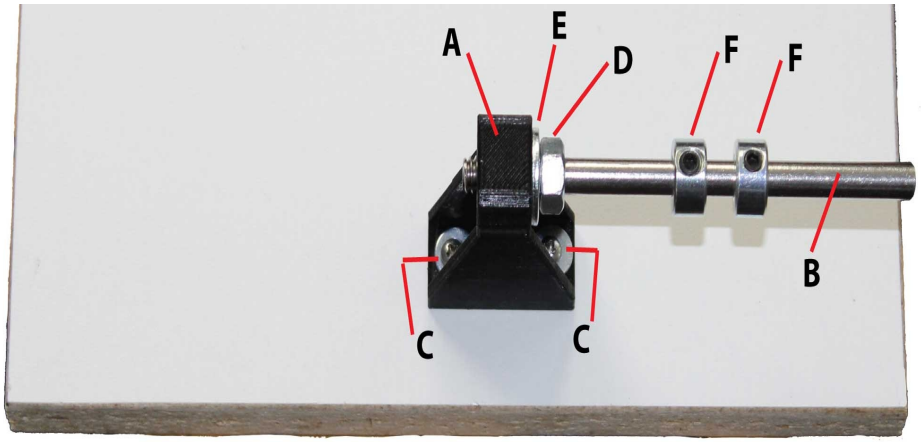

Fig 1

Mounting The Winder

1) Attach the machine to the white base using the two large 1/4 x 20 screws provided. Insert the screws from the counter-sunk side of the board and tighten into the pre-tapped holes in the bottom of the machine.

Machine Controls

1) Wind Direction - Select as required.
2) Count Reset Switch - Select to reset.
3) Speed Control - Knob on the machine front. Maximum machine speed 2250 rpm.

Foot Pedal Speed Control - Optional

1) Turn the machine speed control knob fully counter-clockwise to its off position.
2) Plug the optional foot pedal speed control into the jack located on the left side of the machine.

Attaching A Bobbin To The Winder Arm

We have found that the simplest and usually the best method for securing a bobbin to the winding arm is by using a piece of double sided tape. Supplied with the machine is a sample of this type of tape. It can be a cloth or a fiber glass woven double sided tape (usually marketed as a carpet tape) and can be found in most hardware stores. Notice from the sample that the tape is folded in two to provide the best conformity. The same piece of tape can normally be used numerous times.
Before pressing the bobbin into place, visually make sure that the bobbin is centered on the arm so that the coil winds evenly.

Starting A Wind

1) Place your spool of coil wire about 3 or 4 feet behind you and about on the level of the winder base so that the wire may unspool end on. It will help if the leading edge of the spool is tipped up about 15 degrees.
2) Take a bit of masking tape and tape the end of the coil wire to underside of the winding arm. This should provide enough 'free' wire after the wind is completed to solder to the bobbin's eyelets or to the lead out wires.
3) Rotate the winder arm by hand to run the coil wire around the bobbin about 6 turns.
4) Run the wire under the limit shaft and adjust the inner limit collar so that the wire winds inside of the inner bobbin edge. You should be rotating the winder by hand to make this adjustment.
5) Repeat the same procedure to set the outer limit collar.
6) The coil wire is grasped lightly between thumb and forefinger so that it may be controlled and moved between the set limits. The pressure that is exerted on the wire by the thumb and forefinger provides the winding tension.
7) When you are satisfied that the limits are properly set, turn the machine on at low speed. Slowly move the wire back and forth between the limits to again check that the wire is winding properly within the bobbin.
8) If everything is satisfactory, increase the speed as required.

Service Information

All machine functions and controls are handled by one circuit board. Speed is controlled with a PWM pulse width modulation circuit. Count is triggered magnetically through a Hall sensor that is mounted directly to the circuit board, as is the jack for the optional foot pedal speed control. Lead in wires to circuit board have been kept to a minimum.