



User manual

CW115

CW215

CW118

CW218



Please read this manual carefully before attempting to install the product

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Introduction

Thank you for purchasing a product from Mach Speakers A/S. Every effort has been made to ensure that our products meet your requirements and we sincerely hope that we will live up to your expectations.

To get the most out of your Mach speakers and ensure an easy and trouble-free installation please read the manual carefully and follow the instructions.

If you have any additional questions or comments please do not hesitate to contact our headquarters in Denmark at the following address:

Mach Speakers A/S
Perspektivvej 2
DK-9900 Frederikshavn
Denmark
Tel: +45 72150852

<http://www.mach.dk>

Or send an e-mail to: machservice&support@martin.dk

CW Subwoofer series

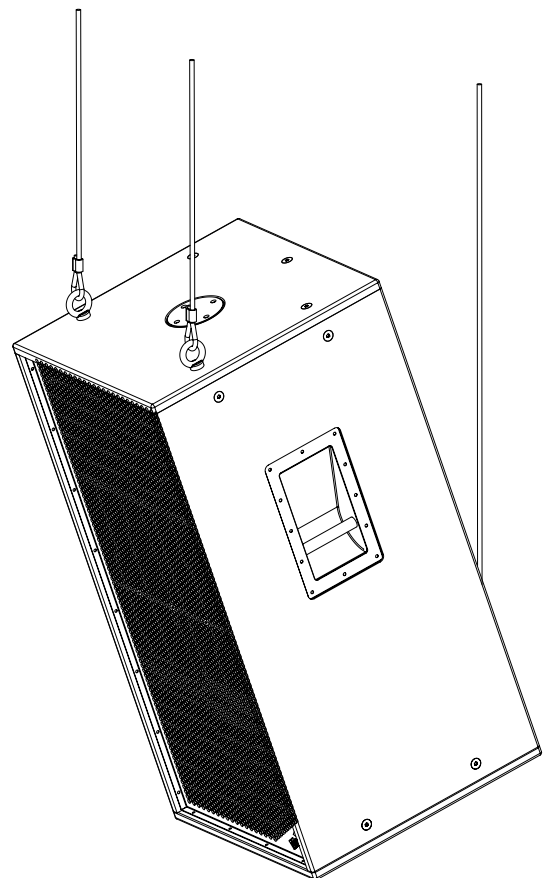
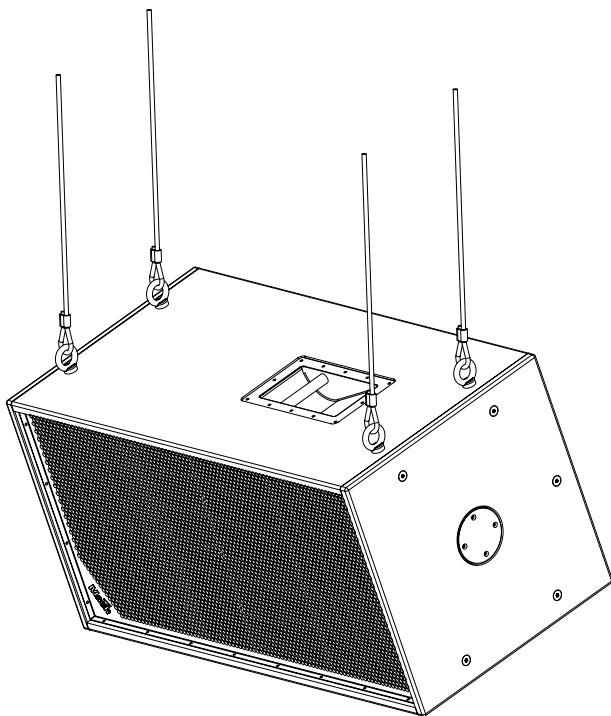
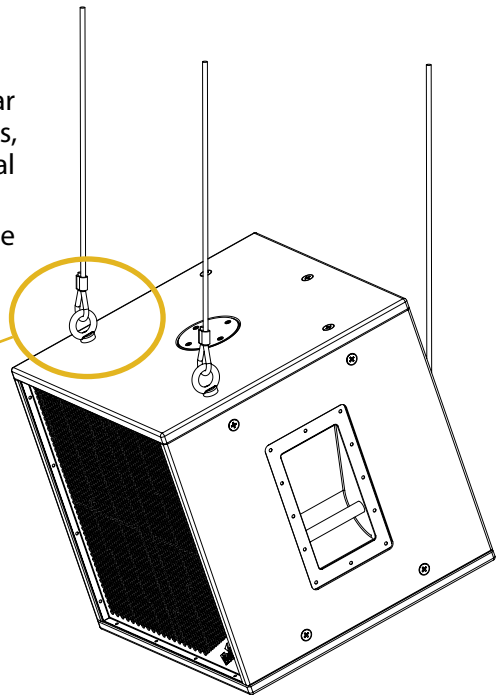
The CW subwoofers have been designed to complement the C-range of speakers. The cabinets have been shaped to achieve an attractive appearance as well as easy mounting and positioning. All C-range products are constructed for heavy-duty use in professional environments.

To fly a speaker:

1. Check that all rigging hardware and fasteners will be able to bear at least ten times the weight of all installed items (speakers, lights, cables, etc.), and that the installation will conform to all legal requirements and safety regulations.
2. Select flying attachment points on the speaker and remove the countersunk 10 mm Allen bolts from these points.
3. Screw eye bolts into the flying attachment points.
4. Fasten suitable flying gear to the eye bolts.

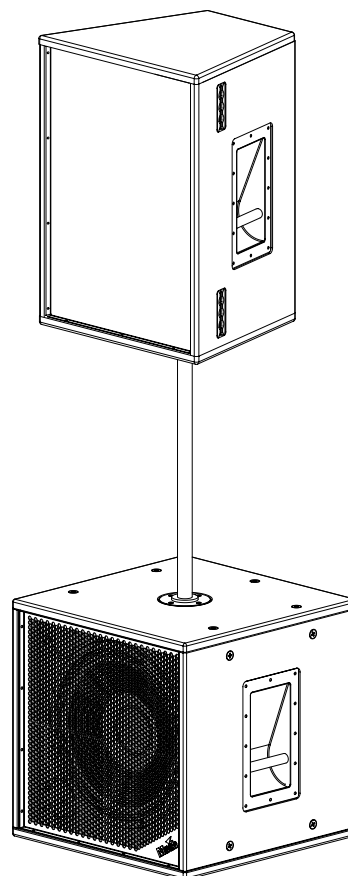
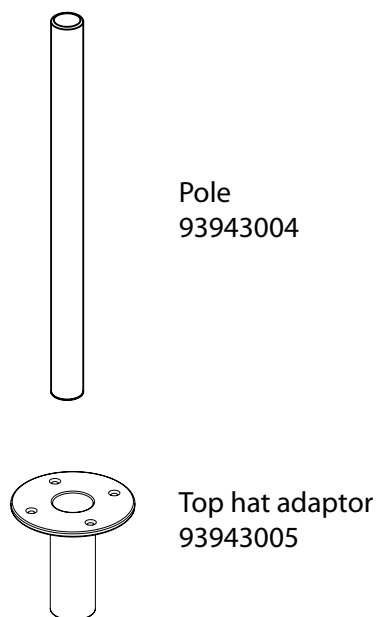


Eye bolt
93940002



To prepare a speakers for pole mounting:

1. Unscrew the 4 countersunk bolts in the blanking plate.
2. Remove the blanking plate, replacing it with the top hat adaptor.
3. Screw the 4 countersunk bolts into position again to secure the top hat adaptor.

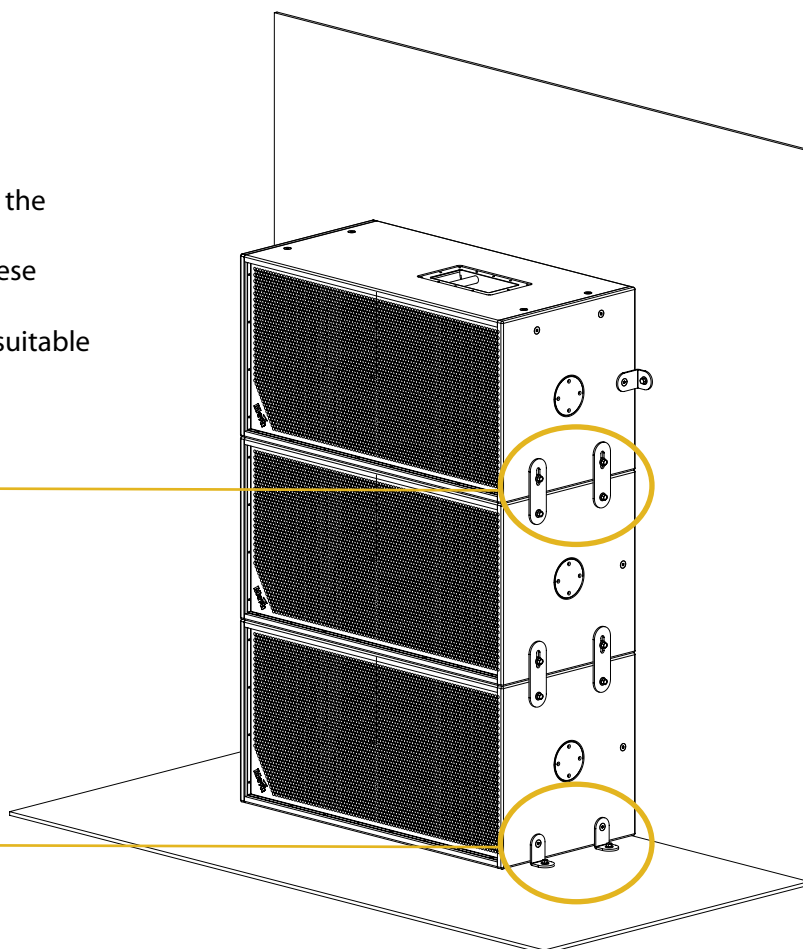
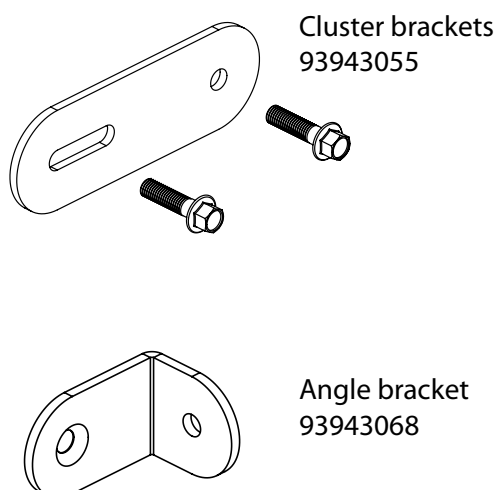


To stack the speakers:

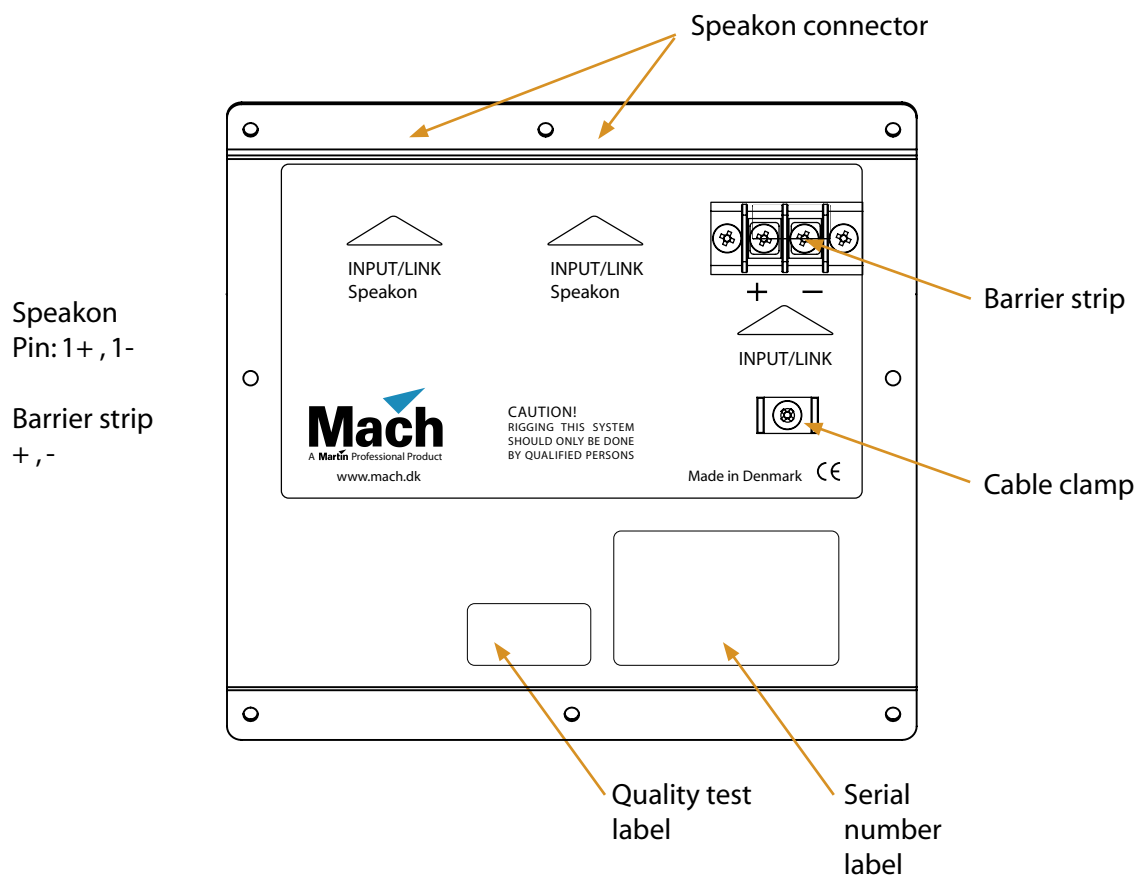
1. Unscrew the countersunk bolts with a 6mm Allan key.
2. Mount the cluster brackets and fasten them with the included screws.

To secure the speakers to surfaces:

1. Remove countersunk 10mm Allen bolts from the speaker at suitable fixing points.
2. Fasten the angle bracket to the speaker at these points with the included screws.
3. Fasten the angle bracket to the surface with suitable fasteners.



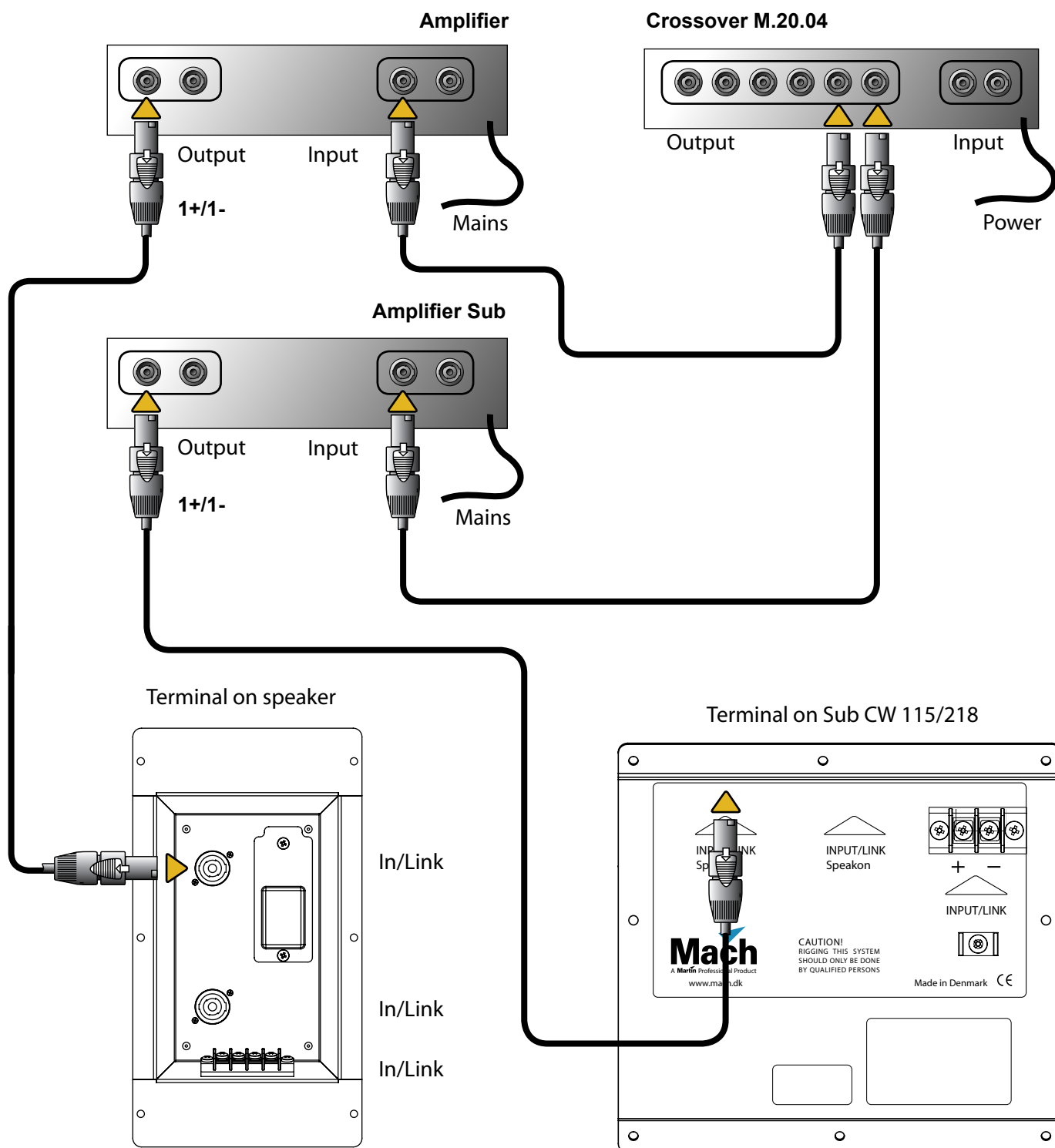
Sub terminal



Connecting the sub to the amplifier

Bi-amp 3-way with Subwoofer

In a bi-amp 3-way system the internal crossover is used for mid/high frequencies and the M20.04 controller is used to filter out the subwoofer signal to a separate amplifier running the subwoofer.



Painting the subwoofer

The C-range cabinets are made of plywood coated with Mach Safecoat and can easily be painted to match the color scheme of your venue.

To paint your speaker:

1. Remove the front grille
2. Degrease the cabinet on all surfaces with denatured alcohol/methylated spirit
Warning: Use of other types of cleaning chemicals can damage the cabinet and should be avoided
3. Mask all areas that should remain unpainted (tweeter, woofer, switch, terminals, reflex port etc)
4. Paint the speaker with Etching primer 2K, P565-713, chromate-free, or a similar product
5. Let the primer dry
6. Apply paint in thin coats to speaker and grill using a paint spraying device
7. When spraying the grille be very careful not to fill any holes, as this will have a serious impact on sound quality
8. Let the paint dry
9. Remove masking
10. Put the grille back in place

Maintenance of the subwoofer

Although subwoofer systems normally only require very limited maintenance there are several things you can do to ensure that your Mach system sounds as good 3 years after installation as on the day you bought it:

Never overload your system – stay within the specified limits for power handling.

Always keep the speaker clean and dry.

As with any electrical product, currents will accelerate corrosion of metal surfaces. Therefore, it is recommended to check the terminals for corrosion at regular intervals, especially if the speaker is mounted in a hostile environment (high humidity, airborne salt, etc.).

How to remove the grille

Remove the screws in the grille and pull the grille out. When replacing the grille do not over-tighten the screws.

How to change the woofer

Remove the grille, then remove the screws in the woofer and lift the woofer out of the cabinet. Carefully disconnect the wires and connect them to the new woofer, install the woofer in the cabinet and reinstall the grille.

How to remove the terminal module from inside of cabinet.

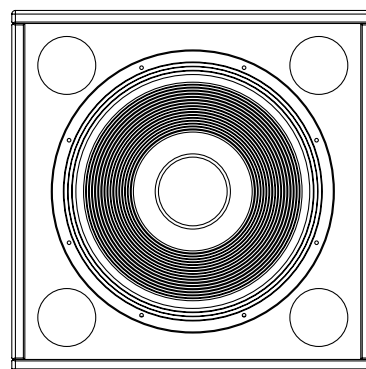
Remove the grille, then remove the screws in the woofer and lift the woofer out of the cabinet. Loosen the eight screws and pull the terminal out. Note the positions of the wires, then carefully disconnect the wires from the transducers.

Technical information

CW115

The CW115 is a reflex-loaded single-driver 15" subwoofer designed for applications where deep and fast bass is needed from a compact enclosure. The CW115 is a perfect subwoofer for larger Mach installation in combination with Ci-Series speakers: CN7, CN8, CM7.

The 15" woofer has a 4" voice coil and with a double spider for improved excursion control and linearity. It ensures good clean bass reproduction supporting the smaller top cabinets in the C-Range and the touring series.



- 15" woofer with 4" voice coil and double spider assembly.
- Bass reflex loaded.
- Prepared for top hat adaptor.
- Recessed NL4 Speakon terminal with link and barrier strips.
- Highly durable SafeCoat coating.
- Mach flying points for 10mm eye bolts.
- Convenient carrying handles.

SPECIFICATIONS:

Power rating AES:	500 W
Power rating Peak:	2000 W
Sensitivity 1W/1m avg:	99 dB
Frequency range +/- 3dB:	45 – 550 Hz
Nominal impedance:	8 ohm
Recommended amplifier:	700 W in 8 ohm
Max. SPL calculated long term:	126 dB
Max. SPL, Peak:	131 dB

WEIGHT & MEASUREMENTS:

Dimensions (H x W x D): 500 x 500 x 500 mm
(19.7 x 19.7 x 19.7 in)
Net weight: 31 kg (68.2 lbs)

CONSTRUKTION

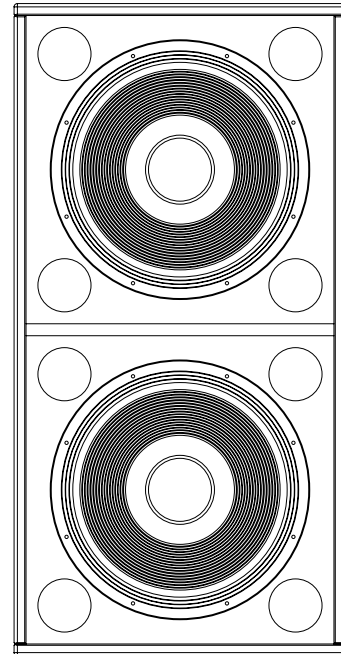
Flying system: Eye bolts
Finish: 18mm plywood with black SafeCoat.
Grille: 2mm steel with foam.
Input connectors: 2 x Speakon NL 4
with link and Barrier strips

ACCESSORIES

Top hat adapter: 35mm diameter. part no. 93943005
Rigging eye bolts part no. 93940002
Cluster bracket kit part no. 93943055
Angle bracket part no. 93943068

CW215

The CW215 is a dual reflex-loaded 15" subwoofer designed for applications where deep and fast bass is needed from a compact enclosure. The CW215 is a perfect subwoofer for use in combination with the Mach CM9, CN12 and CM12. The 15" woofer has a 4" voice coil and with a double spider for improved excursion control and linearity. It ensures good clean bass reproduction supporting the medium SPL top cabinets in the C-Range and the touring series.



- Dual 15" woofers with 4" voice coil and double spider assembly.
- Bassreflex-loaded.
- Prepared for top hat adaptor.
- Recessed NL4 Speakon terminal with link and barrier strips.
- Highly durable SafeCoat coating.
- Mach flying points for 10mm eyebolts.
- Convenient carrying handles.

SPECIFICATIONS:

Power rating AES:	1000 W
Power rating Peak:	4000 W
Sensitivity 1W/1m avg:	102 dB
Frequency range +/- 3dB:	45 – 550 Hz
Normal impedance:	4 ohm
Recommended amplifier:	1400 W into 4 ohm
Max. SPL calculated long term:	132 dB
Max.SPL, Peak:	138 dB

WEIGHT & MEASUREMENTS:

Dimensions (H x W x D): 980 x 500 x 500 mm
(40.2 x 19.7 x 19.7 in)
Net weight: 55 kg (121 lbs)

CONSTRUCTION

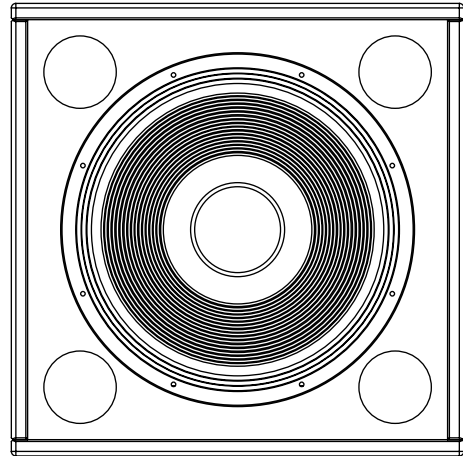
Flying system: eye bolts
Finish: 18mm plywood with black SafeCoat.
Grille: 2mm steel with foam.
Input connectors: 2 x Speakon NL 4 with link and barrier strips

ACCESSORIES

Top hat adaptor: 35mm diameter. part no. 93943005
Rigging hardware: Eye bolt part no. 93940002
Cluster bracket kit part no. 93943055
Angle bracket part no. 93943068

CW118

The CW118 is a reflex-loaded single 18" subwoofer designed for applications where deep and fast bass is needed from a compact enclosure. The CW118 is a perfect subwoofer for Mach bigger installation with Ci-Series, CN7, CN8, CM7. The 18" woofer has a 4" voice coil and with a double spider for improved excursion control and linearity. It ensures good clean bass reproduction supporting the smaller and medium top cabinets in the C-Range together with the touring series.



- 18" woofer with 4" voice coil and double spider assembly.
- Bass reflex-loaded.
- Built in top hat adaptor.
- Recessed NL4 Speakon terminal with link and barrier strips.
- Highly durable SafeCoat coating.
- Mach flying points for 10mm eyebolts.
- Convenient carrying handles.

SPECIFICATIONS:

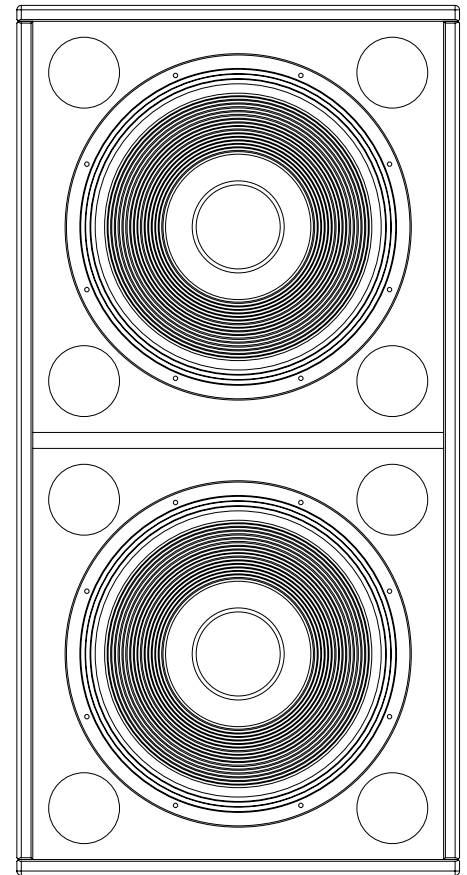
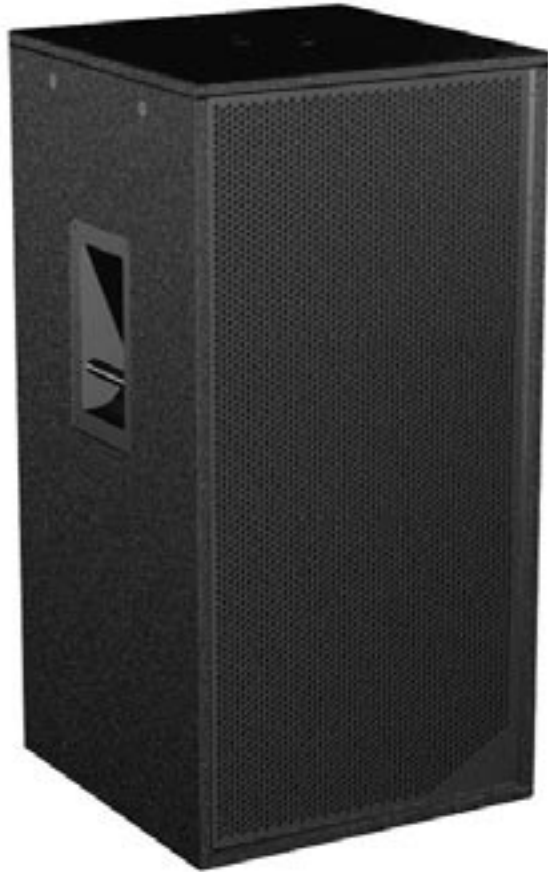
Power rating AES:	1000 W
Power rating Peak:	4000 W
Sensitivity 1W/1m avg:	99.5 dB
Frequency range +/- 3dB:	40 – 400 Hz
Norminal impedance:	8 ohm
Recommended amplifier:	1400 W into 8 ohm
Max. SPL calculated long term:	130 dB
Max. SPL, Peak:	136 dB

WEIGHT & MEASUREMENTS:

Dimensions (H x W x D): 590 x 590 x 660 mm
(23.2 x 23.2 x 26 in)
Net weight: 45 kg (99 lbs)
Flying system: eyebolts
Finish: 18mm plywood with black SafeCoat.
Grille: 2mm steel with foam.
Input connectors: 2 x Speakon NL 4
with link and barrier strips
Top hat adaptor: 35mm diameter. no. 93943005
Rigging hardware: Eye bolt part no. 93940002
Cluster bracket kit no. 93943055
Angle bracket no. 93943068

CW218

The CW218 is a dual reflex-loaded 18" subwoofer designed for applications where deep and fast bass is needed from a compact enclosure. The CW218 is a perfect subwoofer for use in combination with the Mach CM9, CN12 and CM12. The 18" woofer has a 4" voice coil and with a double spider for improved excursion control and linearity. It ensures good clean bass reproduction supporting the medium and high SPL top cabinets in the C-Range together with the touring series.



- Dual 18" woofers with 4" voice coil and double spider assembly.
- Bass reflex-loaded.
- Built in top hat adaptor.
- Recessed NL4 Speakon terminal with link and barrier strips.
- Highly durable SafeCoat coating.
- Mach flying points for 10mm eyebolts.
- Convenient carrying handles.

SPECIFICATIONS:

Power rating AES:	2000 W
Power rating Peak:	8000 W
Sensitivity 1W/1m avg:	102 dB
Frequency range +/- 3dB:	42 – 250 Hz
Norminal impedance:	4 ohm
Recommended amplifier:	2850 W into 4 ohm
Max. SPL calculated long term:	135 dB
Max. SPL, Peak:	141 dB

WEIGHT & MEASUREMENTS:

Dimensions (H x W x D): 1060 x 590 x 660 mm
(41.3 x 23.2 x 26 in)
Net weight: 75 kg (165 lbs)
Flying system: eyebolts
Finish: 18mm plywood with black SafeCoat.
Grille: 2mm steel with foam.
Input connectors: 2 x Speakon NL 4
with link and barrier strips
Top hat adapter: 35mm diameter. no. 93943005
Rigging hardware: Eye bolt part no. 93940002
Cluster bracket kit no. 93943055
Angle bracket no. 93943068

Declaration of conformity

Manufacturer: MACH Speaker A/S
Perspektivvej 2
9900 Frederikshavn
Denmark

We, MACH Speakers A/S, declare under our responsibility that the following product(s)

Product: CW115/CW215/CW118/CW218
Type: Subwoofer

Are in conformity with:

- COUNCIL DIRECTIVE of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC)

Was manufactured in conformity with the following national standards that implements a harmonized standard:

EN 55013

Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment.

Michael Holmbo Michael Holmbo

Date: 11 April 2005

Warranty

For information on the warranty conditions specific for your country please refer to the material handed to you by your local Mach distributor.

Ordering spare parts

In the unlikely event of your speaker breaking down some of the components can be ordered as spare parts.

For information on how to order in your country please contact your local supplier or contact the head office in Denmark at the following address:

Mach Speakers A/S
Perspektivvej 2
DK-9900 Frederikshavn
Denmark
Tel: +45 72150852

Or send an e-mail to: machservice&support@martin.dk

C-range overview

Co-designed by contractors for contractors, the C-range is a breakthrough in installation speaker design and offers extraordinarily easy installation. From full range near-field speakers to medium-throw speakers, the C-range is ideal for many types of venues such as bars, cafés and large live or playback venues.

CN7

Specifications:

Power rating IEC268: 150 watt
Power rating peak: 600 watt
Sensitivity 1w/1m: 92 dB
Max SPL, calculated long term: 114 dB
Max SPL, peak: 120 dB
Frequency response +/-3dB: 65 Hz - 17 kHz
Dispersion angle avg. H 100 x V 100 deg.
Nominal impedance: 8 ohm
Recommended amplifier: 200 watt into 8 ohm
Dimensions (HxWxD): 41.5 x 34.9 x 33.8 cm
(16.3 x 13.7 x 13.3 inches)
Net weight: 15kg (33 lbs)
Finish: Black coating with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4,
and barrier strip terminals
Rigging hardware: Included U-bracket



CN8

Specifications:

Power rating IEC268: 300 watt
Power rating peak: 1200 watt
Sensitivity 1w/1m: 95 dB
Max SPL, calculated long term: 120 dB
Max SPL, peak: 126 dB
Frequency response +/-3dB: 65 Hz - 20 kHz
Dispersion Angle: H 90 x V 60 deg.
Nominal impedance: 4 ohm
Recommended amplifier: 400 watt into 4 ohm
Dimensions (HxWxD): 62 x 34.9 x 33.8cm
(24.4 x 13.7 x 13.3 inches)
Net weight: 22kg (48.5 lbs)
Finish: Black SafeCoat coating
with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4
and barrier strip terminals
Rigging hardware: Included U-bracket



CM7

Specifications:

Power rating IEC268: 300 watt
Power rating peak: 1200 watt
Sensitivity 1w/1m: 96dB (avg.)
Max SPL, calculated long term: 121dB
Max SPL, peak: 127 dB
Frequency range +/-3dB: 80 Hz - 20 kHz
Dispersion angle avg. H 90 x V 60 deg.
Nominal impedance: 8 ohm
Recommended amplifier: 400 watt into 8 ohm
Dimensions (HxWxD): 41.5 x 34.9 x 33.8 cm
(16.3 x 13.7 x 13.3 inches)
Net weight: 15kg (33 lbs)
Finish: Black SafeCoat coating with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4 and barrier strip terminals
Rigging hardware: Included U-bracket



CM9

Specifications:

Power rating IEC268: 600 watt
Power rating peak: 2400 watt
Sensitivity 1w/1m: 99dB (avg.)
Max SPL, calculated long term: 127dB
Max SPL, peak: 133 dB
Frequency range +/-3dB: 70 Hz - 20 kHz
Dispersion angle avg. H 90 x V 60 deg.
Nominal impedance: 4 ohm
Recommended amplifier: 850 watt into 4 ohm
Dimensions (HxWxD): 70 x 34.9 x 33.8 cm
(27.6 x 13.7 x 13.3 inches)
Net weight: 25kg (55 lbs)
Finish: Black SafeCoat coating with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4 and barrier strip terminals
Rigging hardware: Included U-bracket



CN12

Specifications:

Power rating IEC268: 320 watt
Power rating peak: 1280 watt
Sensitivity 1w/1m: 97 dB
Max SPL, calculated long term: 122 dB
Max SPL, peak: 128 dB
Frequency response +/-3dB: 72 Hz - 18 kHz
Dispersion Angle: H 100 x V 65 deg.
Nominal impedance: 8 ohm
Recommended amplifier: 450 watt into 8 ohm

WEIGHT & MEASUREMENTS:

Dimensions (HxWxD): 62 x 43 x 35cm
(24.4 x 16.9 x 13.8 inches)
Net weight: 26.5kg (58.3 lbs)
Finish: Black SafeCoat coating
with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4
and barrier strip terminals
Rigging hardware: Included U-bracket and eye bolts



CM12

Specifications:

Power rating IEC268: 325 watt
Power rating peak: 1300 watt
Sensitivity 1w/1m: 98.5 dB
Max SPL, calculated long term: 124 dB
Max SPL, peak: 130 dB
Frequency response +/-3dB: 70 Hz - 18 kHz
Dispersion Angle: H 90 x V 75 deg.
Nominal impedance: 8 ohm
Recommended amplifier: 450 watt in 8 ohm

WEIGHT & MEASUREMENTS:

Dimensions (HxWxD): 62 x 43 x 35cm
(24.4 x 17 x 13.8 inches)
Net weight: 26.5kg (58.3 lbs)
Finish: Black SafeCoat coating
with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4
and barrier strip terminals
Rigging hardware: Included U-bracket and eye bolts



CM15

Specifications:

Power rating IEC268: 450 watt
Power rating peak: 1800 watt
Sensitivity 1w/1m: 102 dB
Max SPL, calculated long term: 129 dB
Max SPL, peak: 135 dB
Frequency response +/-3dB: 58 Hz - 20 kHz
Dispersion Angle: H 90 x V 55 deg.
Nominal impedance: 8 ohm
Recommended amplifier: 650 watt into 8 ohm

WEIGHT & MEASUREMENTS:

Dimensions (HxWxD): 83 x 50 x 40.5cm
(32.7 x 19.7 x 16 inches)
Net weight: 41.5 kg (91.3 lbs)
Finish: Black SafeCoat coating
with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4
and barrier strip terminals
Rigging hardware: Included eye bolts



CM18

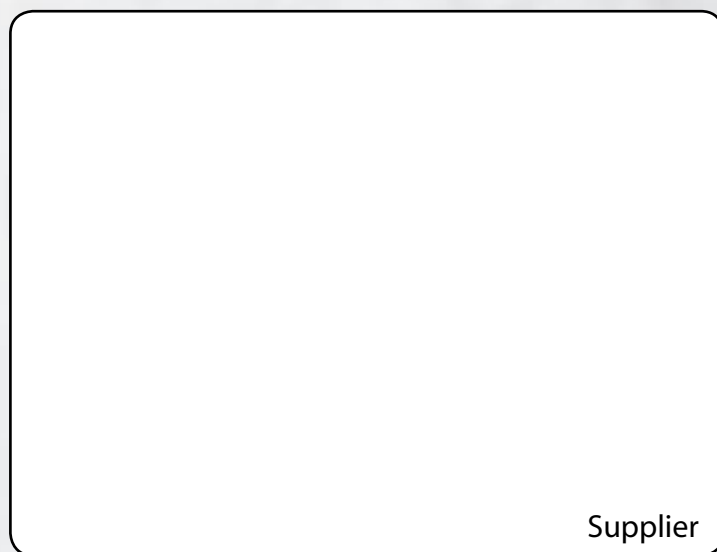
Specifications:

Passive mode:
Power rating IEC268: 700 watt
Power rating peak: 2800 watt
Sensitivity 1w/1m: 102.5 dB
Max SPL, calculated long term: 131 dB
Max SPL, peak: 137 dB
Frequency response +/-3dB: 75 Hz - 20 kHz
Dispersion Angle: H 90 x V 55 deg.
Nominal impedance: 4 ohm
Recommended amplifier: 1000 watt into 4 ohm

WEIGHT & MEASUREMENTS:

Dimensions (HxWxD): 106 x 43 x 35cm
(41.7 x 17 x 13.8 inches)
Net weight: 45kg (99 lbs)
Finish: Black SafeCoat coating
with other colors optional
Grille: 2 mm steel with foam backing
Input connectors: 2 x Speakon® NL 4
and barrier strip terminals
Rigging hardware: Included eye bolts





Supplier

Mach Speakers A/S

www.mach.dk