

Diagram Rear Axle Wheel Spacer

Harley Softail

Diagram Rear Axle Wheel Spacer Harley Softail **Diagram rear axle wheel spacer Harley Softail** provides crucial insight into the assembly and maintenance of the motorcycle's rear wheel system. The Harley-Davidson Softail series is renowned for its classic design, smooth ride, and customizable features, including modifications to the rear wheel setup. Understanding the arrangement and function of the rear axle, wheel spacer, and related components is essential for proper maintenance, tire changes, or upgrades. This comprehensive guide aims to dissect the diagram, explain the parts involved, their roles, and provide step-by-step instructions for servicing or replacing the rear axle wheel spacer on a Harley Softail.

Understanding the Rear Axle Wheel Spacer in Harley Softail

What Is a Rear Axle Wheel Spacer? The rear axle wheel spacer is a cylindrical component situated between the wheel hub and the swingarm or frame. Its primary function is to ensure the correct positioning of the wheel relative to the frame and to maintain proper alignment of the rotor, brake calipers, and sprocket. Proper spacing is vital for safe operation, preventing uneven tire wear, brake issues, and axle misalignment.

Why Is the Wheel Spacer Important?

- **Alignment:** Ensures that the wheel is correctly aligned within the swingarm, maintaining stability and handling.
- **Brake System Functionality:** Keeps the brake rotor centered relative to the brake caliper, preventing uneven brake pad wear.
- **Preventing Damage:** Correct spacing avoids undue stress on axle components, bearings, and the wheel hub.
- **Customization & Upgrades:** Allows for wheel modifications, such as wider tires or different rims, while maintaining proper alignment.

Components Involved in the Rear Wheel Assembly of Harley Softail

Main Components

- **Rear Axle:** The shaft that holds the rear wheel in place.
- **Wheel Spacer:** The component that maintains the correct distance between the wheel hub and the frame or swingarm.
- **Wheel Hub:** The central part of the wheel which houses bearings and attaches to the rim.
- **Swingarm or Frame:** The part of the motorcycle that supports the rear wheel and connects to the suspension.
- **Brake Rotor:** Attached to the wheel hub, used in the braking system.
- **Brake Caliper:** Clamps onto the rotor to slow down or stop the wheel.
- **Axle Nut:** Secures the axle and wheel assembly.
- **Bearings:** Allow smooth rotation of the wheel around the axle.

Additional Components

- **Washer and Locking Devices:** Prevent loosening of nuts and ensure tight assembly.
- **Spacer Shim (if applicable):** Fine-tuning component for precise alignment.

Diagram of Rear Axle Wheel Spacer Setup on Harley Softail

While actual diagrams vary by model year and specific Softail version, the typical rear wheel assembly includes:

- The axle passing through the wheel hub.
- The wheel spacer positioned on either side of the hub, between the hub and the swingarm or frame.
- The bearing seated within the hub, supporting smooth rotation.
- The axle nut securing the assembly.
- The brake rotor mounted to the

hub, aligned with the caliper. Understanding this arrangement is critical when performing maintenance or upgrades.

Step-by-Step Guide to Reading and Interpreting the Diagram

1. Identifying Components
 - Locate the axle in the diagram; it typically runs horizontally through the wheel hub.
 - Find the wheel spacer, depicted as a cylindrical part between the hub and the swingarm.
 - Note the bearing placements within the hub.
 - Observe the brake rotor attached to the hub's flange.
 - Recognize the axle nut securing the assembly.
2. Understanding Component Relationships
 - The spacer must be precisely positioned to center the rotor within the caliper.
 - The axle passes through the bearings and spacer, holding the wheel in place.
 - Proper spacing ensures that the rotor and caliper are correctly aligned, vital for braking performance.
3. Recognizing Variations
 - Different Softail models and years may have variations in spacer sizes, number of spacers, or additional shims.
 - Some diagrams show dual spacers on either side for wider tires or specific wheel configurations.

Common Reasons to Replace or Adjust the Rear Wheel Spacer

1. Upgrading to a Wider Wheel or Tire
 - When installing larger or custom wheels, the original spacer may no longer provide proper alignment.
 - Custom spacers may be needed to accommodate different rim widths.
2. Wear and Damage
 - Over time, spacers may become worn, cracked, or deformed.
 - Damage can cause misalignment, wobbling, or uneven tire wear.
3. Correcting Alignment Issues
 - Improper installation or previous modifications may result in misalignment.
 - Installing the correct spacer size restores proper wheel positioning.
4. Brake Rotor or Caliper Issues
 - Misaligned rotor caused by incorrect spacer can lead to brake pulsation or uneven wear.

How to Measure and Select the Correct Wheel Spacer for Harley Softail

Tools Required

- Digital caliper or micrometer
- Torque wrench
- Manufacturer's specifications manual

Measurement Procedure

1. Remove the Wheel: Follow the service manual for your specific Softail model.
2. Measure the Existing Spacer: Using the caliper, measure the outer diameter, inner diameter (bore), and length.
3. Compare with OEM Specs: Consult Harley-Davidson parts catalog or manual.
4. Select the Correct Spacer: Ensure the new spacer matches the specified dimensions.
5. Verify Fitment: Before reassembling, dry-fit the spacer to confirm proper alignment.

Installing or Replacing the Rear Wheel Spacer on Harley Softail

Step 1: Prepare the Motorcycle

- Ensure the motorcycle is securely mounted on a lift or stand.
- Disconnect the battery for safety if necessary.

Step 2: Remove the Rear Wheel

- Loosen and remove the axle nut.
- Carefully slide out the axle along with the wheel.

Step 3: Extract the Old Spacer

- Remove any existing spacers from the wheel hub.
- Inspect the bearings and hub for damage.

Step 4: Install the New Spacer

- Insert the new spacer into the hub, ensuring it seats properly against the bearing or flange.
- Confirm that the rotor aligns centrally within the caliper.

Step 5: Reassemble the Wheel

- Slide the wheel back onto the axle, ensuring the spacer remains properly positioned.
- Tighten the axle nut to the manufacturer's specified torque.

Step 6: Final Checks

- Spin the wheel to check for wobble or misalignment.
- Verify rotor alignment with the brake caliper.
- Ensure all fasteners are torqued correctly.

Maintenance Tips for Rear Wheel Spacers on Harley Softail

- Regular Inspection: Check

for signs of wear, corrosion, or damage. - Measurement Checks: Periodically measure spacer dimensions to detect deformation. - Proper Torque: Always tighten axle nuts and mounting bolts to specified values. - Clean Components: Keep spacers and associated parts free of dirt and debris. - Use OEM or High-Quality Parts: Ensures proper fit and longevity.

Troubleshooting Common Issues Related to Rear Wheel Spacers

1. **Wheel Wobble or Vibration** - Likely caused by improper spacer installation or incorrect size. - Remedy: Re-measure and replace with correct spacer.
2. **Brake Pulsation** - Misaligned rotor due to spacer issues. - Remedy: Reinstall or replace the spacer to ensure proper rotor centering.
3. **Unusual Tire Wear** - Caused by misalignment stemming from spacer problems. - Remedy: Confirm spacer dimensions and realign the wheel.

Conclusion

Understanding the role and proper installation of the rear axle wheel spacer in a Harley Softail is fundamental for maintaining optimal performance, safety, and customization flexibility. The diagram serves as an essential visual tool to comprehend the relationship between components, aiding in accurate assembly, troubleshooting, and upgrades. Whether replacing worn spacers, adjusting for wider tires, or ensuring precise alignment, a thorough grasp of this component's function ensures your Softail remains reliable and riding-ready. Always refer to the specific service manual for your model, use quality parts, and adhere to torque specifications to keep your Harley Softail in peak condition.

Diagram Rear Axle Wheel Spacer Harley Softail: A Comprehensive Guide

When it comes to customizing or maintaining your Harley Softail, understanding the role and installation of diagram rear axle wheel spacers is essential for ensuring optimal performance, safety, and aesthetic appeal. These small yet crucial components significantly influence your motorcycle's wheel alignment, handling, and overall ride quality. In this detailed review, we'll delve into every aspect of rear axle wheel spacers for Harley Softail models, including their purpose, types, installation process, troubleshooting, and best practices.

Understanding the Role of Rear Axle Wheel Spacers in Harley Softail

What Are Rear Axle Wheel Spacers?

Rear axle wheel spacers are precision-machined components that sit between the wheel hub and the motorcycle's swingarm or axle assembly. Their primary function is to maintain the correct distance between the wheel and the frame, ensuring proper alignment of the wheel in relation to the chassis. Key functions include:

- **Maintaining Proper Wheel Alignment:** Ensuring the wheel remains centered and aligned with the frame and swingarm.
- **Providing Correct Spacing:** Compensating for manufacturing tolerances or modifications that might alter wheel positioning.
- **Enhancing Stability and**

Handling: Proper spacing ensures the motorcycle handles predictably and safely. -
Facilitating Wheel Removal/Installation: They act as guides and spacers during maintenance or upgrades.

Why Are Rear Spacers Critical on Harley Softail?

Harley Softail models are known for their classic look combined with modern engineering. Their rear wheel and axle setup often involves specific dimensions that must be preserved for safety and performance. Incorrect spacers can lead to: - Wheel misalignment, causing uneven tire wear. - Vibration or wobbling at high speeds. - Premature bearing wear due to uneven load distribution. - Brake system issues if the rotor isn't correctly aligned. Therefore, choosing the right diagram rear axle wheel spacer is fundamental in maintaining the integrity of your Softail's drivetrain and overall ride experience.

Types and Variations of Rear Axle Wheel Spacers for Harley Softail

Standard OEM Spacers

Original Equipment Manufacturer (OEM) spacers are designed specifically for Harley Softail models, ensuring a perfect fit and compatibility. They are typically made from high-grade aluminum or steel and are tested for durability. Advantages: - Perfect fit for specific models. - Maintains original handling characteristics. - Usually comes with a warranty. Disadvantages: - Can be more expensive. - Limited options for customization.

Aftermarket Spacers

Aftermarket spacers are manufactured by third-party companies. They often offer various sizes, materials, and designs to cater to rider preferences and custom setups. Common features: - Aluminum or billet aluminum for lightweight performance. - Longer or shorter lengths for custom wheel setups. - Anodized finishes for corrosion resistance. Advantages: - More affordable options. - Greater variety for customization. - Designed for specific performance upgrades. Disadvantages: - Compatibility issues if not chosen carefully. - Quality can vary between brands.

Material Considerations

The material of the spacer impacts durability, weight, and heat dissipation: - Aluminum: Lightweight, corrosion-resistant, and common in OEM and aftermarket parts. - Steel: Heavier but more durable and sometimes used in heavy-duty applications. - Titanium: Rare and expensive, but offers excellent strength-to-weight ratio suitable for high-performance builds.

Choosing the Correct Rear Axle Wheel Spacer for Your Harley Softail

Factors to Consider

When selecting a wheel spacer, consider the following: 1. Model and Year Compatibility: Ensure the spacer is designed specifically for your Softail model, as dimensions can vary. 2. Wheel and Tire Size: Larger or custom wheels may require different spacer thicknesses. 3. Axle Size: Confirm the diameter and thread pitch of your axle. 4. Material Preference: Balance weight savings and durability. 5. Intended Use: Street riding, touring, or performance racing may influence spacer choice.

How to Identify the Correct Diagram

A detailed diagram of your Harley Softail's rear axle assembly is invaluable: - Refer to the service manual specific to your model. - Examine current spacers for measurement and part numbers. - Consult with a Harley dealer or experienced mechanic. Proper identification prevents installation errors and ensures safety.

Installation Process of Rear Axle Wheel Spacers on Harley Softail

Tools Required

- Socket set and wrenches - Torque wrench - Rubber mallet (if needed) - Loctite or thread locker (optional) - Clean cloth and lubricant

Step-by-Step Installation Guide

1. Secure the Motorcycle: - Use a motorcycle lift or stand to stabilize the bike. - Ensure the rear wheel is off the ground. 2. Remove the Wheel: - Loosen the axle nut using the appropriate socket. - Carefully slide out the axle and remove the wheel. 3. Inspect and Clean Components: - Check wheel bearings, spacers, and axle for damage. - Clean contact surfaces with a cloth. 4. Install the New Spacer: - Position the new spacer onto the axle or hub, following the diagram. - Ensure the spacer is seated correctly and aligns with the wheel hub and swingarm. 5. Reinstall the Wheel: - Carefully slide the wheel back onto the axle, ensuring the spacer remains in position. - Tighten the axle nut to the manufacturer's specified torque. 6. Check Alignment and Clearances: - Spin the wheel to ensure it's centered and rotates freely. - Confirm no contact with brake calipers or swingarm. 7. Final Tightening and Inspection: - Use a torque wrench to secure all fasteners. - Recheck torque after a test ride.

Important Tips

- Always verify the torque specifications from Harley's service manual. - Use thread locker if recommended by the manufacturer. - Replace spacers if they show signs of wear or damage. - Consult a professional if unsure about measurements or installation.

Common Issues and Troubleshooting

Symptoms of Incorrect Spacer Installation

- Vibration or wobbling at higher speeds. - Uneven tire wear. - Difficulty in wheel alignment. - Brake rotor misalignment or scrubbing.

How to Address These Issues

- Recheck spacer dimensions and placement. - Ensure proper torque settings. - Replace worn or damaged spacers. - Confirm that the wheel is centered and true.

When to Seek Professional Help

- If unsure about measurements or compatibility. - Persistent handling issues after installation. - Signs of bearing damage or unusual noise.

Maintenance and Longevity of Rear Axle Wheel Spacers

Regular Inspection

- Check for corrosion, cracks, or deformation. - Ensure spacers are seated correctly during routine maintenance.

Cleaning

- Clean with mild soap and water. - Avoid abrasive cleaners that could damage anodized finishes.

Replacement Intervals

- Replace if damaged, corroded, or after a significant impact. - Consult manufacturer recommendations for specific mileage or time frames.

Storage Tips

- Store in a dry environment. - Keep spacers protected from moisture and dirt.

Enhancing Harley Softail Performance with Wheel Spacers

Beyond basic maintenance, wheel spacers can be part of performance upgrades:

- Wider Stance: Achieved by using longer spacers to improve stability.
- Custom Wheel Fitments: Installing larger or aftermarket wheels may require specific spacers.
- Handling Improvements: Proper spacing can improve cornering and reduce wobble. However, always ensure that modifications do not compromise safety or structural integrity.

Conclusion: Ensuring Safety and Performance with Proper Diagram Rear Axle Wheel Spacers

The importance of diagram rear axle wheel spacers in Harley Softail models cannot be overstated. They are vital for maintaining correct wheel alignment, ensuring safe handling, and preserving the longevity of your motorcycle’s drivetrain components. Whether you’re restoring your bike to factory specifications or customizing for enhanced performance and aesthetics, selecting the correct spacer, understanding its installation, and maintaining it properly are critical steps. Always prioritize quality and compatibility, follow manufacturer guidelines, and consult professionals when needed. With proper care and informed choices, your Harley Softail will deliver a smooth, safe, and enjoyable ride for years to come. Remember: The small components like wheel spacers play a big role in the overall health of your motorcycle. Invest time in understanding and maintaining them to ensure your Harley Softail remains a reliable and stylish machine on the road.

Questions & Answers About diagram rear axle wheel spacer harley softail

No	Question	Answer
1	What is the purpose of a rear axle wheel spacer on a Harley Softail?	A rear axle wheel spacer on a Harley Softail helps to properly align the wheel within the swingarm, ensuring stability, preventing wheel wobble, and accommodating aftermarket wheels or tires for custom setups.
2	How do I know which rear axle wheel spacer size I need for my Harley Softail?	You should measure the existing spacer length or consult your motorcycle’s service manual. Alternatively, remove the current spacer and measure its diameter and thickness, or check with a trusted parts supplier using your bike’s model and year for the correct size.

3	Can installing a wheel spacer affect my Harley Softail's handling or safety?	Yes, improper or incorrect wheel spacers can affect handling, stability, and safety. Always ensure spacers are properly installed, match the specifications for your bike, and are made from high-quality materials to maintain safety and performance.
4	Are there any common issues with rear axle wheel spacers on Harley Softails?	Common issues include improper fitment leading to wheel misalignment, uneven wear, or damage to the spacer or axle. Regular inspection and using the correct, high-quality spacers help prevent these problems.
5	Can I upgrade or change my Harley Softail's rear wheel spacer for aesthetic reasons?	Yes, many riders upgrade to custom or aftermarket wheel spacers to achieve a specific look or wheel fitment. Ensure the new spacers are compatible with your bike's specifications to avoid handling issues.
6	Is it necessary to have a professional install the rear axle wheel spacer on my Harley Softail?	While some experienced riders can install spacers themselves, it's recommended to have a professional mechanic perform the installation to ensure proper fit, torque, and safety, especially if modifications are involved.

rear axle spacer, Harley Softail, wheel spacer, motorcycle spacer, Softail accessories, rear wheel setup, Harley Davidson parts, motorcycle wheel alignment, rear axle components, Harley Softail upgrades