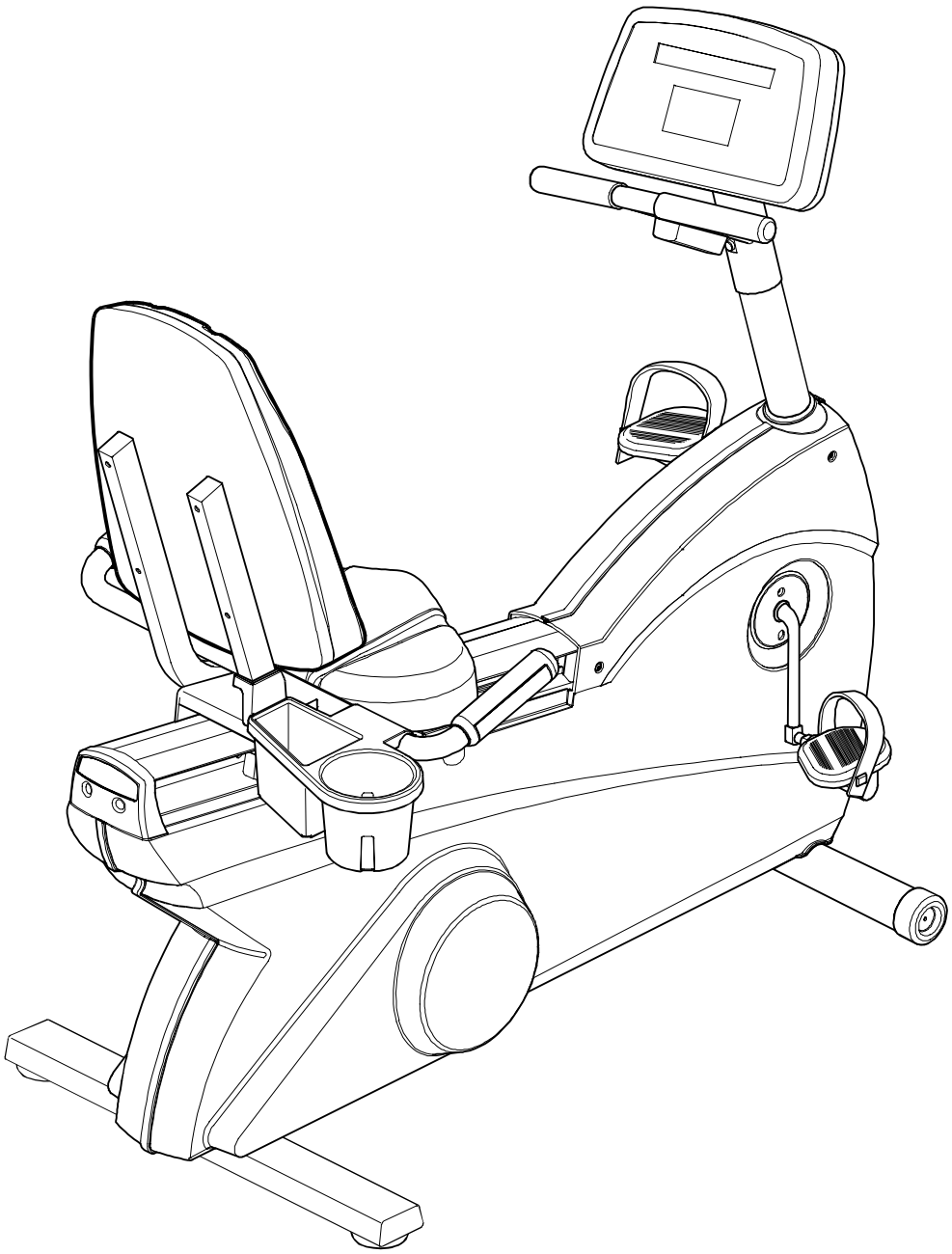
LifeFitness

Rely on it.™

Lifecycle 9500HR/9100 Series Recumbent Exercise Bikes



Customer Support Services

SERVICE MANUAL

Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

INTRODUCTION

HOW TO USE SERVICE MANUAL AND CONTACT CUSTOMER SUPPORT SERVICES

This service manual is applicable to Lifecycle Model 9500HR (heart rate function via Lifepulse and Telemetry) and Lifecycle Model 9100 (heart rate function via Telemetry) belt-drive recumbent exercise bikes.

Note: Information represents typical configuration and may differ slightly from actual equipment.

The Service Manual provides recommendations of safe and efficient approaches to problem situations. This manual is separated into six sections.

Refer to **TABLE OF CONTENTS** for section topics.

When an operating problem occurs, refer to trouble shooting guides and diagnostic mode to isolate cause . When applicable, guides are listed by problem symptom followed with suggestions of probable cause(s) .

Once source of problem is identified, consult "How To..." guides for recommended repair procedures. "How To..." sub-sections are organized by replaceable part or assembly name. For convenience, sub-section lists recommended “Tools Required” to complete specific function.

Refer to **PARTS IDENTIFICATION** to identify proper name and number of part to order for repair of equipment.

A reproducible FAX order claim form is given in COMMUNICATING BY TELEFACSIMILE for convenient ordering of service parts.

To order, contact Life Fitness Customer Support Services.
Via FAX - 24 hrs. /day, 7 days/week.
Via telephone - Monday through Friday from 8:00 AM to 6:00 PM (CST).
Via post - At address cited.

To speed Life Fitness Customer Support Services response to your needs, please provide the following information.

1. Model number
2. Serial number
3. Symptom of problem
4. Part name and number to order (if known)

Before installing part, review "How To..." and follow step by step procedures recommended to install part safely and efficiently.

Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

THEORY OF OPERATION

The Lifecycle recumbent bikes are stationary exercise bicycles that provide a scientific method of improving body fitness and endurance through its unique “12 or 24 MINUTE RIDE TO VIGOROUS HEALTH.”

Computerized state-of-the-art electronics have been engineered to satisfy a range of personalized fitness needs of the beginner to the needs of the most advanced fitness enthusiast.

The Lifecycle concept is based on the self-motivational principle of INTERVAL TRAINING WITH PROGRESSIVE OVERLOAD. During the HILL and RANDOM exercise programs, the workload against which you are pedaling is periodically changed by the built-in computer resulting in an automatic increase or decrease in pedal resistance. This simulates riding up and down virtual “hills,” which are visualized on the display console with columns of “lights” that move from right to left.

With features like the RACE program, Fit Test, level 1 through 20 resistance - almost 25% easier than the level 1 found on earlier editions of the classic Lifecycle exercise bike and much more challenging for the experienced rider. Also a seat adjustment which allows a wider range of selection to accommodate most anyone.

The ability to select a program to match your particular needs is what distinguishes Lifecycle bikes as the world’s most popular physical conditioning device. Its user-flexibility means that you will never outgrow the innumerable challenges the Lifecycle exercise bike has to offer.

The beginner starts with basic programs, then improves his level of fitness at his own rate while constantly challenging himself to the next level. For well-conditioned individuals, the advanced programs offer more difficult modes of training. In fact, many world-class athletes use Lifecycle bikes to maintain peak levels of conditioning.

If you have questions or comments please telephone, FAX or, write us. We are:

LIFE FITNESS - CUSTOMER SUPPORT SERVICES
10601 Belmont Avenue; Franklin Park, IL 60131; U.S.A.
Telephone: 847.451.0036 Toll-free: 800.351.3737
FAX: 847.288.3702 Toll-free: 800.216.8893

Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

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SECTION I

TROUBLESHOOTING GUIDES

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
No Power. Display Console LEDs do not illuminate.	Pedaling too slowly.	Pedal faster than 45 RPM then press the START button.
	Insufficient battery voltage.	LC95R battery voltage output should be: 5.8 - 6.3 VDC. LC91R battery voltage output should be: 9.0 VDC.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board (ACB).	Test with known good ACB. Replace malfunctioning ACB.
	Malfunctioning Alternator.	Test with known good Alternator. Replace malfunctioning Alternator.
Display Console initializes then fails.	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace malfunctioning board.
	Malfunctioning Alternator.	Test Alternator output or, test with known good Alternator. Replace malfunctioning Alternator.

Malfunction	Probable Cause	Corrective Action
Erratic Display Console LEDs.	Pedaling too slowly.	Pedal faster than 45 RPM.
	Insufficient battery voltage.	LC95R battery voltage output should be: 5.8 - 6.3 VDC. LC91R battery voltage output should be: 9.0 VDC.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace malfunctioning board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
Display Console LEDs remain illuminated.	Malfunctioning Display Console.	Inspect for damage or depression at START key. Test with known good Display Console. Replace malfunctioning Display Console.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Prompt persists and information entry not allowed.	Attempting to enter improper duration of time.	Refer to Operation Manual for time duration requirements.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
Prompt goes OFF when the START key is released and information entry not allowed.	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good ACB. Replace defective Alternator Control Board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
Display Console keys (except START key) do not function.	Attempting to enter program not available.	Refer to Operation Manual for program availability.
	Display Console connection loose.	Make sure that the connections at the Display Console are secure. Remove, then reinstall.
	Malfunctioning Display Console.	Test with substitute Display Console. Replace malfunctioning Display Console.
	Numeric keys disabled.	Refer to Diagnostic State 14 to enable numeric keys.

Malfunction	Probable Cause	Corrective Action
Excessive resistance load at start of program.	Pedaling too slowly.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace malfunctioning board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
Excessive resistance load during program.	Pedaling too slowly.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board (ACB).	Test with known good ACB. Replace malfunctioning ACB.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
	Defective load resistor.	Test with known good resistor. Replace defective resistor.

Malfunction	Probable Cause	Corrective Action
Resistance varies during manual program.	Pedaling too slowly.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
	Defective load resistor.	Test with known good resistor. Replace defective resistor.
Resistance is constant during random or hill programs.	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.

NOTE: In RANDOM and HILL programs, resistance variation may be normal. Test for resistance variation in MANUAL program.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Difficult or no pedaling movement.	Malfunctioning Pulley Clutch assembly.	Inspect Pulley for free backward and forward rotation. Replace malfunctioning Pulley.
	Alternator belt excessively tight.	Inspect belt deflection. Adjust as necessary. Alternator belt deflection: 1/4 inch (6mm).
	Left side Crank Nut excessively tight.	Loosen nut 1/16 of a turn.
	Crank Bearings worn or corroded.	Replace Crank Bearings.
	Seat incorrectly adjusted.	Adjust Seat. Refer to Operation Manual.
Pedaling too easy.	Pedaling too slowly.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
	Alternator Belt loose.	Adjust Alternator Belt **to** 1/4 inch (6mm) deflection.
	Power grip belt damaged or off crank pulley.	Replace belt if damaged.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Battery over-heating.	Reverse polarity.	RED wire to positive (+) lead and BLACK wire to negative (-) lead.
	Battery cable insulation worn and contacting frame.	Inspect Wires and replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Defective or damaged main wire harness.	Inspect Main wire harness, and replace if necessary.
Exercise bike not stable.	Stabilizer foot pads.	Adjust Foot Pads.
	Floor surface not level.	Position bike on level surface.
	Stabilizer bar not attached firmly to frame.	Tightened hardware.
	Wheel(s) damaged.	Replace damaged wheel(s).
	Frame damaged.	Contact Life Fitness Customer Support Services.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Emitting loud noise.	Non-carpeted, hard floor.	Place bike on softer surface floor or carpeted area to deaden sound.
	Leaning excessively to either side.	Do not lean.
	Crank bearings not adjusted properly or worn.	Inspect, adjust, and/or replace as necessary.
	Alternator belt loose.	Inspect belt deflection. Adjust the Alternator Belt to 1/4 inch (6mm) deflection.
	Alternator Belt worn.	Replace Belt..
	Malfunctioning Alternator.	While operating the unit, listen for excessive noise from Alternator. Replace Alternator as necessary.
	Free-wheel Pulley not rotating freely.	Inspect Pulley, and replace pulley as necessary.
Seat wobbles.	Seat rollers out of adjustment or excessively worn.	Inspect, adjust, or replace worn rollers as necessary.
Alternator voltage test.	Malfunctioning Alternator.	1. Check the alternator voltage using a DC voltmeter. Attach the positive (+) probe of the voltmeter to the alternator RED lead, and the negative (-) probe of the voltmeter to alternator BLACK lead. 2. Pedal above 45 RPM. 3. Press the START key. 4. Voltmeter reading should be 9-11 VDC.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
No heart rate or display reads no heart rate (Lifepulse).	Heart rate digital signal processor (DSP) board.	Verify that the DSP board is communicating. Execute the diagnostic Mode.
	Faulty cable connection.	Verify heart-rate cable is properly connected, then verify for continuity using an ohmmeter.
	Handlebar/Lifepulse Grip Assembly worn or damaged.	Replace Handlebar/Lifepulse Assembly.
	Life Pulse handlebar.	Using an ohmmeter, verify continuity between Lifepulse sensor and cable connection.
	Moisture on Handlebar /Lifepulse Grip Assembly.	Dry wipe sensors.
	Loose or malfunctioning heart rate lead connection at Display Console.	Secure connection. If necessary, replace malfunctioning Handlebar/Lifepulse Grip Assembly.
	Heart-rate (DSP) Board.	Verify that the heart-rate (DSP) board is communicating, and replace if necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
Handlebar/Lifepulse grips loose.	Excessive wear or damage to grip.	Replace the handlebar assembly.
Lifepulse sensor molding loose.	Improper cleaning solution that contains an acid or ammonia base.	Replace the Lifepulse Sensor Kit.
No heart rate or display reads no heart rate (Telemetry).	No heart rate reading.	Executive Diagnostic Mode to verify performance of heart rate function.
	Faulty cable connection.	Verify Telemetry cable is properly connected.
	Faulty receiver connection.	Verify receiver is plugged into jack properly.
	Defective transmitter (strap).	Test transmitter with a known good unit. Replace strap if necessary.

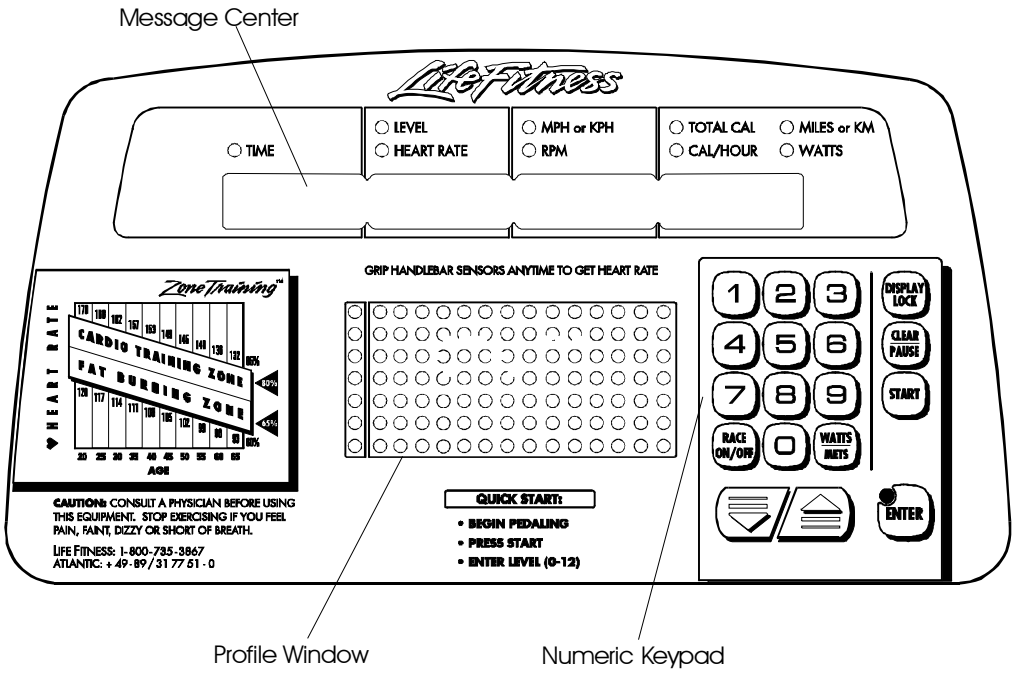
NOTES:

SECTION II

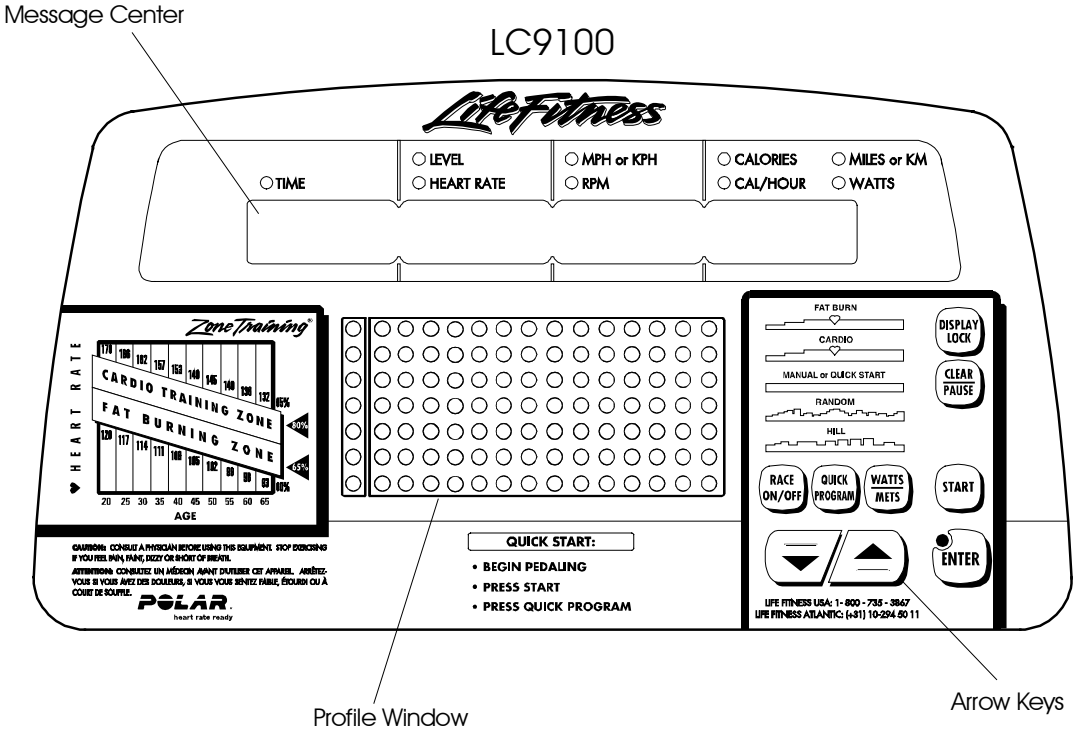
DIAGNOSTICS

Display Console Layout

LC9500

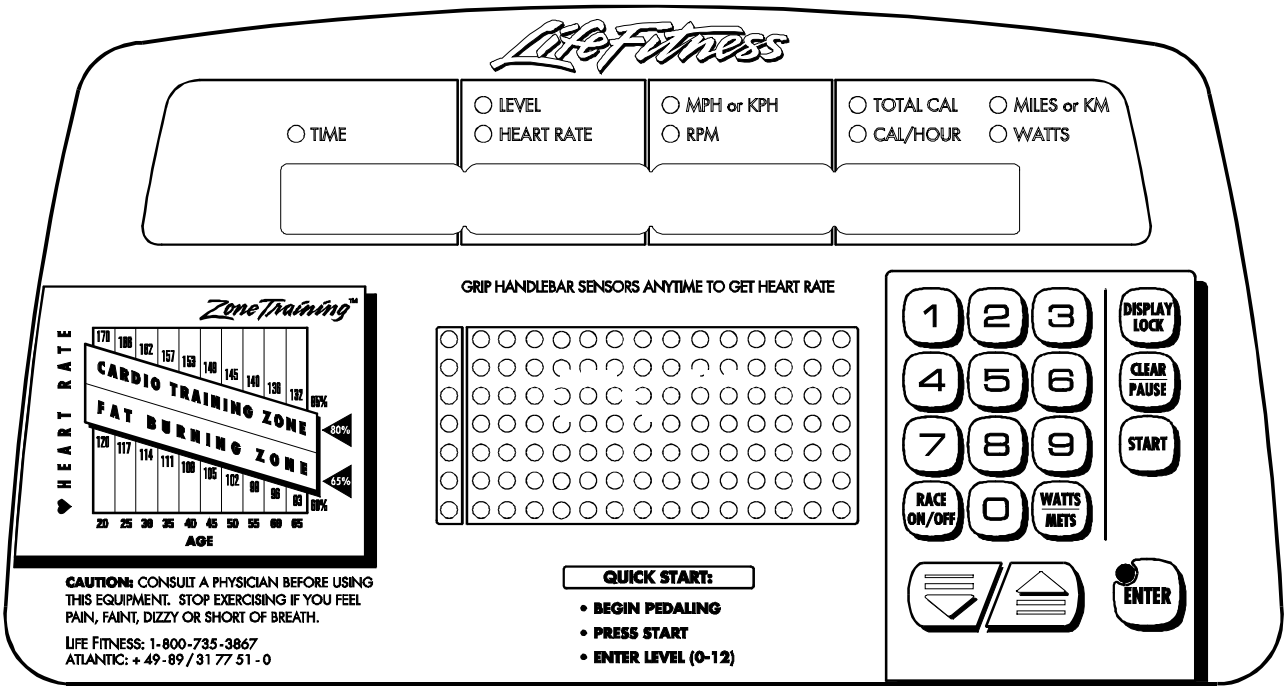


LC9100

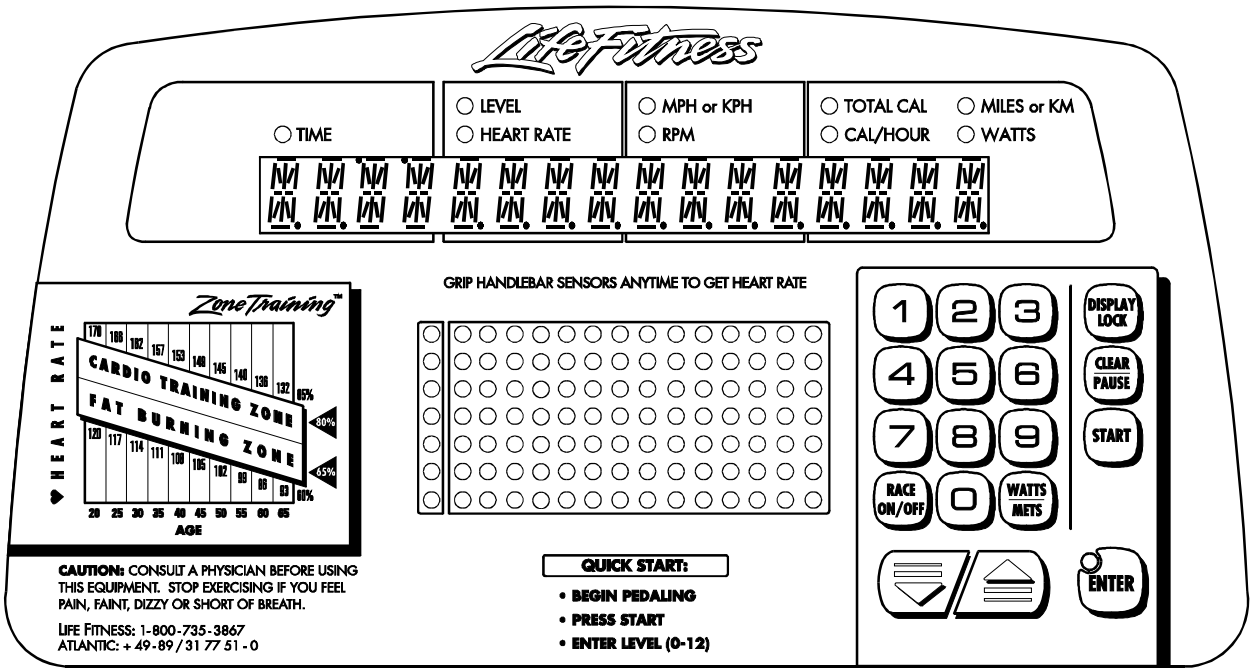


HOW TO ENTER DIAGNOSTIC MODES

LC9500 While pedaling the bike over 45 RPMs, diagnostics can be entered by holding the 5 key or the down ARROW key and pressing the START key.



LC9100 While pedaling the bike over 45 RPMs, diagnostics can be entered by holding the 'DOWN ARROW' key and pressing the 'START' key.



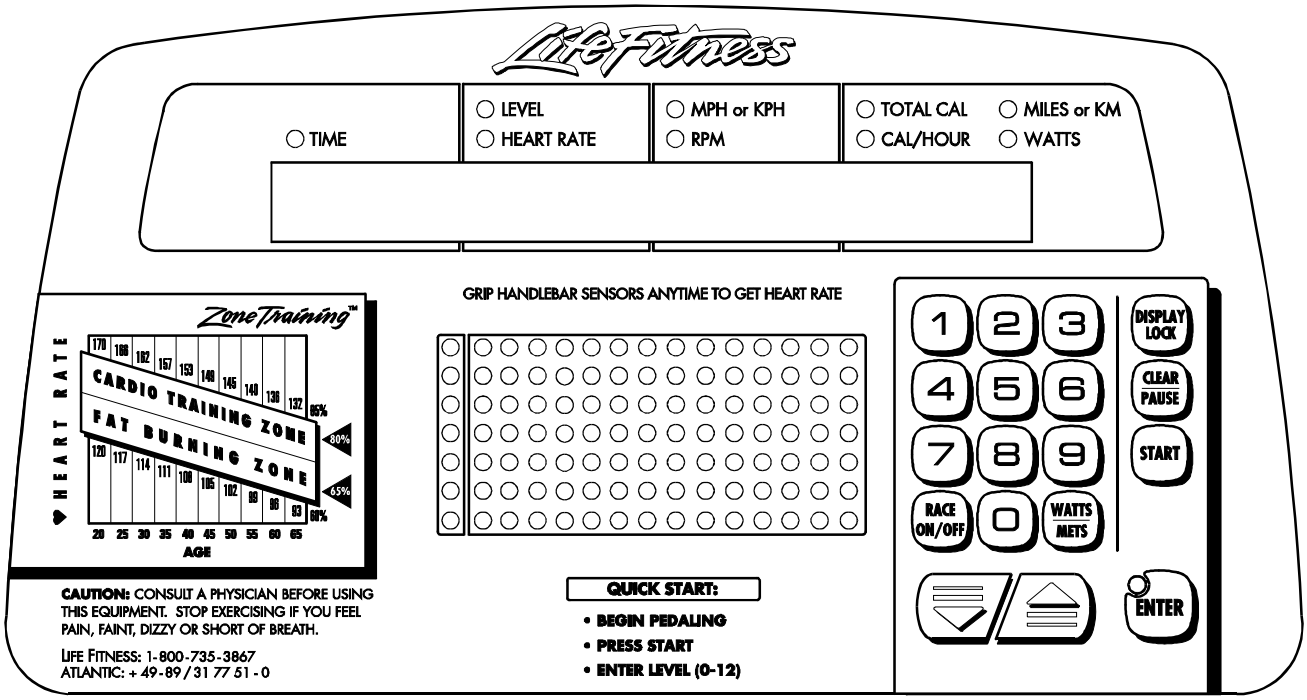
DIAGNOSTICS STATE 1 - ALL LEDS and KEYPAD TEST

Diagnostics is entered by holding the 'DOWN ARROW' key and depressing the 'Start' key while pedaling 45 RPM or faster. On entry to this state, all of the LEDs will turn on.

Pressing keys will result in a beep sound and, for all but the START/ENTER' and 'CLEAR\PAUSE' keys, a character repeated across the message center display.

KEYS	***DISPLAYED CHARACTER***
0	'0'
1	'1'
2	'2'
3	'3'
4	'4'
5	'5'
6	'6'
7	'7'
8	'8'
9	'9'
DISPLAY LOCK	'L'
RACE MODE	'R'
WATTS/METS MODE	'W'
UP	'U'
DOWN	'D'

Press the 'CLEAR/PAUSE' key to abort DIAGNOSTICS and return to the 'PRESS START TO BEGIN' state.
Press the 'START/ENTER' key to advance to DIAGNOSTICS STATE 2.



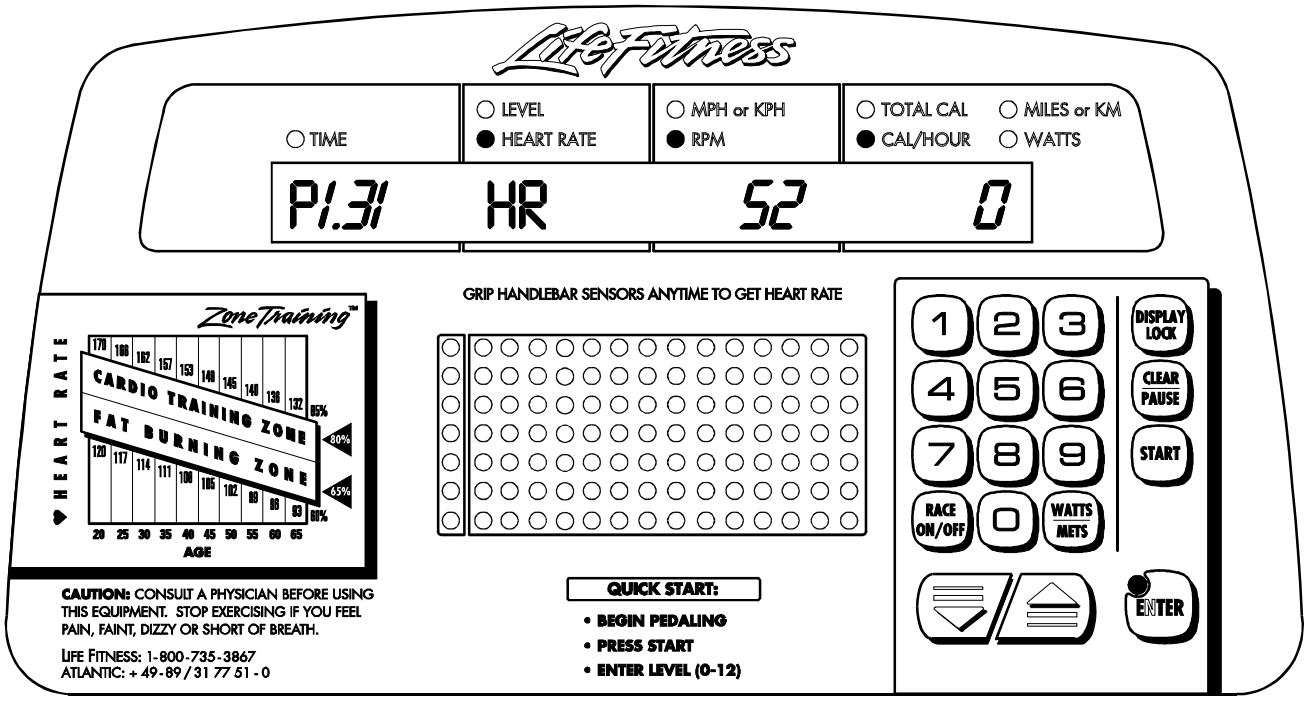
DIAGNOSTICS STATE 2: INDIVIDUAL LED TEST

On entry to this state, the individual LEDs and display segments will be tested.

Indicator LEDs, message center segments, and profile LEDs will all animate independently.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 1.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 3.

DIAGNOSTICS



DIAGNOSTICS STATE 3 - VERSION#: RPM, HR, and LOAD TESTS

The PROGRAM VERSION NUMBER (ex. P1.01) will be displayed in the ELAPSED TIME window.

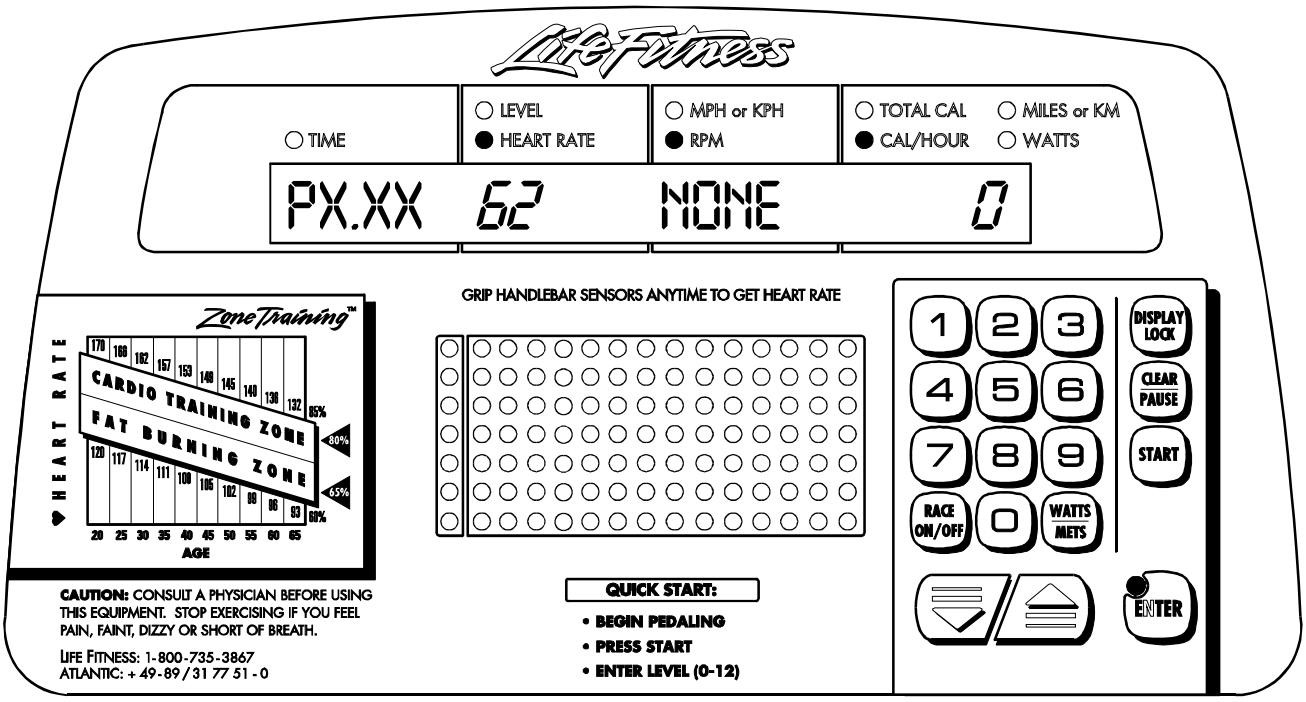
The present RPM will be displayed in the RPM window.
The HEART RATE, if present, will be displayed in the LEVEL/HEART RATE window.

The present LOAD DUTY CYCLE applied to the alternator will be displayed in the CALORIES/HOUR window if the LIFEPULSE GAIN display has not been selected. LOAD duty cycle ranges from 0-415 for 9V battery products, 0-250 for all others in order of increasing load. This value can be adjusted using the UP/DOWN keys to decrement and increment the LOAD duty cycle.

Pressing the DISPLAY LOCK key will disable the LOAD DUTY CYCLE display if enabled, turn off the CALORIES/HR, and display the LIFEPULSE GAIN if HANDS ON LIFEPULSE sensors. Pressing the DISPLAY LOCK key again will re-enable the LOAD DUTY CYCLE display.

Pressing the WATTS/METS key will toggle the display of the LIFEFITNESS PART # of the console software.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 2.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 4.



Section II

DIAGNOSTICS STATE 3 - VERSION#: RPM, NETWORK STATUS, AND LOAD TESTS (Integrated PCB Only)

The PROGRAM VERSION NUMBER (ex. P1.01) will be displayed in the ELAPSED TIME window.

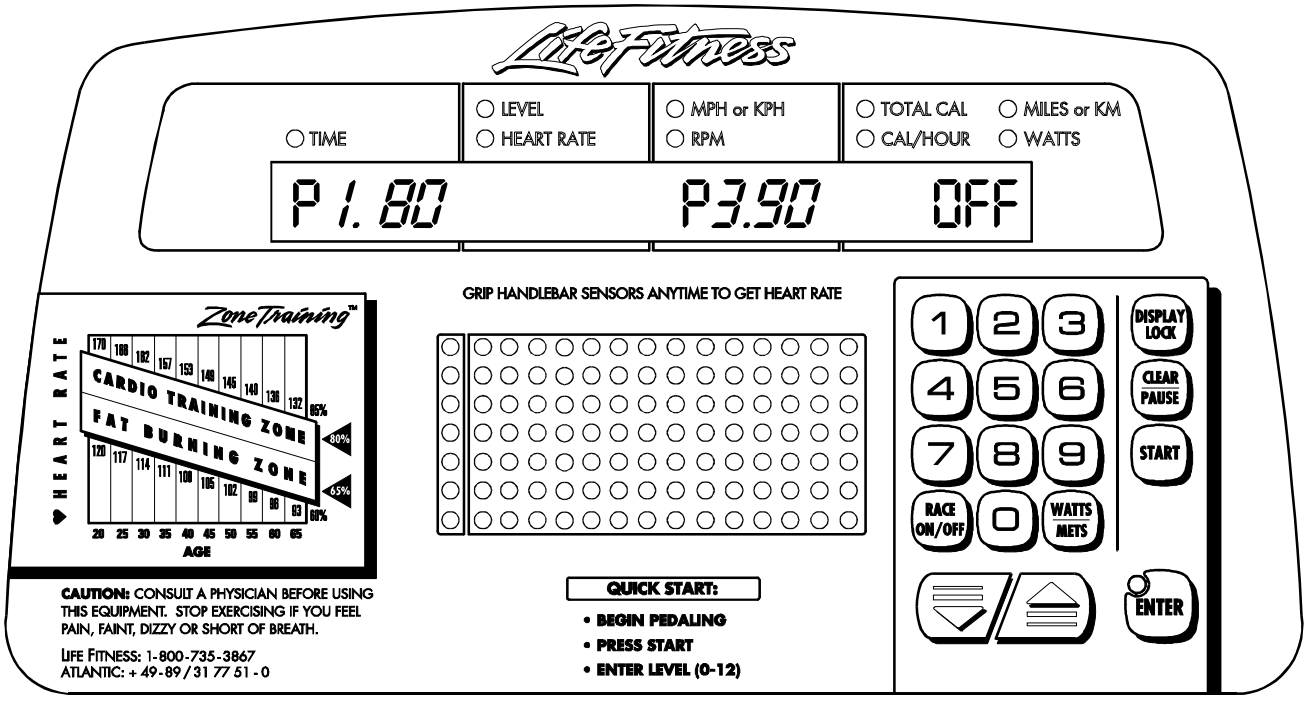
The present RPM will be displayed in the LEVEL and HEART RATE windows.
The NETWORK STATUS will be displayed in the RPM window.

The present LOAD DUTY CYCLE applied to the alternator will be displayed in the CALORIES/HOUR window. LOAD DUTY CYCLE ranges from 0-415 for 9V battery products, 0-250 for all others in order of increasing load. This value can be adjusted using the UP/DOWN arrow keys to increase or decrease the LOAD duty cycle. The LOAD DUTY CYCLE can also be adjusted down or up in units of 25 using the 4 and 6 keys.

Pressing the WATTS/METS key will toggle the display of the Life Fitness part number of the console software.

Pressing the RACE key will toggle the tone ON or OFF.

Press the 'CLEAR/PAUSE' key to return to DIAGNOSTICS STATE 2.
Press the 'START/ENTER' key to advance to DIAGNOSTICS STATE 4.



DIAGNOSTICS STATE 4 - LIFEPULSE and NETWORK STATUS TESTS

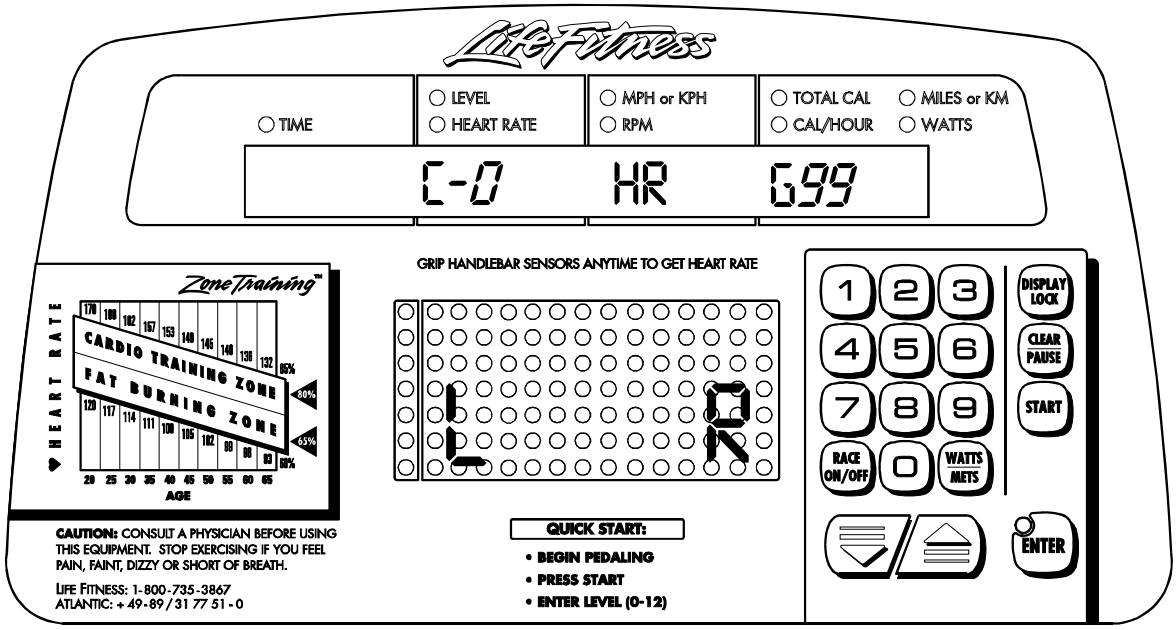
The PROGRAM VERSION NUMBER of the HEART RATE DSP board '05 software (ex. P1.60, if present) will be displayed in the ELAPSED TIME window.

The PROGRAM VERSION NUMBER of the HEART RATE DSP board DSP software (ex. P3.80, if present) will be displayed in the HEART RATE window.

The status of the LIFELINK board and LIFE CENTER connection will be displayed in the CALORIES/HOUR window. The following conditions will be reported.

'NONE' - No LIFELINK board detected.
'NULL' - Board detected but not communicating.
'ON ' - ONLINE status with LIFE CENTER
'OFF ' - OFFLINE status with LIFE CENTER.

Press the 'CLEAR/PAUSE' key to return to DIAGNOSTICS STATE 3.
Press the 'START/ENTER' key to advance to DIAGNOSTICS STATE 5.



DIAGNOSTICS STATE 4 - LIFEPULSE TESTS (Integrated PCB Only)

Upon entry to this diagnostic state, the LIFEPULSE software version number is displayed for 2 seconds. After this , the LP Comm Status is displayed for 2 seconds, which will either display 'LP PC COMM ON' or 'LP PC COMM OFF'. Make sure 'LP PC COMM OFF' appears, or CSAFE will not function correctly. The LP Comm Status can be toggled by pressing the 5 key during the 2 seconds when the LP Comm Status message is being displayed, and does not normally need to be adjusted.

After these messages are done displaying, the LifePulse test information comes up.

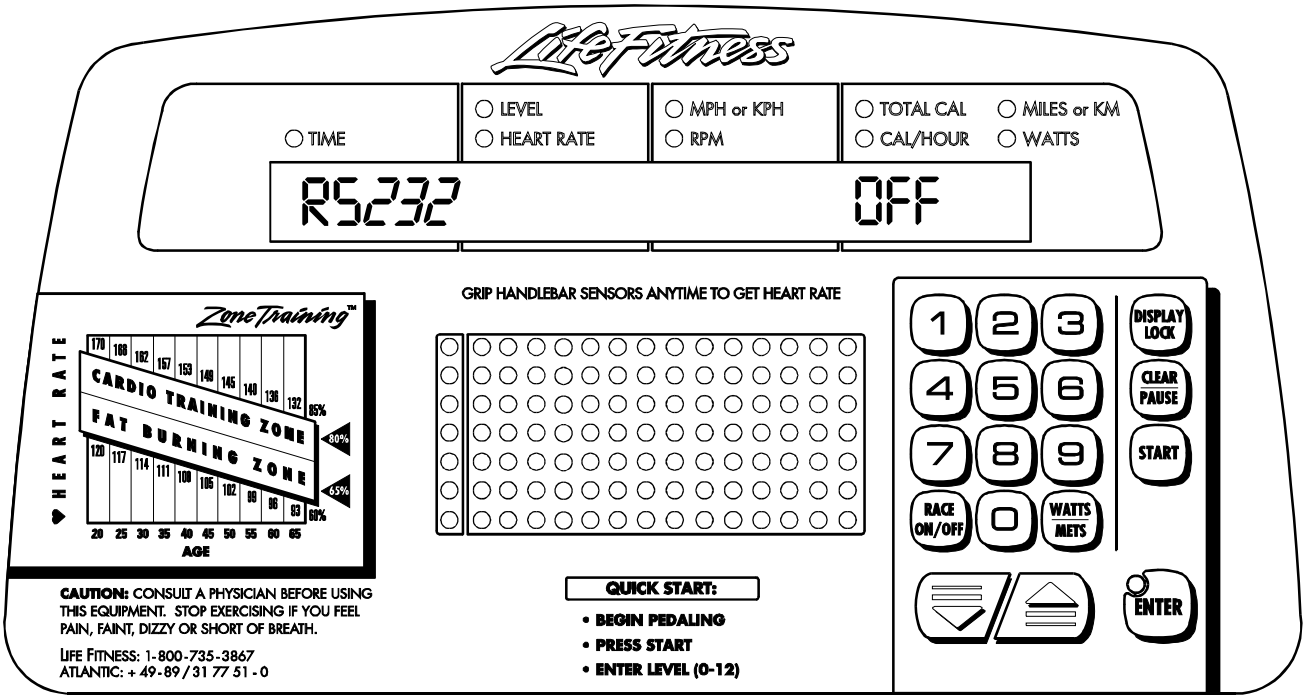
With both hands placed on the LifePulse sensors, the ELAPSED TIME begins counting in the TIME window. This counter will stop counting as soon as a heart rate is displayed.

The GAIN is displayed in the RPM window.

The CONFIDENCE LEVEL between 0-9 is displayed in the CALORIES/HOUR window, with 0 indicating the lowest confidence and 9 indicating the highest.

The profile window will display and 'L' when the left LifePulse sensor is being held. An 'R' when the right LifePulse sensor is being held, and 'L' and 'R' when both sensors are being held.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 3.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 5.



DIAGNOSTICS STATE 5 - LOOPBACK TEST

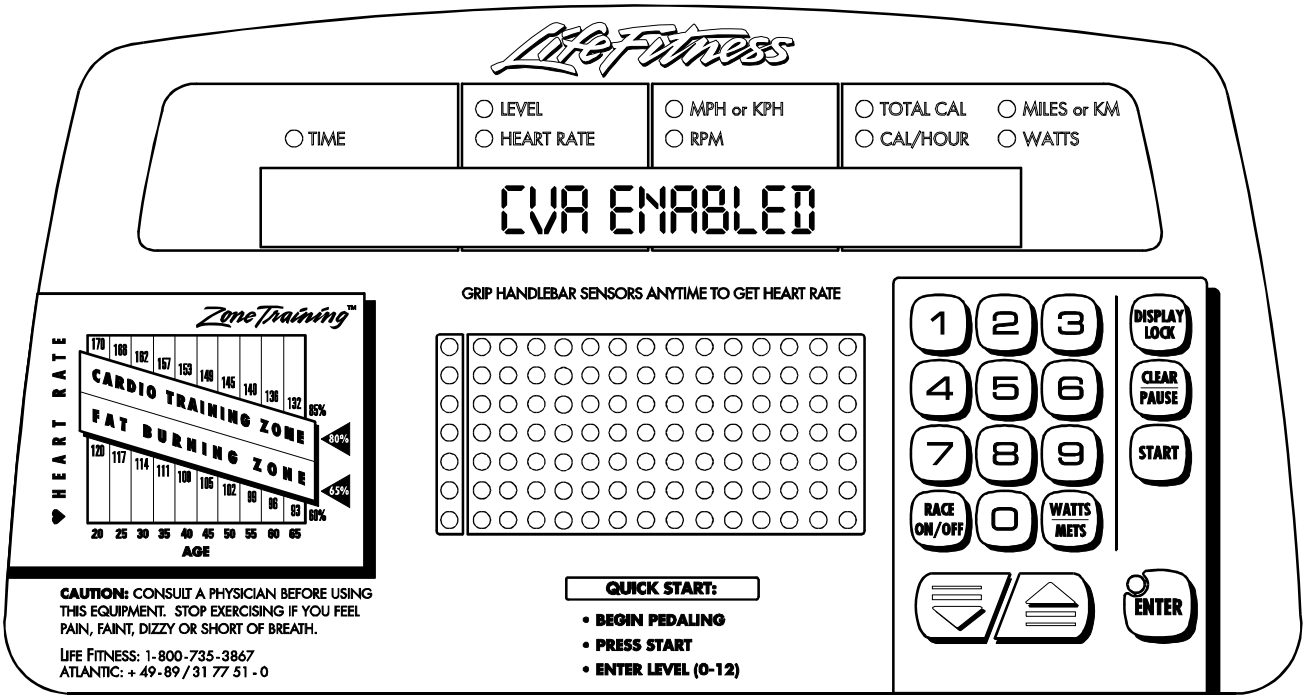
Within this state, the RS232 port is tested. A shorting jumper must be connected for the result of this test to be correct.

If functioning correctly, “RS232 PASS” will be displayed.

If not-functioning correctly , “RS232 OFF” will be displayed.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 4.

Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 6.



DIAGNOSTICS STATE 5 - CVA ENABLE/DISABLE (Integrated PCB Only)

Within this state, CVA support can be turned ON or OFF.

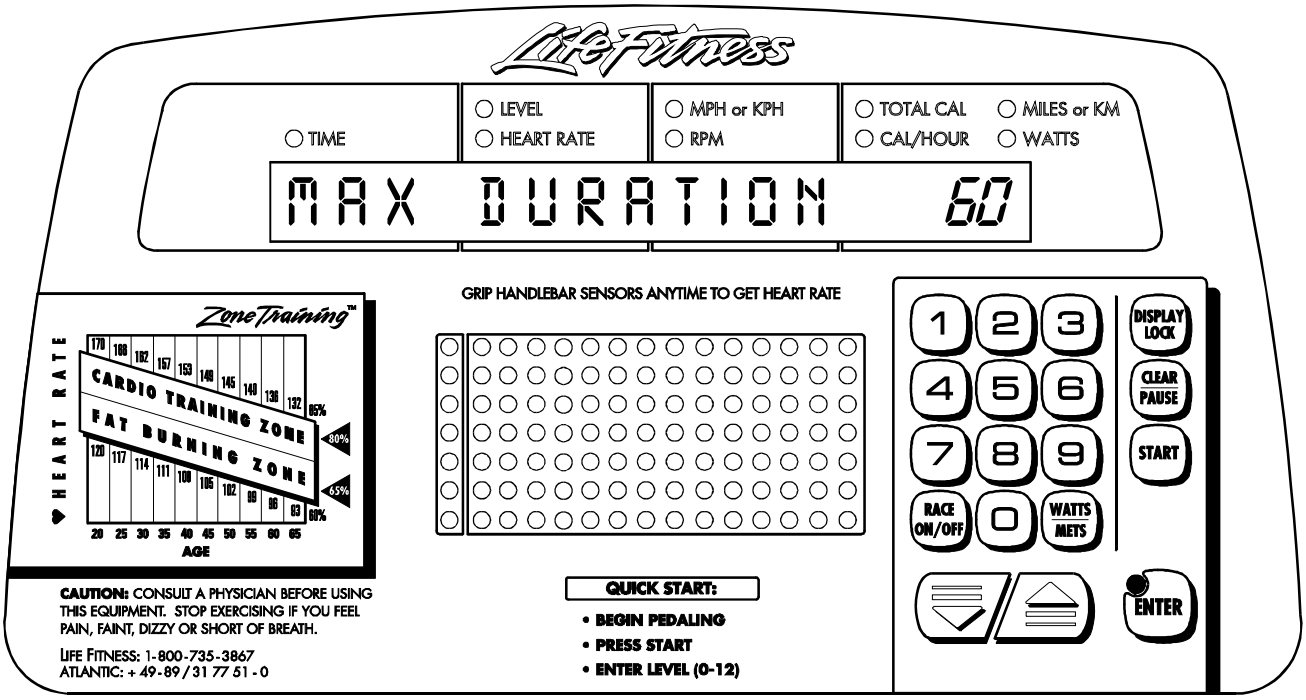
The "UP" and "DOWN" arrow keys toggle between CVA ENABLED and CVA DISABLED.

The ENTER key LED will indicated when the value is at the default setting of CVA DISABLED.

This value is stored in EEROM and is kept when the LifeCycle is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 4.

Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 6.



DIAGNOSTICS STATE 6 - MAXIMUM PROGRAM DURATION

Within this state, the MAXIMUM PROGRAM DURATION is displayed and can be adjusted from a range of 10-99 minutes.

The ‘DOWN ARROW’ will decrease the value by 1 minute. The key will Auto-Repeat if held.

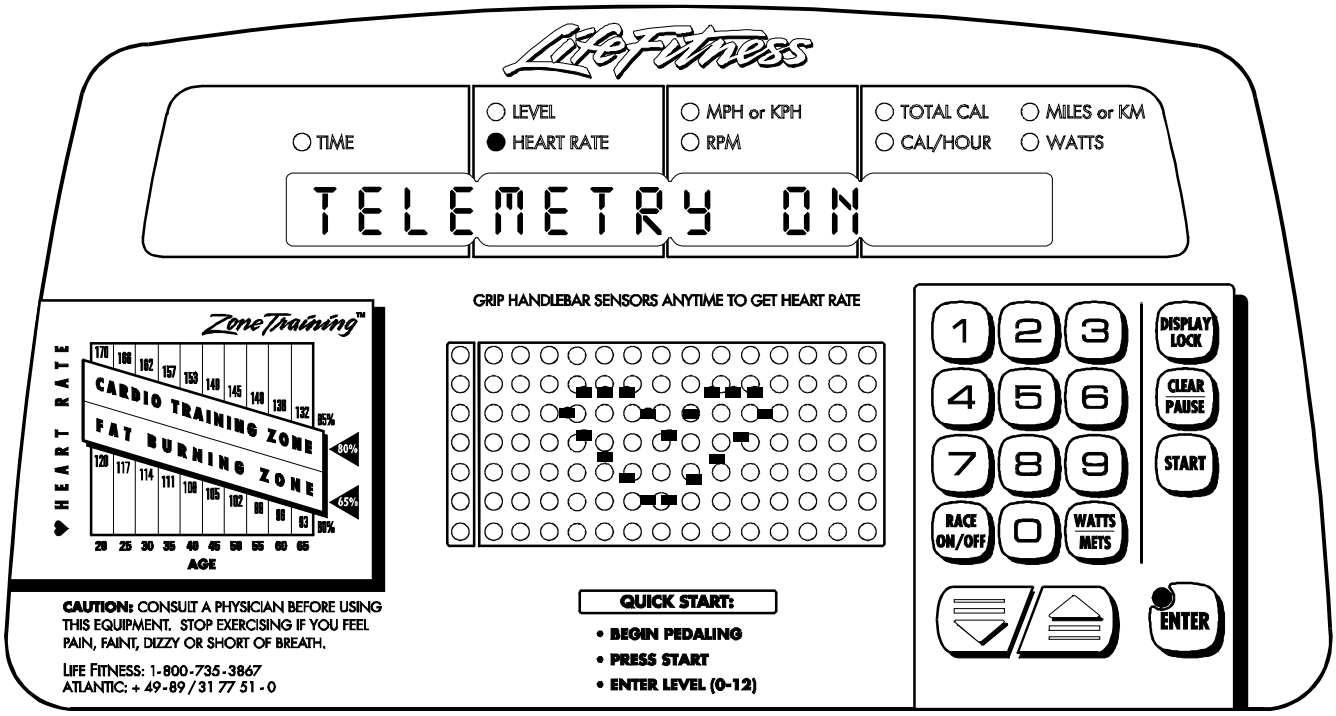
The ‘UP ARROW’ will increase the value by 1 minute. The key will Auto-Repeat if held.

The ENTER key LED indicates when the value is at the default of 60 minutes. This value is stored in EEROM and is kept when the unit is not in use.

To RESET the configuration items in the EEPROM to their default settings, hold the DISPLAY LOCK key down while pressing the ENTER key.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 5.

Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 7.



DIAGNOSTICS STATE 7 - TELEMETRY ENABLE/DISABLE

Within this state, the TELEMETRY can be turned ON or OFF. If a telemetry heart rate is detected, it will be displayed when telemetry is set to ON. The Heart Rate LED will also be flashed every time a telemetry pulse is received.

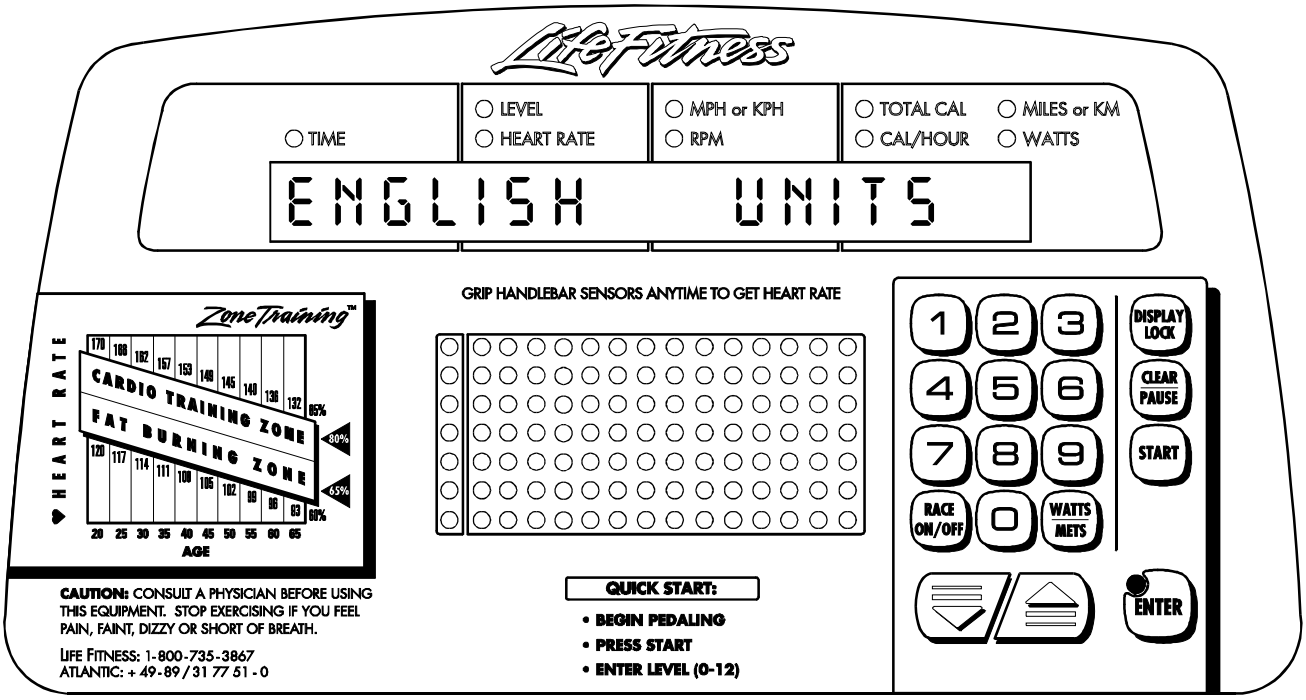
By default, the LifeCycles will have TELEMETRY ON.

The ‘DOWN ARROW’ will turn off the telemetry.

The ‘UP ARROW’ will turn on the telemetry and display a heart shape in the program profile window.

The ENTER key LED indicates when the value is at the default setting of TELEMETRY ON. This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 6.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 8.



DIAGNOSTICS STATE 8 - ENGLISH/METRIC UNITS

Within this state, ENGLISH or METRIC units can be selected.

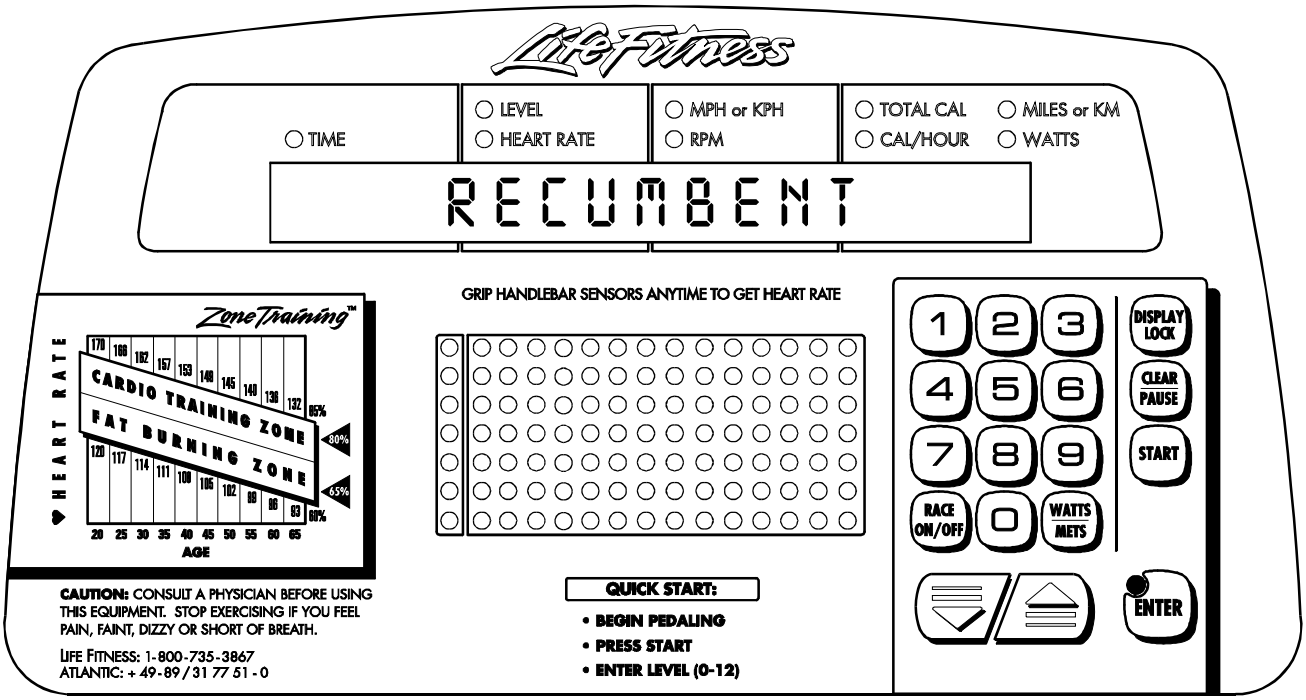
The ‘DOWN ARROW’ will select METRIC units.

The ‘UP ARROW’ will select ENGLISH units.

The ENTER key LED indicates when the value is at the default setting of ENGLISH UNITS.

This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 7.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 9.



DIAGNOSTICS STATE 9 - MODEL SELECTION

Within this state, configuration as an upright or a recumbent LifeCycle can be selected.

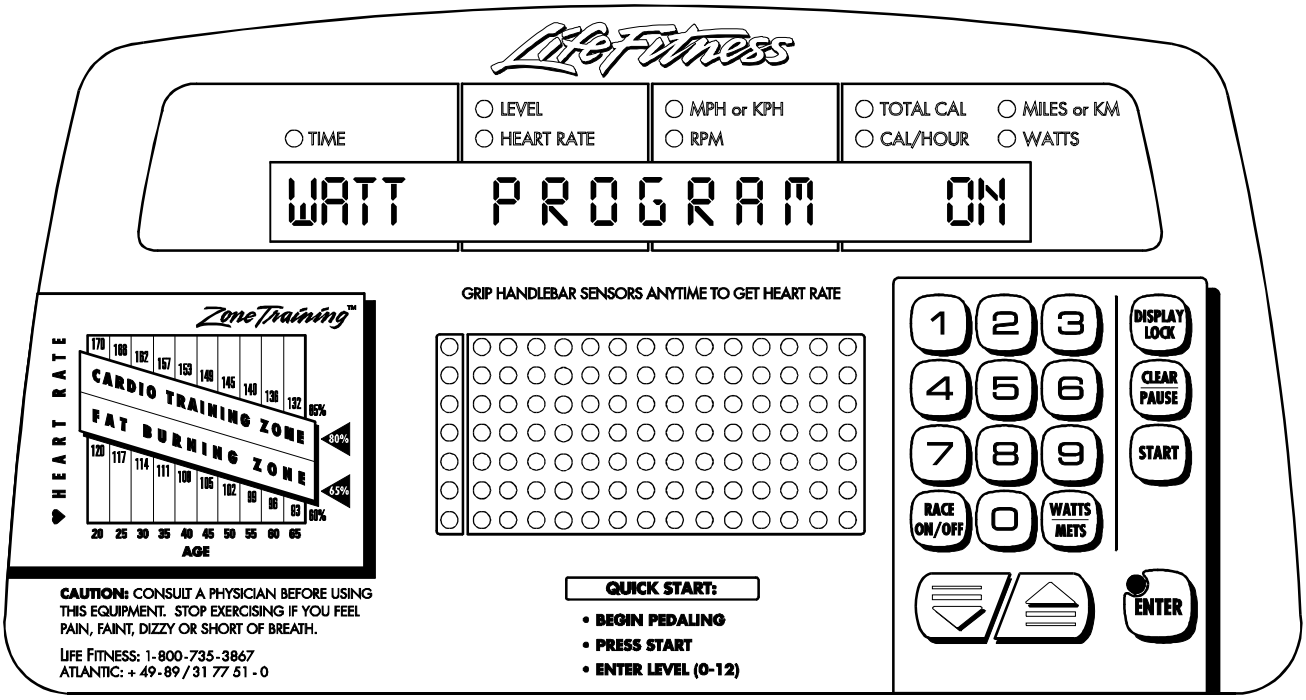
The ‘DOWN ARROW’ will configure as a Recumbent.

The ‘UP ARROW’ will configure as a Upright.

The ENTER key LED indicates when the value is at the default setting of UPRIGHT.

This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 8.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 10.



DIAGNOSTICS STATE 10 - WATTS PROGRAM ENABLE/DISABLE

Within this state, WATTS can be turned ON or OFF.

By default, the LifeCycle will have the WATTS PROGRAM ON.

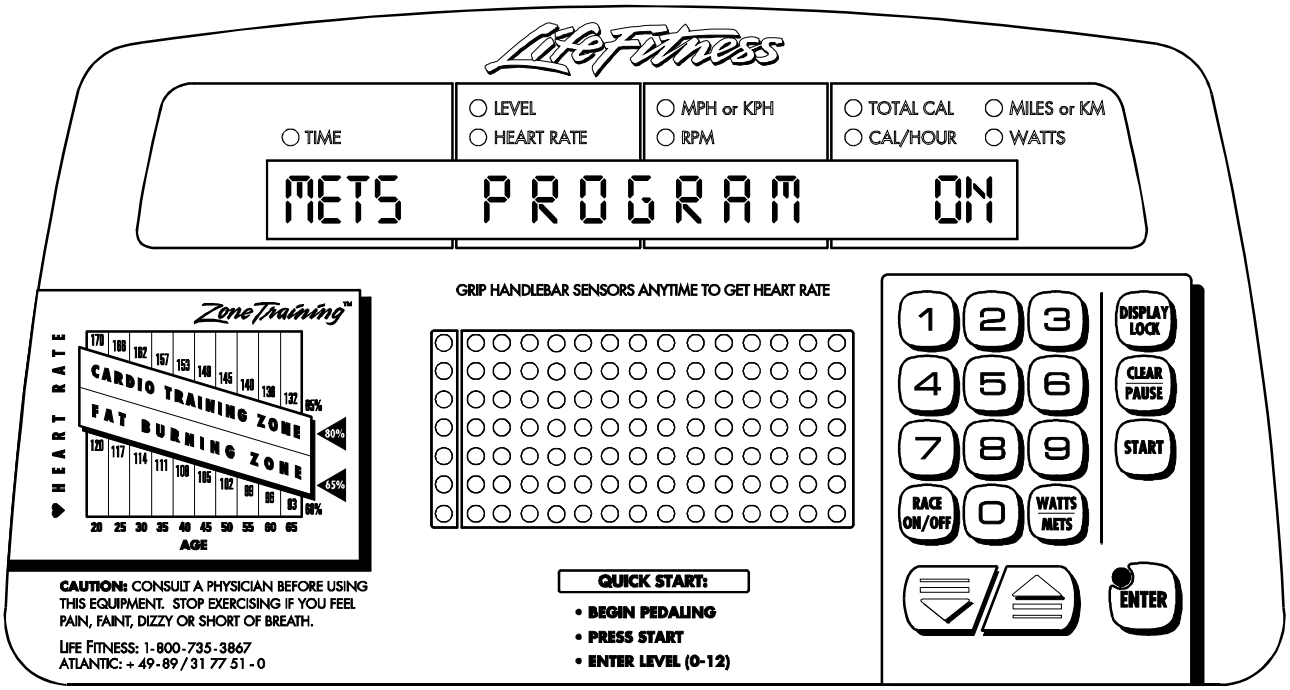
The ‘DOWN ARROW’ will turn OFF the WATTS PROGRAM.

The ‘UP ARROW’ will turn ON the WATTS PROGRAM.

The ENTER key LED indicates when the value is at the default setting of WATTS PROGRAM ON.

The value is stored in EEROM and is kept when the bike is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 9.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 11.



DIAGNOSTICS STATE 11 - METS PROGRAM ENABLE/DISABLE

Within this state, METS PROGRAM can be turned ON or OFF.

By default, the LifeCycle will have the METS PROGRAM ON.

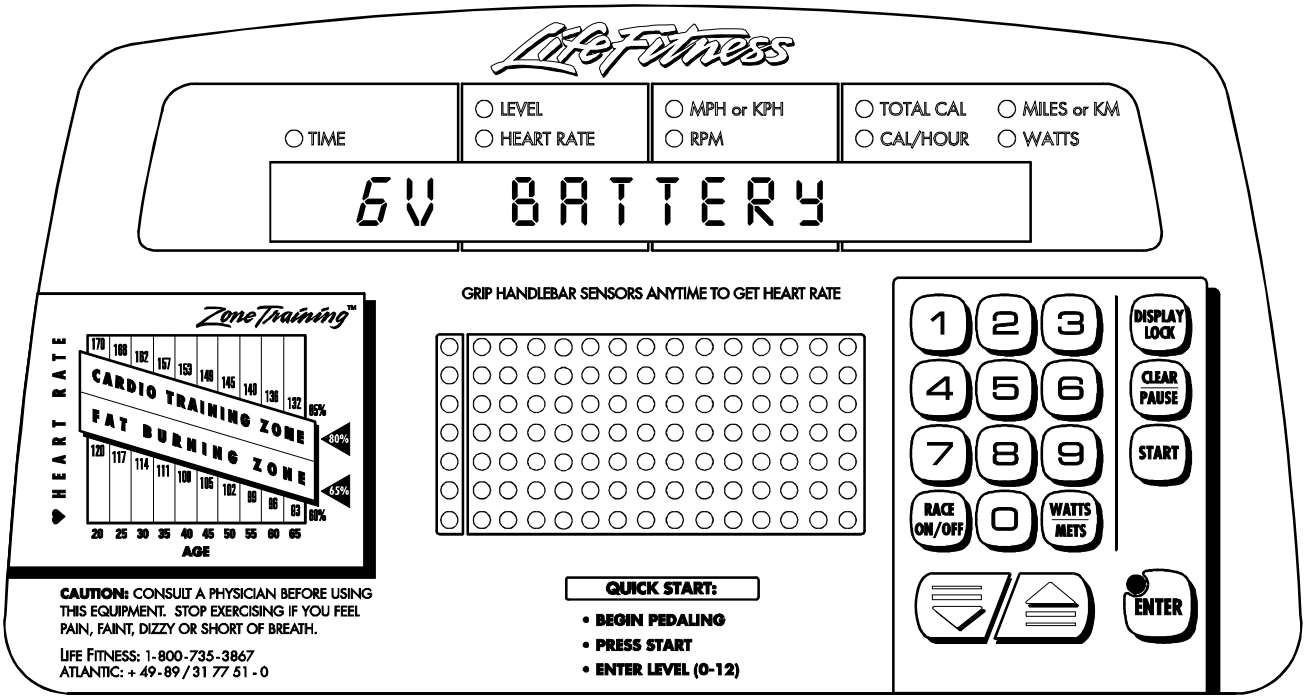
The ‘DOWN ARROW’ will turn OFF the WATTS PROGRAM.

The ‘UP ARROW’ will turn ON the WATTS PROGRAM.

The ENTER key LED indicates when the value is at the default of METS PROGRAM ON.

This value is stored in EEROM and is kept when the bike is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 10.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 12.



DIAGNOSTICS STATE 12 - POWER SUPPLY CONFIGURATION

Within this state, the power supply selection can be made.

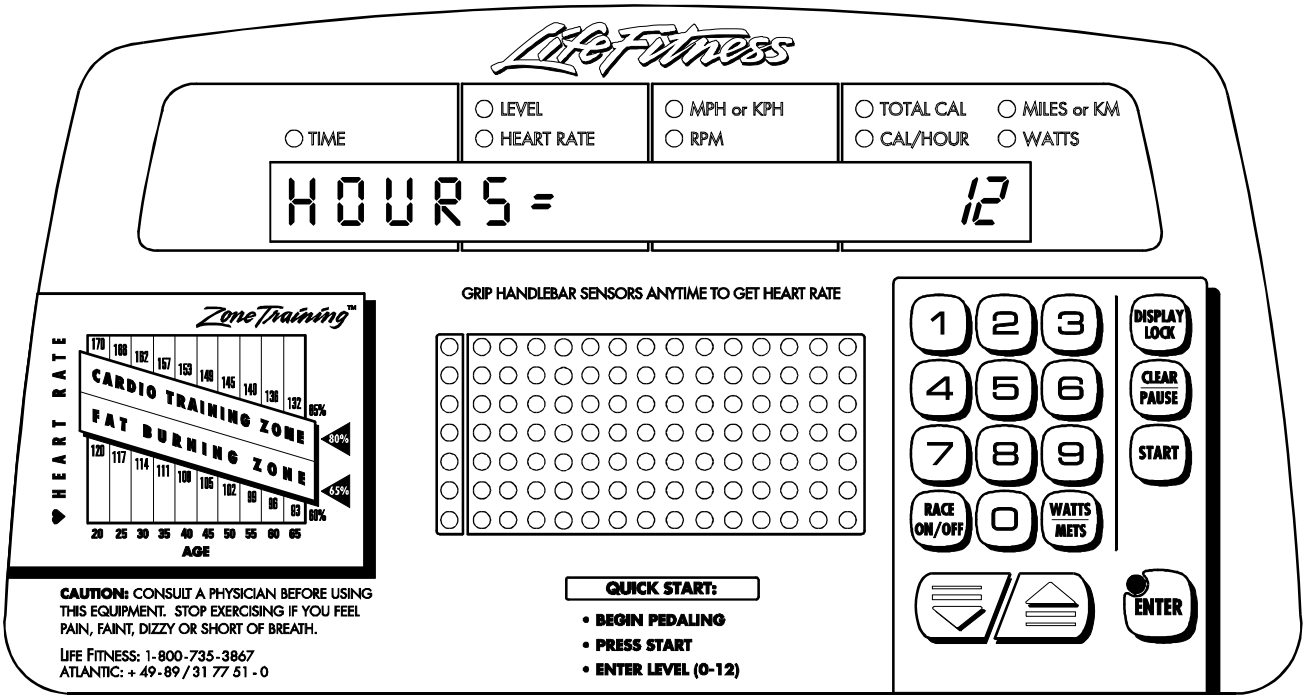
The arrow keys will scroll through the selections of '6 VOLT BATTERY', 'EXTERNAL SUPPLY', or '9 VOLT BATTERY'.

NOTE: LC9100 uses a 9 volt battery. LC9500 uses a 6 volt battery.

The ENTER key LED indicates when the value is the default of 6V battery.

This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 11.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 13.



DIAGNOSTICS STATE 13 - TOTAL HOURS and STATISTICS

Upon entry to this state, TOTAL HOURS are displayed.

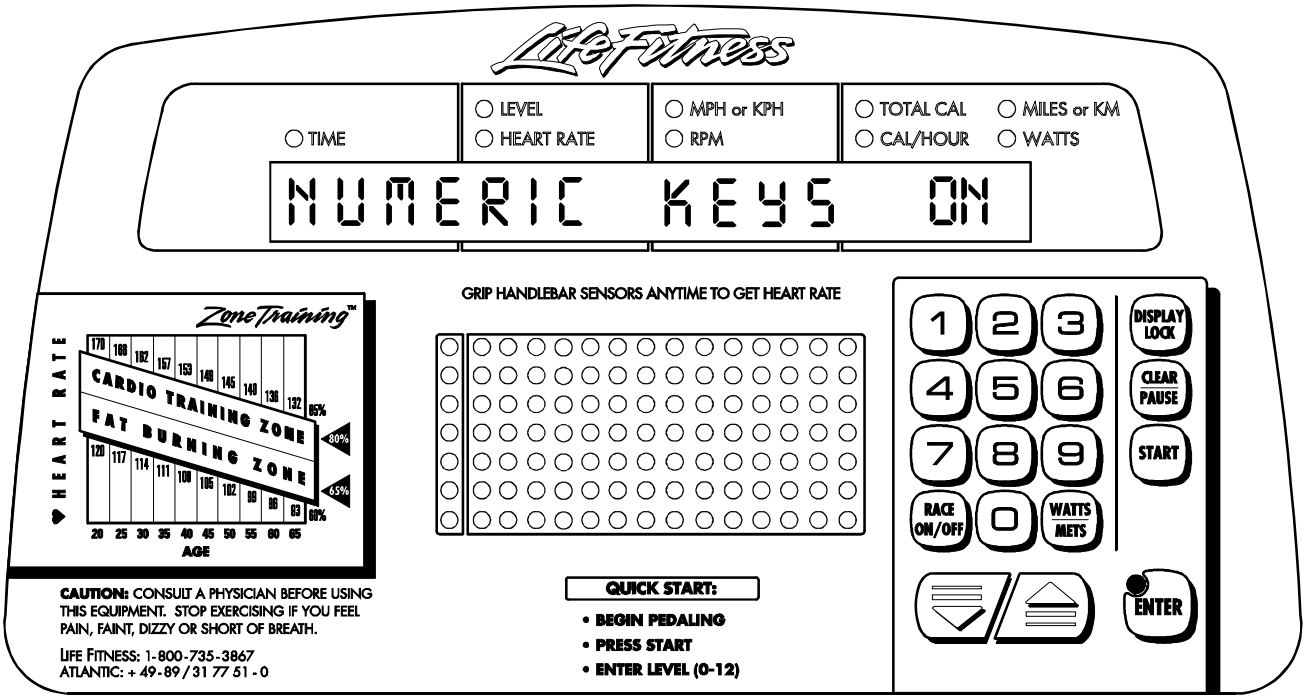
STATISTICS can be displayed using the UP and DOWN arrow keys.
The 'UP ARROW' allows scrolling through the available programs and shows the number of times each program has been selected. The 'DOWN ARROW' backs up through the list of available programs and back to the total hours displayed.

To clear the statistics in the EEPROM, hold the DISPLAY LOCK key down while pressing the ENTER key.

The Programs are:

- HOUR
- HILL
- RANDOM
- MANUAL
- FAT
- CARDIO
- FIT
- WATTS
- METS
- QUICK
- HRT HILL
- HRT INT
- HRT EXT
- SPRT TRN

Pressing the 'CLEAR/PAUSE' key will return to DIAGNOSTICS STATE 12.
Pressing the 'START/ENTER' key will advance to DIAGNOSTICS STATE 14.



DIAGNOSTICS STATE 14- NUMERIC KEYS CONFIGURATION

Within this state, the unit can be configured as to the presence of numeric keys.

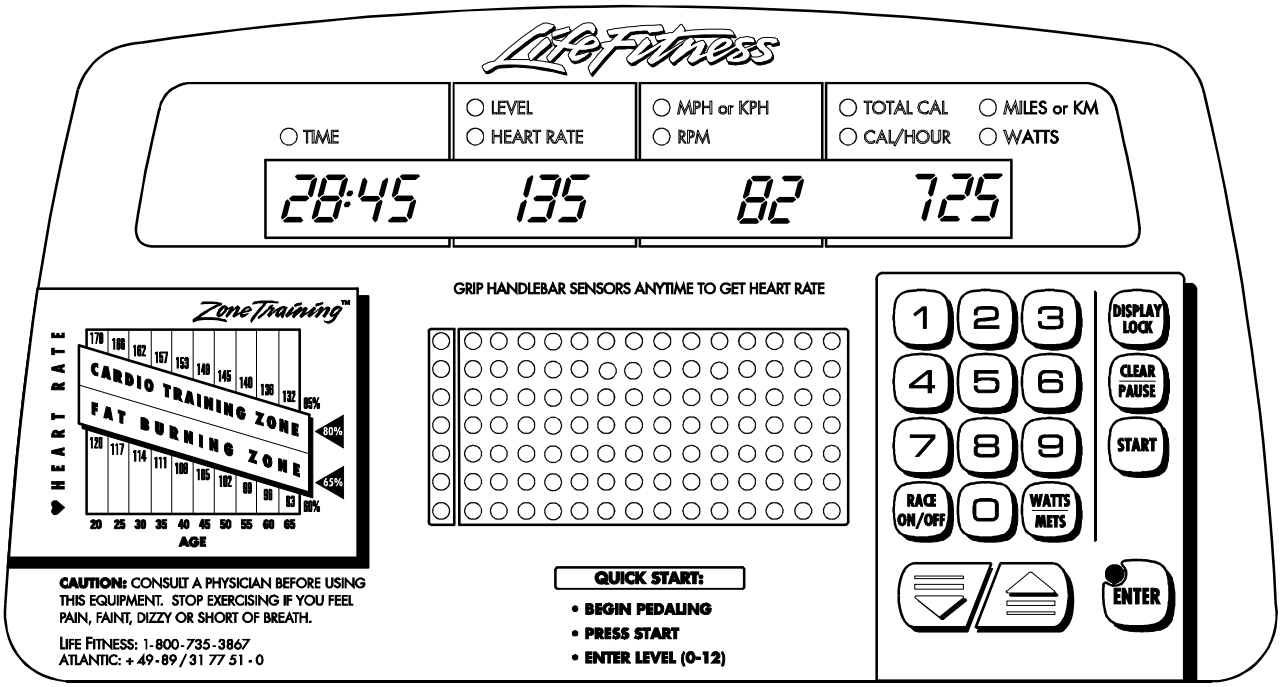
The ‘DOWN ARROW’ will display “NUMERICS OFF”.

The ‘UP ARROW’ will display “NUMERICS ON”.

The ENTER key LED indicates when the value is at the default of NUMERIC KEYS ON.

This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 13.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 15.

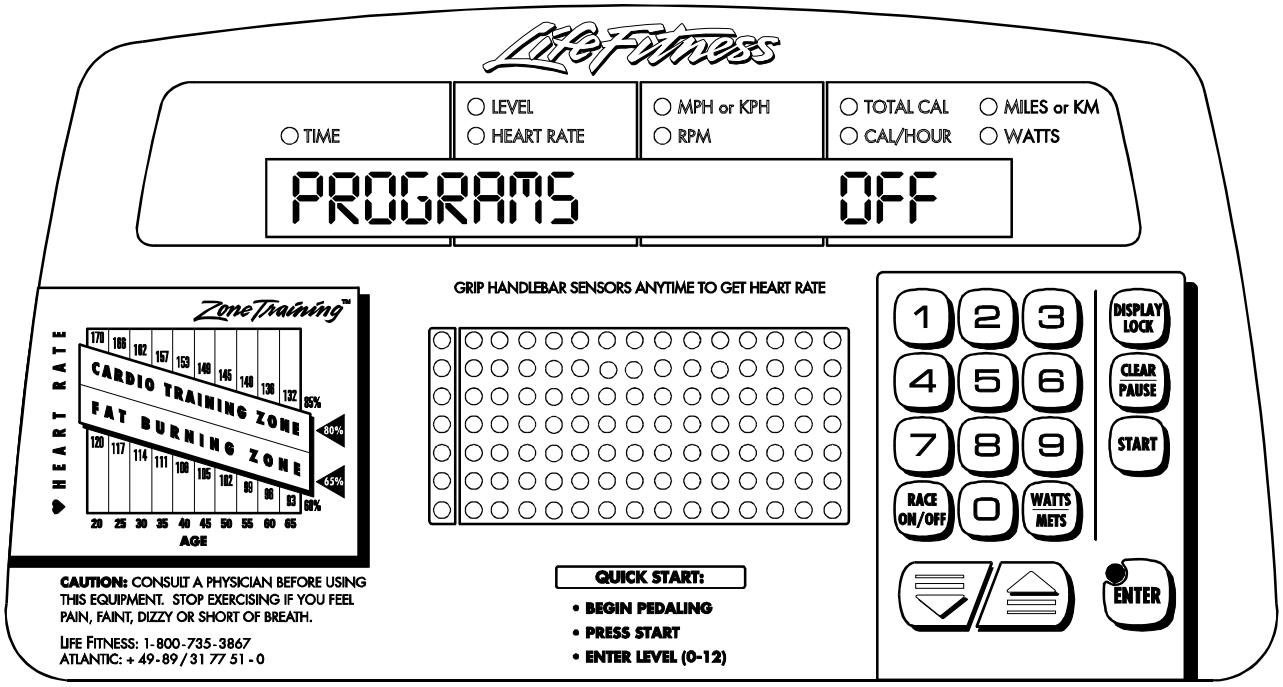


DIAGNOSTICS STATE 15 PHOTO SHOOT

This state is solely intended to be used for PHOTO SHOOTS.

None of the data items displayed are real.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 14.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 16.



DIAGNOSTICS STATE 15 PROGRAMS ENABLE/DISABLE (Integrated PCB Only)

Enable or disable HEART RATE HILL, HEART RATE INTERVAL, HEART RATE EXTREME, or REAL WORLD BIKE.

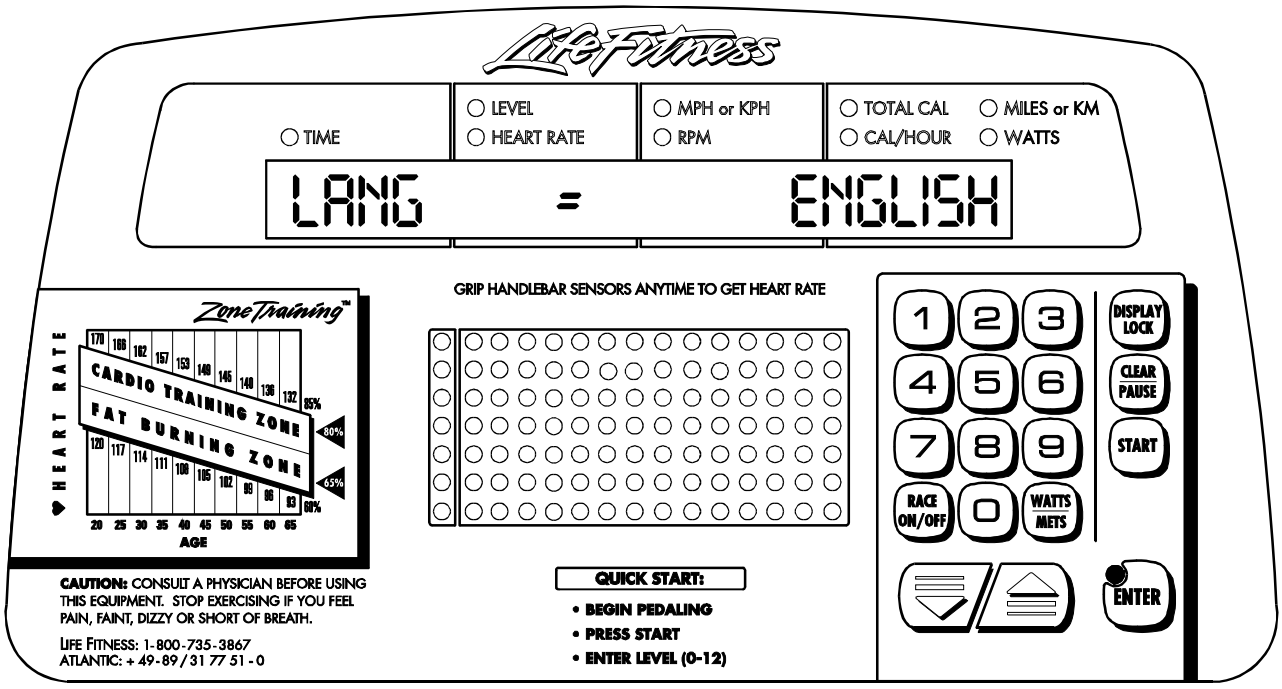
The DOWN ARROW will display PROGRAMS OFF.

The UP ARROW will display PROGRAMS ON.

The ENTER key LED indicates when the value is set to default of PROGRAMS OFF.

This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 14.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 16.



DIAGNOSTICS STATE 16 LANGUAGE SELECTION (ntegrated PCB Only)

Within this state, the LANGUAGE can be changed to nay one of 7 languages, including English, German, French, Italian, Dutch, Spanish or Portuguese.

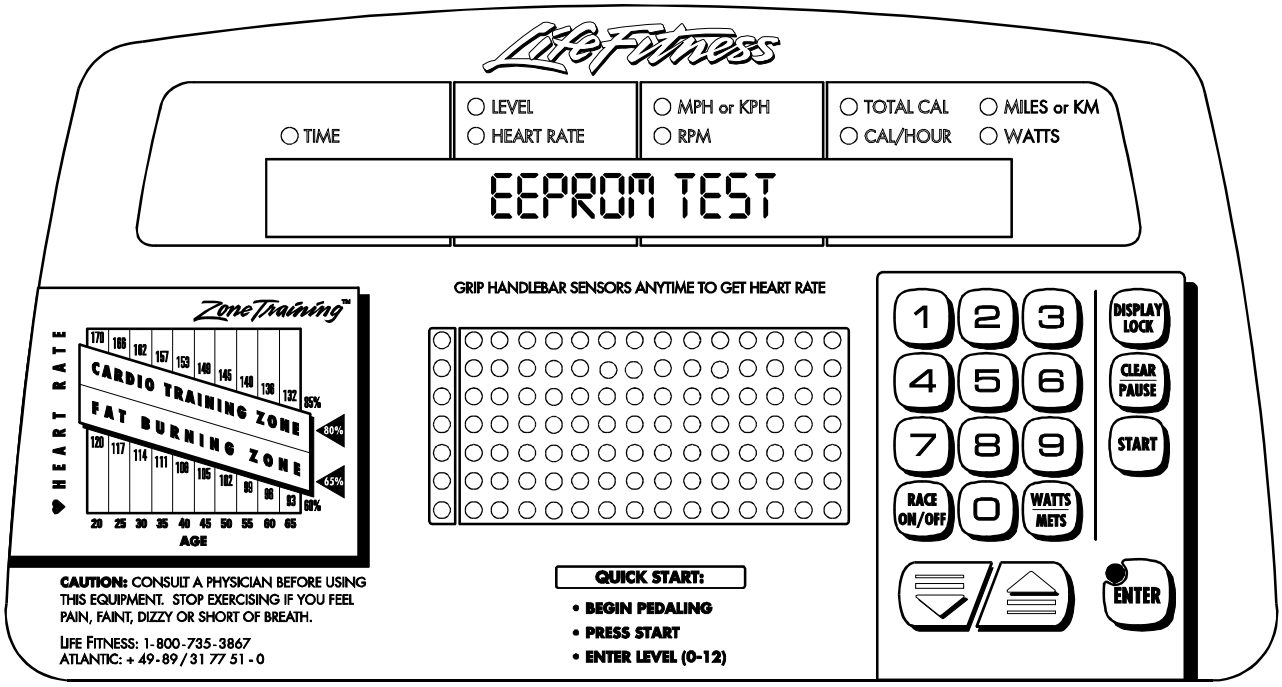
The UP ARROW will display the next language in the list.

The DOWN ARROW will display the previous language in the list.

The ENTER key LED indicates when the language is set to the default of ENGLISH.

This value is stored in EEROM and is kept when the unit is not in use.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 15.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 17.

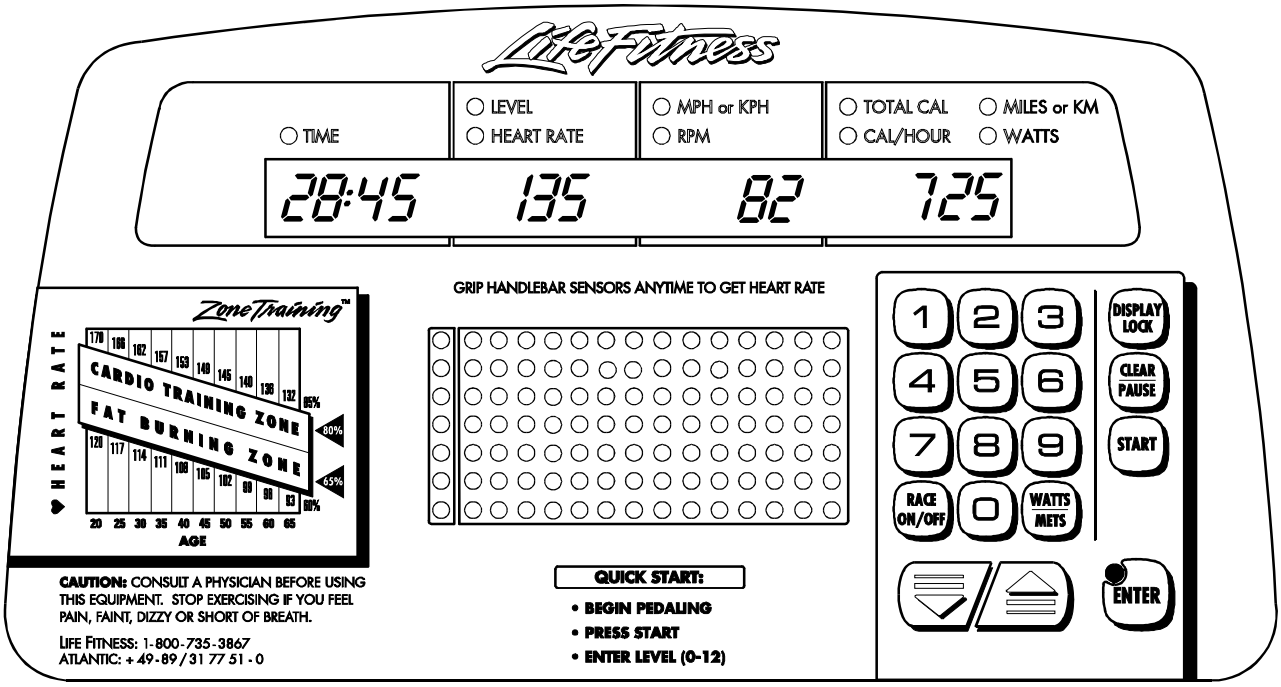


DIAGNOSTICS STATE 17 EEPROM TEST (Integrated PCB Only)

Within this state, EEPROM can be tested.

This diagnostic state tests the Display Console EEPROM by reading, writing, and replacing all used locations in the Display Console EEPROM. The EEPROM location being tested will appear in the display message center. Pressing the DOWN ARROW will initiate the EEPROM test. If the test completes successfully, the message EEPROM GOOD will appear. If the test fails, the message EEPROM BAD AT XX will display with the bad EEPROM location.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 16.
Press the ‘START/ENTER’ key to advance to DIAGNOSTICS STATE 18.



DIAGNOSTICS STATE 18 PHOTO SHOOT (Integrated PCB Only)

This state is solely intended to be used for PHOTO SHOOTS.

None of the data items displayed are real.

Press the ‘CLEAR/PAUSE’ key to return to DIAGNOSTICS STATE 17.

NOTES:

SECTION III

How To...
SERVICE AND REPAIR GUIDES

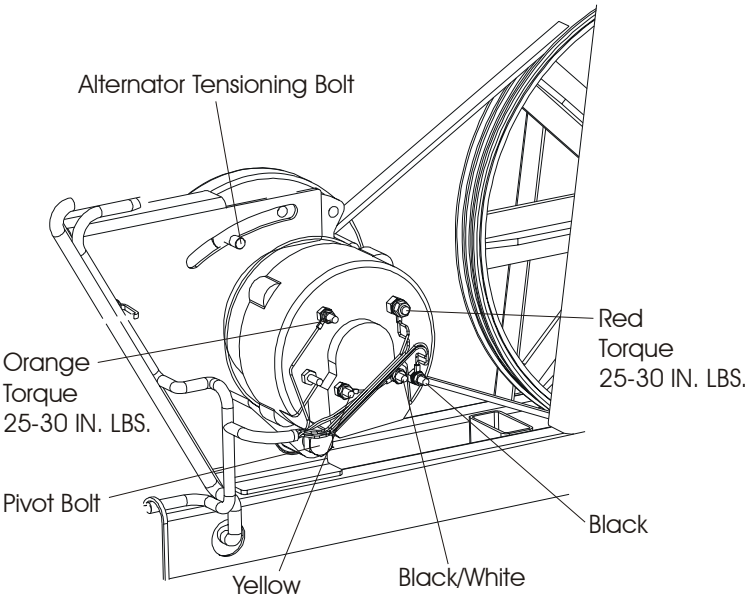
How To...REPLACE THE ALTERNATOR

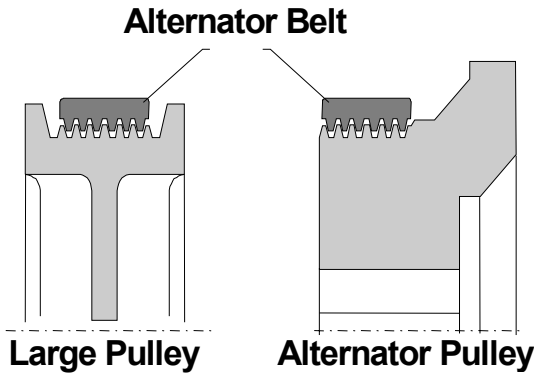
Tools Required: Combination wrenches, belt tension gage, and Phillips screwdriver

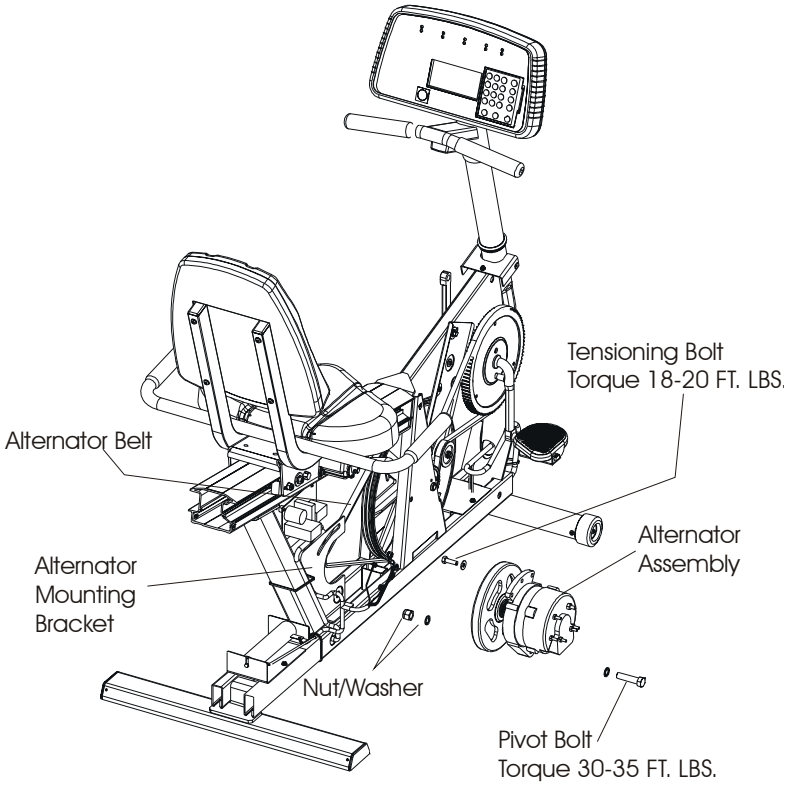
1. See “How To…Replace Shrouds” in this section.
2. Disconnect all terminal wires noting their colors and tagging their locations.
3. Mark the ALTERNATOR position at the TENSIONING BOLT BRACKET, then remove the TENSIONING BOLT.
4. Remove the PIVOT BOLT and hardware from the ALTERNATOR.
5. Remove the ALTERNATOR from the unit.

NOTICE: If only the alternator is being replaced, then remove the ALTERNATOR PULLEY.

6. Install the new alternator in the reverse order. Make sure that the ALTERNATOR BELT is properly aligned to the LARGE PULLEY as shown otherwise damage to the belt can occur.
7. Locate the alternator at the marked area on the alternator bracket. Alternator belt tension should be from 60-70 lbs.



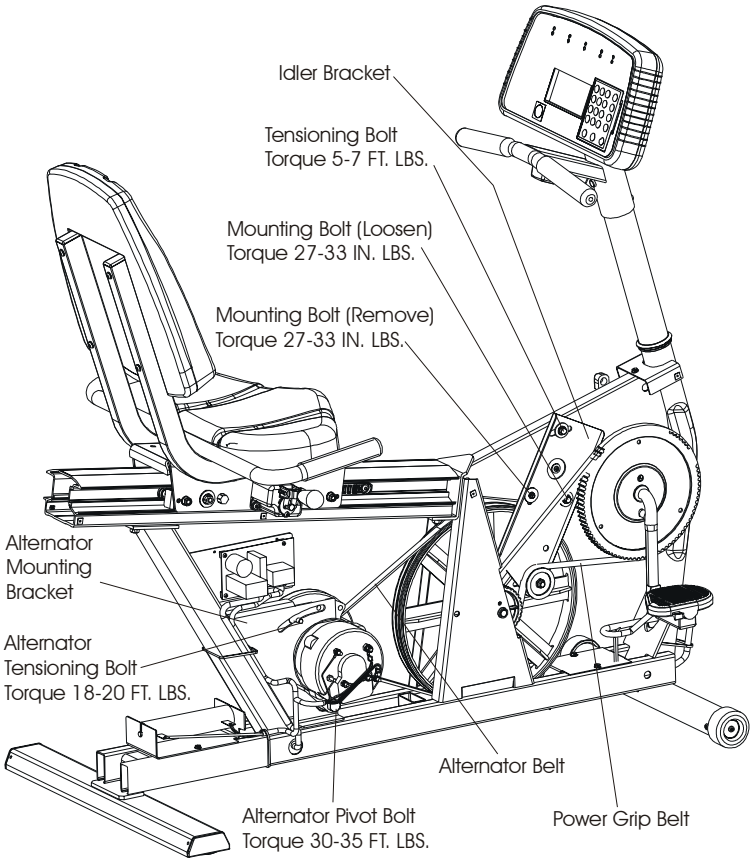




How To...REPLACE THE ALTERNATOR BELT

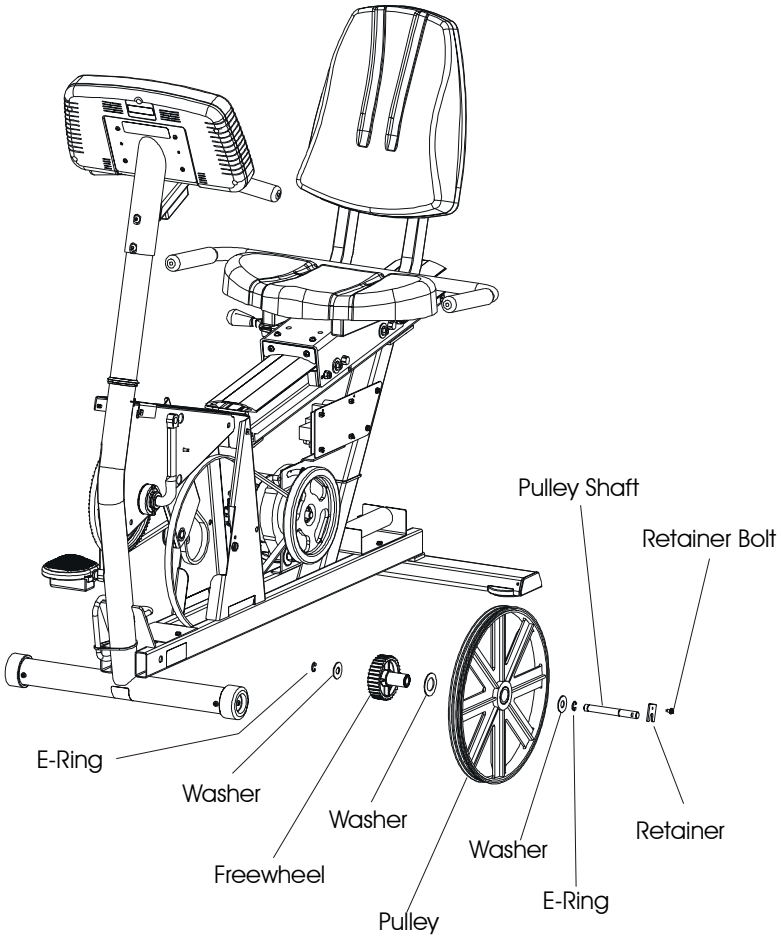
Tools Required: Combination wrenches, pliers, screwdrivers, e-ring tool, center punch, and belt tensioning gage

1. See “How To…Replace Shrouds” in this section.
2. Mark the position of the ALTERNATOR TENSIONING BOLT at the MOUNTING BRACKET, then remove TENSIONING BOLT.
3. Loosen the ALTERNATOR PIVOT BOLT and push the ALTERNATOR forward to slacken the ALTERNATOR BELT.
4. Mark the position of the IDLER BRACKET, Remove and loosen MOUNTING BOLTS as illustrated.
5. Loosen the TENSION BOLT and move the IDLER BRACKET forward to slacken the POWER GRIP BELT.

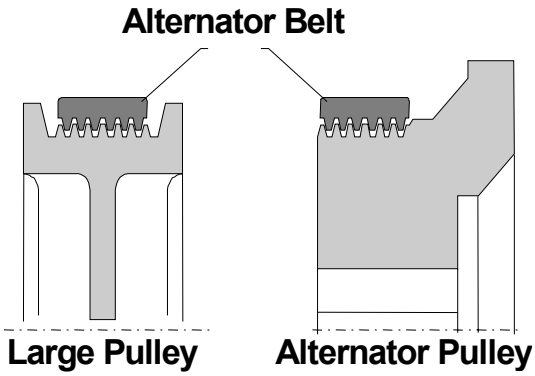


How To...REPLACE THE ALTERNATOR BELT (Continued)

6. Remove the RETAINER BOLT and RETAINER from the end of the PULLEY shaft.
7. Remove the left E-RING from the left side of the PULLEY first, then remove the right E-RING.
8. From the belt side, tap out the SHAFT from the unit.
9. Remove the ALTERNATOR BELT.



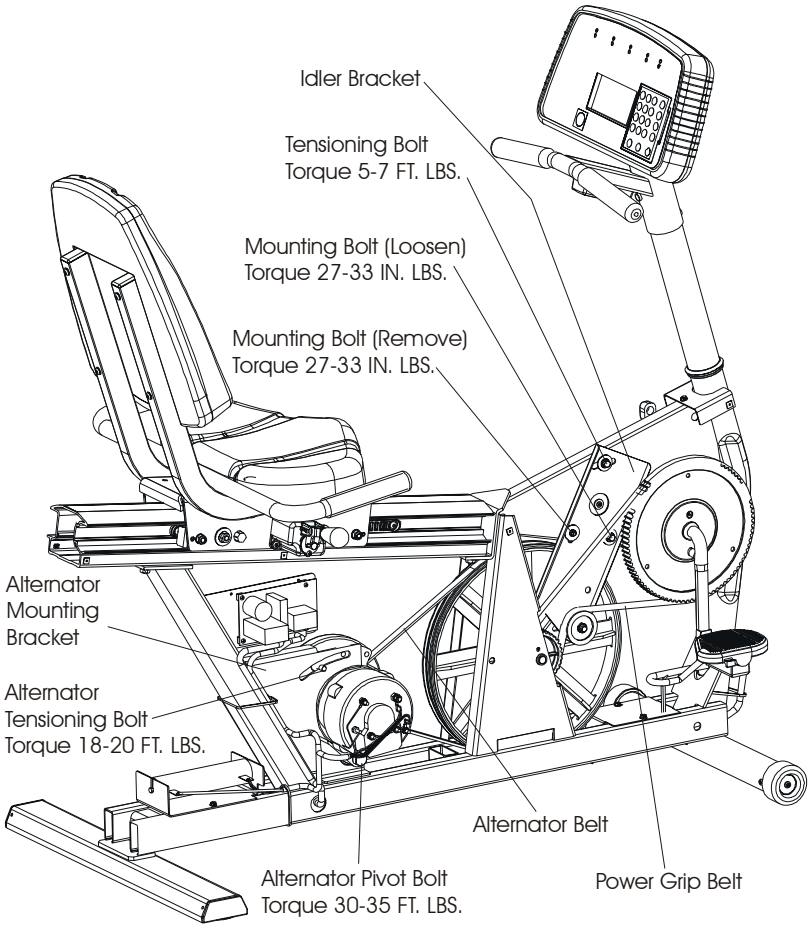
10. Install the new alternator in the reverse order. Make sure that the ALTERNATOR BELT is properly aligned to the LARGE PULLEY as shown otherwise damage to the belt can occur.
11. Locate the alternator at the marked area on the alternator bracket. Alternator belt tension should be from 60-70 lbs. and the POWER GRIP BELT from 35-55 lbs.



How To...REPLACE THE FREEWHEEL/PULLEY ASSEMBLY

Tools Required: Combination wrenches, pliers, screwdrivers, e-ring tool, center punch, and belt tensioning gage

1. See “How To…Replace Shrouds” in this section.
2. Mark the position of the ALTERNATOR TENSIONING BOLT at the MOUNTING BRACKET, then remove TENSIONING BOLT.
3. Loosen the ALTERNATOR PIVOT BOLT and push the ALTERNATOR forward to slacken the ALTERNATOR BELT.
4. Mark the position of the IDLER BRACKET, Remove and loosen MOUNTING BOLTS as illustrated.
5. Loosen the TENSION BOLT and move the IDLER BRACKET forward to slacken the POWER GRIP BELT.



How To...REPLACE THE FREEWHEEL/PULLEY ASSEMBLY (Continued)

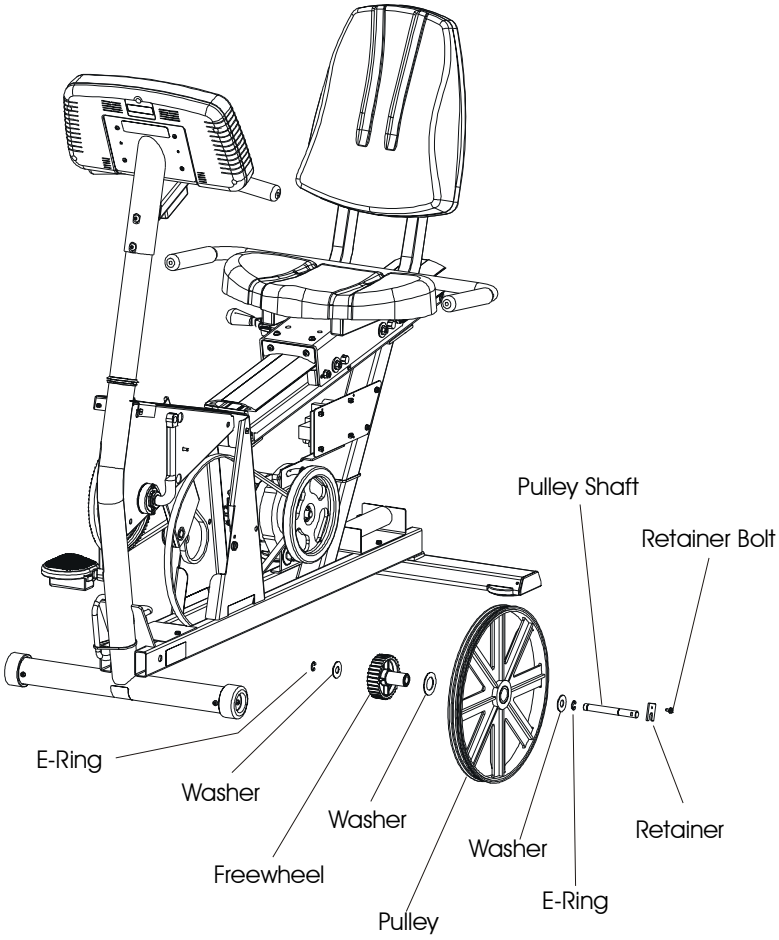
6. Remove the RETAINER BOLT and RETAINER from the end of the SHAFT.

7. Remove the left E-RING from the left side of the PULLEY first, then remove the right E-RING.

8. From the belt side, tap out the SHAFT from the unit.

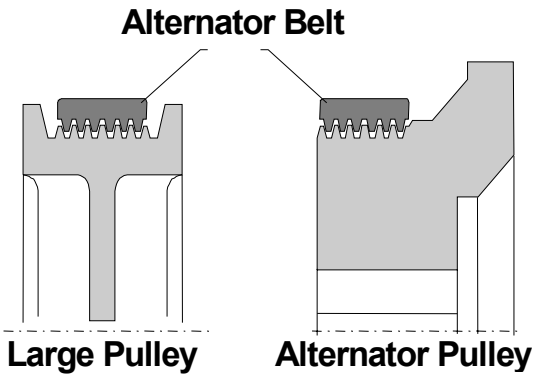
9. Pull the FREEWHEEL/PULLEY ASSEMBLY forward and out of the bike.

10. Slide the FREEWHEEL off the SHAFT noting location of washers.



11. Install the new alternator in the reverse order. Make sure that the ALTERNATOR BELT is properly aligned to the LARGE PULLEY as shown otherwise damage to the belt can occur.

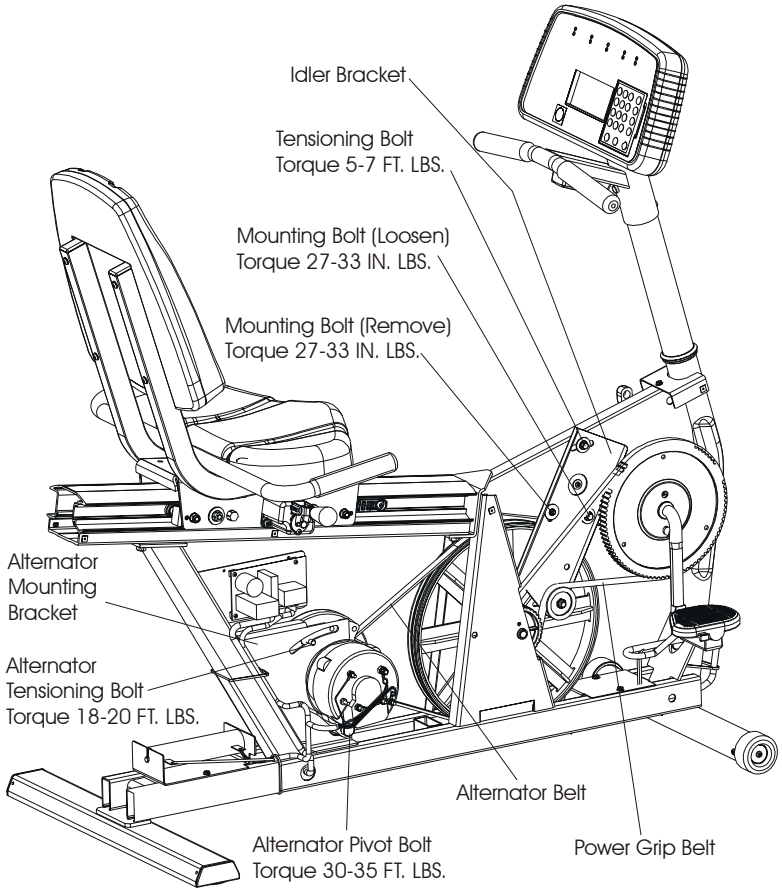
12. Locate the alternator at the marked area on the alternator bracket. Alternator belt tension should be from 60-70 lbs. and the POWER GRIP BELT from 35-55 lbs.



How To...REPLACE THE POWER GRIP BELT

Tools Required: Combination wrenches, pliers, screwdrivers, e-ring tool, center punch, and belt tensioning gage

1. See “How To…Replace Shrouds” in this section.
2. Mark the position of the ALTERNATOR TENSIONING BOLT at the MOUNTING BRACKET, then remove TENSIONING BOLT.
3. Loosen the ALTERNATOR PIVOT BOLT and push the ALTERNATOR forward to slacken the ALTERNATOR BELT.
4. Mark the position of the IDLER BRACKET, Remove and loosen MOUNTING BOLTS as illustrated.
5. Loosen the TENSION BOLT and move the IDLER BRACKET forward to slacken the POWER GRIP BELT.



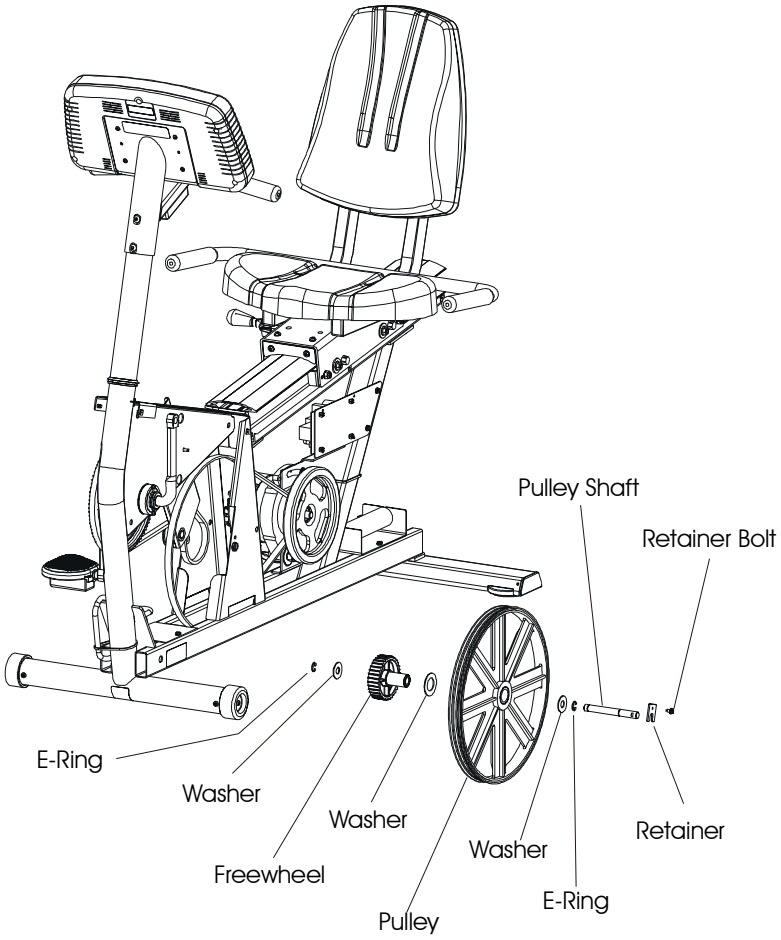
How To...REPLACE THE POWER GRIP BELT (Continued)

6. Remove the RETAINER BOLT and RETAINER from the end of the SHAFT.

7. Remove the left E-RING from the left side of the PULLEY first, then remove the right E-RING.

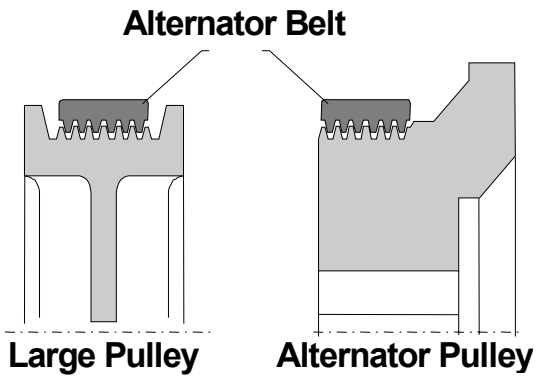
8. From the belt side, tap out the SHAFT from the unit.

9. Pull the FREEWHEEL/PULLEY ASSEMBLY forward and out of the bike and remove the POWER GRIP BELT.



10. Install the new alternator in the reverse order. Make sure that the ALTERNATOR BELT is properly aligned to the LARGE PULLEY as shown otherwise damage to the belt can occur.

11. Locate the alternator at the marked area on the alternator bracket. Alternator belt tension should be from 60-70 lbs. and the POWER GRIP BELT from 35-55 lbs.



Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

How To...REPLACE THE SEAT LOCKING MECHANISM ASSEMBLY

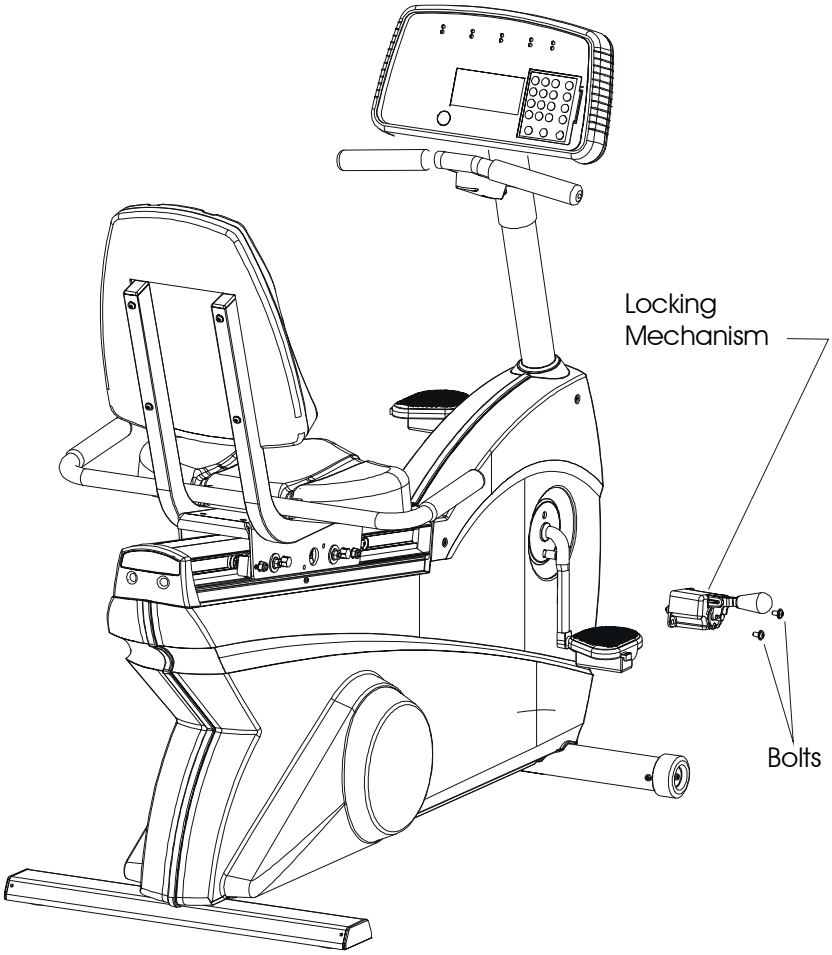
Tools Required: 5/32 inch hex key wrench

1. Disengage the LOCKING MECHANISM and slide the seat to its most forward position.

2. Remove the two 5/32 inch hex key screws from the LOCKING MECHANISM.

3. Remove the LOCKING MECHANISM.

4. Install new LOCKING MECHANISM in reverse order.

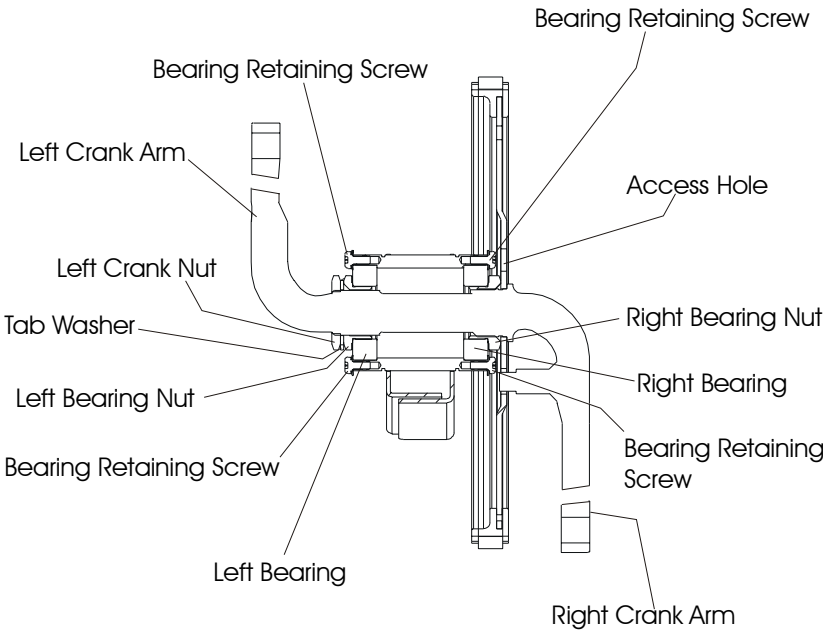


Section III

How To... REPLACE THE CRANK ARM BEARINGS

Tools Required: Special crank arm wrench required (available from Life Fitness), FT LBS. torque wrench, standard screwdriver, hex key set, and clean rag.

1. See “How To…Replace Shrouds” in this section.
2. Loosen the POWER GRIP BELT. See “How To…Replace Power Grip Belt.”
3. Remove the left BEARING RETAINER SCREWS (2).
4. In a clockwise rotation, remove the LEFT CRANK NUT bearing Assembly.
5. Unbend the tabs of the TAB WASHER. Remove and discard.
6. In a clockwise rotation, remove the LEFT BEARING NUT from the CRANK ARM.
7. Through the ACCESS HOLE in the crank arm PULLEY, remove the right BEARING RETAINER SCREWS (2).

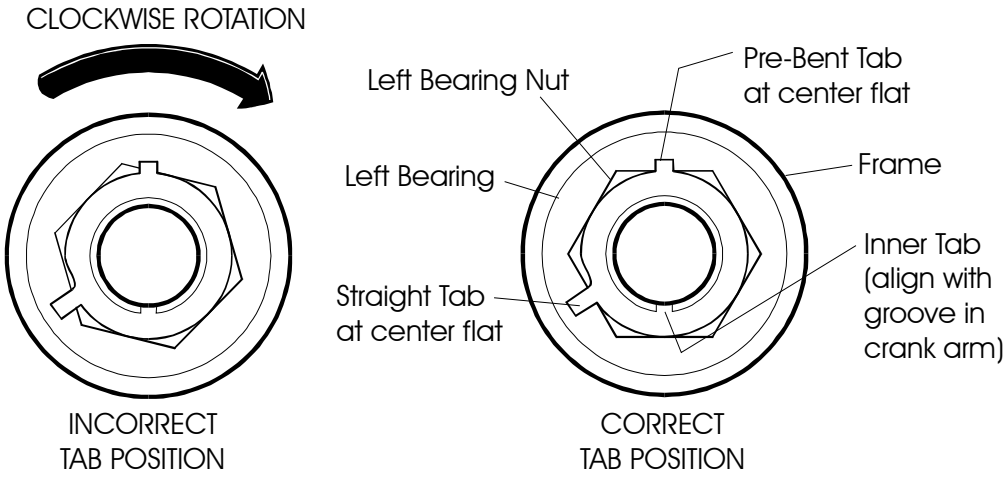


8. Remove the CRANKARM out of the bike frame from its right side.
9. Remove the right crank arm BEARING NUT and slide it off the CRANKARM.
10. Install new crankarm bearings in reverse order. Before assembling, use a clean rag to thoroughly clean out the crank arm bearing area.
11. Install the RIGHT BEARING NUT assembly onto the right CRANKARM and hand thread (clockwise). Finalize tightening to a torque value between 20-30 ft lbs.
12. Install the CRANK ARM through the right side of the frame seating the right crank bearing in place.

How To... REPLACE THE CRANK ARM BEARINGS (Cont.)

13. Install the LEFT BEARING NUT assembly over the left CRANKARM, and hand-thread (counterclockwise). Using torque wrench, initially tighten 9-12 FT. LBS. seating torque, then back off the bearing nut and re-torque to 4 FT. LBS.

14. Install a new TAB WASHER on the left crank arm. Make sure that the inner tab aligns with the groove in the crank arm, and that the outer pre-bent tab is positioned against the center of the bearing nut flat. If it is not, slightly back off the bearing nut (clockwise) until this tab is positioned in the center of the bearing nut flat, then secure it against the bearing nut flat with a hammer.



15. Install the CRANK ARM NUT and hand-thread (counterclockwise) against the TAB WASHER. With the special wrench, tighten to a torque of 4 FT. LBS. Now bend the remaining tab up against the center flat of the crank arm nut. If necessary, back off this nut (clockwise) until the tab is positioned in the center of the bearing nut flat before securing.

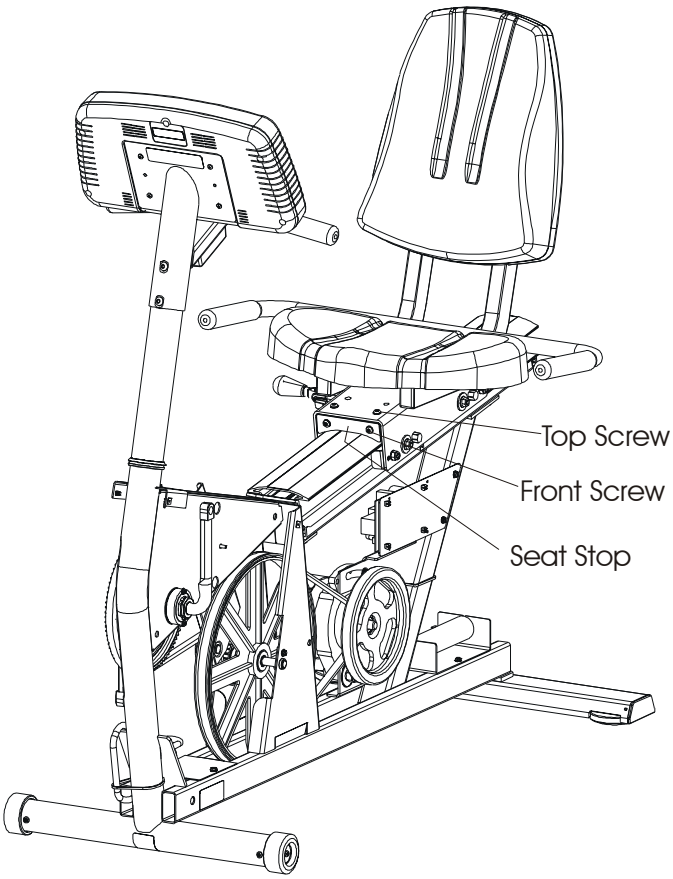
16. Install the BEARING RETAINER SCREWS (4).

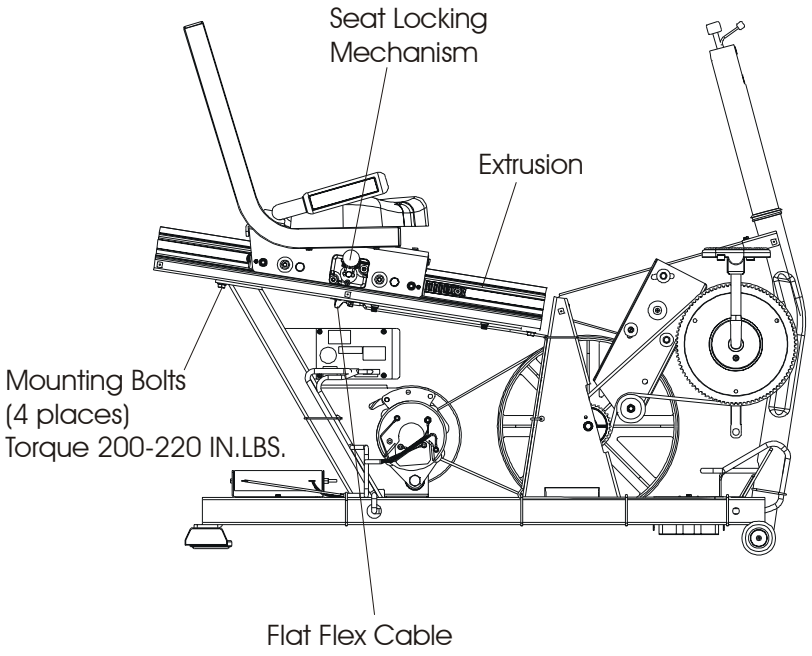
17. Re-install the DRIVE BELTS, SHROUDS, and PEDALS.

How To... REPLACE THE SEAT ASSEMBLY and EXTRUSION

Tools Required: 1/2 inch wrench, Standard screwdriver, and 5/32 inch Hex key wrench

1. See “How To…Replace Shrouds” in this section.
2. Remove the SEAT STOP in front of the seat support by removing two screws from the top and front of the seat assembly.
3. From under the EXTRUSION, disconnect the FLAT FLEX CABLE 4-Pin Connector from the Main Cable, unhook the FLAT FLEX CABLE from the clip, remove two torx screws holding the retainer bracket for the FLAT FLEX CABLE, and remove the grommet.
4. Disengage the LOCKING MECHANISM and carefully back the SEAT ASSEMBLY off the EXTRUSION while guiding the flat flex cable out from the seat extrusion.
5. If necessary to replace the EXTRUSION, remove the FLAT FLEX CABLE in the EXTRUSION, then remove four mounting bolts located under the ends of the EXTRUSION. Replace EXTRUSION and torque four MOUNTING BOLTS 200-220 IN. LBS.
6. Install the new SEAT ASSEMBLY in the reverse order and adjust SEAT ROLLERS. “See “How To…Adjust Seat Roller Adjustment” in this section.





How To...REPLACE THE MAIN WIRE HARNESS

Tools Required: 1/4, 5/16, and 3/8 inch wrenches, side cutters, and standard screwdriver

1. Refer to “How To…Replace Display Console and Handle Bar” in this section to remove the HANDLEBAR ASSEMBLY and disconnect the MAIN WIRE HARNESS connectors.

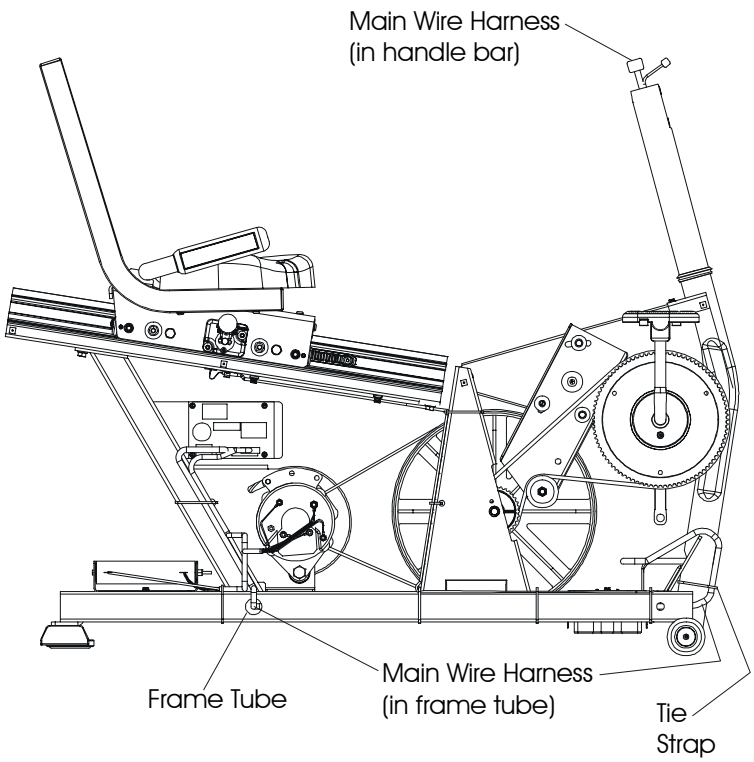
2. Refer to “How To…Replace Shrouds” in this section to remove the right SHROUD.

3. For the LC9500HR only, disconnect the BLACK (neg) wire from the (-) post on the BATTERY, then the RED (pos) wire from the (+) post.

4. Disconnect the MAIN WIRE HARNESS (P1) at the ALTERNATOR CONTROL BOARD.

5. Note the location of the CABLE TIES on frame, then cut them off.

6. Route the MAIN WIRE HARNESS out through the bottom FRAME TUBE and secure with new cable ties.



7. Install the new MAIN WIRE HARNESS in the reverse order of the above steps.

Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

How To...ADJUST SEAT ROLLER ADJUSTMENT

Tools Required: Two torque wrenches, combination wrench set

1. **The SEAT ROLLERS are adjusted to a specified resistance load. If the seat moves too freely with excessive side-to-side movement, then the seat rollers must be adjusted as follows.**

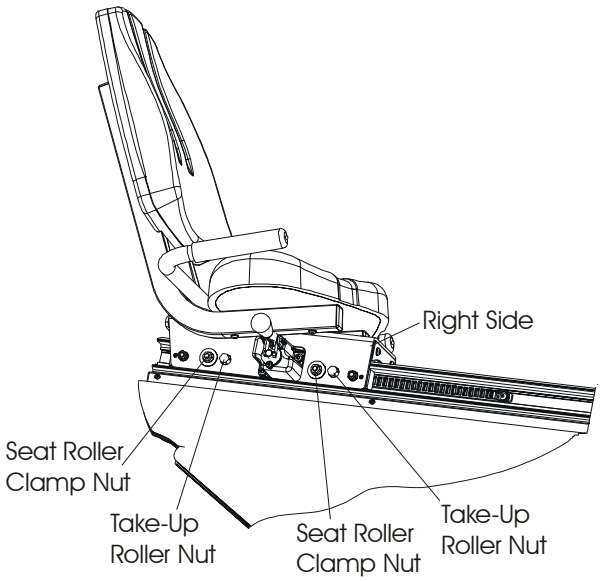
2. Using a ½ inch wrench, loosen all four(4) SEAT ROLLER CLAMP NUTS, then retighten by hand.

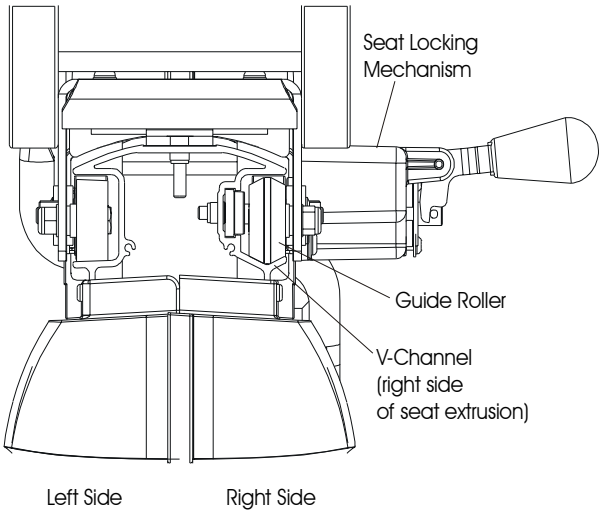
3. Make initial adjustments to the SEAT ROLLERS on the right side of the unit first. This is done to ensure that the two right guide rollers are properly seated in the V-channel of the seat extrusion. Once the SEAT ROLLERS on the right side are adjusted, then proceed to adjust the seat rollers on the left side of the unit.

NOTE: Step 4 requires use of two inch pound torque wrenches. One to maintain a resistance load against the TAKE-UP ROLLER and the other to torque the ROLLER CLAMP NUT.

4. Starting with the right side SEAT ROLLERS, adjust the first TAKE-UP ROLLER NUT to 60-65 in. lbs. in a clockwise direction. Observe that the ROLLER CLAMP NUT will move up. This indicates that the seat roller is being forced up against the extrusion. Continue to maintain the 60-65 in. lbs. resistance load on the take-up roller, and secure the seat roller position by tightening the ROLLER CLAMP NUT from 100-120 in. lbs. Repeat this procedure for other remaining right roller. Once the right side is adjusted, repeat this procedure for the left side. Always set the right side seat rollers first. Failure to do so, will result in side-to-side seat movement.

5. With all SEAT ROLLERS adjusted, test operation of the seat assembly for a 15-25 lbs. pulling force and to insure that no side-to-side movement exists. Repeat this procedure as required.

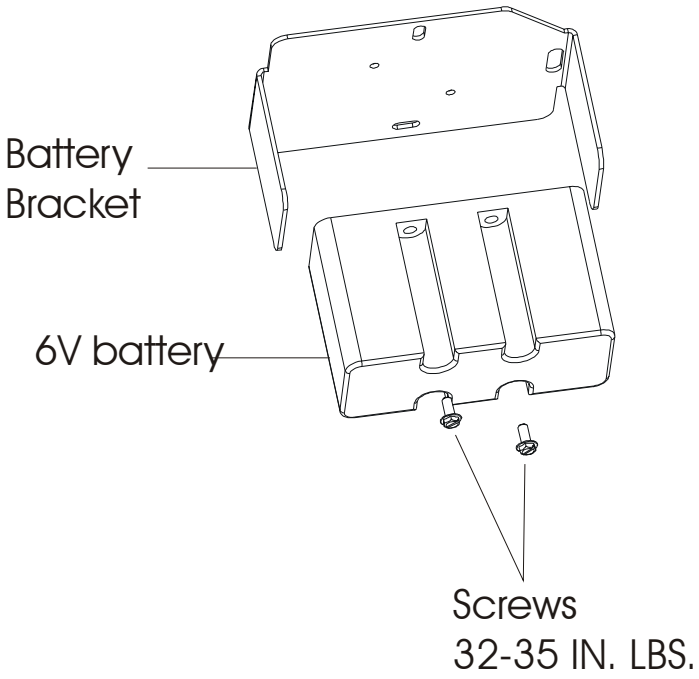




How To... REPLACE THE BATTERY(LC9500HR)

Tools Required: Standard screwdriver

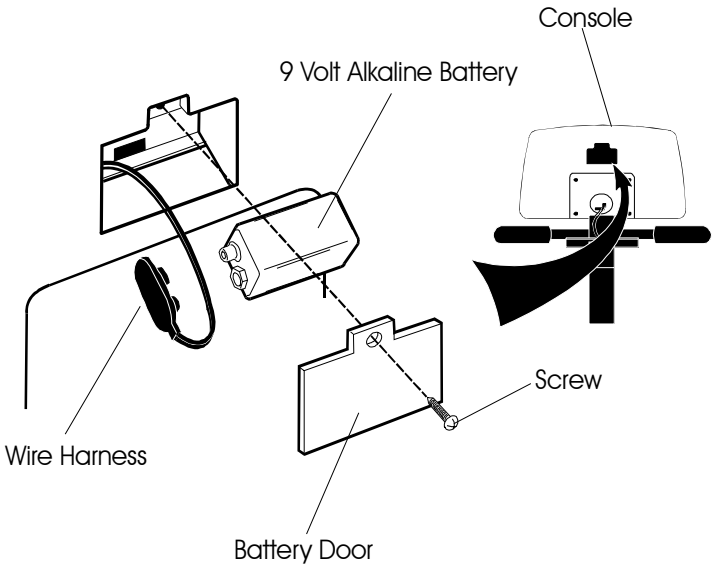
1. Tilt the bike on its side.
2. Disconnect the BLACK (neg) wire from the (-) post on the BATTERY then the RED (pos) wire from the (+) post.
3. Remove the two SCREWS securing the BATTERY to the bracket. Remove the BATTERY and discard.
4. Install new BATTERY and secure with the two SCREWS.
5. Reconnect the BLACK (neg) wire to the (-) post on the BATTERY, and the RED (pos) wire to the (+) post. Carefully tuck the BATTERY WIRES back into the HOUSING.
6. Lift the bike to its upright position, and test all operations.



How To... REPLACE THE BATTERY(LC9100)

Tools Required: Phillips screwdriver

1. Locate and remove the SCREW from the BATTERY DOOR located on the rear of the CONSOLE.
2. Disconnect the 9 VOLT ALKALINE BATTERY from the WIRE HARNESS and replace with a new 9 VOLT ALKALINE BATTERY.
3. Carefully insert 9 VOLT ALKALINE BATTERY and WIRE HARNESS into the back of the display console.
4. Reinstall the BATTERY DOOR and secure with SCREW.



How To... REPLACE THE CONSOLE AND HANDLEBAR ASSEMBLY

Tools Required: Phillips screwdriver and Allen wrench set

1. Remove four PHILLIPS SCREWS from the SUPPORT BRACKET.

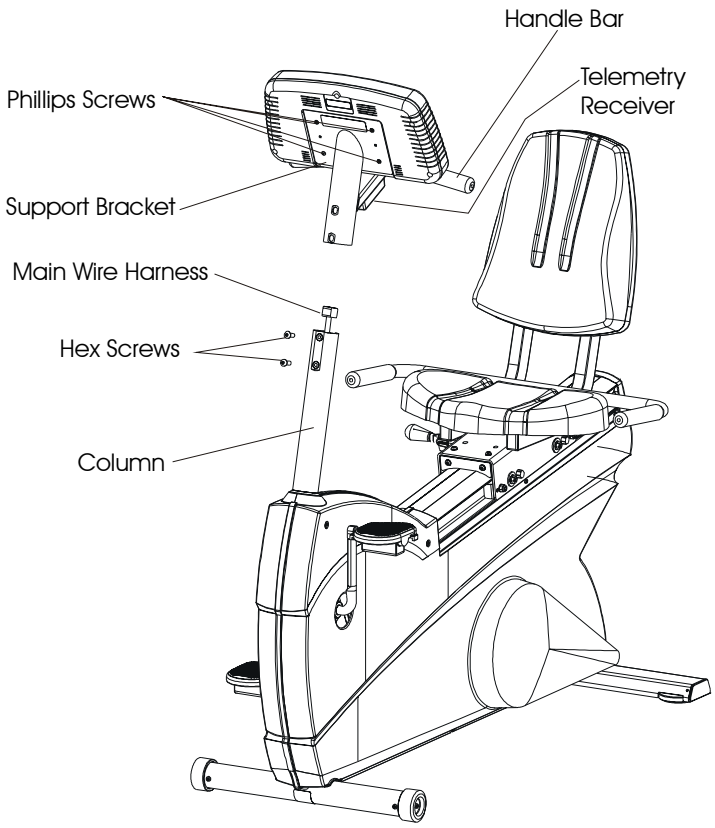
2. Lift the DISPLAY CONSOLE off the support bracket to view wiring cables, then disconnect the MAIN CABLE, LIFEPULSE CABLE (LC9500HR), and TELEMETRY CABLE from the back of the DISPLAY CONSOLE.

3. Remove two HEX SCREWS from the front of the HANDLE BAR COLUMN.

4. Lift off the HANDLE BAR Assembly from the column while carefully guiding the wire harnesses out.

5. Install the new DISPLAY CONSOLE in the reverse order. Make sure not to pinch the cables or over-tighten the display console mounting screws.

6. Test operation of the Lifecycle to ensure its operation.



How To... REPLACE THE ALTERNATOR CONTROL BOARD

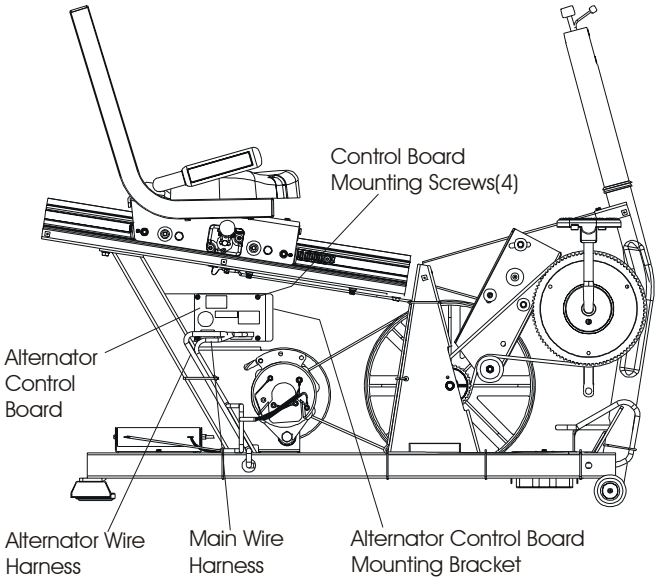
Tools Required: Standard screwdriver

1. Remove the right SHROUD. Refer to See How To...Replace Shrouds" in this section.

2. Note the WIRE HARNESS position and disconnect the ALTERNATOR (P2) and MAIN WIRE HARNESSES (P1) from the ALTERNATOR CONTROL BOARD.

3. Remove four mounting SCREWS securing the ALTERNATOR CONTROL BOARD to its mounting bracket.

4. Install new Alternator Control Board in reverse order.



How To... REPLACE THE FOOT STRAP

Tools Required: None

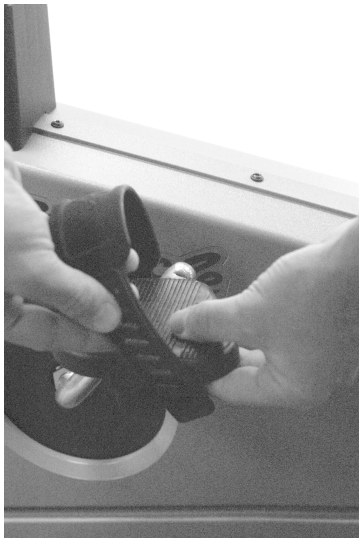
NOTE: THE STRAP HAS BEEN INITIALED "L" FOR LEFT AND "R" FOR RIGHT TO SHOW PEDAL LOCATION.

1. Grasp the outside of the worn STRAP and pull AWAY and DOWN from the knob on the PEDAL.

2. Grasp the inside of the worn STRAP and pull AWAY and DOWN from the knob on the PEDAL.

3. Insert the outside of the new STRAP with the slit on the outside knob of the PEDAL. Pull the STRAP UP until it locks in place.

4. Insert the inside of the new STRAP with the slit on the inside knob of the PEDAL. Pull the STRAP UP until it locks in place.

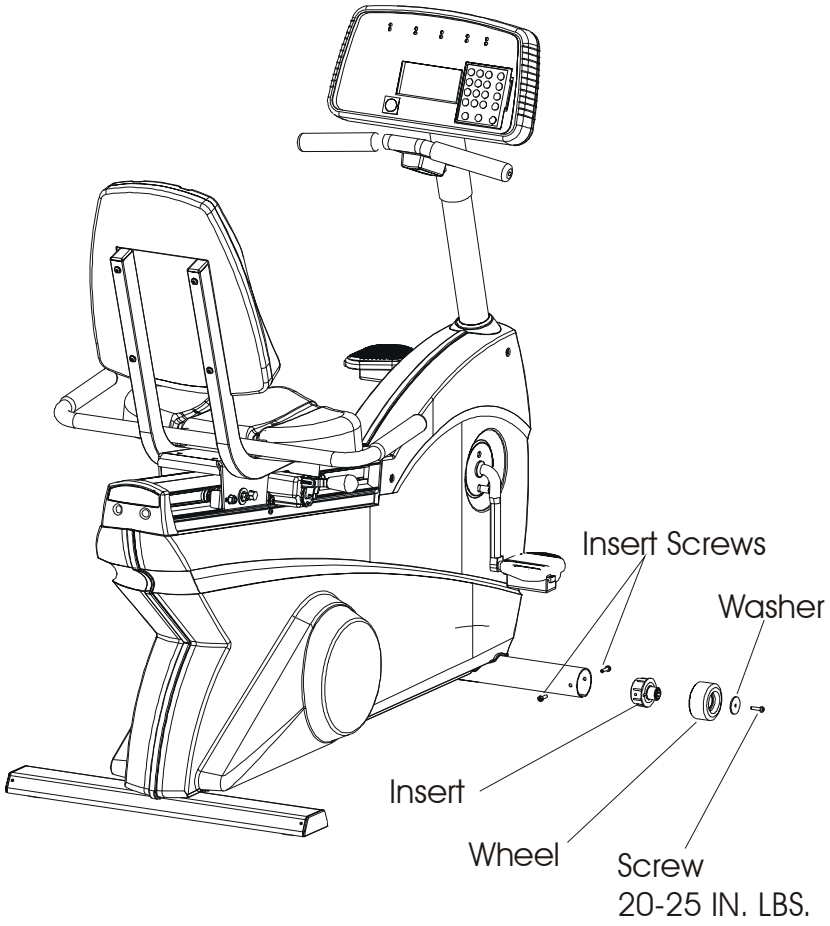


Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

How To... REPLACE THE FRONT WHEEL

Tools Required: Phillips screwdriver

1. Remove the SCREW and WASHER at the end of the WHEEL.
2. Remove and discard WHEEL.
3. Install new wheel in reverse order.
4. If the wheel inserts require replacement, remove the two INSERT SCREWS and slide INSERT out and replace with new INSERT.



Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

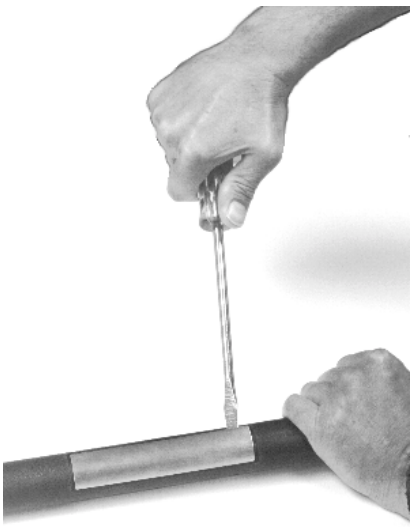
How To... REPLACE THE DIGITAL HEART RATE SENSORS (LC9500HR)

Tools Required: Phillips screwdriver, standard screwdriver, 5/64" hex key wrench **KIT # GK20-00002-0002**

NOTE:* The kit you have received will come equipped with either 5/64" hex key button head screws or Phillips head pan screws. Either can be used for sensor replacement procedures on all models of Life Fitness exercise equipment equipped with Lifepulse digital heart rate sensors. The treadmill handlebar shown in the photographs are for demonstration purposes only. Replacement procedures as listed will remain the same for all applications. *ALWAYS REPLACE BOTH SETS OF SENSORS PROVIDED IN THE KIT.

Removing the existing Lifepulse digital heart rate sensors:

1. Using a standard flat screwdriver, pry off the stainless steel sensor furthest away from you as if you were the user gripping the Lifepulse heart rate monitoring sensors (if screw access holes are already provided in the sensor you wish to replace, simply remove the two screws and continue to Step 2). This will be the sensor on which your fingertips rest during use. This sensor will be referred to as the ***"ground sensor"*** (black or green wire) hereafter in these instructions. The sensor closest to the user, on which the palm rests, will be referred to as the ***"signal output sensor"*** (red or white wire)***.***



2. Pull the ***ground sensor*** gently away from the molded plastic housing, to which it was attached, to reveal a wire harness (black or green wire) with a Faston connector attached to the back of the sensor. Unplug the Faston connector from the ***ground sensor***.

3. Loosen and remove the two screws securing the two sensor molded plastic housings to each other on the assembly. Lift the molded plastic housings away from each other and unplug the Faston connector attached to the back of the ***signal output sensor*** (red or white wire).

Installing the new Lifepulse digital heart rate sensors:

4. Plug the Faston connector (red or white wire) to the back of the new, pre-assembled ***signal output sensor*** assembly (this will be the assembly without the screw access holes in the sensor) and locate it into position. This sensor will be the sensor on which the palm rests during use.

5. Plug the Faston connector (black or green wire) to the back of the new, pre-assembled ***ground sensor*** assembly (this will be the assembly with the screw access holes in the sensor) and locate it into position. This is the sensor on which the fingertips rest during use.

6. Install the two screws through the access holes in the ***ground sensor*** and torque to 5 - 7 in. Lb. .

7. Repeat Steps 1 through 6 to remove and replace the second set of sensors included in the kit.

How To... REPLACE THE DIGITAL HEART RATE PC BOARD (LC9500HR)

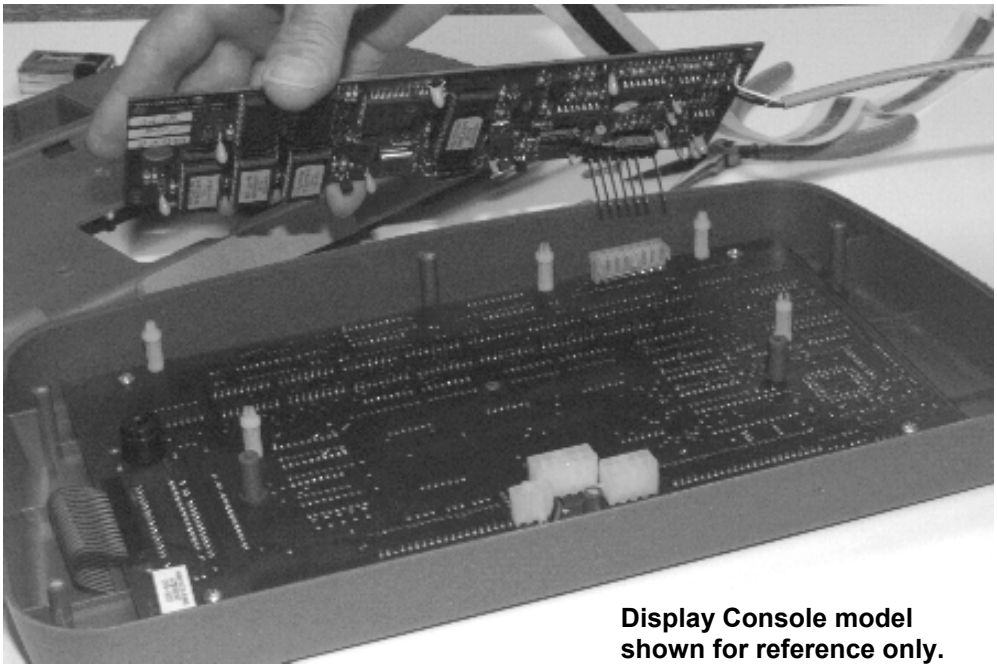
Tools Required: Phillips screwdriver, pliers

1. Remove the four SCREWS securing the DISPLAY CONSOLE to the DISPLAY CONSOLE BRACKET.

2. Unplug the 10-PIN CONNECTOR, 4-PIN CONNECTOR, and the 3-PIN CONNECTOR from the back of the DISPLAY CONSOLE.

3. Remove the SCREWS securing the back of the DISPLAY CONSOLE to the OVERLAY FACE-PLATE. Set the OVERLAY face down on a non-abrasive, flat surface.

4. Ground yourself to the machine by attaching one end of a DISPOSABLE ANTI-STATIC GROUNDING STRAP to your wrist and the other to a suitable grounding point on the exercise bike (e.g.: the metal part of the pedal crankshaft).



Display Console model shown for reference only.

5. Use the pliers to squeeze the tips of the five SPACERS, one at a time, to allow removal of the HEART RATE PC BOARD. ***Before lifting the HEART RATE PC BOARD from position, be aware that an 8-PIN CONNECTOR is also securing the back of the board in place.***

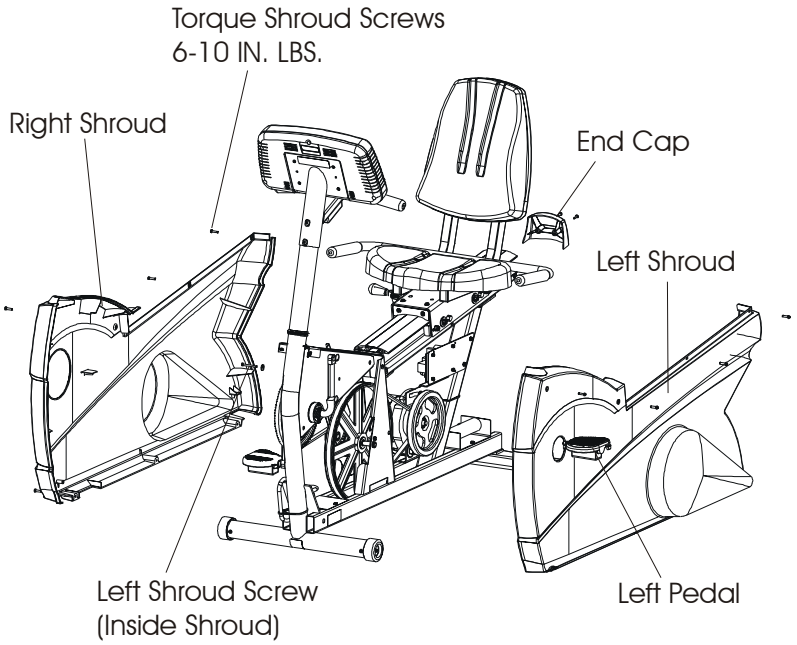
6. Replace any damaged SPACERS with those included in the kit.

7. Reverse Steps 1 through 5 to replace all parts in their proper positions.

How To... REPLACE SIDE SHROUDS

Tools Required: 5/8 inch open-end wrench, standard screwdriver, torx wrench set

1. Remove the LEFT PEDAL in a clockwise rotation.
2. Remove the 2 screws securing the ENDCAP and remove.
3. Remove 7 screws from the RIGHT SHROUD.
4. Remove the RIGHT SHROUD. Position the right crankarm at the 2 o'clock position and guide the SHROUD up and over the crankarm.
5. Inside the LEFT SHROUD, remove the left shroud screw (see illustration) from the center of the IDLER BRACKET.
6. From the outside of the LEFT SHROUD, remove 4 outer screws.



7. Position the left crankarm to a 10 o'clock position and carefully guide the LEFT SHROUD up and over the left crankarm and pedal.
8. Replace the SHROUDS and ENDCAP in reverse order.

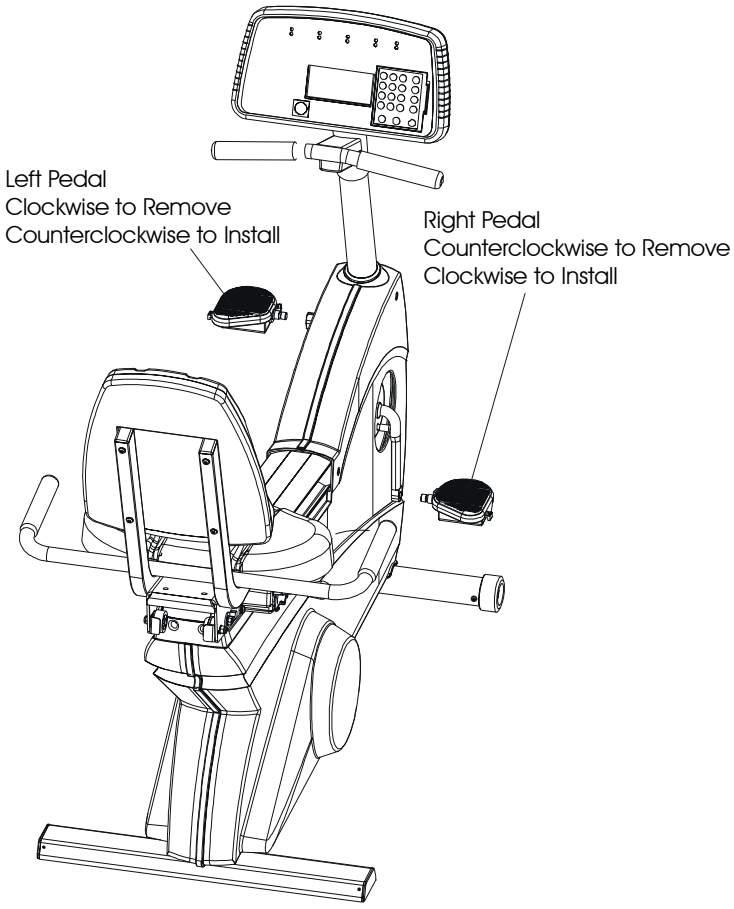
How To... REPLACE THE PEDALS

Tools Required: 5/8 inch open end wrench

1. To remove the LEFT PEDAL, place a 5/8 inch open end wrench on the PEDAL BOLT and turn the wrench clockwise.

2. To remove the RIGHT PEDAL, place a 5/8 inch open end wrench on the PEDAL BOLT and turn the wrench counterclockwise.

3. Install the new PEDALS onto the CRANK ARMS. To tighten the PEDALS, place a 5/8 inch open end wrench on the PEDAL BOLT. Move the wrench counterclockwise for the LEFT PEDAL and clockwise for the RIGHT PEDAL.



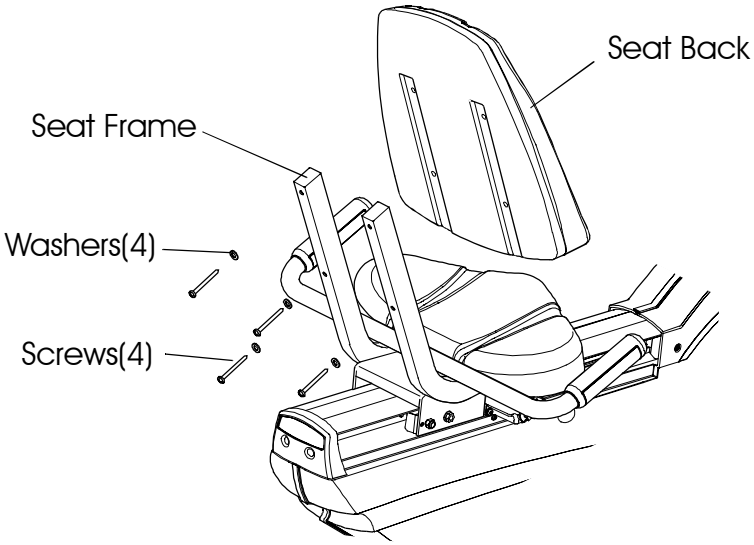
How To... REPLACE THE SEAT BACK

Tools Required: 5/32 inch hex key wrench

1. Remove the four SCREWS from the SEAT BACK and remove the seat back.

2. Position the new SEAT BACK against the SEAT FRAME and secure with four mounting SCREWS.

NOTE: MAKE SURE THE SEAT IS PROPERLY SECURE BEFORE RIDING.



How To... REPLACE THE STABILIZER BAR

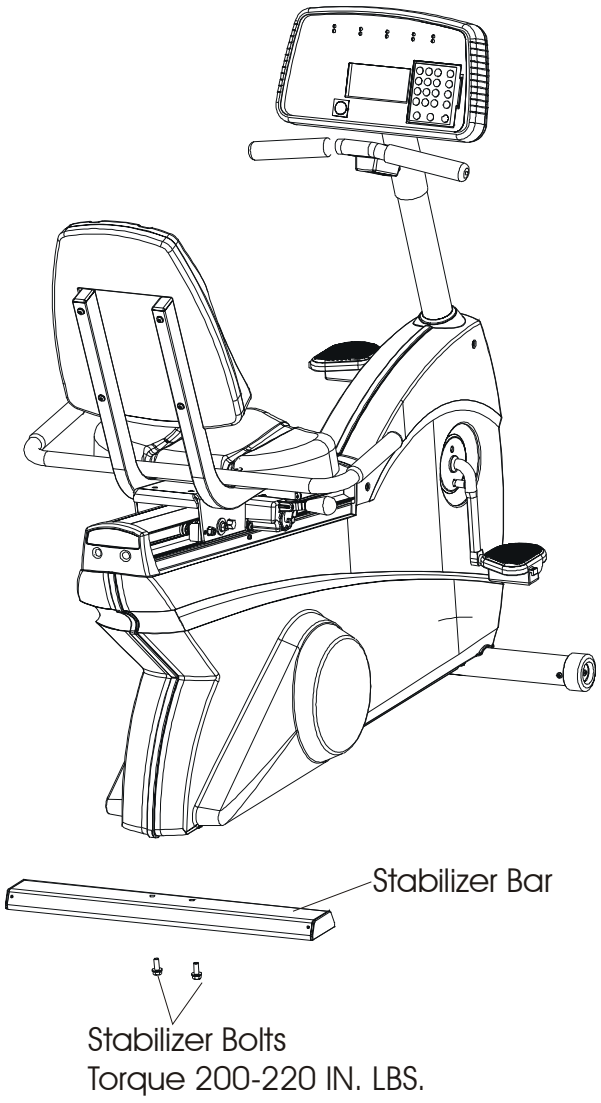
Tools Required: 1/2 inch wrench, short length of 2x4 board or a small box of same size to support bike

1. Raise the rear of the bike and support it with a piece of 2x4 board under the rear of the bike and in front of the STABILIZER BAR.

2. Remove the two STABILIZER BOLTS from the bottom of the STABILIZER BAR. Remove the STABILIZER BAR from the bike frame.

3. Install the new STABILIZER BAR and tighten the bolts to a torque of 200 to 220 INCH LBS. Make sure the STABILIZER BAR is mounted flush against the rear frame of the bike.

4. If the bike is not level, turn the two LEVELERS as necessary to eliminate all rocking motion.



How To... REPLACE THE TELEMETRY RECEIVER

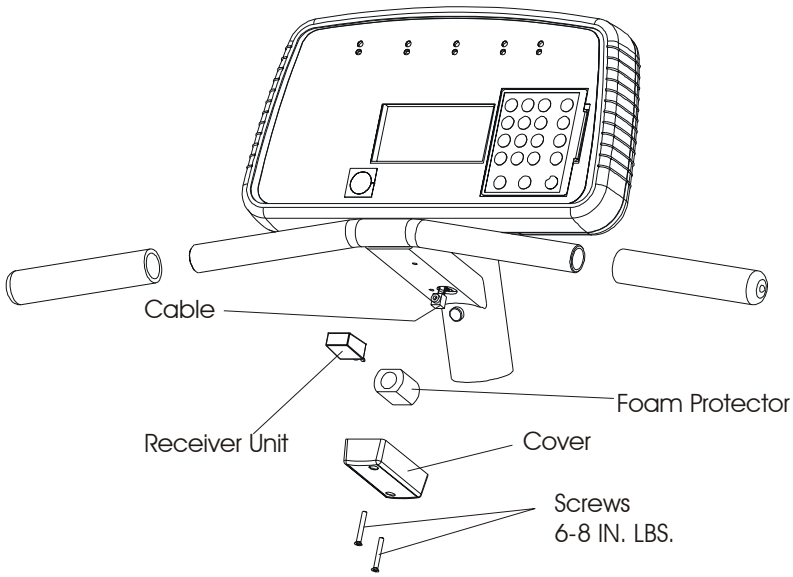
Tools Required: Phillips Screwdriver

1. **Remove LABEL from front of cover.**

2. Remove the two SCREWS and COVER under the HANDLEBAR.

3. Disconnect TELEMETRY RECEIVER from the wire cable. Removing the receiver from foam insulator.

INSTALL NEW TELEMETRY RECEIVER IN REVERSE ORDER.



How To... REPLACE THE SEAT PAD and HANDLEBAR ASSEMBLY

Tools Required: Allen wrench set, Torx wrench set, and torque wrench

1. **Remove the four ALLEN SCREWS and WASHERS securing the SEAT PAD to the SEAT ASSEMBLY.**

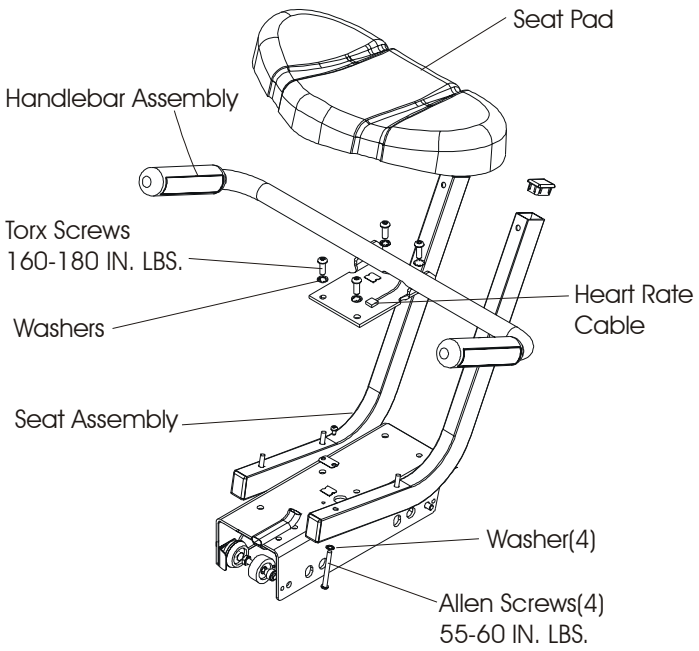
2. Remove the SEAT PAD from the SEAT ASSEMBLY.

3. Replace the SEAT PAD and secure with ALLEN SCREWS and WASHERS. ***Torque ALLEN SCREWS to 55-60 IN. LBS.***

4. Remove the four TORX SCREWS and WASHERS securing the HANDLEBAR ASSEMBLY to the SEAT ASSEMBLY.

5. Remove the HANDLEBAR ASSEMBLY. Disconnect HR CABLE (LC9500HR ONLY)

6. Install new HANDLEBAR ASSEMBLY and secure with TORX SCREWS and WASHERS. Reconnect HR cable (LC9500HR ONLY). ***Torque TORX SCREWS to 32-34 IN. LBS.***

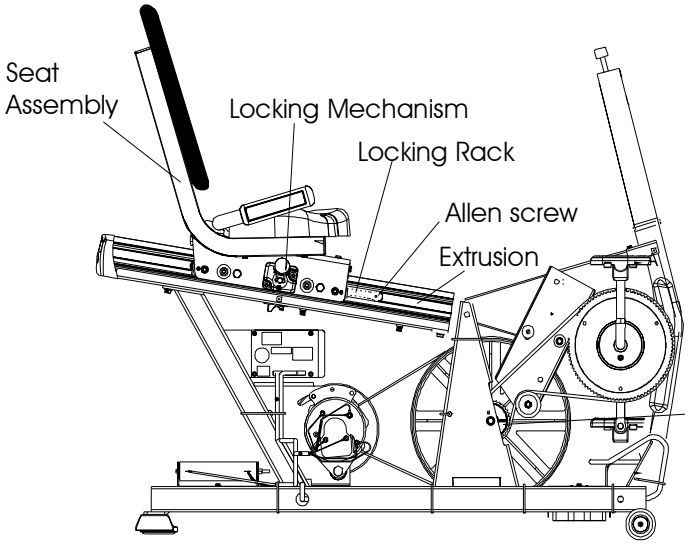


7. Replace the SEAT PAD and secure with ALLEN SCREWS and WASHERS. ***Torque ALLEN SCREWS to 55-60 IN. LBS.***

How To... REPLACE THE LOCKING RACK

Tools Required: Allen wrench set, torque wrench

1. **Disengage LOCKING MECHANISM and slide SEAT ASSEMBLY to the rear of the EXTRUSION.**
2. Remove ALLEN SCREW from the front of the LOCKING RACK.
3. Disengage LOCKING MECHANISM and carefulley slide SEAT ASSEMBLY to the front of the EXTRUSION.
4. Remove ALLEN SCREW from the rear of the LOCKING RACK and remove LOCKING RACK.
5. Replace LOCKING RACK in the reverse order of the above steps. *Torque Allen screws to 50-55 IN. LBS*.



How To... REPLACE THE ACCESSORY TRAY

Tools Required: Phillips screwdriver and 5/32" Hex Key wrench

Recumbent Models	Kit Required
9500HR	AK51-00072-0000
9100, 5500HR, 4500	AK51-00074-0000

1. Using a Hex Key wrench remove the four SCREWS (A) and WASHERS (B) securing the SEAT BACK (C). Remove the SEAT BACK and set it aside.

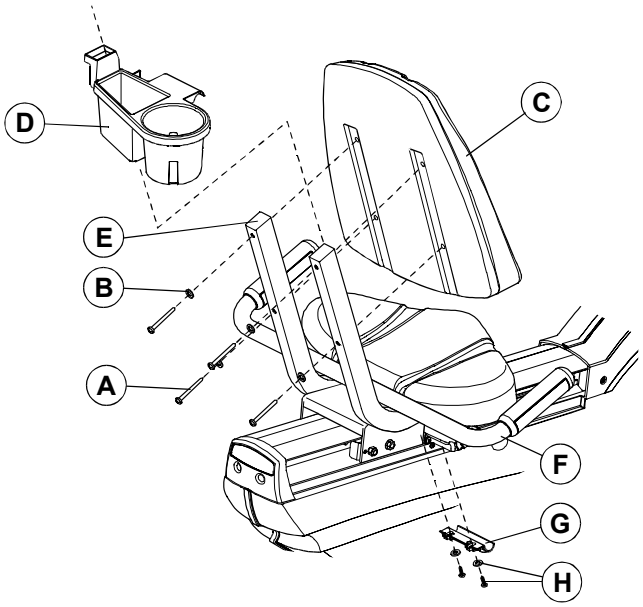
2. Slide the ACCESSORY TRAY (D) over the user right SEAT BACK POST (E) and down to make contact with the SEAT HANDLEBAR (F).

3. Position the UNDERSIDE CLAMP BRACKET (G) around the SEAT HANDLEBAR (F) and tighten the two CLAMP SCREWS and WASHERS (H).

NOTE: BE CAREFUL NOT TO OVER-TIGHTEN THE SCREWS (H).

4. Align the four holes in the SEAT BACK (B) with those in the SEAT BACK POSTS. Insert the four SCREWS (A) and WASHERS (B) through the backside of the SEAT BACK POSTS (E) and into the SEAT BACK. Tighten the four SCREWS securely.

NOTE: BE CAREFUL NOT TO OVER-TIGHTEN THE SCREWS (A).



NOTES

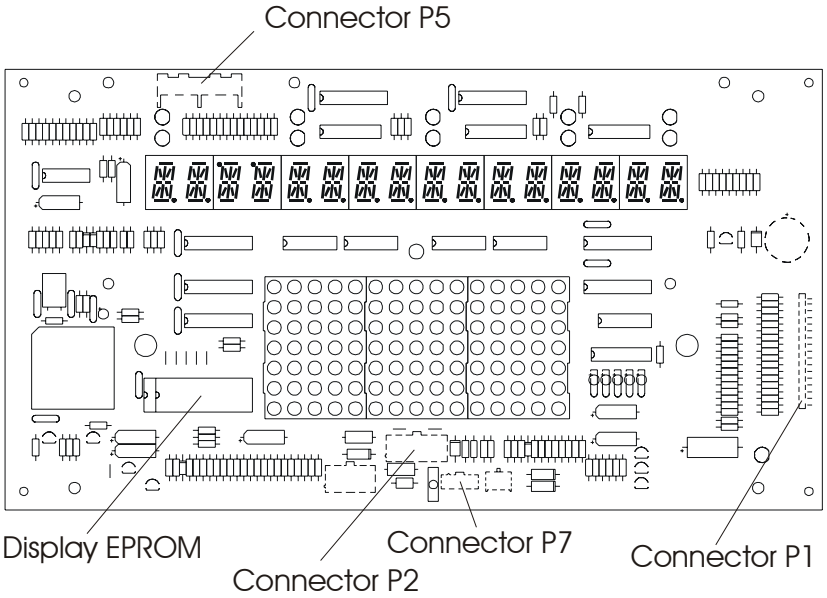
SECTION IV

ELECTRONICS OVERVIEW AND WIRING BLOCK DIAGRAMS

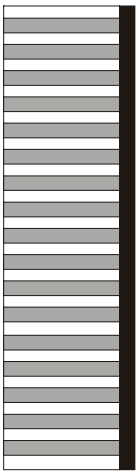
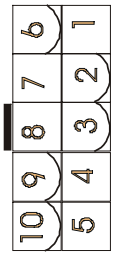
ELECTRONICS OVERVIEW - LC9100 AND LC9500HR DISPLAY CONSOLE BOARD (Equipped with DSP Heart Rate PCB)

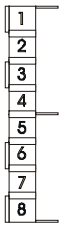
Functional Description

The Display Console Board is designed to work in conjunction with the Alternator Control Board. It reads the keypad input for changes or updates by the user, and refreshes the status LEDs, data display, and profile display matrix.



Connectors and Pin Descriptions

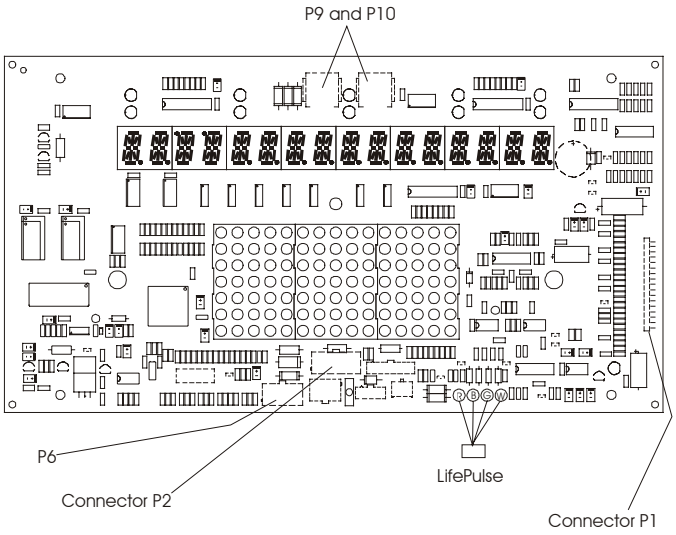
Connector	Location	Pin	Functional Description
P1 is a 17 pin, ribbon connector that connects to the Overlay Board		1	Ground
		2	Strobe
		3	Strobe
		4	Return
		5	Strobe
		6	Return
		7	Strobe
		8	Return
		9	Strobe
		10	Return
		11	Ground
		12	Start
		13	Strobe
		14	Return
		15	Strobe
		16	Return
		17	Ground
P2 is a 10 pin connects to the Alternator Control Board		1	VSYS – POWER CONTROL (7-8VDC)
		2	RPM (0-7.5 VDC)
		3	GROUND
		4	LOAD
		5	VBAT – (6 VDC)
		6	ALTREGLO (7-8 VDC)
		7	FLDCMD
		8	START
		9	VBAT – (6VDC)
		10	VBAT – (6VDC)

Connector	Location	Pin	Functional Description
P5 is an 8 pin connector that connects the Life Pulse Board to the Console Board. Equipped for LC9500HR only.		1	HR-ENABLE (3.8 VDC)
		2	KEY
		3	VSYS (7-8 VDC)
		4	VSYS (7-8 VDC)
		5	GROUND
		6	GROUND
		7	HR-D0 (4.5 VDC)
		8	HR-D1 (4.5 VDC)
P7 is a 3 pin connector that comes from the Polar connector		1	+VCC (5VDC)
		2	POLAR SIGNAL
		3	GROUND

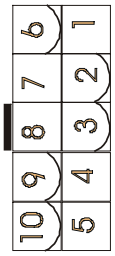
Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes
ELECTRONICS OVERVIEW - DISPLAY CONSOLE BOARD
(Equipped with Integrated PCB)

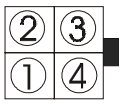
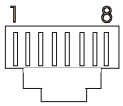
Functional Description

The Display Console Board is designed to work in conjunction with the Alternator Control Board. It reads the keypad input for changes or updates by the user, and refreshes the status LEDs, data display, and profile display matrix.



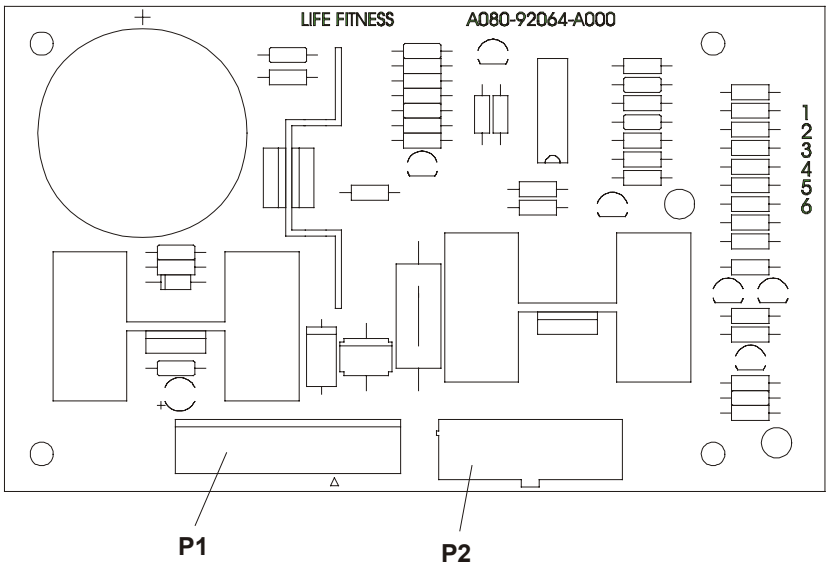
Connectors and Pin Descriptions

Connector	Location	Pin	Functional Description
P1 is a 17 pin, ribbon connector that connects to the Overlay Board		1	Ground
		2	Strobe
		3	Return
		4	Strobe
		5	Strobe
		6	Return
		7	Strobe
		8	Return
		9	Strobe
		10	Return
		11	Ground
		12	Strobe
		13	Strobe
		14	Return
		15	Strobe
		16	Return
		17	Ground
P2 is a 10 pin connects to the Alternator Control Board		1	VSYS – POWER CONTROL (7-8VDC)
		2	RPM (0-7.5 VDC)
		3	GROUND
		4	LOAD
		5	VBAT – (6 VDC)
		6	ALTREGLO (7-8 VDC)
		7	FLDCMD
		8	START
		9	VBAT – (6VDC)
		10	VBAT – (6VDC)

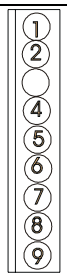
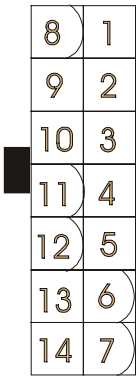
Connector	Location	Pin	Functional Description
Heart rate connector		1	Right +
		2	Right -
		3	Left -
		4	Left +
P9 and P10 are 8 pin connectors that connect to the CSAFE and Cardio Theater interface		1	N/U - not used
		2	N/U - not used
		3	Receive Data
		4	Transmit Data
		5	+8 Vdc
		6	CTS
		7	Ground
		8	N/U - not used
P7 is a 3 pin connector that connects the polar receiver to the console		1	+VCC (5VDC)
		2	POLAR SIGNAL
		3	GROUND

Functional Description

The Alternator Control Board is designed to regulate the alternator voltage by modulating the field current. It regulates the pass current (RPM signal) from the Alternator to the Console, and the pass current from the alternator to the load resistor while providing supply voltage for the console while charging the system battery.



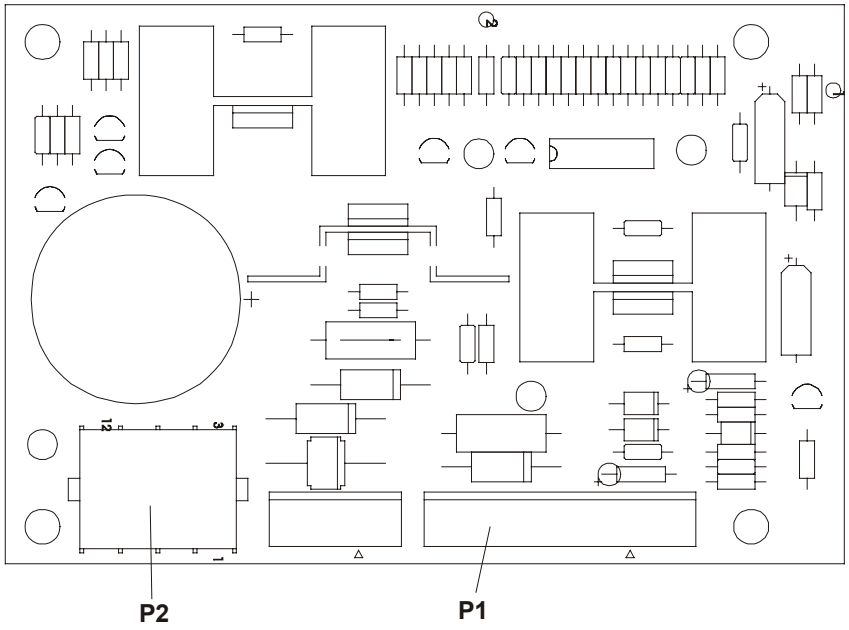
Connectors and Pin Connections

Connector	Location	Pin	Functional Description
P1 is a Molex 9 pin connector that connects to the Console		1	RPM (0-7.5 VDC)
		2	VBAT (9VDC)
		3	NOT USED (BLANK)
		4	LOAD
		5	START
		6	GROUND
		7	GROUND
		8	ALTREGLO (9-11 VDC)
		9	VSYS (7-8 VDC)
P2 is a 14 pin connector that connects to the Alternator and Power Resistor		1	FLD RTN
		2	FIELD (1-4 VDC)
		3	VALT (10 VDC)
		4	LOAD
		5	LOAD
		6	GROUND
		7	GROUND
		8	RPM (0-7.5VDC)
		9	VALT
		10	LOAD
		11	LOAD
		12	GROUND
		13	GROUND
		14	GROUND

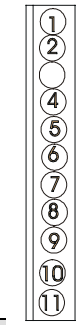
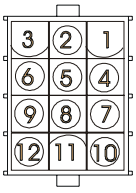
ELECTRONICS OVERVIEW - LC9500HR ALTERNATOR CONTROL BOARD

Functional Description

The Alternator Control Board is designed to regulate the alternator voltage by modulating the field current. It regulates the pass current (RPM signal) from the Alternator to the Console, and the pass current from the alternator to the load resistor while providing supply voltage for the console while charging the system battery.



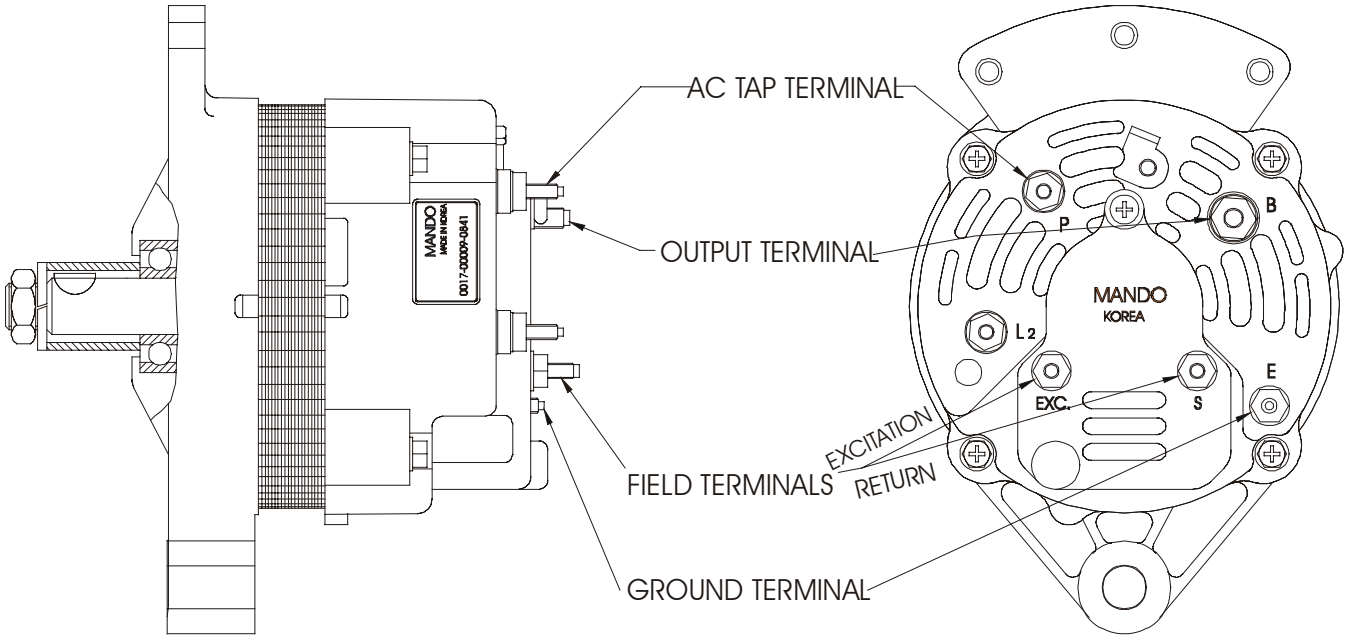
Connectors and Pin Connections

Connector	Location	Pin	Functional Description
P1 is a Molex 11 pin connector that connects to the Console		1	GROUND - BLACK
		2	GROUND – BATTERY
		3	NOT USED (BLANK)
		4	VSYS (7-8VDC)
		5	ALTREGLO (9-11 VDC)
		6	LOADCMD
		7	RPM (0-7.5VDC)
		8	START (7-8VDC)
		9	VBAT – (6VDC)
		10	GROUND – BATTERY
		11	GROUND
P2 is a 12 pin connector that connects to the Alternator and Power Resistor		1	GROUND – ALTERNATOR
		2	GROUND – ALTERNATOR
		3	GROUND – ALTERNATOR
		4	RPM (5VDC)
		5	GROUND – ALTERNATOR
		6	FIELD (1-4 VDC)
		7	LOAD
		8	LOAD
		9	LOAD
		10	VALT (10VDC)
		11	VALT (10VDC)
		12	LOAD

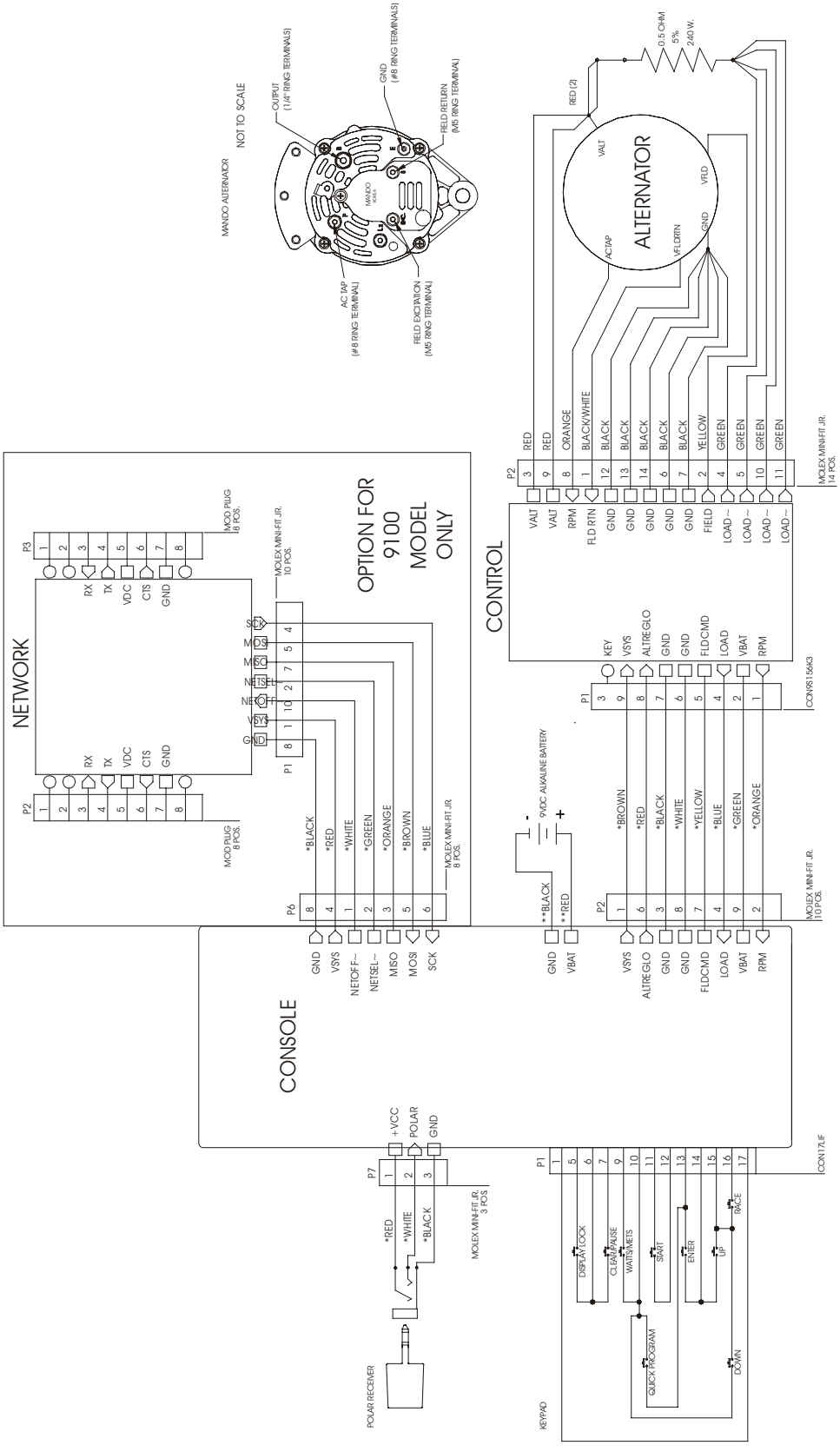
ELECTRONICS OVERVIEW - ALTERNATOR

Functional Description

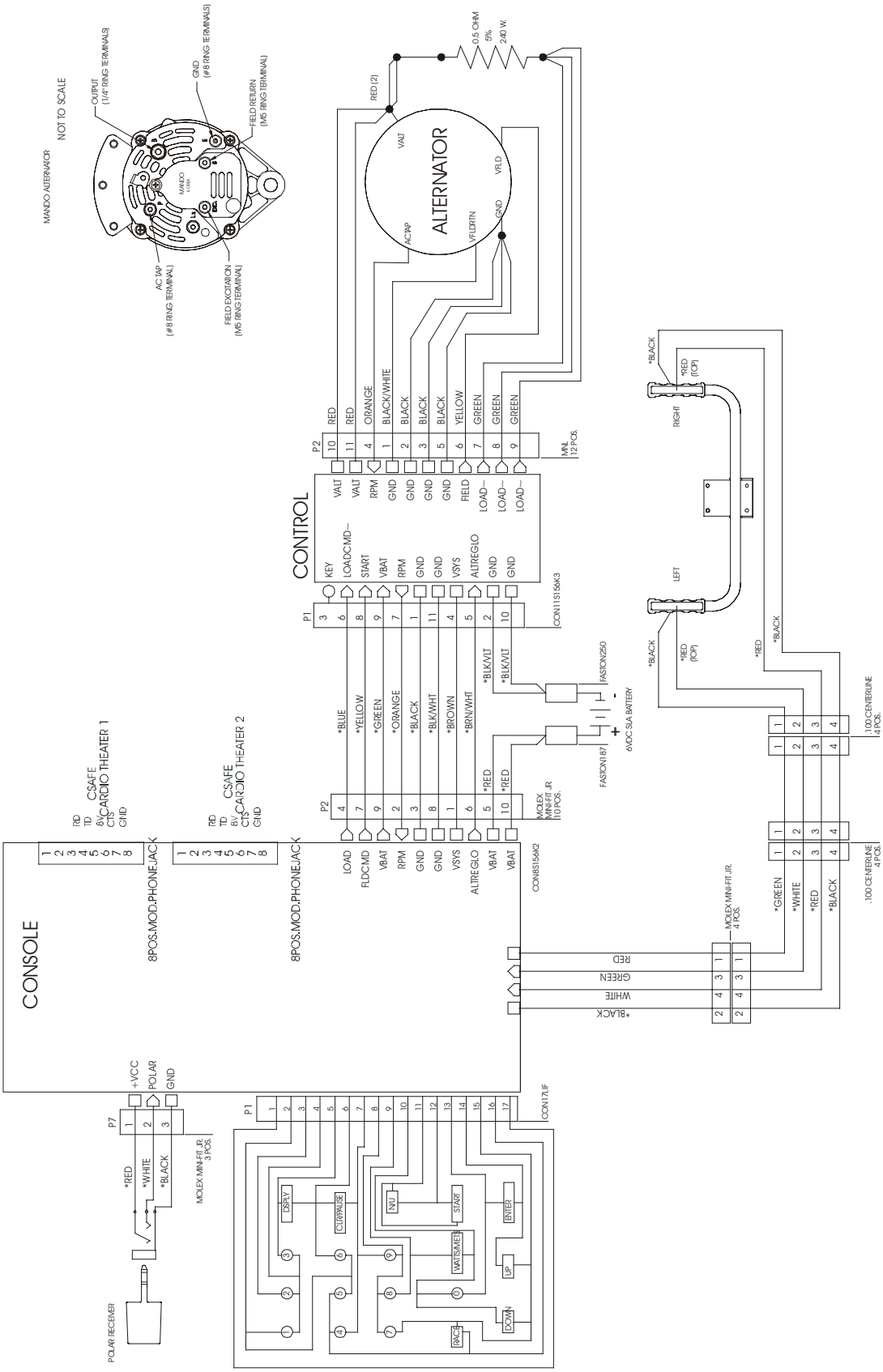
The 12 volt, 35 amp Alternator is designed to provide electrical power to the product, supply load resistance while providing electrical power, and provide the RPM signal from the AC TAP to the Alternator Control Board.



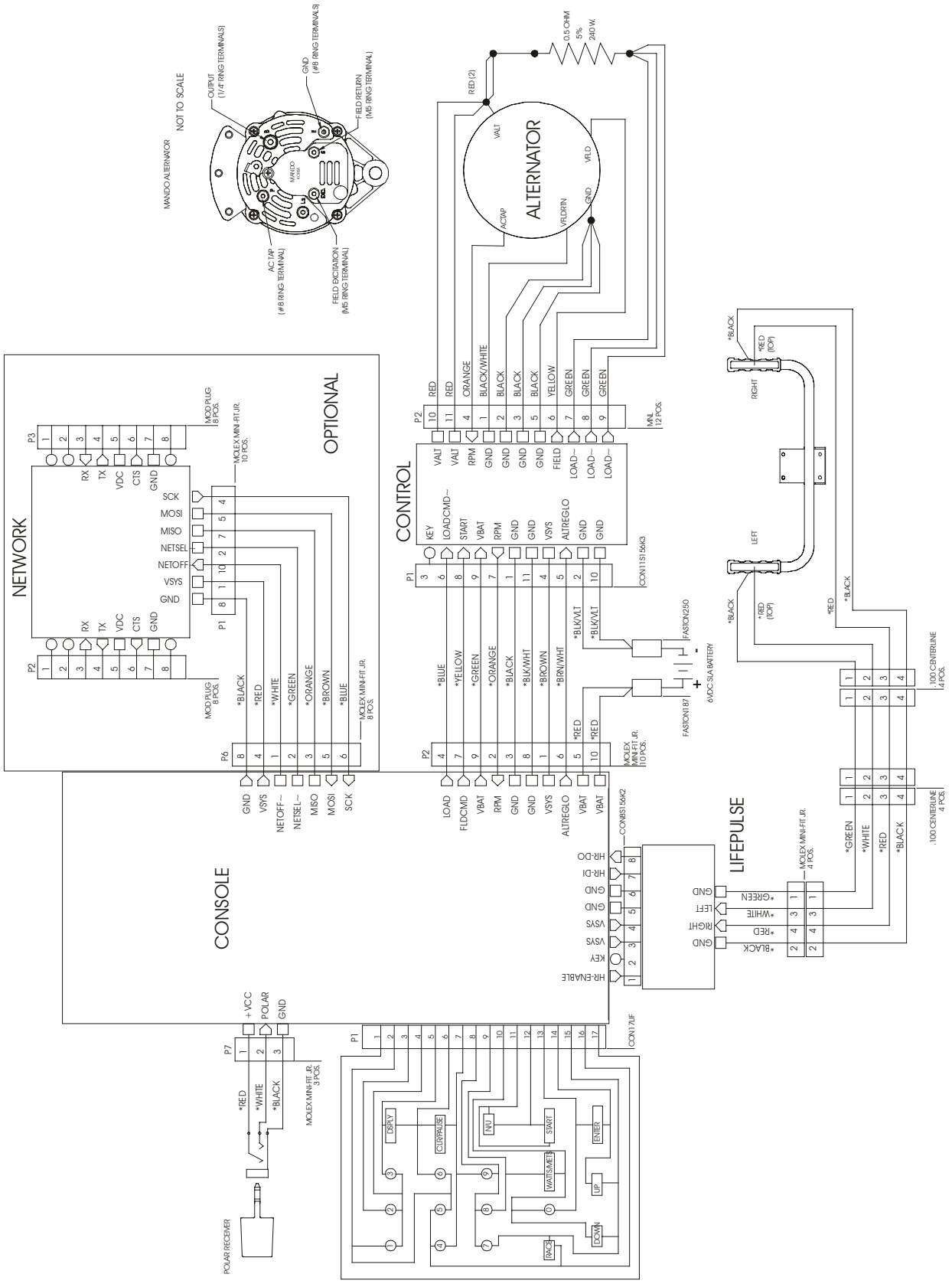
WIRING BLOCK DIAGRAM FOR LC9100



WIRING BLOCK DIAGRAM FOR LC9500HR (Integrated PCB)



WIRING BLOCK DIAGRAM FOR LC9500HR (DSP Heart Rate Board)

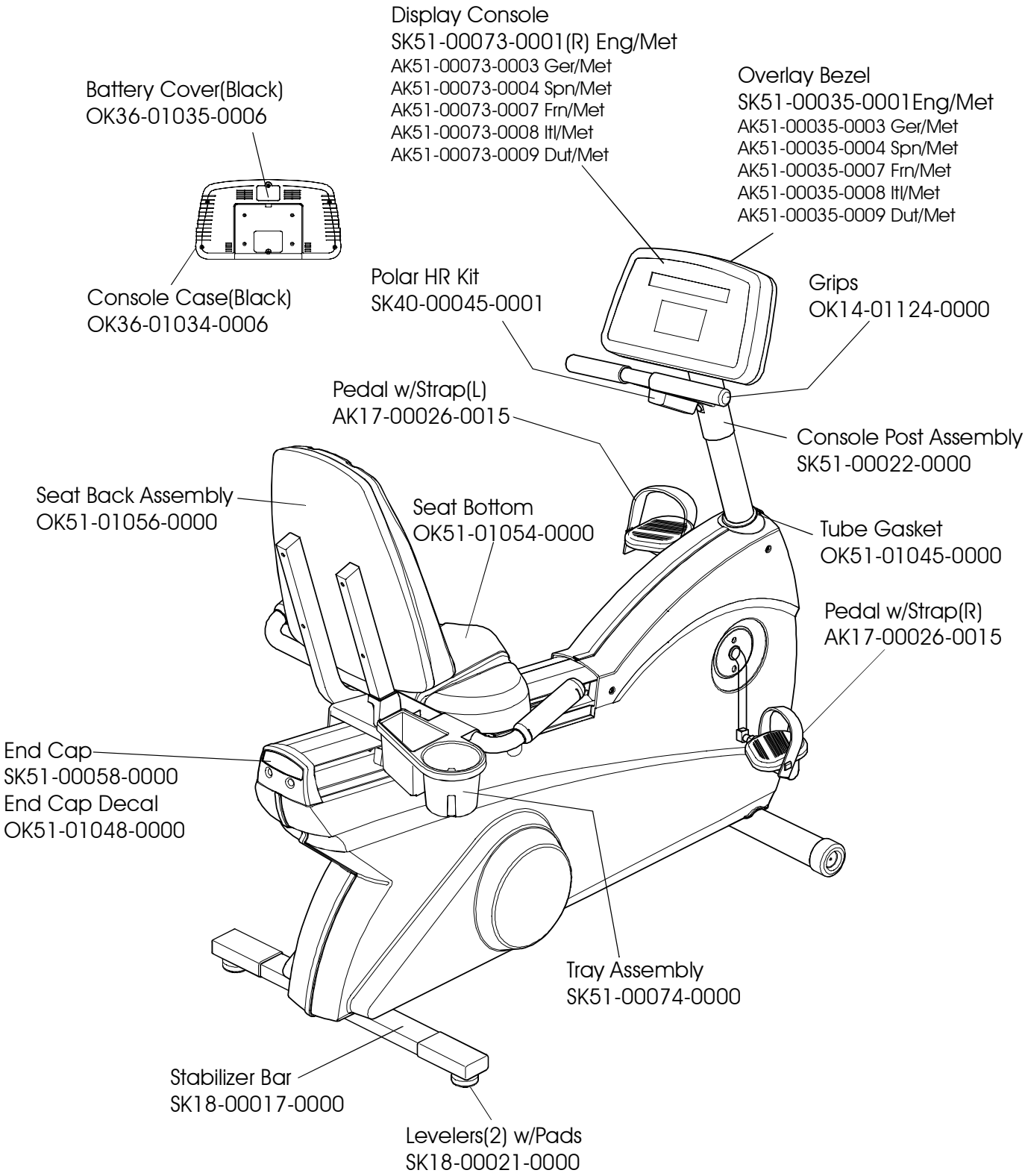


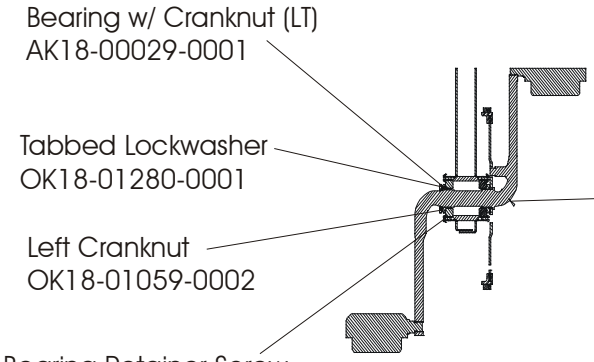
Section IV

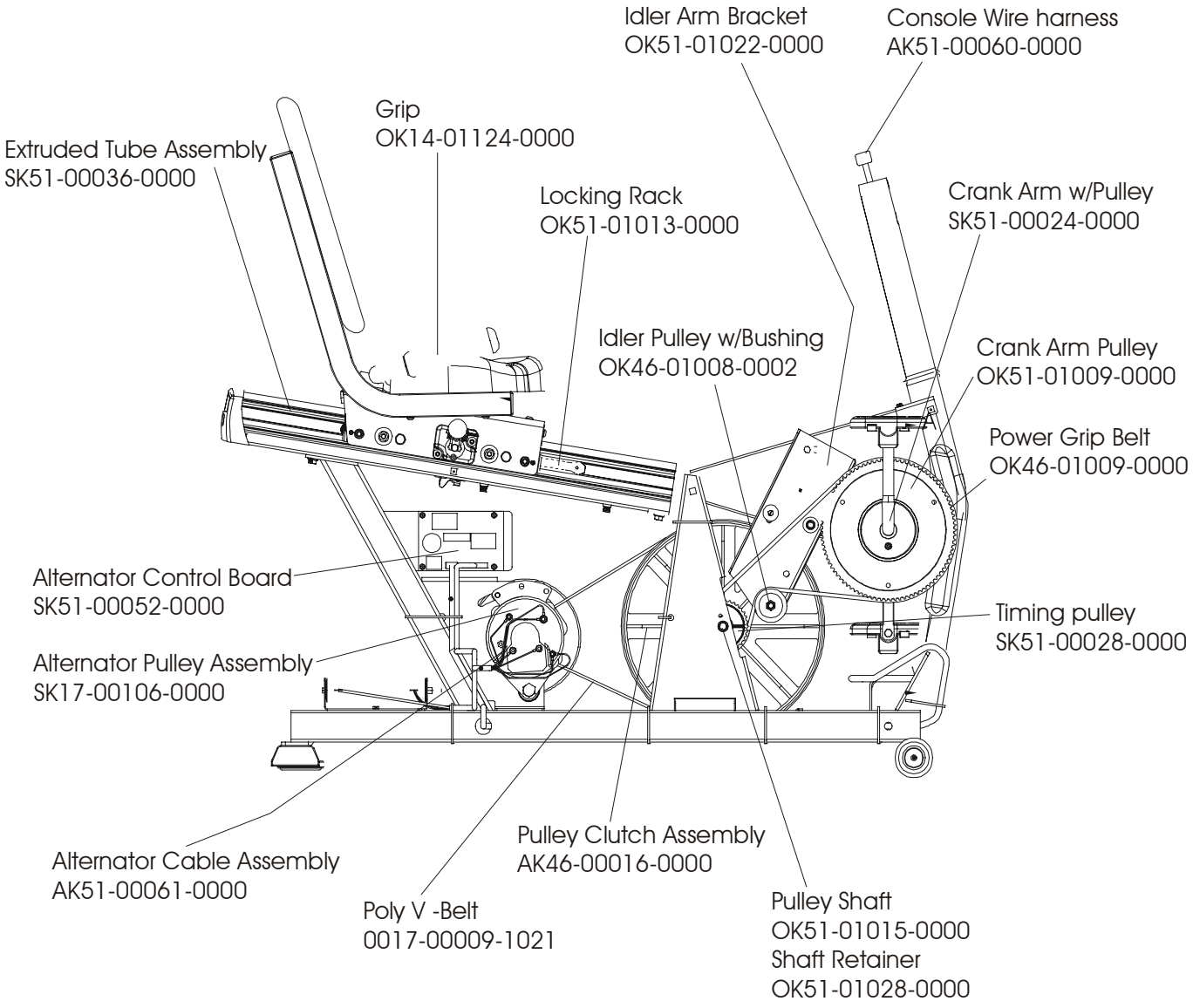
NOTES:

SECTION V

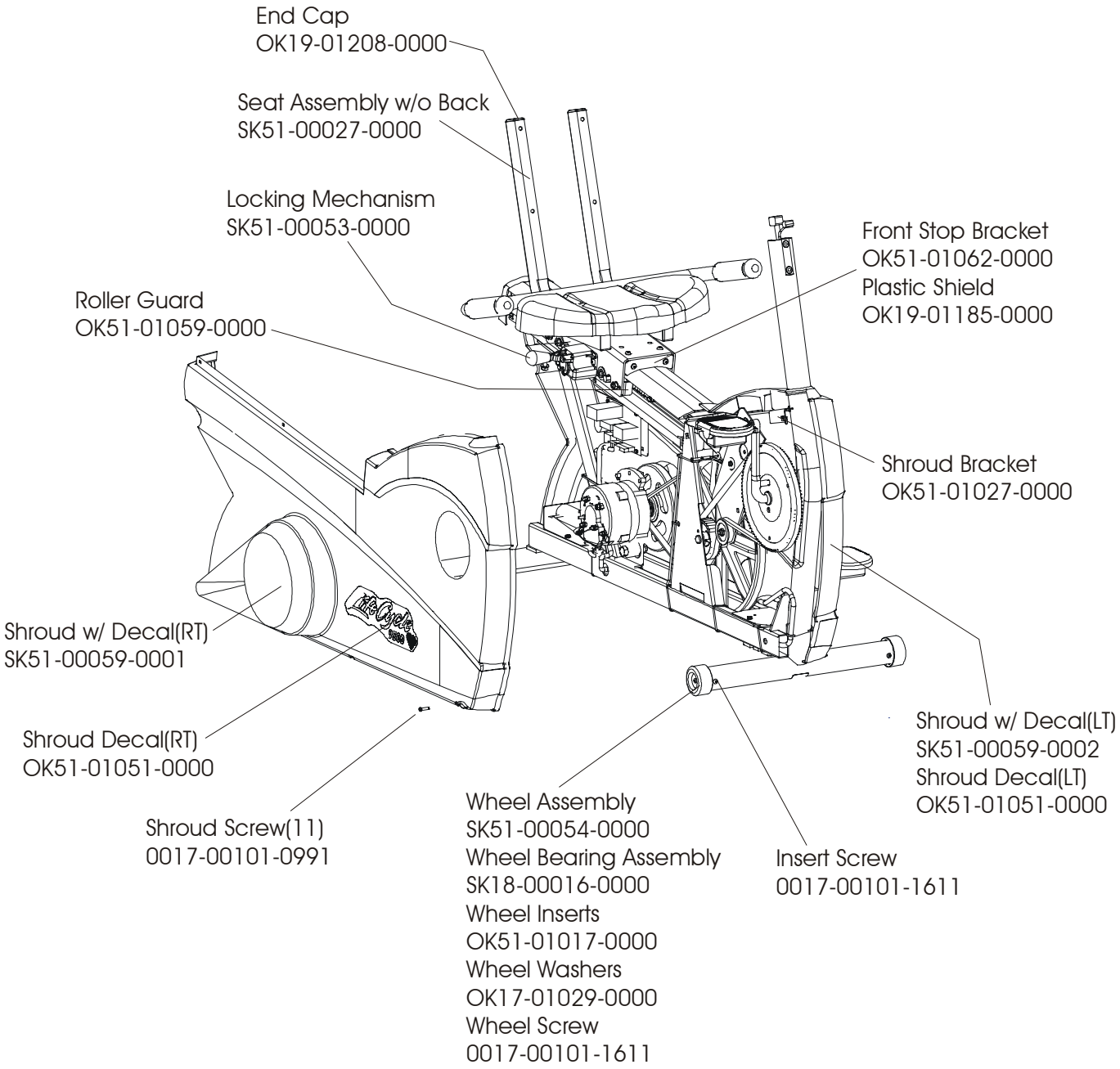
PARTS IDENTIFICATION

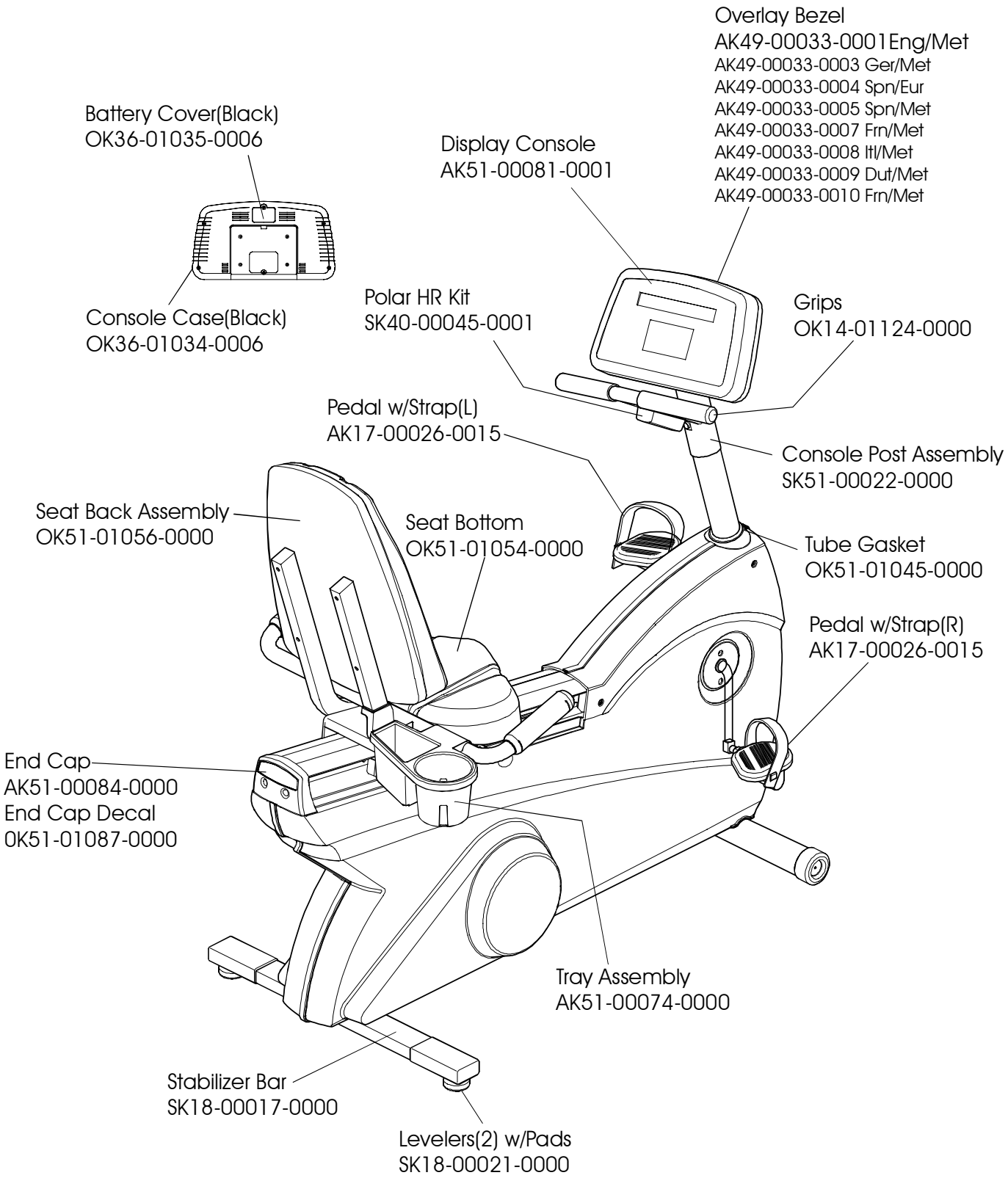




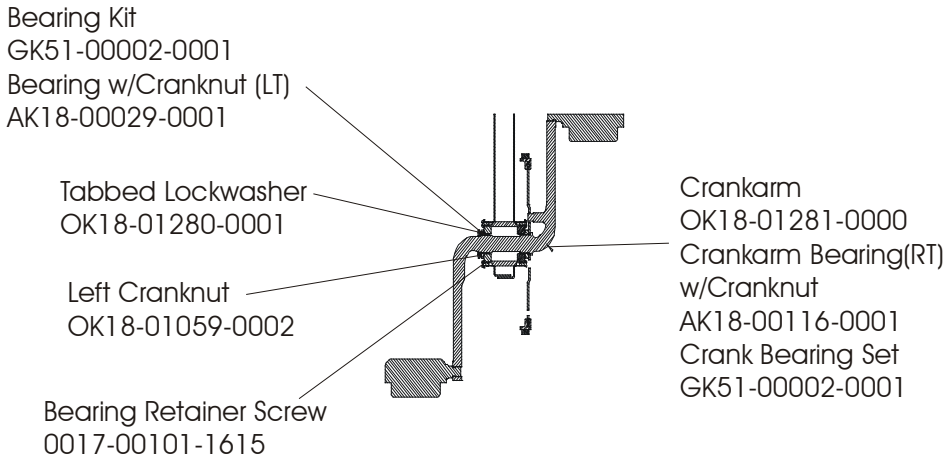


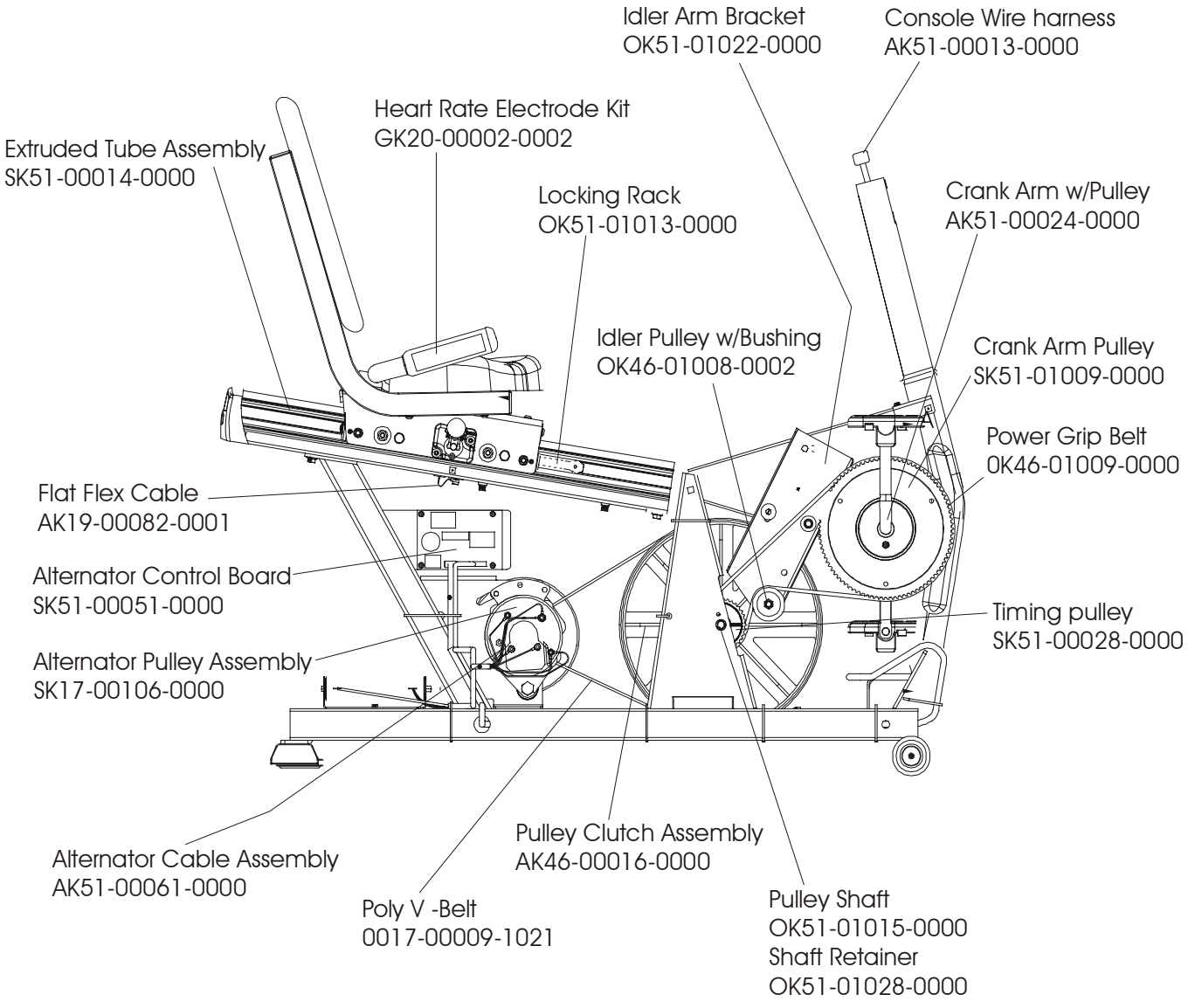
Section V

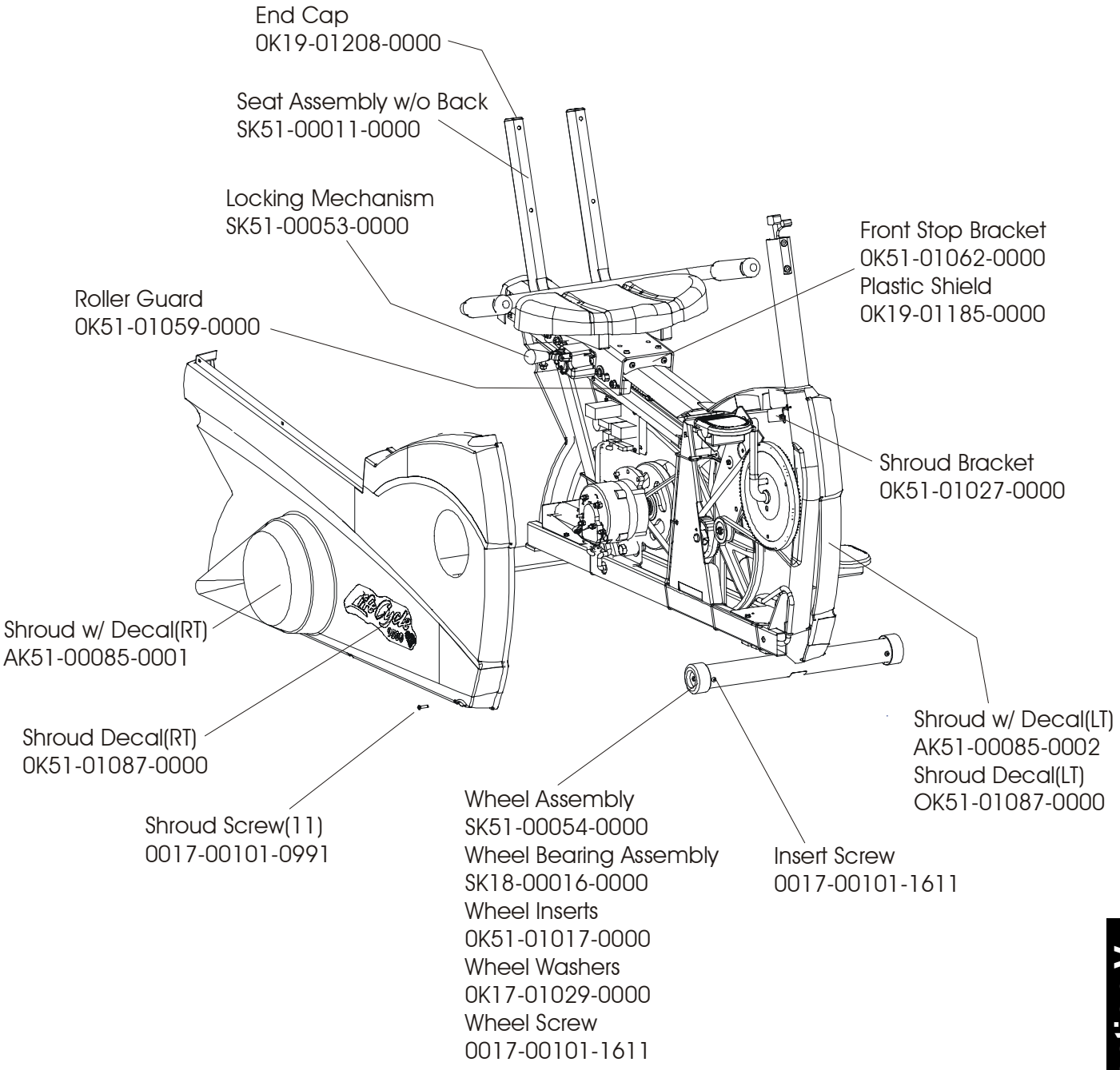


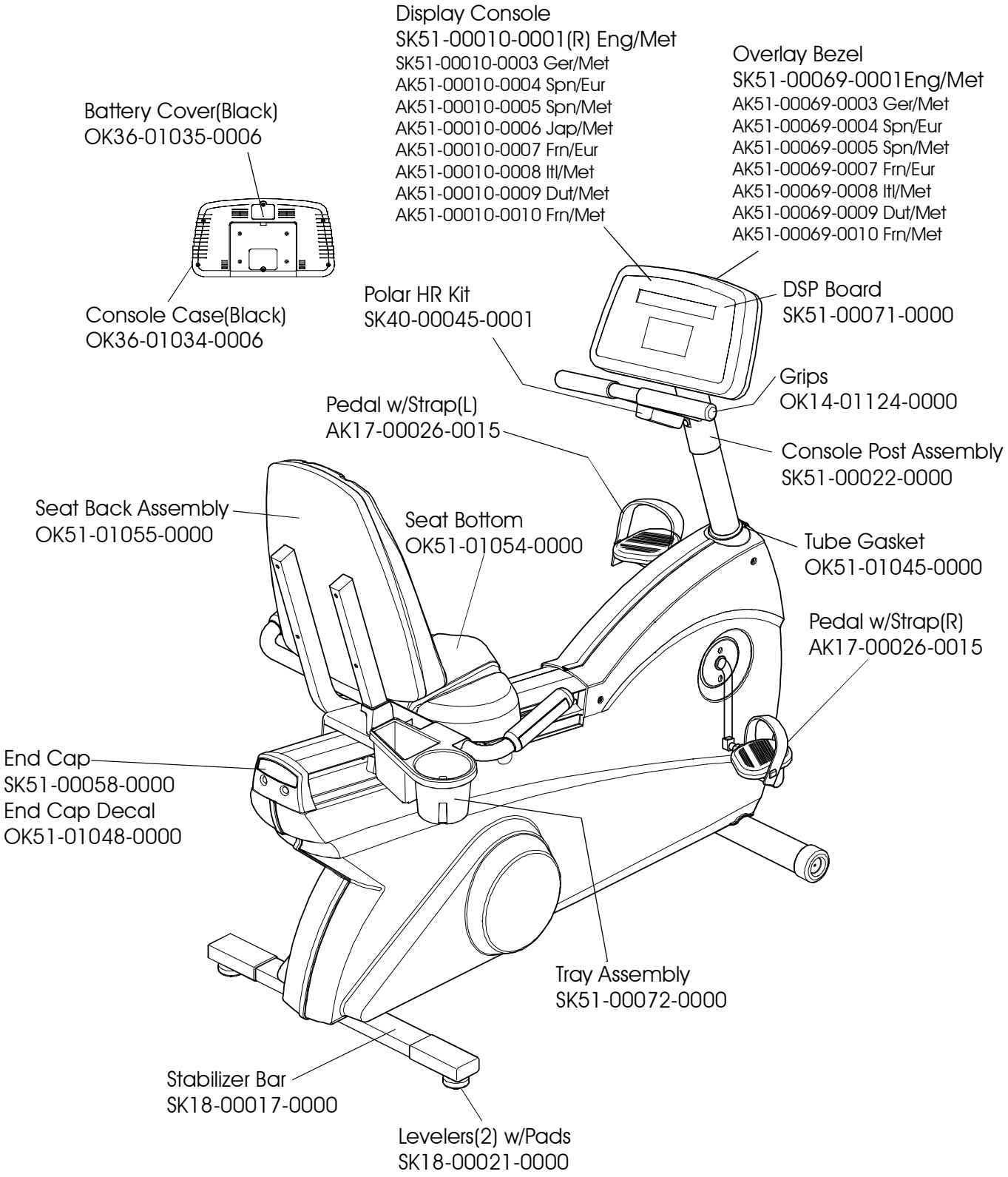


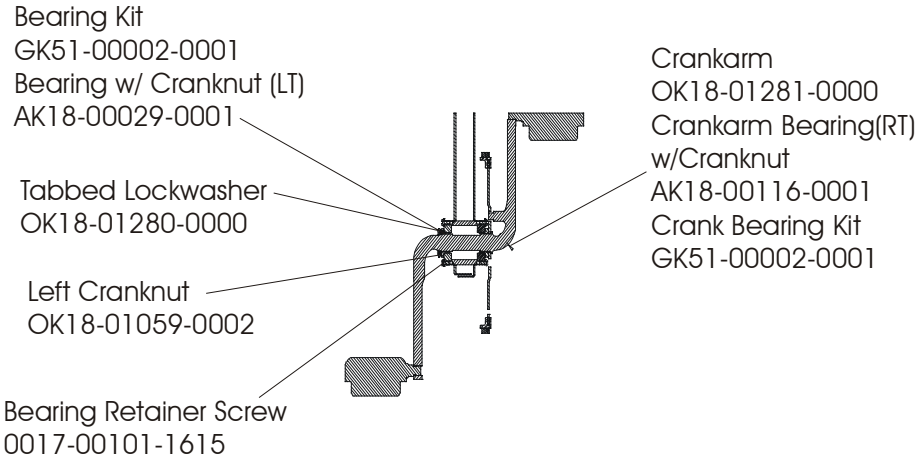
Section V

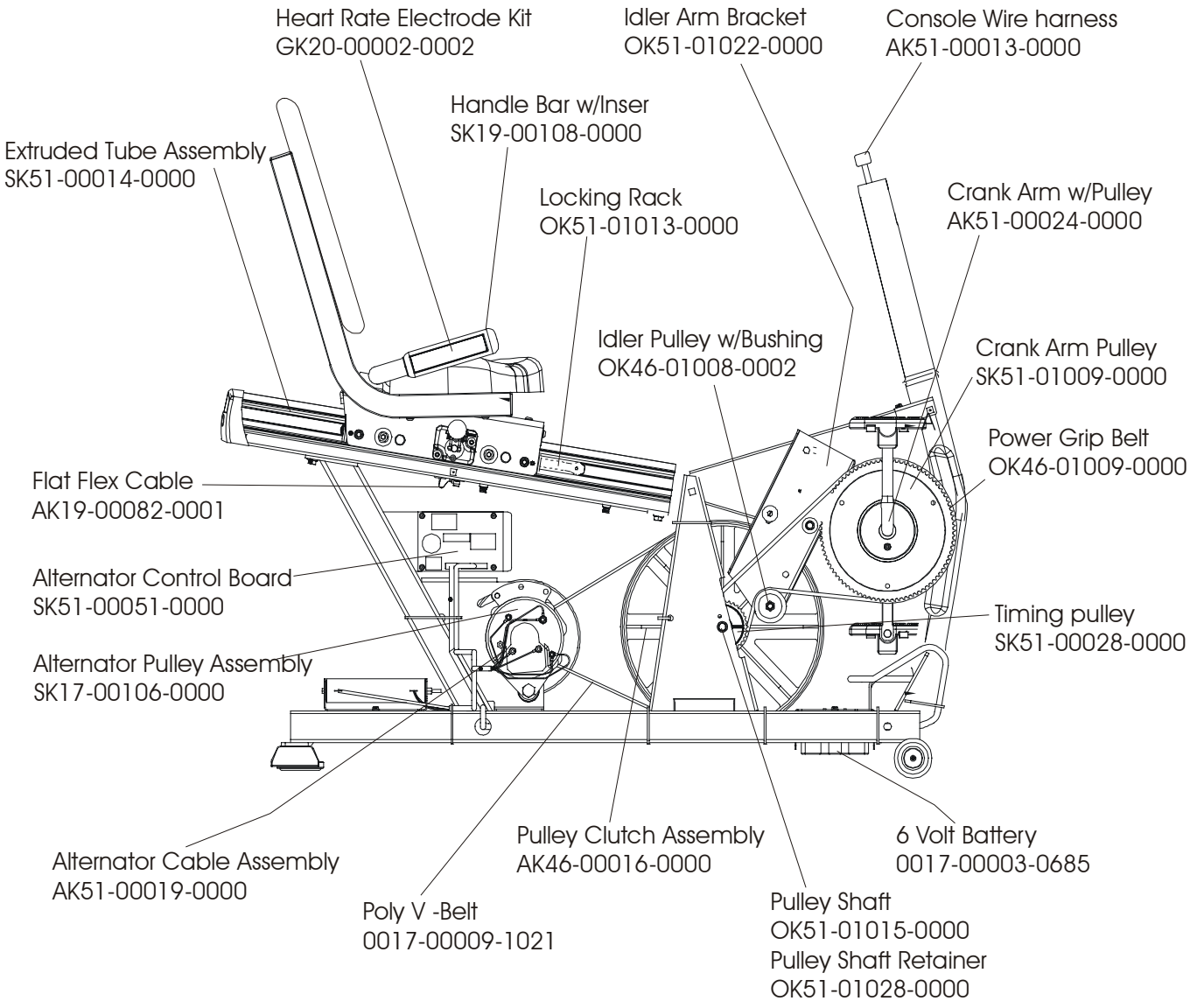




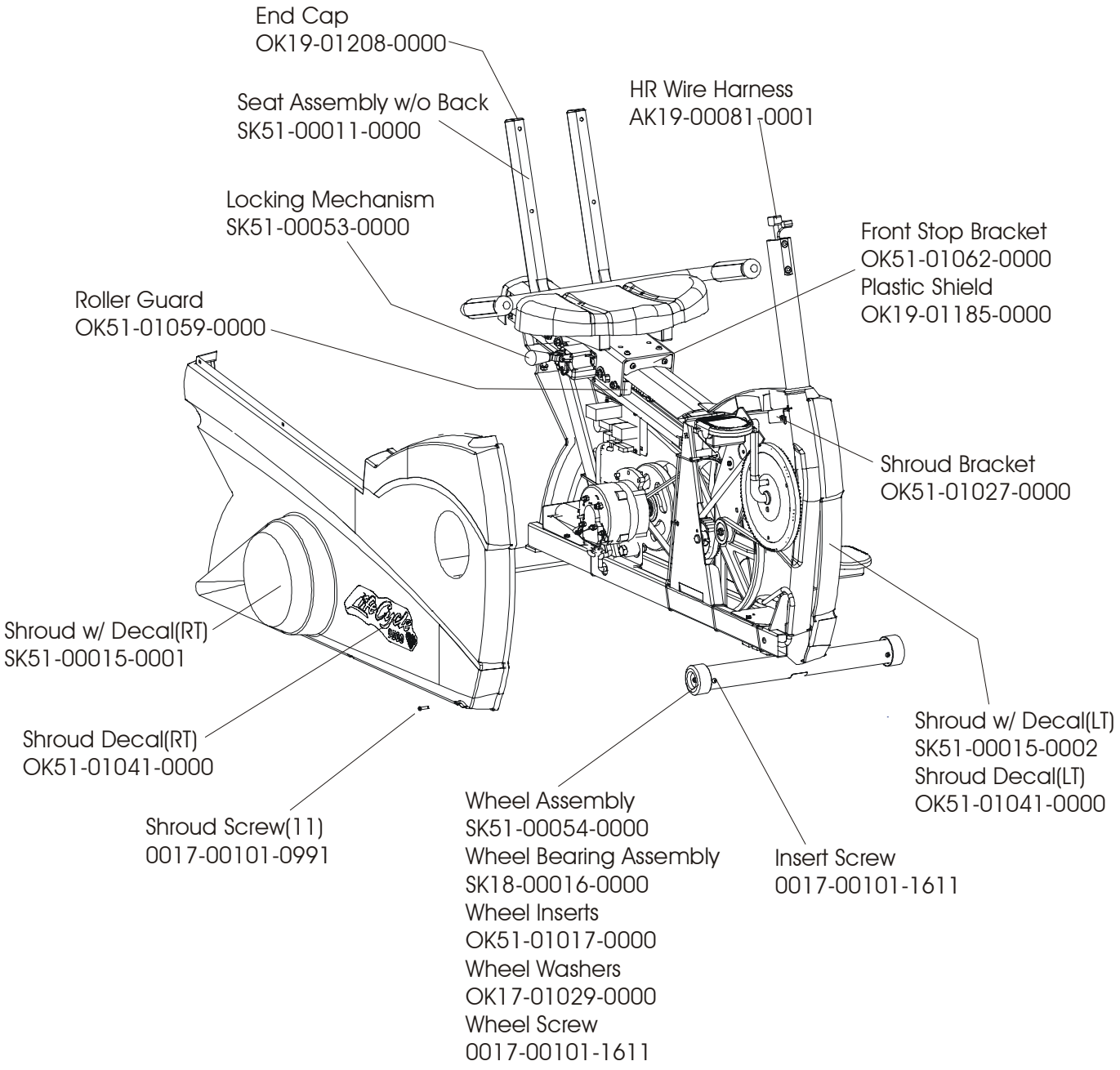


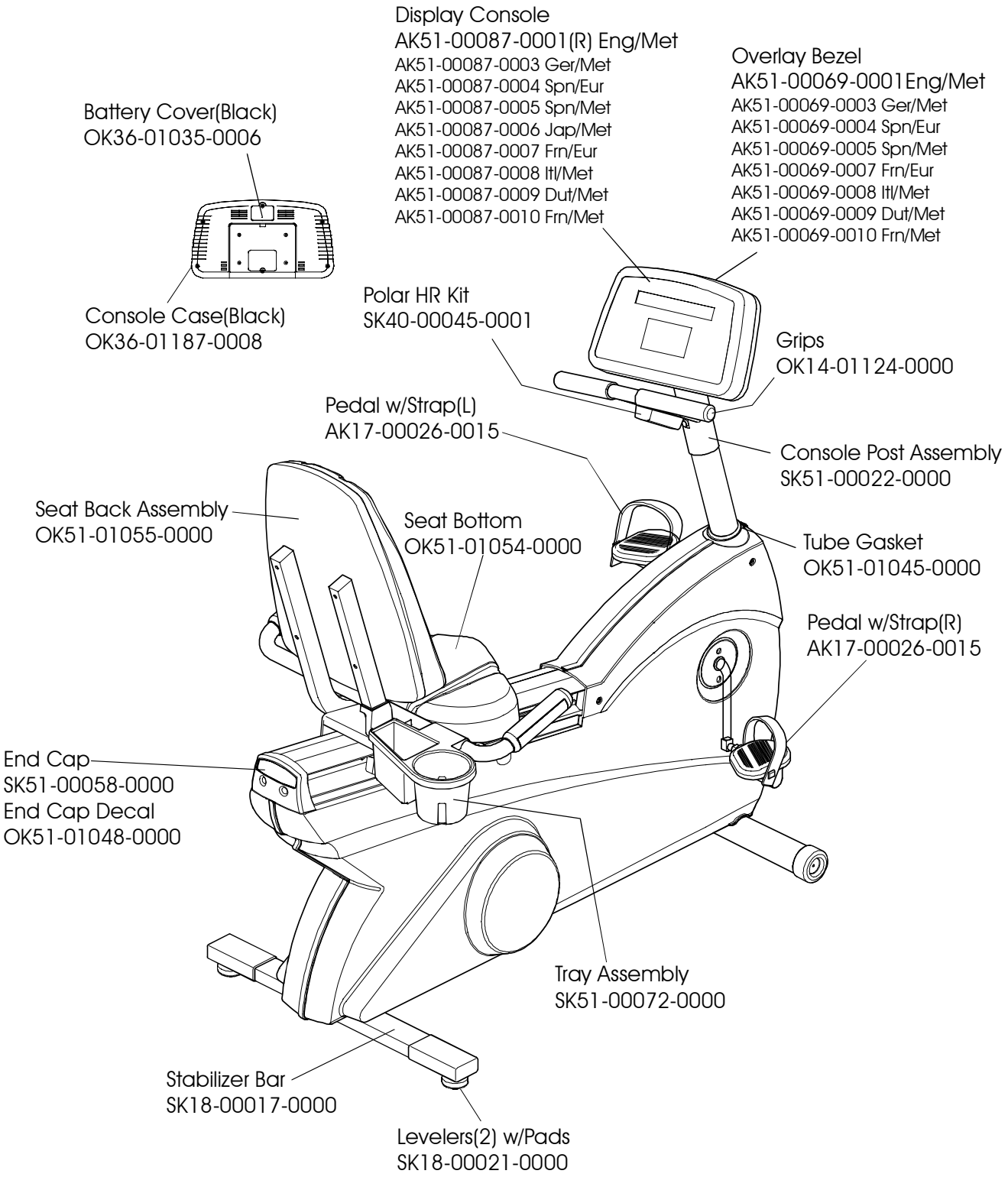


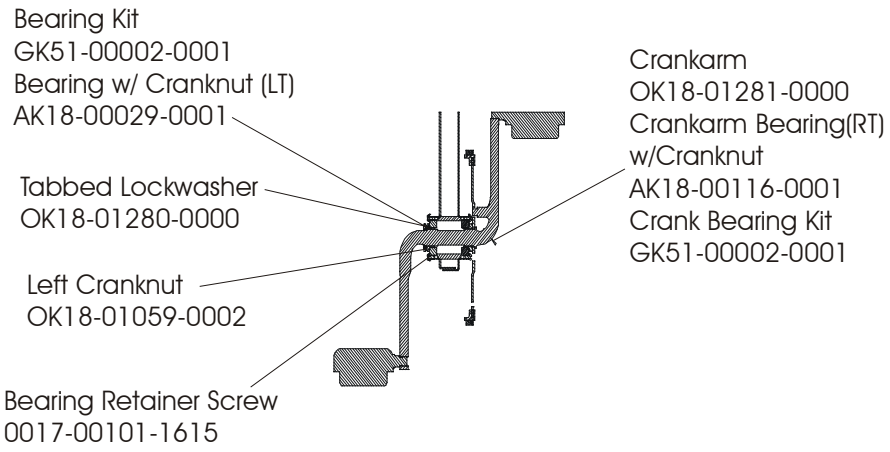


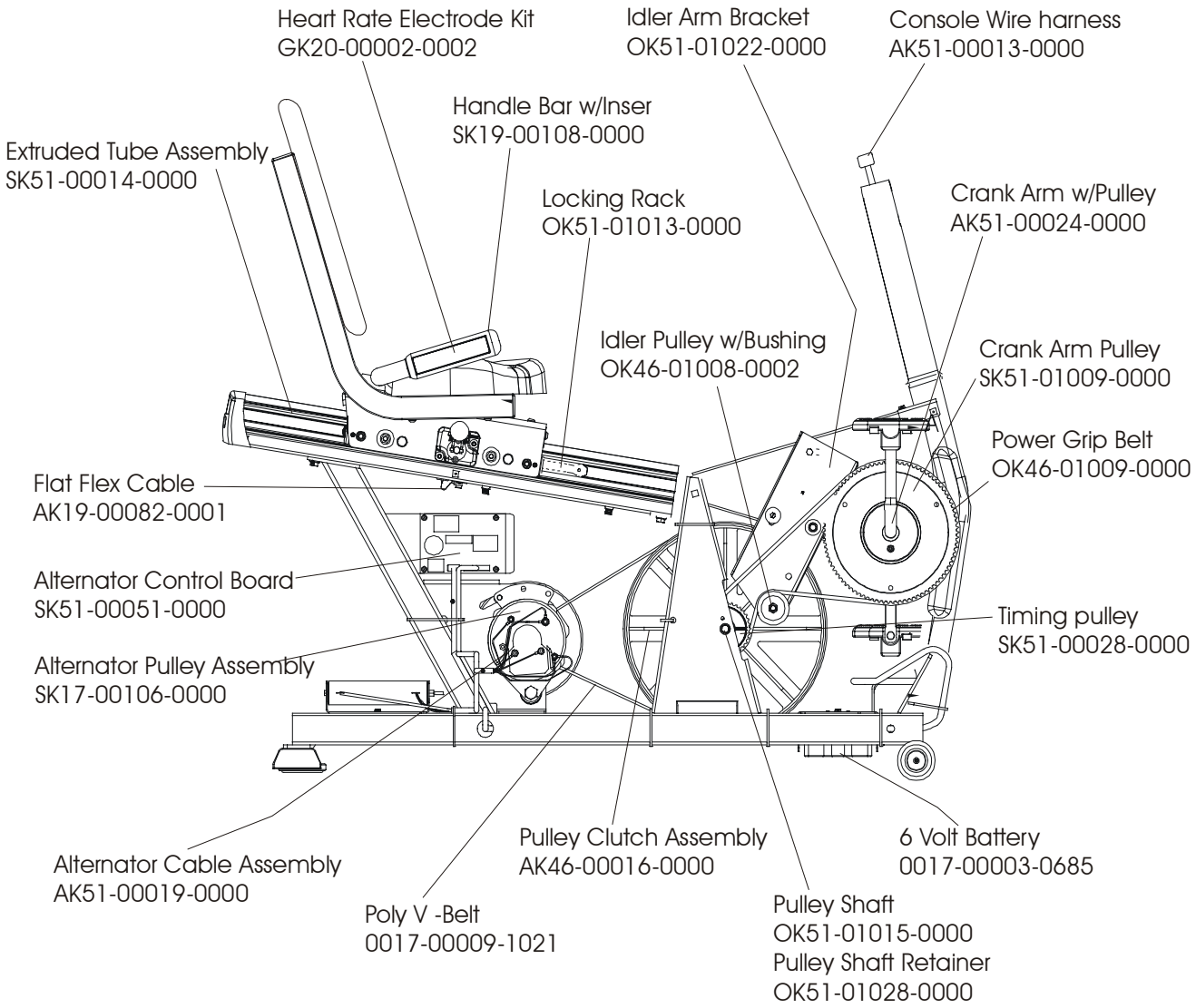


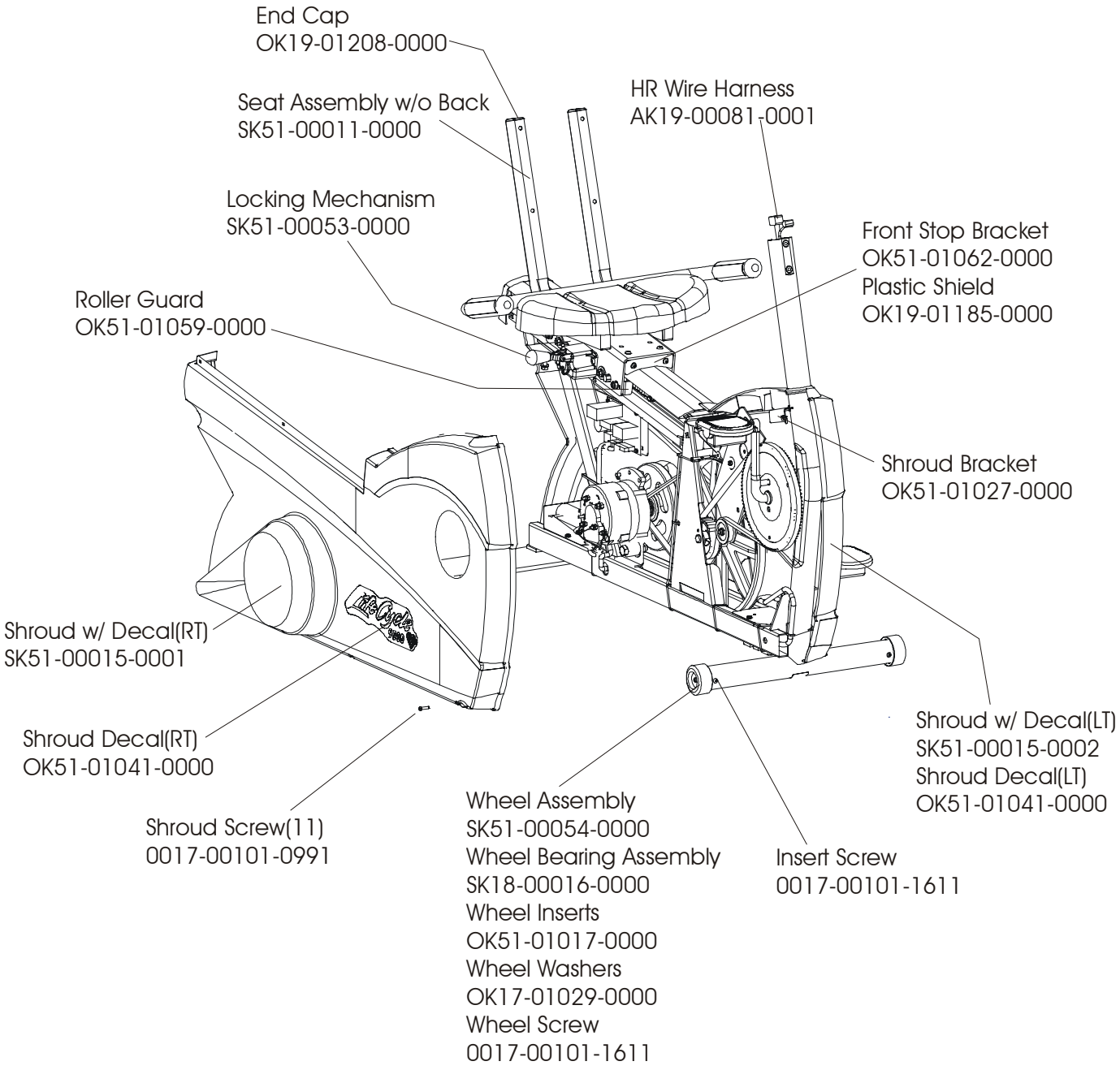
Section V











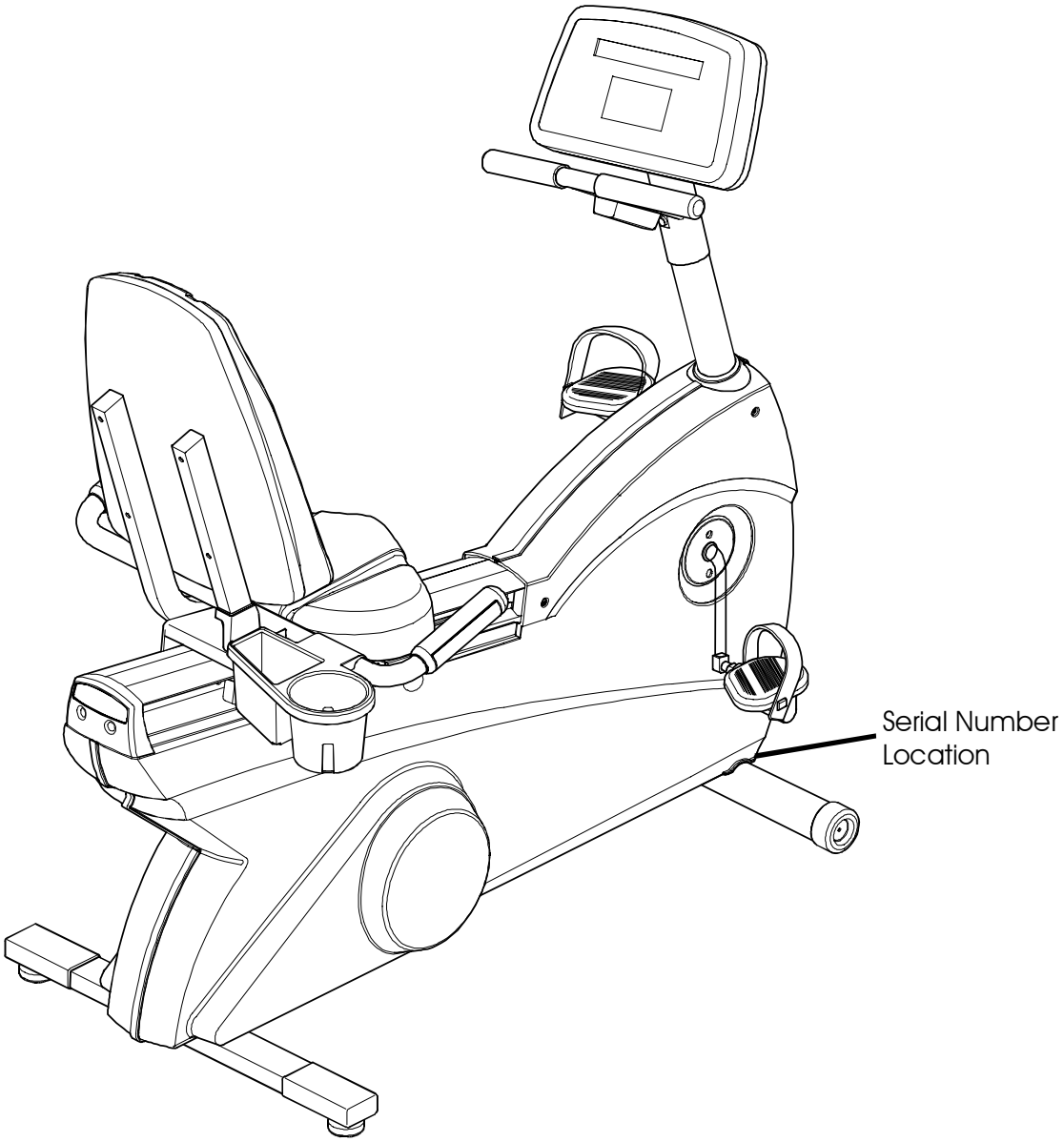
NOTES:

SECTION VI

MISCELLANEOUS INFORMATION

Lifecycle 9500HR / 9100 Series Recumbent Exercise Bikes

MODEL IDENTIFICATION and SERIAL NUMBER LOCATION

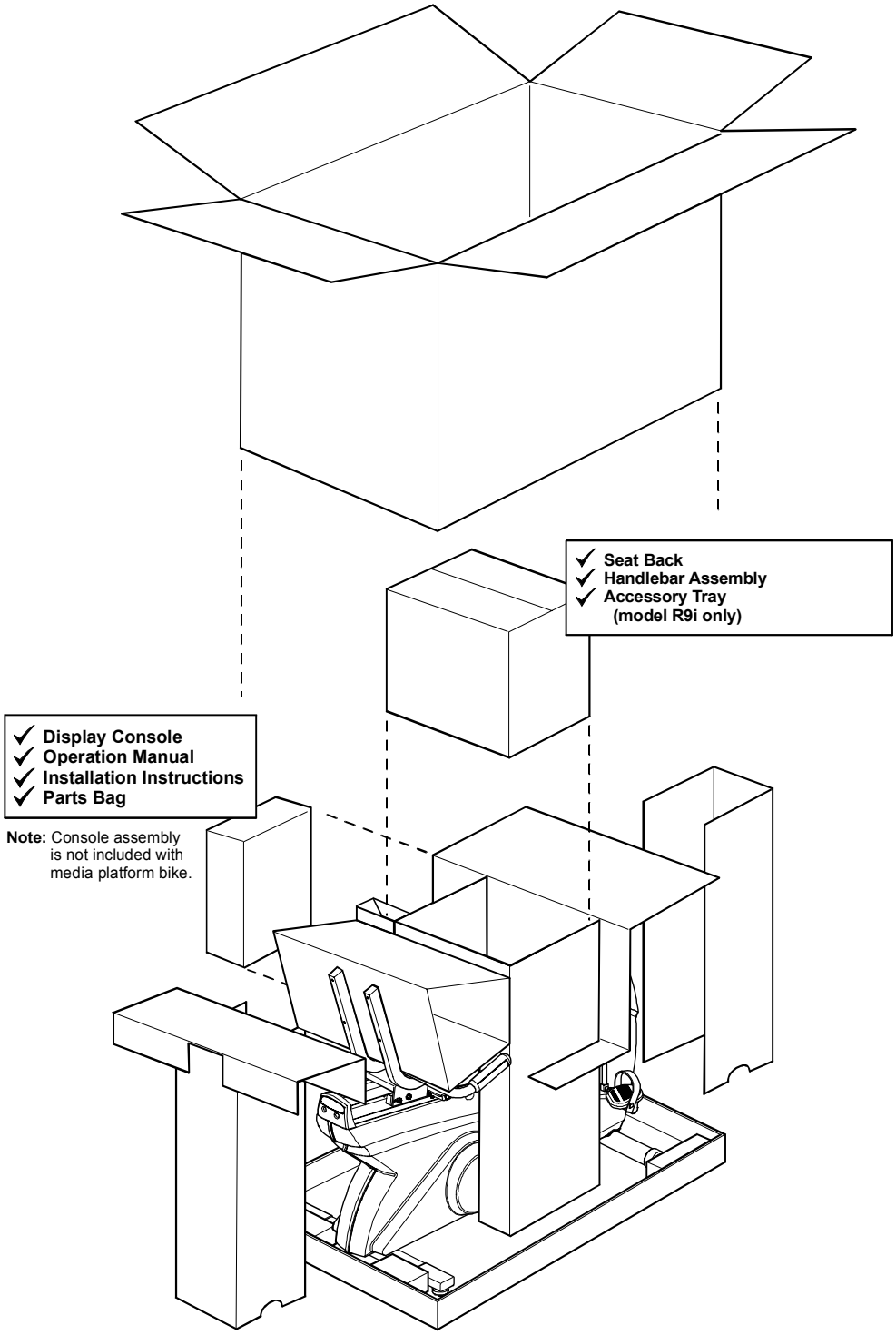


PREVENTIVE MAINTENANCE TIPS

Preventive Maintenance Schedule

	DAILY	MONTHLY	BI-ANNUALLY
HOUSING			
Inside			Clean
Outside	Clean		
ALTERNATOR CONTROL			
Heatsink			Clean
Connectors			Inspect
Board			Inspect
Belt (Power Grip)		Inspect	
Crank Bearings			Inspect
Pedals		Clean/Inspect	
Freewheel Pulley			Clean/Inspect
Alternator Flywheel			Clean/Inspect
Locking Mechanism		Inspect	
SEAT ASSEMBLY			
Top Surface	Clean		
Rollers		Inspect	
ALTERNATOR BELT			
Tension			Inspect
Wear			Inspect
Lifepulse sensors	Clean		

IMPORTANT
SAVE YOUR PACKING MATERIALS IN CASE OF RETURN



COMMUNICATING BY FAX

If you would like to submit a parts order, or if you need help troubleshooting a problem, we have included, for your convenience, a FAX form on the following page. Simply make a copy (or copies) of the FAX sheet and fill in the necessary information. You may FAX us at any time, 24 hours a day, to either of the numbers shown. A Life Fitness service representative will process your order, or respond to your problem, as quickly as possible.

LifeFax

CUSTOMER SUPPORT SERVICES

☐ **PARTS ORDER** *(IF BOTH PLEASE INDICATE)* ☐ **SALE**

☐ **PRODUCT TROUBLESHOOTING** ☐ **WARRANTY**

NAME:	CUSTOMER NO:	DATE:
PHONE:	FAX:	CONTACT NAME:

METHOD OF SHIPMENT: ☐ **1 DAY** ☐ **2 DAY** ☐ **GROUND**

PARTS ORDER FORM

ITEM NO.	PART NUMBER	DESCRIPTION	QUANTITY
1			
2			
3			
4			
5			
6			

PRODUCT TROUBLESHOOTING

PRODUCT NAME:	SERIAL NO.
DETAILED DESCRIPTION OF PROBLEM:	
PRODUCT NAME:	SERIAL NO.
DETAILED DESCRIPTION OF PROBLEM:	

TIME RECEIVED:	TIME COMPLETED:	TECHNICIAN NAME:

LifeFitness

CUSTOMER SUPPORT SERVICES
10601 W. Belmont Ave., Franklin Park IL 60131 PHONE (800) 351-3737 Toll Free or (708) 451-0036
FAX (800) 216-8893 Toll-Free or (708) 288-3702

NOTES: