



# News

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## Cadillac STS: Performance and Sophisticated Luxury

- **New six-speed automatic transmission**
- **All-wheel drive available in combination with V-8 engine**
- **Supercharged performance sedan STS-V**

**FRANKFURT** – A new, six-speed automatic transmission and the option of all-wheel drive are among the enhancements offered on the newest Cadillac STS, the flagship sedan of the Cadillac portfolio. The STS demonstrates unwavering attention to detail, resulting in refined performance, sophisticated luxury, overall harmony and purposeful innovation.

There's no mistaking the STS as anything but a Cadillac. Styling cues include vertically stacked headlamps and light-emitting diode (LED) taillamps, LED center high-mounted stop light (CHMSL) and horizontal "spline lines." These are further enhanced by standard 18-inch polished aluminum wheels on V-6 Sport Luxury models and stylish wheel center caps featuring the Cadillac wreath and crest emblem.

With an overall length of 4,985 mm, a wheelbase of 2,957 mm and front/rear track of 1,596/1,581 mm, the STS is the largest sedan in Cadillac's European portfolio. The STS features a spacious and stylish interior, with an emphasis on high-quality fit and finish.

Quality materials are used throughout. The interior choices include aluminum trim on both console and instrument panel on the Elegance model and two color choices for wood trim that is standard on the Sport Luxury model. Dual-firmness leather seats are specially tanned for a softer feel, with the added option of Tuscany leather upholstery. Natural-grain surfaces on the door and instrument panel offer an inviting, tactile touch, as do the headliner and interior pillars, which are soft backed and covered with a Monaco woven fabric.

The STS is offered with the 189 kW (257 hp) 3.6L V-6 VVT or the 239 kW (325 hp) Northstar

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4.6L V-8 VVT. Both engines incorporate variable valve timing (VVT) and are mated to Cadillac's automatic transmissions with driver shift control, driving the rear wheels. V-8 models feature a six-speed automatic transmission, along with the option of all-wheel drive.

Four-cam variable valve timing gives the V-6 engine increased efficiency, with benefits in fuel economy, emissions and flexibility. Ninety percent of the 3.6L V-6's peak torque is available from 1,600 rpm to 5,800 rpm. In addition, an electronically controlled throttle (ETC) coordinates the driver's intentions with the actions of the various control components. With the V-6, the STS achieves 0-100 km/h (0-62 mph) in 7.4 seconds. The 4.6L Northstar engine delivers 0-100 km/h (0-62 mph) acceleration in 6.2 seconds.

### **Real-time damping**

Integrated chassis control technologies combine performance with a comfortable ride, including two-mode Magnetic Ride Control with performance or touring selections, as standard on the V-8. Driver involvement is further enhanced by ZF steering gear and four-channel StabiliTrak electronic stability control system. This stability system assists the vehicle in maintaining the driver's intended path by applying a brake force at any corner of the vehicle independent of the driver's use of the brake pedal. StabiliTrak is fully integrated with the traction control and ABS systems.

Technical appointments include a keyless access system with a push-button start; optional adaptive cruise control (ACC) and reconfigurable four-color head-up display (HUD); heated and ventilated seats and heated steering wheel.

An enhanced equipment package for the latest STS V-8 Elegance models includes heated seats and power lumbar support as standard, along with eight-way power seat adjustments for the driver and front occupant. This incorporates a memory package with presets for two drivers, and automatically adjusts the outside rearview mirrors; power tilt and telescoping steering wheel position, radio and climate control settings.

Additional refinements on the Sport Luxury model include a Eucalyptus wood trim package, heated front seats, heated steering wheel, power lumbar adjustment on the front seats and an

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uplevel infotainment system. This system includes a 15-speaker Bose 5.1 Surround Sound system that incorporates an integrated six-disc CD/DVD changer, an 8-inch VGA quality touch screen, Bluetooth capability, voice recognition and a navigation system.

### **Cadillac STS-V in detail**

The STS-V is one of the most exciting offerings in Cadillac's family of V-Series vehicles. The STS-V has been developed to deliver supercharged, rear-drive performance with an unmistakably Cadillac design. The STS-V arrived in European Cadillac showrooms in April 2007.

At the heart of the STS-V is a hand assembled 4.4L version of the Northstar engine, which is fitted with an intercooled, positive-displacement supercharger system. The Northstar V-8 SC (supercharged) engine produces 350 kW (476 hp) at 6,400 rpm and will rev to a maximum of 6,700 rpm. The engine generates 111 kW (151 hp) more than its naturally aspirated counterpart and the achievement of over 100-horsepower-per-liter makes the Northstar V-8 SC one of the world's highest specific-output production V-8 engines.

The Northstar V-8 SC develops 595 Nm of torque at 3,900 rpm, 168 Nm more than its naturally aspirated counterpart. The engine's power is underscored by its ability to deliver 90 percent of its peak torque between 2,200 and 6,000 rpm. The Northstar V-8 SC is mated to a six-speed automatic transmission. It is the most powerful engine ever used in a Cadillac.

The chassis of the STS-V has been tuned for performance on virtually every road condition and environment, including GM's demanding Milford Proving Ground road course facility and the famous Nürburgring Nordschleife. Outstanding acceleration, braking and cornering abilities are supported by increased tire sizes (P255/45R18 front, P275/40R19 rear); increased brake rotor diameters, larger pad areas and larger calipers; increased stiffness stabilizer bars and suspension springs; a faster steering ratio; and chassis tuning aimed at delivering performance without compromising driver or passenger comfort.

### **Performance statement**

At a glance it is obvious that the STS-V is a member of the V-Series family, thanks to a polished stainless steel wire mesh grille featuring a recessed Cadillac emblem. A splitter adds to this statement, as do integrated brake ducts in the lower portion of the front fascia. A special STS-V hood design provides clearance for the supercharged V-8 engine. Made from sheet molded

compound (SMC), it has a flowing, sculpted appearance and offers very good torsional stiffness. The back of the STS-V shows a higher, more rearward positioned spoiler that both provides more downforce and cleanly integrates the center-mounted high stop light and Cadillac wreath and crest emblem. Dual polished exhaust ports confirm the STS-V statement. The 2008 model also has new side vents.

Large, 10-spoke painted aluminum alloy wheels (8.5 x 18-inch front, 9.5 x 19-inch rear) offer cooling airflow to the brakes and showcase the STS-V's stopping power with a view of V-Series-badged four-piston brake calipers and large 355/365 mm Brembo rotors. The V-Series emblem is displayed on the calipers.

### **Distinctive, quality interior**

The upper and lower sections of the instrument panel are hand-wrapped with precision-grained leather. The STS-V is further distinguished by the use of distinctive, dark Olive Ash Burl wood, which adorns the center bezel of the instrument panel, console trim and all four door switch plates. Finished aluminum trim accents the passenger side of the instrument panel, which also incorporates a multi-colored V-Series emblem.

The new design steering wheel is fully leather wrapped. In addition to the driver information center (DIC) toggle switches, the steering wheel also is equipped with an interface for cruise control. Standard equipment includes DVD navigation and a 5.1 Bose surround sound audio system and lane-departure warning. In addition, a digital engine boost gauge is accessible through the DIC.

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## **Precision-tuned performance chassis**

The objectives set by GM's Performance Division engineers were to tune the chassis of the Cadillac STS-V, while simultaneously ensuring the virtues of sophistication expected by today's performance luxury car buyer. Engineers lowered the STS-V engine by 14 mm from the base STS V-8 engine position. This change also improved driveline angles despite shortening the two-piece prop shaft.

The front subframe required reinforcements to support increased lateral loading and manage the increased torque of the engine, while the rear subframe took on an even greater load from torque and cornering. Engineers added mass-optimized reinforcements at differential mounting points as well as control arm interfaces.

An increased-diameter tubular front stabilizer bar (36 mm) coupled with an increase in front spring rate manage the added weight transfer from increased braking and cornering forces. Correspondingly, the tubular rear stabilizer bar rate was increased (25.4 mm) to balance vehicle understeer. Rear spring rates were raised to achieve a balanced ride feel.

Specifically tuned monotube shock absorbers manage the increased tire and wheel masses and smooth out road disturbances. A Nivomat leveling system adjusts ride height with load and provides increased spring rate and increased damping as the load is increased. Specific cradle and bushing tuning enhances the transition feel between moderate and aggressive driving.

Faster 17.2:1 steering gear is included in the chassis tuning package to increase the steering sensitivity and responsiveness, but by using a ZF variable ratio, steering gear engineers have maintained high-speed stability in avoidance situations. A vehicle-specific steering valve profile provides feedback at speed while maintaining low parking efforts. Additional changes in profile were required to balance the more aggressive front tires. A special steering cooler is also used.

To further enhance steering precision, a tubular structure runs between the shock tower caps, under the hood and above the engine compartment. The hollow steel brace, a common application in high-performance sports cars, brings very good cross-vehicle stability to the front of the STS-V as well as enhanced steering precision and responsiveness.

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Connecting the power to the ground are P275/40R19 rear tires mounted on 9.5-inch-wide aluminum-alloy wheels. To reduce the spindle offset on the front steering wheels and thus improve resistance to road-induced steer, the front tires are P255/45R18 and mounted on 8.5-inch-wide alloy wheels. This provides balanced overall handling, combined with exceptional traction to manage the increased power output of the engine.

The STS-V is equipped with 355-mm-diameter, 32-mm-wide vented Brembo front brake rotors and 365-mm-diameter, 28-mm-wide vented Brembo rear brake rotors. The selection of a specific pad material required balancing of noise and wear characteristics.

### **Enhanced stability control**

The four-channel StabiliTrak chassis control system has been recalibrated for the STS-V's increase in horsepower and torque and provides enhanced stability control, especially on low-coefficient surfaces (e.g. snow or ice). In addition, the system allows the driver to select from four modes, ranging from full traction and stability control to traction control off and stability control on and even both traction and stability control fully off.

With the increase in torque and the desire to optimize straight-line performance during acceleration from low speed, Vehicle Launch Control software is used, combining a specific combination of traction control, torque management and driveline disturbance mitigation. This logic and prioritizing of system events has led to improvements in performance and less negative feedback to the driver.

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