

MAGIC BREED (AUSTRALIA) PTY LTD

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DESCRIPTION:

The Magic Breed receiver contains:

**Radio Receiver
Decoding circuits
Audible & visual warning signals
Controls for optional pager unit
Power supply & charging circuit for external battery if used.**

When the receiver is switched on, the unit is ready to accept signals from the transmitter which is fitted on the mare's headstall in a pouch.

When the mare lies down & stretches out in the foaling position, a radio signal is transmitted from the transmitter on the mare that is picked up by the receiver, thus activating the audible part which will cause the alarm light on the front of the unit to flash.

If the pager is fitted, the receiver will trigger the pager relay transmitter to alert the remote pocket monitor.

The receiver will continue to sound the alarm until the switch on the front panel is turned off manually.

SETTING UP THE RECEIVER:

Antenna: Various types of antenna may be used, depending on range required and/or type of terrain.

- 1. A telescopic antenna is supplied with the unit & is fitted by inserting through the hole in the top of the case to the screw on the base. Screw down finger tight & extend to full height.**
- 2. For extended range an external wire antenna (supplied) can be plugged into "external antenna" socket on the rear panel.
This wire antenna should be run to as high a position as possible. It can be extended as far as required to cover a large or difficult area. The antenna can be connected to a wire fence for instance if wire is not grounded.
NB: Ensure the wire is not cut from its supplied length & endeavour to fully extend the wire either vertically or horizontally as it is already cut to a pre-tuned length.
NB: Do not connect external antenna (either wire supplied or a CB style antenna) when you are using the telescopic antenna.**

3. **A CB type antenna may also be fitted by using a PL259 connector to "external antenna" socket.
Insert plug of the transformer pack lead into "input" socket on rear of receiver.
NB: Do not substitute your own power pack as certain types can cause large amounts of electrical noise which can severely affect the range of the unit.**

Plug transformer pack into power point, switch on & set is ready for use.

SETTING UP THE TRANSMITTER:

The transmitter is supplied fitted in a pouch. Remove transmitter, then firmly attach the leather pouch to the headstall above the lead ring – see diagram.

Slide off battery compartment cover on transmitter base. Pull out battery connector lead & clip on 9v battery (supplied), slide lead & battery into base of transmitter & slide on cover to retain. NB: It is important to check the state of charge in the batteries regularly as this will also significantly affect the range achieved. Do not leave the battery in the transmitter when not in use during & after the foaling season.

The transmitter battery only uses power when the red sensor light illuminates on the transmitter face. Once the battery has been fitted the transmitter must be kept upright at all times when not in use, otherwise the battery will discharge.

When the transmitter is activated (i.e. tilted over, when laid flat on its back, or when the mare is lying on either her left or right side) the battery voltage is checked & if functioning correctly, the LED will switch on after approximately 1 second. After the transmitter has been tilted continuously for 10 seconds (without interruption) the transmitter will transmit a radio signal for 2 seconds. If still tilted it will transmit again after 10 seconds for 2 seconds, then wait 10 seconds, transmit for 2 seconds, wait for 10 seconds & so on. This will continue until the transmitter is switched off, either by removing the battery, standing the transmitter upright, or by removing the headstall & pouch from the mare. This system was introduced to minimize battery drain.

To test the set, set up the receiver (it is preferable to set it up in the position in which it will be used) & switch on. Tilt the transmitter to horizontal until indicator light illuminates. Hold this position for approximately 10 seconds (inbuilt delay eliminates false alarms) & alarm light on the receiver will illuminate & the audio warning light on the receiver will operate. The transmitter has a built-in battery test circuit. The red sensor light will not operate if the condition of the battery is too low to give correct operation.

CAUTION:

If, when testing, the sensor light does not illuminate, even though the receiver may operate, replace the battery & re-test. Simply slide off battery compartment cover, unclip old battery & replace.

OPERATION:

- (a) Ensure antenna is connected. If using telescopic antenna – fully extend.
- (b) Turn receiver power switch on – green light will illuminate. Receiver is now ready to accept the signal.
- (c) A field test should be conducted by using each transmitter unit & tilting to horizontal until indicator light illuminates, hold for 10 seconds on either side. (See Range Testing). It is advisable to “field test” (using new batteries) all transmitters & receivers (with receivers in position in which they are to be sited during the Season) before the start of each foaling season.
- (d) When receiver is triggered by the transmitter the red alarm light will flash & the audible alert will sound.
- (e) The receiver can be reset by switching “off” & then “on” again. If the receiver goes into alarm when switched on again it indicates the transmitter is still in transmitting position.
- (f) Additional transmitters: There is no limit to the number of transmitters that can be used with the one receiver.
However, the coding number of the transmitter must be the same as that of the receiver. Code numbers are shown on the rear of the receiver under the fitting for the external antenna & will number between Code A1 & Code A5.
The code will also be shown inside the battery compartment on the transmitter.

IMPORTANT:

When placing the transmitter in the pouch ensure the sensor light is at the opening of the pouch & facing away from the mare’s jaw. (See diagram).

REMEMBER:

Transmitter must be kept upright when a battery is connected to eliminate discharge & also when storing the transmitter remove the battery.

RANGE TESTING:

To test the Magic Breed system for range, place the transmitter on its back on the ground in the area that you wish to test, (the red LED will illuminate). See notes on aerial also. After a delay of 10 seconds the receiver should sound & its green LED will flash. Stand the transmitter upright (red LED will go off) & then switch “off” switch on the receiver & then “on” again to reset.

Continue testing in various positions in the foaling paddock to ensure that the receiver picks up the signal from each position. This test is necessary as it has been found in some cases that the ground composition may cause a reduction in range, possibly due to a magnetic condition in the soil.

Should it be found that the receiver is not triggered from any position in the foaling paddock, check that the transmitter (lying on the ground) has a clear line of sight to the receiver aerial i.e. no mesh fences or sheds in the way. If there is interference, consider another aerial setup (refer to Aerial section of Instructions).

TROUBLE SHOOTING RANGE PROBLEMS:

The aerial has a great influence on the range of the system, but interference can also play a part. In an open area site with clear line of sight (no mesh/metal fences) operation using a 27MHz CB aerial connected to the receiver, a range of up to 500 metres may be possible in ideal environments. On the other hand if the external wire aerial (supplied) is plugged into the rear antenna socket & fully extended, a reliable range of up to 400 metres is to be expected, or if using the internal telescopic aerial a range of up to 200 metres is usual.

NOTE: Do not use both the internal & external aerials at the same time as this will adversely affect the achievable range.

If these ranges cannot be obtained, some form of physical or electrical interference may be present. Physical interferences can take the form of sheds, wire mesh fences or the receiver aerial being installed incorrectly (i.e. do not run or wrap the aerial wire along or around metal or electrical conduits). If the receiver is in the house, tinted windows, metal fly screens, building foil in the walls etc. can shield the aerial.

OVERCOMING PROBLEMS CAUSED BY PHYSICAL INTERFERENCE:

Site the receiver as close as possible to, and in a direct line of sight to the foaling paddock. An elevated positioning of the receiver & antenna will work most efficiently.

Use of a Magic Breed Repeater Unit. The repeater unit is normally fitted on the top of a star picket post next to the foaling paddock fence. This unit works by receiving the signal from the transmitter & re-transmitting it with a higher power giving a range of up to 2000 metres (as tested in an open area test site).

ELECTRICAL INTERFERENCE:

Since the receiver device is basically a Tuned electronic receiver, (similar to a small transistor radio) it will be susceptible to electrical interference which may come in many forms, but in all cases can potentially cause range to be severely affected, in some cases by as much as tens of metres. It is often difficult to diagnose the exact cause or source of such interference & for this reason it is necessary to systematically & thoroughly work through all possible sources of interference. Listed below are some of the more common possible sources, but this list is by no means fully comprehensive in all regards.

NB: In the event of impaired range for which electrical interference may be the suspected cause, it will be necessary to isolate any possible causes & test the outcome at each isolation. Once the cause of the interference has been discovered action will need to be taken to resolve the issue. Often proximity to the source of interference can be the resolution, hence physical & electrical separation may sometimes overcome the problem.

SOME SUGGESTIONS:

Another transmitter on the same frequency e.g. 27MHz CB radios if switched on.
 Some remote controlled toys.
 Baby monitors
 Hands-free phones or intercom units
 Touch dimming bedside lights
 Microwave ovens
 Fluorescent lighting

Some low voltage halogen lighting (especially those utilizing electronic transformer-switch mode power supplies).

Some TV sets

Computers (& computer power supplies in particular)

Wireless internet modems/routers

Various low voltage power supplies & in particular Switch Mode power supplies

Close proximity to other transmission devices i.e. mobile telephone retransmission towers

Close proximity to other radiating or transmitter devices

Broad range frequency interference from various appliances

AERIALS:

The aerial or antenna is the necessary link with the receiver & the radio waves coming from the transmitter on the mare, and its quality, type & installation is of vital importance for reliable communication.

The best aerial would be a tuned 27MHz CB type coupled to the rear socket of the Magic Breed receiver via a 50 ohm coaxial cable. However, if there are ideal conditions, the internal telescopic aerial may be quite suitable or the external wire plugged into the rear of the receiver. This wire may be extended to any length required to cover a large area, say strung from the house to a tree or post (fencing wire is suitable) but insulate the wire from any metal or tree with an insulator.

Points to consider when selecting & fitting a CB type aerial:

- (a) The longer the aerial the more efficient.
- (b) If you have a metal roof, a ¼ wave whip aerial can be used (the roof is the other half of the aerial).
- (c) A ground independent type can be fitted to a wooden post or metal roof.

Typical aerial or antennas are:

1. Ground Plane Type (metal roof)
 - Dick Smith D4076
 - Jaycar DC2050
2. Ground Independent Type
 - Dick Smith D4425

Some of the above aerials will need a mounting base & bracket and coaxial connection cable. Other brands & makes are available, consult stores or an aerial specialist.

STANDBY BATTERY:

A 12v sealed lead-acid "cell" type battery is recommended. The internal charging circuit is designed to float charge batteries 2.0AH capacity, up to 6.0AH capacity. With a fully charged 4AH battery the receiver will operate for approximately three (3) days ** before battery needs recharging. When input power is restored the battery will be automatically recharged.

NB: Do not reverse leads to the battery. Polarity is important. The battery is connected using the fitting & lead supplied with this option.

NB: Do not store the battery in discharged condition, fully charge as soon as possible after use. It is preferable to leave the battery plugged into the receiver with the input power switch on at all times. This ensures that the battery is always fully charged (even in the "off" Season). The receiver front panel switch does need to be "on" for the battery to charge.

****This time will be reduced depending on the number of operations, particularly if the remote monitor is being used.**

SPECIFICATIONS:

Power requirement	12-16v AC (use power pack supplied with unit, do not substitute for switch mode type). 17-22v DC (use power pack supplied where applicable – do not substitute for switch mode type).
External Standby Battery (optional)	12 v Gel type battery 2 – 6 AH capacity

TRANSMITTER:

Frequency	27.145 Mhz
Frequency tolerance	0.005%
Modulation	F.M
Deviation	1kHz 10%
Power source	Energizer / Duracell battery 9v
Input current	60 mA AT 8v supply
Coding	Digital PCM
Range	up to 400 yards approximately 360 metres (depending on environmental conditions & open area siting).

GUARANTEE:

All Magic Breed equipment is guaranteed against faulty materials & workmanship for a period of twelve (12) months from Date of Sale. The unit will be repaired or replaced free of charge provided it is returned to Magic Breed (Australia) Pty Ltd, PO Box 5803, Cairns, Queensland 4870, Australia.

WARNING:

Do not open the transmitter case or make any internal adjustments as this may lead to illegal operations as defined by the Licensing Authorities & will void the above guarantee.

ACCESSORIES:

- 1. Magic Breed Remote Monitor & Pocket Pager (range up to 1 mile).**
- 2. Magic Breed Repeater (range up to 2000 metres).**

REMOTE MONITOR & POCKET PAGER:

The Magic Breed receiver unit is designed to stand (inside the residence) & be attached to a power supply. It is not always possible to hear or see the unit when it goes into alarm mode if personnel are at a distance from the unit when the signal is activated.

The Magic Breed Remote Monitor & Pocket Pager unit has been designed to allow the user to be at a distance from the alarm (up to 1 mile) & to be alerted when the receiver is activated by the mare lying down in the foaling position.

The unit has a paging transmitter which is plugged into the back of the receiver & this in turn will then transmit the signal to the pocket pager unit which is carried either in the pocket or on the belt of the user.

The range of these units is dependent on environmental conditions & the status of the 2 small AAA batteries fitted into the pager unit. The unit under ideal conditions should then be able to transmit the signal up to 1 mile.

The pager unit can also be placed in a second residence on the property & when the receiver is activated it will then transmit the warning signal to that second position.

MAGIC BREED REPEATER UNIT:

In situations that require longer transmission distances (more than 400 metres) a repeater unit will transmit the signal up to 2000 metres. The waterproof unit can be sited on a star picket & attached to a 12v battery (car/truck) with crocodile battery clips supplied to facilitate the connection. The siting of the unit is to be within the reception range of the transmitter. When the mare lies down in the foaling position, the signal is relayed from the transmitter on the headstall back to the repeater unit which then re-transmits a more powerful signal back to the Magic Breed receiver unit.

A suitable antenna is supplied by Magic Breed (Aust) Pty Ltd with the repeater unit.