



Elate Carbon Installation Guide

Elate Carbon / Pro

52, 62, 53, 63, 93, 52A,
62A, 53A, 63A, 93A

Components

Alto tweeter, MT450,
MW5, MW6, MW9, MM3,
MXT280C, MXT380C

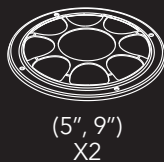
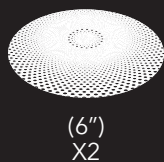
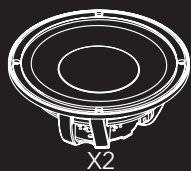


Dear Customer,

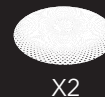
Thank you for choosing Morel for your car audio speaker solution. Morel prides itself on engineering and producing the best high-fidelity speaker systems. We hope you enjoy your Elate Carbon speakers for years to come. If you have any questions, please contact your Morel dealer or Morel support at: www.morelhifi.com

Elate Carbon Components

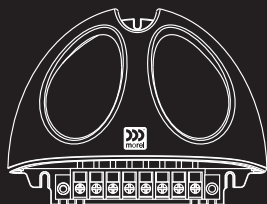
Elate Carbon MW5, MW6, and MW9 Woofer



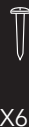
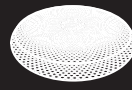
MT450 Tweeter



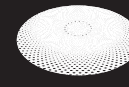
MXT380c/MXT280c Crossover



Alto Tweeter (PRO line only)

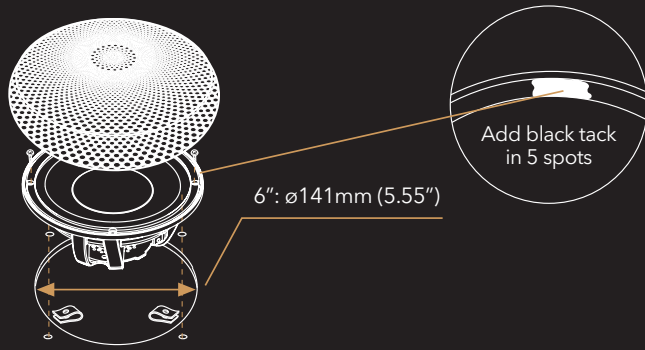


MM3 Midrange

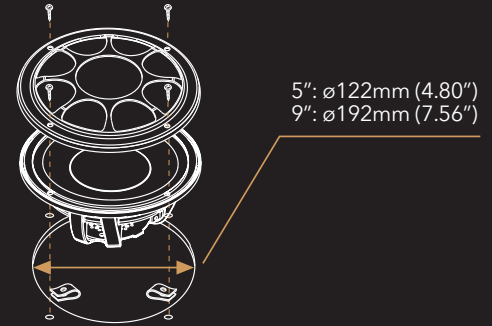


Woofers, Midrange and Alto Tweeter mounting

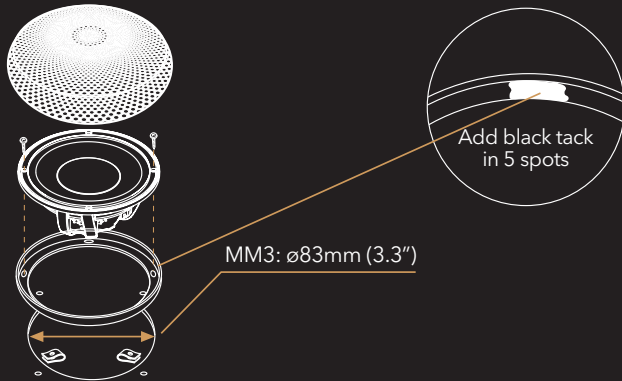
MW6 woofer



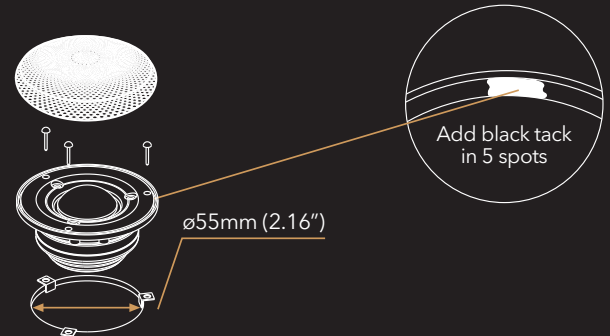
MW5 and MW9 woofer



MM3

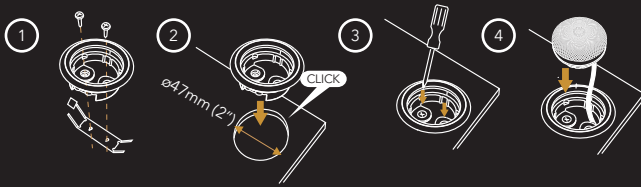


Alto Tweeter



MT450 Tweeter and Crossover Mounting

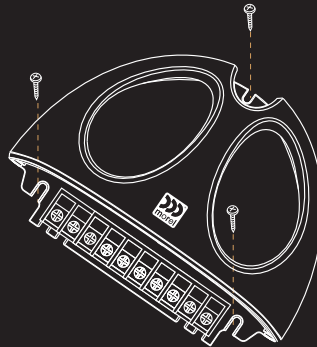
MT450 Flush Mount



MT450 Surface Mount



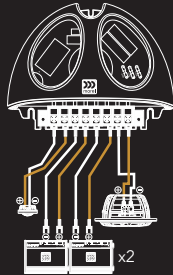
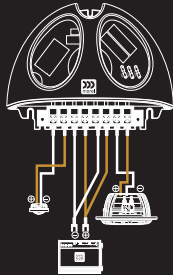
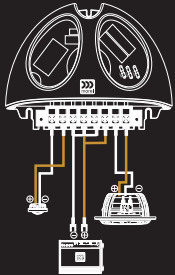
Crossover mounting



Crossover Connections

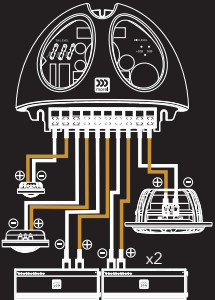
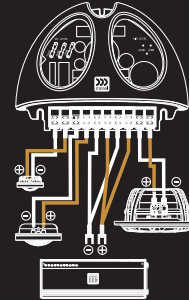
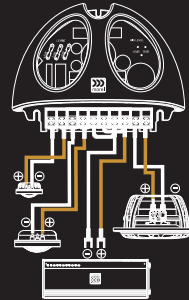
2-WAY Systems Crossover

- ① Standard wire connection/
With bridged jumpers
- ② Bi wire connection/
No bridged jumpers
- ③ Bi Amp connection/
No bridged jumpers

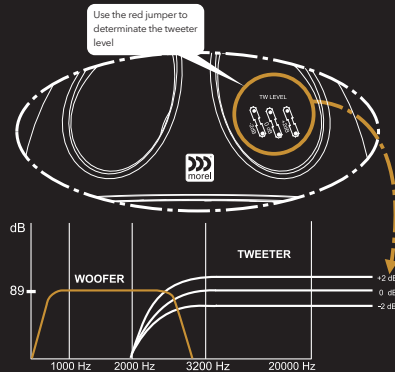


3-WAY Systems Crossover

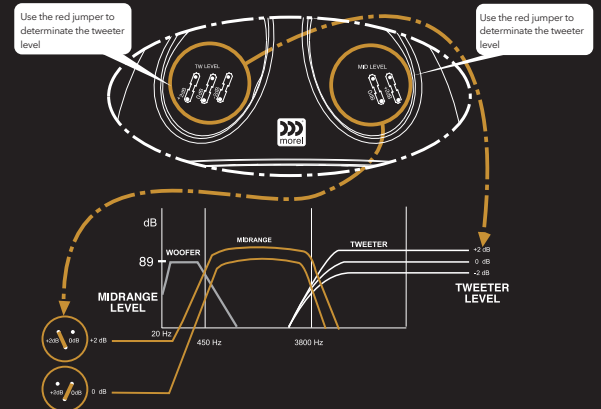
- ① Standard wire connection/
With bridged jumpers
- ② Bi wire connection/
No bridged jumpers
- ③ Bi Amp connection/
No bridged jumpers



2-WAY Crossover Alignment System



3-WAY Crossover Alignment System



Specifications

| WOOFERS | ELATE CARBON MM3 | ELATE CARBON MW5 | ELATE CARBON MW6 | ELATE CARBON MW9 |
|--|-------------------------|-------------------------|-------------------------|-------------------------------------|
| Nominal Impedance (ohm) | 4 | 4 | 4 | 4 |
| Power Handling Wrms | 120 | 160 | 180 | 200 |
| Max. Trans. Pwr Handling Wrms | 400 | 1000 | 1000 | 1000 |
| Sensitivity (2.83 V/1M) dB | 87 | 85 | 87 | 89 |
| Frequency response Hz | 90-6000 | 40-5000 | 30-4000 | 25-3000 |
| Resonant Freq. Fs Hz | 88 | 64.4 | 45 | 44 |
| Voice Coil Diameter mm (inch) | 54 (2.125) | 75 (3) | 75 (3) | 75 (3) |
| Voice Coil Height mm (inch) | 10 (0.4) | 14.50 (0.57) | 14.50 (0.57) | 14.50 (0.57) |
| Voice Coil Type/Former | Aluminium | Titanium | Titanium | Titanium |
| Voice Coil Wire | Hexatech™ Aluminium | Hexatech™ Aluminium | Hexatech™ Aluminium | Hexatech™ Aluminium |
| DC Resistance (ohm) | 3 | 3.6 | 3.6 | 3.6 |
| Voice Coil Induct. @1 kHz (mH) | 0.175 | 0.615 | 0.615 | 0.615 |
| Magnet System | Neodymium | Neodymium | Neodymium | Neodymium Double magnet rear vented |
| HE-Magnetic Gap Height mm (inch) | 4 | 5 (0.20) | 5 (0.20) | 5 (0.20) |
| B-Flux Density (T) | 0.94 | 0.66 | 0.75 | 0.74 |
| BL Product/BXL | 4.2 | 5.15 | 6.51 | 5.15 |
| Max. Linear Ex./Xmax mm (inch) | ±3mm(0.12) | ±4.75mm (0.18) | ±4.75mm (0.18) | ±4.75mm (0.18) |
| Suspension Compliance CMS - mm/N | 0.54 | 0.35 | 0.67 | 0.36 |
| Electrical Q Factor QES | 0.54 | 0.63 | 0.47 | 0.61 |
| QTS | 0.45 | 0.56 | 0.43 | 0.56 |
| QMS | 2.66 | 4.15 | 7.19 | 6 |
| Mech. Resistance RMS- N * S / M | 1.17 | 1.32 | 1 | 1.2 |
| Moving Mass MMS - gr/ounce | 5.3(0.21) | 17(0.59) | 18(0.63) | 30(1.05) |
| Equiv. Can Air Load VAS - L (cu.ft) | 1.15(0.05) | 4.5(0.6) | 13.3(0.47) | 30.9(1.1) |
| Effective Piston Area SD sq.cm (sq.inch) | 38(1.5) | 90(13.95) | 120(18.6) | 219(33.95) |
| Cone Type | Triple Layer Cone (TLC) | Triple Layer Cone (TLC) | Triple Layer Cone (TLC) | Triple Layer Cone (TLC) |
| Cone Material | Carbon Fibre composite | Carbon Fibre composite | Carbon Fibre composite | Carbon Fibre composite |
| Unit Diameter mm(inch) | 100 (3.90) | 135 (5.25) | 165 (6.50) | 222 (8.75) |
| Mounting Depth mm (inch) | 38 (1.50) | 60 (2.36) | 61 (2.40) | 71 (2.80) |
| Mounting Cutout | 83 (3.3) | 120 (4.72) | 141 (5.55) | 192 (7.56) |
| Net Wight Kg (lb) | 0.38 (0.84) | 1.05 (2.31) | 1.18 (2.60) | 1.42 (3.13) |

| CROSSOVERS | MXT280C | MXT380C |
|--------------------|----------------------------------|---|
| Crossover Point | W: 2500Hz/12dB T: 2500Hz/12dB | W: 450Hz/12dB M: 450Hz/12dB 2700Hz/12dB T: 2700Hz/12dB |
| Crossover Controls | Tweeter +/- 2dB | Tweeter +/- 2dB Mid 0/- 2dB |
| Wiring Options | Bi wire / Bi amp | Bi wire / Bi amp |

* Morel operates a policy of continuous products design improvement, consequently specifications are subject to alteration without prior notice

| MIDS & TWEETERS | MT450 | ALTO |
|--------------------------------------|--------------------------------|----------------------------------|
| Nominal Impedance (ohm) | 6 | 6 |
| Power Handling Wrms | 130 | 220 |
| Max. Trans. Pwr Handling Wrms (10ms) | 350 | 1000 |
| Sensitivity (2.83 V/1M) dB | 91 | 91 |
| Frequency Response Hz | 1400-25000 | 1400-25000 |
| FS Hz | 1000 | 900 |
| Voice Coil Diameter mm (inch) | 28 (1.125) | 28 (1.125) |
| Voice Coil Former | Aluminium | Aluminium |
| Voice Coil Wire | Hexatech™ Aluminium | Hexatech™ aluminium |
| DC Resistance ohm | 5.2 | 5.2 |
| Magnet System | Neodymium Rear Vented | Neodymium rear chamber underhung |
| Dome Type | Acuflex™ hand coated soft dome | Acuflex™ hand coated soft dome |
| Dome Material | Silk | Silk |
| Unit Diameter mm (inch) | 43.00 (1.69) | 67.00 (2.6) |
| Mounting Depth mm (inch) | 13.2 (0.52) | 32.00 (1.25) |
| Mounting Cutout mm (inch) | 47.00 (2) | 55 (2.16) |
| Net Weight Kg (lb) | 0.07 (0.15) | 0.35 (0.77) |

Active Configuration

Setting up the Elate Carbon system using an external electronic crossover network may very depending on the processor itself, the car cabin acoustic attributes, and the mounting location of the drive units. Choosing proper crossover points and slopes can greatly affect system performance.

The following guidelines should be used to assure each drive unit in the system performs to the highest level. The Optimal Crossover Point/Slope guide should be used for most vehicle applications. Advanced users may refer to the Recommended Crossover Range/Minimum Slope guide for fine system tuning.

Elate Carbon: 53A, 63A, 93A

Optimal Crossover Point/Slope
Tweeter highpass: 3300Hz/12dB
Midrange lowpass: 3300Hz/12dB
Midrange highpass: 450Hz/12dB
Woofer lowpass: 450Hz/12dB
* Woofer highpass: 40Hz/12dB

Recommended Crossover Range/Minimum Slope
Tweeter highpass: 18000Hz-4000Hz/12dB
Midrange lowpass: 18000Hz-4000Hz/6dB
Midrange highpass: 300Hz-750Hz/12dB
Woofer lowpass: 350Hz-750Hz/6dB
* Woofer highpass: 40Hz-80Hz/12dB

* When used with an active subwoofer system.

Elate Carbon: 52A, 62A, 92A

Optimal Crossover Point/Slope
Tweeter highpass: 2000Hz/12dB
Woofer lowpass: 1800Hz/12dB
* Woofer highpass: 60Hz/12dB

Recommended Crossover Range/Minimum Slope
Tweeter highpass: 18000Hz-3000Hz/12dB
Woofer lowpass: 18000Hz-3000Hz/6dB
* Woofer highpass: 40Hz-80Hz/12dB

Wishing you many years of sound enjoyment!



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