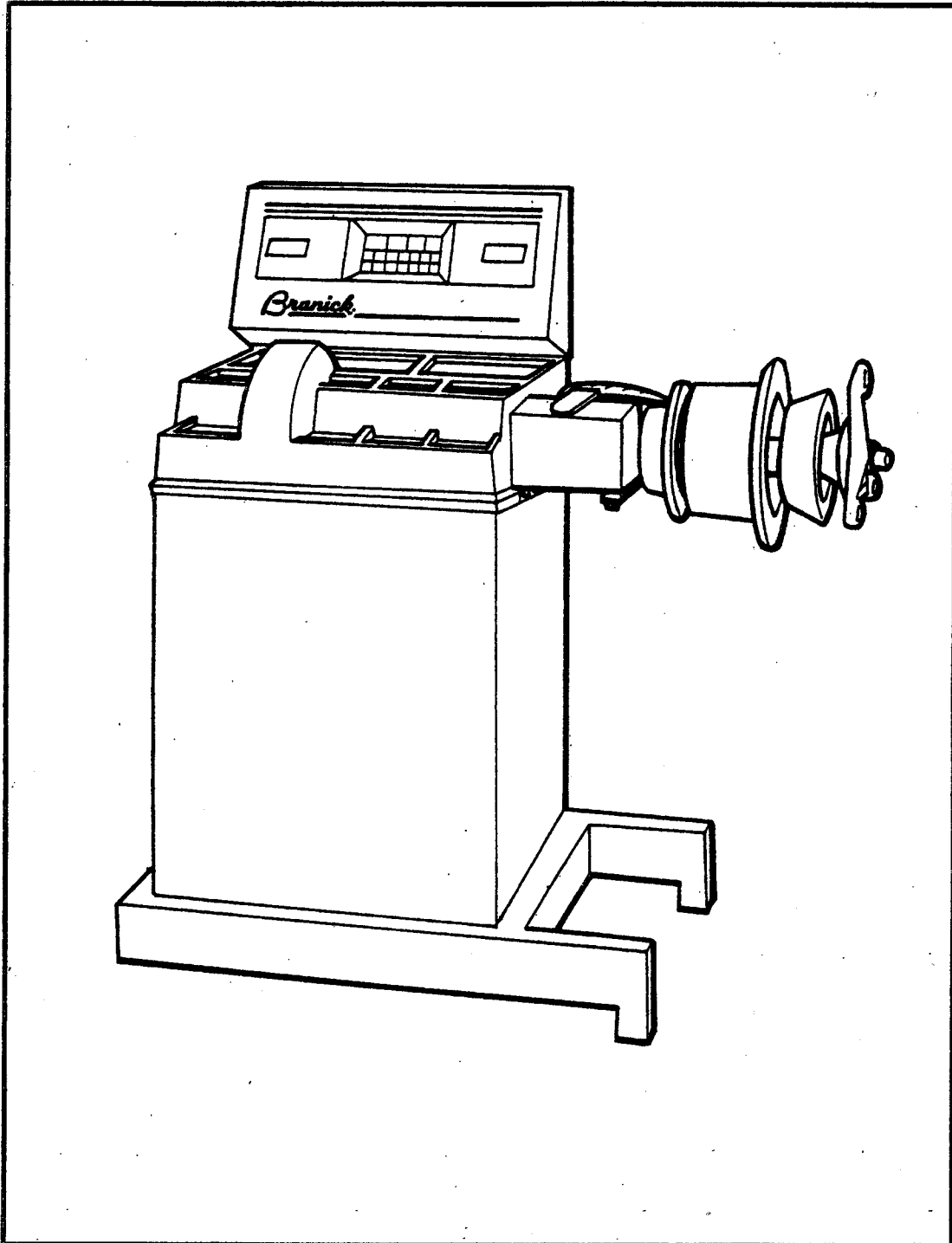


Branick[®]
INDUSTRIES, Inc.

MODEL 3000
Passenger/Truck
Wheel Balancer

Operating Instructions
and Repair Parts
Information



P/N: 81-0037

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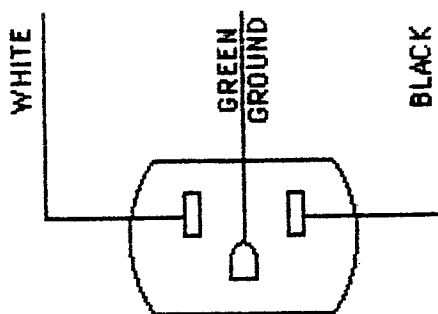
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INSTALLATION

1. Check carton for damage. Note damage on freight waybill. Unpack and check for shipping damage. If damaged, immediately report damage to freight carrier. Freight damage is the responsibility of the delivery carrier.
2. Place balancer in position on a concrete floor. Make sure that balancer rests on the **3 legs only**.

The balancer may be bolted to the floor. If this is done, all three legs must be evenly bolted and local electrical codes must be checked for proper electrical connection.

3. Test outlet for proper ground and polarity. Plug balancer into a grounded 3 prong outlet. **BALANCER SHOULD BE LEFT ON ALL THE TIME.** If unplugged, allow a 5 minute warm up period.



SPECIFICATIONS

- **VOLTAGE AVAILABILITY:**
115 or 220 Volts AC, 50 or 60 Hz Single Phase
- **CURRENT REQUIREMENTS:**
10 AMPS
- **RANGE OF WHEEL CAPACITIES:**
Rim Diameter - 10 inches through 29.9 inches
Rim Width: - 2 inches through 24 inches
- **RECOMMENDED WORK SPACE AROUND BALANCER:**
Length - 60 inches.
Depth - 52 inches
Height - 64 inches
- **MOTOR RATING:**
1/6 H.P., 56 frame
Modified Torque
Built-in Cooling
Auto Tension Drive
- **BALANCING CAPABILITY:**
Dynamic or Static
Two Plane
- **BALANCING SPEED:**
Approximately 220 RPM (for average size tire)
- **ACCURACY:**
Start (Normal) Mode +0.25 oz. (or + 3 Grams) Linear to 19.9 oz
Displays to 0.01 oz or 1 gram,
Dead band: 0.25 oz Passenger car,
2.00 oz Truck.
- **STANDARD PACKAGE INCLUDES:**
Tire lift cart
Heavy truck cones
Light truck cones
Passenger back-cone mounting system
Calipers
11 bin weight tray
Instruction manual

CAUTION INFORMATION



Wherever this symbol appears, there will be important instructions for your safe operation of the balancer

SAFETY

- Be sure the balancer power cord is connected to a properly grounded outlet of the correct voltage and ampere rating.
- Do not touch any of the internal electrical circuits of the balancer while the power cord is connected to the building power outlet.
- Do not expose the balancer to rain or moisture, or operate it on a wet floor.
- Keep hands, hair, and loose clothing away from the spinning parts of the balancer.

NOTE

- Use **HANDS ONLY** on keyboards, wheel nut, and adapter. The use of tools, hammers, or air tools will void warranty.

BALANCING PROCEDURE

SELECTING THE WHEEL MOUNTING SYSTEM

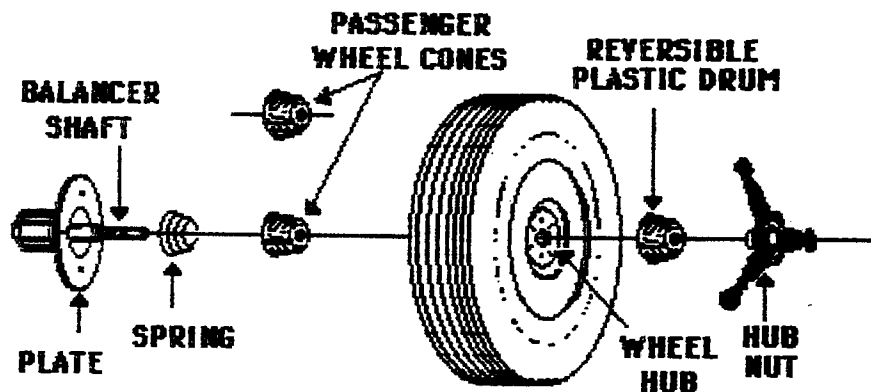
BACK-CONE SYSTEM

To balance wheels which use the large center hole to locate the wheel on the vehicle hub, use back-cone mounting whenever possible.

Parts used in the back-cone mounting system are two cones, one spring, a reversible plastic drum, and a hub nut.

BACK-CONE MOUNTING PROCEDURE

1. Place the spring, large end first, over the balancer shaft.

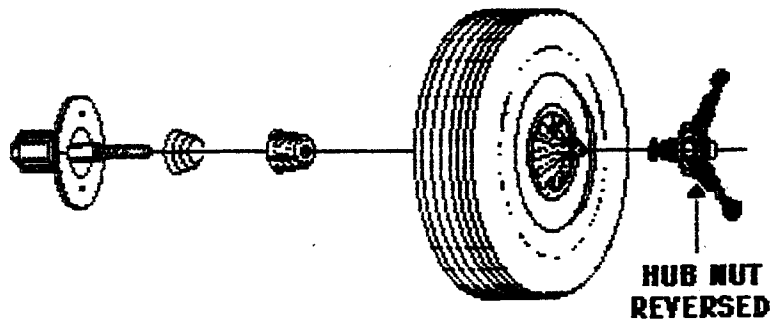


2. Select a cone to fit the back side of the wheel. Slide the cone, large end first, onto the shaft.
3. Snap the black front cup onto the wheel nut, with large or small end toward the wheel depending on wheel design.
4. Mount the wheel on the shaft, placing wheel center hole over cone.
5. Thread the wheel nut onto the balancer shaft. Tighten the wheel nut to be sure of secure mounting, at least four turns.

NOTE: On Mag type wheels, place a cloth rag between the plastic cone and the wheel, for added protection.



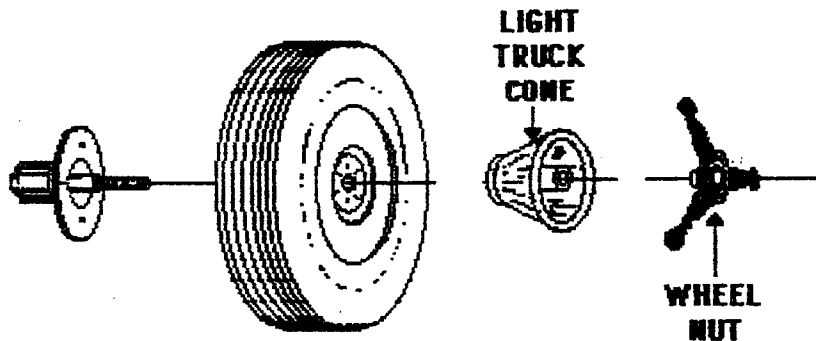
Wheel nut must engage threads for at least four full turns. Failure to tighten wheel nut securely or to force wheel firmly against the faceplate may result in serious personal injury.




If wheels with extended centers cover balance shaft threads do not use the plastic drum; use the SMALL end of the wheel nut. Again, tighten the nut at least four turns.

FRONT CONE SYSTEM

Mount light-truck wheels using the light truck front cone. After-market light-truck wheels with large center holes can be mounted using the light-truck cone or the heavy truck face plate. The back cones can be used as front cones if the tire is mounted true and shows no apparent runout.



 Wheel nut must engage threads for at least four full turns. Failure to tighten wheel nut securely or to force wheel firmly against the faceplate may result in serious personal injury.

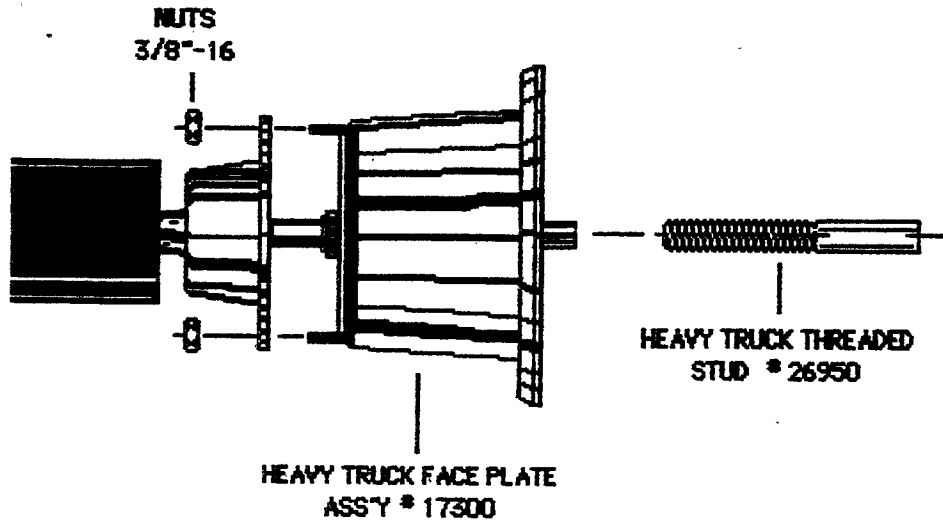
- USE THE TRUCK CONE FROM FRONT ONLY.

TRUCK FACEPLATE:

Most truck wheels, i.e. wheels over 16.5 rims and hole centers over 5 1/2" must be mounted with truck faceplate.

TRUCK FACEPLATE MOUNTING PROCEDURE:

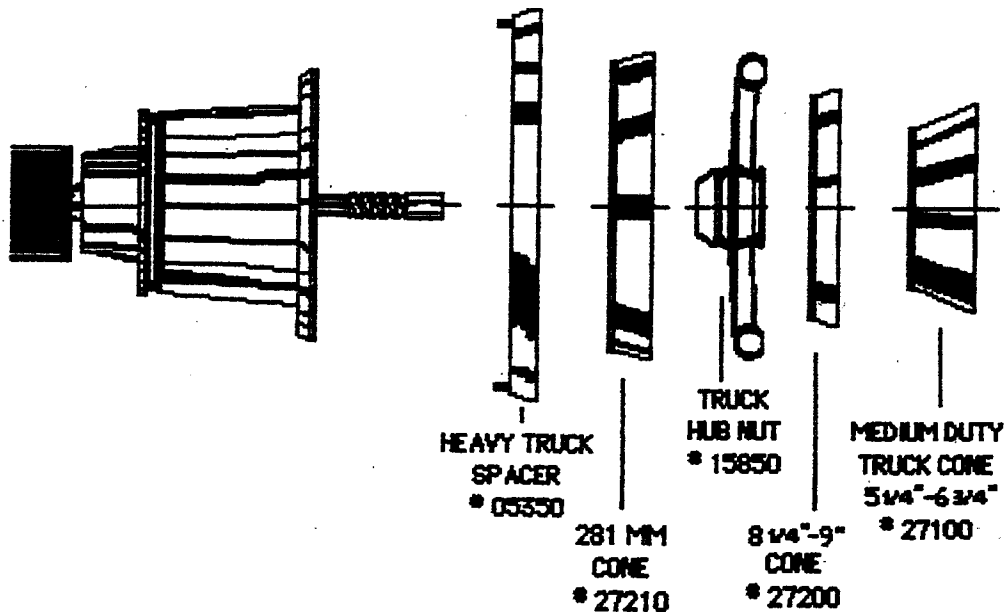
1. Remove coarse threaded stud.
2. Bolt on truck faceplate using 3/8"-16 nuts.
3. Screw in fine threaded stud.



HEAVY DUTY TRUCK CONES:

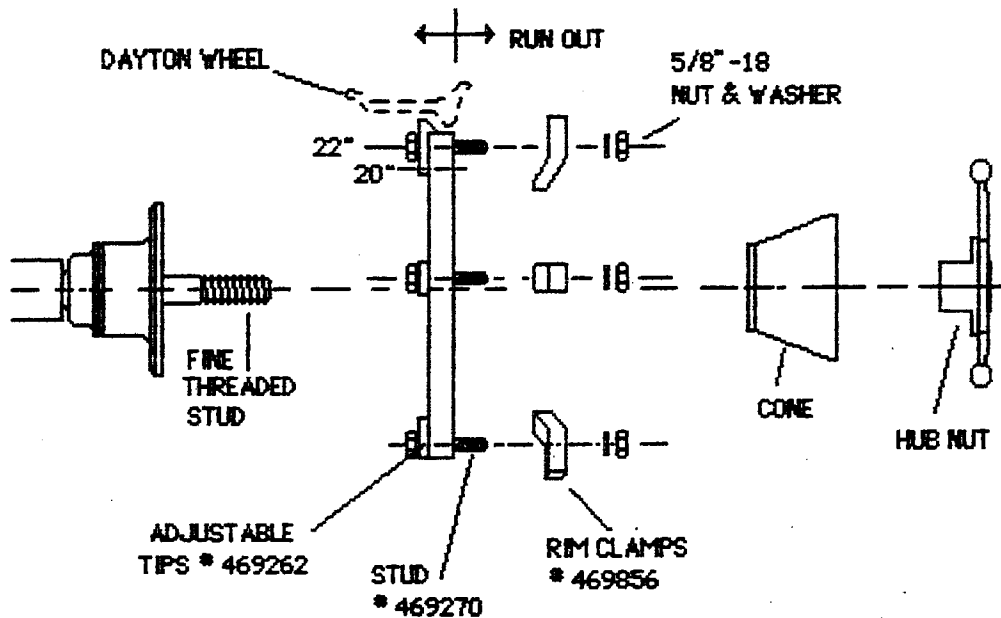
Used for all disc "Budd Type" wheels.

Note: The aluminum, Heavy truck spacer must be used for center holes 8 1/4 and larger.



DEMOUNTABLE RIM ADAPTER 05220

1. Fit Adapter to Truck faceplate using light truck cone and Hub Nut.
2. Set tips of Adapter to 20" or 22" position on adapter (note tips and spokes are marked 1 to 5).
3. Fit Dayton wheel to adapter and tighten, using Rim Clamps nuts and washers. Follow wheel manufacturers rim mounting instructions.
4. Tighten evenly. For best results, use indicator to make sure rim does not have excessive axial run out (1/8") on balancer.



COMBINATION ADAPTER (OPTIONAL FOR PASSENGER CARS)

Wheels that are true to lug patterns must be mounted using optional combination adapter. Examples include wheels from 1968 and earlier Volkswagen, Peugeot and similar automobiles.

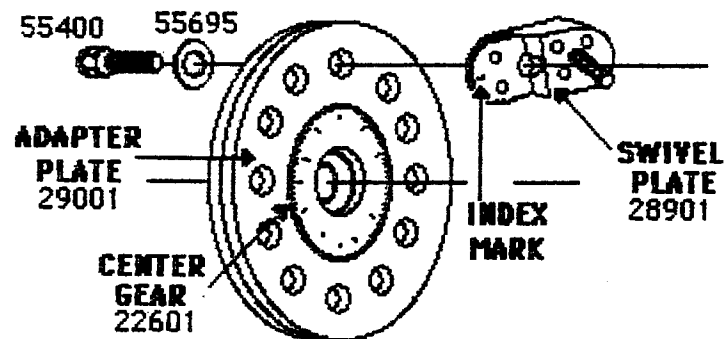
Wheels with no center holes are mounted after the threaded balancer threaded stud is removed.

Combination adapters can be set up to mount wheels with patterns of three, four, or five lugs. The three- and four-lug adapters are also used to mount wheels with six and eight lugs, respectively.

To mount specialty wheels with "Uni-Lug," "K-Lug," or slotted-hole mountings, an adapter from the wheel kit, the large side of the lug nuts, or a combination of fittings must be used. Check wheel runout to ensure correct mounting.

SETTING COMBINATION ADAPTERS

1. With the swivels removed, align Marks 3, 4 and 5 on the center gear with like markings on the adapter plate.
2. Install a swivel with the index mark aligned with Marks 3, 4 and 5 on the gear. Install but do not tighten bolts to retain the swivel.

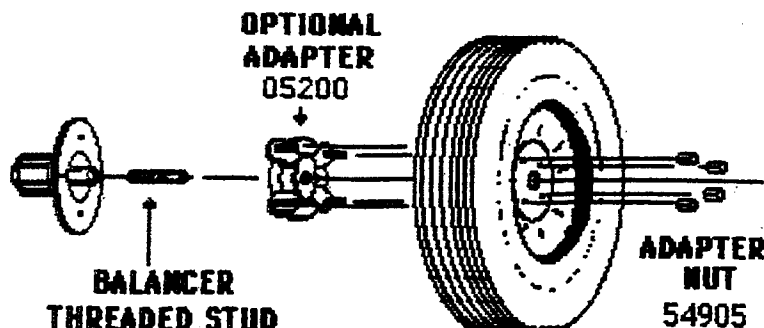


3. Install the desired number of swivels in corresponding holes. For example, if a five-lug adapter is needed, install the four remaining swivels in holes marked 5. Ensure that the marks on the swivels align with the proper numbers on the center gear. Bolt the swivels to the adapter but do not tighten the bolts.
4. Attach the adapter to the wheel. If the bolts are so tight that the swivels will not rotate, loosen the bolts. Thread lug nuts by hand and tighten evenly using an adapter wrench. For best results, use a crisscross tightening method.



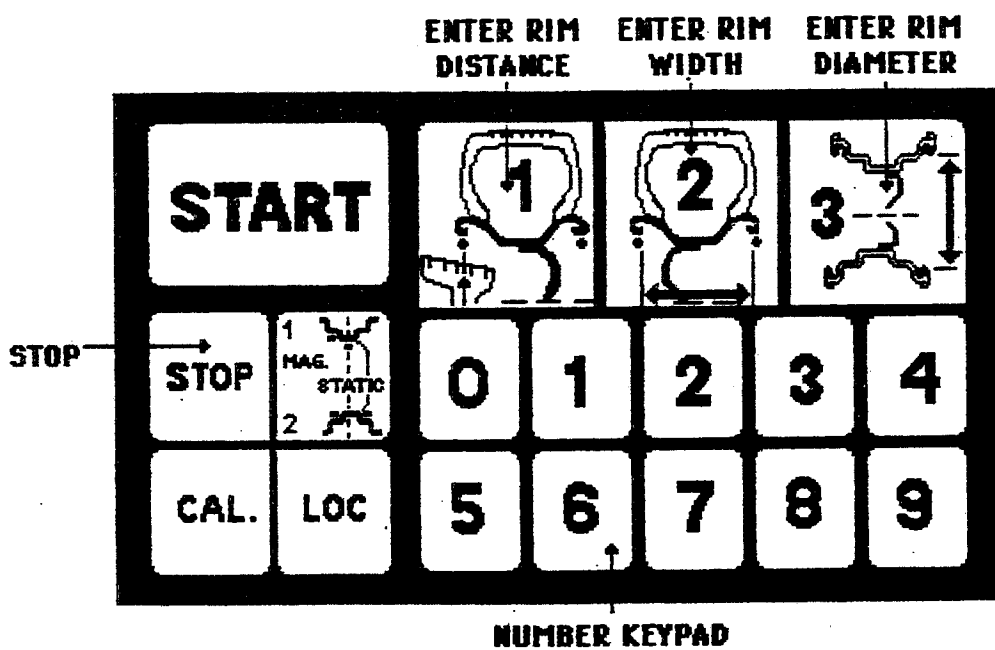
Lug nuts must be centered and threaded at least four full turns. Use only adapter wrench furnished with adapter. Do not use air tools or impact wrenches.

5. Securely tighten the swivel bolts in the rear of the adapter.
6. Mount the wheel and adapter on the faceplate and fasten securely with wingnuts



Once the adapter has been set for a particular type of wheel, the swivels need be changed only when a wheel with a different bolt pattern is mounted.

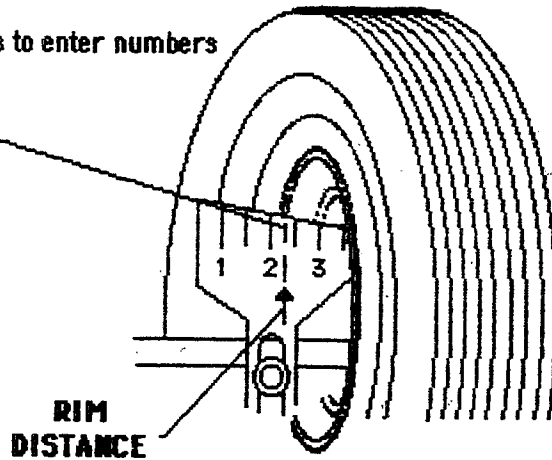
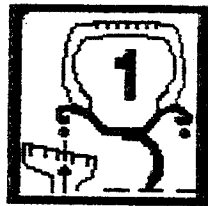
CONTROL PANEL LAYOUT



MEASURING THE WHEEL AND PROGRAMMING

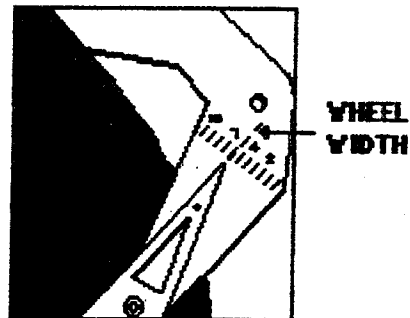
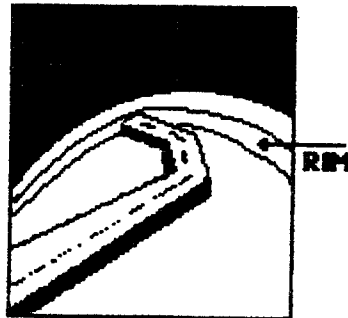
1. RIM DISTANCE

Press 1, then press number keys to enter numbers from Rim Distance Gauge.

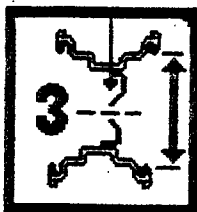


2. RIM WIDTH

Press 2, then press the number keys to enter the wheel width shown on the caliper scale.



3. RIM DIAMETER



Press 3, then press number keys to enter wheel diameter in inches. The wheel diameter may be read from the tire side wall.

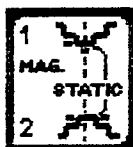
SELECTING TYPE OF BALANCE

NORMAL DYNAMIC BALANCING USING STANDARD CLIP-ON WEIGHTS:



Start spin cycle.

DYNAMIC BALANCING USING ONE ADHESIVE WEIGHT INSIDE, AND ONE ADHESIVE WEIGHT AT RIM CENTERLINE:



Press MAG-STATIC key once, then press the start key.

DYNAMIC BALANCING USING ONE ADHESIVE WEIGHT ON EITHER SIDE OF RIM CENTERLINE:



Press MAG-STATIC key twice, then press the start key.

STATIC BALANCING USING A SINGLE HIDDEN ADHESIVE WEIGHT INSIDE RIM:



Press STATIC key 3 times, then press the start key.



When using adhesive weights, be sure they will clear disc brake calipers.

SPIN CYCLE

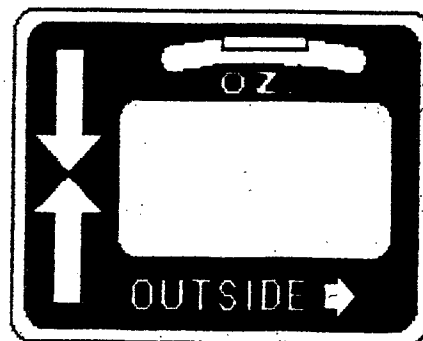
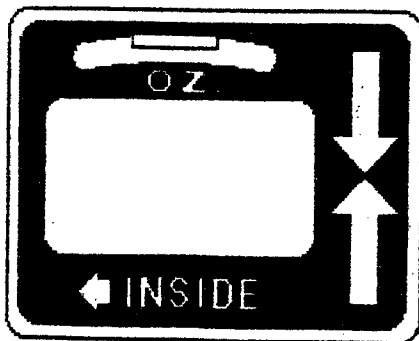
TO START WHEEL SPIN CYCLE



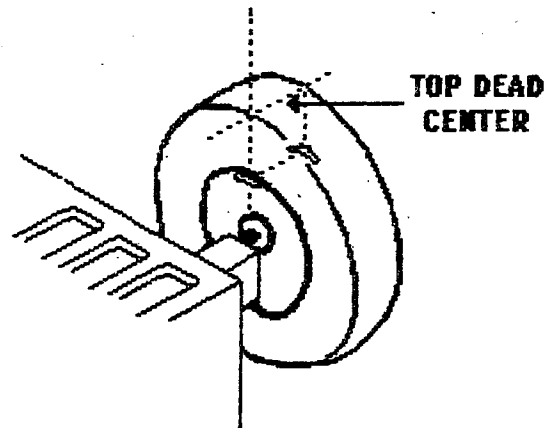
PRESS START KEY

AFTER WHEEL STOPS SPINNING

1. Turn tire by hand until all arrow lights are lit on either one of the displays.



2. Select weight amount shown on that display. Attach at the top dead center point of displayed side of the rim. Secure clip-on weight to rim edge; secure adhesive weight to position desired when selecting weight style.



NOTE: If static balancing was selected, place adhesive weight as close to center of rim as possible.

3. Turn tire by hand until all arrow lights are lit on other display (except when STATIC balance is done).
4. Select weight shown on the display. Attach at the top dead center point of displayed side of the rim. Secure clip-on weight to rim edge; adhesive weight to position desired when selecting weight style.

CHECK SPIN

To check for correct weight placement, press START for another spin cycle.

FINE BALANCE

Hold START key in while spin cycle takes place. The readings will be in 0.1 ounce or 1 gram increments.

CALIBRATION PROCEDURE

Calibration should be performed when the check spin reveals that most wheels are not balanced by the first spin. Calibration **MUST** also be done after the balancer has been repaired. To discontinue the calibration procedure at any time, press the stop key. New calibration data will not be entered into the machine until the LOCK key is pressed after 'CAL LOCK' flashed on the display at the end of the calibration procedure.

The balancer must be plugged in for at least **5 minutes** before calibration. Calibration must be done carefully, as described below. The displays prompt the steps in the procedure.

1. Mount an average size tire/wheel (195-14) on the balancer. It is preferred but not necessary that the wheel be balanced. A new straight rim and tire is best. Press the CAL key. "ENT 1 2 3" will be displayed.
2. Enter the three wheel measurements as directed in the operating section. Press the start key. After one spin cycle, "ROT 180" will be displayed.
3. Loosen the hub nut and rotate the wheel 180° in relation to the face plate. Do this by holding the face plate and noting the position of the valve stem. Then move tire until the valve stem is opposite its starting point. Press the start key; after the spin cycle "3.5 OUT" will be displayed.
4. Attach a single 3.5 oz. (or 100 gram) weight where indicated by the position arrow lights on the **outer rim**. Press the start key; after the spin cycle "3.5 IN" will be displayed.
5. **Remove** the 3.5 oz weight from outer rim and attach it anywhere on the **inner rim**. Press the start key; after this spin cycle "CAL LOC" will be displayed.
6. Press the LOC key. (If beeping occurs prior to CAL LOC: Make sure that correct weight, correct wheel and the proper calibration procedure was used. Press the LOC key and go on to step 7).
7. If the calibration wheel was out of balance, or if the PCB or Sensor arm was replaced; remove all weight from the wheel and balance it, then repeat the calibration procedure with the balanced wheel.

8. Using HD truck tire, 10:00-20 or larger, press the cal key.
9. "Enter 1 2 3" appears. Enter the rim data and push start. The tire will spin.
10. When the tire stops "8on Out" will be displayed. If "3.5 Out" is displayed a larger tire/wheel assembly will be required to calibrate the machine. Attach a single 8 ounce weight at top dead center indicated by position display on the outside of the rim. Push START. The tire will spin.
11. When the tire stops "8 on In" will be displayed. Remove the 8 ounce weight from the outside and attach anywhere on the inside of the rim. Press start. The tire will spin.
12. When the tire stops "Cal Lock will be displayed. Press the LOC Key and calibration will be complete and "cal end" will be displayed.

SPECIAL PROBLEMS

RETURNS (COMEBACKS)

Possible causes of complaints of vibration after balancing are:

- Tire out of round; wheel out of round, bent, or not true. Balancing cannot make a tire round. Replace the tire or wheel as necessary.
- Stiffness variations in radial belts. The tire should be replaced.
- Tire bead improperly seated. Check the bead seating and inflate the tire to the proper pressure if necessary. Re-balance the wheel.
- Suspension wear, misalignment, worn or loose components.
- Wheel not centered because of damaged hub, damaged or worn center hole, worn bolt-circle holes, or poor original manufacture. Check the wheel runout before balancing and on the car after mounting. Replace as necessary.
- Sensitive suspensions. Use the fine-balance feature (hold the START switch depressed during the entire spin cycle).
- Sometimes excessive tire lubrication can cause the tire to rotate on the wheel when the customer drives away. Re-balance the wheel.

AUTOMATIC DIAGNOSTIC ERROR CODES:

<u>Display</u>	<u>Cause</u>
"ROT ERR"	Possible optical timer problem.
"SPD ERR"	Possible PCB or optical timer problem.

SPECIAL FUNCTIONS

SPECIAL FUNCTION CODES

Special function codes allow you to change the normal operation of the balancer.

To select a special function code:

1. Press the enter 1 key one time,
2. Press the number nine key three times; "FUN" will be displayed.
3. Then select and press one of the three-number codes from the list below.

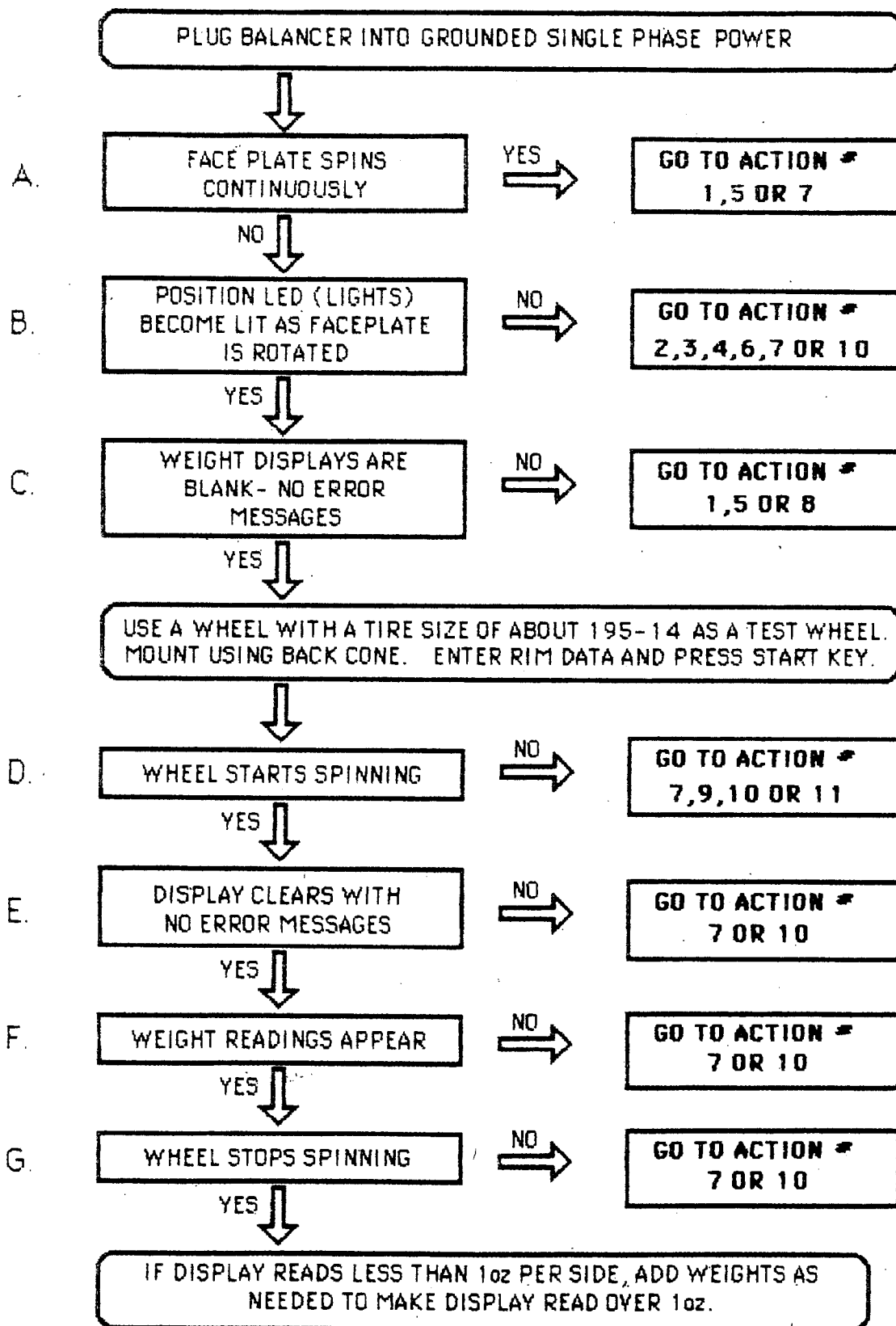
After you select the code the balancer will operate according to the new instructions.

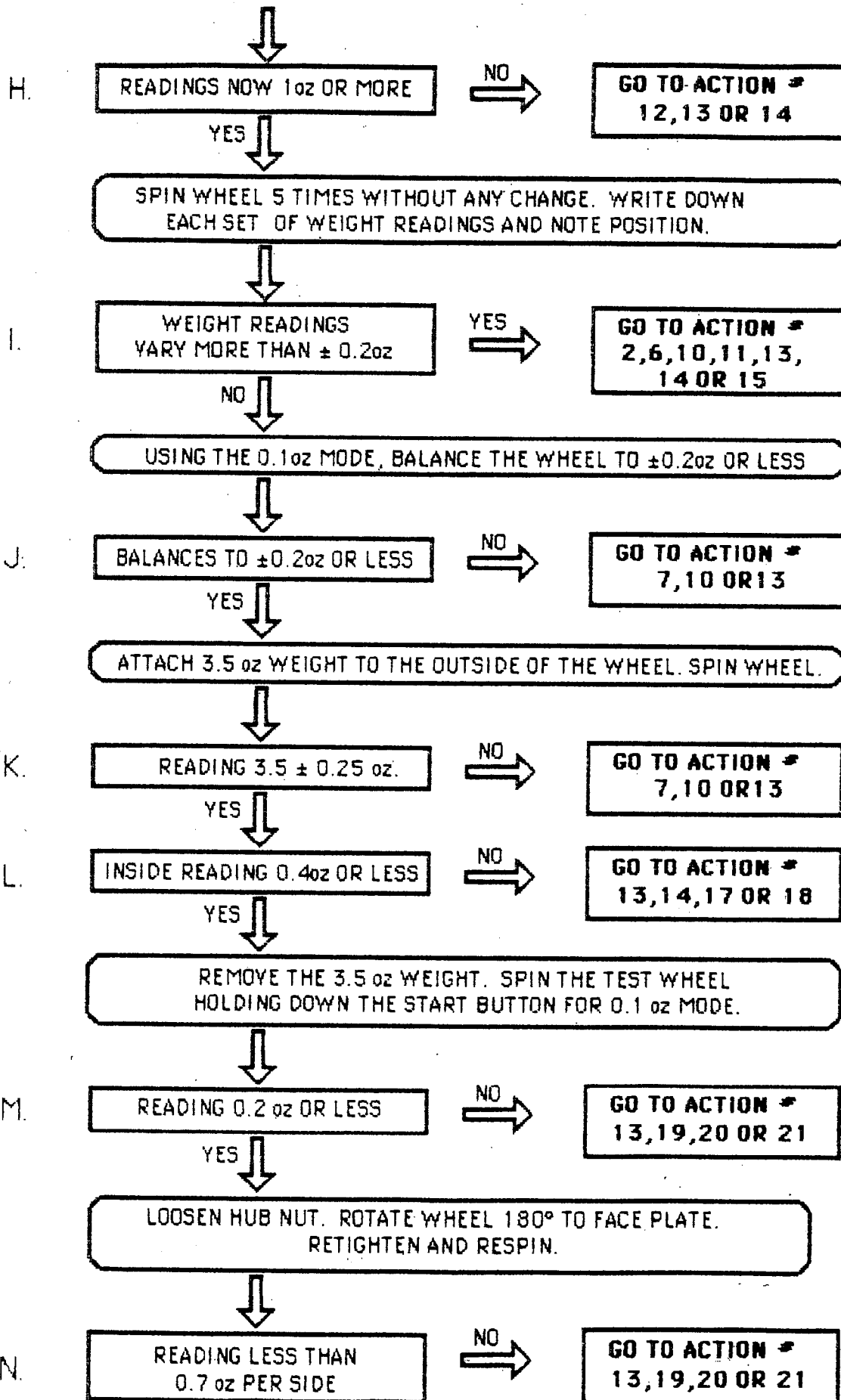
<u>CODE</u>	<u>WHAT DOES IT CHANGE?</u>
000	Places balancer in standard operation (overrides special functions).
001	Displays weights as .01 oz.
010	Displays weight as .1 oz.
025	Displays weight as .25 oz. (standard operation).
100	Displays weight in 1 gram values.
200	Displays weight at 2 gram steps.
500	Displays weight at 5 gram steps.
777	Optical timer counter check.
843	Arm data check.

TROUBLE SHOOTING GUIDE

PROBLEM POSSIBLE CAUSE CHECK	DISPLAYS DON'T LIGHT	WHEEL DOESN'T ROTATE	NO POSITION DISPLAYS	NO WEIGHT READINGS	WHEEL SPINS IN REVERSE	READINGS NON REPEATABLE	UNABLE TO BALANCE TO ZERO	UNABLE TO CALIBRATE	EXCESSIVE INTERFERENCE	ROTATIONAL TOO HIGH
POWER SOURCE/GROUND	■	■				■	■			
WIRING/CONNECTOR	■	■	■	■	■		■	■		
DIRT OR EXTRANEIOUS OBJECTS						■	■	■	■	■
BALANCER MUST SIT ON THREE LEGS ONLY						■	■	■	■	
"0" CAL.							■		■	■
3 1/2 / 100 CALIBRATION							■	■	■	■
TEST WHEEL				■		■	■	■	■	■
HUB NUT, CONES, ADAPTORS ETC.						■				■
PCB/CONTROL PANEL	■	■	■	■		■	■	■	■	
OPTICAL TIMER ASSEMBLY			■			■	■	■		
SENSOR ARM ASSEMBLY		■		■		■	■	■	■	■
DRIVE MOTOR/CAP		■				■	■	■		
BELTS		■				■	■			
RIM DISTANCE GAUGE								■		

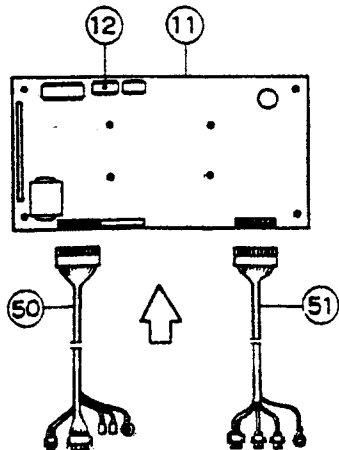
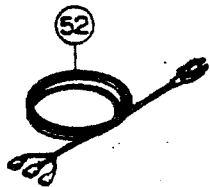
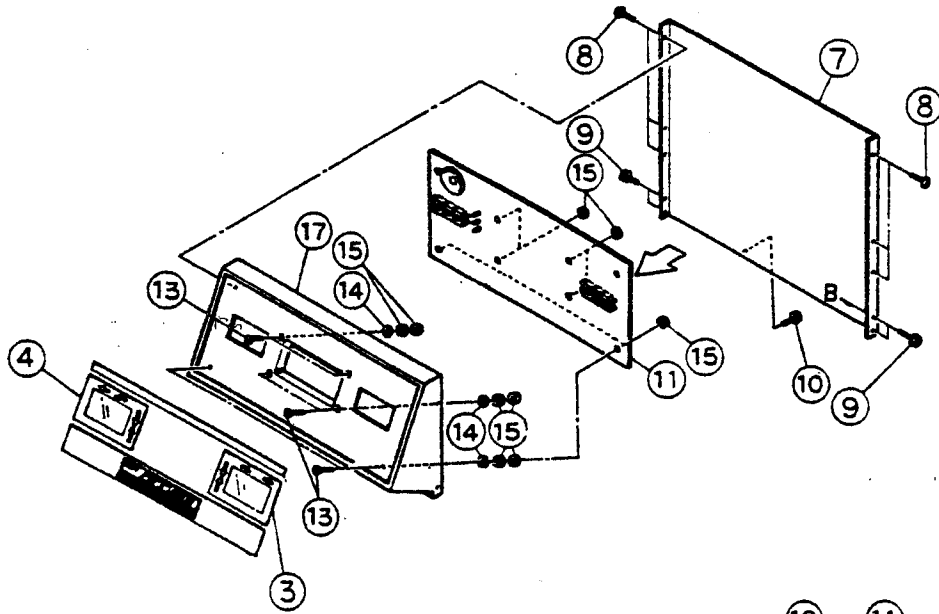
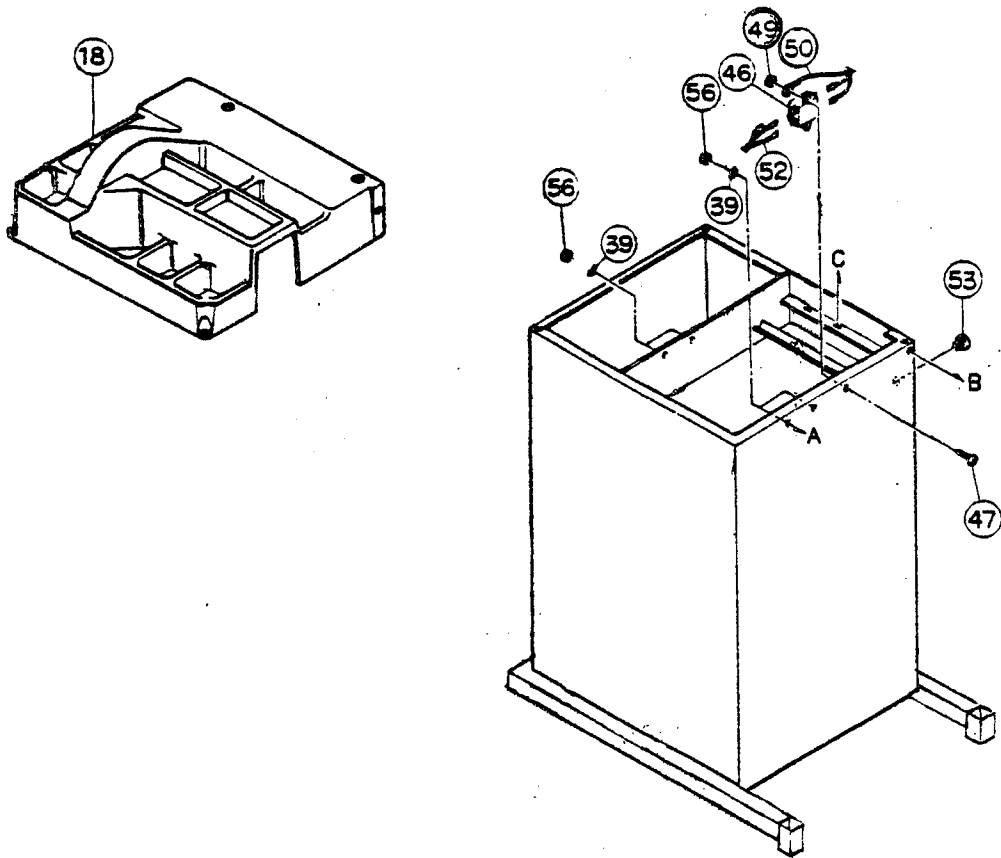
FUNCTIONAL CHECK

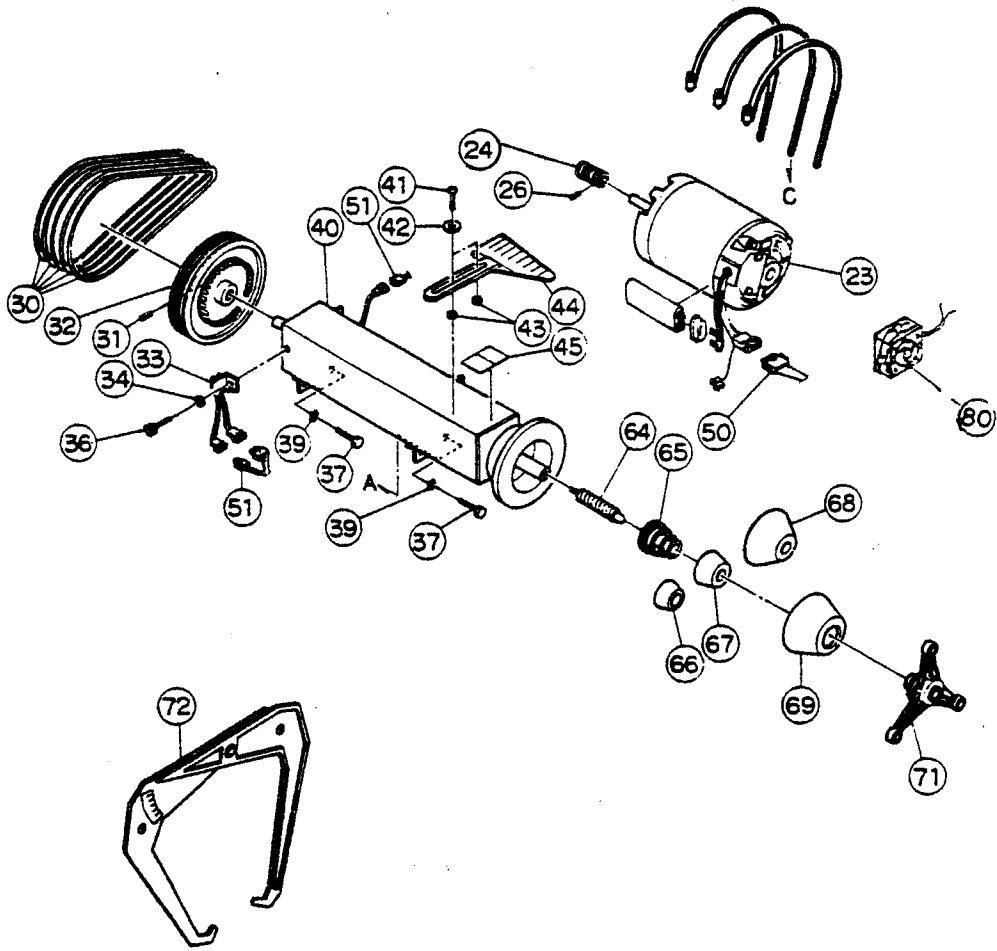




ACTION

- 1 Connect or reconnect power harness at right side of PCB.
- 2 Check building power or circuit breaker.
- 3 Power cord.
- 4 Line filter inside frame.
- 5 Momentarily unplug balancer to reset.
- 6 Connect or reconnect signal harness at middle of PCB.
- 7 Has the PCB been connected properly. Replace PCB if reconnection or other actions do not correct.
- 8 Check or replace batteries on PCB and recalibrate.
- 9 If no start, but click heard and wheel can be spun if pushed by hand, readings are displayed but wheel does not get stopped by power: Replace motor capacitor.
- 10 ROT ERR or SPD ERR message display or spin cycle erratic: test (OTA) optical timer assembly: Press key 1 followed by 9,9,9,7,7,7. The number in the right display window should count up as the face plate is rotated by hand. When rotated slow enough every number from 0 to 63 will be displayed and will start over again. If rotated backwards number should count down. If count up and down is not correct; clean, adjust or replace the OTA.
- 11 Check or replace the motor drive belts.
- 12 If readings are always zero: check wire connections to the PCB or to the sensor arm.
- 13 Recalibrate the balancer.
- 14 Check the sensor arm immediately after a 3.5 calibration. Press the 1 key followed by 9,9,9,8,4,3. The display should read $15\ 30 \pm 25\%$ for both numbers; replace PCB or Arm if numbers are bad.
- 15 Make sure the balancer is sitting firmly on a concrete floor on only the 3 legs. Make sure there is nothing under or leaning against the balancer. If balancer is bolted down check for tightness.
- 16 Check outlet (see #2) with circuit checker for proper ground and neutral.
- 17 Recheck for correct 1,2, rim information entry.
- 18 Experimentally change entry for #1 up or down and respin to get lowest inside reading. Repeat calibration with new #1 number. Reset distance gauge as required.
- 19 Repeat test using better/new car wheel.
- 20 Check cone(s) for looseness on the smooth part of the shaft.
- 21 Check that smooth part of shaft is perpendicular to flat of face plate.





MODEL 3000 SERVICE PARTS

ITEM	PART NO	QTY	DESCRIPTION
3	80-0003	1	LED Cover Decal - Right
4	80-0004	1	LED Cover Decal - Left
7	72-0001	1	Back Panel
8	50-0005	4	#8-32 x 5/8 Hex Washer Head Tapping Screw
10	50-0018	12	1/4-20 x 5/8 Hex Washer Head Tapping Screw
11	02-0001	1	Printed Circuit Board Assembly
13	50-0004	8	#8-32 x 3/8 Flat Head Machine Screw
14	52-0012	8	#8-32 x 5/8 Hex Standoff Spacer
15	50-0002	8	#8-32 x 1/4 Pan Head Machine Screw
17	11-0002	1	Printed Circuit Board Cover
18	11-0003	1	Weight Tray
23	02-0011	1	Motor Assembly
24	22-0001	1	7 Belt 60 Hz Pulley
26	50-0019	1	#10-24 x 5/16 Socket Set Screw
30	23-0001	7	Drive Belt
31	50-0006	2	5/16-18 x 3/8 Socket Set Screw
32	22-0003	1	Large Pulley
33	02-0009	1	Optical Timer Assembly
34	52-0007	1	5/16 External Tooth Washer
36	50-0017	1	1/4-28 x 1/2 Button Head Cap Screw
37	50-0008	4	5/16-24 x 3/4 Hex Head Cap Screw
39	52-0007	10	5/16 External Tooth Washer
40	01-0009	1	Sensor Arm Assembly
41	50-0016	2	1/4-28 x 3/4 Button Head Cap Screw
42	52-0008	4	1/4 x 1-1/4 Fender Washer
43	055-123	2	3/8-16 Hex Nut
44	11-0004	1	Distance Gauge
45	80-0005	1	Reflective Decal
46	40-0014	1	Line Filter
47	50-0003	1	#10-32 x 5/8 Hex Socket Head Cap Screw
49	51-0006	1	#10-32 Hex Nylon Lock Nut
50	42-0003	1	Power Harness
51	42-0002	1	Signal Harness
52	42-0004	1	Power Cord
53	58-0002	1	Strain Relief
56	51-0005	4	5/16-24 Hex Nut
64	01-0010	1	Threaded Stud (Passenger)
Not Shown	01-0011	1	Threaded Stud (Truck)
65	55-0001	1	Cone Spring
66	73-0003	1	Small Cone
67	73-0004	1	Large Cone
68	31-0003	1	Light Truck Cone
69	11-0006	1	Plastic Drum (Large)
Not Shown	01-0003	1	Plastic Drum (Small)
71	01-0004	1	Hub Nut (Passenger)
Not Shown	01-0002	1	Hub Nut (Truck)
72	01-0001	1	Caliper
80	02-0010	1	Fan Assembly
Not Shown	01-0014	1	Light Truck Spacer
Not Shown	31-0004	1	Medium Truck Cone
Not Shown	31-0005	1	Heavy Truck Cone
Not Shown	31-0006	1	281mm Cone
Not Shown	01-0015	1	Truck Hub Spacer
Not Shown	01-0016	1	Truck Face Plate
Not Shown	00-0011	1	Direct Mount Adapter

73-0003
SMALL CONE



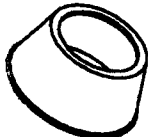
73-0004
LARGE CONE



31-0003
LIGHT TRUCK
CONE



11-0006
LARGE DRUM



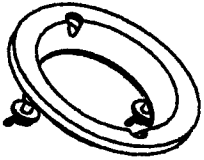
01-0003
SMALL DRUM



55-0001
CONE SPRING



01-0014
LIGHT TRUCK
SPACER



01-0004
PASSENGER
HUB NUT



01-0010
PASSENGER
SHAFT
(COARSE THD)



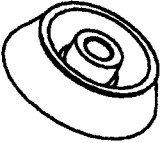
01-0002
TRUCK
HUB NUT



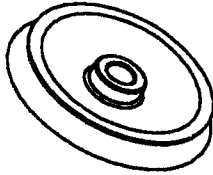
01-0011
TRUCK
SHAFT
(FINE THD)



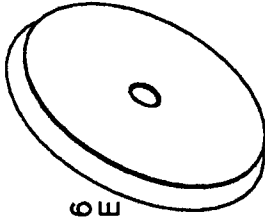
31-0004
MEDIUM
TRUCK
CONE



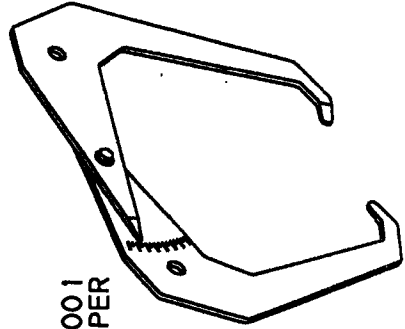
31-0005
HEAVY TRUCK
CONE



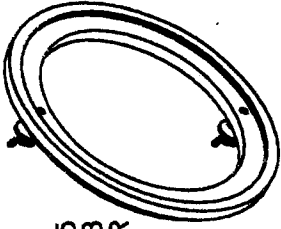
31-0006
281 MM CONE



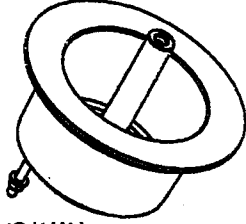
01-0001
CALIPER



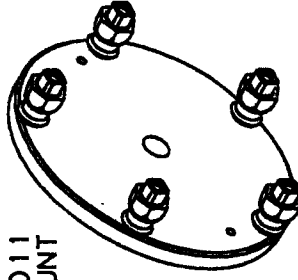
01-0015
TRUCK HUB
SPACER



01-0016
TRUCK FACE
PLATE



00-0011
DIRECT MOUNT



COMMERCIAL WARRANTY

This product is warranted by BRANICK INDUSTRIES, INC. to the original user-owner against defective materials or workmanship for a period of one year from the date of delivery. During the warranty period, product found to be defective will be repaired or replaced at, BRANICK INDUSTRIES, INC.'s option, without charge. The product must be returned, with prior approval, transportation charges prepaid and with proof of original delivery date, to BRANICK INDUSTRIES, INC., 4245 Main Ave., Fargo, North Dakota 58107. The repaired or replacement product will be returned with transportation charges prepaid by Branick.

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