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› Spurtar Dial Indicator with Magnetic Base (Model TDI411) User Manual

## Spurtar TDI411

# Spurtar Dial Indicator with Magnetic Base (Model TDI411) User Manual

Precision Measurement and Inspection Tool

## 1. INTRODUCTION

Thank you for choosing the Spurtar Dial Indicator with Magnetic Base. This precision instrument is designed for accurate alignment, measurement, and inspection tasks in various applications, including mechanical, automotive, and machining. This manual provides essential information for the proper setup, operation, and maintenance of your device to ensure optimal performance and longevity.



Image 1.1: The Spurtar Dial Indicator with Magnetic Base and its included accessories, including the 22-piece contact point set and portable case.

## 2. PRODUCT OVERVIEW AND COMPONENTS

The Spurtar Dial Indicator system consists of a dial indicator gauge, an adjustable long arm, and a magnetic base. Understanding each component is crucial for effective use.

### 2.1 Dial Indicator Components

# How to Use



**1** Rotate the Bezel to set the Gauge to "0"

**2** Position the Contact Point against the item

**3** Slowly move the item while monitoring the Pointer and reading the measurement

Image 2.1: Detailed diagram illustrating the various parts of the dial indicator gauge.

1. **Lifting Cap:** Used to raise the plunger easily.
2. **Bezel Clamp:** Tightens to lock the bezel in place after zeroing.
3. **Limit Pointer:** Adjustable pointers to set tolerance limits for quick visual checks.
4. **Revolution Counter:** Displays the number of full rotations of the main pointer, indicating larger measurement increments.
5. **Bezel:** Rotated to set the gauge to zero.
6. **Stem:** The main body of the indicator, used for mounting.
7. **Spindle:** The movable rod that extends and retracts based on surface variations.
8. **Contact Point:** The tip that touches the surface being measured. Can be replaced with the included 22-piece set.

## 2.2 Magnetic Base and Arm Components

# PARTS NAME



- 1 Lifting Cap**  
Raise the plunger easily
- 2 Bezel Clamp**  
Tighten to lock the bezel in place
- 3 limit pointer**  
Set tolerance limits
- 4 Revolution Counter**  
Count the turns of the pointer
- 5 Bezel**  
Rotated to set zero
- 6 Stem**
- 7 Spindle**
- 8 Contact Point**  
Can be replaced with the 22-piece set included Plunger

Image 2.2: Diagram showing the features of the magnetic base and adjustable arm.

1. **Fine-Tuning Knob:** Allows for precise adjustments of the indicator position for accurate measurement.
2. **Universal Rotating Design:** Provides multi-angle adjustment for flexible positioning.
3. **Clamp:** Secures the adjustable arms in position.
4. **V Base:** Designed to allow secure attachment to round objects.
5. **Magnetic Base:** Provides a strong magnetic hold to metal surfaces for stable, hands-free operation.

## 3. SETUP

Follow these steps to assemble and prepare your dial indicator for use.

1. **Attach the Dial Indicator:** Securely mount the dial indicator's stem into the clamp on the adjustable arm. Ensure it is tightened sufficiently to prevent movement during measurement.
2. **Position the Adjustable Arm:** Use the universal rotating design and clamp to position the dial indicator at the desired angle and height. The fine-tuning knob allows for precise adjustments.
3. **Activate the Magnetic Base:** Place the magnetic base on a clean, flat ferrous metal surface. Rotate the lever on the magnetic base to the 'ON' position to activate the strong magnetic hold. Ensure the base is

firmly attached and stable before proceeding.

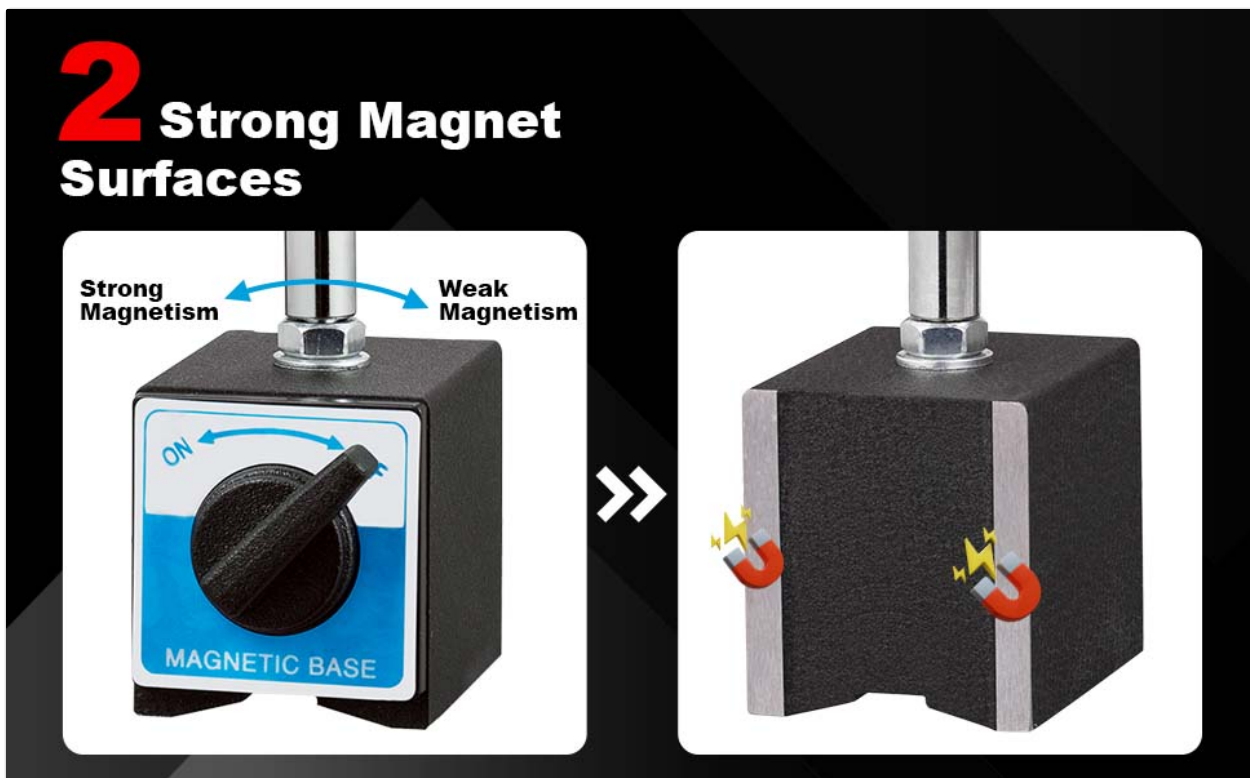


Image 3.1: Illustration of the dial indicator mounted on the magnetic base, ready for use.



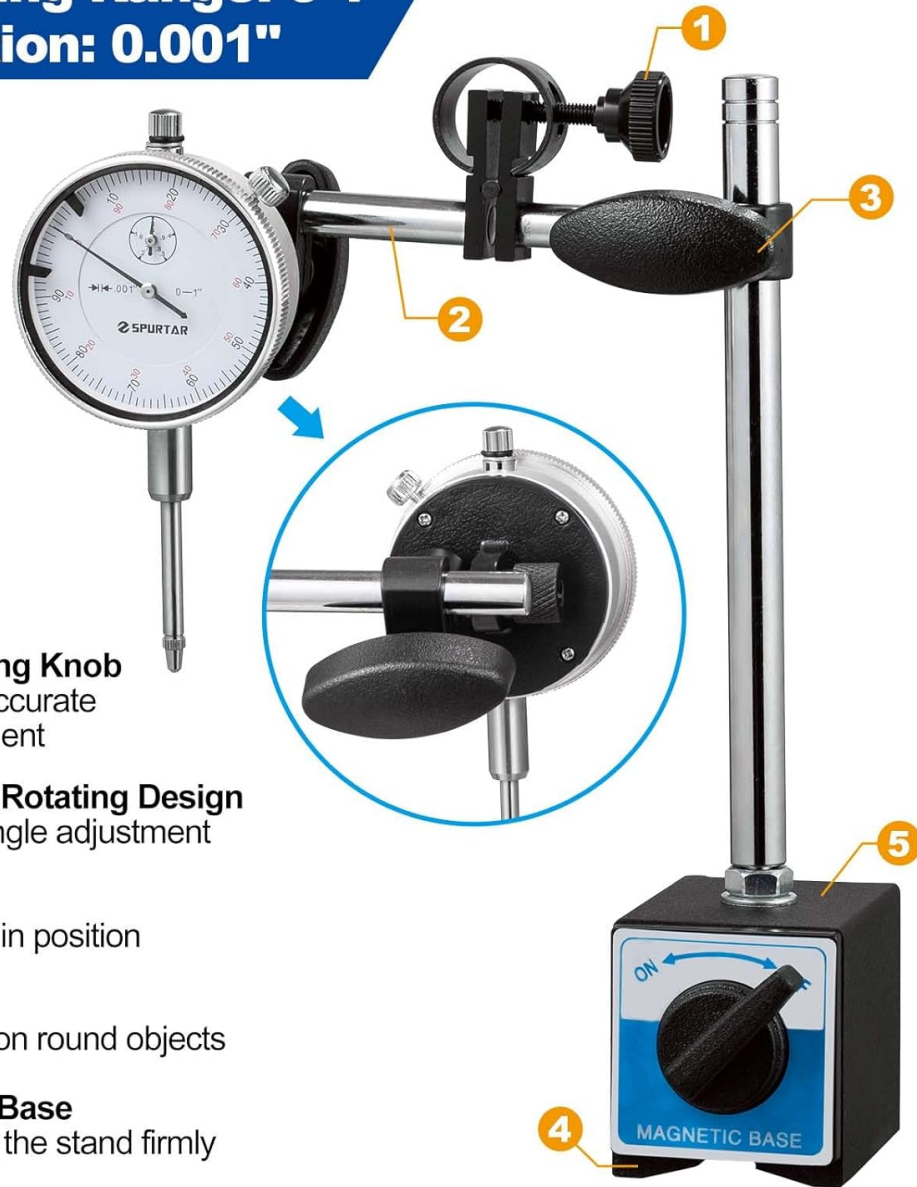
Image 3.2: The magnetic base features two strong magnetic surfaces for enhanced stability when activated.

## 4. OPERATION

Accurate measurement requires careful execution of the following steps.

1. **Position the Contact Point:** Carefully lower the dial indicator so that its contact point gently touches the surface of the item to be measured. Ensure the contact point is perpendicular to the surface for the most accurate reading.
2. **Zero the Gauge:** Once the contact point is in position and the spindle is slightly compressed, rotate the outer bezel of the dial indicator until the main pointer aligns with the '0' mark. If applicable, use the bezel clamp to secure the bezel.
3. **Take the Measurement:** Slowly move the measured part or the dial indicator assembly while observing the main pointer and the revolution counter. The main pointer indicates fractions of an inch (0.001" increments), and the revolution counter tracks full inches.
4. **Read the Measurement:** The total measurement is the sum of the full revolutions shown on the revolution counter and the reading on the main dial.

- **Measuring Range: 0-1"**
- **Resolution: 0.001"**



- 1 Fine-Tuning Knob**  
for more accurate measurement
- 2 Universal Rotating Design**  
for multi-angle adjustment
- 3 Clamp**  
Hold arms in position
- 4 V Base**  
Allow use on round objects
- 5 Magnetic Base**  
for holding the stand firmly

Image 4.1: Visual guide demonstrating the three key steps for using the dial indicator: zeroing the gauge, positioning the contact point, and reading the measurement.



Image 4.2: Demonstrates the importance of positioning the contact point at a vertical angle for accurate readings, contrasting it with an incorrect angled approach.

## 5. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your Spurtar Dial Indicator.

- **Cleaning:** After each use, wipe down the dial indicator and magnetic base with a clean, soft cloth. For stubborn grime, use a mild cleaning solution, ensuring no liquid enters the internal mechanisms of the dial indicator.
- **Lubrication:** Periodically apply a small amount of light machine oil to the spindle and other moving parts to ensure smooth operation. Avoid over-lubrication.
- **Storage:** Store the dial indicator and its accessories in the provided portable case when not in use. This protects it from dust, moisture, and physical damage. Store in a dry, temperature-controlled environment.
- **Inspection:** Regularly inspect the contact point for wear or damage. Replace if necessary using the included 22-piece contact point set.

## 22PCS Contact Point Set



### AGD specifications

- Flat point for convex surfaces
- Rounded point for concave surfaces
- Small points for holes



Image 5.1: The durable portable case designed for convenient storage and transport of the dial indicator set.

## 6. TROUBLESHOOTING

If you encounter issues with your dial indicator, consider the following common problems and solutions:

- **Inconsistent Readings:**

- Ensure the magnetic base is firmly attached to a stable, clean ferrous surface.
  - Verify the contact point is perpendicular to the measured surface.
  - Check for any play or looseness in the adjustable arm clamps. Tighten if necessary.
  - Clean the spindle and contact point for any debris that might impede movement.
- **Pointer Not Moving Smoothly:**
    - The spindle might be dirty or require lubrication. Clean and apply a small amount of light machine oil.
    - Check for any physical obstructions or damage to the spindle.
- **Magnetic Base Not Holding Firmly:**
    - Ensure the lever is fully in the 'ON' position.
    - Clean the bottom surface of the magnetic base and the mounting surface to remove any dirt or debris.
    - Confirm the mounting surface is made of a ferrous metal.

## 7. SPECIFICATIONS

Feature	Specification
Measuring Range	0-1 inch
Resolution	0.001 inch
Contact Point Threads	4-48 (AGD specifications)
Magnetic Base	Strong magnetic hold with ON/OFF switch
Adjustable Arm	Universal rotating shaft with fine-tuning knob
Model Number	TDI411
Manufacturer	Guangzhou Jinyue Auto Parts Co. Ltd.
Country of Origin	China

## 8. PACKAGE CONTENTS

The Spurtar Dial Indicator with Magnetic Base package includes:

- 1 x 0-1" 0.001" Dial Indicator
- 1 x Magnetic Base
- 1 x 22-piece Indicator Point Set
- 1 x Portable Case

# CONVENIENT TO STORE AND CARRY



Image 8.1: The included 22-piece contact point set, featuring various tips for different measurement needs, all conforming to AGD specifications (4-48 threads).

## 9. SAFETY INFORMATION

Always observe basic safety precautions when using precision tools:

- Keep the tool clean and free from debris.
- Avoid dropping or subjecting the tool to impact, as this can affect its accuracy.
- Do not attempt to disassemble the dial indicator beyond routine maintenance, as this may void any warranty and compromise its calibration.
- Keep out of reach of children.

## 10. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the contact details provided with your purchase or visit the official Spurtar website. Please retain your proof of purchase for any warranty claims.

