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**Brower Timing Systems**  
***BIB ID System DTS***  
**2002**

**User's Manual**

*Temporary manual - we will send  
completed manual out in booklet form  
shortly*

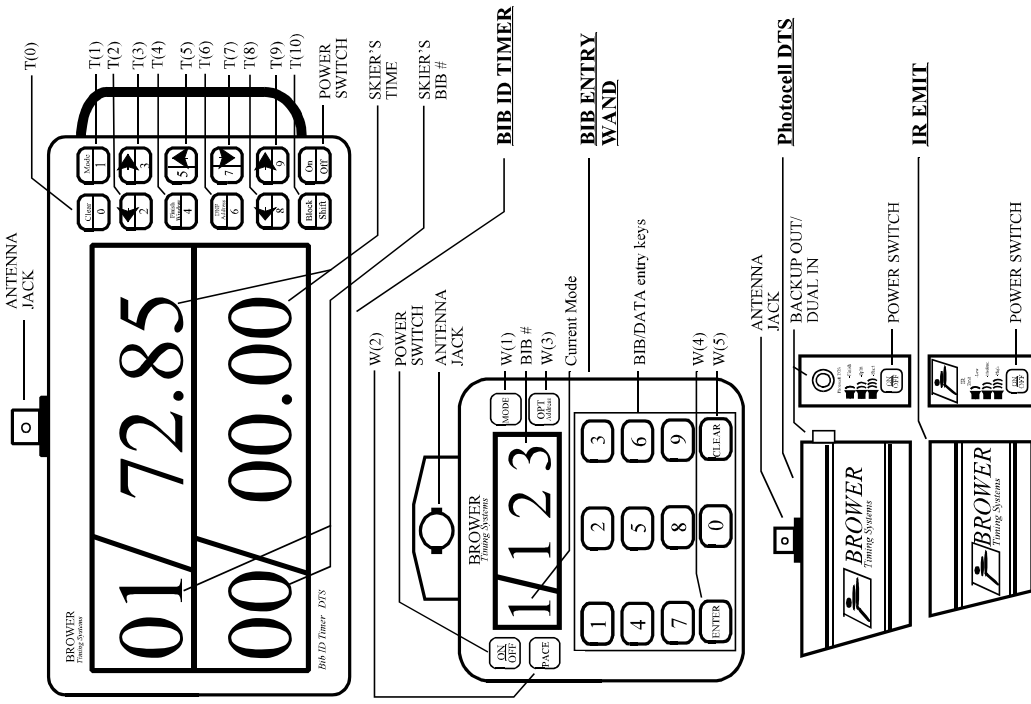
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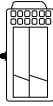
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## DESCRIPTION

### BIB ID TIMER



- T(0) - **CLEAR**: Used to clear the times saved in memory
  - Also used to exit a mode without changing settings
- T(1) - **MODE**: Used to change current Mode, location of the Window, Receiver Address, and Printer Modes
- T(2) - Split review - Memory review (Dual Lane)
- T(3) - Split review - Memory review (Dual Lane)
- T(4) - Enter Window Location - Manual finish (mode 2)
- T(5) - Used for Memory Scroll
  - Also used to change Address and Window Location
  - Modes 3 & 5: Used to DNF skier in upper line of display
- T(6) - DNF skier button in Modes 1 & 7 top line of display only
  - Extend Upper Limit of Window in Mode 2, after pressing T(1)
  - Also used to change the Receiver's Address, after pressing T(1)
- T(7) - Used for Memory Scroll
  - Also used to change Address and Window Location
  - Modes 3 & 5: Used to DNF skier in lower line of display
- T(8) - Split review - Memory review (Dual Lane)
- T(9) - Split review - Memory review (Dual Lane)
  - Enter printer mode
- T(10) - ENTER key, used as enter function for all modes
  - Block an incoming transmission



### BIB ENTRY WAND

- W(1) - **MODE**: Used to change the WAND'S current mode
  - Also used to change the WAND'S Transmission Address
- W(2) - **PACE**: Used to identify a skier as a Pacer in Mode 2
  - Also used to enter the Pacer Speed, Extent and adjust Mode
- W(3) - Mode 2: Used to enter Pacer Speed, Extent and adjust Mode
  - Also used to change the WAND'S Transmission Address
- W(4) - **ENTER**: Used to complete BIB entry Procedure
  - Also used to complete any mode changes
- W(5) - **CLEAR**: Used to erase any erroneous data entry
  - Also exits any mode entered accidentally

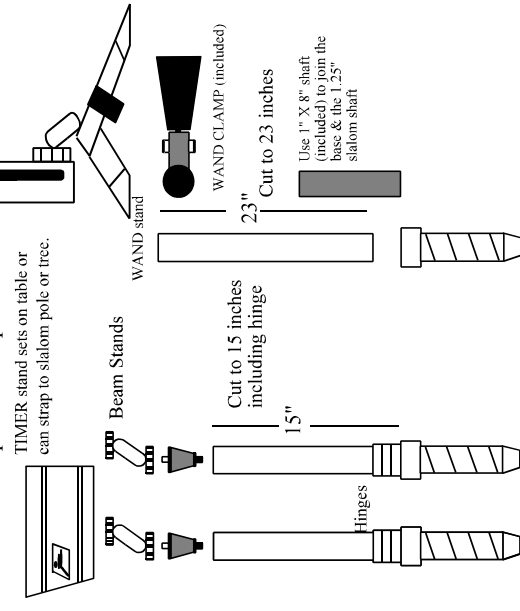
## Installation On The Hill

The BIB ID System comes with mounting fixtures for on-the-hill installation, however, the snowscrew bases and shafts are not included. The user can use bases that are compatible with their existing drills and wrenches.

Mount system according to drawing below:

TIMER stand sets on table or  
Can strap to slalom pole or

tree.



Instructions for building stands for the BIB ID System

- 1) Use slalom bases (new or used) that are compatible with your team's drills and wrenches
- 2) From one length of 1.25" diameter slalom pole, cut shaft to make 3 pieces as diagramed
- 3) Use hinges for Beam stands for added safety
- 4) For the WAND stand, use the 8" shaft to join the base and 23" shaft

- 5) Insert expansion lugs into the end of the slalom pole and tighten setscrew with Allen wrench counter clockwise

## How To Get Started

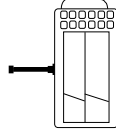
The best way to learn how to operate the BIB ID System is the hands-on method. Set the system up in your home or office (do not install antennas on the Wand, Photocell or TIMER) Be sure to set the timer 20 feet away from the Wand or Photocell. Start pushing buttons as you read the manual. Start at the front of the manual and work through each page.

Try Mode 7 first (because of its simplicity). Next try Modes 1 and 2. Try the “what if’s?” (What if a skier falls or false starts?) to see how the TIMER responds.

After you learn how to operate the system, the quick reference cards (color coded) will refresh your memory on the key strokes required for each mode. Install the card set you intend to use, one on the TIMER pouch.




As you learn how the system operates, try the 3 different modes. You will notice that Modes 1 and 2 are more complex than Mode 7. DNF’s and multiple skiers on the course account for this increased complexity.

## Component Overview



### **BIB ID TIMER**

#### **POWER ON/OFF:**

- To power up the TIMER, press approximately 4 seconds,  and hold for TIMER will beep to indicate power up. 
- To clear times stored in memory, press and hold For 5 seconds.
- To power down, press and hold  for approximately 4 seconds, TIMER will beep to indicate power down

#### **SELECT A MODE:**

## **CLEAR TIMER MEMORY:**

To clear TIMER memory



Press and hold until a long beep is heard

The Bib Id Timer can store up to 256 times with bib Number and splits. The timer's display will start flashing the last 6 times before memory is full. When full, timer will not accept new times. Clear memory at this point or sooner.

### **Display Resolution**

The TIMER displays only 1/100<sup>th</sup> of seconds but keeps time in 1/1000<sup>th</sup> of a second. To access 1/1000<sup>th</sup> of a second times, the printer must be used. When times are dumped to the printer or RS232 Interface they will be in 1/1000<sup>th</sup>.

The TIMER displays only two digits of a bib number, but stores three digits in any print mode. If your race requires three digits, the TIMER'S display will show the two least significant digits.



The TIMER displays only 99.99 seconds. When an event is longer, the display will start counting from zero again. The complete time is stored in memory and will print 100's of seconds to the printer.

### **Timer setup is complete**




## BIB ENTRY WAND



### POWER ON/OFF:

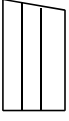
- To power up the WAND, press  and hold for approximately 4 seconds .  
The WAND will beep to indicate power up
- To power down, press and hold  for approximately 4 seconds  
WAND will beep, to indicate power down

### SELECT A MODE:

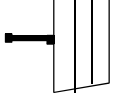
- Press  The current mode indicator will begin flashing
-  Enter valid Mode # 1, 2 or 7 (3, 5 & 8 are Dual Lane Modes)  
New mode will appear in the mode window
-  New mode is now entered

### **BIB ENTRY WAND setup complete**

## Photocell set



### **IR EMIT**






### **Photocell**

### POWER ON/OFF



Press and hold to select desired settings

On both the IR EMIT and the Photocell the Power on button acts as the power switch and the Mode selection switch. As you press and hold in the power switch you will hear the unit beep. If you keep holding the switch, it will beep twice and then three times. The chart below shows how many beeps are required for each setting..

IR EMIT power setting	Photocell mode
	Low 60 ft.
	Medium 110 ft.
	High 17ft ft.
	Finish
	Split
	Start

After powering up to proper settings, set up units on opposite sides of the ski course. When units are properly aligned the squeal from the Photocell will stop. Fine tune alignment with the IR EMIT.

### **Beam setup complete**

Dual Wand

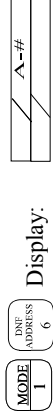
The DUAL WAND is set up like the BIB ENTRY WAND (page 3). To power on, hold arm open for 5 seconds. The unit will automatically power down after 2 hours of non use. The DUAL WAND will keep 6 seconds after the arm is opened. Battery life on the DUAL WAND is 1 year. Change at the first of each year.

The starting gate should look like this:

Changing System Address

The system address is a code in the RF transmission that must be matched when received by the TIMER. If two BIB ID Systems are in the same area, they will interfere with one another. Since the WAND will transmit up to 8 miles, interference is likely if two systems are on the same mountain.

**BIB ID TIMER**

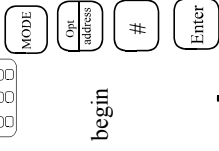


Increment Receiver Address  
Decrement Receiver Address

Press appropriate button until desired Address (1-9) is reached

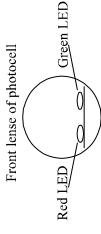
New Receiver Address is now entered

**BIB ENTRY WAND**



The current mode flashing  
Display:  
indicator will

New address is now entered



**PHOTOCELL**

Turn on Photocell and listen for constant buzzing

Press (click) on/off button 3 times

The buzzing will stop and the red LED will blink (X) number of times, X being the ADDRESS number. If address is 5, you will see 5 blinks. After the red LED is finished blinking, the green LED will come on for 4 seconds. When finished, the buzzer will resume and will be ready to line up with IR Emit. Changing Photocell

Dual Beam Set

The DUAL BEAM is set up the same as the Photocell. Connect the two eye's with the 36" cord. The finish line should look like this:

## Mode Selection & Training Tips

### Mode Selection

Try all three different modes of the BIB ID System to get a feel for which mode is best for you

#### Mode 7

- Easy to learn
- Good for a small group of skiers (1-5) on a shorter length course where it is convenient to have one skier on the course at a time
- No operators required to manage the system

#### Mode 1

- Good for large groups of skiers, 10 skiers on the course at time
- Skiers need very little instruction on what to do
- Operator must pay attention to timing by keeping track of DNF's

#### Mode 2

- Good ro groups of skiers with similar abilities
- Up to 10 skiers on the course at a time
- No operator required to time, but to set up mode requires experience
- Gives coach time to coach instead of time

### Training Tips

Assign a training number to all of your skiers for the entire year.

Choose a number system that will help you remember what number belongs to each skier. For example, in the United States, racers are ranked into age class J0-J6. J0 racers could use numbers 0-9 and J1 racers could use 10-19 and so on. If you know the skier's number, the TIMER will tell you in advance who is on the course.

Timing is most beneficial if the skier can see his time at the bottom of the course.

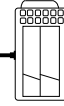
address When the green LED is lit (as described above), you can change address by clicking the on/off button (X) number of times. The red LED will then confirm your selection by blinking out that number. The green LED will come on again, do not press the on/off button at this point.



## Mode Instructions

### Mode 7 - Single Skier

For recreational races and training. Easy to use!



#### **BIB ID TIMER**

No TIMER operator required

False starts and DNF are handled automatically by sending the next skier  
For false starts, just re-enter the same bib number

Mount TIMER where the skiers can view times

#### Setup



Setup complete

After the 1<sup>st</sup> skier completes the course, the TIMER'S display will wait to show the 2<sup>nd</sup> skier's time until the 2<sup>nd</sup> skier skis through the finish. The TIMER will not show running times (unless the memory review buttons are used). This allows the skiers time to ski to the TIMER and look at times.

#### **Radio Signal Blocking** - manually controlled

To block an unwanted signal from triggering the

**TIMER**

Press and hold throughout the unwanted start or finish signals



**Memory**  
Back

Forward



#### Review

Previous skier's time will scroll into view

Th

e following skier's time will scroll into view



For "top/bottom of list" scroll, press and hold button for 3 seconds



MODE

7

Enter

#### **BIB Setup**

#### **ENTRY WAND**



Wait for beeps then go



## With Split Up to 5 splits

### Set up



Push and hold button until you hear 1 beep

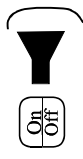
- IR EMITTER is now set to low power

- Point the front of the IR EMIT across the finish line



### Photocell

### Setup



Push and hold button until you hear 1 beep

- Photocell is now set to Finish

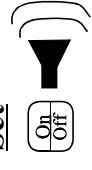
- Point the front of the Photocell across the finish line toward IR EMIT. When the unit is properly aligned the Photocell will stop squealing

**Caution!**  
If a new skier starts before the previous skier has finished, the previous skier's time will be canceled and a DNF will appear on the display



Second Photocell SET is required

### Set up (split)



Press and hold button until you hear 2 beeps

- Photocell is now set to Split

- Point the front of the PHOTOCELL across the split location toward the IR EMIT. When properly aligned the PHOTOCELL will stop squealing.

**CAUTION!**  
A split may only be used with a Finish. The split must not replace the Finish.



## **BIB ID TIMER**

### Setup (split)

- No additional setup required



### Memory Back

Previous skier's time will scroll into view



### Review Forward

The following skier's time will scroll into view



For "top/bottom 3 second



of list" scroll, press and hold button for

### Split Scroll

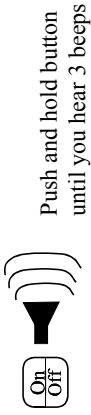
Top window

Top window

## Photozell Start



Set up (Start)



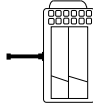
Push and hold button until you hear 3 beeps

- PHOTOCELL is now set to start

- Point the front of the PHOTOCELL across the start line toward IR EMIT. When the unit is properly aligned the PHOTOCELL will stop squealing

### **NOTE!**

A PHOTOCELL Start is used in place of the WAND



**BIB ID TIMER**

### Setup

- No additional setup is required

### Automatic BIB Assignment

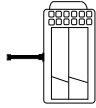
- If a PHOTOCELL Start is used, the TIMER automatically assigns the skier a bib #, in sequence, beginning with 1



## Mode Instructions

### Mode 1

FIFO (first skier in, is first skier out) Multiple skiers  
For racing events and training



## **BIB ID TIMER**

TIMER operator is required. Operator must: 1-DNF a skier that will not finish 2 - DNF a ghost skier in the case of a false start Mount TIMER where the coach may view finish and operate TIMER

### Setup



Setup complete

The TIMER'S display will show the finished skier's time on the top line. If there is another is on course, the top time is scrolled to the bottom line. The running time of the second skier is displayed on the top line. If no skiers are on course, the last finish time will remain on the top line of the display until the next skier starts.

The automatic flow of the TIMER (described above) will be interrupted temporarily if any memory scroll functions are used.

### **DNF Use to DNF a skier who will not finish**

Pressing the DNF button will DNF the top line of the display



only

- If a skier is not going to finish he must be DNF'd from the top line of the display. For example: There are three skiers on course, if the 2<sup>nd</sup> skier leaves the course, press the arrow up or down key to put his time in the top display then DNF that skier.

#### **CAUTION!**

If a fallen skier is not DNF'd, the next skier will finish the fallen skier's time. If this occurs, push the DNF button to make up for the error.



**Memory**



**Review**

For "top/bottom of list" scroll, press and hold button for 3 seconds

## **Radio Signal Blocking**





## BIB ENTRY WAND

Point the front of the PHOTOCELL across the finish line toward the IR EMIT.  
When properly aligned the PHOTOCELL will stop squealing.

### Setup

Setup complete

### Enter Bib #

Wait for beeps then go

### Special Feature - WAND

initiate

Then enter next skier's bib #

- When the skier leaves the start, all active times in the TIMER will be DNF'd and the new skier will be the only active time
- This feature can be used to make Mode 1 function without a TIMER operator. At any time you can DNF all skiers, including ghost skiers on the course by sending a new skier.



## IR EMIT

### Setup



Push and hold button until you hear 1 beep

IR EMIT is now set to low power

Point the front of the IR EMIT across the finish line



## PHOTOCELL



### Setup

Push and hold button until you hear 1 beep

PHOTOCELL is now set to Finish

## With up to 5 Splits

### Skier Requirement (split)

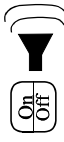
The skier in the start must ensure that the skier in front of him has skied past **all split** PhotoCells before he starts



### **PHOTOCELL**

Second PhotoCell set is required

### Setup (split)



Push and hold button until you hear 2 beeps

PHOTOCELL is now set to Split

Point the front of the PHOTOCELL across the split location toward the IR EMIT. When properly aligned the PHOTOCELL will stop squealing.

### **CAUTION!**

A) A Split may only be used with a Finish. The Split must not replace the Finish.



### **BIB ID TIMER**

### Setup (split)

- No additional setup required

### Memory Review



Back



Forward

Previous skier's time will scroll into view scroll into view

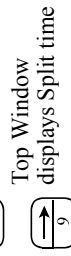
The following skier's time will



For "top/bottom of list" scroll,



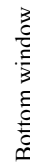
press and hold button for 3 seconds



Top Window displays Split time

Top window displays Finish time

Bottom window



Bottom window

displays Split time

displays Finish time

## Photozell Start



### **PHOTOCELL**

#### Setup (Start)



Push and hold button until you hear 3 beeps

- PHOTOCELL is now set to Start

- Point the front of the PHOTOCELL across the start line toward the IR EMIT. When properly aligned the PHOTOCELL will stop squealing.

#### **NOTE!**

A PHOTOCELL Start is used in place of the WAND



## **BIB ID TIMER**

#### Setup

- No additional setup required

## Automatic Bib Assignment

- If a Beam Start is used, the TIMER automatically assigns the skier a bib #, in sequence, beginning with 1.

## **Mode 2**

### **Pacer Mode - Overview**

Mode 2 is a hands free mode, no operator is need to time skiers. This is done through automated DNF's. Mode 2 handles DNF skiers automatically by establishing finish line ARRIVAL WINDOWS or a preset space of time in which the skier must pass through the finish beam.. Mode 2 is capable of timing up to 9 skiers at a time.

#### **Definition of terms**

##### Arrival Window

- An *Arrival Window* is defined as the time frame inside of which a finish must happen. For example: A skier finishing a course will stop the timer only if he is within his *Arrival Window*.
- A *Window Extent* is the width of the Arrival Window. There are 4 *Window Extents* to choose from: 10, 14, 18 and 22 seconds.

##### Pacer(s)

- A *Pacer* is the skier that will establish the average finish time. This average finish time will automatically establish the *Arrival Window* for the following skiers. The *Pacer* is the first skier out of the start. If the Pacer DNF's, the next skier must designate himself as a *Pacer*.

##### Pacer Speed (adjustable only in the Wand unit)

- The *Pacer Speed* is defined as the skill level of the *pacer* in comparison to the rest of the skiers
- There are 3 *Pacer Speed* settings: 1-Fast, 2-Medium, 3-Slow. These settings configure the *Window* as follows: (figure 1 on the following page)

- Fast - 25% of *Extent* faster than pacer/75% of *Extent* slower than pacer
- Medium - 50% faster/50% slower
- Slow - 75% faster/25% slower

For example: The pacer's **finish time is 40.00sec, the Extent is 10 sec**

Pacer Speed = **1:** The subsequent skiers would be required to finish before (40.00-2.5sec)=**37.50sec** and no later than (40.00+7.5sec)=**47.50sec**

Pacer Speed = **2:** The subsequent skiers would be required to finish before (40.00-5sec)=**35.00sec** and no later than (40.00+5sec)=**45.00sec**

Pacer Speed = **3:** The subsequent skiers would be required to finish before (40.00-7.5sec)=**32.50sec** and no later than (40.00+2.5sec)=**42.50sec**

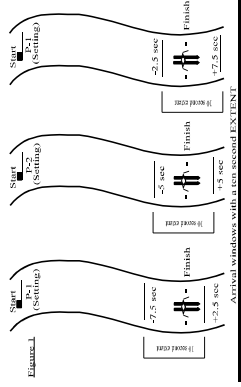
Another example: The pacer's **finish time is 40.00sec, the Extent is 22 sec**

Pacer Speed = **1:** The subsequent skiers would be required to finish before (40.00-5.5sec)=**35.50sec** and no later than (40.00+16.5sec)=**56.50sec**

Pacer Speed = **2:** The subsequent skiers would be required to finish before (40.00-11sec)=**29.00sec** and no later than (40.00+11sec)=**55.00sec**

Pacer Speed = **3:** The subsequent skiers would be required to finish before (40.00-

**Mode Instructions**  
**Mode 2 -Pacer Mode**



Up to 9 skiers on the course at a time  
 For training use with skiers of similar ability

**BIB ID TIMER**

This mode is hands free, no operator is required to operate the TIMER. The course must however be Paced or calibrated before skiers can go. Mount TIMER where skiers can view TIMER after they finish the course.

**Setup**

On/Off MODE 1 ← 2 Block Shift  
 pre-setup is now complete

Remaining setup is done from the WAND

**Adjusting the Arrival Window**

- The TIMER operator may manually lengthen or shorten the time of the Arrival Window, however, no adjustment of the Window Extent is allowed from the TIMER.
- Adjustments may only be made to the Finish Window after the course is Paced

The **MODE FINISH WINDOW 4** is used to adjust the Arrival Window

finish after **MODE 1** Ti **5** ↑ **7** ↓ **Clear 0**  
 not to Lower limit, Upper limit, finish before setting is reached  
 - To increase: - or decrease: until desired  
 - To save new Arrival Window settings, press



- To exit without saving changes, press

The TIMER display will show the finished skier's time on the top line. If there is another skier on course, the finished time is scrolled to the bottom line after 5 seconds and the running time of the next skier is displayed on the top line. If no skiers are on course, the last finish will remain on the top line of the display until the next skier starts.

The automatic flow of the TIMER (described above) will be interrupted temporarily if any memory scroll functions are used.

## DNF

- If a skier's time runs past the Upper Limit set by the pacer, the skier's time will be replaced with DNF
- If a skier finishes before his time has reached the Lower Limit, the skier's time will continue to run until it is either manually stopped or it runs past the Upper Limit. At this time the display will be replaced with DNF.

## Memory Review



Back  
Previous skier's  
time will scroll  
into view



Forward  
The following skier's  
Time will scroll into view


## Radio Signal Blocking

To block an unwanted signal from triggering the TIMER



Press and hold throughout the  
unwanted start or finish signals

## Manual Finish

- A skier may be manually finished by pressing  while the skier is inside the Finish Window
- The TIMER will react the same as with an automatic finish

NOTE: The manual finish feature could be used as a backup timing method if the beam has been knocked down. You can also manually finish the Timer after sending a ghost pace setter from the wand, this way a skier is not needed to PACE the course.



## BIB ENTRY WAND

### Setup

#### Mode 2



#### - Pacer Settings

 Display will read: *Pacer speed=Medium (default)*

- Pacer speed      Display will read:      *Pacer=Fast*

Display will read:      *Pacer=Medium*

Display will read:      *Pacer=Slow*

Display will read:      *Extent = 10 seconds*

- Extent      Display will read:      *Extent = 10 seconds*

Display will read:

Display will read:

Display will read:

#### **Setup is complete!**

- Send Pacer. Pacer must complete course before other skiers can go.

### Enter Bib #

- Skier will be automatically delayed until the Extent time of the previous skier has elapsed
- Wait for triple beep then go



## IR EMIT

### Setup



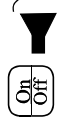
Push and hold button until you hear 1 beep

- IR EMIT is now set to low power
- Point the front of the IR EMIT across the finish line
- It is best to fine adjust the beam alignment with this unit



## PHOTOCELL

### Setup



Push and hold button until you hear 1 beep

- The PHOTOCELL is now set to Finish
- Point the front of the PHOTOCELL across the finish line toward the IR EMIT. When properly aligned the PHOTOCELL will stop squealing

## With Split

1 Split Only



## PHOTOCELL

### Setup (split)



Press and hold button until you hear 2 beeps

- PHOTOCELL is now set to Split
- Point the front of the PHOTOCELL across the split location toward the IR EMIT. When properly aligned the PHOTOCELL will stop squealing.

#### CAUTION!

A split may only be used with a finish and must not replace the finish! A split time cannot be shorter than the Window Extent.



## BIB ID TIMER

### Setup (split)

- No additional setup is required
- The Timer does not establish Split Windows, a skier must wait for the previous skier to pass the split PhotoCells before starting.

### Memory Review



Previous skier's time will scroll into view

#### Forward



The following skier's time will scroll into view



**Split Scroll** independently)

(each skier's split is scrolled



displays h time

Top window displays Top window split time

Bottom window displays split time

## Beam Start

Not available in mode 2

## Mode 8

Cannot print time of day stamp



## MODE INSTRUCTIONS

Mode 3

### Dual Lane FIFO Multiple Skiers

Mode 3 is a dual version of Mode 1 and operates in the same manner. To operate:

- Set the **TIMER & WAND** to Mode 3 (See page 12 to review how to change modes)
- Connect the **DUAL WAND** to the **BIB ENTRY WAND** with the 120" cord and the **DUAL BEAM** to the **FM TRANSMITTER** with the 36" cord (see page 10)

### **BIB ENTRY WAND** **DUAL WAND**



When the **BIB ENTRY WAND** is put into Mode 3 it will automatically flash a "rEd" button sequence is as follows:



is put into Mode 3 it in the display. The

This enters the # of the skier in the Red lane  
The display will now flash "b L U"



This enters the # of the skier in the Blue lane

The display will now show - - \_



The skiers are now ready to start.

If a skier is racing as a single, do not enter a bib # for the empty start gate, just press ENTER

Note: Up to 4 sets of skiers can be on the course at one time

## **BIB ID TIMER**

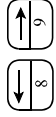


Mode 3 is similar to Mode 1. A skier that will not finish has to be DNF'd or DNF a ghost skier in the case of a false start. Unlike Mode 1, Mode 3 stores bib # and times horizontally rather than vertically. To review times use the right and left arrow buttons to scroll memory. Time will "match up pairs"

when ever you scroll memory



Reviews red lane



Reviews blue lane

To DNF a skier



DNF's skier in red lane

DNF's skier in blue lane

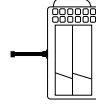
Note: Skiers are DNF'd in FIFO order.

Printer will indicate which lane each skier is in.



### **Mode 5** **Dual Lane Single Skier**

### **BIB ENTRY WAND** **DUAL WAND**



BIB ENTRY WAND operation for Mode 5 is exactly the same as Mode 3.

Note: Only 1 set of skiers can be on the course at one time.

## **BIB ID TIMER**

Mode 5 is an automatic dual mode and operates much like Mode 7 (pg 12). The memory review of Mode 5 will work like Mode 3.

When a set of skiers leave the starting gate, the TIMER will shift the

existing times in memory and show the running times of the new set of skiers. If the previous skiers fell or did not finish, their times would be stored as DNF's.

## Printing

### SET THE PRINTER MODE:

Display:

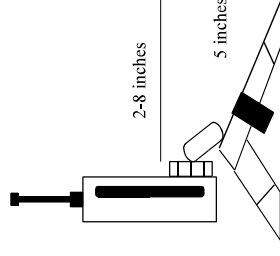
Display:

Display:

Display:

New Printer Mode is now entered

### Setup for printing in sunlight



#### **CAUTION!**

No start to finish signals will be received by the TIMER while printer is dumping



- For more detailed instructions on how to properly operate the printer please refer to the printer User's Manual

### Dump totals at end of session:

- pressing this sequence will initiate a Dump of all the time totals from memory to the printer
- The Dump feature will not print the Time-of-Day references. These times are not stored in memory and are only printed in real time.
- When Dump is complete the display will return to skiers times.

#### **CAUTION!**

The printer enters a low power state if times are not printed for 10 minutes. A small red LED indicates the printer's state. If printer does not print, check the LED. If the LED is not lit, press the paper feed button on the printer to reactivate.

Caution: When printing, receiver will not receive new signals, so only use the advance printing

## Brower Backup Watches

### Description:

The Backup WATCH is a new type of backup using hundreds of seconds, instead of minutes in the time-of-day timing method. There are no minute calculations to be done. Each time has a sequence and bib identifier. The start WAND automatically transfers the skier's bib number to the backup WATCH for future reference. The finish backup WATCH can have the bib number manually scrolled into the WATCH before each skier finishes.

The WATCHES each have a 400 athlete memory which can be reviewed at any time during the race without un-synchronizing the watches. After a race is complete, the times may be dumped through the LED on top of the watch to the HP82240B infrared printer.

**Dumping times to the printer un-synchronizes the watches. The WATCHES must be cleared and re-synchronized after dumping before they will accept any further inputs.**

### Operation:

**Power-up:** Press the power button and hold for 3 seconds. The display will initialize and indicate one of two states:

**Cleared:** The TIMER will show all zeros. The Timer is now ready to be synchronized with the other WATCH

**Stored:** When powered up the display shows the last time from the previous session. You may scroll through the times and print them as you please, but

**These times must be cleared before the WATCHES will accept any electronic or manual trigger.**

**Synchronizing:** To synchronize the WATCHES:

- Make sure the WATCHES are all cleared and showing all zeros
- Connect the supplied phono cable to the connector on top the WATCHES
- Press the [Manual Start] button. The WATCHES will all show a running counter. The WATCHES are now active and synchronized.

- Connect the WATCHES to the support WAND and TRANSMITTER, using the supplied phono cables.

### **Triggering**

**Electronic:** The WAND will trigger the WATCH every time the WAND arm is opened. If a bib number has been properly entered into the wand unit, this number will be sent to the watch connected to the WAND. The TRANSMITTER will trigger the WATCH when the beam is broken.  
**Hand:** When the skier opens the WAND or crosses the finish beam, pressing the manual start button will trigger the WATCH only if the electronic signal is not received. When an Electronic and Hand trigger are both received, the Electronic trigger will replace the manual trigger. This will act as a third level of fail-safe in the event that the BIB ID System experiences a complete failure.

An "E" will display if the received trigger is electronic and "H" will show for a hand trigger.

### **Bib Numbers**

**BIB ENTRY WAND:** The WAND will automatically transfer the bib number to the WATCH

**FM TRANSMITTER:** To enter the bib number into the FM

TRANSMITTER, the operator must scroll the number into the WATCH using the Bib/Order # scroll buttons before each skier crosses the finish beam. When the skier finishes, the number is "captured" with his time and the number automatically advances. This number may then be manually adjusted for the next skier.

**Clearing the WATCH:** Press down both down arrows and hold them until the display shows a flashing set of lines. When finished, the WATCH will show all zeros. The WATCH is ready to be synchronized.

**Memory Reviewing:** To review a skier's time-of-day, press the up arrow. When a trigger is received by the WATCH, it returns to its normal operation, displaying the last triggered time.

**Printing Times:** Printing un-synchronizes the WATCH. Align the IR LED located on the top of the WATCH with the IR port on the front of the HP82240B printer. Then press and hold both up arrows for 2 seconds. The WATCH will display "Prin-" to indicate printing has begun. The printing cycle must finish before the WATCH will operate again. This

may take several minutes as the printer requires 1.8 seconds to print each line.

## RS232 INTERFACE

**Power-Up:** Press and hold the power switch until both lights flash  
Power on is indicated by an occasional flash

**Power-Off:** Press and hold the power button for approximately three seconds until both lights go on solid. Release the button, the LED's will stop blinking.

### **Data Loading:**

- to get data into the INTERFACE, align the lens with the IR port on the BIB ID TIMER (back)
- Power-Up the INTERFACE. If times are already stored in the INTERFACE, the times must be cleared
- When the INTERFACE memory is cleared, dump the times from the BIB ID TIMER by pressing [mode], [9], [9]
- The Receive LED will light to indicate incoming data (if the LED doesn't light, clear the memory and re-align the IR port with the TIMER IR port)
- If the data link is lost during the receiving process, the data must be sent again, then cleared then sent again in its entirety

### **Printer Dump:** (used to create a hard copy or a running order list - see data sorting)

- To dump back to the printer (HP82240B), disconnect the computer cable, line up the INTERFACE with the printer, and single click the power button. The Send LED will light until transfer is complete.

### **Computer Dump:**

- Make sure the cable is connected to the proper serial port
- Open the communication port on the computer (4800,8,n,1)
- Enable the text capture feature in the terminal software
- **Single Click** the power button, the transfer should be immediate
- End text capture and save the file

**Clearing Data:** To permanently remove the data from the INTERFACE,



triple click the power button and the LED's will indicate when the erase cycle is complete.

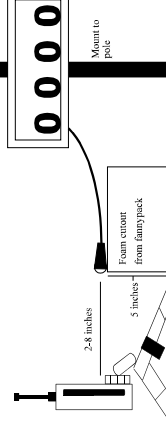
**Data Sorting:** The sorted times are sent to the HP 82240 printer only. The printout can be used for an unofficial running order. To get a finish order fastest to slowest, double click the power button. The LED indicators will not flash while the data is being sorted. This can take a long time if a large number of times are to be sorted. The indicators will return to a normal flashing pattern when the sort is complete. Then the data will be sent to the printer. Sorting has no effect on the times to be sent to the computer. The times will be uploaded to the computer in their original order.

Function->	Power on/off	Dump (printer/computer)	Sort (printer only)	Clear Memory
Click Pattern ->	press and hold	single click	double click	triple click

## DISPLAY 100 Instructions

**Set**

**up:**



- Set TIMER to "Print Totals Only" (see page 29 for instructions)

- The DISPLAY 100 will show times as they will print out on the Printer. However, the printer is not required.

- The DISPLAY 100 will hold times until the next time is received.

## Troubleshooting Guide

where to send your system for tuning.

- Problem:** The power is on but none of the buttons work including the on/off buttons.
- Solution:** Remove the battery of the malfunctioning unit for 10 sec. then reinstall.
- Problem:** A skier is sent, but his bib # is still flashing in the WAND
- Solution:** Make sure you press Enter on the WAND and wait for the dashes to appear in the display. ( )
- Problem:** While pressing Enter on the WAND the dashes appear, but when the skier goes, the TIMER is not triggered
- Solution:** Ensure that all of the addresses are set to the same number.
- Problem:** When I power up the unit, it lets out a series of beeps that don't sound normal
- Solution:** This is the Battery Low indicator. Replace the batteries in the unit. **USE ONLY ALKALINE/BATTERIES.**
- Problem:** I am waiting for the dashes on the WAND, the Addresses are all set to the same #, but the TIMER still doesn't respond to starts.
- Solution:** Make sure that the TIMER is at least 20 feet from the WAND. If problem persists, please contact the manufacturer.
- Problem:** The TIER starts, but when the skier finishes, the TIMER keeps running.
- Solution:** Ensure that the Address in the Finish Photocell is the same as in the Timer. Ensure that the Finish Photocell is properly aligned. If problem persists, please contact the manufacturer.
- Problem:** I was removing the antenna on the Photocell and the antenna mount came loose.
- Solution:** The antenna mount may be hand tightened. This piece is removed when changing the batteries and is not broken if it is loose.
- Problem:** I have used my system for 3 to 4 years and this year I have missed some times.
- Solution:** Because crystals age, after some time the system may need to be tuned up. Call Brower Timing Systems for information on

## Replacing Batteries/Maintenance

### **Battery :Low Indicators:**

All units will indicate a low battery by letting out a long sequence of beeps on power up. Eveready Energizer 9-volt is the recommended battery for all components of the BIB ID System.

### **Expected Battery Life:**

**TIMER:** 40 hours with Alkaline Batter - battery good to 5 volts  
**WAND:** 100 Hours Alkaline Only - both batteries good to 5 volts  
**PHOTOCELL:** 100 Hours Alkaline Only - good to 5 volts  
**IR EMIT:** 250 Hours - Low setting -60 ft.  
175 Hours - Medium - 110 ft.  
100 Hours - High - 175 ft.

### **Changing Batteries:**

**TIMER:** Remove the 4 screws holding the backplate. Attach the tripod to the backplate. Pull off the backplate to reveal the battery. Replace with: 1 - 9v Energizer Alkaline battery  
**WAND:** Remove the 4 screws holding the bottom plate. Remove the bottom carefully. Unplug the ribbon connector. Use the supplied hex key wrench to loosen the battery mount. Replace the batteries and re-assemble in reverse order. Replace with: 2 - 9v Energizer Alkaline batteries (the Duracell battery is too big) **NOTE:** be sure the batteries are lying flat against the housing when re-tighten set screw.

**PHOTOCELL:** Using the antenna as a wrench, remove the antenna mounting lug. With a screwdriver, remove the setscrew on the bottom of the unit. Press on the face of the unit below the lens to slide the guts of the unit out of the housing. Replace with: 1-9v Energizer Alkaline battery (the Duracell is too big)

**IR EMIT:** With a screwdriver, remove the setscrew on the bottom of the unit. Press on the face of the unit below the lens to slide the guts of the unit out of the housing. Replace the battery and install the housing in reverse order. Replace with: 1 - 9v Energizer Alkaline battery (the Duracell is too big)

### **Maintenance:**

The PHOTOCELL and IR EMIT are susceptible to water infiltration in heavy rain or wet snow. If water does get in the unit, after use remove the housing and remove the battery. Let stand until dry. Replace

housing before storing.

## Electrical Specifications

### **TIMER**

radio frequency 433.425MHz  
modulation method FM/FSK  
battery life 40 hours with Alkaline battery - battery is good down to 5 volts  
temperature rating - 20 degrees c.  
receiver sensitivity .14 uV or 3 times as sensitive as hand held radios.  
Memory capacity with no split tim eis 126 bib numbers and times, with splits.

### **WAND**

radio frequency 433.425 Mhz  
100 milliwatts FSK modulation  
transmission distance - 8 miles line-of-sight  
battery life 100 hours - both batteries are good down to 5 volts  
temperature rating - 20 degrees C

### **PHOTOCELL**

100 milliwatts  
transmission distance - 5 miles line-of-sight  
battery life 100 hours - battery is good down to 5 volts

### **IR EMIT**

battery life 250 hours on low 60 ft. - battery is good to 5 volts  
175 hours on medium 110 ft.  
100 hours on high 175 ft.

## Warranty

All products have a 1 year warranty. Brower Timing will repair or replace any failed product at no charge for 1 year from time of purchase. Damage caused by user is not covered by the warranty.  
Send all repairs directly to Brower Timing Systems.

Brower Timing Systems  
12660 South Fort Street #102  
Draper, Utah 84020 USA  
Phone 801-572-5540 Fax 801-572-5941

Note the nature of the problem and include it with the returned product. Include Visa # with expiration date for non-warranty repairs and express return shipping charges.

Include a phone number in case we have a question.  
If overseas, make package as light as possible and send only components that are defective. If you are not sure, call Brower Timing for help.

Austria  
Germany  
France  
Switzerland  
Great Britain  
Norway  
Sweden  
Finland  
Italy  
Portugal  
Slovenia  
Spain

Brower Timing Systems declares that the equipment contained in this system conforms to the RTT directive.

BROWER TIMING SYSTEMS  
12660 South Fort Street #102  
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E-mail: [mark@browertiming.com](mailto:mark@browertiming.com)

