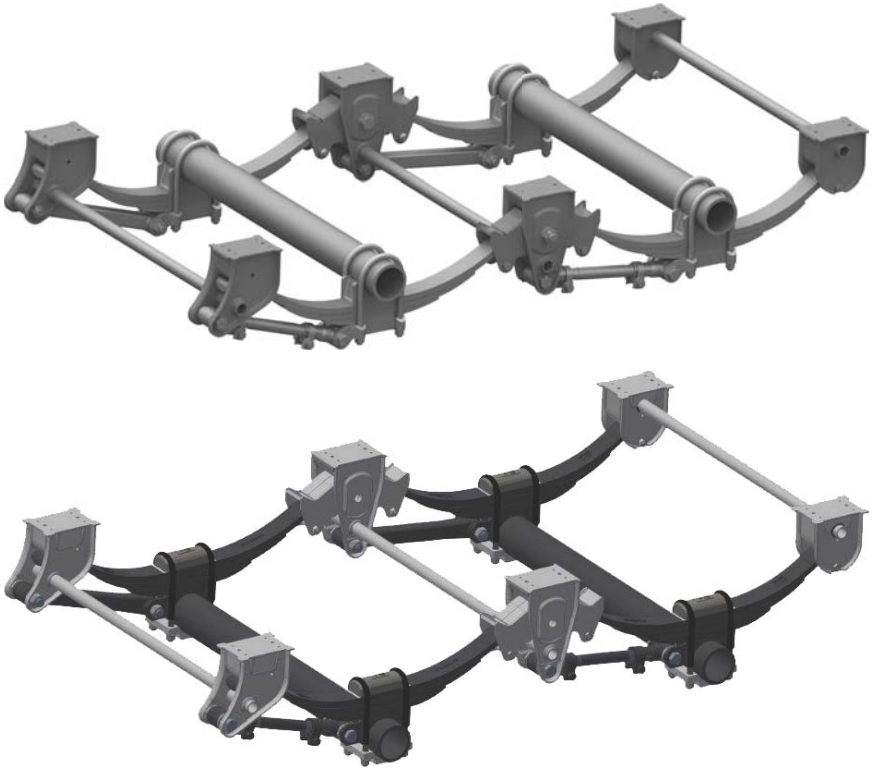
OPERATION MAINTENANCE SERVICE MANUAL

HEAVY DUTY SUSPENSION SYSTEM



DEXTER

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Introduction

This manual is designed to provide information for you to understand, use, maintain, and service your trailer running gear system. Your axles are manufactured by Dexter. Since 1960, Dexter's experience in the design, testing, and manufacturing of trailer axles has resulted in the most complete product line in the industry. The Dexter running gear system consists of axles, suspensions, and braking systems which are engineered to provide you the finest towing and stopping performance available today.

Two Dexter philosophies are at work to provide you the best product available and have enabled us to maintain our position of leadership. First, we operate on the theory that "there is always a better way" for a product to operate, to be manufactured, and/or to be serviced. We are constantly striving to find that better way.

Secondly, we maintain the highest quality control standards in the industry and adhere to ISO 9001:2015. Dexter has operated with detailed documented processes and procedures long before completing ISO Certification, continually placing quality and customer service as the focus. This ensures that critical components including axle beams, hubs, drums, spindles, and braking systems are manufactured to the highest quality standards so that we can provide our customers with dependable products, the most comprehensive product offering and reliable, consistent customer service.

Trusting is hard. Knowing who to trust even harder. Through vertical integration we engineer, design, manufacture and test virtually every part in-house to ensure superior quality trailer running gear. We fuss over details, so you don't have to. **Trust Dexter.**

Visit us online at www.dexteraxle.com.

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Important Safety Notice

Appropriate service methods and repair procedures are essential for the safe, reliable operation of all running gear as well as the personal safety of the individual doing the work. This manual provides general directions for performing service and repair work with tested, effective techniques. Following these guidelines will help assure reliability.

There are numerous variations in procedures, techniques, tools, parts for servicing axles, as well as in the skill of the individual doing the work. This manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Anyone who departs from the instructions provided in this manual must first establish that they neither compromise their personal safety nor the vehicle integrity by their choice of methods, tools, or parts.

Refer to your vehicle manufacturer's owners manual for additional procedures, techniques, and warnings prior to performing any maintenance or repairs.

⚠ CAUTION

This is the safety alert symbol. It is used to alert you to potential injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Dexter strongly emphasizes that each of the maintenance procedures discussed has a significant safety purpose. Failure to maintain proper torque values on each of the suspension components can result in a malfunction of suspension components. Further, use of any visibly worn component can result in a malfunction. Any of these malfunctions can result in loss of vehicle control and personal injury or death. Safety is the number one concern at Dexter. We urge you to follow the maintenance procedures set out in these written instructions.

The first maintenance check should be performed after an initial break-in period at 1,000 miles. A visual inspection of all suspension components and attachment welds should be performed to reveal any obvious problems, such as cracks or unexpected wear.

Operating Procedures

During the "walk-around", it is essential to also check the torque on all suspension fasteners. In the course of the initial 1,000 mile period in which the components of the suspension "seat-in", as much as 25% of the original clamp load on the bolted joints can be lost. After the parts of the suspension

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have worked together for a very short period of time, re-torquing the bolts is necessary to ensure that undue movement, which results in excessive suspension wear, does not occur.

During the first maintenance check, the trailer's axle alignment should be examined and adjusted to comply with the Dexter trailer alignment procedure (shown on page 8). Alignment should also be checked following any maintenance or repair procedure performed on the suspension. Visual inspections and re-torquing are maintenance procedures that are performed every four months throughout the life of the trailer.

Begin each inspection with a review of the Dexter torque decal (shown below) for the appropriate torque values for each suspension fastener. The oiled torque values listed are for new fasteners with lubricated threads. For maintenance checks on fasteners that have been in service, use the higher dry torque values. It is important that you check all bolts and nuts to ensure that the recommended torque values are being maintained.

⚠ CAUTION

HEAVY DUTY SUSPENSION TORQUE REQUIREMENTS

Before torquing equalizer bolts, level equalizers parallel to main frame members. After initial break-in period (up to 1,000 miles) and at least every 4 months thereafter; all bolts and nuts should be checked to ensure recommended torque is being maintained.

TORQUE VALUES FOR BOLTS WITH CLEAN DRY THREADS

1-1/8–7 UNC Nut	Oiled: 615 Ft. Lbs. Dry: 815 Ft. Lbs
1–8 UNC Nut	Dry: 350 Ft. Lbs.
Spring Keeper Nut 5/8–18 UNF	Dry: 50 Ft. Lbs.
Track Rod Clamp Nut 5/8–11 UNC	Dry: 150 Ft. Lbs.
U-Bolt 3/4-10 UNC Nut	Dry: 200 Ft. Lbs.

DEXTER
www.dexteraxle.com

Label No. 059-094-00 Rev F

You cannot rely on visual inspection to detect loose fasteners.
USE A CALIBRATED TORQUE WRENCH!

The Dexter torque decal label should be installed on the side of the trailer in a visible location. Decals can be obtained free of charge by contacting Dexter.

Now let's look closely at the maintenance requirements for each of the suspension's main component groups.

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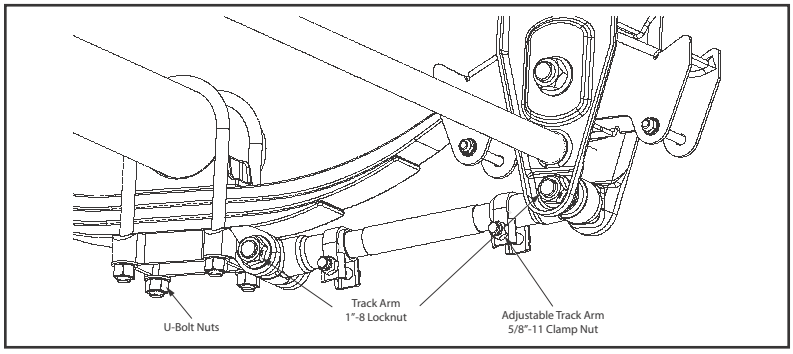
Axle Clamp Group and Springs

1. Check the torque on the U-Bolt/Tie Plate nuts by alternately tightening opposing corners of the clamp assembly (see Figure 1).

   A. U-Bolts are 3/4"–10 and the nuts should be torqued to a **dry** level of **200 Ft. Lbs.**



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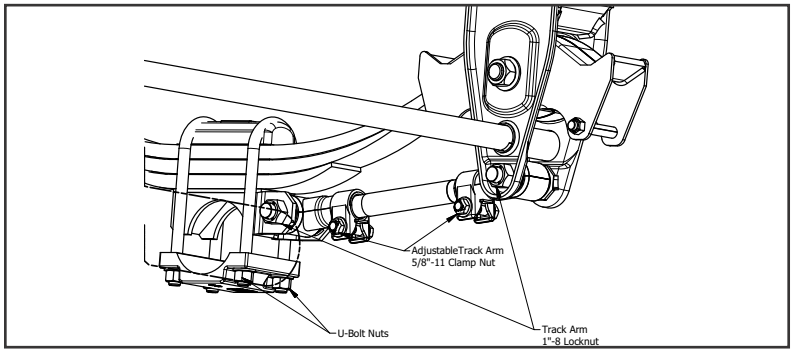

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Figure 1

Always carefully inspect the spring and axle clamp components for any signs of wear or cracks, and replace if visible wear or cracks are present.

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Track Arms (Radius Rods)

1. The 1"–8 UNC nut for track arm attachment bolts at the hangers and tie-plates should be tightened to a **dry** level of **350 Ft. Lbs.** of torque for adjustable and non-adjustable track arms (see Figure 1).

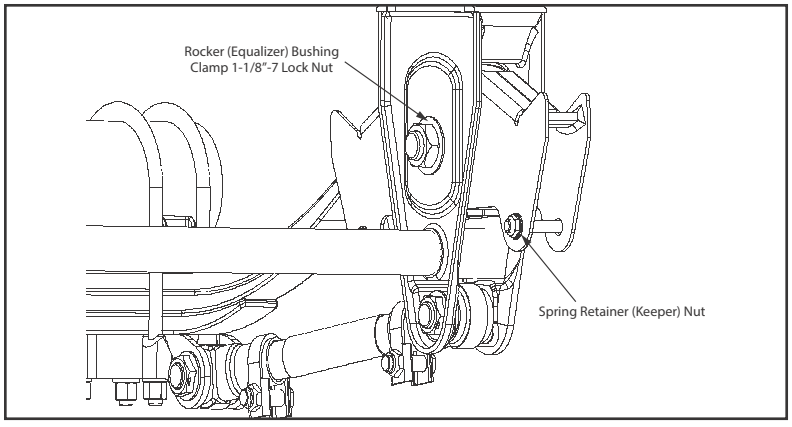
   Loose operation of this bolt can result in wear requiring that new components be installed to avoid structural damage. During your visual inspection, if you observe any visible wear or loosening in the bushing, it is imperative that you immediately replace the track arm, and the bushing and bolt assembly. Failure to replace these components will result in damage to the hanger, spring seat, and/or track arm.

2. Next, check the 5/8"–11 UNC adjustable track arm clamp nut and tighten to a **dry** level of **150 Ft. Lbs.** of torque (see Figure 1). If the clamp bolt has not been properly maintained, then wear between the track arm threads and the eye end may be observed. If so, then the entire track arm must be replaced. Simply retightening or replacing the clamp bolt will not correct this problem.

Rocker Bushings

1. The recommended torque values for the rocker bushing clamp bolts are different for each model.

   A. If you are working on the Dexter Double Slipper Spring (DSS) model suspension, the single 1 1/8"–7 UNC rocker nut should be tightened to a **dry** level of **815 Ft. Lbs.** of torque (see Figure 2).



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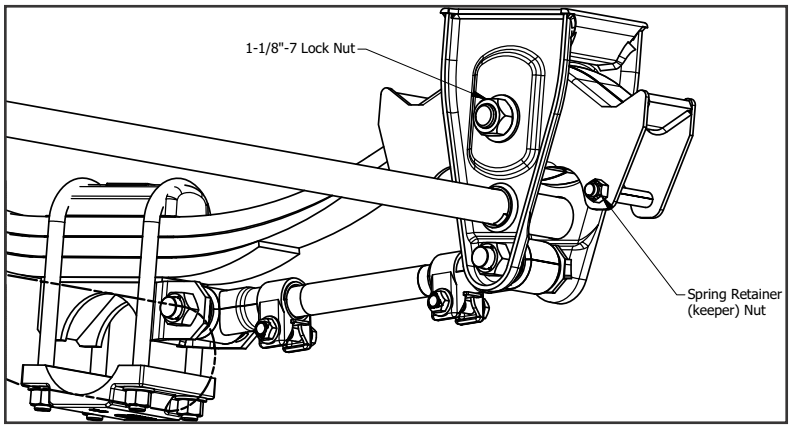

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Figure 2

During your check, if the bolts are loose, a detailed inspection of the rocker is important to ensure that no structural damage has occurred. One way this can be done is by raising the trailer until the trailer weight is taken off the springs. If the rocker is displaced, or if the joint is loose, then the rocker should be removed and the rocker equalizer should be replaced. Again, visually inspect the condition of all rocker or rocker hanger assembly components and replace if visible wear is present.

Hangers

1. Check all of the spring retainer bolts found in the rockers and rear hangers. A **dry** value of **50 Ft. Lbs.** of torque should be maintained on all of these bolts (see Figure 2).

   Loose fasteners that are allowed to operate for any period of time will result in irreversible suspension damage and possible loss of vehicle control. Remove and replace loose or damaged fasteners. Retightening a worn fastener will not correct a situation created by loose operation.

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Heavy Duty Suspension System Axle Alignment

To align a four (4) spring suspension, there is one adjustable track arm (rod) on each axle. These will typically be on the road (left) side.

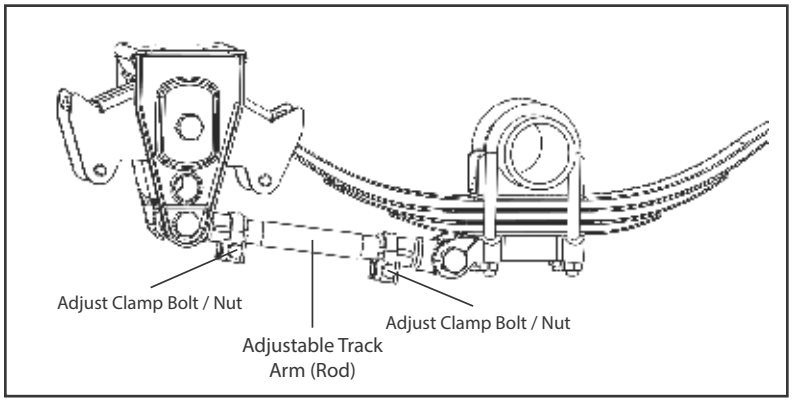
Release the clamps at each end of the adjustable rod (see Figure 1). Align front axle with the king pin and adjust each axle thereafter parallel to the front axle. Be sure to secure the clamps on the adjustable track arm (rod) after alignment (see Figure 1).

Alignment Procedure (Figure 3)

Before taking axle alignment measurements, make sure the trailer is unloaded and free the suspension of any binds by pushing the trailer backwards and then pulling the trailer forward. While pulling the trailer forward on a level floor, apply the brakes and release. The trailer MUST be level from side to side as well as from front to rear.

Note: Neither service nor parking brakes should be applied during the measurement procedure.

Ensure the king pin is at the correct height. Use axle and extenders (or remove outer wheels and any obstructions) to achieve a straight line for measuring from king pin to the axle ends/centers.



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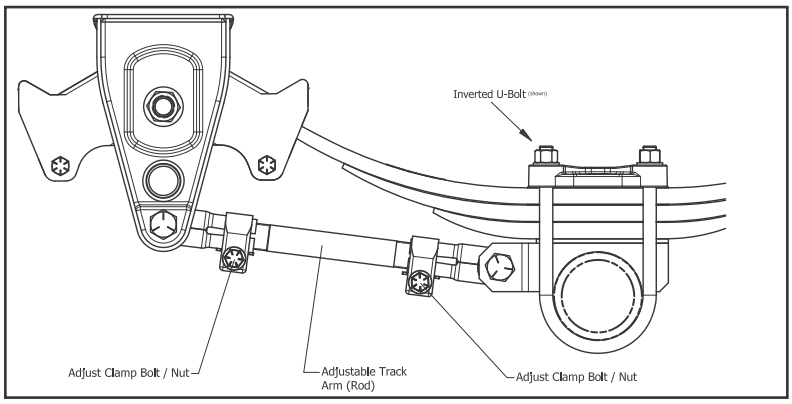

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Figure 3

Measuring

1. **Lateral Centerline (E).** Determine lateral centerline of trailer body and axles by measuring distance E between trailer and axle centerlines first, and correct so that distance E is 1/4" or less for each axle.

2. **Thrust Angle (A, B).** Measure distances A (curbside) then B (roadside) from the king pin to the front of the axle. These must be equal to within 0.1 degree or 1/8" of each other (A = B ± 1/8"). Ensure the lateral tension (pulling force) applied to the measuring tape is the same for both A and B measurements. Use a tensioning device scale or optical (laser) to ensure accuracy.

3. **Scrub Angle (C, D).** Measure distances C (curbside) then D (roadside) between axles, measuring from front of axle extension to front of axle extension (same as center to center). These also must be equal to within 1/16" of each other (C = D ± 1/16"). This measurement should be as close to zero as possible. The smaller the offset, the lower the rolling resistance and the better the fuel economy.

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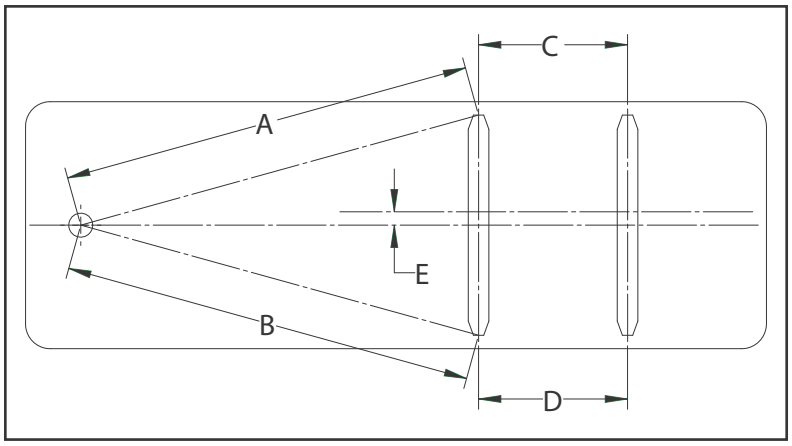

Figure 4

Adjusting

1. Loosen the adjustable track rod clamp bolts (see Figure 1) and turn the center rod to adjust as necessary (see torque min/max table).
2. After adjusting, tighten the adjustable track rod clamp nuts (see Figure 1) to proper torque (see torque min/max table) and recheck measurements.

Precautions

1. Always measure to the front axle ends for accurate alignment.
2. Avoid measuring to rims, suspension brackets, hub cap vent holes, brake drums, etc. This can result in improper alignment. For accurate measurements, use extenders.
3. Always align any succeeding axles with the front axles, not the kingpin.

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Dexter Axle Limited Warranty

What Products Are Covered
All Dexter Axle Company ("Dexter") trailer axles, suspensions, and brake control systems manufactured on or after September 1, 2016, excluding Dexter 6000 series Manufactured Housing Axles. Additional exclusions include the following brands: UFP by Dexter, AL-KO (IAC), Titan Brakes and Actuators by Dexter, and BrakeRite by Dexter products, which are covered under separate warranties.

Limited 1 Year Warranty
As specified in Dexter's current publication "Operation Maintenance Service Manual", grease and oil seals FOR ALL PRODUCTS have a one (1) year limited warranty to the original purchaser from the date of first sale of the trailer incorporating such components. **Except as to grease and oil seals, the following four other warranties are available.**

Limited 2 Year Warranty
Dexter warrants to the original purchaser that its electric/hydraulic brake actuators shall be free from defects in material and workmanship for a period of two (2) years from the date of first sale of the trailer incorporating such components.

Limited 5 Year Warranty
Dexter warrants to the original purchaser that its axles, suspension systems and Genuine Replacement Parts shall be free from defects in material and workmanship for a period of five (5) years. The warranty period shall begin from the date of the original purchase of the trailer and/or Genuine Replacement Parts.

Limited 7 Year Warranty
Dexter warrants to the original purchaser that its Predator Series® electric brake controllers shall be free from defects in material and workmanship for a period of seven (7) years from the date of purchase.

Limited 10 Year Warranty
Dexter warrants to the original purchaser that the suspension components of its Torflex® axles shall be free from defects in material and workmanship for a period of ten (10) years from the date of first sale of the trailer incorporating such suspension components.

Exclusive Remedy
Dexter will, at its option, repair or replace the affected components of any defective axle, repair or replace the entire defective axle, or refund the lesser of the original purchase price and the then-current list price of the axle or components. In all cases, a reasonable time period must be allowed for

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warranty repairs to be completed. Allowance will only be made for installation costs specifically approved by Dexter.

What You Must Do

In order to make a claim under these warranties:

1. You must be the original purchaser of the trailer in which the sprung suspension axles or Torflex® axles or components were originally installed.
2. You must promptly notify Dexter after detection of any defect, but in any case within the applicable warranty period of such defect, and provide us with the axle or applicable component serial number and any substantiation of such defect which may include, but is not limited to, the return of part(s) that we may reasonable request.
3. The axles, suspensions and components must have been installed and maintained in accordance with good industry practice and any specific Dexter recommendations, including those specified in Dexter's current publication "Operation Maintenance Service Manual".

Exclusions

These warranties do not extend to and do not cover defects caused by:

1. The connecting of brake wiring to the trailer wiring or trailer wiring to the towing vehicle wiring.
2. The attachment of the running gear to the frame.
3. Parts not supplied by Dexter.
4. Any damage whatsoever caused by or related to any alteration of the axle including welding supplemental brackets to the axle.
5. Use of an axle on a unit other than the unit to which it was originally mounted.
6. Normal wear and tear.
7. Improper alignment.
8. Improper installation.
9. Unreasonable use (including failure to provide reasonable and necessary maintenance as specified in Dexter's current publication "Operation Maintenance Service Manual including required maintenance after "Prolonged Storage").
10. Improper torque values and torqueing of wheel nuts. (The proper torqueing procedure and torque values are contained in Dexter's current publication "Operation Maintenance Service Manual").
11. Cosmetic finish or corrosion.

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Limitations

1. **In all cases, Dexter reserves the right to fully satisfy its obligations under the Limited Warranties by refunding the lesser of the original purchase price and the then-current list price of the defective axle (or, if the axle has been discontinued, of the most nearly comparable current product).**
2. Dexter reserves the right to furnish a substitute of replacement component or product in the event an axle or any component of the axle is discontinued or is otherwise unavailable.
3. These warranties are nontransferable.

General

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXCEPT THAT OF TITLE, WHETHER WRITTEN, ORAL OR IMPLIED, IN FACT OR IN LAW (INCLUDING ANY WARRANTY AGAINST INFRINGEMENT OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE).

These warranties give you specific legal rights, and you may also have other rights which vary from state to state.

DEXTER HEREBY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF TIME, INCONVENIENCE, LOSS OF USE, TOWING FEES, TELEPHONE CALLS, COST OF MEALS OR LODGING, FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation if incidental or consequential damages, so the above exclusion or limitation may not apply to you.

Inquiries regarding these warranties should be sent to:

Dexter Axle Company
P.O. Box 250
Elkhart, IN 46515

Note: Current publication “Operation Maintenance Service Manual” can be found at www.dexteraxle.com.

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Dexter Video Gallery

In keeping with our continual commitment to industry safety and the development of innovative products, please feel free to view our ongoing video gallery at **www.dexteraxle.com/resources/videos** or scan the following QR codes. We are confident these videos will help educate and promote the Dexter product line that you, as our customer, are investing in.

Bearing Maintenance

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Electric Brakes

E-Z FLEX® Suspension

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Genuine Brakes

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Sway Control

TORFLEX® Suspension Axles

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Dexter Online Parts Store

From magnets and seals to complete brake and hub kits, Dexter offers a complete line of genuine replacement parts for your trailer. Most products are available in-stock and ready to ship within 24 hours direct to you from the factory. With dedicated customer support and quick turnaround, the Dexter Online Parts Store helps keep your trailer going.

- Hub Components
- Brake Components
- Suspension Components
- Complete Hub Kits
- Brake Assemblies & Kits
- Brake Controllers & Actuators

Ready for Immediate Shipment

Direct to Your Door

Visit us online at www.dexteraxle.com

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Genuine Dexter axles and components are available nationwide from our plant locations listed below or through our network of distributors. Check our web site for the distributor nearest you.

Dexter - Headquarters

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www.dexteraxle.com

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Albion, Indiana 46701
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Fax: 260-636-3030

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