



OWNER'S MANUAL



 **DIAMOND C**
TRAILERS



OWNER'S MANUAL

IMPORTANT SAFETY INFORMATION

THIS OWNER'S MANUAL CONTAINS ESSENTIAL SAFETY INFORMATION AND OPERATING INSTRUCTIONS FOR YOUR TRAILER.

YOU MUST READ THIS MANUAL IN ITS ENTIRETY BEFORE LOADING OR TOWING YOUR TRAILER.

FAILURE TO FOLLOW ALL SAFETY PRECAUTIONS AND INSTRUCTIONS MAY RESULT IN SERIOUS INJURY, PROPERTY DAMAGE, OR DEATH.

WARNING – BRAKE SERVICE REQUIRED

OVER TIME, YOUR TRAILER BRAKING PERFORMANCE HAS LIKELY DIMINISHED DUE TO NORMAL WEAR. BRAKE COMPONENTS MUST BE INSPECTED AND REFURBISHED IMMEDIATELY TO ENSURE RELIABLE OPERATION.

OPERATING A TRAILER WITH WORN OR OUT-OF-ADJUSTMENT BRAKES CAN RESULT IN **REDUCED STOPPING POWER, INCREASED STOPPING DISTANCE, OR COMPLETE BRAKE FAILURE**, LEADING TO SERIOUS INJURY OR PROPERLY DAMAGED.

USER NOTE: This manual includes an interactive Table of Contents for easy navigation. Simply click any section title to jump directly to that page. Hyperlinks throughout the document provide quick access to related sections and additional information.

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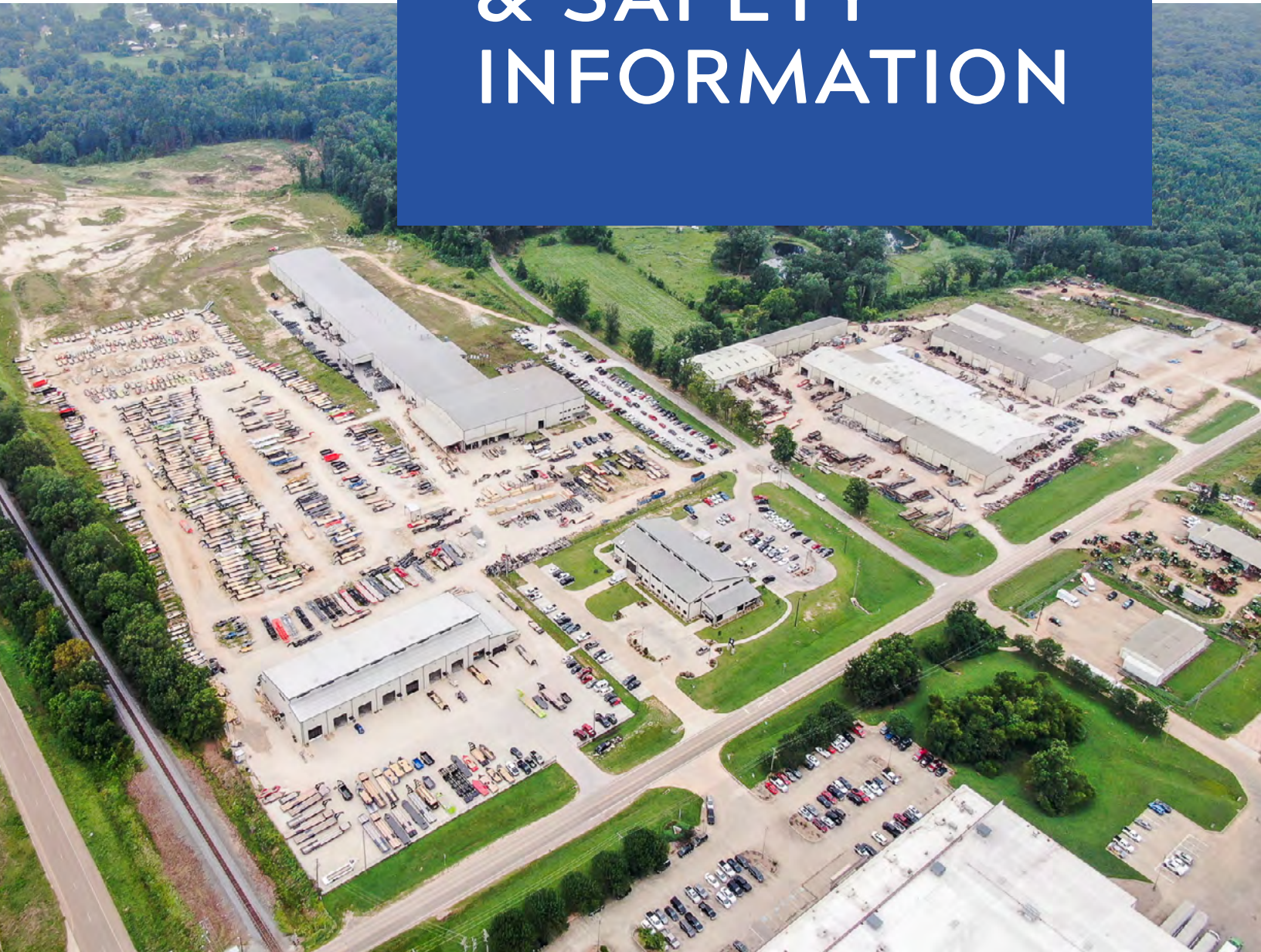
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1

WELCOME & SAFETY INFORMATION





CHAPTER 1: WELCOME & SAFETY

Welcome, and thank you for choosing Diamond C Trailers.

We appreciate your trust in our products and are committed to delivering equipment that is safe, durable, and engineered with purpose. At Diamond C, every trailer is built with relentless attention to detail, premium components, and a commitment to craftsmanship that reflects our core mission: to empower you to do your best work.

This Owner's Manual is designed to help you get the most out of your Diamond C trailer by providing clear operating instructions, essential safety information, and ongoing maintenance guidance. Our goal is to ensure that your trailer performs with the reliability and confidence you expect from a purpose-built product. Whether you are a first-time owner or a seasoned operator, we strongly encourage you to read this manual thoroughly before use. Familiarity with your trailer—its features, capabilities, and best-use practices—is key to maximizing performance, extending longevity, and ensuring your safety.

Thank you again for joining the Diamond C network of hard working North Americans. We are honored to be part of the work you do every day and look forward to supporting you for the long haul.

CHAPTER 1: WELCOME & SAFETY

1.1 DIAMOND C PHILOSOPHY

At Diamond C Trailers our goal is to fuel the well-being, growth, and success of our team members, customers, and community abroad.

OUR NICHE: Delivering **EXTRA**ordinary trailers – and service to match.

DO WORK.

We believe that where there's a will, there's a way. We're committed, creative, and resourceful. We don't back down from a challenge; instead, we pioneer our own way into the future.

We show up mindful and heartfelt, and we put in the work to win and advance our team, our customers, and our community.

Results + Progress + Positivity



LOVE STRONG.

Our calling is much greater than ourselves. We strive to respect and honor others and to lift as we climb, driven by unwavering, unselfish concern for the good of those around us.

We genuinely care, and because we care, we hold each other to high standards. When we win, we win together.

Service + Clarity + Integrity





CHAPTER 1: WELCOME & SAFETY

1.2 GENERAL TRAILER SAFETY

Towing a trailer requires more than just hooking up and hitting the road—it demands attention to safety, awareness of your equipment, and proper operational habits. Following basic safety practices protects you, your passengers, your cargo, and others on the road. Below are key safety principles all trailer owners and operators should follow.

BEFORE YOU TOW

- **Read This Manual:** Familiarize yourself with all trailer systems and safety guidelines before first use.
- **Perform Pre-Trip Inspections:** Always check tires, brakes, lights, coupler connection, safety chains, and load security.
- **Check Capacity Ratings:** Never exceed your trailer's **Gross Vehicle Weight Rating (GVWR)** or the tow vehicle's towing capacity.
- **Balance The Load:** Keep the cargo evenly distributed, with most weight centered over the axles. Maintain proper tongue weight to help prevent trailer sway.

WHILE TOWING

- **Drive Cautiously:** Allow for longer stopping distances and wider turns. Reduce speed, especially when loaded.
- **Monitor Behavior:** Watch for signs of sway, abnormal tire movement, or braking inconsistencies.
- **Avoid Sudden Maneuvers:** Abrupt braking, turning, or lane changes can lead to loss of control.

CHAPTER 1: WELCOME & SAFETY

GENERAL SAFETY REMINDERS

- Always chock wheels before uncoupling or servicing the trailer.
- Use safety chains properly—cross them under the coupler and keep slack minimal.
- Be cautious around hydraulic or pressurized systems—never open lines or fittings under load.
- Perform all maintenance on a level, stable surface using appropriate lifting and safety equipment.



Legal & Safety Notices



WARNING: Failure to follow general towing and maintenance safety practices may result in serious injury, loss of control, or death.

NOTICE: It is the owner's responsibility to operate and maintain the trailer in accordance with this manual and all local, state, and federal laws.

DISCLAIMER: Diamond C assumes no responsibility for accidents or damage resulting from unsafe use, unauthorized modifications, or failure to follow stated guidelines.

2

HITTING THE ROAD FOR THE FIRST TIME



CHAPTER 2: HITTING THE ROAD FOR THE FIRST TIME

**WHAT IS BRAKE BURNISHING?**

Burnishing (sometimes called “seating” or “breaking in” the brakes) is the process of properly conditioning your trailer’s drum brake shoes. When drum brakes are new, the surfaces are not yet mated. Burnishing smooths and mates the brake linings to the drum surface, ensuring optimal braking performance, longer component life, and safer towing.

WHEN SHOULD YOU BURNISH BRAKES?

- **After purchasing a new trailer with drum brakes** (first time use).
- **After brake service** (new shoes, or drums installed).
- **If brakes feel weak or uneven** after maintenance.



CHAPTER 2: HITTING THE ROAD FOR THE FIRST TIME

BURNISHING PROCEDURE

Follow these steps in a safe location (empty parking lot or low-traffic road):

1. LOAD CONDITION:

- Tow the trailer with a moderate load (not empty, but not at full capacity).
- This ensures proper seating pressure without overheating.

2. SPEED UP:

- Accelerate to about **40 mph (64 km/h)**.

3. BRAKE FIRMLY:

- Apply the trailer brakes gradually but firmly to slow the rig down to about **20 mph (32 km/h)**.
- **Do not** lock up the wheels.

4. REPEAT THE CYCLE:

- Perform this process **20-30 times**.
- Allow brakes to cool for a few seconds between stops (*do not keep them applied continuously*).

5. FINAL CHECK:

- After burnishing, brakes should feel more responsive.
- A slight smell or light smoke during burnishing is normal.
- If brakes overheat, allow them to cool before resuming.

SAFETY TIPS

- Always perform burnishing in a **safe area** away from heavy traffic.
- Do not attempt burnishing on steep grades or high-traffic roads.
- Avoid sudden, hard panic stops during the process.
- Ensure the tow vehicle is properly rated for the trailer weight.

WHAT IF BURNISHING IS SKIPPED?

- Brakes may **grab unevenly** or feel weak.
- Stopping distance will be **longer than normal**.
- Brake components may **overheat and wear prematurely**.
- Warranty coverage may be affected if lack of maintenance is evident.

Pro Tip: Axles equipped with an ABS system should be burnished the same way and will not experience wheel lockup.

3

TRAILER IDENTIFICATION



CHAPTER 3: TRAILER IDENTIFICATION

The Vehicle Identification Number (VIN) is a unique 17-character code used to identify your trailer. It is essential for warranty claims, registration, and ownership documentation. Providing the last six digits of your VIN will be adequate.

3.1 PRIMARY LOCATION

The VIN is located on a **sticker affixed to the driver's side of the tongue (frame) of the trailer**, near the front right-hand corner.

Sticker Details:

The VIN sticker includes the following information:

- Full 17-digit VIN
- Manufacturer name and contact information
- Gross Vehicle Weight Rating (GVWR)
- Gross Axle Weight Rating (GAWR)
- Model
- Date of Manufacture
- Trailer Empty Weight

MANUFACTURER & CONTACT INFORMATION		TRAILER EMPTY WEIGHT		DATE OF MANUFACTURE	
MANUFACTURED BY/FABRIQUÉ PAR : ROADCLIPPER ENTERPRISES, INC.		DATE : 01/2020			
GVWR/PNEV : 4486 KG (9890 LB) LRD		EMPTY WEIGHT : 2850 LB		COLD INFL PRESS. / PRESS. DE GONFL. À FROID	
GAWR / PNBE (EACH AXLE)	TIRE / PNEU	RIM / JANTE	KPA (PSI / LPC)	SGL/DUAL	
2359 KG (5200 LB)	ST225/75R15	15X5	448 KPA (65 PSI)	SINGLE	
THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE. / CE VEHICULE EST CONFORME À TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU RÈGLEMENT SUR LA SÉCURITÉ DES VEHICULES AUTOMOBILES DU CANADA EN VIGUEUR À LA DATE DE SA FABRICATION			THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE		
VIN / NIV		46UFU1823L1225853		TYPE : 18TRAJREM	
GROSS VEHICLE WEIGHT RATING (GVWR) —		GROSS AXLE WEIGHT RATING (GAWR) —			

VIN NUMBER MODEL

Additional Notes:

- Ensure the VIN sticker remains **visible, clean, and legible** at all times.
- **Do not remove, cover, or alter** the VIN sticker, as this may void warranty coverage and cause issues with registration or resale.
- When filing a warranty claim, the VIN must be referenced **exactly as it appears** on the sticker.

CHAPTER 3: TRAILER IDENTIFICATION

 Legal & Safety Notices

WARNING: Tampering with, removing, or defacing the VIN sticker is a violation of federal law (49 CFR Part 565) and may result in fines, denied warranty service, or loss of trailer registration. Law enforcement and inspection agencies use the VIN for identification and compliance verification.

NOTICE: Always verify that the VIN sticker remains securely attached, clean, and legible. If the label becomes damaged or unreadable, contact Diamond C Customer Support for assistance in obtaining a replacement before operating or selling the trailer.

DISCLAIMER: Diamond C Trailers is not liable for delays, denied claims, or registration issues resulting from an altered, missing, or incorrect VIN label. Maintaining a valid and visible VIN sticker is the owner's legal responsibility.

3.2 MODEL & SPECIFICATIONS

Each Diamond C trailer is built with precision and purpose, designed to match the specific hauling needs of its owner. Understanding your trailer's **model number and configuration** is essential for proper operation, maintenance, ordering parts, and filing warranty claims.

Your trailer's **serial number (VIN), GVWR, axle rating, and other key specifications** can be found on the **VIN plate**—a tag typically located on the **front driver's side of the tongue or gooseneck**. This plate is your primary point of reference for verifying important trailer information.

In addition to the VIN plate, your trailer may include other identification labels that list details such as:

- Tire and rim size
- Pounds per Square Inch (PSI)
- Gross Vehicle Weight Rating (GVWR)
- Gross Axle Weight Rating (GAWR)
- Date of Manufacture
- Single/Dual Axles
- Trailer Dry Weight

CHAPTER 3: TRAILER IDENTIFICATION

Keep in mind that Diamond C trailers are often customized with optional features or upgraded components. If you are ever unsure about the factory specifications or need support, refer to:

- Your **original sales invoice or build sheet**
- The **Diamond C online resources hub** (accessible via QR code in the back of this manual)
- Our **Customer Support team** at contactus@diamondc.com or locate an [Authorized Diamond C Dealer](#)

Pro Tip: We recommend keeping a photo of your VIN plate and a copy of your original spec sheet for quick reference when ordering parts or scheduling service.



Legal & Safety Notices



WARNING: Altering, removing, or falsifying your trailer's VIN plate, certification labels, or specification markings is illegal and may result in loss of registration, denied warranty coverage, or liability in the event of an accident. Always verify your trailer's information from the original VIN tag before ordering parts or performing maintenance.

NOTICE: Only use verified specifications when servicing or upgrading your trailer. Substituting incorrect components (such as axles, tires, or couplers) may cause unsafe handling, structural failure, or non-compliance with federal weight and brake requirements. Always reference the original build sheet or consult Diamond C Customer Support before making modifications.

DISCLAIMER: Diamond C Trailers assumes no responsibility for damage, injury, or loss resulting from improper use, unauthorized alterations, or failure to comply with federal and state towing regulations. Any deviation from factory specifications may void warranty protection and compromise trailer safety.

4

MAINTENANCE RESPONSIBILITIES



CHAPTER 4: MAINTENANCE RESPONSIBILITIES

To ensure your Diamond C trailer remains safe, road-ready, and compliant with warranty coverage, it is essential that owners follow the prescribed maintenance responsibilities. These responsibilities are designed to prolong trailer life, reduce the risk of failure, and support your investment.

4.1 GENERAL OWNER RESPONSIBILITIES

As the trailer owner, you are responsible for:

- **Conducting Regular Inspections:** Pre-trip and periodic inspections are necessary to catch wear and safety issues early.
- **Performing Maintenance:** Maintain all systems and components per the recommended intervals.
- **Keeping Records:** Document all maintenance and inspections for warranty and resale purposes.
- **Storing Properly:** Protect your trailer from the elements when not in use to prevent corrosion or deterioration.
- **Using Properly:** Always operate your trailer within its designed capacity and in accordance with safe towing practices.



Legal & Safety Notices



WARNING: Attempting to service **brake systems, hydraulics, or suspension components** without proper tools, equipment, and training can result in **serious injury or death**. These systems contain high-force components, pressurized fluids, and critical safety connections.

NOTICE: Always perform inspections and basic maintenance in a safe, level area using the correct procedures. For diagnostics, system bleeding, brake repair, or hydraulic adjustments, refer service to a **qualified trailer technician**.

DISCLAIMER: Improper servicing or unauthorized modifications to any brake, hydraulic, or suspension component may void warranty coverage and significantly compromise towing safety.

CHAPTER 4: MAINTENANCE RESPONSIBILITIES

4.2 WARRANTY OVERVIEW

**DIAMOND C TRAILERS
STRUCTURAL DEFECT WARRANTY****6 - YEAR COVERAGE**

When you purchase a *Diamond C* trailer, you receive a **6-year warranty** that guarantees the trailer's **structural integrity**. This coverage ensures that any **defects in the trailer's structure**—due to materials or manufacturing—will be repaired at no cost within the first six years from the date of purchase, as long as the trailer is used under **normal operating conditions**.

**DIAMOND C TRAILERS
COMPONENT COVERAGE****2 - YEAR PROTECTION**

Diamond C offers a **2-year warranty** for **non-structural components** of the trailer, ensuring that these parts are free from defects in materials or workmanship. It specifically covers the individual components that are not part of the trailer's main structural frame.

Diamond C's warranty reflects the unwavering commitment to quality and customer satisfaction. As part of our mission to deliver the highest standard of craftsmanship, Diamond C ensures that every trailer is built to meet the toughest standards and will stand the test of time.

With Diamond C, you can rest assured that you're not just purchasing a trailer; you're investing in a product that is backed by a company that stands behind their work and values long-lasting performance. Our warranties ensure that, no matter what, we will support you in keeping your trailer performing at its best for years to come.

3-YEAR POWDER COATING WARRANTY

Covers adhesion or bonding failures and low paint mil defects.

Excludes damage caused by accidents, road rash, salt, or chemicals.

Limitations

Warranty coverage is limited to the repair or replacement of defective parts only.

Does not cover incidental damages, loss of use, or transportation costs.

Any use of the trailer beyond its rated **Gross Vehicle Weight Rating (GVWR)**, or any unauthorized modifications or repairs, will void this warranty.

Contact a dealer as soon as a concern is discovered. Unauthorized repairs, delaying repairs or continuing to use a damaged trailer may limit or void warranty coverage.

This Limited Warranty is the sole warranty provided by Diamond C; no dealer or third party is authorized to modify or extend its terms.

For full details on exclusions, please visit the official [Paint Warranty Policy](#).



CHAPTER 4: MAINTENANCE RESPONSIBILITIES

FILING A WARRANTY CLAIM

To initiate a claim, contact your nearest **Diamond C dealer** and provide:

- The last six digits of the trailer's VIN
- Date of purchase
- A detailed description of the issue
- Photos or videos of the concern, if requested

The dealer will submit your claim to the **Diamond C Warranty Team** for evaluation and resolution.

For full coverage details and exclusions, visit diamondc.com/warranty for more information.

Diamond C's Warranty is provided exclusively to the original retail purchaser of the trailer. This warranty is non-transferable and does not apply to any subsequent owners if the trailer is sold or ownership is otherwise transferred.

5

INSPECTION & MAINTENANCE SCHEDULE OVERVIEW



CHAPTER 5: INSPECTION & MAINTENANCE SCHEDULE OVERVIEW

PRE-TRIP

Perform a quick safety and functionality check:

- Check tire pressure and tread wear
- Verify lights and turn signals are working
- Inspect coupler, gooseneck, or king pin for damage and functionality
- Ensure safety chains are attached and undamaged
- Check brake operating system (*breakaway*)
- Check brake type (*hydraulic, electric*)
- Lubricate all grease points (*as needed*)
- Check lug nuts

EVERY 6 MONTHS OR 6,000 MILES

Routine inspection to catch wear early:

- Check tire pressure, tread depth, and sidewall condition
- Inspect suspension components (*springs, hangers, equalizers*)
- Test all trailer lights and inspect wiring for wear
- Lubricate all grease points
- Inspect safety chains and hooks
- Check wheel bearings for play or grinding (*grease as needed*)
- Inspect wire harness
- Thoroughly wash trailer and touch up any possible blemishes
- Verify that all reflective tape is not torn or missing

EVERY 12 MONTHS OR 12,000 MILES

Annual inspection for longevity and road-readiness:

- Inspect brake lines, and all brake systems
- Inspect couplers, hitch balls, or gooseneck parts
- Inspect wheel bearings and grease or oil level (*if necessary*)
- Inspect hydraulic systems
- Check frame/flooring for cracks or damage

Annual DOT Inspection (as necessary)

CHAPTER 5: INSPECTION & MAINTENANCE SCHEDULE OVERVIEW

INSPECT LUG NUTS & RE-TORQUE SCHEDULE:

- **Initial Torque Check:** Re-torque lug nuts after the first 10, 25, and 50 miles of use.
- **Routine Checks:** Inspect and re-torque every 3 months or 3,000 miles, whichever comes first.
- **Inspect coupler, gooseneck, or king pin for damage and functionality**

TORQUE SPECIFICATIONS:

STUD SIZE	LUG NUT TYPE	TORQUE SPECIFICATIONS	WHEEL SIZE & TYPE	WHEEL MATERIAL
1/2"	CONED	90-120 FT. -LB.	15"	STEEL
1/2"	CONED	90-120 FT. -LB.	16"	STEEL
9/16"	CONED	120-140 FT. -LB.	16"	STEEL
5/8"	FLANGED NUTS (NON-ROTATING FLANGE)	275-325 FT. -LB.	17.5" SINGLE OR 16" DUAL"	STEEL
1/2"	CONED	90-100 FT. -LB.	15"	ALUMINUM
9/16"	CONED	120-140 FT. -LB.	16"	ALUMINUM
5/8"	FLANGED NUTS (ROTATING FLANGE)	150 FT. -LB.	16"	ALUMINUM

COUPLER BOLTS INSPECTION FREQUENCY:

- **Initial Inspection:** After the first 50 miles of towing.
- **Routine Checks:** Every 3 months or 3,000 miles, or before long trips.
- **Before Every Trip:** Perform a quick visual check for looseness, rust, or missing hardware.

COUPLER TORQUE SPECIFICATIONS:

- 2 5/16, 30k coupler- 125 ft. lbs. minimum while uncoupled
- 3", 40k coupler- 200 ft. lbs. minimum while uncoupled

Tip: If you notice repeated loosening of bolts or unusual wear, stop towing and consult a qualified service technician. Never attempt to tow with a compromised coupler assembly.

For maintenance help, visit Diamond C's organized manuals page:
diamondc.com/service-maintenance-manuals.

6

DETAILED COMPONENT MAINTENANCE SECTIONS





CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

Your Diamond C trailer is built with precision-engineered components designed for strength, performance, and longevity. To keep your trailer in top condition, it's essential to **inspect, service, and maintain each component regularly**. Proper maintenance helps prevent costly repairs, ensures optimal towing performance, and upholds your warranty coverage.

This section provides **specific maintenance guidelines** for the major systems and components of your trailer, including running gear, electrical, hydraulic, and structural elements. Following these recommendations will help you maintain safety, reliability, and resale value throughout the life of your trailer.

6.1. AXLE CARE & SUSPENSION MAINTENANCE

Your trailer's axles and suspension system are critical to its performance, safety, and load-carrying capability. Routine maintenance helps prevent premature wear, improves handling, and ensures a smoother, more reliable towing experience.

By following the inspection intervals and service recommendations outlined below, you'll extend the life of these components and reduce the risk of costly repairs or roadside issues.

AXLE CARE

- **Before Trips:** Check for leaks, visible damage
- **Every 6 Months:** Inspect tubes, seals, brakes, and lubrication
- **Annually:** Repack wheel bearings with manufacturer-approved grease
- **Torsion Axles:** Check alignment and ride height yearly

SUSPENSION

Check Every 6 Months or Before Long Trips

- Leaf springs, hangers, equalizers, shackles, U-bolts
- Grease quarterly or as needed
- Look for cracks, loose/missing hardware, or wear

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

WATCH FOR:

- Uneven tire wear
- Sagging, swaying, or pulling
- Unusual noises (clunking/squeaking)
- Grease leaks near hubs

Pro Tips:

- **Keep a service log**
- Inspect after heavy-duty or off-road use
- Replace suspension parts in matched sets to maintain balance

See [*Diamond C's Suspension/Axle Maintenance Schedule*](#)

**Legal & Safety Notices**

WARNING: Never attempt to inspect or service axles while the trailer is loaded or improperly supported. Always use jack stands rated for the trailer's weight and work on a stable, level surface.

CAUTION: Improper lubrication or over-tightening of spindle nuts can cause bearing failure, brake damage, or overheating. Follow all service procedures and torque values recommended by Diamond C.

NOTICE: Axle service, including bearing repack and seal replacement, should be performed at the specified intervals or sooner if the trailer is used in wet, off-road, or high-mileage conditions. Neglecting axle maintenance may void warranty coverage.

DISCLAIMER: Only use manufacturer-approved lubricants, seals, and bearings. Using incompatible parts or incorrect service techniques may lead to premature component failure and safety risks.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

6.2. INSPECTING SPRINGS, HANGERS, AND EQUALIZERS

The suspension system is a key component of your trailer's structural integrity and ride performance. It absorbs road shock, keeps the trailer stable during transit, and ensures even load distribution across the axles. Regular inspection of leaf springs, hangers, and equalizers is critical to identifying early signs of wear or failure and avoiding costly repairs or unsafe towing conditions.

WHAT TO LOOK FOR:

- **Leaf Springs:** Check for cracks, broken leaves, sagging, or separation between spring leaves. Uneven or flattened springs may indicate overloading or fatigue.
- **Hangers:** Inspect mounting brackets for cracks, weld separation, rust, or elongation of bolt holes. Hangers must be securely attached to the frame with no signs of shifting or misalignment.
- **Equalizers:** Examine for signs of uneven wear, movement beyond normal range, or worn-out bushings. Cracks or deformities in the equalizer body should be addressed immediately.

**Legal & Safety Notices**

WARNING: Always use appropriate personal protective equipment (PPE) and ensure the trailer is properly supported before performing suspension inspections. Never work under an unsupported trailer.

CAUTION: Visual inspections must be thorough. Hidden cracks, rust, or elongation in suspension components can lead to catastrophic failure if missed. If in doubt, consult a certified trailer technician.

NOTICE: The owner is responsible for conducting inspections at recommended intervals or more frequently under severe use. Failure to do so may result in denied warranty claims or unsafe operating conditions.

DISCLAIMER: Only use Manufacturer or Diamond C-approved parts for suspension repairs or replacements. Installing mismatched or inferior components may affect ride performance and void warranty coverage.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

6.3. HOW TO GREASE SUSPENSION PROPERLY

Routine greasing of the suspension system is essential to prevent premature wear, reduce friction, and ensure smooth and quiet operation. Over time, bushings and pivot points can dry out or accumulate dirt, especially under heavy loads or in wet, dusty environments. Proper lubrication extends component life and helps maintain even axle alignment.

WHAT YOU'LL NEED:

- High-quality grease (lithium complex or synthetic recommended)
- Grease gun (manual or battery-powered)
- Rag or paper towels
- Safety gloves and eye protection

WHERE TO APPLY GREASE:

1. Greaseable Shackles and Equalizers *(Some suspensions do not require greaseable service)*

- Locate the zerk (grease) fittings on each end of the suspension shackle links and equalizer arms.
- Apply grease until you see clean grease beginning to purge from the bushing ends.



2. Pivot Points

- Grease all rotating or flexing suspension joints. If bushings are bronze or have metal sleeves, ensure proper saturation.

3. Axle Hanger Area

- Some hanger assemblies include serviceable fittings—inspect and grease if applicable.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

HOW OFTEN TO GREASE:

- **Routine Use:** Every 6 months or 6,000 miles
- **Heavy-Duty or Harsh Conditions:** Every 3 months or after exposure to mud, water, or gravel
- **Before Long Trips:** Always inspect and top off grease if needed.

TIPS FOR EFFECTIVE GREASING:

- Wipe the fittings clean before and after greasing to prevent dirt contamination.
- Don't over-grease—excessive pressure may damage seals or bushings.
- If no grease purges or fittings are blocked, remove and clean or replace them. Inspect for any movement in the joints that seems loose or noisy—this could indicate worn bushings or failed hardware.



Legal & Safety Notices



WARNING: Always use personal protective equipment (gloves, safety glasses) during maintenance. Grease under pressure may cause injury or damage if mishandled.

CAUTION: Over-greasing may damage bushings or seals. Only grease until clean lubricant emerges. Use Diamond C-recommended grease types only.

NOTICE: Maintenance is the owner's responsibility. Failure to follow proper maintenance intervals may void your warranty and lead to unsafe towing conditions.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

6.4. SIGNS OF WEAR

Recognizing the early signs of wear in your trailer's suspension and axle components is essential to maintaining safe operation and preventing costly repairs. These issues often develop gradually and can affect towing stability, load handling, and braking performance if not addressed promptly.

COMMON WARNING SIGNS:

- **Uneven Tire Wear:** Cupping, scalloping, or rapid tread wear may indicate misalignment, worn suspension parts, or unbalanced axles.
- **Excessive Bouncing or Swaying:** If the trailer feels unstable or “floats” during towing, it could point to weakened leaf springs or loose suspension connections.
- **Trailer Pulling to One Side:** Often caused by uneven axle loading, worn bushings, or improper alignment.
- **Clunking, Grinding, or Squeaking Noises:** These sounds often signal loose bolts, worn bushings, cracked equalizers, or metal-on-metal contact within suspension components.
- **Rust or Grease Leaks:** Grease seeping from hubs or excessive rust around hardware and mounts may indicate seal failure or neglected maintenance.
- **Visible Damage or Sagging:** Check for cracked or broken spring leaves, bent shackles or hangers, and shifted axles.

WHAT TO DO IF YOU NOTICE THESE SIGNS:

- Consult with an approved Diamond C dealer or qualified trailer service technician if structural or performance issues persist
- Inspect and document the affected area
- Tighten hardware and apply fresh grease if appropriate
- Replace worn components as a set to maintain balance

Pro Tip: Regular inspections and logging small changes over time can help catch early wear before it becomes a failure.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

**Legal & Safety Notices**

WARNING: Operating a trailer with worn or damaged suspension or axle components can result in loss of control, tire failure, or serious injury. Stop towing immediately if signs of wear or instability are detected.

NOTICE: Perform regular inspections and replace worn or damaged parts promptly to maintain safe handling and load stability. Always use Diamond C-approved components and proper torque specifications during reassembly.

DISCLAIMER: Failure to address visible wear or ignored maintenance recommendations may void warranty coverage and cause premature component failure. Consult an authorized Diamond C dealer or qualified technician for all major repairs.

6.5. SIMOL JACKS - OPERATION, LUBRICATION, AND INSPECTION PROCEDURES



Your trailer may be equipped with Simol jacks, designed to provide stable and reliable lifting support during loading, unloading, and coupling operations. Proper operation, lubrication, and inspection are critical to maintaining smooth jack performance and preventing premature wear or failure.

Routine maintenance ensures the jacks continue to operate safely and efficiently under load, while also protecting the trailer frame and coupler components from undue stress.



CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

OPERATION GUIDELINES

1. BEFORE USE

- Park the trailer on firm, level ground and chock the wheels securely.
- Ensure the trailer is fully supported by the tow vehicle or stabilizing blocks before deploying the jacks.

2. RAISING AND LOWERING:

- Use the handle or crank supplied with the jack, applying steady, even pressure.
- Avoid forcing the handle if resistance increases unexpectedly – stop and inspect for obstruction or internal binding.
- Do not exceed the rated lift capacity of the jack assembly.

3. AFTER USE

- Fully retract the jack legs before towing to prevent damage.
- Make sure all pins, clips, and retaining hardware are properly secured.

LUBRICATION PROCEDURES

- **Frequency:** Lubricate jacks at least every three months or after exposure to water, salt, or heavy use.
- **Lubrication Points:**
 - Apply high-quality multipurpose grease to the gears, pivot pins, and moving screw threads.
 - Lightly oil the handle mechanism and rotating joints.
 - Wipe off any excess lubricant to prevent dirt accumulation.
- **Recommendation:** Use only manufacturer-approved lubricants to maintain smooth mechanical action and prevent corrosion.

INSPECTION PROCEDURES

Perform a detailed inspection **monthly** or **before extended use**:

- Check for bent, cracked, or rusted components.
- Ensure mounting bolts and brackets are tight and free of distortion.
- Inspect gear housing for proper sealing and absence of debris.
- Verify the jack extends and retracts smoothly without excessive noise or grinding.
- Replace any worn parts immediately – do not operate with damaged or compromised jacks.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS



6.6. REAR STABILIZER JACKS

Rear stabilizer jacks provide stability and balance when loading, unloading, or parking the trailer without the tow vehicle attached. These jacks prevent unwanted rocking or tipping and enhance overall trailer stability during stationary use.

OPERATION GUIDELINES

- Deploy rear stabilizer jacks only when the trailer is parked and disconnected from the tow vehicle.
- Extend the jacks until they make firm contact with the ground—do not lift the trailer.
- Use on solid, level surfaces for best stability.
- Before towing, fully retract and lock stabilizer jacks in place.
- Verify all pins, clips, and fasteners are secure before travel.

INSPECTION PROCEDURES

- Inspect for bent, corroded, or damaged jack legs or brackets.
- Check that mounting hardware is tight and undamaged.
- Verify that jacks extend and retract smoothly without binding or noise.
- Replace worn or seized jacks immediately to ensure safety and proper function.

CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

**Legal & Safety Notices**

WARNING: Improper jack operation or maintenance can cause trailer collapse or personal injury. Never work beneath a raised trailer without additional support.

NOTICE: Keep jacks clean and well-lubricated to maintain performance and prevent corrosion. Use only Diamond C-approved or Simol-specified lubricants and replacement parts.

DISCLAIMER: Modifying or servicing Simol jacks with non-approved components may void warranty coverage and compromise load stability or safety.

6.7. SLIPPER ROLLER SUSPENSION - ADJUSTMENT GUIDE

The **slipper roller suspension** on your Diamond C trailer is designed to deliver smooth load transfer, stable handling, and reduced road shock. This suspension type uses leaf springs that “slip” along roller assemblies to accommodate movement and maintain axle alignment under varying loads.

Proper adjustment and lubrication are vital for consistent performance, ride quality, and long component life.



CHAPTER 6: DETAILED COMPONENT MAINTENANCE SECTIONS

ADJUSTMENT PROCEDURES**1. Initial Setup**

- After the first 50 miles of towing, inspect all suspension fasteners, spring hangers, and roller hardware.
- Re-torque U-bolts, nuts, and spring eye bolts to manufacturer specifications.

2. Routine Adjustment

- Inspect alignment of the springs and rollers; both sides should engage evenly with no visible sag or lean.
- Verify that rollers move freely within their housings and that spring ends rest properly in their saddles.
- If you observe uneven axle tracking, leaning, or excessive sway, inspect for worn bushings, elongated holes, or damaged rollers and replace as needed.

3. Inspection Frequency

- Perform a detailed inspection every 3 months or 3,000 miles, whichever comes first.
- Increase inspection frequency when operating in rough terrain or heavy-load conditions.

INSPECTION CHECKLIST

During every service interval, check for:

- Cracked, flattened, or broken spring leaves.
- Rust, corrosion, or worn bushings.
- Loose or distorted hangers, bolts, or roller brackets.
- Restricted roller movement or excessive play.
- Uneven tire wear or ride height differences side-to-side.

Replace worn components immediately to preserve alignment and suspension geometry.



Legal & Safety Notices



WARNING: Performing suspension service without proper support can cause severe injury. Always raise and secure the trailer on stable jack stands before inspecting or adjusting suspension components.

NOTICE: Keep all moving parts clean and properly lubricated. Use only Diamond C-approved parts and grease to ensure optimal performance and maintain warranty protection.

DISCLAIMER: Altering suspension geometry or using non-approved replacement components may void warranty coverage and compromise towing safety. For major repairs or adjustments, contact an authorized Diamond C dealer or qualified service technician.

7

BRAKES



CHAPTER 7: BRAKES

The braking system is one of the most critical safety components of your trailer. Whether your trailer is equipped with electric, hydraulic, or hydraulic surge brakes, routine inspection and proper maintenance are essential to ensure reliable stopping power, prolong component life, and stay compliant with safety standards.

Well-functioning brakes are vital for maintaining control during towing, especially when hauling heavy loads or navigating steep grades, wet roads, or sudden stops. Neglecting brake care can lead to premature wear, reduced performance, or complete brake failure—posing serious risks to both the driver and others on the road.

Because trailer braking systems often work in coordination with the tow vehicle's system, keeping them in peak condition also helps reduce wear on your truck's components and ensures legal compliance with state and federal safety regulations.

7.1. ELECTRIC BRAKES VS. HYDRAULIC OVERVIEW

ELECTRIC BRAKES

HOW THEY WORK:

Electric brakes use an electromagnet to apply friction against the brake drum when the tow vehicle's brake controller sends a signal through the trailer wiring.



KEY FEATURES:

- Controlled by an in-cab brake controller
- Power comes from the tow vehicle's electrical system
- Adjustable brake strength
- Self-adjusting or manual adjust (depending on model)

Pros:

- Simple, cost-effective system.
- Easy to maintain and replace components.
- Compatible with most modern trucks and SUVs.

Cons:

- Requires a properly wired brake controller.
- Susceptible to corrosion or failure from damaged wiring.
- Performance may suffer with poor grounding or weak battery supply.

CHAPTER 7: BRAKES

HYDRAULIC BRAKES

HOW THEY WORK:

Hydraulic brakes use pressurized brake fluid to transfer force to the brake assemblies. This can be done via a surge actuator (mechanical pressure from trailer motion) or electric-over-hydraulic (EOH), which uses electronic input to drive a hydraulic pump.



KEY FEATURES:

- Uses brake fluid and hydraulic lines
- May operate via surge coupler or EOH system
- Often found on heavier-duty, tandem, or triple axle trailers.

Pros:

- Smooth, proportional braking feel.
- No reliance on electric brake controllers. (for surge systems)
- Excellent stopping power under load.

Cons:

- More complex and requires fluid maintenance.
- Can be harder to troubleshoot leaks or actuator failure.
- EOH systems require compatible brake controller

7.2. ABS BRAKE SYSTEM

(Optional on 7,000 lb axles & Standard 8,000 - 16,000 lb Electric Drum Brakes only)



The ABS system enhances both safety and braking performance when hauling heavy loads. It can reduce stopping distance, improve braking response, and help maintain control by detecting and adjusting for wheel slip in real time. Additional features like dynamic brake boost optimization, sway control, and in-app performance tracking provide increased stability, visibility, and confidence during operation.

CHAPTER 7: BRAKES

Diamond C enhances ABS performance with the IntelliBrake app, giving trailer owners live visibility into their braking system.

With IntelliBrake, you can:

- Track live odometry
- Monitor brake system performance
- Receive hub-level troubleshooting diagnostics
- Access real-time system insights directly from your phone
- The system connects seamlessly via Bluetooth®, making setup quick and easy.

Note: ABS functions fully without the app installed. However, by downloading IntelliBrake, you unlock the full range of monitoring and diagnostic benefits that make your trailer smarter and easier to manage.

The IntelliBrake app is available on both the Apple App Store® and Google Play®.



7.3. TESTING THE BREAKAWAY SYSTEM

The breakaway system is a critical safety feature designed to automatically activate the trailer brakes if the trailer becomes disconnected from the tow vehicle. Regular testing ensures the system is operational and compliant with safety regulations.

WHAT YOU'LL NEED:

- Fully charged breakaway battery
 - A safe, level area with trailer wheels chocked
- Optional: Brake controller or multimeter for voltage testing

CHAPTER 7: BRAKES

STEP-BY-STEP TESTING PROCEDURE:

1. Chock the Trailer Wheels

Prevent any unexpected trailer movement by securely chocking both sides of at least one axle.

2. Unplug the Trailer Harness

Disconnect the 7-way (or other power plug) from the tow vehicle to simulate disconnection.

3. Pull the Breakaway Switch Pin

Remove the pin from the breakaway switch box. This should immediately send power from the breakaway battery to the trailer brakes.

4. Listen for Brake Engagement

You should hear a **faint hum or click** as the electric brake magnets engage. On hydraulic systems, verify activation at the actuator if possible.

5. Try to Tow the Trailer Slightly (Optional)

With chocks still in place, attempt to roll the trailer slightly forward. If the system is working, the brakes should resist movement.

6. Reinsert the Pin

Once testing is complete, return the pin to the switch and reconnect the trailer harness.

7. Recharge the Breakaway Battery (if needed)

After testing, ensure the breakaway battery is still fully charged. Most trailer batteries will recharge automatically when connected to a tow vehicle.

**Legal & Safety Notices**

WARNING: Never tow a trailer with a missing or non-functional breakaway system. Doing so is illegal and extremely dangerous.

NOTICE: The breakaway battery must be maintained at full charge to operate correctly. A discharged or corroded battery connection may cause brake failure during a real emergency.

DISCLAIMER: Always test the breakaway system in a secure, chocked environment. If brakes fail to engage, service the system immediately before towing.



CHAPTER 7: BRAKES

7.4. BRAKE PAD/SHOE INSPECTION & REPLACEMENT

Brake pads and shoes are wear items that must be inspected regularly and replaced as needed to ensure reliable stopping power and prevent damage to drums, rotors, or magnets. Worn brake components can lead to reduced braking efficiency, increased stopping distance, and potential trailer instability.

INSPECTION GUIDELINES

Brake pad or shoe condition should be checked:

- **Every 6,000 miles or 6 months**, whichever comes first
- **Before long trips** or after heavy use
- **Immediately** if you hear squealing, grinding, or experience brake fade

WHAT TO LOOK FOR:

- **Thickness:** Replace pads or shoes if friction material is less than 1/16"
- **Glazing or Cracking:** Indicates overheating or excessive wear
- **Uneven Wear:** May indicate misadjustment, faulty hardware, or contamination
- **Contaminants:** Oil, grease, or brake fluid on pad/shoe surfaces render them unsafe
- **Magnet Wear (electric systems):** Grooves, pits, or uneven surfaces require replacement

REPLACEMENT INSTRUCTIONS (GENERAL OVERVIEW)

Note: Specific steps may vary depending on brake type (electric or hydraulic) and axle model. Always follow manufacturer procedures and torque specs.

1. Secure the Trailer

- Park on a level surface, chock wheels, and lift the trailer securely using jack stands.

2. Remove the Wheel and Drum

- Take off the wheel, remove the dust cap, spindle nut, and pull off the hub/drum assembly.

3. Inspect and Clean

- Check the drum for scoring, heat damage, and minimum thickness
- Clean brake backing plate and inspect all return springs, adjusters, and magnets or cylinders

CHAPTER 7: BRAKES

4. Remove Old Shoes or Pads

- Detach retaining clips or springs and remove worn components carefully

5. Install New Pads or Shoes

- Ensure correct orientation and secure with all springs/hardware
- If self-adjusting, verify function. If manual, set initial drag using star wheel

6. Reassemble & Test

- Reinstall drum, spindle nut, and torque to spec. Reinstall wheel and lower trailer
- Adjust brakes and test for proper operation before towing



Legal & Safety Notices



WARNING: Brake replacement should only be performed by trained personnel or a certified trailer technician. Improper installation may result in brake failure, injury, or death.

NOTICE: Use only **OEM-approved brake pads/shoes and hardware kits**. Aftermarket components may reduce effectiveness and void warranty.

DISCLAIMER: This section provides general guidance. Refer to your trailer's specific brake system manual or contact Diamond C for detailed part compatibility and service procedures.

CHAPTER 7: BRAKES

7.5. BRAKE ADJUSTMENT PROCEDURES

Proper brake adjustment is essential for safe trailer operation. Over time, brakes can become misaligned due to normal wear, which can reduce stopping power, cause uneven braking, or lead to premature component wear. Regular adjustments ensure the brakes engage evenly and perform reliably.

TO ADJUST ELECTRIC DRUM BRAKES:

Lift and support the trailer safely, then remove the dust plug from the brake backing plate to access the star wheel. Turn the star wheel upward until the brake shoe causes slight drag on the wheel. Back off a few clicks until the wheel spins freely with light resistance. Repeat this process on all wheels, reinstall the dust plugs, lower the trailer, and torque all lug nuts to spec.

**Legal & Safety Notices**

WARNING: Brake adjustments should be performed by trained personnel only. Incorrect adjustment may result in brake failure, injury, or death.

NOTICE: Use proper jack stands and wheel chocks before servicing. Do not rely solely on a jack.

NOTICE: Always adjust brakes evenly across all wheels to maintain balanced braking.

DISCLAIMER: This section offers general guidance. Refer to your specific brake system documentation or contact Diamond C for detailed instructions.

8

BEARINGS & HUBS





CHAPTER 8: BEARINGS & HUBS

The wheel bearings and hubs are critical components that allow your trailer's wheels to rotate smoothly while supporting the full weight of the load. Proper maintenance of these parts is essential for safe towing and long-term performance. Bearings must be kept clean, well-lubricated, and correctly adjusted to prevent overheating, excessive wear, or failure. New trailer owners should inspect and repack bearings annually—or more frequently for heavy or commercial use.

Common signs of bearing issues include wheel wobble, noise, visible grease leaks, or excessive heat around the hub. Ignoring these warnings can lead to serious mechanical damage or unsafe towing conditions. Always follow recommended service intervals and use only high-quality, axle-compatible grease and components.

8.1 HOW TO LIFT TRAILER SAFETY

Lifting your trailer correctly is critical for both personal safety and protecting the trailer from damage during service. Whether you're inspecting hubs, servicing bearings, or rotating tires, always follow these steps to ensure a safe and stable lift.

SAFE LIFTING PROCEDURE

1. Park on a Solid, Level Surface.

Always perform maintenance on concrete or solid ground. Avoid gravel, soft soil, or sloped areas that could cause instability.

2. Chock Opposite Wheels.

Before lifting, secure the trailer with wheel chocks on the opposite side of the axle you're working on to prevent any movement.

3. Position Jack at the Correct Lift Point.

Place the floor jack under the main frame rail just behind the axle spring hanger or as close to the axle as possible without contacting suspension components.

4. Lift Slowly and Evenly.

Raise the trailer slowly until the tire is just off the ground. Never lift more than one axle at a time unless using proper shop equipment.

5. Use Jack Stands for Support.

Never rely solely on a jack. Once raised, position properly rated jack stands under the frame or designated support points before beginning any work.

CHAPTER 8: BEARINGS & HUBS

6. Test Stability Before Working.

Gently rock the trailer side-to-side by hand to ensure it is stable and secure before servicing.

7. Do Not Crawl Under an Unsecured Trailer.

Always ensure the trailer is fully supported by jack stands before working underneath it. Even slight shifts can be dangerous.

**Legal & Safety Notices**

WARNING: Lifting improperly or working under an unsupported trailer may result in serious injury or death. Always use approved equipment and follow proper lifting protocols.

NOTICE: Use only frame-approved lift points and ensure jack stands are rated for the trailer's weight. Never attempt to lift more than one axle at a time unless using shop-grade equipment.

DISCLAIMER: This procedure is intended as a general guide. Refer to your specific trailer model's lift point diagrams or consult Diamond C for application-specific instructions.

8.2. REMOVING THE HUB

Removing the hub is a necessary part of inspecting or servicing wheel bearings, seals, and brakes. Always follow safe lifting practices (**see Section 7.1.1**) before beginning.

STEP-BY-STEP HUB REMOVAL**1. Lift and Support the Trailer.**

Ensure the trailer is parked on a level surface, wheels are chocked, and jack stands are in place under the frame.

2. Remove the Wheel.

Use a lug wrench or impact tool to loosen and remove the lug nuts. Remove the wheel and set it aside.

CHAPTER 8: BEARINGS & HUBS

3. Pry Off the Dust Cap.

Use a flat-head screwdriver or cap removal tool to carefully pry off the metal or rubber dust cap covering the hub center.

4. Remove the Cotter Pin.

Straighten and remove the cotter pin (or tang washer if equipped) that holds the spindle nut in place.

5. Loosen and Remove Spindle Nut.

Unscrew the castle or hex nut and remove the washer. Set all parts aside in the order they were removed.

6. Slide Off the Hub.

Carefully slide the hub off the spindle. Be prepared for the outer bearing to come loose—catch it and set it aside.

If the inner bearing and seal remain in place, you can remove the seal to access the inner bearing for cleaning or replacement.

7. Inspect Components.

Examine the spindle, bearings, races, and seals for wear, scoring, rust, or damage. Replace as needed.

**Legal & Safety Notices**

WARNING: Never reuse damaged bearings, worn seals, or distorted spindle hardware. Doing so may result in bearing failure or unsafe towing conditions.

NOTICE: Keep all components clean and organized. Dirt and debris can contaminate the bearing assembly and lead to early failure.

DISCLAIMER: This procedure may vary slightly based on axle type. Refer to your axle manufacturer's service guide or contact Diamond C for axle-specific hub instructions.



CHAPTER 8: BEARINGS & HUBS

8.3. GREASING OR REPLACING BEARINGS

Properly greased bearings are essential for smooth wheel rotation and safe towing. Over time, grease breaks down or becomes contaminated, and bearings may wear out. Follow this guide to clean, inspect, and either repack or replace your bearings.

CLEANING & INSPECTING BEARINGS**1. Wipe Off Excess Grease.**

Use a rag to remove as much old grease as possible from the bearings, races, and spindle.

2. Clean with Solvent.

Soak the bearings in a parts cleaner or solvent. Use a soft brush to remove stubborn grease and grime.

3. Inspect for Wear or Damage.

Look for discoloration (heat damage), scoring, or metal flaking. If any damage is found, replace the bearing and race as a set.

4. Inspect the Race

Races should be smooth and seated evenly. If grooved or damaged, use a race removal tool to replace them.

HOW TO REPACK BEARINGS (BY HAND)**1. Use High-Temp Wheel Bearing Grease.**

Select a grease rated for trailer hubs (NLGI Grade 2, high-temp disc/drum brake compatible).

2. Pack Grease into the Bearing.

Place a dollop of grease in your palm. Push the wide end of the bearing into the grease repeatedly until it oozes out the narrow end between each roller.

3. Fully Coat the Bearing.

Turn the bearing and repeat until all rollers and cages are completely packed.

Tip: You can also use a bearing packer for quicker, cleaner results.

CHAPTER 8: BEARINGS & HUBS

When replacing bearings, always install them as a matched set with their corresponding races to ensure proper fit and function. Use a bearing driver or press to seat new races evenly and securely into the hub. It's also important to replace the grease seal during reassembly to prevent contamination and maintain optimal lubrication inside the hub.

REASSEMBLY NOTES

- Lightly coat the spindle with grease before sliding the hub back on.
- Insert the inner bearing and seal first, then the outer bearing, washer, and spindle nut.
- Adjust the spindle nut until the hub spins freely with slight resistance—then back it off slightly and secure with a cotter pin.



Legal & Safety Notices



WARNING: Never reuse dirty or damaged bearings, seals, or races. Doing so may cause bearing failure at highway speeds.

NOTICE: Cleanliness is critical. Any dirt or grit left in the bearing assembly can lead to premature wear.

DISCLAIMER: Procedures may vary by axle type. Always refer to your axle manufacturer's instructions or contact Diamond C for model-specific guidance.

8.4. TORQUE SPECIFICATIONS

Correct torque values are critical to trailer safety and wheel integrity. Under-or over-tightening fasteners can lead to wheel separation, hub damage, or uneven wear. Always use a properly calibrated torque wrench and follow the recommended specifications. Proper torque is often overlooked, yet it plays a vital role in preventing common issues and ensuring safe operation.

CHAPTER 8: BEARINGS & HUBS

Lug torque should always be checked before the first tow and again after approximately 50 miles. Adhering to these practices not only protects your equipment and safety but also ensures continued warranty coverage, as improper torque is considered a form of inadequate maintenance.

TORQUE RANGES BY STUD SIZE AND WHEEL TYPE:

STUD SIZE	LUG NUT TYPE	TORQUE SPECIFICATIONS	WHEEL SIZE & TYPE	WHEEL MATERIAL
1/2"	CONED	90-120 FT. -LB.	15"	STEEL
1/2"	CONED	90-120 FT. -LB.	16"	STEEL
9/16"	CONED	120-140 FT. -LB.	16"	STEEL
5/8"	FLANGED NUTS (NON-ROTATING FLANGE)	275-325 FT. -LB.	17.5" SINGLE OR 16" DUAL"	STEEL
1/2"	CONED	90-100 FT. -LB.	15"	ALUMINUM
9/16"	CONED	120-140 FT. -LB.	16"	ALUMINUM
5/8"	FLANGED NUTS (ROTATING FLANGE)	150 FT. -LB.	16"	ALUMINUM

Always refer to this chart when installing or servicing wheels, and use a properly calibrated torque wrench to ensure safe, accurate results.

9

TIRES & WHEELS





CHAPTER 9: TIRES & WHEELS

The tires and wheels on your trailer play a vital role in overall safety, load capacity, ride quality, and fuel efficiency. Proper care and inspection not only extend the life of your tires but also reduce the risk of roadside failures and costly repairs.

9.1. TIRE PRESSURE CHART

Maintaining the correct tire pressure is critical for safety, performance, and maximizing tire life. Tire pressure requirements vary based on trailer class, load rating, and tire size. Always refer to the VIN/Certification label on your trailer for the exact PSI recommended by the manufacturer.

TIRE PRESSURE REFERENCE CHART		
TIRE SIZE	LOAD RANGE	RECOMMENDED COLD PSI
ST205/75R15	D	65 PSI
ST225/75R15	E	80 PSI
ST235/80R16 10PR	E	80 PSI
ST235/85R16 14PR	G	110 PSI
ST215/75R17.5	H	125 PSI
235/75R17.5	J	125 PSI

WARNING: Never inflate a tire beyond the maximum PSI listed on the tire sidewall unless specified by the tire manufacturer.

9.2. WEAR PATTERNS AND WHAT THEY MEAN

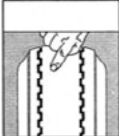
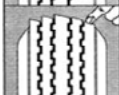
Tire wear patterns reveal critical information about your trailer's condition. Regular inspection can help you detect alignment issues, improper loading, inflation problems, or suspension wear before they become safety risks.

Understanding tire wear patterns can help trailer owners identify and address issues before they lead to unsafe conditions.

CHAPTER 9: TIRES & WHEELS

- **Center wear** typically indicates overinflation.
- **Edge wear** suggests underinflation.
- **One-side shoulder wear** is often caused by axle misalignment or a bent axle.
- **Feathered tread** points to alignment problems such as improper toe-in or toe-out.
- **Cupping or scalloping** may result from worn suspension components or unbalanced tires.
- **Spotty or flat patches** usually stem from locking brakes or hard stops.

Regular inspection, proper tire pressure, and timely maintenance can prevent these wear issues and extend tire life.

	Condition	Possible Cause	Remedy
	Even Center Wear	Over Inflation	Check & Adjust Pressure When Cold
	Inside & Outside Wear	Under Inflation	Check & Adjust Pressure When Cold
	Smooth, Side Wear - One Side	Loss of Camber or Overloading	Check & Unload As Necessary Have Alignment Checked
	"Feathering" Across The Face	Axis Not Square to Frame or Incorrect Toe In	Square Axes Have Alignment Checked
	Cupping	Loose Bearings or Wheel Balance	Check Bearing Adjustment and Wheel & Tire Balance
	Flat Spots	Wheel Lockup	Adjust Brakes

Keeping a log of tire pressure, wear patterns, and rotation intervals can help you catch problems early and extend tire life.

WHAT TO DO WHEN YOU SEE IRREGULAR WEAR

- Check tire pressure on all tires
- Inspect suspension components (hangers, equalizers, bushings)
- Verify load distribution front to rear and side to side
- Have the axle alignment checked by a professional
- Rotate tires if wear is uneven but correctable



Legal & Safety Notices



WARNING: Operating a trailer with improperly inflated tires, excessive wear, or incorrect lug nut torque can lead to tire blowouts, loss of control, and serious injury or death. Always inspect tires and fasteners before towing.

NOTICE: Use only tires that meet the trailer's load rating and follow manufacturer torque specifications. Improper tire or wheel selection may void warranty coverage.

DISCLAIMER: This section provides general guidance. For application-specific recommendations, refer to the tire manufacturer or contact Diamond C.



CHAPTER 9: TIRES & WHEELS

9.3. ROTATING TIRES

Regular tire rotation is essential for maximizing tire life, maintaining even tread wear, and promoting safe trailer operation.

Recommended Interval: Rotate your trailer's tires every 3,000 to 5,000 miles or at least every 6 months, whichever comes first. More frequent rotation may be needed if irregular wear patterns are observed.

Rotation Patterns: Use the appropriate pattern based on your trailer configuration:

- **Tandem Axle (2 axles):** Use an "X" pattern
 - Front Left ↔ Rear Right
 - Front Right ↔ Rear Left
- **Triple Axle (3 axles):** Rotate tires in a circular pattern:
 - Front → Middle → Rear → Front

Note: Always refer to axle and tire manufacturer recommendations for specific guidance.

ROTATION PROCEDURE

1. **Park** the trailer on a level surface and apply wheel chocks.
2. **Loosen** each wheel's lug nuts slightly **before** lifting the trailer.
3. **Raise** the trailer using a properly rated jack placed under each axle. **Remove** the wheels and rotate according to the appropriate pattern. **Reinstall** wheels and torque lug nuts to manufacturer specifications. (see [Section 8.4](#) for lug torque chart).
4. **After driving** 50-100 miles, re-check and re-torque all lug nuts.

Why Tire Rotation Matters: Regular tire rotation helps maintain even tread wear, improves handling and braking stability, reduces the risk of premature tire failure, and ensures compliance with warranty requirements related to tire maintenance.

CHAPTER 9: TIRES & WHEELS

**Legal & Safety Notices**

WARNING: Failure to rotate trailer tires at regular intervals can cause uneven tread wear, reduced traction, and increased risk of blowouts or loss of control, potentially resulting in serious injury or death. Always follow recommended rotation patterns and torque procedures.

NOTICE: Tire rotation is required to maintain optimal performance and warranty coverage. Uneven wear from neglected rotation may void tire or trailer warranty. Check tires for wear patterns and rotate accordingly.

DISCLAIMER: This section offers general rotation guidelines. For tire-specific rotation intervals or patterns, consult the tire manufacturer or contact Diamond C for application-specific recommendations.

9.4. HOW TO TORQUE WHEELS

Properly torquing your trailer's wheels is essential for safety and reliability. Incorrect torque can lead to damaged wheel studs, warped brake components, or even complete wheel separation while in motion—posing a serious safety risk.

WHAT IS TORQUE?

Torque is the measured force used to tighten fasteners, like lug nuts. Using a calibrated torque wrench ensures that each lug nut is tightened to the correct level—not too loose and not too tight.

STEP-BY-STEP TORQUE PROCEDURE

- 1. Clean Mating Surfaces** - Ensure both the wheel and hub surfaces are free of dirt, rust, paint, and grease. Improper contact can cause inaccurate torque and wheel loosening.
- 2. Install Lug Nuts by Hand** - Always start threading lug nuts by hand to avoid cross-threading or damaging studs.
- 3. Tighten in Star Pattern** - Use a star or crisscross pattern to evenly seat the wheel. This prevents warping of brake drums or rotors.
- 4. Torque to Specification** - Use a torque wrench to tighten each lug nut to the manufacturer's recommended value.
[See Section 8.4 for torque specifications by wheel size and stud type.](#)
- 5. Re-Torque After Initial Use** - Recheck torque after 50-100 miles of towing, and periodically as part of regular maintenance.

10

COUPLING SYSTEMS & SAFETY EQUIPMENT



CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

Safe towing begins with proper coupling. The coupler and safety chains are critical components that connect your trailer to the tow vehicle. Before every trip, these systems must be properly secured, adjusted, and inspected.

10.1. INSPECTING BOLTS & WELDS

Trailer safety and structural integrity depend on secure bolted joints and strong welds. Loose hardware or cracked welds can lead to dangerous failures while towing. Regular inspections are essential.

BOLT INSPECTION SUMMARY

Bolts play a critical role in securing your trailer's vital components, such as the axles, suspension system, coupler, and ramps. Regular inspections help prevent loosening, failure, or structural damage.

KEY THINGS TO CHECK

- **Tightness:** Bolts must be torqued to manufacturer specifications.
- **Loosening:** Watch for missing lock washers, gapping, or exposed threads.
- **Corrosion:** Surface rust may be acceptable; heavy corrosion weakens the joint.
- **Movement:** Bolts should not rotate or shift under light pressure.

RECOMMENDED TOOLS

- Calibrated **torque wrench**
- **Inspection mirror** for tight spots
- **Flashlight** for visibility
- **Torque spec chart** (see [Section 8.4](#))

Tip: Use a torque stripe marker to visually detect bolt movement between checks.



Legal & Safety Notices



WARNING: Loose bolts or cracked welds can cause part separation, frame failure, or trailer instability—leading to serious injury, loss of control, or death.

NOTICE: Routine inspections of all bolted joints and welded seams are required to maintain warranty coverage and prevent unsafe conditions.

DISCLAIMER: This section provides general inspection guidance. Refer to Diamond C's certified service providers or the trailer's service documentation for specific structural evaluation procedures.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

10.2. LUBRICATION POINTS

Routine lubrication is critical for reducing wear, preventing corrosion, and ensuring the long-term performance of your trailer's moving components. Failure to lubricate key areas may lead to premature component failure and may void applicable warranty coverage.

KEY COMPONENTS TO LUBRICATE:

- Coupler latch mechanism - Light oil or spray grease
- Jack pivot and screw - Lithium-based grease
- Safety chain hooks (if applicable) - Light lubricant

SERVICE INTERVAL:

Every 3 months, or before/after exposure to rain, road salt, or heavy use.

BEST PRACTICES

- Clean parts before lubrication.
- Avoid over-greasing.
- Use manufacturer-approved lubricants.

**Legal & Safety Notices**

WARNING: Neglected lubrication can result in jammed latches or seized parts.

NOTICE: Proper lubrication helps preserve warranty coverage and ensures safe function.

DISCLAIMER: Always refer to component manufacturer specs for approved lubricants.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

10.3. GOOSENECK, BUMPER PULL, AND PINTLE HITCH DIFFERENCES

Different trailer types require different hitch systems. Understanding each helps you operate your trailer safely and effectively.



GOOSENECK

- Mounts in pickup bed
- Higher load capacity and stability
- Used in heavy-duty hauling and hotshot applications



BUMPER PULL

- Connects via rear receiver hitch
- Easier to use; lower load rating
- Used in utility, landscape, and recreational trailers



PINTLE HITCH

- Hook and lunette ring combo
- Great for off-road or military use
- More play between components; rugged and durable

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

10.4. CURT COUPLER

Different trailer types require different hitch systems. Understanding each helps you operate your trailer safely and effectively.

The Curt coupler is the vital connection point between your trailer and tow vehicle, designed to provide a secure, durable, and smooth towing link. Proper operation and regular maintenance are essential for safety, longevity, and reliable performance. Neglecting coupler care can lead to poor fitment, hitch noise, or, in severe cases, trailer detachment.



OPERATION PROCEDURES

1. Before Coupling:

- Ensure the tow vehicle's hitch ball matches the coupler size and rating (e.g., 2", 2-5/16").
- Inspect the coupler latch, safety pin, and ball socket for wear, rust, or debris.
- Verify that the latch mechanism moves freely and locks securely.

2. Coupling the Trailer:

- Open the latch fully and lower the trailer tongue onto the hitch ball using the jack.
- Confirm the coupler is fully seated on the ball, then close and secure the latch with a safety pin or locking device.
- Cross the safety chains under the tongue and connect the breakaway cable before towing.

3. Uncoupling:

- Park on level ground and chock the trailer wheels.
- Remove the latch pin or lock, raise the coupler off the hitch ball, and retract the jack fully before moving the tow vehicle.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

MAINTENANCE GUIDELINES

- **Lubrication**

Apply a light coating of high-quality grease to the coupler's ball socket and latch mechanism every three months or after exposure to water or dirt.

- **Corrosion Prevention:**

Clean regularly with mild soap and water; dry thoroughly. Use a rust inhibitor or light oil on moving parts to prevent corrosion.

- **Fastener Torque:**

Check all coupler mounting bolts at least every 3,000 miles or 3 months. Re-torque to manufacturer specifications if any looseness or paint cracking is observed.

INSPECTION NOTES

Perform a visual inspection before every trip and after long hauls:

- Check for cracks, deformation, or excessive wear in the coupler housing or latch.
- Ensure the coupler fully engages and locks onto the hitch ball without play.
- Verify that safety chains, mounting bolts, and the breakaway cable are secure and undamaged.
- Replace any damaged or corroded hardware immediately.

**Legal & Safety Notices**

WARNING: Failure to properly secure or maintain the coupler can lead to trailer separation, loss of control, or serious injury. Always verify full latch engagement before towing.

NOTICE: Regularly inspect, clean, and lubricate the coupler to prevent wear and corrosion. Only use Curt- or Diamond C-approved replacement parts.

DISCLAIMER: Do not modify or weld the coupler assembly. Unauthorized repairs or improper installation may void warranty coverage and compromise towing safety.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

10.5. SHOCKER HITCH

The Shocker Hitch is an advanced towing coupler designed to improve ride quality, reduce shock load transfer, and protect both the trailer and tow vehicle from impact stress. It uses an integrated air bag and pivot system (or in some models, a cushioned shank) to absorb bumps, jerks, and road vibration.

Proper operation, air pressure adjustment, and routine inspection are essential to ensure safe and smooth performance. Failure to maintain the hitch properly may lead to reduced towing control or component damage.



PRE-TOWING INSPECTION

- Verify the hitch is securely mounted and torqued to manufacturer specifications.
- Check the air bag (or cushion assembly) for proper inflation and no visible cracks or leaks.
- Confirm the hitch ball and coupler are compatible in size and rating.

SETTING AIR PRESSURE (FOR AIR-RIDE MODELS)

- Inflate the air bag until the trailer rides level with the tow vehicle.
- Avoid over-inflation – the bag should compress slightly when loaded.
- For reference, most systems operate best between 25-50 psi, but always follow the manufacturer's chart for your specific Shocker Hitch model.

COUPLING PROCEDURE

- Follow the standard coupling instructions outlined in Section 10.4 (Curt Coupler).
- Ensure the Shocker Hitch fully engages on the ball and locks securely.
- Connect safety chains and breakaway cable before travel.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

MAINTENANCE PROCEDURES

- **Air Bag or Cushion Inspection:** Check for cracks, air leaks, or dry rot monthly. Replace damaged components immediately.
- **Lubrication:** Lightly grease all pivot points, pins, and hinges every three months or after exposure to water, salt, or dirt.
- **Fastener Torque:** Verify mounting bolts and hardware are torqued to manufacturer specifications every 3,000 miles or 3 months.
- **Corrosion Protection:** Clean and apply light oil film to bare metal surfaces to prevent rust and pitting.

INSPECTION CHECKLIST

BEFORE EACH TRIP:

- Ensure the hitch mount is secure and free of loosened bolts or cracks.
- Verify the air bag maintains pressure and is not rubbing against adjacent components.
- Check pivot bushings for play or wear.
- Confirm the hitch ball latch locks fully and moves smoothly.

10.6. DEMCO EZ LATCH COUPLER

The Demco EZ Latch coupler features an automatic locking mechanism designed for secure, hassle-free hitching on bumper pull trailers. It is utilized in both 2-bolt and 4-bolt adjustable channel configurations. The EZ Latch system automatically hooks and locks around the hitch ball when lowered, eliminating the need for manual latch manipulation during coupling.





CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

OPERATION PROCEDURES

1. Before Coupling:

- Verify the tow vehicle's hitch ball is exactly 2-5/16" (or matching the stamped coupler size) and rated for your trailer's Gross Vehicle Weight Rating (GVWR).
- Ensure the ball socket and internal latch mechanism are clean, free of debris, and moving smoothly.

2. Coupling the Trailer:

- The EZ Latch mechanism is designed to remain in the "ready-to-couple" position. You do not need to manually hold the handle open.
- Lower the trailer tongue directly onto the hitch ball using the jack. As the ball enters the socket, the spring-loaded mechanism will automatically drop, snap shut, and lock securely under the ball.
- **Visual Check:** Ensure the handle drops completely flat into the locked position.
- Insert a safety pin or padlock through the hole in the handle to prevent accidental release and ensure positive engagement.
- Cross safety chains under the tongue and attach the breakaway cable before towing.

3. Uncoupling:

- Park on level ground, chock the trailer wheels, and disconnect the safety chains and breakaway cable.
- Remove the safety pin or lock from the handle.
- Lift the EZ Latch handle upward and slightly forward, holding it open while operating the jack to raise the coupler off the hitch ball.

MAINTENANCE GUIDELINES

- **Channel Bolt Torque:** On both 2-bolt and 4-bolt adjustable mounts, check the mounting bolts every **3,000 miles or 3 months**. Ensure they are torqued tightly to factory specifications. Look for any signs of paint flaking or movement around the bolt holes.
- **Mechanism Care:** Keep the internal spring-loaded latch clean. Spray the moving pivot points inside the housing with a high-quality light lubricant or dry-film lubricant every 3 months. Do not allow dirt or road grime to pack into the latch spring.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

INSPECTION NOTES

Perform a visual inspection before every trip:

- Verify the handle springs back down firmly when released.
- Inspect the 2-bolt or 4-bolt mounting hardware for any signs of thread wear, stretching, or loosening.
- Check the cast housing for hairline cracks, structural deformation, or excessive internal wear from hitch ball friction.



Legal & Safety Notices



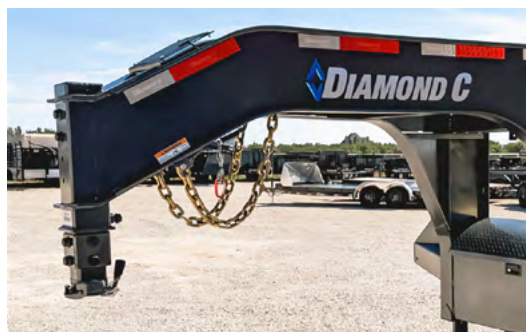
WARNING: Always visually confirm that the EZ Latch jaw has fully closed beneath the hitch ball and that the handle sits completely flat before inserting your safety pin. Failure to lock the handle can cause accidental trailer separation, resulting in property damage, serious injury, or death.

NOTICE: Check channel mounting bolts frequently. A loose 2-bolt or 4-bolt channel assembly can cause severe tongue damage and wallow out mounting holes. Use only Diamond C or Demco-approved replacement hardware.

DISCLAIMER: Do not attempt to modify, grind, or weld any portion of the cast Demco EZ Latch housing or its internal components.

10.7. 40K TELESCOUPLER (3" BALL)

The 40K Telesc coupler is a heavy-duty, high-capacity coupling system designed specifically for heavy bumper pull and specialized towing configurations requiring a 3" hitch ball. This system features an adjustable telescoping sleeve or heavy-duty channel mount and a high-strength locking slider mechanism to handle massive tongue loads and towing capacities up to 40,000 lbs.





CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

OPERATION PROCEDURES

1. Before Coupling:

- **Crucial:** Ensure the tow vehicle is equipped with a heavy-duty hitch receiver and a solid 3" hitch ball rated explicitly for 40,000 lbs or greater. Standard 2-5/16" balls will not function and will cause catastrophic failure.
- Inspect the telescoping inner/outer sleeves and the heavy locking pin assembly for debris, alignment issues, or structural distortion.
- Slide the primary locking collar or pin back to clear the ball socket opening.

2. Coupling the Trailer:

- Align the tow vehicle and slowly lower the Telescoupler socket onto the 3" ball using the trailer jack until it is fully seated.
- Engage the primary locking mechanism by sliding the locking collar/gate forward completely over the ball socket.
- Secure the system by dropping the heavy-duty safety hairpin or linchpin through the locking mechanism's primary safety port.
- Connect all safety chains (ensuring they are appropriately rated for a 40K system) and the breakaway cable.

3. Uncoupling:

- Securely chock the trailer wheels on level ground.
- Remove the safety hairpin/linchpin from the locking mechanism.
- Retract the locking slider collar to open the ball pocket.
- Crank the jack downward to raise the Telescoupler completely clear of the 3" tow ball before driving the tow vehicle away.

MAINTENANCE PROCEDURES

- **Sleeve and Collar Lubrication:** Clean and grease the internal 3" ball pocket and the sliding surfaces of the locking collar every 3 months (or more frequently under severe, dusty, or high-mileage commercial use). Use a heavy-duty, high-pressure lithium or molybdenum grease.
- **Telescoping Hardware Check:** If configured as an adjustable telescoping coupler, inspect the heavy-duty adjustment cross-bolts. Ensure all adjustment fasteners are clean and torqued precisely to factory specifications to prevent slop or movement within the sleeve.

CHAPTER 10: COUPLING SYSTEMS & SAFETY EQUIPMENT

INSPECTION CHECKLIST

BEFORE EACH TRIP

- Verify the 3" ball socket is free of severe gouging, cracks, or oblong wear.
- Ensure the sliding locking gate moves smoothly and seats completely forward without forcing.
- Confirm that the primary safety pin is present, undamaged, and securely retained by its wire loop or clip.
- Inspect the main coupler attachment welds or heavy mounting bolts for stress fracturing.

**Legal & Safety Notices**

WARNING: The 40K Telesc coupler requires a dedicated, correctly rated 3" hitch ball. Never attempt to tow a 3" Telesc coupler on a 2-5/16" or smaller ball. Doing so will result in immediate trailer separation upon movement, creating extreme risk of severe injury, property damage, or death.

NOTICE: Due to the extreme weight capacities transferred through a 40K connection, lubrication of the sliding lock mechanism and ball pocket is mandatory to prevent metal-on-metal galling and premature component binding.

DISCLAIMER: Structural repairs or modifications to the 40K Telesc coupler housing, sleeves, or locking components must only be performed by authorized service facilities. Unauthorized modifications completely void all structural warranties.

11

LIGHTS & WIRING



CHAPTER 11: LIGHTS & WIRING

The trailer's lighting and wiring systems are essential components for **safe operation** and **compliance with state and federal regulations**. Properly functioning lights ensure that your trailer is visible to other drivers, while signaling your intentions when braking, turning, or reversing.

All Diamond C trailers are equipped with **DOT-approved LED** lighting that provides long-lasting performance, energy efficiency, and superior visibility compared to traditional incandescent bulbs. In addition, each trailer features a **sealed, automotive-grade wiring harness** designed to withstand vibration, moisture, and road debris, ensuring reliable performance in a wide range of conditions.

Together, these systems not only enhance safety but also help protect your investment by minimizing maintenance needs and ensuring consistent performance over the lifetime of the trailer.

11.1. DIAGRAM OF TRAILER LIGHT WIRING

Your trailer is equipped with a factory-installed lighting and wiring system that meets all applicable DOT safety standards. This system provides power for running lights, brake lights, turn signals, and other features as required.

For your convenience, we have provided general information on light functions, connector types, and standard industry wiring color codes. This information is intended to help you **identify and maintain basic connections** between your tow vehicle and trailer.

Note: Diamond C engineers do not provide or distribute detailed wiring engineering diagrams. This information is not shared outside the manufacturer. If you experience issues with your trailer lights or wiring system, we recommend the following:

- **For simple issues** (blown fuses, corroded plugs, damaged bulbs), refer to the troubleshooting guide in this manual.
- **For more complex repairs**, contact your authorized Diamond C dealer or a qualified trailer service center.

This ensures that your wiring remains compliant with safety standards and that any repairs are completed to factory specifications.

CHAPTER 11: LIGHTS & WIRING

**Legal & Safety Notices**

WARNING: Improper wiring or electrical modification can cause fire, shock, or loss of vehicle control.

NOTICE: Only use approved components and follow Diamond C service guidelines to maintain DOT compliance.

DISCLAIMER: Do not alter factory wiring. Refer all complex electrical repairs to an authorized Diamond C dealer or qualified technician.

11.2. DIAGNOSING LIGHT FAILURES

Trailer lights are critical for safety and required by law. If a light stops working, follow this diagnostic guide to quickly identify and resolve the issue.

COMMON SYMPTOMS OF LIGHT FAILURES

- One light not working (tail, brake, or turn signal)
- All lights out when the trailer is connected
- Dim or flickering lights
- Brake/turn lights work, but running lights don't (or vice versa)

Step 1: Check the Tow Vehicle

- Confirm the vehicle's lights are functioning properly.
- Use a test light or multimeter at the truck's trailer connector to confirm power is reaching the plug.
- Inspect the tow vehicle's trailer light fuse (many trucks have a dedicated trailer light fuse box).

Step 2: Inspect the Trailer Plug & Connector

- Look for corrosion, dirt, or bent pins inside the plug.
- Ensure the plug is fully seated and locked into the tow vehicle socket.
- Clean contacts with dielectric grease to improve conductivity.

Step 3: Check Ground Connections

- A poor ground is the #1 cause of trailer light issues.
- Make sure the ground wire is firmly connected to clean, bare metal on both trailer and tow vehicle.
- Tighten loose bolts and remove rust or paint that prevents good contact.

CHAPTER 11: LIGHTS & WIRING

Step 4: Test the Wiring Harness

- Inspect wiring along the trailer frame for cuts, pinch points, or exposed wires.
- Look for areas where the insulation has rubbed through against sharp edges.
- Use a circuit tester or 12V test light to confirm power at each light lead.

Step 5: Final Testing

- After repairs, reconnect the trailer and test:
 - Running Lights
 - Brake Lights
 - Left and right turn signals
 - Hazard lights
- Walk around the trailer to confirm all lights function properly.

QUICK TIPS

- Always carry a spare LED light module.
- Periodically clean and re-grease your trailer plug to prevent corrosion.



Legal & Safety Notices



WARNING: Operating a trailer with malfunctioning lights can lead to collisions or legal violations.

NOTICE: Promptly diagnosing and repairing lighting issues ensures safe towing and helps maintain compliance with road regulations.

DISCLAIMER: Always refer to the vehicle and component manufacturer's wiring diagrams, fuses, and specifications before attempting repairs.



CHAPTER 11: LIGHTS & WIRING

11.3. REPAIRING HARNESS OR CONNECTORS

The wiring harness and connectors provide the electrical pathway between the tow vehicle and the trailer. Over time, these components may experience wear, corrosion, or damage that can disrupt proper light operation. Prompt inspection and repair help ensure safe towing and compliance with road regulations.

COMMON ISSUES

- **Corrosion** at terminals or inside connectors due to moisture and road salt.
- **Frayed, cut, or pinched wires** from road debris or improper routing.
- **Loose or bent pins** inside connectors.
- **Damaged insulation** exposing bare wire.

INSPECTION STEPS

1. Disconnect the trailer from the tow vehicle.
2. Examine the plug, socket, and harness for visible damage or corrosion.
3. Gently tug wires at each connection point to check for looseness.
4. Look for green or white corrosion residue on metal terminals.
5. Use a test light or multimeter to verify voltage and ground continuity.

REPAIR GUIDELINES

- **Harness Replacement:**
 - If damage is extensive, replace the entire harness to restore reliability.
 - Secure new harness with clamps or cable ties, keeping it away from moving parts.

CHAPTER 11: LIGHTS & WIRING

WIRING COLOR REFERENCE

Use the following color guide when repairing or replacing wiring to ensure correct connections between the tow vehicle and trailer:

WIRE COLOR	FUNCTION
Brown	Running Lights
Yellow	Left Turn Signal
Green	Right Turn Signal
White	Ground
Blue/Black	Battery Power/Electric Breakaway
Red	Brake/Charge Wire

**Legal & Safety Notices**

WARNING: Improper repair of wiring harnesses or connectors can cause shorts, sparks, or fire hazards, leading to serious injury or equipment damage.

NOTICE: Always use weatherproof connectors and manufacturer-approved repair methods to ensure long-term reliability and preserve warranty coverage.

DISCLAIMER: Refer to the tow vehicle and component manufacturer's wiring specifications and repair procedures before performing any electrical service.

CHAPTER 11: LIGHTS & WIRING

11.4 LIGHTS & SOLAR SYSTEMS

Diamond C trailers are equipped with long-lasting LED lighting systems to improve visibility and reduce maintenance. The solar charging system is designed to maintain the trailer's onboard battery while the trailer is parked or in storage. Regular inspection and maintenance of both systems help ensure reliable operation and extend component life.

**LED TRAILER LIGHTS**

LED lights provide improved durability, faster illumination, and lower power consumption than traditional incandescent bulbs. Although LEDs require minimal maintenance, they should be inspected before each trip.

INSPECTION STEPS

- Verify all markers, clearance, brake, turn signal, reverse (if equipped), and license plate lights operate properly.
- Inspect lenses for cracks, moisture, or damage.
- Check wiring connections for corrosion, loose terminals, or damaged insulation.
- Ensure light mounting hardware is secure.
- Clean lenses regularly to maintain maximum visibility.

MAINTENANCE GUIDELINES

- Replace damaged or inoperative LED assemblies with manufacturer-approved replacement parts.
- Keep electrical connectors clean and protected with dielectric grease when needed.
- Repair damaged wiring using approved weather-resistant connectors and heat-shrink tubing.
- Do not pressure wash electrical connectors or direct high-pressure water at light seals.



SOLAR CHARGING SYSTEM (IF EQUIPPED)

Some Diamond C trailers include a solar charging system designed to help maintain the trailer battery during storage or periods of inactivity. The system is intended to offset normal battery discharge and support battery health. It is not designed to rapidly recharge a deeply discharged battery.

INSPECTION STEPS

- Inspect the solar panel for cracks, loose mounting hardware, or physical damage.
- Keep the panel clean and free of dirt, mud, leaves, snow, or other debris that may reduce charging efficiency.
- Verify all wiring connections are secure and free of corrosion.
- Check the battery terminals for cleanliness and proper tightness.
- Inspect the charge controller (if equipped) for normal operation and indicator lights.

CHAPTER 11: LIGHTS & WIRING

MAINTENANCE GUIDELINES

- Clean the solar panel using water and a soft cloth or sponge. Avoid abrasive cleaners or brushes.
- Park the trailer where the panel receives adequate sunlight whenever possible.
- Periodically inspect wiring for damage caused by road debris, vibration, or rodents.
- If storing the trailer indoors or in shaded areas for extended periods, periodically charge the battery using an approved battery charger as recommended by the battery manufacturer.

TROUBLESHOOTING

If the battery is not maintaining its charge:

- Verify the solar panel is clean and receiving direct sunlight.
- Inspect all wiring and fuse connections.
- Confirm the battery is in good condition and properly connected.
- Check the charge controller (if equipped) for fault indications.
- If the problem persists, contact an authorized Diamond C dealer or qualified service technician.



Legal & Safety Notices



WARNING: Inoperative trailer lights reduce visibility and limit your ability to communicate braking, turning, and other driving intentions to motorists, increasing the risk of a collision, serious injury, or death. Always verify proper light operation before towing.

CAUTION: The solar charging system is designed to maintain battery charge only. It is not intended to recover a severely discharged or damaged battery.

NOTICE: Keep the solar panel clean and unobstructed to maximize charging performance. Replace damaged lighting components and electrical parts only with Diamond C-approved or equivalent replacement components.

DISCLAIMER: Refer to the component manufacturer's documentation for additional operating instructions, maintenance requirements, and warranty information applicable to the lighting system, solar charger, battery, or charge controller.

12

HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)





CHAPTER 12: HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)

The trailer's hydraulic system powers the dump or tilt functions and provides guidance for safe operation, inspection, and maintenance. It helps the reader identify key components – such as the pump, reservoir, hoses, cylinders, and controls – and provides practical instructions for keeping those parts in good working order through proper inspection, fluid checks, and maintenance.

It includes step-by-step instructions for tasks like checking and refilling fluid, bleeding air from the system, and inspecting hoses and seals. Emphasis is placed on safety, preventing leaks or failures, and using approved hydraulic fluids to maintain performance and warranty coverage.

Overall, this section ensures trailer owners can operate hydraulic systems safely, identify issues early, and extend system life through regular maintenance.

12.1. RESERVOIR CHECK AND FLUID TYPE

The hydraulic reservoir stores the fluid that powers the pump, cylinders, and valves used to raise and lower the dump bed or tilt deck. Maintaining the correct fluid level and using the proper fluid type are essential for safe, efficient operation and long system life. The purpose is to ensure the hydraulic system contains clean, properly rated fluid at the correct level for consistent performance and to prevent air, moisture, or debris from entering the system.

CHECKING FLUID LEVEL

1. Park Safely

- Park the trailer on level ground, engage the tow vehicle's parking brake, and chock the wheels.
- Lower the dump bed or tilt deck completely before checking fluid.

2. Access the Reservoir

- Locate the hydraulic pump and reservoir assembly (commonly near the battery box or tongue area).
- Clean around the cap to prevent dirt from entering.

3. Check the Level

- Remove the fill cap or dipstick (if equipped).
- Fluid should be within 1 inch of the top of the reservoir when the bed or deck is fully lowered.
- If low, add fluid slowly to avoid trapping air.

4. Secure the Cap

- Reinstall the cap tightly and wipe away any spilled fluid.

CHAPTER 12: HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)

FLUID CONDITION GUIDE

Hydraulic fluid should appear **bright red** under normal conditions. This indicates the system is clean and operating properly.

If the fluid looks **dark or has a burnt odor**, it has likely overheated or aged and should be **drained, flushed, and refilled** with fresh, approved fluid.

Fluid that appears **milky or foamy** signals contamination from air or water, which requires **bleeding the system** and replacing the fluid to restore proper function and prevent damage.

**Legal & Safety Notices**

WARNING: Contact with hydraulic fluid under pressure can cause serious injury. Never check or open the system while it is pressurized or the bed/deck is raised.

NOTICE: Use only Diamond C-approved hydraulic fluid and keep the reservoir clean to prevent system damage or contamination.

DISCLAIMER: Always follow manufacturer service procedures. Improper maintenance or use of unapproved fluids may void warranty coverage and reduce system performance.

12.2. BLEEDING THE SYSTEM

Bleeding the hydraulic system removes trapped air that can cause slow, uneven, or weak lifting of the dump bed or tilt deck. The process involves cycling the system several times to purge air from the lines, topping off the reservoir, and verifying smooth operation.

This procedure is required after any service or condition that introduces air into the system—such as replacing hoses, cylinders, pumps, or fittings; when the trailer exhibits jerky or uneven movement; if the hydraulic fluid appears foamy or milky in the reservoir; or following long-term storage or fluid replacement.

Proper bleeding restores consistent pressure, prevents premature wear of hydraulic components, and ensures safe, reliable trailer operation. Regular attention to these signs helps maintain long-term hydraulic performance and system integrity.

CHAPTER 12: HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)

BLEEDING PROCEDURE

- 1. Park Safely:** Park the trailer on a level surface. Engage the tow vehicle's parking brake and chock the wheels. Ensure the bed or deck is fully lowered.
- 2. Check Fluid Level:** Remove the reservoir cap and verify that fluid is within 1 inch of the top. Add fluid if necessary.
- 3. Cycle the System:** Activate the hydraulic control switch to raise the bed or deck partially, then lower it completely. Repeat this process **4-6 times** to help push air through the lines.
- 4. Observe the Fluid:** Watch the fluid in the reservoir for bubbles or foam. Allow the system to rest for several minutes between cycles if foaming occurs.
- 5. Top Off Fluid:** After cycling, recheck the fluid level and add more if needed. Replace the cap securely.
- 6. Test Operation:** Fully raise and lower the bed or deck to confirm smooth, consistent movement and proper response.

After bleeding the system, verify that the hydraulic operation is smooth and consistent. If performance does not improve or air bubbles remain, repeat the bleeding process. Continued issues may indicate loose fittings, low fluid levels, or worn components that should be inspected by a qualified service technician.

**Legal & Safety Notices**

WARNING: Hydraulic systems operate under high pressure. Never disconnect hoses or loosen fittings while the system is pressurized or in operation.

CAUTION: Always use safety props or supports before working beneath a raised bed or deck.

NOTICE: Do not overfill the reservoir. Excess fluid may cause leaks or pressure buildup.



CHAPTER 12: HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)

12.3. HOSE AND SEAL INSPECTION

Regular inspection of hydraulic hoses, fittings, and seals is critical to ensure safe and efficient trailer operation. Over time, hoses and seals can wear, crack, or degrade, leading to leaks or loss of hydraulic pressure.

INSPECTION FREQUENCY

- **Before Each Use:** Perform a visual inspection of all hydraulic hoses and connections.
- **Monthly:** Conduct a more thorough inspection, checking for wear, corrosion, or fluid residue.
- **Annually:** Have a qualified technician inspect the hydraulic system as part of a full maintenance check.

INSPECTION PROCEDURE

1. **Clean the Area:** Wipe down hoses and connections with a clean, dry cloth to remove dirt and debris.
2. **Check for Damage:** Look for cracks, bulges, cuts, abrasions, or stiffness along the hose length.
3. **Inspect Fittings and Seals:**
 - Ensure fittings are tight and properly seated.
 - Check for oil residue around fittings or at the base of the cylinders – this may indicate a leak.
 - Examine seals at all hydraulic connections for deterioration or swelling.
4. **Check for Leaks:** Operate the hydraulic system under load and observe all connections for fluid seepage or spraying.
5. **Replace as Needed:** Replace any hose or seal showing signs of damage or leakage. Always use manufacturer-approved replacement parts.

SAFETY PRECAUTIONS

- Never check for leaks using your hands while the system is pressurized. Hydraulic fluid under pressure can penetrate the skin and cause serious injury. Relieve system pressure before tightening fittings or replacing components.
- Dispose of used hoses and seals in accordance with local environmental regulations.

CHAPTER 12: HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)

RECOMMENDED REPLACEMENT INTERVAL

Even if no visible damage is present, hoses should generally be replaced every **5 years** or as recommended by the manufacturer.

**Legal & Safety Notices**

WARNING: Never inspect hoses or seals for leaks using hands or bare skin. Hydraulic fluid under pressure can penetrate the skin and cause serious injury or infection. If injection occurs, seek immediate medical attention.

CAUTION: Always depressurize the hydraulic system before loosening, tightening, or replacing any hose, fitting, or seal. Pressurized components can move unexpectedly or release high-pressure fluid, resulting in injury or equipment damage.

NOTICE: Keep all hydraulic hoses, seals, and fittings clean and dry. Dirt, debris, and contamination can lead to premature wear or hydraulic system failure. Use only Diamond C-approved replacement hoses and seals to maintain system performance and warranty coverage.

12.4. TARP SYSTEM

The tarp system protects your load, keeps debris contained, and helps maintain compliance with road safety laws. Depending on your model, the system may be manual, spring-assisted, or electric.

Regular inspection and maintenance ensure smooth operation, prevent fabric wear, and extend system life.



CHAPTER 12: HYDRAULIC SYSTEMS (DUMP & TILT TRAILERS)

OPERATION GUIDELINES

- Park on level ground and inspect the tarp, arms, and hardware before use.
- To Deploy: Roll or power the tarp evenly across the bed until the load is fully covered.
- To Retract: Remove debris and roll it back slowly, keeping even tension.
- Lock arms and straps securely before towing.

ADJUSTMENT & MAINTENANCE

- **Alignment:** Adjust roller or arms if tarp winds unevenly.
see: [Tarp Arm Alignment Guide](#)
- **Lubrication:** Lightly oil pivot points and rollers every 3 months or after wet conditions.
- **Cleaning:** Wash with mild soap and water only; avoid harsh chemicals.
- **Inspection:** Check for torn fabric, loose bolts, and corrosion.
- Replace worn or damaged components immediately.



Legal & Safety Notices



WARNING: Keep clear of moving tarp arms and rollers during operation. Disconnect power before servicing electric systems.

NOTICE: Maintain clean, lubricated components and ensure full coverage before travel.

DISCLAIMER: Unauthorized modifications or non-approved parts may void warranty coverage and reduce system safety.

13

FRAME & STRUCTURE



CHAPTER 13: FRAME AND STRUCTURE

Your trailer's frame and structural components form the foundation for safe operation and load-bearing performance. Regular inspection and maintenance help prevent fatigue, corrosion, and structural failure over time.

13.1. RUST PREVENTION AND REPAIR

Regular inspection and maintenance are important to help prevent rust and protect the life of your trailer. Exposure to moisture, road salt, chemicals, gravel, and debris can damage protective coatings and allow corrosion to form over time.

TO HELP PREVENT RUST:

- Wash the trailer regularly, especially after exposure to road salt, mud, fertilizer, or chemicals
- Inspect the frame, crossmembers, weld areas, suspension components, axles, and underside of the trailer
- Touch up chips, scratches, or exposed metal as soon as possible
- Keep drain holes and enclosed areas clear of debris
- Store the trailer in a dry, covered area when possible
- Avoid prolonged contact with standing water, wet grass, or corrosive materials

For deeper corrosion, structural damage, cracked welds, or rust affecting load-bearing components, discontinue use and contact Diamond C or an authorized service provider for inspection and repair recommendations.

13.2. COLD WEATHER & ROAD SALT TRAILER MAINTENANCE





CHAPTER 13: FRAME AND STRUCTURE

COLD WEATHER & ROAD SALT TRAILER MAINTENANCE

Best Practices for Protecting Your Trailer Investment

Trailers operated in cold-weather regions may be routinely exposed to road salt, liquid brines, calcium chloride, magnesium chloride, and other deicing chemicals. These materials are effective for winter road safety but can accelerate corrosion of steel, fasteners, suspension components, electrical connections, and areas where protective coatings have been damaged.

Routine washing and inspection are essential preventive maintenance in these environments.

Powder coating provides an excellent protective barrier, but no coating system can completely prevent corrosion if salts and deicing chemicals are allowed to remain on the trailer for extended periods.

RECOMMENDED COLD-WEATHER MAINTENANCE SCHEDULE

Frequency	Recommended Maintenance
After Heavy Salt or Brine Exposure	Rinse the trailer with fresh water as soon as practical. Pay particular attention to the frame, suspension, axles, crossmembers, underside, and areas where road spray collects.
Every 1-2 Weeks During Salt Season	Thoroughly wash the trailer using fresh water and a mild, pH-neutral automotive or equipment soap. These types of cleaners are designed to help remove chemical residue, visible salt deposits, mud, and road grime without damaging the protective coating. Avoid household cleaners containing ammonia, harsh chemicals, or soaps that leave a film or residue on the surface, as these products may negatively affect the appearance and long-term performance of the coating.
Monthly During Winter	Inspect the frame, suspension hangers, welds, seams, crossmembers, coating edges, and other high-exposure areas for chips, scratches, rust bleed, or coating damage.
Mid-Winter	Perform a detailed undercarriage cleaning. Where necessary, use a commercially available salt-removal product intended for vehicles or equipment according to the product manufacturer's directions. Rinse thoroughly afterward.
End of Winter / Salt Season	Perform a complete deep cleaning of the trailer, including the undercarriage. Inspect the powder coating and repair areas where steel has become exposed.



CHAPTER 13: FRAME AND STRUCTURE

Frequency	Recommended Maintenance
Before the Next Winter Season	Inspect the trailer and coating condition. Repair coating damage and address corrosion before regular exposure to road-treatment chemicals begins again. (For additional information, reference the Limited Coating Warranty Policy and Section 13.1, Rust Prevention & Repair , in the Owner's Manual.)

Areas Requiring Special Attention

When washing the trailer, concentrate on areas that receive direct road spray or can retain moisture and contaminants:

- Suspension hangers and mounting areas
- Frame rails and lower frame flanges
- Welds and material overlaps
- Fender mounting locations
- Hydraulic component mounting areas
- Any chipped, scratched, or damaged coating
- Axles, springs, equalizers, and suspension hardware
- Crossmembers
- Gooseneck and tongue areas
- Behind tires and mud flaps
- Electrical connections and junction areas

Proper Washing Practices

Use clean, fresh water with a mild, pH-neutral automotive or equipment detergent.

Avoid harsh acidic or highly alkaline cleaners unless the product has been confirmed compatible with the trailer's coating and components.

Avoid household dishwashing soaps or ammonia cleaners. Using pH-balanced soaps will break the bond of salt and not leave residues on the surfaces after rinsing of dirt and grime.

When pressure washing, use reasonable pressure and distance. **Do not concentrate high pressure water directly into seams, electrical connections, bearings, seals, hydraulic components, or underneath damaged coating edges.**

Whenever possible, wash the trailer in an area that allows the frame and undercarriage to drain and dry completely.

Powder-Coating Inspection

Powder coating acts as a protective barrier between the steel and the environment.

Normal trailer use can eventually result in rock chips, scratches, abrasion, and other localized coating damage.

During inspection, look for:

- Chips or scratches exposing bare steel
- Coating damage from road debris
- Corrosion beginning around damaged areas
- Rust bleeding from seams or overlapping materials
- Salt or dirt accumulation around suspension components
- Accumulation inside frame ledges or other collection points

CHAPTER 13: FRAME AND STRUCTURE

- Damaged or corroded fasteners
- Electrical connections showing signs of corrosion
- Areas that remain wet or retain road debris after washing

Areas of exposed steel should be cleaned, properly prepared, treated as appropriate, and touched up with a compatible protective coating as soon as practical.

(For additional information, reference the [Limited Coating Warranty Policy](#).)

Why Salt Removal Matters

Road-treatment chemicals containing chlorides can remain on trailer surfaces after the road has dried. When moisture returns through rain, snow, condensation, or washing, these deposits can become active again etching the surface of protective coating.

Repeated exposure can accelerate corrosion, particularly where:

Salt + Moisture + Exposed Steel = Increased Corrosion Potential

For this reason, a trailer operated regularly on treated winter roads requires a higher level of cleaning and inspection than a trailer operated primarily in dry or non-corrosive environments.

Recommended Winter Rule

During road-salt season, thoroughly wash the trailer at least every two weeks and as soon as practical following significant salt or brine exposure. Clean the undercarriage, suspension, and frame—not just the visible exterior. At the end of the winter season, perform a complete cleaning and coating inspection and promptly address areas of exposed steel or coating damage.

Owner Maintenance Responsibility

Routine cleaning is part of proper trailer maintenance, particularly when the trailer is operated in severe or corrosive environments.

Allowing road salt, brine, mud, or other corrosive contaminants to accumulate for extended periods can contribute to premature deterioration of coatings, components, and structural materials.

The condition and service life of a trailer are influenced by its operating environment, frequency of exposure, cleaning practices, storage conditions, and maintenance history.

Regular cleaning, inspection, and timely coating repairs are among the most effective ways to protect your trailer investment in cold-weather environments.

(For additional information, reference the [Limited Coating Warranty Policy](#).)

This document provides general preventive-maintenance guidance. Always follow applicable component manufacturer instructions and product directions when using cleaners, corrosion-control products, or performing maintenance.



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13.3. STRESS POINT INSPECTIONS

Over time, key areas of the trailer frame and structure are exposed to repeated load forces, road vibration, and flexing during operation. These areas—known as stress points—require regular inspection to ensure the trailer remains structurally sound and safe to operate.

Stress points are sections of the trailer that experience concentrated strain, such as welds, joints, suspension mounts, tongue connections, and crossmembers. Detecting cracks, distortion, or corrosion early prevents costly repairs and reduces the risk of structural failure.

INSPECTION FREQUENCY

- **Before Each Use:** Perform a quick visual check of primary welds and load-bearing joints.
- **Quarterly:** Conduct a detailed inspection of all stress points, especially around the tongue, coupler, spring hangers, and ramp hinge areas.
- **Annually:** Have a qualified technician inspect the entire frame and verify weld integrity using non-destructive testing methods if needed.

INSPECTION PROCEDURE

1. **Clean the Trailer:** Wash or wipe down high-stress areas to remove dirt, rust, and debris that can conceal cracks or defects.
2. **Check Weld Integrity:** Look for visible cracks, rust lines, or separation along weld seams. Pay close attention to corners, brackets, and high-load connection points.
3. **Inspect for Deformation:** Examine frame rails, crossmembers, and gussets for bends, warping, or elongation of mounting holes.
4. **Examine Suspension Mounts:** Ensure spring hangers, equalizers, and axle brackets are tight, aligned, and free from cracks.
5. **Inspect Tongue and Coupler Area:** Verify there is no movement, cracking, or corrosion around the tongue welds or coupler connection.
6. **Document Findings:** Record inspection results in the maintenance log and schedule repairs immediately for any damaged or questionable areas.

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**Legal & Safety Notices**

WARNING: Do not operate the trailer if cracks, broken welds, or structural deformation are detected. Continued use may result in sudden frame failure, leading to loss of control, serious injury, or death.

CAUTION: Only qualified personnel should perform welding or structural repairs. Improper welding can weaken the trailer frame and void warranty coverage.

NOTICE: Keep stress areas clean and free of corrosion. Apply touch-up paint or protective coating to any bare metal surfaces immediately after inspection.

13.4. PAINT TOUCH-UP GUIDE

Even with Diamond C's durable DM Coating System, small chips or scratches can occur during everyday use. Prompt touch-up prevents rust and keeps your trailer looking new.

WHEN TO TOUCH UP

- Any time bare metal is visible, even in a small spot.
- After exposure to gravel roads, debris, or heavy equipment loading.
- During routine inspections or cleaning, especially along fenders, couplers, and frame edges.

MATERIALS NEEDED

- Diamond C-approved touch-up paint and primer (if bare metal is exposed)
- *available from your dealer*
- Fine-grit sandpaper (220-320 grit) and 600 grit for feathering edges
- Clean lint-free cloth
- Mild detergent and water
- Wax-and-grease remover or rubbing alcohol
- Disposable gloves

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TOUCH-UP PROCEDURE**1. Clean the Area**

Wash the damaged area with soap and water, then dry completely. Remove dirt, wax, or grease with a wax-and-grease remover.

2. Prepare the Surface

Lightly sand around the damaged spot to remove loose coating or rust. Feather the edges for a smooth transition. Wipe the repair area with a clean, lint-free cloth to remove all sanding dust and debris.

3. Prime Bare Metal (If Required)

If bare metal is exposed, apply a Diamond C-approved primer and allow it to dry according to the manufacturer's instructions.

3. Apply Touch-Up Paint

Shake paint well. Apply a thin, even coat using a small brush or applicator. For larger areas, apply multiple light coats rather than one heavy coat.

4. Allow to Cure

Let the paint dry according to the product instructions—typically 24 hours for full hardness. Avoid washing or waxing the area during this period.

5. Inspect & Protect

After curing, lightly wax the repaired area to seal and blend the finish. Regular inspections help prevent new rust from forming.

PRO TIPS

- Perform repairs in a clean, dry, well-ventilated area between 60-90 °F.
- Do not apply touch-up paint to hot surfaces or in direct sunlight.
- Address any surface rust promptly; untreated rust can spread beneath the coating.
- If damage is extensive or involves peeling, delamination, or large rust areas, contact your **Diamond C dealer** for professional evaluation under the **Paint Warranty & Repair Process**.

13.5. THE DM COATING SYSTEM -“THE DIFFERENCE MAKER”

Every Diamond C trailer is finished using our exclusive DM Coating System (Difference Maker) – an advanced powder-coat process designed for long-lasting protection and shine.

Each trailer frame is carefully cleaned, primed, and powder-coated in a multi-step process that ensures a durable bond between steel, primer, and topcoat. A zinc-rich primer adds extra corrosion resistance, and the final high-gloss finish delivers lasting color depth and curb appeal.

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This process creates a finish that:

- Resists chips and corrosion
- Maintains gloss and color over time
- Helps protect your trailer's structure for years of service



The DM Coating System is one of the key reasons Diamond C trailers look great and perform well even after years of real-world use.

MAINTAINING THE DM FINISH

Proper care of your trailer's DM powder-coated finish helps it stay looking new and protects it from rust and corrosion. The finish is durable, but like any coating, it performs best with regular maintenance.

ROUTINE CLEANING

- Wash your trailer **regularly**, especially after exposure to road salt, fertilizers, or industrial dust.
- Use **mild automotive soap** or a gentle detergent with clean water.
- **Rinse thoroughly** to remove all residue – standing soap or chemicals can dull the finish over time.
- Avoid **high-pressure washers** directly on seams, electrical components, or decals.

AVOID HARSH CHEMICALS

- Do **not** use acid-based or petroleum-based cleaners, degreasers, or abrasive polishes.
- Avoid household cleaners like bleach or ammonia – these can break down the coating's surface.
- If removing grease or tar, use a **citrus-based** cleaner or mild solvent, followed by a full wash.

PROTECTION & PREVENTIVE CARE

- After washing, a **light coat of automotive wax or spray sealant** can enhance gloss and help repel dirt and UV rays.
- Inspect your trailer often for **chips, scratches, or rust spots**. Promptly repair small chips to prevent corrosion from spreading.
- Keep your trailer **stored clean and dry** when not in use, especially in winter months. If possible, store indoors or use a breathable cover.

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WINTER & ROAD SALT CARE

- In regions where salt is used on roads, rinse your trailer more frequently during winter.
- Pay special attention to the underside and fender areas, where salt and debris tend to collect.
- Do not allow mud or road grime to sit for long periods – this can trap moisture against the coating.

LONG-TERM BENEFITS

Regular cleaning and gentle care will keep the DM finish looking its best and extend its protection. Following these simple steps helps maintain the paint warranty and keeps your Diamond C trailer standing out for years to come.



Legal & Safety Notices



WARNING: Always perform paint repairs in a well-ventilated area away from open flames or sparks. Many paints and solvents are flammable and may emit harmful vapors.

CAUTION: Wear appropriate personal protective equipment (PPE), including gloves, safety glasses, and a respirator when sanding or painting.

NOTICE: Use only approved or manufacturer-specified paints and primers to ensure proper adhesion and corrosion resistance. Unapproved products may cause finish failure or void warranty coverage.

14

CLEANING & STORAGE





CHAPTER 14: CLEANING & STORAGE

Proper cleaning and storage practices are essential for preserving the appearance, performance, and longevity of your trailer. Regular maintenance helps prevent corrosion, protect finishes, and ensure your trailer is ready for reliable service when needed.

14.1. CLEANING GUIDELINES

1. General Cleaning:

Wash the trailer regularly using mild soap and water to remove dirt, mud, and road salts. Avoid harsh detergents or abrasive cleaners that can dull or damage painted surfaces.

2. Pressure Washing:

If using a pressure washer, keep the nozzle at least 12 inches away from the surface and avoid directly spraying electrical components, wheel bearings, decals, or seals.

3. Frame and Undercarriage:

Pay close attention to the underside of the trailer, fenders, and frame rails where road grime and moisture tend to collect. Rinse thoroughly after exposure to salt, fertilizer, or chemicals.

4. Hydraulic Components:

Wipe down hydraulic cylinders, hoses, and fittings to prevent buildup of dirt or debris. Check for leaks or corrosion during cleaning.

5. Wood Decks:

Sweep debris from wood decking and periodically treat with a wood preservative or sealer to protect against moisture damage and UV exposure.

6. Finishing Touches:

After washing, dry the trailer completely to prevent water spots and rust. Applying a light coat of wax or corrosion inhibitor to painted surfaces can help maintain appearance and protection.

CHAPTER 14: CLEANING & STORAGE

**Legal & Safety Notices**

WARNING: Avoid working under the trailer without proper support. Use jack stands rated for the trailer's weight when lifting for cleaning or storage preparation.

CAUTION: Do not use solvents, gasoline, or abrasive chemicals to clean painted or coated surfaces. These substances can damage finishes and seals.

NOTICE: Regular cleaning and storage maintenance are required to maintain warranty coverage. Failure to remove corrosive materials or perform preventive care may result in premature deterioration of components.

14.2. WINTER STORAGE CHECKLIST

Proper winter storage helps prevent damage caused by freezing temperatures, moisture, and corrosion. Completing this checklist before storing your trailer for the winter will help ensure it remains in excellent condition and is ready for use in the spring.

BEFORE STORAGE**1. Clean Thoroughly:**

Wash the entire trailer, including the frame, undercarriage, and fenders, to remove dirt, salt, and road debris. Allow it to dry completely before covering or storing.

2. Inspect for Damage:

Check for cracks, rust, paint chips, or loose hardware. Complete any necessary repairs or touch-ups before storage.

3. Lubricate Moving Parts:

Apply grease to hinges, latches, jack components, and couplers. Lightly oil exposed metal areas to prevent rust.

4. Protect Hydraulic System:

- Fully lower all hydraulic components to relieve pressure.
- Check reservoir fluid level and top off if needed.
- Wipe down cylinders and hoses to remove dirt and moisture.

5. Battery Care (if equipped):

- Disconnect and remove the battery.
- Clean terminals and store in a cool, dry location.
- Periodically charge the battery to maintain condition during long-term storage.

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6. Tires:

- Inflate tires to the manufacturer's recommended PSI.
- If possible, store the trailer on jack stands to remove weight from the tires.
- Cover tires to protect from UV rays and temperature fluctuations.

7. Electrical System:

Inspect all wiring, connectors, and lights for corrosion or damage. Apply dielectric grease to terminals to prevent oxidation.

8. Coupler and Safety Chains:

Clean, inspect, and apply a light coat of lubricant or corrosion inhibitor.

9. Decking and Wood Surfaces:

Sweep off all debris and apply a wood sealer or preservative to help resist moisture absorption.

10. Storage Location:

- Store indoors or under a high-quality, breathable cover.
- Ensure the storage surface is level and dry.
- Engage the parking brake or use wheel chocks to prevent movement.

**Legal & Safety Notices**

WARNING: Never work beneath a raised trailer unless it is securely supported by jack stands rated for its full weight. Failure to do so may result in serious injury or death.

CAUTION: Do not use plastic tarps or non-breathable covers, as trapped moisture can accelerate corrosion and wood decay.

NOTICE: Completing seasonal maintenance and storage preparation helps preserve trailer performance and may be required for warranty validation. Always document completed maintenance in the trailer's service log.



CHAPTER 14: CLEANING & STORAGE

14.3. BATTERY DISCONNECT/MAINTENANCE FOR POWERED TRAILERS

Proper battery maintenance and disconnection procedures are essential to ensure reliable performance, extend battery life, and prevent electrical issues while the trailer is in storage or not in use. Regular inspection and care help maintain consistent power for the trailer's hydraulic, lighting, and accessory systems.

This section provides guidance on safely disconnecting, maintaining, and storing the trailer's battery. Following these recommendations will help prevent corrosion, electrical drain, and premature battery failure, ensuring your powered trailer remains dependable and ready for use.

INSPECTION AND MAINTENANCE FREQUENCY

- **Before Each Use:** Verify battery charge level and inspect terminals for corrosion or loose connections.
- **Monthly:** Clean terminals and check cable connections for tightness and damage.
- **Seasonally (Before Storage):** Disconnect or remove the battery for maintenance charging and protection during extended periods of inactivity.

BATTERY MAINTENANCE PROCEDURE

1. Safety First:

Park the trailer on a level surface, turn off all electrical components, and ensure the ignition source is off before working on the battery.

2. Inspect the Battery:

- Check for cracks, swelling, or leaks.
- Ensure terminals and cables are free from corrosion and securely attached.
- Replace damaged cables or terminals immediately.

3. Clean Terminals:

- Disconnect the **negative (-)** cable first, then the **positive (+)** cable.
- Use a battery terminal cleaner or a mixture of baking soda and water to remove corrosion.
- Rinse with clean water and dry thoroughly.

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4. Check Voltage:

- Use a multimeter to verify voltage (a fully charged 12V battery should read approximately 12.6V or higher).
- Recharge if necessary using an appropriate **12V battery charger**.

5. Reconnect or Remove:

- When reconnecting, attach the positive **(+) cable first**, then the **negative (-) cable**.
- For long-term storage, disconnect both cables or remove the battery entirely.

6. Storage Tips:

- Store the battery in a cool, dry place away from direct sunlight or freezing temperatures.
- Keep it on a maintenance (float) charger to preserve charge during long-term storage.

**Legal & Safety Notices**

WARNING: Batteries contain acid and produce explosive gases. Avoid sparks, flames, and smoking near the battery. Wear protective eyewear and gloves when performing maintenance.

CAUTION: Always disconnect the negative (-) cable first to prevent accidental short circuits. Improper handling may result in electrical shock, fire, or component damage.

NOTICE: Use only manufacturer-recommended 12V deep-cycle or Lithium batteries for powered trailer systems. Using incorrect battery types may reduce performance or void warranty coverage.

15

TORQUE SPECIFICATIONS & CHARTS



CHAPTER 15: TORQUE SPECIFICATIONS & CHARTS

Proper torque application is critical to trailer safety, performance, and component longevity. Bolts or fasteners that are under- or over-tightened can cause premature wear, misalignment, or structural failure. Always use a calibrated torque wrench and follow the recommended values when servicing or reassembling components.

Torque specifications define the correct clamping force required to maintain secure connections without damaging parts. Adhering to these specifications ensures that all critical components – including wheels, suspension, and frame assemblies – remain properly fastened for safe and reliable operation.

15.1. LUG NUT TORQUE BY WHEEL TYPE

STUD SIZE	LUG NUT TYPE	TORQUE SPECIFICATIONS	WHEEL SIZE & TYPE	WHEEL MATERIAL
1/2"	CONED	90-120 FT. -LB.	15"	STEEL
1/2"	CONED	90-120 FT. -LB.	16"	STEEL
9/16"	CONED	120-140 FT. -LB.	16"	STEEL
5/8"	FLANGED NUTS (NON-ROTATING FLANGE)	275-325 FT. -LB.	17.5" SINGLE OR 16" DUAL"	STEEL
1/2"	CONED	90-100 FT. -LB.	15"	ALUMINUM
9/16"	CONED	120-140 FT. -LB.	16"	ALUMINUM
5/8"	FLANGED NUTS (ROTATING FLANGE)	150 FT. -LB.	16"	ALUMINUM

15.2. COUPLER TORQUE

Proper coupler torque is essential to ensure a secure connection between the trailer and the towing vehicle. Maintaining correct torque on the coupler mounting bolts prevents loosening, misalignment, and potential detachment during operation. The coupler serves as the critical link between the trailer and tow vehicle, and proper bolt torque helps maintain trailer stability, reduces stress on the tongue structure, and ensures safe and reliable towing performance.

Maintaining proper torque on coupler bolts is critical to ensure a secure connection between the trailer and the towing vehicle. Regular inspection and re-torquing help prevent loosening, fatigue, and potential coupler failure during operation.

CHAPTER 15: TORQUE SPECIFICATIONS & CHARTS

INSPECTION FREQUENCY

- **Initial Inspection (After 50 Miles of Towing):**
After the first 50 miles of use, check all coupler mounting bolts for proper torque. New hardware may settle slightly after initial towing, requiring re-tightening to the specified values.
- **Routine Checks (Every 3 Months or 3,000 Miles):**
Inspect and verify torque at least once every three months or 3,000 miles, whichever comes first. Re-torque as necessary to maintain secure mounting.
- **Before Every Trip:**
Perform a quick visual inspection to ensure all coupler bolts and mounting hardware are in place, free of rust, and show no signs of movement or loosening. Look for chipped paint, metal shavings, or rust trails – these can indicate bolt movement or fatigue.

COUPLER TORQUE SPECIFICATIONS

- **2-5/16" 30K Coupler:** Torque to a minimum of **125 ft-lb** while the coupler is **uncoupled**.
- **3" 40K Coupler:** Torque to a minimum of **200 ft-lb** while the coupler is **uncoupled**.

Note: Always apply torque using a calibrated torque wrench. Verify torque on clean, dry fasteners, and avoid the use of lubricants or anti-seize compounds unless specified by the coupler manufacturer.

SERVICE AND SAFETY RECOMMENDATIONS

If you notice **repeated bolt loosening, corrosion, or unusual wear** around the coupler or mounting hardware, stop towing immediately and consult a qualified service technician. Continuing to tow with a compromised coupler assembly can lead to separation, loss of control, or serious injury.

For additional maintenance guidance, visit the **Diamond C Service & Maintenance Manuals** page at: diamondc.com/service-maintenance-manuals

CHAPTER 15: TORQUE SPECIFICATIONS & CHARTS

**Legal & Safety Notices**

WARNING: Failure to maintain proper coupler torque may result in trailer detachment, loss of control, or serious injury. Always use a calibrated torque wrench and follow specified torque values.

NOTICE: Inspect and re-torque coupler bolts regularly to prevent loosening, corrosion, and fatigue. Only use clean, dry fasteners during torque checks.

DISCLAIMER: Do not apply lubricants or anti-seize compounds unless approved by the coupler manufacturer. Improper torque procedures or unauthorized modifications may void warranty coverage and compromise towing safety.

15.3. AXLE U-BOLT TORQUE

Proper axle U-bolt torque is essential for maintaining correct axle alignment, suspension performance, and safe towing operation. U-bolts secure the axle to the leaf spring assembly and preserve suspension geometry under load.

Maintaining correct torque ensures that the axle and suspension components remain securely clamped, providing trailer stability and consistent ride quality. Under-tightened U-bolts can cause axle movement, uneven tire wear, or poor handling, while over-tightening can stretch or damage the bolts, leading to premature component failure.

INSPECTION FREQUENCY

- **Initial Inspection:** After the first 50 miles of towing, inspect and re-torque all axle U-bolts.
- **Routine Checks:** Verify torque every 3 months or 3,000 miles, whichever comes first.
- **Before Long Trips:** Perform a visual inspection to confirm that no U-bolt nuts are missing, loose, or rusted.

Note: Always perform torque checks when the trailer is unloaded and on a level surface.

CHAPTER 15: TORQUE SPECIFICATIONS & CHARTS

**Legal & Safety Notices**

WARNING: Loose or improperly torqued U-bolts can cause axle shift, loss of control, or serious injury. Always torque to manufacturer specifications using a calibrated torque wrench.

NOTICE: Inspect and re-torque U-bolts after initial use and at regular service intervals to maintain proper axle alignment and suspension performance.

DISCLAIMER: Never torque U-bolts with the trailer loaded or use impact tools for final tightening. Failure to follow proper procedures may void warranty coverage and compromise towing safety.

15.4. SPARE MOUNT - BOLT TORQUE

The **spare tire mount** secures your trailer's spare wheel and tire assembly in a stable, accessible location. Maintaining proper **bolt torque** is essential to prevent vibration, hardware loosening, or loss of the spare tire during travel. Correct torque ensures both safety and protection of the mounting bracket and trailer structure.

TORQUE SPECIFICATIONS

- **Spare Mount Bolt Torque:** Torque all spare tire mount bolts to **75-90 ft-lb** (unless otherwise specified by the mount manufacturer).
- Always verify torque using a **calibrated torque wrench**.
- Check that the wheel lug nuts on the spare are torqued to the same value recommended for your trailer's primary wheels.

INSPECTION FREQUENCY

- **Initial Check:** After the first 50 miles of towing.
- **Routine Inspection:** Every 3 months or 3,000 miles.
- **Before Every Trip:** Perform a visual check to confirm that the spare mount bolts, nuts, and wheel fasteners are secure and free from corrosion.

CHAPTER 15: TORQUE SPECIFICATIONS & CHARTS

MAINTENANCE TIPS

- Keep bolts and bracket surfaces clean and dry to prevent rust.
- Replace any worn or stretched fasteners immediately.
- Do not use lubricants or anti-seize on torque surfaces unless specified by the manufacturer.
- Verify that the **spare tire** is properly inflated and matches your trailer's size and load rating.

**Legal & Safety Notices**

WARNING: Loose or improperly torqued spare mount bolts can cause the tire or bracket to detach while towing, resulting in property damage or serious injury.

NOTICE: Inspect and re-torque all spare mount hardware at recommended intervals. Use only Diamond C-approved fasteners and follow specified torque values.

DISCLAIMER: Failure to maintain proper torque or the use of non-approved mounting components may void warranty coverage and compromise towing safety.

16

TROUBLESHOOTING





CHAPTER 16: TROUBLESHOOTING

UNDERSTANDING THE IMPORTANCE OF TROUBLESHOOTING

Even with the highest quality materials and craftsmanship, every trailer may occasionally experience issues due to wear, environmental conditions, or improper use. Troubleshooting is the process of identifying, diagnosing, and resolving those issues efficiently – before they become major problems.

At Diamond C, we design our trailers to deliver years of dependable service. However, proper maintenance and prompt attention to any irregularities play a crucial role in ensuring performance, safety, and longevity. By following the troubleshooting steps in this section, owners can often correct small issues themselves or accurately communicate the problem to a service professional, saving time and avoiding unnecessary repairs.

WHY TROUBLESHOOTING MATTERS:

- **Safety First:** Detecting potential failures early – such as brake issues, electrical malfunctions, or loose fasteners – prevents breakdowns or accidents during towing.
- **Prevents Costly Damage:** Addressing small concerns quickly (for example, uneven tire wear or lighting failures) helps avoid larger, more expensive repairs later.
- **Improves Trailer Lifespan:** Regular inspection and troubleshooting extend the life of the trailer's components, including suspension, frame, and electrical systems.
- **Increases Reliability:** A well-maintained trailer ensures smoother operation, consistent performance, and peace of mind for every haul.
- **Supports Warranty Claims:** Proper troubleshooting helps document problems accurately, making it easier to resolve warranty issues through Diamond C's support process.



CHAPTER 16: TROUBLESHOOTING

16.1. HYDRAPRO ELECTRIC-OVER-HYDRAULIC (EOH) BRAKE PUMP

The HydraPro electric-over-hydraulic (EOH) brake pump system on your Diamond C trailer is designed to provide consistent and reliable braking power for safe towing and stopping performance. If the pump begins to malfunction—such as running continuously, failing to engage, or providing weak pressure—it can reduce braking efficiency and create unsafe towing conditions. This section explains how to recognize brake pump issues, understand their causes, and take the appropriate steps to correct them.

BEFORE TROUBLESHOOTING

Before performing any troubleshooting or repair, the trailer must first be inspected by an authorized Diamond C dealer. The dealer will verify installation, wiring, and system operation to rule out any mechanical or electrical faults within the trailer.

If the issue appears to originate from the brake pump assembly, the Diamond C dealer will coordinate with Deutche Hydrapro, the original equipment manufacturer (OEM) for the pump system. Hydrapro prefers to provide direct guidance on troubleshooting and repair procedures to ensure all steps are performed safely and according to manufacturer specifications.

For assistance, contact **HydraPro USA Warranty Support** at **(469) 375-1540** or warranty@hydraprousa.com. They can help with troubleshooting, recommendations, and coordinating next steps.

Do not attempt to disassemble or service the brake pump without proper authorization. Unauthorized repair or modification can result in component damage, personal injury, or voided warranty coverage.

COMMON SYMPTOMS

- Brake pump does not activate when brakes are applied
- Pump continues running after brakes are released
- Weak or delayed brake response
- Pump makes unusual noises (grinding, whining, or clicking)
- Brakes lock up or fail to release properly

CHAPTER 16: TROUBLESHOOTING

MAINTENANCE TIPS

- **Inspect fluid levels regularly:** Use only the brake fluid type recommended by Diamond C Trailers.
- **Keep electrical connections clean:** Corrosion or loose terminals can interrupt pump performance.
- **Bleed the system annually or as needed:** This ensures consistent hydraulic pressure and prevents air buildup.
- **Listen for changes:** A pump that suddenly becomes louder or quieter may indicate early signs of failure.

WHEN TO CONTACT A DEALER

If the pump continues to malfunction after performing the above checks, or if you notice **fluid leaks, electrical shorts, or persistent pressure issues**, contact an **authorized Diamond C dealer or service center**. Professional service ensures proper diagnosis and safe, reliable brake performance.

For additional information or support, contact your authorized Diamond C dealer or visit diamondc.com/service-maintenance-manuals

16.2. LIGHTS MALFUNCTIONS (FLICKERING OR INOPERATIVE LIGHTS)

Proper trailer lighting is essential for **safety and legal compliance** on the road. Lights provide visibility to other drivers and signal your movements, helping prevent accidents. When lights flicker, dim, or fail to operate, it often indicates an **electrical issue** that should be addressed immediately.

This section helps owners identify common lighting issues, understand their causes, and take corrective actions to restore safe and proper operation.

COMMON SYMPTOMS

- Lights flicker intermittently while driving
- One or more lights are dim or not functioning
- All trailer lights fail to operate
- Turn signals or brake lights work inconsistently



CHAPTER 16: TROUBLESHOOTING

16.3. VIBRATION OR HANDLING CONCERNS

Smooth and stable towing is essential for both safety and comfort. Excessive vibration, swaying, or poor handling can indicate mechanical issues, load imbalance, or improper towing setup. Ignoring these warning signs may lead to premature component wear, reduced control, or even accidents.

This section helps identify the most common causes of vibration or handling concerns and provides guidance for correcting them to maintain safe and predictable trailer performance.

COMMON SYMPTOMS

- Noticeable vibration or shaking while towing
- Trailer sways side-to-side at highway speeds
- Uneven tire wear or “cupping” patterns
- Trailer feels unstable when braking or cornering
- Steering or handling feels heavy or inconsistent

POSSIBLE CAUSES AND CORRECTIVE ACTIONS

1. Vibration or shaking while towing

- **Likely Cause:** Unbalanced or damaged tires and wheels
- **Recommended Solution:** Inspect tires for signs of wear or damage. Have them balanced or replaced as necessary to ensure smooth operation.

2. Trailer sways side-to-side

- **Likely Cause:** Improper load distribution or insufficient tongue weight
- **Recommended Solution:** Verify that the load is evenly distributed, with roughly 10-15% of total trailer weight on the tongue. Secure all cargo firmly to prevent shifting during transit.

3. Uneven tire wear

- **Likely Cause:** Misaligned axles, worn suspension components, or incorrect tire pressure
- **Recommended Solution:** Check axle alignment and inspect suspension bushings, shackles, and hangers for wear. Adjust tire pressure to match manufacturer specifications.

CHAPTER 16: TROUBLESHOOTING

4. Instability during braking

- **Likely Cause:** Faulty brakes, loose wheel bearings, or an overloaded trailer
- **Recommended Solution:** Inspect the brake system for proper function and ensure wheel bearings are tight and lubricated. Confirm that total trailer weight does not exceed its rated GVWR.

5. Trailer pulls to one side

- **Likely Cause:** Uneven tire pressure or brake imbalance
- **Recommended Solution:** Inflate all tires to the same recommended pressure. Check for even brake adjustment and pad wear across all wheels.

6. Excessive bounce or harsh ride

- **Likely Cause:** Worn shocks or suspension parts
- **Recommended Solution:** Examine shocks, springs, and mounting hardware for wear or damage. Replace worn components to restore a smooth ride and stable handling.

**Legal & Safety Notices**

WARNING: Operating a trailer with vibration, sway, or poor handling can result in loss of control, rollover, or serious injury. Stop towing immediately and correct the cause before resuming operation.

NOTICE: Verify load balance, tire condition, and proper hitch setup before every trip. Maintain recommended tire pressure and torque settings to ensure safe and stable handling.

DISCLAIMER: Continued towing with unresolved handling issues may void warranty coverage and cause damage to suspension, tires, or frame components. Always consult an authorized Diamond C dealer for diagnosis and repair.

CHAPTER 16: TROUBLESHOOTING

16.4. KTI HYDRAULIC PUMP TROUBLESHOOTING

The **KTI hydraulic power unit** is used on many Diamond C dump, tilt and hydraulic dovetail trailers to raise and lower the bed. While the system is highly reliable, occasional performance issues may occur due to electrical, hydraulic, or mechanical causes. This guide outlines common problems, causes, and corrective actions to help you diagnose issues quickly.

For additional assistance, **you may contact KTI directly at: support@kti.com** for troubleshooting support and recommendations. Their technical team can walk you through diagnostics and, when necessary, may **authorize replacement equipment** to resolve the issue.

SYSTEM CHECK & MAINTENANCE SUMMARY

Electrical: Keep the battery fully charged (12.5-13.5V) and ensure all ground connections are clean and tight. Inspect the hand remote and wiring for damage, and verify that the solenoid engages when the switch is pressed.

Hydraulic: Use ATF Dexron III or ISO 32 hydraulic oil as specified. Check fluid level with the bed lowered – it should be about one inch below the fill port. After servicing, cycle the system several times to remove air and keep the filler cap area clean.

Maintenance: Run the pump monthly to keep seals lubricated, store the trailer with the bed lowered, inspect hoses regularly for wear or leaks, and replace hydraulic fluid annually or if it becomes dirty.

When to Contact a Dealer: If troubleshooting does not resolve the issue or if you observe:

- Burnt electrical odor or smoke from the motor
- Hydraulic leaks from pump fittings or cylinder
- Bed movement without remote activation
- Repeated fuse failures

Stop operation immediately and contact your authorized Diamond C dealer or KTI technical support for professional service.



Legal & Safety Notices



WARNING: Loose or improperly torqued components can cause parts to detach while towing, resulting in serious injury or property damage.

Always inspect and re-torque bolts and fasteners at recommended intervals. Use only **Diamond C-approved hardware** and follow all specified torque values.

NOTICE: Before performing any maintenance or repair, ensure the trailer is parked on level ground, the battery is disconnected, and the bed (if raised) is properly supported.

Failure to follow these procedures may lead to damage or unsafe operation.

DISCLAIMER: Failure to maintain proper torque, use approved components, or follow Diamond C procedures may **void warranty coverage** and **compromise towing safety**. Diamond C Trailers assumes no responsibility for accidents, damage, or injury resulting from misuse, neglect, or unauthorized modification.

17

SERVICE RECORD



CHAPTER 17: SERVICE RECORD

Diamond C is committed to providing exceptional support for trailer owners, dealers, and service centers. For questions about maintenance, warranty, or replacement parts, please contact us using the information below.

17.1 CONTACT & SUPPORT INFORMATION

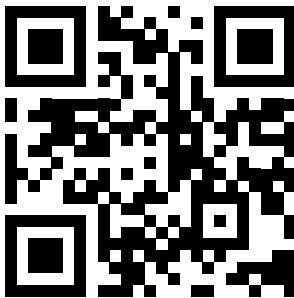
DIAMOND C TRAILERS HEADQUARTERS

Address: 4006 FM 3417 Mount Pleasant, TX 75455

Phone: (903) 572-2834

Email: support@diamondc.com

Website: www.diamondc.com



(Scan to visit website)

Warranty & Technical Support

For assistance with warranty claims, repair authorization, or technical guidance, contact:

Email: warranty@diamondc.com

Hours: Monday-Friday, 8:00 AM-5:00 PM (CST)

*You may also reach out through your **authorized Diamond C dealer**, who can coordinate warranty evaluation and service directly with our team.*

CHAPTER 17: SERVICE RECORD

COMPONENT MANUFACTURER SUPPORT

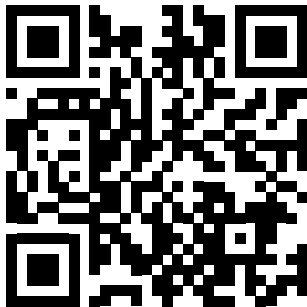


KTI HYDRAULIC SYSTEMS

Technical Support: (949) 752-8818

Website: www.ktihydraulicsinc.com

Email: support@ktihydraulicsinc.com



(Scan to visit KTI's website)



HYDRAPRO USA (BRAKE PUMP SYSTEMS)

Warranty & Technical Support: (469) 375-1540

Email: warranty@hydraprousa.com

CHAPTER 17: SERVICE RECORD

17.2 QR CODE TO DIAMOND C ONLINE MANUAL HUB

ONLINE RESOURCES

Access the latest owner's manual, safety updates, and maintenance videos:

www.diamondc.com/service-maintenance-manuals/#/



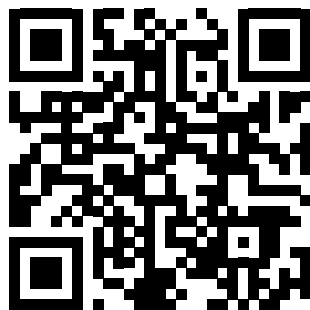
(Scan to visit DC Resources)

17.3 PHONE, EMAIL, AUTHORIZED SERVICE CENTERS

AUTHORIZED SERVICE CENTERS

To locate an authorized Diamond C dealer or service center near you, visit

www.diamondc.com/find-a-dealer



(Scan to find a dealer)



DIAMOND C EQUITY INITIATIVE

OFFICIAL DIGITAL MAINTENANCE & SERVICE LOG

Protect Your Asset & Maximize Resale Value. Keeping an accurate record of routine service is vital for your trailer’s long-term performance, safety, and durability. Crucially, a well-documented maintenance history is required to qualify your trailer for the **Diamond C Certified Transfer Program** should you choose to sell it down the road.

TRAILER PROFILE

MODEL:		VIN NUMBER:	
PURCHASE DATE:		SELLING DEALER:	
ORIGINAL OWNER:		OWNER EMAIL/ PHONE:	

RECOMMENDED SERVICE INTERVALS

INTERVAL	CRITICAL INSPECTIONS & SERVICE ACTIONS	SYSTEMS IMPACTED
Every Trip / Weekly	• Check tire pressure & inspect tread wear • Verify all DOT lighting and wiring harnesses are functional • Inspect coupler, safety chains, and breakaway switch hookup	Tires, Electrical, Tow Hitch
Every 6 Months / 6,000 Mi	• Check lug nut torque specifications • Inspect brake adjustment & operational responsiveness • Inspect suspension components for early wear or fatigue	Running Gear, Brakes, Suspension
Every 12 Months / 12,000 Mi	• Repack wheel bearings & replace grease seals • Inspect structural welds, tongue, and frame joints for distortion • Test full emergency breakaway system battery and switch	Axles/Hubs, Frame Structure, Safety

MAINTENANCE & SERVICE HISTORY LOG

DATE	MILEAGE / HOURS	SERVICE PERFORMED & PARTS REPLACED	SERVICED BY / AUTHORIZED STAMP

Planning to sell or upgrade? Keep this log updated with receipts. To register for a **Certified Warranty Transfer** or to purchase a **1-Year Structural Bridge Extension**, visit an authorized Diamond C Warranty Repair Center within 30 days of vehicle private sale or resale. Learn more at www.diamondc.com



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www.diamondc.com

