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› **Moroso 89650 Power-Speed Calculator Instruction Manual**

## Moroso 89650

# Moroso 89650 Power-Speed Calculator Instruction Manual

Model: 89650

## INTRODUCTION

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The Moroso 89650 Power-Speed Calculator is a specialized slide rule designed for quick and accurate automotive performance calculations. This manual provides instructions on how to effectively use this tool to determine various engine and vehicle performance parameters.

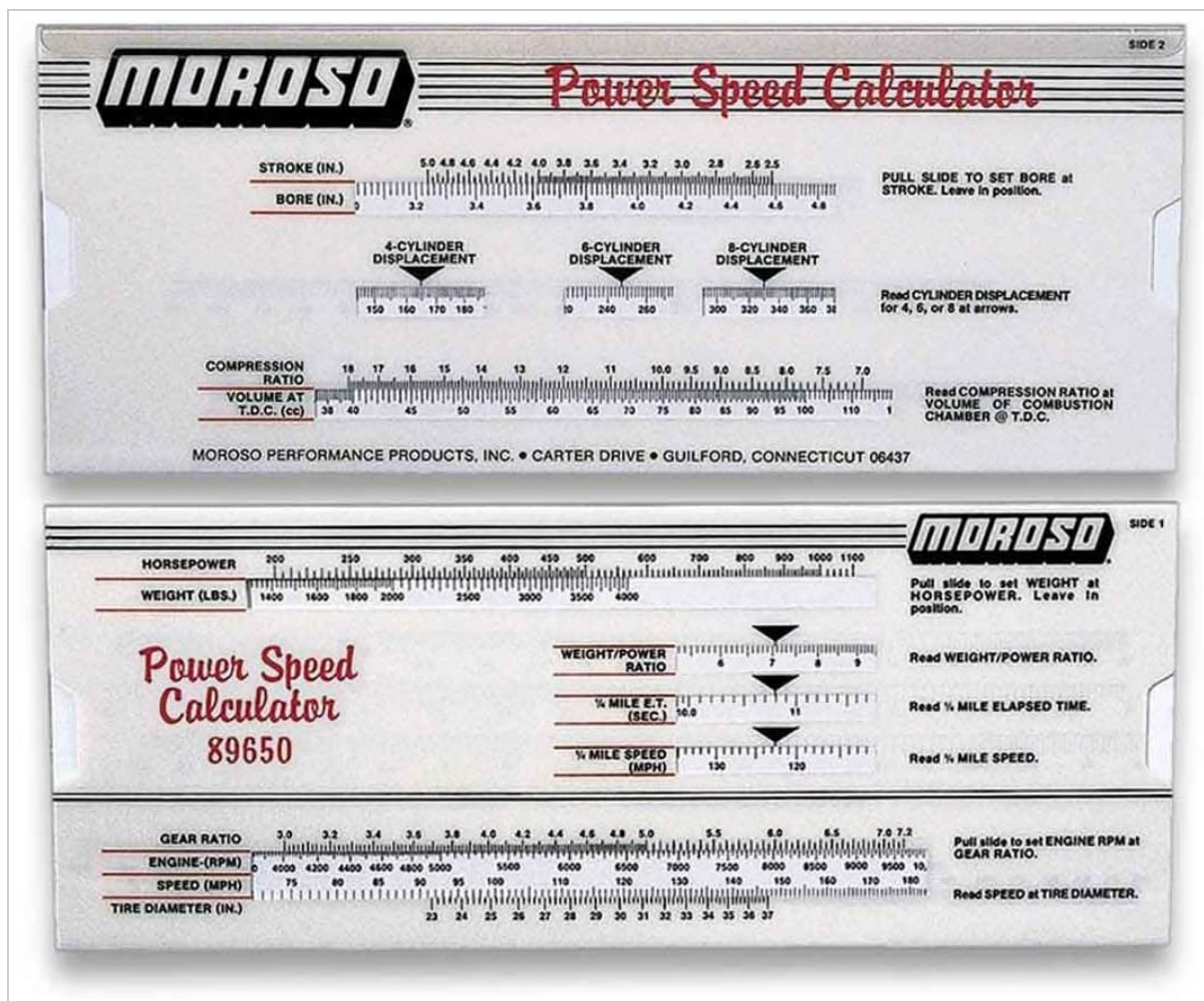


Image: The Moroso 89650 Power-Speed Calculator, displaying its front and back sides with scales for engine displacement, compression ratio, horsepower, weight, speed, and gear ratio calculations.

## SETUP

The Moroso 89650 Power-Speed Calculator is a mechanical slide rule and requires no assembly, batteries, or external power source. It is ready for use directly out of its packaging. Ensure the slide rule is clean and free from debris before use to allow for smooth operation of the sliding components.

## OPERATING INSTRUCTIONS

The calculator features multiple scales on both sides, allowing for various performance calculations. To use, locate the relevant scales for your desired calculation and align the movable slide according to the input values. Read the result on the corresponding output scale.

### Key Calculations:

- Engine Displacement to Compression Ratio:** Use the 'STROKE (IN.)', 'BORE (IN.)', '4-CYLINDER DISPLACEMENT', '6-CYLINDER DISPLACEMENT', '8-CYLINDER DISPLACEMENT', 'COMPRESSION RATIO', and 'VOLUME AT T.D.C. (CC)' scales. Align the stroke and bore values, then read the displacement. Subsequently, align the displacement with the volume at Top Dead Center (T.D.C.) to determine the compression ratio.
- E.T., M.P.H., and Power-to-Weight Ratios:** Utilize the 'HORSEPOWER', 'WEIGHT (LBS.)', 'WEIGHT/POWER RATIO', '1/2 MILE E.T. (SEC.)', and '1/2 MILE SPEED (MPH)' scales. Set the vehicle's horsepower and weight to find the power-to-weight ratio. From this, estimate 1/4 mile Elapsed Time (E.T.) and 1/4 mile Speed (MPH).

- **Tire Diameter to Speed and Gear Ratio:** Refer to the 'GEAR RATIO', 'ENGINE (RPM)', 'SPEED (MPH)', and 'TIRE DIAMETER (IN.)' scales. Align the engine RPM with the tire diameter and gear ratio to calculate the vehicle's speed.
- **Horsepower Measured at Flywheel:** This calculator assists in estimating horsepower based on other performance parameters. Ensure all input values are accurate for reliable estimations.

Always ensure precise alignment of the scales for accurate readings. Slight misalignments can lead to calculation errors.

## MAINTENANCE

To ensure the longevity and accuracy of your Moroso 89650 Power-Speed Calculator, follow these simple maintenance guidelines:

- **Cleaning:** Wipe the calculator surfaces with a soft, dry cloth. For stubborn marks, a slightly damp cloth can be used, followed immediately by drying. Avoid abrasive cleaners or solvents, as these may damage the printed scales or material.
- **Storage:** Store the calculator in a clean, dry environment, away from direct sunlight and extreme temperatures. Prolonged exposure to heat or cold can affect the material.
- **Handling:** Handle the slide rule carefully to prevent bending or scratching of the scales. Avoid dropping the device.

## TROUBLESHOOTING

As a mechanical device, troubleshooting for the Power-Speed Calculator is minimal. Most issues relate to user error or physical damage.

- **Inaccurate Readings:** Double-check that all scales are precisely aligned according to your input values. Ensure you are reading the correct output scale. Verify your input data for accuracy.
- **Difficulty Sliding:** If the movable slide becomes stiff, gently clean the edges and surfaces with a soft, dry cloth to remove any accumulated dust or grime. Do not apply lubricants.
- **Physical Damage:** If the calculator is bent, cracked, or the scales are illegible due to damage, its accuracy may be compromised. Replacement may be necessary.

## SPECIFICATIONS

| Feature                            | Detail                       |
|------------------------------------|------------------------------|
| Brand                              | Moroso                       |
| Model Number                       | 89650                        |
| Material                           | Metal Plastic                |
| Item Weight                        | 2.11 ounces (0.06 Kilograms) |
| Manufacturer                       | Moroso                       |
| UPC                                | 084663896507                 |
| Global Trade Identification Number | 00084663896507               |

| Feature              | Detail            |
|----------------------|-------------------|
| First Available Date | November 23, 2005 |

## WARRANTY AND SUPPORT

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Warranty information for the Moroso 89650 Power-Speed Calculator is not provided in the product details. For specific warranty terms or support inquiries, please contact Moroso Performance Products directly through their official website or customer service channels.