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Torus Power Plugs and Receptacles **P.1**

Torus Power Plugs and Receptacles

There appears to be a lot of misunderstanding regarding the type of approved certified power receptacles and power cords that are electrically permitted for use around the world with power conditioning products such as Torus.

Torus Power Isolation Transformers are available worldwide but there seems to be some confusion when it comes to the receptacles available in overseas market places. Because most after market power cables are produced using the NEMA 5-15 USA style receptacles some overseas customers are plugging 240 Volt equipment into 120 Volt rated outlets.



*NEMA 5-15R 120
Volt 15 Amp*

Pictured to the left is a standard USA type 3-prong U ground power receptacle.

They are rated for 120 volts 15 amps and should NEVER be used with 240 Volt gear.

The concern here is that some people may be using what they think is an authorized certified 240 Volt US style receptacle on their audio and video equipment when in fact that is not the case at all. This is obviously a serious fire and safety issue!

The 240 Volt British, German and IEC320 type receptacles we currently use on the overseas Torus units are in fact fully Certified 240 volt receptacles.

In North America the power in

most homes is 120 Volt 15 amps per circuit. If you wish with special wiring you can have 20 amp 120 volt circuits but they required different receptacles and plugs with different pin configuration.

In North America we also can run 240 volt lines for specialized equipment like stoves, dryers and air conditioning etc. but they also require specialized plugs and receptacles. A lot of stereo and home theater rooms will have dedicated circuits from the Hydro panel so there is less chance of electrical contamination from other appliances in the house (lots of luck with that!).

In my case for instance, in my main sound room I have a 60 amp 240 volt Torus unit wired directly to the hydro panel and it has 18 - 120 volt outlets on the back for attaching the normal 120 volt gear. This way my equipment is totally ISOLATED and PROTECTED from the outside world.

The maximum output from a 15 amp/120 volt circuit is 1800 watts and 2400 watts if you use the 20 amp/120 volt setup. What most people do not understand is that most big amplifiers are limited by the current or voltage draw from the wall power socket. So when manufactures tell you that a specific amplifier can put out 3000 watts of power that assumes the wall plug can supply it – a big assumption. That's why we feel strongly that any power conditioning device should be



*NEMA 5-20R 120
Volt 20 Amp*



European 240 Volt Plug/Receptacle



German 240 Volt Plug/Receptacle



IEC 250 Volt Power Cord/Plug

capable of supplying all the voltage and current swing available from the wall plug.

The Torus is capable of supplying 'short term' current at over 10 times or more the rating of the wall plug. So when that transient comes along the amp can respond instantaneously to the signal. This is where the output impedance being as low as possible

on the Torus is a very important feature. The typical wall plug will have a resistance of 1-2 ohms and will resist transferring that current short term to the amplifier. The Torus can present as low impedance as 0.2 ohms to 0.04 ohms depending on the model.

Torus has spent many thousands of dollars making sure our products get all the essential Certifications and Safety documentation necessary. All our 240 volt units until recently have used 240 volt IEC style receptacles/cords and we just recently introduced the 240

volt style British and German receptacles (see pictures left) as most customers in Europe and the Far East seem to accept these kinds of connectors in 240 volt high end gear.

I think it is an interesting phenomenon that some people will manufacture and sell equipment and other people will use equipment that has no approvals in specific applications. I assume some customers are simply unaware of the risks and some manufactures assume that they will not be held accountable if things go wrong?

So please be very cautious when using 120 Volt rated plugs and power cables with 240 Volt equipment. In fact don't do it! The safety and fire hazards are of major concern— not to mention liability issues.

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