

***Sunfire***

***True Subwoofer***

2700 Watt Powered Subwoofer

Preliminary User's Manual

***Sunfire Corporation***

*.....from the mind & soul of Bob Carver*

# TABLE OF CONTENTS

	PAGE
SAFETY INSTRUCTIONS.....	2
1) Cautions	
CHOOSING A LOCATION.....	2
HEAT RISE.....	3
USING TWO WOOFERS.....	3
CONNECTIONS AND CONTROLS.....	3
1) Crossover Frequency Adjustment	
IN CASE OF DIFFICULTY.....	4
HOW IT WORKS.....	5
FUNNY THINGS ABOUT YOUR TRUE SUBWOOFER.....	5
1) Bumps, Protrusions, and Motion	
SPECIFICATION.....	6
WARRANTY INFORMATION.....	6

Your Sunfire True Subwoofer is designed to give you the best low frequency sound quality possible for your home theater experience. It incorporates a built-in 2,700 watt amplifier and a pair of drivers to produce tight, floor-rumbling powerful bass down to 18 Hz that you can feel as well as hear.

Your speaker has an adjustable high cut filter and high and low level inputs for easy incorporation into existing systems or as an integral part of a subwoofer/satellite combination.

The speaker cabinet is finished in textured semi-gloss black.

## **SAFETY INSTRUCTIONS:**

Never open the cabinet or remove the metal control panel as this might result in electrical shock or damage to the unit.

If your True Subwoofer needs servicing, contact your nearest authorized Sunfire dealer.

Unplug your subwoofer's power cord from the electrical outlet if it will be left unused for a long period of time.

Route the power-supply cord so it is not likely to be walked on or pinched by items placed upon or against it, especially at plugs, convenience receptacles, and the point where it exits from the unit.

## **CAUTIONS:**

To prevent fire or shock, do not expose this subwoofer to rain or moisture.

Do not place the subwoofer with its metal plate against the floor. If you wish to place your woofer so the drivers move up and down, use at least 1-1/2 inch high spikes or feet. They may be attached either with screws or self-stick backing.

Place this unit away from heat sources such as radiators, stoves, or other appliances that produce heat.

To maintain the speaker cabinet's finish, clean the speaker cabinet with a soft, damp cloth; dry with a fresh cloth.

To avoid loud noise surprises, turn down the bass level control before making connections.

The metal control panel on the back acts as a heat sink for the subwoofer's internal amplifier. Therefore, place the unit approximately two inches away from a wall, and do not let anything come into contact with this panel.

## **CHOOSING A LOCATION:**

Your Sunfire True Subwoofer is designed to be placed in a corner. For optimum performance, it must be placed in a corner. Experiment with at least two corners and then decide which is best.

Although low frequencies are non-directional, factors such as room reflections, standing waves, resonance and absorption strongly affect your subwoofer's performance.

Slightly moving the subwoofer can have a major effect on bass response.

We recommend that you place your woofer at least two feet away from your television or computer's disk drive system so the speaker's magnet won't distort the colors of your TV picture or erase your floppy disks.

Unlike electric fields, which decrease with distance according to a one over r-squared law, magnetic fields decrease with a one over r-cubed law. (r is the distance.) This means that small increases in distances will drastically reduce the magnetic field from the woofer's big magnet. Usually a couple feet from your T.V. set is enough to prevent color distortion due to the woofer's magnet.

## **HEAT RISE:**

The metal side plate serves as the amplifier heat sink and also as a conduit to remove internal heat to the outside and into the atmosphere. It can reach temperatures of 65 degrees C, which will feel hot to the touch using nerves, flesh and blood as temperature sensors. As uncomfortable as it may feel, 65 degrees C cannot burn you, and in fact is almost cool to copper, silicon, steel, and aluminum, the stuff of which your woofer is constructed.

## **USING TWO WOOFERS:**

If you wish to use two woofers, the sound output will double. It will increase 6 dB. Always drive each woofer through the LEFT/MONO input EVEN THOUGH you are driving one woofer with a right channel drive and the other with a left channel drive.

## **CONNECTIONS AND CONTROLS:**

- 1) **AUTO ON/OFF** - Presence of a musical signal turns the unit on. After approximately 2-1/2 minutes of signal absence, the woofer will turn off.
- 2) **POWER INDICATOR** - Lights bright when power in on. Dim when off.
- 3) **HIGH LEVEL INPUTS** - Connect to an amplifier or receiver's speaker outputs.
- 4) **LOW LEVEL INPUTS** - Connect to a receiver's line out jacks.
- 5) **VOLUME CONTROL** - Lets you match the output level with your satellite speakers (if used). Increases subwoofer output as you rotate it clockwise.
- 6) **CROSSOVER FREQUENCY** - Controls the high frequency cutoff point. When you rotate it fully clockwise, it cuts high frequencies over 120 Hz. When you rotate it fully counterclockwise, it cuts high frequencies over 40 Hz.

- 7) **HIGH PASS OUTPUTS** - Line level output signals above 70 Hz are available from these jacks. They operate at all times, when using either Hi-level inputs or Line-level inputs.
- 8) **FLAT - VIDEO CONTOUR SWITCH** - When set to Flat the system frequency response extends to 18 Hz. This is the recommended setting for most audio or video applications.

### **CROSSOVER FREQUENCY ADJUSTMENT:**

Rotate the control until the bass sounds natural.

If the mid-bass sounds natural but you want more low bass, turn the crossover frequency down a little, then turn the volume control up by about the same amount. This increases low-bass output while leaving the mid-bass output the same. When set to Video Contour, a low frequency roll off is introduced commencing at approximately 30 Hz. This setting may be used if you or your system is disturbed by ultra low bass.

### **IN CASE OF DIFFICULTY:**

- 1) Not enough bass:

Check to see that the input connections are going to the input terminals and not the output terminals. In other words, they must go to Line-in instead of Hi-pass out. If they are connected to Hi-pass out by mistake, the bass will be weak but the woofer will function. If the bass seems weak, make certain the woofer is in the corner firing at 45 degrees into the walls formed by the corner. This is not absolutely essential, but will maximize the bass output and give the smoothest possible response. If you place the unit so one of the drivers is firing into one of the walls, leave three inches of clearance between the driver and the wall.

- 2) Woofer will not automatically turn itself off after approximately three minutes:

Check that hum is not keeping the woofer on. Hum can be formed by a ground loop so check below.

- 3) Hum - If the woofer has hum, perform the following:

First turn the volume control all the way down on the woofer and note if the hum diminishes, remains the same, or goes away. If the hum diminishes but remains, turn the plug for the woofer around in its socket.

Almost all systems with a subwoofer will have a ground loop. It's almost unavoidable because the woofer is usually located at a distance from the amplifier, the other speakers and the preamp. All plug into a common house wiring and the wire that goes from the plug end of the woofer, through the phono leads, or the RCA interconnect leads, back to the power amp and preamp and then to the power plug back to another power outlet and then through the house wiring constitutes a loop, ground loops are almost guaranteed to make the system hum to some extent. It can be minimized or made to vanish entirely by getting all the plugs in the system in alignment.

The first thing to do is to turn the volume control up to approximately 12:00. Plug the woofer in. If it hums, turn the plug around. If it hums less, leave the plug that way. If

it hums more, leave it the way that it hummed less. Take the power amp plug and turn it around in the outlet. You might have to purchase a ground breaker that has two small prongs so that it can be turned around in the outlet. If that results in less hum, leave it that way. However, it may result in more. In that case reverse the woofer plug again. There are four possible combinations, one of which will almost certainly result in vanishing low hum. To achieve this it will be necessary to perform these experiments in order to determine which yields minimum hum.

4) **Woofer will not turn on:**

It is possible the Volume Control is turned down or no signal is received. Check input connections. Check mode switch on surround system to be certain that a bass signal is being sent to the woofer.

## **HOW THE SYSTEM WORKS:**

The system works very simply. To have lots of bass, we have to move lots of air. Your Sunfire True Subwoofer incorporates two drivers that can move back and forth approximately five times more than a normal subwoofer. That gives it a lot of air moving capacity which is a requirement for massive bass.

The second requirement (because the air pressure inside the box is much greater than a conventional woofer) is that the drive amplifier must be much more powerful than an ordinary woofer amplifier. In fact, it has to be so powerful that it is almost hard to believe. This new technology has two parts. One, the woofer. Two, the very powerful amplifier.

## **FUNNY THINGS ABOUT THIS WOOFER:**

This woofer has two drivers, each sharing the acoustic output. Sometimes one driver appears to be moving more than the other. They both move the same amount only when operating at the limit of their excursion and power output, or when bass requirements and music requirements demand maximum output from the system. Otherwise, the power is shared between the two drivers in a way that depends on the momentary amplitude and the momentary musical spectrum. It is normal for one or the other to move more or less than its mate during operation.

You will note that on one of the drivers there appears a slight bump. Under that bump is a cap that holds some of the electronics. The bump is normal. If viewed from the control side of the woofer, that bump will be on the left. The driver on the right is absolutely flat, is very rugged, and cannot be damaged. The one on the left, with the slight bump, is not quite as rugged and modest care should be taken, though it is still extremely rugged. During an installation, you should put the driver with the bump toward a protected side.

Each driver is attached to the cabinet by eight bolts. The bolts at 12:00, 3:00, 6:00 and 9:00 o'clock protrude from the driver more than the bolts located at 1:30, 4:30, 7:30, and 10:30. This is normal and is part of the design. **DO NOT, UNDER ANY CIRCUMSTANCES, ATTEMPT TO TIGHTEN THE PROTRUDING BOLTS.** To do so may crack the cabinet.

# SPECIFICATIONS

## AMPLIFIER OUTPUT

2700 watts rms (four ohm impedance)

## HIGH CUT FILTER

40 Hz - 120 Hz Adjustable

## FREQUENCY RESPONSE

18 Hz - 120 Hz

## POWER VOLTAGE

AC 120 V/60 Hz

## DIMENSIONS

11" x 11" x 11"

## WEIGHT

48 lbs

## FINISH

Black anodize and black lacquer.

## WARRANTY

This unit is warranted to be free of manufacturing defects for a period of three (3) years from date of original purchase, including parts, labor and return shipping. The unit must be returned to *Sunfire Corporation*, 5210 Bickford Avenue, Snohomish, WA, 98290, or an authorized *Sunfire Service Center*. It must be shipped in the original shipping carton. If you do not have the original carton, we will send you one free of charge. Call 206-335-4748 Customer Service.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

RECORD YOUR SERIAL NUMBER HERE: \_\_\_\_\_