Introduction to the REL T-9 Subwoofer

The REL T-9 subwoofer is the largest sub in REL's "Serie T" line. It is a solidly built sub with a 10" Ultra Long Throw main driver, a 10" front-firing passive radiator and a 300 watt Class A/B plate amp. In keeping with REL innovation (and tradition), theT-9 has a number of flexible hook up schemes, the most unique being by way of the included high level hook-up cable.

SECRETS
BEST
—OF—
2014

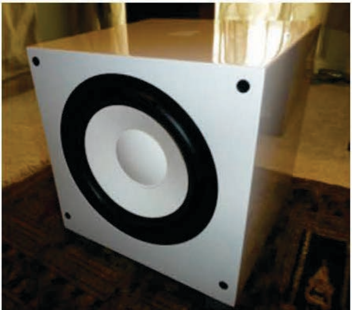
This sub is a REL through and through. That means you get great build quality. But you also get REL's incredible focus on the important details. REL just builds subwoofers and they do it excellently. As a result, the T-9 is replete with new advancements and trickle down technologies from REL's Gibraltar and Serie R lines. So let's dig a little deeper and see if the T-9 really lives up to its family heritage.

REL T-9 SUBWOOFER SPECIFICATIONS

- Design: Down-firing Active Driver, Passive Radiator
- Driver: 10″
- Passive Radiator: 10″
- Amplifier: 300 watts RMS (Class AB)
- MFR: 28 Hz at -6 dB In-Room
- Inputs: Hi-Level Neutrik Speakon, Low-Level Mono RCA, LFE RCA
- Outputs: None
- Dimensions: 14.75″ H × 13″ W × 14.75″ D
- Weight: 39 Pounds
- Finishes: Gloss Piano Black or White Lacquer
- MSRP: $1,199 USD
- REL
- SECRETS Tags: RES, Subwoofers, Audio

The Design of the REL T-9 Subwoofer

REL has four subwoofer lines. They range from the “Habitat1” lifestyle products to the “Gibraltar” subs which are their finest offerings. The T-9 is the biggest sub from REL’s “Serie T” line. The T subs are the most affordable floor standing REL subs and they are generally intended for home cinema applications.



The T-9 is roughly cubic in shape and checks in at just under 15″ a side. Its main driver is a down-firing 10″ “bass engine” with a stamped steel frame and a coated paper cone. REL refers to this as an “Ultra Long Throw” driver and I can attest that it has a generous surround. The main driver is loaded by a 10″ coated paper passive radiator that is mounted on the front of the cabinet.

REL claims their drivers are carefully designed to reproduce low bass, with exceptionally low resonant frequencies and long-travel suspensions. They refer to them as “bass engines”. REL also claims that they keep the moving mass as low as practical in their drivers, thereby making for a more mechanically efficient design. One can infer from these claims that the drivers’ suspensions are highly flexible to maintain acceptably low free air resonance frequencies.

Built-in amplification for the T-9 is by way of a high current 300W Class A/B amp with remote-mounted toroidal transformer. This amp is cooled via an oversized heat sink bank. Three connection options are available: unbalanced low level, unbalanced .1 LFE and a balanced high level input via an included high level cable with a Neutrik Speakon connector that snaps into the back of the amp. I will further discuss this connection in the following Set-Up section of this review.

There are separate volume controls for the low and high level inputs. The non-defeatable second-order variable low-pass filter utilizes Butterworth filtering and is set via an analog dial with a range from 30 – 120 Hz.

REL makes the following claim regarding the T-9 – "REL's latest input filter design is borrowed from its more expensive sibling (Serie R) and is considerably quicker than previous REL designs. This speed is partly responsible for the slam and attack for which Serie T is known."

The REL T-9 cabinet is solidly braced and features a high gloss finish with five layers of carefully applied lacquer. The T-9s are available in either black or white finishes. One last point – the sub comes with milled aluminum feet and no spikes. It is plug and play ready.

Setup of the REL T-9 Subwoofer

I evaluated the REL T-9 concurrently with my recent review of the Sonus faber Venere 3.0 surround system. This system included a pair of Sonus faber Venere 3.0 floorstanders, the Venere Center and a pair of Venere Walls along with the REL T-9 for a complete 5.1-channel set up.

I placed the REL T-9 in the front left corner of the room and started out by connecting the mono sub output of my surround processor to the low level input on the REL plate amp. I was going to use my processor's built-in bass management as one would do with most any other subwoofer. So I set the sub's crossover to the max frequency (120 Hz) and set the volume to half mast. Meanwhile, the Venere 3.0's have useable in-room response down to about 34 Hz which means that I could set the crossover as low as 40 Hz in my processor if I wanted. I started with 40 Hz and even tried 60 Hz and 80 Hz while setting the level in the surround processor as well.

I generally liked what I heard, but the sound just wasn't gelling the way I wanted. The bass was in balance but felt just a little bit disconnected for my tastes (a very common problem with most subs). That is when I decided to try the REL T-9 via its included High Level hook up cable. This cable connects in parallel to the speaker outputs on your amp and is terminated at the sub's plate amp by way of a Neutrik Speakon connector. The input impedance to the sub is very high so its presence in the circuit doesn't affect the signal going to your main speakers in any way.

In this case you set your mains to "large", tell your processor you do not have a sub, then manually dial in a crossover and level setting on the sub's amp to get the best blend. Since the crossover is controlled by an analog dial with limited graduations on the scale, I was not sure of the final crossover setting, but it was somewhere between 50 – 60 Hz. Of course, this would mean "double bass", but in practice this connection scenario was by far the best sound I got from the system.

At the time of review, I was driving the main speakers with a Krell s550i integrated amp set to theater bypass. This amplifier is fully balanced architecture and so I grounded the high level connector to the chassis as per the REL manual.

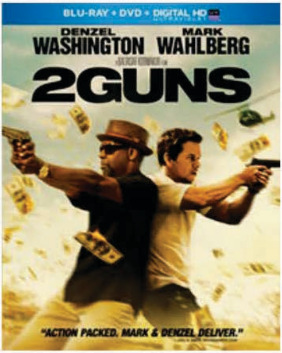
The REL can also be connected via the .1 LFE low level input at the same time. This input has its own level knob. In this configuration, the discrete LFE signal will be reproduced by the sub. The LFE spec includes frequencies up to 120 Hz and this theoretically would be less taxing on your main speakers. I tried this set up for a few days but decided that I liked the single high level connection better.

The main point of the foregoing narrative is to say that the high level hook up far surpassed what I heard from the typical low level connection. I am at a loss to fully explain why this is, but what I heard was indisputable. It was a vast improvement. The bass was better connected to the rest of the audible band and the blend at the crossover frequency was nearly seamless. As with other high quality subs, I was then able to increase the sub's level for greater impact while the sound of the bass remained as a whole with the rest of the music.

The REL T-9 Subwoofer In Use

The T-9 subwoofer has a very musical soul. But don't take that to mean that it doesn't perform well on cinematic material because it does. This duality of purpose means the REL T-9 is the best kind of subwoofer.

By contrast, the worst subwoofers typically put out lots of bass. They may grab your attention at first with a movie or two. Then later they become wearisome because the bass may be under damped (a/k/a one-note) and quite possibly distorted. They subsequently don't handle music very well and in the end they are rather useless because even the flashiest, actioniest movies have music (and probably a lot of it). I like to feel the special effects as much as the next guy, but massive effects don't go on non-stop throughout the movie. As a matter of fact, there is usually more music than bomby things in most movies.


BLU-RAY • DVD • DIGITAL HD
DENZEL WASHINGTON
MARK WAHLBERG
2GUNS
"ACTION PACKED. MARK & DENZEL DELIVER."

Take the buddy cop movie 2Guns as an example. This movie has gunshots, explosions and fisticuffs galore. And surely the REL T-9 pounded out those effects with the best of subs in its class, even more than one would expect given its size and power rating.

For me, however, I got more out of the REL's handling of the music on 2Guns. The musical score on this movie is replete with a groovy bass line which is reminiscent of the caper-type music you might hear in a movie like Ocean's Eleven. It involves the sound of an acoustic upright bass plying its way through the registers. I'm sure this music is fun to play and it is fun to listen to over a high quality system while putting the audience in the right contextual mood. The REL T-9 nailed these bass lines. The notes were tuneful and balanced. They bubbled right along in perfect time with the music.

Later in the film, our protagonists are forced to cross the border from Mexico back into the US under the guidance of a "coyote". This scene is accompanied by the song "Two Against One" from the Rome Soundtrack by Danger Mouse and Daniele Lupi. This particular version sounded like a re-mix over the copy I have of the CD, but it was the best I've ever heard the song reproduced. And it set the mood nicely as intended by the director.

BLU-RAY + DVD + DIGITAL COPY
BRAD PITT
WORLD WAR
NEW UNRATED CUT

Another action film I watched in my evaluation of the REL T-9 was World War Z. This is one movie that is action packed from the opening credits to the big finale. The T-9 never sounded strained and the low bass effects were felt as much as they were heard.

This movie still had its share of mood-setting music. Particularly at the beginning, the score features ominous horn sounds that are reminiscent of War of the Worlds. The REL T-9 shined in reproducing the splat and blat of the fundamentals and harmonics in the lowest horns. There was a fine blend with the satellites as well. Gunshots and choppers had a startling realism too, and the T-9 strutted its stuff even more so during the vivid, concussive plane crash scene.

BLU-RAY™
+ DVD
DIANE LANE
Disney
JOHN MALKOVICH
SECRETARIAT

THE IMPOSSIBLE TRUE STORY

The T-9 further impressed by not showing signs of thermal or dynamic stress even on scenes of sustained bass. A good example of this would be the extended race sequences on the Blu-ray of Secretariat. The horses' pounding hooves were unrelenting and this was a perfect opportunity for the little REL to pull you into the scene. It let me feel I was right there in the moment and it was a rather exhilarating experience.

JACKSON BROWNE
TIME THE CONQUEROR

One aspect of the REL T-9 that was quite compelling was related to its ability to decode complexities in music. I've almost always listened to the CD of Jackson Browne's political statement piece Time the Conqueror on headphones because the thick bass lines get muddled when played on average speaker systems. In this case, I listened in Dolby Pro Logic II over the Venere/REL set up.

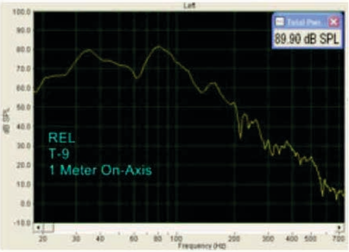
Even the most bass heavy tracks like "Where Were You" with lots of deep synth and bass drum were terrific. The REL sorted through the complexities and delivered a coherent foundation to the music. On subtler songs like "Going Down to Cuba", the deep bass can have a way of sounding detached and bloated. The REL blended beautifully and let me kick back and enjoy the music.

HOODOO MAN BLUES
JUNIOR WELLS'
CHICAGO BLUES BAND
with BUDDY GUY

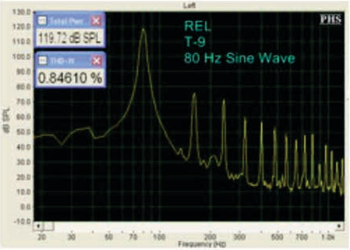
I finished up with the Junior Wells and Buddy Guy classic Hoodo Man Blues on vinyl. This was played in a 2.1 configuration over the Venere 3.0's and the REL T-9. I played this record a little louder than usual. The REL T-9 maintained pace and a fine blend on "Hound Dog". On other tracks, the REL proved to be tuneful and spry in reproducing Jack Myers' bass lines. This T-9 subwoofer has a very musical soul.

The REL T-9 Subwoofer On the Bench

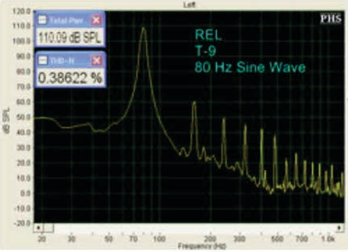
All the below measurements are in-room response. The distortion measurements are performed on-axis in the near field to mitigate any room boundary effects. The frequency response test was performed at 1-meter on-axis.



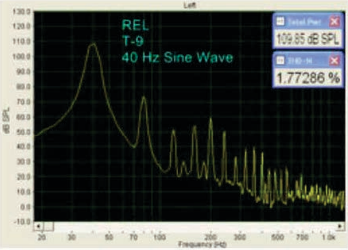
The plot above is the standard in-room frequency response test of the REL T-9 Subwoofer. This test result is remarkably flat despite the expected boundary and room-induced modal effects. The gentle low end roll off starts at around 34 Hz with strong response all the way down to 20 Hz. The upper end usable response extends to about 120 Hz. All in all, this is a very solid result for a compact sub.



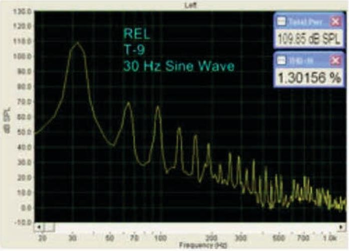
The T-9 was something of an enigma, capable of clean output up to 120 dB. THD + N on this plot was less than 1%!



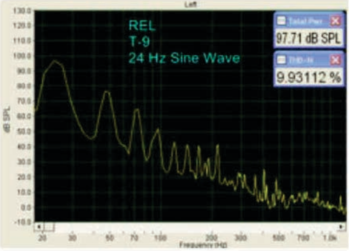
At a more pedestrian output level (110 dB), the distortion (THD+N) dropped to 0.39%.



Tested at 40Hz, the distortion rose significantly but was still quite acceptable at 1.77%.



The 32 Hz plot was also clean and the measured THD+N at 110 dB was just over 1.3%.

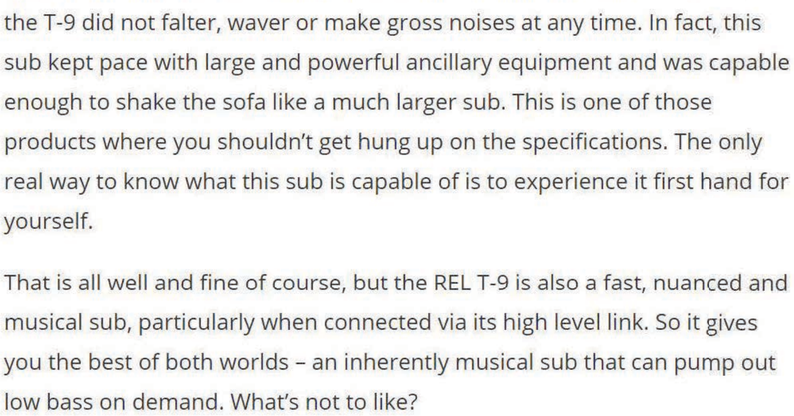


The measured THD+N at 24Hz hit approximately 10% with the level at 98 dB. Distortion rose steadily with higher SPLs and/or lower frequencies.

Conclusions about the REL T-9 Subwoofer

More than any other sub I have reviewed over the years; the REL T-9 requires me to rethink my definitions of compact, mid-sized and large as far as subwoofers are concerned. I would normally view the REL T-9 as a small or compact sub. Its cabinet is smaller than a 15″ cube. Its main driver is a modest 10″. The amp is also modestly rated at 300 watts. But there is nothing small or compact about the actual performance delivered by the mighty T-9.

Let me remind you that my room is quite large and I had but one T-9 in my system throughout the review period. Unlike many other subs of its size,



the T-9 did not falter, waver or make gross noises at any time. In fact, this sub kept pace with large and powerful ancillary equipment and was capable enough to shake the sofa like a much larger sub. This is one of those products where you shouldn't get hung up on the specifications. The only real way to know what this sub is capable of is to experience it first hand for yourself.

That is all well and fine of course, but the REL T-9 is also a fast, nuanced and musical sub, particularly when connected via its high level link. So it gives you the best of both worlds – an inherently musical sub that can pump out low bass on demand. What's not to like?