



Hafler[®]

VRM10s

VRM10sCE

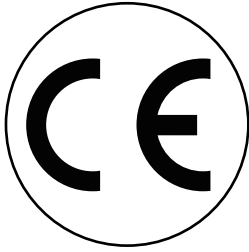
VRM12s

VRM12sCE

VRM15s

VRM15sCE

**SUBWOOFER
SYSTEMS**



Declaration of Conformity

Application of Council Directive: 73/23/EEC (Low Voltage Directive)
89/336/EEC (EMC Directive)

Standard(s) to which Conformity is Declared: EN55103-1
EN55103-2
EN60065

Manufacturer's Name: Hafler

Manufacturer's Address: 546 South Rockford Drive, Tempe, Arizona 85281

Importer's Name: _____

Importer's Address: _____

Type of Equipment: Amplified Subwoofer

Model No: VRM10sCE VRM12sCE VRM15sCE

Year of Manufacturing: 1999 2000 2001 2002 2003

Serial Number: _____

*I, the undersigned, hereby declare that the equipment specified above conforms
to the above Directive(s) and Standard(s)*

Place: **Hafler**

Date: **12/01/98**


James C. Strickland, VP Engineering

SUBWOOFER MODEL

Free Field Frequency Response
Peak Acoustic Output
Total Harmonic Distortion (THD)
Low Frequency Driver

Dimensions

Cabinet Finish
Net Weight

VRM10S

27Hz-100Hz, ± 2 dB
>112dB (w/music @ 2m)
<3%, 30Hz (90dB @ 2m)
10" (254mm) Cellulose Fibre Cone
Santoprene Rubber Surround
2" (51mm) 4-Layer Voice Coil
30 oz. Magnet
1.0ft³ (28 Liter) Bass Reflex Down Firing

14.75"(H) x 16.0"(W) x 17.50"(D)
(37.46cm x 40.64cm x 40.64cm)
Black Ebony Ash Vinyl
51 lbs. (23.2kg)

VRM12S

25Hz-100Hz, ± 2 dB
>115dB (w/music @ 2m)
<3%, 25Hz (90dB @ 2m)
12" (305mm) Cellulose Fibre Cone
Santoprene Rubber Surround
2.5" (63.5mm) 4-Layer Voice Coil
102 oz. Magnet
1.8ft³ (50.4Liter) Bass Reflex Down Firing

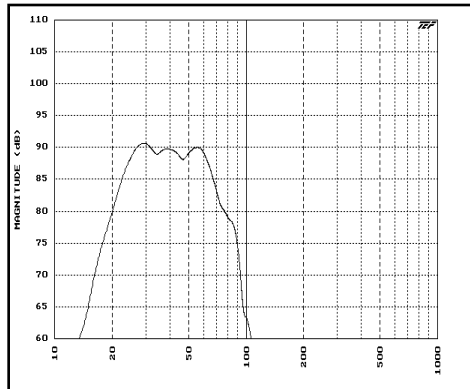
16.75"(H) x 18.50"(W) x 19.50"(D)
(46.35cm x 49.53cm x 49.21cm)
Black Ebony Ash Vinyl
74 lbs. (33.6kg)

VRM15S

22Hz-100Hz, ± 2 dB
>118dB (w/music @ 2m)
<3%, 22Hz (90dB @ 2m)
15" (381mm) Cellulose Fibre Cone
Santoprene Rubber Surround
2.5" (63.5mm) 4-Layer Voice Coil
153 oz. Magnet
2.5ft³ (70 Liter) Bass Reflex Down Firing

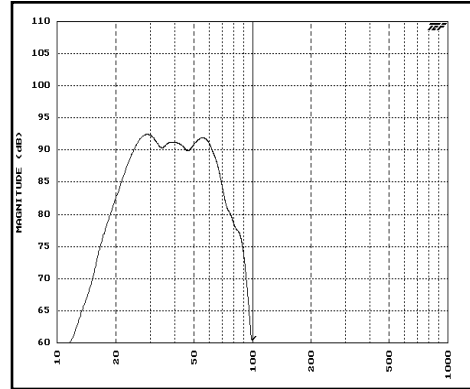
18.75"(H) x 20.0"(W) x 21.0"(D)
(46.35cm x 49.53cm x 49.21cm)
Black Ebony Ash Vinyl
88 lbs. (40kg)

VRM10s
Frequency Response



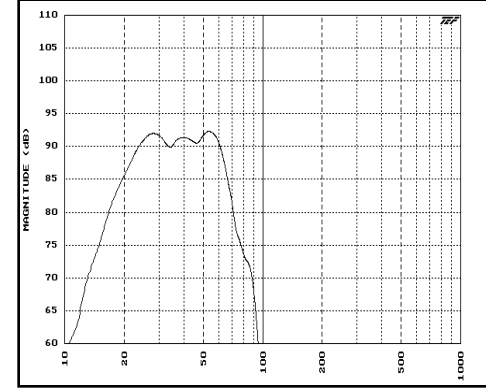
Frequency Response @ 2m*

VRM12s
Frequency Response



Frequency Response @ 2m*

VRM15s
Frequency Response



Frequency Response @ 2m*

Performance Specifications - Amplifier Section

Power Rating	200W RMS @ 4 ohms
Signal-to-Noise.....	>100dB
CMRR	>70dB typical @ 60Hz
Input Impedance	47k Ω per phase balanced, 47k Ω unbalanced
Input Sensitivity Range.....	RCA Input: 160mV to 5V RMS Speaker Input: 50mV to 45W (receivers that drive nominal 8 Ω speaker loads)
Maximum Input.....	RCA Input: 10V RMS Speaker Input: 180W (receivers that drive nominal 8 Ω speaker loads)
Gain.....	+45dB max. to +15dB min.

Power Consumption

Idle Power: 11W / 150mA @ 120 VAC

Idle Power: 11W / 90mA @ 230 VAC

Normal Operation: 66W / 380mA @ 230VAC

Full Power: 330W / 3.3A @ 120VAC

Full Power: 315W / 1.7mA @ 230VAC

Rear Panel

Unbalanced RCA Inputs

Gain Control (30dB range)

Low Pass Crossover (variable 40Hz~140Hz)

Phase DIP Switches (0°, -90°, -180°, -270°)

Low -Pass Crossover Section

Crossover Frequency	Variable from 40Hz~140Hz
Crossover Slope	24dB/octave (4th order) Linkwitz-Riley
Subsonic Filter	12dB/octave (-3dB @ 18Hz)

Specifications are subject to change without notice.

Table of Contents

PERFORMANCE SPECIFICATIONS	
Frequency Response Graphs.....	i
INTRODUCTION.....	1
TECHNICAL DESIGN FEATURES.....	1
DESIGN FEATURES.....	4
INSTALLATION	
Location.....	5
Typical Studio Installations.....	5
Home Theater Installations.....	5
Input Switch.....	6
XLR Wiring Configurations.....	7
OPERATION	
Auto Turn-On/Sleep Mode.....	8
Input Sensitivity.....	8
Low-Pass Crossover.....	8
Phase Control.....	9
Set-up Procedure.....	9
AC Line.....	10
LED Indicator.....	10
Break-In and Warm Up.....	10
Cleaning and Maintenance.....	10
SERVICE POLICY & LIMITED WARRANTY.....	11
SAFETY PRECAUTIONS.....	12

Introduction

Thank you and congratulations on your purchase of the HAFLER series of Subwoofer, the world's finest brand in professional audio equipment.

The VRM series is comprised of three modules; the VRM10s, VRM12s, and VRM15s. The VRM10s is an amplified 10" subwoofer. The VRM12s is an amplified 12" subwoofer and the VRM15s is an amplified 15" subwoofer. All VRM series are designed and engineered for Home Theater Systems.

For ease of use, this manual is organized into two main sections: Installation and Operation. "Installation" covers the set-up of your new HAFLER equipment in the system. "Operation" covers the controls and how to use them for optimum performance.

Technical Design Features

The VRM10s/VRM12s/VRM15s monitors utilize a specially designed amplifier featuring our innovative Trans•ana circuitry. This topology, with its unique input-to-output configuration (derived from our patented Trans•nova circuit), employs power gain in the MOSFET output stage that result in superior sound quality.

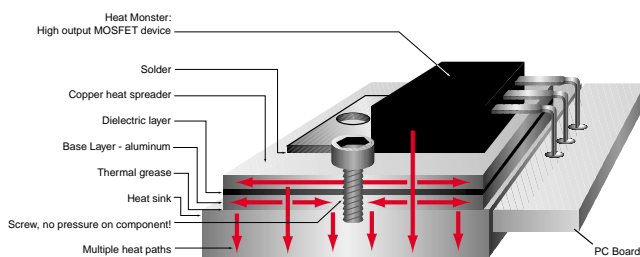
The amplifier features an auto turn-on/off circuit that eliminates the need for a conventional power switch. Input signals can be fed into the amplifier via Un-Balanced RCA jacks or Speaker level input jacks. Each pair of inputs is combined into a mono-summed signal before being fed into a 4th order Linkwitz-Riley low-pass crossover, adjustable from 40Hz~140Hz. If selected, the signal is then fed into the Phase Control that allows the phase of the signal to be adjusted at 90°, 180°, or 270° increments.

The VRM10s is a 10" (254mm) low frequency transducer that features a 2" (51mm) voice coil and is driven by a 30 oz. magnet. The VRM12s is a 12" (305mm) low frequency transducer that features a 2.5" (63.5mm) voice coil and is driven by a 102 oz. magnet. The VRM15s is a 15" (381mm) low frequency transducer that features a 2.5" (63.5mm) voice coil and is driven by a 153 oz. magnet. All VRM transducers feature Cellulose Fiber cones for accurate sound reproduction and Santoprene Rubber Surrounds that are immune to temperature fluctuations. This specialized rubber surround controls woofer damping and reduces 2nd harmonic distortions for a very wide and flat frequency response. The VRM series voice coils are 4-layers of copper wound on aluminum formers. Aluminum voice coil formers provide excellent heat dissipation that provides higher power handling versus plastic or Kapton type formers used by other manufacturers.

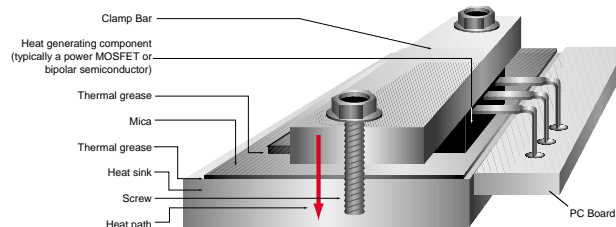
Technical Design Features

MEHSA

(Maximum Efficiency HeatSink Application) MEHSA is a proprietary process that yields up to 5 times better heat transfer than traditional FET mounting techniques using the exact same components. A multi-layer insulated metal substrate operating with minimal thermal resistance spreads heat both downward and outward to quickly dissipate heat from each device across the heatsink. This process combined with our DSM technology and MOSFET devices allows us to squeeze more watts per cubic inch from every output device as well as provide consistent thermal stability.



The MEHSA Way



The Old Way

The Result: Better reliability through faster heat dissipation.

Trans•ana

Trans•ana (TRANSconductance Active Nodal Amplifier) is a circuit that allows the audio signal to pass through the amplifier at low voltage. The signal is directly level-shifted to the fixed high voltage rails via a pair of driver transistors. Signal linearity is assured by an active node formed by the driver transistors at ultrasonic frequencies. This allows amplifier performance similar to Trans•nova which is highly stable and linear while utilizing the advantages of a non-floating power supply.

The Result: An extended frequency band width accurately supplied to the output stages of the amplifier.

MOSFET Devices

HAFLER is one of the few manufacturers in the sound community to utilize MOSFET devices in the amplifier output stage. MOSFET (Metal Oxide Semiconductor Field Effect Transistor) devices offer several important inherent advantages over older bi-polar designs. These advantages include: thermal stability, fast switching speed, ultra low output impedance and wide bandwidth linearity. In addition, MOSFETs operate very similarly to vacuum tubes in that they are more linear than bipolar transistors. However, MOSFETs can deliver the midrange clarity without the limitations of transient response and high frequency phase shifting normally associated with tube operation.

The Result: Thermal stability, fast switching speed, ultra low output impedance and wide bandwidth linearity.

Subsonic Filter

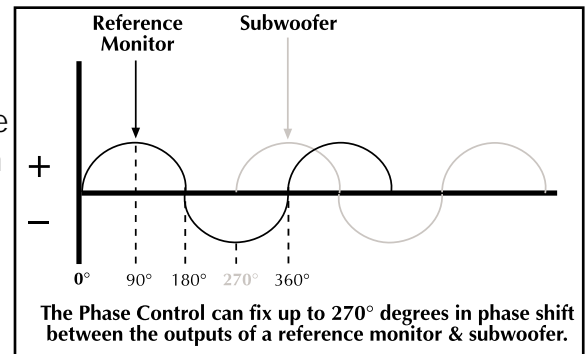
The VRM series uses a Subsonic Filter to prevent the woofer from reproducing inaudible frequencies. Subsonic frequencies (known as infrasonic frequencies) are signals below the normal human hearing range. The subsonic filter reduces the energy of these frequencies and restrains the woofer from operating outside its optimum linear excursion. This type of electronic control eliminates the mechanical distortion caused by a woofer traveling beyond its XMAX, improves power handling, increases reliability and improves sonic performance.

The Result: Improved power handling, increased reliability and improved sonic performance.

Phase Control

The Phase Control is used to align the arrival time of the subwoofer's output information with satellite monitors. Aligning both signals will insure that both Subwoofer and reference monitor information arrive at the listening position at the same time. This eliminates the possibility of acoustical cancellation and improves the reproduction of transients in the crossover region.

The Result: Eliminates phase cancellation and improves transient response.



Speaker Level Inputs

Does your receiver have only speaker level outputs? No problem! Hafler's Speaker Level Input circuitry converts the speaker line outputs (high level) from your receiver into pre-amp line inputs (low level) for your VRM amplifier. This allows compatibility with a variety of receivers as well as the ability to retrofit your new Hafler subwoofer into existing systems without the need for external adapters.

Santoprene Rubber Surround

Santoprene is a very durable and temperature tolerant material which provides a consistent support necessary for the linear motion of the speaker cone. In addition, the damping capabilities eliminate the transmission of sonic disturbances between the cone and the frame of the speaker. This greatly improves the accuracy of the woofer's low frequency response.

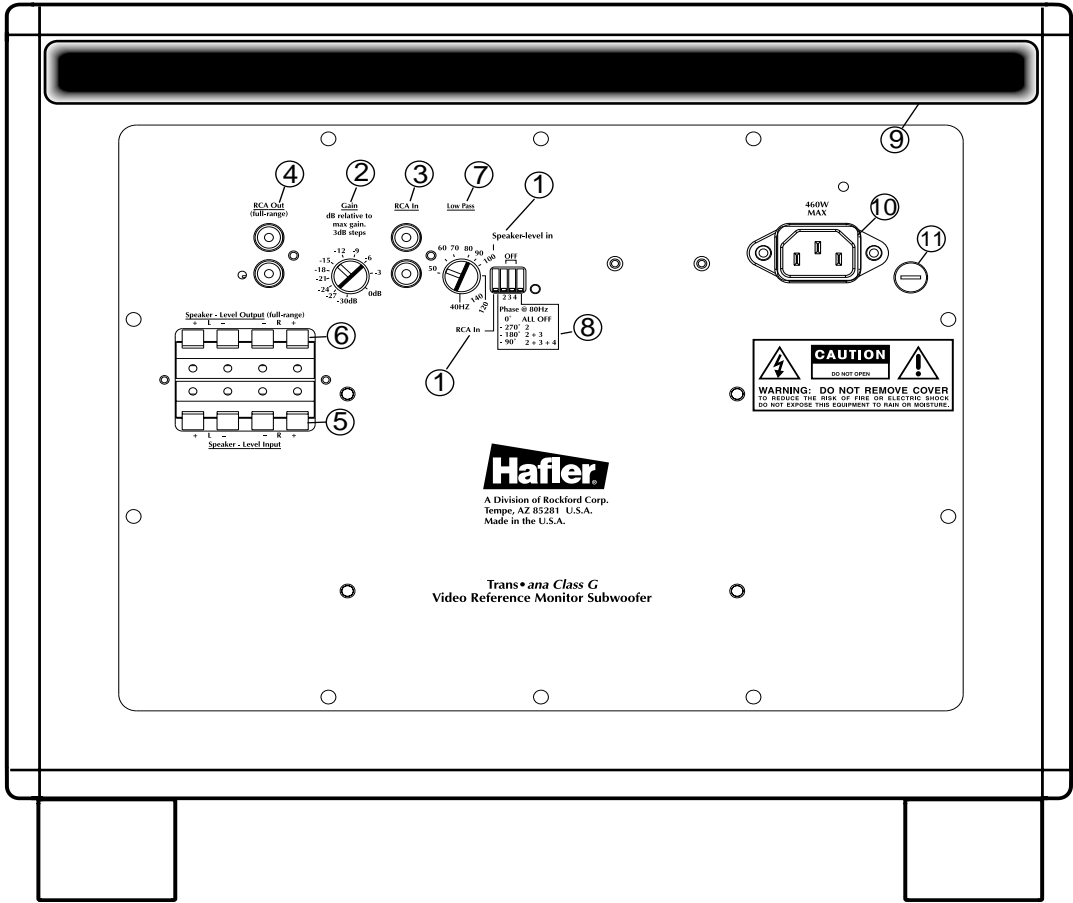
The Result: Improves woofer's low frequency response.

Aluminum Voice Coil Former

The transducers voice coil former is black anodized aluminum for highly efficient thermal transfer. Another method of producing voice coils is with Kapton® formers. Although this material is very resistant to heat, any heat generated by the transducer is "trapped" on the copper voice coil windings. HAFLEER uses aluminum voice coil formers because aluminum acts like a "heat sink" and helps dissipate heat away from the voice coil. This allows winding high temperature copper wire in multiple layers for improved efficiency.

The Result: Improves power handling by efficiently dissipating heat.

Design Features



1. RCA Input/Speaker Level Input Switch
2. Gain Control
3. RCA Input
4. RCA Output (full range)
5. Speaker Line Input
6. Speaker Line Output (Full range)
7. Low-Pass Crossover
8. Phase Switches
9. Enclosure Vent
10. AC Line Input
11. AC Line Fuse

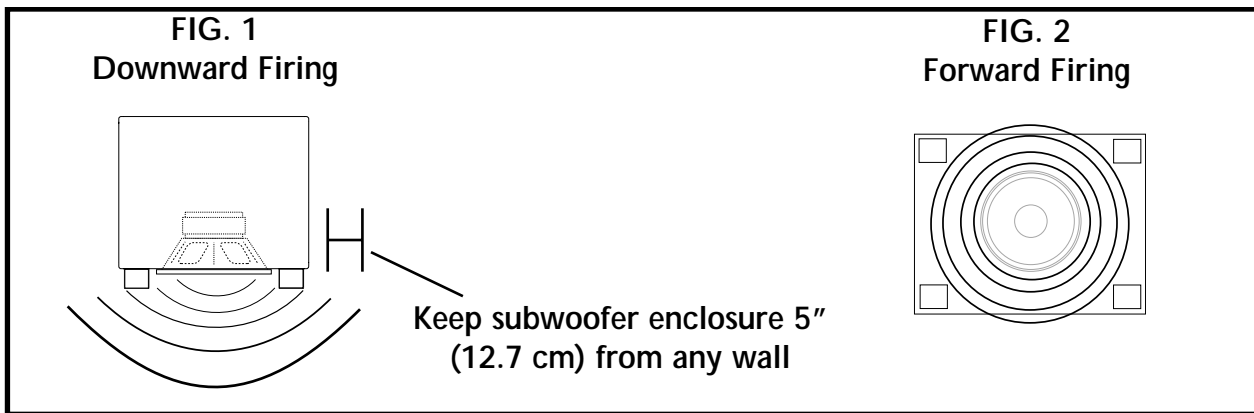
Installation

Location

The size of the room used for your Home Theater can have a significant effect on the bass response of your system. Since many movies exaggerate explosions, earthquakes, and other low frequency effects, a high performance subwoofer system is required. Your Hafler subwoofer is specially designed for these high levels of excursion and linearity. In order to get the most out of your subwoofer, Hafler has documented the differences between typical Studio and Home Theater installations.

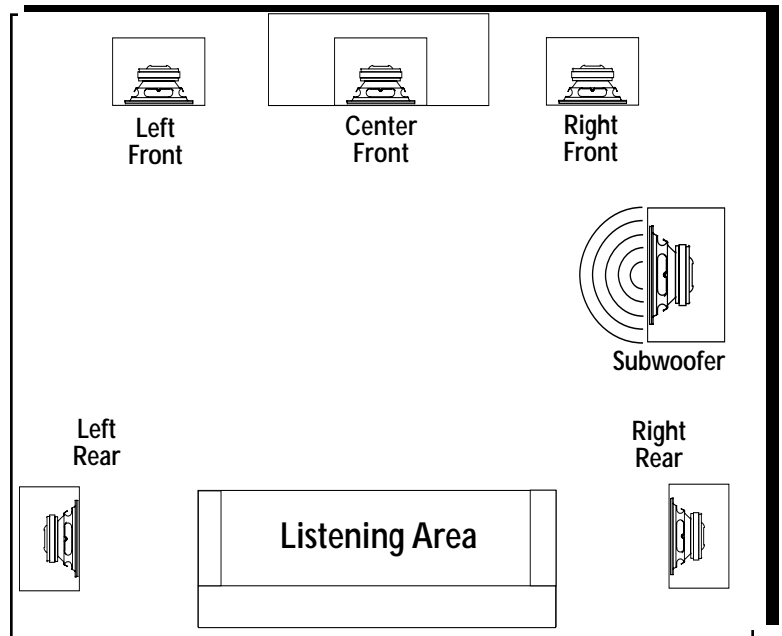
Typical Studio Installations

In typical studio installations, damping material is usually used on the walls and ceilings make the room "acoustically dead." In this type of anechoic environment, the subwoofer will tend to experience minimal "Boundary Loading" effects. Firing the subwoofer downward (FIG. 1) or directly facing forward (FIG. 2) and keeping the cabinet at least 5" (12.7 cm) away from any wall will provide best results.

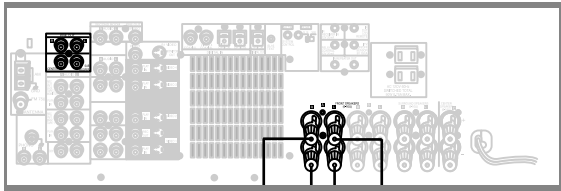


Home Theater Installations

Home Theater installations are typically medium sized living rooms or game rooms that have large flat, uncovered walls. Acoustics in this type of installation can have a big effect on the SPL (Sound Pressure Level) and f_3 (low frequency cut-off) of the subwoofer because the walls are very reflective. The only elements in these installations that acoustically "absorb" sounds are furniture and carpet. Dramatic "Boundary Loading" can be achieved by locating the subwoofer under a table, next to a wall or in a corner (FIG. 4), thus increasing SPL and lowering the f_3 of the subwoofer system. Locating the subwoofer in the middle of the room or in a large open area where there are few reflective surfaces will cause a decrease in SPL and an increase in f_3 . Experiment with different locations in the room to determine which type of bass response works best in your home theater.



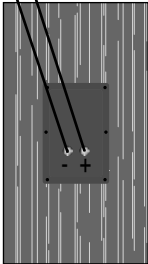
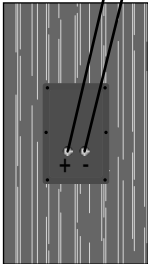
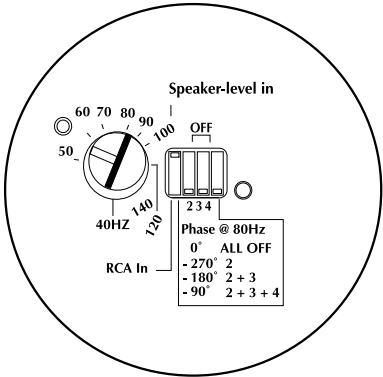
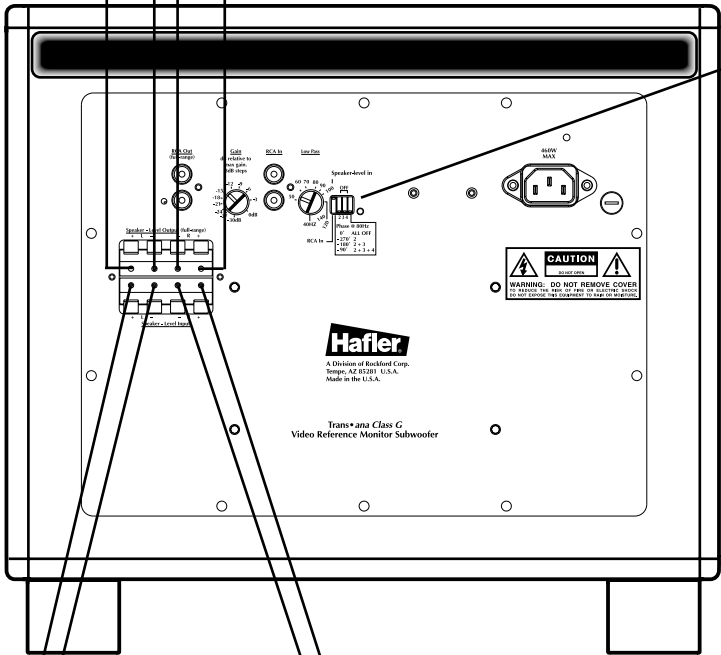
Installation



Receiver

Speaker Level Outputs

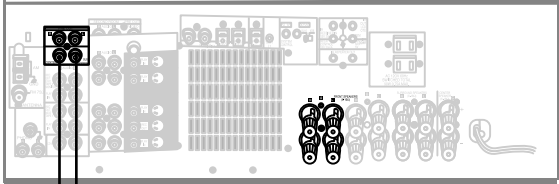
VRM Subwoofer



VRM Satellite Speaker

VRM Satellite Speaker

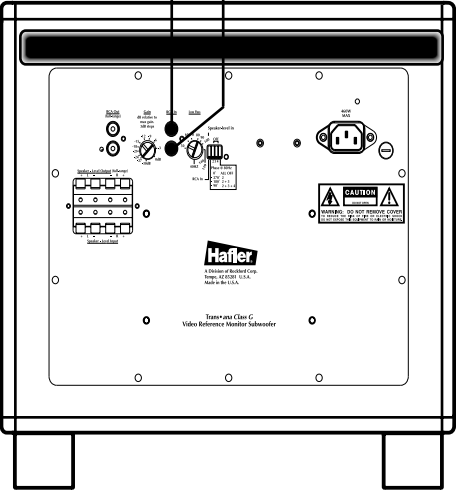
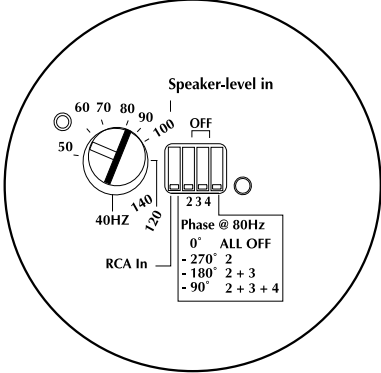
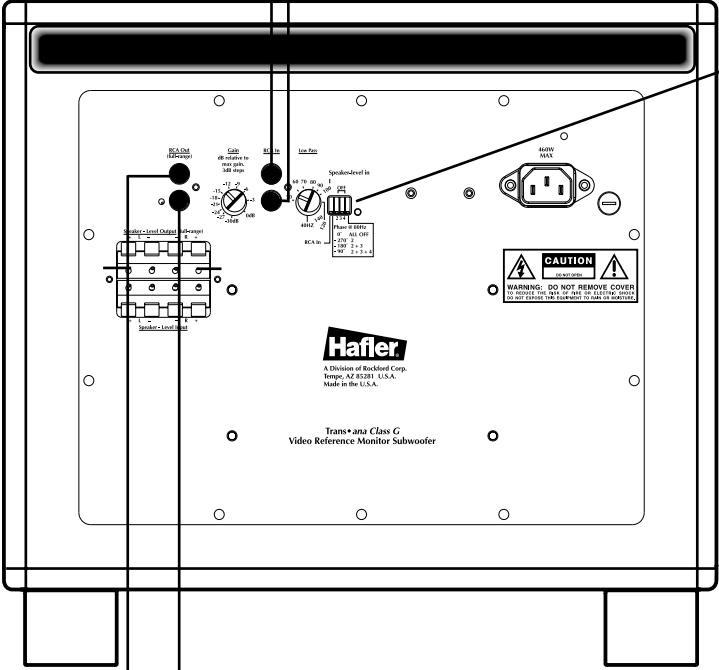
Installation using RCA (low level) Inputs



Receiver

Signal Level Output

VRM Subwoofer



Signal Level Loop (SLL)
 Shown here passing low-level signal to an optional component such as signal processor or an additional Hafler VRM Subwoofer.

Operation

Auto Turn-on / Sleep Mode

The VRM subwoofers automatically turn on when they sense an input signal. When the signal being fed to the VRM is turned off, the subwoofer's amplifier will turn off and go into "sleep mode." This feature eliminates the inconvenience of operating a mechanical power switch.

Input Sensitivity

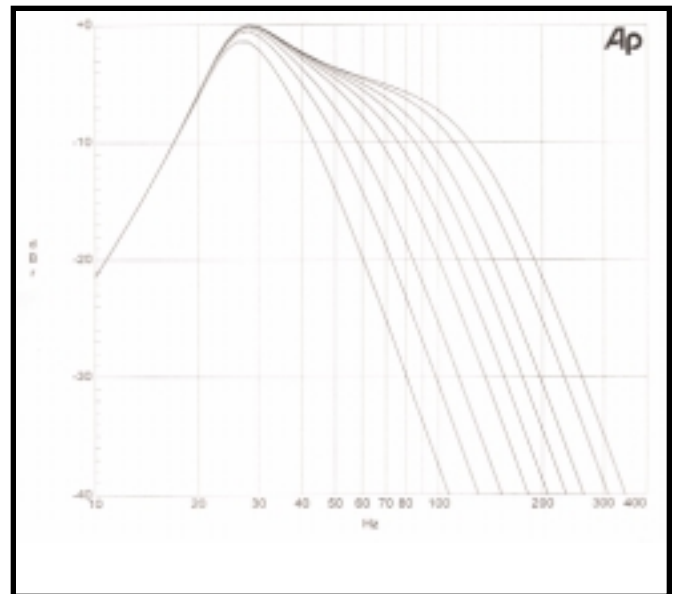
The Input Sensitivity is used to match the VRM series with signal levels from a variety of signal sources. The Input Sensitivity uses a potentiometer to match input levels over a 30dB range and is variable from 0dB to -30dB. The numbers listed on the back panel indicate attenuation from maximum gain, calibrated in dB.

Low-Pass Crossover

The Low-Pass Crossover is used to set the electrical cutoff point of the subwoofer enclosure. The Crossover uses a variable potentiometer to set the cutoff point anywhere between 40Hz and 140Hz. When the control is set to its full COUNTER CLOCKWISE position the cutoff frequency is set to 140Hz Low-Pass. When the control is set to its full CLOCKWISE position the cutoff frequency is set to 40Hz Low-Pass.

It is important to match the Low-Pass crossover point of the subwoofer with the High-Pass crossover point of the high frequency reference monitors. Mismatching the crossover points can cause dips or peaks in the acoustical response. Overlapping the crossover points (i.e., subwoofer at 60Hz Low-Pass & high frequency monitors at 50Hz High-Pass) can cause a peak between 50Hz and 60Hz. Underlapping the crossover points (i.e., subwoofer at 40Hz Low-Pass & high frequency monitors at 70Hz High-Pass) will cause a dip between 40Hz and 70Hz.

We recommend using a crossover setting whenever possible to minimize "localization" of the subwoofer, usually between 50Hz and 60Hz. These low frequencies make it nearly impossible to detect where the subwoofer is in the listening room.



Electrical Crossover Response*

*This graph was generated by setting the variable crossover to 40Hz 50Hz, 60Hz, 70Hz, 80Hz, 90Hz, 100Hz, 120Hz & 140Hz.

Operation

Phase Control

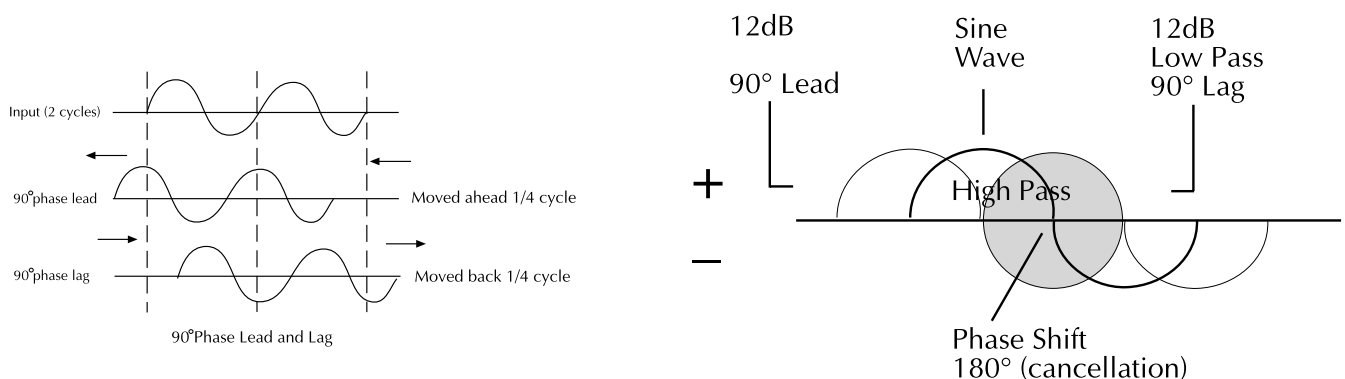
The Phase Control switches allow the VRM subwoofer to be acoustically aligned with other speakers in your system. 0° , -90° , -180° , or -270° degrees of phase shift at 80Hz can be selected using DIP switches 2, 3, and 4. For 0° degrees of phase shift, leave all three switches in the OFF (up) position. -270° degrees of phase shift occurs when switch 2 is selected in the ON (down) position. -180° degrees can be achieved by selecting both switches 2 and 3 in the ON (down) position. Finally, selecting all switches 2, 3, and 4 in the ON (down) position produces -90° degrees of phase shift.

Set-up Procedure

- 1) Place all your speakers and any acoustically significant components in their working location in the listening environment.
- 2) Insert a sine wave signal into the audio path. **Be careful to turn down the level before turning on the amplifiers.**
- 3) Choose a frequency that corresponds to the crossover frequency between the VRM subwoofer and the reference monitors.
- 4) From the listening position, alternate between the VRM subwoofer and the full range speakers and adjust the levels until they have the same acoustic output. Use an SPL meter, a microphone on a VU meter, or your ears to accomplish this.
- 5) With all speakers on, try the 0° , -270° , -180° , and -90° degree phase settings. The setting with the highest SPL reading from your listening position will produce the most effective acoustic alignment.
- 6) Set the VRM10s/VRM12s/VRM15s gain control according to your preference. This will not affect the acoustic alignment of your system.

Here is a list of some items that **can** affect acoustic alignment: Relocating speakers, changing the VRM subwoofer Low Pass frequency, changing the acoustic environment (i.e., traps, diffusers, etc.), changing the listening position.

Although this procedure produces the maximum achievable acoustic gain for your system, listening tests may still lead you to prefer another setup.



Example of how phase misalignment between high frequency speakers and a subwoofer can cause cancellation

AC Line

The VRM10s/VRM12s/VRM15s operate from a 115 VAC/60Hz power line.

The VRM10sCE/VRM12sCE/VRM15sCE operate from a 230 VAC 50/60Hz power line. Connection is made by a 16 gauge, IEC Type 320, grounded line cord. For safety considerations only a properly grounded (earthed) receptacle should be used. If a grounded circuit is not available, do not break off the ground pin; use the proper adapter plug for a two wire receptacle with the grounding plug suitably connected to earth ground.

Important: The power line fuse is mounted on the rear panel. If this fuse blows, replace it only with the same type and rating as indicated in the parts list.

LED Indicator

Amplifier operation is monitored internally and has a status LED. This indicator can be used for system troubleshooting. The LED will illuminate GREEN if signal is present at the subwoofer's input. The LED will turn off and the amplifier will go into sleep mode if signal is not present.

COLOR	STATUS
GREEN	Power on
NO LED	Sleep Mode

Break-in and Warm-up

We recommend initially breaking in the subwoofer for approximately 8 hours with musical information to establish the subwoofer's natural bass response.

Cleaning & Maintenance

There is no requirement for regular maintenance on the electronic components of the subwoofer. If the cabinet or woofer becomes soiled, it can be cleaned using a damp, soft cloth. If the subwoofer is located in a particularly dusty environment, cleaning the inside with compressed air or vacuuming every 18 to 24 months is sufficient.

Service Policy and Limited Warranty

Rockford Corporation (Hafler Division) offers a limited warranty on Hafler products on the following terms:

- **Length of Warranty**
1 year on Subwoofer Monitors
- **What is Covered**
This warranty applies only to products sold to the original owner and is non-transferable. This warranty only applies to units sold in the continental United States. You are required to have a copy of the receipt stating the customer's name, dealer name, product purchased and date of purchase.
- **Products found to be defective during the warranty period** will be repaired or replaced (with product deemed to be equivalent) at Hafler's discretion.
- **What is NOT Covered**
 1. Damage caused by accident, abuse, improper operations, water, theft
 2. Service performed by anyone other than Hafler or an Authorized Hafler service center
 3. Any product purchased outside the United States (please contact your local dealer)
 4. Shipping charges to get the unit to Hafler
 5. Any product which has had the serial number defaced, altered, or removed
- **Limit on Implied Warranties**
Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Hafler any other liability in connection with the sale of the product.
- **How to obtain service or technical support**
Please call 1-800-669-9899 for Rockford/Hafler support. You must obtain an RA # (return authorization number) to return any products to Hafler. You are responsible for shipment of product to Hafler.

Rockford Corporation
Hafler Division
2055 E. 5th Street
Tempe, Arizona 85281

NOTICE - IMPORTANT SAFETY INFORMATION



**WARNING: TO PREVENT FIRE OR SHOCK HAZARD
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.**

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read Instructions

All the safety and operating instructions of your Hafler equipment should be read before power is applied to the equipment.

2. Retain Owner's Manual

These safety and operating instructions should be retained for future reference.

3. HEED WARNINGS

All warnings on the equipment and in the operating instructions are important and should be followed.

4. FOLLOW INSTRUCTIONS

All operating and use instructions are important and should be followed.

5. HEAT

The equipment should be kept away from areas of high temperature, i.e., heater vents, radiators, stoves/ovens, fireplaces, etc.

6. VENTILATION

The equipment should be used in an area suitable for proper ventilation. Care should be taken not to impede airflow in and around the cabinet.

7. WATER AND MOISTURE

The equipment should not be used in or around water, such as a bathtub, sink, or swimming area. Also, the equipment should not be used in areas prone to flooding, such as a basement.

8. POWER SOURCES

The equipment should be connected only to a power source of the same voltage and frequency as that listed on the rear panel above the power cord entry point.

9. POWER CORD PROTECTION

Power cords should be arranged so they do not interfere with the movement of objects in the room: people, fan blades, utility carts, etc. Also, care should be taken that the cord is not pinched or cut, and placed so it is not in danger of being pinched or cut, as in under a rug, around a tight corner, etc.

10. POWER CORD GROUNDING

The power supply cord is of a three wire grounded type, designed to reduce the risk of electric shock sustained from a live cabinet. It is assumed to be of suitable length for most uses of the equipment. The use of extension cords and power strips is discouraged unless they are of suitable rating to deliver the required total current for safe operation of all connected equipment. Furthermore, extension cords or power strips must provide the same three wire

grounded connection. It is important that the blades of the equipment's plug be able to fully insert into the mating receptacle. Never remove the round grounding pin on the plug in an attempt to mate to a two wire ungrounded receptacle: use a grounding adapter with the grounding tab or wire suitably connected to earth ground.

11. NON-USE PERIODS

During periods of extended non-use, the power cord should be unplugged from the power source.

12. CLEANING

The equipment should be cleaned only as detailed in the operating instructions.

13. OBJECT AND LIQUID ENTRY

Care should be taken so that objects and/or liquids, such as cleaning fluids or beverages, are not spilled into the enclosure of the equipment.

14. DAMAGE REQUIRING SERVICE

Hafler equipment should be serviced by qualified service personnel when:

- A. The power supply cord or plug has been damaged, or
- B. Objects have fallen onto, or liquid has been spilled into the equipment, or
- C. The equipment has been exposed to rain, or
- D. The equipment does not appear to operate normally or exhibits a marked change in performance, or
- E. The equipment has been dropped, or the enclosure has been damaged.

15. SERVICING

The user should not attempt to service the equipment beyond that which is described in the operating instructions. All other service should be referred to qualified service personnel.

16. CARTS AND STANDS

The equipment should be used with carts or stands only of sufficient strength and stability for the use intended.

An equipment and cart combination should be moved with care. Quick stops and starts, excessive force, and uneven surfaces may cause the equipment and cart combination to topple.

ADVERTENCIA – INFORMACION DE SEGURIDAD IMPORTANTE



PRECAUCIONES:

Para Prevenir el incendio o la descarga eléctrica, no exponer este equipo a la lluvia o a la humedad

El símbolo de flecha relámpago dentro de un triángulo equilátero, es para alertar al usuario de la presencia de “voltajes peligrosos” no aislados en el interior del aparato, los cuales pueden ser de suficiente magnitud para constituir un riesgo de choque eléctrico a las personas.

El símbolo de exclamación dentro de un triángulo equilátero, es para alertar al usuario de la presencia de instrucciones importantes de operación y mantenimiento (servicio) en la documentación que acompaña al equipo.

1.LEA LAS INSTRUCCIONES

Todas las instrucciones de seguridad y operación de su equipo Hafler, deben ser leídas antes de que el equipo sea conectado eléctricamente.

2.CONSERVE EL MANUAL DEL PROPIETARIO

Estas instrucciones de seguridad y operación, deben ser conservadas para futuras referencias.

3.CUADROS DE ADVERTENCIAS

Todas las advertencias en el equipo y en las instrucciones de operación, son importantes y deben ser seguidas.

4.SIGA LAS INSTRUCCIONES

Todas las instrucciones de uso y operación son importantes y deben ser seguidas.

5.CALOR

El equipo debe ser mantenido lejos de áreas de alta temperatura, como por ejemplo: ventilaciones de calentadores, radiadores, estufas/hornos, hogueras, etc.

6.VENTILACION

El equip debe ser usado en áreas con ventilación adecuada. Deben er tornadas las precauciones necesarias para no impedir el flujo de aire dentro y alrededor del aparato.

7.AGUA Y HUMEDAD

El equipo no debe ser usado en el agua ó alrededor de ésta, tales como en una bañera, tanque o áreas de nado. También, el equipo no debe ser usado en áreas propensas a inundaciones, tales como en un sótano.

8.FUENTES DE PODER

El equipo debe ser conectado a una fuente de poder del mismo voltaje y frecuencia que el indicado en el panel trasero sobre el punto de entrada del cable de corriente.

9.PROTECCION DEL CABLE DE CORRIENTE

Los cables de corriente deben ser dispuestos de forma tal que no interfieran con el movimiento de objetos en la sala: personas, aspas de ventilación, carretillas, etc. También, es necesario tener cuidado de que el cable no esté punzado o cortado, y debe estar ubicado de forma tal que esto no ocurra, como podría suceder debajo de una alfombra o al pasar el cable por una esquina aguda, etc.

10.ATERRAMIENTO DEL CABLE DE CORRIENTE

El cable de corriente es del tipo aterrado de tres hilos, diseñado para reducir el riesgo de una descarga eléctrica procedent de un chasis energizado. Se asume que su longitud es suficiente para la mayoría de usos del equipo. El uso de extensiones y multienchufes no es recomendado, a menos que tengan el amperaje

adecuado para poder suministrar la corrioente requerida pra la operación segura de todo el equipo conectado. Aun más, las extensiones deben proveer de la misma conexión aterrada de tres hiles. Es importante que el enchufe se pueda introducir completamente en el receptáculo. Nunca remeva el pin de aterramiento en un intento por conectar el cable en un receptáculo de dos hilos no aterrado: use un adaptador de aterramiento que esté adecuadamente conectado a un punto de tierra.

11.PERIODOS SIN USO

Durante períodos prolongados sin uso del equipo, el cable de corriente debe ser desconectado de la fuente de electricidad.

12..LIMPIEZA

El equip debe ser limpiado solo en la forma que se detalla en las instrucciones de operación.

13..INTRODUCCIÓN DE OBJETOS Y LIQUIDO

Deben ser tornadas precauciones con el fin de que objetos y/ó líquidos, tales como fluidos de limpieza y gaseosas, no sean derramados dentro del chasis del aparato.

14.DAÑOS QUE REQUIEREN DE SERVICIO

Los equipos Hafler deben ser llevados a servicio por personal calificado cuando:

A.El cable de corriente ó el enchufe haya sido dañado, ó

B.Objetos ó líquido hayan sido introducidos ó deramado en el equipo, ó

C.El equipo haya sido expuesto a lluvia, ó

D.El equipo aparenta no operar normalmente ó exhibe un marcado cambio en su desempeño, ó

E.El equipo se ha caído, o el chasis ha sido golpeado.

15.SERVICIO

El usuario no deberá intentar darle servicio al equipo más allá de lo que está descrito en el instructivo de operación. Todo lo demás, deberá ser referido a servicio por personal calificado.

16.CARRETILLAS Y SOPORTES

El equipo podrá ser usado con carretillas y soportes que tengan la fortaleza y estabilidad suficiente para el uso previsto.

La combinación equipo/carretilla deberá ser movida con cuidado. Rápidas paradas y arranques, excesiva fuerza y superficies imparejas, pueden causar el volcamiento del conjunto de carretilla/equipo.

ATTENTION: INFORMATIONS IMPORTANTES DE SÉCURITÉ



AVERTISSEMENT:

Afin de prévenir les risques de feu ou de choc, ne pas exposer cet appareil à la pluie ou à l'humidité

La lumière clignotante du symbole de la flèche à l'intérieur d'un triangle équilatéral, à pour objet d'alerter l'utilisateur de la présence "d'un voltage dangereux" non-isolé à l'intérieur du produit, qui pourrait être de magnitude suffisante au risque d'électrocution.

Le point d'exclamation, à l'intérieur d'un triangle équilatéral, à pour objet de prévenir l'utilisateur de l'importance des instructions de fonctionnement et de maintenance, jointes à l'appareil.

1. LIRE LES INSTRUCTIONS

Le mode d'emploi et les mesures de sécurité de votre équipement Hafler devraient être consultés avant sa mise en marche.

2. CONSERVER LE GUIDE DE L'UTILISATEUR

Le mode d'emploi et les mesures de sécurité devraient être conservés pour des références futures.

3. CONSIDÉRATIONS DE MISE EN GARDE

Le mode d'emploi et les mises en garde concernant cet équipement sont de grande importance et devraient être suivis.

4. SUIVRE LE MODE D'EMPLOI

Le mode d'emploi et les conseils d'utilisation sont importants et devraient être suivis.

5. CHALEUR

Le matériel devrait être préservé loin de toute source de chaleur: radiateurs, cuisinière/fours, cheminées,...etc.

6. VENTILATION

Le matériel devrait être utilisé dans un endroit à bonne ventilation. Il reste nécessaire de respecter la circulation de flux d'air à l'intérieur et autour du meuble.

7. EAU ET HUMIDITÉ

Le matériel ne devrait pas être utilisé près d'une source d'eau, telle qu'une baignoire, un évier, ou une aire de baignade. De plus, le matériel ne devrait pas être utilisé dans des lieux sujets aux inondations, tels que les sous-sols.

8. SOURCES D'ÉNERGIE

Le matériel devrait seulement être relié à une source d'énergie de même voltage et fréquence que celle indiquée sur le tableau arrière, au dessus de la fiche d'entrée de la prise de courant.

9. PROTECTION DE LA PRISE DE COURANT

La prise de courant devrait être arrangée de façon à ne pas interférer avec le déplacement d'objets (chariots, pales de ventilateurs...etc.) ou de personnes à l'intérieur de la pièce. D'autre part, il faudrait faire très attention à ce que la prise ne soit pas percée ou coupée, ou disposée de façon à risquer de l'être, comme sous un tapis, autour d'un angle pointu...etc.

10. PRISE DE COURANT À TROIS FICHES

La prise de courant est composée de trois fiches, désignées à réduire le risque de décharge électrique de l'appareil.

Elle devrait être de longueur suffisante pour la plupart des utilisations de ce matériel. L'utilisation de rallonge et d'adaptateur est déconseillée à moins d'être en mesure de fournir la charge électrique requise à un fonctionnement sans risque, de tout matériel relié.

11. PÉRIODES DE NON-UTILISATION

Durant les périodes de non-utilisation, la prise de courant ne devrait pas être branchée à une source d'énergie.

12. NETTOYAGE

Le matériel devrait être nettoyé en respectant les instructions indiquées.

13. PÉNÉTRATION DES LIQUIDES

Une attention particulière est exigée quant à la dispersion de liquides tels que les produits de nettoyage et boissons, de façon à éviter toute pénétration dans l'enceinte du matériel.

14. DÉGÂT NÉCESSITANT UNE RÉVISION

Le matériel Hafler devrait être révisé par des personnes qualifiées de service après-vente, lorsque:

A. Les fiches ou la prise de courant ont été endommagés, ou:

B. Des objets sont tombés sur le matériel, ou des liquides s'y sont dispersés, ou:

C. Le matériel a été exposé à la pluie, ou:

D. Le matériel ne semble pas fonctionner correctement, ou affiche un changement de performance, ou:

E. Le matériel a été renversé à terre, ou l'enceinte a été endommagée.

15. RÉVISION

L'utilisateur ne devrait pas essayer de réviser le matériel en allant plus loin que ce qui a été décrit dans le mode d'emploi. Toute autre révision devrait être confiée à un personnel qualifié.

16. CHARRIOTS ET MEUBLES

Le matériel devrait être utilisé avec des chariots et meubles de qualité et stabilité suffisante à son utilisation préconçue.

L'ensemble du matériel et du charriot devrait être déplacé avec précaution. Des mises en marche et arrêts brusques, des collisions excessives ainsi que des surfaces inégales peuvent renverser l'ensemble du matériel et du charriot.

ACHTUNG – WICHTIGE SICHERHEITS – INFORMATIONEN



WARNUNG:

Um die Gefahr eines Elektroschocks oder Feuer zu vermeiden, setzen Sie das Gerät keinem Regen oder extremer Feuchtigkeit aus.

Der Blitz mit dem Pfeil, in einem gleichschenkligen Dreieck, soll den Benutzer vor unisolierter "gefährlicher Spannung" innerhalb des Gerätes warnen.

Das Ausrufezeichen, in einem gleichschenkligen Dreieck, soll den Benutzer darauf aufmerksam machen, dass dem Gerät wichtige Operations- und Service-Informationen beigelegt sind.

1. INSTRUKTIONEN LESEN

Alle Sicherheits- und Operationshinweise Ihres Hafler Equipments sollten vor der Inbetriebnahme gelesen werden.

2. BETRIEBSANLEITUNG AUFBEWAHREN

Bewahren Sie die Bedienungsanleitung sorgfältig auf, damit Sie in dieser auch in Zukunft nachschlagen können.

3. WARNUNGEN BEACHTEN

Alle Warnungen des Gerätes und der Bedienungsanleitung sind extrem wichtig und müssen befolgt werden.

4. INSTRUKTIONEN BEACHTEN

Alle Operations- und Gebrauchshinweise sind extrem wichtig und müssen beachtet werden.

5. HITZE

Das Equipment sollte fern von Hitze ausstrahlenden Geräten aufgestellt werden, wie z.B. Heizungen, Öfen etc.

6. VENTILATION

Das Equipment sollte so aufgestellt werden, dass eine ausreichende Ventilation gewährt wird.

7. WASSER UND FEUCHTIGKEIT

Das Equipment sollte nicht im oder in der Nähe von Wasser benutzt werden, wie z.B. in Schwimmbädern, Saunen etc. Es sollte ebenfalls nicht in überschwemmungsgefährdeten Gebieten aufgestellt werden, wie z.B. Kellerräumen.

8. STROMANSCHLUB

Das Equipment darf nur an eine Stromversorgung angeschlossen werden, die die gleichen Parameter aufweist, welche auf der Rückseite, über ein Anschlussterminal des Gerätes, aufgelistet sind.

9. SCHUTZ DER ZULEITUNG

Die Zuleitungen sollten so verlegt werden, dass diese nicht in den Bewegungsbereich anderer Möbelstücke oder Personen hereinragen. Achten Sie darauf, dass das Kabel nicht gequetscht oder durchschnitten wird, wie z.B. unter Schränken oder an scharfen Kanten etc.

10. MASSEANSCHLUB

Das dreidradige Anschlusskabel ist mit einem Erdungsleiter ausgestattet, welcher die Risiken eines Elektroschocks verringert. Das Kabel hat eine Länge, welche für die meisten Anwendungen völlig ausreicht. Wenn Sie Verlängerungskabel benutzen, achten Sie darauf, dass dies die erforderlichen Ströme übertragen können. Benutzen Sie immer dreidradige Verlängerungskabel.

11. ZEITRÄUME IN DENEN DAS GERÄT NICHT GENUTZT WIRD

Wird das Gerät über einen längeren Zeitraum nicht genutzt (z.B. Urlaub), ziehen Sie bitte den Netzstecker aus der Steckdose.

12. REINIGEN

Reinigen Sie das Gerät nur, wie in der Bedienungsanleitung detailliert beschrieben.

13. EINDRINGEN VON FREMDKÖRPERN

Achten Sie darauf, dass weder Fremdkörper, noch Flüssigkeiten in das Gerät eindringen.

14. ERFORDERLICHER REPARATURSERVICE

Hafler Equipment sollte nur von qualifizierten Service-Technikern instand gesetzt werden, wenn:

A. Das Stromversorgungskabel beschädigt wurde

B. Eine Flüssigkeit in das Gerät eingedrungen ist

C. Das Gerät Regen ausgesetzt wurde

D. Das Gerät nicht mehr ordnungsgemäß funktioniert, ggf. nicht mehr die volle Leistung abgibt

E. Das Gerät runtergefallen ist oder das Gehäuse beschädigt wurde

15. SERVICE

Der Benutzer sollte nur den Service ausführen, der in der Bedienungsanleitung für den Benutzer freigegeben wird. Den weiterführenden Service sollte nur von qualifizierten Technikern durchgeführt werden.

16. AUFSTELLUNG

Das Equipment sollte so aufgestellt werden, dass der gewählte Untergrund die erforderliche Stabilität aufweist, so dass eine gefahrlose Benutzung gewährleistet wird.

Das Equipment und der Untergrund sollte mit äußerster Vorsicht bewegt werden. Bei schnellen Bewegungen oder starkem Abbremsen, kann es zum Umkippen des Equipments kommen.

NOTARE – IMPORTANTI INFORMAZIONI SULLA SICUREZZA



ATTENZIONE:
Per prevenire incendio scariche elettriche, non esporre questo apparato a pioggia o umidità.

Il simbolo del fulmine in un triangolo equilatero vuole avvertire della presenza di tensioni elevate non isolate e di valore sufficiente per costituire rischio di shock elettrico alle persone.

Il punto esclamativo contenuto in un triangolo equilatero vuole avvertire l'utente della presenza di parti di servizio e di manutenzione che sono dettagliate nel manuale di istruzioni.

1.LEGGETE LE ISTRUZIONI

Tutte le istruzioni riguardanti la sicurezza ed il funzionamento devono essere lette prima di applicare tensione all'apparato.

2.CONSERVATE IL MANUALE

Queste istruzioni riguardanti la sicurezza ed il funzionamento devono essere conservate come riferimento futuro.

3.AVERTENZE

Tutte le avvertenze poste sull'apparato e sul libretto di istruzioni sono importanti e devono essere seguite.

4.SEGUIRE LE ISTRUZIONI

Tutte le istruzioni operative e di funzionamento devono essere seguite.

5.TEMPERATURA

L'apparato deve essere mantenuto lontano da tutte le zone ad alta temperatura, termosifoni, termoconvettori, stufe e forni, caminetti ed altro.

6.VENTILAZIONE

L'apparato deve essere posizionato in aree convenienti per una corretta ventilazione. Prestare attenzione che sia consentita circolazione d'aria attorno e dentro il cabinet.

7.ACQUA E POLVERE

L'apparato deve essere posizionato lontano da zone contenenti acqua, come vasche a bagno, acquari e piscine. Inoltre non deve essere impiegato in aree soggette ad allagamento, come le cantine.

8.REQUISITI DI ALIMENTAZIONE

L'apparato deve essere connesso solo ad un'alimentazione della stessa tensione e frequenza di quanto scritto sulla parte posteriore del telaio.

9.PROTEZIONE DEL CAVO DI ALIMENTAZIONE

Il cavo di alimentazione deve essere posizionato in modo di non interferire con il movimento di oggetti nella stanza: persone, ventilatori, carrelli, ecc...prestate attenzione anche che il cavo non sia tagliato o spellato e che non possa tagliarsi e spellarsi.

10.MESSA A TERRA

Il cavo di alimentazione è del tipo a tre fili con terra ed è progettato per ridurre il rischio di shock elettrici. Si presume che sia della lunghezza sufficiente per la maggior parte degli impieghi. L'impiego di prolunghe e adattatori è sconsigliato se questi non garantiscono la potenza sufficiente per il corretto funzionamento degli apparati connessi. È altresì importante che vengano sempre impiegate prolunghe con la configurazione a tre fili con terra.

11.PERIODI DI NON UTILIZZO

Durante lunghi periodi di non utilizzo, staccare il cavo di alimentazione.

12.PULIZIA

L'apparato deve essere pulito solo come indicato dalle istruzioni.

13.INGRESSO DI OGGETTI E LIQUIDI

Si deve prestar attenzione che oggetti e liquidi, come fluidi detergenti e bibite, non vengano versati all'interno dell'apparato.

14.RIPARAZIONI

Gli apparati Hafler devono essere riparati da personale qualificato quando:

A.Il cavo di alimentazione o la spina sono danneggiati

B.Oggetti sono caduti all'interno del telaio o quando del liquido è entrato

C.Quando l'apparato è stato esposto a pioggia

D.Quando l'apparato non sembra funzionare normalmente o quando esibisce un cambiamento di prestazioni o

E.Quando è caduto o il telaio è stato danneggiato

15.ASSISTENZA

L'utente non deve tentare di prestare assistenza all'apparato, se non per quanto esposto nelle istruzioni. Tutti gli altri interventi devono essere effettuati da un tecnico specializzato.

16.CARRELLI E STAND

L'apparato deve essere impiegato su carrelli o stand solo se questi sono sufficientemente solidi e stabili per la funzione a cui si vuole dedicarli.

La combinazione di carrello ed apparato deve essere mossa con cautela. Fermate e partenze improvvise, forze eccessive e superfici irregolari, possono ribaltare la combinazione carrello e apparato.

Hafler®

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