



# Tornado 2.2 Stereo Power Amp User Manual

# Tornado User Manual

## INTRODUCTION

Thank you for choosing a Talk Electronics Tornado power amplifier. We are confident that it will provide you with many years of musical enjoyment and reliable service. However, please take the time to read this guide thoroughly before using the amplifier. It explains how to install and connect it, and suggests how to ensure that you always enjoy its optimum performance.

## UNPACKING LIST

- Power amplifier
- Instruction manual
- AC power cord
- Guarantee card

NOTE: We recommend that the supplied AC power cord is replaced with a high quality Merlin Cables power cord for best results. Please be aware that this unit is not supplied with interconnects and we recommend the use of the Merlin series of interconnect cables.

## INSTALLATION INSTRUCTIONS

HOW TO SITE AND CONNECT YOUR TORNADO POWER AMPLIFIER FOR BEST PERFORMANCE AND SAFE OPERATION

Please unpack your amplifier carefully and position it on a stable, level surface close to a mains socket. Before attempting to connect it into your system please read this manual carefully.

The Tornado will perform well when placed on a coffee table or bookshelf but if you wish to achieve the best performance we suggest you place it on a specialist hi-fi support. There are many suitable designs available, which your dealer will be happy to advise you about.

Position the amplifier so that it will not be subjected to high ambient temperatures: avoid sites where it will be in direct sunlight or close to a central heating radiator. For your own safety - and your ampli-

fier's well-being - do not allow it to come into contact with water. Keep it away from potted plants to avoid those all-too-common watering accidents! To clean the amplifier's case disconnect it from the wall socket and wipe it with a barely damp, lint-free cloth or chamois leather. If you suspect that water has entered the casework, return the amplifier to your dealer so that he can examine it.

Once you have installed the amplifier please do not throw away its packaging. If you move home or need to return the unit to your dealer for example for upgrade, the original packaging will protect it and ensure it arrives undamaged.

## ELECTRICAL CONNECTIONS

Using your mains lead of choice, connect the amplifier directly to a wall socket. We strongly recommend that you do not use extension blocks as they degrade sound quality. For the same reason we also advise against "line filters" and "mains conditioners". If your mains supply is noisy or you have household appliances that generate clicks and pops that can be heard through your hi-fi system, have an electrician correct the problem at its source. We do however recommend the use of 'Merlin Cables' power chords which do not interfere with the current flow and offer a significant performance improvement.

Should you need to replace the fuse in your (UK) mains plug, please fit only the correct replacement type. This is a standard 5A.

If, for any reason, you wish to replace the plug or cable, please note that the lead must be connected as follows. NOTE: These instructions apply in the United Kingdom only - consult your dealer about wiring conventions in other countries.

Green and yellow wire connects to EARTH (E or symbol  $\perp$ )

Blue wire connects to NEUTRAL (N)

Brown wire connects to LIVE (L)

This unit must be earthed.

## SIGNAL CONNECTIONS

The Tornado Series was developed using high quality interconnects and speaker cables from Merlin Cables, these allow the amplifiers to operate as intended and deliver their optimum performance. We strongly recommend that you use these cables for all connections. You can obtain these from your dealer or distributor.

Please note that we particularly advise you not to use solid core interconnect or speaker cables, or any type of high capacitance speaker cables. We further suggest that you use short cable runs. Try to keep interconnects to 2 metres/6 feet or less and speaker cable runs below 10 metres/30 feet. Even though a Tornado amplifier will drive longer speaker cables you will find its performance improves with shorter cables. The use of "litz" or "goertz" type cables may cause your amplifier to overheat under certain circumstances. These are best avoided.

## REAR PANEL

A diagram can be found on page 6 of this manual.

## MAINS CONNECTIONS

The Tornado's mains switch is fitted on the left of the rear panel (when viewed from the rear). Use this to switch off the amplifier completely. Next to it is an IEC socket into which the supplied mains lead fits. If an internal fuse should blow i.e. the blue LED will not illuminate when the amplifier is not hot but plugged in and switched on, then the amplifier should be returned to your dealer for examination. Any replacement should only be of an identical type.

The amplifier, whilst powered ON, will be warm to the touch even as idle, due to the class A quiescent current flowing in the output stage. This is perfectly normal.

## INPUT CONNECTIONS

The input sockets for the Tornado are either RCA phono or XLR balanced. Connect your pre-amplifier's main audio outputs to these. Use the rear mounted switch to select the input type that you have connected to. The switch points towards the input selected. Left and right are clearly marked, see rear panel diagram.

## SPEAKER CONNECTIONS

Gold plated 5-way binding posts are provided for your speakers. The red terminal is the positive connection and the black terminal is negative. If you use bare cables or spade terminals that require clamping in the binding posts, be sure to arrange the leads so that they do not short-circuit the amplifier. Clamp the connections tightly but do not over-tighten them: do not, for instance, tighten the binding posts with

pliers. Check this sort of connection periodically to make sure that the wire is still tightly gripped. Better still, use high quality cables factory fitted with appropriate plugs! The uppermost pair is for the left channel, whilst the bottom pair is for the right channel.

Tornado amplifiers are suitable for use with most current loudspeaker systems with an impedance rating between 4 and 16 Ohms. Contact your dealer if you have a particularly unusual loudspeaker system and are uncertain about how your amplifier might react to it. Under all normal circumstances the amplifier is well protected against encounters with demanding speakers: it has thermal protection, voltage and current limiting and DC offset protection.

## MUTE LINK INPUT

This is to allow simultaneous mute control over the power amplifier when used with a Hurricane pre-amplifier, just connect using the 3.5mm jack lead provided with your Hurricane pre-amplifier.

## BI-WIRING

Although there are not two sets of speaker terminals provided, if you intend to bi-wire - or tri-wire - your loudspeakers, we recommend that you use cables correctly fitted with a single pair of plugs at the amplifier end for four reasons. 1) To bi/tri wire properly you should have a common ground point. 2) Trying to squeeze two or three individual cables into a binding post will give a poor connection that will degrade sound quality. 3) It increases the likelihood of wiring one or more of the speaker drive units out of phase by reversing its connections. 4) It invites accidents through wires breaking free and shorting the amplifier's output.

## FRONT PANEL

Although there are no front panel controls Connecting the mute link cable between your Hurricane pre-amplifier (if you have one) will operate internal relays that connect the audio signal to the loudspeakers when the mute button on the Hurricane's front panel is pressed once. To un-mute press it a second time. It does not connect the mains supply to the amplifier: the actual mains power switch is on the rear panel.

If you do not have a Hurricane pre-amplifier then the Tornado will un-mute itself automatically a few seconds after being powered on.

Leaving the mains supply permanently connected and silencing the amplifier with the Hurricane's mute switch means the Tornado will deliver optimum performance immediately it is brought out of its "stand-by" state.

When the amplifier's output is muted the red indicator light on the front panel extinguishes.

## PROTECTION MODE

### INTERNAL FUSES

If for any reason these are found to have blown or the red LED on the front panel will not illuminate within 20 seconds of power up, then the protection circuits have identified a possible fault condition. The amplifier should immediately be switched off and returned to your dealer or distributor for examination. There are no user serviceable parts in your power amplifier. Units contain lethal voltages, so only qualified personnel should service your amplifier.

### HINTS AND TIPS

Although you can stack a Tornado power amplifier with a pre-amplifier and other components, your system will not perform at its best if you do. The power supply in the amplifier can induce hum into sensitive components.

When using a Tornado with our Hurricane pre-amplifier we recommend that you place the units side by side or arrange them on separate shelves of a system rack, separated by about 15cm. Keep your turntable, if you are using one, as far away as possible from the power amplifier.

Don't be tempted to take a little look inside the amplifier: there's nothing very exciting to see and there are some dangerous voltages floating about inside its case. Similarly, do not try to modify or "improve" the design with the latest audiophile fad components. We know what we are doing and we chose the most appropriate components for this design. We certainly will not repair the amplifier under guarantee if you've been fiddling with it!

### SPECIFICATIONS

Type Stereo	
Nominal power output 20-20k 8 ohms	100W
Input impedance	22k ohms
Input sensitivity	1V for full output
Distortion 1KHz 8Ohms	<0.005%
Mains Voltage	230V or 115V AC $\pm$ 10%
Dimensions	
width	440mm
height	89mm
depth	325mm (allow at least 400mm for connections)
Weight per unit unpacked	16.2kg

### TORNADO 2.2

Talk Electronics' policy of continued research and development means that the above specification may change without notice.

The Tornado has been manufactured to conform with the protection requirements of the EC Council directive 89/336/EEC relating to EMC by application of the following standards:

EN50081-1 1997 Emissions Standard

EN50082-1 1997 Immunity Standard

and also the requirements of the EC low voltage directive relating to electrical safety by application of the following standard BSEN60065: 2002 Safety standard

For the purposes of testing the Tornado was used with the mains cables and high quality interconnects supplied by Merlin Cables. Compliance with the above standards can only be made if the unit is installed as per this manual and using the correct cables.

\*Guarantee: 3 Years return to dealer.

To help us provide you with the most efficient service please return your guarantee card promptly. Your amplifier is guaranteed against manufacturing and component defects for a period of 3 years. The guarantee does not cover and damage caused by accident, misuse, neglect or through incorrect installation, adjustment or repair by unauthorised personnel or the cost of collecting the Tornado from you and returning it to the dealer. The above does not effect your statutory rights as a consumer.

E & OE. Due to our policy of continued development we reserve the right to change the specifications at any time.

\*Upon return of Guarantee Card



# GUARANTEE

To extend your guarantee from 1 year to 3 years FREE of charge please complete and return this form

TALK ELECTRONICS LTD.  
THE OLD BARN  
HIGHER PARK FARM  
HALEBOURNE LANE  
CHOBHAM  
SURREY GU24 8SL  
UNITED KINGDOM

FOLD HERE

Model: Tornado 2.2

Purchase date \_\_\_\_\_

Price paid \_\_\_\_\_

Serial Number \_\_\_\_\_

Colour:  Black  Silver

Type:  Stereo  Mono

Where did you purchase your Tornado 2.2

\_\_\_\_\_

How did you hear about Talk Electronics?

Existing customer

Family/Friend  Dealer

Advertising  Review  Internet

Other \_\_\_\_\_

Please tell us about the rest of your system

CD Player \_\_\_\_\_

Pre-amplifier \_\_\_\_\_

Tuner \_\_\_\_\_

Speakers \_\_\_\_\_

Mains Cables \_\_\_\_\_

Interconnect Cables \_\_\_\_\_

Speaker Cables \_\_\_\_\_

Why did you choose the Tornado 2.2

\_\_\_\_\_

\_\_\_\_\_

Are you interested in Home Cinema?

Yes  No  Undecided

Have you visited our website?

[www.talkelectronics.com](http://www.talkelectronics.com)

Yes  No  Do not have connection

FOLD HERE

Customer Name \_\_\_\_\_

Address \_\_\_\_\_

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Post Code \_\_\_\_\_

E-mail address \_\_\_\_\_

Data Protection Act

Your details will be held by Talk Electronics Ltd. for promotional and statistical purposes.

If you do not wish to receive marketing information please tick this box

Comments \_\_\_\_\_

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# REAR PANEL LAYOUT

