



1991 SATURN

“It’s not every day you start a new car company from scratch and have all these people waiting to see what you turn out. The world has its eye on us. And there’s not a person in this company who doesn’t feel it.”

—Dana Andrew,
Saturn Powertrain Engineer



So Saturn was a bold move, from a lot of perspectives. Ten years ago, who would ever have predicted a new American car company coming on the scene?

A company that, first of all, would negotiate a labor agreement so thin it fits in a file folder, instead of the usual three-inch-thick binder.

Then construct a totally new, state-of-the-art and environmentally conscious manufacturing and assembly complex.

And then create a work setting that gives all of its people—engineers, designers, and manufacturing technicians—the freedoms they've been clamoring for.

The chance to push ahead with notions they believe in. To feel as if what they do makes a difference. And to forget about hierarchy, red tape, time clocks, and all the other trappings of bureaucracy that so often come between people and the product they're building.

In short, Saturn was the first time in a long time that so many people had come together behind the same idea.

And as anyone at Saturn will tell you, the idea wasn't to build a car jam-packed with every whiz-bang technological advance one could throw into it.

It was to build a good, reliable, well-designed, and exceptionally engineered car. One that could compete with what seemed to be the world's favorite small cars—all the Hondas, Toyotas, Nissans, and other competitors that keep driving away with market share.

And for good reason. They're good cars. In fact, so good that during the design phase Saturn engineers purchased some two hundred of them.

"We figured the only way to beat the competition was to drive the competition," explains Jay Wetzel, one of Saturn's founding engineers.

So that's what the engineers did. They drove the competitive cars back and forth to work. They picked them apart to find out what performed, what didn't, and why. And they tested them against prototype Saturns in virtually every road and weather condition imaginable—from the bitter cold winters of Kapuskasing, Canada, to the European proving grounds operated by Lotus in Millbrook, England.

They studied the competition with one goal in mind—to find out what American car buyers want most in a small car.

As Jay puts it, "Most great cars in history reflect the personality of one person. In our case, that person just happens to be the consumer."

As passionate as the engineers are about these new Saturns, they'll be the first to point out that they didn't design them just to please themselves. They designed them to please consumers.

Consumers who, as they learned in numerous research clinics, can be pretty emphatic about what they want.

A car that's nimble and quick to respond. A car that's fuel-efficient, roomy, dependable, and easy to maintain—meaning you don't have to tear other things apart just to get to the part that needs servicing.

And a car with a personality all its own—no cookie cutter stuff. One that borrows from the best of the best worlds: the reliability you've come to expect from the Japanese and the performance you've come to respect in the Europeans.

All of which, as Jay explains, wouldn't be that big a deal for a sticker price of thirty thousand. The trick, however, was to do it for a lot less than half that.



SATURN SL1



The Saturn SL is priced even more economically than the SL1. It features slightly different upholstery and wheel covers, and it's only available with a manual transmission and manual steering.

The SL1 is what Saturn engineers describe as their price/value contender.

It comes outfitted with a peppy 1.9-liter single-overhead-cam fuel-injected engine—tuned to give you all the power you need to zip through the city and cruise the freeways.

The SL1 also comes standard with a five-speed manual transmission and some pretty impressive EPA ratings—an estimated thirty-seven miles per gallon on the highway and twenty-seven in the city. It has front-wheel drive, four-wheel independent suspension, and a long list of “standard” features typically listed as “optional” on competitive models.

Things like variable-effort power steering. An adjustable steering column.

Full analog instrumentation, including a tachometer, trip odometer, and engine temperature gauge. Fourteen-inch tires. Tinted glass. Halogen headlights. Reclining front bucket seats. Remote trunklid and fuel-filler door releases.

Features which make it clear that Saturn's notion of price/value isn't what it is to some manufacturers—a car stripped to the bone, except for the bare essentials.

In fact, the only portion of a Saturn that's stripped down is the sticker price.



Saturn engineers make the most of storage space—including map pockets in the doors, a large, deep glove compartment, mesh pockets on the

backs of the front seats (except in the SL), and a few other convenient nooks and crannies.



"The real challenge in building these engines was not to get carried away by technology, but to perfect simplicity. To pull everything we could from the least number of components."

— Peter Dugdale,
Engine Engineer

That's the thinking that Peter brought with him when he joined Saturn back in 1985. And it's the same philosophy that guided the powertrain team in their development of Saturn's two new fuel-injected 1.9-liter cast aluminum engines.

The single-overhead-cam engine, designed for maximum fuel efficiency. And the dual-overhead-cam engine, designed for performance, with competitive fuel economy.

Obviously, each engine is tuned to please a slightly different driver. Yet, there's one tuning characteristic they both share. Both, according to Peter are very "torque-heavy" engines. Meaning that they'll respond every bit as well in the city, when you're battling stop-and-go traffic, as on the freeway, when you're accelerating through the gears to cruising speed.

A performance characteristic due, in part, to the way each engine is linked to Saturn's new automatic transmission—by a device called the powertrain control module. It's a computer that puts these two components in constant communication with each other.

Which is great. Because the better the engine and transmission can respond to each other's needs, the better your Saturn will respond to yours.



"Ideas this radical usually get shot down. But then, that's what's so nice about Saturn. No idea is considered too radical to explore."

—Bob Downs,
Transmission Engineer

What Bob's referring to is Saturn's new computer-controlled automatic transmission—an innovation that's already racked up eleven patents.

It's what Bob describes as a "smart transmission," programmed to seek the perfect shift no matter where you are—climbing a mountain pass in the Rockies or cruising down a sun-baked freeway in

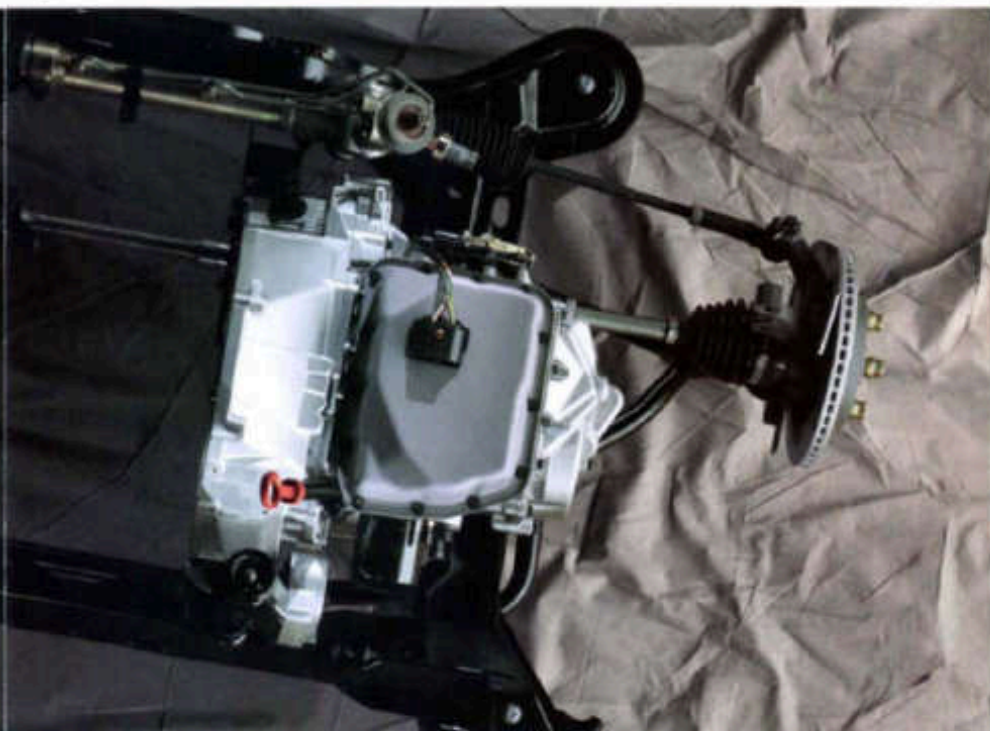
Southern California.

With the help of algorithms, silicon sensors, and tiny solenoid valves, it detects influencing variables—temperature, altitude, turbine speed, engine torque, oil temperature—and then translates these computer-based messages into mechanical action.

The result: a shift that feels much the same regardless of road and weather conditions. And a transmission that, amazingly enough, can even be manufactured on the same assembly line as the manual—another first in the U.S. auto industry.

Which brings to mind another Saturn feature you may be wondering about—the five-speed manual. It's designed to be tight, yet smooth. To have a very light clutch feel and an easy-to-manuever gearshift.

"We tackled the job the only way we knew how," explains engineer Warren Lett. "We got our hands on the best transmissions out there. Then we dissected them, extracted bits and parts of each, built on that, and produced what we think is an even better product."



SATURN SL2

It's a car most accurately described as a sport sedan—a comfortable balance between a small Japanese car and a European touring sedan, with a good blend of what you might expect from each—reliability and performance.

The SL2 comes with Saturn's performance engine, a 1.9-liter dual-overhead-cam multipoint fuel-injected engine that delivers 124 horsepower at 6000 rpm. Working with a five-speed close-ratio manual transmission (automatic is optional), this engine's tuned to give you an extra surge of power, an extra bit of thrust when you accelerate. And to give you an estimated EPA rating of thirty-four miles per gallon on the highway, twenty-four in the city.

The SL2 is front-wheel drive, with a sport-tuned suspension that includes stabilizer bars in both the front and rear. The front bar is larger than the one in the rear to provide the stability you need for quick cornering.

The tires are speed-rated 195/60R15 steel-belted performance radials designed especially for Saturn by Firestone.

The SL2 comes with a long list of standard features—including alloy wheels, full analog instrumentation, and variable-effort power steering, to name a few.

And like the SL1, it also comes with a sticker price that may surprise you. Pleasantly.



The Saturn sedan—the SL, SL1, and SL2—features more than 100 cubic feet of interior space.

The SL2 is styled a little differently than the SL1. It features body-colored bumpers and door handles, a rear reflector panel, and fifteen-inch alloy wheels.



“You can’t just call people up and say: ‘Hey, can we borrow your crash data?’ So you do the next best thing—you collect your own.”

—Ken Warner,
Structural Engineer

Which is what Ken’s team had in mind when they purchased seven brand-new import vehicles, drove them back to the testing facility, and promptly ran them into the nearest wall.

“It’s the only way to find out what our competition’s made of,” says Ken. “And if we’re going to be the company we say we are, then we have to go beyond what’s expected or required of us.”

Go beyond is precisely what Ken’s team did. They pushed Saturn crash testing beyond federal safety requirements—conducting additional crash tests at higher speeds and various angles. With the help of Cray supercomputers and simulation software, they designed strategically placed “crash zones” into every Saturn—to help dissipate the energy of a crash before it reaches vehicle occupants.

They also developed a special ramp

that fits beneath the rear seat to help prevent people from sliding under the safety belts—“submarining,” as it’s called in the industry. And a new patented safety belt latchplate that makes it a lot easier for parents to secure child safety seats.

“Safety is a peculiar business to be in,” says Ken. “You want people to appreciate the fact that you did a good job for them. You just hope they never have to find out how good.”



“Steel would have been the easy way to go, but not necessarily the smartest—at least not from the consumer’s perspective.”

—Dave Wittaker,
Body Panel Engineer

According to Dave, Saturn engineers had done enough testing to know that polymer

materials, combined with the right paint process, would beat steel hands-down when it comes to dents, dings, chipping, rust, oxidation, and corrosion.

And that’s why they opted to use spaceframe technology to construct the Saturn frame and a new dent-resistant polymer for the bodyside panels.

The paint system they chose represents one of the most technologically advanced around. A primer specifically formulated to adhere to the panel and be flexible, to give upon impact. A water-borne acrylic that lends the color finish a brilliant, lustrous, “wet” look. And a clearcoat that helps shield the acrylic against things that can eventually ruin a finish—dust, dirt, tree sap, acid rain, and ultraviolet light.

These features work together to give Saturn cars a competitive advantage both aesthetically and functionally.

Saturn bodyside panels are two to four times more resistant to dents and dings than steel. The Saturn paint finish is ten times more resistant to chips. Oxidation and rust aren’t even an issue.



SATURN SC

Convenient as they may be, four doors aren't the answer for everyone.

Some people have other, more pressing needs to fulfill. Like one of those lifelong and burning desires to own a sport coupe. A vehicle known for its sleek lines, aerodynamic qualities, and ability to accentuate the pure pleasure of driving.

These are the people the Saturn engineers had in mind when they designed the Saturn coupe.

The SC comes standard with Saturn's 1.9-liter dual-overhead-cam multipoint fuel-injected engine, a five-speed manual transmission, and an estimated EPA rating of thirty-four miles per gallon on the highway and twenty-four in the city. It also has front-wheel drive, a sport-tuned indepen-



dent suspension, speed-rated steel-belted tires, alloy wheels, a leather-wrapped steering wheel, and a few other pleasing surprises.

But then, these are things you'll

have to experience for yourself. As one Saturn engineer comments, "Our biggest challenge will be getting people into our showrooms. Once we get them behind the wheel of a Saturn, we're home free."

The interior of the SC—just like the interior of all Saturns—is ergonomically designed. All the gauges are comfortably placed within the driver's line of vision and all the controls are very easy to reach.



The SC features a sport-tuned suspension system with front and rear stabilizer bars, as

well as a strut-riding system tuned for better performance handling.



SERVICE / PERFORMANCE

"It's not every day we get a chance to start fresh, so we want to do it right."

—David Fisher,
Saturn Retailer

Right to David—as well as to all the other retailers who joined Saturn—meant setting a few standards.

Developing a stringent screening process for retailers who apply to own a Saturn facility. And creating an extensive training program for individuals who want to help sell and service the cars.

The retailers who joined Saturn are all too familiar with the image "car dealer" conjures up in the minds of most consumers.



Needless to say, it's an image they'd all like to change.

"It's not enough to be selling an exceptional car," explains David. "The people selling it and servicing it also have to be exceptional. And that's what all our screening and training programs are about."

Retailers aren't alone in their concerns. Saturn engineers have also been doing their part to cultivate Saturn's reputation by designing cars that are easy to service—therefore cutting down on what usually accounts for a good bit of the repair bill—labor.

It's a difference you'll appreciate when you start poking around under the hood and notice the color-coded dipsticks, the steel timing chain, and the spin-off oil

filter on the automatic transmission, to name just a few conveniences.

And when you go for your first service check and watch technicians connect a little device called the "portable diagnostic tool" to your car's powertrain control module, and then download a virtual "transcript" of engine and automatic transmission activity—all in less than a minute,



"What makes this car work is attention to detail. Nothing more, nothing less."

—Stan Fowler,
Development Engineer

Stan went after that detail the same way he always does—by pushing Saturn to their limits on the track. Just about as close to the edge as he can get without falling off.

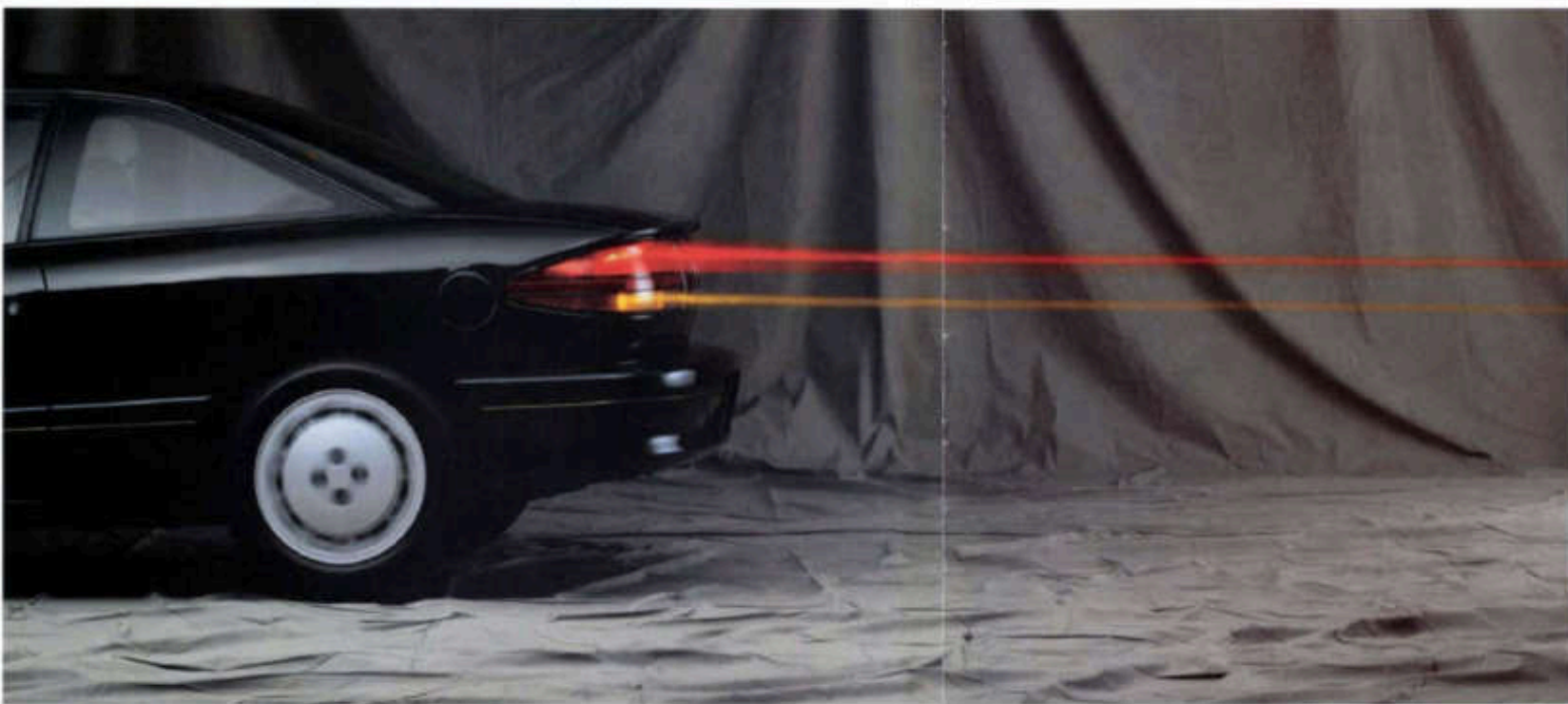
"When you've got your foot pressed to the floor, with the track moving outside at a blur, nothing is subtle," Stan says. "That's when you find out just how good a job you've done."

It's also when you really begin to appreciate Saturn features such as the wide stance and longer wheelbase—characteristics that increase stability and smooth out the ride over rough surfaces.

All told, Saturn engineers subjected the sedans and the coupe and all their various components to a grueling total of more than six million test miles.

First, they took the cars to the desert proving grounds in Mesa, Arizona, a track with enough variation to mimic every road surface imaginable. Then it was off to Kaposkasing, Canada, where the average temperature four months out of the year is a nippy twenty below zero. And then to England, to the Millbrook Proving Grounds operated by Lotus, for a 200,000-mile independent evaluation, to see how well the cars measured up to European driving conditions—lots of hills, switchbacks, and extended high-speed cruising.

As Stan says, there's really not any magic in the design of these cars. Just attention to detail. Meticulous finessing. And constant refining.



SPECIFICATIONS

ENGINE AND ELECTRICAL

Availability	SL, SLI	SL, SC
Engine Type	1.8 liter I-4, 1600 cc, 4-cyl.	1.9 liter I-4, 1600 cc, 4-cyl.
Horsepower (SAE Net)	87 hp @ 4000 rpm	104 hp @ 4000 rpm
Displacement	118 cu. in. (1907 cc)	118 cu. in. (1907 cc)
Torque (SAE Net)	87 ft. lbs. @ 2400 rpm	102 ft. lbs. @ 4000 rpm
Valves	1600 rpm	4000 rpm
Rear B. Axle	1.73 in. x 1.94 in. (32 mm x 49 mm)	1.73 in. x 1.94 in. (32 mm x 49 mm)
Compression Ratio	9.2:1	9.5:1
Valvetrain	Free suspension	Multi-point fuel injection
Valve Train	2 valves per cylinder, chain-drive	4 valves per cylinder, chain-drive
Engine Block	Aluminum alloy with cast-iron cylinder liners	Aluminum alloy with cast-iron cylinder liners
Cylinder Head	Aluminum alloy	Aluminum alloy
Exhaust System	3-way catalytic	3-way catalytic
Ignition System	Distributorless electronic	Distributorless electronic
Alternator	12 volt, 80 amp	12 volt, 80 amp
Battery	12 volt, 55 amp-hr starting amps	12 volt, 55 amp-hr starting amps
Recommended fuel	87 octane unleaded regular	87 octane unleaded regular

BODY / SUSPENSION / CHASSIS

Body Type	Four-spacer
Exterior Panels	Polycarbonate bodywork panels and bumper covers, galvanized steel hood and windshield, steel roof
Bumpers	Triple beam steel
Front Suspension	Independent MacPherson strut lower leg work and springs, and tubular front subframe bar
Rear Suspension	Independent multi-link with coil springs
Steering Type	Manual rack-and-pinion, SL; variable-effort power rack-and-pinion SL, SLI & SC
Steering Ratio	16.1:1 (SL), 16.1:1 (SLI), 16.2:1 (SLI, SC)
Steering Wheel Turns, lock-to-lock	4.0 (SL), 3.9 (SLI & SLI, SC)
Turning Circle, curb-to-curb	19.6 ft. (SL & SLI), 17.8 ft. (SC)
Braking System, front disc	Dual-diagonal, power-assisted front disc / rear drum
Rear Drum	Standard, 9.8 in. (250 mm) diameter
Optional Anti-lock 4 Wheel Disc	17 in. (200 mm) diameter
Wheels	16" steel with full covers (SL, SLI), 17" aluminum alloy (SLI, SC)
Tires	P175/70R16 all season steel belted radial (SL, SLI) P180/60R16 performance steel belted radial (SLI, SC) T110/70R16 steel belted radial compact sport
Exhaust System	Hidden steel

DRIVE TRAIN

Type	Transverse front engine, three wheel drive, with equal length halfshafts			
Transmission	MANUAL OPTIONAL AUTOMATIC			
Ratio (1:1)	M / S / L	S / L / SC	S / L / SC	S / L / SC
Ratio (2:1)	3.077	3.239	3.239	3.239
3rd	1.889	2.025	2.024	2.024
4th	1.287	1.423	1.423	1.423
5th	0.861	0.933	0.936	0.936
6th	0.640	0.730	—	—
Final Drive	4.100	4.100	4.110	4.110

CAPACITIES

Engine Coolant	33 quarts (34 liters)	
Engine Oil	42 quarts (34 liters)	
Fuel Tank	13.2 gallons (50 liters)	
EPN Estimated MPG (City / Highway)	27 / 34 (SL, SLI) 30 / 38 (SLI, SC)	26 / 34 (SL, SC) 27 / 32 (SLI, SC)
EPN Passenger Volume	89 cu. ft. (Cubic)	95 cu. ft. (Cubic)
EPN Cargo Volume	12 cu. ft. (Cubic)	11 cu. ft. (Cubic)

EXTERIOR DIMENSIONS

	SEDAN	COUPE
Wheelbase	102.4 in. (2603 mm)	99.2 in. (2520 mm)
Overall Length	176.2 in. (4476 mm)	170.0 in. (4304 mm)
Overall Width	67.6 in. (1718 mm)	67.6 in. (1718 mm)
Overall Height	55.3 in. (1404 mm)	56.6 in. (1438 mm)
Track, front	56.0 in. (1418 mm)	56.0 in. (1418 mm)
Track, rear	56.0 in. (1418 mm)	56.0 in. (1418 mm)
Maximum Ground Clearance	5.9 in. (150 mm)	5.9 in. (150 mm)
Weight Distribution	45% front / 55% rear	42% front / 58% rear

EXTERIOR DIMENSIONS (continued)

Curb Weight	SL/SLI	2362 lbs. (1074 kg)
	SLI	2634 lbs. (1197 kg)
Maximum Gross Vehicle Weight and its conditioning	SC	2361 lbs. (1071 kg)
	SL/SLI	2362 lbs. (1074 kg)
	SLI	2663 lbs. (1209 kg)
Optional automatic transmission and its conditioning	SC	2423 lbs. (1099 kg)

INTERIOR DIMENSIONS

	SEDAN	COUPE
FRONT		
Head Room	38.3 in. (973 mm)	37.3 in. (947 mm)
Leg Room	42.3 in. (1074 mm)	42.6 in. (1080 mm)
Shoulder Room	54.3 in. (1379 mm)	53.0 in. (1346 mm)
Hip Room	54.6 in. (1392 mm)	53.3 in. (1358 mm)
REAR		
Head Room	38.1 in. (967 mm)	37.0 in. (940 mm)
Leg Room	32.6 in. (827 mm)	34.4 in. (872 mm)
Shoulder Room	56.3 in. (1429 mm)	54.9 in. (1394 mm)
Hip Room	50.7 in. (1281 mm)	49.2 in. (1247 mm)

COLOR COMBINATIONS

	INTERIOR		EXTERIOR	
	SL, SLI	SLI	SC	ACCOUNT STUBS (SC ONLY)
White	Blue / Tan	Blue / Tan	Black / Tan	Black / Tan / Gold
Blue	Blue / Tan	Blue / Tan	Black / Tan	Black / Tan
Silver / Gray	—	Gray / Tan	Black / Tan	Black / Tan
Gold	Gold / Tan	—	—	—
Beige / Tan	Tan / Tan	Tan / Tan	Black / Tan	Black / Tan
Light Blue	Blue / Tan	—	—	—
Blue	—	Blue / Tan	—	—
Bright Blue	—	—	Blue / Tan	Blue / Tan
Blue / Green	—	Tan / Tan	Tan / Tan	Gold
Red / Black	—	Black / Tan	—	—
Black	—	—	Black / Gold	Gold
Red	—	—	Black / Silver	Silver
Red / Silver	—	—	Black / Bright Blue	Bright Blue
Medium Red / Silver	Tan / Tan	Tan / Tan	—	—
Medium Red / Silver	—	Tan / Tan	—	—

SAFETY FEATURES

OCCUPANT PROTECTION: Automatic safety belt system for driver and right front passenger including restraint and audible warning system • Manual lap/shoulder safety belts, outboard rear seat positions • Manual lap safety belts, front/rear seat positions, where applicable • Energy absorbing steering column • Energy absorbing instrument panel • Energy absorbing dashboard caps, front • Interlocking door latches • Side-guard door beams • Passenger guard inside door lock handles • Inertia locking, falling door lockers, two-door models (3-door models) • Safety anchors • Head anchors, driver and right front passenger (selectable) • Brakes with inside master cylinders • Safety door lock and door intrusion components • ACCIDENT AVOIDANCE: Side marker lamps and reflectors • Parking lamps that illuminate with headlights • Four-way hazard warning flashers • Kick legs • Center high-mounted stop lamp • Directional signal control with lane change flasher turn signal lamp • Windshield defroster, wiper and mold speed sensors • Inside mirror mirror • Outside left mirror mirror (right mirror where applicable) • Brake system with dual master cylinders and warning light • Steerer safety switch • Dual air-overhead lock • Low glare lock on inside windshield moldings, wiper area and blades, remote steering wheel surface • Illuminated/brake and inhibitor controls • Tire with built-in tread wear indicator

UPDATED SAFETY INFORMATION

Securely notify us in writing about safety recalls about Saturn products. Saturn reserves product performance in the field. We then prepare bulletins for servicing our product best. You can get these bulletins, too. Ask your retailer, or go to www.saturn.com 1-800-333-6000.

ABOUT THIS CATALOG

We have tried to make this catalog as comprehensive and factual as possible. We reserve the right, however, to make changes at any time, without notice, in prices, colors, materials, equipment, specifications, models and availability. Some information may have been updated since the time of printing, please check with your Saturn retailer for complete details.

