sixcow CAT40-DFG-1

User Manual: sixcow CAT40 BT40 Spindle Drawbar Force Test Gauge

Model: CAT40-DFG-1

1. Product Overview

The sixcow CAT40 BT40 Spindle Drawbar Force Test Gauge is a professional tool designed to accurately measure the drawbar pressure of CAT40 and BT40 CNC mill machines. Maintaining correct drawbar force is crucial for optimal machine performance, tool life, and machining accuracy.

Image 1.1: The sixcow CAT40 BT40 Spindle Drawbar Force Test Gauge, showing the gauge unit and its protective carrying case.

Key Features:

- **Great Compatibility:** Works with all CAT40 and BT40 CNC mill machines. Direct replacement for OE Part # CAT40-DFG-1.
- **Technical Parameters:** Test range of 0-3000 PSI/LBS. Provides direct reading where 1 PSI equals 1 lb of drawbar pull. Features a 5/8-11" rear thread for retention knob (not included).
- **Durable Construction:** Made from premium-grade hard stainless steel for the rack and housing, ensuring high sensitivity, accuracy, and resistance to cracking. The dial face is hard-coated crystal with an anti-glare finish, offering scratch, water, dust, and shock resistance.
- **Easy to Use:** One-piece design for simple, hand-only installation. Helps prevent worn spindle taper, chattering tools, and loose tools by ensuring proper drawbar pressure.

Image 1.2: Illustrates the gauge's compatibility with CAT40 and BT40 CNC mill machines and its function as a replacement for OE Part # CAT40-DFG-1.

Image 1.3: Highlights the professional design and material quality of the gauge, emphasizing its hard-coated crystal dial and stainless steel construction for durability.

2. Setup

Before using the drawbar force test gauge, ensure you have a compatible retention knob (not included) with a 5/8-11" thread. The gauge is designed for easy assembly.

Assembly Steps:

1. Carefully remove the drawbar force gauge from its toolbox.
2. Locate the 5/8-11" rear thread on the gauge's body.
3. Screw in your retention knob (not included) into this thread. Finger tight is sufficient for a secure connection.

Image 2.1: Detailed view of the gauge's robust stainless steel housing and the 5/8-11" rear thread for retention knob attachment, illustrating the assembly process.

3. Operating Instructions

Using the sixcow drawbar force gauge is a straightforward process to assess the health of your CNC machine's

spindle drawbar.

Measurement Procedure:

1. Ensure the retention knob is securely attached to the gauge (finger tight).
2. Place the assembled gauge into the spindle of your CNC machine, as you would a regular tool holder.
3. Energize the spindle. The gauge will display the current drawbar force in PSI/LBS.
4. Record the reading. Compare it to your machine's recommended drawbar force specifications.

Image 3.1: Visual guide on the simple two-step process for using the gauge: install retention knob, then place in spindle and energize.

Understanding Readings and Potential Issues:

A consistent and correct drawbar force is vital. Deviations can indicate underlying problems that may lead to costly repairs and reduced machining quality.

- **Revealed Drawbar Force Loss:** The gauge helps identify when the drawbar force is insufficient.
- **Avoid Downtime & Costly Repairs:** Regular checks can prevent major issues before they occur.
- **Extend Service Life:** Proper drawbar force contributes to the longevity of your spindle and tools.

Possible Signs of Incorrect Drawbar Pressure:

- Possible worn spindle taper from loose tools.
- Dropping tools or popping sound during automatic tool change.
- Excessive tool wear and consumption.
- Poor tool rigidity.

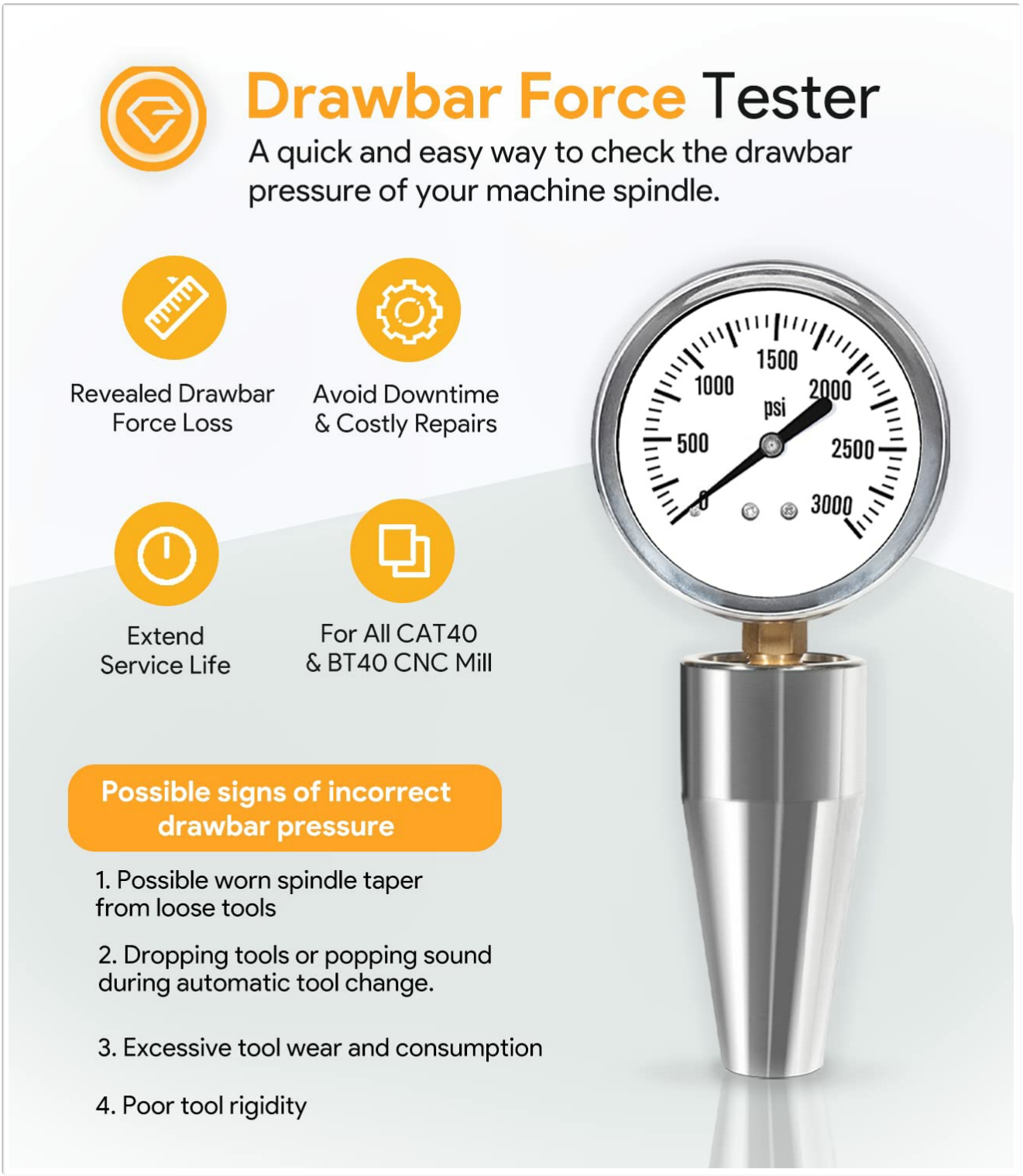

Image 3.2: Highlights the benefits of using the gauge and lists common indicators of incorrect drawbar pressure.

Product Demonstration Video:

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Video 3.1: An official demonstration video from Sixcow LLC USA, showcasing the CAT40 BT40 Spindle Drawbar Force Test Gauge in use and highlighting its features. (Duration: 0:24)

4. Maintenance

The sixcow drawbar force gauge is constructed from high-quality, durable materials designed for longevity and resistance to harsh workshop environments.

- **Cleaning:** Wipe the gauge clean with a soft, dry cloth after each use to remove any dust, oil, or debris. Avoid using harsh chemicals or abrasive materials that could damage the dial face or housing.
- **Storage:** Store the gauge in its provided toolbox when not in use. This protects it from physical damage, dust, and moisture, ensuring its accuracy and extending its lifespan.
- **Inspection:** Periodically inspect the gauge for any signs of damage, such as cracks in the housing or dial face, or bent components. Ensure the threads for the retention knob are clean and free of burrs.

Image 4.1: Illustrates the professional design and material quality of the gauge, emphasizing its hard-coated crystal dial and stainless steel construction for durability.

5. Troubleshooting

If you encounter issues or suspect inaccurate readings, consider the following:

- **Inaccurate Readings:**
  - Ensure the retention knob is properly and securely threaded into the gauge.
  - Verify that the gauge is fully seated in the spindle taper.

- Check for any visible damage to the gauge or the spindle taper itself.
- Confirm the machine's air pressure system is functioning correctly, as it directly impacts drawbar force.

- **Gauge Not Fitting Spindle:**
  - Confirm your machine uses CAT40 or BT40 taper. This gauge is specifically designed for these standards.
  - Ensure the retention knob used is compatible with your spindle and the gauge's 5/8-11" thread.
- **No Reading or Fluctuating Reading:**
  - Ensure the spindle is properly energized to apply force to the drawbar.
  - Check for any obstructions or debris in the spindle taper or on the gauge.

For persistent issues not resolved by these steps, please contact sixcow customer support.

6. Specifications

Attribute	Detail
Model	CAT40-DFG-1
Compatibility	CAT40 and BT40 CNC Mill Machines
Test Range	0-3000 PSI/LBS
Retention Knob Thread	5/8-11" (Retention Knob NOT included)
Material	Premium-grade hard stainless steel rack and housing
Package Dimensions	8.66 x 4.88 x 2.32 inches
Weight	2.51 Pounds
Manufacturer	sixcow

Image 6.1: Detailed product dimensions, indicating that the gauge is a direct replacement meeting or exceeding OEM standards.

7. Warranty and Support

sixcow is committed to customer satisfaction and product quality.

- **Satisfaction Guarantee:** Your satisfaction is our priority.
- **Money-Back Guarantee:** All sixcow products support a 30-Day money-back guarantee.
- **Warranty:** A 12-Month warranty is provided for quality-related issues.

For any warranty claims or support inquiries, please contact sixcow customer service directly. Simply return the product for warranty service if needed.