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

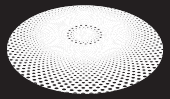
Dear Customer,

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


X2


(6″)
X2


(5″, 9″)
X2

X2

X8


X8

MT450 Tweeter


X2


X2


X2

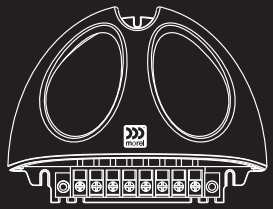

X2


X4


X2


X2

MXT380c/MXT280c Crossover



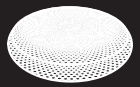
X2


X6


X6

Alto Tweeter (PRO line only)


X2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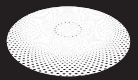
X6


X6

MM3 Midrange


X2


X2

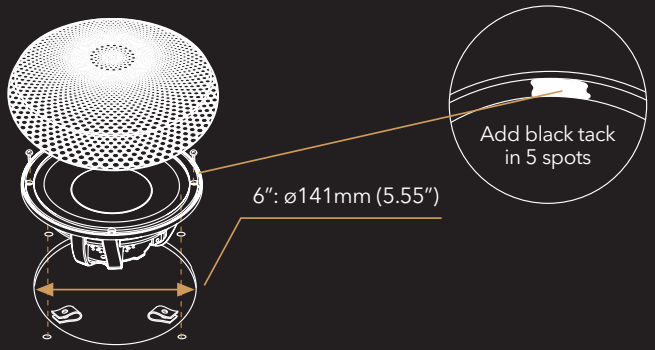

X2


X8

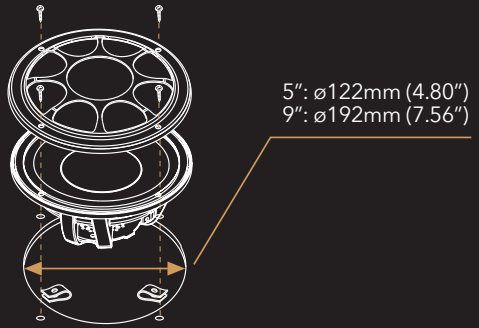

X8

Woofer, Midrange and Alto Tweeter mounting

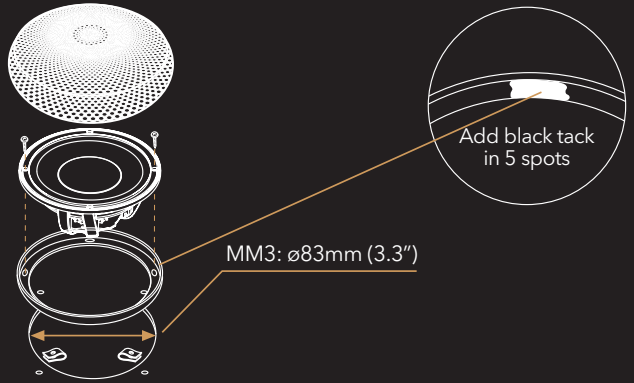
MW6 woofer



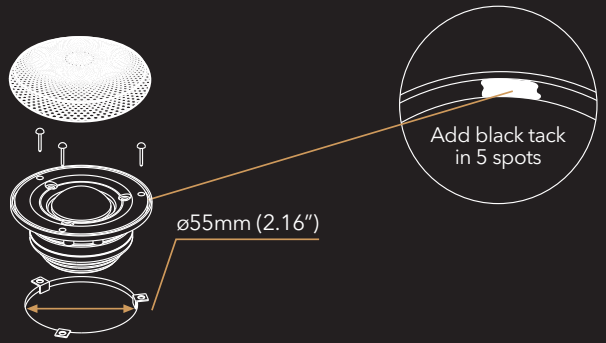
MW5 and MW9 woofer



MM3

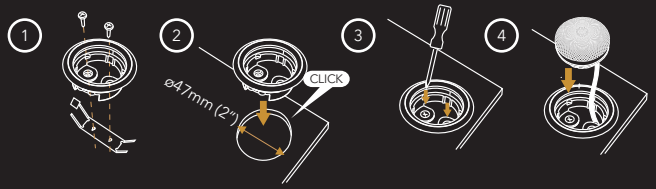


Alto Tweeter

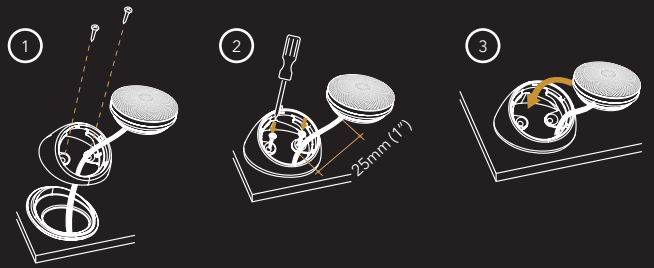


MT450 Tweeter and Crossover Mounting

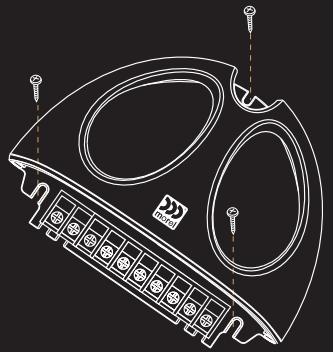
MT450 Flush Mount



MT450 Surface Mount



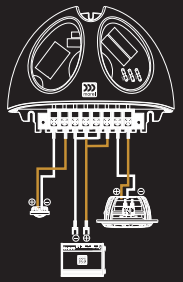
Crossover mounting



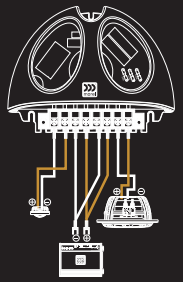
Crossover Connections

2-WAY Systems Crossover

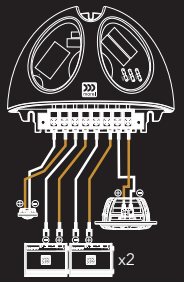
① Standard wire connection/ With bridged jumpers



② Bi wire connection/ No bridged jumpers

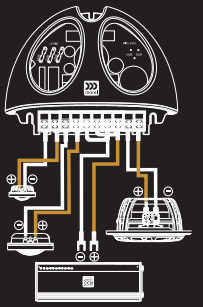


③ Bi Amp connection/ No bridged jumpers

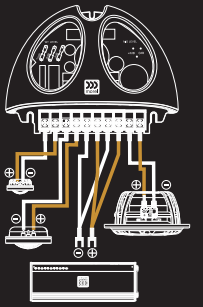


3-WAY Systems Crossover

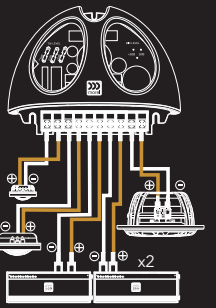
① Standard wire connection/ With bridged jumpers



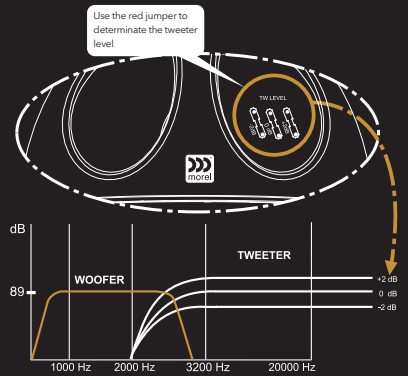
② Bi wire connection/ No bridged jumpers



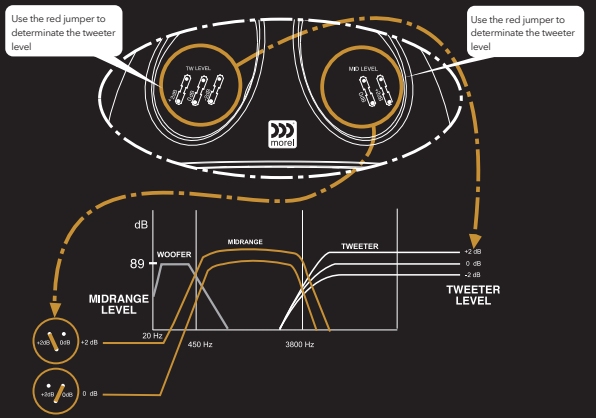
③ Bi Amp connection/ No bridged jumpers



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.ft³)	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 (1.25)	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

Reccomended 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

Elate Carbon: 52A, 62A, 92A

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

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

* When used with an active subwwofer system.

Wishing you many years of sound enjoyment!

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