



Titanium II Symetec™ Subwoofers



Installation and Operation Guide

Ultimate Sound, Inc
138 University Parkway
Pomona, California
Phone: 909-594-2604
Fax: 909-594-0191
e-mail
technicalsupport@ultimate-sound.com

Ultimate Europe AB
Flojelbergsgatan 7A
SE 431 37
Molndal, Sweden
Phone: 46-31 87 64 50
Fax: 46-31 87 20 04
europesupport@ultimate-europe.com

I. Introduction

You have purchased a very sophisticated subwoofer manufactured by **Ultimate® Sound**. Founded in 1975, **Ultimate® Sound** makes speakers for every car audio application, speakers for marine environments, enclosed speaker systems, amplifiers, accessories and other products. Our tradition of leadership and innovation in the audio industry continues with innovative products like **Titanium II Symetec Subwoofers**.

We recommend you have your new **Titanium II Symetec Subwoofers** installed by a professional. Professional installation shops have the equipment to do the job correctly, and the experience to recommend the best mounting locations in your vehicle.

Please use your new **Titanium II Symetec Subwoofers** responsibly. Very loud music can cause permanent hearing loss.

TITANIUM II SYMETEC™ SUBWOOFER FEATURES:

- **SYMETEC™** symmetrical geometric cone design increases the stiffness of the cone for less harmonic distortion at high power.
- **Titanium II cone formula-** for strength, durability and stability during high power operation at extreme temperatures.
- **The Butyl Rubber Surround** has superior damping characteristics and will last longer than foam surrounds
- **Kapton® Voice Coil Former-** Higher power handling than aluminum voice coil formers.
- **4 Layer voice coil windings** keep more wire in the magnetic gap for more output..
- **Vented, extended pole piece-** keeps the voice coil cool during long excursions at high power.
- **Bumped back plate-** makes sure the voice coil never bottoms out.

II. Package Contents

- 1 Titanium II Symetec Subwoofer
- Instruction manual and warranty card.

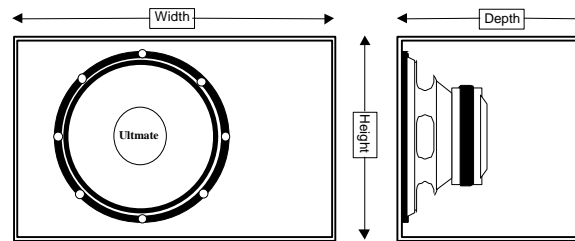
III. Specifications

Model	TS1200	TS1000
Size	12"/305mm	10"/254mm
Impedance	4Ω	4Ω
Frequency Response	24Hz-500Hz	27Hz-800Hz
Voice Coil	2"/ 50.8mm	1.5"/ 38mm
Magnet	55 oz.	40 oz.
Fs	29Hz	32Hz
Vas- ft ³ /Liter	2.4ft ³ / 68 Liters	1.38ft ³ / 39 Liters
Xmax	0.3"/7mm	0.3"/7mm
Qts	.37	.40
Sensitivity	91.7dB	90.5dB
Power- RMS	250 Watts	200 Watts
Power- MAX	500 Watts	400 Watts
Cone	Titanium II Symetec™	Titanium II Symetec™
Surround	Butyl	Butyl
Frame	Steel	Steel
Mounting Depth(In.)	5.2"	4.5"
Mounting Depth(mm)	130mm	114.3mm

IV. Installation- Sealed Enclosures

1. Sealed enclosures provide excellent performance with **Titanium II Symetec Subwoofers**. They are the simplest enclosures to design and build. We recommend you choose a sealed design if you have not built subwoofer enclosures before. Remember to glue and screw all joints, using enough glue to make sure all joints are air tight. Loosely fill the enclosure with fiberglass, poly-fill, or cotton damping material.

Recommended Sealed Enclosures			
TS1200	Recommended Internal Volume	Driver Displacement	Total Internal Volume
Optimum	0.82ft ³ /23.2L	0.14ft ³ /4.08L	0.96ft ³ /27.28L
Minimum	0.35ft ³ /9.9L	0.14ft ³ /4.08L	0.49ft ³ /13.98L
TS1000			
Optimum	0.65ft ³ /18.4L	0.08ft ³ /2.27L	0.73ft ³ /20.67L
Minimum	0.3ft ³ /8.5L	0.08ft ³ /2.27L	0.38ft ³ /10.77L



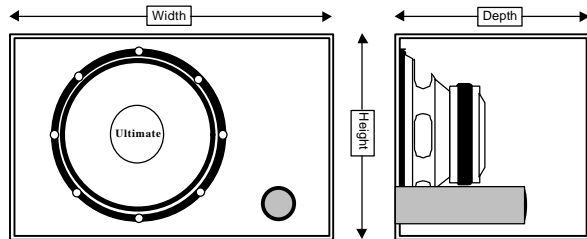
$$\text{Internal Volume(ft}^3\text{)} = \frac{(\text{in Inches})\text{Internal Width X Depth X Height}}{1728}$$

$$\text{Internal Volume(L)} = \frac{(\text{in Centimeters})\text{Internal Width X Depth X Height}}{1000}$$

V. Installation- Ported Enclosures

1. Ported enclosures use a tuned vent to get additional output at the tuning frequency. Smaller ports than recommended may cause noise from air turbulence. Flared ports will produce less turbulence and noise. Remember to glue and screw all joints, using enough glue to make sure all joints are air tight.
2. Make sure there is at least 2" between the end of the port and the adjacent wall of the enclosure.

Recommended Vented Enclosures	
Optimum Volume TS1200	
Volume	1.78ft ³ / 50.41L
Driver Displacement	0.14ft ³ / 4.0L
Port Displacement	0.03ft ³ /0.85L
Total Enclosure Volume	1.95ft ³ / 55.2L
Port Diameter	3"/76mm
Port Length	7.8"/198mm
Tuning	33Hz
F ₃	35Hz
Optimum Volume TS1000	
Volume	1.2ft ³ / 33.98L
Driver Displacement	0.08ft ³ /2.27L
Port Displacement	0.05ft ³ /1.42L
Total Enclosure Volume	1.33ft ³ / 37.67L
Port Diameter	3"/76mm
Port Length	11.7" / 297.2mm
Tuning	33Hz
F ₃	34Hz



See the supplied warranty card for service information

Call 888-909-9988 for technical assistance.