

Crash Tests

New Car Safety

VOLVO XC90 (LHD)

2003 on

Front+side+head airbags

Overall Evaluation



Overall score

33.81 out of 37

Variante: WAGON

Eng: 2.4 litre diesel.

Kerb weight: 2120 kg

Category: 4WD LARGE/MEDIUM

Vehicles built: 2003

Tests by Euro NCAP

Important note: The *left-hand-drive diesel* European model was tested by Euro NCAP. Australasian specifications may vary and therefore models sold in Australasia might provide different levels of protection to those described on this page.

Model History and Safety Features

The Volvo XC90 was introduced in Australia during 2003.

Dual front airbags, side airbags and head-protecting side curtains are standard equipment. ABS brakes and electronic stability control are also standard.

The front seat belt buckles are mounted on the seats and the upper anchorages adjust automatically to the height of the occupant. These features improve the fit of the seat belt. Pretensioners are fitted to the front seat belts to reduce slack in the event of a crash. A three point seat belt is fitted to the centre rear seat. This provides better protection than a two point seat belt. This seat also has an integrated child booster cushion.

OVERALL EVALUATION : 5 Stars

The Volvo XC90 scored 13.81 out of 16 in the offset crash test. The passenger compartment held its shape very well. There was a slight risk of chest and leg injury for the driver and passenger.

The vehicle scored 16 out of 16 in the side impact crash test. A further 2 points were scored in the optional pole test and two points were awarded for advanced seat belt reminders.

FRONTAL OFFSET CRASH TEST

Body region scores out of 4 points each: Head/neck 4pts, chest 3.39pts, upper legs 3pts, lower legs 3.42pts.

The passenger compartment was found to be immensely strong in the offset crash test. The brake pedal moved rearwards by 65mm and upwards 4mm. The steering wheel hub moved forwards 1mm, downwards -17mm and sideways 13mm. The front ("A") pillar moved 15mm rearwards. All doors remained closed during the crash. After the crash all doors opened with normal effort.

The airbag cushioned the head of the driver and contact was stable. Dash components were a potential source of injury for the knees of the driver and passenger.

SIDE IMPACT CRASH TEST

Body region scores out of 4 points each: Head 4pts, chest 4pts, abdomen 4pts, pelvis 4pts.

This test simulates a fairly small car striking the driver's door of the vehicle under test. It is based on a regulation test but the regulation does not apply to vehicles with a high seat height like the XC90. Such vehicles can be expected to perform relatively well in this particular side impact test.



Offset crash test at 64km/h

The vehicle was eligible for an optional pole impact test, since it had head-protecting side airbags and scored four points for the head in the side impact test. The manufacturer decided to go ahead with the pole test and the vehicle earned a further two points.

INJURY MEASUREMENTS

Refer to the information sheet "How the test are done"	Offset Crash Test at 64km/h		Side Impact Crash Test at 50km/h
	Driver	Passn	Driver
Head HIC	194	122	273
Acceleration (g for 3ms)	35.8	29.5	13.3
Neck - Shear (kN)	0.43	0.57	-
Tension (kN)	0.54	0.48	-
Extension (Nm)	17.68	7.63	-
Chest Accln (g for 3ms)			-
Compression (mm)	26.3	25.54	9.69
Viscous criterion (m/s)	0.07	0.12	0.02
Abdomen - Force (kN)	-	-	0.12
Pelvis - Force (kN)	-	-	0.34
Upper legs Force (kN)	Left 2.38 Right 1.81	2.63 0.91	
Knee displ (mm)	Left 1.98 Right 0.31	1.25 1.26	
Lower legs Force (kN)	Left 1.1 Right 2.6	1.94 1.7	
Index (Upper/Low)	Left 0.23/0.16 Right 0.53/0.2	0.36/0.17 0.26/0.23	

Bonus points (maximum 5)

Pole Test: 2 pts Seat belt reminders: 2 pts

Modifiers for offset test scores

Head	No deduction
Chest	No deduction
Upper leg	Variable loading 1 pt deduction L & R (driver and passenger)
Lower leg	No deduction
Foot score	Score 4 points

Pedestrian rating (2003 protocol)



9.74 points out of 36

Child head impacts 4.76pts; adult head impacts 4.98pts; upper leg nil pts and lower leg impacts nil pts.



March 2004

Published by
New Car Assessment Program
PO Box 1555
Canberra ACT Australia 2601

XC90_03.doc issued 23-Mar-04