

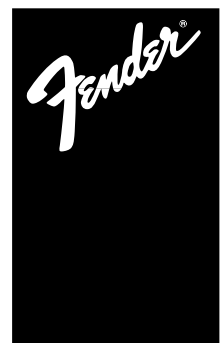
# TOUR SERIES LOUDSPEAKER SYSTEMS



From Fender Pro Audio

Owner's Manual for  
118s, 118sc

P/N 050751





Fender Musical Instruments  
7975 North Hayden Road, Scottsdale, Arizona 85258 U.S.A.

Fender knows the importance of sound reinforcement. From the simple box-top mixer to today's professional touring concert systems, the need to communicate, to make the connection between the performer and the audience is foremost in Fender's mind.

Perhaps no other single piece of gear can make or break your band's sound. You see, your sound system is more than just a combination of dials, wires and speakers. It is an integral part of the audio chain and should be treated with special care and attention to detail.

At Fender, we know what building quality musical instruments and sound reinforcement equipment is all about. In fact, many of the world's best sounding electric musical instruments and sound reinforcement equipment proudly wear the Fender name.

Whether you need a simple box top powered mixer for your Saturday afternoon jam, or a professional full-size concert system, Fender has the sound reinforcement equipment to meet your needs.

Wishing you years of enjoyment and a heartfelt *thank you*,

**Bill Schultz**

Bill Schultz  
Chairman  
Fender Musical Instruments Corporation

# **TOUR SERIES 118s / 118sc PROFESSIONAL SUBWOOFER LOUDSPEAKERS**

## **INTRODUCTION**

**13-Ply Baltic Birch Cabinet**

**800W Program Power Handling**

**40 Hz to 400 Hz Frequency Response**

**98 dB Sensitivity @ 1W / 1m**

**One 18" (46 cm) Cast Frame Woofer with 4" (10 cm) Voice Coil and 109 Ounce Magnet**

**4-pole Speakon™ Connectors and High Current 1/4" Phone Jacks**

**Reinforced for Flying Applications (118s only)**

Thank you for purchasing a Tour Series 118s or 118sc Professional Subwoofer from Fender® Pro Audio. We are sure you will find it both a unique and effective sound reinforcement product, providing years of trouble-free service.

Designed for the most demanding concert sound and sound contracting requirements, the cabinet's internal wood bracing helps eliminate side wall movement. This design results in low distortion, very high power handling and very high SPL output. Likewise, large ports on the 118s and cabinet prevent compression at high SPL due to large exit velocities.

After moisture sealing, the 118s cabinet is painted with an environmentally friendly tough black finish for longer life and lasting looks. The 118sc is covered in a rugged black carpet with the addition of metal corners and feet. The 118s is equipped with flypoints to attach rigging hardware for flying applications. With its trapezoidal shape, the 118s fits well in a tight cluster with either the 2912 or 2915 enclosures. When used in this configuration, the 118s effectively reproduces the low-end frequencies; the 2912 / 2915's are then used as mid-high cabinets.

**CAUTION: Almost all speakers produce strong magnetic fields which may interfere with the normal operation of nearby electronic devices, including televisions and computer video monitors. To reduce or eliminate interference, increase the distance between this product and other nearby electronic devices.**

## CONNECTIONS

The two 4-Pole Speakon™ connectors and the two 1/4" phone jacks are wired in full parallel so that any one of the connectors may be used as an input and the other connector as an output to another subwoofer. This allows the multiple cabinets to be "daisy chained", eliminating the need for several long runs of speaker cable.

*Note: A single 118s / 118sc subwoofer represents an 8Ω load to the amplifier. Daisy chaining two of them in parallel will represent a 4Ω load to the amplifier. Only amplifiers rated for 4Ω output should be used in this configuration.*

The following polarity convention should be used when making connections to the 118s / 118sc:

<u>Polarity</u>	<u>Phone Jack</u>	<u>Speakon™</u>
Positive (+)	Tip	1+ and/or 2+
Negative (-)	Sleeve	1- and/or 2-

## USING THE 118s/118s IN A SYSTEM

The 118s / 118sc is designed to augment the low frequency performance of the main P.A. speakers using bi-amplification. By reproducing very high levels of the low bass frequencies, the 118s / 118sc relieve the smaller main speakers from having to supply this energy.

In order to split frequencies and send certain frequencies to one type of speaker and other frequencies to another type, a line-level electronic crossover, such as a Fender PCN-2 or PCN-4, is required.

Two different configurations are shown on pages 5 and 6, demonstrating how easy it is to add a subwoofer to a system. Figure 3, on page 7, shows a more extensive configuration for those set-ups requiring additional power.

## SETUP SUGGESTIONS

The placement of any speaker can dramatically affect its sound. Thus, there are three primary considerations to review when placing subwoofers.

The **first** is time alignment. The mid/high racks should be as close as possible to the subwoofer so the sound from the subwoofer reaches the audience at the same time as the sound from the mid/high packs. If the subwoofer is placed too far from the mid/high packs, a slight smearing of the lower bass frequencies may occur. While ideal placement for this consideration would involve stacking the mid/high pack on top of the subwoofer, this effect is quite subtle and an obvious effect may not be heard until the separation between the two cabinets is large enough to cause an audible time delay.

The **second** consideration is to try to obtain as much bass as possible from the subwoofer. A subwoofer hanging in free air is referred to as operating in "full space" since the subwoofer is free to radiate in all directions (omnidirectionally). A speaker in the middle of the floor or up in the air with its back against a wall is referred to as operating in "half space". Full space operation will result in about a 3 dB decrease in output as compared to half space. In order to compensate for the decrease in output using a full space configuration, the power amplifier may need to be turned up. Placing a speaker near a large, flat wall and on the floor (quarter space) will boost the bass performance by about 3 dB as compared to half space. The more surfaces the subwoofer is placed against, the fewer the number of subwoofer enclosures are needed to achieve a desired SPL.

The **third** consideration is convenience and the visual aspect of the speaker array. For temporary installations, the subwoofer can be used as a support for a mid/high pack mounted directly on top of the subwoofer. In permanent installations, the 118s/118sc, for example, can be placed under a stage or table.

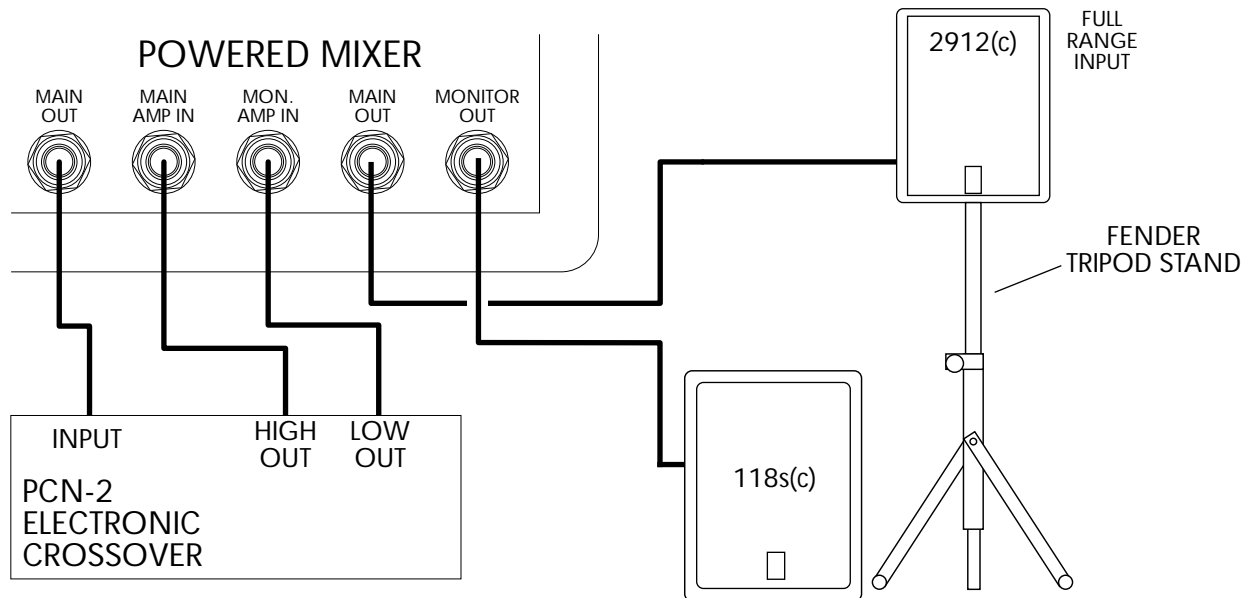
For each particular situation, a compromise among these three factors should yield the best solution possible.

## CROSSOVER SUGGESTIONS

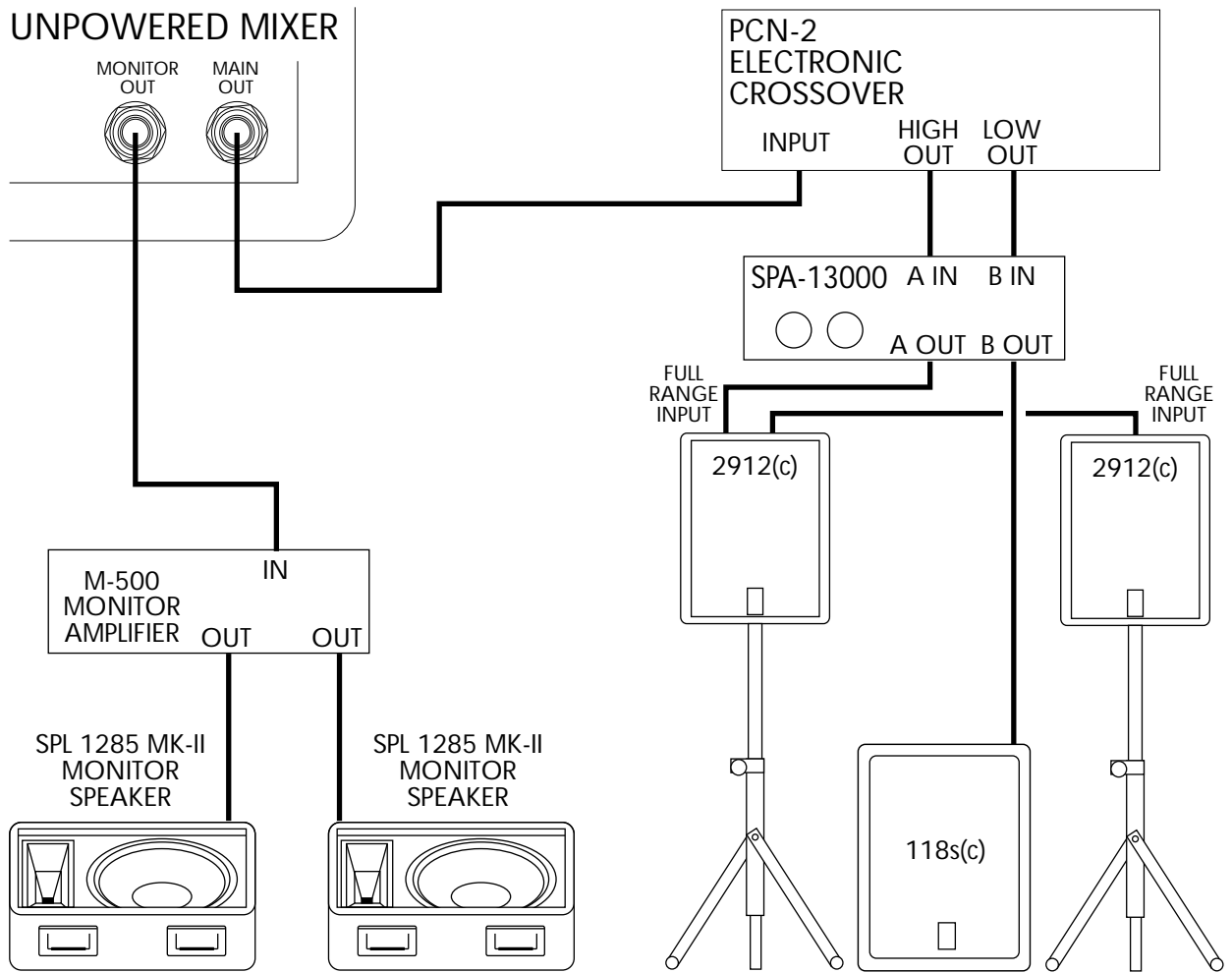
After the speaker system has been placed, the crossover point needs to be set for maximum benefit. While the 18" driver in the 118s/118sc is fully capable of accurately reproducing frequencies above 400 Hz, setting the crossover point this high makes time alignment very difficult and the large 18" woofer will start to "beam". Beaming occurs when lower frequencies are emitted in an approximately omnidirectional pattern while higher frequencies are emitted more on-axis. For the 118s/118sc, this occurs above the crossover points of 400 Hz. If the crossover point is set too high and the subwoofer is placed far from the mid/high packs, bass frequencies will sound like they are being produced in two different locations. Most listeners cannot locate the origin of frequencies below 150 Hz. Setting the crossover point too low (below 80 Hz) will not take full advantage of the subwoofer because it places too high of a demand on the mid/high packs. For these reasons, a crossover point of ranging between 80 and 200 Hz is recommended depending upon the placement of the speakers.

The output level of the subwoofer(s) should be matched by ear to the output level of the full range cabinets by adjusting the level control at the crossover (if it has one) or at the power amplifiers. Normally, the output of the full range cabinets is subjectively higher than that of the subwoofers so a balance can be achieved by turning down the mid/high frequency signal at or before the power amplifiers.

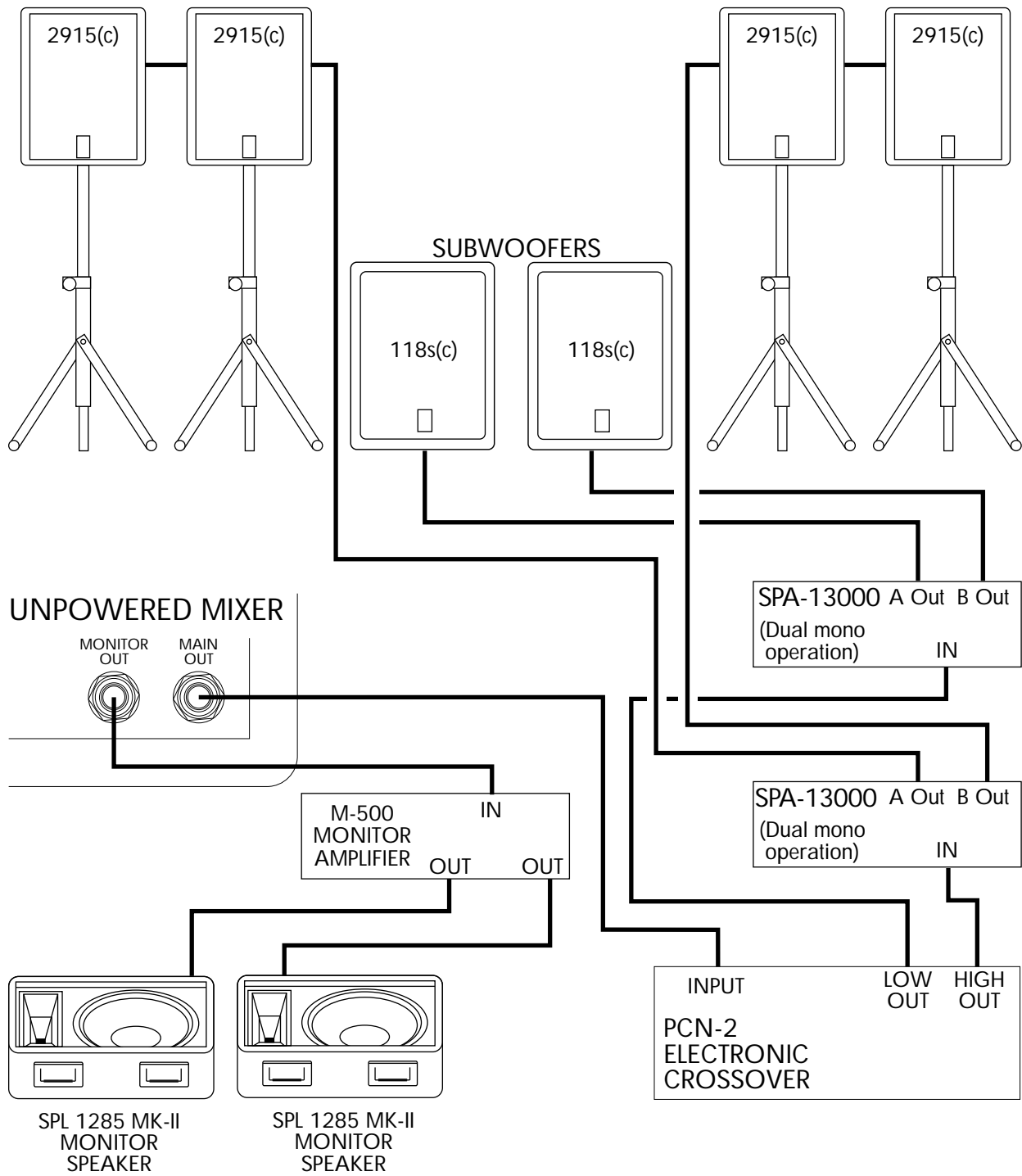
**FIGURE 1**



**FIGURE 2**



**FIGURE 3**



## SPECIFICATIONS

<b>PART NUMBER</b>		071-1310-000 118s 071-1310-100 118sc
<b>MAXIMUM dB SPL OUTPUT LONG TERM</b>		124 dB
<b>DRIVER</b>		18" (46 cm) cast frame woofer 4" (10 cm) voice coil 109 ounce (3.1 kg) magnet
<b>CABINET</b>		3/4" 13-ply Baltic birch Black paint (118s) Black carpet (118sc)
<b>FREQUENCY RESPONSE</b>	Axial +/- 3 dB: LF Limit +/- 3 dB:	42 Hz to 400 Hz 42 Hz
<b>AXIAL SENSITIVITY</b>	SPL @ 1W/1m: 1/2 Space Efficiency:	98 dB 2.25 %
<b>POWER HANDLING</b>	E.I.A. RS 426-A Noise: Program: Peak: Nominal Impedance:	400W, for 8 hours 800W 1600W 8 $\Omega$
<b>DIMENSIONS</b>	Weight Height Width (front) Width (rear) Depth	85 lbs. (37 kg) 28.5" (72.4 cm) 24.6" (62.4 cm) 8.8" (22.2 cm) 24.1" (61.3 cm)

**WARNING:** The length of the useful life of this cabinet will depend in substantial part upon how this cabinet is treated in use. The user of this cabinet must periodically have this cabinet inspected to ensure that continued use has not weakened the cabinet's structure, including the various joints which are fastened with glue and/or screws. Because this cabinet is in some instances, suspended from heights in use and could cause serious injuries or fatalities if it falls, this determination is important and must be attended to by the user.

For questions concerning flying your 118's, please refer to the "Flying with Fender RigSafe™" booklet (P/N 049646) or contact ATM FlyWare at (310) 834-5914.

A PRODUCT OF:  
**FENDER MUSICAL INSTRUMENTS CORP.**  
CORONA, CA 91720 USA