

# DYNABAL

## Operator and Service Manual

BEAR 80-150

2400

BEAR 80-200A

4300

4300TC

BEAR 80-250

4300MW

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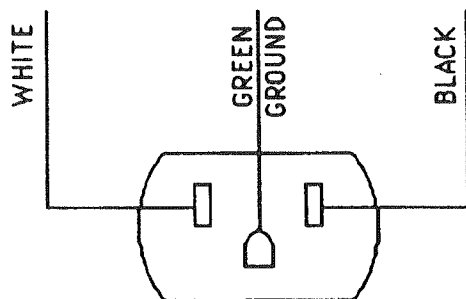
## INSTALLATION

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**. If the balancer is frequently used to balance large or greatly out of balance tires, one of the following procedures may be used to increase stability and/or to prevent the balancer from moving:

Weight may be added at the bottom of the balancer. This can be reached through the accessory storage area on the right side of the balancer. On the 4300TC this area may be reached by removing the weight tray/top cover. One gallon jugs have been provided; remove the jugs, fill them with water, and replace them. Any other clean, heavy material may also be used.

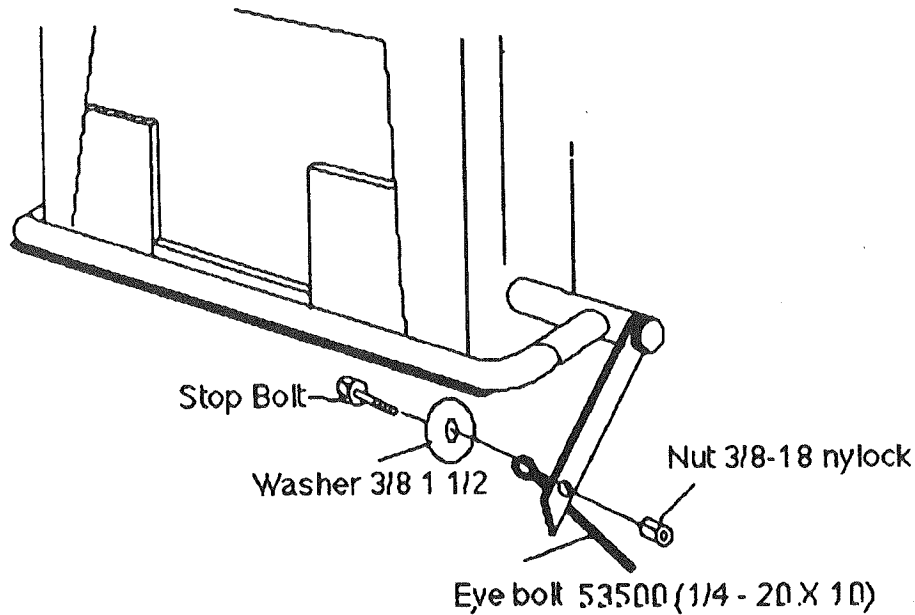
The balancer may be bolted to the floor. If this done, all three legs must be evenly bolted and local electrical codes must be checked for proper electrical connection.

3. Check balancer ID label to confirm correct voltage. 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. When first plugged in the balancer may display a 60 second count-down.



4. Attach weight decals to weight trays as required.

5. If balancer is supplied with a hood, connect the eye bolt stop.



### 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 15 inches

Rim Width: 3 inches through 20 inches: 2400,

2 inches through 24 inches: 4300, 4300 MW

Maximum Tire Diameter: 40 inches: 2400

42 inches: 4300 & 4300 MW

all 24.5 road tire diameters: 4300TC

### RECOMMENDED WORK SPACE AROUND BALANCER:

Length -	46 inches	2400
	52 inches	4300 & 4300 MW
	64 inches	4300TC
Depth -	46 inches	2400
	52 inches	4300 & 4300 MW
	64 inches	4300TC
Height -	49 inches -	2400
	64 inches -	4300 all

### MOTOR RATING:

1/6 H.P., 56 frame  
Modified Torque  
Built-in Cooling  
Auto Tension Drive

### BALANCING CAPABILITY:

Dynamic or Static  
Two Plane

### CYCLE TIME:

6.9 Seconds (Approx.) for Average Wheel 2400 & 4300  
4.9 Seconds (Approx.) for Average Wheel 4300 MW

### BALANCING SPEED:

Approximately 220 RPM (for average size car tire)

### ACCURACY:

Start (Normal) Mode + 1/4 oz.. (or + 3 Grams) Linear to 19.9 oz  
Displays to 0.01 oz or 1 gram. .25oz deadband cars, 2.00 oz on 4300TC  
on HD truck.

### STANDARD PACKAGE INCLUDES:

built-in 11 bin weight tray -.....2400  
14 bin weight tray -.....4300 4300 MW, 4300TC  
passenger back-cone mounting system  
light truck cone  
accessory storage  
instruction manual  
calipers

**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

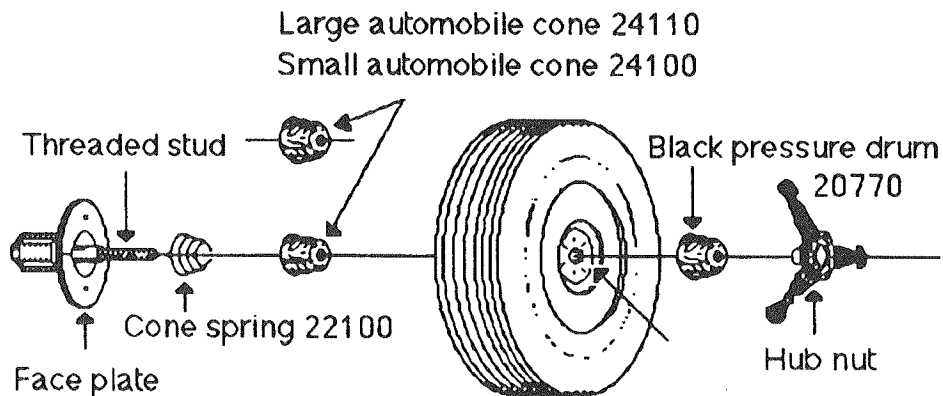
#### BACK-CONE SYSTEM

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

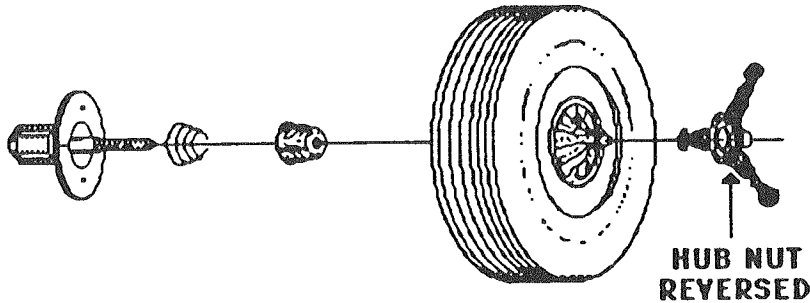
1. Place the spring, large end first, over the balancer shaft.



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.



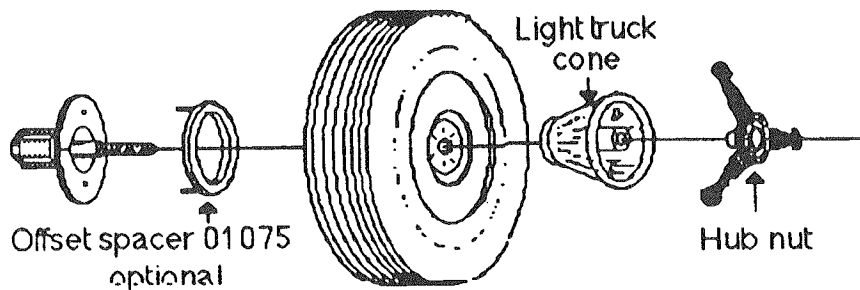
Hub nut must engage threads for at least four full turns.  
Failure to tighten hub nut securely or to force wheel firmly against the face plate may result in serious personnel injury



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. 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 hub nut securely or to force wheel firmly against the face plate may result in serious personnel injury

Use the truck cone from the front only.  
Use the optional offset spacer (accessory #01075) with wheels having a center hold 4" or larger and with dual type and other large offset wheels.

## AUTOMOBILE COMBINATION ADAPTER optional accessory #01929

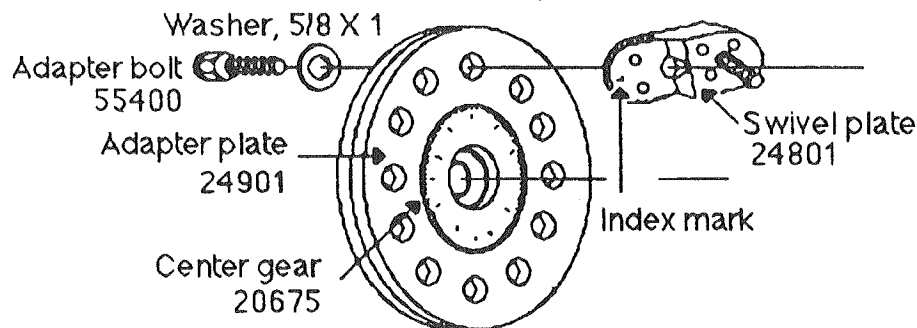
Wheels that are true to lug patterns must be mounted using the optional combination adapter. Examples include wheels made prior to 1968 and earlier Volkswagen Peugeot and similar automobiles. Wheels with no center holes are mounted after the balancer threaded stud is removed.

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 or 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 or 5 on the gear. Install, but do not tighten bolts to retain the swivel.



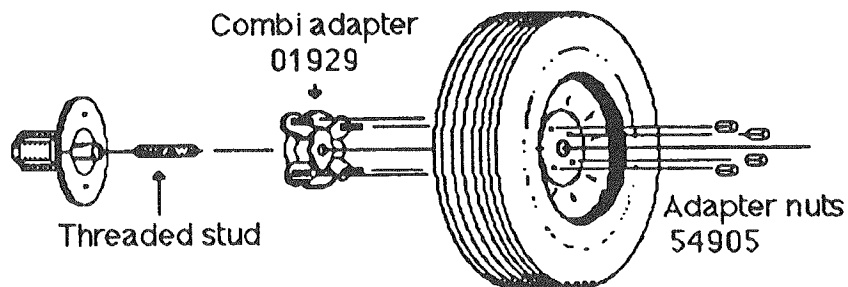
3. Install the desired number of swivels in corresponding holes. For example, if a five-lug adapter is needed, install the four remaining swivels in holes marked 5. Ensure that the marks on the swivels align with the proper numbers on the center gear. Bolt the swivels to the adapter but do not tighten 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.

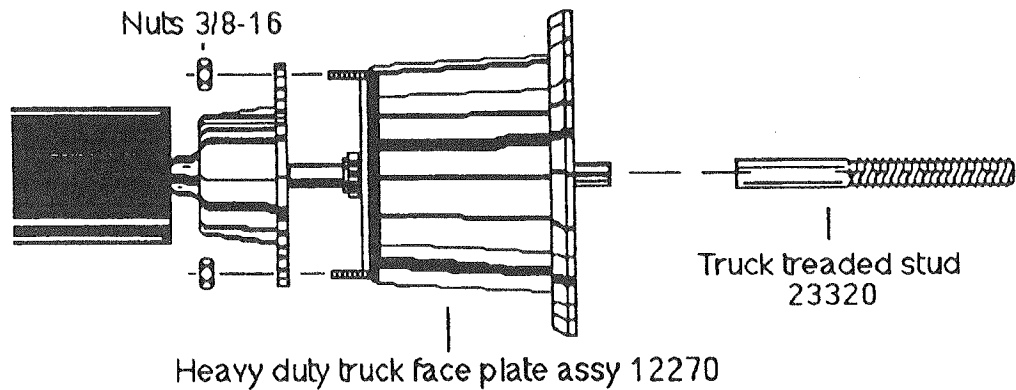
5. Securely tighten the swivel bolts in the rear of the adapter.
6. Mount the wheel and adapter on the faceplate and fasten securely with wingnuts.



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.

### TRUCK FACEPLATE MOUNTING PROCEDURE: 4300TC only

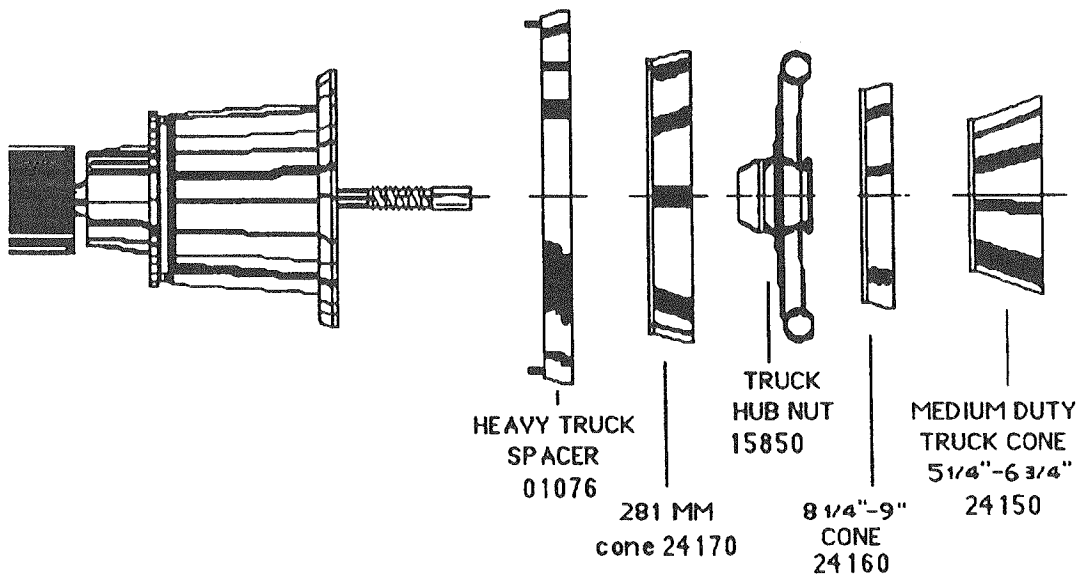
1. Remove coarse threaded stud.
2. Bolt on truck faceplate using 3/8-16 nuts.
3. Screw in fine threaded stud.



### HEAVY DUTY TRUCK CONES:

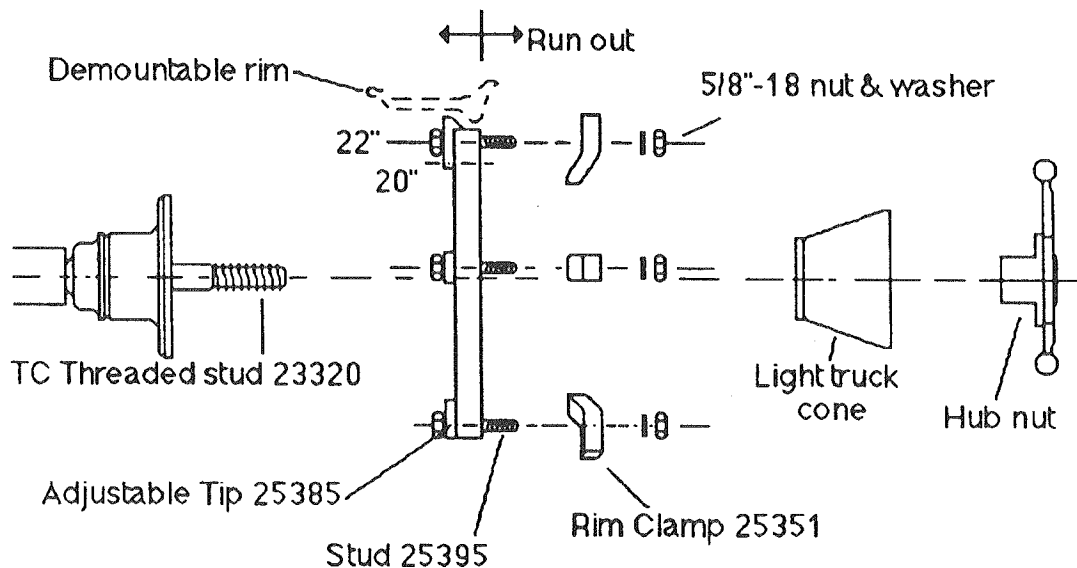
Used for all disc "Budd Type" wheels.

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

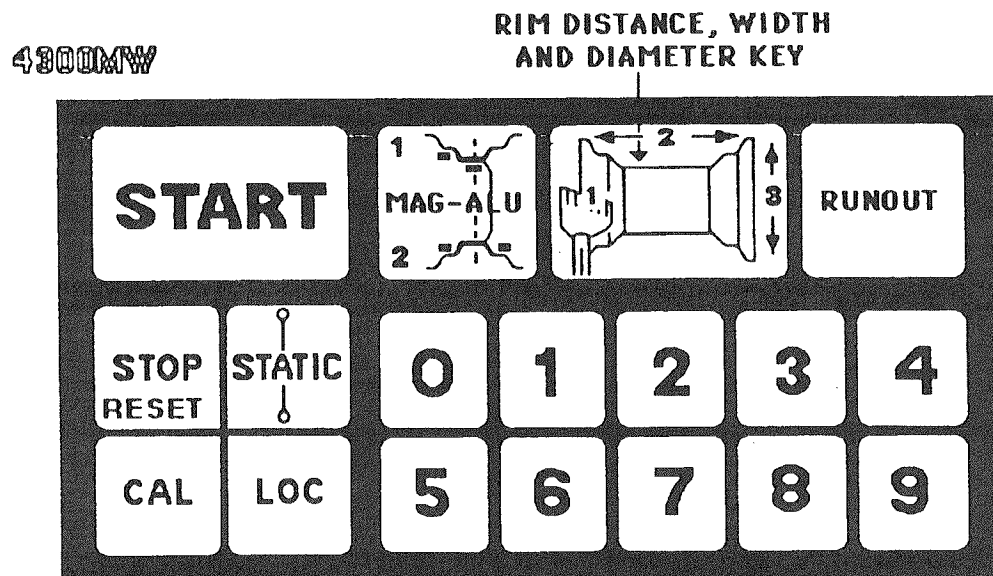
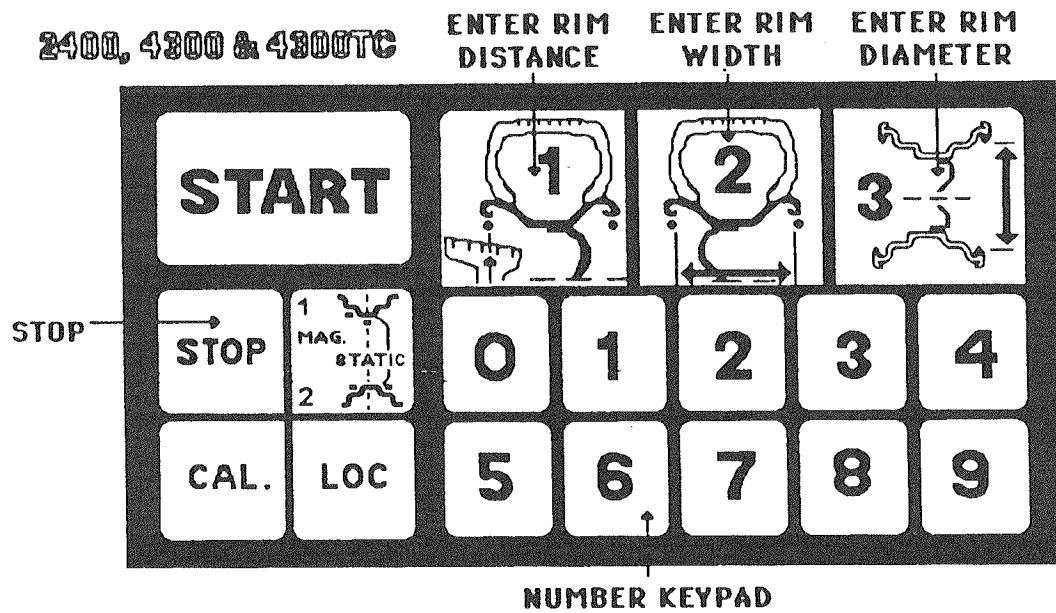


DEMOUNTABLE RIM ADAPTER accessory #01050

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.



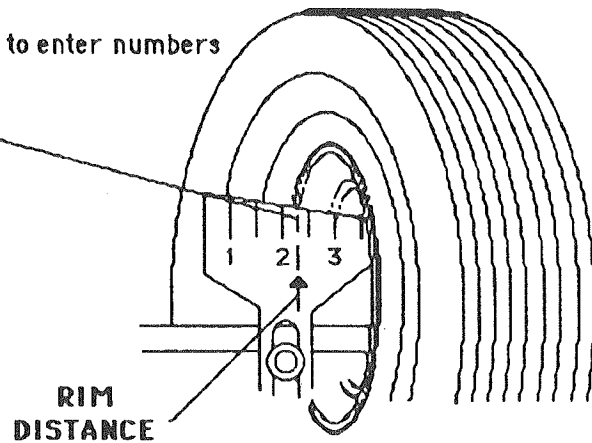
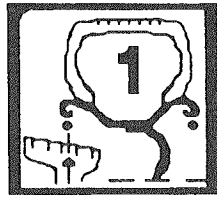
## CONTROL PANEL LAYOUT



## MEASURING THE WHEEL AND PROGRAMMING

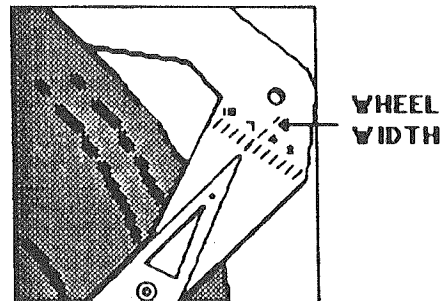
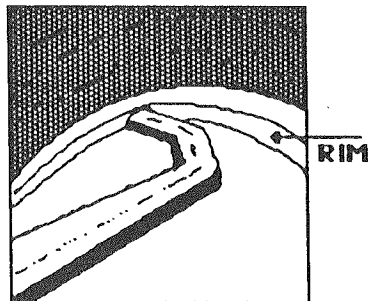
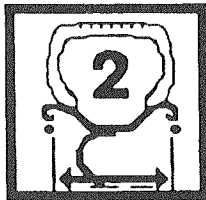
### 1. RIM DISTANCE

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

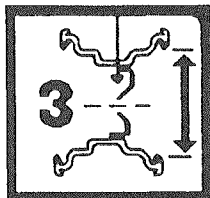


### 2. RIM WIDTH

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



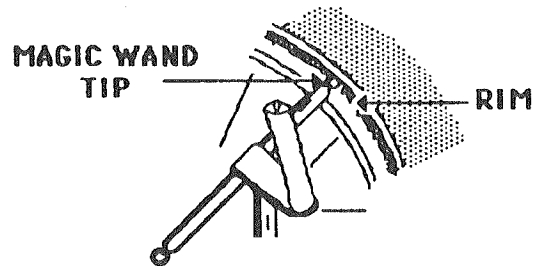
### 3. RIM DIAMETER



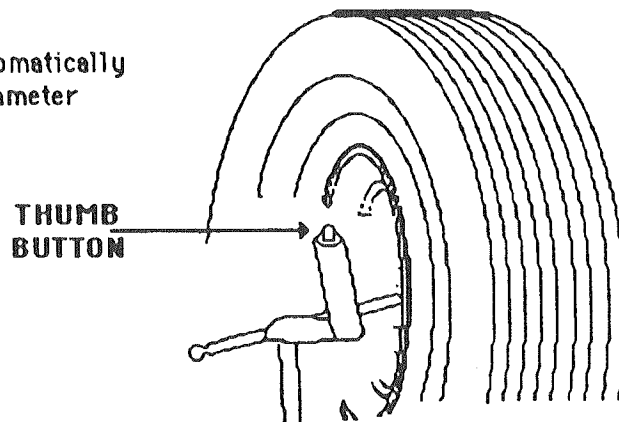
Press 3, then press number keys to enter wheel diameter in inches. The wheel diameter may be read from the tire side wall.

## 4300 MW PROGRAMMING

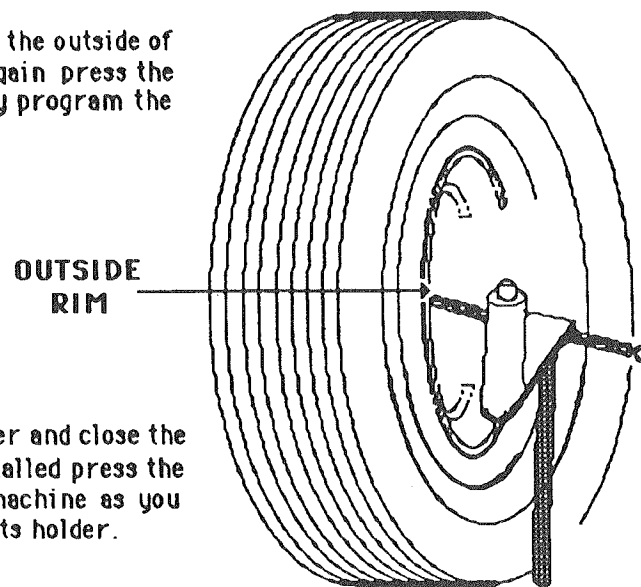
1. Place MAGIC WAND tip on the inside rim at the bead seat.



Press WAND thumb button to automatically program the distance and the diameter



- 2 Place the MAGIC WAND tip on the outside of the rim at the bead seat and again press the thumb button to automatically program the rim width.



- 3 Return the WAND to its holder and close the hood. If the hood is not installed press the thumb button to start the machine as you are returning the WAND to its holder.

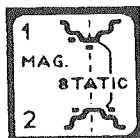
## SELECTING TYPE OF BALANCE

NORMAL DYNAMIC BALANCING USING STANDARD CLIP-ON WEIGHTS: press mag-static key until "normal run" appears.



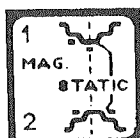
Start spin cycle.

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



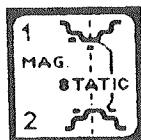
Press MAG-STATIC key once, then press the start key.

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.  
On the 4300 MW machine press the STATIC key once then press the start key.



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

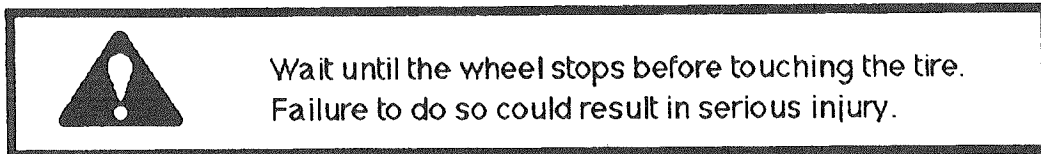
## SPIN CYCLE

### TO START WHEEL SPIN CYCLE

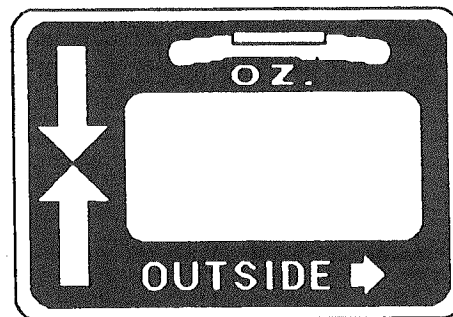
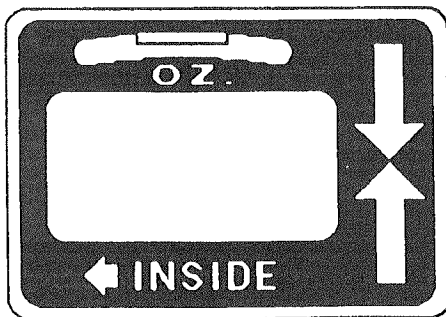


PRESS START KEY  
OR CLOSE THE HOOD  
OR USE THE 4300 MW PUSH BUTTON

### AFTER WHEEL STOPS SPINNING



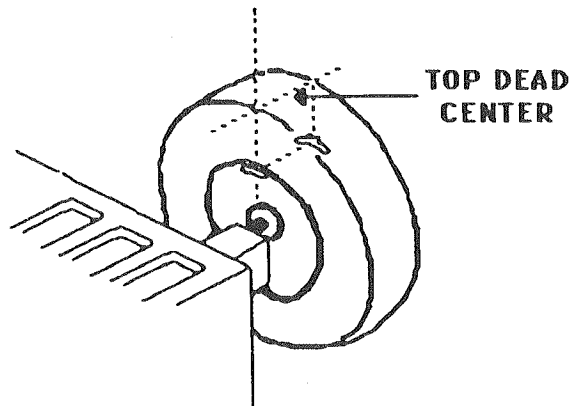
1. Turn tire by hand until all arrow lights are lit on either one of the displays.



The 4300 MW will automatically position to the heaviest weight side. After attaching the weight called for, press any number key to auto-position to the lighter weight side.

2. Select weight amount shown on that display. Attach at the top

dead center point of displayed side of the rim. Secure weight to rim.



**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 (shield down) for another spin cycle.

#### FINE BALANCE

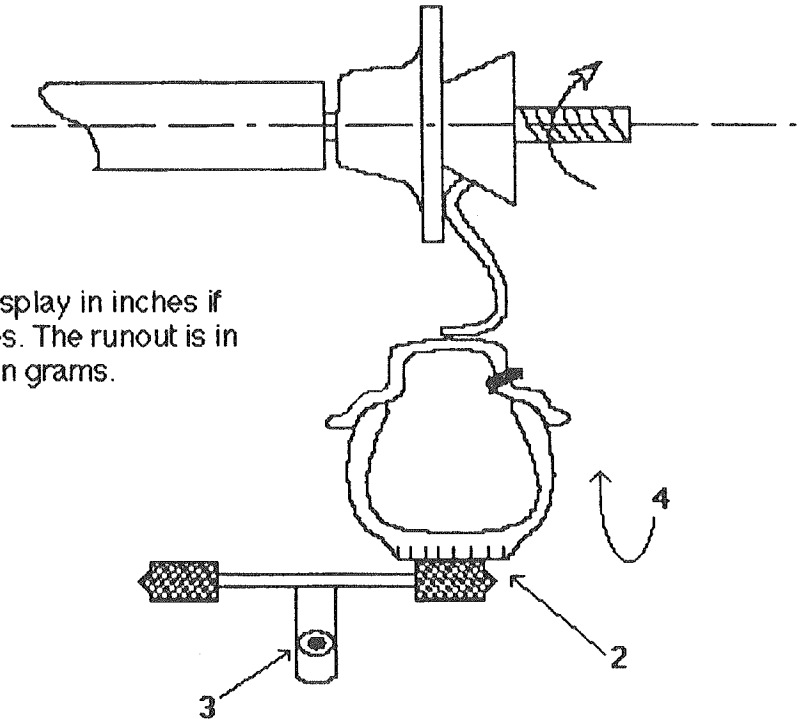
Hold START key in while spin cycle takes place. The readings will be in 0.1 ounce or 1 gram increments.

## 4300MW RUN OUT

Run out should be checked on come backs, when a problem is suspected or when more weight than usual is required. Use the following procedure:

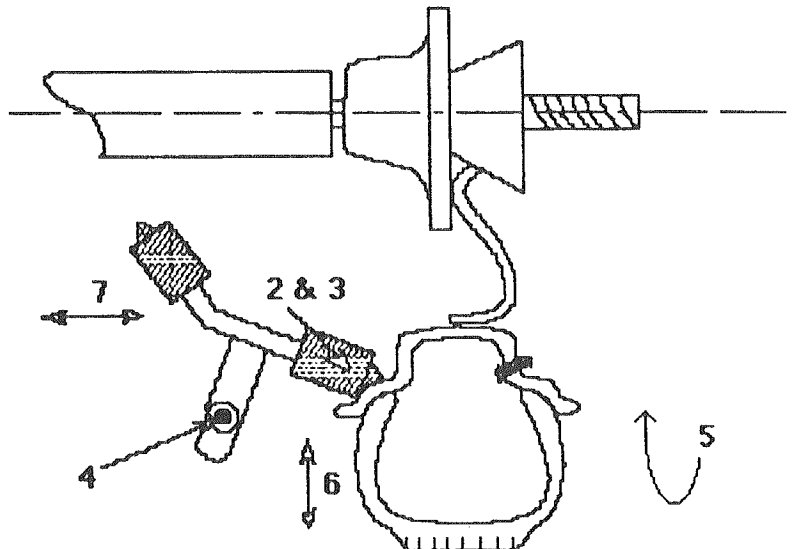
### Tire run out

1. Press run out key on keyboard.
2. Place wand on tire as shown.
3. Press wand button to zero display.
4. Rotate tire by hand.
5. Tire run out is shown on the outside display in inches if the balancer displays weight in ounces. The runout is in Millimeters if the displayed weight is in grams.



### Rim run out

1. Press run out key on keyboard.
2. Place wand tip on rim.
3. Hold wand in direction shown.
4. Press wand button to zero display.
5. Rotate tire by hand.
6. Rim radial run out is displayed on the outside window.
7. Rim axial runout is displayed on the inside window.



## CALIBRATION PROCEDURE

After a wheel is balanced, you must run a Check Spin to see that the wheel is balanced accurately. Calibration should be performed when this check spin reveals that most wheels are not accurately balanced by the first one or two spins. 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. Lower hood. Press the start key.  
*On the 4300 MW model, push 1 2 3 " will be displayed. Move the wand to the inside of the rim at the bead seat, push the wand button, then move the wand to the outside of the rim at the bead seat. and again push the wand button Return the wand to the holder and push the wand button to start.*  
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.

*Following steps are for 4300TC only*

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:**

<b><u>Display</u></b>	<b><u>Cause</u></b>
"ERR 3"	Requires calibration; check or replace batteries.
"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.

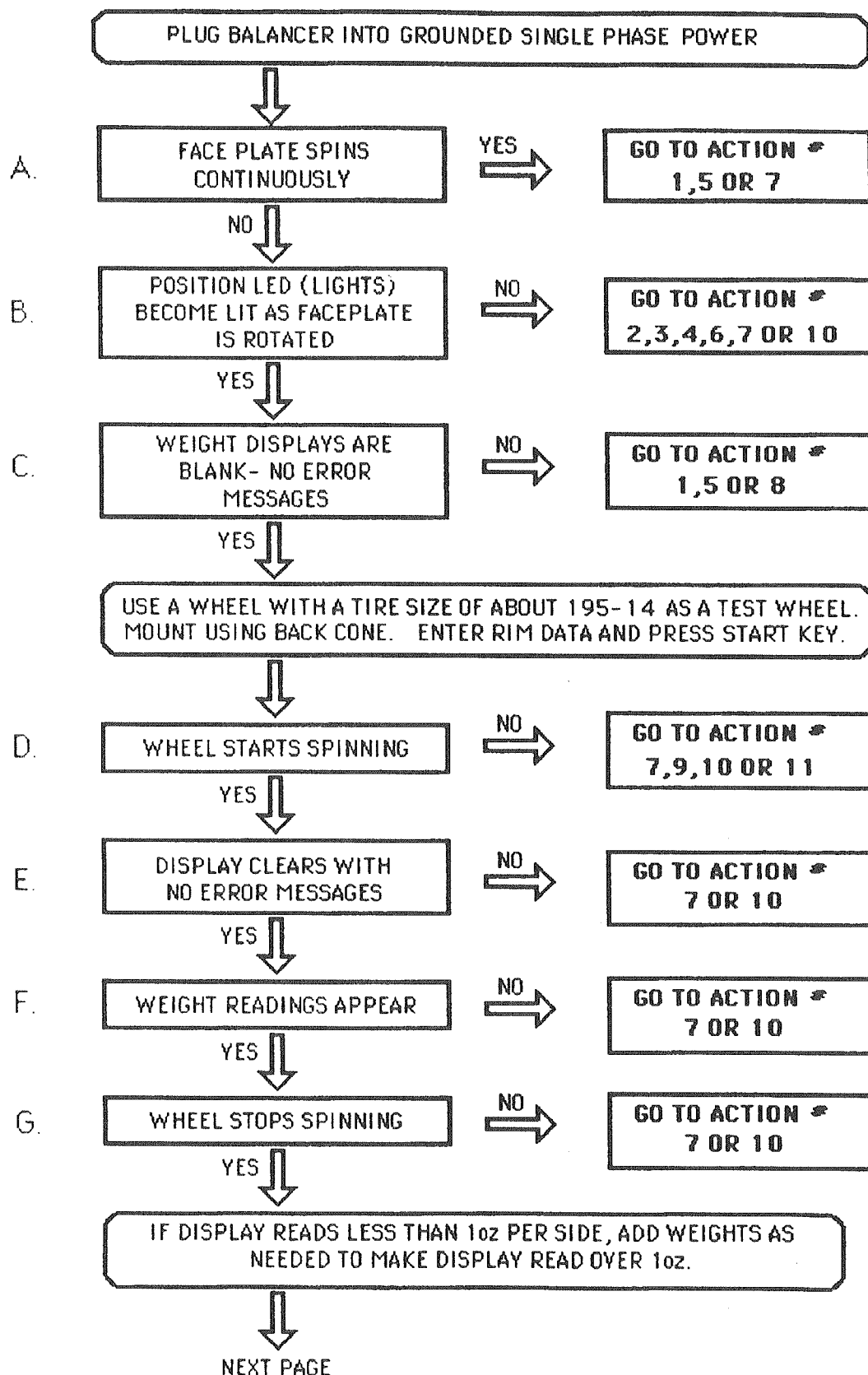
After you select the code the balancer will operate according to the new instructions.

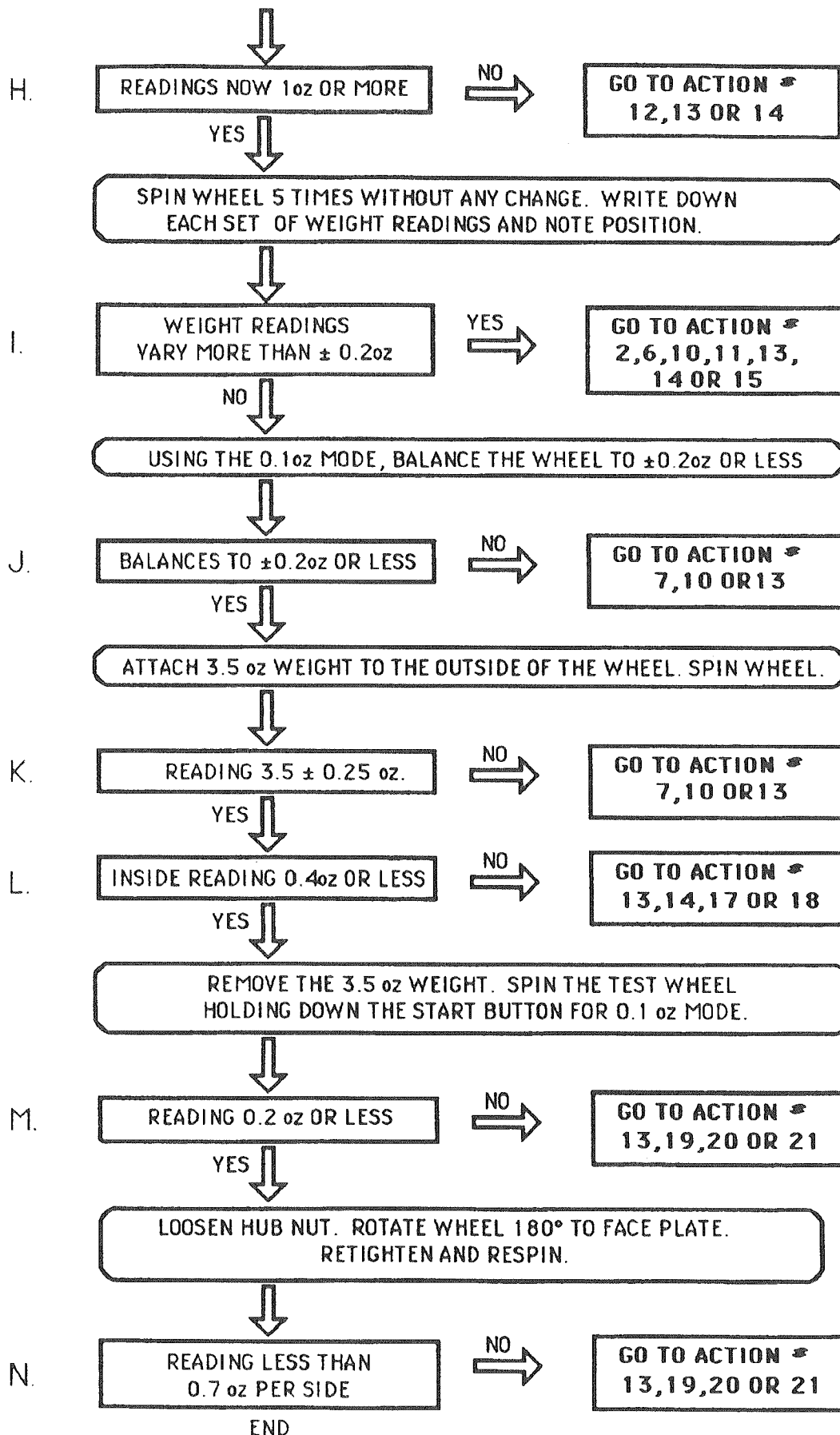
<b><u>CODE</u></b>	<b><u>WHAT DOES IT CHANGE?</u></b>
000	Places balancer in standard operation (overrides special functions).
001	Displays weights as .01 oz.
010	Displays weight as .1 oz.
025	Displays weight as .25 oz. with .25 oz. deadband
100	Displays weight in 1 gram values.
200	Displays weight at 2 gram steps.
500	Displays weight at 5 gram steps with 10 gram deadband.
xxx	Displays weight at 5 gram steps with 5 gram deadband..
550	Places balancer in motor drive operation (standard operation)
555	Places balancer in hand spin operation.
601	Enable wand (4300MW only).
602	Disable wand (4300MW only).
771	Wand check (4300MW only)
777	Optical timer counter check. (see functional check, action #10).
843	Arm data check. (see functional check, action #14).

## TROUBLE SHOOTING GUIDE

<div>PROBLEM</div> <div>POSSIBLE CAUSE</div> <div>CHECK</div>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
WIRING/CONNECTOR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
DIRT OR EXTRANEIOUS OBJECTS						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BALANCER MUST SIT ON THREE LEGS ONLY						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
"0" CAL.							<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 1/2 / 100 CALIBRATION							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TEST WHEEL				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HUB NUT, CONES, ADAPTORS ETC.						<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
PCB/CONTROL PANEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
OPTICAL TIMER ASSEMBLY			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
SENSOR ARM ASSEMBLY		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DRIVE MOTOR/CAP		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
BELTS		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
RIM DISTANCE GAUGE									<input checked="" type="checkbox"/>	

## FUNCTIONAL CHECK

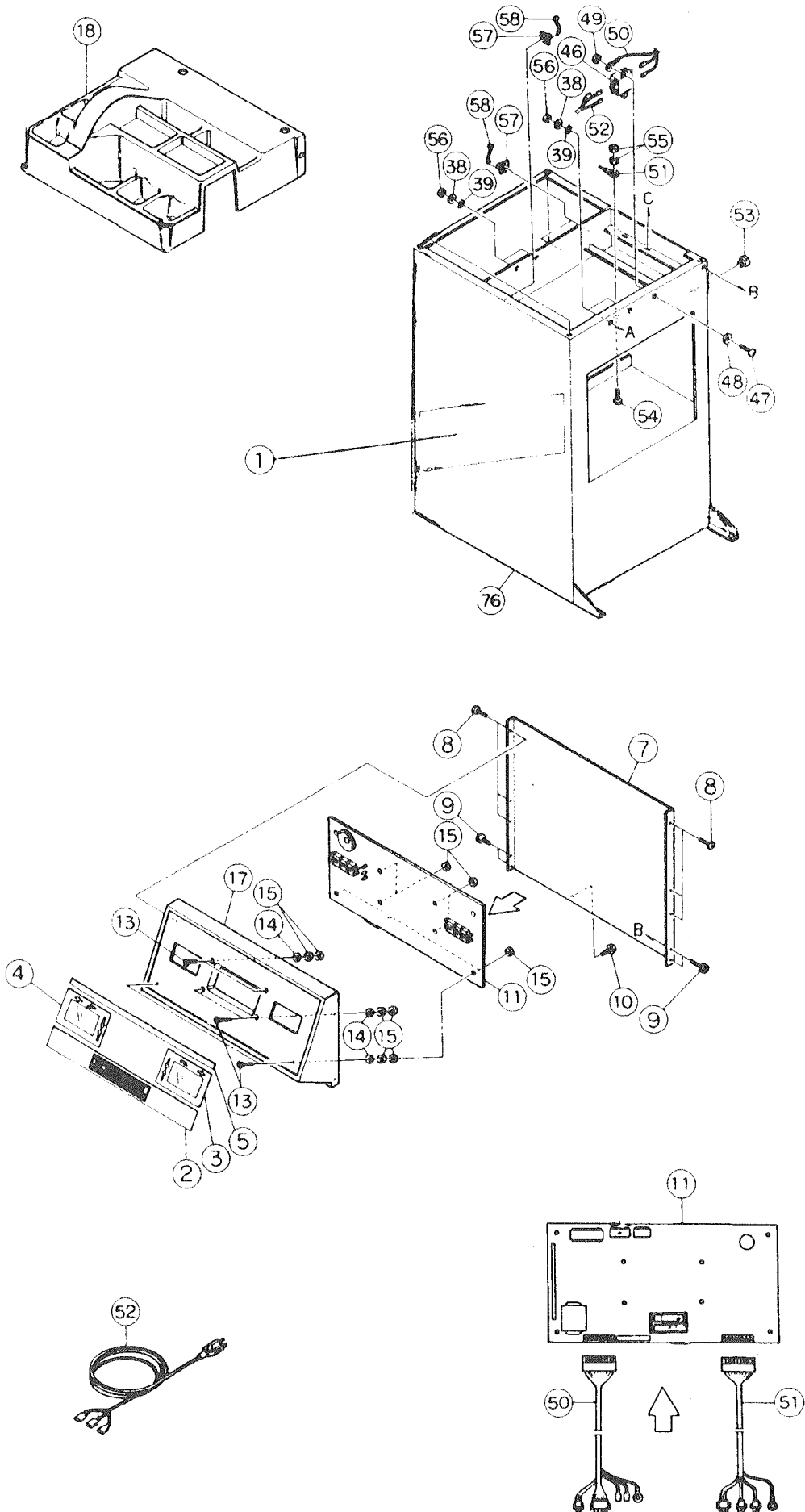


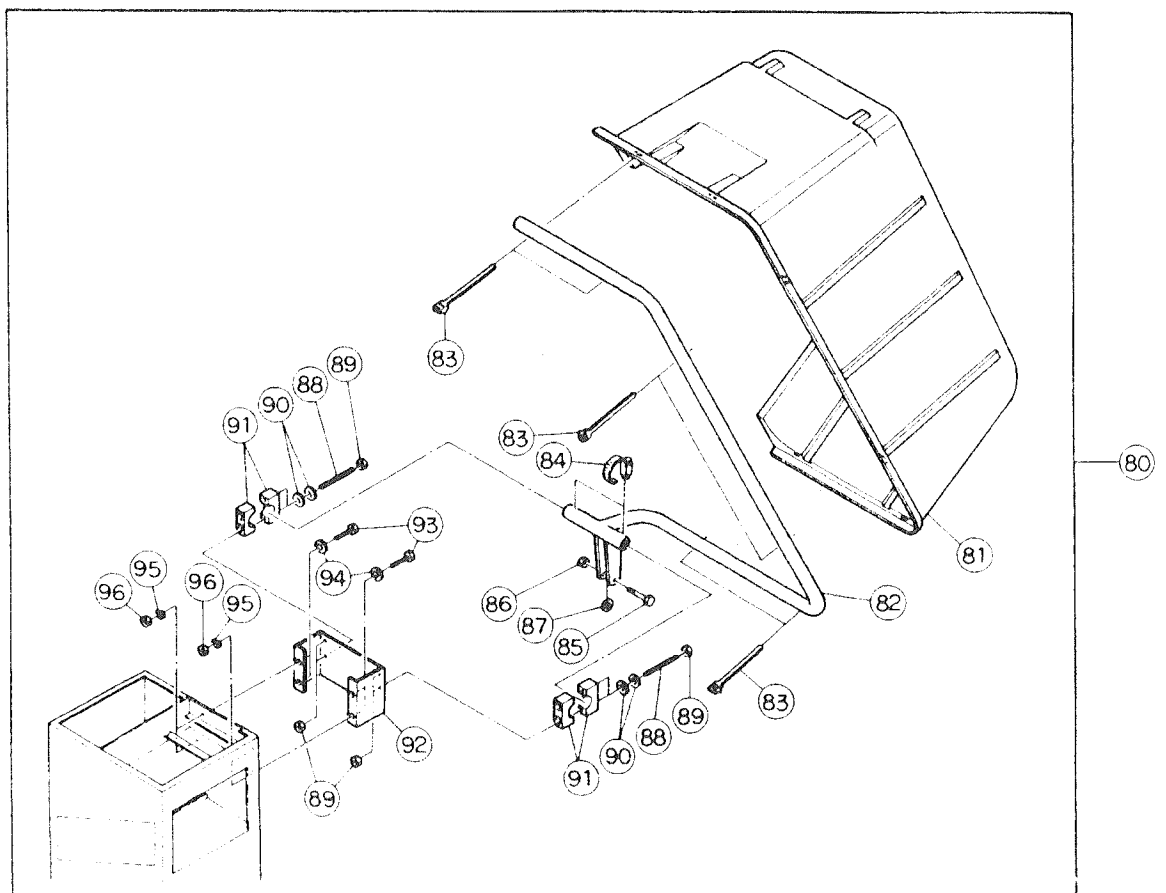
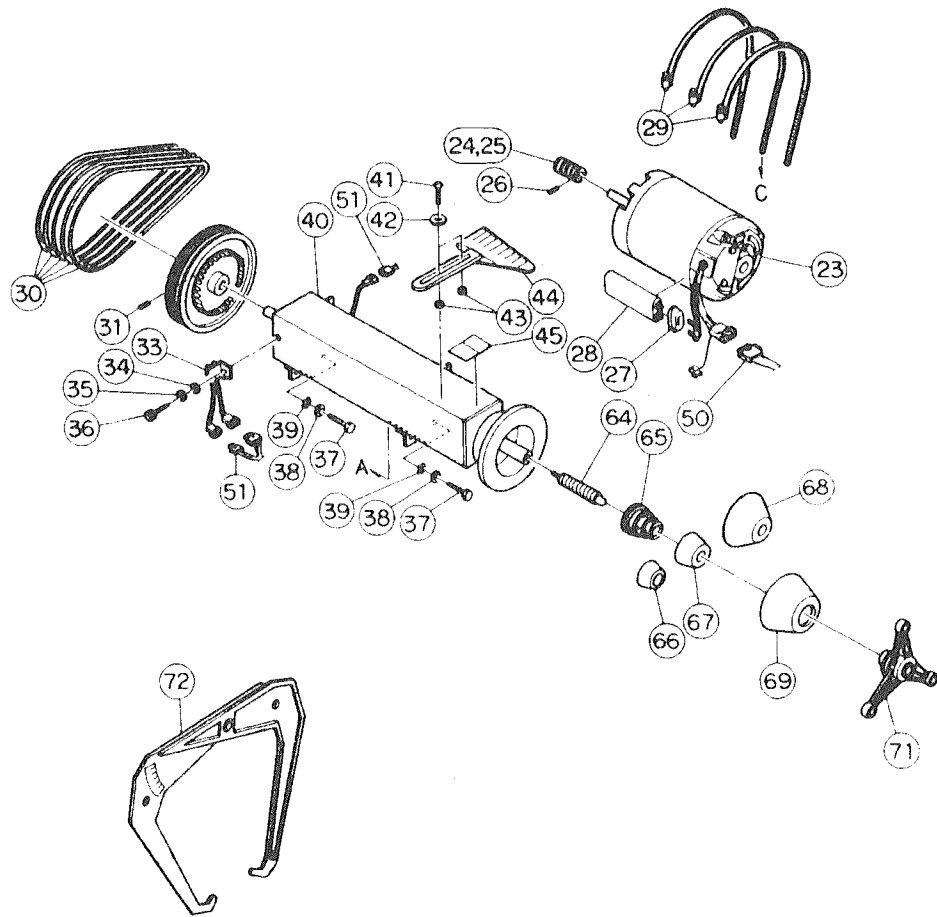


## ACTION

- 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 Recalibrate.
- 9 If no start, but click heard and wheel can be spun if pushed by hand, readings are displayed but wheel does stop 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. On the 4300 MW, perform tests J through M with the rim data entered using the key board, then with the rim data entered using the Magic Wand.
- 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  $15 \pm 30 \pm 25\%$  for both numbers; replace PCB or Arm if numbers are bad. Do not attempt to adjust the sensor arm, the earth will open up and swallow you.
- 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, 3 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.

# 2400 PARTS LIST ILLUSTRATION



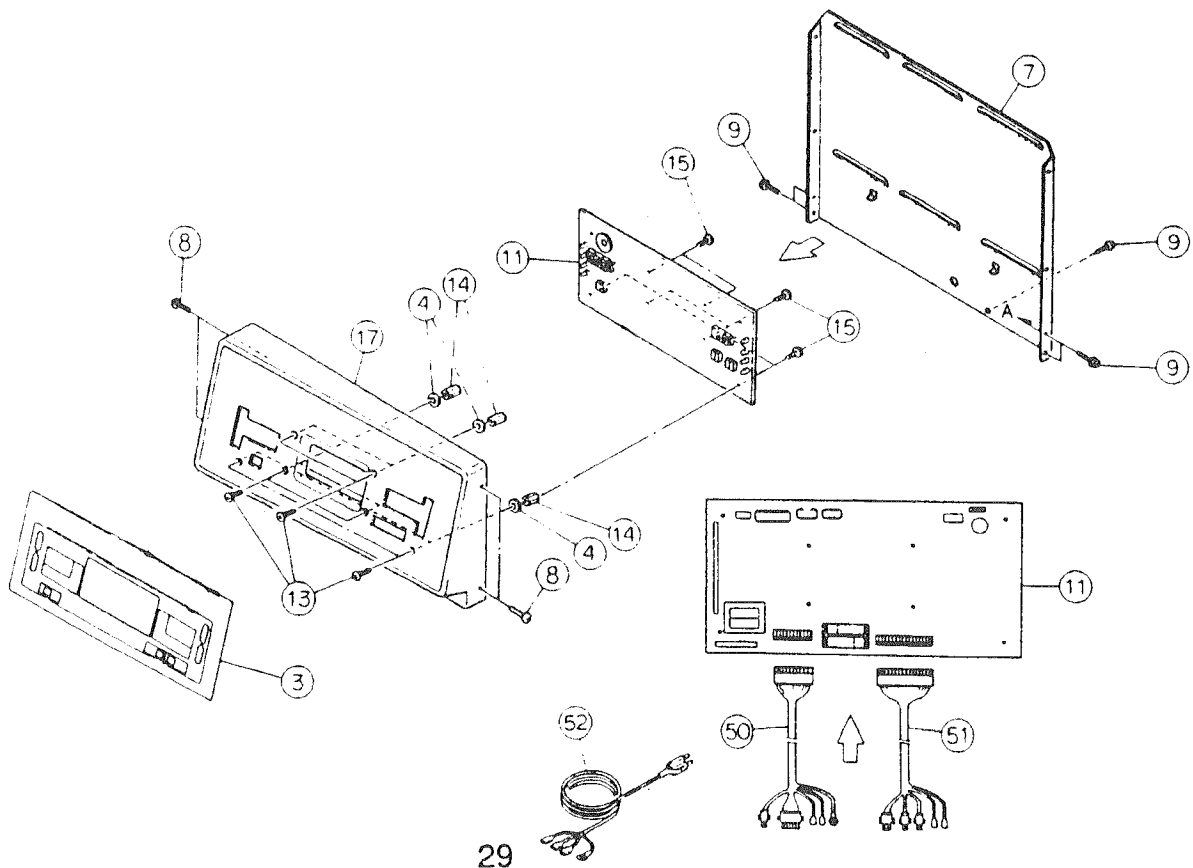
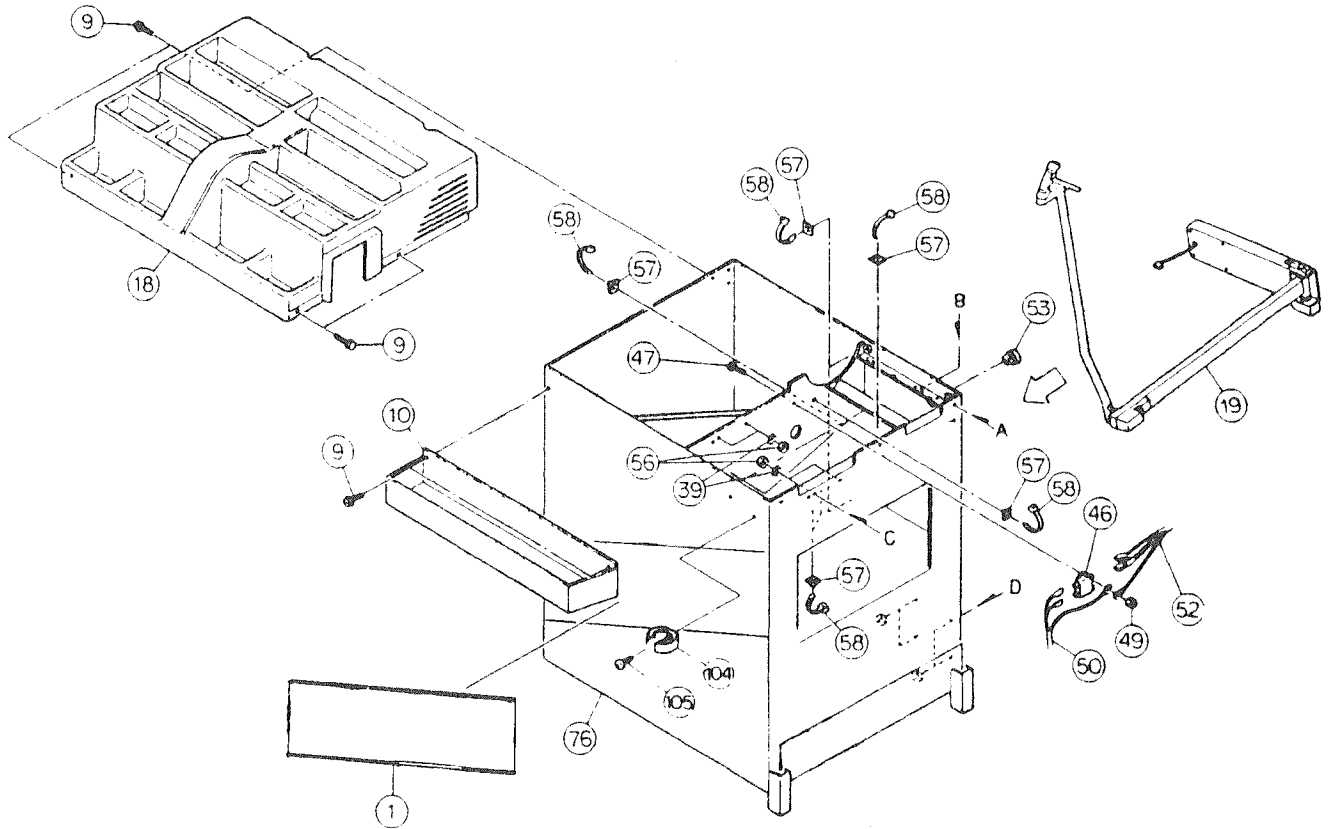


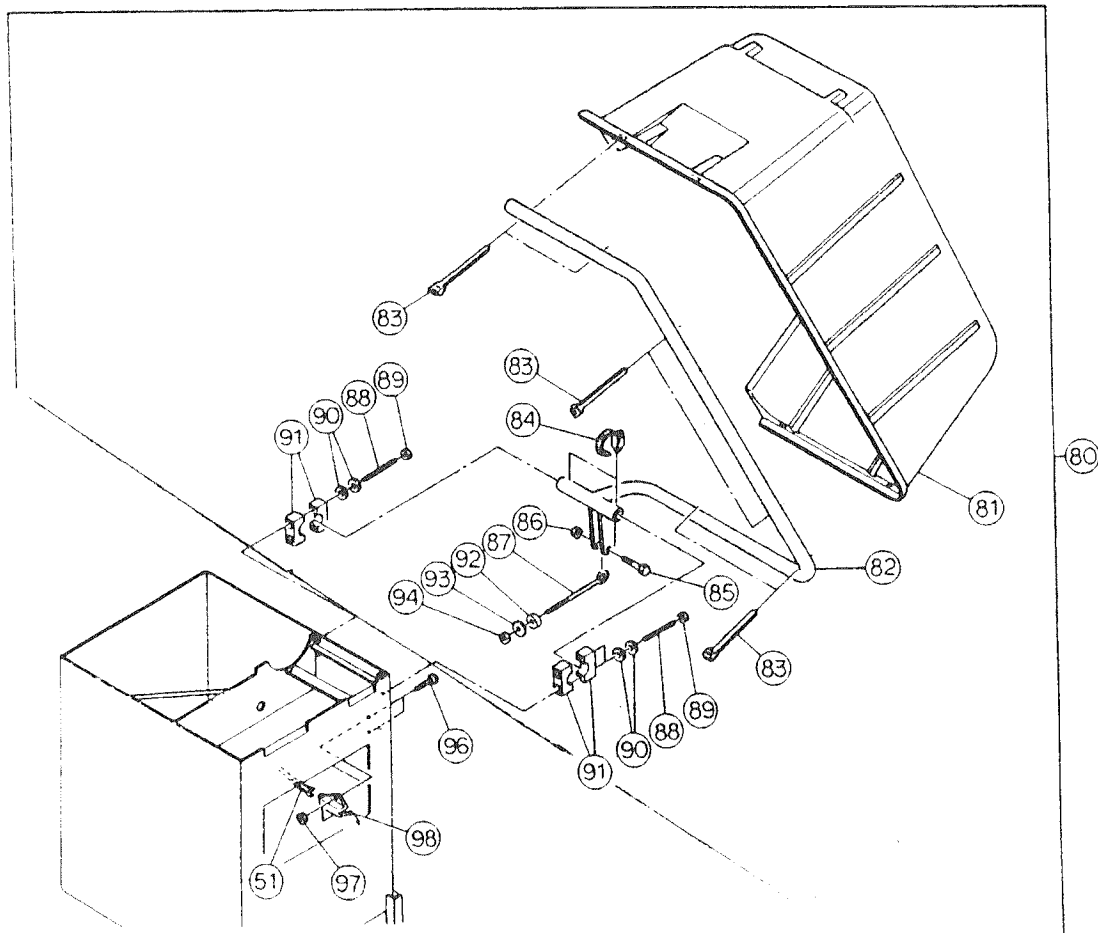
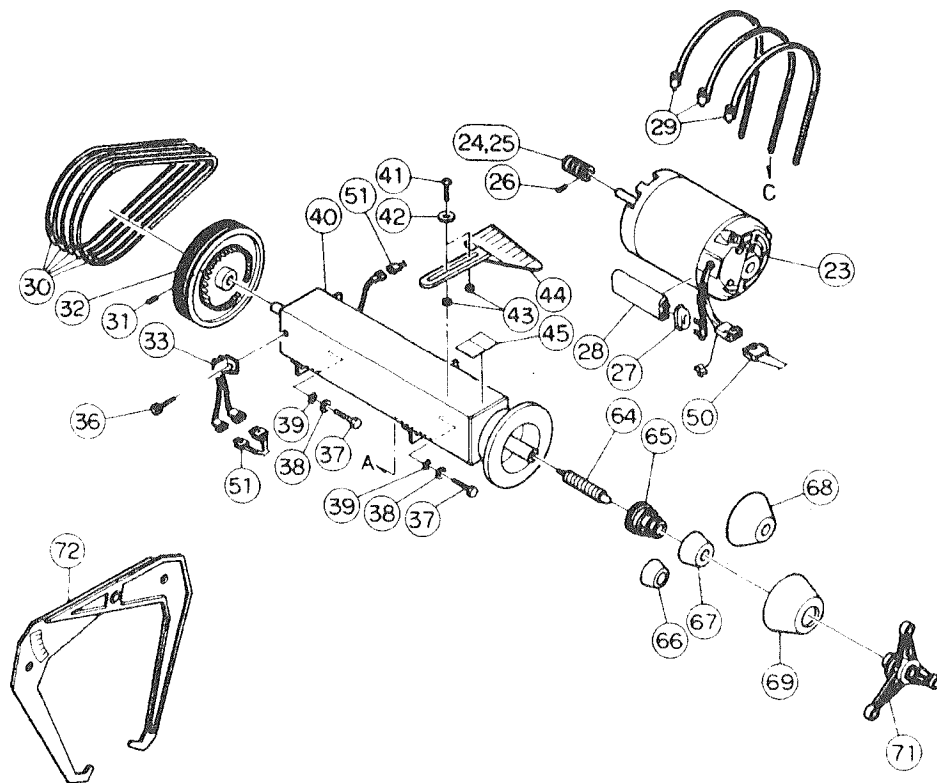
## 2400 PARTS LIST

<u>Reference</u>	<u>Part#</u>	<u>old pn</u>	<u>Description</u>
1	64501		Decal, frame
2	61201		Decal 2400 bottem strip
3	61376..61953		Window decal, Right
4	.61375..61952		Window decal, Left
5	61200..64901		Decal 2400 top strip
7	21375..25495		Back plate
8	51000		8 x 5/8 Phillips head screw
9	53354		1/4-20 x 5/8 hexhead
10	53350		1/4-20 x 5/8 hexhead
11	10250..12000		2400 Pcb.(Printed Circuit Board assembly)
12	.52591		8-32 x 1/4 black flat Phillip
14	52615		8-32 x 5/8 hex standoff
15	52590		8-32 x 1/4 panhead Phillips
17	20225..21285		Pcb cover, black ABS 2400 series
18	20226..21290		Weight tray,black ABS top cover 2400 series
23	48550		Drive motor
24	23210..26300		50 Hz motor pulley
25	23200..26200		60 Hz motor pulley
26	52900		10-24 x 5/16 set screw
27	57100		Capacitor boot
28	48400		Motor Capacitor
29	57950		Motor clamp (hose clamp #128)
30	58498		Drive belt, 2400
31	53900		Pulley screw
32	25151		Large pulley
33	16200		OTA (Optical timer assy)
36	52600		8-32 x 1/2 set screw
37	54285		5/16-24 x 1 1/2 arm bolt
39	54520		5/16 star washer
40	15100		Sensor arm asy
41	53600		Distance gauge screw
42	53800		Sable black 1/4 x 1 1/4 washer
43	54875		1/4 x 1 1/4 nut
44	20726..22801		Distance gauge
45	66500		Decal, mirror,
46	34800		Line filter
47	53060		10" x 32 x 5/8 Phillips screw
49	53176		10-32 lock nut
50	16225		Signal wire harness
51	16250		Motor wire harness

52	47700	Power cord
53	57200	Strain relief
56	54400	5/16-24 Arm nut
57	56600	Adhesive mount
58	56475	Tie wrap, medium
64	23300..26900	Threaded stud, for plastic hub nut
	23310	Threaded stud for metal hub nut. Larger dia.
65	22100..25400	Cone spring
66	24100..27300	Small cone, automobile
67	24110..27400	Large cone, automobile
68	24126..27501	Light truck cone
69	20770..22900	Drum. black plastic pressure
71	15800	Hub nut assy, black plastic
	15825	Hub nut assy, metal
72	15900	Caliper assy
	20700..22700	Caliper arm
76	23591	Frame, 2400
80	15601	Hood Kit, 2400
81	20200..21200	Hood
82	22053..23500	Hood tube
83	56525	Tie wrap, 9" black
84	57800	Hose clamp #51
85	54800	3/8 x 16 x 2 1/2 bolt
86	54885	3/8 - 16 Nylock nut
87	51500	3/8 x 1 1/2 washer
88	54100	5/16 - 18 x 3 1/2 stud
89	54200	5/16 - 18 nut
90	54500	5/16 Washer
91	20625..22400	Hood tube bearing block
92	22000..23450	Hood bracket 2400
93	53425	1/4 - 20 x 1 bolt
94	53550	1/4 - 20 nut
95	53775	Washer
96	53550	1/4 - 20 nut
97	20970	Long screw, Pcb
	69801	Manual, 2400/4300 series

# 4300, 4300MW & 4300TC PARTS LIST ILLUSTRATION





### 4300, 4300MW & 4300TC PARTS LIST

<u>Reference</u>	<u>Part#</u>	<u>old pn</u>	<u>Description</u>
1	64501		Decal, frame
3	61575		Front panel overlay
4	52800		Washer, #8 flat
7	21395..25495		Back plate, 4300 series
8	51000		8 x 5/8 Phillips head screw
9	53350		1/4-20 x 5/8 hexhead
10	21325..23608		Tray, 4300MW only
11	10360..12026.....		4300 Pcb.(Printed Circuit Board assembly)
	10390		4300TC Pcb
	10400		4300MW Pcb
13	52591		8-32 x 1/4 black flat Phillip
14	52615		8-32 x 5/8 hex standoff
15	52590		8-32 x 1/4 panhead Phillips
17	20275..21313		Pcb cover, black ABS 4300 series
18	20276..21314		Weight tray,black ABS top cover 4300 series
19	15160		Majic Wand assy
23	48550		Drive motor
24	23210..26300		50 Hz motor pulley
25	23200..26200		60 Hz motor pulley
26	52900		10-24 x 5/16 set screw
27	57100		Capacitor boot
28	48400		Motor Capacitor
29	57950		Motor clamp (hose clamp #128)
30	58502		Drive belt, 4300 series
31	53900		Pulley screw
32	25151		Large pulley (part of sensor arm assy)
33	16200		OTA (Optical timer assy)
36	53590		Screw 1/4-28 X 1/2 button head
37	54285		Bolt 5/16-24 x 3/4 hex head
39	54520		Washer, 5/16 external tooth
40	15100		Sensor arm asy
	15150		Sensor arm assy 4300TC
41	53600		Screw, 1/4-28 X 3/4 button head
42	53800		Washer, 1/4 x 1 1/4, sable black
43	54875		1/4 x 1 1/4 nut
44	20726..22801		Distance gauge
45	66500		Decal, mirror
46	34800		Line filter
47	53060		Screw, 10" x 32 x 5/8 Phillips
49	53176		Nut, 10-32 lock

50	16225	Signal wire harness
51	16250	Motor control wire harness
52	47700	Power cord
53	57200	Strain relief
56	54400	5/16-24 Arm nut
57	56600	Adhesive mount
58	56475	Tie wrap, medium
64	23300..26900	Threaded stud, for plastic hub nut
	23310	Threaded stud for metal hub nut. Larger diameter.
	23320	Threaded stud, fine thread for TC
65	22100..25400	Cone spring
66	24100..27300	Small cone, automobile
67	24110..27400	Large cone, automobile
68	24126..27501	Light truck cone
69	20770..22900	Drum. black plastic pressure
71	15800	Hub nut assy, black plastic
	15825	Hub nut assy, metal
	15850	Hub nut assy TC, fine thread
72	15900	Caliper assy
	20700..22700	Caliper arm
76	21080..23606	Frame, 4300, 4300MW
	21105	Frame, 4300TC
80	15603	Hood Kit, 4300, 4300MW
81	20200..21200	Hood
82	22053..23500	Hood tube
83	56525	Tie wrap, 9" black
84	57800	Hose clamp #51
85	54800	3/8 x 16 x 2 1/2 bolt
86	54885	3/8 - 16 Nylock nut
87	51500	3/8 x 1 1/2 washer
88	54100	5/16 - 18 x 3 1/2 stud
89	54200	5/16 - 18 nut
90	54500	5/16 Washer
91	20625..22400	Hood tube bearing block
92	22000..23450	Hood bracket 2400
93	53425	Bolt 1/4 20 X1
94	53550	Nut, 1/4 20
96	52650	Screw, 8-32 X 3/4 phillips
98	20525..22000	Hood Switch Cover
	47800	Hood Switch
104	57405	Clip, 4300MW only
105	53100	Screw, 10-32 X 1 pan head phillips32
	48480	Fan assy 4300TC
	69801	Manual, 2400/4300 series

# DYNABAL

CORPORATION

## BALANCERS PARTS PRICE LIST

JUNE 1, 1939

<u>PART</u> <u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PRICE</u>
05350.....	OFFSET SPACER ASSY - TC.....	\$ 190.00
12000.....	PCB ASSY - 2000M.....	500.00 *
12003.....	PCB ASSY - 2400.....	600.00 *
12005.....	PCB ASSY - 3000M.....	500.00 *
12026.....	PCB ASSY - 4300.....	600.00 *
12027.....	PCB ASSY - 4300MW.....	600.00 *
14002.....	PCB ASSY - 4002.....	600.00 *
14021.....	PCB ASSY - 4002A.....	600.00 *
14050.....	PCB ASSY - BEAR.....	500.00 *
14100.....	ATLAS CONVERSION PANEL.....	80.00
14110.....	POTUNDA CONVERSION PANEL.....	80.00
15100.....	SENSOR ARM ASSY.....	600.00 *
15150.....	SENSOR ARM ASSY - TC.....	600.00 *
15160.....	WAND ASSY.....	500.00 *
15601.....	HOOD KIT - 2400.....	555.00
15603.....	HOOD KIT - 4300.....	440.00
15800.....	HUB NUT ASSY.....	50.00
15850.....	HUB NUT ASSY - TC.....	180.00
16000.....	"O" RING SET OF 10.....	6.00
16200.....	OTA, OPTICAL TIMER ASSY.....	50.00
16226.....	SIGNAL HARNESS W/O SWITCH.....	35.00
16250.....	MOTOR CONTROL HARNESS.....	36.00
17300.....	FACE PLATE ASSY - TC.....	1000.00
21200.....	HOOD.....	150.00
21210.....	HOOD FR.....	228.00
21235.....	PCB COVER - 2400.....	50.00
21290.....	WEIGHT TRAY - 2400.....	69.00
21300.....	TOP COVER/WEIGHT TRAY - 4002.....	225.00
21313.....	PCB COVER - 4300 & 4300MW.....	90.00
21314.....	WEIGHT TRAY - 4300 & 4300MW.....	162.00
22000.....	COVER, HOOD SWITCH.....	2.00
22400.....	BEARING BLOCK, HOOD TUBE.....	7.00
22501.....	HUB NUT.....	18.00
22501.....	COMBI CENTER GEAR, BLACK PLASTIC.....	20.00
22700.....	CALIPER ARM.....	10.00
22801.....	DISTANCE GAUGE.....	7.00
22900.....	PLASTIC DRUM.....	16.00
23450.....	HOOD BRACKET - 2400.....	114.00
23500.....	HOOD TUBE.....	115.00
23591.....	2400 FRAME.....	480.00
23605.....	4300 FRAME.....	610.00
23608.....	TRAY- 4300MW ONLY.....	86.00
24600.....	MOTOR WRAP.....	6.00
25400.....	CONE SPRING.....	8.00
25495.....	BACKPLATE - 2400 PCB.....	54.00
25502.....	BACKPLATE - 4300 PCB.....	55.00
25600.....	HUB NUT WASHER, STEEL.....	3.00
25700.....	HUB NUT WASHER, NYLON.....	3.00

26200.....	PULLEY, 7 BELT, 60 HZ.....	16.00
26300.....	PULLEY, 7 BELT, 50 HZ.....	16.00
26500.....	DAYTON TIP.....	30.00
26700.....	DAYTON STUD.....	6.00
26900.....	THREADED STUD STANDARD.....	74.00
26905.....	THREADED STUD, METAL H.N.LARGE.....	74.00
26950.....	THREADED STUD - TC.....	74.00
27200.....	CONE, TRUCK, HEAVY DUTY.....	248.00
27300.....	CONE, SMALL.....	65.00
27400.....	CONE, LARGE.....	65.00
27501.....	CONE, LIGHT TRUCK.....	70.00
29901.....	SWIVEL PLATE.....	38.00
29001.....	ADAPTOR PLATE.....	100.00
29011.....	METAL HUB NUT.....	80.00
29101.....	DAYTON CLAMP.....	15.00
34800.....	LINE FILTER.....	19.00
47700.....	CORD, POWER - 3 CONDUCTOR.....	10.00
47800.....	SWITCH, HOOD.....	8.00
48400.....	CAPACITOR, MOTOR.....	24.00
40550.....	MOTOR, DRIVE.....	225.00
50000.....	BALANCER; FASTNER HARDWARE.....	2.00
53500.....	EYEBOLT, 1/4-20 X 10.....	7.00
54905.....	NUT, ADAPTOR 3/8-16 X 1.....	0.00
55400.....	BOLT, ADAPTOR 1/2-13 X 3.....	5.00
55575.....	SCREW, DAYTON 7/16-20 X 1.....	3.00
55950.....	WASHER, RUBBER 1 1/2".....	4.00
57950.....	HOSE CLAMP, #116.....	6.00
58498.....	DRIVE BELT - 2400.....	5.00
58500.....	DRIVE BELT - 4000.....	5.00
58502.....	DRIVE BELT - 4300.....	5.00
61901.....	DECAL, 2400 TOP PCB STRIP.....	16.00
61902.....	DECAL, 2400 BTM PCB STRIP.....	16.00
61952.....	DECAL, 2400 LEFT WINDOW.....	10.00
61950.....	DECAL, 2400 RIGHT WINDOW.....	10.00
62050.....	OVERLAY, 4300 PCB COVER.....	40.00
62060.....	OVERLAY, 4300MW PCB COVER.....	40.00
62501.....	OVERLAY, BEAR PCB (4300).....	40.00
64000.....	DECAL, FRAME - 2000M.....	10.00
64025.....	DECAL, FRAME - 3000M.....	24.00
64025.....	DECAL, SIDE FRAME, 3000M.....	15.00
64400.....	DECAL, FRAME, BEAR.....	10.00
64501.....	DECAL, FRAME DYNABAL.....	18.00
66500.....	DECAL, MIRROR.....	5.00
66501.....	DECAL DISTANCE FOR MW.....	5.00
67700.....	DECAL, WEIGHT, OZ.....	3.00
67800.....	DECAL, WEIGHT, GRAMS.....	3.00
69801.....	OWNERS MANUAL, 2400,4300,4300MW.....	5.00

\*REBUILT PARTS, CORE CREDIT OF \$200.00 ALLOWED WHEN OLD PART IS RETURNED.

~MINIMUM ORDER \$50.00

~FOR FACTORY, PARTS SHIPPED UPS COD

~Subject to change without notice.

2010 FORTUNE DRIVE, SAN JOSE, CALIFORNIA 95131

(800) 227-8966

(408) 434-6600

FAX 408434-0535

# BEAR<sup>®</sup>



## Service Notice

# Information

NO. 00214 - IN

DATE JULY 31, 1989

MODEL 80-200A

TO: ALL COMPANY AND AUTHORIZED SERVICE CENTERS

SUBJECT: 80-200A BALANCER INTRODUCTION

AS OF MAY 01, THE 80-200 BALANCER IS NO LONGER BEING PRODUCED BY DYNABAL. THE 80-200A HAS REPLACED THE 80-200 AND IS NOW BEING SHIPPED. THE NEW 80-200A BALANCER STARTED PRODUCTION WITH SERIAL NUMBER 07894620. ALL UNITS PRODUCED AFTER THIS NUMBER WILL BE 80-200A MODELS.

AN INSTRUCTION MANUAL FOR THE 80-200A IS BEING MAILED WITH THIS NOTICE FOR YOUR USE. THE INSTRUCTION MANUAL INCLUDES A PICTORIAL MODEL BREAKDOWN AND PARTS LISTING.

THERE ARE A COUPLE OF DIFFERENCES FROM THE 80-200 MODEL. THE LAYOUT OF THE CONTROL PANEL HAS BEEN CHANGED AS HAS BEEN THE MOUNTING HOLES FOR THE PCB. DUE TO THE RECONFIGURATION OF THE HEAD THE 80-200A PCB IS NOT INTERCHANGEABLE WITH THE 80-200 PCB.

ALSO, THE STOCK PLASTIC 80-200A WHEEL NUT HAS BEEN REPLACED BY ONE MADE OUT OF METAL. THIS METAL WHEEL NUT CAN BE USED ON THE 80-200 BALANCER PROVIDING THE NUT AND STUD ARE CHANGED AT THE SAME TIME. THE METAL WHEEL NUT ALONE CANNOT BE USED ON THE 80-200.

IF THERE ARE ANY QUESTIONS OR PROBLEMS CONTACT THE MILWAUKEE SERVICE DEPARTMENT OR DYNABAL AT 1-800-227-8866.

*James L Mleczo*

JAMES L. MLECZKO  
PRODUCT SERVICE REPRESENTATIVE

**DYNABAL  
CORPORATION**

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San Jose, California 95131 U.S.A.  
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Fax (408) 434-0535

PN 69801 March 1990