



VANLEIGH EXTENDED SHACKLE LINKS

Recall Number:	19V-588		
Product:	Shackle Links		
Date:	08.23.19	Labor Rate:	1.0 Hour

Purpose

This document provides instructions for removal and replacement of shackle links kit 146298.

NOTE: LCI has elected to provide a complete A/P replacement kit as a precaution, which contains six additional wet bolts and nuts. These additional parts are not required to complete Vanleigh Recall 19V-588 and do not need to be returned.

Longer shackle links allow for more suspension travel, which allows for greater clearance between the tire and inner wheel well area.

NOTE: The shackle link kit is to be obtained from Vanleigh Customer Service and all claims/completed work orders are to be submitted to Vanleigh RV. No Pre-Auth is required from LCI to perform this recall.

NOTE: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

Safety

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, serious personal injury, severe product and/or property damage if not performed safely and within the parameters set forth in this document.

WARNING

Incorrect raising or lowering of the trailer could result in death, serious personal injury and/or severe damage to the product and/or property.

CAUTION

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

CAUTION

Make sure the trailer is properly supported before performing any maintenance or repair work. Follow the trailer manufacturer's recommendations for lifting and supporting the unit. Use proper personal protective equipment.



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Resources Required

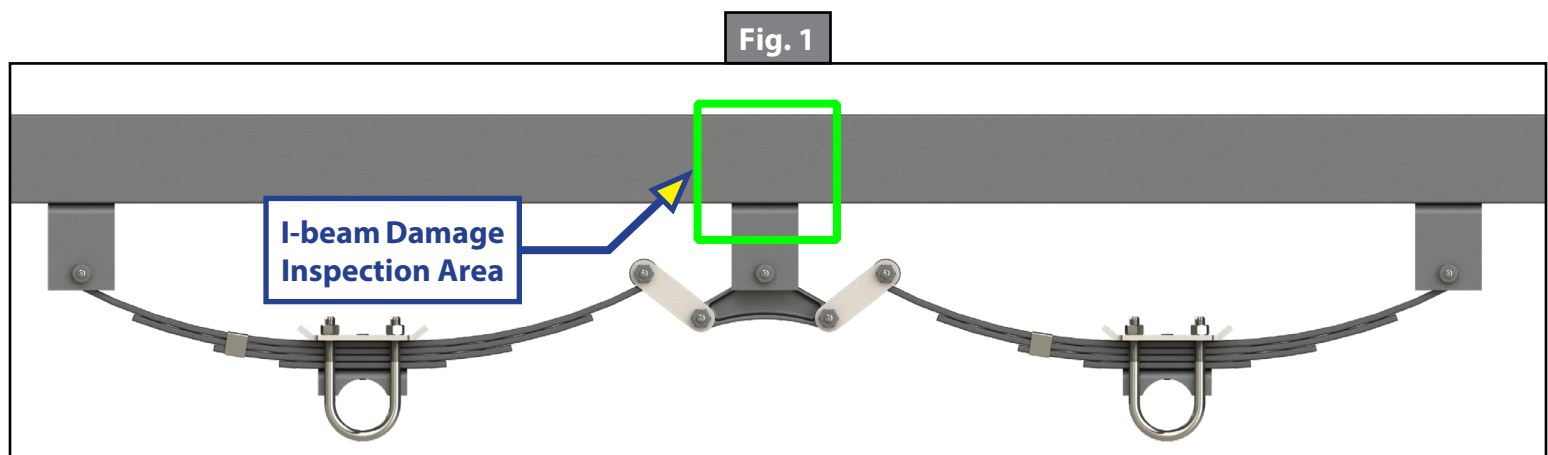
- 1-2 persons, depending on task
- Pneumatic air or impact gun
- Torque wrench
- Floor jacks and jack stands
- Hammer
- 1¹/₁₆", 3/4" and 1³/₁₆" deep well sockets

Preparation

1. Park the trailer on a level surface area.
2. With the trailer still connected to the tow vehicle, lower the front landing gear or the tongue jack until making contact with the ground.
3. Disconnect all internal and external power supplies.
4. Inspect equalizer I-beam area (Fig. 1) for any cracks to the I-beam.

NOTE: Green box indicates I-beam area subject to inspection for cracks.

- A. If cracks are found in the I-beam area, **STOP!** Do **NOT** replace current shackle assemblies. Contact Lippert Components, Inc. via email at customerservice@lci1.com. Include in the email the trailer's 17-digit VIN along with photographs of the axle area showing cracks.
 - B. If no cracks are found in the I-beam area, go to step 5 and proceed with shackle assembly replacement.
5. Locate the equalizers (Fig. 2A) and clean all debris from them.

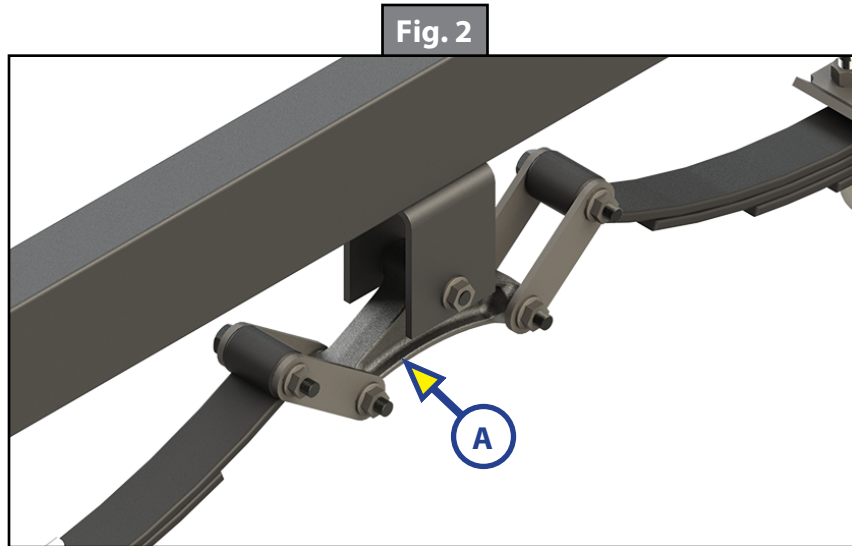




VANLEIGH EXTENDED SHACKLE LINKS

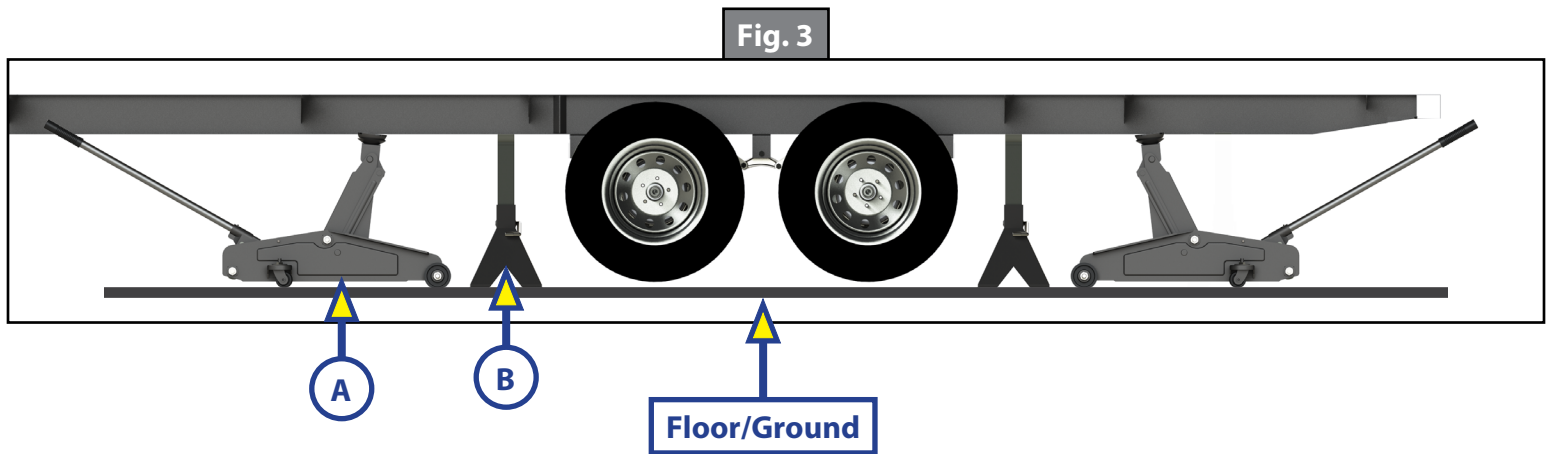
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Removal



NOTE: Do not lift the trailer by the axles. The axles were not designed as a viable lift point.

1. Using the properly-rated floor jack (Fig. 3A), lift the trailer according to the manufacturer's recommendation until the wheels are no longer in contact with the ground.
2. Support framework (Fig. 3B) in accordance with the manufacturer's recommendation.
3. Remove the wheels. Set wheels and lug nuts aside for later re-installation.
4. Using a floor jack (Fig. 3A), lift the axles slightly and carefully place the additional properly-rated jack stands (Fig. 4A) under the axles so that the shackle bolts can be removed.

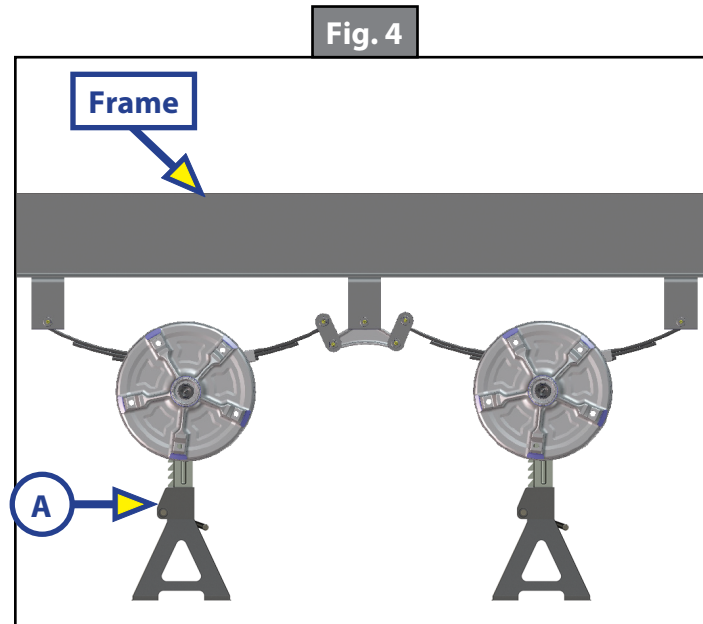




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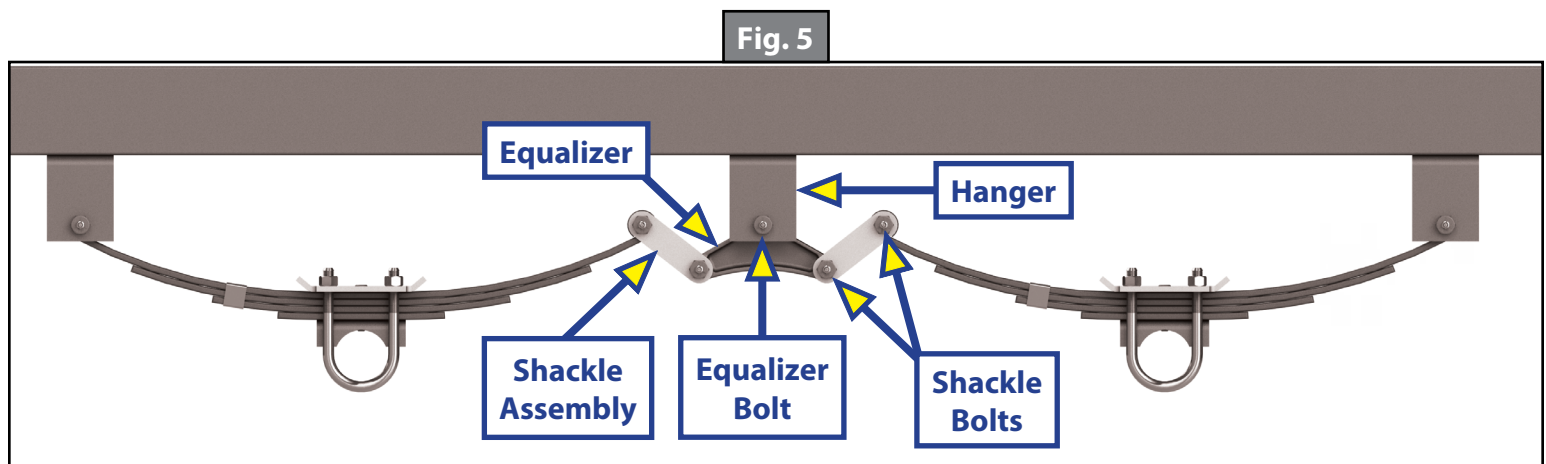
5. Holding the head of the bolts with a wrench, use an impact gun, or an appropriate wrench, to loosen the nuts on the shackle bolts (Fig. 5).



6. Remove the shackle assembly, shackle bolts, nuts and shackle links (Fig. 5) from the leaf spring eyelets and equalizer. Discard removed parts—**DO NOT REUSE**.

The trailer is ready for the installation of the A/P replacement shackle link kit 146298.

Installation





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Make sure the framework is still supported in accordance with the manufacturer's recommendations. Reference figure 4 for the following procedural steps:

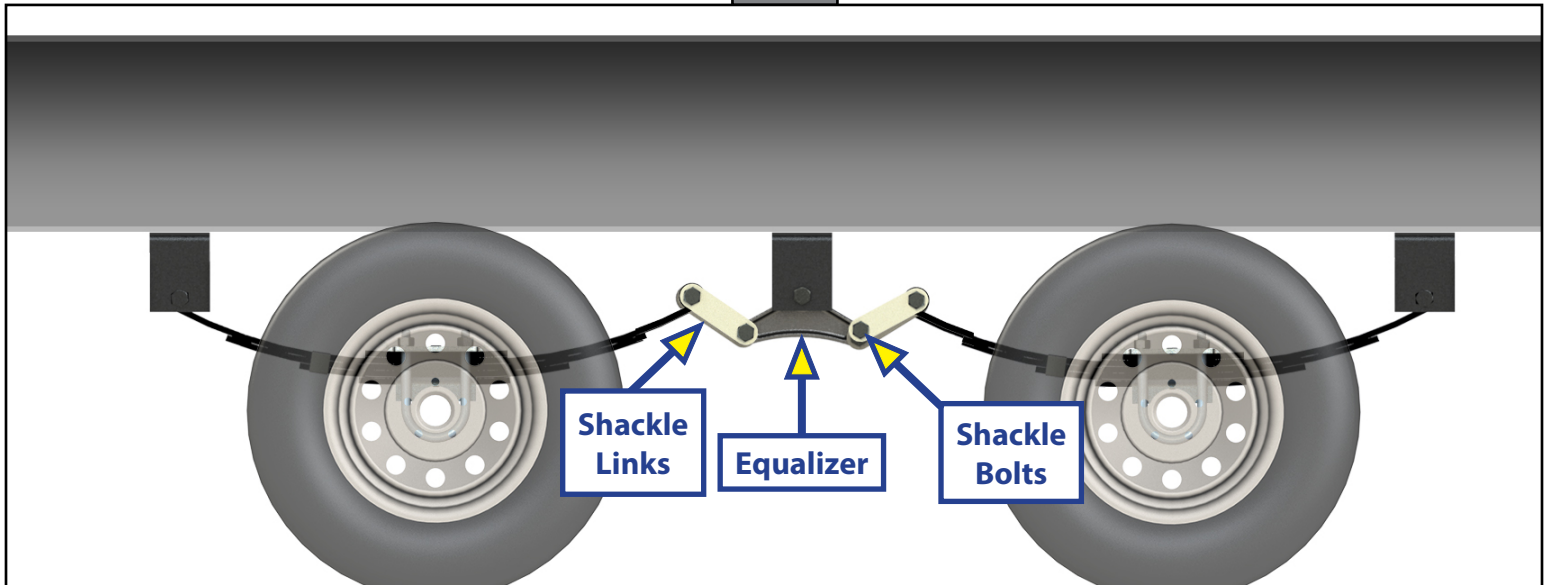
NOTE: When installing the nuts, make sure to use a wrench to hold the bolt heads.

1. Utilizing the floor jacks (Fig. 3A), lift the axles into their normal operating positions.
2. Install new shackle assemblies onto both ends of the equalizer.
 - A. Install shackle assemblies from the outside-in, towards the center of the trailer chassis, through the equalizer and leaf spring eyelet. This ensures the bolt threads do not interfere with any other assemblies.
 - B. Install new shackle links over the shackle bolts protruding through the equalizer and leaf spring.
 - C. Install new nuts onto the threaded end of each shackle bolt until the nuts seat against the shoulder of the bolts.
 - D. Use a torque wrench to tighten nuts until they bottom out on the shoulder of the bolts at 30-50 ft-lbs.
3. Repeat step 2 to install remaining new shackle assemblies on the opposite side of the chassis.
4. Make sure all shackle assemblies have been torqued in accordance with the specifications listed in the Spring Axle Torque Specifications chart.
5. Make sure the new shackle assemblies are upright and their links are located approximately in the 10 o'clock and 2 o'clock positions (Fig. 6).

Wheel Torque Requirements

1. Install wheels and apply lug nuts by hand to prevent cross-threading.

Fig. 6



Spring Axle Torque Specifications		
Bolt Type	Axle Capacity	Torque
Spring Eye, Equalizer and Shackle Bolts	All Double Eye	30-50 ft-lbs



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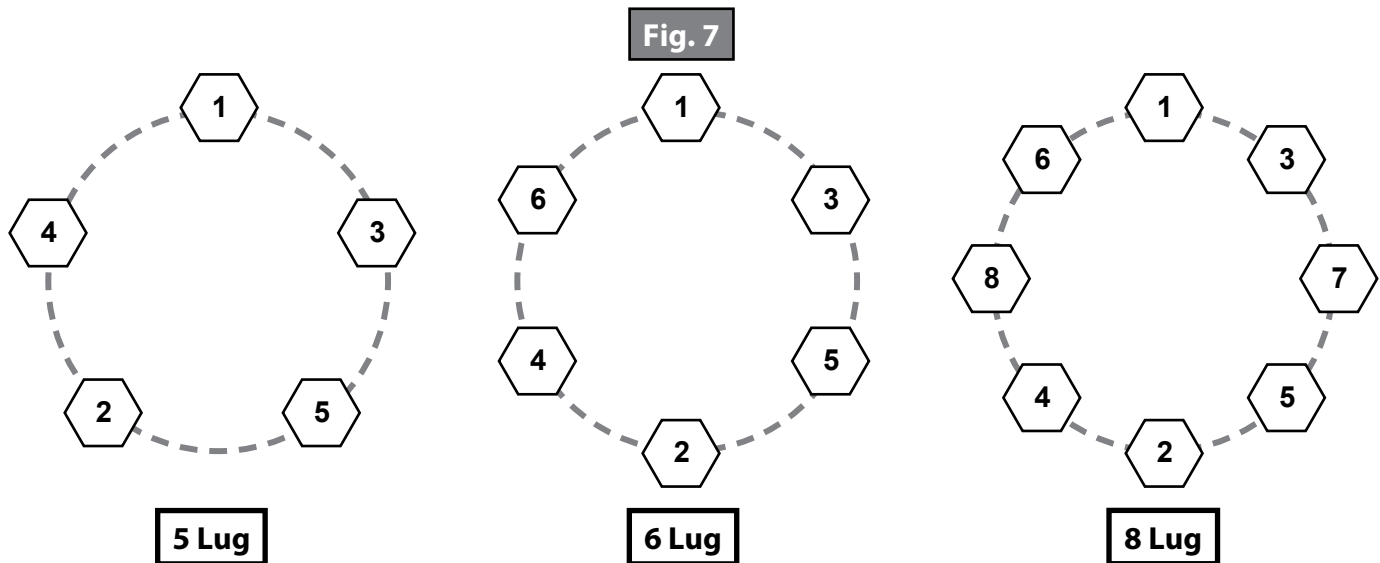
2. Continue to hand-tighten wheel lug nuts in the sequential pattern shown in figure 7.

⚠ WARNING

Proper and accurate torque must be maintained to prevent wheels from loosening, studs from cracking and/or breaking or other possible hazardous breakage that may result in death, serious personal injury, severe product or property damage.

3. After wheel lug nuts are fully hand-tightened, torque nuts in stages in the sequential pattern shown in figure 7.
A. Torque wheel lug nuts to the torque values listed in the Wheel Torque Requirement Chart.

NOTE: Wheel lug nuts should be torqued before first road use and after each wheel removal.



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B. Check and re-torque wheel lug nuts after 10, 25 and 50 miles. A periodic check during regular service is recommended.

4. Remove the jack stands and lower the trailer evenly to the ground.

NOTE: To ensure that the shackle links do not flip either up or down, lowering of the trailer must be with even distribution and without jarring movement. The trailer **MUST NOT** be dropped to the ground.

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"	1/2"	20-25 ft-lbs	50-60 ft-lbs	90-120 ft-lbs
14.5" Demount	1/2"	Tighten sequentially to 85-95 ft-lbs		
16"	9/16"	20-25 ft-lbs	60-70 ft-lbs	120-130 ft-lbs
16.5"	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
17.5" Dual Flange Nut	M22	50-100 ft-lbs	250-300 ft-lbs	450-500 ft-lbs

The replacement shackle links installation is complete.

As a supplier of components to the RV industry, safety, education and customer satisfaction are our primary concerns. Should you have any questions, please do not hesitate to contact us at (574) 537-8900 or by email at customerservice@lci1.com. Self-help tips, technical documents, product videos and a training class schedule are available at lci1.com or by downloading the MyLCI app.