INTERNATIONAL LIMITED WARRANTY

ARX Systems (ARX) warrants to the first purchaser of any ARX equipment that it is free from defects in materials and workmanship under normal use and service. ARX's sole obligation under this warranty shall be to provide, without charge, parts and labour necessary to remedy defects, if any, which appear within twelve (12) months from date of purchase, and for a further twelve (12) months supply parts only.

This is our only warranty. It does not cover (1) finish or appearance items, (2) burned voice coils, or (3) if the equipment has been, in ARX's sole judgement:

- Subjected to misuse, abuse, negligence or accident;
- Repaired, worked on, or altered by persons not authorized by ARX;
- Connected, installed, adjusted or used for a purpose other than that for which it was designed. This includes running speaker systems (a) without the appropriate ISC processor (b) with a non ARX crossover, or (c) with the ISC disconnected or bypassed.

Some states do not allow the exclusion or limitation of incidental or consequential damages so some of the above exclusions may not apply to you.

This warranty gives you and us specific legal rights and you may also have other rights which vary from state to state.

Warranty Service Procedure

Should it become necessary to have your equipment serviced under the terms of the warranty, please follow these steps:

1. Contact ARX for a Return Authorization (RA) number;
2. ***Carefully*** repack the unit, **in its original packaging** where possible, including a note with the RA number, a description of the problem, **and a copy of the receipt showing date of purchase**. Attach these to the actual unit itself. Don't forget to write your name and address clearly, and include a phone number where you can be contacted during normal business hours. Make it easy for our service technicians to contact you if they have a question. Also, use ***plenty*** of packing material - better to be safe than sorry.
3. Send the unit freight prepaid to ARX Systems, at the address given you with your RA number. We will pay the return freight when the serviced unit is returned to you.
4. We strongly recommend you insure the package. We can't fix it if it gets lost! Send it by UPS, Fedex, DHL or a similar service elsewhere.

If Warranty Registration Card is missing, please write to ARX in the country of purchase, stating model and where purchased, or to ARX, PO Box 15, Moorabbin,Victoria 3189, Australia.

You can also Email us at: info@arx.com.au

SPL 12

Integrated Self Powered

Loudspeaker System

Owner's Manual

ARX Systems Pty Ltd, PO Box 15,
Moorabbin, Victoria 3189, Australia
Phone: (03) 9555 7859 **Fax**: (03) 9555 6747
International Fax: +61-3 -9555 6747
On the Web: www.arx.com.au
Email: info@arx.com.au

IMPORTANT - This self-powered loudspeaker is designed to be connected ONLY to the AC voltage ticked ☑ below

☐ **100 V AC, 50 - 60 Hz**

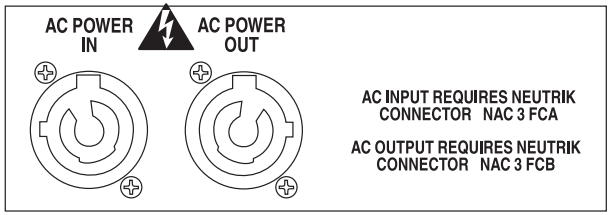
☐ **110 V AC, 50 - 60 Hz**

☐ **220-240 V AC, 50 - 60 Hz**

☐ **240 V AC, 50 - 60 Hz**

It is essential that you check that this voltage is correct for your area before connecting it to AC power. Do not plug power cable into AC power until the voltage has been checked. If incorrect, contact your ARX distributor.

Your warranty does not cover connecting to the wrong AC voltage!



This product has a locking removable AC power lead.

To insert power cable, line up pins, insert connector and twist to the right.

To remove, depress lever on top of the connector, twist to the left, and pull out.

WARNING SYMBOLS USED ON THIS EQUIPMENT

This symbol is intended to alert you to the presence of important operating instructions contained in this owner's manual

This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK OF UNIT
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

WARNING
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

ATTENTION
RISQUE DE CHOC ÉLÉCTRIQUE - NE PAS OUVRIR

CE N1819

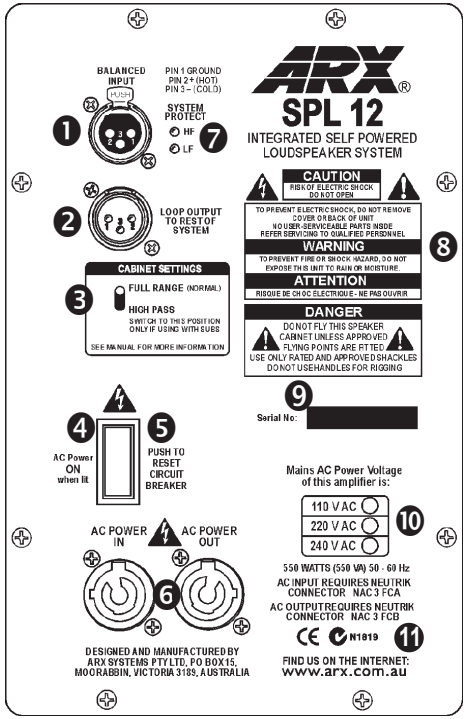
Complies with 89/336/EEC EMC Directive, amended by 92/31/EEC and 93/68/EEC and meets the following standards: EN 55013:1990, Sections 3.2 and 3.5 EN 55020:1988, Sections 4.3, 5.4, 6.2, 7.0, 8.0.

Complies with Australian Standard AS/N251053

SPL 12 Specifications

Frequency response	50Hz - 20KHz +/– 4dB
Loudspeaker type	Active 2 way with onboard amplification and speaker processing
	Low Frequency 12" 305mm 8 Ohm
	High Frequency 60mm voice coil
	16 Ohm; FerroCooled
HF Flare type	Flat front Consistent Beamwidth
Size	610H x 405W x 395D, 7.5° taper to back
Weight	35 Kg
Dispersion	Nominal 90° H x 40° V
Input Connector	3 pin Female XLR, polarity Pin 2 +, Pin 3 –, Pin 1 Ground
Input Impedance	44K Balanced (electronic)
Nominal input level	0dB for nominal rated amplifier outputs
Input Loop Connector	3 pin Male XLR, polarity Pin 2 +,
	Pin 3 –, Pin 1 Ground
Crossover Frequency	1500Hz
Crossover Type	Active 24dB Linkwitz Riley Filter type
Highpass Filter	
Full-range	–3dB @ 55Hz 12dB Butterworth
Switched for Sub	–3dB @ 90Hz 12dB Butterworth
Maximum SPL	130 peak, 127 continuous
Amplifier power	LF 300 Watts RMS 8 ohms, 525 peak
	HF 150 Watts RMS 16 ohms, 300 peak
Amplifier type	Lateral Mosfet
THD	<.01%
Loudspeaker protection	• ISC amplifier anti-clipping circuitry
	• Relay muted input
	• Relay switched output sensing DC and RF error
Status LEDs	AC power, HF Protect, LF Protect
AC Power	110V / 220V / 240V 50 / 60Hz
AC Power Input	Neutrik PowerCon type NAC 3 FCA
AC Power Loop	Neutrik PowerCon type NAC 3 FCB
AC Power protection	User resettable external circuit breaker
AC Wattage Max	550 VA (550 Watts)
Transformer type	Toroidal

SPL 12 REAR PANEL



1 BALANCED INPUT CONNECTOR
3 pin female XLR type connector receives the input signal - typically from the mixing console. Wired Pin 1 Ground, Pin 2 + (Hot) Pin 3 – (Cold)

2 LOOP OUTPUT
3 pin male XLR type connector sends the signal on to another cabinet if required. Wired the same as the input

3 CABINET SETTINGS SWITCH
Normally switched to Full Range. If being used with a Sub (eg SPL 18), then should be switched to High Pass to avoid both cabinets handling overlapping frequencies

4 AC POWER SWITCH and LED
LED illuminates when cabinet is connected to AC Power and switched ON, plus...

5 CIRCUIT BREAKER
This will trip to protect the internals if the cabinet encounters AC power problems. Press the RED button IN to reset. If it continues to trip, remove the cabinet from use and arrange for checking by an authorised ARX service centre

6 AC POWER INPUT AND OUTPUT
The input connector is designed to receive the Neutrik PowerCon NAC3FA. This is a fully approved latching 'twist-and-lock' AC connector. For looping power to another SPL 12 cabinet, a complementary output connector, the NAC3FB, is also provided.

7 SYSTEM PROTECT LEDs
These LEDs will illuminate if either the High Frequency or Low Frequency amplifier has encountered a problem. Switch off AC power, wait 15 seconds, and switch back on. If the problem was temporary, the cabinet will now operate. If not, arrange for a service inspection

8 WARNING MESSAGES
These could save your life and other people's. **Please read them carefully.**
Never poke around inside the cabinet, even when it is switched off. **Never** fly speaker cabinets without consulting a licensed rigger; **only** use suitably rated lifting equipment, and **never** use the handles for anything other than general handling of the cabinet

9 SERIAL NUMBER
Unique to your SPL 12. Please use it in any correspondence with ARX

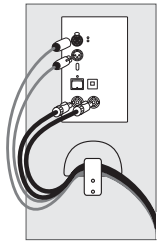
10 AC VOLTAGE
This will indicate the voltage that the cabinet is expecting to see on the AC power connectors. Please ensure that it is correct for your area **before** plugging it in!

11 www.arx.com.au
Our Internet site has product news, advice, technical notes, and lots more on all ARX products. Check it regularly for the latest information

Setting up and using the SPL 12

The SPL 12 is very straightforward to setup and start using, but a few basic steps should be followed.

1. Connect the signal and power cables to the SPL(s) before switching it on.
2. Connect and switch on all preceding equipment (mixer, EQs, etc) before switching on the SPL 12(s), but make sure their level controls are pulled down. The SPL 12 will switch itself on and off silently, but will reproduce (at very high SPL!) whatever switch-on noise or signal that is sent to it.

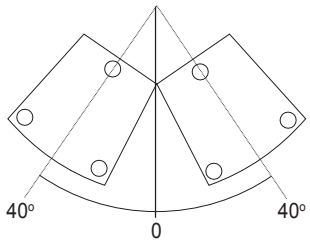


Each SPL 12 has a handy cable strain relief on the rear that you can loop the cables through. This useful feature avoids having all the weight of the cables hanging on the connectors (see pic at left)

Positioning the cabinet

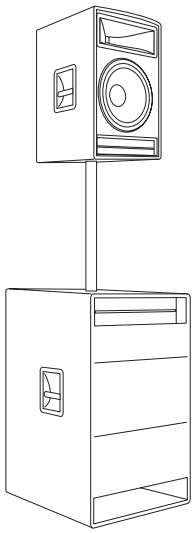
The SPL 12 has a nominal dispersion of 90H x 40V. If arraying 2 cabinets side by side to cover a wider area, the cabinets can be splayed 40 degrees each side of an imaginary line (see pic centre left).

The speakers can also be stand mounted on top of the SPL 18 Sub using the optional pole mounting kit Part # SPL-PMK-1 (see pic below left).



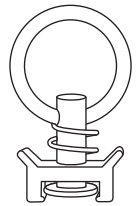
Flying the SPL 12

The SPL 12 is factory fitted with reinforced flying/rigging points, and may be flown using the appropriate flying and rigging equipment. The recessed flying point on the SPL 12 is designed to receive a single stud spring-loaded track connector. See drawings below.



Flying hardware is available from ATM Flyware in the USA, Fax +1-310 834 3042, and components are also available from Penn Fabrication distributors worldwide.

Check www.penn-fabrication.com for distributor details for your country



Connector
Part # R1434

IMPORTANT SAFETY NOTE

Flying speaker cabinets is **dangerous** if done by inexperienced operators and/or when using the wrong equipment. Ensure all rigging is safety rated to a minimum of 5 x the weight of the SPL 12 (35 Kg x 5 = 175 Kgs) and is done by licensed riggers.

Cabinet fitting

Other Features

- Locking AC power connectors. By using the Neutrik PowerCon design, the power connector locks to the cabinet, avoiding the problem of a normal IEC connector vibrating loose during a performance. This can be a nuisance when the system is ground stacked, and a ***real*** problem when the system is flown!
- Noiseless turn on/turn off.

As well, an extra auxiliary AC power output is fitted as standard, so that systems can be powered in a serial/daisy chain layout rather than radially from a central point, thus reducing the cabling required, to a maximum of 4 cabinets.

At ARX we have designed the SPL series to be a true 'building block' audio system.

- It is truly cost effective, with no need for speaker cabling, extra amplifiers or amp racks.
- Ease of installation - simply connect AC power and a signal.
- The modular concept means total flexibility, with system inventory kept at the most efficient level. To increase or decrease the size of the system, simply add or remove cabinets as required.

CoolPort™ Technology

When designing the SPL 12, we paid extremely close attention to cooling. An analysis of existing self powered speaker systems revealed that the majority use an external heatsink on the rear of the cabinet. Testing showed that even under relatively mild use, the heatsinks reached temperatures that caused some concern.

In an ideal world situation where the cabinet would be free standing, with a large enough air space all around to allow free air thermo convection, this would probably be OK. But in the real world speakers are often installed or mounted up against a wall, or worse but extremely common - a wall and ceiling. This leaves the air no room to circulate, and causes the heatsink to heat up to an unacceptable level.

Our solution was simple.

Since the front of a speaker cabinet is always exposed to free air, we thought - why not mount the heatsink at the front? And while we're at it, let's use the considerable air movement generated by the speaker cone movement to actively circulate air across and through this heatsink.

We called this ***CoolPort*** technology

The air circulates across all heat producing surfaces, including the power supply and toroidal transformer, and through the 240,000 sq mm surface area of the heatsink. This ensures that the drivers receive all the power they need, at all times, without the need for external fans and without the risk of exposed high temperature components.

Introduction

Thank you for choosing this ARX SPL 12 Integrated Self-Powered Loudspeaker system. We hope you enjoy using it as much as we enjoyed creating it. As with all ARX equipment, it has undergone precise factory calibration, testing and 'burn in' before shipping. To ensure continued trouble free use, please familiarise yourself with the contents of this owner's manual before using your SPL 12 system.

About the SPL 12

The SPL 12 represents a major change in the way we think of a speaker system. Its two internal amplifiers are fully integrated with the speaker combination to create a totally transparent, powerful and efficient 'building block' audio module with well defined coverage parameters.

Low frequencies are handled by a new 12" (305mm) driver, and high frequencies by a *FerroCooled** 60mm voice coil driver mounted on our new 90° x 40° consistent beamwidth horn flare. The cabinet is built throughout from premium grade void free plywood, with a heavy duty steel mesh protective grille, and is painted in multiple textured coats of catalysed polyurethane.

Reinforced mounting plates and flying hardware are already factory fitted as standard.

Inside Information

The all new amplifier design inside the SPL12 uses existing proven analog amplifier technology for predictable operation in all professional applications.

Its transformer based power supply and Mosfet drive circuitry both enable a reduced parts count for long term reliability. Plus, with their inherent self regulation, Mosfets are accepted as being the most thermally reliable and predictable amplifier output stage available.

The SPL12's oversized amplifier heat exchanger was originally designed for safe heat transference of 1200w RMS in our ZX3200 amplifier. Even at maximum SPL it is only working at 30% of its operating capacity; leaving a 70% safety margin unmatched by any other speaker system

Benefits

The acoustic and practical benefits of this amplifier/speaker combination are many:

- Improved speaker response. The close-coupled design delivers greater actual power at the speaker and improves the damping factor. Frequency response is optimised and phase response is idealised with no potential for mis-adjustment
- Thermal reliability. Thanks to our unique heat exchange/cooling design, the harder the system is driven, the more efficiently the heat exchanger operates.
- There is no power loss caused by long runs of loudspeaker cable which can typically be 30 metres (100') or more. All the amplifier power is delivered to the speaker.
- An elegant all in one solution - amp, processor, speaker are combined in the one cabinet. There are no amp racks to store and cool, no heavy speaker cabling to run.
- Reduced number of connections contributes to inherent low noise, and greatly reduces the possibility of ground loops.

To sum up, the SPL series successfully combines state of the art design with practical, proven technology to deliver an integrated speaker/amplifier solution with all the dynamic impact and transparent audio that today's audiences expect.