ACDelco Promotions Offer Valuable Incentives

ACDelco is committed to offering the greatest value in the industry for your customers and your business. In addition to quality parts and support, such as our new 24-month/unlimited limited parts warranty* (see story on page 2 for more details), ACDelco offers many value-enhancing promotions throughout the year to give you and your customers more reasons to invest in our parts.

For your customers, mail-in rebates such as our popular Spark Plug Rebate and the current rebate for GM OE and ACDelco Professional cabin air filters** enhance value, while our Trade Rebate and CONNECTION Underhood promotions incentivize your business to choose ACDelco parts on all your repairs.

Your ACDelco parts distributor and ACDelco representative have all the details on the latest installer promotions and consumer promotions. Ask them about all the opportunities you can leverage to offer you and your customers greater value — and look to every issue of ACDelco Insider for news on the latest promotions.

*See gmpartsrebates.com for details and rebate form, which must be postmarked by 1/31/19. Retail customers with a U.S. mailing address only. Minimum of 4 spark plugs required with a maximum of 16. Rebate amount dependent on spark plug type and quantity purchased. Allow 6 to 8 weeks for delivery of check. Offer ends 12/31/18.

**$10 rebate for ACDelco GM OE, $5 rebate for ACDelco Professional. See gmpartsrebates.com for details and rebate form, which must be postmarked by 7/31/18. Limit two rebates per mailing address. Retail customers with a U.S. mailing address only. Allow 6 to 8 weeks for delivery of debit card. Offer ends 6/30/18.

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### Current ACDelco National Promotions

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<thead>
<tr>
<th>MAY</th>
<th>JUNE</th>
</tr>
</thead>
<tbody>
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<td><strong>Installer Promotions</strong></td>
<td><strong>INSTALLER PROMOTIONS</strong></td>
</tr>
<tr>
<td>Trade Rebates: A/C, Brakes, Chassis</td>
<td>CONNECTION Underhood Promotion: Ignition &amp; Switches, Wire &amp; Cable, Emissions &amp; O2 Sensors, Transmission Parts, Engine Components</td>
</tr>
<tr>
<td><strong>Consumer Promotions</strong></td>
<td><strong>CONSUMER PROMOTIONS</strong></td>
</tr>
<tr>
<td>Spark Plug Rebate</td>
<td>$10 GM OE or $5 ACDelco Professional Cabin Air Filter Rebate</td>
</tr>
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New Genuine GM Parts / ACDelco Limited Parts Warranty Takes Effect

There’s a new base warranty for Genuine GM Parts and ACDelco Parts: 24 months/unlimited mileage limited warranty for most maintenance parts, with some exclusions. The base warranty also applies to police, delivery, taxi and commercial vehicles.

There are no changes to ACDelco battery warranty coverage. Additionally:

- The limited warranty coverage for Advantage products is 12 months/unlimited mileage
- The Professional brake product line has a 24-month/unlimited-mile limited warranty on most parts
- Professional Iridium and Professional Platinum spark plugs have a seven-year/unlimited-mile limited warranty; RapidFire Performance Platinum spark plugs have a three-year/unlimited-mile limited warranty
- The products with limited lifetime coverage include Professional chassis, OE electric fuel pumps, OE hub wheel bearings, OE and Professional shocks and struts, OE and Professional spark plug wire sets, and OE and Professional radiators
- The parts warranty coverage is applicable through GM dealers, ACDelco direct accounts and authorized resellers
- ACDelco PSC participants are eligible for labor reimbursement through the Consumer Assurance Program.

These changes make it easier to do business with ACDelco, while enhancing the value of your business to your customers. The warranty coverage for them has increased for many of our parts and we’ve eliminated inconsistencies between our sales channels. You can feel more confident installing ACDelco parts, which are backed with stronger assurance than ever.

Talk to your distributor or ACDelco representative for more details on ACDelco warranty coverage and see the accompanying chart for a more complete list of coverage.

<table>
<thead>
<tr>
<th>PRODUCT CATEGORY</th>
<th>PARTS COVERED</th>
<th>LIMITED WARRANTY COVERAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
<td>ACDelco OE and Professional replacement parts</td>
<td>24 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>AIR CONDITIONING</td>
<td>OE and Professional air conditioning</td>
<td>24 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>BEARINGS</td>
<td>OE hub wheel bearings (front and back)</td>
<td>LIMITED LIFETIME</td>
</tr>
<tr>
<td>BEARINGS</td>
<td>Advantage bearings</td>
<td>12 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>BELTS &amp; HOSES</td>
<td>Professional Belts and hoses</td>
<td></td>
</tr>
<tr>
<td>BRAKES</td>
<td>OE and Professional brake products (Lines 14 and 17)</td>
<td>24 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>BRAKES</td>
<td>Advantage brake products (Line 44)</td>
<td>12 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>CHASSIS PARTS</td>
<td>Professional chassis parts and universal joints (Line 45)</td>
<td>LIMITED LIFETIME</td>
</tr>
<tr>
<td>CHASSIS PARTS</td>
<td>Advantage chassis parts (Line 46)</td>
<td>12 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>ELECTRIC FUEL PUMPS</td>
<td>Electric fuel pumps, fuel pump module and sender, fuel pump module (Line 43)</td>
<td>LIMITED LIFETIME</td>
</tr>
<tr>
<td>FILTERS</td>
<td>OE and Professional cabin air filter (Line 48), engine and oil filter (Line 42)</td>
<td>24 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>IGNITION &amp; EMISSIONS</td>
<td>OE and Professional ignition line (Line 01) and emissions (Line 21)</td>
<td>24 MONTHS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>SHOCKS &amp; STRUTS</td>
<td>OE shock absorbers, struts (hydraulic and electric) and lift supports (Line 5); Professional shock absorbers, struts, ready struts and gas-filled lift supports (Line 9)</td>
<td>LIMITED LIFETIME</td>
</tr>
<tr>
<td>SPARK PLUGS</td>
<td>Professional Iridium and Professional Platinum spark plugs</td>
<td>7 YEARS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>SPARK PLUGS</td>
<td>RapidFire Performance Platinum spark plugs</td>
<td>3 YEARS/UNLIMITED MILEAGE</td>
</tr>
<tr>
<td>STARTERS &amp; ALTERNATORS</td>
<td>OE and Professional rotating electrical (Line 33)</td>
<td>24 MONTHS/UNLIMITED MILEAGE</td>
</tr>
</tbody>
</table>

THIS WARRANTY DOES NOT COVER

- Damage or failure due to negligence, alteration, accident, abuse, improper installation, or use for a purpose which the product is not designed or approved by ACDelco.
- Labor costs incurred for inspection, removal or reinstallation.
- Products that are replaced as part of normal maintenance or wear out.
- Vehicles used for racing and other competitions.
- Damage due to the lack of maintenance or use of wrong fuel, oil, refrigerant or lubricants.
- Damage or failure due to system contamination.
- Loss of time, inconvenience, loss of use of the vehicle or other consequential damages.
- Products installed on vehicles registered and normally operated outside of the United States or Canada.
- Police, delivery, taxi, and commercial vehicles are warranted for 24 months/Unlimited mileage with the exception of Advantage Products. Advantage Product limited warranty is 12 months/Unlimited mileage.

*Effective on parts purchased April 1, 2018 or later to the original purchaser.
Training Update: Maintaining Your Profile

Keeping your profile up to date on the ACDelco Learning Management System at acdelcotraining.com is important for a number of reasons, including the fact that it provides a way for ACDelco to communicate and customize training information for you.

What’s more, ACDelco makes it easy to do so. Once you’ve logged in, click the person icon at the top-right corner of the home page and then select Edit Profile.

In each profile, you can:
- Confirm the spelling of your name (training awards are printed using this information)
- Change passwords
- Import ASE test records
- Add your email address to receive ACDelco course enrollment messages and training announcements
- Select preferred training centers in your area (up to three).

TAKING A VIRTUAL CLASSROOM TRAINING SESSION

If you have signed up for a Virtual Classroom Training (VCT) session, which brings ACDelco classroom training to you via online courses, everything you need to participate is available through the MyVCT link (the headset icon) at the top of the acdelcotraining.com home page.

Equipment Test – First-time participants, or those using a new PC, should complete the VCT Live Equipment Self-Test. Just click the link to confirm that your PC is properly configured.

Participant Guide – To access the guide for your course, click the Virtual Classroom Training Participant Guides link. It lists all the VCT participant guide PDFs that are available for download.

Join the Course – To launch the VCT, click the Launch link in the Action column of the registration table listing the course number and course name. It’s recommended to launch the course 30 minutes before the broadcast begins.

Testing – Once the VCT is over, you’ll receive credit by completing the test that is built into the course. If a test is not part of the course, use the Test link in the Action column of the registration table on the MyVCT page. Your registration record will remain on the MyVCT page until the test is completed.

DON’T FRANKENSTEIN YOUR CUSTOMER’S VEHICLE.

Although it might fit, that doesn’t mean it’s the best choice. That’s why professionals trust Genuine GM Parts for their GM collision repair projects. They are the only parts tested to GM factory specifications and engineered for proper fit, form, and function – giving your technicians the parts they need to get the job done right. When it comes to collision repair, stick with the original. Use Genuine GM Parts. Visit genuinegmparts.com/collisionparts.

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**New Tire Fill Alert System**

A recently introduced GM technology — the Tire Fill Alert System (available on the 2018 Silverado, Yukon, Escalade and other models) — makes it easy for drivers to know when they’ve added enough air to their tires.

The Tire Fill Alert System, which works with the Tire Pressure Monitoring System (TPMS), will issue audible and visual signals — outside the vehicle — to inform drivers when the proper tire pressure level is reached.

**HOW IT WORKS**

When a tire’s pressure drops and the warning lamp illuminates in the instrument cluster, the Tire Fill Alert System activates. As the driver begins to fill the tire, the turn signal lamp on the corresponding side will flash.

Once the proper pressure has been reached (based on the Tire and Loading Information label in the driver’s door frame), a single horn chirp will sound and the turn signal lamp will change from flashing to solid for a brief time.

If the tire is overinflated by more than 5 psi, three short horn chirps will occur. To correct the pressure, briefly press the center of the valve stem; the horn will chirp once when the recommended pressure is met.

**SERVICE ISSUES**

Note that the Tire Fill Alert System may not activate due to a variety of factors, including a system malfunction or a low battery in one of the TPMS sensors. If the sensors, which are unique to vehicles with the Tire Fill Alert feature, are not transmitting, follow the service procedure for DTCs C0750, C0755, C0760 or C0765.

In addition, when inflating a tire, watch the Tire Fill Alert Current State parameter. The initial state should be in Monitor mode, and then change to Active and Achieved once the tire is inflated to its proper level.

If issues exist with the turn signal lamp/horn feedback, or if the aforementioned parameter states are not changing, refer to Lighting and/or Body Control Module diagnostics.

**ACDelco ProWire e-Newsletter Offers More Coverage**

Turn to ACDelco’s ProWire e-newsletter when you want more of what you enjoy about Insider: product and promotional news, great service information and technical tips. This monthly newsletter delivers information you’ll only get from ACDelco right to your preferred digital device.

Sign up today by visiting acdelco.com and clicking on the About ACDelco tab, then scroll down to Email Sign Up and get connected. You’ll receive the next edition of ProWire and continue to receive the latest service information from ACDelco.
Pedestrian Detection System Lessens the Blow

One of GM’s newer safety technologies — the Pedestrian Impact Detection System (currently available on the 2018 Regal) — offers supplemental protection to pedestrians involved in low-speed (16-31 mph) frontal collisions.

Pressure sensors located under the front bumper fascia provide pressure information to the vehicle’s Inflatable Restraint Sensing and Diagnostic Module, which helps assess whether a human, animal or other obstacle is involved.

Upon identifying a pedestrian, the system deploys pyrotechnic hinge actuators within 40 milliseconds, elevating the rear portion of the hood by about 4 inches. This creates enough vertical deformation space to cushion the impact on the pedestrian and help reduce potential injury.

Situations in which the system may not activate include when:
- The impact is outside the 16-31-mph speed range or outside the range of the sensors
- Sensors are damaged
- The hood path is blocked by snow or ice
- Aftermarket equipment is attached to the front bumper

After the system has activated, the hood will remain in the raised position until re-situated. In addition, the latch, hinges and actuators must be replaced before the system can be functional again. If the bumper sensors also need to be changed, check the front fascia to ensure that any existing damage will not interfere with future operation.

The Pedestrian Impact Detection System should be disabled when performing repairs to it or when servicing an item near or attached to one of its components. Disable the system by removing the fuse supplying its power or by disconnecting the negative battery cable.

The latch, hinges and actuators need to be replaced after the system deploys.

Take Advantage of ACDelco’s Q2 Underhood CONNECTION Promotion

ACDelco’s Q2 Underhood CONNECTION Promotion is underway and runs through June 30, 2018.

Registered participants from Independent Service Centers (ISCs), ACDelco Professional Service Centers (PSCs) and Regional Service Chains (RSCs) in the United States can receive a $50 Target gift card by increasing their purchases of eligible ACDelco Underhood Parts made on CONNECTION during the promotional period by 10 percent over the same period last year; or, they can receive a $100 Target gift card by increasing their purchases by 20 percent over the same period last year.

Customers must have purchased a minimum of $250 in these eligible parts on CONNECTION from May and June 2018 to participate. The eligible part lines include:
- Ignition & Switches – 01
- Wire & Cable – 16
- Emissions – 21
- Transmission Parts – 37
- GM OE Fuel Pumps – 43
- Engine Components – 51

Ask your distributor or ACDelco representative for complete details — and make sure you take advantage of this great promotion!

COMING SOON:
The Q3 Underhood CONNECTION Promotion will focus on air conditioning, brakes and fuel pumps.
ACDelco’s Trade Rebate Program

Additional Rebates in Q2

Independent Service Centers and Body Shops can earn up to $1,170 in rebates by mail for purchasing qualified ACDelco parts through June 30, 2018!

Rebates will be paid in the form of a pre-paid Visa debit card and will include the total amount of accumulated approved rebates earned during the rebate period. Debit cards will be issued in the name of the participating business and will be shipped with six to eight weeks of the promotion end date. Postmarked by Jan. 15, 2019. Not available within some other offers.

Each of the below part rebates have a rebate redemption limit of 15 per participating shop:

- Professional Ball Joint - $2
- Professional Control Arm - $2
- Professional Drag, Center, or Sway Bar Link - $2
- Professional Idler or Pitman Arm - $2
- Professional Calipers - $10
- GM OE Brake Pipe Kit - $10
- Set of Advantage or Professional Brake Pads or Shoes - $15
- Advantage or Professional Brake Rotors or Drums - $15
- GM OE Compressor, Evaporator or Condenser - $20

For a complete list of eligible part numbers, ask your distributor or ACDelco representative or go to gmpartsrebates.com.

Some changes have been made to the GM Parts Rebate Program. Current participants need to re-register their shop to submit invoices for the new Q2 Trade Rebate offers. Look for a rebate flyer on the ACDelco 1Store.

ACDelco Spark Plug Rebate Continues in 2018

ACDelco is continuing the popular Consumer Spark Plug Rebate for the 2018 calendar year. The "Spark Some Savings" provides consumers rebates when they purchase eligible ACDelco Spark Plugs. Consumers can purchase eligible ACDelco Spark Plugs at retail stores or through professional installers such as your business and apply for a rebate with the following payout:

<table>
<thead>
<tr>
<th>SPARK PLUG</th>
<th>REBATE PER PLUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Iridium</td>
<td>$3</td>
</tr>
<tr>
<td>Professional Double Platinum</td>
<td>$2</td>
</tr>
<tr>
<td>Rapidfire Performance Single Platinum</td>
<td>$1</td>
</tr>
<tr>
<td>Professional Conventional</td>
<td>$.50</td>
</tr>
</tbody>
</table>

A minimum purchase of four Spark Plugs is required; and a maximum of 16 Spark Plugs per Household is allowed. Rebate is not to exceed $48.

Remind your customer about this valuable rebate!
When to Perform a Diesel Service Regeneration


These vehicles come equipped with a Diesel Particulate Filter (DPF) that captures diesel exhaust gas particulates, also known as soot, preventing their release into the atmosphere. This is accomplished by forcing particulate-laden exhaust through a filter substrate consisting of thousands of porous cells. Over time, the soot trapped on the cell walls acts to restrict exhaust flow through the DPF, reducing its effectiveness as well as engine efficiency.

Once soot buildup reaches a specified limit, the Engine Control Module (ECM) commands a regeneration event to burn-off the soot during normal vehicle operation. Regeneration events occurring during vehicle operation are known as normal regenerations as they occur automatically and without the driver’s knowledge. In general, the vehicle will need to be operating continuously at speeds above 30 mph for approximately 20–30 minutes for a full and effective regeneration to complete.

If the above driving conditions are not met and the vehicle cannot perform a regeneration on its own, a message will appear in the Driver Information Center (DIC). Depending on vehicle/model and engine configuration, the message may read: “Clean Exhaust Filter, See Owner’s Manual,” “Diesel Particle Filter is Full, Continue Driving,” or some variation of that message. Should a customer bring in a vehicle with one of the messages displayed, the system may require a Service Regeneration by a technician, which lowers the soot accumulation in a very controlled manner.

A Service Regeneration should only be performed when specifically called out by the appropriate Service Information (SI) document or procedure. Refer to SI for step-by-step instructions on conducting the process.

Tip: During a Service Regeneration, tailpipe exhaust temperature will be greater than 572°F. To help prevent personal injury or property damage from fire or burns:

1. Do not connect any shop exhaust removal hoses to the tailpipe.
2. Park the vehicle outside and keep people, other vehicles and combustible material away during the procedure.
3. Do not leave the vehicle unattended.
4. Remove any debris or mud buildup at the exhaust cooler located at the tailpipe.
5. Due to the elevated engine temperatures created while performing this procedure, it is imperative to keep the front of the vehicle in an open environment, with the hood open and away from any walls or buildings. This will ensure proper airflow across the radiator.

A Service Regeneration can be terminated by applying the brake pedal, commanding Service Regeneration OFF through the scan tool, disconnecting the scan tool from the vehicle, or by shifting the vehicle out or Park or Neutral.

GDS 2 VALUES CHANGE

Note that on select 2016 and newer vehicles listed above, a change was recently implemented in the values of the Soot Accumulation parameter in GDS 2. It is now measured in a percentage instead of grams.

On these vehicles, the ECM will not perform a DPF regeneration until soot accumulation increases to approximately 100%. If accumulation reaches 115% and the system has not regenerated due to driving conditions, a Continue Driving message will appear on the DIC.

Should soot accumulation continue to rise above a calibrated percentage, based on diesel engine application, the DTC P2463 (Diesel Particulate Filter Soot Accumulation) will set and a Service Regeneration will be required.
With the summer driving season just ahead, now marks a good time for technicians to tune up their air conditioning (A/C) knowledge and skills.

The ACDelco Refrigeration Systems Operation and Testing course (S-ACO7-05.01ILT) is an ideal way to do that.

**THE FOCUS**

This full-day, instructor-led class helps equip technicians with the knowledge of A/C operation that’s needed to effectively service, diagnose and repair R-134a and R-1234yf systems. The course is intended for those with an intermediate level of experience with the refrigerant cycle and a basic understanding of compressor, condenser, metering device and evaporator operation.

During training, participants will examine the operation, computerized control and common failures of an A/C system from diagnostic and servicing perspectives. They will also take a detailed look at its key components, including:

- Variable displacement compressors
- Internal Heat Exchangers (IHXs)
- Enhanced evaporators
- Condensers

Among the course’s activities, participants will study condenser-related malfunctions and diagnose issues relating to metering devices, accumulators, compressors and other components.

In addition, heat transfer principles will be discussed as well as the differences and appropriate applications for PAG, POE and PVE refrigerant oils.

**CASE STUDIES AND EXERCISES**

Several case studies during the course help bring technical concepts to life in real-world scenarios.

One study involves a vehicle where students will investigate the root cause of insufficient cooling. Upon examination, they discover that there are no DTCs or TSBs linked to the problem. Ultimately, it is determined that a key component of the system has failed. The study highlights the importance of following the proper steps during the diagnostic process.

In addition to case studies, a number of exercises are included. During the A/C System Performance Test, for example, participants will access Service Information to complete a number of tasks and to learn the proper procedures when diagnosing various HVAC-related concerns. They will also evaluate the A/C system through gauge readings, temperature, humidity and duct temperature, and other data.

As part of a Leak Detection Exercise, participants will employ an ultraviolet and electronic detector to check for leaks on an A/C system. They will also rely on Service Information and other resources to answer leak-related questions, such as: “What is the minimum pressure required to leak-test a system when using an electronic detector?” Or, “How can the evaporator core be checked for leaks?” The exercise helps students learn the proper order in the diagnostic process and to understand that following a process incorrectly can lead to wasted time and effort.
GM recently introduced a new universal refrigerant PAG (Polyalkylene Glycol) oil that can help make servicing certain air conditioning systems easier.

The oil is formulated specifically for GM vehicles with belt-driven A/C compressors that use the environmentally friendly alternative refrigerant R-1234yf. Previously, multiple PAG oils were available for these applications, which required technicians to access Service Information during every A/C service to ensure that the correct oil was used.

With this new product, the A/C repair process is simplified. Now, only two oils are needed (for R-1234yf and R-134a systems) for GM vehicles with belt-driven compressors. The new R-1234yf refrigerant PAG oil comes in the same 8-oz. tubes as the previous oil. In addition, the cartridges are designed to work with oil injection tool GE-45037.

It is acceptable to use any existing inventory of the previously released R-1234yf PAG oils as long as it is the correct part number for the specific A/C system. With a previously released, non-universal product, always refer to Service Information to ensure that you’re using the correct one.

For high voltage electric A/C compressors, use only POE (Polyolester) refrigerant oil (GM #88862657). Only one GM POE oil is released for service at this time.

<table>
<thead>
<tr>
<th>REFRIGERANT TYPE</th>
<th>OIL TYPE</th>
<th>P/N (USA)</th>
<th>P/N (CANADA)</th>
<th>COMPRESSOR DRIVE TYPE</th>
<th>CARTRIDGE SIZE</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-1234yf</td>
<td>PAG</td>
<td>19354657</td>
<td>19354658</td>
<td>BELT-DRIVEN</td>
<td>8 oz. (240ml)</td>
<td>Universal oil for use in R-1234yf systems</td>
</tr>
<tr>
<td>R-134a</td>
<td>PAG</td>
<td>88901445</td>
<td>88900060</td>
<td>BELT-DRIVEN</td>
<td>8 oz. (240ml)</td>
<td>Universal oil for use in R-134a systems</td>
</tr>
<tr>
<td>R-134a and R-1234yf</td>
<td>POE</td>
<td>88862657</td>
<td>88862658</td>
<td>HIGH VOLTAGE ELECTRIC</td>
<td>3.5 oz. (104ml)</td>
<td>Only POE oil released at this time</td>
</tr>
<tr>
<td>R-1234yf</td>
<td>PAG</td>
<td>19260643</td>
<td>19260644</td>
<td>BELT-DRIVEN</td>
<td>8 oz. (240ml)</td>
<td>Replaced by Universal oil 19354657 (19354658 Canada)</td>
</tr>
<tr>
<td>R-1234yf</td>
<td>PAG</td>
<td>19333249</td>
<td>19333250</td>
<td>BELT-DRIVEN</td>
<td>8 oz. (240ml)</td>
<td>Replaced by Universal oil 19354657 (19354658 Canada)</td>
</tr>
<tr>
<td>R-1234yf</td>
<td>PAG</td>
<td>19299051</td>
<td>19299052</td>
<td>BELT-DRIVEN</td>
<td>8 oz. (240ml)</td>
<td>Replaced by Universal oil 19354657 (19354658 Canada)</td>
</tr>
</tbody>
</table>

THE TAKEAWAY
Upon completing the ACDelco Refrigeration Systems Operation and Testing course, participants will be able to:

- Describe an A/C system’s operating principles and functions.
- Identify and apply A/C diagnostic procedures.
- Know how to use the appropriate tools, equipment and processes to service A/C systems correctly.

ENROLLMENT
Ready to brush up on your A/C skills? Course enrollment is easy; just go to acdelcotraining.com. While there, browse the many other available courses.
Training Course Highlights Multiplexed Networks

It’s no secret that diagnosing complex network system failures is a challenge — even for experienced technicians. The good news is: ACDelco offers a training course — Diagnosing Multiplexed Data Bus Networks (S-EL06-74.01SEM) — to help you meet that challenge with the confidence and skills that are needed.

This informative three-hour seminar covers diagnostic strategies that help technicians hone their problem-solving skills relating to serial data failure modes in multiplex networks.

The protocols covered include the Controller Area Network (CAN), Local Interconnect Network (LIN), GM Local Area Network (GMLAN) and the Media Oriented Systems Transport (MOST®) network.

During the training, participants will:

- Learn about vehicle digital communications.
- Identify the characteristics of single- and dual-wire serial data circuits.
- Compare network topologies (star, ring and linear).
- Diagnose a GMLAN fault using a Data Bus Diagnostic Tool.

NETWORK SPEEDS

Participants will also learn how networks transmit messages at different speeds, depending on the importance or complexity of the information. Minimum or maximum transmission speeds are denoted in bits per second, referred to as baud rate.

As shown below, the Society of Automotive Engineers (SAE) classifies networks by speed.

<table>
<thead>
<tr>
<th>SAE NETWORK CLASS</th>
<th>SPEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASS A</td>
<td>Up to 10 kbit/s</td>
</tr>
<tr>
<td>CLASS B</td>
<td>Up to 125 kbit/s</td>
</tr>
<tr>
<td>CLASS C</td>
<td>Up to 1 Mbit/s</td>
</tr>
<tr>
<td>CLASS C+</td>
<td>Up to 10 Mbit/s</td>
</tr>
<tr>
<td>CLASS D</td>
<td>More than 10 Mbit/s</td>
</tr>
</tbody>
</table>

The Data Bus Diagnostic Tool reveals how modules, connectors and wires are working or not working.

GMLAN BUS

As part of the training, GM Local Area Network (GMLAN) Bus protocols will be examined. Low Speed GMLAN is used in applications where a high data rate is not required. This allows for the use of less complex components and for operator-controlled functions where response time requirements are slower than those needed for dynamic vehicle control. With Low Speed GMLAN, data is transmitted over a single wire at 33.33 kbit/s under normal operating conditions, but it is capable of speeds of up to 83.33 kbit/s when needed.

High-Speed GMLAN, on the other hand, is employed where data needs to be exchanged between powertrain chassis or safety systems. This protocol uses a twisted pair of wires that can transmit data up to 500 kbit/s.

During the GMLAN portion of the course, participants will also use a Data Bus Diagnostic Tool (which works with TIS2Web) to help determine the cause of a fault.

MEDIA ORIENTED SYSTEMS TRANSPORT (MOST)

In addition to GMLAN, students will learn about the Media Oriented Systems Transport (MOST) protocol — a high-speed multimedia network that can carry large amounts of data from infotainment systems, including video and streaming audio.

MOST offers two basic configurations — wired and optical — as well as three network speed specifications:

- MOST 25: Up to 25 Mbit/s
- MOST 50: Up to 50 Mbit/s
- MOST 150: Up to 150 Mbit/s

A key difference between MOST and other networks is that communication in MOST systems occurs in a continuous loop or “ring” — and in only one direction — versus the bidirectional systems used in other networks, such as GMLAN.

Continued on next page...
The MOST network offers three speed configurations that transmit data in a continuous loop.

MOST also offers a speed advantage. For example, with a data rate of 50 Mbit/s, the MOST 50 network transmits about 100 times faster than HS GMLAN. This allows for audio and video signals to be transmitted in real time or streamed over the network along with serial data instructions.

**DIAGNOSTIC EXERCISE AND ACTIVITIES**

During one of the diagnostic exercises, students will look at a 2011 Chevrolet Malibu with a no-crank/no-start condition, resulting from a fault. Here, they will apply what they’ve learned during the course toward diagnosing the problem.

In another exercise, participants will utilize diagnostics relating to a MOST 50 wired network that is not functioning properly. With the help of a schematic, they will analyze a ring break (when data flow is interrupted in a MOST system) to identify an optional module. They will also note the colors of the MOST circuit wires as well as the connector terminal number at the radio. Based on the results, the class will discuss the next steps and learn the specification for a MOST 50 wire repair.

By the conclusion of the course, participants will be able to:

- Understand the basic operation of multiplex network protocols.
- Analyze network failures and develop related diagnostic procedures.
- Identify service repair strategies and procedures.

**ENROLL TODAY!**

To enroll in the Diagnosing Multiplexed Data Bus Networks seminar, visit acdelcotraining.com.

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New Training Course Examines Ignition Systems

Diagnosing ignition system misfires can be challenging, especially when the concern is intermittent. The good news is, a recently released ACDelco training course – Ignition Systems (S-EP08-40.01SEM) – can enhance your knowledge and diagnostic skills in this important area.

This informative, three-hour session is designed for technicians with at least an intermediate level of experience with modern ignition systems and cylinder misfire diagnoses. Along with its interactive format, the course includes group activities, Q&A sessions, as well as animations and videos to help illustrate how ignition systems work.

**KEY COMPONENTS**

The seminar will help improve a technician’s ability to identify the root cause of ignition system faults. Training also covers the operation of the ignition system and its key components, including spark plugs; crank, cam and knock sensors; primary/secondary coils; and others.

The course will also examine:

- The methods for diagnosing primary and secondary side ignition concerns
- The function and operation of ignition diagnostic monitors
- Air/fuel flow-related misfires
- Ionic sensing ignition systems and knock sensor timing control.

Participants will learn diagnostic procedures for using a scan tool or scope, examine compression/leak down and spark testing, and understand how to test crankshaft and camshaft position sensors. Training will also review common ignition issues, related service bulletins, recalls and related campaigns.

**NEW TRAINING COURSE**

Examines Ignition Systems

The course highlights key components, such as ignition coils.

Participants will learn how to properly test crankshaft position sensors.
How to Take ACDelco Training

Go to www.acdelcotraining.com to log in to the ACDelco Learning Management System.

To launch or enroll in courses in your training path, open the home page to view your Training Progress Status Report, select Show Detail, and then click the course number and title to view details on a specific course and to launch or enroll in the course.

To view Instructor-Led Training (ILT) courses (ILTs are full-day and half-day hands-on classroom courses), click Take Training > Catalog > Catalog Search and select Instructor-Led Training under Delivery Type.

To view Virtual Classroom Training (VCT) courses (VCTs are one- to two-hour live online courses), click Take Training > Catalog > Catalog Search and select Virtual Classroom Training under Delivery Type.

To launch a Web-Based Training (WBT) course (WBTs are one- to four-hour self-guided online courses), click Take Training > Catalog > Catalog Search and select Service or Business Web-Based Training under Delivery Type.

To launch a TechAssist (TAS) course (TAS courses are 15- to 20-minute online presentations on a specific topic), click Take Training > Catalog > Catalog Search and select TechAssist under Delivery Type.

To launch a Simulation (SIM) (Sims require users to complete all repairs for a condition), click Take Training > Catalog > Catalog Search and select Simulation under Delivery Type.

Facelift for 2019 Camaro Lineup

Fresh styling comes to the 2019 Chevrolet Camaro lineup, as the LS, LT and SS models receive unique front-end designs and revised taillamps and rear fascias. In addition to the new styling, new models and features are offered, including a new Turbo 1LE model and an available 10-speed automatic transmission that replaces the previous 8-speed automatic on the Camaro SS. All models also offer new Chevrolet Infotainment 3 systems. The lineup also includes the supercharged Camaro ZL1, which retains its existing cooling- and aero-optimized front-end design. The 2019 Camaro goes on sale later this year.