

Machine Features

- HIGHLY RELIABLE AUTOMATIC COIL WINDING
- HIGH SPEED WINDING WITH **0-8000rpm** VARIABLE SPEED DRIVE
- ACCURATE OHMS CONTROL (**+/- 1%**)
- CONSISTENT CLEAN-CUT ENDS ON THE COILS
- CAN WIND WIRE DIAMETERS FROM 0.1mm TO 1.4mm (.004" to .055")
- SINGLE OR 2-WIRE (TANDEM) COILS

The **Oakley Coil Winding Machine** can make spiral coils from wire diameters from 0.1mm to 1.4mm (.004" to .055"). The inside diameter of the coils can range from 0.75mm to 12.7mm (.030" to .500"). With proper setup and maintenance, the machine will produce coils with very consistent resistance values and with open inside diameters for easy assembly to the terminal pins. Because these machines are fully automatic, no operator is required.

The standard model is equipped with an electronic wire metering system, a programmable parts counter, a variable hi-speed drive, and our standard cutoff mechanism. As supplied, it will accommodate spools of wire DIN 80, 100, or 125. These spool sizes will normally handle up to 3.0 kg. (6.6 lbs.) of wire. The tooling supplied with the machine varies according to each customer's specific coil requirements.

The standard cutoff accommodates single wire coils with a maximum O.D. of 6mm (.240") and a maximum wire diameter of 0.55mm (.022"). The electronic metering system uses an encoder to measure the length of the wire as it is being spiraled into the coil and then triggers the cutoff when the desired preset length is reached. This system holds an accuracy of +/- 1% of the desired ohmic value. The standard hi-speed drive adjusts the spindle speed from 0 to 8000 rpm. This variable drive is extremely helpful for setting up the machine and also for maximizing the production for each specific coil.



Coil Pickup and Feed Station

The following are the main options available for this machine:

- **Tandem Winding Attachment**—This is required for producing 2 wire coils.



Coil Winder with Tandem Winding Attachment

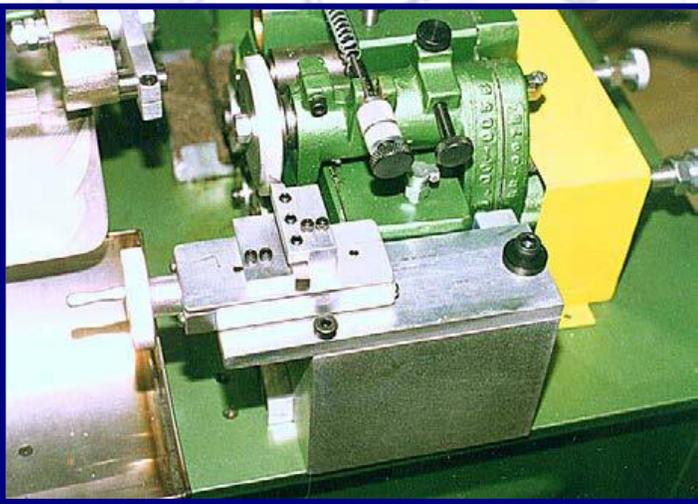
- **Heavy Duty Cutoff**—This unit is required to cut all tandem wire coils (2 wires); all single wire coils with outer diameters over 6mm (.240"); and all single wire coils made from wire diameters larger than 0.55mm (.022"). **Both the standard and the heavy duty cutoffs are required if you wish to run the entire wire range on this machine.** The cutoffs are easily interchangeable.

- **Pail Pack Attachment**—For customers who wish to use large pails or barrels of wire instead of spools, we supply this attachment to help unwind the wire as it is being fed from the pail. If the machine has our tandem winding attachment, then 2 pail pack attachments are required.

- **Despooler**—For customers who wish to use very large spools of wire such as DIN 250 or DIN 355, we offer our automatic despooler. These spools of wire hold 20 kg. or 50 kg. (44 lbs. or 110 lbs.) respectively. Using these large spools of wire eliminates the need for frequently replacing spools when producing a large quantity of coils. The despooler has a combination drive/brake motor with adjustable brake tensioning. When the coil winder is started, the drive motor turns the spool of wire to overcome inertia and prevent the wire from breaking.

Almost immediately, the brake engages and slows the dereeling process to match the rate at which the wire is being removed. A smooth and even dereeling of the wire is attained by simply adjusting the brake tension. When the coil winder is stopped, the brake prevents any further unreeling of the wire. If the machine is equipped with the tandem winding attachment, 2 of these despoolers would be required.

- **Roll Resurfacing Fixture**—This fixture is a portable device that can directly be clamped to the gearbox on the machine. It is equipped with a miniature cross slide to enable you to cut the plastic form rolls while they are in place on the machine. This eliminates the need to remove the spindle and take it to the tool room or send it to a supplier for re-facing. Because it is portable, one fixture can service all of your machines.



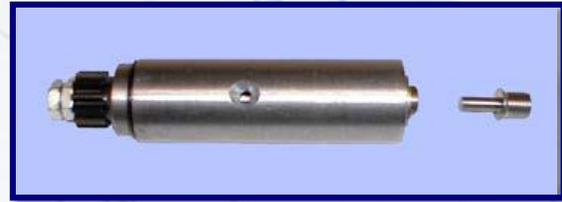
Roll Resurfacing Fixture

The following parts comprise the tooling that is required to run particular types of coils.

Mandrel Spindle Assemblies—Two assemblies are available to hold the mandrels. The small 5/32" spindle accommodates mandrels from 0.75mm to 2.8mm (.030" to .110"). The larger 3/16" spindle accommodates mandrels from 2.8mm to 12.7mm (.110" to .500").



Small 5/32" Spindle with Small Mandrel
0.75mm to 2.8mm (.030" to .110")



Large 3/16" Spindle with Large Mandrel
2.8mm to 12.7mm (.110" to .500")

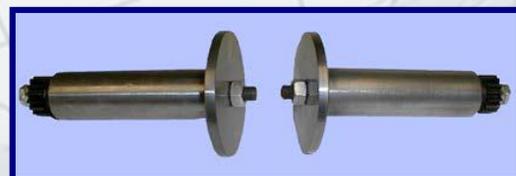
- **Tungsten Carbide Mandrels**—These mandrels must be ordered to fit the proper spindle: either the 5/32" or the 3/16" spindle. They must also be ordered for the proper diameter to produce the coil I.D. that you desire. When selecting this mandrel diameter, you should make an allowance for springback in the wire as it is wound. While this will vary depending upon the hardness of your wire, a minimum allowance for springback would be 0.025mm to 0.05mm (.001" to .002")
- **Form Roll Assemblies**—Three different form roll assemblies are available. Our soft plastic form roll is used to wind fine gauge wires from 0.976mm to 0.25mm (.003" to .010"). Our hard plastic form roll is used to wind medium gauge wires from 0.26mm to 0.5mm (.011" to .020"). For all wire gauges heavier than 0.5mm (.020") and for all tandem wound (2 wire) coils, we recommend the use of 2 carbide form rolls.



Soft Plastic Form Roll Assembly for Fine Wires
Diameters from 0.075mm to 0.25mm (.003" to .010")



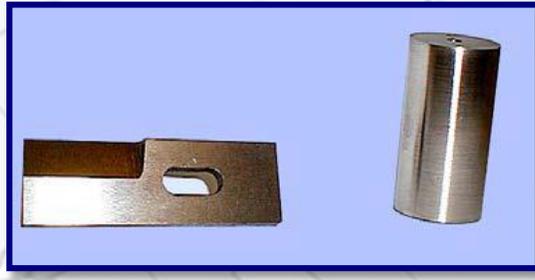
Hard Plastic Form Roll Assembly for Medium Wire
Diameters from 0.26mm to 0.58mm (.011" to .023")



Front and Rear Carbide Form Roll Assemblies for Heavy Wire
diameters 0.59mm to 1.4mm (.0235" to .055")



Standard Cutoff Blade and Bushing



Heavy Duty Cutoff Blade and Bushing

All of these form roll assemblies are available in 2 sizes. The standard size roll is used to make coils with outer diameters up to 6mm (.240"). Whenever the coil outer diameter exceeds 6mm (.240"), you must use the special large form roll assemblies.

Cutoff Blades and Cutoff Bushings—The standard cutoff requires the use of circular cutoff blades and 14.3mm (9/16") O.D. cutoff bushings. The I.D. of these bushings should be approximately 0.25mm (.010") larger than the actual O.D. of the coil. This clearance is especially critical when running medium and light gauge wires. If the clearance is too great, it is difficult to obtain consistently clean-cut ends on your coils.

The heavy duty cutoff requires the use of straight cutoff blades and larger 19mm (3/4") cutoff bushings. For the heavier wire gauges and tandem coils, the clearance in the I.D. of these bushings is not quite as critical. We recommend that it should be 0.25mm to 0.5mm (.010" to .020") larger than the O.D. of the coil.

Both the cutoff blades and the cutoff bushings can be reground many times before they become unusable.

The cutoff blades must be kept sharp to produce consistently clean-cut ends on the coils. It is also extremely important that the cutting edge of the blade is smaller in thickness than the wire diameter being run. Otherwise, the blade will not be able to fit into the space between the turns of the coil and will force down one or more turns as it attempts to cut the wire. For this reason, it is necessary to stone or grind the blade edge to ensure it will suit the particular wire being run.

Coil Winder Specifications Despooler Specifications

Length:	610mm (24")
Width:	812mm (32")
Height:	914mm (36")
Weight:	91 kg. (200 lbs.)
Electric Supply:	220v—1ph—50/60hz
Min. Wire Diameter:	0.35mm (.014")
Max. Wire Diameter:	1.4mm (.055")
Spool Sizes:	DIN 250 or DIN 355
Max. Spool Weight:	50 kg. (110 lbs.)
Max. Wire Diameter:	1.4mm (.055")
Max. Coiling Speed:	8000 rpm