Micro-Tools CUBE-GEAR

Instruction Manual

Main Drive Gear for Bell & Howell Cube Slide Projector

Model: CUBE-GEAR | Brand: Micro-Tools

Product Overview

This product is a replacement main drive gear designed specifically for Bell & Howell Cube Slide Projectors. It addresses common issues where the projector fails to advance or reverse slides due to a worn or damaged original gear. This new gear, manufactured exclusively for Micro-Tools, provides a precise fit and restores the proper functionality of your slide projector's slide advancement mechanism.

Figure 1: The new Main Drive Gear (CUBE-GEAR) for Bell & Howell Cube Slide Projectors. This black plastic gear features a central hub and a larger outer ring with teeth, designed to replace the original worn component.

Installation Instructions

Replacing the main drive gear requires careful disassembly and reassembly of your Bell & Howell Cube Slide Projector. It is recommended to consult a service manual or a reliable video tutorial for your specific projector model before proceeding. The following steps provide a general guide:

1. **Preparation:** Ensure the projector is unplugged from the power source. Gather necessary tools, which may include screwdrivers (Phillips and flathead), a nut driver (1/4 inch recommended), and possibly small pliers.
2. **Accessing the Gear:** Locate the access points to the internal mechanism. This typically involves removing the bottom panel or specific side panels of the projector. Some models may require removing the light bulb access door and a few screws to gain access to the motor assembly.
3. **Locating the Old Gear:** Identify the existing main drive gear connected to the motor shaft. This gear is often made of plastic and may show visible signs of wear, such as stripped or broken teeth.

Figure 2: An example of a worn main drive gear inside a Bell & Howell Cube Slide Projector. Note the visible damage and debris around the gear, indicating wear that prevents proper slide advancement.

4. **Removing the Old Gear:** Carefully detach the old gear from the motor shaft. Note the position of any washers,

especially a wave washer, between the gear and the motor. These components are crucial for proper operation and should be retained.

5. **Installing the New Gear:** Place the new CUBE-GEAR onto the motor shaft. Ensure any washers are correctly positioned before securing the new gear. The gear should fit snugly but be able to rotate freely without excessive friction.

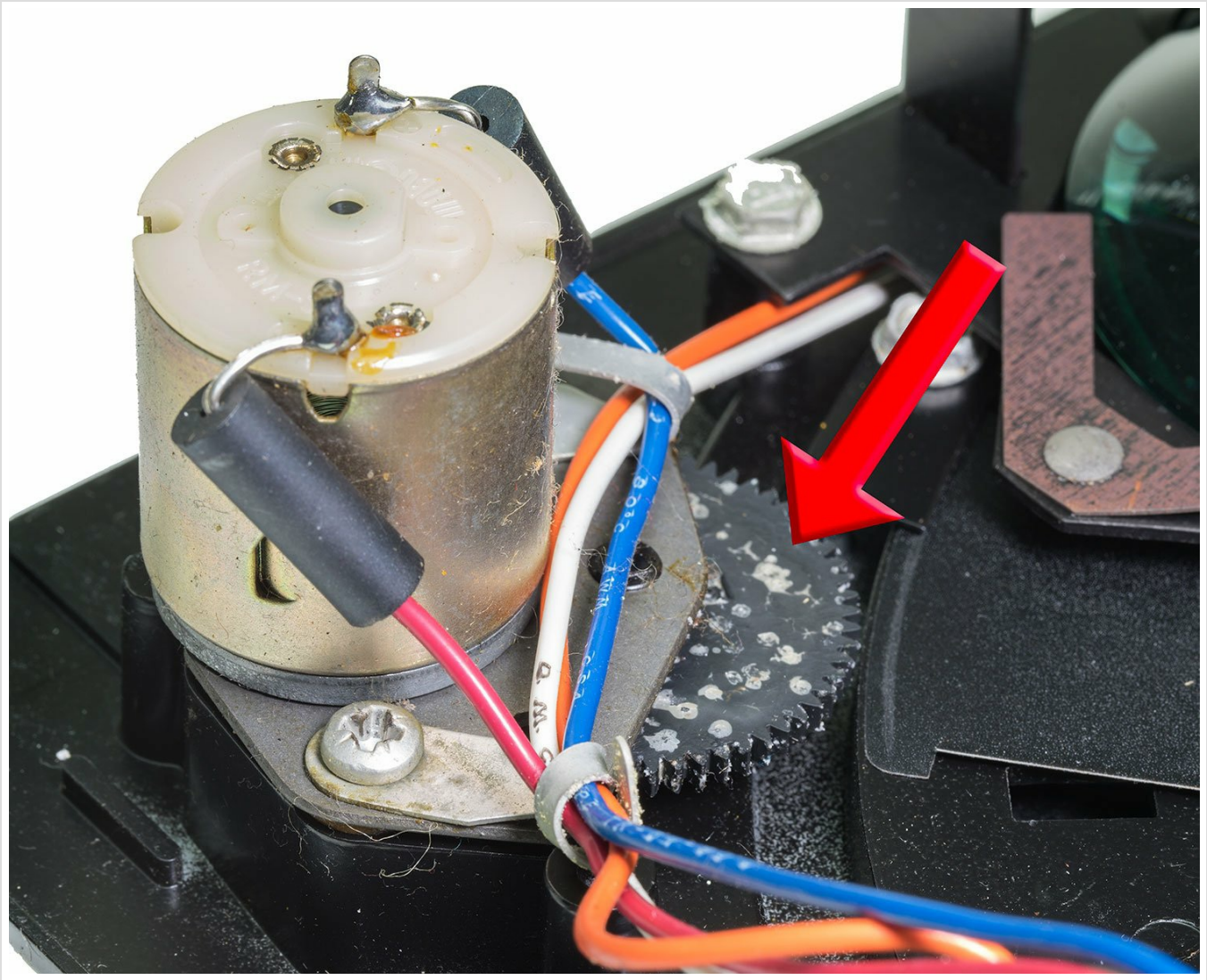

Figure 3: The new CUBE-GEAR correctly installed within the Bell & Howell Cube Slide Projector's mechanism. The red arrow indicates the position of the newly installed gear, ready to restore functionality.

6. **Reassembly:** Carefully reassemble the projector, ensuring all screws and panels are securely fastened. Do not overtighten screws.
7. **Testing:** Plug in the projector and test its slide advance and reverse functions to confirm the successful installation of the new gear.

Operating Principles (After Installation)

Once the new Main Drive Gear is correctly installed, your Bell & Howell Cube Slide Projector should regain its ability to smoothly advance and reverse slides. The gear transmits rotational motion from the projector's motor to the slide advancement mechanism, ensuring that each slide is moved into position accurately and reliably. If the projector previously experienced issues with slides not moving or getting stuck, this replacement gear is designed to resolve those specific mechanical failures related to the drive system.

Maintenance

The CUBE-GEAR is a durable plastic component designed for long-term use. Minimal maintenance is required for the gear itself. However, to ensure the longevity of your projector and the new gear:

- **Keep Clean:** Periodically inspect the projector's internal mechanism for dust, debris, or old lubricant that may impede the gear's movement. Use a soft brush or compressed air to gently clean the area around the gear.
- **Avoid Lubricants:** Unless specified by the projector's original service manual, avoid applying lubricants to the plastic gear. Some lubricants can degrade plastic over time.
- **Gentle Handling:** Always handle the projector with care to prevent internal components from shifting or becoming misaligned.

Troubleshooting

If your Bell & Howell Cube Slide Projector still exhibits issues with slide advancement or reversal after replacing the main drive gear, consider the following:

- **Incorrect Installation:** Double-check that the new gear is seated correctly on the motor shaft and that any associated washers (especially a wave washer) are in their proper positions. Ensure no wires or other components are obstructing the gear's movement.
- **Other Mechanical Issues:** The problem might stem from other worn or broken parts within the projector's slide mechanism, such as other gears, levers, or the motor itself.
- **Power Supply:** Verify that the projector is receiving adequate power and that the motor is functioning.
- **Obstructions:** Ensure there are no physical obstructions (e.g., jammed slides, foreign objects) preventing the slide tray from moving freely.

If the issue persists, professional repair or further diagnosis may be necessary.

Specifications

Attribute	Detail
Item Model Number	CUBE-GEAR
Manufacturer	Micro-Tools
Package Dimensions	5 x 3 x 0.01 inches
Item Weight	0.18 ounces
ASIN	B002RKFAUG
Date First Available	October 5, 2009

Warranty and Support

For specific warranty information regarding the CUBE-GEAR, please contact the manufacturer, Micro-Tools, directly. Details regarding product guarantees and return policies are typically provided at the point of purchase or through the manufacturer's official channels.
For technical support or further assistance with installation and troubleshooting, it is recommended to refer to the original service manual for your Bell & Howell Cube Slide Projector or seek guidance from qualified electronics repair technicians.