KWIK-WAY®

100 & 200 Wheel Balancers

Instruction & Parts Manual

Kwik-Way Products Inc.
Manual Part Number: 504-3050-00

REV 2003

521 Warranty

KWIK-WAY provides a limited 521 Warranty on each serial number Wheel Balancer Product when purchased in a new and unused condition to be free from defective material or workmanship from date of purchase as per the following:

100 & 200 Wheel Balancers

* 5 Years - frame, welding construction
* 2 Years - shaft
* 1 Year - parts, electrics and labor

This warranty does not apply to a product that has been purchased in used condition, that has failed due to improper installation, repairs, service or that has sustained damage caused by accident, improper use or shipment.

Kwik-Way Products Inc. will repair and/or replace, free of charge (FOB factory) all such defective parts, only when returned to factory with shipping charges prepaid. This warranty does not cover parts and supplies consumed in normal operation of the machine.

Kwik-Way Products Inc. disclaims all other warranties, expressed or implied, as to the quality of any goods, including implied warranties of MERCHANTABILITY and FITNESS FOR PARTICULAR PURPOSES. UNDER NO CIRCUMSTANCES WHATSOEVER, SHALL KWIK-WAY PRODUCTS INC. BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON LOST GOODWILL, LOST RESALE PROFITS, WORK STOPPAGE, IMPAIRMENT OF OTHER GOODS OR ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, NEGLIGENCE OR OTHERWISE, EXCEPT ONLY IN THE CASE OF PERSONAL INJURY WHERE APPLICABLE LAW REQUIRES SUCH LIABILITY. This limited warranty gives you specific legal rights and you may also have other rights which vary from state to state. This document contains the complete text of this warranty and may not be modified either orally or in writing.

Because of ***Kwik-Way Products Inc.***'s constant program of product improvement, specifications are subject to change without notice.

KWIK-WAY®
A Tradition of Automotive Precision Since 1920

Kwik-Way Products Inc.
500 57th Street
Marion, Iowa 52302
Toll Free *1-800-553-5953*
Fax 319-377-9101

Internet http://www.kwik-way.com

Office Hours: 7:30 to 5:00 Central Time

Receiving Shipment

Upon taking delivery of your machine, carefully inspect the assembly before removing the crating and packing materials.

If evidence of damage exists, contact the shipper and *Kwik-Way Products Inc.* immediately. Although *Kwik-Way Products Inc.* is not responsible for damage incurred during transit, you will be provided assistance in preparation and filing of any necessary claims.

CAREFULLY READ THIS MANUAL BEFORE ATTEMPTING TO SET-UP OR OPERATE THIS MACHINE.

Important Note:

Always have your serial number ready when communicating with *Kwik-Way Products Inc.* regarding parts or service.

Keep this manual in a safe place.

Date Received _____

Serial Number _____

KWIK-WAY

Toll Free *1-800-553-5953*
Internet http://www.kwik-way.com

Kwik-Way Products Inc.
500 57th Street
Marion, Iowa 52302
319-377-9421
Fax 319-377-9101

SAFETY FIRST

This manual has been prepared for the owner and those responsible for the maintenance of this machine. It's purpose aside from proper maintenance and operations is to promote safety through the use of accepted practice. READ THE SAFETY AND OPERATING INSTRUCTIONS THOROUGHLY BEFORE OPERATING THE MACHINE.

In order to obtain maximum life and efficiency from your machine; follow all the instructions in the operating manuals carefully.

The specifications put forth in this manual were in effect at the time of publication. However, owing to ***Kwik-Way Products'*** policy of continuous improvement, changes to these specifications may be made at any time without obligation.

NOTICE	⚠ DANGER	⚠ DANGER	⚠ DANGER	⚠ DANGER
				
Read the manual first Primero lea el Manual Zuerst Bedienungsanleitung lesen Lire le manuel avant	Do not operate without guards No manejar sin guardias Nur mit Schutzvorrichtung bedienen Ne pas faire marcher sans dispositif de sureté	Electrically ground machine Maquina electricamente de sueld Elektrische Erdleitung Machiné terre electrique	Do not wear tie, confine loose clothing/hair No usar corbata, ropa/cabello suelto Vorsicht mit langem Haar/weite, lockere Kleidung Ne pas porter de cravate, vetements ou cheveux pas restreints	Do not wear watches/jewelry No usar reloj de pulsera/joyeria Uhren u. Ringe ablegen Ne pas porter de montres/bijoutene
DANGER	**⚠ CAUTION**	**⚠ DANGER**	**⚠ DANGER**	**⚠ CAUTION**
				
Wear safety glasses/shield Usar anteojos/protectores de seguridad Schutz-brille benutzen Porter lunettes de sé curité	Keep area dry and clean Mantener el area seca y limpia Arbeitsbereich trocken und sauber halten Maintenir ce zone sec et propre	Turn off before cleaning/adjusting Apagar antes de limpiar/ajustar Ausschalten bei Wartung Fermer avant de nettoyer/ajuster	Do not wear gloves No usar guantes Nicht mit Handschuhen bedienen Ne pas porter de gants	Tighten work piece securely Apretar pieza de trabajo con seguridad Werkstueck fest spannen Serrer solidement le piece de travail

SAFETY INSTRUCTIONS

1. **Read, understand and follow** the safety and operating instructions found in this manual. Know the limitations and hazards associated with operating the machine.

2. **Eye Safety:** Wear an approved safety face shield, goggles or safety glasses to protect eyes when operating the machine.

3. **Grounding the Machine:** Machines equipped with three prong grounding plugs are so equipped for your protection against shock hazards and should be plugged directly into a properly grounded three-prong receptacle in accordance with national electrical codes and local codes and ordinances. A grounding adapter may be used. If one is used, the green lead should be securely connected to a suitable electrical ground such as a ground wire system. Do not cut off the grounding prong or use an adapter with the grounding prong removed.

4. **Work Area:** Keep the floor around the machine clean and free of tools, tooling, stock scrap and other foreign material and oil, grease or coolant to minimize the danger of tripping or slipping. Kwik-Way recommends the use of anti-skid floor strips on the floor area where the operator normally stands and that each machine's work area be marked off. Make certain the work area is well lighted and ventilated. Provide for adequate workspace around the machine.

5. **Guards:** Keep all machine guards in place at all times when machine is in use.

6. **Do Not Overreach:** Maintain a balanced stance and keep your body under control at all times.

7. **Hand Safety: NEVER** wear gloves while operating this machine.

8. **Machine Capacity:** Do not attempt to use the machine beyond its stated capacity or operations. This type use will reduce the productive life of the machine and could cause the breakage of parts, which could result in personal injury.

9. **Avoid Accidental Starting:** Make certain the main switch is in the **OFF** position before connecting power to the machine.

10. **Careless Acts:** Give the work you are doing your undivided attention. Looking around, carrying on a conversation and horseplay are careless acts that can result in serious injury.

11. **Job Completion:** If the operation is complete, the machine should be emptied and the work area cleaned.

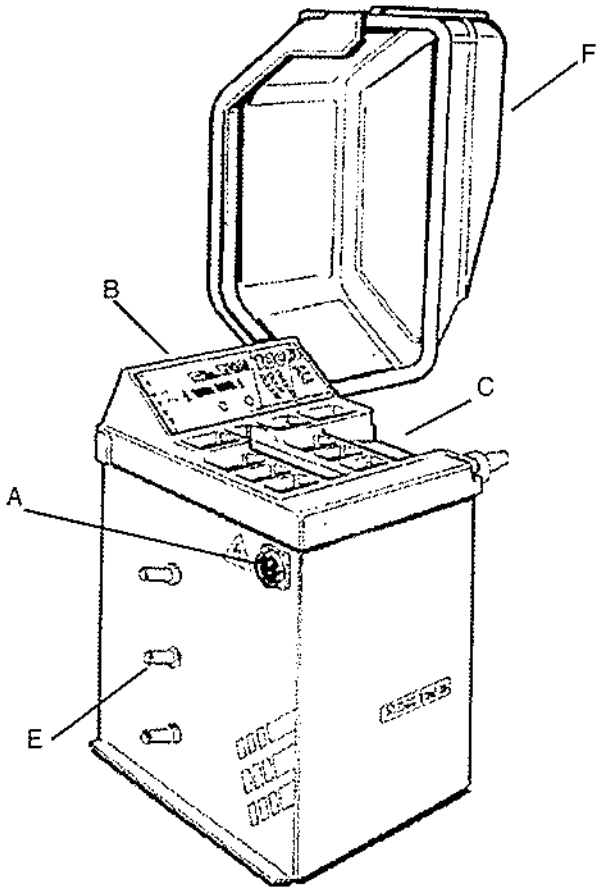
12. **Disconnect All Power and Air to Machine** before performing any service or maintenance.

13. **Replacement Parts:** Use only Kwik-Way replacement parts and accessories; otherwise, warranty will be null and void.

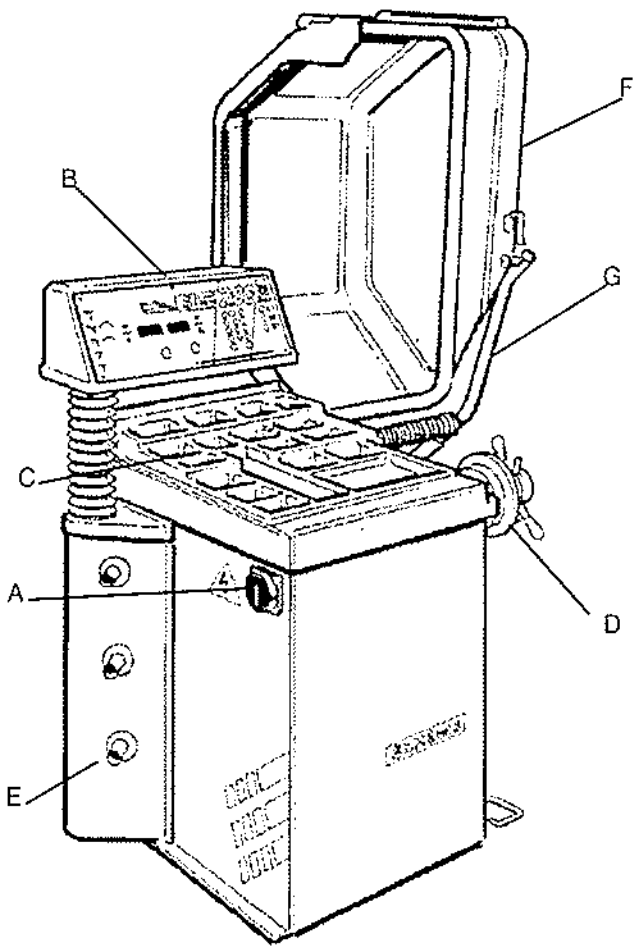
14. **Misuse:** Do not use the machine for other than its intended use. If used for other purposes, ***Kwik-Way Products Inc.*** disclaims any real or implied warranty and holds itself harmless for any injury or loss that may result from such use.

100 & 200 Wheel Balancers

100 WHEEL BALANCER



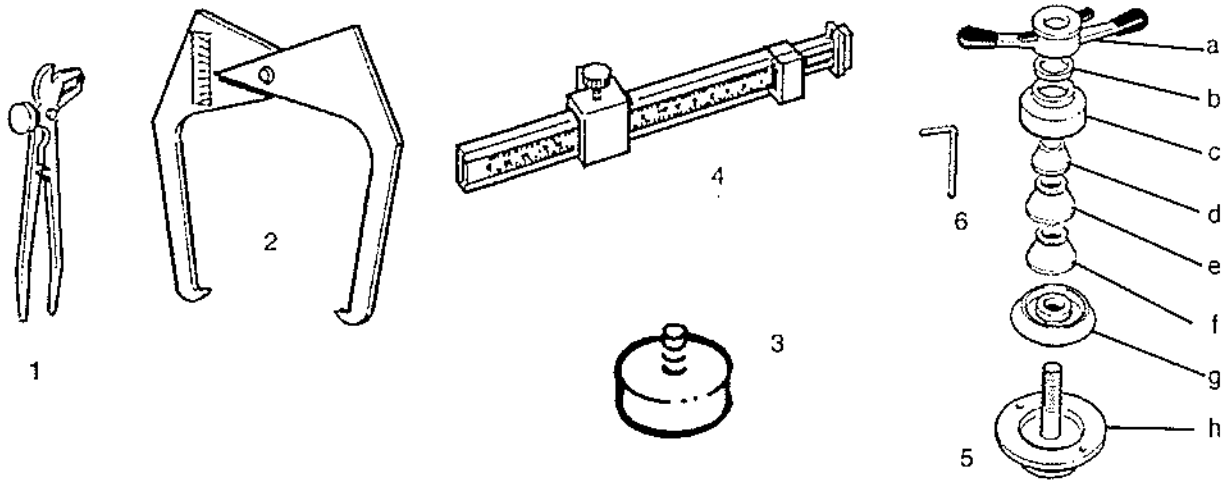
200 HIGH VOLUME WHEEL BALANCER



KEY

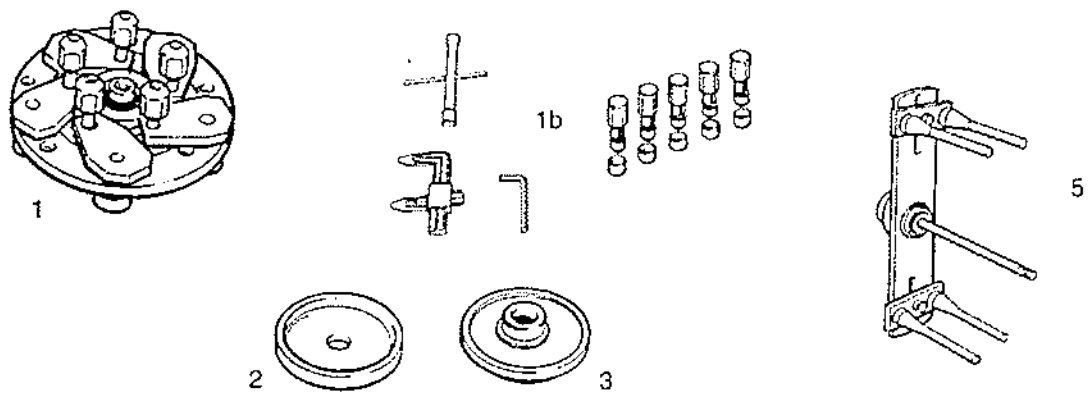
A	Main Switch
B	Electronic Panel
C	Weights Board
D	Flange
E	Flange and Accessories Holder
F	Wheel Protection Guard
G	Automatic Gauge (200 version)

ACCESSORIES SUPPLIED



1	504-6065-00	Wheel weight pliers	d	504-6325-00	#1 Cone
2	504-6027-00	Rim caliper	e	504-6528-62	#2 Cone
3	504-6096-00	Sample weight	f	504-6056-00	#3 Cone
4	504-6294-00	Aluminum wheel gauge	g	504-6123-00	#4 Cone
5	504-6024-00	Bell flange and cones (set)	h	504-6528-61	Bell flange
a	504-6162-00	Kwik-release nut	6	504-6053-00	Wrench L-Hex M-14
b	504-6161-00	Nylon ring	N/S	504-6241-00	Calibration wheel weight, 3.5 oz/100g
c	504-6165-00	Pressure cup			

OPTIONAL ACCESSORIES



1	504-6276-00	Universal flange mount (w/standard nuts)	4	504-6000-00	Truck Cone Set (incl. 504-6062-00/504-6063-00)
1b	504-6281-00	Universal flange mount (w/Kwik-nuts)	5	504-6358-00	Motorcycle wheel clamp
2	504-6062-00	Spacer plate (truck cone)			
3	504-6063-00	Truck cone (4.8-6.70")			

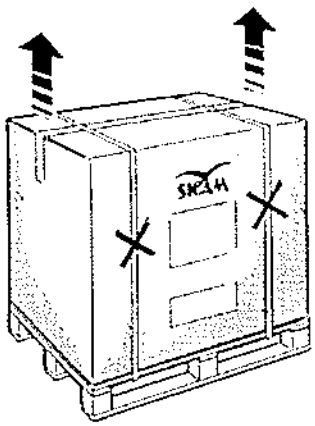
UNPACKING

REMOVING THE BOX:

After removing the straps, remove the cardboard cover and carefully inspect the machine for missing or damages parts. If in doubt, contact your sales representative or Kwik-Way direct.

A box containing your accessories is packed within the box for the machine. Please open and inspect the accessories provided.

NOTE: Discard all non-biodegradable packaging at appropriate collection points. All packaging materials are potentially hazardous to children. Dispose of all materials in a safe method.



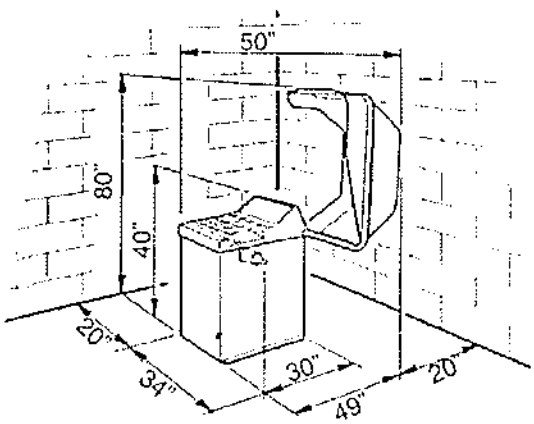
LOCATION OF THE MACHINE

LOCATION:

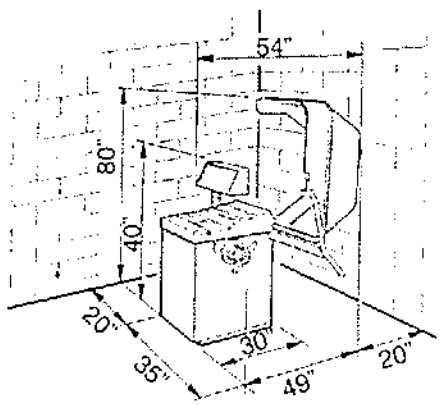
The wheel balancer must be placed on a solid floor made of concrete of similar material. A hollow or soft floor will cause errors in imbalance measurements.

The wheel balancer should not be located any closer than 20 inches to any wall or fixed object. This is to provide for safe and ergonomic operation of the machine.

Anchoring to the floor at the three location on the base is highly recommended to provide maximum reliability and repeatability.



100

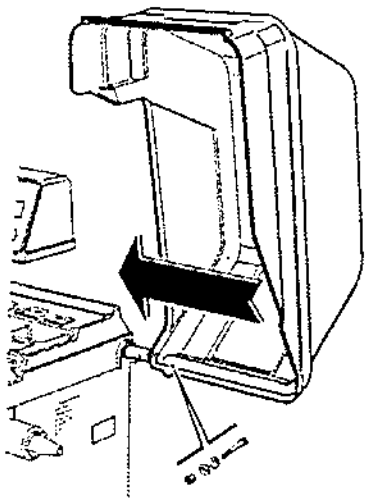


200

INSTALLATION

MOUNTING THE WHEEL GUARD:

Slide the wheel guard over the shaft, being careful to align the through-bolt hole. Insert the bolt from the rear. Attach the nut and tighten



ELECTRICAL CONNECTION:

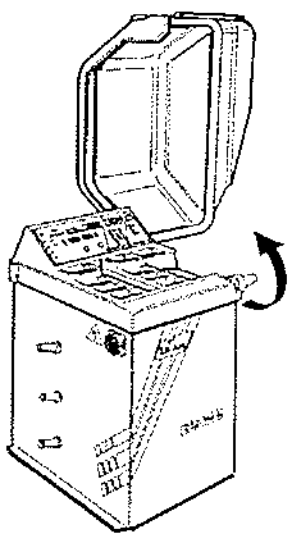
The machine is pre-wired with a 115 volt convenience plug. Simply plug into the closest outlet.

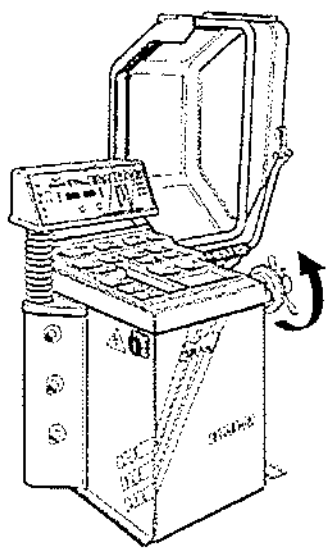
NOTE: DO NOT use an extension cord to provide power to the machine. Locate the unit within the machine's cord length of an outlet.

DO NOT cut or remove the ground prong from the plug. This can cause electrical shock to the operator.

CHECK the rotation of the spindle. Rotation should be CLOCKWISE as viewed from the spindle end.

IF THE MACHINE PERFORMS ABNORMALLY, shut off the main switch and refer to the troubleshooting section of this manual.





100 & 200 Wheel Balancers

MACHINE SPECIFICATIONS

The 100 and 200 are high performance machines:

- Which utilize microprocessors to ensure high precision wheel balancing.
- Incorporates a system of auto faultfinding and auto setting that makes maintenance extremely simple.
- Operates with a single automatic cycle, which measures imbalance of two planes simultaneously, while memorizing the value of the weight and position.
- Offer 5 Aluminum Wheel programs with hidden weight capabilities.
- Wheel Guards that provide for tire and wheel assemblies up to 36" diameter, and when in the open position, prevents accidental starting.
- The 200 utilizes automatic gauges for setting of the wheel dimensions.

TECHNICAL DATA

DIMENSIONS	**100**	**200**
Maximum weight	80"	80"
Depth	56"	56"
Width	34"	38"
WEIGHT		
Gross Weight	365 lb.	445 lb.
Net Weight	314 lb.	378 lb.
ELECTRICS		
Motor HP	.5 HP	.5 HP
Power Supply	115V 1ph	115V 1ph
GENERAL		
Spindle RPM	185/195	185/195
Balance Precision	1gram	1gram
Noise Level	75db	75db
APPLICATION SPECIFICATIONS	**min/max**	**min/max**
Rim Width	1" / 20"	1" / 20"
Rim Diameter	10" / 24"	10" / 20"
Max. Tire Diameter	40"	40"
Max. Tire and Wheel Weight	155lb.	155lb.
Max. Motorcycle Tire and Wheel Weight	45 lb.	45lb.

NOTES:

BELL FLANGE INSTALLATION

Before mounting the bell flange or any Optional Adapter that attaches directly to the machine, clean the spindle and the flange hole thoroughly. An incorrect installation will influence the accuracy of the balancer.

BALANCING ATTACHMENTS:

Figure 1 illustrates the proper installation of the Standard Bell Flange, Part Number 504-6024-00 with 40-mm shaft, and Kwik-Release Wing nut.

Figure 2 illustrates the proper installation of the Optional Lug Centric Adapter, Part Number 504-6281-00 with Kwik Nuts

Figure 3 illustrates the proper installation of the Optional Motorcycle Adapter with 19-mm shaft, Part Number 504-6358-00.

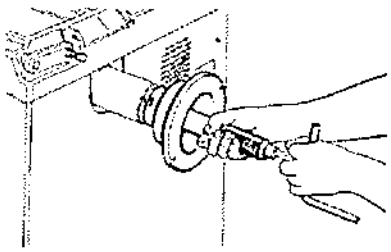


Figure 1

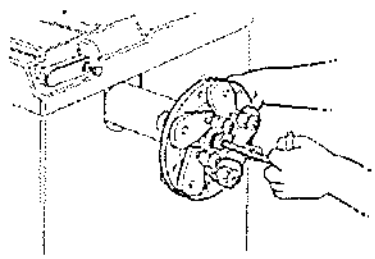


Figure 2

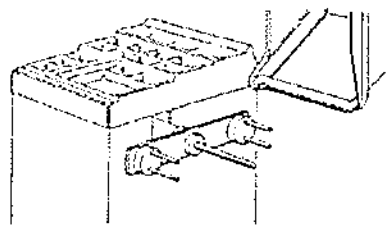


Figure 3

WHEEL ATTACHMENT:

Figure 4 illustrates tire and wheel installation procedure with standard adapter,

Figure 5 illustrates the motorcycle wheel in position.

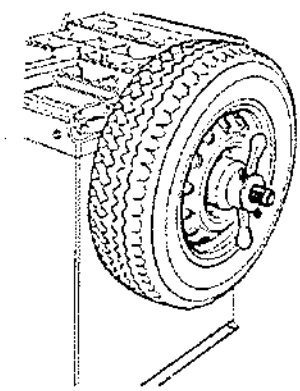


Figure 4

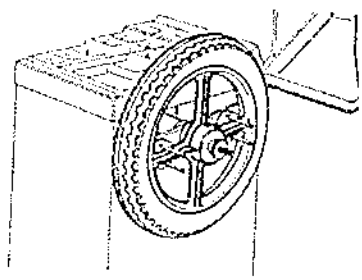


Figure 5

INPUTTING WHEEL AND TIRE INFORMATION

PROGRAMMING WITH MANUAL GAUGE – ENTER THE WHEEL INFORMATION TO BE BALANCED INTO THE PANEL.

- The width is measured with the wheel calipers provided (see FIG. 1)
- The diameter of the rim is obtained from the tire mounted on the rim (see FIG. 2)
- The distance is measured with the internal distance arm (see FIG. 3)

PROGRAMMING WITH AUTOMATIC GAUGES (200 ONLY)

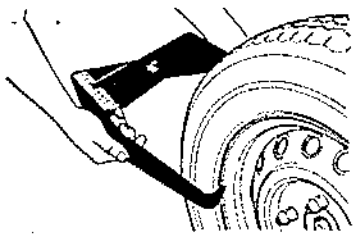
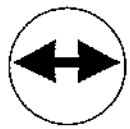


Figure 1



Input Rim Width

Figure 1a

Figure 2

Input Rim Diameter

Figure 2a

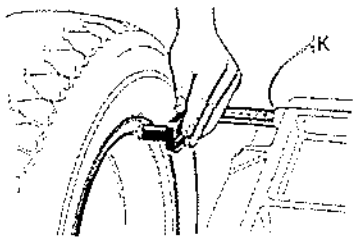
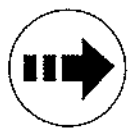


Figure 3



Input Rim Distance

Figure 3a

- Use of the external distance arm eliminates the need of the manual tire caliper. (see FIG. 4)

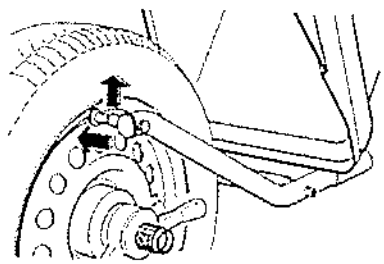
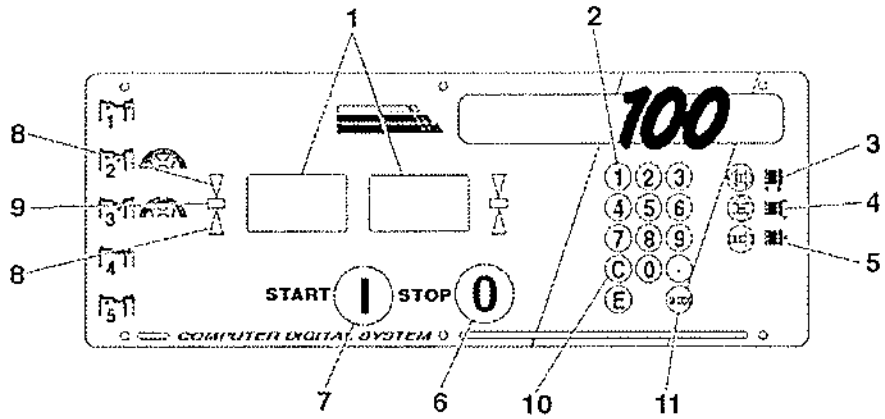


Figure 4

MACHINE CALIBRATION



1. Data displays
2. Programming keyboard
3. Rim width adjustment key
4. Rim diameter adjustment key
5. Rim compensation distance adjustment key
6. STOP button
7. START button
8. LED imbalance direction indicators
9. Point of imbalance (LED)
10. C button - for coded functions
11. Balancing program selector button (MODE)

STEP ONE:

1. Install the bell flange with allen wrench provided - TIGHTEN.
2. ENTER **C439E** to begin the calibration process
3. PRESS **C 72E**, this opens the calibration mode
4. **CAL1** will now appear in the display. Run the machine.
5. **00** will now appear in the display, ENTER **C526E** to memorize.

STEP TWO:

1. Mount a tire and wheel in good condition, preferably 13 or 14 inch size. (remove any weights)
   NOTE: It is a good idea to retain this assembly for future use.
2. Enter the wheel data

a. Press: ↔ Enter the Width (i.e. 6", 6.5," etc.) and PRESS **E** to enter the data.

b. Press: ↕ Enter the Diameter (i.e. 13.0", 14.0", etc) and PRESS E to enter the data.

c. Press: ➡ Enter the Distance from the machine to the rim in millimeters (i.e. 85, 95, 100, etc.) determined by the internal distance arm and PRESS **E** to enter the data.

3. PRESS the **STOP** button.
4. ENTER **C19E**, the display will read **CAL 4**. Run the machine.
5. When the wheel stops, the display will read **CAL 5**
6. Attach the 3.5 oz. Calibration Weight provided at the 12 o'clock position on the INSIDE wheel flange. **Enter 3.5** (the weight value) and PRESS **E.** (If a 3.5 oz. weight is not available, set the weight value to the weight you have.)
7. The display will read **CAL 6**. Run the machine.
8. When the machine stops, the display will read **CAL 7**. Rotate the tire and wheel until the weight is at the 12 o'clock position. Move the weight directly across to the OUTSIDE rim flange at the 12 o'clock position, and attach. Run the machine.
9. When the wheel stops, the display will read **CAL 8**. Rotate the tire and wheel so that the weight is at the 6 o'clock position; PRESS E.
10. ENTER **C526E** to memorize, calibration is now complete.

PROGRAMMING AND ATTACHING ADHESIVE WEIGHTS

A special gauge is provided as standard equipment for attaching adhesive weights to aluminum and or light alloy wheels

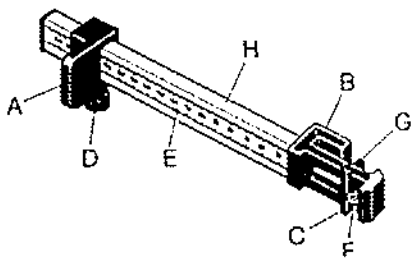


Figure 1

A Gauge base slider
B Weight position gauge head
C External jaws
D Screw knob
E Scaled millimeter plate
F Extruder
G Internal jaws for weight fixing
H Handle with plate seat

NOTE: The gauge (FIG. 1) is used only in conjunction with the ALU 2 and 3 programs to determine the exact location for positioning the weights.

- Using the MODE key, select the ALU 2 program
- Position the Gauge so as to have the base (a) contacting the inside wheel flange
- Slide the base (a) on the body (e) to position the jaw (g) at the point you wish to apply the tape weight. Tighten the lock thumb screw (d)
- Read the measurement on the Millimeter Plate (e) and enter this number using the key board and rim width icon.

- Run a cycle, the weight values will be displayed in the left and right displays
- Rotate the assembly so that the right hand LED display is at the 12 o'clock position
- With the correct weight value required positioned in the external jaw (g), hold the base (a) at the wheel flange in the 12 o'clock position, and with the extruder (f), attach the weight. (FIG. 2)
- Rotate the assembly so that the left hand LED display is in the 12 o'clock position
- Move the head of the gauge (b) to the edge of the wheel and attach the required weight to the edge of the wheel. (FIG. 3)

NOTE: For ALU 3 the process for the outside weight is the same. The inside weight will be a clip on weight. Practice with the Aluminum gauge with a tire and wheel assembly on the floor so as to familiarize yourself with the gauge itself and the attachment of weights.

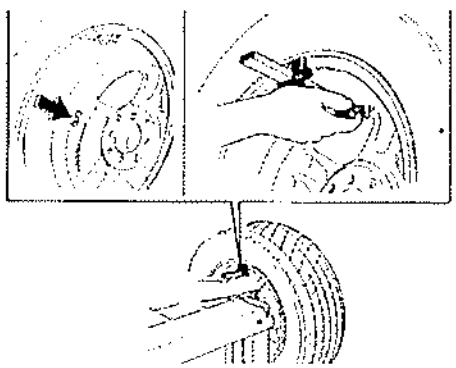


Figure 2

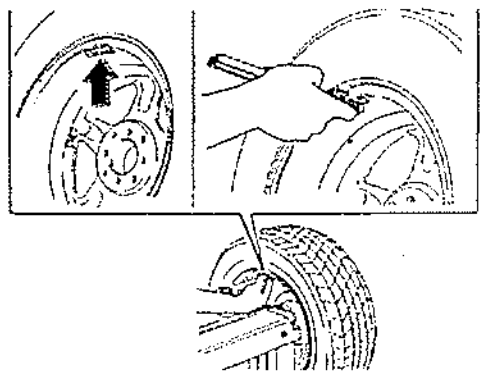


Figure 3

SELECTION OF BALANCING PROGRAMS

Wide varieties of wheels are used in today's automotive and light truck market. Each produces different nominal measurements and reference planes as well as requiring different types of weights for balancing. Your Kwik-Way balancer utilizes different programs to take into account those variations.

You must select a **MODE** that is based on the wheel, type of weight, and where the weight will be placed.

Using the **MODE** button, select the correct program for your application as follows:

Standard dynamic balancing using clip-on weights – Appears automatically when the machine is switched on or you can repeatedly PRESS **MODE** until "nor" appears in the display

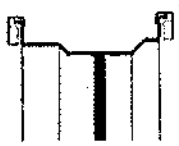
Two programs for alloy or aluminum wheels using only stick-on (adhesive type) weight. Repeatedly PRESS **MODE** until "**ALU 1**" or "**ALU 2**" appears in the display

Three programs for alloy or aluminum wheels using one clip-on and one stick- on weight. Repeatedly PRESS **MODE** until "**ALU 3**" - "**ALU 4**" or "**ALU 5**" appears in the display

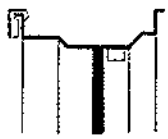
Two programs for the PAX Tire, using stick-on weights and millimeter measurements. Repeatedly PRESS **MODE** until "**PA.S 1**" and "**PA.S 2**" appears in the display

One program for Static Balance uses either stick-on or clip-on weights. Repeatedly PRESS **MODE** until "**STA**" appears in the display

See illustrations below for the weight type and placement.



nor



Alu 4

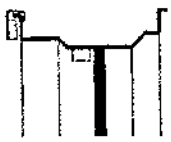
Alu 1

Alu 5

STA

Alu 2

PA.S. 1



Alu 3

PA.S. 2

WEIGHT SEPARATION PROGRAM

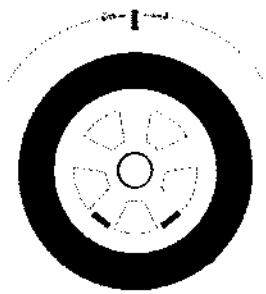
This program is used in either "**ALU 2**" or "**ALU 3**", and intended for aluminum and or light alloy wheels.

- PRESS "**C40E**", the left display will read n, the right hand display will read **000**
- Use the keypad to enter the correct number of spokes (3 to 9) for the wheel being balanced, then PRESS **E**. The displays will read "**000 – 000**". At this point the screen will automatically go to the "**ALU 2**" program. If "**ALU 3**" screen is required, simply use the MODE button and advance to "**ALU 3**"
- Enter the wheel measurements as per the wheel balancing program, and run a cycle
- The displays will now read the internal and external weight requirements, not yet separated
- Rotate the assembly so that the external weight position is at 12 o'clock, if the weight placement at this point would be visible, we must separate the weight
- Move a spoke to the 12 o'clock position, while holding the position **PRESS .** ("Decimal point key") The right hand display will now read the value of one of the weights required. There will be a decimal point to the right of the figure to indicate the separation has been initiated.
- The display will be centered, a new weight value will be displayed, attach that weight at the 12 o'clock position behind the spoke.
- Rotate the tire and wheel until the display re-centers, a second spoke will now be at the 12 o'clock position, attach the weight displayed behind the spoke.
- Now attach the weight displayed for the internal (left display) weight at the 12 o'clock position
- Run a cycle and verify the balance, the displays will read "**000 – 000**"

NOTE: Stick on weights can vary slightly in their actual weight, always re-check and verify that the balance correction is complete.

During this stage of the separation process, you can push the **STOP** button the display will show the "**ALU 2**" program and the number of spokes for a brief time.

To deactivate the weight separation function, PRESS **MODE** repeatedly to return to the "**nor**" program



NOTES:

WHEEL BALANCING

SWITCH THE MACHINE ON WITH THE MAIN SWITCH LOCATED ON THE LEFT SIDE UPPER CORNER.

- The displays will read - **000 000**
- Input the wheel and tire dimensions (see Inputting Wheel and Tire Information)
- Close the wheel guard and push the **START** button, the cycle will begin
- After starting, the read outs in the displays will disappear with the exception of the center segment
- After the competition of the cycle, the amount and location of the imbalance is displayed
- When the readings are complete, the machine slows and stops automatically
- The wheel guard MUST NOT be opened during the cycle. In an emergency, the **STOP** button shuts the machine down.
- The **LED** arrows indicate the direction to rotate the tire and wheel assembly to reach the imbalance location. The center of the display will light up indicating the point at 12 o'clock to attach the weight.
- After attaching the weights, run a second cycle to verify that the imbalance has been corrected.

WHEEL BALANCE CHECKS

The following two test procedures are used to verify that the balance operation is accurate.

CHECKING FOR THE CORRECT OPERATION DURING THE BALANCING PROCEDURE

- After completing the wheel balance as instructed above
- Add a weight to either the inside or outside of the wheel flange, and create an artificial imbalance
- Run a cycle, the machine should now display the exact amount and position of the weight.
- To verify, rotate the tire and wheel assembly by hand until the LED indicator shows the imbalance position in the center. The weight should be directly at the 6 o'clock position and the imbalance amount displayed should be the amount of the weight used. (NOTE: There may also be a reading for the other side, but it can not exceed .25oz.)
- If there is a clearly visible variation in angularity (six o'clock position), the LED's must be recalibrated (see calibration procedures - page 11).
- If there is an unacceptable deviation in weight or the other side is in excess of 5g, the machine must be re-calibrated

  PLEASE NOTE: Attaching weighs exactly at 12 o'clock and also the correct amount of weight is critical to the accuracy of the balancer.

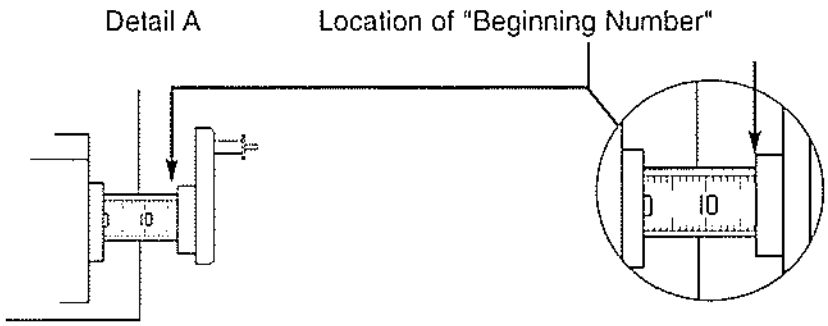
WHEEL CENTERING PRECISION (Balancing Quality)

For this test use the same tire and wheel assembly used for the above test.

- Remove the weight added for the above test. Release the wing nut and rotate the assembly by hand approximately 35 degrees and then re-tighten the wing nut.
- Run a cycle, at the completion, imbalance should not exceed .25oz. on each side (.5oz. on heavy wheels) This allowable error is due to rim centering tolerance.
- If a large amount appears, check for excessive wear in or play in the parts being used to center the wheel, or the wheels center hole itself. (Dirt can also cause an error, thoroughly clean the mounting surfaces of the wheel and all centering devices used)

Distance Arm Calibration – 200

It may become necessary to calibrate your internal and external distance arms. Read and follow the subsequent instructions carefully. Before beginning the calibration procedure, study the Detail A drawing of the internal distance arm so as to understand how the scale is graduated and also to determine the "beginning number" for your machine.

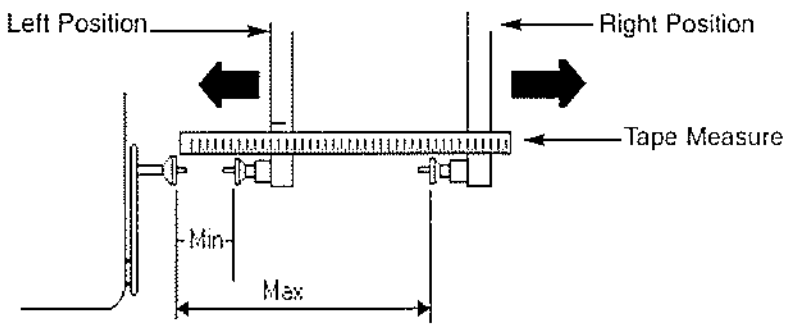


NOTE: Each Graduation on the Internal Arm Scale is 1 MM. The "beginning number" for this arm would be 3 MM. Your beginning number may differ slightly and it is important that you use the correct number when calibrating your machine.

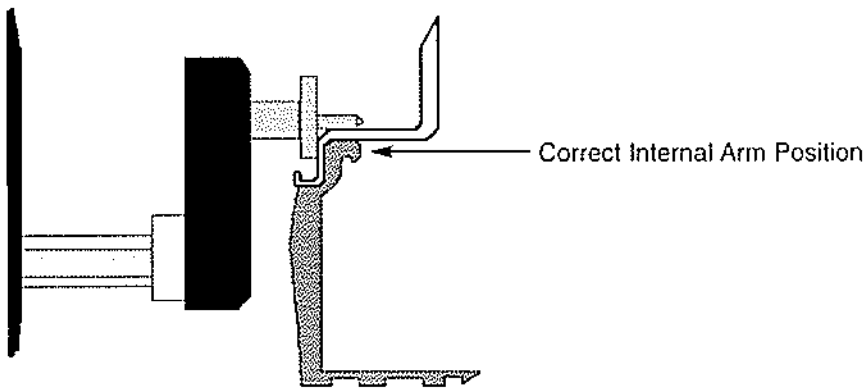
Calibration Procedure:

1. Enter "**C32E**", the left-hand display will read "**D1**"
2. Move the Internal Distance Arm out and read the metric scale to determine the "beginning number", then return arm to the rest position. Enter that number, it will now appear in the right-hand display, "PRESS **E**", the left-hand display will now read "**D2**"
3. Move the Internal Distance Arm to the full open position, read the metric scale again and enter that number, the number will now appear in the right-hand display, "PRESS **E**". Move the arm back to the rest position, the left-hand display will now read "**L1**"
4. Move the External Arm to the full right position. With a metric tape measure, measure the distance to the Internal Arm, (Detail B) this is the Maximum Distance. Enter that measurement, it will appear in the right-hand display, "PRESS **E**". "**L2**" will appear in the left-hand display.

Detail B



5. Move the External Distance Arm to the full left position. (Detail B) With the metric tape measure, measure the distance to the Internal Arm, this is the Minimum Distance. Enter that reading it will appear in the right-hand display, "PRESS E". "**ALT**" will appear in the left-hand display.
6. Mount a tire and wheel assembly onto the spindle, preferably of a 13 or 14 inch diameter. Move the internal arm to contact the rim in the proper diameter position and ENTER THE DIAMETER, "PRESS **E**". Release the internal arm and enter "**STOP,** ENTER **C526,** PRESS **E** ". Wait for the "**BEEP**" calibration is complete.



OPTIMIZATION OF BALANCE

To begin this operation, PRESS the **MODE** key repeatedly until the left display reads oPt. PRESS the **E** key to enter the optimization; **oPt 1** will now appear.

- With the tire and wheel assembly to be optimized mounted, PRESS the **START** button to run the assembly, at the end of the run cycle the display will read **oPt 2.**
- Rotate the tire and wheel so the valve stem is in the 12 o'clock position, and then PRESS the **E** key, this will memorize the first test position. The display will now read **oPt 3,** using a tire crayon or other suitable tool, mark the tire in reference to the valve stem. (FIG. 1)
- Remove the tire and wheel from the balancer and take to a tire machine. Break the beads and rotate the tire on the rim so that the tire reference mark is now180 degrees from the valve stem. Re-inflate the tire, and remount on the balancer. (FIG. 2)
- Rotate the tire and wheel by hand until the valve stem is now at the 12 o'clock position, PRESS the **E** key, this will memorize the second test position. The display will now read **oPt** 4. (FIG. 2)
- PRESS the **START** button to run the assembly. If the display reads **oPt yes,** the tire and wheel is optimized. If the display reads **oPt 5,** Push and hold the **STOP** Button. The left display will show the STATIC imbalance value, while the right display shows the RESIDUAL imbalance value. These figures are useful in determining if you should continue to try and further optimize the assembly.

To continue the optimization process, rotate the tire and wheel assembly until the positioning LED's are centered. Mark the tire at the12 o'clock position. (FIG. 3)

- Remove the tire and wheel assembly from the balancer and take to a tire machine. Break the beads and rotate the tire so that the new mark is in line with the valve stem. Re-inflate the tire, and remount on the balancer. (FIG. 4)
- Rotate the tire and wheel assembly by hand so that the valve stem is at the 12 o'clock position, PRESS the **E** key to memorize the position. The display will now read **oPt 6.**

- PRESS the START button and to run the assembly, if the display reads YES, the optimization process is complete. If the display reads **oPt7**, then you go to step **oPt5** and continue.

When it is no longer possible to reduce further imbalance through the optimization, the process ends. Return to the Normal mode and balance in a conventional method.

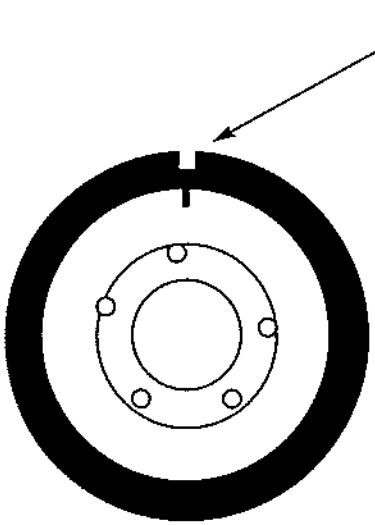


Figure 1

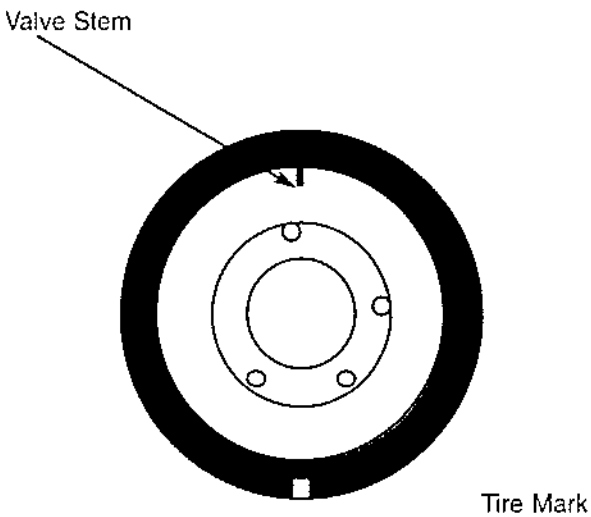


Figure 2

Tire Mark

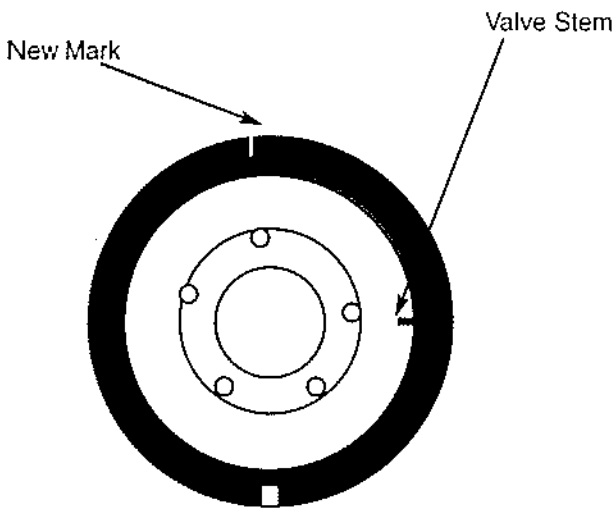


Figure 3

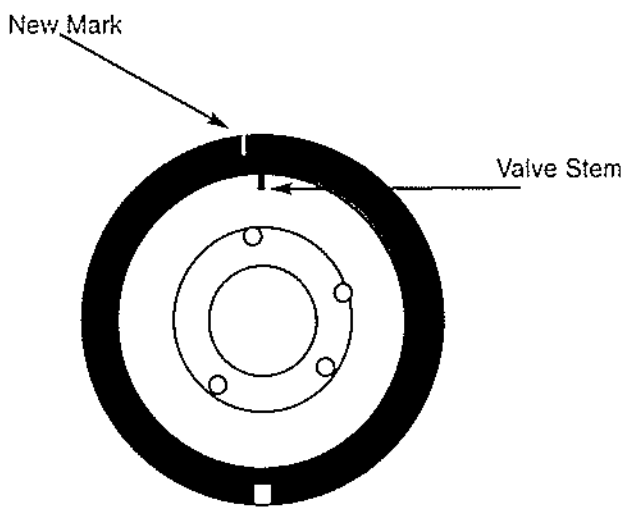


Figure 4

SPECIAL PROGRAMMING

- 1 or 5 Gram Interval Display – To switch from the 1 to 5 or 5 to 1 Gram Display, PRESS **C21E**. To memorize the change PRESS **STOP C526E**
- Automatic Arm Function – To enable or disable the automatic arm function, PRESS **C235E**. To memorize the function PRESS **STOP C526E**
- Silent Function – To de-activate the audible Signal (beep), PRESS **C16E**. To memorize the function PRESS **STOP C526E**
- Run Cycle by Lowering Guard – To enable the function, PRESS **C15E**. To memorize the function ENTER **STOP C526E**
- Weight Display – For Gram Display, ENTER **C18E**, for Ounce Display ENTER **C20E**. To memorize the function PRESS **STOP C526E**
- Round Off – For conventional round off, ENTER **C24E**, for round off to the next highest value (.25oz.), PRESS **C24E**. To memorize the function, PRESS **STOP** then **ENTER C526E**.
- Zeroing Small Weights in Grams – To zero small weights in grams (2-3 g) ENTER **C7E**. The present zeroing reading is displayed in the left display. To change the zero, simply enter the new number. (A Max. of 1 figure increase or decrease to the right of the decimal point) PRESS E to confirm change, and PRESS **STOP** then ENTER **C526E** to memorize.

EXAMPLE: Current reading is 0.21 in left display you may enter 0.31 as a change – remember only 1 digit increase or decrease to the number to the right of the decimal point.

PROGRAMMING FOR BALANCING MOTORCYCLE WHEELS

STATIC

- To select the Static Balance Mode, PRESS **MODE** key repeatedly until **STA** is in the left display
- Manually input the wheel data into the panel - DO NOT use automatic input arms in STATIC Mode
- After running the STATIC balance cycle, always attach weight in the center of the rim width at the 12 o'clock position as indicated by the display arrow.

NOTES:

TECHNICAL ASSISTANCE
and
SPARE PARTS

For assistance in trouble shooting machine problems, refer to the Trouble Shooting Guide on Page 22 of this manual. A Trained Service Technician should be contacted to check any other malfunctions.

In all cases contact the Technical Service Department at Kwik-Way for prompt assistance. Please have the machine model and serial number available for the technician at the time of the call.

WARNING!

Any work on the Electrical, Hydraulic or Pneumatic systems MUST be carried out by FACTORY TRAINED TECHNICIANS ONLY

The machine drawings illustrated in the following pages show the basic machine, and accessory parts. All service parts should be ordered from your Kwik-Way representative or Kwik-Way directly. Substitution of any other will void any warranty, expressed or implied.

TROUBLE SHOOTING GUIDE and MALFUNCTION CODES

DISPLAY	MALFUNCTION	CAUSES	POSSIBLE SOLUTION
The off Display Does not Light Up	The panel has no power	1.Power Supply Is Off 2. Fuses F1 and or F2 is blown 3. Replace the fuse/fuses,	1. Breaker is tripped, or shut 2. Replace fuse or fuses 3. Fuses F3 and or F4 is blown blowing fuses suggests a fault in the electrical system.
E 00	Function non-existent error	1. Wrong Function Code Entered	1. In-put correct function code
E 01	Appears when switched ON	1.The panel has lost its Pre-settings	1. Repeat all settings for the balancer
E 02	Appears when switched ON	1. Panel memory is faulty	1. Replace the Panel Board

TROUBLE SHOOTING GUIDE and MALFUNCTION CODES

DISPLAY	MALFUNCTION	CAUSES	POSSIBLE SOLUTION
E 04	Motor does not run	1. Micro switch open 2. Low voltage to the machine 3. Electronic board malfunction	1. Close hood, re-try 2. Check outlet for proper voltage 3. Replace board
E 06	Appears when START is pushed	1. The Wheel cover is not lowered 2. Cover micro switch is defective	1. Lower the cover 2. Replace the micro switch
E 07	Appears after the first run	1. The difference of phase is too great between the pick-ups.	1. Replace the pick-ups, if error repeats replace the control panel
E 08	Appears after the first run	1. The left pick-up is defective	1. Replace left pick-up
E 09	Appears after the first run	1. The right pick-up is defective	1. Replace right pick-up
E 10	Arrears after the first run	1. Position Gauge fault	1. Replace the optical-electronics
E 11	Appears after the first run	1. Movement Gauge fault	1. Replace the optical-electronics
E 14	Appears in the DISPLAY	1. + 5V supply incorrect	1. Replace the board
E 17	Appears after the first run	1. Weight is out of range (over 250g)	1. Check to see if wheel is correctly mounted. Attach a 100g weight an run again.
E 18	Appears after the first run	1. Wheel data not entered	1. Enter the wheel data.
E 19	Appears after the second calibration cycle	1. The signal reading on the left pickup is lower than the right pickup	1. Connections may be inverted
E 20	Wheel spped is below the minimum RPM	1. Motor speed below minimum 2. Brake pedal operated during run	1. Check voltage (low) 2. Avoid pressing brake pedal
E 21	Possible electrical fault	1. Wheel speed too high	1. Replace encoder or electronic card
E 22	E22 appears during launch	1. Fault in optoelectonic signals	1. Check and replace the control panel electronic card

NOTE: Other malfunctions may occur which are largely technical in nature. Please call a qualified technician or KW Products for assistance.

PERFORMANCE TESTS, FOR SERVICE TECH USE ONLY

TEMPORARY BALANCING OF A WHEEL – When balancing a wheel for the purpose of testing the machine, enter "**C75E**" and proceed normally. Imbalance figures will display, and then cancel automatically. This function can not be put into memory and is canceled by switching the machine off or entering "**C530E**".

+ 5 VOLT DISPLAY – To display this voltage, enter "**C2E**", the left display will read t 2 and the right display the voltage. A value of 4.6 to 4.9 is required.

+ 2.5 VOLT DISPLAY – To display this voltage, enter "**C1E**", the left display will read t1 and the right display the voltage. A value of 2.3 to 2.5 is required.

PICK-UP VOLTAGE DISPLAY - To display the voltage taken in the last wheel spin, ENTER "**C6E**". The left display will read the internal pick-up voltage, while the right display will read the external pick-up voltage. The correct function is as follows; the internal pick-up voltage should always be lower than the external pick-up voltage. The variation should never exceed 3.5 v or be less than 1.5 v.

PICK-UP PHASE DISPLAY – To display the phase from the last wheel spin, ENTER "**C17E**". To test the function of the pick-ups, remove the tire and wheel assembly and attach the sample weight to the bell flange. Run the machine, the difference between the two angles should be 180 degrees + or - 1 degree.

THE FOLLOWING IS FOR MACHINES USING AUTOMATIC GAUGES

HEIGHT POTENTIOMETER VOLTAGE DISPLAY – To display the voltage, ENTER "**C11E**", the left display will read "ALT", the right display will read actual voltage

WIDTH POTENTIOMETER VOLTAGE DISPLAY – To display the voltage, ENTER "**C12E**", the left display will read "LAR", the right display will read actual voltage.

COMPENSATION POTENTIOMETER DISPLAY – To display the voltage, ENTER "**C13E**", the left display will read "**DIS**", the right will read actual voltage.

Concerning the Accuracy of the Potentiometers:

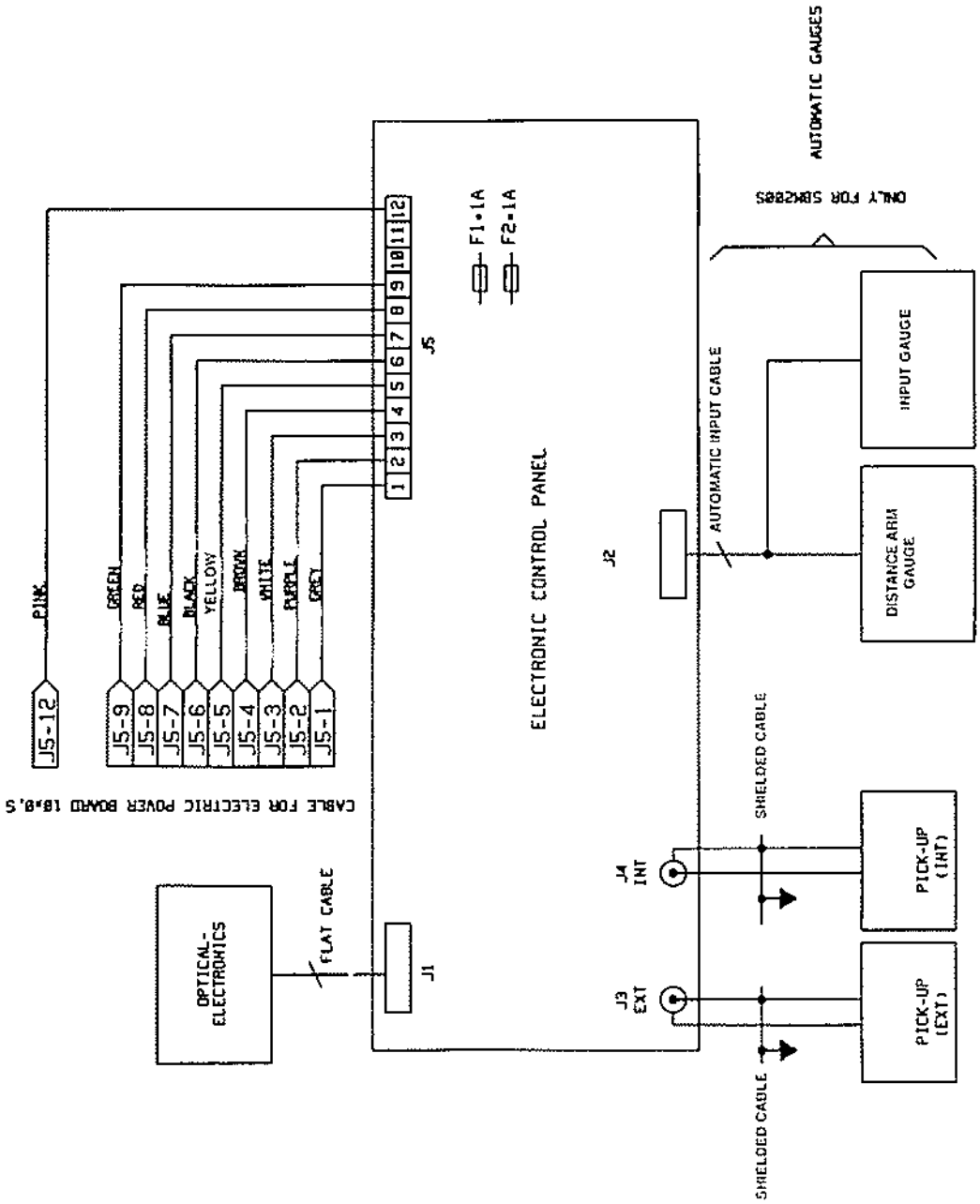
1. Changing the position of the potentiometers will change the corresponding voltage, so an increase in distance will relate to an increase in voltage for height and distance, but will decrease voltage for width
2. The voltage readings obtained in "C11, C12 and C13" should never be 0.0 or 5.0, with an accuracy of +/- 0.1. If these readings are found, then a short circuit caused by a disconnected or broken wire is present

CHECKING SPINDLE RPM – To check spindle speed, ENTER "**C5E**" and then START. The RPM for the one-minute run will appear in the right display. The RPM should be not lower than 185 but not exceed 195.

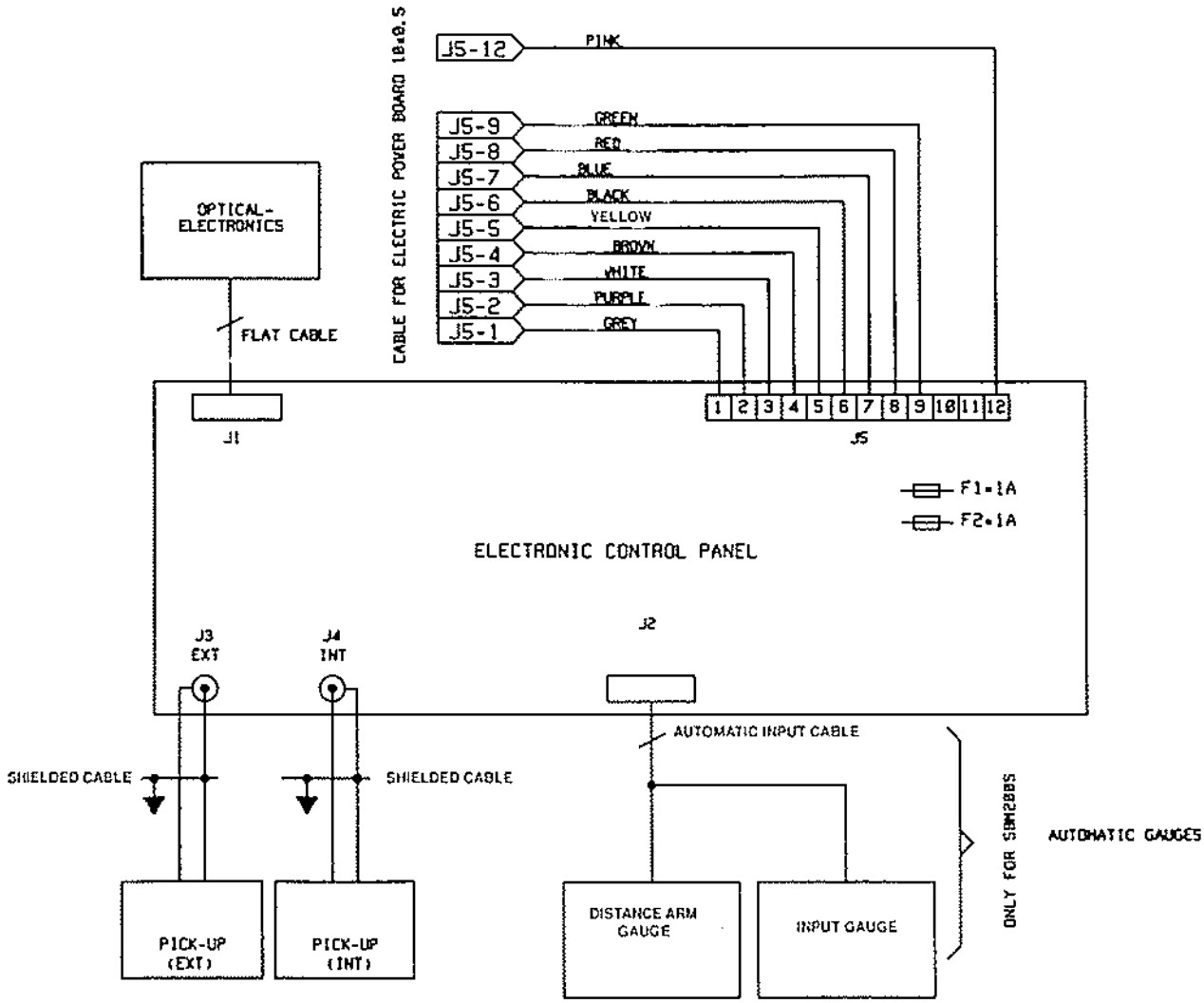
MEMORIZING DATA – To memorize data during or after any test or calibration procedure, simply PRESS "**STOP** then **ENTER C526E**".

NOTE: Remember, the above tests are to performed only by trained service technicians and are not intended for the general shop technicians.

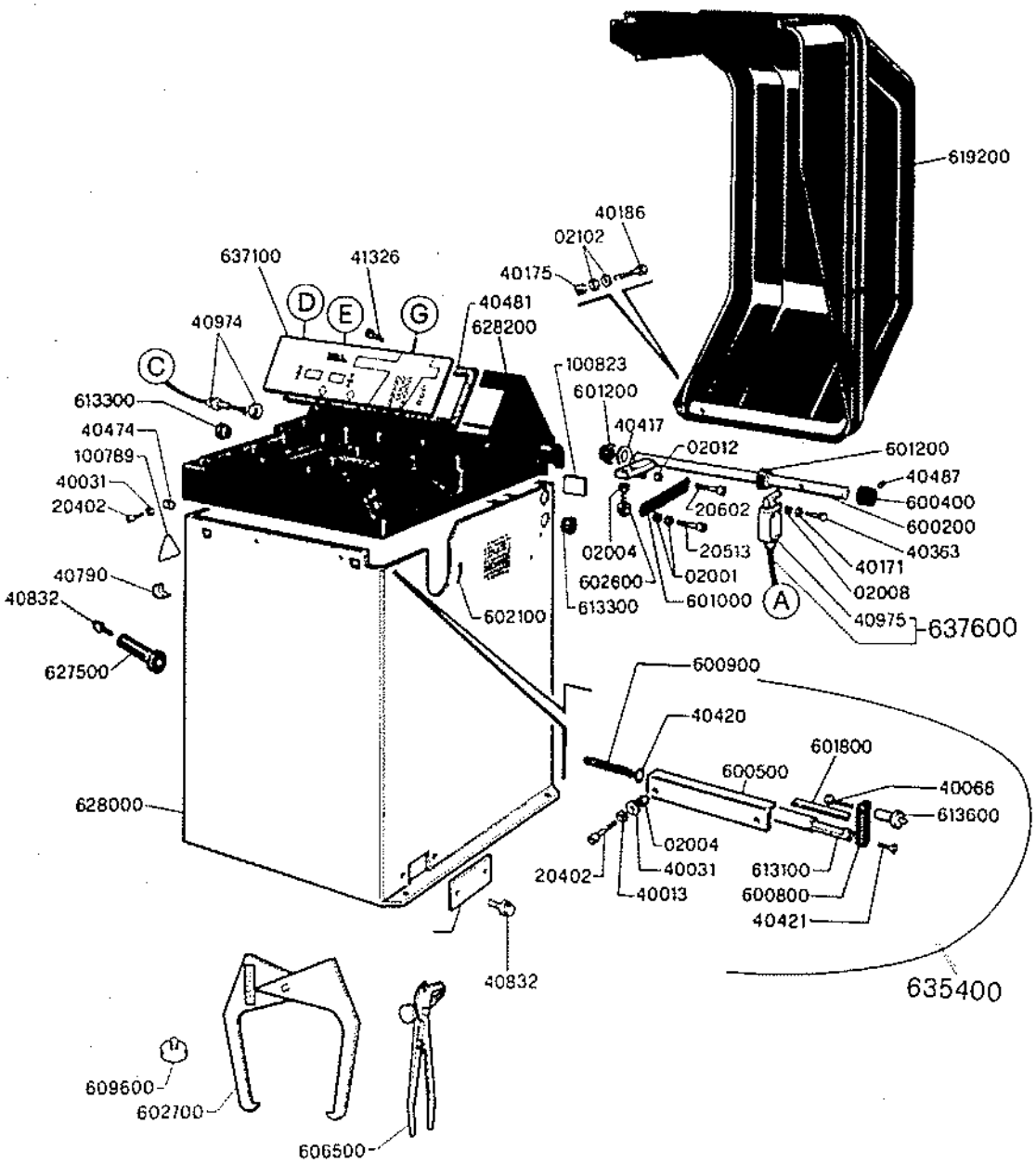
Wiring Diagram - 115V, Power Board



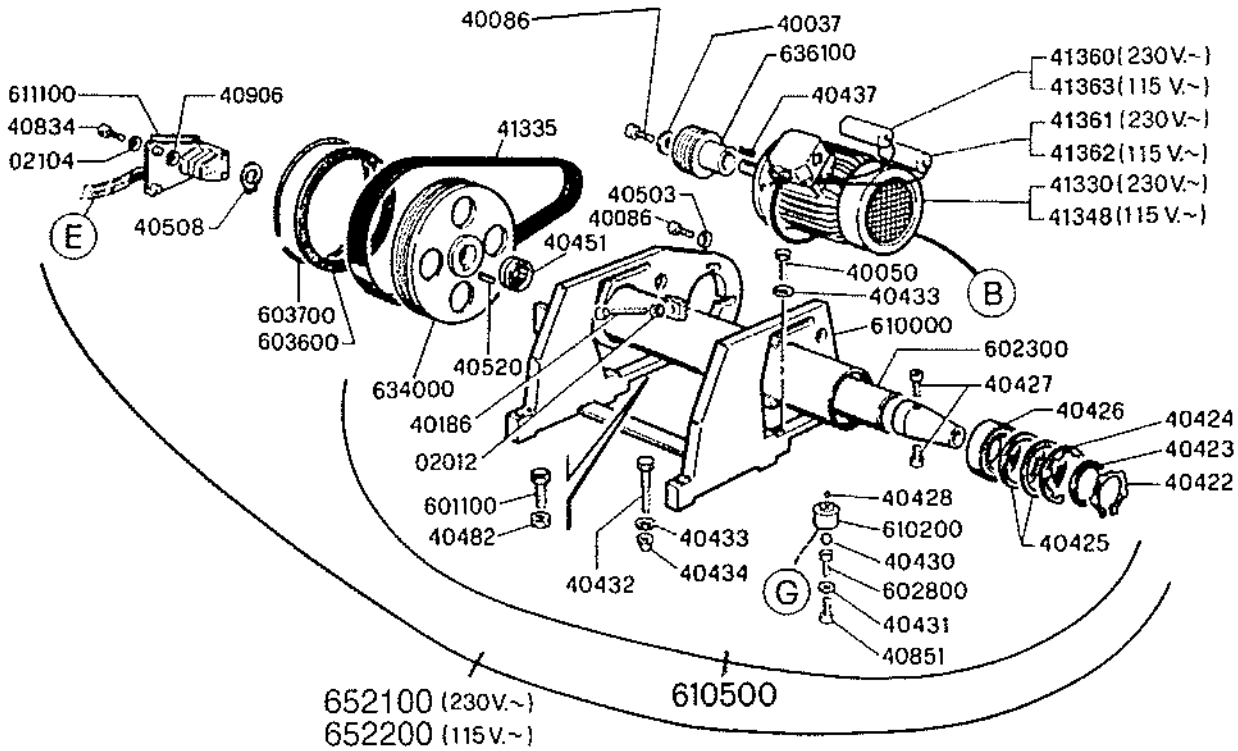
Wiring Diagram - 115V, Control Panel

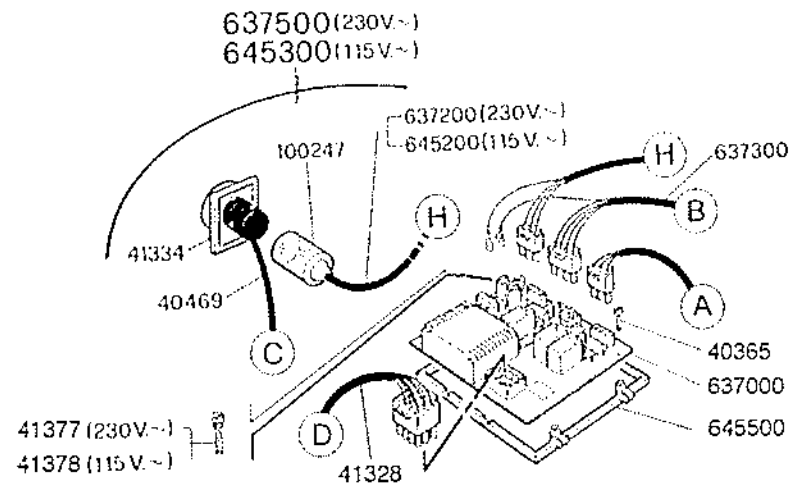


100 WHEEL BALANCER



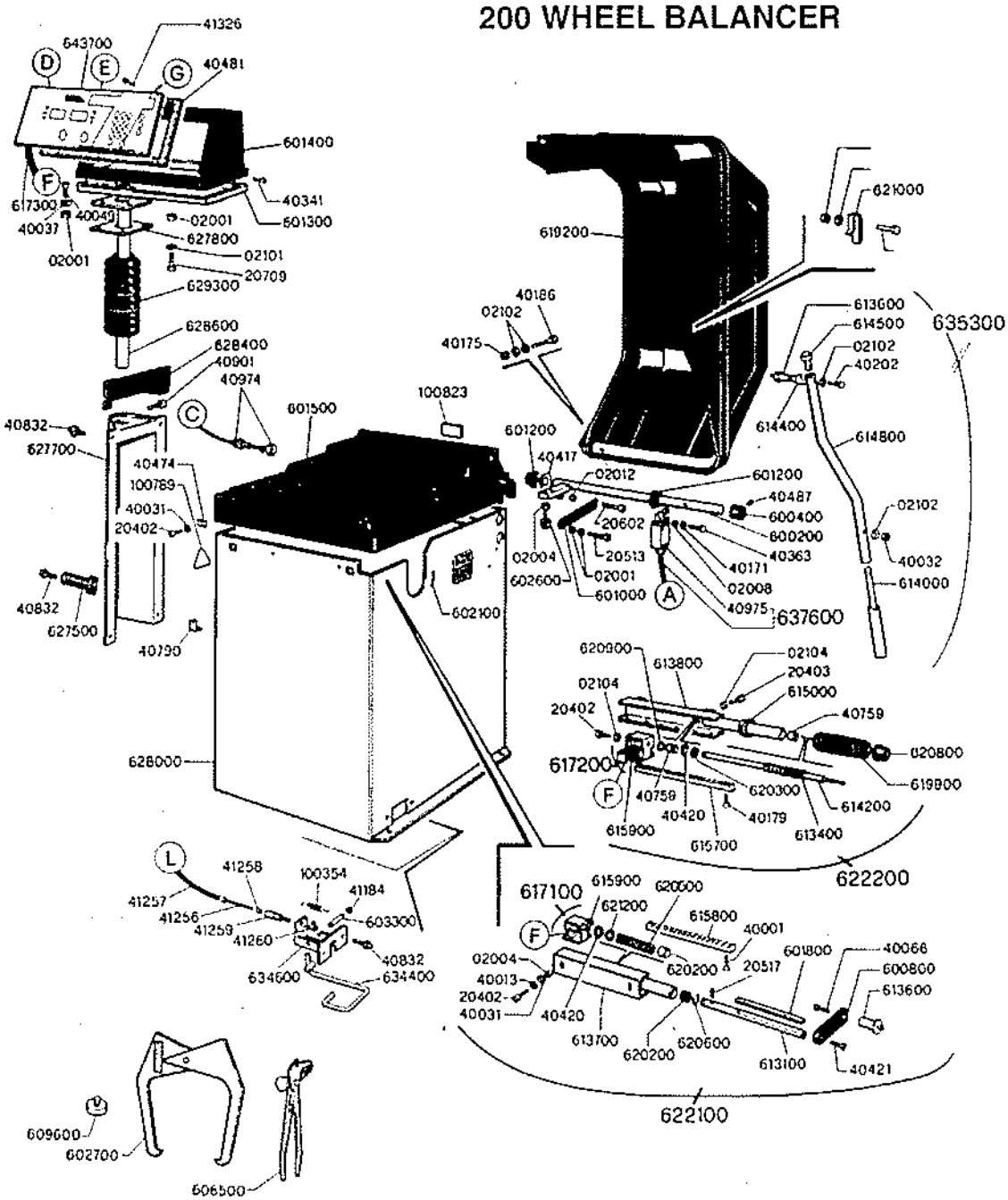
100 & 200 Wheel Balancers



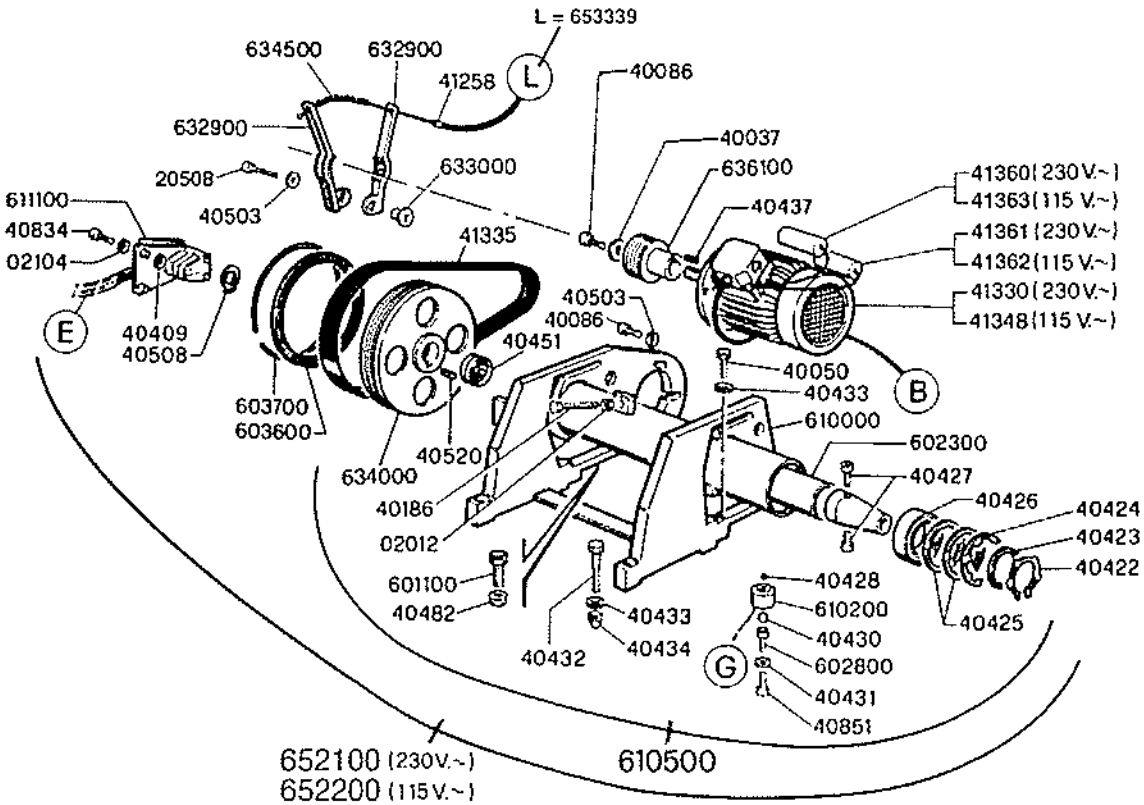


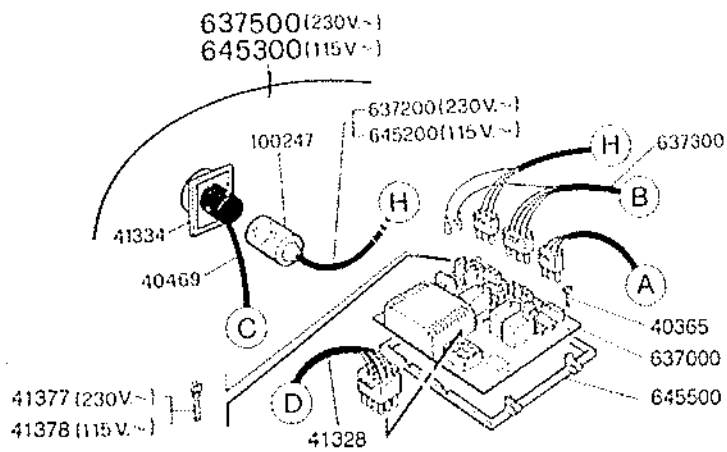
100 WHEEL BALANCER

200 WHEEL BALANCER



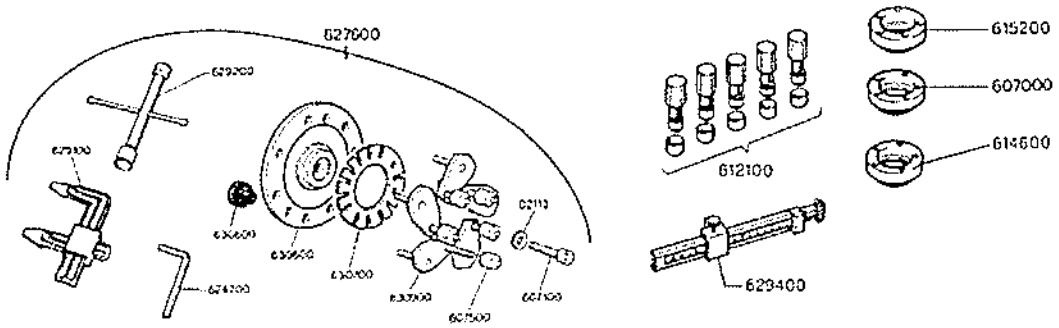
100 & 200 Wheel Balancers

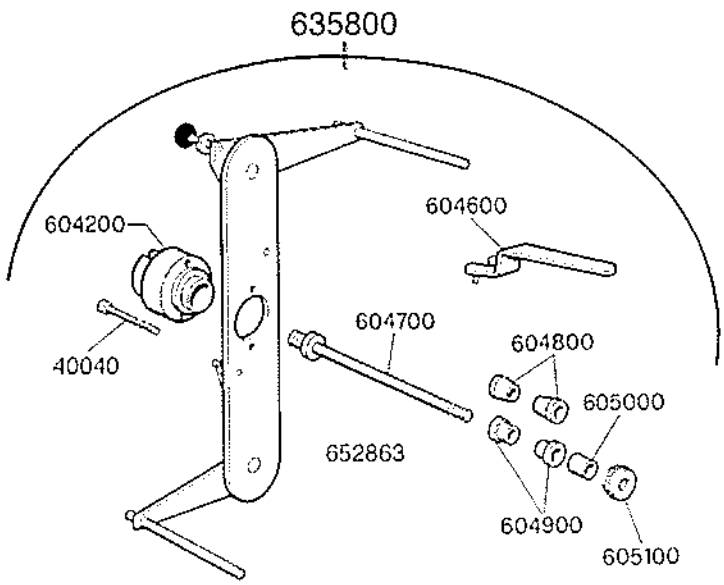




200 WHEEL BALANCER

Parts & Accessories





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