MEDIA INFORMATION







Volvo Cars of North America, LLC

PRESS INFORMATION

FOR IMMEDIATE RELEASE

Concept Lab Volvo gives 2003 New York Auto Show-goers a glimpse into the future

Unique computer interface allows visitors the chance to impact the way Volvo cars of the future may look

New York, NY (April 16, 2003) - Building a futuristic, wildly styled concept car that is chock full of eye-popping gizmos and electronic wizardry is almost impossible to bring to market, or so you think. Visitors to the 2003 New York International auto show that drop by the Volvo display stand will have the unique opportunity to do just that when Volvo Cars of North America, LLC, shows Concept Lab Volvo, a unique computer-based interactive design experience that gives the consumer a chance to "chime in" on possible future Volvo cars.

"Volvo has always cared about the people who drive our cars," commented Vic Doolan, President and CEO of Volvo Cars of North America, LLC. "With Concept Lab Volvo we are taking it to the next level. We want them to tell us how Volvo cars of the future should look. Concept Lab Volvo only reiterates what we've been saying since the launch of the XC90, 'You think, and then you build."

Concept studies of future small Volvos on display

Concept Lab Volvo includes five highly interesting concept studies of how an entire range of small Volvos could look. Models of these cars will remain on display throughout the show and include:

- A yellow sport sedan: A study that explores how dynamic a compact sedan can be. Ultra-light construction is utilized for outstanding fuel economy and many of the visible and structural and suspension parts are derived from motorcycle design.
- A sports coupe: A blend of retrospective shapes from earlier Volvos and a futuristic view on a compact two-seater sports car. It also includes a zero emission powertrain with a hybrid battery pack.

- A small SUV: Demonstrates how the expressive ruggedness and flexibility in a large SUV can come in a compact size with an efficient footprint. It allows off road use as well as urban convenience. The load fixation system is integrated in the roof design.
- **An "Urban Jungle Rider"**: An extremely compact four-wheel drive roadster with a flexible roof set-up. The glass roof may be removed, exposing the aluminum structural frame.
- A four-seat hatchback: Maybe the shortest Volvo ever, with extremely short front and rear over hangs. It could be a three-or five-door design. The strong shoulder section emphasizes the modern Volvo heritage combined with stunning couple-like lines.

Next to each scale model resides a touch-screen computer monitor. Visitors will be able to move through various pages, answering questions about each vehicle from design to safety features that will help Volvo Car Corporation determine how these potential future models should be brought to market.

Using the World Wide Web for customer interaction

Via the www.conceptlabvolvo.com Internet site, customers throughout the world have direct contact with the heart and brains behind Volvo Cars. Visitors to the site can ask questions and put forward their views on these latest models and concept cars directly to the key persons behind current and future Volvo cars. The latest additions to the Concept Lab "range" are the Versatility Concept Car (VCC) - also to be unveiled at the New York show - and the five other small-car concept studies.

Launched earlier this year, about 5,000 people have registered as members on www.conceptlabvolvo.com and more than 100,000 people have visited the site so far. Reactions to the concepts have been positive: "Ahead of the curve," "smart, intelligent, interesting," "seeing the future," are just a few of the comments people have entered in the site's evaluation poll.

The results show that a majority of users found the system easy to use and thought it an excellent way to interact with the Swedish car company. But it's not just the public who are keen to take part. Experts from all corners of Volvo Car Corporation are thrilled to be part of Concept Lab Volvo, too.

"As designers, we are employed to set trends. But we can't sit in the design studio in Sweden and decide what the rest of the world should drive," commented Volvo Car Chief Designer Henrik Otto. "We need to know what people think about our ideas and our visions of the future. Concept Lab Volvo is an unfiltered pathway between the company and the individual, and the Internet gives us contact with people who don't go to motor shows or read car magazines. Personally, I think that Concept Lab Volvo appeals to a younger audience that we

have a hard time reaching through more traditional channels. And we are very keen to know what young people think about our future and visions. After all, they are the ones who are going to buy these cars."

Volvo concepts often become a reality

"Our concept cars are not simply one-off dreams," said Doolan. "They feed the development of our production cars. In fact, two of the concept cars previously shown became production vehicles. The Adventure Concept Car (ACC) became the XC90 - a truly outstanding success story that continues to this day. And the Performance Concept Cars (PCC1 and PCC2) turned into the exciting new S60 R and V70 R."

The site now includes detailed information about the thoughts behind the new Volvo Versatility Concept Car (VCC) - and the five other exciting concept studies from Volvo's design studios in California, Spain and Sweden.

Concept Lab Volvo is open throughout the auto show. It can be accessed from terminals on the Volvo stand, or from any computer with an Internet connection.

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FOR IMMEDIATE RELEASE

Volvo Car Corporation unveils Versatility Concept Car (VCC) at 2003 New York Auto Show

The Versatility Concept Car is a design vision of the future of Volvo's V-Range cars

New York, NY (April 16, 2003) - A hint of the future of Volvo car design was unveiled today amid a flurry of photographers' flashbulbs at the 2003 New York International Auto Show. The Volvo Versatility Concept Car (VCC) takes the estate concept to new levels of performance, technology and luxury.

The exterior design of the Versatility Concept Car is both dramatic and simple; perhaps a reflection of the fact that two of Volvo's design studios have joined forces in its creation: Barcelona in Spain and Goteborg in Sweden. A number of characteristic design elements ensure that no one is going to miss the fact that this is a Volvo:

- The broad shoulders or "catwalk" are even more accentuated here than on the Volvo V70 and S80.
- The soft yet tense frontal surfaces connect with the "sheer" surface of the rear
- The characteristic V-shape of the bonnet, starting with the grille, develops into the "Volvo bridge" (cantrail)

Heritage

Some of the inspiration has been obtained from Volvo's rich design heritage; the distinctive rear design with a glass tailgate, also featured in the Safety Concept Car, traces its roots to the 1971 Volvo P1800 ES. The large, distinguished grille is descended from the 1968 Volvo 164. "The Volvo 164's grille forges a direct link to Volvo luxury, but a strong grille design is also an important display of brand heritage," explains Jose Diaz de la Vega, Creative Director Strategic Design at Volvo Cars.

Bold Design

Among the most noticeable features in front are the slim, vertically stacked headlamps. The inner of the two lamps uses a system known as "Static Bending Light" with three light units aimed at different angles. The top fixture points straight ahead and performs as a conventional dipped beam. As the car turns, however, sensors linked to the steering activate units two and finally three to illuminate the direction in which the car is headed. This system carves out a superior light pattern in the dark when driving on twisting roads, thus boosting safety standards. The outer headlamp contains main beam and side marker lamps.

The indicators front and rear and door handles echo the linear character of the headlamps, and are visually connected via the "Volvo Arch." The 20-inch wheels have puncture-safe "Run Flat" 245/40-20 tires from Pirelli.

The VCC design is also characterized by the absence of a B-pillar, made possible by hinging the back doors at the rear instead of the front. This design promotes the display of the remarkable interior, but is, for safety reasons, not intended for production cars.

The interior of the VCC is an expression of Scandinavian luxury translated into Volvo's own design language; a sensation of well being that stems from high-quality materials, light, airy interiors and an all-round "sensorial experience."

Instrument Panel

Elegant simplicity perhaps best epitomizes the VCC's instrument binnacle. This is an evolution of Volvo Cars' current product programs, in particular the XC90's instrument panel. By minimizing the number of design elements, visual pollution is reduced. The surface finishes and colors harmonize with the other elements of the interior. "Our aim is to create an atmosphere of total tranquility for our customers," said Jose Diaz de la Vega.

Volvo Ambient Air Distribution System

The interior of the Versatility Concept Car has no visible conventional air vents. Instead, air is distributed via concealed outlets. The latter prevents unwanted reflections in the windscreen and provides silent and more uniform air distribution. Additional air is ducted through the tunnel console.

Fixed-center steering wheel

The fixed-center steering wheel allows more controls to be positioned on the wheel, including buttons for the Automated Shifted Manual gearbox. The ergonomic benefits are that the switches and controls are always in the same position. Safety advantages include the possibility for the airbag to be designed for optimum performance.

Optimized A-pillar construction

The use of high-strength steel in the construction of the A-pillars allows a slimmer design for significantly improved visibility - without sacrificing safety.

Floating Center Console

Manufactured in anodized aluminum, the center console floats gracefully through the car - without ever actually touching the dashboard. A two-centimeter gap divides the slim center console from the dashboard, creating a feeling of lightness and space. The center console carries two touch-sensitive slider controls that regulate temperature for the driver and front passenger. Requiring no more than a feather-light touch, the control slides up or down, depending on whether the driver or passenger wants the air to be warmer or cooler. The temperature is indicated with LED lights that change color from cool blue to red-hot. The fan is operated with a similar touch control, as are the power windows.

The center console also carries two adjustable armrests upholstered in thick leather, and beneath them there are two individual cup holders. The subwoofer for the Premium Sound System is located in the rear of the tunnel for optimized audio performance.

Seating luxury

The truly unique and luxuriously designed seating arrangement is beautifully crafted using the traditions of the saddle-maker. Thick, saddle-quality Havana hides complimented with Tempur-foam pads (a Swedish invention) for maximum comfort. The front seats are mounted on rails integrated into the outer sill panel and center tunnel console. This provides a flat, unobstructed floor for the rear passengers. The safety belts are fully integrated into the seat frames, enabling the creation of a design without any B-pillars.

The electrically powered rear seats slide individually, providing optimum flexibility between luggage capacity and legroom. The headrests fold to improve visibility, and concealed beneath the armrest is an optional pop-up integrated child seat for children three years of age and older.

The illuminated WHIPS (Whiplash Protection System) and SIPS (Side Impact Protection System) logos in the seats serve as reminders of the comprehensive safety systems on board.

Luggage travels in style

The primary objective for the luggage compartment is to create the same sensorial impact as that of the passenger's lounge. The application of colors and high-grade materials together with minute attention to detail conveys an exclusive atmosphere without sacrificing practicality. For example, the tumble-mill soft leather for the load floor is both durable and luxurious.

For maximum versatility and convenience, the load floor is electrically operated via controls mounted on the D-pillar. The floor slides out from the luggage compartment making it easier to load heavy or awkward items. Beneath the load floor are two storage compartments, one heated and one chilled.

The luggage compartment also features an integrated safe-box in the right-hand side panel, while the left side contains a lift-out overnight case, trimmed in matching leather, of course.

The luggage cover is also electrically powered. It can be operated from the driver's seat and also from the switch in the D-pillar. When not in use, the panels are stored in a hidden recess within the rear seat. In addition, the electrically powered tailgate is remotely controlled via the "V-Pulse," a unique new integration feature that brings driver and car closer than ever (see Interaction release).

Roof onto the open skies

The roof panel features an X-frame with ambient lighting. It is operated by slider controls in the overhead console. An illuminated IC (Inflatable Curtain) logo offers another reminder of the safety system incorporated in the roof panel.

The solar panel in the roof is semi-transparent and enhances the feeling of spaciousness, as well as providing power for the Volvo Ambient Air Cleaner (VAAC) system. This continuously cleans the air within the car even when the engine is not running (see VAAC release).

Illuminated Door Panels

The door panels contain large leather-lined foldout storage compartments, together with ambient lighting, which illuminates the top edges of the door insert. The grab handles are produced in brushed anodized aluminum with contrasting polished edges to compliment the center console. The door inserts are trimmed in the same saddle quality leather as is used on the seats and instrument panel upper.

Leather Flooring

As a continuation of the saddle-leather theme used on the rest of the upholstery, the same type of material is applied to cover the floor, underlining the concept of a clean, uncluttered interior. Paying particular attention to the comfort

of the passenger's feet, Volvo designers have created genuine Nubuck leather strand rugs woven expertly by our Swedish craftsmen.

Color & Trim for automotive "haute conture"

The finest grades of Swedish saddle leather have been carefully selected to compliment the soft Nubuck material. For example, the high-gloss finish and design of the luggage cover is reminiscent of a high-quality cabinet.

Aluminum is used decoratively both on the exterior and interior in a number of ways. For example, it is anodized, brushed, sandblasted and polished. The ambient light further enhances the feeling of exclusivity. The exterior and interior color schemes have been developed to harmonize perfectly, the Volvo expression of automotive "haute couture."

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FOR IMMEDIATE RELEASE

Volvo's versatility Concept Car Combining high performance with low fuel consumption

New York, NY (April 16, 2003) - The Volvo Versatility Concept Car (VCC), demonstrates that high performance no longer needs to go hand-in-hand with high fuel consumption and high environmental impact. The VCC concept engine, an in-line direct-injected six-cylinder turbocharged powerplant displaces 2.6 liters and produces an impressive 250 hp; yet consumes no more than 1.7 gallons of fuel per 62.1 miles. "New innovative engine and transmission technology makes this extremely low figure possible in a ten year perspective," states Derek Crabb, Vice President Powertrain Engineering at Volvo Car Corporation. Some of the engine's technical highlights include:

- 6 cylinders, 250 hp but just 1.7 gallons/62.1 miles
- New turbo technology
- Direct Start&Stop
- Compression Auto Ignition
- Automated Shifted Manual with Electric Drive

With a spate of concept vehicles, Volvo Cars has been overturning many automotive traditions in recent years. With its Performance Concept Cars, PCC and PCC2, the company showed that the customer who desires a family car need not compromise on performance and sports-car dynamics.

The Adventure Concept Car (ACC) demonstrated that an SUV does not have to be aggressive towards smaller cars, and that it can have the reassuring and predictable driving properties of a passenger car.

The Safety Concept Car (SCC) showed that a car featuring some of the most cutting-edge safety equipment ever seen could in fact be neatly packaged and small in size.

And now with the Versatility Concept Car it is time to show that a large, luxurious V-Range car from Volvo can have a clearly marked pro-environmental profile. The exceptionally low fuel consumption, at just 1.7-gallons/62.1 miles in a car topping 2,866 pounds, is achieved through a range of new technologies. And while these technologies are not yet ready for production, Volvo Car Corporation is currently evaluating them within a 10-year availability timeframe.

- The base engine, an in-line direct-injected six-cylinder unit with a displacement of 2.6 liters, features new turbo technology that puts the emphasis on combustion efficiency. This technology makes greater use of positive boost pressure to clear the combustion chamber of all traces of exhaust gases, thus improving the efficiency rating. The higher compression ratio is on a par with that of a naturally aspirated engine.
- Direct Start&Stop means that the engine cuts out when the car stops, such as at a traffic light or in a stationary line of traffic. When it is time to move off again and the clutch is at the drag point, fuel is injected directly into the engine, which ignites the mixture immediately and gently accelerates the car.
- Compression Auto Ignition (CAI) harnesses the benefits of a big engine to cut fuel consumption and lower exhaust emissions, however contradictory that might at first sound. The system creates a lean and homogeneous fuel/air mixture that is compression-ignited when the engine is being run on part load and at low to medium rpm.
- Automated Shifted Manual is a regular manual gearbox that can be shifted automatically with the help of electronically controlled actuators. The driver can thus use it exactly like a conventional automatic transmission. However, since a manual gearbox has a higher efficiency rating than an automatic - because the frictional losses are lower - the end-result is lower fuel consumption.

The torque-loss problem that arises at the moment of shifting in an automated manual gearbox has been solved in the VCC's concept engine with Electric Drive (ED). The ED unit, which is powered by a separate 42-volt battery, also provides extra propulsion at low revs, before the turbocharger has reached the necessary boost, thus eliminating the problem of turbo-lag.

Electric Drive also gives the battery a free charge of energy. When the driver lifts off the accelerator to reduce speed, the car's forward motion powers the ED unit that in turn recharges the 42-volt battery. This energy can be used, for instance, to drive the Versatility Concept Car for short distances on electric power alone, for example at very low speeds when crawling forward in congested traffic.

The ED unit can be installed either on the driven axle or directly on the rear wheels

In the Versatility Concept Car, the above technologies are combined with the use of lightweight materials, mainly aluminum and carbon fiber. The result is a ten percent reduction in weight compared with a similarly sized Volvo S80.

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FOR IMMEDIATE RELEASE

Volvo's Versatility Concept Car - Interactive Design for Smarter Luxury

New York, NY (April 16, 2003) - The Versatility Concept Car (VCC) from Volvo is a vision of what interactivity in cars might be like ten years from today. Wireless networks make it possible to transfer more information than ever to your car - while leaving you less to carry around. It's a concept Volvo calls "Smarter Luxury" and includes:

- Wireless connection to networks
- Access to films, music and computer databases
- Digital, flexible instruments with analog design
- Upgradeable infotainment control units for each passenger
- V-Pulse the key that indicates the car's status

The interactive capability of the VCC is designed to enhance the overall premium experience, offering a system that is pleasurable to use and own. In our everyday lives, ten years from now, products will be linked together in networks. The VCC will be able to communicate with these networks, to allow them to become a natural part of our lives. All entertainment features that are available at home, such as movies and music, are also available in the car.

In the Versatility Concept Car, there is no traditional audio unit or DVD player. Instead, the car is continuously connected to the home where music and movies are stored as electronic files. The car connects to the home using W-LAN, 3G or GPRS. These files are therefore accessible wherever the car is.

Less is more..."

The Versatility Concept Car is also a reaction to the trend towards stacking increasing numbers of functions and controls in the center console. In the VCC the amount of controls on the center console have been reduced to only the climate unit and security functions, showcasing Volvo's excellent ergonomic design heritage and Scandinavian simplicity. The sliders, controlling the

temperature and fan speed, are designed to give the user a feeling of well being, and of being in control of a very high-tech system.

All other information is available to the driver in the display module, which features digital instruments of analogue design for speed, rpm, engine temperature and fuel quantity. These gauges are a digital interpretation of the metal dials in Volvo's performance cars: the S60 R and V70 R.

The digital screen for the instruments provides added flexibility; when the driver wants to use the navigation system, a map is superimposed over the speedometer readout and rev counter. In the same way, the display can create a pop-up window containing information about the music being played in the audio system.

When the car is started, the system confirms that the car's safety systems are functioning properly by displaying all their icons in the display screen: WHIPS, SIPS, IC, DSTC, SRS AIRBAG. The driver controls the various functions via controls grouped around the steering wheel hub, and via conventionally positioned stalks on either side of the steering wheel.

Individual interaction

These functions and information are not available only to the driver. One of the main ideas about the system is to bring the controls to the passengers - instead of placing it all in the center console. The control units are not built into the car and can therefore easily be changed and upgraded if necessary - a feature that truly shows the Scandinavian approach to luxury.

In the Versatility Concept Car each passenger is given a wireless display with touch-functionality - a webpad. Using this, they can easily listen to their own music, watch films, browse the Internet, or add a destination to the navigation system. The webpad can also serve as an information carrier between the car, the home, and the office.

"A hand to hold"

The old expression "a hand to hold" has undergone a new high-tech interpretation in the VCC. Volvo's V-Pulse is your electronic friend who will tell you the status of the car. It is a very personal part of the car that you can bring home or show to your friends.

A basic luxury is to know that your car and friends are untouched and safe from harm. The V-Pulse gives you "something to hold in your hand in the dark;" reassuring you that everything is okay by generating a calm and regular heartbeat. The heartbeat is transmitted as a gentle pulsating sensation in your hand.

The frequency of the pulse would immediately rise if something were wrong. For example, if the car was left unlocked or the alarm had gone off, you

could open the V-Pulse and see in the small display exactly what has happened, Communication with the car takes place via the GSM network.

This soft and pleasantly rounded Scandinavian jewel, bearing Volvo's signature Iron mark from 1927, is also used to lock and unlock the car. By a gentle squeeze of the V-Pulse the car is unlocked - and the feedback by raised pulse is immediate. The V-Pulse has its natural place in the center console. In position, a gentle press of the V-Pulse starts the car.

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FOR IMMEDIATE RELEASE

The Volvo Ambient Air Cleaner A world first debuts in the Volvo Versatility Concept Car

New York, NY (April 16, 2003) - Emissions from today's modern gasoline engines are in many cases cleaner than the surrounding air, particularly in polluted city centers. In the Versatility Concept Car (VCC), Volvo Car Corporation presents entirely new technology that exploits this fact by filtering the surrounding air from the presence of two environmentally hazardous substances: hydrocarbons (HC) and nitrogen oxides (NOx). The technology is called the Volvo Ambient Air Cleaner (VAAC). Its benefits include:

- Filters hydrocarbons and nitrogen oxides from the surrounding air
- Neutralizes the equivalent of up to 3 cars' exhaust emissions in pollutant urban conditions
- Powered by solar cells when the car is parked

Absorbs nitrogen oxides and hydrocarbons

The basis of VAAC is a container installed in the engine compartment, into which two filters are placed. While driving, the car's ventilation-system fan sucks in air from the surroundings and directs it through the filters, which traps the nitrogen oxides and hydrocarbons, thereby cleaning the air before it enters the passenger compartment. When the filters are filled, they are heated to 150 degrees Celsius using the heat from the engine's exhaust system. The nitrogen oxides and hydrocarbons are then released from the filters and routed to the engine. The hydrocarbons are combusted in the engine cylinders, while the nitrogen oxides are reduced in the car's catalytic converter.

In order to increase the VAAC system's efficiency, the Versatility Concept Car is equipped with a sensor that monitors the ambient air outside the vehicle. When a given level of pollution is detected it activates the fan in response. This happens regardless of whether the car being used or not, since solar cells mounted on the roof power the ventilation-system fan even when the

car is parked. The system can thus adsorb hydrocarbons and nitrogen oxides even with the car's engine switched off.

Filled in two days

The VAAC system can operate continuously for two days during normal urban conditions before the filters reach capacity. Their contents are then automatically discharged to the engine. "VAAC requires a well-functioning, modern gasoline engine for the system to work efficiently," explains Jan Karlsson, project leader for VAAC development at Volvo Cars. "With an engine of SULEV (Super Ultra Low Emission Vehicle) standard, the Versatility Concept Car neutralizes the hydrocarbon emissions produced by up to three other cars, and thus helps clean up the surrounding air."

VAAC is a Volvo patent that has been developed in cooperation with Engelhard Corporation.

PremAir®

PremAir® is the name of Volvo's renowned "ozone eater" and it too is an important part of the overall pro-environmental profile of the Versatility Concept Car.

Volvo was the first car manufacturer in the world to directly deal with the problem of ground-level ozone through the introduction of PremAir®, back in 1999. Ground-level ozone is formed through a combination of air pollution and sunlight. It can cause headache and respiratory problems among humans and may also stunt plant growth.

In the VCC, as with other currently produced Volvo vehicles, the car's radiator is coated with a catalytic layer that converts up to 75 percent of the surrounding ground-level ozone into oxygen as it passes through the radiator. PremAir® is a trademark of Englehard Corporation.

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