

News & Updates

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JASPER Is A Corporate Sponsor of Anderson Woods Residential Program

In late 1999, Jasper Engines & Transmissions was approached by Anderson Woods' President, Judy Colby, to consider a corporate sponsorship of their Residential Program. Anderson Woods, Inc. is a private, nonprofit organization that serves children and adults with disabilities throughout the Midwest. Founded in 1978 by David and Judy Colby, Anderson Woods provides a camp experience in a rural setting, along with residential services and is committed to and supported by its local and regional community.

The Anderson Woods Camp is in its 26th year and is located at the Colby farm in Perry County, Indiana, on 175 acres of wildlife and forest along the Anderson River. By residing together in log cabins and working together to learn techniques of organic gardening and animal husbandry, campers also learn to develop their individual abilities, daily living skills, social skills, and self confidence.

Each Summer, Anderson Woods Camp offers eight sessions lasting four days each. Since welcoming three campers the

first year, the program has grown to serve over 130 campers annually, with separate sessions for children. The camp also offers a Living Skills Training program for the adult campers. For many, the skills taught at camp provide preparation for community residential programs, including residing in a home with Anderson Woods.

From its inception, the mission of Anderson Woods has been to expand and offer Residential programs that would "provide a safe, dignified, permanent residence for persons with mental and/or physical disabilities," and "to teach residents (to the maximum extent possible) to be fully functioning members of the local community." In 1992 the mission was complete with the opening of the first residential home in Siberia, Indiana. There are currently three homes serving 13 Special Persons. In response to the mission, residents are welcomed into the homes with warm hospitality and love; this is a love that fosters trust and security,

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Jasper Engines & Transmissions is a corporate sponsor of the Dove House in Jasper, Indiana, as part of the Anderson Woods Residential Program.

M & M Auto Service, Inc.

M & M Auto Service in Evansville, Indiana, is a family run business that specializes in personalized customer service, and offers all aspects of automotive repair.

Owner Leo Mehling has come to work every day since he and his brother Syd opened their business in 1947. Leo's son Bob, and daughter Becky Cook, joined the operation in 1982. Today, Leo and Bob tackle the daily work of the shop and order parts, while Becky manages the office and accounting duties. A total of 11 employees handle the work at the 4,500 square foot facility at 2210 North Heidelberg in Evansville. There are nine service bays to deal with general automotive repair, engine and transmission installation, and vehicle alignment.

Three of M & M's employees are ASE Certified Master Technicians. Three other employees hold ASE Certification in specific areas. M & M offers incentives for their employees to test for ASE certification, and pays for the tests. M & M seeks opportunities to send their technicians to school and tries to have all employees attend classes offered locally. The company also reimburses employee wages for time at school during work hours, and pays a bonus for evening classes.

To keep in tune to the latest technology, the company established



Leo Mehling and his wife, Betty, pose in front of their JASPER sign at the front office.

www.mmautoservice.com, a website for customers to set appointments, ask Bob Mehling technical questions about their vehicle, and look up employee credentials and certification.

M & M Auto Service has purchased JASPER remanufactured engines and transmissions since 1949, when Leo would drive to JASPER and have the engines installed there. "We believe in the product, and in the quality of the product," says Mehling. "The warranty is a main selling issue, and we always offer the customer the piece of mind of a nationwide warranty."

M & M Auto Service strives to offer their customers quality work, using quality parts at a fair price. They look to provide consistent quality service, and often go the extra mile to get their customers back on the road.



M & M Auto Service at 210 North Heidelberg, Evansville, Indiana, has been at the same location since the company opened in 1947.

Camshaft Bearing Improvements

by Jeff Richardson, Product Manager - Engine Bearings, Federal-Mogul Corporation



Jeff Richardson

currently is Product Manager for Engine Bearings, Timing and Oil Pumps for the North American Aftermarket. He has worked for Federal-Mogul for the past eight years. Prior to that, Jeff was an auto technician for ten years. Richardson keeps his ASE Master Certification up to date.



Many people think that cam bearings haven't changed in the last 25 years. They're wrong. Sealed Power cam bearings from Federal-Mogul have had several dramatic changes over the last few years.

First, Federal-Mogul updated the lining material to a tin based Babbitt for increased fatigue strength over



The Sealed Power Camshaft Bearing from Federal-Mogul is used in several JASPER remanufactured gas engines.

the previous lead based Babbitt. The tin based Babbitt is also an environmentally friendly material that OE manufacturers prefer.

Second they recognized that sometimes, cam bearings were hard to install and got nicked or scratched during the installation process. After the bearing was nicked or scratched it had to be skived so that the

camshaft would install properly.

To minimize the need to skive the bearing once it was installed, Federal-Mogul was able to increase the ID and OD chamfer to help ease the bearing into the proper location.



Wallace Wins Championship for AMS Legends



At left: Mark Wallace poses for one of his four feature wins in 2003 enroute to the Thursday Thunder Series Masters Division Championship at Atlanta Motor Speedway. At right: Wallace on the gas during race action.

Mark Wallace, Atlanta Branch President and Jasper Motorsports Co-owner, won the 2003 Master's Division Championship for Legends Cars at Atlanta Motor Speedway.

During the ten-race Thursday Thunder series on the AMS 1/4 mile infield oval, Wallace won four feature events; never finished out of the top five, and claimed the title with 961 out of a possible 1,000 points!.

Legends Cars have become one of the fastest growing segments of motorsports today. The cars are 5/8th-scale fiberglass bodied, full-fendered versions of the 1930's style coupes and sedans. Each Legends Car is powered by a Yamaha 1250cc four-cylinder motorcycle engine, producing 122 horsepower. The car utilizes a full tube frame with an integral roll cage, and a five-point safety harness. Legends Cars weigh 1,300 pounds with driver.

On the Technical Side: Transmission Seal Materials & Design

by Mike Steinhart, JASPER Transmission
Quality Captain

Mike Steinhart

has been with
Jasper Engines
& Transmis-
sions since
October 1994.
Mike spent six
years in the
Gas Engine



Division, including five years
in failure analysis. He has
been Transmission Quality
Captain the past three years.
Mike is a Certified ASQ
Quality Technician, an ASE
Certified Master Engine
Machinist, and is ASE
Certified and Ford Certified in
Engine Repair.

There are several different types of materials used to seal the internal and external parts of the transmission. All of these materials have benefits and disadvantages and/or limitations. Jasper Engines and Transmissions works closely with the seal kit manufacturers to assure that the best material is used in every situation. Special kits are designed for JASPER that exceed the industry standards. These special JASPER kits have many improvements that make them better than the Original Equipment kits that were used during the initial build. Most of the differences come in the form of rubber material upgrades.

Rubber Materials

There are five different types of rubber that are commonly used in transmissions:

- **Nitrile and Buna** compounds are one of the most common types of rubber used in transmissions mainly because of price. They have good low temperature capability, which means they seal well in cold applications, but they have poor heat resistance. Nitrile and Buna break down quicker than most other forms of

rubber in higher heat areas. The temperature range of these materials is -40°F to 225°F . Certain locations may not be able to use these compounds effectively because of excessive heat buildup from sources such as exhaust manifolds or torque converters. Other reasons why these materials would not be used are application and/or environment. Certain applications such as delivery vehicles and environments such as mountainous terrain can cause transmissions to build up excessive temperatures.

- **Polyacrylate (poly)** is also very common in today's transmissions. The price of poly is slightly higher than nitrile but it has a much higher temperature resistance. The temperature range of poly is -20°F to 300°F . As you can see, one of the limitations is the low temperature capability. Poly is not as flexible as nitrile during colder applications. In certain locations this could cause winter startup problems, but poly is very capable of withstanding most high heat situations.

- **Silicone** is not used as much as nitrile and poly because it has poor chemical resistance to certain types of lubricants, and it is easily damaged during installation. The temperature range of silicone is very good. It has a range of -80°F to 350°F , which makes it ideal for transmission sealing. But with the introduction of very aggressive transmission fluids, there is a very big concern with using Silicone. Silicone swells in some of these fluids causing excessive wear in places

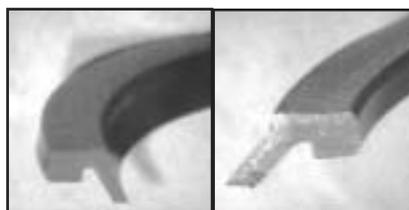


Figure 1 - Molded lip seal designs.
Pictured left to right: Inner lip seal
ring and the Outer lip seal ring.

where either the seal or the mating part is moving.

- **Ethylene Acrylic (trade name Vamac)** has higher heat capabilities than Nitrile or Polyacrylic and has better low temperature performance than Polyacrylic, but it also has an intermediate price range. The temperature range of Vamac is -30°F to 325°F . It has a high degree of oil, ozone, UV and weather resistance. It also ages well in higher heat applications. Vamac is normally not used much because the price is very close to the next compound so it is more feasible to step up to the next level.

- **Fluoroelastomer compound (trade name Viton)** is used in places where excessive heat are common because it has excellent high temperature capabilities. The temperature range of Fluoroelastomer compound is -40°F to 400°F . It is compatible with a wide range of fluids and normally has an extended life range compared to other forms of rubber, even in extreme heat situations of up to 550°F . The main disadvantage is its price. Fluoroelastomer compounds usually run about 4 to 5 times more expensive than Nitrile.

Rubber Seal Designs

There are several different types of seals used to seal the transmission and its components. Metal clad, lip (inner and outer), O-ring, D-ring, Quad, lathe cut, and molded. There are also some special design seals.

Metal clad seals are usually used to seal the internal area of the transmission from the outside environment and keep the internal fluid contained. Some common locations are the front pump (converter seal) and the extension housing seal. There are some internal locations in which these seals are used to separate two different types of fluids. These seals are commonly a rubber lip design that is molded to a metal clad. This metal

(continued on page 6)

GAAS Seminar Examines Marketing to Female Automotive Repair Consumers

Cynthia Cohen, president of Strategic Mindshare Consulting, says female customers represent a very large automotive parts and service market that could be considerably larger.

Cohen said most women view auto repair as something akin to getting a root canal and therefore avoid it whenever possible. "I want to defer it, delay it, and not do it at all," she said.

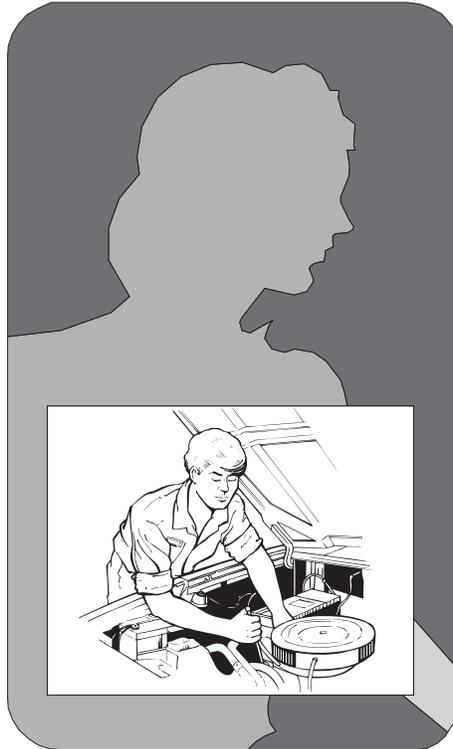
The result is that of five recommended regular services, a shop may only see the female customer three times. Changing the perception and the experience of women could therefore lead to large increases in sales, if it encouraged them to return for all of those recommended services.

Cohen said recent surveys suggest that women are purchasing at least 52 percent of new cars, and some surveys suggest as much as 65 percent. In another survey, 74 percent of women identified themselves as being the one who makes the decision on car maintenance in the household.

As with anything in consumer products today, the automotive marketplace is being affected by the large percentage of baby boomers now between the ages of 35 and 55, also the age range in which incomes are the highest.

In this group, Cohen said, she has identified four distinct behavioral segments: the mom, the self-indulgent woman, the epiphany woman, and the new golden girl. Each group has different priorities and desires, she said, and should be approached differently.

The mom has young children at home and makes most of the purchases for the family, Cohen said, adding that she often feels overwhelmed, that there is no time for her, and everybody else comes first. "She's kind of the female Rodney Dangerfield; she doesn't feel like she gets any respect," she said, "so she can be pleased by any retailer and any service organization that can give her some attention."



Cohen said that while the customer is often very price conscious because she is the family budgeter, she is also very pressed for time, so she will frequently trade time for money. Because she also has children, safety is her number one concern, Cohen said.

The self-indulgent woman may be married, but has no children. Cohen said such a woman purchases for herself and is a buyer of luxury goods. "We found (self-indulgent women) in all economic strata," she said. "Even in the lower income groups, she still is buying what she perceives to be luxury at her price because she deserves it."

The self-indulgent woman can be hard to please, Cohen said, "because she's got money, she's got power, and she's got self-confidence, so she is demanding in every retail and service environment. It's hard to win her loyalty, but she does love discounts."

Because automobile repair is one of the last areas where she doesn't feel confident, she is very sensitive to being spoken down to, Cohen said.

The epiphany woman is going

through a major change in her life often precipitated by some catalytic event - being widowed, divorced, laid off or fired. As a result, she is often changing many things in her life, Cohen said, and she is not afraid to learn new things. That type of woman may be one of the best candidates to become a do-it-yourselfer, she said, because she is interested in learning new things.

The golden girl skews a little to older women, Cohen said, and is someone who is no longer working. "Life is for me," is the attitude of the golden girl, she said.

Shopping is an activity for the golden girl, and therefore she is willing to spend more time talking about what her car needs, Cohen said, adding that it also means that she has the time to shop and drive farther for a discount. "She's price sensitive, but she would love to be loyal," she said. "She would love to have, 'her guy.'"

Those four types of women all share some common traits though, Cohen said. "The number one common thread, the root of the root canal choice, is the lack of knowledge and the whole condescension attitude," she said. "Women hate that."

"They just say, 'Look, give me the information without the attitude,'" Cohen said. "'I'm a smart person, so talk to me and educate me.' They are all open to learning. They want fact-based answers, step-by-step directions, and really quality support materials."

The key to the process is to help women work through their needs while making them understand the process, Cohen said. "This is how a woman wants to see herself - empowered, free, confident - I can do it."

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(transmission seals continued)

supports the seal and gives the seal a housing that can be installed into a bore.

Lip seals are commonly found anywhere a piston needs to be moved. The most common location of a lip seal is on a piston in a clutch pack. As fluid presses against the bottom of the lip it pushes it against the bore causing it to seal. See Figure 1 for lip seal designs.

O-ring, D-ring, Quad and lathe cut seals are all similar. The O-ring is a rubber ring that has a circular cross section. A D-ring is a rubber ring that has a D- shaped cross section and a Quad ring is a rubber ring that is normally designed with 4 lobes. A lathe cut seal is also a rubber ring that usu-

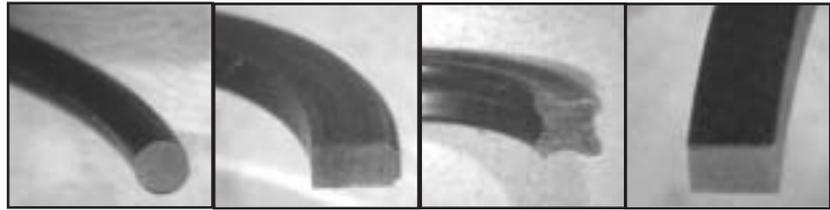


Figure 2 - Various transmission seal designs. Pictured left to right: O-ring seal, D-ring seal, Quad seal and the Lathe cut seal.

ally has a square or rectangular cross section. Some of these lathe cut seals also have some special designs added. All of these seals are used in locations such as sealing a shift lever, piston, pump, servo, extension housing, etc., and can be used to create a static or dynamic seal. See Figure 2 for seal designs.

Molded lip seals are beginning to become very common in later style transmissions. They take the place of piston and lip seal designs. They consist of a metal piston that has the

lip seal molded onto the inner and outer diameter. These molded pistons save time and eliminate the possibility of installing a lip seal incorrectly.

There are many ways to seal a transmission, whether it is internal or external. JASPER has made many changes in rubber compounds to prevent seals from wearing out or breaking down. We have also made changes to some seal designs to help prevent leaks or make the transmission work more efficiently.

(Anderson Woods continued)

enabling residents to make the homes *their* home in body and spirit. This is carried out through the encouragement of House Parents who are called to provide continuous supervision, support, and companionship to the residents.

Anderson Woods residents work toward being a family that serves the larger community, and one that openly shares itself and its gifts. Residents support the local area through active participation in Special Olympics, Special Religious Education (SPRED), Parks and Recreation, worship and church affiliation, and employment. In addition, they serve the community through assisting in Martin's Cloak Food Pantry in Siberia, Indiana.

Anderson Woods facilitates the guidance of the three residences in southern Indiana: Lark Community House in Siberia, and the Owl House and Dove House in Jasper. The program receives support not only from donations by the general public, but also through the Corporate Sponsorship Program in which JASPER participates. A sponsoring business provides assistance in securing employment for



Pictured left to right: Dean Altman, Sara Burke and Tim Sanders are presently employed with JASPER as part of the Anderson Woods Residential Program.

residents, doing home maintenance and repair for their sponsored home, and having an administrator that serves on the Anderson Woods Board of Directors. The sponsoring business also includes residents in company picnics, Christmas activities, and other social gatherings.

Jasper Engines & Transmissions has been the Corporate Sponsor of the Dove House in Jasper since 2000. Since that time, four residents have been employed at JASPER, with Tim Sanders, Dean Altman, and Sara Burke presently employed. Tim washes and waxes the company tractor-trailer rigs. Dean helps stuff envelopes for the billing department, and Sara just recently came on board to help make warranty packets for our sold products.

All three have been a wonderful addition to the JASPER family.

JASPER's sponsorship of the Anderson Woods residence has been very rewarding and worthwhile. If you would like further information concerning sponsorship, donations, or camp/residence requirements, please contact Gayle Durholz with Jasper Engines & Transmissions at 1-800-827-7455, extension 2570. Or you can contact:

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"Associate Sponsor Spotlight"

These great companies help us, and we ask you to help them!



First Tennessee/First Horizon

The First Tennessee family of companies was founded in 1864 as the First National Bank of Memphis. Today, it is a diversified, national financial services company that stretches from coast to coast.

Within Tennessee, the company is lead by the First Tennessee Banking Group, which has more offices than any other financial institution in the state. The group also has the largest statewide market share of households and businesses.

In its first hundred years, the bank grew steadily, but in the last three decades, the organization has reinvented itself twice.

In 1972, the Memphis company launched itself statewide. Through growth and acquisitions, First National became First Tennessee, quickly becoming the leader by focusing on customer service. Today, it enjoys one of the highest customer retention rates of any bank in the nation.

The banking group also has become full service in the range of financial products it offers its customers, including deposits, loans, investments, insurance, financial planning, trust services and asset management, credit cards, mortgages and cash management.

In the '90s, the company survived the decade of bank mergers by again stretching out of its comfort zone. First Tennessee began assembling a national mortgage division, one that today is one of the country's Top 10 providers of mortgage loans to consumers. The First Horizon brand is on 190 offices in 35 states. The growth has kept the company independent, while others around it have been caught in the merger frenzy.

Now, the company's goal is to become the best financial services organization in the nation. Its mortgage offices have become full-fledged providers of all of the company's financial products, and each year more and more customers across the country purchase additional products beyond their primary loan relationship.

The company also features FTN Financial, a leading firm outside Wall Street among long-term fixed-income underwriters in the United States. FTN Financial provides services for the investment and banking community through a network of offices nationwide. First Tennessee also has a fourth business line: merchant processing of credit cards and checks, becoming a national leader in the service for the hospitality industry.

For more information on First Tennessee/First Horizon, contact the company at (901)523-4352 or visit its Web site at www.FirstTennessee.com.

Racing Electronics

Racing Electronics has been "in the biz" for over 15 years. Started as a hobby in a condominium, R.E. has become #1 in Race Communications Worldwide.

The company's main office and manufacturing division is located in Pleasantville, NJ, (outside of Atlantic City) with a satellite office in Concord, NC, (across from Lowe's Motor Speedway).

Racing Electronics operates a fleet of full-service vehicles including 5 "big red" scanner trailers, 3 radio vans, 2 radio buses and 2 rental-only trailers. R.E. vehicles blanket Winston Cup, Busch, Craftsman Truck and IRL racing with ventures into many other race forums. Racing Electronics is the official communications supplier for ASA, ARCA, USAR Hooters, 600 Racing, DIRT and ACT. Additionally, R.E. supplies more than half of Nascar's teams—55% Winston Cup, 65% Busch, 75% CTS—with their racing communications. Racing Electronics customers include Dave Blaney, Jeff Gordon, and Evernham Motorsports, to mention just a few.

The Racing Electronics full product line includes radios and accessories from Motorola and Kenwood, and high quality scanners from Uniden plus the RE2000 Alpha Racing Scanner. Customers seeking service will find that R.E. is the only place to go. Need custom gear? R.E. is where you want to be... from the latest scanner and radio modifications to earpieces and fully customized systems. Accessories? Just tell us what you want.

Racing scanner fans will find that Racing Electronics has the most comprehensive frequency membership plan available. Priced from just \$9.95, customers are entitled to frequency updates weekly via the internet, plus get at-the-track programming (for SC200 & RE2000 only). For a slightly higher fee, customers can also pickup their Event Sheets at the track.

No matter what your racing need, be it professional communications, scanner sales and support, or a full complement of radios and scanners for your venue, Racing Electronics is the one to call... 1-800-272-7111, seven days a week.



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