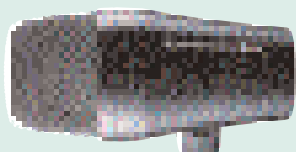





evolution e 900 Series – Tips for Miking Instruments (I)

e 902



In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone so that the interfering sound source is located in the angle area of the highest cancellation of the microphone (approx. 180°).

Kick Drum




Positioning the microphone	Resulting sound	Commentary
	Much attack, little resonance, dry	Position the microphone at a distance of a few centimeters from the batter head.
	Less attack, much resonance, smooth, voluminous	Position the microphone at the level of the resonant head.
	Less attack	Position the microphone in the middle between the batter head and the resonant head. For less attack in all three positions, turn the microphone away from where the beater strikes.

e 904



In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone so that the interfering sound source is located in the angle area of the highest cancellation of the microphone (approx. 180°).

Drums



Positioning the microphone	Resulting sound	Commentary
	More fundamental, little overtones	Position on the drum: 3 – 5 cm above the batter head, the fundamental to overtones ratio can be adjusted by changing the angle of the microphone. The most balanced results are obtained at an angle of 30 – 60°.
	Less fundamental, many overtones	
		Use of a second e 904 for picking up the bottom head and the snares. NB: The lower microphone must be phase-reversed to avoid phase-cancellation effects due to the second microphone being on the other side of the snare drum.

e 905




In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone so that the interfering sound source is located in the angle area of the highest cancellation of the microphone (180°).

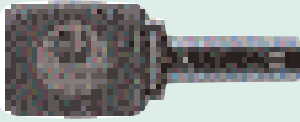
Snare drums, drums and percussion instruments

Positioning the microphone	Resulting sound	Commentary
	more fundamental, little overtones	Position on the drum: 3 – 5 cm above the batter head, the fundamental to overtones ratio can be adjusted by changing the angle of the microphone. The most balanced results are obtained at an angle of 30 – 60°.
	less fundamental, many overtones	




Snare pick-up using two microphones

		Use of a second e 905 for picking up the bottom head and the snares. NB: The lower microphone must be phase-reversed to avoid phase-cancellation effects due to the second microphone being on the other side of the snare drum.
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e 906



Loudspeaker of a guitar amplifier

Positioning the microphone	Resulting sound	Commentary
	Many trebles, aggressive sound	Microphone directed towards the dome of the loudspeaker.
	Less trebles, more lower mids, smoother sound Balanced, natural sound	Good starting position: Microphone directed towards the middle between dome and edge of the loudspeaker. If necessary, turn the microphone by approx. 30° towards the edge.
	Less trebles, more lower mids, smoother sound	Microphone directed towards the edge of the loudspeaker.

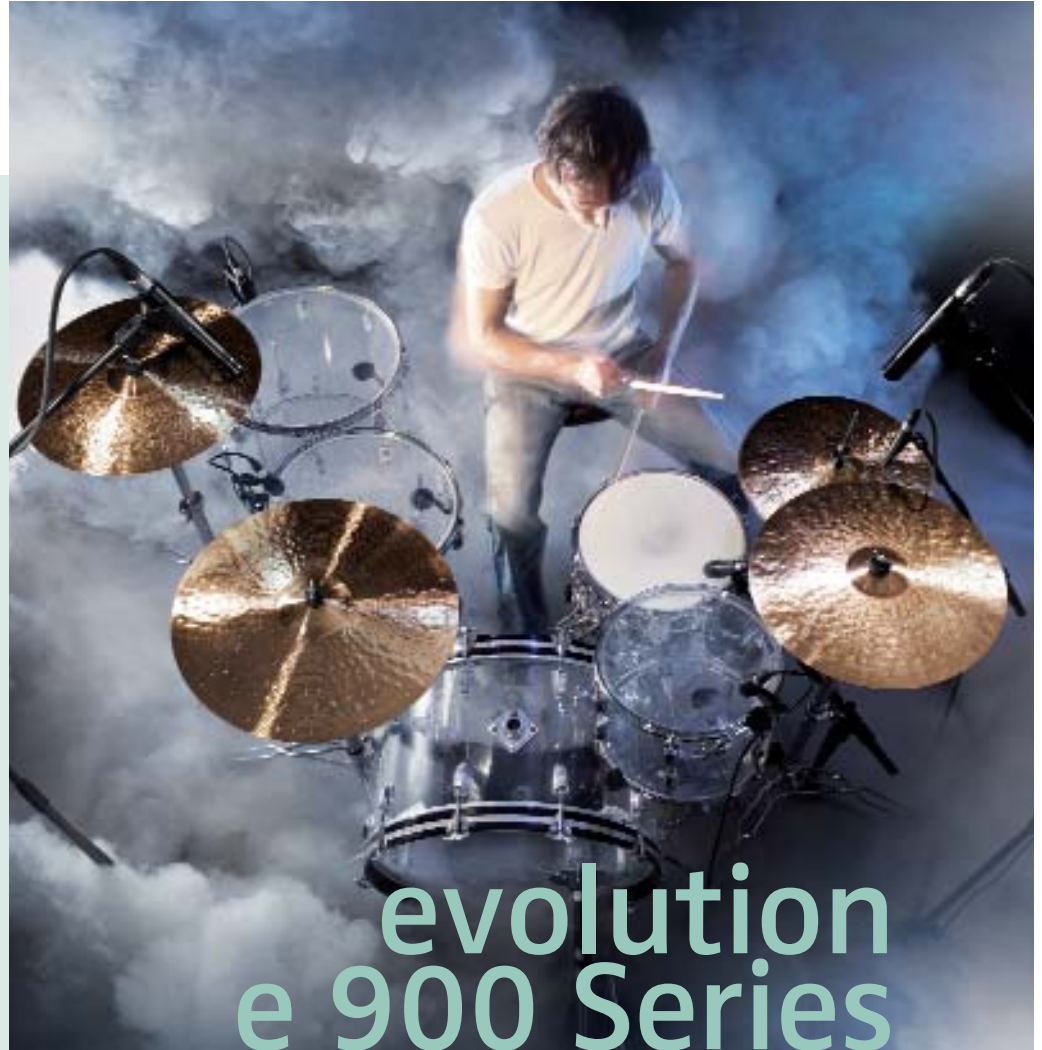
Drums

	Less fundamental, many overtones	Position on the drum: 3 – 5 cm above the drumskin, directed towards the center of the drumskin, the fundamental to overtones ratio can be adjusted by changing the angle of the microphone. The most balanced results are obtained at an angle of 30 – 60°.
	More fundamental, little overtones	

In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone so that the interfering sound source is located in the angle area of the highest cancellation of the microphone (approx. 120°).

Overview of microphone applications

Model	Application																			
	Vocals	Choirs	Studio, acoustic instruments	Orchestra	Brass/saxophone	Acoustic guitar	Acoustic bass	Guitar amplifiers	Bass amplifiers	Leslie	Piano/grand piano	Kick drums	Snare drums	Rack toms	Floor toms	Congas	Cymbals	Percussion	Overheads	
e 901										X	X	X								
e 902					X				X			X			X					
e 904					X								X	X	X	X			X	
e 905													X	X	X				X	
e 906			X					X					X	X	X	X			X	
e 908 B					X											X			X	
e 908 D													X	X	X	X			X	
e 914		X	X	X		X	X				X							X		X
e 935	X																			
e 945	X																			



Tips for Miking Instruments (II)

e 901





The frequency response of the e 901 ("half" cardioid pick-up pattern) is tailored especially for miking kick drums. The condenser boundary microphone is extremely rugged and has a dry and clearly defined low-bass response.

Kick Drum

Positioning the microphone

Resulting sound

Commentary

	<p>Much resonance, much attack.</p> <p>Less attack: Turn the microphone away from where the beater strikes.</p>	<p>Position the microphone at the bottom of the kick drum, approx. 10–20 cm from the batter head.</p>
	<p>The 901 is used for picking up the attack, the 902 for picking up the fundamental.</p>	<p>Combined with an e 902 positioned at the resonant head. The lower microphone must be phase-reversed to avoid phase cancellation effects due to the second microphone being on the other side of the drumskin.</p>







In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone in such a way that the interfering sound source is located in the angle area of the highest cancellation of the microphone (approx. 180°).

e 908



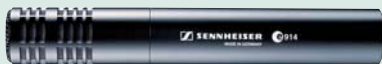
The four versions of this exceptionally vivid, cardioid condenser microphone guarantee optimum miking solutions. The e 908 D has been specially developed for drums and percussion. The e 908 B is designed for wind instruments, but its instrument clamp also makes it particularly suitable for drums with suspension systems or congas. The e 908 B ew has been specially designed for the wireless miking of saxophones, and is used in combination with an evolution wireless bodypack transmitter. The same applies to the e 908 T ew, which is the ideal solution for miking trumpets, flugelhorns and trombones.

Wind Instruments and Drums/Percussion

Positioning the microphone	Resulting sound	Commentary
	Reduced ambient noise	Use the MZH 908 B clamp to attach the microphone to the bell of the instrument. To reduce ambient noise (at the expense of the true "saxophone sound") direct the microphone into the bell (as illustrated).
	Clear, powerful sound	
	Balanced, natural sound	For a saxophone, the microphone should normally be directed partly towards the bell and partly towards the body of the instrument.
	More fundamental, little overtones	Position on the drum: 3–5 cm above the drumskin, directed towards the center of the drumskin, the fundamental to overtones ratio can be adjusted by changing the angle of the microphone. The most balanced results are obtained at an angle of 30–60°.
	Less fundamental, many overtones	
	Pronounced proximity effect	



In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone in such a way that the interfering sound source is located in the angle area of the highest cancellation of the microphone (approx. 180°).

e 914



This compact condenser microphone is the optimum choice for demanding applications that require a wide frequency response, a fast transient response and a high sound pressure level. The cardioid microphone with its outstandingly vivid and clear sound is designed primarily for miking cymbals and hi-hat and for use as an overhead microphone for drum sets, but it is just as ideally suited for percussion, woodwind and string instruments as well as for high-quality home recording. The e 914 has a three-position sensitivity switch and a bass filter switch.

Drumkit

Positioning the microphone	Resulting sound	Commentary
	Natural, clear sound	Positioning the microphone a few centimeters above the outer edge of the hi-hat aiming down gives a natural, clear sound. If necessary, remove unwanted low frequency signal portions by high pass filtering. Attention: When closing the hi-hat, a strong air current is created on the edge. If the microphone is positioned too close to the edge, interfering noise due to the air current can occur.
	Clear stereo reproduction	Good starting position for live miking applications. If the overhead microphones are only used for picking up the cymbals, unwanted signal portions can be attenuated by high pass filtering.

In order to prevent interference due to crosstalk between adjacent sound sources, try to position the microphone in such a way that the interfering sound source is located in the angle area of the highest cancellation of the microphone (approx. 180°).