Congratulations on your purchase! Your new timer should provide years of trouble-free service. To maximize the performance and life of your timer, please read this user's manually carefully before using your timer. It is important to familiarize yourself with the timer before attempting to use it at your first event.

UNPACKING THE TIMER

Your new timer comes in a protective carrying case. Inside the case you'll find the following items:

- Timer console ("MD-200 Electronic Timer")
- Infrared light source ("Transmitter")
- Infrared light detector ("Receiver")
- Camera tripods (2)
- 125 foot cable
- AC power adapters (2)

THE TIMER CONSOLE

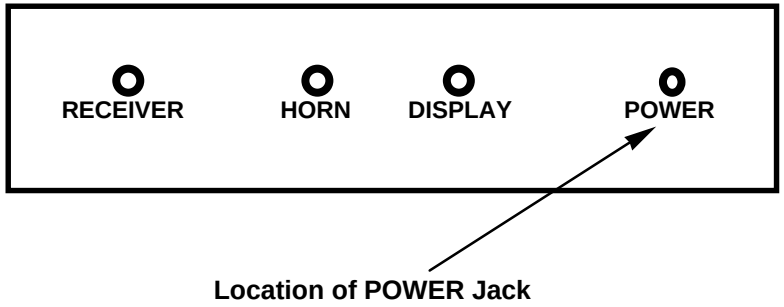
The timer console is the "heart" of your new timer system. The front of the timer console has four push-buttons for controlling the timer, and a six digit time display. The back of the timer console has four jacks for connecting power, the light detector, an optional scoreboard display, and an optional horn. These connections are each discussed in detail in later sections.

The best way to learn about your new timer is to use it. Try each of the operations outlined in the following sections as you read through the manual.

Turning on the Timer Console

The timer console must be plugged into a standard wall outlet to operate. Using either of the AC power adapters provided (they're identical), insert the small plug into the **POWER** jack on the rear of the

timer console and *then* plug the adapter into a wall plug. A rear view of the timer console illustrating the position of the **POWER** jack is shown below:



As soon as the timer console is plugged in, the unit is on and the display reads "**0.000**". Now we're ready to push some buttons!

The START/STOP Button

The **START/STOP** button is used to manually start and stop the timer. When the timer is started, the time is first reset to zero, and then the running time is shown on the display. When the timer is stopped, the final time is shown on the display.

If the timer *is not* running, pressing the **START/STOP** button starts the timer. If the timer *is* running, pressing the button stops the timer. Even if the timer was started by breaking the light beam, it can be stopped with the **START/STOP** button, and vice-versa.

The RESTART Button

Whenever the timer is stopped via the **START/STOP** button or by breaking the light beam, the final time is shown on the six digit display. However, the timer *continues to count* "inside." So even though the final time is shown on

the display, the timer is still counting as if it were never stopped!

Pressing the **RESTART** button allows you to resume timing on the display. Since time was kept internally while the display was "frozen", the time on the display now reads as if the timer was never stopped. Obviously, the **RESTART** button works only if the timer is stopped.

Imagine the following: A rider speeds through the light beam to start the timer. Unfortunately, her hat blows off and falls through the light beam and stops the timer! Normally, the rest of her ride is wasted, but by pressing the **RESTART** button, her timing can be resumed as if the timer were never stopped!

Since you can resume timing via the **RESTART** button, you no longer have to worry about false triggers – you can even purposely stop the timer to measure "split" times or to check a previous time! (See next section.)

The PREVIOUS TIME Button

Have you ever missed recording a time because the next rider started the timer before you wrote the original time down? Or maybe someone walked through the light beam, or a piece of paper blew across and started the timer – erasing the time of the last ride. Well, that's not a problem anymore. The **PREVIOUS TIME** button allows you to recall the previous rider's time!

The timer must be stopped to look at a previous time. Simply press the **PREVIOUS TIME** button and hold the button down. The previous time is displayed as long as the button is held down. Release the button and the most recent time is restored.

For example, let's say the next rider has started the timer before you recorded the last rider's time. Simply wait until the new rider is done, and then display the previous rider's time by pressing the **PREVIOUS TIME** button. If you don't want to wait, stop the timer immediately by pressing the **START/STOP** button (don't worry, we won't lose the current rider's timing!). Then press the **PREVIOUS TIME** button to view the previous rider's time. After recording the time, continue timing on the current rider by pressing the **RESTART** key.

The ALIGN Button

To work properly, the infrared light source (transmitter) and infrared light detector (receiver) must be properly aligned. (Alignment of the electric eyes is discussed in detail in a following section.)

The alignment of the electric eyes can be checked by pressing the **ALIGN** button any time the timer is stopped. If the "eyes" are properly aligned, "Good" is displayed. If not properly aligned, "bAd" is displayed. If the display alternates between "Good" and "bAd", assume the alignment is bad. To return to normal operation, press the **ALIGN** button again.

The HORN Jack

A **HORN** jack is provided on the rear of the MD-200 timer console. This jack allows connection of the optional "OE-200" horn. This horn automatically sounds at any time you specify. Details about connecting and operating the horn are in the user's manual provided with the horn.

The horn jack is also used to connect a remote barrier release for the optional "RP-200" roping package. The roping package automatically starts the timer and releases the barrier in front of the

rider when a calf or steer breaks the light beam between the MD-200 electric eyes. Details about connecting and operating the roping package are in the user's manual provided with the roping package.

The DISPLAY Jack

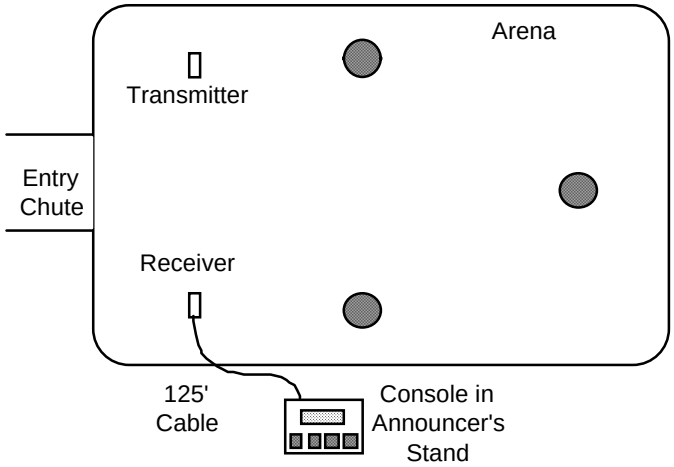
A **DISPLAY** jack is provided on the rear of the MD-200 timer console for connection to the OE-250 scoreboard display. The MD-200 also supports scoreboards from several other manufacturers – contact FarmTek for additional information. The running and final times are displayed on the scoreboard. Details about connecting and operating the scoreboard display are in the user's manual provided with the scoreboard.

THE ELECTRIC EYES

The infrared light source (transmitter) and infrared light detector (receiver) are mounted on tripods on opposite sides of the arena. When the light beam between them is broken, the timer is either started or stopped. As with the **START/STOP** switch, if the timer is not running, breaking the beam resets the time to zero and starts the timer. If the timer is running, breaking the beam stops the timer – the final time is shown on the display.

When the beam is broken, the timer console "beeps" to alert you about the trigger. After the beam is broken, the timer ignores additional beam breaks for two seconds. This prevents multiple triggers such as starting the timer with the horse's front legs, and then immediately stopping the timer with the horse's hind legs!

The receiver is connected to the main timer console via a 125 foot cable. This cable is used to signal the main timer console when the light beam is broken. The transmitter needs no connection to the timer console. A typical arena set-up is shown below:



Infrared Light Source - Transmitter

The transmitter unit is labeled "TRANSMITTER" on its rear panel. The transmitter outputs the infrared light beam that is detected by the receiver. The infrared light is emitted through the solid black front panel. The transmitter has built in rechargeable batteries to allow operation in the arena without AC power. However, if by mistake the batteries were not charged, the transmitter can be operated by plugging it in.

The transmitter must be switched "ON" to operate. If an AC power adapter is plugged into the transmitter, the unit runs from AC power. If no AC adapter is inserted, the unit runs from its internal batteries. When not in use, the transmitter ***must be*** switched "OFF". Over-discharge of the batteries can damage them.

NOTE: If by mistake the batteries are severely discharged, it may take several minutes before the transmitter operates properly even after the AC adapter is plugged in.

Charging the Batteries

After a full battery charge, the transmitter will operate about ten hours. Typically, this is enough time to use the transmitter on two or more separate occasions before recharging is necessary. In fact, it is actually better for the batteries to be used for six to ten total hours before recharging, rather than just a few hours – as if recharged after each use.

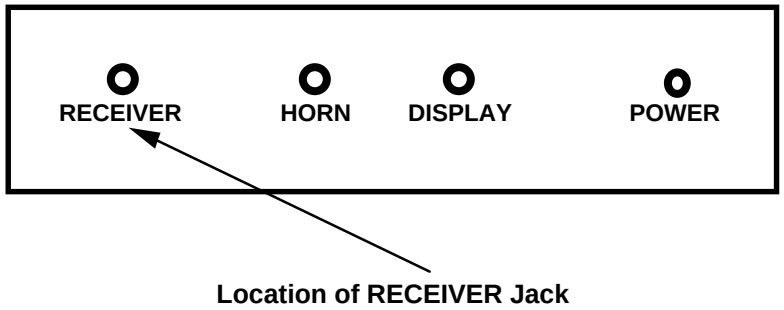
To recharge the transmitter, plug it into a wall outlet using either of the AC power adapters provided for about 14 hours. (Always insert the plug into the transmitter first, and *then* plug the other end into the wall outlet.) Make sure the unit is "OFF" when recharging. Do not leave the transmitter charging for a single period of more than 14 hours.

After charging, the transmitter will remain almost fully charged for several weeks if stored at room temperature. If not used for two or more months, recharge the batteries over-night before the next use.

Infrared Light Detector - Receiver

The receiver unit is labeled "RECEIVER" on its rear panel. The receiver detects the infrared light beam emitted by the transmitter. The infrared light passes through the solid black front panel.

The receiver is connected to the timer console by the 125 foot cable provided. This cable provides a signal to the timer console when the light beam is broken. To connect the cable, insert either end into the jack labeled **CONSOLE** on the rear of the receiver unit. Insert the other end of the cable into the jack labeled **RECEIVER** on the rear of the timer console. *Make sure the plugs are fully inserted*. These connections should be made with the timer console "OFF". A rear view of the timer console illustrating the position of the **RECEIVER** jack is shown below:



Tripods

For use in the arena, the electric eyes should be mounted on the tripods provided. As you read this section, try the adjustments mentioned to familiarize yourself with the tripods.

The tripod has latches on its legs to adjust them to the desired length. Open the latch to extend or shorten a leg, then close the latch to lock the leg in place. *Do not over-tighten "twist" type leg latches!*

Near the top of the tripod where the three legs come together, a center tube (neck) can be raised or lowered to further adjust the height of the tripod. Loosen the collar latch by turning it counter-clockwise, and then raise or lower the neck as desired. After adjustment, tighten the collar latch by turning it clockwise.

The very top of the tripod is called the "head". Two adjustments allow the head to turn left to right, and to tilt forward and backward. The long handle is used to adjust the forward and backward tilt. Turn the handle counter-clockwise to loosen, and then use the handle to adjust the tilt. Turn the handle clockwise to tighten the head in the new position. The knob at the very top of the neck can be loosened to allow you to move the head left and right. Turn the knob counter-clockwise to loosen, clockwise to tighten.

A 1/4 inch screw protrudes through the top of the head. To mount the receiver or transmitter to the tripod, position the hole on the bottom of either unit over this screw. Turn the knob under the head counter-clockwise (when viewed from the top) to tighten the screw into the receiver or transmitter. Tighten the screw firmly, but do not over-tighten. Turn the knob clockwise to loosen the screw and remove the receiver or transmitter. Align the unit on the tripod such that the long tripod handle extends towards you and the rear of the unit faces you.

Aligning the Electric Eyes

The infrared light from the transmitter is emitted in a very narrow beam. This beam must be "aimed" at the receiver to ensure that the receiver "sees" the light beam. The infrared light is emitted and received through the solid black panel on each unit – this is the front of the unit. Read the tripod section to familiarize yourself with the tripods before attempting to set up and align the transmitter and receiver.

To set up the electric eyes in the arena, first attach the transmitter and receiver to the tripods as detailed in the tripod section. Then adjust the tripods to the desired height. The eyes should be high enough so that the light beam is broken by the horse's body (not the legs).

Next, place the eyes on opposite sides of the arena. The eyes should be separated by about 50 to 175 feet. Aim the transmitter in the general direction of the receiver and vice-versa. Then, complete final alignment as described below:

Carefully align the transmitter. Left-to-right alignment can be checked by looking down either line on the top of the transmitter. The line should point straight at the receiver. Up-and-down alignment of the transmitter is checked by looking down the crack on the side of the unit. Adjust the tilt such that the receiver is directly in line when looking straight down the crack on the side of the transmitter. When tightening the tripod adjustments after the alignments are made, make sure the alignment is still good – tightening the tripod knobs may move your previous adjustment.

Alignment of the receiver is not critical. It just needs to be pointed – both horizontally and vertically – in the general direction of the transmitter.

To check the alignment, follow the procedures outlined previously to turn on the transmitter and connect the receiver to the timer console. Then turn on the timer console and press the **ALIGN** key. If the eyes are properly aligned, "Good" is displayed. If not properly aligned, "bAd" is displayed.

Alignment Hints

With a little practice, you'll be able to set-up and align the electric eyes in minutes. Below are some suggestions in the event you cannot obtain alignment or the alignment is sensitive to dust or sunlight.

- Make sure the cable plugs are fully inserted into the receiver and the timer console – push them in completely, a fraction of an inch can make a difference.
- Move the eyes closer together and re-align.
- Distance is reduced when the sun shines on the face of the RECEIVER. If possible, switch sides with the transmitter to keep the sun from entering the receiver. If not possible to switch sides, construct a simple shade for the receiver.
- Try to remember if the batteries were charged. If not, you may need to plug the transmitter into an AC outlet to operate. As mentioned previously, if by mistake the batteries are severely discharged, it may take several minutes before the transmitter operates properly even after the AC adapter is plugged in. The quickest way to restore operation to a severely discharged transmitter is to plug it in with the switch turned "OFF" for one or two minutes and then turn the switch "ON" (leaving the AC adapter plugged in) to operate the transmitter.

CARE OF YOUR TIMER

Your new timer has been designed to withstand a rough environment and treatment. However, a little extra effort to take care of your timer will greatly extend its life and reduce the chance of failure.

To summarize care in one phrase: "Keep it clean!" Always brush the dirt from the tripod legs before collapsing the tripod. Blow dirt off cable connectors before inserting them into the units. Keep the front of the transmitter and receiver clean. (Always blow the dust off first and then gently wipe with a soft cloth or tissue – the front panels are easily scratched). Knock dirt off the cable before throwing it into the carrying case. It only takes a minute, but the extra effort will greatly increase the life and performance of your timer!

The transmitter and receiver units have been designed to withstand a little rain. However, they are not waterproof. Do no leave them uncovered during a heavy thunderstorm. If they get very wet, allow them to dry out before using them again.

The carrying case is the "heart" of your timer care routine. Always store and carry your timer in this case. In short, a little common sense will go a long way in extending the life and performance of your timer.