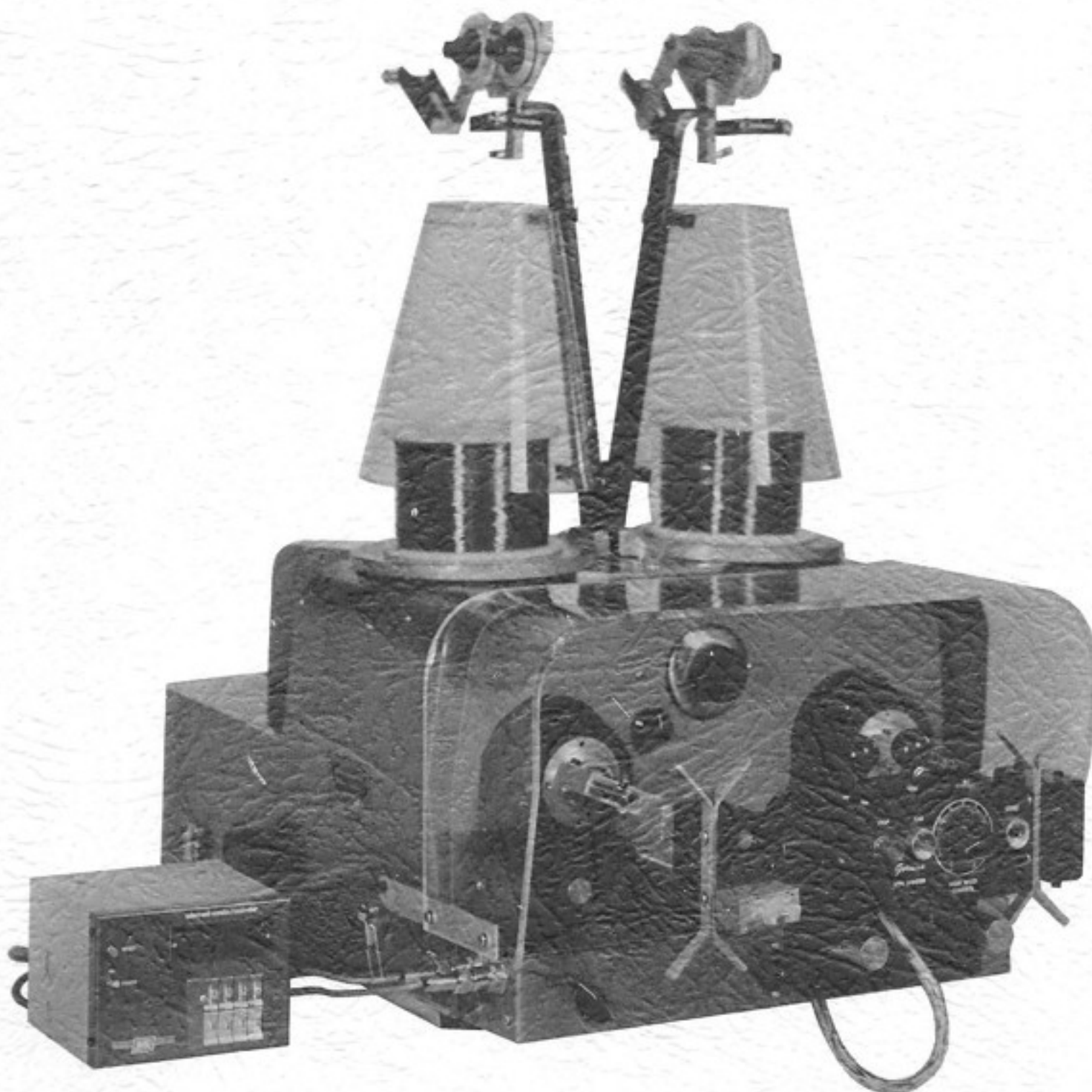


OPERATING INSTRUCTIONS

SPIN WINDER



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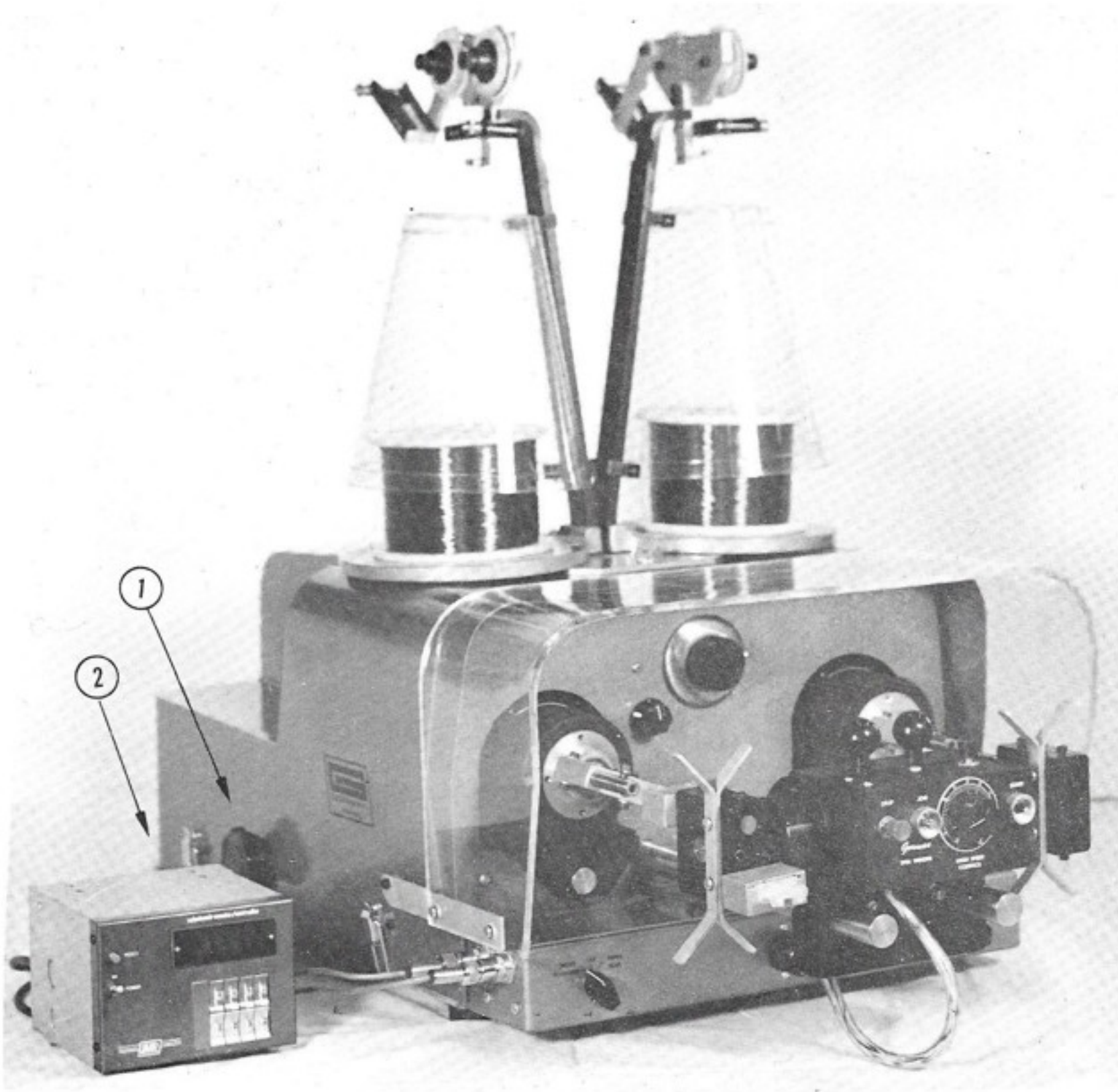


PHOTO A

INTRODUCTION

You now own one of the most efficient, reliable and versatile coil winders that superior engineering and workmanship can produce. It is an unusual bobbin-type machine that keeps the coil form motionless throughout the entire winding process. The wire is applied to each coil by a unique winding head that spins around the stationary bobbin while traveling back and forth.

The Spin Winder is like two machines in one since a pair of identical coils can be wound during each winding cycle. Coil production, however, is likely to be doubled or tripled as a result of the production highlights set forth below.

One of the production features unique with the Spin Winder is its ability to greatly reduce the operator's idle time during the winding cycle. Secondary operations on the wound coil can be performed right on its own fixtures without tying up the working spindles of the machine.

A second important advantage of this type of machine is that taps may be pulled out at any stage during the winding cycle and, they do not require laborious wrapping or fastening down before the coil can be rotated again at high speed.

A third feature is the coils are self-leading from one to the next which saves the operator considerable "search and grasp time" in producing parts.

Finally, many unusually shaped coils or greatly unbalanced components such as pole pieces can easily be wound on the Spin Winder which is unsurpassed for this purpose. With appropriate tooling even small motor armatures can be wound.

In using this manual you should find it contains most of the information you will need to operate and maintain the Spin Winder. In particular we suggest you refer to the section "Production Aids" which tells how to get the most out of your Spin Winder. If we have overlooked something, please don't hesitate to contact us for additional guidance. At Gorman, we are sincerely concerned that you obtain the fullest measure of precision and productivity of which the Spin Winder is capable.

Gorman Machine Corp. also supplies other coil winding equipment including toroid winders, bobbin winders, taping machines and stator winders.

MACHINE WARRANTY

Gorman machines are covered by a one year warranty, the terms of which are stated below.

WARRANTY

Gorman machines, and components thereof, except electronic counters are warranted to be free from defects in materials and workmanship for six months from the date of initial factory shipment. We will fully repair equipment of our manufacture covered by the warranty terms on a no-charge basis, to include parts and 90 days on labor if machine is shipped PREPAID to and from the factory. Electronic counter is warranted by the manufacturer.

Misuse and abuse of the equipment, or unauthorized repair will void this warranty and our obligation to provide no-charge services. Gorman Machine Corporation is not liable for consequential damages.

Prior to returning equipment to the factory for service, please contact Gorman Machine Corporation, either directly or through our representative and indicate the nature of the difficulty being encountered. The problem may be one which can be resolved quickly and easily in the field, thereby eliminating the time loss involved in transportation to and from the factory. Machines sent to the factory should be shipped PREPAID.

When non-warranty repairs are to be made, we will notify you of the estimated charges before proceeding with the work.

SPECIFICATIONS

Wire Sizes:	No. 21 through No. 46 AWG. Specify 7749- 3550 RPM Motors No. 24 through No. 46 AWG. Specify 7930-7700 RPM Motors
Coil Size:	Up to 2.5" OD
Coil Length:	Up to 3½"
Speed Ranges:	Jog (slow) 200 to 700 tpm High 2000 to 7700 tpm; factory set at 4500 max unless otherwise specified.
Speed Control:	Both jog and high speeds are independently variable via SCR motor drive control.
Wire Layering:	Length of traverse is set by two limit switches, and rate of traverse is infinitely variable for wire spacing (pitch control).

Coil Shapes: Round, square, rectangular, slotted and many unusually shaped or greatly unbalanced coil such as pole pieces can be wound.

Winding Cycle: Automatic wire lead-in onto coil form when appropriately tooled. Two coils are wound simultaneously.

Tool Stations: Four, arranged on a rotating turret with safety interlock.

Dereelers: Over-end payoff, dual pulley, with adjustable tension control for wire range of 21 to 46 AWG.

Motors (2): DC Shunt ball bearing, with electric brakes.

Rotation: CW or CCW, switch selectable, when winder is supplied with an electronic counter.

Counter/Turns Ratio: Electronic 1:1. Preset type with automatic deceleration to provide winding within 1 count accuracy.

Power: 115 VAC \pm 10%, 50-60 Hz;

Dimensions: 22"W x 37"D x 32"H including dereelers.

Weight: 130 lbs. net; 185 lbs. shipping.

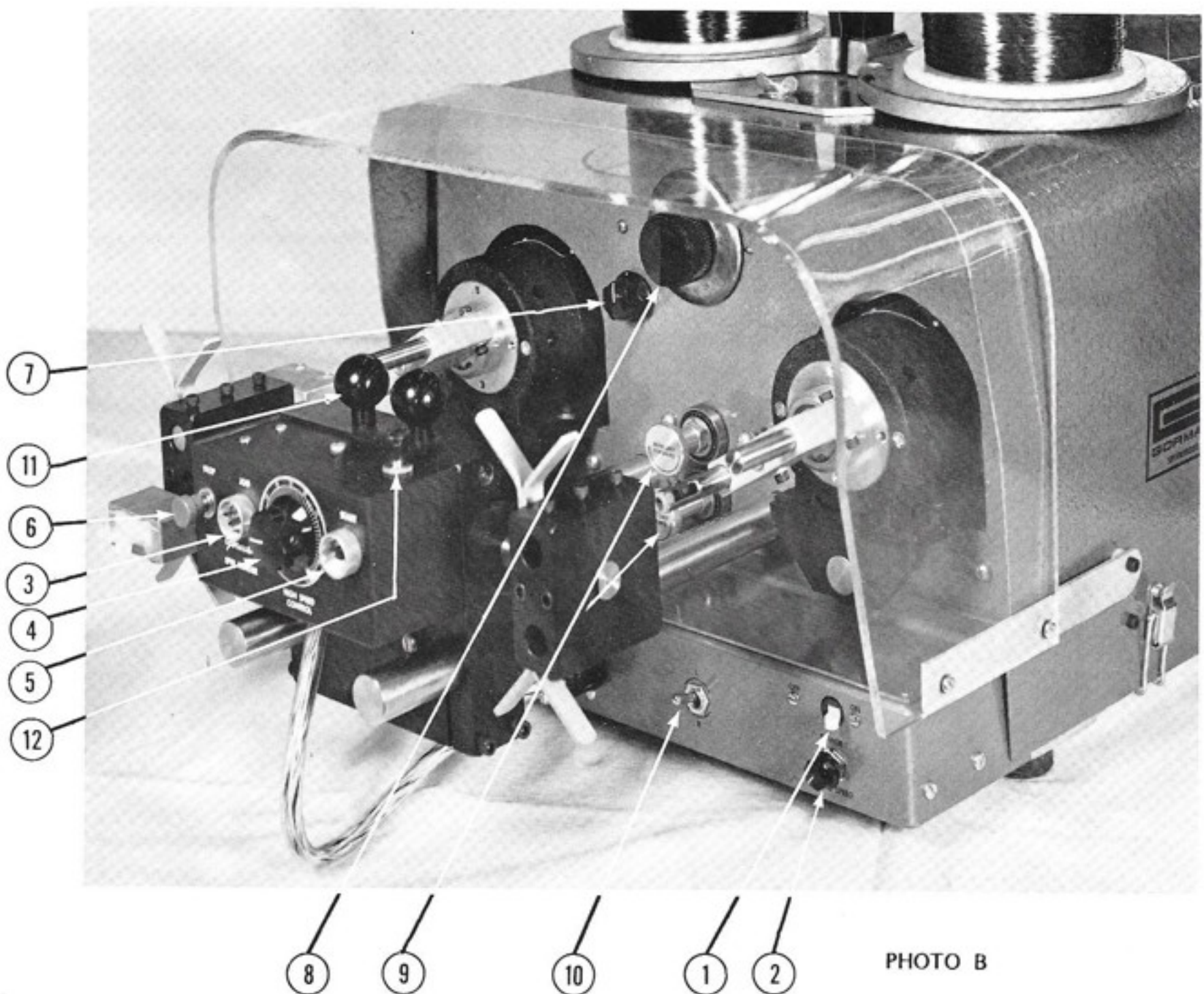


PHOTO B

SECTION 2. OPERATION

PREPARATION

Unbolt the Spin Winder from its packing case and fasten the rubber feet to the base with the screws provided. Remove the wire loading rod 6-C from the hollow motor shaft where it is stored for shipping. Mount the dereelers on top of the machine so that the felt clamps 5-C are toward the back of machine. Attach the dereelers to the top cover of the winder by depressing while turning the two twist-lock fasteners. (10 Photo C)

Place the unit on a sturdy surface with free air flow underneath for circulation and allow 10 inches of free space behind it at the height of 6 inches above the surface. This permits clearance for the loading rod used to feed wire through the machine. The winder is supplied with an electronic preset counter (2-A), the units are connected by attaching the counter's cables to the receptacles on the lower left-hand side of the coil winder. (11 and 12 Photo C)

To maximize operator comfort and productivity give attention to providing a suitable working height, adequate ambient light and other good working conditions. The standard (115 volts) Spin Winder can be powered from AC sources providing 105 to 125 volts, 50-60 Hz.

If the Gorman Spin Winder is new to you, study the controls (described below) and get a feel for how the machine works by operating and adjusting it before loading it with wire.

CONTROLS

"POWER" Switch 1-B: The control circuitry of the winder is turned on or off by moving the lever right or left. The electronic preset counter is attached to the machine, but its power is not controlled with this switch. Neither unit requires warm-up time.

TURRET ASSEMBLY POSITION ADJUSTMENT SCREWS (2 Photo F)

Loosening these screws gives a forwards and backwards adjustment of the entire turret assembly of about 3½ inches. If further adjustment is needed to accommodate certain tooling, the two bars holding the assembly can be moved forwards by loosening the two clamping screws just behind the front plate and also the two screws (3 Photo F) fastening the rear ends of the two bars.

"JOG SPEED" Knob 2-B: This control, located beneath the Power Switch, regulates the slow winding mode of operation. Turning the control clockwise increases the jog speed.

"JOG" Button 3-B: While pressing this button the machine winds at its slower rate.

"HIGH SPEED CONTROL" 4-B: This knob controls the high speed winding rate. Turning it clockwise increases the speed.

"START" Button 5-B: Momentarily pressing this button starts the machine winding at slow speed. Releasing the button puts the machine in high speed. At the proper (preset) counts the winder slows and then stops automatically.

"STOP" BUTTON 6-B: This is the machine's "panic button". Pressing it stops the winding process instantly.

Traverse Index Selector 5-D: This pointer-type knob at the lower left permits presetting the front/rear traverse position of the winding heads when the machine stops winding. There are three positions for this switch.

"FORWARD INDEX" – After the final winding turn (for any preset count) is completed the heads are advanced so the leads come off the coils at the near side of the operator.

"REAR INDEX" – After the final turn the heads move back to bring the leads off the coils at the far side.

"TAP" – The final turn is completed at a random position (but correct turns count) along the coil's length. Further winding proceeds from this point continuing in the same direction of traverse as when the machine was stopped.

Traverse Rate Control 8-B: The large skirted knob between the winding heads controls the traverse (back and forth) rate at which wire is fed on to the coil. **SAFETY NOTE:** Do not operate this control when the machine is winding. Turning the knob to a higher number increases the traverse speed thereby separating adjacent wire turns from one another (increasing pitch). **NOTE:** Adjust this control only when the Spin Winder is stopped or operated by using the Jog Button.

Flyer Stop Position 7-B: Adjusting this knob, which is to the left of the Traverse Rate Control, determines the stopped (rotational) position of the winding heads. Normally it should be set so the wire feed tubes end up horizontally at a 9 o'clock position.

Winding Spin Direction Switch 10-B: On winders used with electronic counters. It is on lower right panel and selects the direction of the winding head rotation. Arrows denote direction of rotation. **NOTE: OPERATE THIS SWITCH ONLY WHEN THE MACHINE IS STOPPED.**

Limit Controls: Located beneath the Traverse Rate Control 8-B are two knurled metal knobs 9-B for presetting the traverse limits of the winding heads. The lower knob which projects further out from the panel controls the forward limit of travel; by turning this knob clockwise, the front traverse limit is moved forward toward the operator. The upper knob controls the rear limit and turning it clockwise also causes forward positioning of the back limit point. These controls may be operated in conjunction with the Manual Traverse Drive described next during setup.

Manual Traverse Drive 1-A: A large knob on each side of the winder. Either knob can be used to operate the winding head traverse mechanism between traverse limits for initial setup of coil length.

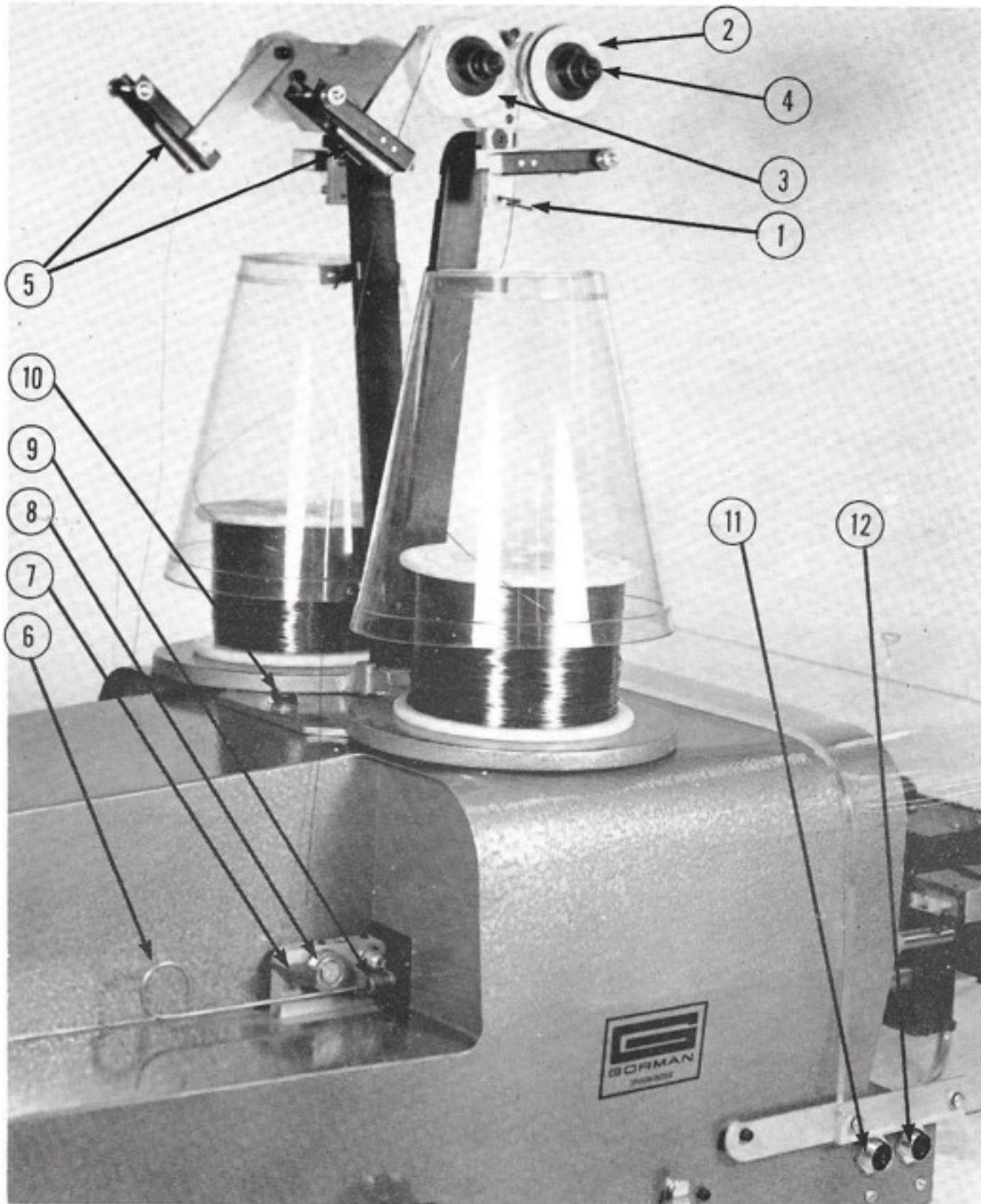
Turret Lock 11-B: Two round knobs project up from the turret console. Squeezing the handles together unlocks the turret enabling it to be rotated and locked in either of two fixed positions 180° apart. A safety interlock prevents operation of the machine unless the turret is properly locked into winding position.

Flyer Lock – A small toggle switch beneath the control box can lock or unlock the flyer while turret is being rotated.

ELECTRONIC COUNTER: The counter supplied with the machine is a separate unit which plugs into the left side of the machine. It will have from one to four pairs of preset counts. Each pair consists of a pre-signal which slows the machine down to JOG speed and a final count which stops the machine. The slow down pre-signal can precede the final count by up to a hundred or more counts depending on the winding speed.

COUNTER RESET - 12B: A button on top of the control box lever on the counter itself.

SPEED RANGE ADJUSTMENTS - 4F: Mounted on the bottom of the control box is a potentiometer which is adjusted with a screw driver. This regulates the top speed of the machine with high speed control 4B turned full clockwise. Be cautious of excessive speed with larger diameter winding flyers. See TOOLING SET-UP page 9.



LOADING WIRE—PHOTO C

The Spin Winder can be used with wire sizes ranging from No. 21 to No. 46 AWG. The left and right winding setups of the machine are similar, so loading both of them is a duplication of the following instructions:

1. Place the wire spool in the dereeler and lead the wire out the top of the plastic cone.
2. Thread wire through eye of the wire guide.
3. Pass wire between jaws of the felt clamp above wire guide 1-C.
4. Route wire appropriately as follows: Directly up between the two pulleys and
 - a) For wire (No. 21 to No. 30) wrap at least two turns around the front 2-C tension pulley then lead wire over top of the other (nylon) pulley 3-C and down through rear felt clamp 5-C.
 - b) For intermediate size wire (No. 31 to No. 40) wrap two turns around the nylon rear tension pulley 3-C and down through rear felt clamp 5-C. Continuous tension adjustment is made on either pulley by turning the knurled nuts 4-C. Turning clockwise increases the tension. Unloading the pressure of the felt clamps on the wire is controlled by the screw and nut near the end of each clamp. Do not lock up the pulley.
 - c) For fine wires to No. 46 AWG and finer, the felt pads alone supply sufficient tension. Pass the wire up between the pulleys and through the red ceramic guide at top center and then directly to the rear felt pad. The wire can either be passed over the top of the nylon pulley with all the tension off or better still, remove this pulley completely. Care must be taken to keep the felt pads clean of accumulated dirt at the point that the wire passes through. Rub the dirt off frequently and also move the wire to different locations in the pads.
5. Run wire from nylon pulley down through the jaws of the rear felt clamp 5-C and on down to back of the machine.
6. Place wire end in the groove of the wire loading rod 6-C with about 2 feet excess wire. Then guide rod and wire around the lower idler pulley 8-C and then through the ceramic guide (9-C) and motor shaft. Push the wire through the shaft with the rod until it appears at the winding head. Detach wire, pull out the loading rod and gently press the felt retaining pad 7-C against the edge of the rear idler pulley 8-C to prevent the wire from coming out of the pulley guide.

NOTE: When using very fine wire you may bypass the idler pulley and feed the wire directly from the rear clamp of the dereeler into the rear ceramic guide.

7. Holding the wire now at the front of the machine, thread the wire from the motor shaft into the side slot of the winding guide tube and out front through the agate. The wire can now be positioned or fastened for the winding start of a bobbin or other coil form.

WINDING COILS

The coil forms are mounted on the turret end blocks 1 Photo D which have provision for mounting tools to hold bobbins, etc. Tooling may vary from job to job but is easily changed in minutes. As shipped from the factory the 5/8" holes (13D) of the tool holder blocks (1-D) in each turret are in alignment with the motor shafts and winding heads. This is essential for even coil buildup. This adjustment should not be disturbed. However, if it becomes necessary to change it, the locked position of the end blocks can be adjusted (rotated) by loosening the two allen head screws on the round collar near the left tool holder 11-D. In setting up for a run of coils it is essential that all four tools and the two winding head setups be identical and symmetrical to ensure uniformity of production. After completing the tooling setup (see PRODUCTION AIDS, Tooling Setup) proceed as follows. It is necessary to mount only one coil form for making these initial adjustments:

1. Mount a coil form on a forward facing holder 2-D.
2. Squeeze turret lock handles 3-D and swing turret around so coil is in winding position.
3. Using the Manual Traverse Knob 1-A adjust the two Limit Controls so traverse of winding head covers the length of the desired coil. NOTE: ALWAYS SET LIMITS BEFORE OPERATING THE WINDER TO PREVENT HEADS FROM TRAVELING TOO FAR FAR FORWARD AND POSSIBLY HITTING PART OF TOOLING.
4. Select appropriate forward or reverse position of the winding heads when winding is finished with the Traverse Index Selector Knob (5-D).
5. Preset into the counter the slow-down and stop counts.
6. Turn on power. Reset the preset counter to zeros.
7. Select approximate traverse speed with Traverse Rate Control Knob (8 Photo D).
8. Position winding head with the Manual Traverse Drive 1-A to either forward or back position (forward position toward operator is preferred).
9. Press "JOG" button and observe winding action, i.e., traverse limiting points, traverse rate, wire tension, etc. Make adjustment as necessary. Remember, the jog speed can be regulated to make observation easy.
10. Press the "START" button and adjust the "HIGH SPEED CONTROL" 9-D to suit the job. The Spin Winder will operate at high speed until a presignal is fed by the counter to slow the machine before the

required number of turns is reached. At this point the machine slows to the finish or jog speed and continues to run until the preset number of turns is wound. It stops automatically and traverses to position the lead as determined by the Traverse Index Selector, 5-D.

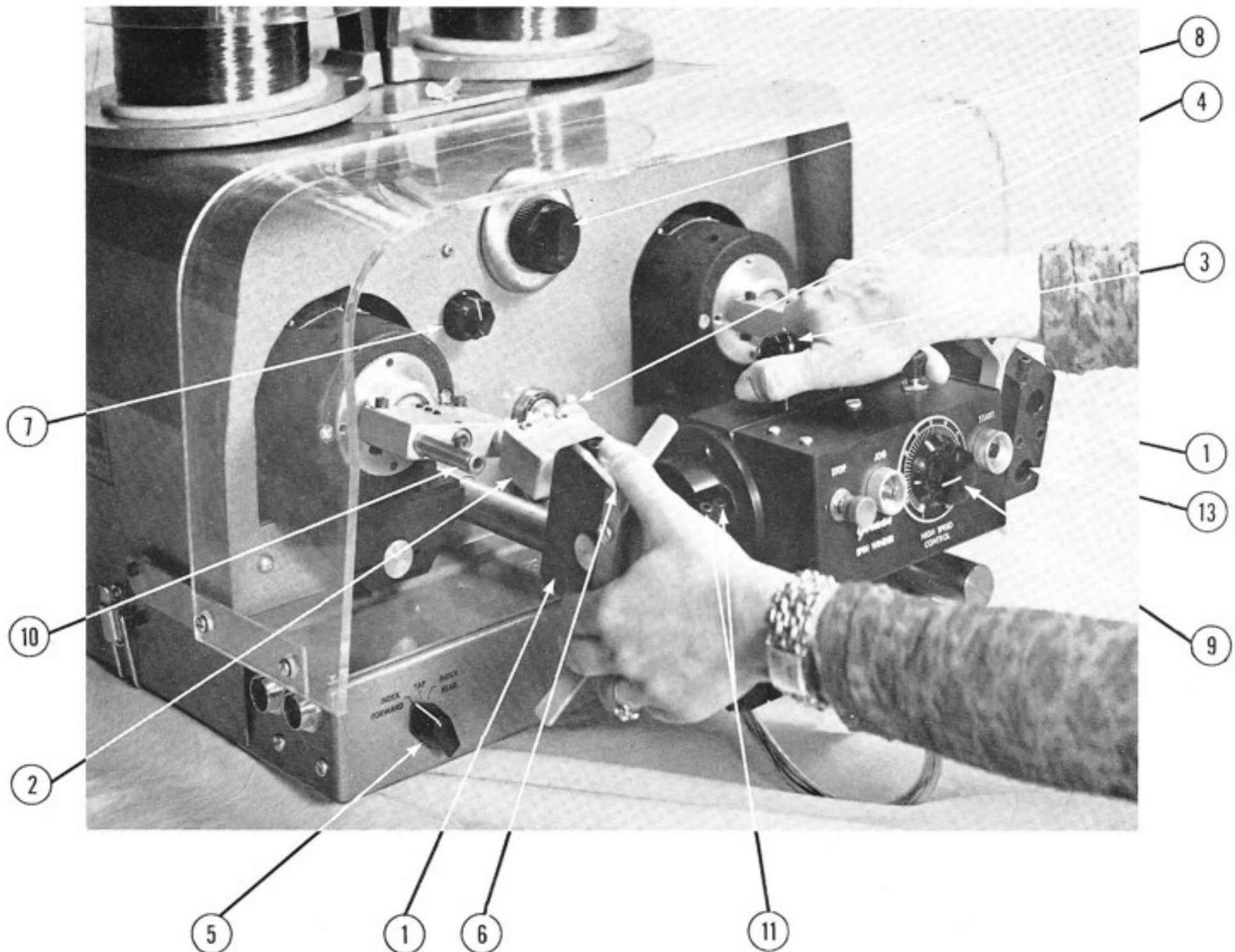
To operate the machine again on another high-speed winding cycle the counter must be reset to zeros. Jog speed winding, however, is still possible without counter reset for any required coil finishing operations.

11. Squeeze the lock handles 3-D and flip the turret over. Clip the wire. The loose end from the coil can be retained in a "Y" clip 6-D attached to the end block.

The position of the wire feeding tube of the winding heads 10-D should always end up near the 9 o'clock position when winding stops. If it doesn't, adjustment is made with the Head Stop Control 7-D. Make trial coils on all four holders to

assure uniformity. Once everything checks out, the production run can begin. The operator is now mainly concerned with the few controls on the turret console and the coil finishing and loading/unloading process. On the production basis the coils are, of course, manufactured in pairs. Two wound coils can be readily finished off right on their holders while another pair is being wound. If the start lead must be insulated from the rest of the turns, just start the coil in the usual manner but by using the jog button. Put on a few turns and stop. Apply the tape to the start lead inside the flange of the bobbin and then press the start button to complete.

In most cases, when winding spinner is going counter clockwise, rotate the turret assembly by bringing the top toward you. This draws the lead wires so they are on top and accessible for clipping, etc. For clockwise rotation of spinner, index or rotate turret top going. In both cases wire guide tube should be at 9 o'clock position for indexing (10-D).



GENERAL COMMENTS

This section deals with the details and precautions necessary to get consistently good results from your Spin Winder and what to look for to achieve this.

First, A WORD ABOUT SAFETY. The Gorman Spin Winder has a safety interlock that prevents operation unless the turret is in a properly locked position. Further, a quick-stop button is provided on the front console to stop winding instantly at any time. Nevertheless, a new operator should be cautioned against poking fingers near the winding heads when they are spinning or wearing loose long sleeves, etc. when operating the machine.

To obtain the most accurate winding layering, the span or turning radius of the wire feeding spinner should be no larger than necessary to clear the coil form.

Setting the tension of the dereeler pulleys may take some experimentation. The general aim is to provide enough tension to prevent any slack from developing at the chosen winding speed and provide a firmly wound coil. Too much tension may stretch the wire or result in excessive breakage. Setting the pressure of the felt clamps on the wire is less critical. The pressure should be sufficient to let the wire pass through smoothly without applying much friction.

Though the Spin Winder is capable of winding at high rates it is neither reasonable nor logical to run it wide open all the time. Setting of the winding speed should be determined by considering several factors:

1. The size of the wire.
2. The precision with which certain coils must be wound.
3. The nature of the coil's entire production cycle while on the machine. For example - if (after winding) completion of the coils on the holders, unloading the coils and reloading the holders with empty bobbins takes one minute then there is no advantage to rushing the winding time cycle to completion in less than 30 seconds. Setting a winding cycle of say, 50 seconds minimizes wear and tear on the entire mechanism thereby lengthening machine life at no expense to production output.

WIRE AND COIL PROBLEMS

Wire breakage can occur for a variety of reasons. Some of them are:

1. Improper threading of the wire through the dereeler. Remember different gages require different wire routing arrangements. (Review "Loading Wire" Steps 1 through 5.)
2. Incorrect tension settings of the dereeler pulleys.
3. Excessive pressure by the dereeler felt clamps.
4. Excessive winding speed for the size wire being used.
5. Unsuitable or inaccurate tooling.
6. Poor quality bobbin or coil forms having nicks or gouges that can catch and break wire.
7. Improper threading of the wire through the winding head.

8. Dirt build-up on the dereeler felt clamps which increases tension.
9. Poor quality wire containing kinks or other defects or snags on spool rim.

Defective coils (in shape or electrical characteristics) can also occur from a variety of causes. These include:

1. Poor quality wire which has defective insulation.
2. Incorrect Traverse Limit settings making for uneven wire buildup at one or both ends of the coil.
3. Poor alignment of the tooling (and coil form) with the winding head (s).
4. Excessive winding speed.
5. Incorrect tension settings of the dereeler pulleys. Among other things, if the wire is stretched markedly the cross section is reduced so that the coils resistance may read higher than normal.
6. Improper "starting" of the coil. Tape your start lead.
7. Winding heads not aligned with respect to one another.
8. Improper seating of the coil form onto the tooling because it is not pushed on all the way. Look for burrs or foreign matter between the bobbin and the tooling.
9. All sets of tooling not installed in exact same relation to the winding heads.
10. Inaccurate or unsuitable tooling.

PRESET COUNTING

The spread selected between the slow-down and preset count depends mainly on the winding speed used. The faster the speed, the larger the spread. A preset program permitting 5 or 6 turns of the winding heads at slow speed before final stop is about right. Spin Winders are equipped with an electronic counter and have a 1 to 1 ratio between counter and winding head. A preset slow-down anywhere between 30 and 130 counts before preset stop is usual depending on winding speed used.

TOOLING SETUP

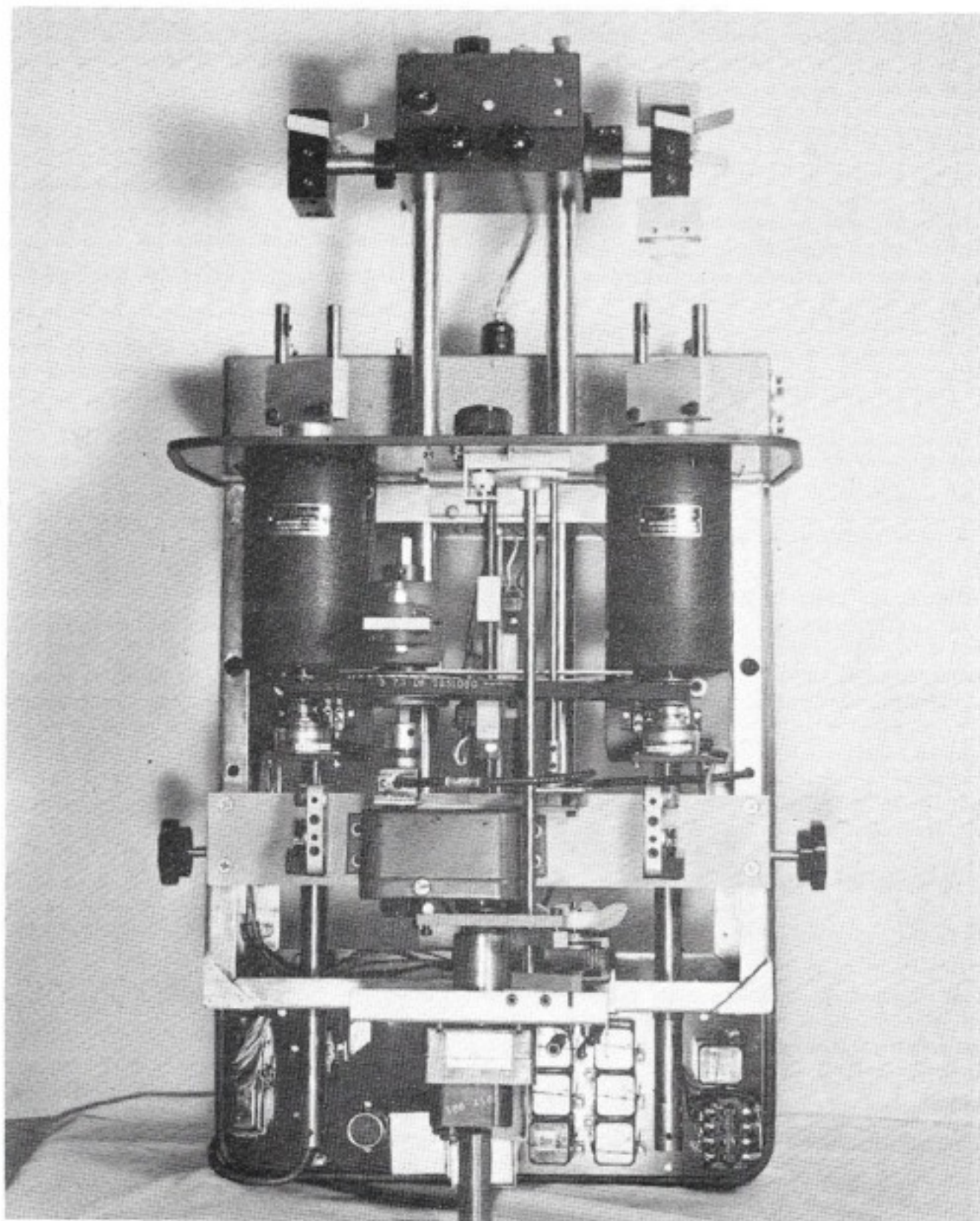
Changing from one coil winding setup to another can be done in a short time. All that is required is to install appropriate coil form holders, possibly change heads and "dial in" the new winding format. The turret end blocks 1-D are bored to accept holders, or mandrels, etc. with a 5/8" shank. If the best results are to be obtained, tools within each set should be identical within reasonably close tolerances. In selecting winding heads for maximum winding precision choose a size where the wire feed tube passes (rotates) fairly close around the outside diameter of the coil. Of course, when winding into a narrow slot the winding guide piece must be tailored to closely conform with the space available in the form to be wound, allowing room for wire buildup. Extremely fine or heavy wire require special heads. A variety of standard and

special tools and winding heads is available from Gorman. Feel free to contact us for recommendations.

Examination of the turret assembly will disclose the recessed Allen head screws (11-D) that when loosened permit rotating or shifting the end blocks into alignment with the motor shafts. Retighten all screws firmly.

Once the machine is set up to make satisfactory coils at one of the four turret tool stations it should be closely duplicated at the other stations.

As normally shipped from Gorman, the winder's High Speed Control provides a winding speed band of 1000 to 4500 tpm. This range can be shifted for speeds up to 7700 tpm by rotating the slotted shaft 4-F exposed on the bottom of the turret console. CAUTION: (1) See "Preset Counting" above regarding maximum speeds with mechanical counter. (2) Do not run winder at speeds higher than 5000 tpm with winding heads over 3 inches wide installed. The centrifugal forces built up can be large therefore possibly causing unsafe conditions.



SECTION 4. MAINTENANCE AND REPAIR

SPIN WINDER

The Spin Winder is designed to operate trouble-free over long periods (years). There are no regular lubricating requirements since bearings are of long life and self-lubricating type.

Motor maintenance is reduced to checking the brushes every 400 operating hours and replacing them when worn. Original length is 5/8". While checking the brushes examine also the timing belts for wear. If the machine has collected some dirt inside, clean it out with compressed air. The dial markings of the Speed Control and Traverse Rate Control are for relative indications only and so do not require calibration.

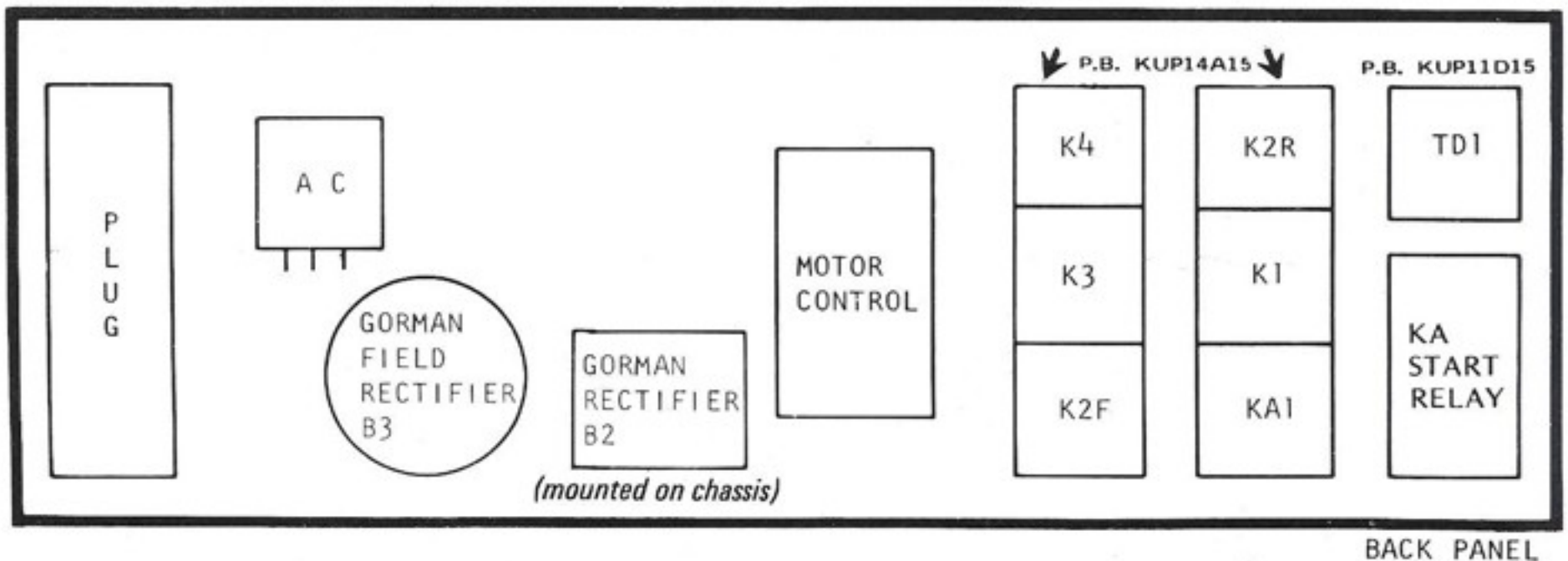
Most of the winder's circuitry is in the form of plug-in modules at the back of the unit.

Relays KA1, K1, K2R, K2F, K3, K4 are identical and therefore may be interchanged to help identify a malfunctioning one. The following listing outlines some malfunctions and their possible source of trouble.

ELECTRICAL TROUBLESHOOTING

1. Winding heads will coast instead of stopping instantly when the Stop Button is pressed or the preset count is reached.
Check relay TD1 and also check brakes behind motors for proper operation.
2. Machine does not traverse and will not continue to wind at high speed after Start Button is released.
Check relay KA1.

3. Winder operates only at maximum speed and cannot be slowed with the High Speed Control. Also it winds at maximum speed with Jog Button.
Check Motor Control SCR, mounted on chassis.
4. Operates normally in both Jog and High Speed but will not traverse.
Check relays K2R and K2F. Also make sure micro switches are being actuated. Check that tap switch (5D) is not between positions.
5. Machine will not index forward or rearward at end of count and switch is not on Tap setting.
Check relay K3 and that tap switch (5D) is not between positions.
6. Machine will not wind at all with Start Button but operates normally with the Jog Button.
Check relay K4. Also check counter stop contacts inside counter.
7. Winder will not operate when either Start or Jog Button is used but some relays are heard to operate and brakes on back of motors briefly engage after pressing Jog Button.
Check relay KA, anything in Motor Control, or Gorman rectifier B2. Also make sure spinner rotation switch is not in neutral position. (10 Photo B).
8. If circuit breaker keeps popping instantly, check rectifier bridge B3 or for a short circuit anywhere. A continual overload will also actuate the breaker. In this case, a cooling off period will be required.
9. Machine will not run at high speed.
Check relay K1.



KA Controls Armature Voltage
 KA1 Energizes Relay TD1 and Clutches
 K1 Controls High-Speed and Low-Speed
 K2F Controls Forward-Clutch (for traverse)
 K2R Controls Reverse-Clutch (for traverse)
 K3 Controls Index-Forward and Index-Reverse
 at end of cycle

K4 Stops the Machine at the end of the cycle
 TD1 Controls the Brakes
 Motor Control Regulates Armature Voltage
 Field Rectifier B3 Supplies Voltage for Motors, Clutches
 and Brakes (B-3)
 Gorman Rectifier B2 Supplies Armature Voltage for Motors
 (B-2)

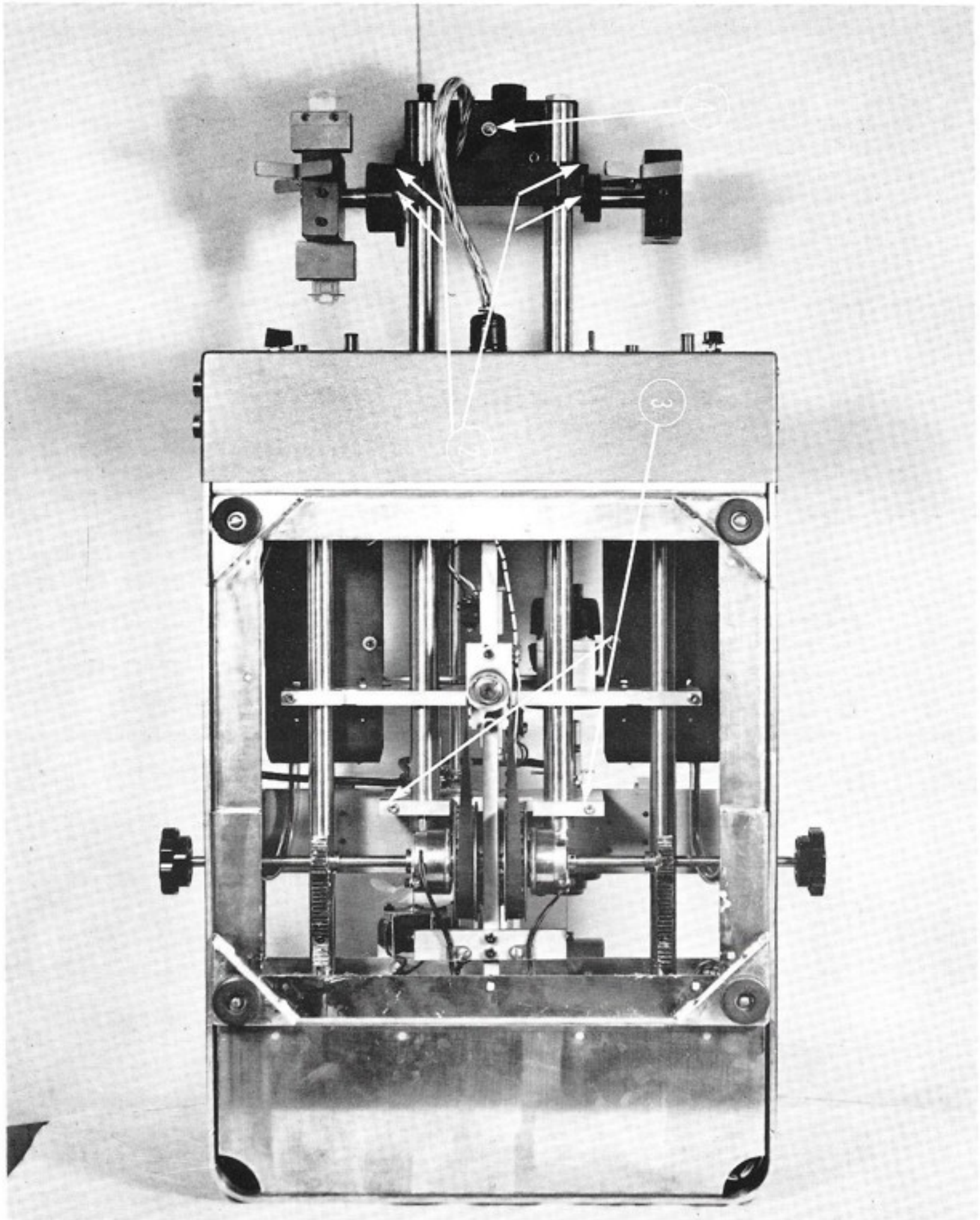
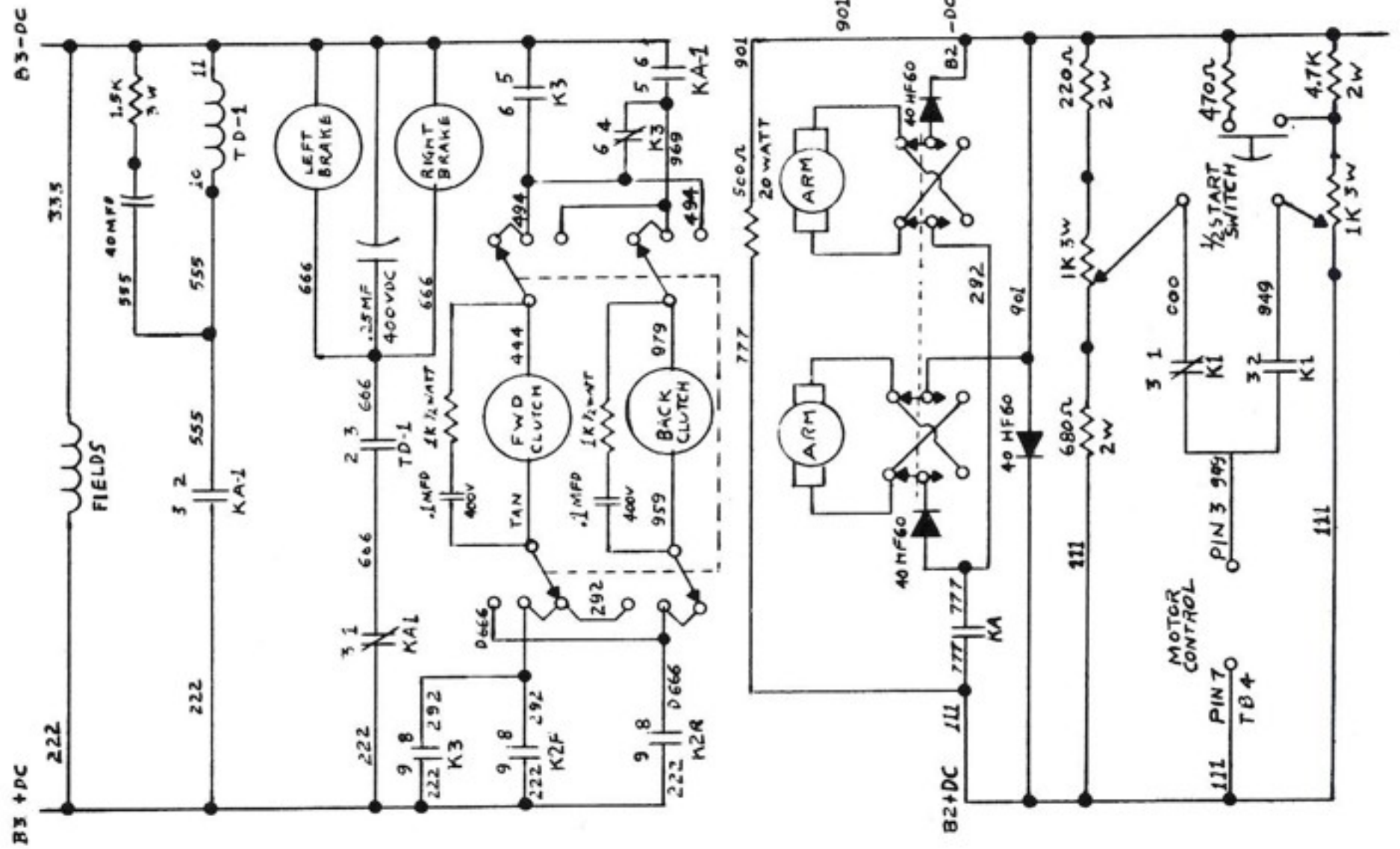


PHOTO F

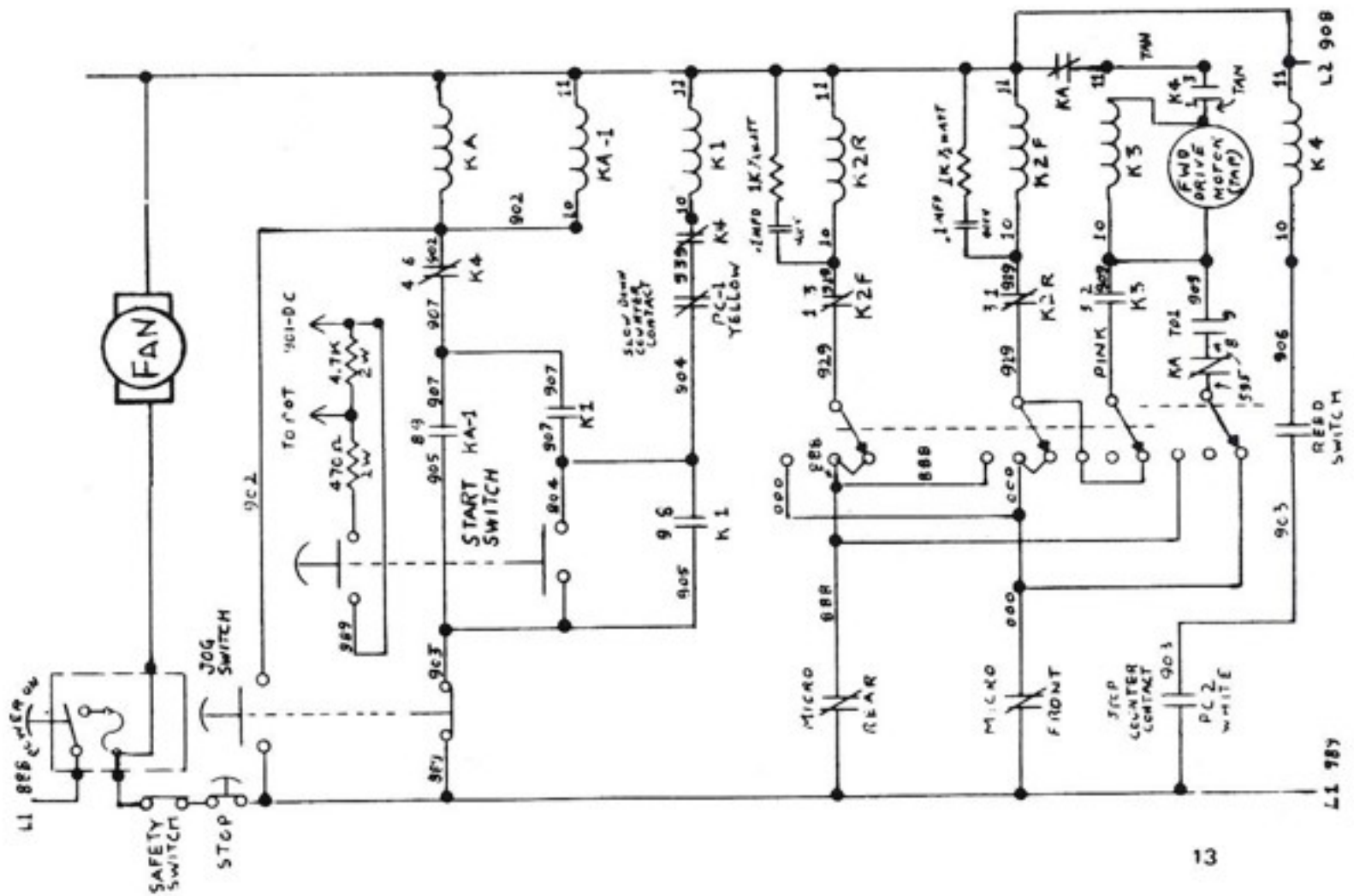
SECTION 5. SUPPLEMENTARY DATA



DC CIRCUIT

WIRE COLOR CODE

- 111-Brown
- 222-Red
- 333-Orange
- 444-Yellow
- 555-Green
- 666-Blue
- 777-Purple
- 888-Gray
- 999-White
- 000-Black



AC CIRCUIT

BASIC WINDING HEADS FOR SPIN WINDER

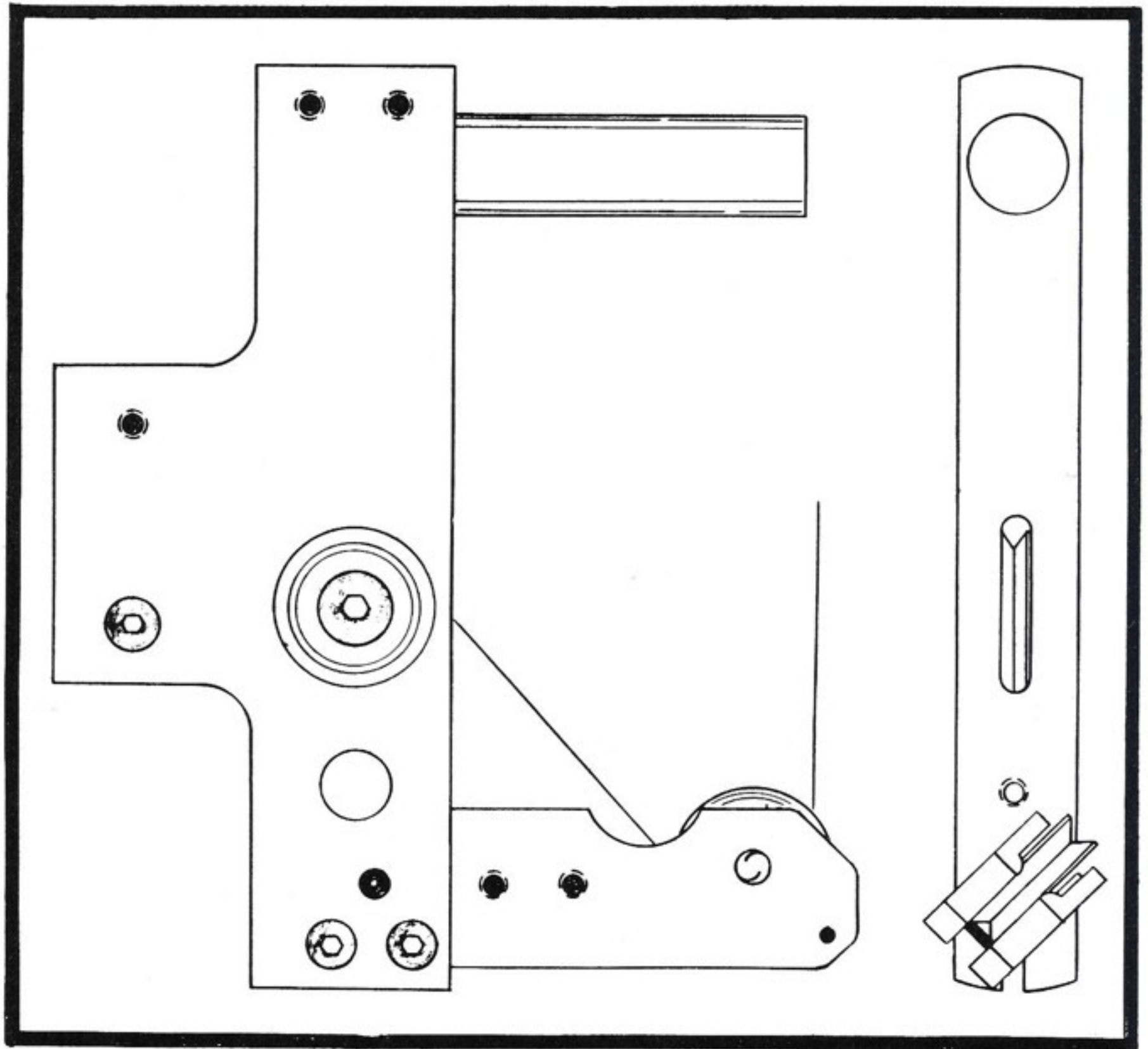
Winding heads are supplied in three basic types; Standard, Needle Head, and Ball Bearing type, all illustrated here.

The Standard Winding Head is for medium and larger bobbins where there is sufficient clearance over the flanges for the wire to clear easily when routed, as shown, directly from the center to the outer winding tube.

The Needle Head Winding Head is made in various sizes and to order for close guiding of the wire onto the bobbin. This type is also used for winding into a slot as for winding odd shaped pole pieces. All the dimensions including the diameter of the needle projection are usually tailored for a particular need.

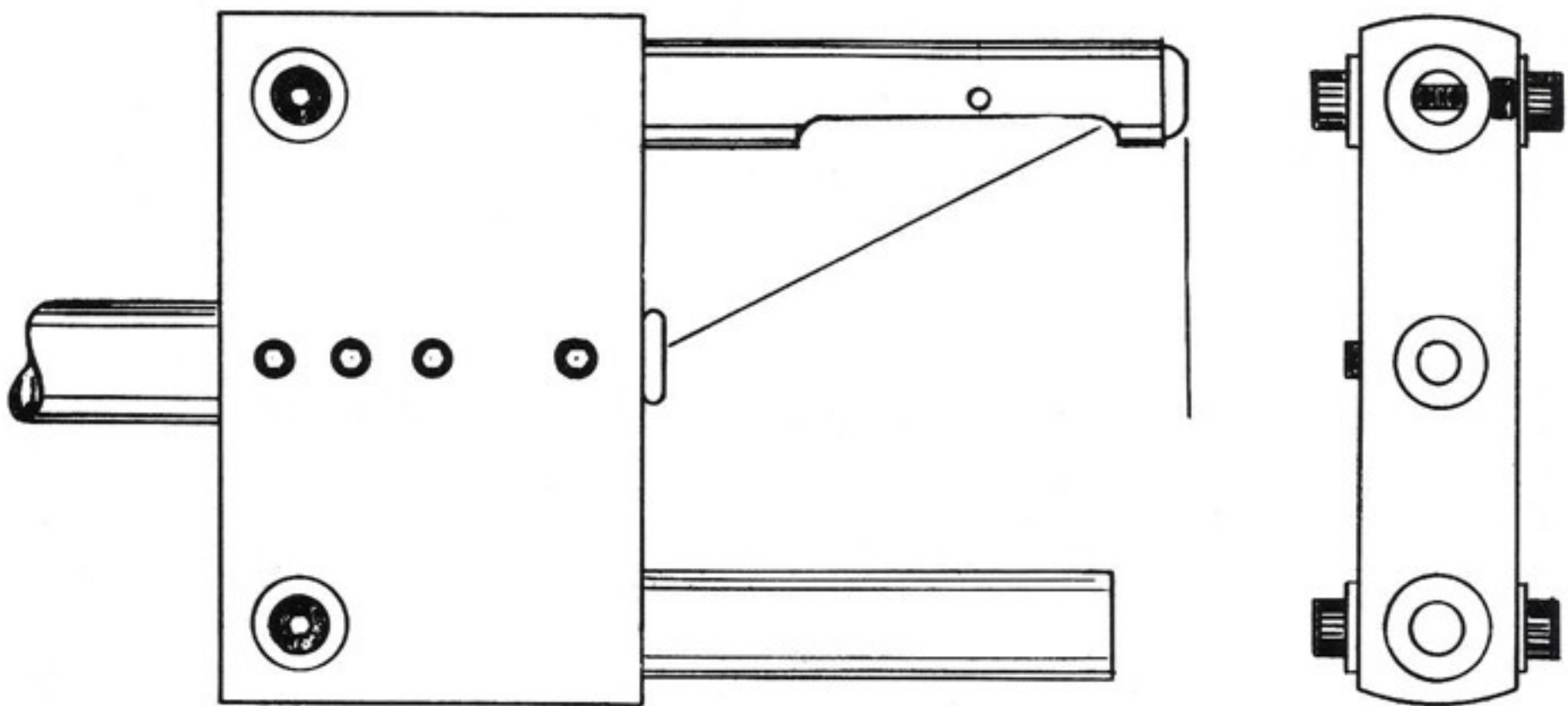
The Ball Bearing Winding Head differs from the Standard Head in that there are two V-Groove ball bearings added. One at the center and one aligned with the outer winding post. The wire can be routed from the center ball bearing out to the outer ball bearing and then onto the bobbin.

Unless otherwise specified, the different winding heads will be supplied in the dimensions as drawn. Any of the dimensions of each type head can be changed as the diameter and length of winding post at nominal cost.

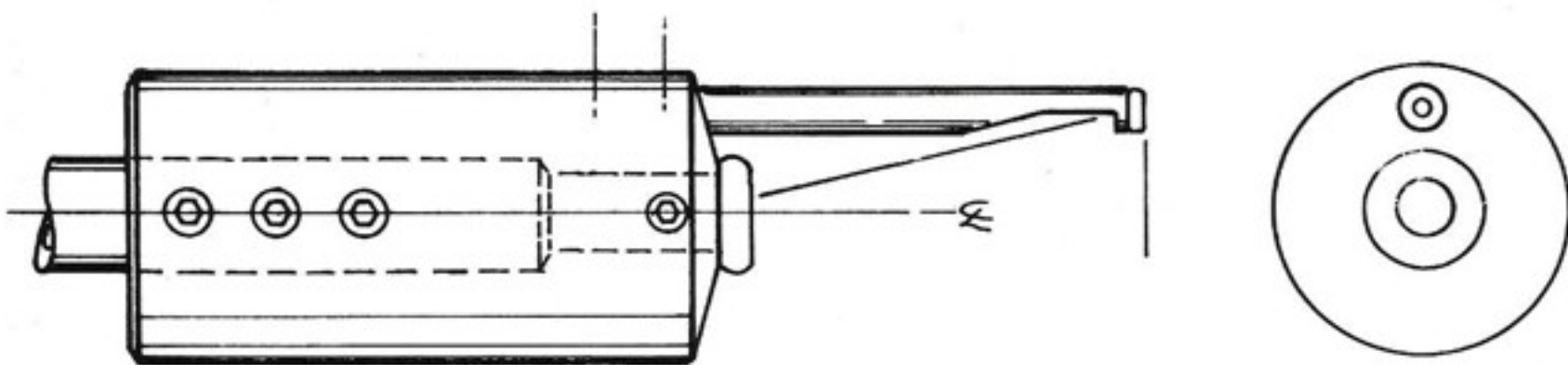


SCALE 1 to 1

BALL BEARING WINDING HEAD



STANDARD WINDING HEAD



NEEDLE WINDING HEAD

SCALE 1 to 1

PARTS FOR THE SPIN WINDER

BELTS:

Part #	Description	Ref #
B285L	Motor to Motor	285L050
B345L	Gear Motor to Clutches	345L050

RELAYS:

AR400	AC Relay	KUP14A15
AR401	DC Relay	KUP11D15
AR414	Motor start power relay	DIL-R22
AR429	Relay in Durant 5-2 Counter	38133202
BR411	Relay for Control Box 110V	KA11AGY

SWITCHES:

AS730	Jog Button (Photo B3)	116-P-CRD-4
AS731	Reed Switch	DRR-1
AS732	Winding Speed Direction (Photo B1)	4P3T,7693K2
AS751	Stop Switch (Photo B6) (RED)	80541-R
AS762	Circuit breaker	JA1-A3
BS780	Start Switch (Photo B5) Black	35-3
BS760	Auto Index Forward/Reverse/Tap	PA600
BS761	Micro Switch	BZ2RD
SS752	Control Interlock Micro Switch	DT2RV-1A7
SS754	Counter Reset Switch	80541-E
SS755	Toggle Switch	MTA106D

ELECTRICAL:

AE318	Socket - foot pedal 6 pin	91PC6F
AE319	Plug - foot pedal 6 pin	91MC6M
AE330 —	Armature Bridge 40 AMP	MDA3506
AE331	Plug-in Bridge 40 AMP	B3
AE336	Socket - Counter 4 pin	91PC4F
AE337	Plug - Counter 4 pin	91MC4M
AE380	Potentiometer	10K
AE423	Line cord	
BE340	Back panels (Wired) No Plug ins or relays	
BE341	Back panels (Wired) With plug ins and relays	
BE342	Clairex pick up	
BE344	3 pin vane sprocket used with pick-up	
BE352	High speed control potentiometer (Dual)	1.5 & 10K
BE369	Capacitor 50V 250 MFD	
BE370	Capacitor 30 MFD or 40 MFD	
BE371	Clarostat potentiometer - Jog Speed Control	1K
BE372	Zener Diode	5227B
BE373 ↗	Transient Diode in B2 Bridge	
BE377	Transistor for motor control	2NI671
BE378	Transistor for inside motor control	2N697
BE379	Transformer	G29-104
BE381	Potentiometer (Dual)	2K & 10K
BE390	12 pin female connector on turret box	S312AB
BE391	12 pin male connector on turret box	T312CCT
SE350	Control Box	

(Cont'd)

CLUTCHES:

ACL280 Zero Max Transmission
 ACL281 Zero Max Transmission
 BCL253 Bottom Clutch-Traverse with 90V armature
 BCL27 One Way Clutch - CCW
 SCL266 2 Bottom Clutch Assemblies with shaft (Complete)
 SCL267 Flexible coupling - 3/8" bore

E1
 E2
 C25SBEC22C66
 D93CRH

COUNTERS:

BCD52 Durant 5 Digit, 2 Preset

58830403

DEREELER PARTS:

AD705 Dereeler Cones (Photo C)
 AD706 Extension Arms
 AD707 Dereeler Assembly (Top)
 AD709 Felt 1/4" round
 AD710 Felt 1/8" round
 AD711 Clamp with felt
 AD712 Felt for clamp (1/2" X 9/16" X 1-5/8")
 AD713 "O" Rings (Rubber-Heavy)
 AD714 Spring - Heavy Tension
 AD715 Spring - Light Tension
 AD716 Pigtail
 AD719 Pulley (Plastic - wire tension)
 AD723 Knurled Lock Nuts
 AD724 Wire Loading Rod
 AD726 Black aluminum washer disc
 SD701 Wire dereeler assembly - double (Photo C)

2-136
 9A-11B
 8A-11A
 5A2 or 92-6
 DWG9002

MOTORS:

AM813 SCR
 BM809 Gear motor (Von Weiss)
 BM812 Motor brake - Complete with armature
 BM814 External Motor Control
 BM815 Internal Motor Control
 MB3 Brushes for DC Motor
 SM801 Permanent magnet DC Motor
 SM802 Heavy duty slow motor
 SM826 Fan Motor
 SM832 Fan Blade

2N689
 VW1A60
 75EC-17B-6

 7930
 13197
 4M070-1

BEARINGS:

BB150 Counter Pick-up bearing
 BB157 Main Drive Bearing (2)
 BB165 V-Bearing
 BB917 Oilite bronze

FS3KDD
 MF2S-212,FST-12
 FS270
 FB1214

(Cont'd)

EYELETS:

AD430	Eyelet with steel shank	EG430
SY130	Eyelet for Needle Head	EF130
SY380	Eyelet for Winding Head (Photo C9)	EF380
SY400	Replacement Rod for Part Number SY130 Eyelet	
SY604	Clamps for eyelets	NPC6

PULLEYS:

BP10	Tension Pulley (modified)	10L050
SP10	Motor Pulleys (Back of transmission)(mod)	10L050
SP30	Pulley on main bearing assembly (modified)	30L050
SP31	Taper lock for main bearing pulley	Dodge 1610-3/4

WINDING HEADS:

SBWH3	Ball bearing winding head with 3" clearance
SNWH3	Needle head-flyer clearance 3/4" diameter max.
SHGH2	Heanium guides 2-1/8" clearance
SHGH3	Heanium guides 3-3/4" clearance

MISCELLANEOUS:

AMI58	Vernier dail assembly	AM-6
AMI587	Machine rubber feet (each)	
AMI592	Vernier dial knob (Photo B8)	
AMI594	Dust Cover	
BMI31	Gear rack	L0202
BT354	Knob for traverse drive limit (Photo B9)	
BT958	Pick-up knob (spindle orient.adj.(Photo B7)	WA-104
SE353	Vernier Dial plate	J490-5
SE355	Round black knobs Turret lock (Photo B11)	
SM825	Gear for gear rack	YA18
SMI590	Safety Shield	
SMI593	Transverse Tube for front drive gear	
SMI594	Turret Assembly	
SMI595	Shaft with square bushing (Main bearing assembly)	
SMI596	Manual traverse knob (Photo A)	