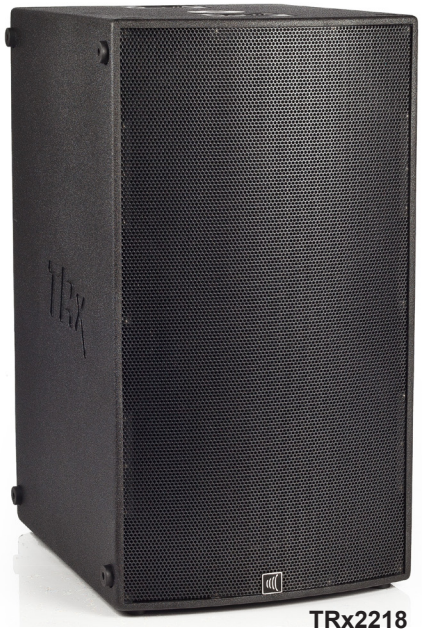
Congratulations on your selection of TRx loudspeakers. The Carvin Audio **TRx2000** series loudspeakers are a high performance solution for bands, audio companies and concert venues. They feature the latest innovations for optimal performance of both live and music playback. The TRx loudspeakers include point source, monitor and subwoofer solutions – all with the goal of providing the best sound at high SPL levels.

The **TRx** Series are made from road worthy multi-ply Baltic Birch covered in weather and UV resistant Duratec™ coating with steel powder coated grills. Handles, pole mounts, fly points and Twist-Loc connectors provide reliable means for transport, suspension, and set-up. These high performance systems are designed for today's pro audio applications and are protected by a 5 year warranty.

TRx BUILT IN USA



TRx2218


TRx12N

TRx2118 / TRx2121


TRx2115


TRx2153

The **TRx12N** is a 12-inch 2-way monitor featuring a bi-ampable coaxial driver. High intelligibility comes from a single concentric source that only a true coaxial driver can offer. It's small footprint is ideal for limited space while its high SPL and 1200w peak power capacity is designed for large concert venues. The 12-inch woofer is ideal for monitoring with great clarity. A pole mount adds the flexibility of being suspended on subs or pole stands for mains.

The **TRx2115** is a multi-purpose loudspeaker for front of house mains and stage monitors featuring a 15-inch heavy-duty woofer and a 1.4-inch exit high frequency driver in a compact trapezoidal enclosure. 2400 watts peak power handling delivers an impressive SPL with extended bass from a small enclosure. Bi-amping improves driver efficiency especially when using as a main. A pole mount and 8 fly points offer a variety of suspension options.

The **TRx2153** is a 3-way high performance solution featuring a 15-inch heavy-duty woofer, a horn loaded 8-inch mid range driver and an 80 x 50 degree horn loaded 1.4-inch exit high frequency driver. The enclosure is capable of 2400w peak in full-range mode. Bi-amping allows the best efficiency with the Hi and Mid drivers powered separately from the Low frequency woofer to provide the clearest sonic detail in the high, mid, and low frequencies. The trapezoid shape allows coupling multiple enclosures for optimal dispersion and 12 fly points are included for suspension.

The **TRx2118** is a single 18-inch high powered compact subwoofer designed for all venues and is ideal for ground stacking main speakers on top or coupling multiple subs for added efficiency. Three pole mounts are featured for single pole solutions, dual poles to elevate two TRx3210 line array elements or matching foot receptors to stack four TRx3210's. With a response down to 32Hz and a 4-inch voice coil, the TRx2118 is capable of 3200w peak for a 133dB SPL output.

The **TRx2121** is a single 21-inch sub in the same compact enclosure as the TRx2118 with equal mounting capabilities. The TRx2121 is designed to extend sub frequencies down an octave to 20Hz for bass you can feel. Couple multiple TRx2121's together for added efficiency or mix them with TRx2118's for full sub frequency spectrum coverage. The 21-inch driver with a 4-inch voice coil allows for 4000w peak power delivering bone rattling low end at high SPL.

The **TRx2218** is a dual 18-inch sub that pairs ideally with a single TRx2153. The TRx2218 in a vertical position places the TRx2153 at a perfect height to project over the crowd. A single pole mount is included for mounting smaller main tops for heavy, low frequency demanding events. Matching foot receptors are included for stacking TRX3210 line array elements. The TRx2218's eight corner ports provide strong wall and baffle support for the highest efficiency possible, and couple vertically or horizontally with another TRx2218. Optional 4-inch CTS44 casters install quickly for easy transport. With a 6400w peak rating, this dual 18" sub will deliver impressive low-end punch for high SPL demands.

CARVIN
AUDIO • AMPLIFIERS
BUILT IN THE USA - SINCE 1946

16262 WEST BERNARDO DR. SAN DIEGO, CA 92127
800-854-2235 CARVINAUDIO.COM

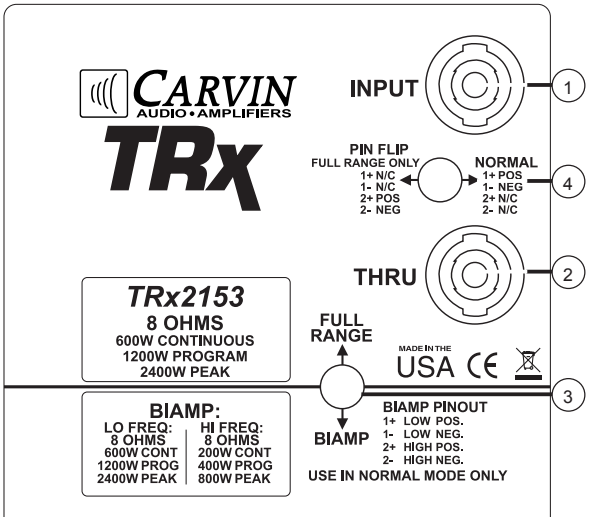
CHOOSING THE CORRECT AMPLIFICATION

TRx Loudspeakers are designed to be used with professional power amplifiers capable of producing the correct power into equivalent speaker loads. Care should be taken to avoid amplifier clipping. Due to the fact that music signals have a high peak-to-average "crest" factor, a lesser power amplifier driven into clipping is more likely to damage a speaker than a higher power amplifier used within its ratings. When an amplifier is over driven, its output waveform is clipped or squared off reducing the crest factor. If an amplifier is extremely over driven, the output waveform can approach that of a square wave. Under these extreme conditions, an amplifier is capable of producing far more power than its un-distorted rated power output.

Carvin Audio recommends an amplifier capable of producing at least the power rating of the speaker up to 1.5 times the power rating of the speaker. (See TECHNICAL SPECIFICATIONS).

Always turn on the amplifiers after the mixer and control systems have been powered on. This will eliminate power peaks due to switch on surges which can damage loudspeakers. When powering down the system, reverse the sequence and switch off the power amplifiers first.

TRx2115 & TRx2153 Connection Plate



1. INPUT (4-PIN TWIST-LOC)
Full range or bi-amp depending on the position of the BIAMP switch.

2. THROUGH (4-PIN TWIST-LOC)
This jack is wired in parallel with the input jack for daisy chaining additional enclosures.

3. BIAMP SWITCH
Changes between full range or bi-amped inputs. DO NOT use with PIN FLIP.

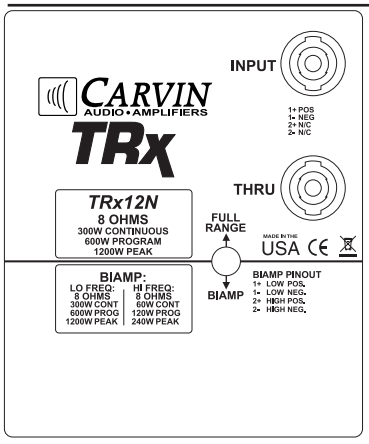
4. PIN FLIP SWITCH

NORMAL
This cabinet is powered through Twist-Loc pins **1+, 1-**
Use in Full Range Mode or BIAMP mode.

PIN FLIP
This cabinet is powered through Twist-Loc pins **2+, 2-**
Use in Full Range Mode only.
DO NOT use in BIAMP mode.

With PIN FLIP other cabinets can be daisy chained on the same 4-conductor cable and powered from a different amp/channel on Twist-Loc pins 1+, 1-

TRx12N Connection Plate

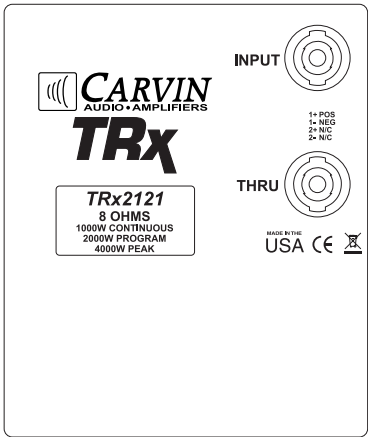


1. INPUT (4-PIN TWIST-LOC)
Full range or bi-amp input depending on the position of the BIAMP switch.

2. THROUGH (4-PIN TWIST-LOC)
This jack is wired in parallel with the input jack for daisy chaining additional enclosures.

3. BIAMP SWITCH
Changes between full range or bi-amped inputs.

TRx2118, TRx2218, TRx2121 Connection Plate



1. INPUT (4-PIN TWIST-LOC)
Full range input, external crossover required. TRx2118, TRx2218 & TRx2121 **do not** have an internal passive crossover.

2. THROUGH (4-PIN TWIST-LOC)
This jack is wired in parallel with the input jack for daisy chaining additional enclosures.

RECOMMENDED BIAMP CROSSOVER FREQUENCIES

	Low/High
TRx12N	1.75kHz - 3kHz
TRx2115	1.75kHz - 3kHz
	Low/Mid-Hi
TRx2153	400Hz - 700Hz
	Low Pass
TRx2118	80Hz - 100Hz
TRx2218	80Hz - 100Hz
TRx2121	80Hz - 100Hz

CONNECTING TRx

The rear panels of the the TRx loudspeakers are fitted with 4-pin Twist-Loc connectors. All connectors are wired in parallel.

4 pin	Bi-amp	Passive	Subwoofers
1+	Low Freq. Positive	Positive Input	Positive Input
1–	Low Freq. Negative	Negative Input	Negative Input
2+	High Freq. Positive	Through	Through
2–	High Freq. Negative	Through	Through

SUSPENSION AND STACKING INFORMATION

Prior to suspending or stacking any loudspeaker systems, it is essential that the user be familiar with overhead suspension and stacking techniques, load ratings, and safety considerations.

SUSPENSION

TRx series loudspeakers are fitted with captive 3/8"-16 threaded receptacles for suspension or permanent installation. Each captive nut has a WLL of 500 lbs. (226 kg.).
Note: Working Load limits are based on vertical pull or 0°, for derating please see derating note below.

DE-RATING: Using the mounting points at an angle will de-rate the "WLL" (working load limit) for each point. Each point mounted at an angle should be de-rated according to the following formula.

"WLL"=cosine(angle) x 500 lbs.
angle = degrees form vertical pull
500 lbs. = WLL for each TRx mounting point @ vertical pull

WARNING – Never exceed the "WLL" throughout the suspension system.

TCSHK10
3/8"-16 forged steel eyebolt
WLL=1600 lbs.

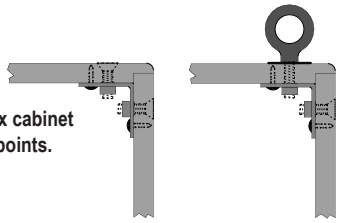
TCSHK58
5/8" forged steel shackle
WLL=6500 lbs.

DANGER:
1) Hardware found at your local hardware store should not be used as it may not be rated for this application.
2) Mounting or rigging loudspeakers is a serious endeavor, always seek the advice of qualified experts.
3) Never use the handles for suspending the loudspeaker, they are not designed or rated for this purpose.
4) Improper installations may result in damage, injury or death.

CAUTION: All hardware used for overhead suspension should be designed and used with a minimum 7:1 design factor. This is the ratio between the structural failure point and the loading to be applied to the component. Periodically inspect and maintain all rigging points on the loudspeaker and all suspension hardware.

NOTICE: The user assumes liability for proper design, installation and use of rigging systems.

IMPORTANT NOTE:
All fly point holes of the TRx loudspeakers must be occupied by tightened hardware, either with the mounting hardware (eyebolts) or "plugged" by the hex-socket screws provided.



Cutaway view of TRx cabinet showing rigging points.

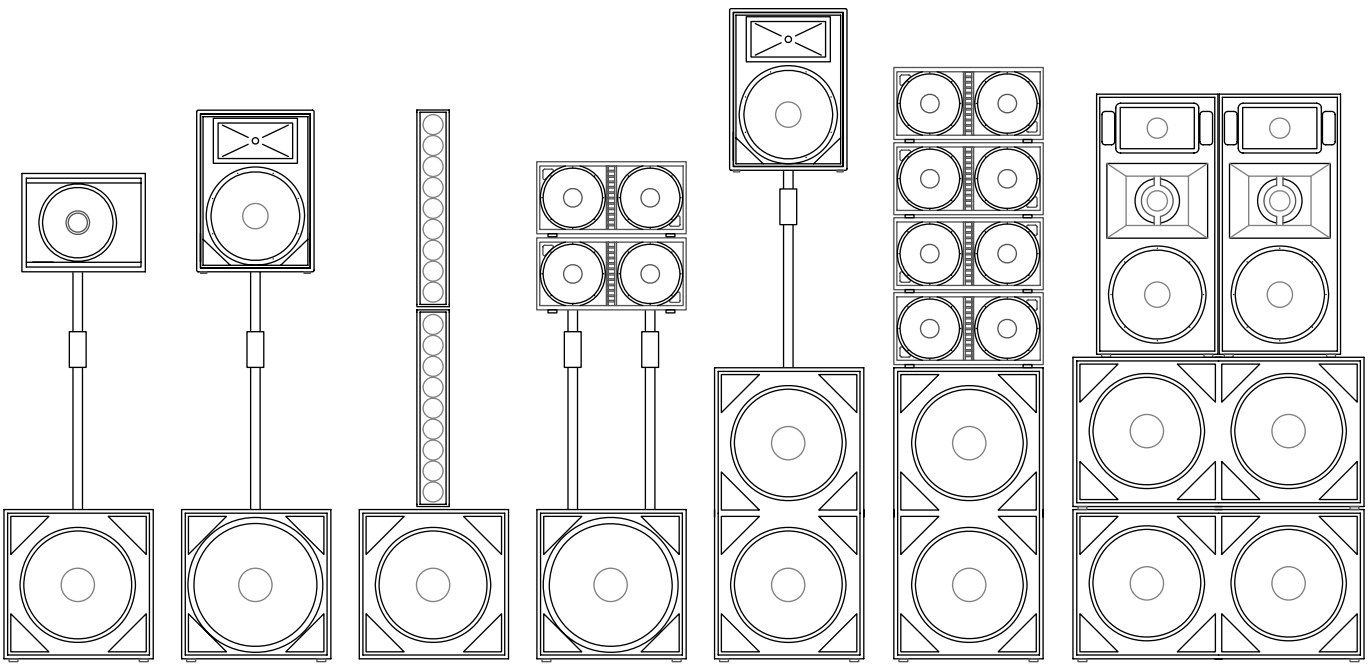
There are two reasons for this. When the loudspeaker is suspended from one end, the load is transferred through the internal steel bracing to the bolts in the adjacent wall of the enclosure for structural support. Also, if the holes are not "plugged" this will create air leaks compromising the low frequency performance of the enclosure.

STACKING

Ensure that the floor, stage or soundwings are level and solid. Be cautious of outdoor windy conditions, speaker stacks could topple over in high wind conditions or be accidentally pushed or bumped over by over-zealous crowds. Loudspeakers producing very high SPL (especially subwoofers) can shift from their original position. Ensure the feet of the loudspeakers are locked into the feet cups of the speaker below. Place frictional material between the floor and the loudspeaker.

SYSTEM SETUPS

The TRx 2000 series is designed to offer a large variety of options when configuring a system, and can also integrate with TRx3000 series elements such as the TRx3903 column array, TRx3210 Line Array, or TRx3218 subs. As with any system, consideration should be made to match SPL of main and subwoofer cabinets. For instance use a TRx2218 to keep up with the SPL capability of a single TRx2153. When a large system is running, it is difficult to detect power amp clipping or subwoofer distortion which may damage the sub.



TRx12N
SS4 POLE
TRx2118

TRx2115
SS4 POLE
TRx2121

(2x) TRx3903
(2x) SS7 POLE
TRx2118

(2x) TRx3210
(2x) SS4 POLE
TRx2121

TRx2115
SS4 POLE
TRx2218

(4x) TRx3210
TRx2218

(2x) TRx2153
(2x) TRx2218

SPECIFICATIONS

TRx12N Specs

System Type: 12-inch 2-Way
Frequency Response: 65 Hz – 20 kHz (-10DB)
70 Hz – 18 kHz (-3 dB)
Coverage Pattern: 80 round
Crossover: 2-Way
with Speaker Guard™ HF protection
Crossover Frequency: 2.5 k Hz
Power: Continuous / Program / Peak
Full Range 300w /600w /1200w
Recommended Amplifier Power: 450 – 900w
Sensitivity (1w @ 1m): 96dB
Maximum SPL: 120dB cont. / 126dB peak
LF Driver: 12-inch woofer
HF Driver: 1-inch Neodymium 1.5-inch VC
Nominal Impedance full range: 8 ohms
Bi-amp LF: 8 ohms 300w /600w /1200w
Bi-amp HF: 8 ohms 60w /120w /240w
Enclosure: 13 ply Russian Baltic Birch
Suspension/Mounting: 1-3/8-inch pole mount cup

Finish: Black DuraTex™
Transport: 1 Recessed Handle
Grill: Black powder coated 16-Ga steel
Acoustically Transparent Foam Backing
Connectors: Two 4-pin TwistLoc
Dimensions (H x W x D): 14.5 in x 15.5 in x 19.5 in
370 mm x 395 mm x 495 mm
Net Wt: 33 lb (15 kg)

TRx2115 Specs

System Type: 15-inch 2-Way, bass-reflex
Frequency Response: 54 Hz – 20 kHz (-10DB)
62 Hz – 18 kHz (-3 dB)
Coverage Pattern: 80H x 50V
Crossover: 2-Way
with Speaker Guard™ HF protection
Crossover Frequency: 1.5 k Hz
Power: Continuous / Program / Peak
Full Range 600w /1200w /2400w
Recommended Amplifier Power: 800 – 1600w
Sensitivity (1w @ 1m): 100dB
Maximum SPL: 128dB cont. / 134dB peak
LF Driver: 15-inch cast frame, 3-inch VC
HF Driver: 1.4-inch exit, 2.5-inch VC
Nominal Impedance full range: 8 ohms
Bi-amp LF: 8 ohms 600w /1200w /2400w
Bi-amp HF: 8 ohms 80w /160w /320w
Enclosure: 13 ply Russian Baltic Birch
Suspension/Mounting: 1-3/8-inch pole mount cup
8 captive 3/8in –16 nut fly points
Finish: Black DuraTex™
Transport: 2 Recessed Handles
Grill: Black powder coated steel
Acoustically Transparent Foam Backing
Connectors: Two 4-pin TwistLoc
Dimensions (H x W x D): 25.75 in x 19 in x 14.5 in
654 mm x 483 mm x 368 mm
Net Wt: 55 lb (25 kg)
Rigging Accessories: TCSHK10: 3/8-16 Eyebolt
TCSHK58: 5/8 shackle

TRx2153 Specs

System Type: 15-inch 3-Way, bass-reflex
Frequency Response: 50 Hz – 20 kHz (-10DB)
60 Hz – 18 kHz (-3 dB)
Coverage Pattern: 80H x 50V
Crossover: 3-Way
with Speaker Guard™ HF protection
Crossover Frequency: 500, 1.5 k Hz
Power: Continuous / Program / Peak
Full Range 600w /1200w /2400w
Recommended Amplifier Power: 800 – 1600w
Sensitivity (1w @ 1m): 100dB
Maximum SPL: 128dB cont. / 134dB peak
LF Driver: 15-inch cast frame, 3-inch VC
MF Driver: 8-inch, 2-inch VC
HF Driver: 1.4-inch exit, 2.5-inch VC
Nominal Impedance full range: 8 ohms
Bi-amp LF: 8 ohms 600w /1200w /2400w
Bi-amp M-HF:8 ohms 200w /400w /800w
Enclosure: 13 ply Russian Baltic Birch
Suspension/Mounting: 12 captive 3/8in –16 nut fly points
Finish: Black DuraTex™
Transport: 4 Recessed Handles
Grill: Black powder coated steel
Acoustically Transparent Foam backing
Connectors: Two 4-pin TwistLoc
Dimensions (H x W x D): 41.5 in x 19 in x 17 in
1054 mm x 482 mm x 435 mm
Net Wt: 82.6 lb (37.5 kg)
Rigging Accessories: TCSHK10: 3/8-16 Eyebolt
TCSHK58: 5/8 shackle

TRx2118 Specs

System Type: 18-inch Sub, bass-reflex
Frequency Response: 32 Hz – 1.5kHz (-10DB)
38 Hz – 1kHz (-3 dB)
Coverage Pattern: omni
Crossover: none
Crossover Frequency: recommended 80-120 Hz
Power: Continuous / Program / Peak
Full Range 800w /1600w /3200
Recommended Amplifier Power: 1200 – 2400w
Sensitivity (1w @ 1m): 98dB
Maximum SPL: 127dB cont. / 133dB peak
LF Driver: 18-inch cast frame, 4-inch VC
Nominal Impedance full range: 8 ohms
Enclosure: 13 ply Russian Baltic Birch
Suspension/Mounting:
Top, (3x) 1-3/8-inch Pole Mount Cups
foot receivers for TRx3210
Finish: Black DuraTex™
Transport: 2 Recessed Handles
Grill: Black powder coated steel
Acoustically Transparent Foam Backing
Connectors: Two 4-pin TwistLoc
Dimensions (H x W x D): 24.5 in x 23.5 in x 23.5 in
625 mm x 600 mm x 600 mm
Net Wt: 76 lb (35 kg)

TRx2121 Specs

System Type: 21-inch Sub, bass-reflex
Frequency Response: 20 Hz – 1.5kHz (-10DB)
30 Hz – 1kHz (-3 dB)
Coverage Pattern: omni
Crossover: none
Crossover Frequency: recommended 50-80 Hz
Power: Continuous / Program / Peak
Full Range 1000w /2000w /4000
Recommended Amplifier Power: 1100 – 2400w
Sensitivity (1w @ 1m): 97dB
Maximum SPL: 127dB cont. / 133dB peak
LF Driver: 21-inch cast frame, 4-inch VC
Nominal Impedance full range: 4 ohms
Enclosure: 13 ply Russian Baltic Birch
Suspension/Mounting:
Top, (3x) 1-3/8-inch Pole Mount Cups
foot receivers for TRx3210
Finish: Black DuraTex™
Transport: 2 Recessed Handles
Grill: Black powder coated steel
Acoustically Transparent Foam Backing
Connectors: Two 4-pin TwistLoc
Dimensions (H x W x D): 24.5 in x 23.5 in x 23.5 in
625 mm x 600 mm x 600 mm
Net Wt: 80 lb (36.25 kg)

TRx2218 Specs

System Type: Dual 18-inch Sub, bass-reflex
Frequency Response: 32 Hz – 2kHz (-10DB)
38 Hz – 1.5kHz (-3 dB)
Coverage Pattern: omni
Crossover: none
Crossover Frequency: recommended 80-120 Hz
Power: Continuous / Program / Peak
Full Range 1600w /3200w / 6400w
Recommended Amplifier Power: 2000 – 3200w
Sensitivity (1w @ 1m): 101dB
Maximum SPL: 133dB cont. / 139db peak
LF Driver: Dual 18-inch cast frame, 4-inch VC
Nominal Impedance full range: 4 ohms
Enclosure: 13 ply Russian Baltic Birch
Suspension/Mounting:
Top, 1-3/8-inch Pole Mount Cup
Finish: Black DuraTex™
Transport: 4 Recessed Handles
Grill: Black powder coated steel
Acoustically Transparent Foam Backing
Connectors: Two 4-pin TwistLoc
Dimensions (H x W x D): 23 in x 41.5 in x 28.5 in
585 mm x 1054 mm x 724 mm
Net Wt: 115 lb (52 kg)

LIMITED WARRANTY

Parts and labor are covered for 5 years on manufacturer's defects. Warranty does not cover burned out drivers caused by excessive power or distortion, or physical damage caused by general use, moisture or dust.
CAUTION: Square wave distortion from power amps can destroy drivers much faster than clean RMS power.

SERVICE

In the USA, please go to www.carvinaudio.com
under "SUPPORT" click on "REPAIR INFORMATION"
Outside the USA, contact your dealer or go to http://www.carvinaudio.com
click on "DEALERS" for your nearest service center.
Include a written description of the problem with serial number and date of purchase.