AUTOMATION

the modern way to cut costs...save time

HIGHLY FLEXIBLE SERIES K MEETS MOST APPLICATIONS, MINIMIZES MAINTENANCE

COIL WINDING EQUIPMENT COMPANY, pioneers in the application of the techniques of automation, are proud to be leading the field in new and important developments. Intense research has made possible the elimination of expensive, custom-built machines for special purposes; at the same time the advantages of ease, speed and economy, normally associated with automation are retained. The purchase of a suitable winding head in combination with Coil Winding Equipment Company's recently developed turret transfer device allows adding—*only as required*—hopper feed for the coil forms, stripping, cementing, taping and cutting attachments, without any need for creating special machines.

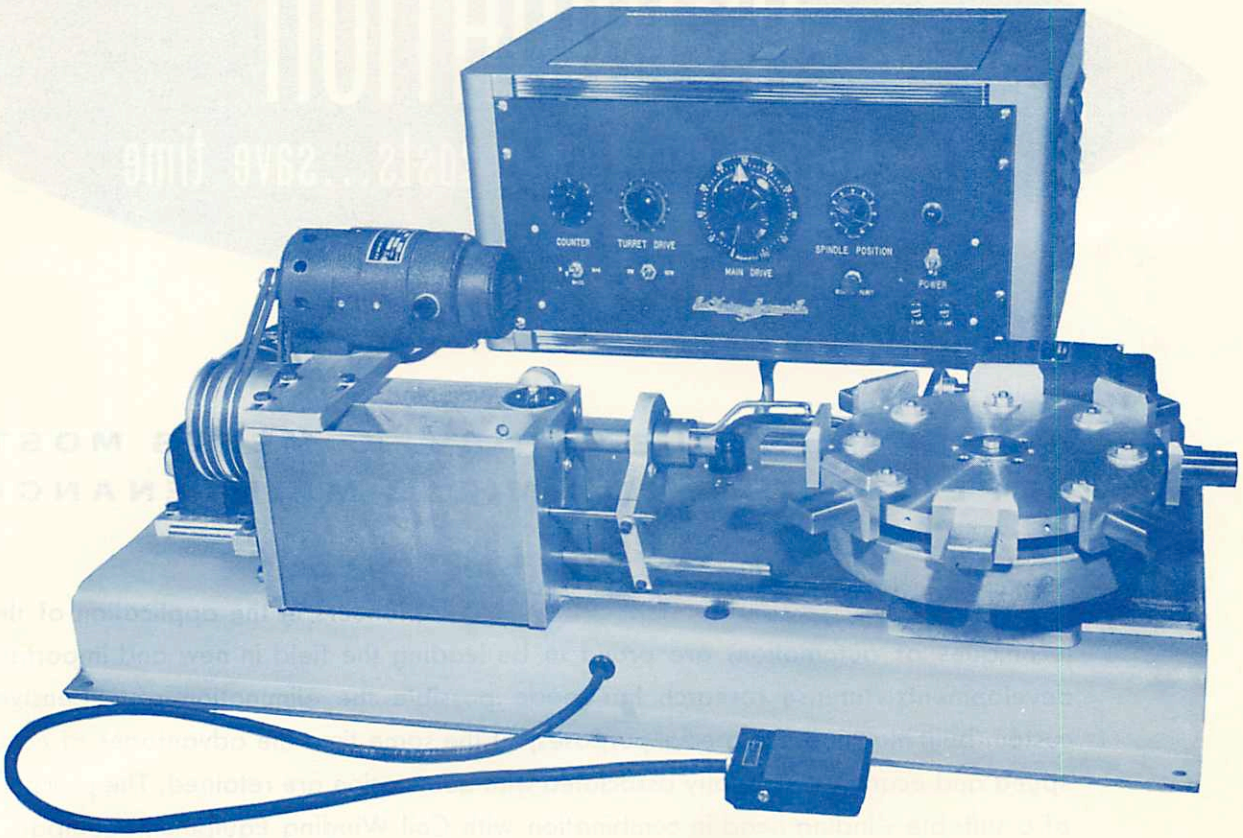
THE WINDING HEAD USED WITH THE TURRET TRANSFER DEVICE differs little from the manually operated unit, and many parts and setup procedures are identical. As a result, winding data on present equipment may be transferred directly to the machines in the K series, offering economy in use as well as in manufacture. Problems of maintenance, service, setup or spare parts are minimized. If the application is suitable for partial or complete automation, it is merely a matter of selecting the proper machine components.

POWERFUL NEW DEVELOPMENTS IN AUTOMATION TECHNIQUES offered for the first time, and ***exclusively***, by Coil Winding Equipment Company, are of major importance in the development of wholly automatic coil winding equipment. With the introduction of Series K, Coil Winding Equipment Co. brings you up to date in automation.

COWECO

COIL WINDING EQUIPMENT CO., OYSTER BAY, L. I., NEW YORK

GENERAL PURPOSE BOBBIN WINDER



MODEL CK

The Model CK uses a typical bobbin winding mechanism to which has been added an automatic turrret-type transfer device. It will produce complete random wound bobbin-type coils without operator attention when equipped with a hopper or magazine loading device for the coil forms and other appropriate standard attachments. More commonly it is used to completely automate the winding process while leaving to the operator the single responsibility of lead termination, taping, soldering, etc. Since these manual operations are performed concurrently with the winding and since the winding itself requires no operataor attention, even the hand loaded machines often double the operator's output. The manual work is performed more efficiently also because the wound coils come to the operator in exactly the same position each time and, of course, extra handling time is eliminated when the work is done on the coil while still mounted on the turret.

The wire spacing and number of turns per layer are determined by readily accessible change gears. The length of the coil is adjustable through a wide range with the use of the exclusive adjustable cam mechanism. The number of layers and thus the number of turns in the coil is selected by a rotary switch which is coupled to a suitable stepping switch acting as a counter. The counting accuracy is better than with conventional machines and the machine makes complete and continuous adjustments to compensate for its overrun. The turret may be moved nearer to or farther from the winding head as required, and it is always kept in alignment with the winding spindle by the keyway on the standard base.

All operations are electrically controlled and suitable safety interlocks are provided to assure proper cycling. The machine is equipped with a multiple-conductor cable which plugs into the control box which may be conveniently located.This feature makes servicing when required particularly convenient.

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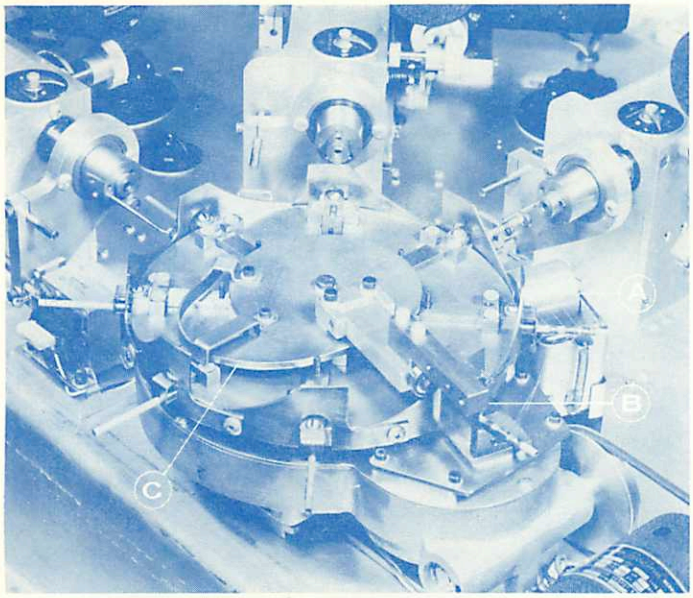
ATTACHMENTS FOR INCREASED AUTOMATION

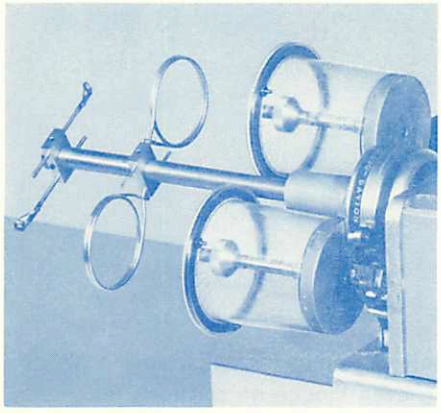


The illustration at left is of a three-head turret-type winding machine incorporating the following three attachments:

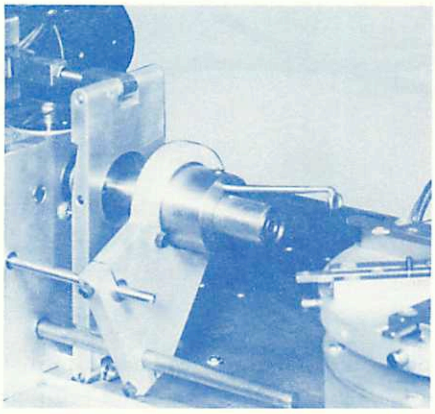
ROLLER-TYPE CEMENTING DEVICE (A)—This device shown in the illustration consists of a roller partially immersed in a tank of cement. Each time the turret indexes, the wound coil passes over the roller depressing and rotating it slightly. A predetermined area of the coil is thereby cemented and the roller is positioned to apply fresh cement to the next coil. A variation of this device is available to apply hot wax or thermoplastics.

GRAVITY-TYPE CUTTING DEVICE (B)—The cutting arm is raised by a special cam as the turret arbor mounting plate rotates under it as shown in the illustration. The arm with its knife blade is allowed to fall after the coil passes under it, thus severing the lead wire at a predetermined location.

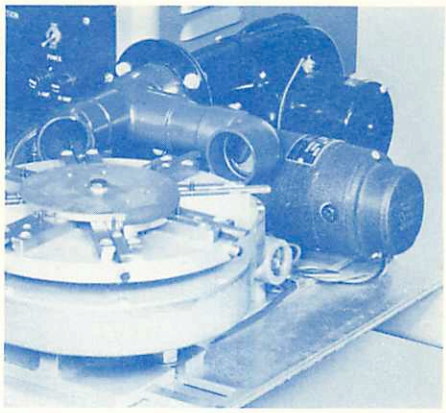
EJECTING DEVICE (C)—Rotation of the turret under the fixed ejecting cam forces sliders to move out radially, and these in turn push the coil off its supporting mandrel. The unit illustrated has a second cam for automatic retraction of the ejecting mechanism.



BIFILAR ATTACHMENT—This device rotates the spools of wire with the winding spindle so as to eliminate twisting of the strands of wire. Some reduction in machine speed is necessitated by the inertia of the wire spools, and it is therefore important to realize that many coils wound with two strands of wire simultaneously do not require this device.



RETRACTING OUTER BARRIER—The device illustrated above consists of a tube concentric with the main spindle which is used to support the outer flange of the bobbin or the outer end of the mandrel. A bracket is mounted behind the "flyer" assembly and this is actuated so as to retract the barrier prior to the indexing of the turret.

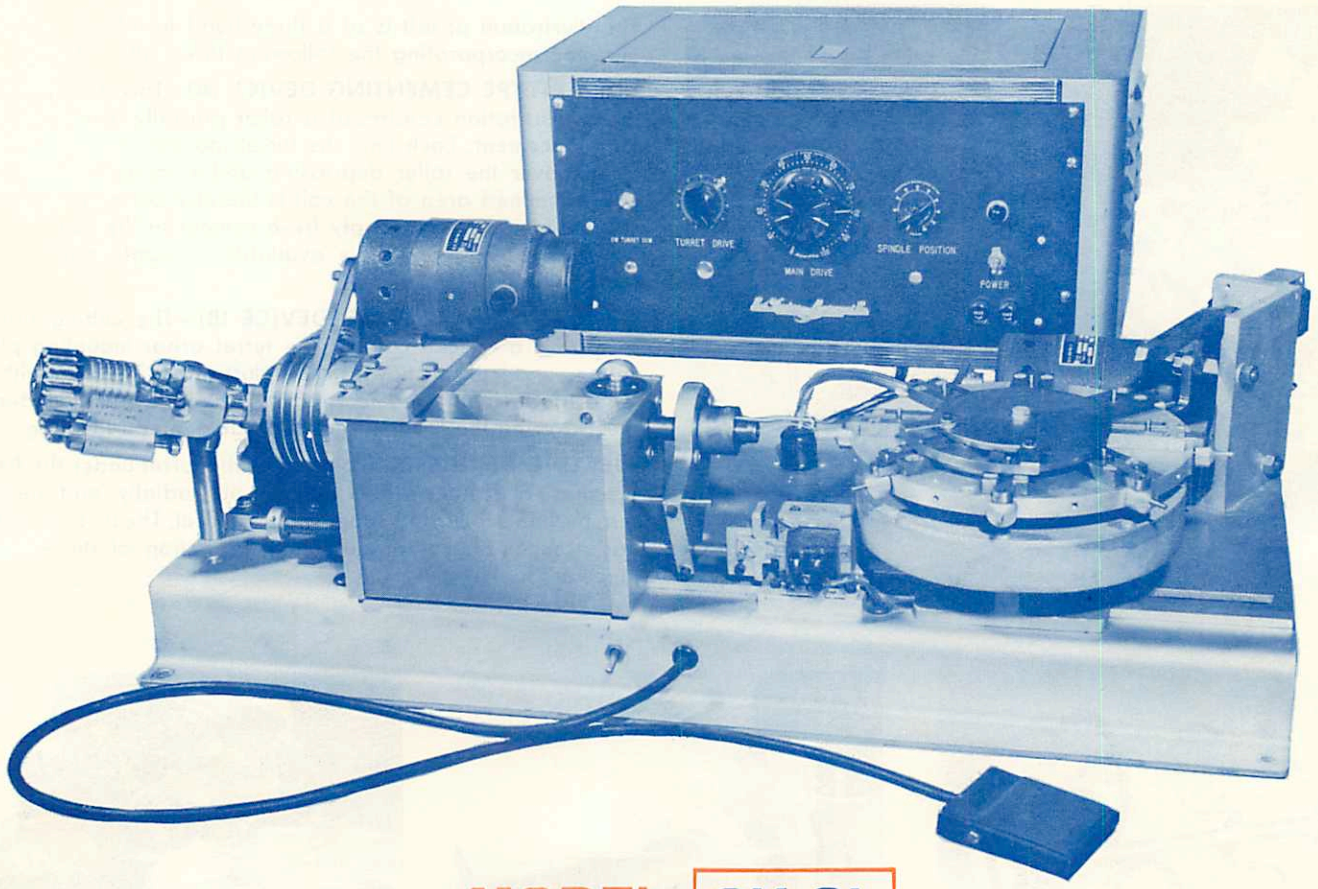


HOT AIR DRYING UNITS—Forced hot air is directed at the coils at two stations around the turret to accelerate drying of the cemented area. Dual heater and blower units with duct openings at four stations can be provided when faster drying is required.

OTHER ATTACHMENTS—The above descriptions cover some of our more popular attachments for the turret-type machines. Other devices as well as modifications of the above are available as required. COWECO guarantees the satisfactory functioning of all attachments supplied and reserves the right to make changes or substitutions from standard devices when improved results would thereby be obtained.

OTHER MODELS OF TURRET-TYPE MACHINES—Numerous other models giving increased capacity or higher winding speeds are available as are multiple-head machines and units with more specialized setups. Our current price list will carry some of these items not described above. However, since new developments are continuosly being made, it is best to check with the factory for a recommendation of equipment of the latest design to to meet YOUR particular needs best.

SINGLE-LAYER WINDER



MODEL CK-SL

This machine differs from the Model CK at left only in the type of control circuit and in the fact that it has a reset mechanism which permits the cam to revolve 360° for each coil. It is specifically designed for close-wound or space-wound single-layer coils with either linear or non-linear turns' spacing. The wire spacing is determined by change gears and the number of turns is precisely controlled by measuring the coil length.

The machine illustrated has a solenoid actuated cutting attachment, automatic ejection of the finished coil and a spray-type solvent applicator which makes the coils self-supporting even though no coil form is used. This machine, therefore, is truly completely automatic and such a setup is frequently supplied to produce at least 25 coils per minute from a single winding spindle. This is an example of a principle which it is good to keep in mind when considering the use of a turret-type machine: since these machines reduce *labor* time only, the most appropriate applications are those in which the labor time represents a substantial portion of the total time required to produce the coil.

SPECIFICATIONS FOR MODELS CK, CK-SL, CK-CP:

Wire sizes #18-#50 • Winding spe
standard: 1⅛") • Nominal coil diam
115V AC Bench space: machine ap

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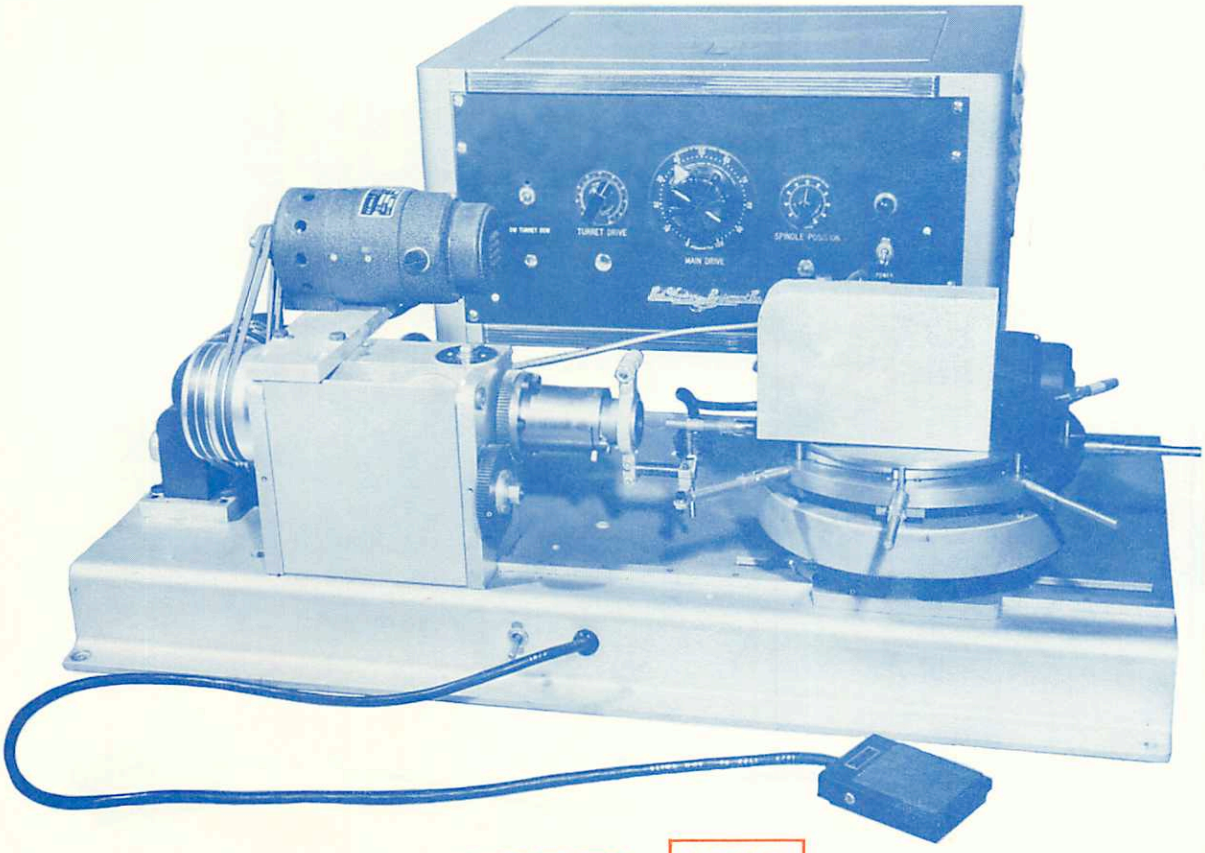
AUTOMATIC LATTICE WINDER



MODEL WK

Lattice or universal-type coils can be produced entirely without operator attention, or a semi-automatic setup can be provided. Attachments are available to cement the finished coil, cut the leads, and eject the coil from the machine without operator attention. More specialized setups include a hopper feed for mounting the coil form on the mandrel prior to winding.

A unique drum-type cam which is adjustable for wear is incorporated as a self-contained cartridge on the spindle nose and is individually driven at a speed necessary to provide the gain for universal winding. The wire guide is mounted directly on the cam and this assembly is the only reciprocating part, keeping the mass low, the stresses localized, and the unit in permanent balance. An adjustment of the wire guide pressure is of the compensating nature, so that pressure may be caused to increase or decrease as required with changes in machine speed. As with all our turret-type machines, the wire guide always comes to rest at the same point on the coil prior to transfer. A high degree of accuracy of the number of turns is assured. An attachment is available to position the cam for the start of each coil when wide coils are being wound.

Since this machine utilizes the same gear box as is used on our popular Model W, it is an unusually versatile unit. Two attachments are of special interest. Shown in the illustration above is a turret mounted mechanism for producing linear or non-linear progressive universal coils. The same device can be used for multiple-pi chokes or for single-layer windings. Also available for this model is a conversion kit that in effect makes it a Model CK unit. Both of these attachments are "bolt-on" units but there is some advantage in specifying these features at the time of original purchase. In some cases this may cause us to recommend a different type of control circuitry.

Gear ratios for lattice patterns can be derived directly from gear data used in the other machines. The turns' count is also determined by change gears as is the rate of progression when the attachment illustrated above is supplied.

Standard equipment includes all of the necessary motors and controls along with the gears and cam necessary to produce a specified coil. A suitable tension device is provided.

SPECIFICATIONS

Maximum coil length 1½" • Winding speed above 2000 rpm with some coil types • Transfer time one second • Bench space: Machine 20" by 34" by 12" high; control box 15" by 22" by 11" high • Weight 150-200 lbs. • Operates on 230 V AC or 115V AC.

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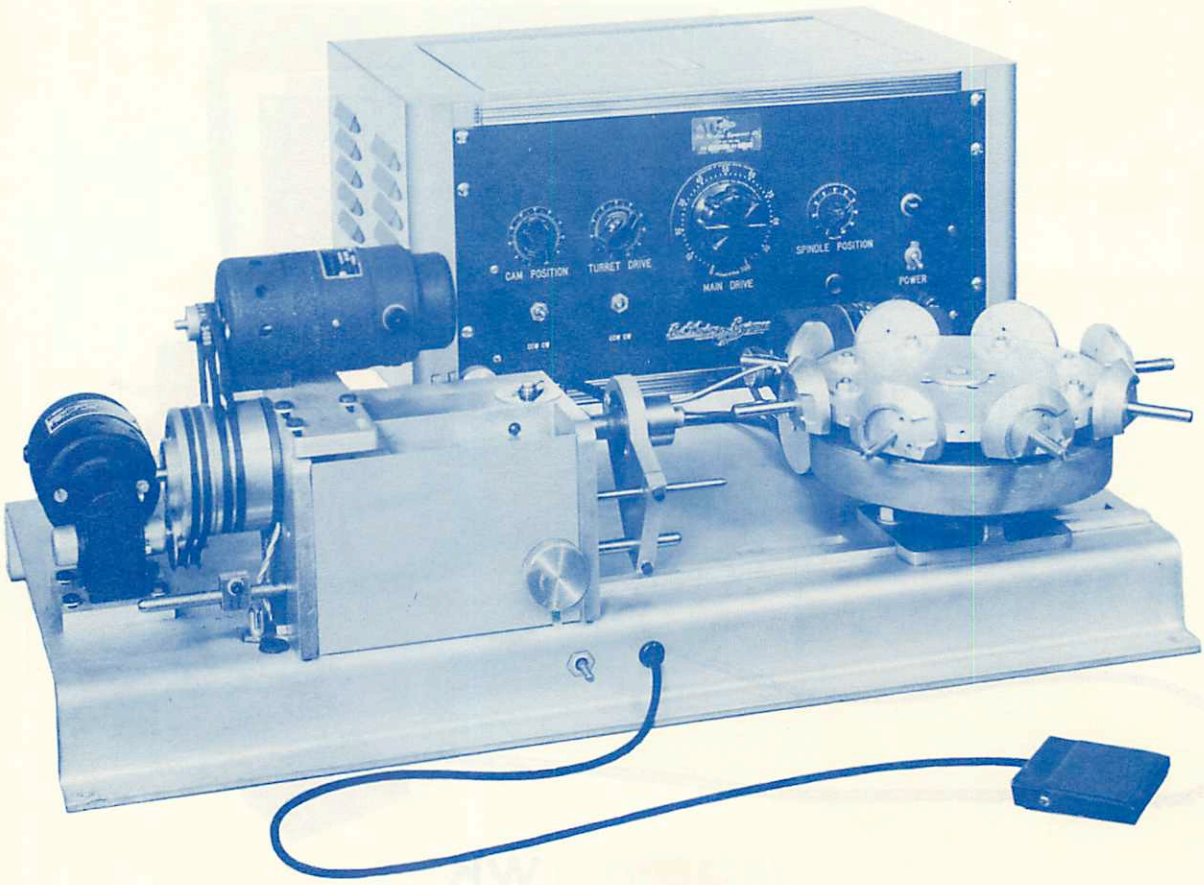
MOST VERSATILE BOBBIN WINDER



MODEL CK-CP

The Model CK-CP closely resembles the Model CK except that the extra provision for positioning the cam traverse at the conclusion of the winding cycle makes it possible to wind coils in which the last turn must be at some location in the coil other than at the end of the bobbin at which the starting lead is located. Thus the counting is independent of the number of layers and is precisely controlled by a device having overrun compensation. This design is most used when a few layers of relatively heavy wire must be precisely wound, particularly where this requirement results in an odd number or fractional number of layers. Thus, this is the most sophisticated of our turret-type bobbin winders and consequently is the most versatile.

eds as high as 4,000 RPM • Transfer time one second • Maximum coil length 2" (At extra cost on Model CK-SL— eters up to 2" (larger with special tooling) • Weight 150-200 lbs. depending on accessories • Operates on 230V AC or proximately 20" by 34" by 12" high; control box 15" by 22" by 11" high.

ATTACHMENTS: In some cases pictures on these pages show attachments not included in the machine price. Standard equipment includes all of the necessary motors and controls along with the gears and cam necessary to produce a specified coil. A suitable tension device is provided.