SAVE TIME AND MONEY WITH THE RAP KIT!

Programming can be expensive, complicated and time-consuming. Towing a vehicle to a dealer or using a mobile programming service cuts into your schedule and profits.

The RAP (Remote Access Programming) Kit, exclusively from Transtar, allows you to program and flash a vehicle right from your shop! No additional tools, training, software or expensive subscriptions required.

THE RAP KIT IS ABSOLUTELY FREE! EVERYTHING YOU NEED IS RIGHT IN THE BOX. PLUG IT IN, MAKE A PHONE CALL AND WE DO THE REST! EACH PROGRAMMING EVENT IS $125

FOR MORE INFORMATION OR TO REGISTER FOR YOUR OWN RAP KIT, VISIT TRANSTAR1.COM/RAP-INFO.
The DL501-7Q is the manufacturer’s designation of Audi’s 0B5, seven-speed, dual-clutch transmission. It’s a real beast of a transmission weighing in more than 300 pounds, which is certain to hurt your back if you do not handle it correctly. There are quite a few of these running around on the streets here in the U.S. and many more worldwide. A code set for a transmission range sensor is one reason a vehicle will find its way in for repairs. Another more common reason is shifting issues related to the double clutch drum assembly.

R. Logmans, the software engineer from TVS-Engineering BV, explains how a programming problem can disguise itself as being a transmission issue. As a driver would travel through mountainous regions, for example, the gear box heats up, which causes the clutches to slip more. Heavy towing could simulate the same environment. The computer will then raise clutch pressure to compensate for the slip, which changes the adaptive values. This will now affect the operation of the vehicle when driven afterward where the transmission had time to cool down. A common symptom would be that when the vehicle is just about to stop, a severe shift shock is felt as it resonates throughout the whole car. The higher clutch adapts prevent the clutch from releasing fast enough.
producing the shock. This can easily be mistaken as being a mechanical issue, a clutch issue or a mechatronic issue when it is not. Resetting the clutch adapts will eliminate this complaint, proving it is not one of these three possibilities. The problem will reoccur, however, once it is driven again under the same conditions that caused the clutch adapts to change in the first place.

One very good reason this adaption issue is commonly thought to be a transmission problem is that it can be. These transmissions are also known to develop valve-body problems affecting the clutch cooling circuit.

Since there are software updates that address this adaptation issue, the first approach is to reset the clutch adapts to see if the harsh clutch release is eliminated. If it remains, there is a definite problem internally. If the shift returns to normal, check to see if the vehicle has the latest software update. If it does, this too will point to an inside transmission problem. If it doesn’t, update the software. Should the vehicle come back a month or two later with a harsh clutch release, a clutch cooling problem does exist in the transmission.

Alex Boon from Henri’s Power Transmissies in the Netherlands is aware of these issues and had several of their jobs return two months later with the “shock on clutch release” complaint. They went into the valve body and performed a number of updates available through Audi and Sonnax. They all left with no issue for the exception of one. The car lost second and reverse gears and produced a DTC P17D5 for transmission control valve 3 mechanical malfunction (N439 solenoid). Of course, as they put it, a little panic sets in. This is not the easiest transmission to pull and to roll around on the bench. They were thinking maybe one of the gear selectors was misaligned or they installed one of the update kits incorrectly. So out comes the mechatronic unit (Figure 1) only to find everything was properly in place. Or so they thought. As they were testing the solenoids they made a discovery. The disc that acts as a solenoid ball seat under the solenoid was upside down (figures 2 and 3). Alex was kind enough to send close-up photos showing this simple mistake that caused such a dramatic result. Figure 4 is a view of the bottom of the solenoid
Happy New Year! It is another year and we are all making our new year’s resolutions. Lose weight, eat right, quit smoking, etc. I wrote an article a couple of years ago about how to increase cash collected, and I challenged shop owners to produce just one more job a week. Many of you took the challenge and were successful. That one more job every week increased your cash collected by $100,000 a year and gave you some breathing room, but there is more to do. This year my resolution is to save money, and I am issuing another challenge to shop owners to focus on saving money in 2017. Let’s talk about three areas of your business that you can take action on right away.

1. Cut waste

The first order of business is to attempt to eliminate waste. Waste comes in many forms. Broken kits that are robbed for a quick solution and never used again. Wrong parts that were ordered but not returned. The list goes on and on. Get up right now and walk around your shop and look for waste. See what I mean? Every shop is different but they all have waste. Eliminate it. If you are trying to save money, quit wasting money. It is your money flying out the window.

Since we are a business of high-dollar parts and labor, the second and third order of business is to save money on labor and parts.

2. Control labor costs

This is one of the areas where there is a lot of waste. Not opening on time, not having a workflow system, no production reports, hiring the wrong people, and basically not making employees accountable for their productivity are all examples of wasted labor. One way to cut labor waste is to start grading each employee. Take the book hours and compare that to their actual time spent. For example, if a work assignment requires 10 book hours and the tech finishes in 8 actual hours he is an 80% tech. If he takes 12 hours he is a 120% tech. Know what your production capacity is and make sure that capacity is reached every week. Look at your current staff. Do you really need that extra installer? Do you need to hire another builder with a lower comeback rate? Are you recruiting the best employees you can find or settling for whoever comes along? Go over production reports every week with your employees and make them accountable for their labor hours. Do something about it now. Don’t put it off.

3. Shop parts

I am going to let you in on a little known secret that will guarantee that you get the best price on every parts order. You have to be open to change the way you order parts. Consider the benefits of ordering all your parts by email. Send a parts cost request to two or three of your favorite competing vendors and let them compete on every order. They will sharpen their pencil once you get started. That happens once they all know they are competing for your orders. When they learn that they have to earn your business on every order by giving you the best price, you will get the best price every time you order parts. It’s called training your parts vendors 101. Vendors count on us not shopping their prices. It used to take too long to shop three vendors on every order. With the email ordering system, you can get three price quotes in less time than it would take you to call one vendor – and beat them at their own game.

The big dog eats first

Let me paint this picture for you. I trained Rottweilers for years. My favorite dog of all was Cesar. He weighed out close to 120 lbs. His daddy was the largest Rottweiler on record in Texas. He was the big dog and all the other dogs knew it. He was more than happy to remind them of that fact if they forgot. Every thanksgiving I would throw the turkey carcass out in the middle of them all. You would think that they would all go after it as soon as it hit the ground. Nope. They would all wait until Cesar ate and when he was finished the other dogs ate. The last part of my challenge is for you to become the big dog and pay yourself first.

Take the challenge and make another 2017 new year’s resolution to become the big dog. If your transmission shop is struggling now you can head off failure if you act before it is too late. Focus on getting that one more job every week, cutting waste, controlling
showing the plunger that acts upon the ball. Figure 5 is a picture of the disc correctly placed against the solenoid. The ball seat, in the center of the disc, is in view. Figure 6 shows the disc incorrectly placed against the solenoid. With the ball placed on the disc side that does not have a ball seat (Figure 7), the solenoid plunger becomes ineffective. The ball is blocked preventing pressure from stroking the even gear switch valve. If this valve doesn’t stroke, it blocks pressure from reaching the K2 clutch. Without a K2 clutch, there are no reverse or even gears. All Alex had to do was flip the disc to resolve this self-inflicted injury.

As a side note: This style solenoid as it first appeared in Saturn’s CVT transmission (Figure 8) was discussed in the July 2004 issue of Transmission Digest. It then came up in the August 2007 issue within a series of articles on the 02E DSG as this transmission uses the same solenoid (figures 9 & 10). Make sure you flip the disc to the right position or someone may be flipping their lid.

A. Little Help

Wayne Colonna is president of the Automatic Transmission Service Group (ATSG).

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A. Little Help

Art Little is the founder of TransTeam, a management support company that provides transmission shop owners with employees, training and leads. The popular TransTeam website has served as the National Employment Headquarters for the transmission industry since 1997. Online training and certification testing for transmission shop center managers are also available at the site. The Nationwide TransTeam Wholesale Club is generating low-cost internet leads for TransTeam shop owner members nationwide now. If you need help with recruiting employees, training or lead generation, visit the TransTeam.com website or call Art at 888-859-0994.

Free Transmission Shop Owner Training:
Transmission shop owners! This month only, sign up for free online training at the website.

Shift Pointers

continued from page 4
Freudenberg Unveils Low-Friction Seals

Freudenberg Sealing Technologies presented a new generation of low-friction transmission seals at the 15th International CTI Symposium in Berlin.

Levitas seal rings are suited for installation in all forms of automated transmissions. A special seal design produces a hydrodynamic oil film between the seal ring and its dynamic counter surface, which reduces friction to the point that merely replacing conventional transmission seals in an automatic transmission reduces the vehicle’s CO₂ emissions by 0.8 grams per kilometer, the company stated.

The transmission is one main determinant of the efficiency of a vehicle’s powertrain. That’s why every manufacturer is working on minimizing frictional losses. Seals are responsible for about one-quarter of all the lost mechanical energy in automatic transmissions, as they keep the oil pressure in the transmission at the prescribed level, making it possible to shift gears perfectly. The key is to keep the amount of oil that flows past the seal very low, Freudenberg explained.

ACDelco Offers GM VVT Solenoids

ACDelco is making General Motors Original Equipment variable valve timing (VVT) solenoids available to aftermarket customers. Fourteen unique part numbers cover 16 million 2000-17 model year GM vehicles on the road.

The availability of GM OE VVT solenoids is part of a growing trend by ACDelco to provide more GM OE parts to the independent aftermarket. Installers are eligible for purchase loyalty points and other opportunities that can be leveraged only through ACDelco.

The solenoids feature many design enhancements that were engineered during the OE manufacturing process, including a special corrosion-resistant coating to help protect the part for as long as 10 years, ACDelco noted.

Jasper Succeeds in 2016 Racing Season

2016 was another highly successful season for the Driveline Division of Jasper Engines & Transmissions. Six of the top eight drivers in the 2016 NASCAR® Sprint Cup Series final points standings drove cars equipped with Jasper products. Sprint Cup Series cars equipped with Jasper products accounted for 23 wins, 93 top-five finishes, 170 top-10 finishes, and earned 26 pole position starts in 2016.

NASCAR® Xfinity Series Drivers using Jasper products accounted for 19 wins in 2016, including Series Champion, Daniel Suarez.

Stewart-Haas Racing and Furniture Row Racing drivers used the single-rail version of the Jasper four-speed transmission in 2016, which allows a single external rail to rotate and move two internal forks to engage the four forward gears. Joe Gibbs Racing drivers used a Jasper three-rail, four-speed transmission.

Partners Testing HVT R3 for Off-Highway

Dana Rexroth Transmission Systems announced pre-production testing on the R3 hydromechanical variable transmission (HVT).

The HVT R3 features a modular design that can be adapted for a variety of configurations, including wheel loaders, motor graders, industrial lift trucks, reach stackers, forestry skidders, and other off-highway equipment. This transmission is designed for applications with net input power from 200 to 270 kW (268 to 362 hp).

A product of the joint venture between Dana Incorporated and Bosch Rexroth, HVTs from Dana Rexroth significantly reduce fuel consumption by decreasing engine speeds throughout the duty cycle and also at idle, when speeds can drop to as low as 600 rpm.

Snap-on: Accessories, Training

The new Snap-on® accessories catalog contains products oriented toward expanding, personalizing and protecting Snap-on devices, including VERUS®, VERDICT®, MODIS™, SOLUS™, Vantage and ETHOS®. Visit www1.snapon.com/diagnostics/us/IAC.

In addition, Snap-on has added MODIS™ Edge Training Solutions modules to its website at http://diagnostics.snapon.com/trainingsolutions to help professional technicians navigate the features and functionality of its latest diagnostic tool.

Cottman Unveils 6 More Car-Care Videos

Cottman Transmission and Total Auto Care is releasing six new auto-care videos that address common concerns and best practices. Titles:

- Check Engine Light
- Scheduled Maintenance
- Tune-Ups
- Fuel System Servicing
- Electrical System Checks
- Tire Maintenance

In the animated videos that are a minute long or less, The Cottman Man provides crucial car-care tips to viewers.

View the videos: cottman.com/videos/
Jasper Announces 2 Promotions

Matt Bland has been named Gas Division manager at the Wernsing Road facility in Jasper, Ind. Bland started his career with Jasper on Aug. 9, 2010, in the Inside Sales department. Since April 2013, Matt has held Team Leader and Group Leader roles within the Jasper Gas Engine Division. He is fluent in Spanish.

Bland succeeds Randy Bauer, who was named corporate maintenance director. Bauer started with Jasper in 1991, in Customer Service and eventually became the department’s manager. In 2006, he was named the Gas Engine Division manager. Randy will work with the maintenance teams in all of Jasper’s remanufacturing facilities.

OTC Releases Encore Update, Bravo 2.8

OTC has released a new update to its Encore software, which includes expanded diagnostic capabilities and more vehicle coverage. The latest release, Bravo 2.8, features major software updates to help technicians fix faster.

Highlights of the software release include tests to assist with diagnosing issues for many domestic, Asian and European models. The update offers an enhanced user experience and an improved interface that provides more information on header bars and the diagnostic trouble codes (DTC) scan screen.

Technicians also now have the ability to turn on or off live data during special tests with the software update. In total, the release increases coverage for 192 new systems and 1,433 new vehicle-ECU combinations.

Among the software enhancements:

- Expanded Ford Passive Anti-Theft System (PATS) key programming
- Zero-point calibration tests for numerous Nissan models
- Automated EVAP tests for numerous Toyota models

Ultra-Lightweight Unit Revealed

A consortium of innovators led by Jaguar Land Rover revealed at the CTI Symposium in Berlin an ultra-lightweight rear-drive unit, the result of a three-year research initiative known as ULTRAN.

Ricardo, the British engineering and environmental consultancy, designed and manufactured the prototype in collaboration with Tata Steel, Lubrizol, GRM Consulting Ltd, American Axle & Manufacturing and the universities of Southampton, Newcastle and Warwick – with the support of the UK’s innovation agency, InnovateUK.

The project set out to push forward the practical application of reducing the mass of driveline systems and components, Ricardo stated. The latest generation Range Rover was the baseline for the research – a vehicle already the subject of extreme mass reduction, being 16 percent lighter than its predecessor.

For the prototype, a mass saving overall of 8.5 kg (24 percent) was achieved approximately equally between the gears and shafts, and the casing system.

MAHLE Introduces SmartACX Smartphone

MAHLE Service Solutions has introduced its SmartACX Smartphone App, a new productivity enhancing application program that helps technicians view the status of the company’s ArcticPRO® machines during vehicle service.

The app allows a technician to remotely view the values and status of the Kia ArcticPRO® ACX1299 A/C machine while it is in use for vehicle service. The benefit of the technician being untethered from the A/C machine allows them to be productive on another repair while the A/C machine is operating.

Once a technician pairs the mobile phone app with one of the machines using a QR code, they can walk away and perform other tasks without the necessity to see the machine light or listen for the buzzer. The app automatically displays the pertinent values and an alert notification on the technician’s smartphone.

Deere Offers Dual-Clutch Unit in Tractors

John Deere, Mannheim, Germany, makes use of the excellent friction and wear behavior of sealing rings made of DuPont™ Vespel® in its pioneering dual-clutch DirectDrive Transmission (DDT) with eight powershift speeds. These rings provide a low-leakage seal against oil pressure of up to 20 bar at oil temperatures of between -30°C and 80°C with transient peaks of up to 110°C over the entire service life of the transmission. John Deere is offering this particularly efficient and energy-saving DDT system, which permits direct gear shifts without any interruption in traction, in its 6R series of six cylinder tractors. Rectangular rings made from Vespel help to provide a durable, reliable seal against the oil pressure which builds up
**Drum Fix: 6T40**

**Whatever it Takes** is now offering a drum fix for the 6T40. This kit fixes damage on the 3-5 side of the drum when the wavy cushion breaks and damages the splines. The kit, Part #A46127AR, contains repair plate, wavy plate, and shim plate to repair the piston damage for '09-up.

**Torque Converter: 4L60/65E**

This torque converter for GM 4L60/65E, '98-'13, is now available from Transtar (Part #GM92-S1). The recon converter GM92-S1 is a heavy-duty version of one of Transtar’s most popular converters. It features upgraded components, a solid billet steel mounting ring that is finished in place, and assembly processes that ensure you have a premium quality torque converter to exceed your customer’s performance expectations, the company states.

**1-2-3-4 Piston: GM 6L80/90**

GM 6L80 and 6L90 1-2-3-4 pistons are subject to cracking over time. Sonnax 1-2-3-4 piston, Part #104984-01, is made from stronger, billet aluminum, making it a reliable solution for lasting results Sonnax says.

- Billet aluminum piston is stronger than OE.
- Unique design refinements provide additional strength to prevent breakage.

**3 Essential Components: Powerglide Units**

Sonnax contender clutch drum, hub, and piston Kit #28755-14K includes the three essential components for building a 7- or 8-clutch drum assembly in Powerglide units:

- Piston is configured to accept extra frictions for increased torque and holding power.
- High-strength drum with reduced rotating mass improves on-track acceleration.
- 6061 forged piston won’t crack.
- Forged chromoly clutch hub guarantees your power makes it to the wheels.

**Overhaul Kits: AS69RC**

Now available from TransTec are overhaul kits for the AS69RC transmission: #DP2707 with the pistons kit; #DP2706 without. The kits apply to Dodge 3500, 4500 and 5500, '13-up. See the company’s website for featured components and sub kits.

**4WD AT Five-Speed GPLA: Honda CR-V**

This 4WD AT five-speed GPLA, found in '05-06 Honda CR-V with the 2.4L engine, is now available from Transtar (Part #30-EAN). This unit is an alternate choice for the 30-CBE, includes oil, and is built with full Sonnax updates and new OEM solenoids. Backed by the Transtar Seal of Quality, this unit comes standard with the 18-month/18,000 mile warranty and is upgradeable to the Premium or Ultimate Warranties upon request. The tag identification on this unit is GPLA.
**Synthetic Gear Lubricants: 75W90, 75W140**

*Transtar* offers Mobil1 synthetic gear lubricants: 75W90, Part #M465-104446; and 75W140, Part #M465-108957. The lubricants are designed to help protect and extend the life of automotive gears, rear axles, and differentials. They provide outstanding protection, even under the most extreme operating conditions, according to Transtar. The 75W140 is shown here.

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**Overdrive Clutch Housing Kit: 68RFE**

Keep hard-working Dodge trucks on the road with *Sonnax* Smart-Tech® overdrive clutch housing Kit #72960-06K. This top-of-the-line upgrade overcomes the leading causes of overdrive burnup with rock-solid reliability:

- Get 20% more clutch capacity.
- 2X thicker clutches increase clutch-pack steel mass by 28%.
- Bolt-on anchor plate eliminates clutch-pack flexing and distortion that contribute to heat build-up.
- 16% more OD apply area for firmer, more controlled shifts.
- Combine with Sonnax line pressure booster kit #RFE-LB1 for even higher levels of performance.

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**Torque Converter: AODE/4R70/4R75**

Now available from *Transtar*. This torque converter for Ford/Mercury/Lincoln AODE/4R70/4R75 (Part #FM69). The recon converter is one of Transtar’s most popular converters. It features upgraded components and assembly processes that ensure you have a premium quality torque converter to exceed your customer’s performance expectations, Transtar says.

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**Line Pressure Booster Kit: Toyota/Lexus**

Get the right amount of pressure exactly when you need it with *Sonnax* line pressure booster Kit #A750-LB1. This affordable, drop-in kit is uniquely designed to provide progressive pressure increases as driving conditions become more demanding in numerous Toyota/Lexus applications:

- Springs 10% stronger than OE
- Shorter shifts & increased torque capacity without low-speed harshness
- Improved band & clutch holding capacity for increased durability
- All the benefits of increased line pressure without overloading the pump at idle
- No special tools or reaming required

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**4-Piece Bearing & Race Kit: Toyota/Lexus**

This 4-piece bearing & race kit for Toyota/Lexus U140/150/240/250, ’98-up, is now available from *Transtar* (Part #27201A). We recommend changing this 4-piece bearing and race set on every rebuild to prevent gear-train failure.

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**Output Planet Nut: U660E/U760E**

This OE output planet nut for Toyota U660E/U760E, ’07-up, is now available from *Transtar* (Part #D47796). This nut is tough to remove and can be easily damaged, the company notes. Transtar now offers a replacement nut that should be offered with every rebuild.
**Overdrive Shaft: A4BF3**

Now available from **Transtar**: overdrive shaft for Hyundai Accent/Elantra/Tiburon A4BF3, '99-up (Part #D42675L). The bushing is prone to weakness and can be a challenge to change, Transtar states. Why hassle with replacing the bushing when Transtar offers an OEM shaft with new bushing for a reasonable price?

**Governor Pressure Transducer: Chrysler**

This 4-pin Rostra transmission governor pressure transducer (sensor) for Chrysler models, '01-up, is now available from **Transtar** (Part #12415HP). This pressure transducer functions as a trigger for the pressure solenoid and features superior PSI management that is capable of handling higher pressures created by many of today’s valve bodies & transmission-performance enhancements, the company states. This part is built to be more durable than OE and will work in your high performance applications, Transtar submits.

**XValve Body: AW55**

This new OEM valve body with solenoids for Nissan/Volvo AW55, '05-up, is now available from **Transtar** (Part #D89740VB). This item fits B or C code valve bodies cast 9165/9167/9168 with b5 spring. It will work on 01-04 models if b5 spring is removed. Instructions are included.

**Servo Master Kit: Powerglide Units**

**Sonnax** supported servo Master Kit #28821-20K includes everything you need to overcome these issues:
- Unique cover design eliminates piston binding that causes unexplained band failure.
- Race-calibrated servo return spring ensures optimum servo function in high gear for longer band life, cooler transmission and shift tunability.
- High-strength billet aluminum piston features dual PTFE seal rings for better seal and low friction.

**AT Control Solenoid Assembly: 5R55W/S**

This automatic transmission control solenoid assembly for Ford 5R55W/S, '04-09, is now available from **Transtar** (Part #46420BR). These blocks have all new O-rings, brass alloy bushings and circuit board for improved durability over the OE design, according to Transtar. Each block goes through a 168-point test to ensure performance to OE specifications.

**Overdrive Shaft: A4BF3**

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