

MODEL TM-2 COMPLETE WITH MICROMETERS AND ILLUMINATION

ZOOM OPTICAL SYSTEM: The advantage of a Zoom Optical System over a conventional system is that a large range of magnifications from 30X - 80X standard and 60X - 160X with optional 20X Eyepiece can be used interchangeably on examination of the Object. A low magnification can be used to see a large area and without re-adjusting the Focal Length, a turn of the zoom knob gives high magnification for more detail studies of a section. The cross hair location will **not** be changed through this **ZOOMING FEATURE**.

Modern technology demands an economical, versatile, optical instrument to measure complex dimensions, inspect shapes and examine surface finish. The inexpensive price of the Zoomatic place it within reach of the small shop as well as allowing it multiple uses for production and quality control.

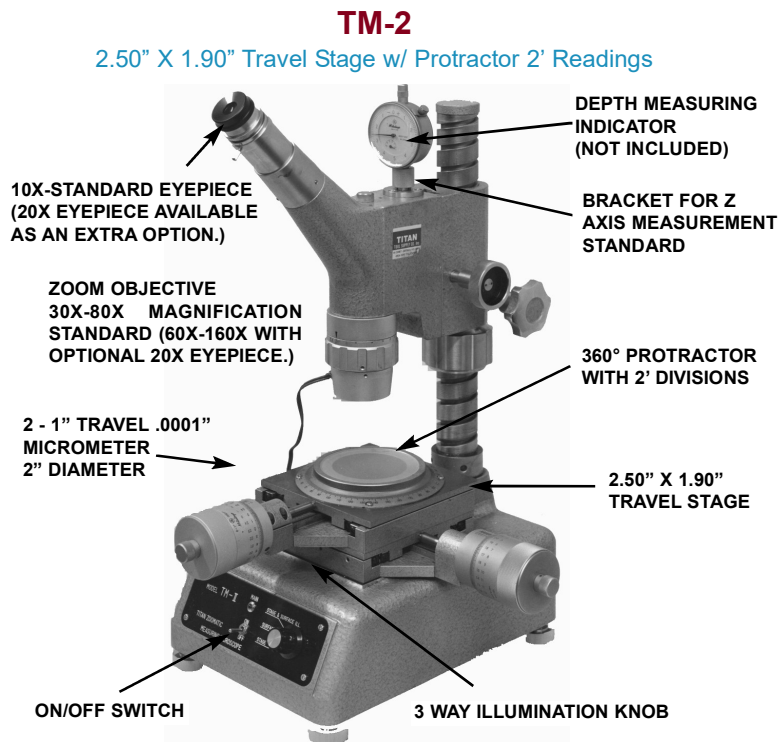
The TM-2 Zoomatic is a significant advance in precision optical measuring. For the first time the advantages of zoom-optics have been combined to give a large range of magnifications 30X - 80X standard and 60X - 160X with the optional 20X Eyepiece for a simple design to produce a Toolmakers Microscope which measures all three coordinates, as well as gives precise angular readings.

Economy: All the most desirable features and accessories are included in one standard unit at a moderate price.

Simplicity: The unit is constructed so that anyone can operate it to measure the most complex workpiece with repetitive accuracy in a minimum amount of time.

The TM-2 Toolmakers Measuring Microscope material is cast Meehanite. The base size is 7.50" wide, 3.50" high and 10.75" long with 4 adjustable leveling legs. The base contains a green substage illuminator and transformer, substage and ring. The Vertical Post is 14" high and 1.377" diameter with a helical groove for the coarse focusing adjustment.

The Optical Frame can be raised and lowered by a primary coarse ring adjustment on the Vertical Post and a Fine rack and Pinion adjustment for the optical focusing. It contains a bracket for fastening an indicator for DEPTH or Z Axis Measuring. The Optical System is a Zoom-Type with 30X to 80X Magnification as standard. The magnification range can be increased from 60X to 160X by purchasing an optional 20X Eyepiece. The Optical Frame has a maximum Rack and Pinion travel of 2.125" and an Eyetube inclined at a 45° angle for ease of use. The Maximum distance vertically between the top of the stage and the bottom of the ring illuminator is 6.625". This can be extended, if necessary by unscrewing the cap on top of the vertical post or adding onto the vertical post which is possible.



DEPTH MEASURING ATTACHMENT:

The TM-2 comes standard with a bracket to accommodate Depth or Z Axis Measurement. The Indicator for this bracket is *not* included with the unit. Depth measurement is best accomplished at 160X with the 20X Eyepiece in place. This is done by focusing in at the top of a workpiece, then zeroing the indicator, focusing at the bottom of the workpiece, and reading the difference on the indicator.

VIDEO:

There is a special Video Adapter available for the TM-2. Order TSTVA-12B. A 2XL Special Adapter can be purchased as an extra that doubles the TSTVA-12B Magnification.

STAGES:



TM-II: This unit has an ultra precise steel bearing Stage with a travel of 2.50" in the X Axis and 1.90" in the Y Axis. The center of the Stage is equipped with a 360° rotatable Vernier plate that has a scale readable to 2'(minutes). This stage is equipped with two Standard Vernier Micrometers that have a one inch measuring range reading directly in .0001" divisions. If desired as an optional extra Digital Micrometers can be purchased that read directly in .00005" or .001mm with Go-No-Go features and memory. These Micrometers are available in 1" or 2" measuring capacity.

OPTICS:

The TM-2 comes standard with a 10X Eyepiece. The 20X Eyepiece to achieve the higher magnification is an optional extra.

The Objective Lens is a ZOOM LENS range of 30X to 80X with the 10X Eyepiece, and 60X to 160X is possible with the 20X Eyepiece. The 20X Eyepiece should be purchased if Depth or Z Axis measurements are desired.

The Reticle has 90° Cross Hairs with divisions on the Vertical and Horizontal Axis as well as circles at every tenth division on the Cross Hair Lines. Cross Hair stays centered within 3% when zooming from one magnification to another.

IMAGE: Optically correct and not inverted. All Lenses are color coated and corrected.

WORKING DISTANCE: With 6 Bulb Ring Illuminator attached .870" Without 6 Bulb Ring Illuminator 1.120"

ANGLE MEASURING EYEPIECE AME-5MB:

The TM-2 can be converted to use the AME-5MB Angle Measuring Eyepiece. This allows for two methods of angle measuring with the TM-2.



ILLUMINATION:

SUBSTAGE ILLUMINATOR: A green Filtered Substage Illuminator with light coming up through the optical Axis of the Microscope.

SURFACE ILLUMINATOR: A Ring type illuminator that holds 6 EL-17 bulbs 3V connected in Series Inclined at a 30° angle at 60° intervals. This gives brilliant shadow free Surface Illumination. This feature is especially helpful in examining blind holes. The light rays are projected in a conical shape. These units are designed to run on 110 Volt AC.

WEIGHT: The bare weight of the unit is 50 pounds. The Shipping Weight complete is approximately 75 pounds. We will only ship this unit overnight air service via UPS, FEDEX, etc. due to its weight. Shipping via ground service will result in mishandling and breakage during shipment.

DI-35-700-10 Specifications

iGaging ABSOLUTE Technology Indicator

The iGaging digital electronic indicator with ABSOLUTE encoder always remembers and traces absolute origin zero or preset data. It provides unlimited measuring speed without losing its origin. This indicator will indicate absolute position when turned on. Indicator face can be rotated up to 330 degrees.

Features:

SPC/USB Data Port

Indicator face can be rotated up to 330 degrees

ABSOLUTE encoder technology

IP54 Protection

Read and convert Inch/mm display

Change measuring direction - Positive up or positive down

Origin set

Preset value

Tolerance function

Zero/ABS - Switch between incremental and absolute measuring

Super large LCD display

Shank diameter: 3/8"

Carbide tip

4-48 threaded tip

Specifications:

Range: 0.5"/12.5mm

Resolution: 0.00005"/0.001mm

Accuracy: 0.00016"

Repeatability: 0.00005"/0.001mm

Battery: 1x CR2032 (2 included)



DM-54-210-100 Digital Micrometer by Sylvac

This digital micrometer manufactured by Sylvac the leader in Swiss Precision Measuring.

Measuring ranges of 0-1" (0-25mm) & 0-2" (0-50mm) and can be used in either the vertical or horizontal by turning the top display unit. Mounting stem of 0.472" (12mm).

Uses standard CR2302 battery included.

Operation Manual and a ISO 9001 Calibration Certificate included with each unit.

Resolution: 0.00005"(0.001mm)

Repeatability: 0.00008"(0.002mm)

Non-Rotating Spindle

Tungsten Carbide Tip Spindle

Operating Temperature: +5° to +40° C

Ordering Information

Model Number

TM-2 Zoomatic Measuring Toolmakers Microscope

Optional Extras

TMEP-20X 20X Eyepiece for Microscope

TSTVA-12B Video Adapter

AME-5MB Angle Measuring Eye Piece

EL-17 Bulbs (priced per piece) used in Ring Light

DM-54-210-100 1" Digital Micrometer by Sylvac