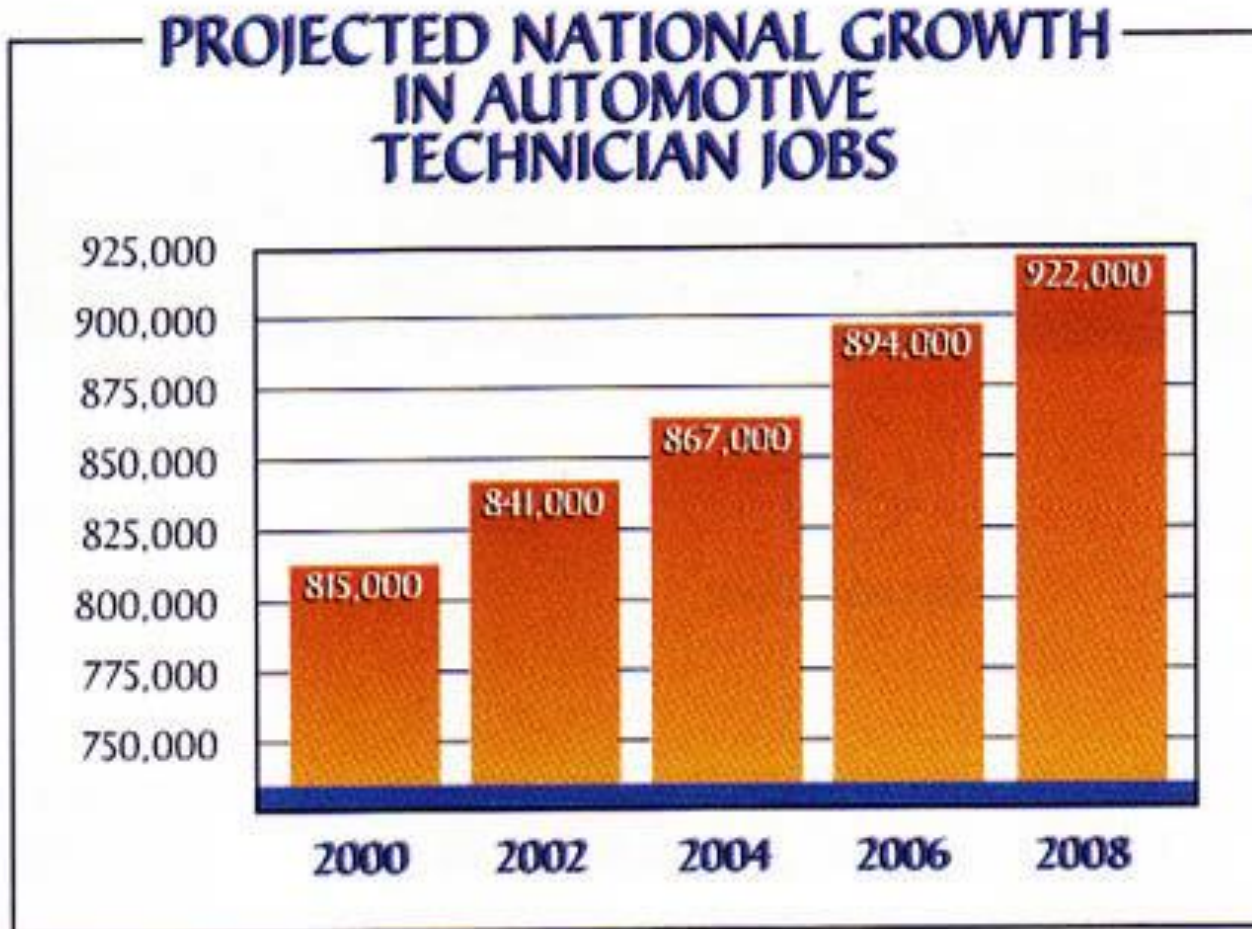


Systems Repair Worksheet
Chapter 1 Pages. 1-18
Automotive Careers
52 Points

Be Certain to Read the Summary

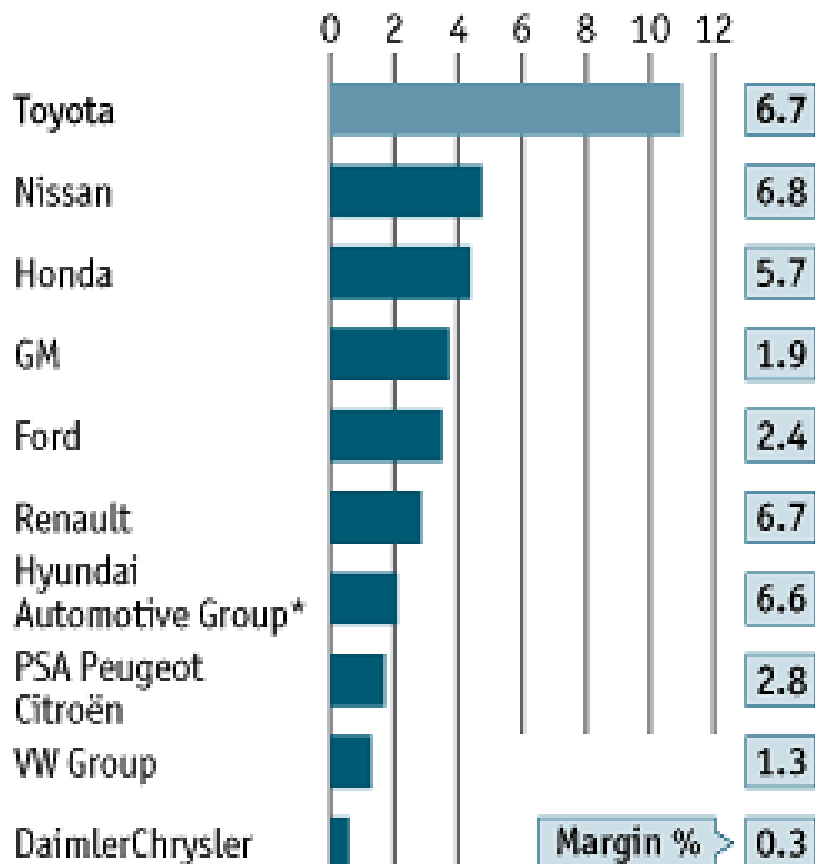


1. The _____ industry's part in the U.S. economy is second only to the food industry!

Beyond the margin

1

Net profit, latest available year, \$bn



Source: Company reports

*Includes Kia Motors

Health care
Automotive
Electronics

ATASA 5th Automotive Careers

Marketing, Sales, and Service

- Buying and Merchandising
- Distribution and Logistics
- e-Marketing
- Management and Entrepreneurship
- Marketing Communications and Promotion
- Marketing Information Management and Research
- Professional Sales and Marketing

Business, Management, and Administration

- Administrative and Information Support
- Business Analysis
- Business Financial Management and Accounting
- Marketing
- Human Resources
- Management

Hospitality and Tourism

- Lodging
- Recreation, Amusements, and Attractions
- Restaurants and Food and Beverage Services
- Travel and Tourism

Law, Public Safety, and Security

- Correction Services
- Emergency and Fire Management Services
- Law Enforcement Services
- Legal Services
- Security and Protective Services

Government and Public Administration

- Revenue and Taxation
- Foreign Service
- Governance
- National Security
- Planning
- Public Management and Administration
- Regulation

Finance

- Banking and Related Services
- Business Financial Management
- Financial and Investment Planning
- Insurance Services

Human Services

- Consumer Services
- Counseling and Mental Health Services
- Early Childhood Development and Services
- Family and Community Services
- Personal Care Services

Education and Training

- Administration and Administrative Support
- Professional Support Services
- Teaching/Training

Agriculture, Food, and Natural Resources

- Animal Systems
- Agribusiness Systems
- Environmental Service Systems
- Food Products and Processing Systems
- Natural Resources Systems
- Plant Systems
- Power, Structural, and Technical Systems

Environmental and Agricultural Systems

Arts, A/V Technology, and Communications

- Audio/Video Techniques
- Journalism and Broadcasting
- Performing Arts
- Printing Techniques
- Telecommunications Techniques
- Visual Arts

Information Technology

- Information Support and Services
- Interactive Media
- Network Systems
- Programming and Software Development



Foundation Knowledge and Skills

Academic and Technical Literacy

- Employability
- Ethics
- Systems
- Teamwork
- Career Development
- Problem Solving
- Critical Thinking
- Information Technology Application
- Legal Responsibilities
- Communication
- Safety, Health, and Environment

Health Sciences

Health Science

- Biotechnology Research and Development
- Diagnostic Services
- Supportive Services
- Health Informatics
- Therapeutic Services

Communication and Information Systems

Industrial, Manufacturing, and Engineering Systems

Architecture and Construction

- Construction
- Design and Pre-construction
- Maintenance and Operations

Manufacturing

- Production
- Manufacturing Production Process Development
- Maintenance, Installation, and Repair
- Quality Assurance
- Logistics and Inventory Control
- Health, Safety, and Environmental Assurance

Science, Technology, Engineering, and Mathematics

- Engineering and Technology
- Science and Math (Investigative, Informational, and Educational)

Transportation, Distribution, and Logistics

- Facility and Mobile Equipment Maintenance
- Health, Safety, and Environmental Management
- Logistics Planning and Management Services
- Sales and Services
- Transportation Operations
- Transportation/Systems Infrastructure Planning, Management, and Regulation
- Warehousing and Distribution Center Operations

2. The automotive industry is considered _____ with both *domestic & foreign* manufacturers.

Global
American
International

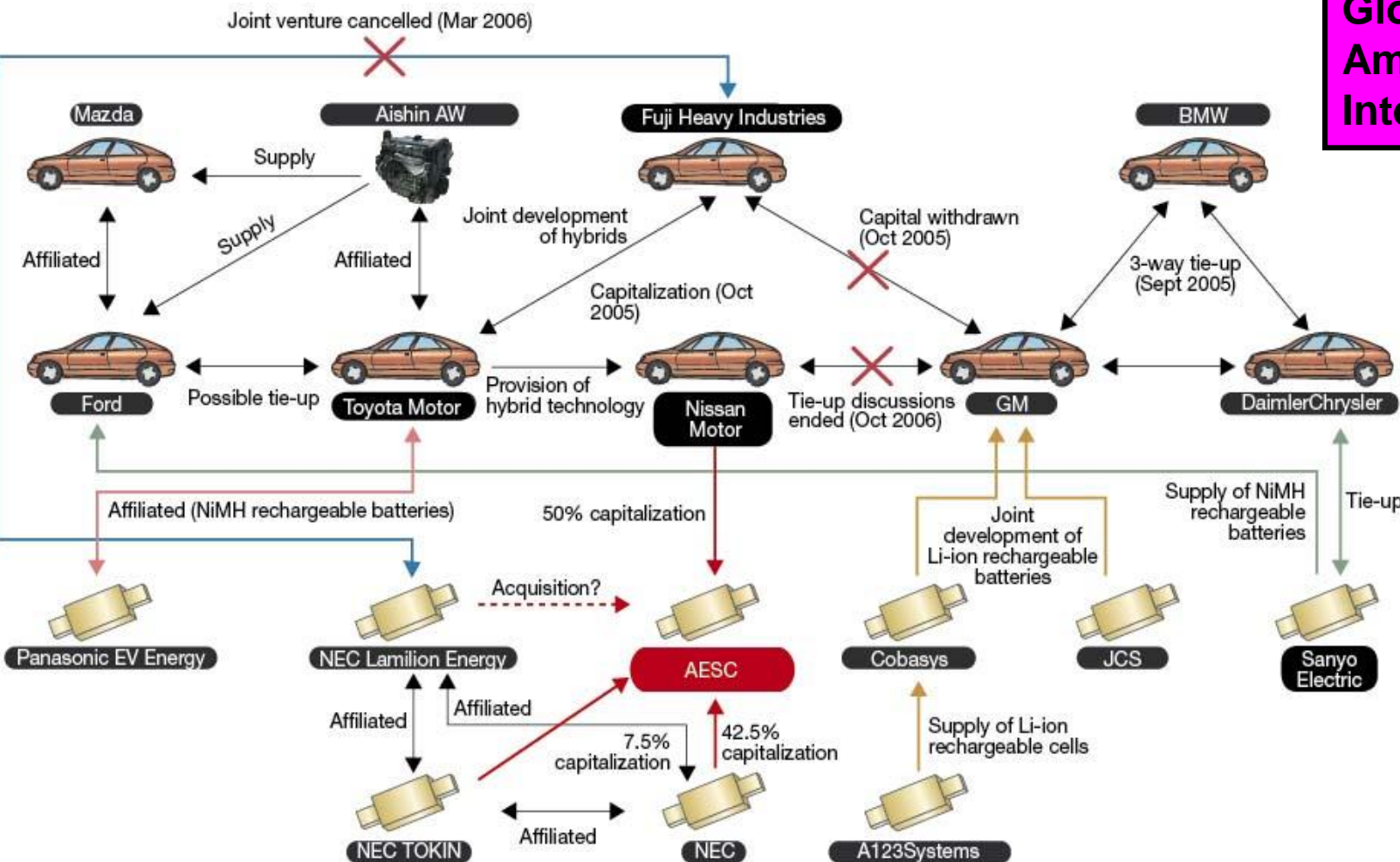
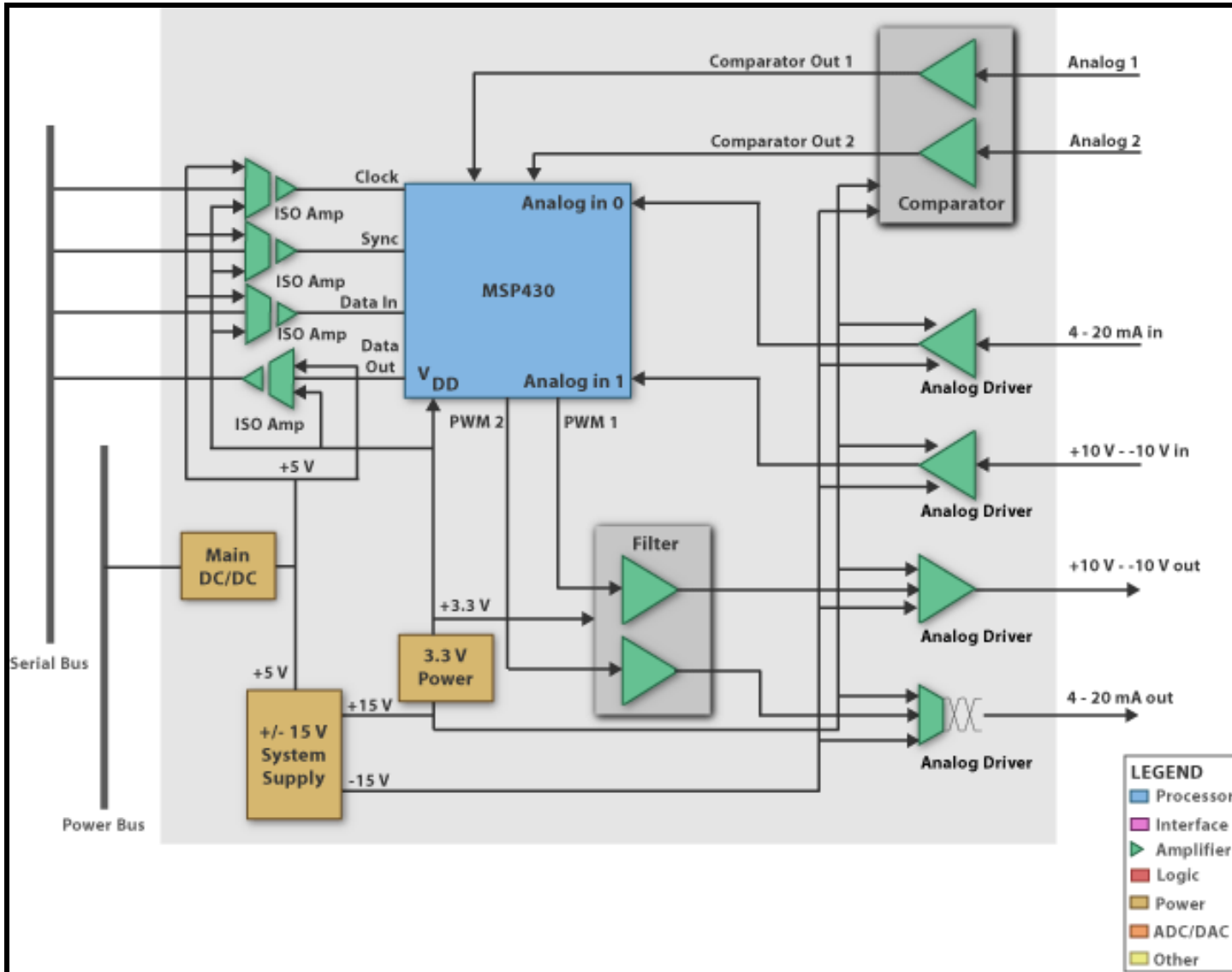


Fig 1 Key Question: Supplying Other Vendors Many automobile manufacturers are involved in the development of rechargeable batteries for hybrid vehicles in cooperation with specific battery manufacturers. AESC, established jointly by Nissan Motor, NEC and NEC TOKIN, is being watched closely to see if it can succeed in delivering product to non-Nissan Group automobile manufacturers.

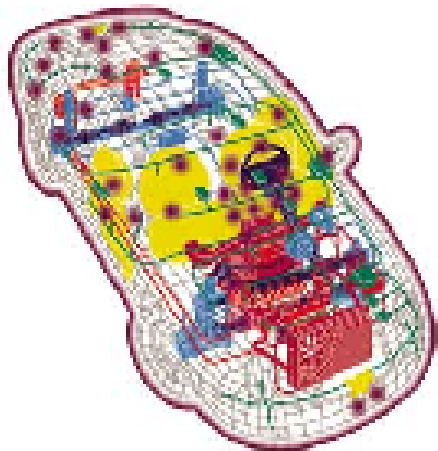
3. A practical understanding of electricity and _____ is necessary for all auto techs.

Calculus
Electronics
Physics



4. Today's *automotive or truck technician* must have good _____ skills.

Where Are We Today?



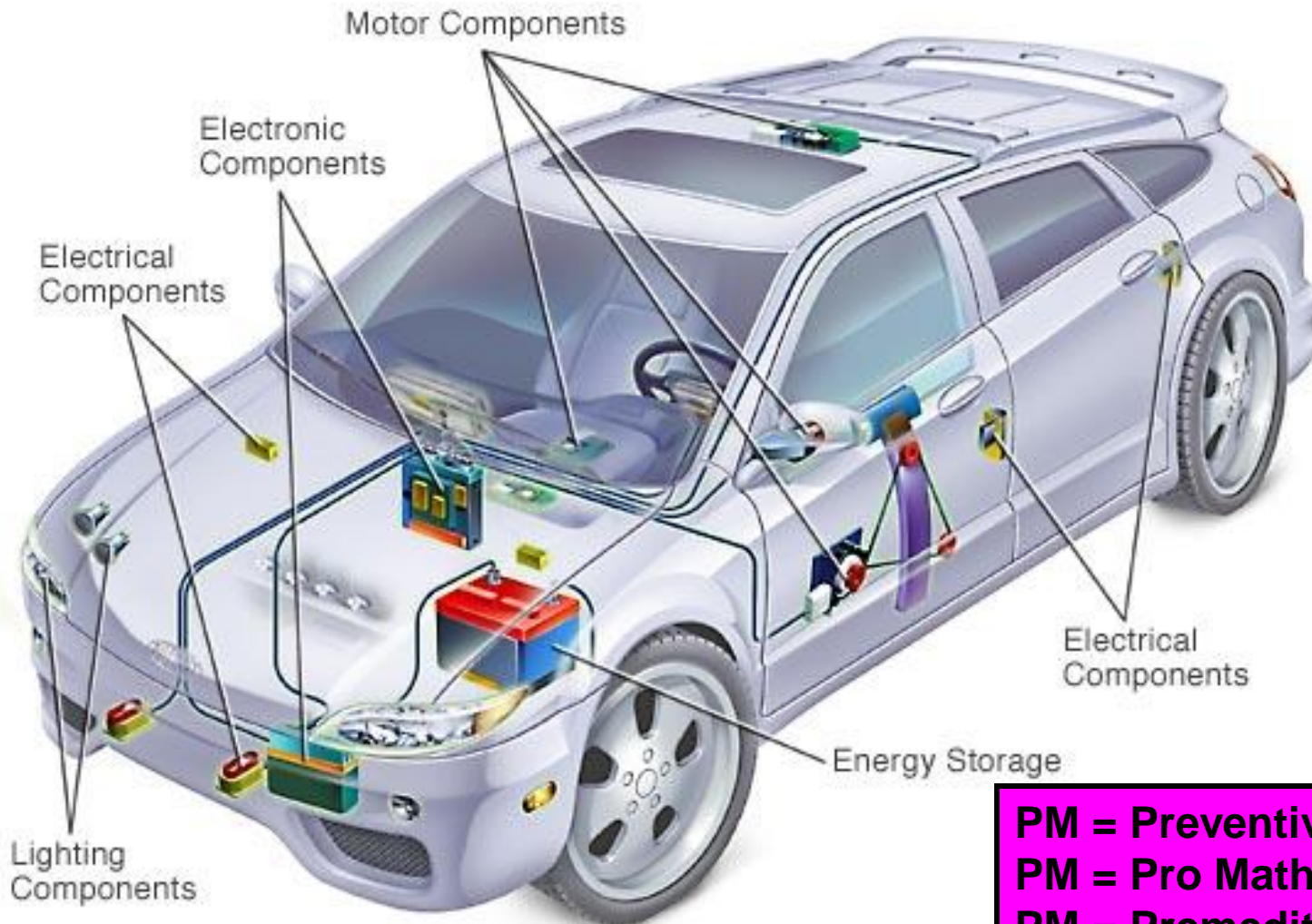
- Collision Warning Systems
- Adaptive Cruise Control
- Night Vision
- LED Displays
- Incandescent Lamp Lighting
- UV Front Lighting
- Motor Controls
- Low Tire Pressure Warning
- Reconfigurable Displays
- Electric Vehicle Propulsion Systems
- Cockpit Modules
- Automatic Wiper Control
- Automatic Head/Tail Lamp Controls

- Electronic Spark Control
- Body Control Computer
- Speakers and Enclosures
- High Fidelity Music Systems
- Compact Disc Players
- AM Radios
- Anti-Lock Brakes
- Traction Controls
- Engine Control Modules
- Suspension Controllers
- FM Radios
- Power Modules
- Remote Keyless Entry
- Cellular Telephone
- Emergency Call Service
- Satellite Radio
- Automatic/Remote Mirror Control
- Remote Start
- CB Radio

- Voltage Regulators
- Anti-Theft Systems
- Electromechanical Instrument Clusters
- Heating/Ventilation/Air Conditioning Controls
- Electronic Instrument Clusters
- Driver Information Center
- Head-Up Displays
- Steering Wheel Controls
- Airmeter Electronics
- Air Bag Electronics
- Pressure Sensors
- Ignition Electronics
- Four Wheel Steering Systems
- Vehicle Stability Control Systems
- Power Train and Transmission Control Modules

Finance
Music
Diagnostic

5. _____ (PM) are services performed at regularly scheduled intervals designed to prevent problems.



PM = Preventive Maintenance
PM = Pro Mathlete
PM = Premeditated Movement

6. Failure to follow PM schedules can result in warranty coverage being denied. *True or False*

Maintenance Schedules

Normal Use Maintenance (Scheduled Maintenance) <input type="button" value="v"/>	Miles Kilometers Months	5,000 8,000 N/A	10,000 16,000 N/A	15,000 24,000 N/A	20,000 32,000 N/A
Maintenance Items <input type="button" value="Show Details"/>					
Replace spark plugs. An Emission Control Service					
Change engine oil and filter (or every 3 months, whichever occurs first). An Emission Control Service		✓	✓	✓	✓
Rotate tires		✓	✓	✓	✓
Replace engine air cleaner filter (or every 24 months, whichever occurs first)					
▶ Inspect fuel tank, cap, cap gasket, and lines for damage or leaks (or every 24 months, whichever occurs first). An Emission Control Service					
Inspect passenger compartment air filter				✓	
Replace passenger compartment air filter					
▶ Check restraint system					
▶ Inspect engine accessory drive belts (or every 48 months, whichever occurs first). An Emission Control Service					
▶ Inspect for tappet noise and engine vibration (or every 48 months, whichever occurs first). An Emission Control Service					
Inspect engine accessory drive belts (or 12 months since last inspection).An Emission Control Service					
▶ Drain, flush, and refill the cooling system (or every 5 years, whichever occurs first). An Emission Control Service					


7. The use of electronic controls has eliminated the need for PM & scheduled service. *True or False*


TECHNICIAN FACTORY SCHEDULED MAINTENANCE


C
2009 Pontiac Vibe AWD 2.4L
Current Odometer:
60,000 miles

Grafton High School
1950 Washington St
Grafton, WI 53024-2103
P:2623765640

Your Vehicle Manufacturer Recommends These Services


 **SELECTED SCHEDULES** [Click Change Plan to Update](#)


 Scheduled Maintenance


 **OPTIONAL CONDITION/SCHEDULE**

Select all that apply

- Severe Driving Conditions - Heavy City Traffic, Hilly or Mountainous Terrain, Frequent Trailer Towing, Taxi, Police or Delivery Service
- Primarily Driving in Dusty Conditions

 **INSPECT ITEMS**

 Check restraint system

 Inspect engine accessory drive belts (or every 48 months, whichever occurs first). An Emission Control Service

8. A _____ is an agreement by a manufacturer to have its authorized dealers repair, replace, or adjust certain parts if they become defective. *Most warranty work is done at a dealership.*

New Vehicle Limited Warranty

Coverage	3 yrs/ 60,000 km	5 yrs/ 100,000 km	5 yrs/ 160,000 km	6 yrs/ 160,000 km	8 yrs/ 130,000 km	8 yrs/ 160,000 km
Base Warranty Coverage (Includes Tires)	✓					
Powertrain Component Warranty	✓	✓	✓			
Sheet Metal (Corrosion)	✓					
Sheet Metal (Rust-Through)	✓	✓	✓	✓		
Specific Hybrid Components*						✓

Emission Control Systems Warranty

Defects & Performance	✓					
Specified Major Emission Components**	✓	✓	✓	✓	✓	

**Guarantee
Warranty
Lease**

9. Warranties may require the owner to pay a certain amount of money called a _____.

Powertrain Coverage



The Honda Certified Used Car Limited Warranty extends the new car powertrain coverage to 7 years/100,000 miles.

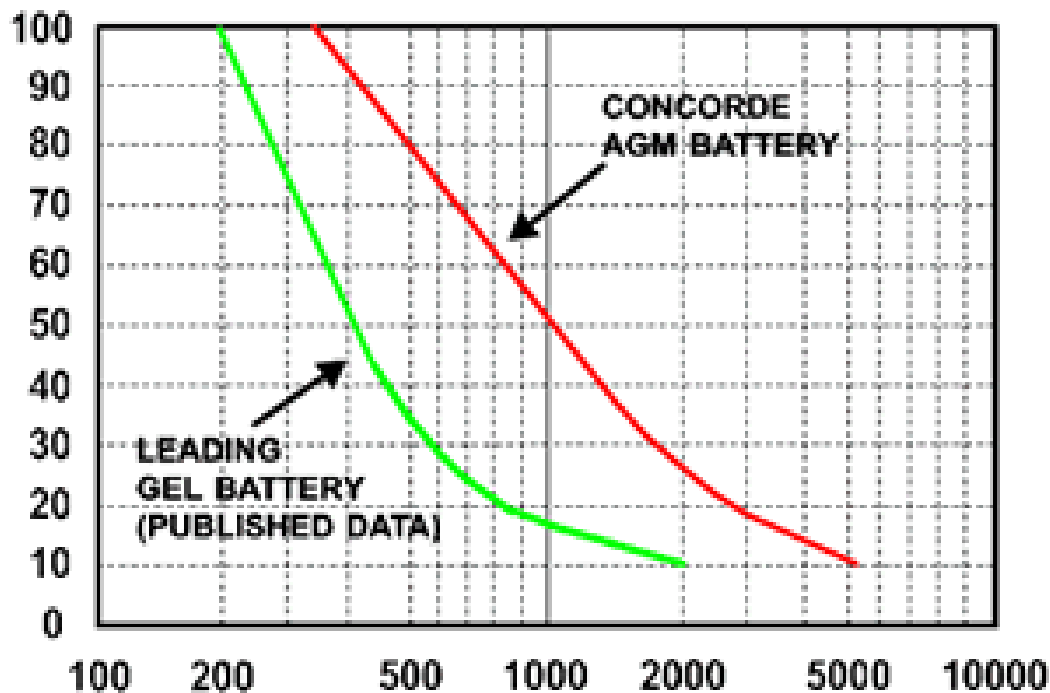
Deductible
Liability
Comprehensive



10. A _____ warranty decreases the amount of the repair bill covered over time or mileage.

All Lifeline Batteries have a 1 year free replacement & 4 year pro rated warranty.

Life Cycle Performance of GPL-8DL Lifeline Battery against Leading Gel Cell Battery



Pro-rated
Debated
Pro active

11. _____ emissions defect and performance warranties are government-mandated.

Type of Coverage	Years in Service/Miles Driven
Emissions Defects Warranty	
Passenger Cars & Light Duty Trucks*	3/36,000
Heavy Duty Vehicles**	5/50,000
Certain Emissions Parts*	8/80,000
Emissions Performance Warranty	
Passenger Cars & Light Duty Trucks*	2/24,000
Heavy Duty Vehicles**	5/50,000
Certain Emissions Parts*	8/80,000

* Applies to vehicles up to 8,500 pounds gross vehicle weight rating (GVWR)

** Applies to trucks over 8,500 pounds gross vehicle weight rating (GVWR) up to 19,500 pounds gross vehicle weight rating (GVWR)

12. The _____ required to be a good service tech can open many doors of opportunity.



**Knowledge
Work Experience
Electives**

Curriculum effective 2010-2011.

TECHNICAL STUDIES

		Credits	
() = Semester Order for Full-Time Students			
(1)	AUTO2-150	Automotive Fundamentals	2
(1)	AUTO2-151	Electrical Systems and Power Accessories	4
(1)	AUTO2-164	Automotive Internship 1 †	1
(2)	AUTO2-152	Heating and Air Conditioning	2
(2)	AUTO2-153	Alignment, Suspension and Steering	3
(2)	AUTO2-154	Fuel Management 1	2
(2)	AUTO2-165	Automotive Internship 2 †	1
(M)	AUTO2-156	Fuel Management 3 †	4
(M)	AUTO2-157	Engine Concepts	4
(M)	AUTO2-166	Automotive Internship 3 †	1
(3)	AUTO2-155	Fuel Management 2 †	4
(3)	AUTO2-160	Automotive Accessories	4
(4)	AUTO2-158	Transmission, Transaxles and Drivelines	4
(4)	AUTO2-159	Automotive Brakes	4

GENERAL STUDIES

ECON-195	Economics	3
OR	Any 200-series ECON course	
ENG-151 and	Communication Skills 1 †	3
ENG-152	Communication Skills 2 †	3
OR	ENG-201 and any 200-series ENG or SPEECH course	
MATH-113	College Technical Mathematics 1A †	3
NATSCI-169	Energy in Nature, Technology and Society	3
OR	Any 200-series NATSCI course	
PSYCH-199	Psychology of Human Relations	3
OR	Any 200-series PSYCH course	
SOCSCI-197	Contemporary American Society	3
OR	Any 200-series HIST or SOCSCI course	

Suggested Electives: Six Credits Needed

AUTO2-167	Automotive Internship 4 †	6
AUTO2-168	Automotive Internship 5 †	
AUTO2-169	Automotive Internship 6 †	
GENST-103	College Success Strategies	
PHYED-210	An Active Approach to Wellness and Fitness	
WELDTC-101	Welding Theory 1	

TOTAL CREDITS: 67

13. _____ serve as the link between the vehicle manufacturers & the customer.



Hardware Stores
Service Stations
Dealerships

14. _____ shops are not associated with a particular automobile manufacturer.



**Independent
Specialty
Franchise**

15. _____ shops are those that may service only one or two automobile systems.

We Install Call us @ 201-991-4660
or Fax 201-991-8716



**36 Month/75,000 Mile
Parts & Labor
Nationwide Warranty!**



**Independent
Specialty
Franchise**

ATASA 5th Automotive Careers

16. _____ repair shops are run by large companies such as Firestone, Goodyear & Midas.

Precision Tune Auto Care
LOOKS LIKE A JOB FOR PRECISION MAN!
The Titan of Automotive Technology!

Standard Brake Service	Additional Services
Lifetime Brake Service	AC Performance Check
2000/90,000 Scheduled Maintenance	Fuel Injection Cleaning
Brake Inspection	Maintenance Services
Manager's Specials	Refrigerant
Engine Performance Check	Oil Change
Premium Oil Change	Radiator Drain & Fill
4-Wheel Brake Service	Drivability Diagnostics
Wheel Balance	Transmission Service
Tune-Up	Lifetime Brake Service
Lifetime Brake Service	Battery Starting
	Remove and Replace Spark Plugs

SMOKING POLICY **PAYMENT** **YOUR SAFETY** **COUPONS**

WELCOME
THE STORE MANAGER IS:



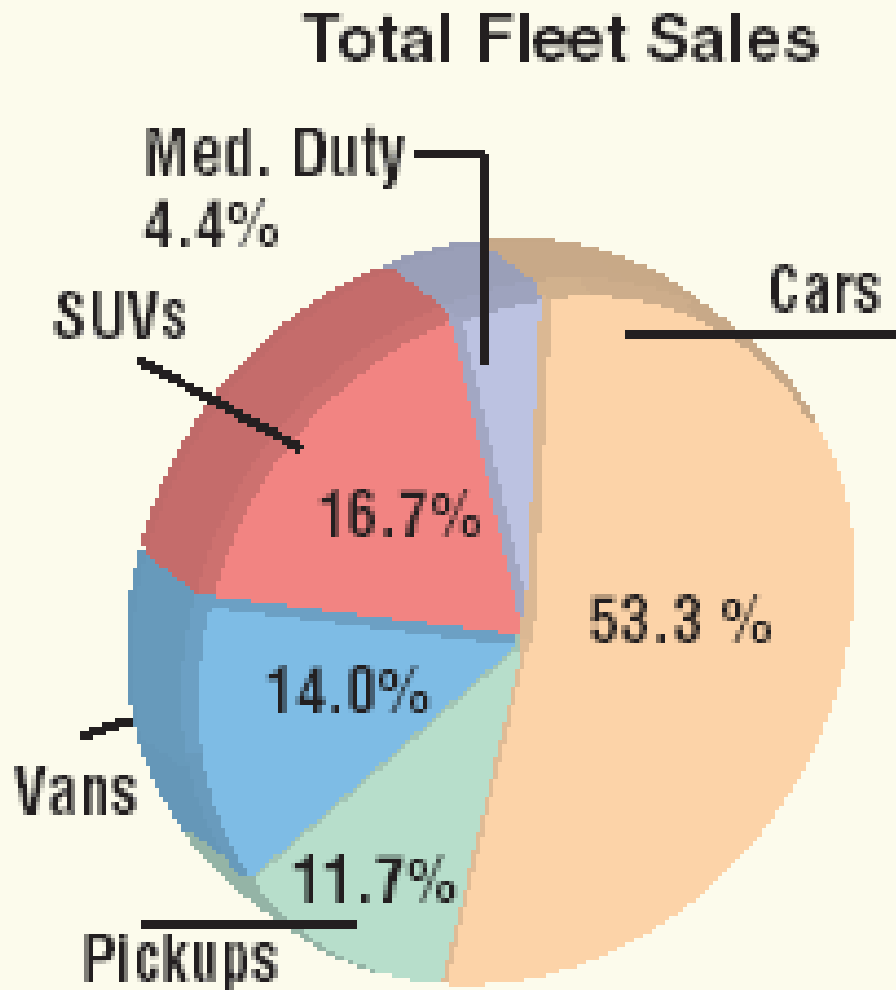
Independent Specialty Franchise

FRANCHISE OPPORTUNITIES ▶
Interested in starting a franchise?

ASK YOUR CAR-X MAN! ▶
About Auto Repair



17. Utilities, rental car, delivery service, bus and taxicab companies are examples of _____ that need to have their own “in-house” PM service & repair facilities and technicians.



Groups
Fleets
Organizations

ATASA 5th Automotive Careers





ATASA 5th Automotive Careers



18. A *service technician* may be involved in assessing vehicle problems, performing _____ tests, making necessary repairs or installing replacement components and preparing *cost estimates*.



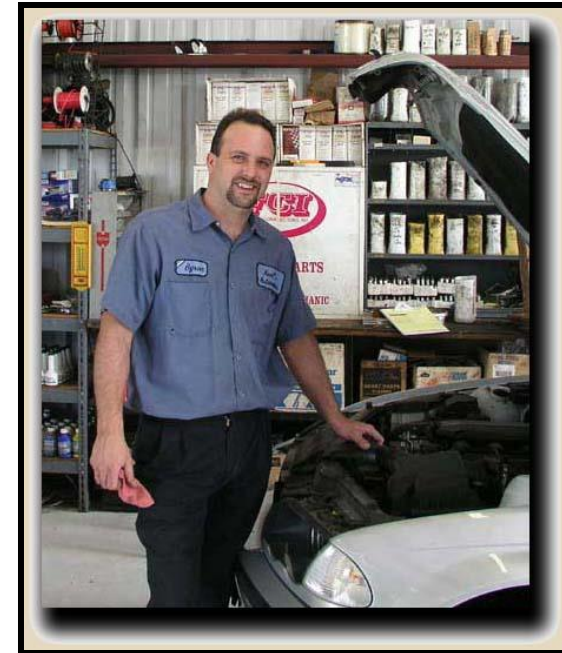
Anesthetic
Diagnostic
Pre-emptive

ATASA 5th Automotive Careers

19. A large dealership may have a shop _____ or _____ to assist technicians.



foreman or lead tech
leader or boss man
manager or tech geek



ATASA 5th Automotive Careers

20. A service _____ or _____ is the person who works with customers to discuss their automotive problems, meets with the technician, writes repair estimates & closes the event. *Get Signatures!!*



geek or clerk
writer or advisor
gear head or technician

21. Service consultants need customer _____, interpersonal communication & sales skills



Relations
Abuse
Educational

22. The service _____ oversees the service & parts departments as well as the body shop.



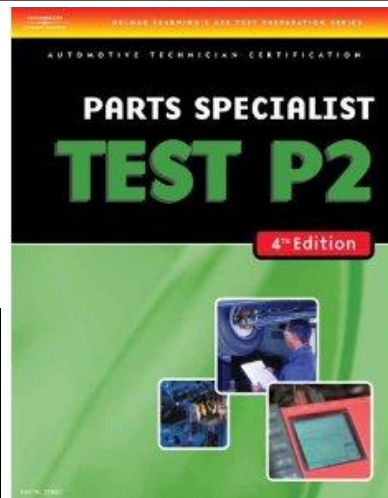
Manager
Director
Representative

22. The service _____ oversees the service & parts departments as well as the body shop.



Manager
Director
Representative

23. The parts _____ position is an excellent career for those who know about cars but would rather not work on them.
There is an ASE certification for auto parts counterperson too.



Counter Person
Counter Clockwise
Parts Driver

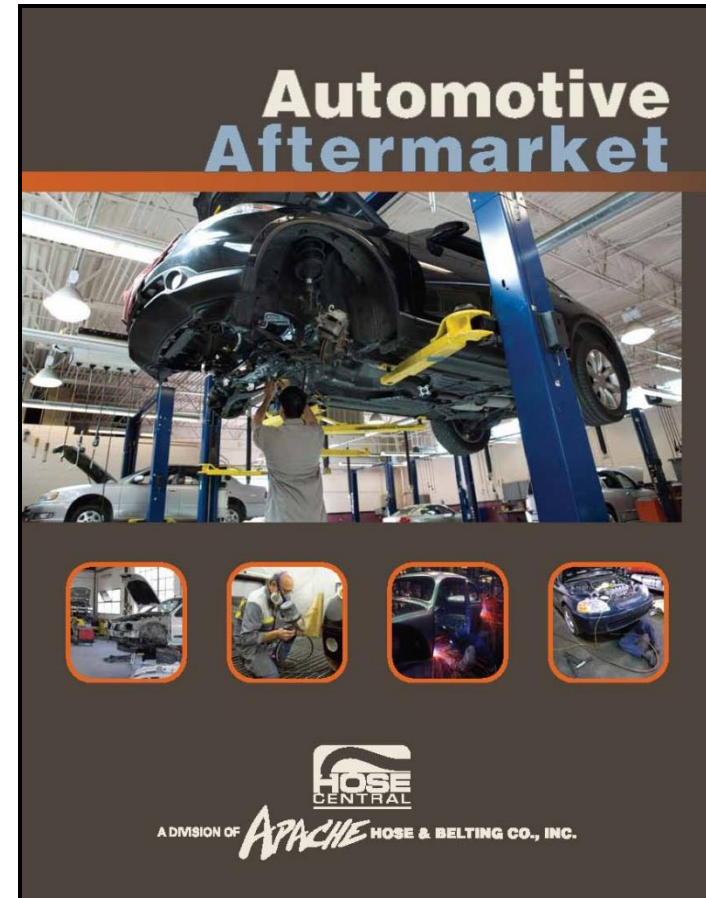
24. The _____ is the network of businesses that supply replacement parts.




AAIA®
**Automotive Aftermarket
Industry Association**

The motor vehicle aftermarket is a significant sector of the U.S. economy employing approximately 4.3 million people in 2008. This industry encompasses all products and services purchased for light and heavy duty vehicles after the original sale including replacement parts, accessories, lubricants, appearance products, tires, collision repairs, service repairs as well as the tools and equipment necessary to make the repair.

Overall aftermarket sales totaled \$280.7 billion in 2008, representing an increase of 0.2 percent over the previous year. Sales in the automotive aftermarket (cars and light trucks) totaled \$210.2 billion while sales in the heavy duty vehicle aftermarket totaled \$70.5 billion.



**Automotive
Aftermarket**



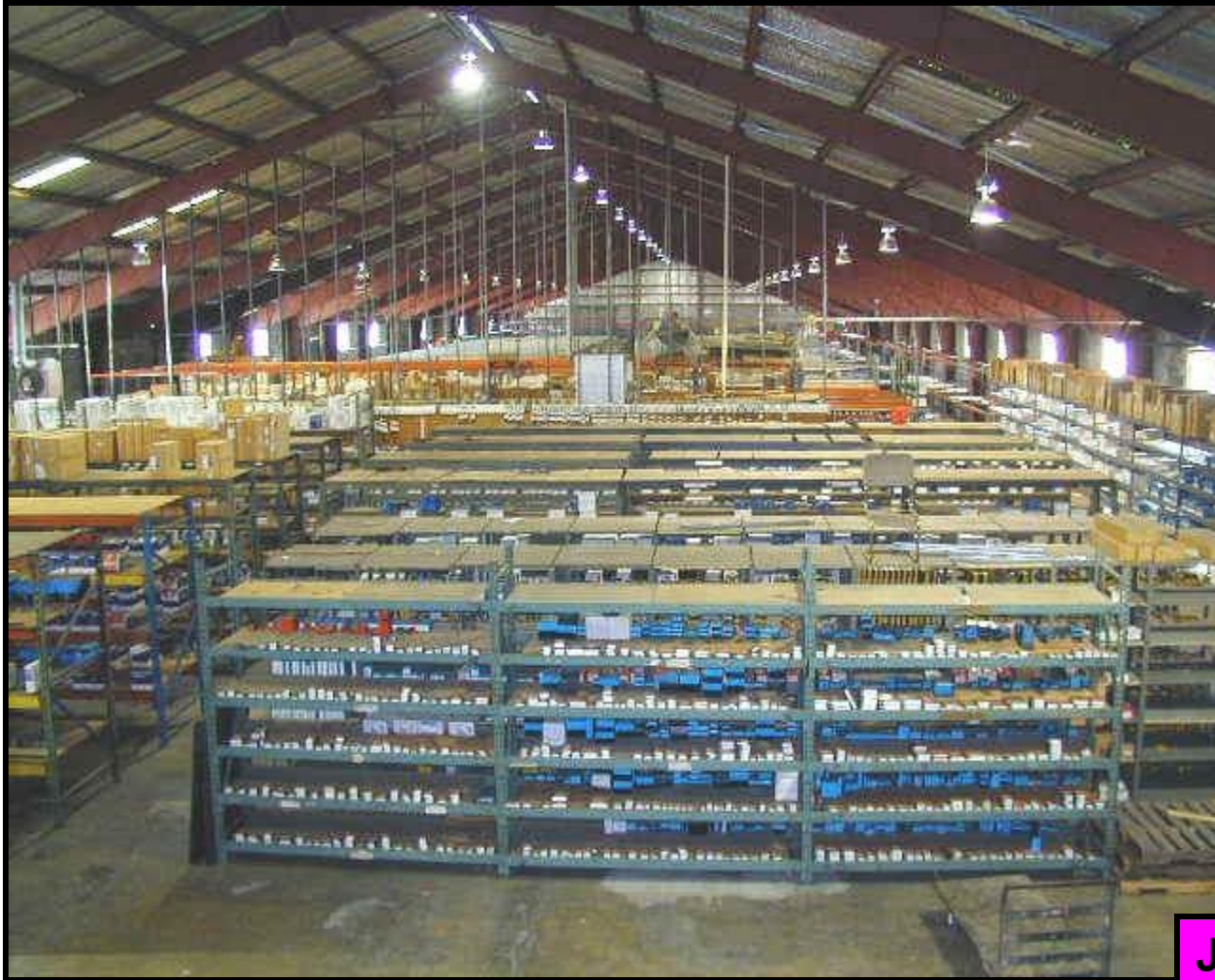
**HOSE
CENTRAL**

A DIVISION OF **APACHE** HOSE & BELTING CO., INC.

The advertisement features a large image of a car on a lift in a garage. Below it are four smaller circular images showing various automotive services: a car being worked on, a person working on a car, a car with a fire, and a car with a damaged front end. The logo for Hose Central is prominently displayed at the bottom, along with the text 'A DIVISION OF APACHE HOSE & BELTING CO., INC.'.

**Afterglow
Aftermarket
Afterburner**

25. _____ carry substantial inventories of OEM and aftermarket parts.



Jobber distributors
Warehouse distributors
Electronic distributors

26. _____ (NAPA, CarQuest, Auto Zone) sell parts and supplies to shops & “do-it-yourselfers”.



Jobbers
Slobbers
Robbers

ATASA 5th Automotive Careers



Jobbers



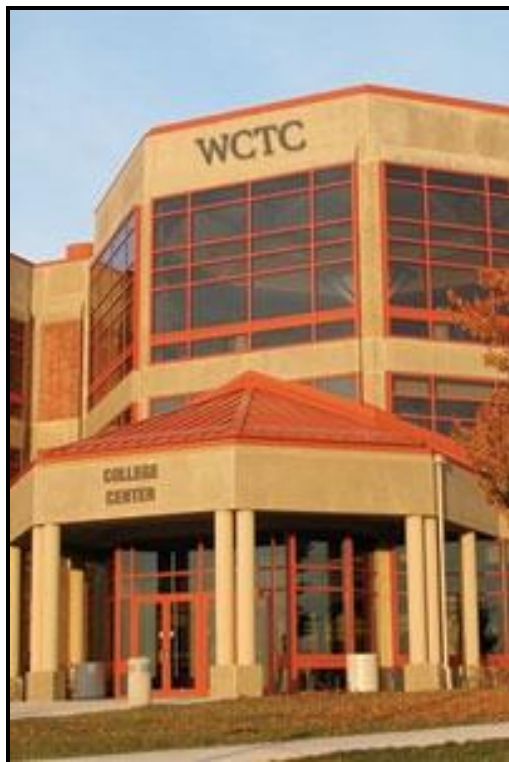
27. Other careers related to the automotive service industry include: recycling, _____ claims adjusters, body shop technicians, trainers and instructors.



Insurance
Assurance
Occurance



ATASA 5th Automotive Careers



28. As a student, gaining work experience can be done by job _____, working under a the supervision of a _____, and part-time work in a co-op or an _____ program.



Shadowing
Mentor
Apprenticeship



wisconsin.gov Employment Numbers: State | Local Search DWD:

Wisconsin Department of Workforce Development

[HOME](#) [WORKERS](#) [EMPLOYERS](#) [YOUTH](#) [PARTNERS & STAFF](#) [MEDIA](#)

[Home](#) > Youth Apprenticeship

Youth Apprenticeship

Wisconsin's Youth Apprenticeship program is a part of a statewide **School-to-Work** initiative. It is designed for high school students who want hands on learning in an occupational area at a worksite along with classroom instruction.

This one or two year elective program combines academic and technical instruction with [mentored on-the-job learning](#).

Investing in Wisconsin's Future

Information for . . .

[Students](#) [Parent](#) [Employer](#) [School](#) [Instructor](#) [YA Coordinators](#)

What's New!

- [2010-2011 Request for Proposal](#) (RFP)
- YA Curriculum Revisions
 - REVISED Curriculum for Manufacturing; Hospitality, Lodging and Tourism; and Transportation, Distribution, Logistics now available under "Program Areas"
- Recent webcasts
 - [Manufacturing Curriculum Revisions](#)
 - [Hospitality, Lodging & Tourism Curriculum Revisions](#)
 - [Transportation, Distribution & Logistics Curriculum Revisions](#)

Update (7/8/2009) Note change since webinar aired. Appendix C of the TDL Program Guide states that the

YA Frequently Used

- » [Program Information](#)
- » [Program Areas](#)
- » [Local YA Coordinator Directory](#)
- » [Map of YA Consortia](#)
- » [State YA Staff Contacts](#)
- » [Child Labor Law](#)
- » [Help Me Find a Topic](#)

Forms and Publications

- » [Forms](#)
- » [Brochures](#)
- » [Skills Standards Checklists](#)

General Information

- » [Starting a YA Program](#)
- » [History](#)
- » [Related Links](#)
- » [Training Modules](#)



Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

- [Transportation, Distribution & Logistics](#)

One Semester Units:

- Auto Collision:
 - Collision Repair Basics
 - Non-structural Analysis & Repair
 - Painting & Refinishing
 - Damage Analysis & Electrical Repair
- Auto Technician:
 - Vehicle Basics & General Service
 - Brake Systems
 - Electrical/Electronics
 - Suspension & Steering
 - Engine Performance & Repair
- Logistics/Supply Chain Management:
 - Planning & Purchasing Unit
 - Inventory Management & Production
 - Storage & Warehousing
 - Distribution & Transportation Operations

Required Skills

Required of ALL Transportation, Distribution & Logistics YA Students

Copy this page **FOR EACH** pathway to be completed

CORE SKILLS	Minimum rating of 2 for EACH Check Rating		
	1	2	3
1. Apply applicable academic knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Apply applicable career knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Communicate effectively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Act professionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Cooperate with others in a team setting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Think critically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Exhibit legal and ethical responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Use technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAFETY	Minimum rating of 2 for EACH Check Rating		
	1	2	3
1. Follow personal safety requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Maintain a safe work environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Demonstrate professional role in an emergency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Rating Scale:

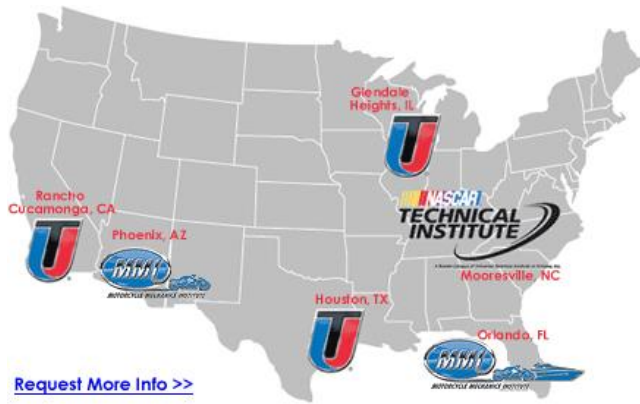
3 = Exceeds entry level criteria | Requires minimal supervision | Consistently displays this behavior

2 = Meets entry level criteria | Requires some supervision | Often displays this behavior

1 = Needs improvement | Requires much assistance & supervision | Rarely displays behavior

Additional Comments -

29. After earning an associate degree, high-end manufacturers offer _____ education.



postgraduate
baccalaureate
apprentice³

ATASA 5th Automotive Careers



30. There is a need for *lifelong* continuous _____ & reading by all professional technicians.

National Institute for **AUTOMOTIVE SERVICE EXCELLENCE**

“Certifying the Automotive Professional”

ABOUT ASE CONTACT US SITE MAP

Search **GO** Advanced Search ▶

ASE Campus myASE ASE Store NATEF Blue Seal of Excellence Program Español

QUICK START

- EXPLORE CERTIFICATION
- REGISTER TO TEST
- PREPARE TO TEST
- OTHER PROGRAMS

✓ **Service Professionals**

✓ **Motorists**

✓ **ASE Resource Center**

WHAT'S NEW

- ASE Announces New Certification Testing Partner.
- 2010 ASE Race Experience.
- EPA Approved Refrigerant Recovery Program.
- more news >

NEW ASE

Maintenance and Inspection E-Learning Program

Click here for more information

Online Registration for Fall 2010
Click Here or Call 1-866-427-3273.

The Official ASE Practice Test Program
Click here.

National Institute for Automotive Service Excellence 101 Blue Seal Drive, S.E, Suite 101, Leesburg, VA 20175 (703) 669-6600 Toll-Free Information Line:
1-888-ASE-TEST

learning
training
updating

31. The 8 basic areas of the National Institute for Automotive Service Excellence & NATEF certification:

A1 _____

A5 _____

A2 _____

A6 _____

A3 _____

A7 _____

A4 _____

A8 _____



We employ technicians certified by the
National Institute for

**AUTOMOTIVE
SERVICE
EXCELLENCE**

Let us show you their credentials

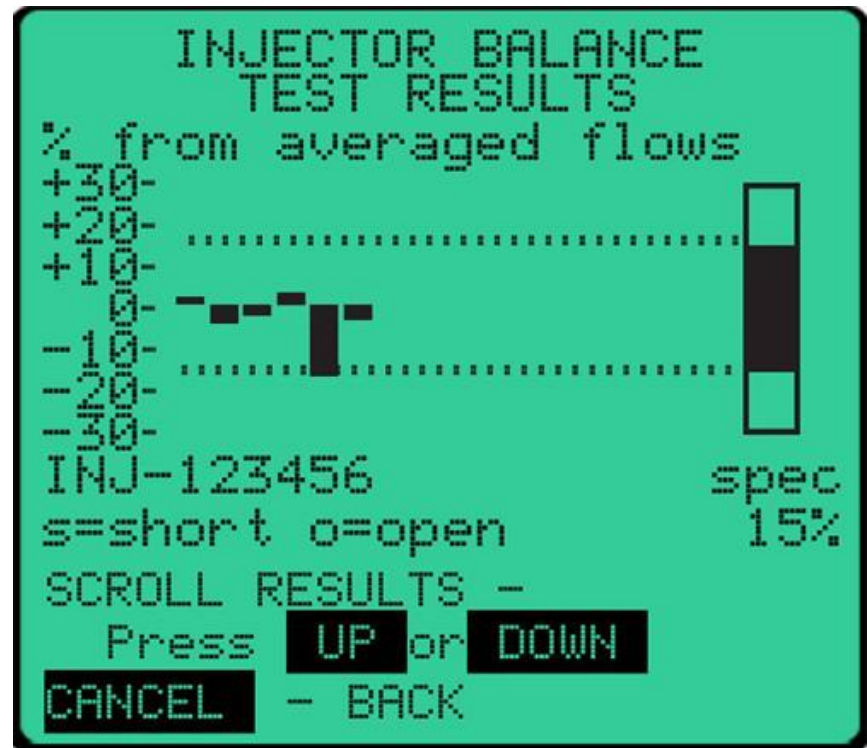
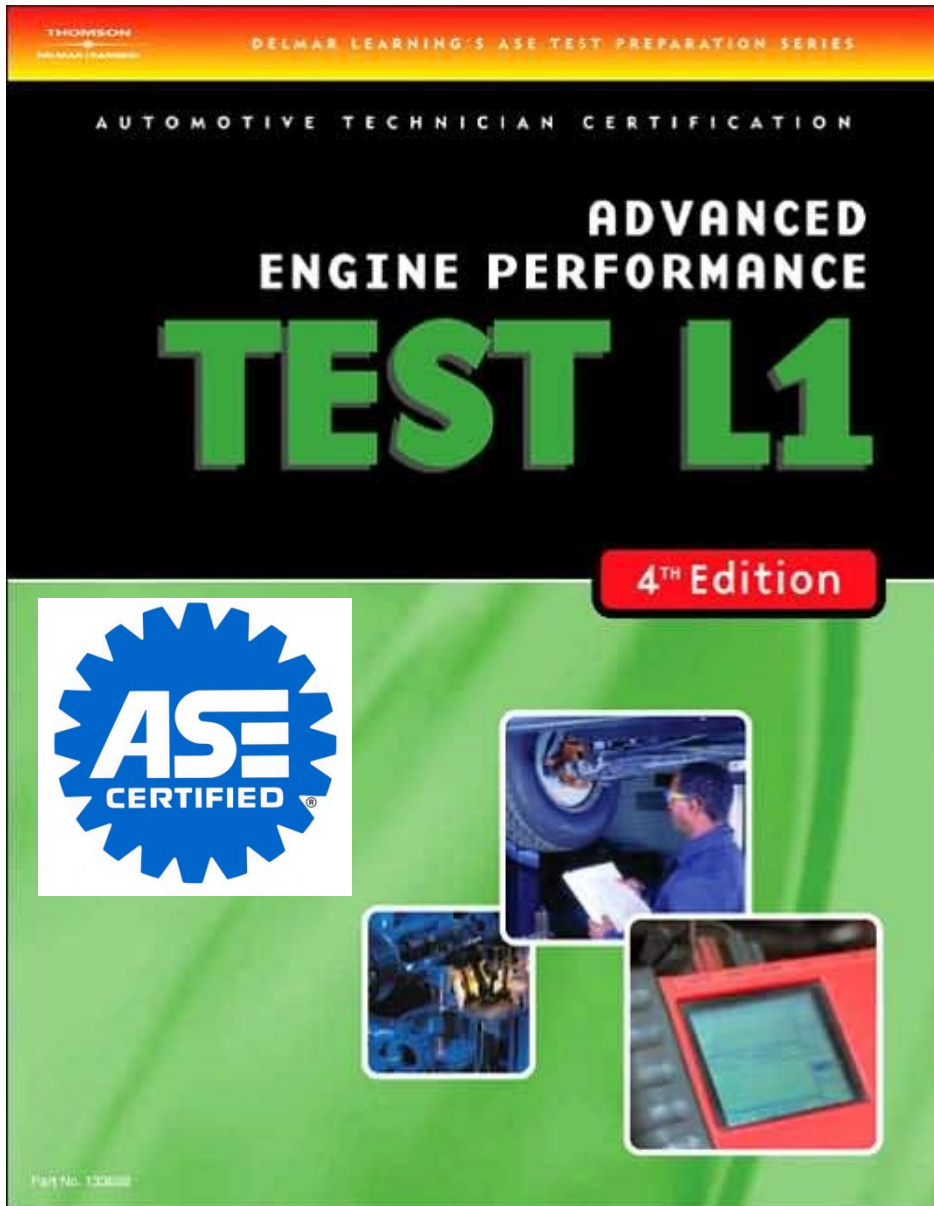
Engine Repair
Manual Transmission
Automatic Transmission
Suspension & Steering
Brakes
Electrical & Electronics
Heating & Air Conditioning
Engine Performance



www.natef.org

NATIONAL AUTOMOTIVE TECHNICIANS
EDUCATION FOUNDATION

32. The ___ certification covers Advanced Level Engine Performance.



"Driveability"

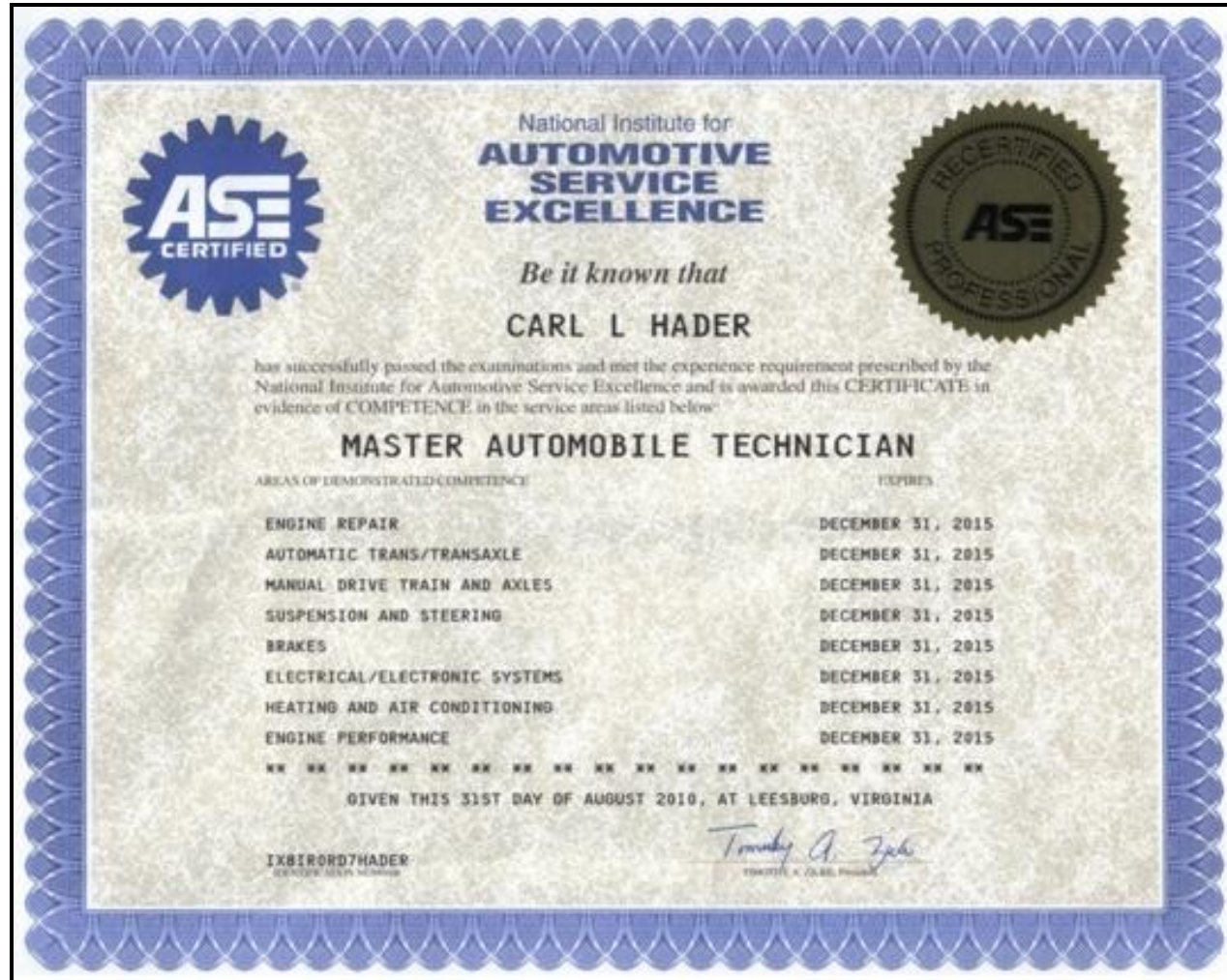
Service Consultant
L1
Parts Counterperson



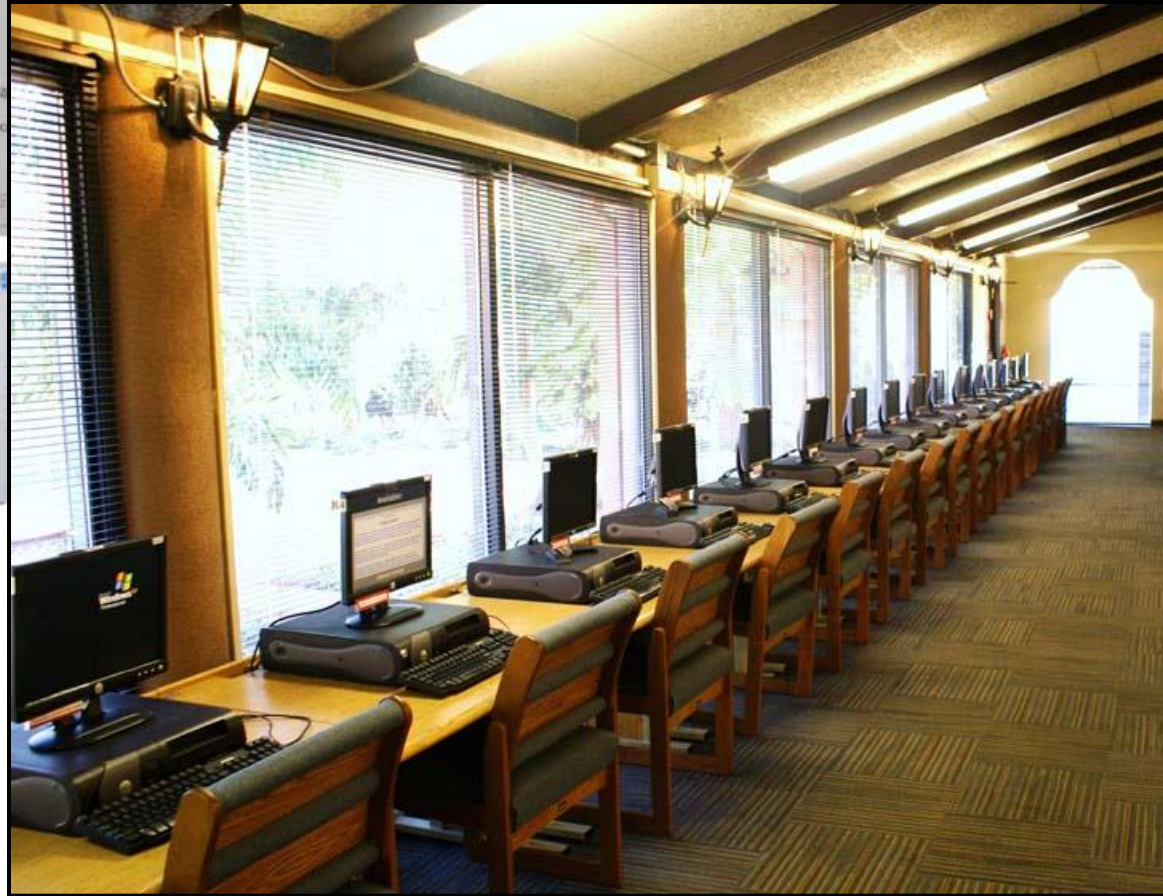
ATASA 5th Automotive Careers



33. A _____ automotive technician is certified in all 8 areas.



34. Two years of hands-on _____ is required for technician certification and retesting is necessary every five years. *Testing may be pencil & paper or web-based.*



Associate Degree Classes
Home Schooling
Work Experience

35. _____ is a *system of pay* in which a technician is paid for the amount of work done. It allows for accurate repair estimates to the customers and *rewards productive technicians*.

Flat Rate Pay

.1 hour = 6 minutes

Flat Rate Billing

If technician pay is \$22.00 per hour

and a job takes 2.5 hours

$2.5 \times 22 = \$55.00$ pay for the job

Does not include fringe benefit package

If Shop Flat Rate charge is \$100.00 per hour

and a job takes 2.5 hours

$2.5 \times 100 = \$250.00$ for labor

Both parts & labor are taxed at 5.6%

$5.6 \times 250 = \$14.00$ tax

36. Use www.identifix.com to determine *flat rate time* to R&R the starter & the cost of a new starter.
Subtotal bill, figure in tax, and determine total cost for a: *2000 or newer car/light truck in your family*

The screenshot shows the Identifix website with a yellow and red color scheme. At the top left is the 'Inc. 5000' logo. The main navigation bar includes links for HOME, TRY DIRECT-HIT, ABOUT US, SERVICES, NEWS, SALES, CAREERS, CONTACT US, and SUBSCRIBE. The page is divided into several sections: a 'FIX OF THE WEEK' section on the left, a 'LOGIN' section in the middle, a 'SEE DIRECT-HIT IN ACTION' section on the right, and a 'TRY DIRECT-HIT' section at the bottom left. The 'HOLIDAY REPAIR HOTLINE SCHEDULE' section is prominently displayed in the center-right.

AMERICA'S FASTEST-GROWING Inc. 5000 PRIVATE COMPANIES

IDENTIFIX
FIND FIXES FASTER™

HOME | TRY DIRECT-HIT | ABOUT US | SERVICES | NEWS | SALES | CAREERS | CONTACT US | SUBSCRIBE

» FIX OF THE WEEK

Wayne Johnson and Strawberry Auto Service have won a pizza lunch for their great fix.
2006 Ford Taurus SE 3.0L, GAS, Vin U

Symptom: The dash gauges operate very erratically at times

Notes: ...engine would stall at times...

Fix: Replaced Battery

[Click Here For Entire Fix](#)

» LOGIN [Forgot Password](#) [Change Password](#)

Username: Password:

Remember Me:

SEE DIRECT-HIT IN ACTION

[» Click Here to Learn More <<](#)

Holiday Repair Hotline Schedule

The Repair Hotline will be *closed* on **Monday, September 6th, 2010** to observe the Labor Day Holiday.

Hotline call requests submitted after 7:00 p.m. Central Friday, September 3rd, 2010 will be serviced **Tuesday, September 7th, 2010.**

» TRY DIRECT-HIT «

Take a drive around our website using the preselected vehicle. Start exploring the vital information Direct-Hit has to offer.

[Try It Now](#) | [Privacy Policy](#) | [FAQ](#) | [System Requirements](#) | [Posts](#) | [Testimonials](#)

Information Available ▾

Articles Quick Fixes

3	Repair-Tracs
211	Hotline Archives
14	Posted Fixes
2	NHTSA Recalls
171	TSBs
0	Fast Fixes
386	OBD-II Code Data
5	Identifix Articles

Repair Info

41	Wiring Diagram Groups
384	Component Locations
47	Specifications
























Estimating Info




















Yes	MOTOR Parts & Labor
No	CHILTON Labor
Yes	Factory Scheduled Maintenance
Yes	Maintenance Schedules
Yes	Reliability Report

Hotline

Yes	Hotline Available
-----	-----------------------------------

MOTOR Parts & Labor:

- +  ALTERNATOR
- +  AUTOMATIC TRANSMISSION
- +  BODY HARDWARE
- +  BRAKES
- +  CLUTCH
- +  COOLING SYSTEM 2.9L, 3.0L, 4.0L
- +  ELECTRICAL
- +  EMISSION SYSTEM
- +  ENGINE 4.0L SOHC
- +  EXHAUST SYSTEM
- +  FRONT DRIVE AXLE 4WD, W/O BEAM AXLE
- +  FRONT SUSPENSION 2WD, W/O BEAM AXLE
- +  FRONT SUSPENSION 4WD, W/O BEAM AXLE
- +  FUEL SYSTEM
- +  HVAC
- +  MAINTENANCE & LUBRICATION
- +  MANUAL TRANSMISSION
- +  REAR SUSPENSION
- +  STARTER PERMANENT MAGNET TYPE
- +  STEERING COLUMN W/RACK & PINION
- +  STEERING POWER, RACK & PINION
- +  TRANSFER CASE
- +  UNIVERSALS & REAR AXLE

- +  COOLING SYSTEM 2.9L, 3.0L, 4.0L
- +  ELECTRICAL
- +  EMISSION SYSTEM
- +  ENGINE 4.0L SOHC
- +  EXHAUST SYSTEM
- +  FRONT DRIVE AXLE 4WD, W/O BEAM AXLE
- +  FRONT SUSPENSION 2WD, W/O BEAM AXLE
- +  FRONT SUSPENSION 4WD, W/O BEAM AXLE
- +  FUEL SYSTEM
- +  HVAC
- +  MAINTENANCE & LUBRICATION
- +  MANUAL TRANSMISSION
- +  REAR SUSPENSION
-  STARTER PERMANENT MAGNET TYPE
 -  **STARTER**
 - [All](#)
 - [ARMATURE](#)
 - [BRUSHES](#)
 - [DRIVE](#)
 - [INTERLOCK SWITCH](#)
 - [SOLENOID RELAY](#)
 - [STARTER](#)
 - [STARTER DRAW](#)
 - [STARTER MOTOR CIRCUIT](#)
- +  STEERING COLUMN W/RACK & PINION
- +  STEERING POWER, RACK & PINION
- +  TRANSFER CASE
- +  UNIVERSALS & REAR AXLE

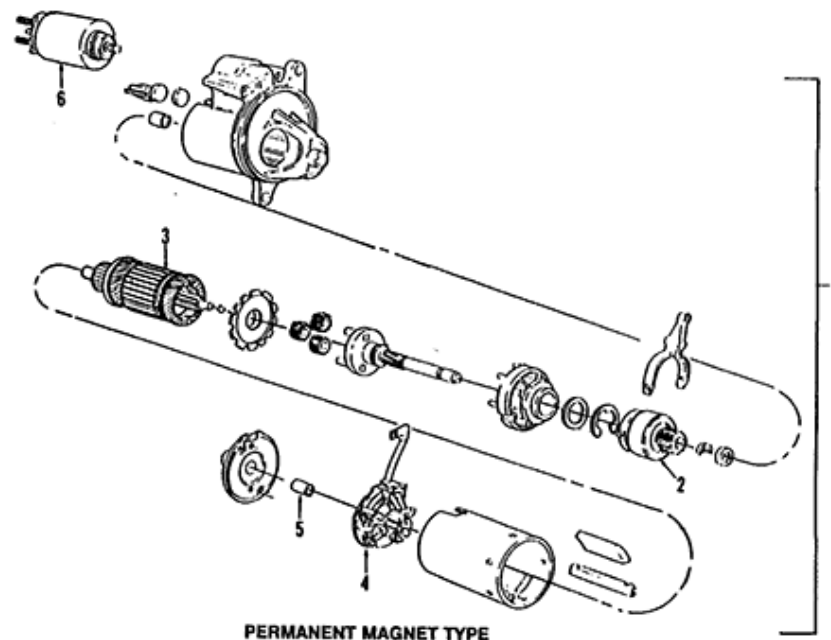
MOTOR Labor

	Skill Level	(Factory Time)	MOTOR Time
STARTER, OVERHAUL			
Ranger			
3.0L, 4.0L	A	(1.6)	2.2
<i>Notes: Includes: R&I Starter.</i>			
STARTER, R&I			
Ranger			
3.0L, 4.0L	B	(0.5)	0.8
STARTER, R&R			
Ranger			
3.0L, 4.0L	B	(0.5)	0.8

MOTOR Parts

	Mfg. Part No.	Price (MSRP) *
1-STARTER		
Ranger		
4.0L		
Auto Trans	7R3Z11002A	\$ 209.02
Manual Trans		
To 12/5/05	F87Z11002BARM	\$ 165.67

* All listed Manufacturer Suggested Retail Prices (MSRP's) are in US Dollars



Starter R & R: _____ Hour

Starter Part #: _____

Starter cost: _____

Labor @ \$80/hour: _____

Subtotal: _____

Tax: _____

Total: _____

CARQUEST

Grafton High School : Terminal 1 1048000027
Supplier : CARQUEST Cedarburg 1976 : Terminal 1

Cart
Catalog
Search
Interchange
Tire
Specs
VIN
History
NHTSA
Images
Setup
Logoff

CR 12-01 Select Year :

2011	2005	1999	1993	1987	1981	1975	1969	1963
2010	2004	1998	1992	1986	1980	1974	1968	1962
2009	2003	1997	1991	1985	1979	1973	1967	
2008	2002	1996	1990	1984	1978	1972	1966	
2007	2001	1995	1989	1983	1977	1971	1965	
2006	2000	1994	1988	1982	1976	1970	1964	

or Enter VIN :

Previous Vehicles : **lahadey37 ghsauto**

NAPA PROLink

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VIEW THIS SPECIAL

\$10 NAPA Electrical Rebate
Get the summer started with a NAPA Power Premium Plus alternator or starter.

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You can help pass the Right to Repair Act that protects the rights of car owners to decide where and how they have their vehicles serviced.

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- Over 4 million catalog applications, the broadest selection of OEM fit-form-function import replacement parts available anywhere.
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- Check out the NAPA Altrom Import Parts product lineup today - Line Code ATM!

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