Schatten Design
Acoustic Pickups
Handmade Pickups For Acoustic Instruments
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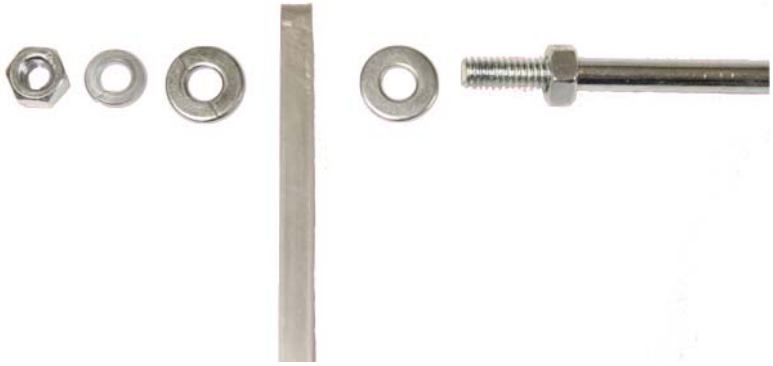
Assembly Instructions - Schatten Design Coil Winding Machine Model D

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.

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.

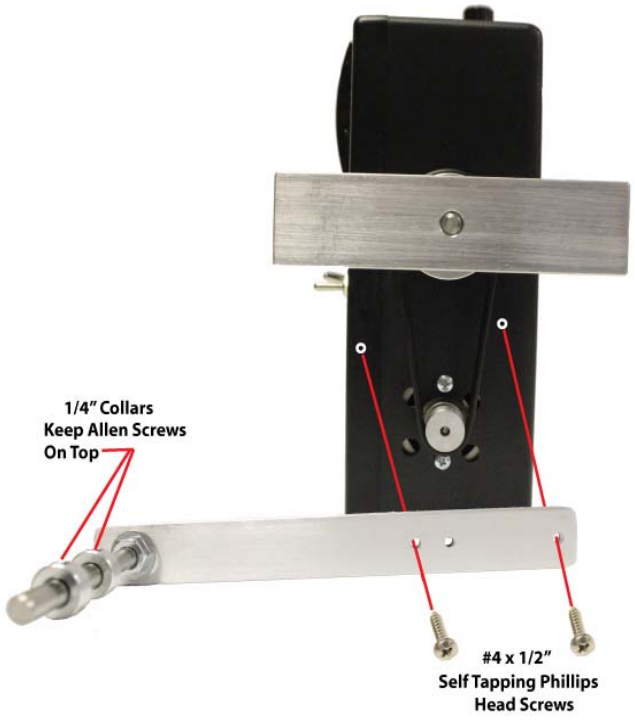
The counter has an internal battery which will retain count information even when the machine is not plugged in. Battery life for the internal battery is spec'd at eight to ten years.



Cross Feed Assembly
1) Thread a 1/4" nut all the way down onto the cross feed shaft and tighten.
2) Install a 1/4" flat washer onto the shaft.
3) Insert the shaft through the powder coated stand-off plate.
4) Install a 1/4" washer,
5) Install a 1/4" lock washer.
6) Install a 1/4" nut and tighten.
7) Set aside the two 1/4" collars from this kit.

Mounting The Winder

1) Line up two holes in the Cross Feed Assembly with the two pre-drilled holes on the side of the box and cover. Install the assembly using the two ½" self tapping screws provided.
2) 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.
3) Install the two 1/4" collars from the cross feed assembly kit onto the cross feed shaft. The allens on the collars should be positioned so that they will come into contact with the upper surface of the shaft only. Since the coil wire will pass under and against the lower surface of the limit shaft, it is imperative that the lower surface of the bar remain unmarked and smooth.



Machine Controls

1) Count Up/Down - Select as required.
2) Wind Direction - Select as required.
3) Count Reset Button - Gray push button below the LCD window of the counter. Push to reset.
4) Speed Control - Knob on the machine front, 40 detents.

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.

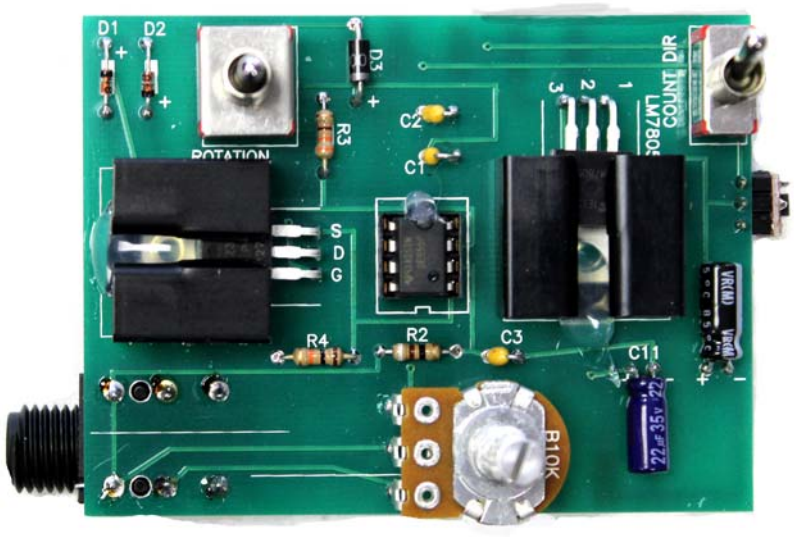
Starting A Wind

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.

Fig 2

Service Information

All machine functions and controls are handled by one circuit board. Speed is controlled with a PWM pulse width modulation circuit featuring a 40 detent rotary pot. The IR sensor 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.



Schatten Design Model D Coil Winding Machine - Parts List - 01-27-2015

QTY	PARTS	PART NUMBER		QTY	PARTS	PART NUMBER
	ENCLOSURE				**MECHANICALS**	
1	Enclosure, pre drilled	1594ESBK		1	Motor w/ Pulley	RS-55PH-3255
	BASE			1	Winder Arm	Arm
1	Board White 8"x 8" x 5/8" Pre Drilled			1	Main Shaft Pulley	Main Shaft Pulley
	ELECTRONICS			2	1/4" Collars	1/4" Collar
1	Circuit Board	PWM Bd - 6i		1	Main Shaft 1/4" x 6 1/8"	Main Shaft
1	Dir Switch DPDT On/Off/On	EG2414-ND		2	Bearings	FR4ZZ
1	Count Up/Dn Sw. SPST On/On	EG2353-ND		2	M3 x 8 Machine Screws	Motor Mounting Screws
1	Jack Neutrik Stereo Switched	NRJ6HF-1		4	Self Tapping Screws	Cover Mounting Screws
1	Nut - Black Neutrik	NRJ-NUT-B		1	Black Knob	Knob
1	IR Sensor Pololu	958				
1	R-1 10K B Taper Pot 16mm	987-1310-ND			**COUNTER**	
1	R-2 Resistor 91 ohm 1/4 watt	CF14JT91R0CT-ND		1	Digital Counter	KAL-D06
1	R-3 Resistor 330 ohm 1/4 watt	CF14JT330RCT-ND				
1	R-4 Resistor 10K ohm 1/4 watt	CF14JT10K0CT-ND			**CROSS FEED ASSEMBLY**	
2	D-1, D-2 Diodes 100v 200ma	1N4148TACT-ND		1	Limit Shaft - part threaded 1/4"-20	4" Stainless
1	D-3 Diode 1kv 1A	641-1312-1-ND		1	Stand Off Plate, Powder Coated	1/8" x 3/4" x 6"
2	C-1, C-2 Capacitors 0.1uf 50v	399-4491-1-ND		2	1/4" Flat Washers	
1	C-3 Capacitor 6800pf 100v	399-4482-1-ND		2	1/4" Nuts	1/4" - 20
1	C-11 Capacitor 22uf 35v	P5162-ND		1	1/4" Lock Washer	
1	C-12 Capacitor 1uf 50v	P5174-ND		2	1/4" Collars	1/4" Collar
1	Mosfet N-CH 55v 29A	IRFZ34NPBF-ND		1	Allen Key 5/64"	
1	Voltage Regulator 5v	LM7805CT-ND		1	Allen Key 3/32"	
2	Heat Sink 220 Vert Mount .75"	HS198-ND		2	1/4-20 x 1" Flat Head Phil	Machine / Base mtg screws
1	CONN IC Dip Socket 8 Pin	ED3044-5-ND		2	#4 x 1" Pan Phil Stainless	Cross feed mtg screws
1	IC OSC Single Timer 100khz 8 Dip	296-9684-5-ND		1 + 1	O Ring Drive Belt 2.112 x 0.103 thick	OR-138N
1	Power Jack 2.1mm Mode	27931-134-0		1	Sample Double Sided Tape	