



AEB Fitment - Standard

# Thatcham Research 1st

## Volvo XC90



The 7-seat XC90 is the first vehicle to use Volvo Cars' new Scalable Product Architecture (SPA) platform set; 40% of the body structure is hot-formed boron steel. The vehicle also includes new advances in active safety and v2x (vehicle to vehicle/infrastructure communications).

### 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





Grey	Mild steel
Blue	High strength steel
Yellow	Very high strength steel
Orange	Extra high strength steel
Red	Ultra high strength steel
Green	Aluminium

## Structure :

The Volvo SPA platform is modular and will form the basis for all Volvo models above the V40 size. This platform is modular in that the sections have common interfaces but can be a different size (except for fixed dimensions for the front bulkhead) or even have different material specifications. An example of this is that the transmission tunnel and inner side sills for the PHEV version are specific to that model. The structure of the new XC90 includes more than 40% (by weight) hot-formed boron steel, including the A, B, and C posts and sill reinforcements as a complete occupant safety cage. The B post reinforcements and the 4 front and rear chassis legs are tailor welded boron/HSLA (High Strength Low Alloy) blanks. The front bumper beam, crash absorbing cans and the front suspension strut towers (joined by an aluminium brace) are of cast aluminium for stiffness and to minimise weight.

The bonnet and front wings are of sheet 6000 series aluminium.

The front crash cans are of a multi-cell construction. The extruded aluminium bumper beams are common for all global XC90 models.

Dimensions are: length 4950 mm, width 2008 mm, height 1775 mm. Wheelbase is 2984 mm.





### Technology :

Run-off road protection – a vehicle run-off road is a common accident type and often results in fatalities. When the XC90 detects this is occurring, it will tighten the seat safety belts and keep them tight until the vehicle has come to a complete stop. The seat frame also includes energy absorbing functionality which can reduce the vertical forces on the occupants by as much as 33%. The SRS system is obviously deployed as required including a collapsible brake pedal. This is a standard fit on all.

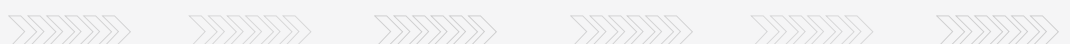
To avoid run-off road incidents, the XC90 features Lane Keeping Aid (LKA system) that can detect the vehicle unintentionally departing its lane and will apply counter steering to prevent this. Driver Alert Control detects changes to the input from the driver to warn of the driver becoming tired. This is supplemented by Rest Stop Guidance that will provide GPS directions to the nearest rest/service area.

Adaptive Cruise Control with Queue Assist is introduced for the first time. In traffic queues the XC90 with this system can autonomously, by combining the adaptive cruise control with the electric power steering, follow the car ahead (in slower moving queues), braking and accelerating to maintain a set distance and steering itself.

Auto Brake at intersections – this system is to prevent the vehicle turning into the path of an oncoming vehicle at a junction.

The XC90 features rear facing radar to detect an imminent rear impact; the system will pre-tension the safety belts, activate the brakes and flash the rear lights to alert the driver of the vehicle behind.

City Safety (AEB) is standard equipment on all XC90. This camera-based system detects and auto-brakes for other vehicles, cyclists and pedestrians; it has enhanced functionality and a faster camera to be able to work at night.







Roll Stability Control is standard. The system uses sensors to detect a risk of the vehicle rolling over and will apply individual wheel braking to attempt to avoid this happening. If a roll-over occurs, the SRS curtain airbags are inflated and remain inflated to protect all 3 rows of occupants.

The interior uses 'thin-seat' technology with an ergonomic seat back shape that is similar to the human spine. By using shape rather than extra padding, the XC90 can offer 3 rows of seats, all of which can be individually folded down, and all 7 seats feature 3-point safety belts with pyrotechnic pre-tensioners and are covered by the curtain SRS airbags.

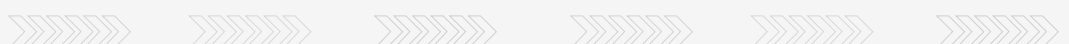
The electrical architecture of the XC90 features 4 main controllers for: safety systems, body, vehicle dynamics, and infotainment. Each of these controllers can connect with every component on the network throughout the car which enables Volvo to be able to implement sophisticated new technologies into the car as these emerge.

Trim levels :  
Momentum, R-Design,  
and Inscription

Momentum : LED Adaptive headlamps, front LED fog lamps, heated folding power door mirrors in body colour, rain sensing wipers, Sensus Connect with Navigation, 19" 10-spoke alloy wheels with 235/55 tyres and TPMS. The front grille is finished in Piano black and the window surrounds are chrome.

R-Design : this has integrated roof rails finished in silver, LED Adaptive headlamps, front LED fog lamps, door mirrors finished in Matt Silver, rain sensing wipers, Sensus Connect with Navigation, 20" 5-spoke alloy wheels with 275/45 tyres and TPMS. The front grille is finished in high gloss Black Mesh with a 'silk metal' surround, and silk metal window surrounds.

Inscription : This has integrated roof rails in silver, LED Adaptive headlamps, front LED fog lamps, heated folding power door mirrors in body colour, rain sensing wipers, Sensus Connect with Navigation,





20" 10-spoke Diamond Cut/Grey alloy wheels with 275/45 tyres and TPMS. The front grille is in Matt Silver with a chrome surround and the window surrounds are chrome. There are also body side mouldings in Chrome with an 'Inscription' logo.

There are 55 First Edition models for the UK. These feature 21" alloy wheels, the D5 Drive-E powertrain, with a Nappa leather interior in Amber. There is a Winter Pack which includes a heated steering wheel, heated washer jet nozzles, a heated windscreen and heated front seats (£575).

There is a HUD Winter pack with similar equipment but includes a Head-Up Display instead of the heated windscreen (£1175). It is not possible to combine the HUD with a heated windscreen.

Intellisafe Pro includes BLIS (Blind spot information) with Cross Traffic Alert & Rear Collision Mitigation, Adaptive Cruise Control, Lane Keeping Aid and Queue Assist (£1500).

Xenium Pack includes Parking Camera with 360° surround view, Park Assist Pilot, and the power tilt & slide panoramic sunroof for £2000 (required BLIS & Rear Collision Mitigation to be chosen £500).

The panoramic powered sunroof is available for £1295

The Head Up Display is an option for £1000

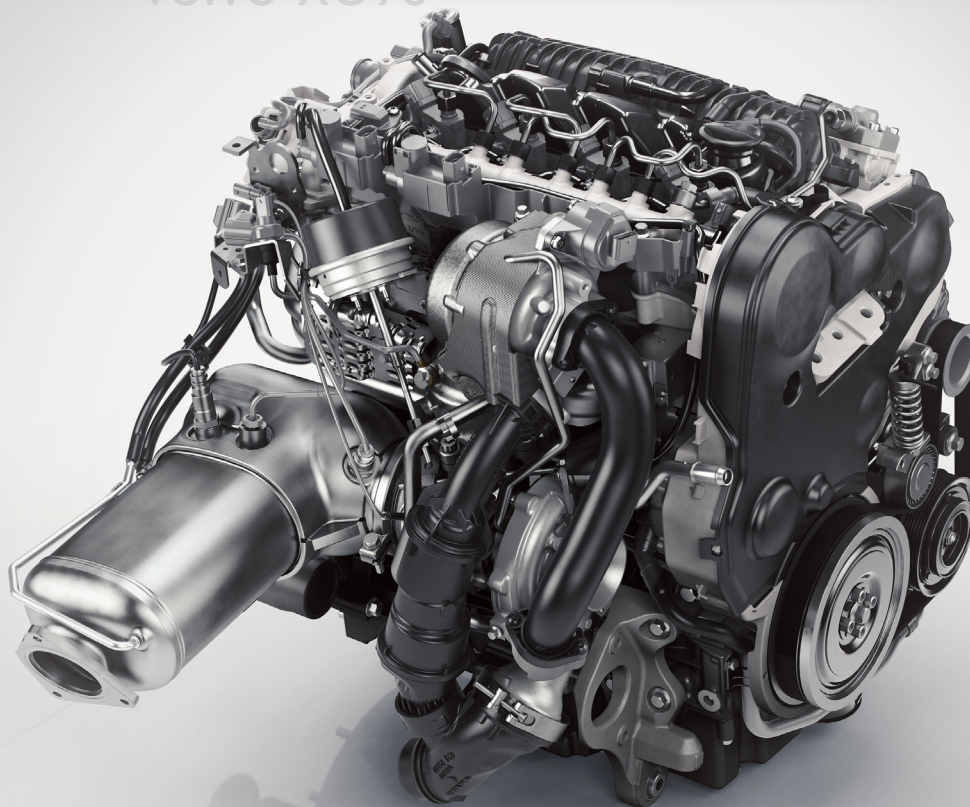
Massage functions and ventilation functions are optional.

Electronic Air Suspension is available at £2150.

There is an optional Contour seat with greater lateral support.







## Paint Colours :

614 Ice White COB	612 Passion Red COB R-Design only	700 Twilight Bronze metallic £700
492 Savile Grey metallic £700	467 Magic Blue metallic £700	711 Bright Silver metallic £700
714 Osmium Grey metallic £700	719 Luminous Sand Momentum metallic £700	717 Onyx Black metallic £700
720 Bursting Blue metallic R-Design only	707 Crystal White Premium metallic £1,000	487 Ember Black Premium metallic £1,000
477 Electric Silver Premium metallic £1,000		

## Powertrains :

All the Drive-E engines for the new XC90 are 4-cylinder.

T6 – a 1969cc 4-cylinder super-charged and turbo-charged engine that produces 320bhp and 400Nm of torque.

T8 – a 2.0 petrol/electric hybrid. The four-cylinder engine is super-charged for the lower end of the power range and turbo-charged for the upper range. This drives the front wheels. The rear wheels are driven by a 60Kw (80bhp) electric motor. Default driving mode is hybrid mode, with selectable electric-only driving for up to 25 miles. Combined output is 400bhp with 640Nm of torque.

D5 – a 4-cylinder twin-turbo (1969cc) diesel engine produces 225bhp and 470Nm of torque.

D4 – a 4-cylinder turbo-diesel that produces 190bhp and 400Nm of torque.

Fuel tank capacity is 71 litres

