

The first measurement we need is the depth of the bore in the housing where the B clutch sits (Fig. 14). This dimension represents the total area filled by the B piston and clutch pack.

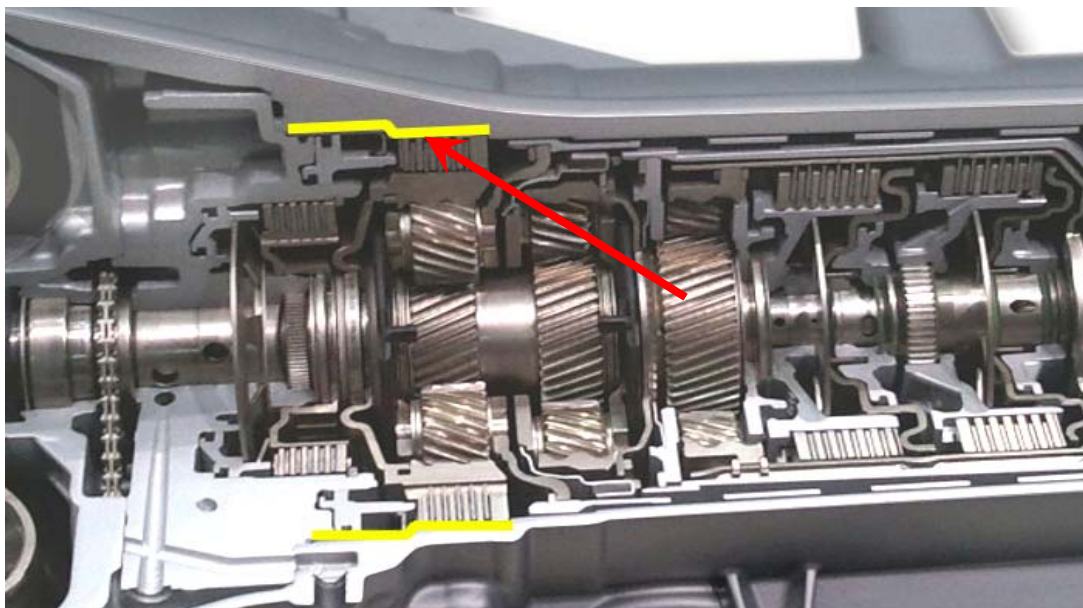


Figure 14: The Bore Where the B Piston and Clutch Sit

The second measurement is the height of the clutch pack after it has been compressed. The pressure against strain gauge special tool number 10429 must match the specification given in the service information (Fig. 15). We are using portions of special tool number 8901A that was designed for the NAG1 transmission.



Figure 15: Clutch Pack Height Is Measured After Being Compressed

The final measurement we need is the height from the B clutch piston to the oil pump housing mating surface (Fig. 16).



Figure 16: *B Clutch Piston to Oil Pump Housing Mating Surface Measurement*

Subtract the B piston measurement and the clutch height measurement from the bore depth and you have your end clearance measurement. We are looking for a clutch pack end clearance between 1.26 mm and 1.67 mm. To adjust the clutch pack clearance within specifications, the flange plate is available in different thicknesses. Select the appropriate size. After replacing the flange plate, take the measurements again.

Besides the snap rings mentioned earlier, the oil pump bolts, the pump housing bolts, as well as the valve body bolts are one-time use. Refer to service information for more detail. A note about gear train end play: Because the oil pump housing bolts are one-time use bolts, it is a good idea to use the old bolts while adjusting the end play. After the correct end play has been established, use new bolts for the final installation of the oil pump housing.

FUEL EFFICIENCY IMPROVEMENTS

There are two unique features introduced with the 2013 Ram truck that we'll get into now. Introduced with the 2013 Ram trucks is a thermal management unit (TMU) (Fig. 17).

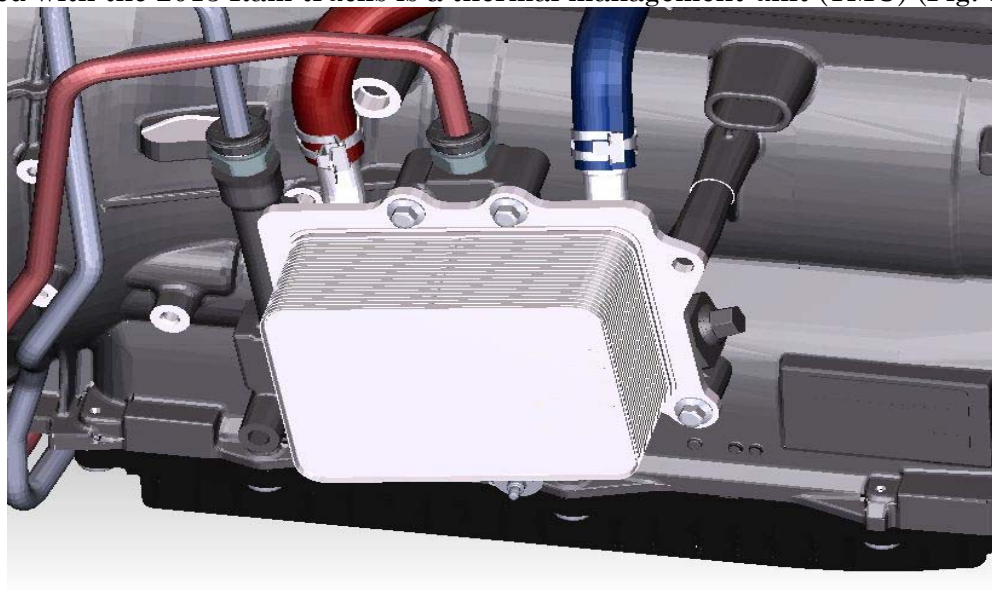


Figure 17: Thermal Management Unit

The 8HP transmission family is such an efficient transmission there is a need for an auxiliary heater to keep the transmission oil at the proper temperature, about 80°C (176°F).

Engine coolant is carried back to a heat exchanger via coolant pipes. In this illustration, the hoses and pipes have been color-coded to show the hot and cold portions of the system (Fig. 18). The coolant pipes and heat exchanger are serviceable separately.

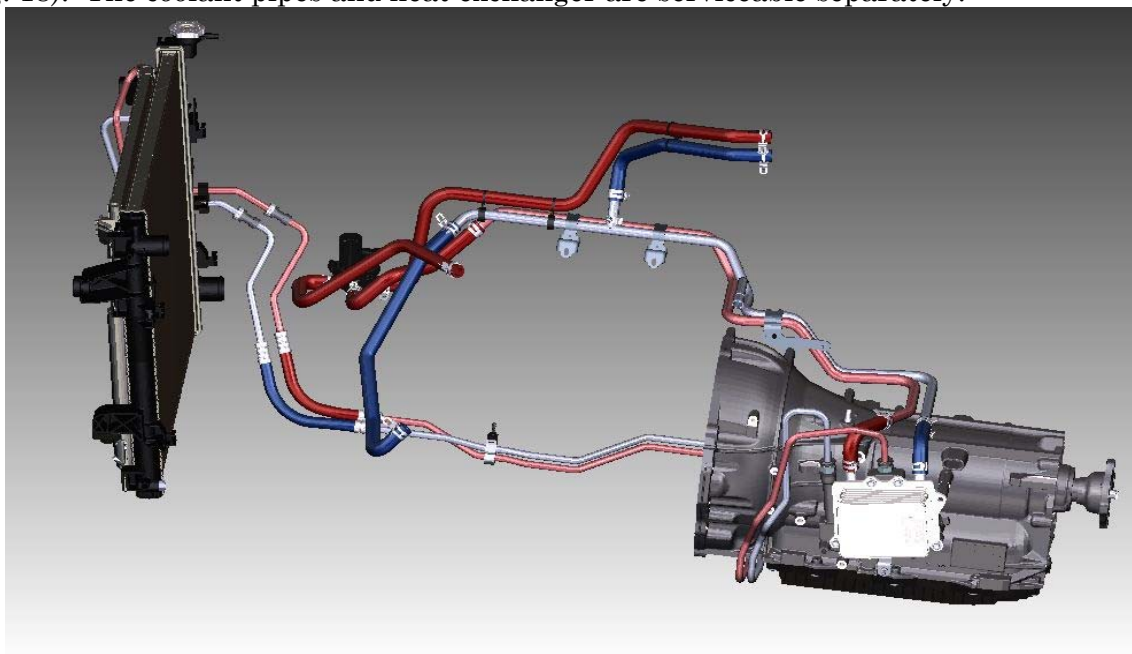


Figure 18: Coolant Pipes Are Part of the TMU System

The second unique feature we'll cover is the hydraulic impulse storage (HIS) unit (Fig. 19). The HIS is a spring-loaded accumulator with a latching solenoid that is part of the Stop/Start feature.

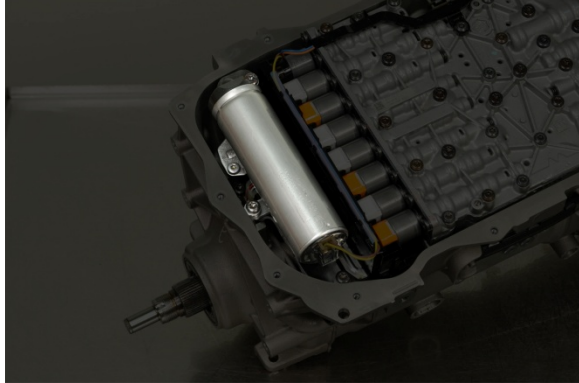


Figure 19: *HIS Unit*

When the engine is running, transmission oil is pumped into the HIS accumulator and is stored. A locking solenoid keeps the piston under tension until the piston is released. Spring pressure takes over and the piston pushes the fluid out of the HIS and into the transmission.

As soon as the engine is restarted, the HIS is filled with fluid and ready for the next cycle.

RAM STOP/START

New for the 2013 Ram 1500 is a Stop/Start feature that turns off the engine when the vehicle comes to rest, restarting it automatically when needed. You'll find a graphic in the reference book that shows the different components in the Stop/Start system. We'll cover some of them now.

The powertrain control module (PCM) calibration dictates when the engine will shut down and restart. This decision is based on brake pedal position, vehicle speed, and time stopped, among others.

The DC-to-DC converter takes battery voltage and steps it up to a higher voltage to keep electrical features like the fan, wipers, headlights, and audio system going until the engine restarts (Fig. 20).



Figure 20: DC-to-DC Converter

Naturally, a system like this places a considerable load on the starting and charging systems.

The starter motor is a heavy-duty, brushless design, better able to cope with the demand placed on it.

All Stop/Start equipped vehicles have an absorbed glass mat (AGM) battery and heavy-gauge cables, that are able to deliver higher amp loads consistently.

Naturally, the alternator needs to be heavy-duty as well. This one is a 220-amp alternator that provides greater charging capacity immediately after auto-starts. Inside the transmission, we have the HIS (Fig. 21). The HIS enables the transmission to build full line pressure, allowing a nearly instantaneous response to the driver's input.

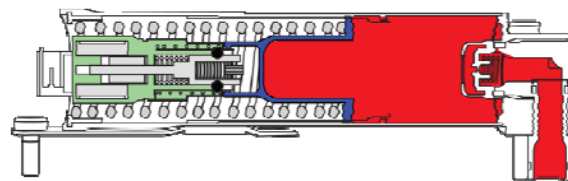
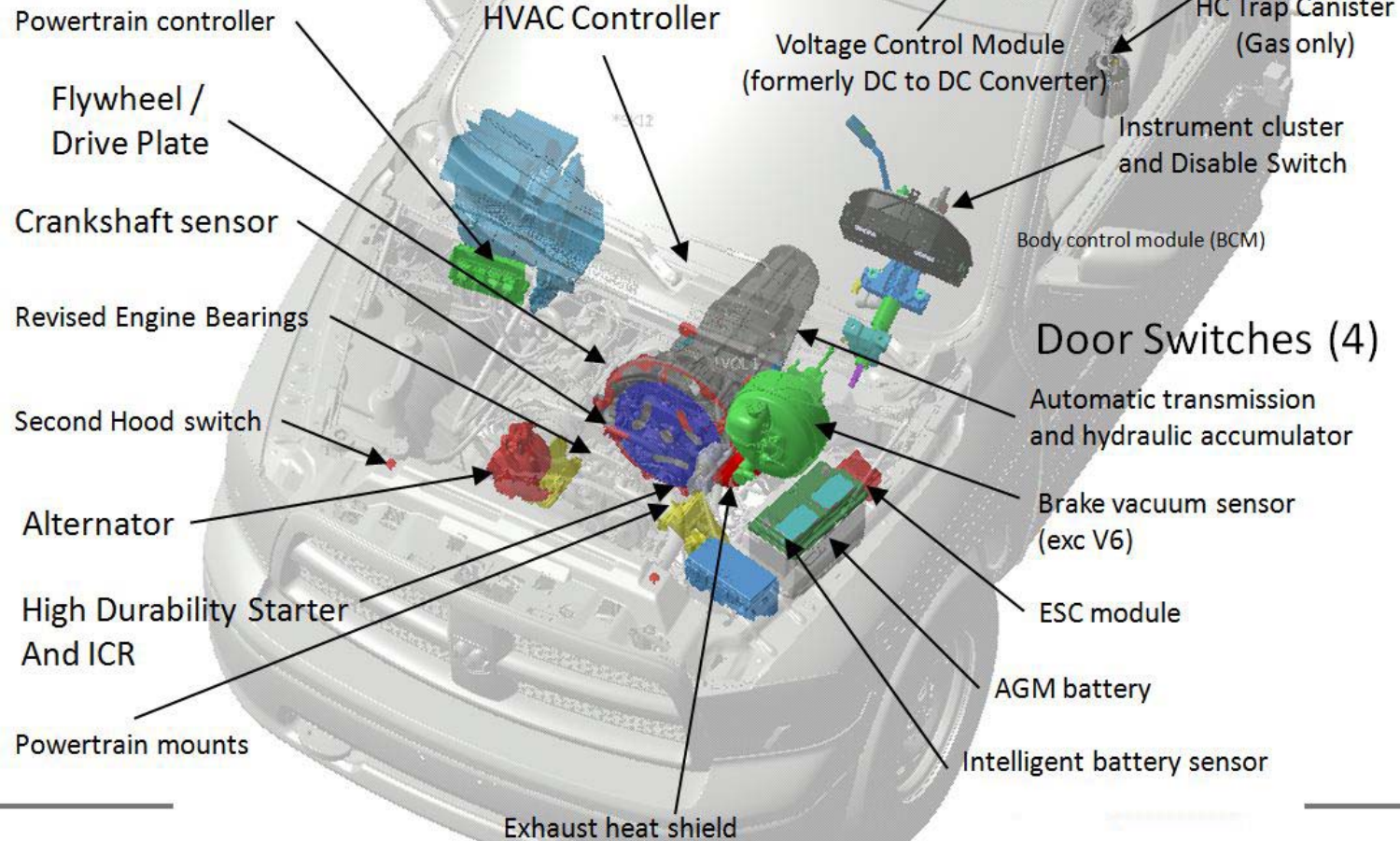


Figure 21: HIS Cutaway View

This completes our program on the 8-speed transmissions. The November Master Tech bonus program follows.

RAM 1500 Stop-Start Components



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Stop/Start Components

REPAIR ORDER PATH

How many times have you been given a repair order to resolve a customer's concern only to be unable to duplicate the problem? This month we have a bonus program: Service Best Practices.

The first thing we'll do is follow a repair order through the service department from the first contact with the customer, through the technician, and on to the point that the customer picks up the vehicle. As part of this Service Best Practices program, we'll cover the new Service Advisor Dashboard system. This new repair order initiation system will streamline the write-up and repair processes.

After exploring the Service Advisor Dashboard system, we'll cover the two most basic and important aspects of the repair process; the Six-step Troubleshooting Procedure and the three Cs.

The last topic in this bonus program covers the Vehicle Not Repaired Check Sheet. This check sheet helps to guide you through the inspection process so you can document everything and make sure all angles are covered.

As part of our November Service Best Practices program, let's review the life of a repair order. This helps us to better understand the processes that will be discussed shortly.

It all begins with the customer expressing a concern to a service advisor who records it for the technician. Naturally, the more detail that is recorded the better.

Currently, there are a few different ways this write-up process is handled, but a new consistent process is in development. The next lesson will cover that new system.

After the write-up process, the repair order is dispatched to the technician. This can be handled in a few different ways as well, depending on the dealership. Looking over a repair order when it is first assigned is the best way to review the customer concern and ask questions about the concerns listed. In fact, the customer may still be there to answer first hand.

At this point in the process, the first C (the Concern) is in place. We'll go into more details related to the three C's shortly. Now it's time to fix a car. During the diagnostic and repair phase, it's recommended to follow the Six-step Troubleshooting Procedure and document this on the repair order.

After the concern is corrected, the completed repair order is returned to the dispatcher or manager. From here, the repair order goes through various processes that may include Warranty Reimbursement. We will finish our program with some helpful hints when submitting warranty claims for Trouble Not Found concerns.

WIADVISOR

In an effort to simplify the service write-up process and improve our customer satisfaction, Chrysler Group has developed a new tool for service advisors called wiADVISOR (Fig. 22). The wiADVISOR program will extend the wiTECH network that is currently installed in your shop into the service drive. What's the advantage of this new system?

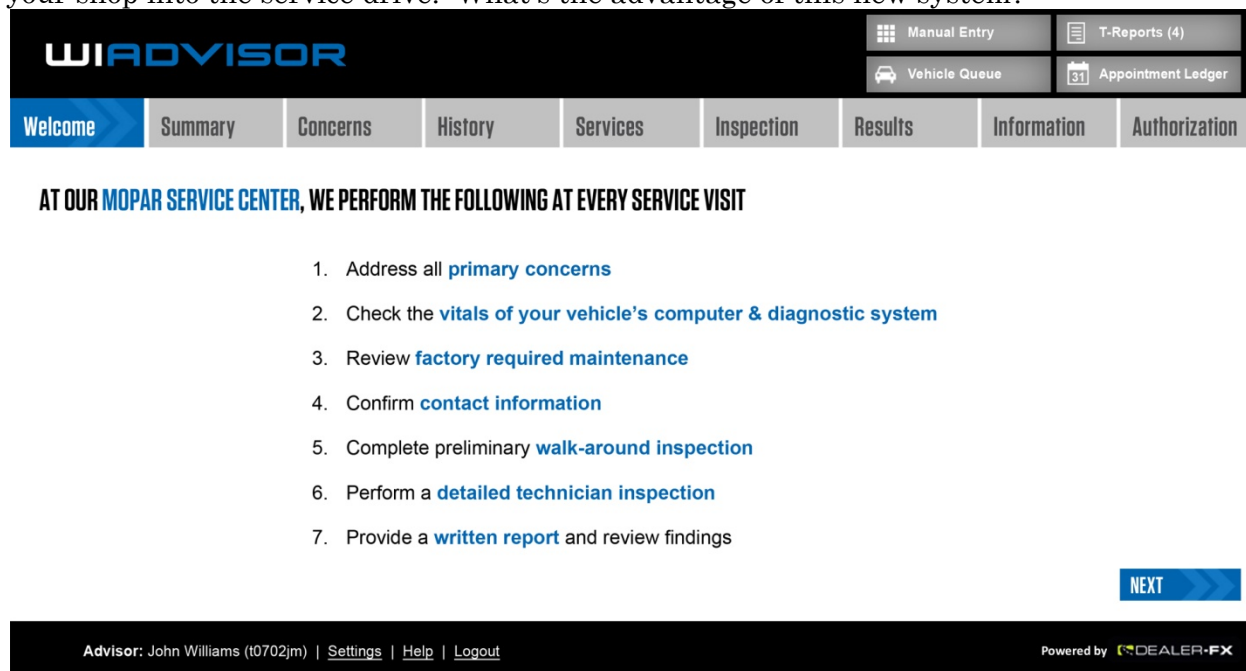


Figure 22: wiADVISOR Welcome Screen

Currently, on average there are 15 different steps performed from the time the customer schedules an appointment to when they sign the repair order. This doesn't include things like following up with the customer, checking parts-ordered status, talking to the technician, and so on.

The need for a more efficient, consistent, and accurate write-up system is being answered. wiADVISOR answers these concerns by improving every step of the write-up process. Keep in mind that the screens you will be shown are prototype screens, they may differ from what you'll see in the future. Let's look at how this system works and how it affects technicians.

wiADVISOR will soon be adding a feature to assist the service advisor in accurately capturing the customer's concern by asking questions based on the type of issue. The answers to these questions will be included on the repair order to assist in diagnosis. The system also allows for the service advisor to add comments to the repair order.

The wiADVISOR system includes a wiTECH microPod that plugs into the OBDII port (Fig. 23).



Figure 23: microPod

An access point extends the dealership's dedicated service network into the service drive, enabling the microPod to communicate (Fig. 24).



Figure 24: Wireless Access Point

For up-to-date information on recommended tablets, please access the wiADVISOR Knowledge Base by logging into the wiTECH Portal at: <http://portal.dcctools.com>.

In practice, the customer is greeted by the service advisor, who plugs the microPod into the OBDII port (Fig. 25). wiADVISOR pulls vehicle information (such as VIN and odometer readings) from the various computer systems in the vehicle, key information from the VIP report and other Chrysler Group databases (such as customer information), and information from the dealer management system.



Figure 25: microPod Plugs into the OBDII Port

If the customer has taken advantage of the online service scheduling capabilities, much of this information will be populated before the customer drives through the door.

The next step is to document the customer's concerns. The service advisor will interview the customer as before, but the wiADVISOR program utilizes a series of drop-down menus to walk the advisor through the process (Fig. 26).

Type | Transmission | SEARCH

Service	Price
☐ Automatic Transmission - Autostick	0.00
☐ Automatic Transmission - Delayed Power Engagement	0.00
☐ Automatic Transmission - Delayed Upshift	0.00
☐ Automatic Transmission - Hard to move gear selector	0.00
☐ Automatic Transmission - Hard to Shift	0.00
☒ Automatic Transmission - Leak	0.00
☐ Automatic Transmission - No Gears	0.00
☐ Automatic Transmission - Noisy	0.00
☐ Automatic Transmission - Shudder / Vibration	0.00
☐ Automatic Transmission - Buring Smell	0.00

Figure 26: Customer Concern Window

Besides the consistent write-up process, there are other advantages that the service advisor, as well as the technician will notice. Some of these are:

- The ability for the customer to schedule appointments electronically
- A VIN- and odometer-specific maintenance menu to show customers exactly what their vehicle maintenance requirements are at that visit.
- A function called Vehicle Systems Vitals identifies any outstanding recalls, Rapid Response Transmittals, and available flash updates
- Up-to-date service history at the tap of a screen
- An optional subscription to features like the Electronic Vehicle Inspection Module, which provides technicians with the ability to perform inspections electronically
- A running estimate of repair costs

The wiADVISOR roll-out process has already begun. If your dealership isn't using it yet, you'll see it soon.

THREE Cs AND SIX STEPS

From the technician's perspective, there are few things that affect your day more than the three Cs and the Six-step Troubleshooting Procedure. The six steps ensure a proper and complete repair while the three Cs make sure everything is documented. We're going to lump these together because they are completed at the same time.

The first C (the Concern) is documented by the service advisor (Fig. 27). This information is the most important piece of information you will use when repairing the vehicle.



Figure 27: *Concern Is Documented During Write-up*

Your job starts with the first of the six steps, verify the concern. Always review all of the information on the repair order so you are reproducing this concern under the same conditions that the customer reported.

Step two is to determine any related symptoms. Maybe the clunking noise they are concerned about is related to the uneven tire wear they didn't notice.

The third step is to analyze the symptoms. Are the symptoms related, or did you discover something the customer should be made aware of? The fourth step is to isolate the cause.

Use published service information to determine the cause of the concern. This is where the second of the three Cs comes in (the Cause). Write detailed notes of the cause of the concern on the repair order. This will aid not only your warranty administrator when the claim is being prepared but also will provide important details to Chrysler to help in improving the quality of our products.

The fifth step is to repair the concern. Now it's time for the third C (the Correction). You don't have to write a novel here, but you do have to make sure you document clearly what was done to correct the concern for the customer.

The final step in the Six-step Troubleshooting Procedure is to verify vehicle operation. This is where you circle back to the first step and try to reproduce the concern under the same conditions the customer described.

VEHICLE NOT REPAIRED CHECK SHEET

Sometimes technicians will simply not be able to address a customer's concern, no matter how hard they may try. Many times, the technician will simply write TNF or something similar on the repair order and move on to the next job as quickly as possible.

This usually ends up with a frustrated customer and technician, and we all know these vehicles come back at some point in the near future anyway. In the event that you were not able to duplicate a concern for any reason, it's a good idea to fill out the Vehicle Not Repaired Check Sheet. Let's look at the high points now.

To access the check sheet, from the Service tab in TechCONNECT scroll down to the Repair Information section. From there, open the Other menu and open the Vehicle Not Repaired Check Sheet (Fig. 28).

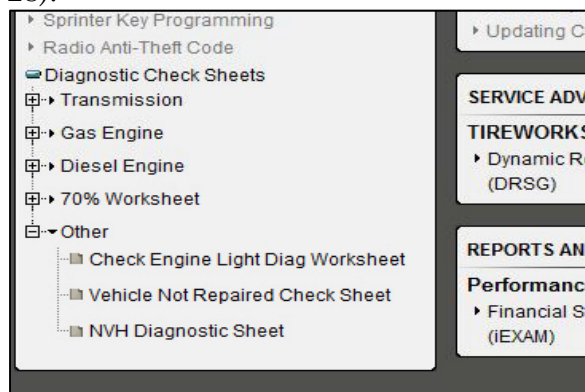


Figure 28: *Vehicle Not Repaired Check Sheet Location*

The top portion is pretty self-explanatory, but be sure to copy, word-for-word, the customer's concern onto the check sheet. The next section of the sheet has three reasons why the vehicle was not repaired; we'll go over each of the three now. In some cases there really isn't a problem with the vehicle, just a lack of understanding on the owner's part.

The first portion in this section is for documenting situations like this. There are situations when the concern cannot be duplicated. That's what the second portion is for. It allows you to document that you checked the system(s) in question, checked for trouble codes, Service Bulletins, Recalls, or rapid response transmittals. You'll also find a place to document a call to the STAR center, or to document if other dealership personnel road tested the vehicle.

The third portion in this section is for situations where the part is not available to repair the car. Fill out the appropriate field to document the issue.

The final section of the check sheet is to document the final outcome. Record the mileage in and mileage out whether or not the customer has been advised of the situation, and the conclusion of the repair order. Attach this check sheet to the repair order.

It only takes a few minutes to complete this check sheet but it can really pay off in the end because everything is documented.

Chrysler allows dealers to submit warranty claims for Trouble Not Found (TNF) diagnosis. All time allowance reimbursed is for Actual Time only. It is imperative to properly document any claim that requests reimbursement. The check sheet will allow the Warranty Administrator the ability to ensure that the claim is properly documented so that if authorization is required, individuals reviewing the claim can logically make the decision regarding reimbursement.

The check sheet will allow the Warranty Administrator the ability to ensure that the claim is properly documented so that if authorization is required, individuals reviewing the claim can logically make the decision regarding reimbursement.

In the near future, we will be providing additional details regarding Warranty Claim requirements. Additional information can be located in the Warranty Administration Manual available on DealerCONNECT.

That completes the November Master Tech bonus program. Be sure to see this month's web program for additional information about this month's topics. Also, visit the Chrysler Academy Learning Center site for training courses that cover subjects related to these topics.

Please join us next month when the topic is 2013.5 Diesel Powertrain Update.

Thank you for participating in the Master Tech program.

TECHNEWS

TECH'S CORNER

In our Master Tech program for October, Mopar Accessories and Performance Parts, we reviewed some of the new accessories available on Chrysler products such as the rear center tail light assembly with the race track graphic available on the 2013 Dodge Dart, the Mopar signal mirror kit, and the new digital brake trailer controller available on the Dodge Durango and Jeep Grand Cherokee.

In reviewing your surveys for the October, it appears that the program was well received with one technician telling us that it contained “very interesting info on new products and installation.” Another tech felt that addressing accessories and modifications to Chrysler vehicles shows the customer’s desire to customize and upgrade a vehicle’s capacity. We agree, and due to the popularity of these accessories, in addition to offering a Master Tech program on Mopar in October 2011, we decided to produce another one this October.

As you know, we also included a segment in the October program on the new Mopar JK-8 conversion kit for the Jeep Wrangler Unlimited. Some of you said that you enjoyed learning about the JK-8 conversion and tips related to the process. Others felt that JK-8 pertains more to body shop techs than to service technicians. Another tech’s response indicated that there was too much on installation of accessories, but went on to say that the JK-8 installation info was just right. So, as you can see, we do review your surveys. In fact, we also use them to come up with future Tech News topics, which allow us to answer your specific concerns. So, please continue to send in your ideas and suggestions.

Can you guess the cars below? You can put your answers in your surveys.

1)



2)

