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› Warner Linear K2xG20-12v-12 B-Track K2 Rugged Duty Linear Actuator User Manual

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Warner Linear K2xG20-12v-12 B-Track K2 Rugged Duty Linear Actuator User Manual

Model: K2xG20-12v-12

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Warner Linear K2xG20-12v-12 B-Track K2 Rugged Duty Linear Actuator. This unit is designed for demanding applications requiring precise linear motion, such as scissor lifts, dump box lifts, paving equipment, and agricultural spray booms.

The K2x series actuator features a 12-inch stroke length and a 20:1 gear ratio, enabling it to move loads up to 2200 pounds at a rate of 0.5 inches per second. It incorporates a ball bearing screw nut for efficient load transfer, double-ended ball bearing motors, and hardened gears for enhanced durability. The actuator is permanently lubricated and boasts an Ingress Protection (IP) 65 rating, ensuring protection against dust and liquids.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the equipment:

- **Read this manual completely** before installation, operation, or maintenance.
- **Disconnect power** before performing any installation, maintenance, or troubleshooting procedures.
- Ensure the actuator is securely mounted to a stable structure capable of supporting the maximum load and forces generated during operation.
- Do not exceed the specified load capacity (2200 lbs) or duty cycle (10% maximum on time for 80-100% load capability).
- Verify correct voltage (12VDC) and current (25 amp) supply to prevent electrical damage or fire. The operating voltage range is 10 to 16VDC.
- Protect wiring from sharp edges, heat, and moving parts.
- Avoid operating the actuator outside its specified temperature range (-30 to +140 degrees F / -34 to +60 degrees C).
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

3. PRODUCT OVERVIEW

The Warner Linear K2xG20-12v-12 is a robust electromechanical linear actuator designed for heavy-duty applications. Key features include:

- **12-inch Stroke Length:** Provides significant linear travel for various applications.
- **High Load Capacity:** Capable of moving loads up to 2200 lbs.
- **Efficient Gear Ratio:** 20:1 gear ratio for effective force application.
- **Durable Construction:** Features internal ball bearing screw nut, double-ended ball bearing motors, and hardened gears.
- **Environmental Protection:** IP65 rated for protection against dust and low-pressure water jets.
- **12VDC Operation:** Compatible with 12-volt DC power systems, with thermal overload protection.



Figure 1: Warner Linear K2xG20-12v-12 B-Track K2 Rugged Duty Linear Actuator. This image shows the complete actuator unit, featuring a long cylindrical body for the stroke mechanism and a rectangular motor housing with a shaft extending from one end.

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of the actuator. Follow these general guidelines:

1. **Mounting:** Securely mount the actuator to a rigid, flat surface using appropriate fasteners. Ensure the mounting points can withstand the maximum force exerted by the actuator. The actuator has mounting holes at both ends of the main body and the motor housing.
2. **Alignment:** Ensure the actuator is correctly aligned with the load to prevent binding or excessive side loading, which can lead to premature wear or failure.
3. **Electrical Connection:**
 - Connect the actuator to a 12VDC power source.
 - Ensure the power supply can deliver the required 25 amps.
 - Utilize a double pole, double throw (DPDT) control switch for directional control (extend/retract).
 - Verify all electrical connections are secure and insulated.
4. **Limit Switches:** The actuator may include internal limit switches to prevent over-extension or over-retraction. Verify their proper function during initial setup.

5. OPERATING INSTRUCTIONS

Once installed and wired correctly, the actuator can be operated using a suitable control switch.

- **Power On:** Ensure the 12VDC power supply is active.
- **Extend/Retract:** Use the DPDT control switch to apply voltage to the motor in the desired direction. Reversing polarity will reverse the direction of the actuator.
- **Duty Cycle:** Adhere to the 10% maximum on-time duty cycle. This means for every 10 minutes of operation, the actuator should be active for no more than 1 minute to prevent overheating and ensure longevity.
- **Thermal Overload Protection:** The 12VDC motor is equipped with thermal overload protection. If the motor overheats, it will temporarily shut down. Allow the unit to cool before resuming operation.

6. MAINTENANCE

The K2xG20-12v-12 actuator is designed for minimal maintenance due to its robust construction and permanent lubrication.

- **Inspection:** Periodically inspect the actuator for any signs of damage, loose connections, or excessive wear. Check mounting points for security.
- **Cleaning:** The IP65 rating provides protection against dust and water. Clean the exterior with a damp cloth if necessary. Avoid using high-pressure water jets directly on seals or electrical connections.
- **Lubrication:** The unit is permanently lubricated and does not require additional lubrication under normal operating conditions. Do not attempt to disassemble for lubrication.
- **Environmental Conditions:** Ensure the actuator operates within its specified temperature and environmental limits to maintain its IP65 rating and overall performance.

7. TROUBLESHOOTING

Refer to the following table for common issues and their potential solutions:

Problem	Possible Cause	Solution
Actuator does not move.	No power, incorrect wiring, faulty switch, thermal overload.	Check power supply (12VDC), verify wiring connections, test control switch, allow motor to cool if overheated.
Actuator moves slowly or with reduced force.	Low voltage, excessive load, internal friction.	Check power supply voltage, reduce load if exceeding capacity, inspect for mechanical obstructions.
Actuator stops prematurely.	Limit switch activation, thermal overload, power interruption.	Verify limit switch settings, allow motor to cool, check power connections.
Unusual noise during operation.	Misalignment, damaged gears, foreign object.	Check mounting alignment, inspect for obstructions. If noise persists, contact Warner Linear support.

If troubleshooting steps do not resolve the issue, contact Warner Linear customer support for assistance.

8. SPECIFICATIONS

Feature	Detail
Model Number	K2xG20-12v-12
Brand	Warner Linear

Feature	Detail
Stroke Length	12 inches
Gear Ratio	20:1
Load Capacity	Up to 2200 pounds
Speed	0.5 inch per second
Power Requirements	12VDC, 25 amp
Operating Voltage Range	10 to 16VDC
Duty Cycle	10% maximum on time for 80-100% load capability
Control Switch Type	Double pole, double throw (DPDT) recommended
Operating Temperature	-30 to +140 degrees F (-34 to +60 degrees C)
Ingress Protection (IP) Rating	IP65 (Dust tight and protected against low-pressure water jets)
Lubrication	Permanently lubricated
Dimensions (Approx.)	28 x 6.8 x 3.5 inches
Weight (Approx.)	13.8 Pounds

9. WARRANTY AND SUPPORT

For specific warranty information, please refer to the documentation provided with your purchase or visit the official Warner Linear website. For technical support, parts, or service inquiries, please contact Warner Linear directly through their official channels.

Manufacturer: Warner Linear

Website: [www.warnerlinear.com](#) (Example link, actual link may vary)

