Mag 3/6/8 Systems

Quick Start Guide

Underground Magnetics www.undergroundmagnetics.com

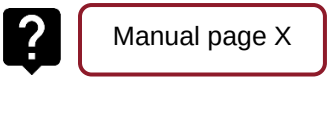
Underground Magnetics

Quick Start Guide: Mag 3S & 6S

Thank you for purchasing your Mag System!

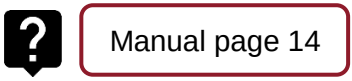
This Quick Start Guide will walk you through the process of starting your new system and preparing to drill. Please read this over and if you have any questions contact our customer service at **515-505-0960**.

Note: This question mark and textbox tells you the page in the Operator's Manual where you can find more detailed information on the corresponding topic.



When you receive your Mag 3S or 6S system:

- The receiver and transmitter will be paired and ready to drill.
- The transmitter has been unlocked, preprogramed at 19 kHz, and calibrated with the receiver at the factory.
  - Always check calibration before drilling.



- The receiver and display have been paired and are set to channel 1.

Choosing the Correct Frequency

The Echo transmitter has 3 separate frequency bands:

- 4 kHz is most appropriate when encountering passive interference.
  - Examples of objects that cause passive interference are rebar, wire mesh, and metal fences.
- 19 kHz is the midrange band and will be the frequency used in most drilling situations.
- 30 kHz responds better in high active interference situations.
  - To check for active interference before drilling, use the depth forecast function.

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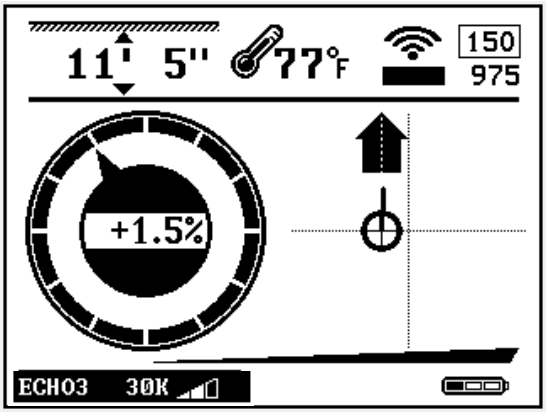
Steps for Use

1. Install batteries into the transmitter positive side down and install the battery cap with the provided battery cap tool.
    - It is recommended that a double C lithium cell battery be used if operating in adverse soil conditions (like rock). This will prevent battery chatter, which can greatly reduce the life of normal C cell batteries. One double C lithium cell battery is included in your Mag System.
2. Turn on receiver by holding the power button down until the Mag logo is visible on the screen. Once the receiver is on, the screen will display the information being sent from the transmitter.
    - The transmitter model, frequency and power level will be in the lower left hand of the screen.
    - The distance from receiver to transmitter, transmitter temperature, transmitter signal strength, and signal to noise ratio will be displayed across the top of the screen.



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3. Turn on display by holding the power button  down until the Mag 6 logo is visible on the screen. The screen will display the information being sent from the receiver.
4. Install the transmitter into the housing. Check calibration by:
    - Place the receiver 10ft away from the housing, measured from inside edge of receiver to center of housing.
    - If the distance on the receiver's screen reads 10ft then no calibration is required.
    - If the distance does not read 10ft, then calibration should be performed.

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Locating Basics

Before drilling, familiarize yourself with locating.

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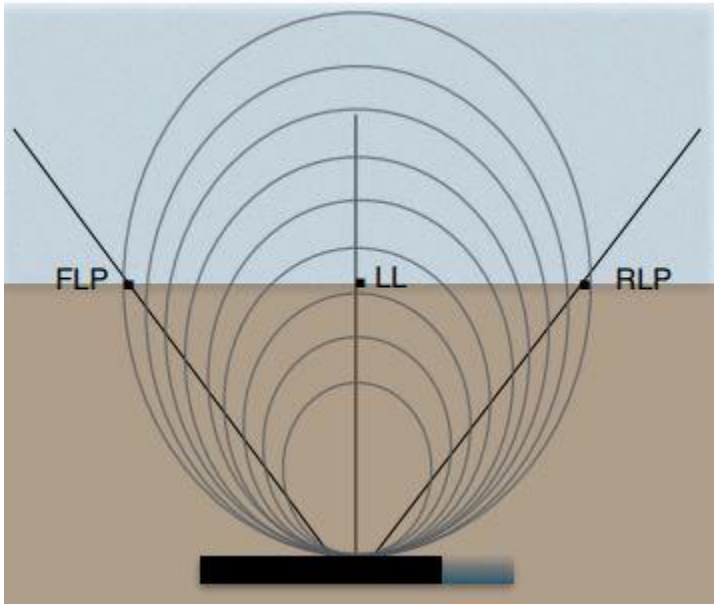
Please refer to our Locating Methods section of the operator's manual, check out our training video on the Mag 6S titled 'Underground Magnetics Single Point' on our website under the 'Resources' tab or on our YouTube channel- 'Underground Magnetics Inc', contact your dealer for additional training, or contact our customer service at **515-505-0960**.

Following are basic locating instructions for determining the location and depth of your Echo transmitter in the ground.

Understanding How the Receiver Locates the Transmitter

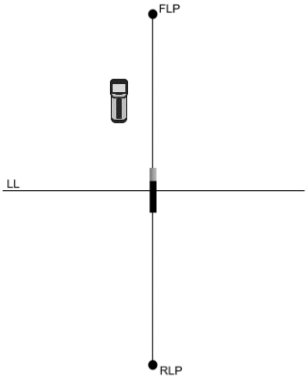
The Mag 6 System uses the “3 locate point” pattern to pinpoint the location and depth of the transmitter.

- Front Locate Point (FLP)
- Locate Line (LL)
- Rear Locate Point (RLP)

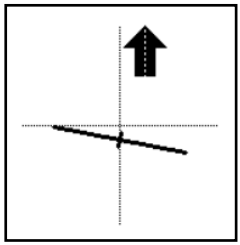


This section of the Quick Start Guide will walk you through the most advanced and efficient process of locating the FLP using the Single Point method.

Finding the Front Locate Point



Actual position of receiver to transmitter



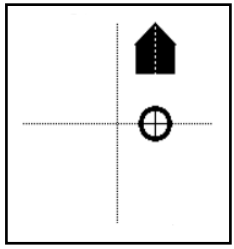
Receiver view

In this scenario the transmitter is behind you and you are walking toward the FLP.

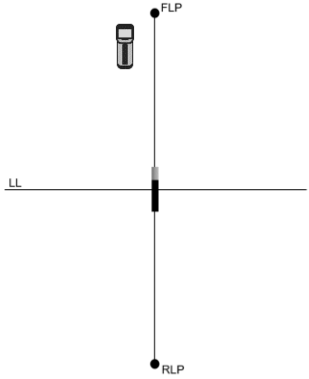
Notice how the arrow that indicates the nearest locate point is slightly to the right and has a narrow base. Its position lets you know the FLP's right-left information relative to the receiver. The width of the base lets you know how close or far the FLP is from you. A skinnier base means you are further away, and completely filled in base means you're about to cross the FLP.

Walk forward until the base of the arrow is fully filled in.

Notice how the Locate Line was replaced with a ball. The ball represents the FLP and appears when you are near it. It will slide along the horizontal axis of the cross hairs to give you the FLP's right-left location.

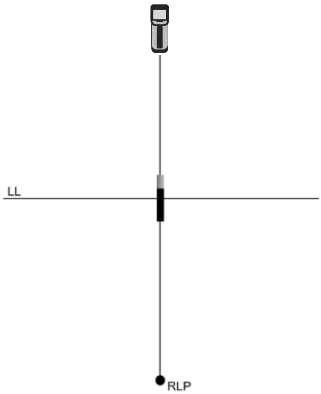


Receiver view

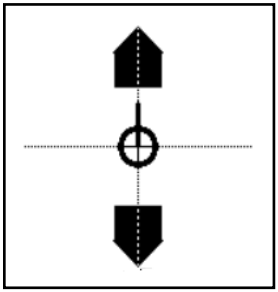


Actual position of receiver to transmitter

Where the cross hairs meet represents the receiver, the ball represents the FLP's position relative to the receiver, and the arrow represents the direction and nearness of the FLP, you can now see that you are about to cross over the FLP and that it is to your right.



Actual position of receiver to transmitter



Receiver view

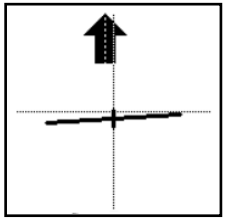
Walk forward until the arrow shows two arrows on screen or flips. Then walk to the right to center the ball in the cross hairs. This is the exact location of the FLP.

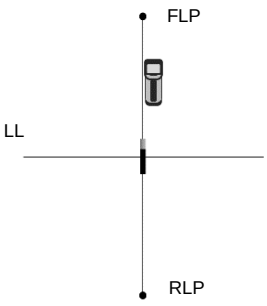
Notice the line that is now on top of the ball. This is for single point locating.

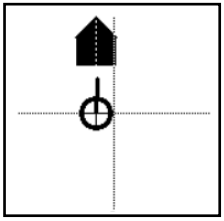
Single Point Locating

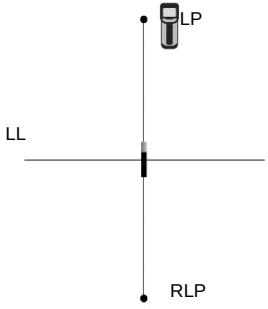
Single Point Locating is the newest and most efficient way to locate the drill head.

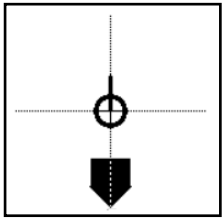
Simply walk forward until the base of the arrow fills in completely and the ball appears on screen. Once the arrow flips, place the ball in the cross hairs.

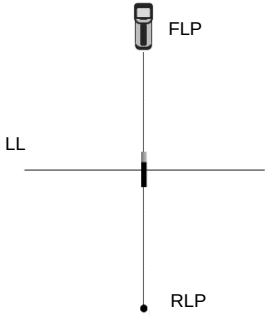












Notice that the ball has a line on top. This is the “point” in “Single Point”. The line points in the direction that the transmitter is pointing in.

You now have the location of the FLP and the direction of the transmitter.

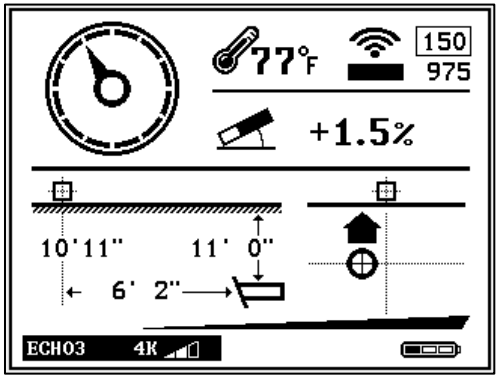
Switch to Bore-To mode, walk a bore’s length forward in line with the point and wait for the FLP to come to you. Continue moving forward and locating the FLP to locate with just a single point.

Bore-To

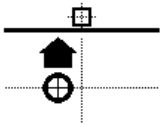
To switch the receiver to Bore-To mode, tap the ↵ from the main page.

To return to Walkover mode, simply tap ↵ again.

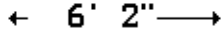
The display screen on both the receiver and the remote display will look like the screen to the right.



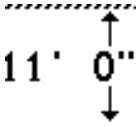

Receiver


Right/left information

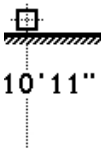

Bore head/ Transmitter



Horizontal distance from transmitter to receiver



Depth over the head



Projected depth

Projected Depth

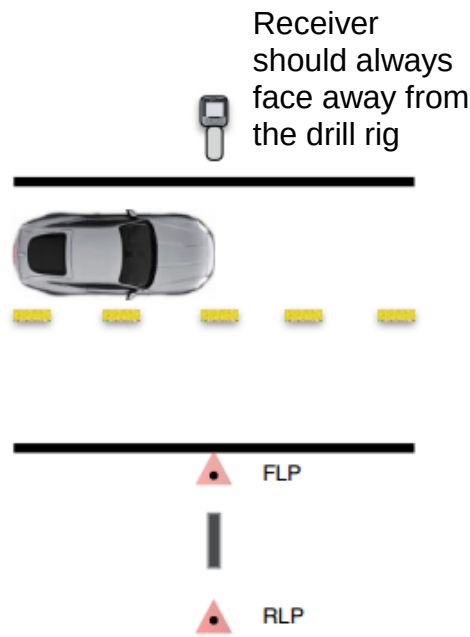
Projected depth tells you what depth the head will be at when it reaches the receiver if the operator maintains the indicated pitch.

The Bore-To feature on the Mag 6S is very powerful. Operators can expect to receive good right-left steering, pitch, and roll information as far out as 100ft.

It is important to note that the depth is only a reference. As distance between the transmitter and receiver decreases, the accuracy increases.

Never cross existing utilities while in the Bore-To mode. Expose and verify visually while crossing utilities.

For best Bore-To results, the operator should locate up to the area that can't be walked over and mark both the FLP and RLP* before moving the receiver to the other side.



Once on the other side, place the receiver directly in-line and proceed with drilling using the right-left steering bar to keep the bore path in-line.

*It is best to place an object, like a traffic cone, at both the front and rear locate points so that a visual alignment can be viewed.