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VEVOR SNS-3V-YE102024

VEVOR 3-Axis Digital Readout DRO Linear Scale Set Instruction Manual

Model: SNS-3V-YE102024

1. Product Overview

The VEVOR 3-Axis Digital Readout (DRO) Linear Scale Set provides precise measurement capabilities for various machine tools. This system includes a digital display unit and three linear scales with travel lengths of 10 inches (250 mm), 20 inches (500 mm), and 24 inches (600 mm). It is designed for accurate measurement of three-dimensional objects, suitable for applications involving wood, stone, and metal.
Key features include a multifunctional display with various calculation and measurement modes, a high-precision read head, and robust dust and water-resistant components.



Image 1.1: The VEVOR 3-Axis Digital Readout (DRO) Linear Scale Set, showing the digital display unit and the three linear scales.

2. Product Specifications

- **Model Number:** SNS-3V-YE102024
- **Rated Voltage:** AC 80-230 V, 50 Hz/60 Hz
- **Max. Power Consumption:** 15 W, ±10%
- **Resolution:** 5 µm
- **Number of Axes:** 3
- **Measuring Range:** 10 in (250 mm), 20 in (500 mm), 24 in (600 mm)
- **Net Weight:** 9.0 lb (4.09 kg), ±3%
- **Product Dimensions (L x W x H):** 73.99 x 2.21 x 5.31 cm
- **Dust and Water Resistance:** IP54
- **Read Head Movement Speed:** 1.5 m/s

- **Signal Cable Length:** 9.8 ft (3 m)
- **Data Connector:** 9-Pin



Image 2.1: Detail of the precision read head, highlighting its 5μm resolution and high movement speed.

3. Package Contents

Verify that all items listed below are present in the package:

- 1 x Support Rod
- 1 x Knife Holder Plate
- 1 x Transparent Watch Case
- 1 x Power Cord
- 1 x Watch Holder
- 2 x Butterfly Piece

- 1 x Screw Pack
- 3 x Ruler Cover
- 4 x L Mounting Plate
- 6 x Socket
- 3 x Screw Pack (for scales)
- 1 x User Manual



Image 3.1: Overview of all components and accessories included in the product package.

4. Setup and Installation

The linear scale set is designed for both vertical and horizontal installation on various machine tools, including grinders, cutting machines, EDM machines, and lathes.

4.1 General Installation Guidelines

1. **Mounting Surface Preparation:** Ensure the mounting surface is clean, flat, and free from debris.
2. **Alignment:** When installing the scale, ensure that the height direction is parallel to the workbench's mounting surface. The tolerance for parallelism should be less than 0.1 mm.
3. **Stability for Unmachined Surfaces:** If installing on unmachined surfaces, use shims behind the scale to ensure stability and proper alignment.
4. **Secure Fastening:** Use the provided L mounting plates and screws to securely fasten the linear scales to the machine tool.
5. **Connect Cables:** Connect the linear scale cables to the digital readout display unit. Ensure connections are firm and secure.
6. **Power Connection:** Connect the power cord to the DRO display unit and then to a suitable AC 80-230V, 50/60Hz power outlet.



Image 4.1: The DRO linear scale set is compatible with various machine tools, allowing flexible vertical or horizontal installation.

5. Operating Instructions

The digital readout display unit features a clear, multifunctional screen with various operational modes.

5.1 Basic Functions

- **Standard Data Measurement:** Displays real-time position data for each axis (X, Y, Z).
- **Calculation:** Perform basic arithmetic operations directly on the display.
- **Zeroing:** Set the current position of any axis to zero.
- **Unit Conversion:** Switch between metric (mm) and imperial (inches) units.
- **Sleep Pause:** Enters a low-power mode after a period of inactivity.
- **Power-Off Memory:** Retains the last measured position data even after power loss.
- **Non-Linear Error Compensation:** Corrects for minor inaccuracies in the linear scale.

5.2 Specialized Functions

- **ARC Cutting Function:** Assists in cutting circular arcs.
- **Circumferential Drilling:** Guides drilling operations around a circumference.
- **Oblique Line Drilling:** Facilitates drilling along an angled line.
- **Inverse Trigonometric Calculation:** Provides advanced mathematical functions for complex machining tasks.



Image 5.1: The smart display screen illustrating its various functions for simplifying complex machining tasks.

6. Maintenance

Proper maintenance ensures the longevity and accuracy of your VEVOR DRO Linear Scale Set.

- **Cleaning:** Regularly clean the linear scales and the display unit with a soft, dry cloth. Avoid abrasive cleaners or solvents.
- **Dust and Liquid Protection:** Although the scales have an IP54 rating for dust and splash resistance, it is recommended to keep them as clean and dry as possible. Avoid direct exposure to excessive liquids or fine dust.
- **Cable Inspection:** Periodically inspect the signal cables for any signs of wear, cuts, or damage. The cables are designed with multiple layers of shielded steel wire and a flexible metal casing for durability.
- **Read Head Care:** Ensure the read head moves smoothly along the scale. Do not apply excessive force.
- **Storage:** When not in use for extended periods, store the unit in a clean, dry environment away from extreme temperatures.



Image 6.1: The linear scale's IP54 rating and robust cable design contribute to its durability and resistance against environmental factors.

7. Troubleshooting

This section provides solutions to common issues you might encounter.

7.1 No Power to Display Unit

- **Check Power Cord:** Ensure the power cord is securely plugged into both the display unit and a functional power outlet.
- **Verify Outlet:** Test the power outlet with another device to confirm it is supplying power.
- **Inspect Power Cord:** Look for any visible damage to the power cord.

7.2 Inaccurate Readings

- **Clean Scales:** Ensure the linear scales and read heads are clean and free from dust, chips, or oil.
- **Check Mounting:** Verify that the scales are securely mounted and parallel to the machine's movement axis. Any

misalignment can affect accuracy.

- **Cable Connection:** Ensure all signal cables are firmly connected to the display unit and the scales. Loose connections can cause intermittent or inaccurate readings.
- **Non-Linear Error Compensation:** If applicable, ensure the non-linear error compensation function is correctly configured according to the manual's advanced settings.

7.3 Display Errors or Freezing

- **Restart Unit:** Turn off the display unit, wait a few seconds, and then turn it back on.
- **Check for Over-speed:** While the read head is designed to prevent over-speed errors, extremely rapid movements might cause temporary display issues. Reduce movement speed.
- **Environmental Factors:** Ensure the operating environment is within specified temperature and humidity ranges.

8. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or contact VEVOR customer service directly. Details regarding specific warranty periods and support channels are typically provided at the point of purchase or on the official VEVOR website.
When contacting support, please have your product model number (SNS-3V-YE102024) and purchase date available.

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