

CLARK SYNTHESIS TACTILE SOUND™ TRANSDUCERS

Imagine a loudspeaker that makes music and movies sound dramatically better by actually **improving the way you hear**. Once you experience Tactile Sound, you'll **never be satisfied without it**.

Welcome to the little-understood world of **Tactile Sound**. Most of the sound we hear reaches our ears via airborne vibrations, such as those produced by loudspeakers. However, we also hear *and feel* sound vibrations conducted through the bones in our bodies (a principle known as bone conduction). These *tactile* sounds bypass the ear's acoustical mechanisms but are likewise translated into electrical signals for the brain.

Clark Synthesis' patented* Tactile Sound Transducers (TSTs) are powerful compression drivers that produce vibrations over the full range of tactile and audible frequencies (unlike gimmicky "shakers" that add only low-frequency vibrations). TSTs work in conjunction with ordinary speakers and subwoofers to increase the proportion of sound heard and felt via bone conduction. As a result you feel the natural percussive impact of sounds, whether they be in-your-face movie effects or the nuances of an acoustic instrument. And by exploiting the anatomical principle of bone conduction, you also experience greater clarity, depth, and dialogue intelligibility – with a sense of immersion akin to wearing the world's greatest headphones!

TSTs have dozens of applications ranging from entertainment to medical research. In a home theater or listening room, TSTs provide tactile sensation as well as greater clarity and dialogue intelligibility. In commercial multiplex theaters, TSTs also cut down on the cost of soundproofing adjacent walls. TSTs mounted under car seats add a startling degree of realism to autosound systems, and also solve a real problem – the tendency to play such systems at dangerously high levels.

Waterproof models for outdoor decks and spas as well as boats are an unobtrusive source of omnidirectional music. Special AquaSonic™ models designed for underwater music (e.g., for synchronized swimmers) and communication (divers) take advantage of the full-range response, not previously available from underwater speakers. These same models have been applied to studies of marine life.

TSTs have been used to record as well as play back sounds for use in military simulators and theme park attractions. Recently, TSTs have earned raves from professional drummers. Mounted beneath a drum throne, the TST allows a drummer to monitor his performance at a much safer volume level.

By improving the way you hear, Clark Synthesis Tactile Sound Transducers represent a fundamental advance in the science of sound reproduction and perception. Please visit www.clarksynthesis.com or call **1.800.898.1945** to find a dealer near you.

See our separate information sheets for details on individual applications.



APPLICATIONS OVERVIEW

Home Theaters



Commercial Theaters



Autosound Systems



Video Games & VR



Outdoor Decks



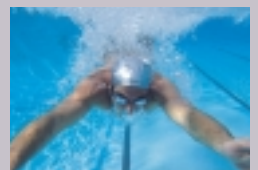
Spas



Boats



Underwater



Stage Monitoring



Theme Parks



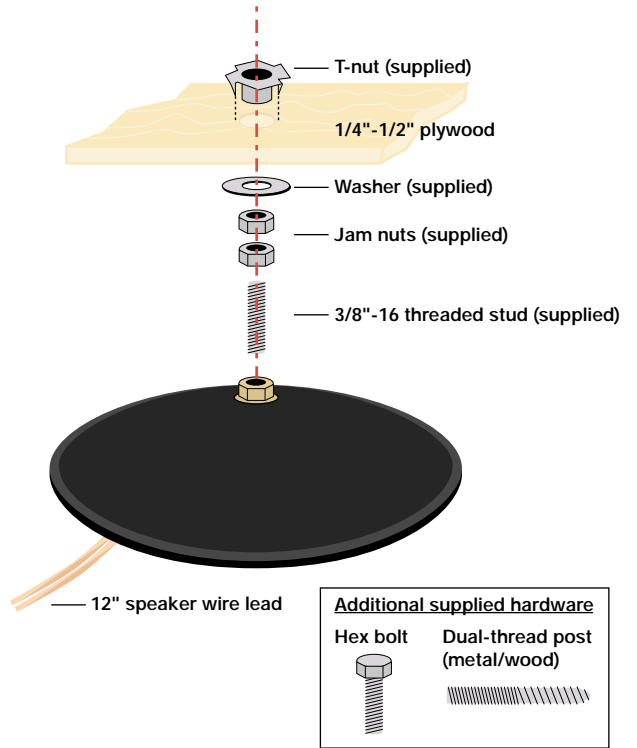
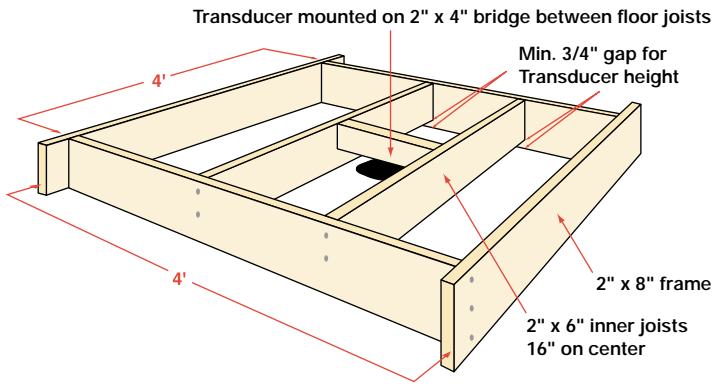
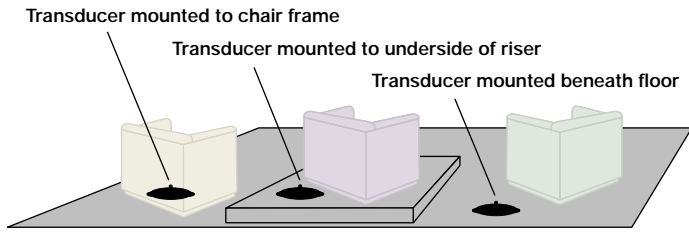
Health and Wellness



Noise Cancellation



Clark Synthesis Tactile Sound Transducers are available in a range of transduction forces to suit a variety of applications. Clark also offers power amps, equalizers, and bandpass filters for use with the TSTs. The diagrams below illustrate how to install a TST beneath a floor or against a section of wood (as might be found under a chair or riser platform). AquaSonic™ models are designed to fit into popular pool-light fixtures.



APPLICATIONS

KEY BENEFITS

	TACTILE SENSATION	IMPROVED CLARITY	IMPROVED INTELLIGIBILITY	GREATER PERCEIVED LOUDNESS
Home Theaters and Listening Rooms	○	○	○	○
Commercial Theaters and Auditoriums	○	○	○	○
Autosound Systems	○	○	○	○
Video Games & VR Simulators	○	○	○	○
Outdoor Decks (waterproof models)	○	○	○	○
Underwater Applications (AquaSonic™)	-	○	○	-
Dance Floors and Stage Monitoring	○	○	○	○
Theme Park Attractions	○	-	○	○
Health, Wellness, and Medical Research	○	○	○	○
Industrial Noise Cancellation	-	○	○	-

KEY TO VERSIONS: WP = WEATHERPROOF WT = WATERTIGHT AQUA = AQUASONIC™ WTL = AQUASONIC™ FOR POOL-LIGHT FIXTURE	TST229 TST229WP TST229WT AQUA229 TST229WTL	TST329 TST329WP TST329WT AQUA329 TST329WTL	TST3710 TST3710WP TST3710WT AQUA3710 TST3710WTL	PLATINUM I
Magnet Assembly	20 oz.	20 oz., 37 MGO neodymium	25 oz., 37 MGO neodymium	27 oz., 42 MGO neodymium
Transduction Force	1.6 lb-ft/watt	2.8 lb-ft/watt	3.5 lb-ft/watt	6.9 lb-ft/watt
Tactile Force Peak	216 lb-ft	378 lb-ft	472 lb-ft	932 lb-ft
Peak Power Handling	350 watts	400 watts	400 watts	400 watts
Continuous Power Handling	100 watts	135 watts	135 watts	135 watts
Frequency Range (Tactile)	15Hz to 800Hz	10Hz to 800Hz	10Hz to 800Hz	5Hz to 800Hz
Frequency Range (Overall)	35Hz to 17kHz	20Hz to 17kHz	20Hz to 17kHz	20Hz to 17kHz
Heat Transfer Fluid	Ferrofluidics S32	Ferrofluidics S32	Ferrofluidics S32	Ferrofluidics S32
Impedance	4 ohms	4 ohms	4 ohms	4 ohms
Overload Protection	Polyswitch 100W	Polyswitch 135W	Polyswitch 135W	Polyswitch 135W
Voice Coil	Kapton former	Kapton former	Kapton former	Kapton former
Dome Material	Cevian polyalloy	Cevian polyalloy	Cevian polyalloy	ABS PBT
Electrical Connection	12", 14AWG OFC	12", 14AWG OFC	12", 14AWG OFC	12", 14AWG OFC
Dimensions	8"Diam. x 2.25"H	8"Diam. x 2.25"H	8"Diam. x 2.25"H	8"Diam. x 2.25"H
Limited Warranty	1 year parts & labor	1 year parts & labor	1 year parts & labor	1 year parts & labor

CLARK SYNTHESIS TACTILE SOUND™ TRANSDUCERS FOR HOME THEATERS AND MUSIC SYSTEMS

Imagine a loudspeaker that makes music and movies sound dramatically better by actually improving the way you hear. Once you experience Tactile Sound, you'll never be satisfied without it.

When a great song comes on, do you lower the volume? Quite the opposite. We like to listen at the loudest comfortable volume because that makes the experience more enjoyable. When the volume is too low, it seems as if *something is missing*.

Welcome to the little-understood world of **Tactile Sound**. Most of the sound we hear reaches our ears via airborne vibrations, such as those produced by loudspeakers. However, we also hear *and feel* sound vibrations conducted through the bones in our bodies (a principle known as bone conduction). These *tactile* sounds bypass the ear's acoustical mechanisms but are likewise translated into electrical signals for the brain.

When you turn up the volume on that great song, in effect you *increase the proportion of sound heard and felt via bone conduction*. Unfortunately, ordinary speakers must be played at extraordinary levels to achieve any significant tactile effect. And at such high levels, any semblance of sonic balance is well past lost (not to mention your sense of hearing!).

Clark Synthesis' patented* Tactile Sound Transducers (TSTs) are powerful compression drivers that produce vibrations over the full range of tactile and audible frequencies (unlike gimmicky "shakers" that add only low-frequency vibrations). TSTs work in conjunction with ordinary speakers and subwoofers to increase the proportion of sound heard and felt via bone conduction. As a result you feel the natural percussive impact of sounds, whether they be in-your-face movie effects or the nuances of an acoustic instrument. And by exploiting the anatomical principle of bone conduction, you also experience greater clarity, depth, and dialogue intelligibility – with a sense of immersion akin to wearing the world's greatest headphones!

In a home theater or listening room, TSTs are installed under seats, floors, or risers, supplementing conventional speakers. Normally they are fed the full bandwidth of the front-channel signals. While TSTs do not replace subwoofers, they do allow use of smaller subwoofers or a lower output level.

Indeed, one benefit of TSTs is that you can listen at a lower volume without sacrificing any visceral impact. This protects your ears from long-term damage and also has been known to save marriages.

By improving the way you hear, Clark Synthesis TSTs close the gap between simply imagining and truly *experiencing* music and movies.

Please visit www.clarksynthesis.com for more information, or call 1.800.898.1945 to find a dealer near you.

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HOME THEATERS/MUSIC SYSTEMS FEATURES & ADVANTAGES

FULL-RANGE TACTILE SOUND

Feel the natural percussive impact of everything from explosions to the plucking of a bass string. Enjoy greater clarity, depth, and dialogue intelligibility through bone conduction.

GREATER PERCEIVED LOUDNESS

Experience "big sound" at lower volumes. Use smaller subwoofers or play them at lower levels.

EFFICIENT OUTPUT WITH 4-OHM IMPEDANCE

One modest stereo amp can power two TSTs.

COMPACT SIZE

8-inch-diameter "saucer" fits tight spaces.

SINGLE-POINT MOUNTING SYSTEM

Easy to mount under chairs and risers.

SECURE CONNECTION WIRE

12", 14AWG OFC speaker wire never comes loose.

A RANGE OF TRANSDUCTION FORCE RATINGS

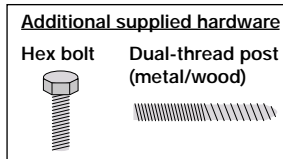
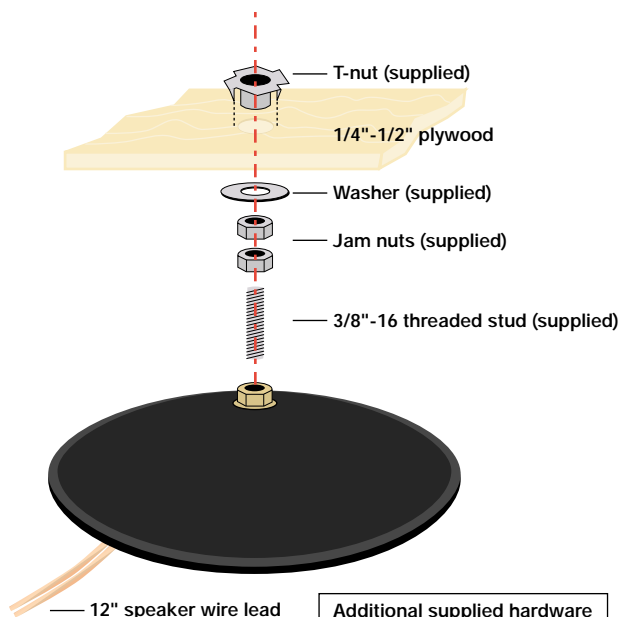
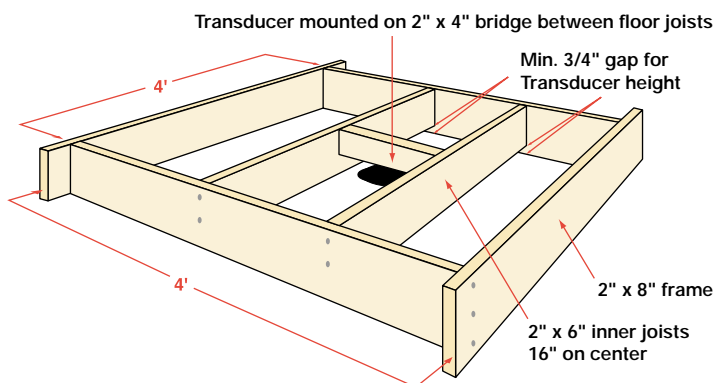
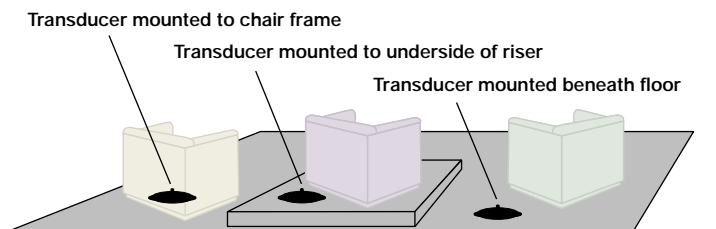
Choose the right output for any application.

Home theater photo courtesy MEDIA SYSTEMS, Boston, MA.



Clark Synthesis Tactile Sound Transducers are available in a range of transduction forces to suit a variety of applications. They are easy to install in your home theater or listening room, mounted under seats, floors, or risers. Clark also offers power amps, equalizers, and bandpass filters for use with the TSTs. The diagrams below illustrate how to install a TST beneath a floor or against a section of wood (as might be found under a chair or riser platform).

For two decades, Clark Synthesis has defined the science of Tactile Sound in applications as diverse as military simulators and systems for the hearing impaired.



WHAT THE CRITICS HAVE SAID:

"On movie sound... I've come to believe tactile sound is an absolute must." Brent Butterworth, Home Theater

"We were a little skeptical... But then we installed a couple of the tactile transducers in our home theater – and now we hate to be away from our couch."

Brian C. Fenton, Popular Mechanics

"The sonic signature produced has a greater sense of enveloping spatial imaging... drawing you further and further into the screen action like you have never experienced before." Gary Reber, Widescreen Review

MODEL	TST229	TST329	TST3710	PLATINUM I
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Dimensions	8"Diam. x 2.25"H	8"Diam. x 2.25"H	8"Diam. x 2.25"H	8"Diam. x 2.25"H
Mounting	3/8-16 hex nut	3/8-16 hex nut	3/8-16 hex nut	3/8-16 hex nut
Limited Warranty	1 year parts & labor	1 year parts & labor	1 year parts & labor	1 year parts & labor