

A10s.2

A12s.2

R10s

R12s

owner's manual



analog and digital systems

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introduction

Congratulations and thank you for purchasing an a/d/s/ mobile subwoofer. The A and R-Series subwoofers are built using the finest materials and are engineered to provide years of musical enjoyment if installed and operated correctly. For best results and optimal warranty coverage, we recommend having your a/d/s/ mobile subwoofer(s) installed by an authorized a/d/s/ mobile specialty dealer.

Be sure to save your sales receipt. It is your best record of the date of purchase, which is required for warranty service.

Read and follow all cautions, warnings and notes.

cautions

Do not attempt to service you're a/d/s/ mobile subwoofer as it has no user serviceable parts. Never connect or disconnect your subwoofers when the system is powered up. Always exercise care when handling the subwoofer in or out of its enclosure.

Note: R-series aluminum cones may bend or distort if handled carelessly, affecting their performance.

about this manual

These subwoofers can be used with factory or aftermarket loudspeakers to extend the bass response of the system by an octave or more. They are designed to be powered by an amplifier with a minimum of 25 watts of power. They are not intended to be powered by a head unit.

keep listening, but be safe!

Sustained listening to loud music over 100dB has been shown to cause permanent hearing damage. Systems using a/d/s/ components are capable of achieving volume levels which substantially exceed this level. When operating your system for sustained periods at high volume, be sure to use hearing protection to prevent long-term exposure. We want you to be able to enjoy the music for many more years.

features

- Rugged die-cast baskets
- Precision-tuned NBR surrounds
- High-power motor structures with vented pole pieces
- Heavy gauge, spring-loaded wire terminals
- A-Series uses rigid co-polymer cones
- R-Series utilizes drawn aluminum cones for even more accurate low-frequency reproduction

placement

Unlike high frequency sound, our ears have difficulty locating the source of deep bass sounds. Consequently, you have a fair amount of flexibility in where you place the subwoofer in your vehicle. Typically the subwoofer is mounted in the rear of the vehicle, either in the trunk, hatchback, or rear cargo area. For proper performance the port must not be closer than 3" from any walls, this will cause the performance to suffer. The enclosure can be mounted vertically or horizontally.

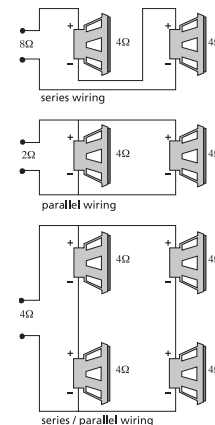
warnings and tips

Always disconnect the battery ground wire before doing any work on your vehicle. Reconnect the cable only after the installation is complete and the wiring has been checked to make sure that there are no problems. If your radio features a code type security system, be sure you know the code before disconnecting the battery!

wiring

The terminals used on these models are color coded to indicate polarity. Red is (+), and Black is (-). These terminals are designed to accept bare wire up to 12 AWG stranded cable, or gold-plated speaker pins.

R-series woofers have dual 4 ohm voice coils. These may be used individually on separate amplifier channels, or they may be wired in series or parallel. Connecting both voice coils of a single woofer in parallel creates the equivalent of a single 2 ohm woofer. Connecting the two voice coils in series will create the equivalent of a single 8 ohm woofer. When using a pair of woofers on a pair of unbridged amplifier channels it is best to **parallel** the two voice coils of each woofer, and connect each woofer to its own dedicated amplifier channel. This will give you a 2 ohm load for each channel. When using a single woofer per pair of amplifier channels, connect each voice coil to its own channel instead of bridging the channels as you would for a single voice coil woofer. This will result in the best damping factor and assure tight, controlled low-frequency performance.



power handling

Your a/d/s/ subwoofer has been designed to handle the demands of high power, high energy music reproduction. Despite their rugged construction, it is still possible to damage your speakers if they are used improperly. An inappropriately designed or constructed enclosure can allow improper cone motion, possibly causing physical damage to the voice-coil or suspension. Excessive drive power for extended periods can cause thermal damage to the voice coil or lead-in wires. Too much low frequency energy may cause the woofer cone to reach it's mechanical limits and "bottom" against the structure. In general, you will hear distortion as a warning before any damage occurs. If you hear distortion, immediately reduce the drive level to the point where the sound retains it's clarity. This will assure that you do not damage your woofers.

enclosure recommendations

ENCLOSURE RECOMMENDATIONS	A10s.2	A12s.2
Sealed Enclosure Volume	0.75cuft	1.35cuft
Vented Enclosure Volume	1cuft	1.35cuft
Port Diameter (inside diameter)	3inches	4inches
Port Length	13inches	17inches

ENCLOSURE RECOMMENDATIONS	R10s	R12s
Sealed Enclosure Volume	0.75cuft	1.35cuft
Vented Enclosure Volume	1cuft	1.35cuft
Port Diameter (inside diameter)	3inches	4inches
Port Length	13inches	17inches

specifications

SPECIFICATIONS	A10s.2	A12s.2
Nominal Impedance	4ohm	4ohm
RE (DC resistance)	3.5ohms	3.5ohms
Levc (coil inductance)	2.5mH	2.3mH
Sensitivity@ 2.83V/1m	90.0dB	91.6dB
Fs (free air resonance)	34.7Hz	30.6Hz
Qms (mechanical Q)	4.99	5.37
Qes (electrical Q)	0.74	0.71
Qts (total Q)	0.64	0.63
BL (force factor)	11.22T/M	11.79T/M
Sd (piston area)	326.85cm ²	456.17cm ²
Vas (volume acoustic suspension)	0.91cuft	1.90cuft
Vas (volume acoustic suspension)	25.88liters	53.90liters
Xmax (linear excursion)	12.3mm	12.3mm
Power (continuous thermal power handling)	250watts	250watts
Power (peak thermal power handling)	500watts	500watts
Outside Diameter	10.75inches	12.5inches
Mounting Diameter	9.25inches	11.25inches
Mounting Depth	4.5inches	5.5inches
Basket Displacement	0.05cuft	0.06cuft
Voice Coil Diameter	2inches	2inches

specifications

SPECIFICATIONS	R10s		R12s	
	series	parallel	series	parallel
Nominal Impedance	8ohm	2ohm	8ohm	2ohm
RE (DC resistance)	6.9ohm	1.7ohm	6.8ohm	1.7ohm
Levc (coil inductance)	5.1mH	1.2mH	4.9mH	1.2mH
Sensitivity@ 2.83V/1m	83.5dB	89.5dB	85.2dB	91.2dB
Fs (free air resonance)	40.1Hz		30.97Hz	
Qms (mechanical Q)	4.437		4.158	
Qes (electrical Q)	0.708		0.614	
Qts (total Q)	0.611		0.535	
BL (force factor)	20.27T/M	10.14T/M	20.93T/M	10.46T/M
Sd (piston area)	326.85cm ²		456.17cm ²	
Vas (volume acoustic suspension)	0.504cuft		1.352cuft	
Vas (volume acoustic suspension)	14.269liters		38.297liters	
Xmax (linear excursion)	15.76mm		15.76mm	
Power (continuous thermal power handling)	500watts		500watts	
Power (peak thermal power handling)	1000watts		1000watts	
Outside Diameter	10.75 inches		12.5 inches	
Mounting Diameter	9.25 inches		11.25 inches	
Mounting Depth	5.25 inches		5.5 inches	
Basket Displacement	0.07cuft		0.08cuft	
Voice Coil Diameter	2.5inches		2.5inches	

warranty information

LIMITED TWO YEAR CONSUMER WARRANTY

Directed Electronics, Inc. promises to the original purchaser, to replace this product should it prove to be defective in workmanship or material under normal use, for a period of two years from the date of purchase from the dealer as indicated by the date code marking of the product **PROVIDED** the product was installed by an authorized Directed dealer. During this two-year period, there will be no charge for this replacement **PROVIDED** the unit is returned to Directed, shipping pre-paid. If the unit is installed by anyone other than an authorized Directed dealer, the warranty period will be one year from the date of purchase by the dealer as indicated by the date code marking of the product. This warranty is non-transferable and does not apply to any unit that has been modified or used in a manner contrary to its intended purpose, and does not cover damage to the unit caused by installation or removal of the unit. During this one-year period, there will be no charge for this replacement **PROVIDED** the unit is returned to Directed, shipping pre-paid. This warranty is void if the product has been damaged by accident or unreasonable use, neglect, improper service or other causes not arising out of defects in materials or construction. Units which are found to be damaged by abuse resulting in thermally damaged voice coils are not covered by this warranty but may be replaced at the absolute/sole discretion of Directed. **ALL WARRANTIES INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY ARE EXPRESSLY EXCLUDED TO THE MAXIMUM EXTENT ALLOWED BY LAW, AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY LIABILITY IN CONNECTION WITH THE SALE OF THE PRODUCT. DIRECTED HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS.** Unit must be returned to Directed, postage pre-paid, with bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number, and address, authorized dealer's name and address, and product description. Note: This warranty does not cover labor costs for the removal and reinstallation of the unit. **IN ORDER FOR THIS WARRANTY TO BE VALID, YOUR UNIT MUST BE SHIPPED WITH PROOF OF INSTALLATION BY AN AUTHORIZED DIRECTED DEALER. ALL UNITS RECEIVED BY DIRECTED FOR WARRANTY REPAIR WITHOUT PROOF OF DIRECTED DEALER INSTALLATION WILL BE COVERED BY THE LIMITED 1 YEAR PARTS AND LABOR WARRANTY.** Note: This warranty does not cover labor costs for the removal and reinstallation of the unit. **BY PURCHASING THIS PRODUCT, THE CONSUMER AGREES AND CONSENTS THAT ALL DISPUTES BETWEEN THE CONSUMER AND DIRECTED SHALL BE RESOLVED IN ACCORDANCE WITH CALIFORNIA LAWS IN SAN DIEGO COUNTY, CALIFORNIA.**



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