Lathe Pro

Sargon®

```
 0.7000
 8.3500
ŁOOL      1
abs  inc  inch  mm  dia  rad  freeze
```

X	7	8	9 sensor	mode
Z	4	5	6 angle	marker
tool	1 +	2	3 -	freeze
clear	+/-	0	. mm	print
abs in/no	inch in/mm	dia in/rad	℄	preset

Lathe Pro™

OPERATOR'S MANUAL

Table of Contents

Features and Capabilities

Bright, efficient LED display
with wide viewing angle.

MEC switch on the rear panel
is used for setting the Machine
Error Compensation.

Internal Nonvolatile Memory
maintains data when Power
is turned OFF.

Sargon®

```
0.7000
8.3500
tOOL        1
```
abs   inc   inch   mm   dia   rad   freeze

Indicator for display modes:
 Absolute;
 Incremental;
 Inch;
 mm;
 Diameter;
 Radius
 Freeze.

Power input module at rear has:
 On/Off switch;
 Fuse protection;
 EMI filter for noise protection.
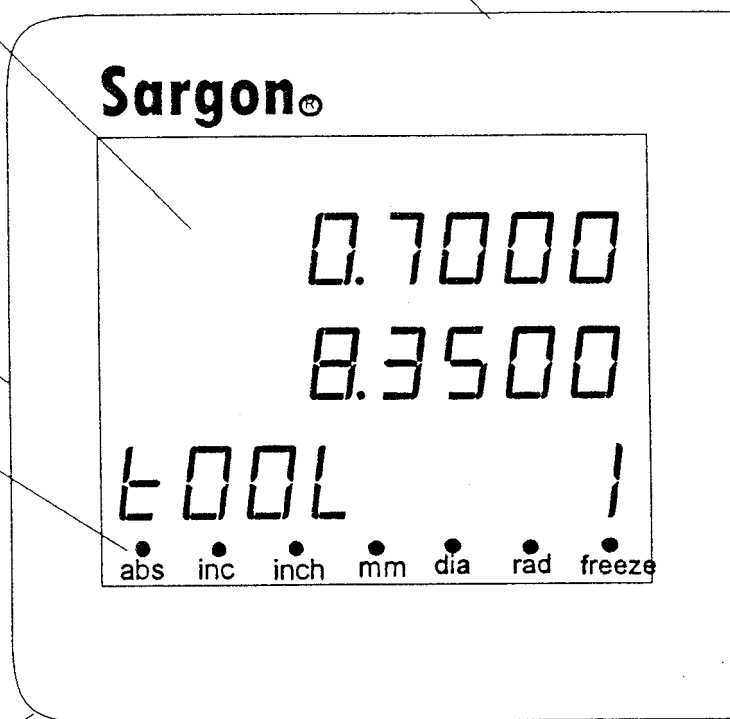
Press X, Y or Z to select an approriate axis, after numerical data has been key in,
press PRESET button to preset a dimension or set the DATUM.

Enter TOOL number.

Press CLEAR at power-up while 8.8.8.8.8.8.8.8. is
flashing to clear all memory.

Press 9 to enter SENSOR mode

Press MODE to change the oprating mode.

Press and hold MARKER while 8.8.8.8.8.8.8.8. is
flashing to setup reference marker;
Press MARKER to search reference marker.

Press 6 to display the angle

Press FREEZE to freeze the display

Press 1 to increase the TOOL number;
Press 3 to decrease the TOOL number.

If the optional RS232 interface is installed,
press PRINT button at power-up while
8.8.8.8.8.8.8.8. is flashing to set RS232 protocol.
Press PRINT button to send the display to
the connecting COMPUTER and/or PRINTER.

Press to toggle incremental and incremental 2.

Preset a dimension if in an incremental mode;
Set the DATUM of a workpieçe if in
the absolute mode.

Center a dimension-divided by 2.

Display Diameter or Radius dimension.

Press at
power-up
Whill 8.s   Abolute or
is flashing   incremental
to set: display.

Inch or
milimeter
display.

Scale resolution, scale direction
and Diameter enable.

X	7	8	9 sensor	mode
Z	4	5	6 angle	marker
tool	1+	2	3-	freeze
clear	+/-	0	• mec	print
abs /inc	inch /mm	dia /rad	₵	preset

Lathe Pro™

<table>
<tr><td>

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Preparation For Use

</td></tr>
</table>

Unpacking

Inspect Shipping Containers. Inspect for obvious damage that would indicate mishandling during shipment. Make note of any indicators, such as: dented corners or torn sides.

Save Packing Material. The shipping box and packing material should be opened carefully to permit reuse in case it is necessary to return any portion of the equipment.

Notify Carrier In Case of Damage. If the display or other items show any external damage, or if parts have vibrated or broken loose, the carrier should be notified within ten days of receipt of shipment.

Check Packing List. Any discrepancy between the items received and the items listed on the shipment packing list should be reported immediately to the Sargon distributor.

General installation notes

WARNING | HAZARDOUS VOLTAGES. USE EXTREME CAUTION.

All required electrical work should be performed by a qualified electrician.

Mount the Lathe Pro a minimum of 6 inches away from any motors. The Lathe Pro may be mounted to the arm provided, or to a custom machined arm, mount, or stand.

Refer to the applicable manual for scale installation.

Typical display installation

1. Remove the large eye bolt located on top of the milling machine column (Index 1).

2. Mount the arm (Index 2) as shown.

3. Bolt the Lathe Pro to the mounting arm with the 5/16-18 bolt (Index 4) provided in the hardware kit.
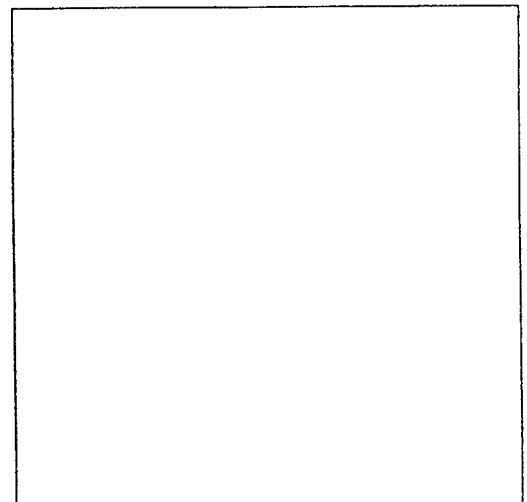
Grounding

The AC outlet should be a three prong grounded outlet (per article 250 of the US National Electrical Code). If it is not, use a grounded adapter and verify that the adapter is grounded.

Verify that the machine is grounded. If it is not, a ground must be installed.

Install a 14 AWG stranded wire (customer provided) from the ground lug located on the back of the Lathe Pro to the machine power ground connection. If this is not possible, drill/tap at an alternate location on the machine. Secure the ground wire using star or split washers to ensure adequate connection. Use an approved anti-oxidation compound at the connection where the paint is scraped.

AC power

Do not use machine power lines for the Lathe Pro. Use a separate 120 or 240 VAC outlet. If an outlet is not available, one should be installed near the Lathe Pro mounting location.

The AC power outlet should be of the same voltage as that indicated on the identification/serial number label on the back of the Lathe Pro.

Use the power cord supplied. Do not modify the power cord in any way.

Routing scale cables

Connect and secure the scale connectors to the Lathe Pro. Using tie-wraps, secure the scale cables and dress any excess slack. Do not wrap any AC power lines with the scale cables. Maintain a minimum of 6 inch spacing from AC lines and cross at right angles.

Getting started

1. After installation, clear the system memory as described in Section 3.

2. Set the Lathe Pro scale resolutions, scale directions etc. as described in Section 4.

3. Once you have completed the setup and exit, the Lathe Pro will automatically switched to NORmal mode. Move the lathe axes and verify the Lathe Pro displays direction as expected. If not correct, repeat step 2.

4. Read the appropriate sections of this manual depending on the type of tasks to be performed and try out the various features.

5. To rapidly gain familiarity with your system and to get the most out of it, read this manual from cover to cover to become fully acquainted with all capabilities.

3 Clearing All Memory - Default Settings

Description

The entire Lathe Pro memory can be cleared as described below.

CAUTION!   When the entire memory is cleared, all position data, stored points and MEC scale factors will be lost.

Clearing all memory

1. Set the power switch at the rear of the Lathe Pro to OFF (0) then back to ON (1). The display will flash *8.8.8.8.8.8.8.8.*.

2. Press and hold the **clear** button until *CLEAR ALL* is displayed.

3. Press the **X** button, *CLEAR ALL* will be changed to *CLEAR yES*.

4. Press the **Y** button, *CLEARED* will be displayed and the Lathe Pro will be set to defaults.
   Then, the Lathe Pro displays the first setup screen, the Scale Resolution screen, refer to Section 4 to change default settings.

Default settings

Scale Resolution:	X axis	0.0002" (0.005 mm)
	Z axis	0.0005" (0.01 mm)
Radius/Diameter Enabled:	X axis	Yes
	Z axis	No
Scale Direction:	X axis	Negative
	Z axis	Positive

4 Setup Screens

Setup screens description

Scale resolutions, scale directions and dia/rad enable are programmed from the Lathe Pro front panel.

Scale resolutions, scale directions and dia/rad enable are stored in the Lathe Pro's nonvolatile memory. Once set, the Lathe Pro may be powered down. When powered up later the settings will still be intact.

Entering the setup screens

Set the power switch at the rear of the Lathe Pro to OFF (0) then back to ON (1). The display will flash *8.8.8.8.8.8.8.8*.

Press and hold the **abs/inc** button until one of the setup screens is displayed.

Note: After Clearing All Memory, the Lathe Pro will automatically enter Scale resolutions' setup screen.

Scale resolutions

MICRON, mm		INCH
10.0	0.01	0.0005
5.0	0.005	0.0002
2.0	0.002	0.0001
1.0	0.001	0.00005
0.5	0.0005	0.00002
0.2	0.0002	0.00001
0.1	0.0001	0.000005

Each axis on the Lathe Pro must be set to the resolution that matches the scale being used for that axis. Resolutions available on the Lathe Pro are shown to the left. The scales must be metric. When inch mode is selected, the metric scale inputs are converted by the Lathe Pro to display in inches.

X [rES   5 ᴗ]

X [rES .0002   10 ᴗ]

Z [rES .0005]
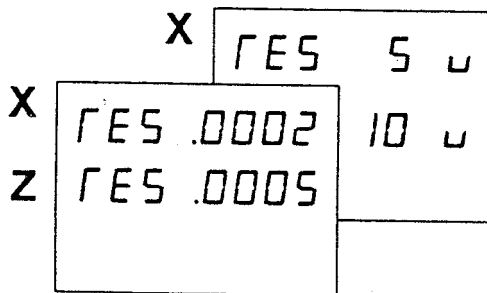
Repeatedly press the **preset** button until the resolution setup screen is displayed.

Repeatedly press **X** or **Z** for the desired axis until the correct resolution is displayed.

Press the **inch/mm** button to change between inch and mm(metric) displays. In mm mode the resolutions are displayed in microns (0.001 mm).

Scale directions The display will count up or down, depending on the direction of table movement. Scale direction can be set, in the Lathe Pro, for each axis, so that movements are properly displayed.

X | ПЕЦ – – ı

Z | ı– – PП 5

Repeatedly press the **preset** button until the scale direction setup screen is displayed.

Press the **X** or **Z** button for the desired axis to switch between positive and negative scale directions.

**Diameter /
radius enable** When dia/rad enable is set to *DIA YES* for an axis, as described below, the **dia/rad** button will then be active for that axis. The **dia/rad** button will not affect an axis that is set to *DIA NO*.

Radius tracks the actual scale movement. Diameter displays double this movement.

X | d ıА УЕ5

Z | d ıА ПП

Repeatedly press the **preset** button until the **dia/rad** enable screen is displayed.

Press the **X** or **Z** for the desired axis to switch between the **dia/rad** function enabled *(YES)* and disabled *(NO)*.
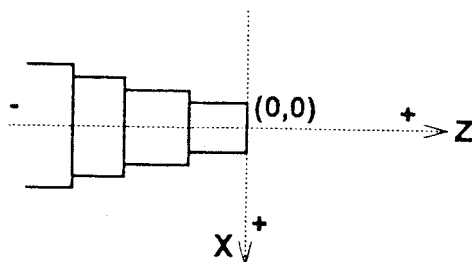
**Exiting the
setup screens** When scale resolutions, **rad/dia** enable and scale directions are correctly set, exit the setup mode by pressing any other button except the **X, Z, inch/mm** or **preset** button.

5 Basic Working Modes

Coordinates

The Z axis is the turning axis of the lathe.

The X axis is the cross travel axis and is perpendicular to the Z axis.

The origin (the starting position of the Z axis) is ordinarily set at the end of the work piece, but it may be set at any location along the turning axis.

Before any machining, make sure that all scale directions are consistent with the directions shown above. The direction of a scale can be reversed on the setup screen. See Section 4.

Basic modes

There are two basic modes: Normal mode and Set-Tool mode.

Press the **mode** button to toggle from one mode to another.

X   2.0000   t.   2.0000
Z   0.0000   0.0000
tOOL   1   t-SEt   1
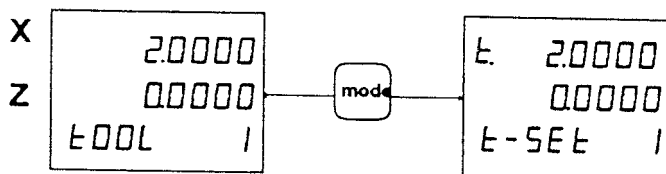
NORMAL mode

The X and Z displays show the position of the cutting tool edge.

The bottom axis displays the current tool being used. Press the **1**(+) or **3**(-) button to increase or decrease the tool number, or enter the tool number on the bottom display, provided the tool is valid, that is, the tool offsets have already been set.

X   2.0000
Z   0.0000

X   0.0000
Z   0.0000
tOOL   1
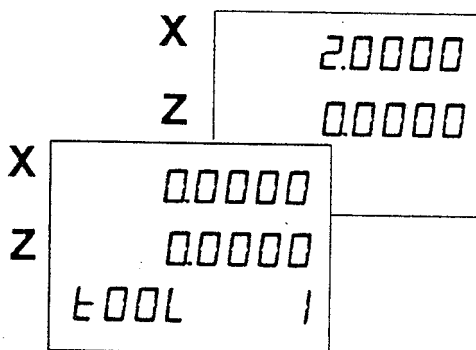
If there is no valid tool or if you press the **3**(-) button when the tool number is 1, the bottom display will become blank and the offset will be turned off. This means the tool offset is disabled.

Set-TOOL mode   The second mode is *SEt-t* (Set-Tool) mode for setting tool offsets.

X
Z

```
 E.     0.0000
        0.0000
 SEE-E    1
```

```
       2.0000
 Z     0.0000
 E-SEE    1
```
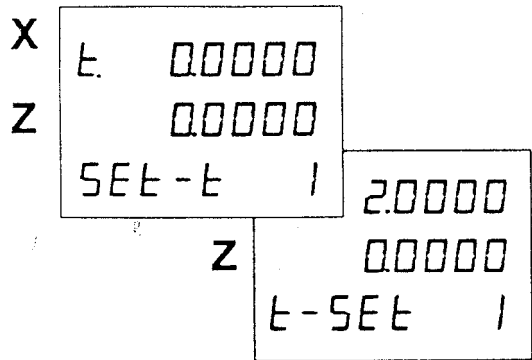
When a tool offsets is set, the *SEt-t* display will be changed to *t-SEt* to show that the tool has been set.

See Section 9 (page 13) for details.

The difference between absolute and incremental

Absolute position is the distance between a fixed starting point on the work piece and another point to which the tool has been moved. Incremental position refers to distances that are not measured with reference to a fixed origin, but instead, the distance is measured between the previous point and some new point.

Absolute register and incremental register are both updated during table movement regardless of which is currently displayed.

Absolute register and incremental register of X and Z axes are otherwise independent, that is, clearing one will not affect the other.

Absolute and incremental on a sample work piece

Absolute Z = -2.0"
Set Incremental Z = 0

-3.0"
-2.0"
-1.0"

Origin
Absolute (0,0)

Z

1.0"

1.0"

1.0"

X

Incremental
Z = -1.0"
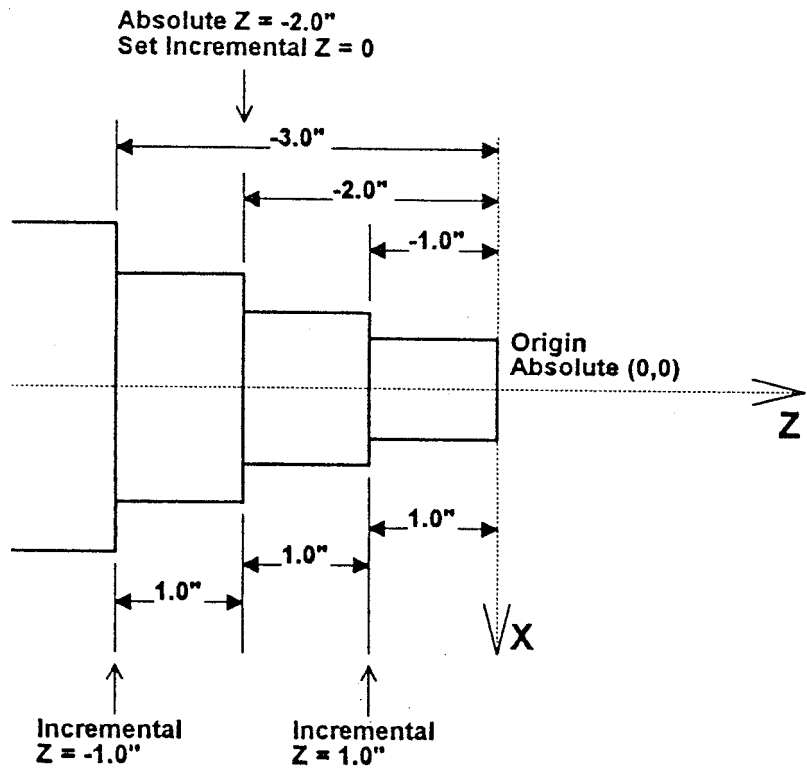
Incremental
Z = 1.0"

Switching between absolute and incremental

Press the **abs/inc** button to switch between absolute and incremental position displays. LEDs behind the screen indicate which mode is active.

7 Numerical Data Entry

Keys and their functions

abs/inc	.... select absolute or incremental mode;
X Z	.... select X or Z axis;
clear	.... cancel;
+/-	.... change the sign of the input;
preset	.... preset;
₵	.... center line;

|		
Set the datum point	absolute mode	X Z [data input 0 ... 9 . +/-] preset
Cancel Input	All modes	X Z [data input 0 ... 9 . +/-] clear
Preset Incremental	incremental mode	X Z [data input 0 ... 9 . +/-] preset
Recall Preset Incremental	incremental mode	X Z preset
Set Incremental	incremental mode	X Z [data input 0 ... 9 . +/-] X Z
Clear current Incremental	incremental mode	X Z clear
Divid the Incremental by two	incremental mode	X Z ₵
Negat the Incremental	incremental mode	X Z +/-
Enter TOOL number	absolute mode	tool [data input 0 ... 9] preset

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8 Angle Finding

Finding the taper angle

-10.62°

p2 (1.500, -4.000)

p1 (0.0, 0.0)

Z

X
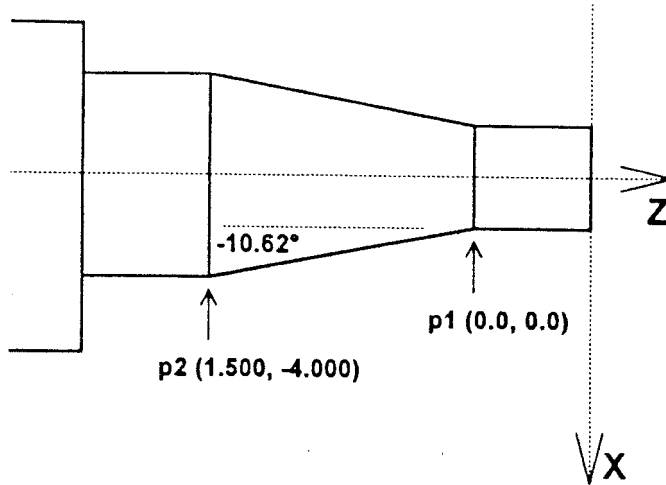
1. Set Lathe Pro to incremental.
2. Move to point 1.
3. Set both axes to zero.
4. Move to point 2.

X   15000

Z   -40000

∂   -10.62

Press the **angle** button. The taper angle of the line connecting p1 and p2 will be displayed as *a xx.xx*.

Press the **+/-** button to view the angle in degrees, minutes and seconds.

Press the **+/-** button again to return to decimal angle display.

Press the **angle** button again to exit angle display.

9 Tool Offsets

Description

Tool Offsets are the dimensions of a tool's cutting edge relative to a reference point, such as the cutting edge of a master tool.

Tool offsets are applicable when more than one tool is being used.

Setting tools after power up

When the Lathe Pro is first powered up, one of the tools must be set.

If all required tools have been previously entered into the Lathe Pro, it is only necessary to set one of those tools on the **NORMAL** mode screen.

Once one tool has been set, the correct dimensions for other tools will be displayed as long as the tool number is changed to correspond to the new tool.
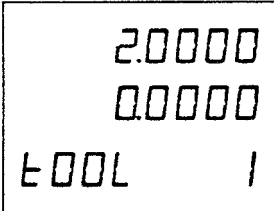
```
X      2.0000
Z      0.0000
tOOL         1
```

Press the **1(+)** or the **3(-)** button to increment or decrement the tool number, or enter the tool number on the bottom display.

On the **NORMAL** mode screen, only those tools which have been set can be selected.

Setting Z axis offset

1. Face the end of the work piece.

2. Enter the Z offset (usually zero) by pressing the **Z** button, keying in the value, and then press the **preset** button. The absolute and incremental dimensions will be set to the same value in the Lathe Pro.

Setting X axis offset

NOTE: Before entering a diameter, ensure the Lathe Pro is displaying diameter.

1. Make a trial skim cut.

2. **Freeze** the display, **if necessary**, so that the tool can be backed away from the work piece allowing room for measurement.

3. Measure the diameter of the work piece.

4. Enter the measured dimension by pressing the **X** button, keying in the value, and then press the **preset** button. The absolute and incremental dimensions will be set to the same value in the Lathe Pro.

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Adding tools

Before setting a new tool, one of the existing tools must be set as described above.

If all tools are being set from scratch, then all tools should first be cleared as described below.

Press the **mode** button repeatedly, until *SEt-t* (set-tool) mode screen is displayed.

```
X  t.     00000
Z         00000
   5Et-t    1    20000
         Z         00000
              t-5Et    1
```
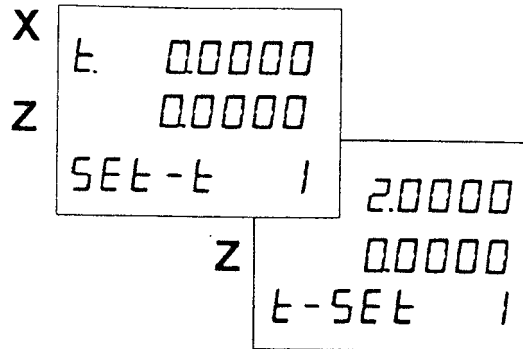
If tool offsets have been previously set for a particular tool, the *t-SEt* (tool-set) will be displayed on the bottom axis display.

Press the **1(+)** or the **3(-)** button to increment or decrement the tool number, or enter the tool number on the bottom display.

Set X and Z tool offsets as described previously.

Changing (overwriting) tool offsets

1. Press the **mode** button to switch to *SEt-t* mode screen.
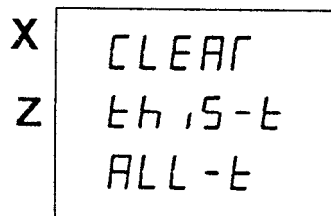
2. Press the **1(+)** or the **3(-)** button to increment or decrement the tool number, or enter the tool number on the bottom display.

3. Set X and Z tool offsets as described previously.

Clearing all tools

```
X  [LEAr
Z  th i5-t
   ALL-t
```

1. Press the **mode** button to switch to *SEt-t* mode screen..

2. Press and hold the **clear** button. *CLEAR* screen will be displayed.

3. Press the **0** button to clear all tools. *0.0.0.0.0.0.0.0.* will be momentarily displayed and all tool offsets will be cleared from the Lathe Pro's memory.

Clearing a single tool

1. Press the **mode** button to switch to *SEt-t* mode screen..

2. Select the tool number to be cleared.

3. Press and hold **clear** button. *CLEAR* screen will be displayed.

4. Press the **Z** button. The current tool will be cleared.

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10 Machine Error Compensation (MEC)

Machine error compensation description

The lathe would have no error if its movements followed perfectly straight lines. This, however, is not the case. There will always be some finite transfer error.

Definition: Transfer Error is the difference between displacement at the linear scale and displacement at the cutting tool.

Machine error is the difference between the actual dimension of a known standard and the value displayed by a digital readout when the standard is measured using the lathe. This error will also be present in any work piece being machined on that axis.

Machine Error Compensation (MEC) multiplies incoming scale signals by a factor such that the displayed value will be correct. This factor is stored in the Gold Tracer's nonvolatile memory and is set at the factory to 1.000000.

Example: A 10.0000 inch standard is measured along one axis with a result of 9.9950 inches. MEC will re-proportion this dimension so that the correct value (10.0000 inches) is displayed. The 0.0050 inch error has been distributed over the 10.0000 inches of travel. Thus the "Machine Error" has been "Compensated" for.

$$MEC\,Factor = \frac{10.0000}{9.9950} = 1.000500$$

Although MEC can improve lathe performance, it is not intended as a substitute for proper installation and maintenance.

Viewing MEC factors

Press and hold the **.** (decimal point) button to view the MEC scale factors for all axes.

$$MEC\,Factor = \frac{True\_Value}{Measured\_Value}$$

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Clearing MEC factor

1. Press the **X** or **Z** button for the appropriate axis. All but the leading zero will be blanked and the decimal point will flash for the selected axis.

2. Set the MEC switch (at rear of unit) to **CAL**, then return it to **OFF**.

3. Press and hold the **.** (decimal point) button to verify the MEC scale factor is now 1.000000.

General MEC calibration notes

The MEC procedure is performed on one axis at a time.

For best results the Lathe Pro should be calibrated in the units (inch or mm) in which it will be used.

Absolute and incremental modes have the same calibration factor for a given axis.

Calibrating MEC

1. Measure a known standard (with the Lathe Pro) ~~as described in this manual~~. *(Gauge) using a dial indicate*

2. When the value of the known standard is displayed, *measured and)* press the **X** or **Z** button for that axis. All but the leading zero will be blanked and the decimal point will flash for the selected axis.

3. Use the numeric keypad to key in the true value (the actual known standard value). *gauge*
Do not press the **preset** button.

4. Set the MEC switch (at rear of unit) to **CAL**, then return it to **OFF**.

5. Measure the standard again to ensure the Lathe Pro is now properly calibrated.

6. Repeat the procedure for the other axis if required.

11 REFERENCE MARKER

Description

The Lathe Pro can remember the position of the REFERENCE Marker for each axis. In case the machine table has been moved when the power is down, this feature can relocate the correct position.

Enter the SET REF mode

Set the power switch at the rear of the Lathe Pro to OFF (0) then back to ON (1). While the display is flashing with *8.8.8.8.8.8.8.8.*, press and hold the **marker** key, the Lathe Pro enter the *SET REF* mode.
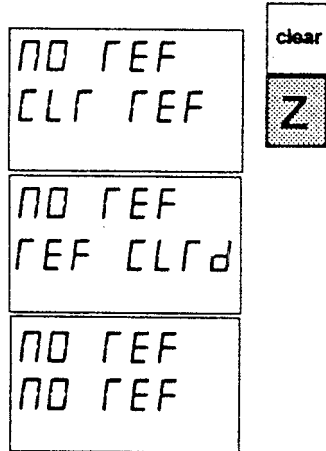
```
SEt rEF      marker
no rEF
rEF SEt
```
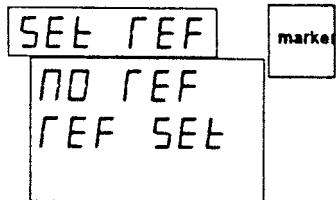
The screen display with *NO REF* or *REF SET*.

The *NO REF* denotes that the REFERENCE Marker has not been set for the axis.

The *REF SET* denotes that the REFERENCE Marker has been set for the axis.

Clear the existing REF SET Marker

```
no rEF      clear
CLr rEF      Z

no rEF
rEF CLrd

no rEF
no rEF
```

If you need reset the *REF SET* Marker, it is necessary to clear it first. To clear the existing *REF SET* Marker:

1. Press **clear** key, the *REF SET* will be changed to *CLR REF*.

2. Press the axis' key (in this case, it is Z1) the display will flash with *REF CLRD*, then change to *NO REF*.

Searching the Reference Marker from a starting point

```
no rEF      Z
SEArCH

no rEF      no rEF
03500       00000

no rEF
FOUNd
```
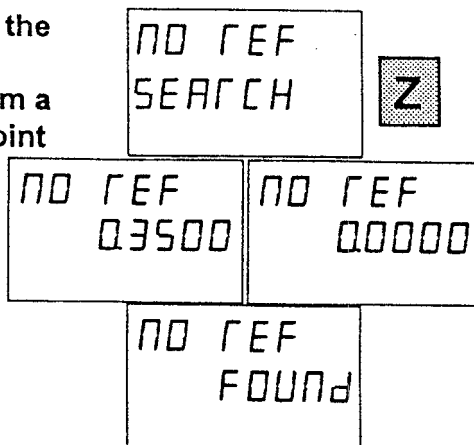
To search a REFERENCE Marker:

1. Select an axis by pressing the X or Z1 key. If the Z1 axis is selected, it will flash with *SEARCH*, then **display the absolute dimension of this starting point.**

2. **To make the relocation of the starting point easier, it is better to preset (section 7, page 11) this dimension to zero**

3. Make sure that the tool movement for the selected axis is *in the positive direction*. Move the tool slowly. When the Marker is detected, the Lathe Pro will save the detected position immediately and flash the display with *FOUND*, then display the current position.

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To view the saved REF SET Marker's Position Data

Marker

SCALE

Starting Point

Work Piece

← distance to the Marker →
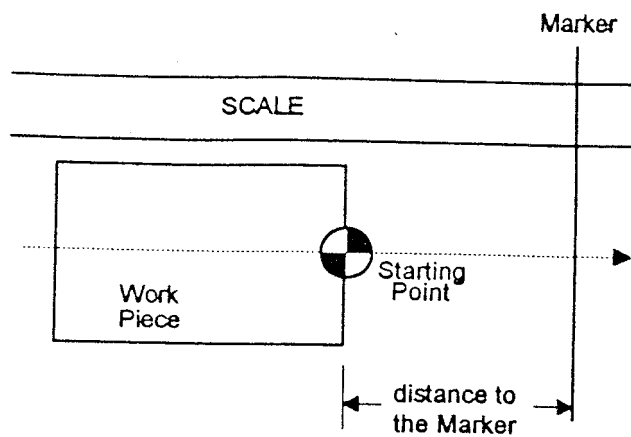
While in the *SET REF* mode, press the **print** key, the Lathe Pro will display **NO DATA** if there is no data; otherwise it will display *REF DATA* follow by the saved data. Then display current position.

Note: If *the starting point's coordinate* has not been reset to *zero* before searching, the distance to the Marker is the reminder of the saved data minus *the starting point's coordinate.*

Exit the SET REF mode

To exit from the *SET REF* mode, press any number key.

Select the REFER function

The *REFER* function allows you to relocate the starting position by searching the *REF SET* Marker. In the *NOR*mal mode, press the **marker** key to select *REFER* function. The Lathe Pro flashes with *REFER* then displays *NO REF* or *SELECT*.

```
ΓEFEΓ
```
marker

```
ΠO ΓEF
SELECL
```
Z

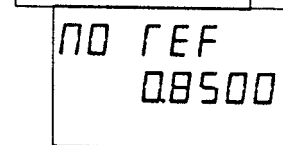The *SELECT* denotes that this axis' Marker data has been saved and the axis can be selected for searching.

Press the Z key to select this axis, the Lathe Pro flashes with *SEARCH* then display its current position in absolute mode.

```
ΠO ΓEF
SEΠΓCH
```
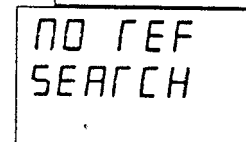
You can press the **print** key to view the saved *REF SET* Marker data.

Searching the REF SET Marker

```
ΠO ΓEF
   0.8500
```

```
ΠO ΓEF
FOUΠd
```
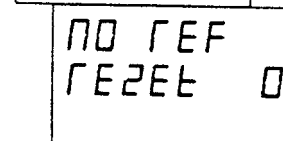
Make sure that the tool movement for the selected axis is *in the positive direction*. Move the table slowly. When the *REF SET* Marker is detected, the Lathe Pro will **copy the saved data to the absolute display register immediately,** then flash the display with *FOUND, RESET 0, END OF F*, and return to the *NOR*mal mode.

Relocate the Starting point

```
ΠO ΓEF
ΓEᒿEL   0
```

```
ΠO ΓEF
EΠd OF F
```
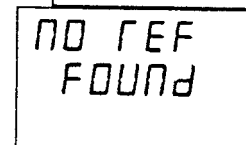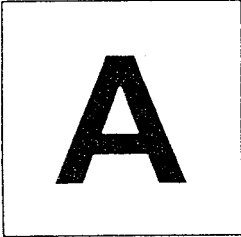
To relocate the starting point right after the reference marker has been found, move the tool in absolute mode, once the Lathe Pro reaches *the starting point coordinate,* its position should also be the original starting point's position.

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A
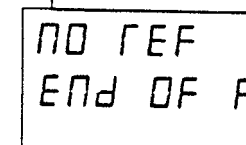
RS232 Functions (Option)

Description

The RS232 option consists of two serial ports designated "COMPUTER" and "PRINTER" installed on the back panel of the Lathe Pro.

RS232 is the communication medium between the Lathe Pro and the computer (and/or the printer). The communication code is ASCII.

The printer and the computer may be used independent of each other.

Information can be sent from the Lathe Pro to the printer, using the Lathe Pro keypad, whether a computer is connected or not.

If a computer is also connected, information can be sent from the Lathe Pro to the printer using the computer keyboard

Information can also be sent from the computer, using the computer keyboard, to the Lathe Pro.

Connector pin assignments

Both connectors are female DB25, their pin assignments and signals are:

Pin Number	Function
2	Tx
3	Rx
4	RTS
5	CTS
7	Signal Ground

Computer setup

A Terminal or Personal Computer can interface with the Lathe Pro through the serial port.

If run Microsoft Windows 3.x, choose Program Manager \ Accessories \ Terminal.

If run Microsoft Windows 95/98, choose Programs \ Accessories \ Hyper Terminal.

Printer setup

A serial printer can interface with the Lathe Pro provided they have the same protocol settings.

Setting RS232 protocol

RS232 protocol is programmed from the Lathe Pro front panel.

Set the power switch at the rear of the Lathe Pro to OFF (0) then back to ON (1). The display will flash *8.8.8.8.8.8.8.8.*

Press and hold the **print** key until one of the setup screens is displayed.

Default protocol settings

bAUdrAtE 9600	X / Z	preset

The Baud Rate options are: 19200, 9600, 4800, 2400, 1200, 600.

Default is 9600.

PArt IY nOnE	X / Z	preset

The Parity options are: None, Odd, Even, Mark.

Default is None.

dAtAb ItS 8	X / Z	preset

The Data Bits options are: 5, 6, 7, 8.

Default is 8.

StOPb ItS 1	X / Z	preset

The Stop Bits options are: 1, 2.

Default is 1.

When Baud Rate, Parity, Data Bits and Stop Bits are correctly set, they are stored in the Lathe Pro nonvolatile memory. Once set, the Lathe Pro may be powered down. When powered up at a later time the settings will still be intact.
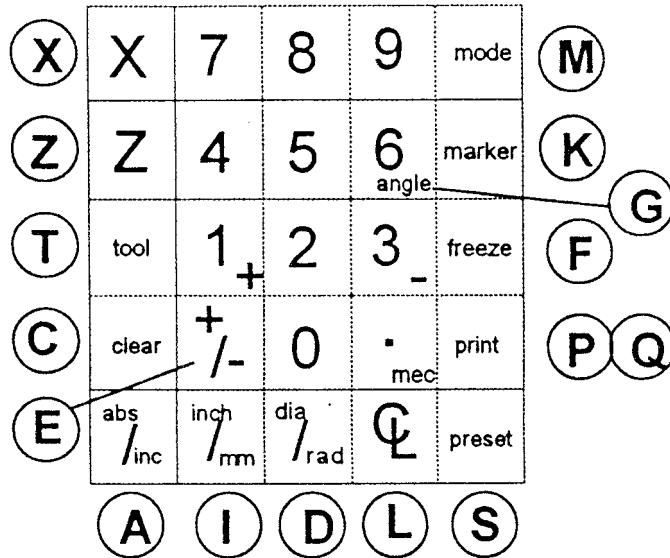
Changing protocol settings

Press the **preset** key until the desired setup screen is displayed.

Press the **X** or **Z** key to change a default setting.

Keyboard equivalents

Most of the Lathe Pro functions can be performed through the computer keyboard.

- Number keys (0 - 9 . + -) correspond to the same keys on the computer keyboard.
- Computer keys correspond to the remaining Lathe Pro keys as shown.
- **P** = PRINTER ON, **Q** = PRINTER OFF.

Printing information

When the printer is on, information is printed as the Lathe Pro is operated. The top axis information is displayed first, followed by the middle axis , then the bottom axis. Some examples are shown below.

```
CRT   ON
PRNTR ON
   2.0000    -4.0000 TOOL    1
```

Information right after power on.

```
M ABSOLUTE    2.0000    -4.0000 T-SET  1
M INCREMENT   2.0000    -4.0000 TOOL   1
```

When the **M** key on the remote computer is pressed or the **mode** key on the Lathe Pro front panel is pressed the display mode toggled between Normal mode and Tool mode.

```
(Example of enter 3.525 to Z then preset
and enter 0. to X then preset through a
remote computer keyboard: )

Z              -4.0000 3.525S
   2.0000      3.5250 TOOL   1
X   2.0000 0.S
   0.0000      3.5250 TOOL   1
```

Dimensions are printed when a value is entered on an axis.

Press and hold the **print** key to turn the printer off. Press the **print** key to turn the printer back on. Press the **print** key to print the current screen.