

# TRx



12" TRx122



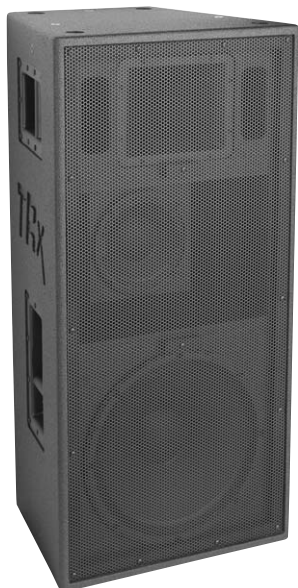
Features dual angles and pole mount



15" TRx152



TRx218  
Dual 18"



TRx153  
15" 3-way

Congratulations on your selection of the TRx loudspeaker. TRx represents Carvin's highest performance sound reinforcement loudspeakers. The TRx series was designed from the beginning as a complete system using the high-level components needed in a professional sound rig. The TRx series includes: 12" and 15" dual angle 2-way monitor/mains speakers, a 15" 3-way medium throw passive or triamp mains speaker and a powerful dual 18" subwoofer. Each TRx cabinet is constructed of cross grain 13 ply laminated **Baltic Birch** plywood with internal bracing to increase efficiency and eliminate cabinet resonance. Specially selected drivers for each loudspeaker assure optimum performance and each enclosure is covered in Carvin's **Duratex™** scratch-resistant, UV stable, weatherproof polyurethane finish. For install and concert rigs, the TRx series includes fly point on all enclosures except subwoofer.

**TRx122 12" TECHNICAL SPECIFICATIONS**

Frequency response: 68 Hz to 18 kHz +/- 3dB • Useable Low Frequency: 60 Hz (-10dB)  
 Impedance / Power Handling: Full Range Passive: 8 ohms / 300 Wrms  
 Bi Amped: LF: 8 ohms / 300 Wrms, HF: 16 ohms / 60 Wrms • Sensitivity: (SPL 1W/1M)  
 Full Range Passive: 99 dB • Bi Amped: LF: 100 dB HF: 105 dB  
 Directivity: 90 deg. Horizontal 60 deg. Vertical • Connections: Neutrik NL4 connectors  
 Configurations: Full Range Passive or Biamp • Enclosure: Cross grain laminated 13 ply Baltic birch  
 Finish: Black DuraTex • Size: 16W x 12.5D x 20.5H", 32 lbs

**TRx152 15" TECHNICAL SPECIFICATIONS**

Frequency response: 60 Hz to 18 kHz +/- 3dB • Useable Low Frequency: 54 Hz (-10dB)  
 Impedance / Power Handling: Full Range Passive: 8 ohms / 400 Wrms  
 Bi Amped: LF: 8 ohms / 400 Wrms, HF: 16 ohms / 60 Wrms • Sensitivity: (SPL 1W/1M)  
 Full Range Passive: 99 dB • Bi Amped: LF: 100 dB HF: 105 dB  
 Directivity: 90 deg. Horizontal 60 deg. Vertical • Connections: Neutrik NL4 connectors  
 Configurations: Full Range Passive or Biamp • Enclosure: Cross grain laminated 13 ply Baltic birch  
 Finish: Black DuraTex • Size: 18.5W x 14.5D x 24H", 44 lbs

**TRx153 15" TECHNICAL SPECIFICATIONS**

Frequency response: 62 Hz to 20 kHz +/- 3dB • Useable Low Frequency: 50 Hz (-10dB)  
 Impedance / Power Handling: Full Range Passive: 8 ohms / 600 Wrms  
 Tri Amped: LF: 8 ohms / 600 Wrms, MF: 16 ohms / 200 Wrms, HF: 16 ohms / 60 Wrms  
 Sensitivity: (SPL 1W/1M) • Full Range Passive: 99 dB  
 Tri Amped: LF: 100 dB, MF: 102 dB, HF: 105 dB  
 Directivity: 60 deg. Horizontal 40 deg. Vertical • Connections: Neutrik NL4 and NL8 connectors  
 Configurations: Full Range Passive or Triamp • Enclosure: Cross grain laminated 13 ply Baltic birch  
 Finish: Black DuraTex • Size: 20"WF x 12.75WB x 17.25D x 41.75H", 95 lbs

**TRx218 DUAL 18" TECHNICAL SPECIFICATIONS**

Frequency response: 30 Hz to 150 Hz +/- 3dB • Useable Low Frequency: 25 Hz (-10dB)  
 Impedance / Power Handling: 4 ohms / 1600 Wrms • Sensitivity: (SPL 1W/1M) 102 dB  
 Connections: Neutrik NL4 connectors • Configurations: Subwoofer  
 Enclosure: Cross grain laminated 13 ply Baltic birch • Finish: Black DuraTex  
 Size: 41.5W x 33D x 22.5H", 167 lbs

**LIMITED WARRANTY**

Parts and labor are covered for 1 year 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 call 800-235-2235 for a RMA # (return authorization number). Write this number on the box and enclose a description of the problem. Prepay to Carvin 12340 World Trade Drive, SD, CA 92128  
 Outside the USA, contact your dealer or go to <http://www.carvinworld.com> for your nearest service center. Include a written description of the problem with serial number and date of purchase.



## 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. The use of amplifiers with outputs greater than those recommended is discouraged.

Carvin 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.



The XC3000 crossover or “drive racks” are recommended for controlling the TRx “main” system.

## 4-WAY ACTIVE AND PASSIVE SYSTEMS

Choose from passive 4 way and active Tri-amp plus sub 4-way systems with amps, cables and racks. All you need is to add your choice of mixing console.



### TRx153-22

Passive 4-way system  
Package contains  
• Two TRx153 • Two TRx218  
• One TRx1MAIN Rack

### TRx153-22T

Tri-amp plus Sub 4-way system  
Package contains  
• Two TRx153 • Two TRx218  
• One TRx2SUB Rack • One TRx3TRI Rack

### TRx153-44

Passive 4-way system with sub rack  
Package contains  
• Four TRx153 • Four TRx218  
• One TRx1MAIN Rack • One TRx2SUB Rack

### TRx153-44T

Tri-amp plus Sub 4-way system  
Package contains  
• Four TRx153 • Four TRx218  
• Two TRx2SUB Rack • One TRx3TRI Rack



**TRx2SUB Rack**  
• Two DCM2000 Amps  
• One XC3000 Crossover  
• Two SP50 Speakon cables  
• Two XLR8  
• One 12 space RW12 rack w/ casters

**TRx1MAIN Rack**  
• Two DCM2000 Amps  
• One DCM2570 Amp  
• One XC3000 Crossover  
• Four SP50 Speakon cables  
• Two SP10 Speakon cables  
• Four XLR8  
• One 12 space RW12 rack w/ casters

**TRx3TRI Rack**  
• One DCM600 Amp  
• One DCM1500 Amp  
• One DCM2570 Amp  
• One XC3000 Crossover  
• Six XLR8 cables  
• One SP8250 8 conductor wire spool  
• Six SP8 (NL8) • 8 SP1 (NL4)  
• One 12 space RW12 rack w/ casters



**SP8250**  
250 ft. 12ga 8 conductor speaker wire  
**SP8**  
NL8 Speakon™ connector 8-pin

## TRx 153 Connection Plate



### 1. FULL RANGE PASSIVE/TRIAMP SWITCHES

Slide switches to FULL RANGE PASSIVE position when using a single amplifier delivering a full range signal. (The internal passive crossover network divides the signals and delivers to the appropriate drivers.)

Slide switches to TRI AMP position when using external active crossover and multiple amplifiers in a tri amp configuration. (TRI AMP position bypasses internal passive crossover network.)

### 2. NL4 FULL RANGE INPUT

Use this input when using a single amplifier delivering a full range signal. (The internal passive crossover network divides the signals and delivers to the appropriate drivers). Ensure switches are in FULL RANGE PASSIVE position.

### 3. NL4 FULL RANGE THROUGH

This jack is wired in parallel with the full range input jack for daisy chaining additional enclosures.

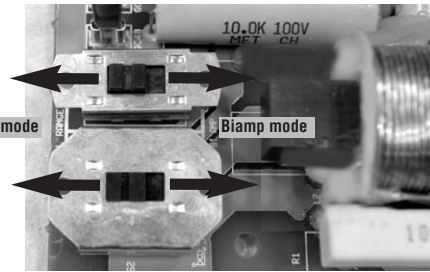
### 4. NL8 TRIAMP INPUT

Use this input when using external active crossover and multiple amplifiers in a tri amp configuration. Ensure switches are in TRI AMP position.

### 5. NL8 TRIAMP THROUGH

This jack is wired in parallel with the tri amp input jack for daisy chaining additional enclosures.

## TRx 122 & TRx 152 Connection Plate



### 1&2. NL4 INPUT JACK

These jacks are wired in parallel and serve as a full range input or a biamped input depending upon switch selection (must remove front grille and woofer to change from full range to biamp mode, see figure C).

## TRx 218 Connection Plate



### 1. NL4 INPUT

Used when using external crossover to deliver only subwoofer frequencies. (TRx218 does not have an internal passive crossover).

### 2. NL4 THROUGH

This jack is wired in parallel with the input jack for daisy chaining additional enclosures.

### CONNECTING TRX

The rear panels of the the TRx loudspeakers are fitted with Neutrik Speakon NL8 or NL4 connectors. All connectors are wired in parallel.

#### NL8 pin Tri-amp

1+	Low Positive
1-	Low Negative
2+	Mid Positive
2-	Mid Negative
3+	High Positive
3-	High Negative
4+	Through
4-	Through

#### NL4 pin Bi-amp Subwoofers

1+	Low Positive	Positive Input	Positive Input
1-	Low Negative	Negative Input	Negative Input
2+	High Positive	Through	Through
2-	High Negative	Through	Through

**RECOMENDED CROSSOVER FREQUENCIES**

	<b>Low/Mid</b>	<b>Mid/High</b>
<b>TRx153</b>	400Hz - 700Hz	2.5kHz - 4kHz
	<b>Low/High</b>	
<b>TRx152</b>	1.75kHz - 3kHz	
<b>TRx122</b>	1.75kHz - 3kHz	
	<b>Low</b>	
<b>TRx218</b>	80Hz - 100Hz	

**FLYING AND STACKING INFORMATION**

Prior to suspending or stacking any TRx Audio 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 nuts for suspending 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.

**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 5:1 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.

**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.

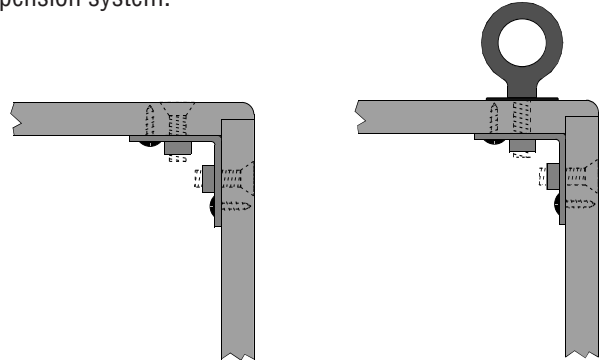
**De-Rating:** Using the mounting points at an angle will de-rate the "WLL" (working load limit) for each point. Each point mounted at an angle should be de-rated according to the following formula.

$$\text{"WLL"} = \cos(\text{angle}) \times 500$$

$$\text{angle} = \text{degrees from vertical pull}$$

$$500 = \text{WLL for each TRx mounting point @ vertical pull}$$

**WARNING -** Never exceed the "WLL" throughout the suspension system.



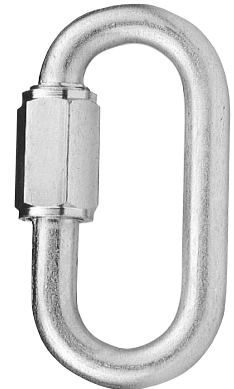
Cutaway view of TRx cabinet showing rigging points.

**IMPORTANT NOTE**

The mounting/rigging points of the TRx loudspeakers must either be used for mounting hardware (eyebolts) or "plugged" with the hex-socket screws provided. There are two reasons for this. When suspending the loudspeaker from one end, the screws in the mounting/rigging points on the other end transfer the load through the internal steel bracing to the bottom surface of the enclosure for structural support. Also if they are not "plugged", the holes can create air leaks compromising the low frequency performance of the enclosure.



**TCSHK10**  
3/8-16 forged steel eyebolt with washer WLL=1600 lbs.



**TCSHK15**  
3/8-16 forged steel quicklink connector WLL=2000 lbs.

**RIGGING ACCESSORIES**

Carvin offers the 3/8" forged steel eyebolts & washers (model number **TCSHK10**), the forged steel Quicklink™ connectors (model number **TCSHK15**).

Visit [www.atm-fly-ware.com](http://www.atm-fly-ware.com) for more rigging information and hardware.