

November 2002

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## JASPER Expands Computerized Gas Engine Live Run Testing

Jasper Engines & Transmissions has implemented computerization in its live-run testing of complete gasoline engines. This computerized testing program, developed by JASPER's Research and Development and Computer Departments, allows data acquisition of oil temperature and pressure, oil flow, water temperature and vacuum readings, improving testing accuracy.

When the engine is started on the live-run test stand, it is allowed to idle for about one minute. A computer servo operates the throttle, while pre-heated oil and water flows through the engine, closely simulating daily operation.

As the test begins, the servo opens the throttle and the engine runs at 1,400 RPM. When the engine oil temperature reaches 145° Fahrenheit, the computer automatically records



**Final preparations are made to the engine before the computer test begins.**



**Engine oil temp and pressure, oil flow, water temp and vacuum is recorded.**

the engine readings, including oil and water temperature, oil pressure, vacuum and oil flow; displays the findings on the monitor, and determines whether or not the engine passes. The entire test session takes just over eight minutes.

"The changes in oil temperature can have a great effect on oil pressure and flow," says Steve Kissel, Floor Supervisor for JASPER's Gas Engine Division. "By acquiring oil flow readings, we can detect issues that may not have been found with checking oil pressure alone, including clearance issues, incorrect rod bearings and excessive camshaft clearance."

"Each of our live-run computers acquires test data when engine oil temperature reaches 145°," says Kissel. "This insures accuracy and consistency between our test stands and our operators."

Kissel says the new computer test system will accentuate JASPER's reputation for quality. "This system will not let an engine go out the door, and not pass our parameters."

## Donnie Braun & Sons Auto Repair

Donnie Braun & Sons Auto Repair in Jefferson City, Missouri, is a classic story of a businessman turning his small part-time business into a successful full-time operation.

Donnie grew up on his family's Missouri farm and received lots of hands-on experience repairing whatever was needed. He began working for an auto repair shop in 1958 and soon specialized in Volkswagen repair. Nine years later, Donnie built a two-bay garage behind his house and started his part-time repair business; building clientele and a good reputation.

Donnie's full-time position was at a Volkswagen dealership in Jefferson City. He started as a technician in 1968, but was quickly promoted to Service Manager. Donnie left the dealership in 1971 and converted his part-time shop to a full-time business, adding two more service bays. By 1989, the time was right to expand. Donnie built his present facility at 2800 Renn's Lake Road, with 14 service bays, counter space, a parts room, office, waiting room, and an employee lounge.

Donnie, his wife DeeLynne, and sons Steve, Gary and Alan make up the Braun's family operation. A total of 14 employees han-

dles a full range of services from brakes to tires and everything in between. They're also an official Missouri State Vehicle Inspection Station. Many of the employees are ASE Certified technicians or Master technicians. They use factory tools and parts to repair a customer's vehicle, and they use All-Data information systems for a vehicle's service information.

Donnie Braun & Sons Auto Repair has been using JASPER quality remanufactured gas engines and transmissions since 1996. "It's basically because of the quality of the product," says Alan Braun. "We tried others in the past, but then we tried JASPER and have had no complaints whatsoever. We receive good service from our JASPER factory representative and great technical support should a problem ever occur."

The future of Donnie Braun & Sons Auto Repair looks very bright as they would like to expand; make their business grow; to be state of the art; and strive to be the best in the field.

JASPER and Braun Auto Repair share a clear common mission statement: to satisfy their customers with a service that is of the highest quality.



*Members of the Braun family include (pictured left to right): Gary Braun, Donnie Braun, DeeLynne Braun and Alan Braun. Not pictured is Steve Braun.*

# Transmission Cooler Flow Checks: A Simple Step for Transmission Installation

by James Feaster - JASPER Research & Development

## James Feaster

Is a 1996 graduate of Rose-Hulman Institute of Technology with a Bachelor of Science degree in Mechanical Engineering. James has 6 years experience with JASPER, including 4 years Gas Quality Captain, 1 year Performance Department and 1 year Transmission Quality Captain. James is ASE certified in Automatic Transmission/Transaxle, Engine Block Machinist and Engine Assembly.



A transmission cooler flow check is just as critical as checking engine oil pressure before running an engine. Just like an engine that is run without oil, a transmission that doesn't have complete fluid flow will cause bushings, washers and bearings to seize to shafts and destroy the transmission.

Before we go into how to conduct a cooler flow check, let's discuss the reasons why a cooler flow check must be performed. The design of the torque converter is what generates the heat in the transmission. The transmission fluid is sheared inside the converter creating heat by friction. The friction is the same heat generated by rubbing your hands together. It doesn't take long for your hands, or a torque converter, to heat up. If the heat from the torque converter is not reduced, the transmission will fail from overheating. Transmission engineers added a cooling system to prevent overheating in the transmission.

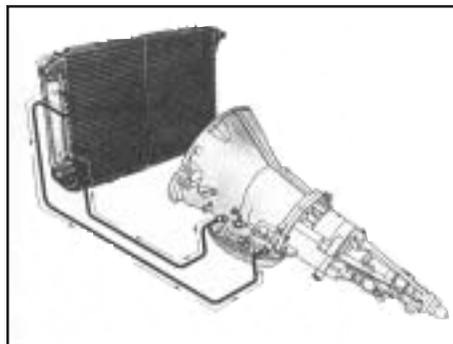
The flow of the transmission fluid must be traced to understand how the

transmission cooler fits into the overall operation of the transmission.

The fluid is picked up from the pan and pumped to the converter and control circuits. The fluid that enters the converter is used to operate the converter and gets heated. The fluid then leaves the transmission and travels to the cooler. The fluid is cooled as it passes through the cooler, then leaves the cooler and returns to the transmission. The fluid lubricates the bushings, washers and bearings in the transmission. Finally, the fluid drops into the pan. Keep in mind the cooler is in the middle of the flow process. If the cooler is restricted, fluid cannot return to the transmission to lubricate the bushings, bearings and washers.

There are several types of coolers, but the most popular is the oil-to-water cooler. The cooler is actually located in the side tank of the radiator and transmission fluid is passed through the cooler.

Oil-to-water coolers have many different designs. The earlier designs flowed fairly well, with minimal restriction. As time went on, smaller and smaller passages were designed into the cooler to make them more efficient. The problem with these small passages is that contamination can be trapped in the cooler more easily. This usually isn't a problem unless the transmission fails and generates a lot of contamination. The contamination clogs the cooler reducing the amount of fluid returning back to the transmis-



**This is the setup for a typical oil-to-water transmission cooler**

sion. This can be an issue when the replacement transmission is installed.

When a replacement transmission is installed in a vehicle, the only way to make sure the cooling system is working correctly is to conduct a cooler flow check. The process is a simple and very important step to prevent a failure.

The transmission is installed and filled with transmission fluid. The return line from the cooler is removed at the transmission. A hose is attached to the line and put into a measuring container. The vehicle is started and fluid will flow into the container. NOTE: rear-wheel drive Chrysler transmissions must be checked in NEUTRAL.

Research has shown that transmissions flow more than the O.E. minimum cooler flow specifications. Most transmissions flow at least two quarts in 20 seconds. If the transmission is flowing less than two quarts in 20 seconds, then the cooling system may be restricted. A second cooler flow test will verify a restrictive cooling system.

Remove the cooler line coming out of the transmission. Connect a line to the transmission and put the other end in a measuring container. Start the vehicle and record how much fluid flows into the container. If the flow is more than two quarts in 20 seconds, the transmission is flowing sufficiently, and the transmission is not the problem. This leaves the cooling system as the culprit. The cooler, cooler lines and by-pass valve, must be flushed or replaced to remove any contaminants. Conduct a flow check again on the return line from the transmission cooler to determine the system has been adequately repaired.

As you can see, it is very important to check cooler flow after replacing a transmission. This process must be done on all transmission replacements to ensure that your customer's transmissions provide years of reliable service.

## Technician Survey Confirms Importance of Vehicle Maintenance

For most people, their automobile, truck, or SUV represents the second-largest purchase they will ever make, behind only their house in cost. So it makes good sense to protect that investment through regular maintenance, right? As sensible and commonplace as this advice is, many consumers are having trouble following it, according to a survey of ASE-Certified automotive technicians.

It's not because the auto technicians aren't trying to educate their customers. Just as physicians' warnings about the dangers of too much fast food often fall on deaf ears, these doctors of motors dispense wise counsel, but their advice is often ignored. Virtually one-half (48 percent) of ASE-Certified technicians polled indicated that they "always" tell their customers about the importance of vehicle maintenance, while these same technicians report that only two percent of motorists "always" follow their advice. Admittedly some of us backslide from time to time, so maybe "always" sets too high a standard. Adding in the responses for "usually," the results are not much better. Eight-four percent of technicians said they "always" or "usually" explain the importance of maintenance, while only 29 percent of motorists "always" or "usually" follow technicians' advice.

"Considering the costs and complexity of today's vehicles, consumers are being penny-wise and dollar-foolish if they neglect routine maintenance," notes ASE President Ronald H. Weiner. Almost two-thirds of the techni-



cians surveyed felt that consumers could take care of their maintenance and repair needs for \$500 or less annually. Not a huge amount, considering the average cost of a new vehicle or the return on investment.

So what items specifically are consumers neglecting? The old-fashioned oil change tops the list (35%), followed by transmissions (19%), tires (14%), cooling systems (13%), brakes (10%), belts (5%), and tune-ups/engine performance (4%). The downside of all this neglect is shortened vehicle life, compromised safety, and the specter of minor repairs ballooning unnecessarily into big-ticket overhauls. Brake pads are indeed cheaper than rotors. As vehicles become more complex and packed with computers, conventional wisdom might suggest that younger people, at ease with today's high-tech gadgets, would be a bit more likely to keep

up with repairs than the older generations. Not so.

The ASE-Certified technicians polled indicated that middle-aged people took the best care of the vehicles (48 percent), followed closely by the elderly (42 percent). Young people placed dead last, at ten percent.

Let's say your consumers have seen the light and begin taking their cars in for routine maintenance and service. What's the pay off? A majority of technicians said motorists could extend vehicle life by 50 percent or more. Mind you, the foregoing is not the opinion of your back yard mechanic, but ASE-Certified technicians.

*Article Courtesy of ASE*

# Your Independent Garage Customer Advisory Committee

We would like to introduce our new Independent Garage Customer Advisory Committee. JASPER has been utilizing Customer Advisory Committees for over 15 years. These groups have been instrumental in the success of JASPER in the past, and we know they will help us stay focused on issues that are important to our customers in the future.

The members of the JASPER Independent Garage Customer Advisory Committee are:

- Rick Hughlett from Rick's Automotive, Springfield, MO.
- Amos Broadway from Broadway Automotive, Montgomery, AL.
- Charlie Kidwell from Freestate Auto & Truck, Capital Heights, MD.
- Robert West from West Service Center, Chesapeake, VA.
- Joe Jacob from Jakes Automotive Repair, Troy, MI.
- Curtis McKay from McKay's Automotive, Houston, TX.
- Robert Vandergriff from R.T. Clapp, Knoxville, TN.
- John Hoffman from Jacs Automotive, St. Charles, MO.
- Eric Pohlman from Eric's Automotive Service, Hamilton, OH.
- Greg Burchette from Bridgewater Motorworks, Bridgewater, NJ.
- Billy Duffy from Duffy's Repair, Ashland, VA.



**The JASPER Customer Advisory Committee is: (back row, left to right) Curtis McKay, John Hoffman, Robert Vandergriff, Greg Burchette, Billy Duffy and Charlie Kidwell. (front row, left to right) Eric Pohlman, Joe Jacob, Doug McAllister, Rick Hughlett, Gene Hammond and Robert West (Not pictured, Amos Broadway).**

- Gene Hammond from Sevy's Auto Repair, New Castle, DE.
- Doug McAllister from Douglas Automotive, Barrington, IL.

Discussions include topics associated with the automotive industry such as how to get more people interested in becoming technicians in the industry. We also discuss things JASPER must do to remain a leader in drivetrain remanufacturing, like the recent offering of technical classes on both gasoline engine and transmission installation.

JASPER wants to be a customer-driven company, and we value you and your customers' input. We feel we benefit greatly not only from our Customer Advisory Committee but also from the feedback our customers give us through the customer reply cards that come with every JASPER product purchased and also our tour reply cards.

There are a lot of changes going on within the automotive industry, and these people continue to provide us with the feedback we need for our next 60 years of business.

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## Hoosier Couple Wins Coca-Cola/JASPER Promotion

Brenda & Michael Jenkins of Jasper, Indiana, recently had an exciting weekend. They were winners of a joint promotion by Jasper Engines & Transmissions and the Evansville Region of Coca-Cola. The Jenkins won two tickets to the Brickyard 400 and IROC race at the Indianapolis Motor Speedway.

"Thanks for the generous promotion. It was a fantastic weekend," says Brenda Jenkins. "The hospitality was great. It was my first NASCAR race, and I plan to go again."

"Watching a NASCAR race on TV is nothing like real life," says Mike Jenkins. "You can't get a feel how fast the cars really are."

As part of the grand prize package, the Jenkins won a 3-day/2-night stay at the Baymont Hotel, \$250.00 spending money, and a bunch of JASPER wearable items that came in real handy at the races.



**Brenda & Michael Jenkins of Jasper, IN, pose next to Dave Blaney's NASCAR Winston Cup Series ride in Gasoline Alley at the Indianapolis Motor Speedway. The Jenkins were winners of a joint promotion by Jasper Engines & Transmissions and the Evansville Region of Coca-Cola.**

## Blaney Promotes Safety Belt Awareness in Buckeye State

Jasper Motorsports driver Dave Blaney posed with Trooper John Gray of the Ohio State Highway Patrol at the Michigan International Speedway. The two men are featured on a poster for the Patrol's "Teen Driving Program." The poster generates awareness of safety belt compliance with its message, "Professional Drivers Buckle Up!" It is expected that NASCAR fans, in particular, will be encouraged to follow the example set by the professional drivers.

These posters are being distributed in conjunction with the "Teen Driving Program" to high schools throughout Ohio. They will also be given out at safety events across the Buckeye State.



*Jasper Motorsports driver Dave Blaney and Ohio State Highway Patrol Trooper John Gray posed for a poster generating awareness of safety belt compliance.*

## We Have Our Calendar Winners for 2003!



*Photo at left is a 1932 Ford owned by Ronnie Jones. Photo at right is a 1969 Chevy Camaro Convertible owned by Andy Mesaros. You can see all of the 2003 winners by logging onto [www.jasperengines.com](http://www.jasperengines.com).*



The winning photographs have been picked to grace the pages of the 2003 Jasper Engines & Transmissions Calendar. Congratulations to this year's winners:

Matt "Fan Man" Andrews  
Forest Hill, MD  
1988 Chevrolet 16 passenger Bus

Lou Baudo  
Brooklyn Heights, OH  
1950 Mercury

Bob Hall  
Troy, MO  
1956 Chevrolet Bel-Air

Chris Cretaro  
East Syracuse, NY  
1937 DeSoto Sedan

Bill Buck  
Tully, NY  
1930 Ford Model A

James Merriman  
Harrison, TN  
1954 Chevrolet Pickup

Mike McAllister  
Elberfeld, IN  
1955 Chevrolet Bel-Air

Mark "Dusty" Miller  
Hamilton, OH  
1965 Ford Mustang Fastback

Rob Jaeger  
Old Hickory, TN  
2001 AC Cobra Replica

Andy Mesaros  
North Hampton, PA  
1969 Chevrolet Camaro Convertible

Ronnie Jones  
Hanover, VA  
1932 Ford

Derek Fletcher  
Canada  
1966 Chevrolet Impala

Tony Roberts  
Springfield, VA  
1990 Chevrolet Blazer

**Honorable Mention:**  
Dave Brames  
Ferdinand, IN

Molly Ann Hambler  
Dunlap, TN

Charles Fields  
North Charleston, SC

Every qualified entrant will receive an autographed JASPER race hat. Our 2003 calendar winners will receive a JASPER stadium jacket and a \$100 credit toward their next purchase of an engine, transmission, differential or stern drive. Honorable mentions will receive a JASPER race T-shirt and a \$50 credit toward their next purchase of one of the aforementioned products.



# “Associate Sponsor Spotlight”

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



## Berryman Products

The history of Berryman Products dates back to 1918 when Waldo D. “Pappy” Berryman traded a prize-winning stud horse for a patented tire sealing formula. With his family, Pappy traveled across the country in a converted wood panel truck. They traveled from coast to coast bartering their Sealex Tire Sealer for food, fuel and lodging.

An old shack in a backwoods area of Lima, Ohio, was converted to serve as the first manufacturing site for Berryman Products. Early products like Solvall Tune Up Oil, OilZall Valve Oil and Lubrex Super-Lubricant gained localized acceptance and popularity and set the pace for Berryman’s quality reputation. Other products added to the Berryman line during the first 35 years of business included Coolex, Rust Knox, EZ Dox-It, Zingo, Gyroseal, Rad-Seal, Bloxit, Boilero and Quix. But it was B-12 Chemtool®, developed in 1958 as a multi-purpose surface cleaning solvent, that soon became Berryman’s flagship product, and continues to provide the cornerstone for new product introductions today.

When Pappy Berryman retired in the 1960’s, R.H. Blankenship purchased the company in 1970 and became owner of Berryman Products, Incorporated, with headquarters in Dallas, Texas. Not long after, Berryman Products moved to larger facilities in Arlington, Texas. In 1986, Blankenship sold the company to members of his immediate family who joined Berryman Products at the grass-roots level, learning all aspects of the company.

Today, Berryman packages and sells over 90 different products including Carburetor and Fuel System Cleaners, Brake Cleaners, Gasoline and Diesel Fuel Additives, Parts Dip Cleaners and Tire sealer. Berryman utilizes High Energy Solvent Technology (H.E.S.T) to remove hardened baked on fuel residues and wear deposits from metal surfaces and fuel passages. The use of H.E.S.T., combined with “state-of-the-art” detergents, give Berryman Products a more complete combination of active chemicals to eliminate engine and fuel system deposits. That’s why Berryman is referred to as “The Good Stuff.”

**For more information on Berryman Products, contact them toll-free at 1-800-433-1704, or visit their website at [www.berrymanproducts.com](http://www.berrymanproducts.com).**

## Schnucks Supermarkets

Long known as “The Friendliest Stores in Town,” Schnucks take great pride in offering customers the very best in service, convenience and value.

Schnucks was founded by Edwin “Pop” Schnuck and his sons Don and Ed in 1939. The first Schnucks was a small corner grocery store in north St. Louis, Missouri. Now 63 years later, Schnucks operates more than 100 state-of-the-art supermarkets in six Midwestern States: Missouri, Illinois, Indiana, Wisconsin, Tennessee and Mississippi.

Most Schnucks locations are combination food and drug stores, offering a wide range of dry groceries and packaged foods, over-the-counter drugs, personal care items, seasonal merchandise, fresh baked goods, fine meats, fresh seafood, fresh produce, quality dairy products, and more. Many stores also feature an in-store Florist shop, full service Pharmacy, salad bar, bulk food section, video rental and film developing.

Schnucks has remained a family operation since that first store opened in 1939. Company President and COO Scott Schnuck is the son of co-founder Don Schnuck. Don’s additional children include Craig Schnuck, Company Chairman and CEO, Todd Schnuck, Chief Financial Officer, Mark Schnuck, Vice-President of Shopping Center Development, and Nancy Schnuck Diemer, Director of Community Affairs.

Schnucks financially supports literally hundreds of not for profit groups in all of the communities they are in. Also, hundreds of Schnuck associates are involved in many of these groups ranging from serving on the boards to assistance during fundraising activities.

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## Great Rates for Smokers!





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