

# Thatcham 1<sup>st</sup> Sight

debut of Mazda CX-5 and SkyActiv



## Summary

Smart City Brake Support (AEB) that may require re-calibration if disturbed, but will reduce likelihood of Beyond Economical Repair. Increased use of HSS and UHSS; may require alignment from consequential damage transmitted from impact forces.

First vehicle to feature SkyActiv efficiency technology, which will be a feature of subsequent Mazda models from 2012.



### MANUFACTURERS:

ALFA ROMEO  
AUDI  
BENTLEY  
BMW  
CADILLAC  
CHEVROLET  
CHRYSLER/JEEP  
CITROEN  
DACIA  
FIAT  
FORD  
GEELY  
GREAT WALL  
HONDA  
HYUNDAI  
INFINITI  
ISUZU  
JAGUAR  
KIA  
LAND ROVER  
LEXUS  
LOTUS  
**MAZDA**  
MERCEDES BENZ  
SAIC MG  
MINI  
MITSUBISHI  
NISSAN  
PEUGEOT  
PORSCHE  
PROTON  
RENAULT  
ROLLS ROYCE  
SEAT  
SKODA  
SSANGYONG  
SUBARU  
SUZUKI  
TATA  
TOYOTA  
VAUXHALL  
VW  
VOLVO  
OTHERS

### OTHER CAT.:

REPAIR  
SAFETY  
GENERAL

# Mazda CX-5 and SkyActiv

May sees the Mazda CX-5 take to the UK roads, a new but different entry to the compact cross-over market.



CX-5 IS THE DEBUT FOR MAZDA'S SKYACTIV TECHNOLOGY THAT INTRODUCES NEW BODY CONSTRUCTION, ENGINES, TRANSMISSIONS, AND CHASSIS DEVELOPMENTS.

All these new features are part of a design philosophy to create lighter, more agile and efficient cars, with this technology being the way forward for all Mazdas; the Mazda 6 due next year and the replacement for the top-selling MX-5.

The body construction features 20% greater use of very thin High Strength Steels and weld/bonding of joints to create a very lightweight but strong body; 8% reduction in body weight, yet 30% stiffer. This makes engine downsizing and improvements in efficiency and emissions possible, but the insurer and repairer need to be aware. The construction principles involve greater interaction between body sections for transmitting & dispersing impact forces. The engineer & VDA need to be alert to how far these forces have transmitted.

The occupant cell is made of a mix of materials from 590MPa HSS to 980MPa UHSS. The first view of the new material will be the 1800MPa Ultra High Strength Steel bumper beams, front and rear. These alone are 20% stronger yet almost 5kg lighter than before, and must NOT be repaired.

Completely new engines debut on the CX-5, a 2.0 petrol and a 2.2 diesel, both highly efficient, both with 14.1 compression ratios. These share castings and are even built on the same production line as each other. These are mated to two new transmissions, both six speed.

All CX-5 models have Smart City Brake Support, using a laser mounted behind the front screen to detect and monitor the distance from the vehicle in front. If the system predicts a risk of impact it will pre-pressurize the brakes to enable quicker driver response. It will automatically operate the brake if the driver doesn't. This will mitigate or completely avoid impact damage at closing speeds of 19mph or less.

Finally, the CX-5 has an optional (4WD models only) Lane Departure Warning System that uses a camera to read the road markings and audibly alert the driver if it detects the vehicle is unintentionally moving out of its lane. This option is combined with headlamp High Beam Control as part of the Safety Pack option.



## Thatcham SOLUTIONS...

Thatcham has purchased a vehicle and a full research project is planned.