Haldex Remanufactured Brake Shoes

The Standard of Quality

Haldex

Remanufactured in the U.S.A.

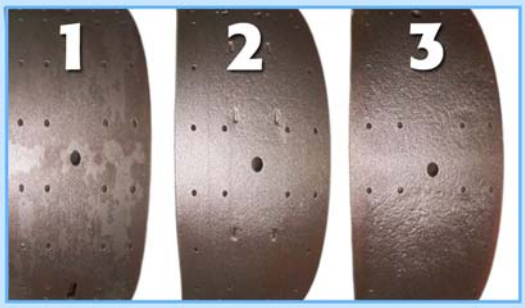
Core Selection

Are You Getting Cores That Make the Grade?

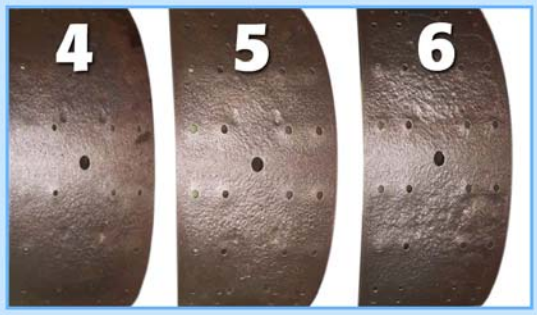
Ask yourself, do you want to settle for a brake shoe that was deemed as "good enough" for the reliner to make the next sale – or would you prefer to have a brake shoe that was qualified to make it through the next, entire life cycle by a professional remanufacturer?

Ensuring that each brake shoe introduced into our manufacturing process can make it through an entire life cycle is the guiding principal employed by Haldex, and it is a primary point of differentiation that separates Haldex from the "reliners" out in the heavy-duty marketplace.

This is precisely why the quality legacy at Haldex begins with a critical selection process for brake shoe cores. Haldex "grades" EVERY core that we touch – and you only get the one's rated at the top of the class.

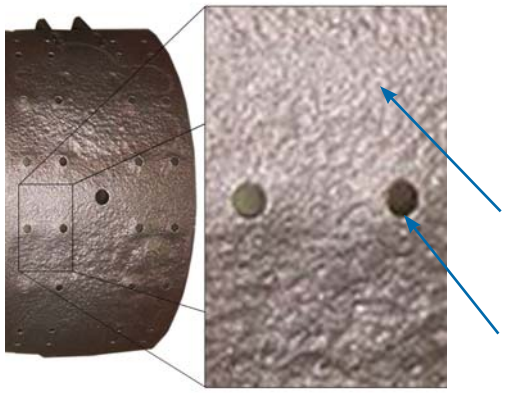


Cores with quality grades of 1, 2 or 3 are initially deemed acceptable to continue through the remanufacturing process. These cores will exhibit tables that are in excellent condition. They would not have been exposed to excessive corrosion or other damage. Rivet holes are symmetrical.



Cores with quality grades of 4, 5 or 6 are automatically culled from the production process and scrapped. These cores exhibit characteristics that will shorten the life cycle of the shoe and have a high potential to prematurely corrode. Rivet holes are often out of spec.

No Coining Allowed!



Coining is a forbidden practice in the Haldex Manufacturing process. Coining is a short term fix that allows reliners to sell you, what you PERCEIVE to be a good brake shoe. The fact is coined brake shoes are BAD for your business. There is a higher likelihood that you are receiving a shoe that is actually not within OEM specifications, and that will return it to its precoined & defective condition. Time, torque and temperature will quickly undo the effects of coining – unfortunately, while the brake shoe is still on your vehicle.

Reliners that coin brake cores are more likely to provide substandard cores with deep divots or other table imperfections which means poor lining to table contact and leads to accelerated corrosion and rust-jacking.

Coining cannot return out-of-spec or "volcanoed" rivet holes to OEM specifications. The continuous "smashing" these areas endure during coining leads to the likelihood of loose lining due to out-of-round rivet holes while the brake is on your vehicle.

Haldex Sets the Standard for Quality

There are many reliners in the market that are focused on just getting shoes out of their facility on onto your shelf. And then there is Haldex. A professional remanufacturer that focuses on providing brake shoes that are qualified to perform at a high level throughout the next life cycle. Choosing Haldex is making a choice that quality is first. The Haldex facility model, the processes, the service and attention to detail ensure that you are doing business with a progressive partner that understands the needs and expectations of customers throughout the heavy-duty marketplace.

Corrosion Resistance - The Haldex Solution

The chemicals applied to our roads make it safer to travel in inclement weather. However, there are drawbacks to this type road surface treatment. The combination of these chemicals, accompanied with normal environmental factors, creates a condition that typically leads to excessive vehicle corrosion. Products exposed to these chemicals often experience shorter life cycles.

Haldex continuously strives to provide advanced solutions that aim to protect our customers' component and equipment investments.

The Haldex corrosion protection solution is born out of extensive research and development using several types of laboratories. These specialists carefully consider the environmental factors that brake shoes are exposed to. As a world class leader in manufacturing. Haldex understands addressing this type of condition extends far beyond applying a surface coating. Through careful analysis corrosive protection processes have been developed.

The characteristics of the coating itself are important, however, long term life cycle performance is derived from the systems surrounding the coating. Core preparation, the ability of the coating to adhere to the shoe and the curing process will determine the level of corrosion protection over the long-haul.

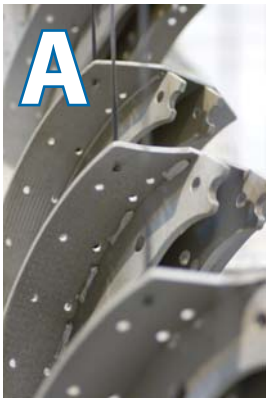
Haldex has invested heavily at all of its Friction Centers to ensure that benchmark performance relative to corrosion protection is achieved.

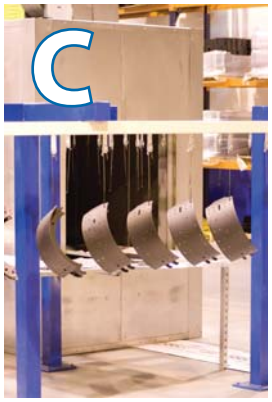
A. Shoes are individually shot-blasted and washed to ensure complete removal of contaminants and proper surface preparation for superior coating adhesion.

B. Haldex utilizes a "full dip", complete submersion process to ensure that coverage is uniform. Paint viscosity is checked several times daily to maintain critical tolerances.

C. Dwell times during the curing process are carefully adhered to before and after coated shoes enter the curing booth. This is another area that must be critically maintained to ensure maximum protection.

D. Computer controlled curing booths are in operation at all Haldex Friction Centers. It is necessary to control factors such as humidity and temperature during the cure process, otherwise corrosion protection is severely limited.





Verifying Standards of Quality

Haldex employs several methods in which we continuously verify the performance level of the corrosion protection processes. Primary laboratory test specifications utilized include ASTM 117B salt spray testing as well as SAE J2334, which simulates the variable elements of our environment over "24 hour cycles". These tests are conducted at our own testing facilities as well as certified independent agencies and on trucks and trailers on your roads, logging thousands of test hours everyday.

Corrosion Protection

Corrosion Protection Comparison and Process Troubleshooting

Haldex

1 - 24 Hour Cycle | 4 - 24 Hour Cycles | 10 - 24 Hour Cycles | 20 - 24 Hour Cycles

Summary Analysis: Little corrosion present at any cycle interval

Cure Process: Pass
Paint Quality: Pass

Competitor "A"

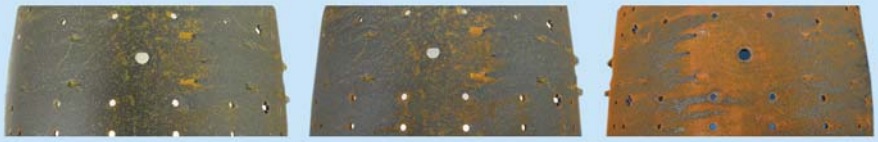
Test discontinued after 10 cycles due to excessive corrosion

1 - 24 Hour Cycle | 4 - 24 Hour Cycles | 10 - 24 Hour Cycles

Summary Analysis: Little corrosion present between cycles 1 and 4. This indicates that paint cure was accomplished fairly well. Corrosion explodes between cycles 4 and 10. This indicates that the paint breaks down fairly quickly as it endures the elements of each cycle.

Cure Process: Pass
Paint Quality: Fail

Competitor "B"



Test discontinued after 10 cycles due to excessive corrosion

1 - 24 Hour Cycle | 4 - 24 Hour Cycles | 10 - 24 Hour Cycles

Summary Analysis: Corrosion present after just one cycle of testing. This indicates that the cure process is substandard. Corrosion remains consistent between cycles 1 and 4. This indicates the paint is somewhat stable at these early stages. Corrosion explodes between cycles 4 and 10. This indicates that the paint destabilized pervasively during this period.

Cure Process: Fail
Paint Quality: Fail

Cycle test conducted at Assured Testing Services, an independent A2LA accredited laboratory that specilizes in corrosion simulation. Cycle tested per SAE J2334 criteria. Each 24 hour cycle includes temperature variants, salt/chemical application 100% humidity and arid environments.

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