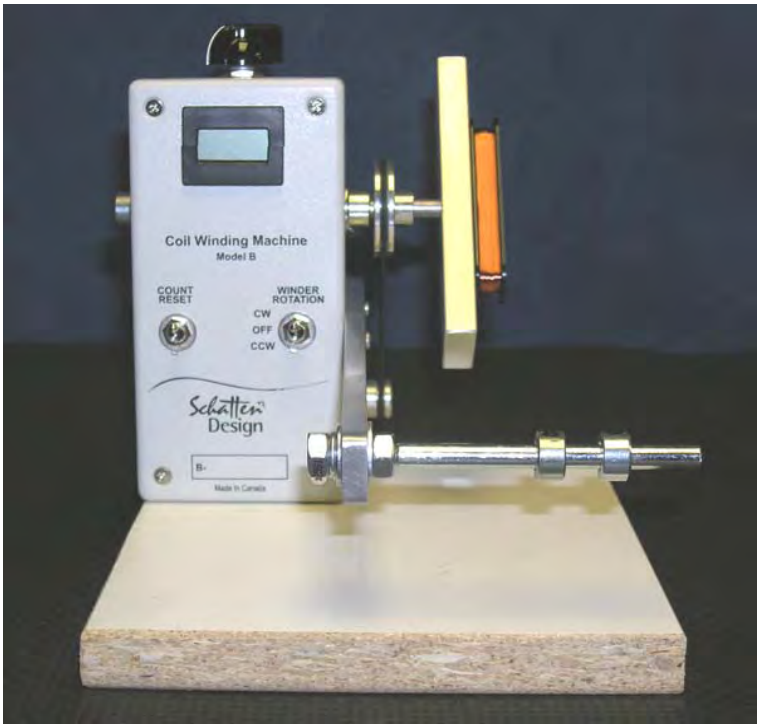
Schatten Design
Acoustic Pickups
Handmade Pickups For Acoustic Instruments
627 Colby Drive Waterloo, Ontario Canada N2V 1B4 519-742-3862 fax: 519-742-1843
www.schattendesign.com email: tech@schattendesign.com

Assembly Instructions - Schatten Design Coil Winding Machine Model B



Thank you for purchasing one of our fifth generation coil winding machines. While the concept of the winder is simple, the execution is not. Despite its small size, the Model B machine 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.

List of components:

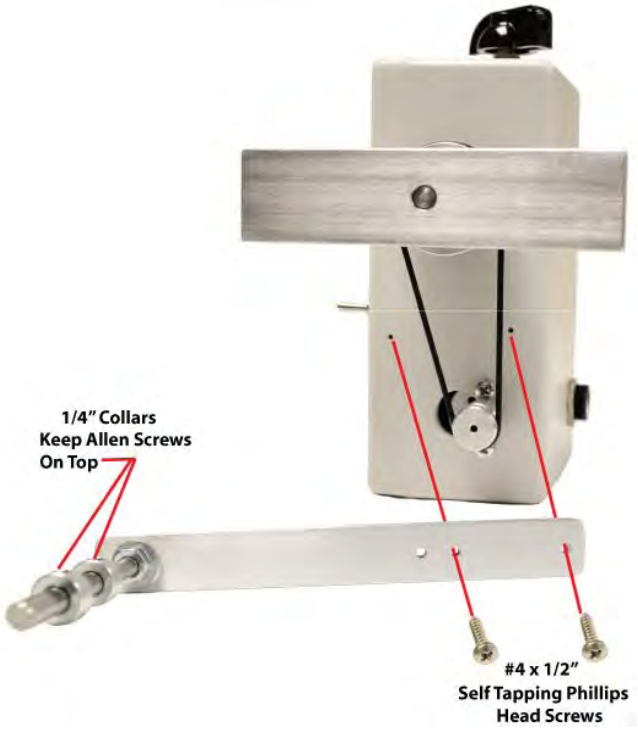
1	Model B Coil Winding Machine, assembled		Kitted Parts (cont'd)
1	Composite base	1	1/4" lock washer
		2	1/4" collars
	Kitted Parts - Cross Feed Assembly	1	5/64" allen key
1	Spare drive belt - OR-034N (2 1/8" x 2 1/4" x 1/16")	1	3/32" allen key
1	Limit shaft, 4" stainless	2	1/4" x 20 x 1" phillips flat head screws
1	Aluminum stand-off, 1/4" x 3/4" x 6"	2	#4 x ½" small phillips head screws
2	1/4" flat washers	1	Sample piece double sided tape, folded
2	1/4" nuts		

Power Supply Specifications: 9 volt, 500 milliamp, center positive.

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 aluminum stand-off.
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.



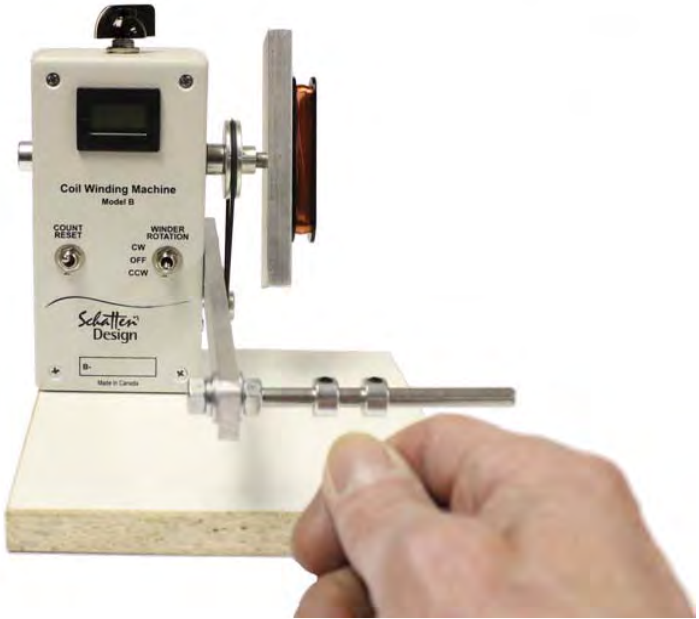
Attaching A Bobbin To The Winder Arm

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.

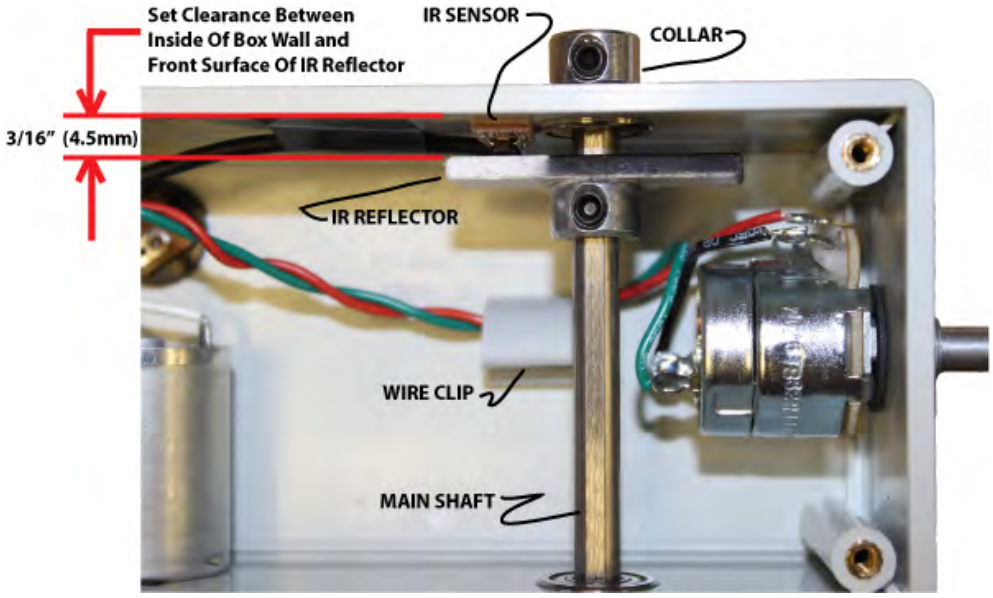
Starting A Wind

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.



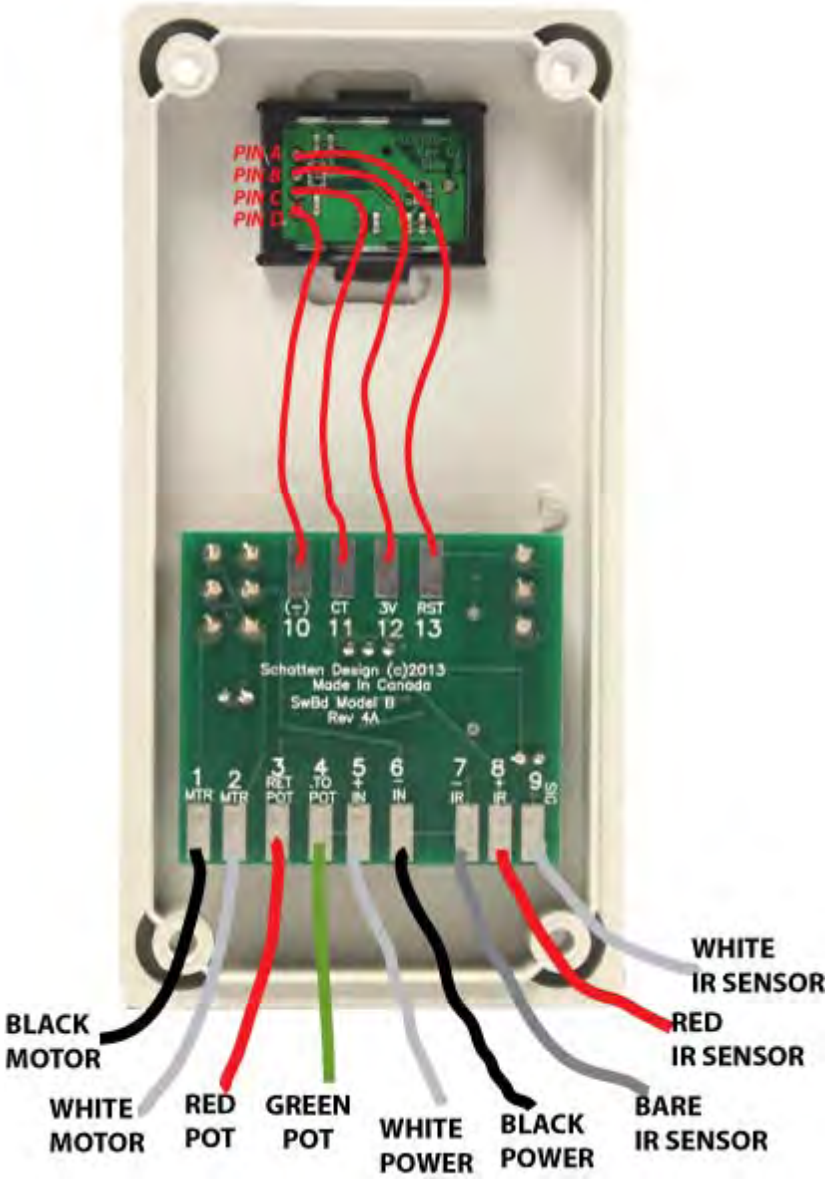
IR Sensor

The photo to the right shows part of the inside of the machine. If the IR reflector should need to be repositioned, it should be set as shown at 3/16" clearance between the front surface of the reflector and the inner box wall.



Wire Assignments

The photo at right shows wire assignments between counter and circuit board and between the circuit board and motor, speed control, power jack, and IR sensor.



Complete Parts List - Model B Winding Machine

QTY	PARTS	PART NUMBER	QTY	PARTS	PART NUMBER
	ENCLOSURE			**ELECTRICS-1**	
1	ENCLOSURE, PRE-DRILLED	1594DSBK	1	100K WIRE WOUND SW POT w/lock washer, nut	CT3020-ND
1	IR REFLECTIVE SENSOR w/ 6" 3 conductor wire -PRE MOUNTED TO ENCLOSURE	958	1	MOTOR w/ PULLEY	TS840
	CIRCUIT BOARD ASSEMBLY			**ELECTRICS-2**	
1	SWITCH CIRCUIT BOARD	SW BD MODEL B - REV 4A	1	IR REFLECTOR Rotary Part	IR REFLECTOR
1	DIR SWITCH DPDT ON/OFF/ON	EG2414-ND	2	O-RING DRIVE BELTS 2 1/8 x 2 1/4 x 1/16	OR-034N
1	CT RESET SWITCH SP MOMENT.	432-1170-ND	1	WIRE CLIP GREY	WIRE CLIP
1	3.3 VOLT REGULATOR	296-21633-5-ND	1	2.1 mm POWER JACK	27931-134-0
1	22uf CAPACITOR -C1	P5162-ND	1	POINTER KNOB	POINTER KNOB
1	1uf CAPACITOR -C2	P5174-ND	1	COUNTER	MINI CAL 1
1	HEAT SINK	HS198-ND			
				MECHANICALS	
	MOUNTING BASE		1	WINDER ARM w/ 10-24x3/8 soc set screw	ARM
1	BOARD WHITE 6" x 6" x 5/8" PRE-DRILLED	BASE	2	BEARINGS	FR4ZZ
			1	MAIN SHAFT PULLEY w/8-32x3/16 soc set screw	MAIN SHAFT PULLEY
			2	1/4" COLLARS	1/4" COLLAR
	CROSS FEED ASSEMBLY			MAIN SHAFT 1/4" x 4 1/4"	ALLEN KEY 5/64"
1	LIMIT SHAFT	4" STAINLESS	1	ALLEN KEY 5/64"	ALLEN KEY 3/32"
1	ALUM FLAT, STAND OFF	1/4 X3/4 X 6"	1	ALLEN KEY 3/32"	
2	1/4" FLAT WASHER	1/4" FLAT WASHER			
1	1/4" LOCK WASHER	1/4" LOCK WASHER			
2	1/4" NUTS	1/4" NUT		**WIRE**	
2	1/4" COLLARS	1/4" COLLAR	1	WIRE BLACK 22 GA	BLACK
			1	WIRE WHITE 22 GA	WHITE
	SCREWS		1	WIRE RED 22 GA	RED
2	1/4 x 20 x 1" FLAT HD PAN PHIL	MACHINE TO BASE MTG SCREWS	1	WIRE GREEN 22 GA	GREEN
2	M3 x 5 MACHINE SCREWS	MOTOR MOUNTING SCREWS	1	RIBBON WIRE, 4 CONDUCTOR	MULTI
4	NUTS FOR TOGGLE SWITCHES	---			
2	LOCK WASHERS FOR TOGGLE SWITCHES	---			
2	TABBED WASHERS FOR TOGGLE SWITCHES	---			
2	#4 x 1/2" PAN PHIL STAINLESS	CROSS FEED LIMIT MTG SCREWS			
4	SELF TAPPING SCREWS	COVER MTG SCREWS			