

Performance Racing Industry

The Voice of the Racing Marketplace

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PISTONS & RINGS

lighter ring," he explained.

"The prime new product we've got this year is a high strength piston ring," said Federal-Mogul's Martens. "It's designed primarily to address the nitrous oxide systems in the market. It also came about as a result of a need in some of the naturally aspirated gas engines that we're experiencing high cylinder pressure, high heat, and correspondingly, some loss of ring tension," he explained. "So we took a hard ductile iron product that is actually a derivative of a product we use for diesel, and adapted it to the automotive market. And because of its material characteristics, it is very easy on the cylinder bores," Martens noted. The new ring is available in a variety of sizes, he added.

Hi Tech Engine Components has seen continued success with its series of piston rings, Falkenrath noted. "Our rings

the company offers a Race Proven series, which is "our top of the line," said Schumann. These rings are compatible with full output high horsepower engines with any compression ratio at a sustained high rpm. The Street Proven series is geared toward the E.T. racer, with engines developing up to 300 horsepower with maximum compression of 10:1 with 6,000 rpm. The Gas Proven series is a cast iron performance level ring set, "for the person that does not want a chrome or moly faced ring," Schumann noted.

"Our most unique product, which was just released in June, is our H-Series. It's a hypereutectic ring set," Schumann explained. "Hypereutectic pistons, due to the high percentage of silicone alloy, generate higher temperatures in the combustion chamber, and higher temperatures in the top of the pistons.

"The total mass of the ring—the cross sectional diameter—is equally, if not more important."

are ductile racing rings with low tension," he said. "We've seen sales of those accelerate this year."

Grant Piston Rings, Anaheim, California, has introduced a variety of new ring packages. Grant was involved in the racing market throughout the 1950s and 1960s, and re-entered the market three years ago with a series of rings for claimer engines, said Verne Schumann. Today, the company offers a variety of ring packages for racing applications.

"We got back into the performance ring industry strictly for the claimer engines in IMCA and other associations with a claim," Schumann said. "We were targeting a 300 to 500 horsepower engine, gas or alcohol, with compression of 13:1. The claimer marketplace is probably the most price and quality sensitive marketplace in the industry—you can't go out and spend a fortune on these cars, but every dollar you spend there has got to be very good quality. That's why we developed the Claim Proven series of rings."

In addition to the Claim Proven rings,

Normal ring sets are not usually compatible right out of the box with these pistons," he said. Working with United Engine & Machine, Grant developed a hypereutectic ring set which is user-friendly "right out of the box," Schumann said. "It does not require an hour or two of methodical, time consuming, expensive work."

In explaining the trend toward thinner rings, Schumann noted that the thickness on the face of the piston ring is not the only factor that has to do with performance. "The total mass of the ring—the cross sectional diameter—is equally, if not more important. The total mass of the ring determines the amount of weight you have to contain in a ring groove. With heavier parts, it's harder to prevent ring flutter, harder to ensure sealing, and you'll have more frictional drag on the cylinder wall. The cross sectional mass of the ring determines the actual reaction time to seatability," he said. "So the smaller the mass, the quicker the ring will react to pressure on the inside of the engine, which will blow it out against the side of the cylinder wall, and that can do

DYNomite Dynamometers

some presetting of the ring before the actual explosion occurs. The smaller cross sectional mass with the lighter weight also relaxes more quickly after the power stroke is underway, and provides less added drag across the piston. So ring thickness is not the only issue—you have to consider the actual depth of the ring in the groove," he said.

Total Seal, Phoenix, Arizona, has added to its ring line this season. In addition to its Gapless piston rings, the company has introduced a new Classic ring set, which feature an extra smooth surface for reduced ring drag, and concentricity for increased seal. The Classic rings are available for most popular applications.

Sales Strategies

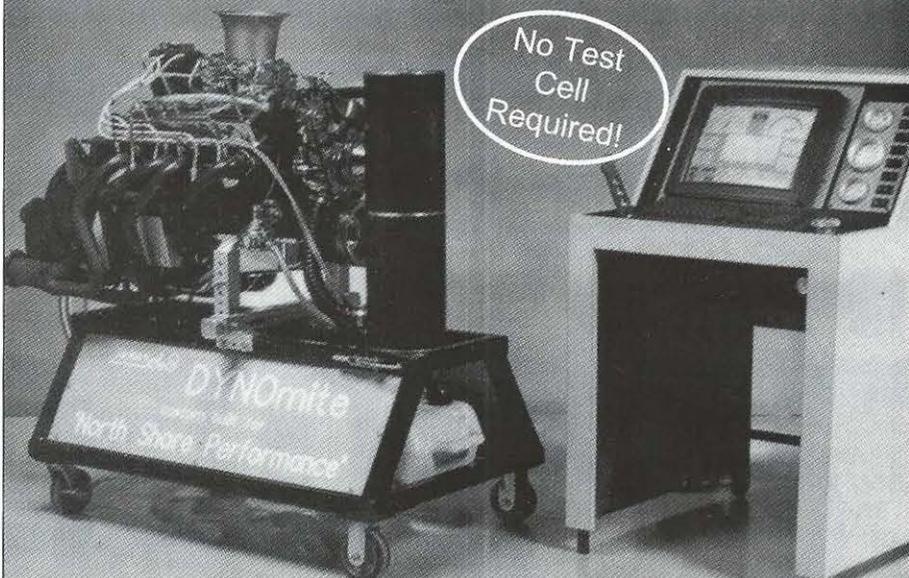
When it comes to selling performance pistons and rings to your racing customers, suppliers agree that the basic ingredients are technical knowledge and inventory.

"Piston selling is probably more technical than almost anything, possibly other than camshafts," said Mills. "Technical knowledge of engines and parts, what heads are available, and so on, will probably be more helpful than anything. And sounding knowledgeable is always impressive to a prospective customer."

"The salesperson needs to have product knowledge," agreed Falkenrath. "He needs to understand the ins and outs of what the products do, and why they work."

"A retailer should inventory the popular numbers," suggested Arias' Curnow. "A racer will buy something that's not exactly what he wants if it's in stock, so we encourage dealer participation in stocking products."

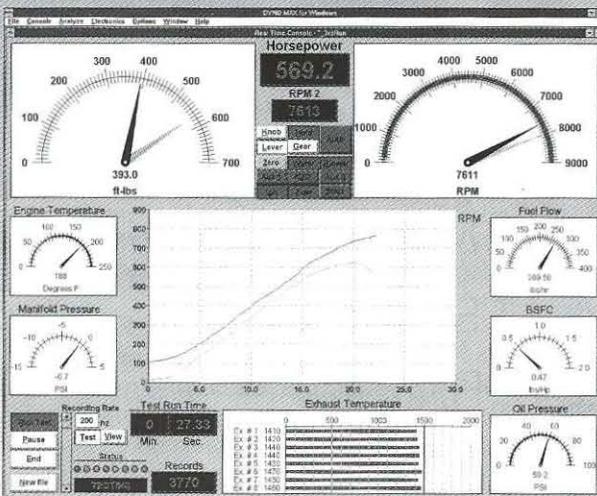
United Engine & Machine also addresses niche markets with its pistons, which Sulprizio believes also helps the retailers. "Generally, it takes more money to build those engines, so one of our goals is to keep our line broad, and not just try to focus on the Chevys. We make sure that we have products for stroker Chryslers, for Neons, or some of the nostalgia stuff that's out there. It becomes a little harder for the manufacturer, but it gives the retailer a broad base to sell from, and I think that's what he has to do to be successful." 



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