

Tuneful sound experience
issue Dec./Jan. 2011

WB**T**

TOP TOPICS:



The secret sound improver

Impact sound interrupter
WBT-0718 under a close
examination.

>> Page 24



Women and messy cables ...

Up to date wiring incl. the Woman Accep-
tance Factor! >> Page 4

Content

3	Editorial
4	Women and messy cables ...
6	Dynaudio – Relive music.
8	RCA connectors
10	RCA plugs
12	Bel Canto – High Dynamic Range Audio
13	RCA sockets
14	nextgen™ – the new quality standard
16	Loudspeaker connectors
18	Banana plugs / Sandwich spades
20	Avantgarde – Purity Meets Performance
21	Recognizable quality – the safe choice with WBT-singet®
22	Pole terminals
24	The secret sound improver
26	Esoteric – Ultra High End Components for High-Fidelity Playback
28	Finishing Touches & Accessories
30	ASR – Power & Emotion
31	Finishing Touches
32	Nordost – the simplest solution is often the best ...
34	Pole terminal accessories
35	Imprint

Dear Sound Enthusiast,

Music is a fundamental part of our lives, an expression of emotion and culture. Even at home, faithful sound reproduction can create listening experiences that really set our senses tingling.



Wolfgang B. Thörner

BRIEF VITA

Wolfgang B. Thörner early recognized the importance of the connections between the individual components of a music system as important interfaces that influence sound.

A mechanical engineer by profession, Thörner tireless sought ways to improve connectors. Showing a great deal of courage and business acumen, he founded WBT 25 years ago.

Today WBT is synonymous throughout the world for top quality, technical advancement and a spirit of innovation **Made in Germany.**

We are pleased to present this second issue of our half-yearly magazine. In addition to information about our products, it contains interesting details about the technical background and the latest developments from WBT towards the next dimension in sound. After all, if you commit yourself to the authentic reproduction of music, then continuous research is essential, existing technology has to be questioned and courageous new approaches have to be adopted.

Scientific investigations now show that the interfaces of a hi-fi system, in other words the connectors, are of central importance. This insight places the research results obtained by WBT in over two decades of audio and practical tests on a much broader footing.

Perfect signal flow is no just a coincidence, but requires know-how. This begins with the precise dimensioning of the conductors in accordance with the geometries of the signal-carrying elements, also the use of top-quality materials means that faithful listening pleasure is guaranteed. Developments like this are a complex matter and require a high level of expertise. WBT not only has 25 years of experience in producing connectors, but also continue to set standards with its innovative products - worldwide.

It is no coincidence that well-known manufacturers swear by connectors with WBT technology for their components and speakers. This issue of our magazine will introduce some of these providers to you. Look forward to the sound of the next generation – with WBT.

Best wishes,

Wolfgang B. Thörner

equipped with

WBT

Women and messy cables ...

Or how can I get my installer to plan cable ducts and connectors to match my needs in terms of timing and media.

This is a scenario that usually plays out on Saturdays and that often ends in a debacle after which domestic bliss is banished for a while at least.

Once the weekend shopping is done, the afternoon starts promisingly with a glass or two of prosecco in a favorite bistro. The lord of the manor has been dreaming of new speakers for some time now and would really like to replace his entire hi-fi system, which is getting quite old now. The age of HD and modern streaming clients with maximum resolution for perfect playback seems to beckon. But how can he make this subject more acceptable to the person who really wears the pants in the house? In the background Dean Martin croons

an evergreen from the speakers – it seems like the perfect opportunity. The guy actually manages to persuade his wife to pay a visit with him to a hi-fi studio. But they have hardly arrived before fate takes a hand. As he presents three CDs that he has brought with him, she realizes she has been set up and casts him a fiery glare. “I see, so you had all this planned...”.

After a few tests, the choice narrows down to a small number of product and it looks like the winner is going to be a high-class sound system with five speakers and the corresponding cables. You can read the woman’s thoughts in her face: “No way! This is a home we’re talking about, not a recording studio!” The friendly consultant is caught between a rock and a hard place and tries to mediate, but he’s too late.

The idea of an electronic mammoth weighing several tons with cables like monstrous tentacles enveloping the entire living room has already taken seed.

This fear is not unreasonable, after all the cable diameters and the number of wires to be laid increases disproportionately to the quality and performance of the system, particularly when the system in question is a home cinema. Also, loudspeakers are rarely placed directly next to the sound system itself, necessitating a spaghetti of fat cables snaking their way around the room – an absolute “no go” as far as any style-conscious woman is concerned.

Model GIRA, Esprit Glas



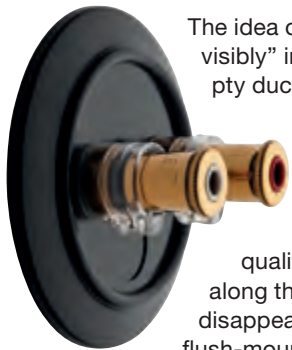
However, there are solutions available. Some manufacturers of high-grade installation materials, such as **GIRA**, **JUNG** or **THPG**, have taken up this subject. These are all well-known providers of exclusive, design-oriented switch and socket systems that are suitable for even the most aesthetically exclusive environments and that can even underline personal taste in terms of style.

Model Jung, Design LS 990





Model THPG, Bakelit



The idea of laying cables “invisibly” inside existing empty ducts is nothing new.

However, until now it was only thin strips that were used to transmit sound. Any sound

quality not already lost along the way had definitely disappeared by the time the flush-mounted loudspeaker sockets with DIN connectors were reached. In purely mechanical terms it was like the eye of a needle. Connectors and sockets vibrated at even the gentlest touch and their tiny contact surfaces were not protected against oxidation.

Not an option for ears that are used to hearing the best, not an option for **GIRA, JUNG and THPG**. These manufacturers are aware of the high standards of their customers, for whom modern audio and video systems are part of everyday life. Anyone investing here is not interested in compromise – either in terms of sound and function, or long-term stability or in questions of design. WBT has proven to be the ideal partner for anyone looking for a company that could provide professional connectors and sockets.

WBT connectors are modern data interfaces, wideband capable and designed for long-term stability. Their contact materials are pure copper or fine silver.* **They are ready to meet the highest high-end requirements.** Enduring quality and reliability as well as compliance with the relevant European and international safety standards are something that WBT takes for granted.

If the wires can be laid in existing empty ducts, then it is generally only necessary to bridge very short distances in the room itself (shown above). **WBT connectors guarantee maximum contact security and the best possible sound.** So there is nothing to stand in the way of decades of listening pleasure, guaranteeing domestic bliss, not just on Saturdays.

GIRA

www.gira.de

JUNG

www.jung.de

THPG

www.produktgesellschaft.de

*Applies to all WBT nextgen™ series products.

Perfection in form and function:

The elegant GIRA socket with WBT pole terminals means that loudspeaker cables can be kept reasonably short.

Fig.: Audio Physic loudspeaker (Germany) with high-end cable Kimber Select (USA).



equipped with

WBT



Reference speaker come and go, the Evidence stays: The Dynaudio Evidence Master is an absolutely unique loudspeaker.



In the Evidence model, more than 20 individual WBT connections ensure both perfect contact and best sound quality.

WBT presents:



RELIVE MUSIC.

It seems that inventive talent and a sense of style, precision and authenticity is natural in Denmark. Plus, Danes simply love what they do. This, more than likely, is why a company as passionate and dedicated as Dynaudio could only hail from Denmark.

Nearly 30 years ago in the small Danish town of Skanderborg, a group of engineers who shared a passion for music came to the conclusion that even the best loudspeakers available at the time were incapable of playing music without coloration. They established a new company to change this: Dynaudio. To this day, the Dynaudio R&D team relies on its own innovations for material selection, manufacturing processes, and component matching. Even the smallest details receive maximum attention. Dynaudio loudspeakers are a unique combination of innovative technology, state-of-the-art precision manufacturing, and true hand-craftsmanship, the latter being an innate Danish characteristic. Such passionate awareness and effort is unheard of with almost any other loudspeaker company, but for Dynaudio it is a fundamental requirement in order to achieve the highest possible sound quality. Today, music lovers not only listen to Dynaudio at home: In thousands of studios worldwide, sound engineers rely on Dynaudio monitors, and the high-end sound systems in Volkswagen, Volvo and Bugatti cars are regarded as the very best in the automotive sector.

Dynaudio engineers not only develop loudspeakers: they invest in fundamental research and development into psychoacoustics, mechanics, and electrodynamics while also cooperating with universities and scientific institutes on these advanced studies. The ability to recognize and understand technological relations allows one to turn this knowledge into an improvement in sound quality. Modern analysis and simulation tools help us improve and optimize loudspeaker construction. But the



Dynaudio precision in every Detail: From the silky-smooth soft dome tweeter to the sound-optimised shape of the aluminium baffle.

true creation of a speaker begins and ends with intense acoustic tests and comparisons. Even models which could be considered thoroughly developed undergo final fine tuning and further optimization at Dynaudio. The company relies on one of the most highly sensitive analysis tools: the human ear, because essentially it's all about music, and music can only be deciphered with our senses. To interpret an emotion into technological reason in order to further improve a loudspeaker is both engineering and a human work of genius. This is exactly what links Dynaudio with great musicians – perfectly controlling an instrument technically and intuitively to bring music to life.

The heart of any loudspeaker is the driver. No company has perfected loudspeaker drivers to the same extent as Dynaudio. But there are numerous details in all drivers that Dynaudio engineers have further optimized, fine tuning each and every facet. These details and the extreme refinements themselves are not always apparent or visible – but one can surely hear the benefits in the resulting sound quality. One of these details is the connection to the amplifier, the binding posts for the speaker cables. An impressive example can be found in the reference loudspeaker Dynaudio Evidence Master. For acoustical reasons, the cabinet consists of three separate chambers. To connect the individual loudspeaker drivers with the crossover in the middle section, only the very best connection was chosen: Exceptionally neutral leads by cable specialist van den Hul, fitted with gold-plated WBT spades, connected to gold-plated WBT pole terminals.

Such attention to detail shows how perfecting small things leads to a better overall loudspeaker – from material finish to the sound performance. And it is this attention to detail that is essential to Dynaudio's promise: Relive Music.

Dynaudio International GmbH
www.dynaudio.com



Would you like to find further manufacturers whose products are equipped with WBT technology?

Ask your WBT specialized trade dealer. He will be happy to inform you and to make the right decision.





nextgen.

WBT RCA CONNECTORS

RCA PLUGS pages 10 - 11

The product range of the RCA plugs is offered by WBT in a particularly broad spectrum. From hifi beginner to an experienced audiophile: everybody finds here the best plug for his cable or his very special applications.

The nextgen™ series enables to open up the world of sound of your hifi system in its full richness, true to detail and vital. nextgen™ are plugs designed for music-lovers.

RCA SOCKETS page 13

Precision is the key when it comes to a tight connection and WBT RCA sockets are unbeatable in this regard. All WBT RCA sockets have an active spring internal contact which adjusts to all RCA connector pins.

The gourmet version of the RCA sockets is the nextgen™ series. The super-fine resolution of the sound makes it possible to get used to the new look very fast!

RCA plugs – nextgen™ –

For the audiophile gourmet: RCA plugs in nextgen™ quality

The core of the WBT development is a central contact unit which consists of pure copper signal conductor the mass of which has been reduced to the minimum. The direct 24 carat gold-plating is nickel-free, therefore non-magnetic. Signal conductors made from silver are passivated for the purpose of oxidation protection. The contact pressure is assured by means of WBT collet chucking device, and the cable strain relief guaranteed in form of the well-proven Torx screws.

matched connection (RCA plugs generally have a characteristic impedance of 15–20 ohm!).



nextgen™
WBT-0102 Cu

nextgen™
WBT-0152 Cu



nextgen™
WBT-0110 Cu

nextgen™
WBT-0110 Ag

WBT-0102 | WBT-0152

For phono outputs (record players, microphones, etc.) good shielding against interference fields is particularly important. This is provided by the WBT-0102 that features the brass sleeve of higher conductivity connected to the minus pole – but otherwise is all nextgen™.

WBT-0110

Recommended particularly for digital applications (D/A converters, CD players, etc.) the RCA plug WBT-0110 features a characteristic impedance of 75 ohm for continuous

WBT-0110

- transmission width 1GHz (!)
- low eddy current through mass reduction
- with 75 ohm the perfect plug for digital connections

WBT-0102 | WBT-0152

- wideband capable (up to 200 MHz)
- excellent shielding against electromagnetic interfering fields
- simply the best plug for analog connections!
- WBT-0152 same construction as WBT-0102, however designed for a larger cable diameter: up to 10.8 mm

Characteristics

- ultimate conductivity through pure copper or fine silver conductors
- 24 carat direct gold-plated (or passivated), nickel-free
- with patented WBT clamping device
- reliable cable strain relief

WBT RCA PLUGS nextgen™

Product	Signal conductor material	Soldering	For cable up to (mm ²)	With nextgen™ technology	Nickel-free	Direct gold-plating	Passivated	Sleeve material
nextgen™								
WBT-0110 Ag	Ag	x	9	x	x		x	Alu
WBT-0110 Cu	Cu	x	9	x	x	x		Alu
nextgen™								
WBT-0102 Ag	Ag	x	9	x	x		x	Ms
WBT-0102 Cu	Cu	x	9	x	x	x		Ms
WBT-0152 Ag	Ag	x	10.8	x	x		x	Ms
WBT-0152 Cu	Cu	x	10.8	x	x	x		Ms

Signal conductor material: Ag = fine silver, Cu = pure copper
Sleeve material: Alu = aluminium, Ms = brass

RCA plugs – classic –

The classic series feature a reliable and stable mechanics, an utmost tightening force and long-life cycle, especially comfortable possibility of cable assembling and the finest machining. The approved clamping device guarantees for a long-lasting high contact pressure, minimizes reliably the transition resistance and compensates for any size variations of the outer contact elements of the RCA females. Torx screws guarantee an excellent cable strain relief. High conductivity is ensured by the copper alloy as basic material. Corrosion is eliminated through the gold-plated surface of all contact elements.



classic
WBT-0144

classic
WBT-0147

WBT-144 | WBT-0147

The clamping sleeve with mat black finish is designed as a two-part structure with independent face ring element – for minimized wear on the contacts. Also the somewhat smaller WBT-0147 presents easily accessible soldering points: the terminal panel for the minus pole is on the rear side.



classic
WBT-0101*

classic
WBT-0150*

WBT-0101* | WBT-0150*

Slotted central pin provides for exact adjustment, a permanently high contact pressure and minimal transition resistances. The surface is protected with 24 carat gold-plating, here free of nickel and therefore non-magnetic. High precision machining tolerances of < 2/100 mm!

* Discontinued model

Characteristics

- with patented WBT clamping device
- slotted contact pin
- heat resistant Teflon insulation
- easy accessible soldering points
- secure cable strain relief

WBT-0101 | WBT-0150

- made from high ductile copper alloy
- 24 carat gold-plating
- nickel-free
- tolerances of < 2/100 mm

WBT-0144 | WBT-0147

- made from copper alloy
- 24 carat gold-plating
- tolerances of < 5/100 mm

WBT RCA PLUGS classic

Product	Signal conductor material	Soldering	For cable up to (mm ²)	Nickel-free	Direct gold-plating	Sleeve material
classic						
WBT-0101*	Cu Zn	x	9	x	x	Ms
WBT-0150*	Cu Zn	x	11.3	x	x	Ms
classic						
WBT-0144	Cu Zn	x	9		x	Ms
WBT-0147	Cu Zn	x	7.8		x	Ms

Signal conductor material: Cu Zn = copper / zinc
Sleeve material: Ms = brass



Fig. right:
The REF1000M drives loudspeakers with incredible energy and detail, featuring 120dB dynamic range, delivering 500 watts into 8 ohms, doubling to 1000 watts into 4 ohms and able to drive a 2 ohm load.



WBT presents:

bel canto

HIGH DYNAMIC RANGE AUDIO

At Bel Canto we recognize that music is an important part of your life. We know because it's an important part of ours as well.

We're all looking for those special moments when we dissolve into the music, suspend disbelief and simply enjoy the moment. There's nothing like the experience of emotion; when the outside world affects your internal state and changes how you feel. It's what Bel Canto is all about!

Bel Canto Design, manufacturer of fine audio electronic components, traces its roots back to 1990. With its headquarters in Minneapolis MN USA, Bel Canto designs and manufactures products in the US with distribution in some 35 countries.

Bel Canto is an industry leader of innovative audio systems focused on the importance of the Digital to Analog Converter (DAC) as control center. Using all of our understanding of advanced technologies we create the best in efficient, low power consumption products that enhance your life not only with the power of music but with the satisfaction that you have invested wisely.

Our founder and chief designer, John Stronczer imbues Bel Canto products with a level of performance that only careful attention to detail can bring. The quality of every component is critical to realizing his goal of reproducing the beauty within the music. This attention to detail extends to the critical connectors used in each design and is reflected in our use of WBT connectors in our equipment. We appreciate the quality and performance and we are certain that you will also.

Bel Canto Design
www.belcantodesign.com

Would you like to find further manufacturers whose products are equipped with WBT technology?

Ask your WBT specialized trade dealer. He will be happy to inform you and to make the right decision.

RCA sockets

For the audiophile gourmet:

RCA sockets in nextgen™ quality!
 WBT offers both chassis versions which are connected to the board by means of cables, as well as board versions which are soldered directly to the board, as well as screwed on. All are equipped with a set of insulating washers, offering the perfect solution for every wall thickness.



nextgen™
WBT-0210 Cu



nextgen™
WBT-0210 Ag

nextgen™

The changeover to the nextgen™ principle enables the RCA sockets (as with WBT-0110!) to be set to an impedance of 75 ohm (typ.), as required for digital connections in particular. Yet also analog data benefit from the enormous bandwidth.

Characteristics

- delivered with a set of insulating washers
- applicable for every wall thickness

WBT-0210

- maximum conductivity thanks to pure copper or fine silver conductors for + and -
- transmission bandwidth of 1 GHz (!)
- inner contact designed as tulip contact with spring ring
- outer contact in the form of a patented double wave contact
- 75 ohm (typ.) characteristic impedance



classic
WBT-0234



classic
WBT-0274

classic Board versions

WBT board type RCA sockets are due to the additional screw connection absolutely strain-relieved and are characterized by a firm fixing on the pc board. The space between the solder feet is in line with the 7/10 inch (17.78 mm) matrix. Both models are finally fixed from the outside by means of a convenient three-hole nut.



classic
WBT-0201



classic
WBT-0244

classic Housing versions

All classic WBT RCA sockets feature the same state-of-the-art. However, WBT-0201 and WBT-0244 are not screwed on the pc board, but mounted in the cabinet. Contacting is generated by means of internal cable connection to the pc board.

WBT-0234 | WBT-0274

WBT-0201 | WBT-0244

- active spring internal socket for secure contact
- 24 carat gold-plating
- insulated, twist-proof installation
- adjustable mounting distance to the board
- heat-resistant Teflon dielectric

By the way:

all RCA housing type sockets can be installed with the impact sound interrupter WBT-0718.

However:

recommended only for absolute high-end gourmets.

WBT RCA SOCKETS

Product	Signal conductor material	75 Ω impedance	Soldering	Chassis assembly	Board assembly (horizontal)	Nickel-free	Gold-plated	Platinated / Passivated	Direct gold-plating
nextgen™									
WBT-0210 Ag	Ag	x	x	x		x		x	
WBT-0210 Cu	Cu	x	x	x		x			x
classic									
WBT-0234	Cu Zn		x		x	x	x		
WBT-0274	Cu Zn		x		x		x		
classic									
WBT-0201	Cu Zn		x	x		x	x		
WBT-0244	Cu Zn		x	x			x		

Signal conductor material: Ag = fine silver, Cu = pure copper, Cu Zn = copper / zinc

WBT nextgen™ connector technology sets the standard for A/V connectors ...

WBT is known worldwide as an innovative manufacturer of high-grade connectors in the audio sector. We are always pushing research and development at WBT in an effort to improve existing products, on the one hand, and to develop product innovations on the other. The latest creation is called nextgen™ and is completely different from all connectors to date.

While conventional connectors (the “classic” products in the WBT portfolio) are almost always made from brass and are manufactured as rotating parts, nextgen™ is a modern, hybrid design that uses the best possible functional materials. Connectors in audio systems are not just any old terminals or contacts, but should be understood as interfaces within the transmission chain. This is a well-known fact in computer technology. When it comes to what can be achieved at present, nextgen™ is at the cutting edge.

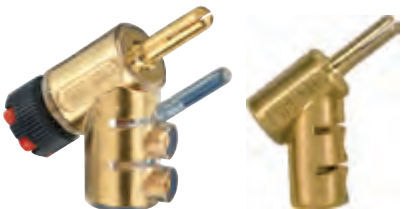
Recent investigations have not just proven that conventional connectors influence signal transmission, but have also demonstrated the errors¹ they create. nextgen™ technology avoids these errors, thereby leading to a much better sound.

WBT nextgen™ – benefits at a glance:

- **Faster signal transmission**
Mass optimization means that metal mass can be approx. 90% less, avoiding mass storage effects. This improves three-dimensional sound quality significantly (fig. 1).
- **Clear signal transmission**
Eddy currents are almost eliminated thanks to the new geometries. That makes the signal clearer, as if ballast has been eliminated.
- **More solid foundations**
Pure, soft copper (or even fine silver) means that the internal resistance of the contact material is decisively optimized. The sound becomes tangibly more substantial.
- **Genuine, standards-compliant 75 Ohm cinch connections**
The nextgen™ cinch connectors, consisting of jack and socket, make cinch connections future-proof. Thanks to the 75 Ohm wave resistance, they also finally have digital capability, with a broadband capability of up to 1 GHz. This enormous broadband capability also benefits analog transmission.
- **Cutting edge technology and thrifty use of raw materials**
The modern, hybrid design means that 90% of the valuable non-ferrous heavy metals (copper and brass) are saved, also increasing technical performance and sound quality. This is still something quite unique worldwide.

nextgen™

CLASSIC VS. NEXTGEN™



■ classic banana plug
WBT-0645

metal mass: 15.45 g brass



■ nextgen™ banana plug
WBT-0610

metal mass: 1.49 g copper

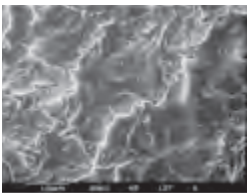
¹ The errors mentioned are non-linear in nature, which is why they cannot be corrected. That's why genuine high-end, in other words high-fidelity transmission, is inconceivable without nextgen.

... and moreover!

WBT impact sound interrupter

Our entire world consists of solid-borne sounds. Sound is nothing more than energy. When sound meets objects, it is partly reflected, just as light is reflected by a mirror. However, part of the sound affects the corpus and causes it to vibrate. Loudspeakers are doubly affected in this case. On the one hand, their housing vibrates even at a minimal rate, depending on the effort the manufacturer makes to keep the corpus stable, excited by the vibrating membranes of the speakers. On the other hand, the sound reflected by the environment meets the loudspeaker housing again and can cause it to vibrate in an undesirable way (non-linear interference). Such micro-vibrations are also transferred to the connector terminal and cable connectors.

If you were to look at the contact surfaces under a scanning electron microscope you would see that these are anything but smooth (fig. 2). If you then consider that both contact sur-

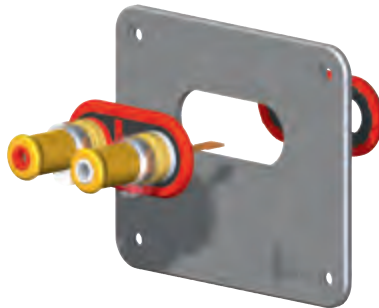


Microscopic picture of the surface roughness in the molecular area – „crater landscape“

Source: The REM-photo comes from a publication of the HTEE, TU Braunschweig, Germany

faces (terminal and jack on the loudspeaker cable) are always in minimal movement, excited by solid-borne sound, then it becomes clear that the signal transmission can suffer. WBT has identified this problem and has worked intensively on a solution to this problem.

The task was to bring two apparently contradictory properties in a single product. The connection and restraint between the poles and box cable must be absolutely secure. On the other hand, the contacts should be technically uncoupled from the housing of the loudspeaker. Solid-borne sound silencer WBT-0718 brings these properties together (fig. 3).



WBT impact sound interrupter – benefits at a glance:

- **More contact security**
You could say that solid-borne sound silencer WBT-0718 is hard and soft at the same time. It is hard enough to offer the terminal posts a secure, anti-twist hold and soft enough to disconnect the contacts from the permanently vibrating housing.
- **More quiet**
The sound seems quieter and more relaxed without losing any of its dynamism. On the contrary, thanks to the optimized connection, detailed dynamic structures can be revealed more effectively.
- **More order**
The greater quietness and balance in comparison with conventional connectors means that the sound seems cleaner and its three-dimensional quality gains sharpness and contours.





nextgen.

WBT LOUDSPEAKER CONNECTORS

BANANA PLUGS / SANDWICH SPADES pages 18 - 19

All WBT banana plugs have a solid terminal mechanism: the contact pin is expanded by a central spike and guarantees a firm position and permanent contact pressure.

WBT has once again set new standards with the new nextgen™ banana plugs and sandwich spades. WBT-0610 and WBT-0681 are the ne plus ultra of loudspeaker connectors.

POLE TERMINALS pages 20 - 21

WBT pole terminals are truly little masterpieces, symbols of quality with high functional value. This is why they can be found as built-in components in so many high quality audio systems.

With a wide range of more than a dozen of terminals WBT would like to enthuse hifi gourmets of all sound tastes. WBT pole terminals feature good haptics and offer universal inner and outer termination options.



**For the audiophile gourmet:
Banana plugs and Sandwich spades in nextgen™ quality**

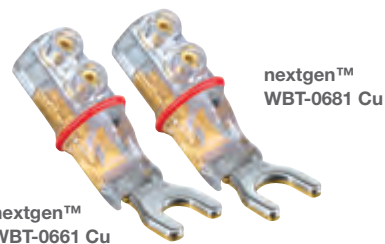
Delicately formed out of pure copper – the signal conductor of the nextgen™ banana plug WBT-0610 Cu. Directly gold-plated in a nickel-free finish to prevent oxidation. Despite the delicacy of the signal conductor, WBT-0610 is perfectly suited for the crimping technique. The crimping cage (cable termination area) is almost metal-free, however long-term stable. This is a real high-tech achievement of the precision mechanics with modern functional materials.

The basic concept behind the tried-and-tested WBT sandwich spade has always been a minimalist signal conductor made from pure copper (Cu versions).

The nextgen™ principle was applied also for the high-tech crimping cage in 2008. You can now look forward to an even more detailed and spacious musical sound!



WBT-0610
The nextgen™ banana plug WBT-0610 feature high conductivity and is free of magnetic interference. The contact pin “bellies” when the spindle is screwed in – for a constantly high contact pressure with constant low transition resistances.



WBT-0661/0681
The key to quality inherent in these sandwich spades is the patented design of their contact forks. An elastomer between the signal conductor and non-magnetic steel cap provides a constantly high contact pressure. Transition resistances are minimized and vibrations successfully absorbed.

Characteristics

- signal conductor made from pure copper or fine silver
- mass-reduced nextgen™ principle
- 24 carat direct gold-plating (nickel-free)
- contacts through crimping
- IEC and CE compliant
- smart cable guiding through the angled design

WBT-0610

- secured with a central pin

WBT-0661 / 0681

- contact fork with integrated vibration absorber
- WBT-0661 with 6 mm fork width
- WBT-0681 with 8 mm fork width

WBT BANANA PLUGS / SANDWICH SPADES nextgen™

Product	Signal conductor material	IEC/CE compliant (insulated)	Crimping	For cable up to (mm ²)	Nickel-free	Direct gold-plating	Platinated
nextgen™							
WBT-0610 Ag	Ag	x	x	10	x		x
WBT-0610 Cu	Cu	x	x	10	x	x	
WBT-0661 Ag	Ag	x	x	10	x		x
WBT-0661 Cu	Cu	x	x	10	x	x	
WBT-0681 Ag	Ag	x	x	10	x		x
WBT-0681 Cu	Cu	x	x	10	x	x	

Signal conductor material: Ag = fine silver, Cu = pure copper
IEC = touch-proof insulation and approved for currents > 34.5 V | CE = suitable for use in A/V systems; safety pin for child protection (preventing unintended connection to a mains socket)

Banana plugs – classic –

The classic banana plugs from WBT present an impressive robust design. To avoid unnecessary transition resistances, it is produced from a single piece of copper alloy. Oxidation is prevented by 24 carat gold-plating.

The expandable central pin means that the WBT banana plugs will fit tightly into any socket. This guarantees not only a secure connection, but also a constant high contact pressure and constantly low transition resistances.



classic
WBT-0645

WBT-0645

Thanks to its angled design the WBT-0645 is a potential space saver in the arrangement of devices. Also, the cable is directed down to the ground and cannot be damaged from kinking. In addition the WBT-0645 can be cascaded and features child protection.



classic
WBT-0600*

classic
WBT-0644

Characteristics

- locking bananas with expandable contact pin
- WBT double Torx screw system
- 24 carat gold-plating
- perfect strain relief

WBT-0600 / WBT-0644

- for crimping or soldering
- easy to assemble
- WBT-0644 has less copper proportion, but otherwise is identical to WBT-0600

WBT-0645

- for crimping
- space-saving and cable-friendly
- stackable
- IEC an CE compliant

WBT-0600* / 0644

Soldering or crimping? Those who favor the crimping technique will use the relevant Torx screws to permanently fix the crimped cable end and as a reliable strain relief.

WBT Torx screws run on special fine threads and maintain the applied pressure perfectly.

* Discontinued model

WBT BANANA PLUGS classic

Product	Signal conductor material	IEC/CE compliant (insulated)	Suitable for Bi-Wiring	Soldering	Crimping	For cable up to (mm ²)	Nickel-free	Gold-plated
classic								
WBT-0600*	Cu Zn			x	x	10	x	x
WBT-0644	Cu Zn			x	x	10		x
WBT-0645	Cu Zn	x	x		x	10		x

Signal conductor material: Cu Zn = copper / zinc
IEC = touch-proof insulation and approved for currents > 34.5 V | CE = suitable for use in AV systems; safety pin for child protection (preventing unintended connection to a mains socket)

equipped with
WBT



WBT presents:



PURITY MEETS PERFORMANCE

Functional design which arises imperatively from its application. Plain, stringent and without alternatives. Bionically formulated technology, geared to the funnel shaped physics of the human ear, allowing the most ingenious principles of sound transduction to unfold. Enduring, precise and incredibly powerful. And last but not least a listening experience with an originality and neutrality which is utterly faithful to what actually took place in the studio or on the stage. Whether it's a violin sonata in minor or a heavy metal guitar riff.

This is purity.

To build systems which are best in class within the world of Super-Speakers today. To adhere faithfully to natural principles and take them to their limits. Unremittingly optimising each and every component and their interactions within the system to all-time perfection. To question part by part. Stripping away as much as possible. And by doing so, gain so much more. In just two decades making the name of Avantgarde Acoustic™ the voice of the audiophile upperclass – as well by using the likely best speaker terminals in the world made by WBT.

This is performance.

From this fertile merging of contradictory claims and desires, our speakers have sprung to life. They are the fascinating outcome of the duality where "Purity meets Performance". They capture all of our commitment, dedication and enthusiasm.

Watch our new video and you will understand.

www.avantgarde-acoustic.de



Would you like to find further manufacturers whose products are equipped with WBT technology?

Ask your WBT specialized trade dealer. He will be happy to inform you and to make the right decision.

Recognizable quality - the safe choice with WBT-signet® -

Make sure that your high-end equipment is fitted with WBT connectors. You deserve it!

Our aim is not just to provide lasting, interference-free and reliable transmission of signals between the various components of a music system. Since the establishment of the WBT company, our objective has been to transmit sounds through our connectors with absolute purity and fidelity. This means precisely analyzing and researching connections and the associated risks for signal transmission, such as stability, corrosion and, in particular, the electrical parameters. Such an uncompromising approach is a complex matter and is associated with high investment costs, however, over the course of the company's history, it has created connectors that were pioneering in many respects, thanks to their innovative technology, and that have been recognized throughout the world.

WBT continues to invest in research and development – the results can be appreciated in the models of the nextgen™ series, for example, which aim to provide the latest in signal transmission in an age of high-resolution media, once again defining the parameters of what is technically feasible.

Only top-quality products attract imitators

Inevitably, top-quality products with a high recognition value will sooner or later encourage imitators in every sector. They seek to benefit from our hard-won reputation without investing a single cent in research and development. This is just one aspect of the problem. Another is the fact that the copies are mostly manufactured in low-wage economies and their only similarity to genuine WBT quality connectors is an external one.

Their production processes and quality controls are nothing like the WBT standard.

Likewise there is little concern shown for the environment. There is no guarantee for sustained high quality or faithful sound reproduction. What might have seemed like a good investment may prove to be a mistake, hitting the owner - and WBT.

The WBT-signet® – the reliable sign of an original product

All of these considerations have spurred us to protect our connectors and our good reputation from poor imitation products by introducing an unmistakable quality seal - the WBT-signet®.

Measuring about 2 centimeters, the WBT-signet® is made from high-quality and forgery-proof functional materials: an adhesive film, the WBT logo in red elastomer, a soft, rubber-like material and a covering made from hard macrolon in anthracite.

Our innovative, top-quality connectors are manufactured in Germany using the latest environmentally-friendly processes. They meet the relevant standards and safety regulations. We guarantee quality and sound. Crude copies are by definition "low-tech" products that generally offer less mechanical resilience, risking wear and tear, as well as fluctuations in sound quality – the antithesis of the recognized WBT quality!

For this reason you should only trust high-end components and connectors that carry the WBT-signet®. WBT products can only be found in specialist retail outlets. This enables us to ensure that, in addition to the original connectors, you will also receive expert advice – offering you the best sound quality and components for your money, tailored precisely to your requirements.

After all, it's what you deserve!

WBT-signet® – the distinctive mark of original high-end quality



You will find WBT-signet® on cables, now which are equipped with original WBT connectors.

Ask your dealer for genuine WBT quality!



For the audiophile gourmet: Pole terminals in nextgen™ quality

nextgen™ pole terminals provide the same great potential for connecting your loudspeaker cables as the classic series, and accept banana plugs, spades, and crimped cable ends. Inside, cables can be soldered, crimped, or even screwed directly to the crossover. The assembly is always insulated and secured perfectly against twisting.

A mineral- and glass-fiber-reinforced plastic sheath houses an innovative, ideally molded signal conductor – naturally made of pure copper in a minimalistic design. The minimized metal masses are one of the basic principles of nextgen™: Only signal conductors that are as thin as possible help to eliminate eddy currents* and mass storage effects*.

In addition, the WBT-0705 presents a fascinating all-metal look and haptics. But for all that: Inside it's pure nextgen™! The ideal shape of this conductor makes every configuration possible, it accepts 4 mm banana plugs and crimped cable ends up to 6 mm² and of course sandwich spades.



nextgen™
WBT-0705 Cu

nextgen™
WBT-0710 Cu

Where sound quality is concerned, nextgen™ pole terminals will satisfy even the most fastidious of audiophiles.



Characteristics

- completely new innovative construction
- minimalistic signal conductor made from pure copper or fine silver
- 24 carat direct gold-plating (nickel-free)
- accepts banana plugs, spades, crimped cable ends (6 mm²/11 AWG)
- for soldering or flat push-on cable shoes
- twist-proof mounting
- fully insulated, IEC and CE conformable
- puzzle plate system

* More basic and background details on eddy currents and mass storage effects can be found in the WBT technical articles at www.wbt.de.

WBT POLE TERMINALS nextgen™

Product	Signal conductor material	IEC/CE compliant (insulated)	Nickel-free	Direct gold-plating	Passivated
nextgen™					
WBT-0705 Ag	Ag	x	x		x
WBT-0705 Cu	Cu	x	x	x	
WBT-0710 Ag	Ag	x	x		x
WBT-0710 Cu	Cu	x	x	x	
WBT-0710 Cu mC	Cu	x	x	x	

Signal conductor material: Ag = fine silver, Cu = pure copper, Cu mC = pure copper with velours chromium finish
IEC = touch-proof insulation and approved for currents > 34.5 V | CE = suitable for use in A/V systems

Pole terminals – classic –

The classic series of pole terminals feature superior mechanisms, solid designs, and strong clamping nuts for high contact pressure and constant low transition resistances – the ideal attributes for minimizing audio interference.

“Genuine gems”: WBT-0702.11, WBT-0702.12, WBT-0730.11 and WBT-0730.12

These four products are already something quite special among our classic range. Their contact areas have been optimized by fine grinding, and the visual appeal of all visible faces enhanced even further by additional polishing.



classic
WBT-0763



classic
WBT-0765



classic
WBT-0766



classic
WBT-0702.12



classic
WBT-0730.12



classic
WBT-0735

WBT-0763 | WBT-0765 | WBT-0766

- extremely high contact pressure through fine pitch thread and cross-milled surface
- soldering or crimping, screw-on pcb connection in case of WBT-0766
- made from brass, gold-plated

WBT-0702

- extremely high contact pressure through fine pitch thread and milled grooves
- soldering or crimping (with a Torx screw) connection
- high conductive copper alloy
- 24 carat direct gold-plating (nickel-free)

WBT-0730 | WBT-0735

- extremely high contact pressure through fine pitch thread and cross-milled surface
- soldering or crimping (with a Torx screw) connection
- high conductive copper alloy
- 24 carat direct gold-plating (nickel-free)

Characteristics

- puzzle plate system
- twist-proof mounting

WBT POLE TERMINALS classic

Product	Signal conductor material	CE compliant (insulated)	Nickel-free	Gold-plated	Direct gold-plating	Direct Platinum-plating	Polished surface
classic							
WBT-0763	Cu Zn			x			
WBT-0765	Cu Zn	x		x			
WBT-0766	Cu Zn	x		x			
classic							
WBT-0702.01	Cu Zn		x	x			
WBT-0702.11	Cu Zn		x		x		x
WBT-0702.12	Cu Zn		x			x	x
classic							
WBT-0730.01	Cu Zn		x		x		
WBT-0730.11	Cu Zn		x		x		x
WBT-0730.12	Cu Zn		x			x	x
WBT-0735	Cu Zn	x	x	x			

Signal conductor material: Cu Zn = copper / zinc
CE = suitable for use in A/V systems



WBT-0718

The secret sound improver

Tune your box with the impact sound interrupter WBT-0718. This takes you even closer to completely faithful sound.

Your specialist dealer will be happy to help you, and WBT has a stock of upgrade kits and special tools available if required. So be sure to ask in advance. Some loudspeaker manufacturers already use similar systems. Some of them talk about it, while others just want to use the improvement in sound quality to benefit your product.

WBT has developed a system with the impact sound interrupter WBT-0718 that can be used on a universal basis, and to be retrofitted easily.

Whatever the case, you can be sure of coming one step closer to true high-end quality.



From impact sound interrupter to the secret sound improver

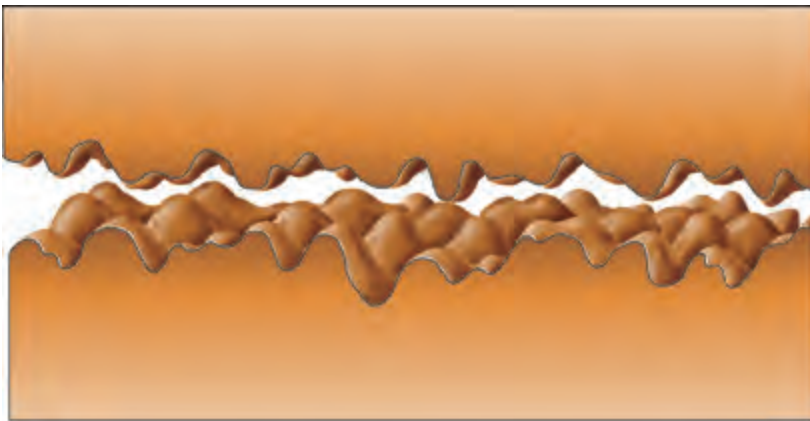
The problem is a familiar one. People have long been aware of the improvement to sound quality that can be achieved by isolating components, and, in particular, electrical contacts from constant vibrations, e.g. from a loudspeaker.

But why is that the case? The physicist will smile broadly and offer an explanation that is as simple as it is illuminating: all contacts, in particular gold-plated contacts, look smooth to the human eye, so that you would expect a full surface contact.

However, appearances can be misleading, and it takes a microscope to reveal the true story: the contact surfaces are far from smooth. They are more like a crater-filled landscape whose peaks make contact at irregular intervals, see Figure 1. (as a matter of fact, this refers to all contacts).

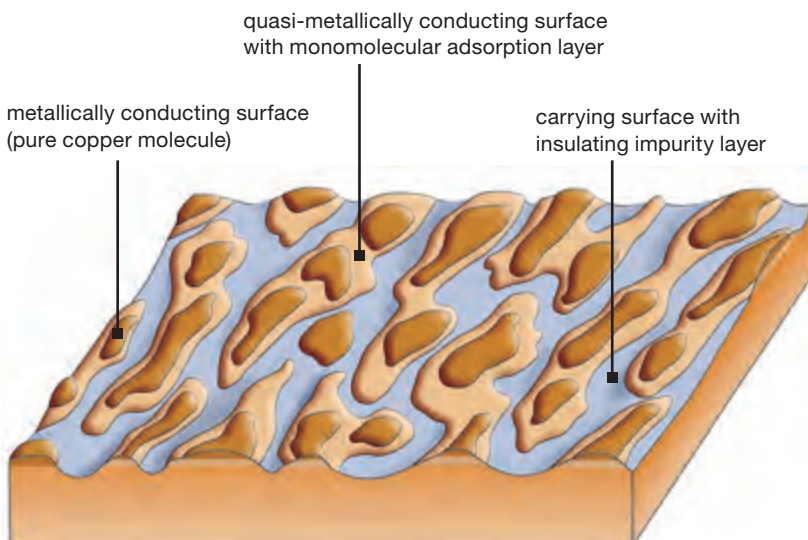
When you realize this, it's not so hard to understand the variations in contact that can result from permanent vibrations, e.g. from a loudspeaker.

Miroscopic picture of the surface roughness in the molecular area – „crater landscape“



Source: model presentation by Prof. W. Rieder, VDE, Berlin, Germany
Graphical presentation by WBT

Miroscopic picture of the real structure of contact surfaces



Source: model presentation by Prof. W. Rieder, VDE, Berlin, Germany
Graphical presentation by WBT



WBT presents:

ESOTERIC

ULTRA HIGH END COMPONENTS FOR HIGH-FIDELITY PLAYBACK



Mono-block Amplifier A-80

ESOTERIC® manufactures ultra high end components for high-fidelity audio and video playback. Products include universal disc and SACD/CD players, master clock generators and amplifiers. ESOTERIC's implementation utilizes very high quality materials combined with unique proprietary designs, resulting in exceptionally high levels of signal accuracy.

Technological Fusion – simply stated: The result of fusing the best in design, technology, engineering, materials and manufacturing. As an early innovator in magnetic tape recording and data storage, the TEAC Corporation was founded in Japan in 1953.

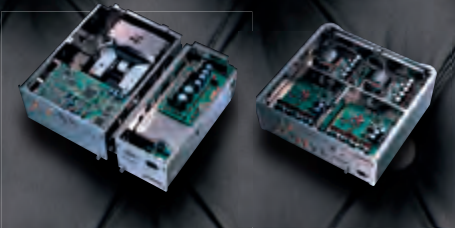
As a 21 year old subsidiary of the TEAC Corporation, TEAC ESOTERIC Company design, engineering and manufacturing improves upon the „state of the art,“ providing our customers with a higher level of system excellence!

In the pursuit of excellence it is necessary to set aside perceived limitations and obstacles, apply all available resources and eliminate compromise at any cost.

This is the design goal for all ESOTERIC products. To simply build the best products we know how to build; products that respond with absolute precision and sonic realism.



Transport P-03 and DAC D-03





Tube Amplifier A-100

WBT terminals are extensively used for our reference level product line for their outstanding sound quality. All the RCA inputs / outputs of our multi-award winning P-03/D-03 SACD/CD digital source system are WBT terminals.

WBT-0210 Cu nexgen™ sockets are selected for SP/DIF coaxial sockets for their true 75 ohm characteristic impedance – one of the most excellent features of WBT's nextgen™ design.

WBT-0710 Cu speaker terminals are used for our amplifiers; the A-100 tube amplifier, the A-80 mono blocks, and the A-100 stereo solid state amplifier. The purity of the conductor material and secure connection between speakers will help to lower the output impedance of the amplifier, maximizing the amplifier's speaker driving ability.

Technical excellence in design, high conductor purity, and true German production consistency – ESOTERIC uses WBT simply because it is the best choice for the best sounding hi-fi gears.

ESOTERIC

www.esoteric.jp/indexe.html

<http://esoteric.teac.com/>



WBT speaker terminals in use:
back of the Tube Amplifier A-100

Would you like to find further manufacturers whose products are equipped with WBT technology?

Ask your WBT specialized trade dealer. He will be happy to inform you and to make the right decision.



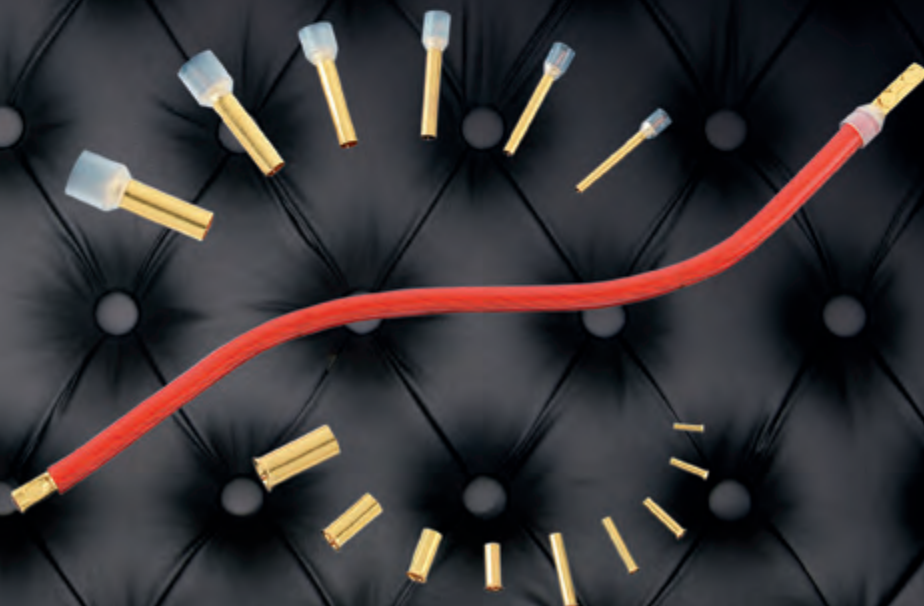
nextgen.

FINISHING TOUCHES & ACCESSORIES

POLE TERMINAL ACCESSORIES page 26
FINISHING TOUCHES page 27

The WBT range of connectors is rounded off with a series of accessories. Every single accessory part is well conceived and enables such a pleasant and easy installation of WBT terminals.

With the fine tools and processing materials you can fully and unreservedly enjoy the quality of WBT products.





ASR Emitter - as entry into the ASR programme of high quality amplifiers



Thanks to continuous development and improving supply the ASR investigative highest sound level.

Would you like to find further manufacturers whose products are equipped with WBT technology?

Ask your WBT specialized trade dealer. He will be happy to inform you and to make the right decision.



WBT presents:



ASR AUDIO SYSTEMS HAS MANUFACTURED SUCCESSFULLY HIGH-END AMPLIFIERS SINCE 1980.

The power amplifier ASR Emitter and Phono preamplifier ASR Basis.

The aim of the development of ASR audio systems is to combine the harmony and musicality of good tube amplifiers with the precision and sovereign power of modern solid state amplifiers!

The design of the ASR Emitter differs from conventional amplifiers:

- short signal paths through a single-stage construction without pre-amplifier
- in principle a power amplifier with volume control!
- external power supplies with large transformers, even with batteries
- Mosfets in all stages
- expensive casing made from aluminum, brass and acrylic glass
- gold-plated PCB

The precisely made with high quality WBT terminals for ASR are the perfect components for this unique concept. The music signals are lead inside ASR amplifiers only over massive silver cable. With the WBT nextgen™ terminals made from solid silver results in a complete signal path from solid silver.

The WBT terminals support as the ASR concept perfectly with their high resolution and thus lead to a relaxed listening experience.

www.asraudio.com

Finishing Touches

Must haves – The crimping pliers WBT-0403 are perfectly matched to the geometry of WBT crimping plugs, and the Dynakey WBT-0481 ideal for the 5 dNm needed for WBT plugs. Also the razor-sharp cable cutter is suitable for both virgin cables and crimped cable ends, without deforming them.

The Dynakey set WBT-0490 has long left behind its original target group of audiophiles and is now entralling tool lovers all over the world.



- Crimping pliers* WBT-0403**
- ideal for crimping of cable end sleeves from 0.5-16 mm² (20-5 AWG) for WBT crimping plugs
 - comfortable grip zones
 - gold-plated



- Crimping set WBT-0411**
- includes the crimping pliers WBT-0403 and cable end sleeves from 0.5-10 mm² (20-7 AWG)
 - delivered in a handy plastic case



- Torque controlled Dynakey WBT-0481**
- high-precision tool
 - factory-set to 5 dNm for perfect mounting of all WBT plugs
 - fitted as standard with a Torx T.6 bit for WBT mounting



- Bit set WBT-0484**
- 18 pieces set with top-grade 4 mm bits made from hardened chrome vanadium steel for WBT-0481



- Cable end sleeves with and without insulation collar**
- made from pure copper, 24 carat gold-plated, nickel-free
 - with and without insulation collar, available in the standard sizes from 0.5-16 mm² (20-5 AWG)
 - also available in fine silver, passivated



- Dynakey set WBT-0490**
- includes the torque controlled Dynakey WBT-0481 and the bit assortment WBT-0484 with 18 top-grade 4 mm bits
 - delivered in a handy plastic case



- Silver solder WBT-0800/0805**
- high quality solder with 4% fine silver content
 - WBT-0800 melting temperature 178°/180° C
 - WBT-0805 (lead-free!) melting temperature 216°/219° C



- Cable cutter WBT-0499**
- ideal also for stripping cables
 - very straight, high-precision cut profile
 - gold-plated



- Angled Torx WBT-0488**
- small Torx T.6 screw driver

* illustration similar to the original

equipped with

WBT



WBT presents:

NORDOST

MAKING THE CONNECTION

**THE SIMPLEST SOLUTION
IS OFTEN THE BEST...**

But not always the easiest to find!

Like many of the best solutions to difficult technical challenges, Nordost audio cables are deceptively simple in appearance. With no unnecessary fillers or padding to add to their bulk and no boxes built onto the conductors to “enhance” the sound, they rely on the same exhaustively selected conductors and dielectric materials, and use the same proprietary precision manufacturing techniques and unique technologies that we use in the most demanding, mission critical aerospace and medical applications, fields in which performance is, quite literally a matter of life and death. Heart surgery and spaceflight leave no margins for error, and it is our extensive experience in these fields that created the foundation on which the audio performance of Nordost cables rests. But high performance alone is not enough; you must be able to deliver it reliably and on demand, making proven consistency paramount. That consistency comes from the engineering elegance of deceptively simple structures, precisely executed in the best available materials; exactly the same approach that delivers superior performance in the audio realm. But it also relies on the quality of termination and the connectors chosen. All that precision in the construction of the cable, the choice of connectors and the selection of superior dielectrics will be wasted if those qualities are not matched by the plugs at each end of the cable, so it should come as no surprise that we choose to use WBT nextgen™ connectors on our audio products.

The nextgen™ RCA's combination of sound, precision engineering and elegant, minimalist design is the perfect foil for Nordost's straight-line, “less is more” philosophy. Not only does the structure of the plug itself mirror the material economy inherent in the cable designs, as well as the painstaking selection of materials, but the engineering precision



extends to the plug interface, both with cable and the equipment to which it's connected. Individual entries for the solder pads ensure that access for termination of the cable – and thus the quality of that termination – is excellent, while the user adjustable tension collar ensures a perfect fit to all sockets, even when they don't match the manufacturing tolerances of the plug and cable. Add excellent strain relief and a choice of contact materials to the equation, along with superb operational reliability and it soon becomes clear that the nextgen™ RCA connector represents the ideal termination option in critical audio signal paths. Combine it with the elegant simplicity and superb performance of the Nordost signal cables and the result is unbeatable teamwork. Nordost audio cables set the performance standard by which others are judged: the WBT connectors play much more than just a supporting role in that success.

Email: info@nordost.com
Website: www.nordost.com



Would you like to find further manufacturers whose products are equipped with WBT technology?

Ask your WBT specialized trade dealer. He will be happy to inform you and to make the right decision.

Pole terminal accessories



Characteristics

All WBT mounting plates are of course equipped with the necessary accessory parts:

- screws
- wood press-in nuts (brass)
- cellular rubber seal
- cabinet production drawing
- assembly drawing
- available also with slot hole

WBT mounting plates have been designed for a professional installation of all WBT pole terminals. They can be installed on the panel front or countersunk.

Their stability is good enough to accept the crossover to be mounted directly on the rear side of the plates.

The power bridges have been designed quite in the sense of the nextgen™ technology for bridging of bi-wiring terminals. The conductor material is pure copper or fine silver which provides these power bridges the highest degree of conductivity. In addition, they feature an intermediate elastomer for absorbing vibrations.

... and of course all mounting plates are available with a slot hole for the impact sound interrupter.

Impact sound interrupter WBT-0718

Soon available from your specialized WBT dealer.

NEW!



Impact sound interrupter WBT-0718

- for decoupling of impact sound in loudspeakers and electronic equipment (line frequency)
- for all WBT pole terminals and RCA sockets



Power bridge WBT-0725, nextgen™ style

- made from pure copper or fine silver
- equipped with elastomer as vibration damper
- fully insulated, IEC and CE conformable
- easy handling

- Assembly requires a slot hole. The rest follows almost automatically. The set is secured with the counter nuts of the pole terminals.
- WBT provides special slot hole punches for retrofits (see figure above).

IMPRINT

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WBT
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