

SP E E C S

P E A V E Y E L E C T R O N I C S

**1508-8 alcp Pro Rider®
00560270**

**1508-8 cucp Pro Rider®
00560250**

The Pro Rider® driver series represents a new level of power and performance for Black Widow® loudspeakers. These outstanding drivers have a power handling rating of 1,200 Watts program, along with high efficiency, reduced distortion and excellent overall sound quality.

The series includes two 15" models in 8 Ohm impedance, suitable for both subwoofer and woofer applications.

DESIGN

The Pro Rider series uses a new cone that is a variation on the existing Kevlar® impregnated cones used on all Black Widows. The new cone is stronger and tougher, highly water-resistant and has a specially designed deep roll accordion surround. The dust cap is also made of the same extremely strong material.

Voice coil assemblies on the new drivers use thermoset insulated aluminum or copper ribbon wire, edge wound and bonded onto an incredibly durable, heat resistant polyimide composite former. The coil wires are solderless diffusion welded to high conductivity OFHC copper foil leads which are embedded inside the former assembly and attached to the tinsel leads with high temperature silver solder. The solder joint is then coated with a special thermally conductive silicone adhesive for encapsulation and heat dissipation.

The voice coil assembly is bonded to the Kevlar cone and new super tough nylon composite spider using a thermoset epoxy originally developed for attaching nose



cones on ICBM missiles – truly an aerospace grade adhesive. The spider and surround are bonded to the frame with a high strength adhesive.

The magnet structure includes subtle changes to its geometry that improve power handling. While it appears the same as the standard structure, and the replacement baskets from the Pro Rider series will fit on standard BW magnet structures, the improved

power handling will be compromised if the standard structure is used.

The vent plate assembly used on Low Rider® drivers to increase power handling is included in the Pro Rider series. This results in a significant improvement in power handling



capabilities and long-term power compression.

These new drivers also adhere to the familiar features of Black Widow products: Cast aluminum frames, replaceable basket assemblies, Rubatex® gaskets and highly reliable, spring loaded terminals are all used.

APPLICATION

The Pro Rider drivers are superior choices for a wide range of sound reinforcement, high level playback, subwoofer and monitor applications. The 1508-8 alcp Pro Rider driver is an excellent choice for general purpose sound reinforcement. The enclosure size is reasonable and its performance from sub bass to upper mid-range is strong. Its versatility included vented and bandpass enclosure designs.

The 1508-8 cupc Pro Rider is specifically optimized for amazing bass performance in very small vented enclosures, along with flat mid-bass and mid-range response for an accurate, clean sound quality. It is an excellent choice for compact enclosures, multi-driver subwoofers and monitors where enclosure size is limited.

Pro Riders can work with crossover points as high as 2.0 kHz, but work best below 1.5 kHz. They deliver excellent performance in both woofer and subwoofer applications.

ENCLOSURES

To assist with the growing interest in home built enclosure designs, Peavey provides complete parameter data on these drivers, as well as several recommended

enclosures for each model. This information and much more can be found at www.peavey.com.

The strength of the completed enclosure has a great effect on the bass performance of the finished system. Box panels that aren't stiff enough will vibrate, canceling bass produced by the woofer and creating undesired sounds of their own. If your box vibrates or you don't think the box panels are stiff enough, add more bracing.

Vents used in the examples require standard Schedule 40 PVC pipe for vent construction. The pipe should be dadoed tightly into the back of the baffle and glued firmly in place with high quality epoxy or high strength, industrial grade hot glue. Rough up the outside of the pipe to improve the glue bond.

Be sure to account for the displacement of the vent, bracing, horn (if used) and woofer or your enclosure before building it or it will be smaller than its intended volume. This can reduce bass output and mis-tune the enclosure.

Line the inside of the enclosure with polyester fiber batting such as quilt stuffing. The batting material should conform to California bedding fire codes. Attach the batting with spray adhesive or staples and keep material away from the end of the vent tube where it can be pulled in by air flow. Handles, protective corners, cabinet covering, grille materials and crossovers are available through Peavey Accessories.

When building a bandpass enclosure, design a panel or door to be removable for access to the woofer. Use foam weather-strip to seal the panel along with enough

screws and bracing to prevent leaks and buzzes. Fill the sealed volume loosely with polyester fiber, but leave the vented volume empty. Place the magnet of the woofer in the vented side for improved cooling.

Peavey does not supply hardware required for the manufacturing of flying systems, and recommends that builders should not suspend or fly any enclosure not certified for such applications.

These instructions are a general guideline for design. Proper construction techniques, good planning and common sense will result in a reliable, high quality, high performance system.

Peavey in no way accepts liability for any damage, accidents or injury that may result from construction or use of enclosure using this information.

PARAMETERS

Thiele-Small parameters for Low Rider subwoofers follow. This data is for use in designing enclosures. Numerous software packages are available that use this data to simulate the response of the driver and enclosure together for optimum performance in any application.

PARAMETER DEFINITIONS

Znom: The nominal impedance of the driver in Ohms.

Revc: DC resistance of the driver in ohms, also known as Re.

Sd: The functional radiating surface area of the cone assembly in meters².

BL: Efficiency of the voice coil and magnet system in Tesla meters.

Fo: Free air resonance. Also known as Fs.

Vas: Volume of air having the same compliance (springiness) as the driver's suspension.

Cms: Restorative force of the driver's suspension in micrometers/Newton.

Mms: The total mass of the moving parts of the loudspeaker, including the air load, in grams.

Qms: Resonance characteristics of the mechanical factors of the loudspeaker.

Qes: Resonance characteristics of electrical factors of the loudspeaker.

Qts: Resonance characteristics of the electrical and mechanical factors combined together.

Xmax: Distance the cone can move in one direction before the coil begins to leave the magnetic gap.

Le: Inductance of the voice coil in millihenries.

SPL: Typical sound pressure level at 1 watt, 1 meter.

no: Electrical to acoustical conversion efficiency in percent.

Vd: Air displacement of the driver from negative Xmax to positive Xmax.

Pmax: Maximum continuous program power in watts.

Disp: Volume displaced by the driver inside the cabinet when mounted on its rear flange

SPECIFICATIONS	1508-8 alcp Pro Rider®	1508-8 cucp Pro Rider®
Part #	00560270	00560250
Size:	15"	15"
Impedance:	8 Ohms	8 Ohms
Power Capacity:	2,400 Watts peak 1,200 Watts program 600 W continuous per AES 2-1984,	2,400 Watts peak 1,200 Watts program 600 W continuous per AES 2-1984,
Sensitivity:	96.3 dB / 1 Watt, 1 Meter	97.9 dB / 1 Watt, 1 Meter
Usable frequency range:	35 Hz ~ 2 kHz	35 Hz ~ 2 kHz
Cone:	Kevlar® impregnated cellulose	Kevlar® impregnated cellulose
Voice coil dia: inches / mm	4.0" / 100	4.0" / 100
Voice coil material:	Aluminum ribbon wire Polyimide-impregnated fiberglass former Nomex® stiffener Solderless diffusion welded OFHC copper leads	Copper ribbon wire Polyimide-impregnated fiberglass former Nomex® stiffener Solderless diffusion welded OFHC copper leads
Net weight:	18 lbs. / 8.2 kg	18 lb. / 8.2 kg
Znom(Ohms)	8	8
Revc (Ohms)	5.80	5.70
Sd (M2)	0.084	0.084
BL (T/M)	16.50	22.70
Vas (liters)	188.2	208.0
Fo, (Hz)	40.4	34.8
Cms (uM/N)	187.8	207.6
Mms (gm)	82.50	100.50
Qms	8.73	8.78
Qes	0.450	0.242
Qts	0.428	0.235
Xmax (mm)	4.6	4.6
Le (mH)	0.41	0.51
SPL (1 WATT 1 M)	96.3	97.9
No (%)	2.70	3.50
Vd (milliliters)	47.1 / 773	47.1 / 773
Pmax (Watts pgm.)	1,200	1,200
Disp (inches3) / milliliters	209 / 3426	209 / 3426
Replacement Basket	00560280	00560260

SUGGESTED ENCLOSURES

For those who want to build their own enclosures but don't want to go through the design process using driver parameters, Peavey provides the following optimized designs:

ENCLOSURE	NET VOLUME Cubic feet/liters	VENT DIAMETER (qty) inches/mm	VENT LENGTH inches/mm	Vb BOX TUNING frequency in Hz	F3, -3 Db point in Hz
Small Vented Box	3.0 / 84.9	(2) 4" / 102	6 7/8" / 175	45	51
Medium Vented Box	4.0 / 113.3	(2) 4" / 102	5" / 127	43	45
Large Vented Box	5.0 / 141.6	(2) 4" / 102	4 3/8" / 111	40	41
Single-Reflex Bandpass	Sealed: 2.25 / 63.7 Vented: 1.75 / 49.6	(2) 6" / 152	8" / 203	83	48 – 138

For 1508-8 alcp Pro Rider®:

1. Small Vented Box

Excellent performance for compact, general purpose use. Warm mid-bass response. F3 is 50 Hz

2. Medium Vented Box

Terrific compromise of bass performance and enclosure size. Warm mid-bass response. F3 is 44 Hz

3. Large Vented Box

Big box, big bass! Great as a subwoofer or the bottom end of a large multi-way enclosure design. F3 is 40 Hz

4. Single Reflex Bandpass enclosure

Special enclosure design that uses the enclosure as an acoustic filter for shaped response. Great choice for a compact subwoofer system. Response is 47 Hz – 135 Hz

For 1508-cucp Pro Rider®:

1. Small Vented Box

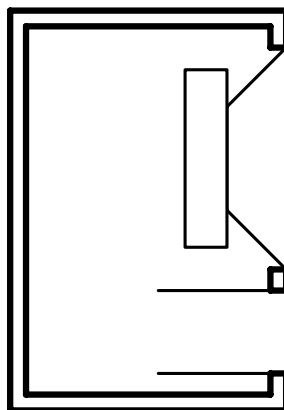
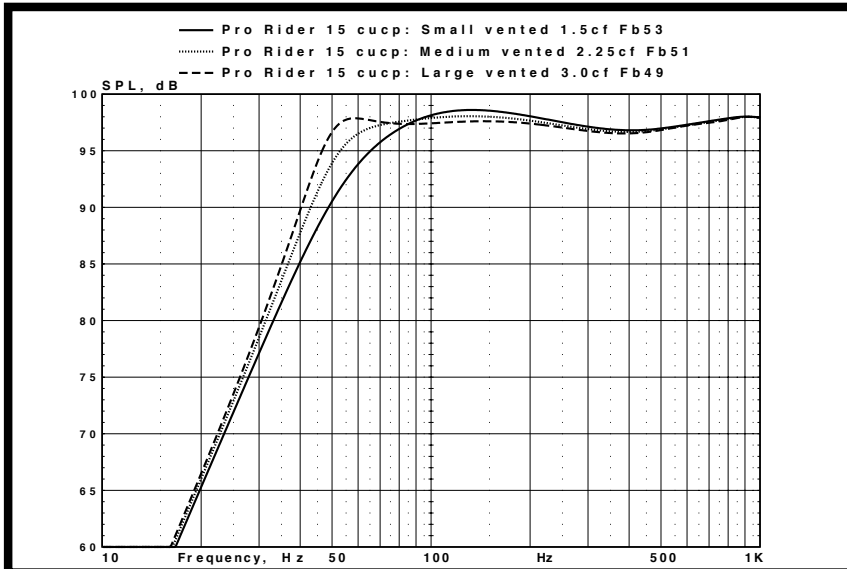
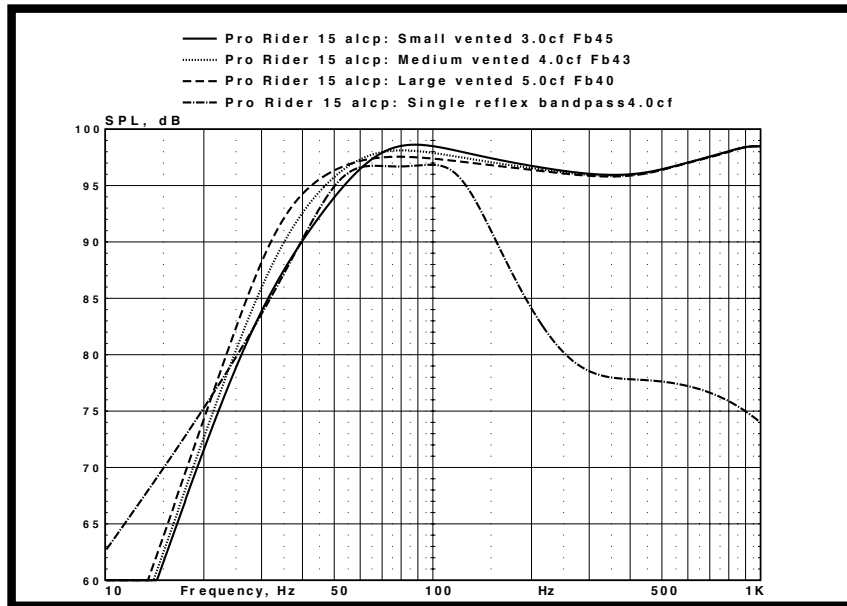
A small enclosure with outstanding bass performance for its size. F3 is 61 Hz

2. Medium Vented Box

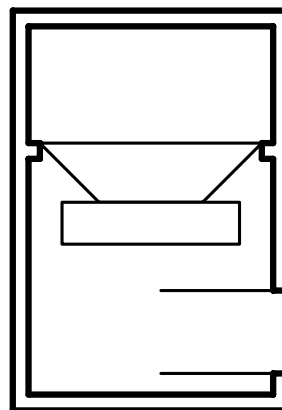
Small box with powerful bass and predictable, flat response down to an F3 is 50 Hz

3. Large Vented Box

Strong, flat response with bass extension to an F3 is 45 Hz. Deep, predictable bass quality for great subwoofer and multi-way system performance.



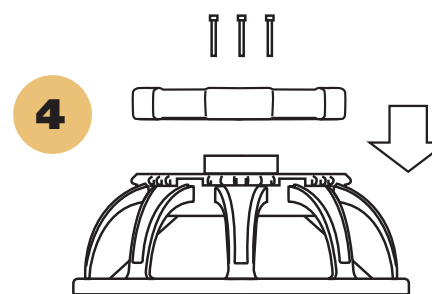
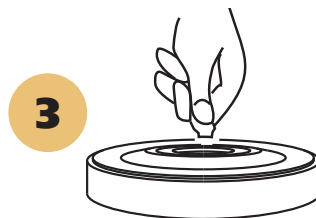
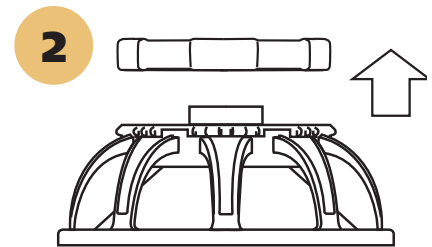
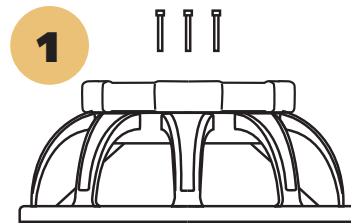
Vented



Single Reflex
Bandpass

Peavey Pro Rider[®] speakers

feature convenient field-replaceable baskets. Replaceable baskets eliminate the need for re-coning speakers and the frustration and delays associated with the re-coning process. It only takes a few minutes to replace a basket and you are back in business. It just can't get any easier than the four steps outlined here.



Baskets are replaced in four easy steps:

- 1** Remove three screws on back of magnet structure.
- 2** Lift the magnet structure off the basket frame.
- 3** Clean the voice coil "gap".
- 4** Align screw holes, lower structure into place on new basket frame, insert screws and tighten.



ONE YEAR LIMITED WARRANTY

NOTE: For details, refer to the warranty statement. Copies of this statement may be obtained online at www.peavey.com.

Kapton® is a registered trademark of DuPont.

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Features and specifications subject to change without notice.

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(OJ(L)37/38,13.02.03 and defined in EN 50419: 2005
The bar is the symbol for marking of new waste and
is applied only to equipment manufactured after
13 August 2005