

The K101-0915 gives the complete electrical state of your rotor before the final test. It's simple and fast to operate and allows testing of 100% of the rotor including the pole pieces, shaft and coils.

Functions:

- Test for Opens & Grounds
- Use the Digital Meter to read amps through the rotor at approximately 14.5 Volts DC
- Use the Analog Meter to read Magnetic Strength (gauss), which can be compared to an OEM rotor readings insuring proper turn on RPM and the maximum output at high RPM.

Dimensions:

Size: 24" Deep X 18" Wide X 12" High
 Weight: 50 lbs.
 Shipping Weight: 55 lbs.
 Power Requirements:
 K101-0915-110 110 Volt, 60 Hz
 K101-0915-220 220 Volt, 50 Hz

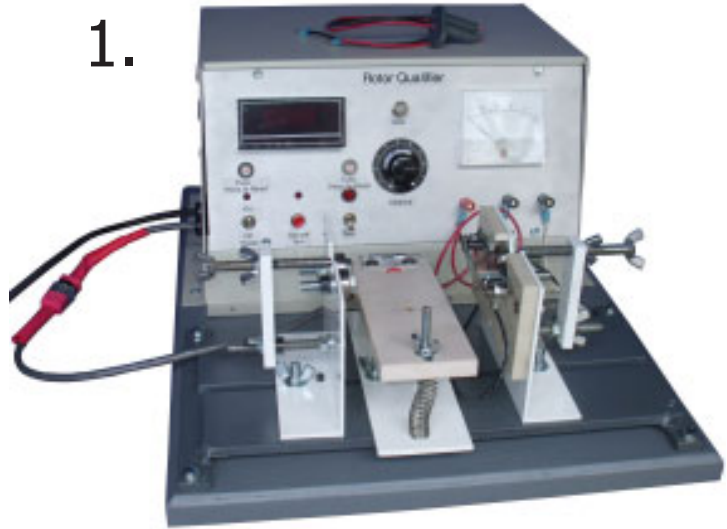
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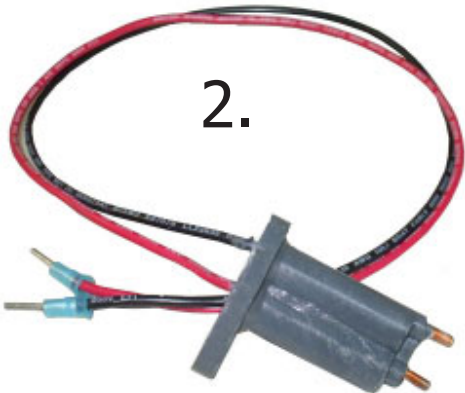
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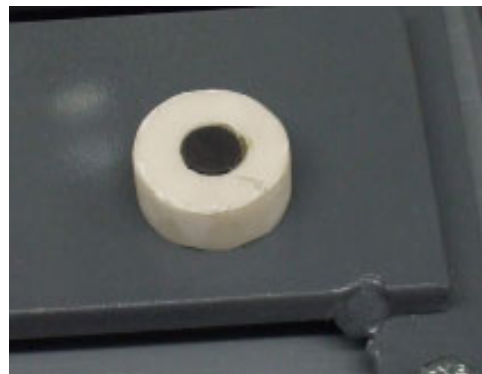
Check List

- 1 Basic Machine
- 2 K101-0915-17 Brush Holder, additional
- 3 K101-0915-22 Calibration Device

2.



3.



Theory Of Operation

DC current is passed through the slip rings at on the car operational voltage, (14.5V). The current is displayed on the digital meters. At the same time the magnetic strength of the rotor is measured and displayed on the analog meter. A Restive Ground Test is also made as well as a Short Test and both are displayed with lights. This combination of tests gives you a 100% evaluation of the rotors condition and it's low end cut in RPM and Full Output RPM based on a comparison to a known good OEM Rotor with a correctly air gaped stator.

Definition of Terms

Calibration Pot (#2): Course adjustment for Gauss Meter reading magnetic strength and is displayed on the Magnetic Strength Meter (#3). Only used for Calibration. Lock in place with the locking nut.

Gauss Sensor (#21): The pick up of the magnet strength from each pole piece as the rotor is rotated. This sensor must be centered on the pole pieces and not in contact with the rotor.

Calibration Devise (#22): a means of insuring the magnetic circuits are working correctly.

Magnetic Strength, (Variations): Once a standard has been reached and recorded in a log, reading higher than 80 will indicate a stronger than OEM Magnetic Strength and the rotor will cut in at a lower RPM and there will be a higher RPM output at the top end. When the reading is lower than 80, the turn on RPM will be higher and the top end will be lower. You will find you may not want to use readings that fall below 70 at all and especially with high output stators. Your final test bench will tell, but once you know you will be able to get maximum usage of all your rotors.

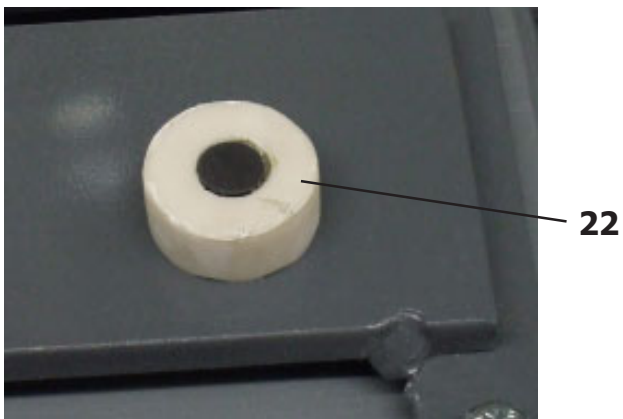
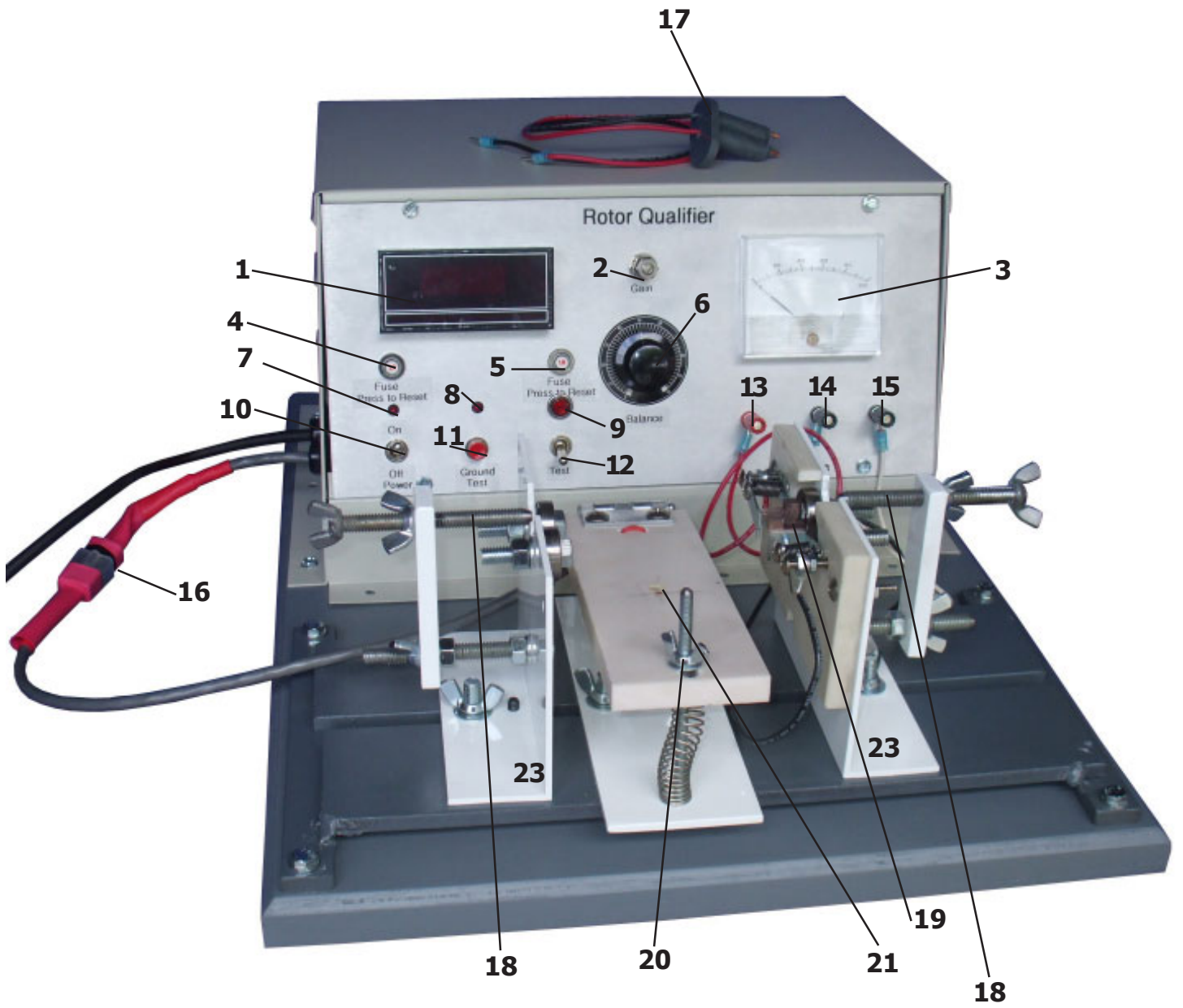
Standard Rotor: An OEM rotor or a rotor that you have tested on your test bench and have determined it to perform correctly for cut in RPM and full output amps.

Warranty

The K101-0915 Rotor Analyzer is warranted by KAR Industries against defects in workmanship or materials under normal use for 1 year from the date of purchase. All electrical parts are warranted for 1 year after the date of purchase. The motor is warranted by the motor manufacturer for 1 year. All parts and repairs under warranty must be shipped prepaid to KAR Industries in Miami Florida. The warranty does not apply to damage resulting from accidents, shipping, misuse or alteration.

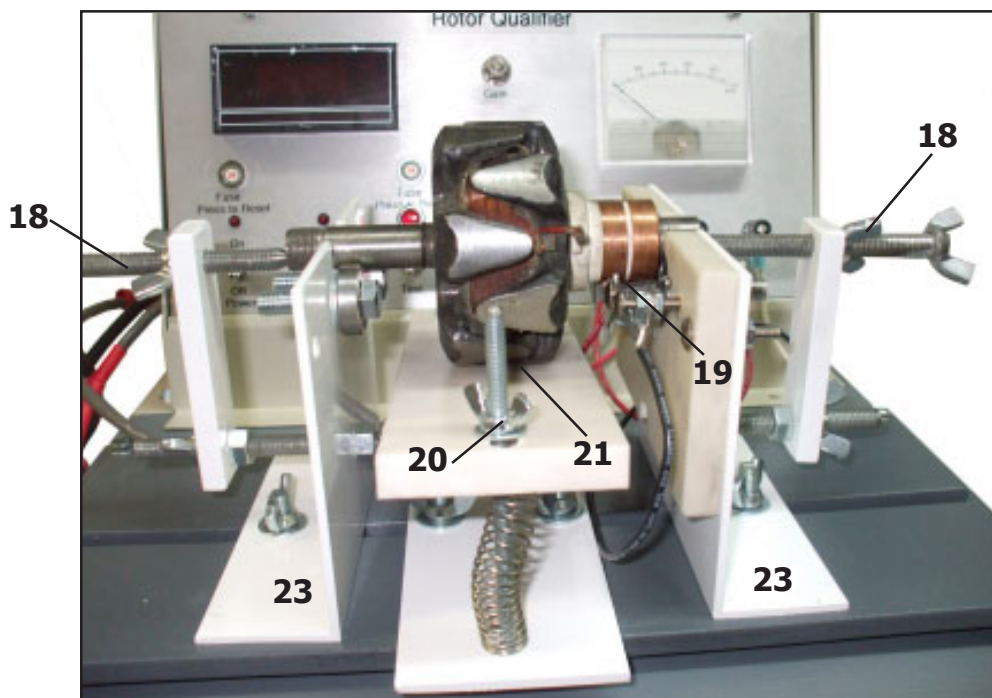
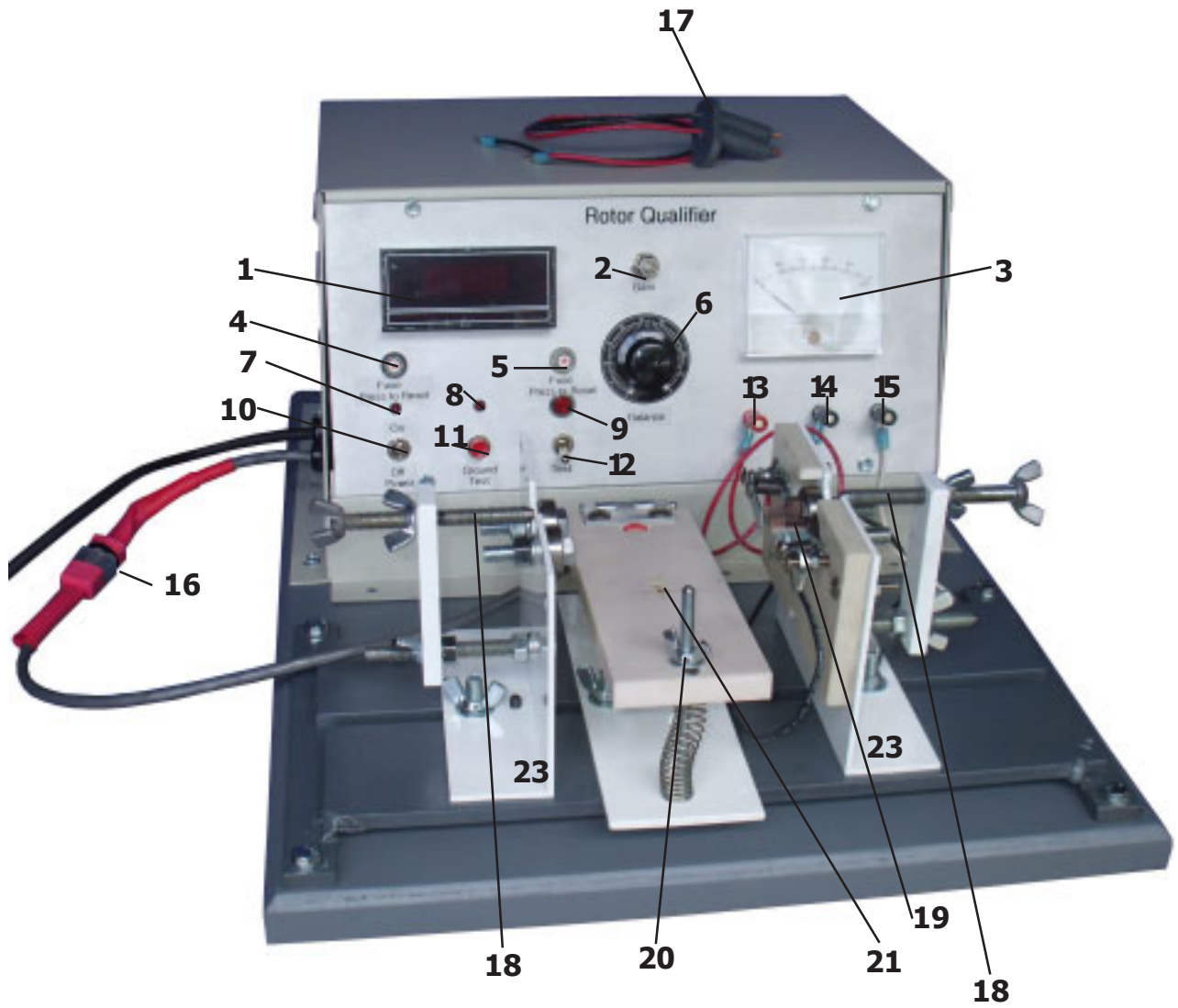
Terms & Policies

All prices are outright, no exchange. All prices are F.O.B. Miami, Florida. In states or countries where sales tax or dues are applicable, the customer will assume all responsibility for these fees. Prices are subject to change without notice.



Component Functions

- 1 **Rotor Amp Draw Digital Meter:** indicates DC Amps through the rotor at approximately 14.5 Volts
- 2 **Calibration Pot:** Calibrates (#3) Magnetic Strength Meter, used with (#22) Calibration Standard
- 3 **Magnetic Strength Meter:** Indicates the Magnetic Strength (gauss) of the entire rotor, both copper and steel components. The standard is based on a good OEM or a rotor that tested good for low RPM cut in and full output RPM. Set to 80 on an OEM or tested good rotor.
- 4 **AC Fuse:** Press to reset the protection for the incoming AC power.
- 5 **DC Fuse for Rotor Current:** Press to reset protection for rotor amps over 10 amps.
- 6 **Gauss (Magnetic Strength) Adjustment:** Calibration Pot for standard rotors, keep a log of the settings for future reference. Set to 80 on an OEM or tested good rotor.
- 7 **AC Power Pilot Light:** When lite, indicates that power is on.
- 8 **Ground Light:** Indicates a ground from coil to steel of 0.5 ohms or more.
- 9 **Test Pilot Light:** Indicates DC current to the rotor
- 10 **AC Power Switch:** Turns incoming AC Power on and off.
- 11 **Ground Test Switch:** Momentary Switch working in conjunction with (#8) Ground Light. A lite light indicates a ground.
- 12 **Test Switch:** Turns DC Power on or off to the rotor. Special Note-always mount rotor before turning on. Works with (#9) Light.
- 13 **Brush Post:** Connection to brush (red)
- 14 **Brush Post:** Connection to brush (black)
- 15 **Ground Post:** Connection to ground on test fixture (white).
- 16 **Gauss Sensor Connector:** Indicates dis-connection between control box and test fixture.
- 17 **Brush Holder:** An additional connector for rotor slip rings in locations other than the shaft.
- 18 **Rotor Location Adjustor:** Hold the rotor in place preventing sideways movement.
- 19 **Brushes:** Brushes for contact with slip rings. Consists of brushes, springs and brush holder.
- 20 **Gauss Pick Up Arm:** Arm adjusts up and down to position the gauss sensor in the center of the pole pieces and approximately 0.045 from the rotor which is the thickness of a hack saw blade with the teeth removed.
- 21 **Gauss Sensor:** Hall Effect Device to pick up the line of magnetic force from the rotor. **WARNING-this is a delicate sensor and should never come in contact with the rotor or permanent damage will happen and this damage is not covered by any warranty.**
- 22 **Calibration Devise:** Calibration Standard used to insure (#21) Hall Effect Operation with (#3) Meter. This must be centered over (#21) Gauss Sensor with Black Magnet facing down.
- 23 **Mounting Brackets:** Locates & Centers the rotor over (#21) Gauss Sensor.



Initial Set Up Procedure

- Lower #20 Adjustable Arm for Gauss Pick Up Sensor
- Loosen the wing nuts on #23 Adjustable Mounting Brackets, also swing #18 Adjustments For Rotor Location back about 2 inches.
- Place the rotor and center over #21 Gauss Pick Up Sensor and bring in the #23 Brackets, come down straight on the #19 Brushes, insuring the brushes are only contacting one slip ring.

WARNING/CAUTION:

**THE GAUSS SENSOR IS A DELICATE DEVICE AND EASILY BROKEN,
DO NOT ALLOW THE ROTOR TO COME IN CONTACT WITH IT.
THE GAUSS SENSOR MUST BE IN THE CENTER OF THE POLE PIECES.**

- When the pole pieces are centered, tighten the wing nuts on #23 Adjustable Mounting Brackets.
- Swing and Readjust #18 Adjustment for Rotor Location in place to prevent sideways movement when the rotor is being rotated, tighten wing nut to hold them in place.
- Raise #20 Adjustment Arm for Gauss Pick Up Sensor using the wing nut until there is a gap the thickness of a hack saw blade with the teeth removed (0.015). This distance must be reset for each different OD rotor. #20 is also adjustable sideways by loosening the wind nut below the #21 Sensor. Make sure wing nuts are tight before testing.

GOOD ADVISE: We recommend using a good OEM rotor or a rotor you have pretested in a unit for low end cut in and high RPM output for this initial set up and to get the magnet reading you will be using in the future. Make sure you keep a log on all your findings. See pages 8 & 10.

SPECIAL NOTE: For an actuated comparison of an unknown rotor condition to an OEM rotor you must use both the rotor current and the magnetic strength readings.

- Turn on the rotor analyzer using #10 AC Power Switch
- Press #11 Ground Test Switch. If the rotor is grounded the #8 Ground Light will come on if the resistance is 0.5 ohms or more.
- Press #12 Test Switch. The #9 Test Pilot Light will come on indicating current through the rotor at 14.5 volts.
- Spin the rotor and adjust #6 Calibration Pot until the #3 Analog Magnetic Strength Meter reads 80. This will be a little difficult, needing almost 3 hands, but it becomes much easier after a few settings. Now 80 is your standard for magnetic strength, based on the rotor you used for the initial set up of this particular rotor. List the rotor number, amp draw and magnetic strength in the log provided in this manual for future use. You will be looking for a variation in magnetic strength as the rotor current stays relatively constant from test to test.
- Now you are ready to test another like rotor. If the next rotor is a different size, you will need to go through this complete set up procedure again. Once you have developed your standard for each rotor type and listed them in your log it will only take seconds to go from one type of rotor to another. When it is necessary, i.e. Old Chrysler Rotor to use the #17 Additional Brush Holder, disconnect the red and black wires from the brushes to the #13 & #14 Brush Posts and connect the red and black leads to the read and black screw jacks. Cover the brushes with a smooth piece of paper for the least amount of drag while the rotor is being rotated.

In order to really appreciate your new Rotor Analyzer try this:

When you get say a 70 reading on the #3 Magnetic Strength meter, press the #12 Test Switch and slowly rotate the rotor. As the pole pieces pass over #21 Magnetic Sensor, you will see the Magnetic Strength Meter go up and then back to 0, then back up again. You will notice that the high readings are not the same. Select the lower readings and observe which pole piece is producing this reading. Now mount the rotor in a hydraulic press and press the pole pieces only, back together with at least 10 tons of pressure. Now retest. You will see the readings go back up to 75-80 where they should be. You have proven that the pole pieces were not tight as they should be. If this had not been caught and corrected, the rotor would have a much higher cut in RPM and a lower top end output.

Test Procedure

- 1 Loosen the wing bottom nuts on #20 Adjustable Location Bracket and lower #21 Gauss Sensor, by tightening the wing nut.
- 2 Loosen the wing nuts on #23 Adjustable Brackets.
- 3 Loosen the #18 Adjustments for Rotor Location or swing out.
- 4 Place the rotor pole pieces center on #21 Gauss Sensor and centered on #19 Brushes.
- 5 After these adjustments are complete, loosen the wing nut that controls the height of #20 Adjustable Gauss Sensor and adjust to a clearance of 0.015 or the thickness of a hacksaw blade with the teeth removed.
- 6 Tighten all other wing nuts.
- 7 Turn on #10 Power Switch.
- 8 Refer to your Settings Log for the setting on #6 Calibration Pot and set it. Or use a STANDARD ROTOR, making sure you list the setting in the Settings Log. There is no need for an adjustment of #2 Calibration Pot.
- 9 Activate #11 Ground Test Switch and observe #8 Ground Test Light. It should come on.
- 10 Activate #12 Test Switch, spin the rotor and observe the amp draw reading on #1 Digital Meter and magnetic strength reading on #3 Magnetic Strength Meter.
- 11 REMINDER: You need both the Amp Draw Reading & the Magnetic Strength Reading to be like your Set Log Reading to insure an expectable low RPM turn on and a good high RPM Amp Output. Match the amp draw and magnetic strength readings to grade your rotors for the maximum salvage and quality in your finished products.

Settings Log

Rotor Type	Rotor #	Amps	Magnetic Strength	Balance Pot Setting

Parts List

Drawing #	Part #	Item Description
1	K101-UM-35MV	Digital Amp Meter
2	K101-753-1203	Calibration (Gain) Pot
3	K101-20350-100Ua	Magnetic (Gauss) Meter
4	K101-W58-XB1A4A-20	Re-setable Fuse Circuit Breaker 20A
5	K101-W58-XBAA\$A-10	Re-setable Fuse Circuit Breaker 10A
6	K101-753-1243	Calibration (Adjusting) Pot
7	K101-LH677R	AC Power Pilot Light
8	K101-LED	Ground Light (Red LED Lamp)
9	K101-LH677R	Test Pilot Light
10	K101-2KG72-1-73 TABS	On/Off Switch DPST
11	K101-P27B-RD	Push Button Switch
19	K101-0915-BS	Brush Spring Set (2)
19	K101-0915-S	Brush Set (2)

Trouble Shooting Instruction

Indication

#7 AC Power Light not illuminating when #10 Power Switch is on

#9 DC Power Light not illuminating when #12 Test Switch is activated

#3 Magnetic Strength Meter giving inconsistent readings or no readings

Possible Solution

Press and reset #4 Fuse, check in house circuits

Press and reset #5 Fuse

1. Make sure the Gauss Sensor Bracket is adjusted correctly, and the #18 Positioning Device are in place and the wing nuts tight.

2. Loosen and clean connections on #19 Brushes and #13, #14 & #16 Connectors.

3. Perform calibration instructions for #3 Analog Magnetic Strength Meter.

Calibration Instructions

Analog Magnetic Strength Meter: Using #22 Calibration Device, place the device with the magnet side down centered on #21 Gauss Sensor. Rotate #6 Balance Pot clockwise as far as it will go. Unlock the nut on #2 Gain Pot and adjust the pot until #3 Analog Magnetic Strength Meter reads 100.

Digital Meter for Rotor Amp Draw:

Refer to the manufacturers instructions supplied with the tester. Amp Meter readings should be compared and adjusted with a standard.

Settings Log

Rotor Type	Rotor #	Amps	Magnetic Strength	Balance Pot Setting