E200P Operation Manual

(Version: V1.01)

ESTUN

ESTUN AUTOMATION CO., LTD

— Total Solution Supplier

Contents

Preface

Synopsis

This document guides the operator how to operate the E200P press break numerical control device.

- **Chapter 1** describes panel and page.
- **Chapter 2** describes the example operation of the Single-Step and Mutil-Step.
- **Chapter 3** describes the operation guide of the pages.

Intended Audience

This document is intended for the **authorized and properly trained** persons:

- Device manufacturer: In the device production process, the people who diagnose the device have the highest managing privileges.
- System integrators: usually refers to the technical personnel of machine tool manufacturers, who can configure the machine parameters to commissioning the system.
- Operator: use the machine to do the programming work, set the programming constant parameters.

Attention

- Copy right is preserved by ESTUN. Do not add or delete part or all of the manual content without ESTUN's consent. Do not use part or all of manual content for the third party's design.
- E200P device provides complete software control and has no mechanical protection device for operator or the tool machine. Therefore, in case of malfunction, machine tool must provide protection device for operator and external part of the machine tool. ESTUN is not responsible for any direct or indirect losses caused by normal or abnormal operation of the device.
- ESTUN preserves the right to modifying this manual in the event of function adding or print error.
- E200P device has the light protection function, but only works on the **CLOSED** stage, it is unavailable on others stage.

Caution Sign

The following symbols with an adjoining safety advice or notice are used in this document. You have to read the safety advices carefully and adhere them strictly!

⚠ WARNING
Risk of injury!
If you **do not** adhere the safety advise adjoining this symbol, there is danger to life and health of individuals!

⚠ CAUTION
Hazard to individuals!
If you **do not** adhere the safety advice adjoining this symbol, there is obvious hazard to individuals!

ℹ NOTE
Note or pointer.
This symbol indicates information that contributes to better understanding.

Chapter 1 Product Introduction

1.1 Characteristic

E200P CNC device is a very suitable for torsional axis bending machine, providing solutions for most of the machine both complete and economy, with high performance, flexible configuration, compact structure, easy to use, high reliability characteristic:

- Servo control, can realize the backgauge and high accuracy of control block.

- Unilateral and bilateral location, to improve the positioning precision and reduce screw clearance.

- The main action of the machine can be configured, such as fast closing, pressing, decompression, opening.

- Backgauge can automatic homing.

- Backgauge can be adjusted through the manual keys.

- All ports can be configured directly on the device page, and the device has self-checking function.

1.2 Operation Panel

E200P Operation panel is as shown in Figure 1-1.

Figure 1-1 Operation panel

Functions of panel keys are described in Table 1-1.

Table 1-1 Description of key functions

Key	Function Description
![delete key]	Delete key: delete all data in input area on left bottom of displayer.

| Key	Function Description
⬅	Enter key: confirm the input content. If no content is input, the key has the similar function to direction key ⬇.
ⓞ	Start key: automatic start-up, top left corner of the key is operation indicator LED. When operation is started, this indicator LED is on.
ⓞ	Stop key: stop operation, top left corner of the key is Stop indicator LED. When initialize normal start-up and no operation, this indicator LED is on.
⬅	Left direction key: page forward, cursor remove
➡	Right direction key: page backward, cursor remove
⬆	Up direction key: select parameter upward
⬇	Down direction key: select parameter downward
P	Function switch: switch over different function pages
±	Symbolic key: user input symbol, or start diagnosis.
0 ~ 9	Numeric key: when setting parameter, input value.
.	Decimal point key: when set up parameter, input decimal point.
+	Manual movement key: in case of manual adjustment, make adjustment object move in forward direction at low speed.
−	Manual movement key: in case of manual adjustment, make adjustment object move in backward direction at low speed.
++ 🖐 −−	High speed selection key: in case of manual adjustment, press this key and press + simultaneously, make adjustment object move in increasing direction at high speed, then press −, make adjustment object move in decreasing direction at high speed.

1.3 Display
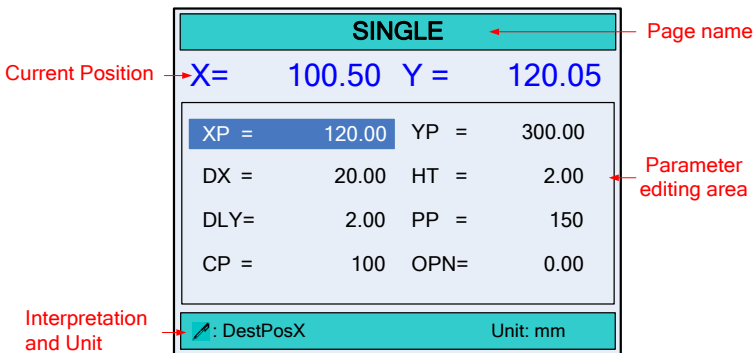
Figure 1-2 Display area

- Page name: here shows the name of the current page.

- Current Position: here shows the relative position of the X-axis and Y-axis.

- Parameter editing area: here shows the editable parameters.

- Interpretation and Unit: here shows interpretation and unit of parameters the cursor on.

Chapter 2 Operation Example

2.1 Single-Step

2.1.1 Background

Now, There are a number of material, needs to be processed into workpiece, the require as following:

● Depth of bending is 100.00mm

● Position of the backgauge is 80.00mm

● Distance of retracting is 5.00mm

● Time for the backgauge retract waiting is 2.00s

● Time for the block holds the pressure is3.00s

● Workpiece is 10.

2.1.2 Analysis

Parameter	Setting
XP	80.00mm
YP	100.00mm
DX	5.00mm
HT	3.00s
DLY	2.00s
PP	10
Others	According to the actual situation to set.

2.1.3 Procedure

Step 1   When the E200P device is electrified, wait a few seconds into the **SINGLE** page (Default page).

Step 2   According to the analysis, press the arrow keys and number keys to modify the corresponding parameters, as shown in Figure 2-1.

Figure 2-1 Single-Step example configuration

Step 3   Press ⬤ to run the machine, the device will enter the running page.

----End

2.2 Mutil-Step

2.2.1 Background

There is a number of sheet metal need for three bends, processing 50. Requirements are follows:

● The first bending: 50mm

● The second bending: 100mm

● The third bending: 300mm

2.2.2 Analysis

According to the process condition of workpiece and tool, analysis data are as follows:

● The first bending: Position of the backgauge is 50.00mm, Depth of bending is 85.00mm, Distance of retracting 5.00mm;

● The second bending: Position of the backgauge is 100.00mm, Depth of bending is 85.00mm, Distance of retracting 5.00mm;

● The third bending: Position of the backgauge is 300.00mm, Depth of bending is 85.00mm, Distance of retracting 5.00mm.

This operation will edit and save in the **2Program**, when the device is power on, set the following parameters in **PROGRAM** page.

Page	Parameter	Setting
PROGRAM	ST	3
	PP	50
	DLY	4.00s

Page	Parameter	Setting
	HT	2.00s
ST 1/3	XP	50.00mm
	YP	85.00mm
	DX	5.00mm
	Repeat Times	1
ST 2/3	XP	100.00mm
	YP	85.00mm
	DX	5.00mm
	Repeat Times	1
ST 3/3	XP	300.00mm
	YP	85.00mm
	DX	5.00mm
	Repeat Times	1

2.2.3 Procedure

Step 1 When the E200P device is electrified, wait a few seconds into the **SINGLE** page (Default page).

Step 2 Press ▶P to enter **PROGRAMS** page.

Step 3 Press ❷ or arrow key to select **2program**, and then press ⏎ to enter the **NO.2 PROGRAM** page.

Step 4 According to the analysis, press the arrow keys and number keys to modify the corresponding parameters, as shown in Figure 2-2.

NO.2	PROGRAM	
X=	10.00 Y =	10.00
ST:	3	STEP
PP:	50	PIECE
CP:	50	PECE
DLY:	4.00	S
HT:	2.00	S

Figure 2-2 Mutil-Step example configuration

Step 5 Press ➡ to enter **1/3ST** page, and modify the parameters according to **Step4**, the result of modifying is as shown in Figure 2-3.

Figure 2-3 Step configuration

Step 6   According to **Step 5**, modify the parameters on the **2/3ST** and **3/3ST** pages.

Step 7   Press P back to **PROGRAM** page.

Step 8   Press ⓞ to run the machine, the device will enter the running page.

      ----End

Chapter 3 Operation Description

3.1 Tipwizard

3.1.1 Start and Stop

- After finishing the programming, press 🔘 to run the machine.

- The device starts, the green indicator light.

- Only on the **SINGLE** page, **PROAGRAM** page or **STEP** page, the machine can run after pressing 🔘. In other pages, press 🔘 to run is invalid.

- When there is any alarm, the machine cannot start until the alarm is clear, the machine can start again.

- Press 🔴 to stop the machine immediately, at the same time, the page on the device backs to the previous programming page.

- The device does not start, the red indicator light.

3.1.2 Parameter Setting

- When editing the parameter, press ⬅️➡️⬇️⬆️ to select the parameter you want to modify, input the value and press ⬅ to finish.

- When editing the parameter, please accord to the tip on the page to edit. If the value out of range, the page will display **Out of range**, please input a correct value again.

3.1.3 Alarm Reset

- When there is any alarm, the machine stops immediately. If you want to recover the machine's operation, you need to clear the alarm.

- On the **CONST** page, press ➡️ to enter the **ALARM RECORD** page, the most of top is the recent alarm information. Please according to the information on the page to processing the problem, and then press 🔴 and ⬅ to clear the alarm, finally you can run the machine.

3.1.4 Monitor

- On the **CONST** page, press ⬅️ to enter **IO MONITOR** page.

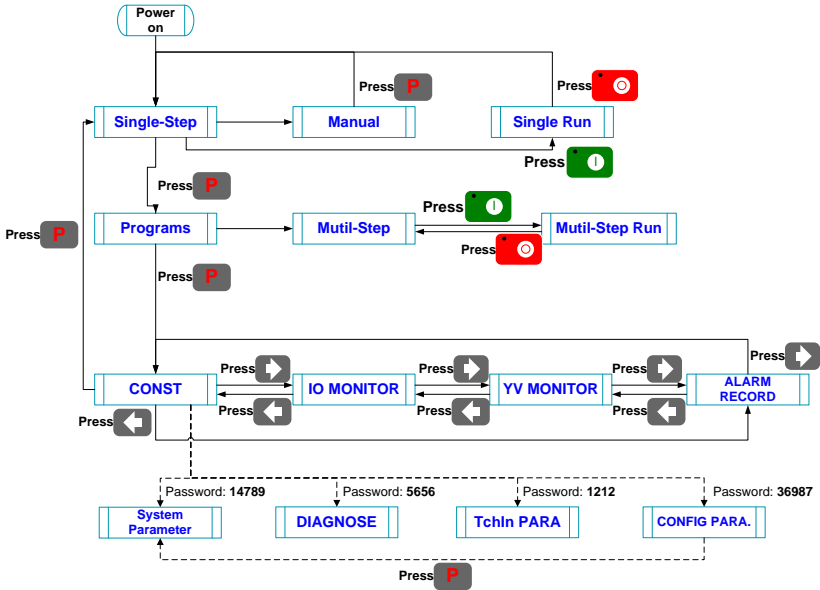- ON the **IO MONITOR** page, press ⬅️ to enter **YV MONITOR** page.

3.2 Operation Flow

Figure 3-1 Operation Flow

3.3 Single-Step

> ℹ️ **NOTE**
>
> In the actual processing, operator user pedal switch to control the bending process. Because of the **SINGLE** page has simple and direct parameter, it more suitable for the bending operation just only one-step.

When the E200P device is electrified, wait a few seconds into the **SINGLE** page (Default page), as shown in Figure 3-2.

[Operation guide]:

- Press ⬅️➡️⬇️⬆️ to select the parameter you want to modify, input the value and press ⬅️ to finish the operation.

- After finishing the editing, press 🔘 to run the machine, the page on the device enters to **RUN** page.

- Press 🔘 to stop the machine. The page on the device enters to **SINGLE** page.

Figure 3-2 The **SINGLE** page

The description of the **SINGLE** parameters is as shown in Table 3-1.

Table 3-1 The description of the **SINGLE** parameters

Parameter	Default	Range	Unit	Description
XP	0.00	0~9999.999	mm/inch	Program position of X axle.
YP	0.00	0~9999.999	mm/inch	Program position of Y axle.
DX	0.00	0~9999.999	mm/inch	Retract distance of X axle.
HT	0.00	0~99.99	s	The interval time from **LDP** signal to decompression process.
DLY	0.00	0~99.99	s	In case of single step, delay time for X-axle retracting.
PP	0	0~9999	-	The number of processing workpiece in this program.
CP	0	0~9999	-	• PP=0: this value is the current work piece. • PP>0: this value is the remain work piece.
OPN	0.00	0~999.999	mm/inch	After bending, the distance of the Y-axis opening.

3.4 Multi-Step

> ### ⓘ NOTE
>
> In the actual processing, operator user pedal switch to control the bending process. In **PROGRAM** page, you can finish the complex operation with carefully programmed.

Step 1 When the E200P device is electrified, wait a few seconds into the **SINGLE** page (Default page).

Step 2 Press [P] to enter the **PROGRAMS** page, as shown in Figure 3-3.

[Operation Guide]

‒ Program-Number is used for storing Mutil-Step programming, in order to work again. E200P CNC device provide 40 Program-Number to user.

‒ Press [←][→][↓][↑] to select the target Program-Number and press [←┘] to enter, and then the editorial content is automatically saved in this program.
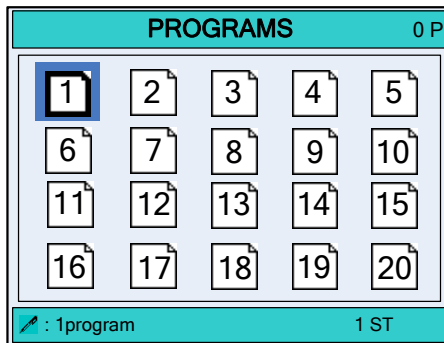

Figure 3-3 The **PROGRAMS** page

Step 3 Select the target Program-Number, such as **2program** and press [←┘] to enter **PROGRAM** page, as shown in Figure 3-4.

[Operation Guide]: Press [↓][↑] to select the parameter you want to modify, input the value and press [←┘] to finish the operation.

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```
NO.2        PROGRAM

X=   10.00  Y =   10.00

ST:                    3    STEP
PP:                    0    PIECE
CP:                   50    PIECE
DLY:               4.00     S
HT:                2.00     S

✎:
```

Figure 3-4 The **PROGRAM** page

The description of the **PROGRAM** parameters is as shown in Figure 3-2.

Table 3-2 The description of the **PROGRAM** parameters

Parameter	Default	Range	Unit	Description
ST	1	0~25	-	The total number of steps in this program.
PP	0	0~99999	-	The number of processing workpiece in this program.
CP	0	0~99999	-	• PP=0: this value is the current work piece. • PP>0: this value is the remain work piece.
DLY	0.00	0~99.99	s	In case of single step, delay time for X-axle retracting.
HT	0.0	0~99.99	s	The interval time from **LDP** signal to decompression process.

Step 4   After finishing the setting of the **PROGRAM** page, press 🡆 to enter **STEP** page, as shown in Figure 3-5.

[Operation Guide]:

● It automatically makes the step number, according to the value of parameter **ST** on the **PROGRAM** page.

● Please pay attention the sequence of the step, e.g. **1 / 3ST**: **1** indicates the current step, **3** indicates the total step. The machine will run in sequence.

● Press 🡄🡆 to enter each step page for editing.

● Press 🡇🡅 to select the parameter you want to modify, input the value and press ↵ to finish the operation.
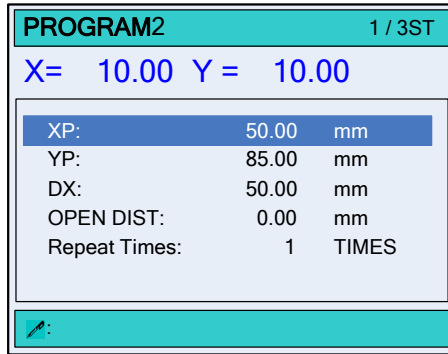
● Press P back to **PROGRAM** page.

Figure 3-5 The **STEP** page

The description of **STEP** parameters is as shown in Table 3-3.

Table 3-3 The description of Step parameters

Parameter	Default	Range	Unit	Description
XP	0.00	0~9999.999	mm/inch	Program position of X-axis.
YP	0.00	0~9999.999	mm/inch	Program position of Y-axis.
DX	0.00	0~9999.999	mm/inch	Retract distance of X axle.
OPEN DIST	0.00	0~999.999	mm/inch	After bending, the distance of the Y-axis opening.
Repeat Times	1	1~99	-	The repeat times in this step.

Step 5 After finishing operation, you can accord the actual situation to run the machine.

- If you want to run the machine from a certain step, press arrow key to switch that step page, Press 🔘 to run, the device enters **RUN** page.
- If you want to run the machine in in sequence, press 🅿 back to **PROGRAM** page, and then Press 🔘 to run, the device enters **RUN** page.

----End

3.5 Manual

$\mathbf{i}$ NOTE
In general, operator wants to adjust the backgauge or the block, need to enter **MANUAL** page to do relevant operation.

When the E200P device is electrified, wait a few seconds into the **SINGLE** page (Default page), press + or − enter **MANUAL** page, as shown in Figure 3-6.

[Operation Guide]:

● Move the cursor and stay on the axis you want to adjust, press and hold + , the motor control this axis runs to the increment count direction slowly.

● Move the cursor and stay on the axis you want to adjust, press and hold − , the motor control this axis runs to the decrement count direction slowly.

● Move the cursor and stay on the axis you want to adjust, press and hold ++ 🖑 — and + , the motor control this axis runs to the increment count direction quickly.

● Move the cursor and stay on the axis you want to adjust, press and hold ++ 🖑 — and − , the motor control this axis runs to the decrement count direction quickly.
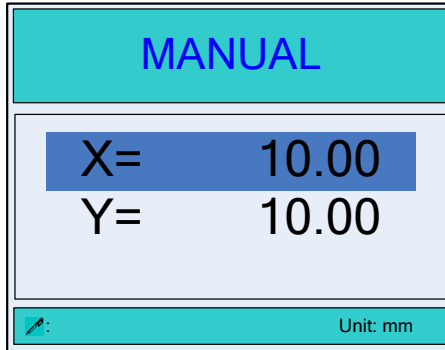
Figure 3-6 The **MANUAL** page

3.6 Alarm and Monitor

● On the **CONST** page, press [←] to enter IO MONITOR page, as shown in Figure 3-7.

Figure 3-7 The **IO MONITOR** page

● On the **CONST** page, press [→] to enter **ALARM RECORD** page, as shown in Figure 3-8.

Figure 3-8 The **ALARM RECORD** page

● On the **CONST** page, press [→] two times to enter **YV MONITOR** page, as shown in Figure 3-9.

Figure 3-9 The **YV MONITOR** page

Appendix A   Common fault and troubleshooting

Fault phenomena	Trouble shooting
When power on, the device will not display.	• The electrode of power supply terminal is connected error; please see the information of power nameplate. • Voltage is too low. • Electrical outlet is not connected.
When X axle programming is operating, the back gauge motor does not move, but Y AXIS motor moves.	Two motors are reversed. Reconnect.
When program is operating, motor does not move.	• Check whether mechanical part has been locked or slider returns to upper dead center. • Check whether the motor wiring is connected well.
When the device is in multi-step programming, the program can't change step.	Check when slider is on upper dead center, **Step** terminal is connected to +24V or not.
When the device is in multi-step programming, the program can't count.	Check when slider is on upper dead center, **Step** terminal is connected to +24V or not.
When programming is operating, the device loses control.	• Check whether communication cable is connected or not. • Check whether the motor direction of X-axis and Y-axis, and the encoder count direction are correct.

Appendix B   Alarm List

Alarm NO.	Alarm Information	Alarm Description
A.01	Pieces reached	Normal message, that the count reaches a preset value.
A.02	XPos < minimum	The current position of X-axis beyond the minimum value, need manually adjust to the soft limit range.
A.03	XPos > maximum	The current position of X-axis or beyond the maximum value, need manually adjust to the soft limit range.
A.04	YPos < minimum	The current position of Y-axis beyond the minimum value, need manually adjust to the soft limit range.
A.05	YPos > maximum	The current position of Y-axis or beyond the maximum value, need manually adjust to the soft limit range.
A.06	Out of UDP	Move the slider to the upper dead point by foot witch.
A.11	Slider Block err.	The slider block has been off the upper limit position when the Y-axis is in positioning.
A.12	Finished work	The count reaches the preset value, need to manually clear alarm.
A.22	Mach. Not ready	Need to start the pump power.
A.23	Encoder abnor.	The voltage of encoder is abnormal, please check it.
A.24	Comm. Err.	Can communication is abnormal, please check whether the communication port ground is well.
A.25	X-axis Dropped	The X-axis driver is missing, need to power on system and drive again.
A.26	Y-axis Dropped	The Y-axis driver is missing, need to power on system and drive again.
A.27	Can Send Err.	The device is not connected to the drive, please connect the drive.
A.28	Mode Err.	That has Switched system in the process of operation mode, clear the alarm after the restart.
A.29	SafeIn Err.	Light signal loss on the CLOSED stage, check the screen input signal with or without object light signal.
A.30	Power Drop	The system voltage is lower than the normal value, check whether the system voltage is normal.
A.32	Axis Droped	When the driven mode is EDS, the drive is offline.
A.51	Drive off 'Clr+Enter'Reset	The main power of servo drive has been off.
AX.60~AX.67	CAN Error	The X-axis CAN communication is abnormal, restarting the system after clearing the alarm.
AY.60~AY.66	CAN Error	The Y-axis CAN communication is abnormal, restarting the system after clearing the alarm.

Appendix C   Parameter Description

Parameter	Default	Range	Unit	Description
CONST				
mm/inch	0	0~1	-	• 0: mm • 1: inch
中文/English	0	0~1	-	• 0: 中文 • 1: English
Release Delay	0.50		s	The delay time for the slide releasing the pressure after bending.
Hold Delay	0.00	0.00~99.99	s	The default interval time from **LDP** signal to decompression process. If the parameter **HT** on the Single-Step page or the Multi-Step page is set to **0**, this parameter value is valid.
Retract Delay	0.00	0.00~99.99	s	The delay time for the back gauge will go to retract.
Version	-	-	-	The current software version number.
TchIn PARA				
X-tea. in	10.00	0~9999.999	mm/inch	When the teaching of X-axis is enabling, the operator assigns to the X-axis of a correct value, to represent the backgauge current position.
Y-tea. in	10.00	0~9999.999	mm/inch	When the teaching of Y-axis is enabling, the operator assigns to the Y-axis of a correct value, to represent the slider current position.
CONFIG PARA.				
YV5->NCRDY	0	0, 1	-	• 0: Disable, the function of YV output is normal. • 1: Enable, the function of YV output is changed to NCRDY output.

Parameter	Default	Range	Unit	Description
Jog Mode	0	0, 1	-	• 0: Semi. • 1: Jog
SINGLE				
XP		0~9999.999	mm/inch	Program position of X axle.
YP		0~9999.999	mm/inch	Program position of Y axle.
DX		0~9999.999	mm/inch	Retract distance of X axle.
HT		0~99.99	s	The interval time from **LDP** signal to decompression process.
DLY		0~99.99	s	In case of single step, delay time for X-axle retracting.
PP		0~9999	-	The number of processing workpiece in this program.
CP		0~9999	-	• PP=0: this value is the current work piece. • PP>0: this value is the remain work piece.
OPN		0~999.999	mm/inch	After bending, the distance of the Y-axis opening.
PROGRAM				
ST		0~25	-	The total number of steps in this program.
PP		0~99999	-	The number of processing workpiece in this program.
CP		0~99999	-	• PP=0: this value is the current work piece. • PP>0: this value is the remain work piece.
DLY		0~99.99	s	In case of single step, delay time for X-axle retracting.
HT		0~99.99	s	The interval time from **LDP** signal to decompression process.
STEP				
XP		0~9999.999	mm/inch	Program position of X axis.
YP		0~9999.999	mm/inch	Program position of Y-axis.
DX		0~9999.999	mm/inch	Retract distance of X axle.
OPEN DIST		0~999.999	mm/inch	After bending, the distance of the Y-axis opening.

Parameter	Default	Range	Unit	Description
Repeat Times		1~99	-	The repeat times in this step.

ESTUN AUTOMATION CO., LTD

Add: 155 Jiangjun Road, Jiangning Development Zone,
      Nanjing 211106, P.R.China
TEL: 025-52785866
FAX: 025-52785992
WEB: www.estun.com
Email: info@estun.com

www.estun.com

ESTUN