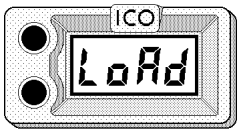
PRO 3



Patented

Rider's Manual

Contents

Operating Instructions

You will find the PRO 3 extremely easy to use. But you must first become familiar with it's operation. There are 3 methods you can use:

1. Pop in the batteries and start pushing buttons.

2. Ask a friend who already has one.

3. Step through this manual, page by page.

Method #1 will work, but it will be frustrating and takes a long time.

The problem with method #2 is your friend may have used method #1.

The 3rd method is by far the quickest and most thorough to learn the many ways the PRO 3 will help you win Enduros.

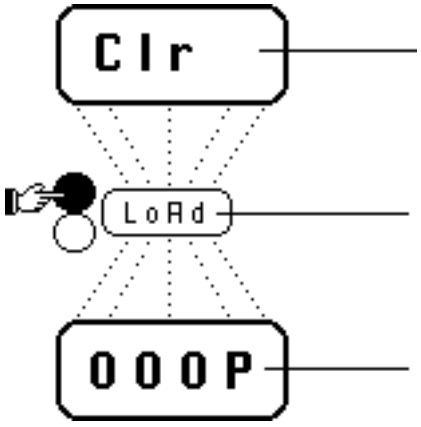
After you have completed the manual, experiment on your own. Don't be afraid of damaging the PRO 3 by trying unusual combinations; it cannot be harmed.

If you get lost and can't figure out where you are, do the "RESET" procedure on page 6 for a fresh start.

Illustrations

Before we install the batteries, let's take a look at the illustrations used throughout this manual.

Readouts



The readout currently on the display

The readout while the button(s) are being pressed

The readout after releasing the button(s)

Switching

This graphic represents BUMPING a button (Press, then release)

Bump top button

Bump bottom button

Bump both buttons simultaneously

The black graphic represents HOLDING a button

Hold top button

Hold bottom button

Hold both buttons simultaneously

Messages

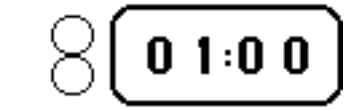
The PRO 3 will display messages at appropriate times to assist you in it's operation.

Some of these messages occur while one or both of the buttons are being HELD. If you continue to hold for 3 seconds, the action described by the message will take place.

The memory is CLEAR of any program.

HOLD top button to LOAD a program.

HOLD bottom button to END programming.



READY. The 01:00 shows a 1 minute START COUNTDOWN has been entered.

HOLD bottom button to CHEC contents of program.

Forgot something?
HOLD top button to ADD data to program.

You are at the END of CHEC.

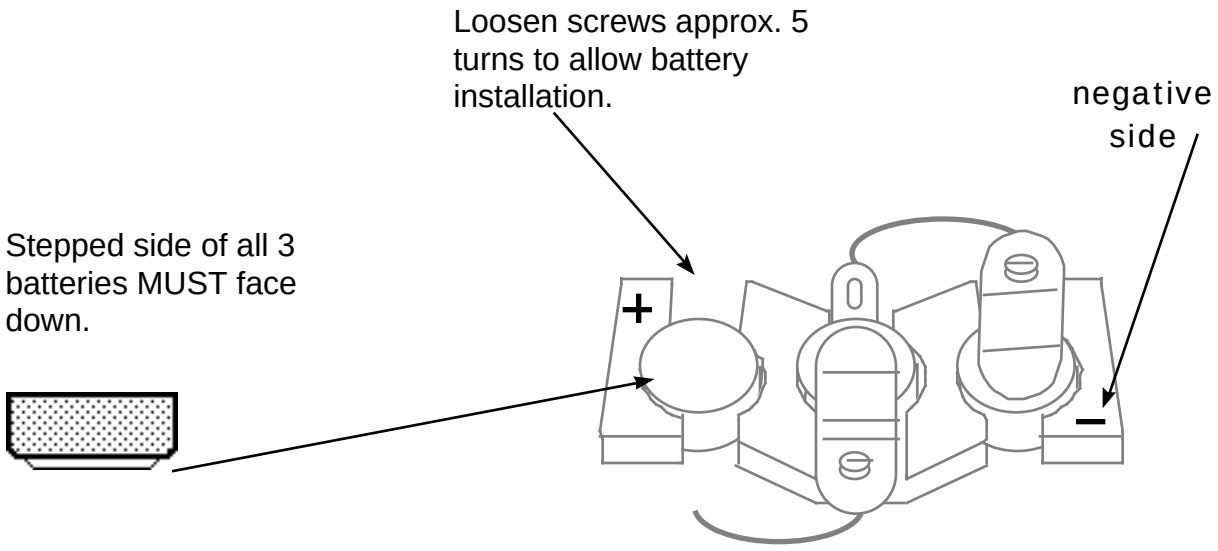
Once the PRO 3 is running, you STOP it by HOLDING both buttons.

You CLEAR the program from memory by HOLDING both buttons while in CHEC.

Let's turn to the next page and install the batteries.

Battery Installation

A new chip has recently become available which ensures clean power up. Shorting is no longer necessary, but not harmful to the instrument.

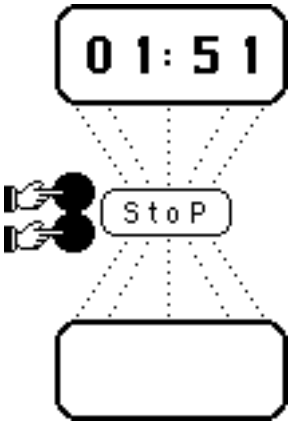


- Use 357 SILVER OXIDE Watch/Calculator batteries.
- Coat the ends of the batteries lightly with Vaseline.
- Silver Oxides should provide approx. 180 hours of ON time.
- It is best to replace the batteries every 10 to 15 events.

DO NOT use LOCTITE®, Silicone Seal, or Contact Cleaner on any part of your instrument.

Stop

Any time the PRO 3 is RUNNING or is at READY, you can STOP it by HOLDING both buttons until the display blanks.



The PRO 3 is RUNNING as a clock.

Hold both buttons until the display blanks.

OFF.

While the PRO 3 is OFF, there is very little drain on the batteries. They may remain installed between races.

The majority of drain occurs while in RUN or READY.

Programming

The method used to enter data into the PRO 3 is to adjust the readout on the display, one digit at a time, until the entire readout is the correct number. At that time you enter the entire number and begin to adjust the readout for the next number.

In general, the TOP button is used to CHANGE the readout.

The BOTTOM button is used to ENTER and to SELECT.

This will become clear as you begin to program, so let's step through a typical race.

Typical Race

We begin with a 1 minute START COUNTDOWN.
The first section of the race is 34.8 miles, run at 18 mph. The next 20.0 miles is run at 24 mph, followed by 5 minutes of FREE TIME. The last section is run at 20 mph, with an unknown FINISH. On paper, the run looks like this:

001P (START COUNTDOWN)
18 - 34.8
24 - 54.8
005P (PAUSE)
20 - END

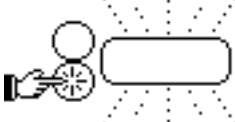
The best method to LOAD this information would be to first jot down the information on a sheet of paper as we have done above.

Note that mileage is entered as a TOTAL distance from the START, and NOT section by section.

The START COUNTDOWN allows you to start the PRO 3 before your row is due to leave. When the COUNTDOWN reaches zero, the PRO 3 will automatically begin to run at the 1st SPEED average in your program.

Start Countdown

OFF. Let's LOAD the example race.

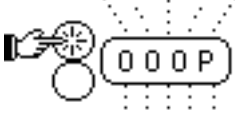


Bump bottom button.

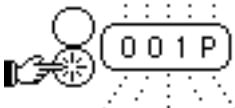
CLEAR. No program is in memory.

Hold top button until 000P is displayed.

The first readout is the START COUNTDOWN. The far right 0 is flashing to signify it is the "active" digit. The first step is to adjust this digit to read 1.

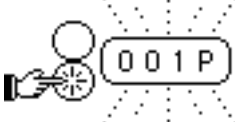


Bump top button once to increment to 1. If you go past 1, keep bumping until it comes around again.



Bump bottom button to enter the 1.

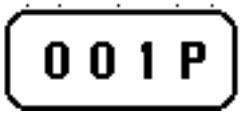
The 1 has been entered and we now move to the next digit.



Since 0 is the correct number, just bump bottom button to enter o.

The far left digit is now flashing.

Since 0 is the correct number, just bump bottom button to enter 0.



The readout is now frozen.

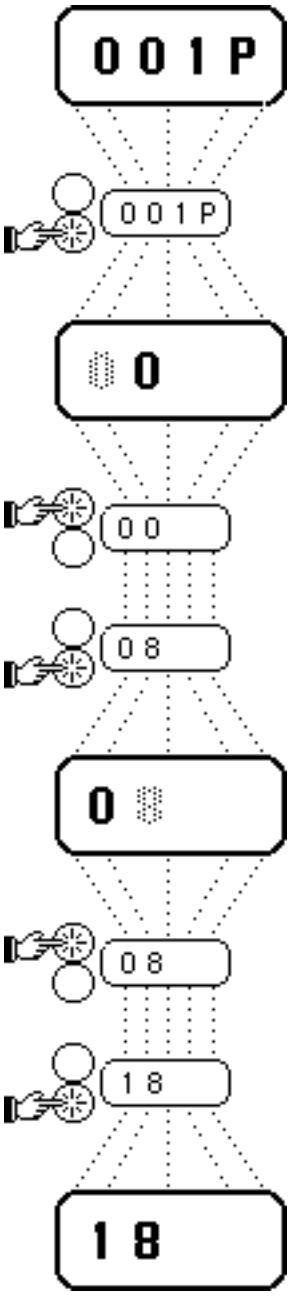
1st Speed Entry

Upon entry of the far left digit, the readout freezes.

If the readout is CORRECT, bump the bottom button to ENTER the entire number.

If it is INCORRECT, bump the top button to ERASE that number. You may then enter the correct number.

This technique is used each time you enter an entire number.



A 1 minute START COUNTDOWN is the correct value.

Bump bottom button to enter 001P.

Now we will enter 18 as the 1st SPEED average.

Bump top button until 8 is displayed.

Bump bottom button to enter 8.

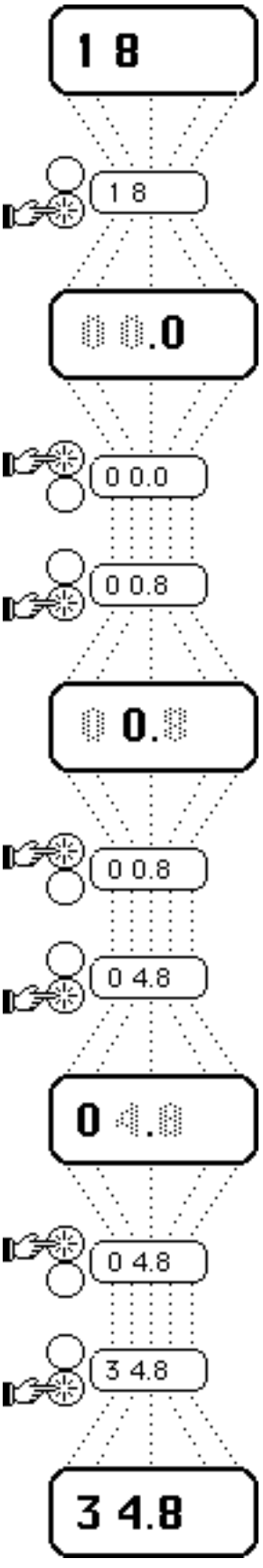
The far left digit is now flashing.

Bump top button once to increment to 1.

Bump bottom button to enter 1.

The readout is now frozen.

1st Mileage Entry



18 is correct as the first SPEED average.

Bump bottom button to enter 18.

We will now enter 34.8 as the 1st MILEAGE point.

Bump top button until 8 is displayed.

Bump bottom button to enter 8.

The next digit is now flashing.

Bump top button until 4 is displayed.

Bump bottom button to enter 4.

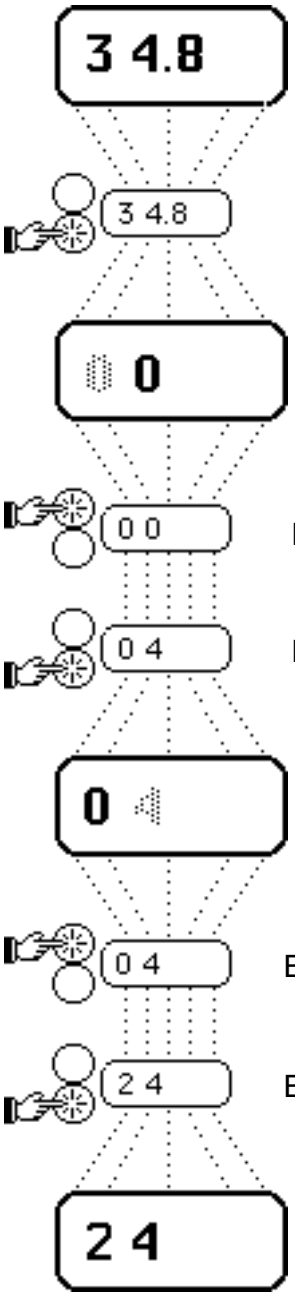
The far left digit is now flashing.

Bump top button until 3 is displayed.

Bump bottom button to enter 3.

The readout is now frozen.

2nd Speed Entry



34.8 is correct as the 1st MILEAGE point.

Bump bottom button to enter 34.8

We will now enter 24 as the
2nd SPEED average.

Bump top button until 4 is displayed.

Bump bottom button to enter 4.

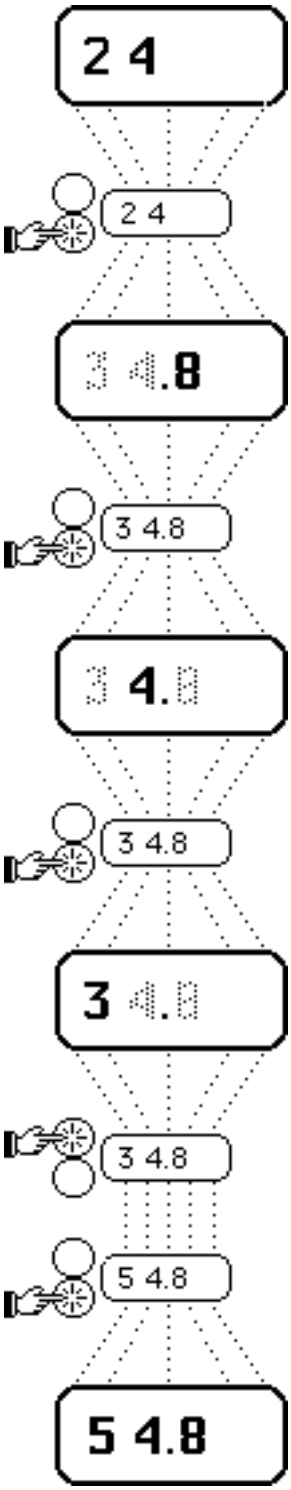
The far left digit is now flashing.

Bump top button until 2 is displayed.

Bump bottom button to enter 2.

The readout is now frozen.

2nd Mileage Entry



24 is correct as the 2nd SPEED average.

Bump bottom button to enter 24.

The previously entered MILEAGE is displayed
as a reference to your position in the program.
We will now enter 54.8 as the 2nd MILEAGE point.

Since 8 is the correct value,
just bump the bottom button to enter 8.

The next digit is now flashing.

Since 4 is the correct value
just bump the bottom button to enter 4.

The far left digit is now flashing.

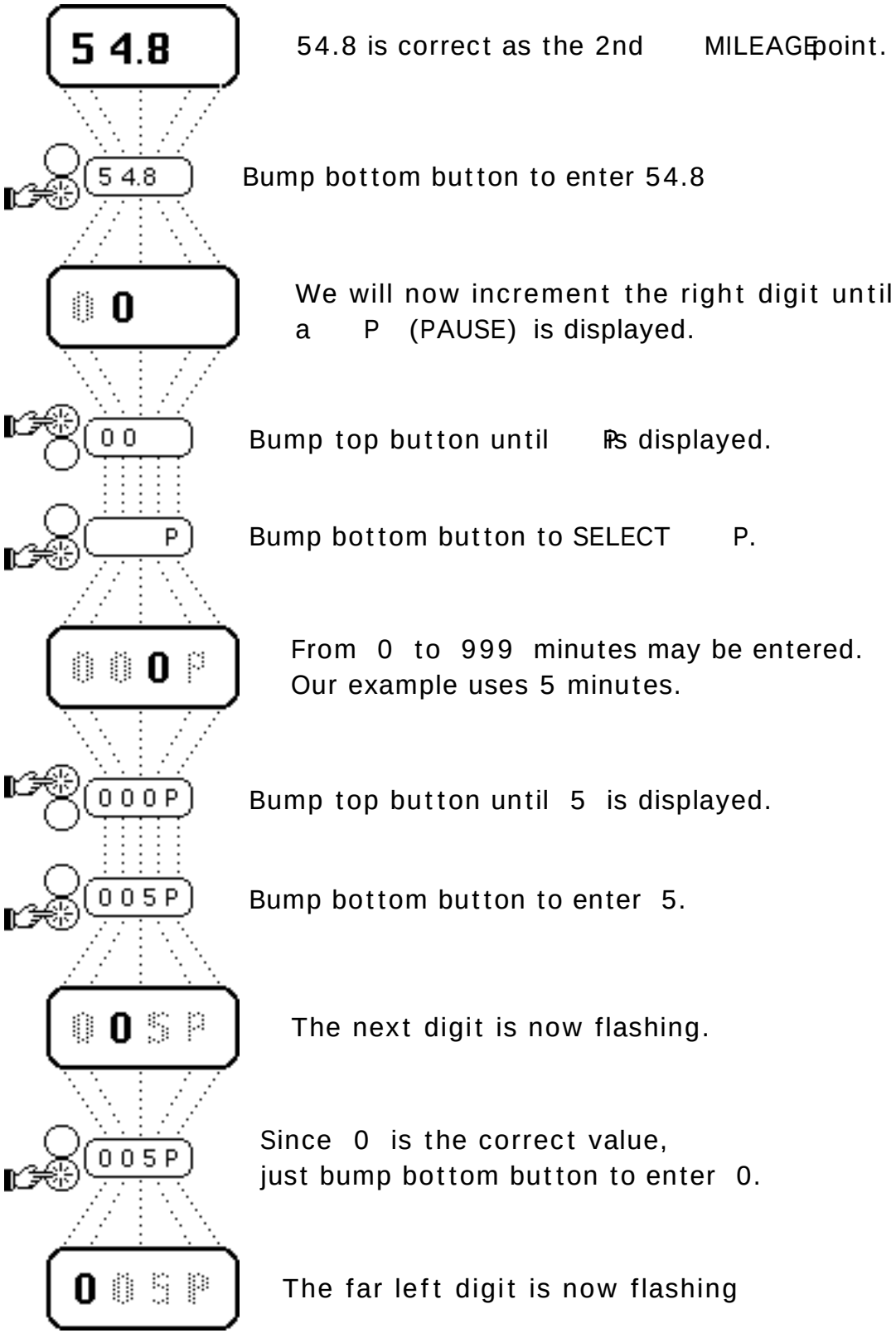
Bump top button until 5 is displayed.

Bump bottom button to enter 5.

The readout is now frozen.

Entering a Pause

FREE TIME is entered using the PAUSE function.
Our example has 5 minutes of FREE TIME.



54.8 is correct as the 2nd MILEAGE point.

Bump bottom button to enter 54.8

We will now increment the right digit until a P (PAUSE) is displayed.

Bump top button until P is displayed.

Bump bottom button to SELECT P.

From 0 to 999 minutes may be entered.
Our example uses 5 minutes.

Bump top button until 5 is displayed.

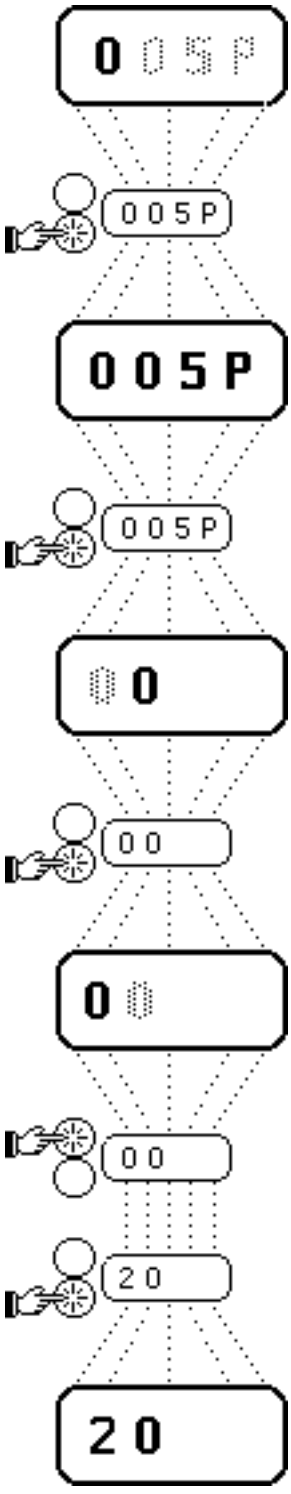
Bump bottom button to enter 5.

The next digit is now flashing.

Since 0 is the correct value,
just bump bottom button to enter 0.

The far left digit is now flashing

3rd Speed Entry



The far left digit is still flashing.

Since 0 is the correct value,
just bump bottom button to enter 0.

The readout is now frozen.

Bump bottom button to enter 005P.

We will now enter 20 as the
3rd SPEED average.

Since 0 is the correct value,
just bump bottom button to enter 0.

The left digit is now flashing.

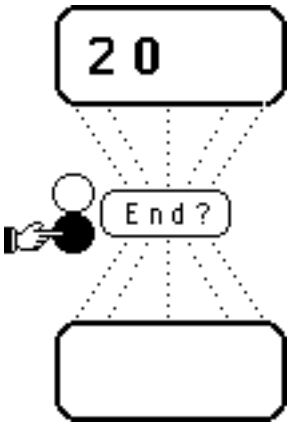
Bump top button until 2 is displayed.

Bump bottom button to enter 2.

The readout is now frozen.

End Programming

We will now END programming with the last SPEED average, since the distance to the FINISH is unknown.



The readout is still frozen.

HOLD the bottom button until the display BLANKS. This will enter 20 and END programming.

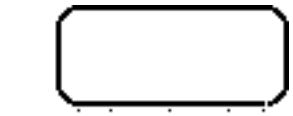
OFF, with your program in memory.

Congratulations, your first program has been entered into the PRO 3.

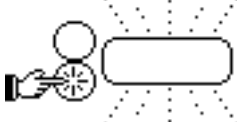
On the next page, we will CHEC the program to make sure everything is OK. You may do this as many times as you wish, but be careful - if you release the button too soon while selectinn CHEC, the PRO 3 will begin to RUN.

If this happens, simply HOLD both buttons to STOP.

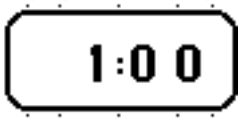
C h E c Program



OFF.



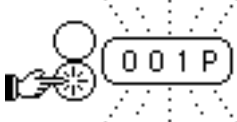
Bump the bottom button to go to READY.



READY. The 1:00 represents the 1 minute START COUNTDOWN.

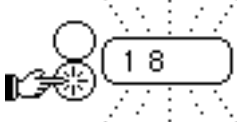
HOLD the bottom button until 001P is displayed. If you release too soon, the PRO 3 will RUN.

The START COUNTDOWN is the 1st number shown.

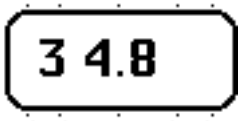


Bump bottom button to view the next number.

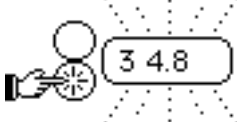
18 is the 1st SPEED average.



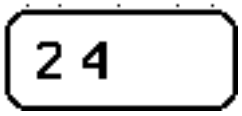
Bump bottom button to view the next number.



34.8 is the 1st MILEAGE point.



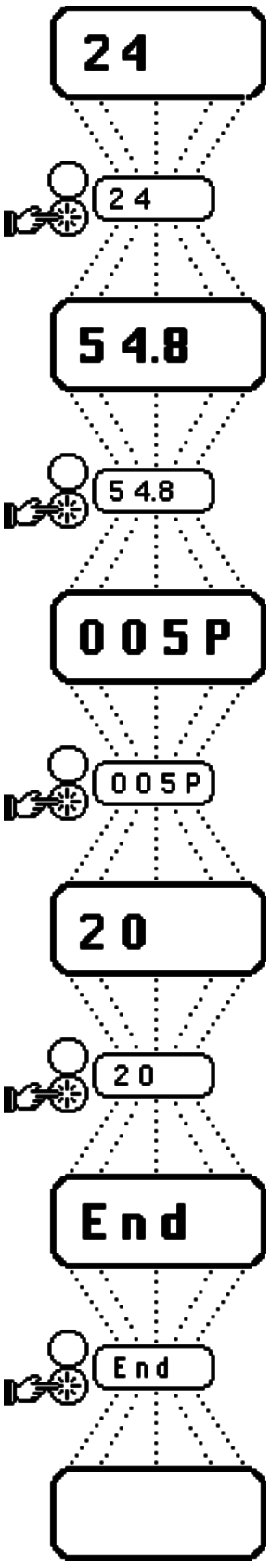
Bump bottom button to view the next number.



24 is the 2nd SPEED average.

C h E c Program

(Continued)



24 is still being displayed.

Bump bottom button to view next number.

54.8 is the 2nd MILEAGE point.

Bump bottom button to view next number.

5 minutes of FREE TIME. (PAUSE)

Bump bottom button to view next number.

20 is the 3rd SPEED average.

Bump bottom button to view next number.

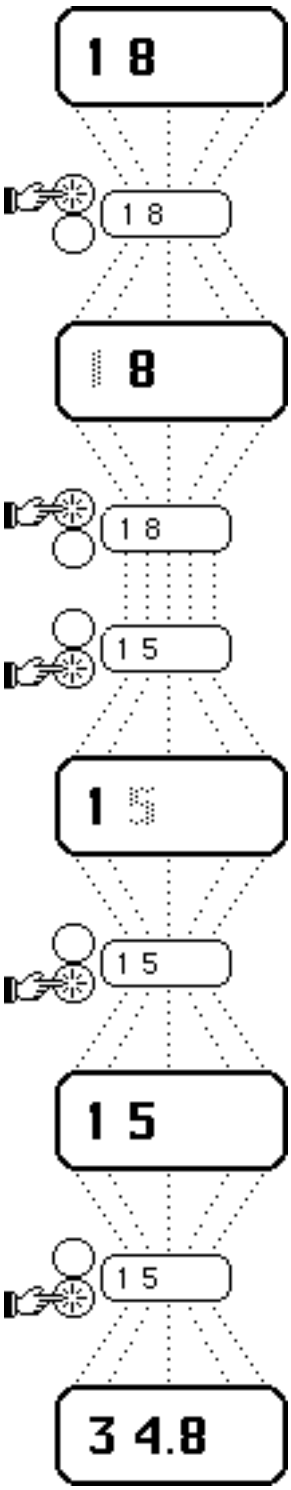
The END of your program.

Bump bottom button to shut OFF.

OFF, with the program still in memory.

Correcting Wrong Data

While stepping through CHEC, you may change a number while it is being displayed.
Once the number has been changed, you will be back in CHEC.



Go back into CHEC and step through until 18 is being displayed.

Bump top button to allow CHANGINGthe displayed number.

As an example, let's change 18 mph to 15 mph.

Bump top button until 5 is displayed.

Bump bottom button to enter 5.

The left digit is now flashing.

Since 1 is the correct value,
just bump bottom button to enter 1.

The readout is now frozen.

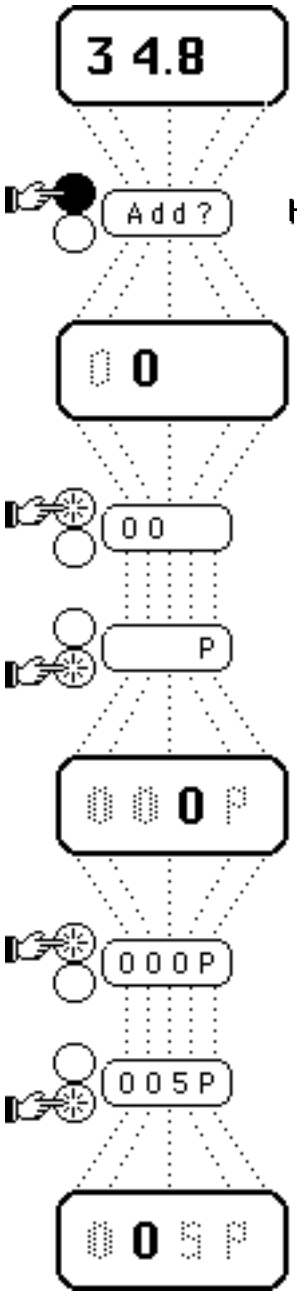
Bump bottom button to enter 15.

You are automatically returned to CHEC..
Continue to bump the bottom button to view remaining data.

Add

You may also ADD data to your program while you are stepping through CHEC. The only time you are not allowed to select ADD is while a SPEEDaverage is being displayed.

As an example, let's ADDa 5 minute PAUSEimmediately following the 34.8 MILEAGE point.



Go back into CHEC and step through until 34.8 is being displayed.

HOLD top button until 00 is displayed.

You are temporarily back in LOAD.
We will now select and enter a 5 minute PAUSE.

Bump top button until P is displayed.

Bump bottom button to SELECT P.

The far right 0 is flashing.

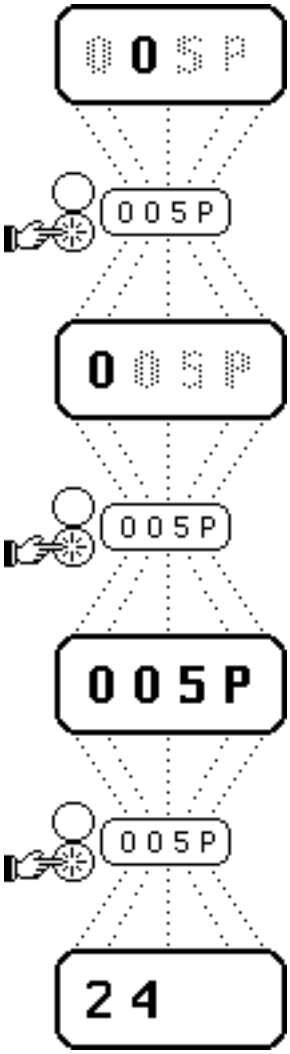
Bump top button until 5 is displayed.

Bump bottom button to enter 5.

The next digit is now flashing.

A d d

(Continued)



The 0 is still flashing.

Since 0 is the correct value,
just bump bottom button to enter 0.

The far left digit is now flashing.

Since 0 is the correct value,
just bump bottom button to enter 0.

The readout is now frozen.

Bump bottom button to enter 005P.

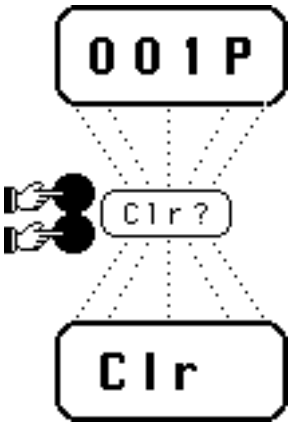
You are automatically returned to CHEC.
Continue to bump the bottom button to view
remaining data.

Step through CHEC and you'll see that the new PAUSE has been ADDED. ALWAYS make sure you have inserted the new data at the correct location in your program.

Clear

You can now appreciate how easy working with the PRO 3 will be.

Next we will CLEAR the memory. This must be done before a new program may be LOADED.



Go into CHEC and stop at any point you wish.

HOLD both buttons until the ? disappears.

You may bump bottom button for OFFor hold top button to LOAD a new program. For now, just shut the PRO 3 OFF.

The next 3 pages will discuss 4 additional functions you may select while programming. Either review them until they are understood, or LOADa sample program using these functions.

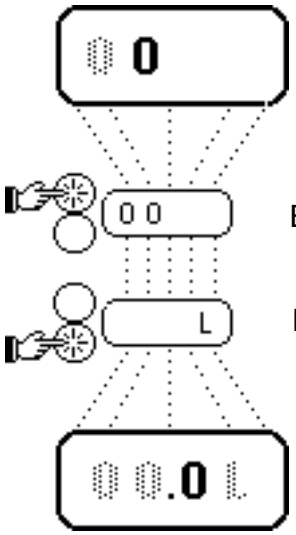
Leap

If a LEAP is entered, an INSTANT jump from one MILEAGE point to another MILEAGE point will occur while the PRO 3 is RUNNING. This is useful for 3 situations:

1. Races with 2nd loops that start at mile 00.0

2. SPEEDS higher than 99 mph
   LEAP to the MILEAGE at the end of the fast section. Then enter a PAUSE of the correct number of minutes needed to travel that section. Continue to enter the rest of the race.

3. Forgot to start PRO 3 at the line
   Blast to 2.9 miles on the course, then go into CHEC. ADD a LEAP to the next POSSIBLE (ie: 3.2 miles @ 24 mph) to the beginning of your program, then start on the correct minute minus any START COUNTDOWN.



You are at the point in your program where you wish to enter a LEAP.

Bump top button until L is displayed.

Bump bottom button to select L.

Enter the correct value using the same technique we used for MILEAGE entry.

- DO NOT use the LEAP function to enter MILEAGE RESETS.
- Resets are independent of all computer operation and are accomplished by resetting your ODOMETER.

Auto Shutdown

The PRO 3 can be set to shut itself off at the end of a race.

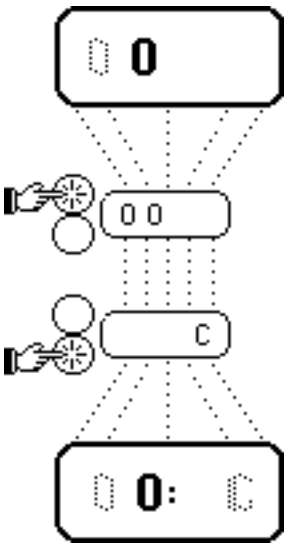
Simply END programming with the MILEAGE point at the FINISH. The PRO 3 will run until 61 minutes beyond the FINISH, then shut OFF.

END on a SPEED to keep RUNNING.

END on a MILEAGE for AUTO SHUTDOWN.

Clock Offset

The PRO 3 INTERNAL CLOCK begins at 00:00 when your row leaves the start, but KEY TIME at some races may not be on a whole hour. Use the CLOCK OFFSET function while programming to change the starting time of the INTERNAL CLOCK. Our example will be 8:15 KEY TIME.



You have just entered the START COUNTDOWN and 00 is now displayed.

Bump top button until C is displayed.

Bump bottom button to select C.

Enter 15: C using the standard technique.

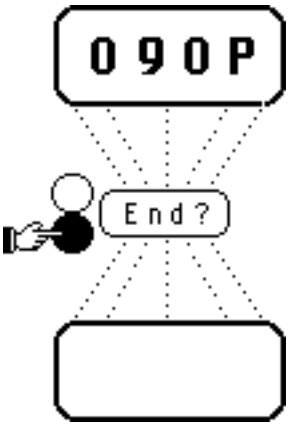
CLOCK OFFSET is independent of the START COUNTDOWN.

Checkpoint Clock

The PRO 3 has a special function which simplifies it's use as a checkpoint clock for putting on races. Simply compute how many minutes into the race the check will be located, then add the number of minutes prior to KEY TIME you plan to start the check clocks. An example:

1st check 12.0 miles out @ 24 mph = 30 minutes
Clocks will start 1 hour before KEY TIME = 60 minutes
Total = 90 minutes

The CHECKPOINT CLOCK function is selected by making a START COUNTDOWN your ONLY entry in a program.



Go into LOAD and adjust the display for a 90 minute START COUNTDOWN.

HOLD bottom button to enter 090P and to END programming.

OFF, with a 90 minute START COUNTDOWN the ONLY entry.

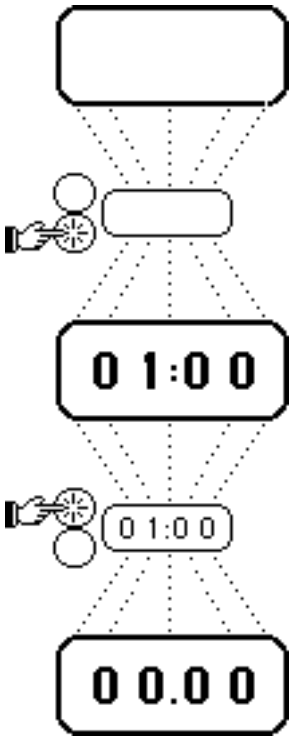
For this example, start the P exactly 1 hour before KEY TIME. It will begin a 90 minute COUNTDOWN. The readout flashes until it reaches 00:00, then changes to a steady readout of minutes and seconds. The minutes will roll over at 99, not 59, to make scoring the later riders much easier.

An additional feature is that pressing either of the 2 buttons has no effect on operation, reducing the chances of the check crew messing something up.

Starting

It's now race day, and your program has a 1 minute START COUNTDOWN.

You may start the PRO 3 to begin a COUNTDOWN to the time your row should leave, or remove the START COUNTDOWN for an INSTANT start.



OFF.

Bump bottom button for READY.

READY with a 1 minute START COUNTDOWN. If you bump the bottom button, the PRO 3 will begin the COUNTDOWN.

Bump top button to remove the COUNTDOWN.

READY, but the START COUNTDOWN has been removed. Bump the bottom button for an INSTANT start.

This is useful if you forget to start when the row ahead of you leaves. Just switch to INSTANT start.

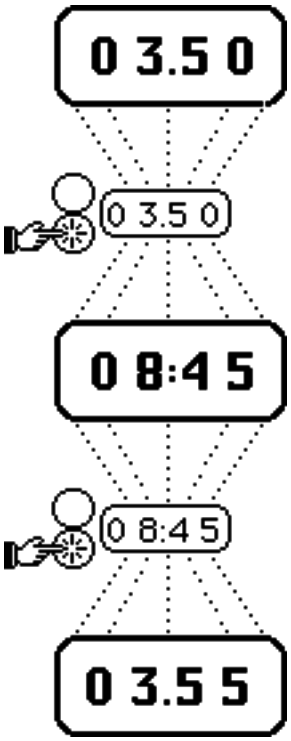
You may also switch back to the START COUNTDOWN.

Try it.

Running

Hopefully, you have bumped the bottom button at the proper time and are now on your way. Several options are available while the PRO 3 is running.

Clock Readout



MILEAGE readout.

Bump bottom button for CLOCK readout.

The minutes and seconds from the start.

Bump bottom button to return to the MILEAGE readout.

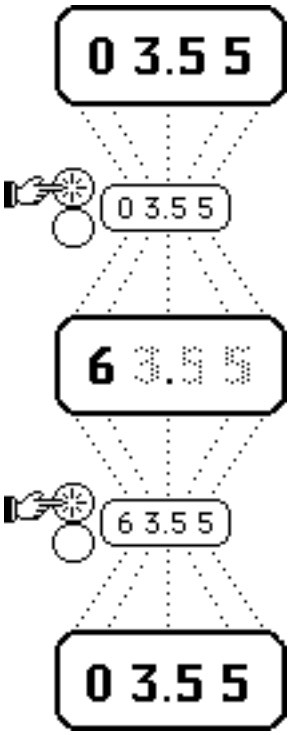
Back to MILEAGE readout. You may switch as many times as you wish.

The entire readout flashes while CLOCK is being displayed.

Possible Check Readout

This feature uses the far left digit of the readout to display the TENTH of a mile that the next POSSIBLE check will be located. The instant it reaches that distance, the digit will automatically jump to the next POSSIBLE location.

The PRO 3 has another feature to warn of an approaching possible. Each time the distance on the readout is within .15 miles of the next possible location, a COLON will begin to flash on the readout. It will continue to flash until it reaches that location, at which time it will go out. Since it always goes out exactly at the start of a minute, use this to determine when it's time to go into a SECRET CHECK.



MILEAGE readout.

Bump top button.

POSSIBLE CHECK readout. The far left digit is flashing the TENTH to the next POSSIBLE.

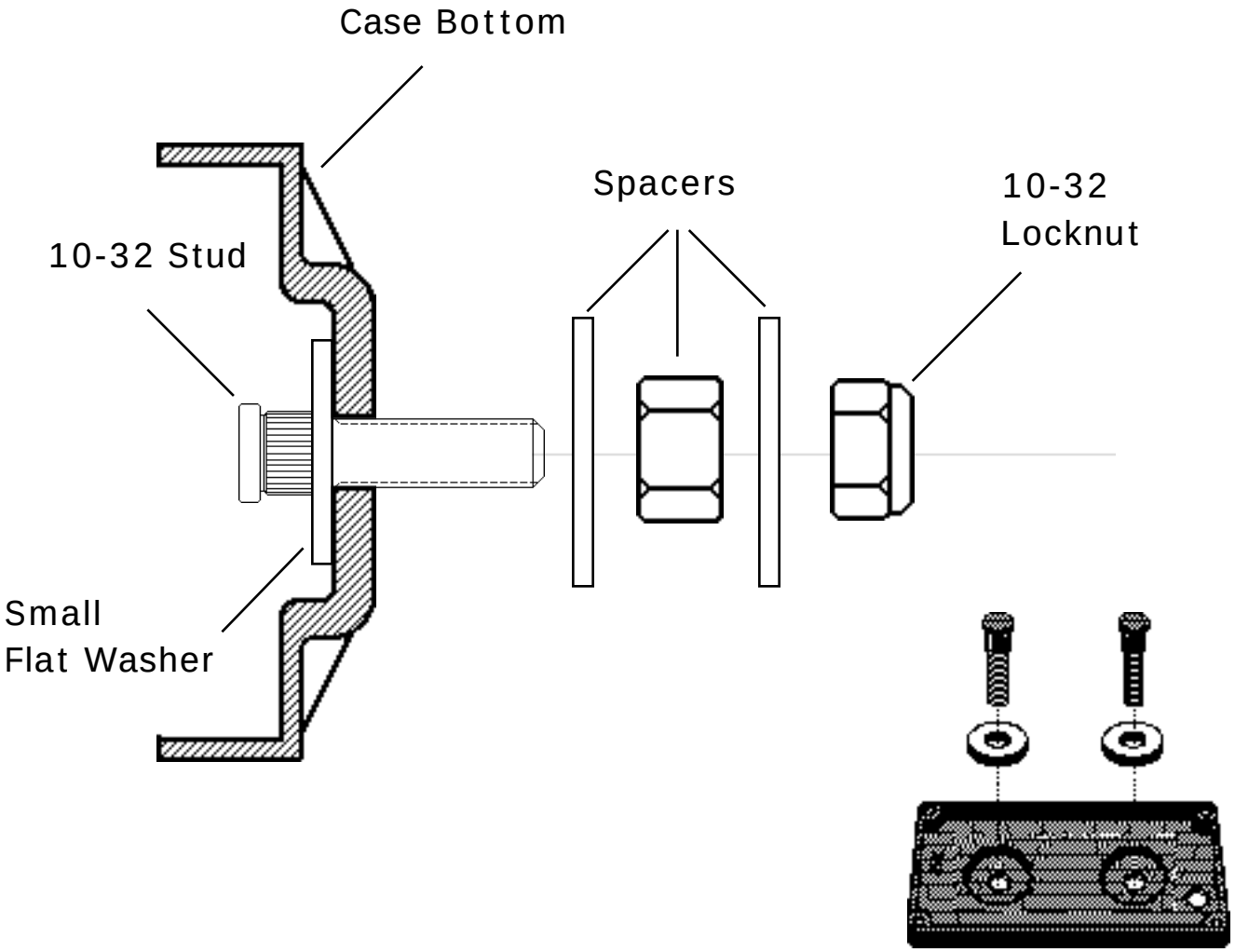
Bump top button to return to a MILEAGE readout.

You may switch back and forth as many times as you wish.

Since most races cannot have a check until 3 miles from the START, the digit will remain blank until the readout reaches 2.85 miles.

Installation

PULL the studs into case bottom with a 10-32 locknut. Use oversized nut (6mm or 1/4-20) and washers as spacers.



- CAUTION: After installation on the handlebars, check that the brake line does not snag the PRO 3 when the forks are fully extended.
- NO LOCTITE®

Attempt to route the THROTTLE cable as far from the PRO 3 as practical. The cable acts as an antenna, picking up interference from the ignition coil/spark plug area and transmitting it to whatever electronic timekeeping equipment happens to be near.

Advanced Notes

STRAIGHT 24 --- End program at 24mph, DO NOT end program at mileage 00.0.

RACES OVER 100 MILES LONG
Each time the mileage readout passes 99.99 while running, it jumps to 00.00 and continues to run at that same SPEED average until it encounters another SPEED change.

In the RARE situation where the race goes for more than 100 miles between 2 consecutive SPEED changes, you must enter a bogus SPEED change in order for the PRO 3 to run properly. Study the example below where you go from 20.0 miles to 130.0 miles without a SPEED change.

Changes at 30.0 miles	Changes at 130.00
18 - 20.0 (20.0)	18 - 20.0 (20.0)
24 - 30.0 (30.0)	24 - 40.0 (40.0) Bogus change
20 - END	24 - 30.0 (130.0)
	20 - END

Note: The bogus SPEED change has to be at a POSSIBLE check location.

FREE TIME
Each time the PR0 3 encounters a PAUSE while running, it automatically goes into a CLOCK COUNTDOWN. Use this to tell how much FREE TIME you have left. If you bump the bottom button, it will give you a frozen readout of the mileage where the FREE TIME is located.

NUMBER OF DATA ENTRIES
PAUSES and LEAPS take up 1/3 less memory than SPEED changes, so the more of them you have in a program the more TOTAL data entries can fit in memory.

SPEED changes	PAUSES/LEAPS	TOTAL Entries
47	0	47
36	16	52
24	34	58
12	52	64
0	70	70

RESTARTS (2nd LOOPS)
Some times the END of the 1st loop is posted in minutes, not mileage. Use the chart at the back of this manual to convert minutes to mileage.

ICO Enduro Instruments - RIDER TROUBLESHOOTING

TEST STEP	RESULT	ACTION TO TAKE
1 - POWER AVAILABLE CHECK ● Remove case back ● View battery holder with two battery clip screws up, one screw down. ● Use voltmeter to check voltage from lower right (terminal) to upper left (clip).	4.2 to 4.8 volts ▶ Low or 0 volts ▶	Go to STEP #5 RESET PROCEDURE Go to next step
2 - BATTERY CHECK ● Remove batteries and check individually with voltmeter.	1.4 to 1.6 volts ▶ Low or 0 volts ▶	Go to next step Replace all 3 batteries Go to next step
3 - BATTERY CONTACT CHECK ● Check for dirty or corroded battery contacts; clean as needed with eraser. PREVENTION: Coat batteries with Vaseline at installation	▶	Go to next step
4 - BATTERY CLIP TENSION CHECK ● With batteries removed, tIghten battery clip screws. ● Bend clips toward holder to increase holding tension. ● Loosen screws (5 turns) and install batteries. ● Repeat STEP #1 (POWER AVAILABLE CHECK)	4.2 to 4.8 volts ▶ Low or 0 volts ▶	Go to next step Return unit to ICO for repair
5 - MICRO RESET PROCEDURE ● View battery holder with two battery clip screws up, one screw down. ● With batteries installed, use a short piece of wire or a bent paper clip to briefly short the lower right (terminal) to upper left (clip).	Display on ▶ Display still blank ▶	Unit is O.K. Return unit to ICO for repair

IF NO VOLTMETER IS AVAILABLE:

1. First try RESET PROCEDURE (STEP #5)
2. Check battery contacts and clip tension (STEPS 3 & 4); reinstall batteries; try RESET PROCEDURE again.
3. Replace batteries; try RESET PROCEDURE again.
4. Return unit to ICO for repair

If your ICO instrument passes these tests and still quits while riding, the problem may be due to interference from the ignition system. Check for the following and correct as needed:

1. Throttle cable routed too close to instrument.
2. Throttle cable routed too close to coil or sparkplug wire.
3. Plug wire rubbing frame.

Limited Warranty

ICO CORPORATION warrants to the original owner that this ICO PRO 3 is free of defects in materials or workmanship for a period of 1 year from the date of purchase. This warranty does not cover damage resulting from improper installation, accident, misuse, or abuse.

In case of difficulties

Many problems can be resolved WITHOUT returning the instrument to us. Please follow these steps to assure the fastest possible solution to your difficulties.

- 1st, refer to the TROUBLESHOOTING section of this manual
- If the problem cannot be identified using the manual, Technical Assistance is provided at the following number:

Technical Assistance (504) 882-3107

Repair info

If it is determined repair is required, return via

UPS 2nd DAY AIR (Blue Label)

Please include:

- A brief description of the problems you encountered
- The date you need your instrument back
- Your return address (P.O. Boxes are not acceptable)
- Daytime phone number
- Proof of purchase if no warranty card was sent in

Our full UPSaddress is:

ICO CORPORATION
Box 1050
29370 Dinkins Drive
Bayou Lacombe, Louisiana 70445