



## How to operate E-lathe with constant service speed DRO

Figure 1



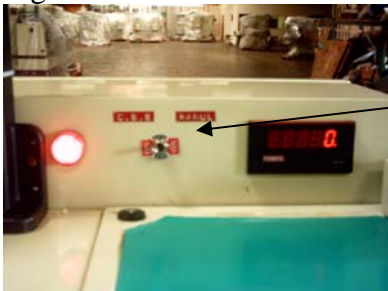
CSS button

Next button

Enter button

Find function switch on machine.

Figure 2



Function switch for  
manual mode and  
constant surface speed

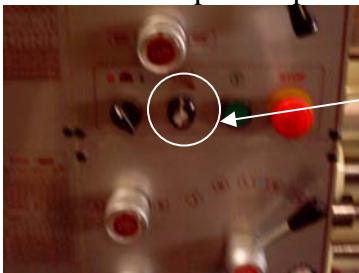
### Step 1

Manual mode: Put function switch to “manual” position.

To use high gear 2200 – 300 rpm, place lever at “H” position

To use low gear range 30-300 rpm, place lever at “L” position

Run machine spindle rpm manually by dial.



Variable  
speed knob

### Step 2

Constant Surface Speed Off Function

Put the switch to constant surface speed mode (see Figure 2).



Press the CSS button (see Figure 1)

Screen appears as follows:



Enter rpm, for example 1200

Lift machine lever to turn on machine

Machine will show 1200 rpm



Function switch  
should be on CSS  
mode

Step 3

Constant Surface Speed Mode On (see above picture), switch should be on CSS mode

Press CSS button (see Figure 1)

It will display “select rpm” mode



Press “next” button (see Figure 1)

Press enter (see Figure 1)  
“Enter diameter” will display



Press CSS button

“Select speed” will display. That’s where we start to input the information for CSS



Input 150 fpm and press enter button (see Figure 1)

Press next button (see Figure 1)

Input 1600 as maximum rpm for safety and press enter button

Press next button (see Figure 1)



Input diameter directly

For example, diameter is 4.0046



Press the CSS button (see figure 1)

CSS will display



Turn on CSS by pressing “next” and enter (see Figure 1)

Press CSS button (see Figure 1)

Machine is ready to function CSS



Turn on spindle by lifting lever up.



Crank crossslide towards center of part

Machine will display 1600 rpm max when tool moves towards part center



## ENT.DIA

This is where the current diameter position is entered.

- ◆ Enter current diameter position value using the numerical keypad
- ◆ Press the Enter button

### Menu Navigation:

- ◆ Press the CSS button to begin machining and activate E70 CSS spindle speed control
- or
- ◆ Press the left arrow button to go to "SEL.SET" parameter setting
- or
- ◆ Press the right arrow button to go to "CSS OFF" parameter setting

## CSS OFF

This allows the operator to turn off E70 CSS spindle control.

- ◆ Press the Enter button to turn E70 CSS spindle control off (Doing this will take you to the "ENT.RPM" parameter setting)

If the Enter button is not pressed:

- ◆ Press the right arrow button to go to the "CSS ON" parameter setting

## CSS ON

This feature must be enabled for the E70 CSS unit to control the spindle speed

- ◆ Press the Enter button to enable E70 CSS spindle speed control (Doing this will take you to the "SEL.SET" parameter setting)

If the Enter button is not pressed:

- ◆ Press the right arrow or left arrow buttons to go to the "CSS OFF" parameter setting

## ENT.RPM or SEL.RPM

When E70 CSS spindle speed is disabled, you will have the opportunity to enter the desired spindle speed.

- ◆ Enter the RPM value using the numerical keypad
- ◆ Press the Enter button

(This will set the spindle at the specified RPM, and the E70 will go to standard DRO mode)

## 3.4 Operating the E70 CSS in Surface Speed mode

**Surface Speed Mode:** The operator knows the Surface Speed that is required, and this value is entered into the E70 CSS. As the operator moves around the work piece, the E70 will adjust the RPM of the spindle to maintain the same surface speed.

Refer to the E70 CSS Quick Reference Guide for Menu Navigation

The message window in the upper right hand corner will guide you through the Surface Speed mode menus. Once the E70 CSS has been set to Surface Speed mode, press the CSS button in the upper right hand corner of the keypad. Each menu parameter is described in detail below.

## SEL.SPD

This is where the surface speed value is entered. If the E70 is in "Inch Mode" the surface speed value will be surface feet / minute (SFM). If the E70 is in "Millimeter Mode", the surface speed value will be in surface meters / minute.

- ◆ Enter the surface speed value using the numerical keypad
- ◆ Press the Enter button

#### *Menu Navigation:*

- ◆ Press the CSS button to begin machining and activate E70 CSS spindle speed control
- or
- ◆ Press the right arrow button to go to "MAX.RPM" parameter setting

#### MAX.RPM

This feature gives the operator the opportunity to easily adjust the maximum RPM for each job. This safety feature was incorporated for situations that require a maximum RPM that is less than the maximum lathe RPM. This is particularly the case when unevenly balanced work pieces are being used that may present a hazard if they are turned at a high RPM.

- ◆ Enter the Maximum RPM using the numerical keypad
- ◆ Press the Enter button

#### *Menu Navigation:*

- ◆ Press the CSS button or the left arrow button to go to "SEL.SPD" parameter setting
- or
- ◆ Press the right arrow button to go to "ENT. DIA" parameter setting

#### ENT.DIA

This is where the current diameter position is entered.

- ◆ Enter current diameter position value using the numerical keypad
- ◆ Press the Enter button

#### *Menu Navigation:*

- ◆ Press the CSS button to begin machining and activate E70 CSS spindle speed control
- or
- ◆ Press the left arrow button to go to "SEL.SPD" parameter setting
- or
- ◆ Press the right arrow button to go to "CSS OFF" parameter setting

#### CSS OFF

This allows the operator to turn off E70 CSS spindle control.

- ◆ Press the Enter button to turn E70 CSS spindle control off (Doing this will take you to the "ENT.RPM" parameter setting)

If the Enter button is not pressed:

- ◆ Press the right arrow button to go to the "CSS ON" parameter setting

#### CSS ON

This feature must be enabled for the E70 CSS unit to control the spindle speed

- ◆ Press the Enter button to enable E70 CSS spindle speed control (Doing this will take you to the "SEL.SET" parameter setting)

If the Enter button is not pressed:

- ◆ Press the right arrow or left arrow buttons to go to the "CSS OFF" parameter setting

#### ENT.RPM or SEL.RPM

When E70 CSS spindle speed is disabled, you will have the opportunity to enter the desired spindle speed.

- ◆ Enter the RPM value using the numerical keypad
- ◆ Press the Enter button



(This will set the spindle at the specified RPM, and the E70 will go to standard DRO mode)

### 3.5 RPM Display Option

The current calculated RPM value can be displayed in the message window by following the procedure below. The E70 CSS unit must be properly calibrated for the display RPM to match the actual RPM of the spindle.

Get into setup mode on the E70 CSS unit

- ◆ Press the Power button
- ◆ Press the ABS/INC button
- ◆ Press the Power button

The E70 CSS unit should now show "SETUP" in the message window

- ◆ Press the +- button
- ◆ Press the 4 button
- ◆ Press the Enter button

The E70 CSS unit should now display "RPM DISP."

- ◆ Press the right arrow button or left arrow button until the unit displays the desired option (RPM OFF or RPM ON)
- ◆ Press the Enter button (This will take you back to the SETUP menu, and "SETUP" will be displayed in the message window)
- ◆ Press the right or left arrow button until the message window displays "QUIT"
- ◆ Press the Enter button (You will now exit setup mode and return to standard DRO mode)

## 4.0 Quick Reference Guide

The Quick Reference Guide was created to assist to operator in navigating through the menus. The symbols used are explained below.



CSS Button – Found in the upper right hand corner of the keypad



Arrow Button – Found in the bottom right hand corner of the keypad



Enter Button



All other items in boxes are show as they are displayed in the message window in the upper right hand corner of the display