BullsEye

electronic heat detection systems

SYSTEM OVERVIEW
AND
OPERATING INSTRUCTIONS

our Eyes don't lie.

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C O N T E N T S

Warning and Safety Information

Product Safety Warning:

This product/kit contains chemicals, including lead. Disassembly of the units can expose the user to these. Wash hands after any contact.

The cows that are being monitored **MUST NOT** be allowed access to water they can submerge the monitors in. Pond access should be restricted to a very shallow part. Submerging the Cow Unit can destroy the unit.

The cows that are being monitored **MUST NOT** have access to low hanging limbs, branches or any other objects the cow could use to scratch off the pouches

Cattle Safety Information - Handling, Attaching and Removing Cow Units:

Setup and installation procedures should be conducted only with the use of cattle restraint mechanisms. Always use a chute designed to restrain the cattle being worked with. Always use extreme caution when handling cattle. Always use clippers designed for livestock use.

Overview of AI Process

AI Process and Use of Bullseye Heat Detection System:

The BullsEye Heat Detection System is a tool to aid in detecting the time of estrus, which is when a cow is permitting another cow or bull to mount her while she remains standing. This is referred to as standing heat the surest sign to determine the best time for breeding.

There are three basic reasons for standing heat detection:

1. Artificial insemination
2. Embryo transplant
3. Confirming pregnancy

Progressive cattlemen use these breeding practices to maximize the profitability of their cows. The level of success in any advanced breeding program is equal to the level of commitment or attention to detail by the operator. In an advance breeding program most variables effecting conception rates will fall into one of three areas:

1. Health/Nutrition
2. Heat detection or timing
3. Semen/embryo handling and placement

All three of them are important to obtaining successful pregnancy.

Health/Nutrition is the most critical factor for a sexually mature cow or heifer having an active reproductive cycle. Females that are in a pattern of gaining weight typically have a higher conception rate. It is recommended that cows be maintained in a body condition score from five (5) to seven (7). Excessively fat females have a lower conception rate.

Continuing education is the key to proper semen or embryo handling and placement. There are many competent schools and technicians to assist you.

Heat detection or timing is the most challenging variable in most advanced breeding programs. Standing heat occurs every 18-24 days in a mature healthy cow that is not pregnant. In an artificial insemination program you are trying to predict the time of the cows fertility or ovulation and the best time to inseminate her.

There are five secondary signs of heat to be aware of when doing heat detection.

1. Early signs
   - Head butting, walking the fence and bawling
   - Trying to mount other cows that will not stand or resting her head on the hip of the cow
2. May occur just before, during and just after standing heat
   - Roughened or matted tail head from being mounted by other cows
   - Clear mucus discharge
3. Two to four days after standing heat
   - Bloody mucus discharge

Feeding time is a poor time to be evaluating cow activity for signs of standing heat. Most cows display signs of heat at the most inopportune times.

A university study shows that:

- 22% start standing between 6 am and noon
- 10% start standing between noon and 6 pm
- 25% start standing between 6 pm and midnight
- 43% start standing between midnight and 6 am

There are two theories in determining best time to inseminate.

1. The most common is 12 hours after the first standing heat.
2. The other is 4 hours after the last standing heat.

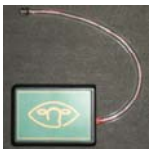
With BullsEye the operator can use either because it gives you the time of the “first stand” and the time of the “last stand”.

It is almost impossible to accurately observe standing heat on a single cow by herself visually. There must also be other animals in the area when using BullsEye. The system is counting on other cows, yearlings or bulls to mount the one you are trying to detect standing heat on.

Kit Overview

The system comes equipped with a convenient handheld unit, Cow Units with attachment supplies and batteries, all packaged in a durable tool box for handy storage.

The kit includes the following:

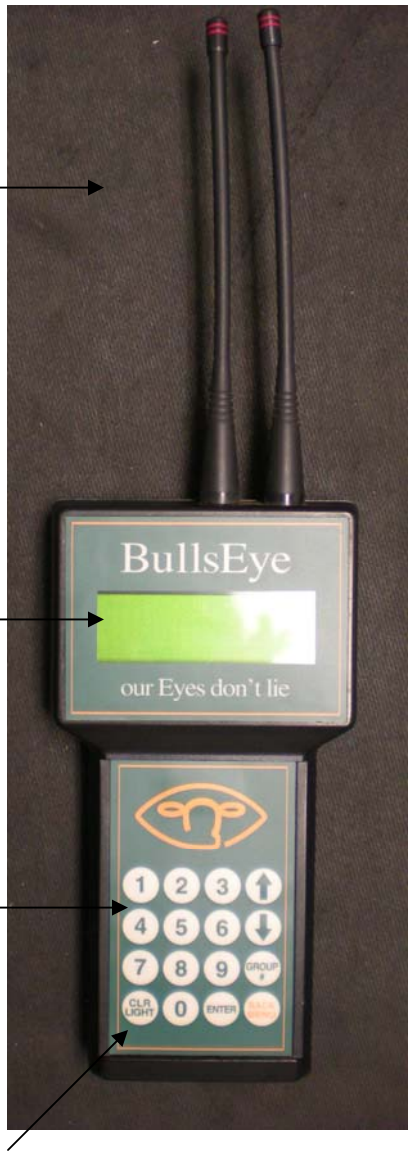
- Tool Box 
- One (1) Handheld Unit 
- Ten (10) Cow Units or Twenty (20) Cow Units 
- Ten (10) Pouches or Twenty (20) Pouches 
- Adhesive 

- Batteries 

Handheld Features

FRONT

BACK



ANTENNAE

DISPLAY

KEYPAD

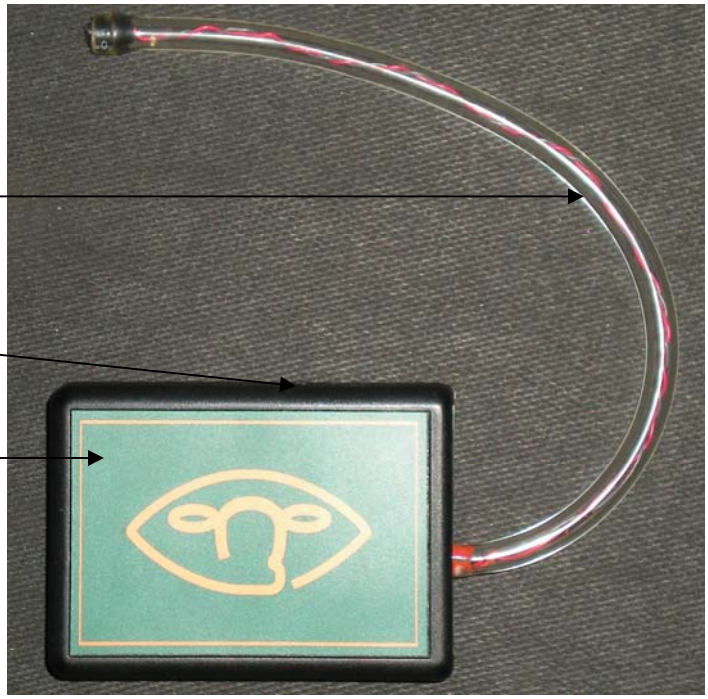
BACK LIGHT*

BATTERY HOLDER

The Back Light can only be turned on when at the Main Menu.

Cow Unit Features

FRONT

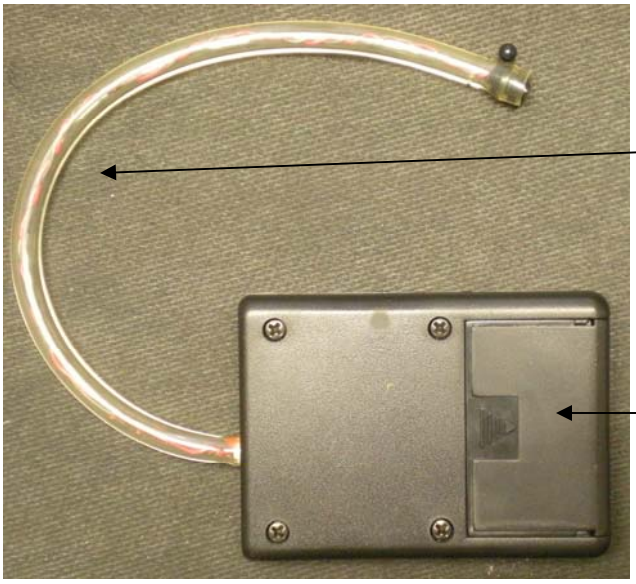


ANTENNAE/SENSOR TUBE

RESET/PROGRAMMING BUTTON

COW UNIT CASE

BACK



ANTENNAE/SENSOR TUBE

BATTERY HOLDER

Handheld Menu Operations and Set Up

INITIAL SET UP

Insert a 9V battery in the Handheld unit

(Always remove battery when not in operation)

Upon battery installation, Handheld unit comes up in the Set Date & Time Menu. The top line will show the current date and time that was set during testing of the unit. The second line is for the new date that you are going to enter.

The display will show the following:

Line 1: *Date 02/11/09 03:58P*
Line 2: *New MN/DY/YR HH:MMP*
Line 3: *<Enter> To Save*
Line 4: *<UP> For AM/PM*

With the numerical key pad enter the following:

- Month (MN)
- Day (DY)
- Year (YR)
- Hour (HH)
- Minutes (MM)
- Change the am/pm with the up arrow
- Push "Enter"

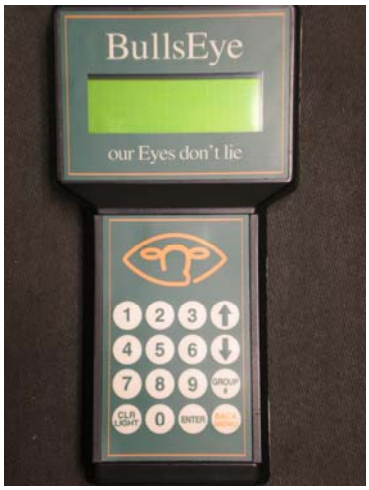
This is the Master Clock and will be sent to the Cow Units during their setup.

This completes the initial setup for the Handheld unit.

NOTE: The installation of the battery turns the Handheld unit on. After turned on, the unit will go into a power save mode and the screen will go blank after three (3) minutes of no keypad activity. To wake up the Handheld unit, press and hold the "*Back Menu*" button for two (2) seconds. This will wake up the unit and it will be ready for input. Under normal operation the Handheld will operate on one (1) 9Volt battery for about two (2) weeks of operation. To extend battery life, just remove the battery during periods of extended non-use and re-install when operation is required. Each time the battery is installed, just update the system with new date and time, and all other data will remain saved and intact.

ADVANCED SETUP:

These settings will be applied to all the Cow Units.



- Push "3" for Setup
- Push "2" for Advanced
    - The display will show the following:
        1)Mount Delay Time
        2)2 Mounts/4 Hours
- Push "1" for Mount Delay Time
    - The display will show the following:
        1)Mount Delay:
        Delay Time (Sec): 1
        Use <Up>/<Dn> or Type in
        Delay (0-7 Sec)

This determines the time to establish as an actual mount. The system can have values from 0-7 seconds; the default system setting is 3 if none is set in a new system.

Settings of 1-2 seconds seem to work well with most cattle. This can be adjusted to compensate for short mounts or no mounts.

NOTE: ***The Handheld is used to communicate and interface to the Cow Units. Make sure all the advanced settings are made prior to setting up the Cow Units. This will ensure that all settings are transferred over during the Cow Unit setup***.

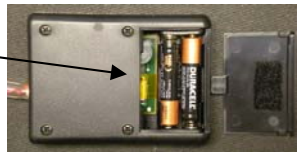
Cow Unit Set Up

The best practice is to setup all of the Cow Units that are going to be mounted on cows at one time. Apply a sticker to each Cow Unit as it is programmed and write the cow identification number on the sticker.

The other option is to setup the Cow Units one at a time at the chute. With this method you may want a second person applying adhesive to the pouches to keep from transferring glue from your hands to the Handheld's touch pad.

Install 2 AAA batteries in the Cow Unit

(Always remove batteries when not in operation)



On the Handheld from the Main Menu:

- Push "3" for Setup
- Push "1" for Basic
- Push "2" for Add/Del/Clr Unit
- Push "1" for Add Cow Unit
- Type in cow identification number from 1 to 999
- The Default Group Setting is 1
    - Up to 15 Groups can be selected. Groups are used for different herds or pens of cattle. This system version a total of 50 unique cow numbers is presently supported. The next release will enable a total of 1,000 cow numbers to be supported.
- Push the programming button on the side of the Cow Unit

- You should hear a beep from the Cow Unit. Once the beep finishes you will have approximately thirty (30) seconds to send the setup data from the Handheld unit.
- Push "Enter" on the Handheld unit to send the setup data to the Cow Unit
- The Cow Unit should beep when it receives the settings

The above steps tell the Cow Unit who it is as well as sets the Date/Time Clock. It also sends the "Advanced Settings" to the Cow Unit

- The first beep indicates the ID# and the Advanced Settings were received
- The second beep indicates the date and time was received.
- The Handheld unit will also display when these are sent ok.

Once a Cow Unit is setup, new date and time can be sent over at anytime if required.

To send date and time **ONLY** over to a Cow Unit, just go through the menu of adding a Cow Unit, but **DO NOT** press the programming button on the Cow Unit. This will allow date and time updates but will not reset the Cow Unit, change its ID or erase any data.

General Operational Notes

- Always do advanced settings on the Handheld before programming the Cow Unit.
- Always delete unused Cow ID's before programming Cow Units.
- Daylight Savings time has to be adjusted manually.
- The Back/Menu button on the Handheld stops activity and returns to the Main Menu.

Operation and Monitoring

Pouch Application

- Open the pouch by peeling the Velcro strips apart

- Insert the Cow Unit into a pouch with the plastic box in the larger pocket and the tube coming out of the Velcro opening. Take the opposite end of the tube and insert into the narrow pocket of the pouch.

- Seal the Velcro and write the cow number on the top (pleated) side of pouch with permanent marker.

- Then take all the programmed units to the chute with the adhesive to mount on the cows.

- Mount the pouch on the cow with the sensor tube positioned directly over the spine between the top of the tail head and the junction of the hip bone.

NOTE: This area needs to be clipped down very short before applying the pouch. Clipping is very important in the spring due to shedding. Some cattle may be in short enough hair in the fall without clipping.

Caution: Always use clippers designed for livestock use.

- Take care to get a good bead of adhesive around the edge of the pouch. Then apply a large "X" of adhesive in the middle of the bottom of the pouch. One 5 oz tube of adhesive should do three to four pouches.
- For best results mount the pouch with the Velcro to the back of the cow. The sensor tube will loop toward the tail giving maximum exposure to the cow that will be mounting the one being monitored.

- After the Cow Unit is mounted on the cow, in the chute apply pressure to the sensor tube to test the unit. The air in the tube must be compressed to make the switch. You may need to use the palm of you hand to apply pressure or you might be able to double over the tube and squeeze. The air must stay compressed longer than the "Mount Delay Time" you have programmed. When a mount is recorded you will hear a beep from the Cow Unit.
- After recording a mount "Upload" that unit
    - Push "1" for Upload
    - Push "1" for Single , use the UP and DOWN arrows to find the Unit #
    - Push "Enter" (The Cow Unit will beep when it transmits information)
    - After "Uploading" Reset the counter
        - Push "3" for Setup
        - Push "1" for Basic
        - Push "2" for Add/Del/Clr Unit
        - Push "3" for Reset
        - Use the UP and DOWN arrows to scroll through the menu and locate the Unit # that you wish to Reset.
        - Press the "<Enter>" Button to Reset

The Reset feature clears all the mount data. It will show "0" as the mount data once it is reset. The unit is now ready to monitor and record mounts on the cow.

The Handheld can be used to Upload mount data at any time. When mount activity is suspected or an inquiry is made, the data can be used to determine the following:

- First Mount Time: The time of the first mount on this particular cow.
- Last Mount Time: The time of the last recorded mount on this cow.
- The Total mount count as of the current time

This information can be used to best determine the optimum time in performing the AI process.

Troubleshooting

LOST UNITS

In the event that a cow unit comes loose or out of a pouch, a Locate Unit feature can be used in helping find the Cow Unit.

First, walk the field using the upload single unit on Handheld scanning the missing unit. Once the Handheld makes contact with the Cow Unit you can use the Locate Unit feature as described below:

From the Main Menu

- Press "3" Setup
- Press "1" Basic Setup
- Pres "3" Locate Unit
- Scroll through the Cow Unit numbers unit the lost unit number is displayed
- Press "ENTER"

This will activate the internal buzzer on that Cow Unit, and will continue beeping for about 30 seconds. The user will have to walk around the area and listen for the unit. If not heard then move and relocate and try again. The unit will have to be within range to trigger the buzzer. In the event that the unit became badly damaged during the coming loose, it may have lost battery power or become unable to respond.

Initial Wake Up and Cow Unit Battery Life

When one first attempts to communicate to the Cow Units after a period of no communication, it may take several Upload attempts to get the Cow Units to respond. This is due to them going into a low power mode and conserving battery life. Once they hear the wake up signal they will respond and wake up. Try several times, to effectively wake up all units, where several units are used on the same herd. Even during the low power mode, the units are still monitoring for mounts and records all data.

Normal battery life in a Cow Unit is approximately 4-6 weeks, during normal cycles. In the event that one cannot communicate to a Cow Unit, the batteries may have weakened to the point that communication cannot be made, but the monitoring continues. Just replace the batteries and all the data will still be in place and saved, and communication should restore.

Warranty Information

Bullseye has a standard one (1) year warranty on any and all workmanship issues that have been assembled and or manufactured by Bullseye. Our standard policies for products and or repairs that fall into this category are as follows:

- Within a one (1) year period, from the date of manufacture (serial label, references a date of manufacture), we will repair at no cost to the customer any and all issues associated with workmanship or manufacturing related repairs. This includes shipping, handling, and repair services. We reserve the right to examine and review each and every workmanship related return and will provide a detail service analysis on each and a will provide a corrective action report on each item determined to be workmanship or manufacturability.
- Any and all shipping/handling related defects/repairs would be honored and handled as a warranty/return item. These are fully covered and insured.