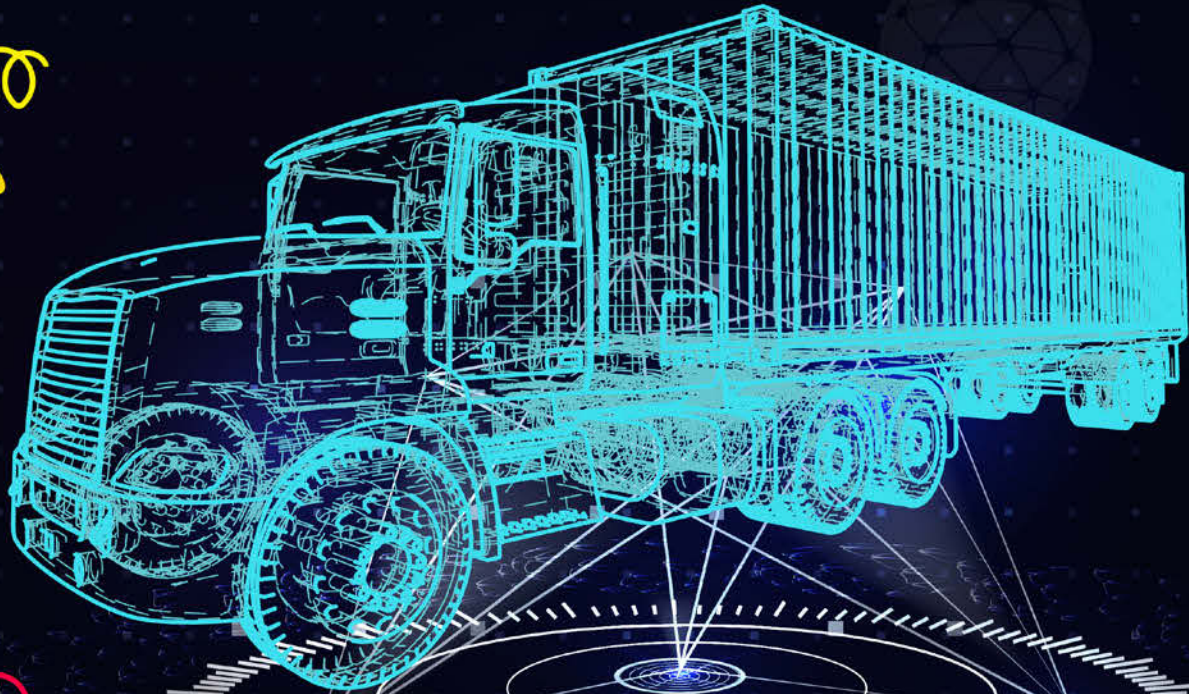


Heavy Duty Diagnostics

STUDY 2019

TEST 01 TEST 01 TEST 01

TEST 01 TEST 01 TEST 01



INSIGHTS

FROM FLEETS AND HEAVY DUTY REPAIR SHOPS

**Diagnostic
tool usage**
page 6

**Diagnostic tool
functionality**
page 10

EXPERIENCE, INGENUITY, AND KNOW-HOW

NEXIQ Pocket HD™

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2019 Fleet Maintenance Heavy Duty Diagnostics Study

In which of the following areas do you get the most help from vehicle and component manufacturers?

31%

Repair

27%

Warranty

24%

Diagnostics

14%

Maintenance

1%

Operations

0%

Safety

4%

Other

By Fleet Maintenance staff

NOT ONLY DO TECHNOLOGICAL ADVANCEMENTS CONTINUE with vehicles, but also with the tools used to help diagnose, troubleshoot, and repair these vehicles. The importance of having a thorough and standardized diagnostic program with comprehensive tools is critical to quickly and accurately diagnose vehicle issues.

The results of the 2019 *Fleet Maintenance* Heavy Duty Diagnostics Study are designed to provide fleets and heavy duty repair shops with insights on the state of current product adoption, and pain points where tools and processes may be improved.

All respondents to this survey indicated they use diagnostic tools to work on heavy duty vehicles.

This general report provides an overview of current diagnostic tool usage, as well as current and desired scan tool functionality, among fleets.

Highlights

Below are some of the biggest takeaways from the recent study conducted by *Fleet Maintenance*:

- Of the individuals surveyed, **91 percent indicate they approve, recommend, or specify heavy duty diagnostic tools** for their fleet.
- Nearly **two-thirds of respondents prefer using a software-based diagnostic platform** run on a shop computer or tablet, compared to a standalone, handheld scan tool (36 percent).
- Respondents utilize both OE and aftermarket scan tools.
 - » **Two-thirds** of respondents **use OE scan tools** in some capacity.
 - » Nearly **half** use both OE and aftermarket scan tools
- When it comes to diagnostic tool usage, respondents indicated the top three reasons for using scan tools currently include:
 - » Access to troubleshooting procedures
 - » Checking parameter identification numbers (PIDs)
 - » Resetting calibration parameters on various electronic systems
- While vehicles continue to become more advanced, some scan tool functionalities have lagged behind, according to respondents. **The top three areas** where respondents **would like to see improvement in diagnostic tool functionality** include:
 - » Troubleshooting electrical problems
 - » Bidirectional tests and functionality
 - » Coverage of OE vehicles and components
- **Nearly half** of respondents said having a **single tool and subscription to diagnose all vehicles serviced** remains their biggest challenge. ▀

4 Welcome

An introduction to the Heavy Duty Diagnostics Study, brought to you by *Fleet Maintenance* magazine.

6 Diagnostic tool usage

- » Tools in the shop
- » OE diagnostics

10 Diagnostic tool functionality

- » Diagnostics challenges
- » Support and training
- » Desired functions

18 Participant details

- » Purchase authority
- » Demographics

On the Cover:

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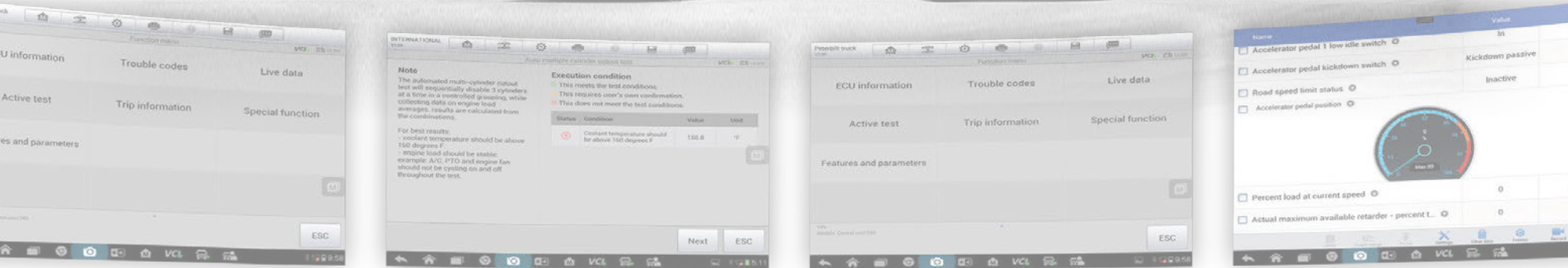
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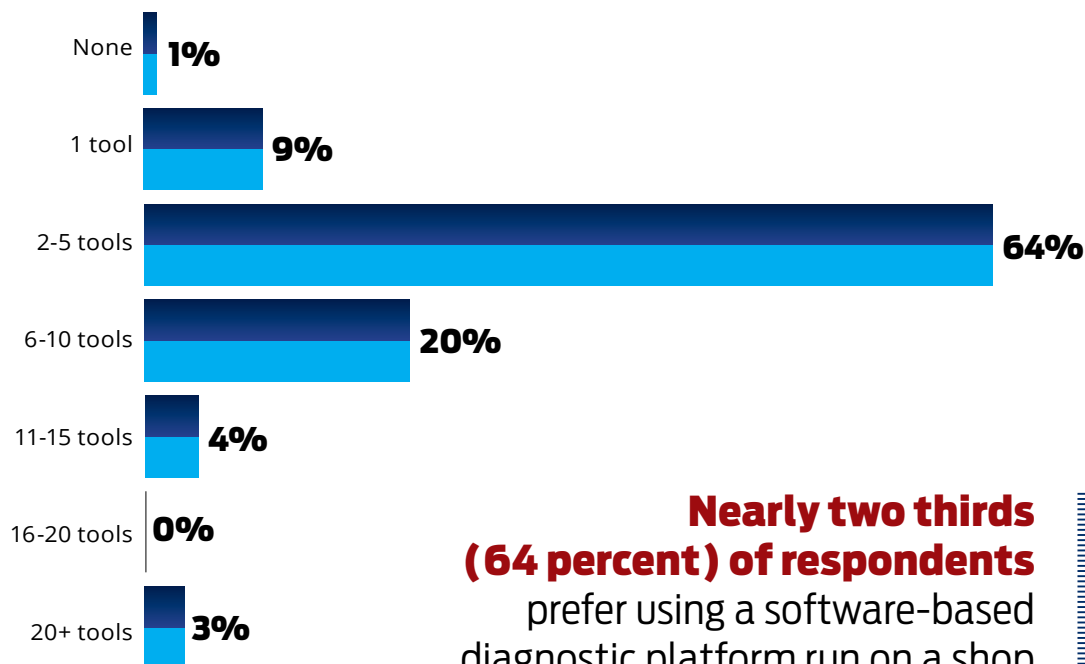
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Diagnostic tool usage

TOOLS IN THE SHOP

When reviewing diagnostic tool usage, the study considered trends in the tool platforms fleets prefer, the frequency and cost of tool updates, and warranty expectations. The study also surveyed the frequency and usage of original equipment manufacturer (OEM) scan tools compared to aftermarket options.

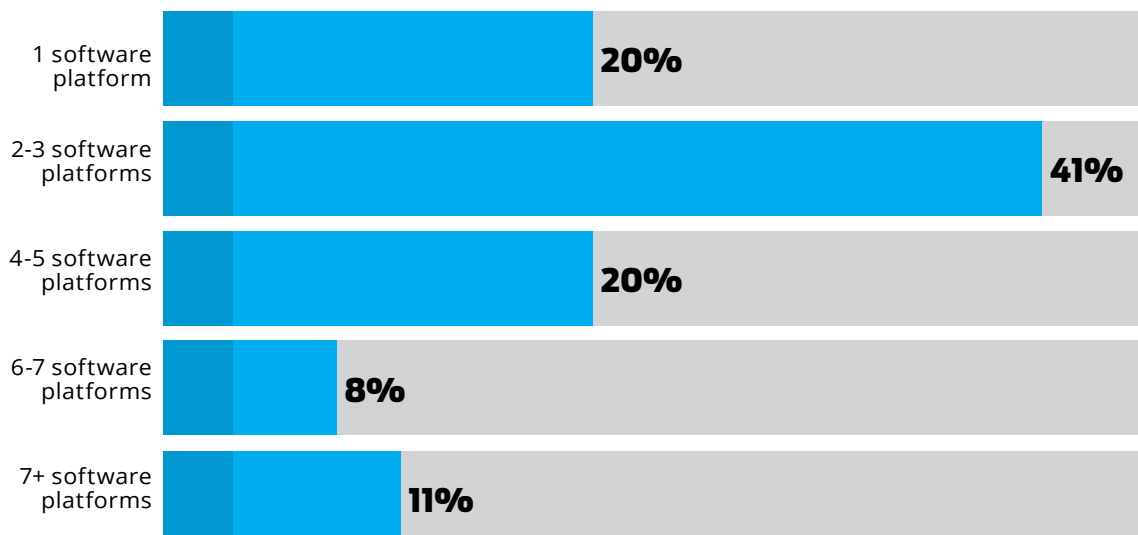
How many diagnostic scan tools do you have in your shop?



Nearly two thirds (64 percent) of respondents prefer using a software-based diagnostic platform run on a shop computer or tablet, compared to a standalone, handheld scan tool (36 percent).



How many diagnostic software platforms do you have in your shop?

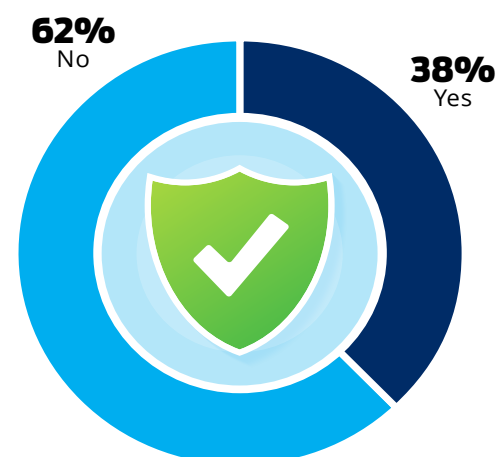


What are your expectations regarding the appropriate length of time for a diagnostic scan tool warranty?



17 percent of respondents indicated they have previously purchased an extended warranty on a diagnostic tool.

When you update your diagnostic tool subscription, does the tool manufacturer continue to provide a hardware warranty during the life of that subscription?





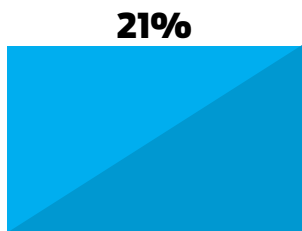
UPDATE...

What is your preferred diagnostic software update method?



An annual subscription with regular updates included

More than three quarters of respondents prefer a software subscription, compared to a "pay-per-use" model.



A "pay-as-you-go" update model

Charging for vehicle diagnosis

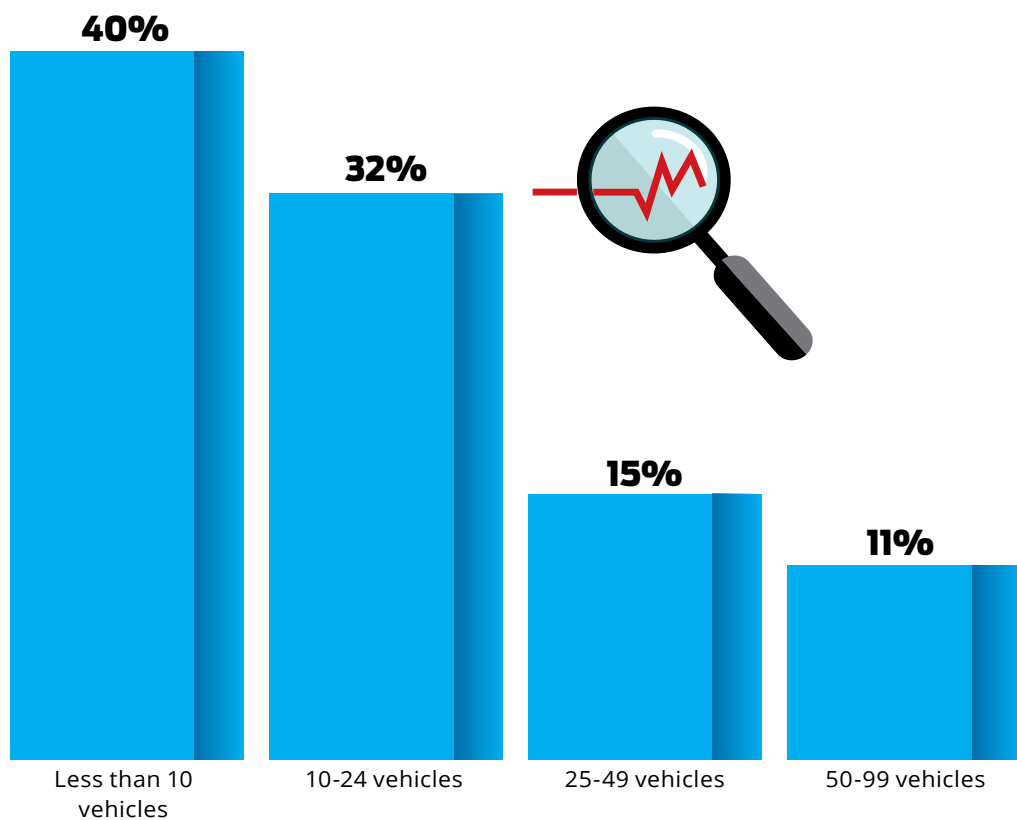


Two-thirds of respondents indicated they do not charge for a diagnostic report, or it is not applicable to their business.



Of all fleet types, independent repair/contract maintenance providers are the most likely to charge to run a diagnostic report. Forty percent of these providers charge an average of \$100 to \$200 for the report.

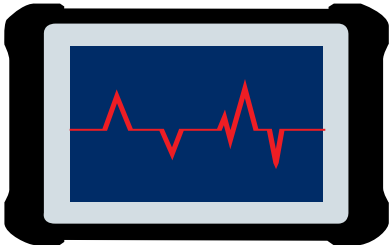
On average, how many vehicles does your fleet diagnose on a weekly basis?



Just over one quarter (28 percent) of fleets scan every single vehicle that enters the service bay.

Diagnostic tool usage

OE DIAGNOSTICS



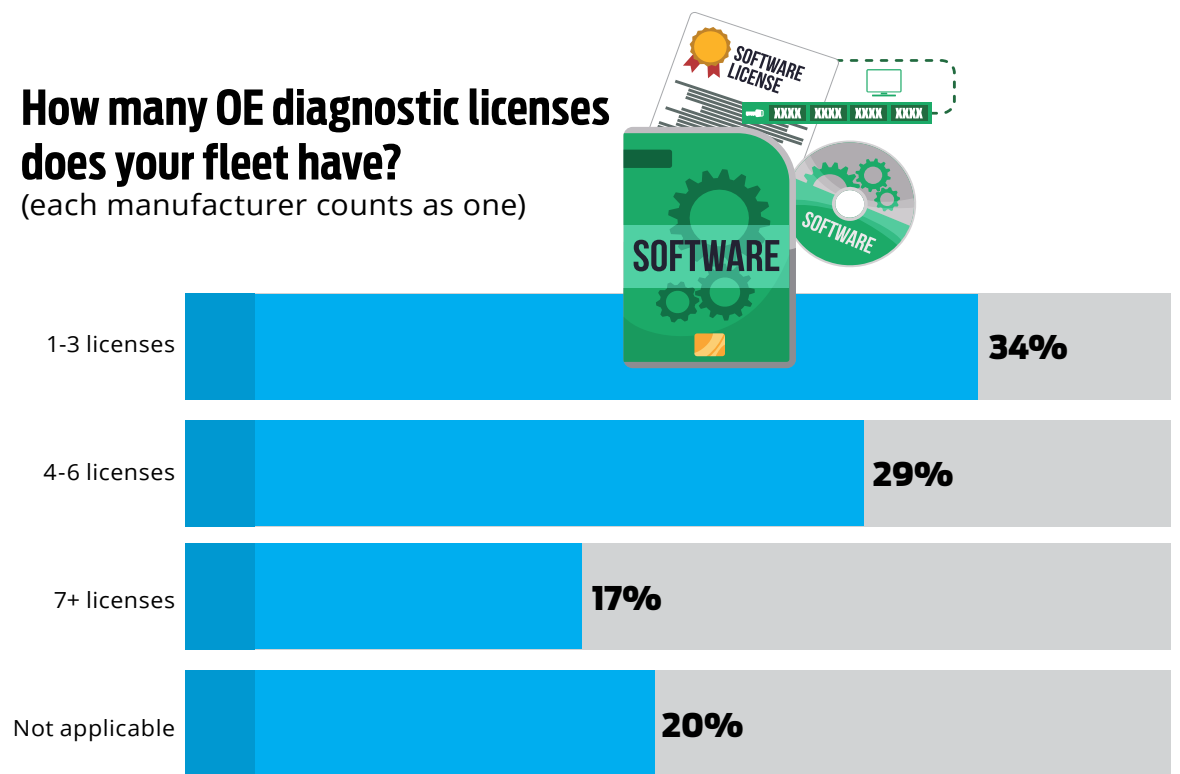
Does your fleet use OE scan tools?

18%
Yes, we use OE scan tools

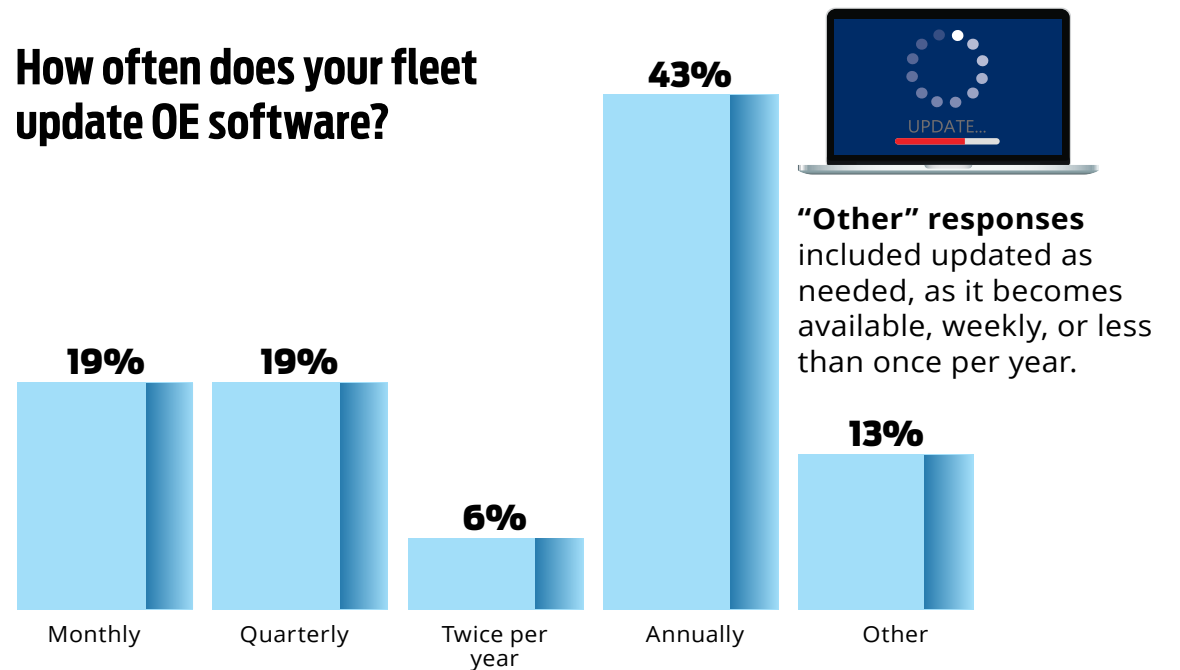
48%
Yes, we use **both** OE scan tools and aftermarket scan tools

34%
No, we use aftermarket scan tools

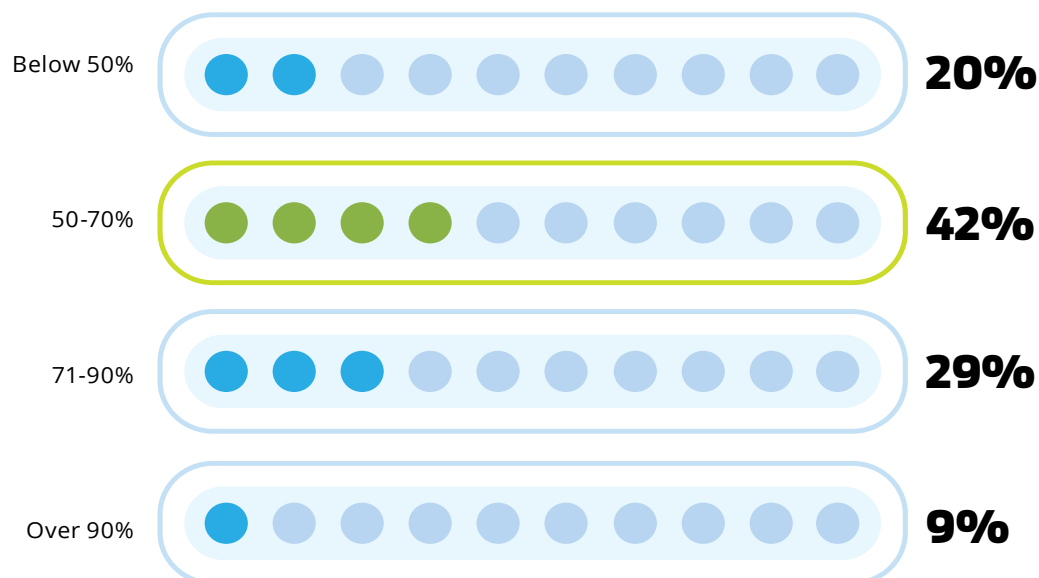
How many OE diagnostic licenses does your fleet have?
(each manufacturer counts as one)



How often does your fleet update OE software?

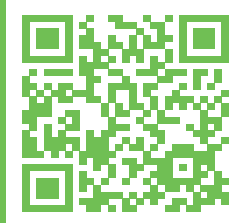


What is the percentage functionality coverage to OE software?



Unmatched heavy-duty diagnostics

New and improved 3824A Bosch ESI[truck]



With easy-to-use software and a massive array of technical information, technicians can perform an ultra-fast and accurate diagnosis to get the repair done right and the vehicle back in operation.

Scan the code with your smartphone camera or compatible QR reader to learn more about the 3824A Bosch ESI[truck]



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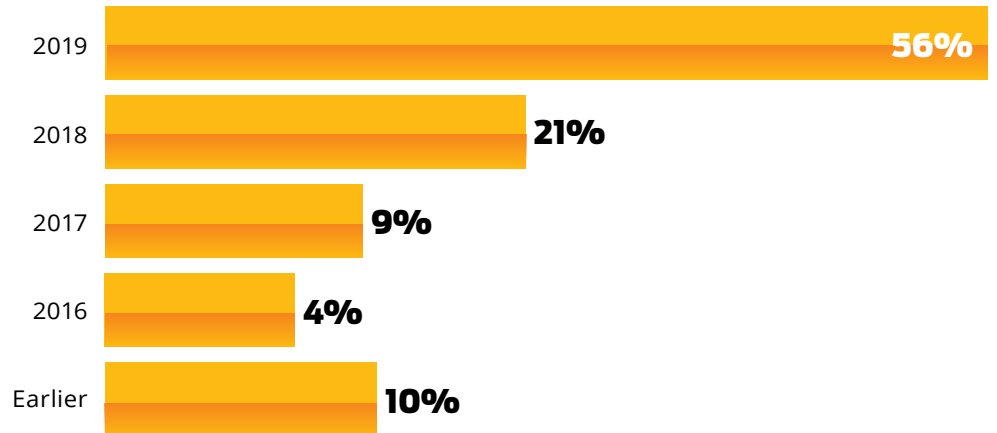
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Diagnostic tool functionality

Respondents shared their expectations of diagnostic scan tool functionality. This includes the current processes and procedures performed with these tools, as well as what respondents expect for tool coverage and capabilities. For instance, more than half of respondents (56 percent) indicated they require a scan tool that provides 2019 model year vehicle coverage.

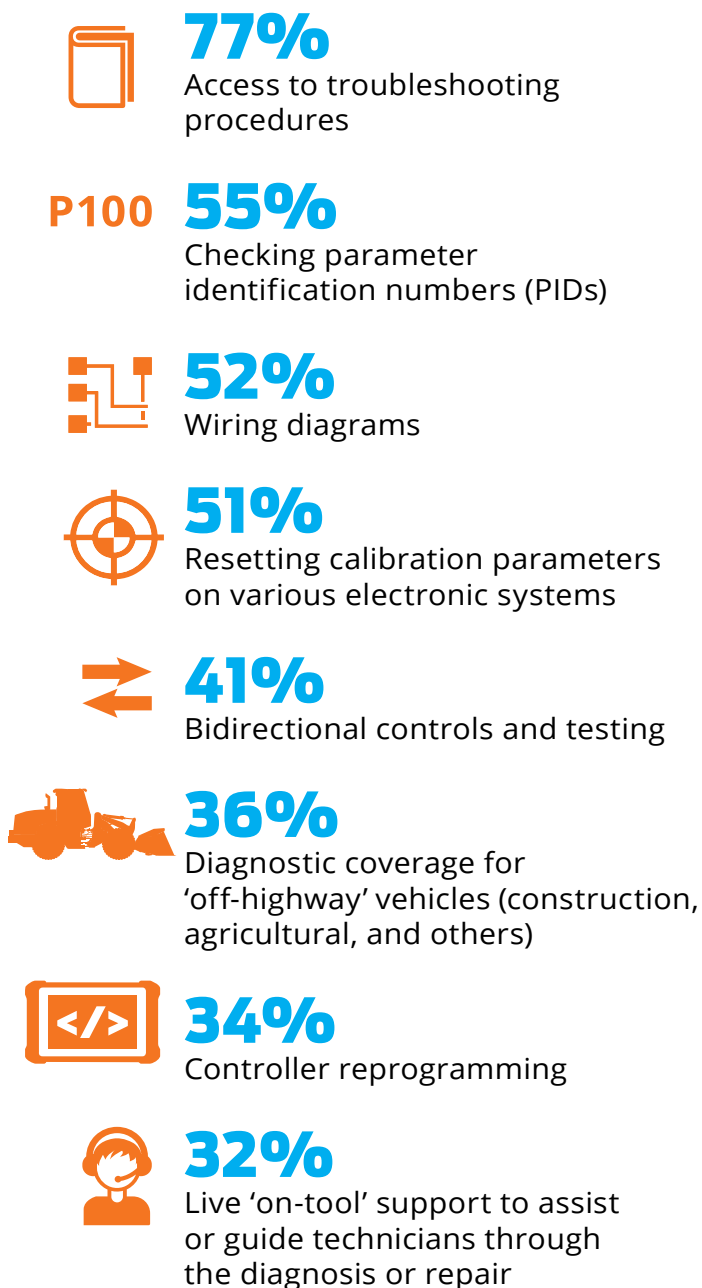
The survey also gathered information on where scan tool functions fall short and where tool manufacturers may be able to offer improvements in the future.

What is the latest model year support you require for your diagnostic scan tool software?

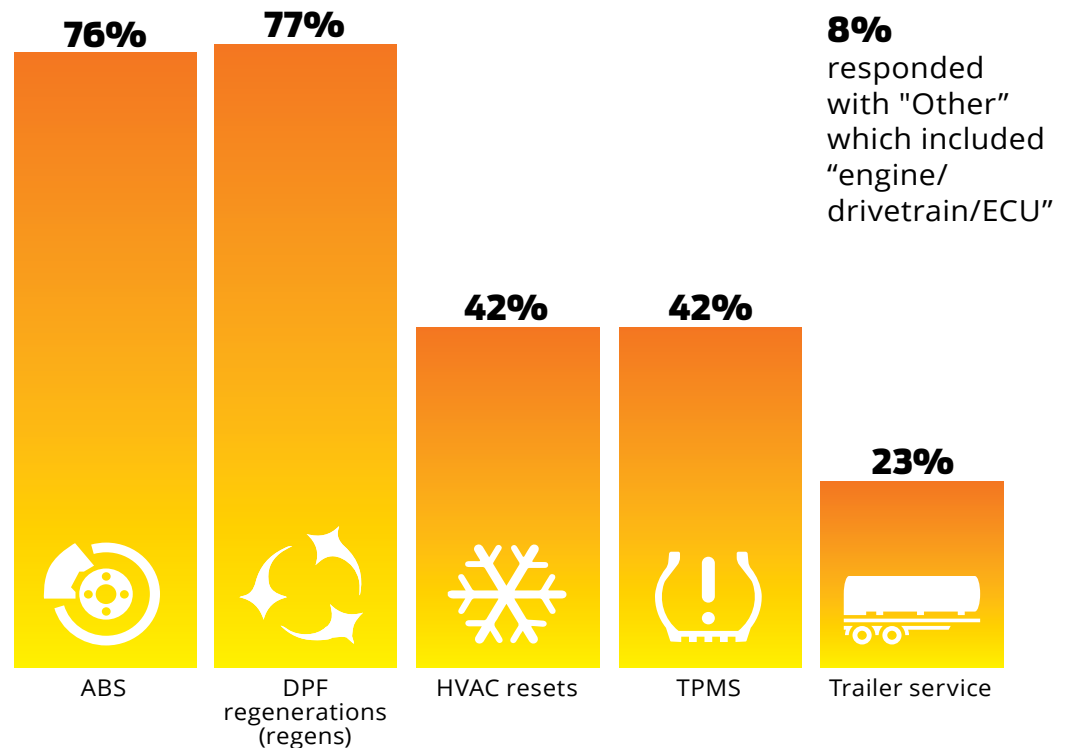


CURRENT FUNCTIONALITY

What are the main functions your fleet uses on a diagnostic scan tool?



For what vehicle systems does your fleet check PIDs?



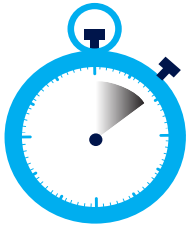
What is the expected length of time it takes to prepare and set up a scan tool to work on a vehicle, including system boot-up time?



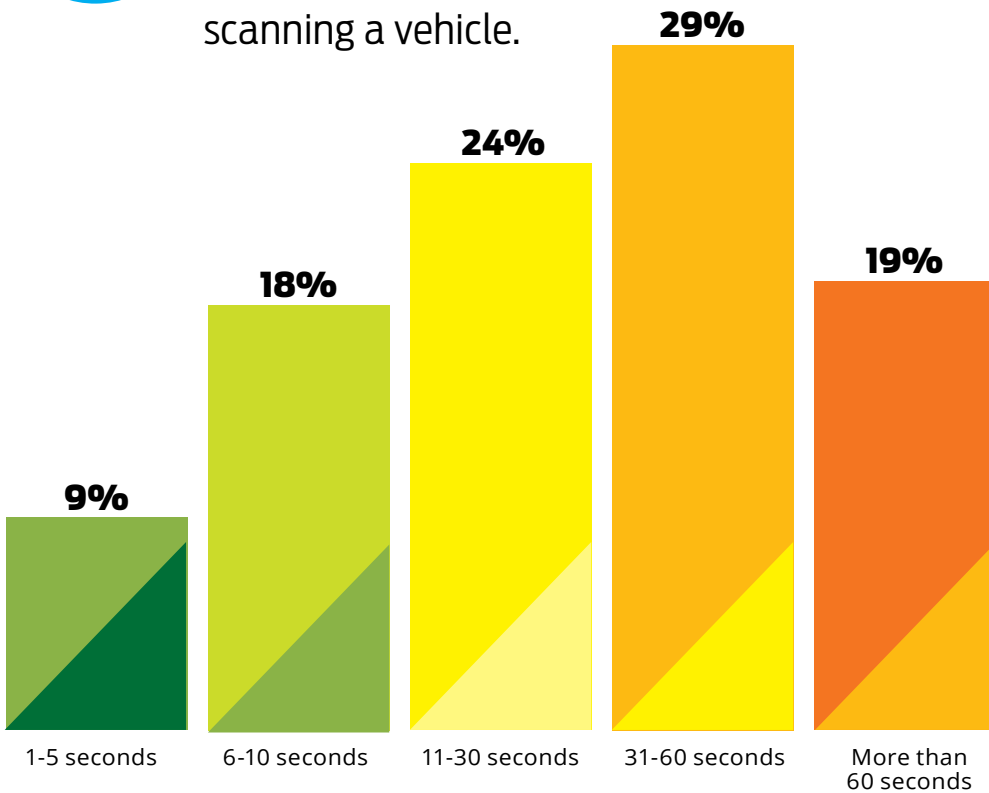
Diagnostic tool functionality

CURRENT FUNCTIONALITY

What is the expected maximum response time, in seconds, when scanning a vehicle?



80 percent of respondents expect a response time of less than one minute when scanning a vehicle.



Does your diagnostic scan tool require the tool battery be pre-charged before using?

43%

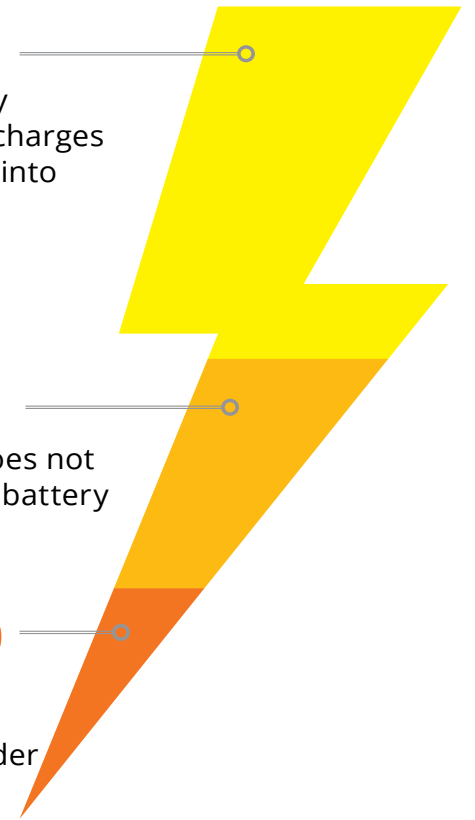
No, the battery automatically charges when plugged into the vehicle

29%

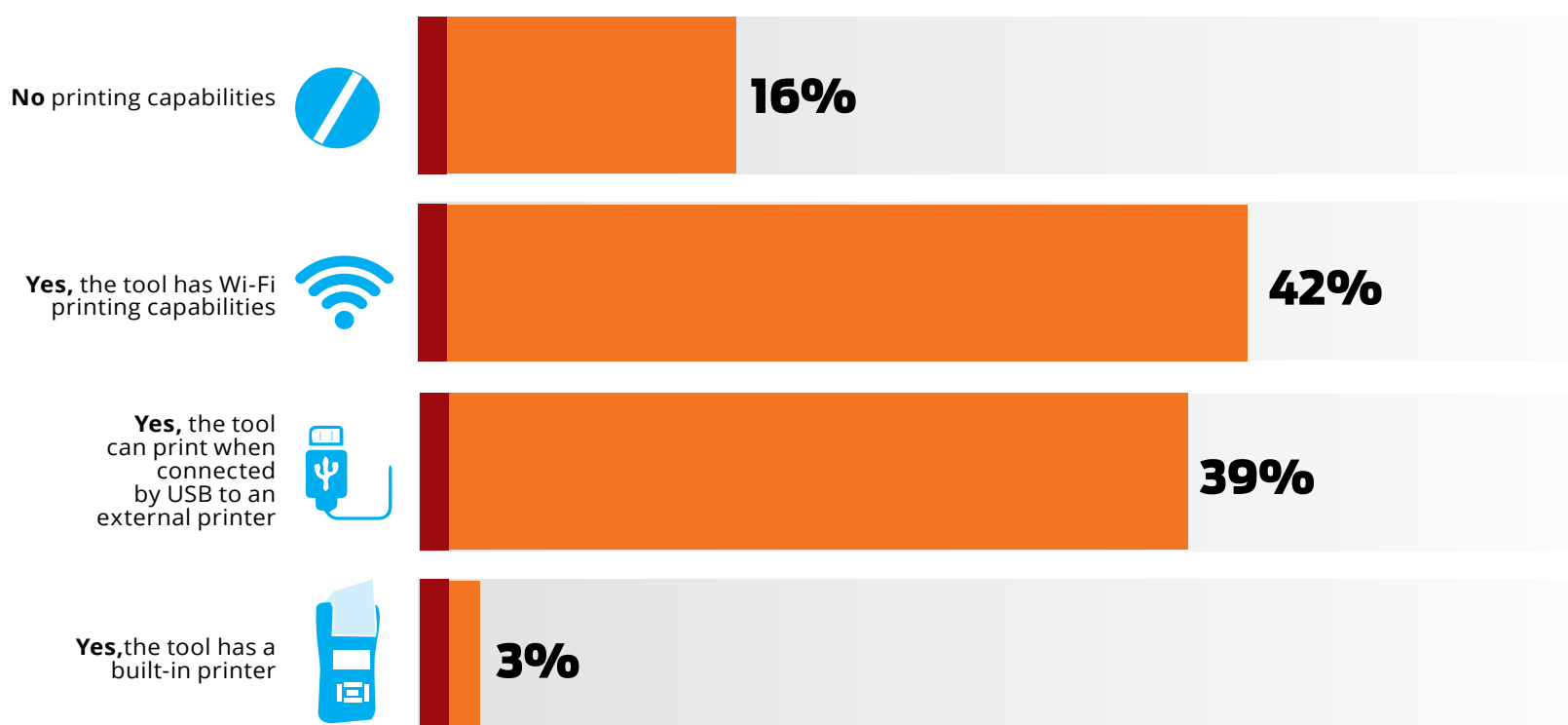
No, the tool does not have a built-in battery

28%

Yes, the tool requires pre-charging in order to boot up



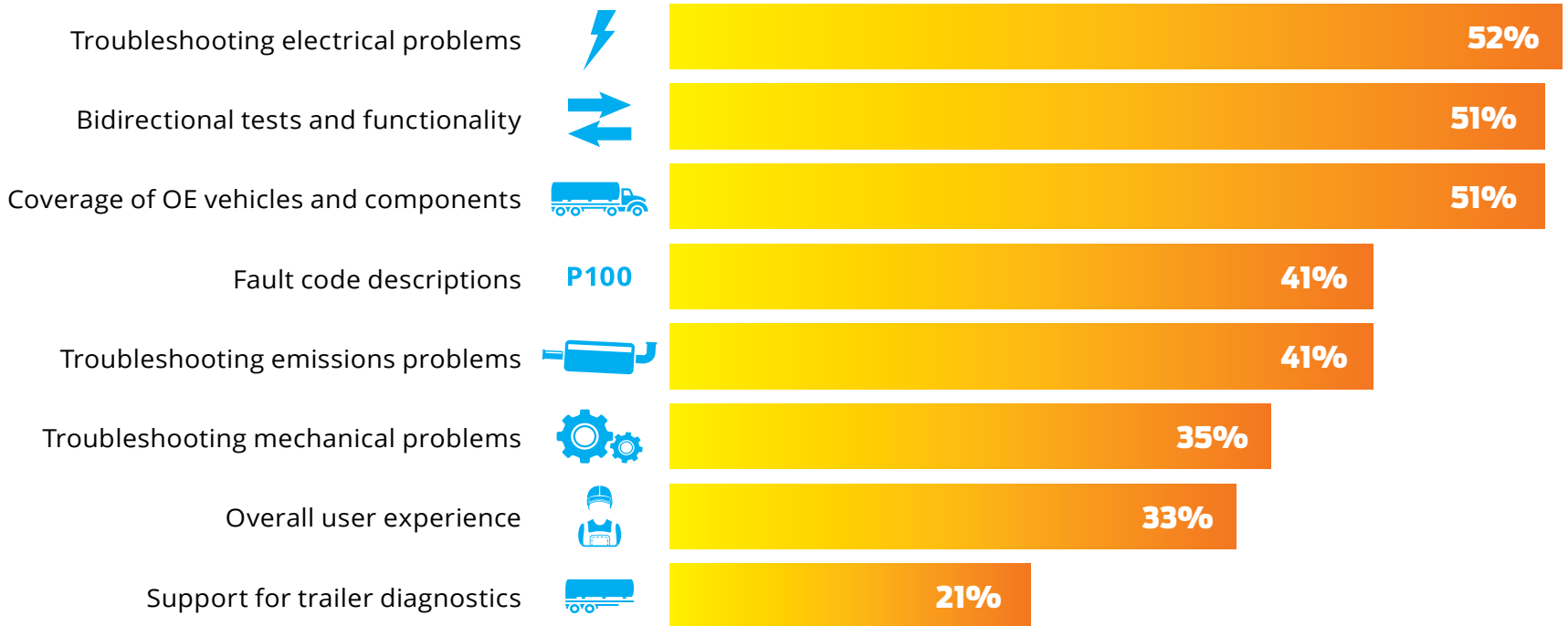
Does your diagnostic scan tool have printing capabilities?



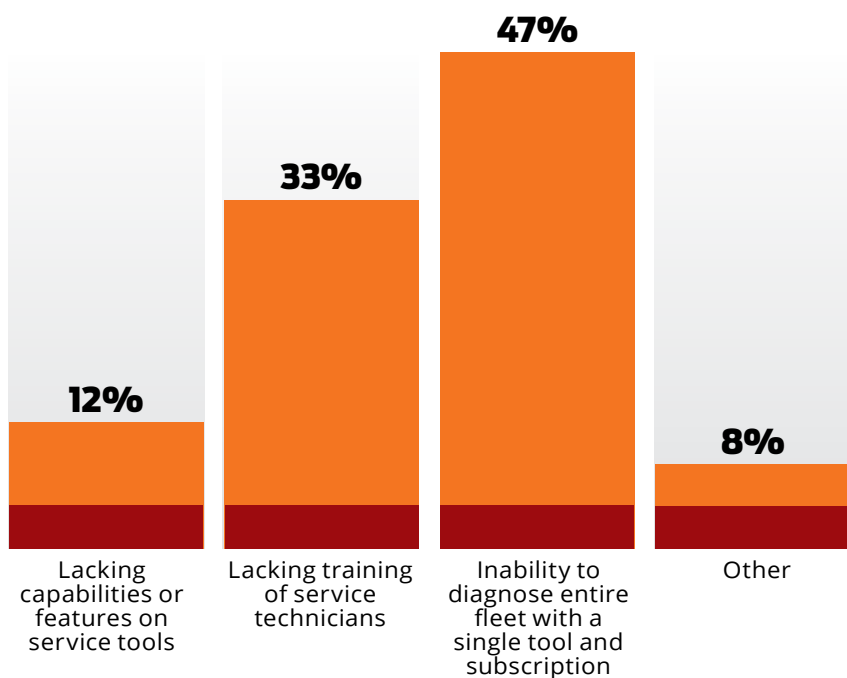
Diagnostic tool functionality

DIAGNOSTIC CHALLENGES

With continued advancements in technology and complexity of vehicles, where have diagnostic tools fallen behind?




What is your organization's greatest challenge when it comes to diagnostic processes?



Respondents indicated **troubleshooting information** is the most important type of information to have when making a repair, followed by information about [schematics](#), [repair procedures](#), and [component location](#).

“Other” responses included time management issues, understanding internal OE codes, and lack of service information. Some respondents in this category also indicated they had no diagnostic process challenges.

 **Nearly three quarters of respondents** indicated that searching for diagnostic information from multiple sources is a challenge.

When diagnosing a vehicle, what process takes more time than expected?

72% Searching for diagnostic information from multiple sources

35% DPF regenerations

21% Resetting calibration parameters on various electronic systems

21% Controller reprogramming



DIAGNOSE YOUR ENTIRE FLEET

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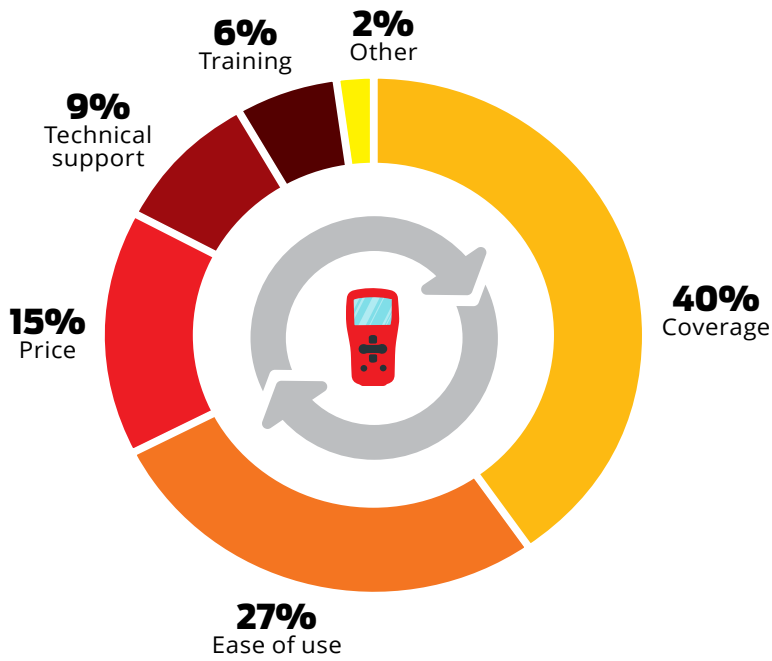
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Diagnostic tool functionality

SUPPORT AND TRAINING

What is the most compelling reason to switch diagnostic platforms?



Does your diagnostic tool manufacturer provide free U.S.-based technical support for the life of the tool, regardless of the tool software subscription status?



52%

Yes



48%

No



WORKING ON AG & OFF-HIGHWAY EQUIPMENT?



The **OHV Pro** is our answer to folks needing a stand alone, full featured scan tool for working on Agricultural, Construction, Mining and other Off-highway applications. Brands such as John Deere, Volvo, Caterpillar and CASE are covered. Perform bi-directional capabilities on hydraulics, injector coding, VGT calibration and more.

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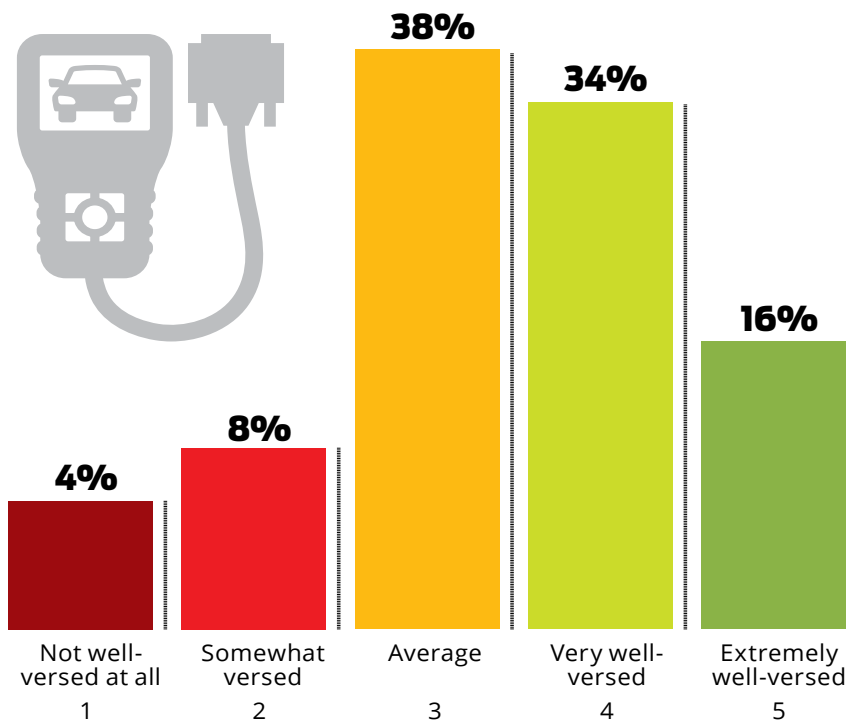
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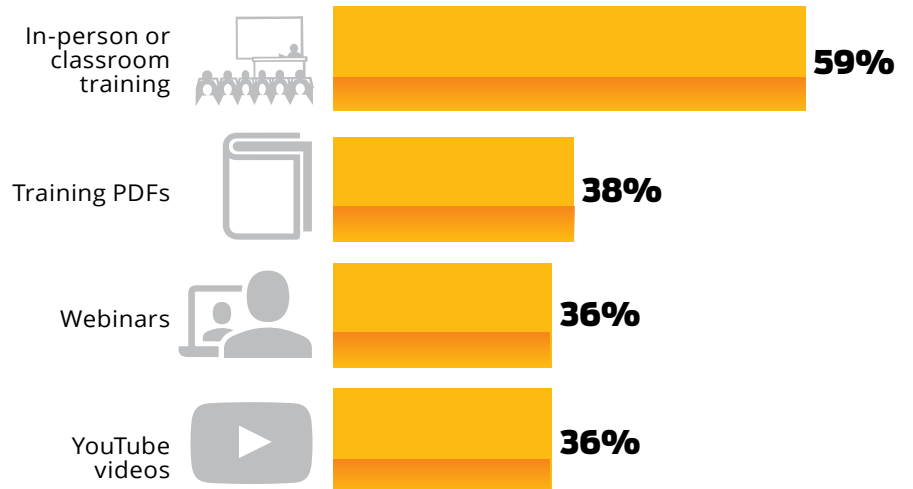
For more information, visit VehicleServicePros.com/11078899

How well-versed are your technicians with their current diagnostic tool usage?

(rated 1 to 5)



What is your preferred method of training from a diagnostics provider?



Nearly half (49 percent) of respondents indicated technical information from diagnostic suppliers is extremely valuable.

Extensive Coverage and Comprehensive Performance !!!

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- ✓ Engine, ✓ Transmission, ✓ ABS, ✓ DPF and ✓ Body/IC
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- ➔ **Wireless HD Scanners**
Smart and advanced diagnostic system with Android wireless/bluetooth/WIFI tablet
Model: F7SN; F7SG; F7SW, F7SB, F6Plus,
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Simple, direct wired scanner:
Model: F506, F3SN ; F3SG
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Model: FD505, FD503, FD501
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Smart and automatic, and cover both R-134A, R-1234YF refrigerant



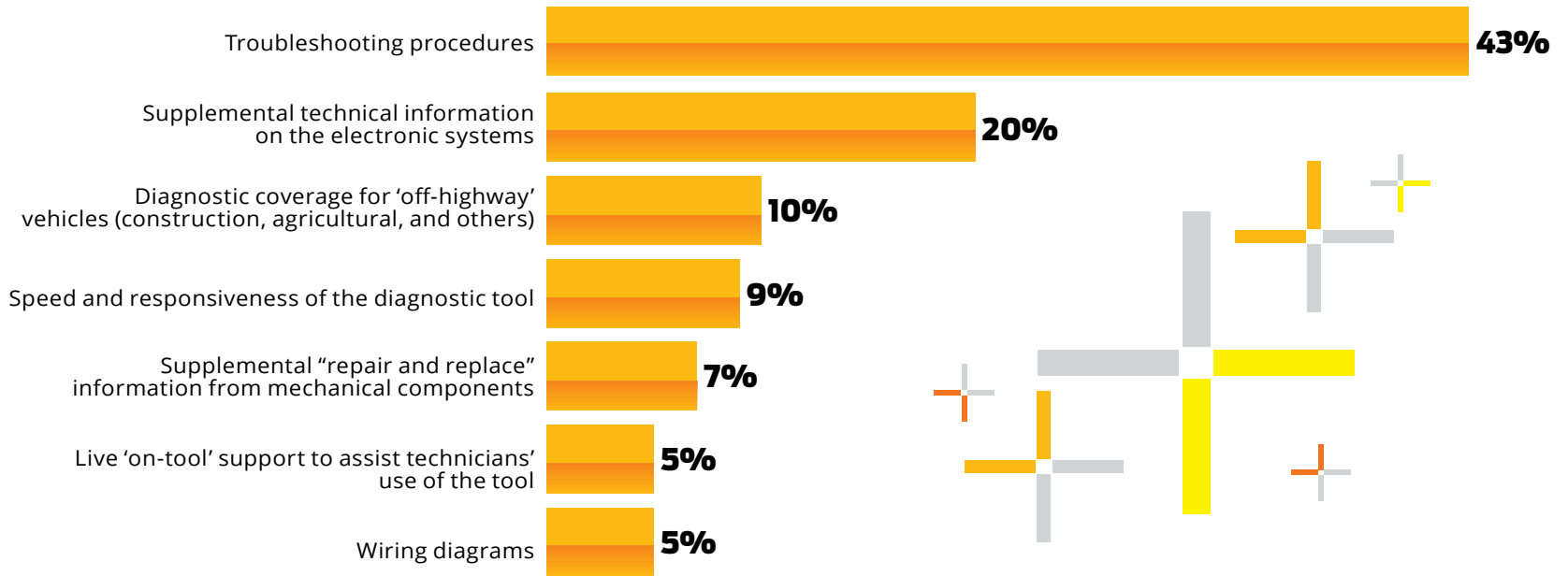
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Diagnostic tool functionality

DESIRED FUNCTIONS

What single most important additional feature should be included on a diagnostic tool?



REPROGRAMMING AND REMOTE DIAGNOSTICS

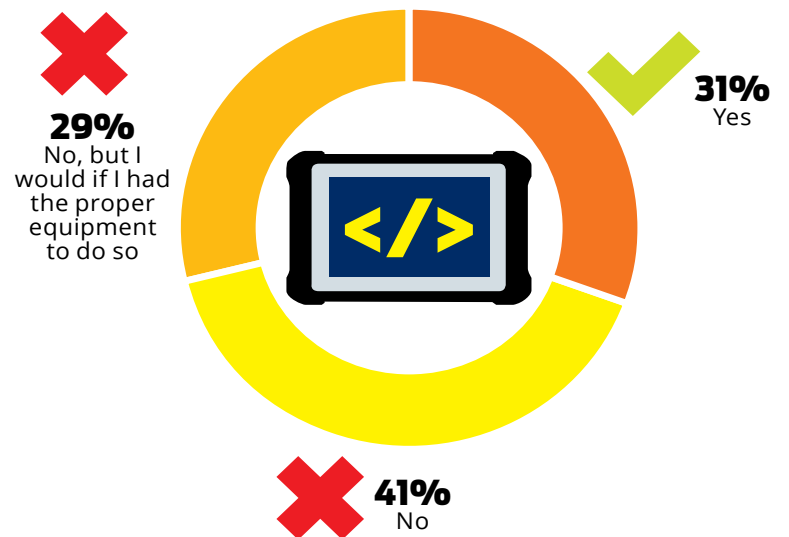
What is RP1210, and how does it benefit diagnostics?

The Technology & Maintenance Council (TMC) Recommended Practice (RP) 1210 provides guidelines on standardizing the process of communication between the vehicle and a heavy duty diagnostic scan tool.



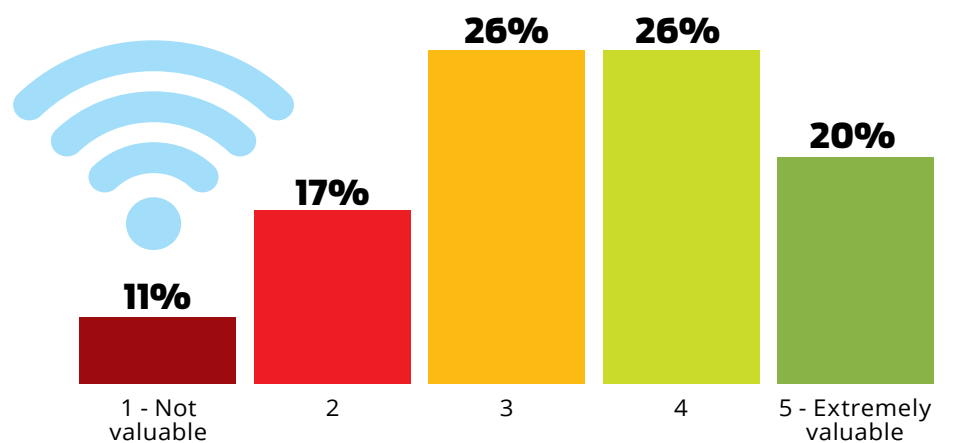
Nearly half (48 percent) of respondents indicate RP1210 is a necessary feature when shopping for new heavy duty diagnostic scan tools.

Do your fleet's diagnostic tools leverage reflashing or reprogramming with RP1210?



How important are remote diagnostics to your diagnostic tool program?

(rated from 1 to 5)





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Participant details

To make the results of the 2019 *Fleet Maintenance Heavy Duty Diagnostics Study* more useful, it is helpful to understand who responded to the study. Respondents to this study covered a variety of business types, including: contract maintenance

providers, common carriers, government and public safety, retail and wholesale delivery, and more.

This section also provides details on whether respondents approve, specify, or influence heavy duty diagnostic tool-related category purchases.

PURCHASE AUTHORITY AND INTENTIONS

91% of respondents have direct or supervisory influence over fleet maintenance **AND** approve, recommend, or specify HD diagnostic tools.

DEMOGRAPHICS

How big is your fleet?

No vehicles;
independent
maintenance
contractor

1-4

5-10

11-50

51-100

101-499

500-1,000

1,001-5,000

5,001+

2%

10%

11%

15%

16%



25%
Corporate
manager



27%
Maintenance
manager

20%
Fleet
manager

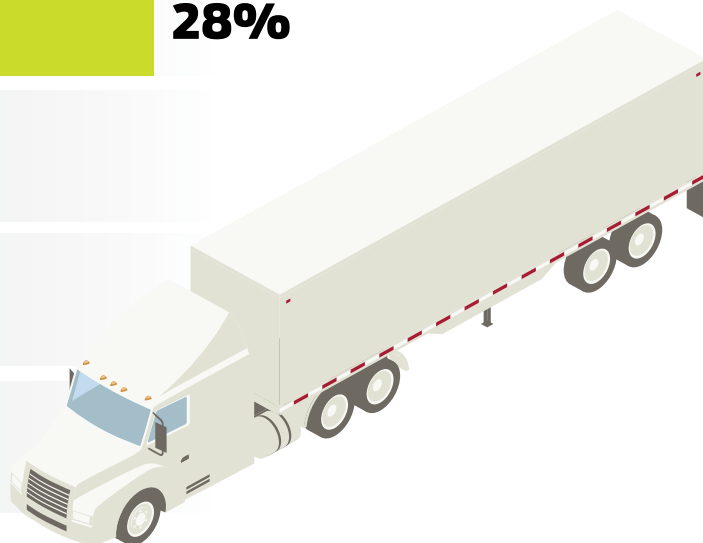


28%
Other

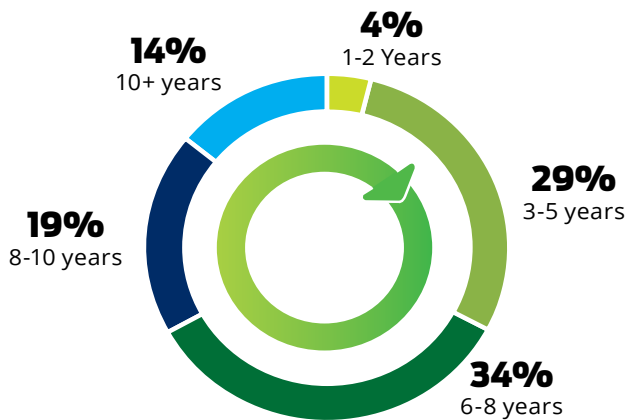


"Other" responses included owners, shop foremen, lead technicians, superintendents, operations manager, etc.

What title best describes your job function?



What is the average age of vehicles in your fleet?

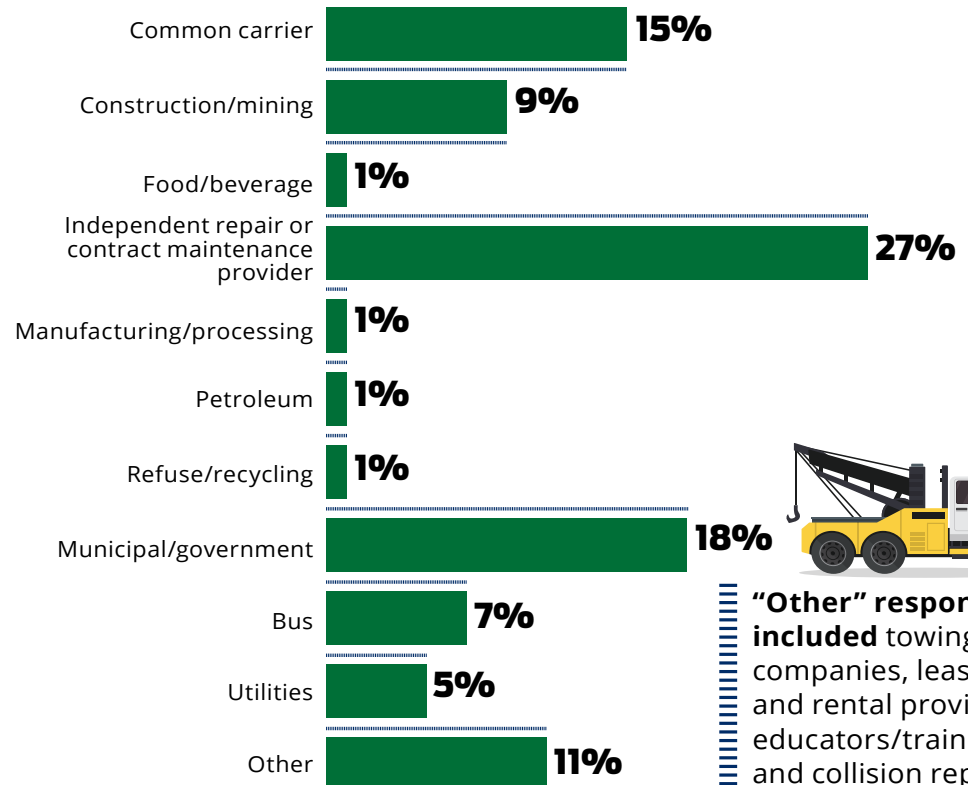


One-third of respondents indicated vehicles in their fleet are **less than five years old**.



Two-thirds of respondents indicated vehicles in their fleet are **less than eight years old**.

What business type best describes your fleet?



“Other” responses included towing companies, lease and rental providers, educators/trainers, and collision repair.



DIAGNOSTICS DONE RIGHT.

- Get access to the most advanced diagnostic platform in the heavy-duty industry!
- Includes repair information, wiring diagrams, fault codes, and parts cross references
- Training available online and in-person from Diesel Laptops
- USA-Based technical support from live Diesel Technicians and IT Professionals
- Upgrades for off-highway equipment available



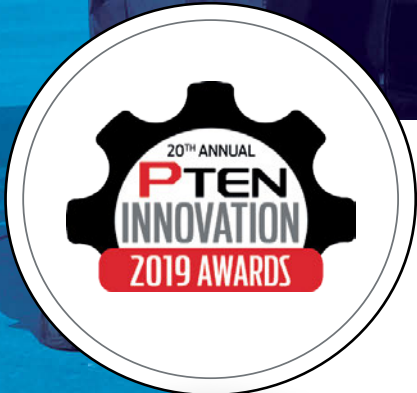
Call us at (888) 983-1975 to learn more or visit us at www.Diesellaptops.com



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