

## VOLVO '92: NEW MODEL, NEW ENGINE AND A UNIQUE SAFETY INNOVATION

There is quite a lot of news from Volvo for the 1992 model year. Most people think of automotive news in terms of new models. For those people, Volvo introduces the new top-of-the-line 960, which combines the best of Volvo's traditional values with a plethora of luxurious appointments and a sophisticated 201 hp inline six-cylinder engine. Also new for 1992 is Volvo's Side Impact Protection System, or SIPS. This unique design, built into every 740, 940 and 960 Volvo, is designed to significantly reduce injuries in side impact accidents, which are second only to frontal impacts in frequency.

According to Joseph L. Nicolato, president and CEO of Volvo Cars of North America, SIPS is based on research work conducted by Volvo's Swedish based accident investigation team. "Almost everyone knows about Volvo's sturdy roll-cage-like passenger compartment and our front and rear crumple zones," Nicolato explained. "SIPS is Volvo's newest major safety innovation and promises to be one of the most significant in our proud safety history."

Providing additional protection from side impacts is a difficult problem because of the very small space between the occupant and the intruding car. In designing SIPS, Volvo engineers realized they would have to spread the impact forces over as much of the car's body structure as possible to dissipate the energy, and also

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maintaining the integrity of the occupant compartment. The solution consists of reinforcements to the B-pillar, the body sills, the roof rails, and the floor. Test data indicates that SIPS equipped vehicles could reduce serious injuries or deaths in side impacts by cars by 25%. Furthermore, SIPS today surpasses by a wide margin the government's side impact regulations which will be required for model year 1994.

While on the topic of safety, Volvo is making ABS brakes standard equipment on all 1992 Volvo models. Similarly, two years ago the company made a driver's side air bag standard equipment on all models. Wherever you look in the Volvo line, it is obvious that safety is a primary design criterion.

Some automobile buyers want their safety in a luxurious and sophisticated package. For these discriminating buyers, Volvo has introduced the 960. Under its smooth body work, the 960 carries an impressive drivetrain which delivers the kind of performance you expect from a 201 hp engine, while producing EPA mileage figures of 18 mpg city and an impressive 26 mpg highway.

The 960 is powered by an inline six-cylinder 2.9 litre engine, designed and built by Volvo. For light weight, the engine is predominantly cast aluminum with cast-in iron cylinder liners for durability. Belt driven double overhead cams operate four valves in each cylinder via hydraulic tappets which require no maintenance. A Bosch Motronic 1.8 system handles both ignition timing and fuel injection functions. It includes a self diagnostic function to speed repairs. Long smooth runners in both the intake and exhaust manifolds contribute to the engine's ability to produce 80% of its maximum torque at a low 1000 rpm. Torque is what really makes a car feel responsive under most driving conditions and Volvo's new six-cylinder really delivers in this area.

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The balance of the 960's powertrain is no less impressive. An electronically controlled four-speed automatic transmission, the AW40, has been tuned specifically for Volvo's new engine. The electronic control system senses road speed, engine speed, engine load and throttle position when determining shifts. The electronics help insure smooth shifting and permit the driver to select from one of three different driving modes. Economy provides the best fuel economy, shifting smoothly at relatively low engine speeds. Sport mode allows the engine to reach higher rpms before shifting and is optimized for performance. Winter mode locks out first and second gears so that starting off in low traction conditions can be more easily accomplished. Unique to Volvo's AW40 is the "Down Slope" mode which automatically determines when you are descending a hill and shifts to a lower gear to provide engine braking.

The 960 is flush with comfort and luxury features as well. Both driver and front seat passenger sit in Volvo's famous orthopedically designed bucket seats, power operated. All seating surfaces are leather. And don't forget Volvo's endearing touch of heating the front seats. An automatic climate control system regulates cabin temperature while a six-speaker AM/FM stereo cassette system fills the air with sound. Power operated features include, sunroof, windows, remote mirrors, and antenna. For those who need to carry bulky objects from time to time, Volvo offers a wagon version of the 960. This polished and well-mannered wagon has all the amenities of the sedan with the extra versatility of a wagon.

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While the 960 is the biggest news from Volvo for 1992, the balance of the product line has not been ignored. Enhancements in the area of comfort and safety can be found on nearly every model.

The most basic Volvo is the 240 which is available in a four-door sedan or a wagon body style. This rugged product has proven itself on the roads of the world for over sixteen years. This year all 240s will be equipped with ABS, adding an anti-locking feature to their powerful four-wheel disc system. Powered by Volvo's trusty 2.3 liter fuel-injected four-cylinder engine, the 240 is the logical choice for those who value a simple no nonsense car with plenty of safety and durability. Back for 1992 is a GL version of the 240 sedan, bringing with it those extras some buyers appreciate, like sunroof, power/heated exterior mirrors and power antenna.

The 740 has been the volume model for Volvo for the past several years. For 1992 all 700 series cars will receive additions to their long list of standard safety features. These include Side Impact Protection System, seat belt pretensioners for both front seats, and automatic locking differential. The number of 740 versions has been reduced this year to three. The base 740 is available as a sedan or wagon powered by the 114 hp version of Volvo's 2.3 liter four-cylinder engine. For those wishing more performance, there is the 740 turbo wagon which proved its capabilities by being the only station wagon ever to have competed in a professional auto racing series.

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The sleek 940 range which was introduced in 1991 has also received SIPS and pretensioners on the front seat belts. For 1992, a new entry level 940 model has been introduced and carries the badge 940 GL. Available in sedan or wagon body styles, it is powered by Volvo's rugged four-cylinder, 114 hp engine coupled to a four-speed automatic transmission. The GL is very well equipped with such features as air conditioning, power sunroof, and a six-speaker audio system.

Volvo has developed quite a following for its 162 hp turbo charged engines over the years. The 940 turbo is available in sedan and wagon body styles and is one of the most fun-to-drive combinations in the Volvo line. For 1992, all 940 models will be equipped with Volvo's automatic locking differential, a great help in poor traction conditions.

Of course, the 960 comes in at the top of the Volvo product line with its many luxury appointments and sophisticated drive train. Like the other cars in the Volvo line, the 960 is designed for safety and durability. It has also been priced to deliver value for the money. Looking across the Volvo line, it is obvious that concern for safety drives this company. For 1992, ABS brakes have become standard equipment on every Volvo sold in the U.S. Two years earlier, Volvo did the same with its SRS, a driver's side air bag. Often overlooked are other Volvo standard features like four-wheel power assisted disc brakes, power assisted rack and pinion steering, and the all steel roll-cage-like unit body with front and rear crumple zones.

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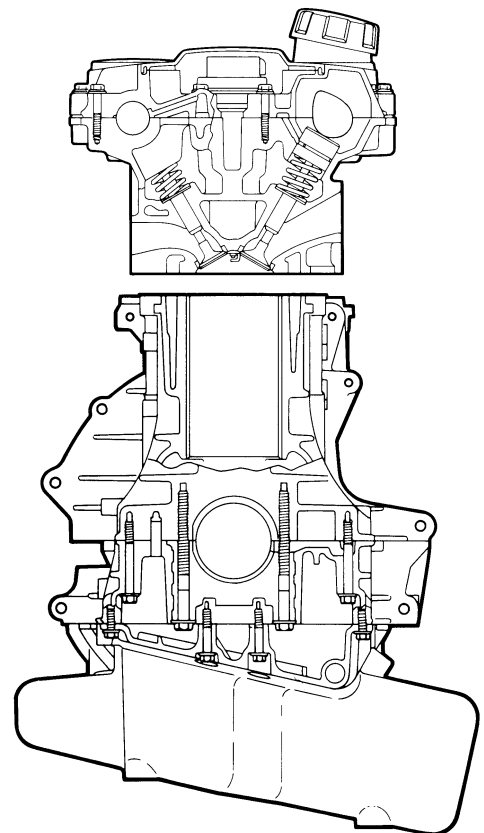
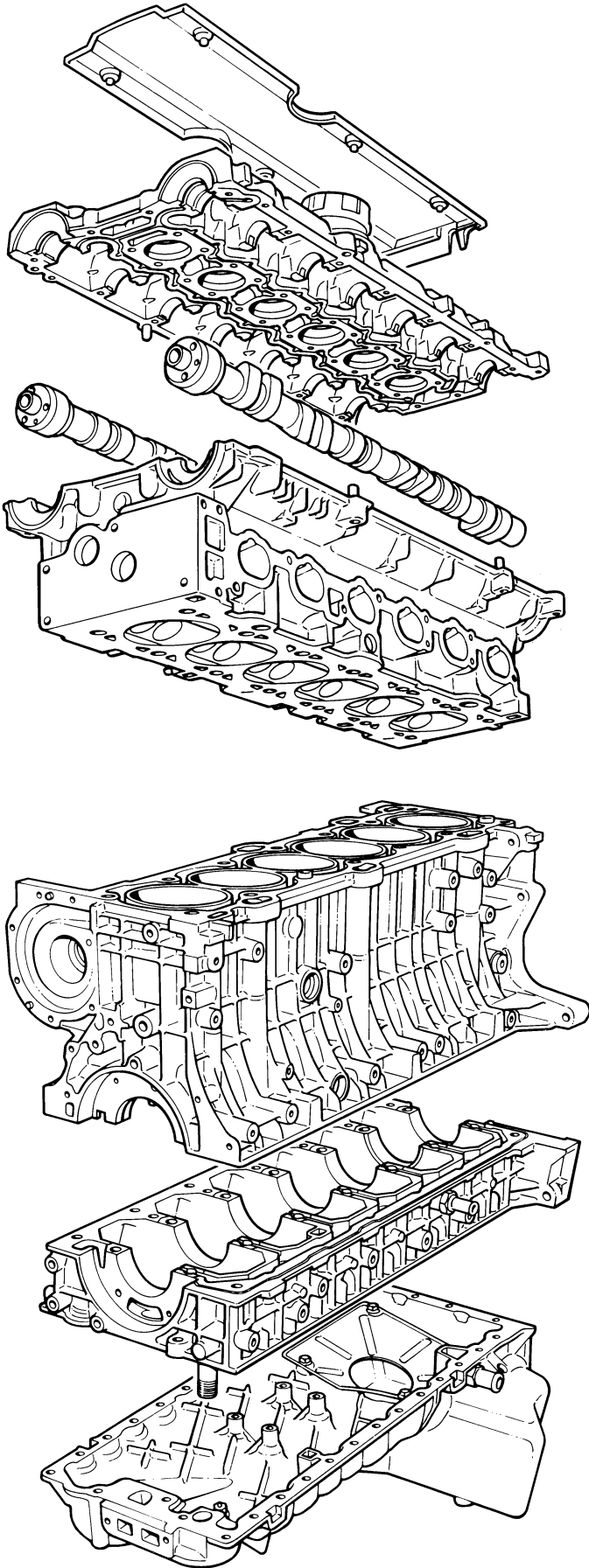
Mr. Nicolato and his colleagues at Volvo believe they are justifiably proud of their offering for 1992, with the introduction of the 960, they have a product they believe can compete with the finest luxury cars from around the world. The introduction of SIPS has allowed Volvo to again advance the frontiers of automotive safety and the additional content Volvo has brought to virtually every model has made them an even greater value.

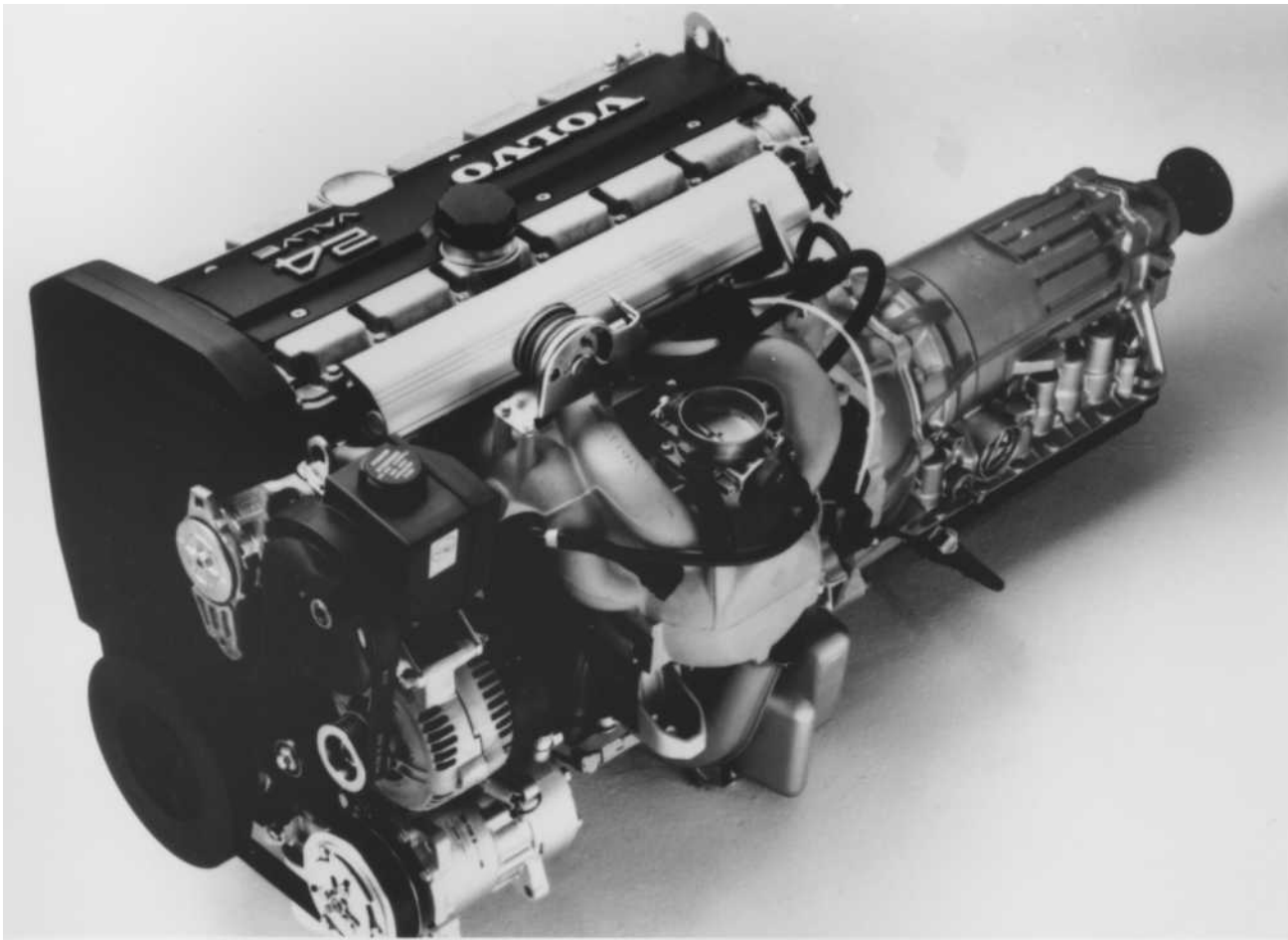
"The 960 is definitely a car which will show itself handsomely when measured against its competitors for overall performance, safety, and value," Nicolato stated with conviction. "Our Side Impact Protection System may well go down in automotive history as one of the major safety innovations. I guess you can't blame us for being a little proud this year."

Volvo has for years been the largest importer of European built cars in America. In spite of the increased competition and chaos in the automotive marketplace, Volvo has steadfastly held on to this enviable position.

# VOLVO

B6304F Engine  
Aluminum Alloy  
In-Line 6 Cylinder  
3 Liter 24 Valve  
201 HP at 6000 RPM  
197 lb ft at 4300 RPM








# **VOLVO**

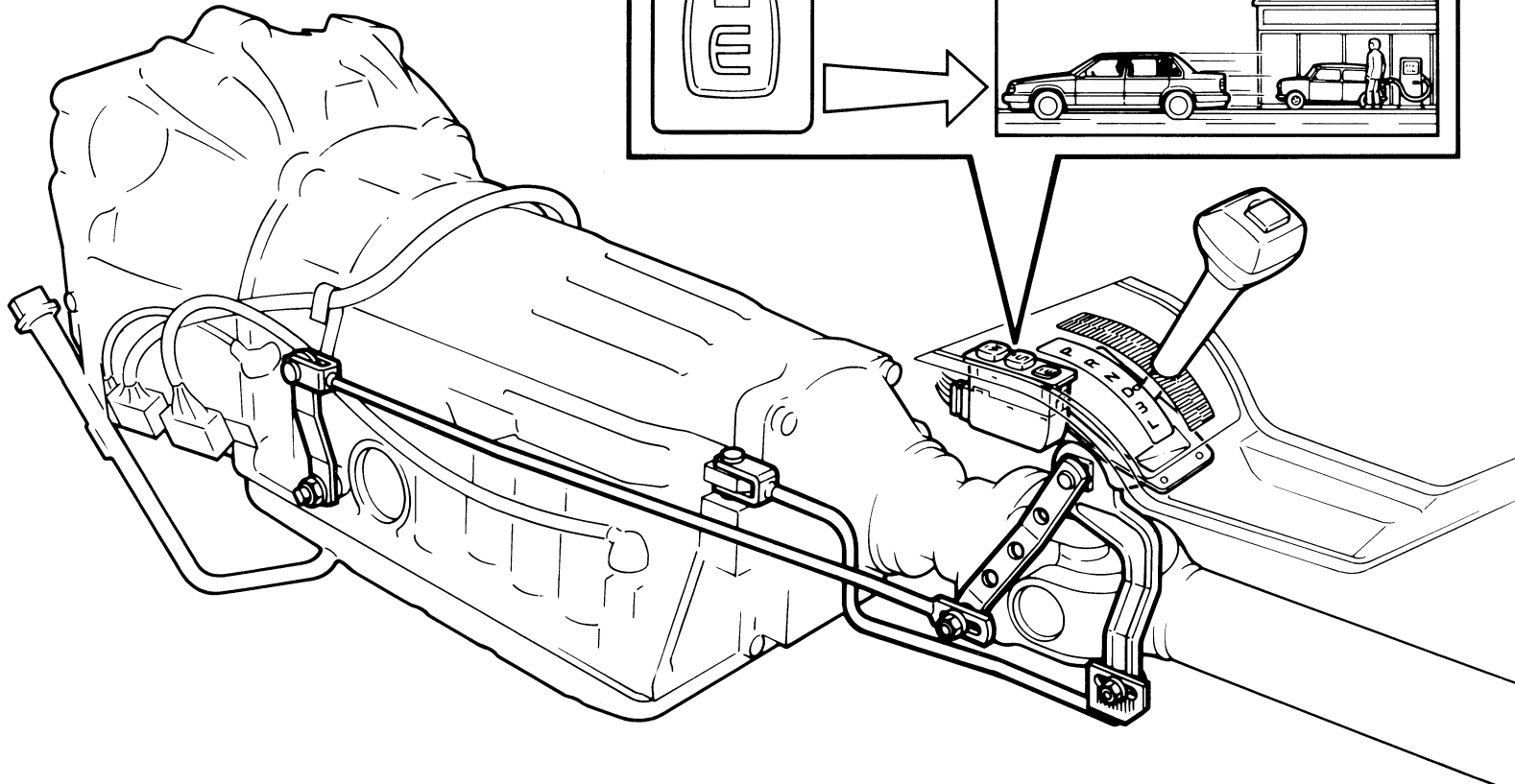
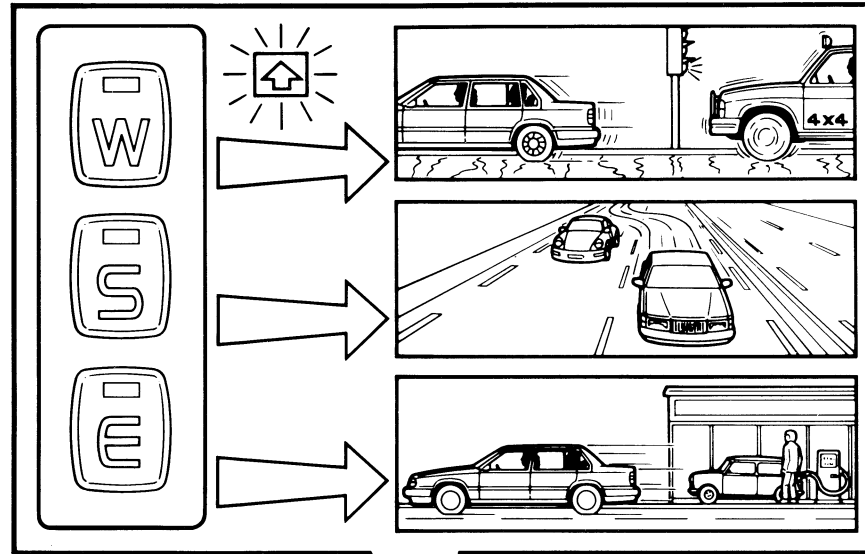
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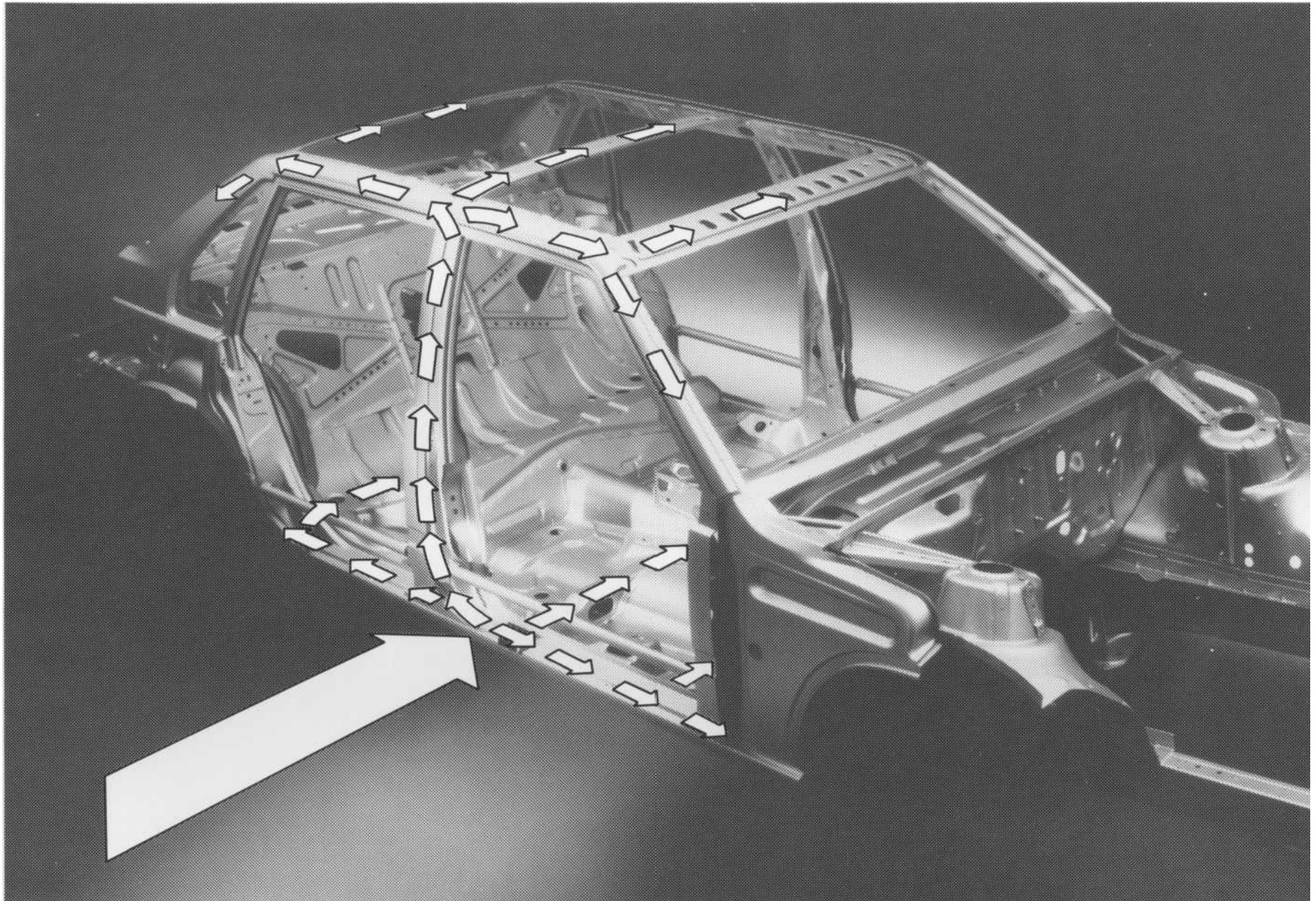


# AW40

## Driving modes

-  **Winter**
-  **Sport**
-  **Economy**





VOLVO SIPS: SIDE IMPACT PROTECTION SYSTEM