



INDEPENDENT
SUSPENSION (IS)
OWNER'S MANUAL

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Introduction

The independent suspension system permits individual wheels to move up and down without affecting the others. This allows wheels to be on different surfaces while maintaining traction.

Additional information about this product can be obtained from lci1.com/support or by downloading the free LippertNOW app. The app is available on Apple App Store® for iPhone® and iPad® and also on Google Play™ for Android™ users. Apple App Store®, iPhone®, and iPad® are registered trademarks of Apple Inc. Google Play™ and Android™ are trademarks of Google Inc.

Safety

Read and understand all instructions before installing or operating this product. Adhere to all safety labels.

This document provides general instructions. Many variables can change the circumstances of any procedure, i.e. the degree of difficulty involved in the service operation and the ability level of the individual performing the operation. This document cannot begin to plot out procedures for every possibility, but will provide the general instructions for effectively installing, removing or servicing the system. In the event the skill level required is too advanced or the procedure too difficult, a certified technician should be consulted before performing the necessary operation. Failure to correctly install, remove or service the system may result in voiding the warranty, inflicting injury or even death.

WARNING

The "WARNING" symbol above is a sign that a procedure has a safety risk involved and may cause death or serious personal injury if not performed safely and within the parameters set forth in this manual.

WARNING

Failure to follow instructions provided in this manual may result in death, serious personal injury and/or severe product and property damage, including voiding of the component warranty.

⚠ WARNING

Trailer **MUST** be supported per manufacturer's recommendations before working underneath.
Failure to do so may result in death or serious personal injury.

⚠ CAUTION

The "CAUTION" symbol is a sign that a procedure has a risk involved that may cause personal injury or property damage if not performed safely and within the parameters set forth in this manual.

⚠ CAUTION

Always wear eye protection when performing service, maintenance or installation procedures.
Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the task.

Trailer Axle Owner's Manual

Many maintenance procedures for trailer axles are listed in the Trailer Axle Owner's Manual. Visit <https://lci-support-doc.s3.amazonaws.com/manuals/axles-and-suspension/ccd-0001412.pdf> to access this information which also features procedures for inspection and replacement.

The Independent Suspension Troubleshooting and Service Manual is included under the general Axles and Suspension section on the Lippert Support Documentation website. Visit the Independent Suspension section at <https://support.lci1.com/axles-and-suspension/>

Independent Suspension Maintenance

Routine maintenance is required to ensure safe and reliable operation of the suspension system. The service periods recommended are based on normal road usage. For off-road and abnormal driving conditions, more frequent maintenance and daily visual inspections are recommended. Replacement of items and wheel alignment tasks should be completed by a qualified technician. Visit the components document section for part numbers: <https://support.lci1.com/curt-independent-suspension>

Warranty Matrix

Independent Suspension (IS) Warranty Matrix						
Component	IS Unique	Axle Component	Warranty	Maintenance Schedule	Consumable	Qty.
Shocks	Yes	No	1 year	Inspect 1 year	Yes	4
Springs	Yes	No	6 years	Inspect 1 year	No	2
Bushings	Yes	No	6 years	Inspect 1 year	Yes	8
Toe and camber hardware	Yes	No	6 years	Inspect/torque 1 year	No	4 ea.
IS AP kit	Yes	No	6 years	Inspect 1 year	No	6 ea.
Hub bearings	No	Yes	1 year	Inspect 1 year	Yes	2
Hub seal	No	Yes	1 year	Inspect 1 year	Yes	2
Hub grease/oil	No	Yes	1 year	Inspect 1 year	Yes	2
Brakes electric/disc	No	Yes	1 year	Inspect 1 year	Yes	2
Axle welds	Yes	Yes	6 years	N/A	No	N/A
Other components	Yes	Yes	6 years	Inspect 1 year	No	N/A

Break-In Period For Electric Drum Brakes

NOTE: Brakes should be manually adjusted after the first 200 miles of operation, then periodically every 3,000 miles.

The break-in period is a typical phenomenon with drum brakes and especially electric drum brakes. Electric drum brakes will require a break-in period to achieve full performance. This break-in period applies for new axles and any time new brake shoes and/or magnets are installed as part of regular maintenance. LCI has found through extensive brake testing that the break-in period for our drum brakes can range from 20 to 50 brake applications.

Brakes can be seated in by applying approximately 8-10 volts to the trailer brakes at an initial speed of 40 mph and allowing the truck/trailer combination to slow down to 20 or 25 mph. For best results do not use truck brakes during this procedure. The trailer brakes will seat in faster by using them to stop both the truck and trailer. The easiest method is to apply the trailer brakes using the manual activation lever located on the in-cab brake controller.

Care **MUST** be taken to not overheat the lining material, therefore brake applications conducted at one mile intervals will suffice. The driver should feel a noticeable difference in the brake performance during this period, sometimes in as few as 10 applications. After 50 applications, the brake lining material will be fully cured from the heat and develop close to 100% contact with the brake drum surface.

This break-in period not only seats the shoe lining material but also seats in the brake electromagnets. During the break-in period, the linings will wear at a faster rate than they do after they are seated in.

Brake Burnishing

Important information about burnishing trailer brakes can be found in video and document formats:

Video: <https://www.youtube.com/watch?v=d9HDloz9fq8&t=15s>

TI-sheet: <https://lci-support-doc.s3.amazonaws.com/technical-information-sheets/axles-and-suspension/ccd-0001947.pdf>

Trailer Axle Brake Inspections

In general, based on normal activity, trailer brakes should be checked annually or every 36,000 miles, whichever comes first. If above normal trailer activity is experienced, then more frequent brake component inspections are recommended. In the event the braking system encounters symptoms of improper application or failure, immediate inspection and service **MUST** be performed.

Recommended Component Inspection Periods

Periodic Bearing Inspection — Should be performed annually or every 36,000 miles, whichever comes first.

Bearing Lubrication Inspection — Should be performed annually unless periodic brake inspections reveal abnormal braking performance.

Brake Cleaning and Inspection — Should be performed annually or every 36,000 miles, whichever comes first.

Wheel Lug Nuts

Tighten the wheel lug nuts in a criss-cross pattern until they are snug. Use a torque wrench to tighten the nuts to the manufacturer's torque specification.

Suspension and Shock Absorber Mounting Bolts

Check all bolts using a torque wrench to tighten to the specified settings.

Shock Absorbers

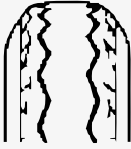
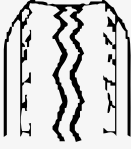
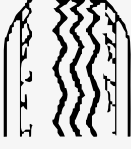



Visually inspect for leaks. If leaks are found, shock absorbers must be replaced. When vehicle is rocked, movement should stop quickly.

Coil Springs

If the suspension feels loose, check for excessive scuffing (large area) around the contact area of the coil springs. If found, replace all four shock absorbers.

Wheel Alignment

Visually inspect tires for abnormal wear. The suspension system is designed to have a small amount of negative camber at full load. Toe and camber adjustments can be made by technicians with the mechanisms provided. Adjustments will vary depending on vehicle and tires.

Tire Tread Wear Pattern Chart		
What Is Happening?	Why?	What Should Be Done?
Center wear 	Over-inflation	Adjust pressure to particular load per tire catalog.
Edge wear 	Under-inflation	Adjust pressure to particular load per tire catalog.
Side wear 	Loss of camber or overloading	Make sure load does not exceed axle rating. Call Lippert Service & Warranty to advise.
Toe wear 	Incorrect Toe-in	Call Lippert Service & Warranty to advise.
Cupping 	Out-of-balance	Check bearing adjustment and balance tires.
Flat spots 	Wheel lockup and tire skidding	Avoid sudden stop if possible and adjust brakes.

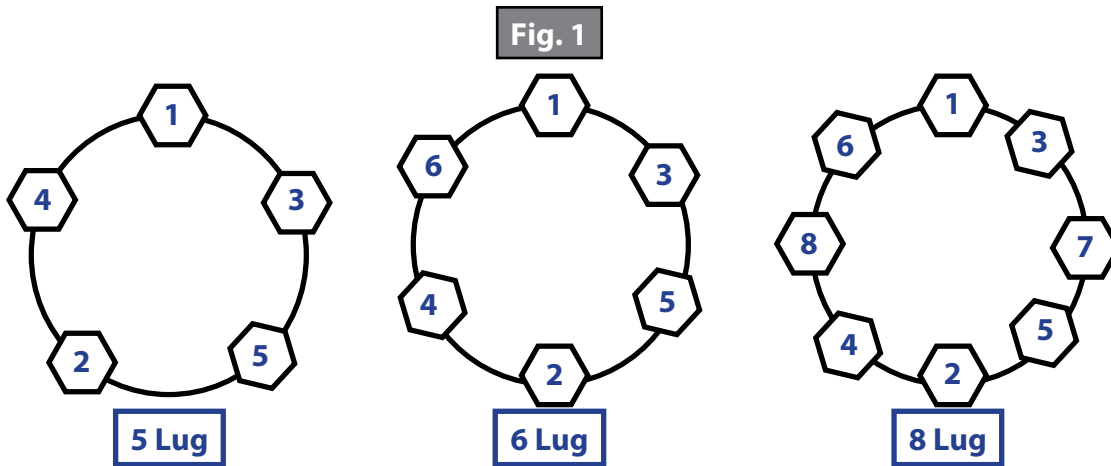
Wheels

Torque Requirements

It is extremely important to maintain proper wheel mounting torque limits on the trailer axles. Use of torque wrenches will ensure proper torque limits are applied to wheel mounting lug nuts. Use no other method to torque wheel lug nuts.

Make sure wheel fasteners match the cone angle of the wheel (usually 60° or 90°) being serviced. Attach new wheel to the axle hub as follows:

1. Start all bolts or nuts by hand to prevent cross-threading.
2. Continue to hand-tighten wheel lug nuts in the sequential pattern shown in Figure 1.
3. After wheel lug nuts are fully hand-tightened, torque nuts in stages in the sequential pattern shown in Figure 1.
 - A. Torque wheel lug nuts to the torque values listed in the Wheel Torque Requirement Chart.



Wheel Torque Requirement Chart				
Wheel Size	Stud Size	Torque Sequence		
		1st Stage	2nd Stage	3rd Stage
14"	1/2"	20-25 ft-lbs	50-60 ft-lbs	90-120 ft-lbs
15"	1/2"	20-25 ft-lbs	50-60 ft-lbs	90-120 ft-lbs
16"	1/2"	20-25 ft-lbs	50-60 ft-lbs	90-120 ft-lbs
16.5" x 6.75"	1/2"	20-25 ft-lbs	50-60 ft-lbs	90-120 ft-lbs
16"	9/16"	20-25 ft-lbs	60-70 ft-lbs	120-130 ft-lbs
16.5" x 6.75"	9/16"	20-25 ft-lbs	60-70 ft-lbs	120-130 ft-lbs
16" Dual and 17.5" Cone Nut	5/8"	50-60 ft-lbs	100-120 ft-lbs	190-210 ft-lbs
16" Dual and 17.5" Flange Nut	5/8"	50-60 ft-lbs	150-200 ft-lbs	275-325 ft-lbs
14.5" Demount	1/2"	Tighten sequentially to 85-95 ft-lbs		

⚠ WARNING

Proper and accurate torque MUST be maintained to prevent wheels from loosening, studs from cracking and/or breaking or other possible hazardous breakage resulting in serious injury or death.

4. Wheel lug nuts should be torqued before first road use and after each wheel removal.
 - A. Check and re-torque wheel lug nuts after 10, 25 and 50 miles. A periodic check during regular service is recommended.



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