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## Wheels

The Nuts and Bolts of Whatever Moves You

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### The Disrobing of a Naked Tesla Sedan

By **JERRY GARRETT**

Norman Meyersohn/The New York Times A stripped Tesla Model S, on the convention floor of the [Detroit auto show](#).



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The wags were out prior to the Tesla press conference Monday at the Detroit auto show, wondering if the bare Model S chassis on display was intentional — or was it accidentally left outside and stripped by car thieves?

“No, we wanted to show off our naked body,” said Ricardo Reyes, Tesla’s vice president for communications, after a sheet was pulled off the vehicle. “Our engineers wanted to show what’s under the skin, the level of detail and engineering expertise that is going into this car. We’re doing it all in-house.”

The all-aluminum rolling chassis — an early production version known as an alpha build — evinced a high level of craftsmanship. So high, in fact, Mr. Reyes had to field repeated challenges to his assertion that the car's previously announced purchase price of \$57,900 (before federal and state incentives or tax rebates) could be honored.

“We’re holding the line on price,” he said. “We are also sticking to our production schedule.” The Model S, the [electric car](#) maker's first sedan, is due in 2012 as a 2013 model. Tesla's first vehicle, the two-seat Roadster that began deliveries about two years ago, uses a chassis provided by Lotus.

The Model S is seen as Tesla's acid test, which will determine whether it has the expertise to build its own vehicle, from scratch, in-house, without engineering help from a larger, more established automaker or outside engineering firm. Fully operational Model S alpha builds were shown in a video accompanying the press presentation, in which the cars were put through their paces on a country road in California, where the car is produced.

“We’ve taken a clean-sheet approach to what an electric car should be,” said Peter Rawlinson, vice president of vehicle engineering. “There are so many new opportunities for packaging when you are not trying to build around an internal combustion engine and transmission.”

The Model S will be powered by one of three possible detachable battery packs, positioned for the most part under the vehicle's floor. “This gives the vehicle a very low center of gravity, improves noise and vibration levels, and opens up new possibilities for the unique suspension we are also developing in-house,” Mr. Rawlinson said.

Mr. Reyes added that the base battery pack on the \$57,900 model would have a range of 160 miles. Optional battery packs would have greater ranges — 230 to 300 miles — but pricing for these units was not disclosed.

He said Tesla also was developing a fast-charging system that could, when speed of charging was essential to, say, continuing a trip, recharge the [lithium](#) battery packs from a 10-percent charge state to about 80 percent in 45 minutes. The Roadster, which has a range of about 240 miles in average use, can be recharged in a few hours with a fast charger, but from a 110-volt outlet, a full charge takes 37 hours.

Mr. Reyes declined to speculate how long a battery pack with a 300-mile range might take to recharge via a 110-volt plug. Theoretically, it could take a couple of days.

“We find Roadster owners don’t use up all 240 miles of the range, and then charge it,” Mr. Reyes said. “They tend to drive 40 or fewer miles per day, and then plug the vehicle in to top off its state of charge overnight. We believe Model S owners will have the same driving patterns. The fast charger, though, will give them added range, very fast, when they need it.”