



**WS-420**

**Settings & Installation  
(setting up a system with the WS-420)**

## Setting up a system using the WS 420

- 1) Unplug all the RCA's from your amps. Turn all the amp gains down.
- 2) Turn the radio up to find the maximum volume. Set the system with the head unit volume at 85% of max. This is the loudest the radio should ever go. Radios will create distortion the higher the volume is turned up. Which will create distortion on the output signal before reaching the amps. So find a safe easy to remember volume. If the head unit is 35. Max should be 30. If the head unit is 40. Maximum should be 30 to 35 and so on.
- 3) Once you have found the maximum volume set point. Turn the radio back down. Use a test CD that you are familiar with for tuning. Something that has highs and lows and vocals.
- 4) Make sure the settings on the radio are flat. You should not tune a system with the treble or bass up.
- 5) Make sure all the eq adjustments are flat. Right in the middle. Plug in all the rcas from the eq to the amps.
- 6) Plug in just the RCA's for the in boat speakers amp. Set the high pass crossover at around 80HZ to 100HZ.
- 7) Turn the radio up to the max safe level found in step 2. Turn the eq up to about  $\frac{3}{4}$  of max volume.
- 8) Slowly turn the gain up until you hear the speakers distort. Slowly back off the gain from that point a small amount until you hear the speakers play as loud as they can with no distortion.
- 9) Unplug the RCA's from that amp and plug the RCA's into the amp running the tower speakers. Set the high pass crossover on the amp for the tower speakers at 80HZ to 100HZ.
- 10) Slowly turn the gain up until you hear the speakers distort. Slowly back off the gain from that point a small amount until you hear the speakers play as loud as they can with no distortion.
- 11) Unplug the RCA's from that amp and plug the RCA's into the amp running the subwoofer. Set the low pass crossover on the amp for the subwoofer at 80HZ. On the WS 420. Turn the bass level to max. The ring is a frequency adjustment. All the way down to the left is 30 HZ. You will want to put this around 60 to 80HZ. So about  $\frac{1}{4}$  of the way up.
- 12) Slowly turn the gain up until you hear the speakers distort. Slowly back off the gain from that point a small amount until you hear the speakers play as loud as they can with no distortion.
- 13) Turn the radio back down and plug in all RCA's and do a final check with everything playing. You should now have the gains set at "unity" Meaning they are all at the same level and you are matched across the board.
- 14) Note that you can adjust the high pass and low pass filters to tailor the sound to each boat. As you can set the high pass higher to get more volume but at the expense of losing some low end mid bass. You can then fine tune the sound on the eq as well. Using the knobs and rings. Most systems will not need much in terms of boost.

#### Installation Tips:

Make sure that all grounds for the radio, the WS 420 and the amplifiers on the system are shared. You may need to re run the factory grounds for the radio and run a new ground for the EQ so that all are grounded at the same point. Most larger systems in boats will have multiple batteries. It is recommended to use a ground distribution block to share all the same grounds for the audio system. It is also recommended to do the same for power. You may want to install a relay on the remote turn on to keep any noises like turn on pops from happening.

Please use high quality shielded RCA cables. The WS 420 is a high voltage line driver. When providing this much voltage to the amplifiers. You are more likely to pick up ambient noise if lower quality cables are used. If you are hearing "hiss" or noise on the system. Re check your wiring and gains. If set up properly, the system should have little to no ambient noise. Some boats will always have some noise as there is no true ground in a boat and there are other electronics that may be interfering with the audio system. This is usually not noticed with lower powered systems but has always been in the system. Just not as audible with the low power. If this is the case. Check with a authorized Wet Sounds installer. They may need to check the other components in the boat or use a noise filter with the system.

Since the WS 420 is an equalizer. You will not need to use the radio settings. Make sure the treble and bass on the radio is always flat. And if using an Ipod or MP3 player. Please make sure there is no eq setting turned on. That source should also be set to flat.

You are now ready to enjoy your system.