

SPL 2912, 2915 Owner's Manual

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P/N 041010

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INTRODUCTION

The Fender Electronics SPL Tour Series 2912 and 2915 are professional, full range, two-way, compact loudspeakers, designed for the most demanding concert sound and sound contracting requirements. With a scientifically derived trapezoidal shape and equipped with fly-points for use with the Fender/Sunn RigSafe™ rigging and flying hardware, the speakers were designed for use as a single unit or as part of a larger loudspeaker array. The RigSafe™ system is compatible with both the JBL S.A.F.E.™ system and the ATM Flyware™ components.

Featuring a passive "Linkwitz" crossover, bi-amp capability, high power handling, fly points and variable horizontal coverage patterns, the SPL 2912 and SPL 2915 were designed to form the basis of anything from a small P.A. system for a band to a full size concert sounding tour system. Both speakers are ideal for use as a two-way system, or as the mid/high pack of a three-way system using a 118S or 215S subwoofer.

Features

The cabinet is a 13-ply, Baltic Birch Plywood enclosure with internal wood bracing to eliminate any side wall movement and steel reinforcement plates on all critical points of the cabinet. The steel plates double as attachment points for the RigSafe™ flying hardware accessories. The cabinet is a vented baffle design for maximum output and is provided with two large diameter ports to prevent compression at high SPL due to large exit velocities. After moisture sealing, the cabinet is primed, finish sanded, and then painted in the strongest textured black finish available.

The low frequency driver for the 2912 is a custom

made, high excursion 12" cast alloy frame woofer with a 2.5 inch voice coil, a very massive magnet structure, and a vented pole design for optimum heat transfer characteristics. The 2915 woofer is a 15" version similar to the 12" but with a three inch voice coil. The high frequency driver for both speakers is handled by a new compression driver using high technology polymer materials to handle large amounts of power. The compression driver is mated to an innovative Controlled Dispersion™ horn that allows a single speaker to be used for applications requiring wide horizontal dispersion or a narrower constant coverage pattern (such as that encountered in multi-cabinet tight pack arrays). The quick insertion or removal of the included horn inserts can change the horizontal coverage pattern of the horn from 90° with both inserts out, to 60° with both inserts in.

The built-in passive crossover is a precision fourth order "Linkwitz" design that has been optimized through literally hundreds of hours of MLS testing, group delay measurements and empirical listening tests.

Careful thought has also been given to the input panel. The panel is made of a tough ABS plastic with internal ribbing to prevent both damage to the outside of the panel and induced sympathetic vibrations caused by the intense sound pressure inside the cabinet. The panel houses dual high current 1/4" Phone Jack connectors and two Neutrik 4-pole Speakon connectors wired in parallel to provide for a variety of interconnection schemes resulting in flexibility in the field.

Connection Convention

In normal operation (using the passive internal crossover), the 1/4" jacks and the Speakon Connectors are wired in parallel allowing any one of the connectors to be used as an input and any other as an output. This allows "daisy chaining" of multiple loudspeakers, obviating the need for several long, cumbersome runs of speaker cable. During normal mode, the connections are as follows:

Polarity	Phone Jacks	Speakon
Positive (+)	Tip	1+ and/or 2+
Negative (-)	Sleeve	1- and/or 2-

When the switch on the back of the speaker is flipped to Bi-Amp mode, the internal crossover and high frequency attenuator are disabled. Thus, an external crossover must be used with the speaker, and two channels of power amplification will be required, one for the low frequencies and one for the high frequencies. In Bi-Amp mode, the connections are as follows:

Frequency	Polarity	Phone Jacks		Speakon
		Left	Right	
Lows	positive (+)		Tip	1+
Lows	negative (-)		Sleeve	1-
Highs	positive (+)	Tip		2+
Highs	negative (-)	Sleeve		2-

* IMPORTANT: Be sure to never plug a full range signal into the H.F. input (if the crossover switch is set to external). Doing so will destroy the compression driver.

Setup Procedure

First, the range of horizontal coverage must be determined. If the speaker will be used as a single unit, as

part of a pair, or as part of a group of widely spaced speakers, then maximum horizontal coverage will be desired. Examples of these types of setups are shown in figures 1 and 2. No changes need to be made to the speaker to set it up in this fashion. The horn in this configuration has a horizontal coverage angle of 90° and a vertical coverage angle of 40°.

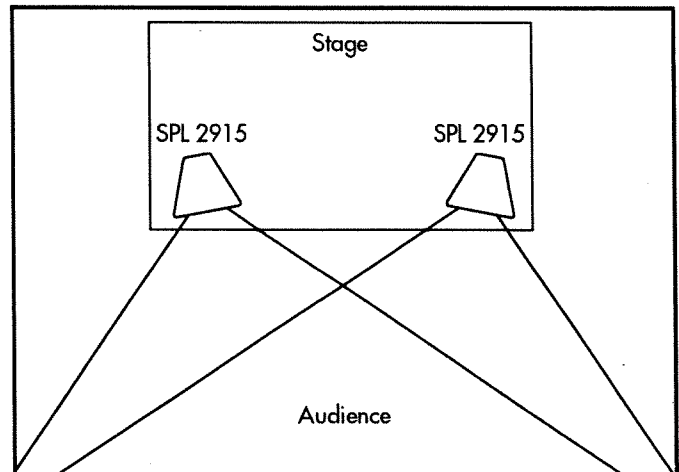


Figure 1. Two speakers arranged as a mono or stereo pair requiring maximum horizontal coverage

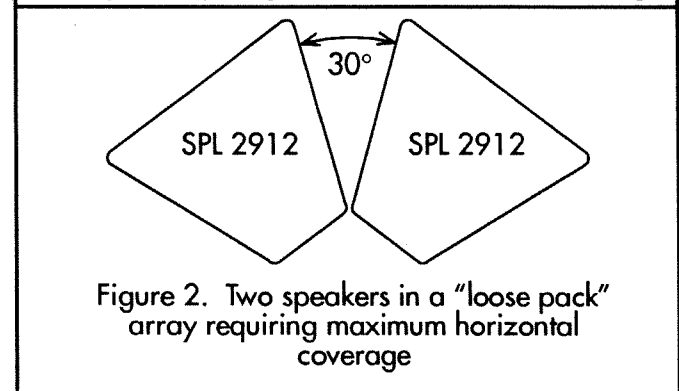


Figure 2. Two speakers in a "loose pack" array requiring maximum horizontal coverage

If the speaker is part of a tightly packed array (see figure 3), then the coverage pattern will have to be modified to avoid a "swishy" sound characteristic of overlapping radiation patterns of multiple drivers.

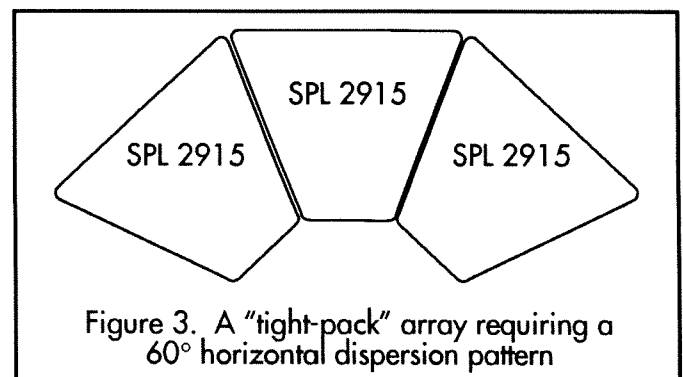
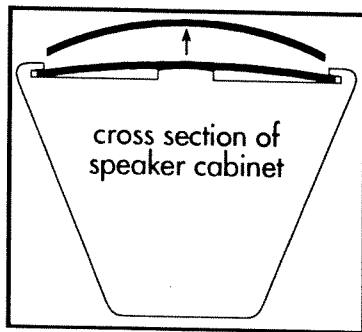


Figure 3. A "tight-pack" array requiring a 60° horizontal dispersion pattern



This modification is performed by first removing the grille from the speaker. Use a small screw driver or even a pen to pry the grille away from the

top and bottom cleat enough to get a finger or two underneath the grille. By pulling outward on the center of the grille, it will bend and pull out from under the sides. Attach the two horn inserts into the horn as shown in figure 4 by first guiding the smaller end of

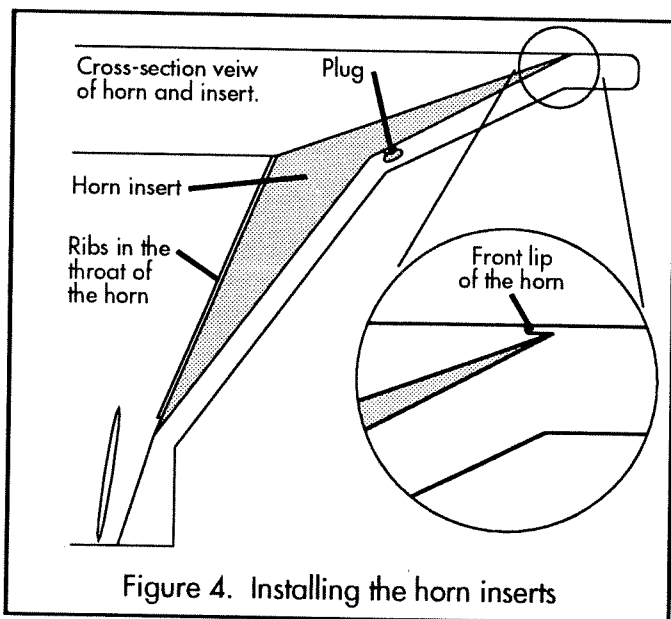


Figure 4. Installing the horn inserts

the insert under the ribs near the throat of the horn. Then, fit the other end of the insert under the front lip of the horn and pop the plug of the insert into the hole in the horn. Reinstall the grille by setting one side of the grille under the side cleat, then bending the other end under the cleat on the other side of the cabinet by gripping the grille on the top and bottom. With the inserts installed, the horizontal coverage angle is reduced to 60°.

Another consideration is for feedback and bass performance. If the speaker is placed near a large, flat wall, bass output will be increased by about 6 dB. However, if placing the speaker near a wall also

causes the speaker to feedback into a microphone on stage, then the speaker must be moved. Placing the speaker near a wall works best if the sources feeding the speaker are keyboards, drum machines, etc., or if the speaker is used for playing back prerecorded music.

The third consideration is to what degree the speakers should be "heard and not seen", especially for permanent installations. If it is desirable to have the speakers hanging from the ceiling (flying), then the 2912 and 2915 can be flown along with and integrate seamlessly with the 118S subwoofer, arranged in any array of up to three rows (tiers), loose or tight pack, with or without downward angling (splaying). See figure 5. The Fender RigSafe™ system has been designed into both speakers to safely accommodate such practices. This system is compatible with both the JBL S.A.F.E™ and the ATM Flyware™ rigging systems. In spite of this, flying loudspeakers above crowds is a dangerous business, and should only be undertaken by experienced and well insured riggers. For more information on safe rigging practices, please refer to the "Flying with Fender RigSafe™" brochure.

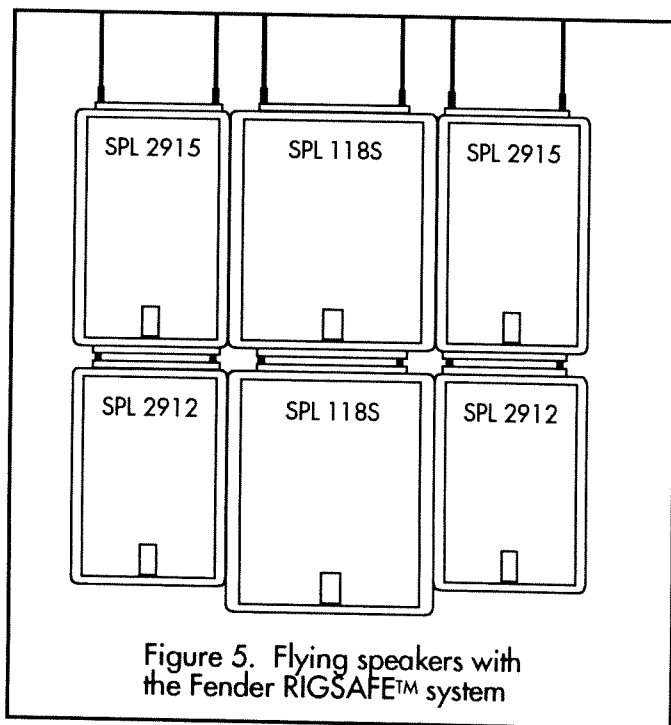


Figure 5. Flying speakers with the Fender RIGSAFE™ system

Normal vs. Bi-Amp operation

Many hours of testing and listening were used to find the optimum crossover point and filter slopes for each speaker. This information was then used to design the built-in passive crossover. For more versatility, and increased headroom, some users will wish to use an electronic crossover/processor (such as the Fender PCN-2, PCN-4 or a SRC-200) with the system. This electronic crossover or processor will take the place of the internal crossover in the speaker and thus the "Normal/Bi-Amp" switch on the back of the speaker must be set to the "Bi-Amp" position. A typical setup of a bi-amp configuration is shown in figure 6.

For those situations requiring a subwoofer, the 2912 and 2915 can still be bi-amplified if a three-way electronic crossover is used. An example of this configuration is shown in figure 7.

CAUTION: Be careful to connect the high frequencies and low frequencies to their correct inputs as shown on the back of the speaker! We strongly recommend that a fourth-order "Linkwitz" or a digital FIR fourth-order active crossover be used and that the crossover frequency be set to about 2000 Hz for both the 2912 and the 2915. Since the output sensitivity of the compression driver is higher than that of the woofer, the high frequency output of the system must be decreased either at the crossover (if such a control is provided) or at the power amplifier(s) that will be used for the high frequencies.

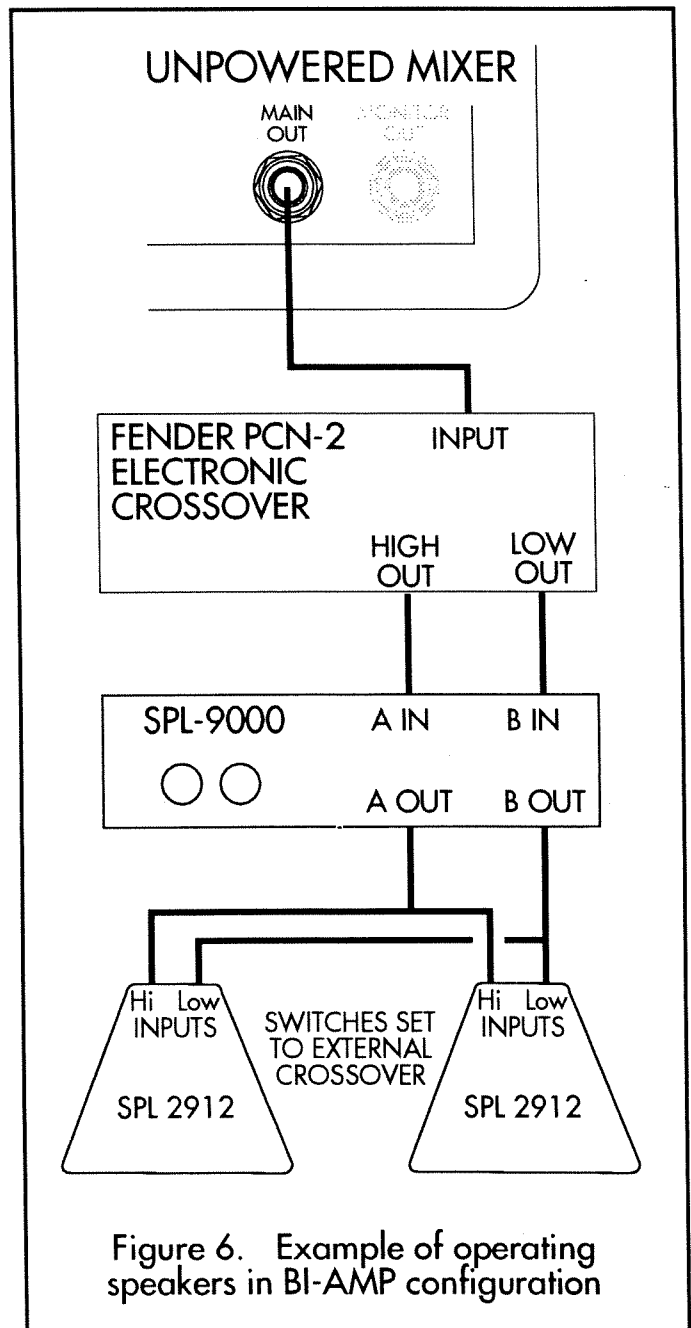


Figure 6. Example of operating speakers in BI-AMP configuration

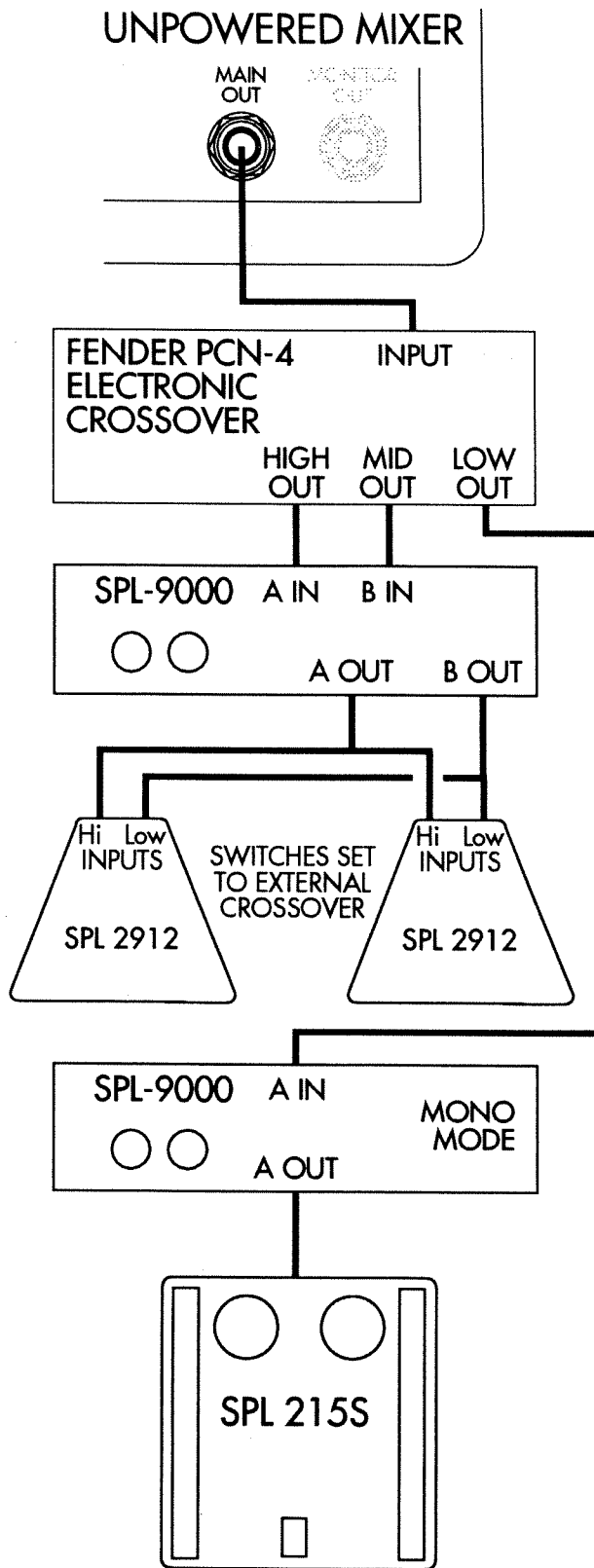


Figure 7. Example of operating speakers in BI-AMP mode with a subwoofer (tri-amping).

Specifications

Model:	2912	2915
Part Number:	071-1330-000	071-1340-000
Frequency Response:	60 Hz to 18Khz +/- 3dB	56 Hz to 18Khz +/- 3dB
Power Handling:	200 Watts E1A RS-426 8 Hrs.	200 Watts E1A RS-426 8 Hrs.
Sensitivity 1M/1W:	97 dB	98 dB
SPL at Rated Input:	120 dB	121 dB
Horizontal Coverage (no horn insert):	90 Degrees	90 Degrees
Horizontal Coverage (with horn insert):	60 Degrees	60 Degrees
Vertical Coverage:	40 Degrees	40 Degrees
Nominal Impedance:	8 Ohms	8 Ohms
Components –		
Low:	(1) 12" cone, 2.5" V.C.	(1) 15" cone, 3" V.C.
High:	(1) 1" Exit Compression Driver	(1) 1" Exit Compression Driver
Intended Crossovers:	2000 Hz 4 pole low pass With phase compensation network	2000 Hz 4 pole low pass With phase compensation network
	2000 Hz 4 pole High pass	2000 Hz 4 pole high pass
Connections:	(2) 1/4" Phone Jacks (2) 4-pole Speakon Jacks	(2) 1/4" Phone Jacks (2) 4-pole Speakon Jacks
Dimensions –		
Height:	25.625 in (65.09 cm)	28.375 in (72.07 cm)
Width:	21.937 in (55.72 cm)	21.937 in (55.72 cm)
Depth:	19.562 in (49.69 cm)	19.562 in (49.69 cm)
Weight:	73 Lbs. (33.18 kg)	75 Lbs. (34.10 kg)

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