

MANUAL

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TOOL MASTER Lite 14



en

*just
efficient*

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Brig, 26st of March 2014

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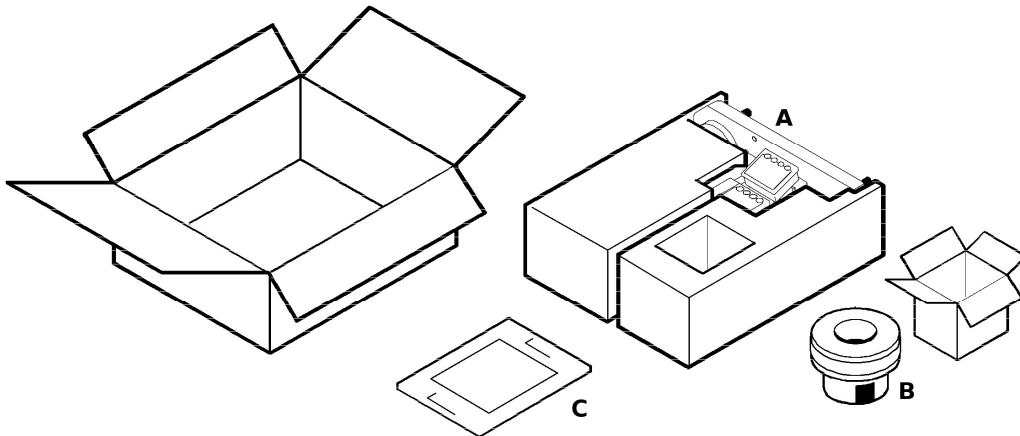
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1. Items Check List

Upon receiving the Tool Master Lite 14, please check the following items are accounted for:

- A. TM Lite 14 Pre-setter**
B. Adaptors
C. User's Manual and Certification
D. Lubricating oil and lint-free cloth



The Pre-setter is identified by a unique Serial Number. The Identification Plate is located on the back of the unit, and also includes the Model and Year. Please write the following information for future reference, and in the event you need to contact Dorian Tool for support.

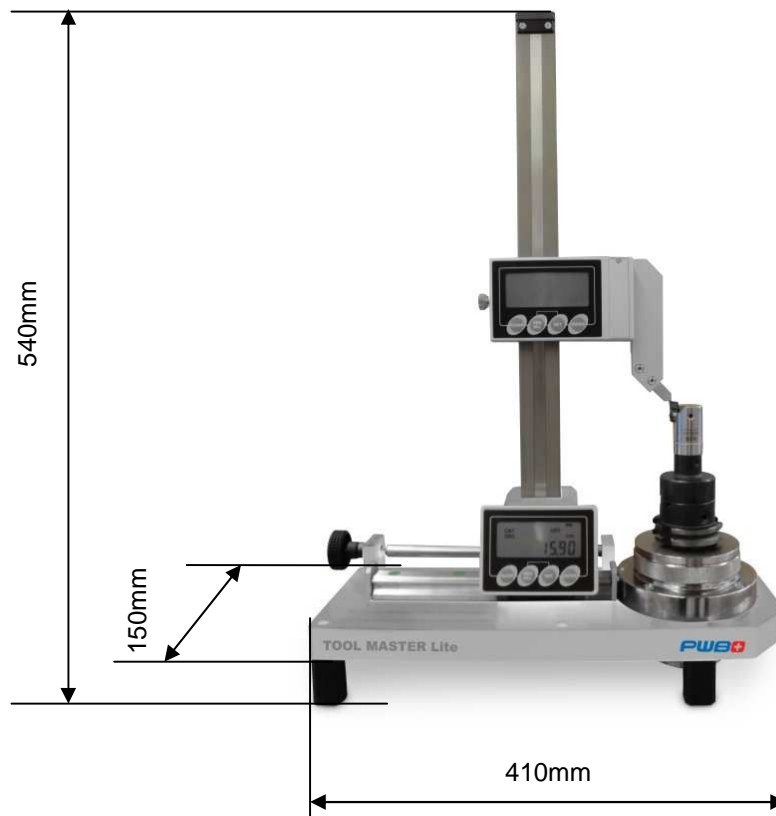
Model: TM Lite 14 **Year:** _____ **Serial No.:** _____

Special Cautions

Please read this instructions manual prior to using the TOOL MASTER LITE 14 Pre-setter, and follow the recommendations listed when using and handling the instrument:

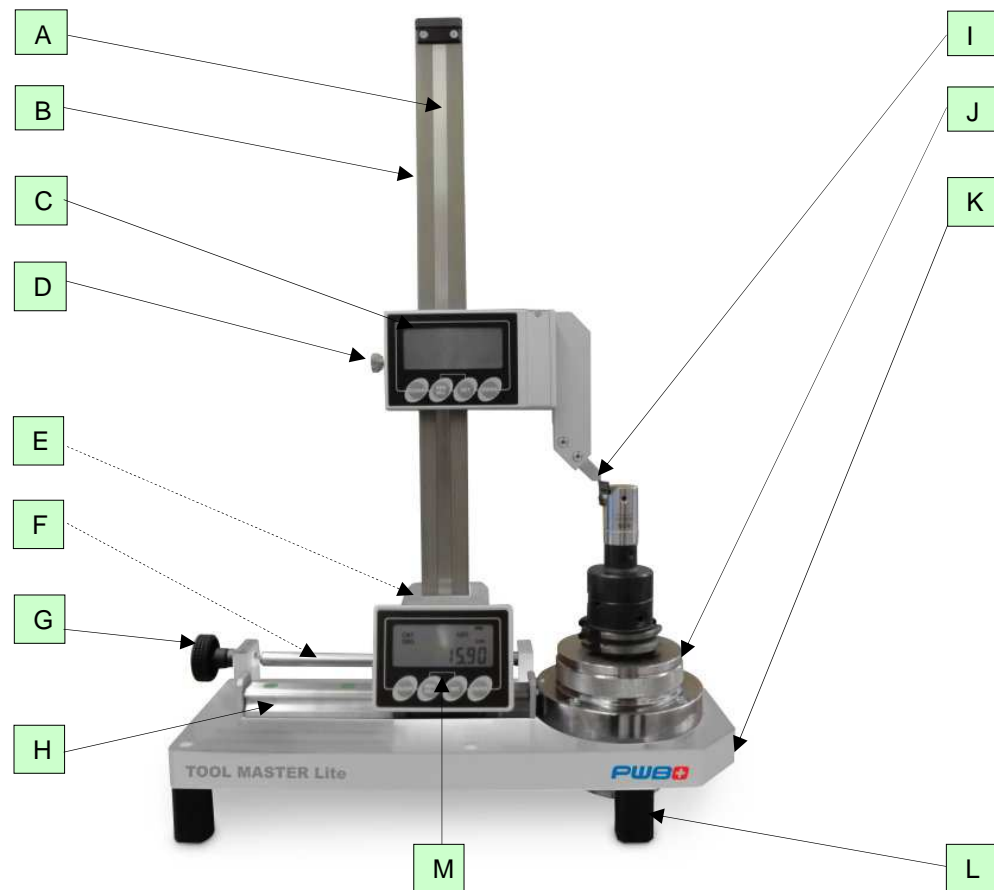
- *Do not place magnets or magnetic material on the magnetic bands*
- *Position the instrument at least 3 feet from magnetic sources*
- *Do not tamper with the instrument*
- *Use original parts only*
- *Do not store the pre-setter in a high-humidity environment*
- *Keep the pre-setter in a room where the temperature range is -3 to 38 °C*
- *Follow the maintenance recommendations listed in this User's Manual*

2. Technical specifications



Height Capacity:	12 in./300mm
Diameter Capacity:	10 in./ 250mm
Resolution:	.0005"/.01mm
Measuring Method:	Contact
Measuring Detection:	Magnetic Band
Power Input:	1.5V Type AA Battery (2 for X-axis DRO, 1 for Z)

3. Parts breakdown



A. Z-Axis Magnetic Band

B. Z-Axis Guide

C. Z-Axis Display/Control

D. Z-Axis Locking Knob

E. X-Axis Locking Knob/backside

F. X-Axis Magnetic Band

G. X-Axis Fine Adjustment Knob

H. X-Axis Guide

I. Probe

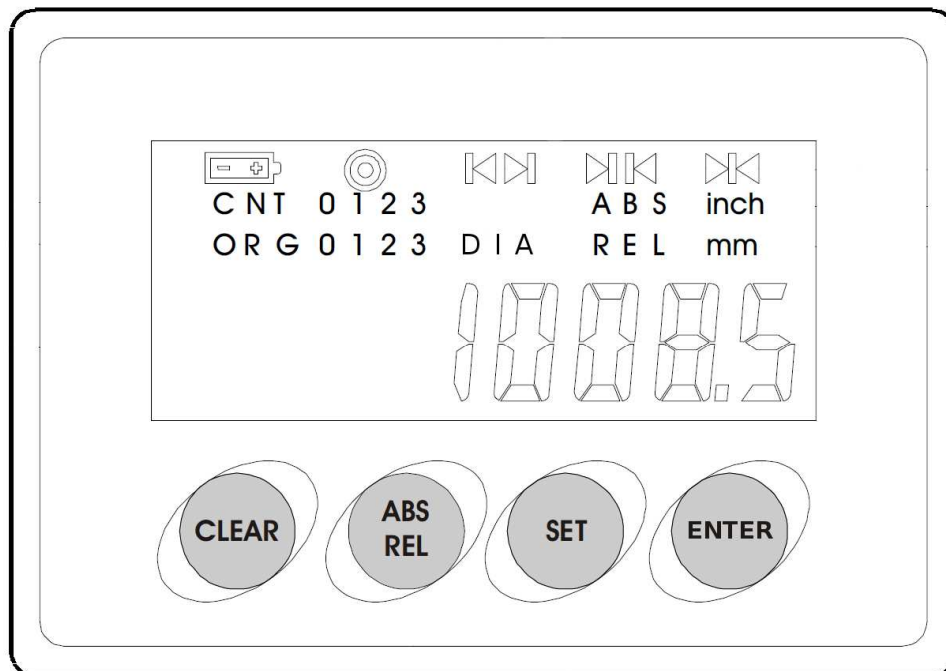
J. Spindle/ Needle bearing sleeve

K. Base

L. Support Legs

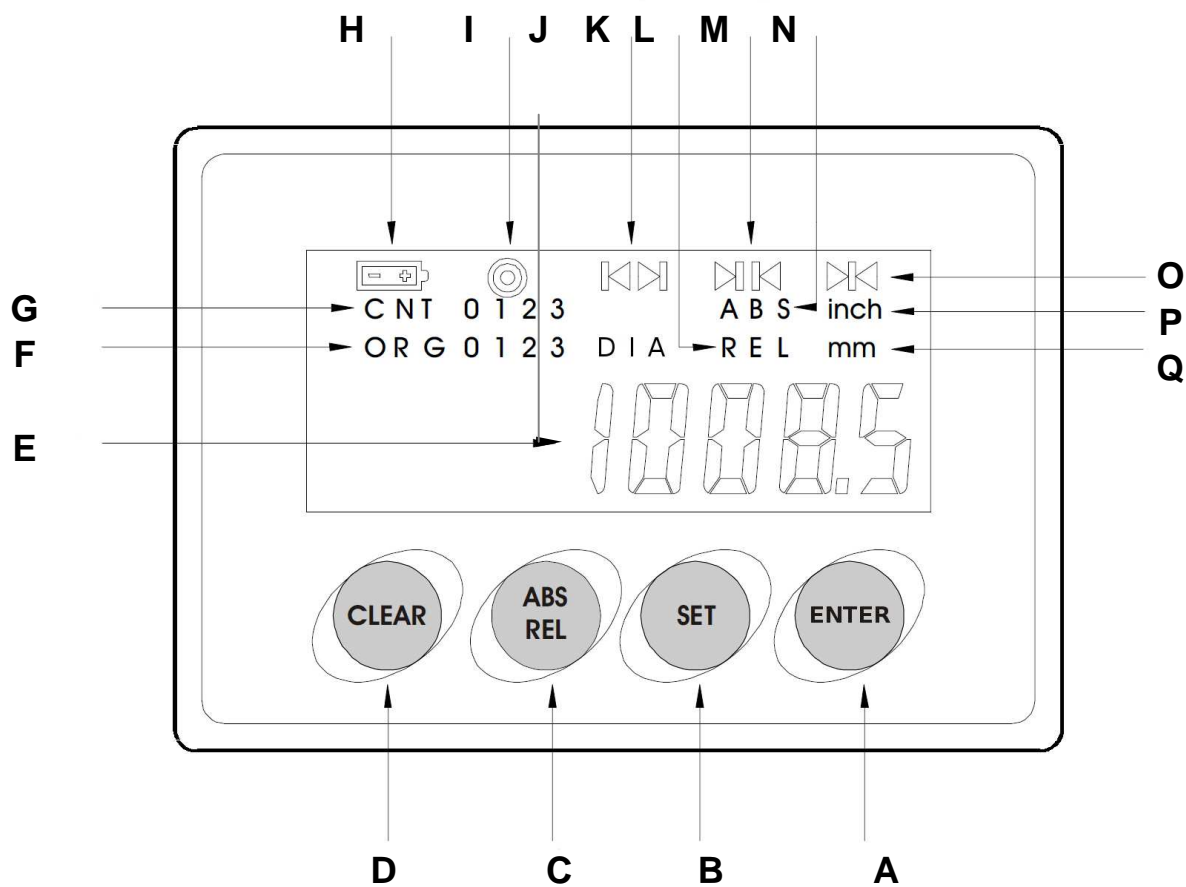
M. X-Axis Display/Control

4. Control description



Control Key	Function
ENTER	<ul style="list-style-type: none"> Confirm selection
SET	<ul style="list-style-type: none"> Access programming menu by pressing and holding for 5 sec. Reset X-Axis origin by holding and pressing CLEAR Reset Z-Axis origin by holding and pressing CLEAR Toggle between ORG origins by holding and pressing ABS/REL (Absolute Mode) Toggle between CNT origins by holding and pressing ABS/REL (Relative Mode) Navigate through programming menu
ABS/REL	<ul style="list-style-type: none"> Toggle between Absolute and Relative Measurement Mode Navigate through programming menu
CLEAR	<ul style="list-style-type: none"> Clear Measurement to zero (Relative Mode only) Toggle between options in programming menu

5. Display identification



A. ENTER Key

B. SET Key

C. ABS/REL Key

D. CLEAR Key

E. Measurement

F. Active Origin (Main Origin,
0,1,2,3)

(Absolute Mode)

G. Relative Origin (Main Origin,
0,1,2,3)

(Relative Mode)

H. Low Battery Alarm

I. No Meaning (displayed with ORG 1)

J. Diameter Reading Mode

(Not shown when in Radius Reading
Mode)

K. No Meaning (displayed with ORG 0)

L. Relative Mode Selected

M. No Meaning (displayed with ORG 2)

N. Absolute Mode Selected

O. No Meaning (displayed with Main
Origin)

P. Inch Scaling

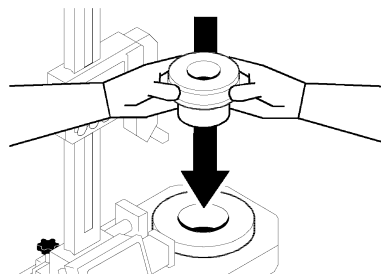
Q. Millimeter (mm) Scaling

6. Installation

The TM Lite 14 does not require major assembling. After unpacking the unit, place the pre-setter in a designated flat surface. If the unit needs to be transported, please lock the X and Z-Axis Locking Knobs before moving the instrument.

Once the pre-setter is in place, unpack the Needle bearing sleeve and place it in the tool pot .

The pre-setter is now ready to be used.



7. Reference setting

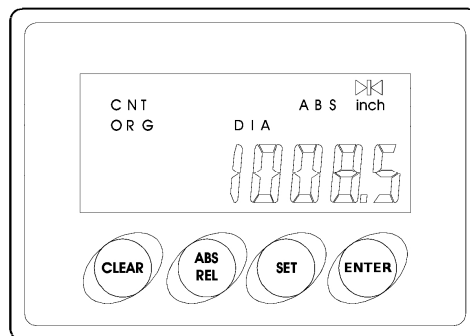
The X and Z axes need to be referenced prior to use the pre-setter.

It is recommended to perform these procedures every week, or in the event that the Tool Sleeve is removed from the unit, or that new batteries have been installed.

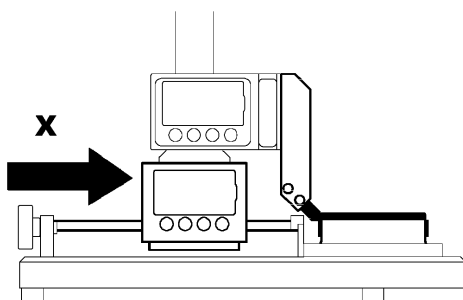
X-Axis Reference

1. Select Absolute Mode by pressing the **ABS/REL** key. The display should read **ABS**.
2. Make sure that the Main Origin is active. The display should read **ORG** with no number (0 through 3) next to it.

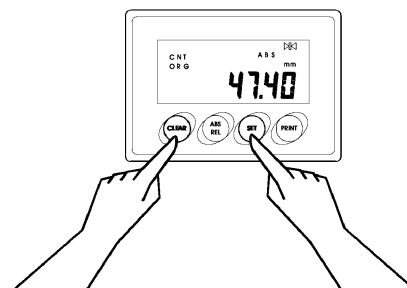
If a different origin is active, press **SET** and hold it while pressing **ABS/REL** until the Main Origin is active.



3. Set the pre-setter's scaling to measure diameter. Refer to page 13 to select the scaling.
4. Release the X-axis Locking Knob and position the Probe in contact with the Tool Sleeve's diameter (above the knurled area), as shown below.
5. Press the **SET** key and hold while pressing the **CLEAR** Key. The display will show 3.7325" in inch mode and 99.49 (Or the engraved value of the tool pot) mm in metric mode. The X-axis is now referenced.



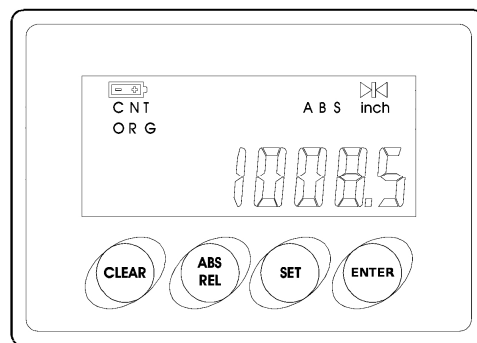
TOOL MASTER Lite 14



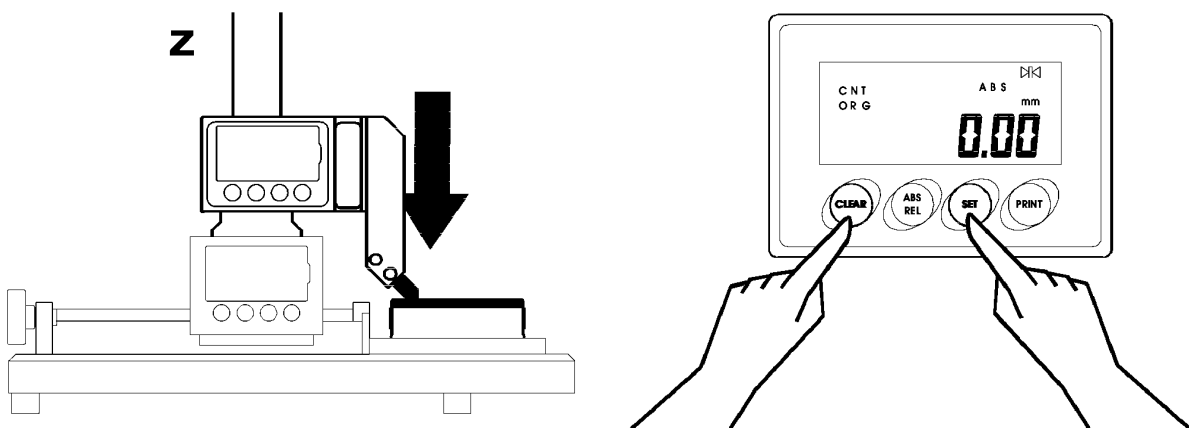
Z-Axis Reference

1. Select Absolute Mode by pressing the **ABS/REL** key. The display should read **ABS**.
2. Make sure that the Main Origin is active. The display should read **ORG** with no number (0 through 3) next to it.

If a different origin is active, press **SET** and hold it while pressing **ABS/REL** until the Main Origin is active.



3. Release the Z-axis Locking Knob and position the Probe in contact with the Tool Pot surface, as shown below.
4. Press the **SET** key and hold while pressing the **CLEAR** Key. The display shows the calibrating value, similar to the engraving on the tool pot. Z-axis is now referenced.



Enter offset values / working with adapters

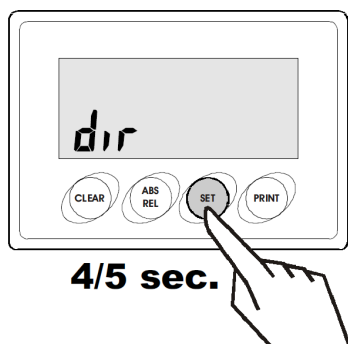
If adaptors are used, must the engraved offset value of the adaptor be set as offset values in the Z axis.

Procedure.

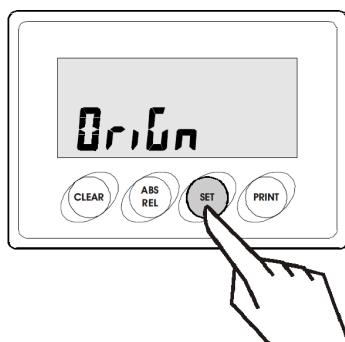
- a) Press the **SET** key and hold it for 5 seconds to access the Programming Menu.
- b) Press **SET** twice until **OFFSETS** is displayed and press **ENTER**.
- c) Select the offset that you would like to use for the tool. Use **SET** and **ABS/REL** to select the desired offsets and press the **ENTER** key to edit it.
- d) Enter the calculated Offset Value. Use **SET** and **ABS/REL** to navigate between spaces and **CLEAR** to increase the value. The first cell corresponds to the value's sign (positive or negative).
 - Example: Select the first digit and press **CLEAR** to make the value negative. Press **SET** to edit the next digit to enter the engraved value on the adaptor.
- e) Press **ENTER** once the value is set, and the display goes back to the **OFFSETS** menu.
Press **CLEAR** twice to exit to the main screen.
- d) Select the chosen machine offset by pressing and holding the **SET** key followed by pressing **ABS/REL** until the chosen offset is shown.

The Z-axis reference zero is now set for this particular adaptor.

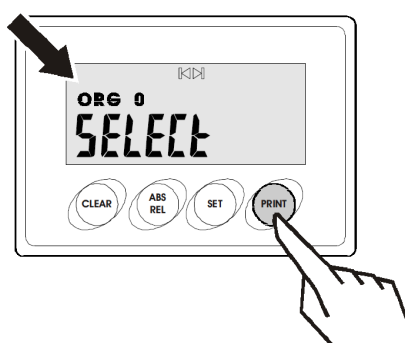
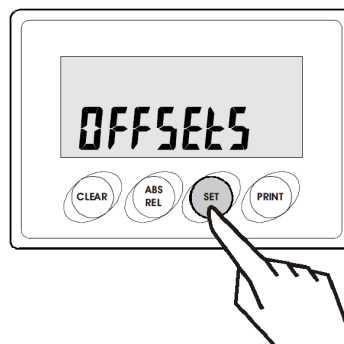
Please see next page for further information



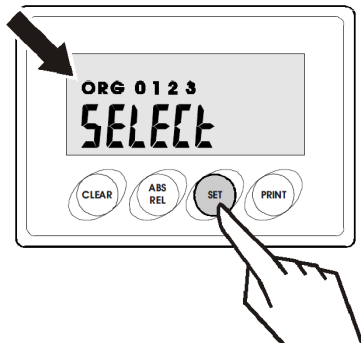
a)



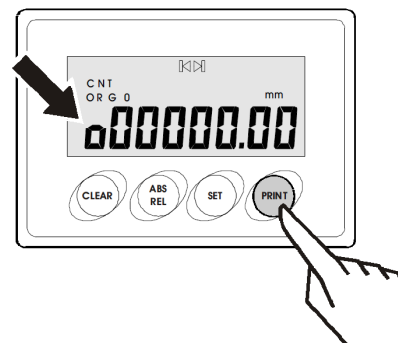
b)



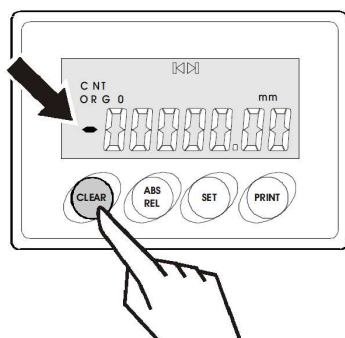
c)



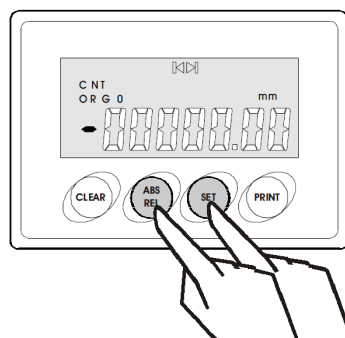
c)



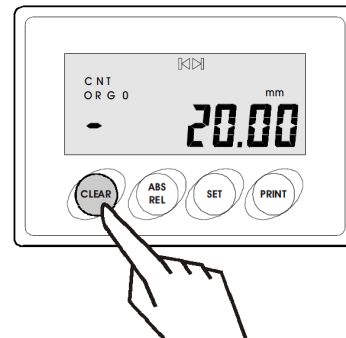
d)



d)



d)



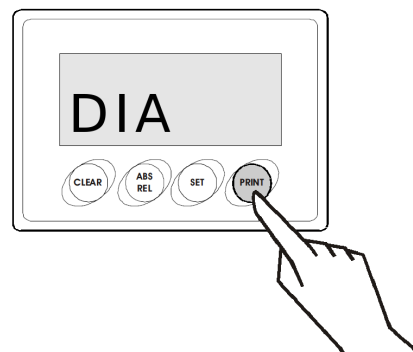
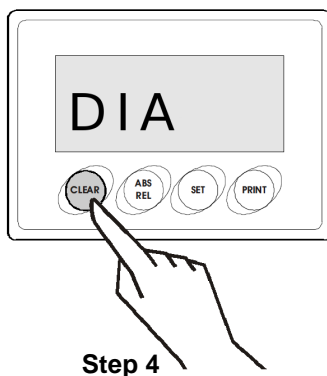
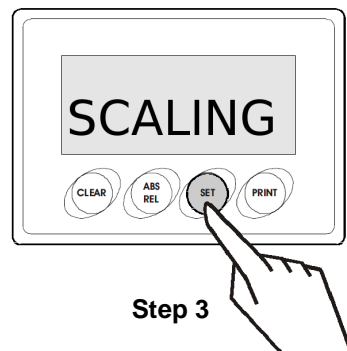
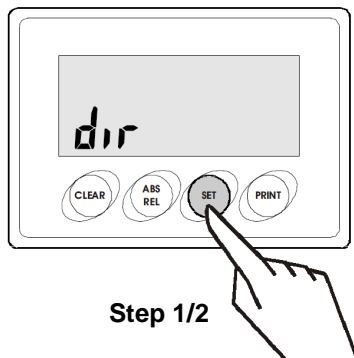
e)

Radius/Diameter Selection

The TOOL MASTER LITE 14 pre-setter gives you the option to measure a tool's radius or diameter. The pre-setter is set to measure diameter by default. The following steps show how to toggle between the two scaling options.

1. On the X-axis Display, press and hold the **SET** key for about 5 seconds to access the Programming Menu.
2. Press **SET** until **SCALING** is displayed.
3. Toggle between **RAD** and **DIA** (diameter and radius) by pressing the **SET** and **ABS/REL** key. Select the desired option and press **ENTER** to set your choice.
4. Press **CLEAR** several times to exit the Programming Menu. The radius/diameter selection is complete.

NOTE: Do not change the scaling option on the Z-Axis Display. It should always be set to **RAD**.



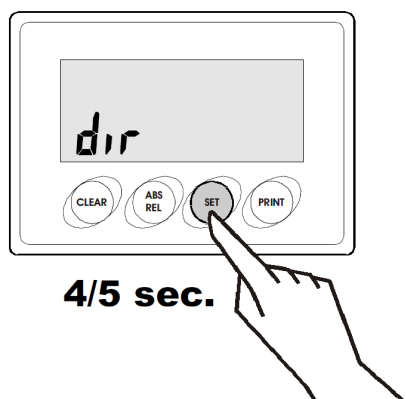
Units Selection

The Tool Master Lite gives you the option to display measurements in inches or millimeters.

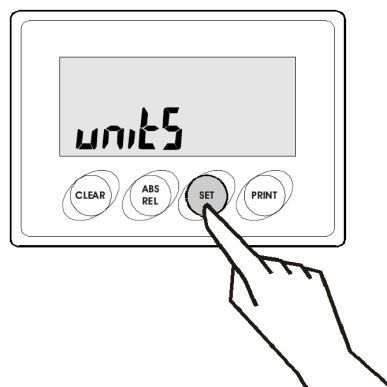
The pre-setter is set to measure in inches by default. The following steps show how to toggle between the two unit options.

1. On the X-axis Display, press and hold the **SET** key for about 5 seconds to access the Programming Menu.
2. Press **SET** until **units** is displayed.
3. Toggle between inch and mm (inch and millimeter) by pressing the **SET** and **ABS/REL** keys. Select the desired option and press **ENTER** to set your choice.
4. Press **CLEAR** several times to exit the Programming Menu. The unit selection is now complete.

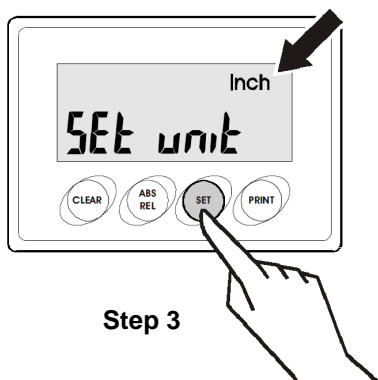
Perform the same sequence to set the unit in the Z-Axis Display.



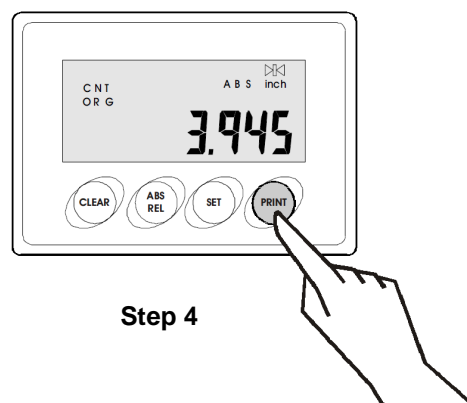
Step 1



Step 2



Step 3



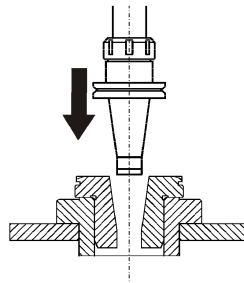
Step 4

8. Measurements

After referencing the pre-setter as shown in the previous sections, it is ready to be used. Follow these steps to perform a tool measurement.

Z-Axis

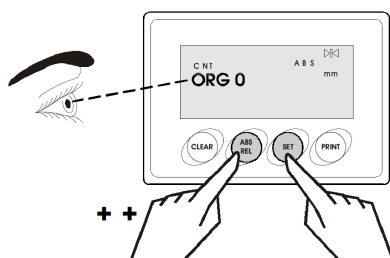
1. Enter a tool



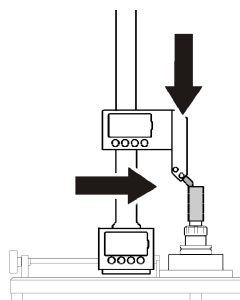
2. Follow the guidelines mentioned in this manual to set the Z-axis reference zero for the adaptor. Select Absolute Mode and select the desired offset by pressing **SET** and holding it while pressing **ABS/REL**.

3. Place the Probe on the cutting edge of the tool as shown. The Z-axis measurement is displayed.

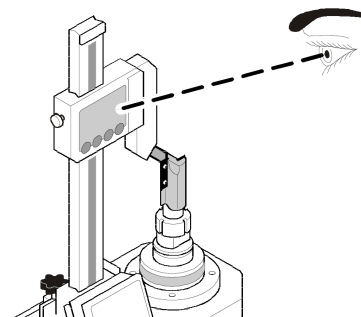
CAUTION: Do not crash the measuring Probe against any tooling, as it may result in loss of pre-setter precision and/or tool breakage.



Step 2

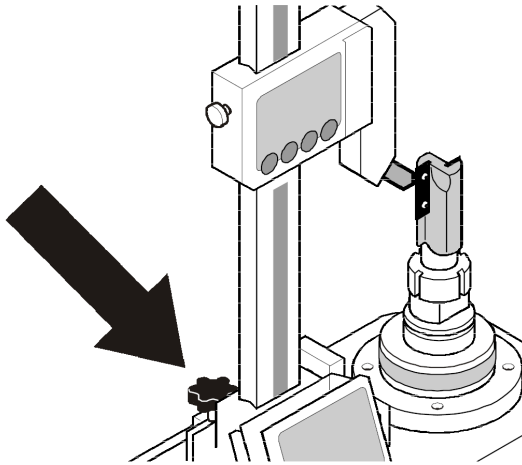


Step 3

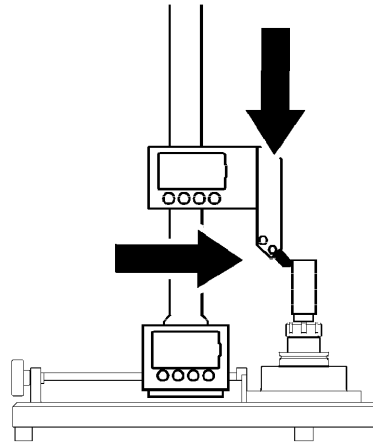


X-Axis

1. Untighten the X-Axis Locking Knob.
2. Position the Probe so that it touches the tool's cutting edge. Be careful not to damage the Probe or the tool's cutting edge.



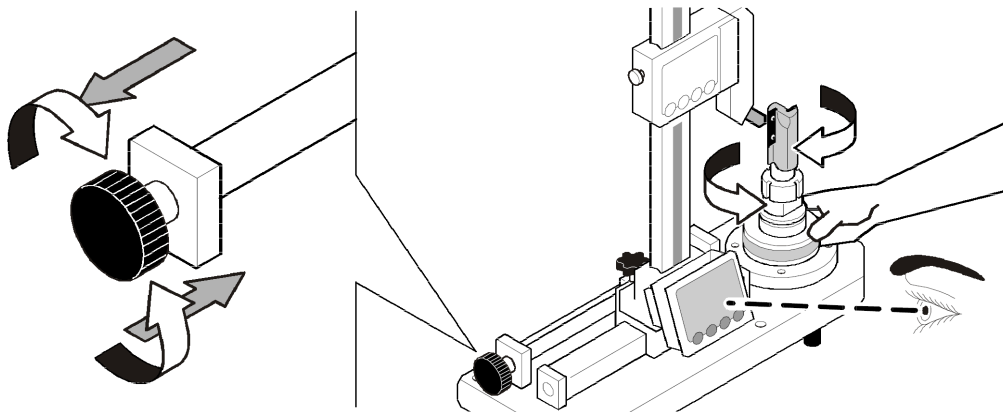
Step 1



Step 2

3. Rotate the Tool Sleeve to identify the maximum diameter. The X-Axis Display shows the tool's diameter.

TIP: You can check for maximum tool run-out by switching to **RELATIVE** Mode, touching the tool's cutting edge, and pressing **CLEAR** to reset the measurement to zero. Rotate the Tool Sleeve to identify maximum run-out.

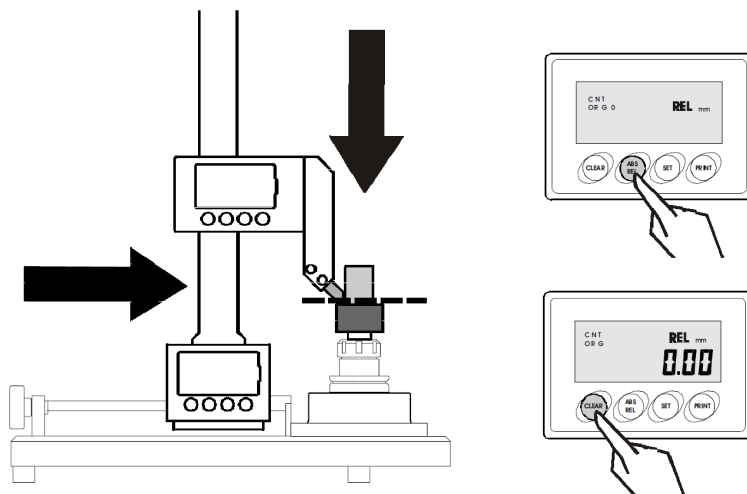


Step 3

Relative Measurements

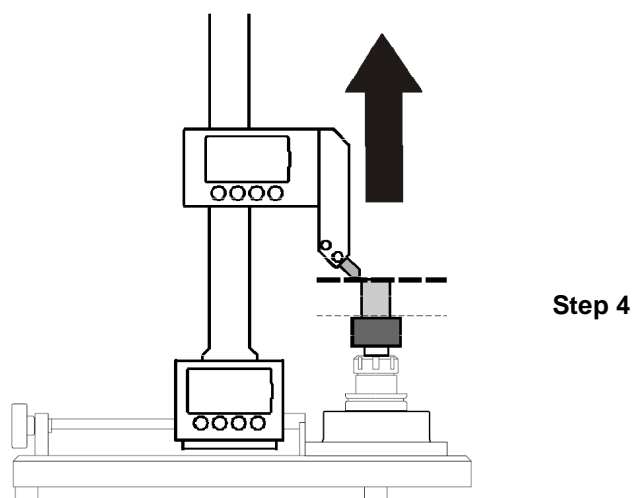
Use Relative measurements when the distance between two tool points is required without losing the referenced zeroes. Follow these steps to make relative measurements:

1. Position the Probe in the first or relative reference point as shown below.
2. Press the **ABS/REL** key to toggle to **RELATIVE** Mode.
3. Press the **CLEAR** key to zero or reset the measurement.



Steps 1, 2 & 3

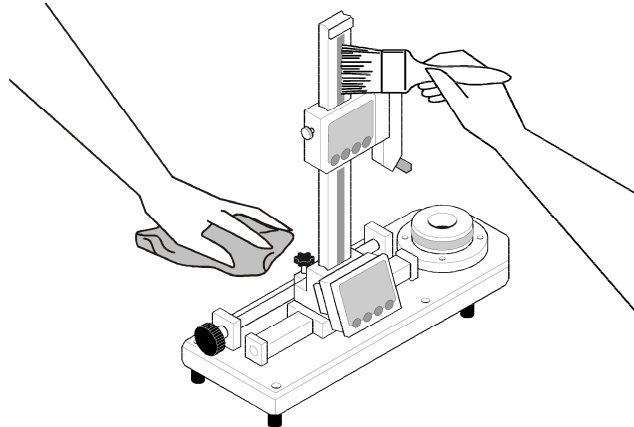
4. Move the probe to the second point. The Display shows the difference between the two points.
5. Press the **ABS/REL** to return to **ABSOLUTE** Mode with the set reference zero.



9. Maintenance

Cleaning

The pre-setter does not require particular cleaning. Occasionally clean the Guide Rails with a brush and a clean cloth. Avoid environments with high concentrations of dust or humidity as recommended in this manual.

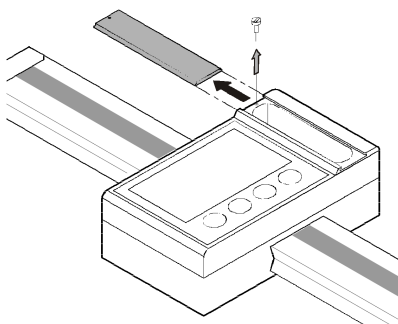


Lubrication

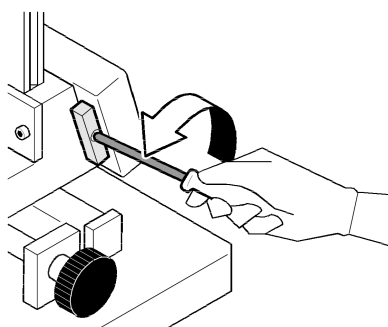
Apply a thin coat of spray lubricant to the X-axis Guide Rail to prevent oxidation. **Do not** use grease lubricants. If the pre-setter is not going to be used, remove the Tool Sleeve and spray with lubricant to prevent rusting. Spray the Flange and X-Axis Guide Rail as well.

Battery Replacement

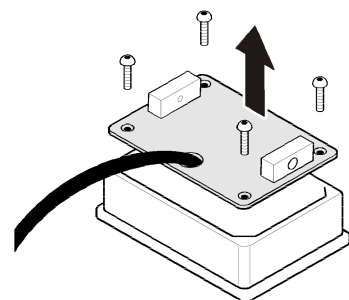
All data is stored in the event the battery is removed or needs to be replaced. After installing a new battery, perform the X and Z-axis reference as shown in this manual.



**Z-Axis Display
(One AA Battery)**



**X-Axis Display
(Two AA Batteries)**



10. Menu overview

To access the Programming Menu, press and hold the **SET** key for about 5 seconds. Use **ABS/REL** and **SET** to navigate through the options, and **ENTER** to select an entry.

Submenu	Description
DIR	<ul style="list-style-type: none">• Defines the positive and negative travel directions for the measurement reading• Manufacturer only
ORIGIN	<ul style="list-style-type: none">• Set value for Main Origin• Manufacturer only
OFFSETS	<ul style="list-style-type: none">• Allows the user to input four (4) offsets from the reference zero• Offsets can be selected in Absolute Mode only
HYST	<ul style="list-style-type: none">• Manufacturer only
SLEEP	<ul style="list-style-type: none">• Define time lapse for Display Auto Shut-off• Press CLEAR to increase time limit and ENTER to set
UNITS	<ul style="list-style-type: none">• Define the measurement units (inch or mm)
SCALING	<ul style="list-style-type: none">• Select RADIUS or DIAMETER• Blocked on Z-Axis
LIN CORR	<ul style="list-style-type: none">• Linear Correction Input• Manufacturer only
SETUP	<ul style="list-style-type: none">• Sensor Calibration• Manufacturer only
SYS	<ul style="list-style-type: none">• System Settings• Manufacturer only
REL HB23	<ul style="list-style-type: none">• Software Number