

West Coast wonders

General Motors' all-new Ecotec 2.0-L turbo, the most powerful production engine in the Ecotec family, is a four-cylinder with six-cylinder behavior, according to GM. It represents GM's first direct injection offering in North America. Output is an estimated 260 hp (194 kW) at 5300 rpm and 260 lb-ft (353 N·m) at 2500-5300 rpm. By comparison, the Ecotec 2.4-L engine in the regular Solstice delivers 177 hp (132 kW) at 6600 rpm and 166 lb-ft (225 N·m) at 4800 rpm. The turbo boost is 20 psi (1.38 bar)

At 130 hp/L (97 kW/L), it has greater specific output than any other GM engine ever, the company says.

An intercooled, twin-scroll turbocharging system, along with variable valve timing, optimizes performance. Engineers in the U.S. and Europe helped design the engine using expertise related to the naturally aspirated Ecotec 2.2-L direct-injec-

tion engine used in some European applications.

With direct injection, fuel is delivered directly to the combustion chamber to create a more complete burn of the air/fuel mixture. Compared with a conventional port-injection combustion system, less fuel is required to produce equivalent power, especially at normal cruising speeds.

"Direct injection technology works well with turbocharging and helps deliver a great balance of power and economy," said Ed Groff, Assistant Chief Engineer, Ecotec 2.0-L Turbo engine. "The Ecotec 2.0-L Turbo produces the power expected of a V6 but in a smaller, more efficient package—and the driving response is simply terrific."

The cylinder block bulkheads—the areas where the main bearing caps are attached—and the bore walls are enlarged for strength. Other areas of the engine

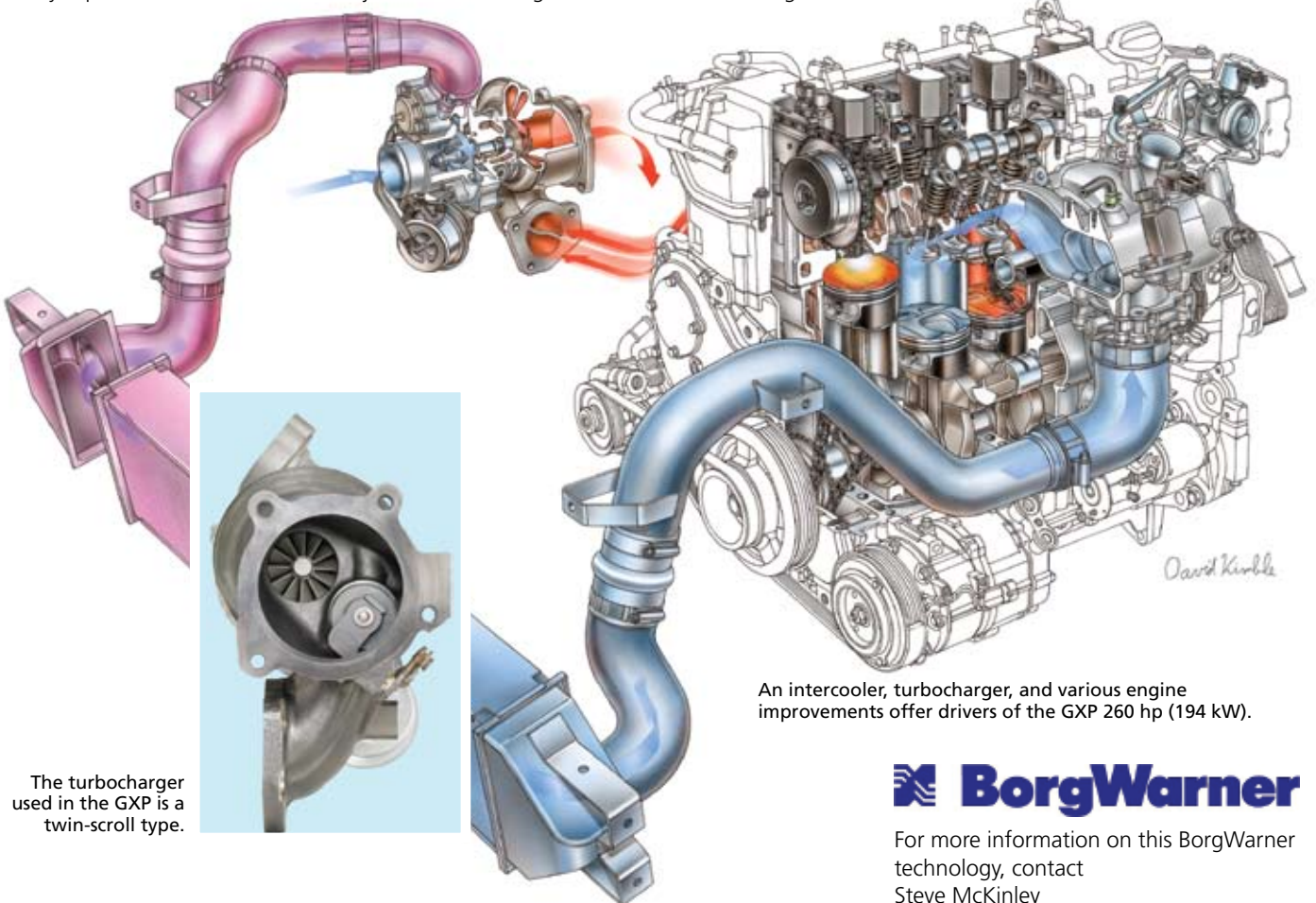
were enhanced to reinforce the structure, and the water jacket is deeper for added cooling capacity and improved cylinder bore roundness.

A unique cylinder head, fuel system, pistons, intake manifold, and the dual-scroll turbocharger (developed in conjunction with **BorgWarner**) are the major components that differentiate the turbo unit from other members of the Ecotec engine family.

Unlike other Ecotec engines, the turbo unit oil cooling does not just spray the underside of the piston; it actually flows into a cast-in channel in the piston.

The car reaches 60 mph (97km/h) from 0 in less than 5.5 s with either manual or automatic transmission.

The 2007 Solstice GXP will be available in fall 2006. Pricing has not yet been established.



An intercooler, turbocharger, and various engine improvements offer drivers of the GXP 260 hp (194 kW).

BorgWarner

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