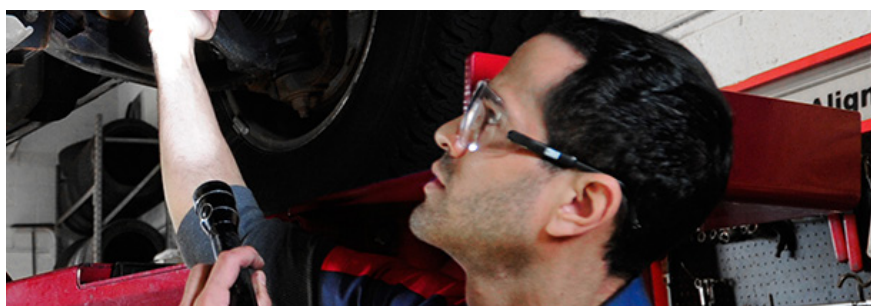




Strengthen Customer Ties During Fall Car Care Month



October is Fall Car Care Month and it's a great opportunity to strengthen customer relationships by reminding your clients about the importance of inspections and preventative maintenance. Remind them it's a good time to have the coolant checked to ensure it's ready for the winter months, along with items such as the wiper blades, tires, air filter and cabin filter.

It's also a good idea to remind customers to consult the owner's manual for upcoming service milestones, such as the manufacturer's recommended timing belt replacement – an item that could generate more hassle and discomfort for the owner if it broke on a cold, dark night in January.

Care Care Month is also a great opportunity to host a Knowledge is Power seminar in your shop to educate your female customers about the ins and outs of automotive maintenance and service.

Complement it with some cider and donuts and you'll have the perfect seasonal opportunity to forge new and strong customer relationships.

WHAT'S INSIDE

IN THE NEWS

- Standardized Heavy-Duty Pickup Trailering Ratings pg 2
- 60 Years of the Chevy Small Block Engine..... pg 10
- New Diesel for Chevy Colorado and GMC Canyon.. pg 12

THE SERVICE BAY

- Hybrid First Responder Information..... pg 2
- The New 8L90 8-Speed Automatic Transmission..... pg 4
- Duramax Diesel Head Gasket Replacement Tips..... pg 9

TRAINING

- ACDelco to the Rescue..... pg 3
- Training Prepares Shop Owners for Wide Range of Repairs..... pg 8
- TIS2Web Tutorial Videos Support GDS2..... pg 8
- Training Schedule pg 12

PRODUCT

- New Accessory Belt Drive Kits..... pg 7
- Battery Enhancements, New Part Numbers..... pg 10

RUNNING THE BUSINESS

- AAPEX 2015 Details..... pg 3
- Installing Windows 10..... pg 5
- Programming for Profit..... pg 6

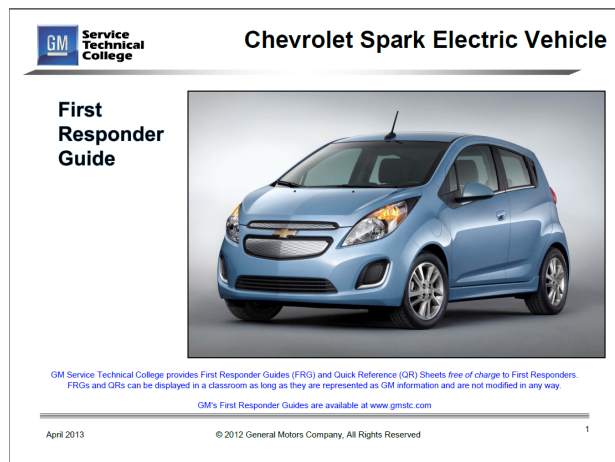
TECH TIPS

- Eliminating Unwanted Vehicle Odors..... pg 7
- Oil Consumption in GM 1.4L Engines..... pg 11



Hybrid Emergency First Responder Information

First responder information regarding various hybrid vehicles produced by GM is available online for emergency personnel. The information is designed to aid first responders in learning about the hybrid vehicles and/or hybrid systems so that they can perform the necessary actions quickly and properly in an emergency situation.



First Responder Guide for the Spark EV

First Responder Guides are available for the following GM vehicles:

Buick

- 2012-2015 Lacrosse eAssist (RPO HP6)
- 2015-2015 Regal eAssist (RPO HP6)

Cadillac

- 2009-2013 Escalade with Two-Mode Hybrid System (RPO HP2)
- 2014-2015 ELR

Chevrolet

- 2008-2010 Malibu Hybrid (RPO HP7)
- 2008-2013 Tahoe Hybrid with Two-Mode Hybrid System (RPO HP2)
- 2009-2013 Silverado Hybrid with Two-Mode Hybrid System (RPO HP2)
- 2011-2015 Volt
- 2013-2014 Malibu Eco eAssist (RPO HP6)
- 2014-2015 Spark EV

GMC

- 2008-2013 Yukon Hybrid with Two-Mode Hybrid System (RPO HP2)
- 2009-2013 Sierra Hybrid with Two-Mode Hybrid System (RPO HP2)

Saturn

- 2007-2009 Saturn Aura Hybrid (RPO code HP7)
- 2007-2010 Saturn Vue Hybrid (RPO HP7)

Go to www.gmstc.com and select the First Responder link in the lower left corner of the page.

The guides include a variety of useful information, including an overview of hybrid system operation components and their location, high voltage label locations and cable cut label locations, air bag information, and high strength steel body structure identification. Additional guides on other topics for first responders also are available.



Leveling the Field With SAE J2807 Trailering Ratings

For decades, the various pickup truck manufacturers have used trailering, payload and other ratings as marketing weapons, advertising towing superiority over one another. Trouble was, those ratings were based on standards within each company, so apples-to-apples comparisons were often difficult – or impossible – to make.

That changed in the past couple of years, as the manufacturers effectively signed a “security treaty” and agreed to abide by guidelines established by the Society of Automotive Engineers (SAE). Known simply as the SAE J2807 standards, they provide specific evaluation specifications for measuring launching, acceleration, climbing, overall weight and more as the factors used to determine the maximum trailering rating of a truck.

By the 2015 model year, the industry’s light-duty (half-ton) trucks had aligned with the standards,

causing some of the ratings to rise and fall among all the manufacturers. For 2016, the industry’s heavy-duty trucks – three-quarter-ton and one-ton – are expected to comply. GM’s Chevrolet Silverado HD and GMC Sierra HD models have already established numbers based on the J2807 standards, but retain a maximum rating of 23,200 pounds for the one-ton models.



ACDelco to the Rescue

The responsibility of maintaining and repairing the ambulance fleet of Nassau County, New York, was transferred from the Nassau County Police Fleet to the Nassau County Department of Public Works (DPW) in January. Since the changeover, the DPW has performed the required ambulance maintenance. However, properly diagnosing and performing drivability repairs on the fleet of Type 1 and Type 3 ambulances equipped with the GM 6.6L Duramax diesel engine was overwhelming the department.



ACDelco training quickly got the Nassau County ambulance fleet back on the road.

The director of the Nassau County DPW, Jim Butcher, contacted ACDelco's Dan Tarca for help. Butcher knew he needed technician training on the 6.6L Duramax diesel and wanted to find out how to get the service information his department needed to make proper repairs. Tarca, the ACDelco New England Market Area Manager, got together with ACDelco District Sales Manager Tom Meade and his two ACDelco M&R Specialists, Rob Oulton and Steve Winnicki, to develop a plan to help Nassau County DPW's technicians. Their goal was to quickly provide the DPW with the resources they needed to get their ambulances back on the road and serve the community when needed.

Oulton and Winnicki coordinated and set up on-site training for the DPW technicians, covering all aspects of the diesel engine and its new emission systems. The training included information about the GM Diesel Exhaust Emission system, Diesel Particulate Filter (DPF) Regeneration, Reductant Fluid quality testing and control module reprogramming.

The technicians quickly learned how to use GM diagnostic software to diagnose and repair the out-of-service ambulances. Before the training, there were 11 ambulances out of service for drivability concerns. But in only two days, nine of those ambulances were repaired and back in service. The other two were diagnosed with Allison automatic transmission concerns and the necessary parts were ordered.

By the end of the training event, the DPW technicians had the service repair information they needed along with the technical expertise required to complete the repairs. Just like the ambulance fleet of Nassau County, ACDelco delivers when it's needed most.

RUNNING THE BUSINESS

AAPEX 2015 IS COMING!



Cool fall air and the appearance of roadside pumpkin stands can only mean one thing: AAPEX. The annual Automotive Aftermarket Products Expo, representing the \$477-billion aftermarket auto parts industry, heads back to the Sands Expo, in Las Vegas, Nov. 2-5. More than 2,200 automotive aftermarket manufacturers and suppliers will be on hand, including ACDelco.

The ACDelco booth is updated with a new look and the representatives there will be looking to speak with all shop owners in attendance. You'll get some great ACDelco gear and have the opportunity for training, too: We are offering two training classes in the AAPEXedu training center, along with in-booth training on topics such as ACDelco products, understanding and optimizing e-commerce and the Professional Service Center program.

You can also follow ACDelco on Twitter, Facebook and YouTube for updates throughout the convention.

If you're going to be at AAPEX, it's a great opportunity to get some face time with ACDelco representatives and get your questions answered about products, the PSC program and more. See you in Las Vegas!



New 8L90 8-Speed Automatic Transmission Delivers World-Class Performance

More than 550 computer-aided engineering analyses were made to endure strength, durability, performance and refinement during the development of the all-new, GM-developed Hydra-Matic 8L90 8-speed automatic transmission (RPO M5U) available in the 2015-2016 Chevrolet Corvette, Silverado, Tahoe and Suburban; GMC Sierra, Yukon and Yukon XL; and Cadillac Escalade.



Hydra-Matic 8L90 8-Speed Automatic Transmission

In the Corvette Stingray, the results are a paddle-shift transmission that delivers world-class shift times rivaling the best dual-clutch designs. In the Silverado and Sierra pickups, the new transmission delivers 11 percent greater torque capacity than the 6L80 6-speed transmission it replaces.

New Architecture

The eight speed ratios of the 8-speed transmission are generated using four simple planetary gear sets, two brake clutches, and three rotating clutches. The resultant on-axis transmission architecture uses a “squashed” torque converter, an off-axis pump and four close-coupled gear sets. The three rotating clutches have been located forward of the gear sets to minimize the length of oil feeds for enhanced shift response. There are variants of the transmission, all based on torque capacity. Architecture is common between the variants, and component differences are primarily related to size.

The Transmission Control Module (TCM) is externally mounted. It makes use of three speed sensors that provide enhanced shift response and accuracy. The TCM has one 66-way connector to interface with the vehicle electrical system, transmission assembly and other vehicle control modules. It receives and monitors various electronic sensor inputs to execute hundreds of calculations and commands every 6.25 milliseconds.

The 4-element torque converter contains a pump, a turbine, a pressure plate splined to the turbine, and a stator assembly. The hydraulic system primarily consists of an off-axis chain-driven binary vane-type pump located in the valve body, and two control valve body assemblies.

Transmission Solenoid Valves

The 8L90 transmission contains nine individual solenoids in the lower control valve body assembly. Seven of the nine solenoid valves are used to control pressure regulation and direction of transmission fluid and the two on/off solenoid valves are only used to direct transmission fluid.

There are three variations of pressure regulating solenoid valves used on this transmission: high pressure normally low; high pressure normally high; and low pressure normally high, variable force.

- High Pressure indicates the solenoid valve is controlling or directing line pressure.
- Low Pressure indicates the solenoid valve is directing a pressurized fluid that is less than line pressure.
- Normally Low is when no current is applied to the solenoid valve coil, the variable restriction is closed, resulting in no or low pressure.
- Normally High is when no current is applied to the solenoid valve coil, the variable restriction is open, resulting in maximum or high pressure.
- The Variable Force Solenoid Valve can increase or decrease the amount of pressurized fluid based on the amount of current applied to solenoid valve coil.



The transmission features two control valve body assemblies.

The pressure regulating solenoid valves regulate hydraulic fluid pressure based on current flow through the solenoid valve coil windings. They are operated by a 12V high side driver and a low side driver, both internal to the TCM. Current is controlled by turning the low side on and off. If the TCM detects a malfunction, it turns off the high side driver to that solenoid and sets a DTC.

Solenoid Characterization

Transmission control solenoid valves 1-7 are pressure regulating valves. Each individual solenoid valve is tested after assembly to determine the output fluid pressure at certain electrical current values, applied to coil windings.

The current versus pressure data points are assigned a file number, which is marked on the solenoid valve housing end. The performance data file is stored on the Techline Information System (TIS) website and is programmed and stored in the vehicle's TCM.

Replacing any of the following components will require the TCM to be programmed with the new or existing solenoid valve performance data.

TCM – Program the new TCM with the existing solenoid data files stored on the TIS website for all seven pressure regulating solenoid valves

One or More Solenoid Valves – Program the TCM with the new data file for only the individual pressure regulating solenoid valves that were replaced

Lower Control Valve Body Assembly with Solenoid Valves – Program the TCM with the new data files stored on the TIS website for all pressure regulating solenoid valves

Transmission Assembly – Program the TCM with the new data files stored on the TIS website for all pressure regulating solenoid valves

Transmission Service Fast Learn

The Transmission Service Fast Learn procedure has been a required programming procedure on some current 6-speed transmissions. Transmission Service Fast Learn is a procedure that is performed after any 8-speed transmission repair. The procedure performs a series of tests which allow the TCM to learn individual clutch apply pressures. These learn pressure values are used by the TCM for clutch control and timing of shifts. A scan tool is used to perform the Transmission Service Fast Learn procedure.

The Transmission Service Fast Learn procedure must be performed when any of the following repairs has been made to the transmission:

- Pressure regulating solenoid replacement
- Valve body repair or replacement
- Any service/repair in response to a shift quality concern
- Any internal transmission service, repair, overhaul or replacement
- Torque converter replacement
- TCM replacement
- Transmission assembly replacement.

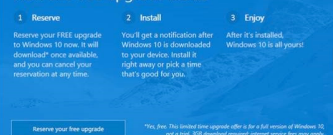
Failure to perform the procedure may result in poor transmission performance, DTCs being set, or customer dissatisfaction.

RUNNING THE BUSINESS

Installing Windows 10 Upgrade Now Makes GM Techline Apps Unusable

ACDelco evaluating changes, compatibility for future applications

How this free upgrade works



Although Microsoft recently announced the availability of Windows 10, along with free one-year upgrades for Windows 7 and 8 users, do not sign up for the upgrade at this time.

Installing Windows 10 will make the GM Techline applications in your service center unusable and prevent technicians from diagnosing and repairing vehicles. Current Techline applications, including TIS2Web, GDS 2, MDI/MDI Manager and Tech2Win, are not compatible with Windows 10. The conversion back to Windows 7 can take several hours and is not supported by the Techline Customer Support Center.

Microsoft pushed an icon to the desktop tray of users eligible for the upgrade. If you have already reserved your upgrade, cancel it as soon as possible.

When will GM Techline applications be ready for Windows 10? The changes needed for compatibility are under evaluation and the current timeline is mid-2016.



Programming and Profits

Program vehicles in-house and you'll no longer send jobs and profits to other repair shops

In-house Programming

Tool: \$495 (one time cost)
Software: \$55/2 day

Estimated Time: 20 mins.
Customer Bill: ~\$250/event

Programming cost *after 10 service jobs* - **\$1045**

Sublet Programming

Flatbed / Tow Cost: \$100/event
Productivity*: \$100/event
Sublet Programming Bill: \$100/event
Estimated Turnaround Time: 20 hours
Customer Bill: ~\$400/event

Programming cost *after 10 service jobs* - **\$3,000**

It is easy and affordable to program vehicles in-house, increasing the shop's productivity and bottom line. All that's needed is a J-2534 interface tool and TIS2Web software for GM vehicles. Several economical options are available for these tools that make it easier for service centers to get a better return on their investment when programming — all while saving time, increasing technician productivity and generating additional profits.

Return on Investment

Programming is quickly becoming more common — and a required procedure — for many repairs, from necessary ECM reprogramming for emissions-related engine repairs to simple relearn procedures needed when replacing a component, such as a window switch module.

Service centers can determine how much of an investment is needed to perform programming by adding up the cost of any programming equipment (diagnostic equipment, interface device, software subscription) and how much they would charge customers for the programming services (minus technician labor time). Divide the investment costs (tools and software) by the gross profit (charge, minus labor time) to reveal the number of programming jobs needed to break even. Most shops are sending profits out the door by not programming.

Service Manager Brady Bengel at Town and Country Auto Center in Lansing, Mich., a Blue Level Professional Service Center, decided to program vehicles in-house once he saw how it would improve his business model.

"I am able to turn vehicles around faster for my customers. I can keep my guys working on cars instead of driving around town or towing them to the competition. And I'm not turning away business due to being able to program in-house. My customers are happy and I've seen an increase in revenue — it's a win-win."

It typically costs a shop almost \$2,000 more to outsource 10 programming events. That's nearly three times as much, and 60 times as long, as programming in-house. In addition, the customer is charged more at a subletting shop versus a shop that provides full service. As a result of the cost efficiencies, in-house programming yields greater profits yet the customer charge is less per event. In the end, quicker, less expensive customer service leads to happier, loyal customers.

TIS2Web Subscription Options

ACDelco TIS2Web is the web-based subscription service for GM vehicle calibrations, Global Diagnostic System 2 (GDS 2) software and Tech 2 diagnostic software updates that are required to diagnose GM vehicles. Several options are available for TIS2Web software applications that are designed to fit the budget and specific needs of every service center, whether it's a one-time programming need or a full subscription.



TIS2Web subscription options:

- **Complete GM Service Support Package**
\$3,125 per year
- **Tech 2 and Service Programming Package**
\$1,395 per year
- **Service Programming System (SPS) Only**
\$55 for 2 days, \$275 quarterly, \$995 per year
- **Tech 2 Diagnostics**
\$750 per year
- **GM Global Diagnostic System 2 (GDS 2)**
\$57 for 3 days, \$227 monthly, \$575 per year
- **Tech2Win**
\$55 for 3 days
- **GM Vehicle Communication Interface Package**
\$775 per year

ACDelco also offers a variety of programming training, including no-charge online tutorials and a diagnostic technical support hotline. To view the TIS2Web Tutorial Videos, go to www.gmtis2webhowto.com

For more information about TIS2Web, go to www.acdelcotechconnect.com, click Shop Programs, and then select PSC Program and TIS2Web.

Programming Tools

In addition to TIS2Web software, a J-2534 interface tool is needed for programming. The DrewTech – MongoosePro® GM II may be a cost-effective option for some repair shops for diagnosing and programming GM vehicles. The tool can be purchased directly at www.drewtech.com.



MongoosePro GM II

The MongoosePro GM II supports TIS2Web for control module programming and Tech2Win for diagnostics on powertrain, chassis, body, anti-theft, and TPMS systems, including GDS 2 vehicle diagnostics. The MongoosePro GM kit includes the MongoosePro GM interface, installation CD and user's manual.

TECH TIPS

Eliminating Unwanted Odors in Vehicles

2015 and prior GM passenger cars and trucks

GM Vehicle Care Odor Eliminator is a non-toxic, biodegradable odor remover that greatly reduces or removes objectionable smells of mold and mildew resulting from vehicle water leaks and customer-created odors such as smoke. It also may be induced into HVAC modules and instrument panel ducts for the control of non-bacterial related odors.

1. Confirm that all water leaks have been repaired.
2. Combine a drop of dish soap the size of a quarter and eight ounces of GM Vehicle Care Odor Eliminator. Top off the bottle with tap water. Use this formula on hard surfaces.
3. Neutralize all carpeting and upholstered seats with GM Vehicle Care Odor Eliminator at full strength.
4. Spray GM Vehicle Care Odor Eliminator into all instrument panel vents. Start the vehicle and turn the HVAC fan on high (not the A/C setting). Spray the formula into the outside fresh air intake vent at the base of the windshield. Wipe off any excess at the instrument panel vents. Once there is a fresh, clean smell coming from the vents, turn the system to the A/C recirculation setting. Roll up the windows and spray three to five pumps into the right lower instrument panel area. Let the vehicle run with the fan set on high for five to seven minutes.

PRODUCT

Improve Efficiency With New Accessory Belt Drive Component Kits

Save time and improve productivity with ACDelco's new line 35 Accessory Belt Drive Component Kits, which provide you with all the parts necessary for a complete restoration

in one kit – without the painstaking process of having to source individual parts.

The lineup of parts includes 78 kits that cover more than 1,300 vehicle applications, both domestic and import. All kits include a serpentine belt, idler(s), tensioner(s) and supporting hardware with detailed installation instructions.

Ask your distributor or ACDelco representative for details on popularity, application information, cross references or bill of material.



TECH TIPS

ACDelco technical tips provide repair information about specific conditions on a variety of vehicles. If you have a tough or unusual service repair, the Diagnostic Hotline can help. Call 1-800-825-5886, prompt #2, from 8 a.m. to 8 p.m. ET Monday–Friday, to speak with a technical expert with the latest OEM information.

PRODUCT INFO

For free technical assistance and product information regarding specific ACDelco products, contact these toll-free information hotlines staffed by ASE-certified technicians:

Brakes

1-888-701-6169 (prompt #1)

Chassis & ReadyStruts

1-800-270-2124

Clutches

1-888-725-8625

Lift Supports

1-800-790-5438

Shocks

1-877-466-7752

Starters & Alternators (New)

1-800-854-0076

Starters & Alternators (Reman)

1-800-228-9672

Steering

1-855-451-1212

Wiper Blades

1-800-810-7096



ACDelco Training Prepares Shop Owners for Wide Range of Repairs

Ten years ago, Tim and Sharon Weaver opened TAW Service Center, Inc. in Berrysburg, Pa., with a dream to repair all things automotive – everything from scooters to tractor-trailers. The ACDelco shop that now sits on five acres was born from the determination that began with Tim renting a single bay in the back of an old dealership in a nearby town.



But it has grown exponentially from the couple's desire to learn and improve through knowledge and training.

The Weavers strongly advocate ACDelco's extensive training offerings, and even joke that they have enough business certifications to wallpaper their waiting room with them.

With a background as a machinist, Tim attended Vail Technical Institute before working on heavy duty trucks. Next, he worked in an auto machine shop, where he would remove and disassemble a vehicle engine, take the parts through the machining process and then reassemble and install it back in the vehicle.

TAW began with the one bay at a nearby dealership and that soon grew to two bays. Sharon, who has a parts and service background with ASE certifications and several prestigious awards, brought along her work experience with a major freight carrier.

They joined the ACDelco program in 2006 and haven't looked back. The Weavers say that without all the ACDelco training they have taken, there is no way they could keep up with the changing times. Plus, the training has helped them sell ACDelco parts as well as diagnose and repair vehicles that come through their shop.

As far as they are concerned, there is no such thing as too much training.

TRAINING UPDATE

TIS2WEB TUTORIAL VIDEOS SUPPORT TECHNICIANS USING GDS2

Global Diagnostics System 2 (GDS2) is a central topic in the ACDelco Techline Information System (TIS2Web) tutorial video series. These videos provide quick instruction in under four minutes per video, require no sign-in and are free of charge.

Two popular TIS2Web tutorial videos illustrate how service technicians can set up ACDelco's online software applications for use with a J2534 scan tool to quickly and accurately diagnose and program GM vehicles. Learn how to successfully install the GDS2

software without any customer delays. See how to easily renew your GDS2 lease agreement, an important step in maintaining the software subscription.

Visit www.gmtis2webhowto.com to view these and the full suite of TIS2Web tutorials – available at no charge.

GMSi and TIS2Web software applications are available via a web-based subscription service delivering GM vehicle calibrations, Global Diagnostic System (GDS2) and Tech2 Scan Tool Diagnostic Software. For more information regarding TIS2Web, go to www.acdelcotechconnect.com or log on at www.acdelcotds.com.

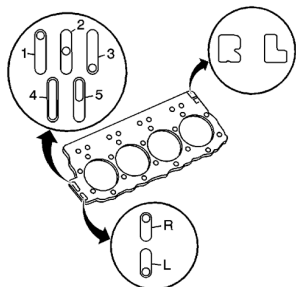
Duramax Diesel Head Gasket Replacement

2001-2015 Chevrolet Express, Chevrolet Silverado, GMC Savana and GMC Sierra, equipped with the Duramax diesel engine

The following are recommendations and best practices to follow during cylinder head service or gasket replacement on the Duramax diesel engine (RPO LB7, LBZ, LGH, LLY, LML, LMM).

Gaskets are not interchangeable

The left and right cylinder head gaskets are not interchangeable. Improper placement of the cylinder head gasket will block coolant and oil passages, which causes severe engine damage.



Surface cleaning procedures

Do not use any power type sanding devices. Do not use a wire brush or wheel to clean gasket surfaces. Do not use chemical cleaning agents on gasket surfaces. Refer to GM Service Bulletin #00-06-01-012 for more information.

Review the appropriate Service Information and GM Service Bulletin #06-06-01-006 for engine block and cylinder head sealing surface cleaning procedures.

Cylinder head bolts

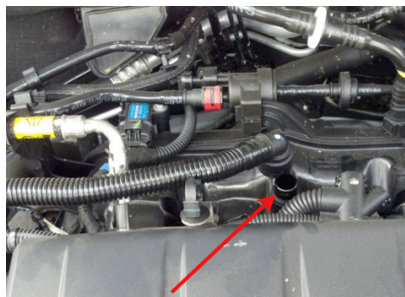
During cylinder head servicing or cylinder head gasket replacement, always use new M12 cylinder head bolts. The M8 cylinder head bolts can be reused. Clean the bolt threads and holes.



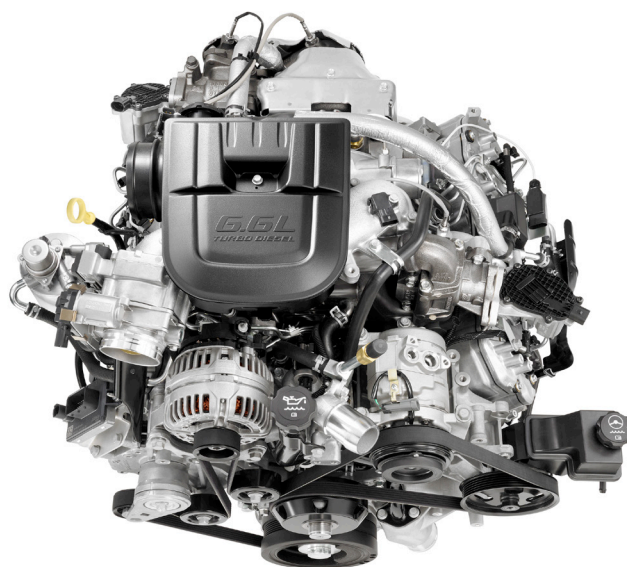
The PCV orifice is an integral part of the camshaft cover.

Handling gaskets

Leave the gaskets in the packaging until they are ready to be installed on the block. Once removed from the packaging, handle them with great care.



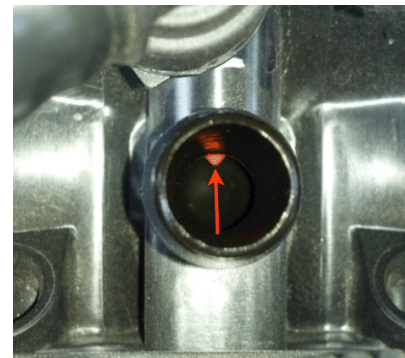
Intake manifold non-return valve location



Do not set the gaskets on workbenches or toolboxes because it could introduce foreign debris. Also, do not use air to blow between the gasket layers.

Cylinder head surface

Do not machine the cylinder head surface. Measure the cylinder head for warpage with a straight edge and a feeler gauge. A cylinder head block deck with warpage in excess of 0.1 mm (0.0039 in.) must be replaced.



Intake manifold non-return valve

Installation

It is recommended to install two head bolts, secured to minimal torque (20 Nm), prior to installing the remaining head bolts. This lessens the chance of introducing other foreign material during installation.

Use a paint pen on the M12 cylinder head bolts during installation to mark the head of each bolt, one by one, indicating which of the four torque steps have been completed on that particular bolt. This prevents skipping a step or doing a step twice. In the end, all bolts should have four paint pen marks.



ACDelco Announces Battery Enhancements, New Part Numbers

Enhancements to ACDelco's battery product portfolio will be introduced over the next several months, along with several new part numbers. The product updates are a result of incorporating the best OE features and consolidating them, as well as making some internal revisions. Most ACDelco catalog numbers should remain the same, but some have been assigned new designations. See your distributor or ACDelco representative for more details.

Old ACDelco Part Number	Old GM Part Number	New ACDelco Part Number	New GM Part Number
75VPS	88865288	75VPG	88861746
75PG	88865248	75VPG	88861746
78PG	88865250	78VPG	88861747
78VPS	88865289	78VPG	88861747
100PS	88865260	78VPG	88861747



60 Years of the Chevy Small Block

It would be very difficult to overstate the significance of the iconic Chevy small block V-8. From its landmark features and manufacturing breakthroughs to its lasting influence six decades later, it is one of the most significant achievements in industrial design from the 20th century.

Chevrolet didn't invent the V-8 engine, of course – and it didn't even develop the basic overhead-valve design – but the Chevy small block helped revolutionize the design and manufacturing in ways that made it more attainable to the broader base of automobile customers. In short, it brought high-performance to the people.

Chief Engineer Ed Cole challenged his engineering team to develop a compact, less costly and easier to manufacture engine. Upon its debut in the 1955 Chevy lineup, the new V-8 engine was physically smaller, 50 pounds lighter and more powerful than the old "Stovebolt" inline-six that had powered Chevrolets for a couple of decades prior.

The new Chevrolet's V-8 (it wouldn't be called "small block" until after the big-block engine came along a decade later) was designed with components and procedures that seem commonplace today, but were state-of-the-art innovations six decades ago. They included lightweight stamped-steel rocker arms that allowed a much higher rpm range; hollow pushrods that carried oil to the cylinder heads; a single-piece intake manifold, which combined the water outlet, exhaust heat riser, distributor mount and valley cover; and internal lubrication,

which eliminated the need for external oil lines and greatly reduced the chance of leaks.

The new V-8's cylinder heads were another important step forward. Their cross-flow port design and wedge-shape combustion chambers were very efficient and, when combined with the comparatively high rpm capability of the valvetrain, gave the new engine a broad performance band that was almost unparalleled.

The original small block displaced only 265 cubic inches (4.35 liters). With a four-barrel carburetor, the engine was rated at 195 hp (gross) in the 1955 Corvette. Interestingly, it gave the fledgling sports cars a shot of serious performance and likely saved it from cancelation, as its first two years of production only offered the archaic Stovebolt engine.

The rest, as they say, is history. The small-block went on to power countless Chevrolet models and other GM vehicles over the next decades and its legacy extends today to the new, Gen V small block family offered in vehicles such as GM's full-size trucks, the Corvette and the all-new 2016 Camaro SS. Interestingly, the new engines have 4.40-inch bore centers, just like the original small block from 1955.



Possible Oil Consumption

2011-2014 Chevrolet Cruze; 2013-2014 Buick Encore and Chevrolet Sonic, equipped with the 1.4L engine

Excessive oil consumption, blue smoke from the exhaust, an illuminated Check Engine light or set fuel trim Diagnostic Trouble Codes (DTC) may be found on some models with the 1.4L engine. Excessive oil consumption, not due to leaks, is defined by the use of 1 quart (0.9 L) or greater of engine oil within 2,000 miles (3,200 kilometers).

Any or all of the following DTCs may be current or set in history: P0106, P0171, P0299, P0507, P1101, or P2096. If these conditions are present, check the PCV orifice for leaking oil or drawing vacuum at idle through its external port. The PCV orifice is an integral part of the camshaft cover.

If the PCV orifice external port is leaking oil or vacuum, replace the camshaft cover assembly. Clean any oil from all induction system components and retest for oil consumption, leaks or any DTCs that reset. Also check for a missing intake manifold non return valve that may have damaged the PCV orifice diaphragm.

If the non-return valve is not visible as shown, use a long cotton swab to wipe any excess oil from the valve. If the non-return valve is still not visible, remove the intake manifold for inspection to validate the valve is missing.



If the intake manifold non-return valve is missing, replace the intake manifold assembly. Clean the oil from all induction system components and retest for oil consumption, leaks or any DTCs that reset.

If the intake manifold non-return valve is seated properly, inspect the spark plugs for signs of oil fouling, check engine cranking compression using GDS 2 and perform cylinder leakage testing using the proper tools. Repair any issues found during the compression or leakage testing.

New York Shop Keeps Up With the Times Through ACDelco Training

Anyone who has been in the automotive business a while knows that one thing never changes: Things are always changing. Just ask Luigi Cannata, the service manager at Lou's Car Care in Syracuse, N.Y., which has been an ACDelco Professional Service Center for more than 15 years.

While the latest technology and engineering developments transform the parts and procedures in automotive service at lightning speed, Cannata has discovered that the best way to keep evolving with the changes is to take advantage of the ACDelco training available to him.

Not only does he participate in many of the training courses, he stresses the importance of training to his fellow technicians. His positive experience with training seminars led him to help organize an ACDelco Learning Management System (LMS) and in-house training at the shop. He also set aside time for all of his mechanics to complete the required training he outlined for them.



Cannata helped plan an in-house training schedule for the rest of the year and required all technicians to attend. He says that the technicians appreciate the ongoing education and feel that the training is invaluable in isolating vehicle concerns.

Lou's Car Care fully supports ACDelco products and utilizes ACDelco branding throughout the shop. Cannata even attributes a 7 percent increase in ACDelco products to the training that builds trust and confidence in ACDelco parts.



Chevrolet Colorado and GMC Canyon Add New Diesel Option

The hot-selling Chevrolet Colorado and GMC Canyon midsize trucks have added a diesel engine option for 2016, ratcheting up their segment-leading capability and efficiency. The all-new 2.8L Duramax turbo-diesel generates 181 horsepower and 369 lb.-ft. of torque, enabling a maximum trailering capacity of 7,700 pounds – a rating unmatched by any other midsize truck.

The engine is part of GM's global family of turbo-diesel four-cylinder engines and features a variable-geometry turbocharger for optimal power and efficiency across the rpm band and a balance shaft for smoothness. A broad torque band makes the 2.8L Duramax very powerful at low rpm, while the turbocharged performance provides a confident feeling of immediate and smooth horsepower on demand.

Additional engine features include:

- Iron cylinder block and aluminum DOHC cylinder head
- Forged steel crankshaft and connecting rods
- Oiling circuit that includes a dedicated feed for the turbocharger to provide increased pressure at the turbo and faster oil delivery
- Piston-cooling oil jets
- 16.5:1 compression ratio
- Common rail direct injection fuel system

- Ceramic glow plugs for shorter heat-up times and higher glow temperatures
- Balance shaft that contributes to smoothness and drives the oil pump
- Laminated steel oil pan with upper aluminum section that contributes to engine rigidity and quietness
- B20 bio-diesel capability.

The Duramax 2.8L is the cleanest diesel truck engine ever produced by General Motors, and meets some of the toughest U.S. emissions standards, thanks in part to a cooled exhaust gas recirculation (EGR) system.

The new diesel is paired with a six-speed automatic transmission, which uses a unique Centrifugal Pendulum Vibration Absorber (CPVA) in the torque converter to reduce powertrain noise and vibration. Additionally, two new features add control and confidence to the driving experience: Smart diesel exhaust braking, which enhances vehicle control and reduces brake wear by varying the amount of brakes needed for the vehicle, load and grade, and an integrated trailer brake controller system.

The new Colorado and Canyon diesel models go on sale this fall.



Training Schedule

Current Instructor-Led Training (ILT) Courses

Course Number	Course Name
S-AC07-02.01ILT	Automotive Air Conditioning Advanced Refrigerant System Diagnostics
S-AC07-03.01ILT	HVAC Control System Operation and Diagnostics
S-BK05-01.01ILT	Braking Systems
S-BK05-02.01ILT	ABS Operation and Diagnosis
S-BK05-03.01ILT	Electronic Brake and Chassis Controls: Is the vehicle really smarter than the driver?
S-DS11-02.01ILT	Service Programming – Flash or Pass: Don't pass up potential customers!
S-DS11-13.01ILT	Vehicle Network Communications: When modules talk, who is really listening?
S-EL06-04.02ILT	Network Communication Diagnosis
S-EL06-10.02ILT	Electrical Power Management
S-EL06-11.02ILT	Enhanced Automotive Circuit Diagnosis
S-EL06-12.01ILT	Hybrid Technology and Service
S-EL06-13.01ILT	Body Electrical Global Diagnostics
S-EL06-14.01ILT	Advanced Body Control System Electrical Diagnostics
S-EL06-17.01ILT	Electrical Diagnostics: Chasing Lost Electrons
S-EM01-01.01ILT	Valvetrain Controls: Are they phasing you?
S-EP08-02.01ILT	Engine Performance Computer Controls and Ignition System Diagnostics
S-EP08-03.01ILT	Engine Performance Air Induction and Fuel System Diagnostics
S-EP08-04.01ILT	Engine Performance Fault Monitoring and Emission System Diagnostics
S-EP08-05.01ILT	Engine Performance Advanced Drivability Diagnostics
S-EP08-06.01ILT	After Combustion Sensors: Is what is in the exhaust making your engine run rough?
S-EP08-07.01ILT	Air Induction and Fuel Injection Systems
S-EP08-08.02ILT	Evaporative Emissions Controls: Why is there always a code but never a leak we can find?
S-EP08-09.01ILT	Spark Generation: Is a lack of spark sending you up in flames?
S-EP08-10.01ILT	Direct Injection
S-EP08-81.02ILT	Duramax Diesel Operation and Diagnosis
S-SS04-01.01ILT	Vibration Correction Diagnostics