News & Updates

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New Gas Engine Assembly Area Streamlines Production Process

In order to improve our remanufacturing process, include improvements in safety to our associates, quality to our customers and gains in productivity for increased value, Jasper Engines & Transmissions recently completed its modernization of the Gas Engine Department.

The project included the development of an assembly area that can expand with the future growth of the company. "We were looking for a final assembly and test area to have a capacity of up to 325 engines per day," said Brad Bawel, Gas Engine Department Coordinator. "Our department didn't have the capability between the two shifts to do that initially."

Major castings move through the system by computerized conveyors to one of four final assembly cell areas. Bawel says each cell can be dedicated to assemble a different engine family to increase productivity. This department can be expanded to six assembly cells when future growth demands it.

When work on the complete engine is finished, it moves to the live-run test area, now located at the end of the assembly lines. From there, the engine is placed on a conveyor and transported to the shipping department where it is painted, placed on a skid and bagged.

"We wanted to streamline (the production) process, and get away from excessive material handling from one station to the next," says Bawel. "By having the (live-run) test stands at the end of the line, it allows the engine to go straight to the stand from the complete builders, and eliminates having to place the engine on a cart, and move the engine into a nearby test room."

The new Gas Engine Assembly area was the last major phase in a

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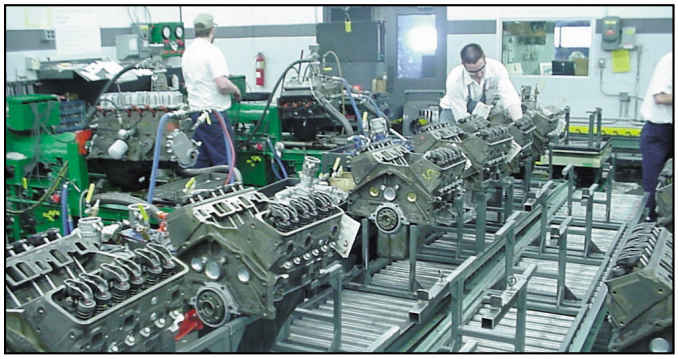

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Customer Profile

Muensterman's Auto Service, Inc.

Muensterman's Auto Service, Inc. of Evansville, Indiana has been a family owned business for nearly 50 years! Founder Jerome Muensterman started with two service bays at his shop at 1300 West Maryland back in 1953. Jerome would drive his old pickup truck to JASPER and pick up the engines he needed. Without the aid of modern four-lane interstate highways, the trip would take Jerome half the day to complete.

In 1958, Muensterman's Auto Service moved to their present location at 1400 West Franklin Street. Their shop has expanded twice since the relocation, and currently utilizes 11 service bays.

Thirteen employees work at Muensterman's, 12 are technicians and eight of the employees are ASE Certified Technicians, including two Master Technicians. The shop is equally owned by the five Muensterman brothers: Tom, Steve, Jerry, Mark and Bob. They acquired the shop from their father in 1988. In 2000, Muensterman's achieved Diamond Dealer status with JASPER, by having sales in excess of $100,000 last year.

Though most of their work revolves around fleet maintanence, including city police, and delivery trucks, Muensterman's can also take care of retail work from tires to routine maintenance.

Muensterman's Auto Service, Inc. of Evansville, Indiana has been a family-owned business since 1953. They live by the company's simple business philosophy of "Just do the job right, and treat people fairly."

The continuous education of technicians is a high priority at Muensterman's. Co-owner Steve Muensterman attended a recent training session at Jasper Engines & Transmissions on Basic Transmission Installation and Advanced Transmission Diagnostics. "Your business has to grow," says Steve, "so it's important to stay up on technology as much as possible."

Muensterman's has purchased JASPER engines, transmissions and radiators in the past year. They use JASPER, " because they are simple, dependable, reliable, with a great warranty," says Steve.

"Just do the job right, and treat people fairly." That is the company business philosophy of Muensterman's Auto Service, Inc. It's a philosophy that will keep their shop riding high with success for many years to come.

Muensterman's co-owner Steve Muensterman (at right, wearing hat) participates in a JASPER sponsored training course on Advanced Transmission Diagnostics.

Piston Ring Performance - Part 1

Built with the quality products of Sealed Power and Fel-Pro.
By Scott Gabrielson - Federal-Mogul Corporation

Scott Gabrielson

has over 21 years of engine parts experience and has operated in multiple job responsibilities within Sealed Power and Federal-Mogul Corporation. He is currently the product planner/engineer for Piston Rings at Federal-Mogul Corporation.

It is no secret that today's engines are, on the whole, smaller, lighter and more powerful than their counterparts of 10 or 15 years ago.

With that smaller engine package comes tremendous demands on the internal components. Perhaps no parts have seen a greater 'downsizing' than the piston rings. Yet, the rings today play a critical role in ensuring satisfactory engine performance and durability.

A decade ago, the typical automotive ring pack consisted of 5/64ths-inch-wide (.078) top and second rings and a 3/16ths-inch-wide (.1875) oil ring. Today's typical ring assembly is more likely to feature a 1.2mm (approx. .047-inch) top ring, 1.5mm (approx. .059-inch) second ring and 3mm (approx. .118-inch) oil ring. That's a dramatic reduction in ring mass and sealing contact area.

Why have OEM's continued to downsize these critical components? One word: Friction. The ring and piston assembly in an automotive engine accounts for an estimated 50 percent of total internal friction-related horsepower loss. It's no wonder, therefore, that engineers continue to focus on smaller ring contact area and lighter materials.

The Beat Goes On.

In spite of their reduced size, today's piston rings must maintain their tension over tens of thousands of miles of service, deliver virtually instantaneous seating, allow fast and easy installation and ensure maximum resistance to corrosion. The rings also are expected to serve as the primary conductor of heat from the piston to the cylinder wall - again, not an easy task given the reduced contact area through which the heat must pass.

How have ring manufacturers been able to keep pace with these operating demands? Primarily through the use of new materials, enhanced manufacturing processes and an entirely new approach to ring end gaps.

A Ring Primer

The **top ring** in an automotive ring pack is exclusively a compression ring. The ring is sealed against the cylinder wall and the bottom of the ring groove by the pressure differential created during the piston's combustion cycle. As pressure increases above the ring and between the ring's inside diameter and the piston groove, the ring is forced downward and outward, creating a tight seal over a wide range of engine rpm.

As ring widths have decreased, domestic OEM's have progressed from conventional gray-iron compression rings...to ductile...to steel rings coated with a plasma-molybdenum or chromium facing. "Plasma-moly" is a durable, scuff resistant ring facing with excellent oil carrying capacity and fast break-in. This advanced material can be found in virtually all domestic JASPER engines utilizing Sealed Power rings.

Chrome, used primarily by overseas OEM's, is a much harder, nonporous material usually requiring a rougher bore finish and longer break-in. In place of chrome, some manufacturers are now using a nitride heat treatment that provides a similar wear property.

The second ring, although commonly referred to as a "compression ring," plays a more important role in oil control by scraping excess oil from the cylinder walls during the power stroke.

This ring is typically manufactured from gray-iron or a similar alloy and often is coated with a phosphate. It can come with a plasma-moly or chrome facing to offer protection from combustion-related heat. Second rings usually feature a low-tension, tapered face engineered to reduce drag while maintaining the ring's oil control capabilities. Sealed Power second rings also feature a reverse torsional twist to create a more effective seal at the piston land.

The third ring, of course, is engineered exclusively for oil control. Most oil rings feature an expander-spacer, and upper and lower scrapers. The expander must maintain original tension over an extended period, provide instantaneous seating, remain clean in spite of often-demanding operating conditions, and resist corrosion. The industry's dominant oil ring design is the Sealed Power SS-50; the oil rails in this classic design rest on angled expander pads, which deliver both lateral and vertical force to seal the top and bottom surfaces of the ring groove.

(This article will be continued in our next issue of News & Updates)

Gas Engine Assembly
(Continued from Page 1)

total restructuring of the department. Engine block boring and torque plate honing takes place in one of four cell areas, each tooled for a certain engine family. The crankshaft department has a new designated area for remanufacturing. Both castings are sent to the assembly area utilizing their own computer operated conveyors.

"The system will build more quality into the unit," says Bawel. "By having an associate do one process at a time, that associate is less likely to make a mistake."

New Videos are Ready for Viewing

Your JASPER Factory Representative has two new videos to show you the next time he visits your shop.

The first video, entitled **6B Cummins Diesel Updates**, talks about one of the most versatile diesel engines on the market... the 6B Cummins. This three-minute video discusses the several improvements JASPER makes to this engine, to enhance its performance and reliability.

The second video is an episode of **NASCAR TECH** that aired February 18th, 2001, on Fox Sports Net. Ned Jarrett talks with Jasper Motorsports co-owner Mark Harrah and NASCAR Winston Cup Series Director Gary Nelson, about JASPER's involvement in NASCAR, and how the technology gained through racing is passed down to our line of quality remanufactured products.

Of course, there are more videos on the way, as JASPER strives to keep you up to date on the processes we take to improve your product.

JASPER Becomes NASCAR Officially Licensed Product

The NASCAR Officially Licensed Automotive Aftermarket Team has added Jasper Engines & Transmissions to its multi-year licensing agreement.

JASPER, the nation's leading mass remanufacturer of drive train components, is expanding its involvement in NASCAR with this licensing agreement.

"The NASCAR Aftermarket Program gets a real boost from adding JASPER, an industry leader," said Odis Lloyd, NASCAR Director, Automotive Aftermarket. "JASPER strengthens the engine management portion of our program by allowing professional technicians the ability to market their products to their customers under the NASCAR umbrella."

NASCAR's Officially Licensed Automotive Aftermarket Program was developed in 1996 to help build brand awareness and increase sales for automotive-related products. The program relies on a powerful marketing platform in print, radio, television and online to communicate its message. The centerpiece of the media platform is a 30 minute weekly television show, "NASCAR TECH," airing on Fox Sports Net, Sundays at 10:00 EST. The platform also offers a daily radio show on MRN, a quarterly magazine "NASCAR TECH, the Professional's Magazine" published by Babcox publications and a dedicated section on NASCAR Online, the official internet site of NASCAR.

As an officially licensed product of NASCAR, JASPER can display the above logo on packaging, advertising, sales literature, promotional items, posters and more. The tie-in with NASCAR will help to build wider ties with automotive professionals and gain greater public recognition. It also gives installers even more incentive to sell and promote our products as their customers demand and seek companies that are part of the NASCAR "team." You'll soon see the NASCAR officially licensed logo on our engine and transmission bags along with almost everything we print!

Strong Industry Commitment Revealed in Recent Survey

Take This Job and: a) Love It b) Shove It c) All of the 'Above' It.
by Kathleen Schmatz

Is the shop where your technicians work a decent place to work? Both technicians and shop owners strongly agree that it is, and said so in responding to the Babcox Tech Group *Survey of Automotive Technicians.* This fall, our research gurus set out to "quantify" the perceptions and opinions of the nation's technicians and shop owners toward their profession.

If you were to agree that the spirit, the expertise, and the passion of any team comes from within each of the team members, then this country's team of technicians needs a little bit more teamwork. For example, our survey asked both technicians and shop owners to indicate how strongly they agree or disagree with eleven statements about being a technician. The results indicated that both technicians and owners share strong opinion concurrence. Why? Because most shop owners divide their time between the office and the service bays so opinions toward this career path are certainly more similar than dissimilar.

In addition to strongly agreeing that their current shop is a good place to work, technicians and owners also agree that there is a shortage of trained technicians and that technicians are in demand. On the other side of the ledger, technicians and shop owners "agree to disagree" with the statements that "the public respects technicians as trained professionals," that their "wages are acceptable for their training and investment in tools," and that they "would recommend this career to others."

Technicians and owners tend to agree (but not as strongly) that being a technician is a good way to earn a living, and that it is difficult to keep up with changes in vehicle technology. Put it all together and what do you get - frankly a generally "positive" outlook, certainly more than the high school career counselors would ever imagine. For example, when asked "if you intend to someday change careers, what is the next likely career change," 39% of responding technicians said they hoped "to become a shop owner," 37% reported they expected "to remain in the automotive business, but not necessarily as a technician," and 24% said they wanted "to do something outside the automotive field."

Some of those "new" career paths included "being a lobster man in Maine," a "breast implant surgeon" (?!), or a "day trader." However, an overall 76% commitment to the industry sure sounds like a mandate to me! My husband is a college professor and he tells me his next career choice is to be a bag boy in the grocery store, asking whether shoppers desire paper or plastic. Not much of a commitment.

If changing the "image" of professional automotive repair technicians is to come at all, it will need to come from inside the industry first, from the country's technician team. Call me an optimist, but I believe that appears to be happening. You can count on us to keep reporting on milestones.

Kathleen Schmatz is Babcox Publications' Group Publisher and Vice President of Marketing. She has twenty-eight years of aftermarket publications experience. Kathleen serves on the Board of Governors of the Car Care Council and is Chairman of the Women's Board of the Car Care Council. The following article appeared in the January 2001 issue of Brake & Front End magazine. It is being reprinted with the permission of Babcox Publications.

JASPER Modified Series Banquet - A Blast!

By Fred Possman - JASPER Modified Series President

The Jasper Engines & Transmissions National Modified Series 2000 Banquet can only be described as a blast for all the competitors.

Starting the all day affair early, everyone met at Stefan Johansson Indoor Karting Center in Indianapolis around noon to have some fun. The center was exclusive to the JASPER Modified Series from 1:00 p.m. to 5:00 p.m.. As President of the Series, I am proud to say I never received the black flag all day. Although this cannot be said for my fellow competitors that were behind me. I think I had a sign that said "Hit Me" on my back bumper, because every time I went on the track the guy seemed to read that imaginary sign and used me for his brakes. They were all given the black flag before one lap was complete and sent to the "Sin Bin." They got what they deserved, and at least I was not waving the black flag. We were all tired and bruised after an afternoon of karting. It was then five minutes up the road to the Best Western Waterfront Inn for a quick shower, and the banquet.

The evening started off with the introduction of the Master of Ceremonies, Danny Williams, track announcer for Indianapolis Raceway Park and Gas City Speedway. I gave a short President's speech on the 2000 season to the 100 plus crowd and then wanted to go right to the awards presentations, and the distribution of the $28,000 point fund.

The first award of the night went to Tom Schrader, Vice President of Sales, Jasper Engines & Transmissions, for recognition of JASPER's involvement as Series Sponsor for the fourth season in a row. All the Series Sponsor's were recognized as award presenters. The TDR Screen Graphics "Above and Beyond" award went to Ken Kropf from Lowell, Michigan. Hoosier Tires presented the "Fast Time" Award to Jason Dietsch from Edgerton, Ohio. Citgo Racing Gasoline's "Hard Charger" Award went to Ryan Cawley from Indianapolis, Indiana. The Ed Martin/Pace American Trailer Sales "Most Improved Driver" was presented to Jeff Weston from Sarasota, Florida. Hoosier 2-Quick Transmissions presented the "Rookie of the Year" award to Rodney Cropper of Fortville, Indiana. The Jasper Engines & Transmissions "Championship Mechanic" and the J & K Communications "Championship Crew Chief" Awards went to Lyle Johnson and Tony Parkhurst from New Castle, Indiana. The Prestigious Central Indiana Mack "Sportsmanship" Award went to veteran L.J. Lines from Knightstown, Indiana. Hoosier jackets were given to all competitors in the top 15 in the points standings. From 15th in the points, and a check for $1,000 to the team of Brad and Stacey Springer, all the way up to 2000 JASPER Modified Series Champion, Rodney Scott and his check for $5,000, everyone enjoyed a fun day and a great evening.

Jasper Engines & Transmissions
National Modified Series
Final 2000 Point Standings

1. Rodney Scott	**1068**
2. Jason Dietsch	**982**
3. L.J. Lines	**954**
4. Rodney Cropper	**901**
5. Jeff Weston	**878**
6. Bobby Murany	**854**
7. Jeff Lane	**851**
8. Harold Scott	**837**
9. Don Skags	**750**
10. Ryan Cawley	**733**
11. Steve Christman	**720**
12. Rusty Rhonemus	**651**
13. Damon Breedlove	**646**
14. Scott Coe	**638**
15. Brad Springer	**587**

Three unidentified go-kart drivers (left) race at the Stefan Johansson Indoor Karting Center. Meanwhile, Tom Schrader, Vice President of Sales (right), congratulates 2000 Jasper Modified Series Champion Rodney Scott.

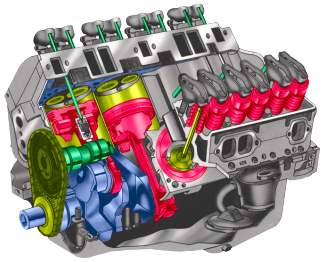
NASCAR KNOWS.

If you had to pick the next most likely candidate to join the ranks of leading aftermarket manufacturers in the NASCAR Officially Licensed Program, you would have been right to pick Jasper Engines & Transmissions. Industry insiders have long recognized that NASCAR Officially Licensed products deliver performance, precision, and endurance. As a technician, you can be confident that these brands will live up to the standards your customers rely on. Because of the association with racing, NASCAR Officially Licensed products mean added value to your customers.

Taking the track to the street.

Racing is a key connection between JASPER and the NASCAR Officially Licensed Program. NASCAR has a heritage of more than 50 years in motorsports and JASPER is the only remanufacturer to build the drivetrain components for a Winston Cup Series Team. The company began its racing involvement in 1989 when it sponsored Ken Ragan in a three-race Winston Cup Series schedule. That initial involvement grew into sponsorship and building the drivetrain for its #77 Winston Cup Series entry. Within the last year, JASPER's #77 car rose from 39th to 25th point position, so you know the company is doing something right! In fact, "Do It Right...and Have Fun" is JASPER's mission statement. The point is that the work you do deserves a product that measures up. When things go smoothly, any task becomes enjoyable and satisfying.

Racing has another important value that made Jasper Engines & Transmissions an



ideal brand for the NASCAR Officially Licensed Program. With their continuing commitment to constantly improving products, racing is an excellent resource for JASPER's ongoing research and development.

Precision beats a "quick-fix."

Value for the installer and consumer represents more than cost cutting. The price for a quality, remanufactured component can be higher than a used or rebuilt unit, but usually, significantly less than that of a new unit. The process begins with complete disassembly and replacement of all parts that are subject to wear. After careful inspection, castings are machined to precise tolerances. JASPER associates apply the latest technical advances to remanufacturing and the knowledge gained from their NASCAR experience. The result is a unit that's built to industry specifications, that meets or exceeds original equipment standards, that looks and performs like new.

There's no need to wonder whether a part has been replaced because JASPER provides a guaranteed list of replaced parts every time. Thorough testing is routine before any unit leaves the factory. For instance, popular complete engines are "live tested" with recorded inspections on compression, vacuum, and oil pressure readings, along with checks for noise and leaks. Every automatic transmission is dynamometer-tested under load. Inspections of shift patterns and shift pressures under varying throttle and load positions are recorded. With all this testing, you can be sure that JASPER products come with a warranty-a nationwide transferable warranty. That means you, and your customers, have JASPER support throughout the country. The same applies to service. JASPER maintains a toll-free technical hotline and a 24-hour, 365-day emergency warranty information line.

Decades add up to expertise.

After nearly 60 years in the industry, dedication to value has made Jasper Engines & Transmissions one of the nation's leading remanufacturers of gas and diesel engines, transmissions, differentials and rear axle assemblies, marine products, performance products, and alternate fuel systems. JASPER's state-of-the-art facilities currently ship over 75,000 gasoline engines, 5,500 diesel engines, 55,000 transmissions, 2,500 differentials, and 1,000 stern drives every year. The JASPER Winston Cup Engine Operation has also recently joined forces with PENSKE/JASPER Engines to supply engines to the 02, 2, 12 and 77 cars. More than 1,700 JASPER associates get credit for the company's phenomenal success.

More power to your business.

As the newest member of the NASCAR Officially Licensed Program team, Jasper Engines & Transmissions is looking forwardto building wider ties with automotive professionals and gaining even higher public recognition. It makes good business sense to let your customers know that you install NASCAR Officially Licensed products. Using the enormous brand equity NASCAR has created, NASCAR Officially Licensed products provide opportunities to drive your sales growth. By building customer loyalty and creating these opportunities, NASCAR Officially Licensed products ultimately put you in a win-win situation.

For more information on Jasper Engines & Transmissions, call 1-800-827-7455 or visit www.jasperengines.com.

JASPER's annual gasoline engine production exceeds 75,000 units. State-of-the-art equipment, such as electronic torque wrenches, assures consistent quality and reliability.

Every JASPER remanufactured automatic transmission is dynamometer tested to assure quality performance and customer satisfaction.

NOW YOU KNOW.™

NASCAR OFFICIALLY LICENSED PRODUCTS

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