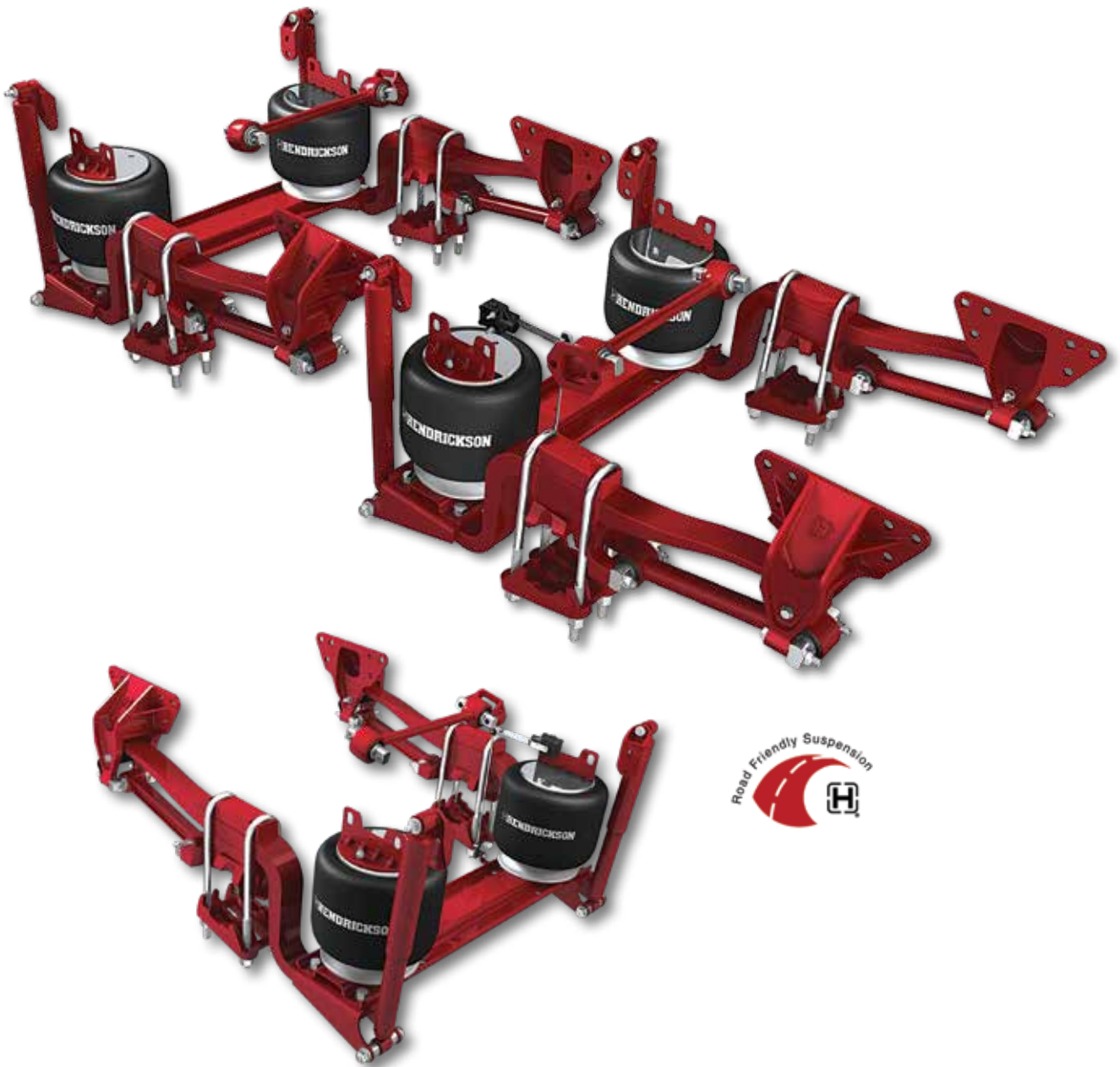


HAS™ air suspensions with low frequency large volume air springs provide:

- Superior Driver Comfort
- Outstanding Cargo and Equipment Protection



To learn more about the HAS Series,  
call +613 8792 3600 or visit  
[www.hendrickson.com.au/hasseries](http://www.hendrickson.com.au/hasseries)

# HAS™ SERIES Air Suspensions

- Lightweight for rigid cargo bodies
- Durable for city delivery applications
- Rugged for tipper and agitator
- Lightweight for maximum payload
- Comfortable for driver and cargo protection
- Smooth ride with large air springs

## Optional HI-TORQUE™ Shock Absorbers

- Heavy-duty shocks incorporate rebound spring which limits rapid shock extension during acceleration

## Cross Channel

- Cross channels are formed from stamped steel

## ULTRA ROD® Torque Rods

- Maintain axle position and ensure maximum lateral stability

## Main Support Members

- Designed and manufactured incorporating advanced materials and process technology
- Substantial spring weight reductions with taper leaf design
- Anti-roll bar concept designed into the suspension system assembly

## Air Springs

- Large volume air springs with rolling lobe design constantly adjust to changing road conditions to deliver superior ride quality

## Axle Connection

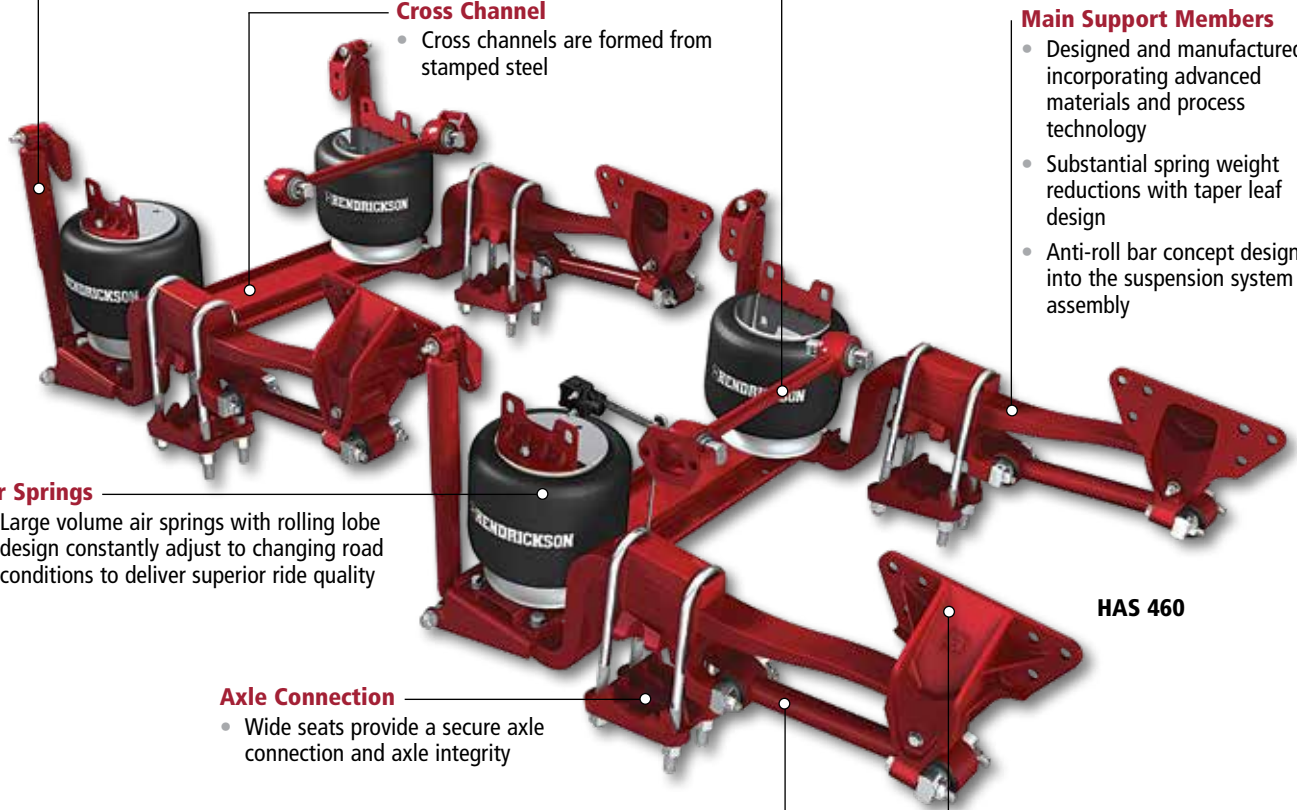
- Wide seats provide a secure axle connection and axle integrity

## Torque Rods

- Engineered to optimise stability during acceleration and braking
- Optional drop-in shims make axle alignment fast and easy for increased tire life

## Frame Hanger

- Low-mount hanger design eliminates fifth-wheel notching
- Provides a durable, low-friction surface for quiet main support member horizontal travel
- Enlarged rebound roller limits vertical travel of main support member for enhanced control during braking



HAS 460

## HAS™ Series Delivers the Performance You Need.

HAS air suspensions prove themselves time and again to meet the performance requirements the industry demands. Hendrickson's advanced engineering produces air suspensions that are smooth riding and lightweight, yet remarkably durable and stable.

## Suspension Specifications

Suspension Model	Suspension Capacity (kg)	GCW Approval (kg) <sup>1</sup>	GVW Approval (kg) <sup>1</sup>	Service: On / Off-Highway <sup>2</sup>	Tractor Approved	Rigid Truck Approved	Job-Site Rating (kg) <sup>3</sup>
HAS 120	5,000	16,000	9,000	On	No	Yes	N/A
HAS 170	7,000	22,000	12,000	On	No	Yes	N/A
HAS 200	9,000	36,000	15,000	On / Off	Yes	Yes	N/A
HAS 230	10,500	40,000	16,000	On / Off	Yes	Yes	N/A
HAS 231	10,500	45,000	16,000	On / Off	Yes	Yes	N/A
HAS 400	18,000	68,000	25,000	On / Off	Yes	Yes	N/A
HAS 460	18,000	81,000	30,000	On / Off	Yes	Yes	21,000
HAS 461	18,000	90,500	34,500	On / Off	Yes	Yes	21,000

## Approved Applications

	HAS 120	HAS 170	HAS 200	HAS 230	HAS 231	HAS 400	HAS 460	HAS 461
General Freight Body	X	X	X		X	X	X	X
Refrigerated Freight Body	X	X	X		X	X	X	X
Refrigerated Meat Body			X	X	X	X	X	X
Car Carrier				X	X	X	X	X
Wood Chip Hauler						X	X	X
Concrete Pumper				X	X	X	X	X
Tow / Recovery Truck			X	X	X	X	X	X
Tipper Body					X	X	X	X
Refuse Body					X*			X*
Mixer / Agitator Body					X*			X*
Doubles Tractor						X	X	X
Fire / Rescue	X	X	X	X	X	X	X	X

1. Contact Hendrickson or the respective vehicle manufacturer for applications that may exceed GVM / GCM approval ratings.
2. Applications requiring more than 10 percent off-highway require application approval.
3. Operators using vehicles equipped with liftable push or tag axles must not exceed published ratings.

All listed applications must comply with applicable Hendrickson specifications and must also be approved by the respective vehicle manufacturer with the vehicle in its original, as-built configuration. Contact Hendrickson and the respective vehicle manufacturer for approval of additional applications.

For additional details regarding specifications, applications, capacities, and operating, service and maintenance instructions contact Hendrickson or respective vehicle manufacturer directly.

\* Subject to review through application approval process.





## HAS™ SERIES

### Superior Ride for Driver Comfort and Equipment Protection

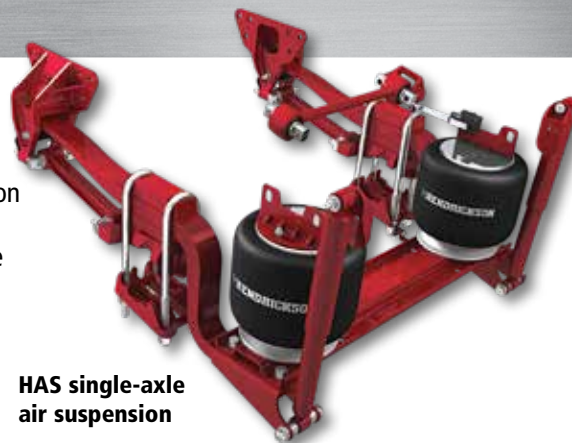
Top-mount, trailing arm air suspensions, such as the HAS Series, offer superior ride by design. Hendrickson has gone even further by using air springs and shock absorbers that are tuned to provide a smooth ride – fully loaded or empty. HAS suspensions use large volume air springs because they produce a lower frequency spring rate for superior ride. The “rolling lobe” design enables the air springs to constantly adjust to changing road conditions, to provide outstanding driver comfort, cargo protection and extended equipment life.

### Durability for Reduced Downtime

HAS air suspensions deliver all the durability the industry demands. Precision manufacturing processes produce fine grain steel main support members with high tensile strength and superior fatigue life. HI-TORQUE™ shock absorbers\* reduce driveline vibration in required applications. Frame hangers feature an integral slipper pad for quiet operation and improved reliability. In both challenging on-road operating conditions and extensive component, system and vehicle fleet testing, Hendrickson’s HAS Series air suspensions demonstrate exceptional durability. HAS air suspensions have proven to deliver outstanding toughness under rugged conditions helping to reduce downtime and operating costs.

### Stability is Built In

HAS air suspensions deliver the stability drivers demand for superior confidence in their trucks. The higher-capacity HAS suspensions build in added stability with increased main support member thicknesses and heavy-duty longitudinal torque rods. Transverse rods ensure maximum lateral suspension stability, while wide air spring centers provide outstanding roll stability. Up to 125 mm wide axle seats distribute forces over a greater area, providing a secure connection between the main support member and the axle.



**HAS single-axle  
air suspension**

\* HI-TORQUE shock absorbers are required on vehicles equipped with engines that exceed specific torque ratings. Contact Hendrickson or the respective vehicle manufacturer for additional information.

**Hendrickson Genuine Parts** are the same quality components installed in Hendrickson original equipment suspensions — consisting of the same design, construction, performance and durability. There’s only one way to maintain and protect your suspension’s original performance. Ask for the name that is synonymous with the finest manufactured suspensions in the world.

Extended Warranty options available at [www.hendrickson.com.au](http://www.hendrickson.com.au)

*Actual product performance may vary depending upon vehicle configuration, operation, service and other factors.*

*All applications must comply with applicable Hendrickson specifications and must be approved by the respective vehicle manufacturer with the vehicle in its original, as-built configuration. Contact Hendrickson for additional details regarding specifications, applications, capacities, and operation, service and maintenance instructions.*

Call Hendrickson or visit our web site for additional information.



[www.hendrickson.com.au](http://www.hendrickson.com.au)

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