DEPTH SOUNDERS AND FISHFINDERS

There are many different fish finders and depth sounders on the market today. In this article we will look at some of the features and specifications that you should take in to account before you make a purchase.

The first step is to decide on what your requirements are. Are you just interested in depth information for navigation or are you interested in locating fish?

NAVIGATION ONLY

If your main use is for navigation then you may require only a dedicated display which will show depth only and can be interfaced with your chart plotter to show the information in your chart plotter data boxes. A multi display is available which saves space on your helm and will provide Depth, speed and water temperature. With these units you can have shallow alarms to warn you if you are in water shallower than a predetermined level. You also have deep alarms, speed thru water, a log meter to record distance traveled, and anchor alarm and the water temperature.

FISH FINDERS

There are many fish finders on the market ranging from small standalone fish finders for a few hundred dollars up the large professional units costing thousands. Most navigation screens today have multi use screens and the capability to add black box fish finders.

PURCHASING CONSIDERATIONS

Before purchasing a unit you should decide how serious a fisherman you are and what type of fishing you do. You also have to look at how much you want to spend and make sure that you get the most value for your dollar.

FEATURES TO CONSIDER

- Dual frequency 50/200 kHz
- High output 600 watts or more

- Split screen so you can use both 50kHz and 200Khz at the same time
- Interference rejection to eliminate problems from other depth sounders.
- Sunlight viewable Screens
- Digital Signal Processing to filter out unnecessary info for best picture of targets

TRANSDUCERS

There are many displays with many features but the transducer is the most important part of the fish finder.

HOW IT WORKS

The transducer contains a piezoceramic disc called and element. When a voltage is applied to this element it vibrates rapidly creating acoustic energy or sound waves. These waves travel out in a cone shape. They will strike a target such as a fish or bottom and then travel back to the transducer. By measuring the time from when the sound wave was generated until the return echo is received the fish finder can determine the depth to the target. The strength of the return echo can determine the size and density of the target. This will now create the picture on our display showing the bottom, baitfish fish or other objects.

Frequency

Frequency is the number of sound waves produced by the transducer per second. Normally we have 50/200 kHz transducers. This means that at 50 kHz the transducer element vibrates at 50,000 cycles per second or sends 50,000 individual sound waves. At 200,000 then it sends 4 times as many.

Beam width

The sound waves are transmitted in a cone shaped pattern. At 200 kHz the beam width is narrow and this delivers more energy on targets and gives the best definition of the targets on the display.

At 50 kHz the beam width is wider and allows you to see deeper in the water.

SELECTING TRANSDUCERS

Standard Transducers

The standard transducer is normally a 50/200 kHz dual frequency containing one element. These are effective and inexpensive. The quality of the ceramic has a lot to do with performance.

Performance Transducers

You can greatly improve the performance of you fish finder by matching your unit with a high performance transducer. These units use an array of 50 kHz elements with a large 200 kHz element. This allows a tighter pattern on the 50 kHz and great target resolution on the screen. These transducers are much larger and require high performance fairing blocks. The transducers are usually 1000 to 2000 watts. Connecting one of the 1000 watt transducers to a 600 watt fish finder display will greatly enhance its display.

Broadband Technology

Airmar a high end transducer manufacture has produced a broadband technology transducer in the 200 kHz frequency. This transducer produces amazing results. It takes a lower voltage to drive the transducer. It is excellent for showing fish targets and will show fish one inch off the bottom. It is also excellent in shallow water and gives great resolution at all ranges.

Smart Transducers

Airmar also make a smart transducer with all the processing in the transducer. It will output NMEA 183 or NMEA2000 These transducers are a multi speed/depth/temp. They can be connected to any unit that is NMEA 183 or 2000 ready.

TRANSDUCER MOUNTING S

Transducers can be Transom, Thru hull or In Hull installed. This is dependent on the boat type and performance expected. The water flow over the transducer surface has to be as smooth as possible for maximum performance.

THRU HULL

This requires drilling a hole in the hull and using a fairing block to compensate for the boats deadrise and ensure the transducer is facing squarely downward. High performance transducers require elongated fairing blocks which reduce drag and provide a clean flow of water over the transducer face. They give the best performance when properly installed. If you trailer your boat you have to be careful not to damage the transducer launching or loading.

IN HULL

The transducer is located in a container which is sealed in the hull and filled with mineral oil or non toxic antifreeze. It has the benefits of no maintenance and no hole in the hull. It only works on a solid glass hull. It will not work in a cored hull, wood or metal. There is a performance loss shooting through the hull. This can be compensated by a higher performing transducer.

TRANSOM MOUNT

This is the simplest mount and used on many smaller boats. Follow the manufactures instruction carefully for location to minimize turbulence and achieve best water flow over the transducer. These installations quite often lack performance at higher speeds.

Conclusion

Check out the manufactures specifications and ensure you get the unit that meets your needs. Happy fishing.