



Issued: October  
Catalog #: CQ8181  
Mfg Code: HFF

# Fleet Solutions Brake Shoe Catalog



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The products described within this literature, including without limitation, product features, specifications, designs, availability and pricing are subject to change by Haldex and its subsidiaries at any time without notice. This document and other information from Haldex, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system, in the current literature or catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through their own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements are met.

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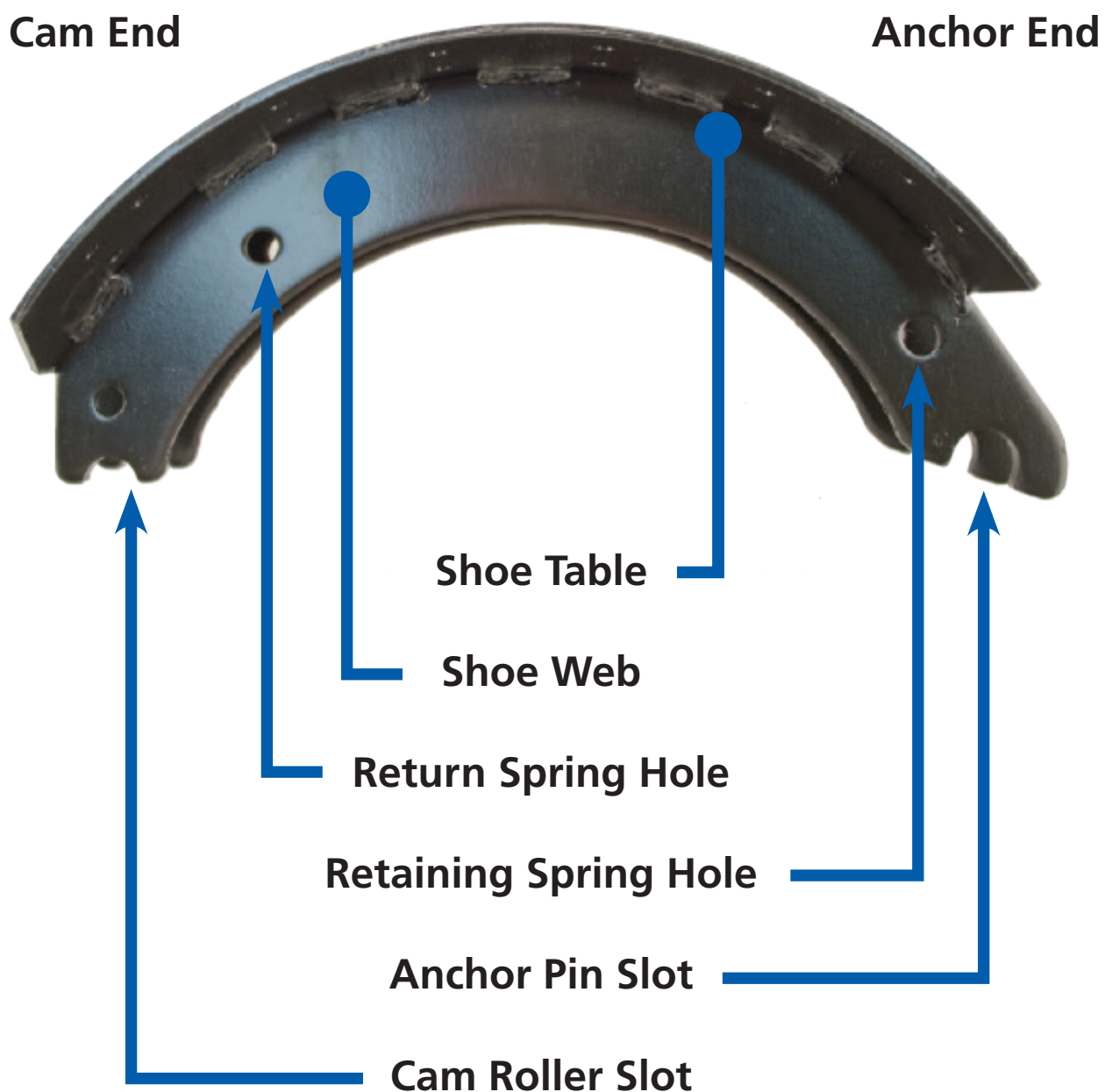
# Anatomy of a Brake Shoe

**Shoe Web:** Shoes may have one or two webs; the web is the rail that the shoe table is welded to.

**Shoe Table:** The table is a flat arched metal plate welded to the web. There are rivet holes through the table for fastening the lining to the table.

**Cam End:** The end of the web that holds the roller which rides on the cam shaft.

**Anchor End:** The end of the shoe that is anchored to the brake spider with the anchor pin.





# Quality Focused Brake Remanufacturing

## Value Added Quality

Haldex is determined to continuously provide the highest quality remanufactured brake shoes in the industry. A primary point of emphasis is adding additional, meaningful quality while minimizing the cost impact to our customers. For this reason as an example, Haldex will not "coin" brake shoes. The extra costs associated with coining do not justify the short term "benefit" of selling a brake shoe that is beyond specifications and beyond its useful life. Haldex's answer to those who promote "coining" is simple..."scrapping".

### Over 30 Quality Checkpoints and Inspections Per Shoe

- Table Wear & Damage
- Web Damage
- Anchor & Roller End Wear & Damage
- Shoe Stretch & Collapse
- Elongated Rivet Holes
- Coating Coverage
- Lining Fit/Rivet Torque



Rust inhibitive coating tested to exceed an aggressive 700 hour salt spray criteria

## Process Fundamentals

The Haldex Way - Quality Inspection Points



A liberal core program protects your core investment.



Shoe quality begins at core check-in. Out of spec shoes are scrapped.



Automatic deliners prevent excessive table damage, protecting shoe quality at a higher level.



Individual shot blasting ensures 100% removal of external contaminants - necessary for reliable coating coverage.



Extensive investments coatings and curing processes ensures maximum protection against corrosion.



Rivet torque specifications are critically maintained to ensure reliable lining to shoe attachment.



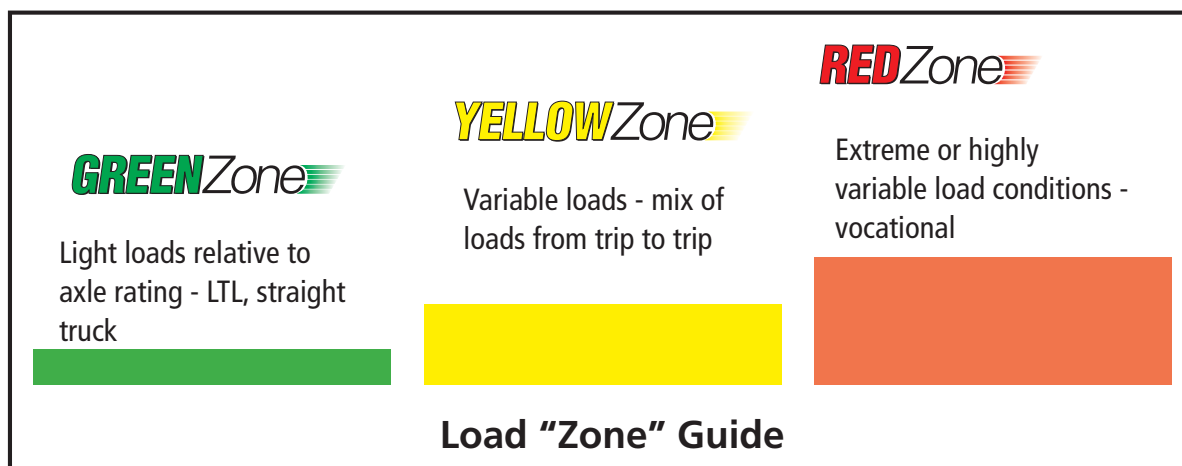
Haldex provides packaging options to fit the needs of your business.

# Choosing the Proper Brake Lining

The primary factors to consider when choosing a brake lining are:

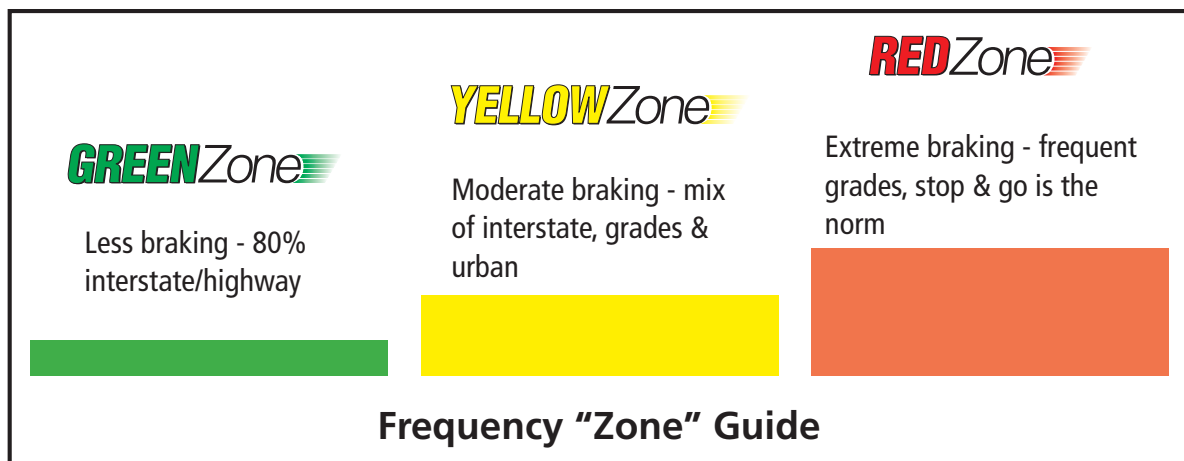
## 1. Load

If loads are typically light relative to the vehicles combined axle weight rating, generally brake temperatures will stay towards the lower end of the temperature spectrum (<400°). Highly variable loads mean that for at least part of the time, loads may be up to or above the vehicle's axle weight rating. To ensure maximum braking performance, a brake lining must be able to perform at a higher temperature (> 550° when heavy), however not be "too much" for those times when the vehicle is loaded lighter (<400°). Extreme load conditions are going to generate high temperatures most of the time, calling for upgraded linings to maintain top-notch braking performance (up to 1000°).



## 2. Braking Frequency

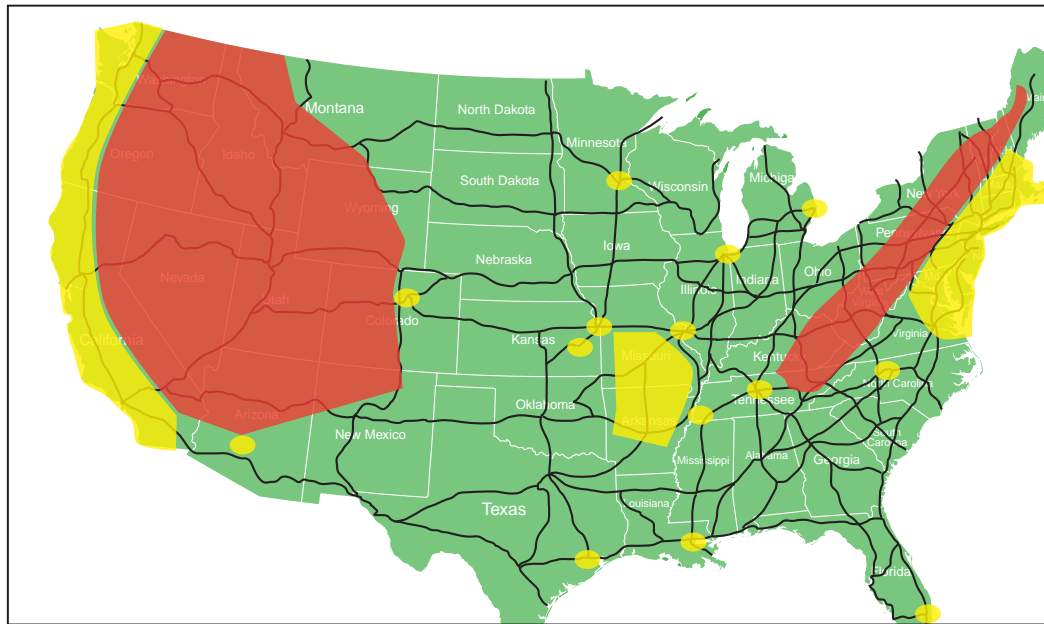
Are you touching the brakes once every 60 miles (interstate driving) or is the vehicle constantly subjected to stop-and-go driving (refuse pick-up)? Stopping frequency is a major influence on a brake's temperature.



## Choosing the Proper Brake Lining (cont'd)

### 3. Road

- Flat roads (Green Zone) generate less demand on your brakes keeping temperatures lower.
- Variable road conditions, such as coast-to-coast operations means that the vehicle will see the complete spectrum of application environments on any given trip. The lining must be able to withstand the extreme situations, yet not be “over-blown” for those times when flat roads and interstate speeds prevail.
- Off road and continuous steep grade environments means brake temperatures will stay elevated for extended periods of time. A lining’s resistance to brake fade is critical in these situations.



**GREEN**Zone



**YELLOW**Zone

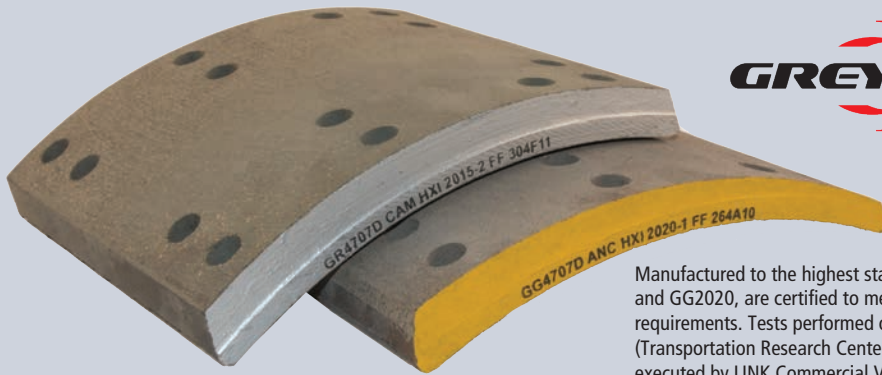


**RED**Zone

### High Performance Key

The key to successfully choosing a brake lining that will be the safest choice, maximize stopping ability and provide the best wear characteristics is to take a critical view of the “application environment” of the vehicle – Load, Road and Frequency – and choose a lining that is well suited to meet these unique demands. All 3 elements must be considered and all three are equally as important as the other. For instance, if you make a choice solely based on load, by discounting the effects of braking frequency, it is possible to inadvertently “under-brake” the vehicle which could lead to increased stopping distances, excessive brake fade and below average wear. Likewise, it would be counter-productive to choose a high temperature lining for an application where temperatures never exceed 350°.

# RSD COMPLETE FLEET SOLUTIONS



Manufactured to the highest standards, Haldex GR2015 and GG2020, are certified to meet or exceed RSD system requirements. Tests performed on official track at TRC (Transportation Research Center Inc.); field exercise executed by LINK Commercial Vehicle Testing.

Fleets today are under intense pressure to reduce costs. Simplifying inventory and improving product life cycles are two key ways they can achieve this. In most cases, using the same friction material on both the tractor and trailer helps aid in this process. However, this common sense practice was made cost prohibitive. RSD formulations being sold in the market today have a much higher acquisition cost. This, accompanied with the abrasive nature of many RSD friction materials, generates high wear characteristics which reduce the life of all contact parts.

The fact is, adding aggressive raw materials into a brake block mix so it will stop faster is substandard technology and the customer is the one who pays for it.

Formulating friction compounds that meet the demanding requirements of our industry is not easy. GR2015 and GG2020 offer the end user a Complete Fleet RSD friction solution. These materials are designed with both the tractor and trailer in mind. Reasonably priced, GR2015 and GG2020 are high quality legacy products that promote extended life cycles on brake related parts.

**Fleet and truck owners alike now have the answer to a very costly problem.**

Haldex RSD products are available in both New PROSteel™ and Remanufactured Shoes.

[www.haldex.com](http://www.haldex.com)  
+1 800-643-2374 - US  
+1 800-267-9247 - Canada



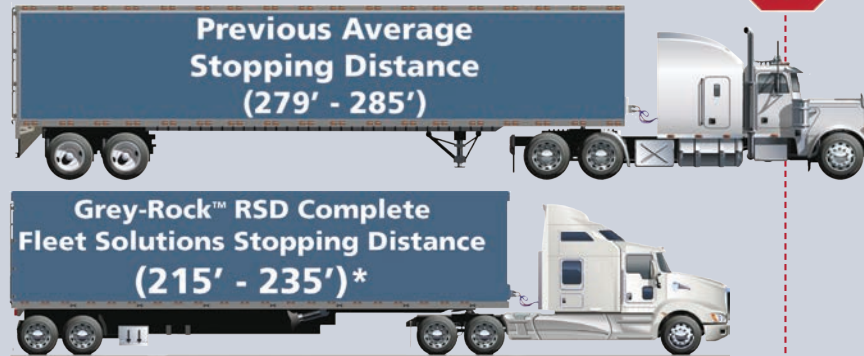


## NHTSA Reduced Stopping Distance Regulations

| Date of Implementation | Vehicle Type    | Tractor GVWR (lbs) | New Stopping Distance - Unloaded | New Stopping Distance - Loaded | Old Stopping Distance - Unloaded | Old Stopping Distance - Loaded |
|------------------------|-----------------|--------------------|----------------------------------|--------------------------------|----------------------------------|--------------------------------|
| August 1, 2011         | 3 Axle Tractor  | Up to 59,600       | 235 ft.                          | 250 ft.                        | 335 ft.                          | 355 ft.                        |
| August 1, 2013         | 3 Axle Tractor  | 59,600- 70,000     | 235 ft.                          | 250 ft.                        | 335 ft.                          | 355 ft.                        |
|                        | 3 Axle Tractor  | Above 70,000       | 235 ft.                          | 310 ft.                        | 335 ft.                          | 355 ft.                        |
|                        | 2 Axle Tractor  | Inclusive          | 235 ft.                          | 250 ft.                        | 335 ft.                          | 355 ft.                        |
|                        | 4+ Axle Tractor | Up to 85,000       | 235 ft.                          | 250 ft.                        | 335 ft.                          | 355 ft.                        |
|                        | 4+ Axle Tractor | Above 85,000       | 235 ft.                          | 310 ft.                        | 335 ft.                          | 355 ft.                        |



## RSD COMPLETE FLEET SOLUTIONS



\*Tested August 2014 at TRC.

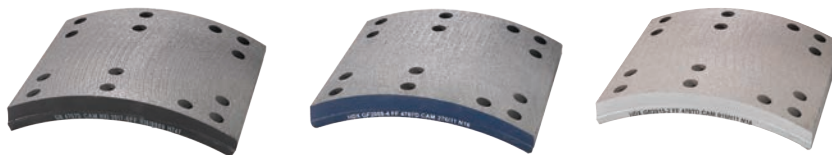
## Haldex Legacy Products GR2015 and GG2020 Exceed New Requirements

- GR2015 and GG2020 have a proven history as the finest 20K & 23K friction materials in the industry.
- Using high quality phenolic resins and base materials enables GR & GG compounds to handle a variety of different applications and conditions.
- Designed for RSD Tractors and Current Trailer Configurations.
- FMVSS 121 Tested at an AL Factor of 165.
- Chase Proven FF coefficient of friction provides low fade, excellent recovery and extended life cycles on brake related parts.

**www.haldex.com**  
**+1 800-643-2374 - US**  
**+1 800-267-9247 - CAN**



## Brake Lining Options - 20,000 lbs.



| Brake Lining        | Haldex GN  | Haldex GF  | Haldex GR<br>RSD Compliant |
|---------------------|------------|------------|----------------------------|
| Lining Rated @      | 20,000 lbs | 20,000 lbs | 20,000 lbs                 |
| Temperature Range   | 625°       | 750°       | 775°                       |
| Resistance to Fade  | Good       | Excellent  | Superior                   |
| Recovery            | Good       | Excellent  | Superior                   |
| Overall Lining Wear | Good       | Very Good  | Excellent                  |

### Brake Lining Performance - Know Your Zone

#### GREENZone

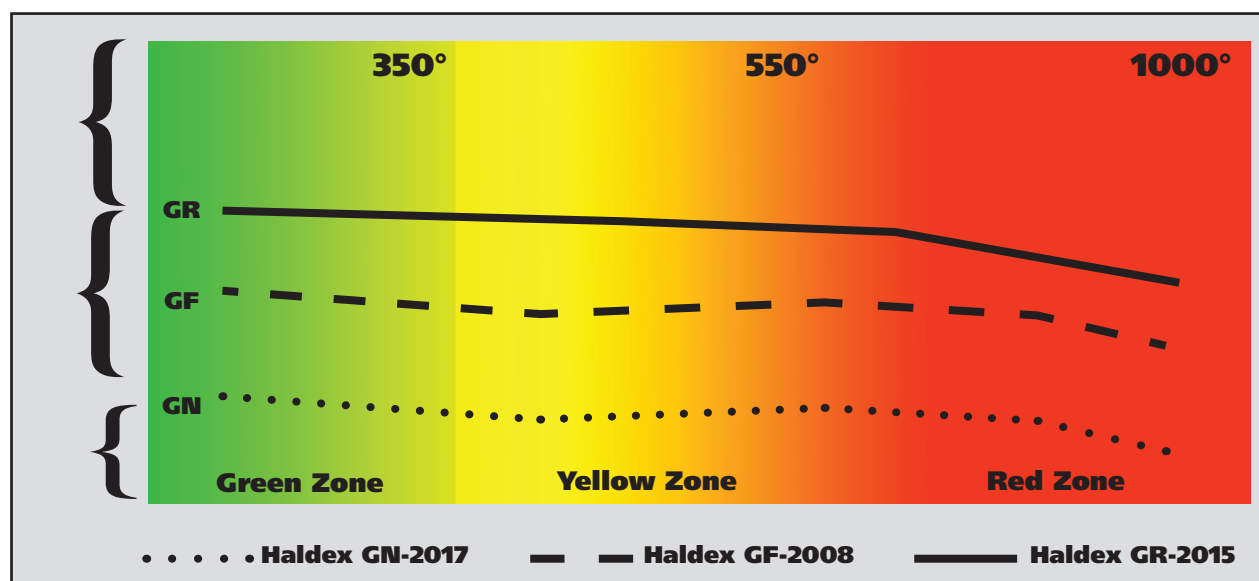
- Lighter loads - flatter roads
- Low stress on the brakes
- Brake temperatures generally stay below 350°

#### YELLOWZone

- Coast to coast operations
- Variable load conditions
- Moderate stress on the brakes
- Brake temperature vary up to 650° due to the variety of terrain and loads encountered

#### REDZone

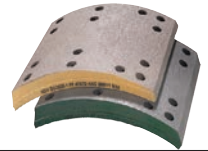
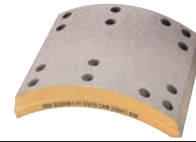
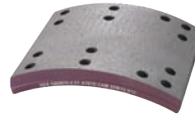
- Extreme loads - extreme stopping
- High stress on the brakes
- Brake temperatures may approach 1000° due to the extreme conditions and variability of the application environment



Brake linings are not created equal. CARQUEST has a complete offering of brake lining options so you can make the best choice for your unique application.

The chart above depicts overall performance of the CARQUEST brake lining options at a variety of temperature ranges to help simplify the process of choosing the right lining for your application.

## Brake Lining Options - 23,000 lbs.



| Brake Lining    | CARQUEST CB | Haldex GD  | Haldex GG RSD Compliant | Haldex GC  |
|-----------------|-------------|------------|-------------------------|------------|
| Lining Rated @  | 23,000 lbs  | 23,000 lbs | 23,000 lbs              | 23,000 lbs |
| Temperature     | 700°        | 700°       | 975°                    | 1000°      |
| Fade Resistance | Excellent   | Excellent  | Superior                | Superior   |
| Recovery        | Excellent   | Excellent  | Superior                | Superior   |
| Lining Wear     | Excellent   | Excellent  | Superior                | Superior   |

### Brake Lining Performance - Know Your Zone

#### GREEN Zone

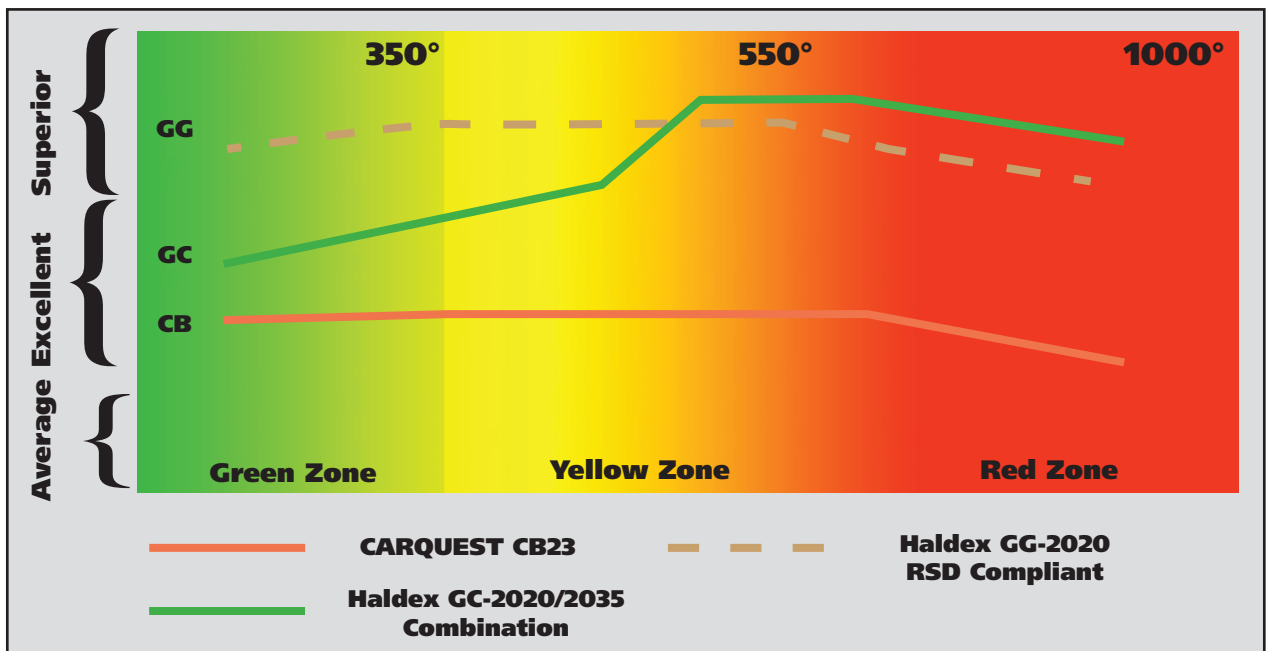
- Lighter loads - flatter roads
- Low stress on the brakes
- Brake temperatures generally stay below 350°

#### YELLOW Zone

- Coast to coast operations
- Variable load conditions
- Moderate stress on the brakes
- Brake temperature vary up to 650° due to the variety of terrain and loads encountered

#### RED Zone

- Extreme loads - extreme stopping
- High stress on the brakes
- Brake temperatures may approach 1000° due to the extreme conditions and variability of the application environment



Brake linings are not created equal. CARQUEST has a complete offering of brake lining options so you can make the best choice for your unique application.

The chart above depicts overall performance of the CARQUEST brake lining options at a variety of temperature ranges to help simplify the process of choosing the right lining for your application.

## Brake Lining Options - 25,000 lbs. and 26,000 lbs.



| Brake Lining        | Haldex GP  | Haldex GM  |
|---------------------|------------|------------|
| Lining Rated @      | 26,000 lbs | 25,000 lbs |
| Temperature Range   | 950°       | 1000°      |
| Resistance to Fade  | Superior   | Superior   |
| Recovery            | Excellent  | Excellent  |
| Overall Lining Wear | Superior   | Very Good  |

### Brake Lining Performance - Know Your Zone

#### GREENZone

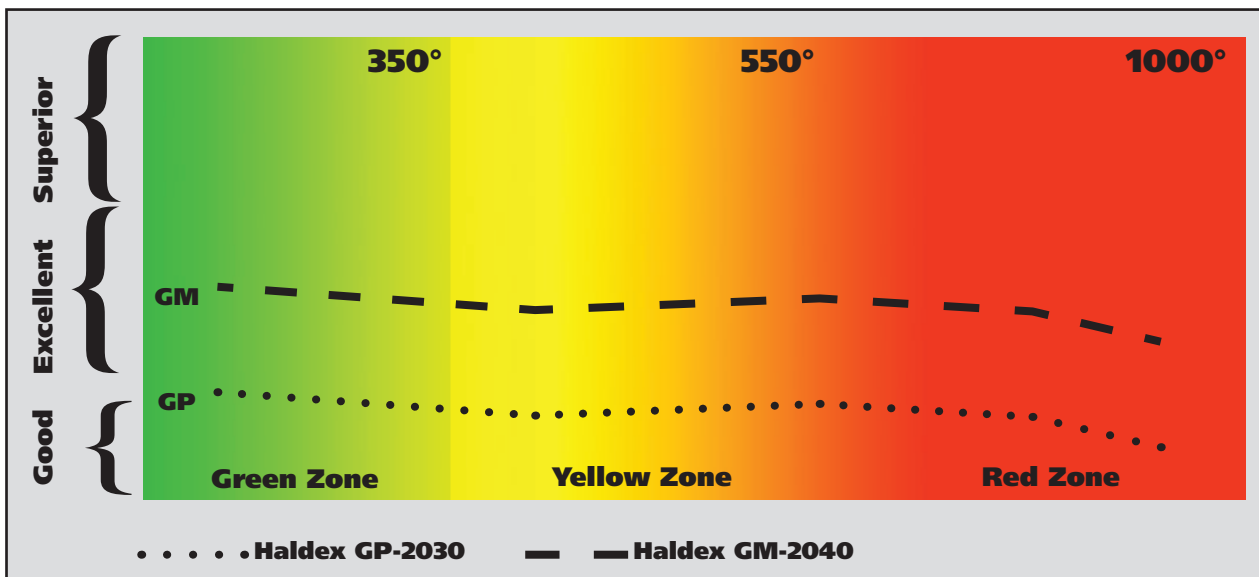
- Lighter loads - flatter roads
- Low stress on the brakes
- Brake temperatures generally stay below 350°

#### YELLOWZone

- Coast to coast operations
- Variable load conditions
- Moderate stress on the brakes
- Brake temperature vary up to 650° due to the variety of terrain and loads encountered

#### REDZone

- Extreme loads - extreme stopping
- High stress on the brakes
- Brake temperatures may approach 1000° due to the extreme conditions and variability of the application environment



Brake linings are not created equal. CARQUEST has a complete offering of brake lining options so you can make the best choice for your unique application.

The chart above depicts overall performance of the CARQUEST brake lining options at a variety of temperature ranges to help simplify the process of choosing the right lining for your application.

## Friction



# BrakeZone

## Haldex brake lining application survey

This application guide is designed to be a simple but comprehensive tool to assist you in determining the proper range of Grey-Rock™ brake linings best suited for your equipment, based on your fleet's specific operating conditions. To use this guide, first complete the quick, three-question survey below.

Choose only one answer per question to describe your fleet's operating conditions, and record that score in the appropriate box. Once you have completed the survey, total the values of your answers. This total is your "application score". Refer to the charts on the back of this survey to determine the recommended Grey-Rock™ brake linings for your fleet, based on your unique application score.



### 1 Which best describes how this vehicle is normally loaded in an average day of operation?

- |   |   |
|---|---|
| <input type="checkbox"/> Normally runs below axle rating .....                          | 2 |
| <input type="checkbox"/> Normally runs about axle rating .....                          | 3 |
| <input type="checkbox"/> Normally runs above axle rating .....                          | 4 |
| <input type="checkbox"/> The vehicle is used in refuse/mixer/dump type operations ..... | 5 |

Application  
score

Record  
scores  
below

### 2 Which best describes the terrain this vehicle covers in an average day of operation?

- |  |   |
|--|---|
| <input type="checkbox"/> Flat or mostly (90%) flat with some rolling hills .....           | 1 |
| <input type="checkbox"/> Rolling hills encountered frequently with some steep grades ..... | 2 |
| <input type="checkbox"/> Steep grades abundant or significant mountainous terrain .....    | 4 |

+

### 3 Which best describes this vehicle's travel patterns during an average day of operation?

- |   |          |
|---|----------|
| <input type="checkbox"/> Nearly all (85%) interstate travel .....                 | .5 (1/2) |
| <input type="checkbox"/> Mix of interstate, city, two-lane blacktop .....         | 2        |
| <input type="checkbox"/> All urban .....  | 3        |
| <input type="checkbox"/> This vehicle is a school bus .....                       | 3        |
| <input type="checkbox"/> This vehicle is used in mixer/dump type operations ..... | 3        |
| <input type="checkbox"/> This vehicle is used in refuse type operations .....     | 6        |

+

=

### 4 Total the three scores above for your own application score:

Refer to the application charts on the back for your fleet's recommended Haldex brake lining options.

## BrakeZone

### Haldex brake lining application survey



1. Calculate your application score with the BrakeZone application survey on the reverse side.
2. Locate your application score on the appropriate lining options charts below.
3. Listed to the right of your score will be the Grey-Rock™ brake lining options that will put you in your BrakeZone – exceptional performance and lower life cycle costs.
4. Contact your Haldex distributor to order premium-quality brake shoes with the Grey-Rock™ brake lining indicated by your score.

| Haldex 20k axle brake linings |      |    |    |          |
|-------------------------------|------|----|----|----------|
| Score                         | HV77 | GN | GF | GR (RSD) |
| 3                             |      |    |    |          |
| 3.5                           |      |    |    |          |
| 4.5                           |      |    |    |          |
| 5                             |      |    |    |          |
| 5.5                           |      |    |    |          |
| 6                             |      |    |    |          |
| 6.5                           |      |    |    |          |
| 7                             |      |    |    |          |
| 7.5                           |      |    |    |          |
| 8                             |      |    |    |          |
| 8.5                           |      |    |    |          |
| 9                             |      |    |    |          |
| 9.5                           |      |    |    |          |
| 10                            |      |    |    |          |
| 11                            |      |    |    |          |
| 12                            |      |    |    |          |
| 13                            |      |    |    |          |
| 14                            |      |    |    |          |
| 15                            |      |    |    |          |

| Haldex 23k axle brake linings |      |    |          |    |    |
|-------------------------------|------|----|----------|----|----|
| Score                         | HV88 | GD | GG (RSD) | GC | GZ |
| 3                             |      |    |          |    |    |
| 3.5                           |      |    |          |    |    |
| 4.5                           |      |    |          |    |    |
| 5                             |      |    |          |    |    |
| 5.5                           |      |    |          |    |    |
| 6                             |      |    |          |    |    |
| 6.5                           |      |    |          |    |    |
| 7                             |      |    |          |    |    |
| 7.5                           |      |    |          |    |    |
| 8                             |      |    |          |    |    |
| 8.5                           |      |    |          |    |    |
| 9                             |      |    |          |    |    |
| 9.5                           |      |    |          |    |    |
| 10                            |      |    |          |    |    |
| 11                            |      |    |          |    |    |
| 12                            |      |    |          |    |    |
| 13                            |      |    |          |    |    |
| 14                            |      |    |          |    |    |
| 15                            |      |    |          |    |    |

| Haldex 25k 26k |    |    |
|----------------|----|----|
| Score          | GM | GP |
| 3.5            |    |    |
| 4.5            |    |    |
| 5              |    |    |
| 5.5            |    |    |
| 6              |    |    |
| 6.5            |    |    |
| 7              |    |    |
| 7.5            |    |    |
| 8              |    |    |
| 8.5            |    |    |
| 9              |    |    |
| 9.5            |    |    |
| 10             |    |    |
| 11             |    |    |
| 12             |    |    |
| 13             |    |    |
| 14             |    |    |
| 15             |    |    |

#### Economy Performance

For fleets that consider "price" the primary factor in brake lining selection criteria.

#### Good Performance

Very good stopping power. Good brake life, handles normal temperatures and load variability for this type of application.

#### Better Performance

Excellent stopping power, superior brake life. Handles high operating temperatures and load variability with ease for this type of application.

#### Best Performance

Includes all the benefits of better performance products plus significant gains in lowering life cycle costs by extending lining life to its maximum. Highly compatible with brake drums for these applications – lowest total life cycle costs.

**RSD** CERTIFIED GG 2020 • GR 2015

Contact your Haldex sales professional.

United States 816-891-2470  
Canada 519-621-6722  
Mexico 52-81-81569500

For additional contact information or to learn more about Haldex, please visit [haldex.com](http://haldex.com)

LF20613  
US Rev. 1/18 5M ALP  
Printed in the USA



# PROSteel™



**The New Haldex Steel Shoe Product Offering  
is like nothing you've seen before.....**

- Made from virgin steel (not recycled) for consistent structural integrity.
- Manufactured in a Haldex approved ISO/TS16949 certified facility to insure quality control and traceability.
- Heat treated cam and anchor ends to provide longer life and minimize wear.
- Seven stitch weld for maximum flexural strength.
- No table weld indentations to trap moisture and promote rust.
- Powder coat finish for superior wear.
- Surface coating surpasses 1000 hours in salt spray test.
- Made to Haldex demanding specifications.
- Certified by the Haldex name stamp.

## Haldex Says No To Recoining

Many reliners today practice a process called recoining. They use a large press to try and salvage a damaged core. The theory is, it will reduce the amount of scrap for the reliner. Haldex does not believe in this method. Rust damages the shoe table and tolerances become distorted from the stress of application. This results in cracked lining and premature failure of the product. Haldex does not pass scrap back to the customer, we replace it with new PROSteel™ shoes, AT NO ADDITIONAL CHARGE!

## Damaged Shoe Replacement

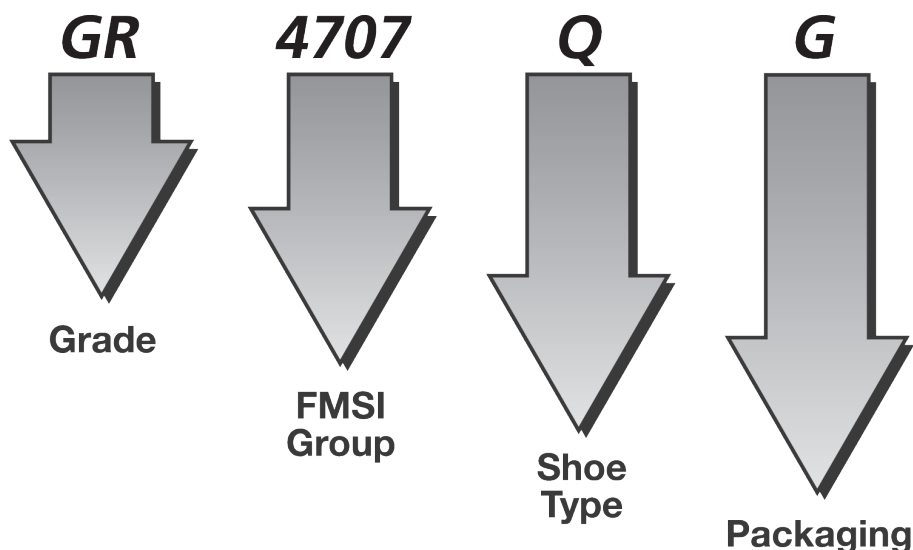
Haldex remanufactured shoes are black, but you may see new blue PROSteel™ shoes included in your shipments. This is evidence that Haldex scrapped an "out of tolerance" core and replaced it with NEW PROSteel™. Dealing with scrap cores is a fact of life in the reline business. There is no "low cost fix". Damaged shoes cause problems and should be replaced with new steel. Every time a Haldex customer receives new blue steel with their remanufactured shoe order, it is a solid reminder of the value of doing business with a quality manufacturer.

**Haldex RSD Compliant Materials  
Available Now. See Complete  
Details on Reverse Side.**



# Brake Shoe Numbering System

## Part Number GN4515QG



### Grades of Friction Available

|    |                                 |
|----|---------------------------------|
| GP | 26,000 lb. Haldex               |
| GM | 25,000 lb. Haldex Semi-Metallic |
| GZ | 23,000 lb. Haldex Semi-Metallic |
| GC | 23,000 lb. Haldex Combination   |
| GW | 23,000 lb. Haldex Wedge Brake   |
| GG | 23,000 lb. Haldex Premium RSD   |
| GD | 23,000 lb. Haldex Premium       |
| CB | 23,000 lb. CARQUEST Premium     |
| GR | 20,000 lb. Haldex Premium RSD   |
| GF | 20,000 lb. Haldex Premium       |
| GN | 20,000 lb. Haldex Standard      |

### FMSI Groups

|      |  |
|------|--|
| 1308 | Eaton E or Meritor Q 15" x 4" Steer Axle                             |
| 1443 | Eaton ES 15" x 4" Steer Axle   |
| 4311 | Eaton 16 ½" x 7" Truck or Trailer Axle                               |
| 4471 | Meritor Tractor "P" Series 18" x 7"                                  |
| 4515 | Meritor Q 16 ½" x 7" Truck or Trailer Axle and Fruehauf Trailer Axle |
| 4707 | Meritor Q-Plus 16 ½" x 7" Truck or Trailer Axle                      |
| 4709 | Eaton "ES" or "ES2" 16 ½" x 7" Truck or Trailer Axle                 |
| 4711 | Meritor Q 16 ½" x 8 5/8" Truck & Trailer Axle                        |
| 4715 | Meritor Q-Plus 16 ½" x 6"  |
| 4718 | Meritor Q-Plus 16 ½" x 8"  |
| 4719 | Eaton "ES2" 16 ½" x 5" Steer Axle                                    |
| 4720 | Meritor Q 16 ½" x 5"   |
| 4725 | Eaton "ES" or "ES2" 16 ½" x 6" Steer Axle                            |
| 4726 | Eaton "ES" or "ES2" 16 ½" x 8 5/8" Truck Axle                        |

### Shoe Types

|     |                                |
|-----|--------------------------------|
| E   | Eaton E Standard               |
| ES2 | Eaton ES 2nd Generation        |
| Q   | Meritor Quick Change or Q-Plus |
| X3  | Fruehauf Trailer XEM3          |

### Packaging

|   |  |
|---|--|
| G | Gripper Kit, 2 relined shoes boxed with brake hardware |
| J | Gripper Kit, 2 new shoes boxed with brake hardware     |
| N | New Shoe (single shoe)                                 |
| R | Reline Shoe (single shoe)                              |

**Note:** Only the most popular aftermarket FMSI Groups and Shoe Types are listed here. There are many more options. (See HFF Catalog).



# 15" Brakes

Most Popular Applications



# 15" Drum Diameter - Meritor/Rockwell Style

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR  | CARQUEST CB | Haldex GD  | Haldex GG  | Haldex GC  |
|-----------------|------------|------------|------------|-------------|------------|------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs | 23,000 lbs  | 23,000 lbs | 23,000 lbs | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°       | 700°        | 700°       | 975°       | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent  | Excellent   | Excellent  | Superior   | Superior   |
| Recovery        | Average    | Excellent  | Excellent  | Excellent   | Excellent  | Superior   | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent  | Excellent   | Excellent  | Superior   | Superior   |

## 1308Q

15" x 4" Rockwell Q - single rail early design

Table further from end (Q shown)



Long Neck

Single Rail



### Hardware Kit

Haldex: CQ69001  
Euclid: E3869  
BWP: MK79  
WA: WAE3869

|                     |   |          |          |          |          |          |          |
|---------------------|---|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF1308QR | GR1308QR | -        | GD1308QR | GG1308QR | GC1308QR |
| Relined Gripper Kit | - | GF1308QG | GR1308QG | CB1308QG | GD1308QG | GG1308QG | -        |
| New Shoe            | - | -        | -        | -        | -        | -        | GC1308QN |
| New Gripper Kit     | - | -        | -        | -        | -        | -        | -        |

## 1308Q2

15" x 4" Rockwell Q - single rail late design  
- most popular - do not mix with early design

Table near cam end (Q2 shown)



Short Neck

Single Rail



### Hardware Kit

Haldex: CQ69001  
Euclid: E3869  
BWP: MK79  
WA: WAE3869

|                     |   |           |           |           |           |           |           |
|---------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Relined Shoe        | - | GF1308Q2R | GR1308Q2R | -         | GD1308Q2R | GG1308Q2R | GC1308Q2R |
| Relined Gripper Kit | - | GF1308Q2G | GR1308Q2G | CB1308Q2G | GD1308Q2G | GG1308Q2G | GC1308Q2G |
| New Shoe            | - | GF1308Q2N | GR1308Q2N | -         | GD1308Q2N | GG1308Q2N | GC1308Q2N |
| New Gripper Kit     | - | GF1308Q2J | GR1308Q2J | -         | GD1308Q2J | GG1308Q2J | GC1308Q2J |

## 4702Q

15" x 4" Rockwell Q+ dual rail shoe

Dual Rail



### Hardware Kit

Haldex: CQ65642  
Euclid: E9064  
BWP: MK98  
WA: WAE9064

|                     |   |           |          |          |          |          |          |
|---------------------|---|-----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF4702Q2R | GR4702QR | -        | GD4702QR | GG4702QR | GC4702QR |
| Relined Gripper Kit | - | GF4702Q2G | GR4702QG | CB4702QG | GD4702QG | GG4702QG | GC4702QG |
| New Shoe            | - | GF4702Q2N | GR4702QN | -        | GD4702QN | GG4702QN | GC4702QN |
| New Gripper Kit     | - | GF4702Q2J | GR4702QJ | -        | GD4702QJ | GG4702QJ | GC4702QJ |



# 15" Drum Diameter - Eaton Style

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR  | CARQUEST CB | Haldex GD  | Haldex GG  | Haldex GC  |
|-----------------|------------|------------|------------|-------------|------------|------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs | 23,000 lbs  | 23,000 lbs | 23,000 lbs | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°       | 700°        | 700°       | 975°       | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent  | Excellent   | Excellent  | Superior   | Superior   |
| Recovery        | Average    | Excellent  | Excellent  | Excellent   | Excellent  | Superior   | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent  | Excellent   | Excellent  | Superior   | Superior   |

## 1308E

15" x 4" Eaton Single anchor pin-center to center on rivets is 2-3/4"



### Hardware Kit

Haldex: CQ66917  
Euclid: E5139  
BWP: MK77  
WA: WAE5139

|                     |   |          |          |          |          |          |          |
|---------------------|---|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF1308ER | GR1308ER | -        | GD1308ER | GG1308ER | GC1308ER |
| Relined Gripper Kit | - | GF1308EG | GR1308EG | CB1308EG | GD1308EG | GG1308EG | GC1308EG |
| New Shoe            | - | GF1308EN | GR1308EN | -        | GD1308EN | GG1308EN | GC1308EN |
| New Gripper Kit     | - | GF1308EJ | GR1308EJ | -        | GD1308EJ | GG1308EJ | GC1308EJ |

## 1443E

15" x 4" Eaton ES Single anchor pin-center to center on rivets is 2"



### Hardware Kit

Haldex: CQ66917  
Euclid: E5139  
BWP: MK77  
WA: WAE5139

|                     |   |          |          |          |          |          |          |
|---------------------|---|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF1443ER | GR1443ER | -        | GD1443ER | GG1443ER | GC1443ER |
| Relined Gripper Kit | - | GF1443EG | GR1443EG | CB1443EG | GD1443EG | GG1443EG | GC1443EG |
| New Shoe            | - | GF1443EN | GR1443EN | -        | GD1443EN | GG1443EN | GC1443EN |
| New Gripper Kit     | - | GF1443EJ | GR1443EJ | -        | GD1443EJ | GG1443EJ | GC1443EJ |



## 15" Drum Diameter - Extended Application Coverage

| Base Shoe Number | Shoe Size  | Description  |
|------------------|------------|--|
| 1245235          | 15 X 3     | Wagner Brake No Hole                                       |
| 1245321          | 15 X 3     | Wagner Brake No Hole                                       |
| 1279425          | 15 X 3 1/2 | Wagner Brake   |
| 1279455          | 15 X 3 1/2 | Wagner Brake   |
| 1280322          | 15 X 3 1/2 | Wagner With Hole   |
| 1280463          | 15 X 3 1/2 | Wagner Brake   |
| 1307T            | 15 X 3 1/2 | Arvin Meritor Front Axle Brake Pin Style                   |
| 1307W            | 15 X 3 1/2 | Arvin Meritor Front Axle Brake Pin Style                   |
| 4561B            | 15 x 3 1/2 | Bendix Wedge Brake   |
| 4562BW           | 15 x 3 1/2 | Bendix Wedge Brake   |
| 4562RW           | 15 x 3 1/2 | Arvin Meritor Wedge Brake                                  |
| 1308426          | 15 X 4     | Wagner Front Axle Brake                                    |
| 1308458          | 15 X 4     | Wagner Front Axle Brake                                    |
| 1308512          | 15 X 4     | Wagner Front Axle Brake                                    |
| 1308E            | 15 X 4     | Eaton Front Axle Single Pin                                |
| 1308Q2           | 15 X 4     | Arvin Meritor Front Axle Brake Quick Change Style          |
| 1308Q            | 15 X 4     | Arvin Meritor Front Axle Brake Quick Change Style          |
| 1308T            | 15 X 4     | Arvin Meritor Front Axle Brake Pin Style                   |
| 1308W            | 15 X 4     | Arvin Meritor RSA Wedge Brake                              |
| 1443E            | 15 X 4     | Dana Spicer/Eaton Front Axle Brake Extended Service Design |
| 2032402          | 15 X 4     | Bendix   |
| 203288           | 15 X 4     | Bendix   |
| 2039299          | 15 X 4     | Bendix   |
| 4693B            | 15 X 4     | Bendix Brazilian Brake for Ford Cargo Series               |
| 4693D            | 15 X 4     | Dana Spicer/Eaton HA Series                                |
| 4702Q            | 15 X 4     | Arvin Meritor Q+ Dual Rail Shoe                            |
| 4729DQ           | 15 X 4     | Dana Spicer/Eaton Heavy Axle                               |
| 4647401          | 15 X 4     | Kelsey Hayes   |
| 4646400          | 15 X 5     | Kelsey Hayes   |
| 4703Q            | 15 X 5     | Arvin Meritor Q+ Dual Rail Shoe                            |
| 4594T            | 15 x 6     | Wagner Brake   |
| 4704Q            | 15 x 6     | Arvin Meritor Q+ Dual Rail Shoe                            |
| 4716ES           | 15 x 6     | Dana Spicer/Eaton Reduced Envelope                         |
| 4595T            | 15 x 7     | Wagner Brake   |
| 4710Q            | 15 X 8 5/8 | Arvin Meritor Q+ Dual Rail Shoe                            |
| 4710Q2           | 15 X 8 5/8 | Arvin Meritor Q+ Dual Rail Shoe                            |
| 4717ES           | 15 x 8-5/8 | Dana Spicer/Eaton Reduced Envelope                         |

Contact your local Haldex Friction Center for additional information on these extended applications. A complete listing of Haldex Friction Centers can be found on Page 33.



# 16 ½ " Brakes

Most Popular Applications



## 16 1/2" Drum Diameter - Meritor/Rockwell Style

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR ♦ | CARQUEST CB | Haldex GD  | Haldex GG ♦ | Haldex GC  |
|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs  | 23,000 lbs  | 23,000 lbs | 23,000 lbs  | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°        | 700°        | 700°       | 975°        | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Recovery        | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |

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### 4515Q - Meritor Q

16.5" x 7" Arvin Meritor "Q" quick change design



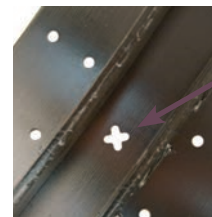
#### Hardware Kit

Haldex: CQ66867  
Euclid: E2769SHD  
BWP: MK39  
WA: WA2769SHD

|                     |          |          |          |          |          |          |          |
|---------------------|----------|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | GN4515QR | GF4515QR | GR4515QR | -        | GD4515QR | GG4515QR | GC4515QR |
| Relined Gripper Kit | GN4515QG | GF4515QG | GR4515QG | CB4515QG | GD4515QG | GG4515QG | GC4515QG |
| New Shoe            | GN4515QN | GF4515QN | GR4515QN | -        | GD4515QN | GG4515QN | GC4515QN |
| New Gripper Kit     | GN4515QJ | GF4515QJ | -        | -        | GD4515QJ | GG4515QJ | GC4515QJ |

### 4707Q+ - Meritor Q+

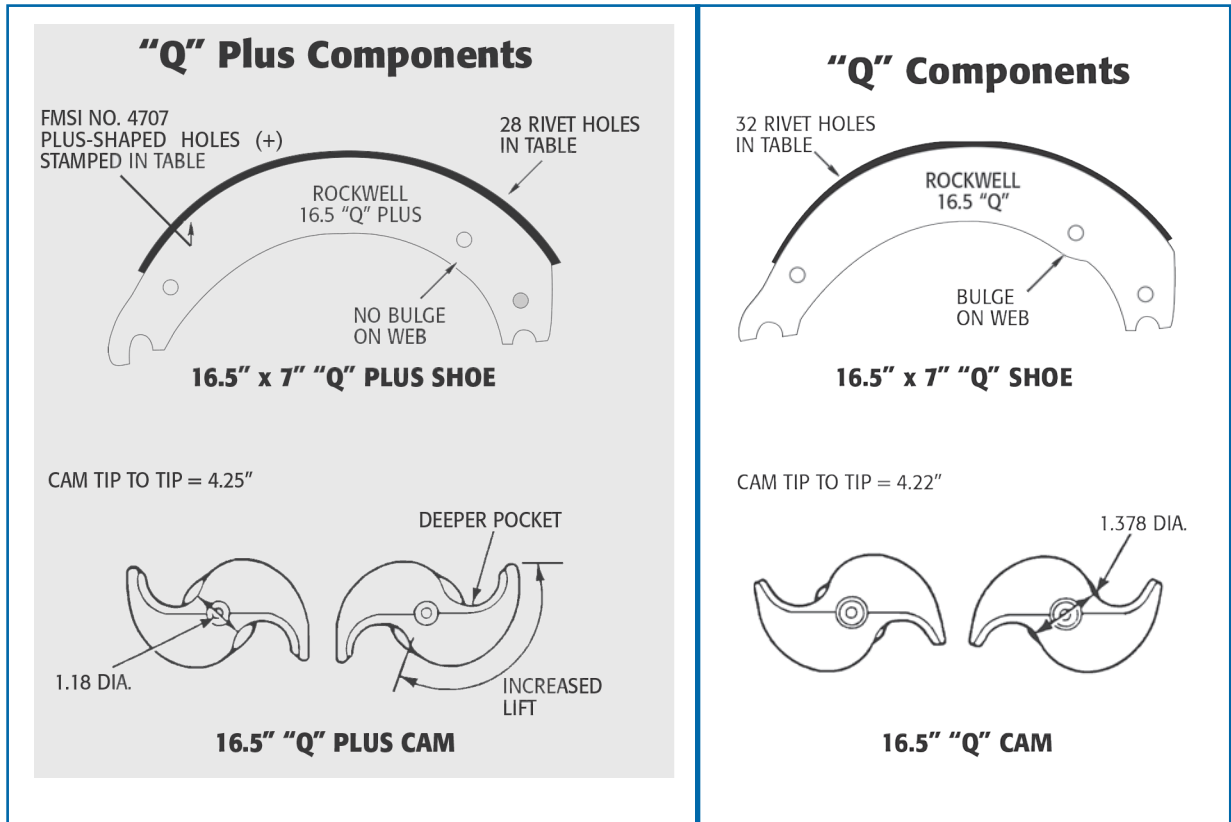
16.5" x 7" Arvin Meritor "Q" extended service quick change design



"Plus" typically stamped in table (Q Plus)

|                     |          |          |          |          |          |          |          |
|---------------------|----------|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | GN4707QR | GF4707QR | GR4707QR | -        | GD4707QR | GG4707QR | GC4707QR |
| Relined Gripper Kit | GN4707QG | GF4707QG | GR4707QG | CB4707QG | GD4707QG | GG4707QG | GC4707QG |
| New Shoe            | GN4707QN | GF4707QN | GR4707QN | -        | GD4707QN | GG4707QN | GC4707QN |
| New Gripper Kit     | GN4707QJ | GF4707QJ | -        | -        | GD4707QJ | GG4707QJ | GC4707QJ |

See additional Meritor Q vs. Q+ Identification Tips on following page



All "Q" Plus Brakes have the following features that are different from "Q" Brakes:

- Thicker Linings
- High Lift Camshaft or "Q" Plus Camshaft

16.5" "Q" style brakes manufactured before 1994 can be retrofitted to the "Q" Plus style by changing the camshaft. Since 1994, "Q" Plus camshaft design has been standard in all 16.5" "Q" Series Brakes. In this case, only the shoe/lining assembly must be changed in order to go from the "Q" to the "Q" Plus Series Brake. In summary, as long as the 16.5" brake assembly has a "Q" Plus type (High Rise) camshaft, you can use either the "Q" or "Q" Plus Brake Shoe.

## 16½" Drum Diameter - Meritor/Rockwell Style (cont'd)

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR ♦ | CARQUEST CB | Haldex GD  | Haldex GG ♦ | Haldex GC  |
|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs  | 23,000 lbs  | 23,000 lbs | 23,000 lbs  | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°        | 700°        | 700°       | 975°        | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Recovery        | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |

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#### 4720Q+ - Meritor Q+

16.5" x 5" Arvin Meritor "Q+" extended service quick change design

|                     |   |          |          |          |          |          |   |
|---------------------|---|----------|----------|----------|----------|----------|---|
| Relined Shoe        | - | GF4720QR | GR4720QR | -        | GD4720QR | GG4720QR | - |
| Relined Gripper Kit | - | GF4720QG | GR4720QG | CB4720QG | GD4720QG | GG4720QG | - |
| New Shoe            | - | GF4720QN | GR4720QN | -        | GD4720QN | GG4720QN | - |
| New Gripper Kit     | - | GF4720QJ | GR4720QJ | -        | GD4720QJ | GG4720QJ | - |



#### 4715Q+ - Meritor Q+

16.5" x 6" Arvin Meritor "Q+" extended service quick change design

|                     |   |          |          |          |          |          |          |
|---------------------|---|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF4715QR | GR4715QR | -        | GD4715QR | GG4715QR | GC4715QR |
| Relined Gripper Kit | - | GF4715QG | GR4715QG | CB4715QG | GD4715QG | GG4715QG | GC4715QG |
| New Shoe            | - | GF4715QN | GR4715QN | -        | GD4715QN | GG4715QN | GC4715QN |
| New Gripper Kit     | - | GF4715QJ | GR4715QJ | -        | GD4715QJ | GG4715QJ | GC4715QJ |



#### 4718Q+ - Meritor Q+

16.5" x 8" Arvin Meritor "Q+" extended service quick change design

|                     |   |          |          |          |          |          |          |
|---------------------|---|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF4718QR | GR4718QR | -        | GD4718QR | GG4718QR | GC4718QR |
| Relined Gripper Kit | - | GF4718QG | GR4718QG | CB4718QG | GD4718QG | GG4718QG | GC4718QG |
| New Shoe            | - | GF4718QN | GR4718QN | -        | GD4718QN | GG4718QN | GC4718QN |
| New Gripper Kit     | - | GF4718QJ | GR4718QJ | -        | GD4718QJ | GG4718QJ | GC4718QJ |



#### 4711Q+ - Meritor Q+

16.5" x 8 5/8" Arvin Meritor "Q+" extended service quick change design

|                     |   |          |          |          |          |          |          |
|---------------------|---|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | - | GF4711QR | GR4711QR | -        | GD4711QR | GG4711QR | GC4711QR |
| Relined Gripper Kit | - | GF4711QG | GR4711QG | CB4711QG | GD4711QG | GG4711QG | GC4711QG |
| New Shoe            | - | GF4711QN | GR4711QN | -        | GD4711QN | GG4711QN | GC4711QN |
| New Gripper Kit     | - | GF4711QJ | GR4711QJ | -        | GD4711QJ | GG4711QJ | GC4711QJ |

### Hardware Kits for all formulas shown on this page:

Haldex: CQ66867 (4715Q+ and 4720Q+ use CQ66887)

Euclid: E2769SHD

BWP: MK39

WA: WA2769SHD



# 16½" Drum Diameter - Meritor/Rockwell Style, Fruehauf Style

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR ♦ | CARQUEST CB | Haldex GD  | Haldex GG ♦ | Haldex GC  |
|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs  | 23,000 lbs  | 23,000 lbs | 23,000 lbs  | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°        | 700°        | 700°       | 975°        | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Recovery        | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |

♦ RSD Systems Compliant



## 4515T Pin Style - Meritor/Rockwell

16.5" x 7" Arvin Meritor pin

### Hardware Kit

Haldex: CQ67390  
Euclid: KIT-4HD  
BWP: MK4  
WA: WA085053

|                           |          |          |          |   |          |           |           |
|---------------------------|----------|----------|----------|---|----------|-----------|-----------|
| Relined Shoe              | GN4515TR | GF4515TR | GR4515TR | - | GD4515TR | GG4515TR  | GC4515TR  |
| Relined Gripper Kit       | -        | GF4515TG | GR4515TG | - | GD4515TG | GG4515TG  | GC4515TG  |
| New Shoe                  | GN4515TN | -        | -        | - | -        | GG4515TN  | -         |
| New Gripper Kit           | -        | -        | -        | - | -        | GG4515TJ  | -         |
| Relined Shoe (Cast)       | -        | -        | -        | - | -        | GG4515TCR | GC4515TCR |
| Relined Gripper Kit(Cast) | -        | -        | -        | - | -        | GG4515TCG | GC4515TCG |
| New Shoe (Cast)           | -        | -        | -        | - | -        | GG4515TCN | -         |

## 4515X3 - Fruehauf Style

16.5" x 7" Fruehauf XEM3



### Hardware Kit

Haldex: CQ66914  
Euclid: E3710SHD  
BWP: MK42  
WA: WA3710SHD

|                     |           |           |           |   |           |           |           |
|---------------------|-----------|-----------|-----------|---|-----------|-----------|-----------|
| Relined Shoe        | GN4515X3R | GF4515X3R | GR4515X3R | - | GD4515X3R | GG4515X3R | GC4515X3R |
| Relined Gripper Kit | GN4515X3G | GF4515X3G | GR4515X3G | - | GD4515X3G | GG4515X3G | GC4515X3G |
| New Shoe            | GN4515X3N | GF4515X3N | GR4515X3N | - | GD4515X3N | GG4515X3N | GC4515X3N |
| New Gripper Kit     | GN4515X3J | GF4515X3J | -         | - | GD4515X3J | GG4515X3J | GC4515X3J |

## 16½" Drum Diameter - Eaton Style

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR ♦ | CARQUEST CB | Haldex GD  | Haldex GG ♦ | Haldex GC  |
|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs  | 23,000 lbs  | 23,000 lbs | 23,000 lbs  | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°        | 700°        | 700°       | 975°        | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Recovery        | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |

♦ RSD Systems Compliant



No tab version shown

### 4311E "Conventional"

16.5" x 7" Eaton EB Series Low Mount

#### Hardware Kit

Haldex: CQ67319  
 Euclid: E1887AHD  
 BWP: MK10  
 WA: WA1887ASHD

|                     |          |          |          |          |          |          |          |
|---------------------|----------|----------|----------|----------|----------|----------|----------|
| Relined Shoe        | GN4311ER | GF4311ER | GR4311ER | -        | GD4311ER | GG4311ER | GC4311ER |
| Relined Gripper Kit | GN4311EG | GF4311EG | GR4311EG | CB4311EG | GD4311EG | GG4311EG | GC4311EG |
| New Shoe            | GN4311EN | GF4311EN | GR4311EN | -        | GD4311EN | GG4311EN | GC4311EN |
| New Gripper Kit     | GN4311EJ | GF4311EJ | GR4311EJ | -        | GD4311EJ | GG4311EJ | GC4311EJ |

## EATON 16.5" x 7" Conventional Style Shoe

### CONVENTIONAL SHOE



TAB

NO TAB

FMSI LINING 7" 4311

**Eaton 4311**  
**"conventional" style shoes may or may not incorporate tabs as shown.**

The Eaton "ES" and "ESII" Extended Service 16.5" x 7" brake for drive and trailer axles is a completely redesigned brake from the standard single anchor pin type. To change from conventional to "ES" or "ESII" style, new brake shoes, hardware and camshafts are required. If "ES" or "ESII" brakes are changed back to conventional, the "ES" style camshafts can be used with the conventional style shoe and conventional shoe hardware. Even though changeover from the conventional style to the "ES" or "ESII" style is possible, each type of shoe has its own core group. Cores CANNOT be interchanged or upgraded as far as your core account is concerned.

## 16½" Drum Diameter - Eaton Style (cont'd)

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR ♦ | CARQUEST CB | Haldex GD  | Haldex GG ♦ | Haldex GC  |
|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs  | 23,000 lbs  | 23,000 lbs | 23,000 lbs  | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°        | 700°        | 700°       | 975°        | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Recovery        | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |

♦ RSD Systems Compliant

### 4709ESII

16.5" x 7" Eaton Extended Service  
2nd Generation



#### Hardware Kit

Haldex: CQ65477  
Euclid: E10244  
BWP: MK105  
WA: WAE10244

|                     |            |            |            |            |            |            |            |
|---------------------|------------|------------|------------|------------|------------|------------|------------|
| Relined Shoe        | GN4709ES2R | GF4709ES2R | GR4709ES2R | -          | GD4709ES2R | GG4709ES2R | GC4709ES2R |
| Relined Gripper Kit | GN4709ES2G | GF4709ES2G | GR4709ES2G | CB4709ES2G | GD4709ES2G | GG4709ES2G | GC4709ES2G |
| New Shoe            | GN4709ES2N | GF4709ES2N | GR4709ES2N | -          | GD4709ES2N | GG4709ES2N | GC4709ES2N |
| New Gripper Kit     | GN4709ES2J | GF4709ES2J | GR4709ES2J | -          | GD4709ES2J | GG4709ES2J | GC4709ES2J |

### 4709ES

16.5" x 7" Eaton Extended Service  
1st Generation

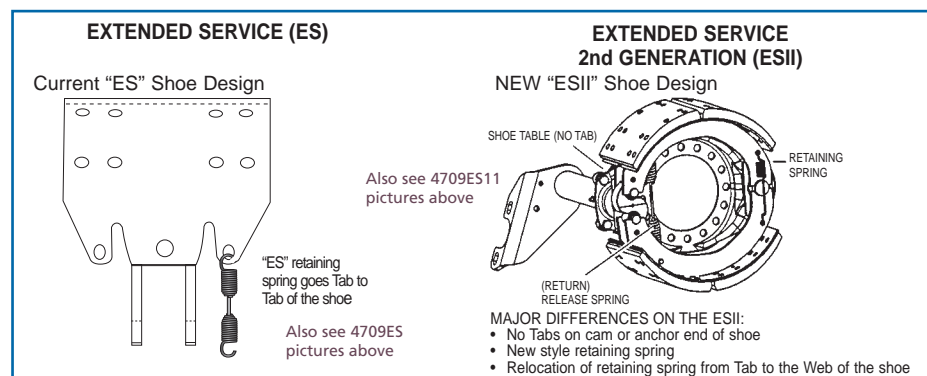


#### Hardware Kit

Haldex: CQ65481  
Euclid: E5481A  
BWP: MK84  
WA: WA5481A

|                     |           |           |           |           |           |           |           |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Relined Shoe        | GN4709ESR | GF4709ESR | GR4709ESR | CB4709ESR | GD4709ESR | GG4709ESR | GC4709ESR |
| Relined Gripper Kit | GN4709ESG | GF4709ESG | GR4709ESG | CB4709ESG | GD4709ESG | GG4709ESG | GC4709ESG |
| New Shoe            | GN4709ESN | GF4709ESN | GR4709ESN | CB4709ESN | GD4709ESN | GG4709ESN | GC4709ESN |
| New Gripper Kit     | GN4709ESJ | GF4709ESJ | GR4709ESJ | -         | GD4709ESJ | GG4709ESJ | GC4709ESJ |

## Eaton ES vs. Eaton ESII Identification Tips



## 16½" Drum Diameter - Eaton Style (cont'd)

| Brake Lining    | Haldex GN  | Haldex GF  | Haldex GR ♦ | CARQUEST CB | Haldex GD  | Haldex GG ♦ | Haldex GC  |
|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|
| Lining Rated @  | 20,000 lbs | 20,000 lbs | 20,000 lbs  | 23,000 lbs  | 23,000 lbs | 23,000 lbs  | 23,000 lbs |
| Temperature     | 625°       | 750°       | 775°        | 700°        | 700°       | 975°        | 1000°      |
| Fade Resistance | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Recovery        | Average    | Excellent  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |
| Lining Wear     | Average    | Very Good  | Excellent   | Excellent   | Excellent  | Superior    | Superior   |

### ♦RSD Systems Compliant



#### 4719ES2

16.5" x 5" Eaton Extended Service  
2nd Generation

#### Hardware Kit

Haldex: CQ65445  
Euclid: E10760  
BWP: MK113  
WA: WAD5038

|                     |   |            |            |   |            |            |            |
|---------------------|---|------------|------------|---|------------|------------|------------|
| Relined Shoe        | - | GF4719ES2R | GR4719ES2R | - | GD4719ES2R | GG4719ES2R | GC4719ES2R |
| Relined Gripper Kit | - | GF4719ES2G | GR4719ES2G | - | GD4719ES2G | GG4719ES2G | GC4719ES2G |
| New Shoe            | - | GF4719ES2N | GR4719ES2N | - | GD4719ES2N | GG4719ES2N | GC4719ES2N |
| New Gripper Kit     | - | GF4719ES2J | -          | - | GD4719ES2J | GG4719ES2J | GC4719ES2J |



#### 4725ES2

16.5" x 6" Eaton Extended Service  
2nd Generation

#### Hardware Kit

Haldex: CQ65445  
Euclid: E10760  
BWP: MK113  
WA: WAD5038

|                     |   |            |            |   |            |            |   |
|---------------------|---|------------|------------|---|------------|------------|---|
| Relined Shoe        | - | GF4725ES2R | GR4725ES2R | - | GD4725ES2R | GG4725ES2R | - |
| Relined Gripper Kit | - | GF4725ES2G | GR4725ES2G | - | GD4725ES2G | GG4725ES2G | - |
| New Shoe            | - | GF4725ES2N | GR4725ES2N | - | GD4725ES2N | GG4725ES2N | - |
| New Gripper Kit     | - | GF4725ES2J | -          | - | GD4725ES2J | GG4725ES2J | - |



#### 4726ES2

16.5" x 8 5/8" Eaton Extended Service  
2nd Generation

#### Hardware Kit

Haldex: CQ65477  
Euclid: E10244  
BWP: MK105  
WA: WAE10244

|                     |   |            |            |            |            |            |            |
|---------------------|---|------------|------------|------------|------------|------------|------------|
| Relined Shoe        | - | GF4726ES2R | GR4726ES2R | -          | GD4726ES2R | GG4726ES2R | GC4726ES2R |
| Relined Gripper Kit | - | GF4726ES2G | GR4726ES2G | CB4726ES2G | GD4726ES2G | GG4726ES2G | GC4726ES2G |
| New Shoe            | - | GF4726ES2N | GR4726ES2N | -          | GD4726ES2N | GG4726ES2N | GC4726ES2N |
| New Gripper Kit     | - | GF4726ES2J | -          | -          | GD4726ES2J | GG4726ES2J | GC4726ES2J |

## 16½" Drum Diameter - Extended Application Coverage

| Base Shoe Number | Shoe Size  | Description  |
|------------------|------------|--|
| 4549Q            | 16 1/2 X 4 | Arvin Meritor Quick Change                                       |
| 4549T            | 16 1/2 X 4 | Arvin Meritor Pin Style  |
| 4223EHM          | 16 1/2 X 5 | Dana Spicer/Eaton EB Series High Mount                           |
| 4223EO           | 16 1/2 X 5 | Dana Spicer/Eaton EB Series Low Mount                            |
| 4223E            | 16 1/2 X 5 | Dana Spicer/Eaton EB Series Low Mount                            |
| 4524QM           | 16 1/2 X 5 | Arvin Meritor Q Style Relocated Return Spring Pin Hole           |
| 4524Q            | 16 1/2 X 5 | Arvin Meritor Q Style  |
| 4524TM           | 16 1/2 X 5 | Arvin Meritor Pin Style  |
| 4524T            | 16 1/2 X 5 | Arvin Meritor Pin Style  |
| 4719ES2          | 16 1/2 X 5 | Dana Spicer/Eaton Extended Service 2nd Design Quick Change Style |
| 4719ES           | 16 1/2 X 5 | Dana Spicer/Eaton Extended Service 1st Design Quick Change Style |
| 4720Q            | 16 1/2 X 5 | Arvin Meritor Q+ Style   |
| 4317EHM          | 16 1/2 X 6 | Dana Spicer/Eaton EB Series High Mount                           |
| 4317E            | 16 1/2 X 6 | Dana Spicer/Eaton EB Series Low Mount                            |
| 4514QM           | 16 1/2 X 6 | Arvin Meritor Q Style  |
| 4514Q            | 16 1/2 X 6 | Arvin Meritor Q Style  |
| 4514T            | 16 1/2 X 6 | Arvin Meritor Pin Style  |
| 4715Q            | 16 1/2 X 6 | Arvin Meritor Q+ Style   |
| 4725ES2          | 16 1/2 X 6 | Dana Spicer/Eaton Extended Service 2nd Design Quick Change Style |
| 4725ES           | 16 1/2 X 6 | Dana Spicer/Eaton Extended Service 1st Design Quick Change Style |
| 4311EHM          | 16 1/2 X 7 | Dana Spicer/Eaton EB Series High Mount                           |
| 4311E            | 16 1/2 X 7 | Dana Spicer EB Series Low Mount                                  |
| 4515BQ           | 16 1/2 X 7 | Bendix Quick Change Primarily Ford Cargo Series                  |
| 4515F            | 16 1/2 X 7 | Fruehauf Pin Style   |
| 4515Q            | 16 1/2 X 7 | Arvin Meritor Quick Change Style                                 |
| 4515TB           | 16 1/2 X 7 | Arvin Meritor Pin Style Stamped Steel Bushed Anchor Pin          |
| 4515TC           | 16 1/2 X 7 | Cast Shoe Arvin Meritor Pin Style                                |
| 4515T            | 16 1/2 X 7 | Arvin Meritor Pin Style  |
| 4515U            | 16 1/2 X 7 | U Brake  |
| 4515X2           | 16 1/2 X 7 | Fruehauf XEM Early Design  |
| 4515X3           | 16 1/2 X 7 | Fruehauf XEM 3rd Design Most Popular XEM Style                   |
| 4707QH           | 16 1/2 X 7 | Arvin Meritor Q+ Relocated Return Spring Pin Hole                |
| 4707QM           | 16 1/2 X 7 | Arvin Meritor Q+ Thick Web                                       |
| 4707Q            | 16 1/2 X 7 | Arvin Meritor Q+ Extended Service                                |
| 4708EQ           | 16 1/2 X 7 | Dana Spicer/Eaton ES Series Quick Change                         |
| 4708ET           | 16 1/2 X 7 | Dana Spicer/Eaton Extended Service Pin Style                     |
| 4708EX3          | 16 1/2 X 7 | Dana Spicer/Eaton Extended Service Fruehauf XEM Replacement      |
| 4708TC           | 16 1/2 X 7 | Cast Shoe Dana Spicer/Eaton Severe Duty                          |
| 4709ES2          | 16 1/2 X 7 | Dana Spicer/Eaton Extended Service 2nd Design                    |
| 4709ES           | 16 1/2 X 7 | Dana Spicer/Eaton Extended Service 1st Design                    |

**Continued on next page**

Contact your local Haldex Friction Center for additional information on these extended applications. A complete listing of Haldex Friction Centers can be found on Page 33.



## 16½" Drum Diameter - Extended Application Coverage (cont'd)

| Base Shoe Number | Shoe Size      | Description   |
|------------------|----------------|---|
| 4644TL           | 16 1/2 X 8     | Arvin Meritor Pin Style Left Side                     |
| 4644TR           | 16 1/2 X 8     | Arvin Meritor Pin Style Right Side                    |
| 4718Q            | 16 1/2 X 8     | Arvin Meritor Q+ Style                                |
| 4551FL           | 16 1/2 X 8 5/8 | Fruehauf Pin Style Left Side                          |
| 4551FR           | 16 1/2 X 8 5/8 | Fruehauf Pin Style Right Side                         |
| 4551Q            | 16 1/2 X 8 5/8 | Arvin Meritor Q Style                                 |
| 4551T            | 16 1/2 X 8 5/8 | Arvin Meritor Pin Style                               |
| 4551X3L          | 16 1/2 X 8 5/8 | Fruehauf XEM 3rd Design Left Side                     |
| 4551X3R          | 16 1/2 X 8 5/8 | Fruehauf XEM 3rd Design Right Side                    |
| 4674E            | 16 1/2 X 8 5/8 | Dana Spicer EB Series Low Mount                       |
| 4711Q            | 16 1/2 X 8 5/8 | Arvin Meritor Q+ Style                                |
| 4726ES2          | 16 1/2 X 8 5/8 | Dana Spicer/Eaton Extended Service Quick Change Style |
| 4726ES           | 16 1/2 X 8 5/8 | Dana Spicer/Eaton Extended Service Quick Change Style |
| 4552QN           | 16 1/2 X 10    | Arvin Meritor Q Style                                 |
| 4552T            | 16 1/2 X 10    | Arvin Meritor Pin Style                               |

Contact your local Haldex Friction Center for additional information on these extended applications. A complete listing of Haldex Friction Centers can be found on Page 33.

## Enhanced Economy Fleet Grade Materials

| <b>Brake Lining</b> | <b>Haldex HV76</b> | <b>Haldex HV77</b> | <b>Haldex HV88</b> |
|---------------------|--------------------|--------------------|--------------------|
| Lining Rated @      | 20,000 lbs         | 20,000 lbs         | 23,000 lbs         |
| Temperature Range   | 550°               | 550°               | 650°               |
| Resistance to Fade  | Good               | Good               | Good               |
| Recovery            | Good               | Good               | Good               |
| Overall Lining Wear | Good               | Good               | Good               |

### Brake Lining Performance - Know Your Zone

#### **GREEN**Zone

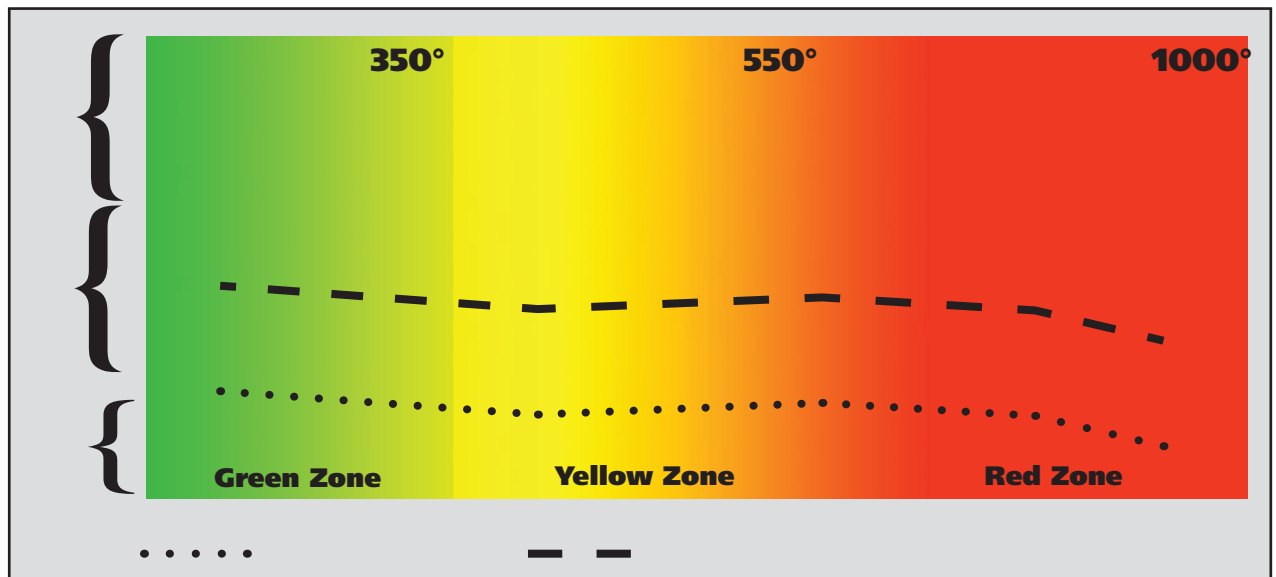
- Lighter loads - flatter roads
- Low stress on the brakes
- Brake temperatures generally stay below 350°

#### **YELLOW**Zone

- Coast to coast operations
- Variable load conditions
- Moderate stress on the brakes
- Brake temperature vary up to 650° due to the variety of terrain and loads encountered

#### **RED**Zone

- Extreme loads - extreme stopping
- High stress on the brakes
- Brake temperatures may approach 1000° due to the extreme conditions and variability of the application environment



Fleets should consider higher performance brake linings than those listed here when typical operating environments include higher frequency of braking and higher temperature braking. Examples of these environments include heavy-hauling, loads that tend to shift more (liquid/refrigeration), negotiating steep grades and moderate urban/stop-and-go conditions.

Haldex "V" Series Brake Linings are designed to deliver superior performance when compared to similar products in their class. If you are interested in using brake linings that provide the lowest total life cycle costs, speak to your Carquest Representative regarding premium friction products.

## Enhanced Economy Fleet Grade Materials (cont'd)

| <b>Brake Lining</b> | <b>Haldex HV76</b> | <b>Haldex HV77</b> | <b>Haldex HV88</b> |
|---------------------|--------------------|--------------------|--------------------|
| Lining Rated @      | 20,000 lbs         | 20,000 lbs         | 23,000 lbs         |
| Temperature Range   | 550°               | 550°               | 650°               |
| Resistance to Fade  | Good               | Good               | Good               |
| Recovery            | Good               | Good               | Good               |
| Overall Lining Wear | Good               | Good               | Good               |

### HV76

| FMSI NO. | Hardware Kit |
|----------|--------------|
| 1308E    | CQ66917      |
| 1443E    | CQ66917      |
| 4702Q    | CQ65642      |

|                     |            |            |            |
|---------------------|------------|------------|------------|
| Relined Shoe        | HV761308ER | HV761443ER | HV764702QR |
| Relined Gripper Kit | HV761308EG | HV761443EG | HV764702QG |
| New Shoe            | HV761308EN | HV761443EN | HV764702QN |
| New Gripper Kit     | HV761308EJ | HV761443EJ | HV764702QJ |

### HV77

| FMSI NO. | Hardware Kit |
|----------|--------------|
| 4515Q    | CQ66867      |
| 4707Q    | CQ66867      |
| 4709ES2  | CQ65477      |

|                     |            |            |              |
|---------------------|------------|------------|--------------|
| Relined Shoe        | HV774515QR | HV774707QR | HV774709ES2R |
| Relined Gripper Kit | HV774515QG | HV774707QG | HV774709ES2G |
| New Shoe            | HV774515QN | HV774707QN | HV774709ES2N |
| New Gripper Kit     | HV774515QJ | HV774707QJ | HV774709ES2J |

### HV88

| FMSI NO. | Hardware Kit |
|----------|--------------|
| 4515Q    | CQ66867      |
| 4707Q    | CQ66867      |
| 4709ES2  | CQ65477      |

|                     |            |            |              |
|---------------------|------------|------------|--------------|
| Relined Shoe        | HV884515QR | HV884707QR | HV884709ES2R |
| Relined Gripper Kit | HV884515QG | HV884707QG | HV884709ES2G |
| New Shoe            | HV884515QN | HV884707QN | HV884709ES2N |
| New Gripper Kit     | HV884515QJ | HV884707QJ | HV884709ES2J |

**Eaton ES 2nd Design**  
5" - 6" Shoes



**Haldex:** CQ65445  
**Euclid:** E10760  
**BWP:** MK113  
**WA:** WAD5038

**Eaton ES 2nd Design**  
7" - 8 5/8" Shoes



**Haldex:** CQ65477  
**Euclid:** E10244  
**BWP:** MK105  
**WA:** WAE10244

**Eaton ES**  
1st Design



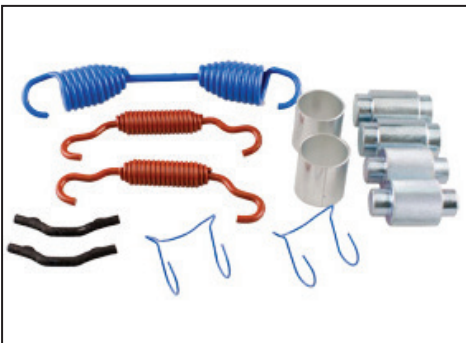
**Haldex:** CQ65481  
**Euclid:** E5481A  
**BWP:** MK84  
**WA:** WA5481A

**Eaton**  
Conventional Style



**Haldex:** CQ67319  
**Euclid:** E1887AHD  
**BWP:** MK10  
**WA:** WA1887ASHD

**Arvin Meritor**  
"Q" & "Q+"



**Haldex:** CQ66867  
**Euclid:** E2769SHD  
**BWP:** MK39  
**WA:** WA2769SHD

**Arvin Meritor**  
"Q" , "Q+" 16.5" Steer Axle



**Haldex:** CQ66887  
**Euclid:** E3710SHD  
**BWP:** MK42  
**WA:** WA3710SHD

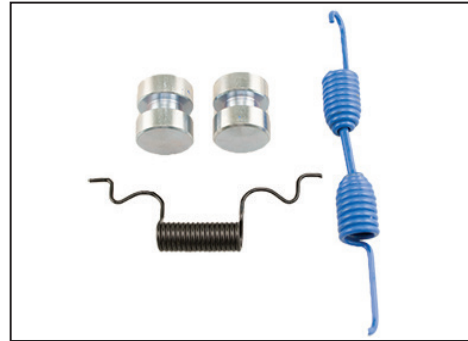
## Hardware Kits (cont'd)

**Fruehauf  
XEM3**



**Haldex:** CQ66914  
**Euclid:** E3710SHD  
**BWP:** MK42  
**WA:** WA3710SHD

**Eaton  
1308E & 1443E Steer Axle**



**Haldex:** CQ66917  
**Euclid:** E5139  
**BWP:** MK77  
**WA:** WAE5139

**Arvin Meritor 15" "Q+"  
Double Web**



**Haldex:** CQ65642  
**Euclid:** E9064  
**BWP:** MK98  
**WA:** WAE9064

**Arvin Meritor  
Pin Style**



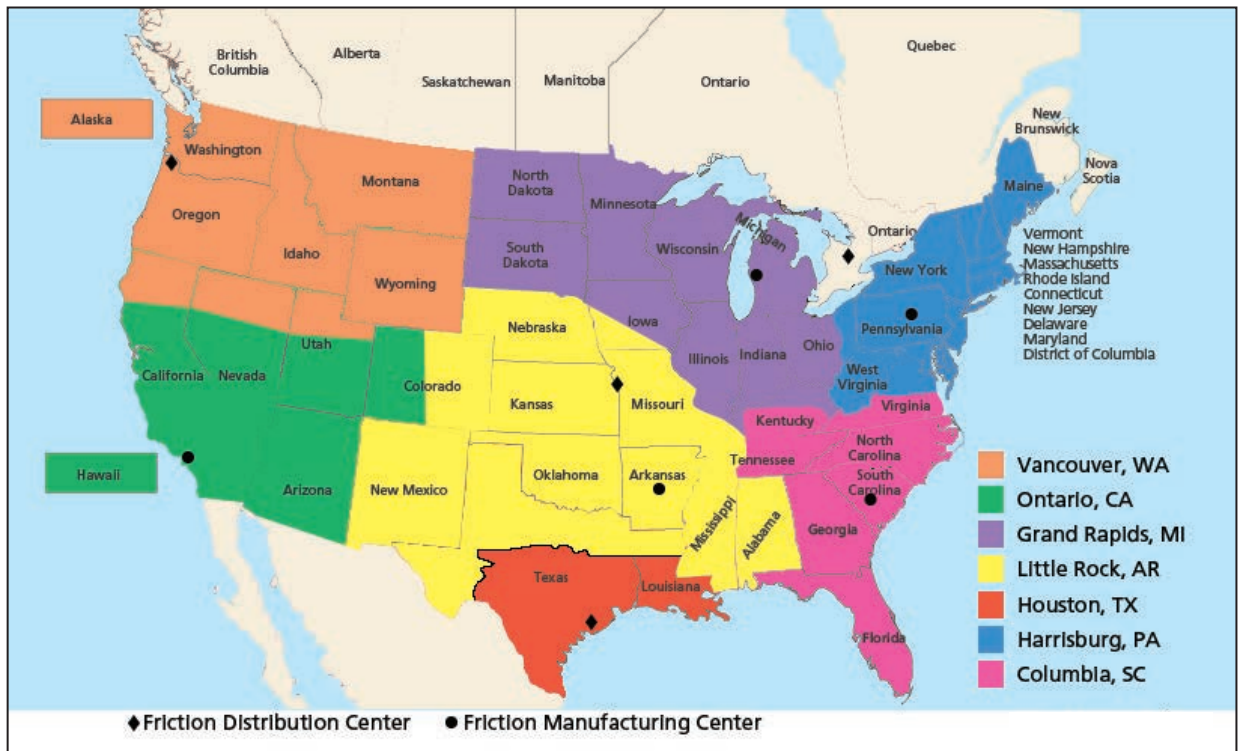
**Haldex:** CQ67390  
**Euclid:** KIT-4HD  
**BWP:** MK4  
**WA:** WA085038

**Arvin Meritor 1308Q  
Steer Axle - Single Web**



**Haldex:** CQ69001  
**Euclid:** E3869  
**BWP:** MK79  
**WA:** WAE3869





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# Haldex Brake Job Recommendations - Disassembly

## Disassembly

**Important note:** Most friction problems can be diagnosed by a close inspection of the old parts.

- 1. Before pulling the wheels, check each for end play.** This may indicate seal problems or bearing/cup wear.
- 2. Inspect all shoes for even wear.** If all wheel ends are not worn evenly, there will be failed or misadjusted components that will need to be corrected before assembly.
- 3. Inspect lining surface for heat checking.** If present, this indicates some combination of excessive heat, all wheels not braking evenly, incorrect lining is being used for the application, or overloading.
- 4. Check wear across each shoe.** An uneven pattern or excessive grooves can indicate the drums need replacing. An uneven pattern can also indicate bent spiders or bell mouth drums.
- 5. Inspect lining surface for grease or oil.** Never reuse a grease or oil soaked brake shoe. Grease or oil on the friction material will cause the lining to glaze and not do its share of the braking. It is not recommended to do one-wheel brake jobs.
- 6. Inspect interior drum surface for even wear, glazing and/or heat checking.** Heat checks, cracks and blue spots are indicators of excessive heat (hairline heat checks not over 1" are normal). Never reuse a drum if wear is over .080, or if several heat checks are aligned across the braking surface, or if hard spots exist.
- 7. Check s-cam for wear at the bushing, head and spline areas.** The wheel with a worn s-cam or worn s-cam bushings is more than likely not doing its share of the braking.

**8. Check brake adjusters for proper settings and operation. Check clevis pins and brake bushings for wear.** Never mix automatic brake adjusters with manual brake adjusters, or use different makes of automatic brake adjusters on the same axle.

**9. Check the wear difference between the front and rear axle shoes.** If the wear is not equal, this can indicate an air timing imbalance or different rated friction materials. Check for inconsistent use of elbows in air lines (a 90° elbow is equal to 7' of extra hose).

**10. Inspect spiders.** Both anchor and s-cam bores should be free of wear.

## Reassembly

### Important:

A) Select the proper friction material based on your type of loads, position of loads and operating terrain. Consult your supplier if you have any questions.

B) Many shoes look alike, especially the new extended service design. Therefore, be sure to install the same shoe as is removed.

**1. Always replace all shoe attaching parts, anchor pin bushings, cam bushings and oil seals.** All parts being reused should be cleaned with solvent, rinsed and dried. Replace s-cams, bearings and cups, as necessary.

**2. Lubricate anchor pins, brake rollers and bushing area of camshafts.** Never lubricate the face of the roller (contact point with the s-cam). Only lubricate the bearing area of the roller that contacts the shoe web.

**3. Install new drums, if necessary.** Do not mix light and heavy duty drums as this will result in uneven brake shoe wear.

**4. Lubricate axle spindle to ensure bearings slide on easily. Slide hubs on to the axle far enough to be able to install outer bearing and inside axle nut.** Never slam the hub onto the axle. Adjust bearing to manufacturer's specifications. Install spacer and outer nut (if applicable) and new hub cap gasket.

**5. Inspect all spring brakes for center seal leakage and replace if needed.**

**6. Always adjust all brake adjusters on all wheels of the vehicle.** Follow manufacturers installation instructions based on the model of brake adjuster being utilized. If you replaced any brake chambers, ensure you did not mix sizes or allowable strokes. Never mix long stroke with standard stroke chambers.

**7. Inspect all brake hoses leading to chambers and replace if cracks are found.**

**8. Check brake release.** If slow on trailer, install a quick release gladhand on the service side of the trailer.

**9. If relining a tractor, ensure air governor cut-in/cut-out minimum pressures are set to 105/120 PSI. On trailers, replace both gladhand seals.**

**10. Always road test to "break-in" new lining.**

A) Ten snubs, 40 mph deceleration to 20 mph (brake application).

B) Ten stops from 20 mph at moderate air pressure.

C) Two stops from 20 mph at full air pressure.

**10. Re-examine wheels for excessive end play. Re-check brake adjusters and chambers for proper and equal stroke.**

## Notes

[illegible]

# **MIDLAND**

## AIR DISC BRAKE PAD Replacement Kits



Durable & Quiet  
All Makes For  
Commercial Vehicles



Manufactured by





# MIDLAND



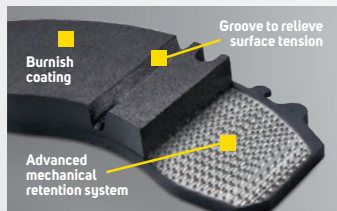


Each replacement kit includes four disc pads and the hardware necessary to complete one axle.

## HD PRO Air Disc Brake Pads

 MAXIMUM, HEAVY-DUTY FRICTION


**Developed for transit, refuse, dump, coach – high frequency – extreme temperature braking**



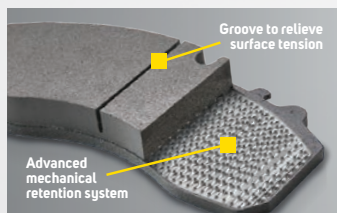
- Quiet, safe, reliable
- Exceptional fade and recovery in demanding stop-and-go and variable, high-load applications
- Outstanding durability with long life formulation
- Rotor friendly friction compound
- Full surface burnish coating
- V Groove noise and wear reduction design
- Advanced mechanical retention system
- FMVSS 121 & ECE R90 certified



## CV advanced Air Disc Brake Pads

 PREMIUM, MID/HEAVY-DUTY FRICTION

**Developed for trucks, tractors, trailers, dump, coach – coast-to-coast operations – standard & heavy haul loads**



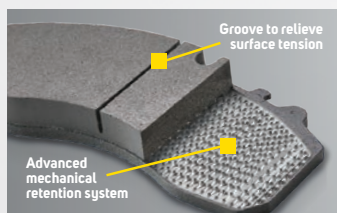
- Quiet friction compound
- Excellent fade resistance and recovery at moderate-to-high braking temperatures
- Long life, proven wear performance
- Solid durability and rotor friendly
- Advanced mechanical retention system
- FMVSS 121 & ECE R90 certified



## SELECT XT Air Disc Brake Pads

 STANDARD-DUTY FRICTION

**Developed for trucks, tractors, trailers – interstate & urban – standard line haul loads**



- High value cost benefit ratio
- Reliable, stable performance
- Slotted for vibration and noise reduction properties
- Corrosion resistant coating
- Easy on rotors
- Advanced mechanical retention system
- FMVSS 121 & ECE R90 certified



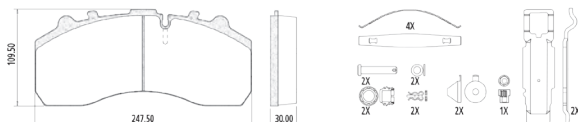
## AIR DISC BRAKE PAD IDENTIFICATION



Each replacement kit includes four disc pads and the hardware necessary to complete one axle.

### D1203 ♦

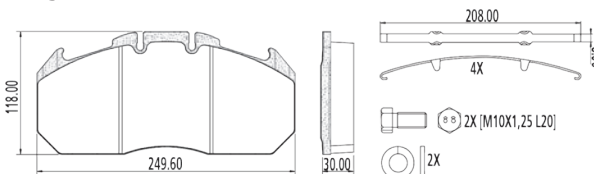
FMSI: 8323 D1203



**APPLICATION:** Neoplan®, Nova®, Prevost®, Setra®, Van Hool®  
**BRAKE MFR & SYSTEM:** Knorr® SB7 & SN7

### D1310

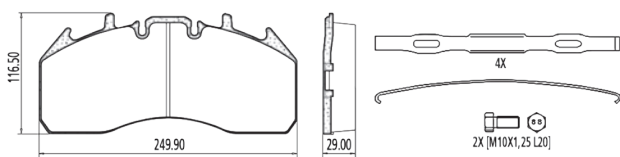
FMSI: 8425 D1310



**APPLICATION:** MAN®, Van Hool®  
**BRAKE MFR & SYSTEM:** Meritor® D-ELSA2

### D1311 ♦

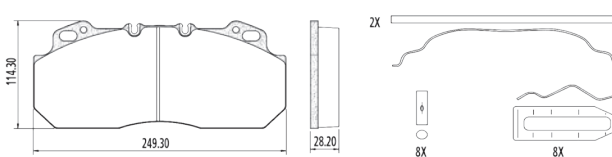
FMSI: 8426 D1311



**APPLICATION:** MCI®  
**BRAKE MFR & SYSTEM:** Meritor EX225H2

### D1312 ♦

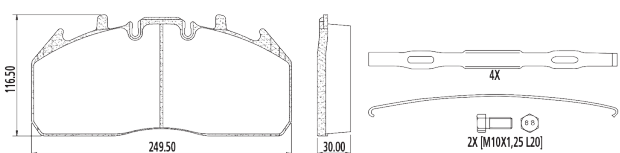
FMSI: 8427 D1312



**APPLICATION:** MCI, Neoplan, Prevost, Volvo  
**BRAKE MFR & SYSTEM:** Meritor 2x60

### D1323

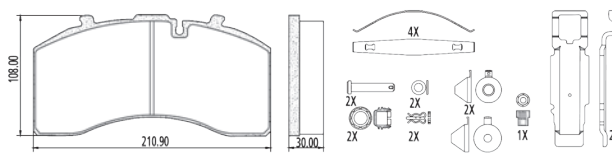
FMSI: 8435 D1323



**APPLICATION:** Various  
**BRAKE MFR & SYSTEM:** Meritor EX225H3

### D1369 ♦

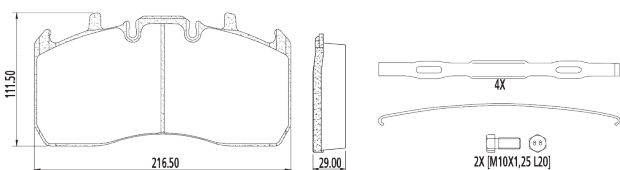
FMSI: 8479 D1369



**APPLICATION:** SAF® Axles  
**BRAKE MFR & SYSTEM:** Knorr SK7

### D1370

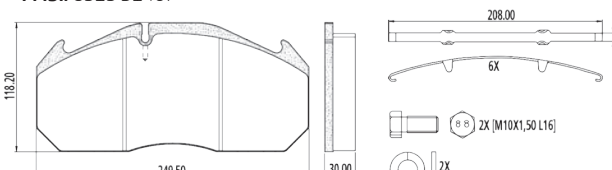
FMSI: 8480 D1370



**APPLICATION:** Various  
**BRAKE MFR & SYSTEM:** Meritor EX225L2

### D1407

FMSI: 8515 D1407

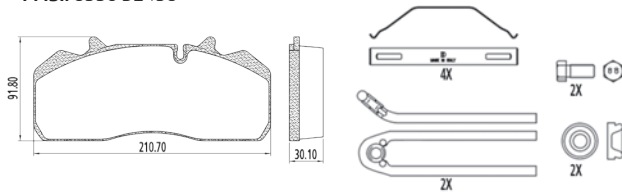


**APPLICATION:** MAN, Setra, Van Hool  
**BRAKE MFR & SYSTEM:** Meritor D-ELSA1



**D1438**

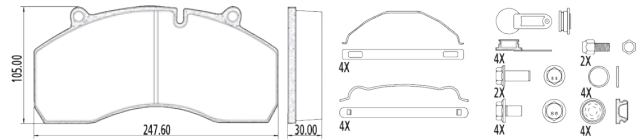
FMSI: 8556 D1438



**APPLICATION:** SAF Axles  
**BRAKE MFR & SYSTEM:** WABCO PAN 19-1

**D1441**

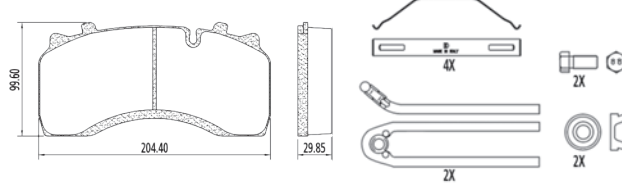
FMSI: 8577 D1441



**APPLICATION:** SAF Axles, SMB® Axles  
**BRAKE MFR & SYSTEM:** Haldex DB22

**D1517**

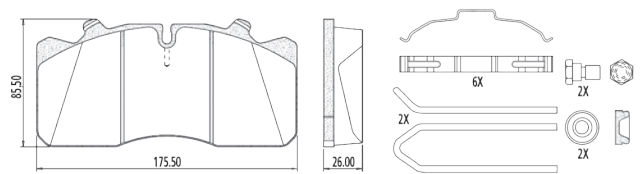
FMSI: 8726 D1517



**APPLICATION:** SAF Axles  
**BRAKE MFR & SYSTEM:** WABCO PAN 19-2

**D1518**

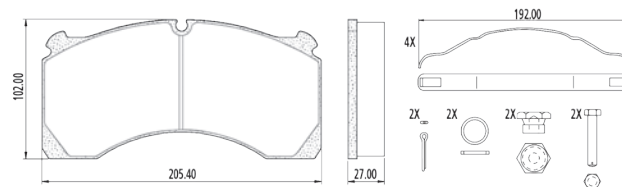
FMSI: 8727 D1518



**APPLICATION:** Cozad® Trailers, Mack®  
**BRAKE MFR & SYSTEM:** WABCO PAN 17

**D1525**

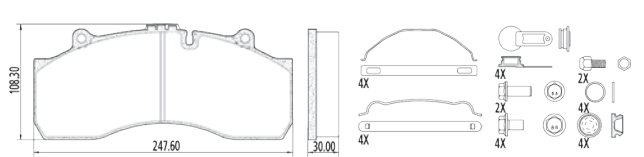
FMSI: 8733 D1525



**APPLICATION:** Trailer Axles  
**BRAKE MFR & SYSTEM:** Meritor DX195

**D1527**

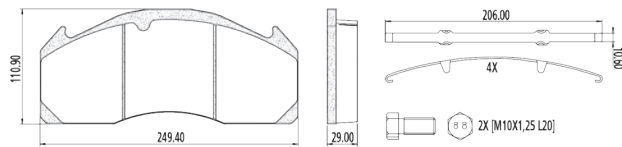
FMSI: 8735 D1527



**APPLICATION:** SAF Axles, SMB Axles, Scania®  
**BRAKE MFR & SYSTEM:** Haldex DB22

**D1560**

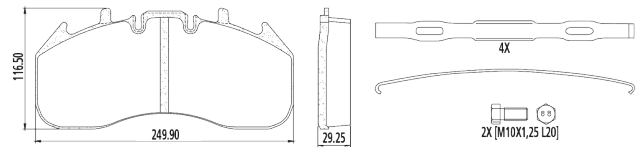
FMSI: 8771 D1560



**APPLICATION:** Volvo®  
**BRAKE MFR & SYSTEM:** Meritor D-DUCO

**D1690**

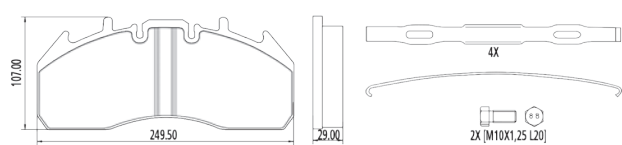
FMSI: 8917 D1690



**APPLICATION:** MCI  
**BRAKE MFR & SYSTEM:** Meritor EX2252H2

**D1708**

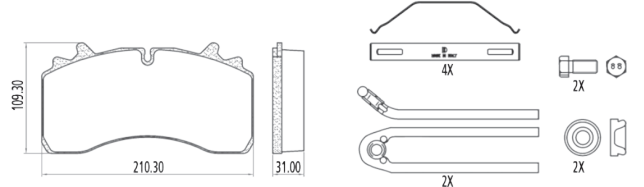
FMSI: 8931 D1708



**APPLICATION:** Volvo  
**BRAKE MFR & SYSTEM:** Meritor ELSA 225-3

**D1777**

FMSI: 9007 D1777



**APPLICATION:** SAF Axles  
**BRAKE MFR & SYSTEM:** WABCO PAN 22

# MIDLAND

## AIR DISC BRAKE PAD APPLICATION



Each replacement kit includes four disc pads and the hardware necessary to complete one axle.

| FMSI<br>BASE | FMSI<br>NUMBER | <b>HD PRO</b> PART NUMBERS<br>EXTREME TEMPERATURE PERFORMANCE<br>Heavy / Severe-Duty Cycles | <b>CV advanced</b> PART NUMBERS<br>HIGH TEMPERATURE PERFORMANCE<br>Moderate / Heavy-Duty Cycle | <b>SELECT XT</b> PART NUMBERS<br>INTERSTATE LINEHAUL<br>Standard / Moderate-Duty Cycle |
|--------------|----------------|---|--|--|
| D1203        | 8323 D1203     | MPBD1203HD ♦  | MPBD1203CV ♦   | MPBD1203XT   |
| D1310        | 8425 D1310     | MPBD1310HD  | MPBD1310CV   | MPBD1310XT   |
| D1311        | 8426 D1311     | MPBD1311HD ♦  | MPBD1311CV ♦   | MPBD1311XT   |
| D1312        | 8427 D1312     | MPBD1312HD ♦  | MPBD1312CV ♦   | MPBD1312XT   |
| D1323        | 8435 D1323     | MPBD1323HD  | MPBD1323CV   | MPBD1323XT   |
| D1369        | 8479 D1369     | MPBD1369HD ♦  | MPBD1369CV ♦   | MPBD1369XT ♦   |
| D1370        | 8480 D1370     | MPBD1370HD  | MPBD1370CV   | MPBD1370XT   |
| D1407        | 8515 D1407     | MPBD1407HD  | MPBD1407CV   | MPBD1407XT   |
| D1438        | 8556 D1438     | MPBD1438HD  | MPBD1438CV   | MPBD1438XT   |
| D1441        | 8577 D1441     | MPBD1441HD  | MPBD1441CV   | MPBD1441XT   |
| D1517        | 8726 D1517     | N/A   | MPBD1517CV   | N/A  |
| D1518        | 8727 D1518     | MPBD1518HD  | MPBD1518CV   | MPBD1518XT   |
| D1525        | 8733 D1525     | MPBD1525HD  | MPBD1525CV   | MPBD1525XT   |
| D1527        | 8735 D1527     | MPBD1527HD  | MPBD1527CV   | MPBD1527XT   |
| D1560        | 8771 D1560     | MPBD1560HD  | MPBD1560CV   | MPBD1560XT   |
| D1690        | 8917 D1690     | MPBD1690HD  | MPBD1690CV   | MPBD1690XT   |
| D1708        | 8931 D1708     | MPBD1708HD  | MPBD1708CV   | MPBD1708XT   |
| D1777        | 9007 D1777     | MPBD1777HD  | MPBD1777CV   | MPBD1777XT   |

♦ POPULAR FMSI NUMBER





Manufactured by



| MAIN APPLICATION                             | BRAKE MFR & SYSTEM | WVA NUMBER   | OE PART NUMBER   |
|--|--------------------|--|--|
| Neoplan®, Nova®, Prevost®, Setra®, Van Hool® | Knorr® SB7 & SN7   | 29087, 29105, 29106, 29108, 29109, 29163, 29179, 29201, 29202, 29275 | MAN# 81508205099, 81508206030, 81508206032, 81508206056<br>Neoplan# 0821.340.00, 0821.351.00 SAF# 3057007700, 3057007900, 5317002300<br>Setra# 8285000571, 8285515573, 9291037 SMB # M100669 |
| MAN®, Van Hool                               | Meritor® D-ELSA2   | 29131, 29156   | Meritor # 68324558, 68324957, 68325344, 68325346, 68325901, 68326015<br>Volvo# 20976509, 21309468, 85107768 Rockwell® # 15227419T, 68324558NZP   |
| MCI®   | Meritor EX225H2    | 29187  | Meritor # 3222-F-2476  |
| MCI, Neoplan, Prevost, Volvo                 | Meritor 2x60       | 29090  | Volvo# 3093919, 3093939, 8550611, 20825594, 20850194, 85105485, 85506111   |
| Various                                      | Meritor EX225H3    | 29188  | Meritor# KIT2252H3CE, KIT2252H3BE  |
| SAF® Axles                                   | Knorr SK7          | 29158  | Mercedes Benz® # 004 420 70 20<br>SAF# 3057008500  |
| Various                                      | Meritor EX225L2    | 29189  | Meritor # KIT2252L2CD  |
| MAN, Setra, Van Hool                         | Meritor D-ELSA1    | 29030  | MAN# 81508205091, 81508206044, 81508206046<br>Meritor# 68325023, 68325166 Setra# 8 285 388 435   |
| SAF Axles                                    | WABCO® PAN 19-1    | 29126, 29159   | SAF# 3057008000  |
| SAF Axles, SMB® Axles                        | Haldex DB22        | 29120  | Fruehauf# M910027-03 Haldex # 790-22012<br>Bendix# 976003N SAF# 81163, 87407   |
| SAF Axles                                    | WABCO PAN 19-2     | 29119, 29142   | WABCO# 12999747VT  |
| Cozad® Trailers, Mack®                       | WABCO PAN 17       | 29088  | Mack# 2611-12999703VT  |
| Trailer Axles                                | Meritor DX195      | 29124, 29155   | Meritor # 3222-T-2308, MDP1314, MDP5076, 15224835, 15224835A<br>Rockwell# 15224835T400   |
| SAF Axles, SMB Axles, Scania®                | Haldex DB22        | 29185  | Haldex# 91567, 790-22008   |
| Volvo®                                       | Meritor D-DUCO     | 29125  | Meritor # MDP5057<br>Volvo# 1078439, 20768092, 20918891, 20931343, 20932682, 3095396   |
| MCI  | Meritor EX2252H2   | -  | MCI # 04-01-1164<br>Meritor # 3222-E-2605, KIT2252H2BA   |
| Volvo  | Meritor ELSA 225-3 | 29174, 29204, 29218, 29219, 29226                                    | Volvo# 20568711, 20568714, 21024701, 21024702, 21496550  |
| SAF Axles                                    | WABCO PAN 22       | 29162  | SAF# 0233501309, 233501309, 3057008401, 3057008400<br>WABCO# 12999796  |

# MIDLAND



## HD PRO



## YOUR AIR DISC BRAKE PAD SOLUTION

Midland air disc brake pads feature OE quality friction material and offer reliable, quiet, durable performance. This line of friction material was developed to meet the needs of heavy-duty and commercial vehicles.

When analyzing Cost Per Mile (CPM) savings, Fras-le's advanced engineering solution provides significantly longer brake pad life and less rotor wear, which can add up to big savings. Longer lasting components mean fewer brake jobs over the life of the vehicle.

Our emphasis on product quality provides you with precise fit, form and function in every set purchased. With our 100% asbestos-free formula, Midland air brake disc pads are environmentally friendly. Each replacement kit includes four disc pads and the hardware necessary to complete one axle.



## CV advanced



## SELECT XT



Manufactured by



## MIDLAND

United States 816-891-2470  
Canada 519-621-6722

[haldex.com](http://haldex.com) Midland is a Haldex brand



CARQUEST Corporation  
Raleigh, North Carolina 27604  
[www.CARQUEST.com](http://www.CARQUEST.com)

