

# **RMG-200A**

# **RMG-200AT**

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## **INSTALLATION / OPERATION MANUAL**



**Weather-Resistant,  
High-Output, Loudspeaker Systems**



[communitypro.com](http://communitypro.com)



# EC STATEMENT OF CONFORMITY

## EC STATEMENT OF CONFORMITY

This document confirms that the range of products of Community Professional Loudspeakers bearing the CE label meets all of the requirements in the EMC directive 89/336/EEC laid down by the Member States Council for adjustment of legal requirements. Furthermore, the products comply with the rules and regulations referring to the electromagnetic compatibility of devices from 30-August-1995.

The Community Professional Loudspeaker products bearing the CE label comply with the following harmonized or national standards:

**DIN EN 55013:08-1991**

**DIN EN 55020:05-1995**

**DIN EN 55082-1:03-1993**

The authorized declaration and compatibility certification resides with the manufacturer and can be viewed upon request. The responsible manufacturer is the company:

**Community Light & Sound**  
**333 East Fifth Street**  
**Chester, PA 19013**  
**USA**

**TEL: 1-(610) 876-3400**

**FAX: 1-(610) 874-0190**

Chester, PA USA March 2011

### FIND THE LATEST ONLINE

Every effort has been made to ensure that the information contained in this manual was complete and accurate at the time of printing. However, due to ongoing technical advances, changes or modifications may have occurred that are not covered in this publication. The latest version of this manual and the most recent product information published by Community is always available at <http://www.communitypro.com>.

# WELCOME TO COMMUNITY



## A TRADITION OF EXCELLENCE AND INNOVATION... SPANNING MORE THAN 40 YEARS!

Since the founding of our company in 1968, Community has been a constant developer and innovator of loudspeaker technology. Many of our engineering achievements were undertaken to solve problems, when no prior solutions existed, while others were the result of simply seeing a better way to do things.

Over the years our technologies have been imitated, and our methods have become common practice throughout the professional sound industry. However, developments like carbon fiber diaphragm compression drivers still stand alone, and well ahead of the competition. Just a few of Community's unique accomplishments include the following:

- First successful fiberglass mid-frequency, high-frequency, and large-format bass horns.
- First compression loaded mid-range horn for touring systems - the LMF.
- First suspension-less diaphragm HF driver - the VHF100.
- First mid-range, full-decade (200 Hz - 2 kHz) high-power compression driver - the M4.
- First carbon fiber diaphragm compression drivers - M4, EM280, EM282.
- First Ferrofluid-cooled professional woofers - the VBS Series.
- First product series with all drivers Ferrofluid-cooled.
- First air-cooled loudspeakers for touring systems - AirForce.
- First three-way cinema loudspeaker systems - Paramount Executive Studio Theatre, Warner Bros. screening theatre and dubbing rooms.
- First electro-acoustic system to equal the sound level of pneumatic warning sirens.
- First to provide loudspeaker coverage over an entire country - Denmark Emergency System.
- First comprehensive, calibrated data acquisition of sound reinforcement products.
- First integral signal-aligned three-way sound reinforcement systems - RS Series.
- First pro audio company with an Internet Web site.
- First all horn-loaded, high-fidelity, weather-resistant loudspeakers - R2 Series.

In line with our history of excellence and innovation, each Community product is manufactured in accordance with a complicated and exacting chain of procedures that ensure absolute quality and uniformity.

With our unique designs, our sophisticated techniques, and our proprietary materials and transducers, we are committed to bringing only the finest audio products to the many thousands of professional sound engineers, performers, and end users who rely on them daily.



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# IMPORTANT SAFETY INFORMATION



## IMPORTANT SAFETY INFORMATION

Always follow these basic safety precautions when using or installing R-Series loudspeakers and accessories:

Read these instructions.  
Keep these instructions.  
Heed all warnings.

Follow all instructions, particularly those pertaining to rigging, mounting, suspension of the product, and electrical connections.

The terms **IMPORTANT**, **CAUTION**, and **DANGER** are used throughout this manual to alert the reader to important safety considerations. If you have any questions or do not understand the meaning of these terms, do not proceed with installation. Contact your local dealer, distributor, or call Community directly for assistance. These terms are defined below:



**IMPORTANT:** describes an operating condition or user action that may expose the equipment or user to potential damage or danger.



**CAUTION:** describes an operating condition or user action that will likely cause damage to the equipment or injury to the user or to others in the vicinity.



**DANGER:** describes an operating condition or user action that will immediately damage the equipment and/or be extremely dangerous or life threatening to the user or to others in the vicinity.

## RIGGING AND ELECTRICAL SAFETY



**DANGER:** The loudspeakers described in this manual are designed and intended to be 'flown,' mounted, or suspended for maximum acoustical performance using a variety of rigging hardware, means, and methods. Installation of the loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design. Severe injury and/or loss of life may occur if these products are improperly installed.



**DANGER:** R-Series rigging fittings are rated at a Working Load Limit (WLL) of 100 lbs (45.4kg) with a 10:1 safety margin. No single rigging fitting should ever be subjected to a load that is greater than this stated limit. Failure to heed this warning could result in severe injury and/or loss of life.



**IMPORTANT:** Refer to the sections on installation and connections later in this manual for additional information on rigging and electrical safety.



**IMPORTANT:** The stainless steel mounting bolts that mount the yoke must be kept in place to seal the enclosure from air leaks. If the rigging fittings do not remain sealed, air leaks will occur in the enclosure that will compromise the loudspeaker's weather-resistance and its low frequency performance.



# UNPACKING

## UNPACKING AND INSPECTION

R-Series loudspeakers are inherently rugged and are carefully packed in sturdy cartons. However, it's wise to thoroughly inspect each unit after it has been removed from the packaging, as damage may have occurred during shipping.

## SHIPPING CLAIMS

Please note that once the shipment has left your dealer or the Community factory, the responsibility for damage is *always* borne by the freight company. If damage has occurred during shipping, you must file a claim directly with the freight company. It's very important to contact the freight company as soon as possible after receiving your shipment, as most freight companies have a short time limit within which they will investigate claims.

Make sure to save the carton and the packing materials, as damage claims can be denied if these materials are not retained. If there is evidence of physical damage to the carton upon arrival, be very careful before signing a delivery receipt. Often, the fine print in a delivery receipt will waive your right to file a claim for damage, or loss, after you sign it.

Your Community dealer and the factory will try to help in any way they can, but *it is the responsibility of the party receiving the shipment to file the damage claim*. This is a provision of law in the USA and in most countries.

It's always a good idea to retain the carton and packing materials indefinitely, if possible, in the event that the product may need to be returned to your dealer or distributor for repair in the future.

## WHAT'S IN THE BOX

Each shipping carton contains the following items:

- (1) RMG-200A  
or
- (1) RMG-200AT
- (1) Swivel Yoke-style Bracket (Fully assembled and attached to RMG-200A/RMG-200AT loudspeaker.)
- (1) Installation/Operation Manual
- (1) Warranty Card

## PURPOSE OF THIS MANUAL

This manual is intended to help you install and use the RMG-200A and RMG-200AT loudspeakers safely and effectively. It provides useful information to help you obtain the best performance, sound quality, and reliability from these systems.

We've provided a Quick-Start diagram to enable you to install and operate the products immediately, but we recommend that you read this manual in its entirety to ensure that your installation meets the highest possible quality standards.

# INTRODUCTION / APPLICATIONS



## INTRODUCTION TO RMG LOUDSPEAKERS

### ***All-Weather, All-Purpose***

The RMG-200A and RMG-200AT are complete horn/driver systems designed for use in stand-alone voice-range sound reinforcement and announcement/signaling applications. They are designed to handle the harshest outdoor environmental conditions, but are often the ideal choice for indoor environments as well.

Both models are fully horn-loaded, manufactured from hand-laid fiberglass, and powered by Community's industry-leading electro-mechanical drivers. Horn-loading provides the highest possible efficiency, excellent transient response, and predictable pattern control - all of which equate to superior performance.

Fiberglass construction ensures that these loudspeakers can withstand continual exposure to the elements and are free from the decomposition that can occur over time with wood-based products.

Community's proprietary driver technology provides excellent sonic quality and is engineered for durability and longevity. The driver in both RMG models exhibits exceptional resistance to potentially damaging environmental conditions, as do the enclosures themselves. Both models meet the needs of numerous applications, some of which are listed below:

### **TYPICAL APPLICATIONS**

- Stadiums
- Voice Warning Systems
- Industrial Paging
- Athletic Fields (football, soccer, baseball, tennis)
- Sports Arenas
- Racetracks & Motor Speedways
- Gymnasiums & Field Houses
- Theme Parks and Amusement Parks
- Swimming Pools and Water Parks
- Ski Slopes
- Cruise Ships
- Fairgrounds
- Rodeos
- Air Shows
- Skating Rinks
- Convention Centers
- Factories & Warehouses

***Please see our comprehensive 60 page R-Series Application Guide at [www.communitypro.com/rseries](http://www.communitypro.com/rseries) for advice and information on how to best utilize the R6-51 and R6-BASSHORN, as well as how to utilize other R-Series loudspeakers. The Guide contains a wealth of knowledge, along with numerous examples of successful installations.***

# PRODUCT DESCRIPTION

## PRODUCT DESCRIPTION

The RMG-200A and RMG-200AT provide focused, high output sound projection, with predictable performance and exceptional long-term durability.

The horn portion of the assembly is a handcrafted one-piece waveguide, precision molded of hand-laminated, fiber-reinforced glass for optimum performance. Substantial fiberglass layering, and an integral throat and driver flange construction can withstand substantial torque loads. The inherent strength and rigidity of the fiberglass construction enhances sonic efficiency by preventing sound energy loss, as well as providing inherently weatherproof fabrication.

The RMG-200AT is a variant of the RMG-200A, but equipped with a high-power, low distortion 75W autoformer for 70V or 100V operation.

### PRODUCT FEATURES

- 2-inch (51 mm) throat exit M200 driver, Ferrofluid-cooled
- High efficiency
- High power output
- Non-metallic diaphragm eliminates 'ringing' and harmonic distortion
- Swivel yoke bracket included
- Highly resistant to harsh environments, IP65 rating with a minimum 5-degree downward aiming angle

### DRIVER DESIGN

The compression driver is a high output, high sensitivity loudspeaker that is configured with the diaphragm facing forward, isolating the voice coil and magnetic structure from the environment. The one-piece, non-metallic diaphragm and suspension offers exceptional resistance to the effects of humidity, dust, and corrosive atmospheres. The large area and low compression phase plug loading, coupled with a massive magnet structure, exhibits extremely low distortion at high outputs, while maintaining high efficiency and low power compression. A fiberglass rear cover protects the driver from the effects of weather and corrosion.

A factory-installed weather-resistant steel swivel yoke bracket is included. We proudly offer a five-year warranty providing protection against manufacturing defects on all components of the system.

## HIGH-PASS FILTER

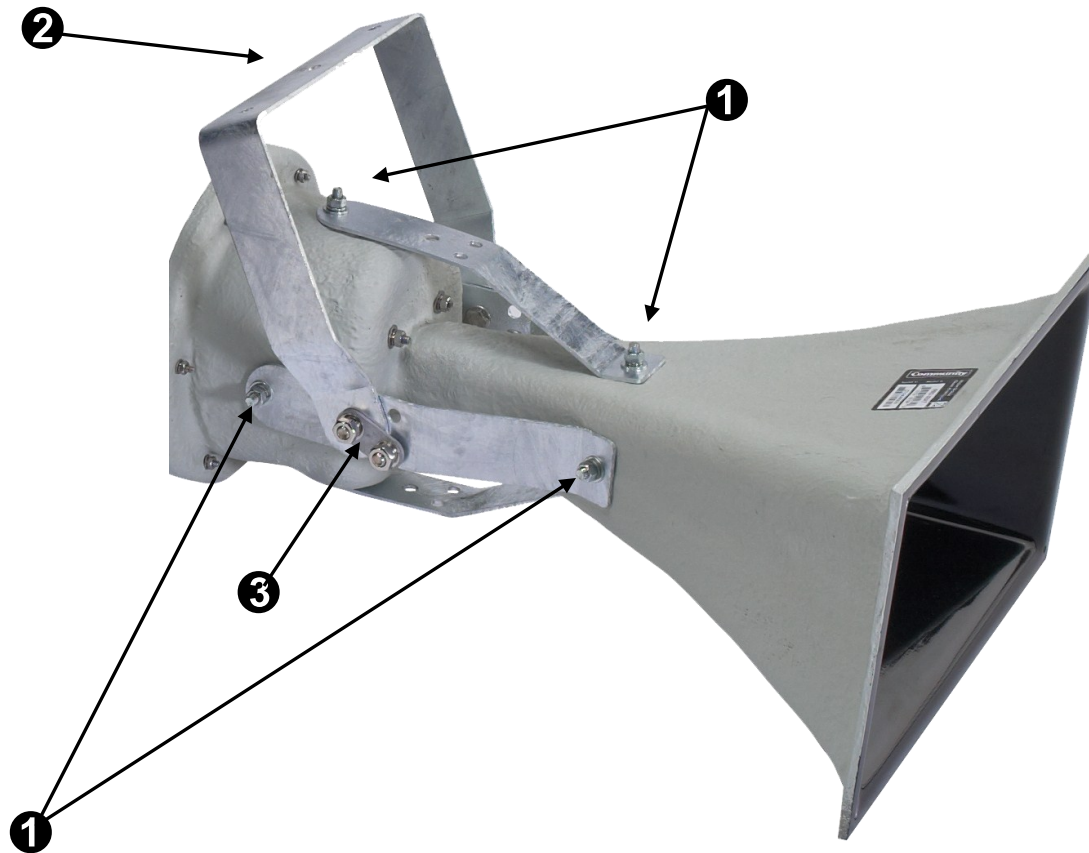
The RMG-200A and RMG-200AT are horn-loaded loudspeaker systems with a specified low frequency response of 400 Hz. Any attempt to reproduce significant levels below this frequency can result in over-excursion of the driver. For this reason, a 400 Hz 24dB-per-octave electronic high-pass filter must be employed to protect the driver from low frequency content below 400 Hz.



# QUICK START-UP GUIDE



## BASIC FEATURES OF THE RMG-200A & RMG-200AT



	FEATURE	DESCRIPTION
1	<b>Bracket Strap Attachment Points</b>	Eight total; two on each side, and two each on the top and bottom surfaces.
2	<b>Yoke Bracket</b>	Attaches to the bracket straps.
3	<b>Bracket Clamp Bar</b>	Secures the loudspeaker's angular adjustment.

## EQUALIZATION

Small amounts of frequency **boost** can brighten-up the higher frequencies and round out the lower frequencies, but they should be restricted to no more than approximately +3 dB in order to avoid damage to the drivers.

Equalization **cuts** can be very effective for removing the effects of room resonance and other unwanted acoustical artifacts, but here again should be kept to a minimum. Extreme EQ cuts (or attenuation) will not cause driver damage, but should be used with discretion to avoid acoustic 'holes' in the audible spectrum.

External equalization can be used to "voice" the loudspeaker for particular applications and is especially effective in attenuating feedback-prone frequencies.

**CAUTION:** Do not attempt to boost frequencies at, or below 400 Hz with an equalizer (either graphic or parametric). This will counteract the effect of the high-pass filter discussed above, potentially causing damage to the driver.

## POWER AMPLIFICATION

Power amplifiers used with the RMG-200A and RMG-200AT should be capable of providing enough power to properly drive the loudspeaker without the amplifier entering into a state of clipping.

Clipping occurs when an amplifier runs out of power. The peaks of the reproduced waveform begin to 'clip' and resemble a square wave instead of the typical sine waves and saw-tooth waves that form the basis of most speech and music. Clipping leads to rapid driver failure because the driver is no longer moving as it's intended to. When power is flowing into a driver, but movement is limited because of amplifier clipping, much of the energy is converted to heat which will soon cause the driver's voice coil to burn out. As a rule, it is better to use an amplifier with *more* power than is necessary, rather than one that has *less* power than necessary.

Recommended amplifier power for the RMG-200A and RMG-200AT is 100W to 140W per channel *for each loudspeaker*. In a system that employs multiple units, the amplifier's power rating must be scaled upwards by the number of units in the system (for 70.7V/100V systems)

Normal practice for the RMG-200A is to connect multiple loudspeakers in a parallel circuit. As more units are added, the load impedance presented to the amplifier will decrease. Care should be taken to ensure that the combined load of multiple units does not decrease below the amplifier's rated *minimum impedance*, which for most amplifiers is either 4 ohms or 2 ohms. Below is a table to help calculate total load impedance of multiple units powered by a single amplifier channel.

### RMG-200A

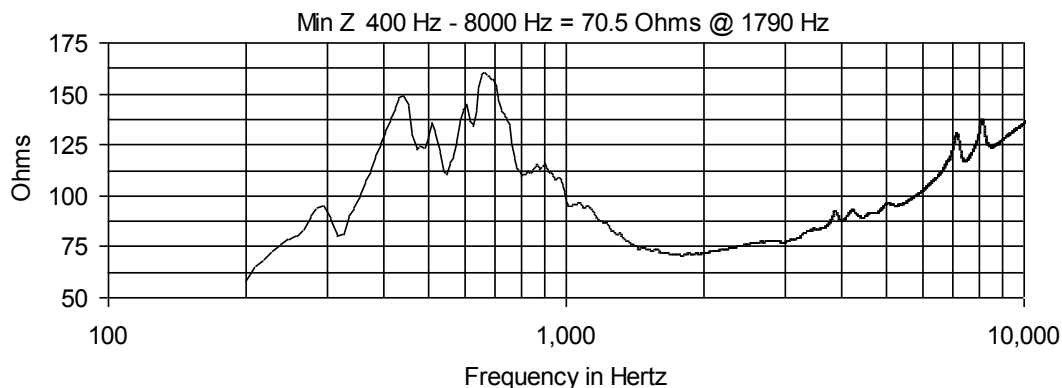
No. of Units	1	2	3	4	5	6	7	8
Impedance	11Ω	5.5Ω	3.9Ω	2.75Ω	2.2Ω	1.83Ω	1.57Ω	1.375Ω

# AMPLIFICATION & CONNECTIONS



## RMG-200AT

### IMPEDANCE 75W



## PROTECTIVE LIMITING

We recommend the use of a high quality signal limiter to help prevent loudspeaker damage due to sudden transients (dropped microphones, etc.) and/or damage from amplifier clipping. The limiter should be connected as the last device in the signal chain before the power amplifier. Alternately, most modern DSP based loudspeaker processors (also called *loudspeaker controllers* or *loudspeaker management systems*) have built-in dynamic control capabilities that can provide the recommended limiting functionality.

## AMPLIFIERS WITH BUILT-IN LIMITING

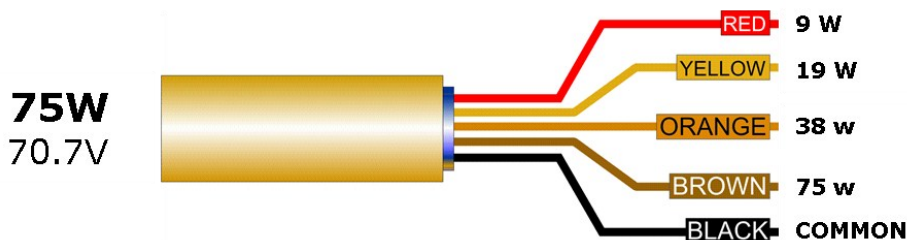
Power amplifier manufacturers have introduced amplifiers with built-in limiting. These limiters are usually designed to prevent the amplifier from clipping. This type of limiting is acceptable to use in lieu of a stand-alone limiter because it is easy to set-up, is specifically designed for the amplifier, and in most cases is tamper-proof. This assumes that the amplifier output is sized as recommended.

## CONNECTING THE LOUDSPEAKER

The RMG-200A and RMG-200AT each have a 12 ft (3.6m) (RMG-200A :16 gauge, RMG200AT: 18 gauge) SJOW-type neoprene jacketed cable attached to the enclosure with a weather-tight gland-nut. These 'pigtailed' (as they're sometimes called), are for connection to the amplifier. Cables may be connected to the amplifier's speaker cabling using solder, a terminal block, crimped connections, or wire-nuts.

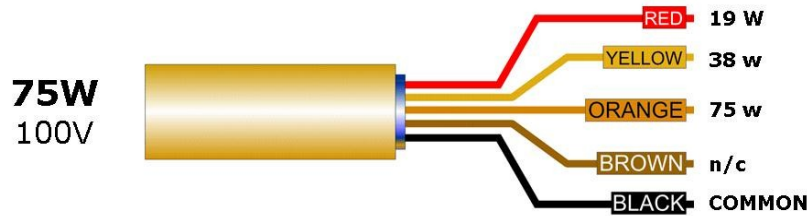
If used outdoors, make sure to provide the connections with a weather-resistant treatment. This can take the form of a weatherproof junction box (recommended) or a coating of a dielectric compound, such as "CRC Dielectric Grease," or a similar product. In all cases, do not remove the gland nut that attaches the cable to the lower rear of the loudspeaker, as this will compromise the weather integrity of the enclosure. All terminations should conform to local electrical codes and industry best practices.

### RMG200AT (75W/70.7V)



# ELECTRICAL INSTALLATION

## **RMG200AT** **(75W 100V)**



### **Connector Cable Polarity:**

The white jacketed conductor is the positive or + signal wire and the black is the negative or – signal wire. Positive voltage applied to the + wire produces positive acoustic pressure at the mouth of the loudspeaker.

## **LOUDSPEAKER CABLE**

The resistance of the cable that connects the loudspeaker to the amplifier will affect the performance of the loudspeaker. Cable with too high of a resistance will cause power losses and impair the frequency performance of the system by reducing the electrical damping factor. To minimize these issues it is desirable to keep the total cable resistance under 0.2 ohm. However, for lengths over 100 feet, the wire gauges needed to meet this requirement are usually not a practical choice for both physical and cost reasons. Therefore #10 AWG (American Wire Gauge) is recommended as the most practical gauge for installations that require 100' (or greater) distances.

Both stranded and solid conductors are acceptable, although cable with stranded conductors is often easier to work with. The length of both conductors has been calculated into the total resistance in the table shown below. Note that the lower the gauge number, the larger the wire size.

It is always desirable to locate amplifiers as close to the loudspeakers as possible, thereby minimizing the cost of the loudspeaker cable, as well as reducing the inherent electrical losses that result from long cable runs.

When installed outdoors, cable insulation should be resistant to water, temperature, and ultraviolet exposure. Recommended cable compositions include polyethylene, neoprene, Teflon™, Silicon™, and Hypalon™. Cable compositions that are NOT recommended are Rubber, PVC, polypropylene, polyurethane, and nylon.

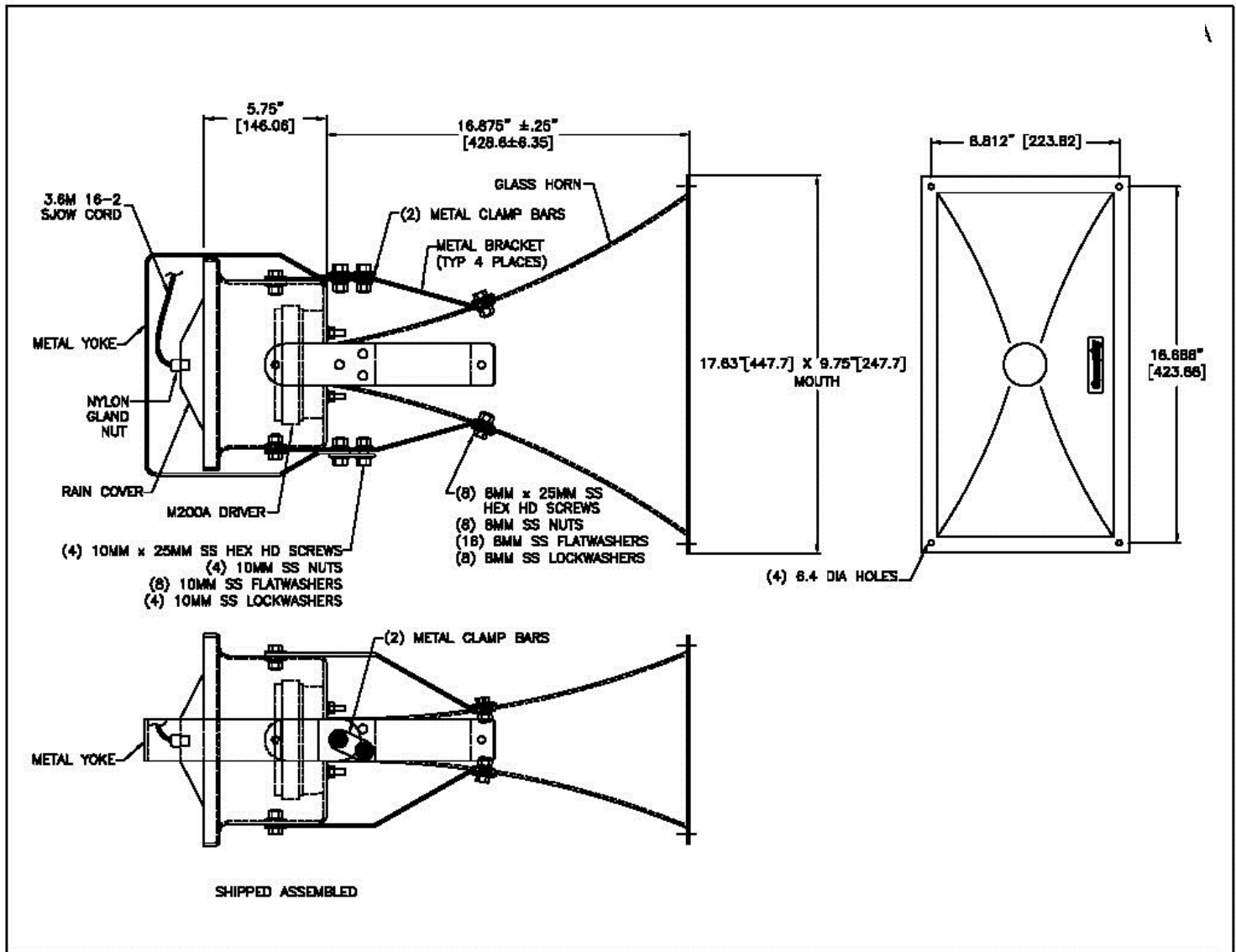
Run Length	Minimum Wire Gauge (American Wire Gauge)	Total Resistance
10 ft. (3m)	16 AWG	0.08 ohm
25 ft. (8m)	14 AWG	0.13 ohm
50 ft. (15m)	12 AWG	0.16 ohm
75 ft. (25m)	10 AWG	0.15 ohm
100 ft. (30m)	10 AWG	0.20 ohm
200 ft. (60m)	10 AWG	0.40 ohm
300 ft. (90m)	10 AWG	0.60 ohm
400 ft. (120m)	10 AWG	0.80 ohm
500 ft. (150m)	10 AWG	1.00 ohm

***Recommended Wire Gauge vs. Distance***

# MOUNTING DIMENSIONS



## RMG-200A and RMG-200AT MOUNTING DIMENSIONS



RMG-200AT - 18 gauge, 5 conductor, 12' (3.6m) SJOW cable

**NOTE:** The gland-nut should be at the bottom when installing the loudspeaker. It is also advisable to leave a "drip loop" so water will not migrate toward the loudspeaker.



# MECHANICAL INSTALLATION

## SSYRMG SWIVEL YOKE BRACKET

The RMG-200 and RMG-200AT come equipped with a factory-installed galvanized steel yoke-style bracket attached to the loudspeaker. The bracket is designed to provide an easy and safe method of mounting an RMG loudspeaker to a fixed mounting surface. The assembly is capable of providing two-axes of motion, rotation and tilt, if installed using a single center attachment bolt to secure the yoke to the mounting surface.

The brackets are manufactured of galvanized steel and the fasteners are stainless steel in order to resist rust and degradation from inclement weather when installed in outdoor environments.

Please note that no hardware is provided to attach the yoke bracket to the mounting surface. Such hardware must be supplied by the installer and should be sized and rated for the weight load of the RMG-200A (20 lbs / 9kg) - or the RMG-200AT (22 lbs / 9.9 kg with the internal autoformer).

When planning the installation, careful consideration should be given to stress from **wind-load** or other external forces

The installer is solely responsible for determining that the mounting hardware is adequately sized and rated, and if the supporting structure to which the RMG-200A or RMG-200AT is attached, is capable of safely supporting the weight of the horn/driver/yoke assembly, as well as wind loads, other external forces (such as seismic activity), and the torsional forces that may result from adjusting the focus of the loudspeaker during installation.

The community PMB1-RR and PMB2-RR may be suitable for pole mounting of the RMG Systems in many cases. Consideration should be given to expected wind and mechanical stresses when selecting a mounting system. Please see page five.

### INSTRUCTIONS

1. The yoke bracket is fully assembled and attached to the RMG-200A or RMG-200AT loudspeaker and ready to install to your ceiling, wall, pole, or other mounting surface. Use hardware that is appropriately sized and rated to handle both the static and dynamic weight load.
2. After mechanical installation, connect the RMG-200A or RMG-200AT to a suitable power amplifier.  
**IMPORTANT!** Make sure that the output of the amplifier is high-passed at 400 Hz with a 24 dB/octave filter! While listening to program material, adjust the focus until you obtain the desired acoustical coverage. When satisfied, firmly tighten (10mm x 25 stainless steel bolts, the two pivot bolts), and the two clamp bar bolts. A torque of approximately 15 foot-lbs should be sufficient to secure the loudspeaker and maintain the chosen angle.
3. Often, installations are performed using only a single fastener in the center hole of the yoke bracket. This allows the installer to rotate the loudspeaker as well as pivoting it. If you have installed the RMG-200A or RMG-200AT in this manner, we strongly recommend adding two additional fasteners in the remaining two holes of the bracket for safety, after achieving the desired acoustical focus.
4. In many situations, a back-up safety cable is required to ensure that the loudspeaker will not create a safety hazard in the event that one or more of the primary mounting components fail. We strongly recommend the use of safety cables for *all* installations. Mounting surfaces that appear to be solid can later become unstable when subjected to external forces, or to degradation over time.

# TECHNICAL SPECIFICATIONS



Model:	RMG-200A	RMG-200AT
<b>Loudspeaker Type:</b>	Weather resistant voice-range horn system	Weather resistant voice-range horn system
<b>Operating Range:</b>	400 Hz to 8 kHz 500 Hz to 4 kHz ( $\pm 3.5\text{dB}$ )	400 Hz to 8 kHz 500 Hz to 4 kHz ( $\pm 3\text{dB}$ )
<b>Max Input Ratings:</b>	75W continuous, 120W program	75 / 38 / 19 / 9 watt autoformer taps @ 70V
<b>Sensitivity 1W/1m:</b>	115 dB SPL (400 Hz to 4 kHz 1/3 octave bands)	114 dB SPL (400 Hz to 4 kHz 1/3 octave bands)
<b>Maximum Output:</b>	134 dB SPL / 141 dB SPL (peak)	133 dB SPL / 140 dB SPL (peak)
<b>Nominal Impedance:</b>	11 ohms	72 ohms (75W tap @ 70V)
<b>Minimum Impedance:</b>	10.8 ohms @ 1.8 kHz	70.5 ohms @ 1.8 kHz (75W tap @ 70V)
<b>Recommended Power Amplifier:</b>	100W to 140W (per unit)	100W to 140W (per unit)
<b>Required Signal Processing:</b>	400 Hz high-pass filter 24dB/octave	400 Hz high-pass filter 24dB/octave
<b>Nominal -6dB</b>	50°H (+4° / -9°, 2 kHz to 4 kHz) 40°V (+10° / -10°, 2 kHz to 4 kHz)	50°H (+4° / -9°, 2 kHz to 4 kHz) 40°V (+10° / -10°, 2 kHz to 4 kHz)
<b>Axial Q / DI:</b>	35 / 15.4, 2 kHz to 4 kHz	35 / 15.4, 2 kHz to 4 kHz
<b>Driver Protection:</b>	None	None
<b>Input Connection:</b>	16 gauge, 2 conductor, 12 foot SJOW cable through gland nut	18 gauge, 5 conductor, 12 foot SJOW cable through gland nut
<b>Environmental Performance:</b>	IEC529 IP65W rating with a minimum 5-degree downward aiming angle	IEC529 IP65W rating with a minimum 5-degree downward aiming angle
<b>Supplied Accessories:</b>	Swivel Yoke Bracket (attached)	Swivel Yoke Bracket (attached)
<b>Dimensions—Height:</b> <b>Width (front):</b> <b>Width (rear):</b> <b>Depth:</b>	9.75 inches (248 mm) 17.63 inches (448 mm) 10.5 inches (267 mm) 25 inches (635 mm)	9.75 inches (248 mm) 17.63 inches (448 mm) 10.5 inches (267 mm) 25 inches (635 mm)
<b>Weight (with bracket):</b>	21 lbs (9.5 kg)	24.3 lbs (11 kg)
<b>Shipping Weight:</b>	27 lbs (12.2 kg)	30 lbs (13.6 kg)

*Please note that specifications are subject to change without notice.*

# SYSTEM OPTIMIZATION

## COMMISSIONING THE SYSTEM

Commissioning is the process of optimizing the performance of a sound system after it has been installed. There are several important steps in commissioning a system; these include the following:

1. Verifying the proper operation of each system component:
  - a) Every source such as mixers, microphones, CD players, audio feeds from other locations, and so on, should be tested independently of the newly installed system to insure that they are working properly.
  - b) All amplifiers should be tested independently of the main system to verify that they are each receiving their intended signal (i.e. high-frequencies, low-frequencies, delayed signal for ancillary speakers, etc.). Many modern amplifiers have numerous modes in which they can function; (i.e. stereo, dual mono, bridging, hi-pass & lo-pass filters, limiters, and sometimes much more). It's extremely important to make sure that each amplifier in the system has the right settings applied in order to properly perform its intended function in the system.
  - c) If present, the DSP 'front end' (also called a loudspeaker controller, loudspeaker management system, crossover, etc.) must be set up carefully to insure that its internal routing and gain structure are correct for the overall system requirements. It's possible to almost instantly damage mid and high frequency drivers if the LF and MF/HF outputs are accidentally crossed.
  - d) After all electronic components and interconnects have been tested and verified, it's then time to test each loudspeaker element in the system. Such testing should be performed at VERY low audio levels to avoid damage to drivers from possible wiring errors. Each loudspeaker section should be carefully listened to, in order to make sure it is performing properly. It should then be checked with a handheld polarity tester to verify that no phase errors are present.
2. Next, the gain structure of the system should be established. Each component in the signal path should be adjusted to provide the intended input and output levels. Gain structure is a somewhat complex subject that goes beyond the scope of this Manual. Moreover, 'proper' gain settings vary significantly from one device to another. We recommend that you read the User's Manual for each device in the signal path, and adjust according to the manufacturer's recommendations. The goal is for your system to operate the lowest possible noise floor and highest possible headroom...which is what gain structure is all about.
3. Setting protective limiters and high-pass filters. This subject is covered on page 11 of this manual.
4. Setting delay times (if any) to align one or more ancillary loudspeakers with the arrival time of the sound from the primary source. If delayed speakers are used to augment the main source, their timing must be set so that the sound arriving at the listener's ears from each delay speaker will be in sync with the sound arriving from the primary source. This is usually accomplished with test & measurement instrumentation, but in a pinch can be set by applying a short duration pulse to the system and establishing the delay time by ear. An inexpensive electronic metronome is a good source for adjusting delay times by ear.
5. Equalizing the system to achieve the best possible sound quality.

This last step in system commissioning is known as system equalization or "voicing." Equalization is the process of adjusting the frequency response of the system, by use of an equalizer, to optimize voice intelligibility, musical sound quality, or both. Note that all R-Series loudspeakers are factory voiced to optimize speech intelligibility. For this reason, many designers and installers find that they can minimize overall system equalization and still achieve excellent voice intelligibility and high grade sonic properties.



# IN CASE OF DIFFICULTY



SYMPTOM	PROBABLE CAUSE	WHAT TO DO
No Sound.	Equipment is turned off.	Check and make sure that all equipment in the audio signal path is turned on. Amplifiers should not be turned on until all equipment
No Sound.	Bad or open connection.	Make sure the signal and input wire connections for all connectors in the system and all terminal screws are properly connected or soldered. Make sure all wire and cables are intact and not severed
No Sound.	Driver has completely failed.	This would be an unusual cause but could occur with severe abuse or an adverse amplifier failure. All other possibilities should be explored before assuming this is the cause. If it is, replace or repair
No sound or very low volume.	System control is turned down.	Check to make sure that the audio signal to the amplifier is high enough to drive it properly. Check all volume/level controls and
Low volume level.	System electronic gain is too low.	Check to make sure that the audio signal to the amplifier is high enough to drive it properly. Check all volume/level controls and
Low volume level.	Signal or speaker wire connection is shorted.	Make sure the signal and input wire connections in all system connectors are not shorted. Even one small wire strand shorting the
Sound cuts in and out.	Bad connection.	Check all connections and cabling for shorts or loose connections.
Distortion, low volume, or no volume from any or all drivers.	Cold/open solder joint.	Using an ohm meter, check the continuity of the crimp connectors, all solder joints, and the wiring to the drivers. Also visually inspect solder joints as cold joints may only malfunction with higher current
Distortion from the loudspeaker at higher volume levels.	Too little amplifier power.	If the power rating of the amplifier being used is too low, it will clip at higher volume levels. Reduce the volume level or use a more powerful amplifier equal to the loudspeaker's "Program" power
Distortion from the loudspeaker at higher	Driver is malfunctioning.	Using a sine wave oscillator or wide range program at moderate levels, listen to each driver to isolate the problem. Repair or
Noises from the loudspeaker (buzzes or rattles).	Driver is malfunctioning.	Using a sine wave oscillator or wide range program at moderate levels, listen to each driver to isolate the problem. Repair or replace as needed.

## TRANSFERABLE WARRANTY “(LIMITED)” VALID IN THE USA ONLY

The MX8 and MX10 loudspeaker systems are designed and backed by Community Professional Loudspeakers. For complete warranty information within the USA please refer to the **Warranty Card** enclosed with the product. Please call 610-876-3400 to locate your nearest Authorized Field Service Station.

For Factory Service call 610-876-3400. You must obtain a Return Authorization (R/A) number prior to the return of your product for factory service.

For repairs outside of the USA please contact your local Community Distributor.



# THE COMPLETE R-SERIES FAMILY

## R.25

Two-way, full-range  
100 Hz to 16 kHz  
LF 1 x 8", HF 1 x 3/4"  
200W RMS, 500W PGM, 8 ohms  
Available coverage pattern: 90° x 40°

*For portable systems and as short throw fill loudspeakers.*



## R.5

Two-way, full-range  
85 Hz to 16 kHz  
LF 1 x 12", HF 1 x 1"  
200W RMS, 500W PGM, 8 ohms  
Available coverage patterns: 60° x 60°, 90° x 40°, 90° x 90°

*For short-to-medium throw applications like gyms and small seating areas.*



## R.5COAX

Two-way, full-range, 80 Hz to 18 kHz  
LF 1 x 12", HF 1 x 1"  
200W RMS, 500W PGM, 8 ohms  
Available coverage patterns: 60° x 60°, 90° x 90°

*For short-throw applications such as concession areas, gyms and as fill loudspeakers.*



## R.5HP

Three-way, full-range, 85 Hz to 16 kHz  
LF 1 x 12", MF 1 x 2", HF 1 x 1"  
200W RMS, 500W PGM, 6 ohms  
Available coverage pattern: 60° x 40°

*For high level speech reinforcement and music reproduction.*



## R.5SUB

Subwoofer, 45 Hz to 150 Hz  
LF 1 x 12"  
200W RMS, 500W PGM, 6 ohms

*For near-field low frequency reinforcement.*



## R1

Two-way, full-range, 90 Hz to 16 kHz  
LF 1 x 12", HF 1 x 1"  
200W RMS, 500W PGM, 8 ohms  
Available coverage patterns: 60° x 40°, 60° x 60°, 90° x 94°

*For medium-throw indoor and outdoor applications.*



## R2

Three-way, full-range, 70 Hz to 16 kHz  
LF 2 x 12", MF 1 x 2", HF 1 x 1"  
(Model R2-52Z features MF 2 x 2")  
400W RMS, 1000W PGM, 4 ohms  
Available coverage patterns: 50° x 20°, 70° x 70°, 90° x 40°, 40-70° x 40°, 60-90° x 40°

*For short-to-long throw applications requiring full bandwidth reproduction.*



## R2SUB

Subwoofer, 30 Hz to 500 Hz  
LF 2 x 12"  
400W RMS, 1000W PGM, 4 ohms

*For powerful low frequency reinforcement.*



## R6-51

Three-way, full-range  
50 Hz to 16 kHz  
LF 6 x 12", MF 6 x 2", HF 6 x 1"  
LF: 1200W RMS, 4 ohms  
MF: 450W RMS, 8 ohms  
HF: 300W RMS, 8 ohms

*For high-level, very long throw full-range reinforcement.*



## R6-Basshorn

Basshorn 6 x 12"  
45 Hz to 500 Hz  
1200W RMS, 3000W PGM, 4 ohms

*For high-level, very long throw low frequency reinforcement.*



## RMG-200A

Voice-range horn system  
400 Hz to 8 kHz  
MF 1 x 2"  
75W RMS, 120W PGM, 11 ohms

*For voice-range announcement.*



## RSH-462

Exponential FocusedArray™ horn system  
400 Hz to 8 kHz  
MF 4 x 2"  
300W RMS, 750W PGM, 11 ohms

*For voice-range announcement and high-level paging.*



# R-SERIES OPERATING DISTANCES



## Recommended Effective Operating Distances\*

	Model	Pattern (H x V)	Description	Yards		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	Distance
				Meters		9.1	18.2	27.3	36.4	45.5	54.6	63.7	72.8	81.9	91	100.1	109.2	118.3	127.4	136.5	145.6	154.7	163.8	172.9	182	191.1	200.2	209.3	218.4	
R.25	R.25-94Z	90° x 40°	2-way coaxial system																											20 yds / 18m
	R.25-94TZ	90° x 40°	2-way coaxial system - 200W autoformer																											20 yds / 18m
R.5 Full-Range	R.5-66Z	60° x 60°	2-way system																											30 yds / 27m
	R.5-66TZ	60° x 60°	2-way system - 200W autoformer																											30 yds / 27m
	R.5-94Z	90° x 40°	2-way system																											30 yds / 27m
	R.5-94TZ	90° x 40°	2-way system - 200W autoformer																											30 yds / 27m
	R.5-99Z	90° x 90°	2-way system																											30 yds / 27m
	R.5-99TZ	90° x 90°	2-way system - 200W autoformer																											30 yds / 27m
R.5COAX	R.5COAX66	60° x 60°	2-way coaxial system																											20 yds / 18m
	R.5COAX66T	60° x 60°	2-way coaxial system - 200W autoformer																											20 yds / 18m
	R.5COAX99	90° x 90°	2-way coaxial system																											20 yds / 18m
	R.5COAX99T	90° x 90°	2-way coaxial system - 200W autoformer																											20 yds / 18m
R.5HP		60° x 40°	3-way system																											60 yds / 55m
R.5HPT		60° x 40°	3-way system - 200W autoformer																											50 yds / 46m
R.5SUB		360° x 180°	Compact subwoofer																											10 yds / 9m
R.5SUB-T		360° x 180°	Compact subwoofer - 200W transformer																											10 yds / 9m
R1	R1-64Z	50° x 35°	2-way system																											50 yds / 46m
	R1-66Z	60° x 60°	2-way system																											50 yds / 46m
	R1-94Z	80° x 35°	2-way system																											50 yds / 46m
R2	R2-52Z	50° x 20°	3-way long throw																											100 yds / 91m
	R2-474Z	40°-70° x 40°	3-way asymmetrical medium throw																											80 yds / 73m
	R2-694Z	60°-90° x 40°	3-way asymmetrical short throw																											60 yds / 55m
R2	R2-77Z	60° x 60°	3-way short throw																											60 yds / 55m
	R2-94Z	80° x 40°	3-way medium throw																											70 yds / 64m
	R2SUBZ	360° x 180°	Subwoofer system																											10 yds / 9m
	R2SUBDF	360° x 180°	Subwoofer system																											20 yds / 18m
R6	R6-51BIAMP	50° x 10°	3-way full-range system																											190 yds / 173m
	R6-Basshorn	360° x 180°	Basshorn system																											150 yds / 137m
Voice Range	RMG200A	50° x 40°	Voice range horn system																											80 yds / 73m
	RMG200AT	50° x 40°	Voice range horn system - 200W autoformer																											80 yds / 73m
	RSH-462	60° x 20°	FocusedArray™ horn system																											210 yds / 192m

\* 96 dBA SPL with no atmospheric effects; rounded to nearest 10 yards.



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