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# Brake Study <sup>2018</sup>

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# 2018 Brake Study

## Fleet Maintenance, in partnership with Meritor, presents the study results

By Fleet Maintenance Staff

**M**aximizing uptime, minimizing costs and maintaining a safe, efficient and profitable operation are the primary goals of any fleet. *Fleet Maintenance* is committed to serving as your ongoing resource for information and knowledge on fleet maintenance and repair. As such, we provide best practices and pertinent information to help fleets achieve the aforementioned goals.

To gauge current and future brake practices and preferences in the market, *Fleet Maintenance* conducted a survey of fleet managers. In partnership with Meritor, the results of the brake study have been incorporated into this *2018 Fleet Maintenance Brake Study* supplement.

## Highlights

Below are some of the biggest takeaways from the *2018 Fleet Maintenance Brake Study*:

- Of the individuals surveyed, **80 percent indicate they approve purchasing of brakes and brake system parts and components**; 76 percent and 73 percent, respectively, also approved purchasing of the tools and the equipment used for repairing and servicing brakes and brake systems.
- When it comes to training technicians on brake repair and maintenance procedures, **fleets turn to brake and brake service OEMs, suppliers and vendors most often (74 percent)**.
- The top three most important factors in purchasing brake parts were **quality, availability and price**.
- A majority of respondents, **66 percent, use primarily drum brakes in their fleet**.
- **Respondents indicated a mix of vehicle types made up their fleet**, with heavy duty vehicles - Class 7 and 8 - being the most widely serviced vehicle type (72 percent).

Over the next few pages, we provide a general overview of the type of fleets which were surveyed (Pg. 4), insights into current brake maintenance practices (Pg. 6), current brake preferences (Pg. 8) and a look toward the future of braking (Pg. 10).

Please note: percentages indicated throughout this supplement are rounded to the nearest whole number. Because of this, some totals may be more than 100 percent.



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## General overview

### Details on the brake study respondents.

By Stefanie Von Rueden, Assistant Editor

To make the results of the *2018 Fleet Maintenance Brake 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.

#### Vehicles

Respondents indicated a mix of vehicles in their fleet.

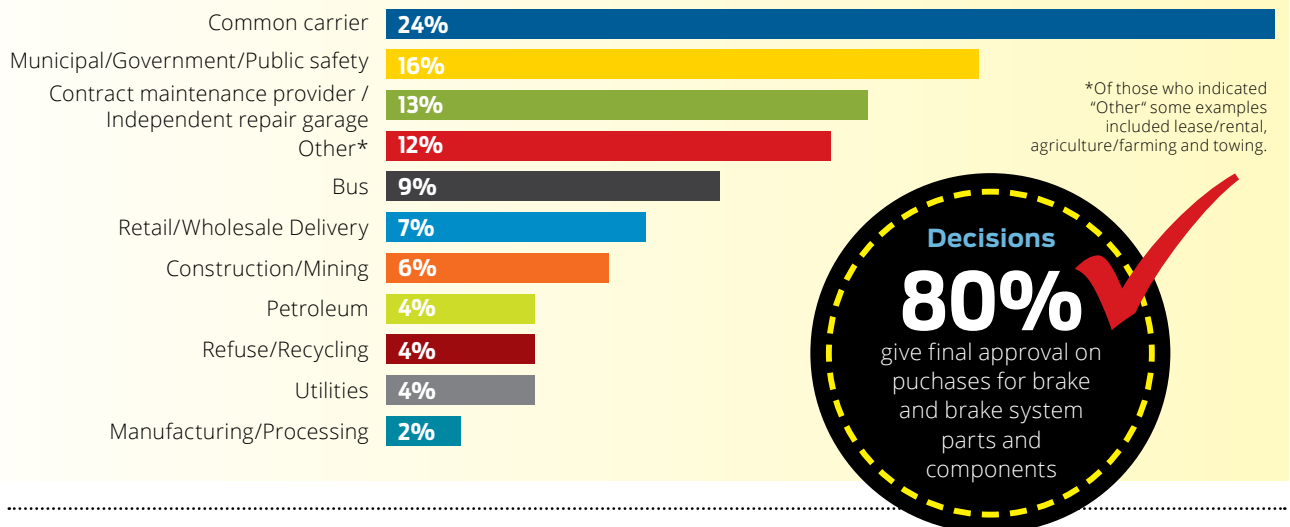
- 72 percent have trailers, and 72 percent have heavy duty vehicles (Class 7 and 8).
- 62 percent have medium duty vehicles in their fleet (Class 4, 5 and 6).
- 60 percent have light duty vehicles (Class 1, 2 and 3).

- 57 percent have less than 100 vehicles in their fleet, and 18 percent have more than 500 vehicles in their fleet.

#### Maintenance staff

- The majority of respondents have nine or fewer maintenance employees.
  - 72 percent had nine bays or fewer at their company or independent repair contractor.
  - 45 percent had four or fewer technicians at their company.
- Whether managing a small, private fleet or a large corporate fleet, the study findings may allow fleets to understand how others are approaching brake management and maintenance practices. This information can help fleet maintenance managers make more informed decisions when refining their approach.

### What is your company's primary type of business?



### What vehicle classes make up your fleet?

Respondents selected all that apply.

**Mixed fleets**  
Respondents indicated a combination of all vehicle classes make up their fleet.

**60%**

Light duty Classes 1, 2 and 3



**62%**

Medium duty Classes 4, 5 and 6

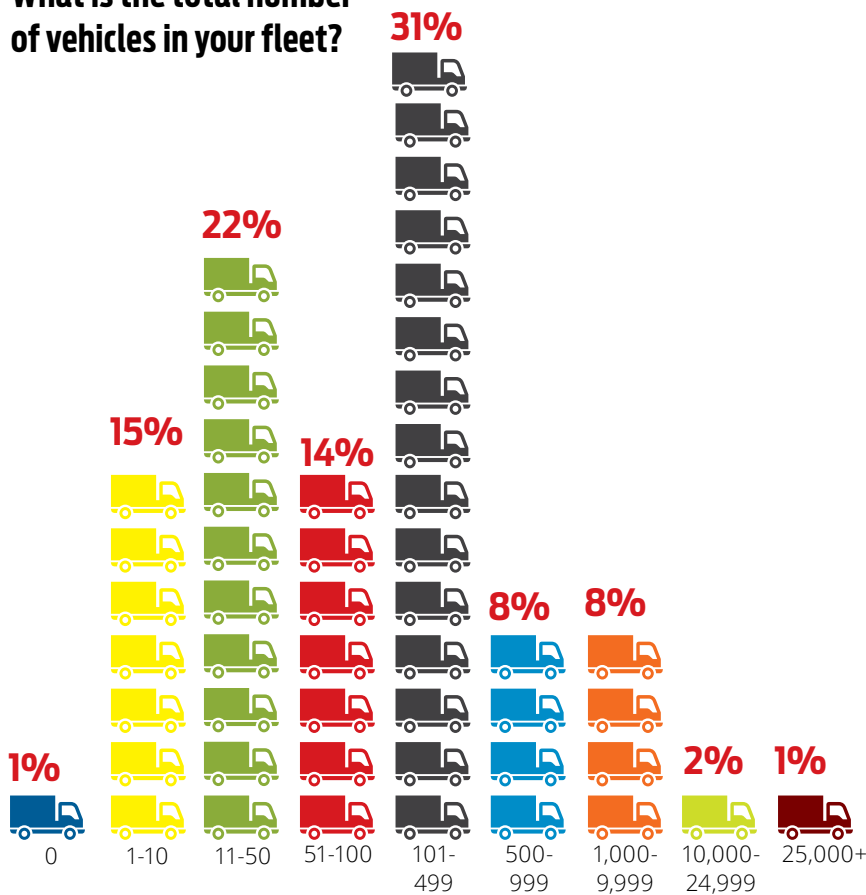


**72%**

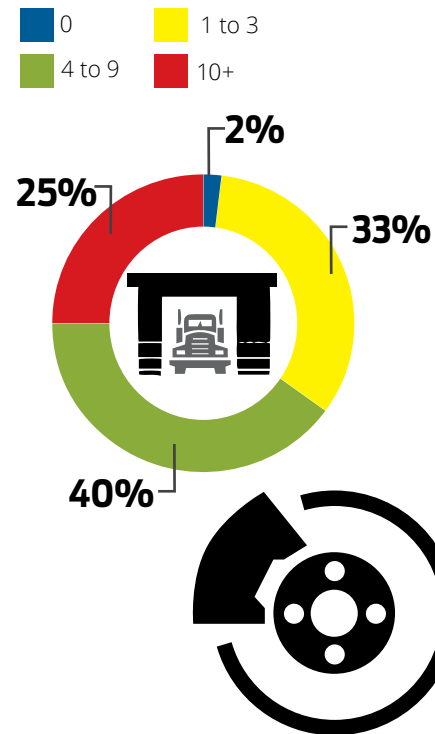
Heavy duty Classes 7 and 8



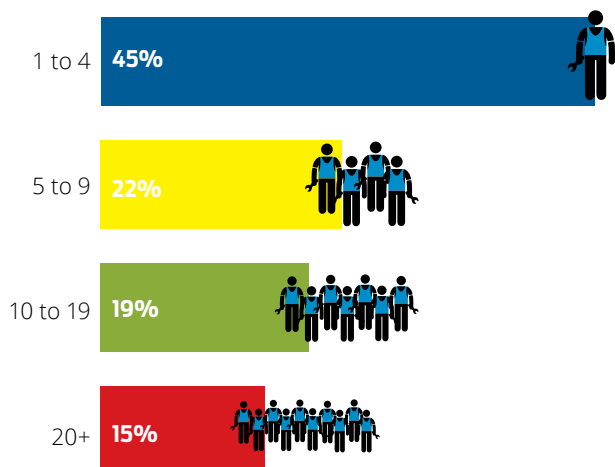
## What is the total number of vehicles in your fleet?



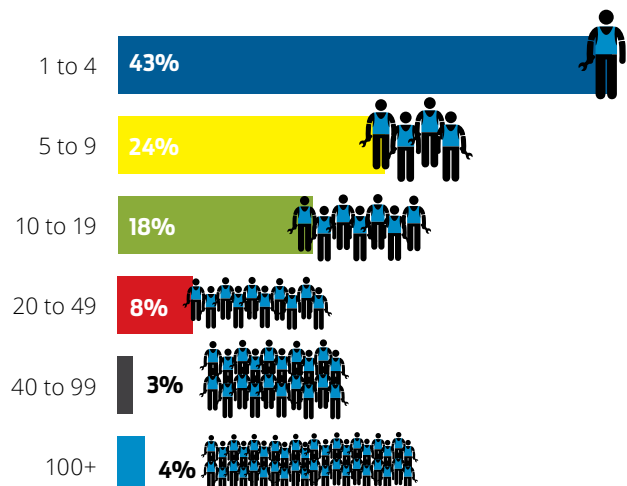
## How many bays are at your company locations or independent repair contractor?



## How many technicians are at your company locations or independent repair contractor?



## How many maintenance staff are at your company?



## Current Braking Practices The influencers

By Vesna Brajkovic, Assistant Editor

When it comes to brake repair and service practices, fleets have many decisions to make – from managing replacement parts and components, to purchasing brake tools and shop equipment. For the majority of fleets, that purchasing responsibility belongs to the fleet maintenance manager, according to findings from the *2018 Fleet Maintenance Brake Study*.

### Of the survey respondents:

- **96 percent indicated they either give final approval or recommend/influence** which brakes and brake system parts and components are purchased for their fleet.

While technicians are responsible for some brake tool and equipment purchasing, survey respondents indicate management (maintenance management, fleet manage-

ment or corporate management) is the primary purchaser for the following:

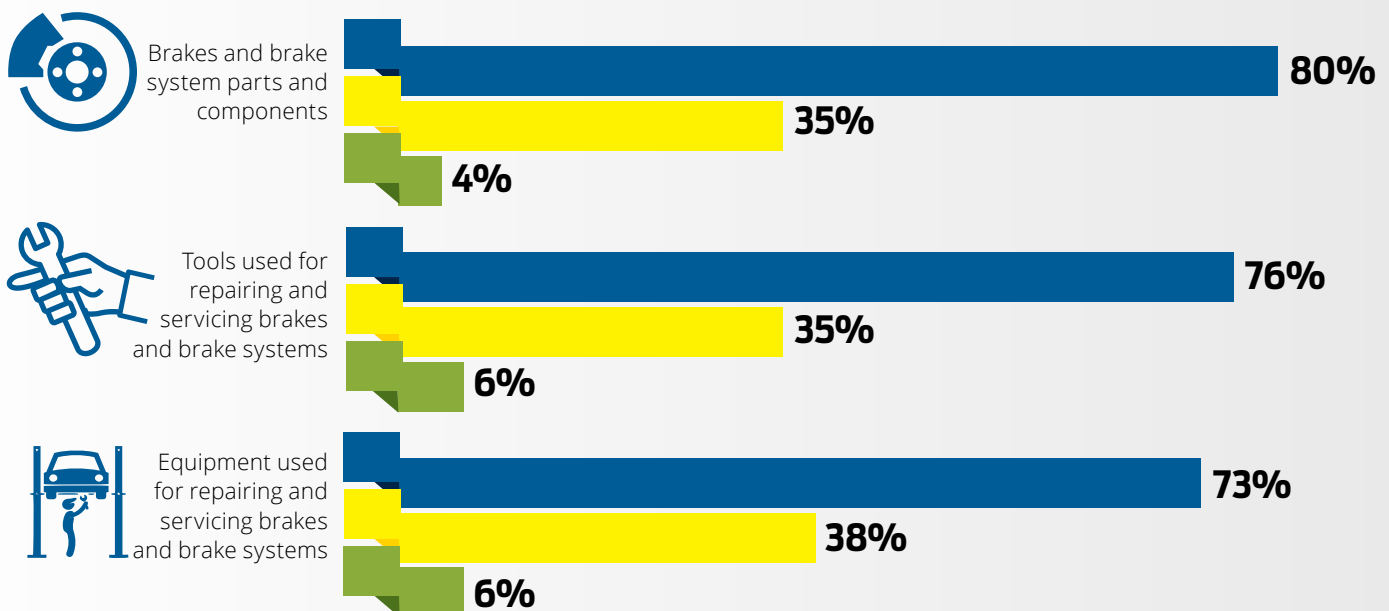
- 91 percent say management is the primary purchaser for brake shop equipment.
- 79 percent say management is the primary purchaser for brake service tools.

No matter who the purchaser is, technician training on proper maintenance procedures is imperative when it comes to any repair, but especially braking systems.

The most popular sources for technician training on brake repair and components were brake system OEMs, supplier and vendors (74 percent), online (38 percent) and vehicle dealers (37 percent), followed by technical schools (30 percent), industry events and conferences (22 percent) and organizations and trade associations (22 percent).

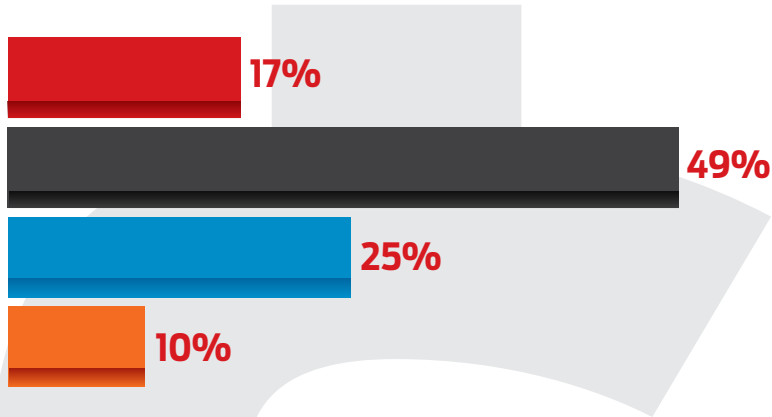
### What is your role in purchasing each of the following? Respondents selected all that apply.

■ Approve
 ■ Recommend/Influence
 ■ No Influence



## Who is the primary purchaser of brake replacement parts and components?

■ Technician   
 ■ Maintenance management   
 ■ Fleet management   
 ■ Corporate management



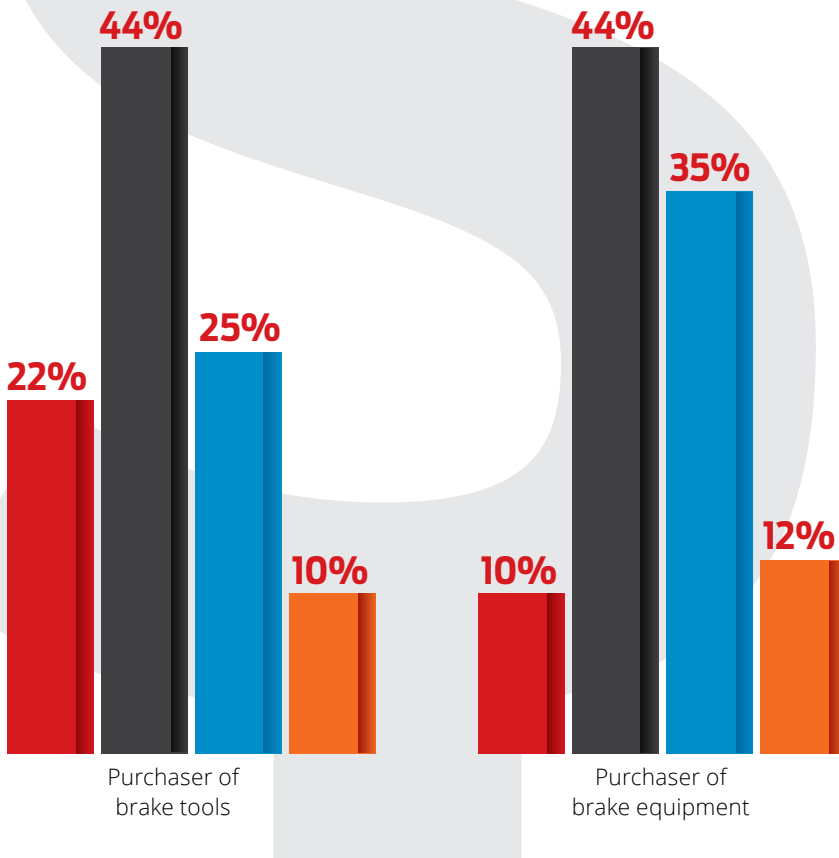
Purchases

## 84%

say management is primarily responsible for replacement parts and component purchases

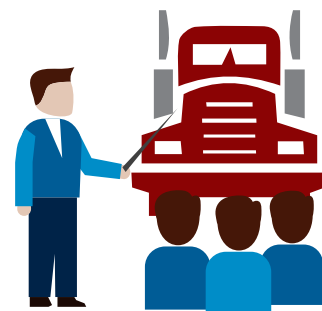
## Who is the primary purchaser of brake tools and equipment?

■ Technician   
 ■ Maintenance management   
 ■ Fleet management   
 ■ Corporate management



## 74%

of respondents say their techs receive training on brake repair and maintenance procedures from OEMs, suppliers and vendors.



## Brake Preferences What matters most?

By Vesna Brajkovic, Assistant Editor

Properly functioning brakes are a critical part of an efficiently run fleet operation. The consequences of bad brakes result in not only a safety issue, but potential out-of-service violations that threaten uptime. Because of this, proper brake maintenance, as well as selection, is imperative. As some would expect, fleet maintenance managers have their preferences.

The *2018 Fleet Maintenance Brake Study* found that the **quality of a brake was the most important factor when purchasing brakes**, which 35 percent source from truck and trailer dealerships. Quality is followed in importance by product availability, price and customer support.

Respondents indicated both Bendix and Meritor were the most often spec'd brake brands, followed by Haldex and Gunitite.

A majority of the fleets, according to the survey, primarily use drum brakes (66 percent). Disc brakes are used by 26 percent and hydraulic brakes by 3 percent. Five percent use all types, or a combination of them.

In this section, you will find a breakdown of some of brake preference results.

Adoption of online purchasing as the primary means of procuring parts is still not widespread, with 0 percent indicating they purchase parts through online websites. Fleets still prefer purchasing brake parts from brick and mortar stores most – especially truck and trailer dealerships (35 percent) and retail parts stores (18 percent).

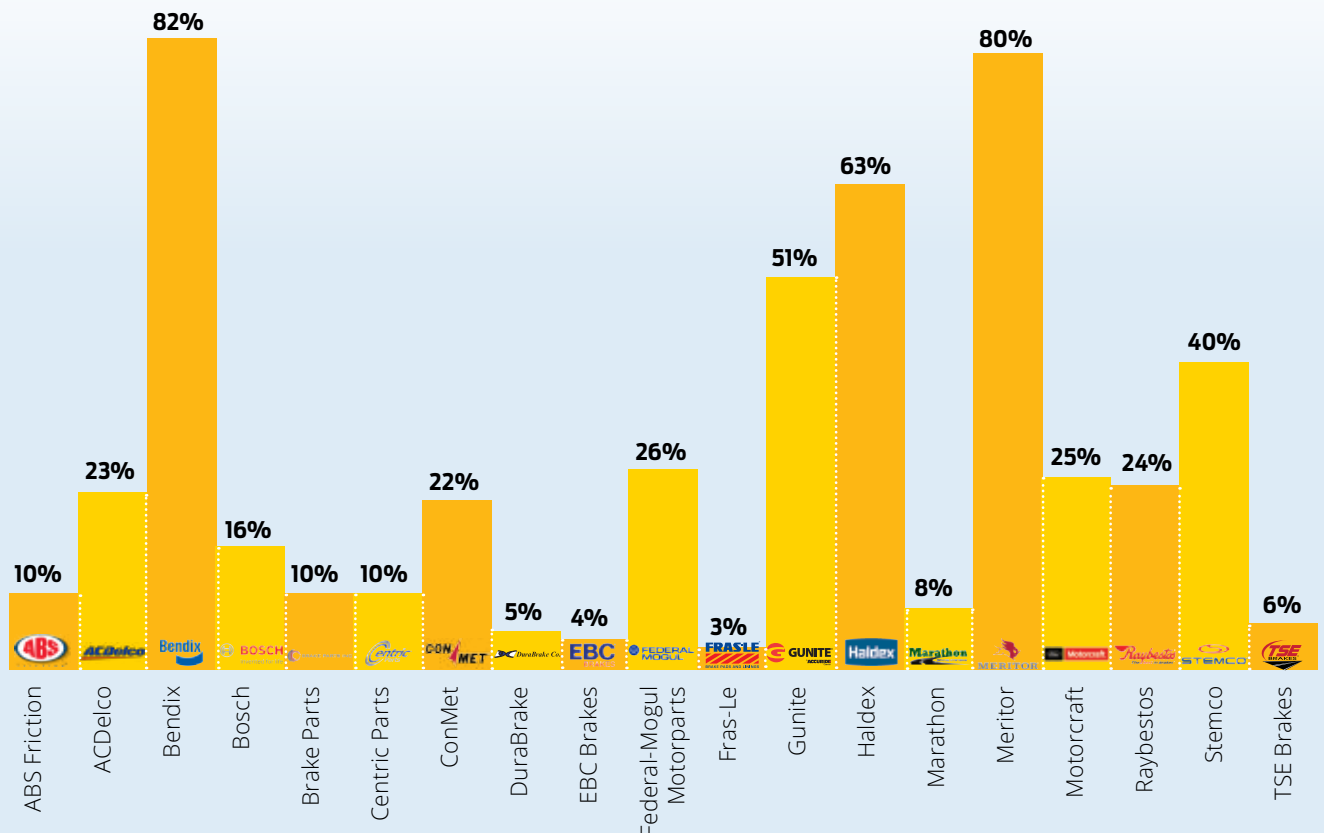


### The following factors are important for brake part purchasing.

(Listed in order by highest importance.)

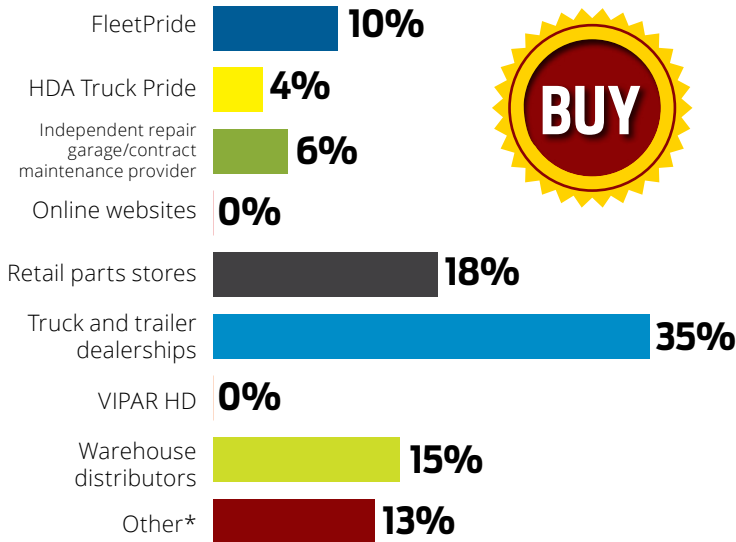
1. Quality
2. Availability
3. Price
4. Customer support
5. Brand name
6. Stopping distance
7. Past experience
8. Mileage range/life
9. Speed of delivery
10. Warranty

### Which brand of brake product do you use in your fleet?





## Which sales outlet is your primary source for purchasing brake parts?



\*Of those who indicated 'Other,' parts were mostly purchased directly from the OEM or at local aftermarket suppliers.

## Assessing quality parts

Proper parts selection can have a major impact on vehicle performance.

By Erica Schueller, Editor-in-chief

Not all parts are created equal. To get the best performance and longevity of parts and components, it is important that they meet stringent specifications for optimal performance.

To determine the best part for the application, it is important to review the different types of parts available to the aftermarket. Considerations can be made based on a scale of parts options available ranging from all-makes aftermarket parts, to aftermarket parts manufactured to OE specifications, to genuine OE parts. Standardized remanufactured parts may also be a suitable option.

The evaluation process involves determining the expectations of the part you look to purchase, and at what price point. This means determining at what point in the full life cycle of the vehicle you're currently operating and/or servicing. The original owner of the vehicle would likely opt for genuine OE parts or parts manufactured to OE specs, while a second or third owner of the vehicle would find an all-makes aftermarket part suitable.

When verifying the quality of an aftermarket part and corresponding supplier, consider the following:

- Standardization and consistency of manufactured product
- Responsive customer support after purchase
- Speed of delivery
- Available training
- Warranty

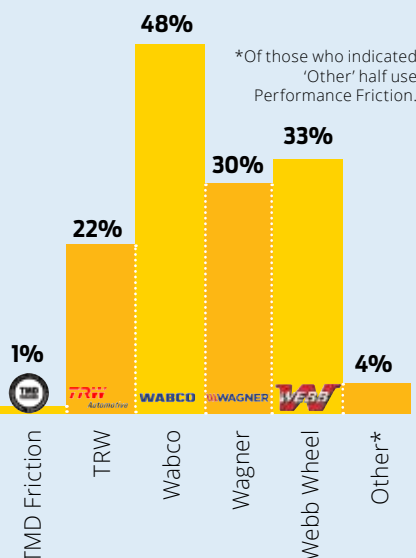
While there is no industry-wide standard in place when it comes to aftermarket parts manufacturing as a whole, look to the processes of the intended parts manufacturer to gain insights on the anticipated value and performance.

The majority of respondents use primarily **drum (66 percent)** or **disc (26 percent) brakes** in their fleet. Three percent use hydraulic brakes, and 5 percent use all types, or a combination of them.

## When replacing brake linings, brake chambers or brake adjusters, are you sure to specify the same as was originally spec'd on the vehicle?

**YES**  
72%

**NO**  
29%



\*Of those who indicated 'Other' half use Performance Friction.

# Future of braking systems

The influence of current and future technologies on braking systems.

By David Brierley, Managing Editor

Manufacturers continue to add systems to vehicles that make them safer and more efficient as the technology allowing them to do so becomes more readily available. As this technology advances, so too must the braking systems that allow vehicles to safely slow down and stop.

While most vehicles still use traditional braking systems, the 2018 Fleet Maintenance Brake Study found that nearly 10 percent use regenerative braking in some capacity. Regenerative braking allows the recovery of energy during the braking event that would otherwise be lost as friction heat. The recovered energy can be stored for later use, increasing the vehicle's efficiency.

Regenerative braking is most commonly found in fuel-electric hybrids or fully electric vehicles where the recovered energy is stored as electricity in a battery. The stored electricity can then be used to power the vehicle's electric motors, providing additional range of operation.

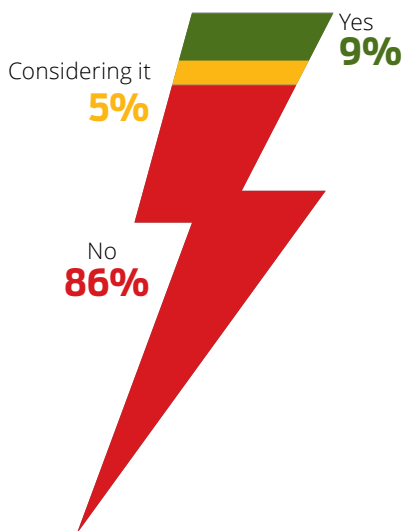
Traditional braking systems are also changing. Basic safety systems that have been around since the early 2000s, such as electronic stability control, rollover stability control

and anti-lock braking, can control a vehicle's brakes with little or no driver input in order to help the driver maintain traction and control.

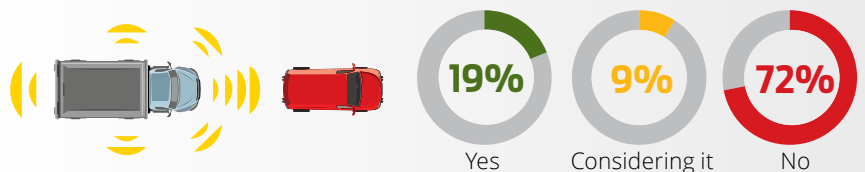
In recent years, more advanced safety systems have started to gain popularity, with 19 percent of respondents using some form of collision-avoidance and 14 percent using forward collision mitigation technology. Forward collision mitigation uses cameras and radar to determine if and when a collision is likely to occur. If the system detects an impending collision, it can actively apply the brakes with no driver input in order to lessen the impact or avoid the collision altogether.

As time goes on, these systems are becoming more popular on vehicles, and fleets are no exception. This is made clear by the fact that while only 9 percent of respondents currently use regenerative braking, another 5 percent are considering it. Likewise, 19 percent are already using some form of collision avoidance system, and another 9 percent are considering implementing this technology. These trends in brake technology are encouraging in that they may lead to continually cleaner and safer vehicle performance and operation.

## Are you using a regenerative braking system?

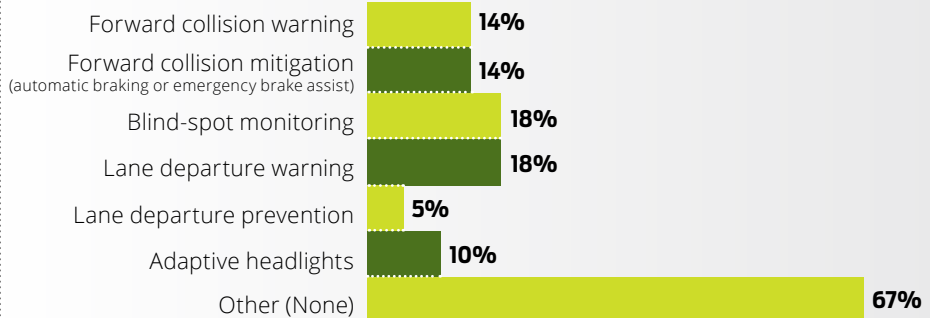


## Are you using collision-avoidance systems?



## Which type of collision-avoidance systems do you have on your vehicles?

Respondents selected all that apply.



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