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› Grin Technologies Front Torque Arm V2 Instruction Manual

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Grin Technologies Front Torque Arm V2 Instruction Manual

Comprehensive guide for installation and use of the Grin Technologies Front Torque Arm V2, designed for electric bicycle front forks with fender eyelets.

PRODUCT OVERVIEW

The Grin Technologies Front Torque Arm V2 is a critical safety component designed to prevent axle spinout and potential damage to the motor cable and bicycle fork dropouts on electric bicycles. Constructed from thick 1/4-inch laser-cut stainless steel, this torque arm is specifically engineered for front forks equipped with fender eyelets. It is compatible with M12 or M14 hub motor axles.

Note: The V2 eyelet arm has been succeeded by the V5 design, which offers increased versatility and strength. This manual pertains to the V2 model.

KEY FEATURES

- **Material:** Thick 1/4-inch laser-cut stainless steel plate for durability.
- **Application:** Designed for front forks with existing fender eyelets.
- **Function:** Prevents hub motor axle spinout and protects motor cables and fork dropouts.
- **Compatibility:** Suitable for M12 or M14 hub motor axles.
- **Origin:** Manufactured in Canada.

PACKAGE CONTENTS

Verify that all components are present before beginning installation.



Figure 1: Grin Technologies Torque Arm V2 components. This image displays the main components of the torque arm kit: the axle plate, the arm, a C-washer, and various bolts required for assembly and attachment.

- Axle Plate (main component that secures to the axle)
- Torque Arm (connects the axle plate to the fender eyelet)
- C-Washer (for specific axle configurations)
- Mounting Hardware (bolts and nuts)

INSTALLATION INSTRUCTIONS

Proper installation is crucial for the safe and effective operation of your electric bicycle. If you are unsure about any step, consult a qualified bicycle mechanic.

Tools Required:

- Appropriate wrenches for axle nuts and mounting bolts.
- Hex keys (Allen wrenches) if applicable for included hardware.
- Torque wrench (recommended for axle nuts).

Step-by-Step Guide:

1. **Prepare the Fork:** Ensure your front fork has threaded fender eyelets. Clean the area around the dropout and eyelet.
2. **Install Axle Plate:** Loosen the axle nuts on your hub motor. Slide the axle plate onto the motor axle, ensuring it sits flush against the fork dropout. The square opening in the axle plate should align with the flat sides of your motor axle (M12 or M14). If necessary, use the C-washer to accommodate specific axle designs or "lawyer lips" on the fork.
3. **Position the Torque Arm:** Attach the separate torque arm piece to the axle plate using the provided hardware. The arm should extend towards the fender eyelet.
4. **Secure to Fender Eyelet:** Align the hole in the torque arm with the threaded fender eyelet on your fork. Use the appropriate bolt to secure the torque arm to the eyelet. Ensure a snug fit without overtightening, which could strip the threads.

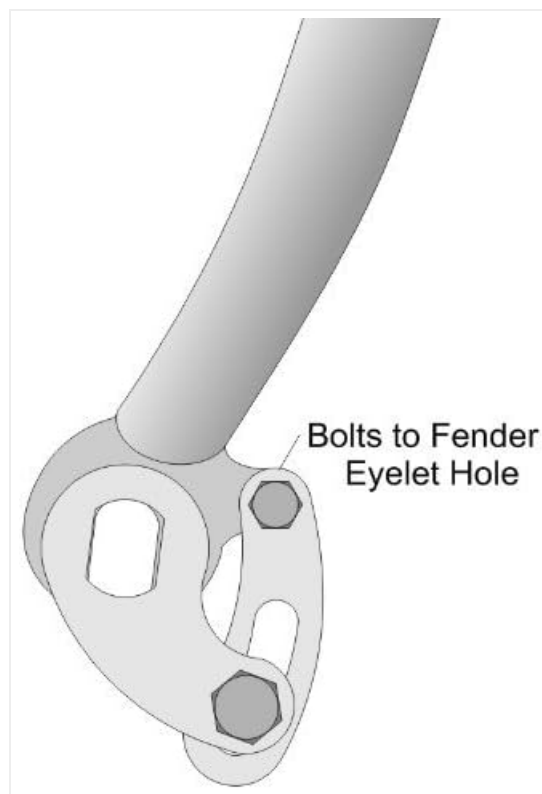


Figure 2: Diagram illustrating the torque arm attachment point. This diagram shows how the torque arm is secured to the fender eyelet hole on the bicycle fork using a bolt.

5. **Tighten Axle Nuts:** Once the torque arm is correctly positioned and secured to the fender eyelet, fully tighten your hub motor's axle nuts to the manufacturer's specified torque. This is critical for preventing axle rotation.



Figure 3: Installed Grin Technologies Torque Arm V2. This image provides a close-up view of the torque arm properly installed on a bicycle's front fork, securing the hub motor axle.

6. **Final Check:** Verify that all bolts are tight and the torque arm is securely in place, preventing any movement of the motor axle relative to the fork.

OPERATION

The Grin Technologies Front Torque Arm V2 operates passively by creating a rigid connection between your hub motor's axle and the bicycle fork. When the hub motor generates torque, the force that would normally attempt to spin the axle within the dropouts is transferred through the torque arm to the fender eyelet, which is designed to withstand such forces. This prevents the axle from rotating, protecting both the motor's wiring and the structural integrity of your bicycle's fork dropouts.

MAINTENANCE

- **Regular Inspection:** Periodically check all bolts and connections for tightness. Vibrations from riding can cause fasteners to loosen over time.
- **Cleanliness:** Keep the torque arm and surrounding area clean from dirt and debris. While stainless steel is corrosion-resistant, regular cleaning helps maintain its condition.
- **Damage Check:** Inspect the torque arm and fork dropouts for any signs of stress, cracks, or deformation, especially after heavy use or impacts.
- **Hardware Condition:** If any bolts or nuts show signs of wear or corrosion, replace them with appropriate high-grade stainless steel hardware.

TROUBLESHOOTING

- **Axle Spinout or Movement:**
 - Ensure axle nuts are tightened to the motor manufacturer's specifications.
 - Verify the torque arm is securely bolted to the fender eyelet.
 - Check if the axle plate is properly seated on the motor axle flats.
- **Mounting Bolt Issues:**
 - If the provided bolt does not fit your fender eyelet, it may be due to varying thread sizes. Source a compatible high-grade bolt from a hardware store.
 - Avoid forcing bolts, as this can strip threads in the fork eyelet.
- **Interference with Other Components:**
 - Ensure the torque arm does not interfere with brake calipers, rotors, or other fork-mounted accessories. Adjust positioning slightly if possible, or consult a mechanic.

SPECIFICATIONS

Brand	Grin Technologies
Model	Front Torque Arm V2
Material	1/4" Thick Laser-Cut Stainless Steel
Compatibility	Front forks with fender eyelets; M12 or M14 hub motor axles
Item Weight	0.8 ounces
Package Dimensions	6 x 3.4 x 0.3 inches
UPC	628461000010
Part Number	COMINSO5JUL39887

FURTHER INFORMATION AND UPGRADES

Grin Technologies continuously develops and refines its products. The V2 torque arm has been succeeded by more advanced versions. For information on newer models or alternative torque arm solutions, please refer to the manufacturer's official website.

GRIN TORQUE ARM UPGRADE CHART

We now use Hardened 17-4 Steel Inserts and our designs are more versatile



Figure 4: Grin Torque Arm Upgrade Chart. This chart provides an overview of different Grin Technologies torque arm versions, including the V2, and highlights their compatibility and features, such as those for fender eyelets or regen braking.

For example, the [V5 eyelet arm](#) is a more versatile and stronger design that has replaced the V2.

WARRANTY AND SUPPORT

For specific warranty terms and conditions, please refer to the official Grin Technologies website or contact their customer support directly. Product support and technical assistance can be obtained through the manufacturer's official channels.

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