MERIDIAN

Jaguar XF Sportbrake

Meridian in-car audio

The Meridian Audio Systems for the Jaguar XF Sportbrake

From the very beginning, Meridian has created audio systems that combine innovative technology with the most natural and fundamental of approaches: referencing the qualities of their music reproduction to the sound of the original musical performance.

Meridian's innovative technologies have set the benchmark for others to follow, creating entertainment systems that deliver exquisite power and performance at an unmatched level of quality.

The collaboration between Jaguar and Meridian for the XF Sportbrake has led to the development of a choice of two in-car audio systems, individually designed without compromise for the vehicle cabin. Both deliver exceptional, distortion-free sound, with DSP-tuned performance providing crystal-clear highs and full, deep bass. Drivers and passengers alike experience the very highest quality – the kind of sound and performance expected from a top-line home entertainment system.

The Meridian Sound System delivers natural and realistic stereo sound, using Meridian Cabin Correction to tune the audio system precisely to the acoustics of the vehicle cabin. This preserves the natural rhythm of the music and ensures perfect clarity and definition for every instrument and vocal.

The Meridian Surround Sound System delivers a truly realistic concert-like performance for each passenger. Using Trifield technology to create an all-enveloping soundfield, the system places the listener at the heart of the musical experience.

System Sources

- AM, FM, DAB, DAB+ & DMB radio
- Analogue & digital TV
- HD & Sirius Satellite Radio in North America
- iPod, USB, Bluetooth support – AAC, MP3 and WMA connection via USB
- USB audio & video playback
- 3.5mm analogue auxiliary input
- CD & DVD playback
- Bluetooth interface & audio streaming
- Virtual CD changer stores up to 10 CDs on hard drive
- Hard disk-based navigation system
- Speech recognition

System Highlights

Choice of two Meridian audio systems, designed specifically for the Jaguar XF Sportbrake

12-channel, 11-speaker stereo Meridian Sound System option

15-channel, 17-speaker Meridian Surround Sound System option

High output, distortion-free sound with full frequency range

Deep bass extension and clear, clean highs

Stable, full stereo imaging from any position in the vehicle

Maintains maximum digital audio detail from all sources

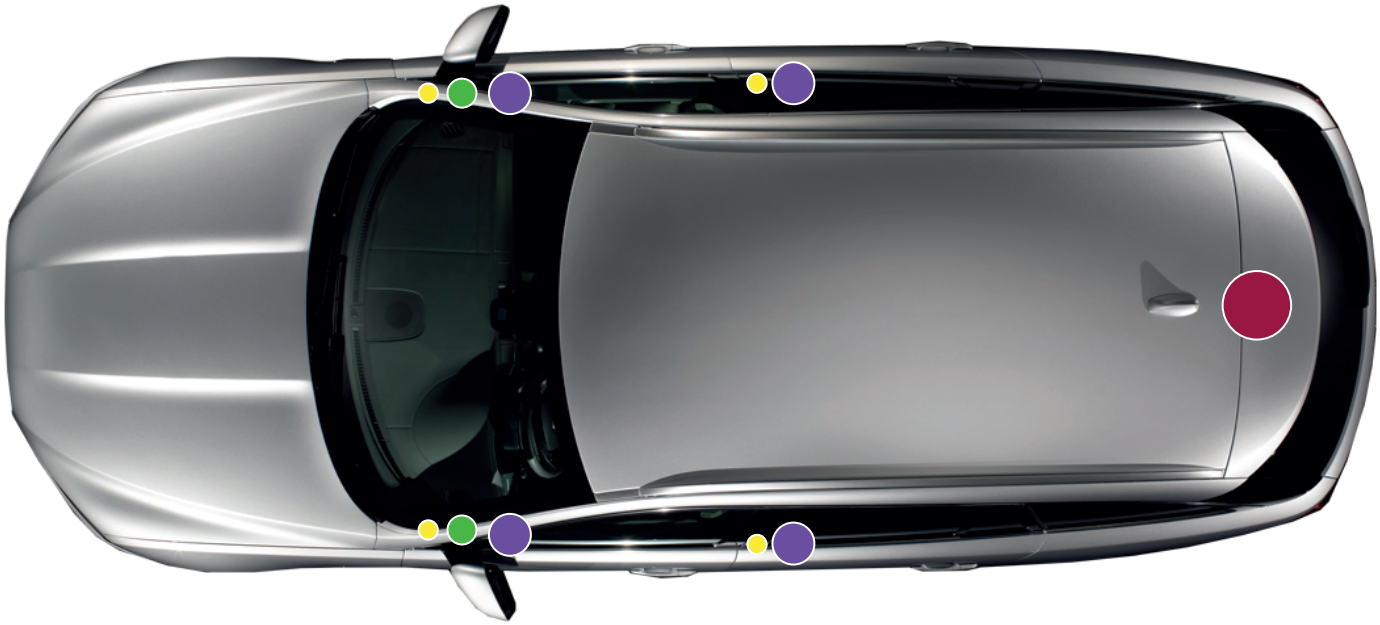
Automatic volume compensation for changes in ambient noise levels

Smooth, full frequency range sound, tuned to cabin acoustics

Meridian Audio Limited

www.meridian-audio.com

Meridian Sound System



- **12-channel stereophonic system**
- **11 loudspeaker drivers optimally positioned throughout the vehicle**
- **380W, 0.2% THD amplification**

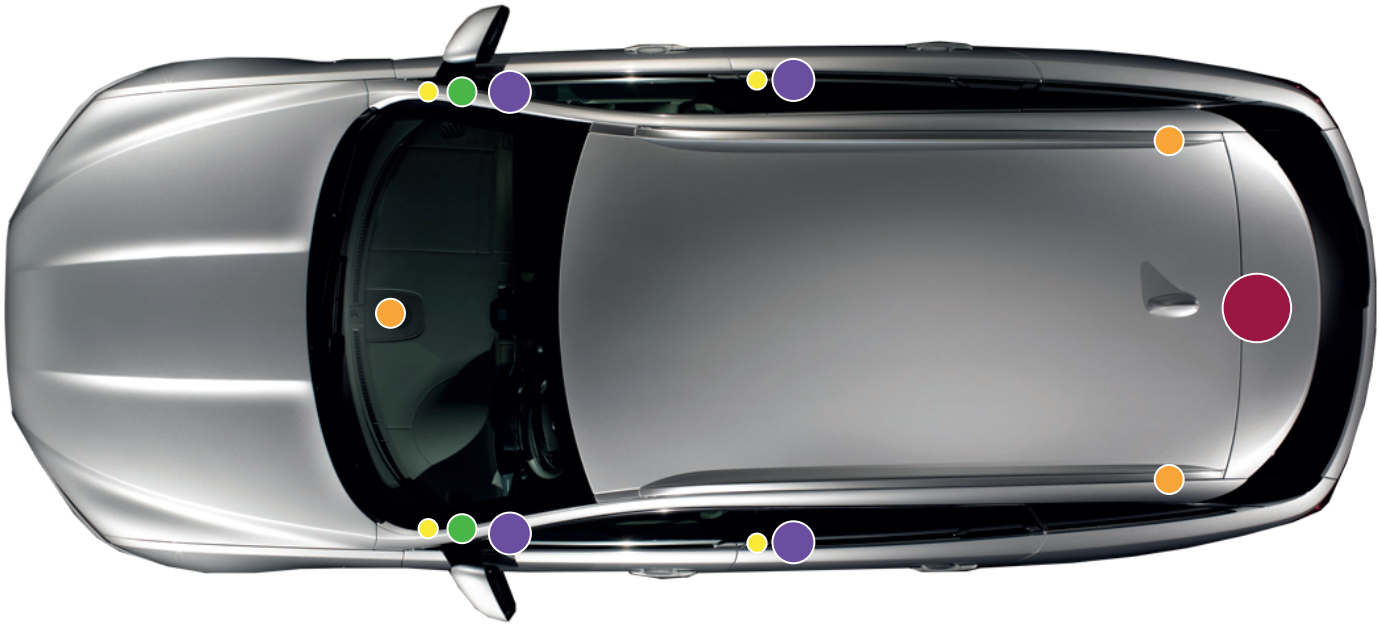
Tweeter 25mm

Midrange 100mm

Bass 168mm

Subwoofer 250mm

Meridian Surround Sound System



- **15 channels of stereo and surround**
- **17 loudspeaker drivers optimally positioned around the vehicle interior**
- **825W, 0.2% THD amplification**

Tweeter 25mm

Midrange 100mm

Coaxial Midrange 100mm/Tweeter 25mm

Bass 168mm

Subwoofer 250mm

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Technologies

Meridian DSP Technology

Traditional loudspeaker systems rely on relatively high-powered amplifiers driving a passive crossover to feed the appropriate speakers. This approach wastes a great deal of energy as heat; the audio quality is compromised as components are built for power-handling and not for quality; and the crossover characteristics are difficult to optimise.

Meridian takes a very different approach, based on years of experience with DSP technology. Power-efficient active DSP crossovers are individually tailored to each loudspeaker, for maximum efficiency, creating crossover characteristics impossible to produce in the traditional way, and delivering the performance of conventional speakers many times the size.

Meridian DSP technology provides multiple benefits, including delivering clean and clear distortion-free sound at all levels, and providing significant performance enhancement with smoother frequency response, faster transients and deeper bass.

Trifield

In most audio systems, and especially in-car, the sound is optimised for one listening position – listeners in other seating positions find the sound unbalanced. In addition, the stereo image is often pulled into the loudspeakers. The common solution is to add a centre speaker fed with a mix of left and right channels – but this simply reduces the stereo width and does not solve the problem. Meridian's exclusive Trifield process delivers a full, wide and enveloping soundfield with listener-position independence, giving all vehicle occupants a full, stable stereo experience wherever they are seated. The sound comes from around the listener, instead of being pulled into the loudspeakers.

Meridian Digital Dither Shaping

Modern digital audio systems take in many different sources that must be digitally converted into a common format to maintain the best possible sound. If poorly carried out, this conversion and subsequent processing can result in the loss of important musical detail. Such loss is particularly noticeable in quiet passages, where subtlety can be hidden by noise and even ruined by distortion.

With Meridian Digital Dither Shaping, digital signal changes are made smooth and seamless throughout the system, maintaining maximum detail and ensuring maximum quality from all sources. Meridian Digital Dither Shaping is employed whenever a digital process is performed.

Meridian Cabin Correction

The common approach to overcoming problems with difficult acoustic spaces (such as vehicle cabins, which suffer resonances, particular at low frequencies) is simply to use more power. However, this makes the listening experience even worse, creating a "boomy" effect. Meridian DSP provides a superior solution. Derived from Meridian's ground-breaking Room Correction technology, Meridian Cabin Correction is based on a detailed acoustic analysis of the car interior. The cabin is a defined, fixed environment and is thus ideal for this approach. Using digital signal processing, Meridian Cabin Correction identifies resonances and constructs precise digital filters to smooth out any deficiencies. It's a gentle yet accurate technique that balances the reverberation time at critical frequencies.

Meridian Cabin Correction delivers smoother, more natural sound and improved imaging. It minimises 'muddiness' and maximises definition and timing accuracy, adding clarity and definition to every instrument.

Dynamic Volume Control

The interior noise level in a vehicle can vary dramatically. Different road surfaces and speeds, the weather, and the opening of windows or a sun-roof, for example, can dramatically affect the ambient noise level and thus impact listening enjoyment. It's all too easy for the music to be drowned out or suddenly to become too loud.

Dynamic Volume Control solves this problem elegantly and effectively, by measuring the cabin noise level and adjusting the system volume to compensate for changes. Adjustments are made slowly for smooth, unnoticeable operation. As a result, music maintains a consistent volume despite changes in ambient noise and vehicle occupants always hear audio clearly whatever the driving environment.

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Loudspeakers

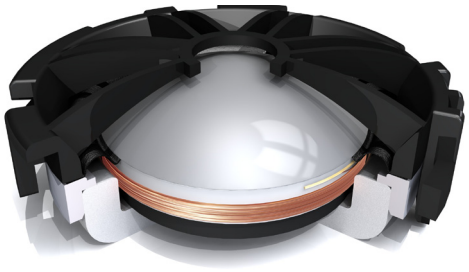
Drivers were specifically designed and developed by Meridian engineers in collaboration with Jaguar's suppliers. Materials were selected for low mass but also for their stability, with extensive use of advanced mineral-filled composites. The overall driver and enclosure parameters were designed to minimise the requirement for compensation and filtering in the electronics, for a smooth, natural performance, with full, tight bass and clear high frequency (HF) response.

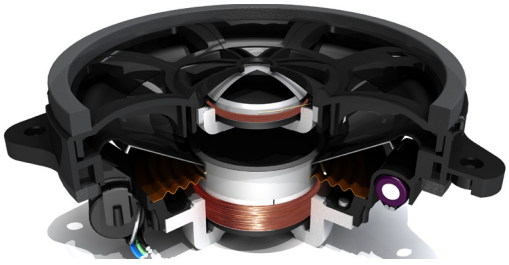
Tweeter

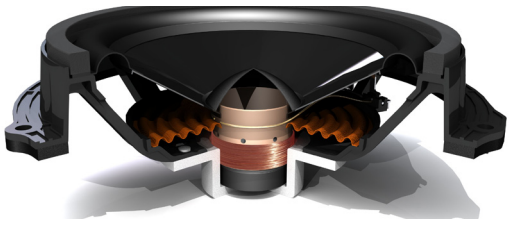
- Ultra-light aluminium alloy dome for maximum efficiency and extended HF response
- Low moving-mass design for superb transient handling and negligible distortion
- Powerful neodymium magnet assembly for maximum efficiency and linearity, and minimum weight.

Bass & midrange

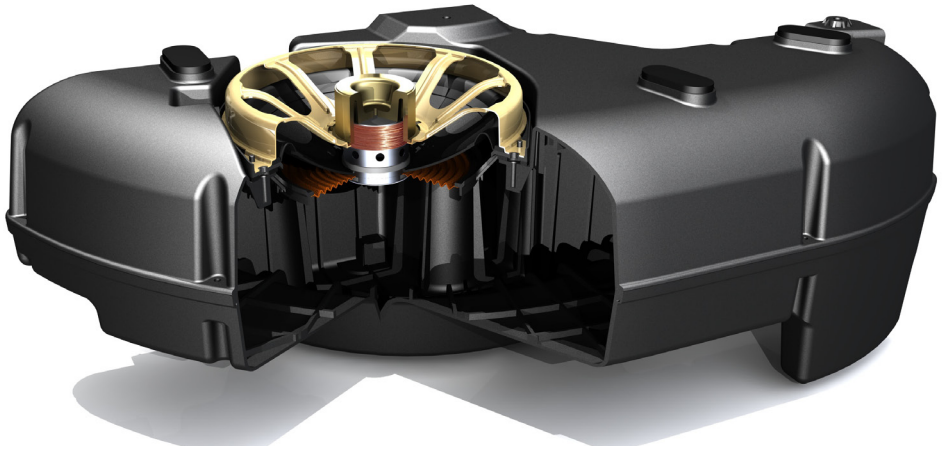
- Mica-filled polypropylene cones for stiffness and damping
- Low moving-mass design for superb transient handling and negligible distortion
- Powerful neodymium magnet assemblies for maximum efficiency and linearity, and minimum weight
- Tight, dynamic and precise sound, with deep bass and excellent midrange reproduction







Above right & below: the four types of loudspeaker driver used in the Jaguar XF (not to scale). Top to bottom: 25mm HF, 100/25mm coaxial, 165mm LF, cutaway of the 250mm subwoofer assembly.



Jaguar XF Sportbrake Outline Specifications

25mm Tweeter

Nominal Impedance:	4Ω
Power Handling RMS:	25W
Power Handling Max:	50W
Sensitivity (1W/1m):	88 dB ± 2dB
Resonance Frequency:	1.4 kHz
Operating Freq Bandwidth:	3 kHz – 20 kHz
THD @ 10W:	<1%

100mm Midrange

Nominal Impedance:	2Ω
Power Handling RMS:	70W
Power Handling Max:	100W
Sensitivity (1W/1m):	87 dB ± 2dB
Resonance Frequency:	115 Hz
Operating Freq Bandwidth:	200 Hz – 5 kHz
THD @ 10W:	<2%
Linear Excursion:	± 2mm

165mm Bass

Nominal Impedance:	2Ω
Power Handling RMS:	70W
Power Handling Max:	100W
Sensitivity (1W/1m):	89 dB ± 2dB
Resonance Frequency:	60 Hz
Operating Freq Bandwidth:	60 Hz – 3 kHz
THD @ 10W:	<2%
Linear Excursion:	± 3mm

250mm Subwoofer

Nominal Impedance:	2 x 2Ω
Power Handling RMS:	2 x 70W
Power Handling Max:	2 x 100W
Sensitivity (1W/1m):	88 dB ± 2dB
Resonance Frequency:	50 Hz
Operating Freq Bandwidth:	30 Hz – 100 Hz
THD @ 10W:	<2%
Linear Excursion:	± 10mm
Enclosure Volume:	32 litres

Amplification

Type:	Class D with feedback.
Channels:	12 or 15.
Power Rating (0.2% THD):	380W or 825W