

Technical Training
Model Year Update

09NP-XK: 2009 Model Year XK / XKR



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ACRONYMS, ABBREVIATIONS AND SYMBOLS

The following acronyms, abbreviations and symbols are used in this course book. The majority of them conform to J1930 standards.

Acronym, Abbreviation or Symbol	Definition or Description
ATC(M)	Automatic Temperature Control (Module)
AUU	Auxiliary USB Unit
CAN	Controller Area Network
CJB	Central Junction Box
GTR	Global Technical Reference
IDS	Integrated Diagnostic System
IMS	Instant Mobility System
LED	Light-Emitting Diode
MOST®	Media Oriented Transport System
PID	Parameter Identification Data
TSD	Touch-Screen Display
USB	Universal Serial Bus

OVERVIEW

The Jaguar XK / XKR model line has been updated for the 2009 Model Year with the standard and optional features listed below.

Audio System

Standard equipment:

- 525-watt Premium Surround Sound System w/Pro Logic II
- Sirius Satellite Radio
- Portable Audio Interface

NOTE: In some publications, the Portable Audio Interface may be referred to as the Auxiliary USB Unit (AUU).

Optional features:

- Bowers & Wilkins (B&W) premium signature speaker system
- High-output, low-distortion Kevlar® midrange speakers
- Specially designed aluminum-dome tweeters

Climate Control System

Standard equipment:

- Pollution Sensor

NOTE: In some publications, the Pollution Sensor may be referred to as the Air Quality / Smog Sensor.

Body Systems

Standard equipment:

- Powerfold Mirrors
- Front Parking Aid

Chassis Systems

Optional features (supercharged models only):

- Alcon® Performance Brakes

AUDIO SYSTEM

The standard 2009 MY premium audio system comprises the following:

- Alpine 5.1 6-channel, 525-watt Surround Sound System
- 8 system speakers, including subwoofer
- Dolby® Pro Logic II amplifier
- In-dash 6-disc CD player
- Portable Audio Interface
- Sirius Satellite Radio (subscription required)

Optional Bowers & Wilkins Speaker System

For the 2009 model year, the Bowers & Wilkins 525-watt signature speaker system is made available as an option on all vehicles in the XK / XKR model line. The system includes high-output, low-distortion Kevlar® midrange speakers and specially designed high-frequency performance aluminum tweeters.

Jaguar has worked in collaboration with Bowers & Wilkins' engineers on speaker mountings, angles and final tuning calibration to produce a speaker system specifically designed for the interior contours of XK vehicles. There are different acoustic response curves for the coupe and convertible models (to account for the effect of lowering the convertible top).

Kevlar Speakers



Aluminum Tweeter



PORTABLE AUDIO INTERFACE

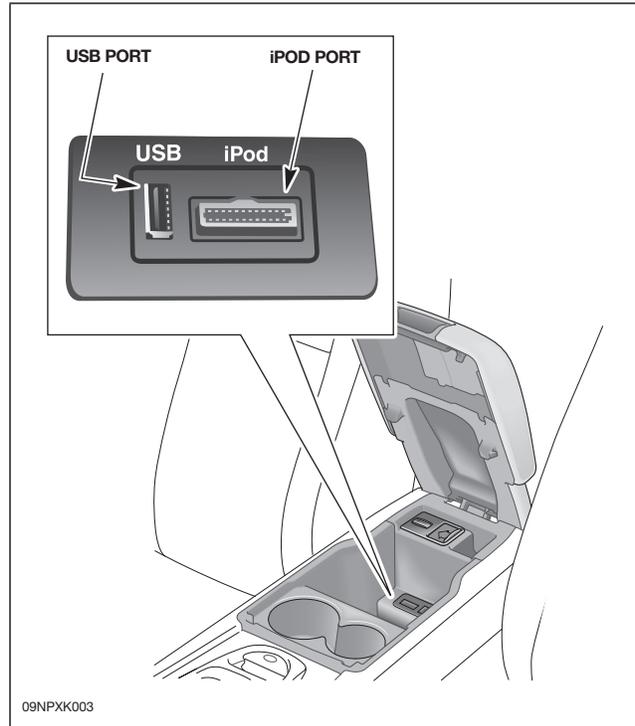
The portable audio interface allows for the connection, control and playback of a range of portable audio devices through the vehicle’s audio system. The interface supports all iPod generations and USB MP3 player / mass storage devices available at time of writing, including the 3rd & 4th generation iPod Photo, iPod Nano and the 5th generation models with a storage capacity up to 256 GB.

NOTE: In some publications, the Portable Audio Interface may be referred to as the Auxiliary USB Unit (AUU).

Component Description

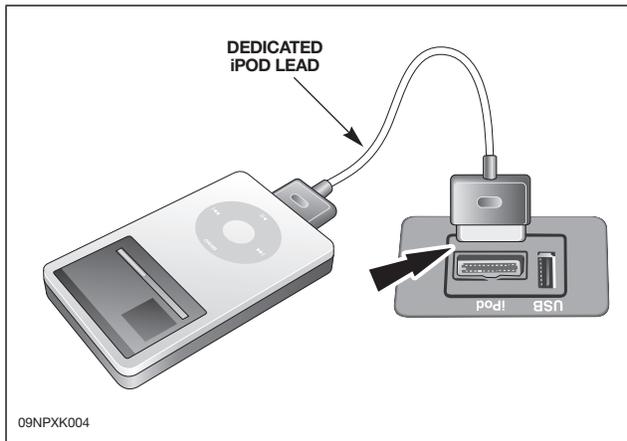
Portable Audio Unit Docking Station

The portable audio unit docking station is mounted in the center console.



NOTE: The docking station is also referred to as the auxiliary input panel in the GTR workshop manual.

Connecting an iPod



A dedicated iPod lead is supplied with the Portable Audio Interface. Plug in the iPod carefully to protect the connector pins from damage.

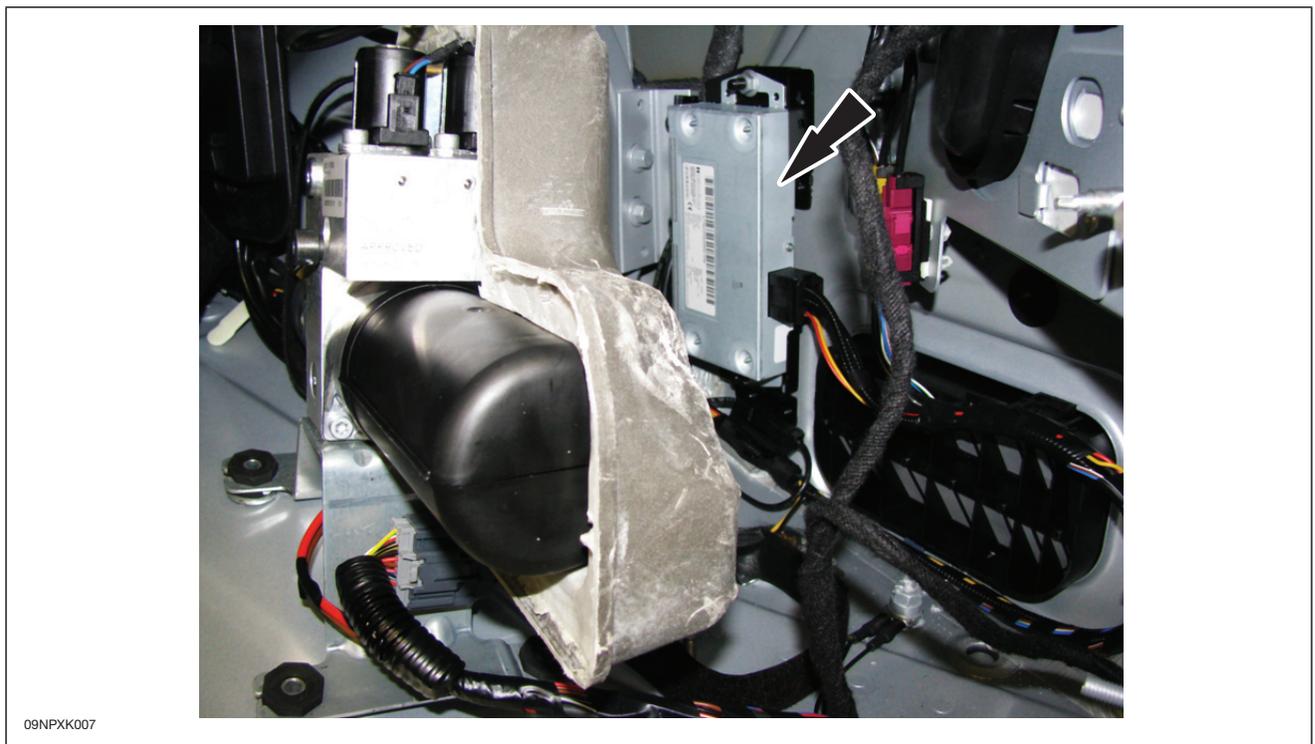
Connecting a USB Device



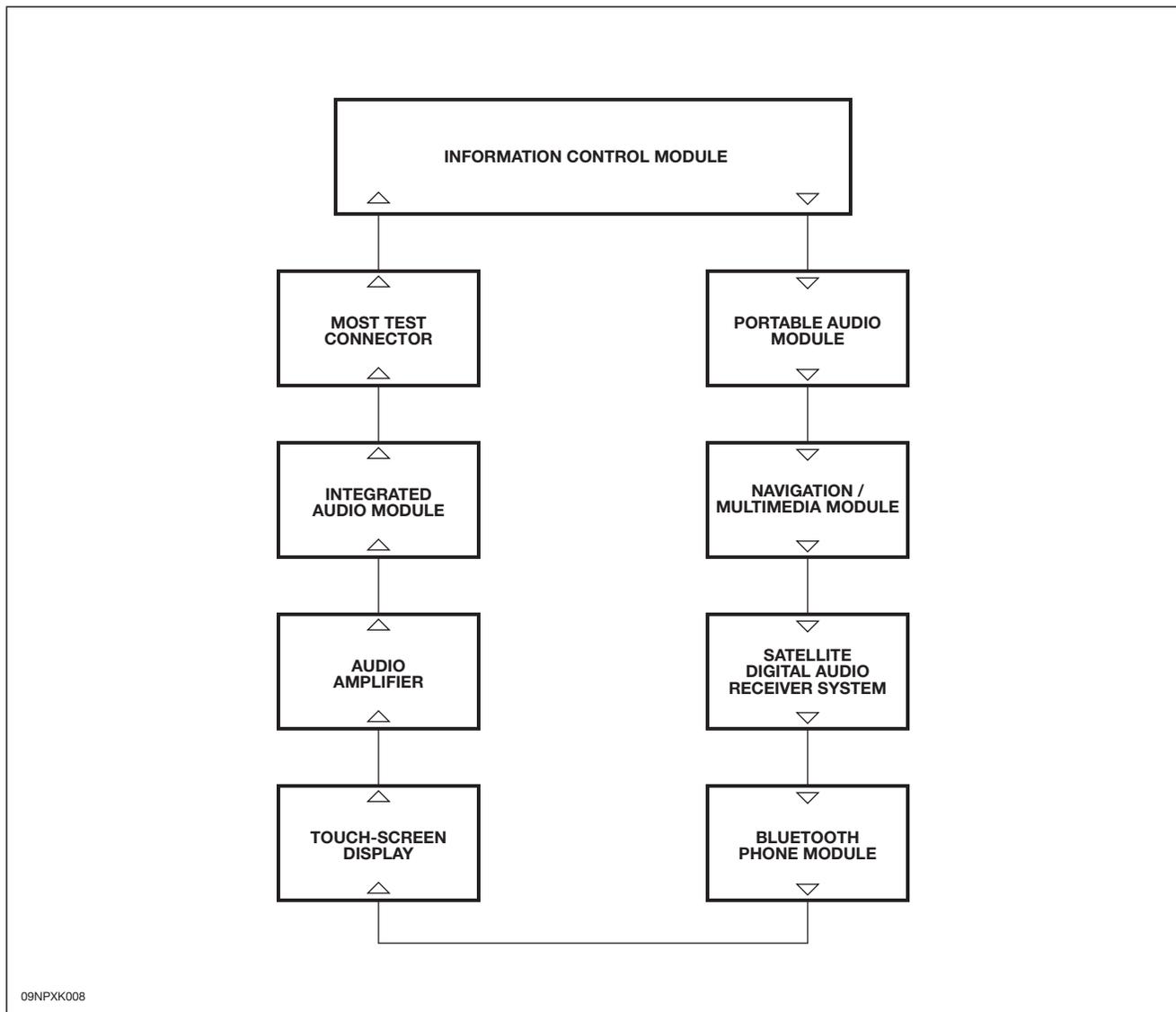
NOTE: It is recommend that the USB device contain music files only. The presence of other file types will slow the automatic indexing of files.

Portable Audio Module

The Portable Audio Module is located in the right rear of the trunk, behind the convertible top hydraulic pump when fitted. In the photograph, the convertible top hydraulic pump has been moved in order to view module location.



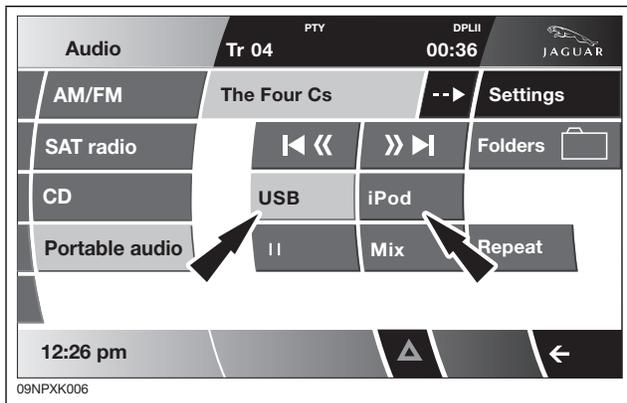
The Portable Audio Module communicates on the MOST® Ring.



Principles of Operation

Operation of portable audio devices is controlled from the Touch-Screen Display (TSD). For safety reasons, the normal control interface of the portable device is disabled when it is plugged into the docking station, and it can only be controlled from the TSD.

From the Audio 'Home' screen, select 'Portable audio'. The touch-screen will display the option for 'USB' or 'iPod'.



An iPod and a USB device can be connected simultaneously to the portable audio docking station. Whichever device is connected first will be the active device. The operator can switch between devices using the TSD; select 'iPod' or 'USB'. When switching between devices, play will resume from the previous point.

NOTES:

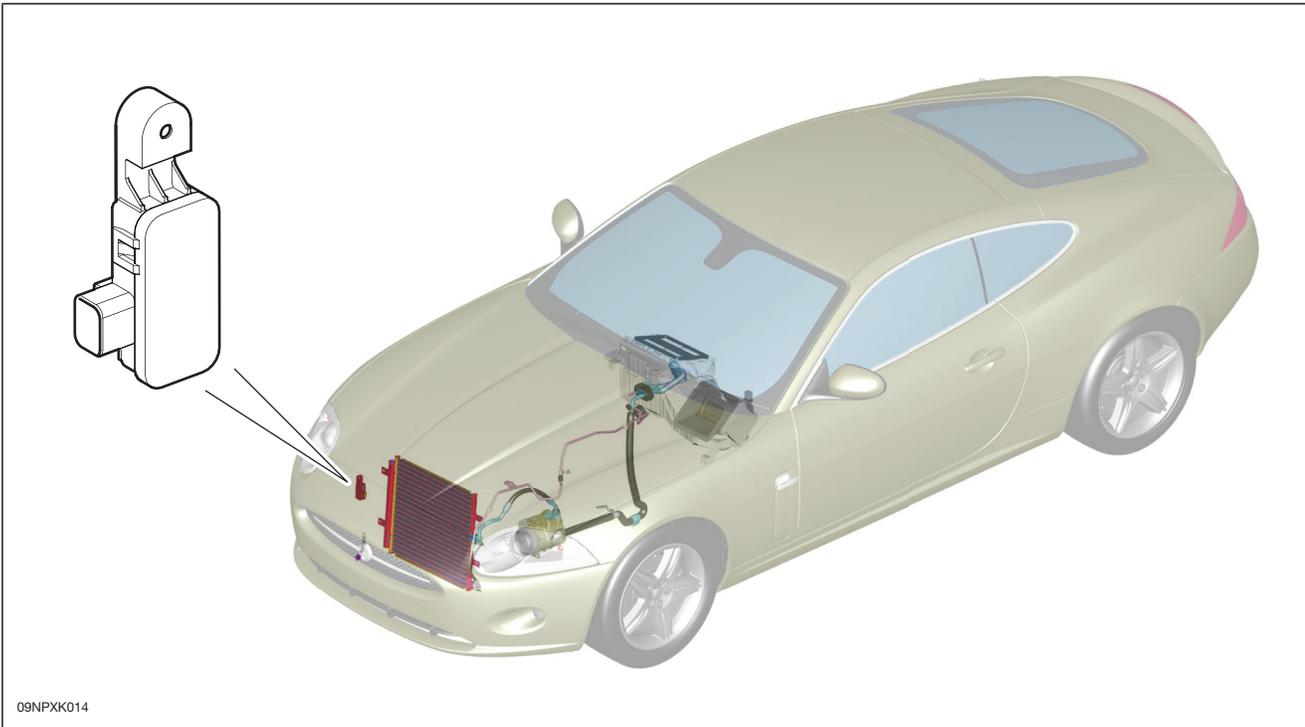
- USB hub adapters that link more than one USB device together are not supported.
- Devices connected to the iPod and USB ports will be charged while connected.
- The maximum charging current supplied is 500mA.
- Devices that are fully discharged will not play.

For more Portable Audio detailed function and operation information, refer to the Audio section of the Owner's Handbook.

POLLUTION SENSOR

From 2009 MY onward, all XK / XKR vehicles are fitted with a pollution sensor as part of the Automatic Temperature Control (ATC) System.

NOTE: In some publications, the Pollution Sensor may be referred to as the Air Quality / Smog Sensor.



The pollution sensor (mounted RH front of A/C condenser) monitors levels of smog-producing contaminants – which include hydrocarbons and oxidized gases such as nitrous oxides, sulfur oxides and carbon monoxide – from the ambient air in front of the vehicle. The Automatic Temperature Control Module (ATCM) uses pollution sensor input signals to control the air intake source. The recirculation (fresh/recirc) door is opened or closed in direct response to changes in pollution levels in order to reduce pollution contaminants entering the cabin.

Pollution Sensor Strategy

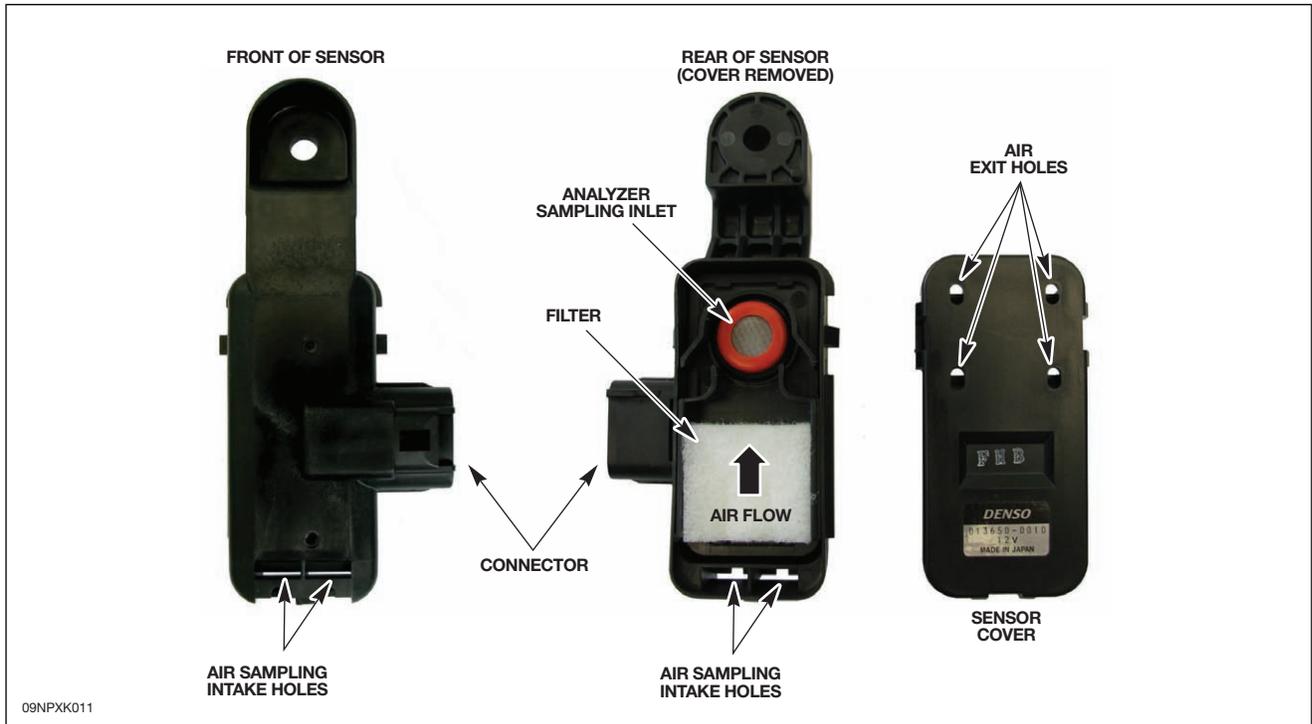
- Only active while in ATC AUTO mode and is fully automatic
- Can be overridden by manual selection of the air source using the recirculation control switch below the Touch Screen Display (TSD)
- Sensor sensitivity response levels can be adjusted from the TSD

Component Description

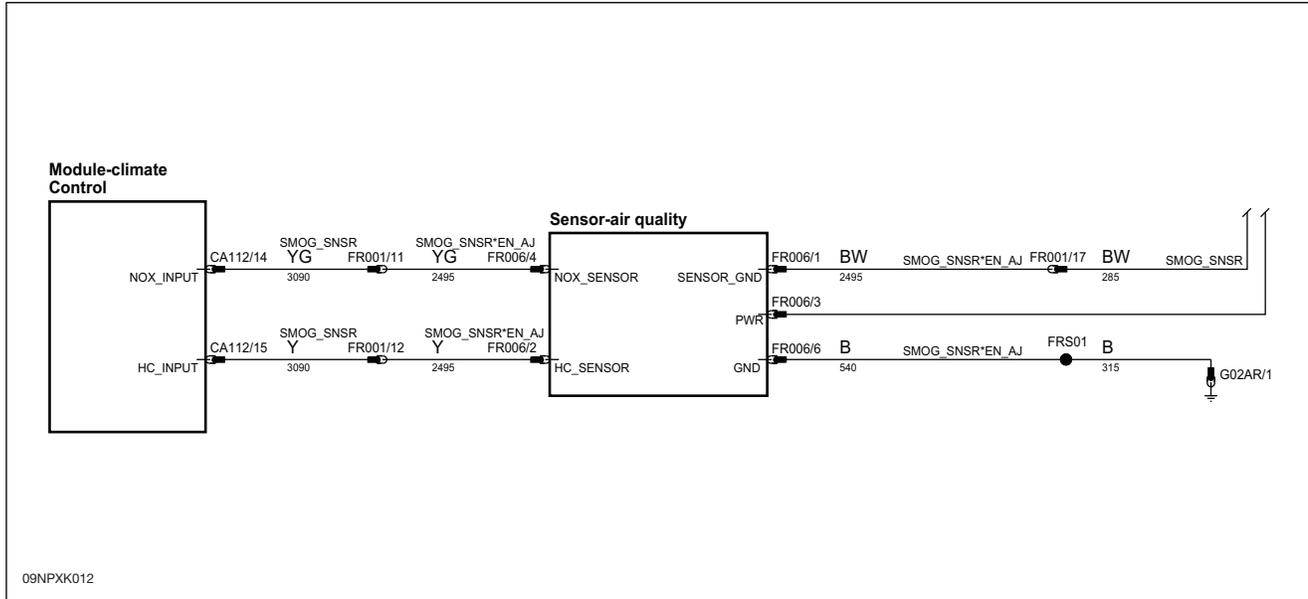
Pollution Sensor

The pollution sensor relies on the continuous airflow over the condenser to draw ambient air to sample for contaminant levels. Air is drawn through sampling holes on the bottom front of the sensor.

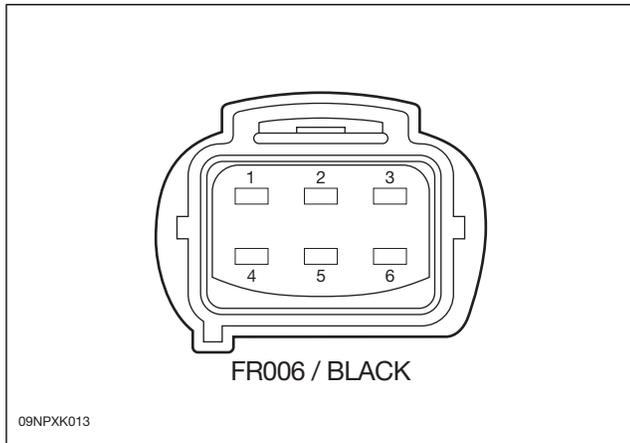
NOTE: The sensor is directional and must be oriented with the front facing forward for proper operation.



The pollution sensor is powered by an ignition-controlled voltage feed from the central junction box (CJB) and provides separate input signals for hydrocarbon and oxidized gas levels to the ATCM.



Pollution Sensor Electrical Connector



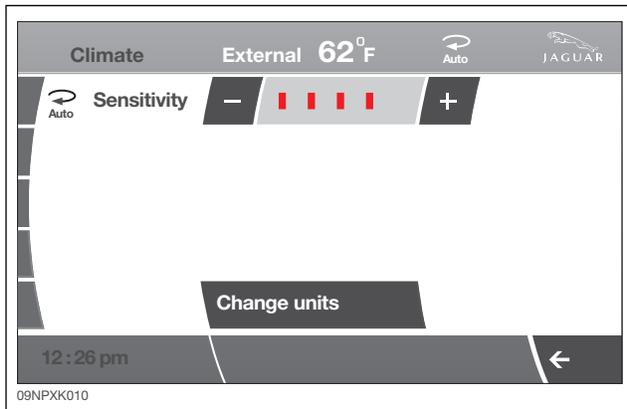
Pin	Color	Function
1	BW	Sensor Ground
2	Y	Inactive: 5V from ATCM Active: pulls voltage down to 0V
3	WB	CJB Ignition switched power
4	Y	Inactive: 5V from ATCM Active: pulls voltage down to approx. 2.8V
5	—	Not used
6	B	Ground

Principles of Operation

The sensor's sensitivity is adjustable. The sensitivity setting changes the threshold for pollution level increase over a base pollution level. When the threshold is exceeded, air recirculation is switched on (the recirc door closes). The recirc door remains closed either for a timed period or until the pollution levels decrease (whichever is sooner). Once the level of pollutants decreases below the threshold, air recirculation will switch off.

Sensor Sensitivity Settings

Sensor sensitivity can be adjusted using the TSD. From the TSD Climate menu, select 'Settings' to access the 'Auto' Sensitivity adjustment screen. Increase or decrease the sensitivity by pressing the '+' or '-' buttons.



Diagnostics

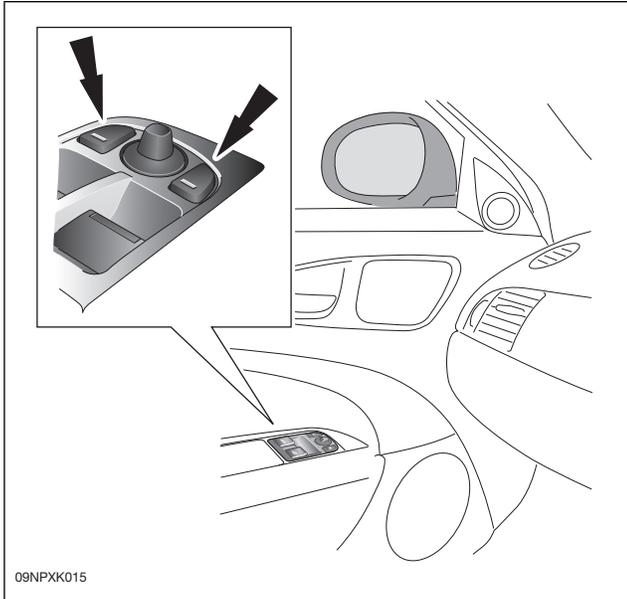
- Sensor fault codes are stored in the ATCM and can be accessed using IDS
- If there is a fault with the sensor, the ATCM disables automatic operation of the recirculation door
- Pollution sensor Parameter Identification Data (PIDs) can be monitored using IDS

MIRROR POWERFOLD

Power mirror foldback is a standard feature starting with the 2009 model year. Mirror foldback can be operated manually or automatically when the vehicle is stationary or moving at a speed of 20 km/h (12 mph) or less.

Manual Operation

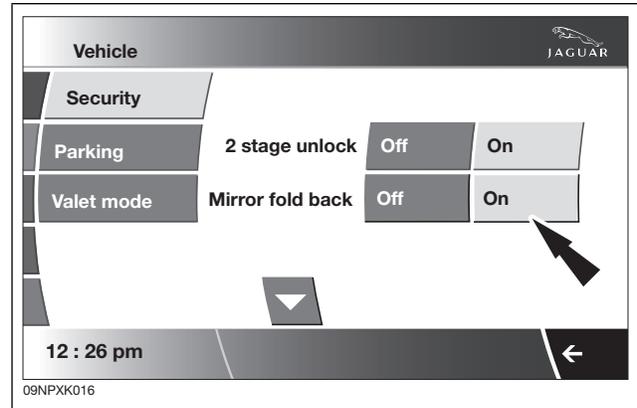
Mirror foldback is initiated by pressing then releasing the Left and Right mirror select buttons at the same time.



The first press of the mirror select buttons causes the two door mirrors to turn inwards to the folded position and stop. A further press of the mirror select buttons causes the door mirrors to turn outwards to the unfolded position and stop. If the mirror select buttons are pressed while the door mirrors are moving, they stop and reverse direction until they reach their original position. If one of the door mirrors has been manually folded, the two door mirrors can be resynchronized by an inward and outward operating cycle.

Automatic Operation

Mirror foldback is selected and deselected from the 'Vehicle' menu of the Touch-Screen Display (TSD).



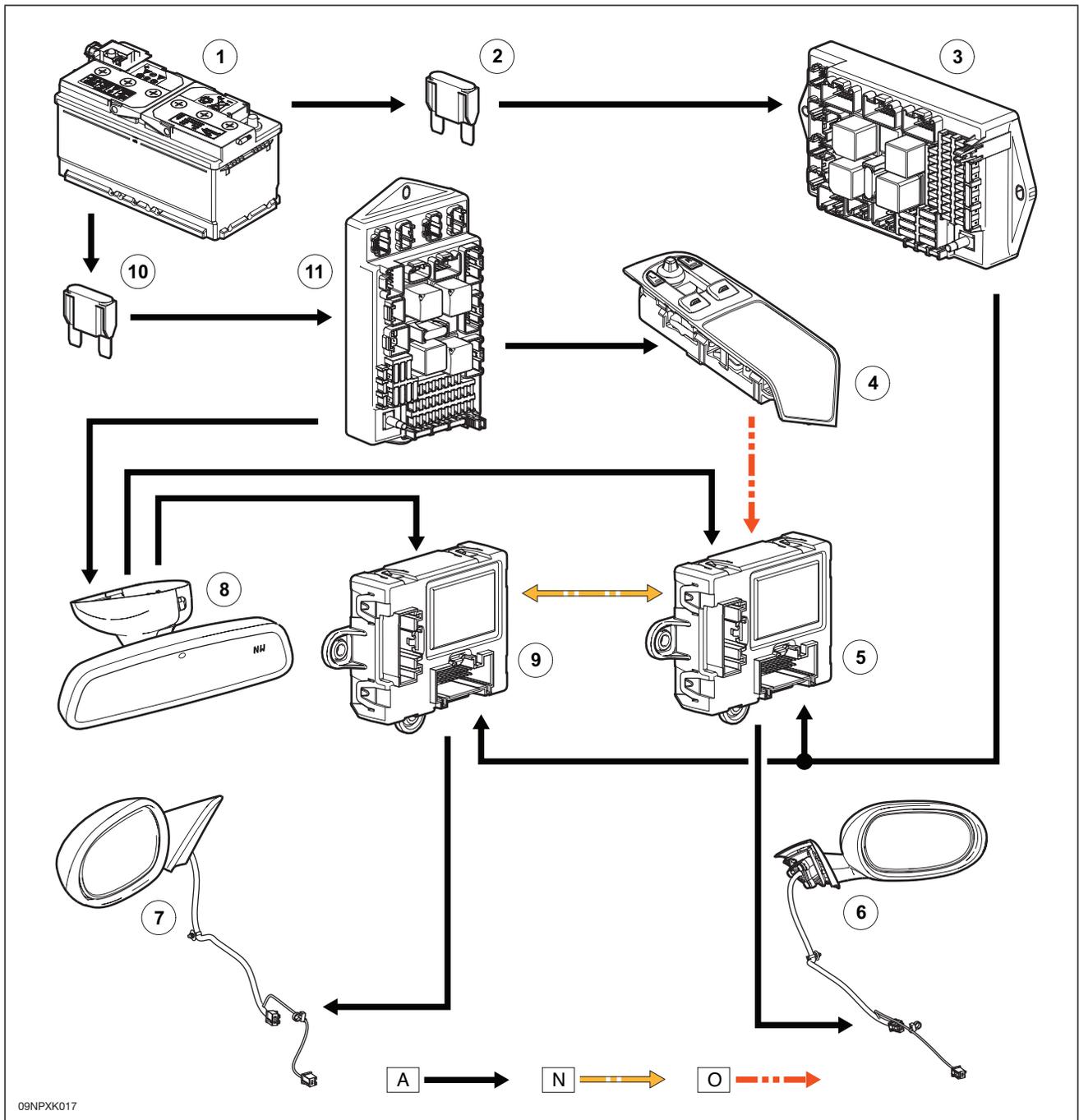
Automatic operation is synchronized with the exterior locking and unlocking of the vehicle (it does not work with interior locking and drive-away locking). If automatic operation is selected, the door mirrors fold when the vehicle is locked and unfold when the vehicle is unlocked.

NOTE: If the door mirrors have been folded manually, they will not unfold automatically even though automatic mode is selected on the TSD.

Thermal Cut-Out

A thermal cut-out feature is incorporated to protect the mirror foldback motors. Thermal cut-out only occurs with the door mirrors in the unfolded position, and resets after 5 minutes.

Mirror Control Diagram

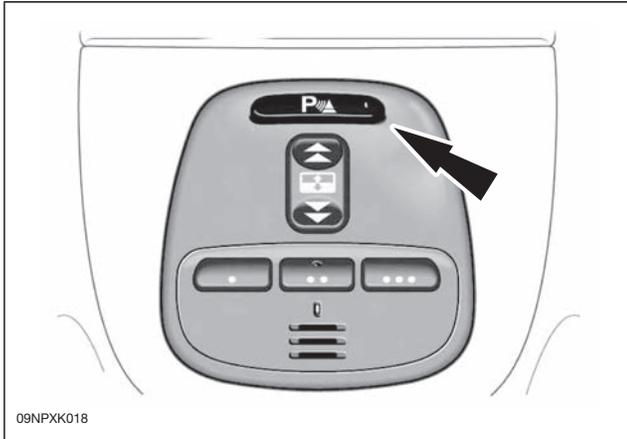


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- | | | |
|-------------------|--------------------------|----------------------------|
| A Hardwired | 3 Auxiliary junction box | 8 Interior rearview mirror |
| N MS CAN bus | 4 Door mirror switches | 9 Passenger door module |
| O LIN bus | 5 Driver door module | 10 Megafuse |
| 1 Battery | 6 Driver door mirror | 11 Central junction box |
| 2 Megafuse (175A) | 7 Passenger door mirror | |

PARKING AID

Front parking aid is a standard feature starting with the 2009 model year (rear parking aid has been standard equipment since the New XK was introduced in 2007). With both front and rear parking aid fitted, an activation/deactivation switch is installed in the overhead console.



Pressing the switch turns both the front and rear parking aid on or off. The integral switch warning indicator light will come on when the system is turned on, or if a fault is detected in the system.

The front parking aid provides an audible proximity warning when driving forwards or reversing.

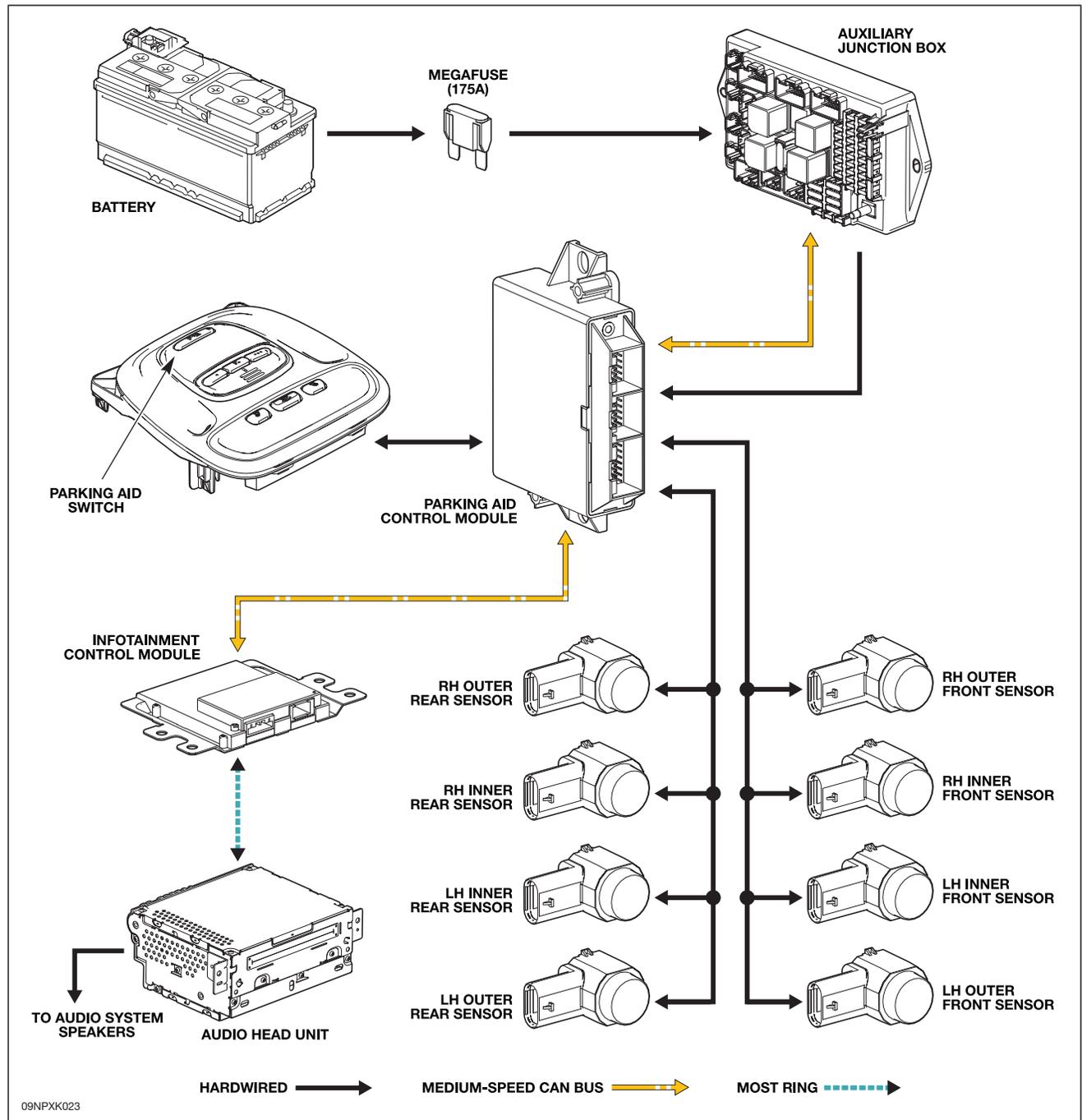
The front and rear sensors only operate within a fixed speed range in forward gears and are not effective when moving forwards above 15 km/h (9 mph). The parking aid system automatically switches off when the vehicle is moving above 15 km/h (9 mph) and requires to be switched on again when moving below 15 km/h (9 mph).

The entertainment system speakers broadcast audible warnings to the driver, and a visual representation is shown on the Touch Screen Display (TSD). If an obstacle is sensed by the front parking aid sensors, the front audio system speakers will sound. If an obstacle is sensed by the rear parking aid sensors, the rear audio system speakers will sound.

Diagnostics

The control module has a diagnostic connection via the medium speed CAN bus to enable faults to be retrieved using IDS. Additionally, an on-board diagnostic routine within the parking aid control module constantly monitors the system and alerts the driver to a system fault by emitting a 5-second continuous tone through the audio system speakers when the ignition is switched on and a gear is selected. The control switch LED will also illuminate.

Parking Aid Control Diagram



ALCON® PERFORMANCE BRAKES

Starting with the 2009 model year, an Alcon® performance brake package is available as an option on the supercharged vehicles in the model line. Alcon® is one of the world's foremost manufacturers of performance and motorsport brake systems.

The performance brake option package includes:

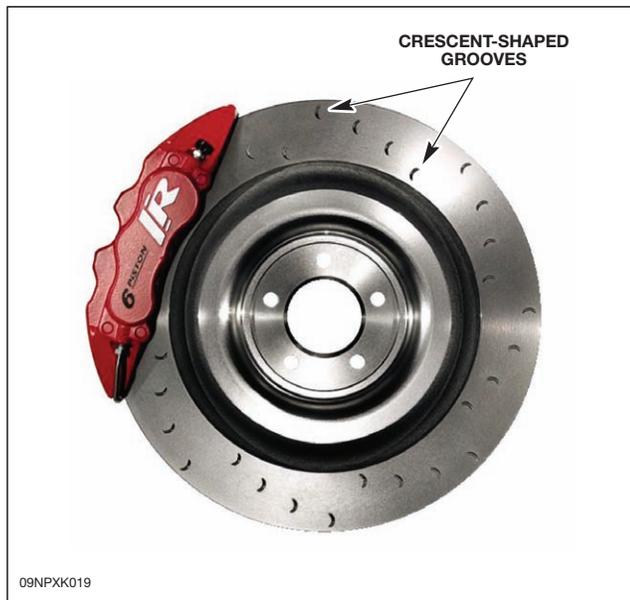
- 20-inch alloy wheels (required with option)
- Separate parking brake calipers (required with option)
- Instant Mobility System (IMS)
 - includes tire sealer and an inflator pump

NOTE: The performance brake option requires unique mounting hardware; no changes are made to the suspension or the hydraulic components.

Brake Discs and Calipers

Alcon® performance brakes use ventilated discs with race-developed crescent-shaped grooves for improved performance. The calipers are painted red and branded with the Jaguar supercharged 'R' logo.

Front Brake Disc and Caliper

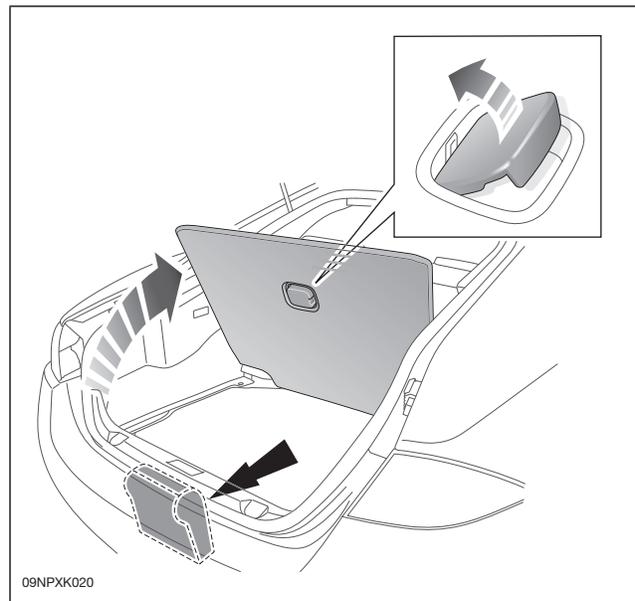


Front brakes use a 40cm (15.75 in.) brake disc and a 6-piston caliper. Rear brakes use a 35cm (13.78 in.) brake disc and a 4-piston caliper.

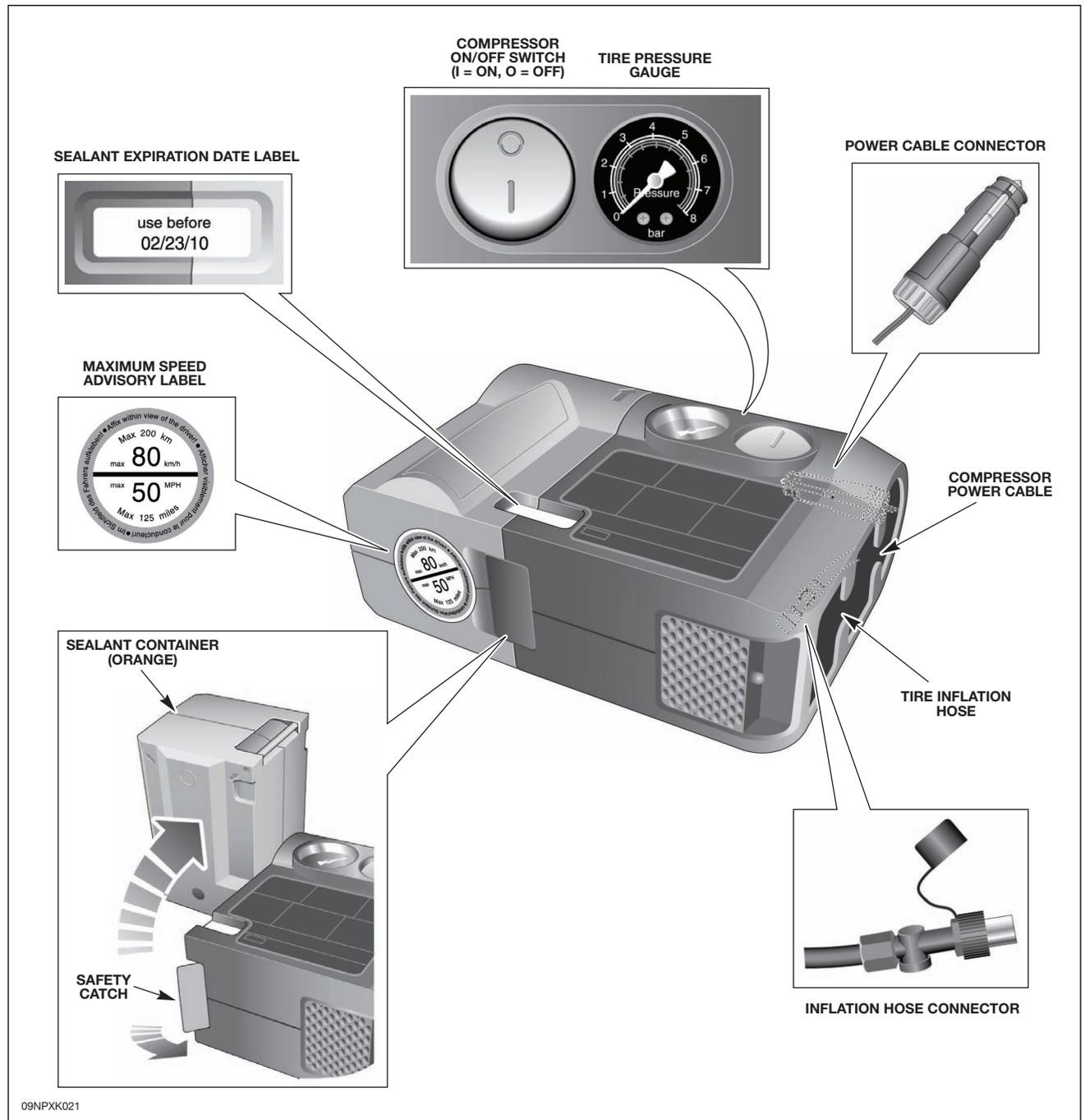
Instant Mobility System

Alcon® performance brakes will not accommodate a mini-spare tire/wheel. Vehicles with the performance brake package are equipped with an Instant Mobility System (IMS). The IMS is stowed in the rear of the trunk under the liner, and includes a single-use container of tire sealant and an inflator pump.

NOTE: The IMS may also be referred to as the Tire Repair Kit.



The sealant used in the IMS has a limited shelf life; the expiration date is printed on the top of the tire repair kit case. The sealant container should be replaced before the expiration date, whether or not the repair kit has been used.



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